



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

Exhibit 11: SAR Test Report of Portable Cellular Phone FCC ID: PY7A3880065 Model: J10i2

Date of test: November 19 – December 01, 2009

Date of Report: February 18, 2010

Laboratory: SAR Testing Laboratory Sony Ericsson Mobile Communications, Inc. 7001 Development Drive, P.O. Box 13969, Research Triangle Park, NC, 27709, USA

Tested by: Rodney G. Dixon
Eng. Technician IV, Global Type Approval

Test Responsible: Gary Thomas *Gary Thomas*
Technical Manager

Accreditation: This laboratory is accredited to ISO/IEC 17025-2003 to perform the following electromagnetic exposure tests:



- Specific Absorption Rate (SAR)
- Dielectric parameters
- RF power measurement

A2LA Certificate
#1650-01

On the following types of products: Wireless communications devices.

Statement of Compliance: Sony Ericsson Mobile Communications, Inc declares under its sole responsibility that portable cellular telephone FCC ID PY7A3880065 model J10i2 to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines (FCC 47 CFR §2.1093). It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

(none)

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This test report shall not be reproduced except in full, without written approval of the laboratory.

The results and statements contained herein relate only to the items tested. The names of individuals involved may be mentioned only in connection with the statements or results from this report.

Sony Ericsson Mobile Communications encourages all feedback, both positive and negative, on this test report.



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1. Introduction

The Sony Ericsson SAR Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID PY7A3880065 model J10i2. The Specific Absorption Rate (SAR) of this product was measured. The applicable RF safety guidelines and the SAR measurement specifications used for the test are described in [1].

2. Description of the Device Under Test

All information in this section was supplied by the customer.

2.1 Customer Details

Company Name:	Sony Ericsson Mobile Communications (USA) Inc.
Address:	7001 Development Drive P.O. Box 13969 Research Triangle Park, NC 27709, USA
Department:	Global Type Acceptance
Contact Name:	Iyad Hindi

2.2 Device Description

Device Model	AAD-3880065-BV
Market Name	J10i2
GPRS Multislot Class	10
EDGE Class	10
GPRS Capability Class	B
BT Class and Conducted Power	Class 1, 6 dBm (4 mW)
Production Unit or Identical Prototype ^{Note 1}	Identical Prototype
Hardware Version	AP
Software Version	R7AA040
Device Category	Portable
RF Exposure Environment	General Population / Uncontrolled

Note 1: Per 47 CFR §2.908

Serial Number (of EUT used for each test)	BX900ZN51W			BX900ZN53K		
Mode	GSM 800			GSM 1900		
Crest Factor	8.3			8.3		
Multiple Access Scheme	TDMA			TDMA		
Channel No.	128	189	251	512	660	810
Measured Power Level [dBm] ^{Note 2}	33.4	33.5	33.4	30.5	30.5	30.4
Product Maximum Power Level [dBm] ^{Note 2}	33.5			30.5		
Transmitting Frequency Range [MHz]	824.2 – 848.8			1850.2 – 1909.8		



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WLAN Output Power						
Serial Number of EUT			BX900ZN4ZX			
Mode	Max Output Power [dBm] ^{Note 2}	Factory Tolerance [dBm] ^{Note 2}	Measured Power [dBm] ^{Note 2, 3}			
			Ch 1	Ch 6	Ch 11	Ch 13
801.11b 1Mbit/sec	17.5	1	17.7	17.6	17.7	17.7
801.11b 2Mbit/sec						
801.11b 5.5Mbit/sec						
801.11b 11Mbit/sec						
801.11g 6Mbit/sec	13.5	1	13.6	13.6	13.7	13.5
801.11g 9Mbit/sec						
801.11g 12Mbit/sec						
801.11g 18Mbit/sec						
801.11g 24Mbit/sec						
801.11g 36Mbit/sec						
801.11g 48Mbit/sec						
801.11g 54Mbit/sec						

Note 2: All power levels in this section refer to average power in dBm.

Note 3: Only the highest reported power level per mode is shown in this table.

2.3 Antenna Description

Type	Internal Antenna	
Location	Bottom of Phone	
Main and WLAN antennas distance	80 mm	
Dimensions	Max Length	30 mm
	Max Width	15 mm
Configuration	Semi-PIFA	



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3. Test Equipment Used

3.1 Dosimetric System

The Sony Ericsson SAR Laboratory utilizes Dosimetric Assessment Systems (Dasy4™) for adjacent to head and body-worn measurements manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±9.7 % (K=1) with an expanded uncertainty of ±19.4 % (K=2) for Dasy4™. The measurement uncertainty budget is given in Appendix 5 for the system. The list of calibrated equipment used for the measurements is shown in the following table.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	392	May-26-2010
DASY3 DAE V1	417	Nov-6-2010
DASY3 DAE V1	432	May-15-2010
E-Field Probe ETDV6	1583	Nov-18-2010
E-Field Probe ETDV6	1586	May-25-2010
E-Field Probe ETDV6	1587	May-25-2010
Dipole Validation Kit, DV835V2	438	May-25-2010
Dipole Validation Kit, DV1900V2	536	May-26-2010
Dipole Validation Kit, DV2440V2	702	May-20-2010
S.A.M. Phantom used for 835MHz (Head)	1023	
S.A.M. Phantom used for 835MHz (Body)	1031	
S.A.M. Phantom used for 1900MHz (Head)	1054/1335	
S.A.M. Phantom used for 1900MHz (Body)	1020	
S.A.M. Phantom used for 2450MHz (Head and Body)	1251	



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3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3443U00433	February 01, 2010
Signal Generator HP8648C	3443U00311	April 09, 2010
Signal Generator HP8648C	3537A01598	August 10, 2011
Power Meter 437B	3125U16382	December 04, 2009
Power Meter 437B	3125U16190	May 07, 2010
Power Meter 437B	3125U113481	April 02, 2010
Power Meter 437B	3125U12026	May 07, 2010
Power Meter 437B	3110A05257	April 02, 2010
Power Meter 437B	3125U13729	January 05, 2010
Power Sensor - 8482H	MY41090241	June 4, 2010
Power Sensor - 8482H	3318A07097	June 04, 2010
Power Sensor - 8482H	MY41090240	February 13, 2010
Power Sensor - 8482H	2704A06235	December 03, 2009
Power Sensor - 8482H	MY41090239	February 13, 2010
Power Sensor - 8482H	3318A09268	August 07, 2010
Dielectric Probe Kit HP85070B	US33020390	April 7, 2010
Dickson Thermometer TC200	909709	May 4, 2010
Dickson Humidity FH325	9099180	May 07, 2010
Network Analyzer 8752A	3310A01528	December 5, 2009



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4. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with the dielectric probe kit. These values, along with the temperature of the simulated tissue are shown in the table below. A mass density of $\rho=1g/cm^3$ was entered into the system in all the cases. It can be seen that the measured parameters are within tolerance of the recommended limits [1]. The ambient temperature of the laboratory was maintained within the desired range and the liquid depth above the ear reference points was above 15.0 cm in all the cases. It is seen that the measured parameters are satisfactory for compliance testing.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	Simulated Tissue Temp (°C)
835	Head	November 21, 2009	41.14	0.9063	22.3
		Recommended Limits	41.5	0.9	20-25
	Body	November 19, 2009	57.14	1.017	22.1
		Recommended Limits	55.2	0.97	20-25
1900	Head	November 21, 2009	38.44	1.46	21.4
		November 24, 2009	38.89	1.425	21.4
		November 25, 2009	38.36	1.46	21.6
		Recommended Limits	40	1.4	20-25
	Body	November 30, 2009	51.07	1.512	20.4
		Recommended Limits	53.3	1.52	20-25
2450	Head	November 19, 2009	39.38	1.911	21.6
		Recommended Limits	39.2	1.95	20-25
	Body	November 30, 2009	51.57	2.089	20.4
		Recommended Limits	52.7	1.95	20-25



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The list of ingredients and the percent composition used for the simulated tissue are indicated in the table below.

Ingredient	800/900 MHz Head	800MHz Body	1800/1900 MHz Head	1900MHz Body
	900MHz Body		1800MHz Body	
Sugar	57.99%	56.00%	--	--
DGBE	--	--	44.92%	30.82%
Water	39.72%	41.76%	54.90%	68.89%
Salt	1.18%	0.76%	0.18%	0.29%
HEC	0.92%	1.21%	--	--
Bact.	0.19%	0.27%	--	--



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5. System Accuracy Verification

A system accuracy verification of the DASY4 was performed using the measurement equipment listed in Section 3.1. The daily system accuracy verification occurs within the flat section of the SAM phantom.

A SAR measurement was performed to see if the measured SAR was within +/- 10% from the numerical target SAR values indicated in the standards. These tests were done at 835MHz/900MHz and/or 1800MHz/1900MHz and 2450MHz. These frequencies are within 100MHz of the mid-band frequency of the test device, according to [1].

The test was conducted on the same days as the measurement of the DUT. The results from the system accuracy verification are displayed in the table below (SAR values are normalized to 1W forward power delivered to the dipole). The ambient temperature of the laboratory was maintained within the desired the range and the liquid depth above the ear reference points was above 15.0 cm in all the cases.

It is seen in the following table that the system is operating within its specification, as the results are within acceptable tolerance of the reference values. The SAR distributions for each dipole measurement are shown in Appendix 1.

f (MHz)	Tissue Type	Date Measured	SAR (W/kg)		Dielectric Parameters		Tissue
			1g	10g	ϵ_r	σ (S/m)	Temp (°C)
835	Head	Nov-21-09	9.75	6.38	41.14	0.91	22.3
		Recommended Limits	9.50	6.20	41.50	0.90	20-25
	Body	Nov-19-09	9.96	6.54	57.14	1.02	22.1
		Recommended Limits	9.90	6.46	55.20	0.97	20-25
1900	Head	Nov-21-09	37.31	19.68	38.44	1.46	21.4
		Nov-24-09	39.38	20.78	38.89	1.43	21.4
		Nov-25-09	38.03	20.09	38.36	1.46	21.6
		Recommended Limits	39.7	20.5	40	1.4	20-25
	Body	Nov-30-09	38.01	20.50	51.07	1.51	20.4
		Recommended Limits	40.5	20.89	53.3	1.52	20-25
2450	Head	Nov-19-09	55.71	25.08	39.38	1.91	21.6
		Recommended Limits	52.4	24	39.8	1.95	20-25
	Body	Nov-30-09	58.06	25.77	51.57	2.09	20.4
		Recommended Limits	54.5	25.2	52.7	1.95	20-25

Daily, prior to conducting tests, measurements were made with the RF sources powered off to determine the system noise level. The highest system noise was 0.0000353 W/kg, which is below the recommended limit in [1].



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6.0 Test Results

Simultaneous Transmitter (i.e. WLAN, Bluetooth) Considerations

This Bluetooth/WLAN antenna is located at a minimum of 80 mm from the cellular antenna. The maximum reported WLAN/Bluetooth conducted power is 17.7 dBm.

The following table summarizes the stand-alone maximum SAR values for the cellular and WLAN operating conditions:

Operating Configuration	Maximum Cellular SAR (W/kg, 1-gram average)	Maximum WLAN SAR (W/kg, 1-gram average)	Sum(Cellular + WLAN) (W/kg, 1-gram average)
Head Adjacent Right	1.05	0.69	1.74
Left	0.71	0.84	1.55
Body-worn	0.72	0.03	0.75

For the Head Adjacent Cheek/Touch position, when the individual maximum SAR values for cellular and WLAN modes are added together, the resulting sum exceeds the limit of 1.6 W/kg.

The physical separation distance between the Cellular and WLAN antennas is 8 cm. The separation distance between the SAR peaks in Cellular and WLAN modes was measured and is 7.34 cm.

The SAR to Peak Location Separation ratio is: $(1.74/7.34) = 0.24$. Per FCC document KDB648474, since the SAR to Peak Location Separation ratio is < 0.3 in all test configurations, additional simultaneous transmission considerations (including the processing of volumetric scans) are not required.

For reference, the measured stand-alone SAR values are presented in the following tables:

- Head Adjacent, Cellular: Tables 1-2
- Head Adjacent, WLAN: Tables 3
- Body-worn, Cellular: Tables 4
- Body-worn, WLAN: Tables 5



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6.1 Head Adjacent Test Results

The SAR results shown in Tables 1 through 4 are maximum SAR values averaged over 1 gram and 10 grams of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the simulated tissue, the measured drift, and the extrapolated SAR. The extrapolated SAR corresponds to the measured SAR scaled to the maximum conducted output power. All conducted data was supplied by the Sony Ericsson engineer responsible for the RF design of the DUT.

The ambient temperature of the laboratory was maintained within the desired range and the liquid depth above the ear reference points was above 15.0 cm in all the cases.

The test conditions indicated as bold numbers in the following tables are included in Appendix 2. All other test conditions measured lower SAR values than those included.



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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	Left Head (Cheek / Touch Position)						
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambient Temp (°C)
800 GSM	128 / 824	33.4	0.53	0.38	-0.03	0.53	0.38	24.1	22.3
	189 / 837	33.5	0.60	0.43	0.02	0.60	0.43		
	251 / 849	33.4	0.71	0.51	0.06	0.71	0.51		
1900 GSM	512 / 1850	30.5	0.54	0.35	-0.08	0.54	0.35	24.1	21.4
	660/1880	30.5	0.47	0.30	-0.02	0.47	0.30		
	810/1910	30.4	0.44	0.27	-0.05	0.44	0.27		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	Left Head (15° Tilt Position)						
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambient Temp (°C)
800 GSM	128 / 824	33.4	0.26	0.19	0.02	0.26	0.19	24.1	22.3
	189 / 837	33.5	0.28	0.21	0.01	0.28	0.21		
	251 / 849	33.4	0.28	0.21	-0.01	0.28	0.21		
1900 GSM	512 / 1850	30.5	0.36	0.22	-0.02	0.36	0.22	24.1	21.4
	660/1880	30.5	0.32	0.20	-0.06	0.32	0.20		
	810/1910	30.4	0.30	0.18	-0.07	0.30	0.18		

Table 1: SAR measurement results for the portable cellular telephone FCC ID PY7A3880065 model J10i2 at maximum output power with Standard Battery BST-43. Measured against the left head in GSM mode.



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	Right Head (Cheek / Touch Position)						
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambient Temp (°C)
800 GSM	128 / 824	33.4	0.51	0.31	-0.15	0.51	0.31	24.1	22.3
	189 / 837	33.5	0.55	0.38	0.06	0.55	0.38		
	251 / 849	33.4	0.72	0.50	-0.04	0.72	0.50		
1900 GSM	512 / 1850	30.5	1.05	0.63	-0.16	1.05	0.63	24.1	21.4
	660/1880	30.5	0.93	0.54	-0.10	0.93	0.54		
	810/1910	30.4	0.89	0.52	-0.07	0.89	0.52		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	Right Head (15° Tilt Position)						
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambient Temp (°C)
800 GSM	128 / 824	33.4	0.29	0.21	0.02	0.29	0.21	24.1	22.3
	189 / 837	33.5	0.30	0.22	0.03	0.30	0.22		
	251 / 849	33.4	0.32	0.23	0.03	0.32	0.23		
1900 GSM	512 / 1850	30.5	0.41	0.26	-0.08	0.41	0.26	24.1	21.4
	660/1880	30.5	0.37	0.23	-0.05	0.37	0.23		
	810/1910	30.4	0.34	0.21	-0.04	0.34	0.21		

Table 2: SAR measurement results for the portable cellular telephone FCC ID PY7A3880065 model J10i2 at maximum output power with Standard Battery BST-43. Measured against the right head in GSM mode.



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f(MHz)	Conducted Output Power	Channel/frequency	WLAN Left Head Position (Cheek / Touch Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
WLAN	17.7	1/2412	0.74	0.38	-0.08	23.6	21.6
	17.6	6/2437	0.69	0.35	-0.03		
	17.7	11/2462	0.84	0.41	0.04		
	17.7	13/2472	0.61	0.30	-0.01		
f(MHz)	Conducted Output Power	Channel/frequency	WLAN Left Head Position (15° Tilt Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
WLAN	17.7	1/2412	0.78	0.38	-0.02	23.6	21.6
	17.6	6/2437	0.71	0.34	-0.01		
	17.7	11/2462	0.79	0.37	0.01		
	17.7	13/2472	0.63	0.29	-0.01		
f(MHz)	Conducted Output Power	Channel/frequency	WLAN Right Head Position (Cheek / Touch Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
WLAN	17.7	1/2412	0.68	0.33	0.06	24	22
	17.6	6/2437	0.68	0.33	0.12		
	17.7	11/2462	0.69	0.33	0.07		
	17.7	13/2472	0.56	0.27	-0.05		
f(MHz)	Conducted Output Power	Channel/frequency	WLAN Right Head Position (15° Tilt Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
WLAN	17.7	1/2412	0.77	0.37	0.06	24	22
	17.6	6/2437	0.76	0.35	0.12		
	17.7	11/2462	0.68	0.31	0.07		
	17.7	13/2472	0.61	0.28	-0.05		

Table 3: WLAN SAR measurement results for the portable cellular telephone FCC ID PY7A3880065 model J10i2 at maximum output power with Standard Battery BST-43. Measured against the head in WLAN mode.



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6.2 Body-Worn Test Results

The SAR results shown in Tables 5 and 6 are the maximum SAR values averaged over 1gram and 10 grams of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the simulated tissue after the test, the measured drift and the extrapolated SAR. The extrapolated SAR corresponds to the measured SAR scaled to the maximum conducted output power. All conducted data was supplied by the Sony Ericsson engineer responsible for the RF design of the DUT. Conducted powers shown in these tables are peak power per slot.

A “flat” phantom was used for the body-worn tests. This “flat” phantom corresponds to the flat portion of the SAM phantom.

The ambient temperature of the laboratory was maintained within the desired the range and the liquid depth above the ear reference points was above 15.0 cm in all the cases.

The same device holder described in section 6 was used for positioning the phone.

The following body-worn accessories were tested for this phone:

- 15 mm spacer

A full data set output of the test conditions with the highest SAR values is included as Appendix 3. These test conditions included are indicated as bold numbers in the following tables. All other test conditions measured lower SAR values than those included.



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f(MHz)	Operating Condition	Channel/ frequency	Conducted Output Power (dBm)	Body Worn						
				15mm SPACER						
				Measured (W/kg) 1g / 10g	Drift (dB)	Extrapolated (W/kg) 1g / 10g	Ambient Temp (°C)	Simulate Temp (°C)		
Back of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	30.5	0.44	0.31	0.03	0.44	0.31	23.6	22.1
		189 / 837	30.5	0.53	0.37	0.06	0.53	0.37		
		251 / 849	30.4	0.68	0.47	-0.02	0.68	0.47		
	1:8 Duty Cycle	251 / 849	33.4	0.718	0.497	0.02	0.72	0.50	23.6	22.1
1900 GSM	2:8 Duty Cycle	512 / 1850	28	0.40	0.25	-0.01	0.45	0.28	23.6	20.4
		660/1880	27.9	0.42	0.25	0.06	0.47	0.28		
		810/1910	27.8	0.35	0.21	0.06	0.39	0.24		
	1:8 Duty Cycle	512 / 1850	30.5	0.431	0.263	0.05	0.43	0.26	23.6	20.4
Front of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	30.5	0.42	0.30	-0.01	0.42	0.30	23.6	22.1
		189 / 837	30.5	0.49	0.35	0.01	0.49	0.35		
		251 / 849	30.4	0.59	0.42	0.00	0.59	0.42		
1900 GSM	2:8 Duty Cycle	512 / 1850	28	0.45	0.27	0.05	0.50	0.30	23.6	21.2
		660/1880	27.9	0.34	0.21	0.03	0.38	0.23		
		810/1910	27.8	0.34	0.20	-0.04	0.38	0.23		

Table 4: SAR measurement results for the portable cellular telephone FCC ID PY7A3880065 model J10i2 at maximum output power with Standard Battery BST-43. Measured with GSM/GPRS Mode.



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

f(MHz)	Conducted Output Power	Channel/frequency	WLAN Body Worn 15mm SPACER				
			Measured (W/kg) 1g / 10g	Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)	
Back of phone facing body							
WLAN	17.7	1/2412	0.03	0.02	0.04	23.6	20.4
	17.6	6/2437	0.03	0.02	-0.08		
	17.7	11/2462	0.02	0.01	0.19		
	17.7	13/2472	0.03	0.02	-0.05		
Front of phone facing body							
WLAN	17.7	1/2412	0.11	0.06	0.08	23.6	20.4
	17.6	6/2437	0.11	0.06	0.20		
	17.7	11/2462	0.08	0.04	0.01		
	17.7	13/2472	0.08	0.04	0.09		

Table 5: WLAN SAR measurement results for the portable cellular telephone FCC ID PY7A3880065 model J10i2 at maximum output power with Standard Battery BST-43. Measured against the body with WLAN Modes.



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Approved SEM/CCMVPCP Gary Thomas	Checked		D

References

- [1] FCC, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions,” Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01).
- [2] IEC 62209-1, “Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz) ”, First Edition 2005-02.
- [3] IEEE, “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques,” Std 1528-2003, June 2003.
- [4] FCC KDB248227, “SAR measurement procedure for 802.11 a/b/g Transmitters”, May 2007
- [5] FCC KDB648474, “SAR Evaluation Consideration for HANDSETS with Multiple Transmitters and Antenna”, April 2008.
- [6] 3GPP TS 34.121 Universal Mobile Telecommunications System (UMTS); Terminal Conformance Specification, Radio Transmission and Reception (FDD).
- [7] FCC KDB941225 SAR Test Procedures, 3G Devices, 2.5G, GPS/GPRS/Edge, 2.1093 (SAR Measurement Procedures for 3G Devices, WCDMA/HSUPA)



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Appendix 1

SAR distribution comparison for the system accuracy verification



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

835 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation_835Body_438_1031_19Nov09_T01

File Name: [Validation_835Body_438_1031_19Nov09_T01.da4](#)

Phantom: SAM with CRP (Low Band Body) Phantom section: Flat Section

Probe: ET3DV6 - SN1586ConvF(6.14, 6.14, 6.14)Duty Cycle: 1:1Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.02 \text{ mho/m}$; $\epsilon_r = 57.1$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.02 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 33.5 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.976 mW/g; SAR(10 g) = 0.639 mW/g

Maximum value of SAR (measured) = 1.06 mW/g

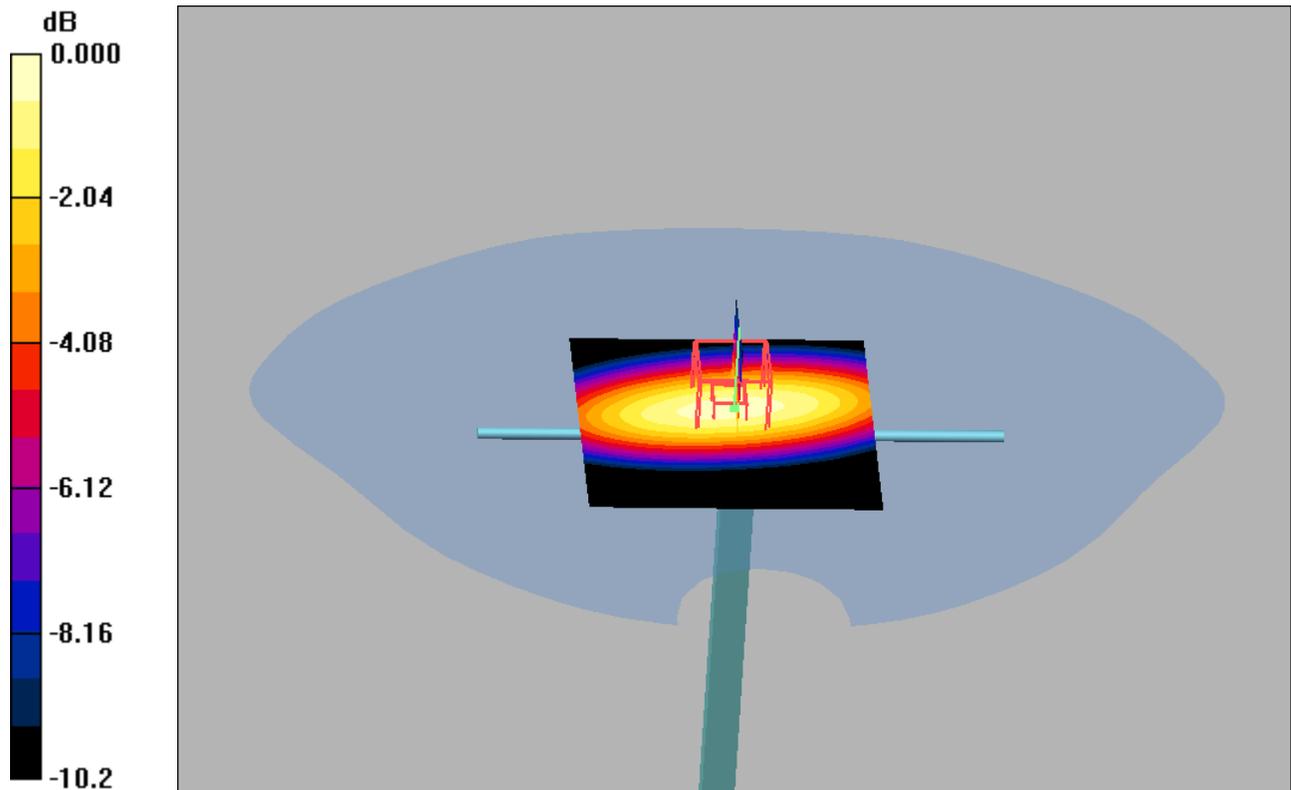
Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 33.5 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.672 mW/g

Maximum value of SAR (measured) = 1.10 mW/g



0 dB = 1.10mW/g



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835 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation_835Head_438_1023_21Nov09_T01

File Name: [Validation_835Head_438_1023_21Nov09_T01.da4](#)

Phantom: SAM with CRP (Low Band Head) Phantom section: Flat Section

Probe: ET3DV6 - SN1586ConvF(6.26, 6.26, 6.26) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.906 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.03 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 34.8 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.957 mW/g; SAR(10 g) = 0.625 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

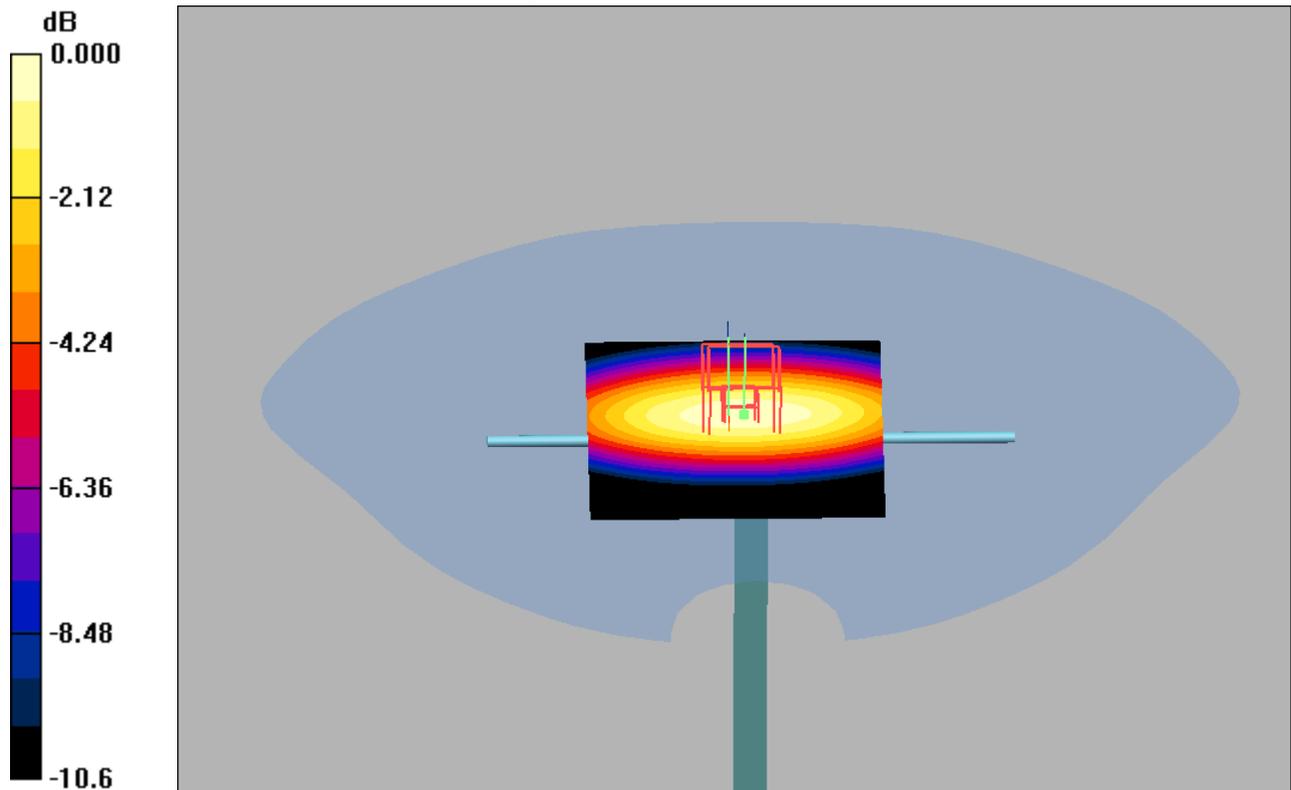
Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 34.8 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.988 mW/g; SAR(10 g) = 0.647 mW/g

Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation_1900Body_536_1020_30Nov09_T01

File Name: [Validation_1900Body_536_1020_30Nov09_T01.da4](#)
 Phantom: SAM with CRP (High Band Body) Phantom section: Flat Section
 Probe: ET3DV6 - SN1583 ConvF(4.61, 4.61, 4.61) Duty Cycle: 1:1 Frequency: 1900 MHz
 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³
 Measurement Standard: DAS4 (High Precision Assessment)

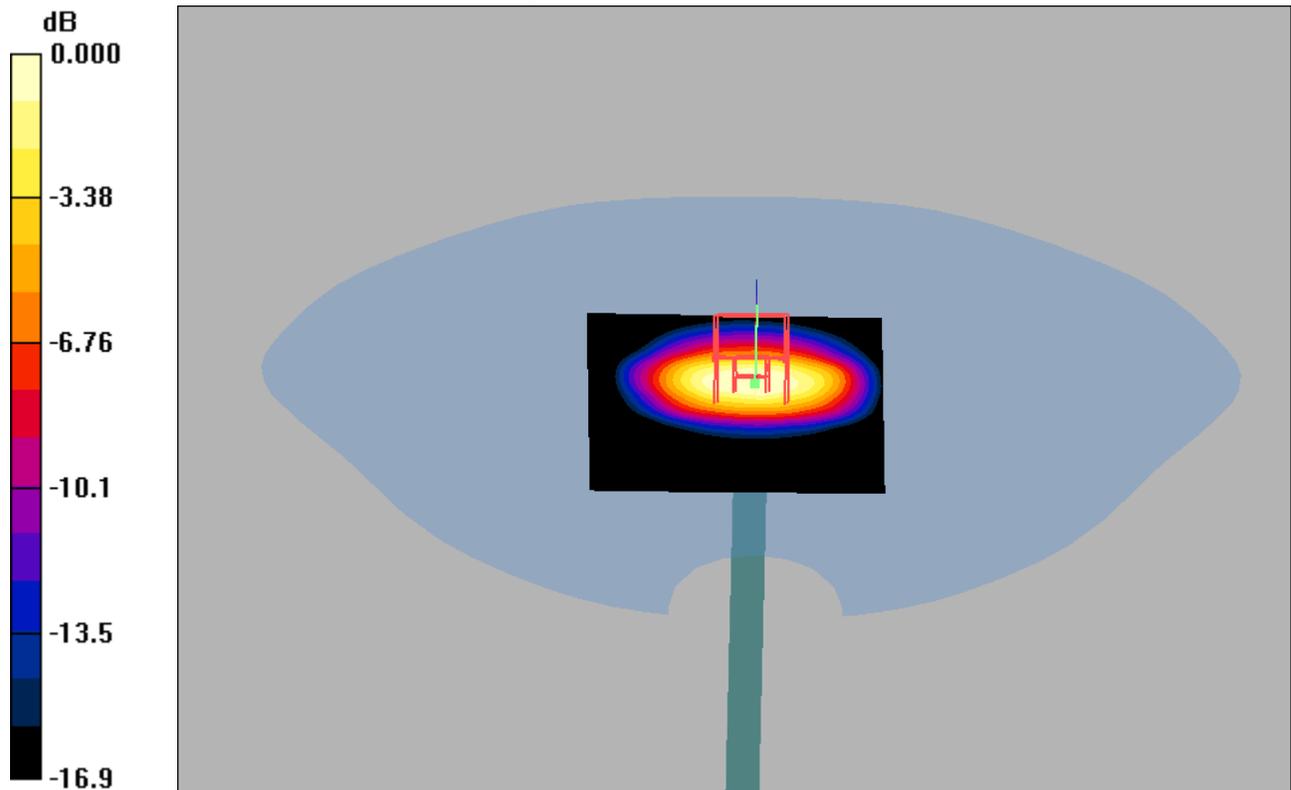
Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (interpolated) = 4.76 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 50.9 V/m; Power Drift = 0.039 dB
 Peak SAR (extrapolated) = 6.16 W/kg

SAR(1 g) = 3.87 mW/g; SAR(10 g) = 2.08 mW/g
 Maximum value of SAR (measured) = 4.34 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 50.9 V/m; Power Drift = 0.039 dB
 Peak SAR (extrapolated) = 6.02 W/kg

SAR(1 g) = 3.79 mW/g; SAR(10 g) = 2.05 mW/g
 Maximum value of SAR (measured) = 4.31 mW/g



0 dB = 4.31mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation_1900Body_536_1054_24Nov09_T01

File Name: [Validation_1900Body_536_1054_24Nov09_T01.da4](#)
 Phantom: SAM with CRP (High Band Head) Phantom section: Flat Section
 Probe: ET3DV6 - SN1587ConvF(5.23, 5.23, 5.23) Duty Cycle: 1:1 Frequency: 1900 MHz
 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³
 Measurement Standard: DAS4 (High Precision Assessment)

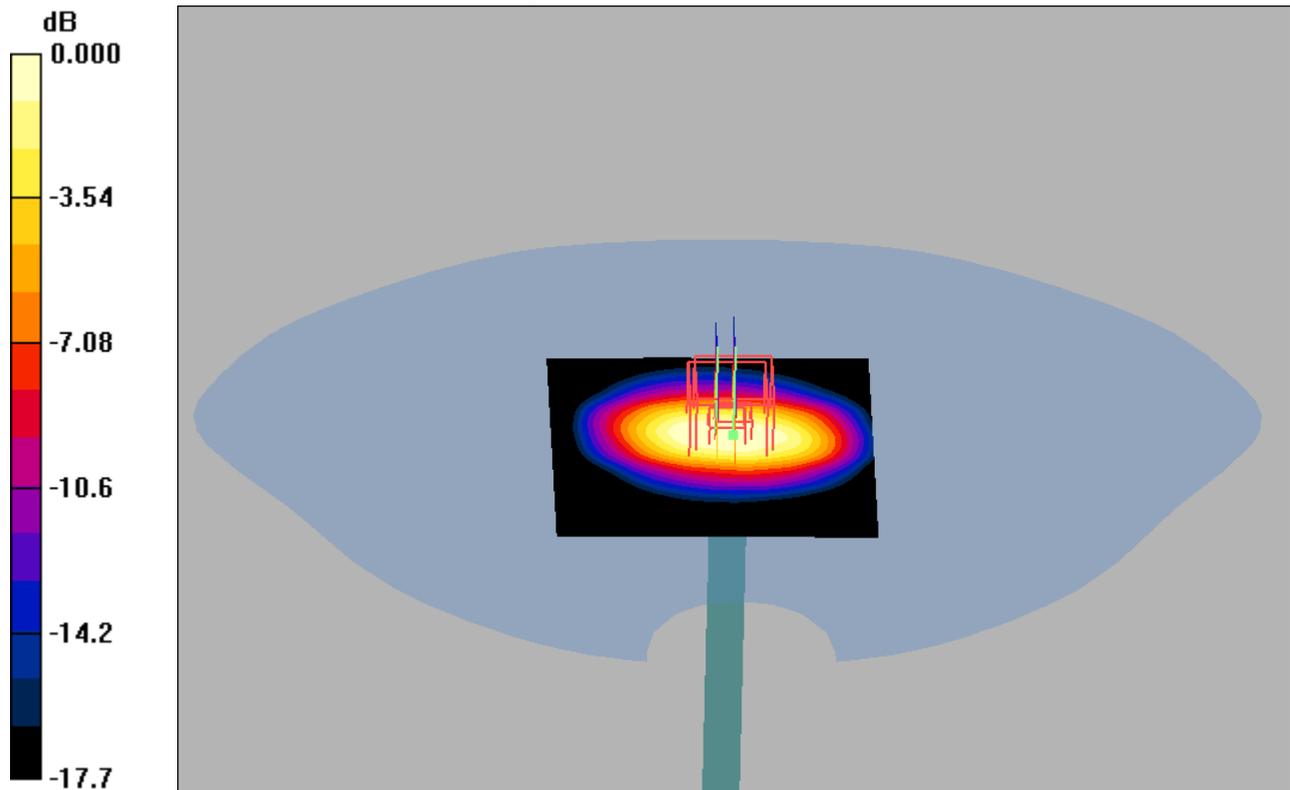
Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (interpolated) = 5.11 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 59.8 V/m; Power Drift = 0.030 dB
 Peak SAR (extrapolated) = 6.83 W/kg

SAR(1 g) = 3.96 mW/g; SAR(10 g) = 2.09 mW/g
 Maximum value of SAR (measured) = 4.47 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 59.8 V/m; Power Drift = 0.030 dB
 Peak SAR (extrapolated) = 6.66 W/kg

SAR(1 g) = 3.85 mW/g; SAR(10 g) = 2.03 mW/g
 Maximum value of SAR (measured) = 4.25 mW/g



0 dB = 4.25mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation 1900Head_536_1054_21Nov09_T01

File Name: [Validation_1900Head_536_1054_21Nov09_T01.da4](#)
 Phantom: SAM with CRP (High Band Head) Phantom section: Flat Section
 Probe: ET3DV6 - SN1587 ConvF(5.23, 5.23, 5.23) Duty Cycle: 1:1 Frequency: 1900 MHz
 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.46 \text{ mho/m}$; $\epsilon_r = 38.4$; $\rho = 1000 \text{ kg/m}^3$
 Measurement Standard: DAS4 (High Precision Assessment)

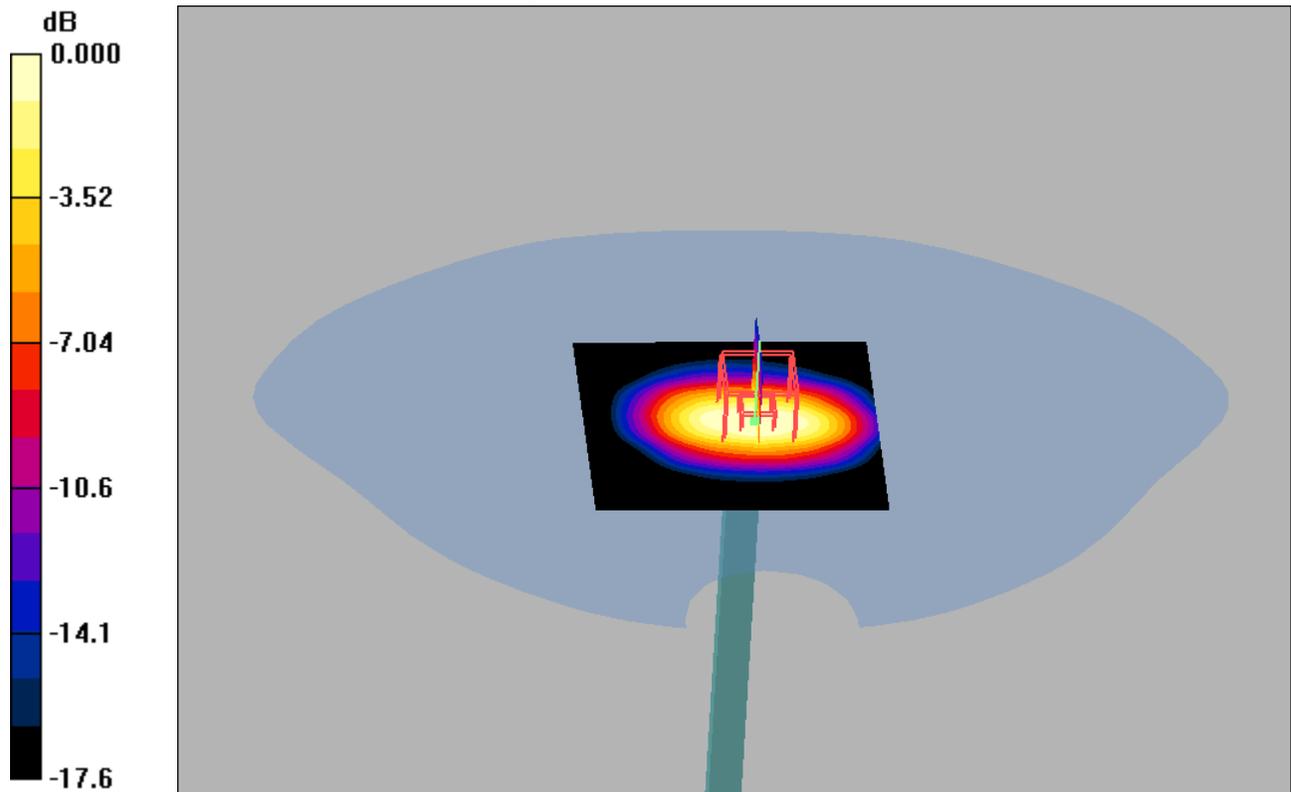
Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (interpolated) = 4.83 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 56.3 V/m; Power Drift = -0.032 dB
 Peak SAR (extrapolated) = 6.50 W/kg

SAR(1 g) = 3.78 mW/g; SAR(10 g) = 1.99 mW/g
 Maximum value of SAR (measured) = 4.27 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 56.3 V/m; Power Drift = -0.032 dB
 Peak SAR (extrapolated) = 6.30 W/kg

SAR(1 g) = 3.67 mW/g; SAR(10 g) = 1.94 mW/g
 Maximum value of SAR (measured) = 4.12 mW/g



0 dB = 4.12mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation 1900Head_536_1054_25Nov09_T01

File Name: [Validation 1900Head_536_1054_25Nov09_T01.da4](#)
 Phantom: SAM with CRP (High Band Head) Phantom section: Flat Section
 Probe: ET3DV6 - SN1587 ConvF(5.23, 5.23, 5.23) Duty Cycle: 1:1 Frequency: 1900 MHz
 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.46 \text{ mho/m}$; $\epsilon_r = 38.4$; $\rho = 1000 \text{ kg/m}^3$
 Measurement Standard: DASY4 (High Precision Assessment)

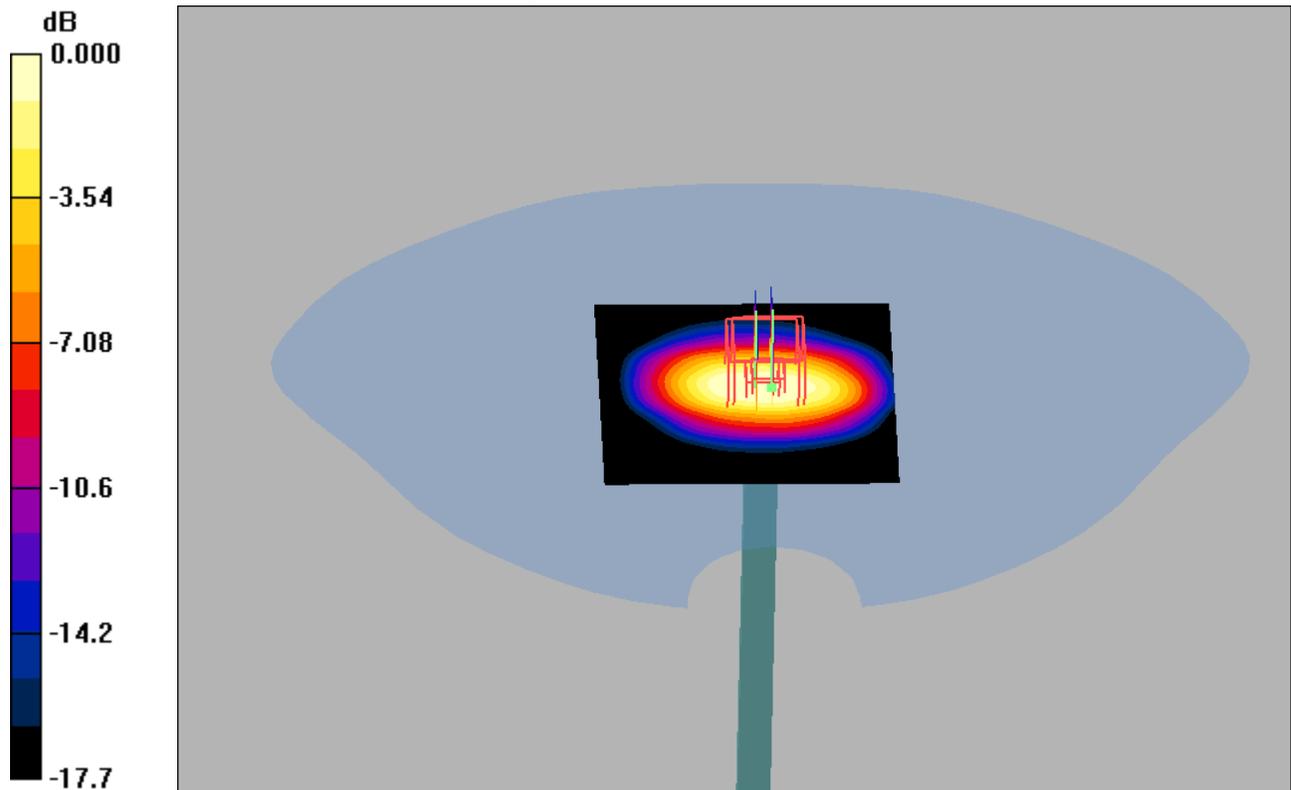
Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (interpolated) = 4.88 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 57.6 V/m; Power Drift = -0.006 dB
 Peak SAR (extrapolated) = 6.63 W/kg

SAR(1 g) = 3.84 mW/g; SAR(10 g) = 2.03 mW/g
 Maximum value of SAR (measured) = 4.35 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 57.6 V/m; Power Drift = -0.006 dB
 Peak SAR (extrapolated) = 6.46 W/kg

SAR(1 g) = 3.75 mW/g; SAR(10 g) = 1.98 mW/g
 Maximum value of SAR (measured) = 4.13 mW/g



0 dB = 4.13mW/g



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2450 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation 2450Body 702 1251 30Nov09 T01

File Name: [Validation 2450Body 702 1251 30Nov09 T01.da4](#)

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Flat Section

Probe: ET3DV6 - SN1587 ConvF(3.99, 3.99, 3.99) Duty Cycle: 1:1 Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.09$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Measurement Standard: DAS Y4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 7.24 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.8 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 14.6 W/kg

SAR(1 g) = 5.82 mW/g; SAR(10 g) = 2.58 mW/g

Maximum value of SAR (measured) = 6.39 mW/g

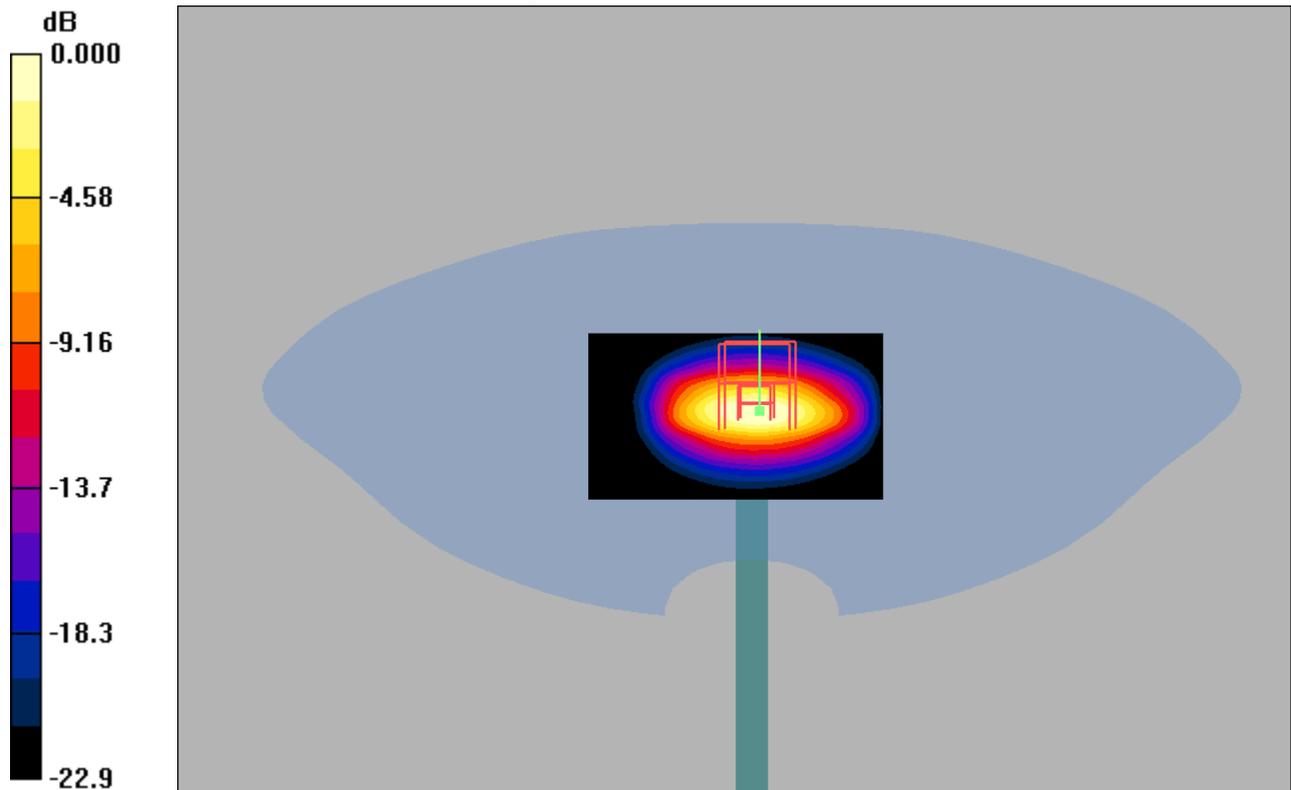
Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.8 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 14.5 W/kg

SAR(1 g) = 5.74 mW/g; SAR(10 g) = 2.55 mW/g

Maximum value of SAR (measured) = 6.26 mW/g



0 dB = 6.26mW/g



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

2450 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.

Validation 2450Head_702_1251_19Nov09_T01

File Name: [Validation 2450Head_702_1251_19Nov09_T01.da4](#)

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Flat Section

Probe: ET3DV6 - SN1587 ConvF(4.58, 4.58, 4.58) Duty Cycle: 1:1 Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.91$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Measurement Standard: DASY4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 7.07 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.4 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 5.56 mW/g; SAR(10 g) = 2.5 mW/g

Maximum value of SAR (measured) = 6.21 mW/g

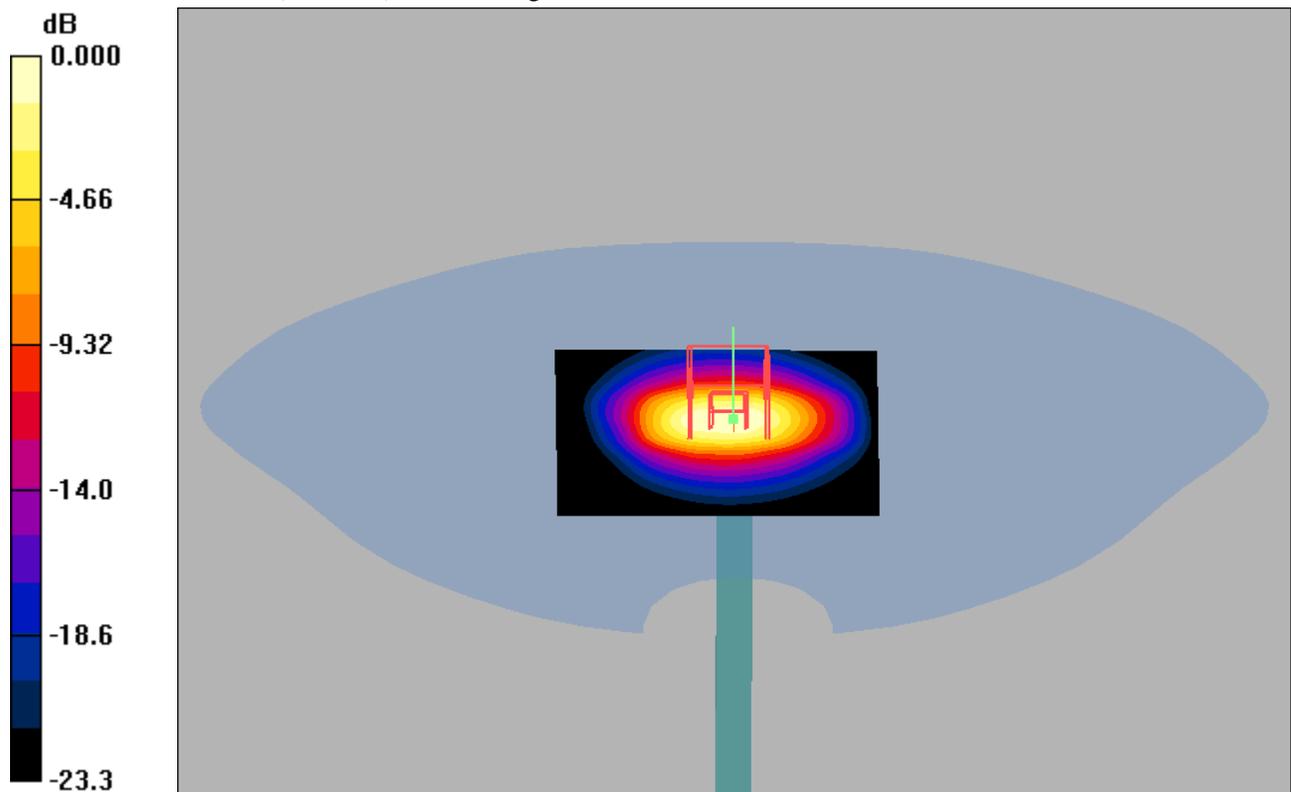
Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.4 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 5.57 mW/g; SAR(10 g) = 2.51 mW/g

Maximum value of SAR (measured) = 6.26 mW/g



0 dB = 6.26mW/g

APPLICANT: Sony Ericsson Mobile Communications Inc.

FCC ID: **PY7A3880065**



REPORT

28(82)

Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked	D	

Appendix 2

SAR distribution plots for Phantom Head Adjacent Use



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

800 GSM Band: SAR Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Cheek Position.

Date/Time: 11/21/2009 8:56:25 AM

File Name: [21Nov09 J10i2 GSM850 N51W RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (Low Band Head)Phantom section: Right Section

Probe: ET3DV6 - SN1586ConvF(6.26, 6.26, 6.26)

Medium parameters used (interpolated): $f = 849 \text{ MHz}$; $\sigma = 0.919 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn392; Calibrated: 5/26/2009

- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1023

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High channel cheek/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

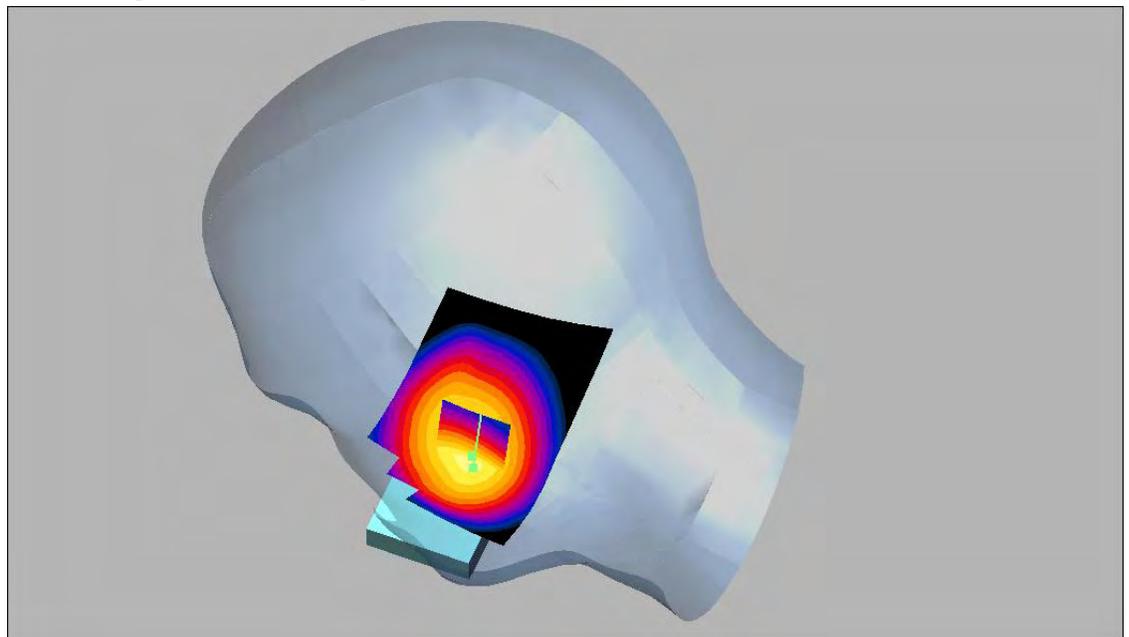
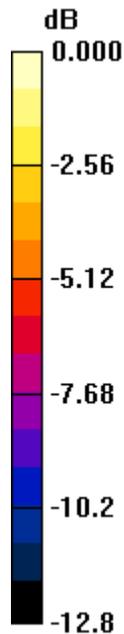
Maximum value of SAR (interpolated) = 0.781 mW/g

High channel cheek/Zoom Scan (31x31x36)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.64 V/m; Power Drift = -0.040 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

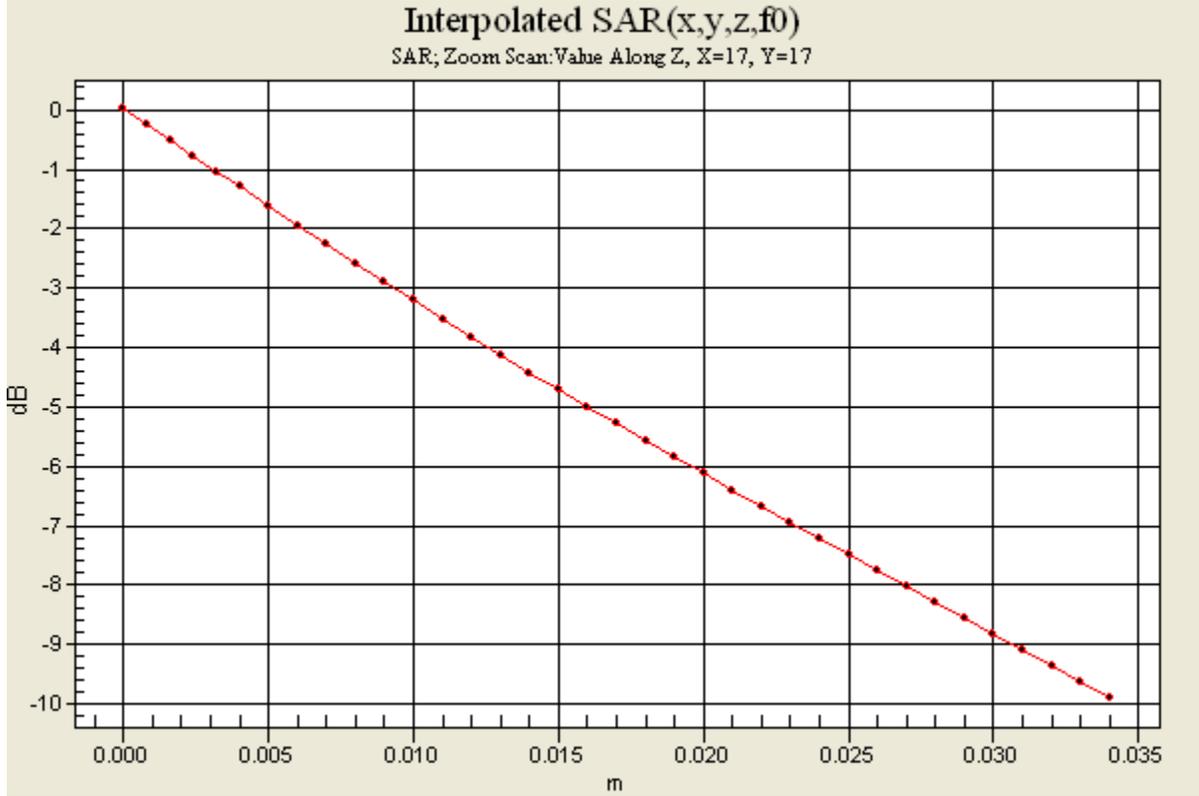
Maximum value of SAR (interpolated) = 1.04 mW/g



0 dB = 1.04mW/g



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Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Tilt Position.

Date/Time: 11/21/2009 9:58:13 AM

File Name: [21Nov09 J10i2 GSM850 N51W RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (Low Band Head)Phantom section: Right Section

Probe: ET3DV6 - SN1586ConvF(6.26, 6.26, 6.26)

Medium parameters used (interpolated): $f = 849 \text{ MHz}$; $\sigma = 0.919 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn392; Calibrated: 5/26/2009

- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1023

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High channel tilt/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.342 mW/g

High channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.9 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.409 W/kg

SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.228 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

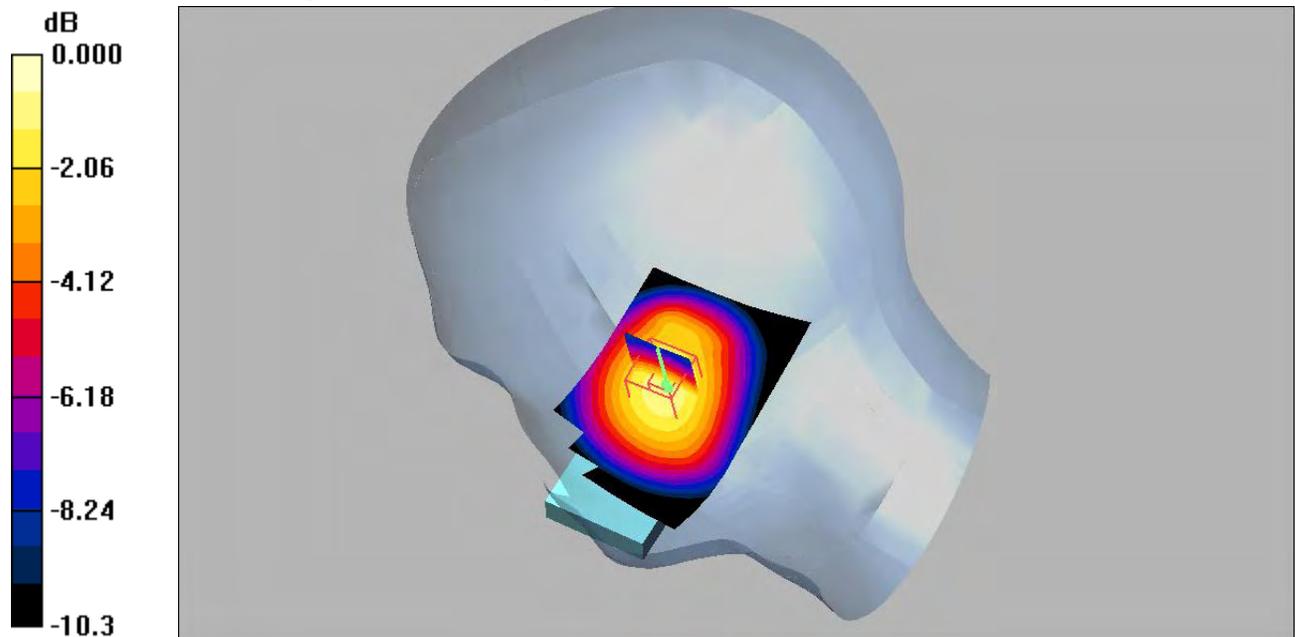
Maximum value of SAR (measured) = 0.343 mW/g

High channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.9 V/m; Power Drift = 0.029 dB

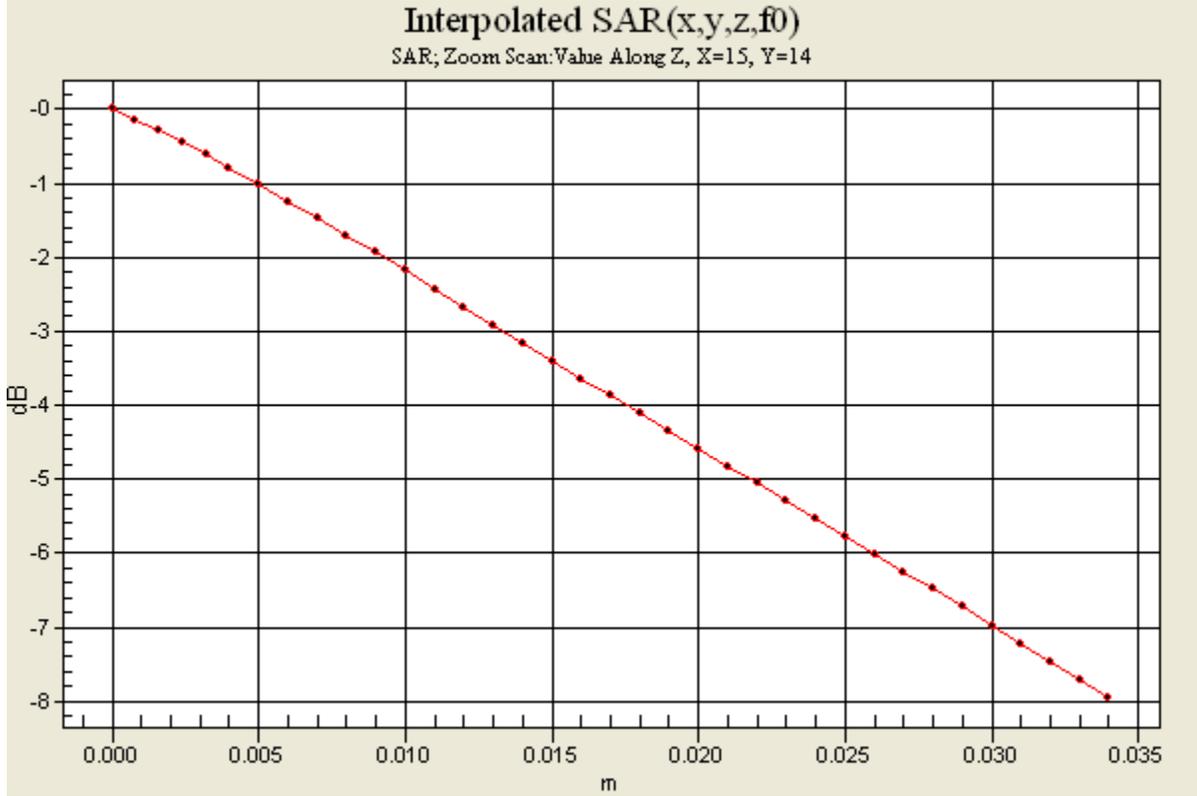
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.409 mW/g





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Approved SEM/CCMVPCP Gary Thomas	Checked	D	





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800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Cheek Position.

Date/Time: 11/21/2009 11:03:42 AM

File Name: [21Nov09 J10i2 GSM850 N51W LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (Low Band Head)Phantom section: Left Section

Probe: ET3DV6 - SN1586ConvF(6.26, 6.26, 6.26)

Medium parameters used (interpolated): $f = 849$ MHz; $\sigma = 0.919$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn392; Calibrated: 5/26/2009

- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1023

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High channel cheek/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.761 mW/g

High channel cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.09 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.931 W/kg

SAR(1 g) = 0.711 mW/g; SAR(10 g) = 0.505 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

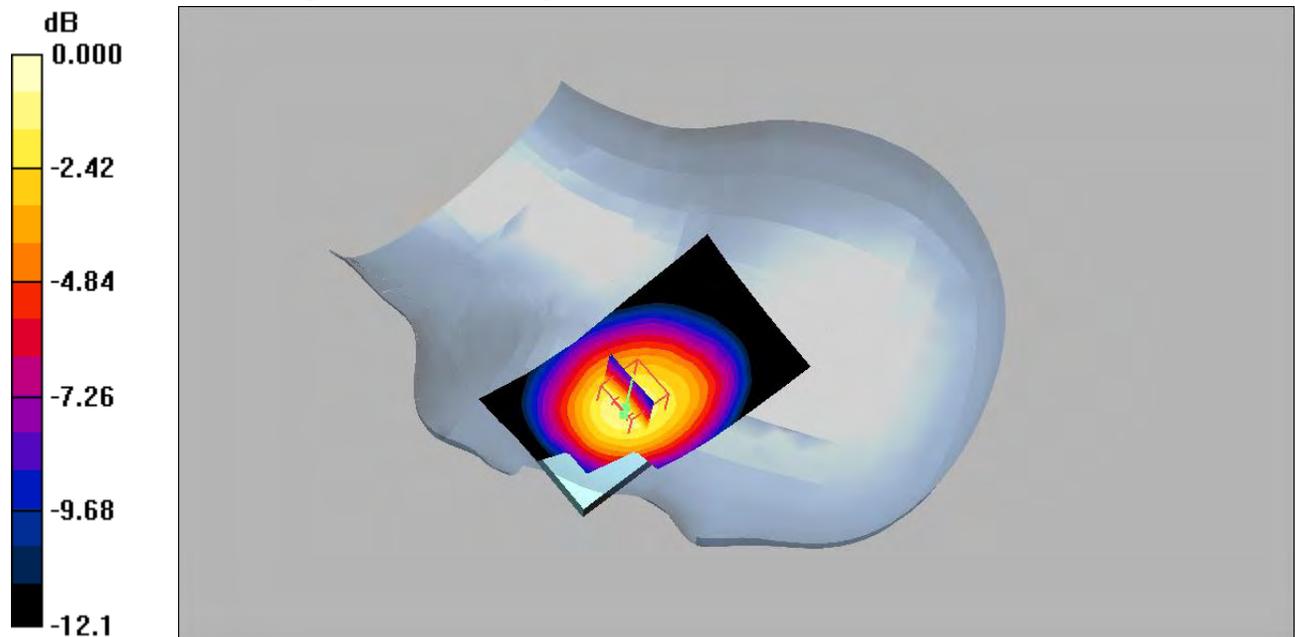
Maximum value of SAR (measured) = 0.765 mW/g

High channel cheek/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.09 V/m; Power Drift = 0.064 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

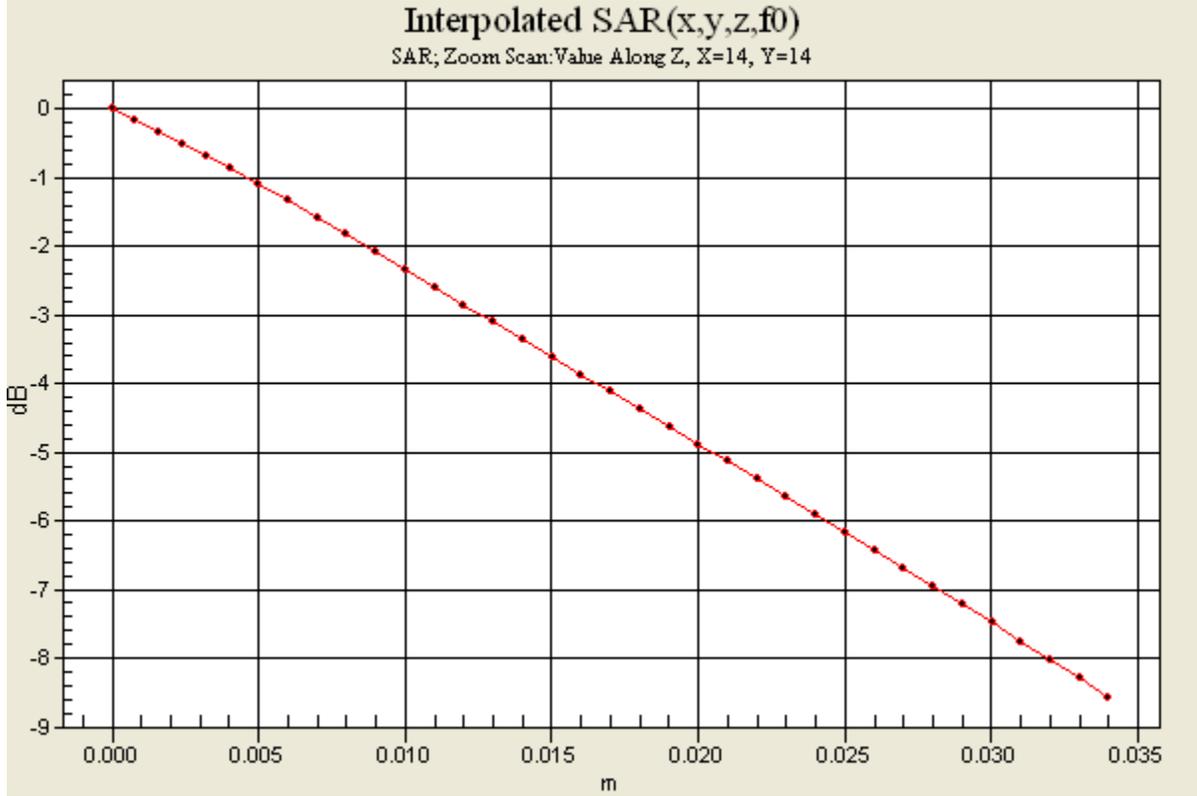
Maximum value of SAR (interpolated) = 0.931 mW/g



0 dB = 0.931mW/g



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800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Tilt Position.

Date/Time: 11/21/2009 11:25:06 AM

File Name: [21Nov09 J10i2 GSM850 N51W LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (Low Band Head)Phantom section: Left Section

Probe: ET3DV6 - SN1586ConvF(6.26, 6.26, 6.26)

Medium parameters used (interpolated): $f = 824 \text{ MHz}$; $\sigma = 0.896 \text{ mho/m}$; $\epsilon_r = 41.3$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn392; Calibrated: 5/26/2009

- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1023

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel tilt/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.267 mW/g

Low channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.0 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.194 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

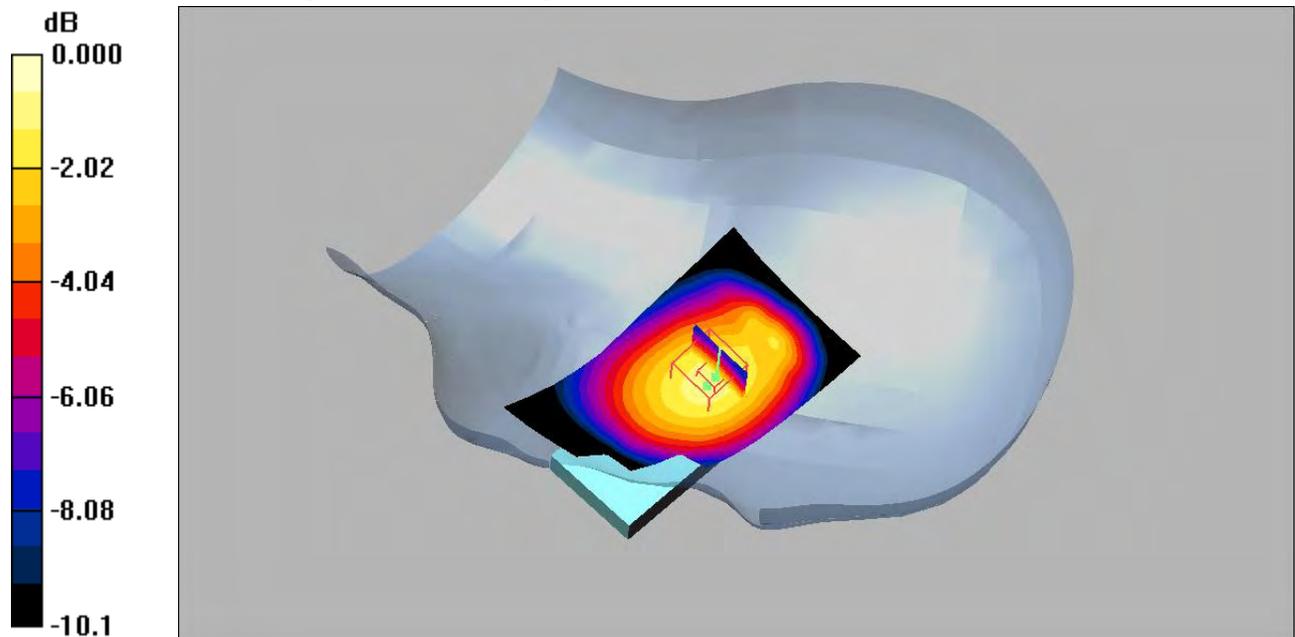
Maximum value of SAR (measured) = 0.282 mW/g

Low channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.0 V/m; Power Drift = 0.024 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

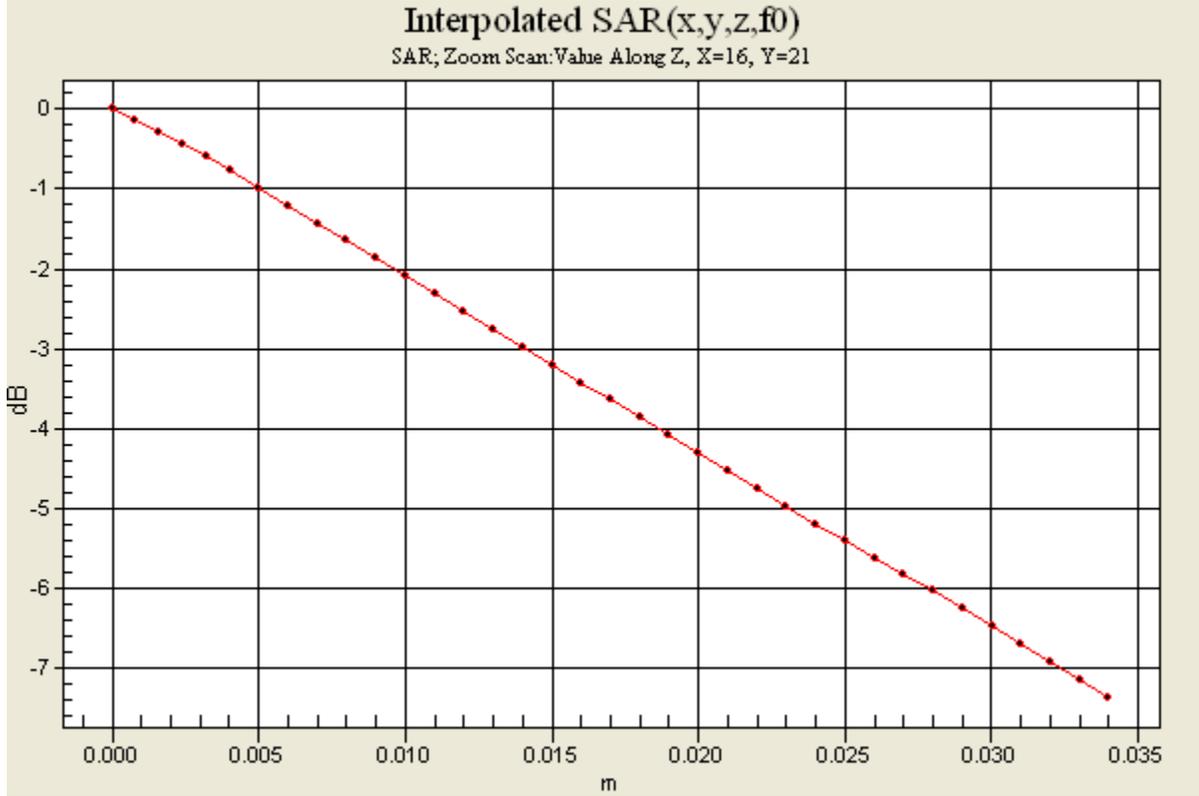
Maximum value of SAR (interpolated) = 0.335 mW/g



0 dB = 0.335mW/g



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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Cheek Position.

Date/Time: 11/21/2009 7:55:21 AM

File Name: [21Nov09 J10i2 GSM1900 N53K RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (High Band Head)Phantom section: Right Section

Probe: ET3DV6 - SN1587ConvF(5.23, 5.23, 5.23)

Medium parameters used (interpolated): $f = 1850.2 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.23, 5.23, 5.23); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1335

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.26 mW/g

Low channel cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.626 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

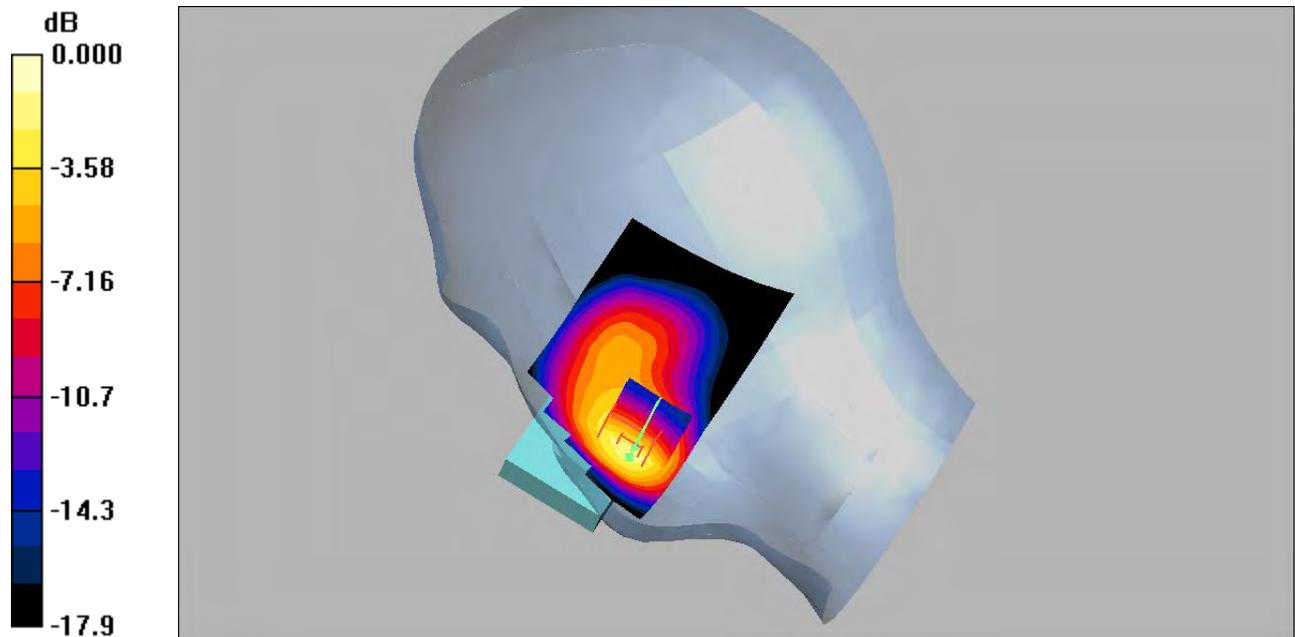
Maximum value of SAR (measured) = 1.15 mW/g

Low channel cheek/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = -0.160 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

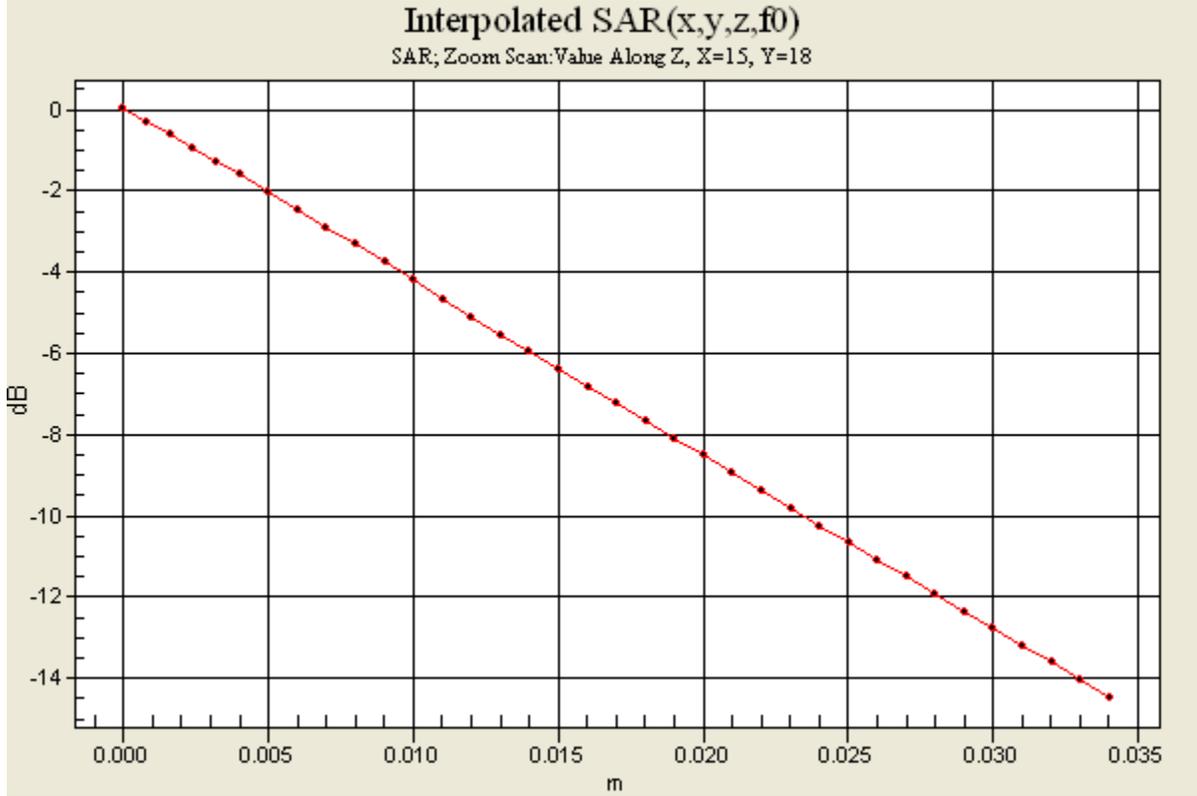
Maximum value of SAR (interpolated) = 1.66 mW/g



0 dB = 1.66mW/g



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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Tilt Position.

Date/Time: 11/21/2009 9:01:51 AM

File Name: [21Nov09 J10i2 GSM1900 N53K RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (High Band Head) Phantom section: Right Section

Probe: ET3DV6 - SN1587 ConvF(5.23, 5.23, 5.23)

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.23, 5.23, 5.23); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1335

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.495 mW/g

Low channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.8 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 0.588 W/kg

SAR(1 g) = 0.413 mW/g; SAR(10 g) = 0.259 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

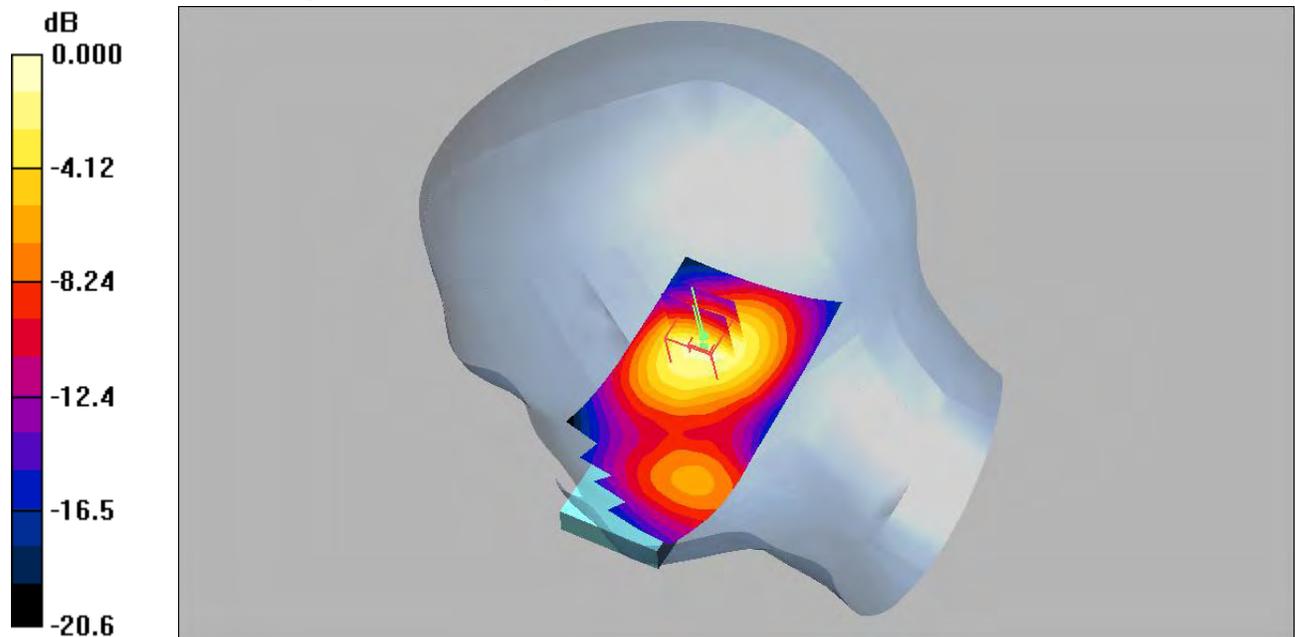
Maximum value of SAR (measured) = 0.449 mW/g

Low channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.8 V/m; Power Drift = -0.076 dB

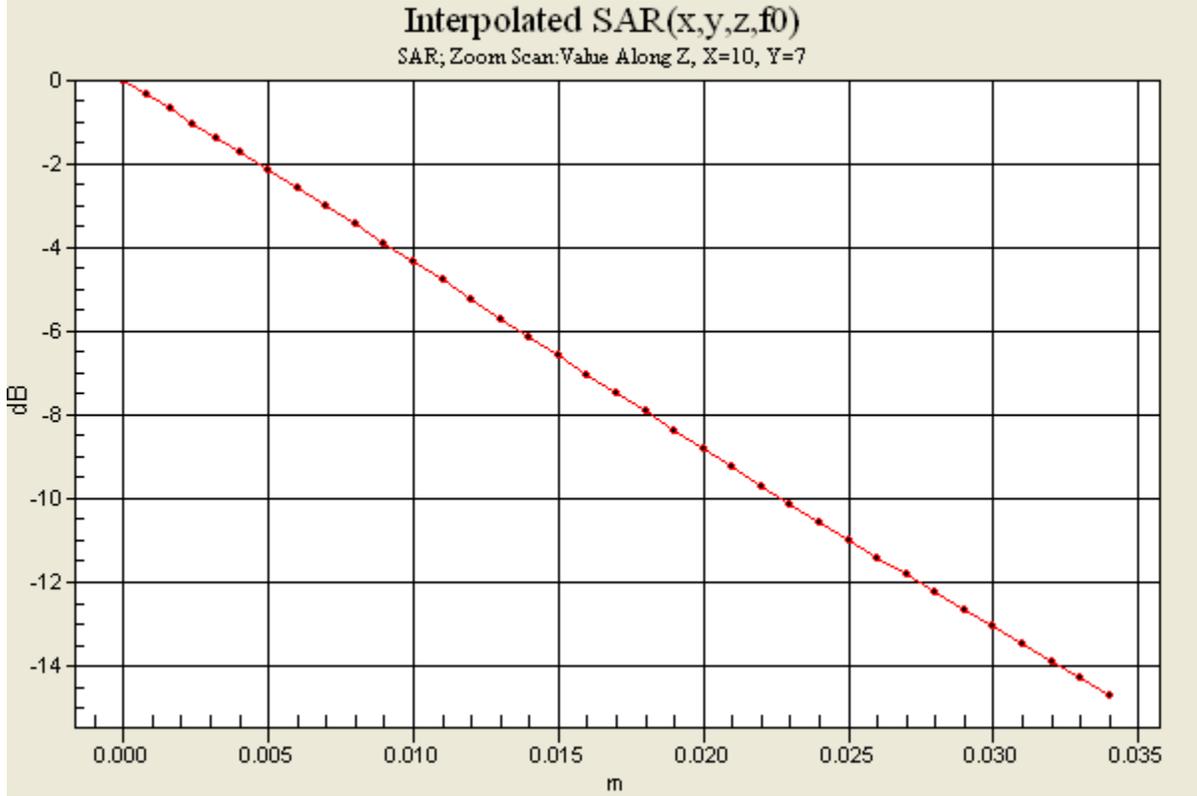
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.588 mW/g





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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Cheek Position.

Date/Time: 11/21/2009 10:11:04 AM

File Name: [21Nov09 J10i2 GSM1900 N53K LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (High Band Head)Phantom section: Left Section

Probe: ET3DV6 - SN1587ConvF(5.23, 5.23, 5.23)

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.23, 5.23, 5.23); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1335

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.617 mW/g

Low channel cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.98 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.746 W/kg

SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.349 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

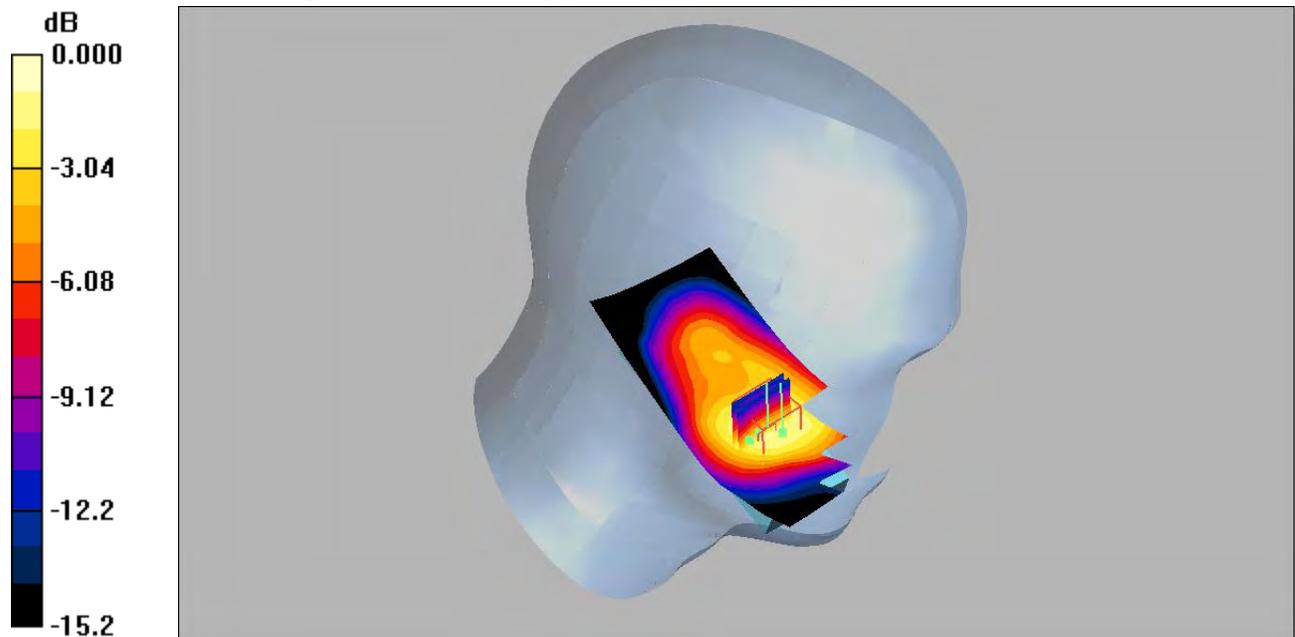
Maximum value of SAR (measured) = 0.578 mW/g

Low channel cheek/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.98 V/m; Power Drift = -0.083 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

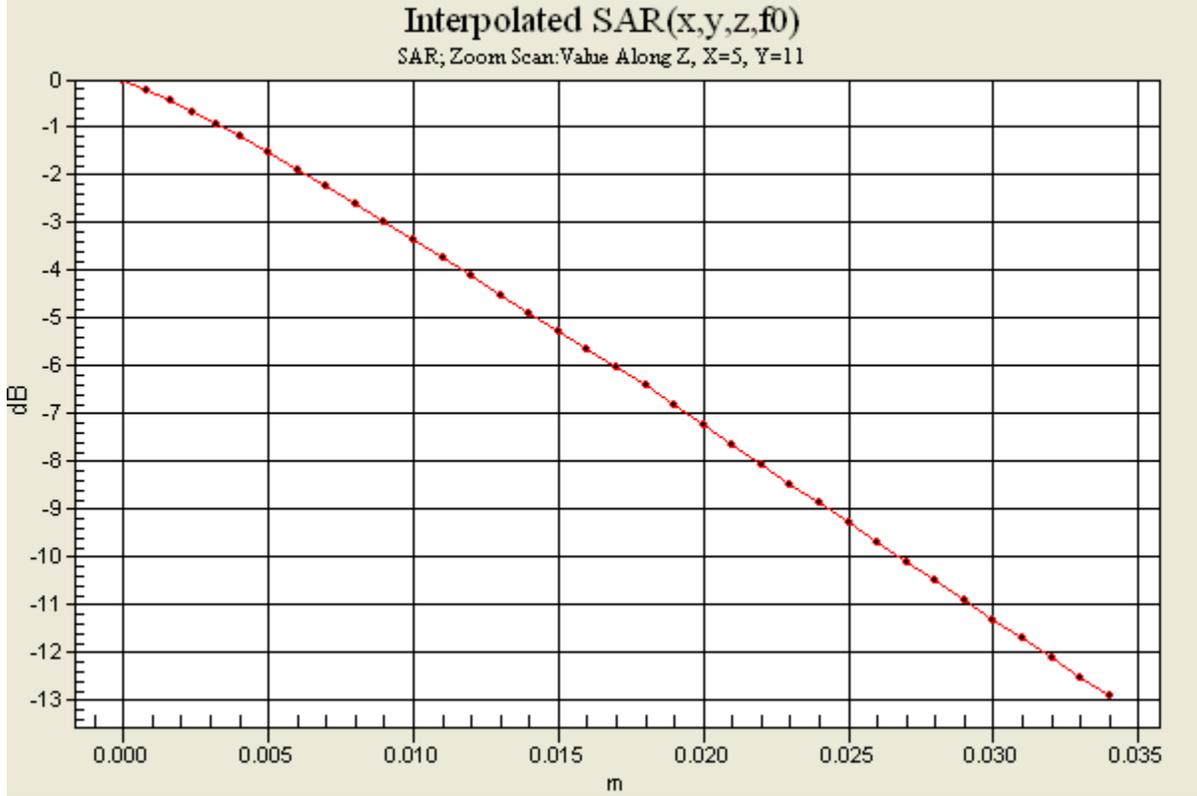
Maximum value of SAR (interpolated) = 0.746 mW/g



0 dB = 0.746mW/g



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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Tilt Position.

Date/Time: 11/21/2009 11:18:49 AM

File Name: [21Nov09_J10i2_GSM1900_N53K_LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (High Band Head)Phantom section: Left Section

Probe: ET3DV6 - SN1587ConvF(5.23, 5.23, 5.23)

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.23, 5.23, 5.23); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1335

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.422 mW/g

Low channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.529 W/kg

SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.223 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

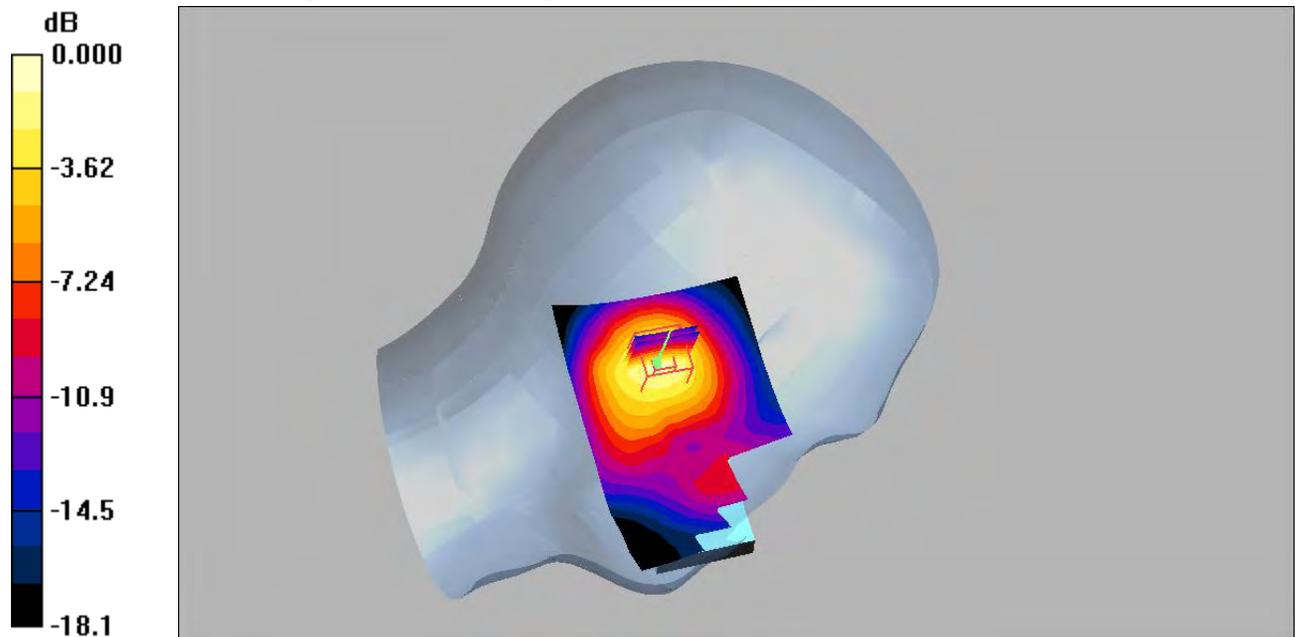
Maximum value of SAR (measured) = 0.395 mW/g

Low channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.015 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

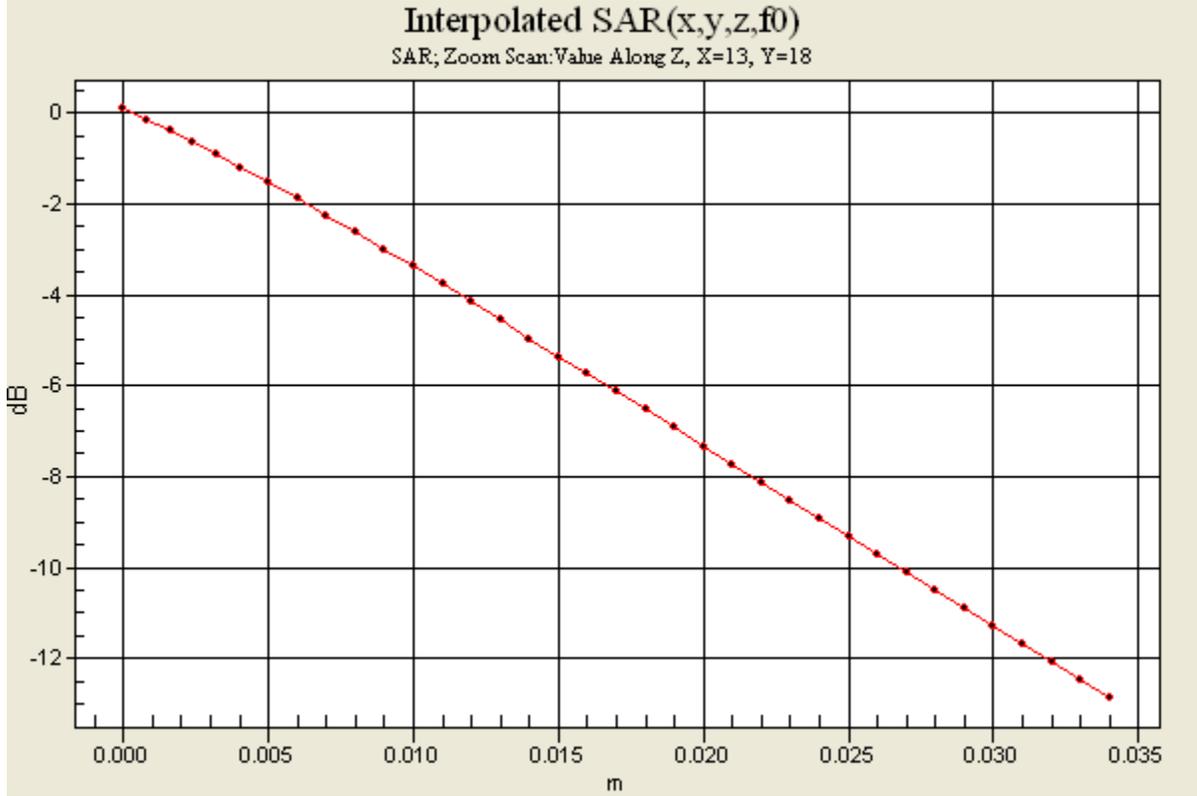
Maximum value of SAR (interpolated) = 0.529 mW/g



0 dB = 0.529mW/g



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Approved SEM/CCMVPCP Gary Thomas	Checked		D

WLAN: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Check Position.

Date/Time: 11/19/2009 2:15:19 PM

File Name: [19Nov09 J10i2 WLAN2450 N4ZX RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Right Section

Probe: ET3DV6 - SN1587ConvF(4.58, 4.58, 4.58)

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.58, 4.58, 4.58); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (WLAN right phantom); Type: SAM; Serial: 1251

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High FCC channel check/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.817 mW/g

High FCC channel check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.7 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.332 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.780 mW/g

High FCC channel check/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

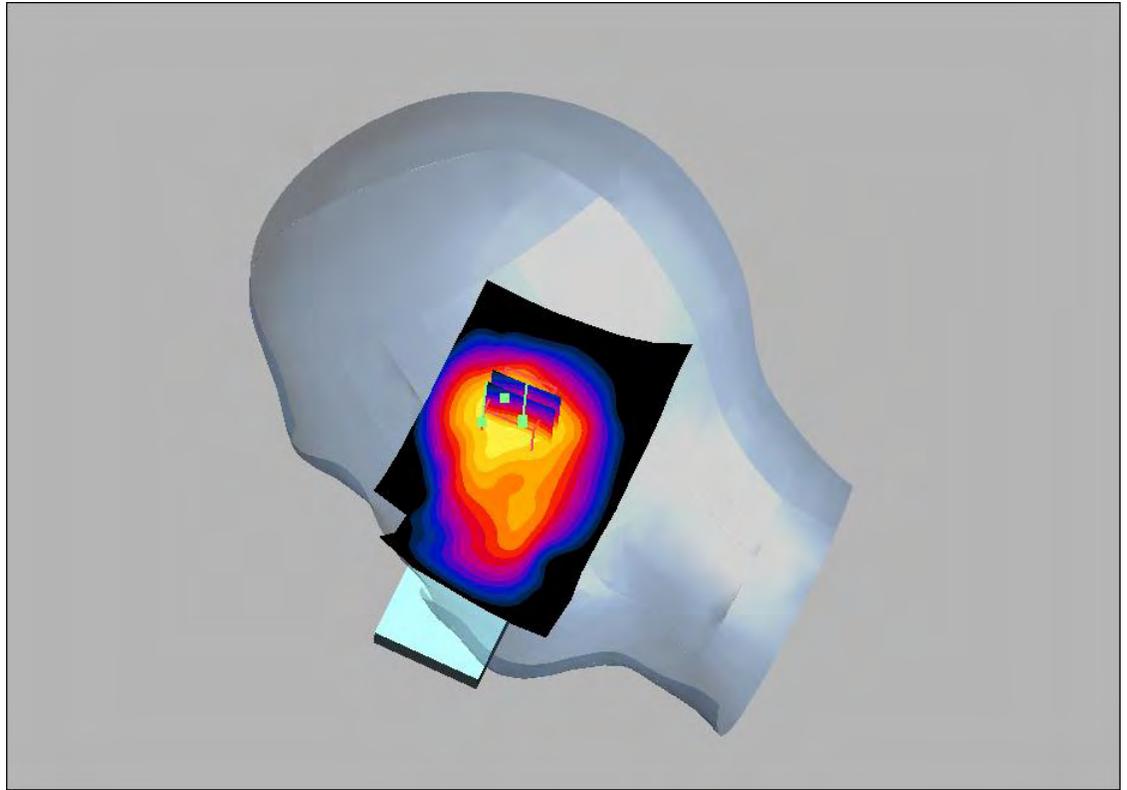
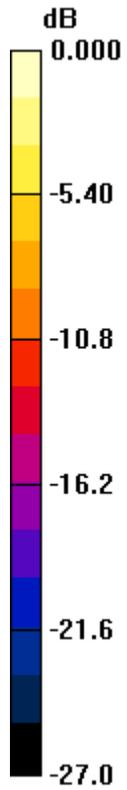
Reference Value = 17.7 V/m; Power Drift = 0.070 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.63 mW/g



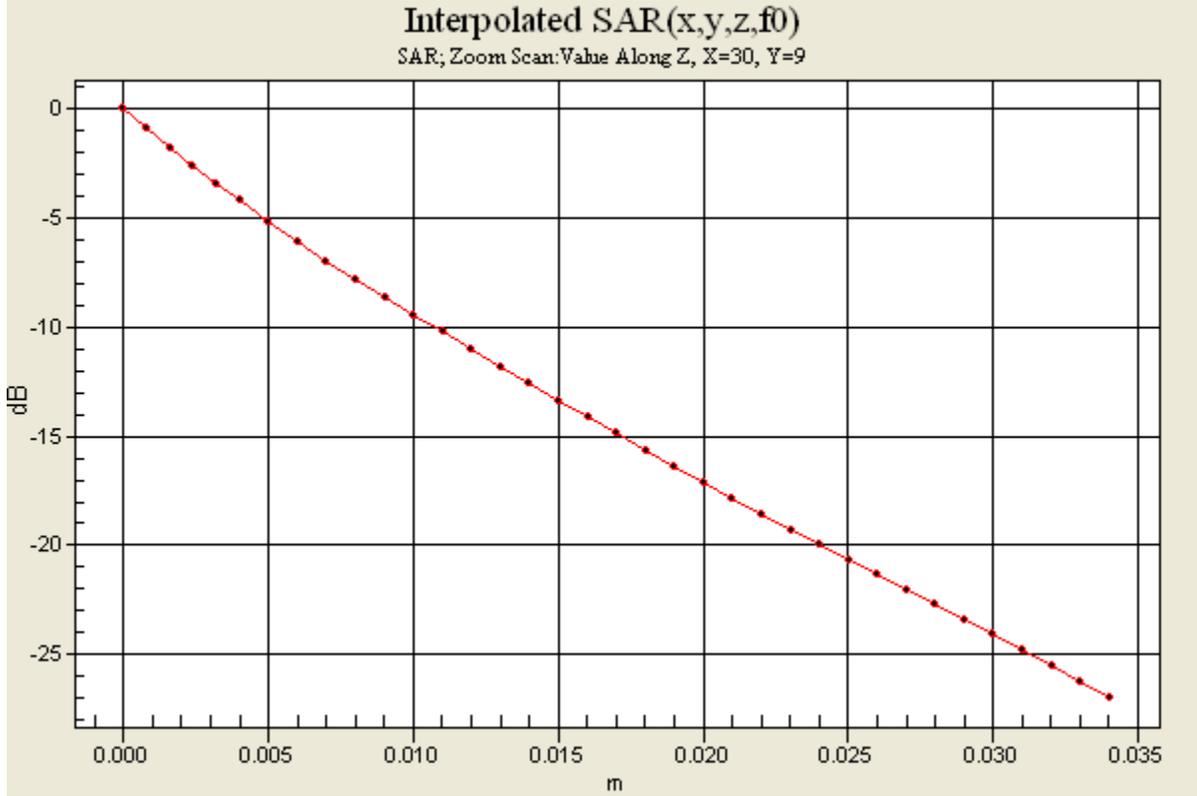
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0 dB = 1.63mW/g



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Approved SEM/CCMVPCP Gary Thomas	Checked		D

WLAN: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Right Tilt Position.

Date/Time: 11/19/2009 12:21:23 PM

File Name: [19Nov09 J10i2 WLAN2450 N4ZX RCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Right Section

Probe: ET3DV6 - SN1587 ConvF(4.58, 4.58, 4.58)

Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.58, 4.58, 4.58); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (WLAN right phantom); Type: SAM; Serial: 1251

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.906 mW/g

Low channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.1 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.365 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.858 mW/g

Low channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

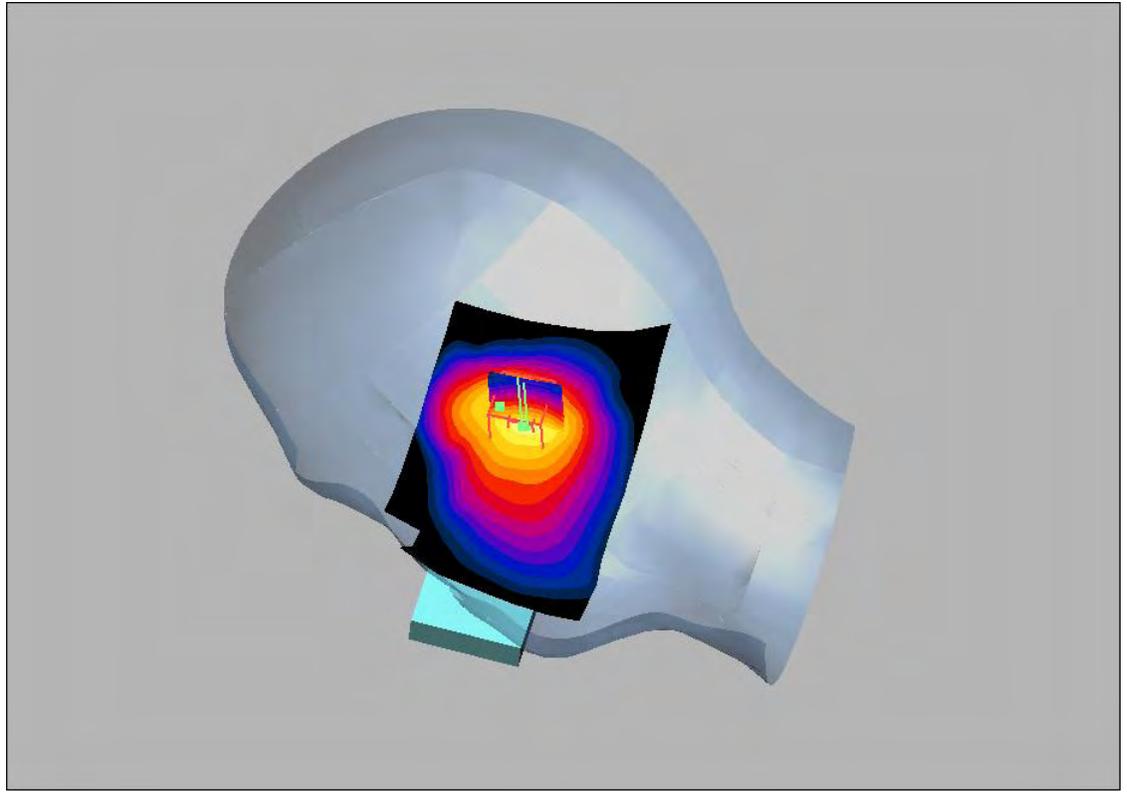
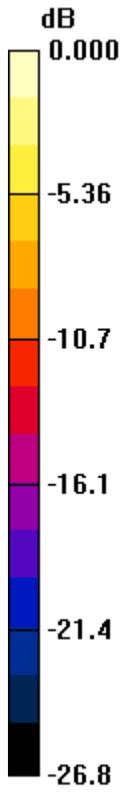
Reference Value = 22.1 V/m; Power Drift = -0.014 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.67 mW/g



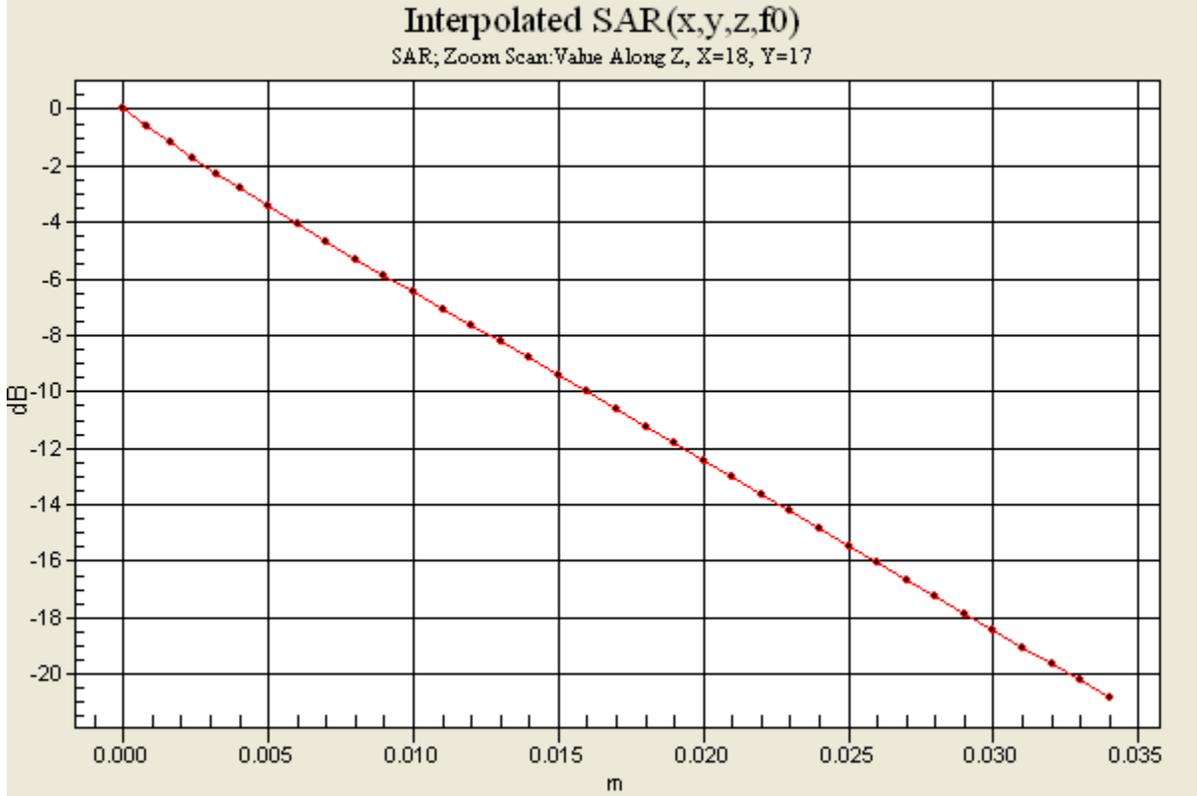
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Approved SEM/CCMVPCP Gary Thomas	Checked	D	



0 dB = 1.67mW/g



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked	D	





Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
Approved SEM/CCMVPCP Gary Thomas	Checked		D

WLAN: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Check Position.

Date/Time: 11/19/2009 9:40:37 AM

File Name: [19Nov09_J10i2_WLAN2450_N4ZX_LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Left Section

Probe: ET3DV6 - SN1587 ConvF(4.58, 4.58, 4.58)

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.58, 4.58, 4.58); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (WLAN right phantom); Type: SAM; Serial: 1251

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High FCC channel check/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.942 mW/g

High FCC channel check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 1.73 W/kg

SAR(1 g) = 0.843 mW/g; SAR(10 g) = 0.408 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.940 mW/g

High FCC channel check/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

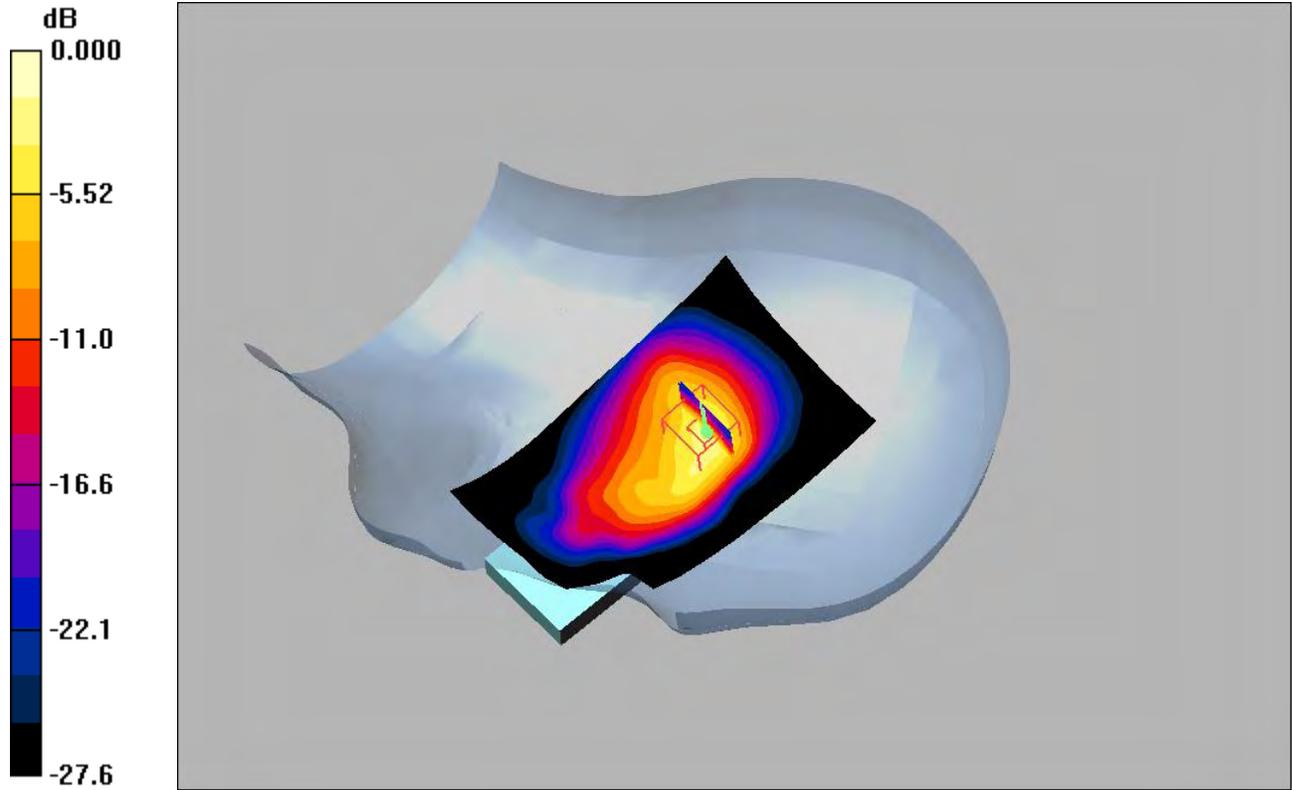
Reference Value = 20.4 V/m; Power Drift = 0.038 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.73 mW/g



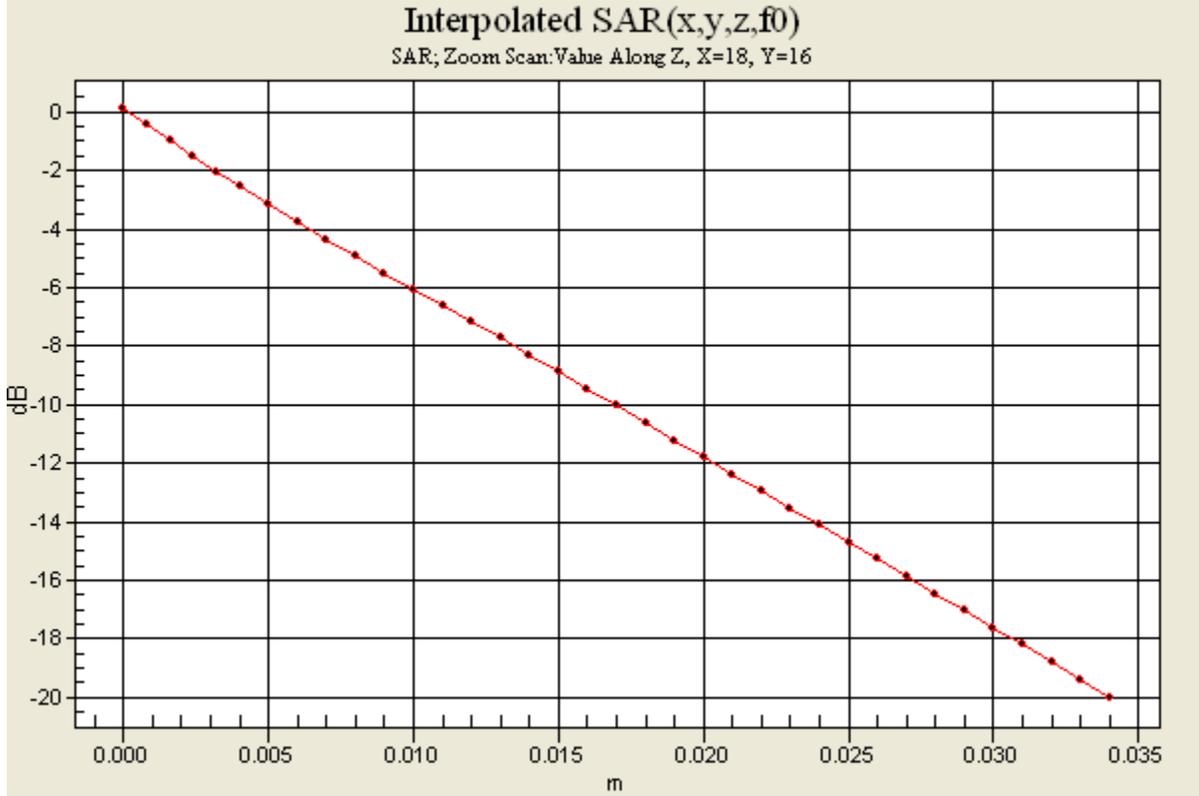
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0 dB = 1.73mW/g



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WLAN: Distribution and Extrapolation of Maximum SAR

Model: J10i2 with Standard Battery: BST-43, Left Tilt Position.

Date/Time: 11/19/2009 10:04:11 AM

File Name: [19Nov09_J10i2_WLAN2450_N4ZX_LCT01.da4](#)

DUT: Susan

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Left Section

Probe: ET3DV6 - SN1587 ConvF(4.58, 4.58, 4.58)

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.58, 4.58, 4.58); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (WLAN right phantom); Type: SAM; Serial: 1251

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High FCC channel tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.903 mW/g

High FCC channel tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.0 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.789 mW/g; SAR(10 g) = 0.369 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.882 mW/g

High FCC channel tilt/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

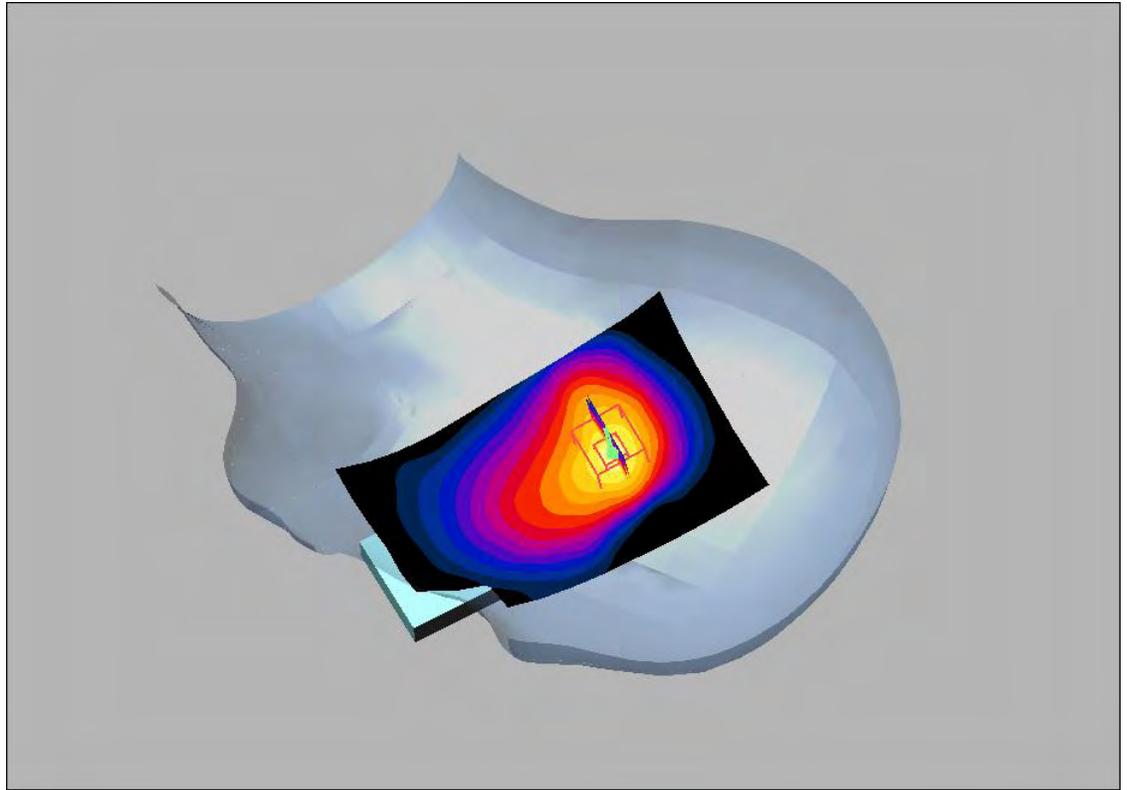
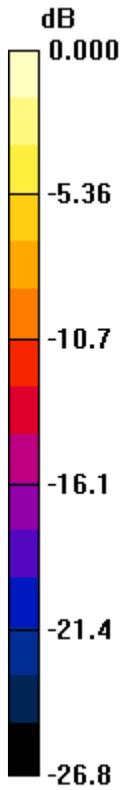
Reference Value = 22.0 V/m; Power Drift = 0.005 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.65 mW/g



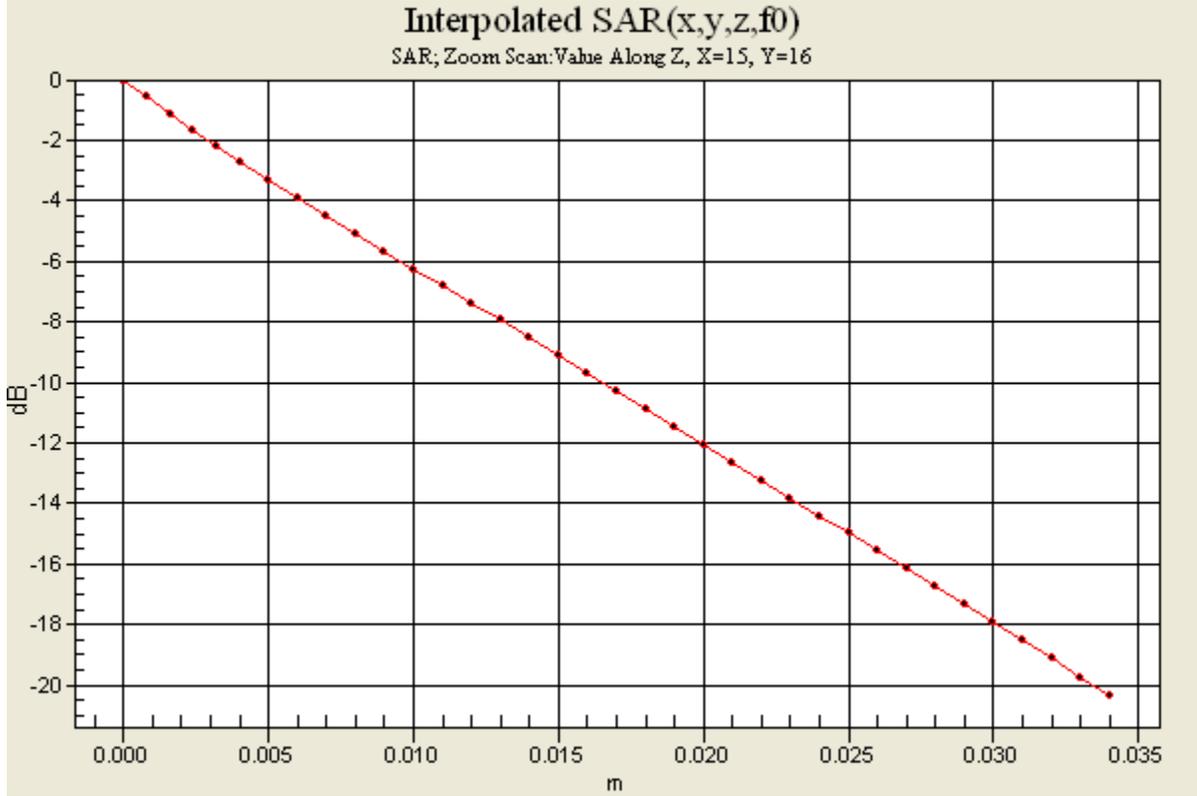
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0 dB = 1.65mW/g



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Appendix 3

SAR distribution plots for Body Worn Configuration



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Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-43)

Date/Time: 11/19/2009 11:19:15 AM

File Name: [19Nov09 J10i2 GSM835 N51W 15mm BBF01.da4](#)

DUT: Susan body

Phantom: SAM with CRP (Low Band Body)Phantom section: Flat Section

Probe: ET3DV6 - SN1586ConvF(6.14, 6.14, 6.14)

Medium parameters used (interpolated): $f = 849 \text{ MHz}$; $\sigma = 1.04 \text{ mho/m}$; $\epsilon_r = 57$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.14, 6.14, 6.14); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn392; Calibrated: 5/26/2009

- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High channel back/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.711 mW/g

High channel back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.0 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.923 W/kg

SAR(1 g) = 0.679 mW/g; SAR(10 g) = 0.471 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.728 mW/g

High channel back/Zoom Scan (31x31x36)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

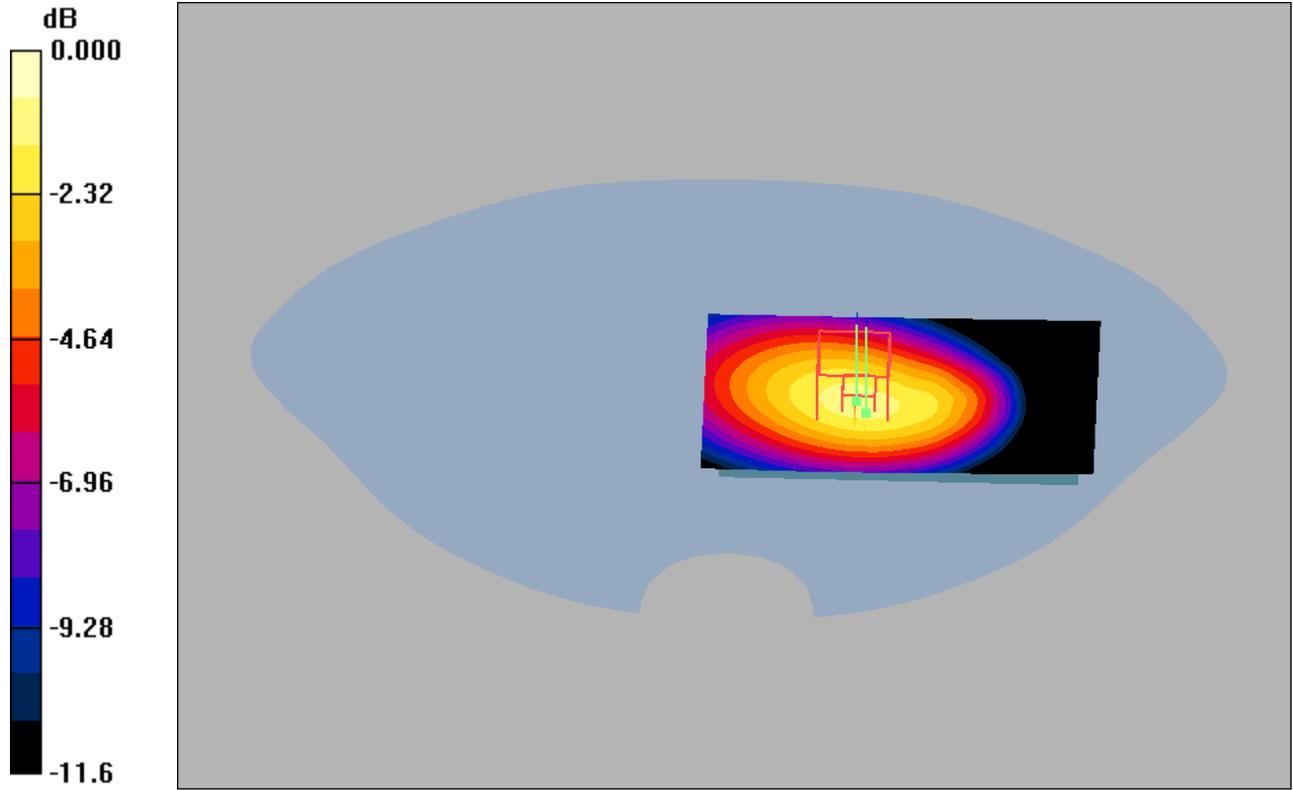
Reference Value = 19.0 V/m; Power Drift = -0.016 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.923 mW/g



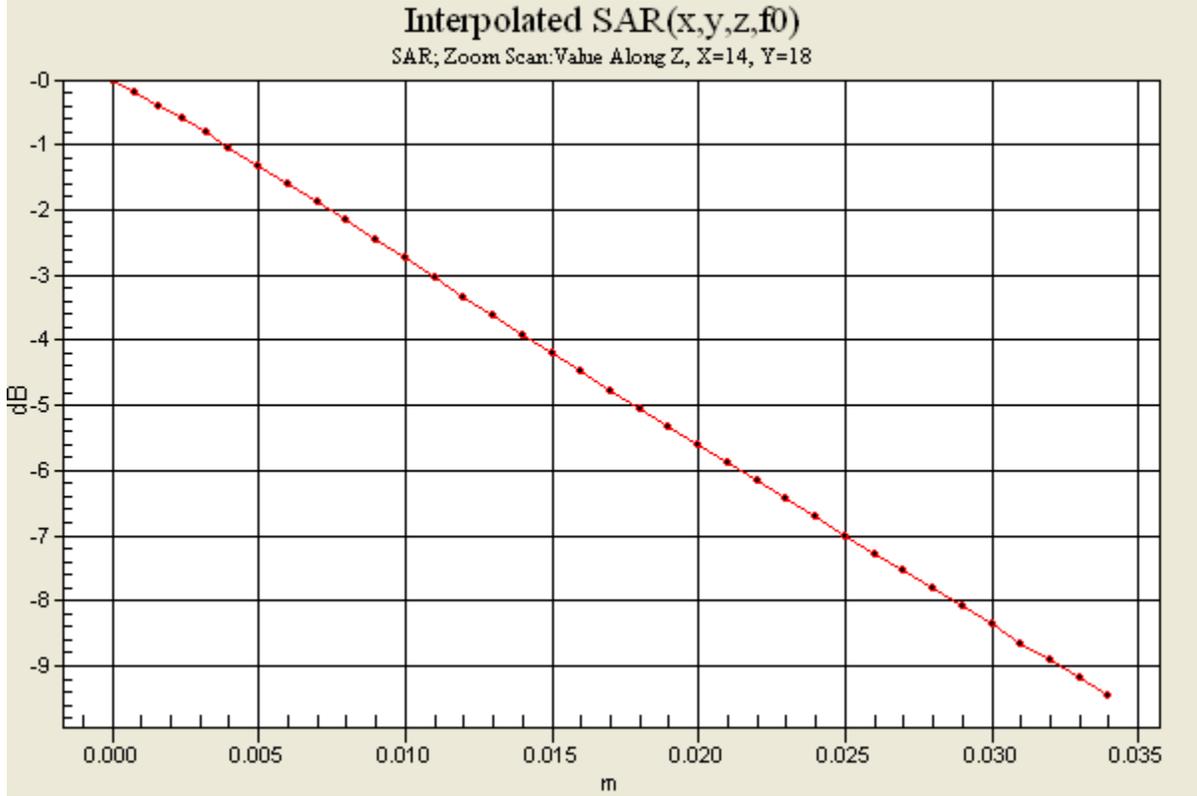
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0 dB = 0.923mW/g



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Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-43)

Date/Time: 11/30/2009 10:54:47 AM

File Name: [30Nov09 J10i2 GSM1900 N53K 15mm BBF01.da4](#)

DUT: Susan body

Phantom: SAM with CRP (High Band Body)Phantom section: Flat Section

Probe: ET3DV6 - SN1583ConvF(4.61, 4.61, 4.61)

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(4.61, 4.61, 4.61); Calibrated: 11/18/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 11/6/2009
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Middle channel back/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.479 mW/g

Middle channel back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 0.608 W/kg

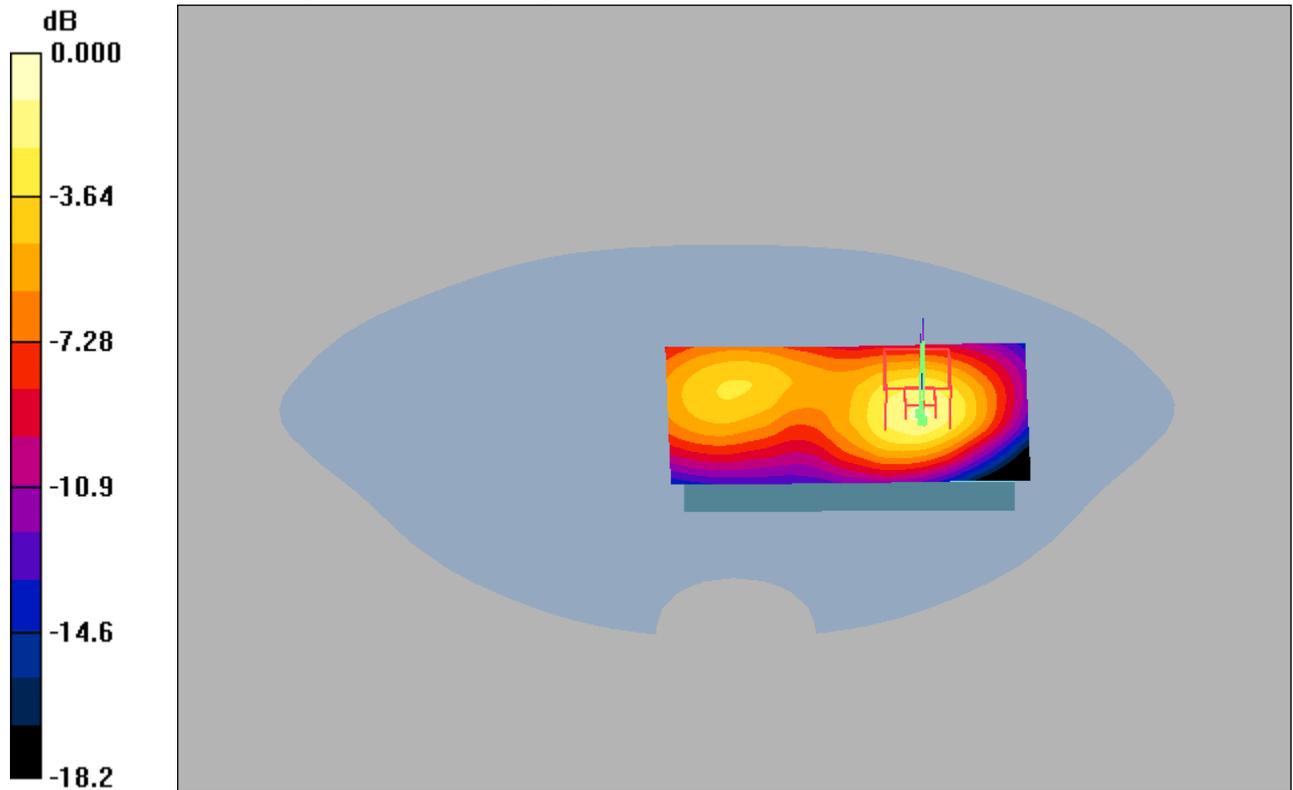
SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.254 mW/g

Maximum value of SAR (measured) = 0.452 mW/g

Middle channel back/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = 0.061 dB

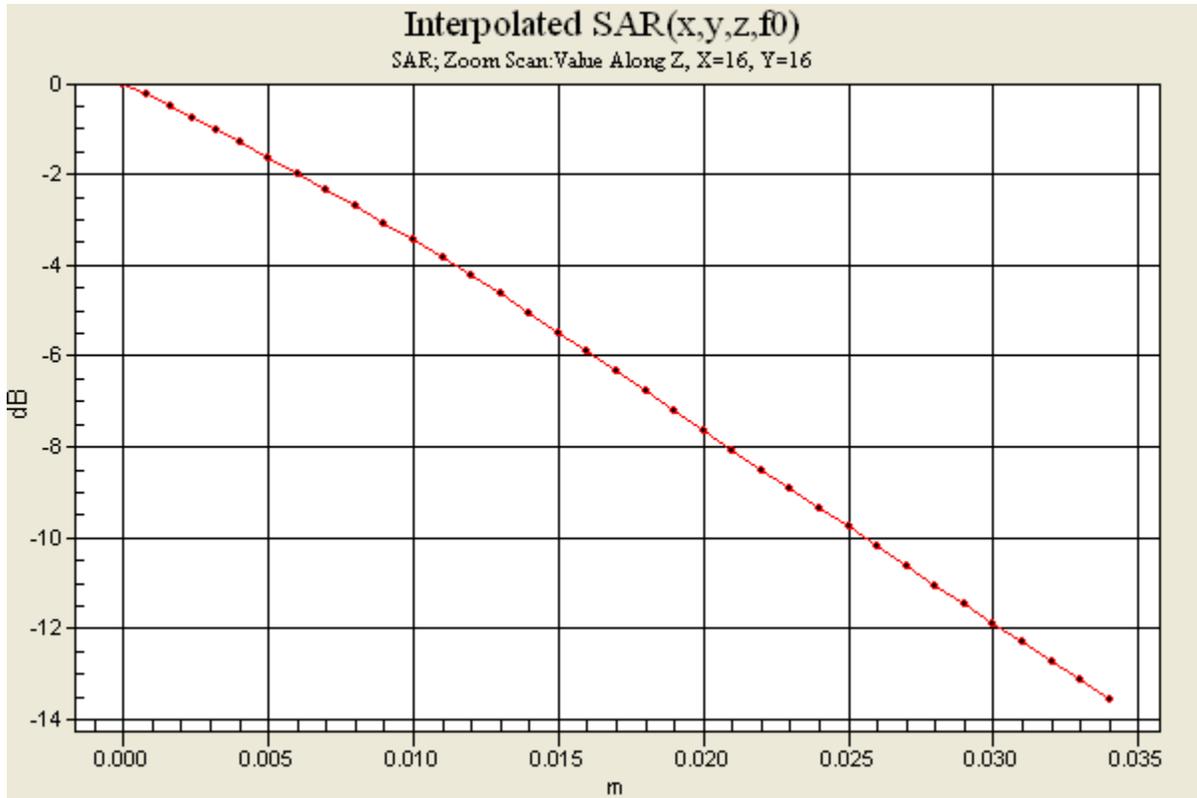
Maximum value of SAR (interpolated) = 0.608 mW/g



0 dB = 0.608mW/g



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Distribution of maximum SAR in WLAN. Measured with back of device facing the body using a 15mm spacer.

(Standard Battery, BST-43)

Date/Time: 11/30/2009 10:07:26 AM

File Name: [30Nov09 J10i2 WLAN2450 N4ZX 15mm BBF01.da4](#)

DUT: Susan

Phantom: SAM with CRP (WLAN right phantom) Phantom section: Flat Section

Probe: ET3DV6 - SN1587 ConvF(3.99, 3.99, 3.99)

Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 2.08$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(3.99, 3.99, 3.99); Calibrated: 5/25/2009

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 5/15/2009

- Phantom: SAM with CRP (WLAN right phantom); Type: SAM; Serial: 1251

- Measurement SW: DAS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low channel back/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.036 mW/g

Low channel back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.53 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 0.071 W/kg

SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.019 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.036 mW/g

Low channel back/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

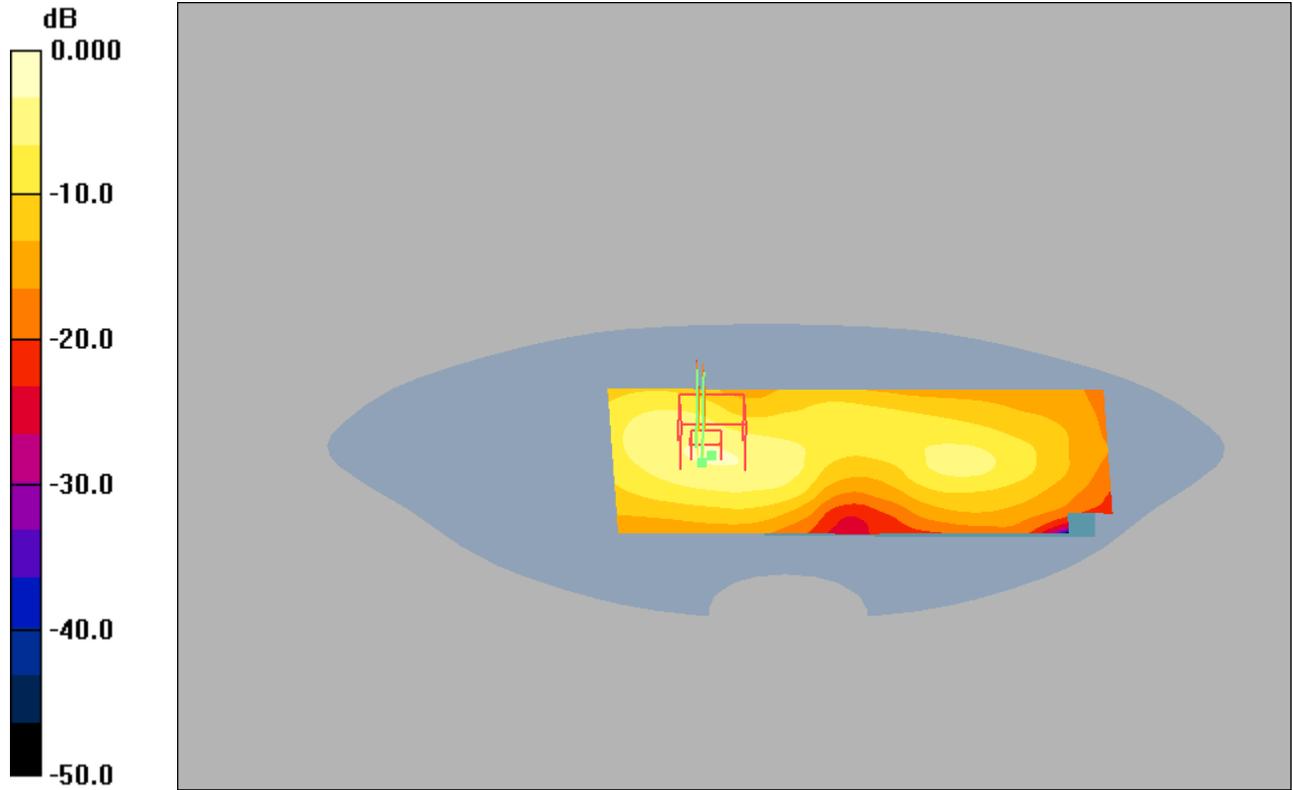
Reference Value = 3.53 V/m; Power Drift = 0.044 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.071 mW/g



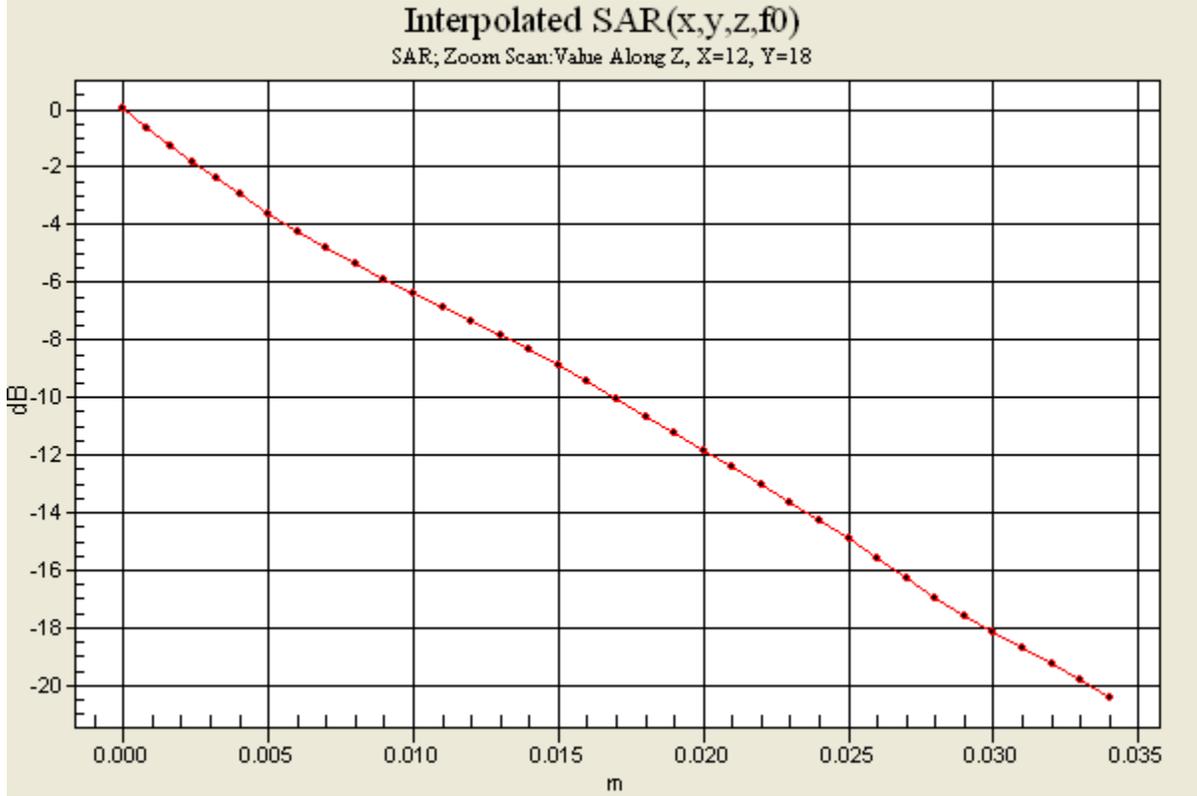
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0 dB = 0.071mW/g



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APPLICANT: Sony Ericsson Mobile Communications Inc.

FCC ID: **PY7A3880065**



Sony Ericsson

REPORT

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Appendix 4

Probe Calibration Certificates

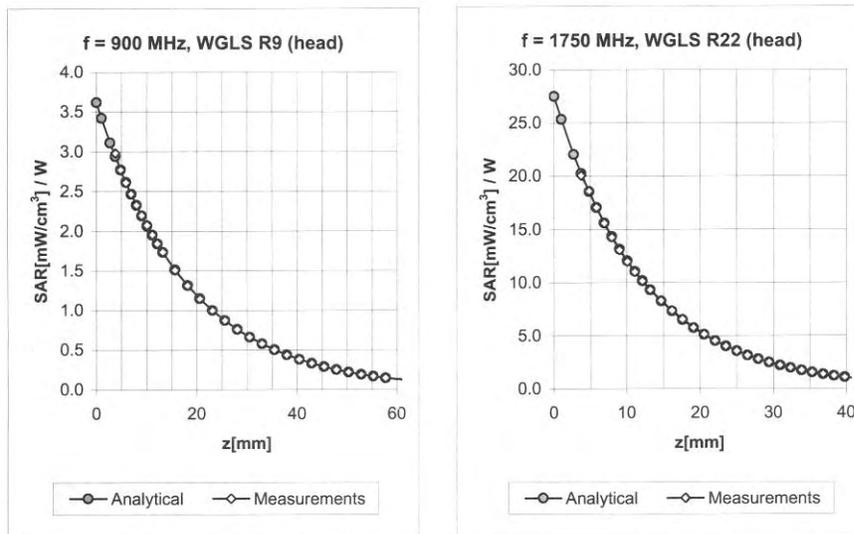


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ET3DV6 SN:1583

November 17, 2008

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.20	3.91	6.48 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.23	3.41	6.31 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.81	1.92	5.40 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.99	1.72	5.12 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.99	1.23	4.58 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.27	3.20	6.33 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.34	2.72	6.19 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.99	1.89	4.90 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.99	1.78	4.58 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.99	1.43	4.00 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.



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ET3DV6 SN:1583

November 17, 2008

DASY - Parameters of Probe: ET3DV6 SN:1583

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.84 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	92 mV
NormY	2.03 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	93 mV
NormZ	1.96 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	92 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	9.8	6.0
SAR _{be} [%]	With Correction Algorithm	0.8	0.5

TSL 1750 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	11.2	7.5
SAR _{be} [%]	With Correction Algorithm	0.9	0.4

Sensor Offset

Probe Tip to Sensor Center **2.7 mm**

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).

^B Numerical linearization parameter: uncertainty not required.

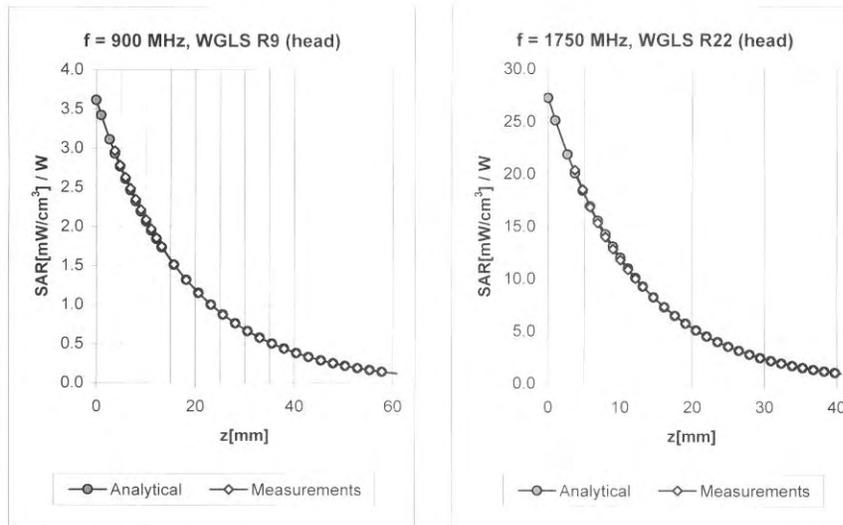


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ET3DV6 SN:1586

May 25, 2009

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.41	2.28	6.26 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.42	2.25	6.07 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.58	2.44	5.37 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.68	2.24	5.11 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.55	1.80	4.51 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.40	2.42	6.14 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.33	2.76	6.03 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.59	3.12	4.78 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.88	2.32	4.49 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.40	1.90	4.01 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.



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ET3DV6 SN:1586

May 25, 2009

DASY - Parameters of Probe: ET3DV6 SN:1586

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.91 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	94 mV
NormY	1.88 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	93 mV
NormZ	1.97 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	94 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	9.8	5.8
SAR _{be} [%]	With Correction Algorithm	0.9	0.6

TSL 1750 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	10.2	6.5
SAR _{be} [%]	With Correction Algorithm	0.9	0.6

Sensor Offset

Probe Tip to Sensor Center 2.7 mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).

^B Numerical linearization parameter: uncertainty not required.

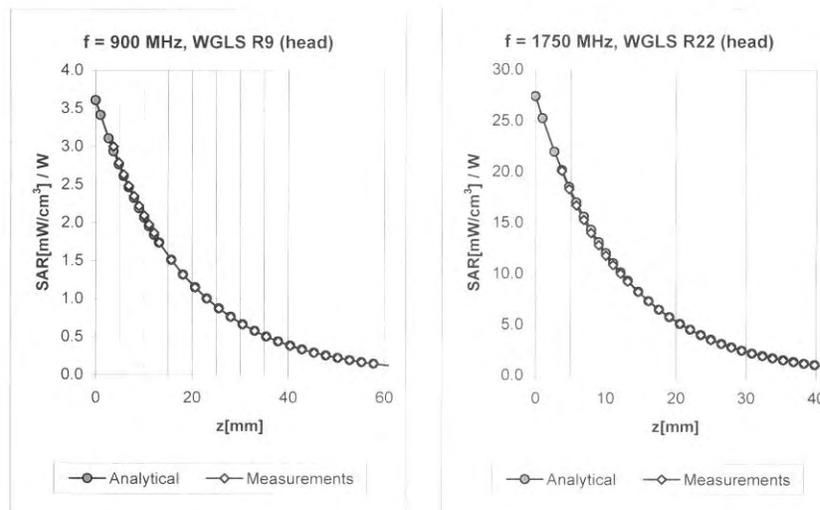


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ET3DV6 SN:1587

May 25, 2009

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.44	2.15	6.39	± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.22	3.75	6.16	± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.50	2.60	5.49	± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.45	2.95	5.23	± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.50	2.30	4.58	± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.34	2.60	6.27	± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.34	2.69	6.11	± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.60	2.60	4.90	± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.83	2.48	4.58	± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.35	2.00	3.99	± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.



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Appendix 5

Measurement Uncertainty Budget



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon		No. REP 2009 006 J10i2 02	
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Table 1. Uncertainty Budget for System Performance Check (Dipole & flat phantom) DASy4 System

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	$e = f(d,k)$	<i>f</i>	<i>g</i>	$h = c \times f / e$	$i = c \times g / e$	<i>k</i>
Uncertainty Component	Sec.	Tol. (± %)	Prob. Dist.	Div.	c_f (1-g)	c_g (10-g)	1-g u_i (±%)	10-g u_i (±%)	v_i
Measurement System									
Probe Calibration (<i>k</i> =1)	E.2.1	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Axial Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Hemispherical Isotropy	E.2.2	1.0	R	1.73	1	1	0.6	0.6	∞
Boundary Effect	E.2.3	4.7	R	1.73	1	1	2.7	2.7	∞
Linearity	E.2.4	1.0	R	1.73	1	1	0.6	0.6	∞
System Detection Limits	E.2.5	1.0	N	1	1	1	1.0	1.0	∞
Readout Electronics	E.2.6	0.8	R	1.73	1	1	0.5	0.5	∞
Response Time	E.2.7	2.6	R	1.73	1	1	1.5	1.5	∞
Integration Time	E.2.8	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance (corresponds to the mechanical constrains of the robot)	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	2.9	R	1.73	1	1	1.7	1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1	1	0.6	0.6	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	1.0	R	1.73	1	1	0.6	0.6	∞
Input Power and SAR Drift Measurement	8, 6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty - shell thickness tolerance	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values (5)	E.3.2	4.3	R	1.73	0.64	0.43	1.59	1.07	∞
Liquid Conductivity - measurement uncertainty (6)	E.3.3	6.20	R	1.73	0.64	0.43	2.29	1.54	∞
Liquid Permittivity - deviation	E.3.2	3.7	R	1.73	0.6	0.49	1.28	1.05	∞



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from target values (5)									
Liquid Permittivity - measurement uncertainty (6)	E.3.3	6.08	R	1.73	0.6	0.49	2.11	1.72	∞
Combined Standard Uncertainty			RSS				9.37	9.03	
Expanded Uncertainty (95% C.L.)							18.74	18.05	



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Table 2: Uncertainty Budget for the Device Under Test with DASY4 System

a	b	c	d	$e = f(d,k)$	f	g	$h = c \times f / e$	$i = c \times g / e$	k
Uncertainty Component	Sec.	Tol. (± %)	Prob. Dist.	Div.	c_i (1-g)	c_i (10-g)	1-g u_i (±%)	10-g u_i (±%)	v_i
Measurement System									
Probe Calibration ($k=1$)	E.2.1	4.8	N	1	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance (corresponds to the mechanical constrains of the robot)	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	2.9	R	1.73	1	1	1.7	1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1	1	0.6	0.6	∞
Test sample Related									
Test Sample Positioning	E.4.2	2.5	N	1	1	1	2.7	2.7	4
Device Holder Uncertainty	E.4.1	0.9	R	1.73	1	1	0.7	0.7	4
Output Power Variation - SAR drift measurement (4)	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞



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Liquid Conductivity - deviation from target values (5)	E.3.2	4.3	R	1.73	0.64	0.43	1.6	1.1	∞
Liquid Conductivity - measurement uncertainty (6)	E.3.3	6.20	R	1.73	0.64	0.43	2.3	1.5	∞
Liquid Permittivity - deviation from target values (5)	E.3.2	3.7	R	1.73	0.6	0.49	1.3	1.0	∞
Liquid Permittivity - measurement uncertainty (6)	E.3.3	6.08	R	1.73	0.6	0.49	2.1	1.7	∞
Combined Standard Uncertainty			RSS				9.7	9.3	
Expanded Uncertainty (95% CONFIDENCE LEVEL)			K=2				19.4	18.7	



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Table 3a. Values for ϵ'

Uncertainty Component	Tolerance (±%)	Probability Distribution	Divisor	c_i	Standard Uncertainty (±%)	v_i or v_{eff}
Repeatability (n repeats)	0.97	N	1	1	0.97	4
Network analyzer uncertainty sources	8.38	R	1.73	1	4.83	∞
Dielectric Error Sources	5.93	R	1.73	1	3.42	∞
Combined standard uncertainty					6.08	

Table 3b. Values for σ

Uncertainty Component	Tolerance (±%)	Probability Distribution	Divisor	c_i	Standard Uncertainty (±%)	v_i or v_{eff}
Repeatability (n repeats)	1.85	N	1	1	1.85	4
Network analyzer uncertainty sources	8.38	R	1.73	1	4.83	∞
Dielectric Error Sources	5.93	R	1.73	1	3.42	∞
Combined standard uncertainty					6.20	



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Appendix 6

Photographs of the Device under Test



Prepared (also subject responsible if other) SEM/CCMVAR Rodney Dixon	No. REP 2009 006 J10i2 02
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Front:



Back:



Side:





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15mm Back:



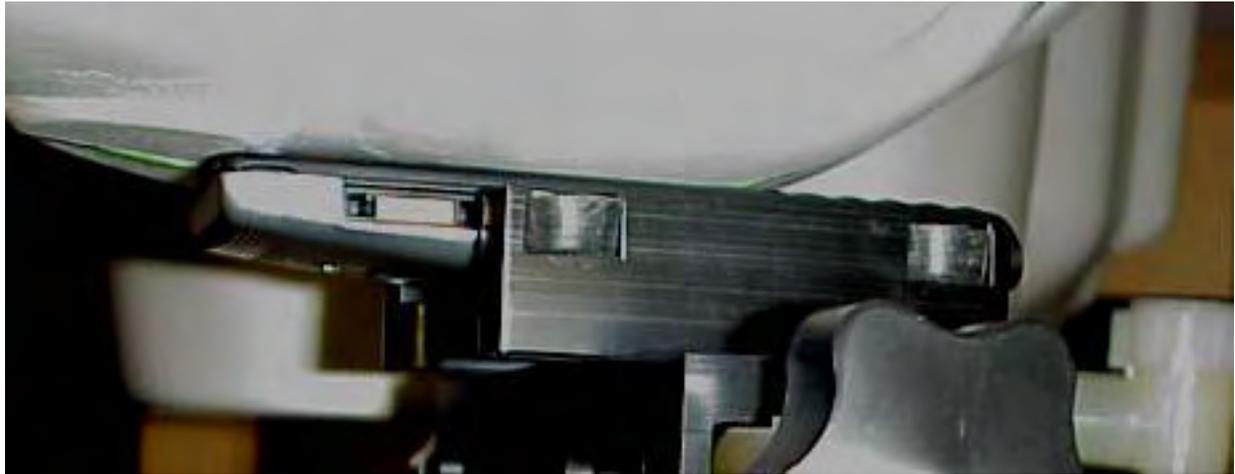
15mm Front:





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Position of device against head phantom using the “cheek” position



“cheek/touch” position



“cheek/tilt” open position