



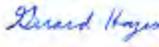
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

## Exhibit 11: SAR Test Report of Portable Cellular Phone FCC ID: PY7A3152021 Model: CS8

**Date of test:** February 28 –March 18, 2009  
**Date of Report:** April 1, 2009

**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 Dixon  
 Eng. Technician IV, Global Type Approval

**Test Responsible:** Gerard Hayes   
 Technical Manager

**Accreditation:** This laboratory is accredited to ISO/IEC 17025-2005 to perform the following  
 electromagnetic exposure tests:



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

On the following types of products: Wireless communications devices.

**A2LA Certificate  
 #1650-01**

**Statement of Compliance:** Sony Ericsson Mobile Communications, Inc declares under its sole responsibility that portable cellular telephone FCC ID PY7A3152021 model CS8 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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**Table of Contents**

<b>1. Introduction</b>	<b>3</b>
<b>2. Description of the Device Under Test</b>	<b>3</b>
2.1 Antenna description	3
2.2 Device description	3
<b>3. Test Equipment Used</b>	<b>5</b>
3.1 Dosimetric System	5
3.2 Additional Equipment	5
<b>4. Electrical parameters of the tissue simulating liquid</b>	<b>6</b>
<b>5. System Accuracy Verification</b>	<b>8</b>
<b>6. Test Results</b>	<b>9</b>
6.1 Head Adjacent Test Results	11
6.2 Body-Worn Test Results	20
<b>References</b>	<b>23</b>
<b>Appendix 1: SAR distribution comparison for system accuracy verification</b>	<b>24</b>
<b>Appendix 2: SAR distribution plots for Phantom Head Adjacent Use</b>	<b>61</b>
<b>Appendix 3: SAR distribution plots for Body Worn Configuration</b>	<b>142</b>
<b>Appendix 4: Probe Calibration Certificate</b>	<b>154</b>
<b>Appendix 5: Measurement Uncertainty Budget</b>	<b>163</b>
<b>Appendix 6: Photographs of the device under test</b>	<b>169</b>



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

## 1. Introduction

The Sony Ericsson SAR Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID PY7A3152021 model CS8. 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

### 2.1 Antenna description

Type	Monopole	
Location	Chin Cover	
Dimensions	Width	12.0 mm
	Length	38.0 mm

### 2.2 Device description

FCC ID Number / Device Model	<b>PY7A3152021 / CS8</b>	
SEMC Type Number / IC Number	<b>AAD-3152021-BV / 4170B-A3152021</b>	
Hardware Revision #	<b>TP4</b>	
Software Revision #	<b>R1DA014</b>	
Battery Option(s)	<b>1200-2369 (BST-38)</b>	
Mode(s) of Operation Transmitting Frequency Range	GSM/GPRS/EDGE 824-849 MHz	Serial number of Device Tested CB5A0ZBMFQ
	GSM/GPRS/EDGE 1850-1910 MHz	CB5A0ZBMFQ, CB5A0ZBMKF
	UMTS/HSDPA Band IV (1850-1910 MHz)	CB5A0ZBMKF
Production Unit or Identical Prototype (47 CFR §2.908)	<b>Identical Prototype</b>	
Device Category	<b>Portable</b>	
RF Exposure Limits	<b>General Population / Uncontrolled</b>	

GSM		850 MHz	1900 MHz
	Factory Target Maximum Output Power	$f_{low}$	32.5 dBm
$f_{mid}$		32.5 dBm	30.5 dBm
$f_{high}$		32.5 dBm	30.5 dBm
Calibration Frequency ( $f_{low}, f_{mid}, f_{high}$ ) Duty Cycle	$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$
		1/8	1/8



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**Device description (continued)**

<b>GPRS</b>		<b>850 MHz</b>	<b>1900 MHz</b>	
	<b>Factory Target Maximum Output Power</b>	$f_{low}$	32.5 dBm	30.5 dBm
	<b>Calibration Frequency (<math>f_{low}, f_{mid}, f_{high}</math>) Duty Cycle</b>	$f_{mid}$	32.5 dBm	30.5 dBm
		$f_{high}$	32.5 dBm	30.5 dBm
		$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$
	1/4	1/4	1/4	
<b>EGPRS</b>		<b>850 MHz</b>	<b>1900 MHz</b>	
	<b>Factory Target Maximum Output Power</b>	$f_{low}$	28 dBm	27 dBm
	<b>Calibration Frequency (<math>f_{low}, f_{mid}, f_{high}</math>) Duty Cycle</b>	$f_{mid}$	28 dBm	27 dBm
		$f_{high}$	28 dBm	27 dBm
		$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$
	1/4	1/4	1/4	
<b>W-CDMA (Circuit Switched, UMTS Mode)</b>		<b>Band IV</b>		
	<b>Factory Target Maximum Output Power RMC 12.2, <math>\beta_c=8, \beta_d=15</math></b>	$f_{low}$	24.0 dBm	
	<b>Calibration Frequency (<math>f_{low}, f_{mid}, f_{high}</math>) Duty Cycle</b>	$f_{mid}$	24.0 dBm	
		$f_{high}$	24.0 dBm	
		$f_{low}, f_{mid}, f_{high}$	$f_{low}, f_{mid}, f_{high}$	
	1/1			



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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 ±9.6 % (K=1) with an expanded uncertainty of ±19.2 % (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	345	Oct-31-2009
DASY3 DAE V1	417	Nov-07-2009
DASY3 DAE V1	432	May-13-2009
E-Field Probe ETDV6	1538	May-19-2009
E-Field Probe ETDV6	1539	Nov-17-2009
E-Field Probe ETDV6	1583	Nov-17-2009
E-Field Probe ETDV6	1586	May-19-2009
Dipole Validation Kit, DV835V2	429	Nov-03-2009
Dipole Validation Kit, DV1800V2	217	Nov-04-2009
Dipole Validation Kit, DV1900V2	537	Nov-04-2009
Dipole Validation Kit, DV2440V2	702	May-07-2009
S.A.M. Phantom used for 835MHz (Head)	1023	
S.A.M. Phantom used for 835MHz (Body)	1031	
S.A.M. Phantom used for 1800MHz (Head and Body)	1054/1335	
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	

#### 3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3443U00433	February 01, 2010
Power Meter 437B	3125U16382	December 04, 2009
Power Meter 437B	3125U16190	May 05, 2009
Power Sensor - 8482H	MY41090241	June 14, 2009
Power Sensor - 8482H	3318A09268	July 02, 2009
Dielectric Probe Kit HP85070B	US33020256	Sept. 11, 2009
Digital Thermometer 61220-601 And Probe (61220-604)	350078	December 10, 2009
Digital Hygrometer/ Thermometer	230355187	March 03, 2010
HP RF Amplifier 8347A	3307A1069	May 07, 2009



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**4. Electrical parameters of the tissue simulating liquid**

Prior to conducting SAR measurements, the relative permittivity,  $\epsilon_r$ , and the conductivity,  $\sigma$ , 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 the 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		
			$\epsilon_r$	$\sigma$ (S/m)	Simulated Tissue Temp (°C)
835	Head	March 10, 2009	41.7	0.8996	21.8
		March 11, 2009	42.31	0.9018	21.5
		Recommended Limits	41.5	0.9	20-25
	Body	March 4, 2009	56.42	0.9552	21.7
		Recommended Limits	55.2	0.97	20-25
1800	Head	March 5, 2009	39.66	1.368	21.9
		March 10, 2009	39.17	1.409	21.5
		March 12, 2009	38.64	1.357	21.2
		Recommended Limits	40	1.4	20-25
	Body	March 6, 2009	39.35	1.365	21.5
		Recommended Limits	40	1.4	20-25
1900	Head	March 4, 2009	39.35	1.458	22.1
		March 5, 2009	39.38	1.442	22.1
		March 6, 2009	39.21	1.46	21.3
		March 9, 2009	38.91	1.448	21.3
		March 11, 2009	40.04	1.44	21.5
		Recommended Limits	40	1.4	20-25
	Body	February 28, 2009	51.97	1.552	21.7
		March 2, 2009	51.57	1.537	21.7
		Recommended Limits	53.3	1.52	20-25
2450	Head	March 12, 2009	38.99	1.884	22
		March 16, 2009	39.24	1.93	21.9
		Recommended Limits	39.2	1.95	20-25
	Body	March 18, 2009	51.12	2.014	21.7
		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.

<b>Ingredient</b>	<b>800/900 MHz Head 900MHz Body</b>	<b>800MHz Body</b>	<b>1800/1900 MHz Head 1800MHz Body</b>	<b>1900MHz Body</b>
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. 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 Temp (°C)
			1g	10g	$\epsilon_r$	$\sigma$ (S/m)	
835	Head	Mar-10-09	9.37	6.17	41.7	0.90	21.8
		Mar-11-09	9.55	6.27	42.31	0.90	21.5
		<b>Recommended Limits</b>	<b>9.50</b>	<b>6.20</b>	<b>41.50</b>	<b>0.90</b>	<b>20-25</b>
	Body	Mar-04-09	9.22	6.14	56.42	0.96	21.7
		<b>Recommended Limits</b>	<b>9.90</b>	<b>6.46</b>	<b>55.20</b>	<b>0.97</b>	<b>20-25</b>
1800	Head	Mar-05-09	35.10	18.85	39.66	1.37	21.9
		Mar-10-09	36.48	19.39	39.17	1.41	21.5
		Mar-12-09	34.76	18.53	38.64	1.36	21.2
		<b>Recommended Limits</b>	<b>38.1</b>	<b>19.8</b>	<b>40</b>	<b>1.4</b>	<b>20-25</b>
	Body	Mar-06-09	35.37	19.04	39.35	1.37	21.5
		<b>Recommended Limits</b>	<b>38.1</b>	<b>19.8</b>	<b>40</b>	<b>1.4</b>	<b>20-25</b>
1900	Head	Mar-04-09	41.49	21.60	39.35	1.46	22.1
		Mar-05-09	38.17	19.86	39.38	1.44	22.1
		Mar-06-09	38.38	20.02	39.21	1.46	21.3
		Mar-09-09	38.35	19.95	38.91	1.45	21.3
		Mar-11-09	37.11	19.45	40.04	1.44	21.5
		<b>Recommended Limits</b>	<b>39.7</b>	<b>20.5</b>	<b>40</b>	<b>1.4</b>	<b>20-25</b>
	Body	Feb-28-09	40.86	21.43	51.97	1.55	21.7
		Mar-02-09	42.32	22.05	51.57	1.54	21.7
		<b>Recommended Limits</b>	<b>40.5</b>	<b>20.89</b>	<b>53.3</b>	<b>1.52</b>	<b>20-25</b>
2450	Head	Mar-12-09	55.80	25.46	38.99	1.88	22
		Mar-16-09	54.74	24.95	39.24	1.93	21.9
		<b>Recommended Limits</b>	<b>52.4</b>	<b>24</b>	<b>39.8</b>	<b>1.95</b>	<b>20-25</b>
	Body	Mar-18-09	57.37	25.86	51.12	2.01	21.7
		<b>Recommended Limits</b>	<b>54.5</b>	<b>25.2</b>	<b>52.7</b>	<b>1.95</b>	<b>20-25</b>

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 0.000476 W/kg, which is below the recommended limit in [1].



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**6.0 Test Results**

For all measurements, the test sample was operated using a base station simulator (CMU-200) that allows control of the transmitter using the signally software that is installed on the phone. For the purposes of these tests, the unit is commanded to set to the proper channel, transmitter power level and transmit mode of operation. The phone was tested in the configurations stipulated in [1,2]. The phone was positioned into these configurations using the positioner supplied with the DASY4 SAR measurement system.

**HSDPA Considerations**

As per TCB/FCC guidance, the conducted power of the device was confirmed in two UMTS circuit switched modes (RMC and Voice) and four HSDPA modes. A CMU-200 was used to establish the call processing and modulation settings and an RF power meter was used for the measurements. For all HSDPA measurements, the following settings were applied:

$$H\text{-SET3 QPSK, CQI feedback} = 2\text{msec, } \Delta\text{ACK} = \Delta\text{NACK} = \Delta\text{CQI} = 8$$

The results (including relevant CMU modulation settings) are presented in the Table 6.0. As seen in the table, the conducted power measurements for the HSDPA modes were equal or below the circuit switched modes for each frequency/channel.

**Table 6.0: Conducted Power Summary for UMTS - HSDPA Modes**

	$\beta\text{C}$	$\beta\text{D}$	$\Delta\text{HS}$	max->	Band 4		
					1712.4	1732.6	1752.6
CS - RMC	8	15	-		23.9	24.0	24.0
CS - voice	8	15	-		23.9	24.0	24.0
HSDPA - 1	2	15	8		23.8	23.8	23.8
HSDPA - 2	12	15	8		23.8	23.8	23.7
HSDPA - 3	15	8	8		23.3	23.3	23.2
HSDPA - 4	15	4	8		23.3	23.3	23.2



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For head measurements, the units were measured in the following voice modes which correspond to the operating conditions with the highest conducted power:

- GSM with a 1/8 duty cycle
- UMTS (circuit switched) with RMC=12.2,  $\beta_c=8$ , and  $\beta_d=15$

In all configurations, tests were conducted with Bluetooth and WLAN functionality turned off.

For body measurements, the units were measured in the following data modes which correspond to the operating conditions with the highest conducted power:

- E/GPRS (Multislot, Class 10) with a 1/4 duty cycle
- UMTS (circuit switched) with RMC=12.2,  $\beta_c=8$ , and  $\beta_d=15$

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

This Bluetooth/WLAN antenna is located at a minimum of 26.8 mm from the cellular antenna. The maximum reported WLAN conducted power is 17.8 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	0.97	0.11	1.08
Body-worn	1.23	0.06	1.29

Since the sum of two stand-alone SAR values are below 1.6 W/kg 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 1-8
- Head Adjacent, WLAN: Tables 9,10
- Body-worn, Cellular: Tables 11,12
- Body-worn, WLAN: Tables 13



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**6.1 Head Adjacent Test Results**

The SAR results shown in Tables 1 through 10 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.

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 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) GSM 1:8 Duty Cycle	Left Head (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g			
800 GSM	128 / 824	32.3	0.61	0.44	-0.03	0.62	0.45	22	21.8
	<b>189 / 837</b>	<b>32.4</b>	<b>0.74</b>	<b>0.52</b>	<b>0.01</b>	<b>0.75</b>	<b>0.53</b>		
	251 / 849	32.4	0.58	0.41	0.03	0.59	0.42		
1900 GSM	512 / 1850	30.4	0.29	0.20	0.09	0.30	0.20	21.9	22.1
	660/1880	30.5	0.28	0.18	0.04	0.29	0.18		
	<b>810/1910</b>	<b>30.3</b>	<b>0.31</b>	<b>0.21</b>	<b>0.04</b>	<b>0.32</b>	<b>0.21</b>		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	Left Head (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g			
800 GSM	128 / 824	32.3	0.35	0.26	0.03	0.36	0.26	22	21.8
	<b>189 / 837</b>	<b>32.4</b>	<b>0.45</b>	<b>0.32</b>	<b>0.03</b>	<b>0.46</b>	<b>0.33</b>		
	251 / 849	32.4	0.31	0.22	0.04	0.31	0.23		
1900 GSM	512 / 1850	30.4	0.20	0.12	-0.01	0.20	0.12	21.9	22.1
	660/1880	30.5	0.24	0.14	-0.02	0.24	0.14		
	<b>810/1910</b>	<b>30.3</b>	<b>0.24</b>	<b>0.14</b>	<b>-0.07</b>	<b>0.25</b>	<b>0.14</b>		

**Table 1: SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured closed against the left head in GSM mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 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	32.3	0.66	0.48	-0.06	0.68	0.49	22	21.8
	<b>189 / 837</b>	<b>32.4</b>	<b>0.70</b>	<b>0.51</b>	<b>-0.03</b>	<b>0.72</b>	<b>0.52</b>		
	251 / 849	32.4	0.59	0.42	-0.01	0.60	0.43		
1900 GSM	512 / 1850	30.4	0.30	0.18	-0.11	0.30	0.19	21.9	22.1
	660/1880	30.5	0.30	0.18	-0.07	0.30	0.19		
	<b>810/1910</b>	<b>30.3</b>	<b>0.33</b>	<b>0.21</b>	<b>-0.11</b>	<b>0.34</b>	<b>0.21</b>		
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	32.3	0.44	0.33	0.01	0.45	0.33	22	21.8
	<b>189 / 837</b>	<b>32.4</b>	<b>0.49</b>	<b>0.35</b>	<b>0.02</b>	<b>0.50</b>	<b>0.36</b>		
	251 / 849	32.4	0.34	0.24	0.01	0.34	0.25		
1900 GSM	512 / 1850	30.4	0.25	0.14	0.07	0.25	0.15	21.9	22.1
	660/1880	30.5	0.25	0.14	0.01	0.25	0.15		
	<b>810/1910</b>	<b>30.3</b>	<b>0.29</b>	<b>0.17</b>	<b>-0.03</b>	<b>0.30</b>	<b>0.17</b>		

**Table 2: SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured closed against the right head in GSM mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

f(MHz)	Channel/frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	Left Head (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g			
800 GSM	128 / 824	32.3	0.80	0.58	0.08	0.81	0.60	21.1	21.5
	189 / 837	32.4	0.84	0.62	0.11	0.86	0.63		
	<b>251 / 849</b>	<b>32.4</b>	<b>0.93</b>	<b>0.68</b>	<b>0.05</b>	<b>0.95</b>	<b>0.70</b>		
1900 GSM	512 / 1850	30.4	0.26	0.16	-0.10	0.26	0.16	22.4	22.1
	660/1880	30.5	0.29	0.17	-0.07	0.29	0.17		
	<b>810/1910</b>	<b>30.3</b>	<b>0.34</b>	<b>0.20</b>	<b>-0.04</b>	<b>0.34</b>	<b>0.20</b>		

f(MHz)	Channel/frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	Left Head (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g			
800 GSM	128 / 824	32.3	0.43	0.31	0.04	0.43	0.32	21.1	21.5
	189 / 837	32.4	0.42	0.31	0.05	0.43	0.31		
	251 / 849	32.4	0.41	0.30	0.05	0.42	0.30		
1900 GSM	512 / 1850	30.4	0.14	0.09	0.00	0.14	0.09	22.4	22.1
	660/1880	30.5	0.15	0.09	-0.05	0.15	0.09		
	<b>810/1910</b>	<b>30.3</b>	<b>0.18</b>	<b>0.11</b>	<b>0.02</b>	<b>0.18</b>	<b>0.11</b>		

**Table 3: SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured open against the left head in GSM mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

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	32.3	0.83	0.62	0.00	0.85	0.63	21.1	21.5
	189 / 837	32.4	0.80	0.59	-0.03	0.82	0.60		
	<b>251 / 849</b>	<b>32.4</b>	<b>0.95</b>	<b>0.70</b>	<b>0.00</b>	<b>0.97</b>	<b>0.71</b>		
1900 GSM	512 / 1850	30.4	0.20	0.13	0.07	0.20	0.13	22.4	22.1
	660/1880	30.5	0.23	0.15	-0.02	0.23	0.15		
	<b>810/1910</b>	<b>30.3</b>	<b>0.27</b>	<b>0.17</b>	<b>-0.04</b>	<b>0.27</b>	<b>0.17</b>		
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	<b>128 / 824</b>	<b>32.3</b>	<b>0.50</b>	<b>0.37</b>	<b>-0.01</b>	<b>0.51</b>	<b>0.38</b>	21.1	21.5
	189 / 837	32.4	0.43	0.31	-0.01	0.44	0.32		
	251 / 849	32.4	0.41	0.30	-0.01	0.41	0.30		
1900 GSM	512 / 1850	30.4	0.18	0.11	0.08	0.18	0.11	22.4	22.1
	660/1880	30.5	0.19	0.11	0.07	0.19	0.11		
	<b>810/1910</b>	<b>30.3</b>	<b>0.23</b>	<b>0.13</b>	<b>0.03</b>	<b>0.23</b>	<b>0.13</b>		

**Table 4: SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured open against the right head in GSM mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Left Head Position (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.661	0.458	-0.05	0.66	0.46	21.8	21.5
	1413/1732.6	24	0.685	0.468	-0.10	0.69	0.47		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.806</b>	<b>0.515</b>	<b>-0.18</b>	<b>0.81</b>	<b>0.52</b>		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Left Head Position (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.345	0.22	0.04	0.35	0.22	21.8	21.5
	1413/1732.6	24	0.39	0.247	0.06	0.39	0.25		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.415</b>	<b>0.262</b>	<b>0.06</b>	<b>0.42</b>	<b>0.26</b>		

**Table 5: UMTS SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured closed against the left head in UMTS mode.**

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Right Head Position (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.74	0.46	-0.10	0.74	0.46	21.8	21.5
	1413/1732.6	24	0.68	0.43	0.10	0.68	0.43		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.78</b>	<b>0.48</b>	<b>0.03</b>	<b>0.78</b>	<b>0.48</b>		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Right Head Position (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.35	0.23	0.04	0.35	0.23	21.8	21.5
	1413/1732.6	24	0.41	0.26	0.08	0.41	0.26		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.52</b>	<b>0.32</b>	<b>0.05</b>	<b>0.52</b>	<b>0.32</b>		

**Table 6: UMTS SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured closed against the right head in UMTS mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Left Head Position (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.639	0.406	0.09	0.64	0.41	21.4	21.2
	1413/1732.6	24	0.638	0.398	0.04	0.64	0.40		
	1513/1752.6	24	0.607	0.373	0.05	0.61	0.37		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Left Head Position (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.331	0.214	0.03	0.33	0.21	21.4	21.2
	1413/1732.6	24	0.345	0.221	0.03	0.35	0.22		
	1513/1752.6	24	0.392	0.249	-0.06	0.39	0.25		

**Table 7: UMTS SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured open against the left head in UMTS mode.**

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Right Head Position (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.54	0.37	-0.05	0.54	0.37	21.4	21.2
	1413/1732.6	24	0.53	0.36	0.02	0.53	0.36		
	1513/1752.6	24	0.55	0.37	0.05	0.55	0.37		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Right Head Position (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			UMTS Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
Band IV	1312/1712.4	23.9	0.43	0.26	0.03	0.43	0.26	21.4	21.2
	1413/1732.6	24	0.49	0.30	-0.15	0.49	0.30		
	1513/1752.6	24	0.50	0.31	0.03	0.50	0.31		

**Table 8: UMTS SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured open against the right head in UMTS mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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F(MHz)	Channel/ frequency	Conducted Output Power (dBm)	WLAN Left Head Position (Cheek / Touch Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
Open	1/2412	17.3	0.10	0.05	-0.11	21.7	21.9
	6/2437	17.8	<b>0.11</b>	<b>0.05</b>	<b>0.00</b>		
	11/2462	16.9	0.06	0.03	0.15		
	13/2472	16.9	0.05	0.02	-0.08		
Closed	1/2412	17.3	0.08	0.03	-0.05	21.8	21.8
	6/2437	17.8	<b>0.10</b>	<b>0.04</b>	<b>0.03</b>		
	11/2462	16.9	0.06	0.02	0.08		
	13/2472	16.9	0.03	0.01	-0.10		
F(MHz)	Channel/ frequency	Conducted Output Power (dBm)	WLAN Left Head Position (15° Tilt Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
Open	1/2412	17.3	0.05	0.03	0.05	21.7	21.9
	6/2437	17.8	<b>0.06</b>	<b>0.03</b>	<b>0.05</b>		
	11/2462	16.9	0.03	0.02	0.09		
	13/2472	16.9	0.02	0.01	0.11		
Closed	1/2412	17.3	0.07	0.03	-0.02	21.8	21.8
	6/2437	17.8	<b>0.10</b>	<b>0.05</b>	<b>0.03</b>		
	11/2462	16.9	0.05	0.03	0.08		
	13/2472	16.9	0.03	0.01	0.00		

**Table 9: WLAN SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured against the left head in WLAN mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

F(MHz)	Channel/ frequency	Conducted Output Power (dBm)	WLAN Right Head Position (Cheek / Touch Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
Open	1/2412	17.3	0.07	0.03	-0.19	22	22
	6/2437	17.8	<b>0.07</b>	<b>0.04</b>	<b>-0.19</b>		
	11/2462	16.9	0.03	0.02	0.12		
	13/2472	16.9	0.02	0.01	-0.04		
Closed	1/2412	17.3	0.08	0.04	0.06	22	22
	6/2437	17.8	<b>0.09</b>	<b>0.04</b>	<b>-0.08</b>		
	11/2462	16.9	0.04	0.02	-0.11		
	13/2472	16.9	0.04	0.02	0.08		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	WLAN Right Head Position (15° Tilt Position)				
			Measured (W/kg) 1g / 10g		Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)
Open	1/2412	17.3	0.06	0.03	0.03	22	22
	6/2437	17.8	<b>0.07</b>	<b>0.04</b>	<b>-0.20</b>		
	11/2462	16.9	0.03	0.02	-0.17		
	13/2472	16.9	0.02	0.01	-0.04		
Closed	1/2412	17.3	0.07	0.03	-0.02	22	22
	6/2437	17.8	<b>0.10</b>	<b>0.05</b>	<b>0.03</b>		
	11/2462	16.9	0.05	0.03	0.08		
	13/2472	16.9	0.03	0.01	0.00		

**Table 10: WLAN SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured against the right head in WLAN mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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**6.2 Body-Worn Test Results**

The SAR results shown in Tables 11 through 13 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.

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 cellular phone was tested with a headset (HBP-20) connected to the device for all body-worn SAR measurements.

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.



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

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)		
<b>Back of phone facing body</b>										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	1.13	0.81	0.03	1.16	0.83	21.4	21.7
		<b>189 / 837</b>	<b>32.4</b>	<b>1.20</b>	<b>0.87</b>	<b>0.01</b>	<b>1.23</b>	<b>0.89</b>		
		251 / 849	32.4	1.01	0.73	0.01	1.03	0.74		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.4	0.43	0.26	-0.09	0.44	0.27	22.1	21.7
		660/1880	30.5	0.49	0.30	-0.02	0.50	0.31		
		<b>810/1910</b>	<b>30.3</b>	<b>0.53</b>	<b>0.32</b>	<b>0.00</b>	<b>0.54</b>	<b>0.33</b>		
<b>Front of phone facing body</b>										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.68	0.51	-0.01	0.69	0.52	21.4	21.7
		<b>189 / 837</b>	<b>32.4</b>	<b>0.77</b>	<b>0.58</b>	<b>0.02</b>	<b>0.79</b>	<b>0.59</b>		
		251 / 849	32.4	0.64	0.48	-0.02	0.65	0.49		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.4	0.20	0.13	-0.05	0.21	0.13	21.1	21.5
		660/1880	30.5	0.24	0.15	0.00	0.24	0.15		
		<b>810/1910</b>	<b>30.3</b>	<b>0.26</b>	<b>0.16</b>	<b>0.00</b>	<b>0.27</b>	<b>0.17</b>		

**Table 11: SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured with GSM/GPRS Mode.**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	UMTS Body Worn 15mm SPACER						
			Measured (W/kg) 1g / 10g	Drift (dB)	Extrapolated (W/kg) 1g / 10g	Ambient Temp (°C)	Simulate Temp (°C)		
<b>Back of phone facing body</b>									
Band IV	1312/1712.4	23.9	0.56	0.36	0.04	0.56	0.36	21.4	21.7
	1413/1732.6	24	0.60	0.38	0.05	0.60	0.38		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.61</b>	<b>0.39</b>	<b>-0.08</b>	<b>0.61</b>	<b>0.39</b>		
<b>Front of phone facing body</b>									
Band IV	1312/1712.4	23.9	0.23	0.15	-0.01	0.23	0.15	21.4	21.7
	1413/1732.6	24	0.27	0.17	0.01	0.27	0.17		
	<b>1513/1752.6</b>	<b>24</b>	<b>0.33</b>	<b>0.21</b>	<b>-0.06</b>	<b>0.33</b>	<b>0.21</b>		

**Table 12: UMTS SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured against the body with UMTS/HSDPA Modes.**

f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	WLAN Body Worn 15mm SPACER				
			Measured (W/kg) 1g / 10g	Drift (dB)	Ambient Temp (°C)	Simulate Temp (°C)	
<b>Back of phone facing body</b>							
WLAN	1/2412	17.3	0.05	0.03	-0.20	21.4	21.7
	6/2437	17.8	<b>0.06</b>	<b>0.03</b>	<b>-0.05</b>		
	11/2462	16.9	0.04	0.02	-0.05		
	13/2472	16.9	0.02	0.01	0.13		
<b>Front of phone facing body</b>							
WLAN	1/2412	17.3	0.02	0.01	0.07	21.4	21.7
	6/2437	17.8	<b>0.02</b>	<b>0.01</b>	<b>-0.20</b>		
	11/2462	16.9	0.02	0.01	0.06		
	13/2472	16.9	0.01	0.00	0.01		

**Table 13: WLAN SAR measurement results for the portable cellular telephone FCC ID PY7A3152021 model CS8 at maximum output power with Standard Battery BST-38. Measured against the body with WLAN Mode.**



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**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.



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**Appendix 1**

**SAR distribution comparison for the system accuracy verification**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

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

**Validation\_835Head\_429\_1023\_10Mar09\_T01**

File Name: [Validation\\_835Head\\_429\\_1023\\_10Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583ConvF(6.48, 6.48, 6.48) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 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 = -0.010 dB

Peak SAR (extrapolated) = 1.38 W/kg

**SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.628 mW/g**

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

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 34.8 V/m; Power Drift = -0.010 dB

Maximum value of SAR (interpolated) = 1.38 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 = -0.010 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.930 mW/g; SAR(10 g) = 0.612 mW/g**

Maximum value of SAR (measured) = 0.995 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 34.8 V/m; Power Drift = -0.010 dB

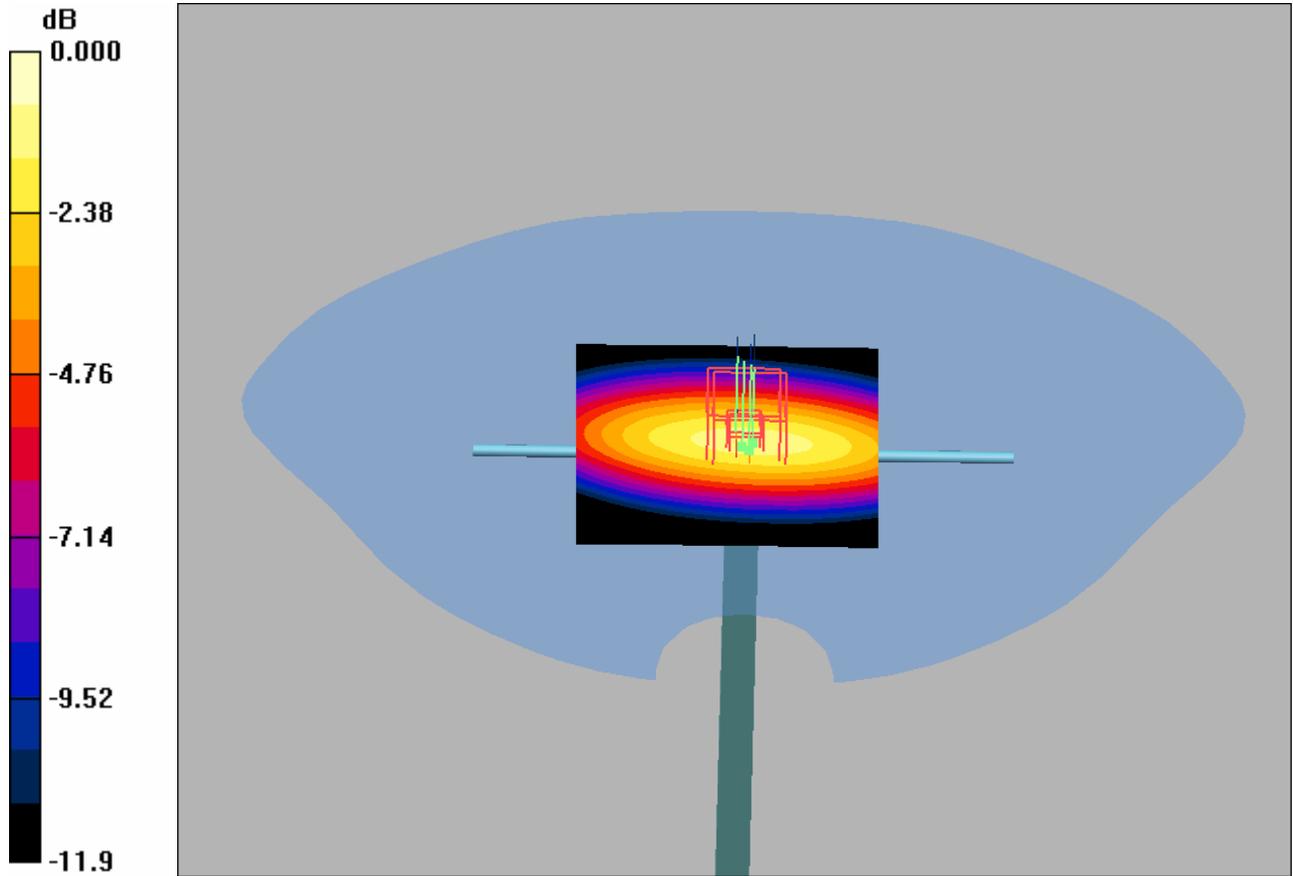
Maximum value of SAR (interpolated) = 1.35 mW/g

Procedure Notes: Pin: before 100.6 mW / after 100.5 mW

Humidity - 43.2 % Ambient Temp - 22 C Simulant Temp - 21.8 C



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0 dB = 1.35mW/g



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

**Validation\_835Head\_429\_1023\_11Mar09\_T01**

File Name: [Validation\\_835Head\\_429\\_1023\\_11Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583ConvF(6.48, 6.48, 6.48) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.902 \text{ mho/m}$ ;  $\epsilon_r = 42.3$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 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 = 35.0 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.41 W/kg

**SAR(1 g) = 0.969 mW/g; SAR(10 g) = 0.636 mW/g**

Maximum value of SAR (measured) = 1.05 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 35.0 V/m; Power Drift = 0.050 dB

Maximum value of SAR (interpolated) = 1.41 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 = 35.0 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.37 W/kg

**SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.617 mW/g**

Maximum value of SAR (measured) = 1.01 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 35.0 V/m; Power Drift = 0.050 dB

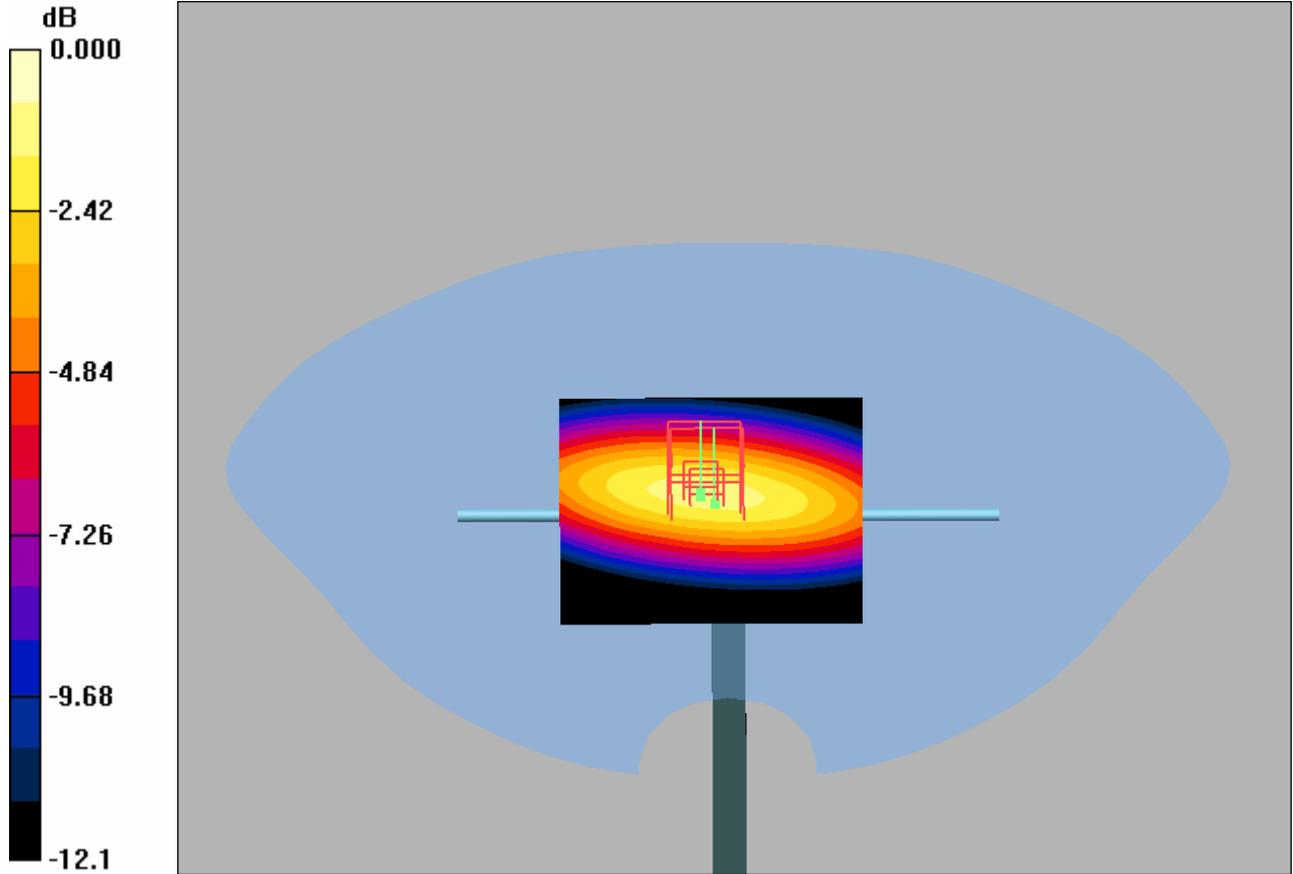
Maximum value of SAR (interpolated) = 1.37 mW/g

Procedure Notes: Pin: before 100.3 mW / after 99.5 mW

Humidity - 42.7 % Ambient Temp - 21.1 C Simulant Temp - 21.5 C



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0 dB = 1.37mW/g



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

**Validation\_835Body\_429\_1031\_04Mar09\_T01**

File Name: [Validation\\_835Body\\_429\\_1031\\_04Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1539ConvF(5.53, 5.53, 5.53) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.955 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 0.999 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 = 33.4 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 1.30 W/kg

**SAR(1 g) = 0.920 mW/g; SAR(10 g) = 0.613 mW/g**

Maximum value of SAR (measured) = 1.00 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 33.4 V/m; Power Drift = -0.153 dB

Maximum value of SAR (interpolated) = 1.30 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 = 33.4 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 1.27 W/kg

**SAR(1 g) = 0.893 mW/g; SAR(10 g) = 0.595 mW/g**

Maximum value of SAR (measured) = 0.963 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 33.4 V/m; Power Drift = -0.153 dB

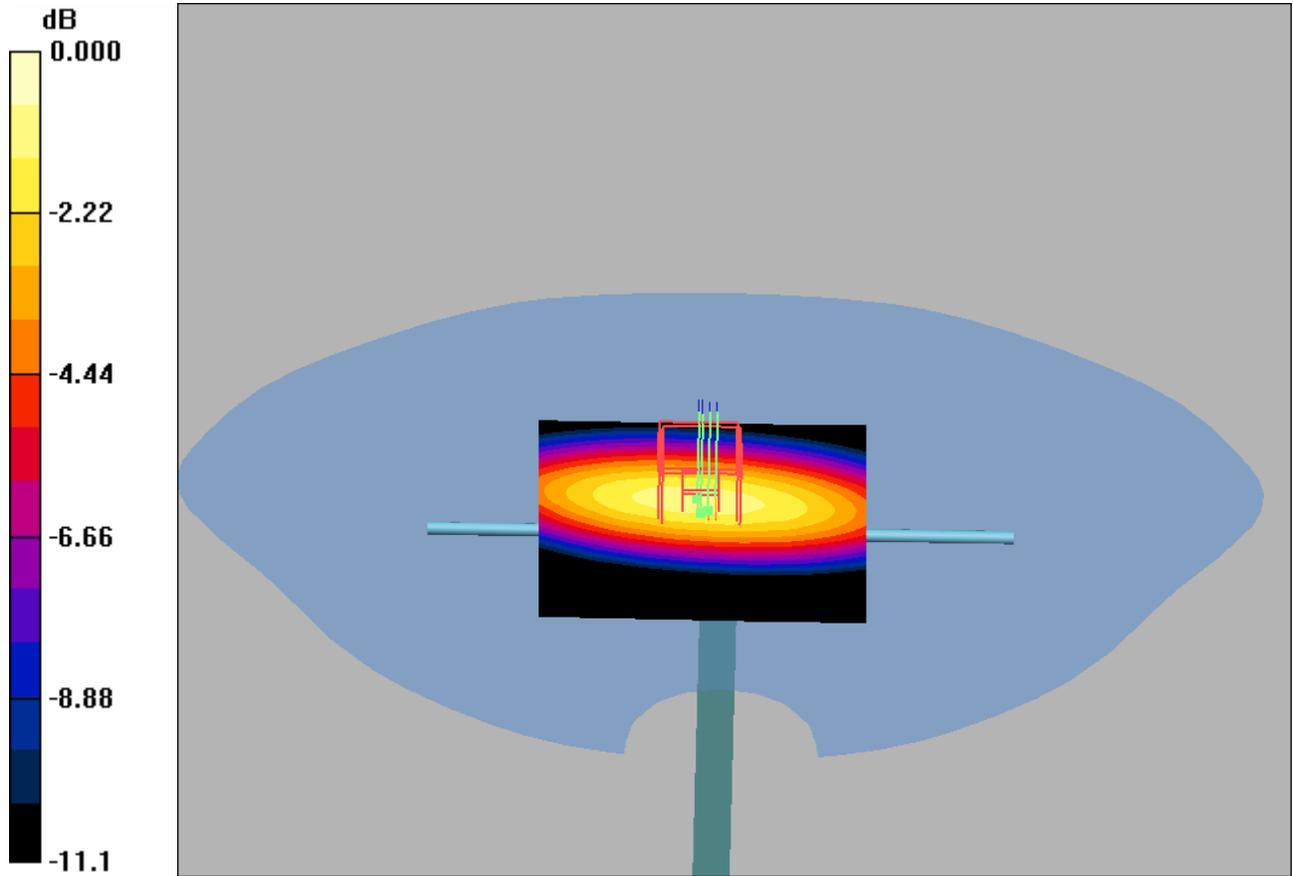
Maximum value of SAR (interpolated) = 1.27 mW/g

Procedure Notes: Pin: before 99.6 mW / after 97 mW

Humidity - 38.6 % Ambient Temp - 21.4 C Simulant Temp - 21.7 C



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0 dB = 1.27mW/g



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**1800 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1800Head\_217\_1335\_03Mar09\_T01**

File Name: [Validation\\_1800Head\\_217\\_1335\\_03Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4) Duty Cycle: 1:1 Frequency: 1800 MHz

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.35 \text{ mho/m}$ ;  $\epsilon_r = 38.6$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.44 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 = 0.021 dB

Peak SAR (extrapolated) = 6.13 W/kg

**SAR(1 g) = 3.58 mW/g; SAR(10 g) = 1.92 mW/g**

Maximum value of SAR (measured) = 4.03 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 57.6 V/m; Power Drift = 0.021 dB

Maximum value of SAR (interpolated) = 6.13 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 = 0.021 dB

Peak SAR (extrapolated) = 6.01 W/kg

**SAR(1 g) = 3.51 mW/g; SAR(10 g) = 1.88 mW/g**

Maximum value of SAR (measured) = 3.96 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 57.6 V/m; Power Drift = 0.021 dB

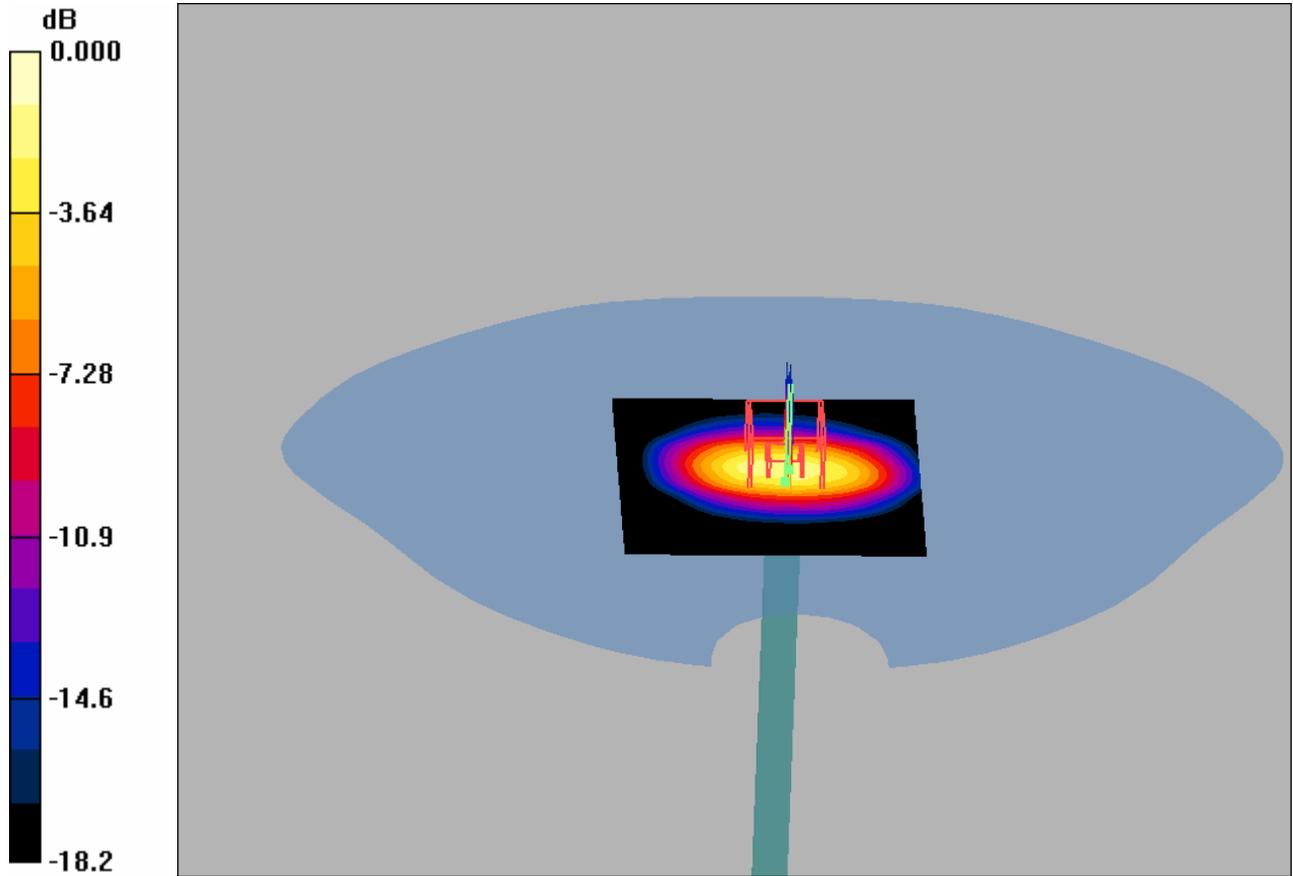
Maximum value of SAR (interpolated) = 6.01 mW/g

Procedure Notes: Pin: before 99.2 mW / after 101.2 mW

Humidity: 37.2 % Ambient Temp: 21.6 C Simulant Temp: 22 C



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0 dB = 6.01mW/g



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**1800 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1800Head\_217\_1335\_05Mar09\_T01**

File Name: [Validation\\_1800Head\\_217\\_1335\\_05Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4) Duty Cycle: 1:1 Frequency: 1800 MHz

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.44 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 = 56.2 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 6.10 W/kg

**SAR(1 g) = 3.56 mW/g; SAR(10 g) = 1.91 mW/g**

Maximum value of SAR (measured) = 4.00 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.2 V/m; Power Drift = 0.077 dB

Maximum value of SAR (interpolated) = 6.10 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 = 56.2 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 5.97 W/kg

**SAR(1 g) = 3.46 mW/g; SAR(10 g) = 1.86 mW/g**

Maximum value of SAR (measured) = 3.82 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.2 V/m; Power Drift = 0.077 dB

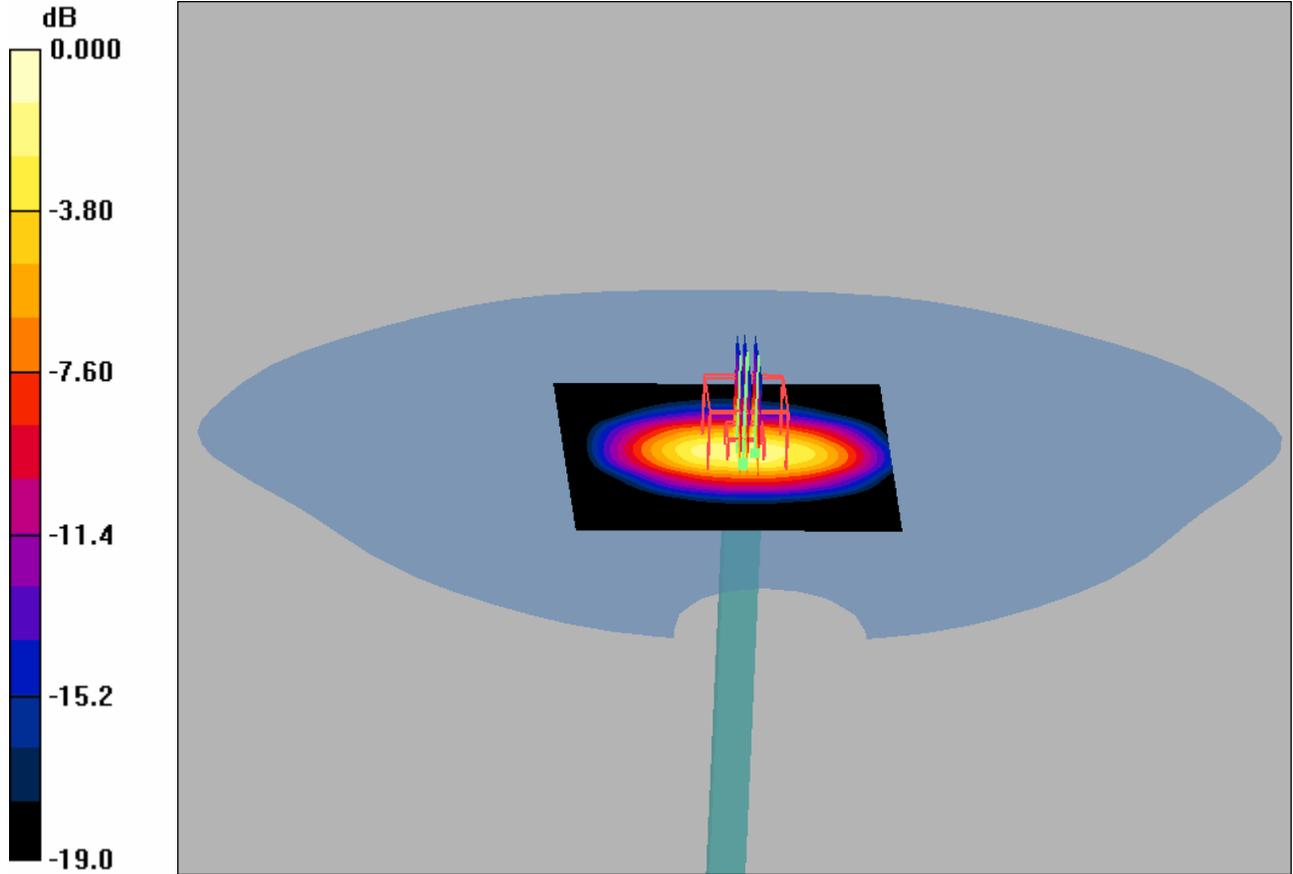
Maximum value of SAR (interpolated) = 5.97 mW/g

Procedure Notes: Pin: before 99.8 mW / after 100.2 mW

Humidity: 36.2 % Ambient Temp: 21.6 C Simulant Temp: 21.9 C



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0 dB = 5.97mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1800 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1800Head\_217\_1054\_10Mar09\_T01**

File Name: [Validation\\_1800Head\\_217\\_1054\\_10Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538 ConvF(5.46, 5.46, 5.46) Duty Cycle: 1:1 Frequency: 1800 MHz

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.41 \text{ mho/m}$ ;  $\epsilon_r = 39.2$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.50 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 = 56.1 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 6.20 W/kg

**SAR(1 g) = 3.55 mW/g; SAR(10 g) = 1.88 mW/g**

Maximum value of SAR (measured) = 4.02 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.1 V/m; Power Drift = 0.013 dB

Maximum value of SAR (interpolated) = 6.20 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 = 56.1 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 6.49 W/kg

**SAR(1 g) = 3.75 mW/g; SAR(10 g) = 2 mW/g**

Maximum value of SAR (measured) = 4.24 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.1 V/m; Power Drift = 0.013 dB

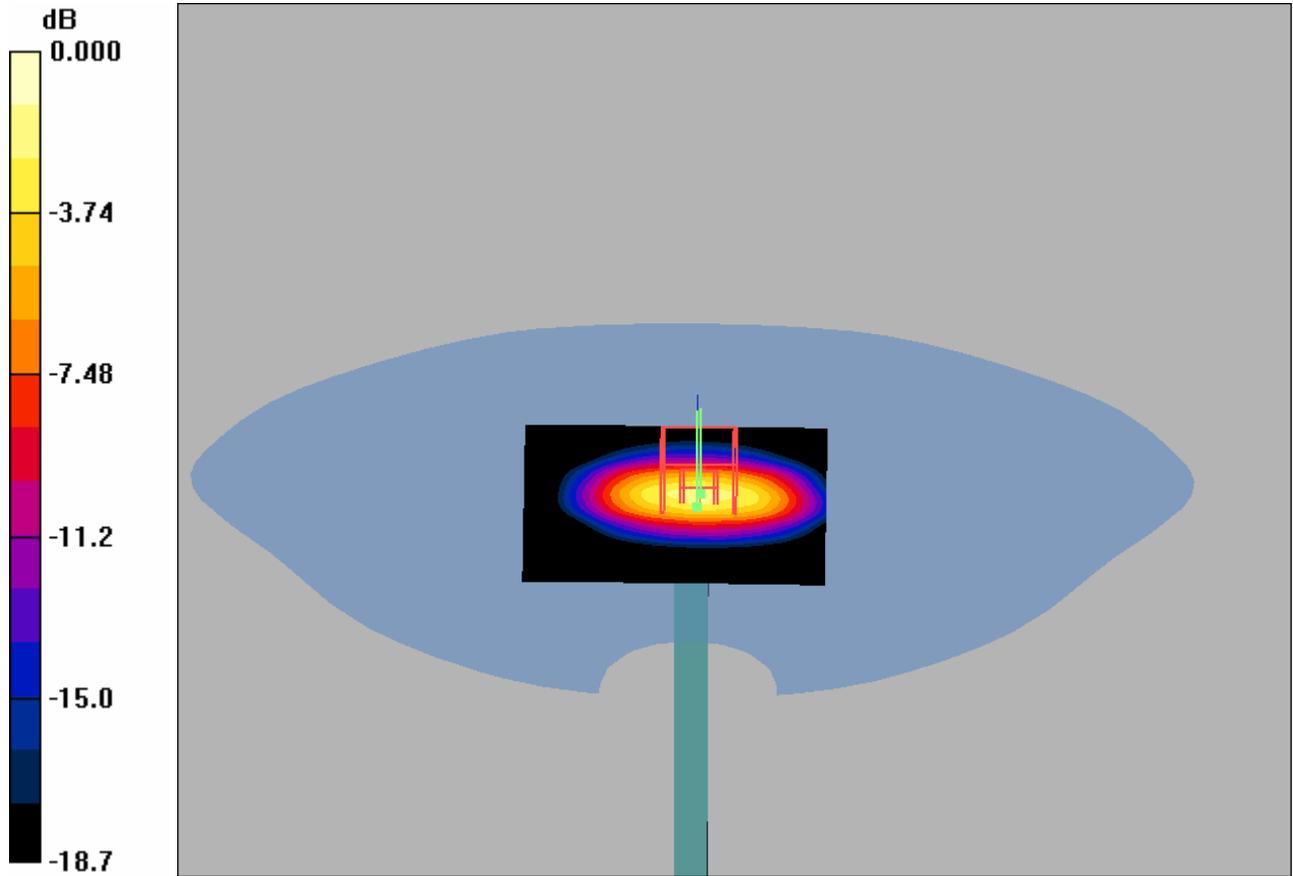
Maximum value of SAR (interpolated) = 6.49 mW/g

Procedure Notes: Pin: before 99.6 mW / after 100.5 mW

Humidity: 38.8 % Ambient Temp: 21.8 C Simulant Temp: 21.5 C



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0 dB = 6.49mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1800 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1800Head\_217\_1335\_12Mar09\_T01**

File Name: [Validation\\_1800Head\\_217\\_1335\\_12Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4) Duty Cycle: 1:1 Frequency: 1800 MHz

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.36 \text{ mho/m}$ ;  $\epsilon_r = 38.6$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.38 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 = 52.5 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 6.09 W/kg

**SAR(1 g) = 3.53 mW/g; SAR(10 g) = 1.88 mW/g**

Maximum value of SAR (measured) = 3.97 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.5 V/m; Power Drift = -0.024 dB

Maximum value of SAR (interpolated) = 6.09 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 = 52.5 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 5.92 W/kg

**SAR(1 g) = 3.42 mW/g; SAR(10 g) = 1.83 mW/g**

Maximum value of SAR (measured) = 3.85 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.5 V/m; Power Drift = -0.024 dB

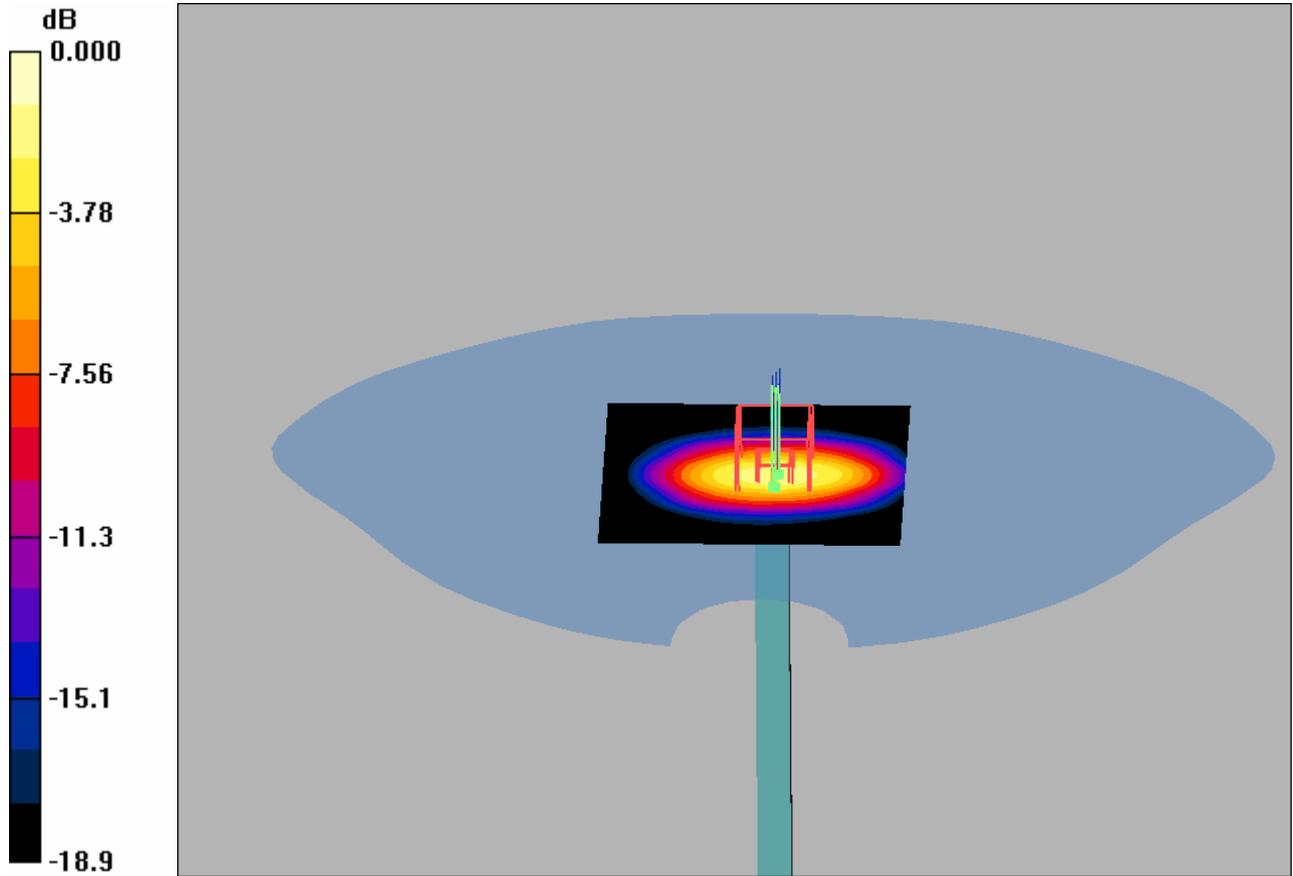
Maximum value of SAR (interpolated) = 5.92 mW/g

Procedure Notes: Pin: before 99.7 mW / after 100.5 mW

Humidity: 42.6 % Ambient Temp: 21.4 C Simulant Temp: 21.2 C



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 5.92mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1800 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1800Body\_217\_1335\_06Mar09\_T01**

File Name: [Validation\\_1800Body\\_217\\_1335\\_06Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4) Duty Cycle: 1:1 Frequency: 1800 MHz

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.36 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.49 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 = 57.1 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 6.13 W/kg

**SAR(1 g) = 3.58 mW/g; SAR(10 g) = 1.93 mW/g**

Maximum value of SAR (measured) = 3.99 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 57.1 V/m; Power Drift = 0.019 dB

Maximum value of SAR (interpolated) = 6.13 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 = 57.1 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 5.99 W/kg

**SAR(1 g) = 3.48 mW/g; SAR(10 g) = 1.87 mW/g**

Maximum value of SAR (measured) = 3.93 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 57.1 V/m; Power Drift = 0.019 dB

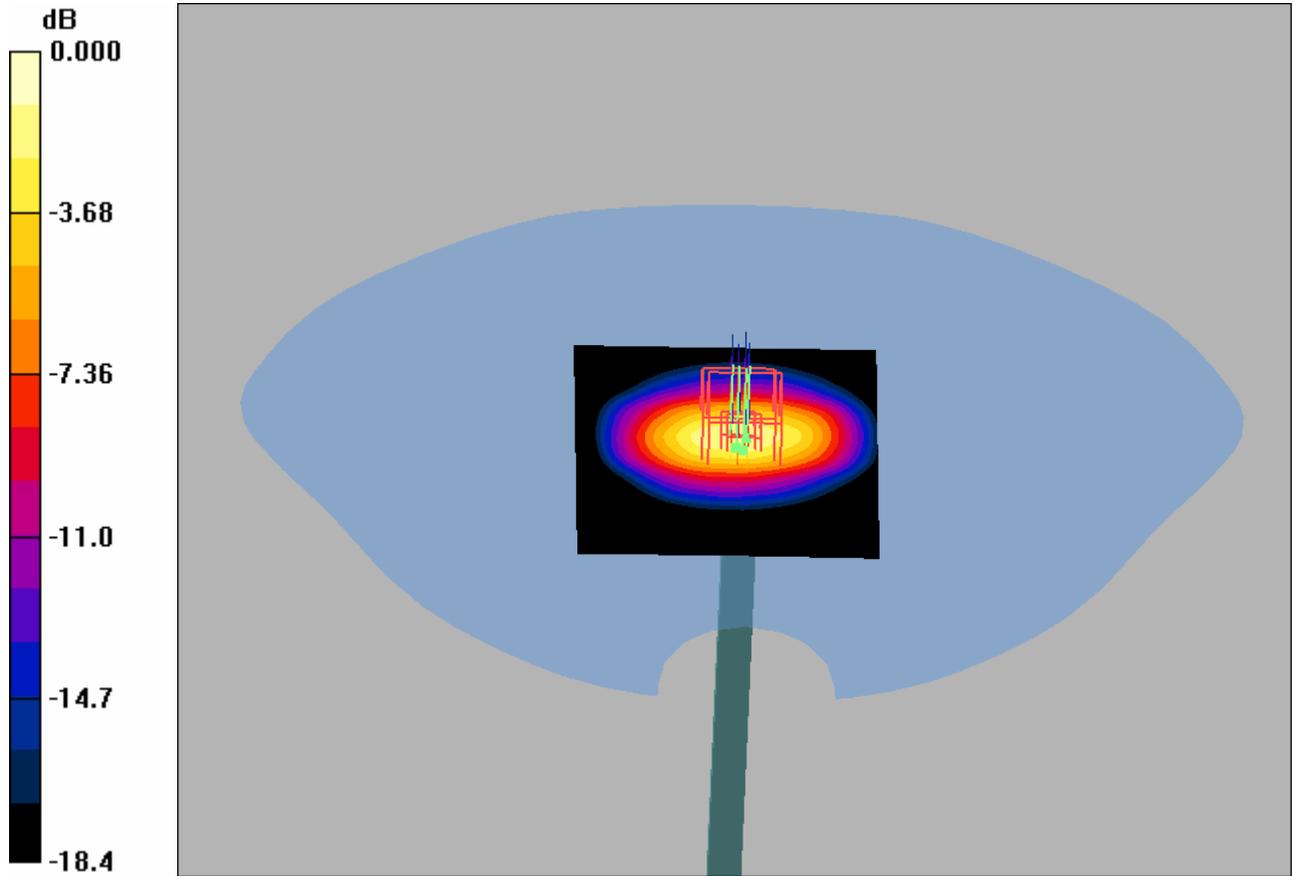
Maximum value of SAR (interpolated) = 5.99 mW/g

Procedure Notes: Pin: before 100.2 mW / after 99.4 mW

Humidity: 37.3 % Ambient Temp: 21.1 C Simulant Temp: 21.5 C



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 5.99mW/g



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

**Validation\_1900Head\_537\_1335\_04Mar09\_T01**

File Name: [Validation\\_1900Head\\_537\\_1335\\_04Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1583ConvF(5.12, 5.12, 5.12) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.46 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 5.48 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 = 59.9 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 7.62 W/kg

**SAR(1 g) = 4.26 mW/g; SAR(10 g) = 2.22 mW/g**

Maximum value of SAR (measured) = 4.79 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 59.9 V/m; Power Drift = 0.025 dB

Maximum value of SAR (interpolated) = 7.62 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 = 59.9 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 7.46 W/kg

**SAR(1 g) = 4.17 mW/g; SAR(10 g) = 2.17 mW/g**

Maximum value of SAR (measured) = 4.64 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 59.9 V/m; Power Drift = 0.025 dB

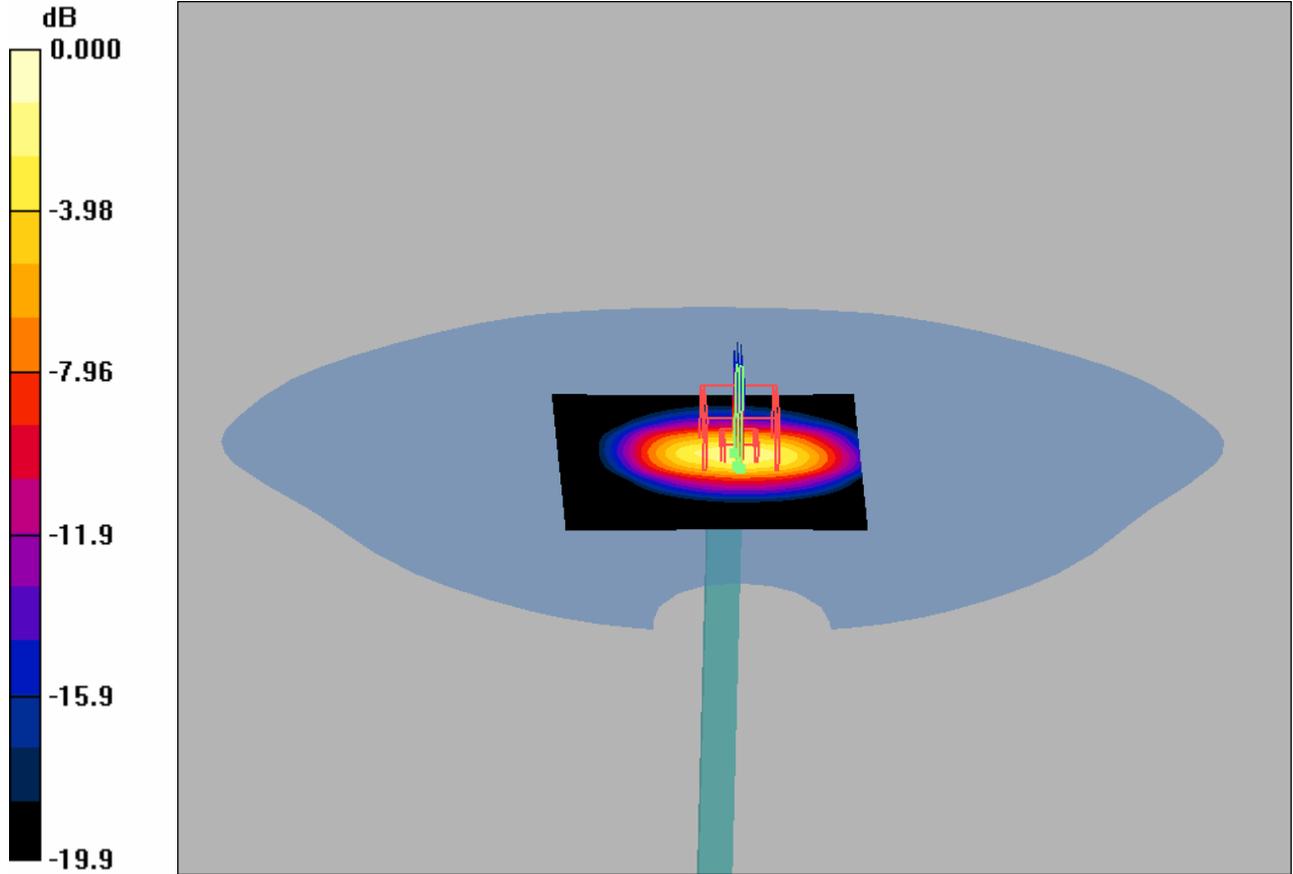
Maximum value of SAR (interpolated) = 7.46 mW/g

Procedure Notes: Pin: before 100.2 mW / after 103 mW

Humidity: 37.8 % Ambient Temp: 21.9 C Simulant Temp: 22.1 C



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0 dB = 7.46mW/g



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

**Validation\_1900Head\_537\_1054\_05Mar09\_T01**

File Name: [Validation\\_1900Head\\_537\\_1054\\_05Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538 ConvF(5.18, 5.18, 5.18) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.44 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.39 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 = 51.0 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 6.62 W/kg

**SAR(1 g) = 3.71 mW/g; SAR(10 g) = 1.93 mW/g**

Maximum value of SAR (measured) = 4.14 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.0 V/m; Power Drift = 0.034 dB

Maximum value of SAR (interpolated) = 6.62 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 = 51.0 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 7.01 W/kg

**SAR(1 g) = 3.92 mW/g; SAR(10 g) = 2.04 mW/g**

Maximum value of SAR (measured) = 4.40 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.0 V/m; Power Drift = 0.034 dB

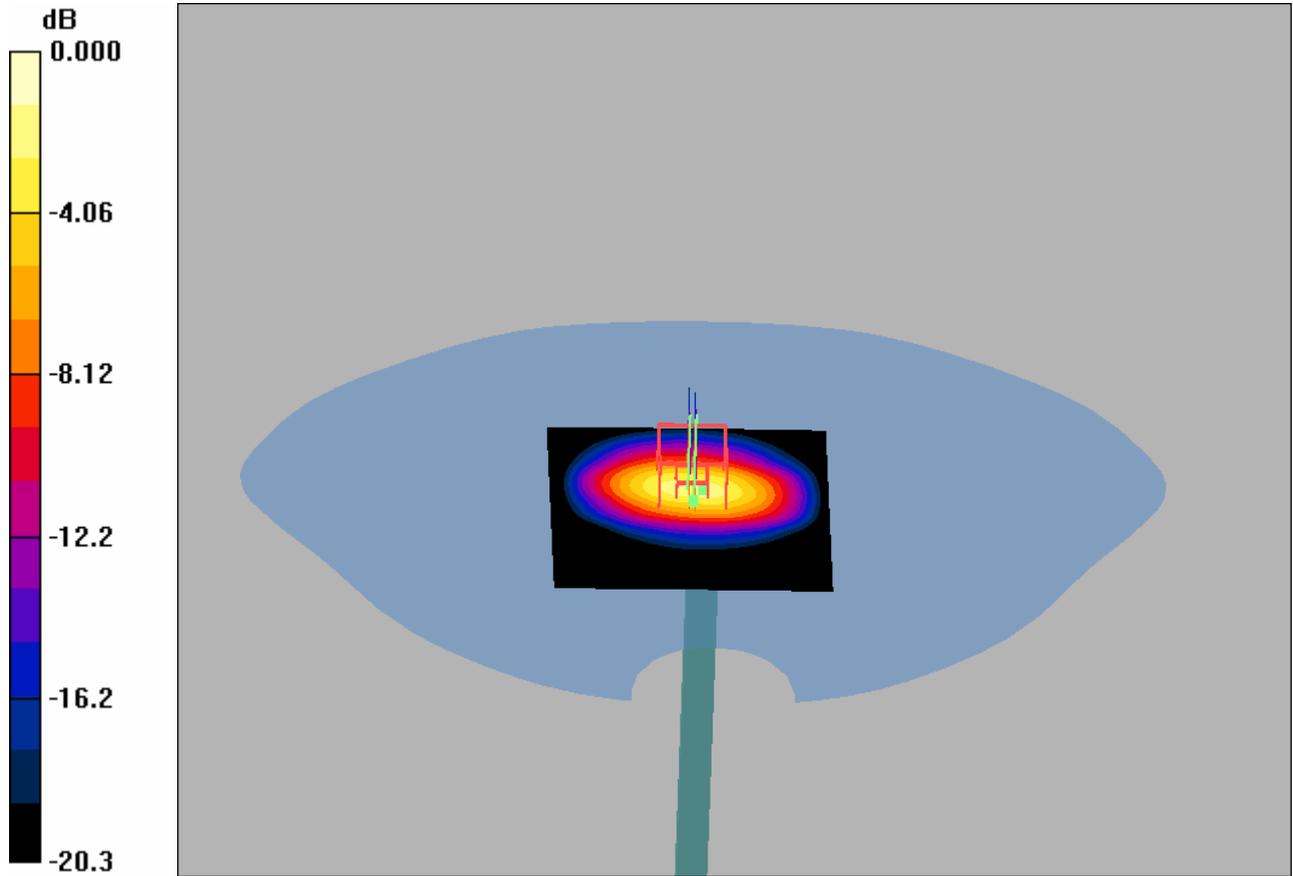
Maximum value of SAR (interpolated) = 7.01 mW/g

Procedure Notes: Pin: before 100.1 mW / after 99.8 mW

Humidity: 35.8 % Ambient Temp: 22.4 C Simulant Temp: 22.1 C



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0 dB = 7.01mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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**1900 MHz SAR Distribution of Validation Dipole Antenna System Performance Check.**

**Validation\_1900Head\_537\_1054\_06Mar09\_T01**

File Name: [Validation\\_1900Head\\_537\\_1054\\_06Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538ConvF(5.18, 5.18, 5.18) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.46 \text{ mho/m}$ ;  $\epsilon_r = 39.2$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.49 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 = 51.3 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 6.68 W/kg

**SAR(1 g) = 3.72 mW/g; SAR(10 g) = 1.94 mW/g**

Maximum value of SAR (measured) = 4.19 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.3 V/m; Power Drift = 0.054 dB

Maximum value of SAR (interpolated) = 6.68 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 = 51.3 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 7.05 W/kg

**SAR(1 g) = 3.93 mW/g; SAR(10 g) = 2.05 mW/g**

Maximum value of SAR (measured) = 4.44 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.3 V/m; Power Drift = 0.054 dB

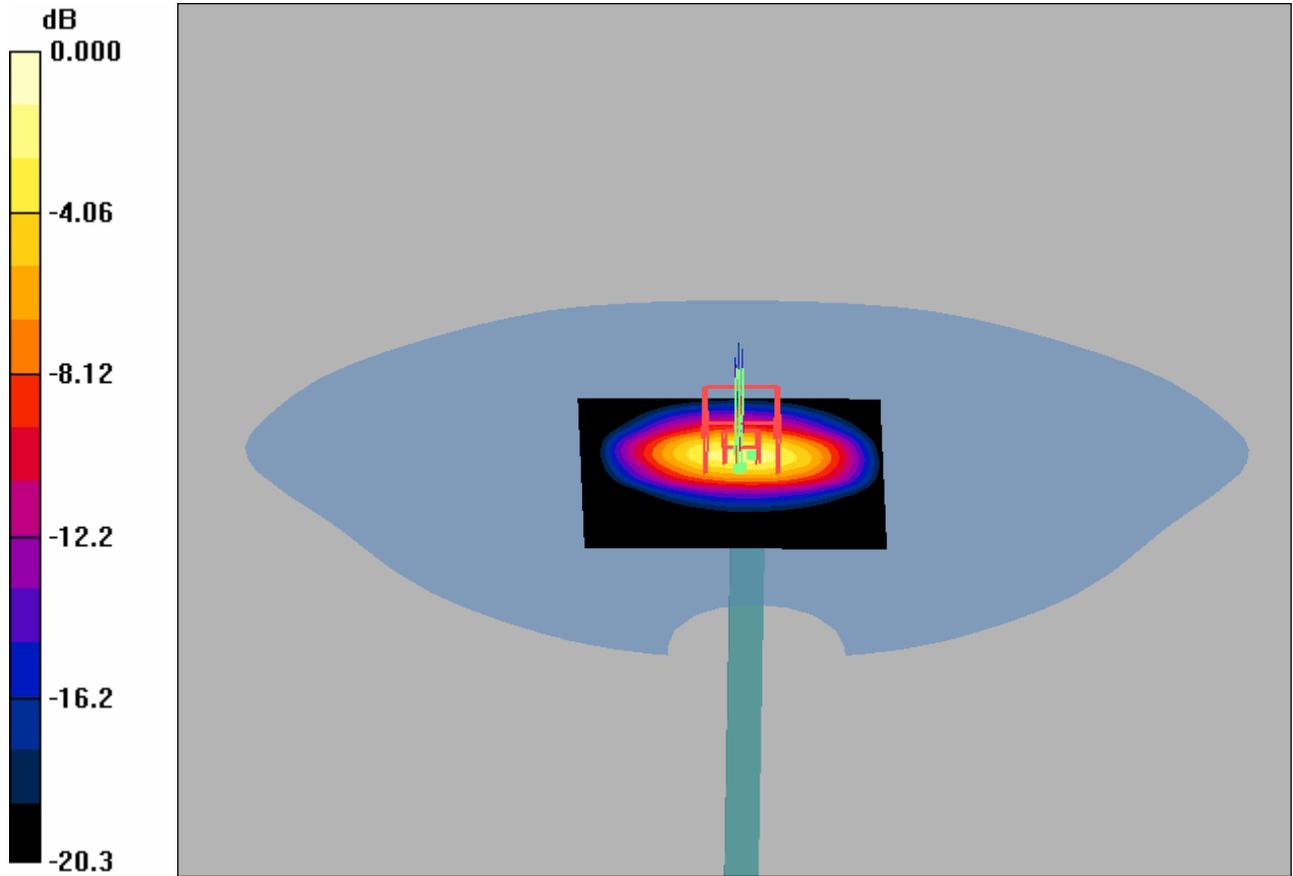
Maximum value of SAR (interpolated) = 7.05 mW/g

Procedure Notes: Pin: before 99.6 mW / after 99.7 mW

Humidity: 36.2 % Ambient Temp: 21.6 C Simulant Temp: 21.3 C



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0 dB = 7.05mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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**1900 MHz SAR Distribution of Validation Dipole Antenna**

**System Performance Check.**

**Validation\_1900Head\_537\_1054\_09Mar09\_T01**

File Name: [Validation\\_1900Head\\_537\\_1054\\_09Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538 ConvF(5.18, 5.18, 5.18) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 38.9$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.73 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 = 56.7 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 6.66 W/kg

**SAR(1 g) = 3.71 mW/g; SAR(10 g) = 1.93 mW/g**

Maximum value of SAR (measured) = 4.17 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.7 V/m; Power Drift = 0.000 dB

Maximum value of SAR (interpolated) = 6.66 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 = 56.7 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 7.04 W/kg

**SAR(1 g) = 3.94 mW/g; SAR(10 g) = 2.05 mW/g**

Maximum value of SAR (measured) = 4.39 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.7 V/m; Power Drift = 0.000 dB

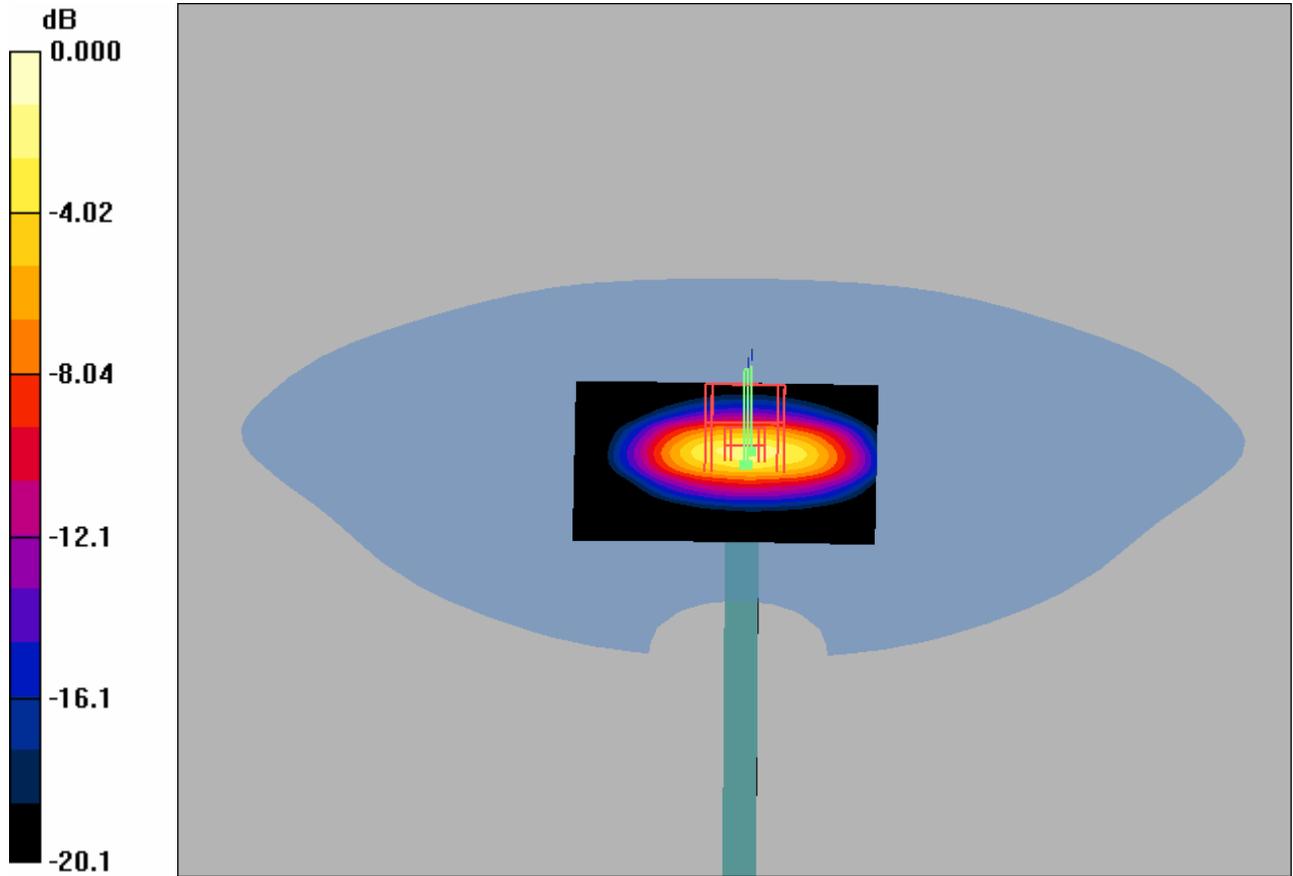
Maximum value of SAR (interpolated) = 7.04 mW/g

Procedure Notes: Pin: before 99.5 mW / after 100 mW

Humidity: 36.2 % Ambient Temp: 21.6 C Simulant Temp: 21.3 C



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0 dB = 7.04mW/g



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

**Validation\_1900Head\_537\_1054\_11Mar09\_T01**

File Name: [Validation\\_1900Head\\_537\\_1054\\_11Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538 ConvF(5.18, 5.18, 5.18) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.44 \text{ mho/m}$ ;  $\epsilon_r = 40$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 4.51 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 = 52.9 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 6.40 W/kg

**SAR(1 g) = 3.61 mW/g; SAR(10 g) = 1.89 mW/g**

Maximum value of SAR (measured) = 4.07 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.9 V/m; Power Drift = 0.005 dB

Maximum value of SAR (interpolated) = 6.40 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 = 52.9 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 6.79 W/kg

**SAR(1 g) = 3.83 mW/g; SAR(10 g) = 2.01 mW/g**

Maximum value of SAR (measured) = 4.28 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.9 V/m; Power Drift = 0.005 dB

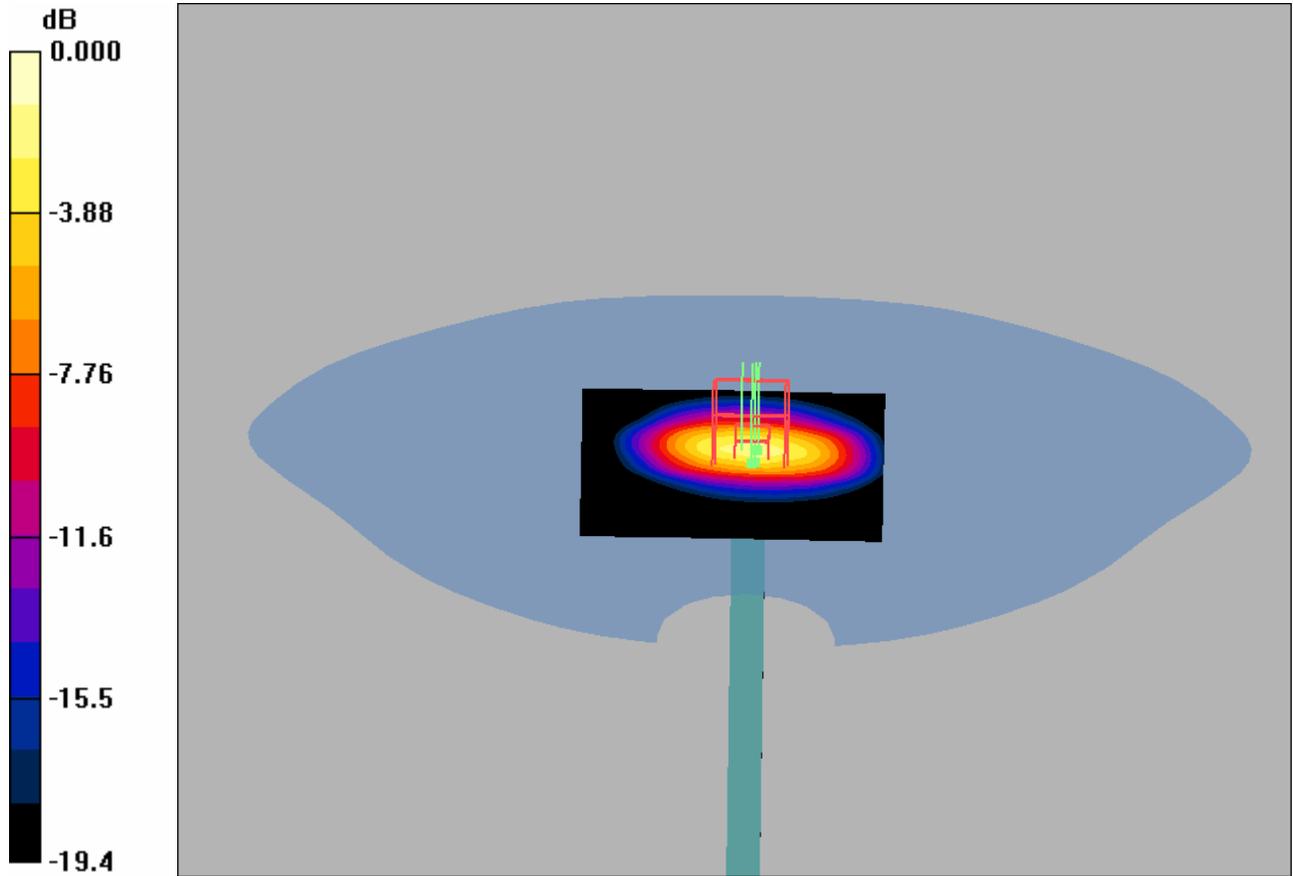
Maximum value of SAR (interpolated) = 6.79 mW/g

Procedure Notes: Pin: before 99.5 mW / after 101 mW

Humidity: 40.1 % Ambient Temp: 21.7 C Simulant Temp: 21.5 C



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0 dB = 6.79mW/g



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

**Validation\_1900Body\_537\_1020\_28Feb09\_T01**

File Name: [Validation\\_1900Body\\_537\\_1020\\_28Feb09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(4.64, 4.64, 4.64) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 5.06 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 = 51.7 V/m; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 7.27 W/kg

**SAR(1 g) = 3.99 mW/g; SAR(10 g) = 2.09 mW/g**

Maximum value of SAR (measured) = 4.42 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 = 51.7 V/m; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 7.52 W/kg

**SAR(1 g) = 4.17 mW/g; SAR(10 g) = 2.19 mW/g**

Maximum value of SAR (measured) = 4.63 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.7 V/m; Power Drift = 0.026 dB

Maximum value of SAR (interpolated) = 7.27 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.7 V/m; Power Drift = 0.026 dB

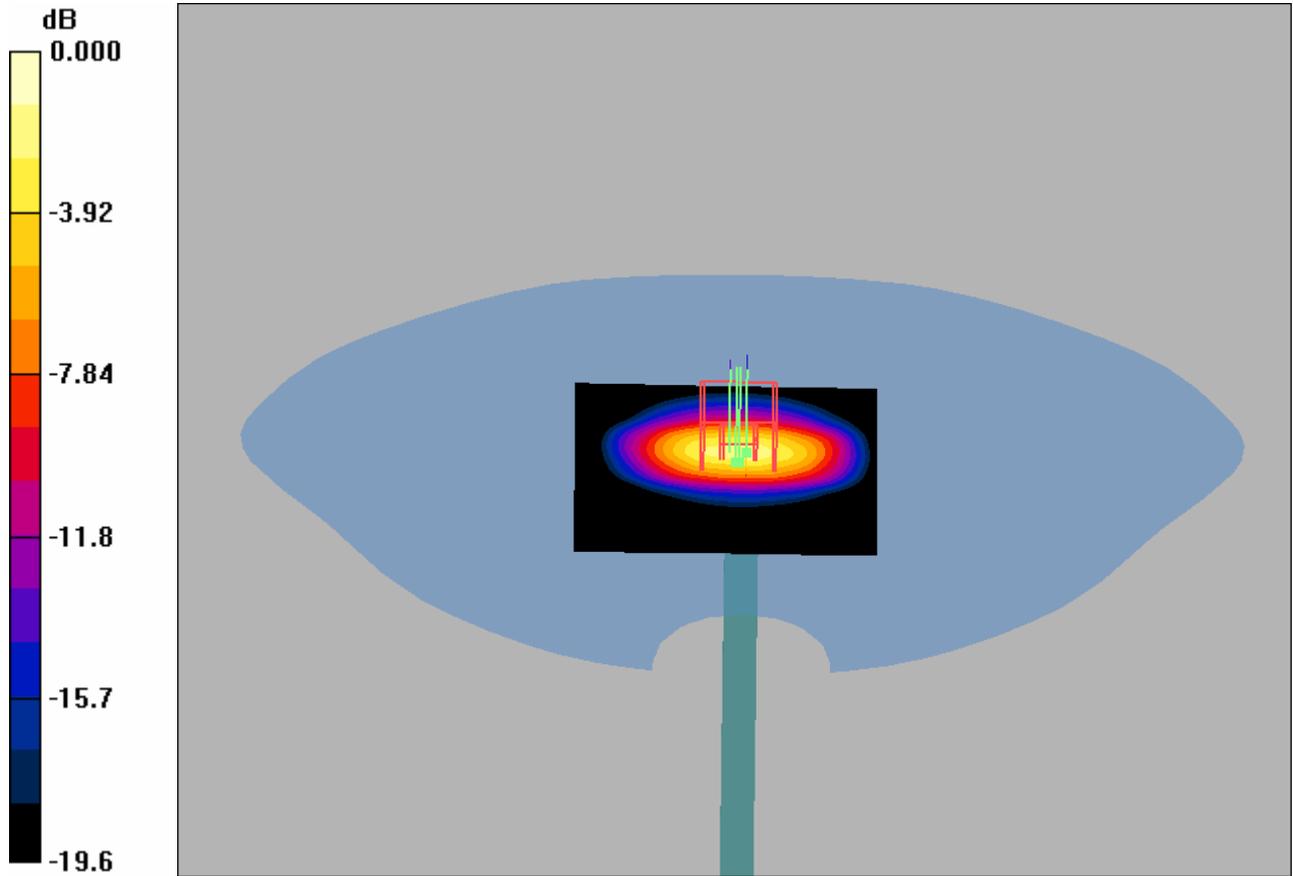
Maximum value of SAR (interpolated) = 7.52 mW/g

Procedure Notes: Pin: before 99.6 mW / after 100.1 mW

Humidity - 42.1 % Ambient Temp - 22.1 C Simulant Temp - 21.7 C



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0 dB = 7.52mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 MHz SAR Distribution of Validation Dipole Antenna**

**System Performance Check.**

**Validation\_1900Body\_537\_1020\_02Mar09\_T01**

File Name: [Validation\\_1900Body\\_537\\_1020\\_02Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(4.64, 4.64, 4.64) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.54 \text{ mho/m}$ ;  $\epsilon_r = 51.6$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 5.26 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 = 55.7 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 7.67 W/kg

**SAR(1 g) = 4.19 mW/g; SAR(10 g) = 2.18 mW/g**

Maximum value of SAR (measured) = 4.74 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.7 V/m; Power Drift = 0.006 dB

Maximum value of SAR (interpolated) = 7.67 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 = 55.7 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 7.85 W/kg

**SAR(1 g) = 4.35 mW/g; SAR(10 g) = 2.27 mW/g**

Maximum value of SAR (measured) = 4.90 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.7 V/m; Power Drift = 0.006 dB

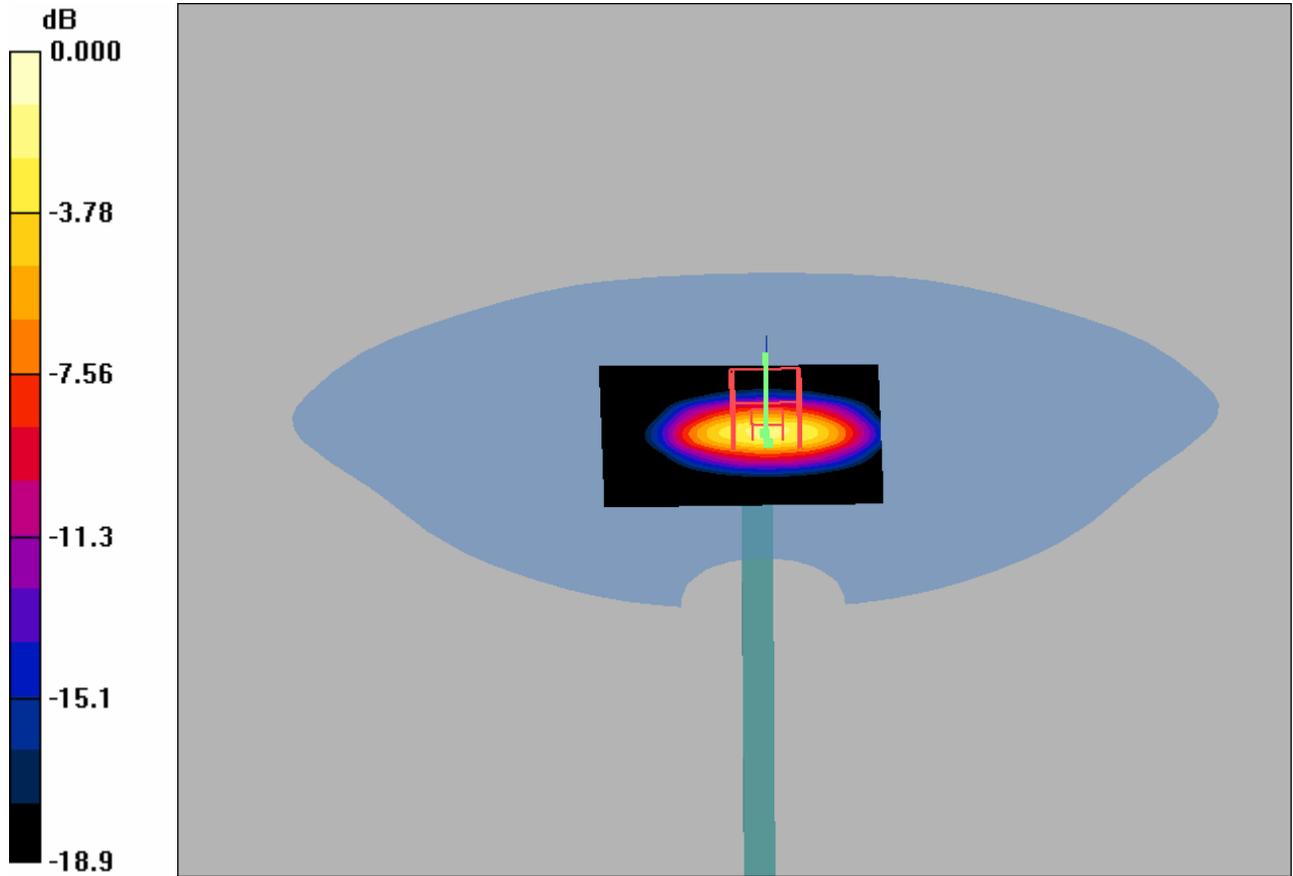
Maximum value of SAR (interpolated) = 7.85 mW/g

Procedure Notes: Pin: before 101.4 mW / after 100.4 mW

Humidity - 39.7 % Ambient Temp - 21.4 C Simulant Temp - 21.7 C



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0 dB = 7.85mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

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

**Validation 2450Head 702 1251\_12Mar09\_T01**

File Name: [Validation 2450Head 702 1251\\_12Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538 ConvF(4.68, 4.68, 4.68) Duty Cycle: 1:1 Frequency: 2450 MHz

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.88 \text{ mho/m}$ ;  $\epsilon_r = 39$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 7.19 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 = 58.5 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 5.45 mW/g; SAR(10 g) = 2.48 mW/g**

Maximum value of SAR (measured) = 6.09 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.5 V/m; Power Drift = 0.065 dB

Maximum value of SAR (interpolated) = 12.2 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 = 58.5 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 12.7 W/kg

**SAR(1 g) = 5.75 mW/g; SAR(10 g) = 2.63 mW/g**

Maximum value of SAR (measured) = 6.35 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.5 V/m; Power Drift = 0.065 dB

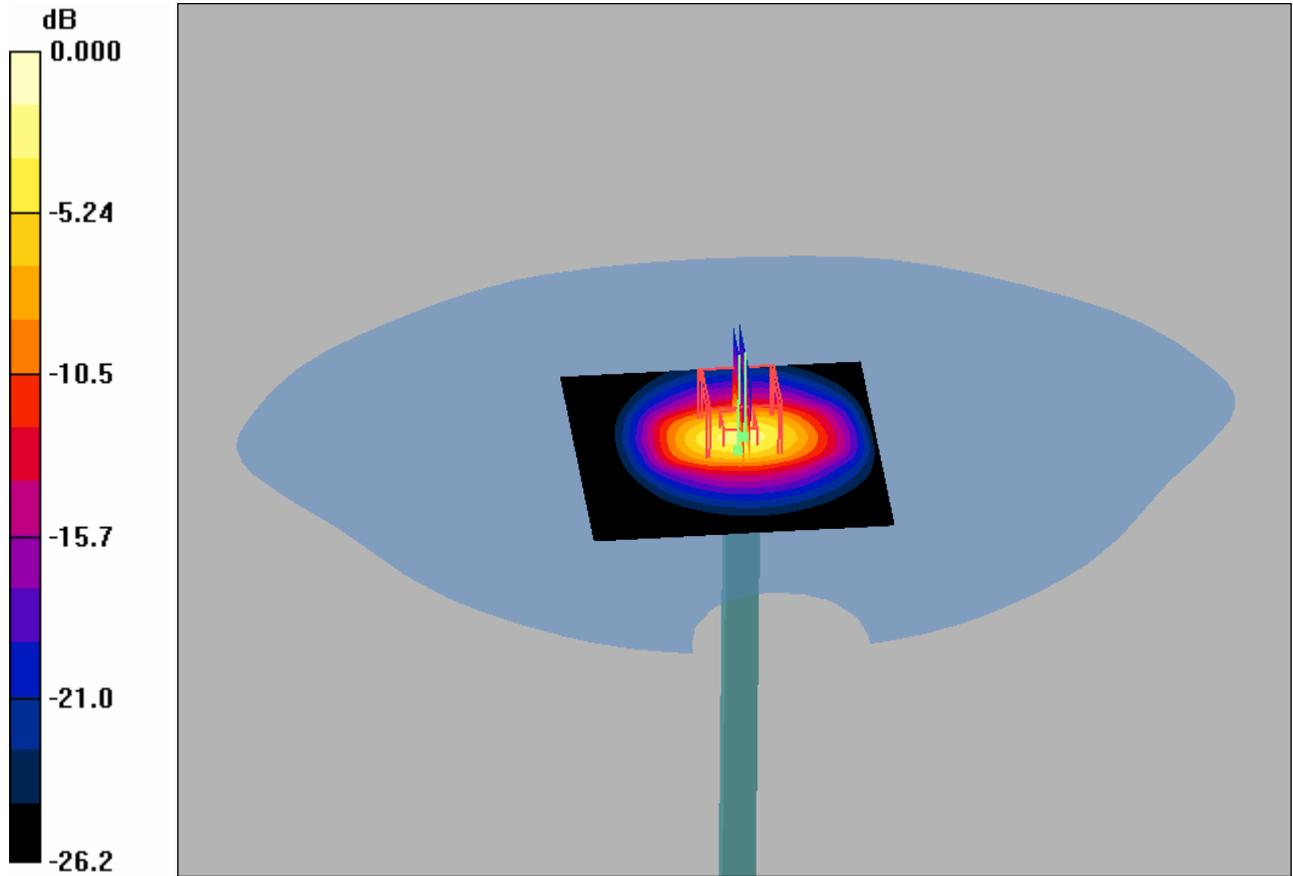
Maximum value of SAR (interpolated) = 12.7 mW/g

Procedure Notes: Pin: before 99.6 mW / after 101.1 mW

Humidity: 43.3 % Ambient Temp: 21.8 C Simulant Temp: 22 C



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0 dB = 12.7mW/g



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

**Validation 2450Head 702 1251 16Mar09 T01**

File Name: [Validation 2450Head 702 1251 16Mar09 T01.da4](#)

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

Probe: ET3DV6 - SN1538ConvF(4.68, 4.68, 4.68) Duty Cycle: 1:1 Frequency: 2450 MHz

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.93 \text{ mho/m}$ ;  $\epsilon_r = 39.2$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 6.91 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 = 56.1 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 11.9 W/kg

**SAR(1 g) = 5.31 mW/g; SAR(10 g) = 2.41 mW/g**

Maximum value of SAR (measured) = 5.97 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.1 V/m; Power Drift = 0.047 dB

Maximum value of SAR (interpolated) = 11.9 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 = 56.1 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 5.55 mW/g; SAR(10 g) = 2.54 mW/g**

Maximum value of SAR (measured) = 6.15 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.1 V/m; Power Drift = 0.047 dB

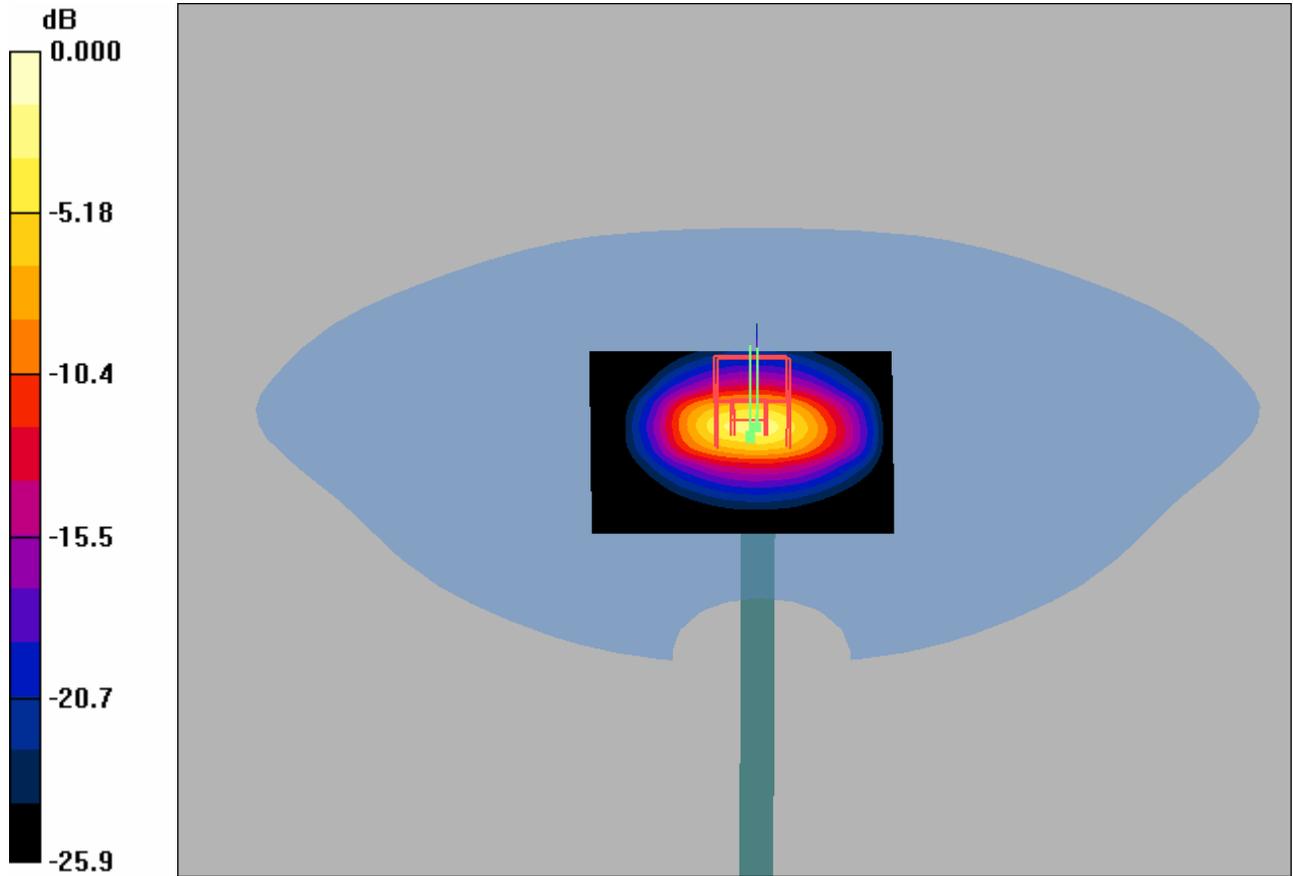
Maximum value of SAR (interpolated) = 12.2 mW/g

Procedure Notes: Pin: before 99.4 mW / after 99 mW

Humidity: 41.6 % Ambient Temp: 21.7 C Simulant Temp: 21.9 C



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0 dB = 12.2mW/g



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

**Validation 2450Body\_702\_1251\_18Mar09\_T01**

File Name: [Validation\\_2450Body\\_702\\_1251\\_18Mar09\\_T01.da4](#)

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

Probe: ET3DV6 - SN1538ConvF(4.15, 4.15, 4.15) Duty Cycle: 1:1 Frequency: 2450 MHz

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 2.01 \text{ mho/m}$ ;  $\epsilon_r = 51.1$ ;  $\rho = 1000 \text{ kg/m}^3$

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) = 6.91 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 = 58.1 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 12.8 W/kg

**SAR(1 g) = 5.54 mW/g; SAR(10 g) = 2.5 mW/g**

Maximum value of SAR (measured) = 6.18 mW/g

**Dipole at 10 mm/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.1 V/m; Power Drift = -0.020 dB

Maximum value of SAR (interpolated) = 12.8 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 = 58.1 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 13.5 W/kg

**SAR(1 g) = 5.82 mW/g; SAR(10 g) = 2.62 mW/g**

Maximum value of SAR (measured) = 6.49 mW/g

**Dipole at 10 mm/Zoom Scan 2 (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.1 V/m; Power Drift = -0.020 dB

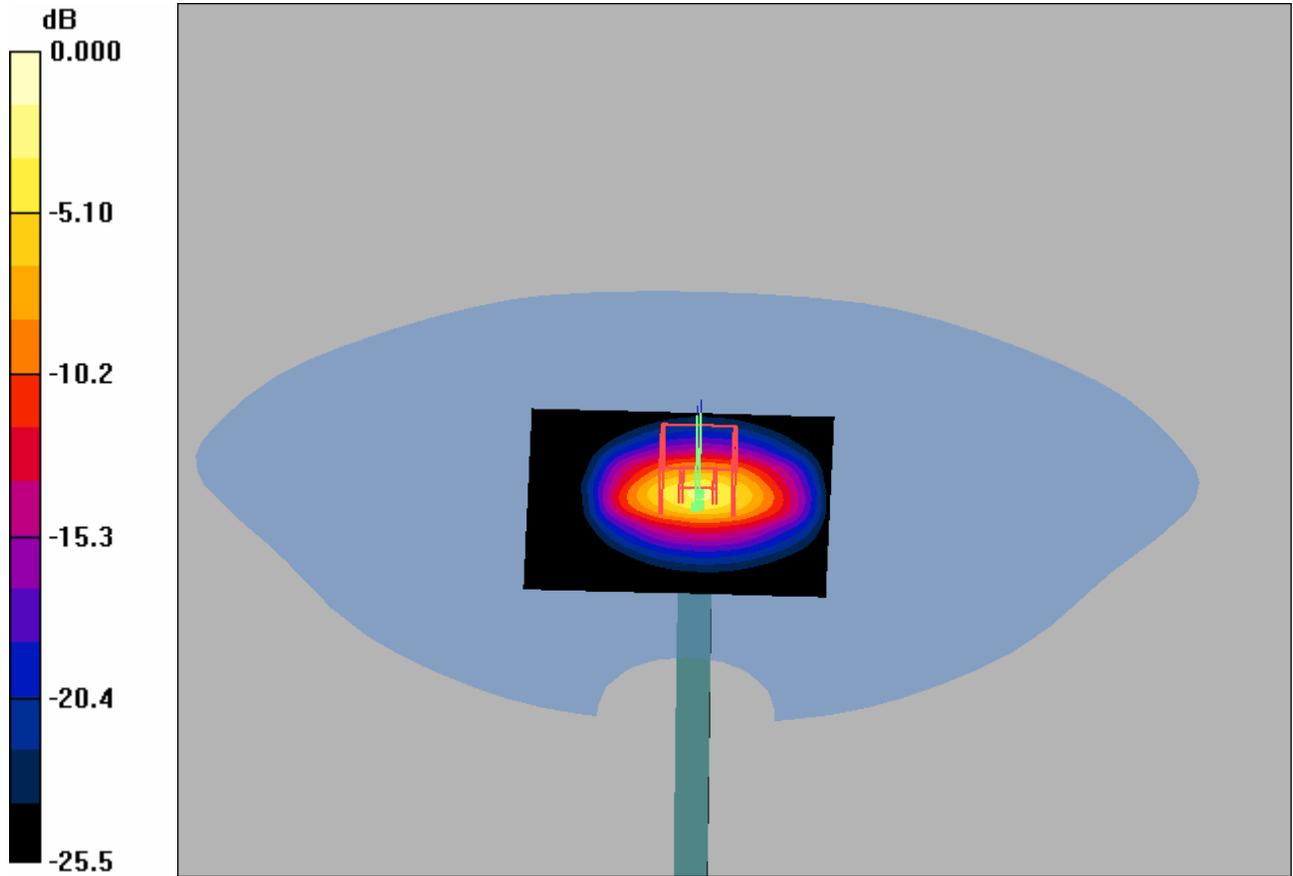
Maximum value of SAR (interpolated) = 13.5 mW/g

Procedure Notes: Pin: before 99 mW / after 99 mW

Humidity: 43.1 % Ambient Temp: 21.4 C Simulant Temp: 21.7 C



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0 dB = 13.5mW/g



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**Appendix 2**

**SAR distribution plots for Phantom Head Adjacent Use**



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**800 GSM Band: SAR Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Position.**

Date/Time: 3/10/2009 8:24:35 AM

File Name: [10Mar09\\_CS8\\_GSM850\\_BMFQ\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated):  $f = 836 \text{ MHz}$ ;  $\sigma = 0.901 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 43.2 % Ambient Temp - 22 C Simulant Temp - 21.8 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**Middle channel cheek/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) = 0.752 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.35 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.901 W/kg

**SAR(1 g) = 0.704 mW/g; SAR(10 g) = 0.505 mW/g**

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

Maximum value of SAR (measured) = 0.750 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

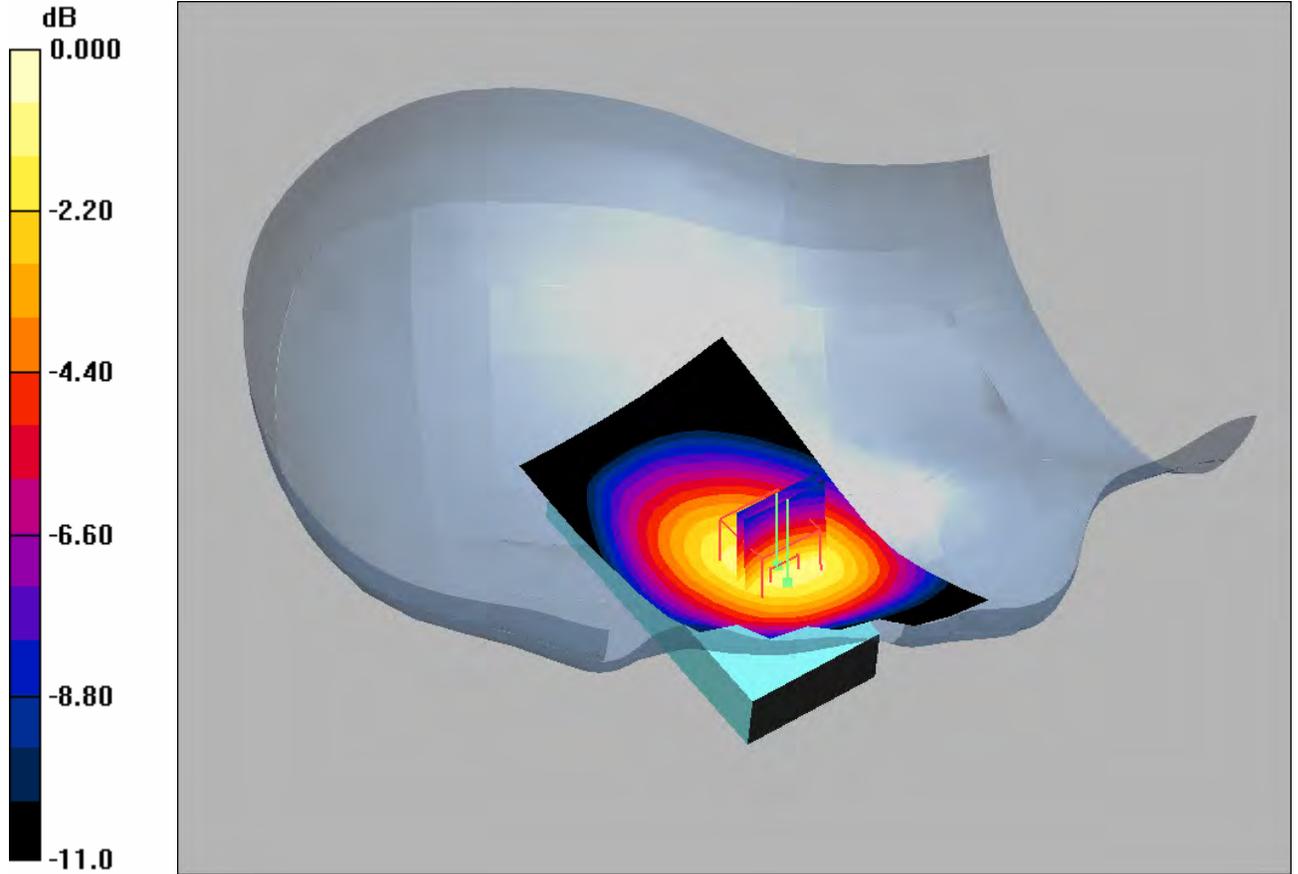
Reference Value = 9.35 V/m; Power Drift = -0.029 dB

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

Maximum value of SAR (interpolated) = 0.901 mW/g



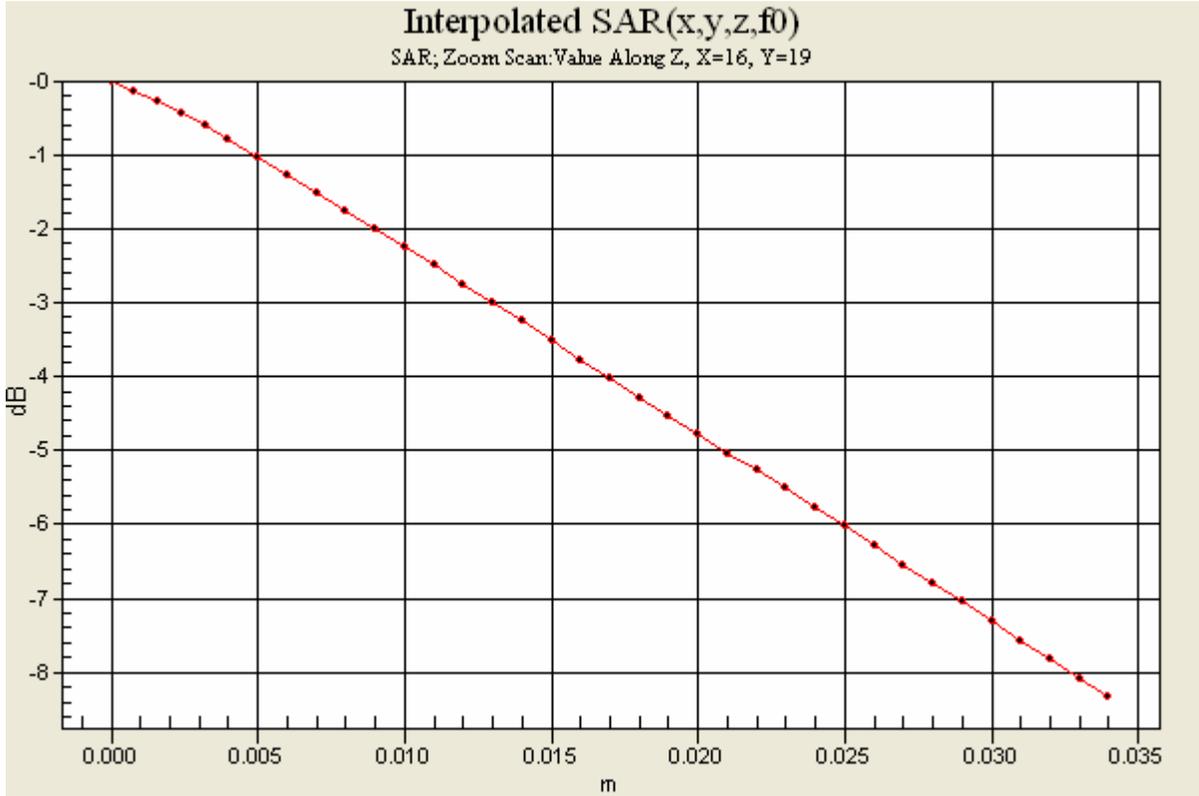
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0 dB = 0.901mW/g



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**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Position.**

Date/Time: 3/10/2009 9:25:34 AM

File Name: [10Mar09\\_CS8\\_GSM850\\_BMFQ\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated):  $f = 836 \text{ MHz}$ ;  $\sigma = 0.901 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 43.2 % Ambient Temp - 22 C Simulant Temp - 21.8 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**Middle 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) = 0.505 mW/g

**Middle channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.4 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.625 W/kg

**SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.349 mW/g**

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

Maximum value of SAR (measured) = 0.517 mW/g

**Middle channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

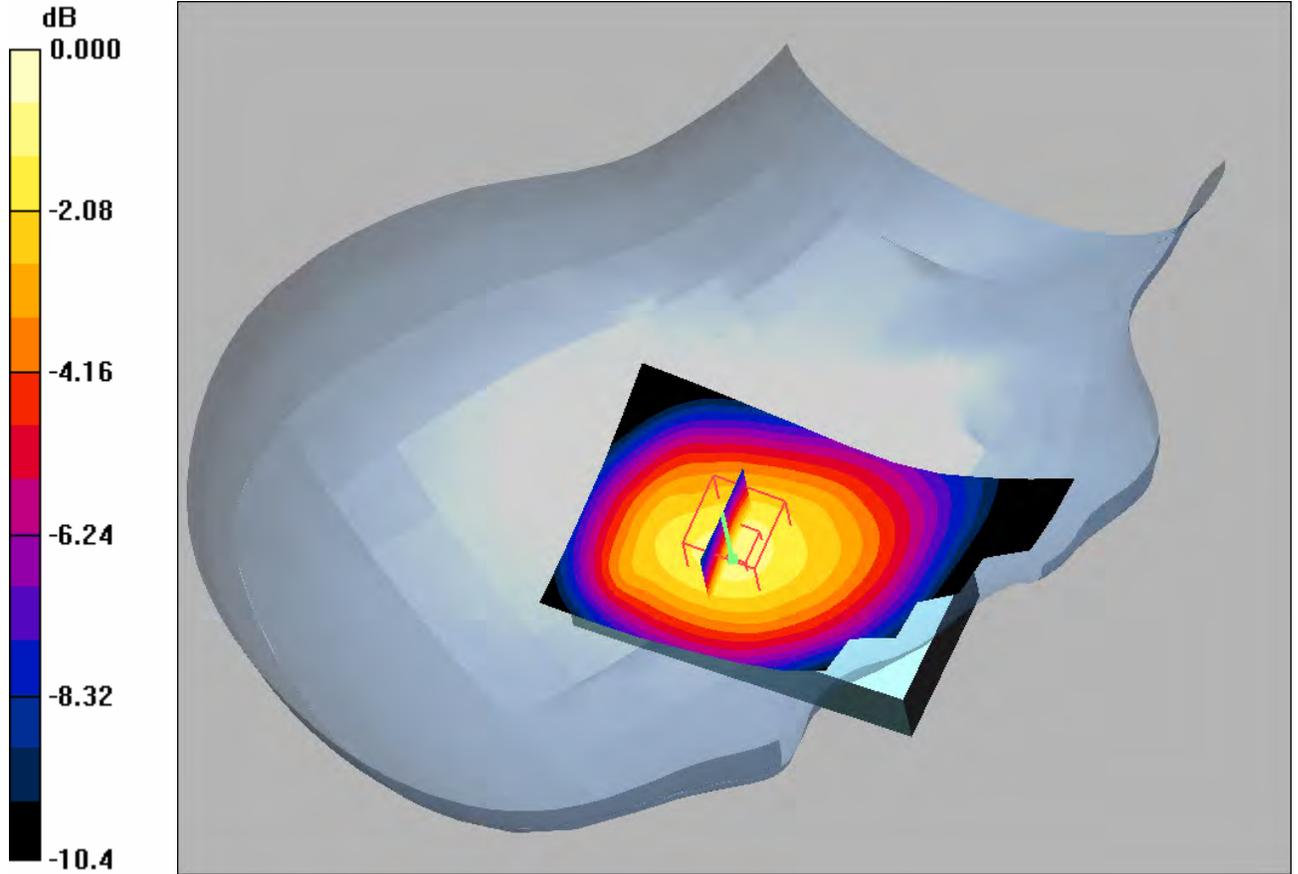
Reference Value = 17.4 V/m; Power Drift = 0.018 dB

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

Maximum value of SAR (interpolated) = 0.625 mW/g



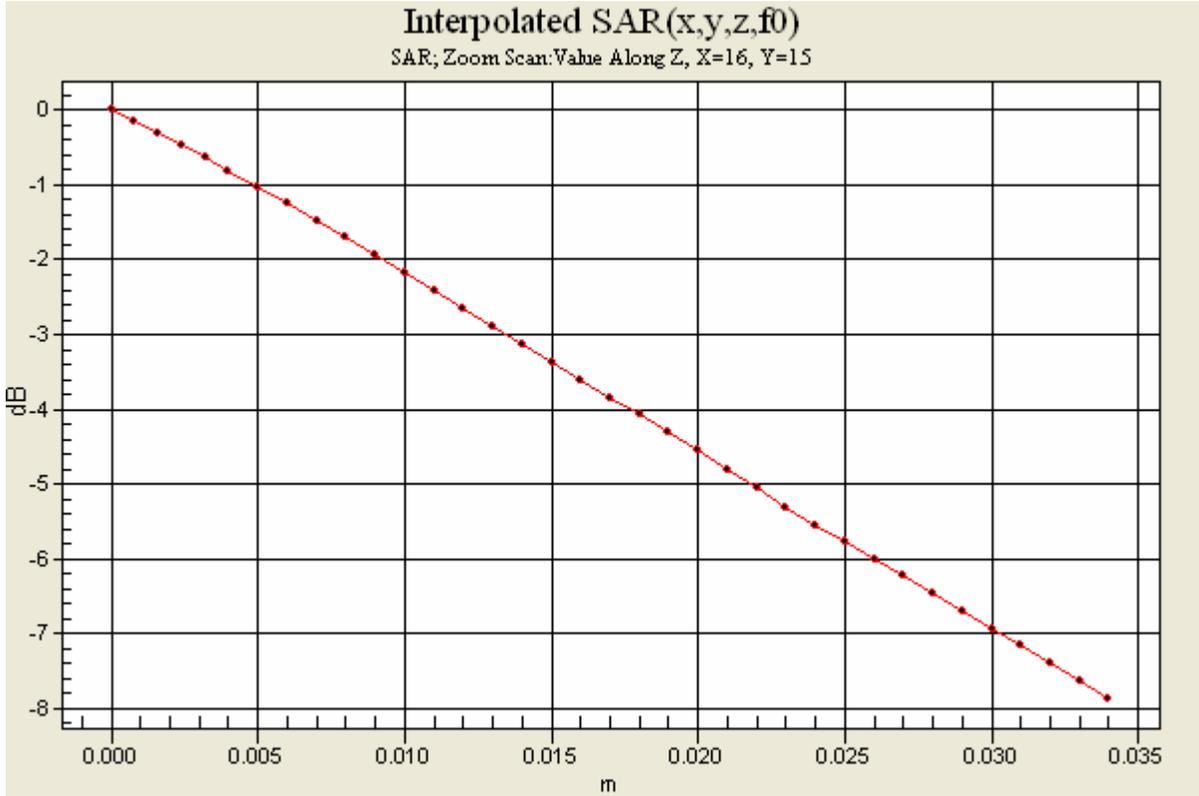
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0 dB = 0.625mW/g



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**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Position.**

Date/Time: 3/10/2009 10:30:24 AM

File Name: [10Mar09\\_CS8\\_GSM850\\_BMFQ\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated):  $f = 836$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 43.2 % Ambient Temp - 22 C Simulant Temp - 21.8 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**Middle channel cheek/Area Scan (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.747 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.9 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.973 W/kg

**SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.521 mW/g**

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

Maximum value of SAR (measured) = 0.792 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

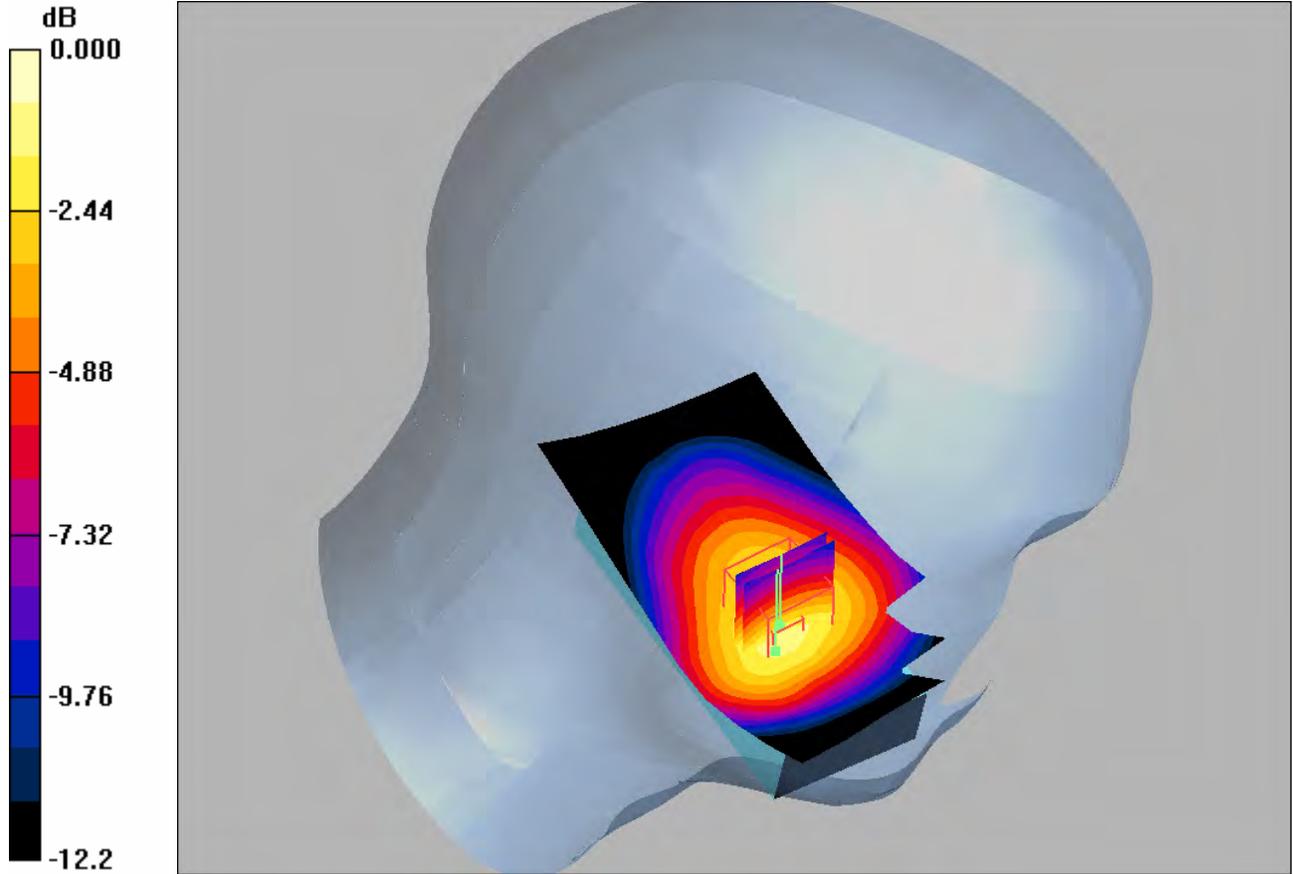
Reference Value = 10.9 V/m; Power Drift = 0.008 dB

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

Maximum value of SAR (interpolated) = 0.973 mW/g



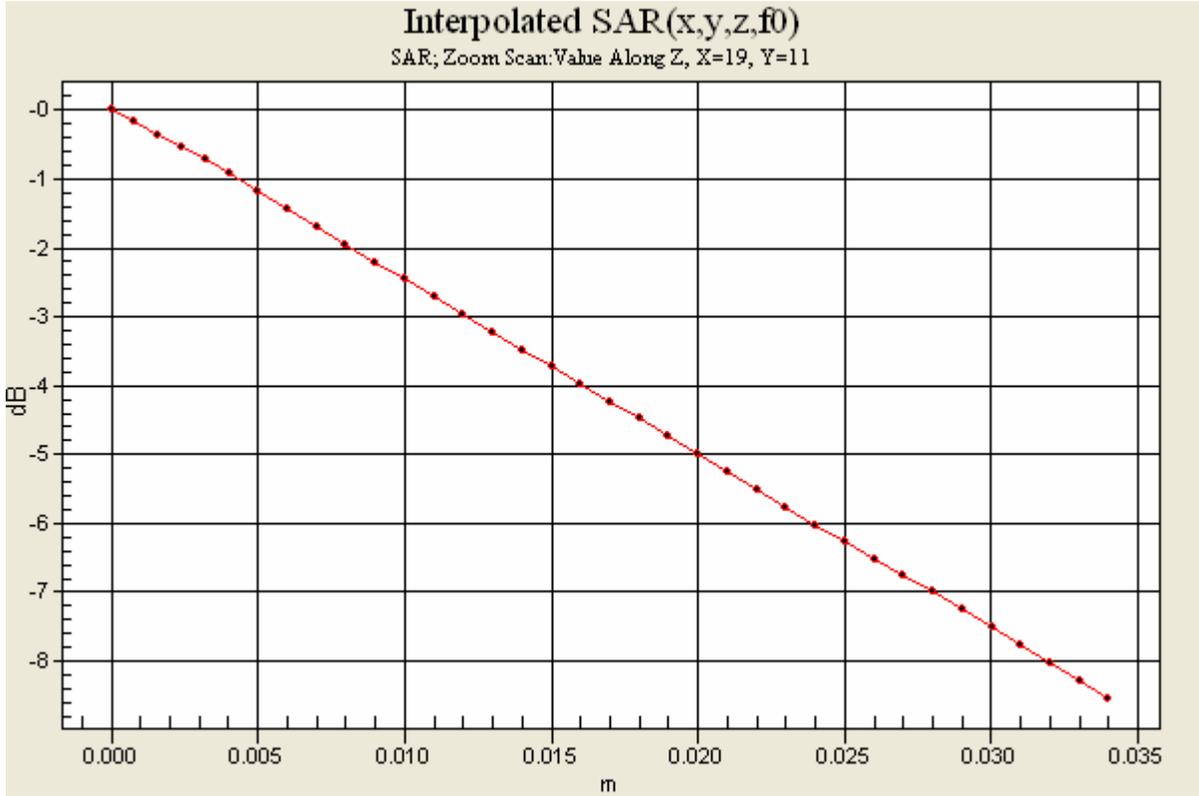
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0 dB = 0.973mW/g



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**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Position.**

Date/Time: 3/10/2009 12:06:54 PM

File Name: [10Mar09\\_CS8\\_GSM850\\_BMFQ\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated):  $f = 836 \text{ MHz}$ ;  $\sigma = 0.901 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 43.2 % Ambient Temp - 22 C Simulant Temp - 21.8 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**Middle 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) = 0.464 mW/g

**Middle channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.6 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.577 W/kg

**SAR(1 g) = 0.447 mW/g; SAR(10 g) = 0.324 mW/g**

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

Maximum value of SAR (measured) = 0.474 mW/g

**Middle channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

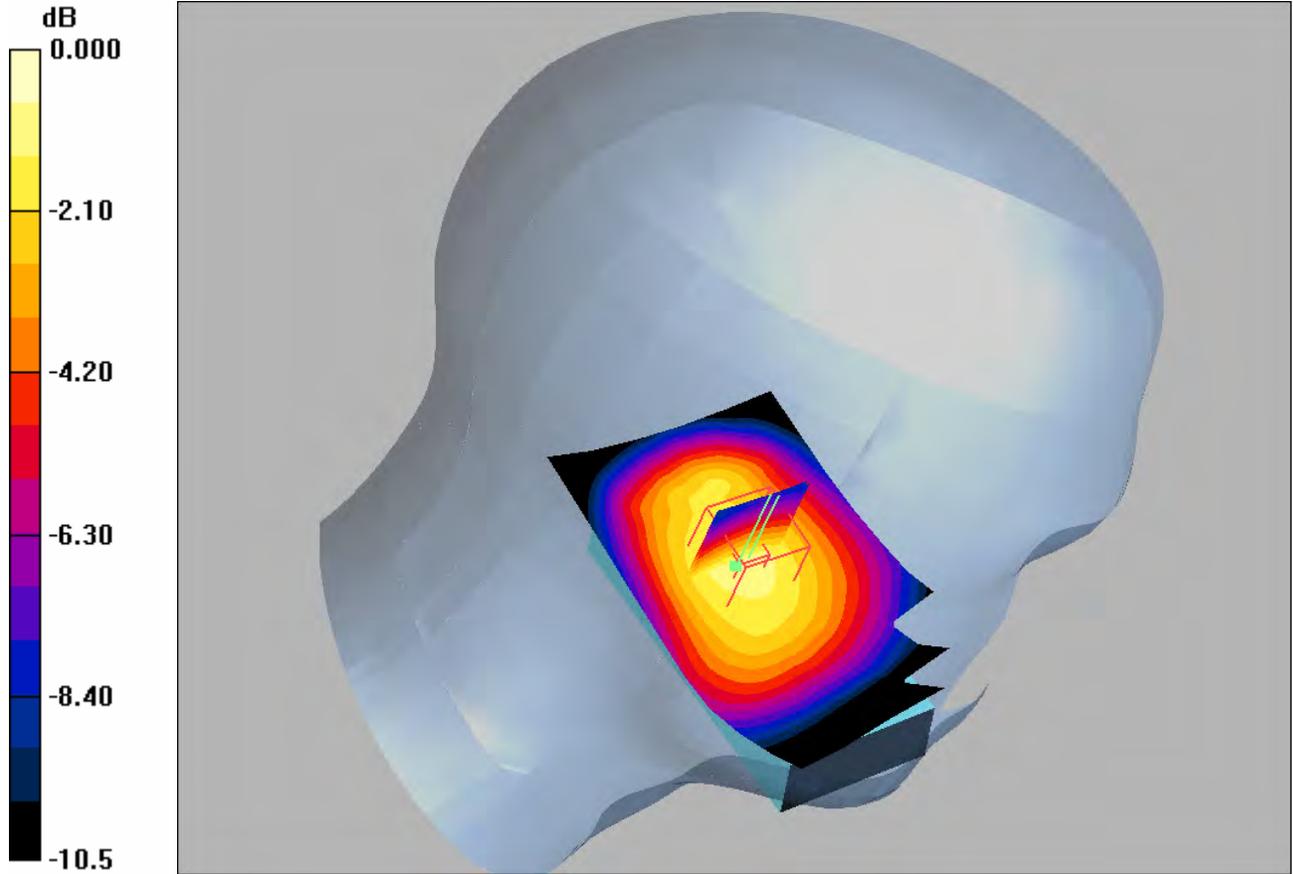
Reference Value = 18.6 V/m; Power Drift = 0.031 dB

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

Maximum value of SAR (interpolated) = 0.577 mW/g



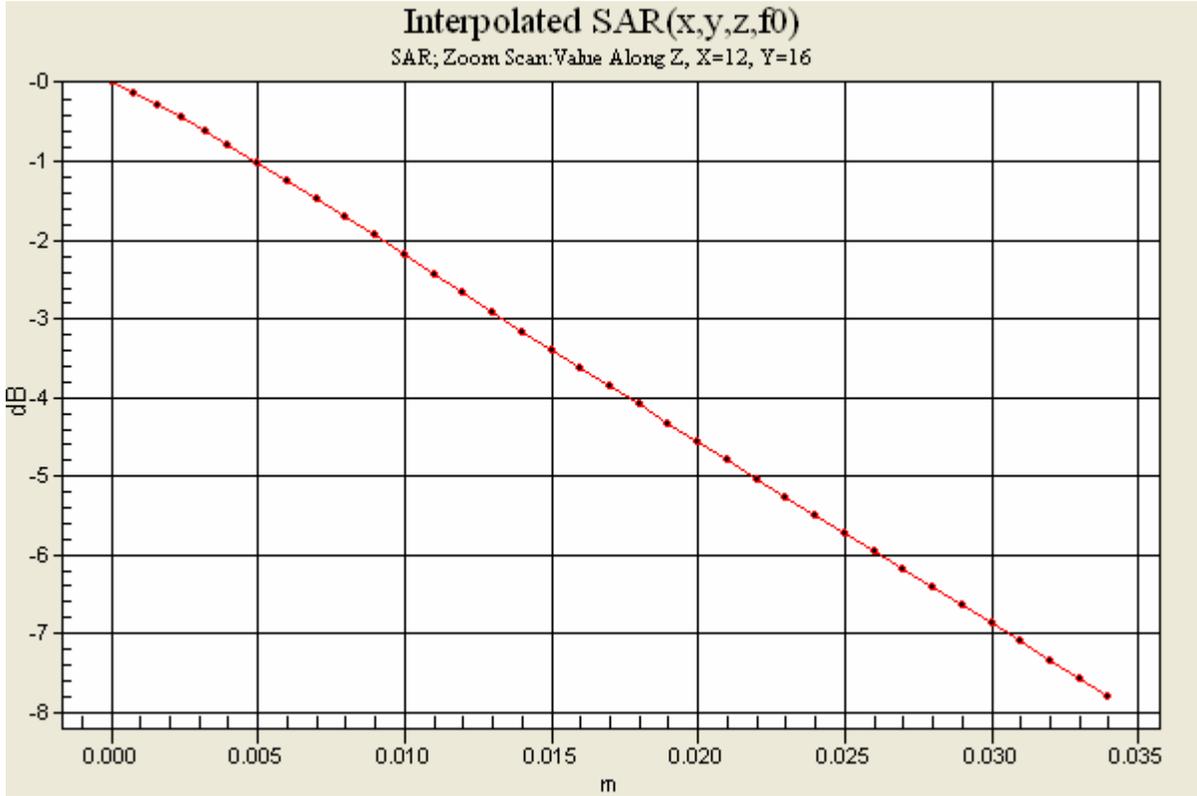
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0 dB = 0.577mW/g



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Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**800 GSM Band: SAR Distribution and Extrapolation of Maximum SAR Model: CS8 with Standard Battery: BST-38, Right Cheek Open Position.**

Date/Time: 3/11/2009 11:06:37 AM

File Name: [11Mar09\\_CS8\\_GSM850\\_BMFQ\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated): f = 849 MHz;  $\sigma = 0.916$  mho/m;  $\epsilon_r = 42.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 42.7 % Ambient Temp - 21.1 C Simulant Temp - 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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 (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 1.01 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 34.5 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 1.19 W/kg

**SAR(1 g) = 0.952 mW/g; SAR(10 g) = 0.695 mW/g**

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

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

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

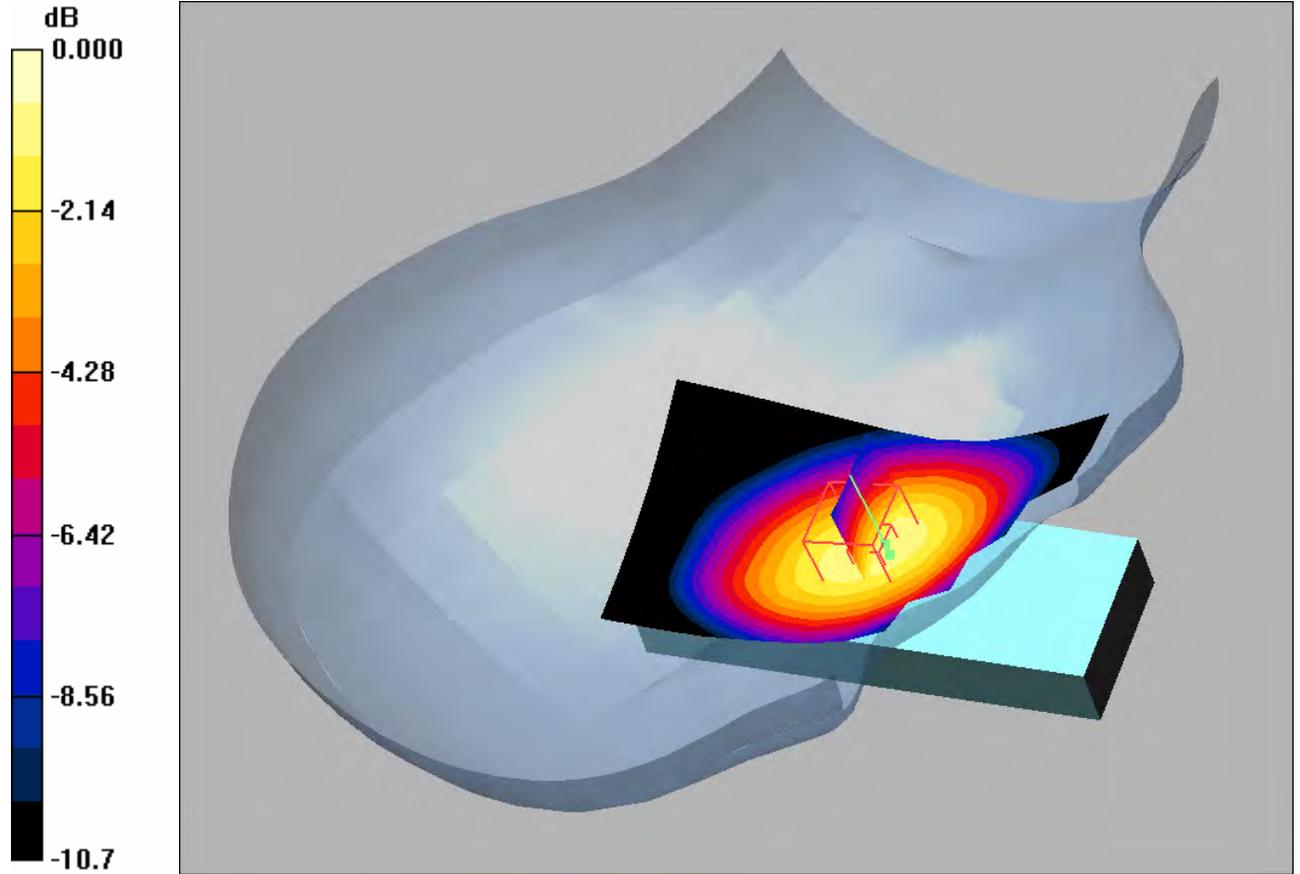
Reference Value = 34.5 V/m; Power Drift = 0.004 dB

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

Maximum value of SAR (interpolated) = 1.19 mW/g



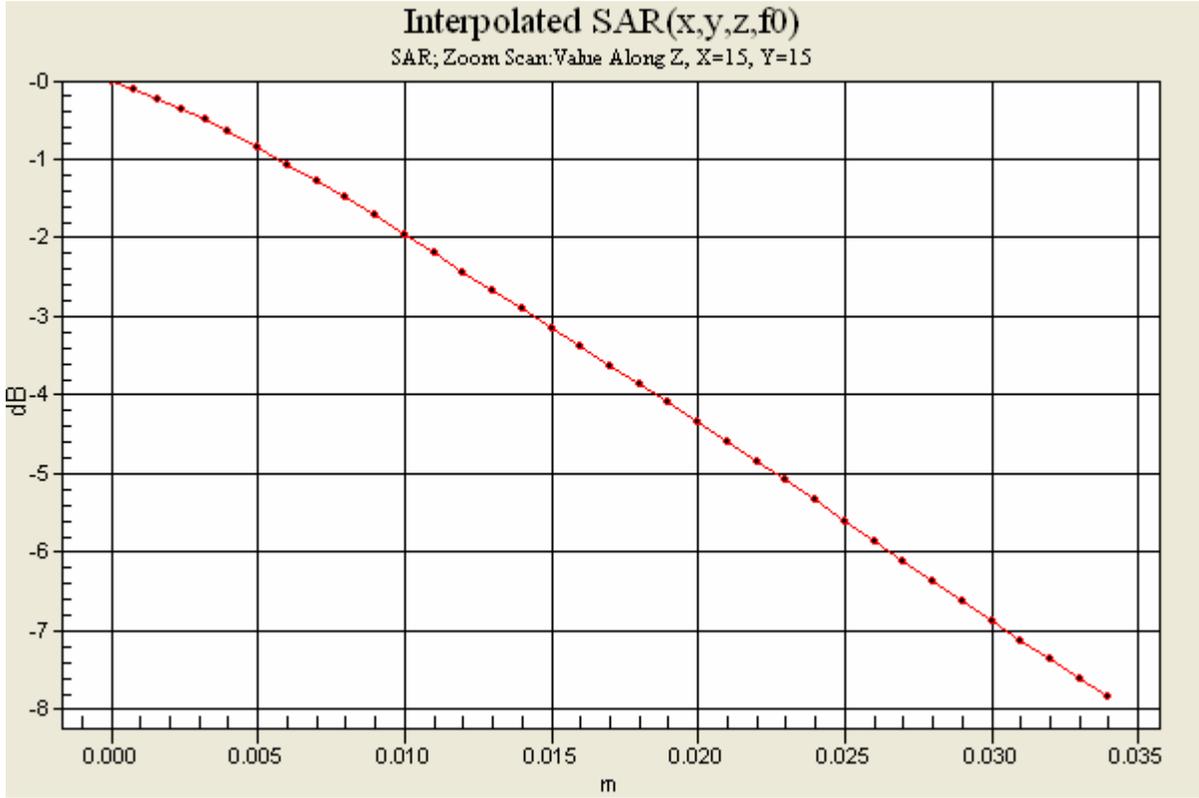
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 1.19mW/g



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Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Open Position.**

Date/Time: 3/11/2009 11:27:33 AM

File Name: [11Mar09\\_CS8\\_GSM850\\_BMFQ\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated): f = 824 MHz;  $\sigma = 0.89$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 42.7 % Ambient Temp - 21.1 C Simulant Temp - 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.543 mW/g

**Low channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.0 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 0.628 W/kg

**SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.368 mW/g**

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

Maximum value of SAR (measured) = 0.533 mW/g

**Low channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

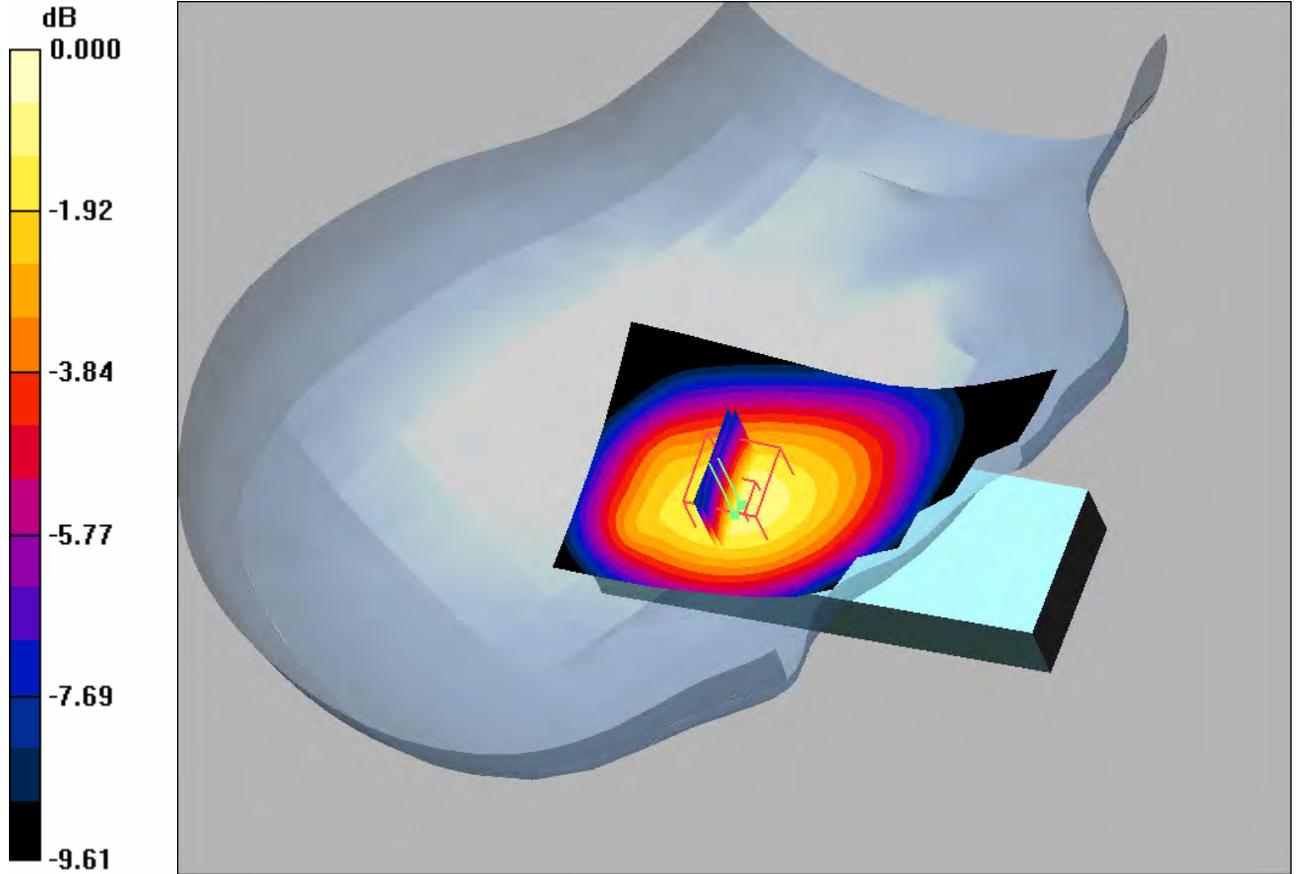
Reference Value = 20.0 V/m; Power Drift = -0.008 dB

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

Maximum value of SAR (interpolated) = 0.628 mW/g



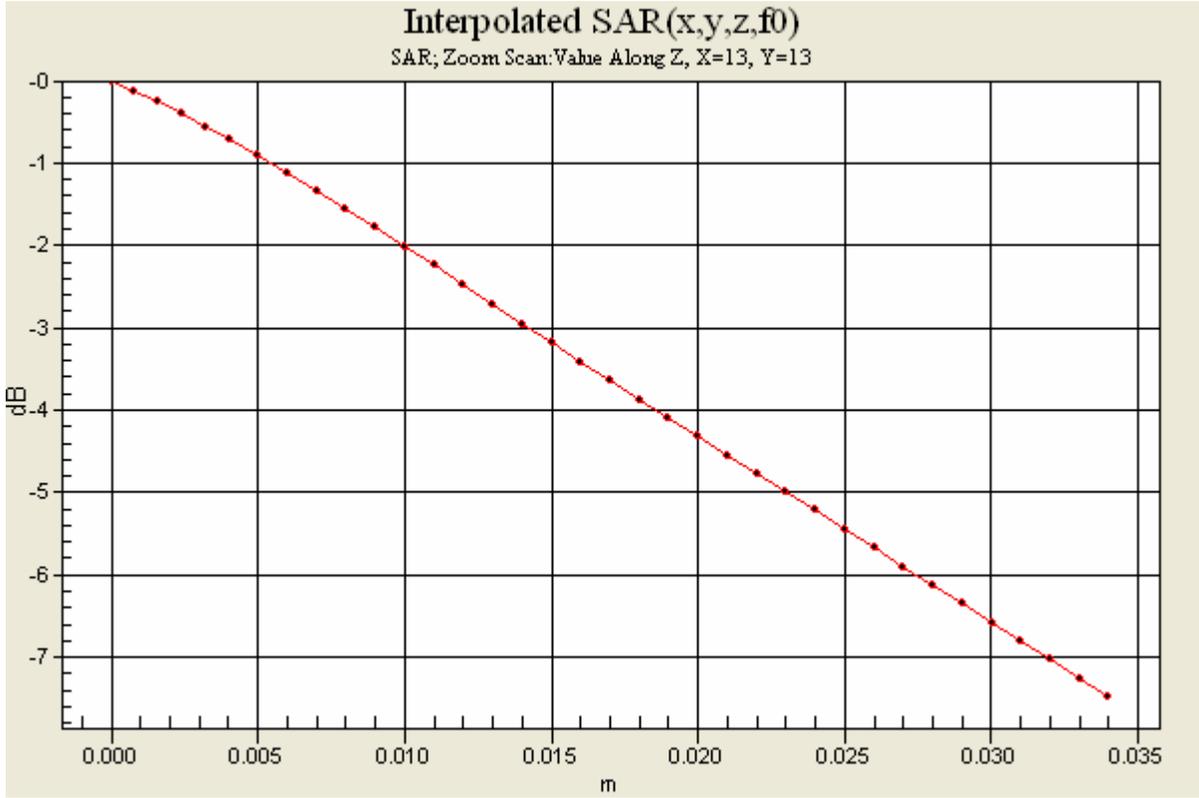
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.628mW/g



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**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Open Position.**

Date/Time: 3/11/2009 8:35:17 AM

File Name: [11Mar09\\_CS8\\_GSM850\\_BMFQ\\_open\\_LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated): f = 849 MHz;  $\sigma = 0.916$  mho/m;  $\epsilon_r = 42.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 42.7 % Ambient Temp - 21.1 C Simulant Temp - 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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 (51x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.977 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.932 mW/g; SAR(10 g) = 0.684 mW/g**

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

Maximum value of SAR (measured) = 0.984 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

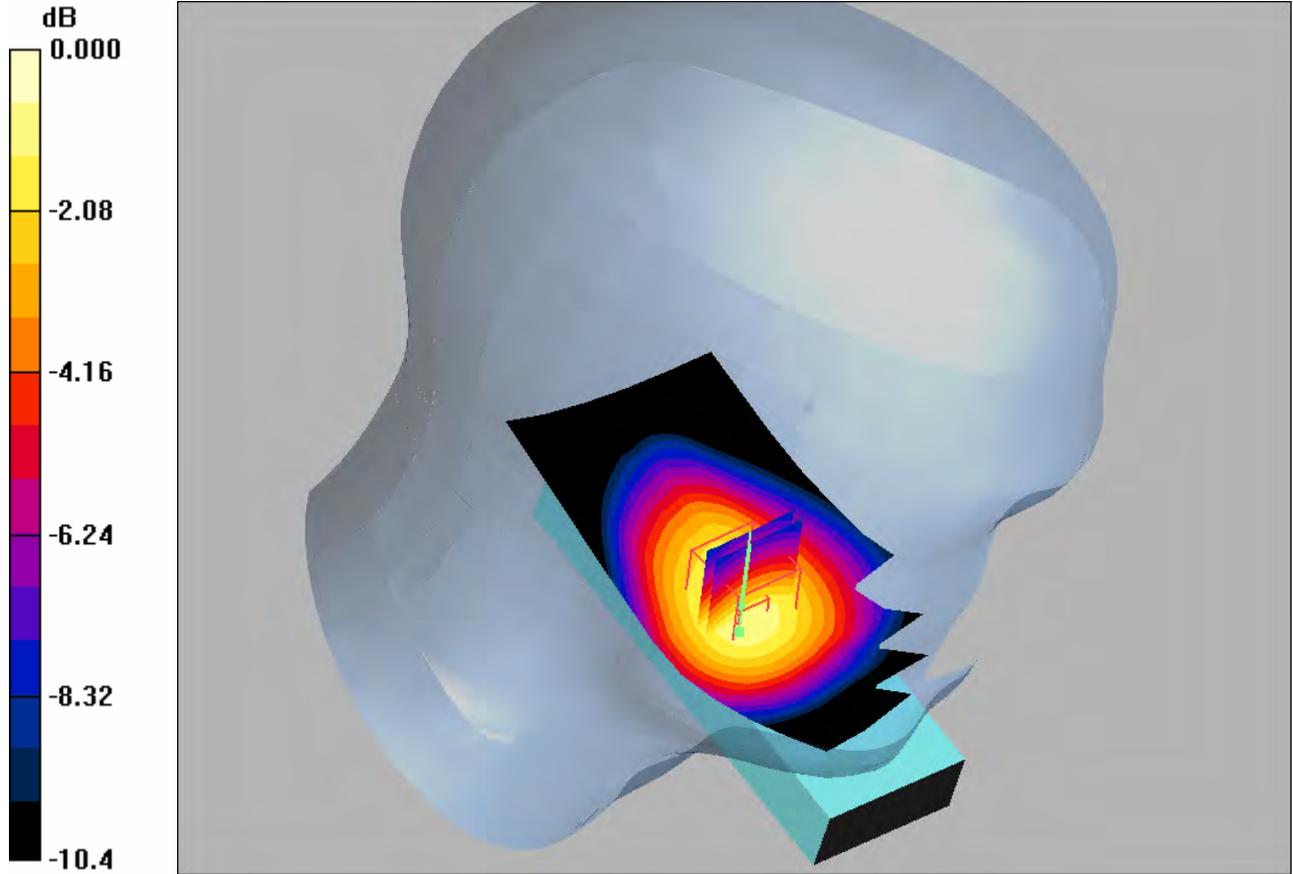
Reference Value = 11.5 V/m; Power Drift = 0.054 dB

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

Maximum value of SAR (interpolated) = 1.17 mW/g



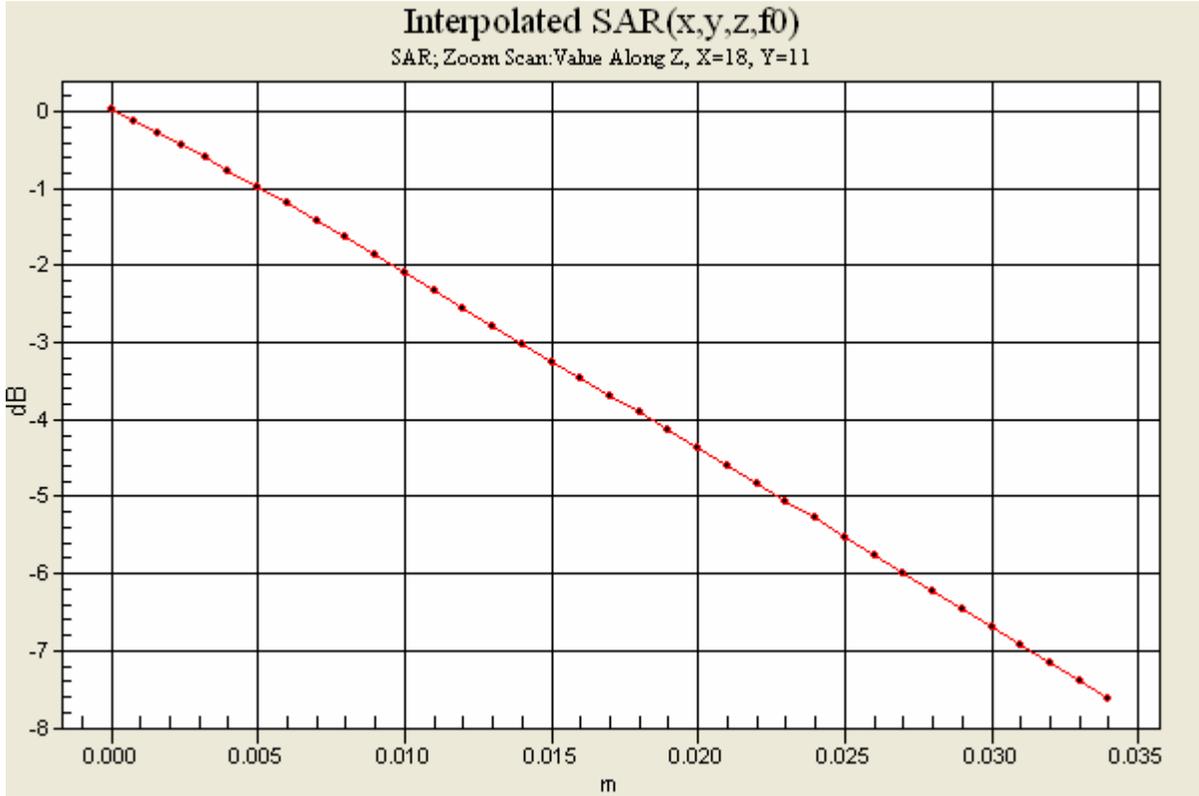
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 1.17mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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**800 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Open Position.**

Date/Time: 3/11/2009 8:58:05 AM

File Name: [11Mar09\\_CS8\\_GSM850\\_BMFQ\\_open\\_LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583 ConvF(6.48, 6.48, 6.48)

Medium parameters used (interpolated):  $f = 824$  MHz;  $\sigma = 0.89$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity - 42.7 % Ambient Temp - 21.1 C Simulant Temp - 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(6.48, 6.48, 6.48); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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 (51x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.445 mW/g

**Low channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.9 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 0.542 W/kg

**SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.313 mW/g**

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

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

**Low channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

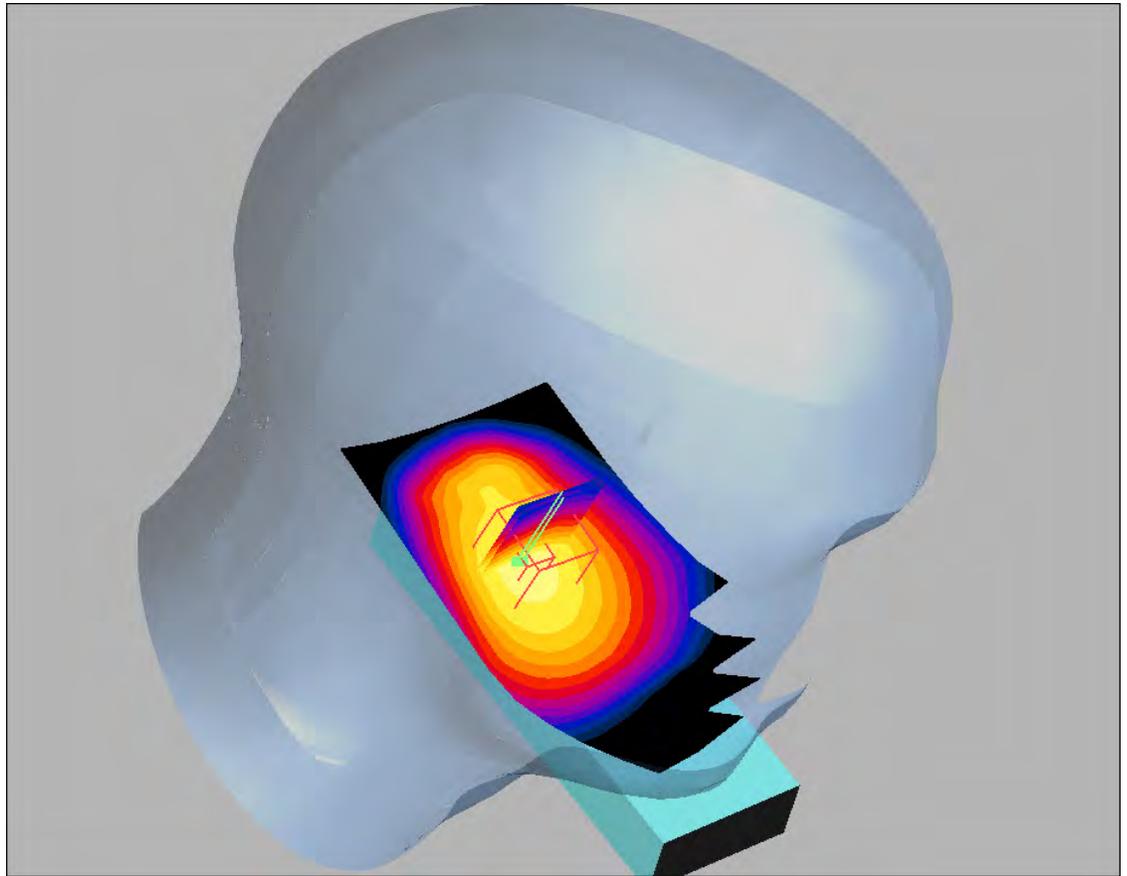
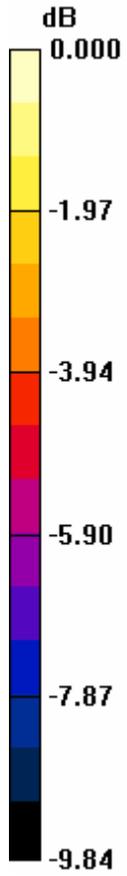
Reference Value = 17.9 V/m; Power Drift = 0.044 dB

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

Maximum value of SAR (interpolated) = 0.542 mW/g



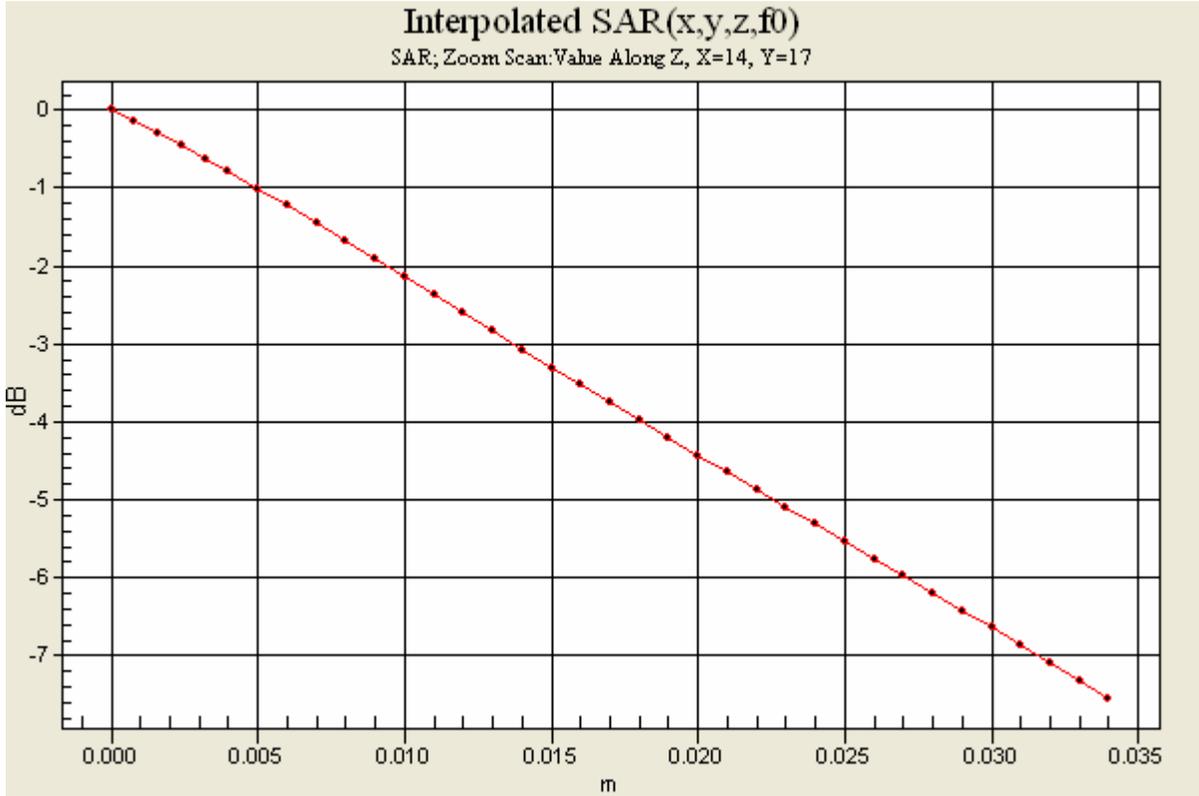
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.542mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Position.**

Date/Time: 3/4/2009 11:38:31 AM

File Name: [04Mar09 CS8 GSM1900 BMKF RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(5.12, 5.12, 5.12)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 37.8 % Ambient Temp: 21.9 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.12, 5.12, 5.12); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel cheek/Area Scan (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.367 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.526 W/kg

**SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.205 mW/g**

Maximum value of SAR (measured) = 0.360 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

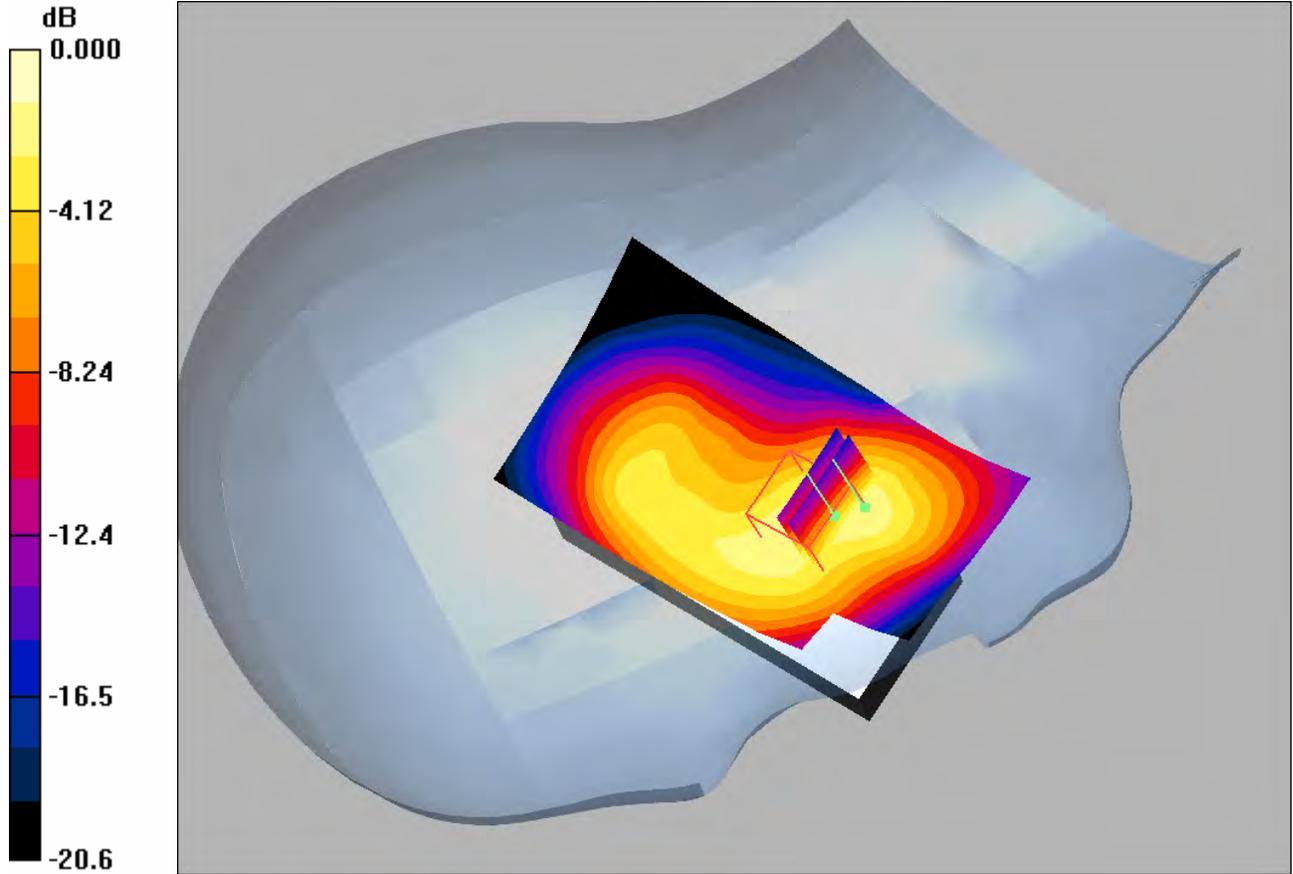
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = -0.108 dB

Maximum value of SAR (interpolated) = 0.526 mW/g



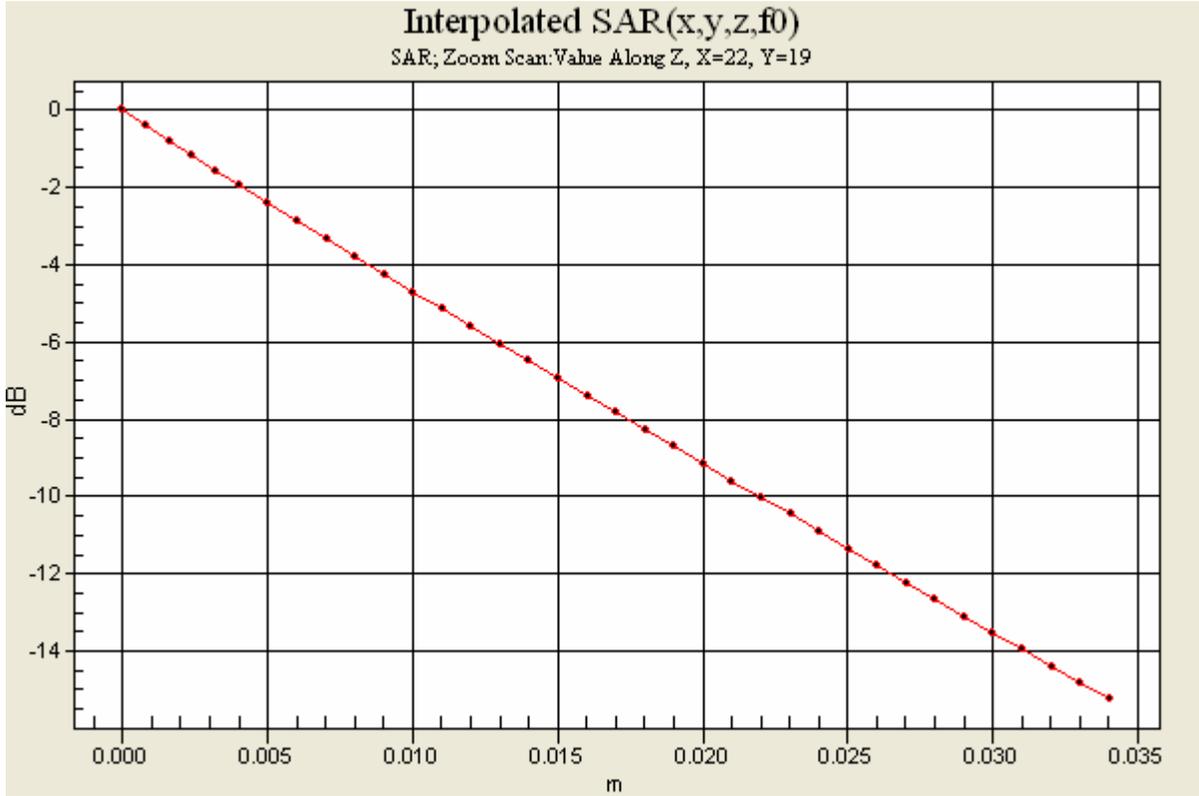
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 0.526mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Position.**

Date/Time: 3/4/2009 12:48:33 PM

File Name: [04Mar09\\_CS8\\_GSM1900\\_BMKF\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(5.12, 5.12, 5.12)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 37.8 % Ambient Temp: 21.9 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.12, 5.12, 5.12); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel tilt/Area Scan (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.350 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.2 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 0.488 W/kg

**SAR(1 g) = 0.294 mW/g; SAR(10 g) = 0.167 mW/g**

Maximum value of SAR (measured) = 0.316 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

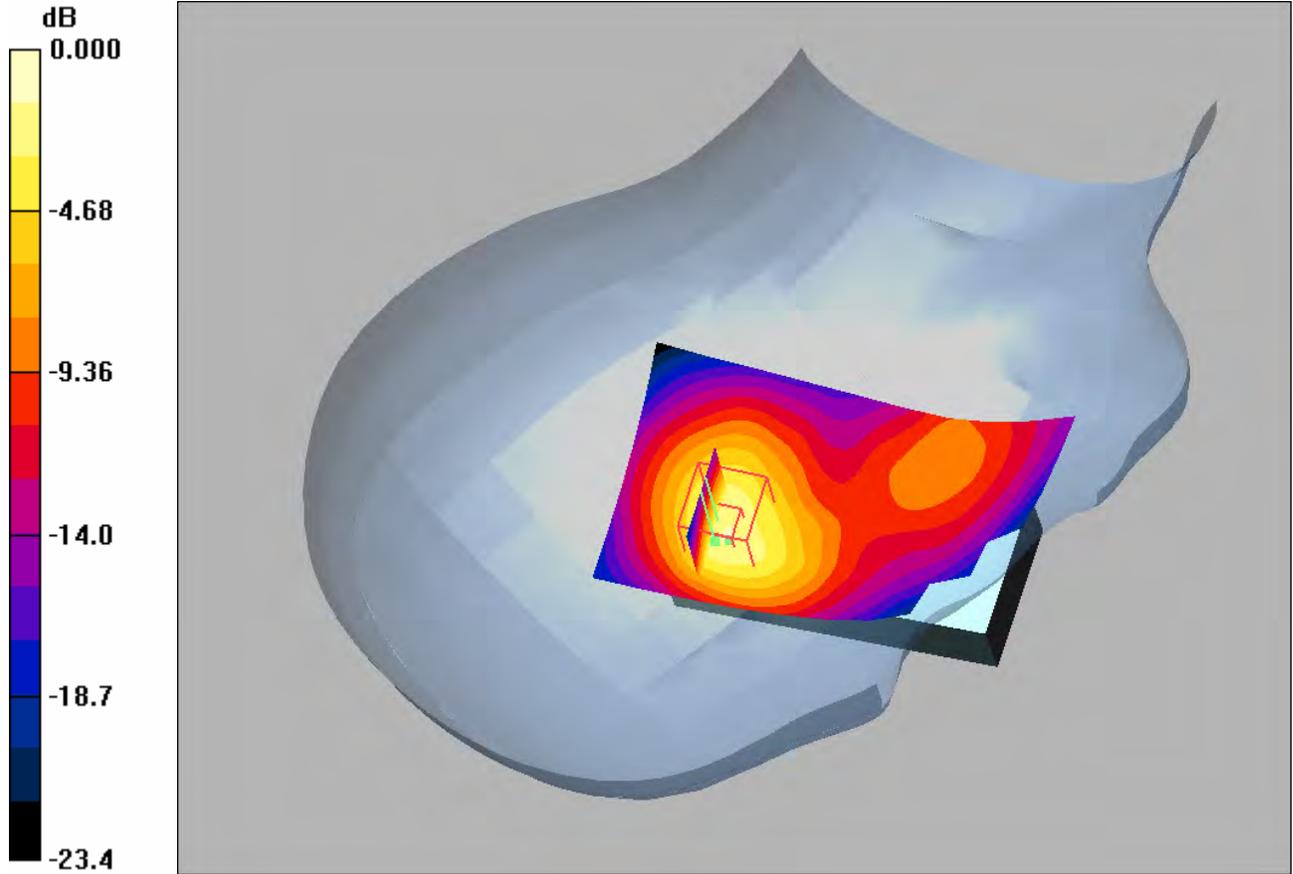
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.2 V/m; Power Drift = -0.027 dB

Maximum value of SAR (interpolated) = 0.488 mW/g



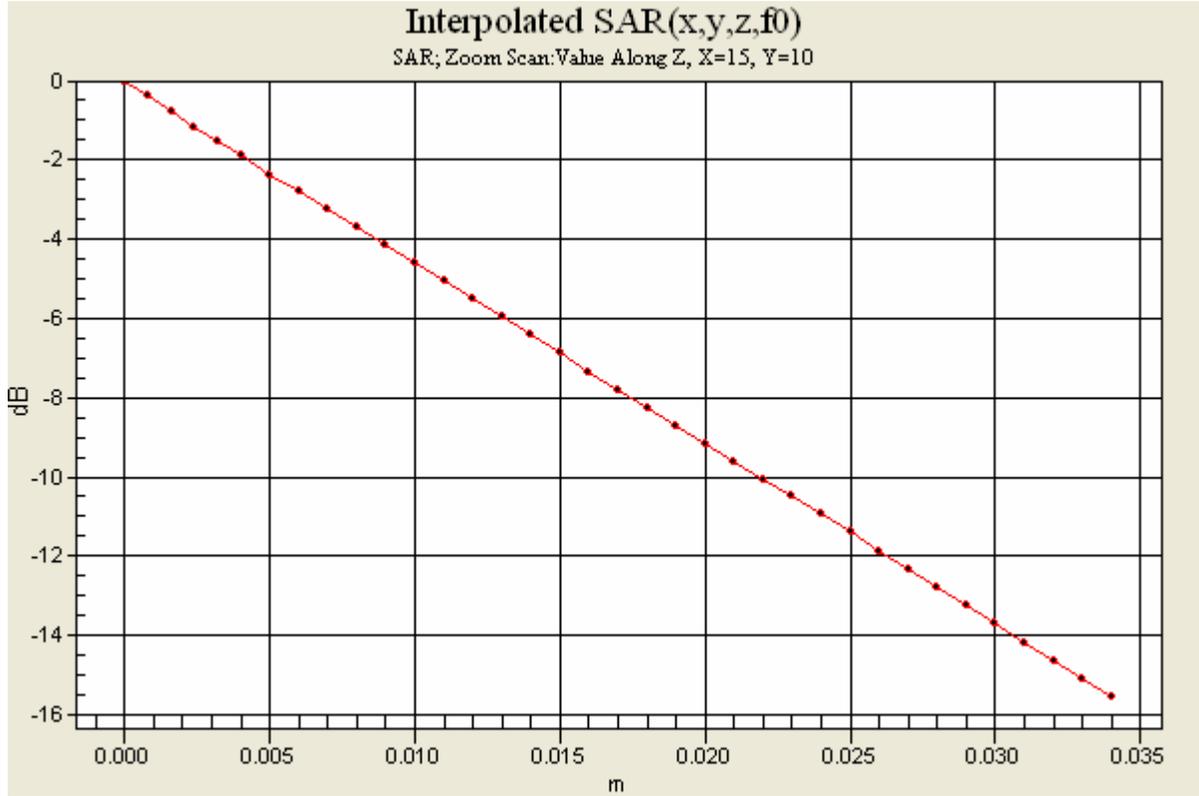
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.488mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Position.**

Date/Time: 3/4/2009 8:36:58 AM

File Name: [04Mar09\\_CS8\\_GSM1900\\_BMKF\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(5.12, 5.12, 5.12)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 37.8 % Ambient Temp: 21.9 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.12, 5.12, 5.12); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel cheek/Area Scan (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.345 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.449 W/kg

**SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.205 mW/g**

Maximum value of SAR (measured) = 0.337 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

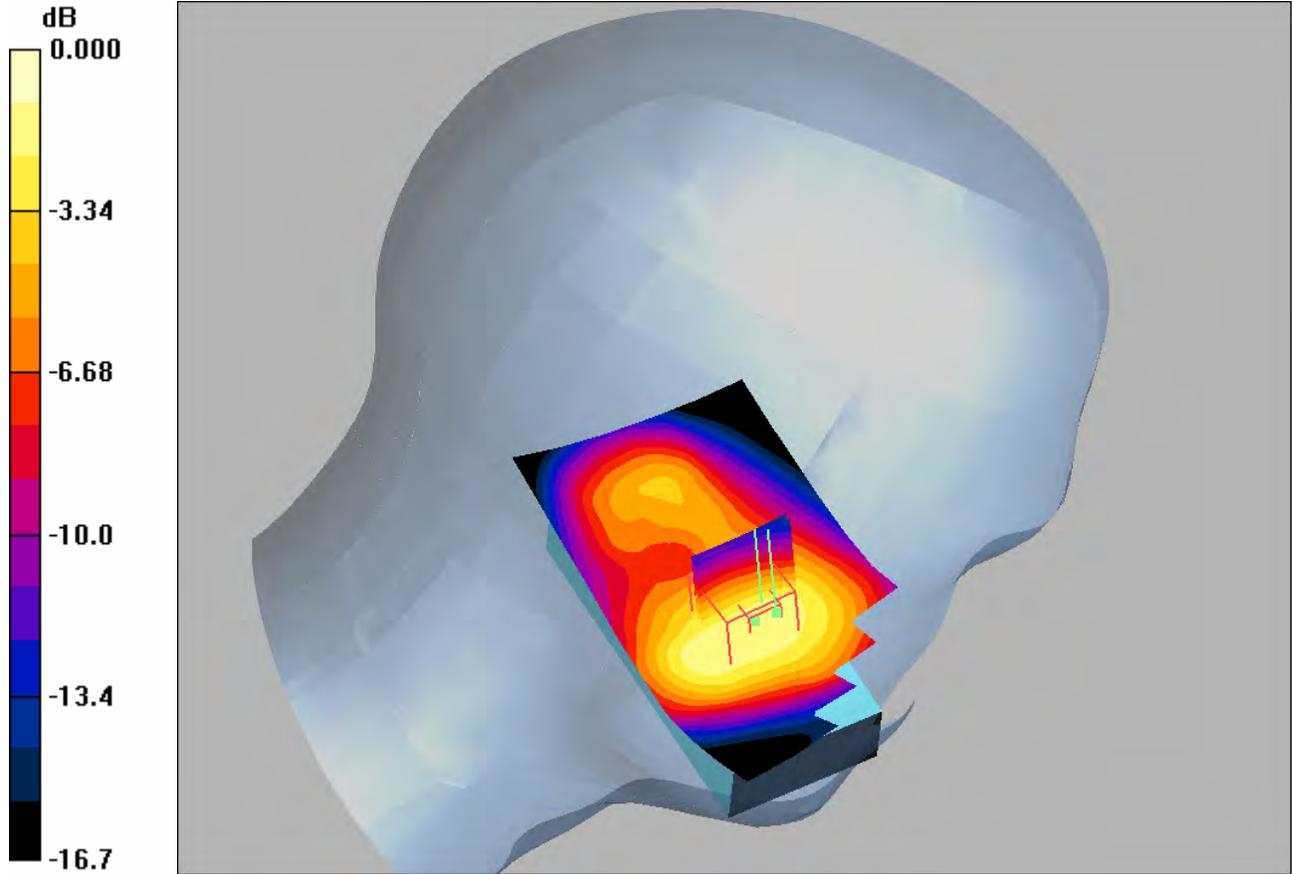
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = 0.039 dB

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



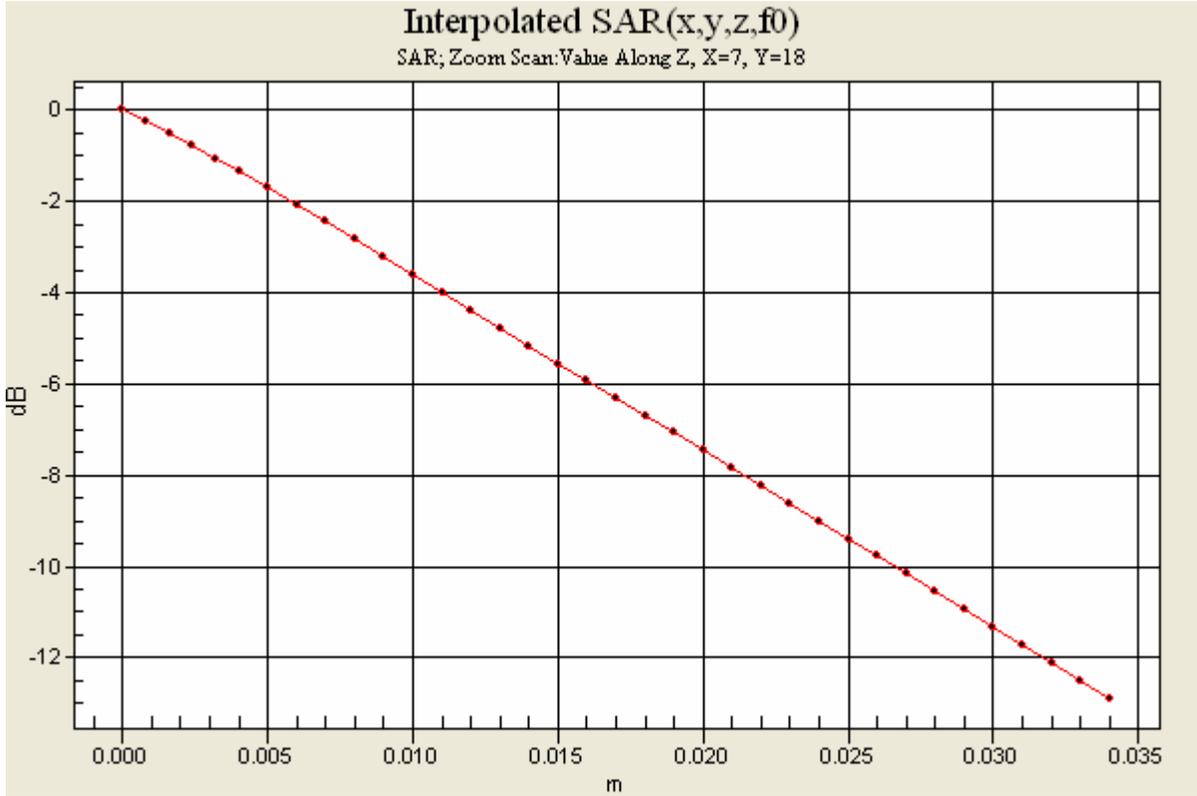
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.449mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Position.**

Date/Time: 3/4/2009 9:51:15 AM

File Name: [04Mar09 CS8 GSM1900 BMKF LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1583 ConvF(5.12, 5.12, 5.12)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 37.8 % Ambient Temp: 21.9 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.12, 5.12, 5.12); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel tilt/Area Scan (51x91x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.278 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.0 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 0.385 W/kg

**SAR(1 g) = 0.243 mW/g; SAR(10 g) = 0.140 mW/g**

Maximum value of SAR (measured) = 0.271 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

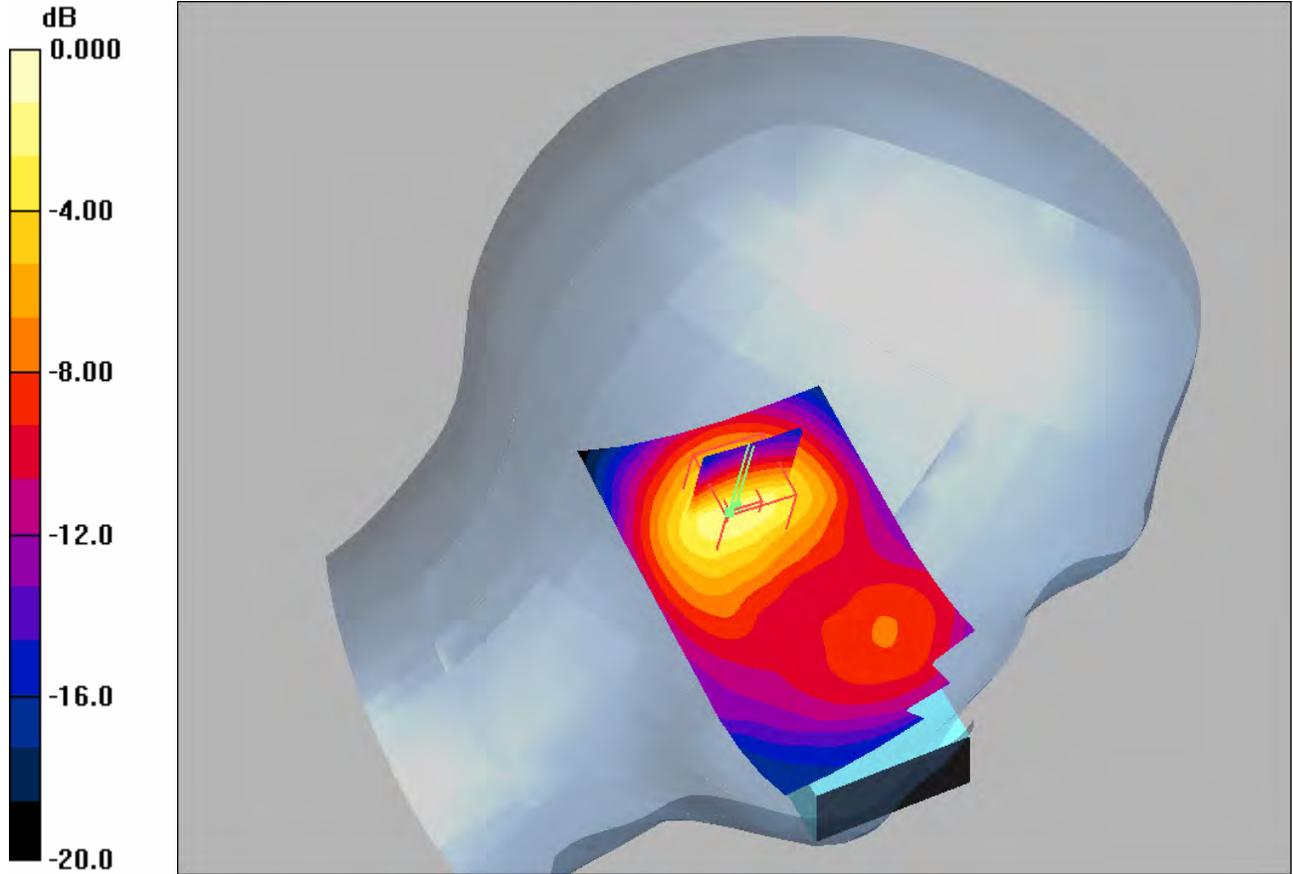
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.0 V/m; Power Drift = -0.069 dB

Maximum value of SAR (interpolated) = 0.385 mW/g



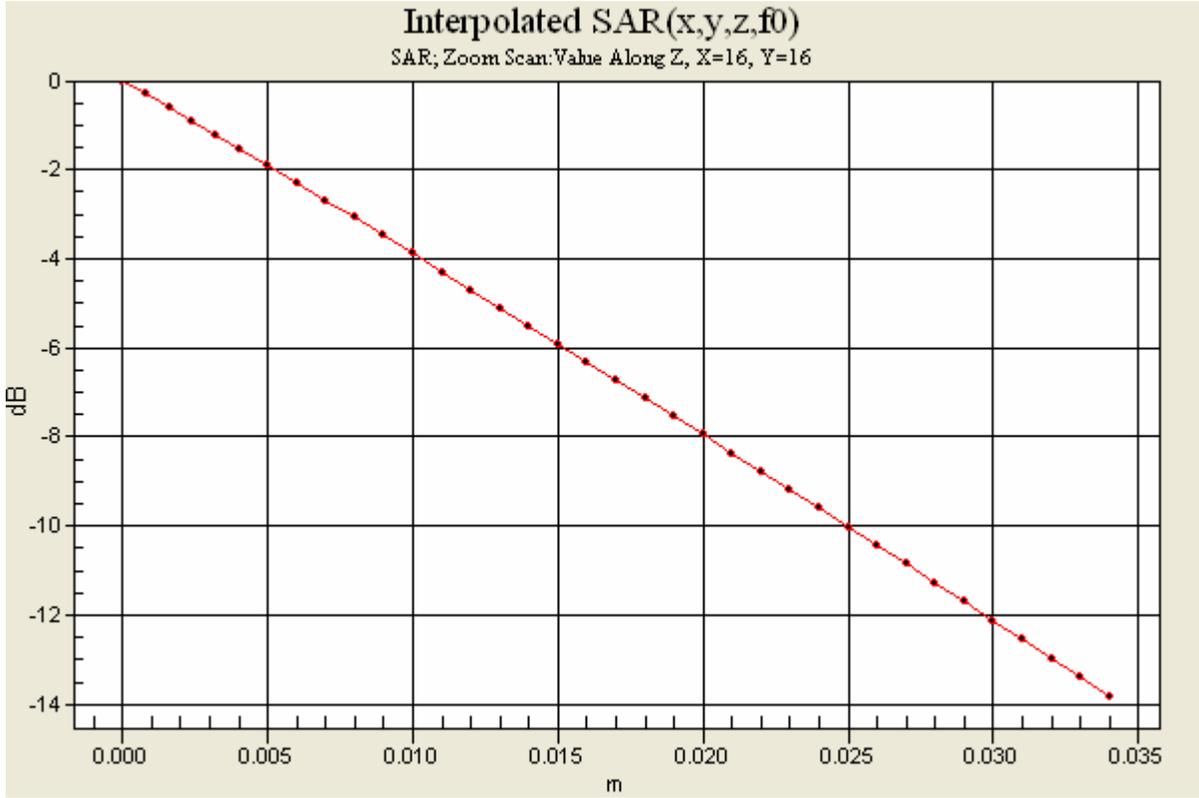
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.385mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Open Position.**

Date/Time: 3/5/2009 11:39:19 AM

File Name: [05Mar09\\_CS8\\_GSM1900\\_BMFQ\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538 ConvF(5.18, 5.18, 5.18)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 35.8 % Ambient Temp: 22.4 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.18, 5.18, 5.18); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.295 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.34 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.394 W/kg

**SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.168 mW/g**

Maximum value of SAR (measured) = 0.285 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

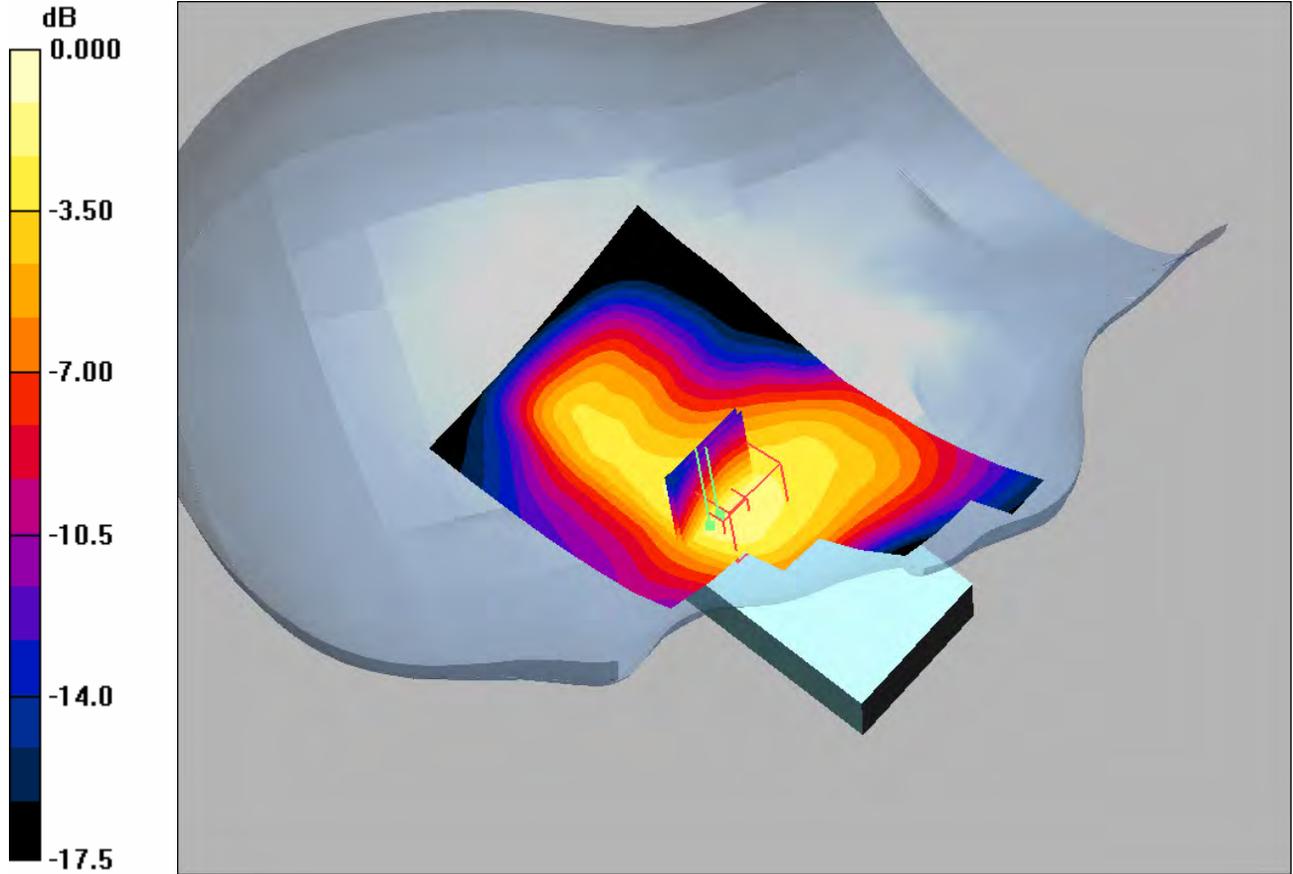
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.34 V/m; Power Drift = -0.043 dB

Maximum value of SAR (interpolated) = 0.394 mW/g



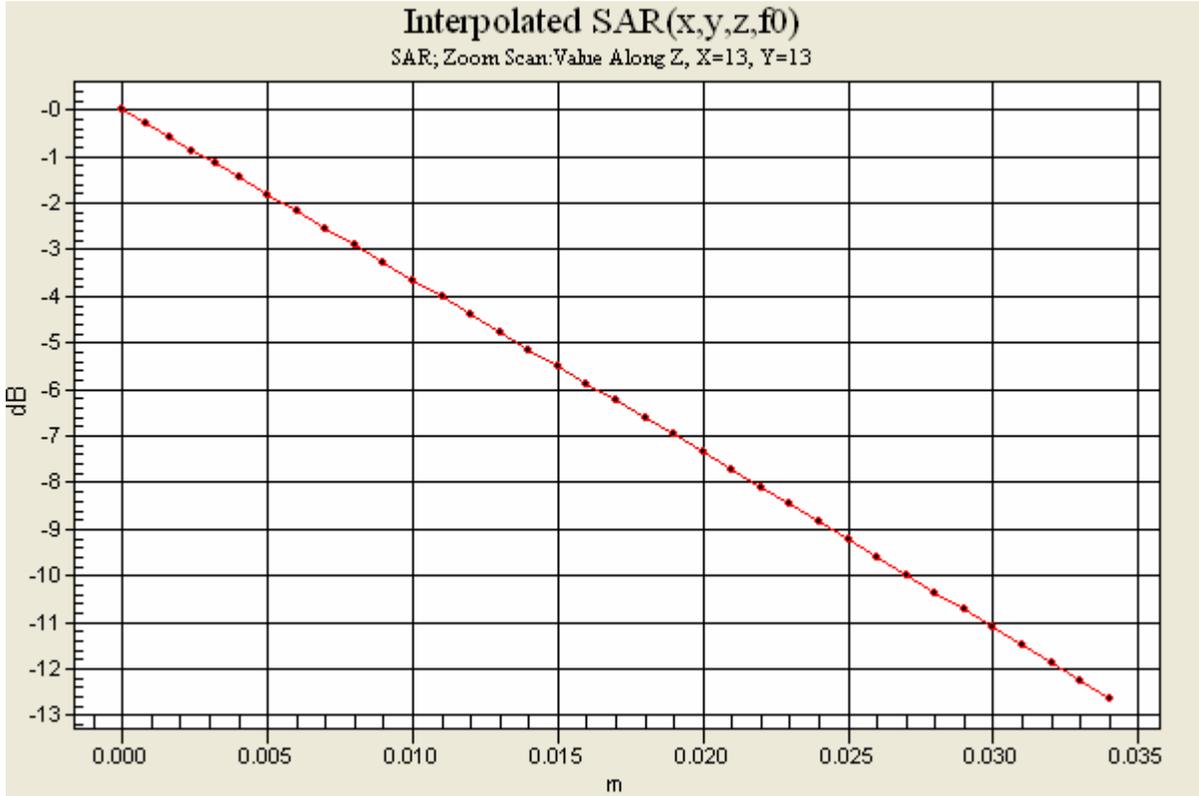
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

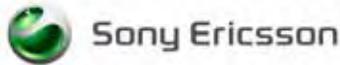


0 dB = 0.394mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	





Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Open Position.**

Date/Time: 3/5/2009 12:46:24 PM

File Name: [05Mar09\\_CS8\\_GSM1900\\_BMFQ\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538ConvF(5.18, 5.18, 5.18)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 35.8 % Ambient Temp: 22.4 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.18, 5.18, 5.18); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.274 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.18 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.356 W/kg

**SAR(1 g) = 0.227 mW/g; SAR(10 g) = 0.133 mW/g**

Maximum value of SAR (measured) = 0.246 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

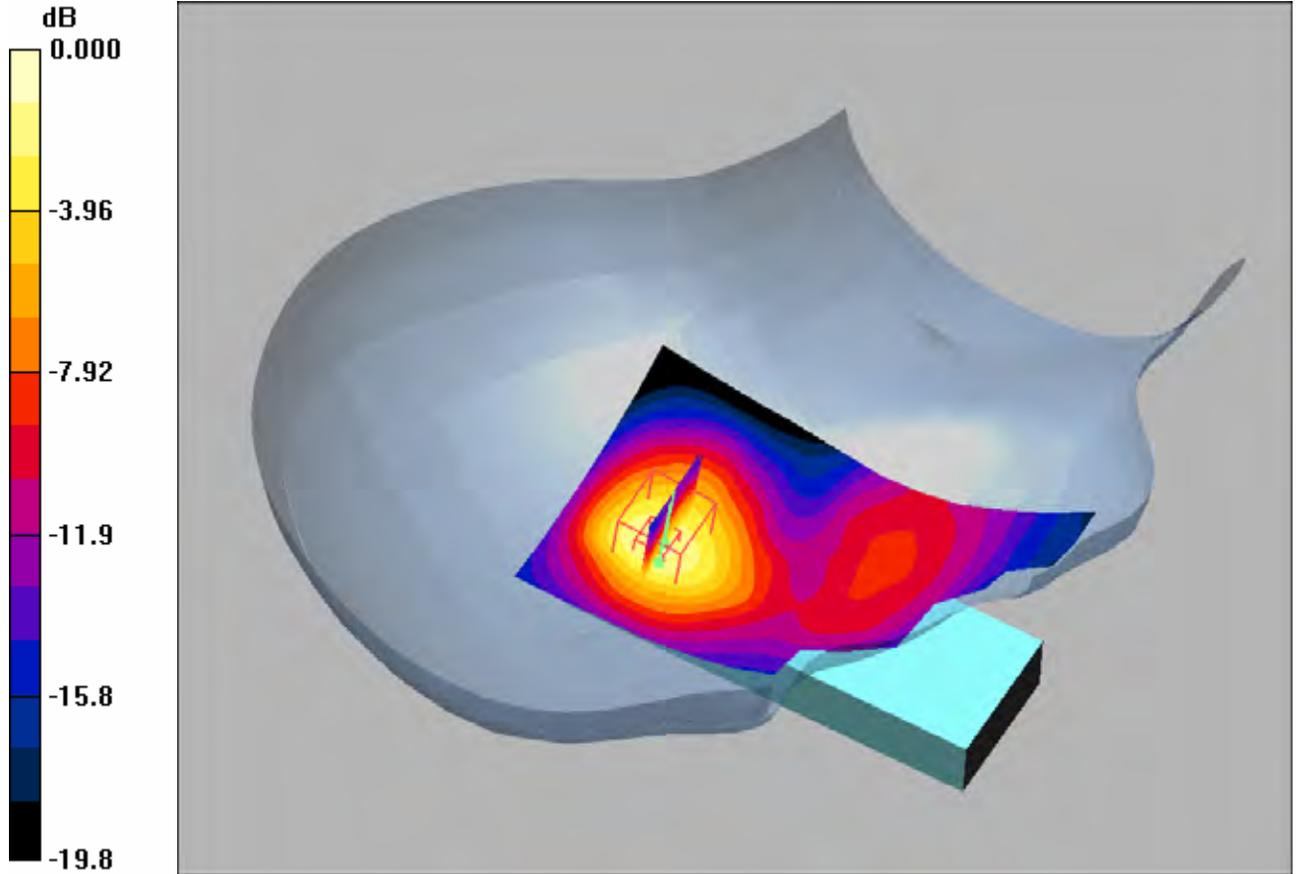
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.18 V/m; Power Drift = 0.028 dB

Maximum value of SAR (interpolated) = 0.356 mW/g



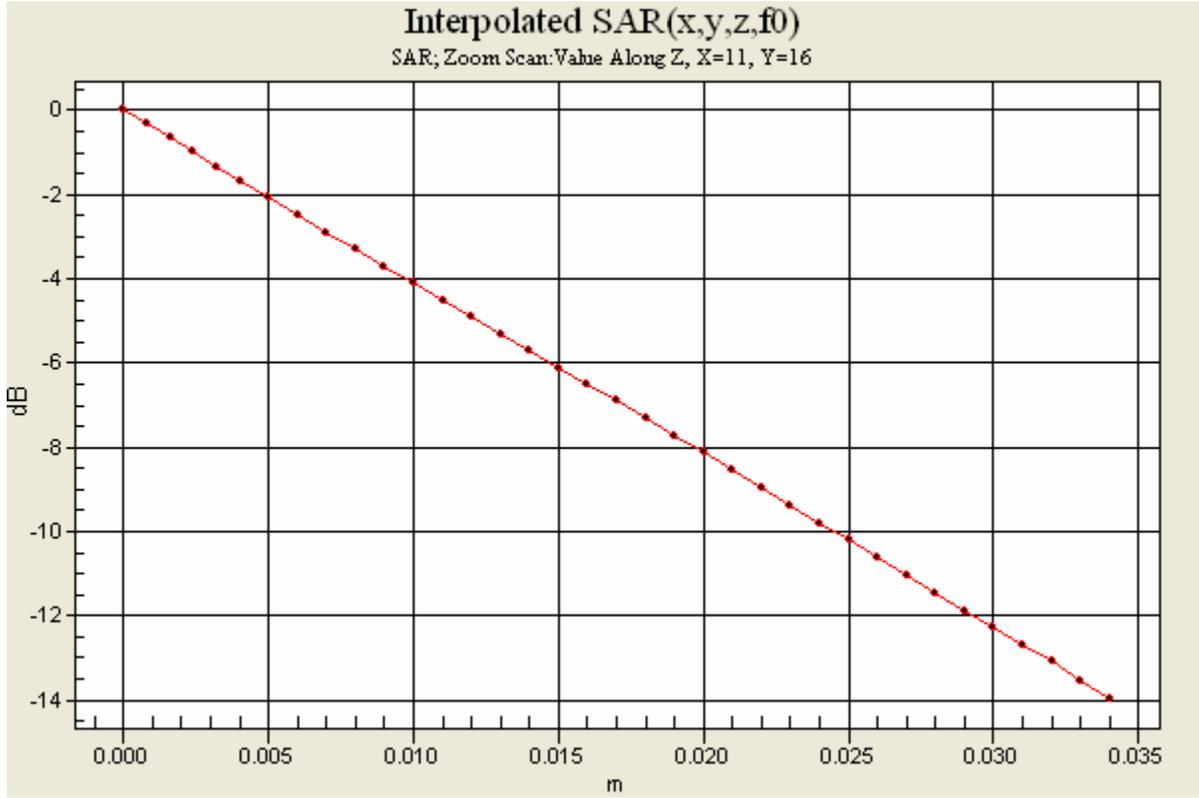
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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0 dB = 0.356mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR  
Model: CS8 with Standard Battery: BST-38, Left Cheek Open Position.**

Date/Time: 3/5/2009 9:00:42 AM

File Name: [05Mar09 CS8 GSM1900 BMFQ open LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538 ConvF(5.18, 5.18, 5.18)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 35.8 % Ambient Temp: 22.4 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.18, 5.18, 5.18); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.387 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.16 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 0.523 W/kg

**SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.202 mW/g**

Maximum value of SAR (measured) = 0.374 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

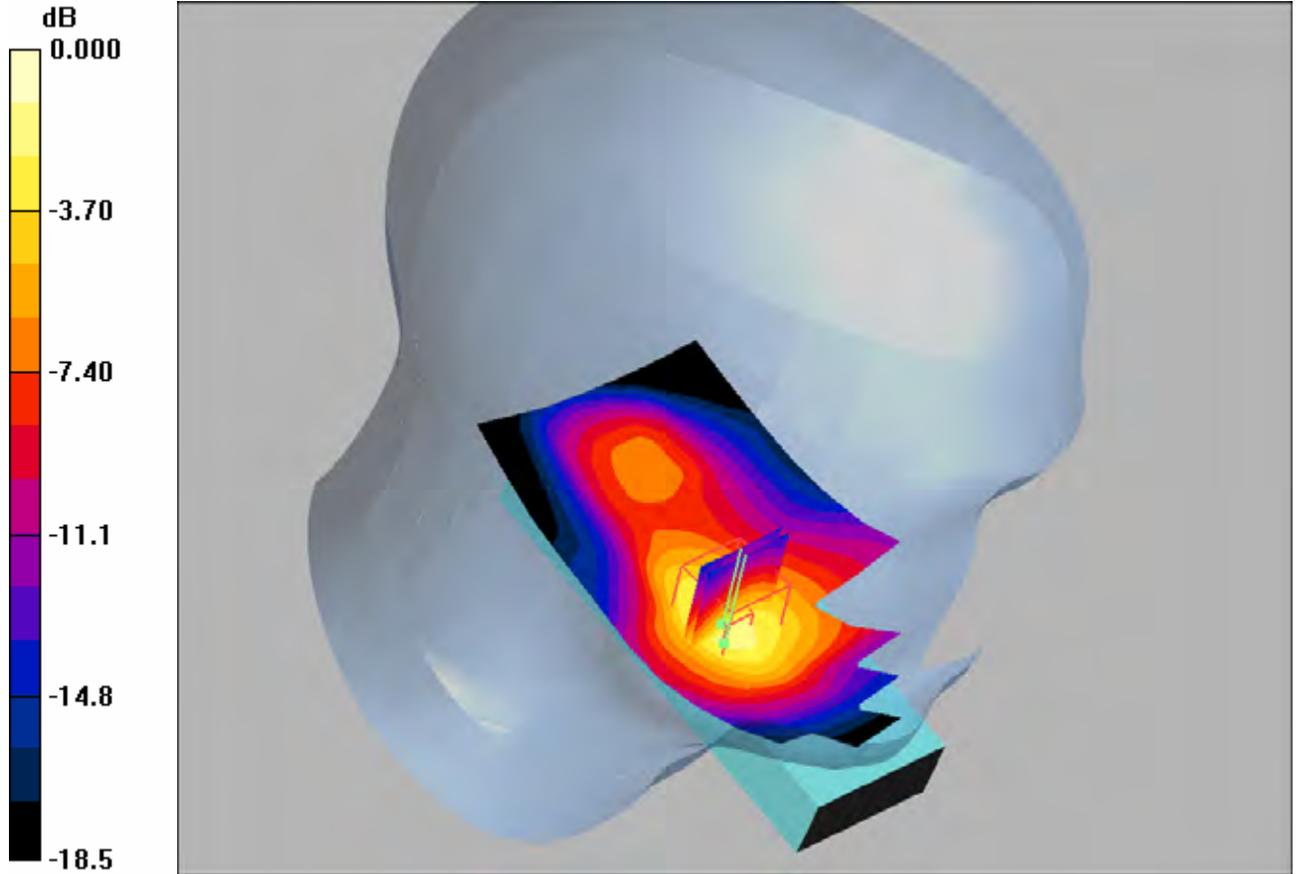
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.16 V/m; Power Drift = -0.040 dB

Maximum value of SAR (interpolated) = 0.523 mW/g



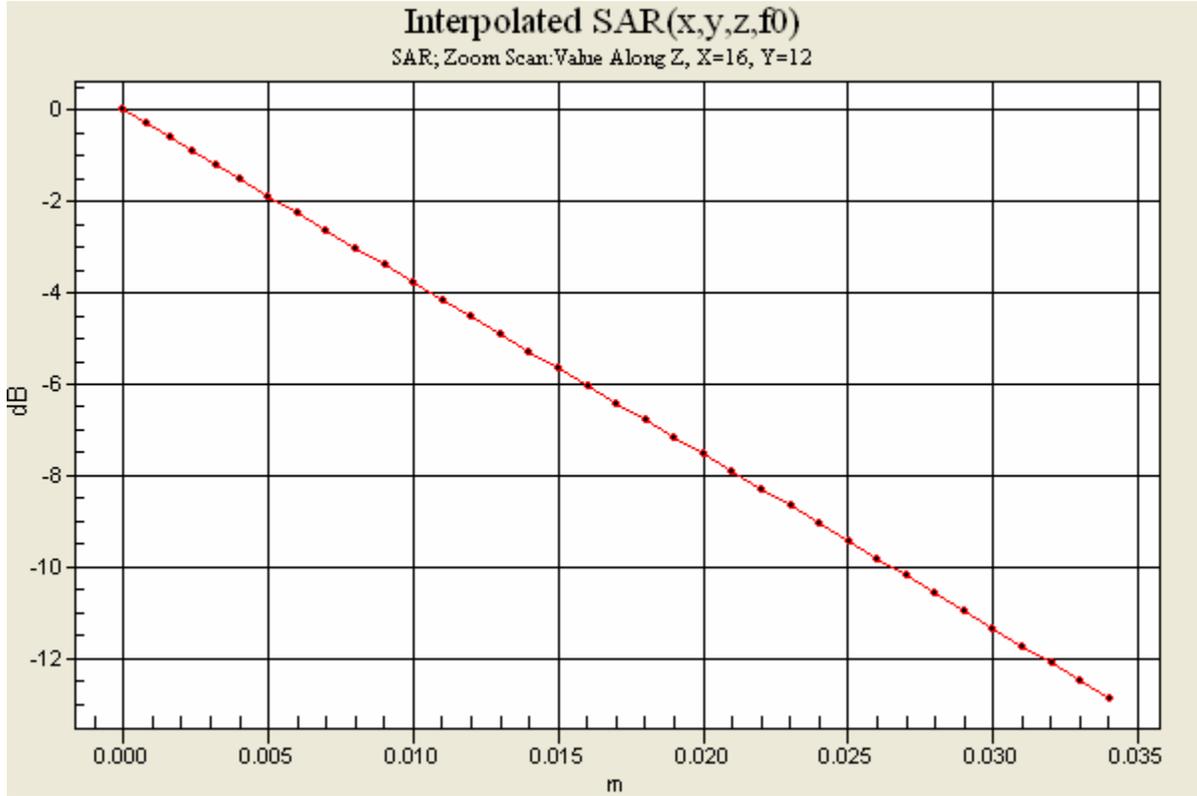
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

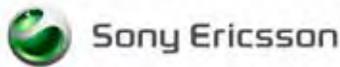


0 dB = 0.523mW/g



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**1900 GSM Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Open Position.**

Date/Time: 3/5/2009 10:15:26 AM

File Name: [05Mar09\\_CS8\\_GSM1900\\_BMFQ\\_open\\_LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538ConvF(5.18, 5.18, 5.18)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST-38 Humidity: 35.8 % Ambient Temp: 22.4 C Simulant Temp: 22.1 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.18, 5.18, 5.18); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.199 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.98 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.267 W/kg

**SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.107 mW/g**

Maximum value of SAR (measured) = 0.190 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

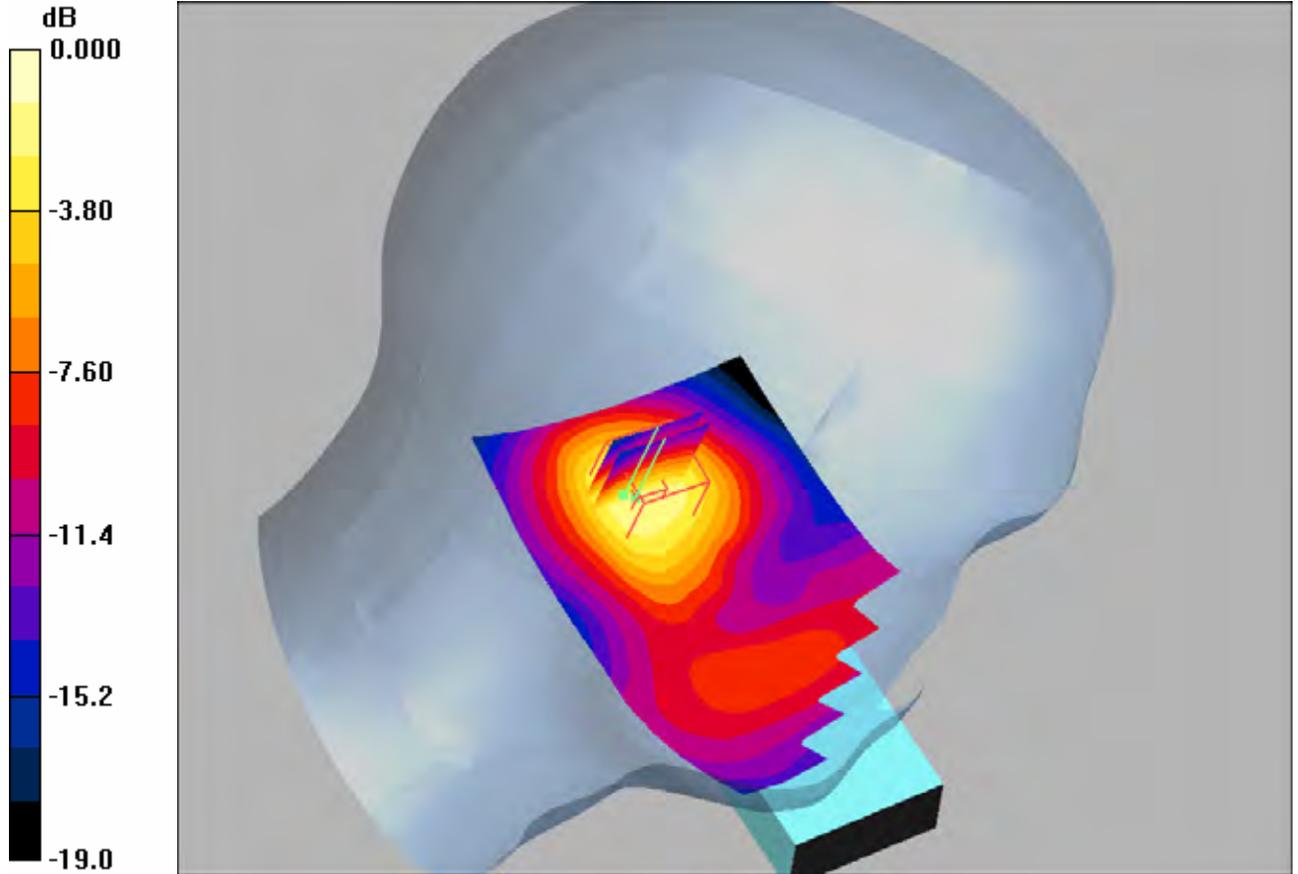
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.98 V/m; Power Drift = 0.016 dB

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



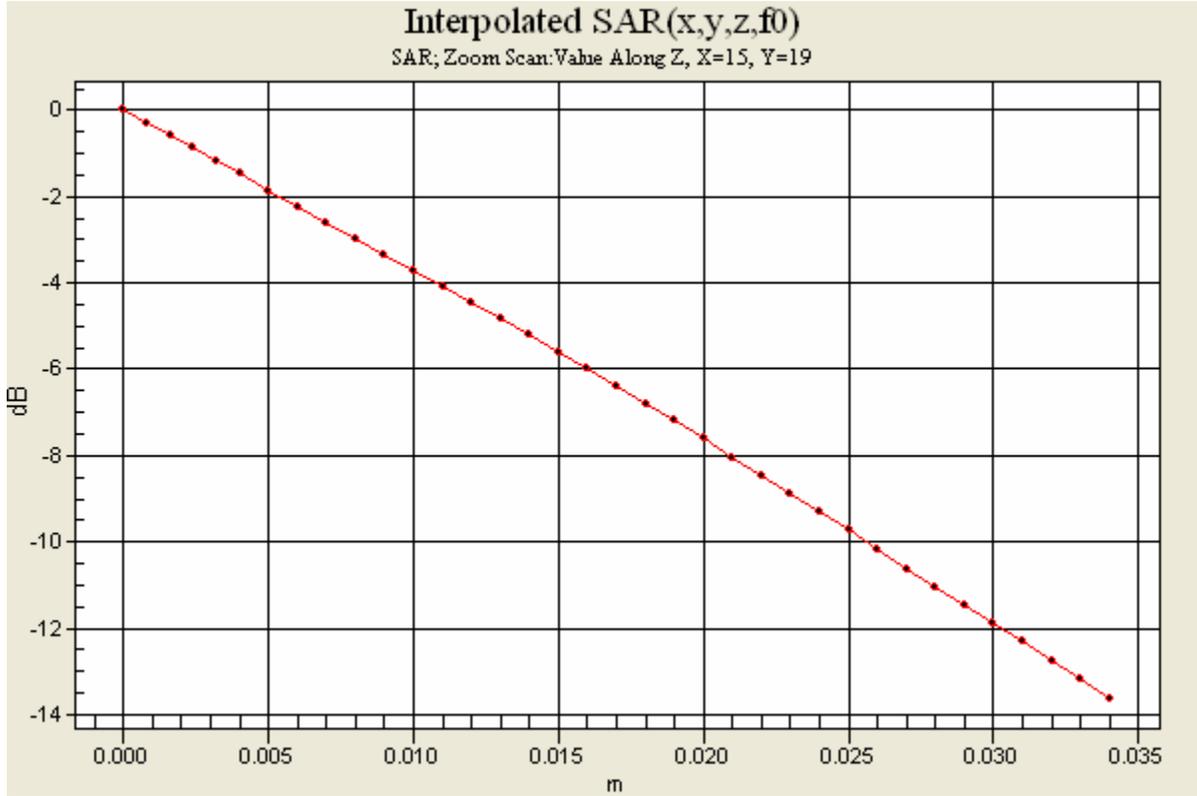
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

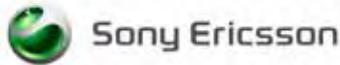


0 dB = 0.267mW/g



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**Band IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Position.**

Date/Time: 3/10/2009 10:05:29 AM

File Name: [10Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(5.46, 5.46, 5.46)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 38.8 % Ambient Temp: 21.8 C Simulant Temp: 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.46, 5.46, 5.46); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 1.18 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.775 mW/g; SAR(10 g) = 0.484 mW/g**

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

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

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

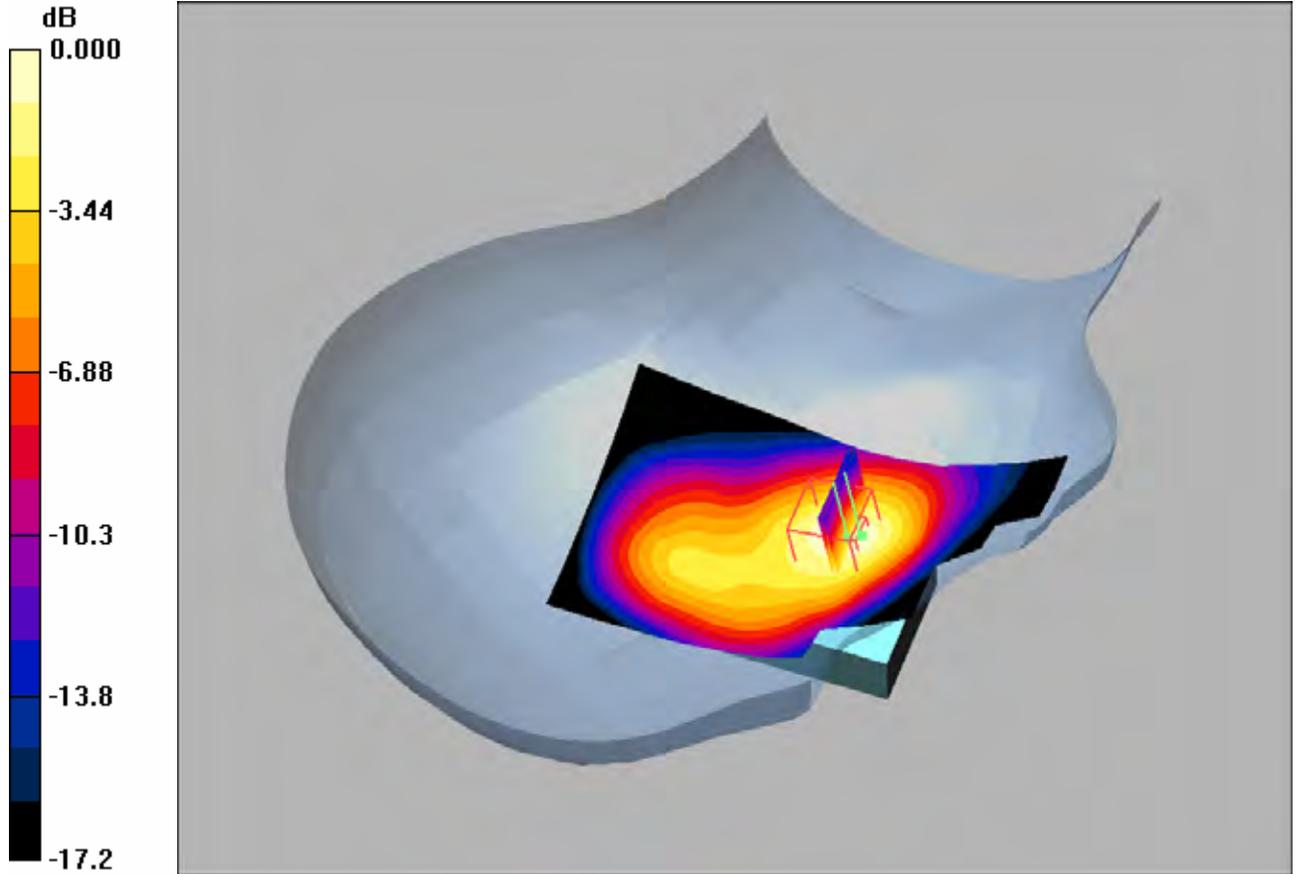
Reference Value = 10.4 V/m; Power Drift = 0.027 dB

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

Maximum value of SAR (interpolated) = 1.17 mW/g



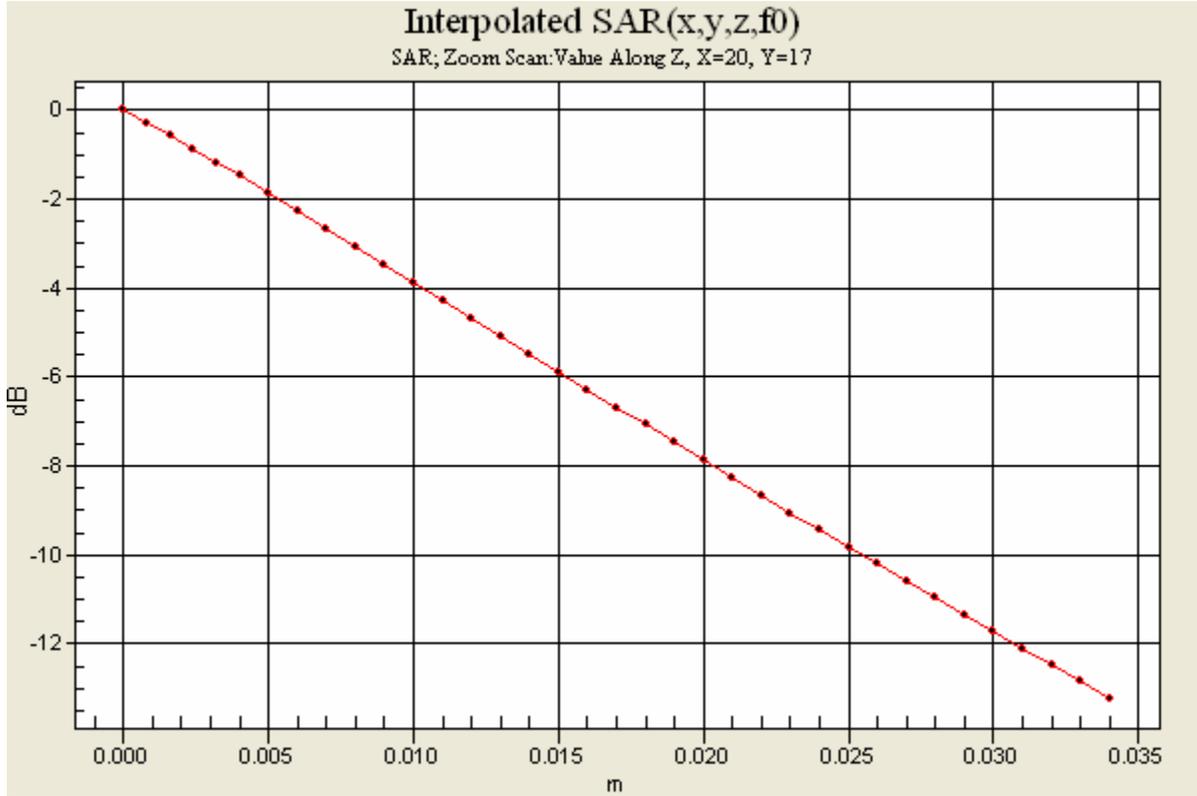
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

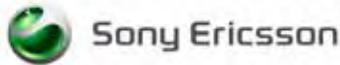


0 dB = 1.17mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**BAND IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Position.**

Date/Time: 3/10/2009 11:38:33 AM

File Name: [10Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(5.46, 5.46, 5.46)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 38.8 % Ambient Temp: 21.8 C Simulant Temp: 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.46, 5.46, 5.46); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.553 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.740 W/kg

**SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.324 mW/g**

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

Maximum value of SAR (measured) = 0.558 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

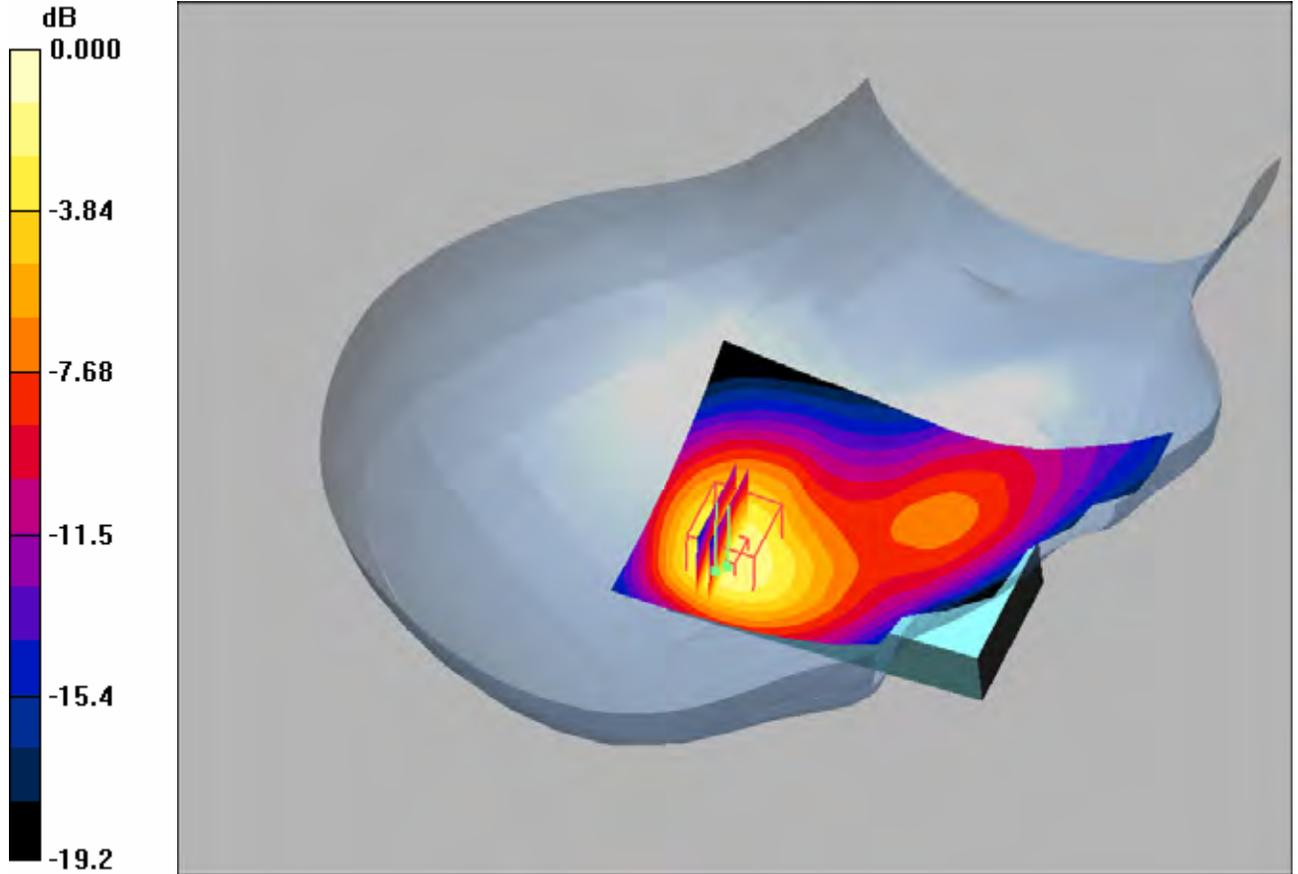
Reference Value = 15.0 V/m; Power Drift = 0.053 dB

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

Maximum value of SAR (interpolated) = 0.740 mW/g



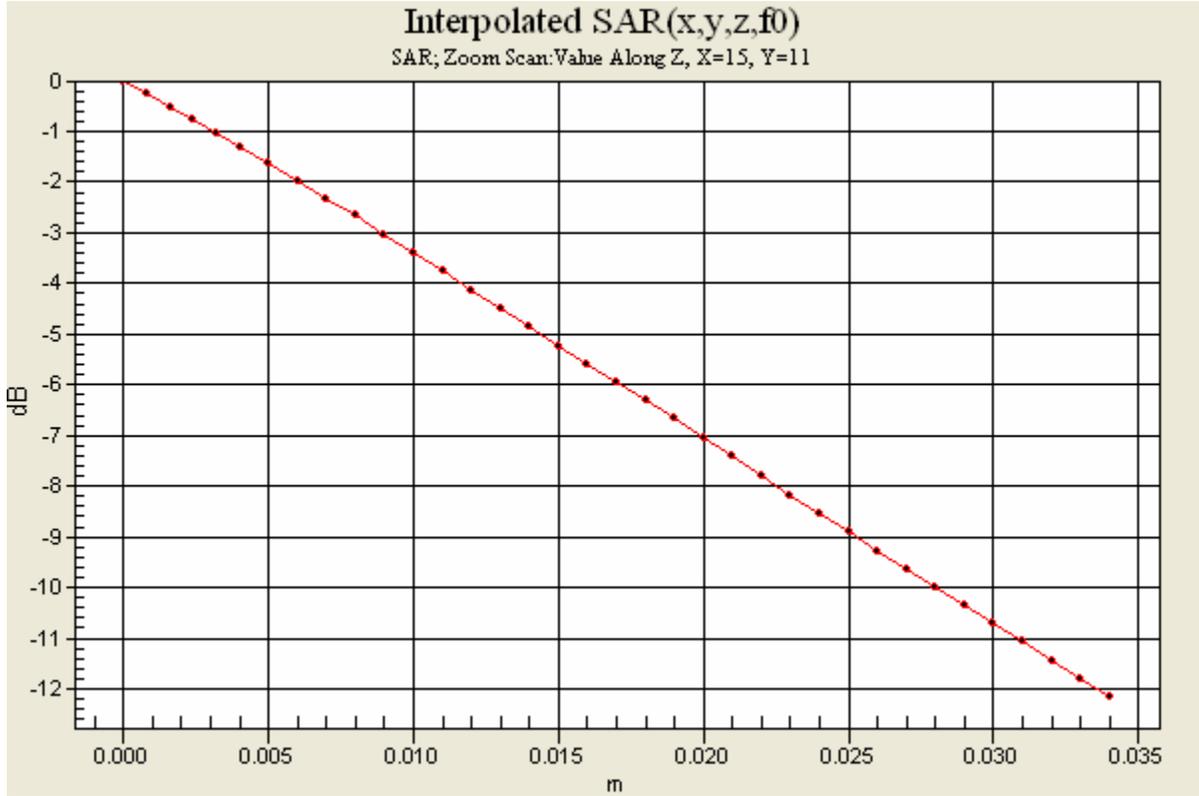
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

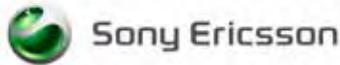


0 dB = 0.740mW/g



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**BAND IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Position.**

Date/Time: 3/10/2009 12:57:44 PM

File Name: [10Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(5.46, 5.46, 5.46)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 38.8 % Ambient Temp: 21.8 C Simulant Temp: 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.46, 5.46, 5.46); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.900 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.8 V/m; Power Drift = -0.184 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.806 mW/g; SAR(10 g) = 0.515 mW/g**

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

Maximum value of SAR (measured) = 0.901 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

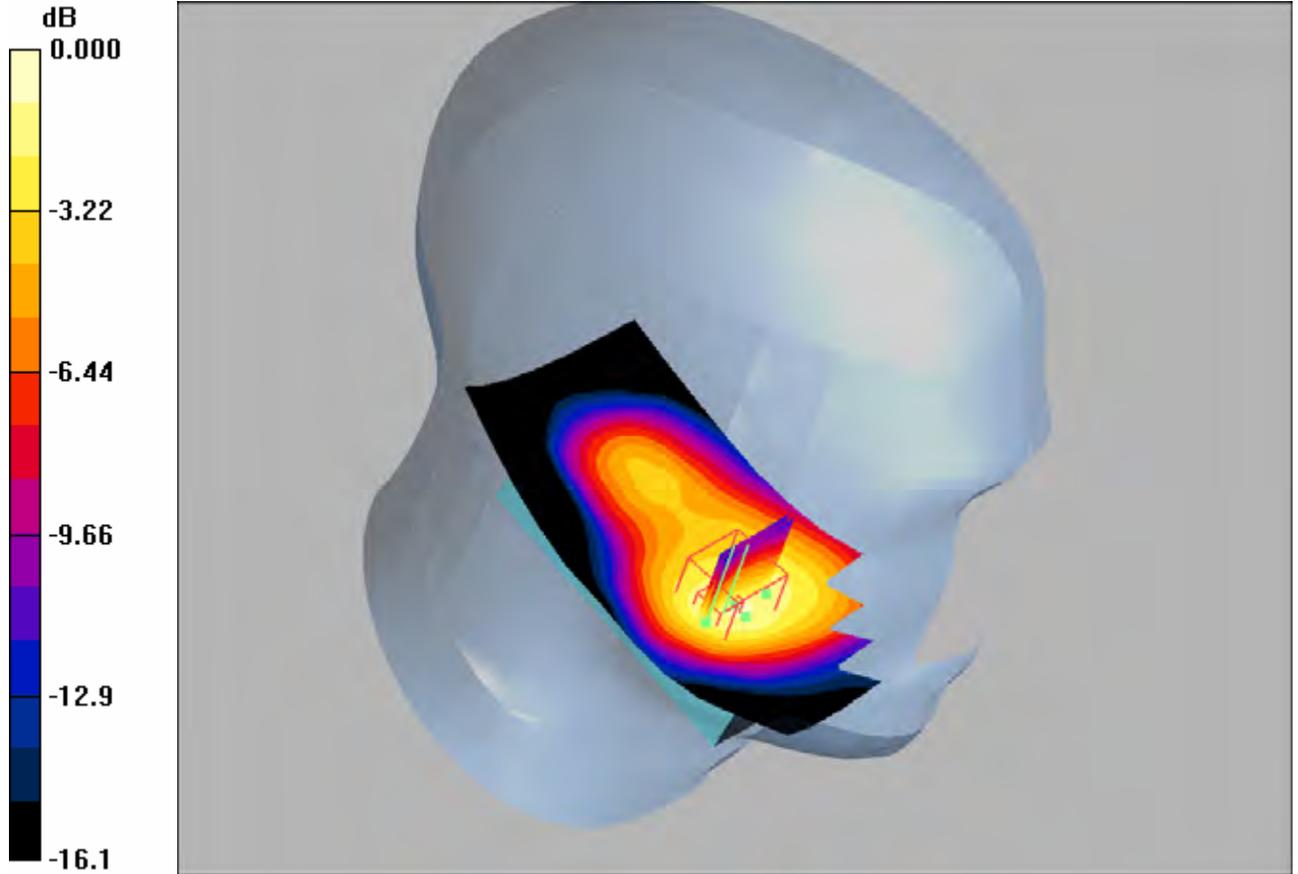
Reference Value = 11.8 V/m; Power Drift = -0.184 dB

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

Maximum value of SAR (interpolated) = 1.11 mW/g



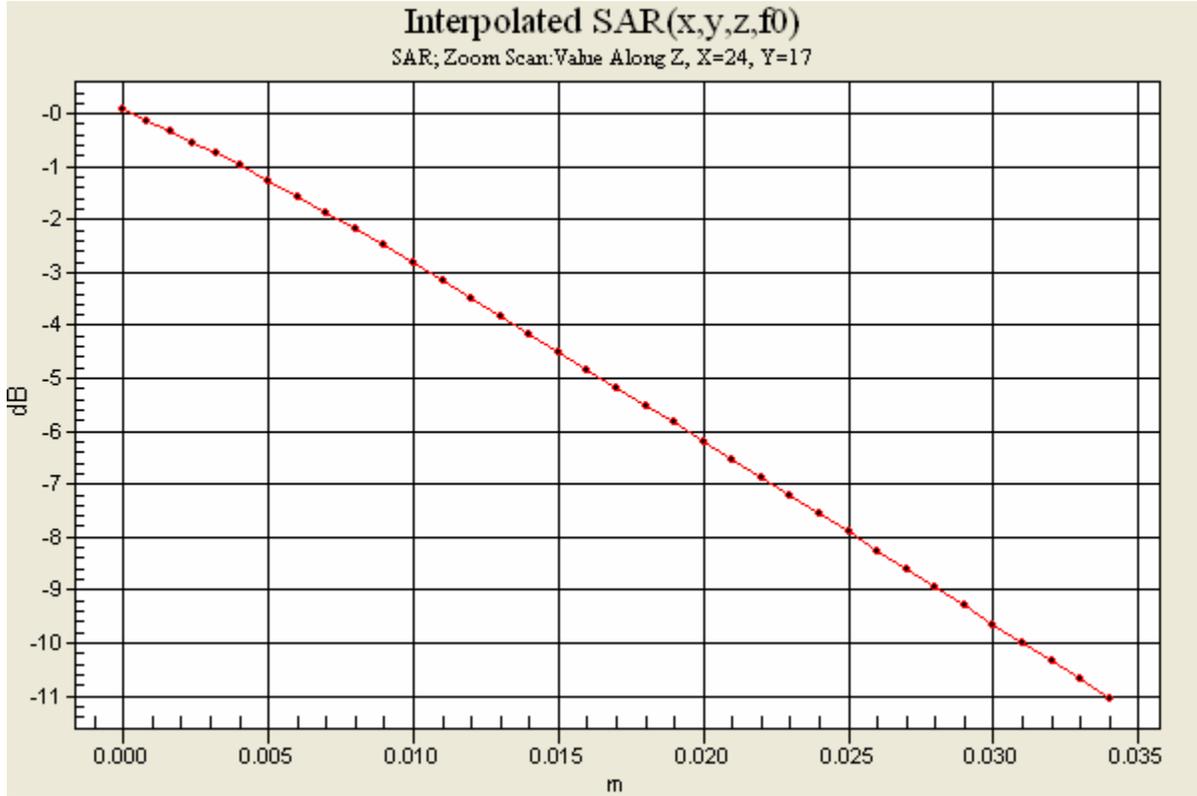
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

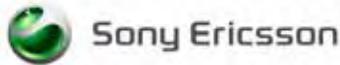


0 dB = 1.11mW/g



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Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**BAND IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Position.**

Date/Time: 3/10/2009 2:40:59 PM

File Name: [10Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(5.46, 5.46, 5.46)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 38.8 % Ambient Temp: 21.8 C Simulant Temp: 21.5 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(5.46, 5.46, 5.46); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054

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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.542 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.4 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.600 W/kg

**SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.262 mW/g**

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

Maximum value of SAR (measured) = 0.445 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

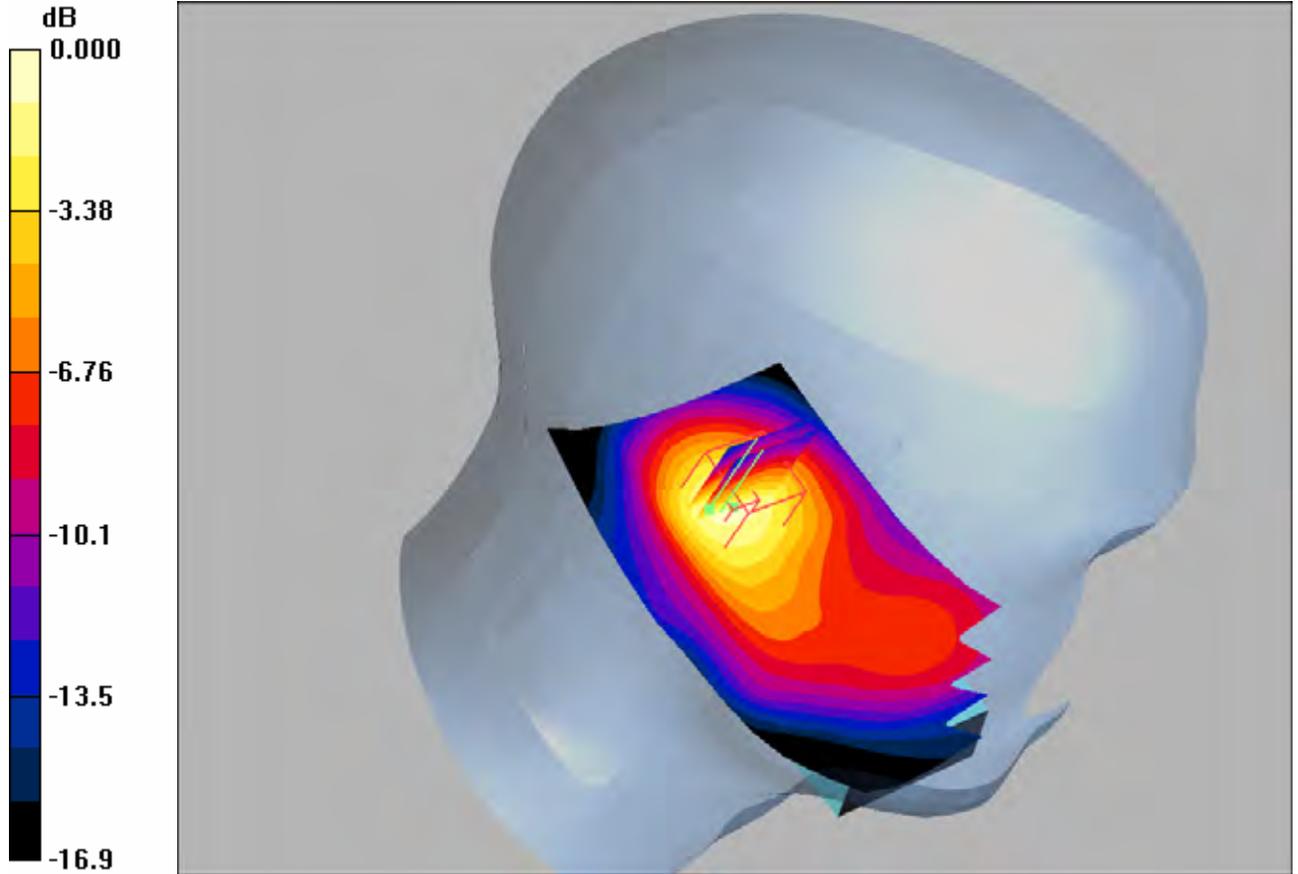
Reference Value = 17.4 V/m; Power Drift = 0.064 dB

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

Maximum value of SAR (interpolated) = 0.600 mW/g



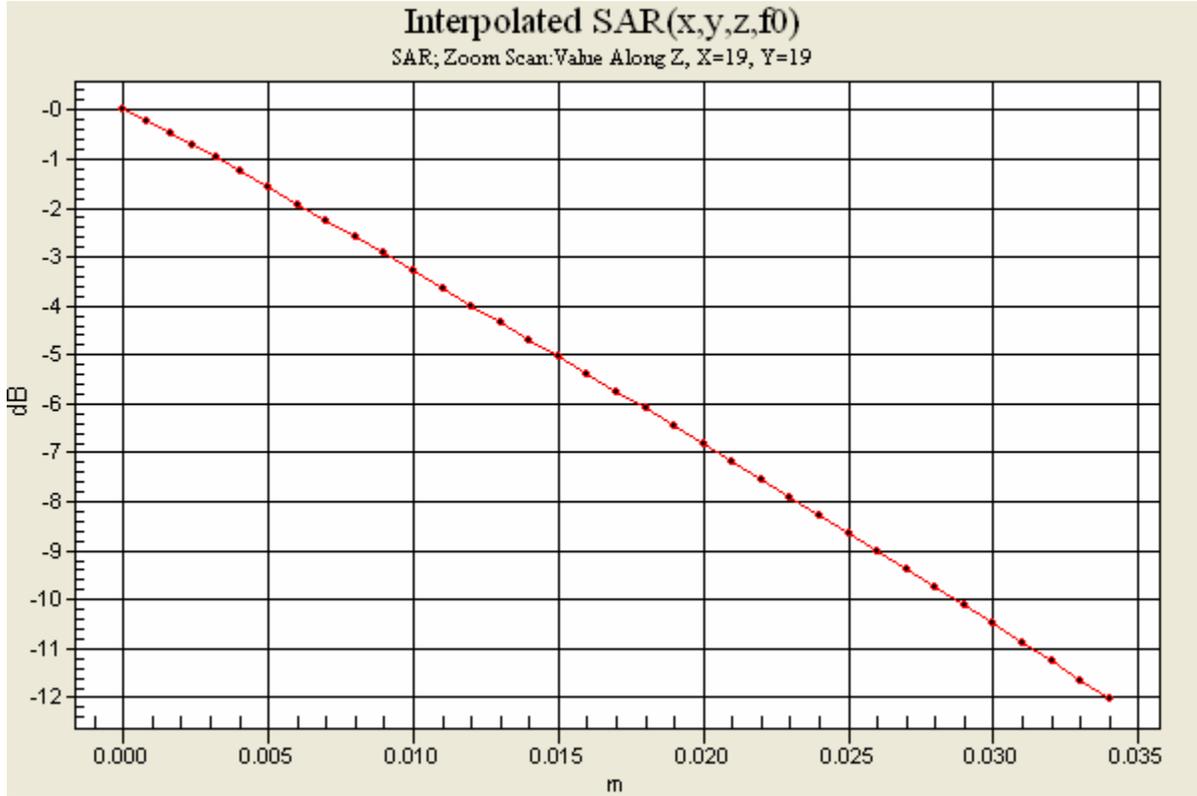
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

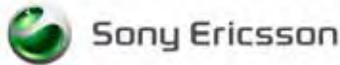


0 dB = 0.600mW/g



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Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**BAND IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Open Position.**

Date/Time: 3/12/2009 12:16:17 PM

File Name: [12Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 38.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 42.6 % Ambient Temp: 21.4 C Simulant Temp: 21.2 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.4, 5.4, 5.4); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.613 mW/g

**High channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.12 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.808 W/kg

**SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.368 mW/g**

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

Maximum value of SAR (measured) = 0.601 mW/g

**High channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

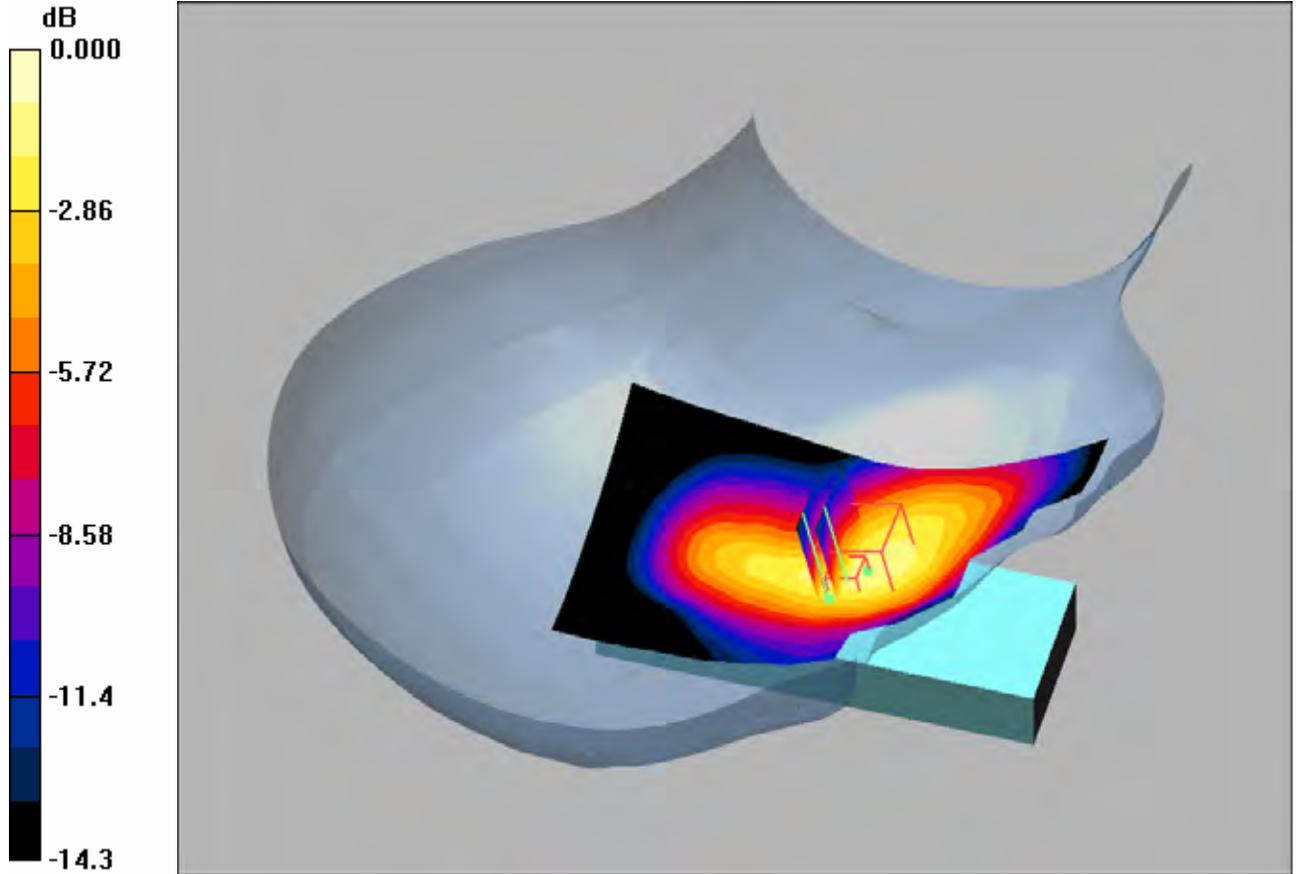
Reference Value = 6.12 V/m; Power Drift = 0.048 dB

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

Maximum value of SAR (interpolated) = 0.808 mW/g



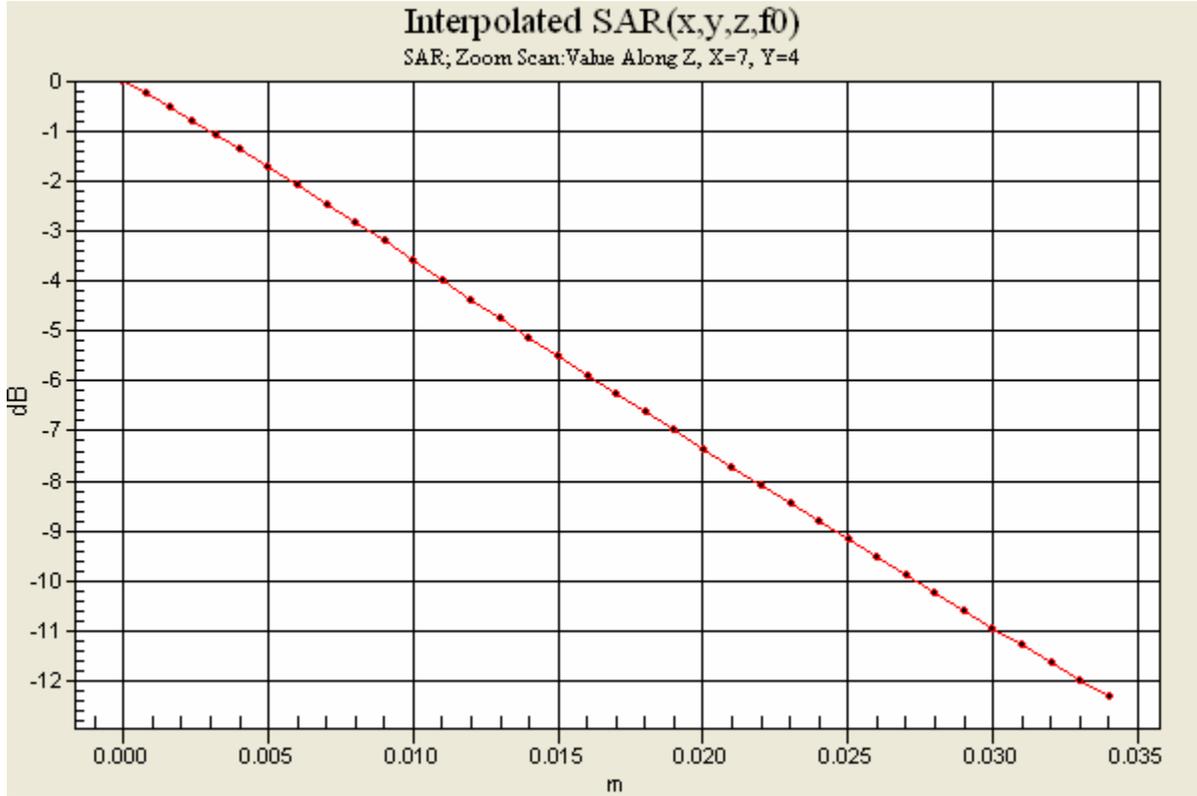
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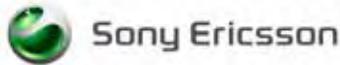


0 dB = 0.808mW/g



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**BAND IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Tilt Open Position.**

Date/Time: 3/12/2009 2:50:47 PM

File Name: [12Mar09 CS8 B4WCDMA BMKF open RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 38.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 42.6 % Ambient Temp: 21.4 C Simulant Temp: 21.2 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.4, 5.4, 5.4); Calibrated: 11/17/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn345; Calibrated: 10/31/2008
- 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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.599 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 0.741 W/kg

**SAR(1 g) = 0.503 mW/g; SAR(10 g) = 0.305 mW/g**

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

Maximum value of SAR (measured) = 0.549 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

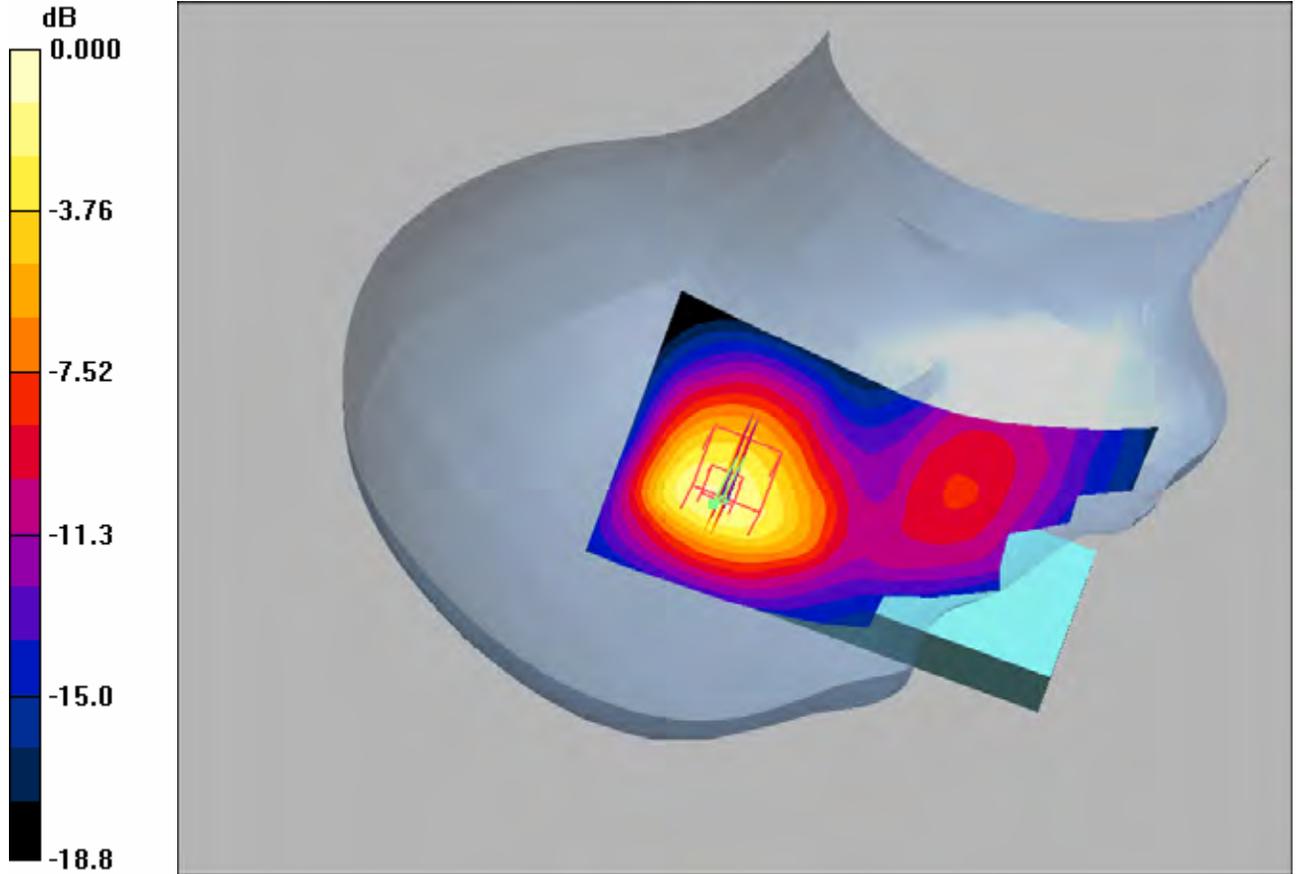
Reference Value = 14.1 V/m; Power Drift = 0.032 dB

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

Maximum value of SAR (interpolated) = 0.741 mW/g



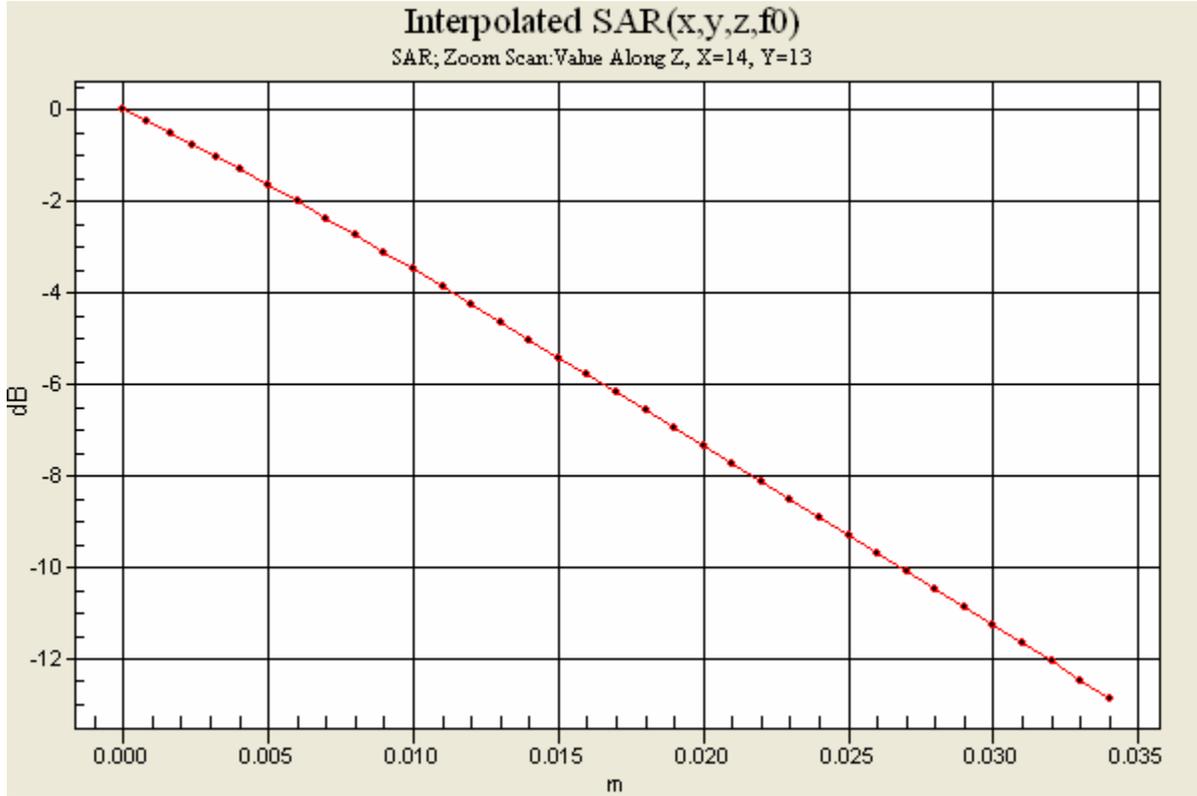
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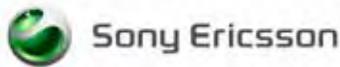


0 dB = 0.741mW/g



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**Band IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Open Position.**

Date/Time: 3/12/2009 9:00:27 AM

File Name: [12Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_open\\_LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4)

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.28$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 42.6 % Ambient Temp: 21.4 C Simulant Temp: 21.2 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.4, 5.4, 5.4); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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 cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.703 mW/g

**Low channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.1 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.943 W/kg

**SAR(1 g) = 0.639 mW/g; SAR(10 g) = 0.406 mW/g**

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

Maximum value of SAR (measured) = 0.692 mW/g

**Low channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

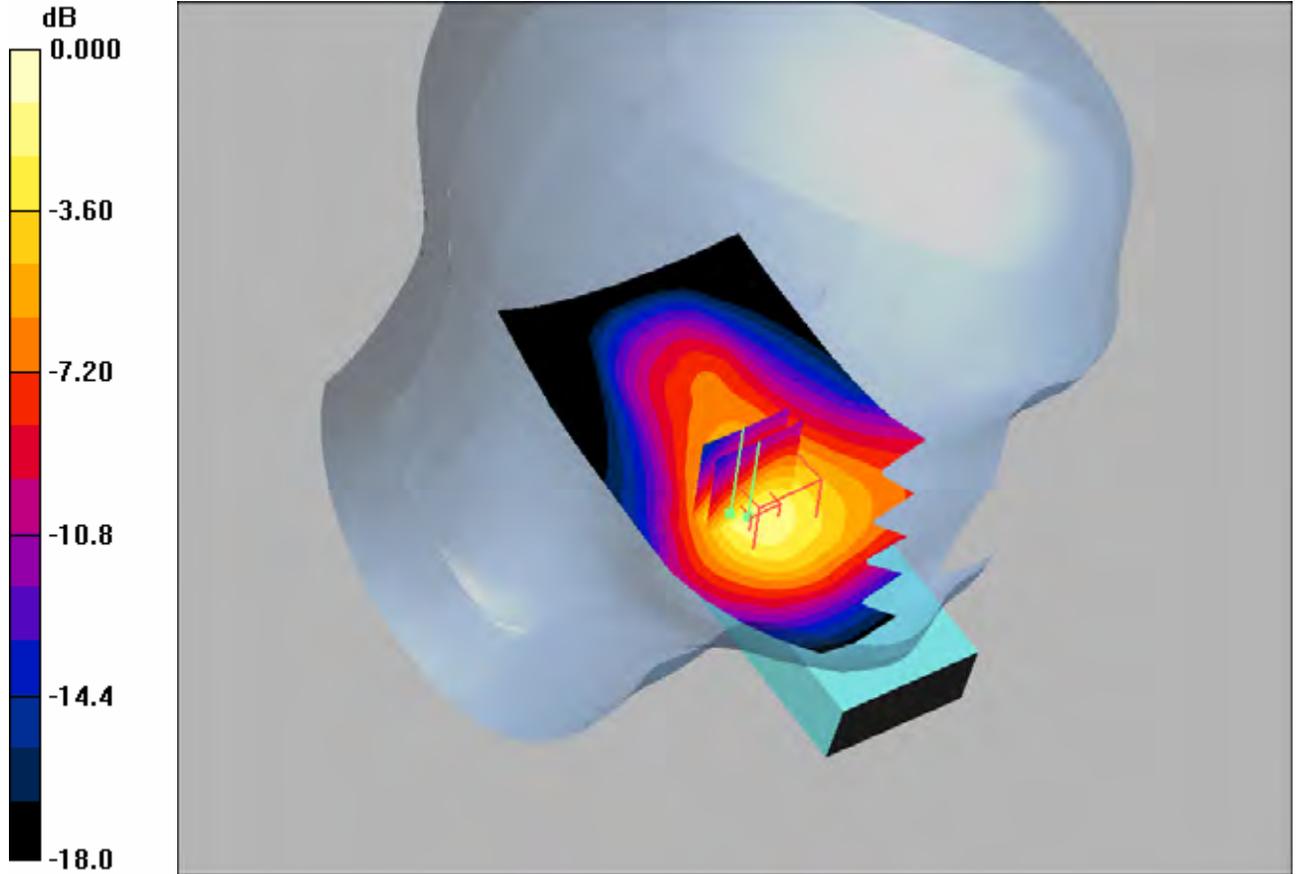
Reference Value = 21.1 V/m; Power Drift = 0.094 dB

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

Maximum value of SAR (interpolated) = 0.943 mW/g



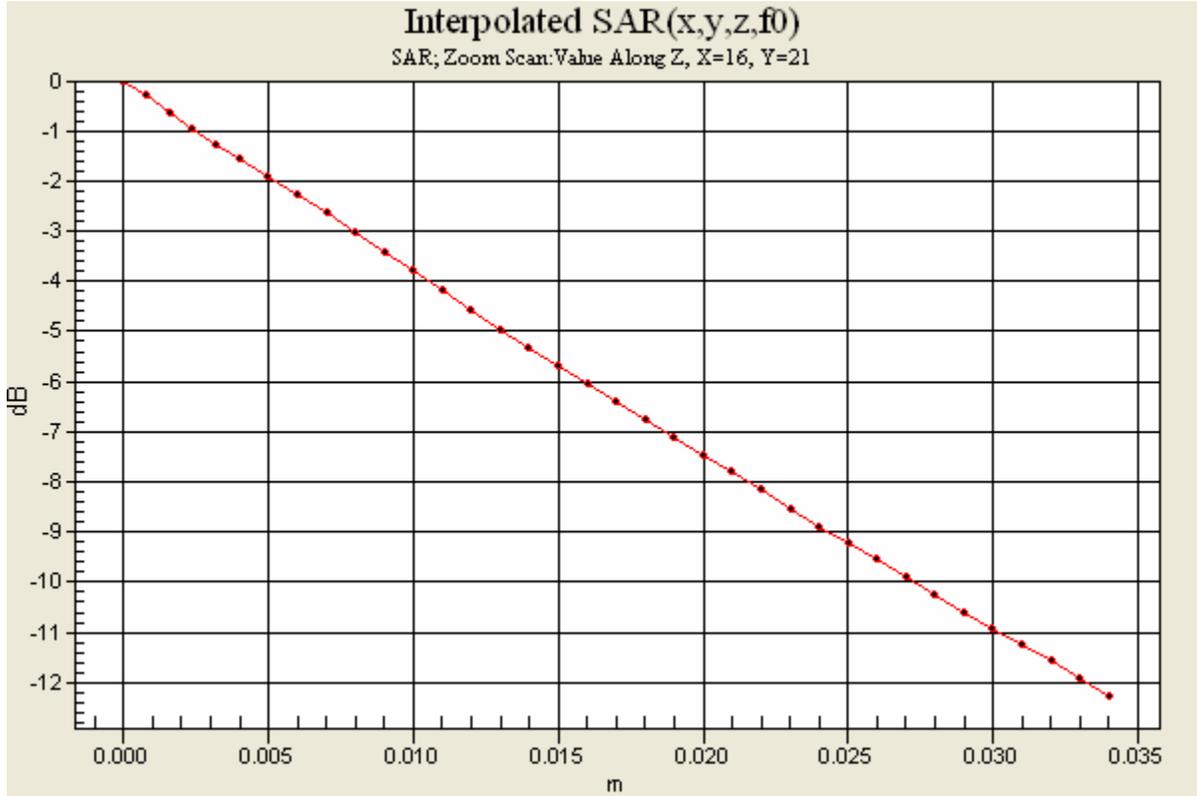
Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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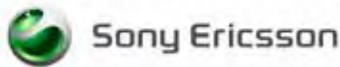


0 dB = 0.943mW/g



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**Band IV WCDMA Band: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Tilt Open Position.**

Date/Time: 3/12/2009 11:00:04 AM

File Name: [12Mar09 CS8 B4WCDMA BMKF open LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1583 ConvF(5.4, 5.4, 5.4)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 38.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 42.6 % Ambient Temp: 21.4 C Simulant Temp: 21.2 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1583; ConvF(5.4, 5.4, 5.4); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn345; Calibrated: 10/31/2008

- 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

**High channel tilt/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.466 mW/g

**High channel tilt/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.19 V/m; Power Drift = -0.055 dB

Peak SAR (extrapolated) = 0.552 W/kg

**SAR(1 g) = 0.392 mW/g; SAR(10 g) = 0.249 mW/g**

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

Maximum value of SAR (measured) = 0.424 mW/g

**High channel tilt/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

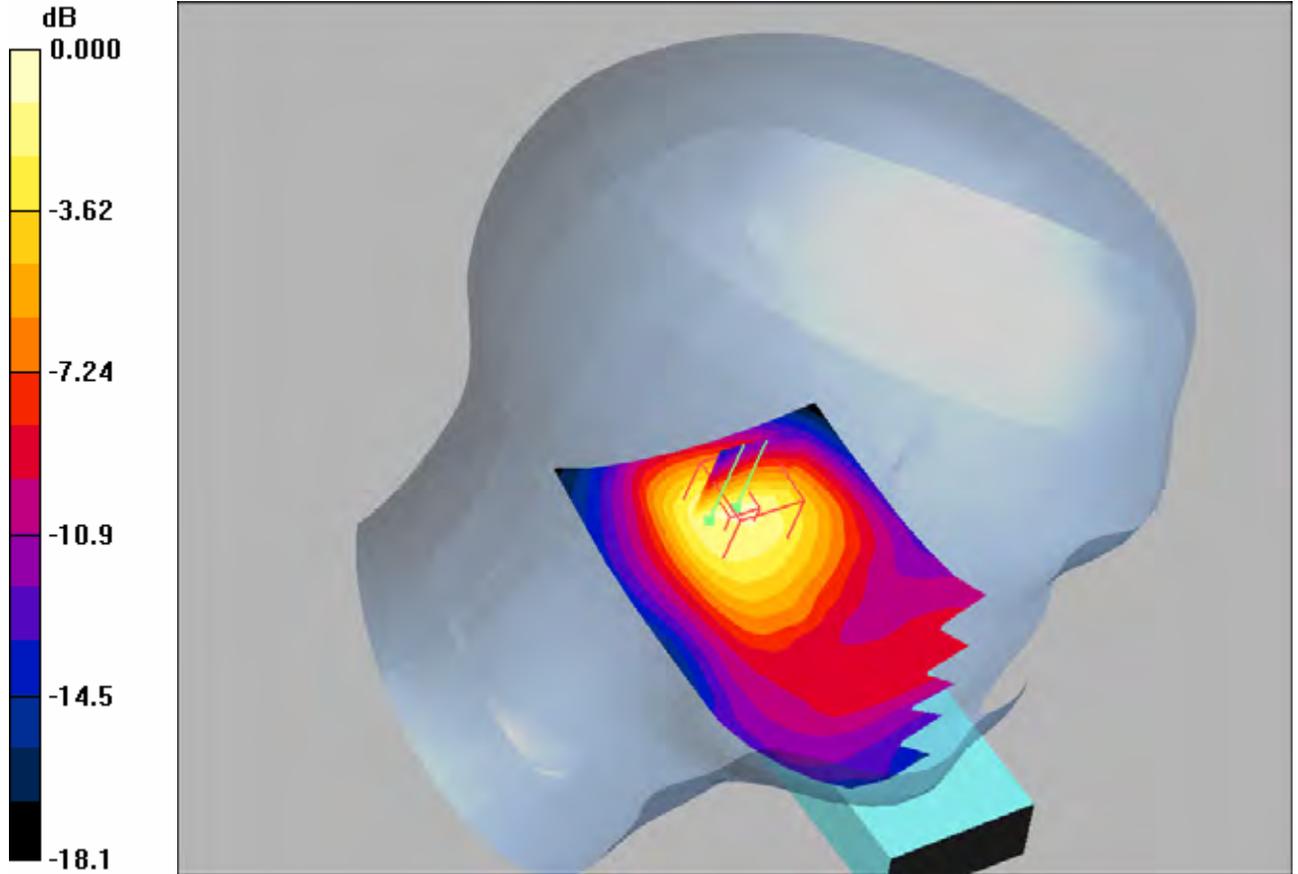
Reference Value = 7.19 V/m; Power Drift = -0.055 dB

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

Maximum value of SAR (interpolated) = 0.552 mW/g



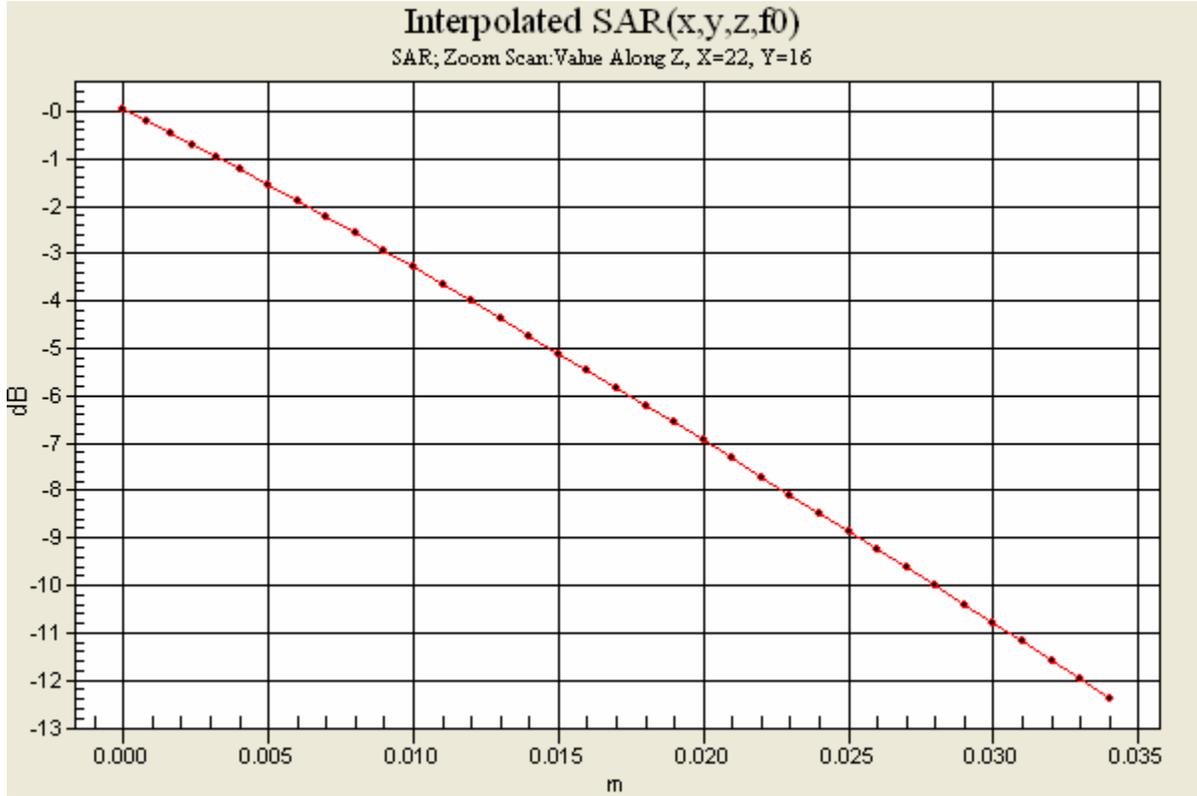
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0 dB = 0.552mW/g



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**WLAN: Distribution and Extrapolation of Maximum SAR  
Model: CS8 with Standard Battery: BST-38, Right Cheek Position.**

Date/Time: 3/12/2009 2:37:17 PM

File Name: [12Mar09\\_CS8\\_WLAN2450\\_BMJP\\_RCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(4.68, 4.68, 4.68)

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.86$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 43.3 % Ambient Temp: 21.8 C Simulant Temp: 22 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(4.68, 4.68, 4.68); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

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

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

**Middle channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.103 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.05 V/m; Power Drift = -0.079 dB

Peak SAR (extrapolated) = 0.239 W/kg

**SAR(1 g) = 0.094 mW/g; SAR(10 g) = 0.042 mW/g**

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

Maximum value of SAR (measured) = 0.099 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

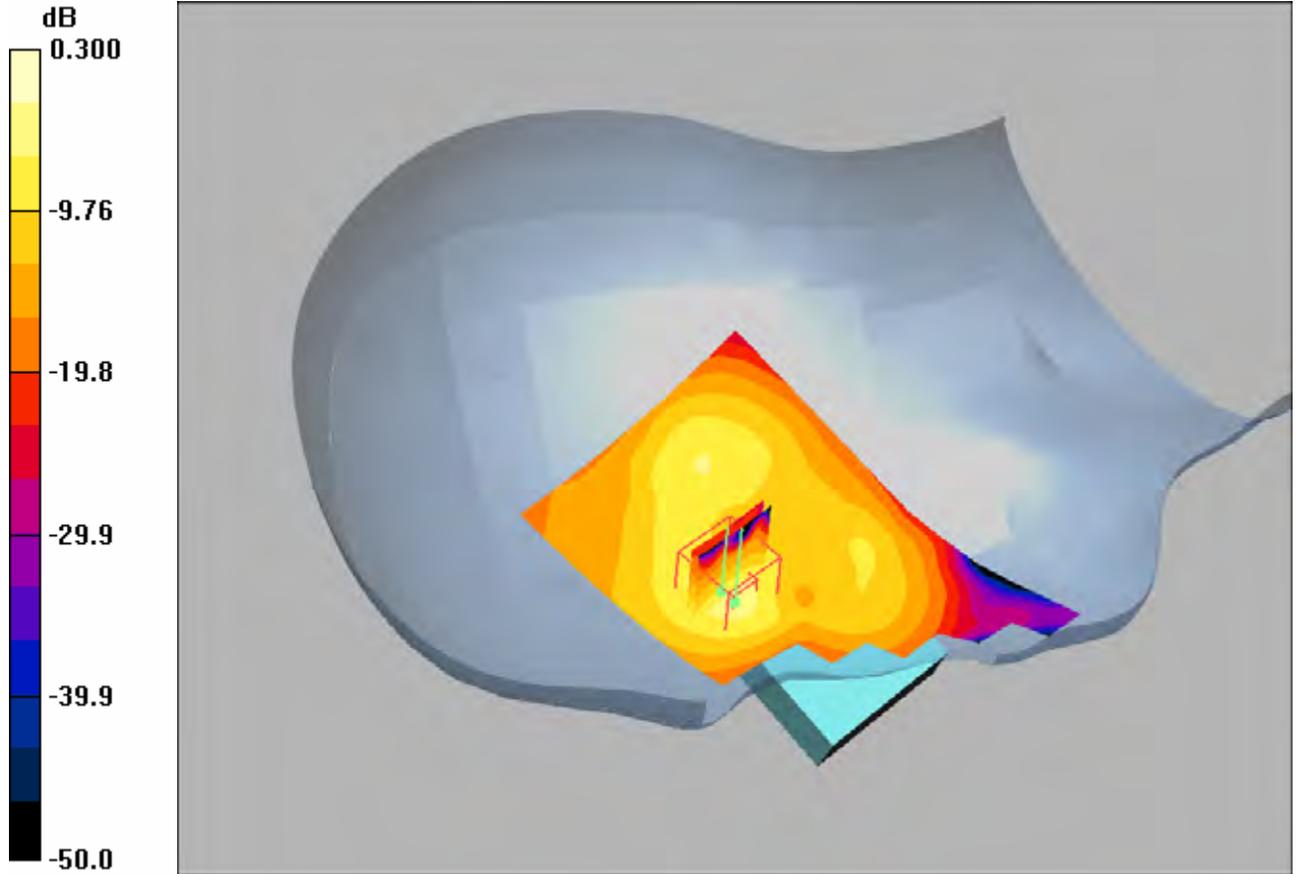
Reference Value = 5.05 V/m; Power Drift = -0.079 dB

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

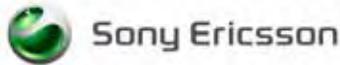
Maximum value of SAR (interpolated) = 0.239 mW/g



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0 dB = 0.239mW/g



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**WLAN: Distribution and Extrapolation of Maximum SAR  
Model: CS8 with Standard Battery: BST-38, Left Cheek Position.**

Date/Time: 3/12/2009 11:22:59 AM

File Name: [12Mar09\\_CS8\\_WLAN2450\\_BMJP\\_LCT01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(4.68, 4.68, 4.68)

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.86$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 43.3 % Ambient Temp: 21.8 C Simulant Temp: 22 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(4.68, 4.68, 4.68); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

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

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

**Middle channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.100 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.23 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 0.265 W/kg

**SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.042 mW/g**

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

Maximum value of SAR (measured) = 0.105 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

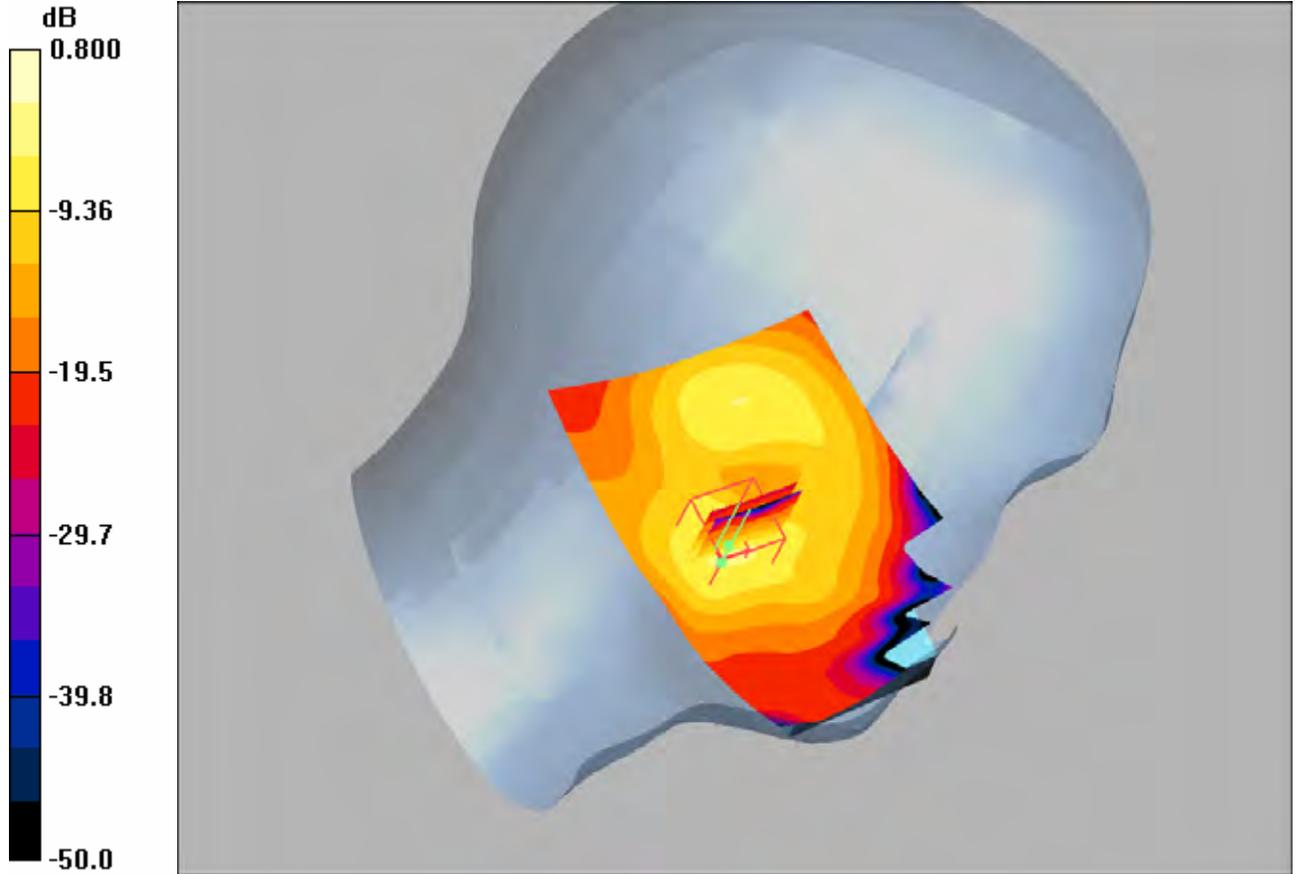
Reference Value = 6.23 V/m; Power Drift = 0.032 dB

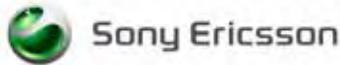
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.265 mW/g



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**WLAN: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Right Cheek Open Position.**

Date/Time: 3/16/2009 1:48:51 PM

File Name: [16Mar09\\_CS8\\_WLAN2450\\_BMJP\\_open\\_RCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538 ConvF(4.68, 4.68, 4.68)

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 41.6 % Ambient Temp: 21.7 C Simulant Temp: 21.9 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(4.68, 4.68, 4.68); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

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

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

**Middle channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.077 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.09 V/m; Power Drift = -0.185 dB

Peak SAR (extrapolated) = 0.153 W/kg

**SAR(1 g) = 0.073 mW/g; SAR(10 g) = 0.037 mW/g**

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

Maximum value of SAR (measured) = 0.079 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

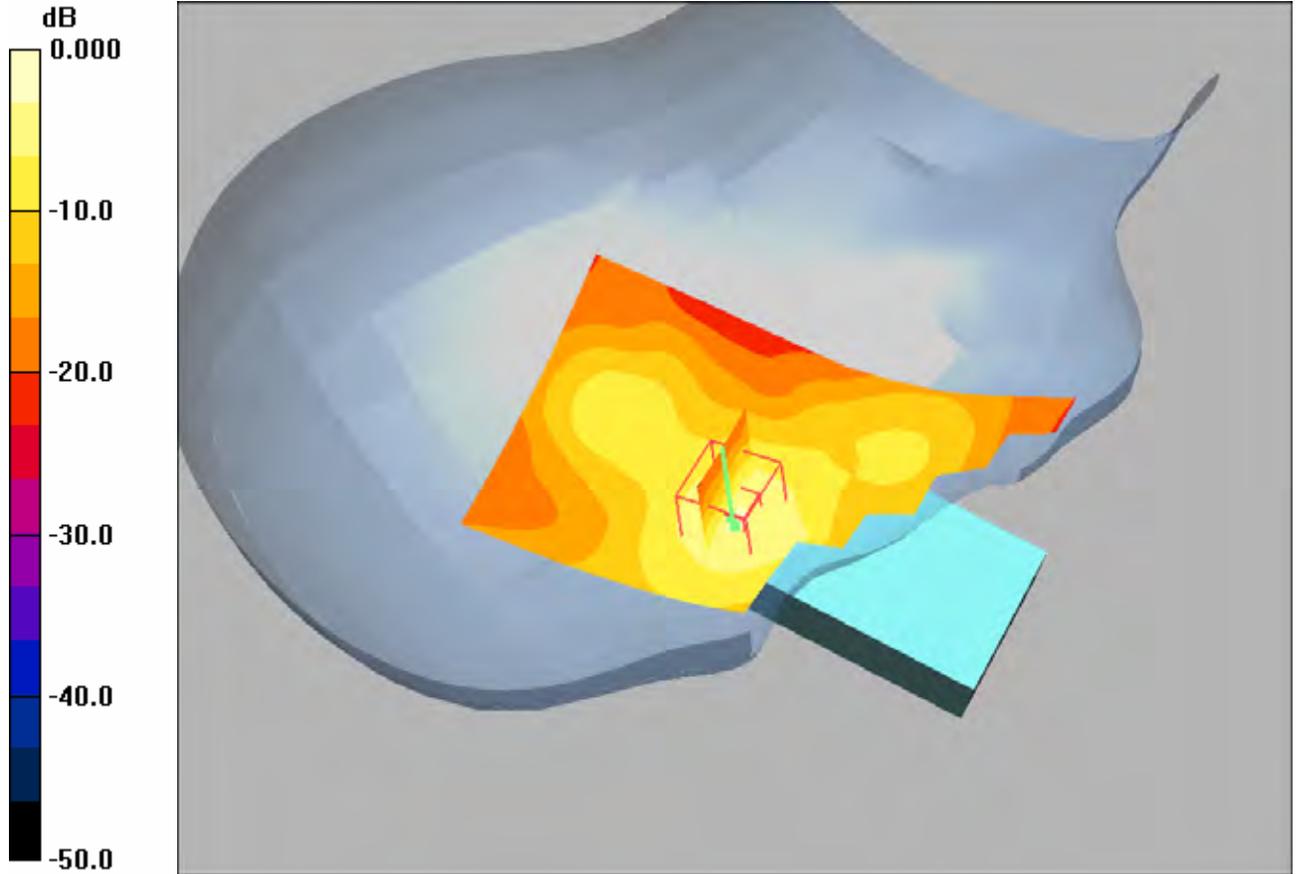
Reference Value = 3.09 V/m; Power Drift = -0.185 dB

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

Maximum value of SAR (interpolated) = 0.153 mW/g



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0 dB = 0.153mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**WLAN: Distribution and Extrapolation of Maximum SAR**

**Model: CS8 with Standard Battery: BST-38, Left Cheek Open Position.**

Date/Time: 3/16/2009 9:51:00 AM

File Name: [16Mar09 CS8 WLAN2450 BMJP open LCT01.da4](#)

DUT: CS8 Open

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

Probe: ET3DV6 - SN1538 ConvF(4.68, 4.68, 4.68)

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 41.6 % Ambient Temp: 21.7 C Simulant Temp: 21.9 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(4.68, 4.68, 4.68); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

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

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

**Middle channel cheek/Area Scan (61x101x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.113 mW/g

**Middle channel cheek/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.52 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.224 W/kg

**SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.052 mW/g**

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

Maximum value of SAR (measured) = 0.116 mW/g

**Middle channel cheek/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

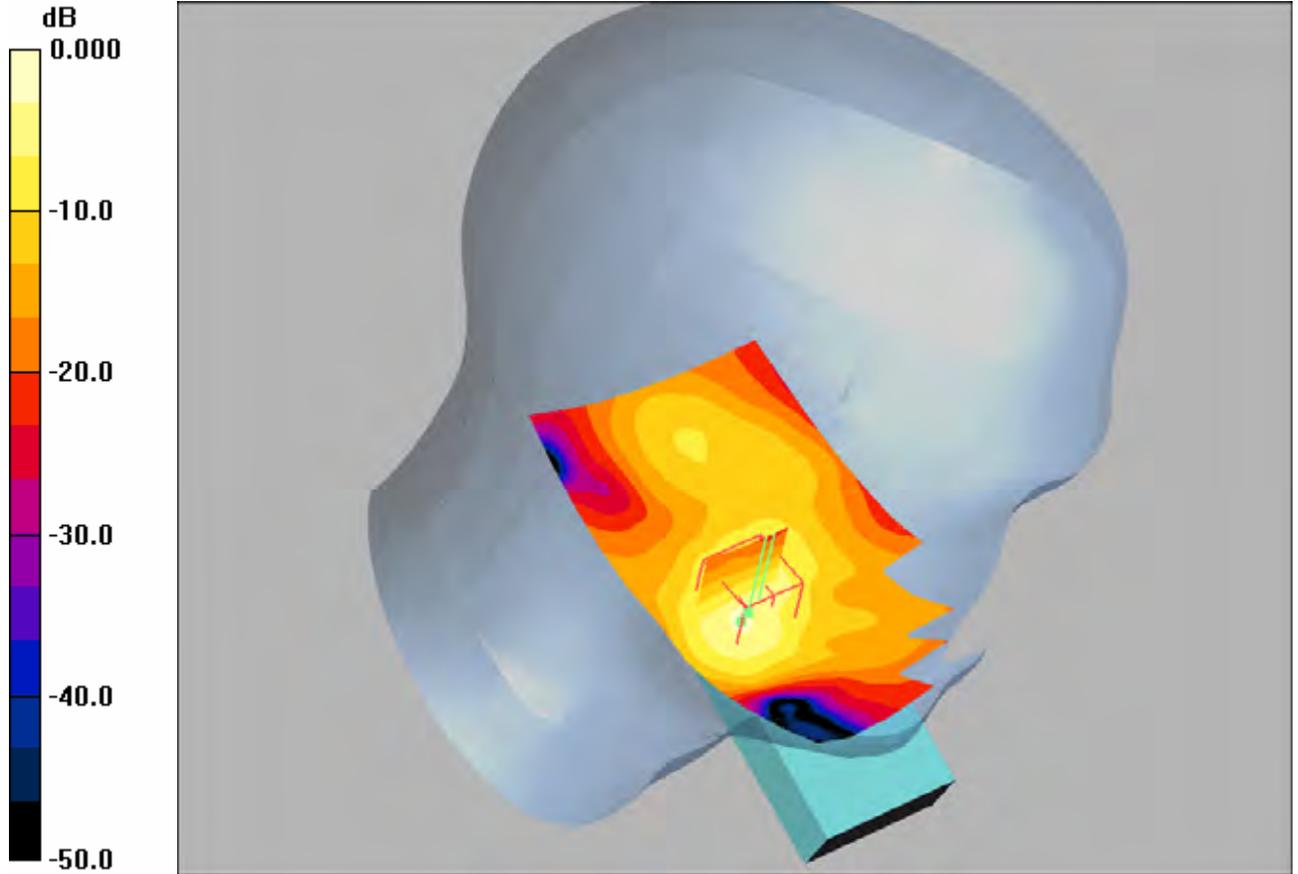
Reference Value = 3.52 V/m; Power Drift = -0.003 dB

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

Maximum value of SAR (interpolated) = 0.224 mW/g



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Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



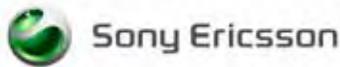
0 dB = 0.224mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
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**Appendix 3**

**SAR distribution plots for Body Worn Configuration**



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-38)**

Date/Time: 3/4/2009 9:42:41 AM

File Name: [04Mar09\\_CS8\\_GSM835\\_BMFQ\\_15mm\\_BBF01.da4](#)

DUT: CS8 body

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

Probe: ET3DV6 - SN1539 ConvF(5.53, 5.53, 5.53)

Medium parameters used (interpolated): f = 836 MHz;  $\sigma = 0.956$  mho/m;  $\epsilon_r = 56.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST38 Humidity - 38.6 % Ambient Temp - 21.4 C Simulant Temp - 21.7 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.53, 5.53, 5.53); Calibrated: 11/17/2008

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

- Electronics: DAE3 Sn432; Calibrated: 5/13/2008

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

- 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

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

Maximum value of SAR (interpolated) = 1.27 mW/g

**Middle channel back/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.0 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 1.53 W/kg

**SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.867 mW/g**

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

Maximum value of SAR (measured) = 1.29 mW/g

**Middle channel back/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

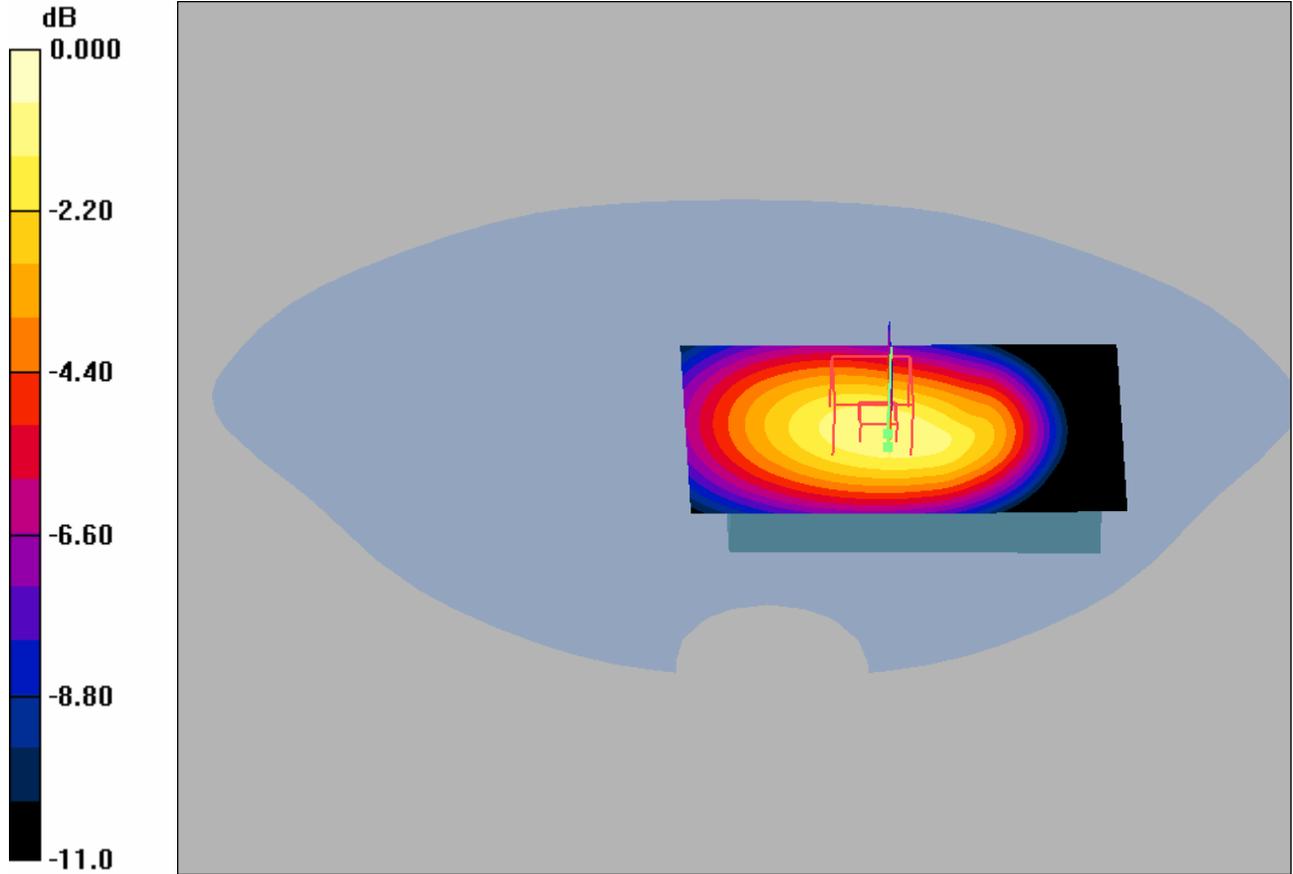
Reference Value = 29.0 V/m; Power Drift = 0.011 dB

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

Maximum value of SAR (interpolated) = 1.53 mW/g

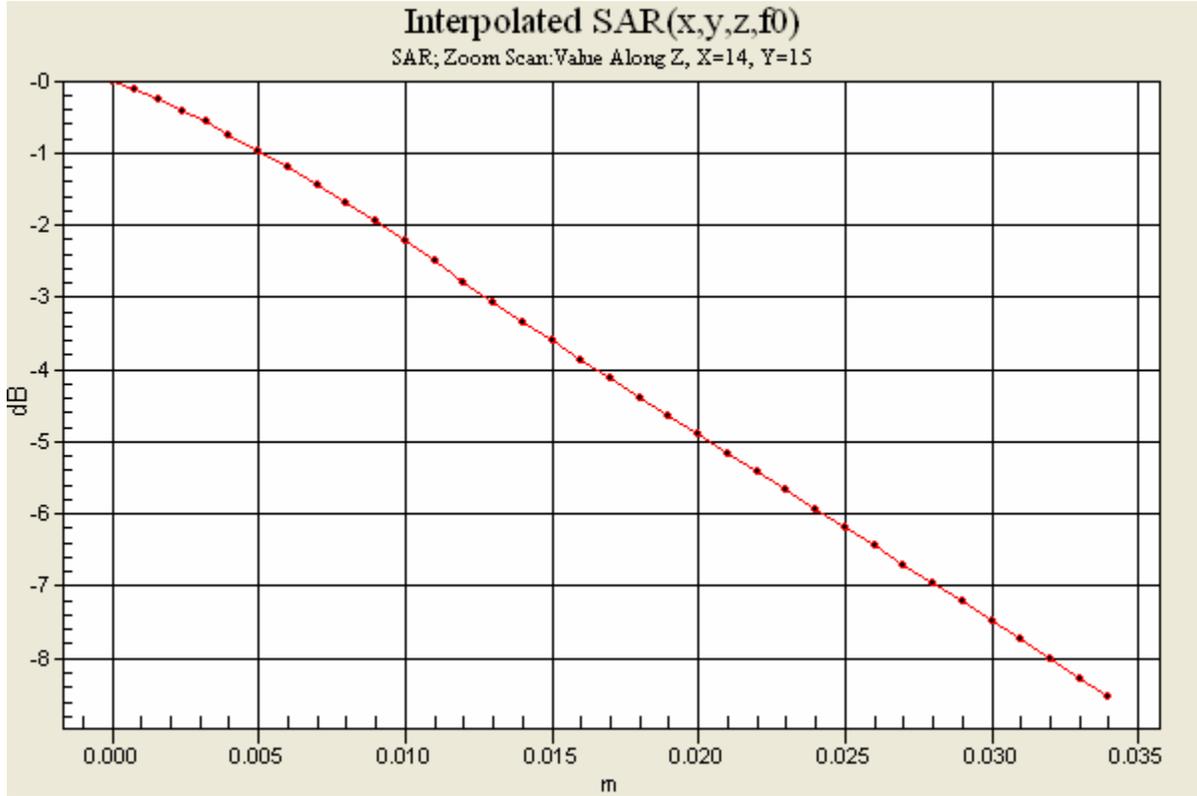


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**Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-38)**

Date/Time: 2/28/2009 1:26:10 PM

File Name: [28Feb09\\_CS8\\_GSM1900\\_BMKF\\_15mm\\_BBF01.da4](#)

DUT: CS8 body

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

Probe: ET3DV6 - SN1586ConvF(4.64, 4.64, 4.64)

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST38 Humidity - 42.1 % Ambient Temp - 22.1 C Simulant Temp - 21.7 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.64, 4.64, 4.64); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn432; Calibrated: 5/13/2008

- 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

**High channel back/Area Scan (51x81x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.590 mW/g

**High channel back/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.908 W/kg

**SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.323 mW/g**

Maximum value of SAR (measured) = 0.557 mW/g

**High channel back/Zoom Scan (31x31x36)/Cube 0:**

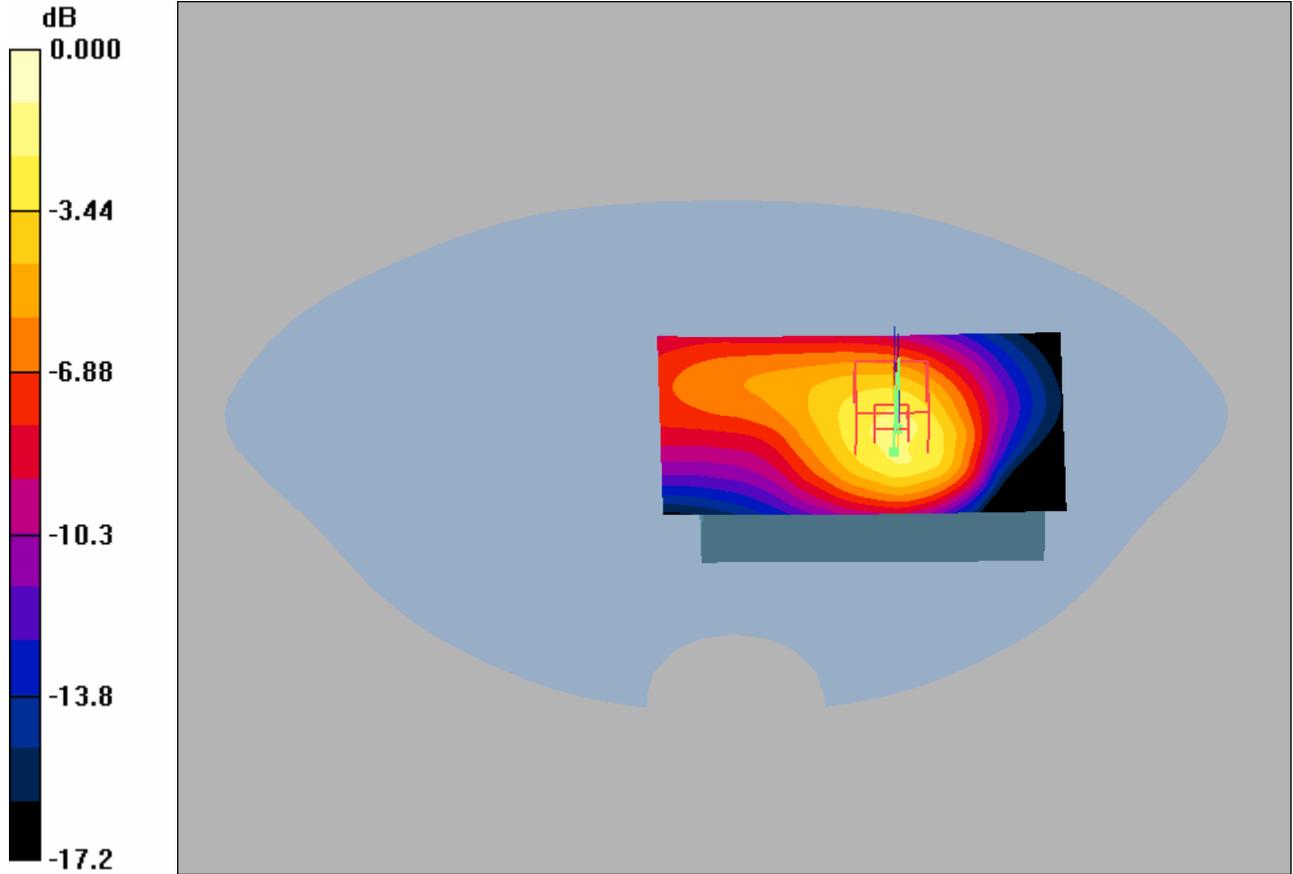
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = 0.004 dB

Maximum value of SAR (interpolated) = 0.908 mW/g

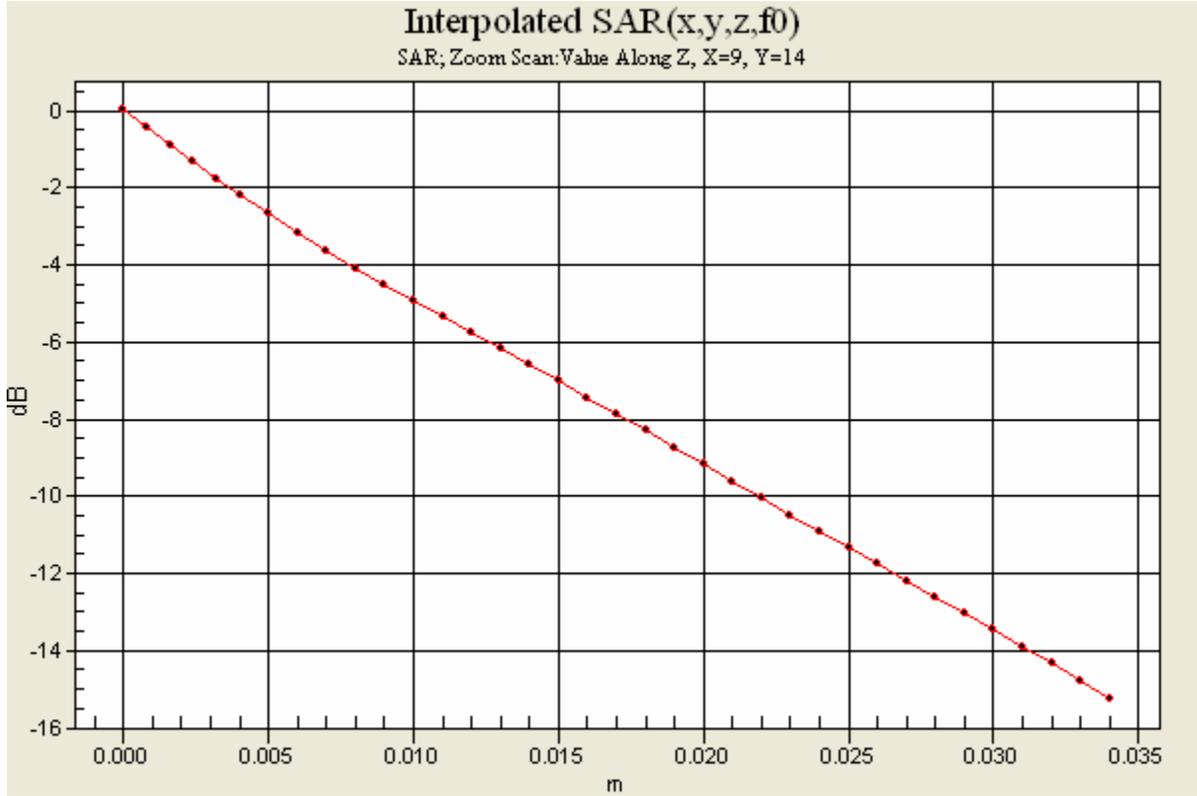


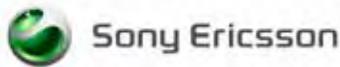
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**Distribution of maximum SAR in UMTS Band IV. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-38)**

Date/Time: 3/2/2009 10:23:57 AM

File Name: [02Mar09\\_CS8\\_B4WCDMA\\_BMKF\\_15mm\\_BBF01.da4](#)

DUT: CS8 body

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

Probe: ET3DV6 - SN1586ConvF(4.91, 4.91, 4.91)

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery - BST39 Humidity - 42.1 % Ambient Temp - 22.1 C Simulant Temp - 21.7 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.91, 4.91, 4.91); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn432; Calibrated: 5/13/2008

- 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

**High channel back/Area Scan (51x81x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.675 mW/g

**High channel back/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = -0.084 dB

Peak SAR (extrapolated) = 0.968 W/kg

**SAR(1 g) = 0.610 mW/g; SAR(10 g) = 0.386 mW/g**

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

Maximum value of SAR (measured) = 0.651 mW/g

**High channel back/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

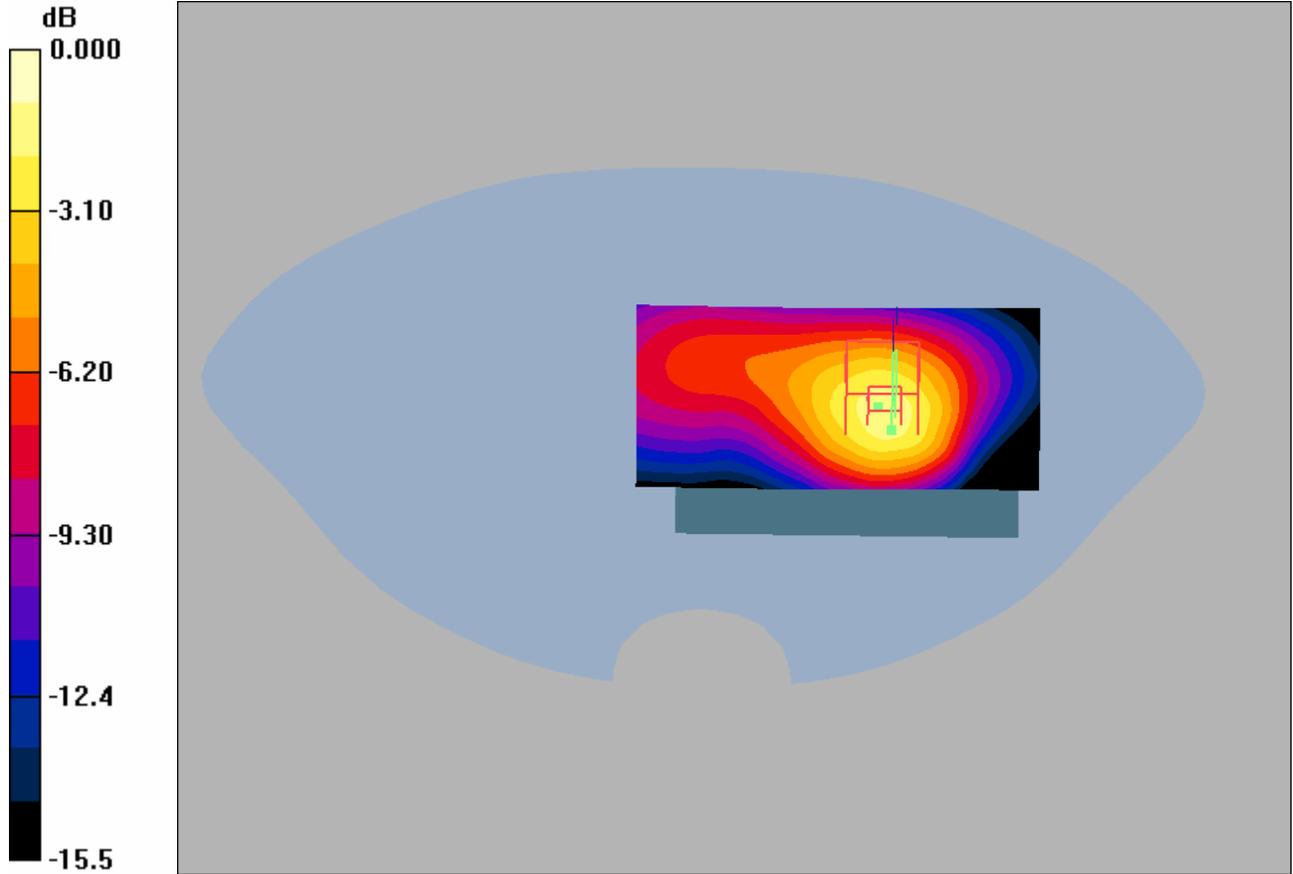
Reference Value = 10.5 V/m; Power Drift = -0.084 dB

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

Maximum value of SAR (interpolated) = 0.968 mW/g



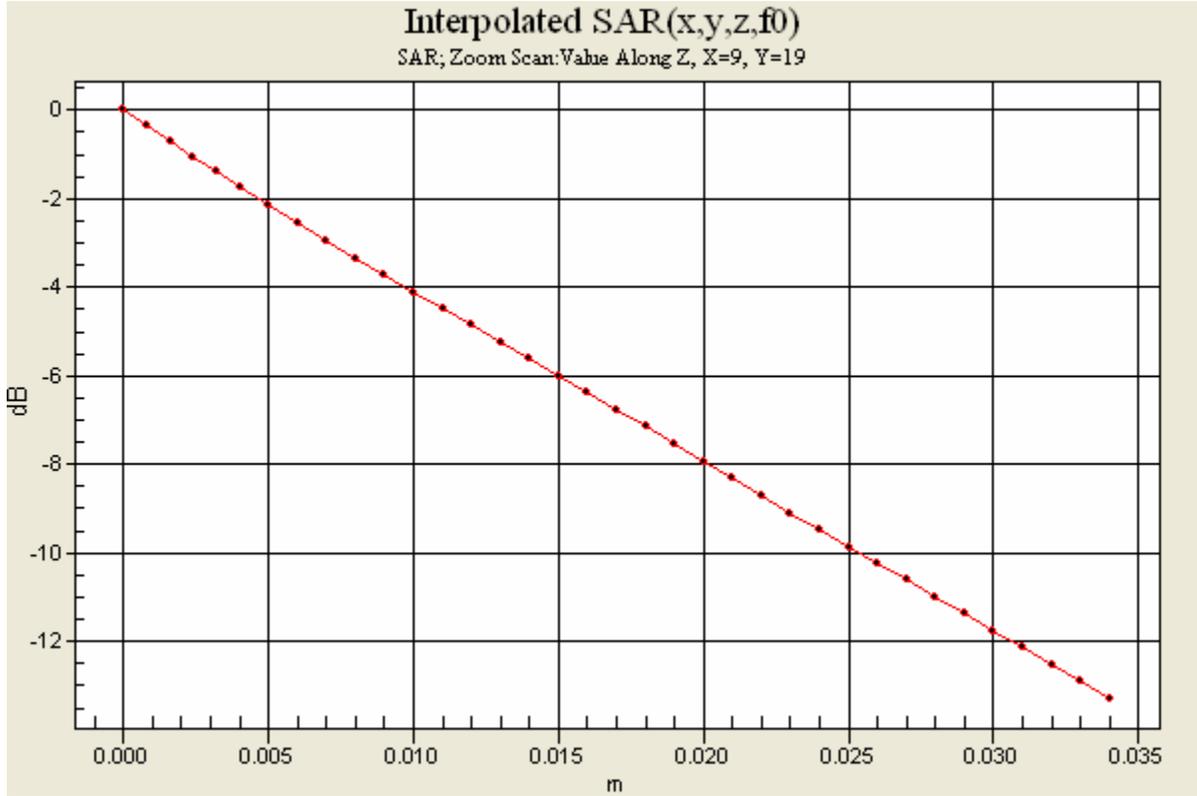
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0 dB = 0.968mW/g



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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-38)**

Date/Time: 3/18/2009 8:24:28 AM

File Name: [18Mar09\\_CS8\\_WLAN2450\\_BMJP\\_15mm\\_BBF01.da4](#)

DUT: CS8 Closed

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

Probe: ET3DV6 - SN1538 ConvF(4.15, 4.15, 4.15)

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2.01$  mho/m;  $\epsilon_r = 51.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Measurement Standard: DASY4 (High Precision Assessment)

Program Notes: Battery BST-38 Humidity: 43.1 % Ambient Temp: 21.4 C Simulant Temp: 21.7 C

DASY4 Configuration:

- Probe: ET3DV6 - SN1538; ConvF(4.15, 4.15, 4.15); Calibrated: 5/19/2008

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

- Electronics: DAE3 Sn417; Calibrated: 11/7/2008

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

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

**Middle channel back/Area Scan (61x81x1):**

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.058 mW/g

**Middle channel back/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.67 V/m; Power Drift = -0.047 dB

Peak SAR (extrapolated) = 0.125 W/kg

**SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.031 mW/g**

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

Maximum value of SAR (measured) = 0.058 mW/g

**Middle channel back/Zoom Scan (31x31x36)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

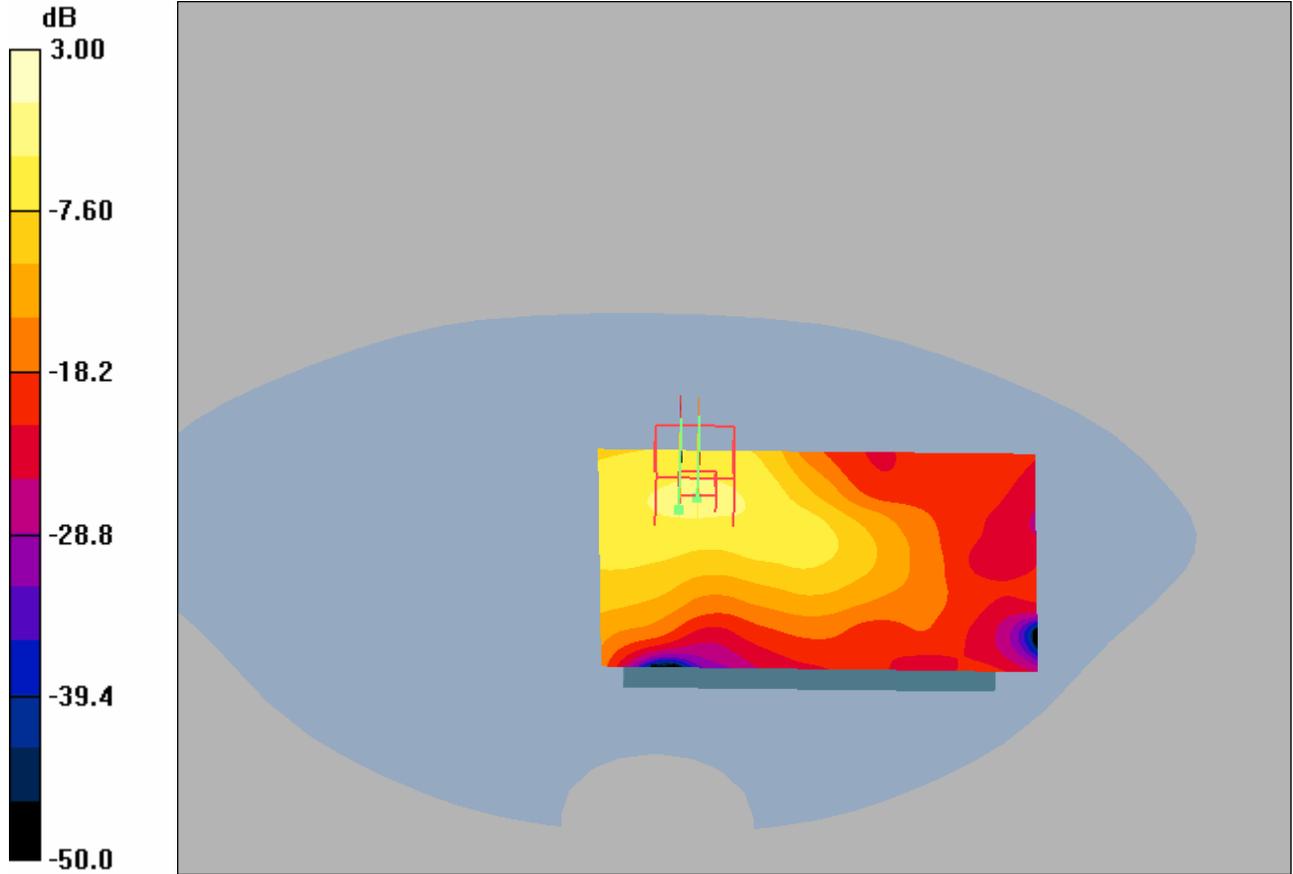
Reference Value = 3.67 V/m; Power Drift = -0.047 dB

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

Maximum value of SAR (interpolated) = 0.125 mW/g



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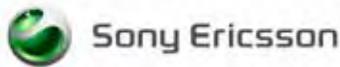
0 dB = 0.125mW/g



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**Appendix 4**

**Probe Calibration Certificates**

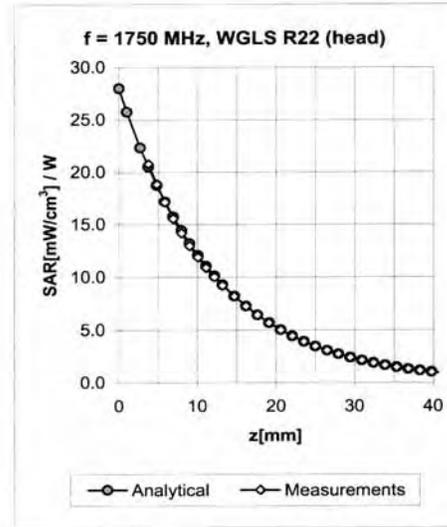
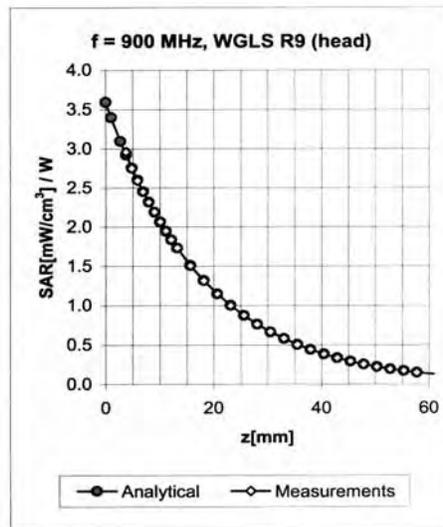


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ET3DV6 SN:1538

May 19, 2008

### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.23	3.69	6.22 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.28	3.22	6.08 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.55	2.50	5.46 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.53	2.50	5.18 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.50	2.40	4.68 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.32	3.06	6.07 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.41	2.70	5.93 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.56	2.50	4.82 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.50	2.50	4.58 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.48	2.40	4.15 ± 11.0% (k=2)

<sup>c</sup> 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:1538**

**May 19, 2008**

**DASY - Parameters of Probe: ET3DV6 SN:1538**

**Sensitivity in Free Space<sup>A</sup>**

**Diode Compression<sup>B</sup>**

NormX	1.28 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP X	90 mV
NormY	1.22 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Y	83 mV
NormZ	1.41 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Z	90 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		<b>3.7 mm</b>	<b>4.7 mm</b>
SAR <sub>be</sub> [%]	Without Correction Algorithm	10.8	6.4
SAR <sub>be</sub> [%]	With Correction Algorithm	0.6	0.2

**TSL                      1750 MHz      Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		<b>3.7 mm</b>	<b>4.7 mm</b>
SAR <sub>be</sub> [%]	Without Correction Algorithm	11.1	6.5
SAR <sub>be</sub> [%]	With Correction Algorithm	0.8	0.5

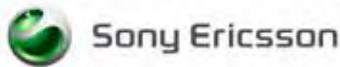
**Sensor Offset**

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%.**

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 8).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

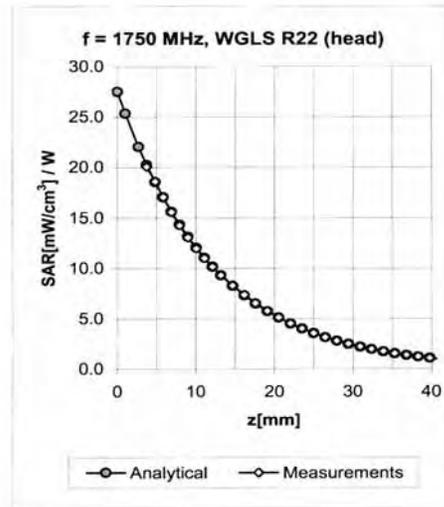
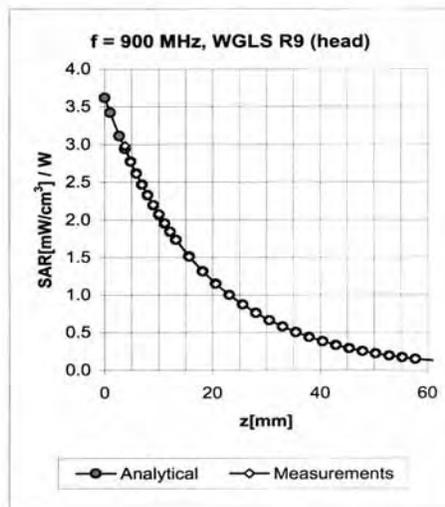


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ET3DV6 SN:1583

November 17, 2008

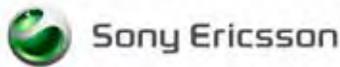
### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	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)

<sup>c</sup> 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.



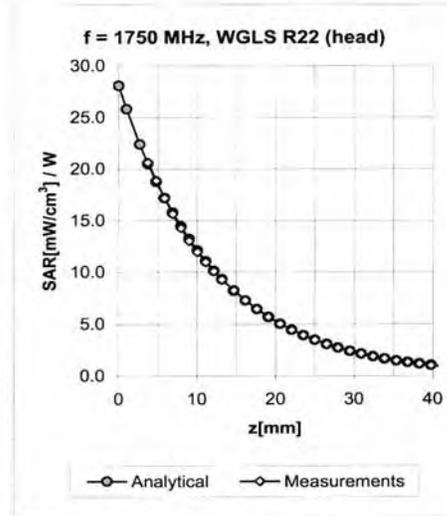
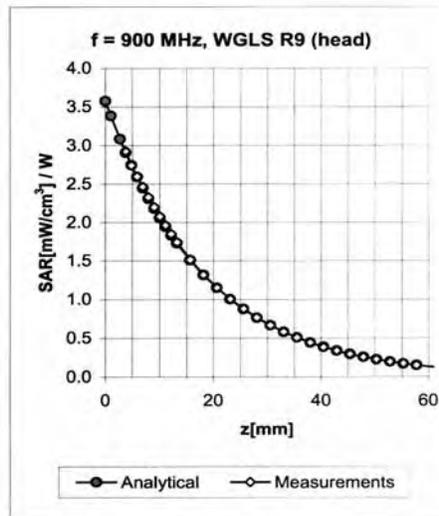


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ET3DV6 SN:1586

May 19, 2008

### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.68	2.06	6.50 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.35	2.80	6.29 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.55	2.50	5.54 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.50	2.50	5.29 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.45	2.50	4.69 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.65	2.14	6.25 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.35	2.80	6.10 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.50	2.50	4.91 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.48	2.50	4.64 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.40	2.50	4.11 ± 11.0% (k=2)

<sup>c</sup> 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 19, 2008**

**DASY - Parameters of Probe: ET3DV6 SN:1586**

**Sensitivity in Free Space<sup>A</sup>**

**Diode Compression<sup>B</sup>**

NormX	1.87 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP X	92 mV
NormY	1.81 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Y	93 mV
NormZ	1.92 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Z	93 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		<b>3.7 mm</b>	<b>4.7 mm</b>
SAR <sub>be</sub> [%]	Without Correction Algorithm	10.7	6.6
SAR <sub>be</sub> [%]	With Correction Algorithm	0.6	0.1

**TSL                      1750 MHz      Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		<b>3.7 mm</b>	<b>4.7 mm</b>
SAR <sub>be</sub> [%]	Without Correction Algorithm	11.2	6.7
SAR <sub>be</sub> [%]	With Correction Algorithm	0.8	0.4

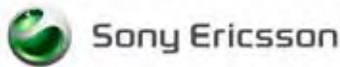
**Sensor Offset**

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%.**

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 8).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

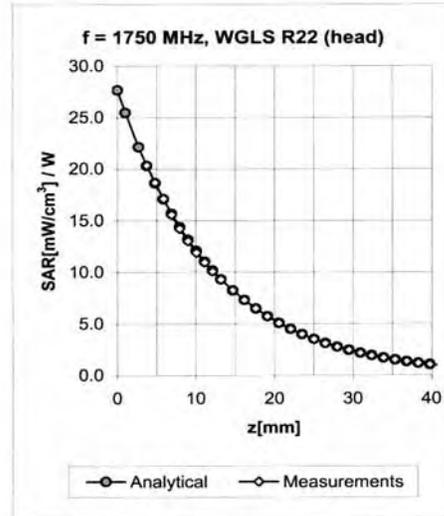
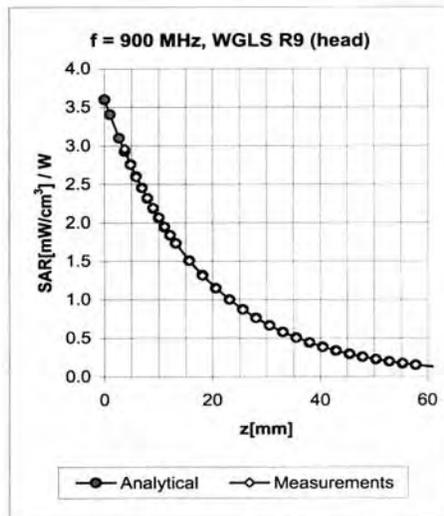


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Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

ET3DV6 SN:1539

November 17, 2008

### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.29	3.10	5.71 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.30	3.22	5.57 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.99	1.73	4.90 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.99	1.72	4.65 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.99	1.42	4.27 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.33	3.02	5.53 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.32	3.42	5.34 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.99	1.99	4.56 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.99	1.73	4.21 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.99	1.46	3.76 ± 11.0% (k=2)

<sup>c</sup> 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**



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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.	$c_i$ (1-g)	$c_i$ (10-g)	1-g $u_i$ (±%)	10-g $u_i$ (±%)	$v_i$
<b>Measurement System</b>									
Probe Calibration ( $k=1$ )	E2.1	4.7	R	1.73	0.707	0.707	1.9	1.9	$\infty$
Axial Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	$\infty$
Hemispherical Isotropy	E.2.2	1.0	R	1.73	1	1	0.6	0.6	$\infty$
Boundary Effect	E.2.3	4.7	R	1.73	1	1	2.7	2.7	$\infty$
Linearity	E.2.4	1.0	R	1.73	1	1	0.6	0.6	$\infty$
System Detection Limits	E.2.5	1.0	N	1	1	1	1.0	1.0	$\infty$
Readout Electronics	E.2.6	0.8	R	1.73	1	1	0.5	0.5	$\infty$
Response Time	E.2.7	2.6	R	1.73	1	1	1.5	1.5	$\infty$
Integration Time	E.2.8	4.7	R	1.73	0.707	0.707	1.9	1.9	$\infty$
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	$\infty$
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	$\infty$
Probe Positioning with respect to Phantom Shell	E.6.3	2.9	R	1.73	1	1	1.7	1.7	$\infty$
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1	1	0.6	0.6	$\infty$
<b>Dipole</b>									
Dipole Axis to Liquid Distance	8, E.4.2	1.0	R	1.73	1	1	0.6	0.6	$\infty$
Input Power and SAR Drift Measurement	8, 6.6.2	5.0	R	1.73	1	1	2.9	2.9	$\infty$
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty - shell thickness tolerance	E.3.1	4.0	R	1.73	1	1	2.3	2.3	$\infty$
Liquid Conductivity - deviation from target values (5)	E.3.2	4.3	R	1.73	0.64	0.43	1.59	1.07	$\infty$
Liquid Conductivity - measurement uncertainty (6)	E.3.3	6.20	R	1.73	0.64	0.43	2.29	1.54	$\infty$



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Approved SEM/CV/PF/P Gerard Hayes			Checked			A			
Liquid Permittivity - deviation from target values (5)	E.3.2	3.7	R	1.73	0.6	0.49	1.28	1.05	∞
Liquid Permittivity - measurement uncertainty (6)	E.3.3	6.08	R	1.73	0.6	0.49	2.11	1.72	∞
<b>Combined Standard Uncertainty</b>			RSS				9.37	9.03	
<b>Expanded Uncertainty (95% C.L.)</b>							18.74	18.05	



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Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**Table 2: Uncertainty Budget for the Device Under Test with 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.	$c_i$ (1-g)	$c_i$ (10-g)	1-g $u_i$ (±%)	10-g $u_i$ (±%)	$v_i$
<b>Measurement System</b>									
Probe Calibration ( $k=1$ )	E2.1	4.8	N	1	1	1	4.8	4.8	$\infty$
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	$\infty$
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	$\infty$
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	$\infty$
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	$\infty$
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	$\infty$
Readout Electronics	E.2.6	1.0	N	1	1	1	1.0	1.0	$\infty$
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	$\infty$
Integration Time	E.2.8	2.6	R	1.73	1	1	1.5	1.5	$\infty$
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	$\infty$
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	$\infty$
Probe Positioning with respect to Phantom Shell	E.6.3	2.9	R	1.73	1	1	1.7	1.7	$\infty$
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1	1	0.6	0.6	$\infty$
<b>Test sample Related</b>									
Test Sample Positioning	E.4.2	2.2	N	1	1	1	2.2	2.2	4
Device Holder Uncertainty	E.4.1	0.9	R	1.73	1	1	0.5	0.5	4
Output Power Variation - SAR drift measurement (4)	6.6.2	5.0	R	1.73	1	1	2.9	2.9	$\infty$
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	$\infty$



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon				No. REP 2009 002 CS8 02					
Approved SEM/CV/PF/P Gerard Hayes			Checked			A			

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	∞
<b>Combined Standard Uncertainty</b>			RSS				<b>9.6</b>	<b>9.2</b>	
<b>Expanded Uncertainty (95% CONFIDENCE LEVEL)</b>			K=2				<b>19.2</b>	<b>18.5</b>	



Prepared (also subject responsible if other) SEM/CV/PF/P Rodney Dixon		No. REP 2009 002 CS8 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

**Table 3a. Values for  $\epsilon'$**

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	$\infty$
Dielectric Error Sources	5.93	R	1.73	1	3.42	$\infty$
<b>Combined standard uncertainty</b>					<b>6.08</b>	

**Table 3b. Values for  $\sigma$**

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	$\infty$
Dielectric Error Sources	5.93	R	1.73	1	3.42	$\infty$
<b>Combined standard uncertainty</b>					<b>6.20</b>	



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**Appendix 6**

**Photographs of the Device Under Test**



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**Front:**



**Back:**



**Side:**





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



**“cheek/touch” position**



**“tilt” position**



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**Position with device against flat phantom using a 15mm spacer with hands free accessory.**



**Back of device against flat phantom.**



**Front of device against flat phantom**



**Hands Free**