



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

Exhibit 11: SAR Test Report of Portable Cellular Phone FCC ID: PY7A1052042 Model : W580

Date of test: April 24 – May 1, 2007
Date of Report: May 18, 2007

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, Product Verification Group

Test Responsible: Gerard Hayes *Gerard Hayes 18 MAY 2007*
 Technical Manager

Accreditation: This laboratory is accredited to ISO/IEC 17025-1999 to perform the following electromagnetic exposure tests:



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

A2LA Certificate #1650-01

On the following types of products:
 Wireless communications devices.

Statement of Compliance: Sony Ericsson Mobile Communications, Inc declares under its sole responsibility that portable cellular telephone FCC ID PY7A1052042 model W580i to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines (FCC 47 CFR §2.1093). It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

(none)

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

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

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



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1. Introduction

The Sony Ericsson SAR Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID PY7A1052042 model W580i. 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	Bent Monopole	
Location	Bottom of the Handset	
Dimensions	Width	10.0mm
	Length	44.0mm
	Height	6.5mm

2.2 Device description

FCC ID Number / Device Model	PY7A1052042 / W580i			
Serial number	BD3093FKYV		BD3093FSYA	
Mode(s) of Operation	GSM 800		GSM 1900	
Transmitting Frequency Range	824-849 MHz		1850-1910 MHz	
Modulation Mode(s)	TDMA		TDMA	
Target Value and Factory Tolerance Window for Maximum Output Power Setting	f_{low}	32.0 dBm +0.5/-1.0 dB	f_{low}	30.5 dBm +0.2/-1.5 dB
	f_{mid}	32.0 dBm +0.5/-1.0 dB	f_{mid}	30.0 dBm +0.2/-1.0 dB
	f_{high}	32.3 dBm +0.5/-1.3 dB	f_{high}	30.0 dBm +0.2/-1.0 dB
GSM Mode: 1/8 Duty Cycle	f_{low}	Same as GSM 1:8	f_{low}	Same as GSM 1:8
	f_{mid}	Same as GSM 1:8	f_{mid}	Same as GSM 1:8
	f_{high}	Same as GSM 1:8	f_{high}	Same as GSM 1:8
GPRS Mode: 2/8 Duty Cycle	f_{low}	Same as GSM 1:8	f_{low}	Same as GSM 1:8
	f_{mid}	Same as GSM 1:8	f_{mid}	Same as GSM 1:8
	f_{high}	Same as GSM 1:8	f_{high}	Same as GSM 1:8
Target Maximum Output Power Setting (adjusted from GSM mode)	f_{low}	28.5 dBm max.	f_{low}	27.5 dBm max.
	f_{mid}	28.0 dBm max.	f_{mid}	27.0 dBm max.
	f_{high}	28.5 dBm max.	f_{high}	27.5 dBm max.
EGPRS Mode: 2/8 Duty Cycle	f_{low}	28.5 dBm max.	f_{low}	27.5 dBm max.
	f_{mid}	28.0 dBm max.	f_{mid}	27.0 dBm max.
	f_{high}	28.5 dBm max.	f_{high}	27.5 dBm max.
Calibration Frequency	f_{mid}		f_{mid}	
Production Unit or Identical Prototype (47 CFR §2.908)	Identical Prototype			
Device Category	Portable			
RF Exposure Limits	General Population / Uncontrolled			



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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 ±19.1% (K=2) for Dasy4™. The measurement uncertainty budget is given in Appendix 5 for the system. The list of calibrated equipment used for the measurements is shown in the following table.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	392	23-May-2007
DASY3 DAE V1	416	13-Nov-2007
DASY3 DAE V1	432	19-May-2007
E-Field Probe ETDV6	1539	21-Nov-2007
E-Field Probe ETDV6	1586	30-May-2007
E-Field Probe ETDV6	1587	30-May-2007
Dipole Validation Kit, DV835V2	429	21-Nov-2007
Dipole Validation Kit, DV900V2	049	21-Nov-2007
Dipole Validation Kit, DV1800V2	217	20-Nov-2007
Dipole Validation Kit, DV1900V2	537	20-Nov-2007
S.A.M. Phantom used for 835MHz (Head)	1023/1251	
S.A.M. Phantom used for 835MHz (Body)	1031	
S.A.M. Phantom used for 900MHz (Head and Body)	1023/1251	
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	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3443U00433	February 1, 2008
Power Meter 437B	3125U16382	December 18, 2007
Power Meter 437B	3125U16190	May 31, 2007
Power Sensor - 8482H	MY41090241	June 2, 2007
Power Sensor - 8482H	3318A09268	July 31, 2007
Dielectric Probe Kit HP85070B	US33020256	Sept. 11, 2007
Digital Thermometer 61220-601 And Probe (61220-604)	350078	November 11, 2007
Digital Hygrometer/ Thermometer	21242911	December 7, 2007
HP RF Amplifier 8347A	3307A1069	May 16, 2007



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4. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with the dielectric probe kit. These values, along with the temperature of the simulated tissue are shown in the table below. A mass density of $\rho=1\text{g/cm}^3$ 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]. During the tests, the ambient temperature of the laboratory was maintained within the range 20.0 to 25.0 °C, the relative humidity was in the range 30.0 to 70.0 %, and the liquid depth above the ear reference points was above 15.0 cm in all the cases. It is seen that the measured parameters are satisfactory for compliance testing.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	Simulated Tissue Temp (°C)
835	Head	April 26, 2007	41.58	0.9036	22.4
		Recommended Limits	41.5	0.9	20-25
		April 27, 2007	41.06	0.8985	21.6
		Recommended Limits	41.5	0.9	20-25
	Body	April 24, 2007	54.16	1.018	22.3
		Recommended Limits	55.2	0.97	20-25
		April 25, 2007	54.06	1.017	22
		Recommended Limits	55.2	0.97	20-25
1900	Head	April 28, 2007	38.82	1.468	21.2
		Recommended Limits	40	1.4	20-25
		April 29, 2007	38.72	1.47	20.6
		Recommended Limits	40	1.4	20-25
	Body	April 30, 2007	50.85	1.543	20.9
		Recommended Limits	53.3	1.52	20-25
		May 1, 2007	50.73	1.525	20.9
		Recommended Limits	53.3	1.52	20-25

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

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

5. System Accuracy Verification



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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 target SAR indicated on the dipole certification sheet. 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). During the tests, the ambient temperature of the laboratory maintained within the range 20.0 to 25.0 °C, the relative humidity was in the range 30.0 to 70.0 %, and the liquid depth above the ear reference points was above 15.0 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values. The SAR distributions are shown in Appendix 1.

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 0.00029 W/kg, which is below the recommended limit in [1].



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f (MHz)	Tissue Type	Date Measured	SAR (W/kg)		Dielectric Parameters		Tissue Temp (°C)
			1g	10g	ϵ_r	σ (S/m)	
835	Head	Apr-26-07	9.6506986	6.2974052	41.58	0.9036	22.4
		Recommended Limits	9.50	6.20	41.50	0.90	20-25
		Apr-27-07	9.4411178	6.1726547	41.06	0.8985	21.6
		Recommended Limits	9.50	6.20	41.50	0.90	20-25
	Body	Apr-24-07	9.826475	6.4402578	54.16	1.018	22.3
		Recommended Limits	9.90	6.46	55.20	0.97	20-25
		Apr-25-07	10	6.539415	54.06	1.017	22
		Recommended Limits	9.90	6.46	55.20	0.97	20-25
1900	Head	Apr-28-07	40.376051	21.276596	38.82	1.468	21.2
		Recommended Limits	39.7	20.5	40	1.4	20-25
		Apr-29-07	40.770385	21.36068	38.72	1.47	20.6
		Recommended Limits	39.7	20.5	40	1.4	20-25
	Body	Apr-30-07	39.389389	20.870871	50.85	1.543	20.9
		Recommended Limits	40.5	20.89	53.3	1.52	20-25
		May-01-07	39.362232	20.926756	50.73	1.525	20.9
		Recommended Limits	40.5	20.89	53.3	1.52	20-25



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6. Test Results

For both head measurements (with a 1/8 GSM duty cycle) and body measurements (2/8 E/GPRS duty cycle), the test sample was operated using a base station simulator that allows control of the transmitter using the signally software that installed on the phone call. 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.

The Cellular Phone FCC ID PY7A1052042 has the following battery option:
BKB 193 203 (BST-38) Standard Lithium Polymer Battery

The phone was placed in the SAR measurement system with a fully charged battery.

6.1 Head Adjacent Test Results

The SAR results shown in Tables 1 through 4 are maximum SAR values averaged over 1 gram and 10 grams of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the simulated tissue, the measured drift, and the extrapolated SAR. The extrapolated SAR corresponds to the measured SAR scaled to the maximum conducted output power.

During the tests, the ambient temperature of the laboratory maintained within the range 20.0 to 25.0 °C, the relative humidity was in the range 30.0 to 70.0 %, 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 table are included in Appendix 2. All other test conditions measured lower SAR values than those included.

Summary of Maximum Extrapolated SAR Results : Head Adjacent			
Frequency	Extrapolated SAR (W/kg)		Test Configuration
	1 g	10 g	
800 GSM	0.46	0.33	Left head, cheek/touch position, 849 MHz Open Position
1900 GSM	1.26	0.71	Right head, cheek/touch position, 1910 MHz Closed Position



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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Left Head (Cheek / Touch Position)				Ambient Temp (°C)	Simulate Temp (°C)	
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)			Extrapolated (W/kg) 1g / 10g
800 GSM	128 / 824	32.3	0.26	0.18	0.05	0.26	0.18	22.1	22.4
	189 / 837	32.5	0.41	0.27	0.00	0.41	0.27		
	251 / 849	32.8	0.43	0.29	0.02	0.43	0.29		
	251 / 849 BT On	32.8	0.43	0.29	-0.05	0.43	0.29		
1900 GSM	512 / 1850	30.5	0.92	0.52	-0.05	0.92	0.52	21.6	21.2
	660/1880	30.2	1.13	0.64	0.05	1.13	0.64		
	810/1910	29.9	1.26	0.71	-0.01	1.26	0.71		
	810/1910 BT On	29.9	1.24	0.69	0.01	1.24	0.69		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Left Head (15° Tilt Position)				Ambient Temp (°C)	Simulate Temp (°C)	
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)			Extrapolated (W/kg) 1g / 10g
800 GSM	128 / 824	32.3	0.14	0.10	0.02	0.14	0.10	22.4	22.4
	189 / 837	32.5	0.22	0.16	0.00	0.22	0.16		
	251 / 849	32.8	0.19	0.14	0.00	0.19	0.14		
1900 GSM	512 / 1850	30.5	0.26	0.16	0.02	0.26	0.16	21.5	21.3
	660/1880	30.2	0.30	0.19	0.01	0.30	0.19		
	810/1910	29.9	0.31	0.19	-0.02	0.31	0.19		

Table 1: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power closed position with Standard Battery BST-38. Measured against the left head.



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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Right Head (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
800 GSM	128 / 824	32.3	0.20	0.15	-0.12	0.20	0.15	21.7	22
	189 / 837	32.5	0.32	0.24	0.09	0.32	0.24		
	251 / 849	32.8	0.35	0.25	-0.02	0.35	0.25		
1900 GSM	512 / 1850	30.5	0.70	0.42	-0.01	0.70	0.42	21.6	21.3
	660/1880	30.2	0.87	0.52	-0.04	0.87	0.52		
	810/1910	29.9	0.95	0.57	-0.03	0.95	0.57		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Right Head (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
800 GSM	128 / 824	32.3	0.14	0.10	-0.02	0.14	0.10	21.8	22
	189 / 837	32.5	0.19	0.14	0.02	0.19	0.14		
	251 / 849	32.8	0.19	0.14	-0.03	0.19	0.14		
1900 GSM	512 / 1850	30.5	0.25	0.15	-0.01	0.25	0.15	21.6	21.4
	660/1880	30.2	0.31	0.19	0.02	0.31	0.19		
	810/1910	29.9	0.32	0.19	-0.02	0.32	0.19		

Table 2: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power closed position with Standard Battery BST-38. Measured against the right head.



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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Left Head Open Position (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	0.28	0.20	0.01	0.28	0.20	21.5	21.6
	189 / 837	32.5	0.40	0.29	0.02	0.40	0.29		
	251 / 849	32.8	0.46	0.33	0.00	0.46	0.33		
	251 / 849 BT On	32.8	0.46	0.33	-0.08	0.46	0.33		
1900 GSM	512 / 1850	30.5	0.30	0.19	-0.10	0.30	0.19	20.7	20.6
	660/1880	30.2	0.37	0.22	-0.02	0.37	0.22		
	810/1910	29.9	0.36	0.22	-0.05	0.36	0.22		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Left Head Open Position (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	0.17	0.12	0.01	0.17	0.12	21.1	21.4
	189 / 837	32.5	0.22	0.16	0.03	0.22	0.16		
	251 / 849	32.8	0.29	0.21	0.08	0.29	0.21		
1900 GSM	512 / 1850	30.5	0.12	0.08	0.03	0.12	0.08	21.4	20.7
	660/1880	30.2	0.14	0.09	0.01	0.14	0.09		
	810/1910	29.9	0.14	0.09	0.07	0.14	0.09		

Table 3: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power open position with Standard Battery BST-38. Measured against the left head.



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f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Right Head Open Position (Cheek / Touch Position)					Ambient Temp (°C)	Simulate Temp (°C)
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
800 GSM	128 / 824	32.3	0.27	0.20	-0.03	0.27	0.20	21.9	21.5
	189 / 837	32.5	0.38	0.28	-0.06	0.38	0.28		
	251 / 849	32.8	0.46	0.33	-0.06	0.46	0.33		
1900 GSM	512 / 1850	30.5	0.32	0.20	0.04	0.32	0.20	20.9	20.6
	660/1880	30.2	0.36	0.22	0.05	0.36	0.22		
	810/1910	29.9	0.38	0.23	0.01	0.38	0.23		
	810/1910 BT On	29.9	0.37	0.23	-0.01	0.37	0.23		
f(MHz)	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
			Right Head Open Position (15° Tilt Position)					Ambient Temp (°C)	Simulate Temp (°C)
			GSM 1:8 Duty Cycle	Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		
800 GSM	128 / 824	32.3	0.18	0.13	-0.05	0.18	0.13	21.5	21.4
	189 / 837	32.5	0.20	0.14	-0.04	0.20	0.14		
	251 / 849	32.8	0.29	0.21	0.01	0.29	0.21		
1900 GSM	512 / 1850	30.5	0.12	0.07	0.06	0.12	0.07	20.8	20.6
	660/1880	30.2	0.15	0.09	0.03	0.15	0.09		
	810/1910	29.9	0.15	0.09	0.00	0.15	0.09		

Table 4: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power open position with Standard Battery BST-38. Measured against the right head.



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6.2 Body-Worn Test Results

The SAR results shown in Tables 5 through 7 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. During the tests, the ambient temperature of the laboratory maintained within the range 20.0 to 25.0 °C, the relative humidity was in the range 30.0 to 70.0 %, 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
- ICE26 Carry Case
- ICE30 Carry Case

A full data set output of the test conditions with the highest SAR values from the DASY™ measurement system 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.

Summary of Maximum Extrapolated SAR Results: Body-worn			
Frequency	Extrapolated SAR (W/kg)		Test Configuration
	1 g	10 g	
800 GSM	1.17	0.80	15mm SPACER Carry Accessory, back of phone facing body, 837 MHz, 2:8 Duty Cycle,
900 GSM		0.97	15mm SPACER Carry Accessory, back of phone facing body, 897 MHz, 2:8 Duty Cycle,
1800 GSM		0.55	ICE26 Carry Accessory, back of phone facing body, 1748 MHz, 2:8 Duty Cycle, Bluetooth On
1900 GSM	1.13	0.66	ICE26 Carry Accessory, back of phone facing body, 1910MHz, 2:8 Duty Cycle



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f(MHz)	Operating Condition	Channel/frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
				Body Worn			Carry Accessory: 15mm SPACER Back of phone facing body			
				Measured (W/kg) 1g / 10g	Drift (dB)	Extrapolated (W/kg) 1g / 10g	Ambient Temp (°C)	Simulate Temp (°C)		
Back of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.80	0.55	0.02	0.80	0.55	22.1	22
		189 / 837	32.5	1.17	0.80	0.05	1.17	0.80		
		251 / 849	32.8	1.02	0.70	-0.04	1.02	0.70		
800 GSM	Bluetooth On	189 / 837	32.5	1.09	0.75	-0.07	1.09	0.75	22.1	22
	1:8 Duty Cycle	189 / 837	32.5	0.54	0.37	-0.07	0.54	0.37	22.1	22
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.73	0.42	0.03	0.73	0.42	20.8	20.9
		660/1880	30.2	0.97	0.56	0.02	0.97	0.56		
		810/1910	29.9	1.02	0.60	-0.02	1.02	0.60		
Front of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.36	0.26	-0.12	0.36	0.26	22.4	22.1
		189 / 837	32.5	0.52	0.37	-0.12	0.52	0.37		
		251 / 849	32.8	0.53	0.38	0.00	0.53	0.38		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.34	0.21	0.09	0.34	0.21	20.8	21
		660/1880	30.2	0.43	0.26	-0.03	0.43	0.26		
		810/1910	29.9	0.44	0.27	0.05	0.44	0.27		

Table 5: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power with Standard Battery BST-38. Measured against the body with carry accessory 15mm Spacer.



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f(MHz)	Operating Condition	Channel/frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
				Body Worn			Carry Accessory: ICE26 Back of phone facing body			
				Measured (W/kg) 1g / 10g	Drift (dB)	Extrapolated (W/kg) 1g / 10g	Ambient Temp (°C)	Simulate Temp (°C)		
Back of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	1.06	0.73	-0.06	1.06	0.73	22.1	22.3
		189 / 837	32.5	1.14	0.78	0.02	1.14	0.78		
		251 / 849	32.8	1.06	0.73	0.03	1.06	0.73		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.80	0.48	-0.05	0.80	0.48	21	20.9
		660/1880	30.2	1.03	0.61	-0.03	1.03	0.61		
		810/1910	29.9	1.13	0.66	-0.09	1.13	0.66		
	Bluetooth On	810/1910	29.9	1.09	0.65	-0.11	1.09	0.65	20.9	20.9
	1:8 Duty Cycle	810/1910	29.9	0.57	0.33	-0.01	0.57	0.33	20.9	20.9
Front of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.48	0.35	-0.04	0.48	0.35	22.2	22.3
		189 / 837	32.5	0.56	0.40	0.00	0.56	0.40		
		251 / 849	32.8	0.51	0.36	-0.03	0.51	0.36		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.35	0.22	0.07	0.35	0.22	22.4	21.8
		660/1880	30.2	0.44	0.27	-0.01	0.44	0.27		
		810/1910	29.9	0.47	0.29	0.01	0.47	0.29		

Table 6: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power with Standard Battery BST-38. Measured against the body with carry accessory ICE26 carry case.



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f(MHz)	Operating Condition	Channel/ frequency	Conducted Output Power (dBm)	FCC ID PY7A1052042 with Standard Battery BST-38						
				Body Worn			Carry Accessory: ICE30 Back of phone facing body			
				Measured (W/kg) 1g / 10g	Drift (dB)	Extrapolated (W/kg) 1g / 10g	Ambient Temp (°C)	Simulate Temp (°C)		
Back of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.84	0.58	-0.03	0.84	0.58	22.1	22.3
		189 / 837	32.5	1.02	0.71	0.04	1.02	0.71		
		251 / 849	32.8	1.02	0.70	0.03	1.02	0.70		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.64	0.38	0.00	0.64	0.38	21	20.9
		660/1880	30.2	0.78	0.47	0.01	0.78	0.47		
		810/1910	29.9	0.90	0.53	-0.03	0.90	0.53		
Front of phone facing body										
800 GSM	2:8 Duty Cycle	128 / 824	32.3	0.42	0.30	-0.03	0.42	0.30	22.2	22.3
		189 / 837	32.5	0.55	0.39	-0.04	0.55	0.39		
		251 / 849	32.8	0.51	0.36	-0.07	0.51	0.36		
1900 GSM	2:8 Duty Cycle	512 / 1850	30.5	0.35	0.22	0.16	0.35	0.22	22.4	21.8
		660/1880	30.2	0.43	0.27	0.10	0.43	0.27		
		810/1910	29.9	0.50	0.31	-0.12	0.50	0.31		

Table 7: SAR measurement results for the portable cellular telephone FCC ID PY7A1052042 model W580i at maximum output power with Standard Battery BST-38. Measured against the body with carry accessory ICE 30 carry case.



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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] 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 1528-200X, Draft 6.5 – August 20, 2001.



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Appendix 1

SAR distribution comparison for the system accuracy verification



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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835 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using head tissue).

Validation_835Head_429_1023_26Apr07_T01

File Name: [Validation_835Head_429_1023_26Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1539ConvF(5.96, 5.96, 5.96) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.904 \text{ mho/m}$; $\epsilon_r = 41.6$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASy4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 35.2 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.959 mW/g; SAR(10 g) = 0.626 mW/g

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

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:

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

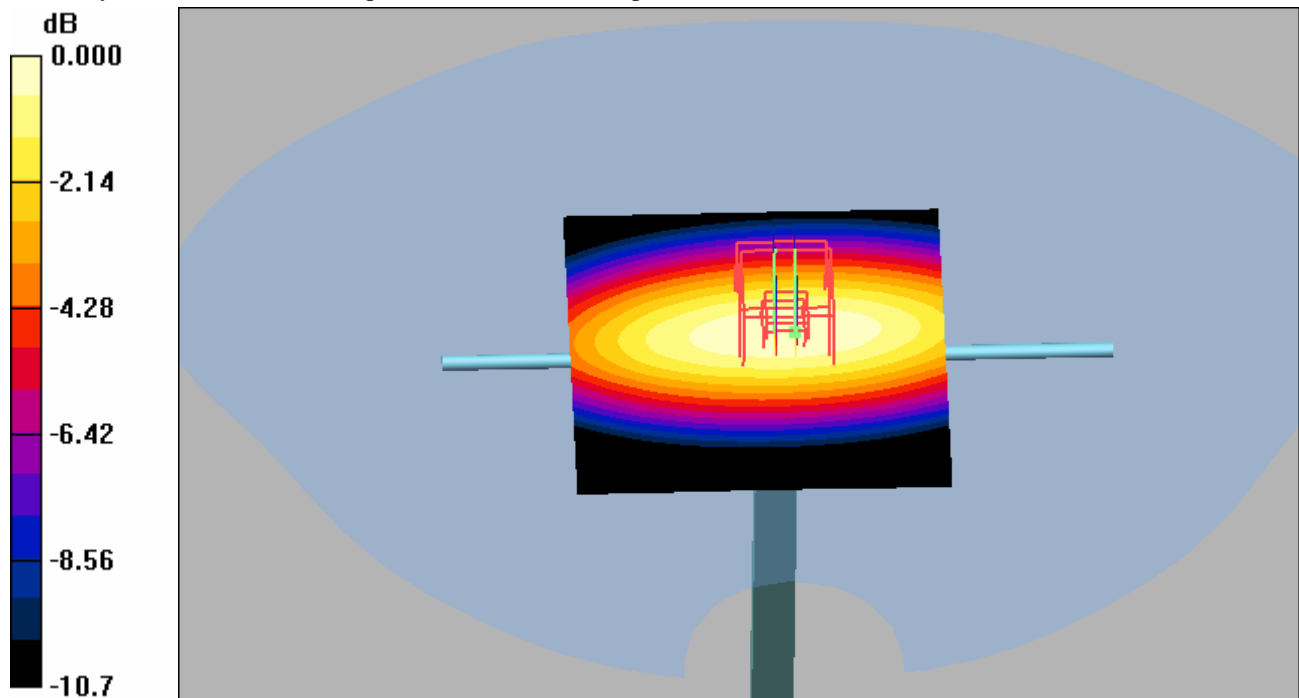
Reference Value = 35.2 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 0.975 mW/g; SAR(10 g) = 0.636 mW/g

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

Humidity - 41.5 % Ambient Temp - 22.1 C Simulant Temp - 22.4 C



0 dB = 1.04mW/g



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

835 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using head tissue).

Validation 835Head_429_1023_27Apr07_T01

File Name: [Validation_835Head_429_1023_27Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1539ConvF(5.96, 5.96, 5.96) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.899 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

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 = 33.7 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.623 mW/g

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

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:

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

Reference Value = 33.7 V/m; Power Drift = 0.024 dB

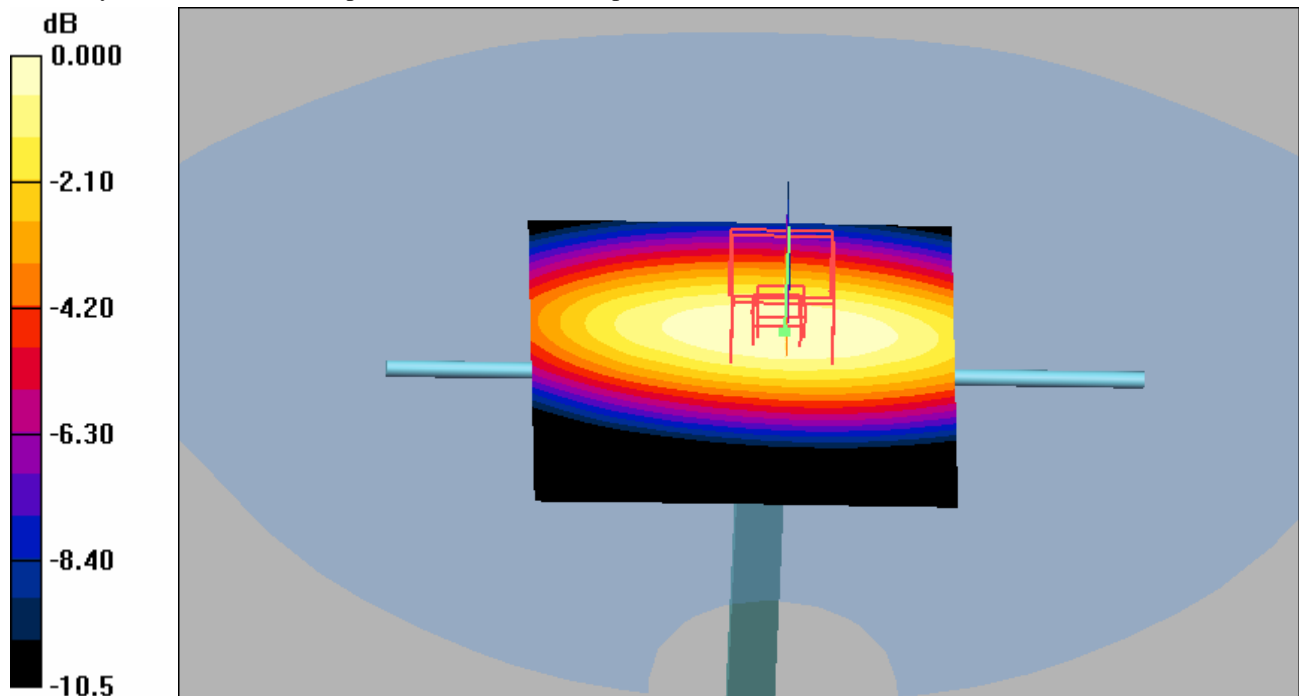
Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.938 mW/g; SAR(10 g) = 0.614 mW/g

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

Procedure Notes: Pin: before 100.3 mW / after 100.1 mW

Humidity - 43 % Ambient Temp - 21.5 C Simulant Temp - 21.6 C



0 dB = 1.00mW/g



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835 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using body tissue).

Validation_835Body_429_1031_24Apr07_T01

File Name: [Validation_835Body_429_1031_24Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(6.35, 6.35, 6.35) Duty Cycle: 1:1 Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.02 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

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) = 1.09 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 = 33.7 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1 mW/g; SAR(10 g) = 0.656 mW/g

Maximum value of SAR (measured) = 1.09 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 = 33.7 V/m; Power Drift = 0.007 dB

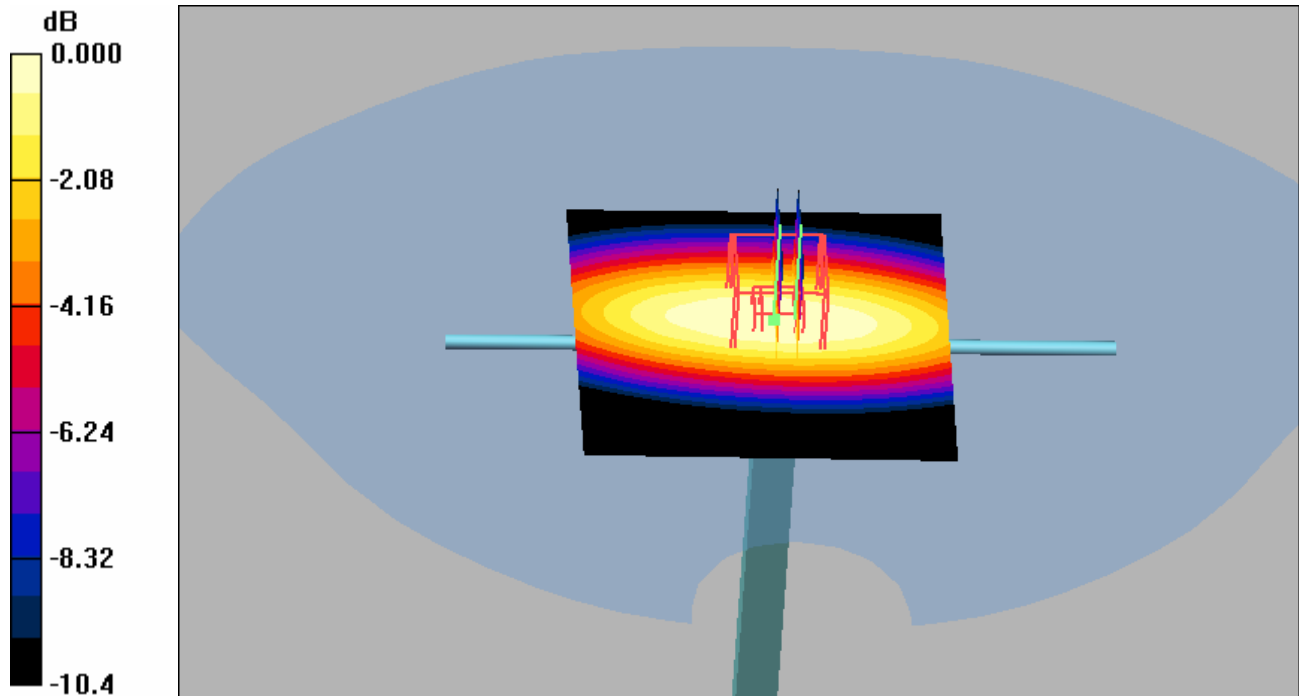
Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.982 mW/g; SAR(10 g) = 0.643 mW/g

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

Procedure Notes: Pin: before 100.7 mW / after 101 mW

Humidity - 33.8 % Ambient Temp - 22.1 C Simulant Temp - 22.3 C



0 dB = 1.06mW/g



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835 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using body tissue).

Validation 835Body_429_1031_25Apr07_T01

File Name: [Validation 835Body_429_1031_25Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(6.35, 6.35, 6.35)Duty Cycle: 1:1Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.02 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

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) = 1.10 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 = 34.0 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.667 mW/g

Maximum value of SAR (measured) = 1.10 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 = 34.0 V/m; Power Drift = 0.008 dB

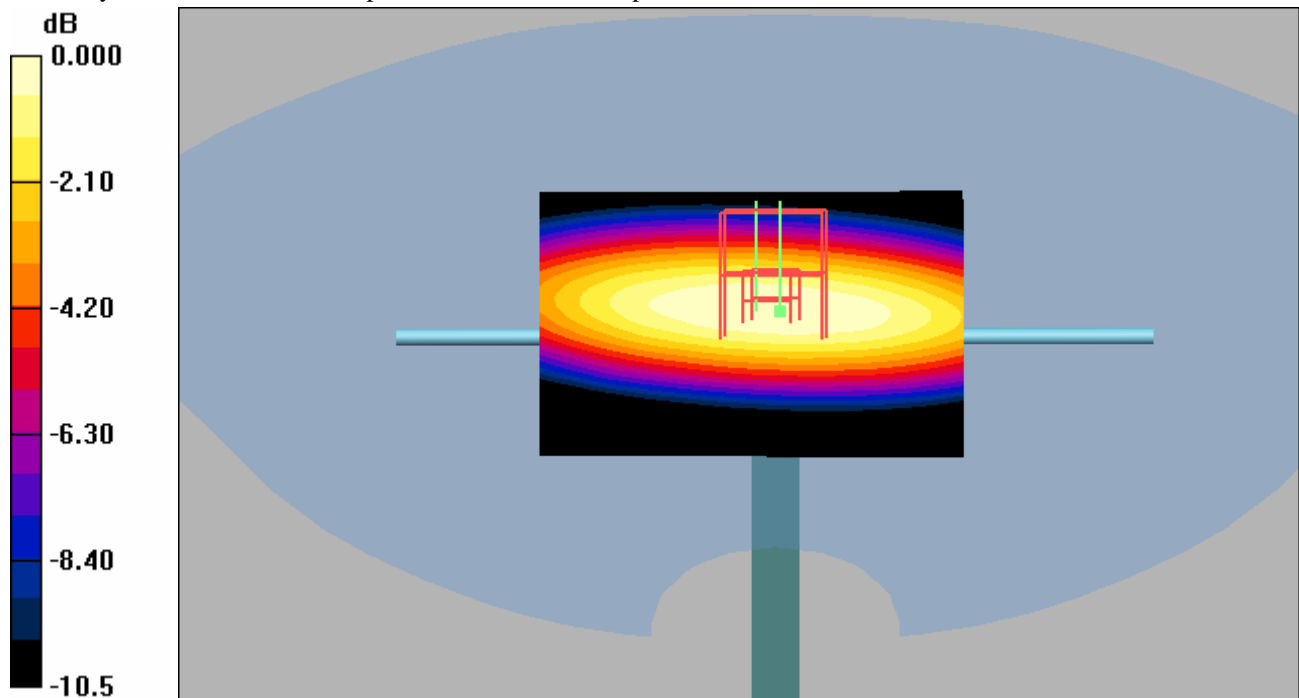
Peak SAR (extrapolated) = 1.48 W/kg

SAR(1 g) = 0.997 mW/g; SAR(10 g) = 0.652 mW/g

Maximum value of SAR (measured) = 1.07 mW/g

Procedure Notes: Pin: before 100.9 mW / after 100.8 mW

Humidity - 40.1 % Ambient Temp - 22.1 C Simulant Temp - 22 C



0 dB = 1.07mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using head tissue).

Validation_1900Head_537_1054_28Apr07_T01

File Name: [Validation_1900Head_537_1054_28Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1587ConvF(5.2, 5.2, 5.2) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Measurement Standard: DASy4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 5.06 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 59.7 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 7.11 W/kg

SAR(1 g) = 4.1 mW/g; SAR(10 g) = 2.16 mW/g

Maximum value of SAR (measured) = 4.62 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:

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

Reference Value = 59.7 V/m; Power Drift = -0.019 dB

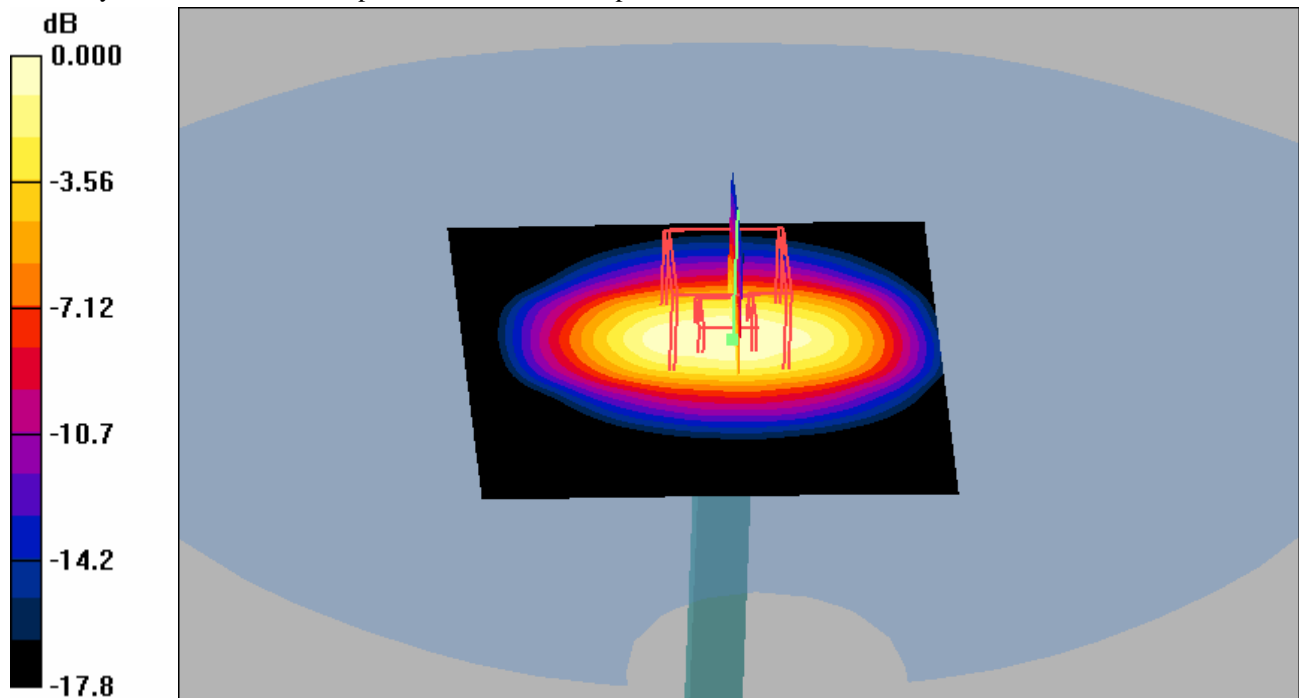
Peak SAR (extrapolated) = 7.08 W/kg

SAR(1 g) = 4.06 mW/g; SAR(10 g) = 2.14 mW/g

Maximum value of SAR (measured) = 4.58 mW/g

Procedure Notes: Pin: before 101 mW / after 101.1 mW

Humidity: 40.3 % Ambient Temp: 21.6 C Simulant Temp: 21.2 C



0 dB = 4.58mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using head tissue).

Validation_1900Head_537_1054_29Apr07_T01

File Name: [Validation_1900Head_537_1054_29Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1587ConvF(5.2, 5.2, 5.2) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Measurement Standard: DASy4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 5.04 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 58.3 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 7.27 W/kg

SAR(1 g) = 4.11 mW/g; SAR(10 g) = 2.15 mW/g

Maximum value of SAR (measured) = 4.69 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:

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

Reference Value = 58.3 V/m; Power Drift = -0.034 dB

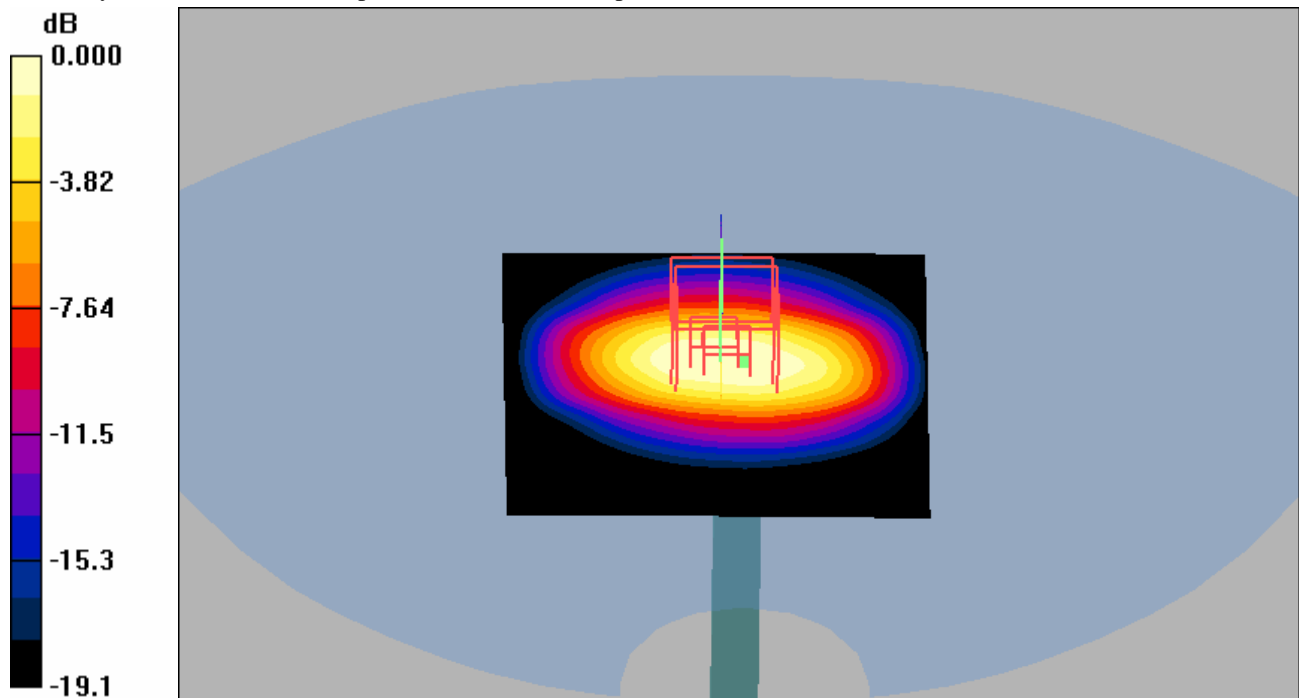
Peak SAR (extrapolated) = 7.02 W/kg

SAR(1 g) = 4.04 mW/g; SAR(10 g) = 2.12 mW/g

Maximum value of SAR (measured) = 4.41 mW/g

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

Humidity: 38.3 % Ambient Temp: 20.7 C Simulant Temp: 20.6 C



0 dB = 4.41mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using body tissue).

Validation_1900Body_537_1020_30Apr07_T01

File Name: [Validation_1900Body_537_1020_30Apr07_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(4.62, 4.62, 4.62)Duty Cycle: 1:1Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

Measurement Standard: DASy4 (High Precision Assessment)

Dipole at 10 mm/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 5.12 mW/g

Dipole at 10 mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 57.8 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 6.81 W/kg

SAR(1 g) = 3.99 mW/g; SAR(10 g) = 2.11 mW/g

Maximum value of SAR (measured) = 4.50 mW/g

Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:

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

Reference Value = 57.8 V/m; Power Drift = -0.021 dB

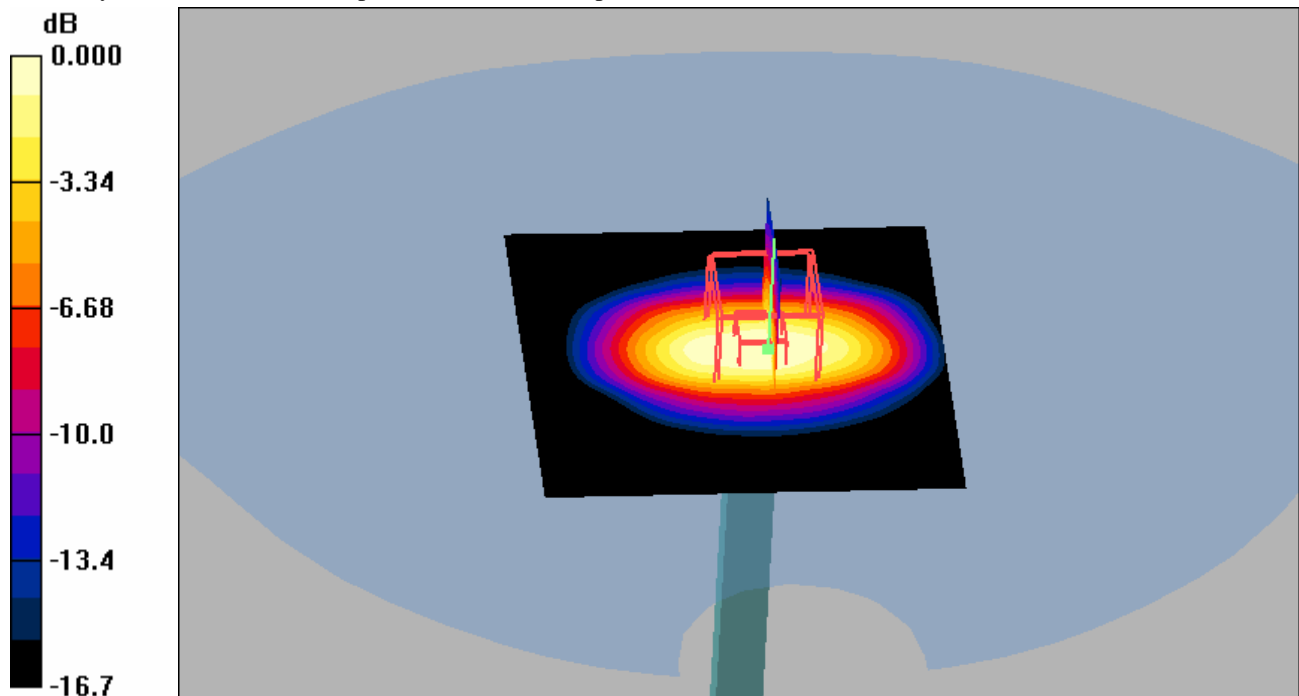
Peak SAR (extrapolated) = 6.58 W/kg

SAR(1 g) = 3.88 mW/g; SAR(10 g) = 2.06 mW/g

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

Procedure Notes: Pin: before 100 mW / after 99.8 mW

Humidity: 40.1 % Ambient Temp: 21 C Simulant Temp: 20.9 C



0 dB = 4.40mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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1900 MHz SAR Distribution of Validation Dipole Antenna

System Performance Check (Using body tissue).

Validation_1900Body_537_1020_01May07_T01

File Name: [Validation_1900Body_537_1020_01May07_T01.da4](#)

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

Probe: ET3DV6 - SN1586ConvF(4.62, 4.62, 4.62)Duty Cycle: 1:1Frequency: 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 50.7$; $\rho = 1000 \text{ kg/m}^3$

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) = 5.08 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 = 56.4 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 6.85 W/kg

SAR(1 g) = 4 mW/g; SAR(10 g) = 2.12 mW/g

Maximum value of SAR (measured) = 4.56 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 = 56.4 V/m; Power Drift = -0.033 dB

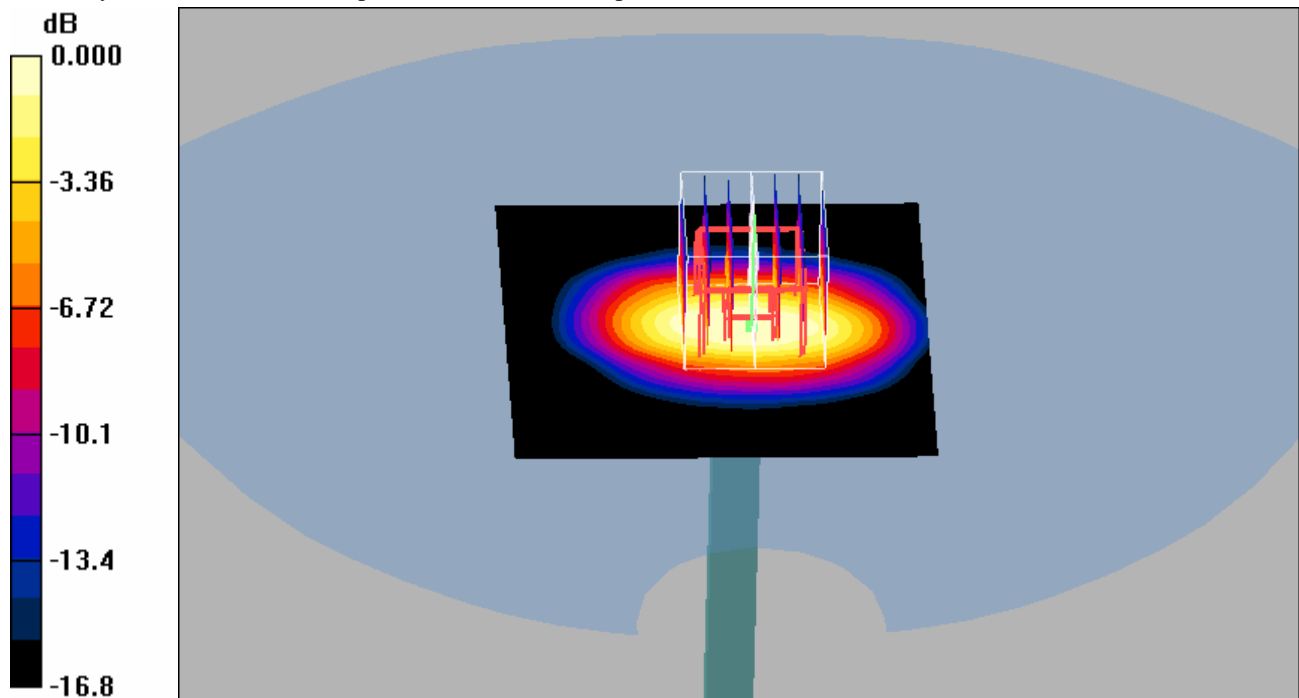
Peak SAR (extrapolated) = 6.56 W/kg

SAR(1 g) = 3.9 mW/g; SAR(10 g) = 2.08 mW/g

Maximum value of SAR (measured) = 4.36 mW/g

Procedure Notes: Pin: before 100.5 mW / after 100.2 mW

Humidity: 39.7 % Ambient Temp: 20.8 C Simulant Temp: 20.9 C



0 dB = 4.36mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Appendix 2

SAR distribution plots for Phantom Head Adjacent Use



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

800 GSM Band: SAR Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side, Cheek/Touch Position.

Date/Time: 4/26/2007 4:11:11 PM

File Name: [26Apr07_W580_GSM850_FKYV_RC01.da4](#)

DUT: W580 closed

Program Notes: Battery BST-38 Humidity - 41.9 % Ambient Temp - 21.7 C Simulant Temp - 22 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.379 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 10.9 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 0.499 W/kg

SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.251 mW/g

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

Maximum value of SAR (measured) = 0.371 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

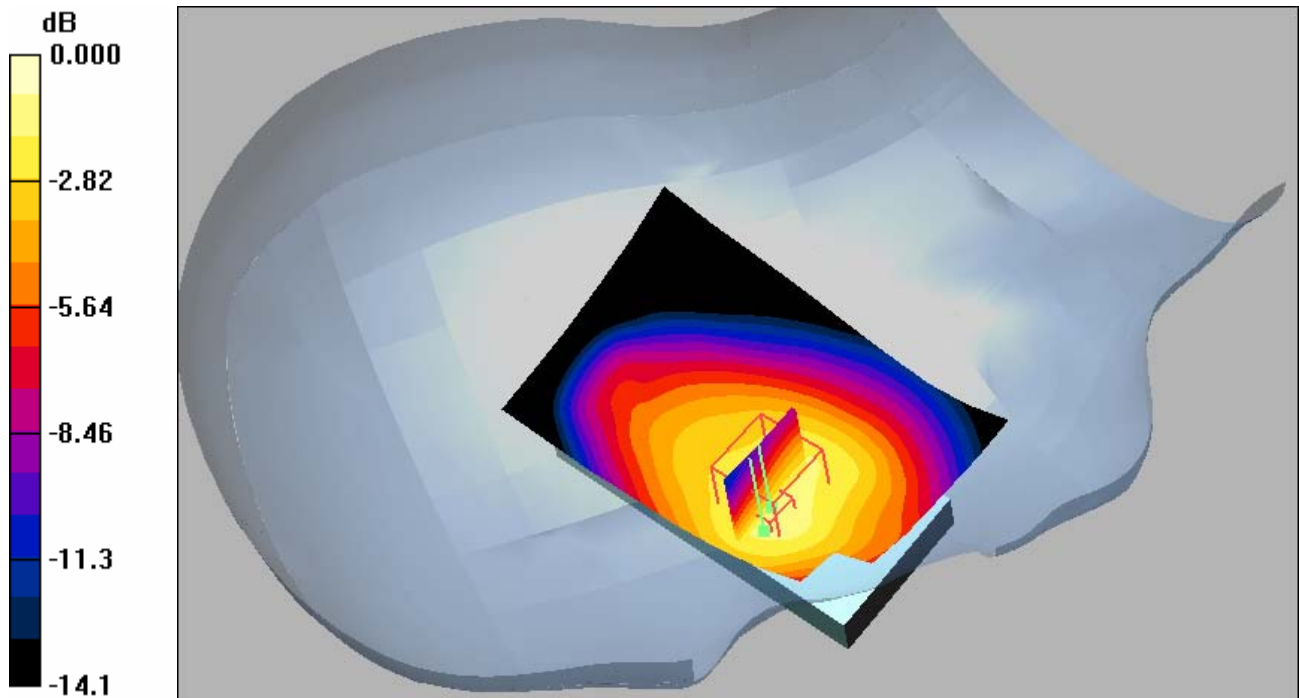
Reference Value = 10.9 V/m; Power Drift = -0.018 dB

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

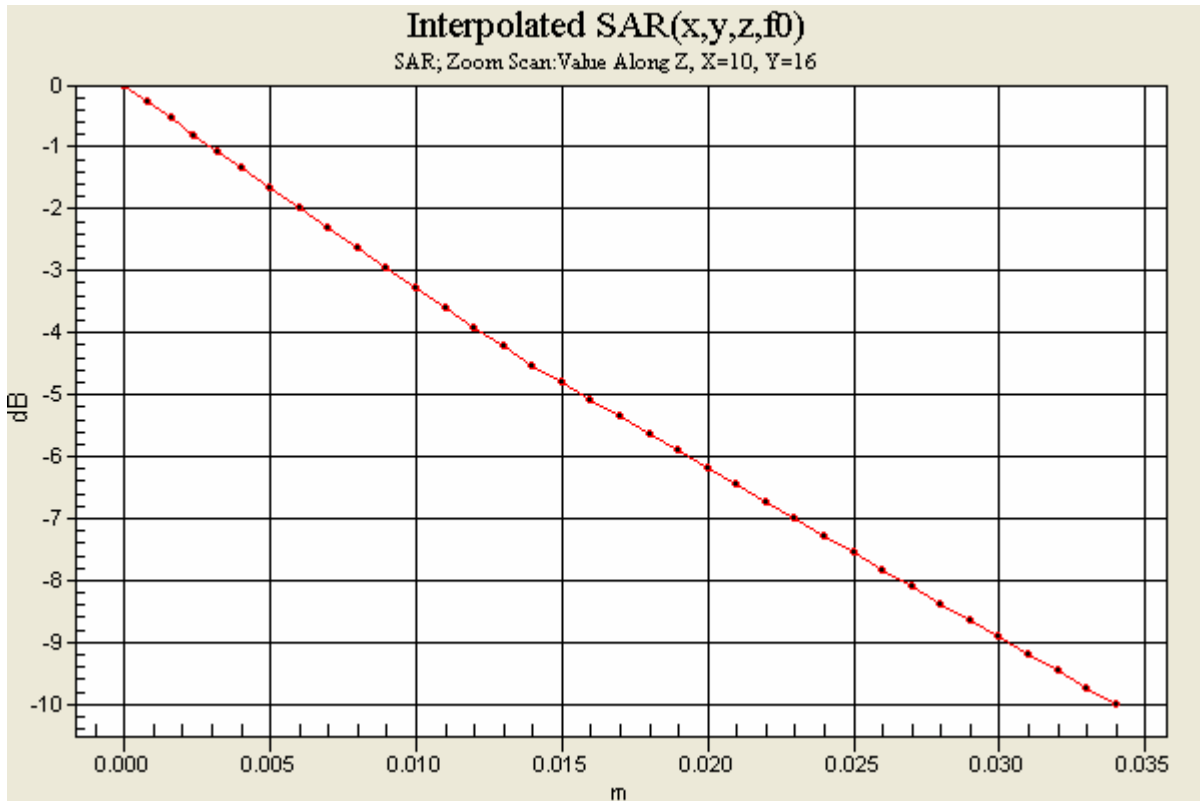
Maximum value of SAR (interpolated) = 0.499 mW/g



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0 dB = 0.499mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side, Tilt Position.

Date/Time: 4/26/2007 5:15:15 PM

File Name: [26Apr07_W580_GSM850_FKYV_RT01.da4](#)

DUT: W580 closed

Program Notes: Battery BST-38 Humidity - 42.2 % Ambient Temp - 21.8 C Simulant Temp - 22 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.200 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 13.2 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.249 W/kg

SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.139 mW/g

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

Maximum value of SAR (measured) = 0.201 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

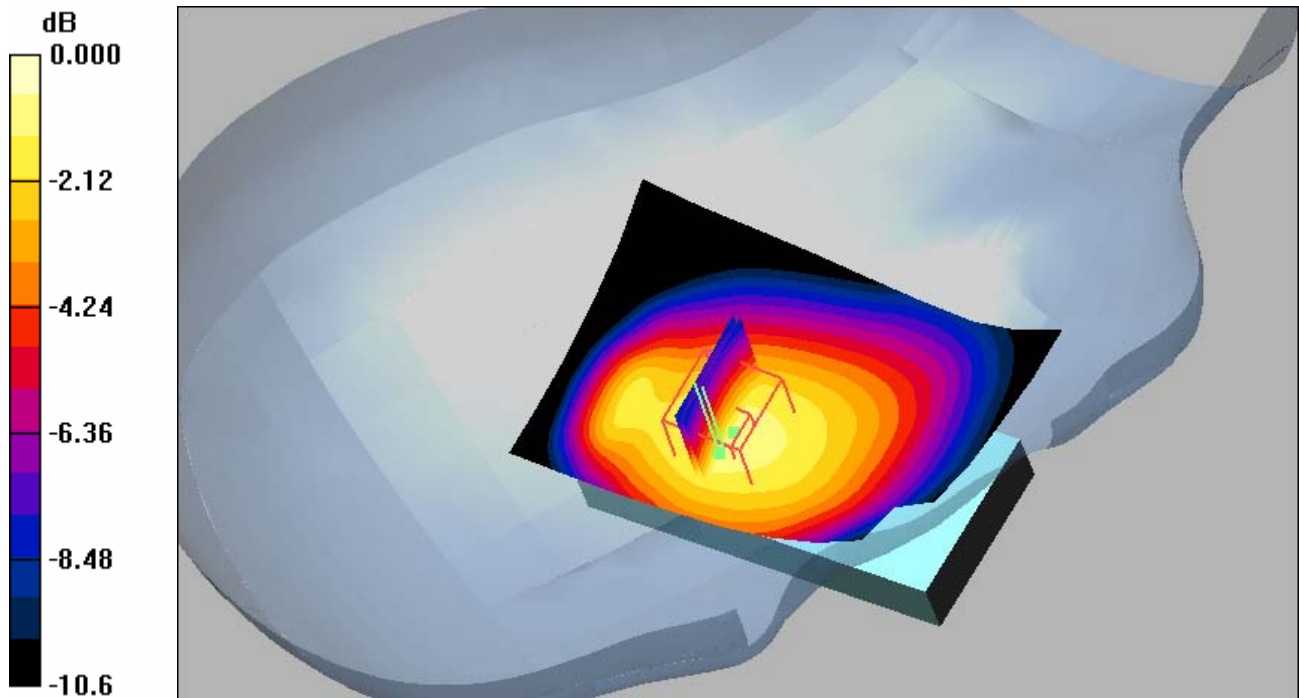
Reference Value = 13.2 V/m; Power Drift = -0.035 dB

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

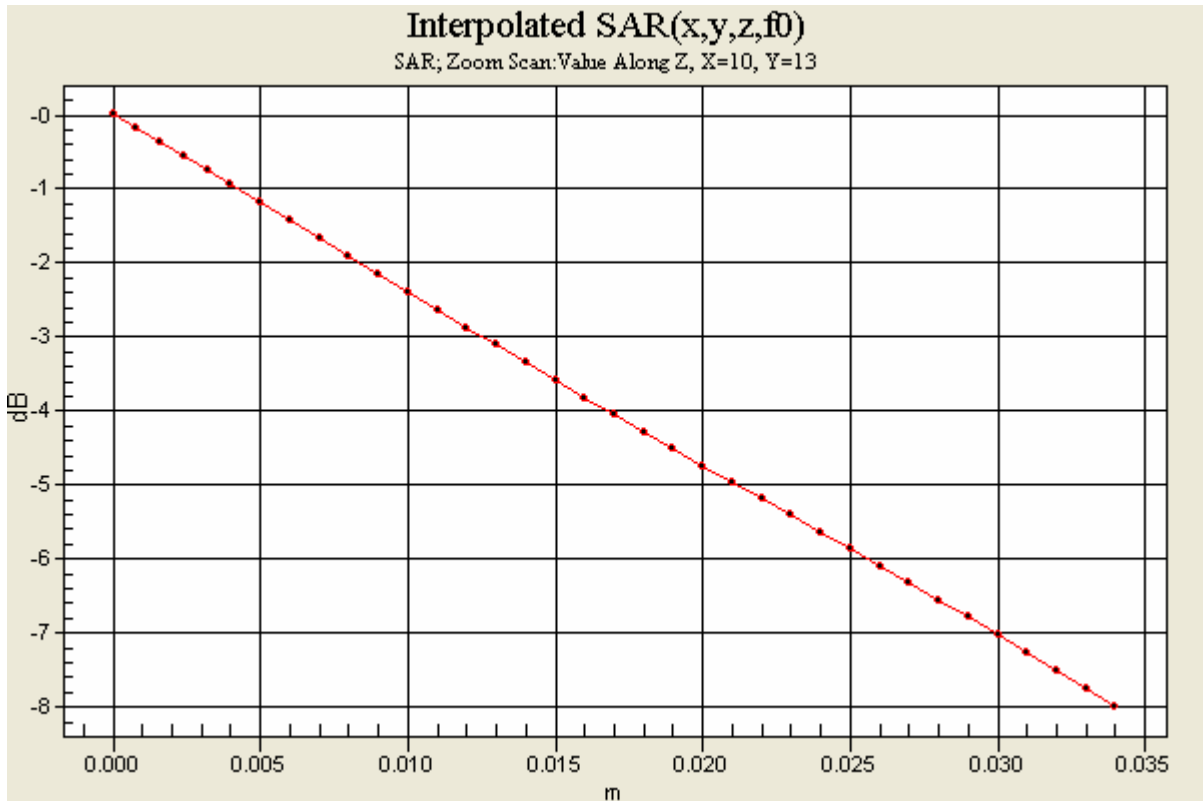
Maximum value of SAR (interpolated) = 0.249 mW/g



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0 dB = 0.249mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side, Cheek/Touch Position.

Date/Time: 4/26/2007 2:00:47 PM

File Name: [26Apr07_W580_GSM850_FKYV_LC01.da4](#)

DUT: W580 closed

Program Notes: Battery BST-38 Humidity - 41.5 % Ambient Temp - 22.1 C Simulant Temp - 22.4 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.478 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 10.8 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.670 W/kg

SAR(1 g) = 0.431 mW/g; SAR(10 g) = 0.287 mW/g

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

Maximum value of SAR (measured) = 0.461 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

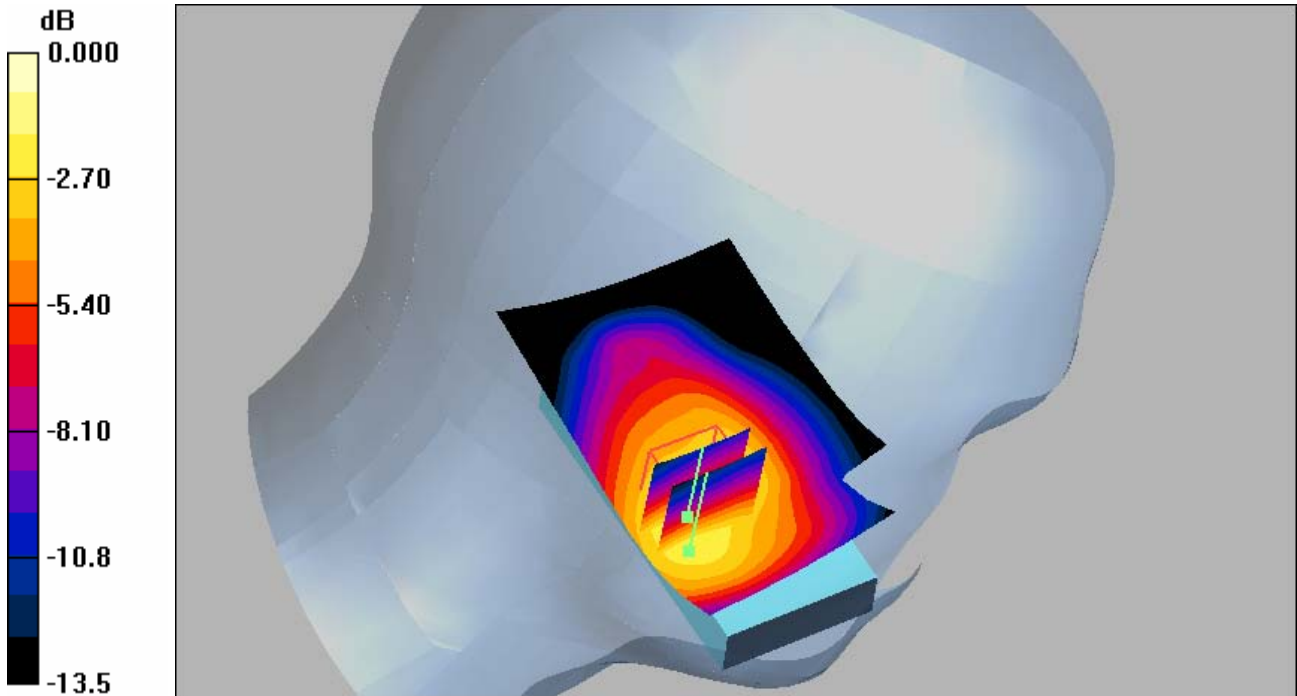
Reference Value = 10.8 V/m; Power Drift = 0.018 dB

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

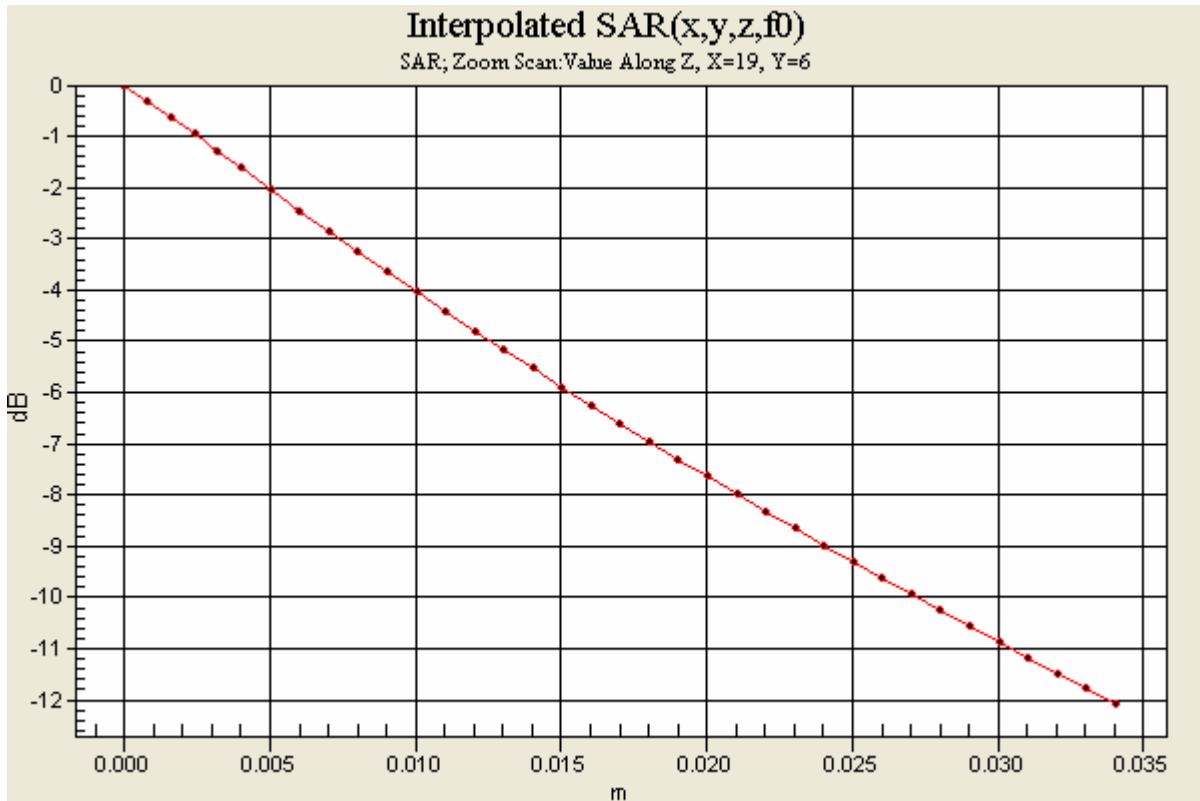
Maximum value of SAR (interpolated) = 0.670 mW/g



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0 dB = 0.670mW/g





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

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side, Tilt Position.

Date/Time: 4/26/2007 2:40:39 PM

File Name: [26Apr07_W580_GSM850_FKYV_LT01.da4](#)

DUT: W580 closed

Program Notes: Battery BST-38 Humidity - 43.1 % Ambient Temp - 22.4 C Simulant Temp - 22.4 C

Communication System: GSM 850; Frequency: 836 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): $f = 836 \text{ MHz}$; $\sigma = 0.905 \text{ mho/m}$; $\epsilon_r = 41.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.229 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 13.5 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.215 mW/g; SAR(10 g) = 0.157 mW/g

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

Maximum value of SAR (measured) = 0.227 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

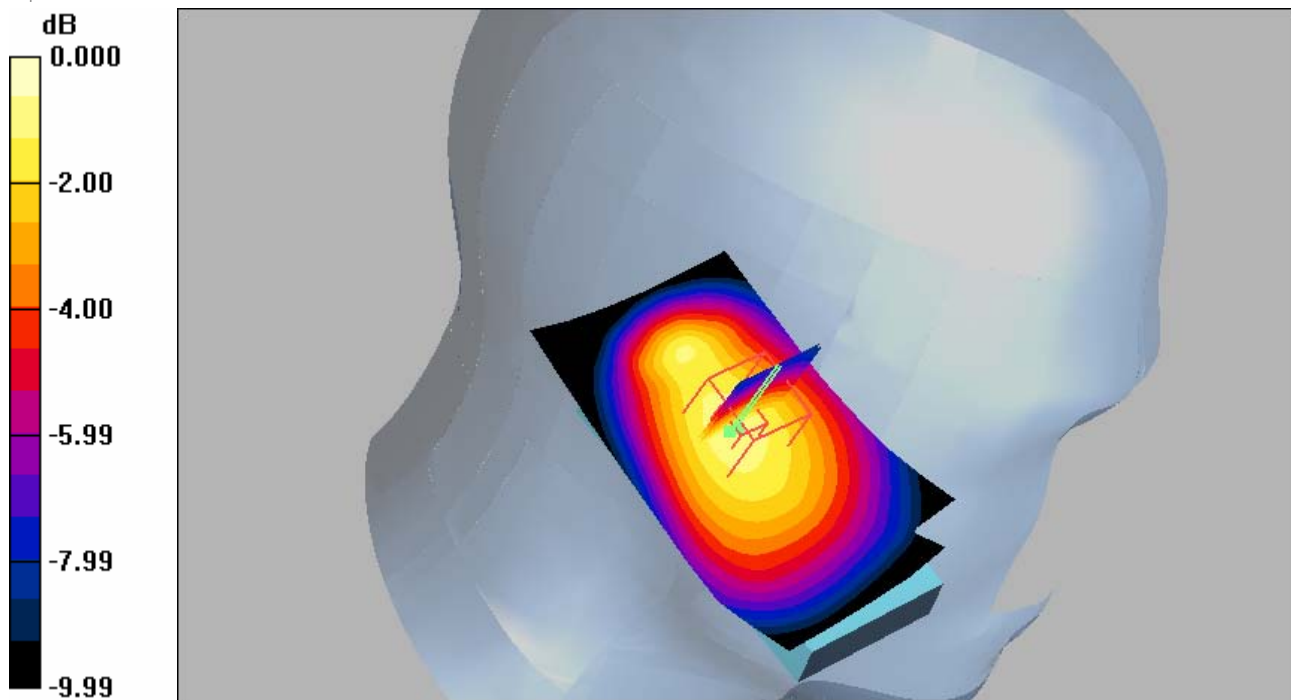
Reference Value = 13.5 V/m; Power Drift = -0.002 dB

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

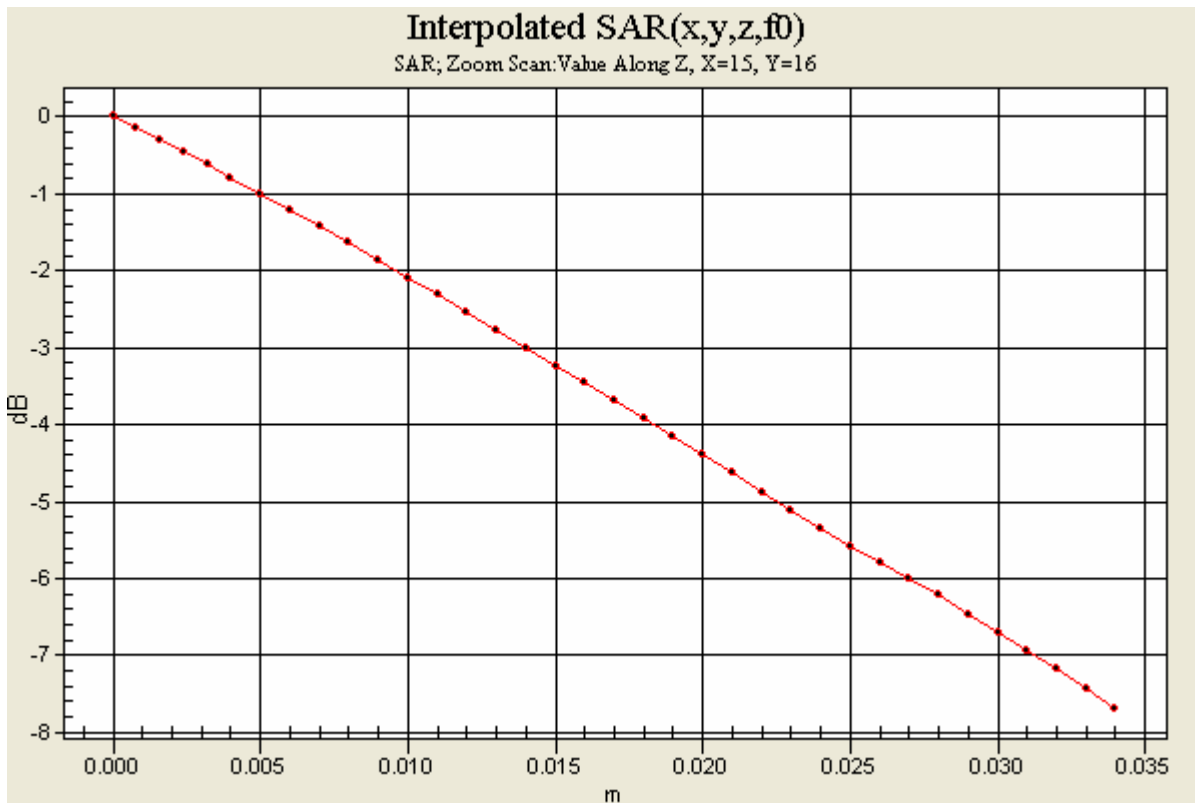
Maximum value of SAR (interpolated) = 0.272 mW/g



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0 dB = 0.272mW/g





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

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side, Cheek/Touch Position with Blue Tooth.

Date/Time: 4/26/2007 5:37:21 PM

File Name: [26Apr07_W580_GSM850_FKYV_BT_LC01.da4](#)

DUT: W580 closed

Program Notes: Battery BST-38 Humidity - 43.1 % Ambient Temp - 22.4 C Simulant Temp - 22.4 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.455 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 11.6 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.663 W/kg

SAR(1 g) = 0.429 mW/g; SAR(10 g) = 0.285 mW/g

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

Maximum value of SAR (measured) = 0.459 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

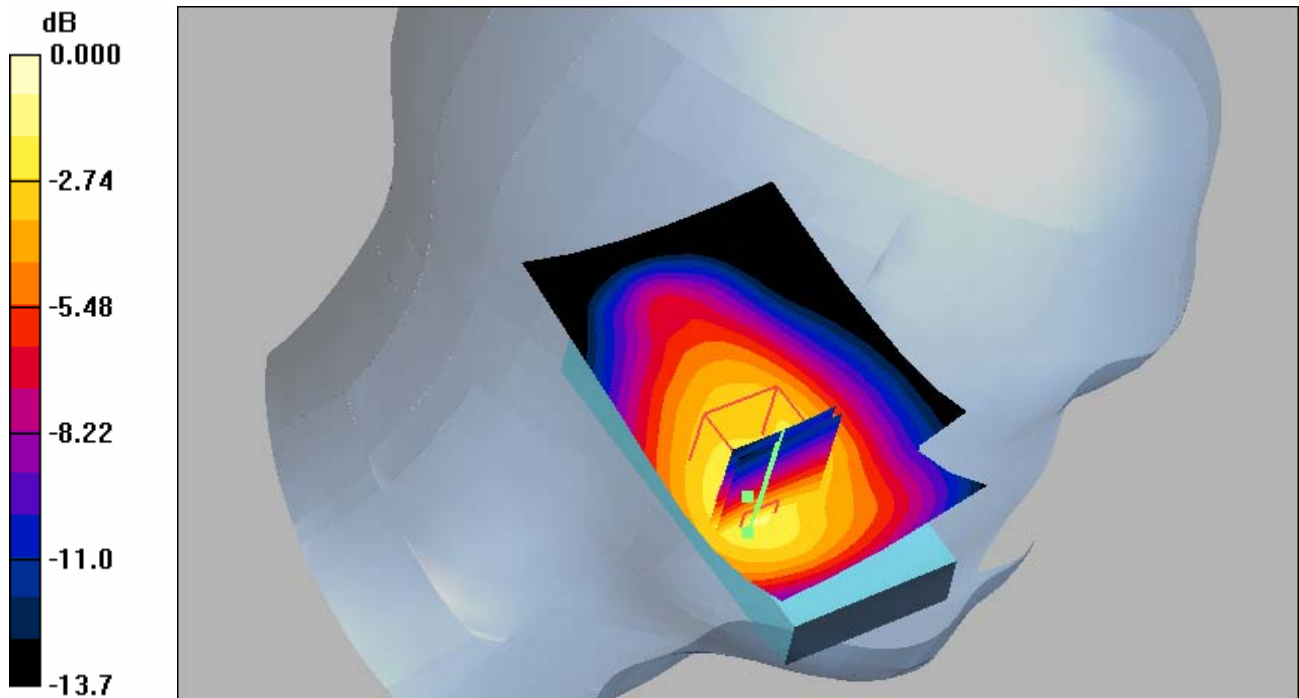
Reference Value = 11.6 V/m; Power Drift = -0.048 dB

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

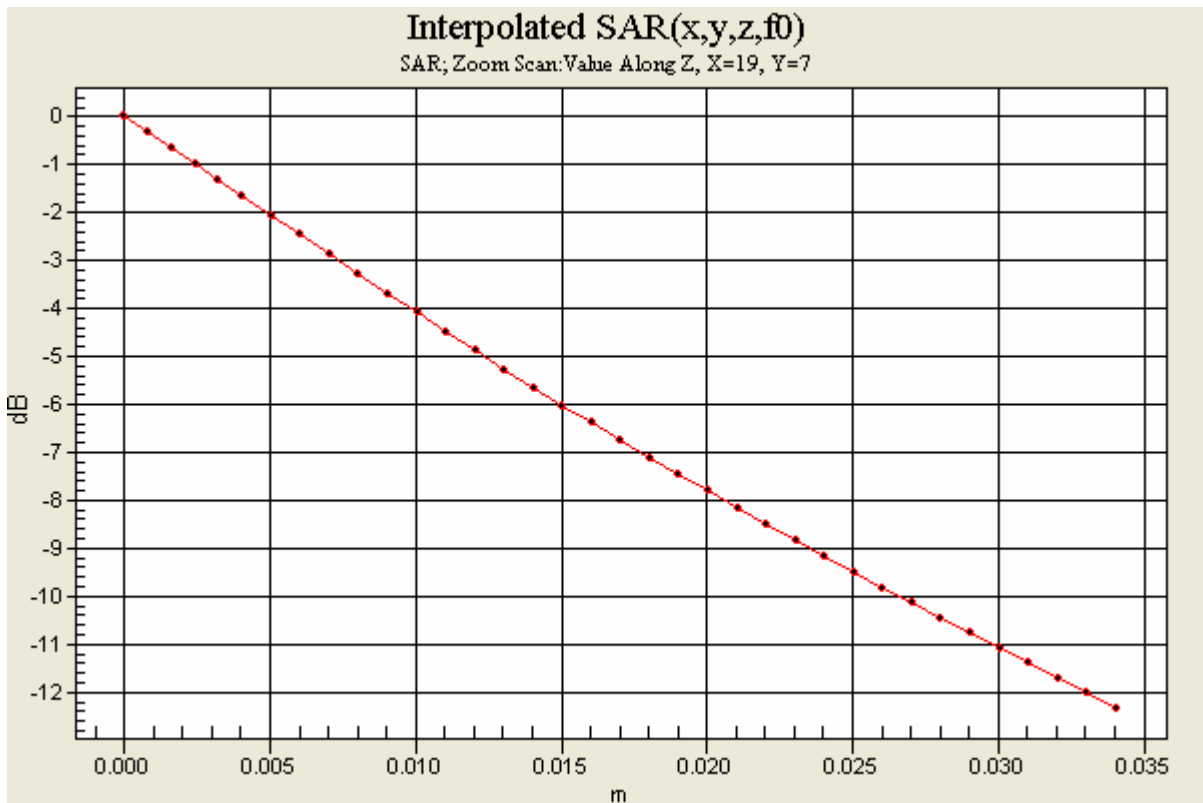
Maximum value of SAR (interpolated) = 0.663 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.663mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side, Cheek/Touch Position.

Date/Time: 4/28/2007 10:23:22 AM

File Name: [28Mar07_W580_GSM1900_FSYA_RC01.da4](#)

DUT: W580 closed

Program Notes: Battery - BST38 Humidity - 41.6 % Ambient Temp - 21.6 C Simulant Tem - 21.3 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 14.4 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.950 mW/g; SAR(10 g) = 0.571 mW/g

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

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

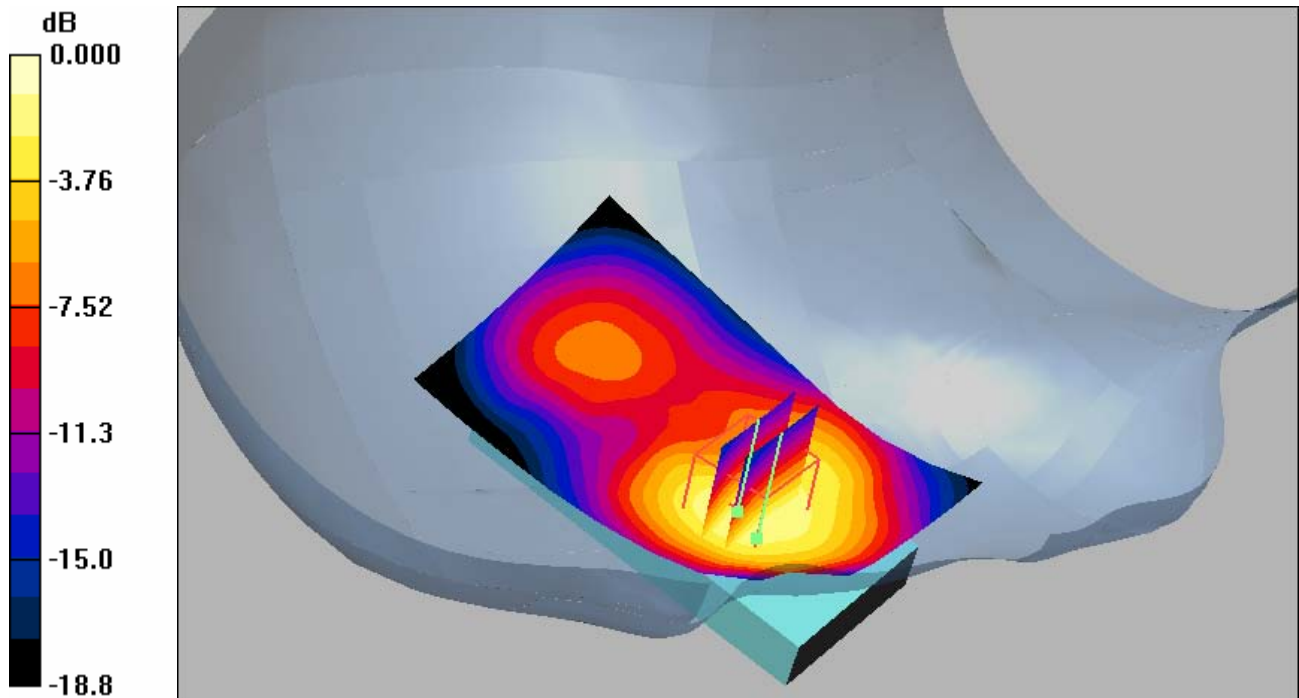
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = -0.035 dB

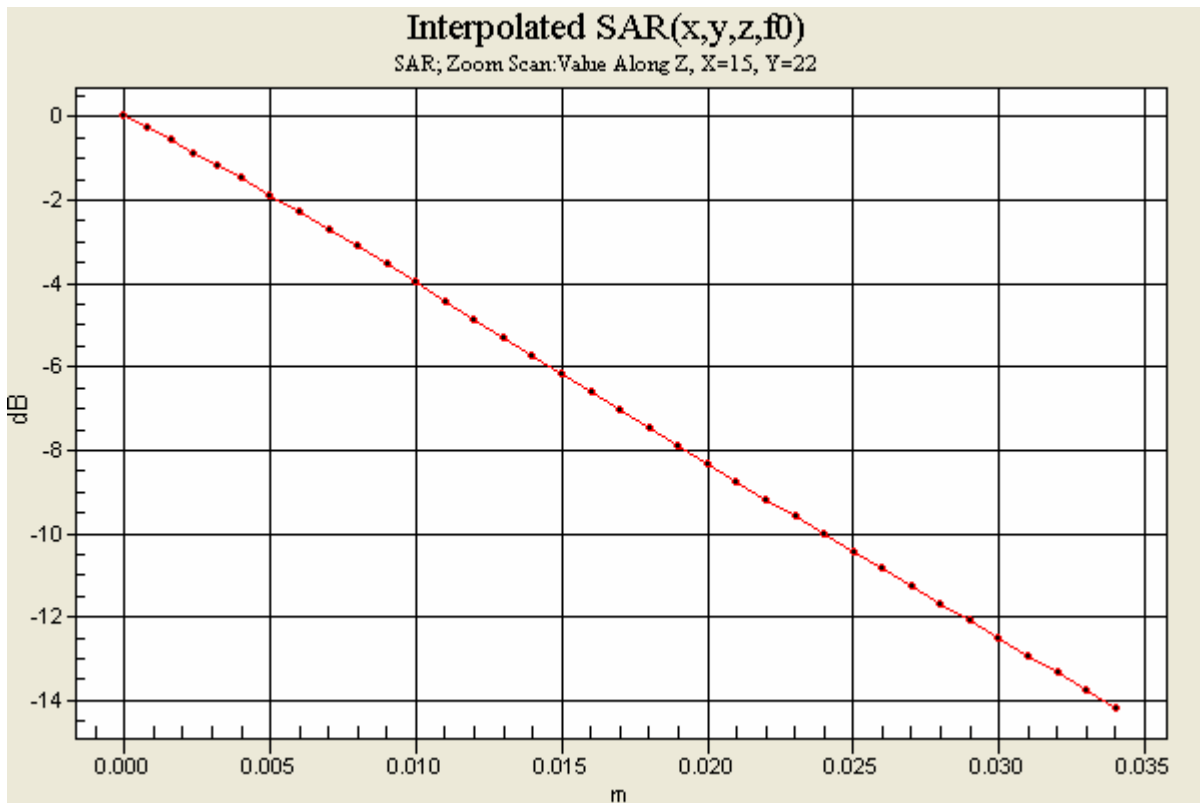
Maximum value of SAR (interpolated) = 1.39 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A



0 dB = 1.39mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR
Model: W580i with Standard Battery: BST-38, Right Side, Tilt Position.**

Date/Time: 4/28/2007 11:22:59 AM

File Name: [28Mar07_W580_GSM1900_FSYA_RT01.da4](#)

DUT: W580 closed

Program Notes: Battery - BST38 Humidity - 40.8 % Ambient Temp - 21.6 C Simulant Tem - 21.4 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.368 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 16.3 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.474 W/kg

SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.187 mW/g

Maximum value of SAR (measured) = 0.356 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

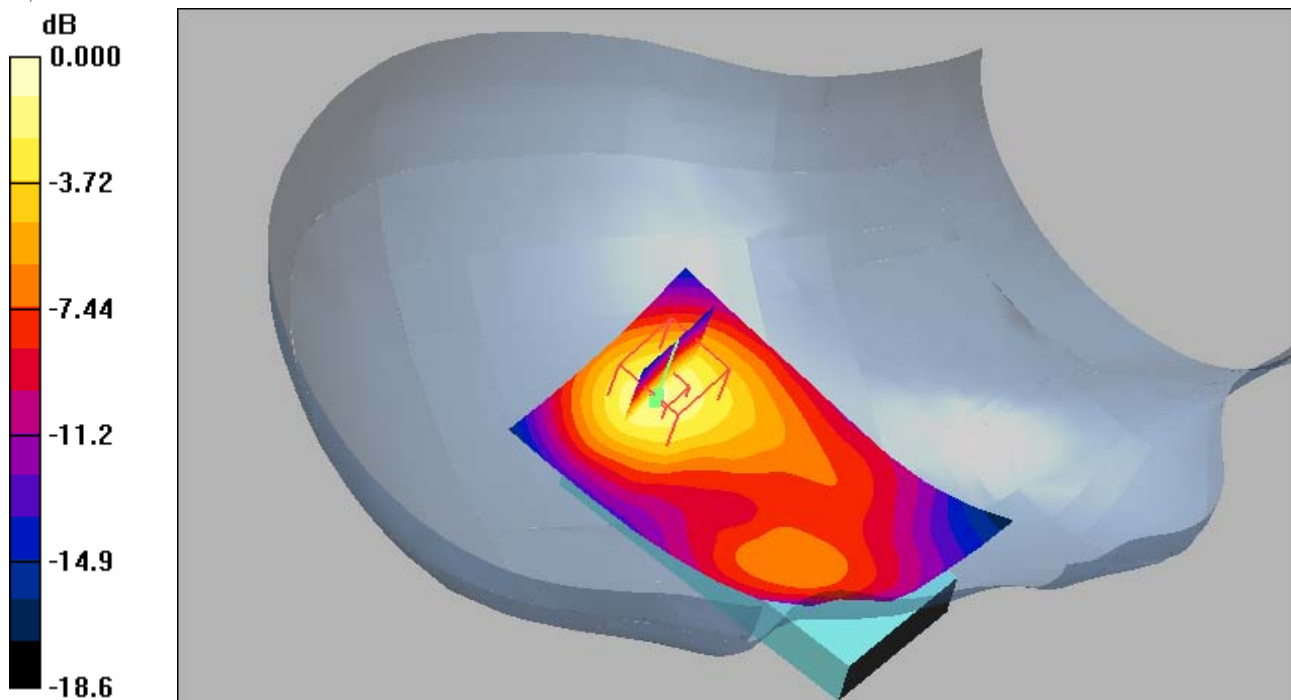
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.3 V/m; Power Drift = -0.020 dB

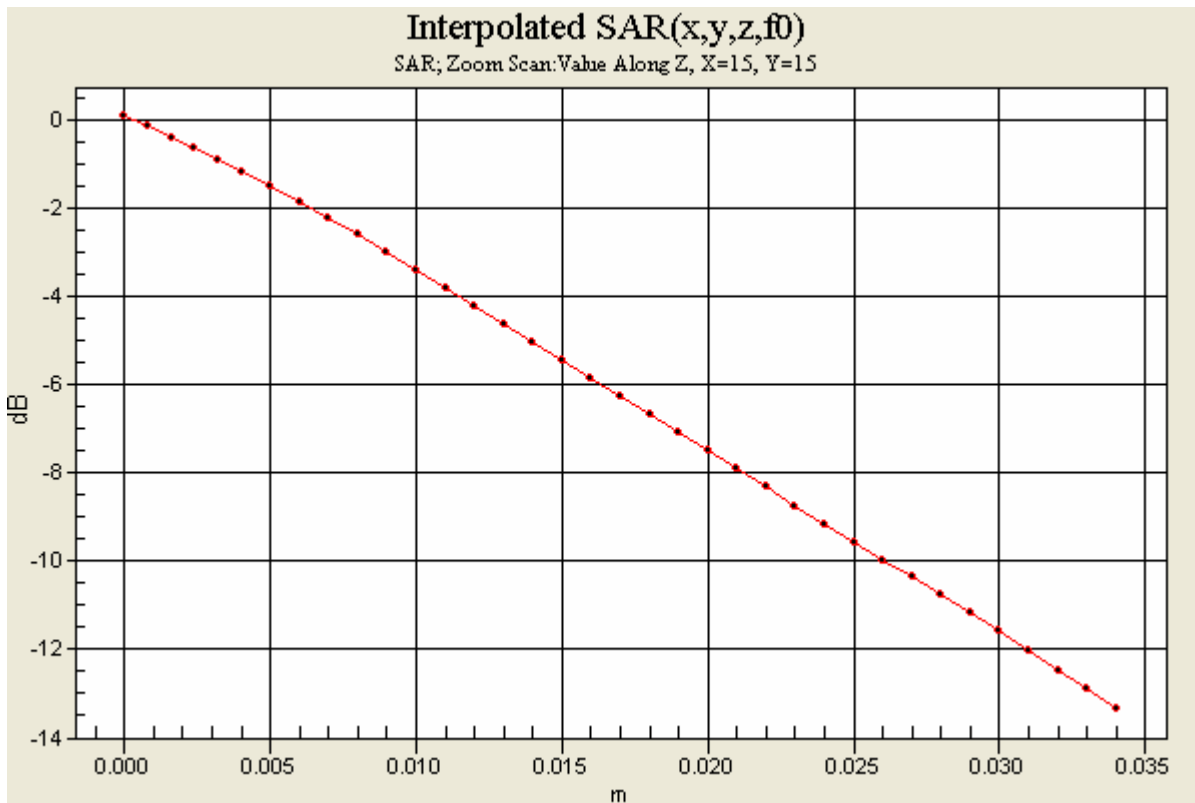
Maximum value of SAR (interpolated) = 0.474 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A



0 dB = 0.474mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side, Cheek/Touch Position.

Date/Time: 4/28/2007 8:02:30 AM

File Name: [28Apr07_W580_GSM1900_FSYA_LC01.da4](#)

DUT: W580 closed

Program Notes: Battery - BST-38 Humidity: 40.3% Ambient Temp: 21.6 C Simulant Temp: 21.2 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 1.46 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 12.2 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 1.98 W/kg

SAR(1 g) = 1.26 mW/g; SAR(10 g) = 0.706 mW/g

Maximum value of SAR (measured) = 1.38 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

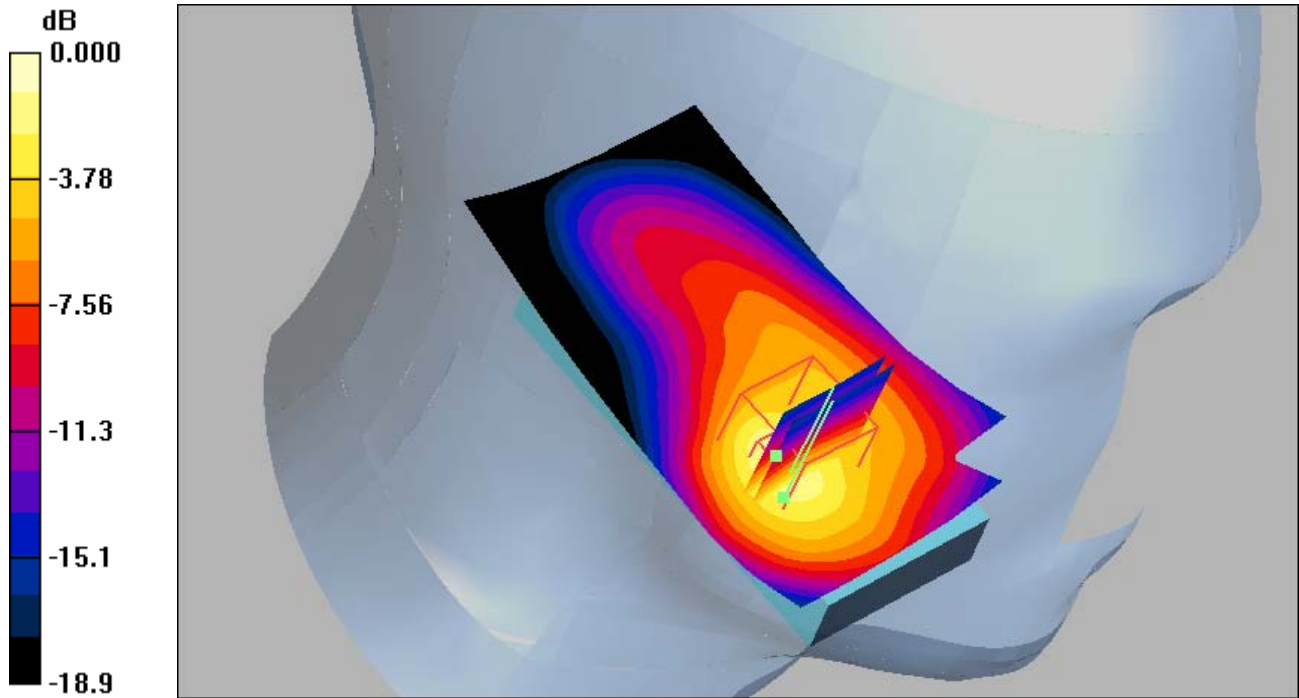
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.2 V/m; Power Drift = -0.006 dB

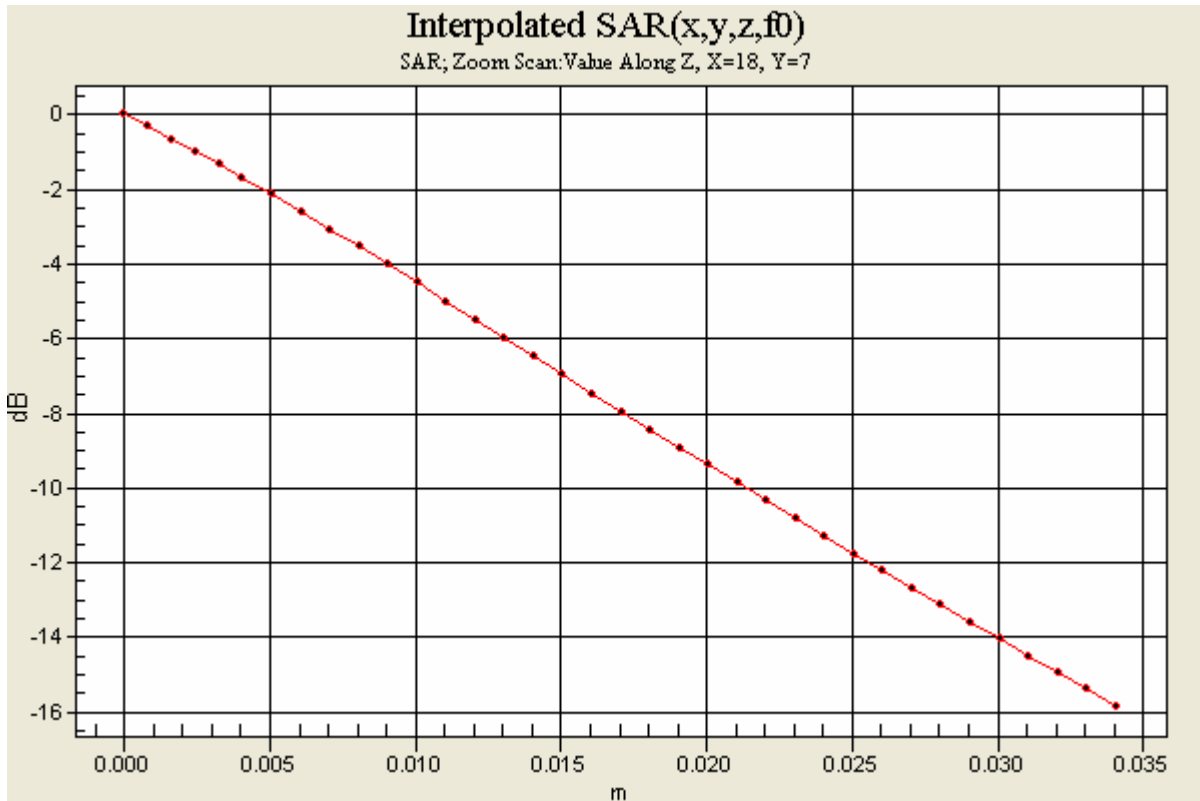
Maximum value of SAR (interpolated) = 1.98 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 1.98mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

**1900 GSM Band: Distribution and Extrapolation of Maximum SAR
Model: W580i with Standard Battery: BST-38, Left Side, Tilt Position.**

Date/Time: 4/28/2007 9:18:43 AM

File Name: [28Apr07_W580_GSM1900_FSYA_LT01.da4](#)

DUT: W580 closed

Program Notes: Battery - BST-38 Humidity: 41.9% Ambient Temp: 21.5 C Simulant Temp: 21.3 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: $f = 1910 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 15.9 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.310 mW/g; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.333 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

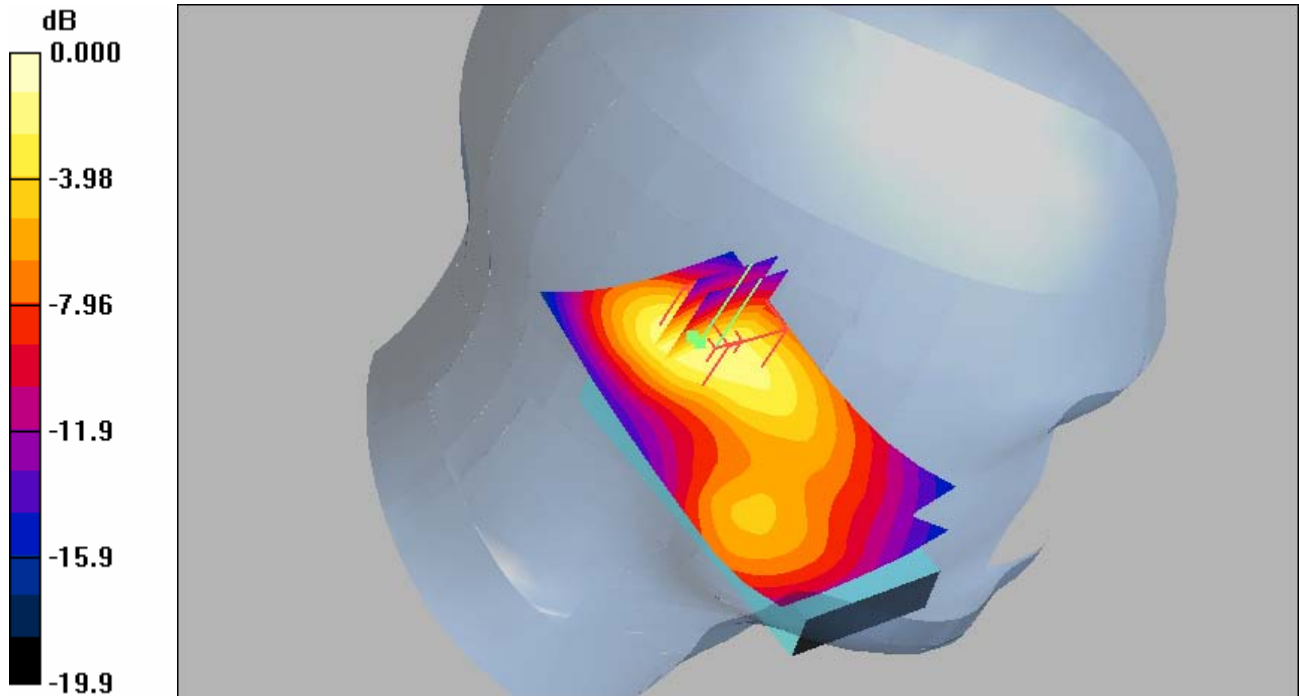
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.9 V/m; Power Drift = -0.018 dB

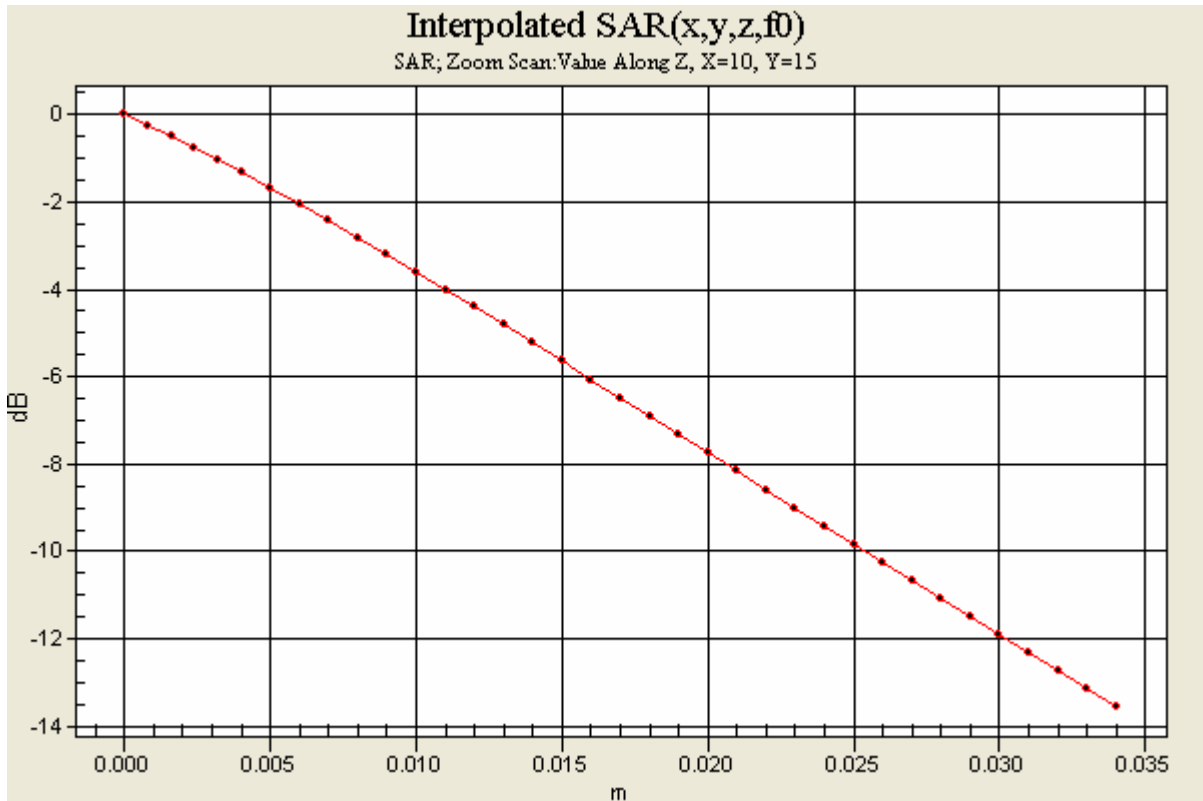
Maximum value of SAR (interpolated) = 0.453 mW/g



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0 dB = 0.453mW/g





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**1900 GSM Band: Distribution and Extrapolation of Maximum SAR
Model: W580i with Standard Battery: BST-38, Right Side, Cheek/Touch Position with Blue Tooth.**

Date/Time: 4/28/2007 11:44:59 AM

File Name: [28Apr07_W580_GSM1900_FSYA_BT_LC01.da4](#)

DUT: W580 closed

Program Notes: Battery - BST-38 Humidity: 41.9% Ambient Temp: 21.5 C Simulant Temp: 21.3 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: $f = 1910 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.45 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 12.5 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.686 mW/g

Maximum value of SAR (measured) = 1.40 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

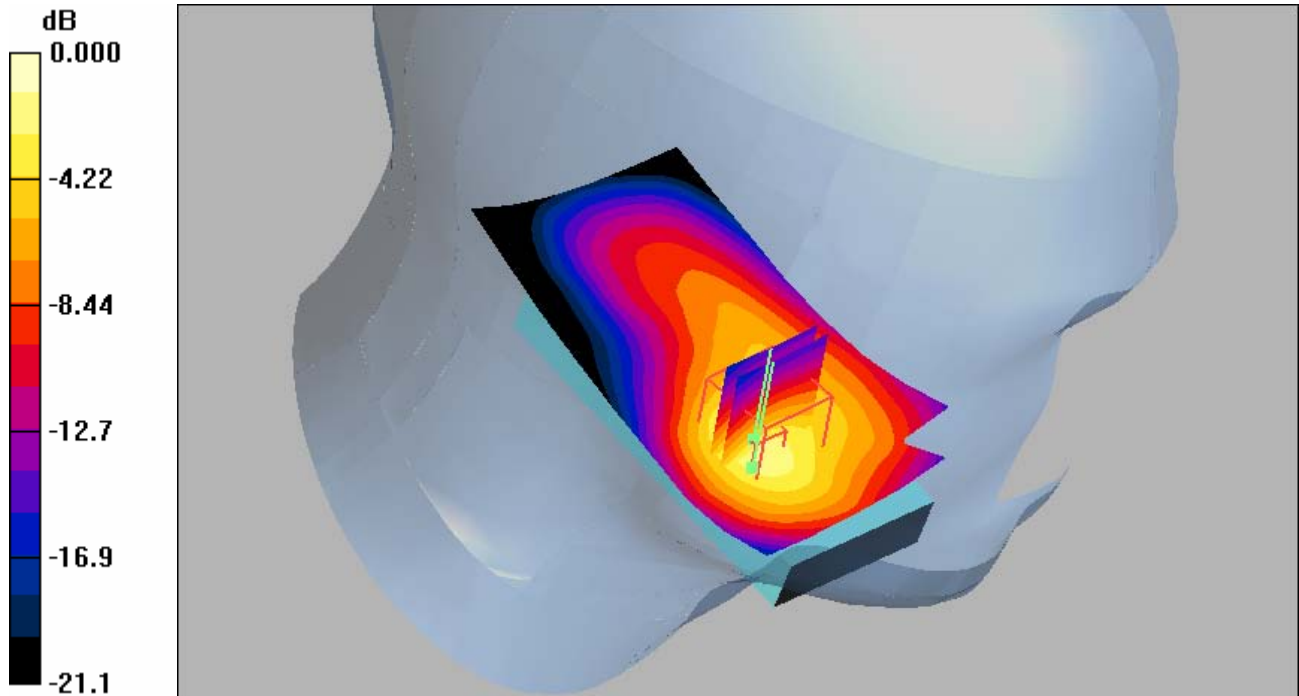
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.5 V/m; Power Drift = 0.008 dB

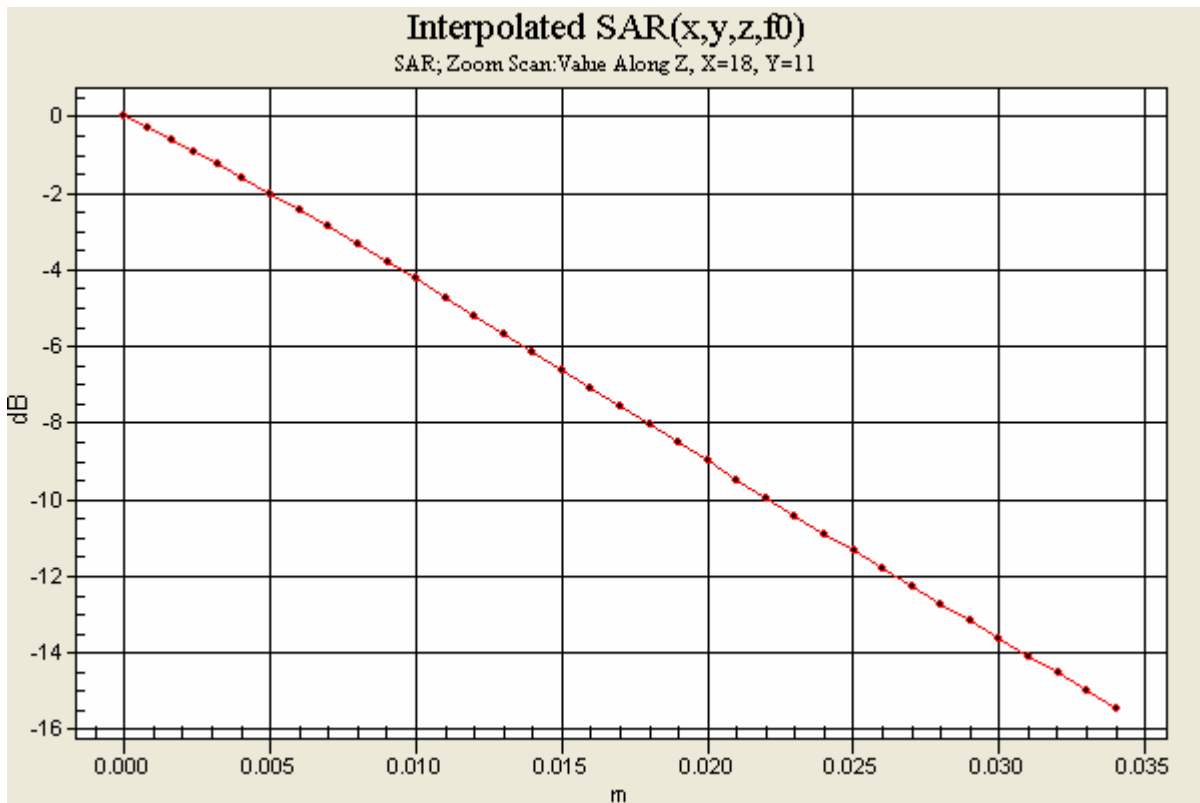
Maximum value of SAR (interpolated) = 1.96 mW/g



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0 dB = 1.96mW/g





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

800 GSM Band: SAR Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side Open Position, Cheek/Touch Position.

Date/Time: 4/27/2007 10:29:09 AM

File Name: [27Apr07_W580_GSM850_FKYV_open_RC01.da4](#)

DUT: W580 open

Program Notes: Battery BST-38 Humidity - 48.6 % Ambient Temp - 21.9 C Simulant Temp - 21.5 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.486 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 11.3 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.624 W/kg

SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.330 mW/g

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

Maximum value of SAR (measured) = 0.500 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

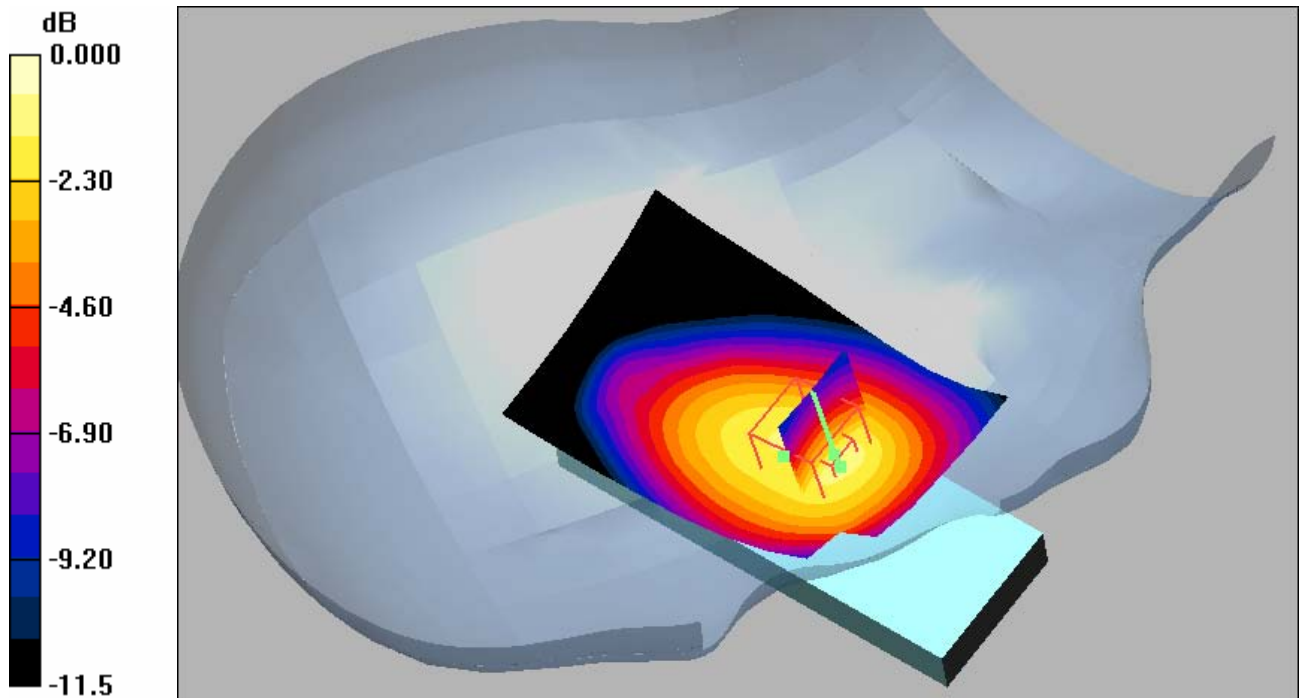
Reference Value = 11.3 V/m; Power Drift = -0.062 dB

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

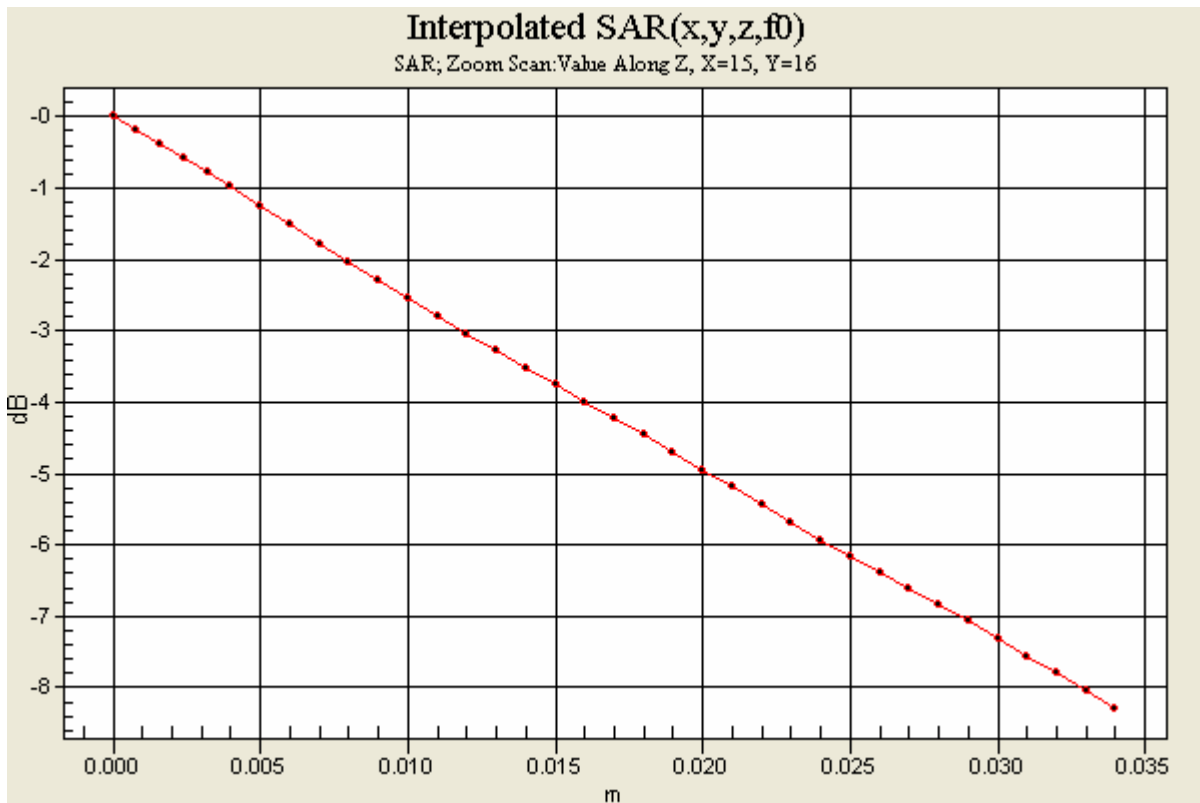
Maximum value of SAR (interpolated) = 0.624 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.624mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side Open Position, Tilt Position.

Date/Time: 4/27/2007 11:27:12 AM

File Name: [27Apr07_W580_GSM850_FKYV_open_RT01.da4](#)

DUT: W580 open

Program Notes: Battery BST-38 Humidity - 45.6 % Ambient Temp - 21.5 C Simulant Temp - 21.4 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.307 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 15.5 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.375 W/kg

SAR(1 g) = 0.290 mW/g; SAR(10 g) = 0.209 mW/g

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

Maximum value of SAR (measured) = 0.309 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

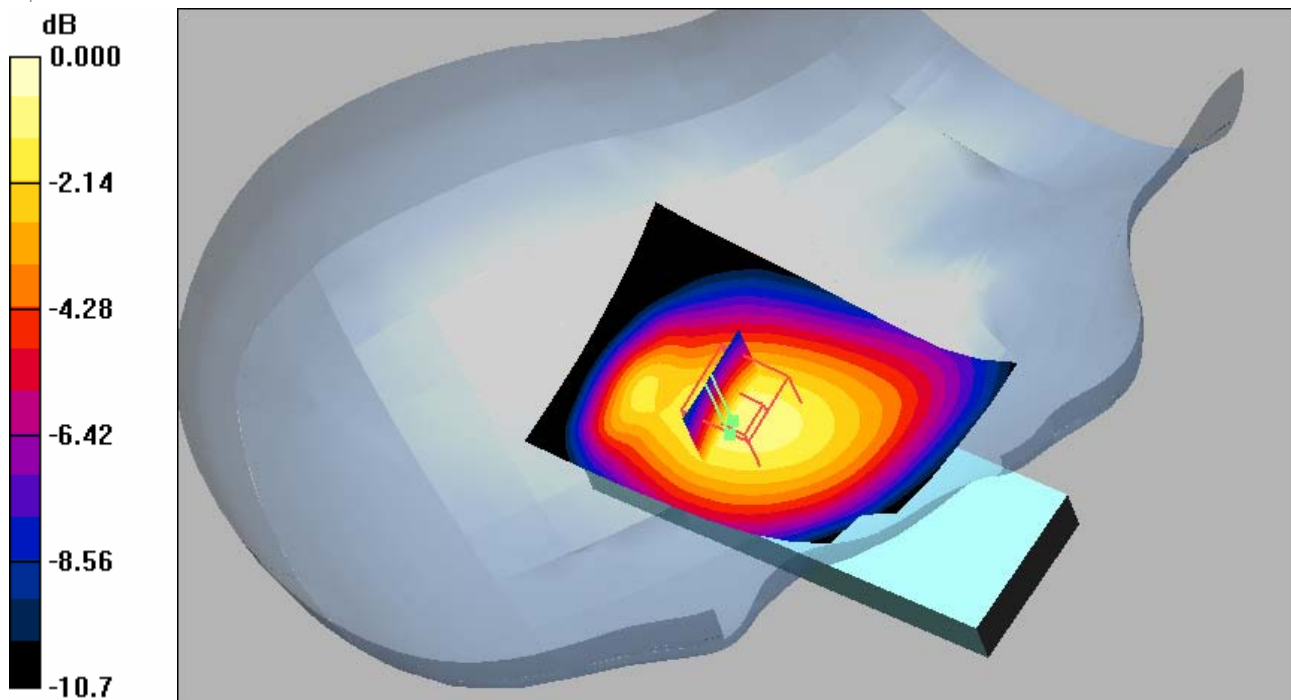
Reference Value = 15.5 V/m; Power Drift = 0.007 dB

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

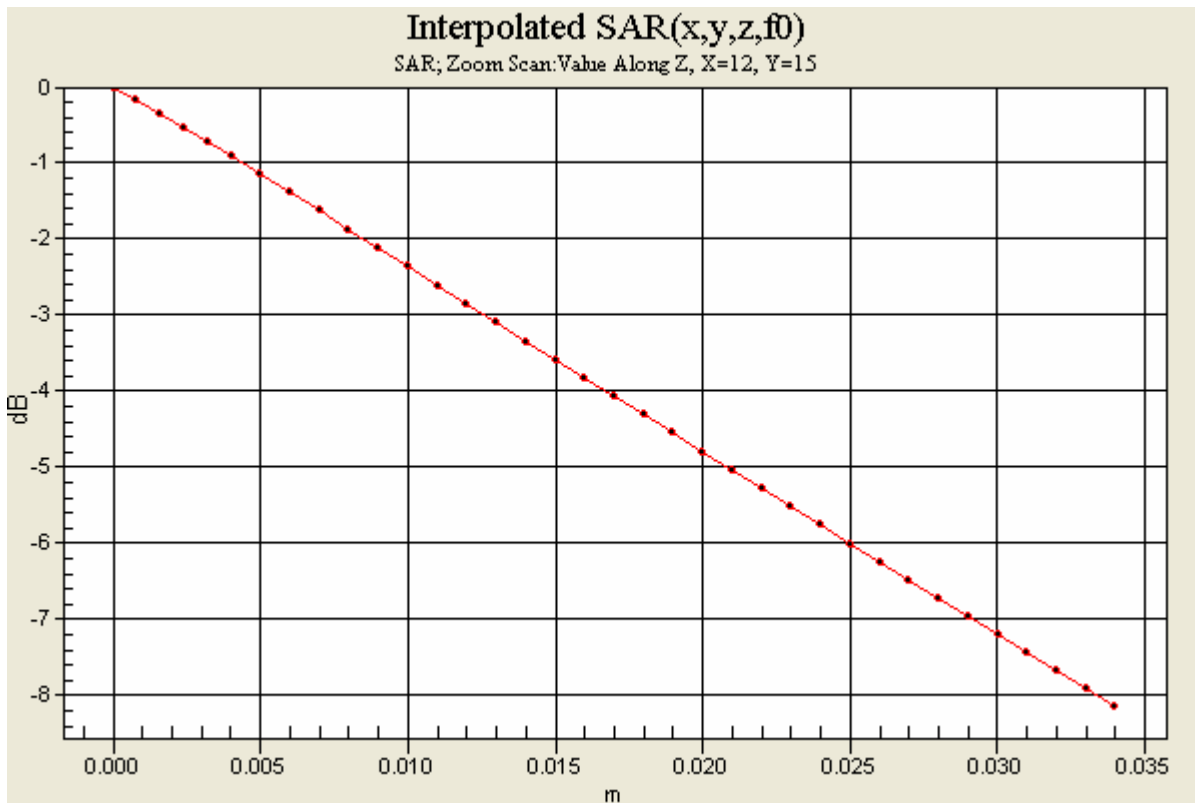
Maximum value of SAR (interpolated) = 0.375 mW/g



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0 dB = 0.375mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side Open Position, Cheek/Touch Position.

Date/Time: 4/27/2007 8:21:08 AM

File Name: [27Apr07_W580_GSM850_FKYV_open_LC01.da4](#)

DUT: W580 open

Program Notes: Battery BST-38 Humidity - 43 % Ambient Temp - 21.5 C Simulant Temp - 21.6 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.485 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 10.5 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 0.598 W/kg

SAR(1 g) = 0.458 mW/g; SAR(10 g) = 0.334 mW/g

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

Maximum value of SAR (measured) = 0.485 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

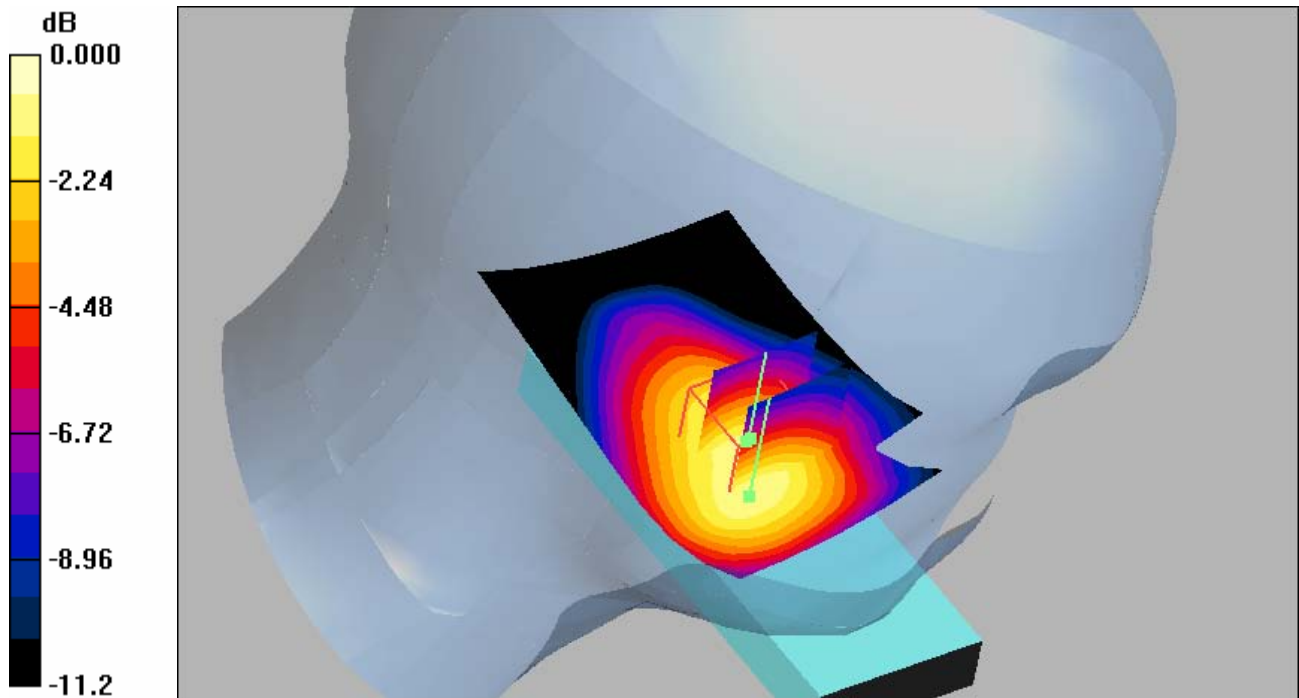
Reference Value = 10.5 V/m; Power Drift = 0.000 dB

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

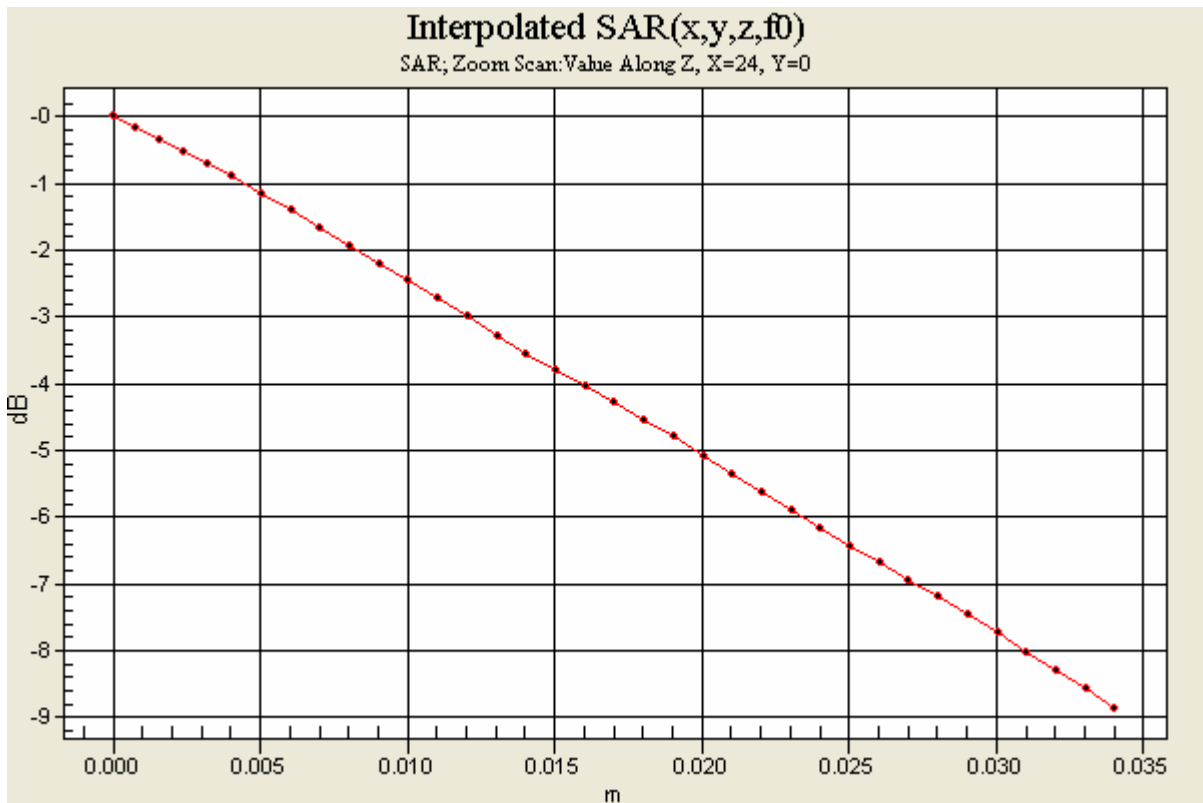
Maximum value of SAR (interpolated) = 0.598 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.598mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side Open Position, Tilt Position.

Date/Time: 4/27/2007 9:26:40 AM

File Name: [27Apr07_W580_GSM850_FKYV_open_LT01.da4](#)

DUT: W580 open

Program Notes: Battery BST-38 Humidity - 45.2 % Ambient Temp - 21.1 C Simulant Temp - 21.4 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.307 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 14.6 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 0.370 W/kg

SAR(1 g) = 0.287 mW/g; SAR(10 g) = 0.207 mW/g

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

Maximum value of SAR (measured) = 0.304 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

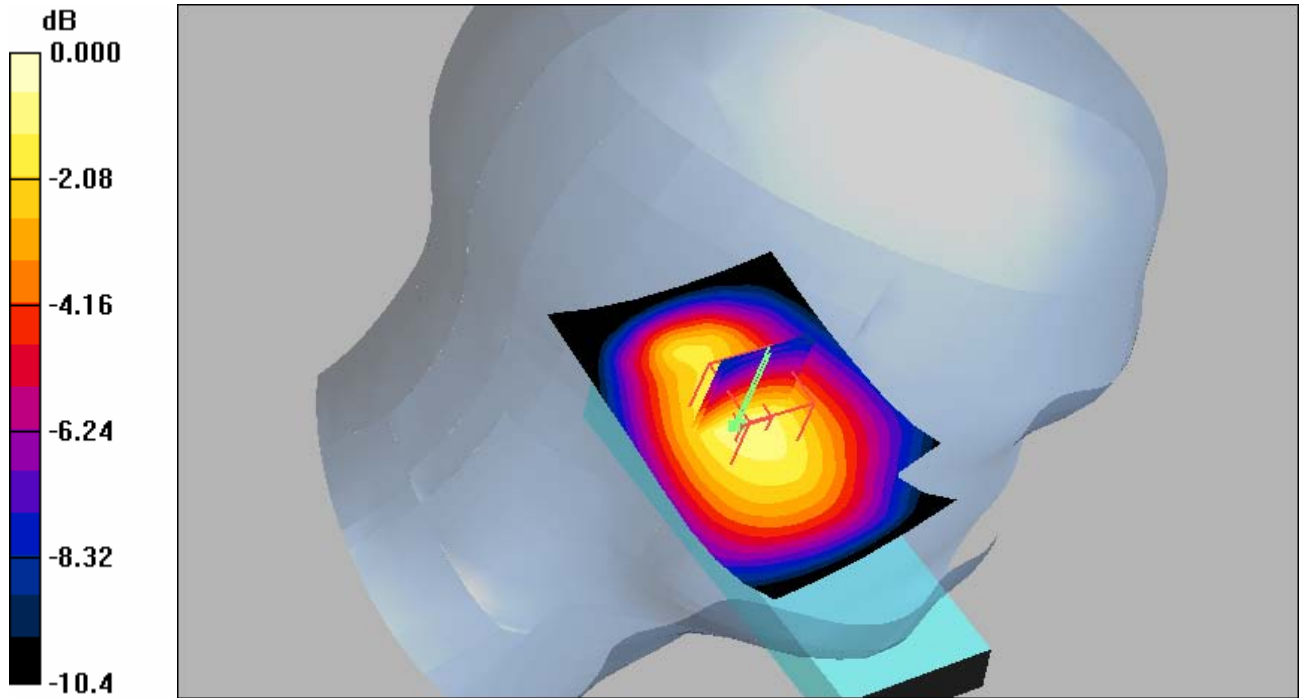
Reference Value = 14.6 V/m; Power Drift = 0.085 dB

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

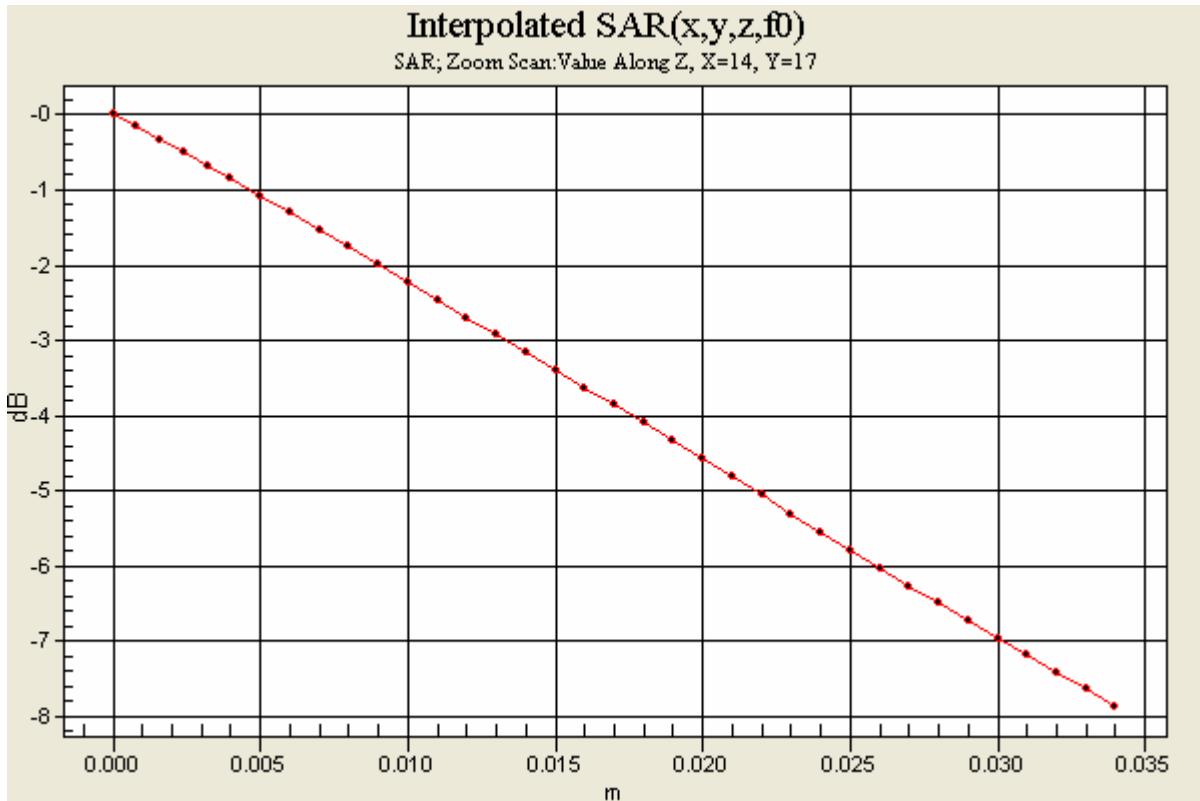
Maximum value of SAR (interpolated) = 0.370 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.370mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

800 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side Open Position, Cheek/Touch Position with Blue Tooth.

Date/Time: 4/27/2007 11:49:02 AM

File Name: [27Apr07_W580_GSM850_FKYV_open_BT_LC01.da4](#)

DUT: W580 open

Program Notes: Battery BST-38 Humidity - 45.2 % Ambient Temp - 21.1 C Simulant Temp - 21.4 C

Communication System: GSM 850; Frequency: 849 MHz; Duty Cycle: 1:8.3

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1539; ConvF(5.96, 5.96, 5.96); Calibrated: 11/21/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 5/19/2006
- Phantom: SAM with CRP (Low Band Head); Type: SAM; Serial: 1251
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.489 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 11.4 V/m; Power Drift = -0.080 dB

Peak SAR (extrapolated) = 0.587 W/kg

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.334 mW/g

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

Maximum value of SAR (measured) = 0.486 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

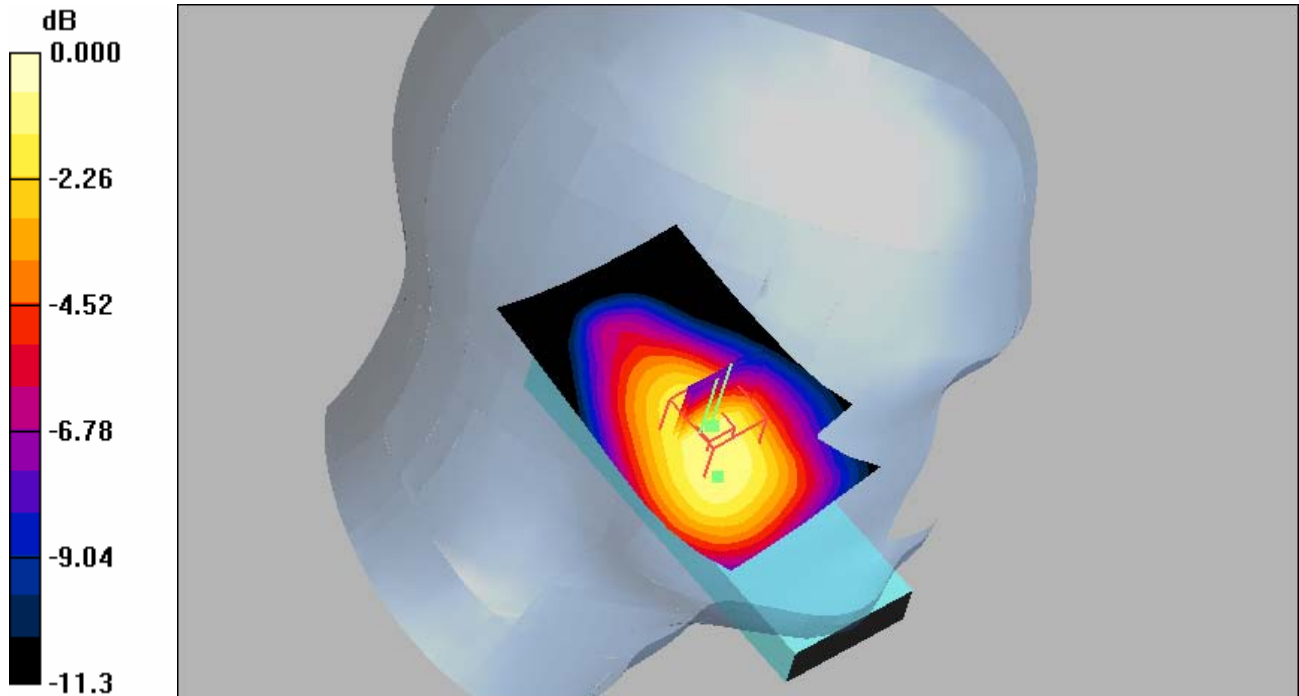
Reference Value = 11.4 V/m; Power Drift = -0.080 dB

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

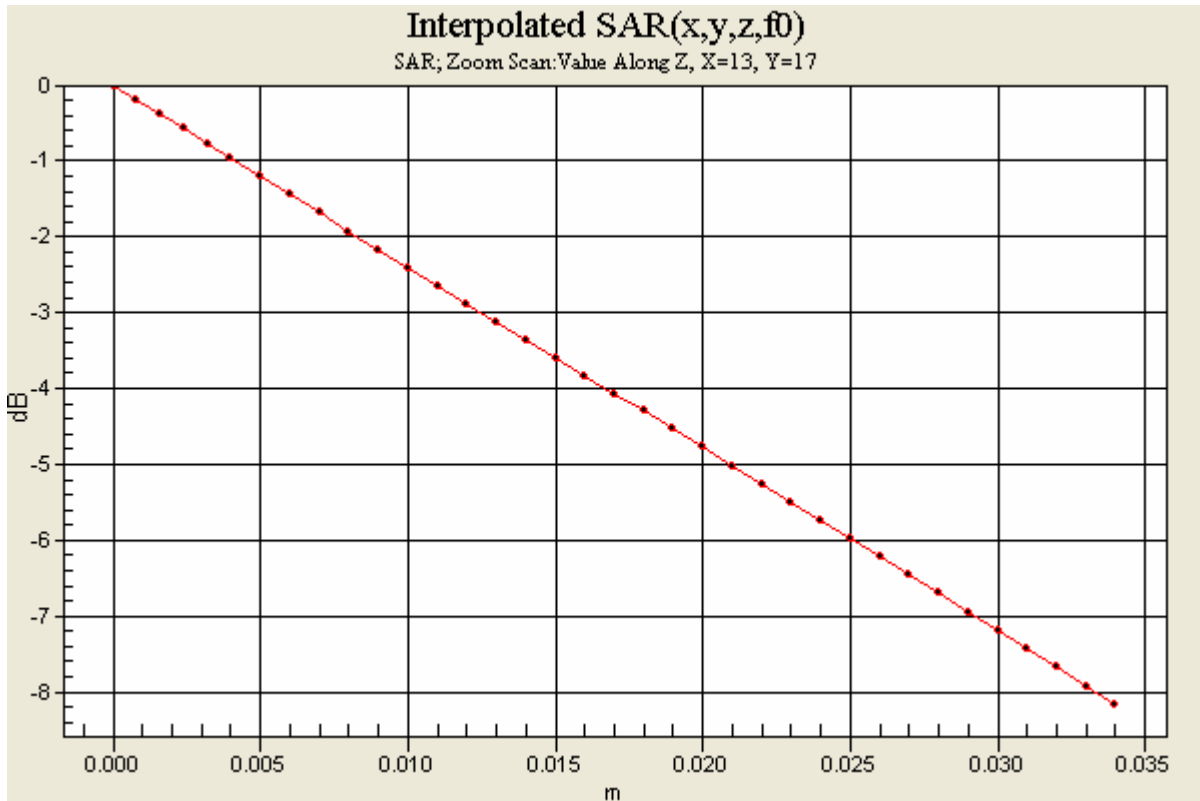
Maximum value of SAR (interpolated) = 0.587 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A



0 dB = 0.587mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side Open Position, Cheek/Touch Position.

Date/Time: 4/29/2007 10:06:07 AM

File Name: [29Apr07_W580_GSM1900_FSYA_open_RC01.da4](#)

DUT: W580 open

Program Notes: Battery - BST38 Humidity - 37 % Ambient Temp - 20.9 C Simulant Tem - 20.6 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.432 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 6.52 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.534 W/kg

SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.232 mW/g

Maximum value of SAR (measured) = 0.414 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

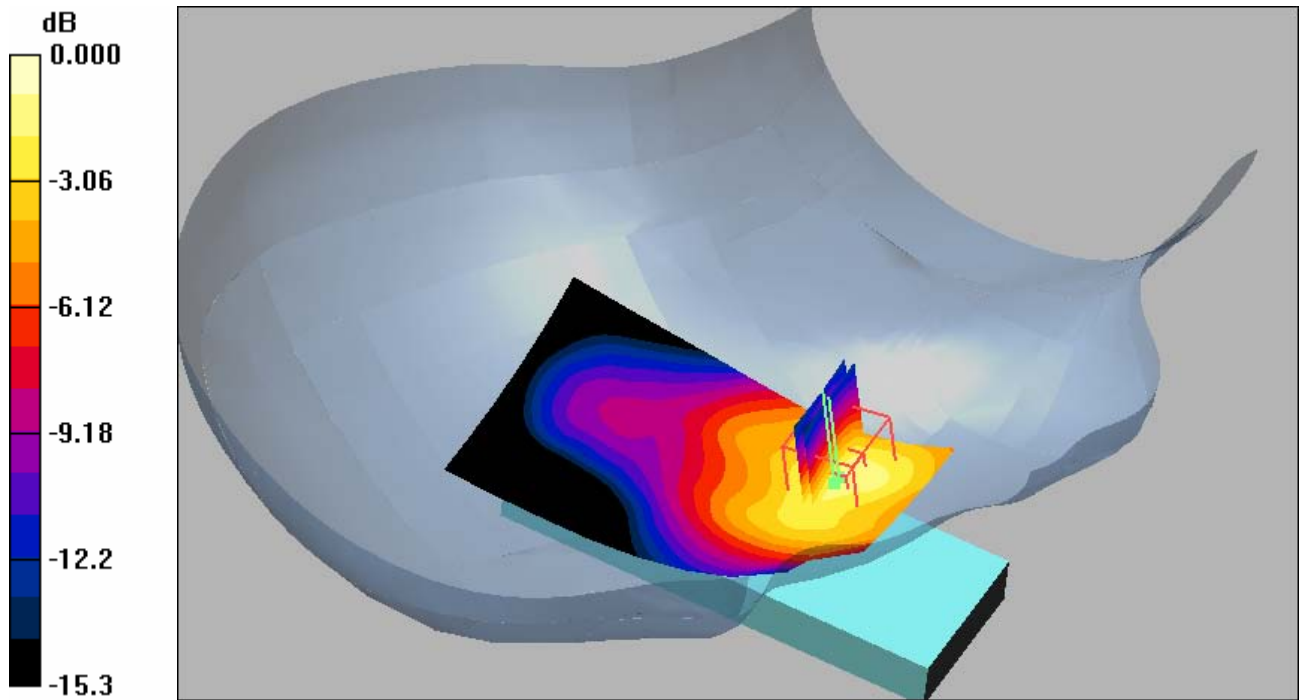
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.52 V/m; Power Drift = 0.012 dB

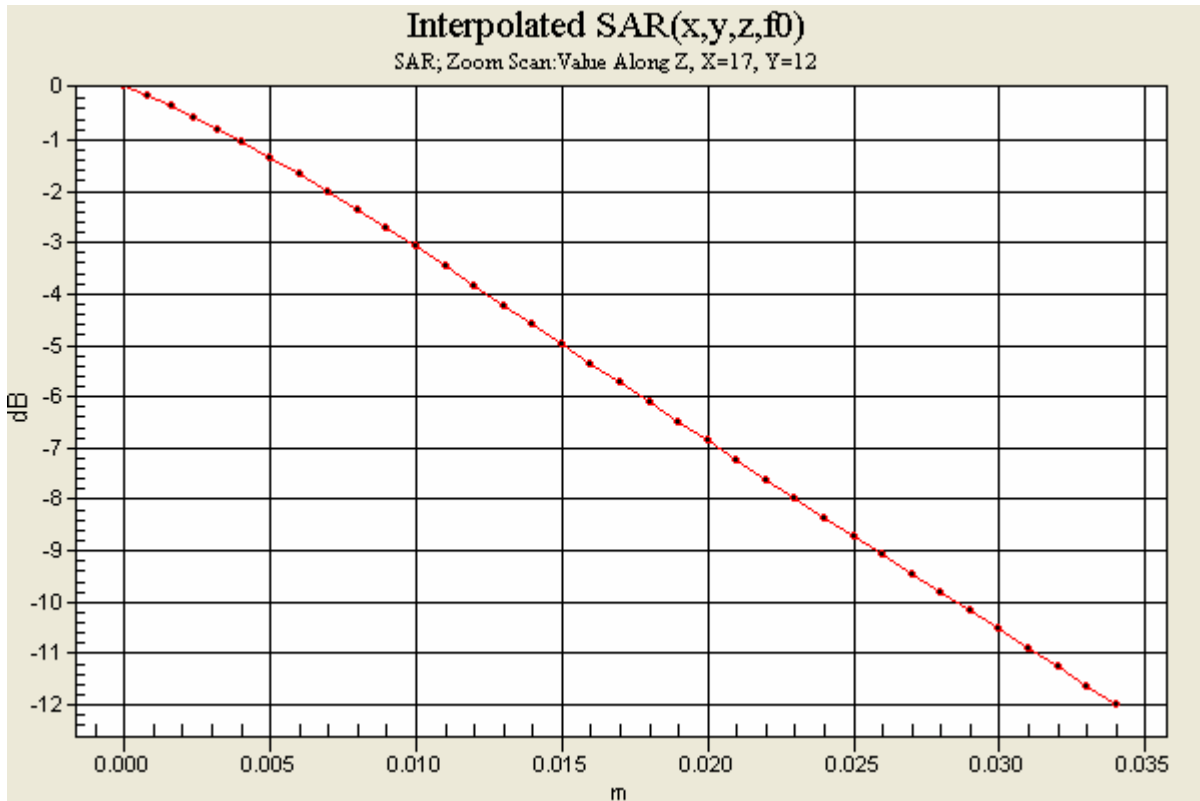
Maximum value of SAR (interpolated) = 0.534 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.534mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side Open Position, Tilt Position.

Date/Time: 4/29/2007 10:46:55 AM

File Name: [29Apr07_W580_GSM1900_FSYA_open_RT01.da4](#)

DUT: W580 open

Program Notes: Battery - BST38 Humidity - 39.9 % Ambient Temp - 20.8 C Simulant Tem - 20.6 C

Communication System: DCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.45 \text{ mho/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.170 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 10.8 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.148 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.161 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

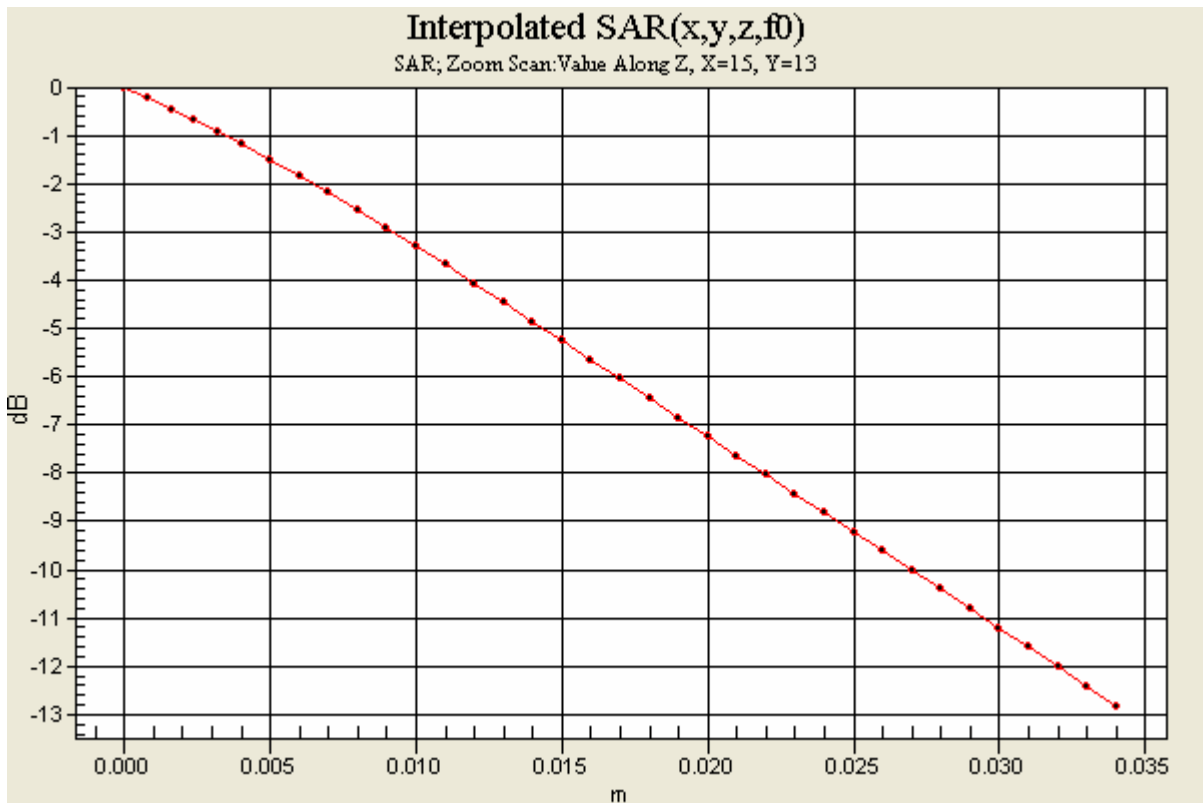
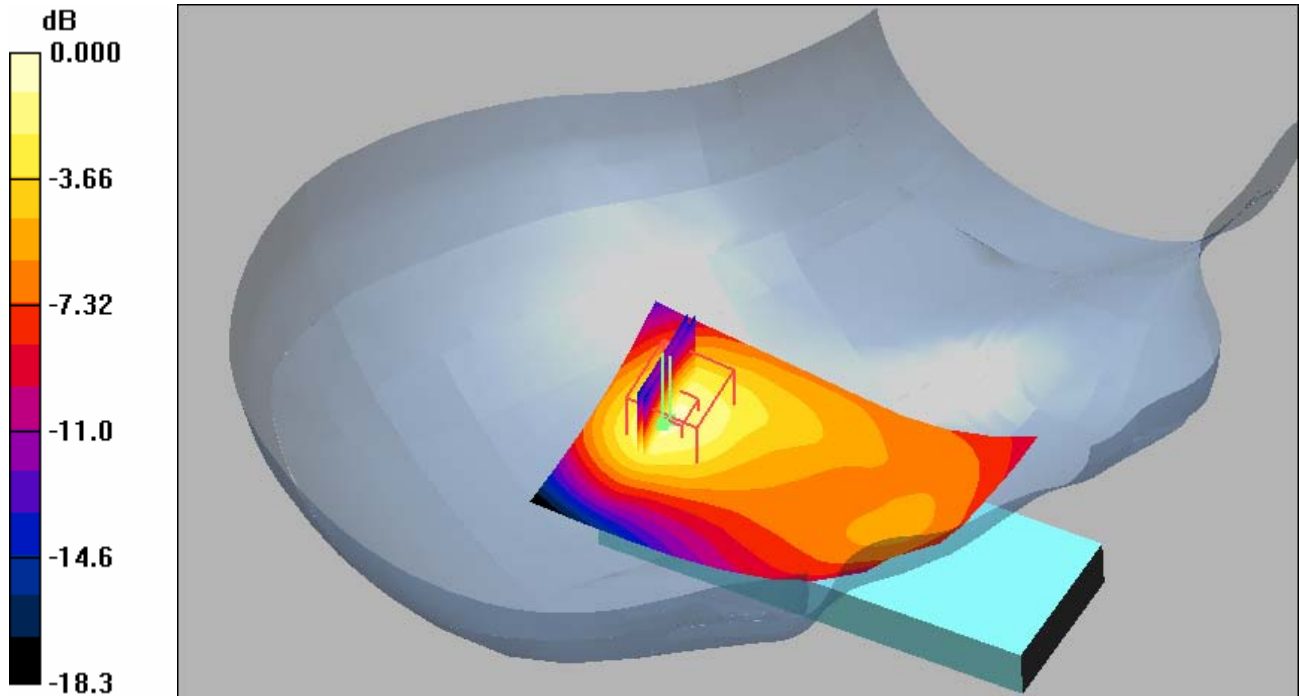
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.8 V/m; Power Drift = 0.031 dB

Maximum value of SAR (interpolated) = 0.210 mW/g



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

1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side Open Position, Cheek/Touch Position.

Date/Time: 4/29/2007 7:37:25 AM

File Name: [29Apr07_W580_GSM1900_FSYA_open_LC01.da4](#)

DUT: W580 open

Program Notes: Battery - BST-38 Humidity: 38.3% Ambient Temp: 20.7 C Simulant Temp: 20.6 C

Communication System: DCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 5.78 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.570 W/kg

SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.222 mW/g

Maximum value of SAR (measured) = 0.407 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

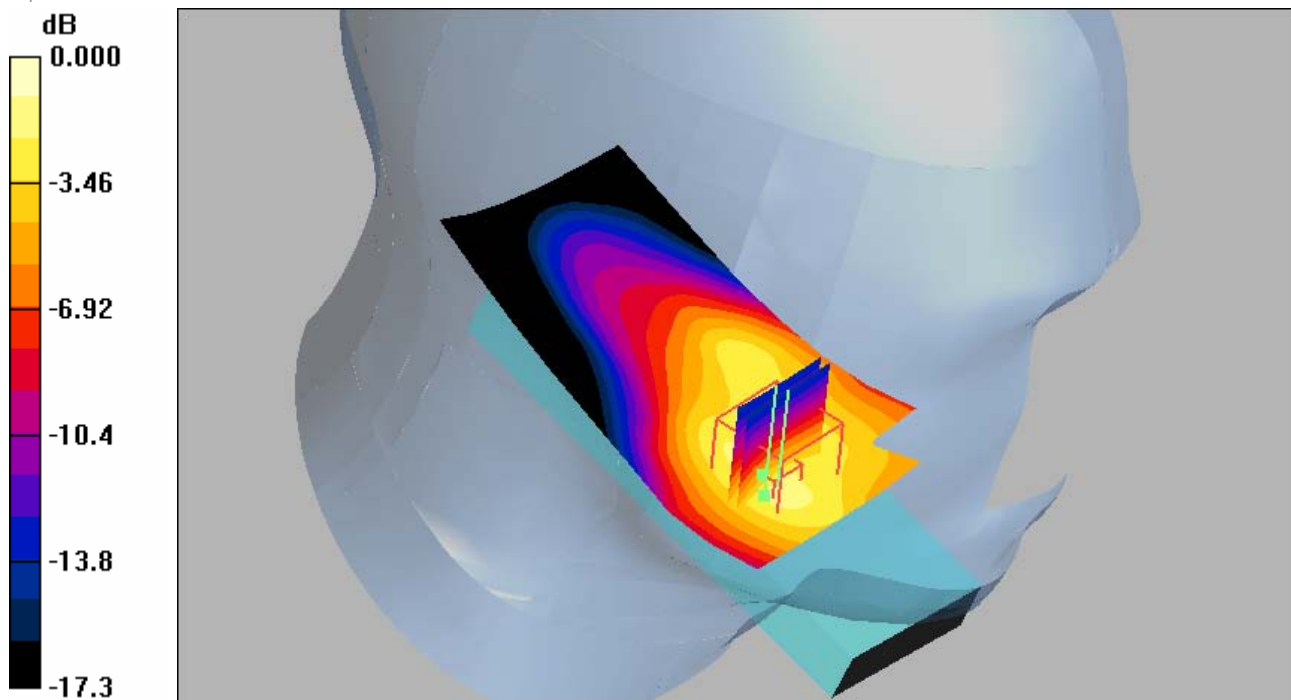
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.78 V/m; Power Drift = -0.016 dB

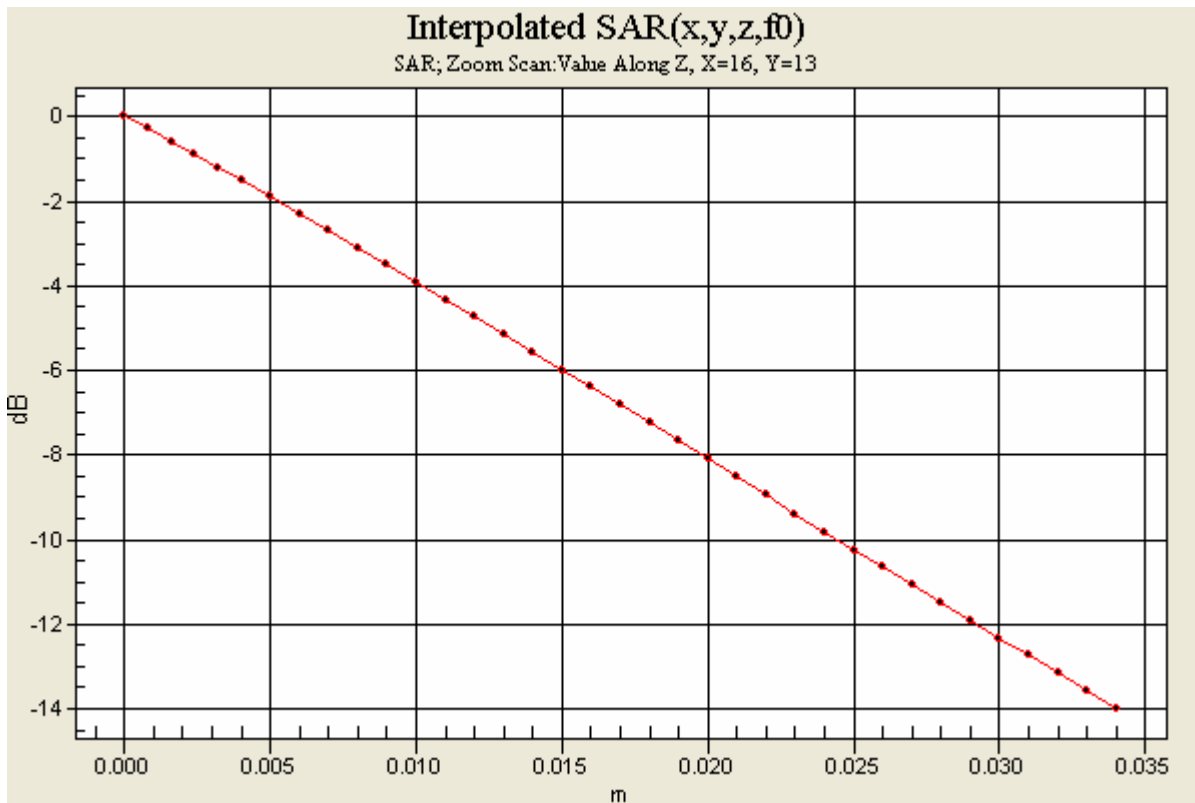
Maximum value of SAR (interpolated) = 0.570 mW/g



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0 dB = 0.570mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Left Side Open Position, Tilt Position.

Date/Time: 4/29/2007 8:36:28 AM

File Name: [29Apr07_W580_GSM1900_FSYA_open_LT01.da4](#)

DUT: W580 open

Program Notes: Battery - BST-38 Humidity: 37.3% Ambient Temp: 21.4 C Simulant Temp: 20.7 C

Communication System: DCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.156 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 10.2 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.196 W/kg

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.090 mW/g

Maximum value of SAR (measured) = 0.151 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

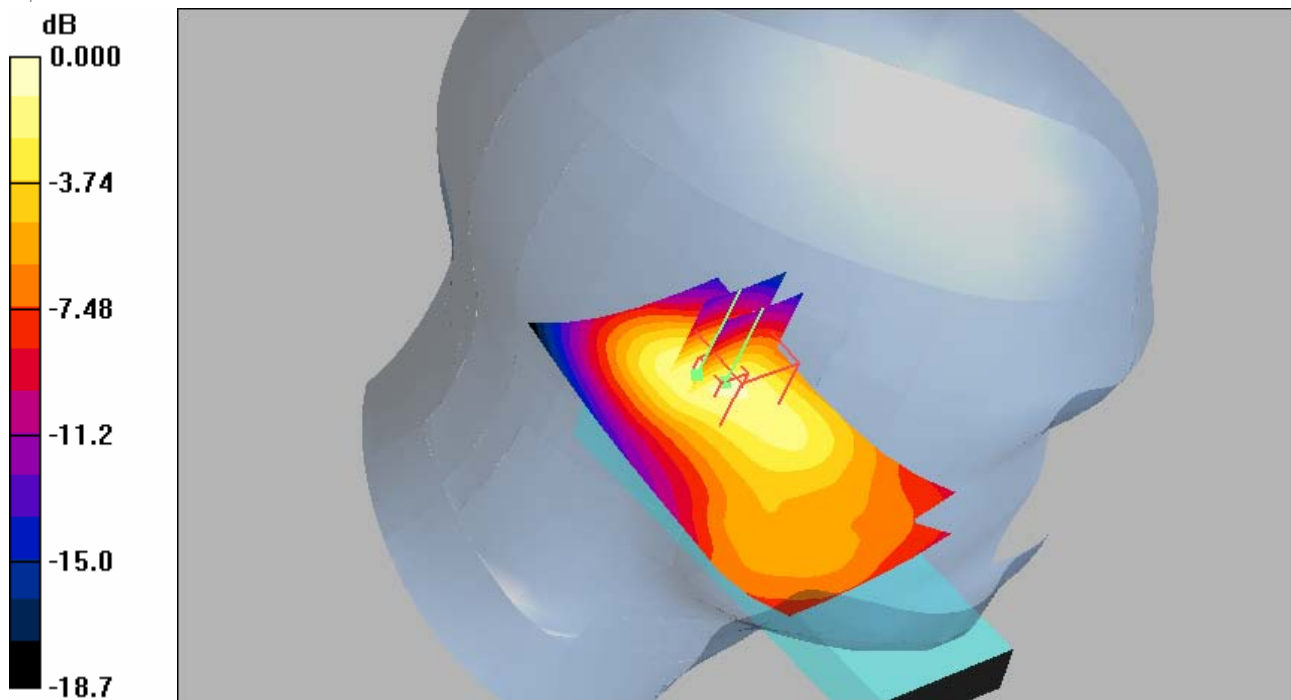
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.2 V/m; Power Drift = 0.008 dB

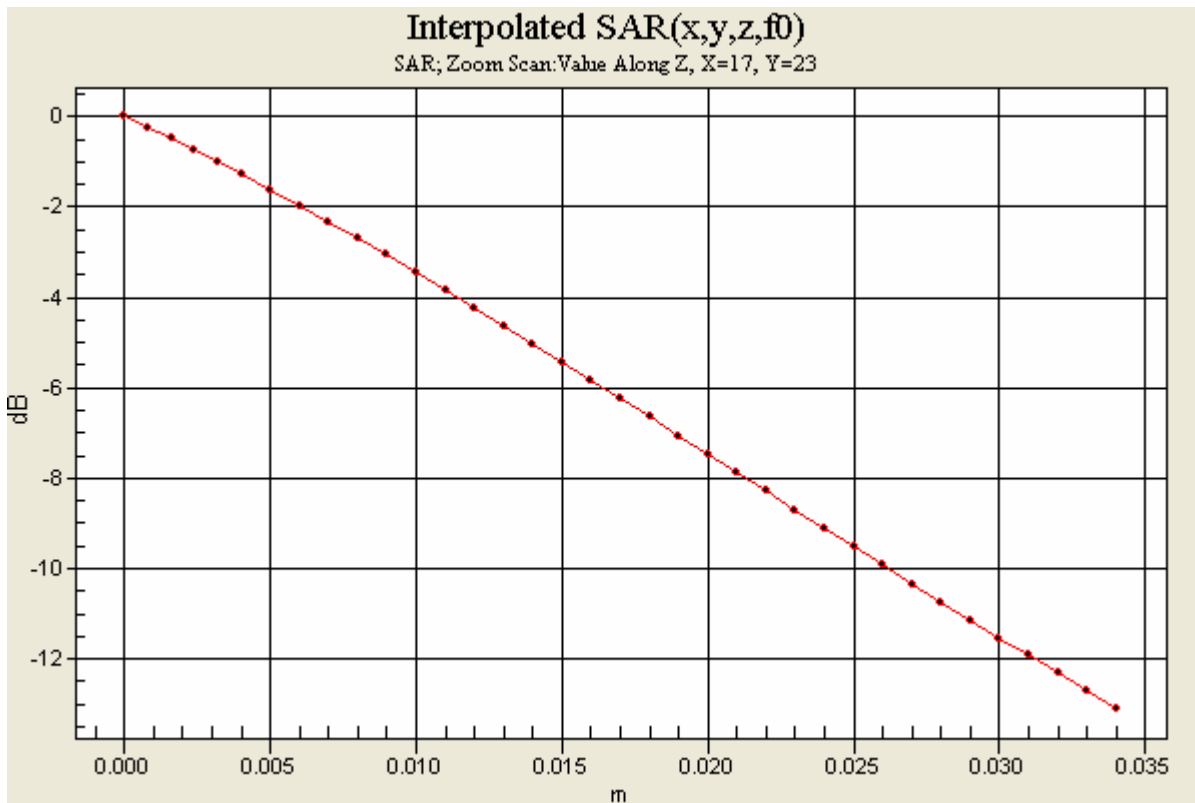
Maximum value of SAR (interpolated) = 0.196 mW/g



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0 dB = 0.196mW/g





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1900 GSM Band: Distribution and Extrapolation of Maximum SAR

Model: W580i with Standard Battery: BST-38, Right Side Open Position, Cheek/Touch Position with Blue Tooth.

Date/Time: 4/29/2007 11:28:24 AM

File Name: [29Apr07_W580_GSM1900_FSYA_open_BT_RC01.da4](#)

DUT: W580 open

Program Notes: Battery - BST38 Humidity - 39.9 % Ambient Temp - 20.8 C Simulant Tem - 20.6 C

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(5.2, 5.2, 5.2); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn416; Calibrated: 11/13/2006
- Phantom: SAM with CRP (High Band Head); Type: SAM; Serial: TP: 1054
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.425 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 6.77 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.519 W/kg

SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.228 mW/g

Maximum value of SAR (measured) = 0.406 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

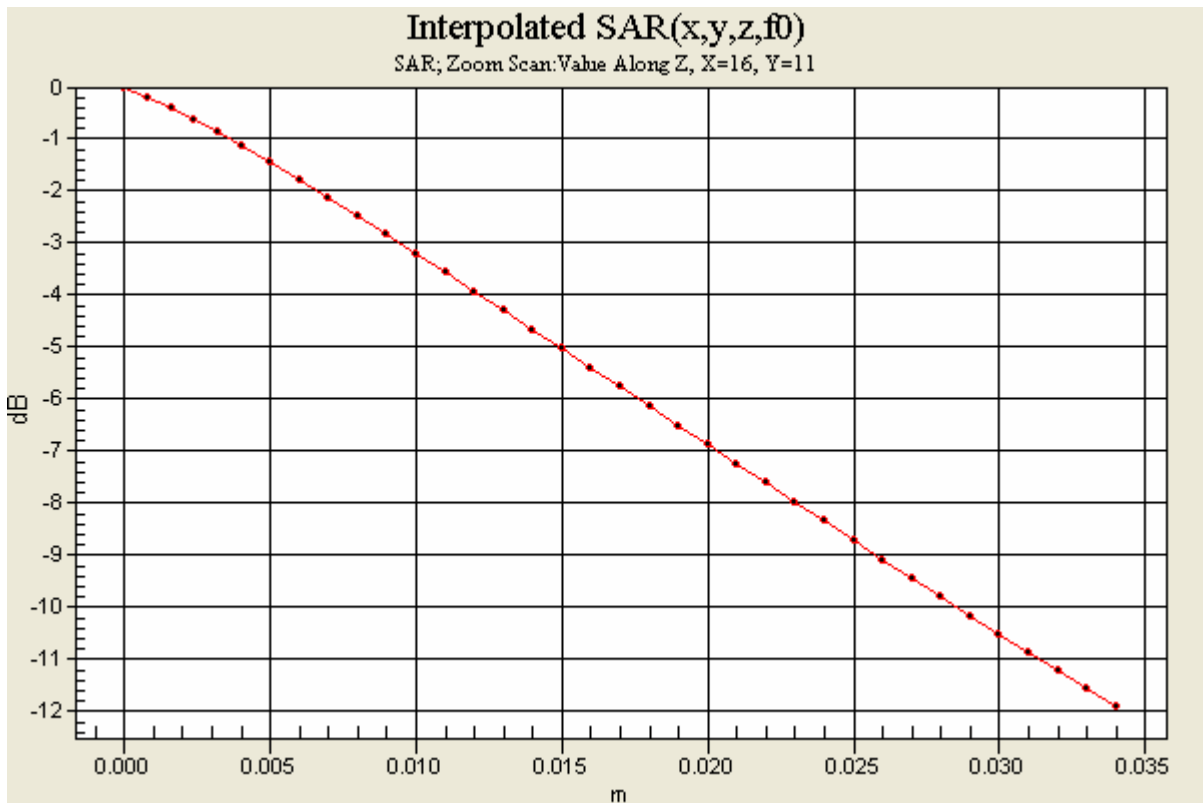
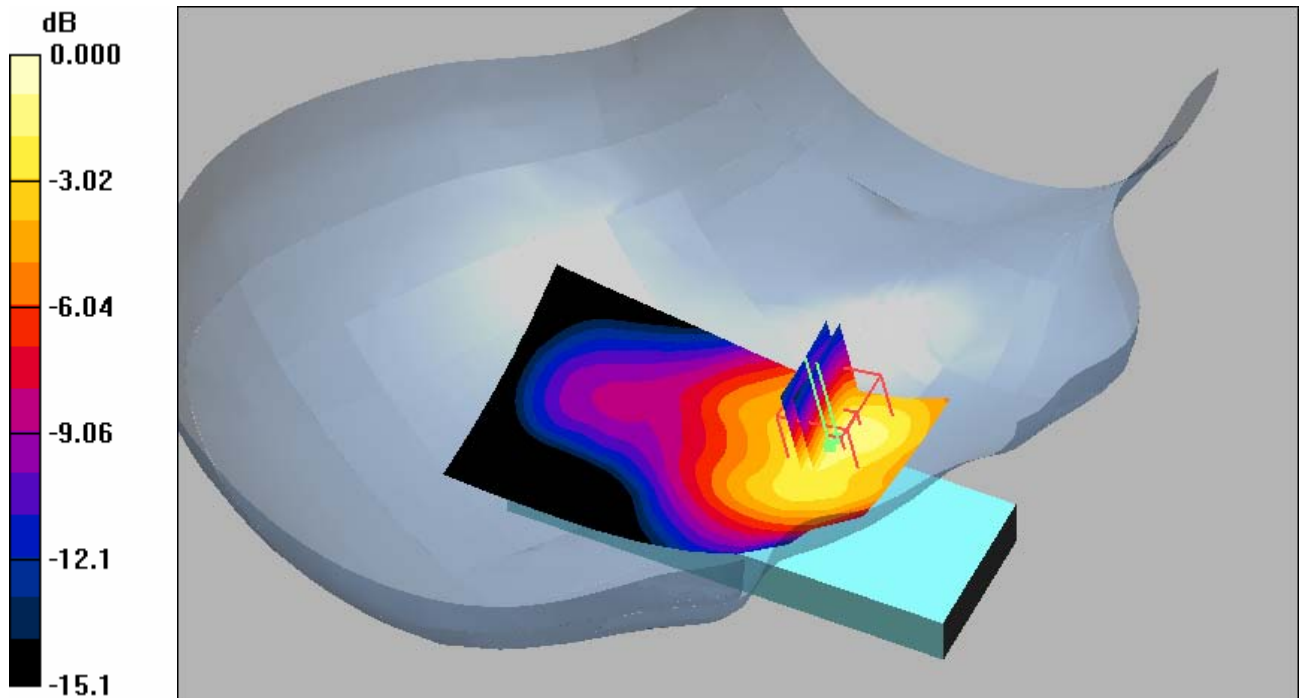
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.77 V/m; Power Drift = -0.010 dB

Maximum value of SAR (interpolated) = 0.519 mW/g



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Appendix 3

SAR distribution plots for Body Worn Configuration



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Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using a 15mm spacer. (Standard Battery, BST-38)

Date/Time: 4/25/2007 8:30:07 AM

File Name: [25Apr07_W580_GSM835_FKYV_15mm_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 40.1 % Ambient Temp - 22.1 C Simulant Temp - 22 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

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

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 21.2 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.803 mW/g

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

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

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

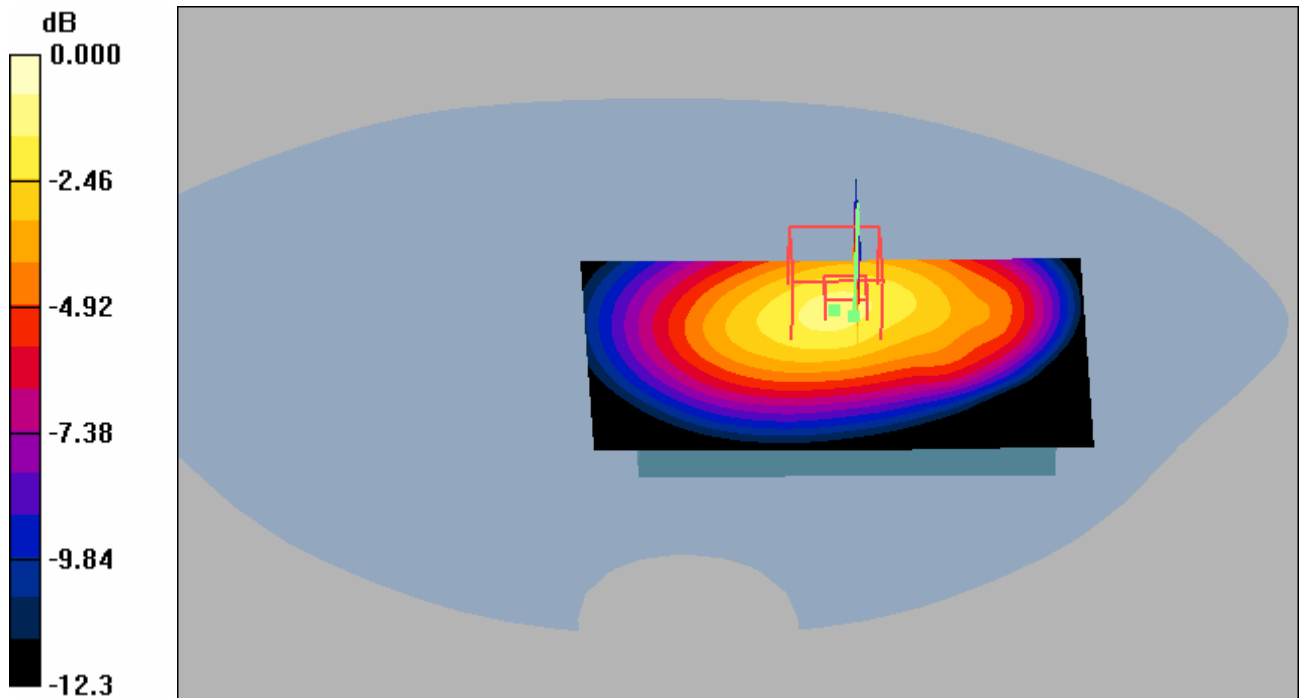
Reference Value = 21.2 V/m; Power Drift = 0.053 dB

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

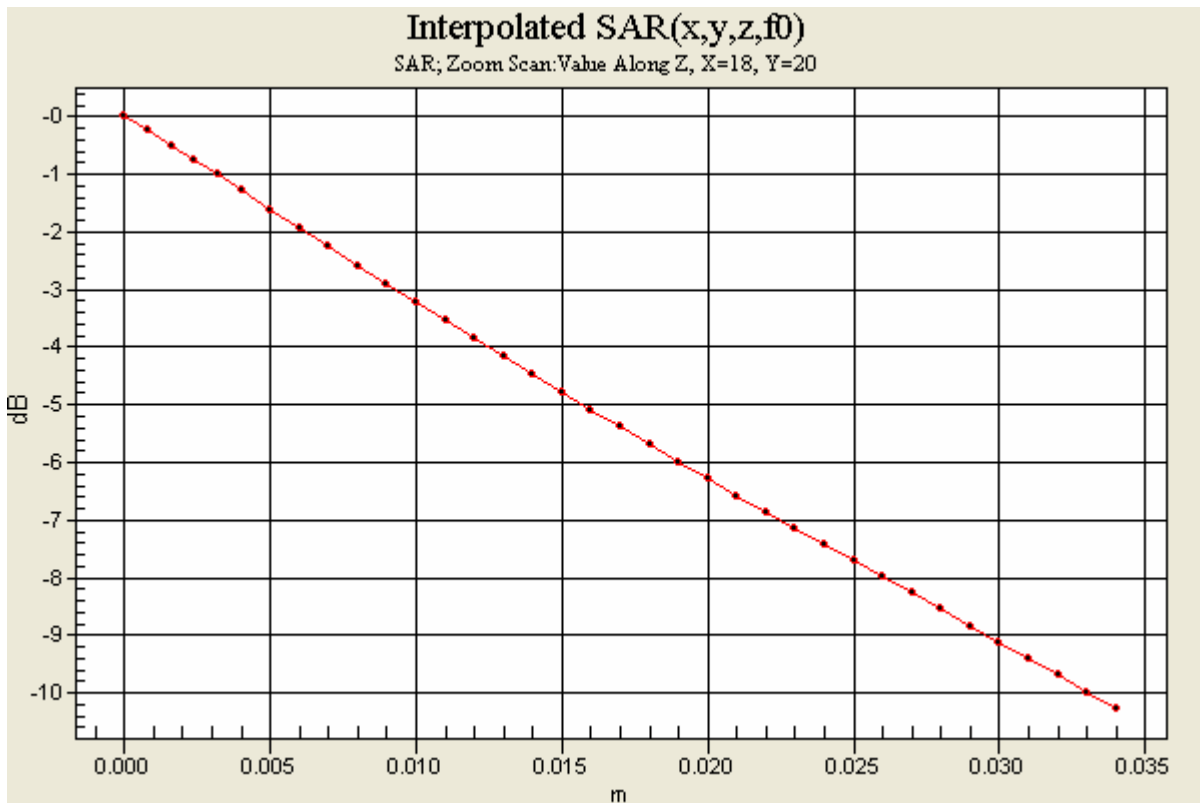
Maximum value of SAR (interpolated) = 1.69 mW/g



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0 dB = 1.69mW/g





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Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using an ICE26 carry case. (Standard Battery, BST-38)

Date/Time: 4/24/2007 10:51:31 AM

File Name: [24Apr07_W580_GSM835_FKYV_ICE26_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 33.8% Ambient Temp - 22.1 C Simulant Temp - 22.3 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 1.24 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 23.6 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.782 mW/g

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

Maximum value of SAR (measured) = 1.23 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

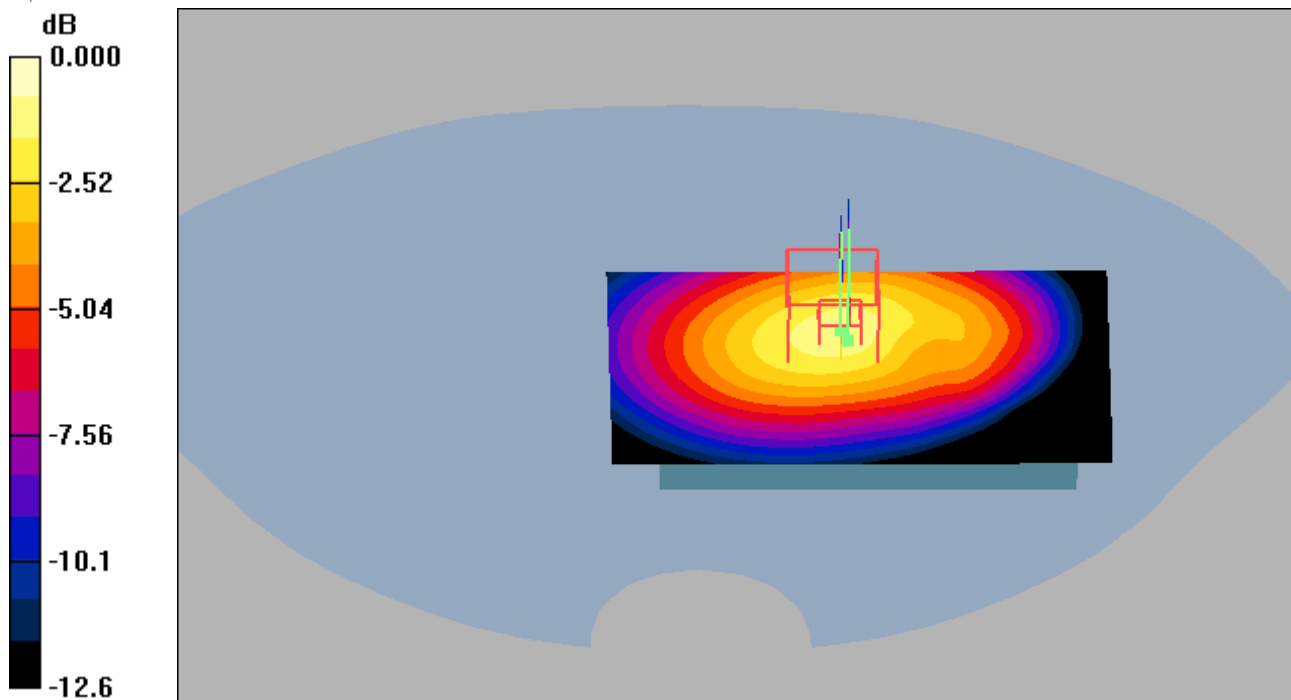
Reference Value = 23.6 V/m; Power Drift = 0.018 dB

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

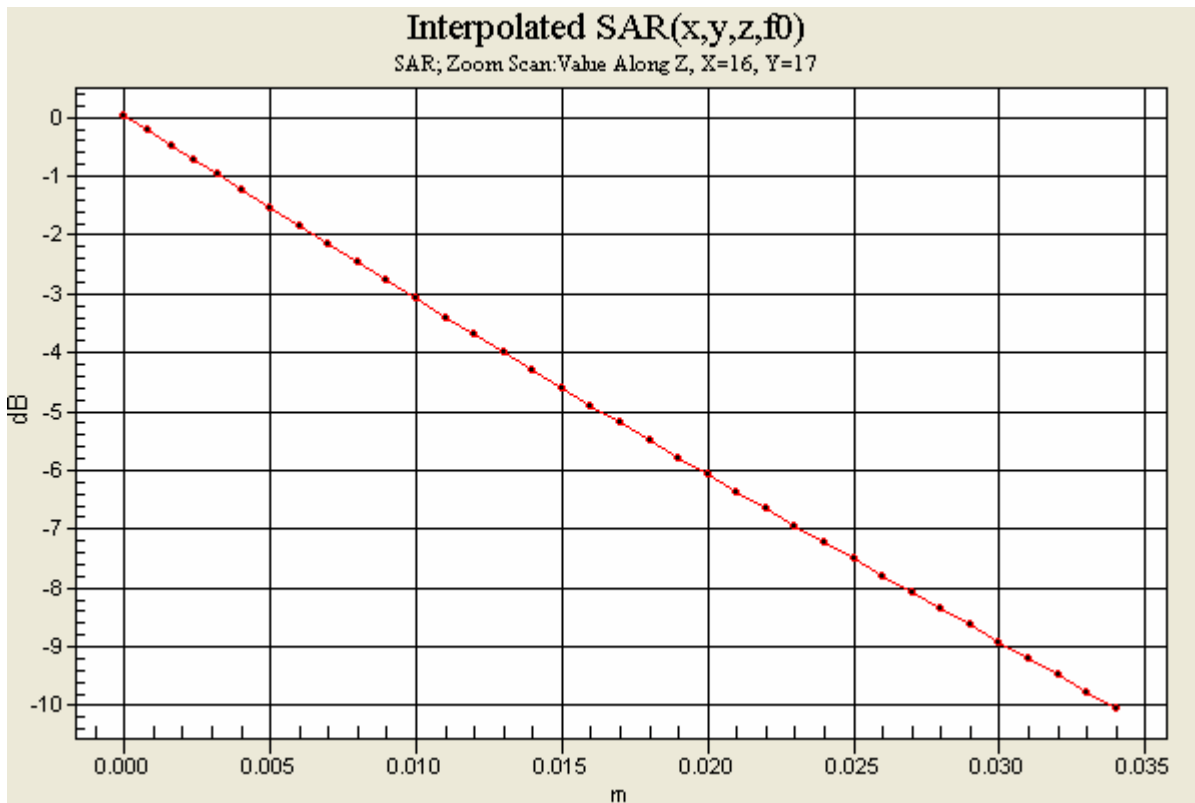
Maximum value of SAR (interpolated) = 1.62 mW/g



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0 dB = 1.62mW/g





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Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using an ICE30 carry case. (Standard Battery, BST-38)

Date/Time: 4/24/2007 10:28:19 AM

File Name: [24Apr07_W580_GSM835_FKYV_ICE30_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 33.8% Ambient Temp - 22.1 C Simulant Temp - 22.3 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 1.08 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 22.6 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.709 mW/g

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

Maximum value of SAR (measured) = 1.09 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

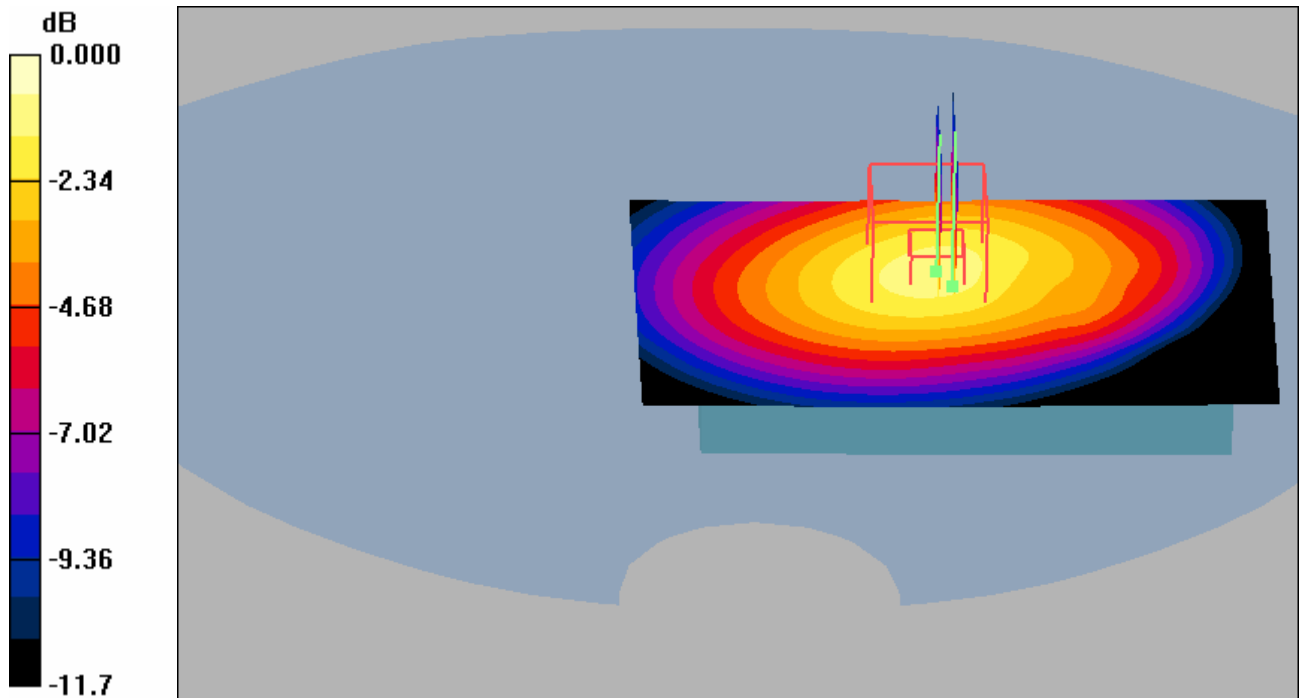
Reference Value = 22.6 V/m; Power Drift = 0.040 dB

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

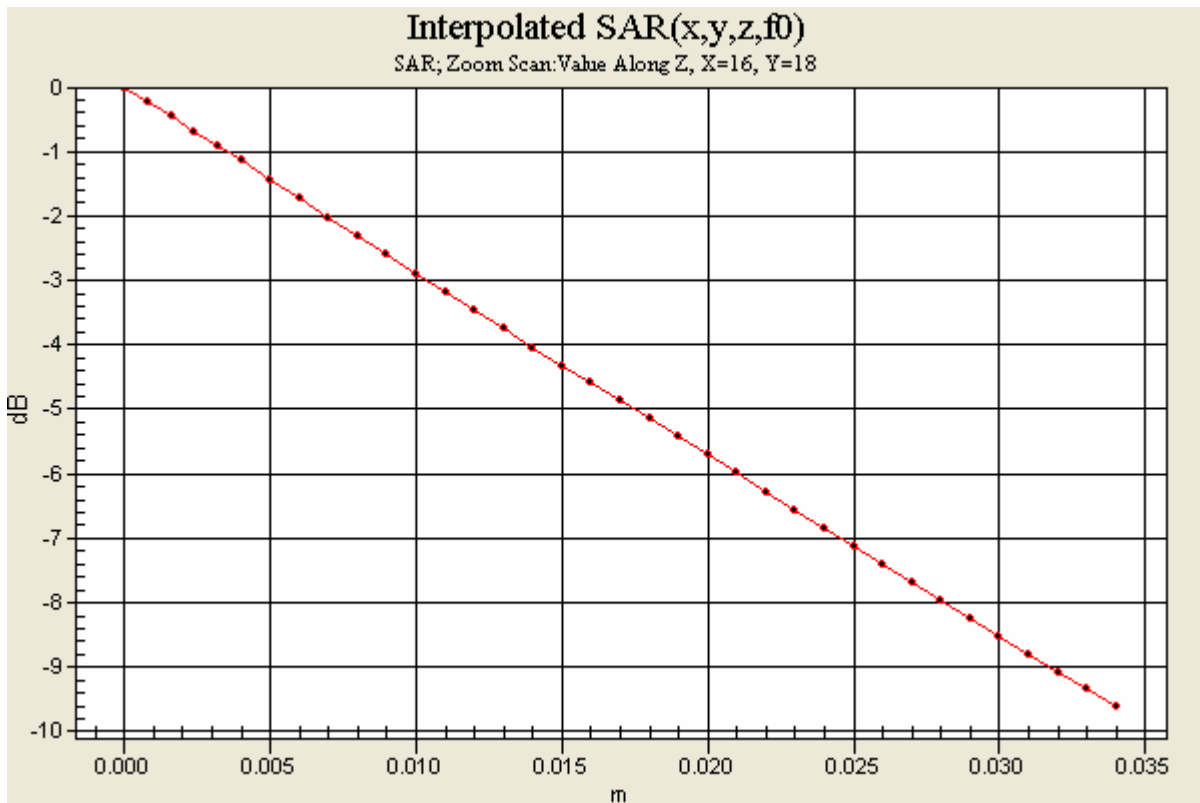
Maximum value of SAR (interpolated) = 1.41 mW/g



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0 dB = 1.41mW/g





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Distribution of maximum SAR in 800 GSM band. Measured with front of device facing the body using a 15mm spacer. (Standard Battery, BST-38)

Date/Time: 4/25/2007 9:30:42 AM

File Name: [25Apr07_W580_GSM835_FKYV_15mm_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 41.7 % Ambient Temp - 22.4 C Simulant Temp - 22.1 C

Communication System: GSM 850 multi-slot Body; Frequency: 849 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 849 MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.561 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 14.5 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 0.702 W/kg

SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.376 mW/g

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

Maximum value of SAR (measured) = 0.559 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

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

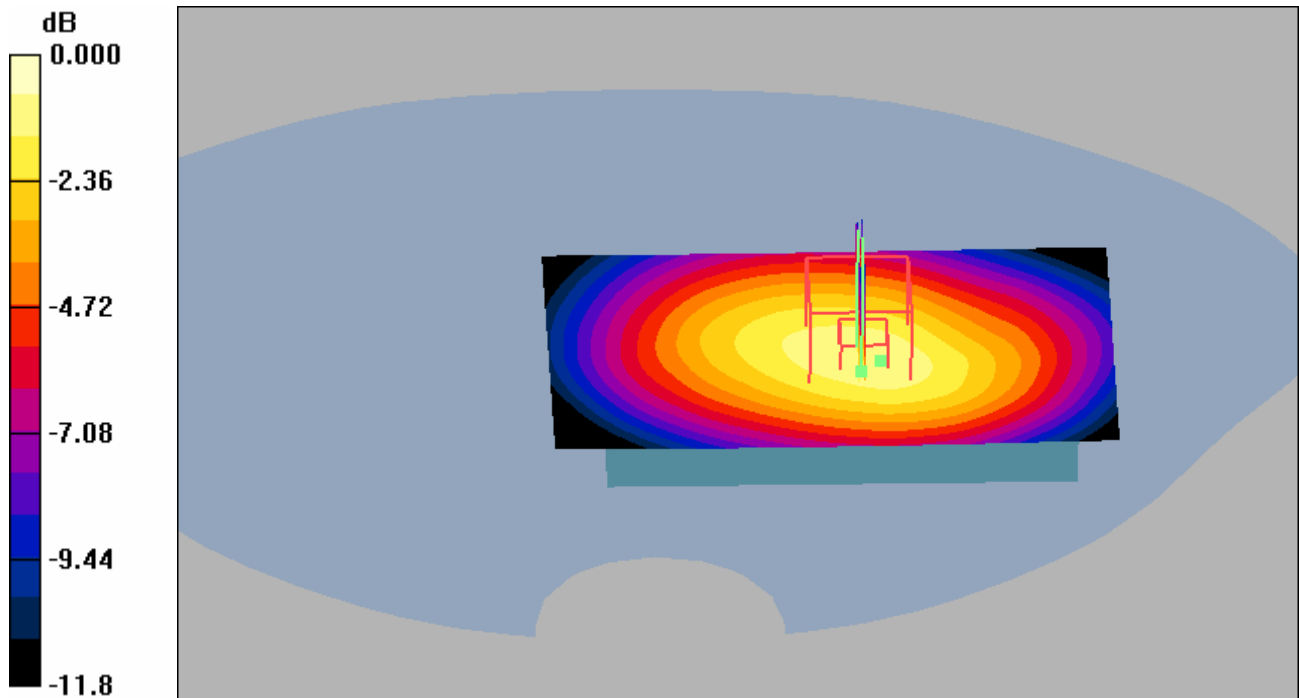
Reference Value = 14.5 V/m; Power Drift = -0.005 dB

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

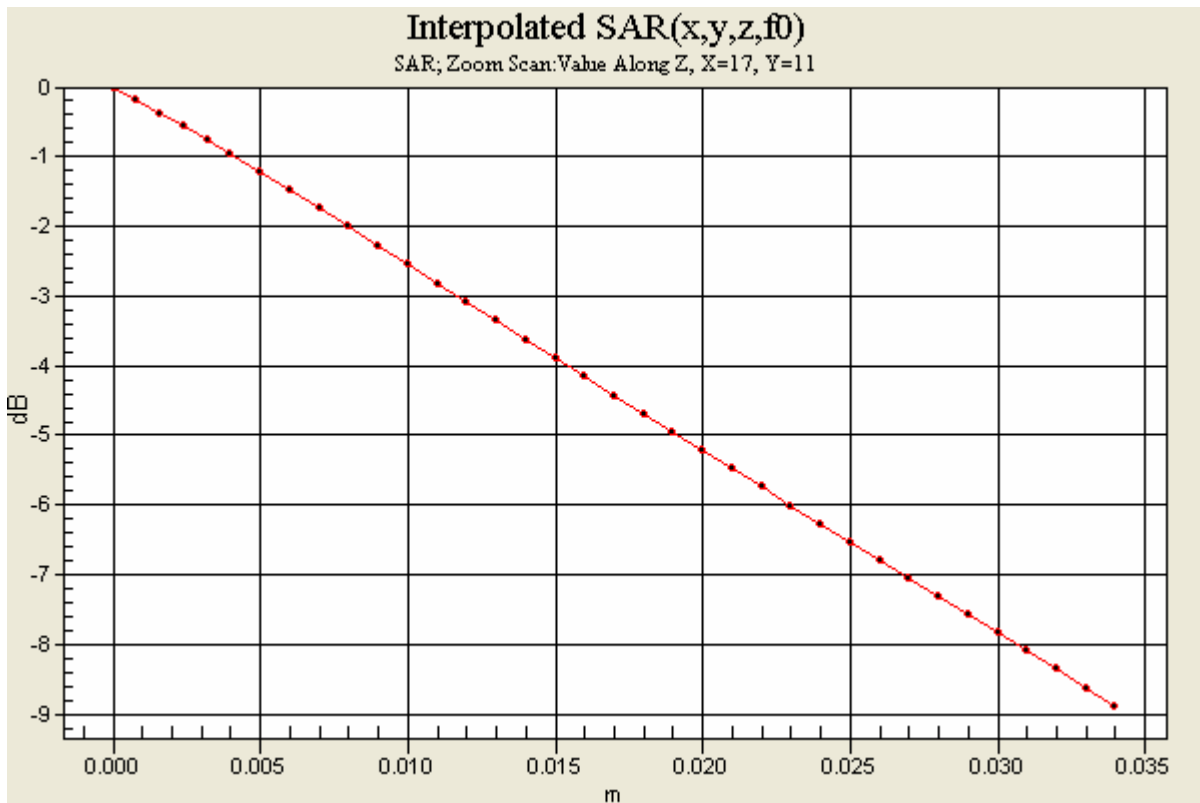
Maximum value of SAR (interpolated) = 0.702 mW/g



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0 dB = 0.702mW/g





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

Distribution of maximum SAR in 800 GSM band. Measured with front of device facing the body using an ICE26 carry case. (Standard Battery, BST-38)

Date/Time: 4/24/2007 11:11:32 AM

File Name: [24Apr07_W580_GSM835_FKYV_ICE26_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 34.3% Ambient Temp - 22.2 C Simulant Temp - 22.3 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.597 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 18.1 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.732 W/kg

SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.399 mW/g

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

Maximum value of SAR (measured) = 0.592 mW/g

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

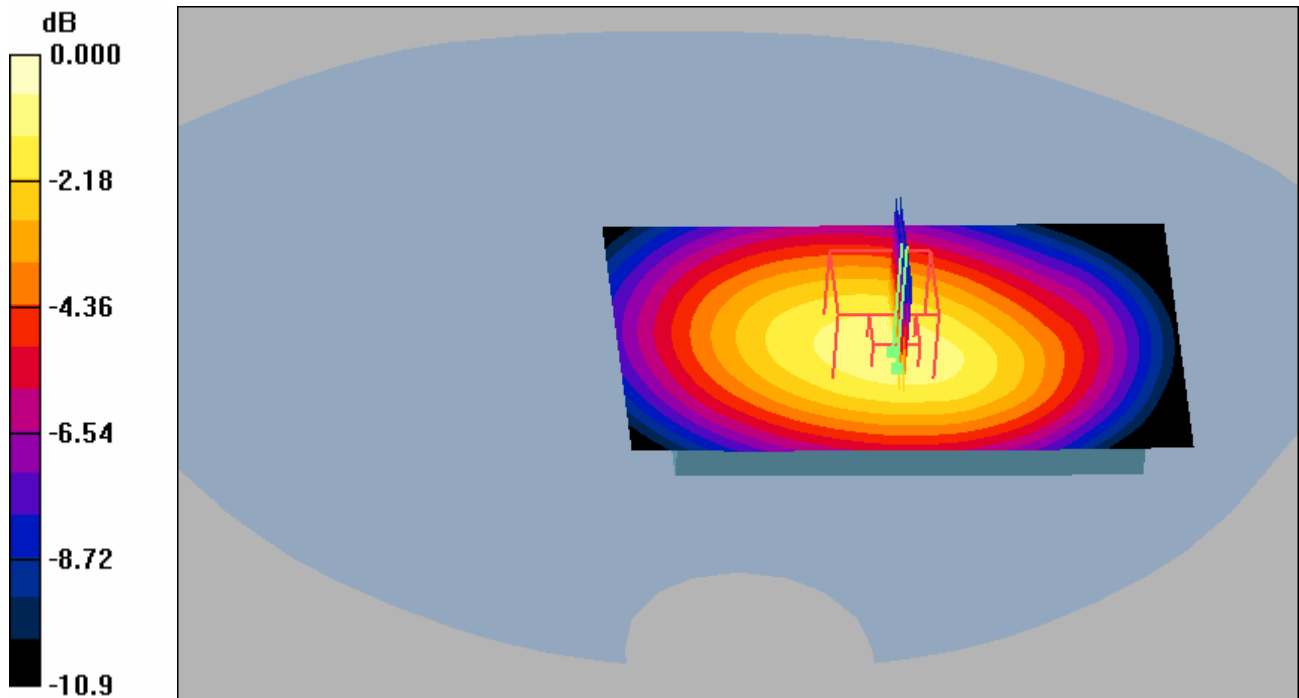
Reference Value = 18.1 V/m; Power Drift = -0.003 dB

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

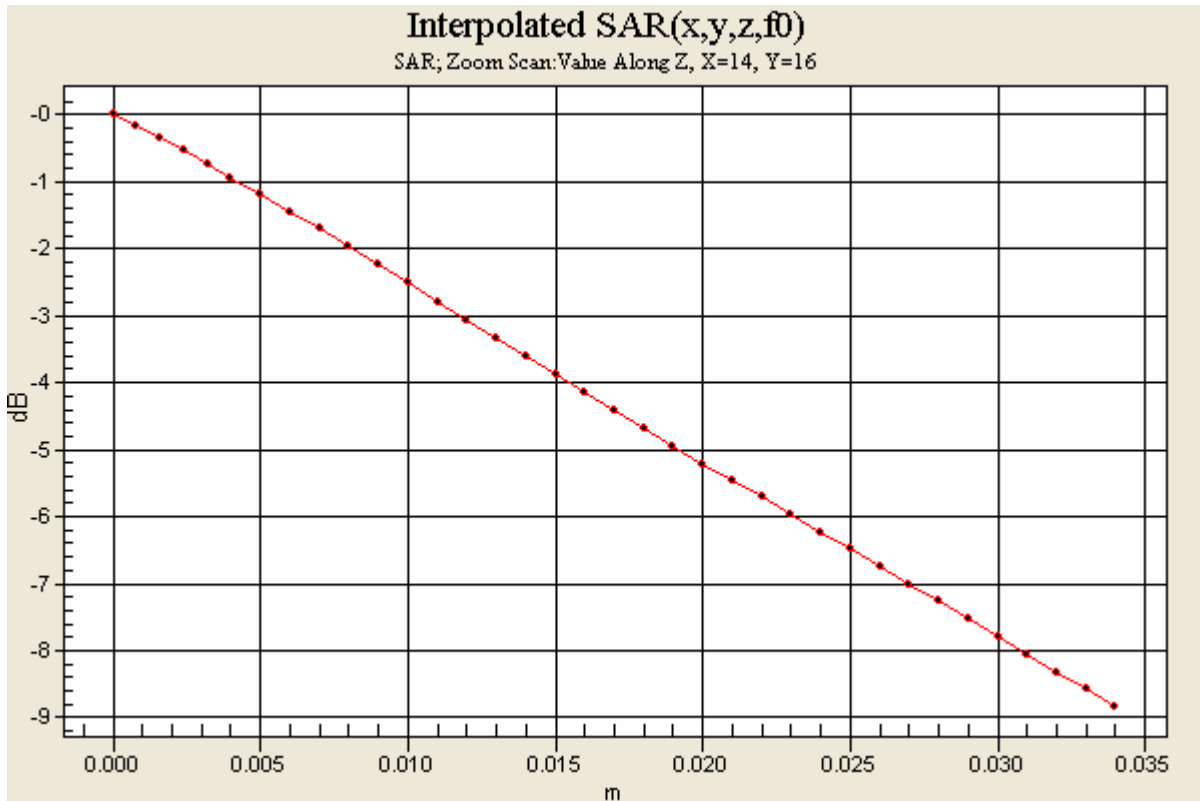
Maximum value of SAR (interpolated) = 0.732 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.732mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A

Distribution of maximum SAR in 800 GSM band. Measured with front of device facing the body using an ICE30 carry case. (Standard Battery, BST-38)

Date/Time: 4/24/2007 10:06:52 AM

File Name: [24Apr07_W580_GSM835_FKYV_ICE30_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 34.3% Ambient Temp - 22.2 C Simulant Temp - 22.3 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 0.594 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 17.3 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.743 W/kg

SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.392 mW/g

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

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

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

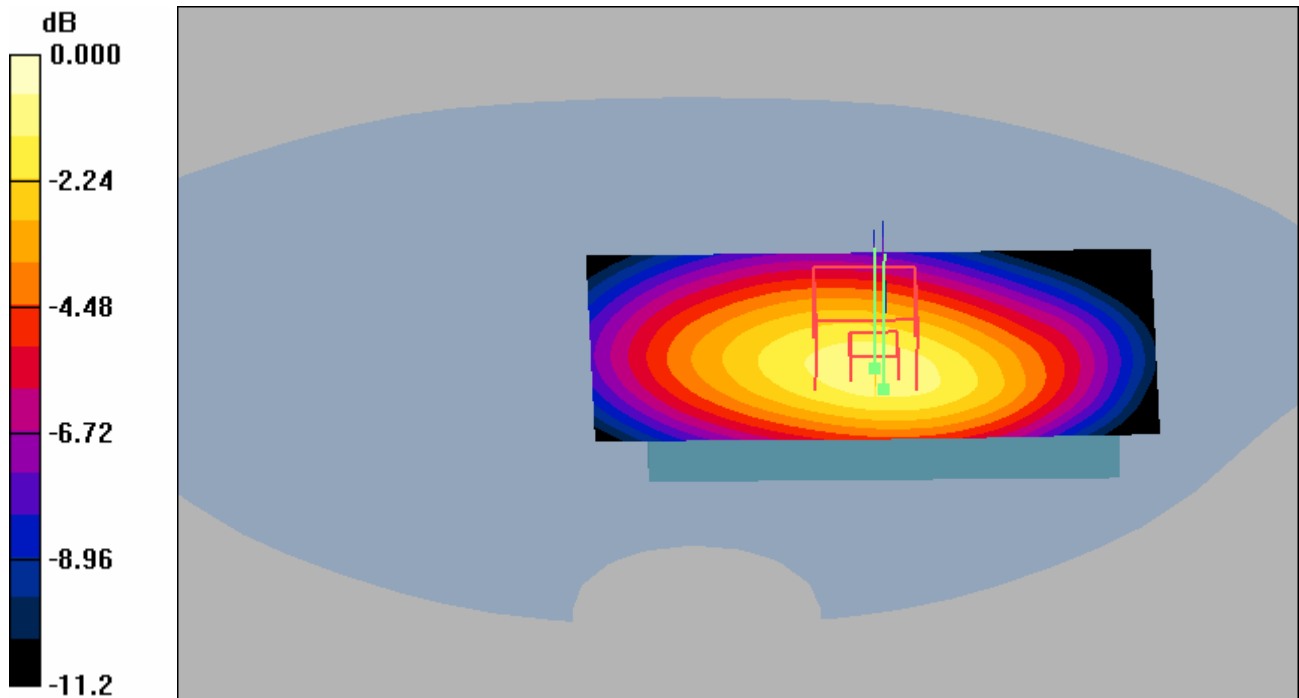
Reference Value = 17.3 V/m; Power Drift = -0.035 dB

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

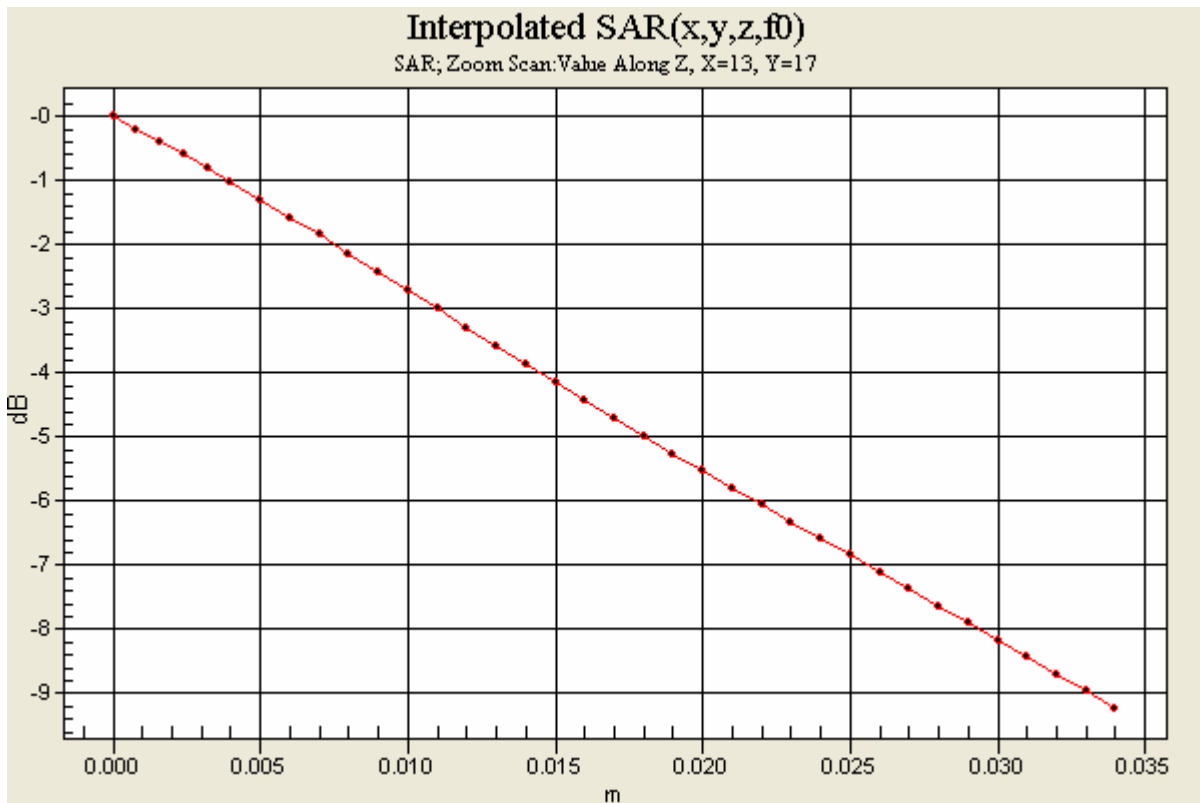
Maximum value of SAR (interpolated) = 0.743 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 0.743mW/g





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Distribution of maximum SAR in 800 GSM band. Measured with back of device facing the body using a 15mm SPACER with Blue Tooth. (Standard Battery BST-38)

Date/Time: 4/25/2007 9:57:03 AM

File Name: [25Apr07_W580_GSM835_FKYV_15mm_BT_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 40.1 % Ambient Temp - 22.1 C Simulant Temp - 22 C

Communication System: GSM 850 multi-slot Body; Frequency: 836 MHz; Duty Cycle: 1:4.15

Medium: Head 835/900 MHz Medium parameters used (interpolated): f = 836 MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(6.35, 6.35, 6.35); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (Low Band Body); Type: SAM; Serial: TP: 1031
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 2/Area Scan (51x81x1):

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

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

Maximum value of SAR (interpolated) = 1.16 mW/g

Unnamed procedure 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 18.2 V/m; Power Drift = -0.070 dB

Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.745 mW/g

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

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

Unnamed procedure 2/Zoom Scan (31x31x36)/Cube 0:

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

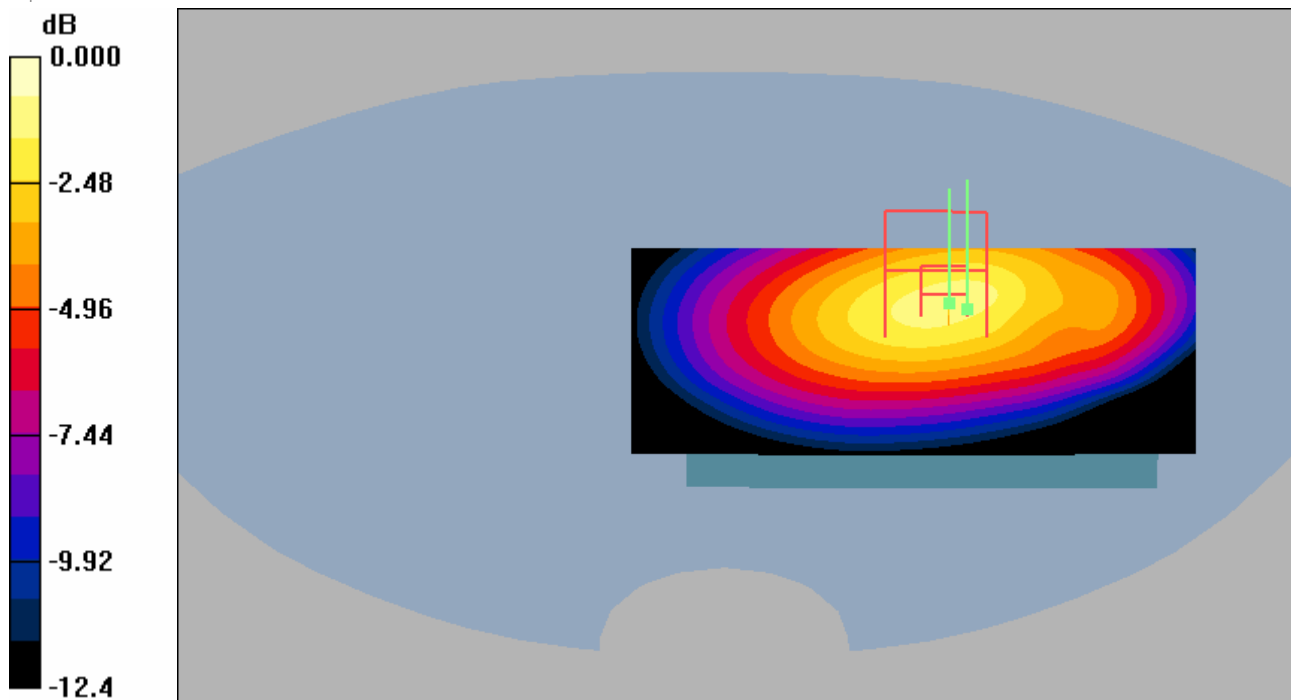
Reference Value = 18.2 V/m; Power Drift = -0.070 dB

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

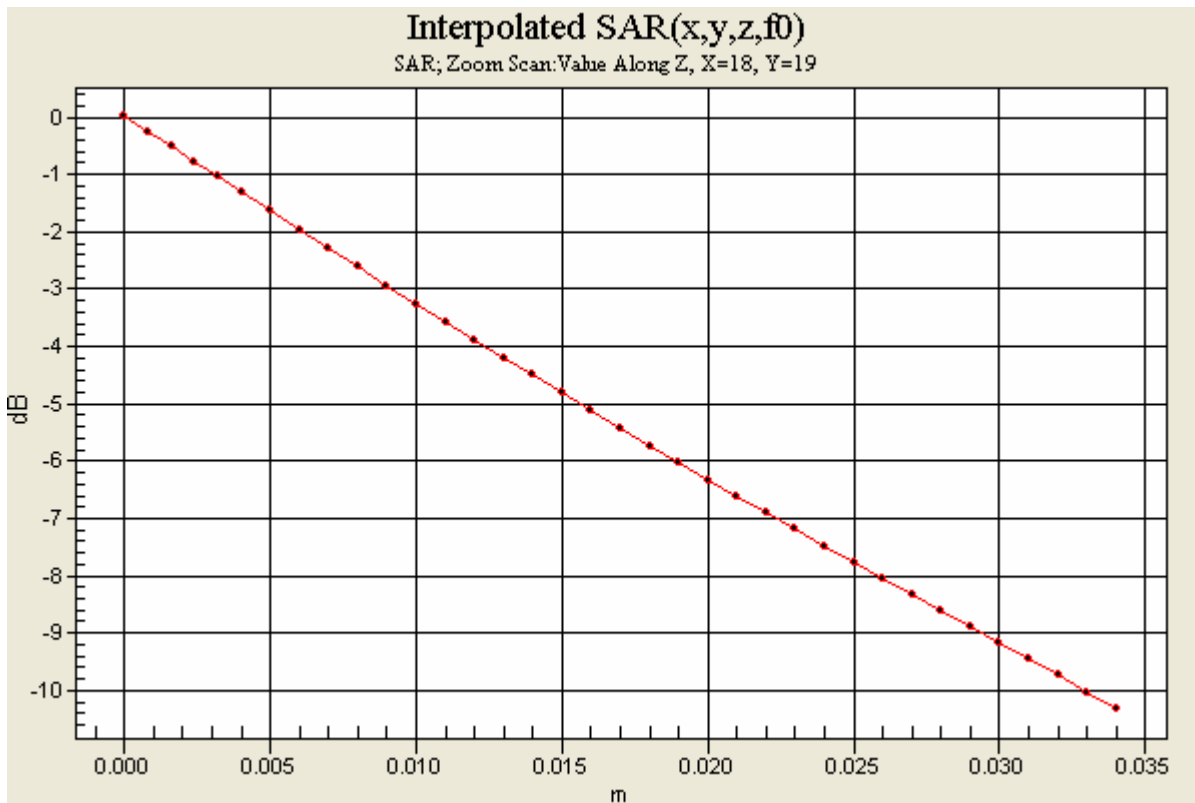
Maximum value of SAR (interpolated) = 1.55 mW/g



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0 dB = 1.55mW/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: 5/1/2007 8:46:42 AM

File Name: [01May07_W580_GSM1900_FSYA_15mm_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 39.7 % Ambient Temp - 20.8 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 50.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 1.13 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 15.6 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.599 mW/g

Maximum value of SAR (measured) = 1.12 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

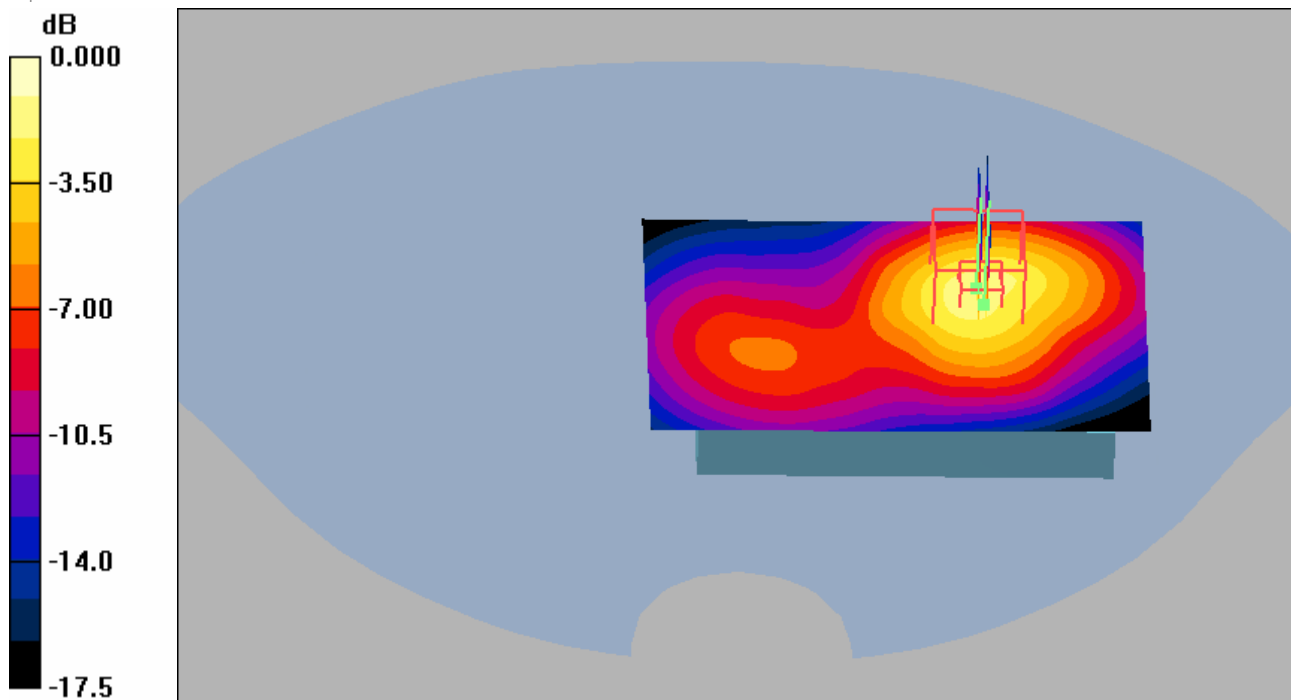
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = -0.021 dB

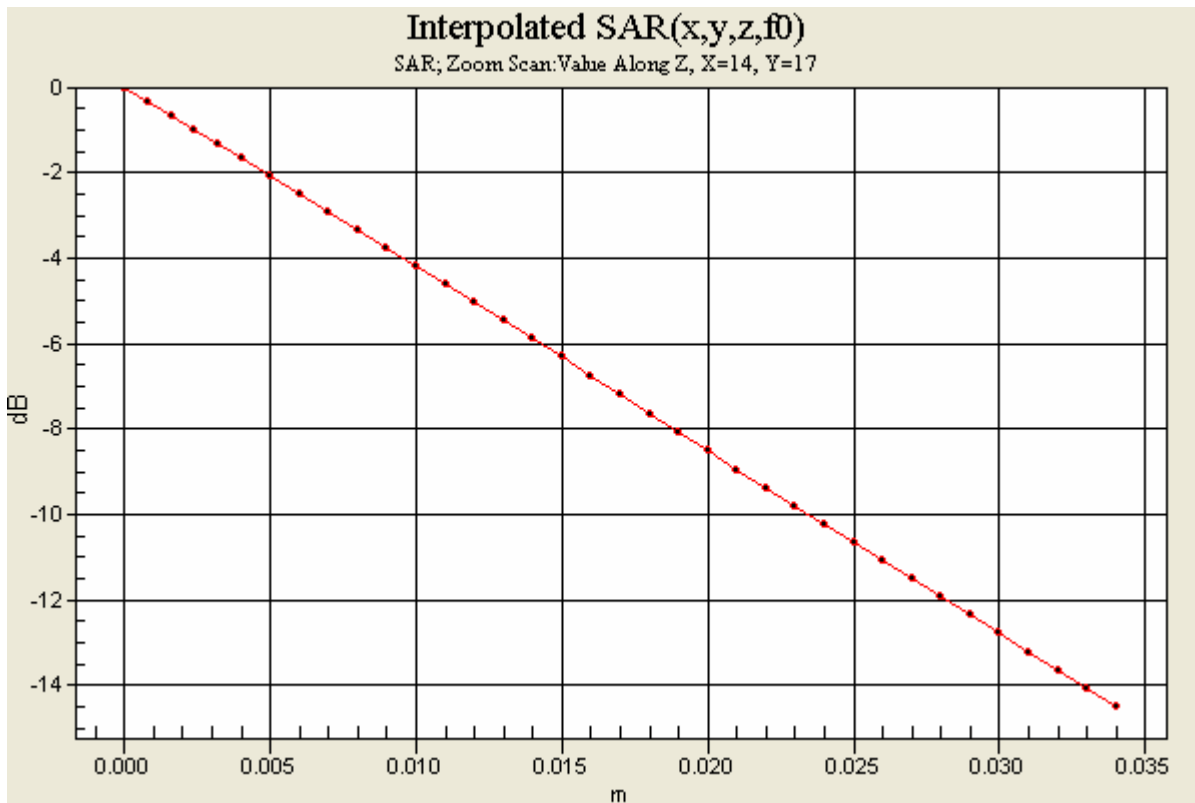
Maximum value of SAR (interpolated) = 1.65 mW/g



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0 dB = 1.65mW/g





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Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using an ICE26 carry case. (Standard Battery, BST-38)

Date/Time: 4/30/2007 10:28:51 AM

File Name: [30Apr07_W580_GSM1900_FSYA_ICE26_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 40.1 % Ambient Temp - 21 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.55 \text{ mho/m}$; $\epsilon_r = 50.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 1.24 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 15.3 V/m; Power Drift = -0.095 dB

Peak SAR (extrapolated) = 1.79 W/kg

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.664 mW/g

Maximum value of SAR (measured) = 1.22 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

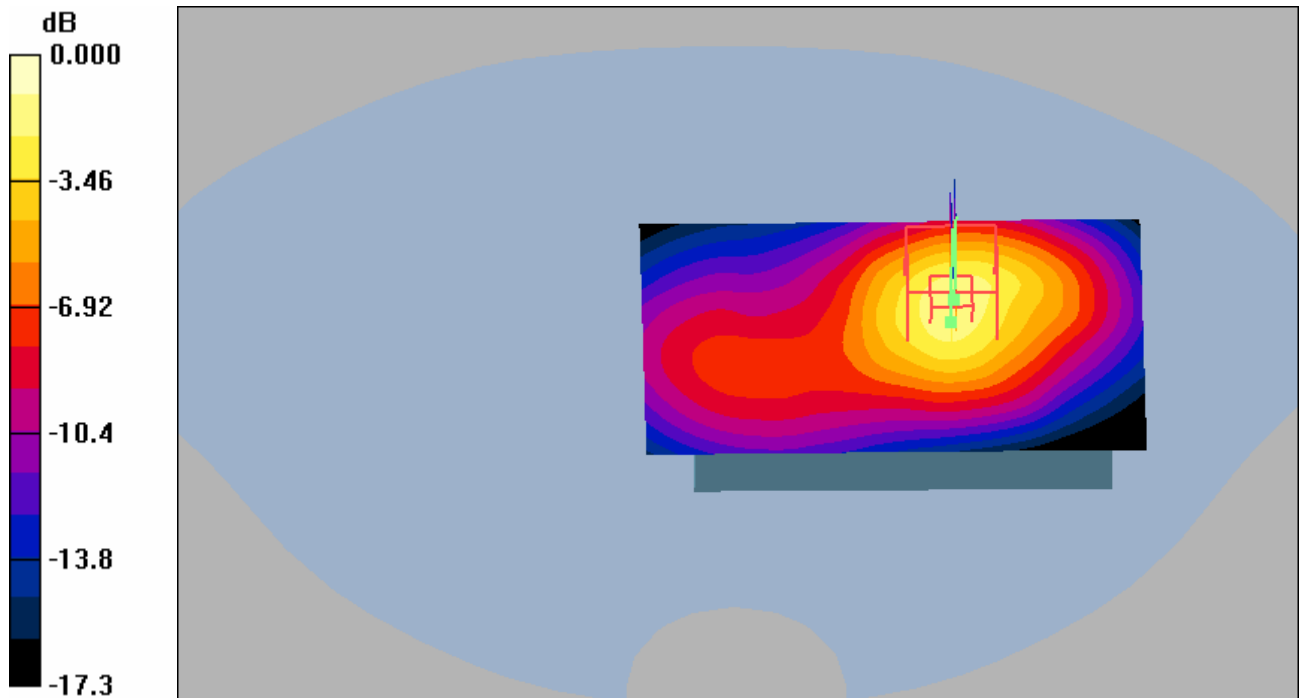
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.3 V/m; Power Drift = -0.095 dB

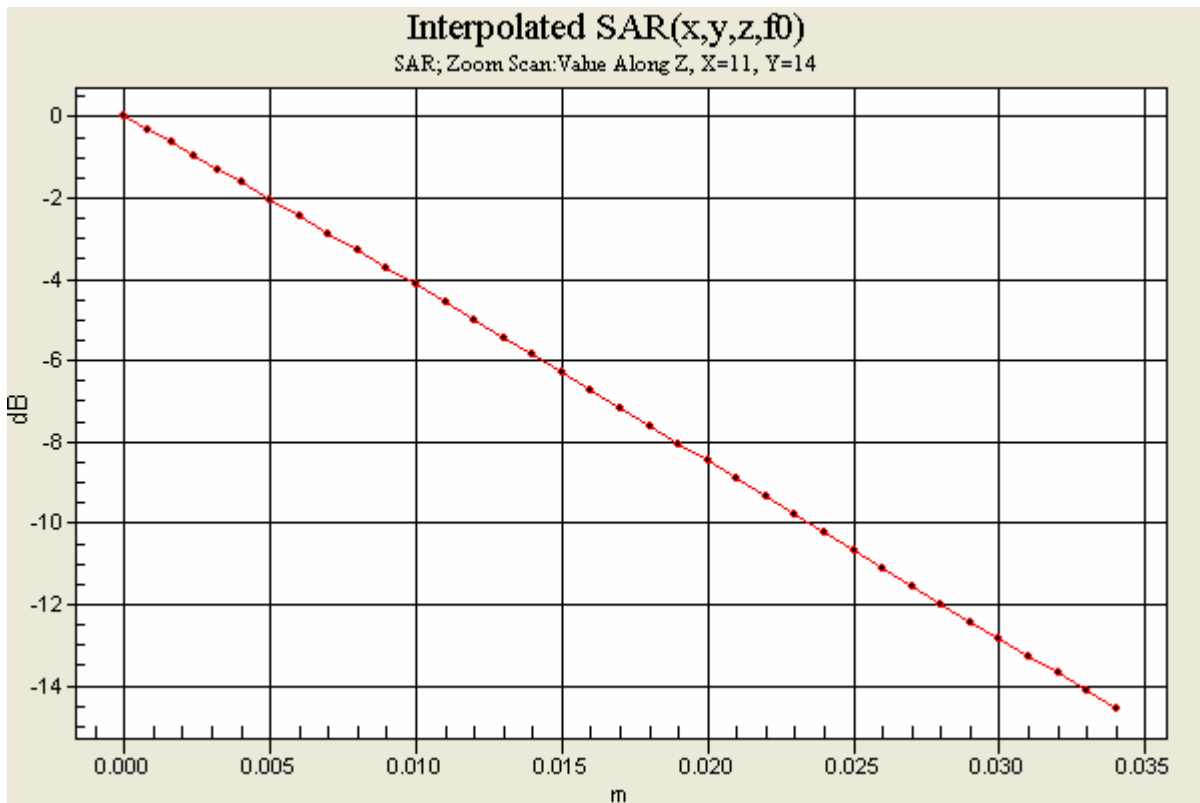
Maximum value of SAR (interpolated) = 1.79 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 1.79mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using an ICE30 carry case. (Standard Battery, BST-38)

Date/Time: 4/30/2007 11:39:43 AM

File Name: [30Apr07_W580_GSM1900_FSYA_ICE30_BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 40.1 % Ambient Temp - 21 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.55 \text{ mho/m}$; $\epsilon_r = 50.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

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

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 16.1 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.895 mW/g; SAR(10 g) = 0.527 mW/g

Maximum value of SAR (measured) = 0.970 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

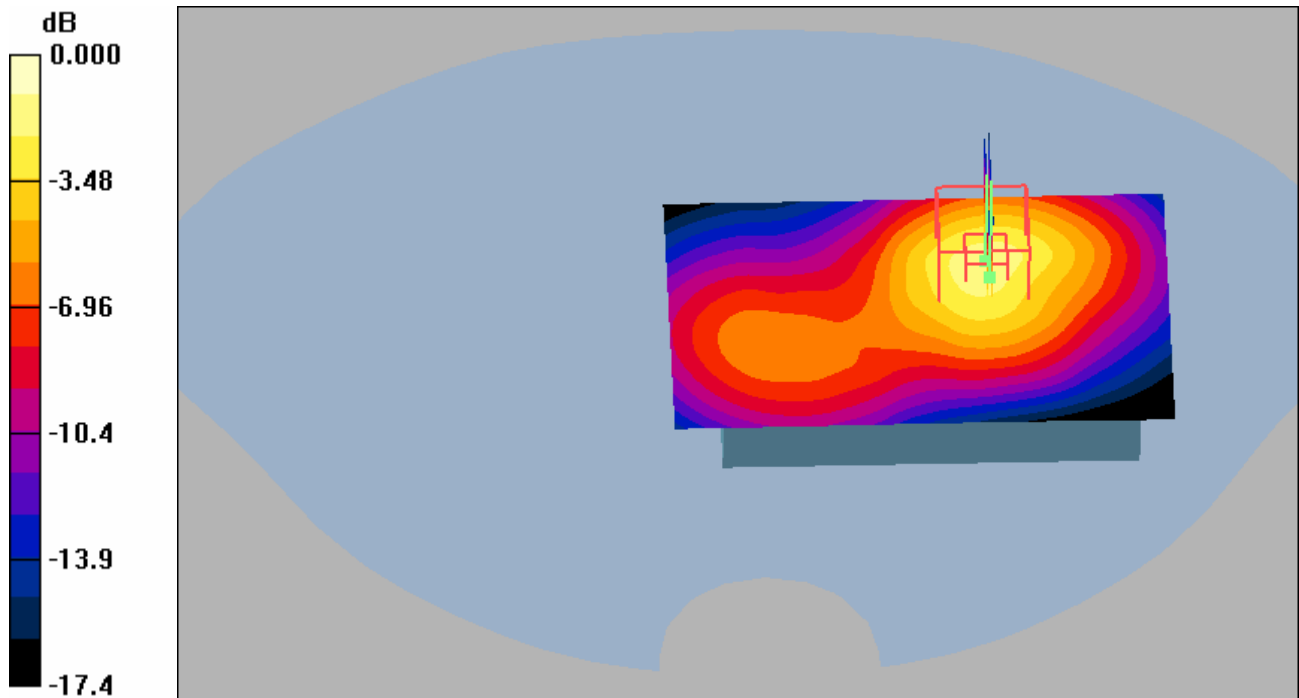
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.1 V/m; Power Drift = -0.030 dB

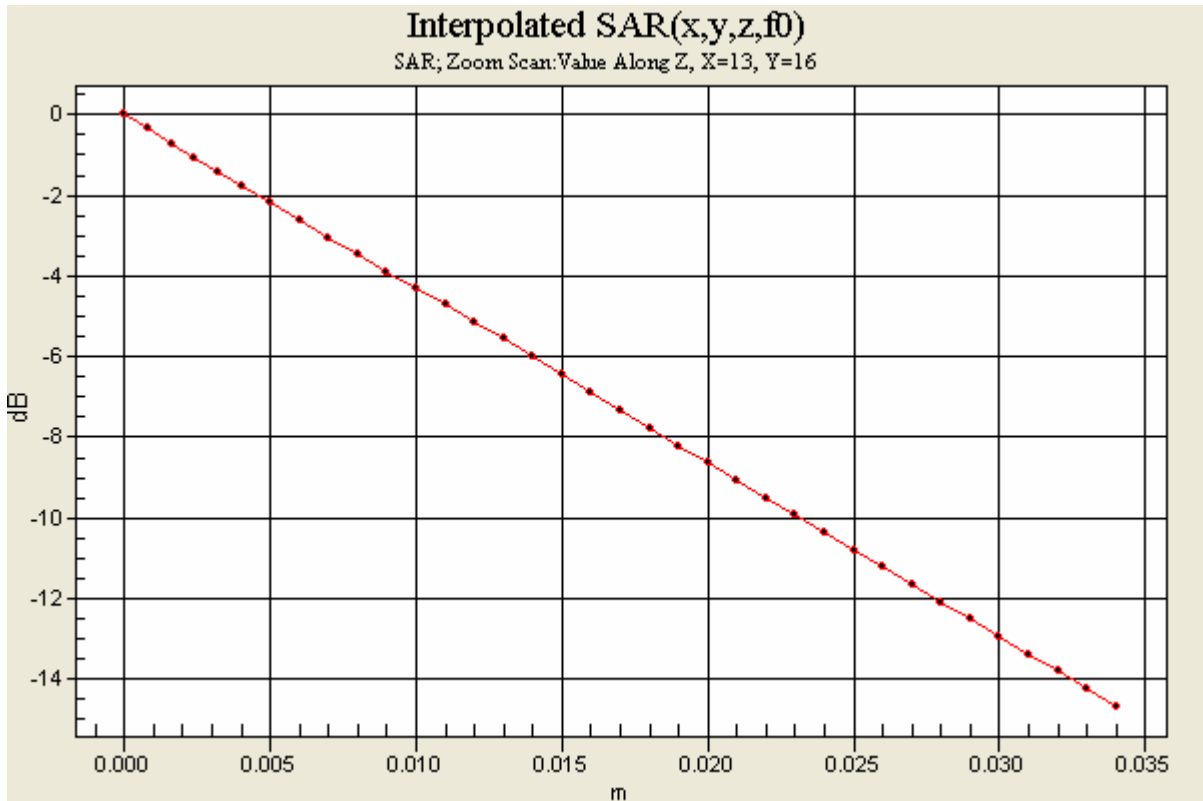
Maximum value of SAR (interpolated) = 1.46 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
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0 dB = 1.46mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using a 15mm spacer. (Standard Battery, BST-38)

Date/Time: 5/1/2007 9:10:08 AM

File Name: [01May07_W580_GSM1900_FSYA_15mm_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 41.6 % Ambient Temp - 20.9 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 50.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.490 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 13.7 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 0.734 W/kg

SAR(1 g) = 0.444 mW/g; SAR(10 g) = 0.273 mW/g

Maximum value of SAR (measured) = 0.483 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

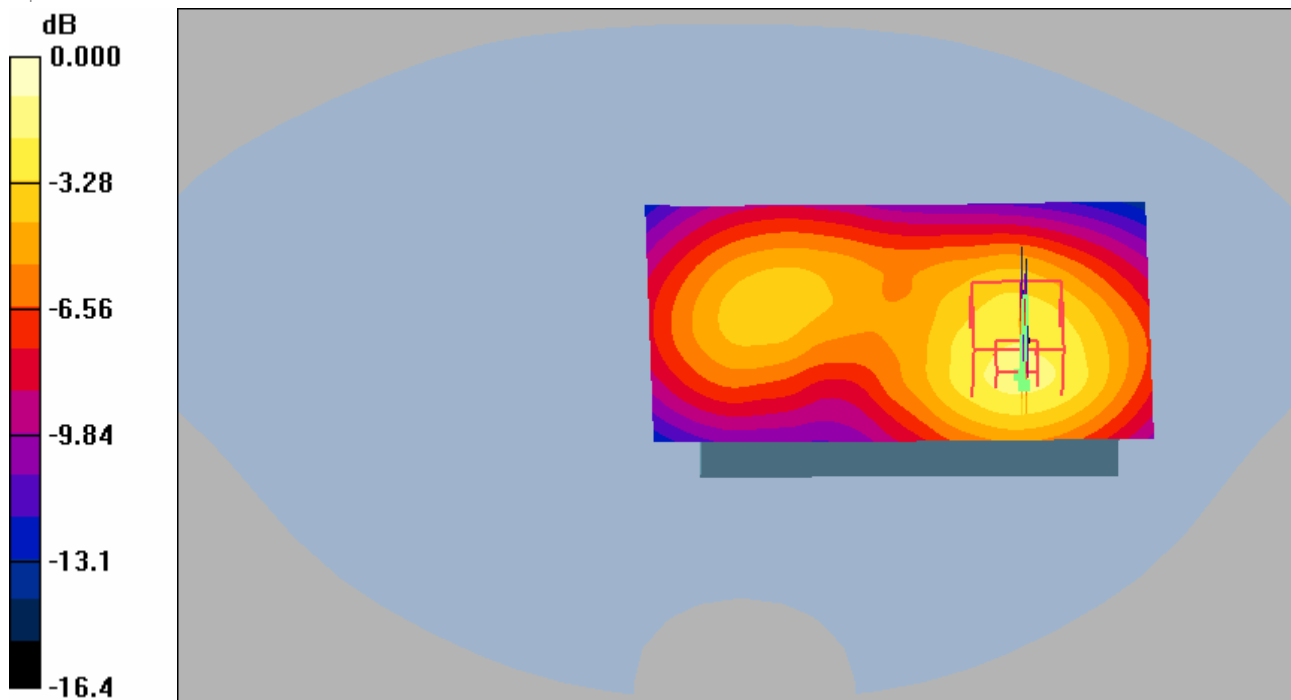
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = 0.049 dB

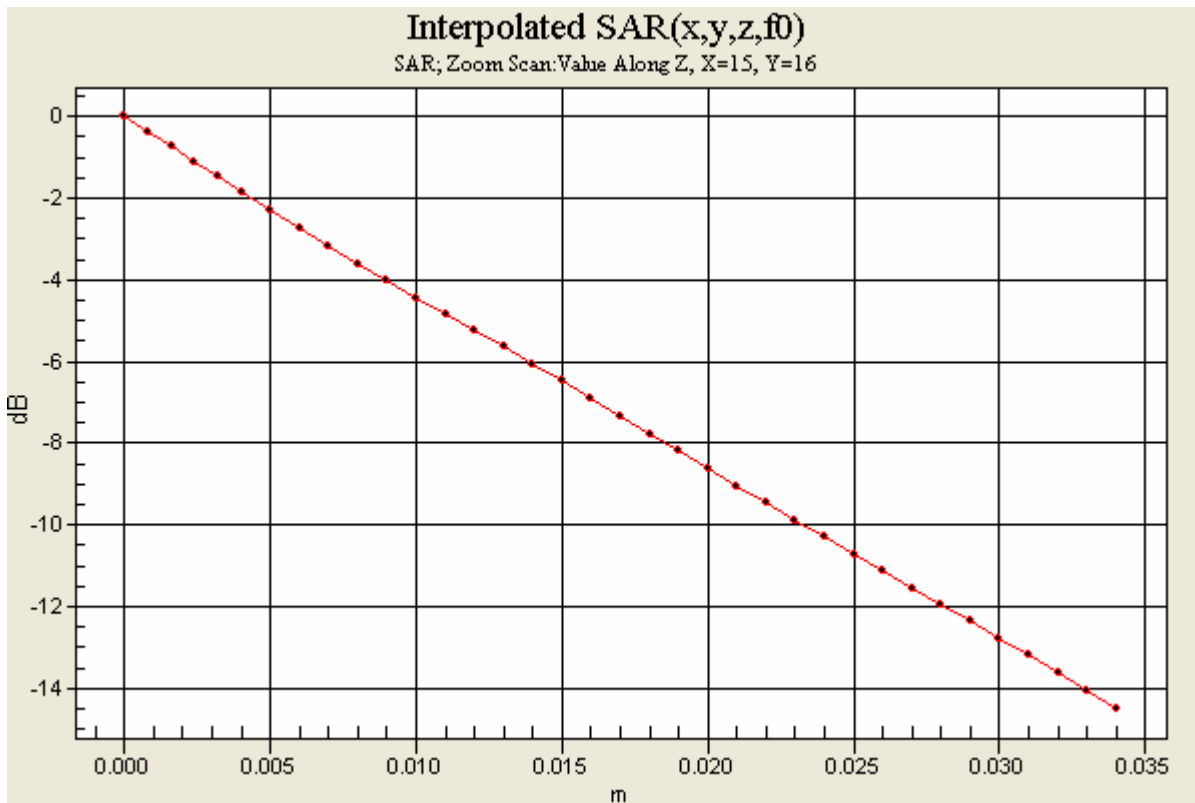
Maximum value of SAR (interpolated) = 0.734 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A



0 dB = 0.734mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using an ICE26 carry case. (Standard Battery, BST-38)

Date/Time: 4/30/2007 10:48:35 AM

File Name: [30Apr07_W580_GSM1900_FSYA_ICE26_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 42.6 % Ambient Temp - 21.2 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.530 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 14.6 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.774 W/kg

SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.287 mW/g

Maximum value of SAR (measured) = 0.504 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

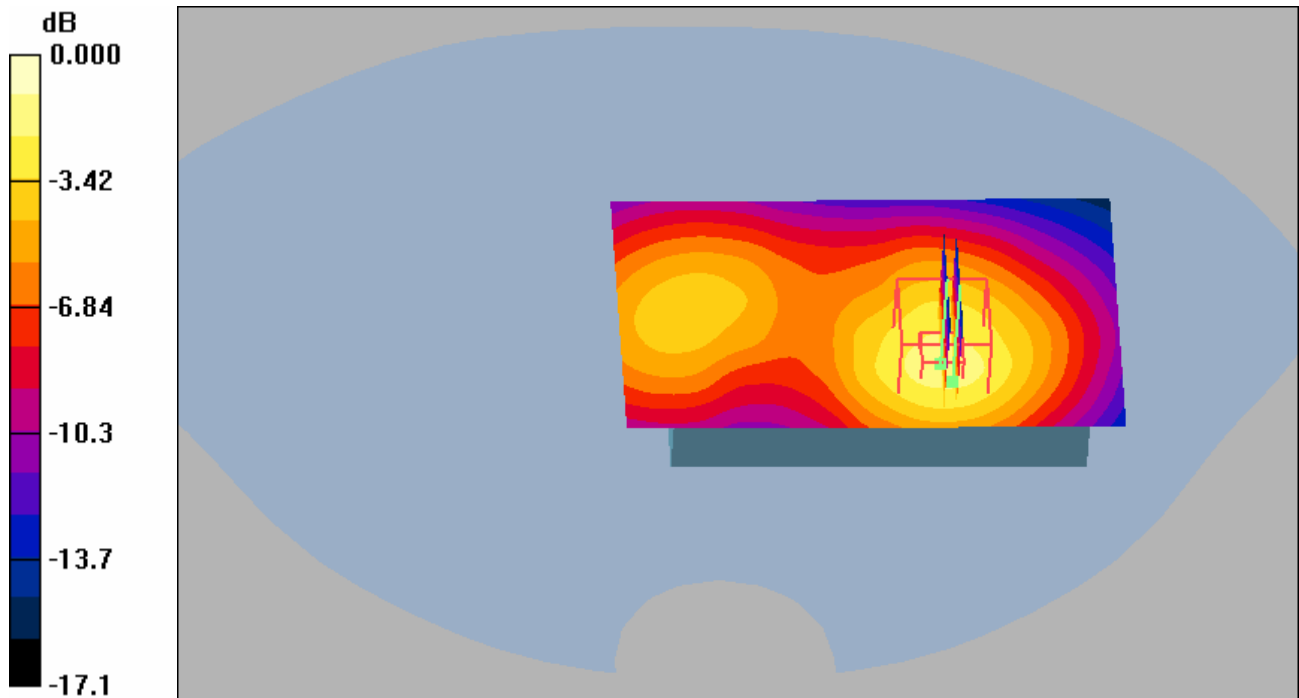
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.6 V/m; Power Drift = 0.010 dB

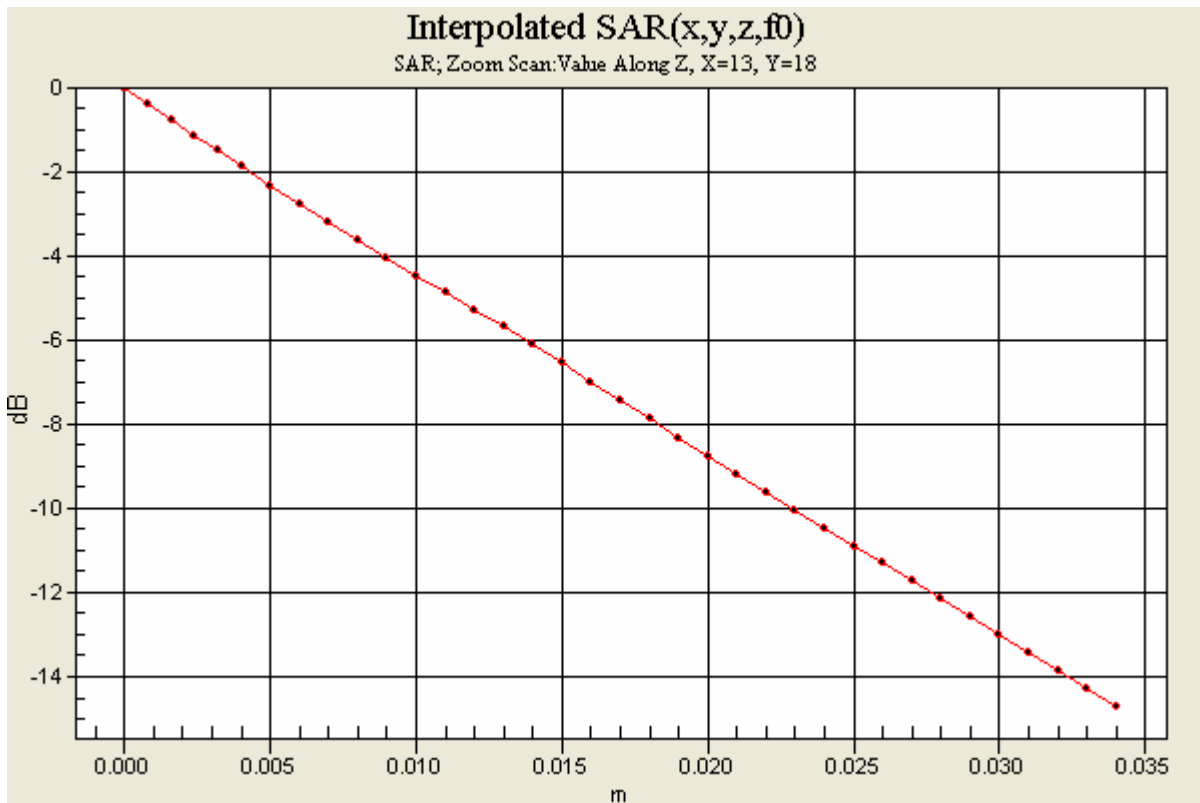
Maximum value of SAR (interpolated) = 0.774 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.774mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using an ICE30 carry case. (Standard Battery, BST-38)

Date/Time: 4/30/2007 11:07:32 AM

File Name: [30Apr07_W580_GSM1900_FSYA_ICE30_BF01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 42.6 % Ambient Temp - 21.2 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 0.553 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 13.7 V/m; Power Drift = -0.123 dB

Peak SAR (extrapolated) = 0.809 W/kg

SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.535 mW/g

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

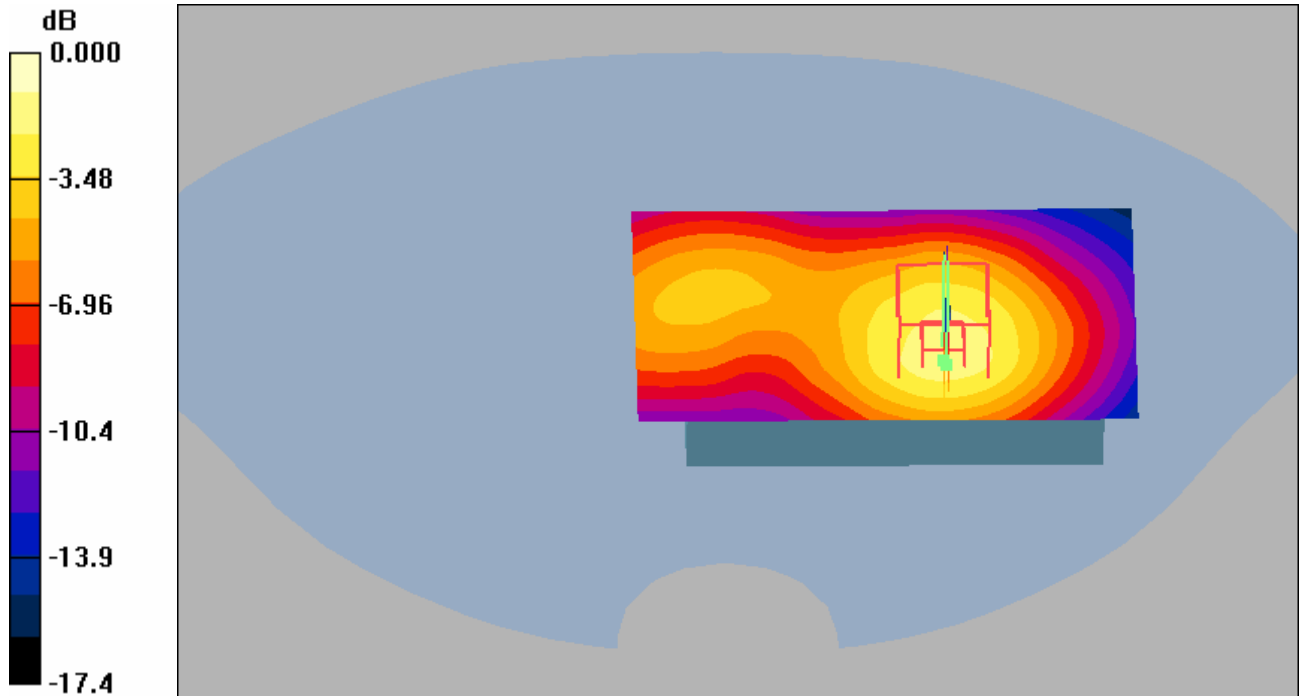
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = -0.123 dB

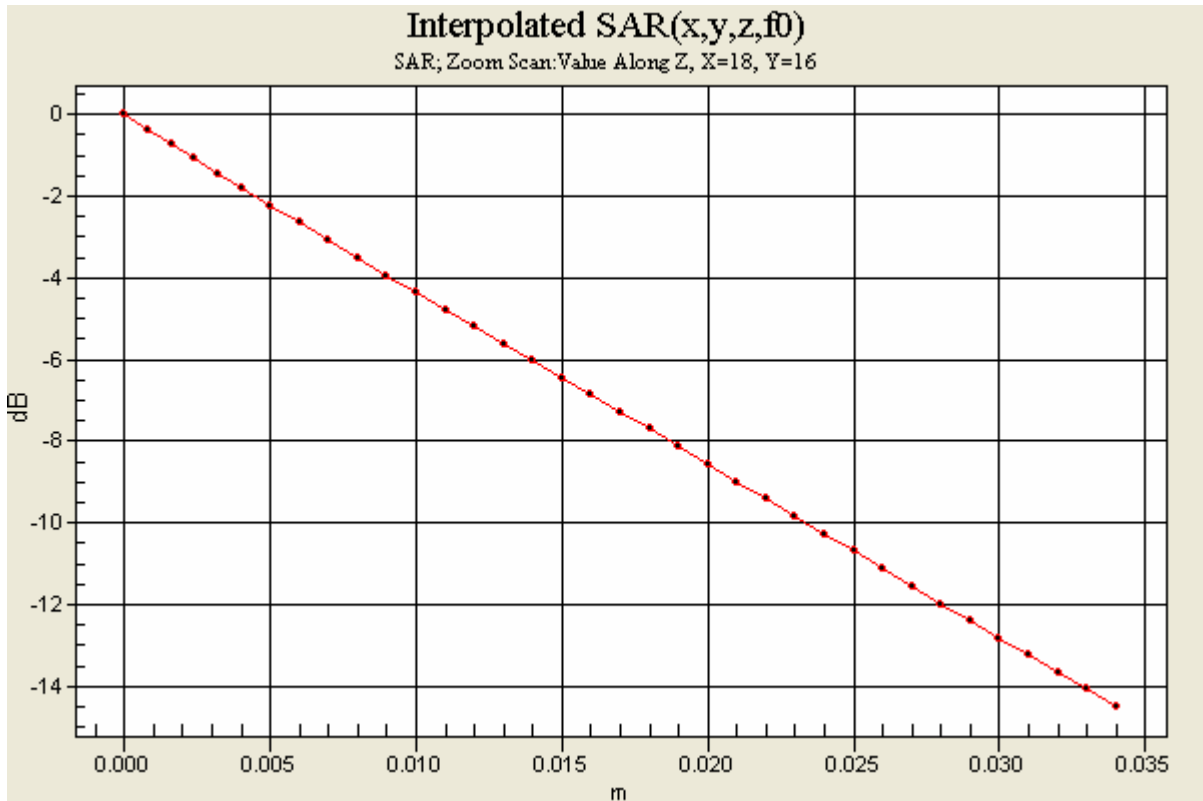
Maximum value of SAR (interpolated) = 0.809 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	



0 dB = 0.809mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using a ICE26 carry case with Blue Tooth. (Standard Battery BST-38)

Date/Time: 5/1/2007 10:15:42 AM

File Name: [01May07 W580 GSM1900 FSYA ICE26 BT BB01.da4](#)

DUT: W580 body

Program Notes: Battery - BST38 Humidity - 41.6 % Ambient Temp - 20.9 C Simulant Temp - 20.9 C

Communication System: DCS 1900 Body; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: Head 1800/1900 MHz Medium parameters used: f = 1910 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1586; ConvF(4.62, 4.62, 4.62); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn392; Calibrated: 5/23/2006
- Phantom: SAM with CRP (High Band Body); Type: SAM; Serial: TP: 1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure 3/Area Scan (51x81x1):

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

Maximum value of SAR (interpolated) = 1.20 mW/g

Unnamed procedure 3/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 16.0 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.645 mW/g

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

Unnamed procedure 3/Zoom Scan (31x31x36)/Cube 0:

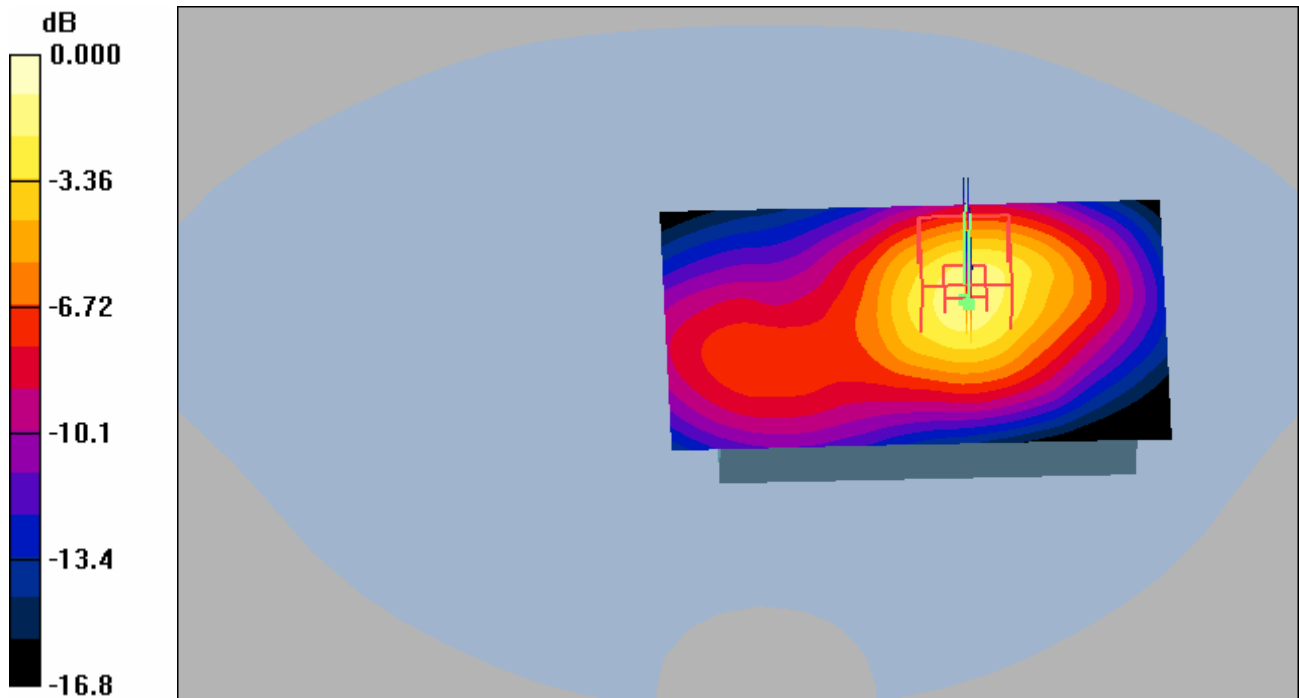
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.0 V/m; Power Drift = -0.114 dB

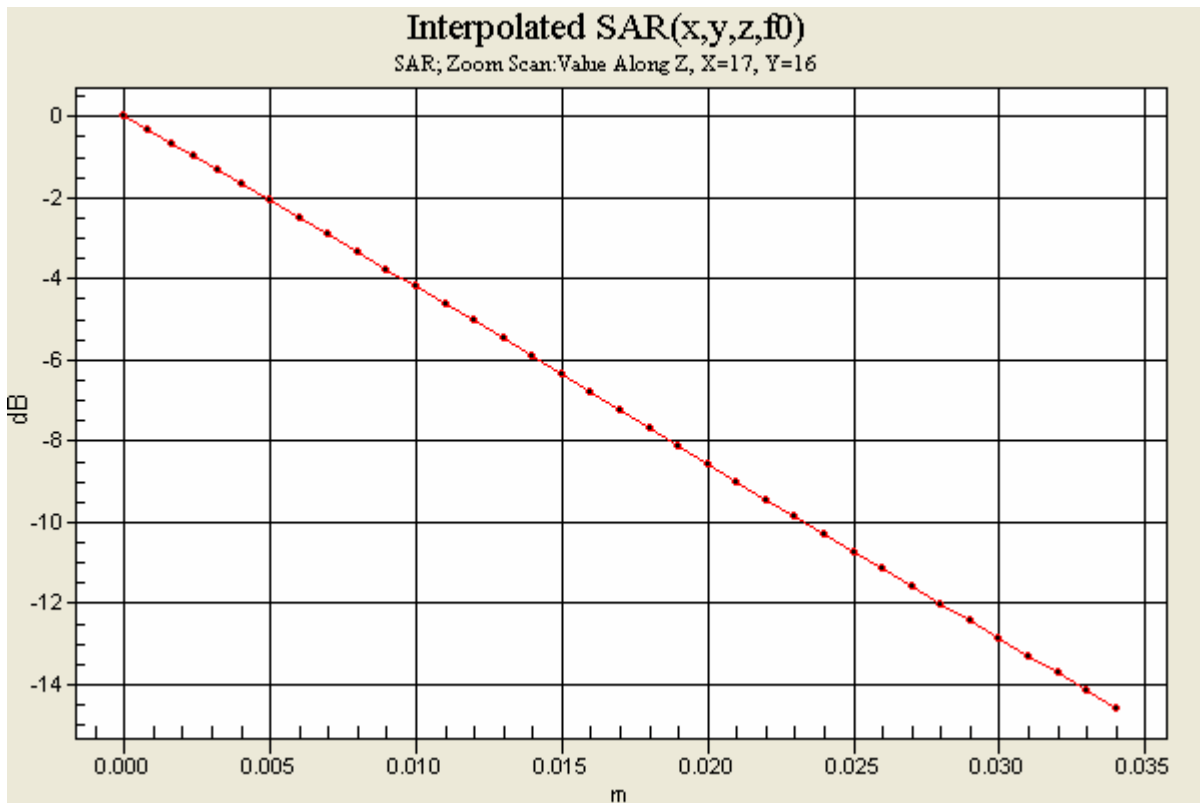
Maximum value of SAR (interpolated) = 1.74 mW/g



Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked		A



0 dB = 1.74mW/g





Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

Appendix 4

Probe Calibration Certificates

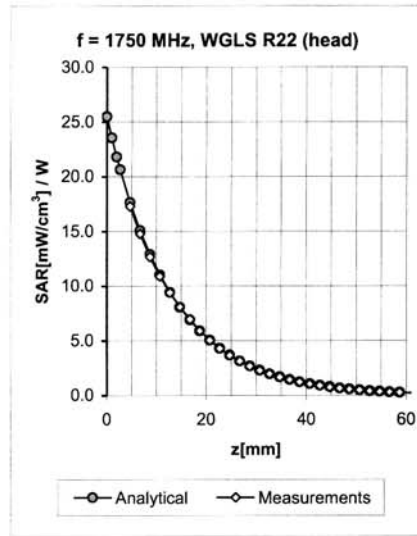
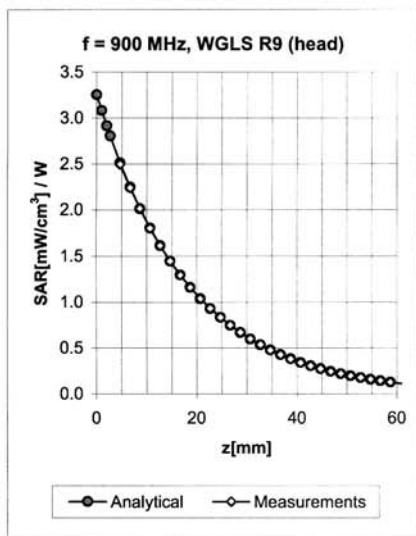


Prepared (also subject responsible if other) SEM/CV/PF/P Gerard Hayes and Rodney Dixon		No. REP 2007 002 W580 02	
Approved SEM/CV/PF/P Gerard Hayes	Checked	A	

ET3DV6 SN:1539

November 21, 2006

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.36	2.37	5.96 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.31	2.63	5.94 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.47	2.78	4.91 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.54	2.69	4.69 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.83	1.78	4.18 ± 11.8% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.35	2.64	5.95 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.36	2.74	5.81 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.63	2.73	4.35 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.71	2.52	4.27 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.78	1.83	4.11 ± 11.8% (k=2)

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



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ET3DV6 SN:1539

November 21, 2006

DASY - Parameters of Probe: ET3DV6 SN:1539

Sensitivity in Free Space ^A			Diode Compression ^B	
NormX	1.32 ± 10.1%	μV/(V/m) ²	DCP X	89 mV
NormY	1.29 ± 10.1%	μV/(V/m) ²	DCP Y	87 mV
NormZ	1.38 ± 10.1%	μV/(V/m) ²	DCP Z	87 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	8.8	4.7
SAR _{be} [%]	With Correction Algorithm	0.1	0.3

TSL 1750 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	13.0	8.4
SAR _{be} [%]	With Correction Algorithm	0.8	0.0

Sensor Offset

Probe Tip to Sensor Center **2.7 mm**

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

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

^B Numerical linearization parameter: uncertainty not required.

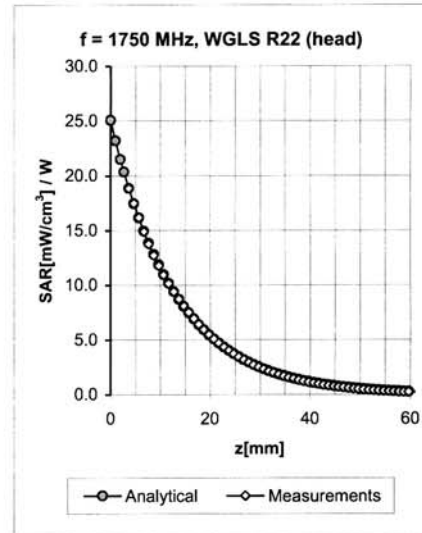
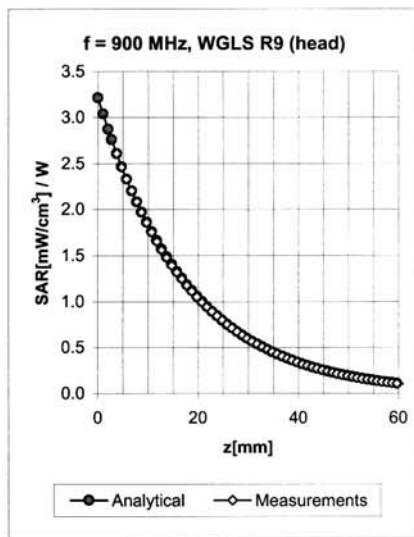


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ET3DV6 SN:1586

May 30, 2006

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.60	1.70	6.65 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.47	1.96	6.44 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.56	2.57	5.38 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.56	2.51	5.18 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.66	1.96	4.62 ± 11.8% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.51	1.91	6.35 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.48	2.04	6.20 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.57	2.69	4.79 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.70	2.33	4.62 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.58	2.27	4.20 ± 11.8% (k=2)

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



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ET3DV6 SN:1586

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DASY - Parameters of Probe: ET3DV6 SN:1586

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.89 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	94 mV
NormY	1.86 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	94 mV
NormZ	1.90 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	94 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	7.6	4.2
SAR _{be} [%]	With Correction Algorithm	0.0	0.2

TSL 1750 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	6.2	3.4
SAR _{be} [%]	With Correction Algorithm	0.1	0.2

Sensor Offset

Probe Tip to Sensor Center **2.7 mm**

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

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

^B Numerical linearization parameter: uncertainty not required.

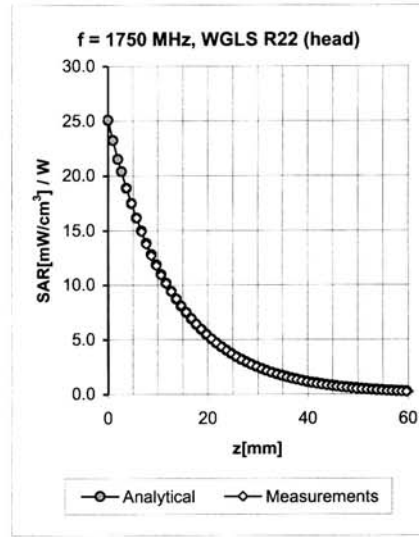
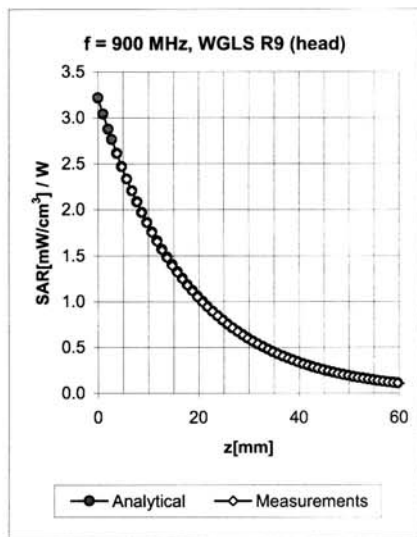


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Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.61	1.66	6.80 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.67	1.63	6.58 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.49	2.65	5.45 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.49	2.72	5.20 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.58	2.01	4.58 ± 11.8% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.57	1.79	6.53 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.51	1.93	6.35 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.53	2.77	4.84 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.65	2.38	4.66 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.42	2.57	4.12 ± 11.8% (k=2)

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



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ET3DV6 SN:1587

May 30, 2006

DASY - Parameters of Probe: ET3DV6 SN:1587

Sensitivity in Free Space^A

Diode Compression^B

NormX	2.05 ± 10.1%	μV/(V/m) ²	DCP X	95 mV
NormY	1.93 ± 10.1%	μV/(V/m) ²	DCP Y	95 mV
NormZ	1.80 ± 10.1%	μV/(V/m) ²	DCP Z	95 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	7.5	3.9
SAR _{be} [%]	With Correction Algorithm	0.0	0.1

TSL 1750 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	5.8	3.0
SAR _{be} [%]	With Correction Algorithm	0.1	0.2

Sensor Offset

Probe Tip to Sensor Center **2.7 mm**

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

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

^B Numerical linearization parameter; uncertainty not required.



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



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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	∞
Combined Standard Uncertainty			RSS				9.37	9.03	
Expanded Uncertainty (95% C.L.)							18.74	18.05	



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

<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
Measurement System									
Probe Calibration (<i>k</i> =1)	E2.1	4.8	N	1	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance (corresponds to the mechanical constrains of the robot)	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	2.9	R	1.73	1	1	1.7	1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1	1	0.6	0.6	∞
Test sample Related									
Test Sample Positioning	E.4.2	1.7	N	1	1	1	1.7	1.7	4
Device Holder Uncertainty	E.4.1	1.7	R	1.73	1	1	1.0	1.0	4
Output Power Variation - SAR drift measurement (4)	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞



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Liquid Conductivity - deviation from target values (5)	E.3.2	4.3	R	1.73	0.64	0.43	1.6	1.1	∞
Liquid Conductivity - measurement uncertainty (6)	E.3.3	6.20	R	1.73	0.64	0.43	2.3	1.5	∞
Liquid Permittivity - deviation from target values (5)	E.3.2	3.7	R	1.73	0.6	0.49	1.3	1.0	∞
Liquid Permittivity - measurement uncertainty (6)	E.3.3	6.08	R	1.73	0.6	0.49	2.1	1.7	∞
Combined Standard Uncertainty			RSS				9.6	9.2	
Expanded Uncertainty (95% CONFIDENCE LEVEL)			K=2				19.1	18.4	



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Table 3a. Values for ϵ'

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

Table 3b. Values for σ

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



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Appendix 6

Photographs of the Device Under Test



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a. Front



b. Back



c. Side

View of Device (Closed)



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a. Front



b. Back



c. Side

View of Device (Open)



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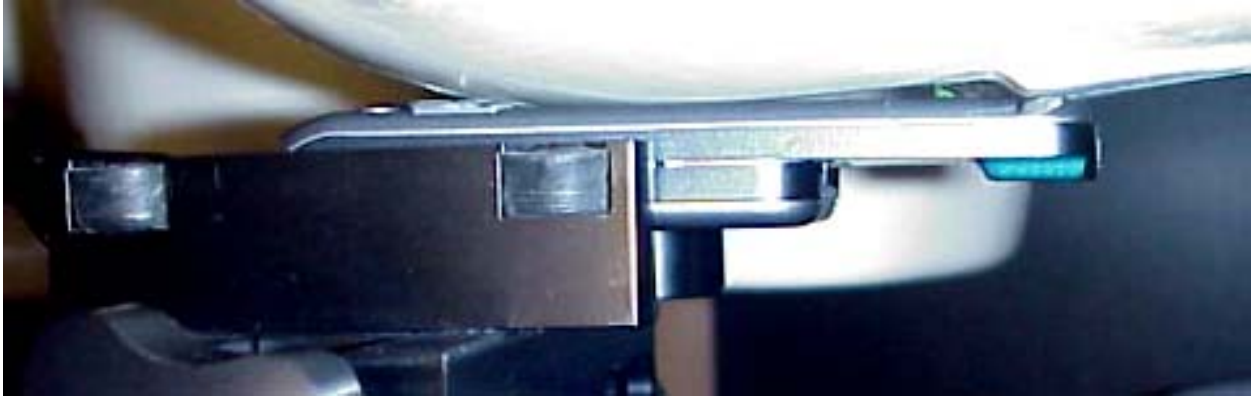
View of Hands-free Accessory



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



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



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



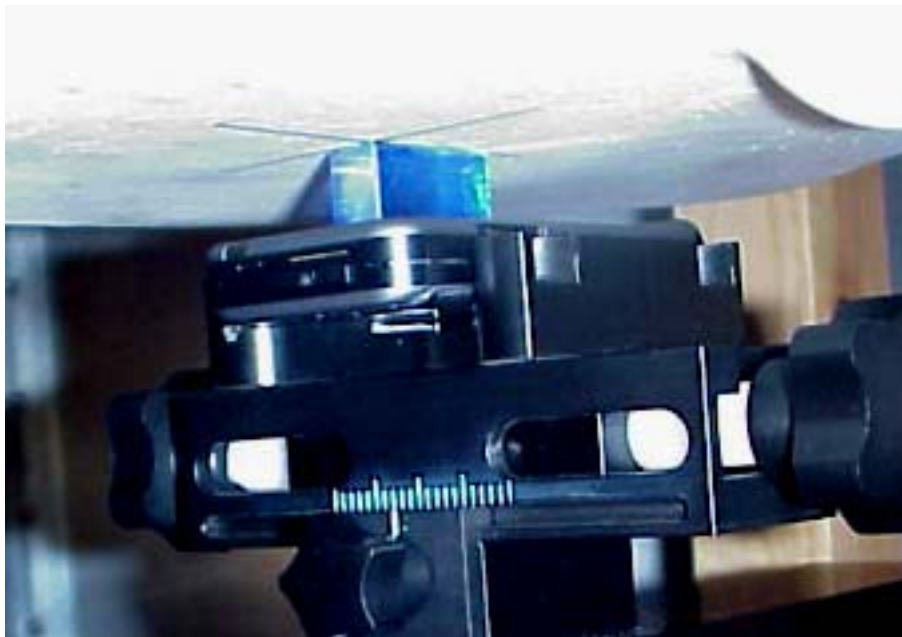
Position of device against head phantom using the “tilt” open position



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Position with front of device against flat phantom using a 15mm SPACER with hands free accessory.



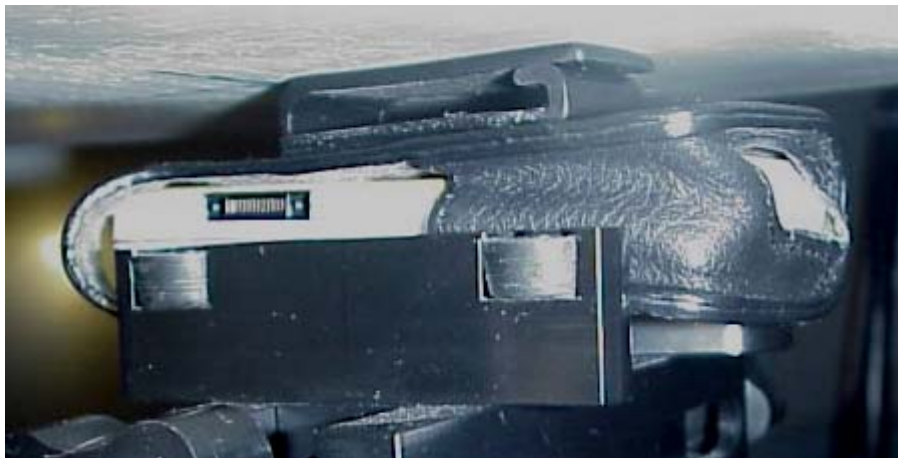
Position with back of device against flat phantom using a 15mm SPACER with hands free accessory.



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Position with front of device against flat phantom using an ICE26 carry case with hands free accessory.



Position with back of device against flat phantom using an ICE26 carry case with hands free accessory.



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Position with front of device against flat phantom using an ICE30 carry case with hands free accessory.



Position with back of device against flat phantom using an ICE30 carry case with hands free accessory.



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Accessory ICE26 front.



Accessory ICE26 back.



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Accessory ICE30 top.



Accessory ICE30 front.