



Sony Ericsson

REPORT

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Exhibit 11: SAR Test Report of Portable Cellular Phone

FCC ID: PY7AF061011 Model : Z502A

Date of test: June 22- July 29, 2004
Date of Report: March 17, 2005

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
 Technician III, Product Verification Group

Test Responsible: Gerard Hayes
 Consulting Engineer, Antenna/RF Development Group

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

On the following types of products:
 Wireless communications devices. A2LA certificate #1650-01

Statement of Compliance: Sony Ericsson Mobile Communications, Inc declares under its sole responsibility that portable cellular telephone FCC ID PY7AF061011 model Z502A 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 PY7AF061011 model Z502A. 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	Internal antenna	
Location	Inside the lower back cover, near the hinge	
Dimensions	Width	35 mm
	Length	15 mm
	Height	10mm
Configuration	PIFA-Type Antenna	

2.2 Device description

FCC ID Number / Device Model	PY7AF061011 / Z502A		
Serial number	BD3017AYMN		
Mode(s) of Operation			GSM 1900
Modulation Mode(s)			TDMA
Target Value and Factory Tolerance Window for Maximum Output Power Setting			f_{low} 29.7± 0.3 dBm
			f_{mid} 29.5± 0.5 dBm
			f_{high} 29.2± 0.8 dBm
Calibration Frequency (f_{low}, f_{mid}, f_{high})			f_{low}
Duty Cycle			1/8 GSM 2/8 EGPRS (Data)
Transmitting Frequency Rang(s)			1850-1910 MHz
Production Unit or Identical Prototype (47 CFR §2.908)	Identical Prototype Model: Z500A (FCC ID: PY7AF031011) without GSM -850 operation.		
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 (Dasy3™ v3.1d for body-worn measurements and Dasy4™ for adjacent to head measurements) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is $\pm 11.33\%$ (K=1) with an expanded uncertainty of $\pm 22.67\%$ (K=2) for Dasy3™ v3.1d and $\pm 10.14\%$ (K=1) with an expanded uncertainty of $\pm 20.27\%$ (K=2) for Dasy4™. The measurement uncertainty budget is given in Appendix 5 for both systems. The list of calibrated equipment used for the measurements is shown in the following table.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	415	10-Dec-2004
DASY3 DAE V1	417	10-Dec-2004
DASY3 DAE V1	431	26-Nov-2004
DASY3 DAE V1	432	24-Nov-2004
E-Field Probe ETDV6	1538	27-May-2005
E-Field Probe ETDV6	1539	16-Dec-2004
E-Field Probe ETDV6	1583	16-Dec-2004
E-Field Probe ETDV6	1586	27-May-2005
Dipole Validation Kit, DV1900V2	536	21-Jan-2005
S.A.M. Phantom used for 1900MHz (Head)	1054	
S.A.M. Phantoms used for 1900MHz (Body)	1020 / 1030	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3537A01598	09-Sep-2005
Power Meter 437B	3125U113481	03-May-2005
Power Meter 437B	3125U13729	08-Jan-2005
Power Sensor - 8482H	MY41090240	12-May-2005
Power Sensor - 8482H	MY41090239	12-May-2005
Network Analyzer HP8752C	3410A3105	17-Sep-2004
Dielectric Probe Kit HP85070B	US33020256	23-Oct-2004
Digital Thermometer 61220-601	350078	10-Nov-2004
Thermometer Probe 61220-604	99172351	10-Nov-2004
Digital Hygrometer/ Thermometer	21242911	10-Nov-2004
AR Power Amplifier 5S1G4	19290	21-Jan-2005



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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 in the range 21.7-24.7°C, the relative humidity was 40.8%- 55.1 %, and the liquid depth above the ear reference points was more than 15.0 cm for 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)
1900	Head	Measured, 21-Jun-04	38.85	1.44	22.6
		Measured, 22-Jul-04	38.10	1.43	22.3
		Recommended Limits	40.00	1.40	20-25
	Body	Measured, 25-Jun-04	50.89	1.55	23.0
		Measured, 28-Jun-04	50.68	1.56	22.4
		Measured, 29-Jul-04	51.16	1.51	21.8
		Recommended Limits	53.30	1.52	20-25

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

Ingredient	800MHz Head	800MHz Body	1800/1900MHz Head	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%	--	--



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5. System Accuracy Verification

A system accuracy verification of the DASY3 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 835 MHz 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 was in the range 21.5-23.8 °C, the relative humidity was in the range 44.4 – 55.5 % and the liquid depth above the ear reference points was above 150 mm 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 0.0085 W/kg, which is below the recommended limit in [1].

f (MHz)	Tissue Type	Description	SAR (W/kg) 1g / 10g	Dielectric Parameters		Tissue Temp (°C)
				ϵ_r	σ (S/m)	
1900	Head	Measured, 21-Jun-04	39.60 20.70	38.85	1.44	22.6
		Measured, 22-Jul-04	40.53 21.20	38.10	1.43	22.3
		Recommended Limits	39.70 20.50	40.00	1.40	20-25
	Body	Measured, 25-Jun-04	42.98 22.49	50.89	1.55	23.0
		Measured, 28-Jun-04	43.54 22.73	50.68	1.56	22.4
		Measured, 29-Jul-04	42.93 22.40	51.16	1.51	21.8
		Recommended Limits	40.50 20.89	53.30	1.52	20-25



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6. Test Results

For head measurements (with a 1/8 GSM duty cycle), the sample was operated using test software that allows the control of the transmitter. For body measurements (2/8 EGPRS 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 DASY 3.1d SAR measurement system.

The Cellular Phone FCC ID PY7AF061011 has the following battery options:

Model #1 – BKB 193 191 (BST-35) Standard Lithium Polymer Battery

Model #2 – BKB 193 174 (BST-30) Alternative/Optional Lithium Ion Battery

Both batteries were used for SAR testing. 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.

The humidity and ambient temperature of the test facility were in the ranges 21.1-26.5% and 22.9-23.9°C, respectively. The SAR measurements were performed using the SAM phantoms listed in section 3.1.

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	
1900 GSM	1.45	0.73	Left head, cheek/touch position, 1850 MHz BST-35 battery



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Left Head (Cheek / Touch Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	1.42	0.713	-0.13	1.45	0.73	23.5	21.7
	660/1880	29.7	1.31	0.675	-0.04	1.34	0.69	23.5	21.7
	810/1910	29.4	1.11	0.587	-0.06	1.14	0.60	23.5	21.7
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Left Head (15° Tilt Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.195	0.123	0.02	0.20	0.13	23.1	21.9
	660/1880	29.7	0.216	0.135	-0.03	0.22	0.14	23.1	21.9
	810/1910	29.4	0.176	0.11	-0.04	0.18	0.11	23.1	21.9

Table 1: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Standard Battery BST-35. Measured against the left head.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Right Head (Cheek / Touch Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	1.29	0.673	-0.07	1.32	0.69	22.5	21.7
	660/1880	29.7	1.19	0.641	-0.04	1.22	0.66	22.5	21.7
	810/1910	29.4	1.08	0.581	-0.04	1.11	0.59	22.5	21.7
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Right Head (15° Tilt Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.197	0.127	0.00	0.20	0.13	23.6	21.8
	660/1880	29.7	0.205	0.129	-0.03	0.21	0.13	23.6	21.8
	810/1910	29.4	1.08	0.102	-0.03	1.11	0.10	23.6	21.8

Table 2: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Standard Battery BST-35. Measured against the right head.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Left Head (Cheek / Touch Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	1.400	0.699	-0.07	1.433	0.715	22.6	21.4
	660/1880	29.7	1.280	0.656	-0.01	1.310	0.671	22.6	21.4
	810/1910	29.4	1.160	0.607	-0.02	1.187	0.621	22.6	21.4
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Left Head (15° Tilt Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.211	0.132	0.02	0.216	0.135	22.8	21.0
	660/1880	29.7	0.201	0.125	0.08	0.206	0.128	22.8	21.0
	810/1910	29.4	0.178	0.109	0.06	0.182	0.112	22.8	21.0

Table 3: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Optional Battery BST-30. Measured against the left head.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Right Head (Cheek / Touch Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	1.300	0.676	-0.20	1.330	0.692	23.0	22.3
	660/1880	29.7	1.160	0.612	-0.17	1.187	0.626	23.0	22.3
	810/1910	29.4	1.020	0.548	-0.13	1.044	0.561	23.0	22.3
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 1:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Right Head (15° Tilt Position)						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.191	0.121	-0.03	0.195	0.124	22.7	21.2
	660/1880	29.7	0.191	0.119	-0.07	0.195	0.122	22.7	21.2
	810/1910	29.4	0.164	0.101	0.08	0.168	0.103	22.7	21.2

Table 4: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Optional Battery BST-30. Measured against the right head.



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6.2 Body-Worn Test Results

The SAR results shown in tables 5-8 are the 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 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. The humidity and ambient temperature of the test facility were in the ranges 22.3-32.8% and 22.5-23.9°C, respectively.

A “flat” phantom was used for the body-worn tests. This “flat” phantom corresponds to the flat portion of the SAM phantom. The tissue stimulant depth above the ear canal was verified to be above 15.0 cm in all the measurements. 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:

- Carry case model ICE-26
- 15 mm spacer

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	
1900 GSM	0.683	0.641	ICE-26 Carry Accessory, front of phone facing body, 1850MHz BST-35 battery



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 2:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Body Worn (PHF: HPB-20)			Carry Accessory: ICE-26			
			Back of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.415	0.269	-0.06	0.425	0.275	23.0	22.8
	660/1880	29.7	0.431	0.268	-0.01	0.441	0.274	23.2	22.7
	810/1910	29.4	0.429	0.271	-0.03	0.439	0.277	24.2	22.6
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) EGPRS 2:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Body Worn (PHF: HPB-20)			Carry Accessory: ICE-26			
			Front of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.667	0.373	-0.03	0.683	0.382	23.0	22.8
	660/1880	29.7	0.488	0.264	0.05	0.499	0.270	23.2	22.7
	810/1910	29.4	0.488	0.626	-0.03	0.499	0.641	24.2	22.6

Table 5: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Standard Battery BST-35. Measured against the body with carry accessory ICE-26.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 2:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Body Worn (PHF: HPB-20)			Carry Accessory: ICE-26			
			Back of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.462	0.279	-0.02	0.473	0.285	22.6	21.8
	660/1880	29.7	0.445	0.272	-0.03	0.455	0.278	22.4	21.4
	810/1910	29.4	0.402	0.245	0	0.411	0.251	22.3	21.6
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) EGPRS 2:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Body Worn (PHF: HPB-20)			Carry Accessory: ICE-26			
			Front of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.556	0.318	-0.08	0.569	0.325	22.6	21.8
	660/1880	29.7	0.476	0.268	-0.07	0.487	0.274	22.4	21.4
	810/1910	29.4	0.410	0.235	0.01	0.420	0.240	22.3	21.6

Table 6: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Optional Battery BST-30. Measured against the body with carry accessory ICE-26.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 2:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Body Worn (PHF: HPB-20)			Carry Accessory: 15mm Spacer			
			Back of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.428	0.265	-0.04	0.438	0.271	22.4	22.3
	660/1880	29.7	0.425	0.26	0.00	0.435	0.266	22.5	21.7
	810/1910	29.4	0.438	0.265	-0.02	0.448	0.271	22.6	21.9
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) EGPRS 2:8 Duty Cycle	FCC ID PYAF031011 with Standard Battery BST-35						
			Body Worn (PHF: HPB-20)			Carry Accessory: 15mm Spacer			
			Front of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.219	0.13	0.00	0.224	0.133	22.4	22.3
	660/1880	29.7	0.127	0.0795	0.01	0.130	0.081	22.5	21.7
	810/1910	29.4	0.11	0.0649	-0.03	0.113	0.066	22.6	21.9

Table 7: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Standard Battery BST-35. Measured against the body with 15mm spacer.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) GSM 2:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Body Worn (PHF: HPB-20)			Carry Accessory: 15mm Spacer			
			Back of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.427	0.261	-0.01	0.437	0.267	22.3	21.5
	660/1880	29.7	0.381	0.237	0.01	0.390	0.243	22.4	21.2
	810/1910	29.4	0.427	0.263	-0.01	0.437	0.269	22.5	21.4
f (MHz)	Channel/ frequency	Conducted Output Power (dBm) EGPRS 2:8 Duty Cycle	FCC ID PYAF031011 with Optional Battery BST-30						
			Body Worn (PHF: HPB-20)			Carry Accessory: 15mm Spacer			
			Front of phone facing body						
			Measured (W/kg) 1g / 10g		Drift (dB)	Extrapolated (W/kg) 1g / 10g		Ambi ent Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	29.9	0.189	0.117	-0.04	0.193	0.120	22.3	21.5
	660/1880	29.7	0.155	0.096	-0.04	0.159	0.098	22.4	21.2
	810/1910	29.4	0.117	0.072	-0.02	0.120	0.073	22.5	21.4

Table 8: SAR measurement results for the portable cellular telephone FCC ID PY7AF061011 model Z502A at maximum output power with Optional Battery BST-30. Measured against the body with 15mm spacer.

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.

APPLICANT: Sony Ericsson Mobile Communications Inc.

FCC ID: **PY7AF061011**



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Appendix 1

SAR distribution comparison for the system accuracy verification

APPLICANT: Sony Ericsson Mobile Communications Inc.

FCC ID: **PY7AF061011**



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1900 MHz SAR Distribution of Validation Dipole Antenna**System Performance Check on June 21, 2004 (Using head tissue).**

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

Probe: ET3DV6 - SN1586ConvF(5.14, 5.14, 5.14) Duty Cycle: 1:1 Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $s = 1.45$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Measurement Standard: DASY4 (High Precision Assessment)

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

Reference Value = 57.7 V/m; Power Drift = 0.008 dB

Maximum value of SAR (interpolated) = 4.81 mW/g

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

Reference Value = 57.7 V/m; Power Drift = 0.008 dB

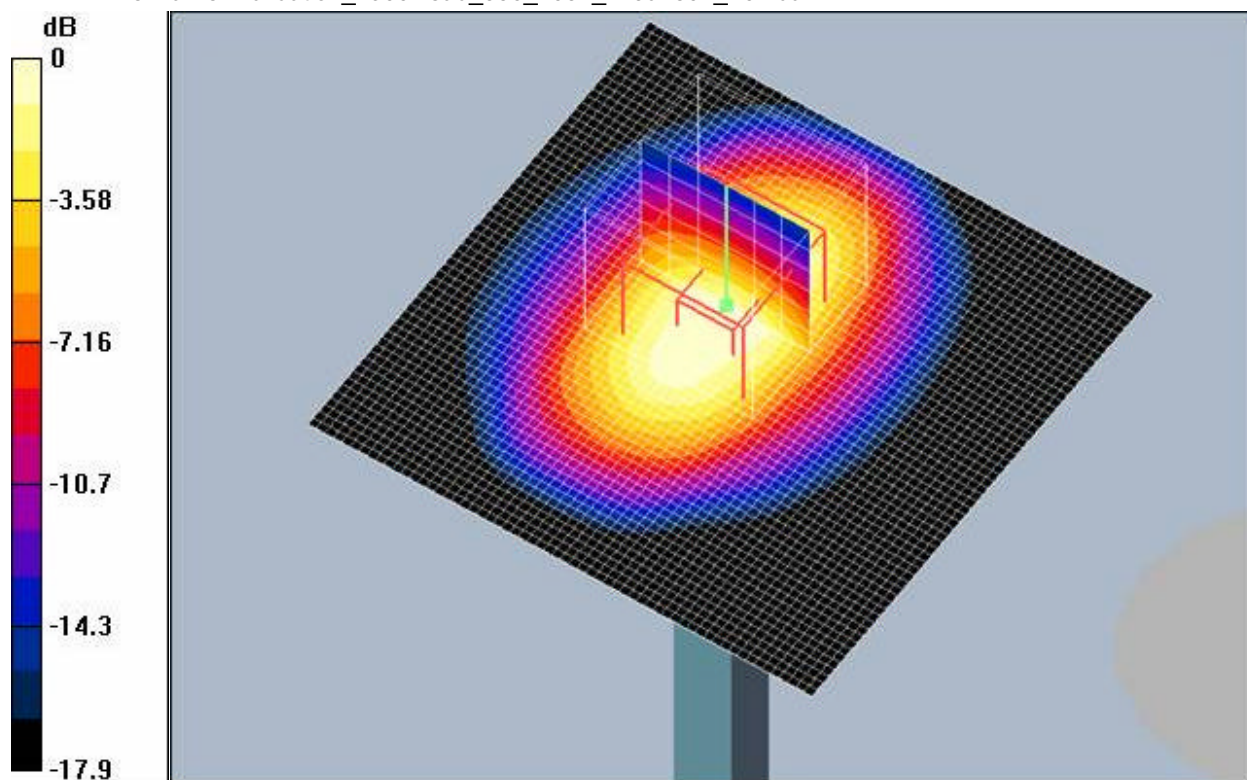
Maximum value of SAR (measured) = 4.29 mW/g

Peak SAR (extrapolated) = 6.73 W/kg

SAR(1 g) = 3.81 mW/g; SAR(10 g) = 1.99 mW/g

Procedure Notes: Pin: before 99.4 mW / after 100.1 mW Humidity: 45.1% Ambient Temp: 22.6 C Simulant Temp: 21.9 C

File Name: Validation_1900Head_536_1054_21June04_T01.da4



0 dB = 4.29mW/g



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1900 MHz SAR Distribution of Validation Dipole Antenna**System Performance Check on July 22, 2004 (Using head tissue).**

File Name: Validation_1900Head_536_1054_22July04_T01.da4

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

Probe: ET3DV6 - SN1538ConvF(4.95, 4.95, 4.95)Duty Cycle: 1:1Frequency: 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $s = 1.43 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$

Measurement Standard: DASY4 (High Precision Assessment)

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

Reference Value = 59.6 V/m; Power Drift = 0.0 dB

Maximum value of SAR (interpolated) = 5.05 mW/g

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

Reference Value = 59.6 V/m; Power Drift = 0.0 dB

Maximum value of SAR (measured) = 4.52 mW/g

Peak SAR (extrapolated) = 6.98 W/kg

SAR(1 g) = 3.98 mW/g; SAR(10 g) = 2.08 mW/g**Dipole at 10 mm/Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

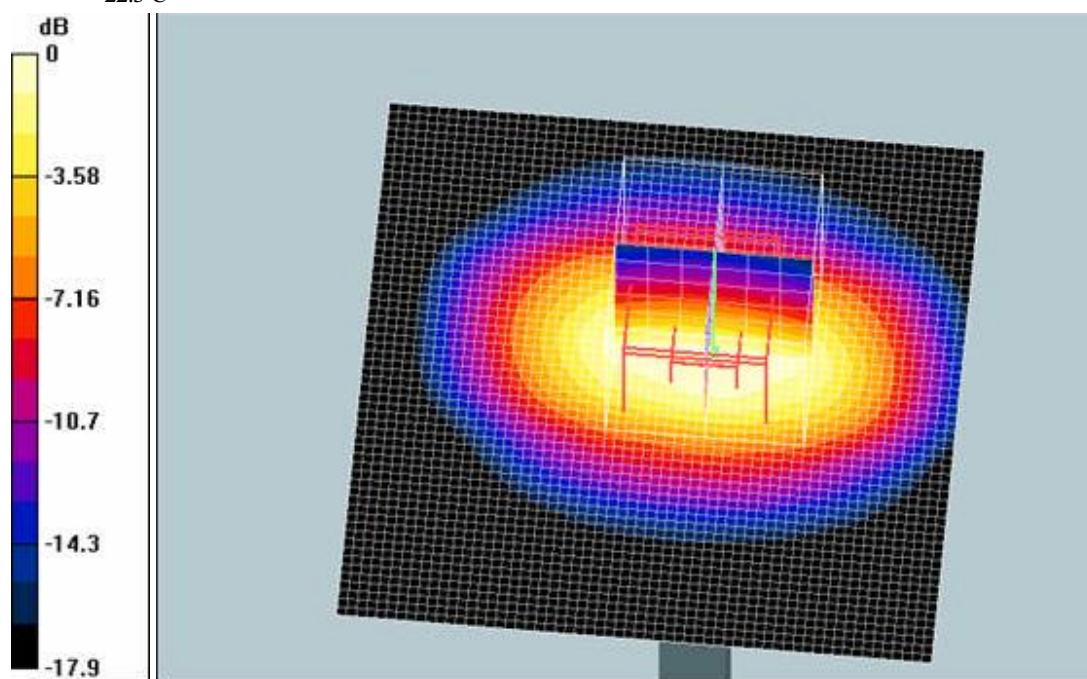
Reference Value = 59.6 V/m; Power Drift = 0.0 dB

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

Peak SAR (extrapolated) = 7.19 W/kg

SAR(1 g) = 4.07 mW/g; SAR(10 g) = 2.13 mW/g

Procedure Notes: Pin: before 99.0 mW / after 99.6mW Humidity: 42.8% Ambient Temp: 23 C Simulant Temp: 22.3 C



0 dB = 4.58mW/g

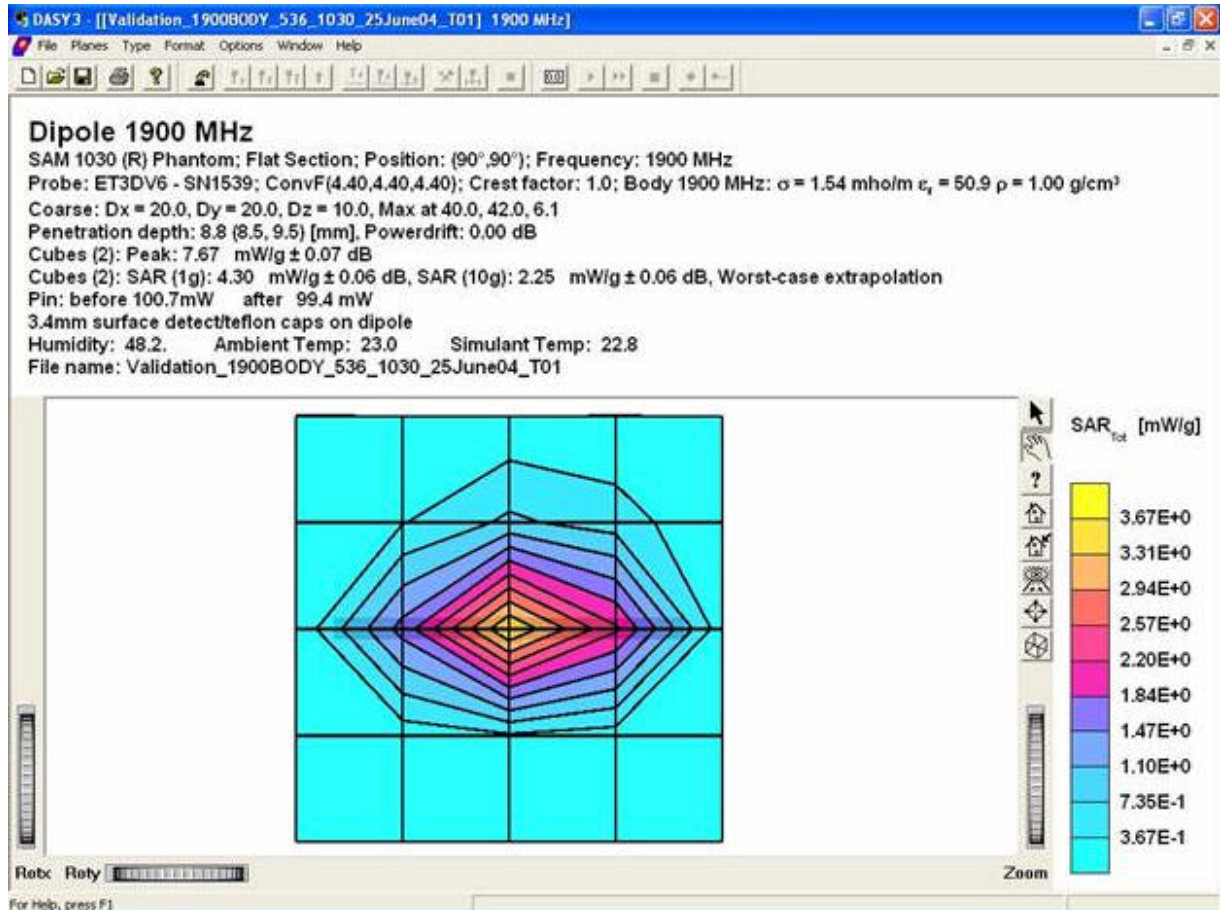


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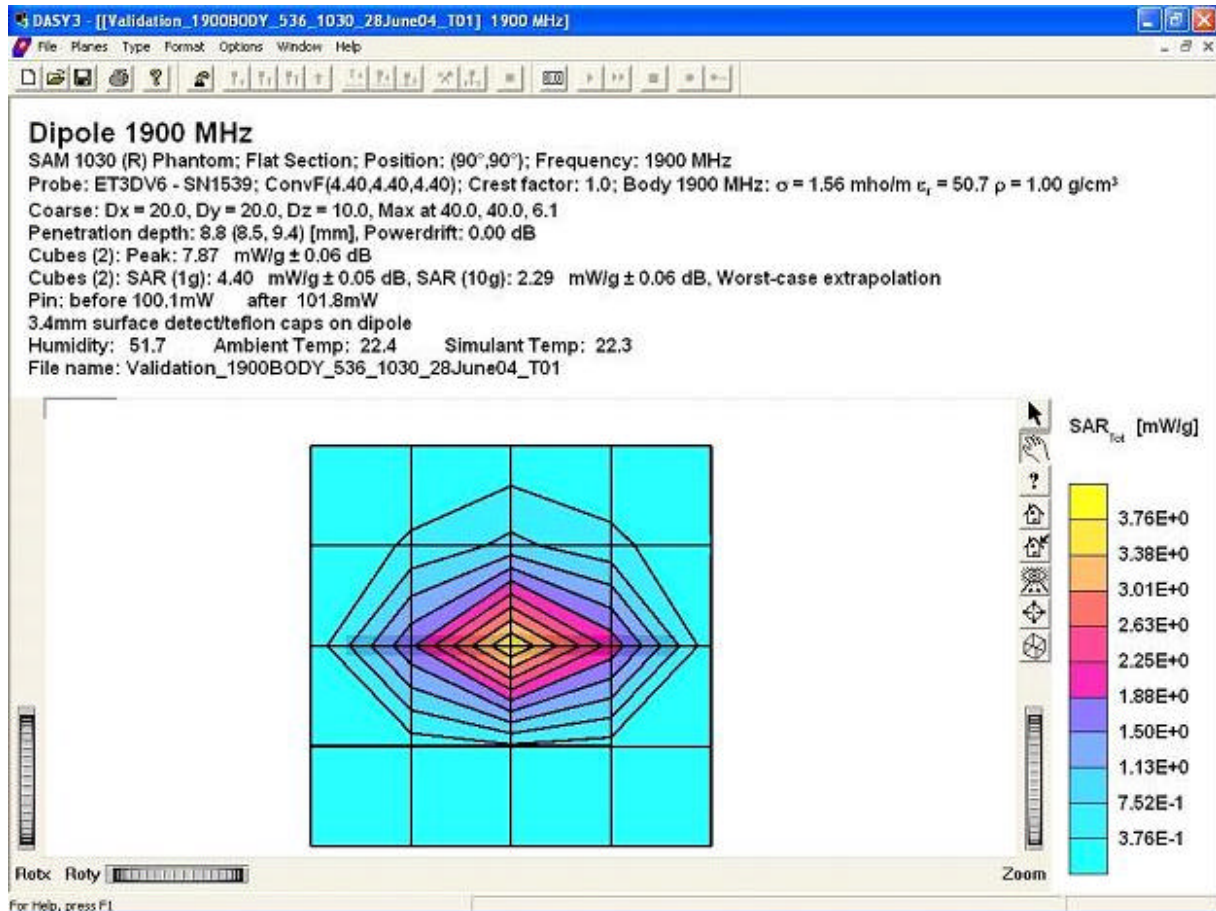
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1900 MHz SAR distribution of validation dipole antenna from system performance check on June 25, 2004 (Using muscle/body tissue).



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1900 MHz SAR distribution of validation dipole antenna from system performance check on June 28, 2004 (Using muscle/body tissue).

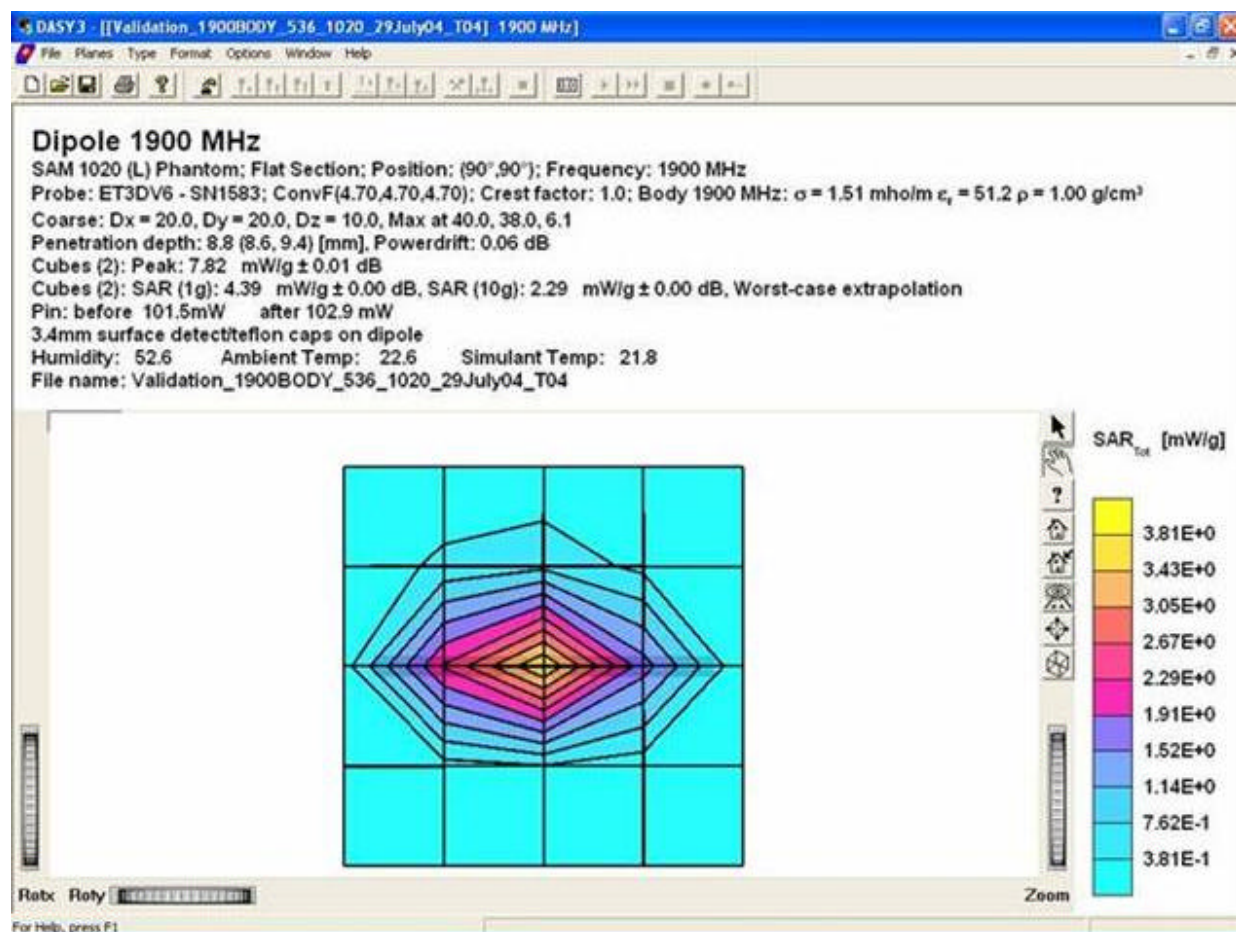


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1900 MHz SAR distribution of validation dipole antenna from system performance check on July 29, 2004 (Using muscle/body tissue).