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Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Exhibit 11: SAR Test Report of Portable Cellular Phone FCC ID: PY7A1041012 model: T226s

Date of test: May 13-30, 2003
Date of Report: June 1st, 2003

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

Tested by: Dulce Altabella
 Staff Engineer, Antenna Development Group

Test Responsible: Dulce Altabella
 Staff Engineer, Antenna 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 PY7A1041012 model T226s 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 PYA1041012 model T226s. 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 back cover, near the top	
Dimensions	Width	32 mm
	Length	30 mm
Configuration	Patch antenna	

2.2 Device description

FCC ID Number / Device Model	PY7A1041012 / T226s
Serial number	A6101TVF63
Mode(s) of Operation	GSM 1900
Modulation Mode(s)	TDMA
Target Value for Maximum Output Power Setting	30 dBm
Factory Tolerance Window in Power Setting	± 1.0 dB
Duty Cycle	1/8
Transmitting Frequency Rang(s)	1850-1910 MHz
Production Unit or Identical Prototype (47 CFR §2.908)	Identical Prototype
Device Category	Portable
RF Exposure Limits	General Population / Uncontrolled

3. Test Equipment Used

3.1 Dosimetric System

The Sony Ericsson SAR Laboratory utilizes a Dosimetric Assessment System (Dasy3™ v3.1d) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±10.59% (K=1) with an expanded uncertainty of ±21.17% (K=2). The measurement uncertainty budget is given in Appendix 5. The list of calibrated equipment used for the measurements is shown in the following table.



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Description	Serial Number	Cal Due Date
DASY3 DAE V1	416	11-Dec-2003
DASY3 DAE V1	417	11-Dec-2003
E-Field Probe ETDV6	1583	19-Dec-2003
E-Field Probe ETDV6	1586	20-Jun-2003
Dipole Validation Kit, DV1800V2	217	14-Jan-2004
Dipole Validation Kit, DV1900V2	537	14-Jan-2004
S.A.M. Phantom used for 1900MHz	1030	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3537A01598	09-Sep-2003
Power Meter 437B	3125U113481	16-May-2004
Power Meter 437B	3110A05257	16-May-2004
Power Sensor - 8482H	MY41090240	16-May-2004
Power Sensor - 8482H	MY41090241	16-May-2004
Network Analyzer HP8752C	3410A3105	23-Aug-2003
Dielectric Probe Kit HP85070B	US33020390	16-Sep-2003
Digital Thermometer 61220-601	350078	25-Sep-2003
Digital Thermometer 61220-601	21117674	12-Nov-2003
Thermometer Probe 61220-604	99172351	25-Sep-2003
Thermometer Probe 61220-604	21117824	12-Nov-2003
Digital Hygrometer/ Thermometer	21242911	24-Sep-2003
B Power Amplifier 5S1G4	19290	05-May-2004

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 22.2-23.9°C, the relative humidity was 37.9- 47.5%, and the liquid depth above the ear reference points was more than 150 cm for all the cases. It is seen that the measured parameters are satisfactory for compliance testing.



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f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	Simulated Tissue Temp (°C)
1900	Head	Measured, 19-May-03	39.05	1.45	21.6
		Measured, 20-May-03	39.88	1.44	22.0
		Measured, 30-May-03	39.42	1.45	22.0
		Recommended Limits	40.00	1.40	20-25
	Body	Measured, 22-May-03	52.95	1.53	21.3
		Measured, 28-May-03	52.51	1.54	21.9
		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	1800/1900MHz	1900MHz
	Head	Body
Sugar	--	--
DGBE	44.92%	30.82%
Water	54.90%	68.89%
Salt	0.18%	0.29%
HEC	--	--
Bact.	--	--

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 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 22.9-23.6 °C, the relative humidity was in the range 36.1 – 45.8 % 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 0.0003W/kg, which is below the recommended limit in [1].



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f (MHz)	Tissue Type	Description	SAR (W/kg), 1g / 10g	Dielectric Parameters		Tissue Temp (°C)
				ϵ_r	σ (S/m)	
1900	Head	Measured, 19-May-2003	42.56 / 22.12	39.05	1.45	21.2
		Measured, 20-May-2003	41.81 / 21.81	39.88	1.44	22.0
		Measured, 30-May-2003	42.82 / 22.20	39.42	1.45	22.1
		Recommended Limits	39.70 / 20.50	40.00	1.40	20-25
	Body	Measured, 22-May-2003	41.70 / 21.90	52.95	1.53	22.0
		Measured, 28-May-2003	42.53 / 22.43	52.51	1.54	22.1
		Recommended Limits	40.50 / 20.89	53.30	1.52	20-25

6. Test Results

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and 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 PY7A1041012 has the following battery options:

Model #1 – BKB 193 174 EP3/A Battery

This battery was 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 33.4 -48.6% and 21.5-24.5°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.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Left Head (Cheek / Touch Position)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.40 / 0.21	0.05	0.41 / 0.22	24.0	21.8
	660/1880	30.6	0.34 / 0.19	0.00	0.34 / 0.19	23.7	22.2
	810/1910	30.2	0.28 / 0.16	0.08	0.29 / 0.17	23.8	22.2

Table 1: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the left head in the Cheek/Touch Position.

f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Right head (Cheek / Touch Position)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.48 / 0.26	0.07	0.50 / 0.26	22.3	22.0
	660/1880	30.6	0.44 / 0.23	-0.01	0.45 / 0.24	22.4	22.0
	810/1910	30.2	0.41 / 0.19	-0.06	0.41 / 0.20	22.3	22.0

Table 2: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the right head in the Cheek/Touch Position.

F (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Left Head (15° Tilt Position)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.38 / 0.21	-0.00	0.39 / 0.22	23.4	22.0
	660/1880	30.6	0.32 / 0.18	-0.02	0.32 / 0.18	23.5	22.2
	810/1910	30.2	0.31 / 0.17	0.11	0.32 / 0.17	23.8	22.2

Table 3: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the left head in the 15° Tilt Position.

¹ Output power was measured at Sony Ericsson by personnel outside the scope and control of the SAR testing laboratory.



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F (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Right Head (15° Tilt Position)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.39 / 0.21	-0.03	0.40 / 0.22	23.8	21.5
	660/1880	30.6	0.35 / 0.19	-0.01	0.36 / 0.20	23.9	21.6
	810/1910	30.2	0.35 / 0.18	-0.04	0.36 / 0.18	23.4	22.0

Table 4: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the right head in the 15° Tilt Position.



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6.2 Body-Worn Test Results

The SAR results shown in table 5-10 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.

The humidity and ambient temperature of the test facility were in the ranges 42.2-50.1% and 23.6-24.2°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 150mm 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 connected to the device for all body-worn SAR measurements.

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

-Carry case model ICT-14

-Carry case model ICE-25

-20 mm spacer

A full data set output of the three test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 3. The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included.

f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: ICT-14 (Back of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.63 / 0.39	-0.09	0.64 / 0.40	24.1	22.2
	660/1880	30.6	0.50 / 0.31	-0.11	0.51 / 0.32	24.1	22.1
	810/1910	30.2	0.40 / 0.25	-0.03	0.44 / 0.25	23.8	21.9

Table 5: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with carry accessory ICT-14. Back of the phone facing the flat phantom.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: ICT-14 (Front of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.10 / 0.06	-0.10	0.10 / 0.06	24.0	22.0
	660/1880	30.6	0.07 / 0.04	-0.08	0.07 / 0.05	24.0	22.2
	810/1910	30.2	0.06 / 0.04	0.01	0.06 / 0.04	23.9	21.8

Table 6: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with carry accessory ICT-14. Front of the phone facing the flat phantom.

f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: ICE-25 (Back of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolate d (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.73 / 0.44	-0.11	0.75 / 0.44	23.8	22.0
	660/1880	30.6	0.50 / 0.30	-0.08	0.51 / 0.31	23.8	21.9
	810/1910	30.2	0.35 / 0.22	-0.07	0.36 / 0.22	23.3	22.0

Table 7: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with carry accessory ICE-25. Back of the phone facing the flat phantom.

f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: spacer ICE-25 (Front of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.09 / 0.06	-0.11	0.10 / 0.06	23.7	22.0
	660/1880	30.6	0.05 / 0.03	-0.07	0.06 / 0.03	23.8	21.8
	810/1910	30.2	0.05 / 0.03	-0.12	0.05 / 0.03	23.5	21.9

Table 8: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with carry accessory ICE-25. Front of the phone facing the flat phantom.



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f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: 20 mm (Back of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolate d (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.40 / 0.24	0.00	0.41 / 0.25	24.2	22.1
	660/1880	30.6	0.70 / 0.43	-0.03	0.72 / 0.44	24.1	22.2
	810/1910	30.2	0.64 / 0.39	0.01	0.66 / 0.40	23.5	21.9

Table 9: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with a 20 mm spacer. Back of the phone facing the flat phantom.

f (MHz)	Channel/ frequency	Conducted Output Power (dBm) ¹	Body Worn PHF: HPB-20 Carry Accessory: spacer 20 mm (Front of phone facing body)				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
1900 GSM	512 / 1850	30.9	0.06 / 0.03	-0.03	0.06 / 0.04	24.2	22.1
	660/1880	30.6	0.05 / 0.03	-0.05	0.05 / 0.03	24.0	22.0
	810/1910	30.2	0.05 / 0.03	-0.04	0.05 / 0.03	23.6	21.9

Table 10: SAR measurement results for the portable cellular telephone FCC ID PY7A1041012 model T226s at maximum output power. Measured against the body with a 20 mm spacer. Front of the phone facing the flat phantom.

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



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Dipole 1900 MHz

SAM 1020(L); Flat

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Head 1900 MHz: $\sigma = 1.45 \text{ mho/m}$ $\epsilon_r = 39.0$ $\rho = 1.00 \text{ g/cm}^3$ Cubes (2): Peak: $7.68 \text{ mW/g} \pm 0.08 \text{ dB}$, SAR (1g): $4.29 \text{ mW/g} \pm 0.03 \text{ dB}$, SAR (10g): $2.23 \text{ mW/g} \pm 0.01 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 8.6 (8.5, 8.9) [mm]

Powerdrift: -0.04 dB

Pin: before 100mW after 100.8 mW

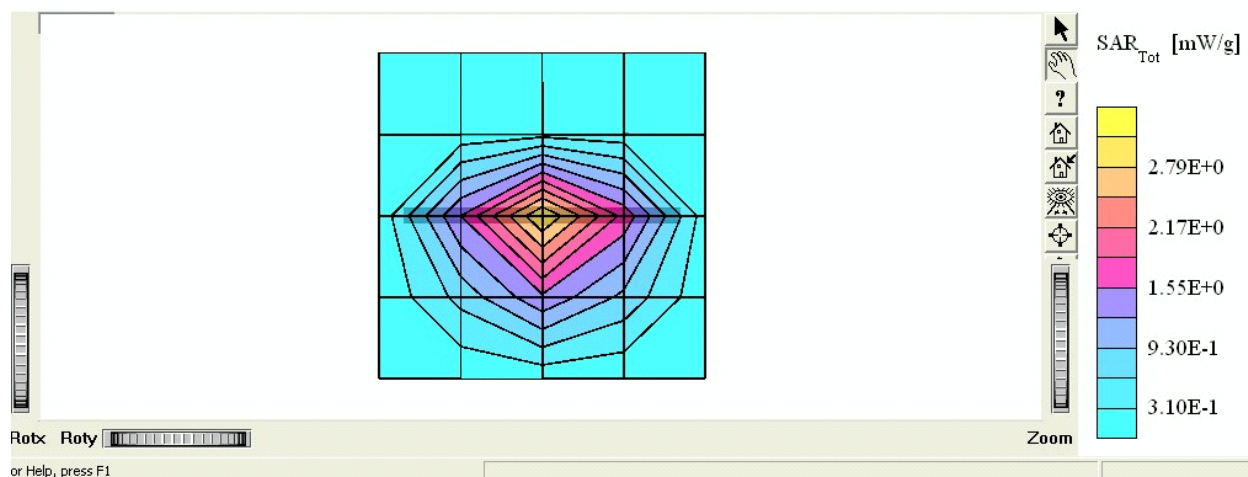
3.4mm surface detect/teflon caps on dipole

Humidity: 43.4

Ambient Temp: 23.6

Simulant Temp:21.2

Validation_1900Head_537_1020_19May_03_T01



1900 MHz SAR distribution of validation dipole antenna from system performance check on May 19, 2003. Using head tissue.



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Dipole 1900 MHz

SAM 1020(L); Flat

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Head 1900 MHz: $\sigma = 1.44 \text{ mho/m}$, $\epsilon_r = 39.9$, $\rho = 1.00 \text{ g/cm}^3$ Cubes (2): Peak: $7.38 \text{ mW/g} \pm 0.06 \text{ dB}$, SAR (1g): $4.14 \text{ mW/g} \pm 0.10 \text{ dB}$, SAR (10g): $2.16 \text{ mW/g} \pm 0.12 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 8.6 (8.5, 9.0) [mm]

Powerdrift: -0.08 dB

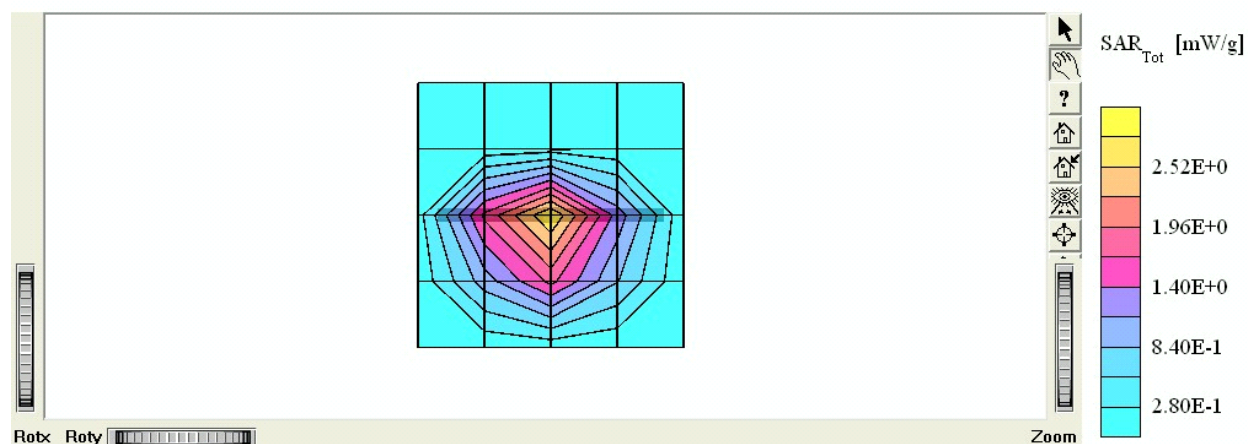
Pin: before 100 mW after 99.0 mW

3.4mm surface detect/teflon caps on dipole

Humidity: 43.6 Ambient Temp: 23.1

Simulant Temp: 22.0

Validation_1900Head_537_1020_20May_03_T01



1900 MHz SAR distribution of validation dipole antenna from system performance check on May 20, 2003. Using head tissue.



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Dipole 1900 MHz

SAM 1020(L); Flat

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Head 1900 MHz: $\sigma = 1.45$ mho/m $\epsilon_r = 39.4$ $\rho = 1.00$ g/cm³Cubes (2): Peak: 7.83 mW/g ± 0.10 dB, SAR (1g): 4.36 mW/g ± 0.10 dB, SAR (10g): 2.26 mW/g ± 0.10 dB, (Worst-case extrapolation)

Penetration depth: 8.4 (8.2, 8.8) [mm]

Powerdrift: -0.04 dB

Pin: before 100 mW after 101.8 mW

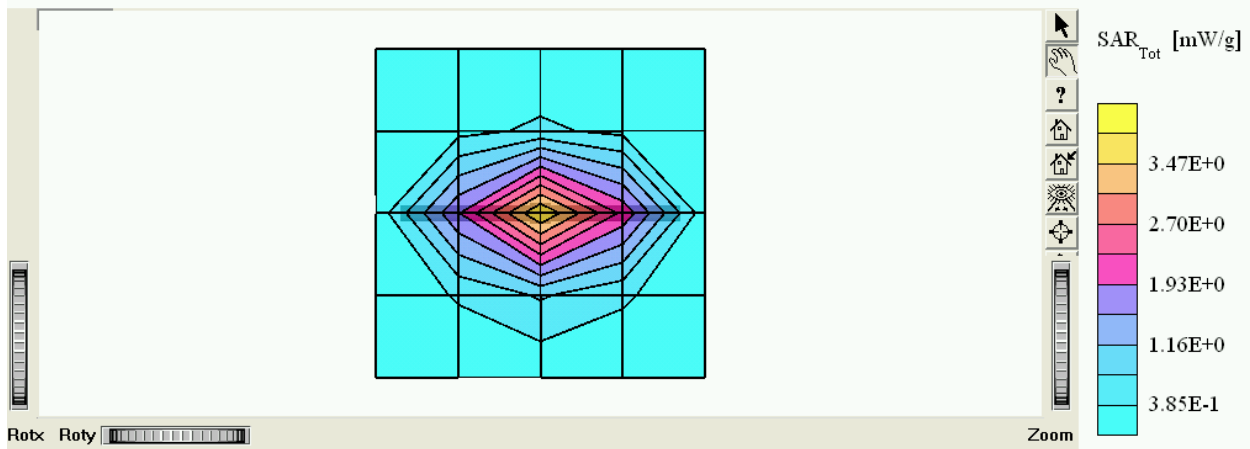
3.4mm surface detect/teflon caps on dipole

Humidity: 45.5

Ambient Temp: 23.2

Simulant Temp: 22.1

Validation_1900Head_537_1030_30May_03_T01



1900 MHz SAR distribution of validation dipole antenna from system performance check on May 30, 2003. Using head tissue.



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REPORT

16(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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Dipole 1900 MHz

SAM 1030 (R); Flat

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$ Cubes (2): Peak: $7.41 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (1g): $4.17 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (10g): $2.19 \text{ mW/g} \pm 0.05 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 8.9 (8.6, 9.5) [mm]

Powerdrift: 0.00 dB

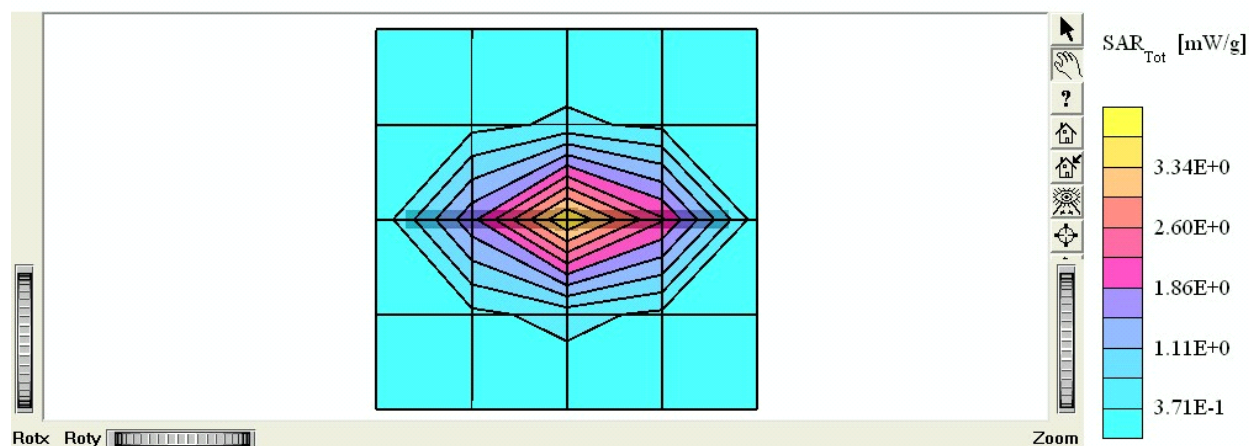
Pin: before 100 mW after 100 mW

3.4mm surface detect/teflon caps on dipole

Humidity: 45.6 Ambient Temp:23.1

Simulant Temp:22.0

Validation_1900Body_537_1020_22May_03_T01



1900 MHz SAR distribution of validation dipole antenna from system performance check on May 22, 2003. Using muscle tissue.



Sony Ericsson

REPORT

17(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Dipole 1900 MHz

SAM 1030 (R); Flat

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Body 1900 MHz: $\sigma = 1.54 \text{ mho/m}$, $\epsilon_r = 52.5$, $\rho = 1.00 \text{ g/cm}^3$ Cubes (2): Peak: $7.43 \text{ mW/g} \pm 0.06 \text{ dB}$, SAR (1g): $4.19 \text{ mW/g} \pm 0.06 \text{ dB}$, SAR (10g): $2.21 \text{ mW/g} \pm 0.06 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 8.9 (8.7, 9.5) [mm]

Powerdrift: -0.05 dB

Pin: before 100mW after 98.5 mW

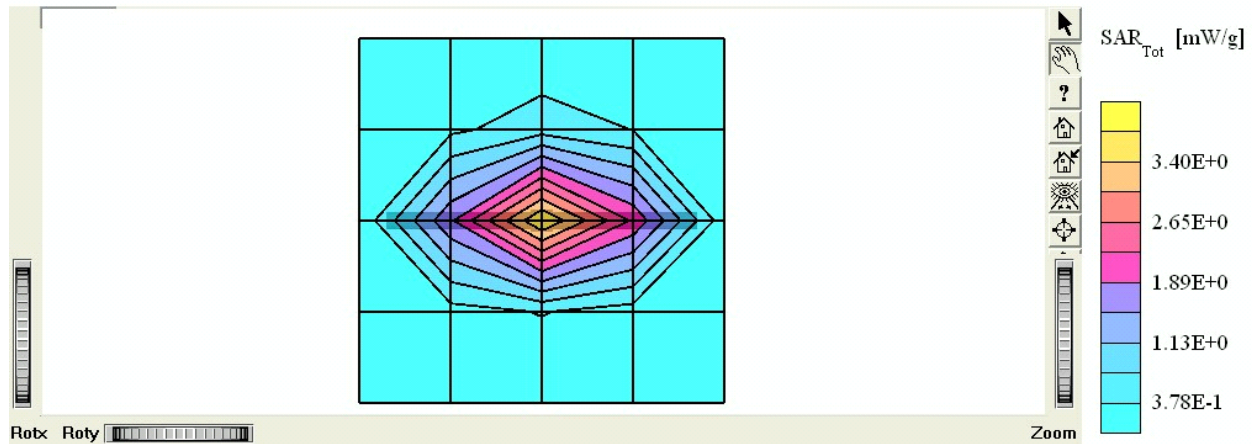
3.4mm surface detect/teflon caps on dipole

Humidity: 45.2

Ambient Temp: 23

Simulant Temp: 22.1

Validation_1900Body_537_1030_28May_03_T01



1900 MHz SAR distribution of validation dipole antenna from system performance check on May 28, 2003. Using muscle tissue.

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REPORT

18(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Appendix 2

SAR distribution plots for Phantom Head Adjacent Use



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REPORT

19(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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T226s

SAM 1020(L) Phantom; Left Hand Section; Position: (93°, 61°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.9$ $\rho = 1.00$ g/cm³

Cube 5x5x7: SAR (1g): 0.404 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: 0.05 dB

SN: A6101TVF63

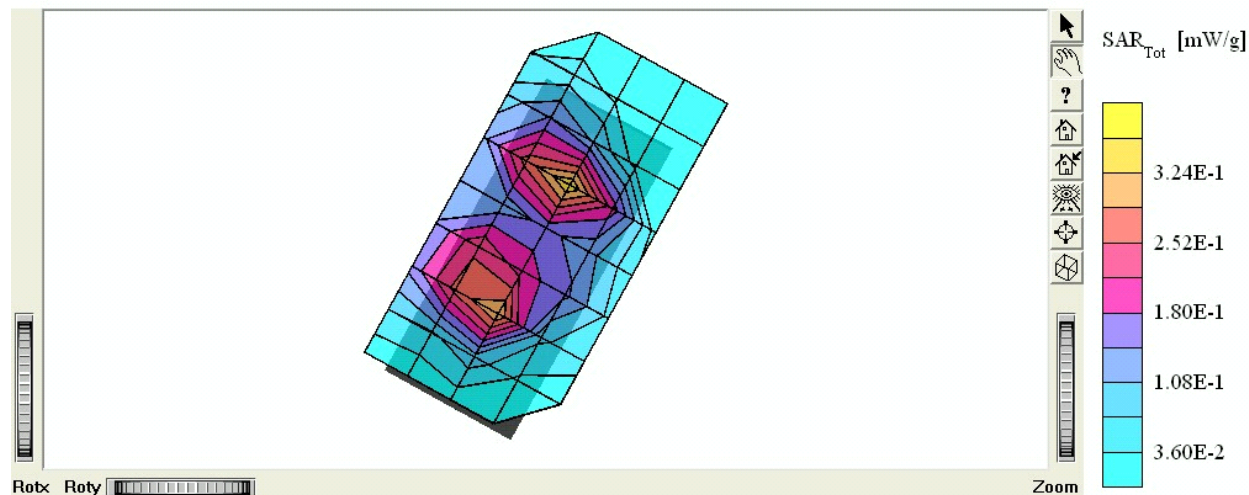
Battery: BKB 193 174 EP3/A

Humidity: 45.3

Ambient Temp: 24.0

Simulant Temp: 21.8

20May03_T226_GSM1900_VF63_CH512_LC01



Distribution of maximum SAR in 1900 GSM band. Measured against the left hand side of the head in the “cheek” position.



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REPORT

20(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Left Hand Section; Position: (93°, 61°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.44 \text{ mho/m}$ $\epsilon_r = 39.9$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.404 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

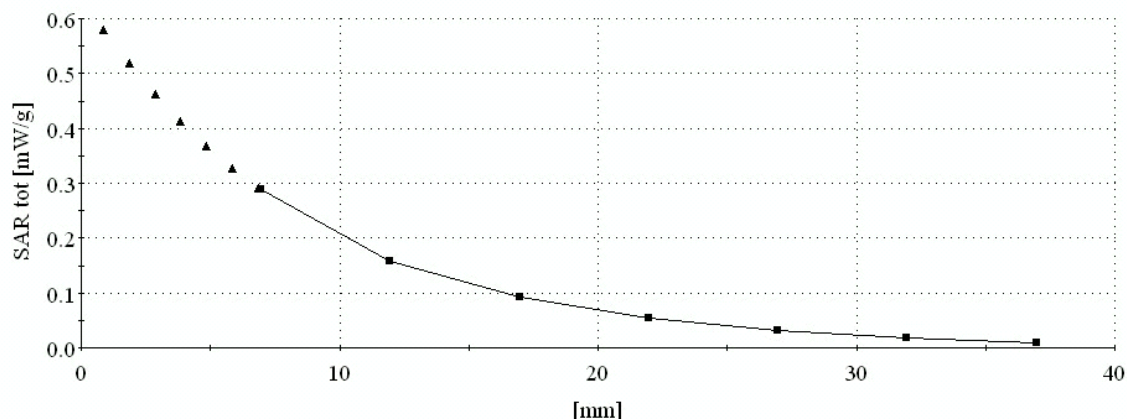
Battery: BKB 193 174 EP3/A

Humidity: 45.3

Ambient Temp: 24.0

Simulant Temp: 21.8

20May03_T226_GSM1900_VF63_CH512_LC01



SAR Extrapolation to the phantom inner surface. Measured for Maximum SAR in 1900 GSM band, while phone is against the left hand side of the head in the “cheek” position.



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REPORT

21(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Right Hand Section; Position: (93°, 299°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.45$ mho/m $\epsilon_r = 39.4$ $\rho = 1.00$ g/cm³

Cube 5x5x7: SAR (1g): 0.488 mW/g, SAR (10g): 0.258 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: 0.07 dB

SN: A6101TVF63

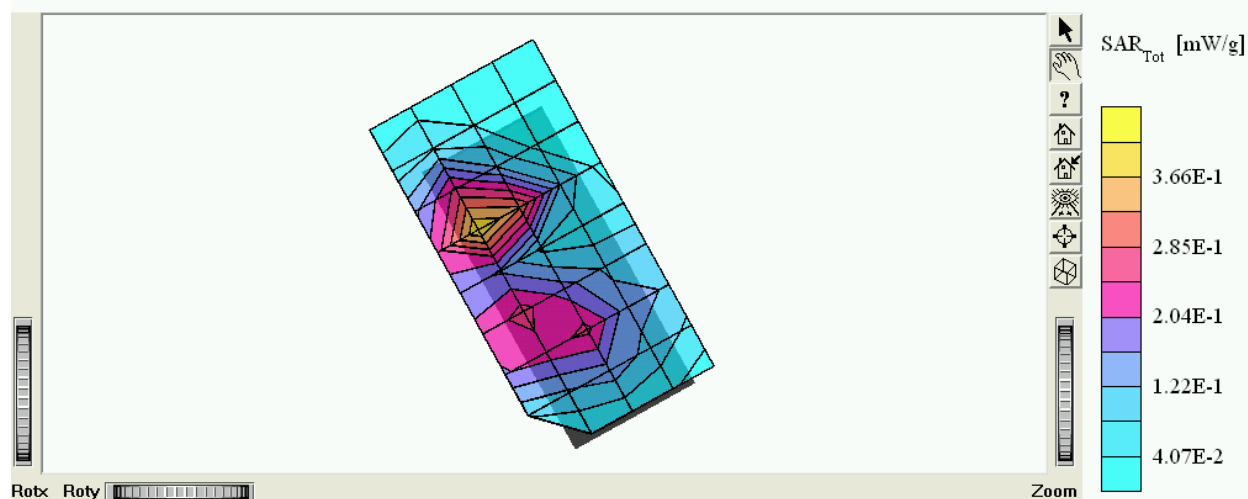
Battery: BKB 193 174 EP3/A

Humidity: 51.4

Ambient Temp: 22.0

Simulant Temp: 22.3

30May03_T226_GSM1900_VF63_CH512_RC01



Distribution of maximum SAR in 1900 GSM band. Measured against the right hand side of the head in the “cheek” position.



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REPORT

22(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Right Hand Section; Position: (93°, 299°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.45 \text{ mho/m}$, $\epsilon_r = 39.4$, $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.488 mW/g, SAR (10g): 0.258 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

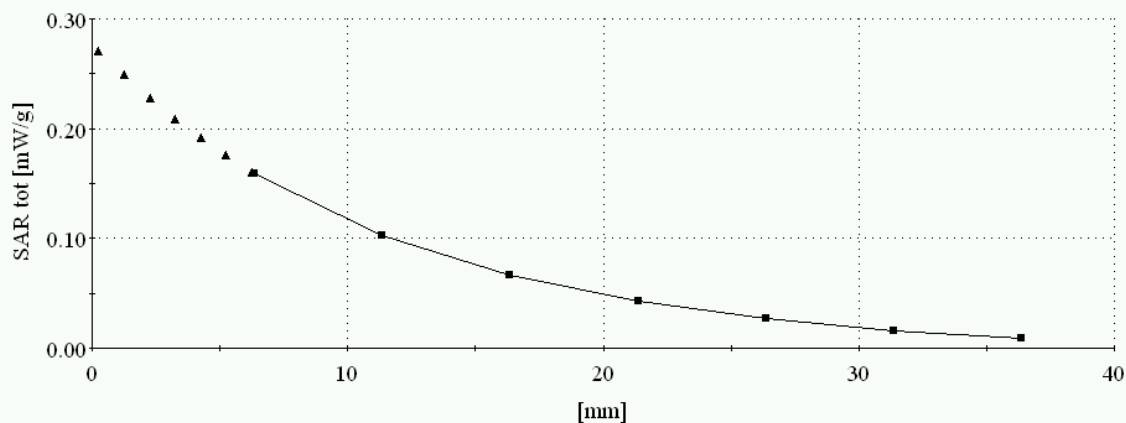
Battery: BKB 193 174 EP3/A

Humidity: 51.4

Ambient Temp: 22.0

Simulant Temp: 22.3

30May03_T226_GSM1900_VF63_CH512_RC01



SAR Extrapolation to the phantom inner surface. Measured for Maximum SAR in 1900 GSM band, while phone is against the right hand side of the head in the “cheek” position.



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23(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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T226s

SAM 1020(L) Phantom; Left Hand Section; Position: (108°,61°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.9$ $\rho = 1.00$ g/cm³

Cube 5x5x7: SAR (1g): 0.386 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.00 dB

SN: A6101TVF63

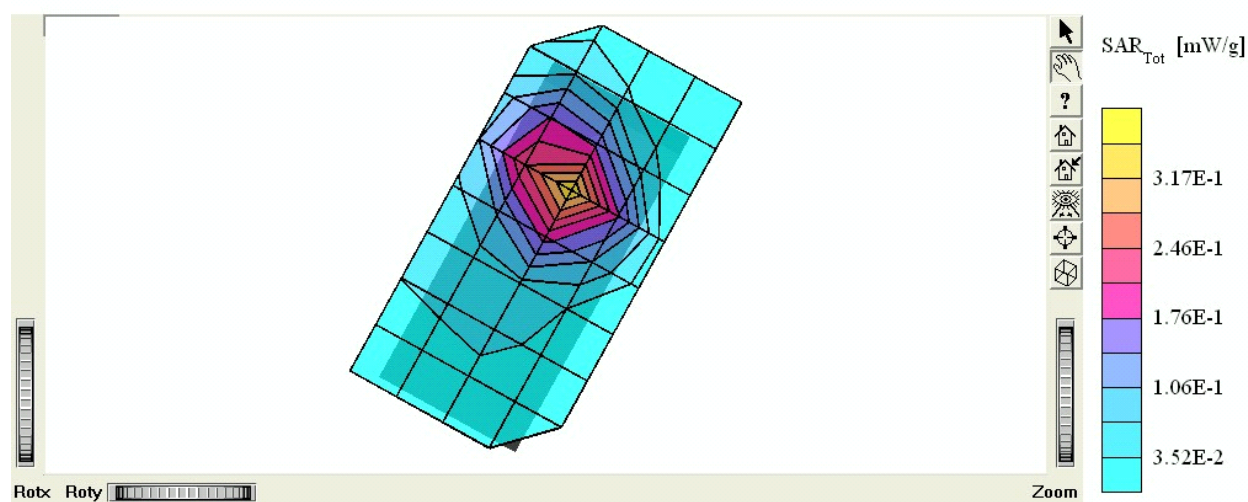
Battery: BKB 193 174 EP3/A

Humidity: 43.1

Ambient Temp: 23.4

Simulant Temp: 22.0

20May03_T226_GSM1900_VF63_CH512_LT01



Distribution of maximum SAR in 1900 GSM band. Measured against the left hand side of the head in the “tilt” position.



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24(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Left Hand Section; Position: (108°, 61°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.44 \text{ mho/m}$ $\epsilon_r = 39.9$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.386 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

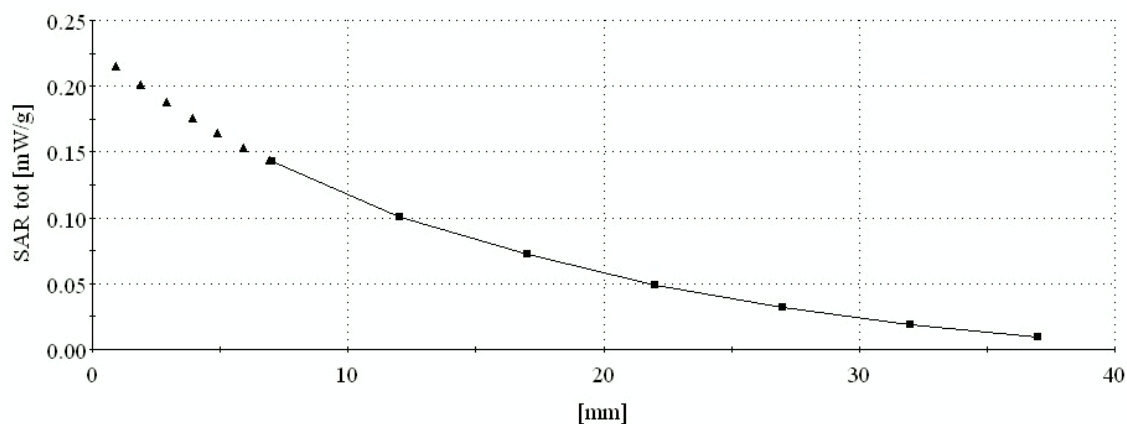
Battery: BKB 193 174 EP3/A

Humidity: 43.1

Ambient Temp: 23.4

Simulant Temp: 22.0

20May03_T226_GSM1900_VF63_CH512_LT01



SAR Extrapolation to the phantom inner surface. Measured for Maximum SAR in 1900 GSM band, while phone is against the left hand side of the head in the “tilt” position.



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25(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Right Hand Section; Position: (108°, 299°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.45 \text{ mho/m}$, $\epsilon_r = 39.0$, $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7; SAR (1g): 0.388 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.03 dB

SN: A6101TVF63

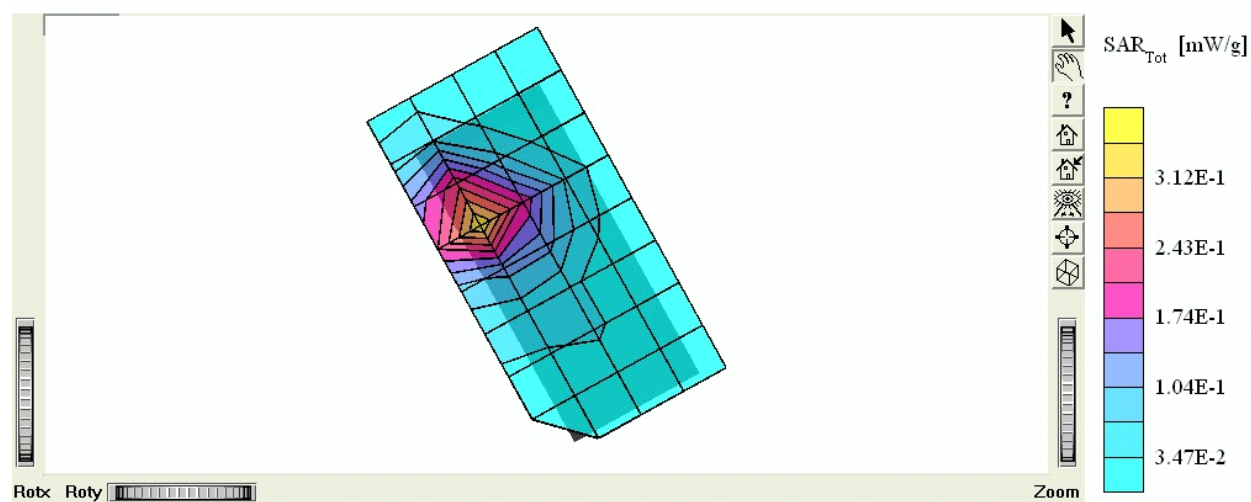
Battery: BKB 193 174 EP3/A

Humidity: 43

Ambient Temp: 23.8

Simulant Temp: 21.5

19May03_T226_GSM1900_VF63_CH512_RT01



Distribution of maximum SAR in 1900 GSM band. Measured against the right hand side of the head in the “tilt” position.



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26(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1020(L) Phantom; Right Hand Section; Position: (108°, 299°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1586; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Head 1900 MHz: $\sigma = 1.45 \text{ mho/m}$ $\epsilon_r = 39.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.388 mW/g, SAR (10g): 0.215 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

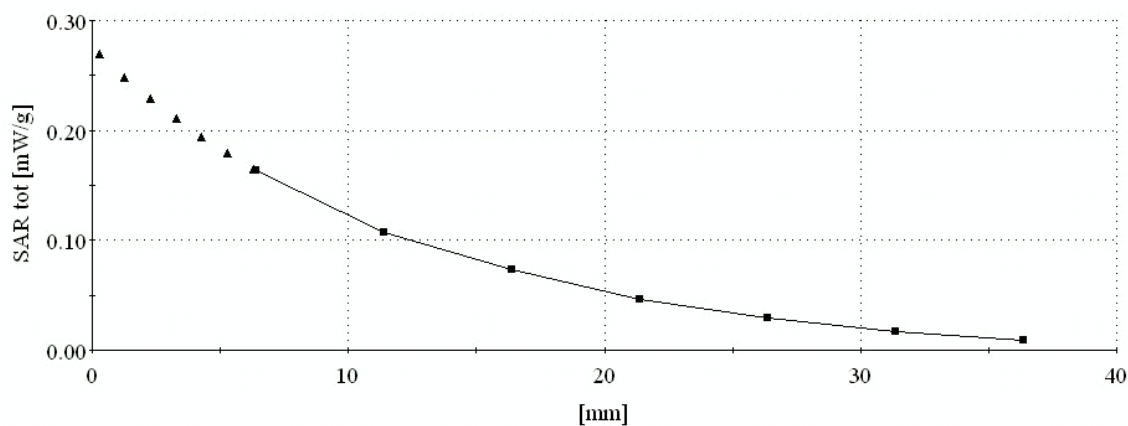
Battery: BKB 193 174 EP3/A

Humidity: 43

Ambient Temp: 23.8

Simulant Temp: 21.5

19May03_T226_GSM1900_VF63_CH512_RT01



SAR Extrapolation to the phantom inner surface. Measured for Maximum SAR in 1900 GSM band, while phone is against the right hand side of the head in the “tilt” position.

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27(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Appendix 3

SAR distribution plots for Body Worn Configuration



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28(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.629 mW/g, SAR (10g): 0.387 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.09 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

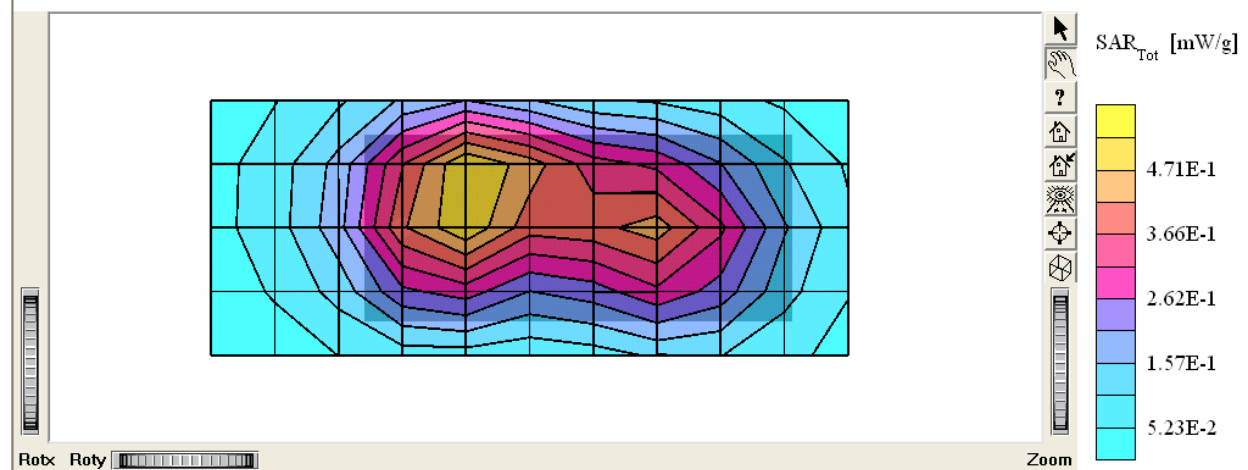
Holster: (ICT-14)

Humidity: 43.7

Ambient Temp: 24.1

Simulant Temp: 22.2

22May03_T226_GS1900_VF63_CH512_BB01



Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using carry accessory ICT-14 and hands free accessory RLF 501 25/04 (HPE-14).



Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.629 mW/g, SAR (10g): 0.387 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

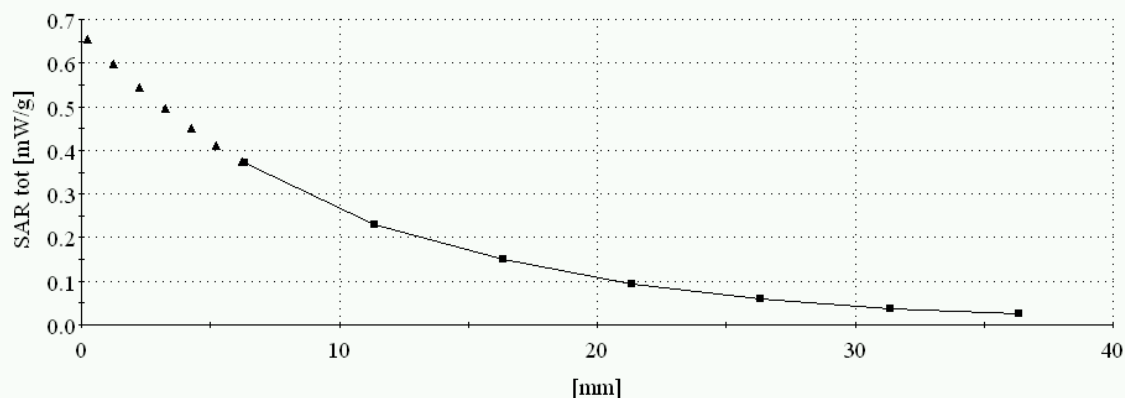
Holster: (ICT-14)

Humidity: 43.7

Ambient Temp: 24.1

Simulant Temp: 22.2

22May03_T226_GS1900_VF63_CH512_BB01



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while back of the phone is against the body using carry accessory ICT-14 and hands free accessory RLF 501 25/04 (HPE-14).



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REPORT

30(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.102 mW/g, SAR (10g): 0.0637 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.10 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

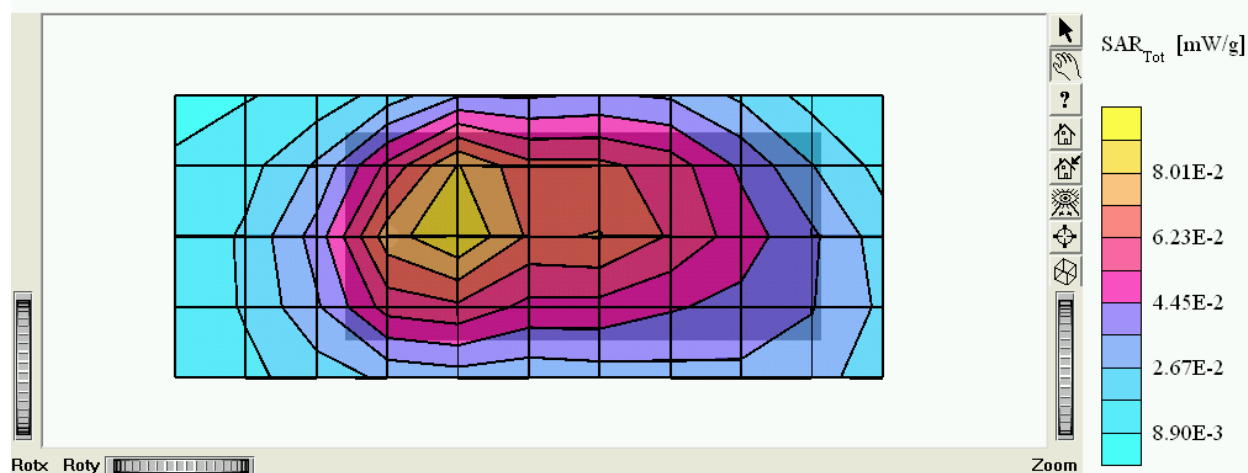
Holster: ICT-14

Humidity: 45.6

Ambient Temp:24.0

Simulant Temp:22.0

22May03_T226_GS1900_VF63_CH512_BF01



Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using carry accessory ICT-14 and hands free accessory RLF 501 25/04 (HPE-14).



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REPORT

31(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.102 mW/g, SAR (10g): 0.0637 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

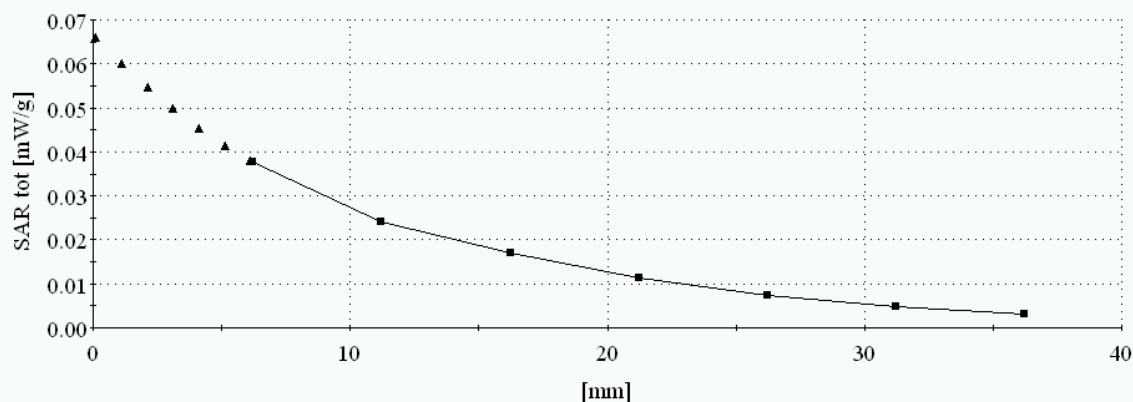
Holster: ICT-14

Humidity: 45.6

Ambient Temp:24.0

Simulant Temp:22.0

22May03_T226_GS1900_VF63_CH512_BF01



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while front of the phone is against the body using carry accessory ICT-14 and hands free accessory RLF 501 25/04 (HPE-14).



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REPORT

32(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.733 mW/g, SAR (10g): 0.445 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.11 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

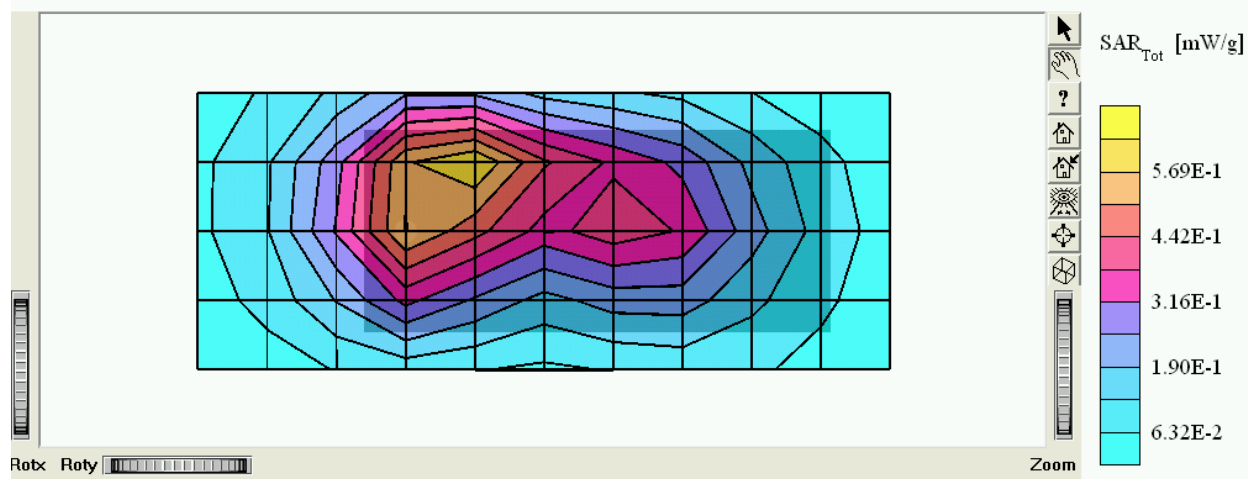
HolsterICE-25

Humidity: 45

Ambient Temp: 23.8

Simulant Temp: 22.0

22May03_T226_GS1900_VF63_CH512_BB02



Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using carry accessory ICE-25 and hands free accessory RLF 501 25/04 (HPE-14).



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REPORT

33(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°, 270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.733 mW/g, SAR (10g): 0.445 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

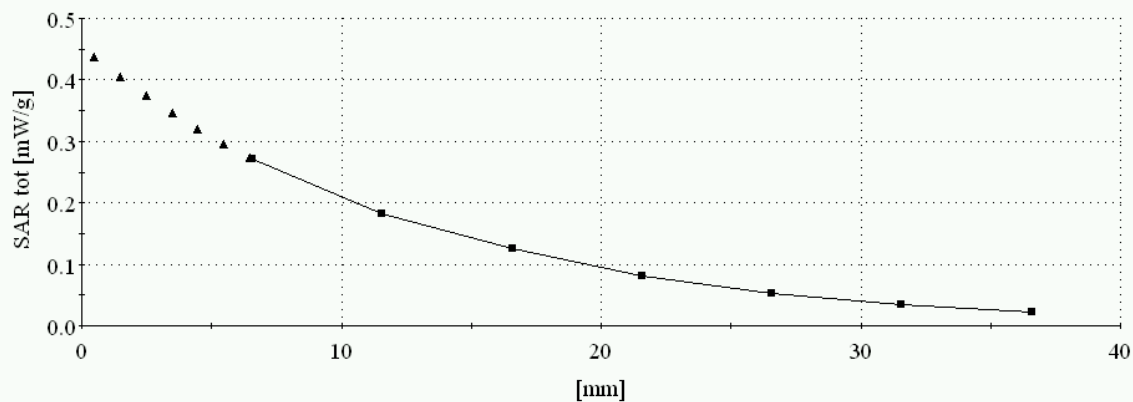
Holster: ICE-25

Humidity: 45

Ambient Temp: 23.8

Simulant Temp: 22.0

22May03_T226_GS1900_VF63_CH512_BB02



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while back of the phone is against the body using carry accessory ICE-25 and hands free accessory RLF 501 25/04 (HPE-14).



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34(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.0955 mW/g, SAR (10g): 0.0592 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.11 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

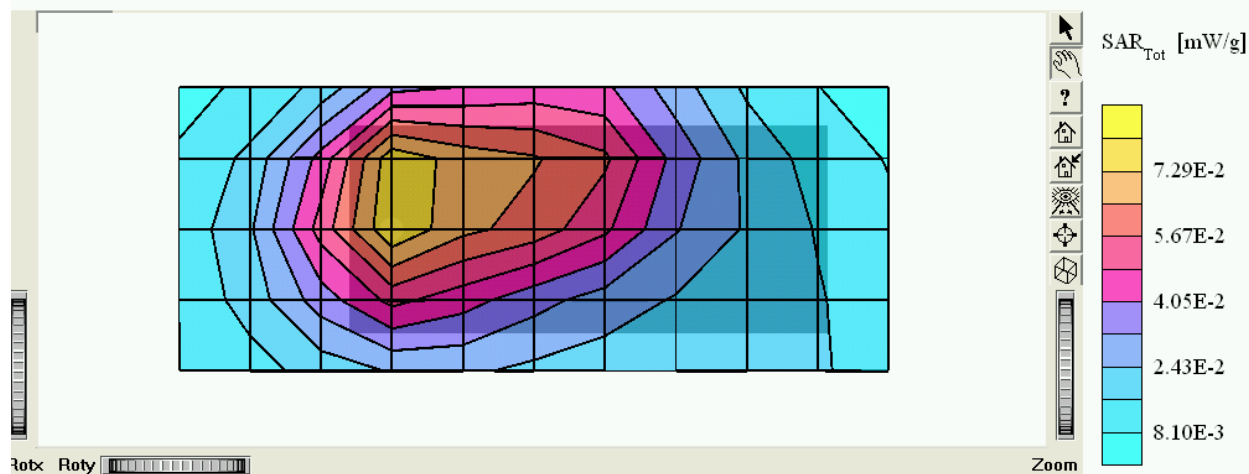
Holsterice-25

Humidity: 45.3

Ambient Temp: 23.7

Simulant Temp: 22.0

22May03_T226_GS1900_VF63_CH512_BF02



Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using carry accessory ICE-25 and hands free accessory RLF 501 25/04 (HPE-14).



Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.0955 mW/g, SAR (10g): 0.0592 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

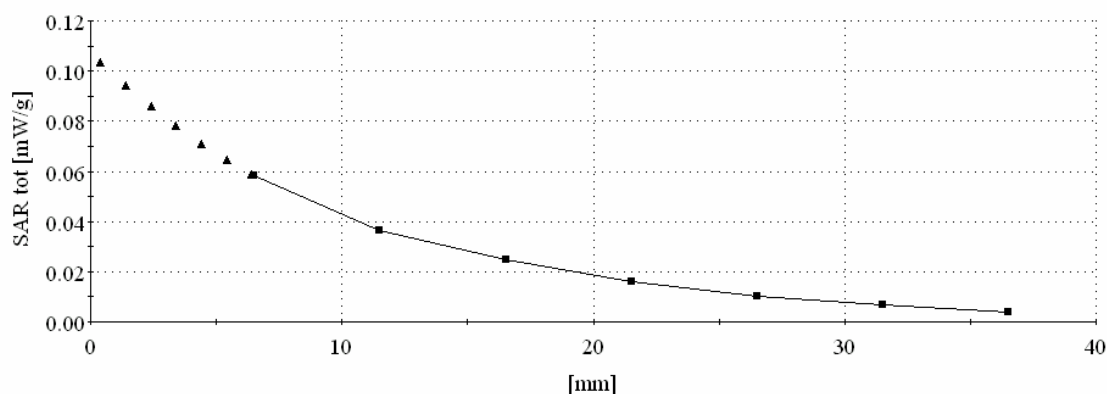
Holsterice-25

Humidity: 45.3

Ambient Temp: 23.7

Simulant Temp: 22.0

22May03_T226_GS1900_VF63_CH512_BF02



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while front of the phone is against the body using carry accessory ICE-25 and hands free accessory RLF 501 25/04 (HPE-14).



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Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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T226s

SAM 1030 (R) Phantom; Flat Section; Position: (87°, 270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.705 mW/g, SAR (10g): 0.431 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.03 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

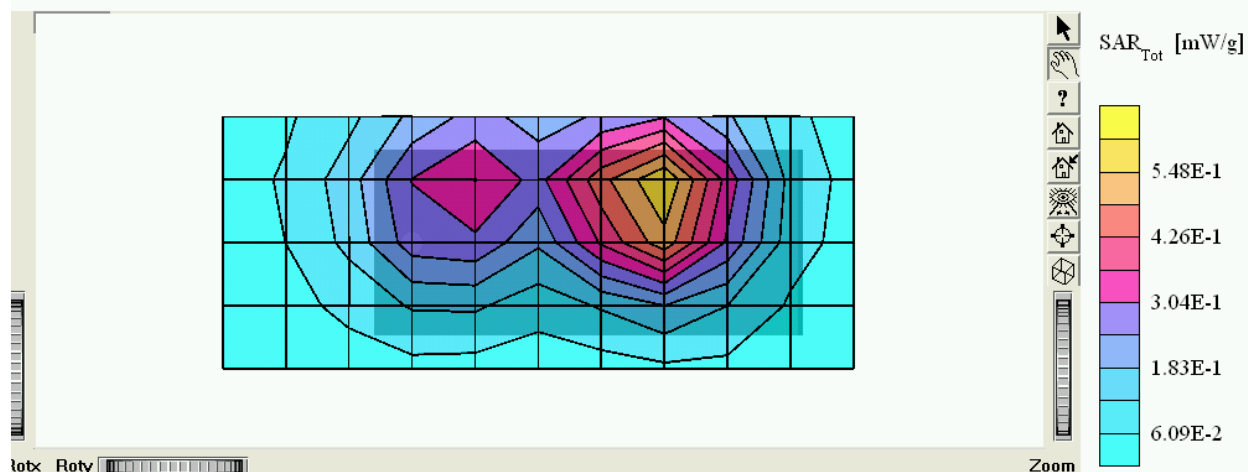
Holster: 20 mm spacer

Humidity: 45.2

Ambient Temp: 24.1

Simulant Temp: 22.2

22May03_T226_GS1900_VF63_CH660_BB03



Distribution of maximum SAR in 1900 GSM band. Measured with back of device facing the body using a 20mm spacer and hands free accessory RLF 501 25/04 (HPE-14).



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37(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (87°, 270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.705 mW/g, SAR (10g): 0.431 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

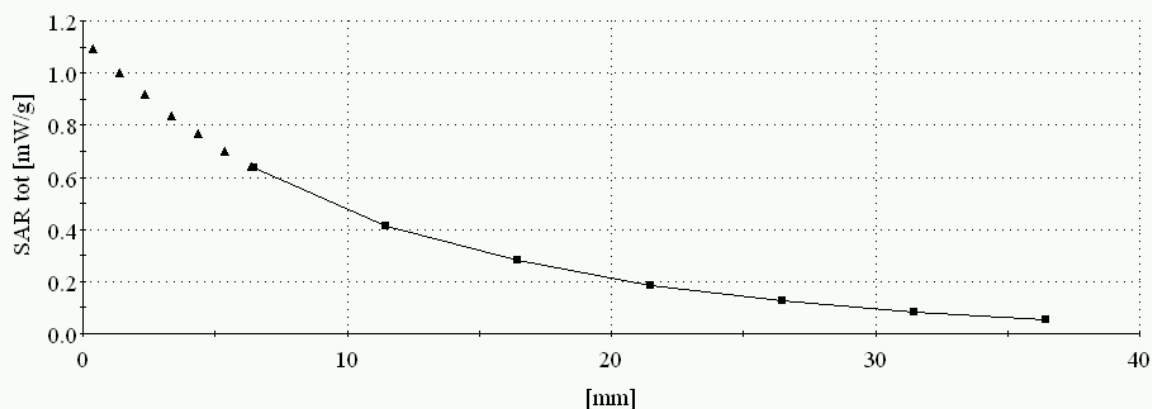
Holster: 20 mm spacer

Humidity: 45.2

Ambient Temp: 24.1

Simulant Temp: 22.2

22May03_T226_GS1900_VF63_CH660_BB03



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while back of the phone is against the body using a 20 mm spacer and hands free accessory RLF 501 25/04 (HPE-14).



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Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (90°,270°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.0601 mW/g, SAR (10g): 0.0371 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: -0.03 dB

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

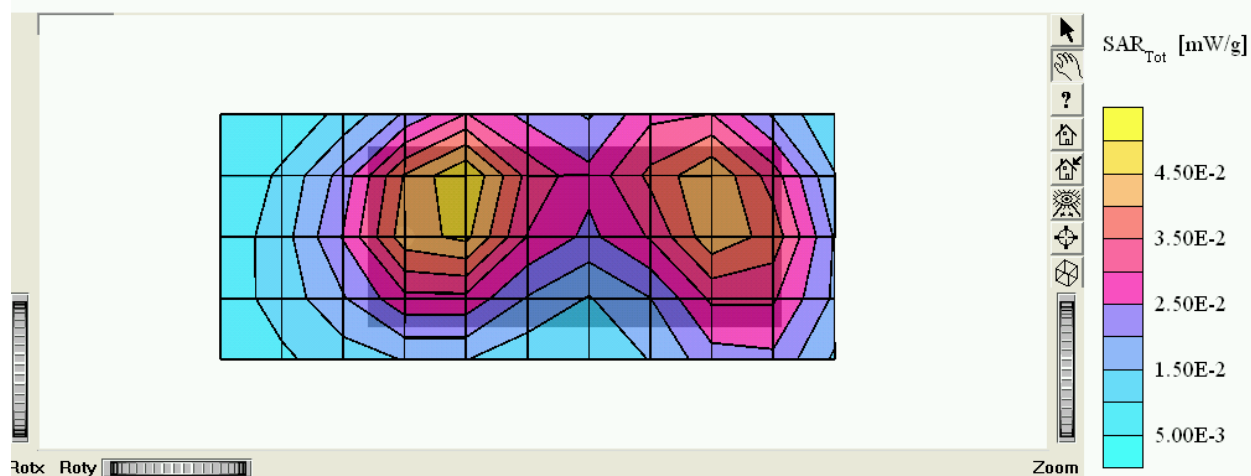
Holster: 20 mm spacer

Humidity: 44.8

Ambient Temp: 24.2

Simulant Temp: 22.1

22May03_T226_GS1900_VF63_CH512_BF03



Distribution of maximum SAR in 1900 GSM band. Measured with front of device facing the body using a 20mm spacer and hands free accessory RLF 501 25/04 (HPE-14).



Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

T226s

SAM 1030 (R) Phantom; Flat Section; Position: (87°, 270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1583; ConvF(5.10,5.10,5.10); Crest factor: 8.0; Body 1900 MHz: $\sigma = 1.53 \text{ mho/m}$ $\epsilon_r = 53.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.705 mW/g, SAR (10g): 0.431 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

SN: A6101TVF63

Battery: BKB 193 174 EP3/A

Hands free: RLF 501 25/04 (HPE-14)

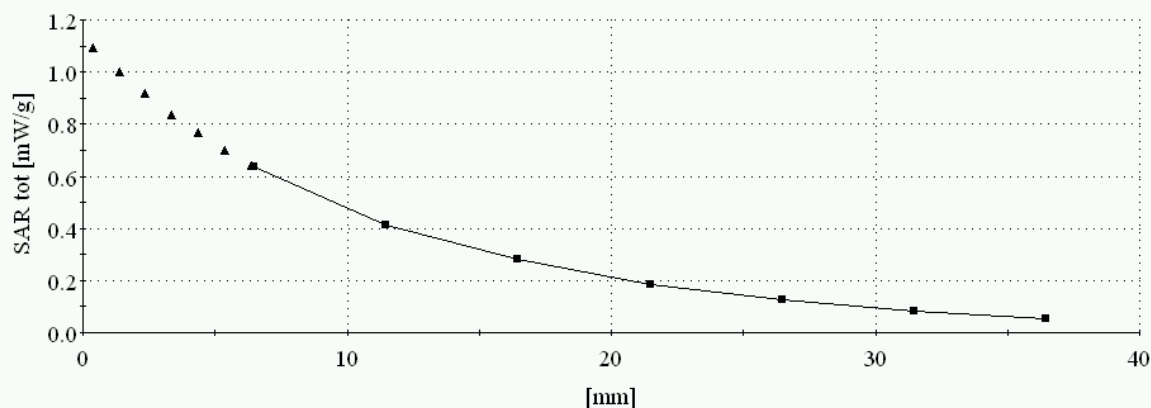
Holster: 20 mm spacer

Humidity: 45.2

Ambient Temp: 24.1

Simulant Temp: 22.2

22May03_T226_GS1900_VF63_CH660_BB03



SAR Extrapolation to the phantom inner surface. Measured for maximum SAR in 1900 GSM band, while front of the phone is against the body using a 20 mm spacer and hands free accessory RLF 501 25/04 (HPE-14).

APPLICANT: Sony Ericsson Mobile Communications Inc.

FCC ID: **PY7A1041012**



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Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Appendix 4

Probe Calibration Certificate



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Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1586

June 20, 2002

DASY3 - Parameters of Probe: ET3DV6 SN:1586

Sensitivity in Free Space

Diode Compression

NormX	$1.81 \mu\text{V}/(\text{V}/\text{m})^2$	DCP X	97	mV
NormY	$1.78 \mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	97	mV
NormZ	$1.72 \mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	97	mV

Sensitivity in Tissue Simulating Liquid

Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\%$ mho/m
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
	ConvF X	$6.6 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$6.6 \pm 9.5\%$ (k=2)	Alpha 0.33
	ConvF Z	$6.6 \pm 9.5\%$ (k=2)	Depth 2.61
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
	ConvF X	$5.1 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$5.1 \pm 9.5\%$ (k=2)	Alpha 0.51
	ConvF Z	$5.1 \pm 9.5\%$ (k=2)	Depth 2.40

Boundary Effect

Head	835 MHz	Typical SAR gradient: 5 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%] Without Correction Algorithm		9.1	5.0
SAR _{be} [%] With Correction Algorithm		0.4	0.6
Head	1900 MHz	Typical SAR gradient: 10 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%] Without Correction Algorithm		11.9	8.1
SAR _{be} [%] With Correction Algorithm		0.3	0.3

Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.7 ± 0.2	mm



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REPORT

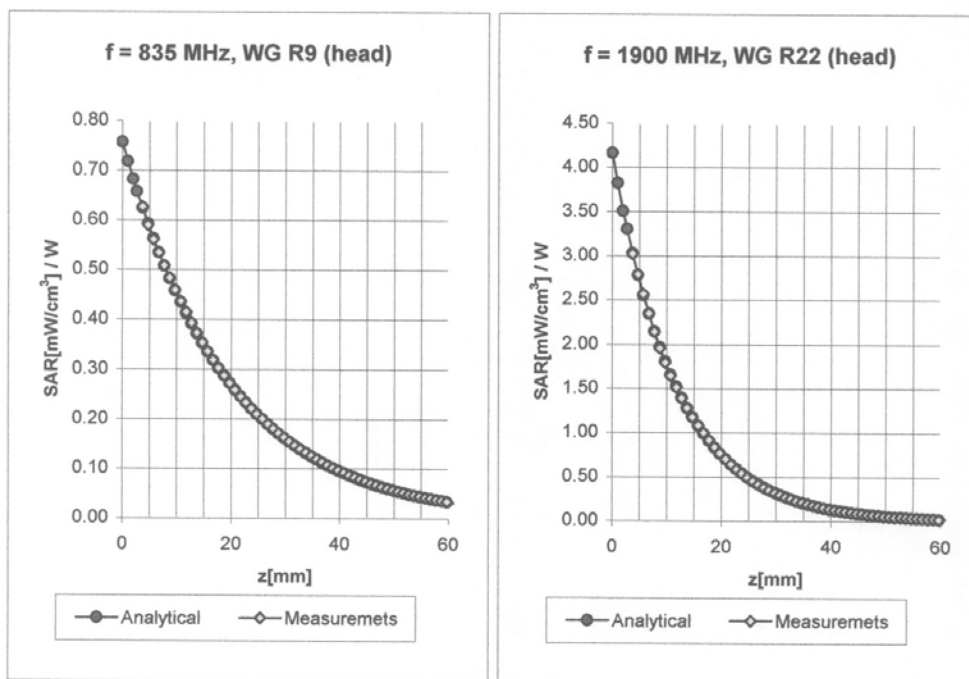
42(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1586

June 20, 2002

Conversion Factor Assessment



Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\%$ mho/m
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
	ConvF X	6.6 $\pm$ 9.5% (k=2)	Boundary effect:
	ConvF Y	6.6 $\pm$ 9.5% (k=2)	Alpha 0.33
	ConvF Z	6.6 $\pm$ 9.5% (k=2)	Depth 2.61
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
	ConvF X	5.1 $\pm$ 9.5% (k=2)	Boundary effect:
	ConvF Y	5.1 $\pm$ 9.5% (k=2)	Alpha 0.51
	ConvF Z	5.1 $\pm$ 9.5% (k=2)	Depth 2.40



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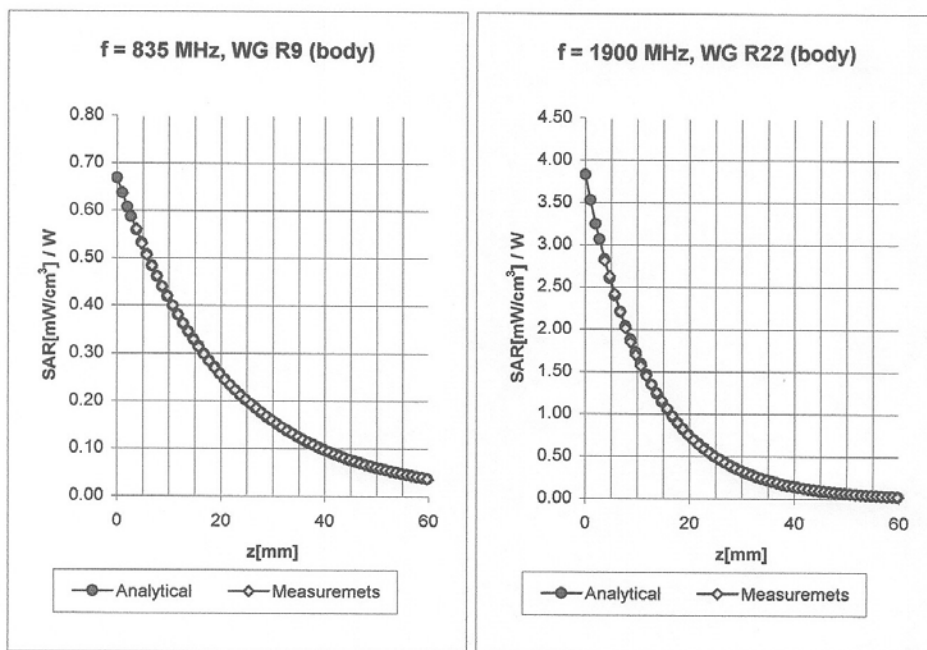
43(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1586

June 20, 2002

Conversion Factor Assessment



Body	835 MHz	$\epsilon_r = 55.2 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
Body	900 MHz	$\epsilon_r = 55.0 \pm 5\%$	$\sigma = 1.05 \pm 5\% \text{ mho/m}$
	ConvF X	$6.3 \pm 9.5\% (k=2)$	Boundary effect:
	ConvF Y	$6.3 \pm 9.5\% (k=2)$	Alpha 0.34
	ConvF Z	$6.3 \pm 9.5\% (k=2)$	Depth 2.67
Body	1900 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\% \text{ mho/m}$
Body	1800 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\% \text{ mho/m}$
	ConvF X	$4.8 \pm 9.5\% (k=2)$	Boundary effect:
	ConvF Y	$4.8 \pm 9.5\% (k=2)$	Alpha 0.72
	ConvF Z	$4.8 \pm 9.5\% (k=2)$	Depth 2.08



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44(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1583

December 19, 2002

DASY - Parameters of Probe: ET3DV6 SN:1583

Sensitivity in Free Space

Diode Compression

NormX	1.72 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	93	mV
NormY	1.92 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	93	mV
NormZ	1.86 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	93	mV

Sensitivity in Tissue Simulating Liquid

Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\% \text{ mho/m}$
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
ConvF X	7.1 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	7.1 $\pm 9.5\%$ (k=2)	Alpha	0.36
ConvF Z	7.1 $\pm 9.5\%$ (k=2)	Depth	2.31
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
ConvF X	5.6 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.6 $\pm 9.5\%$ (k=2)	Alpha	0.49
ConvF Z	5.6 $\pm 9.5\%$ (k=2)	Depth	2.42

Boundary Effect

Head	835 MHz	Typical SAR gradient: 5 % per mm		
	Probe Tip to Boundary		1 mm	2 mm
	SAR _{be} [%] Without Correction Algorithm		8.2	4.5
	SAR _{be} [%] With Correction Algorithm		0.3	0.4
Head	1900 MHz	Typical SAR gradient: 10 % per mm		
	Probe Tip to Boundary		1 mm	2 mm
	SAR _{be} [%] Without Correction Algorithm		11.7	8.0
	SAR _{be} [%] With Correction Algorithm		0.3	0.4

Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.5 $\pm$ 0.2	mm



Sony Ericsson

REPORT

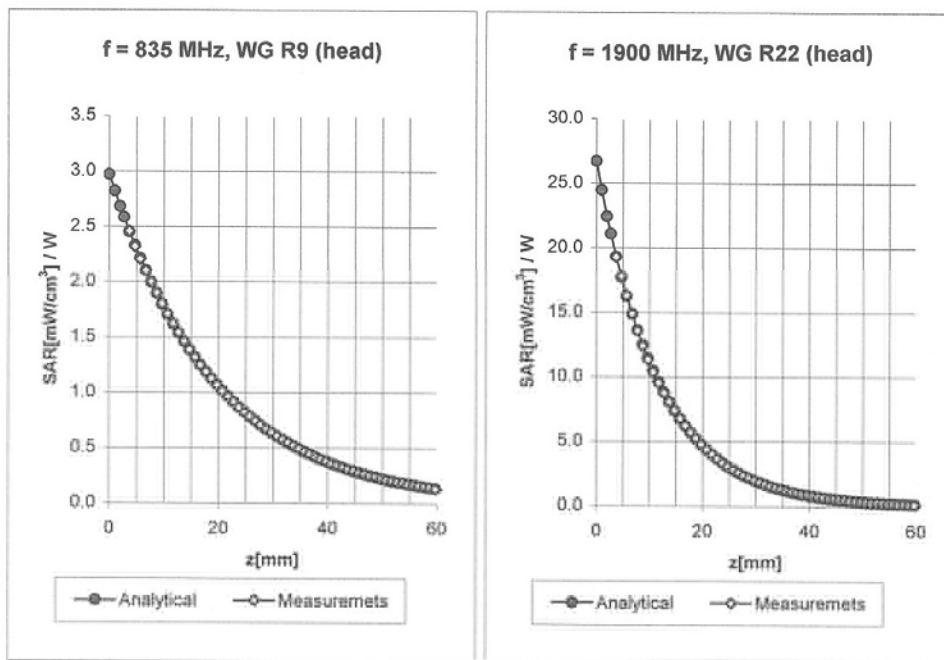
45(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1583

December 19, 2002

Conversion Factor Assessment



Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\%$ mho/m
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
ConvF X	7.1 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	7.1 $\pm 9.5\%$ (k=2)	Alpha	0.36
ConvF Z	7.1 $\pm 9.5\%$ (k=2)	Depth	2.31
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
ConvF X	5.6 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.6 $\pm 9.5\%$ (k=2)	Alpha	0.49
ConvF Z	5.6 $\pm 9.5\%$ (k=2)	Depth	2.42



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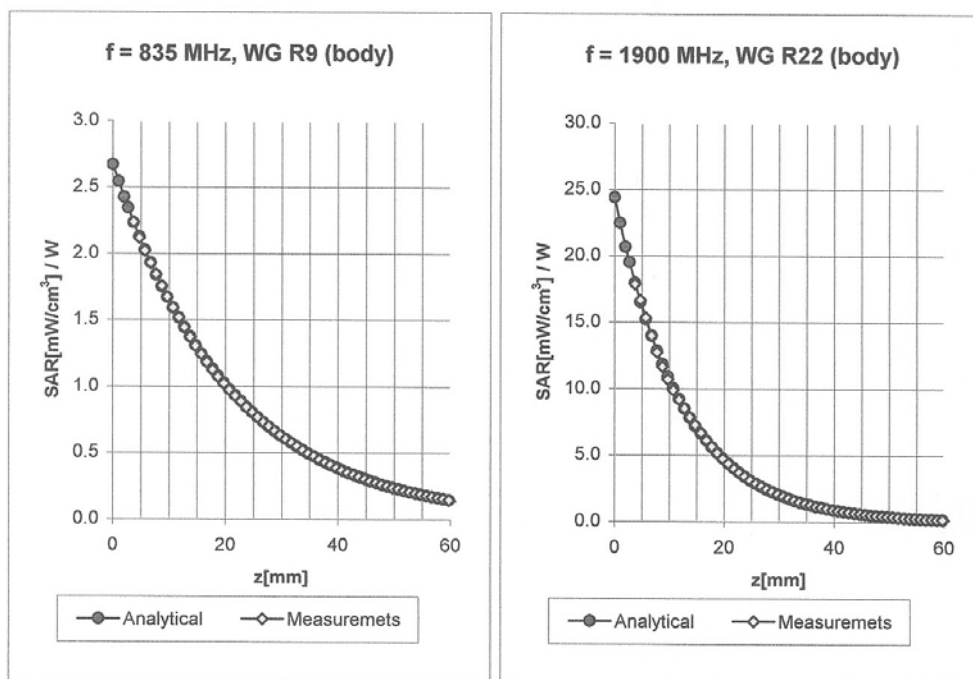
46(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1583

December 19, 2002

Conversion Factor Assessment



Body	835 MHz	$\epsilon_r = 55.2 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
Body	900 MHz	$\epsilon_r = 55.0 \pm 5\%$	$\sigma = 1.05 \pm 5\% \text{ mho/m}$
	ConvF X	6.8 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	6.8 $\pm 9.5\%$ (k=2)	Alpha 0.35
	ConvF Z	6.8 $\pm 9.5\%$ (k=2)	Depth 2.46
Body	1900 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\% \text{ mho/m}$
Body	1800 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\% \text{ mho/m}$
	ConvF X	5.1 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	5.1 $\pm 9.5\%$ (k=2)	Alpha 0.69
	ConvF Z	5.1 $\pm 9.5\%$ (k=2)	Depth 2.11



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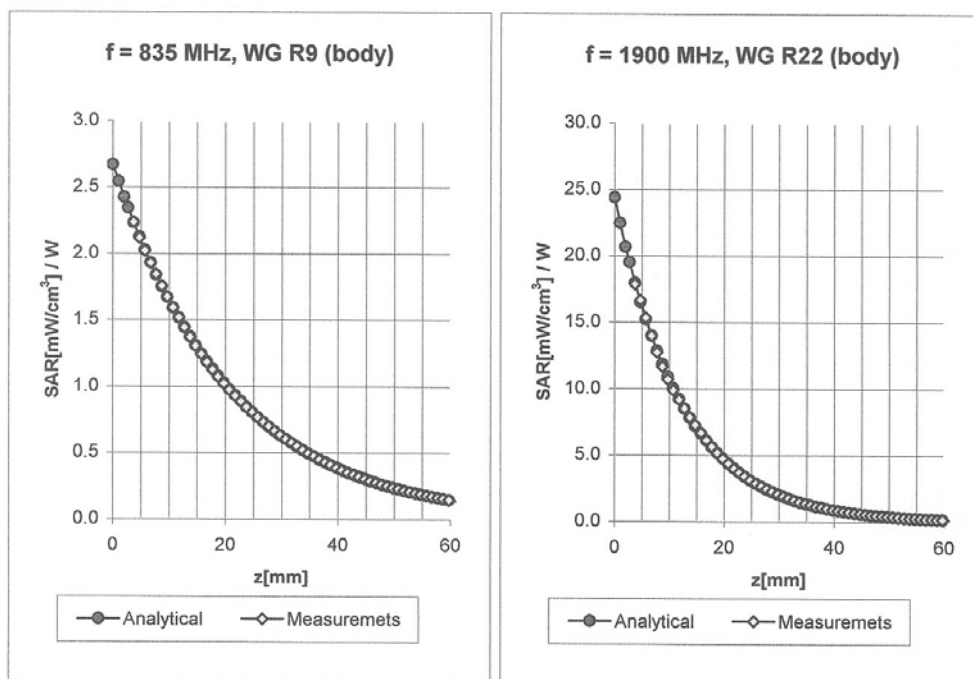
47(60)

Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

ET3DV6 SN:1583

December 19, 2002

Conversion Factor Assessment



Body	835 MHz	$\epsilon_r = 55.2 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
Body	900 MHz	$\epsilon_r = 55.0 \pm 5\%$	$\sigma = 1.05 \pm 5\%$ mho/m
	ConvF X	$6.8 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$6.8 \pm 9.5\%$ (k=2)	Alpha 0.35
	ConvF Z	$6.8 \pm 9.5\%$ (k=2)	Depth 2.46
Body	1900 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\%$ mho/m
Body	1800 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\%$ mho/m
	ConvF X	$5.1 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$5.1 \pm 9.5\%$ (k=2)	Alpha 0.69
	ConvF Z	$5.1 \pm 9.5\%$ (k=2)	Depth 2.11

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Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
Approved SEM/ CV/PF/PC Gerard Hayes	Checked GJH	A	\\Usrtmsw20\Users3\$\10020757\FCC\SAR Test Report of Portable Cellular Phone T226s.doc

Appendix 5

Measurement Uncertainty Budget



Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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1. Table 1. Uncertainty Budget for System Performance Check (Dipole & flat phantom)

<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 ($k=1$)	E.2.1	4.8	N	1	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	8.3	R	1.73	1	1	4.8	4.8	∞
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	0.0	R	1.73	1	1	0.0	0.0	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
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 constraints 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	3.9	R	1.73	1	1	2.3	2.3	∞
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	4.2	R	1.73	0.64	0.43	1.55	1.04	∞
Liquid Conductivity - measurement uncertainty (6)	E.3.3	6.20	R	1.73	0.64	0.43	2.29	1.54	∞
Liquid Permittivity - deviation from target values (5)	E.3.2	3.3	R	1.73	0.6	0.49	1.14	0.93	∞
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				10.59	10.29	
Expanded Uncertainty (95% CONFIDENCE LEVEL)							21.17	20.59	



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2. Table 2. Uncertainty Budget for the Device Under Test

<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 ($k=1$)	E.2.1	4.8	N	1	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	8.3	R	1.73	1	1	4.8	4.8	∞
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	1.4	R	1.73	1	1	0.8	0.8	∞
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 constraints 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	3.9	R	1.73	1	1	2.3	2.3	∞
Test sample Related									
Test Sample Positioning	E.4.2	1.2	N	1	1	1	1.2	1.2	4
Device Holder Uncertainty	E.4.1	1.2	R	1.73	1	1	0.7	0.7	4
Output Power Variation - SAR drift measurement (4)	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values (5)	E.3.2	4.2	R	1.73	0.64	0.43	1.6	1.0	∞
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	3.3	R	1.73	0.6	0.49	1.1	0.9	∞
Liquid Permittivity - measurement uncertainty (6)	E.3.3	6.08	R	1.73	0.6	0.49	2.1	1.7	∞



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Combined Standard Uncertainty			RSS				10.71	10.40	
Expanded Uncertainty (95% CONFIDENCE LEVEL)			K=2				21.41	20.80	

Table 4a. Values for ϵ'

Uncertainty Component	Tolerance ($\pm\%$)	Probability Distribution	Divisor	c_i	Standard Uncertainty ($\pm\%$)	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	∞
<u>Combined standard uncertainty</u>					6.08	

Table 4b. Values for σ

Uncertainty Component	Tolerance ($\pm\%$)	Probability Distribution	Divisor	c_i	Standard Uncertainty ($\pm\%$)	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	∞
<u>Combined standard uncertainty</u>					6.20	

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Appendix 6

Photographs of the device under test

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**Front view of device****Back view of device**

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**Side view of device**

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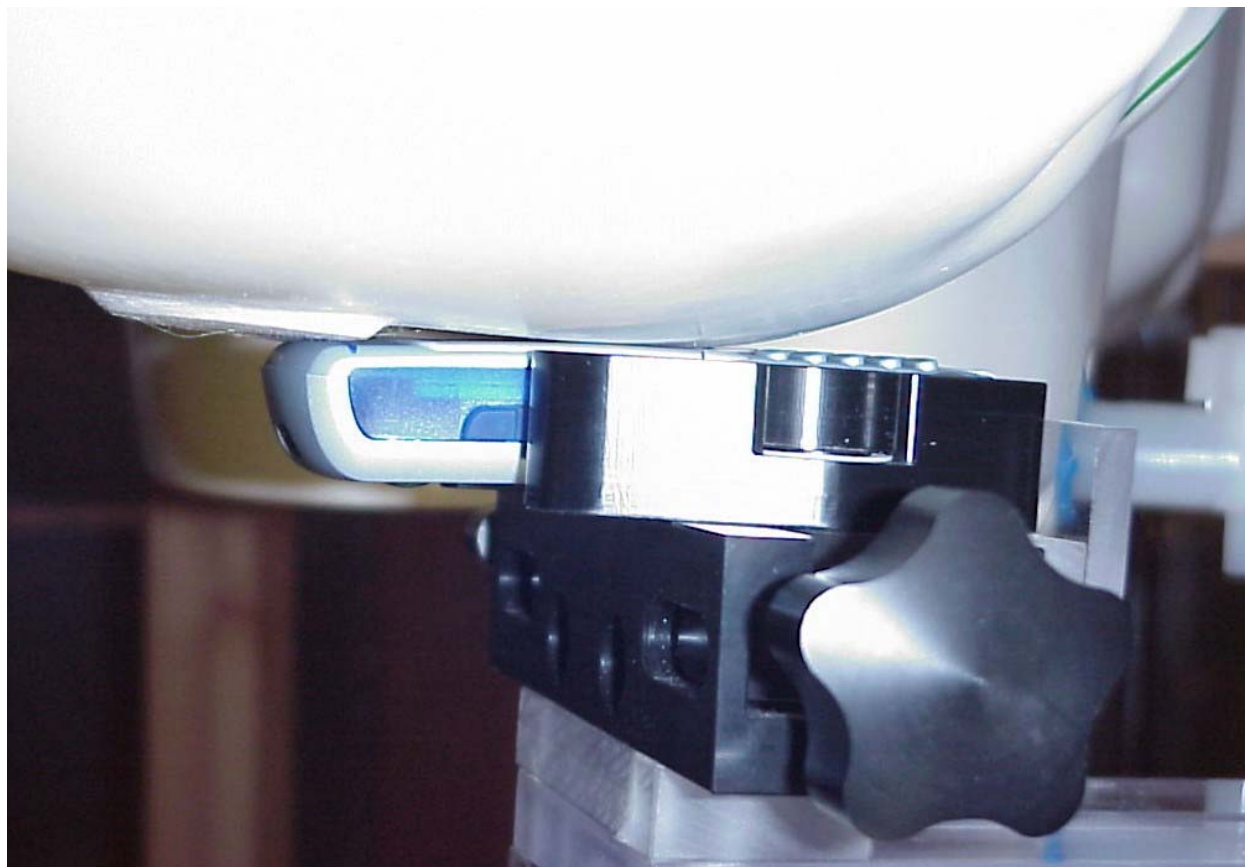
Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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Front, back, and side views of carry accessory model ICT-14.



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



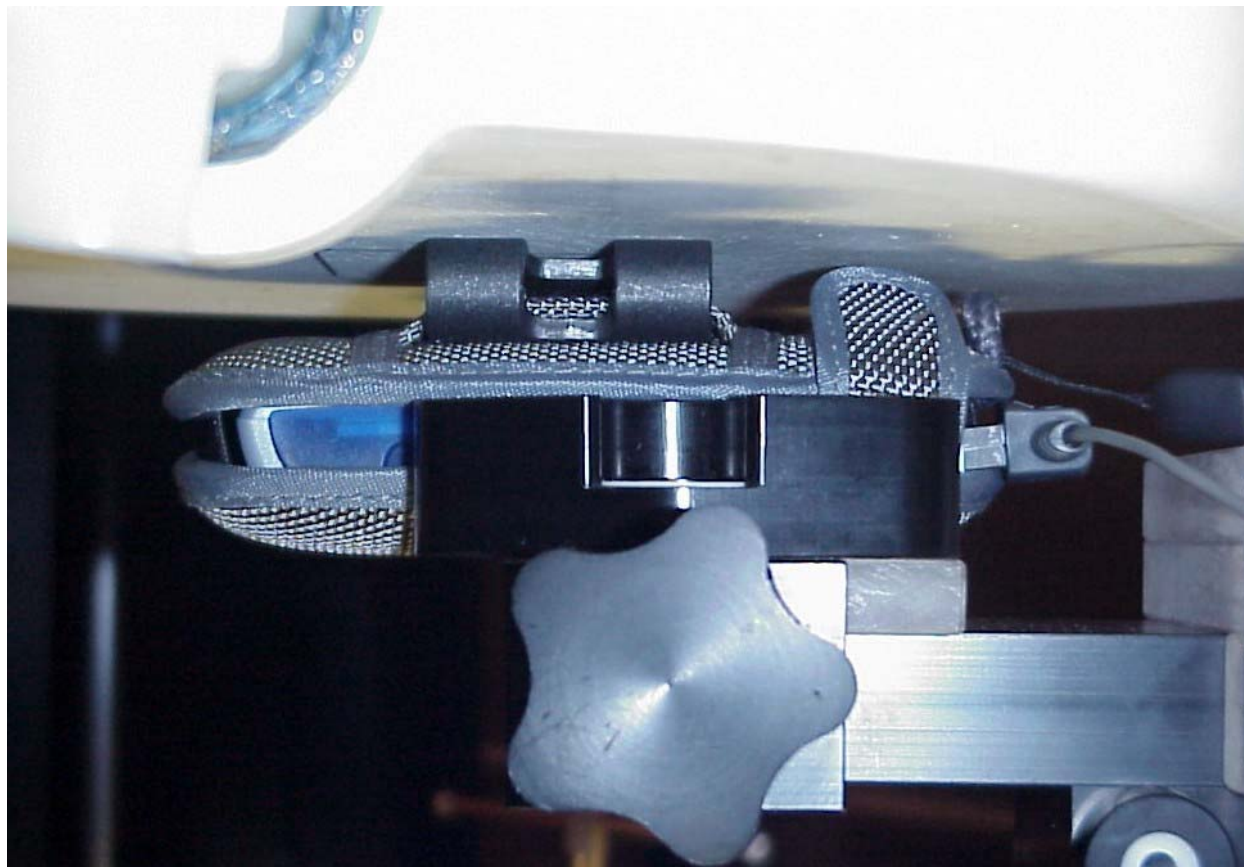
Prepared (also subject responsible if other) SEM/CV/PF/P Dulce Altabella		No. SEM/CA/P-03:0110/REP	
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Position of device against head phantom using the “tilt” position



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Position of device against flat phantom using carry accessory ICT-14 with hands free accessory RLF 501 25/04 (HPE-14).



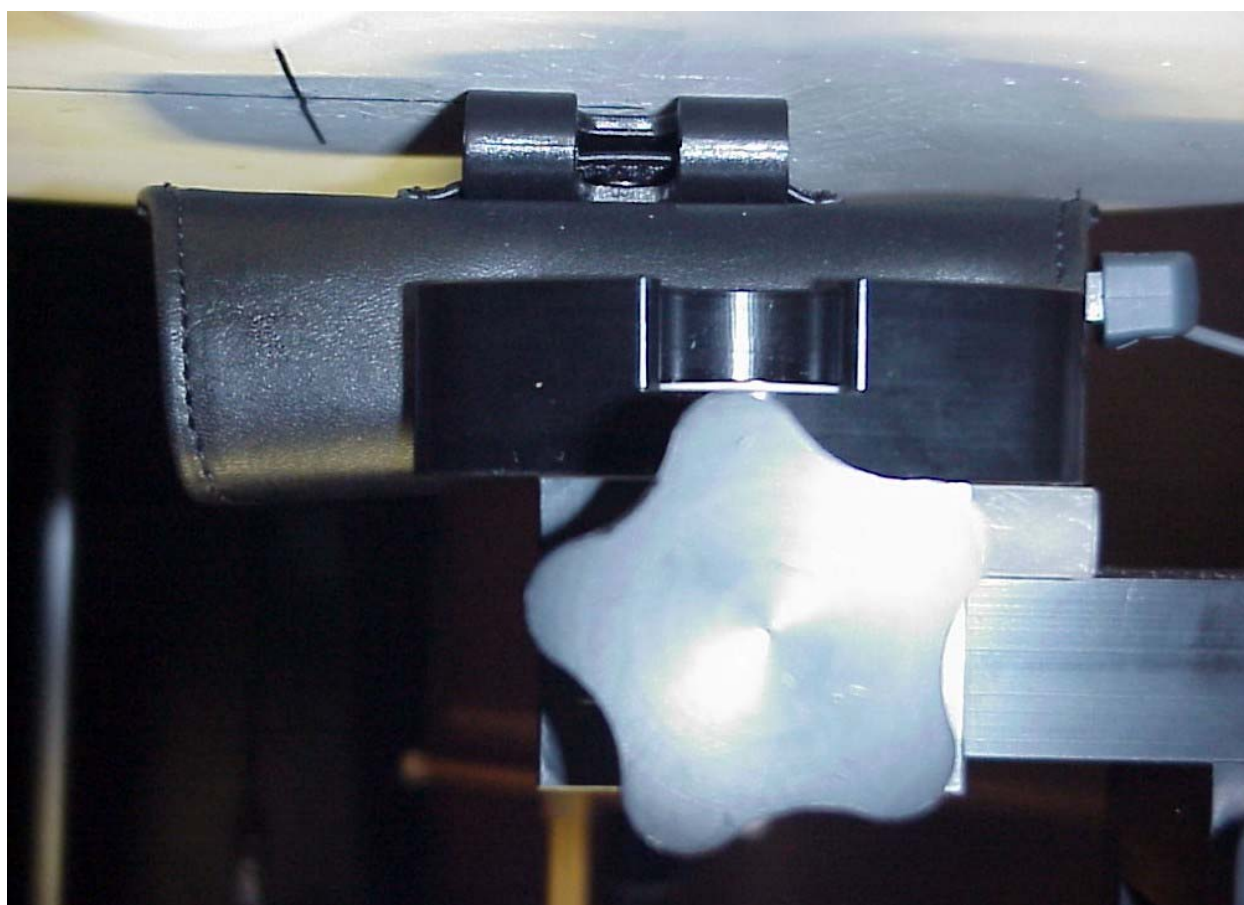
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Position of device against flat phantom using a 20 mm spacer with hands free accessory RLF 501 25/04 (HPE-14).



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Position of device against flat phantom using carry accessory ICE-25 with hands free accessory RLF 501 25/04 (HPE-14).