RF EXPOSURE EVALUATION

SPECIFIC ABSORPTION RATE

SAR TEST REPORT

FOR THE

PALM, INC.

PORTABLE DUAL-BAND PCS/CELLULAR CDMA2000 PHONE WITH BLUETOOTH

MODEL(S): TREO XXX

FCC ID: O8FJIMI

IC: 3905A-JIMI

Test Report Serial Number

082205O8F-T664-S24C
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DECLARATION OF COMPLIANCE
SAR RF EXPOSURE EVALUATION

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FCC IDENTIFER:	**O8FJIMI**
IC IDENTIFIER:	**3905A-JIMI**
Model(s):	**Treo XXX**
FCC Rule Part(s):	**47 CFR §2.1093; IC RSS-102 Issue 1 (Provisional)**
Test Procedure(s):	**FCC OET Bulletin 65, Supplement C (01-01)** **IEEE Standard 1528-2003**
FCC Classification:	**PCS Licensed Transmitter held to ear (PCE)**
Device Description:	**Portable Dual-Band PCS/Cellular CDMA2000 Phone with co-located Bluetooth**
Tx Frequency Range(s):	**1851.25 - 1908.75 MHz (PCS CDMA)** **824.70 - 848.31 MHz (Cellular CDMA)** **2402 - 2480 MHz (Bluetooth)**
Max. RF Output Power Tested:	**23.8 dBm Conducted (PCS CDMA)** **24.0 dBm Conducted (Cellular CDMA)** **0 dBm Peak Conducted (Bluetooth)**
Battery Type(s) Tested:	**Lithium-ion 3.7 VDC (P/N: 157-10014-00)**
Antenna Type(s) Tested:	**Fixed Stubby (Dual-Band CDMA)** **Internal (Bluetooth)**
Body-Worn Accessories Tested:	**Leather Side Case with Belt-Clip (SKU#3180WW)** **Leather Pouch and Swivel Belt-Clip (SKU#3179WW)**
Additional Configuration(s) Tested:	**1.5 cm Air-Gap Spacing (Front and Back Sides of DUT)**
Audio Accessories Tested:	**Generic Ear-Microphone**
Max. SAR Levels Evaluated:	**Head: 1.26 W/kg (PCS Band); 1.26 W/kg (Cellular Band)** **Body: 0.548 W/kg (PCS Band); 1.01 W/kg (Cellular Band)**

Celltech Labs Inc. declares under its sole responsibility that this wireless portable device has demonstrated compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC 47 CFR §2.1093 and Health Canada's Safety Code 6. The device was tested in accordance with the measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C (Edition 01-01), Industry Canada RSS-102 Issue 1 (Provisional), and IEEE Standard 1528-2003 for the General Population / Uncontrolled Exposure environment. All measurements were performed in accordance with the SAR system manufacturer recommendations.

I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By:

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1.0 INTRODUCTION

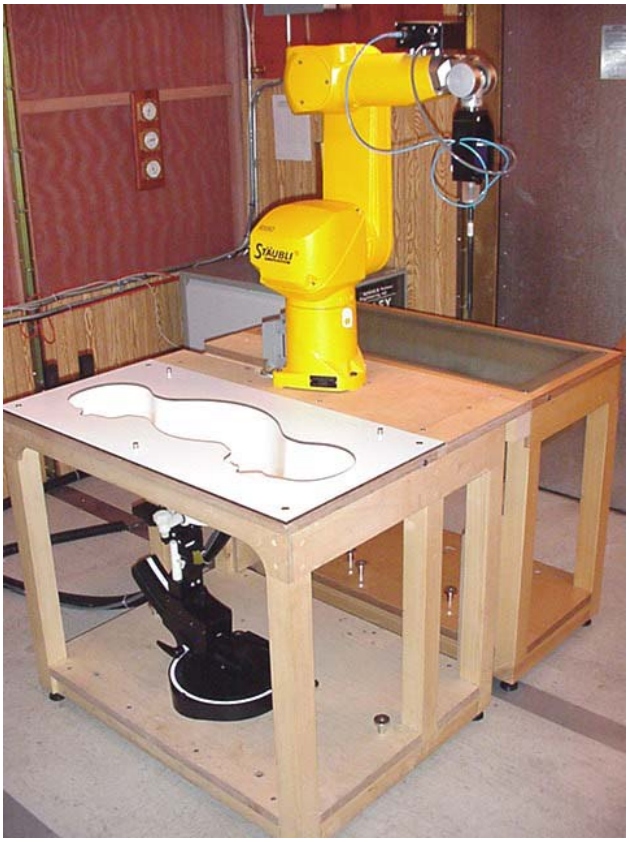
This measurement report demonstrates that the Palm, Inc. Model: Treo XXX Dual-Band PCS/Cellular CDMA2000 Phone with Bluetooth FCC ID: O8FJIMI, complies with the SAR (Specific Absorption Rate) RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) and Health Canada's Safety Code 6 (see reference [2]) for the General Population / Uncontrolled Exposure environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]), IC RSS-102 Issue 1 (Provisional) (see reference [4]), and IEEE Standard 1528-2003 (see reference [5]) were employed. A description of the product, operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 DESCRIPTION of Device Under Test (DUT)

FCC Rule Part(s)	47 CFR §2.1093			
IC Rule Part(s)	RSS-102 Issue 1 (Provisional)			
FCC Device Classification	PCS Licensed Transmitter held to ear (PCE)			
IC Device Classification	2 GHz Personal Communications Services		RSS-133 Issue 3	
	800 MHz Cellular Telephone Employing New Technology		RSS-132 Issue 1 (Prov.)	
Test Procedure(s)	FCC OET Bulletin 65, Supplement C (01-01)			
	IC RSS-102 Issue 1 (Provisional)			
	IEEE Standard 1528-2003			
Device Description	Portable Dual-Band PCS/Cellular CDMA2000 Phone with Bluetooth			
FCC IDENTIFIER	O8FJIMI			
IC IDENTIFIER	3905A-JIMI			
Model(s)	Treo XXX			
Serial No. of Sample Tested	PWVC0835H0AX		Identical Prototype	
Tx Frequency Range(s)	1851.25 - 1908.75 MHz		PCS CDMA	
	824.70 - 848.31 MHz		Cellular CDMA	
	2402 - 2480 MHz		Bluetooth	
Max. RF Output Power Tested	23.8 dBm	Conducted	1851.25 MHz	PCS Band
	23.8 dBm	Conducted	1880.00 MHz	
	23.3 dBm	Conducted	1908.75 MHz	
	24.0 dBm	Conducted	824.70 MHz	Cellular Band
	23.8 dBm	Conducted	836.52 MHz	
	24.0 dBm	Conducted	848.31 MHz	
	0 dBm	Peak Conducted	FHSS	Bluetooth
Battery Type(s) Tested	Lithium-ion		3.7 VDC	P/N: 157-10014-00
Antenna Type(s) Tested	External Stubby		Dual-Band CDMA	
	Internal		Bluetooth	
Body-Worn Accessories Tested	Leather Side Case (contains Metal Snap) with Belt-Clip			SKU#3180WW
	Leather Pouch and Swivel Belt-Clip (Plastic with Metal Spring)			SKU#3179WW
	Leather Latch Case (No metal, > 1.5 cm separation distance)			SKU#3196WW
Additional Configurations Tested	1.5 cm Air-Gap Spacing		Front and Back Sides of DUT	
Audio Accessories Tested	Generic Ear-Microphone			

3.0 SAR MEASUREMENT SYSTEM

Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 measurement system is comprised of the measurement server, robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for brain and/or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the DASY4 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the DASY4 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.



DASY4 Measurement System with SAM Phantom

DASY4 Measurement System with SAM Phantom

4.0 MEASUREMENT SUMMARY

HEAD SAR EVALUATION RESULTS - Cellular CDMA

Band	Mode	Freq. (MHz)	Channel	Antenna Type	Battery Type	Phantom Section	Test Position	Cond. Power Before Test (dBm)	SAR Drift During Test (dB)	Measured SAR 1g (W/kg)		Scaled SAR 1g (+ 0.2 dB Cond. Pwr.) SAR (W/kg)		Scaled SAR 1g (+ 0.2 dB Cond. Pwr.) Cond. Pwr. (dB)
Cellular	CDMA	836.52	384	Stubby	Li-ion	Right Ear	Cheek/Touch	23.8	0.0783	P	1.06	P	1.11	24.0
										S	1.03	S	1.08	24.0
Cellular	CDMA	824.70	1013	Stubby	Li-ion	Right Ear	Cheek/Touch	24.0	0.296	P	1.01	P	1.06	24.2
										S	0.942	S	0.986	24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Right Ear	Cheek/Touch	24.0	-0.0870	P	1.17	P	1.23	24.2
										S	1.15	S	1.20	24.2
Cellular	CDMA	836.52	384	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	23.8	0.0403	1.05		1.10		24.0
Cellular	CDMA	824.70	1013	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	24.0	0.0484	1.14		1.19		24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	24.0	0.0677	1.20		**1.26**		24.2
Cellular	CDMA	836.52	384	Stubby	Li-ion	Left Ear	Cheek/Touch	23.8	-0.0209	1.01		1.06		24.0
Cellular	CDMA	824.70	1013	Stubby	Li-ion	Left Ear	Cheek/Touch	24.0	0.0190	0.855		0.895		24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Left Ear	Cheek/Touch	24.0	-0.0477	1.10		1.15		24.2
Cellular	CDMA	836.52	384	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	23.8	0.0470	0.850		0.890		24.0
Cellular	CDMA	824.70	1013	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	24.0	0.00982	0.720		0.754		24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	24.0	0.00854	0.928		0.972		24.2

ANSI / IEEE C95.1 1999 - SAFETY LIMIT	BRAIN: 1.6 W/kg (averaged over 1 gram)	Spatial Peak - Uncontrolled Exposure

Test Date(s)	August 23, 2005			Relative Humidity	31	%
Measured Fluid Type	835 MHz Brain			Atmospheric Pressure	101.8	kPa
Dielectric Constant ε_r	IEEE Target		Measured / Deviation	Ambient Temperature	22.9	°C
	41.5	± 5%	41.3 / -0.5%	Fluid Temperature	22.7	°C
Conductivity σ (mho/m)	IEEE Target		Measured / Deviation	Fluid Depth	≥ 15	cm
	0.90	± 5%	0.87 / -3.3%	ρ (Kg/m^3)	1000	

Note(s):

1. The measurement results were obtained with the DUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2. If the SAR levels measured at the mid channel were ≥ 3 dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).
3. Secondary peak SAR levels within 2 dB of the primary were reported (P = Primary, S = Secondary).
4. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
5. The measured SAR levels were scaled up by +0.2 dB (≤ 5%) to report worst-case SAR levels with a ≤ +5% increase in conducted power.
6. The DUT was not evaluated for Head SAR with the Bluetooth co-transmitting due to the fact that the Bluetooth is intended for body-worn operation only with a a corresponding Bluetooth device.
7. The Lithium-ion battery was fully charged prior to each SAR evaluation.
8. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluations. The temperatures reported were consistent for all measurement periods.
9. The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluations using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters).
10. The SAR measurements were performed within 24 hours of the system performance check.

MEASUREMENT SUMMARY (Cont.)

HEAD SAR EVALUATION RESULTS - PCS CDMA

Test Date	Band	Mode	Freq. (MHz)	Chan.	Antenna Type	Battery Type	Phantom Section	Test Position	Cond. Power Before Test (dBm)	SAR Drift During Test (dB)	Measured SAR 1g (W/kg)		Scaled SAR 1g (+ 0.2 dB Cond. Pwr.) SAR (W/kg)		Scaled SAR 1g (+ 0.2 dB Cond. Pwr.) Cond. Pwr. (dB)
Aug 24	PCS	CDMA	1880.00	600	Stubby	Li-ion	Right Ear	Cheek/Touch	23.8	0.195	P	0.917	P	0.960	24.0
											S	0.742	S	0.777	24.0
Aug 24	PCS	CDMA	1851.25	25	Stubby	Li-ion	Right Ear	Cheek/Touch	23.8	-0.00835	P	0.867	P	0.908	24.0
											S	0.679	S	0.711	24.0
Aug 24	PCS	CDMA	1908.75	1175	Stubby	Li-ion	Right Ear	Cheek/Touch	23.3	0.0694	P	0.711	P	0.745	23.5
											S	0.534	S	0.559	23.5
Aug 23	PCS	CDMA	1880.00	600	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	23.8	0.239	1.20		**1.26**		24.0
Aug 23	PCS	CDMA	1851.25	25	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	23.8	-0.0698	1.12		1.17		24.0
Aug 23	PCS	CDMA	1908.75	1175	Stubby	Li-ion	Right Ear	Ear/Tilt (15°)	23.3	-0.164	0.928		0.972		23.5
Aug 24	PCS	CDMA	1880.00	600	Stubby	Li-ion	Left Ear	Cheek/Touch	23.8	-0.123	P	0.912	P	0.955	24.0
											S	0.786	S	0.823	24.0
Aug 24	PCS	CDMA	1851.25	25	Stubby	Li-ion	Left Ear	Cheek/Touch	23.8	-0.0054	P	0.839	P	0.879	24.0
											S	0.823	S	0.862	24.0
Aug 24	PCS	CDMA	1908.75	1175	Stubby	Li-ion	Left Ear	Cheek/Touch	23.3	0.00878	P	0.704	P	0.737	23.5
											S	0.654	S	0.685	23.5
Aug 23	PCS	CDMA	1880.00	600	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	23.8	-0.0116	1.17		1.23		24.0
Aug 23	PCS	CDMA	1851.25	25	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	23.8	-0.181	1.18		1.24		24.0
Aug 23	PCS	CDMA	1908.75	1175	Stubby	Li-ion	Left Ear	Ear/Tilt (15°)	23.3	-0.0623	0.937		0.981		23.5

ANSI / IEEE C95.1 1999 - SAFETY LIMIT | **BRAIN: 1.6 W/kg (averaged over 1 gram)** | **Spatial Peak - Uncontrolled Exposure**

Test Date(s)	August 23, 2005	August 24, 2005
Measured Fluid Type	1880 MHz Brain	
Dielectric Constant ε_r	IEEE Target: 40.0 ± 5%	
Date	Aug 23	Aug 24
Measured	38.5	38.2
Deviation	-3.8%	-4.5%
Conductivity σ (mho/m)	1880 MHz Brain	
IEEE Target	1.40 ± 5%	
Date	Aug 23	Aug 24
Measured	1.40	1.35
Deviation	0.0%	-3.6%

Test Date(s)	Aug 23	Aug 24	Unit
Relative Humidity	30	31	%
Atmospheric Pressure	101.5	102.0	kPa
Ambient Temperature	25.3	24.0	°C
Fluid Temperature	23.3	23.5	°C
Fluid Depth	≥ 15	≥ 15	cm
ρ (Kg/m^3)	1000		

Note(s):

1. The measurement results were obtained with the DUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2. If the SAR levels measured at the mid channel were ≥ 3 dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).
3. Secondary peak SAR levels within 2 dB of the primary were reported (P = Primary, S = Secondary).
4. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
5. The measured SAR levels were scaled up by +0.2 dB (≤ 5%) to report worst-case SAR levels with a ≤ +5% increase in conducted power.
6. The DUT was not evaluated for Head SAR with the Bluetooth co-transmitting due to the fact that the Bluetooth is intended for body-worn operation only with a corresponding Bluetooth device.
7. The Lithium-ion battery was fully charged prior to each SAR evaluation.
8. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluations. The temperatures reported were consistent for all measurement periods.
9. The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluations using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters).
10. The SAR measurements were performed within 24 hours of the system performance check.

MEASUREMENT SUMMARY (Cont.)

BODY-WORN SAR EVALUATION RESULTS - PCS CDMA

Band	Mode	Freq. (MHz)	Chan.	Antenna Type	Battery Type	Accessories		DUT Position to Planar Phantom	Separ. Distance to Planar Phantom (cm)	Cond. Power Before Test (dBm)	SAR Drift During Test (dB)	Measured SAR 1g (W/kg)	Scaled SAR 1g (+ 0.2 dB Cond. Pwr.)	
						Body-Worn	Audio						SAR (W/kg)	Cond. Pwr. (dBm)
PCS	CDMA	1880	600	Stubby	Li-ion	Side Case with Belt-Clip	Ear-Mic	Front	1.4	23.8	-0.184	0.446	0.467	24.0
PCS	CDMA	1880	600	Stubby	Li-ion	Pouch and Swivel Belt-Clip	Ear-Mic	Back	2.5	23.8	-0.107	0.260	0.272	24.0
PCS	CDMA	1880	600	Stubby	Li-ion	None (Air-Gap Spacing)	Ear-Mic	Back	1.5	23.8	-0.159	0.481	0.504	24.0
PCS	CDMA	1880	600	Stubby	Li-ion	None (Air-Gap Spacing)	Ear-Mic	Back	1.5	23.8	-0.187	0.523	**0.548**	24.0
Bluetooth*		FHSS								0				0
PCS	CDMA	1880	600	Stubby	Li-ion	None (Air-Gap Spacing)	Ear-Mic	Front	1.5	23.8	-0.186	0.405	0.424	24.0

ANSI / IEEE C95.1 1999 - SAFETY LIMIT | **BODY: 1.6 W/kg (averaged over 1 gram)** | **Spatial Peak - Uncontrolled Exposure**

Test Date(s)	August 24, 2005	*August 30, 2005
Measured Fluid Type	1880 MHz Body	
Fluid Parameters	IEEE Target	Date / Measured / Deviation
Dielectric Constant ε_r	53.3 ± 5%	Aug 24: 51.0 (-4.3%); Aug 30: 50.9 (-4.5%)
Conductivity σ (mho/m)	1.52 ± 5%	Aug 24: 1.51 (-0.7%); Aug 30: 1.58 (+3.9%)
ρ (Kg/m^3)	1000	

Test Date(s)	Aug. 24	Aug. 30	Unit
Relative Humidity	30	34	%
Atmospheric Pressure	101.8	102.2	kPa
Ambient Temperature	25.5	23.4	°C
Fluid Temperature	23.5	23.5	°C
Fluid Depth	≥ 15	≥ 15	cm

Note(s):

* Bluetooth Co-located Simultaneous Transmit evaluation.

1. The measurement results were obtained with the DUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2. If the SAR levels measured at the mid channel were ≥ 3 dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).
3. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
4. The measured SAR levels were scaled up by +0.2 dB (≤ 5%) to report worst-case SAR levels with a ≤ +5% increase in conducted power.
5. The Lithium-ion battery was fully charged prior to each SAR evaluation.
6. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluations. The temperatures reported were consistent for all measurement periods.
7. The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluations using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters).
8. The SAR measurements were performed within 24 hours of the system performance check.

MEASUREMENT SUMMARY (Cont.)

BODY-WORN SAR EVALUATION RESULTS - Cellular CDMA

Band	Mode	Freq. (MHz)	Chan.	Antenna Type	Battery Type	Accessories		DUT Position to Planar Phantom	Separ. Distance to Planar Phantom (cm)	Cond. Power Before Test (dBm)	SAR Drift During Test (dB)	Measured SAR 1g (W/kg)	Scaled SAR 1g (+ 0.2 dB Cond. Pwr.)	
						Body-Worn	Audio						SAR (W/kg)	Cond. Pwr. (dB)
Cellular	CDMA	836.52	384	Stubby	Li-ion	Side Case with Belt-Clip	Ear-Mic	Front	1.4	23.8	-0.0791	0.841	0.881	24.0
Cellular	CDMA	824.70	1013	Stubby	Li-ion	Side Case with Belt-Clip	Ear-Mic	Front	1.4	24.0	-0.0952	0.593	0.621	24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Side Case with Belt-Clip	Ear-Mic	Front	1.4	24.0	-0.0212	0.861	0.902	24.2
Cellular	CDMA	848.31	777	Stubby	Li-ion	Side Case with Belt-Clip	Ear-Mic	Front	1.4	24.0	-0.107	0.961	**1.01**	24.2
Bluetooth*		FHSS								0				0
Cellular	CDMA	836.52	384	Stubby	Li-ion	Pouch and Swivel Belt-Clip	Ear-Mic	Back	2.5	23.8	-0.0542	0.248	0.260	24.0
Cellular	CDMA	836.52	384	Stubby	Li-ion	None (Air-Gap Spacing)	Ear-Mic	Back	1.5	23.8	-0.0730	0.618	0.647	24.0
Cellular	CDMA	836.52	384	Stubby	Li-ion	None (Air-Gap Spacing)	Ear-Mic	Front	1.5	23.8	-0.0974	0.636	0.666	24.0

ANSI / IEEE C95.1 1999 - SAFETY LIMIT | **BODY: 1.6 W/kg (averaged over 1 gram)** | **Spatial Peak - Uncontrolled Exposure**

Test Date(s)	August 25, 2005	*August 30, 2005			Test Date(s)	Aug. 25	Aug. 30	Unit
Measured Fluid Type	835 MHz Body				Relative Humidity	30	34	%
Fluid Parameters	IEEE Target		Date	Measured	Deviation	Atmospheric Pressure	102.2	102.2	kPa
Dielectric Constant ε_r	55.2	± 5%	Aug 25	54.0	-2.2%	Ambient Temperature	24.1	24.2	°C
			Aug 30	53.8	-2.5%				
Conductivity σ (mho/m)	0.97	± 5%	Aug 25	0.98	+1.0%	Fluid Temperature	23.5	23.3	°C
			Aug 30	0.97	0.0%				
ρ (Kg/m^3)	1000					Fluid Depth	≥ 15	≥ 15	cm

Note(s):

* Bluetooth Co-located Simultaneous Transmit evaluation.

1. The measurement results were obtained with the DUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2. If the SAR levels measured at the mid channel were ≥ 3 dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).
3. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
4. The measured SAR levels were scaled up by +0.2 dB (≤ 5%) to report worst-case SAR levels with a ≤ +5% increase in conducted power.
5. The Lithium-ion battery was fully charged prior to each SAR evaluation.
6. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluations. The temperatures reported were consistent for all measurement periods.
7. The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluations using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters).
8. The SAR measurements were performed within 24 hours of the system performance check.

5.0 DETAILS OF SAR EVALUATION

The Palm, Inc. Model: Treo XXX Dual-Band PCS/Cellular CDMA2000 Phone with Bluetooth FCC ID: O8FJIMI was compliant for localized Specific Absorption Rate (SAR) based on the test provisions and conditions described below. The detailed test setup photographs are shown in Appendix D.

Ear-held Configuration

1) The DUT was tested in an ear-held configuration on both the left and right sections of the SAM phantom at the mid channel of the operating band. If the SAR level at the mid channel of the frequency band for each test configuration (left ear, right ear, cheek/touch, ear/tilt) was ≥ 3dB below the SAR limit, measurements at the low and high channels were optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).

a) The handset was placed in the device holder in a normal operating position with the test device reference point located along the vertical centerline on the front of the device aligned to the ear reference point, with the center of the earpiece touching the center of the ear spacer of the SAM phantom.

b) With the handset positioned parallel to the cheek, the test device reference point was aligned to the ear reference point on the head phantom, and the vertical centerline was aligned to the phantom reference plane (initial ear position).

c) While maintaining the three alignments, the body of the handset was gradually adjusted to each of the following test positions:

- Cheek/Touch Position: the handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.

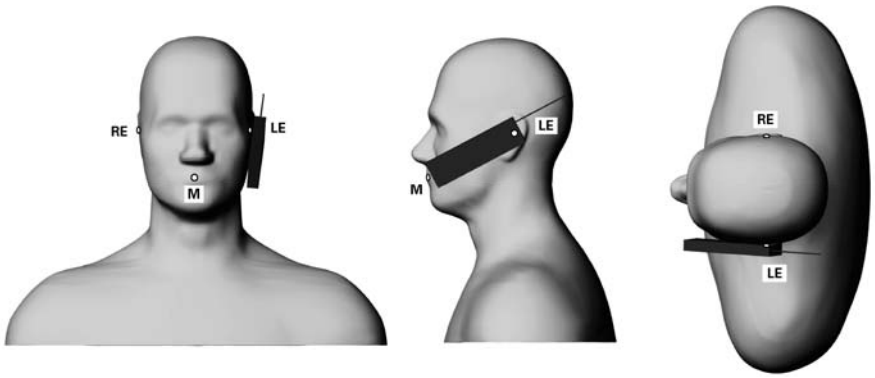


Figure 1. Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

- Ear/Tilt Position: With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.

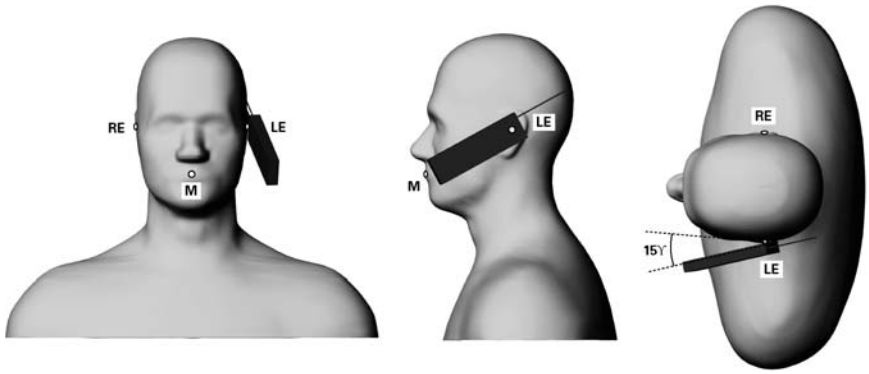


Figure 2. Phone position 2, "tilted position." The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

DETAILS OF SAR EVALUATION (Cont.)

Body-worn Configuration

2) The DUT was tested in a body-worn configuration placed inside the Leather Side Case and Belt-Clip accessory (SKU#3180WW). The front side of the DUT (keypad side) was placed facing parallel to the outer surface of the SAM phantom (planar section) with the belt-clip touching the phantom surface (the Leather Side Case with Belt-Clip accessory is designed so that the DUT is positioned with the front keypad side facing the user's body). The Leather Side Case with Belt-Clip accessory provided a 1.4 cm separation distance between the front side of the DUT (keypad side) and the outer surface of the SAM phantom (planar section). A generic ear-microphone accessory was connected to the audio port of the DUT for the duration of the tests.
3) The DUT was tested in a body-worn configuration placed inside the Fitted Leather Pouch with Swivel Belt-Clip accessory (SKU#3179WW). The back side of the DUT was placed facing parallel to the outer surface of the SAM phantom (planar section) with the attached swivel belt-clip accessory touching the phantom surface (the Fitted Leather Pouch accessory is designed so that the DUT is positioned with the back side facing the user's body). The Fitted Leather Pouch with Swivel Belt-Clip accessory provided a 2.5 cm separation distance between the back side of the DUT and the outer surface of the SAM phantom (planar section). A generic ear-microphone accessory was connected to the audio port of the DUT for the duration of the tests.
4) The DUT was tested in a body-worn configuration with an "air-gap" spacing of 1.5 cm between the front side (keypad side) and the outer surface of the SAM phantom (planar section). The DUT was also tested with an "air-gap" spacing of 1.5 cm between the back side (battery side) and the outer surface of the SAM phantom (planar section). No body-worn accessories were used with the DUT in the "air-gap" spacing test configurations for the purpose of allowing for generic body-worn holster/case/clip accessories that do not contain any metallic components and provide a minimum separation distance of 1.5 cm between the phone and the user's body. A generic ear-microphone accessory was connected to the audio port of the DUT for the duration of the tests.
5) Co-located transmit tests were performed with the CDMA and Bluetooth transmitting simultaneously in the worst-case single-transmit body-worn configuration for both the PCS and Cellular bands.

Test Modes & Power Settings

6) The DUT was tested with a modulated CDMA signal generated by the Will'Tek 4303 Mobile Service Tester in the "always up" power control mode.
7) For the co-transmit body-worn SAR evaluations the Bluetooth was enabled via internal software with the DUT transmitting to a remote Bluetooth headset device.
8) The conducted power levels were measured prior to each test according to the procedures described in FCC 47 CFR §2.1046 using a Gigatronics 8652A Universal Power Meter.
9) The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
10) The measured SAR levels were scaled up by +0.2 dB ($\leq$ 5%) to report worst-case SAR levels with a $\leq$ +5% increase in conducted power.
11) The Lithium-ion battery was fully charged prior to each SAR evaluation.

Test Conditions

12) The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter checks and the SAR evaluations. The temperatures reported were consistent for all measurement periods.
13) The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters).
14) The SAR measurements were performed within 24 hours of the system performance check.

6.0 EVALUATION PROCEDURES

a. (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated using the SAM phantom.
(ii) For certain body-worn and face-held devices a planar phantom was used.

b. The SAR was determined by a pre-defined procedure within the DASY4 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 15mm x 15mm.

An area scan was determined as follows:

c. Based on the defined area scan grid, a more detailed grid is created to increase the points by a factor of 10. The interpolation function then evaluates all field values between corresponding measurement points.

d. A linear search is applied to find all the candidate maxima. Subsequently, all maxima are removed that are >2 dB from the global maximum. The remaining maxima are then used to position the cube scans.

A 1g and 10g spatial peak SAR was determined as follows:

e. Extrapolation is used to find the points between the dipole center of the probe and the surface of the phantom. This data cannot be measured, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.4 mm (see probe calibration document in Appendix F). The extrapolation was based on trivariate quadratics computed from the previously calculated 3D interpolated points nearest the phantom surface.

f. Interpolated data is used to calculate the average SAR over 1g and 10g cubes by spatially discretizing the entire measured cube. The volume used to determine the averaged SAR is a 1mm grid (42875 interpolated points).

g. A zoom scan volume of 32 mm x 32 mm x 30 mm (5x5x7 points) centered at the peak SAR location determined from the area scan is used for all zoom scans for devices with a transmit frequency < 800 MHz. Zoom scans for frequencies ≥ 800 MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7x7x7 points) to ensure complete capture of the peak spatial-average SAR.

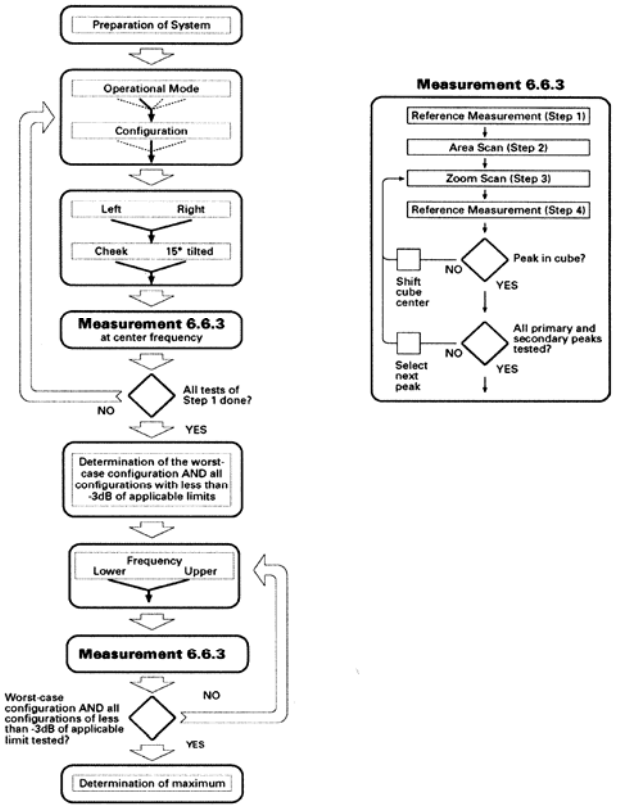


Figure 3. Flow Chart for determining the largest peak spatial-average SAR from all device configurations per IEEE Standard 1528-2003 (see reference [5]).

7.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations a system check was performed at the planar section of the phantom with an 835MHz dipole and a 1900MHz dipole (see Appendix E for system validation procedures). The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters). A forward power of 250mW was applied to the dipole and the system was verified to a tolerance of ±10% (see Appendix B for system performance check test plots). See Table 1 below for the SAR system manufacturer's reference body SAR values from the DASY4 Operation Manual, April 2005 (see reference [6]).

SYSTEM PERFORMANCE CHECK EVALUATIONS

Test Date	Equiv. Tissue (MHz)	SAR 1g (W/kg)			Dielectric Constant ε_r			Conductivity σ (mho/m)			ρ (Kg/m^3)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
		IEEE/SPEAG Target	Meas.	Dev.	IEEE Target	Meas.	Dev.	IEEE Target	Meas.	Dev.						
8/22/05	835 Brain	2.38 ±10%	2.54	+6.7%	41.5 ±5%	41.6	+0.2%	0.90 ±5%	0.92	+2.2%	1000	25.5	23.8	≥ 15	30	101.1
8/23/05	1900 Brain	9.93 ±10%	10.4	+4.7%	40.0 ±5%	38.4	-4.0%	1.40 ±5%	1.42	+1.4%	1000	25.6	23.3	≥ 15	30	101.5
8/25/05	835 Brain	2.38 ±10%	2.45	+2.9%	41.5 ±5%	40.7	-1.9%	0.90 ±5%	0.90	0.0%	1000	24.2	23.1	≥ 15	31	102.2
8/30/05	1900 Body	9.95 ±10%	10.4	+4.6%	53.3 ±5%	50.7	-4.9%	1.52 ±5%	1.59	+4.6%	1000	23.4	23.5	≥ 15	34	102.2
8/30/05	835 Body	2.43 ±10%	2.49	+2.5%	55.2 ±5%	53.8	-2.5%	0.97 ±5%	0.97	0.0%	1000	24.7	23.3	≥ 15	33	102.2

Note(s):
1. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the system performance check. The temperatures reported in the above table were consistent for all measurement periods.

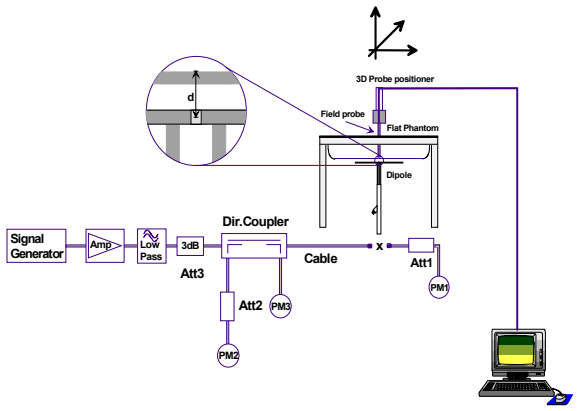


Figure 4. System Performance Check Setup Diagram

Dipole Type	Distance [mm]	Frequency [MHz]	SAR (1g) [W/kg]	SAR (10g) [W/kg]	SAR (peak) [W/kg]
D300V2	15	300	3.02	2.06	4.36
D450V2	15	450	5.01	3.36	7.22
D835V2	15	835	9.71	6.38	14.1
D900V2	15	900	11.1	7.17	16.3
D1450V2	10	1450	29.6	16.6	49.8
D1500V2	10	1500	30.8	17.1	52.1
D1640V2	10	1640	34.4	18.7	59.4
D1800V2	10	1800	38.5	20.3	67.5
D1900V2	10	1900	39.8	20.8	69.6
D2000V2	10	2000	40.9	21.2	71.5
D2450V2	10	2450	51.2	23.7	97.6
D3000V2	10	3000	61.9	24.8	136.7

Table 32.1: Numerical reference SAR values for SPEAG dipoles and flat phantom filled with body-tissue simulating liquid. Note: All SAR values normalized to 1 W forward power.

Table 1. SAR system manufacturer's reference Body SAR values

835MHz Dipole Setup

1900MHz Dipole Setup

8.0 SIMULATED EQUIVALENT TISSUES

The 1880/1900MHz simulated equivalent tissue mixtures consist of Glycol-monobutyl, water, and salt. The 835MHz simulated tissue mixtures consist of a viscous gel using hydroxethylcellulose (HEC) gelling agent and saline solution. Preservation with a bactericide was added and visual inspection was made to ensure air bubbles were not trapped during the mixing process. The fluids were prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

1880/1900MHz TISSUE MIXTURES				
INGREDIENT	1900 MHz Brain	1880 MHz Brain	1900 MHz Body	1880 MHz Body
	System Check	DUT Evaluation	System Check	DUT Evaluation
Water	55.85 %	55.85 %	69.85 %	69.85 %
Glycol Monobutyl	44.00 %	44.00 %	29.89 %	29.89 %
Salt	0.15 %	0.15 %	0.26 %	0.26 %

835MHz TISSUE MIXTURES		
INGREDIENT	835 MHz Brain	835 MHz Body
	System Check & DUT Evaluation	System Check & DUT Evaluation
Water	40.71 %	53.79 %
Sugar	56.63 %	45.13 %
Salt	1.48 %	0.98 %
HEC	0.99 %	--
Bactericide	0.19 %	0.10 %

9.0 SAR SAFETY LIMITS

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Notes:
1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

10.0 ROBOT SYSTEM SPECIFICATIONS

Specifications

POSITIONER: Stäubli Unimation Corp. Robot Model: RX60L
Repeatability: 0.02 mm
No. of axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor: AMD Athlon XP 2400+
Clock Speed: 2.0 GHz
Operating System: Windows XP Professional

Data Converter

Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY4 software
Connecting Lines: Optical downlink for data and status info.
Optical uplink for commands and clock

DASY4 Measurement Server

Function: Real-time data evaluation for field measurements and surface detection
Hardware: PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM
Connections: COM1, COM2, DAE, Robot, Ethernet, Service Interface

E-Field Probe

Model: ET3DV6
Serial No.: 1387
Construction: Triangular core fiber optic detection system
Frequency: 10 MHz to 6 GHz
Linearity: ±0.2 dB (30 MHz to 3 GHz)

Phantom(s)

Type: SAM V4.0C
Shell Material: Fiberglas
Thickness: 2.0 ±0.1 mm
Volume: Approx. 25 liters

11.0 PROBE SPECIFICATION (ET3DV6)

Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g. glycol)
Calibration:	In air from 10 MHz to 2.5 GHz In brain simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy ± 8%)
Frequency:	10 MHz to >6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity:	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation normal to probe axis)
Dynamic Range:	5 μW/g to >100 mW/g; Linearity: ±0.2 dB
Surface Detection:	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions:	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application:	General dosimetry up to 3 GHz Compliance tests of portable phone

ET3DV6 E-Field Probe

12.0 SAM PHANTOM V4.0C

The SAM phantom V4.0C is a fiberglass shell phantom with a 2.0 mm (+/-0.2 mm) shell thickness for left and right head and flat planar area integrated in a wooden table. The shape of the fiberglass shell corresponds to the phantom defined by SCC34-SC2. The device holder positions are adjusted to the standard measurement positions in the three sections (see Appendix G for specifications of the SAM phantom V4.0C).

SAM Phantom V4.0C

13.0 DEVICE HOLDER

The DASY4 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

Device Holder

14.0 TEST EQUIPMENT LIST

TEST EQUIPMENT		ASSET NO.	SERIAL NO.	DATE CALIBRATED		CALIBRATION DUE DATE
USED	DESCRIPTION					
x	Schmid & Partner DASY4 System	-	-	-		-
x	-DASY4 Measurement Server	00158	1078	N/A		N/A
x	-Robot	00046	599396-01	N/A		N/A
	-DAE4	00019	353	15Jun05		15Jun06
x	-DAE3	00018	370	25Jan05		25Jan06
x	-ET3DV6 E-Field Probe	00016	1387	18Mar05		18Mar06
	-ET3DV6 E-Field Probe	00017	1590	20May05		20May06
	-EX3DV4 E-Field Probe	00125	3547	21Jan05		21Jan06
	-300 MHz Validation Dipole	00023	135	26Oct04		26Oct05
	-450 MHz Validation Dipole	00024	136	04Nov04		04Nov05
x	-835 MHz Validation Dipole	00022	411	**Brain**	30Mar05	30Mar06
x				**Body**	12Apr05	12Apr06
	-900 MHz Validation Dipole	00020	054	**Brain**	10Jun05	10Jun06
				Body	10Jun05	10Jun06
	-1800 MHz Validation Dipole	00021	247	**Brain**	14Jun05	14Jun06
				Body	14Jun05	14Jun06
x	-1900 MHz Validation Dipole	00032	151	**Brain**	17Jun05	17Jun06
x				**Body**	22Apr05	22Apr06
	-2450 MHz Validation Dipole	00025	150	**Brain**	30Sep04	30Sep05
				Body	22Apr05	22Apr06
	-5000 MHz Validation Dipole	00126	1031	**Brain**	11Jan05	11Jan06
				Body	11Jan05	11Jan06
x	-SAM Phantom V4.0C	00154	1033	N/A		N/A
	-Barski Planar Phantom	00155	03-01	N/A		N/A
	-Plexiglas Planar Phantom	00156	161	N/A		N/A
	-Validation Planar Phantom	00157	137	N/A		N/A
	HP 85070C Dielectric Probe Kit	00033	N/A	N/A		N/A
x	ALS-PR-DIEL Dielectric Probe Kit	00160	260-00953	N/A		N/A
x	Gigatronics 8652A Power Meter	00110	1835801	16Apr05		16Apr06
	Gigatronics 8652A Power Meter	00008	1835267	29Apr05		29Apr06
	Gigatronics 8652A Power Meter	00007	1835272	18Oct04		18Oct05
x	Gigatronics 80701A Power Sensor	00011	1833542	08Oct04		08Oct05
x	Gigatronics 80701A Power Sensor	00109	1834366	16Apr05		16Apr06
x	HP 8753ET Network Analyzer	00134	US39170292	04May05		04May06
x	Will'Tek 4303 Mobile Service Tester	n/a	1141417	09Jun04		09Jun06
x	HP 8648D Signal Generator	00005	3847A00611	29Apr05		29Apr06
x	Rohde & Schwarz SMR40 Signal Generator	00006	100104	12Apr05		12Apr06
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	N/A		N/A

15.0 MEASUREMENT UNCERTAINTIES

UNCERTAINTY BUDGET FOR DEVICE EVALUATION						
Error Description	**Uncertainty Value ±%**	**Probability Distribution**	**Divisor**	**ci 1g**	**Uncertainty Value ±% (1g)**	**V_i or V_{eff}**
Measurement System						
Probe calibration	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	0.7	1.9	∞
Spherical isotropy of the probe	9.6	Rectangular	1.732050808	0.7	3.9	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	1	Rectangular	1.732050808	1	0.6	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0.8	Rectangular	1.732050808	1	0.5	∞
Integration time	2.6	Rectangular	1.732050808	1	1.5	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
Test Sample Related						
Device positioning	2.9	Normal	1	1	2.9	12
Device holder uncertainty	3.6	Normal	1	1	3.6	8
Power drift	5	Rectangular	1.732050808	1	2.9	∞
Phantom and Setup						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	2.5	Normal	1	0.64	1.6	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	2.5	Normal	1	0.6	1.5	∞
Combined Standard Uncertainty					**10.58**	
Expanded Uncertainty (k=2)					**21.16**	

Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])

MEASUREMENT UNCERTAINTIES (Cont.)

UNCERTAINTY BUDGET FOR SYSTEM VALIDATION

Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V_i or V_{eff}
Measurement System						
Probe calibration	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	1	2.7	∞
Spherical isotropy of the probe	0	Rectangular	1.732050808	1	0.0	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	1	Rectangular	1.732050808	1	0.6	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0	Rectangular	1.732050808	1	0.0	∞
Integration time	0	Rectangular	1.732050808	1	0.0	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
Test Sample Related						
Dipole Positioning	2	Normal	1.732050808	1	1.2	∞
Power & Power Drift	4.7	Normal	1.732050808	1	2.7	∞
Phantom and Setup						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	2.5	Normal	1	0.64	1.6	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	2.5	Normal	1	0.6	1.5	∞
Combined Standard Uncertainty					**8.79**	
Expanded Uncertainty (k=2)					**17.57**	

Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])

16.0 REFERENCES

[1] Federal Communications Commission, “Radiofrequency radiation exposure evaluation: portable devices”, Rule Part 47 CFR §2.1093: 1999.

[2] Health Canada, “Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz”, Safety Code 6: 1999.

[3] Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.

[4] Industry Canada, “Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada’s Safety Code 6 for Exposure of Humans to Radio Frequency Fields”, Radio Standards Specification RSS-102 Issue 1 (Provisional): September 1999.

[5] IEEE Standard 1528-2003, “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”: December 2003.

[6] Schmid & Partner Engineering AG, “DASY4 Manual” V4.5: April 2005.

APPENDIX B - SYSTEM PERFORMANCE CHECK DATA

Date Tested: 08/22/2005

System Performance Check (Brain) - 835 MHz Dipole

DUT: Dipole 835 MHz; Model: D835V2; Type: System Performance Check; Serial: 411; Calibrated: 03/30/2005

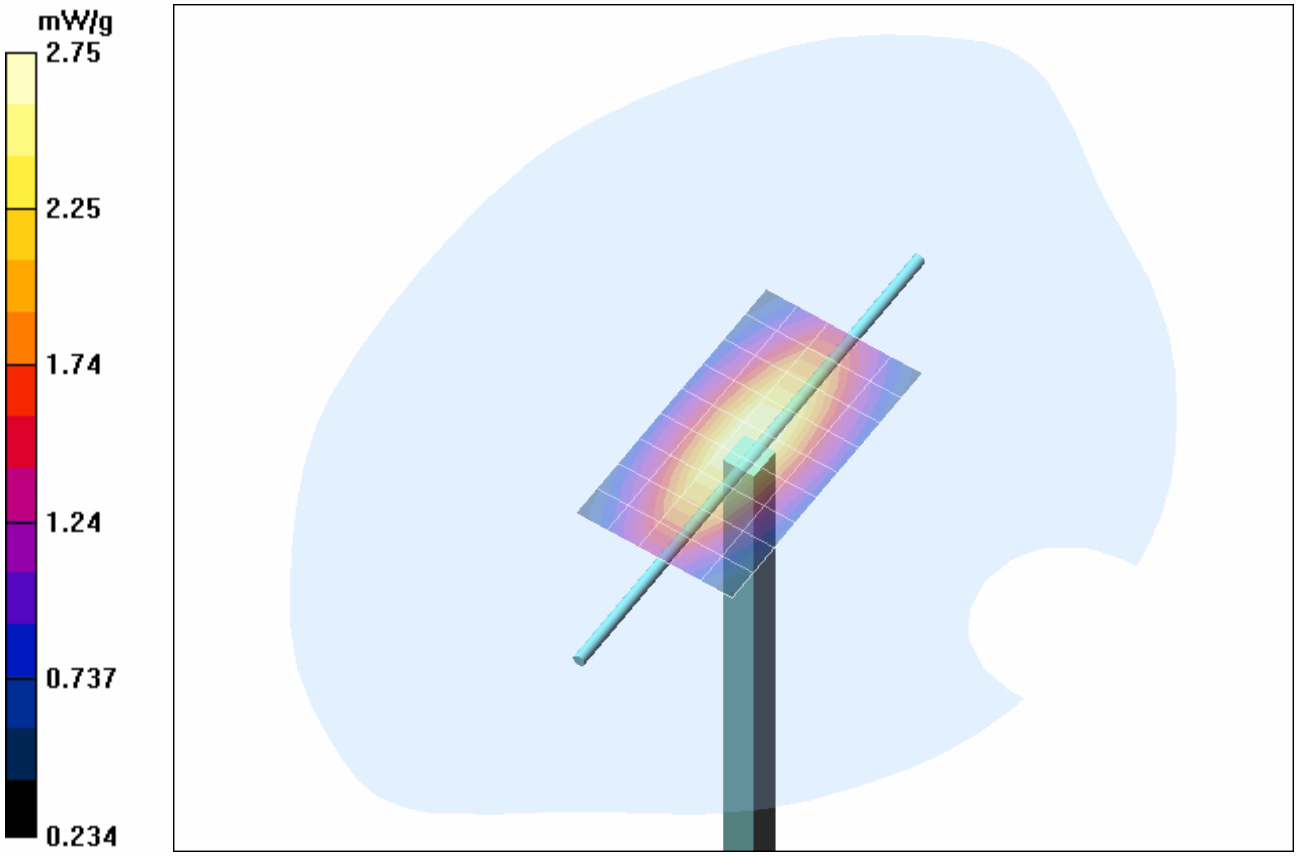
Ambient Temp: 25.5 °C; Fluid Temp: 23.8 °C; Barometric Pressure: 101.1 kPa; Humidity: 30%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL835 (σ = 0.92 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3)

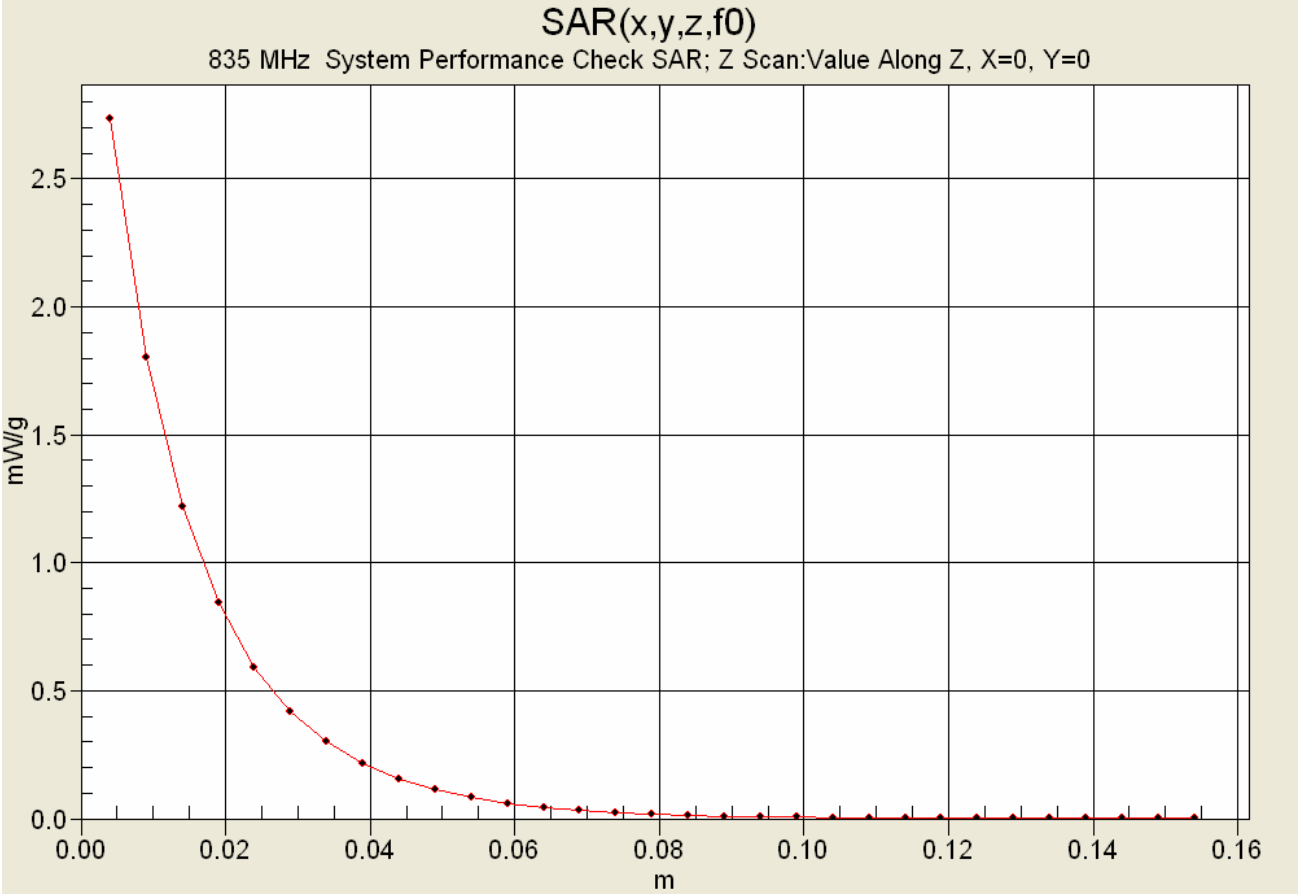
- Probe: ET3DV6 - SN1387; ConvF(6.47, 6.47, 6.47); Calibrated: 18/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 25/01/2005
- Phantom: SAM 4.0; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

835 MHz Dipole - System Performance Check/Area Scan (6x10x1):
Measurement grid: dx=10mm, dy=10mm

835 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.2 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 3.89 W/kg
SAR(1 g) = 2.54 mW/g; SAR(10 g) = 1.64 mW/g



Z-Axis Scan



Date Tested: 08/23/2005

System Performance Check (Brain) - 1900 MHz Dipole

DUT: Dipole 1900 MHz; Model: D1900V2; Type: System Performance Check; Serial: 151; Calibrated: 06/17/2005

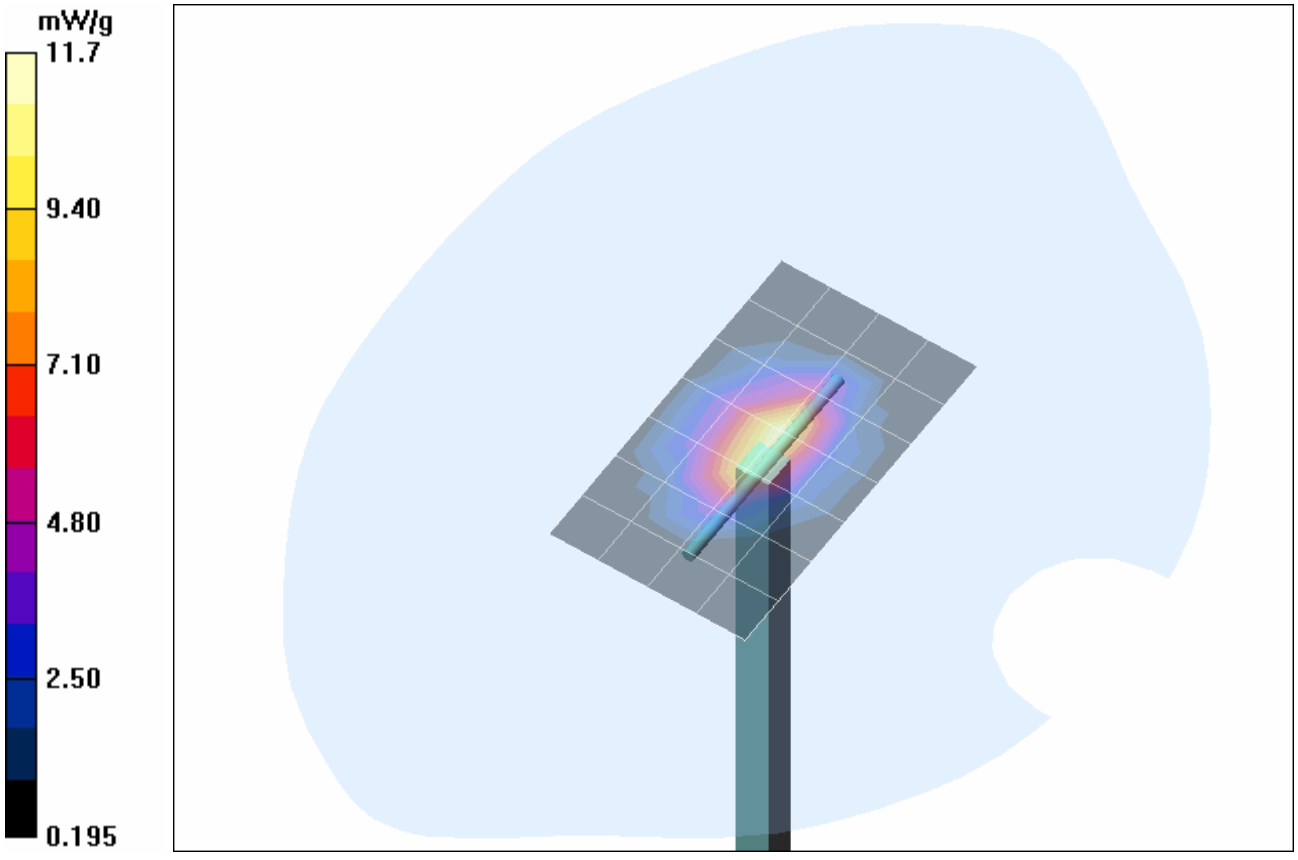
Ambient Temp: 25.6 °C; Fluid Temp: 23.3 °C; Barometric Pressure: 101.5 kPa; Humidity: 30%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900 (σ = 1.42 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3)

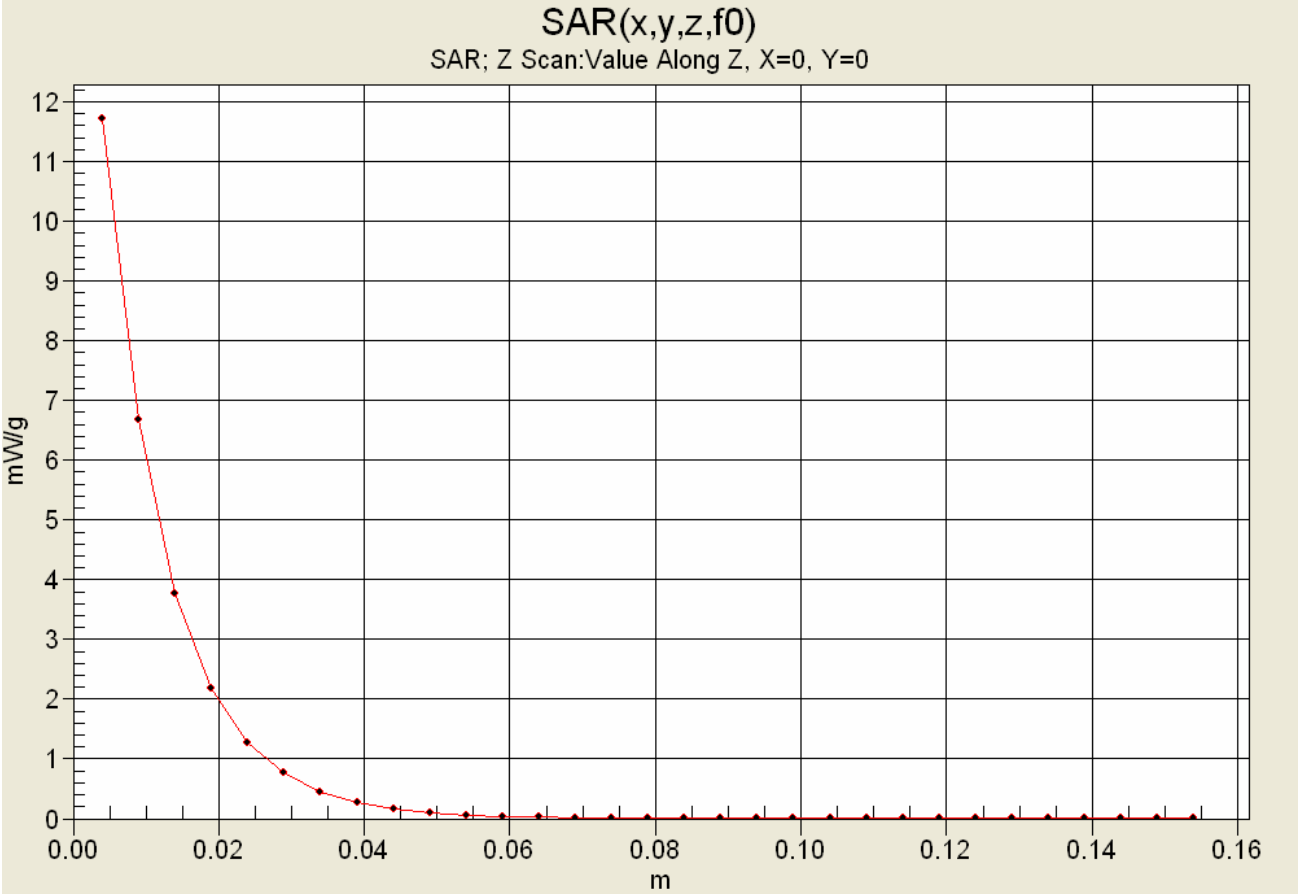
- Probe: ET3DV6 - SN1387; ConvF(5.18, 5.18, 5.18); Calibrated: 18/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 25/01/2005
- Phantom: SAM 4.0; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

1900 MHz Dipole - System Performance Check/Area Scan (5x8x1):
Measurement grid: dx=15mm, dy=15mm

1900 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.0 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.45 mW/g



Z-Axis Scan



Date Tested: 08/25/2005

System Performance Check (Brain) - 835 MHz Dipole

DUT: Dipole 835 MHz; Model: D835V2; Type: System Performance Check; Serial: 411; Calibrated: 03/30/2005

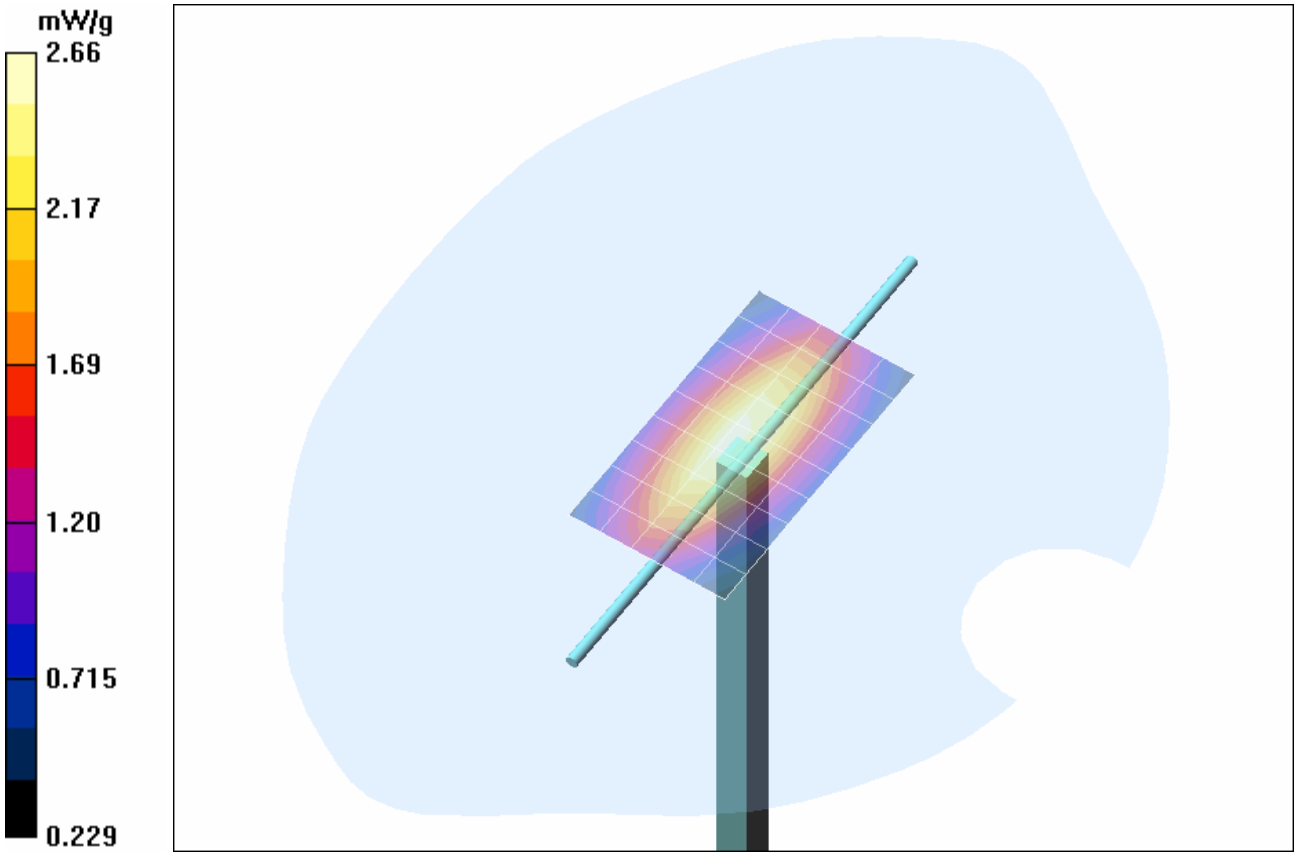
Ambient Temp: 24.2 °C; Fluid Temp: 23.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 31%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL835 (σ = 0.90 mho/m; ε_r = 40.7; ρ = 1000 kg/m^3)

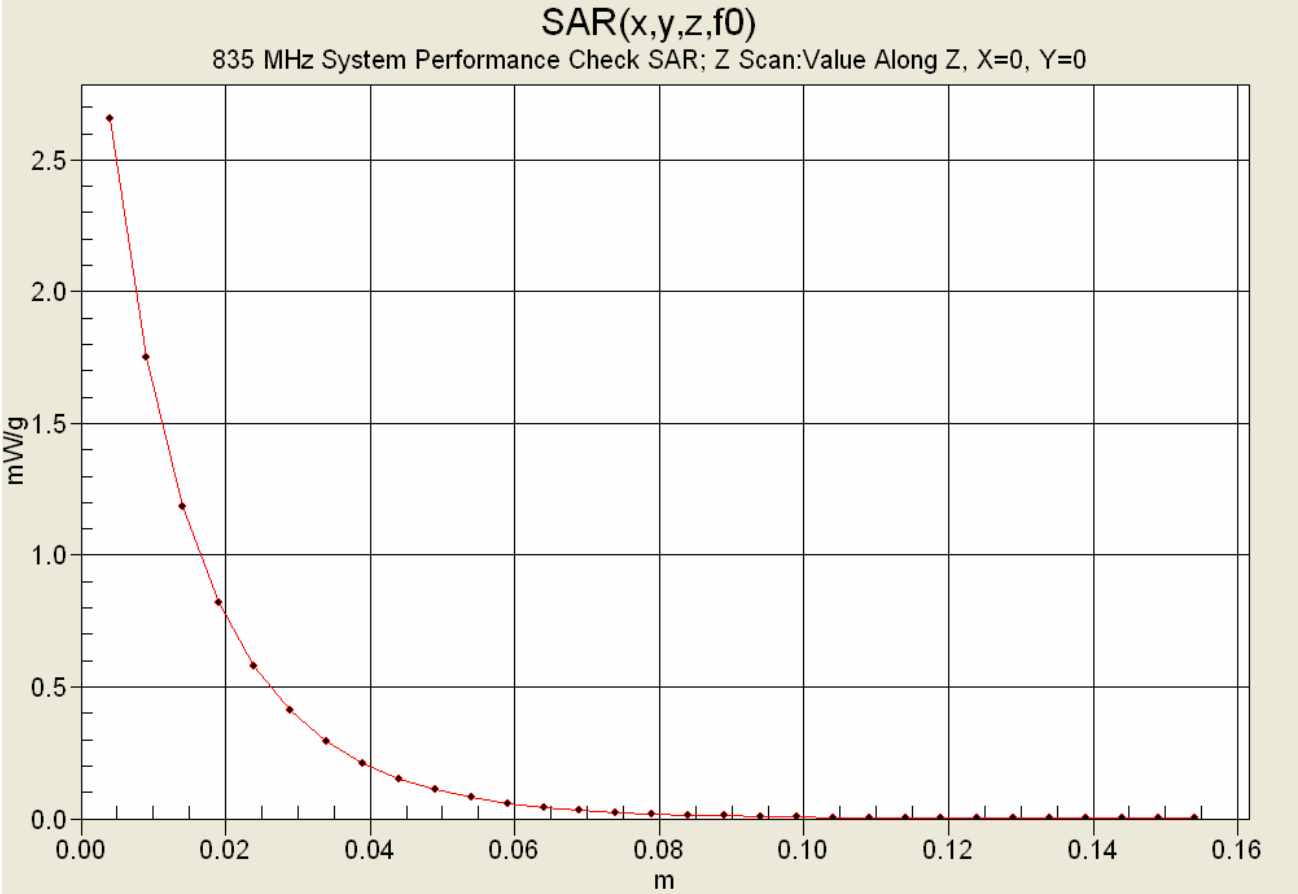
- Probe: ET3DV6 - SN1387; ConvF(6.47, 6.47, 6.47); Calibrated: 18/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 25/01/2005
- Phantom: SAM 4.0; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

835 MHz Dipole - System Performance Check/Area Scan (6x10x1):
Measurement grid: dx=10mm, dy=10mm

835 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.6 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 3.74 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.59 mW/g



Z-Axis Scan



Date Tested: 08/30/2005

System Performance Check (Body) - 1900 MHz Dipole

DUT: Dipole 1900 MHz; Model: D1900V2; Type: System Performance Check; Serial: 151; Calibrated: 04/22/2005

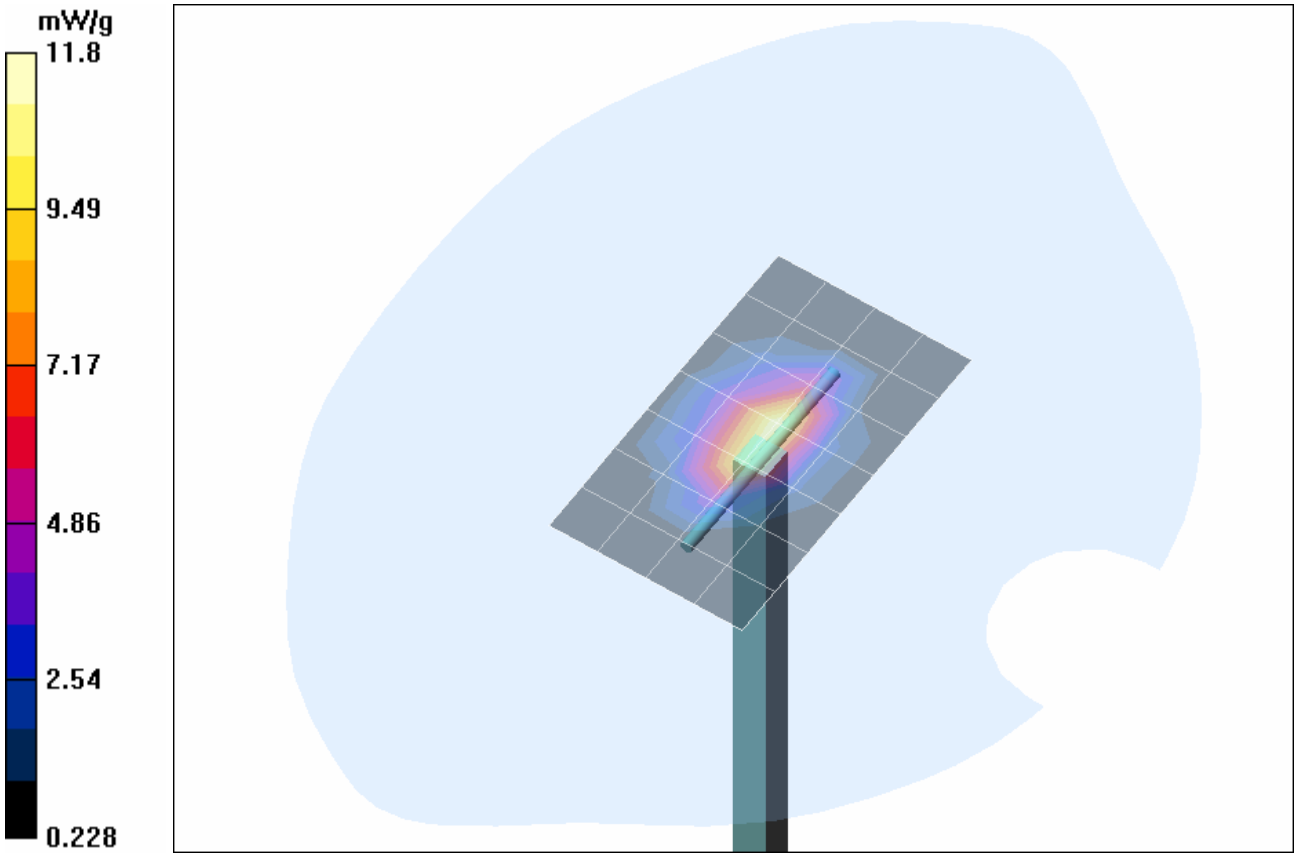
Ambient Temp: 23.4 °C; Fluid Temp: 23.5 °C; Barometric Pressure: 102.2 kPa; Humidity: 34%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: M1900 (σ = 1.59 mho/m; ε_r = 50.7; ρ = 1000 kg/m^3)

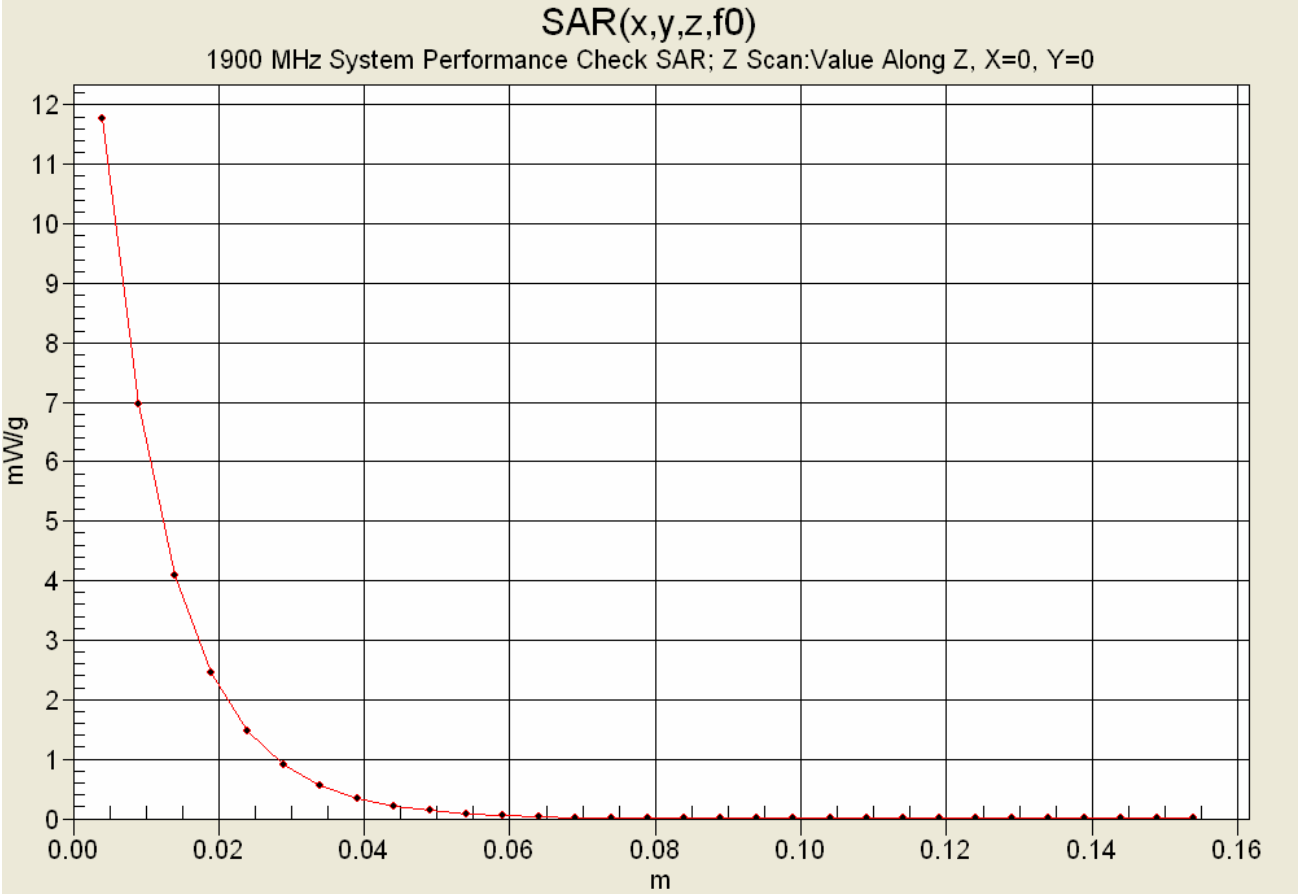
- Probe: ET3DV6 - SN1387; ConvF(4.75, 4.75, 4.75); Calibrated: 18/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 25/01/2005
- Phantom: SAM 4.0; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

1900 MHz Dipole - System Performance Check/Area Scan (5x8x1):
Measurement grid: dx=15mm, dy=15mm

1900 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.1 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.54 mW/g



Z-Axis Scan



Date Tested: 08/30/2005

System Performance Check (Body) - 835 MHz Dipole

DUT: Dipole 835 MHz; Model: D835V2; Type: System Performance Check; Serial: 411; Calibrated: 04/12/2005

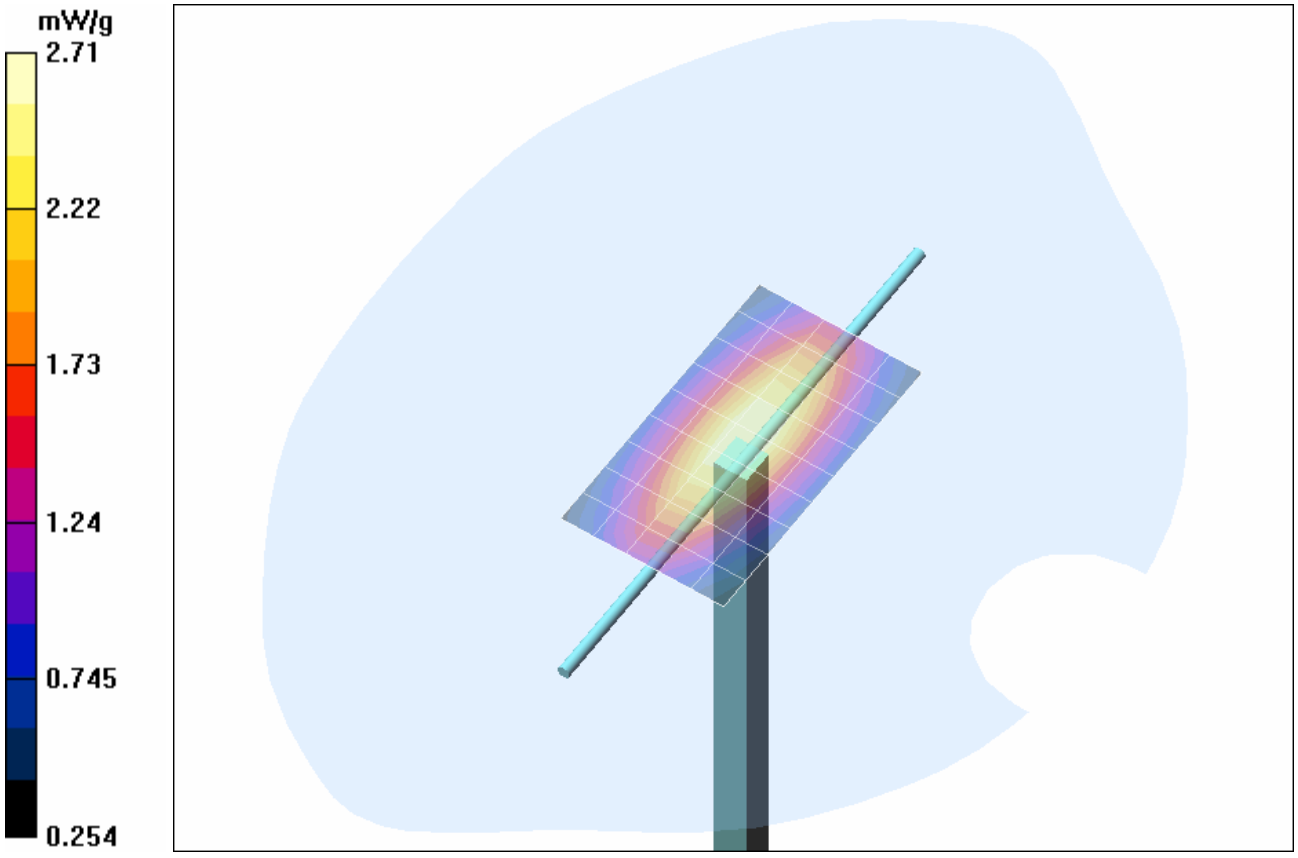
Ambient Temp: 24.7 °C; Fluid Temp: 23.3 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: M835 (σ = 0.97 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3)

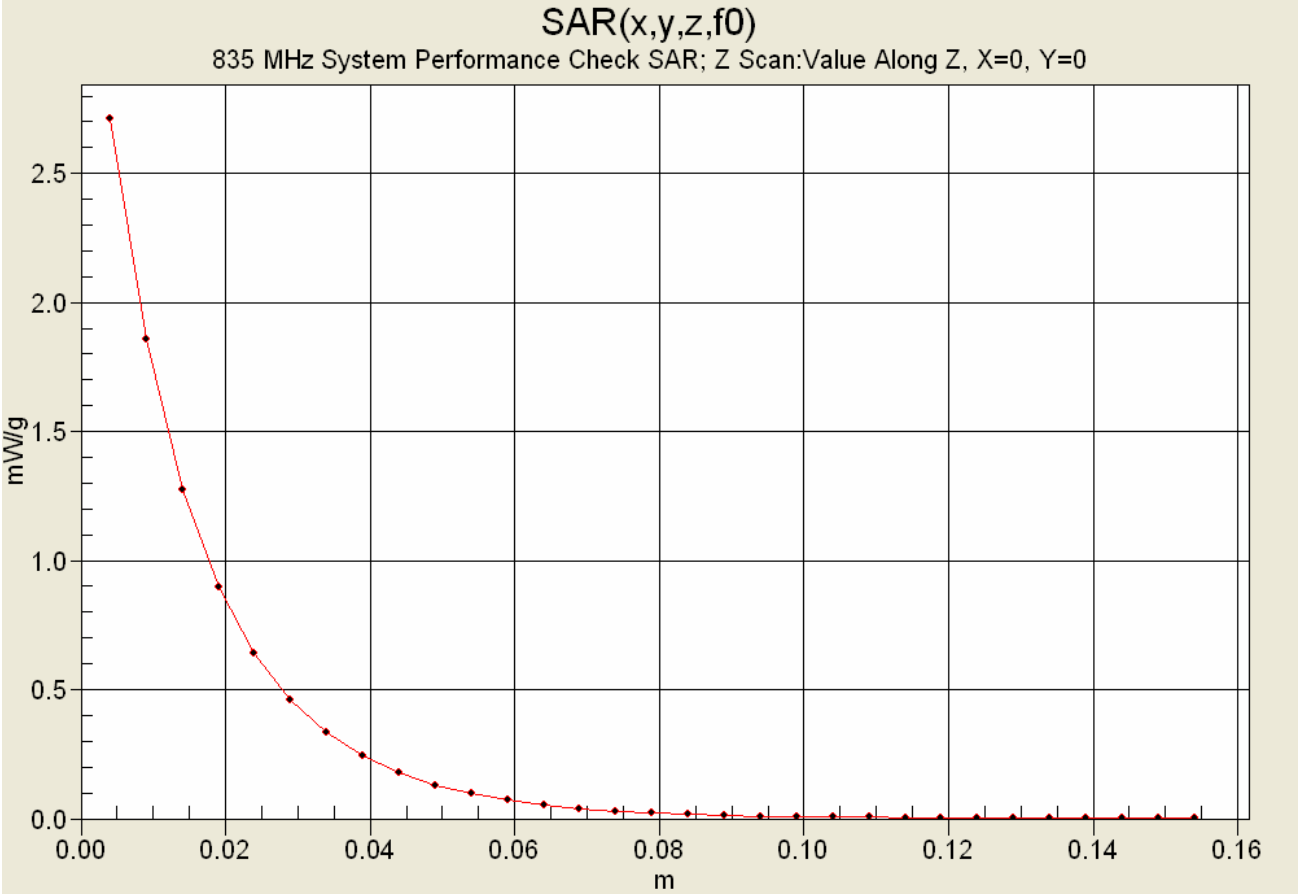
- Probe: ET3DV6 - SN1387; ConvF(6.1, 6.1, 6.1); Calibrated: 18/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 25/01/2005
- Phantom: SAM 4.0; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

835 MHz Dipole - System Performance Check/Area Scan (6x10x1):
Measurement grid: dx=10mm, dy=10mm

835 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.0 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 3.60 W/kg
SAR(1 g) = 2.49 mW/g; SAR(10 g) = 1.64 mW/g



Z-Axis Scan



APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

835 MHz DUT Evaluation (Head)

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************************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Tue 23/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH   FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
************************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.7350	42.02	0.89	42.38	0.78
0.7450	41.97	0.89	41.83	0.80
0.7550	41.92	0.89	41.37	0.82
0.7650	41.86	0.89	41.15	0.83
0.7750	41.81	0.90	41.09	0.84
0.7850	41.76	0.90	41.09	0.85
0.7950	41.71	0.90	41.17	0.85
0.8050	41.66	0.90	41.50	0.85
0.8150	41.60	0.90	41.54	0.86
0.8250	41.55	0.90	41.52	0.86
0.8350	41.50	0.90	41.29	0.87
0.8450	41.50	0.91	41.01	0.88
0.8550	41.50	0.92	40.51	0.89
0.8650	41.50	0.93	40.06	0.91
0.8750	41.50	0.94	39.79	0.93
0.8850	41.50	0.95	39.58	0.94
0.8950	41.50	0.96	39.60	0.95
0.9050	41.50	0.97	39.88	0.95
0.9150	41.50	0.98	40.17	0.95
0.9250	41.48	0.98	40.33	0.95
0.9350	41.46	0.99	40.37	0.95

835 MHz System Performance Check (Brain)

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************************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Mon 22/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH   FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
************************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.7350	42.02	0.89	42.71	0.83
0.7450	41.97	0.89	42.48	0.83
0.7550	41.92	0.89	42.36	0.84
0.7650	41.86	0.89	42.21	0.85
0.7750	41.81	0.90	42.05	0.86
0.7850	41.76	0.90	42.11	0.87
0.7950	41.71	0.90	42.05	0.88
0.8050	41.66	0.90	41.96	0.89
0.8150	41.60	0.90	41.96	0.90
0.8250	41.55	0.90	41.79	0.91
0.8350	41.50	0.90	41.57	0.92
0.8450	41.50	0.91	41.47	0.92
0.8550	41.50	0.92	41.41	0.93
0.8650	41.50	0.93	41.13	0.94
0.8750	41.50	0.94	40.92	0.95
0.8850	41.50	0.95	40.77	0.96
0.8950	41.50	0.96	40.75	0.97
0.9050	41.50	0.97	40.66	0.98
0.9150	41.50	0.98	40.68	0.99
0.9250	41.48	0.98	40.69	0.99
0.9350	41.46	0.99	40.65	1.01

1880 MHz DUT Evaluation (Head)

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**********************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Tue 23/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH   FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
1.8000	40.00	1.40	38.82	1.32
1.8100	40.00	1.40	38.79	1.32
1.8200	40.00	1.40	38.77	1.34
1.8300	40.00	1.40	38.58	1.35
1.8400	40.00	1.40	38.69	1.35
1.8500	40.00	1.40	38.68	1.36
1.8600	40.00	1.40	38.63	1.36
1.8700	40.00	1.40	38.48	1.38
1.8800	40.00	1.40	38.54	1.40
1.8900	40.00	1.40	38.37	1.41
1.9000	40.00	1.40	38.36	1.42
1.9100	40.00	1.40	38.36	1.42
1.9200	40.00	1.40	38.32	1.44
1.9300	40.00	1.40	38.29	1.45
1.9400	40.00	1.40	38.19	1.46
1.9500	40.00	1.40	38.18	1.47
1.9600	40.00	1.40	38.11	1.48
1.9700	40.00	1.40	37.95	1.49
1.9800	40.00	1.40	38.01	1.50
1.9900	40.00	1.40	37.92	1.50
2.0000	40.00	1.40	37.87	1.52

1880 MHz DUT Evaluation (Head)

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**********************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Wed 24/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH   FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
1.7800	40.03	1.39	38.70	1.24
1.7900	40.02	1.39	38.54	1.28
1.8000	40.00	1.40	38.64	1.25
1.8100	40.00	1.40	38.56	1.30
1.8200	40.00	1.40	38.29	1.28
1.8300	40.00	1.40	38.48	1.28
1.8400	40.00	1.40	38.48	1.32
1.8500	40.00	1.40	38.37	1.33
1.8600	40.00	1.40	38.18	1.31
1.8700	40.00	1.40	38.22	1.32
1.8800	40.00	1.40	38.17	1.35
1.8900	40.00	1.40	37.68	1.37
1.9000	40.00	1.40	37.97	1.36
1.9100	40.00	1.40	37.91	1.37
1.9200	40.00	1.40	37.80	1.40
1.9300	40.00	1.40	37.80	1.37
1.9400	40.00	1.40	37.72	1.40
1.9500	40.00	1.40	37.93	1.38
1.9600	40.00	1.40	37.71	1.42
1.9700	40.00	1.40	37.87	1.43
1.9800	40.00	1.40	38.05	1.44

1880 MHz DUT Evaluation (Body)

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**********************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Wed 24/Aug/2005
Freq    Frequency(GHz)
FCC_eH  FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH  FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB  FCC Limits for Body Epsilon
FCC_sB  FCC Limits for Body Sigma
Test_e  Epsilon  of  UIM
Test_s  Sigma of UIM
**********************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
1.8000	53.30	1.52	51.38	1.42
1.8100	53.30	1.52	51.32	1.43
1.8200	53.30	1.52	51.29	1.44
1.8300	53.30	1.52	51.17	1.45
1.8400	53.30	1.52	51.26	1.47
1.8500	53.30	1.52	51.25	1.47
1.8600	53.30	1.52	51.09	1.49
1.8700	53.30	1.52	51.10	1.50
1.8800	53.30	1.52	50.98	1.51
1.8900	53.30	1.52	51.01	1.53
1.9000	53.30	1.52	51.01	1.54
1.9100	53.30	1.52	50.86	1.54
1.9200	53.30	1.52	50.90	1.56
1.9300	53.30	1.52	50.87	1.56
1.9400	53.30	1.52	50.78	1.58
1.9500	53.30	1.52	50.70	1.58
1.9600	53.30	1.52	50.53	1.60
1.9700	53.30	1.52	50.74	1.62
1.9800	53.30	1.52	50.59	1.62
1.9900	53.30	1.52	50.50	1.64
2.0000	53.30	1.52	50.46	1.65

1900 MHz System Performance Check (Brain)

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**********************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Tue 23/Aug/2005
Freq    Frequency(GHz)
FCC_eH  FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH  FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e  Epsilon  of  UIM
Test_s  Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
1.8000	40.00	1.40	38.82	1.32
1.8100	40.00	1.40	38.79	1.32
1.8200	40.00	1.40	38.77	1.34
1.8300	40.00	1.40	38.58	1.35
1.8400	40.00	1.40	38.69	1.35
1.8500	40.00	1.40	38.68	1.36
1.8600	40.00	1.40	38.63	1.36
1.8700	40.00	1.40	38.48	1.38
1.8800	40.00	1.40	38.54	1.40
1.8900	40.00	1.40	38.37	1.41
1.9000	40.00	1.40	38.36	1.42
1.9100	40.00	1.40	38.36	1.42
1.9200	40.00	1.40	38.32	1.44
1.9300	40.00	1.40	38.29	1.45
1.9400	40.00	1.40	38.19	1.46
1.9500	40.00	1.40	38.18	1.47
1.9600	40.00	1.40	38.11	1.48
1.9700	40.00	1.40	37.95	1.49
1.9800	40.00	1.40	38.01	1.50
1.9900	40.00	1.40	37.92	1.50
2.0000	40.00	1.40	37.87	1.52

835 MHz DUT Evaluation (Body)

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************************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Thu 25/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH   FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB   FCC Limits for Body Epsilon
FCC_sB   FCC Limits for Body Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
************************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.7350	55.59	0.96	54.98	0.89
0.7450	55.55	0.96	55.04	0.89
0.7550	55.51	0.96	55.16	0.90
0.7650	55.47	0.96	54.96	0.91
0.7750	55.43	0.97	54.80	0.89
0.7850	55.39	0.97	54.90	0.92
0.7950	55.36	0.97	54.35	0.91
0.8050	55.32	0.97	54.02	0.95
0.8150	55.28	0.97	54.29	0.96
0.8250	55.24	0.97	54.08	0.96
0.8350	55.20	0.97	54.02	0.98
0.8450	55.17	0.98	54.58	0.98
0.8550	55.14	0.99	54.34	0.99
0.8650	55.11	1.01	54.28	1.00
0.8750	55.08	1.02	53.78	1.00
0.8850	55.05	1.03	53.91	1.02
0.8950	55.02	1.04	53.43	1.02
0.9050	55.00	1.05	53.53	1.03
0.9150	55.00	1.06	53.41	1.05
0.9250	54.98	1.06	53.42	1.05
0.9350	54.96	1.07	53.44	1.07

835 MHz System Performance Check (Brain)

```
************************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Thu 25/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH   FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
************************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.7350	42.02	0.89	41.68	0.81
0.7450	41.97	0.89	41.51	0.82
0.7550	41.92	0.89	41.88	0.81
0.7650	41.86	0.89	41.33	0.83
0.7750	41.81	0.90	41.38	0.82
0.7850	41.76	0.90	41.56	0.85
0.7950	41.71	0.90	41.14	0.84
0.8050	41.66	0.90	40.64	0.85
0.8150	41.60	0.90	41.04	0.88
0.8250	41.55	0.90	40.81	0.88
0.8350	41.50	0.90	40.65	0.90
0.8450	41.50	0.91	40.67	0.90
0.8550	41.50	0.92	40.66	0.92
0.8650	41.50	0.93	40.49	0.92
0.8750	41.50	0.94	40.03	0.93
0.8850	41.50	0.95	39.96	0.95
0.8950	41.50	0.96	40.02	0.92
0.9050	41.50	0.97	39.72	0.95
0.9150	41.50	0.98	39.60	0.97
0.9250	41.48	0.98	39.52	0.96
0.9350	41.46	0.99	39.44	0.97

1900 MHz System Performance Check & 1880 MHz DUT Evaluation (Body)

```
**********************************************************
Celltech Labs Inc.s
Test Result for UIM Dielectric Parameter
Tue 30/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH   FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB   FCC Limits for Body Epsilon
FCC_sB   FCC Limits for Body Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
**********************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
1.8000	53.30	1.52	51.23	1.53
1.8100	53.30	1.52	51.04	1.48
1.8200	53.30	1.52	51.21	1.51
1.8300	53.30	1.52	51.26	1.51
1.8400	53.30	1.52	51.03	1.53
1.8500	53.30	1.52	51.02	1.55
1.8600	53.30	1.52	50.94	1.55
1.8700	53.30	1.52	50.98	1.58
1.8800	53.30	1.52	50.89	1.58
1.8900	53.30	1.52	50.75	1.59
1.9000	53.30	1.52	50.69	1.59
1.9100	53.30	1.52	50.89	1.58
1.9200	53.30	1.52	50.73	1.64
1.9300	53.30	1.52	50.44	1.61
1.9400	53.30	1.52	50.45	1.64
1.9500	53.30	1.52	50.55	1.64
1.9600	53.30	1.52	50.49	1.64
1.9700	53.30	1.52	50.33	1.67
1.9800	53.30	1.52	50.47	1.67
1.9900	53.30	1.52	50.35	1.70
2.0000	53.30	1.52	50.24	1.70

835 MHz System Performance Check & DUT Evaluation (Muscle)

```
**********************************************************
Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Tue 30/Aug/2005
Freq     Frequency(GHz)
FCC_eH   FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH   FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB   FCC Limits for Body Epsilon
FCC_sB   FCC Limits for Body Sigma
Test_e   Epsilon  of  UIM
Test_s   Sigma of UIM
**********************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.7350	55.59	0.96	54.78	0.86
0.7450	55.55	0.96	54.67	0.88
0.7550	55.51	0.96	54.55	0.89
0.7650	55.47	0.96	54.60	0.91
0.7750	55.43	0.97	54.46	0.92
0.7850	55.39	0.97	54.26	0.92
0.7950	55.36	0.97	54.46	0.93
0.8050	55.32	0.97	54.13	0.94
0.8150	55.28	0.97	54.17	0.92
0.8250	55.24	0.97	54.17	0.95
0.8350	55.20	0.97	53.82	0.97
0.8450	55.17	0.98	53.48	0.98
0.8550	55.14	0.99	53.54	0.99
0.8650	55.11	1.01	53.69	1.00
0.8750	55.08	1.02	53.73	1.01
0.8850	55.05	1.03	53.31	1.02
0.8950	55.02	1.04	52.98	1.03
0.9050	55.00	1.05	53.32	1.04
0.9150	55.00	1.06	53.03	1.05
0.9250	54.98	1.06	53.13	1.05
0.9350	54.96	1.07	52.86	1.07

APPENDIX G - SAM PHANTOM CERTIFICATE OF CONFORMITY

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 BA
Series No	TP-1002 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 18.11.2001

Signature / Stamp Schmid & Partner Engineering AG
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