RF EXPOSURE EVALUATION

SPECIFIC ABSORPTION RATE

SAR TEST REPORT

FOR

ITRONIX CORPORATION

IX-AC595 DUAL-BAND CDMA/EV-DO PCMCIA MODEM

INSTALLED IN

IX325 SERIES RUGGED TABLET PC

WITH CO-LOCATED

BLUETOOTH

IDENTIFIER(S)	FCC ID: KBCIX-AC595	IC: 1943A-AC595
Test Standard(s) and Procedure(s)	FCC OET Bulletin 65, Supplement C (01-01)	
	FCC OET SAR Measurement Procedures for 3G Devices	
	Industry Canada RSS-102 Issue 2	

Test Report Serial No.

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Test Lab and Location

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DECLARATION OF COMPLIANCE
SAR RF EXPOSURE EVALUATION

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FCC IDENTIFIER:	KBCIX-AC595	**IC IDENTIFIER:**	1943A-AC595	**MODEL:**	IX-AC595	
Rule Part(s) Applied:	FCC	47 CFR §2.1093	IC	Health Canada Safety Code 6		
Test Procedure(s) Applied:	FCC	OET Bulletin 65, Supplement C (01-01)	OET SAR Measurement Procedures for 3G Devices			
	IC	RSS-102 Issue 2				
Device Classification(s):	FCC	PCS Licensed Transmitter (PCB)	47 CFR Part 24 Subpart E			
	IC	2 GHz Personal Communication Services	RSS-133 Issue 3			
		800 MHz Cellular Telephones Employing New Technologies	RSS-132 Issue 2			
Device Model & Description:	Dual-Band CDMA/EV-DO PCMCIA Modem Card		1xEV-DO Rev A	1xEV-DO Rev 0	CDMA 1xRTT	
Host PC Type:	IX325 Rugged Tablet PC		Manufactured by Itronix Corporation			
Co-located Transmitter(s):	MS-6837 Bluetooth		Manufactured by Micro-Star International			
User Display Orientation(s):	0 Degrees Landscape		-90 Degrees Portrait			
Transmit Frequency Range(s):	1851.25 - 1908.75 MHz	PCS CDMA/EV-DO	824.70 - 848.31 MHz	Cellular CDMA/EV-DO		
	2402 - 2480 MHz	Bluetooth	Simultaneous Transmission with IX-AC595			
Max. RF Output Power Tested:	PCS Band	24.2 dBm	0.263 Watts	EV-DO Rev. 0	1880.00 MHz	Conducted Average
		24.2 dBm	0.263 Watts	EV-DO Rev. A	1880.00 MHz	Conducted Average
		24.2 dBm	0.263 Watts	CDMA 1xRTT	1880.00 MHz	Conducted Average
	Cellular Band	23.9 dBm	0.245 Watts	EV-DO Rev. 0	836.52 MHz	Conducted Average
		24.0 dBm	0.251 Watts	EV-DO Rev. A	836.52 MHz	Conducted Average
		24.1 dBm	0.257 Watts	CDMA 1xRTT	836.52 MHz	Conducted Average
	Bluetooth	3.60 dBm	0.0023 Watts	tested with modulated signal & fixed frequency		
Antenna Type(s) Tested:	Internal Dual-Band CDMA		Manufactured by Sierra Wireless	Embedded on PCMCIA Card		
	Internal Bluetooth		Manufactured by Well Green Technology	Left Side Center Edge of Tablet PC		
Battery Type(s) Tested:	Lithium-ion		11.1 V, 3600 mAh	Model: T8M-E		
Max. SAR Level(s) Evaluated:	**Body**	**PCS Band**	**CDMA 1xRTT**	**0.331 W/kg**	**1g average**	
		Cellular Band	**EV-DO Rev. 0 & Bluetooth**	**0.294 W/kg**	**1g average**	

Celltech Labs Inc. declares under its sole responsibility that this wireless portable device was compliant with the Specific Absorption Rate (SAR) RF exposure requirements of 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) and Industry Canada RSS-102 Issue 2 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.

Test Report Approved By:
Sean Johnston
SAR Lab Manager
Celltech Labs Inc.

TABLE OF CONTENTS

1.0 INTRODUCTION

This measurement report demonstrates that ITRONIX CORPORATION Model: IX-AC595 Dual-Band CDMA/EV-DO PCMCIA Modem Card installed in the IX325 Rugged Tablet PC with co-located Bluetooth complies with the SAR (Specific Absorption Rate) RF exposure requirements of 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]) and IC RSS-102 Issue 2 (see reference [4]) were employed. A description of the product and 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.

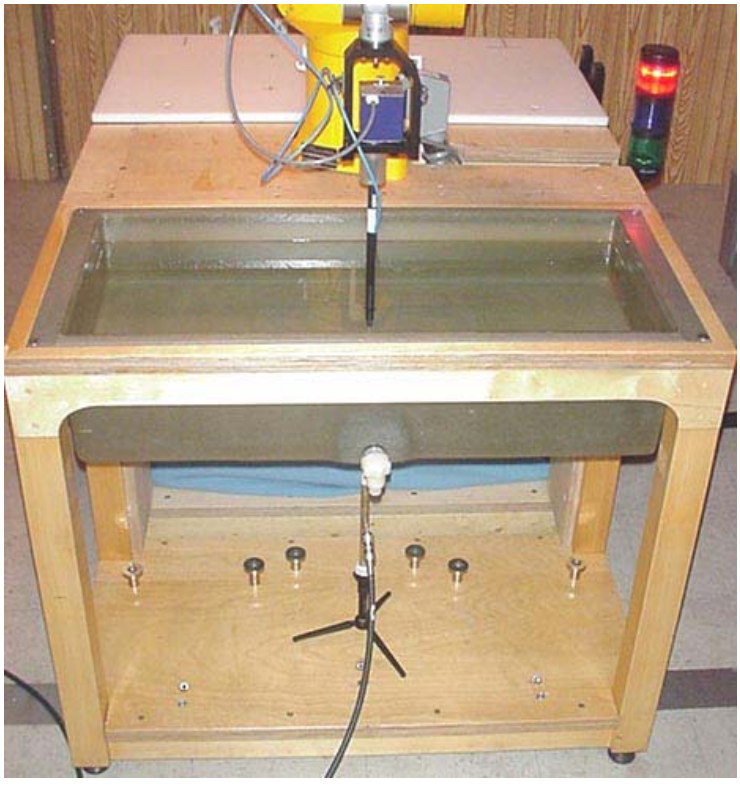
2.0 DESCRIPTION of DEVICE UNDER TEST (DUT)

FCC Rule Part(s) Applied	47 CFR §2.1093			**IC Standard(s) Applied**	Health Canada Safety Code 6			
Test Procedure(s) Applied	FCC OET Bulletin 65, Supplement C (01-01)			FCC OET SAR Measurement Procedures for 3G Devices				
	Industry Canada RSS-102 Issue 2							
RF Exposure Category	General Population / Uncontrolled Environment							
FCC Device Classification	PCS Licensed Transmitter (PCB)				47 CFR Part 24 Subpart E			
IC Device Classification	2 GHz Personal Communication Services				RSS 133 Issue 3			
	800MHz Cellular Telephones Employing New Technologies				RSS-132 Issue 2			
Device Model(s)	IX-AC595							
Device Manufacturer	Sierra Wireless Inc. (AC595 PCMCIA Card)				Itronix Corporation (IX325 Tablet PC)			
Device Description	Dual-Band CDMA/EV-DO PCMCIA Modem Card installed in IX325 Rugged Tablet PC							
Transmitter Mode(s)	CDMA 1xRTT		1xEV-DO Rev. 0		1xEV-DO Rev. A			
Co-located Transmitter(s)	Micro-Star International Bluetooth Model: MS-6837 (Simultaneous Transmission with Dual-Band CDMA/EV-DO)							
LCD Display User Orientation(s)	0 Degrees Landscape				-90 Degrees Portrait			
FCC IDENTIFIER	KBCIX-AC595			**IC IDENTIFIER**	1943A-AC595			
Test Sample Serial No.(s)	ZZGEG6108ZZ8638		IX325 Tablet PC		Production Unit			
	X272806107210		AC595 PCMCIA Modem		Production Unit			
Transmit Frequency Range(s)	824.70-848.31 MHz	Cellular Band CDMA/EV-DO	1851.25-1908.75 MHz	PCS Band CDMA/EV-DO	2402-2480 MHz	Bluetooth		
Max. RF Conducted Average Output Power Level(s) Tested	**Band**	**Freq.**	**EV-DO Rev. 0**		**EV-DO Rev. A**		**CDMA 1xRTT**	
		MHz	**dBm**	**Watts**	**dBm**	**Watts**	**dBm**	**Watts**
	Cellular	**836.52**	23.9	0.245	24.0	0.251	24.1	0.257
	PCS	**1880.00**	24.2	0.263	24.2	0.263	24.2	0.263
	Bluetooth	**2441**	3.60 dBm		0.0023 Watts			
Antenna Type(s) Tested	Dual-Band CDMA/EV-DO		Internal		Embedded on PCMCIA Card			
	Bluetooth		Internal		Left Side Center Edge of Tablet PC			
Battery Type(s) Tested	Internal Lithium-ion		11.1 V, 3600 mAh		Model: T8M-E			
Additional Battery Type(s) Testing Not Performed	External Second Lithium-ion		11.1 V, 3600 mAh		Model: T8S-E			
	Note: The external second lithium-ion battery was not evaluated for SAR based on the fact that it has exactly the same power specifications as the internal battery and provides additional separation distance from tablet to user.							

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 SAR Measurement System with planar phantom



DASY4 SAR Measurement System with planar phantom and validation dipole

4.0 OUTPUT POWER MEASUREMENTS

1xEV-DO Rev. 0

Power Measurement Procedures

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

Application	Rev. License
1xEV-DO Terminal Test	A.07.13, L

FTAP

- Call Setup → Shift & Preset
- Protocol Rev → 0 (1xEV-DO)
- Application Config → Enhanced Test Application Protocol → FTAP
- FTAP Rate → 307.2 kbps (2 Slot, QPSK)
- Access Network Info → Cell Parameters → Sector ID → (Didn't Need One) → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RTAP

- Call Setup → Shift & Preset
- Protocol Rev → 0 (1xEV-DO)
- Application Config → Enhanced Test Application Protocol → RTAP
- RTAP Rate → 153.6 kbps
- Access Network Info → Cell Parameters → Sector ID → (Didn't Need One) → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

Conducted Average Power Measurements

1 x EV-DO Rev. 0

Band	Freq. (MHz)	Channel	FTAP			RTAP		
			Rate (kbps)	dBm	Watts	Rate (kbps)	dBm	Watts
PCS	1851.25	25	307.2 (2 slot)	23.8	0.240	153.6	24.0	0.251
	1880.00	600		**24.2**	**0.263**		24.1	0.257
	1908.75	1175		23.6	0.229		23.7	0.234
Cellular	824.70	1013	307.2 (2 slot)	23.2	0.209	153.6	23.4	0.219
	836.52	384		23.7	0.234		**23.9**	**0.245**
	848.31	777		23.7	0.234		23.9	0.245

OUTPUT POWER MEASUREMENTS (Cont.)

1xEV-DO Rev. A

Power Measurement Procedures

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

Application	Rev. License
1xEV-DO Terminal Test	A.07.13, L

FETAP

- Call Setup → Shift & Preset
- Protocol Rev → A (1xEV-DO-A)
- Application Config → Enhanced Test Application Protocol → FETAP
- FTAP Rate → 307.2 kbps (2 Slot, QPSK)
- Protocol Subtype Config → Release A Physical Layer Subtype → Subtype 0
- Access Network Info → Cell Parameters → Sector ID → (Didn't Need One)→ Subnet Mask → 0
- Generator Info → Termination Parameters > Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RETAP

- Call Setup → Shift & Preset
- Protocol Rev → A (1xEV-DO-A)
- Application Config → Enhanced Test Application Protocol → RETAP
- F-Traffic Format → 4 (1024, 2,128) Canonical (307.2k, QPSK)
- R-Data Pkt Size → 4096
- Protocol Subtype Config → Release A Physical Layer Subtype → Subtype 2
  → PL Subtype 2 Access Channel MAC Subtype → Default (Subtype 0)
- Access Network Info → Cell Parameters → Sector ID → (Didn't Need One) → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration > 16 Slots
  → ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

Conducted Average Power Measurements

1x EV-DO Rev. A

Band	Freq. (MHz)	Channel	FETAP			RETAP		
			Rate (kbps)	dBm	Watts	Rate (bps)	dBm	Watts
PCS	1851.25	25	307.2 (2 slot)	23.7	0.234	4096 (16 Slots)	24.2	0.263
	1880.00	600		23.8	0.240		**24.2**	**0.263**
	1908.75	1175		23.8	0.240		23.8	0.240
Cellular	824.70	1013	307.2 (2 slot)	23.2	0.209	4096 (16 Slots)	23.5	0.224
	836.52	384		23.7	0.234		**24.0**	**0.251**
	848.31	777		23.7	0.234		24.0	0.251

OUTPUT POWER MEASUREMENTS (Cont.)

CDMA 1xRTT

Power Measurement Procedures

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

Application	Rev. License
CDMA2000 Mobile Test	B.12.12, L

1xRTT

- Call Setup → Shift & Preset
- Protocol Rev → 6 (IS-2000-0)
- Radio Config (RC) → RC3 (Fwd3, Rvs3)
- FCH Service Option (SO) Setup → SO55
- Traffic Data Rate → Full
- Cell info → Cell Parameters → System ID (SID) → 8
  → Network ID (NID) → 65535
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

Conducted Average Power Measurements

CDMA 1xRTT

Band	Freq. (MHz)	Channel	Rate (Kbps)	Radio Config. (RC)	Service Option (SO)	dBm	Watts
PCS	1851.25	25	9600	RC3	SO55 (FCH)	24.2	0.263
	1880.00	600				**24.2**	**0.263**
	1908.75	1175				23.7	0.234
Cellular	824.70	1013	9600	RC3	SO55 (FCH)	23.5	0.224
	836.52	384				**24.1**	**0.257**
	848.31	777				24.0	0.251
PCS	1851.25	25	9600	RC3	SO32 (FCH + SCH)	23.5	0.224
	1880.00	600				23.7	0.234
	1908.75	1175				23.6	0.229
Cellular	824.70	1013	9600	RC3	SO32 (FCH + SCH)	23.1	0.204
	836.52	384				23.5	0.224
	848.31	777				23.6	0.229
PCS	1851.25	25	9600	RC1	SO55	24.2	0.263
	1880.00	600				24.2	0.263
	1908.75	1175				23.7	0.234
Cellular	824.70	1013	9600	RC1	SO55	23.5	0.224
	836.52	384				24.1	0.257
	848.31	777				24.0	0.251

5.0 MEASUREMENT SUMMARY

BODY SAR EVALUATION RESULTS

Cellular CDMA/EV-DO

Test Mode		Freq.	Chan.	Bluetooth On/Off	Battery Type	DUT Position to Planar Phantom	DUT Spacing to Planar Phantom	Cond. Power Before Test	SAR Drift During Test	Measured SAR 1g
		MHz					cm	dBm	dB	W/kg
EV-DO Rev. 0	RTAP	836.52	384	Off	Standard	Bottom Side	0.0 (Touch)	23.9	-0.101	0.281
EV-DO Rev. A	RETAP	836.52	384	Off	Standard	Bottom Side	0.0 (Touch)	24.0	-0.0549	0.278
CDMA 1xRTT	SO55, RC3	836.52	384	Off	Standard	Bottom Side	0.0 (Touch)	24.1	-0.0750	0.268
EV-DO Rev. 0	**RTAP**	836.52	384	**On**	Standard	Bottom Side	0.0 (Touch)	23.9	-0.0730	**0.294**
ANSI / IEEE C95.1:2005 - SAFETY LIMIT		**BODY: 1.6 W/kg (averaged over 1 gram)**					**Spatial Peak Uncontrolled Exposure / General Population**			

Test Date(s)	January 18, 2007				**Relative Humidity**	33	**%**
Fluid Type	**835 MHz Body**				**Atmospheric Pressure**	103.4	**kPa**
Dielectric Constant ε_r	**IEEE Target**		**Measured**	**Deviation**	**Ambient Temperature**	24.1	**°C**
	55.2	**± 5%**	57.3	+3.8%	**Fluid Temperature**	22.8	**°C**
Conductivity σ **(mho/m)**	**IEEE Target**		**Measured**	**Deviation**	**Fluid Depth**	≥ 15	**cm**
	0.97	**± 5%**	0.99	+2.1%	**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.	The device modes tested and reported in the above test data table were selected based on the procedures described in FCC OET SAR Measurement Procedures for 3G Devices were implemented (see reference [6]).
3.	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]).
4.	A co-located simultaneous transmit SAR evaluation with Bluetooth was performed in the maximum single transmit SAR configuration.
5.	The DUT was evaluated for SAR at maximum power via air-link using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set.
6.	The power drift of the DUT measured by the DASY4 system during the SAR evaluations was <5% from the start power.
7.	The DUT battery was fully charged prior to the SAR evaluations.
8.	The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
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).
10.	The SAR evaluations were performed within 24 hours of the system performance check.

MEASUREMENT SUMMARY (Cont.)

BODY SAR EVALUATION RESULTS

PCS CDMA/EV-DO

Test Mode		Freq.	Chan.	Bluetooth On/Off	Battery Type	DUT Position to Planar Phantom	DUT Spacing to Planar Phantom	Cond. Power Before Test	SAR Drift During Test	Measured SAR 1g
		MHz					cm	dBm	dB	W/kg
EV-DO Rev. 0	FTAP	1880.00	600	Off	Standard	Bottom Side	0.0 (Touch)	24.2	-0.0130	0.301
EV-DO Rev. A	RETAP	1880.00	600	Off	Standard	Bottom Side	0.0 (Touch)	24.2	0.0700	0.324
CDMA 1xRTT	**RC3, SO55**	1880.00	600	Off	Standard	Bottom Side	0.0 (Touch)	24.2	0.0560	**0.331**
EV-DO Rev. A	RETAP	1880.00	600	On	Standard	Bottom Side	0.0 (Touch)	24.2	0.0040	0.326

ANSI / IEEE C95.1:2005 - SAFETY LIMIT	BODY: 1.6 W/kg (averaged over 1 gram)	Spatial Peak Uncontrolled Exposure / General Population

Test Date(s)	January 19, 2007				Relative Humidity	32	%
Fluid Type	1880 MHz Body				Atmospheric Pressure	103.4	kPa
Dielectric Constant ε_r	IEEE Target		Measured	Deviation	Ambient Temperature	25.0	°C
	53.3	± 5%	52.3	-1.8%	Fluid Temperature	23.5	°C
Conductivity σ (mho/m)	IEEE Target		Measured	Deviation	Fluid Depth	≥ 15	cm
	1.52	± 5%	1.50	-1.3%	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.	The device modes tested and reported in the above test data table were selected based on the procedures described in FCC OET SAR Measurement Procedures for 3G Devices were implemented (see reference [6]).
	3.	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]).
	4.	A co-located simultaneous transmit SAR evaluation was performed with CDMA 1xRTT and the Bluetooth On.
	5.	The DUT was evaluated for SAR at maximum power via air-link using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set.
	6.	The power drift of the DUT measured by the DASY4 system during the SAR evaluations was <5% from the start power.
	7.	The DUT battery was fully charged prior to the SAR evaluations.
	8.	The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
	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).
	10.	The SAR evaluations were performed within 24 hours of the system performance check.

6.0 DETAILS OF SAR EVALUATION

The ITRONIX CORPORATION Model: IX-AC595 Dual-Band CDMA/EV-DO PCMCIA Modem installed in the IX325 Rugged Tablet PC with co-located Bluetooth was compliant for localized Specific Absorption Rate (Uncontrolled Exposure) based on the test provisions and conditions described below. The detailed test setup photographs are shown in Appendix D.

Test Configuration(s)

1. The DUT was evaluated for body SAR (lap-held) with the bottom side of the Tablet PC placed parallel to, and touching, the outer surface of the planar phantom.

Test Mode(s) & Power Setting(s)

2. The conducted power levels of the DUT were measured prior to the SAR evaluations using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set according to the procedures described in FCC SAR Measurement Procedures for 3G Devices (see reference [6]).
3. The DUT was tested in continuous transmit operation with a modulated CDMA signal via air-link with the Agilent 8960 Series 10 E5515C Wireless Communications Test Set at maximum power in “all bits up” power control mode.
4. For the co-located simultaneous transmit SAR evaluations the Bluetooth was tested in continuous transmit mode at maximum power on a fixed frequency (frequency hopping disabled) and modulated signal.
5. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.

Test Conditions

6. The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
7. 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).

7.0 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 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 (5 x 5 x 7 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 (7 x 7 x 7) to ensure complete capture of the peak spatial-average SAR.

8.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations system checks were performed using a planar phantom with an 835MHz dipole and a 1900MHz dipole (see Appendix E for system validation procedures). The dielectric parameters of the simulated tissue mixtures were measured prior to the system performance checks using an ALS-PR-DIEL Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C). A forward power of 250 mW 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 (see reference [8]).

SYSTEM PERFORMANCE CHECK EVALUATIONS

Test Date	Equiv. Tissue	SAR 1g (W/kg)			Dielectric Constant ε_r			Conductivity σ (mho/m)			ρ (Kg/m³)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
	Body (MHz)	SPEAG Target	Meas.	Dev.	IEEE Target	Meas.	Dev.	IEEE Target	Meas.	Dev.						
Jan 18	835	2.43 ±10%	2.63	+8.3%	55.2 ±5%	57.3	+3.8%	0.97 ±5%	0.99	+2.1%	1000	24.1	22.8	≥ 15	33	103.4
Jan 19	1900	9.95 ±10%	10.7	+7.6%	53.3 ±5%	52.3	-1.8%	1.52 ±5%	1.51	-0.6%	1000	25.0	23.5	≥ 15	32	103.4

Note(s)

1. The fluid temperature was measured prior to and after the system performance checks to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
2. The SAR evaluations were performed within 24 hours of the system performance check.

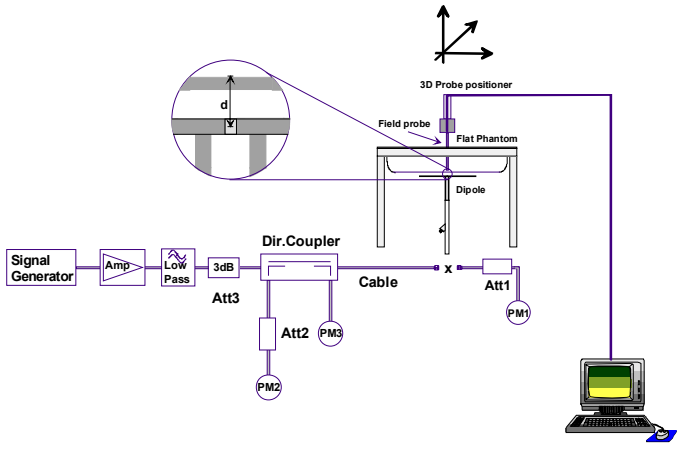


Figure 1. System Performance Check Measurement Setup

835MHz Dipole Setup

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

1900MHz Dipole Setup

9.0 SIMULATED EQUIVALENT TISSUES

The 1880/1900MHz simulated equivalent tissue mixture consisted of Glycol-monobutyl, water, and salt. The 835MHz simulated equivalent tissue mixture consisted of a viscous gel using 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 MIXTURE		
INGREDIENT	1900 MHz Body System Performance Check	1880 MHz Body DUT Evaluation
Water	69.85 %	69.85 %
Glycol Monobutyl	29.89 %	29.89 %
Salt	0.26 %	0.26 %

835MHz TISSUE MIXTURE		
INGREDIENT	835 MHz Body System Performance Check	835 MHz Body DUT Evaluation
Water	53.79 %	53.79 %
Sugar	45.13 %	45.13 %
Salt	0.98 %	0.98 %
Bactericide	0.10 %	0.10 %

10.0 SAR SAFETY LIMITS

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure)	(Occupational / Controlled Exposure)
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
The Spatial Average value of the SAR averaged over the whole body.		
The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.		
The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.		
Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.		
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.		

11.0 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	Measurement Software: DASY4, V4.7 Build 44
	Postprocessing Software: SEMCAD, V1.8 Build 171
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	Planar Phantom
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 55 liters

12.0 PROBE SPECIFICATION (ET3DV6)

Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, 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 Detect:	± 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 mobile phone

ET3DV6 E-Field Probe

13.0 PLANAR PHANTOM

The planar phantom is a fiberglass shell phantom with a 2.0 mm (+/-0.2mm) thick device measurement area at the center of the phantom for SAR evaluations of devices with a larger surface area than the planar section of the SAM phantom. The planar phantom is integrated in a wooden table (see Appendix G for dimensions and specifications of the planar phantom).

Planar Phantom

14.0 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. For evaluations of larger devices such as Laptop and Tablet PCs, a Plexiglas platform is attached to the device holder.

Device Holder

15.0 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
x	-DAE4		00019	353	21Jun06		21Jun07
	-DAE3		00018	370	08Feb06		08Feb07
x	-ET3DV6 E-Field Probe		00016	1387	16Mar06		16Mar07
	-EX3DV4 E-Field Probe		00125	3547	14Feb06		14Feb07
	-300MHz Validation Dipole		00023	135	23Oct06		23Oct07
	-450MHz Validation Dipole		00024	136	07Dec06		07Dec07
	-835MHz Validation Dipole		00022	411	**Brain**	28Mar06	28Mar07
x					**Body**	18Jan07	18Jan08
	-900MHz Validation Dipole		00020	054	**Brain**	06Jun06	06Jun07
					Body	06Jun06	06Jun07
	-1640MHz Validation Dipole		00212	0175	**Brain**	14Aug06	14Aug07
	-1800MHz Validation Dipole		00021	247	**Brain**	08Jun06	08Jun07
					Body	09Jun06	09Jun07
	-1900MHz Validation Dipole		00032	151	**Brain**	09Jun06	09Jun07
x					**Body**	19Jan07	19Jan08
	-2450MHz Validation Dipole		00025	150	**Body**	24Apr06	24Apr07
	5GHz Validation Dipole	-5200MHz	00126	1031	**Body**	18Jul06	18Jul07
		-5500MHz			**Body**	14Nov06	14Nov07
		-5800MHz			**Brain**	15Mar06	15Mar07
					Body	18Jul06	18Jul07
	-SAM Phantom V4.0C		00154	1033	N/A		N/A
x	-Barski Planar Phantom		00155	03-01	N/A		N/A
	-Plexiglas Side Planar Phantom		00156	161	N/A		N/A
	-Plexiglas Validation Planar Phantom		00157	137	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	12Apr06		12Apr07
	Gigatronics 8652A Power Meter		00007	1835272	03Feb06		03Feb07
x	Gigatronics 80701A Power Sensor		00011	1833542	03Feb06		03Feb07
x	Gigatronics 80701A Power Sensor		00013	1833713	03Feb06		03Feb07
x	HP 8753ET Network Analyzer		00134	US39170292	18Apr06		18Apr07
	HP 8648D Signal Generator		00005	3847A00611	N/A		N/A
	Rohde & Schwarz SMR40 Signal Generator		00006	100104	06Apr06		06Apr07
x	Amplifier Research 5S1G4 Power Amplifier		00106	26235	N/A		N/A
	HP E4408B Spectrum Analyzer		00015	US39240170	02Feb06		02Feb07
	Anritsu Radio Communication Analyzer		00208	6200241241	06Jun06		06Jun07
x	Agilent 8960 Wireless Communication Test Set		80012	GB42361078	13Dec06		12Jan09

16.0 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 (1880 MHz)	7.0	Normal	1	1	7.0	∞
Probe calibration (835 MHz)	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)	5	Normal	1	0.64	3.2	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	5	Normal	1	0.6	3.0	∞
Combined Standard Uncertainty (1880 MHz)					**12.05**	
Combined Standard Uncertainty (835 MHz)					**11.24**	
Expanded Uncertainty (k=2) (1880 MHz)					**24.09**	
Expanded Uncertainty (k=2) (835 MHz)					**22.48**	

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 (1900 MHz)	7.0	Normal	1	1	7.0	∞
Probe calibration (835 MHz)	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)	5	Normal	1	0.64	3.2	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	5	Normal	1	0.6	3.0	∞
Combined Standard Uncertainty (1900 MHz)					**10.51**	
Combined Standard Uncertainty (835 MHz)					**9.57**	
Expanded Uncertainty (k=2) (1900 MHz)					**21.01**	
Expanded Uncertainty (k=2) (835 MHz)					**19.14**	

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

17.0 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 - “Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)”, Radio Standards Specification RSS-102 Issue 2: November 2005.

[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] Federal Communication Commission - “SAR Measurement Procedures for 3G Devices”: June 2006 (Rev 1).

[7] ANSI/IEEE C95.1-2005 - “American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz”, New York: IEEE, April 2006.

[8] Schmid & Partner Engineering AG - “DASY4 Manual”, V4.5 March 2005.

APPENDIX A - SAR MEASUREMENT DATA

Date Tested: 01/18/2007

Body SAR - Cellular Band - EV-DO Rev. 0 - Bottom Side of Tablet PC - 836.52 MHz - Ch. 384

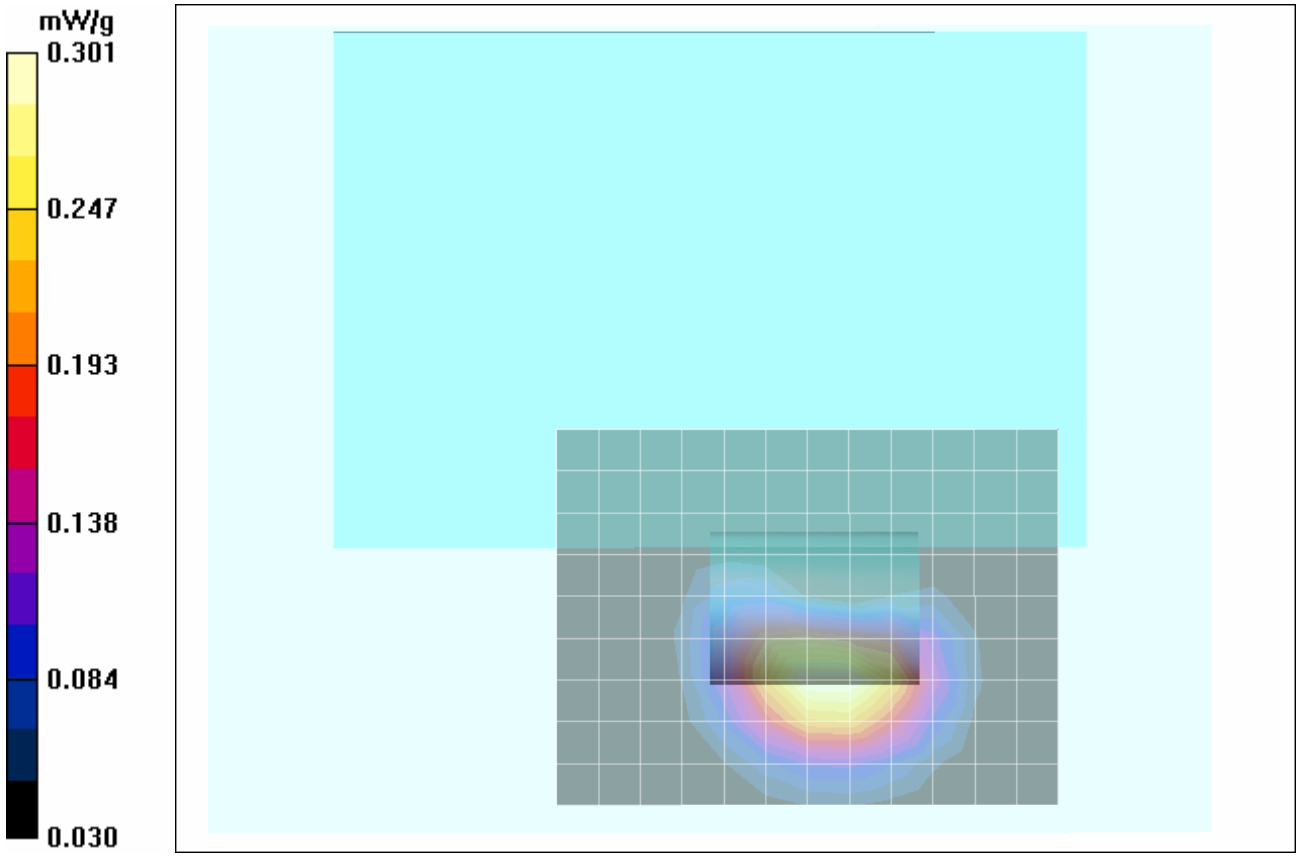
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

Communication System: Cellular CDMA
RF Output Power: 23.9 dBm (Conducted)
Frequency: 836.52 MHz; Duty Cycle: 1:1
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M835 Medium parameters used: f = 836.52 MHz; σ = 0.99 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. 0
Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. 0
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.2 V/m; Power Drift = -0.101 dB
Peak SAR (extrapolated) = 0.372 W/kg
SAR(1 g) = 0.281 mW/g; SAR(10 g) = 0.197 mW/g
Maximum value of SAR (measured) = 0.301 mW/g



Date Tested: 01/18/2007

Body SAR - Cellular Band - EV-DO Rev. A - Bottom Side of Tablet PC - 836.52 MHz - Ch. 384

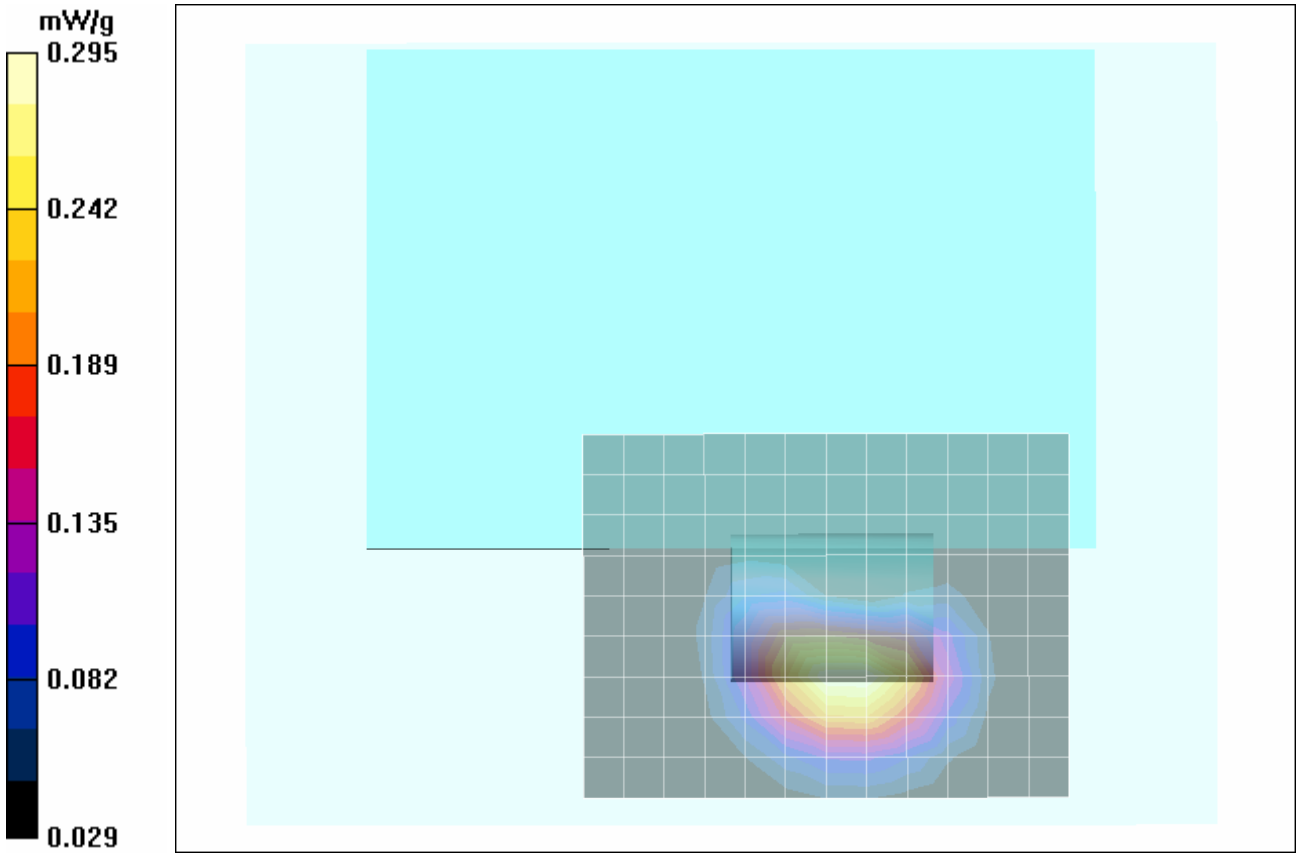
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

Communication System: Cellular CDMA
Frequency: 836.52 MHz; Duty Cycle: 1:1
RF Output Power: 24.0 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M835 Medium parameters used: f = 836.52 MHz; σ = 0.99 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. A
Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. A
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = -0.0549 dB
Peak SAR (extrapolated) = 0.367 W/kg
SAR(1 g) = 0.278 mW/g; SAR(10 g) = 0.196 mW/g
Maximum value of SAR (measured) = 0.295 mW/g



Date Tested: 01/18/2007

Body SAR - Cellular Band - CDMA 1xRTT - Bottom Side of Tablet PC - 836.52 MHz - Ch. 384

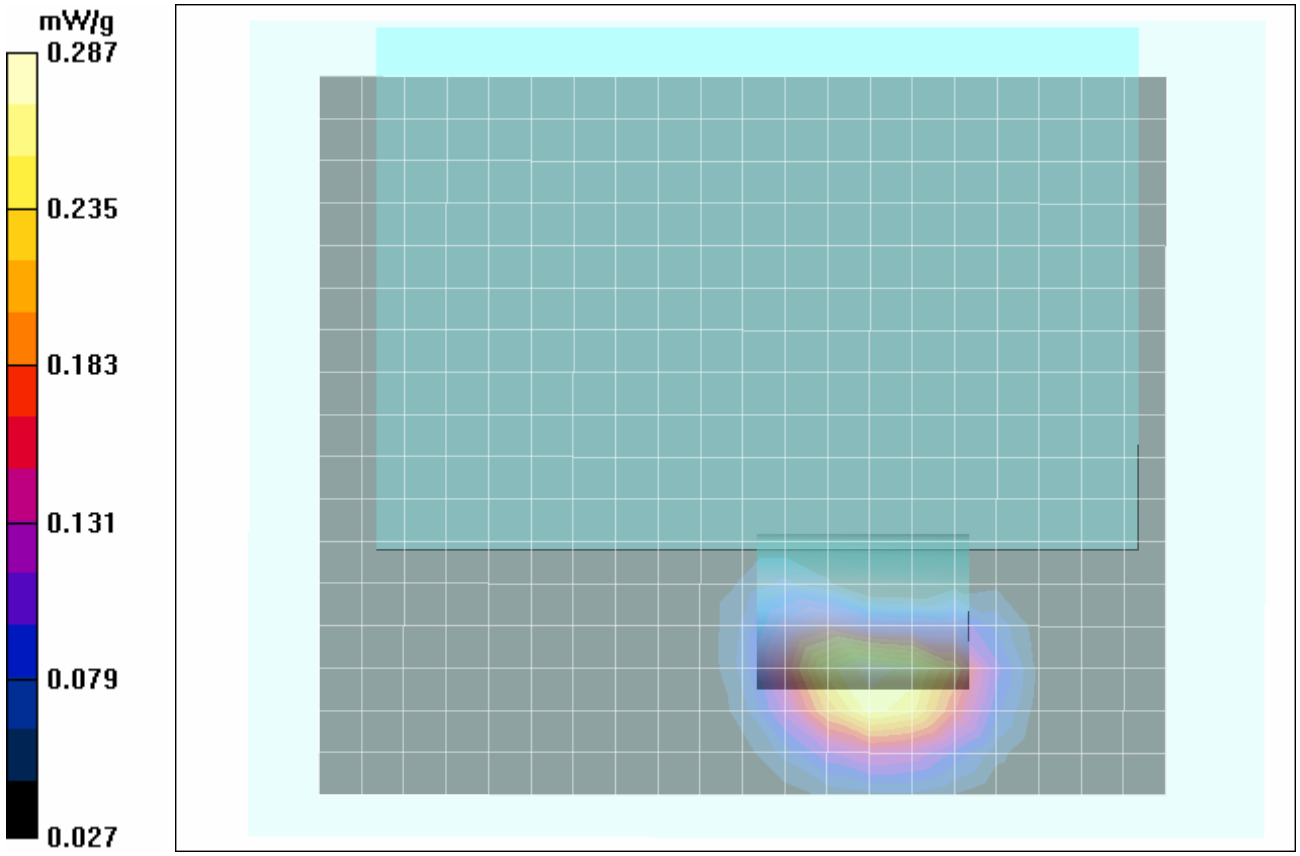
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

Communication System: Cellular CDMA
Frequency: 836.52 MHz; Duty Cycle: 1:1
RF Output Power: 24.1 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M835 Medium parameters used: f = 836.52 MHz; σ = 0.99 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - CDMA 1xRTT
Area Scan (19x21x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - CDMA 1xRTT
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.0750 dB
Peak SAR (extrapolated) = 0.361 W/kg
SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.287 mW/g



Date Tested: 01/18/2007

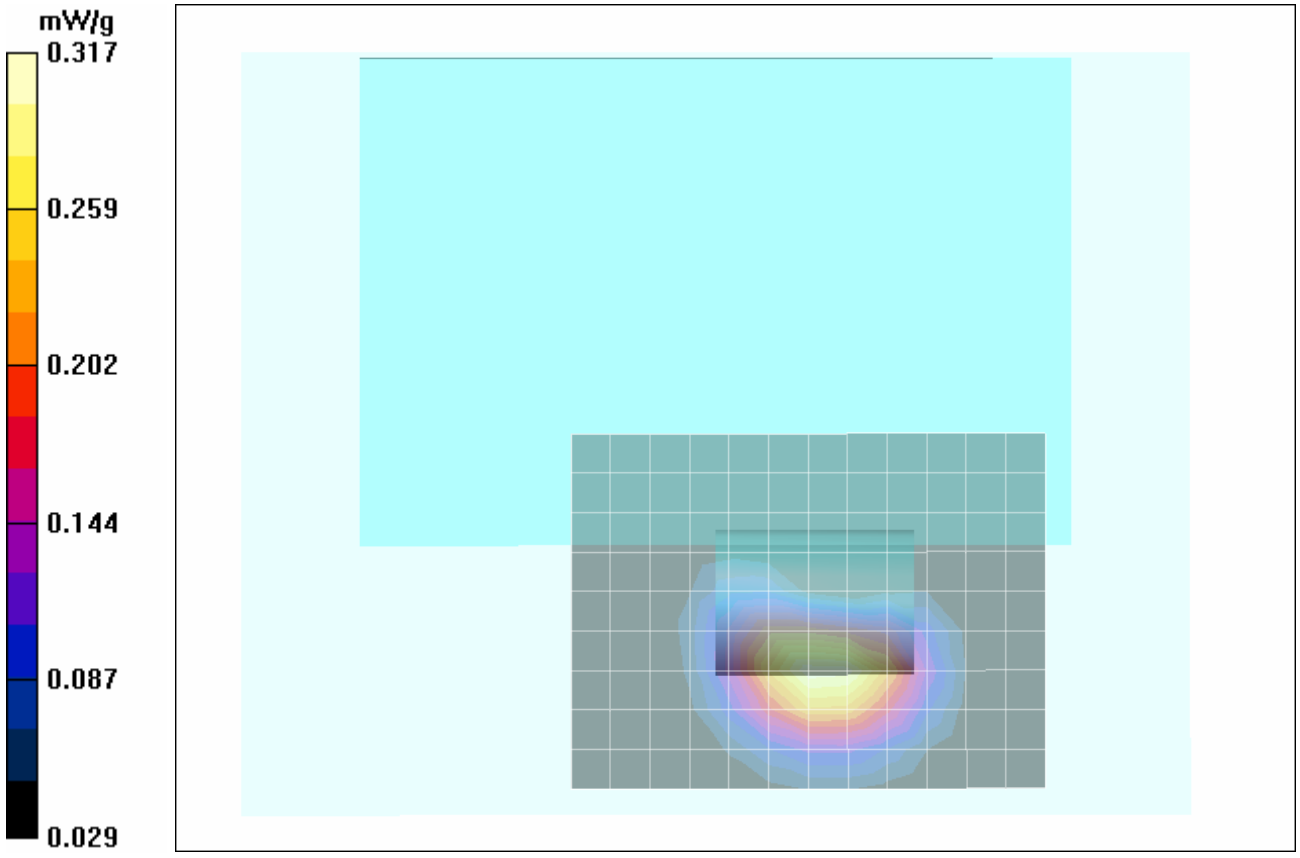
Body SAR - Cellular Band - EV-DO Rev. 0 - Bottom Side of Tablet PC - 836.52 MHz - Ch. 384 Simultaneous Transmit with Co-located Bluetooth

DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

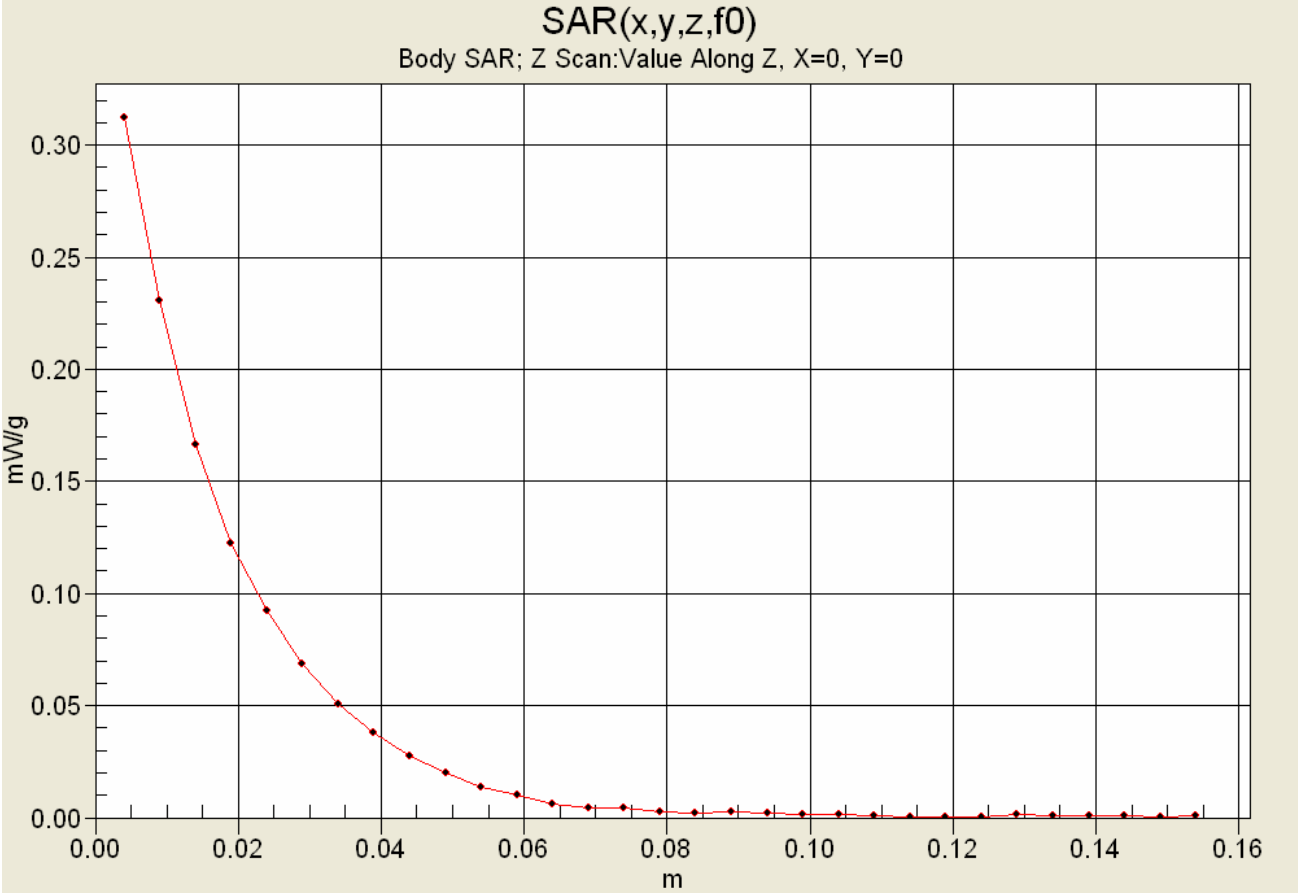
Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

Communication System: Cellular CDMA
Frequency: 836.52 MHz; Duty Cycle: 1:1
RF Output Power: 23.9 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Frequency: 2441 MHz; Channel 41; Duty Cycle: 1:1 (Bluetooth)
RF Output Power: 3.60 dBm Conducted (Bluetooth)
Medium: M835 Medium parameters used: f = 836.52 MHz; σ = 0.99 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. 0 & BT Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm
Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 384 - 836.52 MHz - EV-DO Rev. 0 & BT Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = -0.0730 dB
Peak SAR (extrapolated) = 0.391 W/kg
SAR(1 g) = 0.294 mW/g; SAR(10 g) = 0.205 mW/g
Maximum value of SAR (measured) = 0.317 mW/g



Z-Axis Scan



Date Tested: 01/19/2007

Body SAR - PCS Band - EV-DO Rev. 0 - Bottom Side of Tablet PC - 1880 MHz - Ch. 600

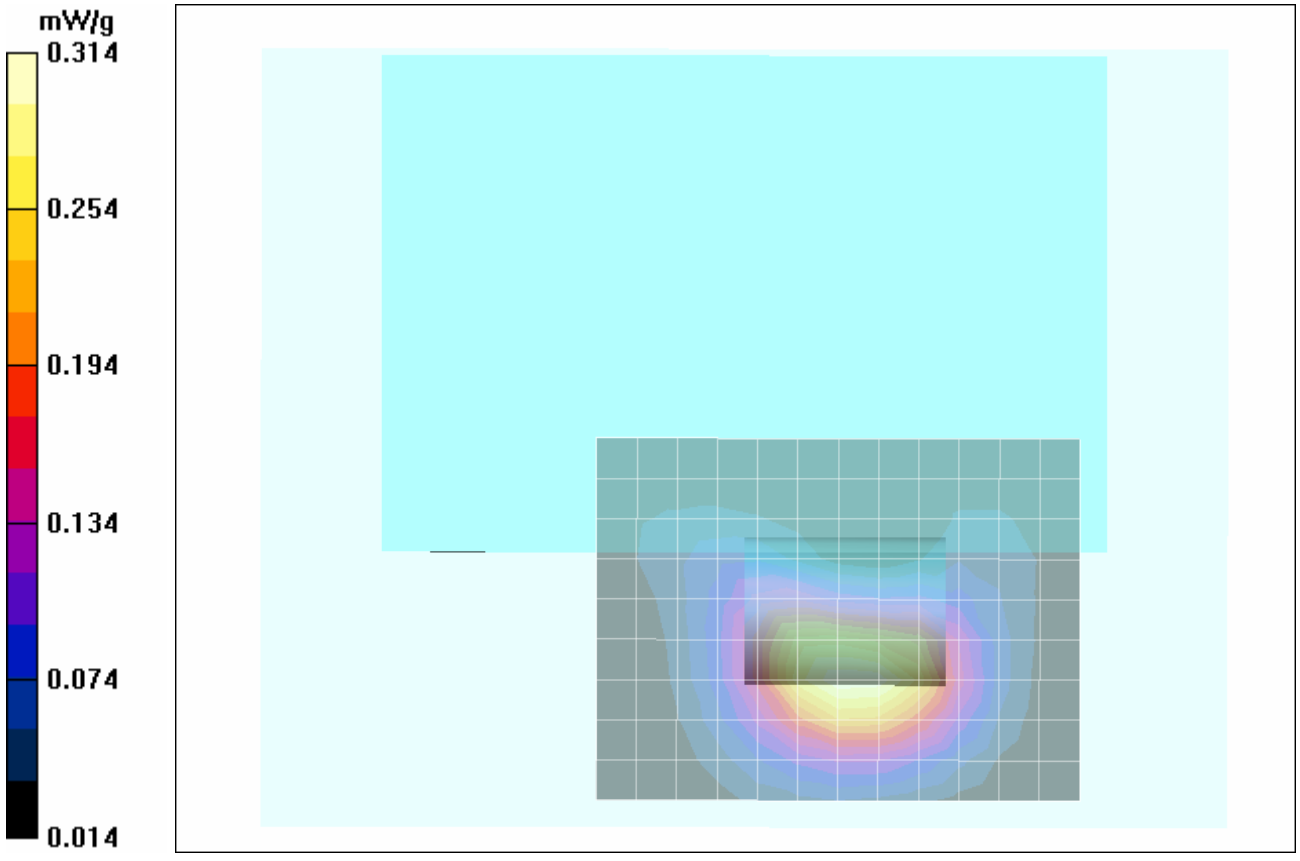
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

Communication System: PCS CDMA
Frequency: 1880 MHz; Duty Cycle: 1:1
RF Output Power: 24.2 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M1880 Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(4.7, 4.7, 4.7); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. 0
Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. 0
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = -0.0130 dB
Peak SAR (extrapolated) = 0.593 W/kg
SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.189 mW/g
Maximum value of SAR (measured) = 0.314 mW/g



Date Tested: 01/19/2007

Body SAR - PCS Band - EV-DO Rev. A - Bottom Side of Tablet PC - 1880 MHz - Ch. 600

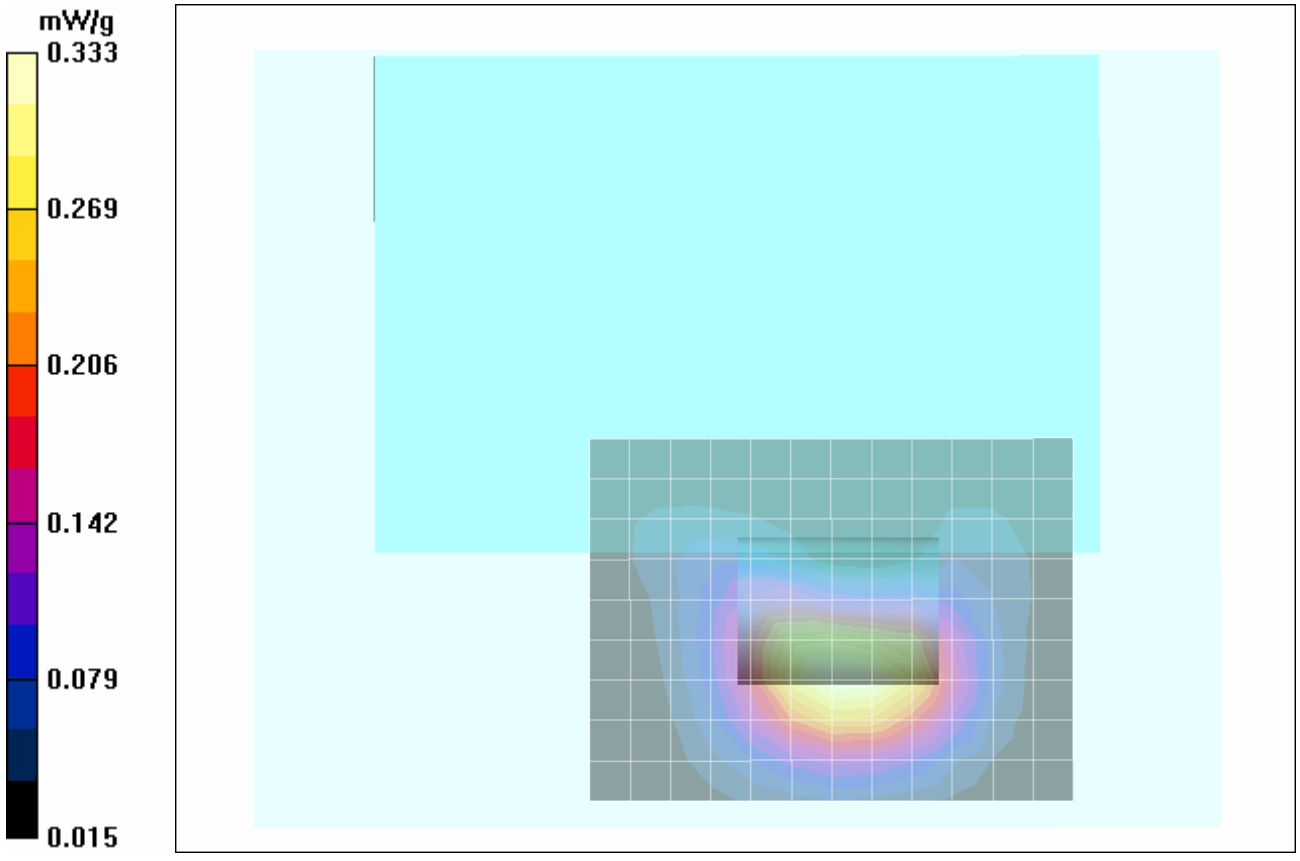
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

Communication System: PCS CDMA
Frequency: 1880 MHz; Duty Cycle: 1:1
RF Output Power: 24.2 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M1880 Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(4.7, 4.7, 4.7); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. A
Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. A
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = 0.0700 dB
Peak SAR (extrapolated) = 0.634 W/kg
SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.204 mW/g
Maximum value of SAR (measured) = 0.333 mW/g



Date Tested: 01/19/2007

Body SAR - PCS Band - CDMA 1xRTT - Bottom Side of Tablet PC - 1880 MHz - Ch. 600

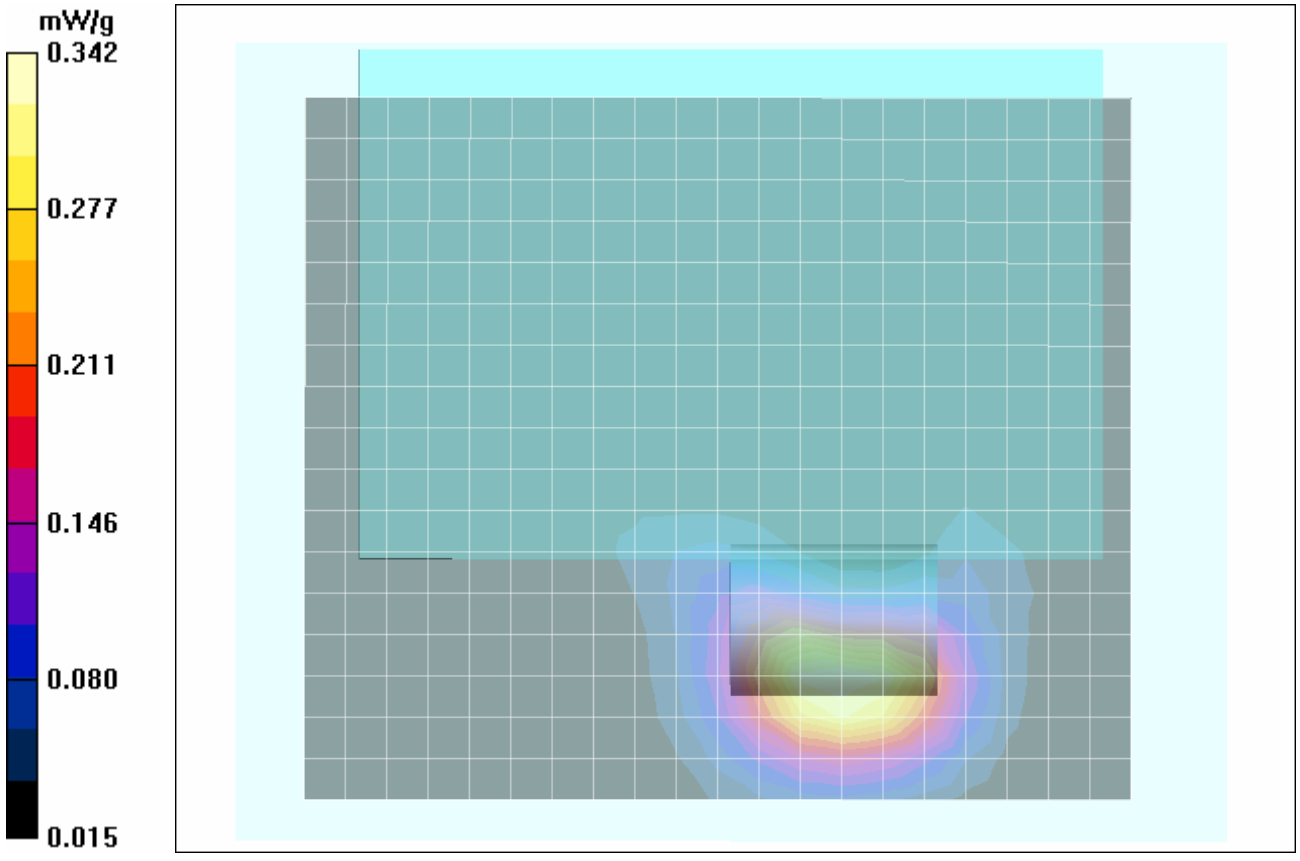
DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

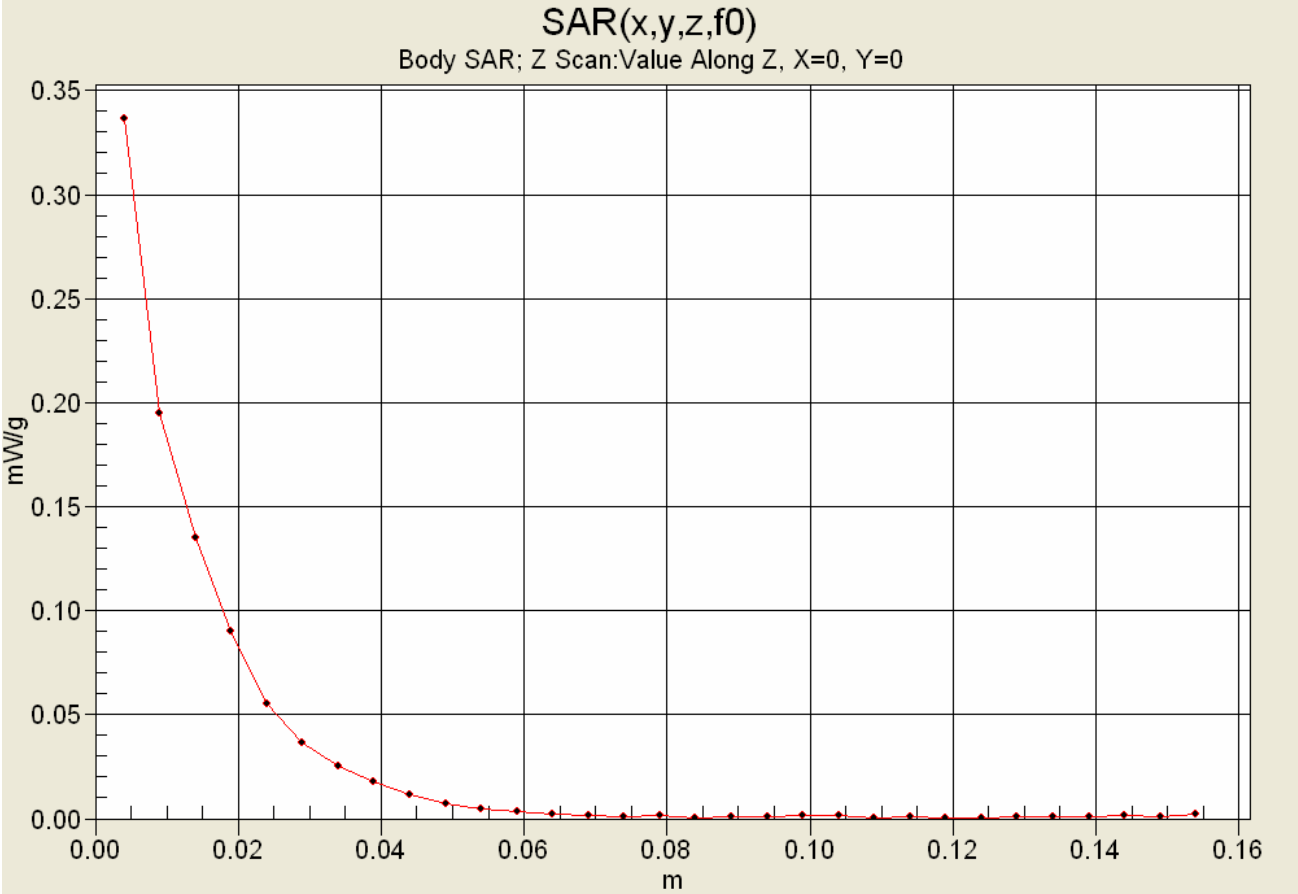
Communication System: PCS CDMA
Frequency: 1880 MHz; Duty Cycle: 1:1
RF Output Power: 24.2 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Medium: M1880 Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(4.8, 4.8, 4.8); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - CDMA 1xRTT
Area Scan (19x21x1): Measurement grid: dx=15mm, dy=15mm

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - CDMA 1xRTT
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = 0.0560 dB
Peak SAR (extrapolated) = 0.659 W/kg
SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.208 mW/g
Maximum value of SAR (measured) = 0.342 mW/g



Z-Axis Scan



Date Tested: 01/19/2007

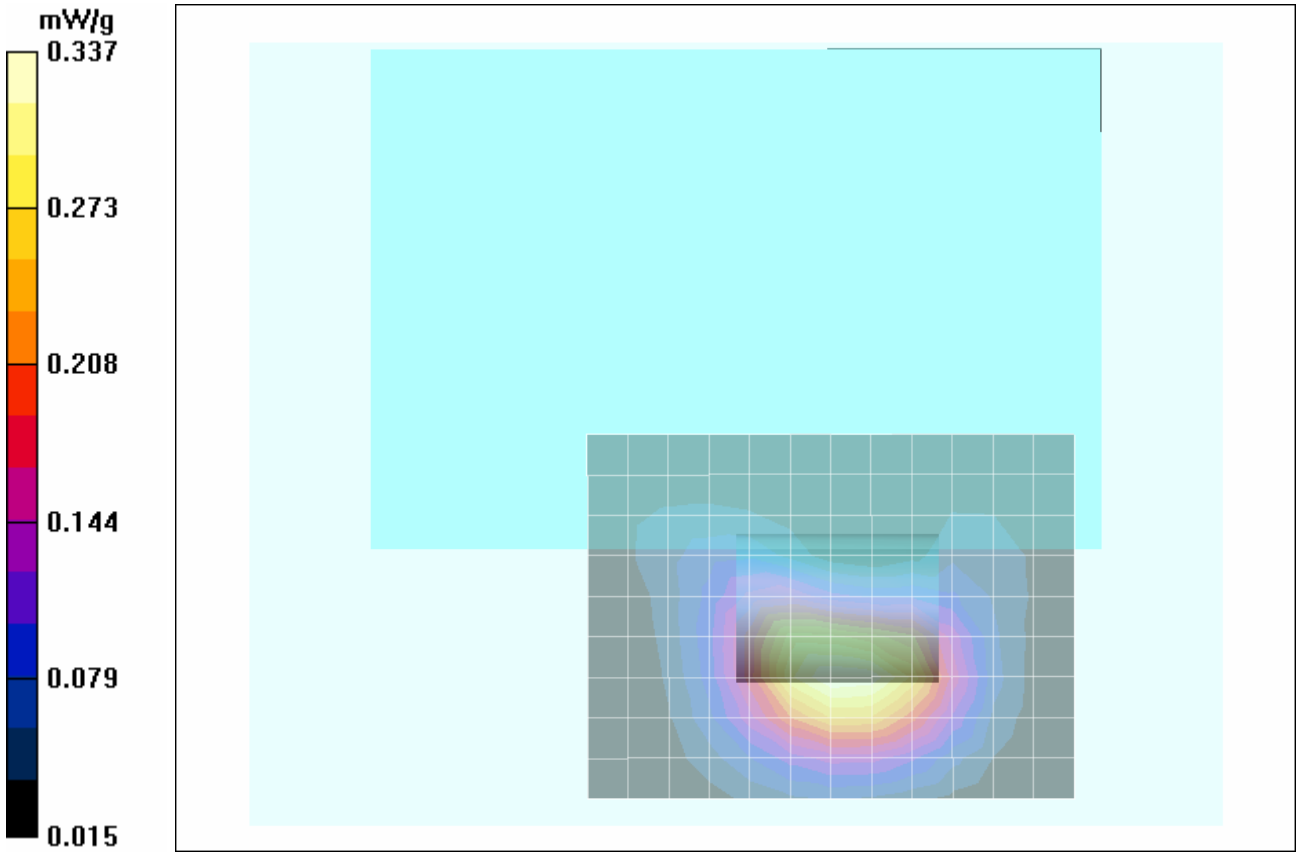
Body SAR - PCS Band - EV-DO Rev. A - Bottom Side of Tablet PC - 1880 MHz - Ch. 600 Simultaneous Transmit with Co-located Bluetooth

DUT: Itronix IX-AC595; Type: CDMA/EV-D0 PCMCIA Card installed in IX325 Tablet PC; Serial: ZZGEG6108ZZ8638

Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

Communication System: PCS CDMA
Frequency: 1880 MHz; Duty Cycle: 1:1
RF Output Power: 24.2 dBm (Conducted)
11.1V, 3600mAh Lithium-ion Battery (Model: T8M-E)
Frequency: 2441 MHz; Channel 41; Duty Cycle: 1:1 (Bluetooth)
RF Output Power: 3.60 dBm Conducted (Bluetooth)
Medium: M1880 Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(4.7, 4.7, 4.7); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. A & BT Area Scan (10x13x1): Measurement grid: dx=15mm, dy=15mm
Body SAR - Bottom Side of Tablet PC Touching Planar Phantom - Channel 600 - 1880 MHz - EV-DO Rev. A & BT Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = 0.00400 dB
Peak SAR (extrapolated) = 0.633 W/kg
SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.204 mW/g
Maximum value of SAR (measured) = 0.337 mW/g



APPENDIX B - SYSTEM PERFORMANCE CHECK DATA

Date Tested: 01/18/2007

System Performance Check - 835 MHz Dipole

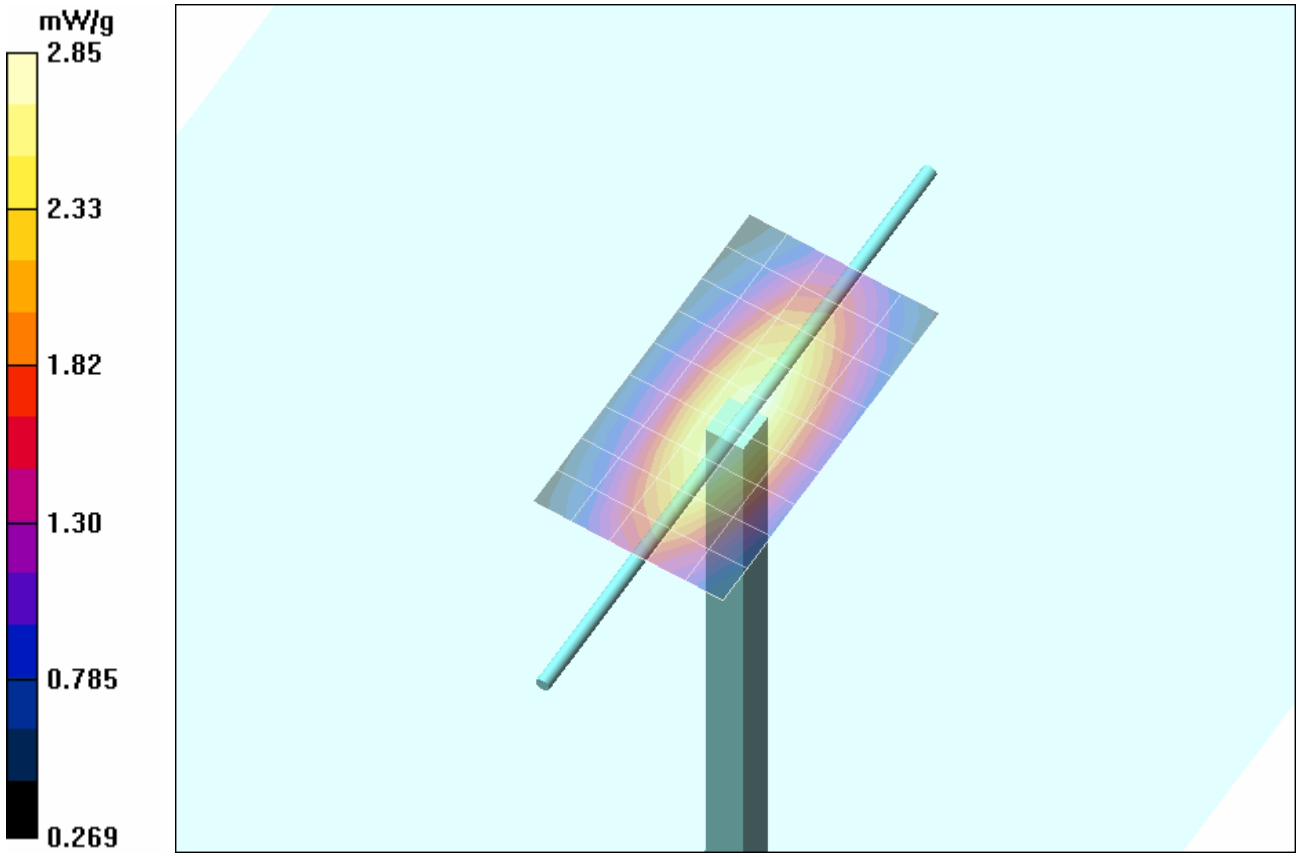
DUT: Dipole 835 MHz; Asset: 00022; Serial: 411; Validation: 01/18/2007

Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

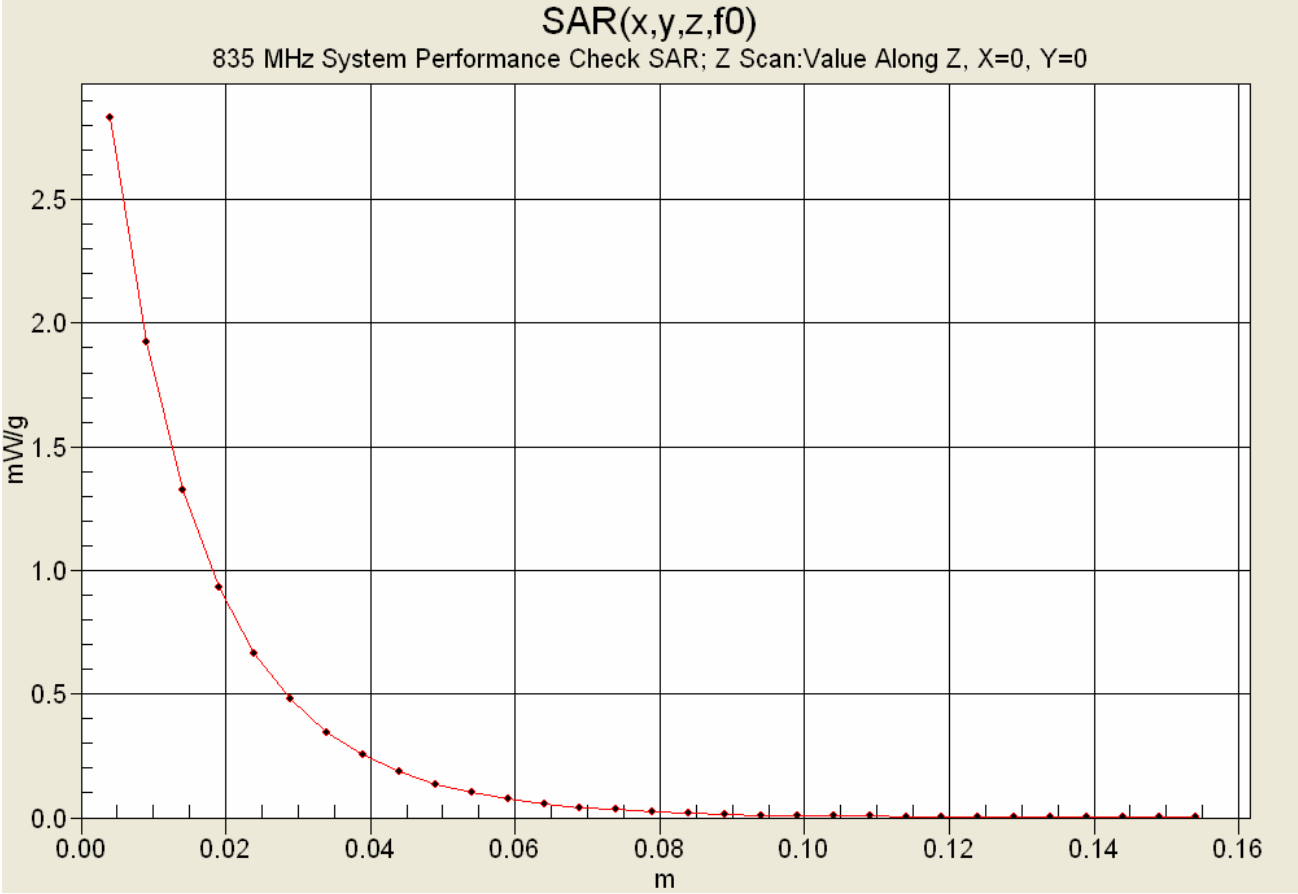
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: M835 Medium parameters used: f = 835 MHz; σ = 0.97 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

835 MHz Dipole - System Performance Check/Area Scan (6x10x1):
Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 2.86 mW/g

835 MHz Dipole - System Performance Check/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.8 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 3.85 W/kg
SAR(1 g) = 2.63 mW/g; SAR(10 g) = 1.72 mW/g
Maximum value of SAR (measured) = 2.85 mW/g



Z-Axis Scan



Date Tested: 01/19/2007

System Performance Check - 1900 MHz Dipole

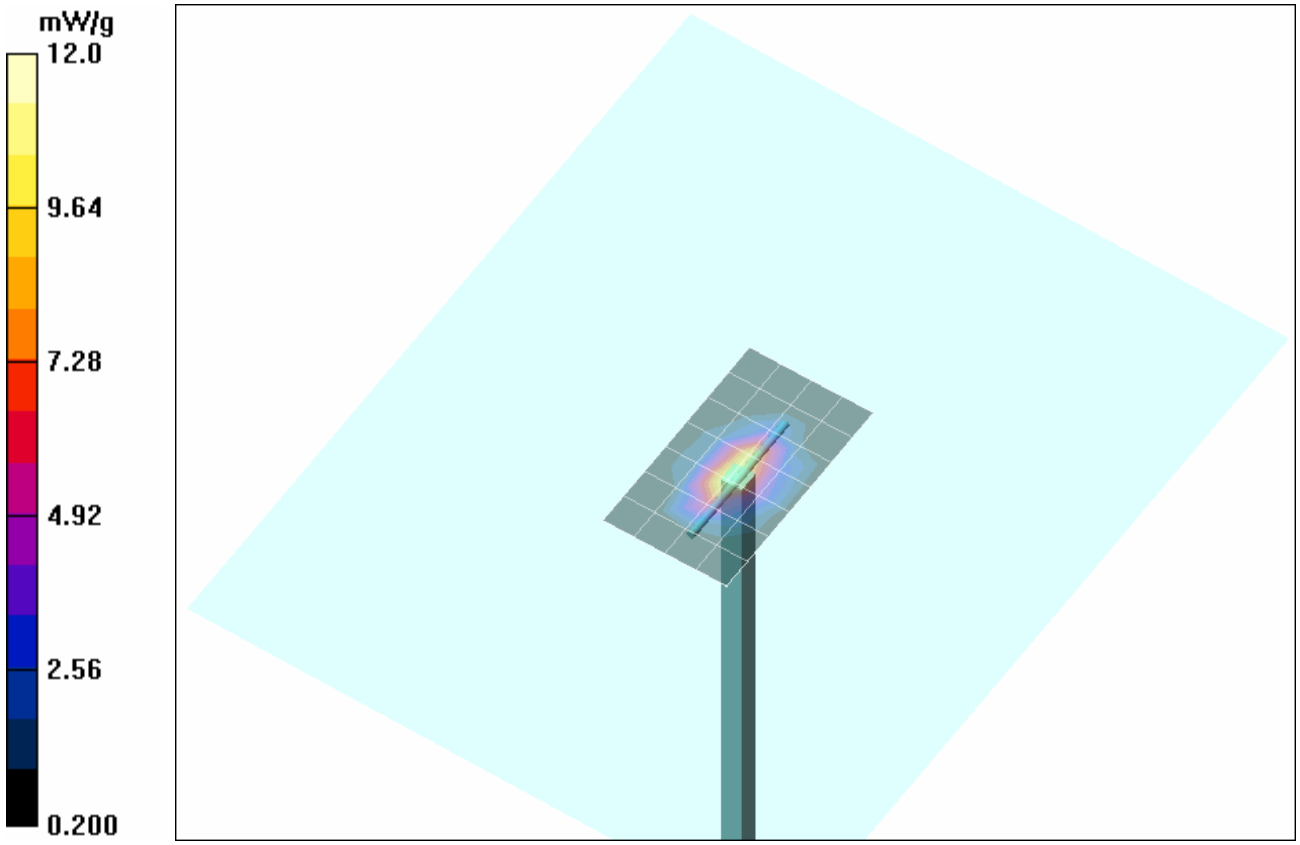
DUT: Dipole 1900 MHz; Asset: 00032; Serial: 151; Validation: 01/19/2007

Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

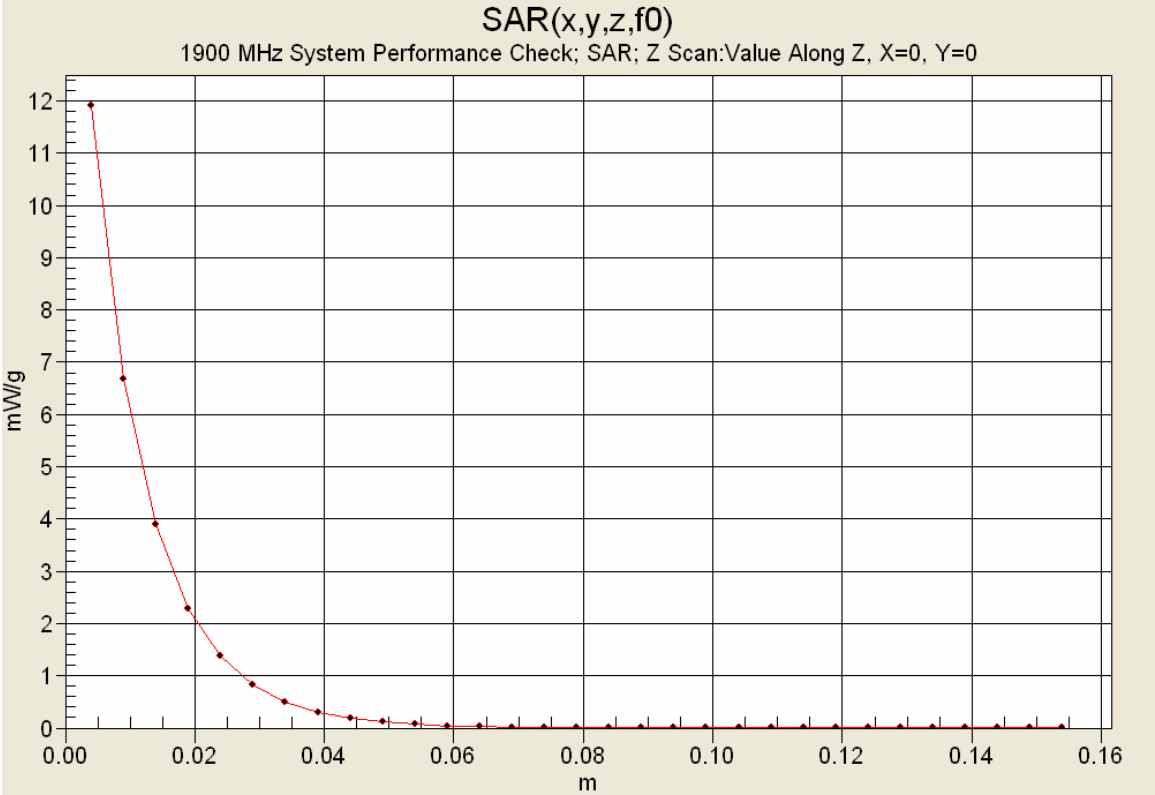
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: M1900 Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1387; ConvF(4.7, 4.7, 4.7); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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 = 87.8 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(1 g) = 10.7 mW/g; SAR(10 g) = 5.47 mW/g
Maximum value of SAR (measured) = 12.0 mW/g



Z-Axis Scan



APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

835 MHz System Performance Check & DUT Evaluation (Body)

****

Celltech Labs Inc
Test Result for UIM Dielectric Parameter
Thu 18/Jan/2007
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	57.72	0.90
0.7450	55.55	0.96	57.59	0.91
0.7550	55.51	0.96	57.54	0.91
0.7650	55.47	0.96	57.45	0.93
0.7750	55.43	0.97	57.51	0.93
0.7850	55.39	0.97	57.53	0.94
0.7950	55.36	0.97	57.25	0.95
0.8050	55.32	0.97	57.28	0.96
0.8150	55.28	0.97	57.34	0.96
0.8250	55.24	0.97	57.17	0.97
0.8350	55.20	0.97	57.26	0.99
0.8450	55.17	0.98	57.06	0.99
0.8550	55.14	0.99	57.00	1.00
0.8650	55.11	1.01	56.99	1.01
0.8750	55.08	1.02	56.91	1.02
0.8850	55.05	1.03	56.96	1.02
0.8950	55.02	1.04	56.82	1.03
0.9050	55.00	1.05	56.97	1.04
0.9150	55.00	1.06	56.81	1.05
0.9250	54.98	1.06	56.77	1.06
0.9350	54.96	1.07	56.81	1.07

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

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Fri 19/Jan/2007
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

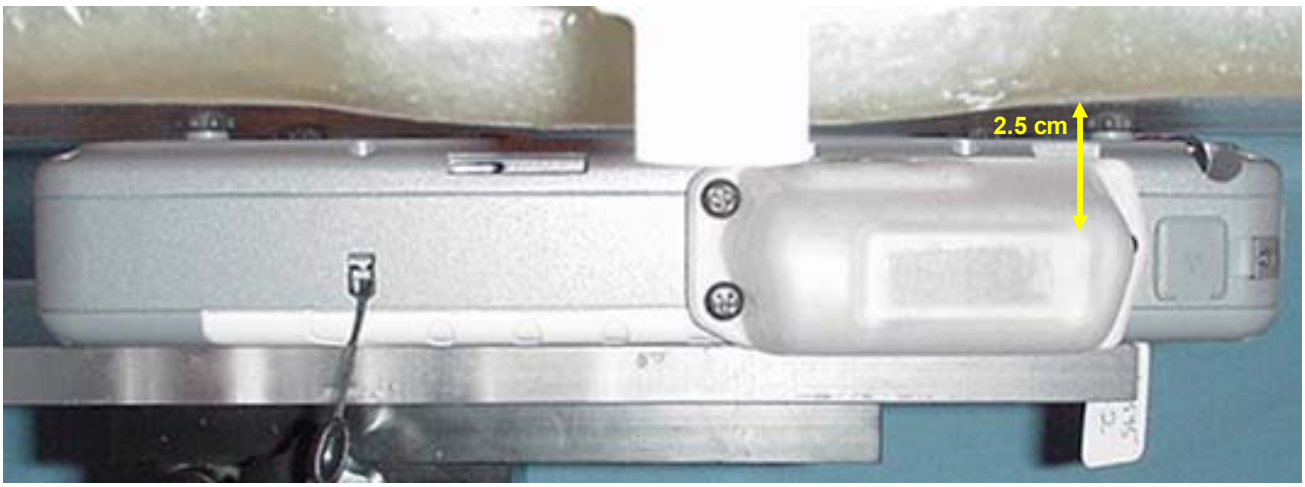
****

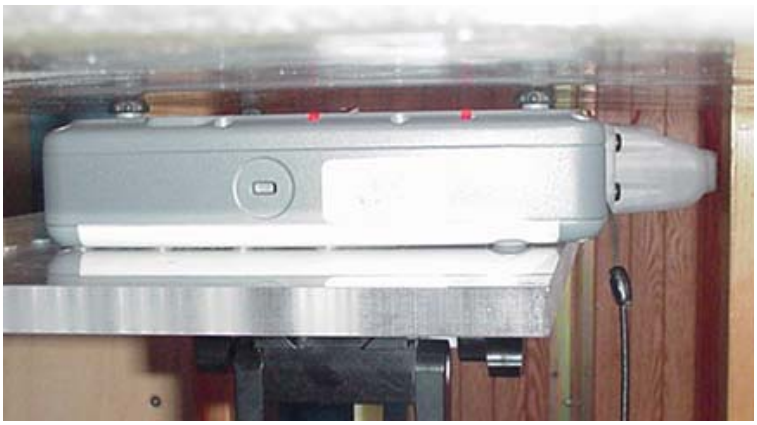
Freq	FCC_eB	FCC_sB	Test_e	Test_s
1.8000	53.30	1.52	52.57	1.42
1.8100	53.30	1.52	52.50	1.43
1.8200	53.30	1.52	52.51	1.44
1.8300	53.30	1.52	52.51	1.44
1.8400	53.30	1.52	52.48	1.46
1.8500	53.30	1.52	52.49	1.47
1.8600	53.30	1.52	52.38	1.48
1.8700	53.30	1.52	52.38	1.48
1.8800	53.30	1.52	52.32	1.50
1.8900	53.30	1.52	52.22	1.51
1.9000	53.30	1.52	52.27	1.51
1.9100	53.30	1.52	52.12	1.53
1.9200	53.30	1.52	52.20	1.54
1.9300	53.30	1.52	52.08	1.55
1.9400	53.30	1.52	52.13	1.56
1.9500	53.30	1.52	52.06	1.57
1.9600	53.30	1.52	51.96	1.59
1.9700	53.30	1.52	51.94	1.60
1.9800	53.30	1.52	51.96	1.61
1.9900	53.30	1.52	51.91	1.61
2.0000	53.30	1.52	51.83	1.64

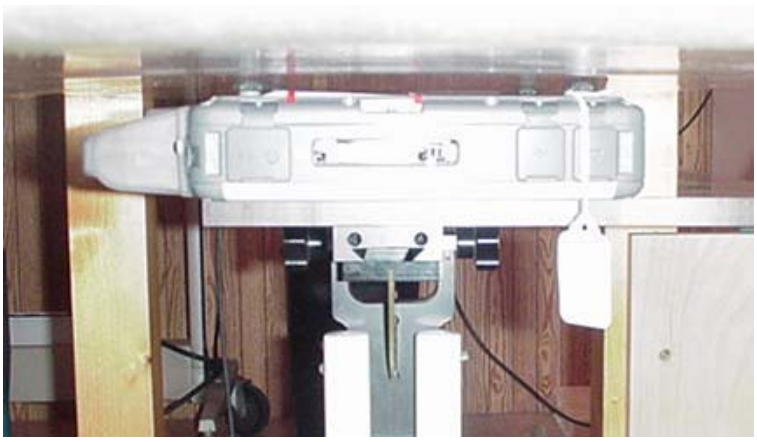
APPENDIX D - SAR TEST SETUP PHOTOGRAPHS

BODY SAR TEST SETUP PHOTOGRAPHS

Bottom Side of Tablet PC Touching Planar Phantom
(2.5 cm Gap from PCMCIA Card to Planar Phantom)







APPENDIX E - SYSTEM VALIDATION

835 MHz SYSTEM VALIDATION

Type:	**835 MHz Validation Dipole**
Asset Number:	**00022**
Serial Number:	**411**
Place of Validation:	**Celltech Labs Inc.**
Date of Validation:	**January 18, 2007**

Celltech Labs Inc. hereby certifies that the 835 MHz System Validation (Body) was performed on the date indicated above.

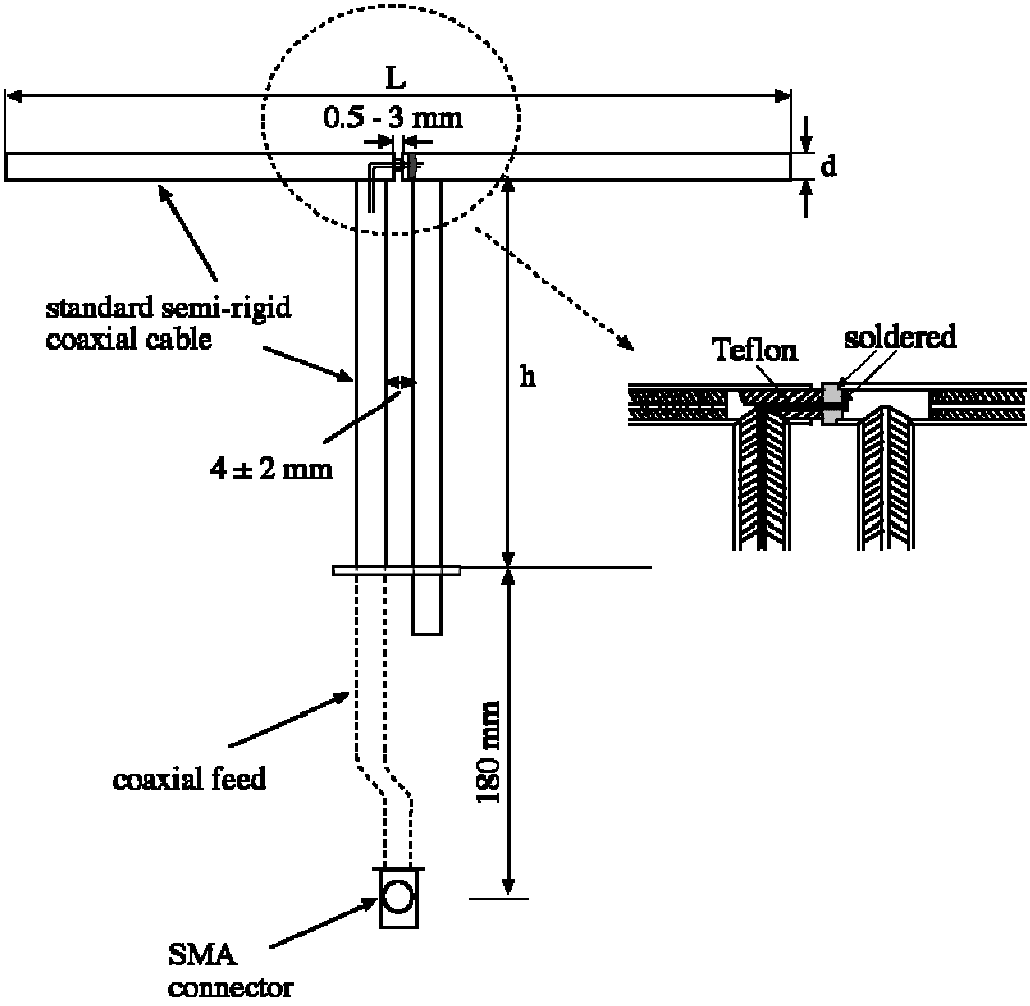
Performed by:	**Sean Johnston**
Approved by:	**Spencer Watson**

Celltech Labs Inc. 1955 Moss Court, Kelowna, B.C. Canada V1Y 9L3
Tel. 250-448-7047 • Fax. 250-448-7046 • e-mail: info@celltechlabs.com
www.celltechlabs.com

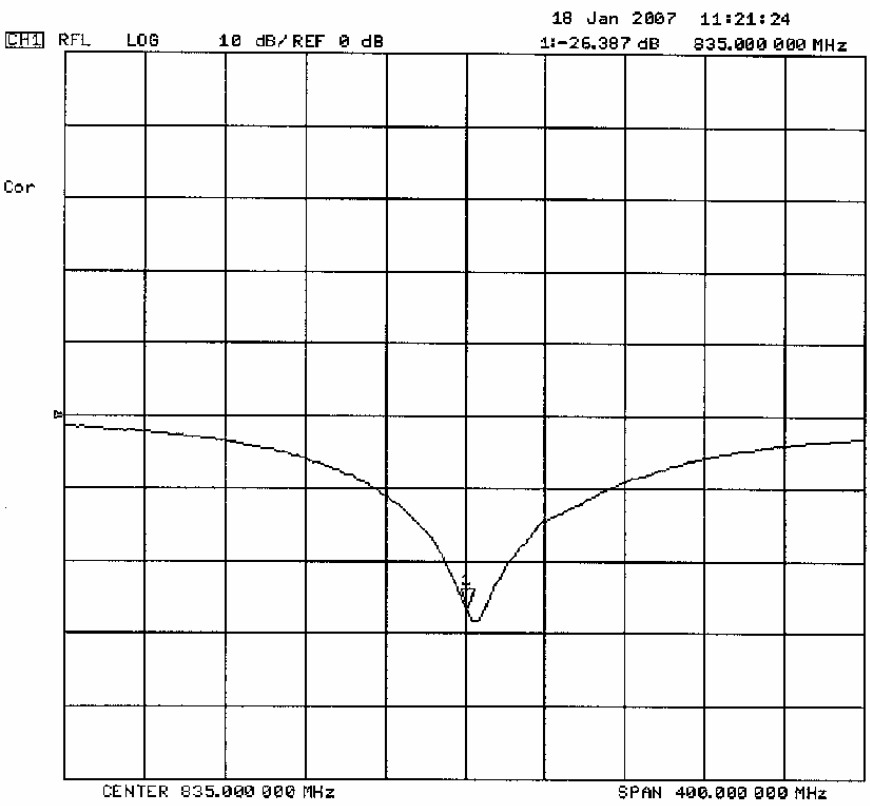
1. Validation Dipole Construction & Electrical Characteristics

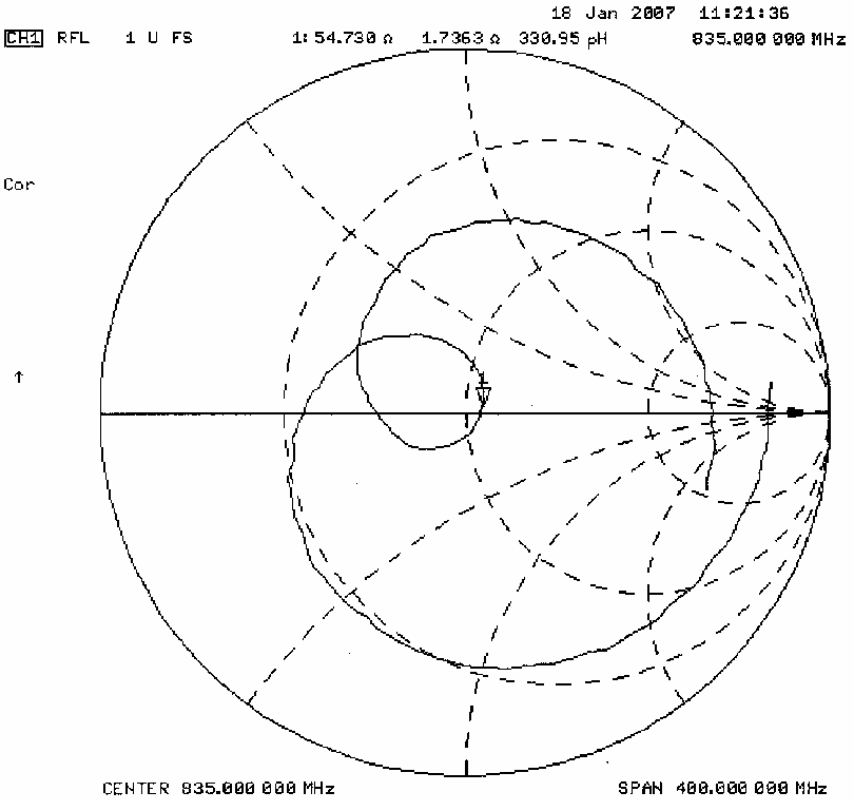
The validation dipole was constructed in accordance with the IEEE Standard "Annex G (informative) Reference dipoles for use in system validation". The electrical properties were measured using an HP 8753ET Network Analyzer. The network analyzer was calibrated to the validation dipole N-type connector feed point using an HP85032E Type N calibration kit. The dipole was placed parallel to a planar phantom at a separation distance of 15.0mm from the simulating fluid using a loss-less dielectric spacer. The measured input impedance is:

Feed point impedance at 835 MHz	Re{Z} = 54.730Ω
	Im{Z} = 1.7363Ω
Return Loss at 835 MHz	-26.387dB



2. Validation Dipole VSWR Data





3. Validation Dipole Dimensions

Frequency (MHz)	L (mm)	h (mm)	d (mm)
300	420.0	250.0	6.2
450	288.0	167.0	6.2
835	**161.0**	**89.8**	**3.6**
900	149.0	83.3	3.6
1450	89.1	51.7	3.6
1800	72.0	41.7	3.6
1900	68.0	39.5	3.6
2000	64.5	37.5	3.6
2450	51.8	30.6	3.6
3000	41.5	25.0	3.6

4. Validation Phantom

The validation phantom is a Fiberglass shell planar phantom manufactured by Barski Industries Ltd. The phantom is also in conformance with the requirements defined by IEEE SCC34-SC2 for the dosimetric evaluations of body-worn and lap-held operating configurations. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids.

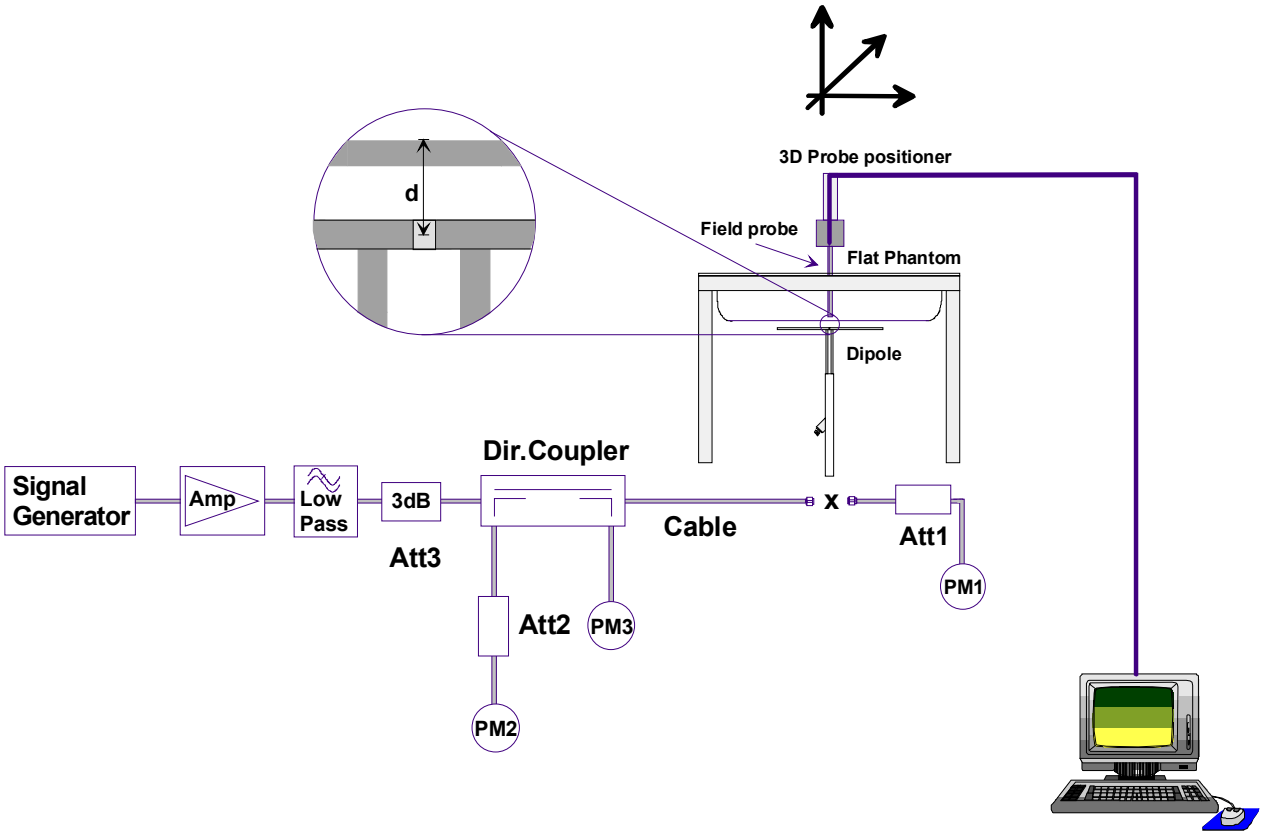
Shell Thickness: 2.0 ± 0.1 mm
Filling Volume: Approx. 55 liters
Dimensions: 44 cm (W) x 94 cm (L)

5. 835 MHz System Validation Setup

6. 835 MHz Validation Dipole Setup

7. SAR Measurement

Measurements were made using a dosimetric E-field probe ET3DV6 (S/N: 1387, Conversion Factor 6.04). The SAR measurement was performed with the E-field probe in mechanical detection mode only. The setup and determination of the forward power into the dipole was performed using the following procedures.



First the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the dipole connector (X). The signal generator is adjusted for the desired forward power at the dipole connector (taking into account the attenuation of Att1) as read by power meter PM2. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2. If the signal generator does not allow adjustment in 0.01dB steps, the remaining difference at PM2 must be taken into consideration. PM3 records the reflected power from the dipole to ensure that the value is not changed from the previous value. The reflected power should be 20dB below the forward power.

8. Measurement Conditions

The planar phantom was filled with 835 MHz Body tissue simulant.

Relative Permittivity:	57.3 (+3.8% from target)
Conductivity:	0.99 mho/m (+2.1% from target)
Fluid Temperature:	22.8 °C
Fluid Depth:	≥ 15.0 cm

Environmental Conditions:

Ambient Temperature:	24.1 °C
Barometric Pressure:	103.4 kPa
Humidity:	33 %

The 835 MHz Body tissue simulant consisted of the following ingredients:

Ingredient	Percentage by weight
Water	53.79%
Sugar	45.13%
Salt	0.98%
Dowicil 75	0.10%
Target Dielectric Parameters at 22 °C	ε_r = 55.2 (+/- 5%) σ = 0.97 S/m (+/- 5%)

9. System Validation SAR Results

SAR @ 0.25W Input averaged over 1g (W/kg)				SAR @ 1W Input averaged over 1g (W/kg)			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
2.43	**+/- 10%**	2.63	+8.23%	**9.71**	**+/- 10%**	10.52	+8.34%
SAR @ 0.25W Input averaged over 10g (W/kg)				**SAR @ 1W Input averaged over 10g (W/kg)**			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
1.60	**+/- 10%**	1.72	+7.50%	**6.38**	**+/- 10%**	6.88	+7.84%
The results have been normalized to 1W (forward power) into the dipole.							

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.

System Validation - 835 MHz Dipole - January 18, 2007

DUT: Dipole 835 MHz; Asset: 00022; Serial: 411

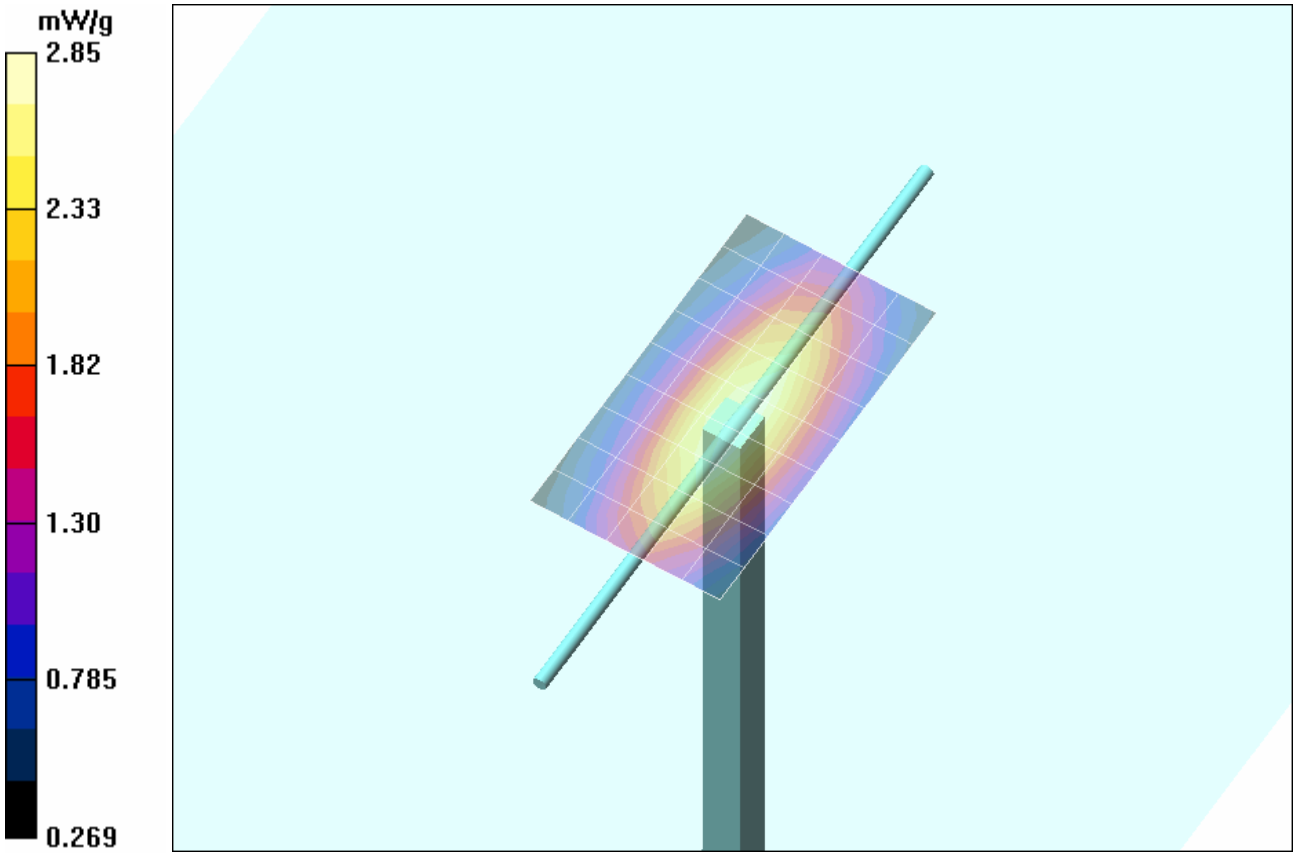
Ambient Temp: 24.1°C; Fluid Temp: 22.8°C; Barometric Pressure: 103.4 kPa; Humidity: 33%

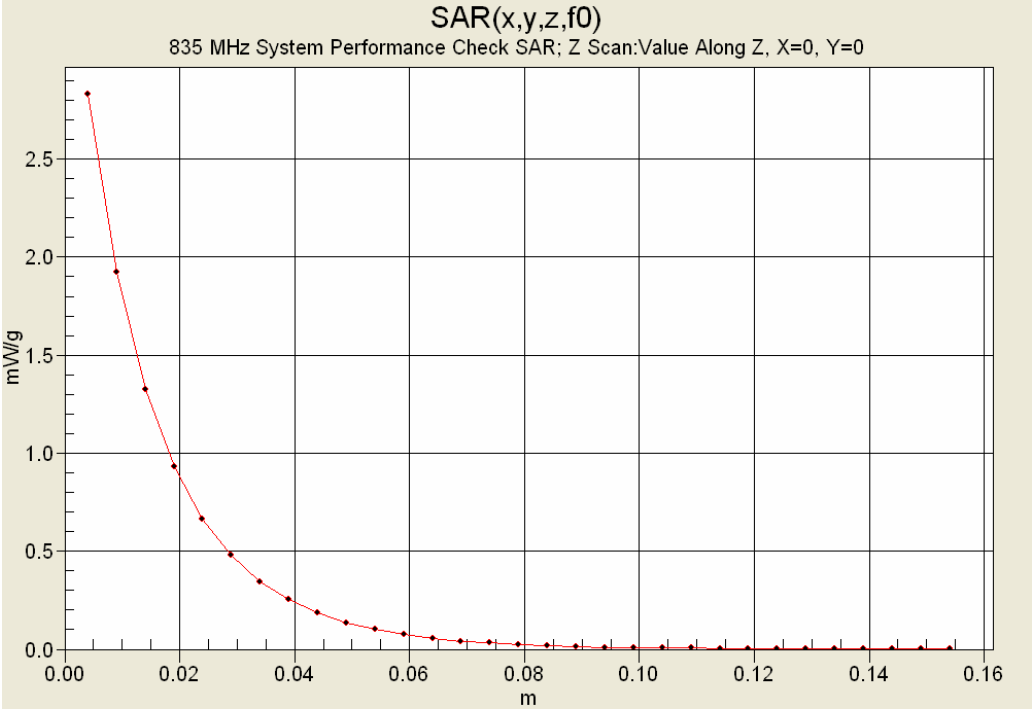
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: M835 Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1387; ConvF(6.04, 6.04, 6.04); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

835 MHz System Validation/Area Scan (6x10x1):
Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 2.86 mW/g

835 MHz System Validation/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.8 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 3.85 W/kg
SAR(1 g) = 2.63 mW/g; SAR(10 g) = 1.72 mW/g
Maximum value of SAR (measured) = 2.85 mW/g





10. Measured Fluid Dielectric Parameters

835 MHz System Validation (Body)

****

Celltech Labs Inc
Test Result for UIM Dielectric Parameter
Thu 18/Jan/2007
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	57.72	0.90
0.7450	55.55	0.96	57.59	0.91
0.7550	55.51	0.96	57.54	0.91
0.7650	55.47	0.96	57.45	0.93
0.7750	55.43	0.97	57.51	0.93
0.7850	55.39	0.97	57.53	0.94
0.7950	55.36	0.97	57.25	0.95
0.8050	55.32	0.97	57.28	0.96
0.8150	55.28	0.97	57.34	0.96
0.8250	55.24	0.97	57.17	0.97
0.8350	55.20	0.97	57.26	0.99
0.8450	55.17	0.98	57.06	0.99
0.8550	55.14	0.99	57.00	1.00
0.8650	55.11	1.01	56.99	1.01
0.8750	55.08	1.02	56.91	1.02
0.8850	55.05	1.03	56.96	1.02
0.8950	55.02	1.04	56.82	1.03
0.9050	55.00	1.05	56.97	1.04
0.9150	55.00	1.06	56.81	1.05
0.9250	54.98	1.06	56.77	1.06
0.9350	54.96	1.07	56.81	1.07

1900 MHz SYSTEM VALIDATION

Type:	**1900 MHz Validation Dipole**
Asset Number:	**00032**
Serial Number:	**151**
Place of Validation:	**Celltech Labs Inc.**
Date of Validation:	**January 19, 2007**

Celltech Labs Inc. certifies that the 1900 MHz System Validation (Body) was performed on the date indicated above.

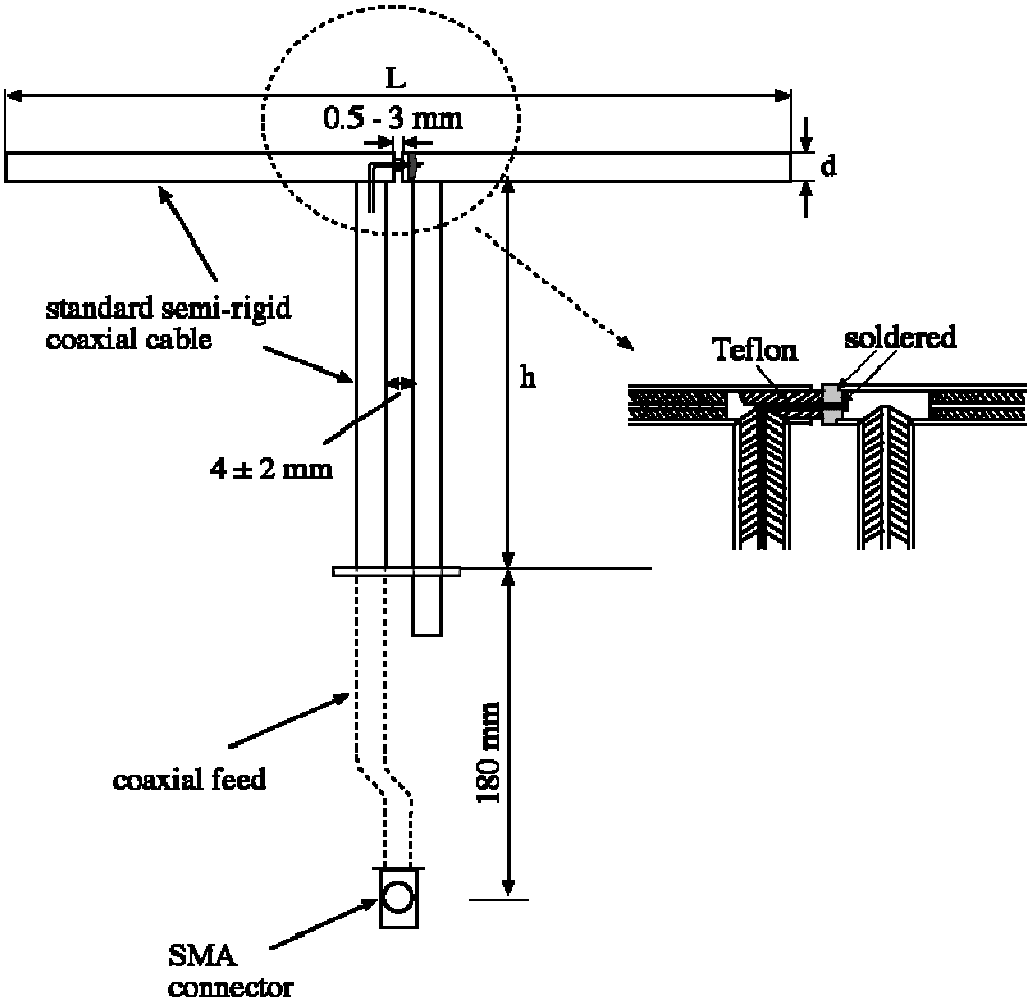
Performed by:	**Sean Johnston**
Approved by:	**Spencer Watson**

Celltech Labs Inc. 1955 Moss Court, Kelowna, B.C. Canada V1Y 9L3
Tel. 250-448-7047 • Fax. 250-448-7046 • e-mail: info@celltechlabs.com
www.celltechlabs.com

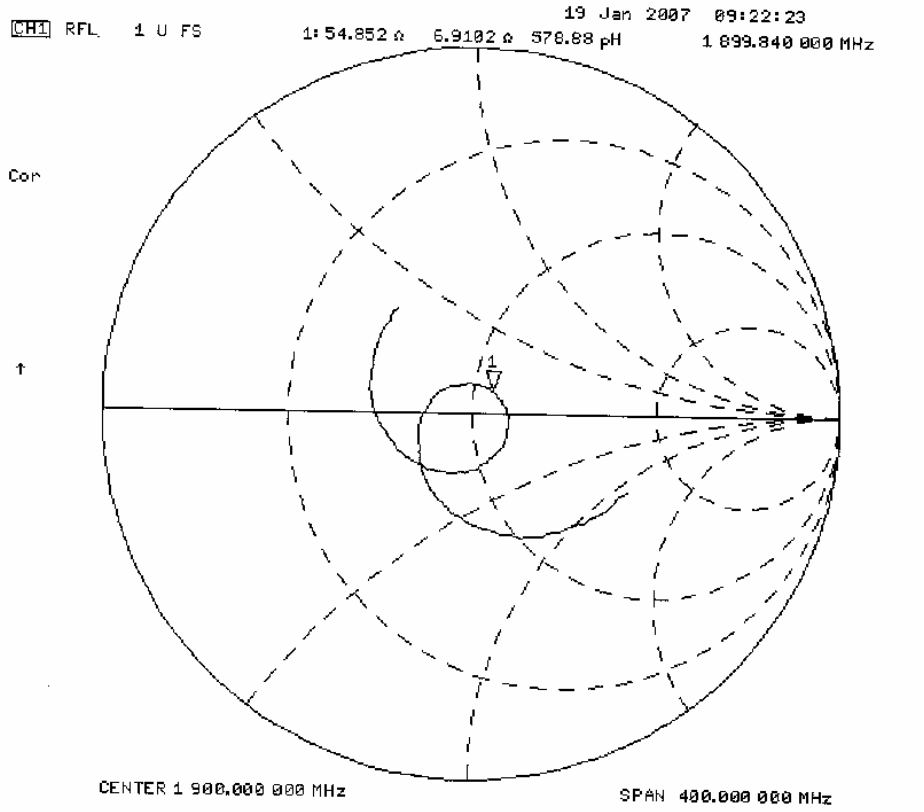
1. Dipole Construction & Electrical Characteristics

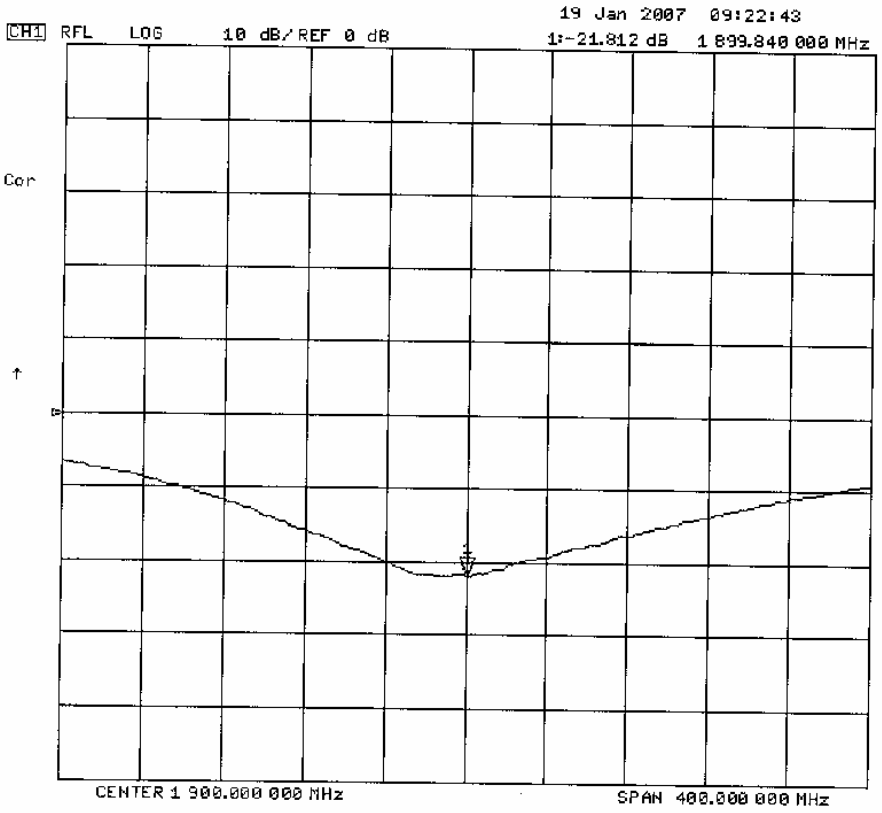
The validation dipole was constructed in accordance with the IEEE Standard "Annex G (informative) Reference dipoles for use in system validation". The electrical properties were measured using an HP 8753ET Network Analyzer. The network analyzer was calibrated to the validation dipole N-type connector feed point using an HP85032E Type N calibration kit. The dipole was placed parallel to a planar phantom at a separation distance of 10.0mm from the simulating fluid using a loss-less dielectric spacer. The measured input impedance is:

Feed point impedance at 1900 MHz	Re{Z} = 54.852Ω
	Im{Z} = 6.9102Ω
Return Loss at 1900 MHz	-21.812 dB



2. Validation Dipole VSWR Data





3. Validation Dipole Dimensions

Frequency (MHz)	L (mm)	H (mm)	D (mm)
300	420.0	250.0	6.2
450	288.0	167.0	6.2
835	161.0	89.8	3.6
900	149.0	83.3	3.6
1450	89.1	51.7	3.6
1800	72.0	41.7	3.6
1900	**68.0**	**39.5**	**3.6**
2000	64.5	37.5	3.6
2450	51.8	30.6	3.6
3000	41.5	25.0	3.6

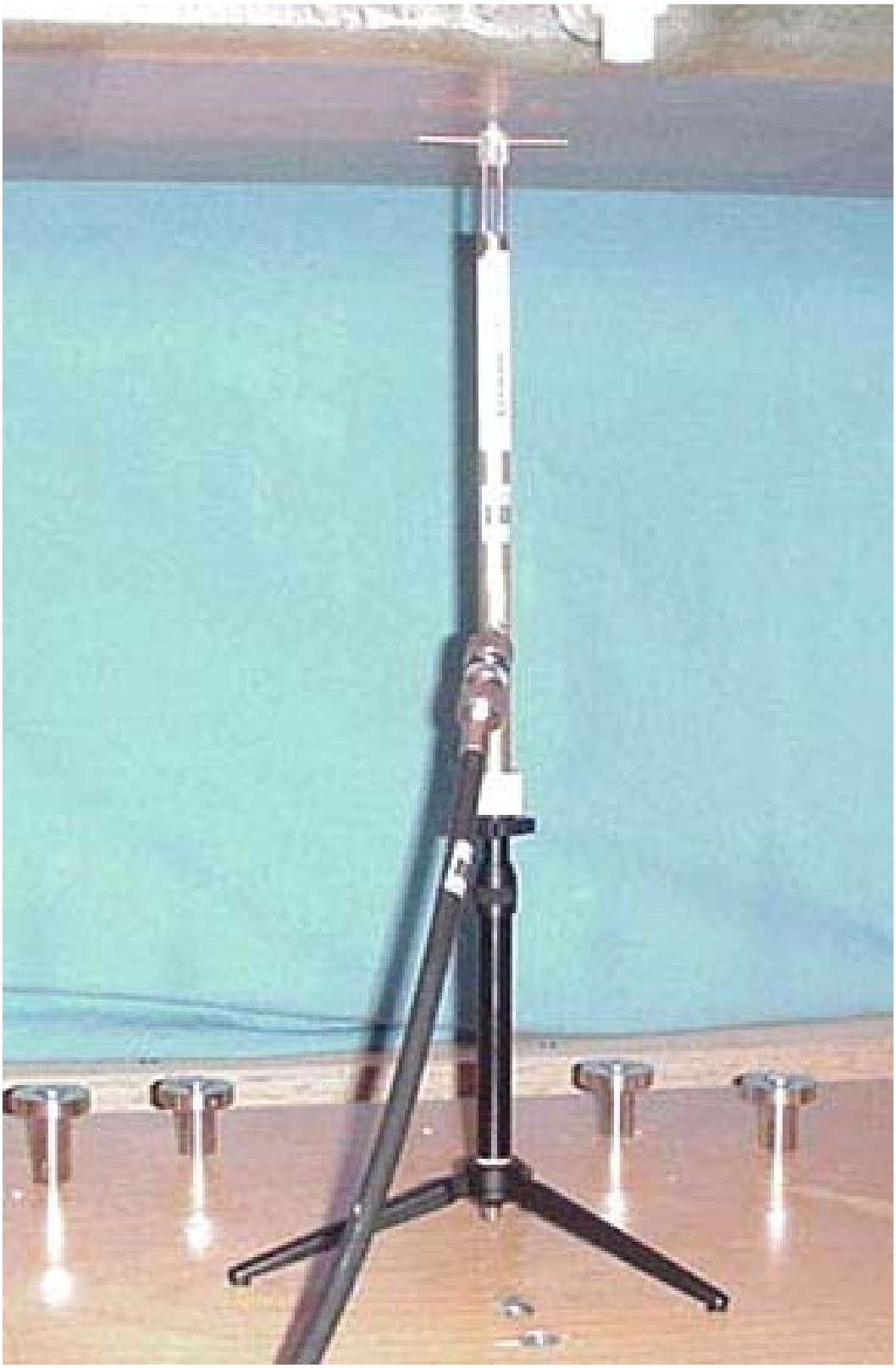
4. Validation Phantom

The validation phantom is a Fiberglass shell planar phantom manufactured by Barski Industries Ltd. The phantom is also in conformance with the requirements defined by IEEE SCC34-SC2 for the dosimetric evaluations of body-worn and lap-held operating configurations. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids.

Shell Thickness: 2.0 ± 0.1 mm
Filling Volume: Approx. 55 liters
Dimensions: 44 cm (W) x 94 cm (L)

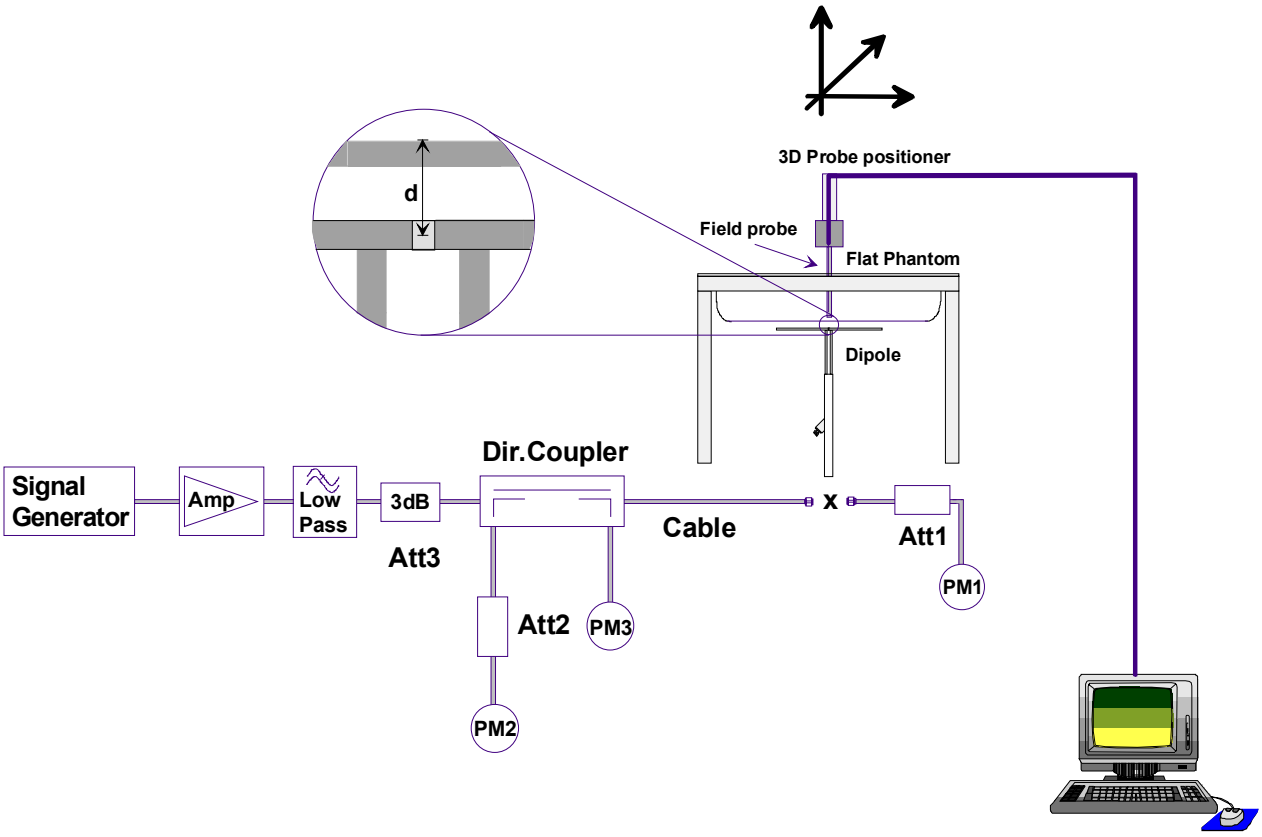
5. 1900 MHz System Validation Setup

6. 1900 MHz Validation Dipole Setup



7. SAR Measurement

Measurements were made using a dosimetric E-field probe ET3DV6 (S/N: 1387, Conversion Factor 4.7). The SAR measurement was performed with the E-field probe in mechanical detection mode only. The setup and determination of the forward power into the dipole was performed using the procedures described below.



First the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the dipole connector (X). The signal generator is adjusted for the desired forward power at the dipole connector (taking into account the attenuation of Att1) as read by power meter PM2. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2. If the signal generator does not allow adjustment in 0.01dB steps, the remaining difference at PM2 must be taken into consideration. PM3 records the reflected power from the dipole to ensure that the value is not changed from the previous value. The reflected power should be 50dB below the forward power.

8. Measurement Conditions

The planar phantom was filled with 1900 MHz Body tissue simulant.

Relative Permittivity: 52.3 (-1.8% deviation from target)
Conductivity: 1.51 mho/m (-0.6% deviation from target)
Fluid Temperature: 23.5°C
Fluid Depth: ≥ 15.0 cm

Environmental Conditions:
Ambient Temperature: 25.0 °C
Barometric Pressure: 103.4 kPa
Humidity: 32%

The 1900 MHz Body tissue simulant consisted of the following ingredients:

Ingredient	Percentage by weight
Water	69.85%
Glycol	29.89%
Salt	0.26%
Target Dielectric Parameters at 25 °C	ε_r = 53.3 (+/-5%) σ = 1.52 S/m (+/-5%)

9. System Validation SAR Results

SAR @ 0.25W Input averaged over 1g (W/kg)				SAR @ 1W Input averaged over 1g (W/kg)			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
9.95	+/- 10%	10.8	+8.6%	39.8	+/- 10%	43.2	+8.6%
SAR @ 0.25W Input averaged over 10g (W/kg)				SAR @ 1W Input averaged over 10g (W/kg)			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
5.20	+/- 10%	5.52	+6.2%	20.8	+/- 10%	22.1	+6.2%
The results have been normalized to 1W (forward power) into the dipole.							

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.

System Validation - 1900 MHz Dipole - January 19, 2007

DUT: Dipole 1900 MHz; Asset: 00032; Serial: 151

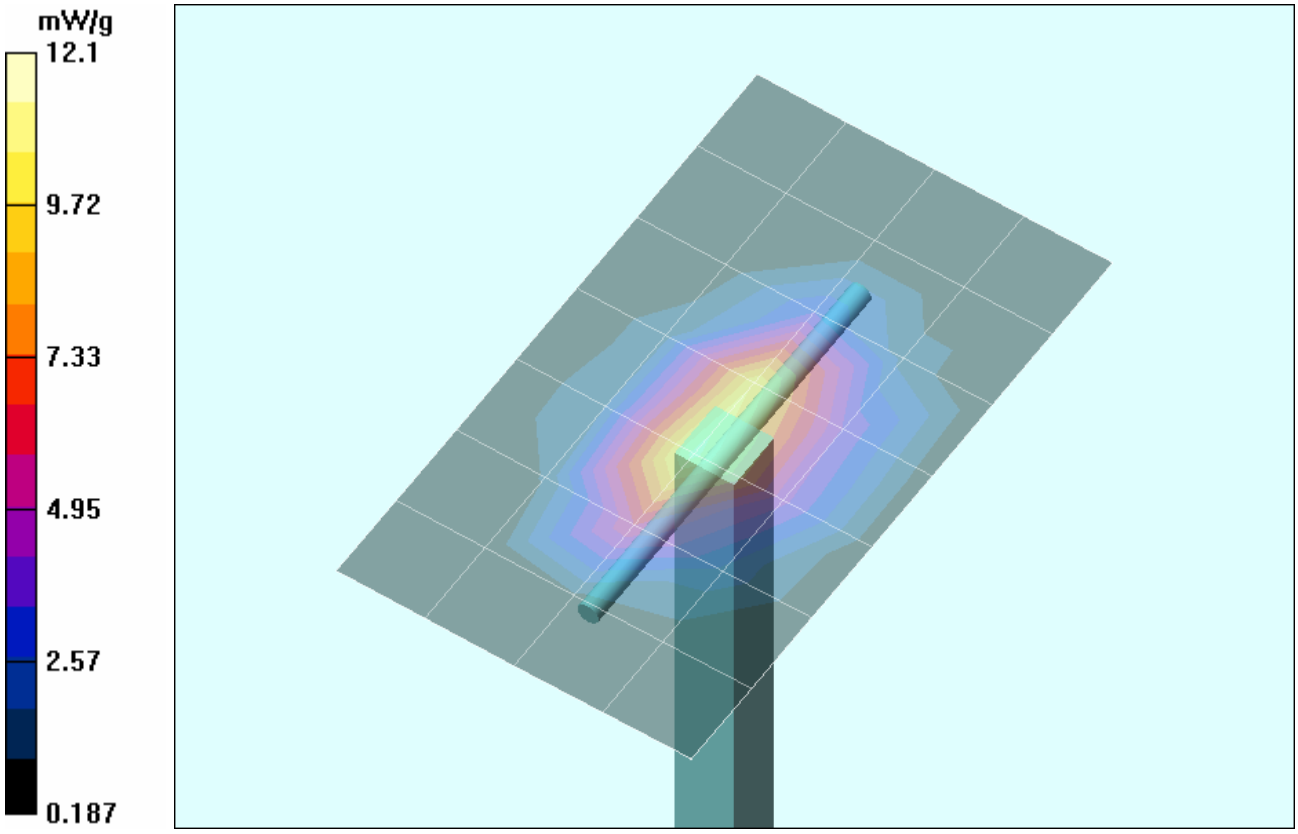
Ambient Temp: 25.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 103.4 kPa; Humidity: 32%

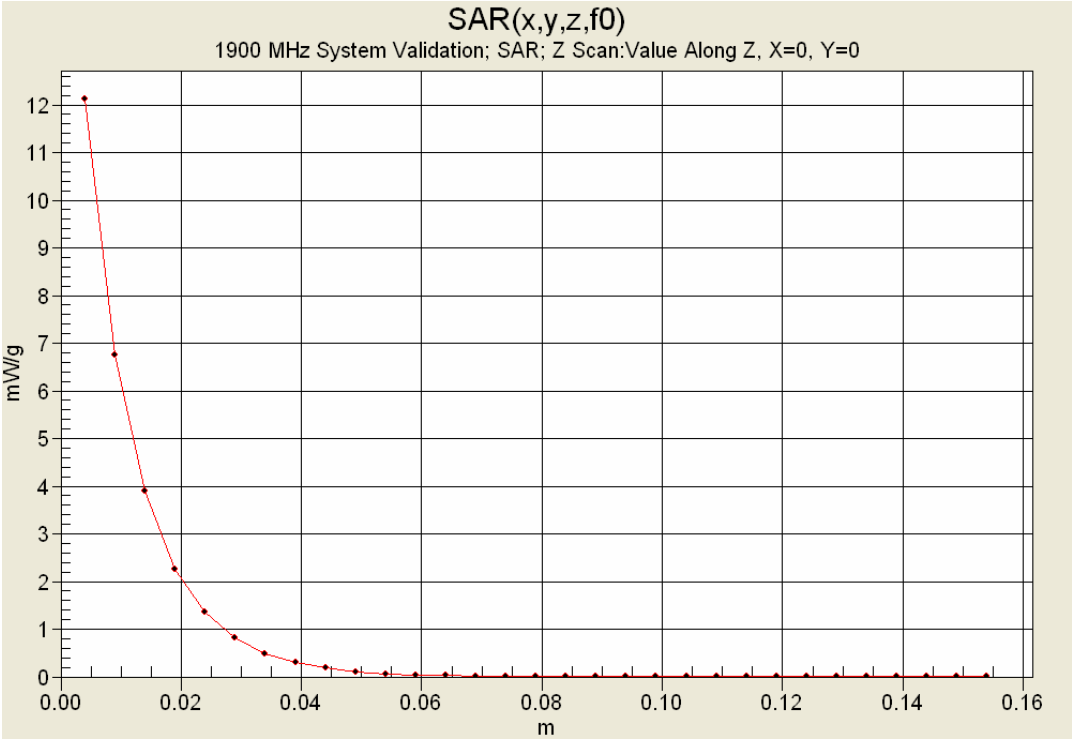
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: M1900 Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1387; ConvF(4.7, 4.7, 4.7); Calibrated: 16/03/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 21/06/2006
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

1900 MHz Dipole - System Validation/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.1 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 20.3 W/kg
SAR(1 g) = 10.8 mW/g; SAR(10 g) = 5.52 mW/g
Maximum value of SAR (measured) = 12.1 mW/g





10. Measured Fluid Dielectric Parameters

1900 MHz System Validation (Body)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Fri 19/Jan/2007
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	52.57	1.42
1.8100	53.30	1.52	52.50	1.43
1.8200	53.30	1.52	52.51	1.44
1.8300	53.30	1.52	52.51	1.44
1.8400	53.30	1.52	52.48	1.46
1.8500	53.30	1.52	52.49	1.47
1.8600	53.30	1.52	52.38	1.48
1.8700	53.30	1.52	52.38	1.48
1.8800	53.30	1.52	52.32	1.50
1.8900	53.30	1.52	52.22	1.51
1.9000	53.30	1.52	52.27	1.51
1.9100	53.30	1.52	52.12	1.53
1.9200	53.30	1.52	52.20	1.54
1.9300	53.30	1.52	52.08	1.55
1.9400	53.30	1.52	52.13	1.56
1.9500	53.30	1.52	52.06	1.57
1.9600	53.30	1.52	51.96	1.59
1.9700	53.30	1.52	51.94	1.60
1.9800	53.30	1.52	51.96	1.61
1.9900	53.30	1.52	51.91	1.61
2.0000	53.30	1.52	51.83	1.64

APPENDIX F - PROBE CALIBRATION

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Celltech Labs

Certificate No: ET3-1387_Mar06

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1387
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	March 16, 2006
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41495277	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41498087	3-May-05 (METAS, No. 251-00466)	May-06
Reference 3 dB Attenuator	SN: S5054 (3c)	11-Aug-05 (METAS, No. 251-00499)	Aug-06
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-05 (METAS, No. 251-00467)	May-06
Reference 30 dB Attenuator	SN: S5129 (30b)	11-Aug-05 (METAS, No. 251-00500)	Aug-06
Reference Probe ES3DV2	SN: 3013	2-Jan-06 (SPEAG, No. ES3-3013_Jan06)	Jan-07
DAE4	SN: 654	2-Feb-06 (SPEAG, No. DAE4-654_Feb06)	Feb-07

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-05)	In house check: Nov 06

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: March 16, 2006

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibrated:	March 18, 2005
Recalibrated:	March 16, 2006

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space[A] Diode Compression[B]

NormX	**1.62** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**92** mV
NormY	**1.72** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**92** mV
NormZ	**1.72** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**92** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	9.3	5.0
SAR_{be} [%]	With Correction Algorithm	0.1	0.2

Sensor Offset

Probe Tip to Sensor Center	**2.7** mm

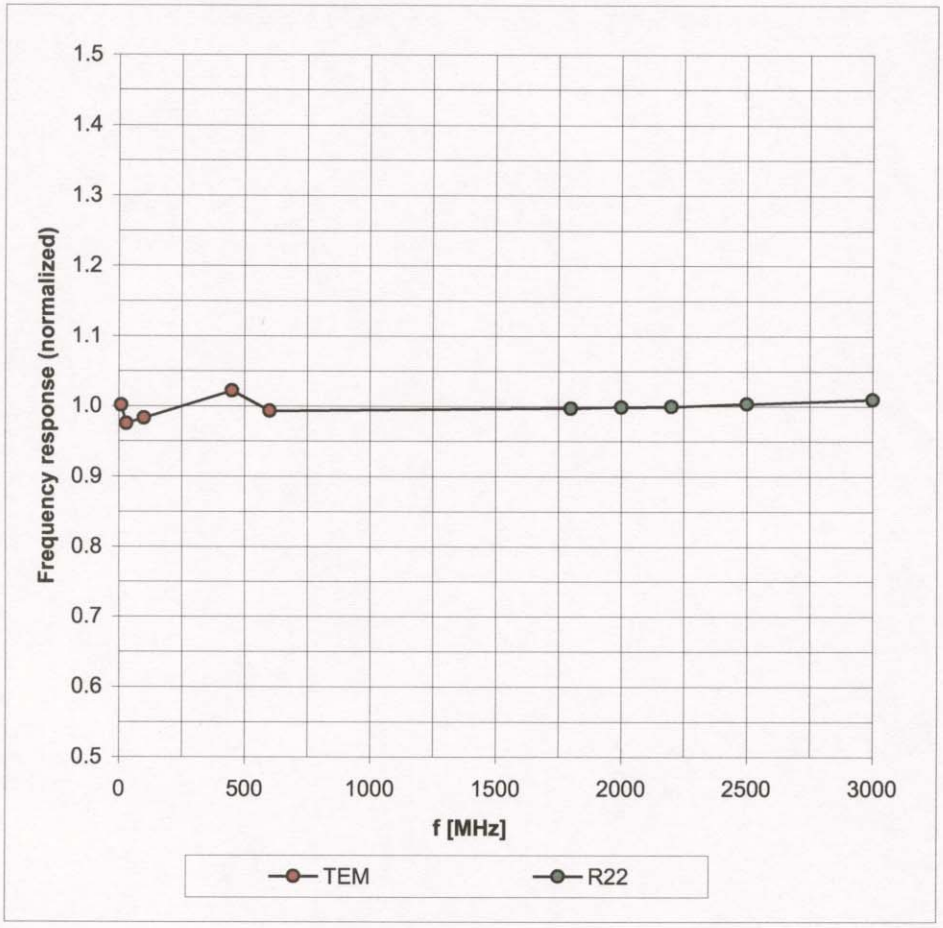
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

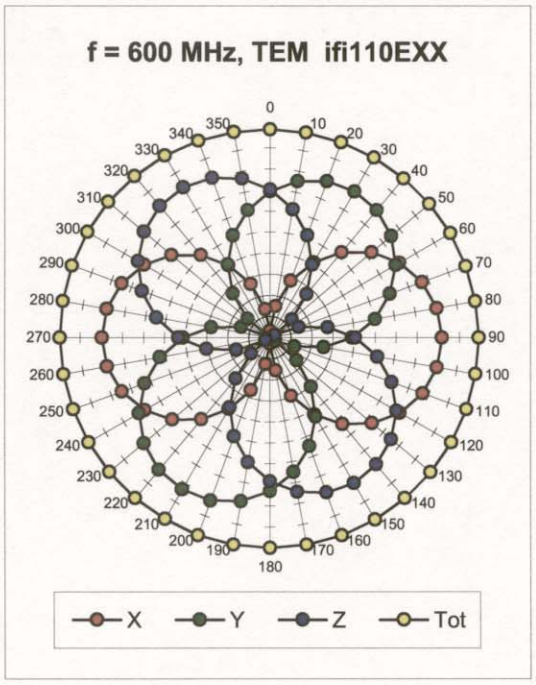
Frequency Response of E-Field

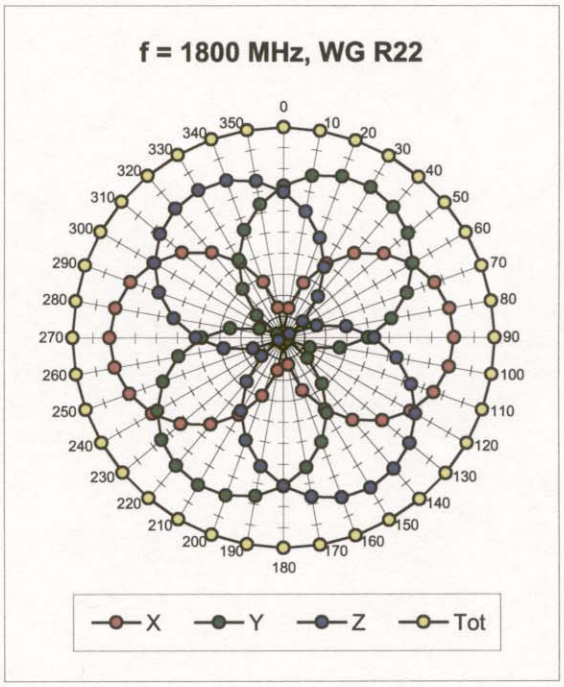
(TEM-Cell:ifi110 EXX, Waveguide: R22)

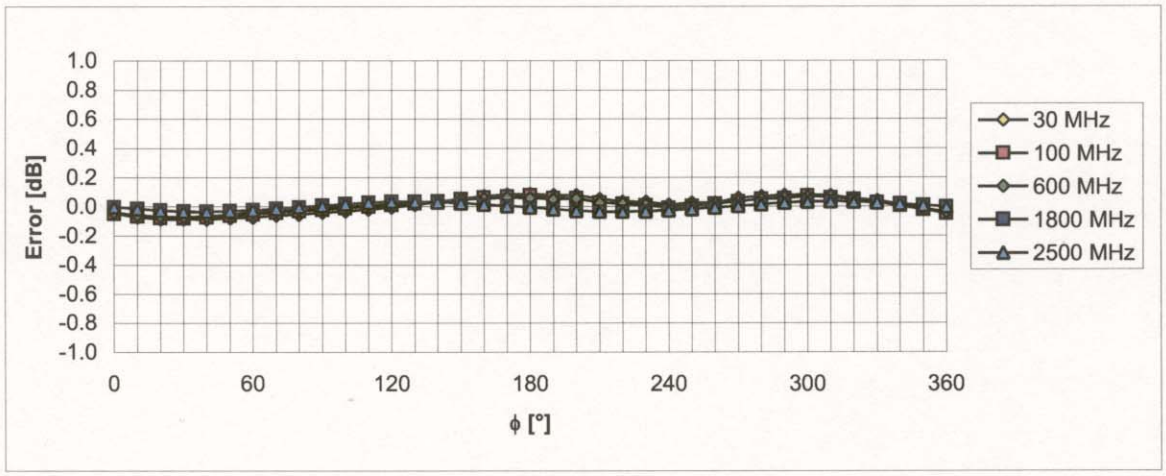


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



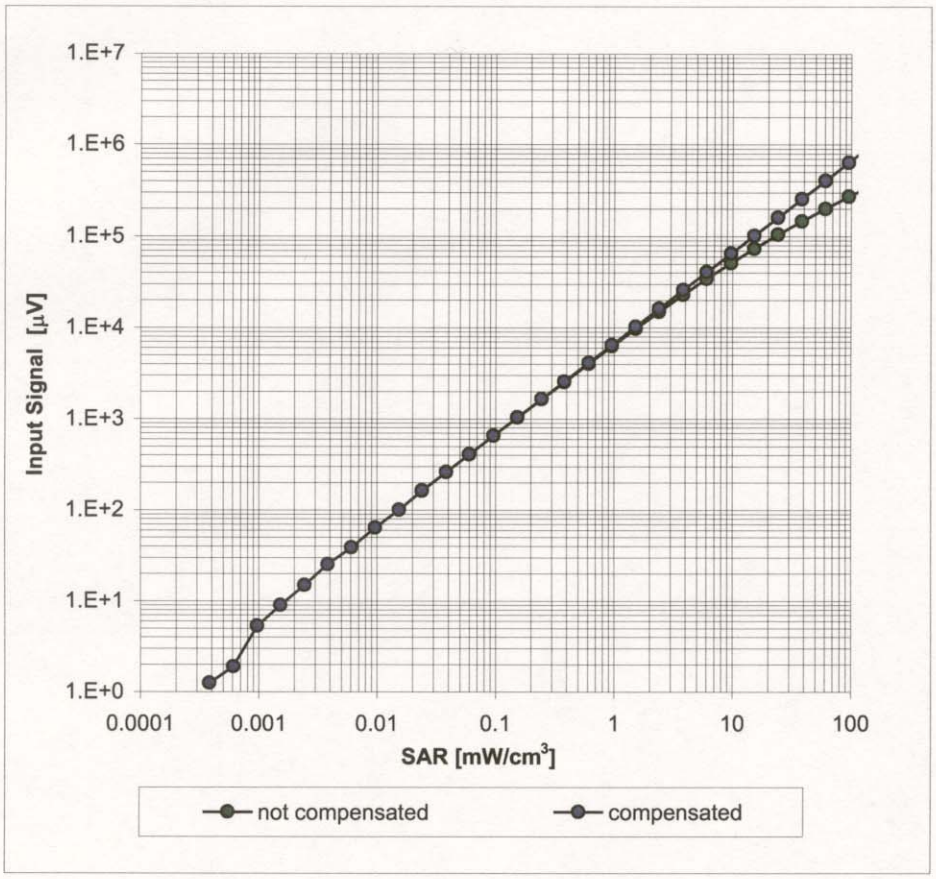


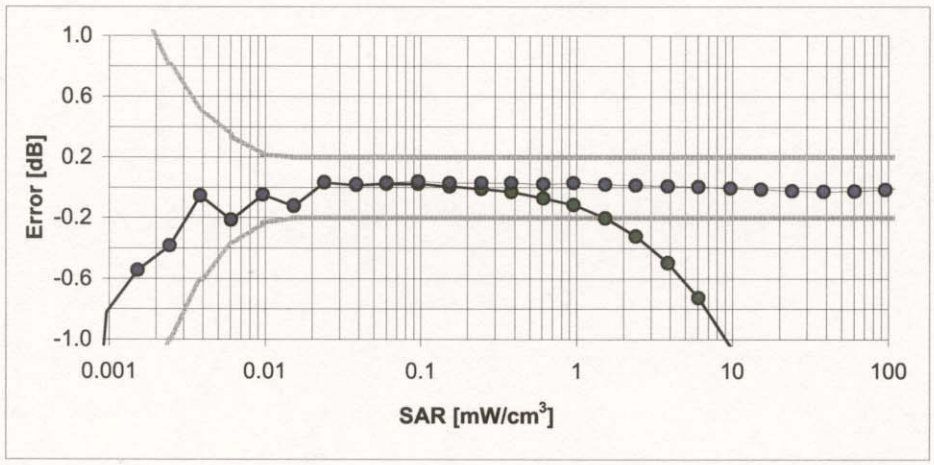


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

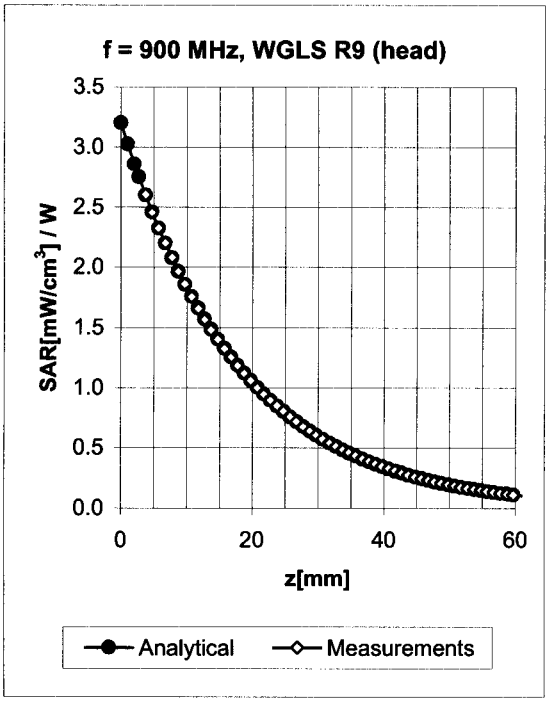
(Waveguide R22, f = 1800 MHz)

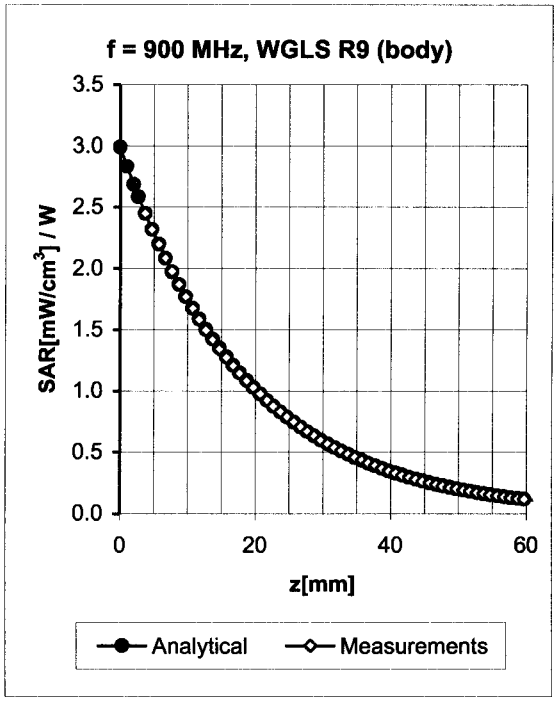




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



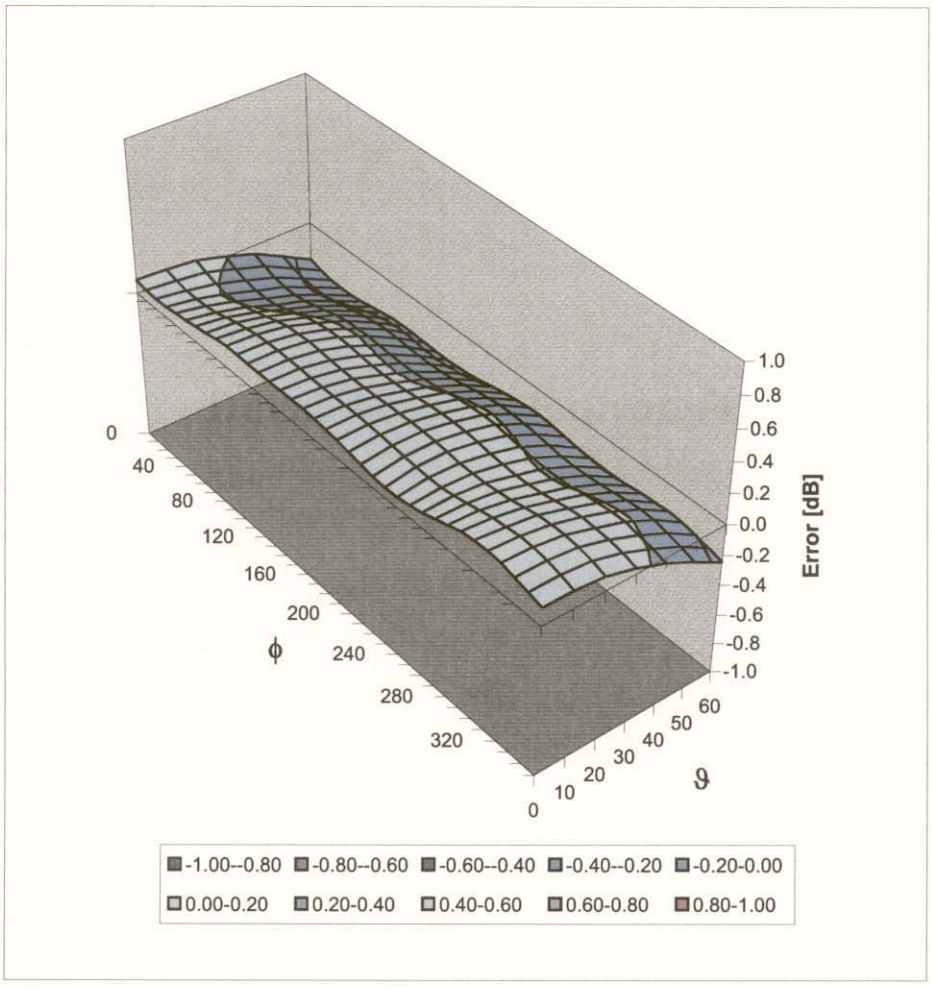


f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.62	1.86	6.35 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.59	1.97	6.04 ± 11.0% (k=2)

[C] **The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.**

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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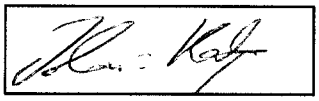
Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Assessment:	**Zurich**
Date of Assessment:	**March 18, 2006**
Probe Calibration Date:	**March 16, 2006**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by:



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Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion factor (± standard deviation)

150 ± 50 MHz	ConvF	**8.6 ± 10%**	**ε_r = 52.3 ± 5%** **σ = 0.76 ± 5% mho/m** (head tissue)
150 ± 50 MHz	ConvF	**8.2 ± 10%**	**ε_r = 61.9 ± 5%** **σ = 0.80 ± 5% mho/m** (body tissue)
300 ± 50 MHz	ConvF	**7.8 ± 9%**	**ε_r = 45.3 ± 5%** **σ = 0.87 ± 5% mho/m** (head tissue)
450 ± 50 MHz	ConvF	**7.4 ± 8%**	**ε_r = 43.5 ± 5%** **σ = 0.87 ± 5% mho/m** (head tissue)
450 ± 50 MHz	ConvF	**7.3 ± 8%**	**ε_r = 56.7 ± 5%** **σ = 0.94 ± 5% mho/m** (body tissue)
750 ± 50 MHz	ConvF	**6.6± 7%**	**ε_r = 41.8 ± 5%** **σ = 0.89 ± 5% mho/m** (head tissue)
750 ± 50 MHz	ConvF	**6.4 ± 7%**	**ε_r = 55.4 ± 5%** **σ = 0.96 ± 5% mho/m** (body tissue)
1925 ± 50 MHz	ConvF	**5.0 ± 7%**	**ε_r = 39.8 ± 5%** **σ = 1.48 ± 5% mho/m** (head tissue)
1925 ± 50 MHz	ConvF	**4.7 ± 7%**	**ε_r = 53.2 ± 5%** **σ = 1.60 ± 5% mho/m** (body tissue)

Important Note:

For numerically assessed probe conversion factors, parameters Alpha and Delta in the DASY software must have the following entries: Alpha = 0 and Delta = 1.
Please see also Section 4.7 of the DASY4 Manual.

APPENDIX G - PLANAR PHANTOM CERTIFICATE OF CONFORMITY

2378 Westlake Road
Kelowna, B.C. Canada
V1Z-2V2

BARSKI INDUSTRIES (1985) LTD.

Ph. # 250-769-6848
Fax # 250-769-6334
E-mail: barskiind@shaw.ca
Web: www.bcfiberglass.com

FIBERGLASS FABRICATORS

Certificate of Conformity

Item : Flat Planar Phantom Unit # 03-01
Date: June 16, 2003
Manufacturer: Barski Industries (1985 Ltd)

Test	Requirement	Details
Shape	Compliance to geometry according to drawing	Supplied CAD drawing
Material Thickness	Compliant with the requirements	2mm +/- 0.2mm in measurement area
Material Parameters	Dielectric parameters for required frequencies Based on Dow Chemical technical data	100 MHz-5 GHz Relative permittivity<5 Loss Tangent<0.05

Conformity

Based on the above information, we certify this product to be compliant to the requirements specified.

Signature: _____

Daniel Chailler

Fiberglass Planar Phantom - Top View

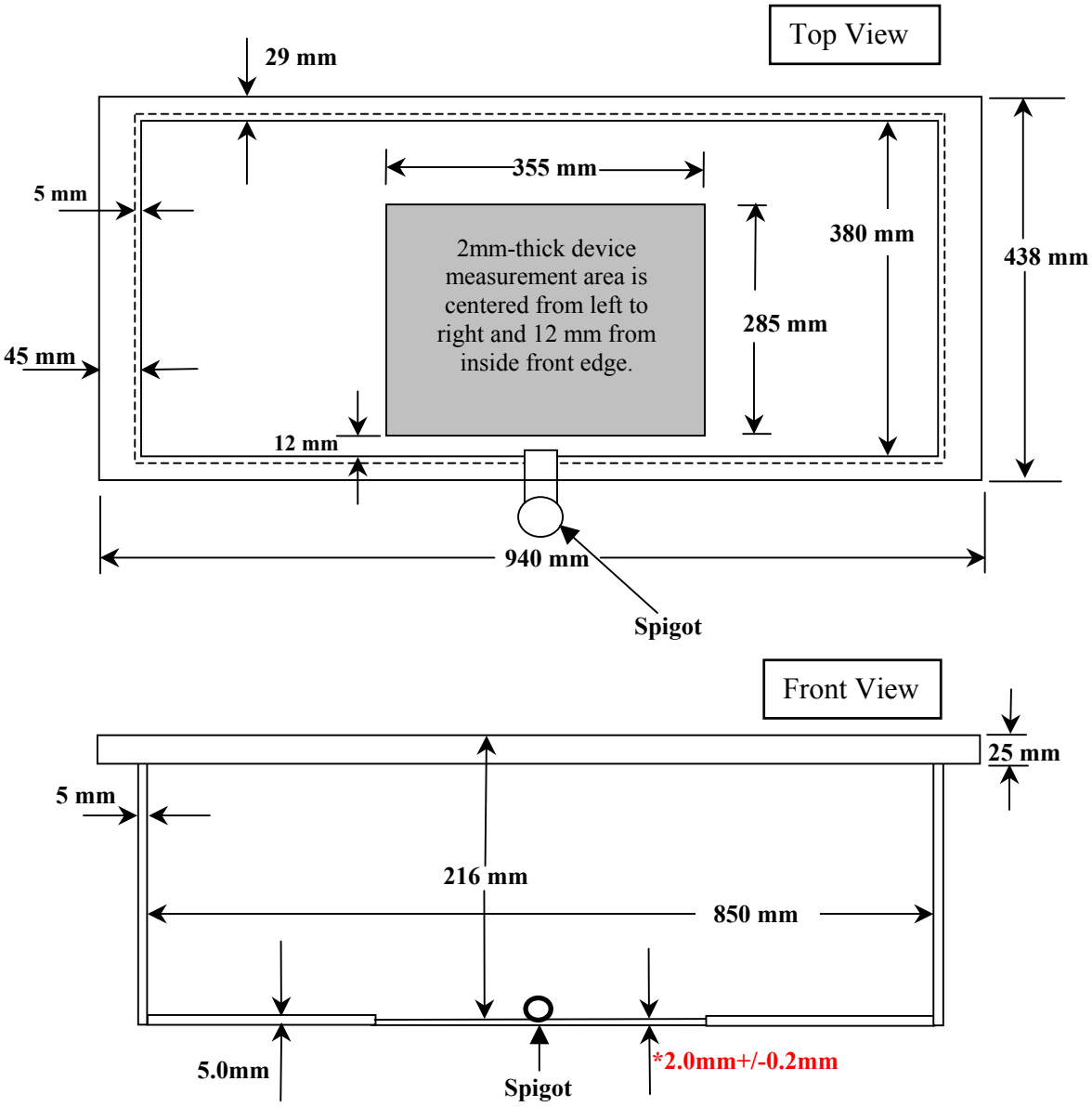
Fiberglass Planar Phantom - Front View

Fiberglass Planar Phantom - Back View

Fiberglass Planar Phantom - Bottom View

Dimensions of Fiberglass Planar Phantom

(Manufactured by Barski Industries Ltd. - Unit# 03-01)



Note: Measurements that aren't repeated for the opposite sides are the same as the side measured. This drawing is not to scale.