SAR TEST REPORT (FCC/IC)

RF EXPOSURE EVALUATION | SPECIFIC ABSORPTION RATE

APPLICANT	M/A-COM, INC.			
DEVICE UNDER TEST (DUT)	PORTABLE UHF-H PTT RADIO TRANSCEIVER (ANALOG/DIGITAL)			
DEVICE FREQUENCY RANGE	450 - 512 MHz			
DEVICE MODEL(S)	P7300			
DEVICE IDENTIFIER(S)	FCC ID:	OWDTR-0052-E	IC:	3636B-0052
APPLICATION TYPE	Certification			
STANDARD(S) APPLIED	FCC 47 CFR §2.1093			
	Health Canada Safety Code 6			
PROCEDURE(S) APPLIED	FCC OET Bulletin 65, Supplement C (01-01)			
	Industry Canada RSS-102 Issue 2			
	IEEE 1528-2003			
	IEC 62209-1:2005			
FCC DEVICE CLASSIFICATION	Licensed Non-Broadcast Transmitter Held to Face (TNF)			
IC DEVICE CLASSIFICATION	Land Mobile Radio Transmitter/Receiver (27.41-960 MHz)			
RF EXPOSURE CATEGORY	Occupational / Controlled			
RF EXPOSURE EVALUATIONS	Face-held & Body-worn			
DATE(S) OF EVALUATIONS	September 05, 08-09, 2008			
TEST REPORT SERIAL NO.	090208OWD-T932-S90U			
TEST REPORT REVISION NO.	Revision 1.0	Initial Release	October 08, 2008	
TEST REPORT SIGNATORIES	Testing Performed By		Test Report Prepared By	
	Sean Johnston Celltech Labs Inc.		Jonathan Hughes Celltech Labs Inc.	
TEST LAB AND LOCATION	Celltech Compliance Testing and Engineering Lab			
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TEST LAB ACCREDITATION(S)	ilac-MRA A2LA ACCREDITED Test Lab Certificate No. 2470.01			

DECLARATION OF COMPLIANCE
SAR RF EXPOSURE EVALUATION

Test Lab Information	**Name**	**CELLTECH LABS INC.**			**Address**	21-364 Lougheed Road, Kelowna B.C. V1X 7R8 Canada				
Applicant Information	**Name**	**M/A-COM, INC.**			**Address**	221 Jefferson Ridge Parkway, Lynchburg, VA 24501 USA				
Standard(s) Applied	**FCC**	47 CFR §2.1093			**IC**	Health Canada Safety Code 6				
Procedures Applied	**FCC**	OET Bulletin 65, Supplement C (01-01)			**IC**	RSS-102 Issue 2				
	IEEE	1528-2003			**IEC**	62209-1:2005				
Device Description	Portable UHF-H Push-To-Talk Radio Transceiver				**Model(s)**	P7300	**Frequency Range**	450 - 512 MHz		
Device Part No.(s) & Serial No.(s) Tested	Scan Radio	Part No.: RU-013585-001			Serial No.: T2-UT-003			Identical Prototype		
	System Radio	Part No.: RU-013585-002			Serial No.: T2-UT-030			Identical Prototype		
Measured RF Output Power	Scan Radio	4.1 Watts	36.13 dBm	450 MHz	Conducted					
		3.9 Watts	35.91 dBm	481 MHz	Conducted					
		4.0 Watts	36.02 dBm	512 MHz	Conducted					
	System Radio	4.1 Watts	36.13 dBm	450 MHz	Conducted					
		3.9 Watts	35.91 dBm	481 MHz	Conducted					
		4.0 Watts	36.02 dBm	512 MHz	Conducted					
Antenna Type(s) Tested	Helical Stub	470 - 512 MHz	Length: 62 mm	P/N: KRE1011219/14						
	Quarter-wave Whip	450 - 512 MHz	Length: 149 mm	P/N: KRE1011223/12						
Battery Type(s) Tested	7.5V	NiCd	immersible	non-IS	P/N: BT-023406-001	7.5V	NiCd	immersible	IS	P/N: BT-023406-002
	7.5V	NiMH	immersible	non-IS	P/N: BT-023406-003	7.5V	NiMH	immersible	IS	P/N: BT-023406-004
	7.5V	Li-ion	immersible	non-IS	P/N: BT-023406-005	7.5V	Li-ion	immersible	IS	P/N: BT-023406-006
Body-worn Accessories Tested	Metal Belt-Clip									P/N: CC23894
	Nylon "T"-Strap Holder									P/N: KRY1011656/1
	[BEE] P7300 Black Nylon Case with Belt Loop Kit: Kit containing FM-016199-001 P7300 [BEE] Nylon Case (Black) (with radio retaining strap) & [BEE] Leather Belt Loop (P/N: CC-014527)									P/N: KT-016201-001
	[BEE] P7300 Leather Case with Belt Loop Kit: Kit containing FM-016199-003 P7300 [BEE] Leather Case (with radio retaining strap) without shoulder strap D-rings, Swivel-Mount (P/N: KRY1011608/2) & [BEE] Leather Belt Loop (P/N: CC-014527)									P/N: KT-016201-003
	[BEE] P7300 Leather Case with Shoulder Strap Kit: Kit containing FM-016199-004 P7300 [BEE] Leather Case with shoulder strap D-rings (with radio retaining strap), Swivel-Mount (P/N: KRY1011608/2) & [BEE] Shoulder Strap (P/N: CC-014524-001)									P/N: KT-016201-004
	[BEE] Short Leather Retaining Strap (for use with shoulder strap application)									P/N: CC-014524-002
Audio Accessories Tested	Speaker-Microphone									P/N: MC-023933-001
	Speaker-Microphone Antenna Version (SMA)									P/N: MC-023933-002
	Earphone for speaker/mic									P/N: LS103239V1
Max. SAR Level(s) Evaluated	Face-held	**2.15 W/kg**	1g average	50% Duty Cycle	**FCC/IC SAR Limit**	8.0 W/kg	1g average			
	Body-worn	**4.02 W/kg**	1g average	50% Duty Cycle	**FCC/IC SAR Limit**	8.0 W/kg	1g average			

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 for the Occupational/Controlled Exposure environment. 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 2, IEEE 1528-2003 and IEC 62209-1:2005. 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.

The results and statements contained in this report pertain only to the device(s) evaluated.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.

Test Report Approved By	Sean Johnston	**Sean Johnston**	**Celltech Labs Inc.**

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1.0 INTRODUCTION

This measurement report demonstrates that the M/A-COM Model: P7300 Portable Analog/Digital UHF-H PTT Radio Transceiver 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 Occupational / Controlled Exposure environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]) IC RSS-102 Issue 2 (see reference [4]), IEEE 1528-2003 (see reference [5]) and IEC 62209-1:2005 (see reference [6]) were employed. A description of the device, 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 ADDITIONAL BODY-WORN AND AUDIO ACCESSORIES

	Accessory Type	Part No.
Additional Body-worn and Audio Accessories (Testing Not Required *)	Kit containing FM-016199-002 P7300 [BEE] Nylon Case (Orange) (with radio retaining strap) & [BEE] Leather Belt Loop (P/N: CC-014527)	KT-016201-002
	Metal Belt Clip (alternate)	CC-011318
	Earphone Kit, Black	EA-009580-001
	Earphone Kit, Beige	EA-009580-002
	2-Wire Kit, Palm mic, Black	EA-009580-003
	2-Wire Kit, Palm mic, Beige	EA-009580-004
	3-Wire Kit, Mini-Lapel Mic, Black	EA-009580-005
	3-Wire Kit, Mini-Lapel Mic, Beige	EA-009580-006
	Explorer Headset w/ PTT	EA-009580-007
	Lightweight headset single speaker w/ PTT	EA-009580-008
	Breeze Headset w/ PTT	EA-009580-009
	Headset, heavy duty, N/C behind the head w/ PTT	EA-009580-010
	Ranger Headset w/ PTT	EA-009580-011
	Skull mic w/ body PTT & earcup	EA-009580-012
	Headset, heavy duty, N/C over the head w/ PTT	EA-009580-013
	Throat mic w/ acoustic tube & body PTT	EA-009580-014
	Throat mic w/ acoustic tube, body PTT, & ring PTT	EA-009580-015
	Breeze headset w/ PTT & pigtail jack	EA-009580-016
	Hurricane headset w/ PTT	EA-009580-017
	Hurricane headset w/ PTT & pigtail jack	EA-009580-018

* Additional testing not required for listed body-worn accessories based on identical or similar construction with equal or lesser spacing and similar metallic components. Additional testing not required for listed audio accessories based on no expected affect to SAR levels.

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 System with Plexiglas validation phantom

DASY4 SAR System with Plexiglas side planar phantom

4.0 SAR MEASUREMENT SUMMARY

1. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2. If the scaled SAR levels evaluated at the mid channel (50% duty cycle) 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]). The low and high channels were evaluated in the worst-case configuration measured at the mid channel (body-worn with belt-clip).
3. Secondary peak SAR levels measured within 2 dB of the primary are reported (P = Primary, S = Secondary).
4. The power droops measured by the DASY4 system for the duration of the SAR evaluations were added to the measured SAR levels to report scaled SAR results as shown in the test data tables.
5. The SAR levels were scaled up by an additional 5% to correlate with the conducted output power levels measured by the EMC lab (Rhein Tech). See conducted output power comparison table on page 8.
6. The SAR evaluations were performed with the scan radio. The system radio was evaluated for SAR in the worst-case battery configuration for each antenna type. The only difference between the scan and system radio is the number of keys on the front keypad.
7. The Speaker-Microphone Antenna Version SAR evaluations were selected based on the worst-case face-held and body-worn battery configuration measured with the Scan Radio.
8. The body-worn SAR evaluations were performed with the belt-clip accessory based on the minimum spacing provided from the back of the radio to the planar phantom. The remaining body-worn accessories were evaluated in the worst-case antenna and battery configuration measured with the belt-clip accessory.

FACE-HELD SAR EVALUATION RESULTS

Test Date	Freq.	Ch.	Test Mode	DUT Type	Antenna Part No.	Battery Type	DUT Position to Planar Phantom	DUT Spacing to Planar Phantom	Cond. Power Before Test	Measured SAR 1g (W/kg)		SAR Drift During Test	Scaled SAR (droop + 5%[5]) 1g (W/kg)	
										Duty Cycle			Duty Cycle	
	MHz							cm	Watts	100%	50%	dB	100%	50%
Sep 5	481	Mid	CW	Scan	KRE1011219/14	NiCd NIS	Front Side	2.5	3.9	3.62	1.81	0.0208	3.80	1.90
Sep 5	481	Mid	CW	Scan	KRE1011219/14	NiCd IS	Front Side	2.5	3.9	3.80	1.90	-0.0057	4.00	2.00
Sep 5	481	Mid	CW	Scan	KRE1011219/14	NiMH NIS	Front Side	2.5	3.9	3.65	1.83	0.0313	3.83	1.92
Sep 5	481	Mid	CW	Scan	KRE1011219/14	NiMH IS	Front Side	2.5	3.9	3.92	1.96	0.0582	4.12	2.06
Sep 5	481	Mid	CW	Scan	KRE1011219/14	Li-ion NIS	Front Side	2.5	3.9	3.50	1.75	0.0128	3.50	1.75
Sep 5	481	Mid	CW	Scan	KRE1011219/14	Li-ion IS	Front Side	2.5	3.9	3.70	1.85	0.0426	3.89	1.94
Sep 5	481	Mid	CW	System	KRE1011219/14	NiMH IS	Front Side	2.5	3.9	4.00	2.00	-0.0984	4.30	**2.15**
Sep 5	481	Mid	CW	Scan	KRE1011223/12	NiCd NIS	Front Side	2.5	3.9	2.08	1.04	-0.0875	2.23	1.11
Sep 5	481	Mid	CW	Scan	KRE1011223/12	NiCd IS	Front Side	2.5	3.9	1.82	0.910	-0.187	2.00	1.00
Sep 5	481	Mid	CW	Scan	KRE1011223/12	NiMH NIS	Front Side	2.5	3.9	2.03	1.02	-0.0815	2.17	1.09
Sep 5	481	Mid	CW	Scan	KRE1011223/12	NiMH IS	Front Side	2.5	3.9	1.95	0.975	-0.193	2.14	1.07
Sep 5	481	Mid	CW	Scan	KRE1011223/12	Li-ion NIS	Front Side	2.5	3.9	2.06	1.03	-0.159	2.24	1.12
Sep 5	481	Mid	CW	Scan	KRE1011223/12	Li-ion IS	Front Side	2.5	3.9	1.81	0.905	-0.0843	1.94	0.969
Sep 5	481	Mid	CW	System	KRE1011223/12	NiCd NIS	Front Side	2.5	3.9	1.96	0.980	-0.0359	2.08	1.04
Sep 5	481	Mid	CW	SMA	KRE1011219/14	NiMH IS	Front Side	2.5	3.9	1.39	0.695	0.0455	1.46	0.730
Sep 5	481	Mid	CW	SMA	KRE1011223/12	Li-ion NIS	Front Side	2.5	3.9	2.11	1.06	-0.0105	2.22	1.11

SAR LIMIT(S)		BRAIN	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	averaged over 1 gram	Occupational / Controlled

Test Date(s)	September 05, 2008			Relative Humidity	33	%
Measured Fluid Type	480 MHz Brain			Atmospheric Pressure	101.1	kPa
Dielectric Constant ε_r	IEEE Target	Measured	Deviation	Ambient Temperature	22.0	°C
	43.3 ± 5%	42.5	-1.8%	Fluid Temperature	23.9	°C
Conductivity σ (mho/m)	IEEE Target	Measured	Deviation	Fluid Depth	≥ 15	cm
	0.87 ± 5%	0.89	+2.3%	ρ (Kg/m^3)	1000	

Antenna Part No.s	KRE1011219/14 = Helical Stub		KRE1011223/12 = ¼-wave Whip	
Abbreviations	SMA = Speaker-Microphone Antenna Version		IS = Intrinsically Safe	NIS = Non-intrinsically Safe
	LC = Leather Case	SS = Shoulder Strap	NC = Nylon Case	LBL = Leather Belt Loop

BODY-WORN SAR EVALUATION RESULTS

Test Date	Freq.	Ch.	DUT Type	Antenna Part No.	Battery Type	Body-worn Accessory		Audio Accessory	Cond. Power Before Test	Measured SAR 1g (W/kg) Duty Cycle		SAR Drift During Test	Scaled SAR (droop + 5%[5]) 1g (W/kg) Duty Cycle	
	MHz					Type	cm		Watts	100%	50%	dB	100%	50%
Sep 8	481	Mid	Scan	KRE1011223/12	NiCd NIS	Belt-Clip	1.1	Speaker-Mic	3.9	P 5.01	2.51	-0.0169	P 5.28	2.64
										S 4.85	2.43		S 5.11	2.56
Sep 8	481	Mid	Scan	KRE1011223/12	NiCd IS	Belt-Clip	1.1	Speaker-Mic	3.9	P 4.65	2.33	-0.225	P 5.14	2.57
										S 4.28	2.14		S 4.73	2.37
Sep 8	481	Mid	Scan	KRE1011223/12	NiMH NIS	Belt-Clip	1.1	Speaker-Mic	3.9	P 5.39	2.70	-0.160	P 5.87	2.94
										S 4.75	2.38		S 5.17	2.59
Sep 8	481	Mid	Scan	KRE1011223/12	NiMH IS	Belt-Clip	1.1	Speaker-Mic	3.9	P 4.74	2.37	-0.316	P 5.35	2.68
										S 4.50	2.25		S 5.08	2.54
Sep 8	481	Mid	Scan	KRE1011223/12	Li-ion NIS	Belt-Clip	1.1	Speaker-Mic	3.9	P 5.32	2.66	-0.273	P 5.95	2.97
										S 4.69	2.35		S 5.24	2.62
Sep 8	481	Mid	Scan	KRE1011223/12	Li-ion IS	Belt-Clip	1.1	Speaker-Mic	3.9	P 4.73	2.37	-0.285	P 5.30	2.65
										S 4.50	2.25		S 5.05	2.52
Sep 8	481	Mid	Scan	KRE1011219/14	NiCd NIS	Belt-Clip	1.1	Speaker-Mic	3.9	6.78	3.39	-0.0139	7.14	3.57
Sep 8	481	Mid	Scan	KRE1011219/14	NiCd IS	Belt-Clip	1.1	Speaker-Mic	3.9	P 7.01	3.51	0.0070	P 7.36	3.68
										S 6.86	3.43		S 7.20	3.60
Sep 8	481	Mid	Scan	KRE1011219/14	NiMH NIS	Belt-Clip	1.1	Speaker-Mic	3.9	6.80	3.40	-0.0239	7.18	3.59
Sep 8	481	Mid	Scan	KRE1011219/14	NiMH IS	Belt-Clip	1.1	Speaker-Mic	3.9	P 7.27	3.64	-0.108	P 7.83	3.91
										S 7.47	3.74		S 8.04	4.02
Sep 8	481	Mid	Scan	KRE1011219/14	Li-ion NIS	Belt-Clip	1.1	Speaker-Mic	3.9	6.67	3.34	-0.0096	7.02	3.51
Sep 8	481	Mid	Scan	KRE1011219/14	Li-ion IS	Belt-Clip	1.1	Speaker-Mic	3.9	6.68	3.34	-0.0041	7.02	3.51
Sep 8	450	Low	Scan	KRE1011223/12	NiMH NIS	Belt-Clip	1.1	Speaker-Mic	4.1	P 4.73	2.37	0.0108	P 4.97	2.48
										S 4.50	2.25		S 4.73	2.36
Sep 8	512	High	Scan	KRE1011223/12	NiMH NIS	Belt-Clip	1.1	Speaker-Mic	4.0	P 3.87	1.94	-0.0085	P 4.07	2.04
										S 3.64	1.82		S 3.83	1.91
Sep 8	512	High	Scan	KRE1011219/14	NiMH IS	Belt-Clip	1.1	Speaker-Mic	4.0	P 4.45	2.23	-0.177	P 4.87	2.43
										S 4.23	2.12		S 4.63	2.31
Sep 9	481	Mid	Scan	KRE1011219/14	NiMH IS	T-Strap	2.0	Speaker-Mic	3.9	6.63	3.31	0.0051	6.63	3.31
Sep 9	481	Mid	Scan	KRE1011219/14	NiMH IS	LC & SS	3.5	Speaker-Mic	3.9	P 4.95	2.48	0.0034	P 5.20	2.60
										S 4.15	2.08		S 4.36	2.18
										S 3.42	1.71		S 3.59	1.80
Sep 9	481	Mid	Scan	KRE1011219/14	NiMH IS	NC & LBL	4.0	Speaker-Mic	3.9	2.24	1.12	-0.135	2.43	1.21
Sep 9	481	Mid	Scan	KRE1011219/14	NiMH IS	LC & LBL	5.0	Speaker-Mic	3.9	1.82	0.910	0.0536	1.91	0.956
Sep 9	481	Mid	SMA	KRE1011219/14	NiMH IS	Lapel-Clip	1.5	Earphone	3.9	0.746	0.373	0.0242	0.783	0.392
Sep 9	481	Mid	SMA	KRE1011223/12	NiMH IS	Lapel-Clip	1.5	Earphone	3.9	P 0.716	0.358	-0.0159	P 0.755	0.377
										S 0.536	0.268		S 0.565	0.282

SAR LIMIT(S)		BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	averaged over 1 gram	Occupational / Controlled

Test Date(s)		Sept. 08, 2008		Sept. 09, 2008		Test Date	Sep 8	Sep 9	Unit
Dielectric Constant ε_r	Fluid Type	480 MHz Body		480 MHz Body		Relative Humidity	32	32	%
	IEEE Target	Meas.	Dev.	Meas.	Dev.	Atmospheric Pressure	101.1	101.1	kPa
	56.6 ± 5%	57.3	+1.3%	56.5	-0.2%	Ambient Temperature	22.3	22.2	°C
Conductivity σ (mho/m)	Fluid Type	480 MHz Body		480 MHz Body		Fluid Temperature	23.5	23.4	°C
	IEEE Target	Meas.	Dev.	Meas.	Dev.	Fluid Depth	≥ 15	≥ 15	cm
	0.94 ± 5%	0.93	-1.1%	0.96	+2.1%	ρ (Kg/m^3)	1000		

5.0 DETAILS OF SAR EVALUATION

The M/A-COM Model: P7300 Portable Analog/Digital UHF-H PTT Radio Transceiver described in this report was compliant for localized Specific Absorption Rate (Occupational / Controlled Exposure) based on the test provisions and conditions described below. Detailed photographs of the test setup are shown in Appendix D.

Face-held Configuration

1. The Radio was tested in a face-held configuration with the front of the radio placed parallel to the outer surface of the planar phantom. A spacing of 2.5 cm was maintained between the front side of the Radio and the outer surface of the planar phantom.
2. The Speaker-Microphone Antenna Version (P/N: MC-023933-002) was connected to the Radio and tested in a face-held configuration with the front of the speaker-microphone placed parallel to the outer surface of the planar phantom with a spacing of 2.5 cm.

Body-worn Configuration

3. The Speaker-Microphone Antenna Version (P/N: MC-023933-002) was connected to the Radio and tested in a body-worn configuration with the back of the speaker-microphone placed parallel to the outer surface of the planar phantom. The speaker-microphone Lapel Clip was touching the outer surface of the planar phantom and provided a 1.5 cm spacing between the back of the speaker-microphone and the outer surface of the planar phantom. The SAR evaluation was performed with the Earphone audio accessory (P/N: LS103239V1) connected to the Speaker-Mic.
4. The Radio was tested in a body-worn configuration with the back side placed parallel to the outer surface of the planar phantom. The attached Metal Belt-Clip (P/N: CC23894) was touching the planar phantom and provided a 1.1 cm spacing between the back of the Radio and the planar phantom. The evaluation was performed with the Speaker-Microphone (non-antenna version) audio accessory (P/N: MC-023933-001) connected to the Radio.
5. The Radio was tested in a body-worn configuration with the Nylon "T"-Strap Holder (P/N: KRY1011656/1) attached to the Radio and the back side facing parallel to and touching the outer surface of the planar phantom. The Nylon "T"-Strap Holder provided a 2.0 cm spacing between the back of the Radio and the planar phantom. The evaluation was performed with the Speaker-Microphone (non-antenna version) audio accessory (P/N: MC-023933-001) connected to the Radio.
6. The Radio was tested in a body-worn configuration with the Leather Case and Shoulder Strap Kit (P/N: KT-016201-004). The Radio was placed inside the Leather Case (P/N: FM-016199-004) and the back of the Radio was facing parallel to the outer surface of the planar phantom. The back side of the Leather Case (P/N: FM-016199-004) was touching the planar phantom and provided a 3.5 cm spacing between the back of the Radio and the planar phantom. The evaluation was performed with the Speaker-Microphone (non-antenna version) audio accessory (P/N: MC-023933-001) connected to the Radio.
7. The Radio was tested in a body-worn configuration with the Black Nylon Case and Belt-Loop Kit (P/N: KT-016201-001). The Radio was placed inside the Nylon Case (P/N: FM-016199-001) with the Leather Belt Loop (P/N: CC-014527) attached to the swivel mount on the back of the Nylon Case. The back side of the Leather Belt Loop (P/N: CC-014527) was placed parallel touching the outer surface of the planar phantom and with the Nylon Case (P/N: FM-016199-001) accessory provided a combined spacing of 4.0 cm between the back of the Radio and the planar phantom. The evaluation was performed with the Speaker-Microphone (non-antenna version) audio accessory (P/N: MC-023933-001) connected to the Radio.
8. The Radio was tested in a body-worn configuration with the Leather Case and Belt Loop Kit (P/N: KT-016201-003). The Radio was placed inside the Leather Case (P/N: FM-016199-003) with the Leather Belt Loop (P/N: CC-014527) attached to the Swivel Mount on the back of the Leather Case. The back side of the Leather Belt Loop (P/N: CC-014527) was placed parallel touching the outer surface of the planar phantom and with the Leather Case (P/N: FM-016199-003) accessory provided a combined spacing of 5.0 cm between the back of the Radio and the planar phantom. The evaluation was performed with the Speaker-Microphone (non-antenna version) audio accessory (P/N: MC-023933-001) connected to the Radio.

RF CONDUCTED OUTPUT POWER MEASUREMENTS					
Celltech (SAR Lab)			Rhein Tech (EMC Lab)		
450 MHz	36.13 dBm	4.1 Watts	450 MHz	36.28 dBm	4.25 Watts
481 MHz	35.91 dBm	3.9 Watts	481 MHz	36.08 dBm	4.06 Watts
512 MHz	36.02 dBm	4.0 Watts	512 MHz	36.20 dBm	4.17 Watts

DETAILS OF SAR EVALUATION (Cont.)

Output Power

9. The DUT was configured to the maximum conducted power setting prior to the SAR evaluations by the manufacturer.
10. The conducted power levels were measured prior to the SAR evaluations with a Gigatronics 8652A Universal Power Meter according to the procedures described in FCC 47 CFR §2.1046 and RSS-Gen. The SAR levels were scaled up by 5% to correlate with the conducted output power levels measured by the EMC lab (Rhein Tech). See conducted output power comparison table on previous page.
11. The area scan evaluation was performed with a fully charged battery. After the area scan evaluation was completed the battery was replaced with a fully charged battery prior to the zoom scan evaluation.
12. The power drift of the DUT during the SAR evaluations was measured by the DASY4 system. A SAR-versus-Time power droop evaluation was performed in the SAR measurement configuration that reported the maximum measured power droop (see Appendix A - SAR Test Plots for SAR-versus-Time power droop evaluation plot).

Test Mode

13. The DUT was tested in unmodulated continuous transmit operation (Continuous Wave mode at 100% duty cycle) with the transmit key constantly depressed. For a push-to-talk device the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base.

Test Conditions

14. 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.
15. The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using an HP 85070C Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C).

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 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 1 g and 10 g 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 form 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 1 g and 10 g 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. Depending on the device type under evaluation, zoom scans for frequencies ≥ 800 MHz are typically 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.

7.0 SYSTEM PERFORMANCE CHECK

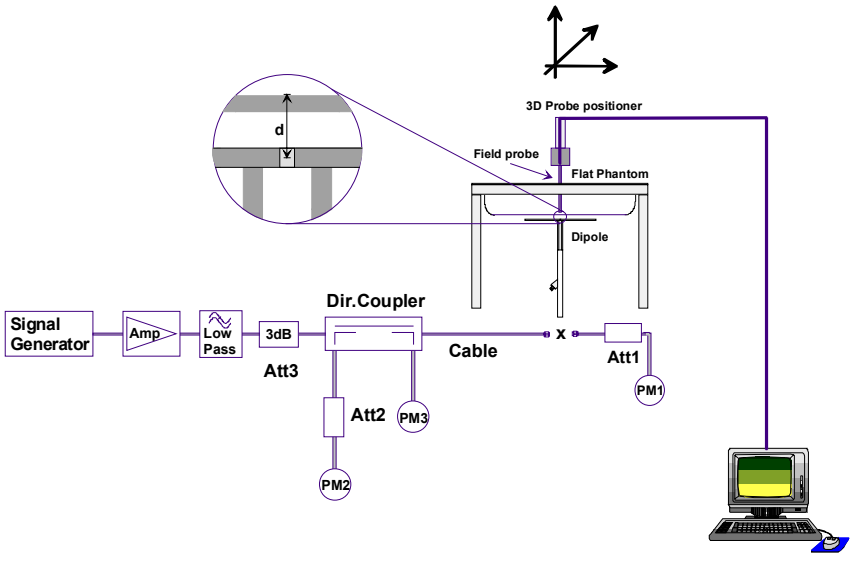
Prior to the SAR evaluations, system checks were performed using a Plexiglas planar phantom and 450 MHz dipole (see Appendix B for system performance check test plots). The dielectric parameters of the simulated tissue mixture were measured prior to the system performance checks using an HP 85070C Dielectric Probe Kit and HP 8753ET Network Analyzer (see Appendix C for measured fluid dielectric parameters). A forward power of 250 mW was applied to the dipole and the system was verified to a tolerance of ±10% from the system validation target SAR value (see Appendix E for system validation procedures).

SYSTEM PERFORMANCE CHECK EVALUATIONS

Test Date	Equiv. Tissue	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)
	450 MHz	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.						
Sep 5	Brain	1.18 ±10%	1.30	+10%	43.4 ±5%	43.3	-0.2%	0.89 ±5%	0.86	-3.4%	1000	22.0	23.9	≥ 15	33	101.1
Sep 8	Brain	1.18 ±10%	1.27	+7.6%	43.4 ±5%	43.4	0.0%	0.89 ±5%	0.87	-2.3%	1000	22.3	23.7	≥ 15	32	101.1
Sep 9	Brain	1.18 ±10%	1.28	+8.5%	43.4 ±5%	43.5	+0.3%	0.89 ±5%	0.85	-4.5%	1000	22.4	23.6	≥ 15	32	101.1

Note(s)

1. The target SAR value is referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).
2. The target dielectric parameters are referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).
3. 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.



System Performance Check Measurement Setup Diagram

450 MHz Validation Dipole Setup

8.0 SIMULATED EQUIVALENT TISSUES

The simulated tissue mixtures consisted of a viscous gel using hydroxethylcellulose (HEC) gelling agent and saline solution. Preservation with a bactericide was added and visual inspection made to ensure air bubbles were not trapped during the mixing process. The fluid was prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

SIMULATED TISSUE MIXTURES		
INGREDIENT	**450 MHz Brain**	**450 MHz Body**
	System Check & DUT Evaluation	DUT Evaluation
Water	38.56 %	52.00 %
Sugar	56.32 %	45.65 %
Salt	3.95 %	1.75 %
HEC	0.98 %	0.50 %
Bactericide	0.19 %	0.10 %

9.0 SAR LIMITS

SAR RF EXPOSURE LIMITS			
FCC 47 CFR 2.1093	**Health Canada Safety Code 6**	**(General Population / Uncontrolled Exposure)**	**(Occupational / Controlled Exposure)**
Spatial Average (averaged over the whole body)		0.08 W/kg	0.4 W/kg
Spatial Peak (averaged over any 1 g of tissue)		1.6 W/kg	**8.0 W/kg**
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)		4.0 W/kg	20.0 W/kg
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.			

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	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.	1590
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
Evaluation Phantom	
Type	Side Planar Phantom
Shell Material	Plexiglas
Bottom Thickness	2.0 mm ± 0.1 mm
Outer Dimensions	75.0 cm (L) x 22.5 cm (W) x 20.5 cm (H); Back Plane: 25.7 cm (H)
Validation Phantom (≤ 450MHz)	
Type	Planar Phantom
Shell Material	Plexiglas
Bottom Thickness	6.2 mm ± 0.1 mm
Outer Dimensions	86.0 cm (L) x 39.5 cm (W) x 21.8 cm (H)

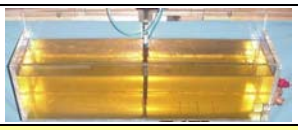
11.0 PROBE SPECIFICATION (ET3DV6)

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

12.0 SIDE PLANAR PHANTOM

The side planar phantom is constructed of Plexiglas material with a 2.0 mm shell thickness for face-held and body-worn SAR evaluations of portable radio transceivers. The side planar phantom is mounted on the side of the DASY4 compact system table.



Plexiglas Side Planar Phantom

13.0 VALIDATION PLANAR PHANTOM

The validation planar phantom is constructed of Plexiglas material with a 6.0 mm shell thickness for system validations at 450MHz and below. The validation planar phantom is mounted to the table of the DASY4 compact system.

Plexiglas Validation 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.

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	NA	NA
x	-Robot	00046	599396-01	NA	NA
x	-DAE4	00019	353	22Apr08	22Apr09
x	-ET3DV6 E-Field Probe	00017	1590	21Jul08	21Jul09
x	-450 MHz Validation Dipole	00024	136	25Jul08	25Jul09
	-SAM Phantom V4.0C	00154	1033	NA	NA
	-Barski Planar Phantom	00155	03-01	NA	NA
x	-Plexiglas Side Planar Phantom	00156	161	NA	NA
x	-Plexiglas Validation Planar Phantom	00157	137	NA	NA
	ALS-PR-DIEL Dielectric Probe Kit	00160	260-00953	NA	NA
x	HP 85070C Dielectric Probe Kit	00033	US39240170	NA	NA
x	Gigatronics 8652A Power Meter	00007	1835272	23Apr08	23Apr09
x	Gigatronics 80701A Power Sensor	00014	1833699	23Apr08	23Apr09
x	HP 8753ET Network Analyzer	00134	US39170292	28Apr08	28Apr09
x	HP 8648D Signal Generator	00005	3847A00611	NR	NR
	Rohde & Schwarz SMR20 Signal Generator	00006	100104	NR	NR
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	NR	NR
	Amplifier Research 10W1000C Power Amplifier	00041	27887	NR	NR
	Nextec NB00383 Microwave Amplifier	00151	0535	NR	NR
Abbr.	NA = Not Applicable		NR = Not Required		

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 (450 MHz)	6.65	Normal	1	1	6.65	∞
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	0.8	Rectangular	1.732050808	1	0.5	∞
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)	2.3	Normal	1	0.64	1.5	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	1.8	Normal	1	0.6	1.1	∞
Combined Standard Uncertainty					**11.15**	
Expanded Uncertainty (k=2)					**22.30**	

Measurement Uncertainty Table in accordance with IEEE 1528-2003 and IEC 62209-1:2005

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 (450 MHz)	6.65	Normal	1	1	6.65	∞
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	0.8	Rectangular	1.732050808	1	0.5	∞
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	∞
Dipole						
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)	4.5	Normal	1	0.64	2.9	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	0.3	Normal	1	0.6	0.2	∞
Combined Standard Uncertainty					**9.72**	
Expanded Uncertainty (k=2)					**19.45**	

Measurement Uncertainty Table in accordance with IEEE 1528-2003 and IEC 62209-1:2005

17.0 REFERENCES

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

[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] IEC International Standard 62209-1:2005 - “Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures.”

APPENDIX A - SAR MEASUREMENT DATA

Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - NiCd NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

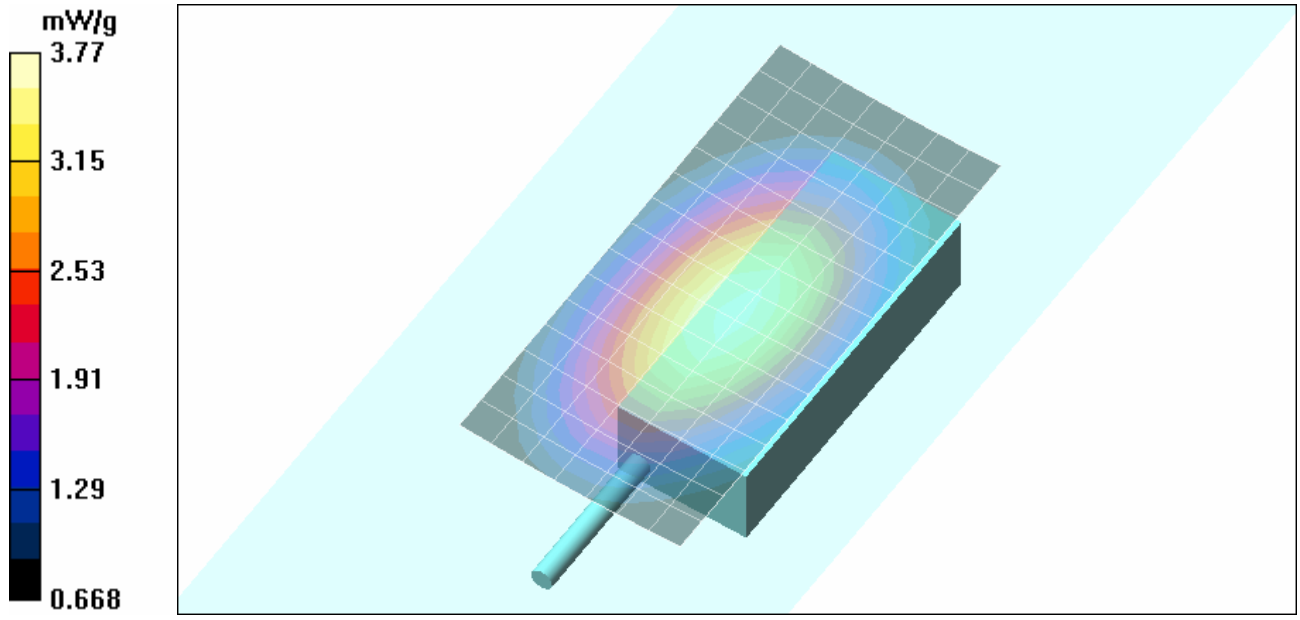
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.70 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 63.2 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 4.95 W/kg
SAR(1 g) = 3.62 mW/g; SAR(10 g) = 2.72 mW/g
Maximum value of SAR (measured) = 3.77 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - NiCd IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

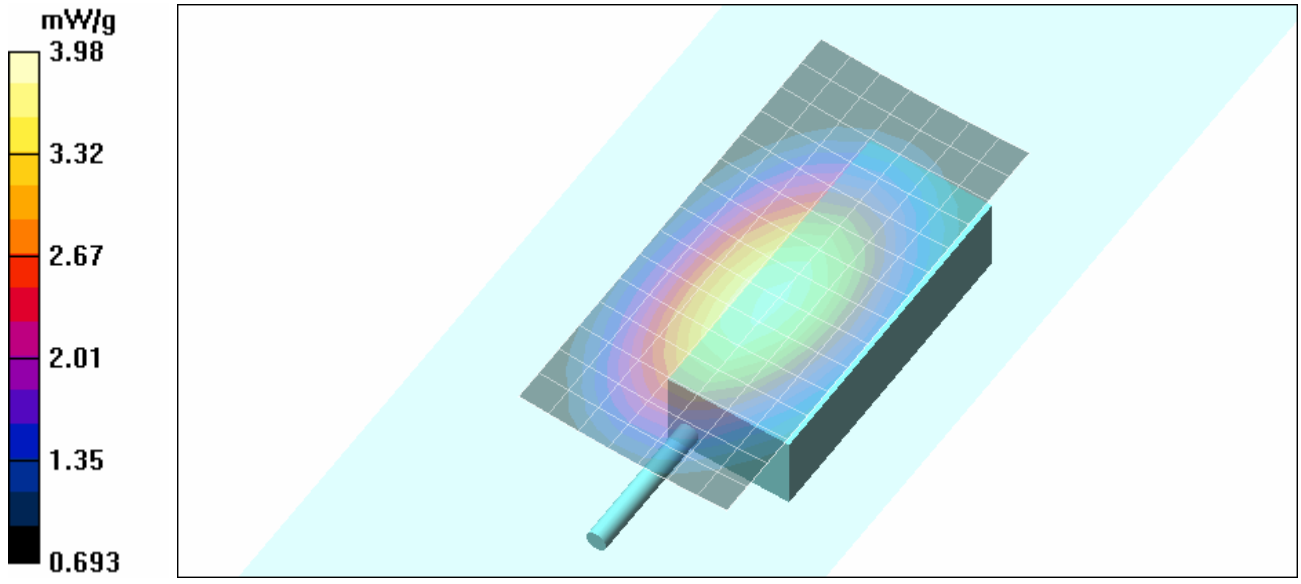
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.88 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 66.3 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 5.23 W/kg
SAR(1 g) = 3.8 mW/g; SAR(10 g) = 2.84 mW/g
Maximum value of SAR (measured) = 3.98 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - NiMH NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

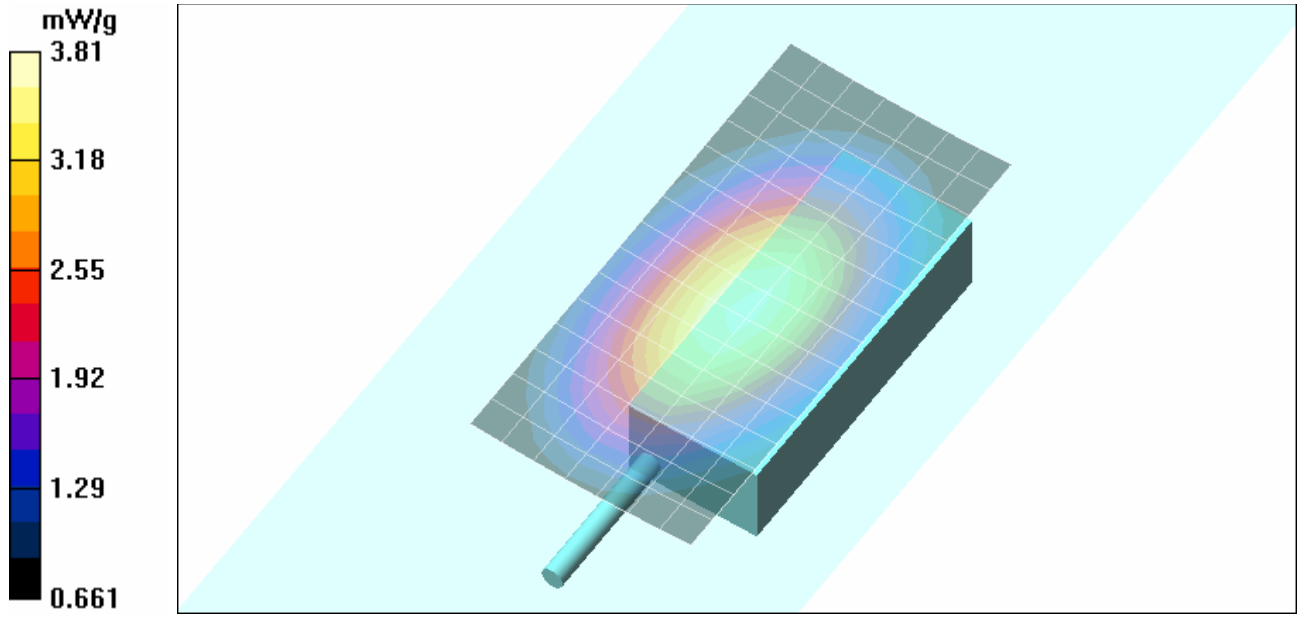
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.71 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 63.4 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 5.00 W/kg
SAR(1 g) = 3.65 mW/g; SAR(10 g) = 2.74 mW/g
Maximum value of SAR (measured) = 3.81 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

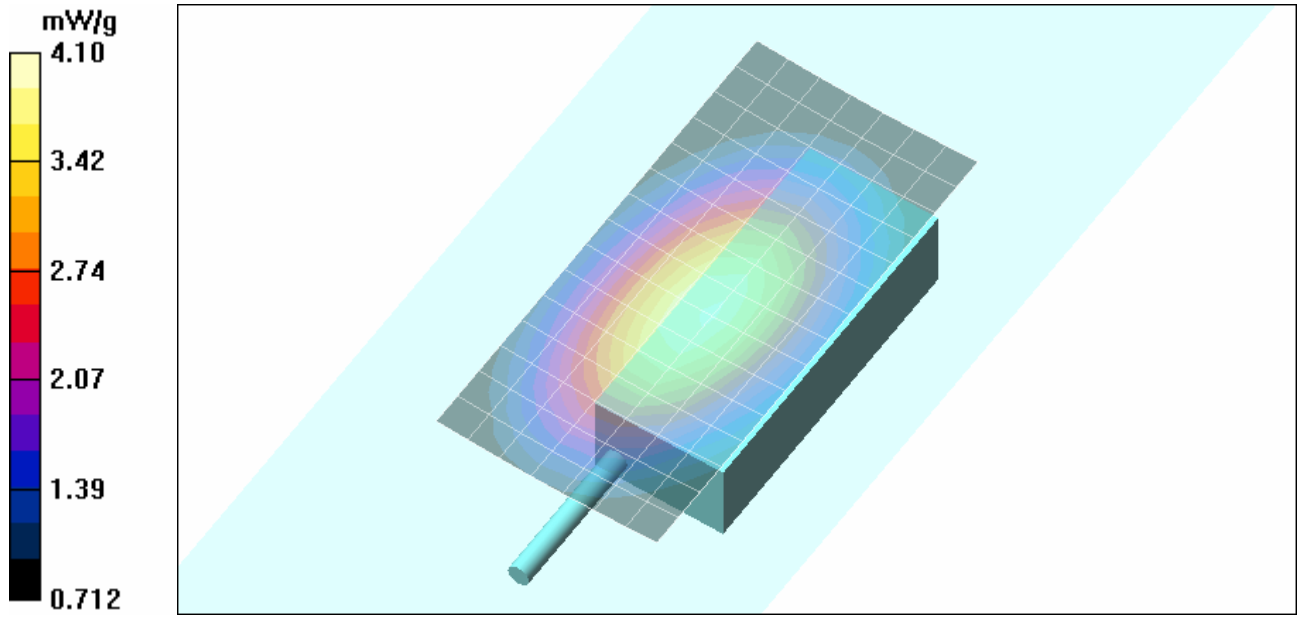
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.94 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 66.0 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 5.37 W/kg
SAR(1 g) = 3.92 mW/g; SAR(10 g) = 2.94 mW/g
Maximum value of SAR (measured) = 4.10 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - Li-ion NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

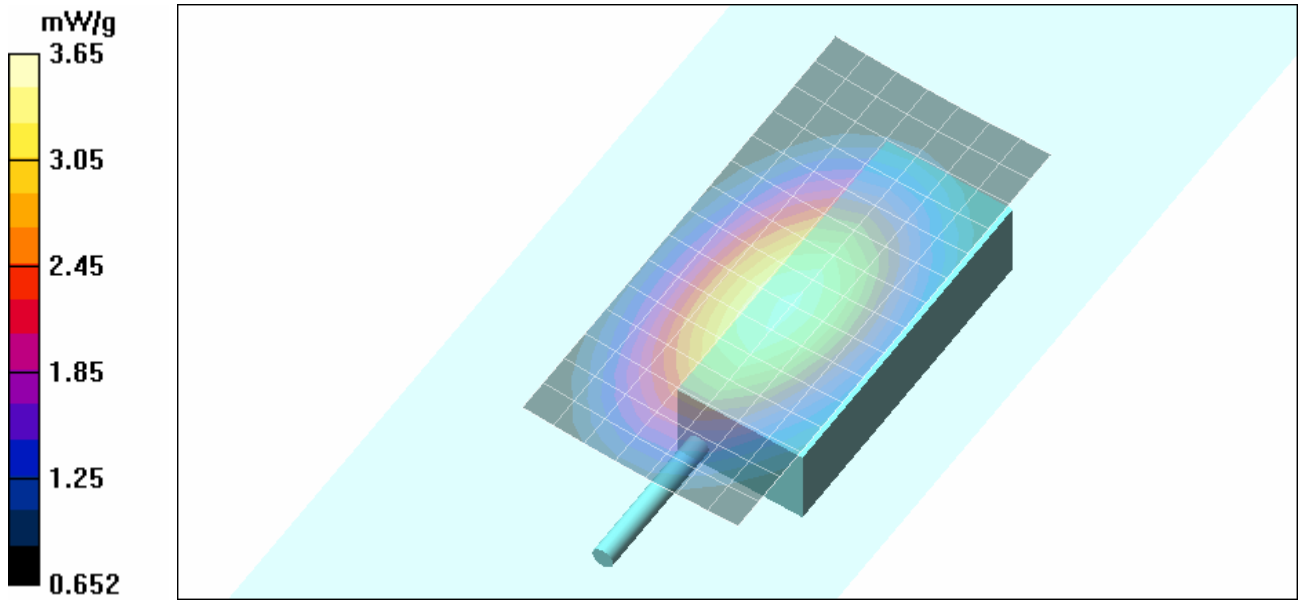
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.54 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 63.4 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 4.77 W/kg
SAR(1 g) = 3.5 mW/g; SAR(10 g) = 2.63 mW/g
Maximum value of SAR (measured) = 3.65 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Stub Antenna - Li-ion IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

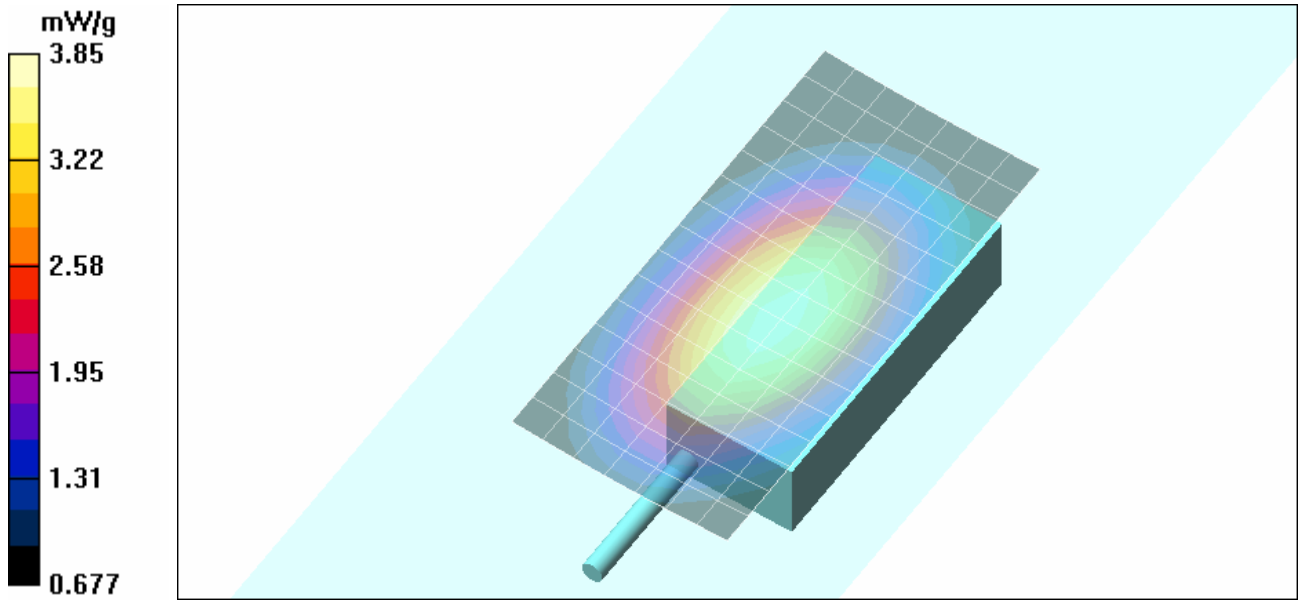
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.82 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 64.9 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 5.05 W/kg
SAR(1 g) = 3.7 mW/g; SAR(10 g) = 2.79 mW/g
Maximum value of SAR (measured) = 3.85 mW/g



Date Tested: 09/05/2008

Face-held SAR - System Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-030

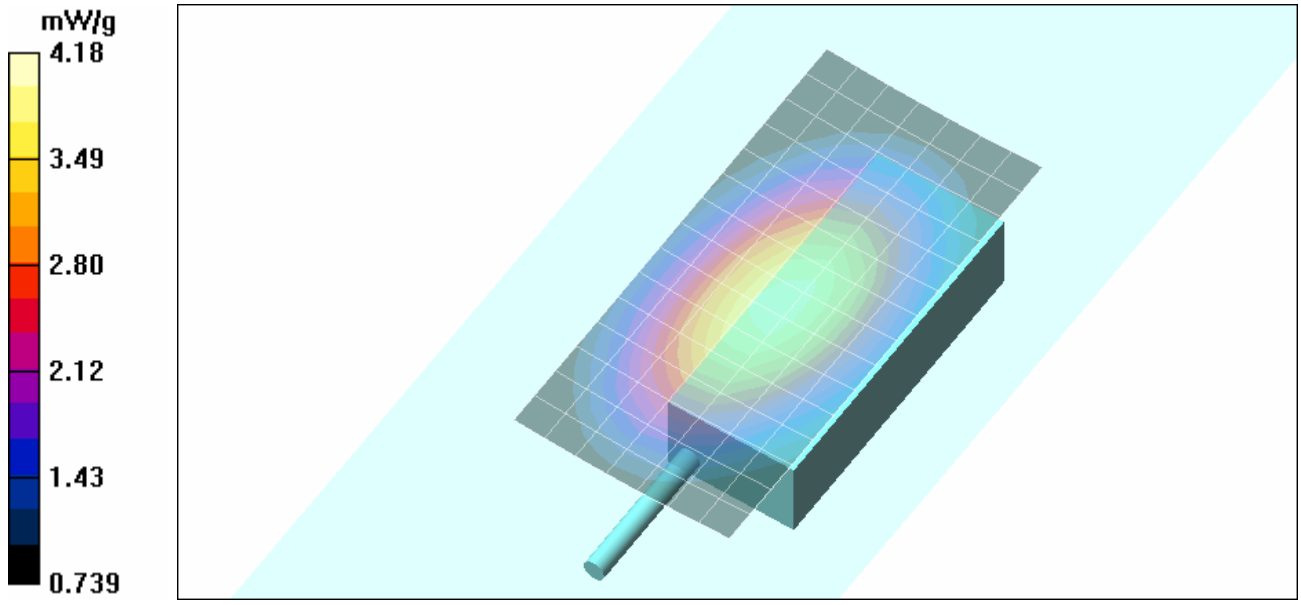
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

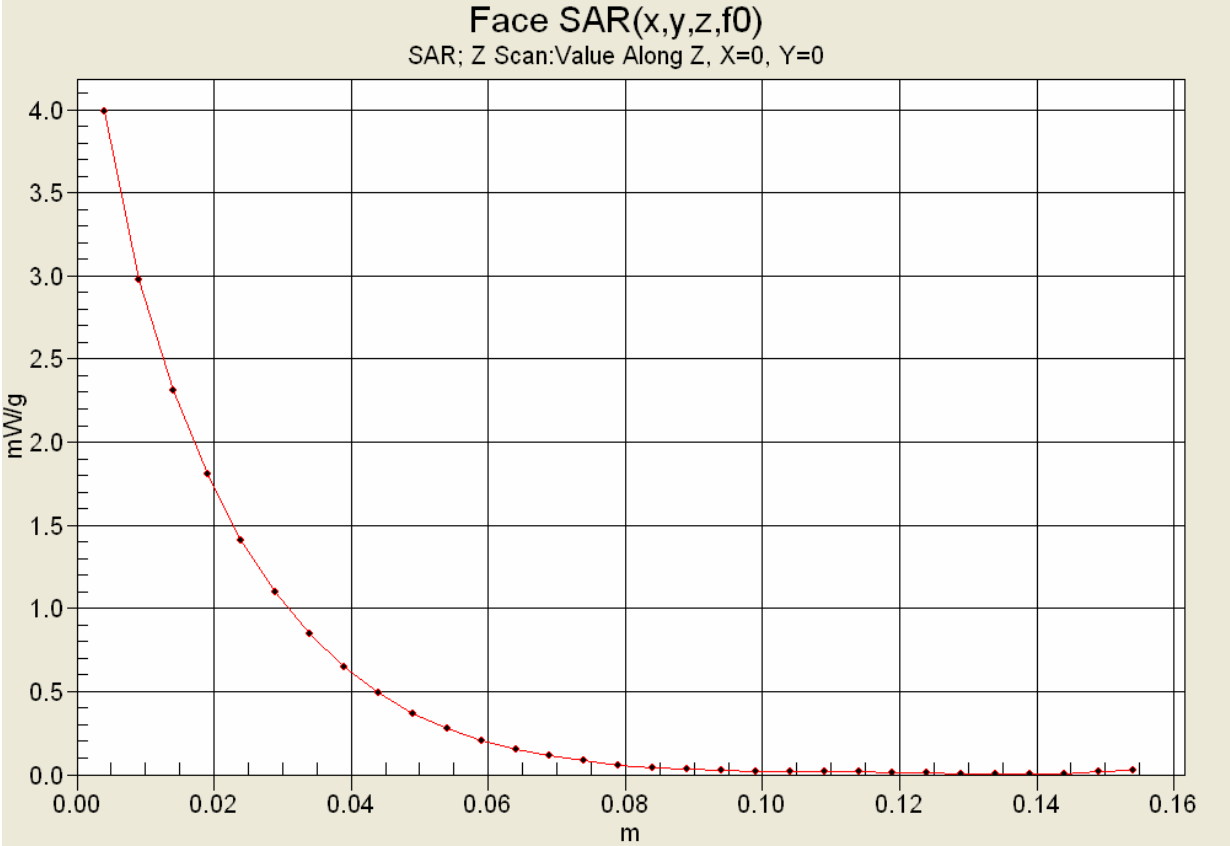
- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.86 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 65.6 V/m; Power Drift = -0.098 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(1 g) = 4 mW/g; SAR(10 g) = 2.99 mW/g
Maximum value of SAR (measured) = 4.18 mW/g



Z-Axis Scan



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - NiCd NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

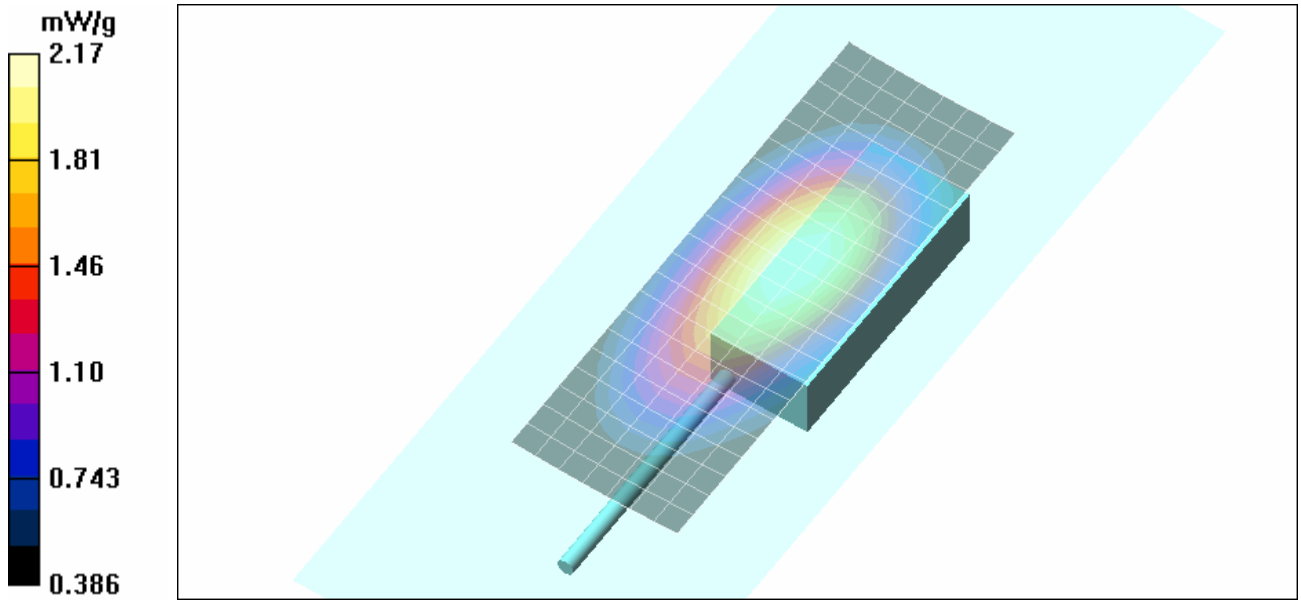
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.22 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.9 V/m; Power Drift = -0.087 dB
Peak SAR (extrapolated) = 2.85 W/kg
SAR(1 g) = 2.08 mW/g; SAR(10 g) = 1.56 mW/g
Maximum value of SAR (measured) = 2.17 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - NiCd IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

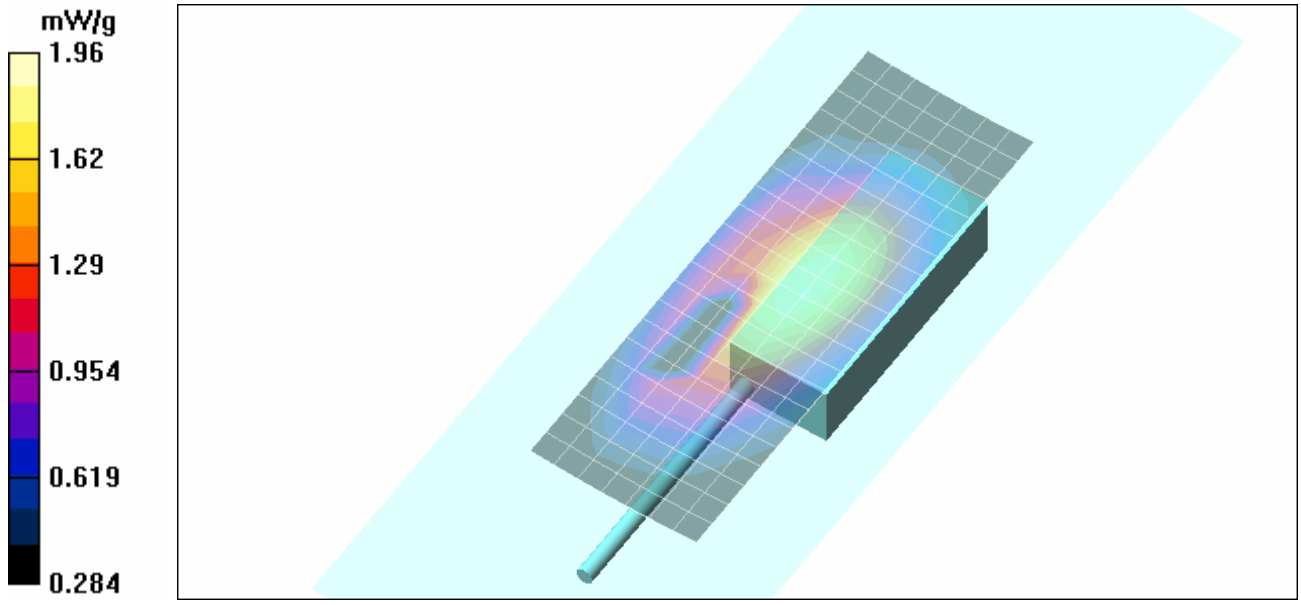
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.87 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 50.6 V/m; Power Drift = -0.187 dB
Peak SAR (extrapolated) = 2.55 W/kg
SAR(1 g) = 1.82 mW/g; SAR(10 g) = 1.33 mW/g
Maximum value of SAR (measured) = 1.96 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - NiMH NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

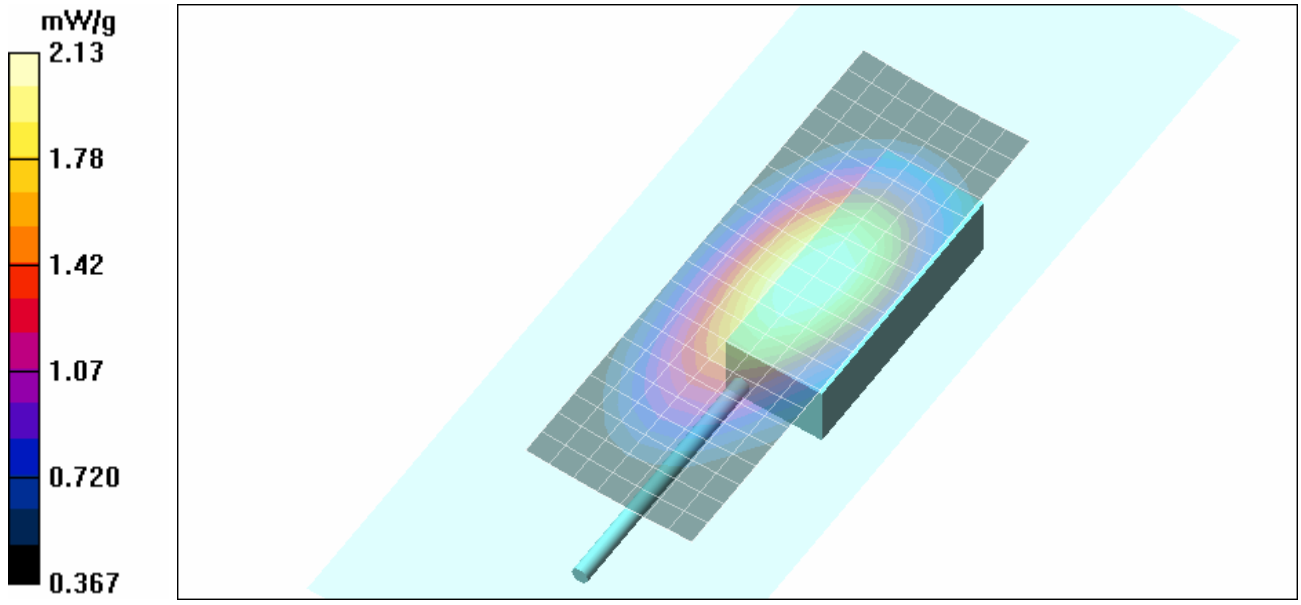
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.21 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.5 V/m; Power Drift = -0.082 dB
Peak SAR (extrapolated) = 2.77 W/kg
SAR(1 g) = 2.03 mW/g; SAR(10 g) = 1.53 mW/g
Maximum value of SAR (measured) = 2.13 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

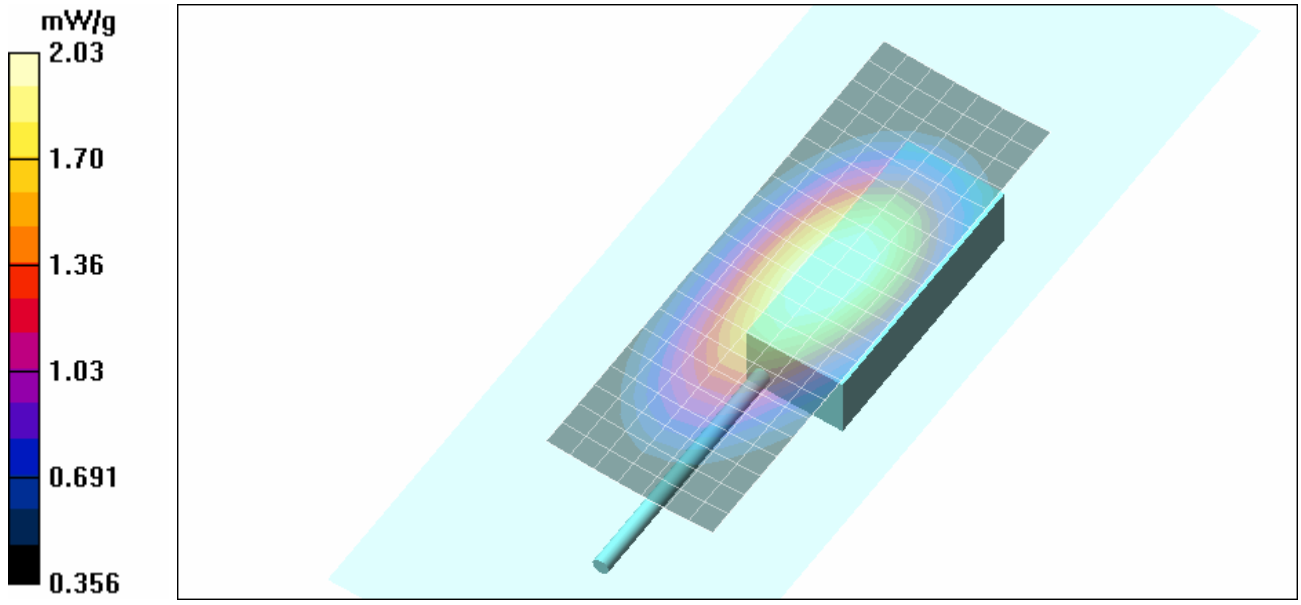
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.15 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.4 V/m; Power Drift = -0.193 dB
Peak SAR (extrapolated) = 2.65 W/kg
SAR(1 g) = 1.95 mW/g; SAR(10 g) = 1.47 mW/g
Maximum value of SAR (measured) = 2.03 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - Li-ion NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

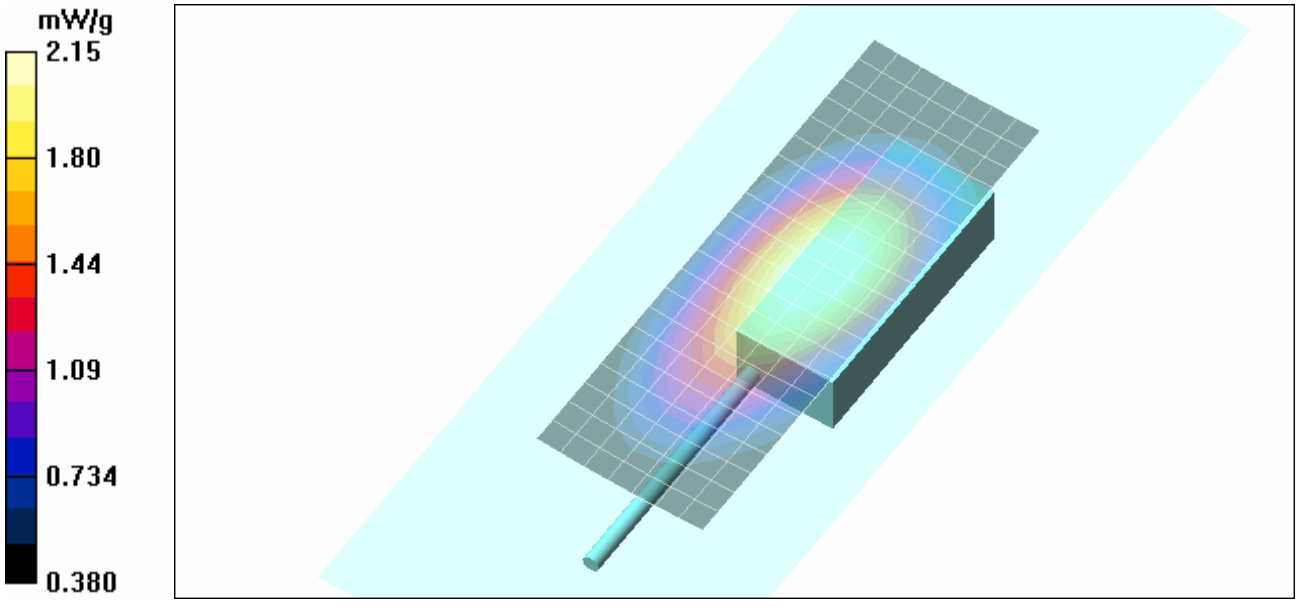
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.28 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 49.4 V/m; Power Drift = -0.159 dB
Peak SAR (extrapolated) = 2.79 W/kg
SAR(1 g) = 2.06 mW/g; SAR(10 g) = 1.55 mW/g
Maximum value of SAR (measured) = 2.15 mW/g



Date Tested: 09/05/2008

Face-held SAR - Scan Radio - Whip Antenna - Li-ion IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

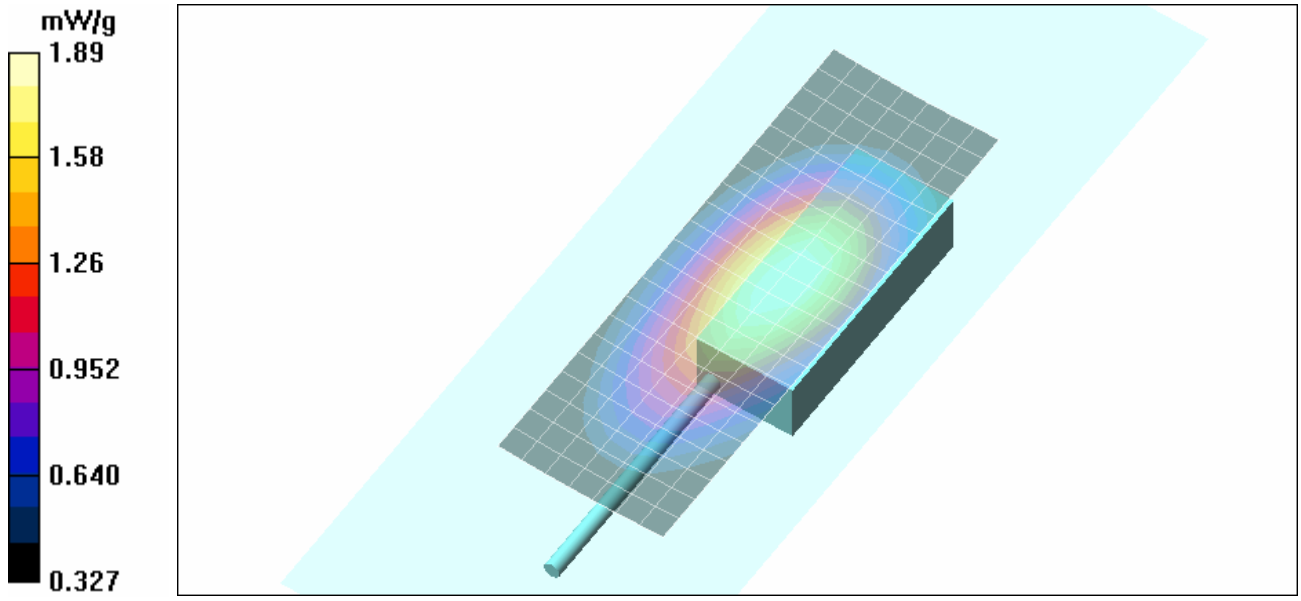
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.92 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 45.9 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 2.46 W/kg
SAR(1 g) = 1.81 mW/g; SAR(10 g) = 1.36 mW/g
Maximum value of SAR (measured) = 1.89 mW/g



Date Tested: 09/05/2008

Face-held SAR - System Radio - Whip Antenna - NiCd NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-030

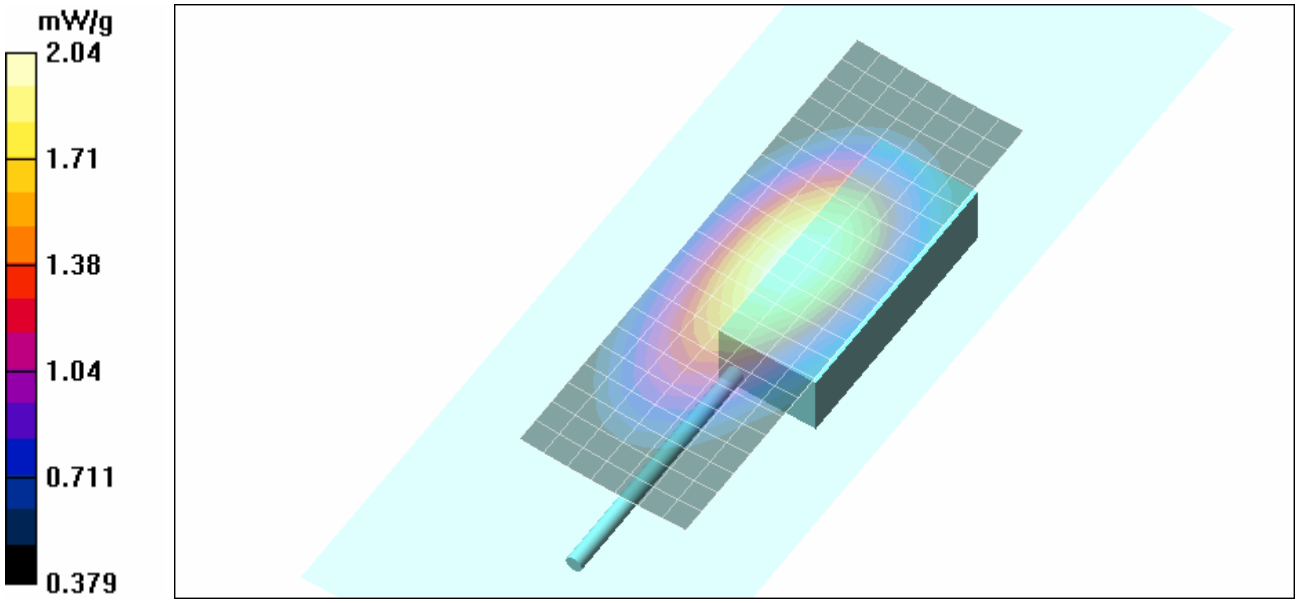
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.04 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 47.3 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 2.66 W/kg
SAR(1 g) = 1.96 mW/g; SAR(10 g) = 1.48 mW/g



Date Tested: 09/05/2008

Face-held SAR - SMA - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Accessory: Speaker-Microphone Antenna Version (SMA); Part No.: MC-023933-002

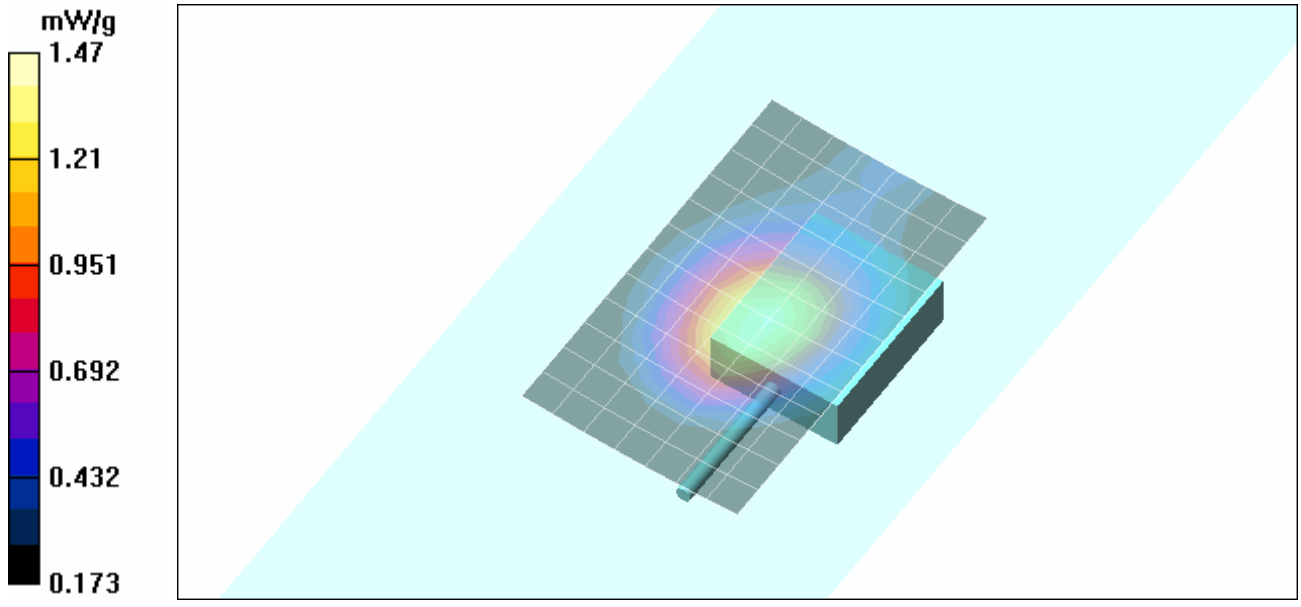
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.41 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 39.4 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 2.03 W/kg
SAR(1 g) = 1.39 mW/g; SAR(10 g) = 0.976 mW/g
Maximum value of SAR (measured) = 1.47 mW/g



Date Tested: 09/05/2008

Face-held SAR - SMA - Whip Antenna - Li-ion NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Accessory: Speaker-Microphone Antenna Version (SMA); Part No.: MC-023933-002

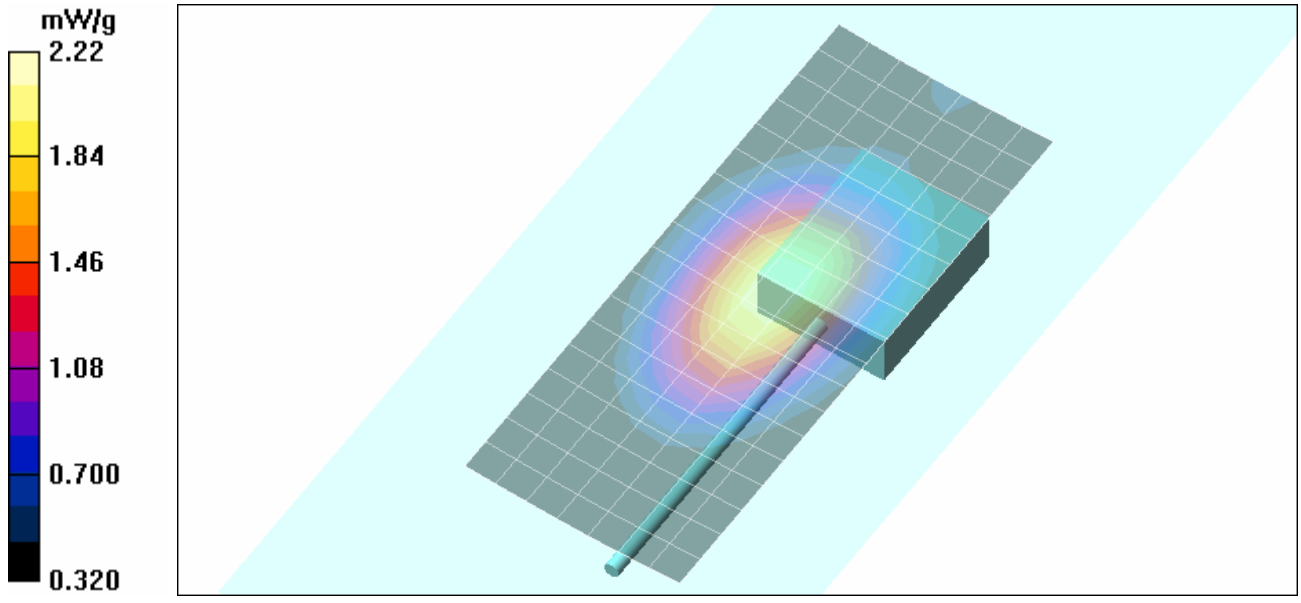
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 480 MHz; σ = 0.89 mho/m; ε_r = 42.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Area Scan (8x19x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.08 mW/g

Face-held SAR - 2.5 cm Spacing from Front Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 44.2 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 3.01 W/kg
SAR(1 g) = 2.11 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.22 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiCd NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

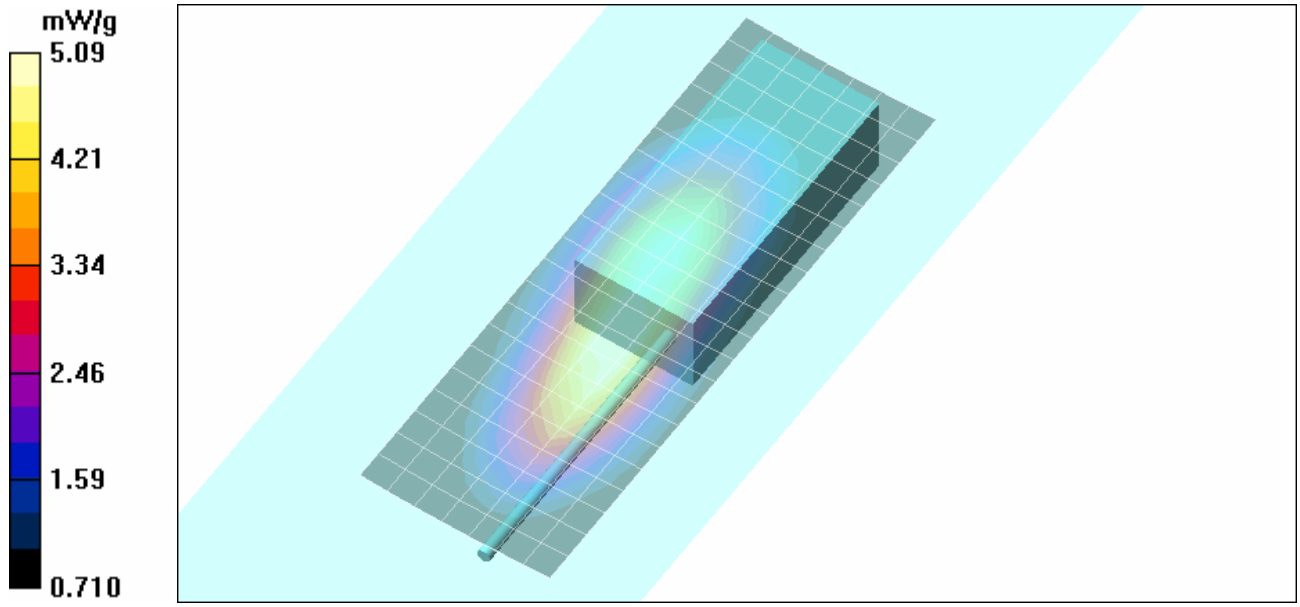
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.39 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 74.1 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 7.36 W/kg
SAR(1 g) = 5.01 mW/g; SAR(10 g) = 3.57 mW/g
Maximum value of SAR (measured) = 5.27 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 74.1 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 6.93 W/kg
SAR(1 g) = 4.85 mW/g; SAR(10 g) = 3.51 mW/g
Maximum value of SAR (measured) = 5.09 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiCd IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

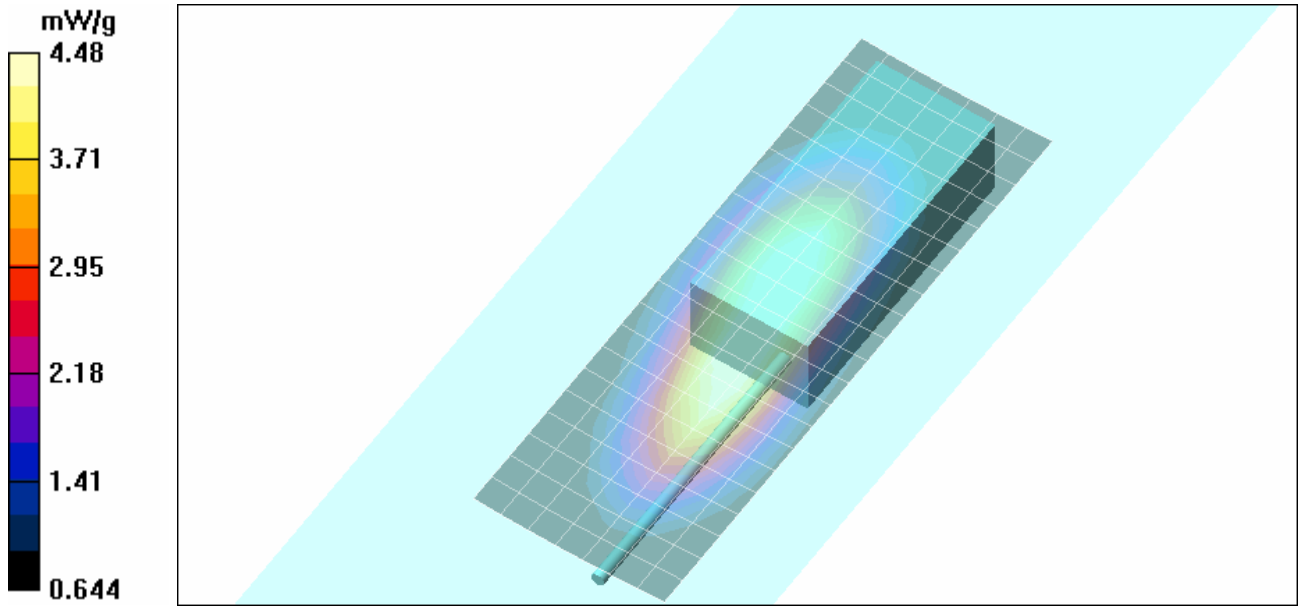
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.98 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 70.7 V/m; Power Drift = -0.225 dB
Peak SAR (extrapolated) = 6.79 W/kg
SAR(1 g) = 4.65 mW/g; SAR(10 g) = 3.32 mW/g
Maximum value of SAR (measured) = 4.89 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 70.7 V/m; Power Drift = -0.225 dB
Peak SAR (extrapolated) = 6.10 W/kg
SAR(1 g) = 4.28 mW/g; SAR(10 g) = 3.11 mW/g
Maximum value of SAR (measured) = 4.48 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiMH NIS Battery - Mid Channel - 481 MHz

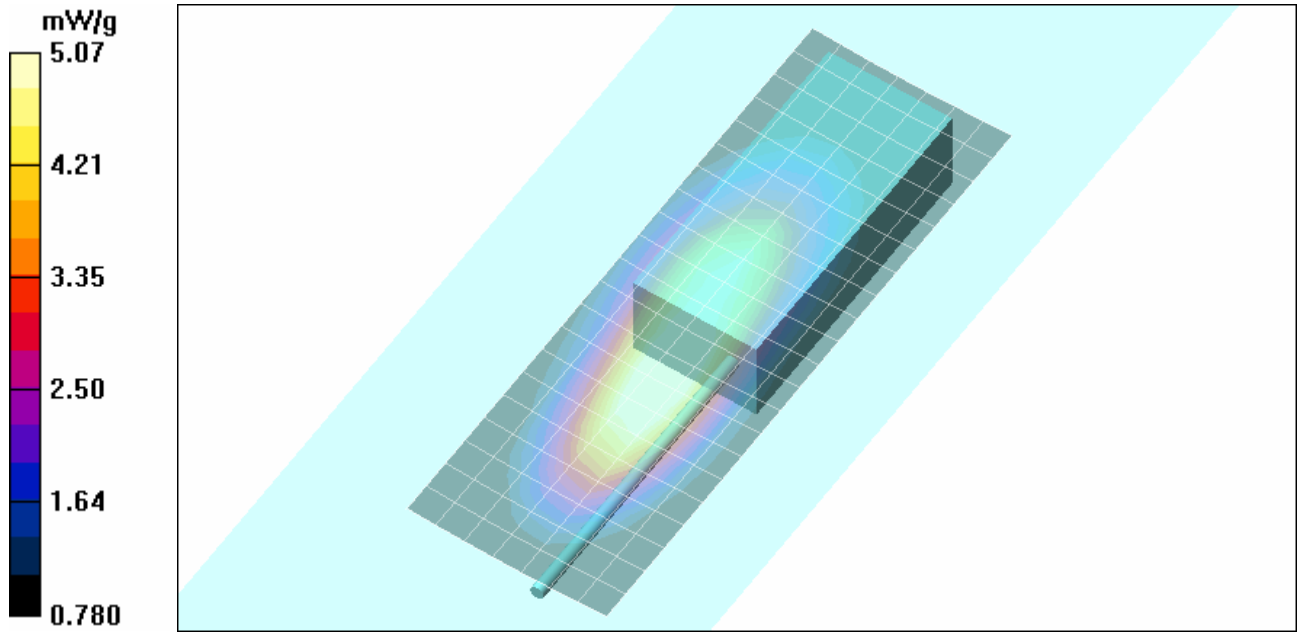
DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.68 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 75.8 V/m; Power Drift = -0.160 dB
Peak SAR (extrapolated) = 7.81 W/kg
SAR(1 g) = 5.39 mW/g; SAR(10 g) = 3.82 mW/g
Maximum value of SAR (measured) = 5.67 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 75.8 V/m; Power Drift = -0.160 dB
Peak SAR (extrapolated) = 6.99 W/kg
SAR(1 g) = 4.75 mW/g; SAR(10 g) = 3.46 mW/g
Maximum value of SAR (measured) = 5.07 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiMH IS Battery - Mid Channel - 481 MHz

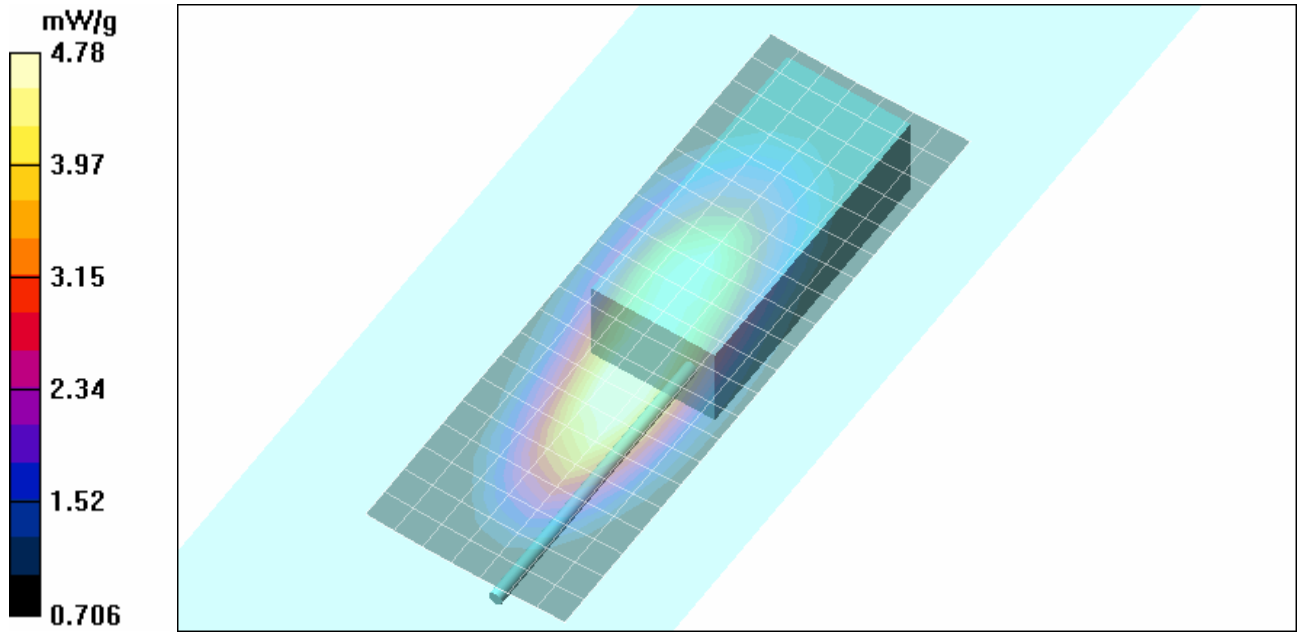
DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

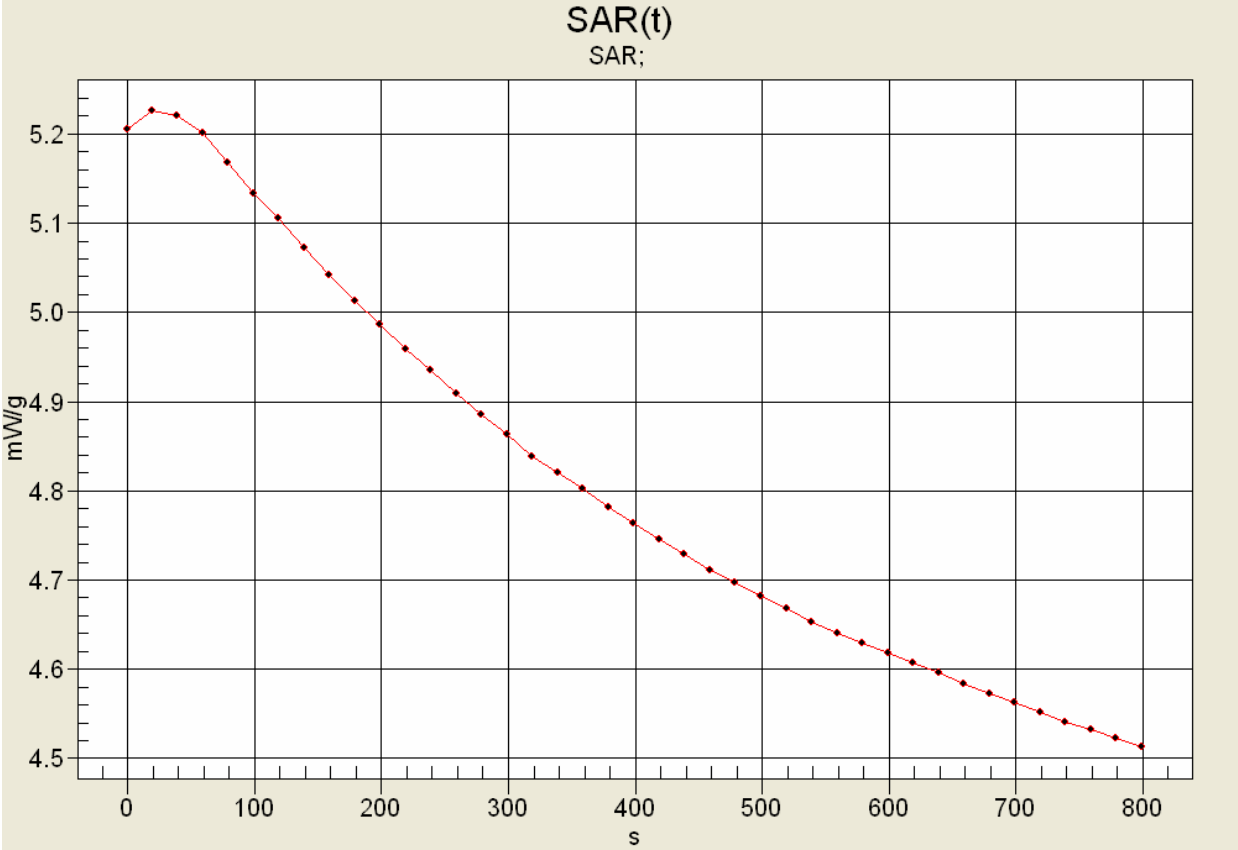
Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.09 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 72.1 V/m; Power Drift = -0.316 dB
Peak SAR (extrapolated) = 6.92 W/kg
SAR(1 g) = 4.74 mW/g; SAR(10 g) = 3.36 mW/g
Maximum value of SAR (measured) = 4.99 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 72.1 V/m; Power Drift = -0.316 dB
Peak SAR (extrapolated) = 6.74 W/kg
SAR(1 g) = 4.5 mW/g; SAR(10 g) = 3.18 mW/g
Maximum value of SAR (measured) = 4.78 mW/g



SAR-versus-Time Power Droop Evaluation

Body-worn Configuration
Mid Channel (481 MHz)
NiMH IS Battery
Whip Antenna



Max SAR: 5.23 mW/g
End SAR: 4.51 mW/g (-0.643 dB)
SAR after 340s: 4.82 mW/g (-0.355 dB)
(340s = Zoom Scan Duration)
(800s = Area Scan Duration)

Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - Li-ion NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

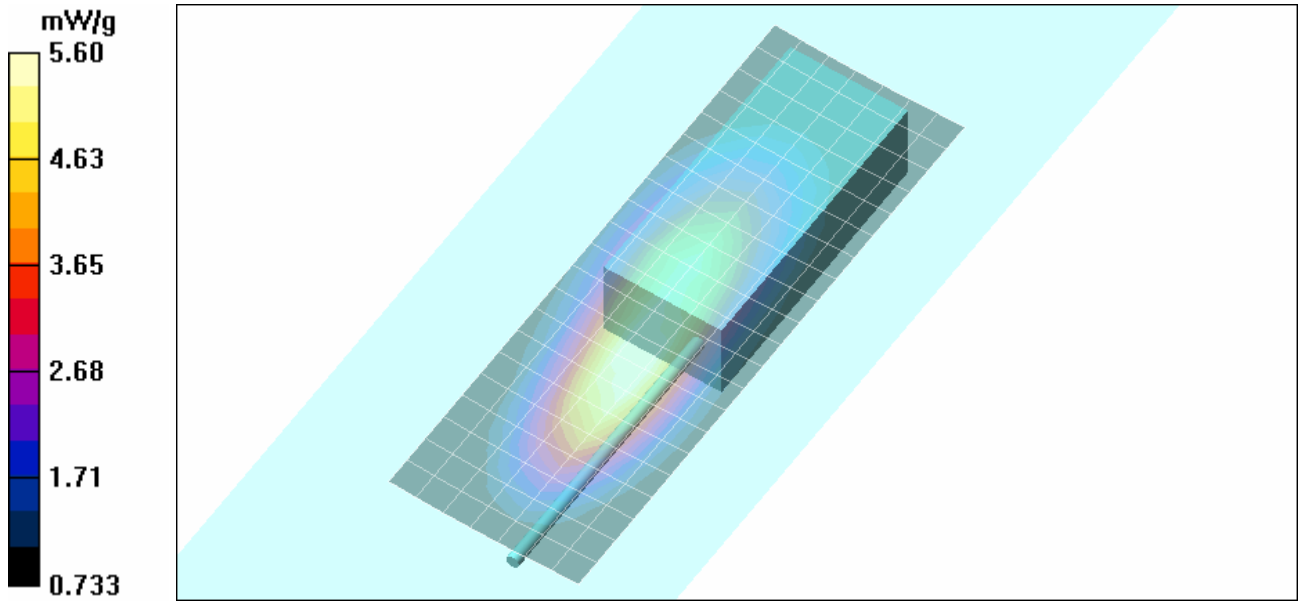
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.68 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 75.5 V/m; Power Drift = -0.273 dB
Peak SAR (extrapolated) = 7.75 W/kg
SAR(1 g) = 5.32 mW/g; SAR(10 g) = 3.78 mW/g
Maximum value of SAR (measured) = 5.60 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 75.5 V/m; Power Drift = -0.273 dB
Peak SAR (extrapolated) = 6.81 W/kg
SAR(1 g) = 4.69 mW/g; SAR(10 g) = 3.42 mW/g
Maximum value of SAR (measured) = 4.93 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - Li-ion IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

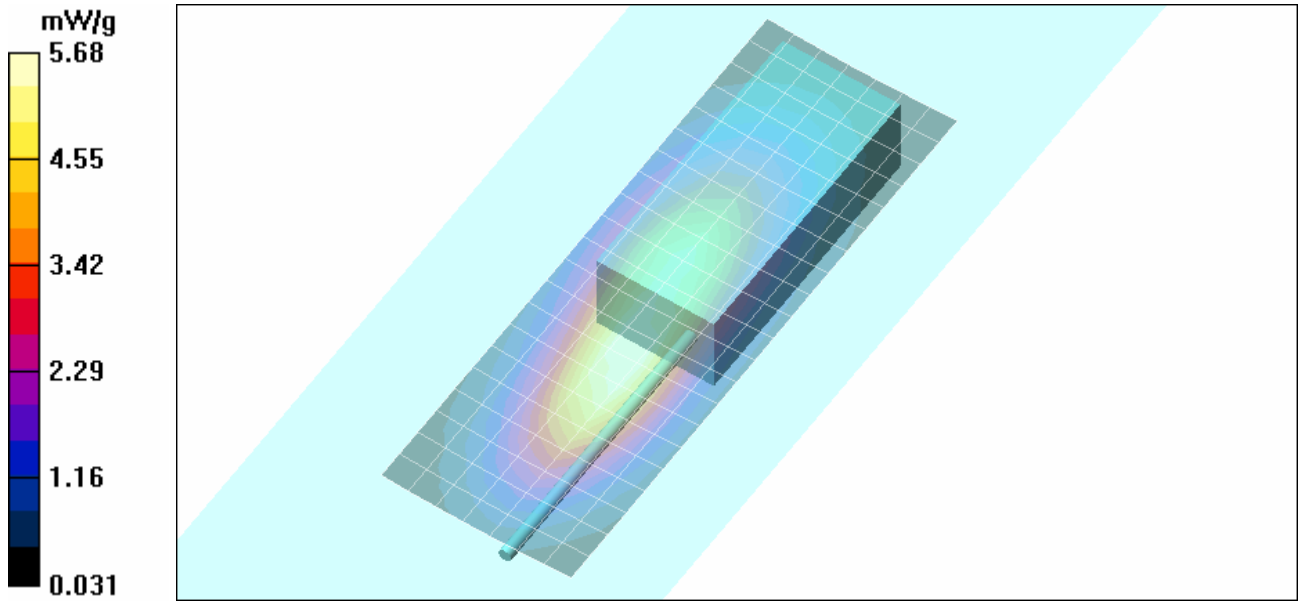
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.14 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 71.4 V/m; Power Drift = -0.285 dB
Peak SAR (extrapolated) = 6.93 W/kg
SAR(1 g) = 4.73 mW/g; SAR(10 g) = 3.39 mW/g
Maximum value of SAR (measured) = 5.00 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 71.4 V/m; Power Drift = -0.285 dB
Peak SAR (extrapolated) = 6.43 W/kg
SAR(1 g) = 4.5 mW/g; SAR(10 g) = 3.25 mW/g
Maximum value of SAR (measured) = 4.73 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiCd NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

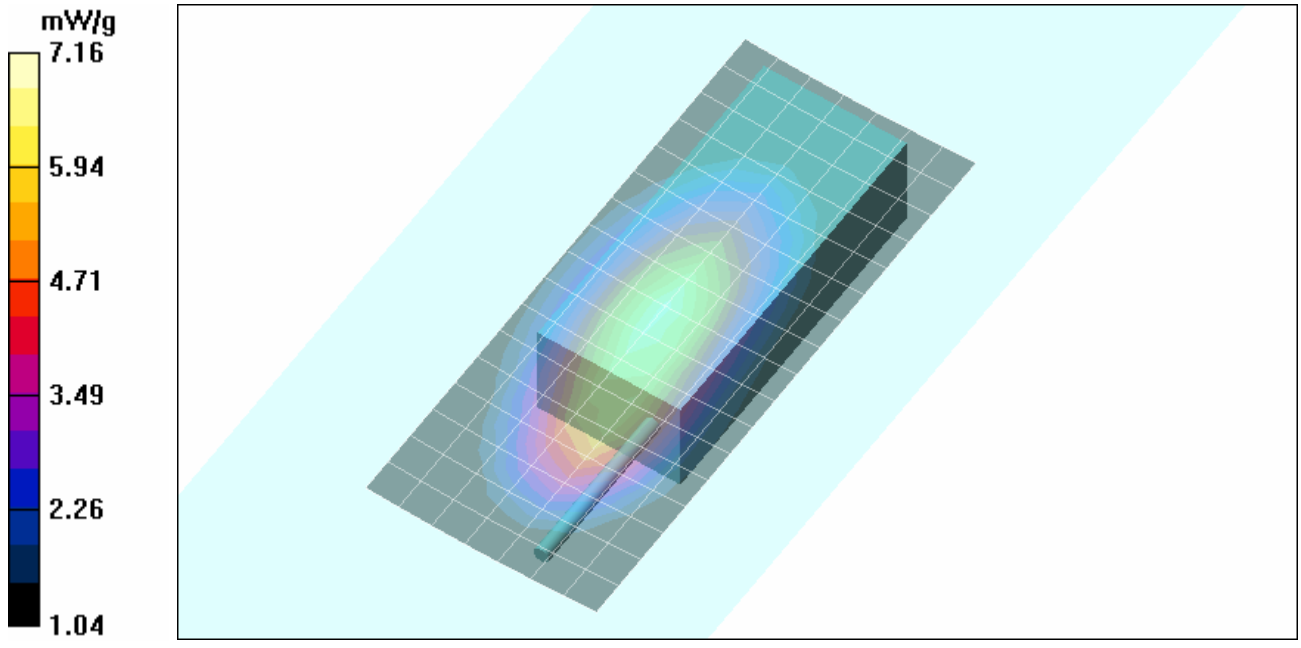
Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.94 mW/g

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 84.0 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 10.1 W/kg
SAR(1 g) = 6.78 mW/g; SAR(10 g) = 4.81 mW/g
Maximum value of SAR (measured) = 7.16 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiCd IS Battery - Mid Channel - 481 MHz

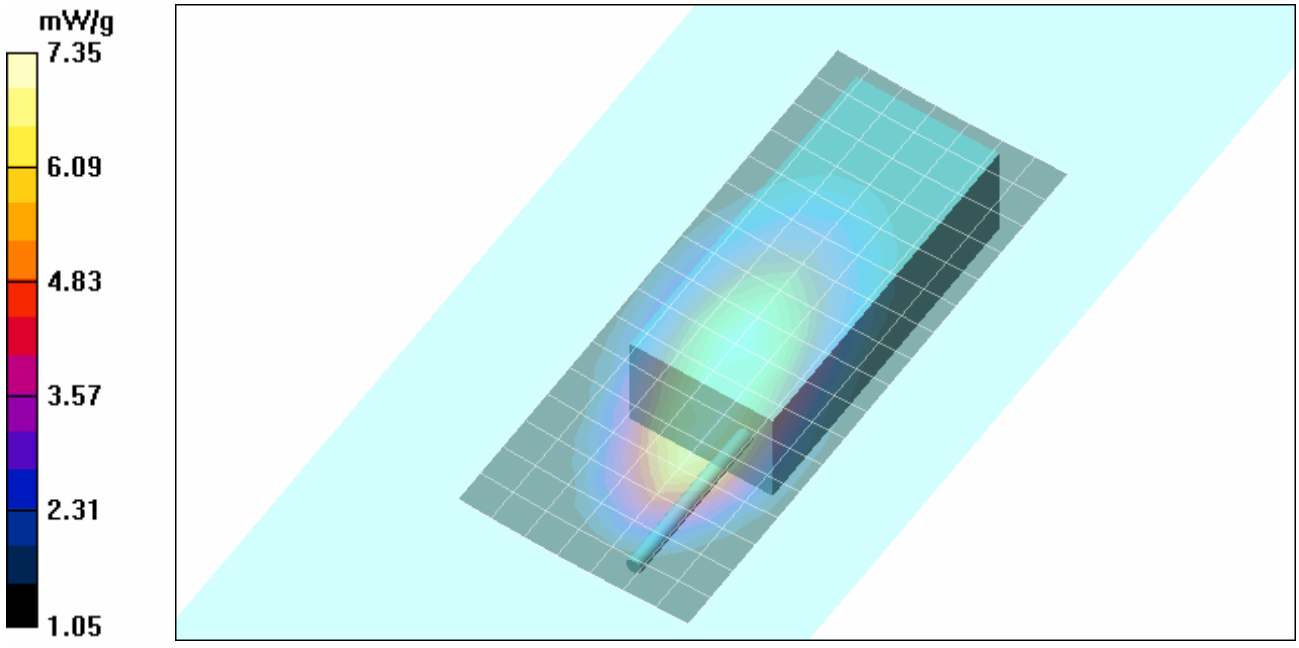
DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 7.51 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 85.6 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 10.4 W/kg
SAR(1 g) = 7.01 mW/g; SAR(10 g) = 4.98 mW/g
Maximum value of SAR (measured) = 7.35 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 85.6 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 9.85 W/kg
SAR(1 g) = 6.86 mW/g; SAR(10 g) = 4.96 mW/g
Maximum value of SAR (measured) = 7.21 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

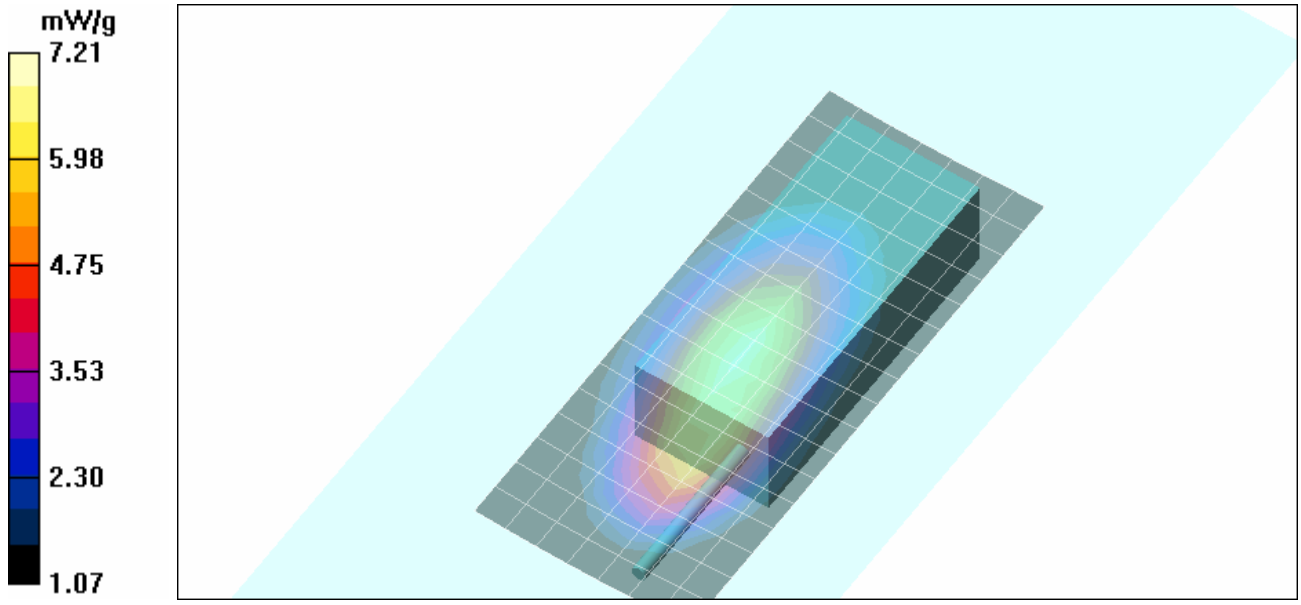
Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.97 mW/g

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 84.4 V/m; Power Drift = -0.024 dB
Peak SAR (extrapolated) = 10.0 W/kg
SAR(1 g) = 6.8 mW/g; SAR(10 g) = 4.82 mW/g
Maximum value of SAR (measured) = 7.21 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

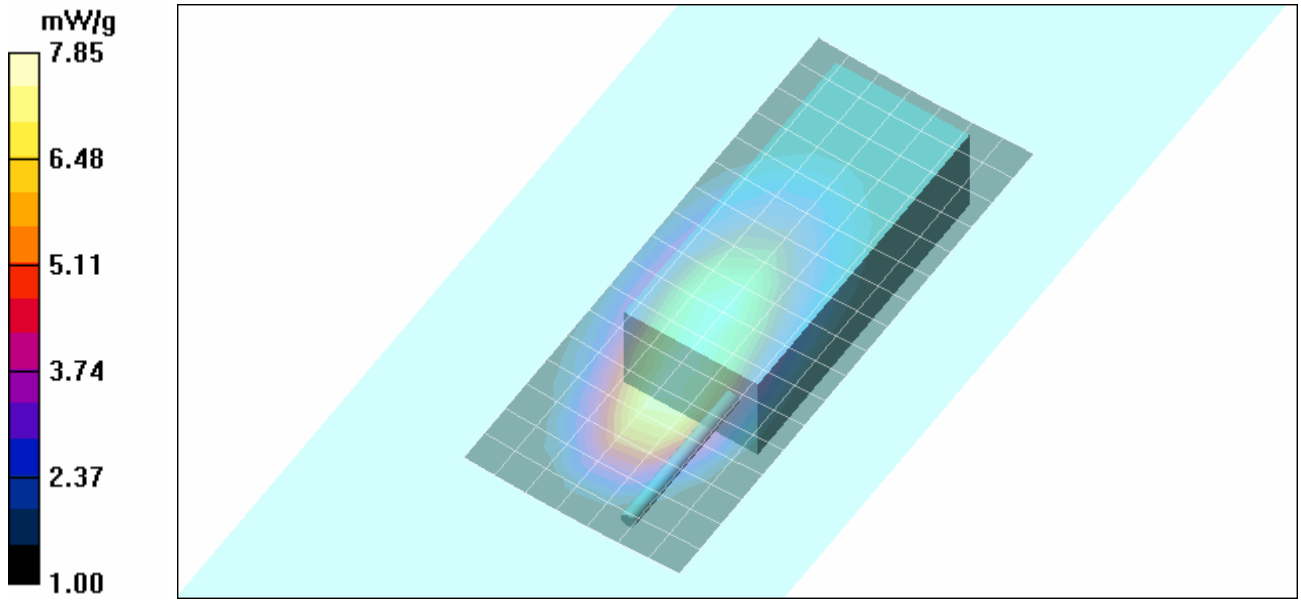
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

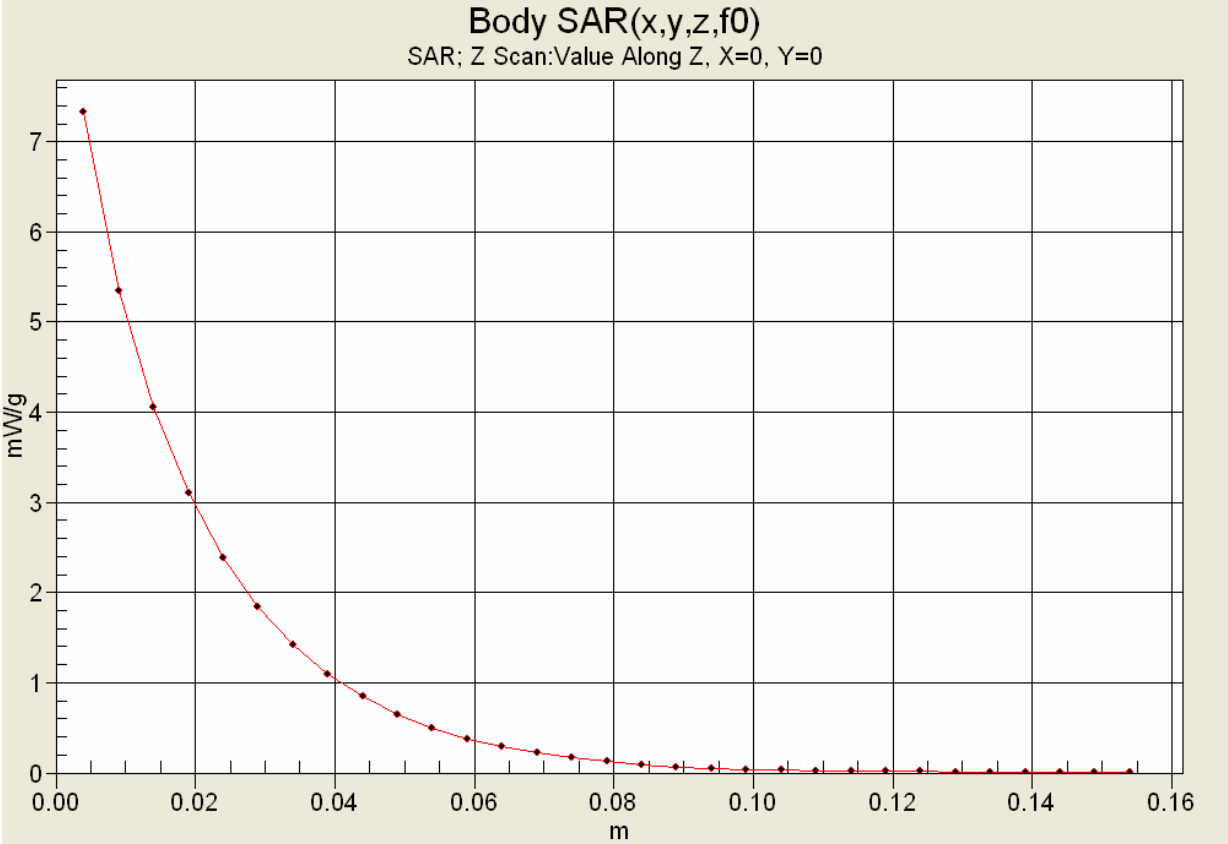
Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 8.03 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 91.9 V/m; Power Drift = -0.108 dB
Peak SAR (extrapolated) = 10.7 W/kg
SAR(1 g) = 7.27 mW/g; SAR(10 g) = 5.23 mW/g
Maximum value of SAR (measured) = 7.62 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 91.9 V/m; Power Drift = -0.108 dB
Peak SAR (extrapolated) = 10.8 W/kg
SAR(1 g) = 7.47 mW/g; SAR(10 g) = 5.35 mW/g
Maximum value of SAR (measured) = 7.85 mW/g



Z-Axis Scan



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - Li-ion NIS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

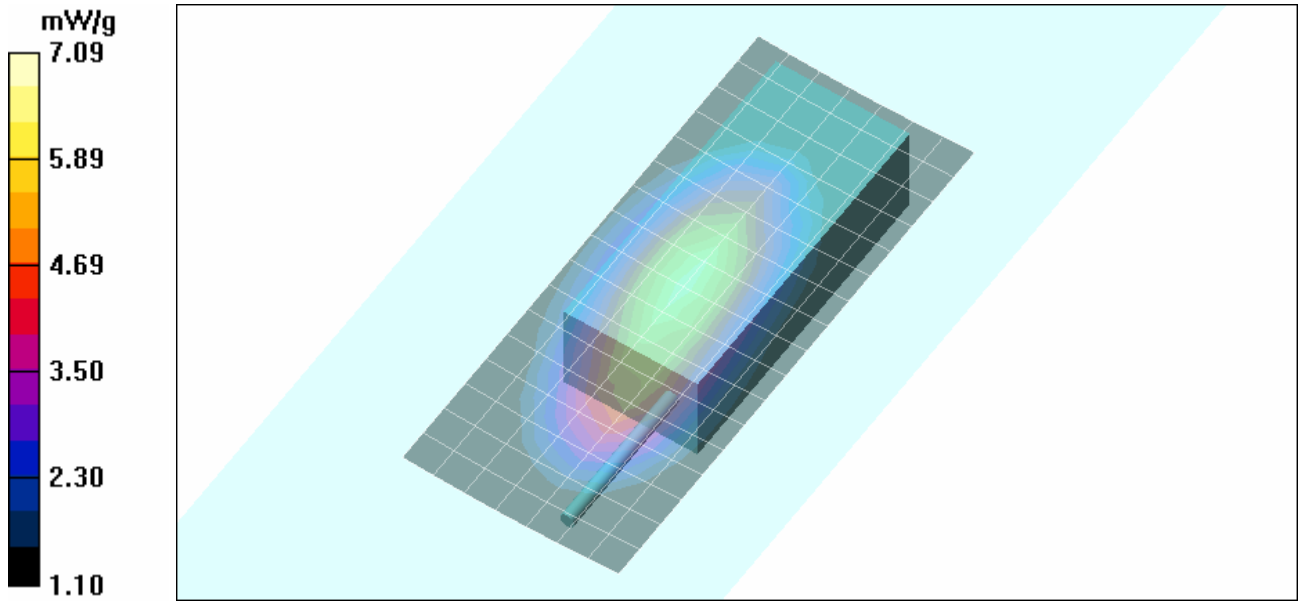
Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.62 mW/g

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 78.5 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 9.91 W/kg
SAR(1 g) = 6.67 mW/g; SAR(10 g) = 4.74 mW/g
Maximum value of SAR (measured) = 7.09 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - Li-ion IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

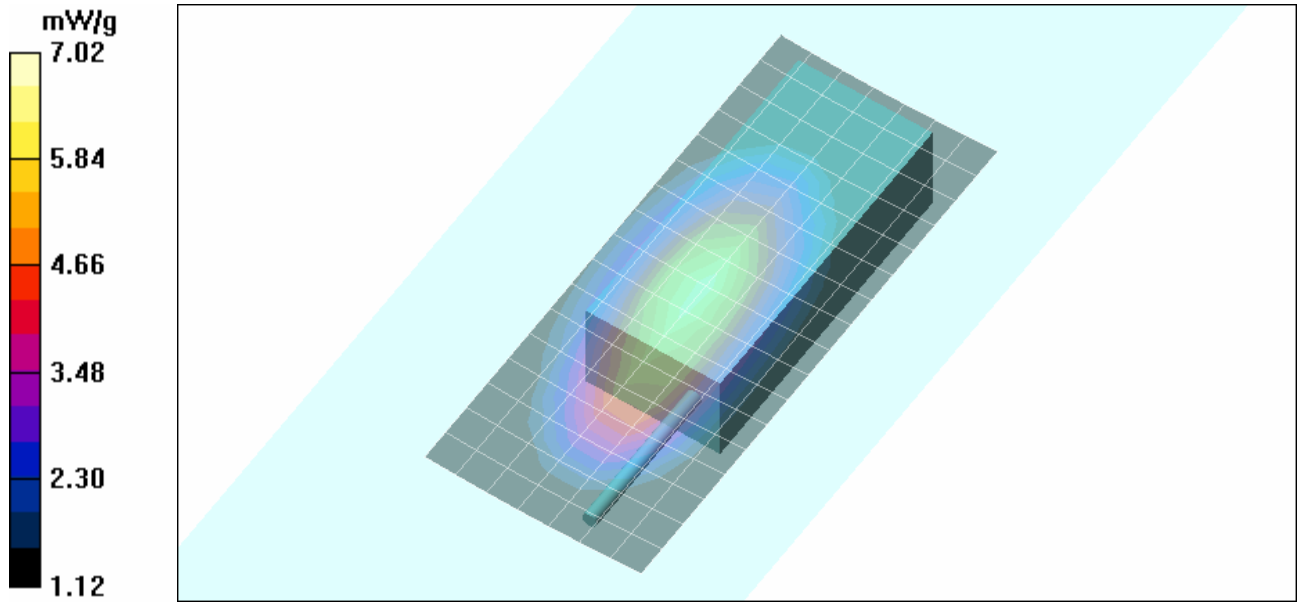
Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.53 mW/g

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 82.0 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 9.88 W/kg
SAR(1 g) = 6.68 mW/g; SAR(10 g) = 4.78 mW/g
Maximum value of SAR (measured) = 7.02 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiMH NIS Battery - Low Channel - 450 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

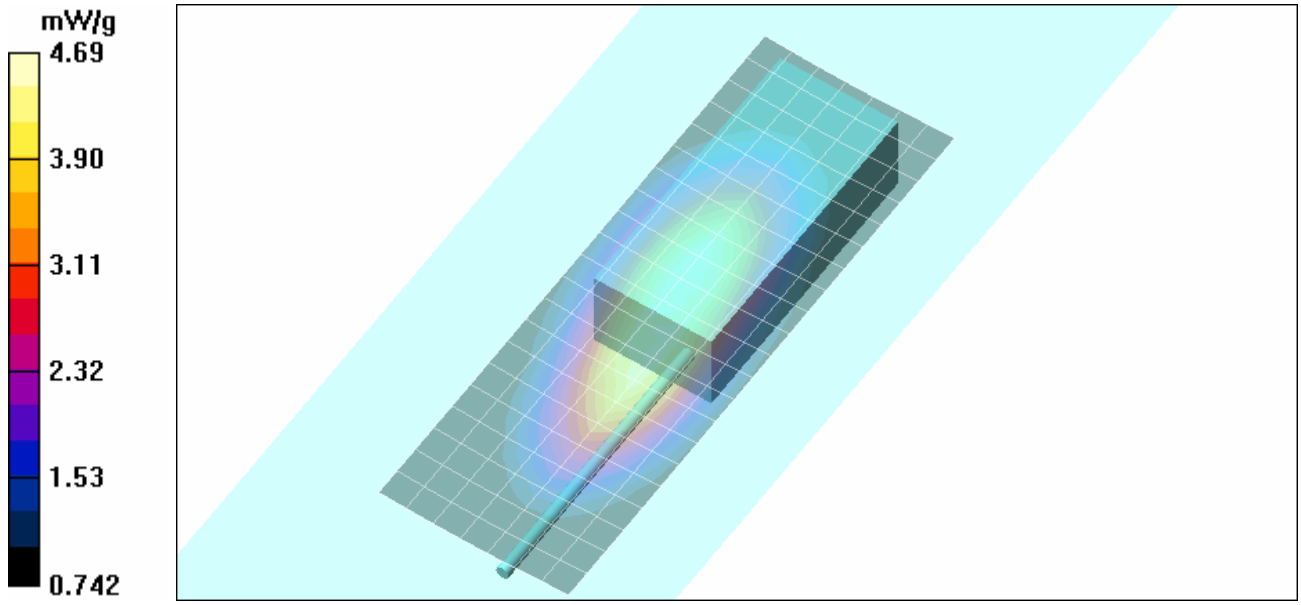
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 450 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.82 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 70.4 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 6.82 W/kg
SAR(1 g) = 4.73 mW/g; SAR(10 g) = 3.45 mW/g
Maximum value of SAR (measured) = 4.99 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 70.4 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 6.24 W/kg
SAR(1 g) = 4.5 mW/g; SAR(10 g) = 3.34 mW/g
Maximum value of SAR (measured) = 4.69 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Whip Antenna - NiMH NIS Battery - High Channel - 512 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

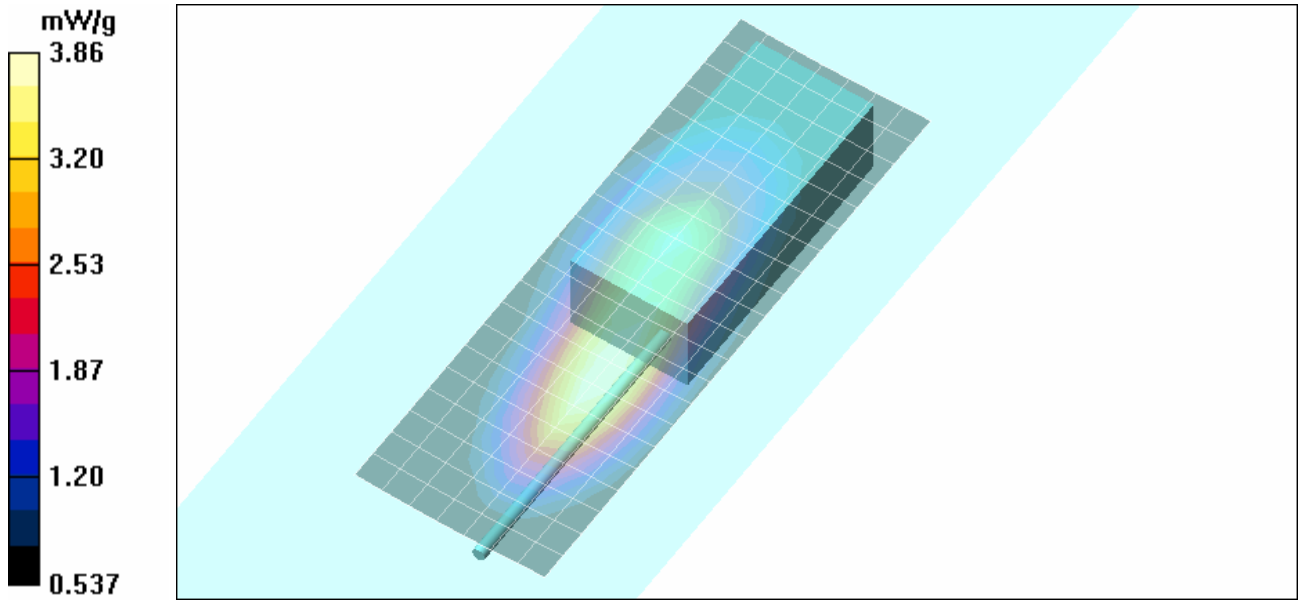
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 512 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.07 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 61.4 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 5.62 W/kg
SAR(1 g) = 3.87 mW/g; SAR(10 g) = 2.74 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 61.4 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 5.49 W/kg
SAR(1 g) = 3.64 mW/g; SAR(10 g) = 2.56 mW/g
Maximum value of SAR (measured) = 3.86 mW/g



Date Tested: 09/08/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - High Channel - 512 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

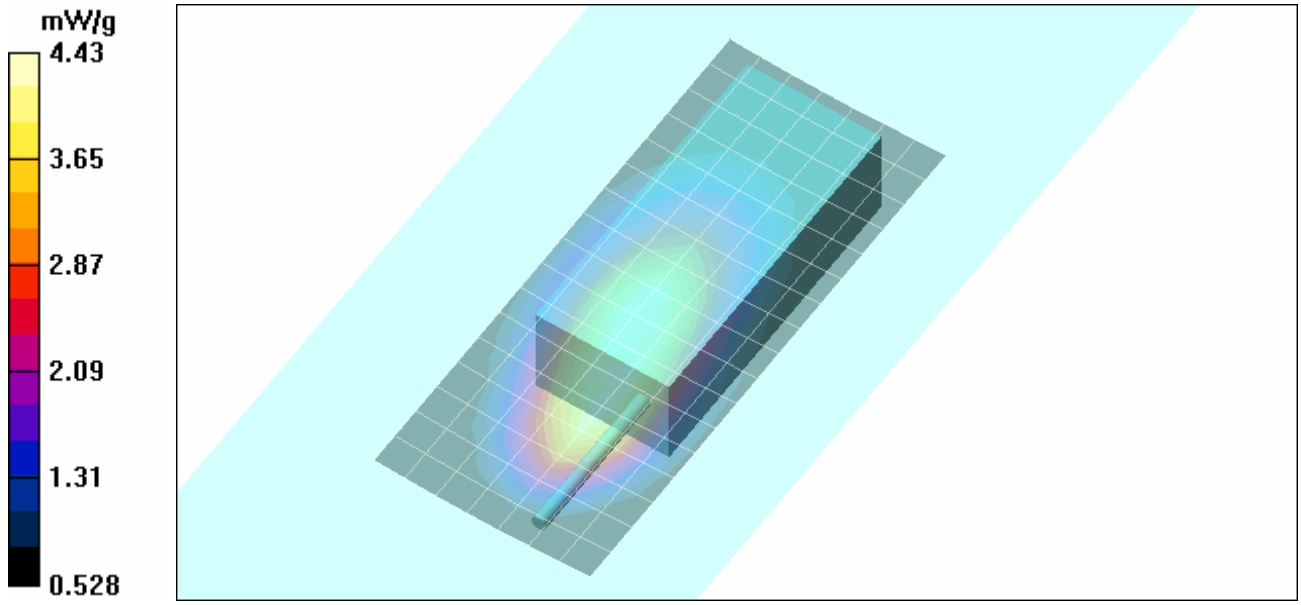
Body-worn Accessory: Belt-Clip (P/N: CC23894); Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

Ambient Temp: 22.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 512 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.93 mho/m; ε_r = 57.3; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.66 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 67.9 V/m; Power Drift = -0.177 dB
Peak SAR (extrapolated) = 6.65 W/kg
SAR(1 g) = 4.45 mW/g; SAR(10 g) = 3.15 mW/g
Maximum value of SAR (measured) = 4.68 mW/g
Body-worn SAR - 1.1 cm Belt-Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 67.9 V/m; Power Drift = -0.177 dB
Peak SAR (extrapolated) = 6.11 W/kg
SAR(1 g) = 4.23 mW/g; SAR(10 g) = 3.03 mW/g
Maximum value of SAR (measured) = 4.43 mW/g



Date Tested: 09/09/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003

Body-worn Accessory: T-Strap Holder (P/N: KRY1011656/1)
Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

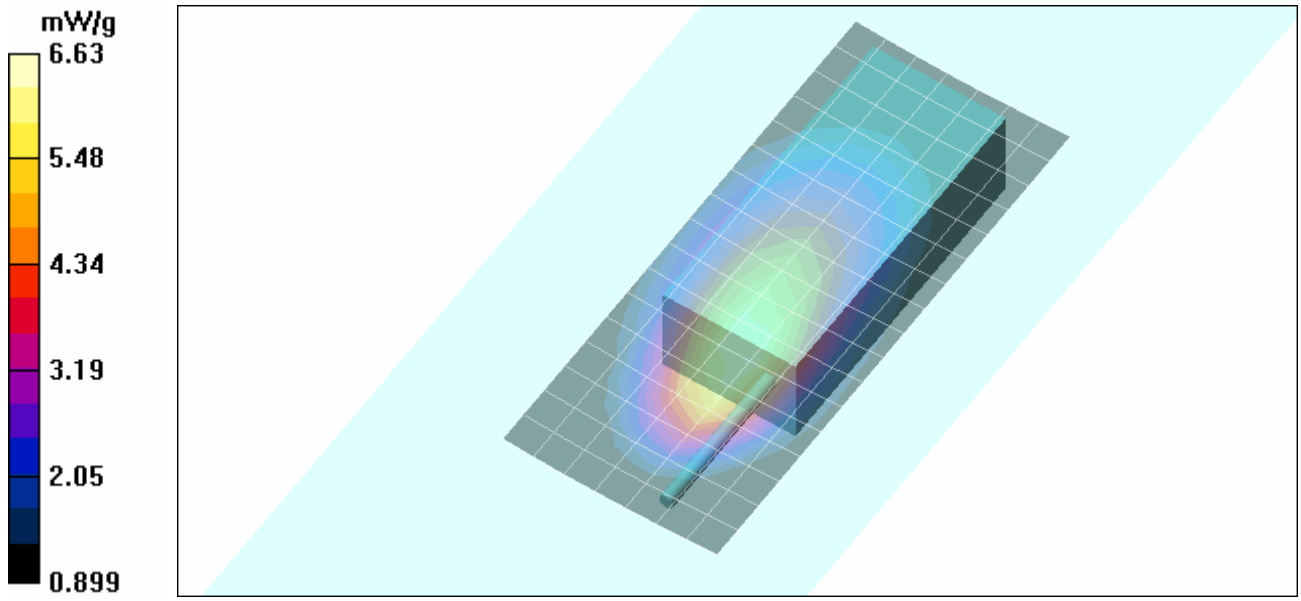
Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3

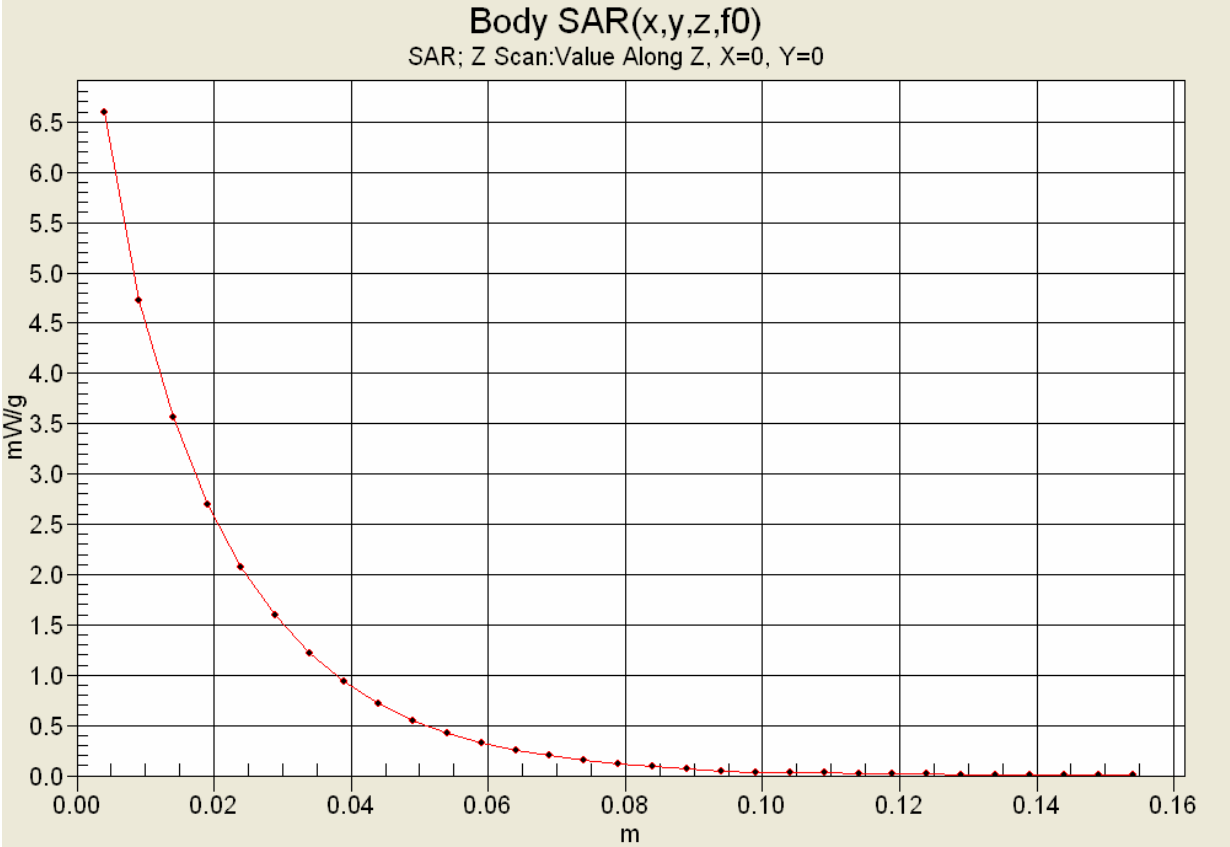
- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 2.0 cm T-Strap Holder Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.32 mW/g

Body-worn SAR - 2.0 cm T-Strap Holder Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 80.1 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 9.01 W/kg
SAR(1 g) = 6.31 mW/g; SAR(10 g) = 4.56 mW/g
Maximum value of SAR (measured) = 6.63 mW/g



Z-Axis Scan

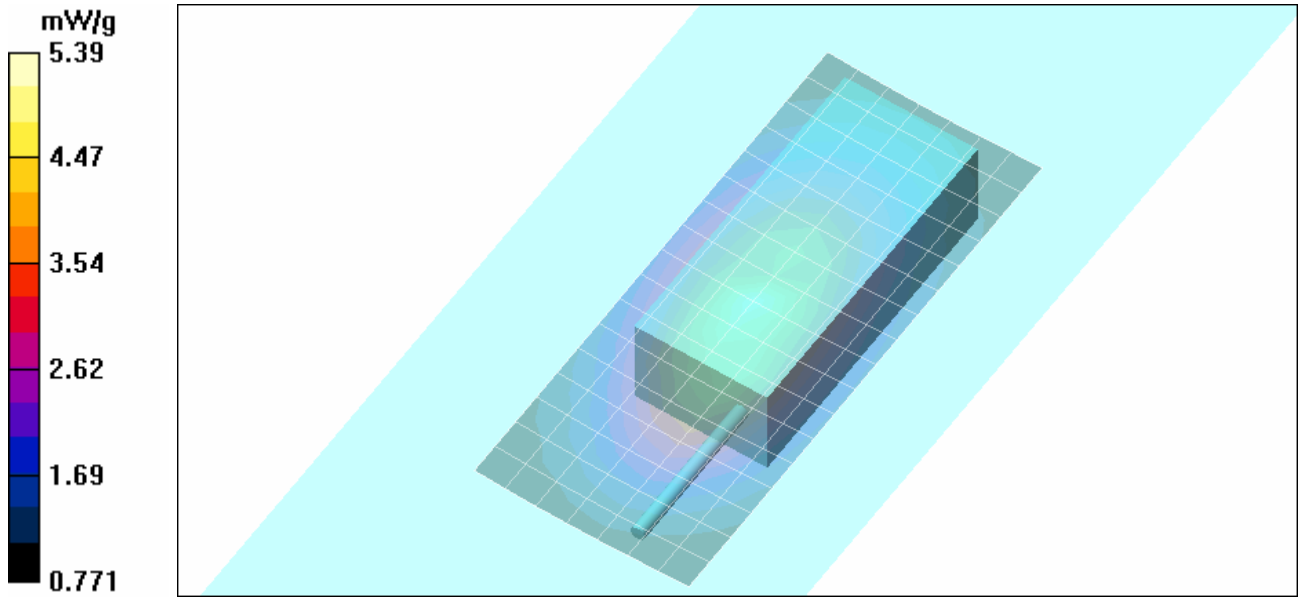


Date Tested: 09/09/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003
Body-worn Accessory: Leather Case with Shoulder Strap Kit (P/N: KT-016201-004)
Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)
Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%
Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 3.5 cm Leather Case Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.82 mW/g
Body-worn SAR - 3.5 cm Leather Case Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 62.0 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 8.84 W/kg
SAR(1 g) = 4.95 mW/g; SAR(10 g) = 3.25 mW/g
Maximum value of SAR (measured) = 5.39 mW/g
Body-worn SAR - 3.5 cm Leather Case Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 62.0 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 6.69 W/kg
SAR(1 g) = 4.15 mW/g; SAR(10 g) = 2.96 mW/g
Maximum value of SAR (measured) = 4.80 mW/g
Body-worn SAR - 3.5 cm Leather Case Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 2: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 62.0 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 4.63 W/kg
SAR(1 g) = 3.42 mW/g; SAR(10 g) = 2.59 mW/g



Date Tested: 09/09/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003
Body-worn Accessory: Nylon Case with Belt Loop Kit (P/N: KT-016201-001)
Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

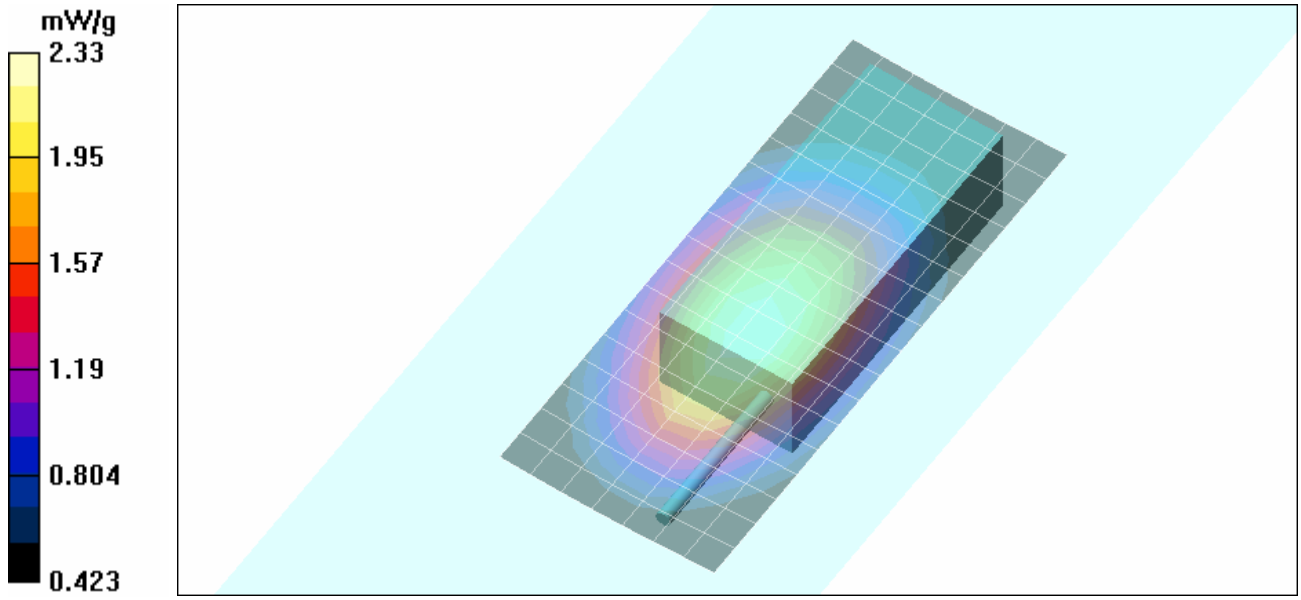
Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 4.0 cm Nylon Case & Belt Loop Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.31 mW/g

Body-worn SAR - 4.0 cm Nylon Case & Belt Loop Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 49.5 V/m; Power Drift = -0.135 dB
Peak SAR (extrapolated) = 3.07 W/kg
SAR(1 g) = 2.24 mW/g; SAR(10 g) = 1.69 mW/g
Maximum value of SAR (measured) = 2.33 mW/g



Date Tested: 09/09/2008

Body-worn SAR - Scan Radio - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003
Body-worn Accessory: Leather Case with Belt Loop Kit (P/N: KT-016201-003)
Audio Accessory: Speaker-Microphone (P/N: MC-023933-001)

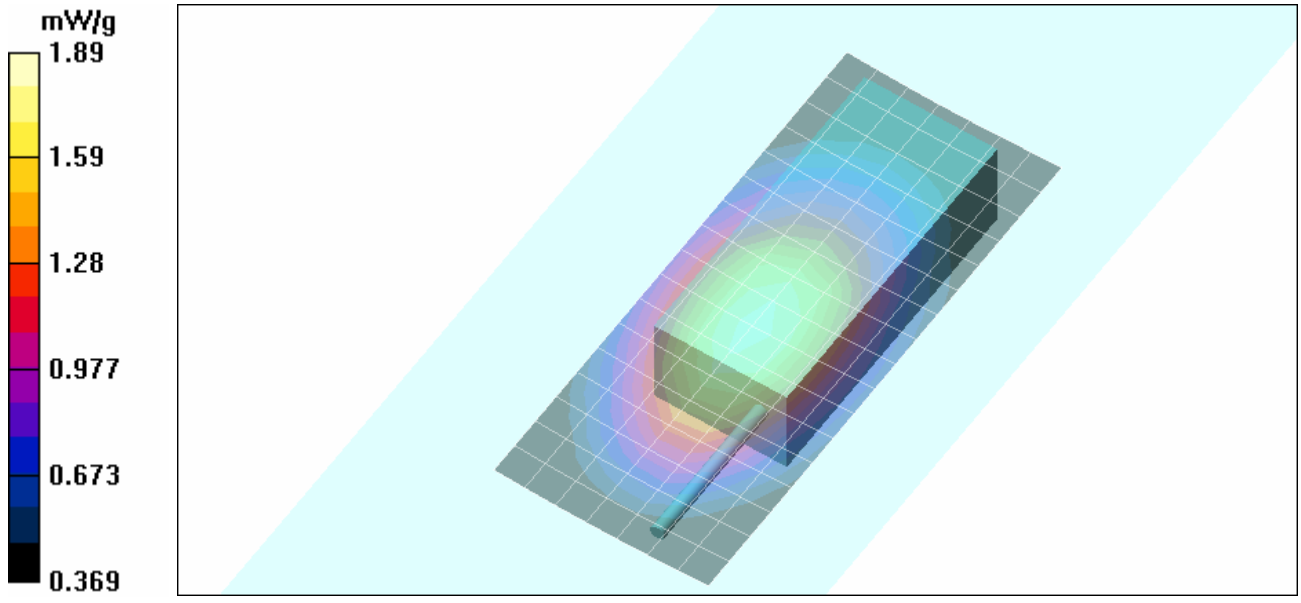
Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 5.0 cm Leather Case & Belt Loop Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.86 mW/g

Body-worn SAR - 5.0 cm Leather Case & Belt Loop Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 43.7 V/m; Power Drift = 0.054 dB
Peak SAR (extrapolated) = 2.48 W/kg
SAR(1 g) = 1.82 mW/g; SAR(10 g) = 1.38 mW/g
Maximum value of SAR (measured) = 1.89 mW/g



Date Tested: 09/09/2008

Body-worn SAR - SMA - Stub Antenna - NiMH IS Battery - Mid Channel - 481 MHz

DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003
Body-worn Accessory: Speaker-Microphone Antenna Version with Lapel-Clip (P/N: MC-023933-002)
Audio Accessory: Earphone (P/N: LS103239V1)

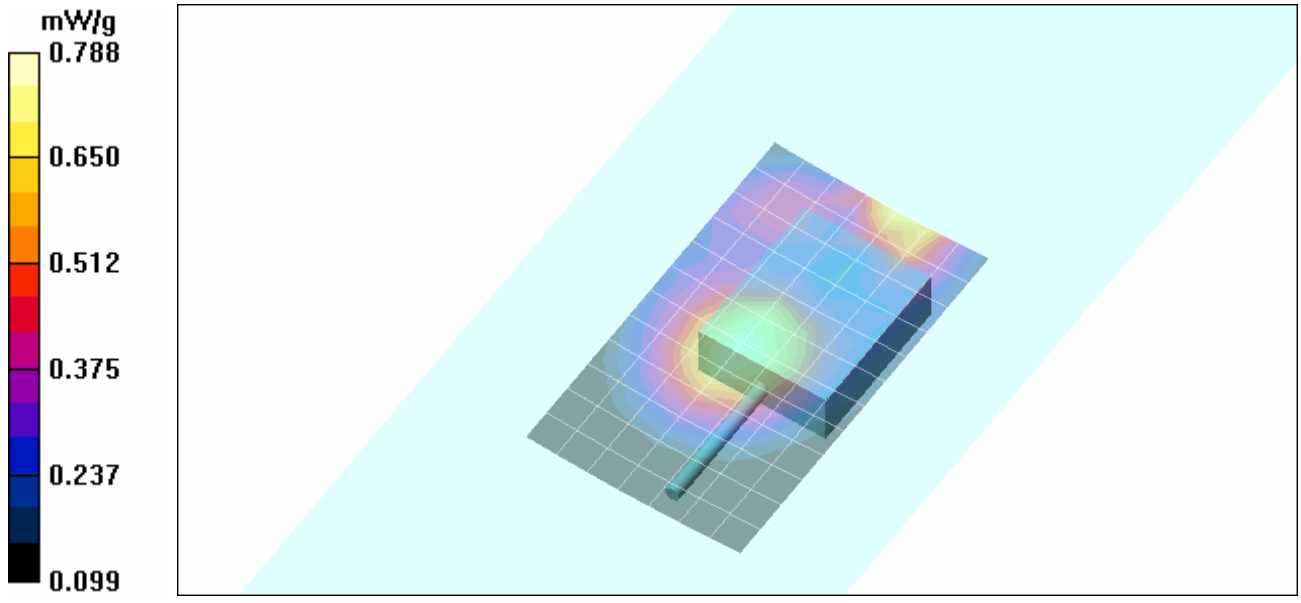
Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Lapel Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.768 mW/g

Body-worn SAR - 1.5 cm Lapel Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 28.3 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.746 mW/g; SAR(10 g) = 0.528 mW/g
Maximum value of SAR (measured) = 0.788 mW/g



Date Tested: 09/09/2008

Body-worn SAR - SMA - Whip Antenna - NiMH IS Battery - Mid Channel - 481 MHz

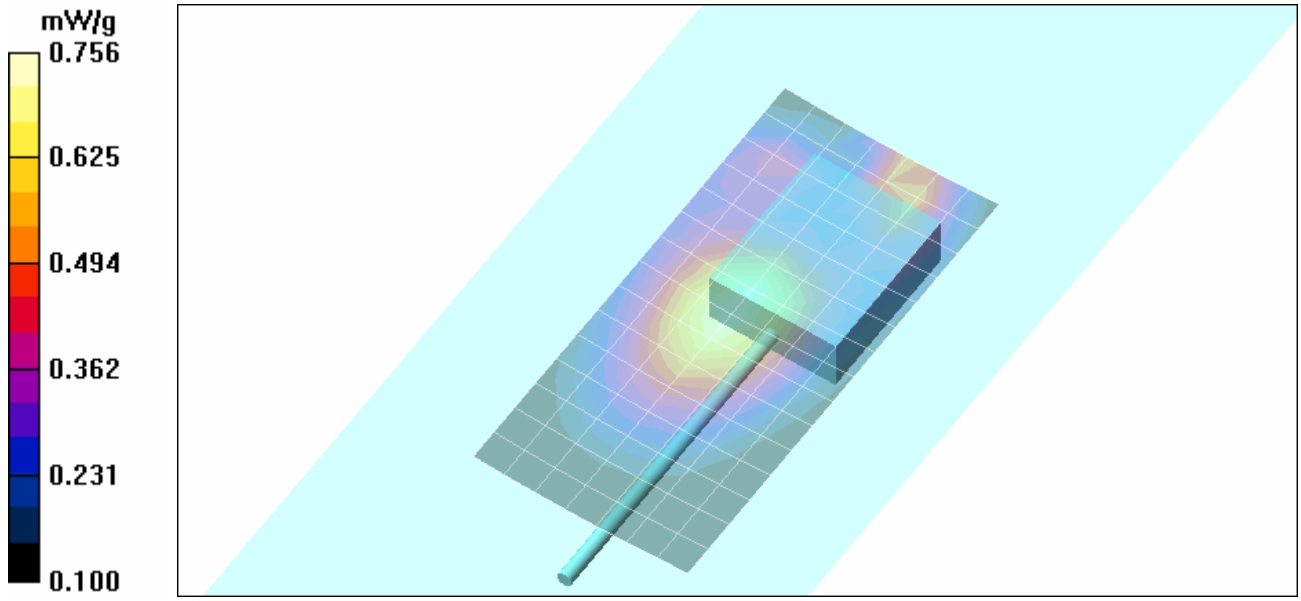
DUT: M/A-COM Model: P7300; Type: Portable PTT UHF-H Radio Transceiver; Serial: T2-UT-003
Body-worn Accessory: Speaker-Microphone Antenna Version with Lapel-Clip (P/N: MC-023933-002)
Audio Accessory: Earphone (P/N: LS103239V1)

Ambient Temp: 22.2°C; Fluid Temp: 23.4°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: UHF (CW)
Frequency: 481 MHz; Duty Cycle: 1:1
Medium: M450 Medium parameters used: f = 480 MHz; σ = 0.96 mho/m; ε_r = 56.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.27, 8.27, 8.27); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Lapel Clip Spacing from Back Side of DUT to Planar Phantom
Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.763 mW/g
Body-worn SAR - 1.5 cm Lapel Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 25.9 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.716 mW/g; SAR(10 g) = 0.516 mW/g
Maximum value of SAR (measured) = 0.756 mW/g
Body-worn SAR - 1.5 cm Lapel Clip Spacing from Back Side of DUT to Planar Phantom
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 25.9 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.887 W/kg
SAR(1 g) = 0.536 mW/g; SAR(10 g) = 0.360 mW/g
Maximum value of SAR (measured) = 0.561 mW/g



APPENDIX B - SYSTEM PERFORMANCE CHECK DATA

Date Tested: 09/05/2008

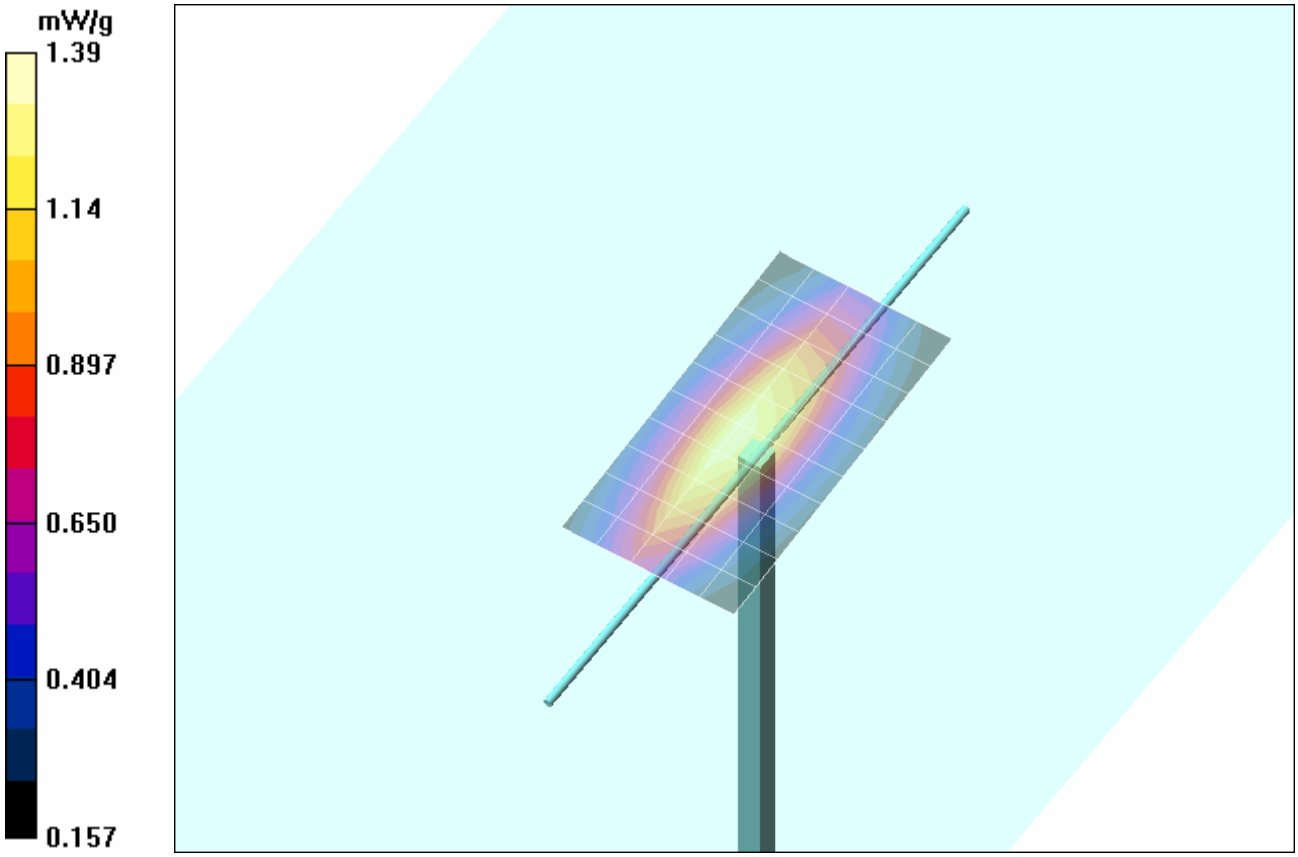
System Performance Check - 450 MHz Dipole - HSL

DUT: Dipole 450 MHz; Asset: 00024; Serial: 136; Validation: 07/25/2008

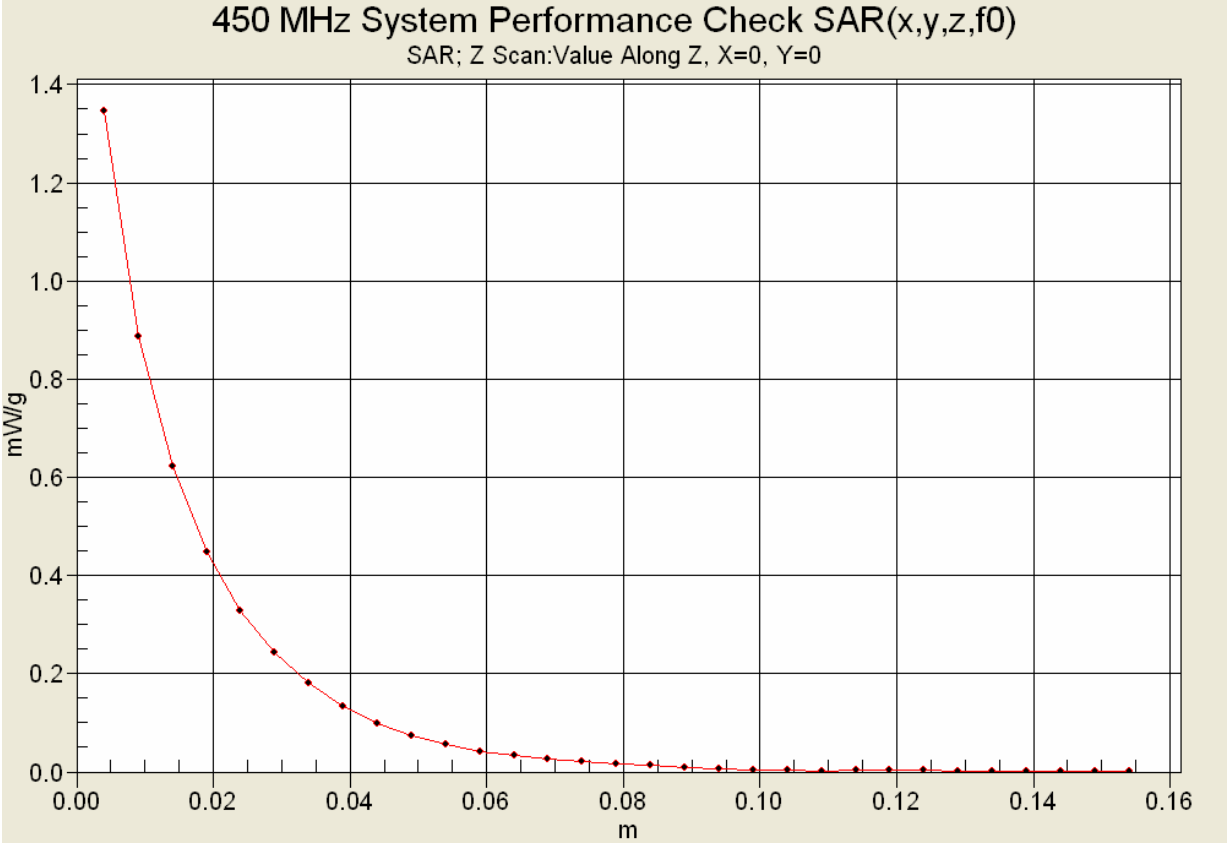
Ambient Temp: 22.0°C; Fluid Temp: 23.9°C; Barometric Pressure: 101.1 kPa; Humidity: 33%
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 450 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.3; ρ = 1000 kg/m^3
- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build

System Performance Check - 450 MHz Dipole
Area Scan (6x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.31 mW/g

System Performance Check - 450 MHz Dipole
Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 40.8 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 2.05 W/kg
SAR(1 g) = 1.3 mW/g; SAR(10 g) = 0.858 mW/g
Maximum value of SAR (measured) = 1.39 mW/g



Z-Axis Scan



Date Tested: 09/08/2008

System Performance Check - 450 MHz Dipole - HSL

DUT: Dipole 450 MHz; Asset: 00024; Serial: 136; Validation: 07/25/2008

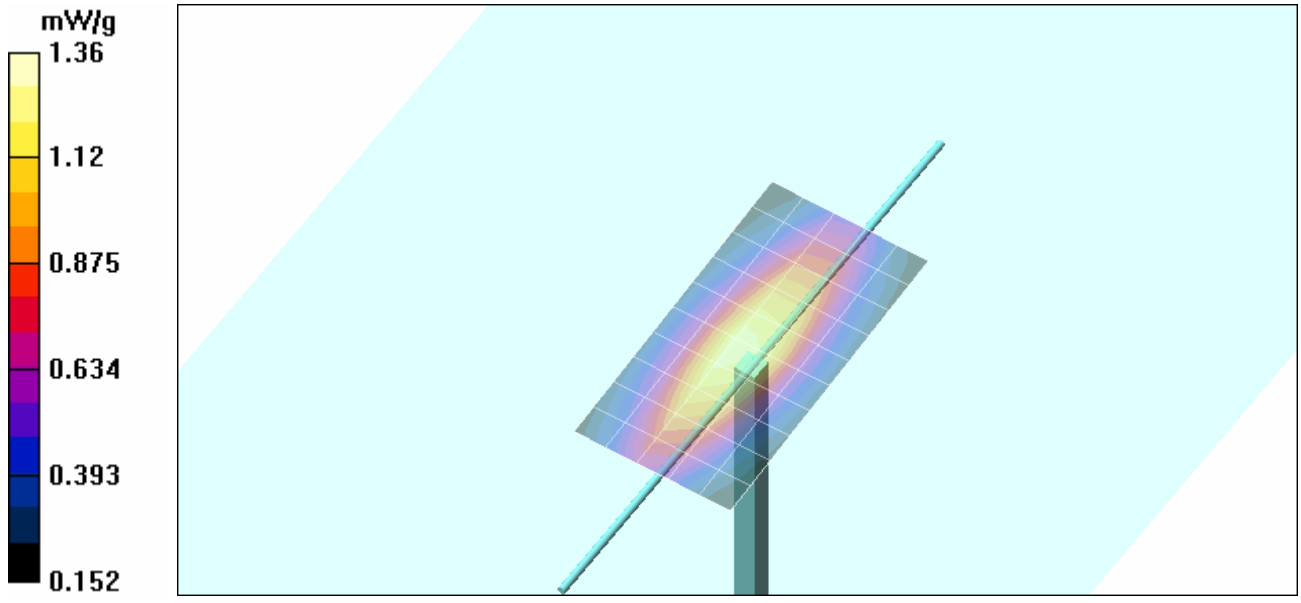
Ambient Temp: 22.3°C; Fluid Temp: 23.7°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 450 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 450 MHz; σ = 0.87 mho/m; ε_r = 43.4; ρ = 1000 kg/m^3

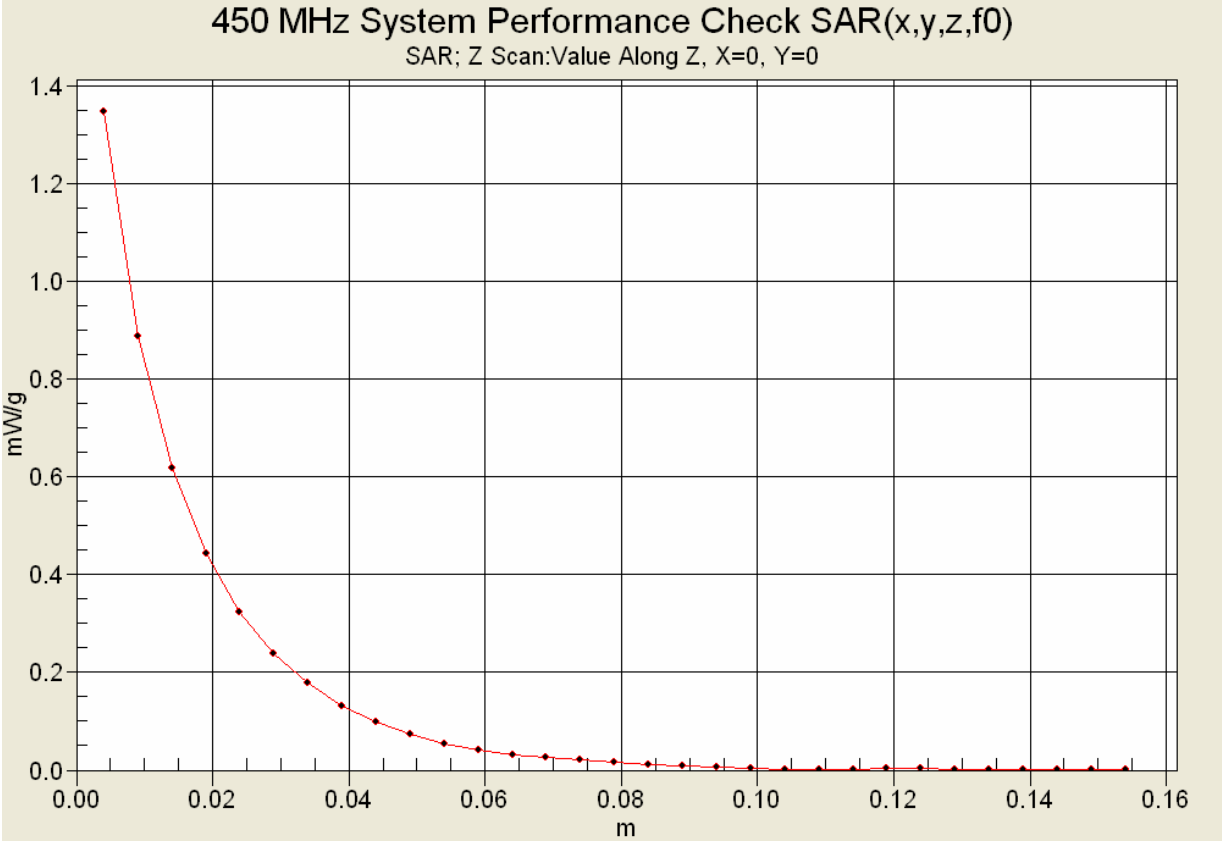
- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

System Performance Check - 450 MHz Dipole
Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.25 mW/g

System Performance Check - 450 MHz Dipole
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 40.8 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 1.99 W/kg
SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.841 mW/g
Maximum value of SAR (measured) = 1.36 mW/g



Z-Axis Scan



Date Tested: 09/09/2008

System Performance Check - 450 MHz Dipole - HSL

DUT: Dipole 450 MHz; Asset: 00024; Serial: 136; Validation: 07/25/2008

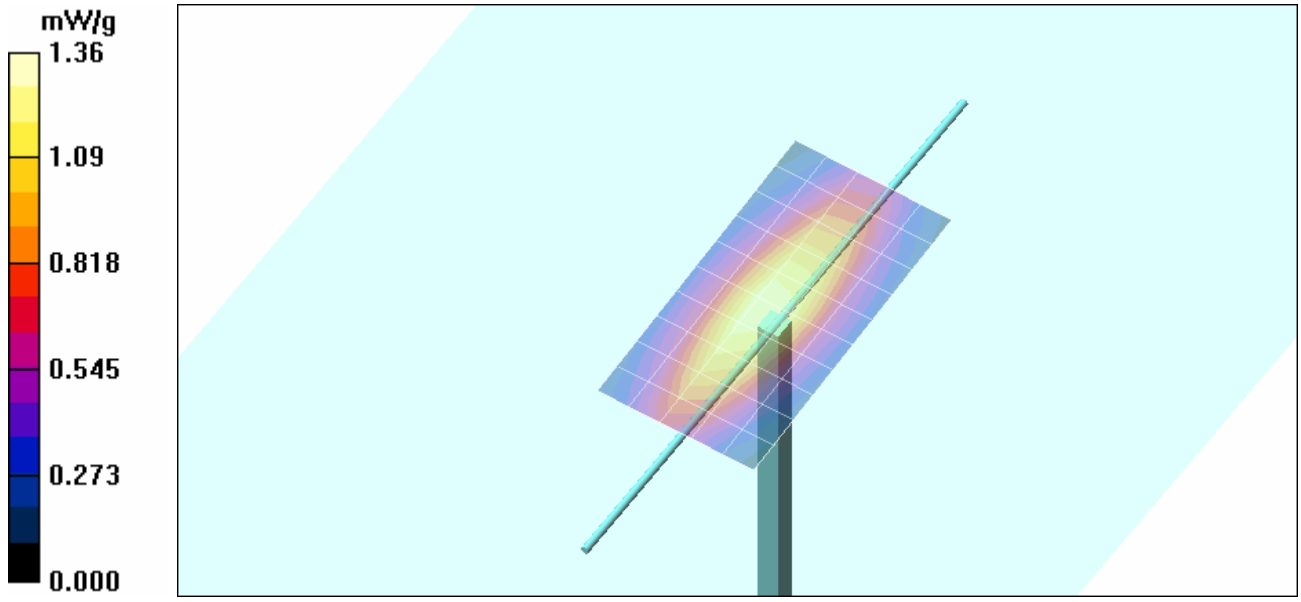
Ambient Temp: 22.4°C; Fluid Temp: 23.6°C; Barometric Pressure: 101.1 kPa; Humidity: 32%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 450 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 450 MHz; σ = 0.85 mho/m; ε_r = 43.5; ρ = 1000 kg/m^3

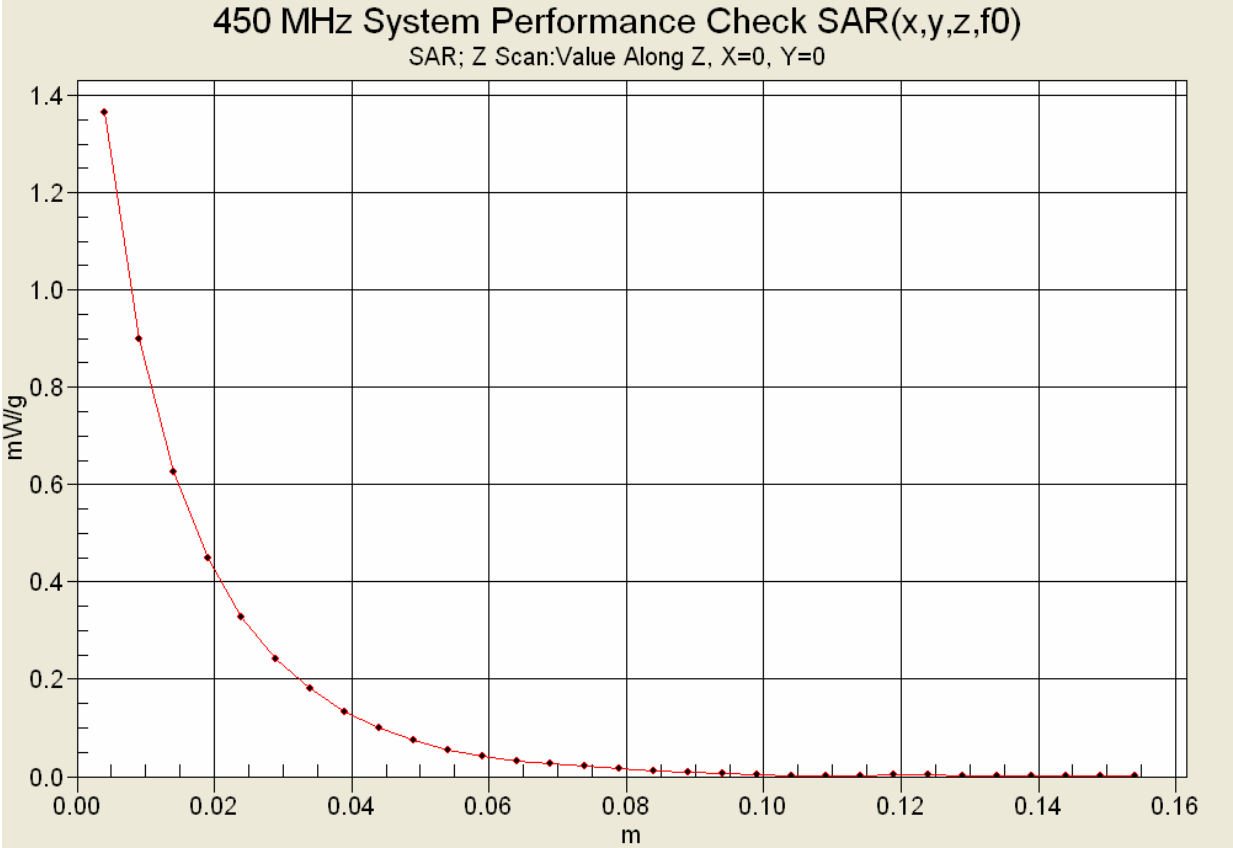
- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

System Performance Check - 450 MHz Dipole
Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.27 mW/g

System Performance Check - 450 MHz Dipole
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 40.8 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 2.01 W/kg
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.851 mW/g
Maximum value of SAR (measured) = 1.37 mW/g



Z-Axis Scan



APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

450 MHz System Performance Check & 480 MHz DUT Evaluation (Brain)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
5/Sep/2008
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
0.3500	44.70	0.87	45.13	0.76
0.3600	44.58	0.87	45.20	0.79
0.3700	44.46	0.87	44.93	0.79
0.3800	44.34	0.87	44.48	0.79
0.3900	44.22	0.87	44.43	0.82
0.4000	44.10	0.87	44.06	0.84
0.4100	43.98	0.87	43.92	0.82
0.4200	43.86	0.87	43.18	0.83
0.4300	43.74	0.87	43.37	0.83
0.4400	43.62	0.87	42.99	0.86
0.4500	43.50	0.87	43.30	0.86
0.4600	43.45	0.87	42.31	0.87
0.4700	43.40	0.87	42.22	0.88
0.4800	43.34	0.87	42.47	0.89
0.4900	43.29	0.87	42.42	0.89
0.5000	43.24	0.87	42.34	0.90
0.5100	43.19	0.87	41.58	0.92
0.5200	43.14	0.88	41.98	0.93
0.5300	43.08	0.88	41.37	0.93
0.5400	43.03	0.88	41.10	0.93
0.5500	42.98	0.88	41.15	0.95

450 MHz System Performance Check (Brain)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
8/Sep/2008
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
0.3500	44.70	0.87	46.33	0.79
0.3600	44.58	0.87	46.13	0.79
0.3700	44.46	0.87	45.82	0.81
0.3800	44.34	0.87	45.60	0.81
0.3900	44.22	0.87	45.03	0.82
0.4000	44.10	0.87	44.79	0.83
0.4100	43.98	0.87	44.65	0.83
0.4200	43.86	0.87	44.10	0.84
0.4300	43.74	0.87	44.13	0.85
0.4400	43.62	0.87	43.94	0.86
0.4500	43.50	0.87	43.38	0.87
0.4600	43.45	0.87	43.56	0.88
0.4700	43.40	0.87	43.17	0.89
0.4800	43.34	0.87	43.02	0.90
0.4900	43.29	0.87	42.88	0.90
0.5000	43.24	0.87	42.50	0.91
0.5100	43.19	0.87	42.49	0.92
0.5200	43.14	0.88	42.49	0.93
0.5300	43.08	0.88	42.10	0.94
0.5400	43.03	0.88	41.86	0.95
0.5500	42.98	0.88	41.71	0.96

480 MHz DUT Evaluation (Body)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
8/Sep/2008
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
0.3500	57.70	0.93	58.56	0.83
0.3600	57.60	0.93	59.02	0.83
0.3700	57.50	0.93	59.32	0.84
0.3800	57.40	0.93	59.18	0.86
0.3900	57.30	0.93	58.70	0.86
0.4000	57.20	0.93	58.25	0.87
0.4100	57.10	0.93	57.79	0.89
0.4200	57.00	0.94	57.43	0.88
0.4300	56.90	0.94	57.89	0.87
0.4400	56.80	0.94	57.90	0.89
0.4500	56.70	0.94	57.88	0.92
0.4600	56.66	0.94	57.60	0.92
0.4700	56.62	0.94	57.35	0.92
0.4800	56.58	0.94	57.32	0.93
0.4900	56.54	0.94	57.39	0.93
0.5000	56.51	0.94	57.03	0.95
0.5100	56.47	0.94	56.48	0.96
0.5200	56.43	0.95	56.94	0.97
0.5300	56.39	0.95	56.84	0.97
0.5400	56.35	0.95	56.31	0.99
0.5500	56.31	0.95	56.27	1.00

450 MHz System Performance Check (Brain)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
9/Sep/2008
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
0.3500	44.70	0.87	45.87	0.77
0.3600	44.58	0.87	45.73	0.78
0.3700	44.46	0.87	45.32	0.79
0.3800	44.34	0.87	45.07	0.79
0.3900	44.22	0.87	45.11	0.79
0.4000	44.10	0.87	44.55	0.82
0.4100	43.98	0.87	44.69	0.82
0.4200	43.86	0.87	44.28	0.83
0.4300	43.74	0.87	43.69	0.84
0.4400	43.62	0.87	43.83	0.84
0.4500	43.50	0.87	43.49	0.85
0.4600	43.45	0.87	43.41	0.86
0.4700	43.40	0.87	43.14	0.86
0.4800	43.34	0.87	42.96	0.88
0.4900	43.29	0.87	42.65	0.89
0.5000	43.24	0.87	42.53	0.89
0.5100	43.19	0.87	42.46	0.91
0.5200	43.14	0.88	42.22	0.91
0.5300	43.08	0.88	41.93	0.92
0.5400	43.03	0.88	41.92	0.93
0.5500	42.98	0.88	41.68	0.94

480 MHz DUT Evaluation (Body)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
9/Sep/2008
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

****

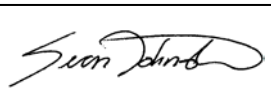
Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.3500	57.70	0.93	58.10	0.86
0.3600	57.60	0.93	58.25	0.87
0.3700	57.50	0.93	57.80	0.88
0.3800	57.40	0.93	57.95	0.88
0.3900	57.30	0.93	57.52	0.89
0.4000	57.20	0.93	57.37	0.90
0.4100	57.10	0.93	57.40	0.91
0.4200	57.00	0.94	57.29	0.92
0.4300	56.90	0.94	57.01	0.92
0.4400	56.80	0.94	56.85	0.93
0.4500	56.70	0.94	56.73	0.93
0.4600	56.66	0.94	56.63	0.94
0.4700	56.62	0.94	56.62	0.95
0.4800	56.58	0.94	56.52	0.96
0.4900	56.54	0.94	56.25	0.96
0.5000	56.51	0.94	56.14	0.98
0.5100	56.47	0.94	56.11	0.98
0.5200	56.43	0.95	55.87	0.99
0.5300	56.39	0.95	55.75	1.00
0.5400	56.35	0.95	55.86	1.00
0.5500	56.31	0.95	55.76	1.02

APPENDIX E - SYSTEM VALIDATION

450 MHz SYSTEM VALIDATION

Type:	**450 MHz Validation Dipole**
Asset Number:	**00024**
Serial Number:	**136**
Place of Validation:	**Celltech Labs Inc.**
Date of Validation:	**July 25, 2008**

Celltech Labs Inc. certifies that the 450 MHz System Validation was performed on the date indicated above.

Validated by:	**Sean Johnston**
Signature:	

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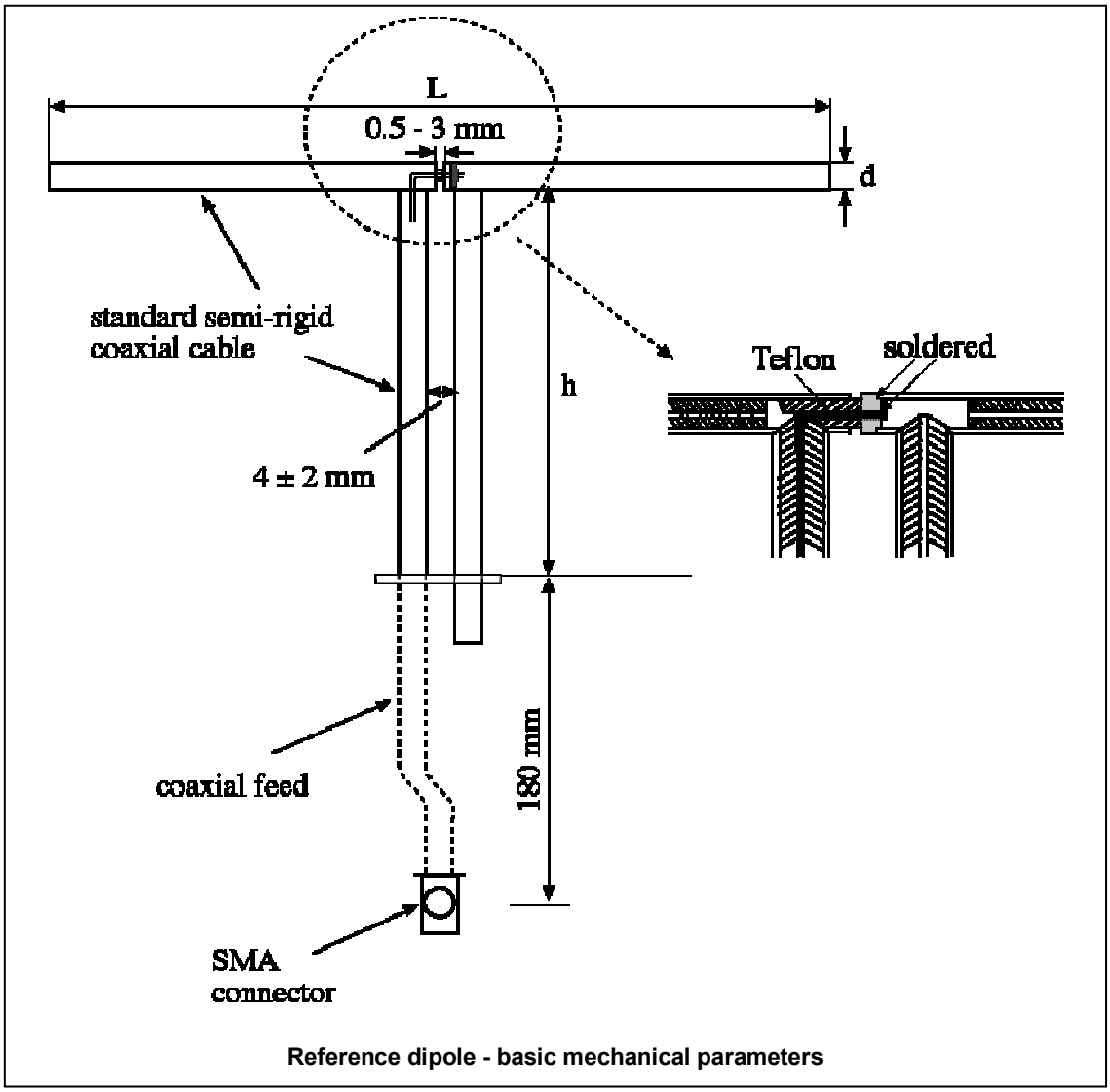
Tel. 250-765-7650 • Fax. 250-765-7645 • e-mail: info@celltechlabs.com
www.celltechlabs.com

1. Dipole Construction & Electrical Characteristics

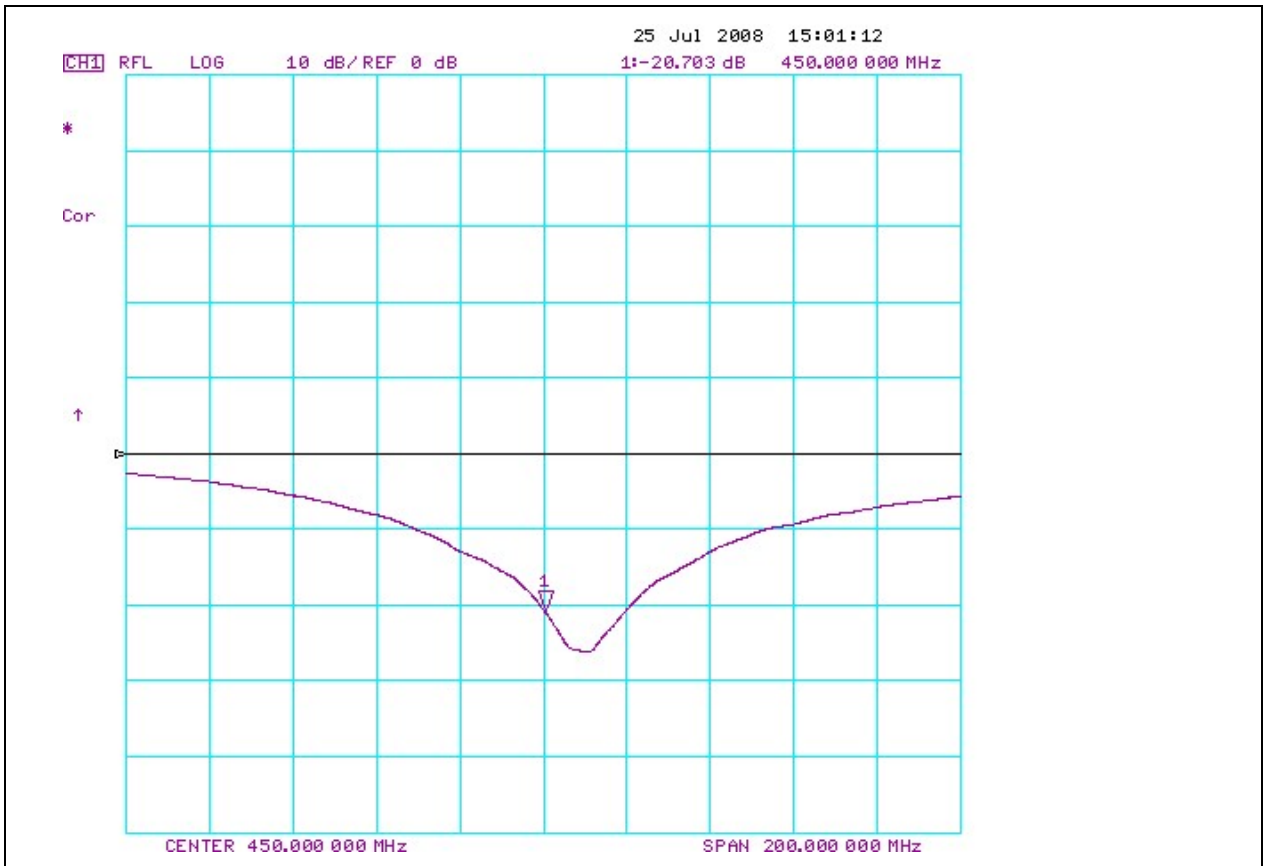
The validation dipole was constructed in accordance with the requirements specified in IEEE Standard 1528-2003 and International Standard IEC 62209-1:2005. The electrical properties were measured using an HP 8753ET Network Analyzer. The network analyzer was calibrated to the validation dipole N-type connector feed point using an HP85032E Type N calibration kit. The dipole was placed parallel to a planar phantom at a separation distance of 15.0 mm from the simulating fluid using a loss-less dielectric spacer. The measured input impedance is:

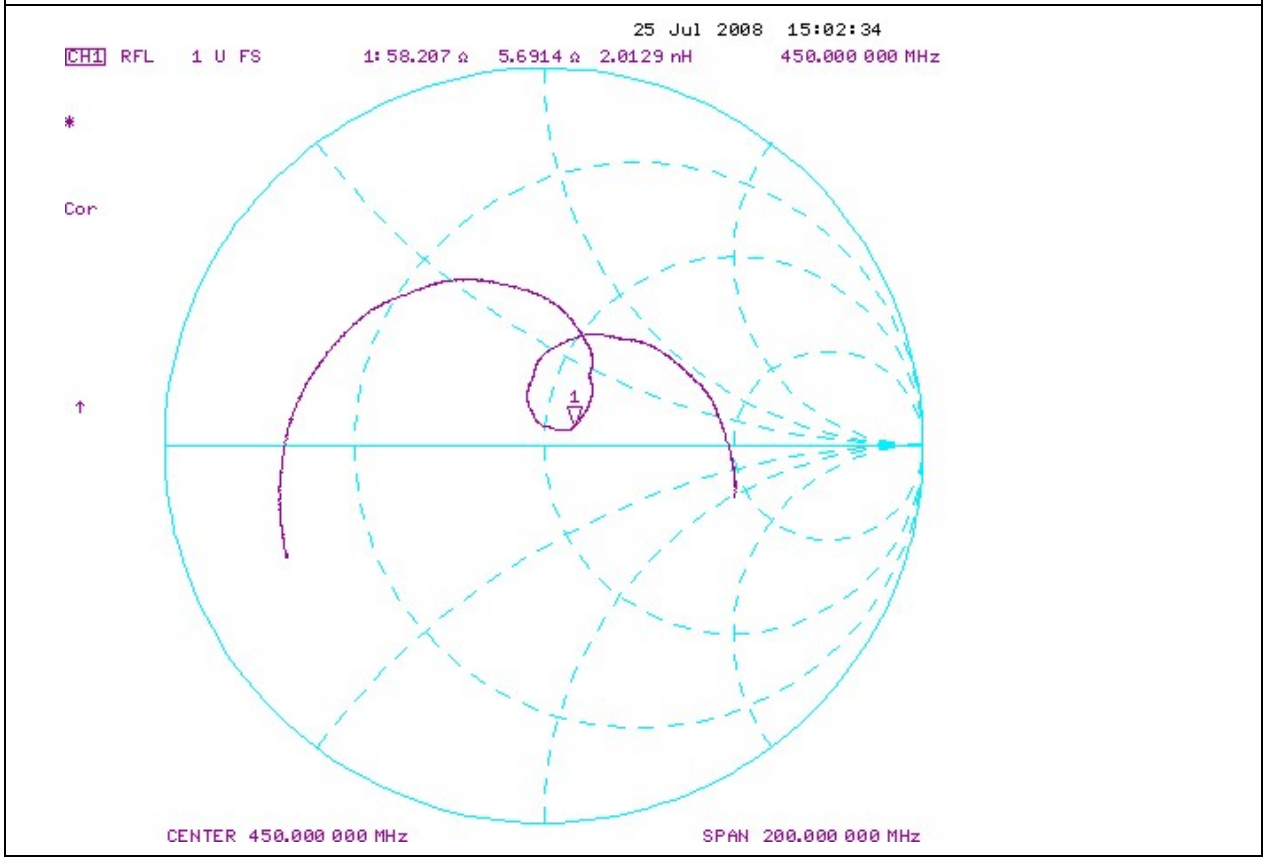
Feed point impedance at 450 MHz	Re{Z} = 58.207 Ω
	Im{Z} = 5.6914 Ω
Return Loss at 450 MHz	-20.703 dB



Reference dipole - basic mechanical parameters

2. Validation Dipole VSWR Data





3. Validation Dipole Dimensions

Frequency (MHz)	L (mm)	h (mm)	d (mm)
300	396.0	250.0	6.0
450	**270.0**	**167.0**	**6.0**
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	51.5	30.4	3.6
3000	41.5	25.0	3.6

4. Validation Phantom

The validation phantom (planar) was constructed using relatively low-loss tangent Plexiglas material.

The inner dimensions of the validation phantom are as follows:

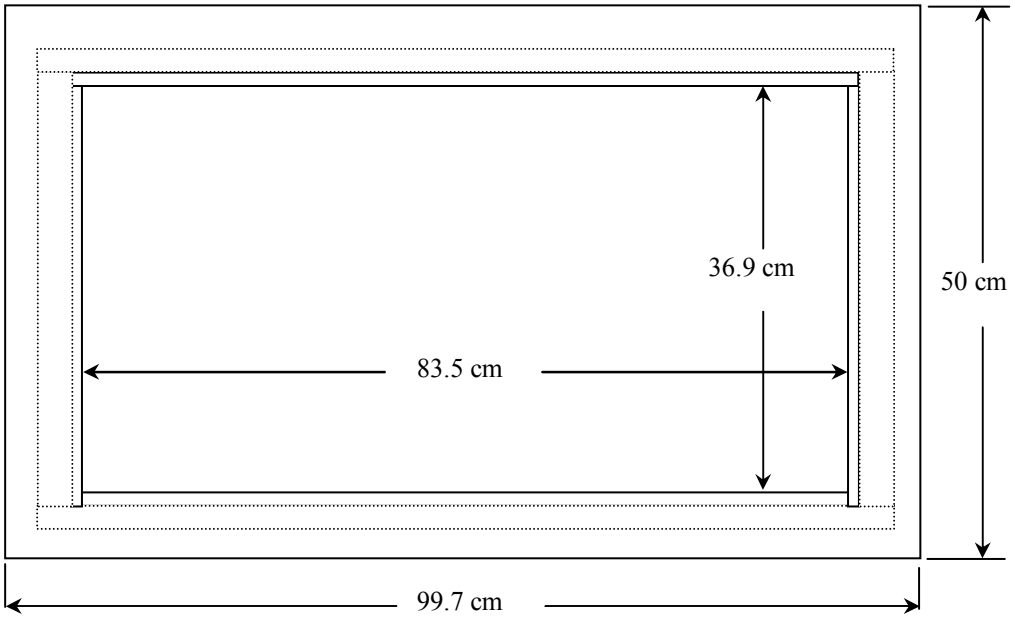
Length: 83.5 cm
Width: 36.9 cm
Height: 21.8 cm

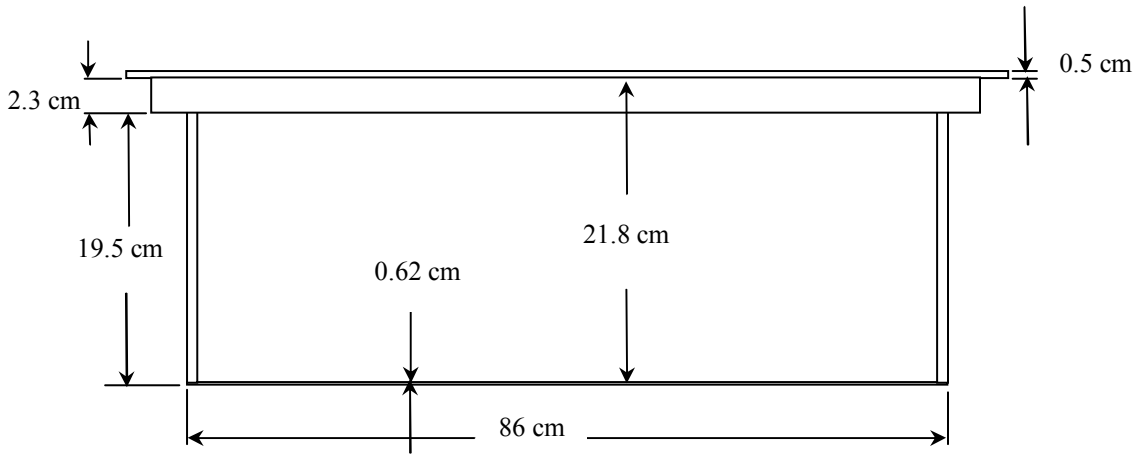
The bottom section of the validation phantom is constructed of 6.2 ± 0.1mm Plexiglas.

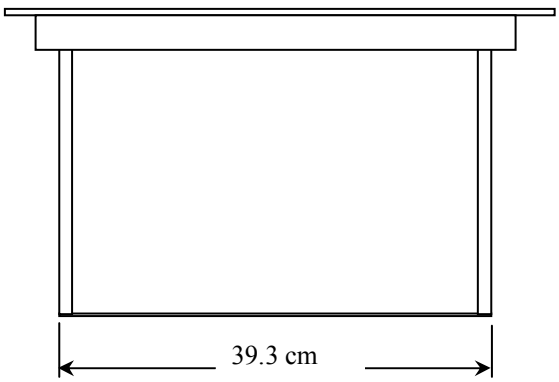
5. Test Equipment List

TEST EQUIPMENT	ASSET NO.	SERIAL NO.	DATE OF CAL.	CAL. DUE DATE
SPEAG DASY4 Measurement Server	00158	1078	N/A	N/A
SPEAG Robot	00046	599396-01	N/A	N/A
SPEAG DAE4	00019	353	22Apr08	22Apr09
SPEAG ET3DV6 E-Field Probe	00017	1590	21Jul08	21Jul09
450 MHz Validation Dipole	00024	136	25Jul08	25Jul09
Plexiglas Validation Planar Phantom	00157	137	N/A	N/A
HP 85070C Dielectric Probe Kit	00033	US39240170	N/A	N/A
Gigatronics 8652A Power Meter	00007	1835272	23Apr08	23Apr09
Gigatronics 80701A Power Sensor	00014	1833699	23Apr08	23Apr09
HP 8753ET Network Analyzer	00134	US39170292	28Apr08	28Apr09
HP 8648D Signal Generator	00005	3847A00611	NCR	NCR
Amplifier Research 5S1G4 Power Amplifier	00106	26235	NCR	NCR

6. Dimensions of Plexiglas Planar Phantom







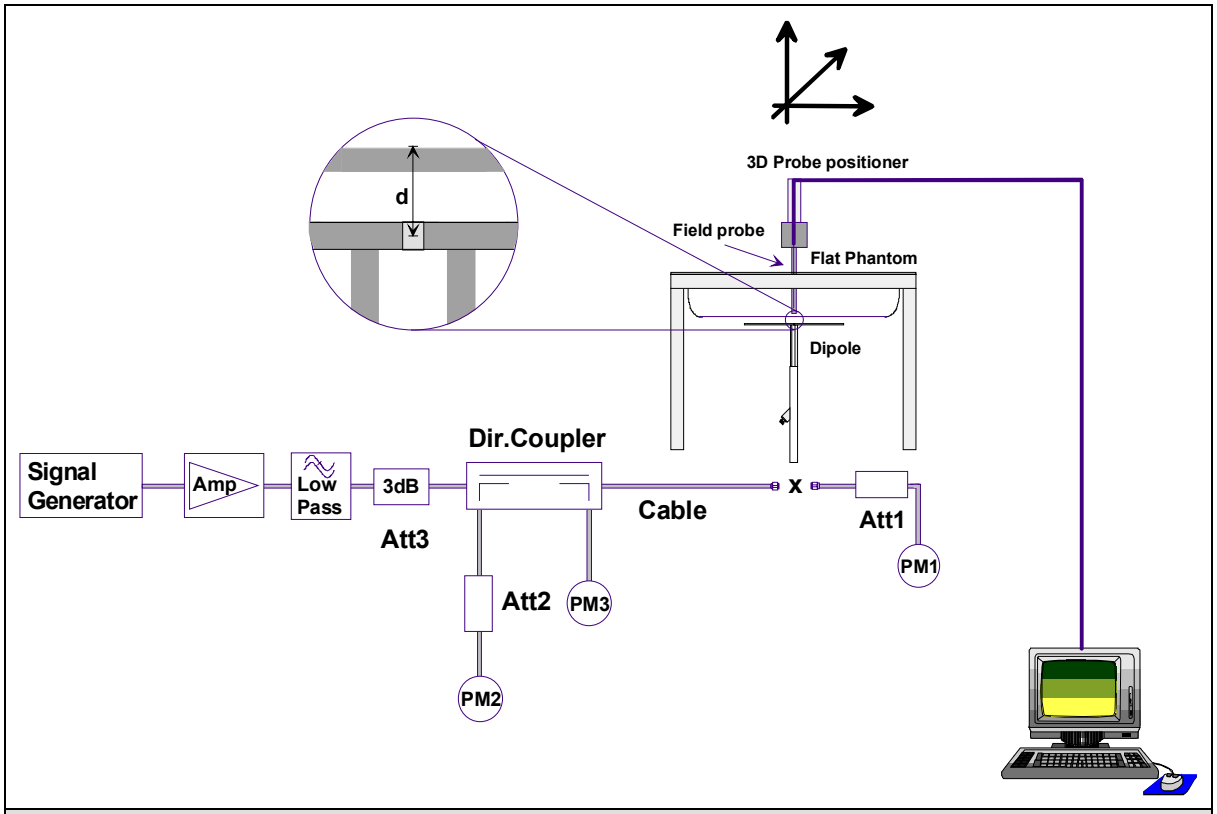
7. 450 MHz System Validation Setup

8. 450 MHz Validation Dipole Setup

9. SAR Measurement

Measurements were made using a dosimetric E-field probe ET3DV6 (S/N: 1590, Conversion Factor 7.66). 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 20dB below the forward power.



System Validation Measurement Setup Diagram

10. Measurement Conditions

The validation phantom was filled with 450 MHz Brain tissue simulant.

Relative Permittivity: 43.4 (-0.2% deviation from target)
Conductivity: 0.89 mho/m (+2.3% deviation from target)
Fluid Temperature: 23.1°C (Start of Test) / 23.2°C (End of Test)
Fluid Depth: ≥ 15.0 cm

Environmental Conditions:
Ambient Temperature: 24.1°C
Barometric Pressure: 100.9 kPa
Humidity: 31%

The 450 MHz Brain tissue simulant consisted of the following ingredients:

Ingredient	Percentage by weight	
Water	38.56%	
Sugar	56.32%	
Salt	3.95%	
HEC	0.98%	
Dowicil 75	0.19%	
IEEE/IEC Target Dielectric Parameters (450 MHz):	**ε_r = 43.5 (+/- 5%)**	**σ = 0.87 S/m (+/- 5%)**

11. System Validation SAR Results

SAR @ 0.25W Input averaged over 1g (W/kg)				SAR @ 1W Input averaged over 1g (W/kg)			
IEEE/IEC Target		Measured	Deviation	IEEE/IEC Target		Measured	Deviation
1.23	**+/- 10%**	1.18	-4.0%	**4.92**	**+/- 10%**	4.72	-4.0%
SAR @ 0.25W Input averaged over 10g (W/kg)				**SAR @ 1W Input averaged over 10g (W/kg)**			
IEEE/IEC Target		Measured	Deviation	IEEE/IEC Target		Measured	Deviation
0.825	**+/- 10%**	0.775	-6.1%	**3.30**	**+/- 10%**	3.10	-6.1%

Frequency (MHz)	1 g SAR	10 g SAR	Local SAR at surface (above feed-point)	Local SAR at surface (y = 2 cm offset from feed-point)[a]
300	3.0	2.0	4.4	2.1
450	4.9	3.3	7.2	3.2
835	9.5	6.2	4.1	4.9
900	10.8	6.9	16.4	5.4
1450	29.0	16.0	50.2	6.5
1800	38.1	19.8	69.5	6.8
1900	39.7	20.5	72.1	6.6
2000	41.1	21.1	74.6	6.5
2450	52.4	24.0	104.2	7.7
3000	63.8	25.7	140.2	9.5

Numerical reference SAR values for reference dipole and flat phantom normalized to 1 W (IEEE 1528-2003; IEC 62209-1:2005)

Date Tested: 07/25/2008

System Validation - 450 MHz Dipole - HSL

DUT: Dipole 450 MHz; Asset: 00024; Serial: 136; Validation: 07/25/2008

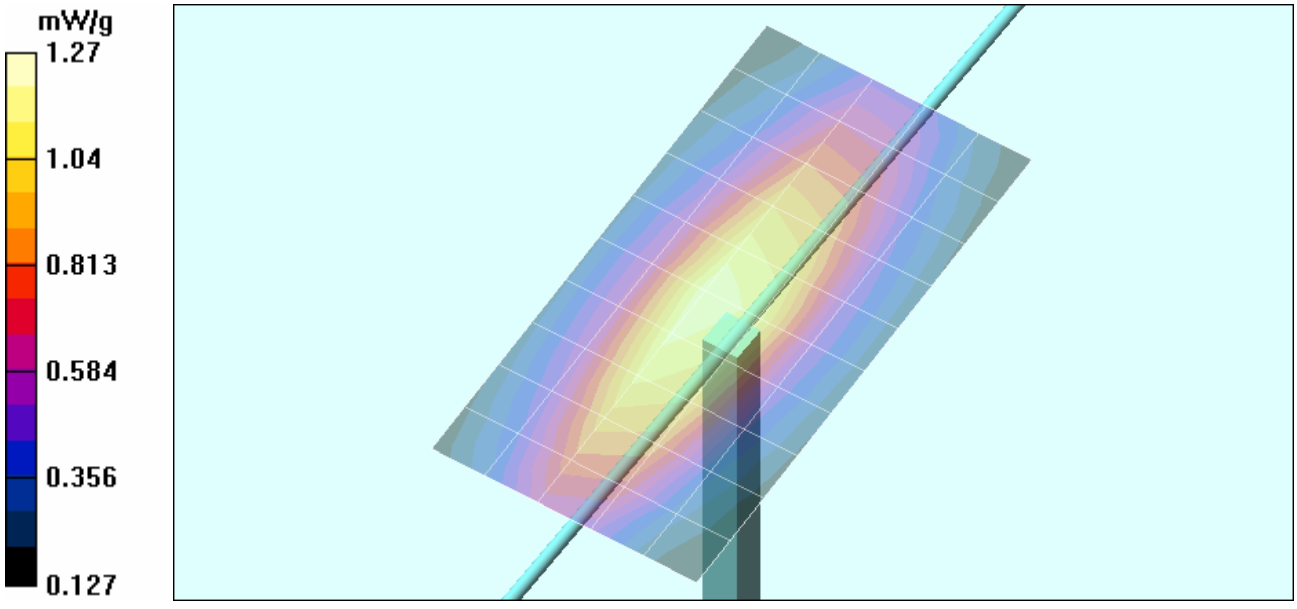
Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 100.9 kPa; Humidity: 31%

Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 450 MHz; Duty Cycle: 1:1
Medium: HSL450 Medium parameters used: f = 450 MHz; σ = 0.89 mho/m; ε_r = 43.4; ρ = 1000 kg/m^3

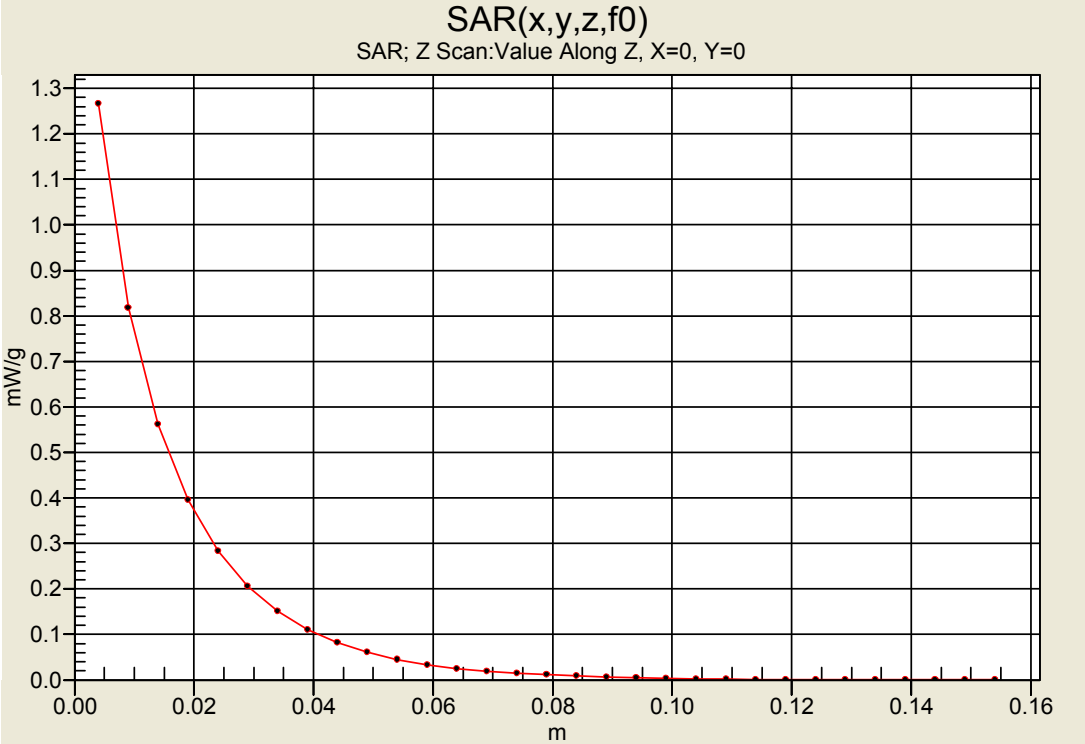
- Probe: ET3DV6 - SN1590; ConvF(7.66, 7.66, 7.66); Calibrated: 21/07/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

450 MHz Dipole - System Validation
Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.18 mW/g

450 MHz Dipole - System Validation
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 38.3 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.775 mW/g
Maximum value of SAR (measured) = 1.27 mW/g



Z-Axis Scan



12. Measured Fluid Dielectric Parameters

System Validation - 450 MHz (Brain)

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Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
Fri 25/Jul/2008
Frequency (GHz)
IEEE_eH IEEE 1528-2003 Limits for Head Epsilon
IEEE_sH IEEE 1528-2003 Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

****

Freq	IEEE_eH	IEEE_sH	Test_e	Test_s
0.3500	44.70	0.87	46.31	0.80
0.3600	44.58	0.87	45.65	0.82
0.3700	44.46	0.87	45.27	0.82
0.3800	44.34	0.87	45.47	0.83
0.3900	44.22	0.87	44.76	0.84
0.4000	44.10	0.87	44.57	0.87
0.4100	43.98	0.87	44.63	0.86
0.4200	43.86	0.87	44.66	0.86
0.4300	43.74	0.87	43.79	0.89
0.4400	43.62	0.87	43.68	0.87
0.4500	43.50	0.87	43.44	0.89
0.4600	43.45	0.87	43.27	0.90
0.4700	43.40	0.87	43.17	0.90
0.4800	43.34	0.87	43.66	0.91
0.4900	43.29	0.87	42.68	0.92
0.5000	43.24	0.87	42.39	0.95
0.5100	43.19	0.87	42.24	0.94
0.5200	43.14	0.88	41.96	0.95
0.5300	43.08	0.88	42.42	0.95
0.5400	43.03	0.88	41.99	0.97
0.5500	42.98	0.88	41.92	0.98

13. Measurement Uncertainties

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 (450 MHz)	6.65	Normal	1	1	6.65	∞
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	0.8	Rectangular	1.732050808	1	0.5	∞
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	∞
Dipole						
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)	2.3	Normal	1	0.64	1.5	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	0.2	Normal	1	0.6	0.1	∞
Combined Standard Uncertainty					**9.40**	
Expanded Uncertainty (k=2)					**18.80**	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 and IEC 62209-1:2005						