A Test Lab Techno Corp.

Changan Lab：No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.
Tel：886-3-271-0188 / Fax：886-3-271-0190

SAR EVALUATION REPORT

Test Report No.	:	**0812FS14**
Applicant	:	**Giant Electronics Ltd.**
Trade Mark	:	**Motorola**
Model Number	:	**MH230**
Battery Type	:	**Ni-MH Battery (3.6V , 700mAh) / ALKALINE Battery (1.5V * 3 PCS)**
Product Name	:	**Two Way Radio with GMRS , FRS and Weather Band Receiver**
Date of Test	:	**Dec. 10 ~ Dec. 15, 2008**
Test Environment	:	**Ambient Temperature： 22 ± 2 ℃** **Relative Humidity：40 - 70 %**
Test Specification	:	**Standard C95.1-1999** **IEEE Std. 1528-2003** **2.1093;FCC/OET Bulletin 65 Supplement C [July 2001]**
Max. SAR	:	**0.382 W/kg FRS FACE SAR _ 15mm (50% Duty Cycle)** **0.463 W/kg FRS Body SAR With Headset_15mm (50% Duty Cycle)** **0.289 W/kg FRS Body SAR With Headset & Belt Clip (50% Duty Cycle)** **0.884 W/kg GMRS FACE SAR _ 15mm (50% Duty Cycle)** **0.800 W/kg GMRS Body SAR With Headset_15mm(50% Duty Cycle)** **0.681 W/kg GMRS Body SAR With Headset & Belt Clip (50% Duty Cycle)** **(Condition: 50% Duty Cycle and positive power drift)**
Test Lab	:	**Changan Lab.**

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full.

Country Huang	**20090122**	**Sam Chuang**	**20090122**
Measurement Center Manager		**Testing Engineer**	

Contents

1. Description of Equipment under Test (EUT)

Applicant : **Giant Electronics Ltd.**
7/F, Elite Industrial Building, 135 - 137 Hoi Bun Rd, Kwun Tong, Kolwoon, HK

Manufacturer	:	Giant Electronics Ltd.
Manufacturer Address	:	7/F, Elite Industrial Building, 135 - 137 Hoi Bun Rd, Kwun Tong, Kolwoon, HK
FCC ID	:	K7GMHBCJ
Product Name	:	Two Way Radio with GMRS , FRS and Weather Band Receiver
Trade Mark	:	Motorola
Model Number	:	MH230
Battery Type	:	Ni-MH Battery (3.6V , 700mAh) ALKALINE Battery (1.5V * 3 PCS)
Test Device	:	Production Unit
TX Frequency	:	467.5625 - 467.7125 MHz FRS 462.5500 - 462.7250 MHz GMRS
Max. RF Output Power	:	0.35 W (25.44 dBm) ERP FRS 1.05 W (30.21 dBm) ERP GMRS
Max. SAR Measurement	:	0.382 W/kg FRS FACE SAR _ 15mm (50% Duty Cycle) 0.463 W/kg FRS Body SAR With Headset_15mm (50% Duty Cycle) 0.289 W/kg FRS Body SAR With Headset & Belt Clip (50% Duty Cycle) 0.884 W/kg GMRS FACE SAR _ 15mm (50% Duty Cycle) 0.800 W/kg GMRS Body SAR With Headset_15mm(50% Duty Cycle) 0.681 W/kg GMRS Body SAR With Headset & Belt Clip (50% Duty Cycle) (Condition: 50% Duty Cycle and positive power drift)
Antenna Type	:	Fixed
Antenna Gain	:	0dBi
Device Category	:	Portable
RF Exposure Environment	:	General Population / Uncontrolled
Battery Option	:	Standard
Application Type	:	Certification

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for Uncontrolled environment / General Population exposure limits specified in Standard C95.1-1999 and had been tested in accordance with the measurement procedures specified in IEEE Std. 1528-2003.

Front view

Back view

Figure 1. EUT Photo

2. Other Accessories

Figure 2. Headset

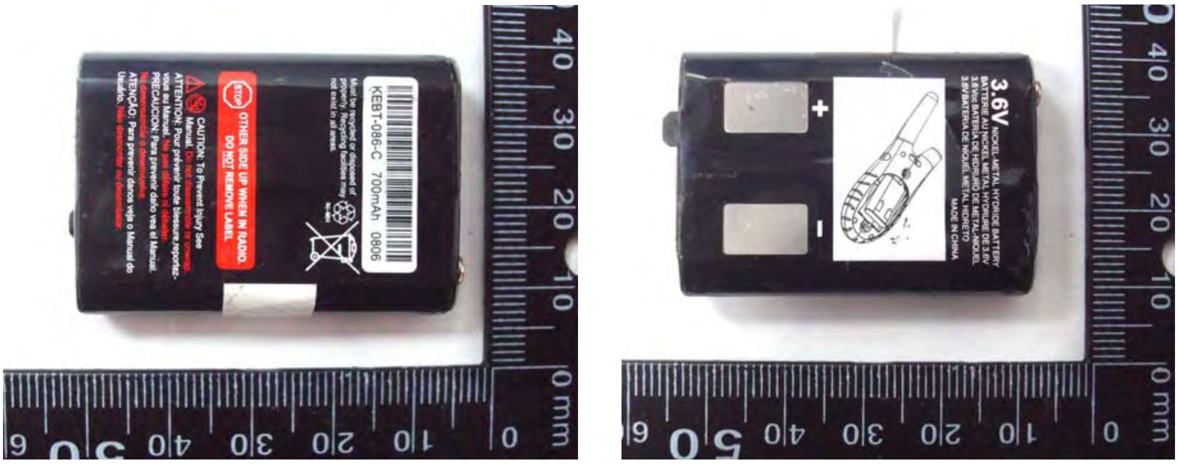


Figure 3. Ni-MH Battery (3.6V 700mAh)

Figure 4. ALKALINE Battery (1.5V * 3 PCS)

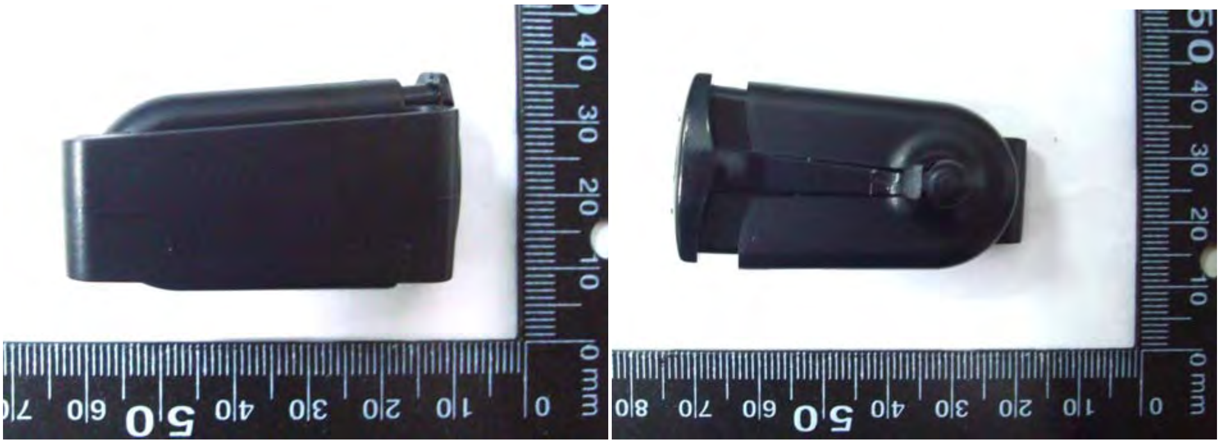


Figure 5. Belt Clip

Figure 6. USB Cable

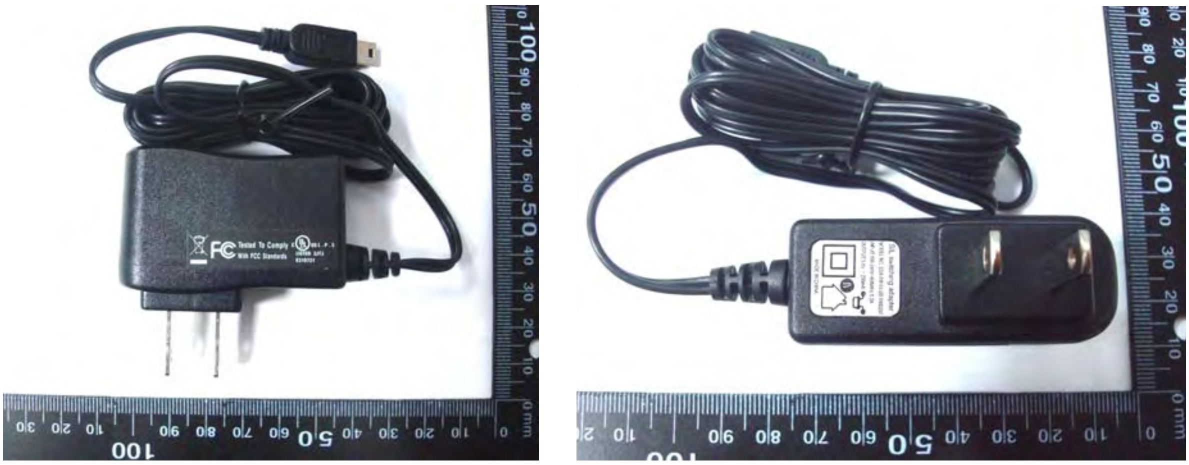


Figure 7. AC Adapter

3. Introduction

The A Test Lab Techno. Corp. RF Testing Laboratory has performed measurements of the maximum potential exposure to the user of **Giant Electronics Ltd. Trade Mark：Motorola Model(s) ：MH230**. The test procedures, as described in American National Standards, Institute C95.1 - 1999〔1〕, FCC/OET Bulletin 65 Supplement C [July 2001] were employed and they specify the maximum exposure limit of 1.6mW/g as averaged over any 1 gram of tissue for portable devices being used within 20cm between user and EUT in the Uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.

4. SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Figure 8).

$$SAR = \frac{d}{dt}\left(\frac{dw}{dm}\right) = \frac{d}{dt}\left(\frac{dw}{\rho dv}\right)$$

Figure 8. SAR Mathematical Equation

SAR is expressed in units of Watts per kilogram (W/kg)

$$SAR = \frac{\sigma E^2}{\rho}$$

Where：

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m^3)

E = RMS electric field strength (V/m)

＊**Note**：

The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane〔2〕

5. SAR Measurement Setup

These measurements were performed with the automated near-field scanning system DASY4 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m) which positions the probes with a positional repeatability of better than ±0.025mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length = 300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teaches pendant (Joystick) and remote control, and is used to drive the robot motors. The Measurement Server is based on a PC/104 CPU board with a 166MHz low-power Pentium, 32MB chipdisk and 64MB RAM. The necessary circuits for communication with either the DAE3 electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY4 I/O-board, which is directly connected to the PC/104 bus of the CPU board. The PC consists of the Intel Pentium 4 2.4GHz computer with WindowsXP system and SAR Measurement Software DASY4, Post Processor SEMCAD, monitor, mouse, and keyboard. 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 converter (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the Measurement Server.

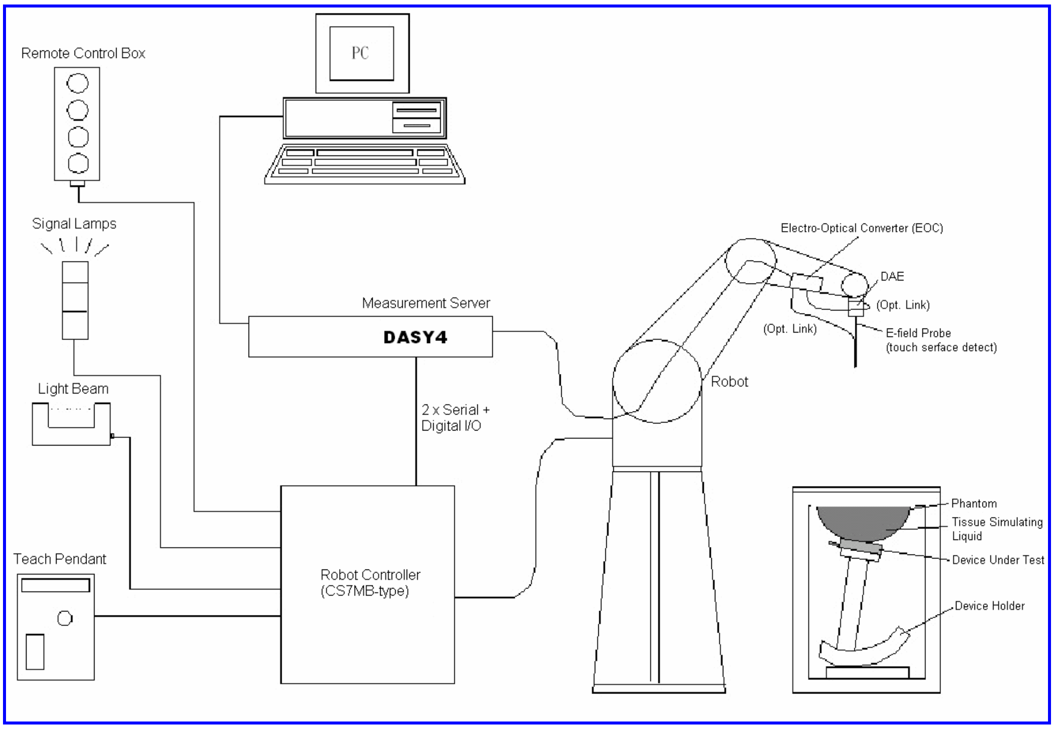


Figure 9. SAR Lab Test Measurement Setup

The DAE4 (or DAE3) consists of 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 PC-card 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. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in〔3〕.

6. System Components

6.1 DASY4 E-Field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 or ET3DV6 (manufactured by SPEAG), designed in the classical triangular configuration〔3〕and optimized for dosimetric evaluation. The probes is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

6.1.1 E-Field Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 6 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz, 1800MHz, 2000MHz and 2450MHz (accuracy ±8%) Calibration for other liquids and frequencies upon request
Frequency	10 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity	±0.3 dB in brain tissue (rotation around probe axis) ±0.5 dB in brain tissue (rotation normal probe axis)
Dynamic Range	10 μW/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surface
Dimensions	Overall length: 330mm Tip length: 20mm Body diameter: 12mm Tip diameter: 2.5mm Distance from probe tip to dipole centers: 1.0mm
Application	General dosimetry up to 6GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

Figure 10.
E-field Probe

Figure 11.
Probe setup on robot

6.1.2 E-Field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure described in〔4〕with accuracy better than ±10%. The spherical isotropy was evaluated with the procedure described in〔5〕and found to be better than ±0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1GHz, and in a wave guide above 1GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\text{SAR} = C\frac{\Delta T}{\Delta t}$$

Where：

Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (head or body),

ΔT = Temperature increase due to RF exposure.

Or

$$\text{SAR} = \frac{|E|^2 \sigma}{\rho}$$

Where：

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6.2 Data Acquisition Electronic (DAE) System

Cell Controller

Processor：	Intel Pentium 4
Clock Speed：	2.4GHz
Operating System：	Windows XP Professional

Data Converter

Features：	Signal Amplifier, multiplexer, A/D converter, and control logic
Software：	DASY4 v4.7 (Build 71) & SEMCAD v1.8 (Build 184)
Connecting Lines：	Optical downlink for data and status info
	Optical uplink for commands and clock

6.3 Robot

Positioner：	Stäubli Unimation Corp. Robot Model: RX90L
Repeatability：	±0.025 mm
No. of Axis：	6

6.4 Measurement Server

Processor：	PC/104 with a 166MHz low-power Pentium
I/O-board：	Link to DAE3
	16-bit A/D converter for surface detection system
	Digital I/O interface
	Serial link to robot
	Direct emergency stop output for robot

6.5 Device Holder for Transmitters

In combination with the SAM Twin Phantom V4.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the IEEE SCC34-SC2 and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).

＊**Note**：A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configurations〔6〕. To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

Larger DUT cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.

Figure 12. Device Holder

6.6 Phantom - SAM v4.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Figure 13. SAM Twin Phantom

Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	810×1000×500 mm (H×L×W)

Table 1. Specification of SAM v4.0

6.7 Data Storage and Evaluation

6.7.1 Data Storage

The DASY4 software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension .DA4. The postprocessing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

6.7.2 Data Evaluation

The DASY4 post processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software：

Probe parameters：	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	dcpi
Device parameters：	- Frequency	f
	- Crest factor	cf
Media parameters：	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as：

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with V_i = compensated signal of channel i (i = x, y, z)

U_i = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated：

E-field probes：

$$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

H-field probes：

$$H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

with V_i = compensated signal of channel i (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)

μ V/(V/m)^2 for E-field Probes

$ConvF$ = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude)：

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

ρ = equivalent tissue density in g/cm^3

∗**Note**：that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = \frac{H_{tot}^2}{37.7}$$

with P_{pwe} = equivalent power density of a plane wave in mW/cm^2

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m

7. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	Dosimetric E-Field Probe	ET3DV6	1530	Sep. 23, 2008	Sep. 23, 2009
SPEAG	450MHz System Validation Kit	D450V2	1021	Mar. 19, 2008	Mar. 19, 2009
SPEAG	Data Acquisition Electronics	DAE4	541	Feb. 21, 2008	Feb. 21, 2009
SPEAG	Device Holder	N/A	N/A	NCR	NCR
SPEAG	Phantom	SAM V4.0	1009	NCR	NCR
SPEAG	Robot	Staubli RX90L	F00/589B1/A/01	NCR	NCR
SPEAG	Software	DASY4 V4.7 Build 55	N/A	NCR	NCR
SPEAG	Software	SEMCAD V1.8 Build 176	N/A	NCR	NCR
SPEAG	Measurement Server	SE UMS 001 BA	1021	NCR	NCR
R & S	Wireless Communication Test Set	CMU200	112387	Oct. 31, 2008	Oct. 31, 2009
Agilent	Wireless Communication Test Set	E5515C	MY47511156	May. 27, 2008	May. 27, 2009
Agilent	ENA Series Network Analyzer	E5071B	MY42402996	Nov. 04, 2008	Nov. 04, 2009
Agilent	Dielectric Probe Kit	85070C	US99360094	NCR	NCR
R&S	Power Sensor	NRP-Z22	100179	May. 03, 2008	May. 03, 2009
Agilent	Signal Generator	E8257D	MY44320425	Jul. 03, 2008	Jul. 03, 2009
Agilent	Dual Directional Coupler	778D	50334	NCR	NCR
Mini-Circuits	Power Amplifier	ZHL-42W-SMA	D111103#5	NCR	NCR

Table 2. Test Equipment List

8. Tissue Simulating Liquids

The Head and body mixtures consist of a viscous gel using hydroxethylcellullouse (HEC) gelling agent and saline solution. Preservation with a bactericide is added and visual inspection is made to ensure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an 8720ES Network Analyzer.

IEEE SCC-34/SC-2 in 1528 recommended Tissue Dielectric Parameters

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified in 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equation and extrapolated according to the head parameter specified in 1528.

Target Frequency	Head		Body	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 - 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00
(ε_r = relative permittivity, **σ** = conductivity and **ρ** = 1000 kg/m^3)				

Table 3. Tissue dielectric parameters for head and body phantoms

8.1 Ingredients

The following ingredients are used:

- Water: deionized water (pure H_20), resistivity ≥ 16 M Ω -as basis for the liquid
- Sugar: refied white sugar (typically 99.7 % sucrose, available as crystal sugar in food shops) -to reduce relative permittivity
- Salt: pure NaCl -to increase conductivity
- Cellulose: Hydroxyethyl-cellulose, medium viscosity (75-125 mPa.s, 2% in water, 20° C), CAS # 54290 -to increase viscosity and to keep sugar in solution.
- Preservative: Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS # 55965-84-9 -to prevent the spread of bacteria and molds
- DGBE: Diethylenglycol-monobuthyl ether (DGBE), Fluka Chemie GmbH, CAS # 112-34-5 -to reduce relative permittivity

8.2 Recipes

The following tables give the recipes for tissue simulating liquids to be used in different frequency bands.

Note: The goal dielectric parameters (at 22 ℃) must be achieved within a tolerance of ±5% for ε and ±5% for σ .

Liquid type	HSL 450 - A	
Ingredient	Weight (g)	Weight (%)
Water	522.94	38.91
Sugar	765.09	56.93
Cellulose	3.39	0.25
Salt	50.94	3.79
Preventol	1.63	0.12
Total amount	1’344.00	100.00
Goal dielectric parameters		
Frequency [MHz]	450	
Relative Permittivity	43.5	
Conductivity [S/m]	0.87	

Liquid type	HSL 450 - B	
Ingredient	Weight (g)	Weight (%)
Water	590.62	46.21
Sugar	654.00	51.17
Cellulose	2.36	0.18
Salt	29.96	2.34
Preventol	1.06	0.08
Total amount	1'278.00	100.00
Goal dielectric parameters		
Frequency [MHz]	450	
Relative Permittivity	56.7	
Conductivity [S/m]	0.94	

8.3 Liquid Confirmation

8.3.1 Parameters

Liquid Verify

Ambient Temperature： 22±2 ℃；Relative Humidity：40-70 ％

Liquid Type	Freq.	Temp (℃)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
450MHz Head	450MHz	22.0	εr	43.5	44.60	2.53%	± 5	Dec. 15, 2008
			σ	0.87	0.880	1.15%	± 5	
450MHz Body	450MHz	22.0	εr	56.7	56.30	-0.71%	± 5	Dec. 10, 2008
			σ	0.94	0.940	0.00%	± 5	
450MHz Body	450MHz	22.0	εr	56.7	56.30	-0.71%	± 5	Dec. 14, 2008
			σ	0.94	0.940	0.00%	± 5	
450MHz Body	450MHz	22.0	εr	56.7	56.30	-0.71%	± 5	Dec. 15, 2008
			σ	0.94	0.940	0.00%	± 5	

Table 4. Measured Tissue dielectric parameters for head and body phantoms

8.3.2 Liquid Depth

The liquid level was during measurement 15cm ±0.5cm.

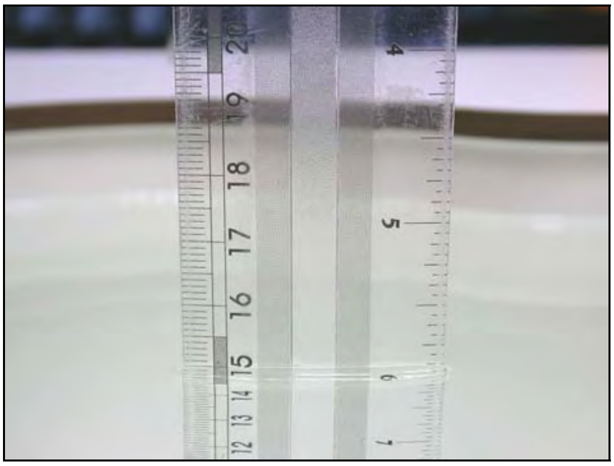


Figure 14. Head-Tissue-Simulating-Liquid

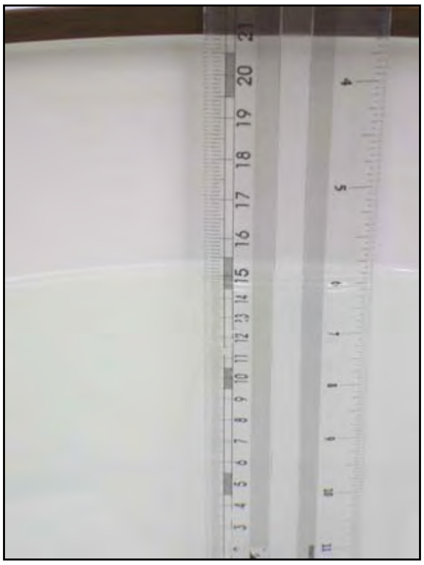


Figure 15. Body-Tissue-Simulating-Liquid

9. *Measurement Process*

9.1 Device and Test Conditions

The Test Device was provided by **Giant Electronics Ltd.** for this evaluation. The spatial peak SAR values were assessed for the lowest, middle and highest channels defined by FRS (Ch8 = 467.5625 MHz, Ch11 = 467.6375 MHz, Ch14 = 467.7125 MHz) and GMRS (Ch15 = 462.5500 MHz, Ch04 = 462.6375 MHz, Ch22 = 462.7250 MHz)systems. Battery and accessories shall be those specified by the manufacturer. The battery shall be fully charged before each measurement and there shall be no external connections.

<table>
<tr><td>Usage</td><td colspan="5">Operates with a built-in test mode by client</td></tr>
<tr><td>Distance between antenna axis at the joint and the liquid surface:</td><td colspan="5">For Body,
EUT front to phantom, 15mm separation.
EUT back to phantom, 15mm separation.
EUT back to phantom, to attach belt clip.</td></tr>
<tr><td>Simulating human Head/Body</td><td colspan="5">Body</td></tr>
<tr><td>EUT Battery</td><td colspan="5">Fully-charged with Ni-MH battery or ALKALINE battery.</td></tr>
<tr><td rowspan="7">Output Power (ERP)</td><td colspan="2">Channel</td><td>Frequency MHz</td><td>Before SAR Test (dBm)</td><td>After SAR Test (dBm)</td></tr>
<tr><td rowspan="3">FRS</td><td>Lowest - 8</td><td>467.5625</td><td>25.44</td><td>25.43</td></tr>
<tr><td>Middle - 11</td><td>467.6375</td><td>25.44</td><td>25.42</td></tr>
<tr><td>Highest - 14</td><td>467.7125</td><td>25.44</td><td>25.43</td></tr>
<tr><td rowspan="3">GMRS</td><td>Lowest - 15</td><td>462.5500</td><td>30.21</td><td>30.20</td></tr>
<tr><td>Middle - 04</td><td>462.6375</td><td>30.21</td><td>29..99</td></tr>
<tr><td>Highest - 22</td><td>462.7250</td><td>30.21</td><td>29..99</td></tr>
</table>

9.2 System Performance Check

9.2.1 Symmetric Dipoles for System Validation

Construction	Symmetrical dipole with l/4 balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.
Frequency	450, 900, 1800, 1950, 2000, 2450, 5000MHz
Return Loss	$>$ 20 dB at specified validation position
Power Capability	$>$ 100 W (f $<$ 1GHz); $>$ 40 W (f $>$ 1GHz)
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request
Dimensions	D450V2：dipole length 270 mm; overall height 330 mm D900V2：dipole length 149 mm; overall height 330 mm D1800V2：dipole length 72 mm; overall height 300 mm D1950V2：dipole length 62 mm; overall height 300 mm D2000V2：dipole length 65 mm; overall height 300 mm D2450V2：dipole length 51.5 mm; overall height 300 mm D5GHzV2：dipole length 20.6 mm; overall height 450 mm

Figure 16. Validation Kit

9.2.2 Validation

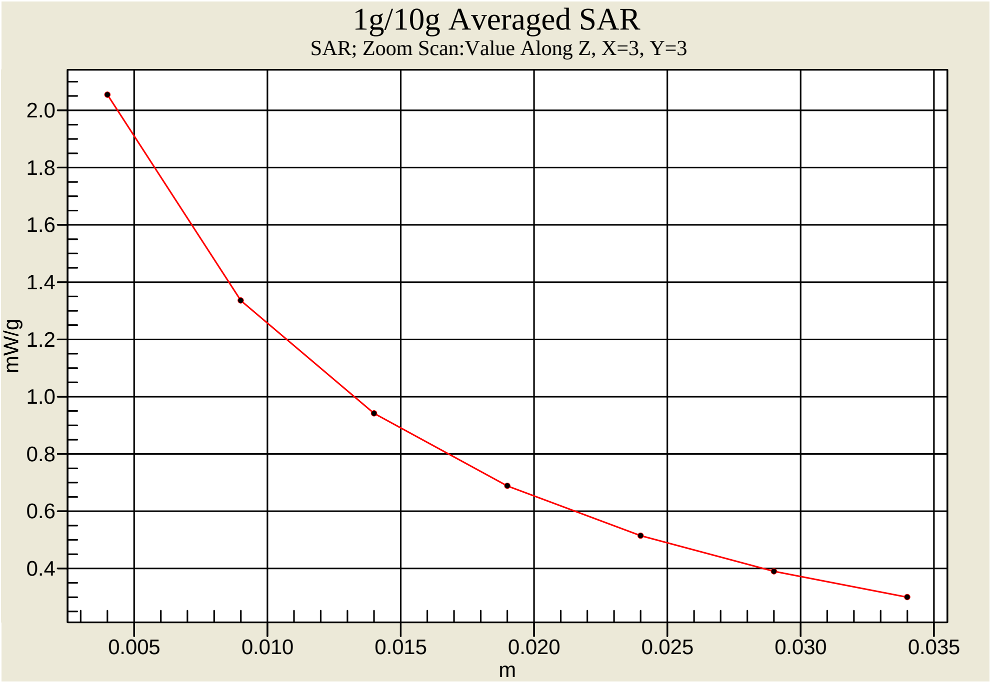
Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ± 10%. The validation was performed at 450 MHz.

Validation kit	Mixture Type	SAR_{1g} [mW/g]	SAR_{10g} [mW/g]	Date of Calibration
D450V2-SN1021	Head	4.90	3.27	Mar. 19, 2008
	Body	4.72	3.17	

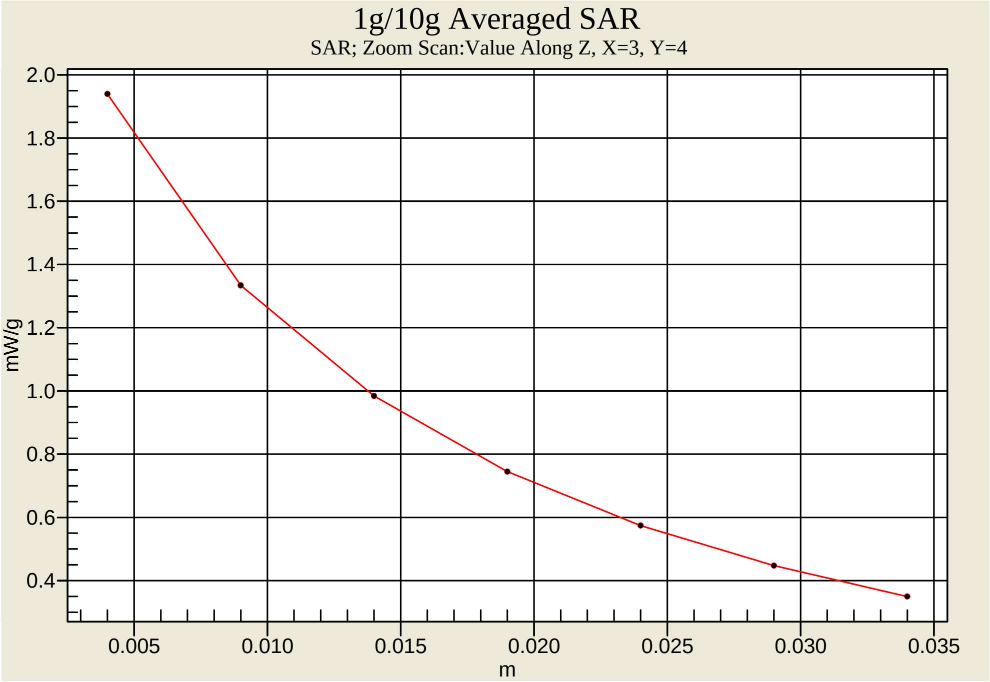
Frequency (MHz)	Power	SAR_{1g} (mW/g)	SAR_{10g} (mW/g)	Drift (dB)	Difference percentage (%) 1g	Difference percentage (%) 10g	Date
450 (Head)	398mW	1.92	1.25	-0.023	-1.55%	-3.95%	Dec. 15, 2008
	Normalize to 1 Watt	4.82	3.14				
450 (Body)	398mW	1.82	1.27	0.000	-3.12%	0.66%	Dec. 10, 2008
	Normalize to 1 Watt	4.57	3.19				
450 (Body)	398mW	1.81	1.24	-0.027	-3.65%	-1.72%	Dec. 14, 2008
	Normalize to 1 Watt	4.55	3.12				
450 (Body)	398mW	1.8	1.25	-0.053	-4.66%	-1.42%	Dec. 15, 2008
	Normalize to 1 Watt	4.5	3.125				

Detail results see Appendix A.

Z-axis Plot of System Performance Check

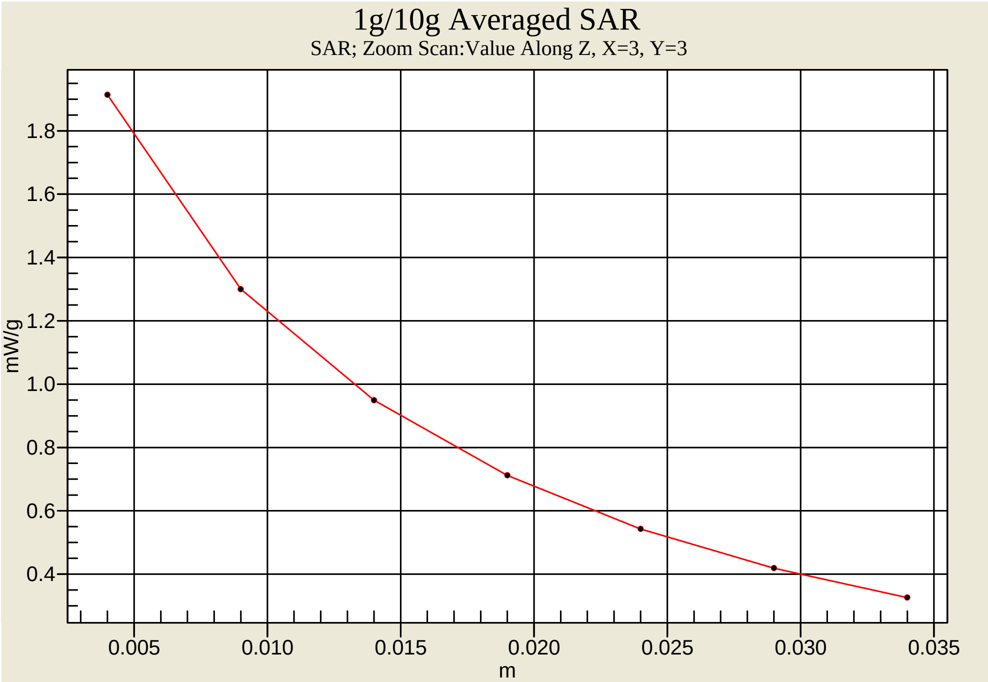


Head-Tissue-Simulating-Liquid 450MHz

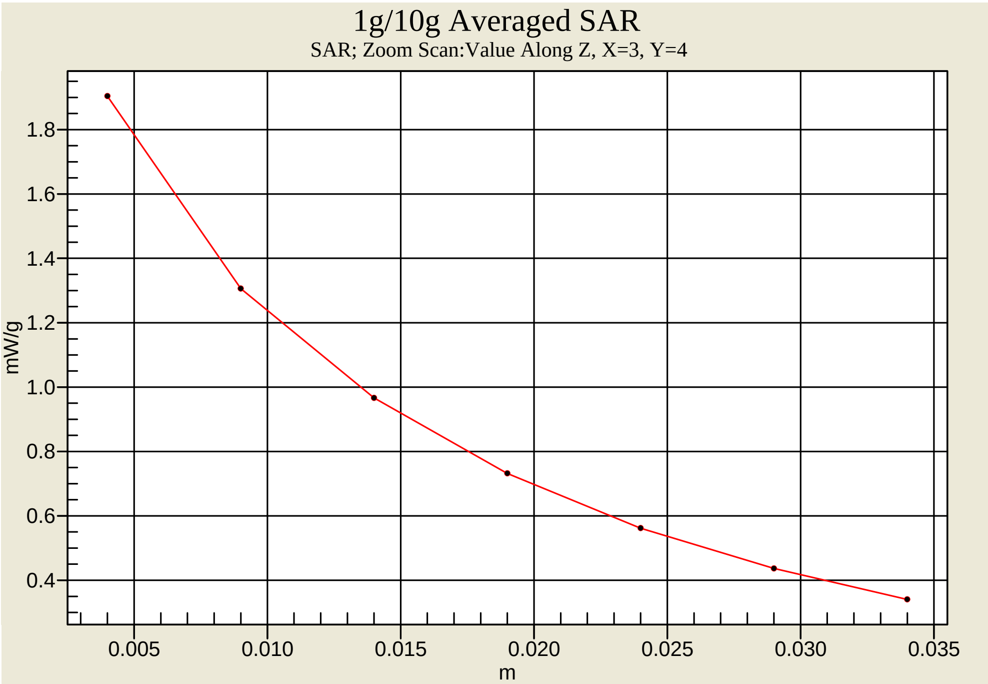


Body-Tissue-Simulating-Liquid 450MHz (2008.12.10)

Z-axis Plot of System Performance Check



Body-Tissue-Simulating-Liquid 450MHz (2008.12.14)



Body-Tissue-Simulating-Liquid 450MHz (2008.12.15)

9.3 Dosimetric Assessment Setup

9.3.1 Body Test Position

Body - Worn Configuration

Body - Worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device.

Body - Worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 15 mm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances.
For this test：

■ The EUT is placed into the holster/belt clip and the holster is positioned against the surface of the phantom in a normal operating position.

■ Since this EUT doesn’t supply any body-worn accessory to the end user, a distance of 15mm was tested to confirm the necessary “minimum SAR separation distance”.
(＊Note：This distance includes the 2 mm phantom shell thickness.)

9.3.2 Measurement Procedures

The evaluation was performed with the following procedures：

Surface Check： A surface checks job gathers data used with optical surface detection. It determines the distance from the phantom surface where the reflection from the optical detector has its peak. Any following measurement jobs using optical surface detection will then rely on this value. The surface check performs its search a specified number of times, so that the repeatability can be verified. The probe tip distance is 1.3mm to phantom inner surface during scans.

Reference： The reference job measures the field at a specified reference position, at 4 mm from the selected section's grid reference point.

Area Scan： The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a finer measurement around the hot spot. The sophisticated interpolation routines can find the maximum locations even in relatively coarse grids. When an area scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. Any following zoom scan within the same procedure will then perform fine scans around these maxima. The area covered the entire dimension of the EUT and the horizontal grid spacing was 15 mm × 15 mm.

Zoom Scan： Zoom scans are used to assess the highest averaged SAR for cubic averaging volumes with 1 g and 10 g of simulated tissue. The zoom scan measures 5 x 5 x 7 points in a 32 x 32 x 30 mm cube whose base faces are centered around the maxima returned from a preceding area scan within the same procedure.

Drift： The drift job measures the field at the same location as the most recent reference job within the same procedure, with the same settings. The drift measurement gives the field difference in dB from the last reference measurement. Several drift measurements are possible for each reference measurement. This allows monitoring of the power drift of the device in the batch process. If the value changed by more than 5%, the evaluation was repeated.

9.4 Spatial Peak SAR Evaluation

The DASY4 software includes all numerical procedures necessary to evaluate the spatial peak SAR values. Based on the Draft: SCC-34, SC-2, WG-2 - Computational Dosimetry, IEEE P1529/D0.0 (Draft Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) Associated with the Use of Wireless Handsets - Computational Techniques), a new algorithm has been implemented. The spatial-peak SAR can be computed over any required mass.

The base for the evaluation is a "cube" measurement in a volume of $(32\times32\times30)mm^3$ (5×5×7 points). The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan. If the 10g cube or both cubes are not entirely inside the measured volumes, the system issues a warning regarding the evaluated spatial peak values within the Postprocessing engine (SEMCAD). This means that if the measured volume is shifted, higher values might be possible. To get the correct values you can use a finer measurement grid for the area scan. In complicated field distributions, a large grid spacing for the area scan might miss some details and give an incorrectly interpolated peak location.
The entire evaluation of the spatial peak values is performed within the Postprocessing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into three stages:

Interpolation and Extrapolation

The probe is calibrated at the center of the dipole sensors which is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated.

In DASY4, the choice of the coordinate system defining the location of the measurement points has no influence on the uncertainty of the interpolation, Maxima Search and SAR extrapolation routines. The interpolation, Maxima Search and extrapolation routines are all based on the modified Quadratic Shepard's method [7].

10. Measurement Uncertainty

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR to be less than ±27 %〔8〕.

According to Std. C95.3〔9〕, the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy's of ±1 to 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ±2dB can be expected.

According to CENELEC〔10〕, typical worst-case uncertainty of field measurements is ±5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ±3 dB.

Source of Uncertainty	Uncertainty Value	Probability Distribution	Divisor	c_i	Standard Uncertainty ±1%(1-g)	v_i or V_{eff}
Type-A	0.9 %	Normal	1	1	0.9	9
Measurement System						
Probe Calibration	7 %	Normal	2	1	3.5	∞
Axial Isotropy	0.2dB	Rectangular	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
Hemispherical Isotropy	9.6 %	Rectangular	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
Spatial Resolution	0 %	Rectangular	$\sqrt{3}$	1	0	∞
Boundary Effect	11.0 %	Rectangular	$\sqrt{3}$	1	6.4	∞
Linearity	0.2dB	Rectangular	$\sqrt{3}$	1	2.7	∞
Detection Limit	1.0 %	Rectangular	$\sqrt{3}$	1	0.6	∞
Readout Electronics	1.0 %	Normal	1	1	1.0	∞
RF Ambient Conditions	3.0 %	Rectangular	$\sqrt{3}$	1	1.73	∞
Probe Positioner Mech. Const.	0.4 %	Rectangular	$\sqrt{3}$	1	0.2	∞
Probe Positioning	0.35 %	Rectangular	$\sqrt{3}$	1	0.2	∞
Extrapolation and Integration	3.9 %	Rectangular	$\sqrt{3}$	1	2.3	∞
Test sample Related						
Test sample Positioning	4.7 %	Normal	1	1	4.7	5
Device Holder Uncertainty	6.1 %	Normal	1	1	6.1	5
Drift of Output Power	5.0 %	Rectangular	$\sqrt{3}$	1	2.9	∞
Phantom and Setup						
Phantom Uncertainty (Including temperature effects)	4.0%	Rectangular	$\sqrt{3}$	1	2.3	∞
Liquid Conductivity (target)	5.0%	Rectangular	$\sqrt{3}$	0.6	1.7	∞
Liquid Conductivity (meas.)	10.0%	Rectangular	$\sqrt{3}$	0.6	3.4	∞
Liquid Permittivity (target)	5.0%	Rectangular	$\sqrt{3}$	0.6	1.7	∞
Liquid Permittivity (meas.)	5.0%	Rectangular	$\sqrt{3}$	0.6	1.7	∞
Combined standard uncertainty		RSS			13.5	88.7
Expanded uncertainty (Coverage factor = 2)		Normal (k=2)			27	

Table 5. Uncertainty Budget of DASY

11. SAR Test Results Summary

11.1 FRS Face SAR -1.5 cm Spacing

Ambient：

Temperature (℃)： **22 ± 2** Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **HSL450** Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1** Probe S/N： **1530**

Frequency		Modulation	Battery	Accessory	SAR_{1g}[mW/g] Duty Cycle		Power Drift	Amb. Temp	Remark
MHz	Ch.				100%	50%			
467.5625	8	FM	Ni-MH	N/A	0.665	0.333	-0.032	21.00	-
467.5625	8	FM	ALKALINE	N/A	0.751	0.376	-0.068	21.00	-
467.5625	8	FM	Ni-MH	N/A	0.245	0.123	-0.012	21.00	With USB Cable
467.5625	8	FM	Ni-MH	N/A	0.585	0.293	-0.017	21.00	With AC Adapter
467.6375	11	FM	Ni-MH	N/A	0.618	0.309	-0.010	21.00	-
467.7125	14	FM	Ni-MH	N/A	0.617	0.309	-0.020	21.00	-
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

◆ SAR values are scaled for the power drift

Frequency		Battery	SAR_{1g}[mW/g] Duty Cycle		power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift) Duty Cycle	
MHz	Ch.		100%	50%			100%	50%
467.5625	8	Ni-MH	0.665	0.333	-0.032	1.007	0.670	0.335
467.5625	8	ALKALINE	0.751	0.376	-0.068	1.016	0.763	0.382
467.5625	8	Ni-MH	0.245	0.123	-0.012	1.003	0.246	0.123
467.5625	8	Ni-MH	0.585	0.293	-0.017	1.004	0.587	0.294
467.6375	11	Ni-MH	0.618	0.309	-0.010	1.002	0.619	0.310
467.7125	14	Ni-MH	0.617	0.309	-0.020	1.005	0.620	0.310

SAR is basically proportional to average transmit power and duty cycle
(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).
SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))
Where

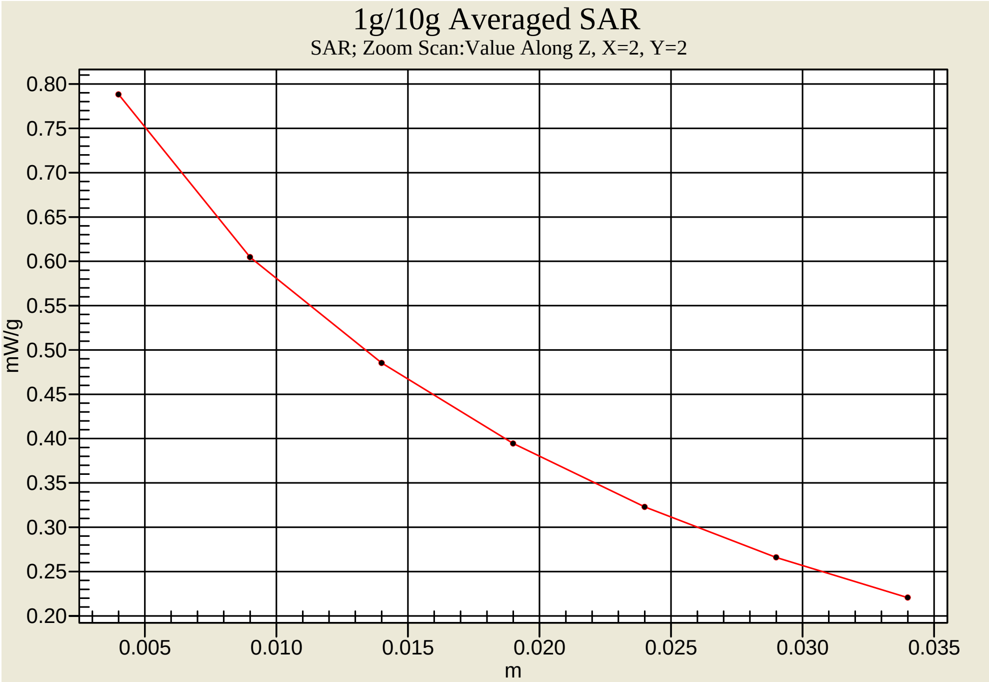
Px is the unknown power (i.e. the power at the highest drift)

Tx is the transmit duty cycle used at that unknown power.

If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Face SAR -1.5 cm Spacing _ FRS CH8 _ ALKALINE Battery

11.2 GMRS Face SAR -1.5 cm Spacing

Ambient：

Temperature (℃)： **22 ± 2** Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **HSL450** Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1** Probe S/N： **1530**

Frequency MHz	Ch.	Modulation	Battery	Accessory	SAR_{1g}[mW/g] Duty Cycle 100%	50%	Power Drift	Amb. Temp	Remark
462.5500	15	FM	Ni-MH	N/A	1.500	0.750	-0.050	21.00	-
462.6375	4	FM	Ni-MH	N/A	1.750	0.875	-0.045	21.00	-
462.6375	4	FM	ALKALINE	N/A	1.390	0.695	-0.065	21.00	-
462.6375	4	FM	Ni-MH	N/A	0.882	0.441	-0.016	21.00	With USB Cable
462.6375	4	FM	Ni-MH	N/A	1.180	0.590	-0.034	21.00	With AC Adapter
462.7250	22	FM	Ni-MH	N/A	1.510	0.755	-0.025	21.00	-
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					**1.6 W/kg (mW/g) Averaged over 1 gram**				

◆ SAR values are scaled for the power drift

Frequency MHz	Ch.	Battery	SAR_{1g}[mW/g] Duty Cycle 100%	50%	power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift) Duty Cycle 100%	50%
462.5500	15	Ni-MH	1.500	0.750	-0.050	1.012	1.517	0.759
462.6375	4	Ni-MH	1.750	0.875	-0.045	1.010	1.768	0.884
462.6375	4	ALKALINE	1.390	0.695	-0.065	1.015	1.411	0.705
462.6375	4	Ni-MH	0.882	0.441	-0.016	1.004	0.885	0.443
462.6375	4	Ni-MH	1.180	0.590	-0.034	1.008	1.189	0.595
462.7250	22	Ni-MH	1.510	0.755	-0.025	1.006	1.519	0.759

SAR is basically proportional to average transmit power and duty cycle
(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).
SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))
Where

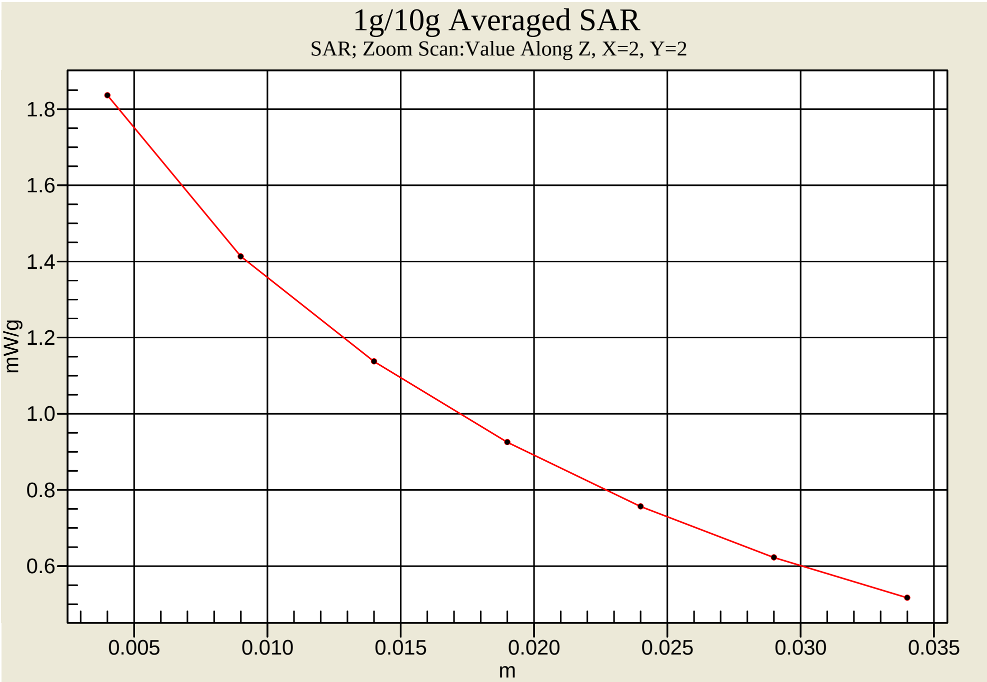
Px is the unknown power (i.e. the power at the highest drift)

Tx is the transmit duty cycle used at that unknown power.

If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Face SAR -1.5 cm Spacing _ GMRS CH4 _ Ni-MH Battery

11.3 FRS Body SAR with Headset _ 15 mm Spacing

Ambient：

Temperature (℃)： **22 ± 2** Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **MSL450** Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1** Probe S/N： **1530**

Frequency		Modulation	Battery	Accessory	SAR_{1g}[mW/g] Duty Cycle		Power Drift	Amb. Temp	Remark
MHz	Ch.				100%	50%			
467.5625	8	FM	Ni-MH	Headset	0.628	0.314	0.004	21.5	-
467.6375	11	FM	Ni-MH	Headset	0.812	0.406	-0.009	21.5	-
467.6375	11	FM	ALKALINE	Headset	0.921	0.461	-0.020	21.5	-
467.6375	11	FM	Ni-MH	Headset	0.472	0.236	-0.099	21.5	With USB Cable
467.6375	11	FM	Ni-MH	Headset	0.542	0.271	-0.008	21.5	With AC Adapter
467.7125	14	FM	Ni-MH	Headset	0.752	0.376	-0.021	21.5	-
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

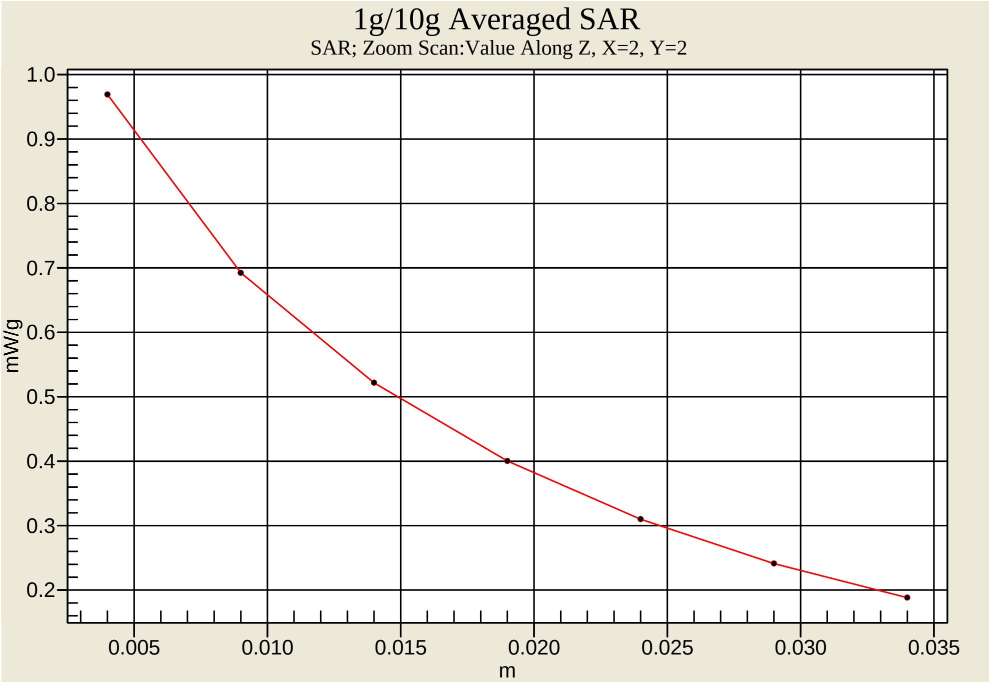
◆ SAR values are scaled for the power drift

Frequency		Battery	SAR_{1g}[mW/g] Duty Cycle		power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift) Duty Cycle	
MHz	Ch.		100%	50%			100%	50%
467.5625	8	Ni-MH	0.628	0.314	0.004	1.001	0.629	0.314
467.6375	11	Ni-MH	0.812	0.406	-0.009	1.002	0.814	0.407
467.6375	11	ALKALINE	0.921	0.461	-0.020	1.005	0.925	0.463
467.6375	11	Ni-MH	0.472	0.236	-0.099	1.023	0.483	0.241
467.6375	11	Ni-MH	0.542	0.271	-0.008	1.002	0.543	0.271
467.7125	14	Ni-MH	0.752	0.376	-0.021	1.005	0.756	0.378

SAR is basically proportional to average transmit power and duty cycle
(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).
SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))
Where
Px is the unknown power (i.e. the power at the highest drift)
Tx is the transmit duty cycle used at that unknown power.
If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Body SAR with Headset _15 mm Spacing _ FRS CH11 _ ALKALINE Battery

11.4 GMRS Body SAR with Headset _ 15 mm Spacing

Ambient：

Temperature (℃)： **22 ± 2** Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **MSL450** Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1** Probe S/N： **1530**

Frequency		Modulation	Battery	Accessory	SAR_{1g}[mW/g] Duty Cycle		Power Drift	Amb. Temp	Remark
MHz	Ch.				100%	50%			
462.5500	15	FM	Ni-MH	Headset	1.420	0.710	-0.014	21.5	-
462.6375	4	FM	Ni-MH	Headset	1.370	0.685	-0.003	21.5	-
462.7250	22	FM	Ni-MH	Headset	1.600	0.800	0.002	21.5	-
462.7250	22	FM	ALKALINE	Headset	1.340	0.670	0.002	21.5	-
462.7250	22	FM	Ni-MH	Headset	0.821	0.411	-0.025	21.5	With USB Cable
462.7250	22	FM	Ni-MH	Headset	1.050	0.525	0.004	21.5	With AC Adapter
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

◆ SAR values are scaled for the power drift

Frequency		Battery	SAR_{1g}[mW/g] Duty Cycle		power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift) Duty Cycle	
MHz	Ch.		100%	50%			100%	50%
462.5500	15	Ni-MH	1.420	0.710	-0.014	1.003	1.425	0.712
462.6375	4	Ni-MH	1.370	0.685	-0.003	1.001	1.371	0.685
462.7250	22	Ni-MH	1.600	0.800	0.002	1.000	1.601	0.800
462.7250	22	ALKALINE	1.340	0.670	0.002	1.000	1.341	0.670
462.7250	22	Ni-MH	0.821	0.411	-0.025	1.006	0.826	0.413
462.7250	22	Ni-MH	1.050	0.525	0.004	1.001	1.051	0.525

SAR is basically proportional to average transmit power and duty cycle
(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).
SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))
Where

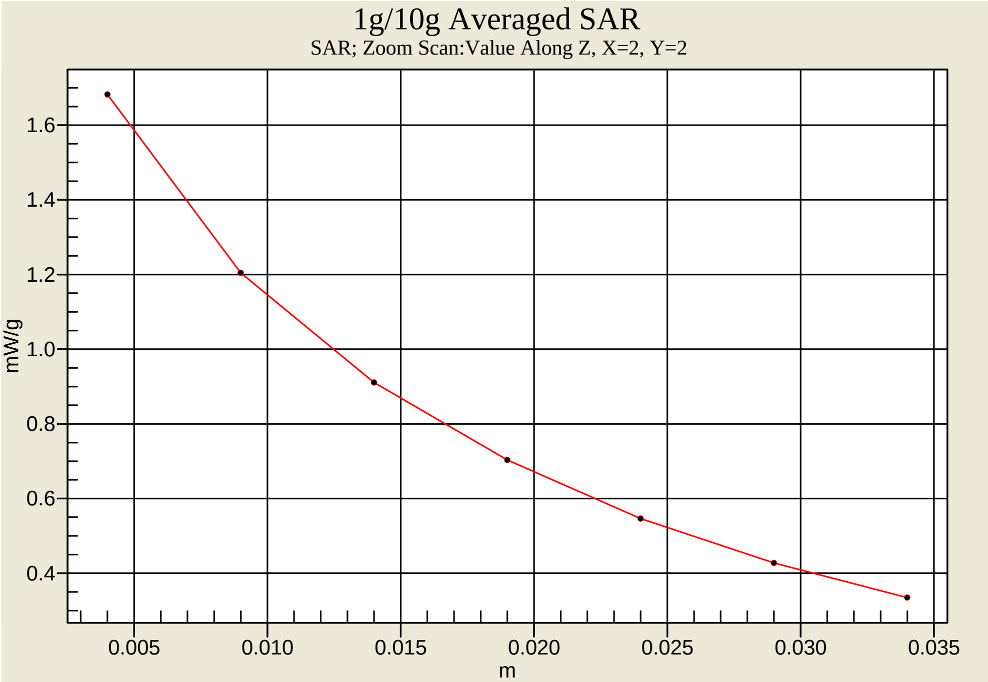
Px is the unknown power (i.e. the power at the highest drift)

Tx is the transmit duty cycle used at that unknown power.

If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Body SAR with Headset _15 mm Spacing _ GMRS CH22 _ Ni-MH Battery

11.5 FRS Body SAR with Headset and Belt Clip

Ambient：

Temperature (℃)： **22 ± 2** Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **MSL450** Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1** Probe S/N： **1530**

Frequency		Modulation	Battery	Accessory	SAR_{1g}[mW/g] Duty Cycle		Power Drift	Amb. Temp	Remark
MHz	Ch.				100%	50%			
467.5625	8	FM	Ni-MH	Headset/Belt Clip	0.370	0.185	0.077	21.5	-
467.6375	11	FM	Ni-MH	Headset/Belt Clip	0.459	0.230	-0.002	21.5	-
467.7125	14	FM	Ni-MH	Headset/Belt Clip	0.496	0.248	0.004	21.5	-
467.7125	14	FM	ALKALINE	Headset/Belt Clip	0.575	0.288	-0.016	21.5	-
467.7125	14	FM	Ni-MH	Headset/Belt Clip	0.311	0.156	-0.001	21.5	With USB Cable
467.7125	14	FM	Ni-MH	Headset/Belt Clip	0.341	0.171	0.008	21.5	With AC Adapter
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

◆ SAR values are scaled for the power drift

Frequency		Battery	SAR_{1g}[mW/g] Duty Cycle		power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift) Duty Cycle	
MHz	Ch.		100%	50%			100%	50%
467.5625	8	Ni-MH	0.370	0.185	0.077	1.018	0.377	0.188
467.6375	11	Ni-MH	0.459	0.230	-0.002	1.000	0.459	0.230
467.7125	14	Ni-MH	0.496	0.248	0.004	1.001	0.496	0.248
467.7125	14	ALKALINE	0.575	0.288	-0.016	1.004	0.577	0.289
467.7125	14	Ni-MH	0.311	0.156	-0.001	1.000	0.311	0.156
467.7125	14	Ni-MH	0.341	0.171	0.008	1.002	0.342	0.171

SAR is basically proportional to average transmit power and duty cycle

(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).

SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))

Where

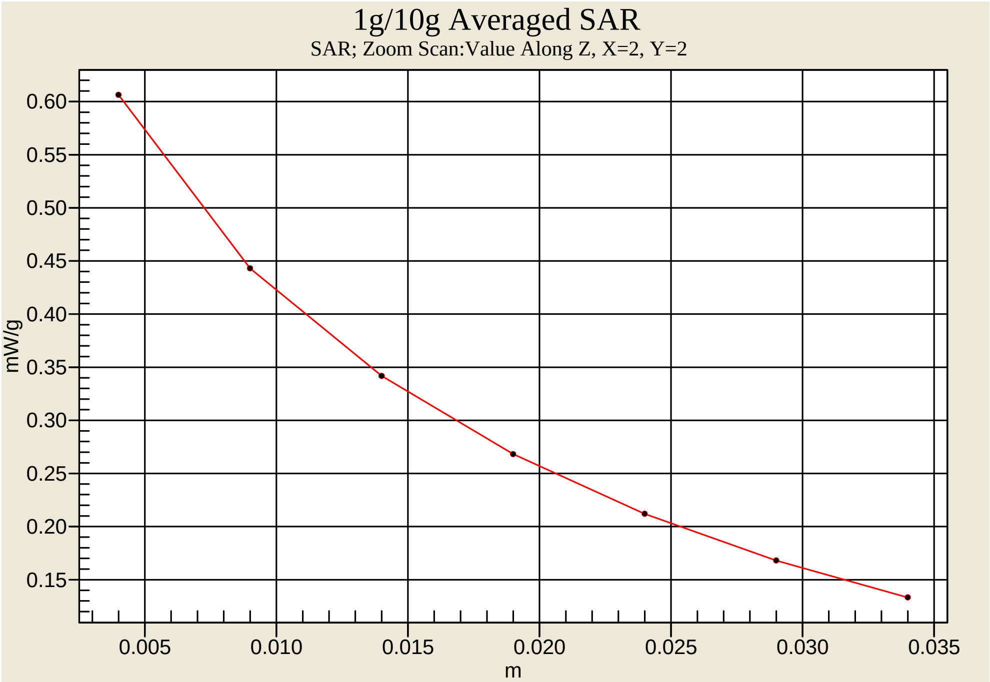
Px is the unknown power (i.e. the power at the highest drift)

Tx is the transmit duty cycle used at that unknown power.

If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Body SAR with Headset and Belt Clip _ FRS CH14 _ ALKALINE Battery

11.6 GMRS Body SAR with Headset and Belt Clip

Ambient：

Temperature (℃)： **22 ± 2**　　Relative HUMIDITY (%)： **40-70**

Liquid：

Mixture Type： **MSL450**　　Liquid Temperature (℃)： **22**

Depth of liquid (cm)： **15**

Measurement：

Crest Factor： **1**　　Probe S/N： **1530**

Frequency		Modulation	Battery	Accessory	SAR_{1g}[mW/g]		Power Drift	Amb. Temp	Remark
					Duty Cycle				
MHz	Ch.				100%	50%			
462.5500	15	FM	Ni-MH	Headset/Belt Clip	1.330	0.665	0.105	21.5	-
462.5500	15	FM	ALKALINE	Headset/Belt Clip	1.310	0.655	-0.021	21.5	-
462.5500	15	FM	Ni-MH	Headset/Belt Clip	0.364	0.182	-0.013	21.5	With USB Cable
462.5500	15	FM	Ni-MH	Headset/Belt Clip	0.703	0.352	0.008	21.5	With AC Adapter
462.6375	4	FM	Ni-MH	Headset/Belt Clip	1.310	0.655	-0.006	21.5	-
462.7250	22	FM	Ni-MH	Headset/Belt Clip	1.330	0.665	-0.013	21.5	-
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					**1.6 W/kg (mW/g) Averaged over 1 gram**				

◆ SAR values are scaled for the power drift

Frequency		Battery	SAR_{1g}[mW/g]		power drift (dB)	+ power drift 10^(dB/10)	SAR_{1g}[mW/g] (include +power drift)	
			Duty Cycle				Duty Cycle	
MHz	Ch.		100%	50%			100%	50%
462.5500	15	Ni-MH	1.330	0.665	0.105	1.024	1.363	0.681
462.5500	15	ALKALINE	1.310	0.655	-0.021	1.005	1.316	0.658
462.5500	15	Ni-MH	0.364	0.182	-0.013	1.003	0.365	0.183
462.5500	15	Ni-MH	0.703	0.352	0.008	1.002	0.704	0.352
462.6375	4	Ni-MH	1.310	0.655	-0.006	1.001	1.312	0.656
462.7250	22	Ni-MH	1.330	0.665	-0.013	1.003	1.334	0.667

SAR is basically proportional to average transmit power and duty cycle

(i.e. SAR = P x T where P is the average transmit power and T is the transmit duty cycle).

SAR(unknown) = SAR(know) x (PxTx/P(known) T(known))

Where

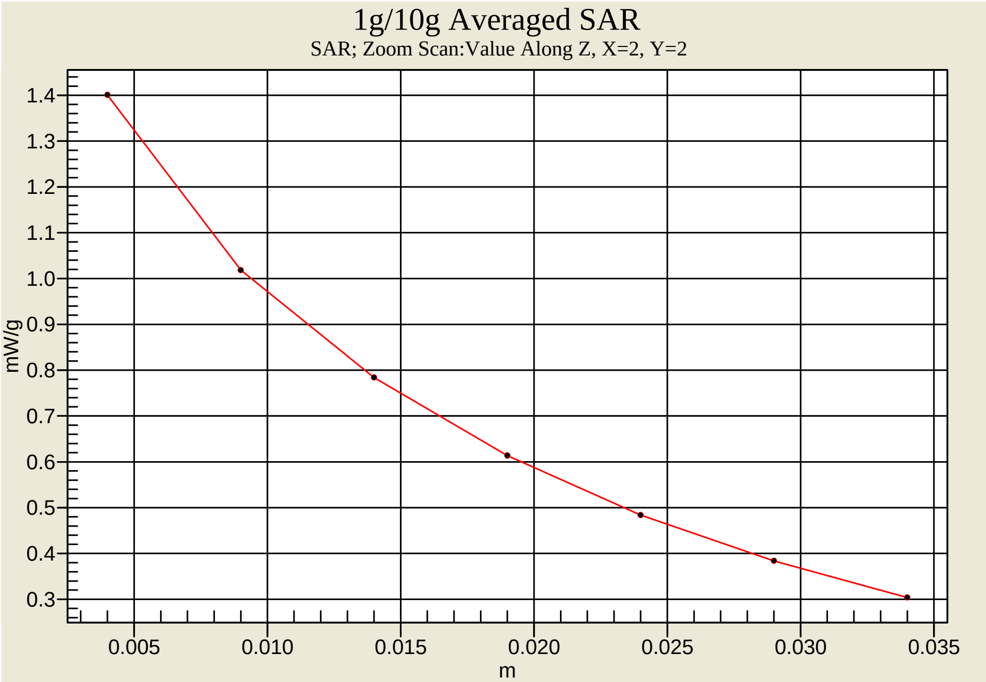
Px is the unknown power (i.e. the power at the highest drift)

Tx is the transmit duty cycle used at that unknown power.

If transmitter duty cycle is the same then it should be a relationship of Px/Pknown)

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Body SAR with Headset and Belt Clip _ GMRS CH15 _ Ni-MH Battery

11.7 EUT Setup up Photo

Face Position

Figure 17. EUT Face to Phantom 15 mm spacing

Face Position

Figure 18. EUT Face to Phantom 15 mm spacing (Charging by USB Cable via computer)

Face Position

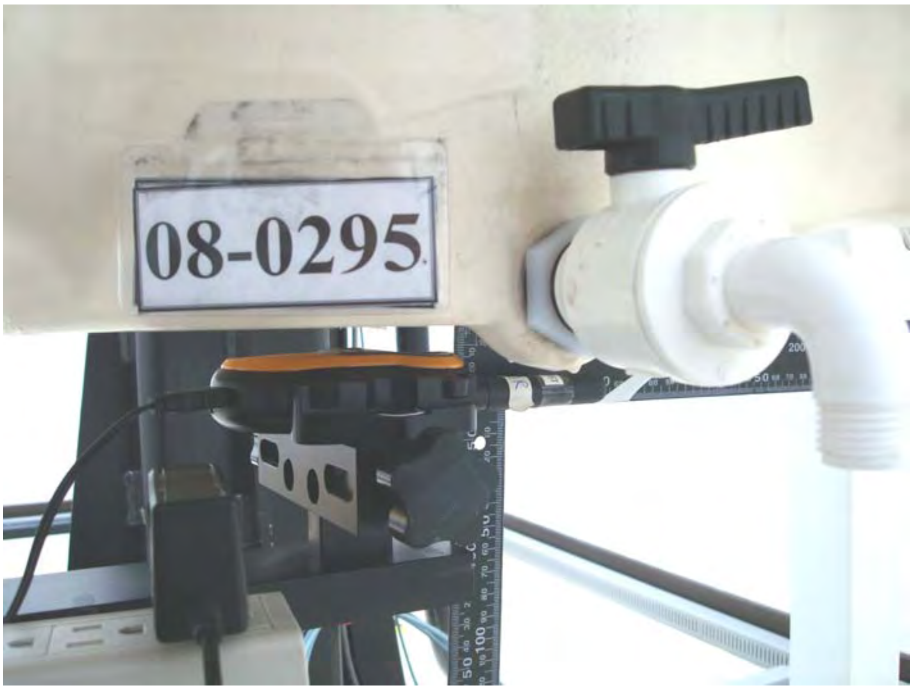


Figure 19. EUT Face to Phantom 15 mm spacing (Charging by AC Adapter)

Body Position

Figure 20. EUT with Headset to Phantom 15 mm spacing

Body Position

Figure 21. EUT with Headset to Phantom 15 mm spacing (Charging by USB Cable via computer)

Body Position

Figure 22. EUT with Headset to Phantom 15 mm spacing (Charging by AC Adapter)

Body Position

Figure 23. EUT with Headset & Belt clip

Body Position

Figure 24. EUT with Headset & Belt clip (Charging by USB Cable via computer)

Body Position

Figure 25. EUT with Headset and Belt clip (Charging by AC Adapter)

11.8 Std. C95.1-1999 RF Exposure Limit

Human Exposure	Population Uncontrolled Exposure (W/kg) or (mW/g)	Occupational Controlled Exposure (W/kg) or (mW/g)
Spatial Peak SAR* (head)	1.60	8.00
Spatial Peak SAR** (Whole Body)	0.08	0.40
Spatial Peak SAR*** (Partial-Body)	1.60	8.00
Spatial Peak SAR**** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 6. Safety Limits for Partial Body Exposure

Notes：

***** 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 Average value of the SAR averaged over the whole - body.

******* The Spatial Average value of the SAR averaged over the partial - body.

******** 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.

Population / Uncontrolled Environments：are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Occupational / Controlled Environments：are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

12. Conclusion

The SAR test values found for the portable mobile device **Giant Electronics Ltd. Trade Mark：Motorola Model(s)：MH230** are below the maximum recommended level of 1.6 W/kg (mW/g).

13. References

[1] Std. C95.1-1999, "*American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300KHz to 100GHz",* New York.

[2] NCRP, National Council on Radiation Protection and Measurements, "*Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields"*, NCRP report NO. 86, 1986.

[3] T. Schmid, O. Egger, and N. Kuster, "*Automatic E-field scanning system for dosimetric assessments*", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp, 105-113, Jan. 1996.

[4] K. Poković, T. Schmid, and N. Kuster, "*Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequency*", in ICECOM'97, Dubrovnik, October 15-17, 1997, pp.120-124.

[5] K. Poković, T. Schmid, and N. Kuster, "*E-field probe with improved isotropy in brain simulating liquids*", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.

[6] N. Kuster, and Q. Balzano, "*Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz"*, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[7] Robert J. Renka, "*Multivariate Interpolation Of Large Sets Of Scattered Data*", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988 , pp. 139-148.

[8] N. Kuster, R. Kastle, T. Schmid, *Dosimetric evaluation of mobile communications equipment with known precision*, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[9] Std. C95.3-1991, "*IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave,* New York: IEEE, Aug. 1992.

[10] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), *Human Exposure to Electromagnetic Fields High-frequency*: 10KHz-300GHz, Jan. 1995.

Appendix A - System Performance Check

See following Attached Pages for System Performance Check.

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 01:02:02

System Performance Check at 450 MHz_20081215_Head

DUT: Dipole 450MHz; Type: D450V2; Serial: D450V2 SN:1021

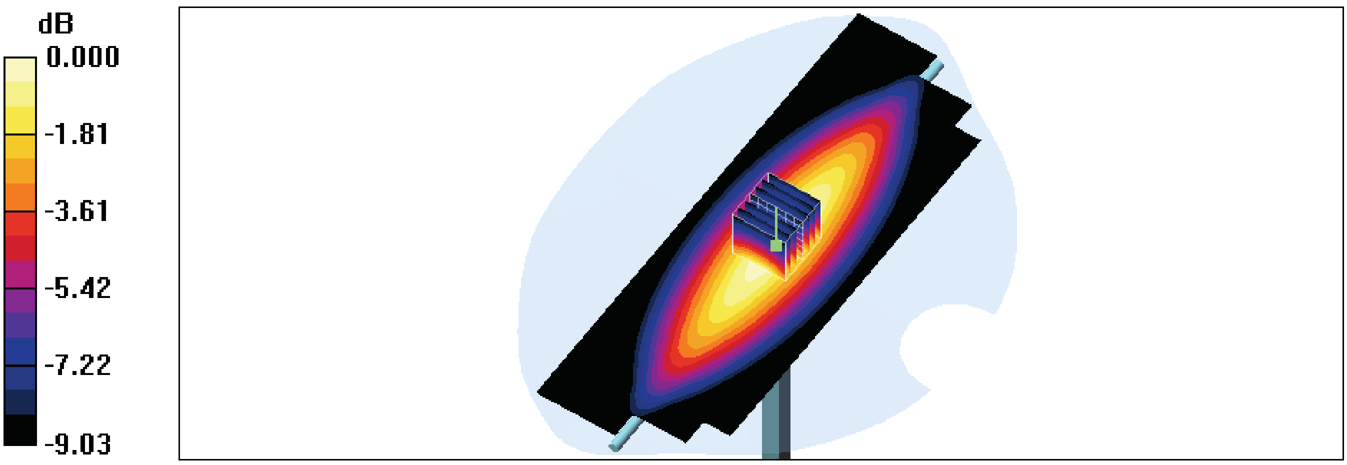
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.88 mho/m; ε_r = 44.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

System Performance Check at 450 MHz/Area Scan (61x201x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.05 mW/g

System Performance Check at 450 MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.4 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 3.13 W/kg
SAR(1 g) = 1.92 mW/g; SAR(10 g) = 1.25 mW/g
Maximum value of SAR (measured) = 2.05 mW/g



0 dB = 2.05mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/10 PM 14:00:12

System Performance Check at 450 MHz_20081210_Body

DUT: Dipole 450MHz; Type: D450V2; Serial: D450V2 SN:1021

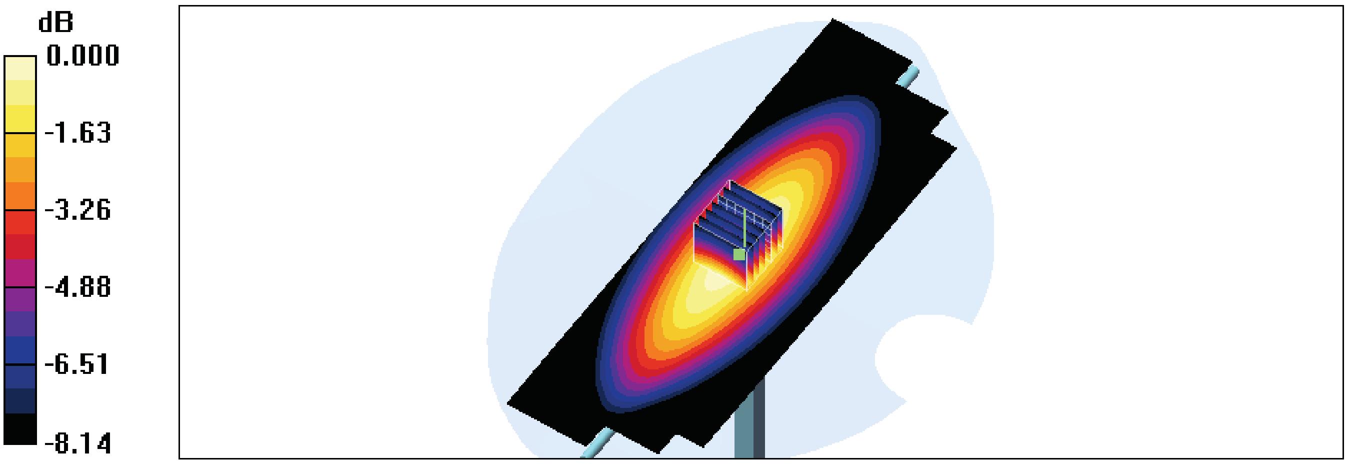
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 56.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

System Performance Check at 450 MHz/Area Scan (61x201x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.93 mW/g

System Performance Check at 450 MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 45.1 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 2.80 W/kg
SAR(1 g) = 1.82 mW/g; SAR(10 g) = 1.27 mW/g
Maximum value of SAR (measured) = 1.94 mW/g



0 dB = 1.94mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/14 AM 04:10:49

System Performance Check at 450 MHz_20081214_Body

DUT: Dipole 450MHz; Type: D450V2; Serial: D450V2 SN:1021

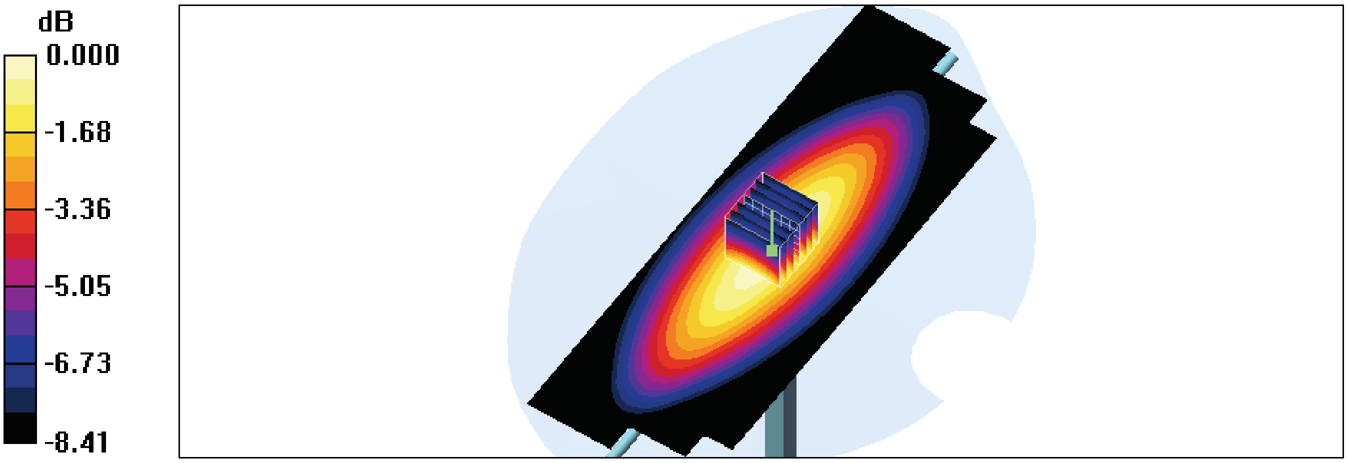
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 56.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

System Performance Check at 450 MHz/Area Scan (61x201x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.90 mW/g

System Performance Check at 450 MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 45.7 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 2.82 W/kg
SAR(1 g) = 1.81 mW/g; SAR(10 g) = 1.24 mW/g
Maximum value of SAR (measured) = 1.91 mW/g



0 dB = 1.91mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 09:22:36

System Performance Check at 450 MHz_20081215_Body

DUT: Dipole 450MHz; Type: D450V2; Serial: D450V2 SN:1021

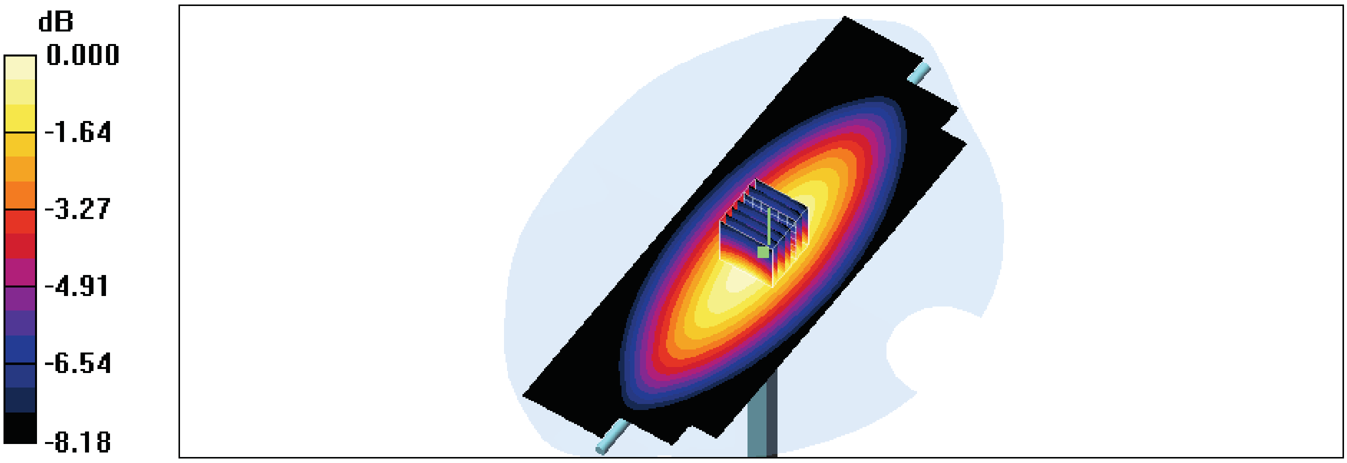
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 56.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

System Performance Check at 450 MHz/Area Scan (61x201x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.90 mW/g

System Performance Check at 450 MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.1 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.8 mW/g; SAR(10 g) = 1.25 mW/g
Maximum value of SAR (measured) = 1.90 mW/g



0 dB = 1.90mW/g

Appendix B - SAR Measurement Data

See following Attached Pages for SAR Measurement Data.

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 01:33:18

Flat_FRS CH8_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

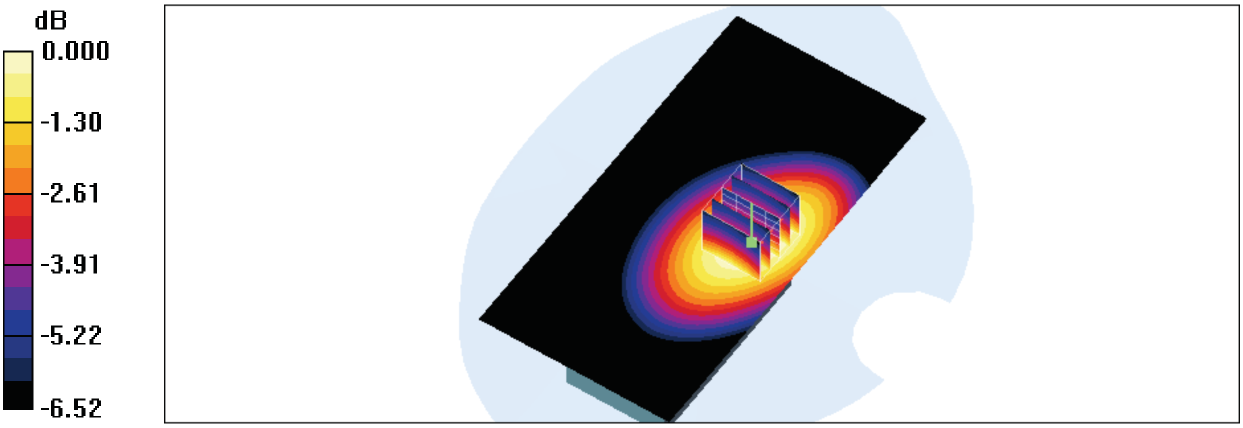
Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.732 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.5 V/m; Power Drift = -0.032 dB
Peak SAR (extrapolated) = 0.894 W/kg
SAR(1 g) = 0.665 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 0.696 mW/g



0 dB = 0.696mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 02:28:43

Flat_FRS CH8_Brain_Alkaline_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

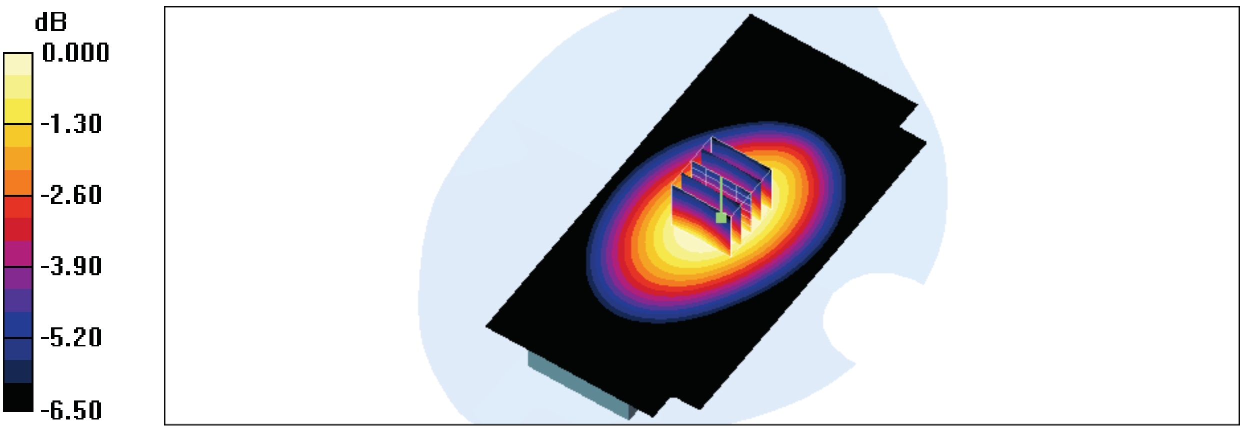
- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.881 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.9 V/m; Power Drift = -0.068 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.751 mW/g; SAR(10 g) = 0.569 mW/g
Maximum value of SAR (measured) = 0.788 mW/g



0 dB = 0.788mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 02:56:09

Flat_FRS CH8_Brain_Ni-MH_USB Cable_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

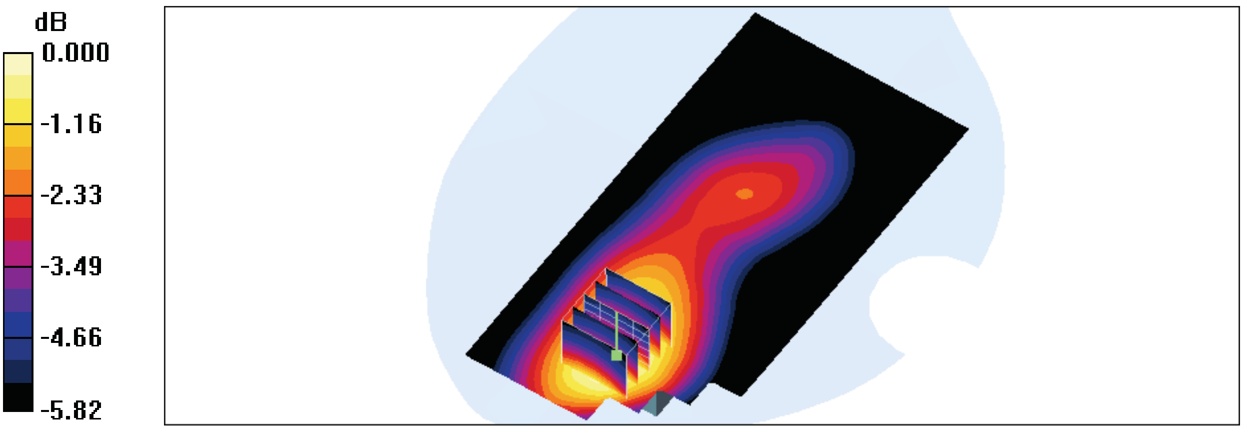
Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.264 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.321 W/kg
SAR(1 g) = 0.245 mW/g; SAR(10 g) = 0.189 mW/g
Maximum value of SAR (measured) = 0.257 mW/g



0 dB = 0.257mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 03:31:49

Flat_FRS CH8_Brain_Ni-MH_USB AC adaptor_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

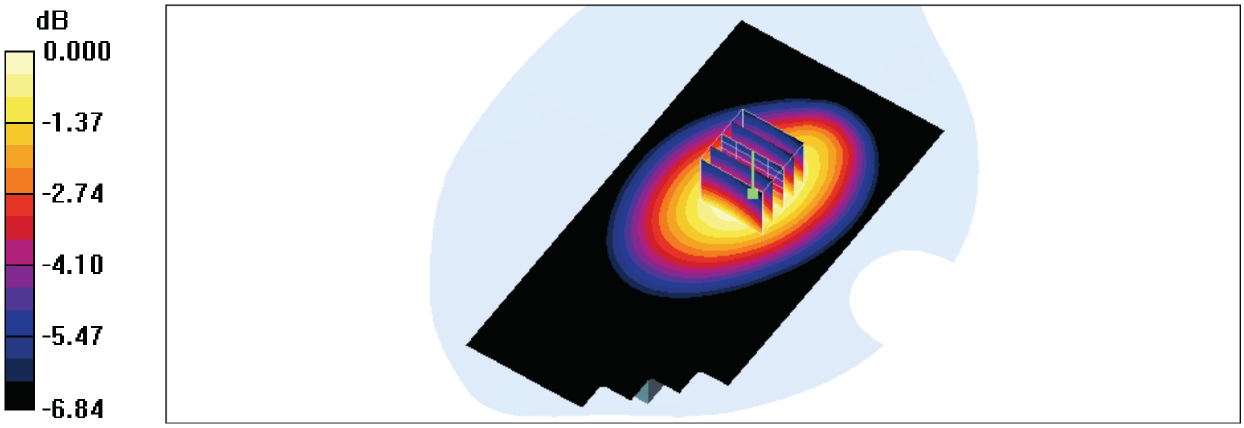
Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.648 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.8 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 0.795 W/kg
SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.440 mW/g
Maximum value of SAR (measured) = 0.612 mW/g



0 dB = 0.612mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 01:52:06

Flat_FRS CH11_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

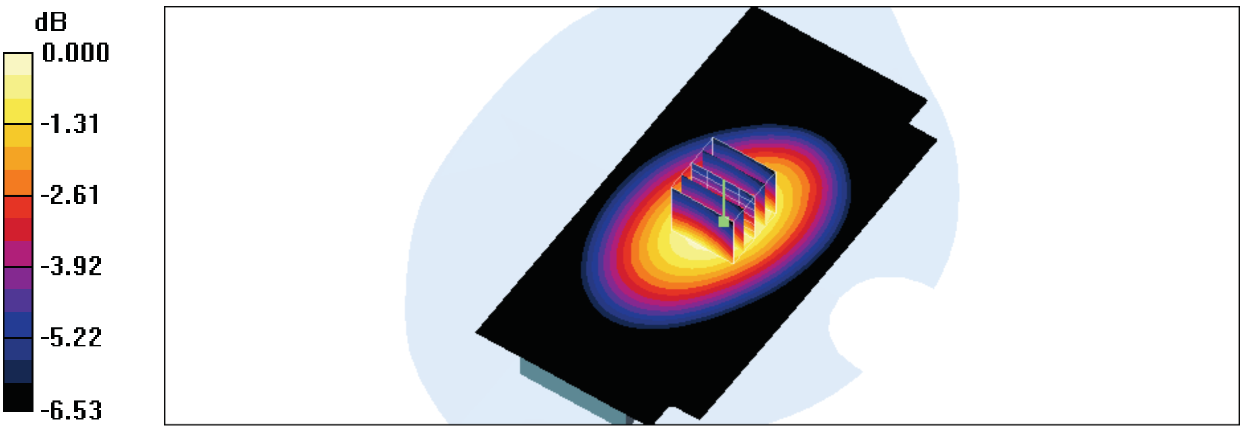
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.655 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.1 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.830 W/kg
SAR(1 g) = 0.618 mW/g; SAR(10 g) = 0.470 mW/g
Maximum value of SAR (measured) = 0.648 mW/g



0 dB = 0.648mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 02:09:57

Flat_FRS CH14_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

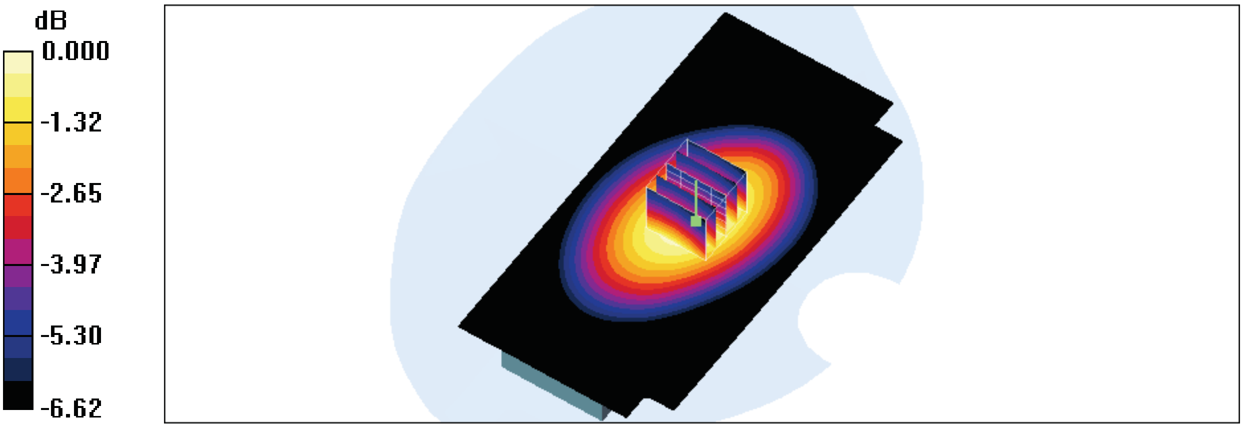
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; σ = 0.891 mho/m; ε_r = 44.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.661 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 0.830 W/kg
SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.468 mW/g
Maximum value of SAR (measured) = 0.647 mW/g



0 dB = 0.647mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/10 PM 10:47:59

Flat_FRS CH8_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

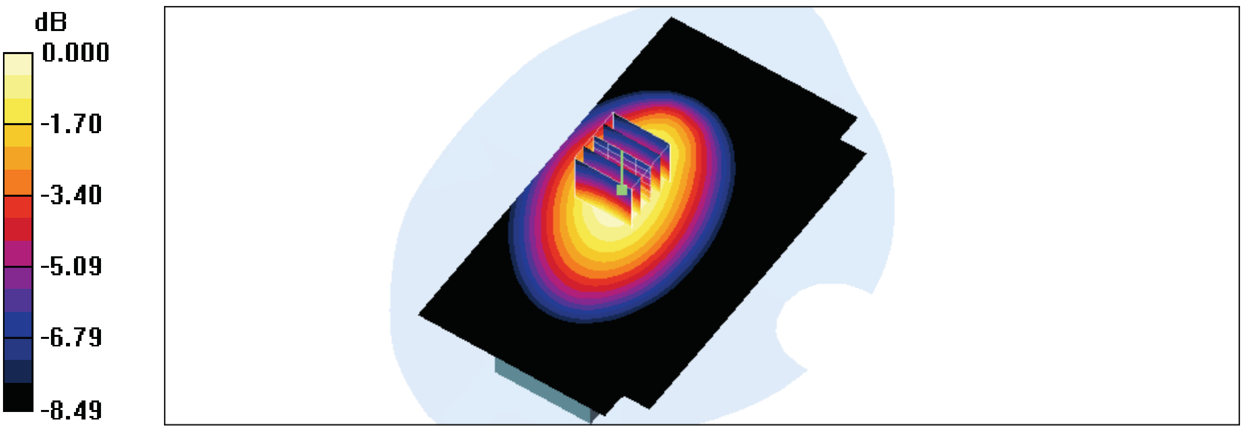
Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.687 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.0 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 0.909 W/kg
SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.451 mW/g
Maximum value of SAR (measured) = 0.660 mW/g



0 dB = 0.660mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/10 PM 11:12:04

Flat_FRS CH11_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

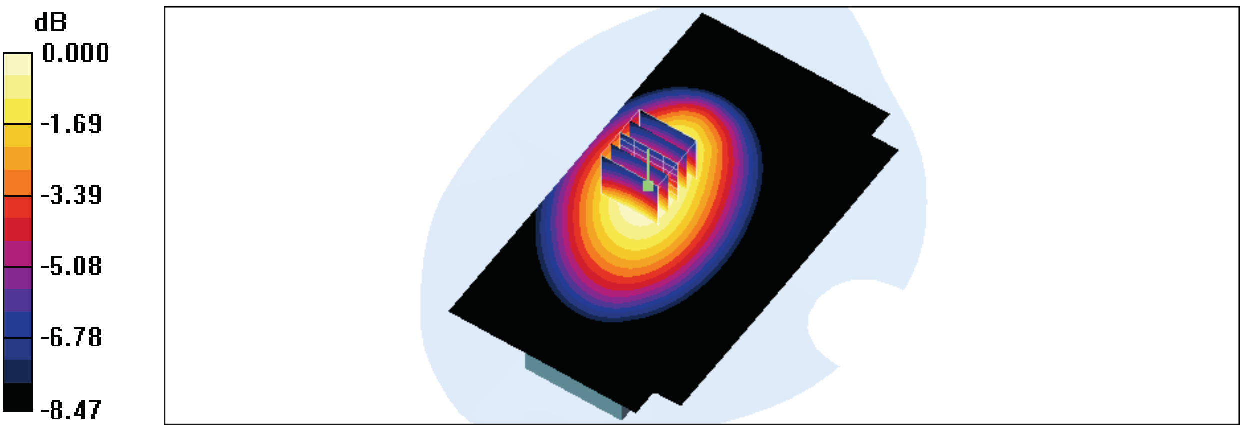
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.903 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.5 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.812 mW/g; SAR(10 g) = 0.585 mW/g
Maximum value of SAR (measured) = 0.856 mW/g



0 dB = 0.856mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 12:14:48

Flat_FRS CH11_Headset_muscle_Alkaline_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

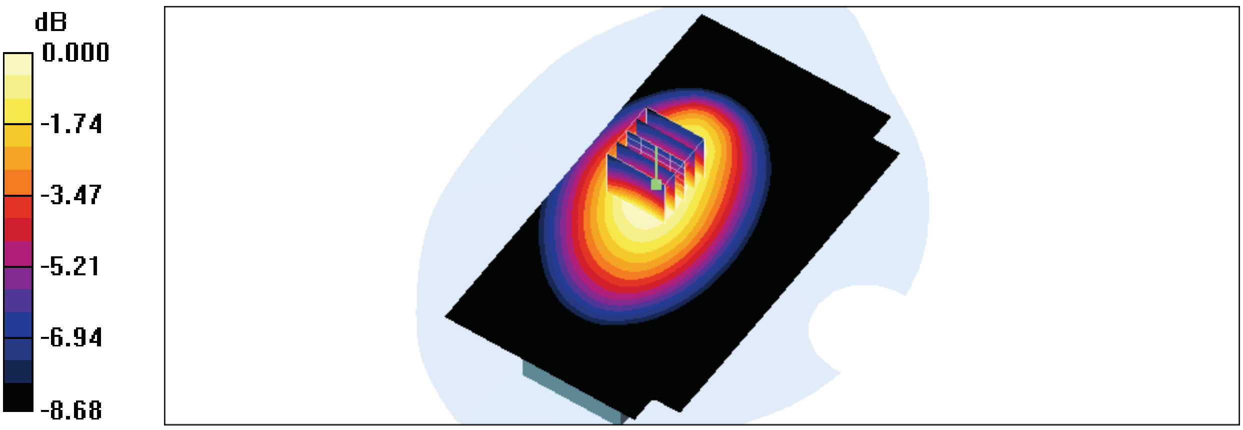
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.04 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.2 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.921 mW/g; SAR(10 g) = 0.659 mW/g
Maximum value of SAR (measured) = 0.969 mW/g



0 dB = 0.969mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 10:57:03

Flat_FRS CH11_Headset_muscle_Ni-MH_USB Cable_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

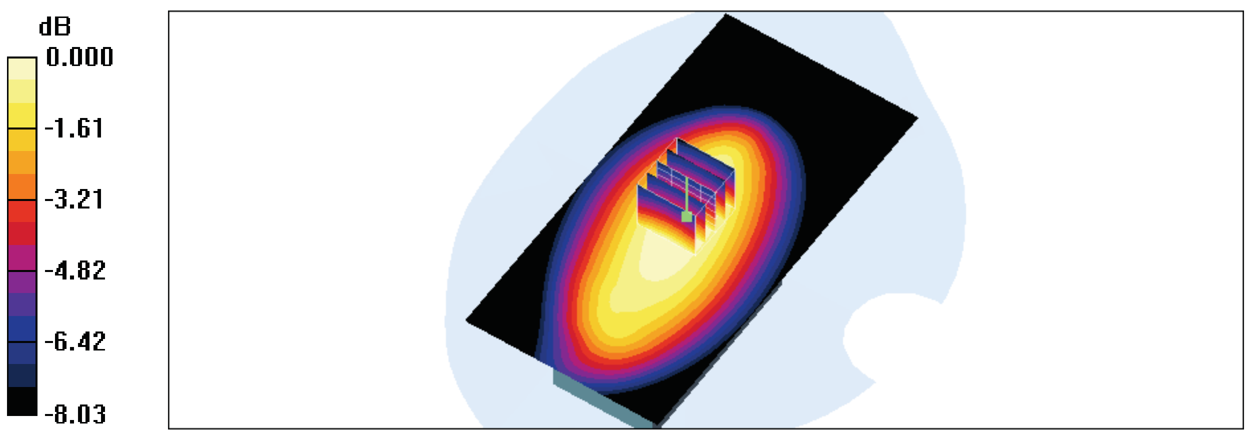
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.515 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.1 V/m; Power Drift = -0.099 dB
Peak SAR (extrapolated) = 0.683 W/kg
SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.493 mW/g



0 dB = 0.493mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 11:14:37

Flat_FRS CH11_Headset_muscle_Ni-MH_USB AC adaptor_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

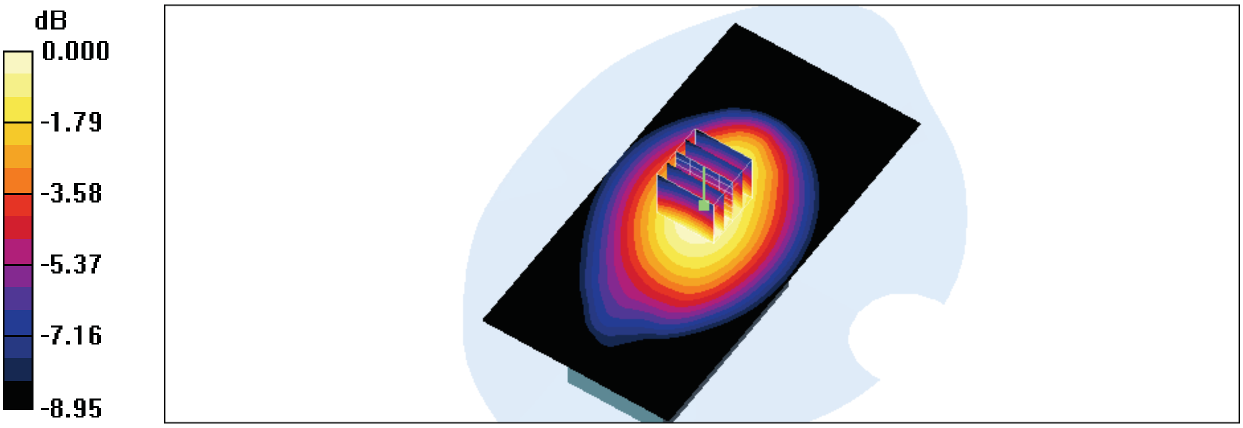
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.597 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.2 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 0.800 W/kg
SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.385 mW/g
Maximum value of SAR (measured) = 0.573 mW/g



0 dB = 0.573mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/10 PM 11:32:12

Flat_FRS CH14_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

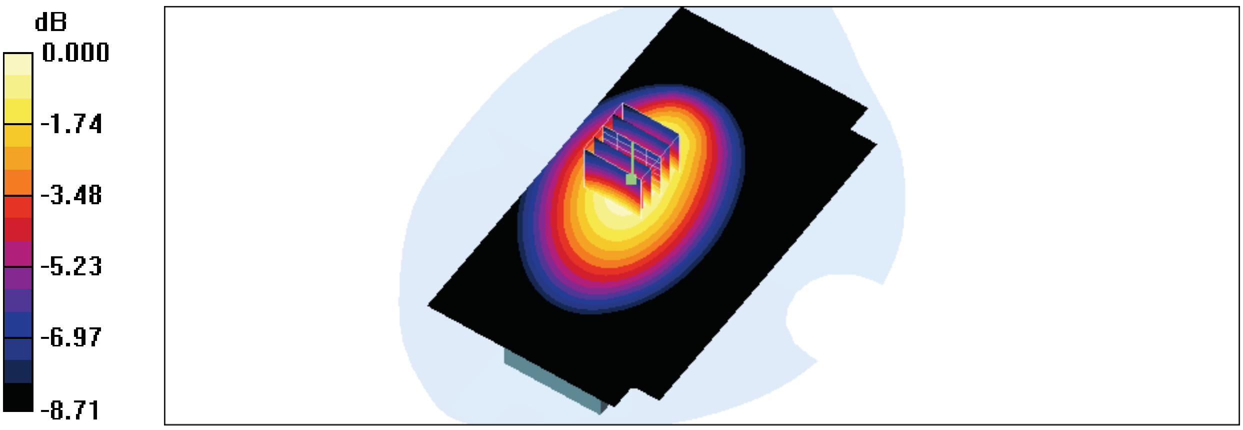
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.811 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.4 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.752 mW/g; SAR(10 g) = 0.536 mW/g
Maximum value of SAR (measured) = 0.795 mW/g



0 dB = 0.795mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 12:58:50

Flat_FRS CH8_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

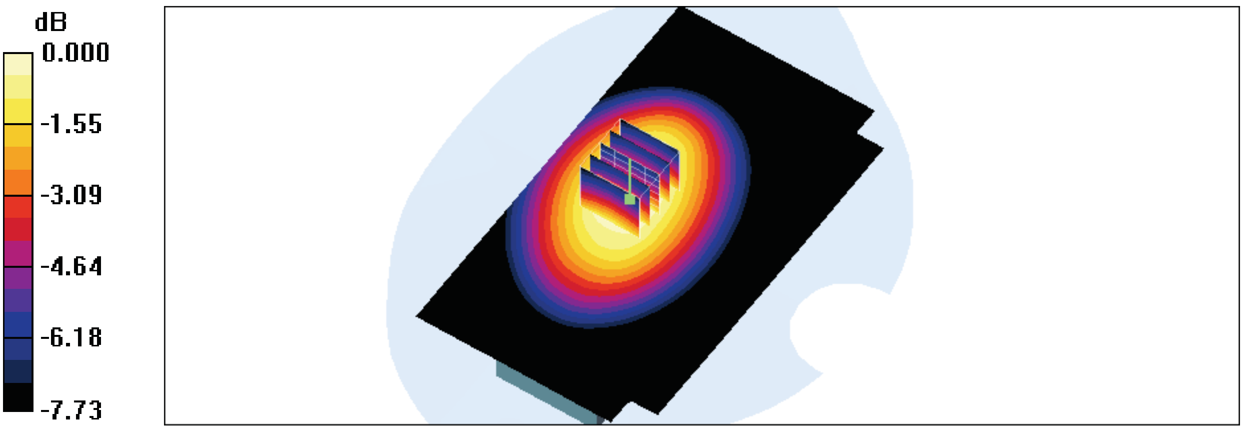
Communication System: FRS; Frequency: 467.5625 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.5625 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.434 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.1 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.269 mW/g
Maximum value of SAR (measured) = 0.390 mW/g



0 dB = 0.390mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 12:38:39

Flat_FRS CH11_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

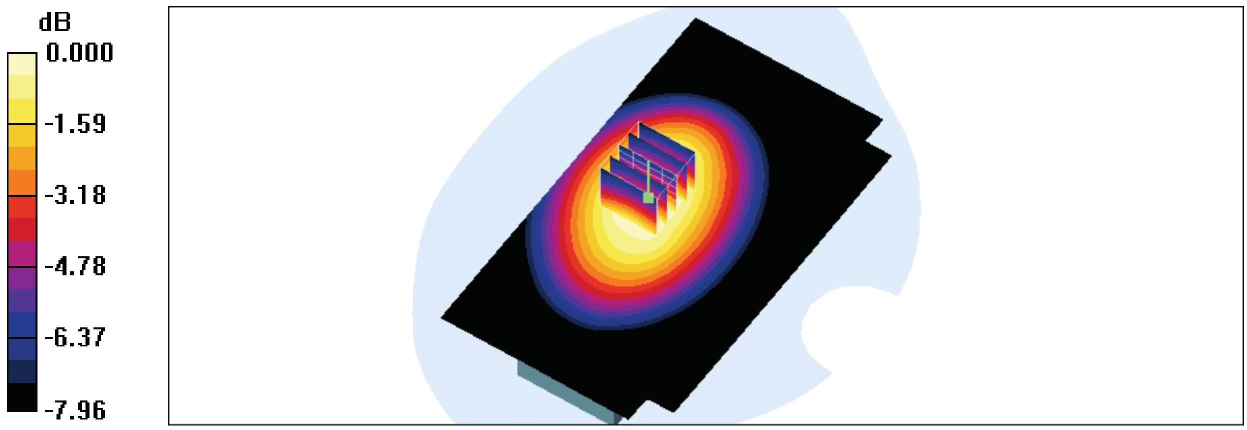
Communication System: FRS; Frequency: 467.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.6375 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.526 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.6 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.653 W/kg
SAR(1 g) = 0.459 mW/g; SAR(10 g) = 0.334 mW/g
Maximum value of SAR (measured) = 0.483 mW/g



0 dB = 0.483mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/10 PM 11:51:42

Flat_FRS CH14_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

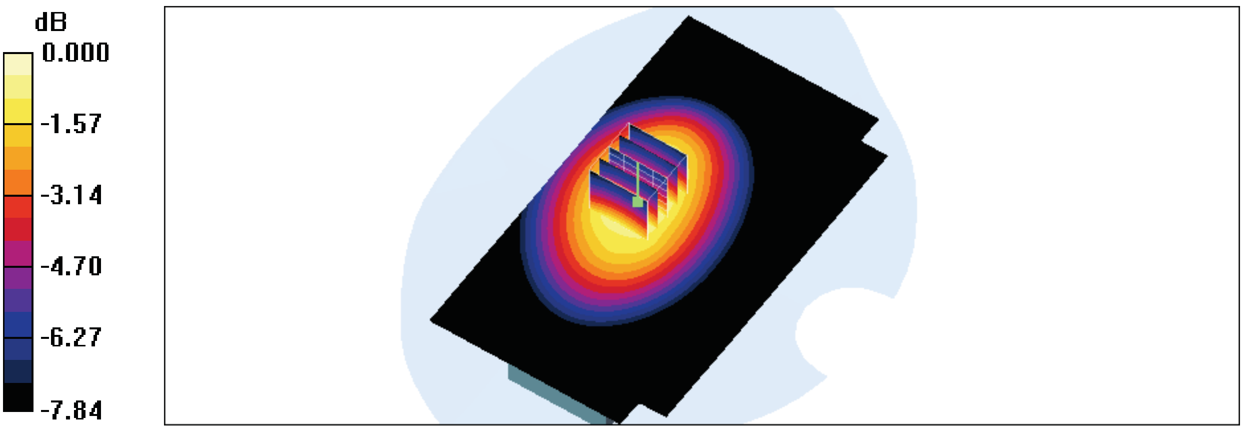
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; $\sigma = 0.951$ mho/m; $\varepsilon_r = 55.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.525 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.1 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 0.711 W/kg
SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.359 mW/g
Maximum value of SAR (measured) = 0.524 mW/g



0 dB = 0.524mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 01:23:04

Flat_FRS CH14_Headset_muscle_belt clip_Alkaline

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

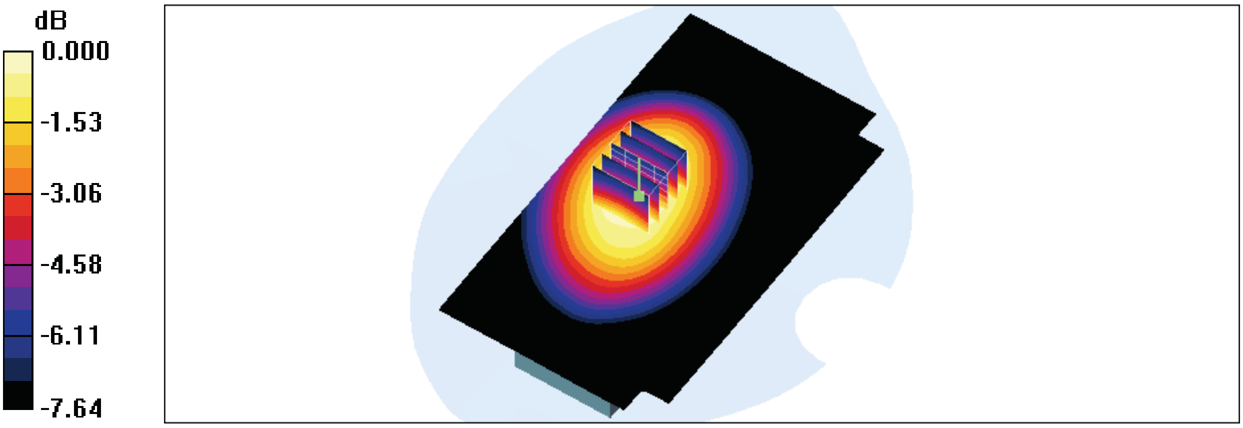
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.670 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.9 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.813 W/kg
SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.420 mW/g
Maximum value of SAR (measured) = 0.606 mW/g



0 dB = 0.606mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 02:24:50

Flat_FRS CH14_Headset_muscle_belt clip_Ni-MH_USB Cable

DUT: MH230; Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

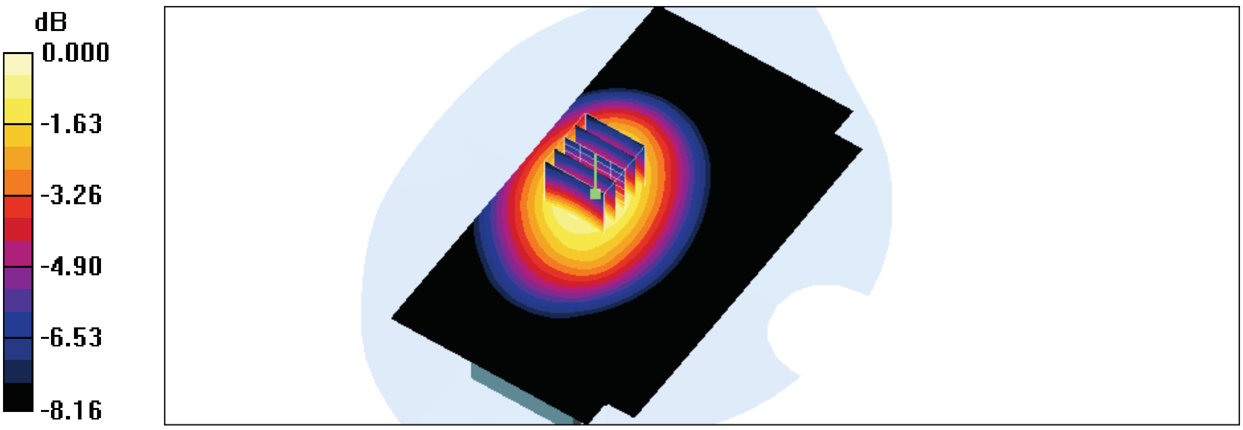
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; $\sigma = 0.951$ mho/m; $\varepsilon_r = 55.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.334 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 0.440 W/kg
SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.225 mW/g
Maximum value of SAR (measured) = 0.326 mW/g



0 dB = 0.326mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 02:45:23

Flat_FRS CH14_Headset_muscle_belt clip_Ni-MH_USB AC adaptor

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

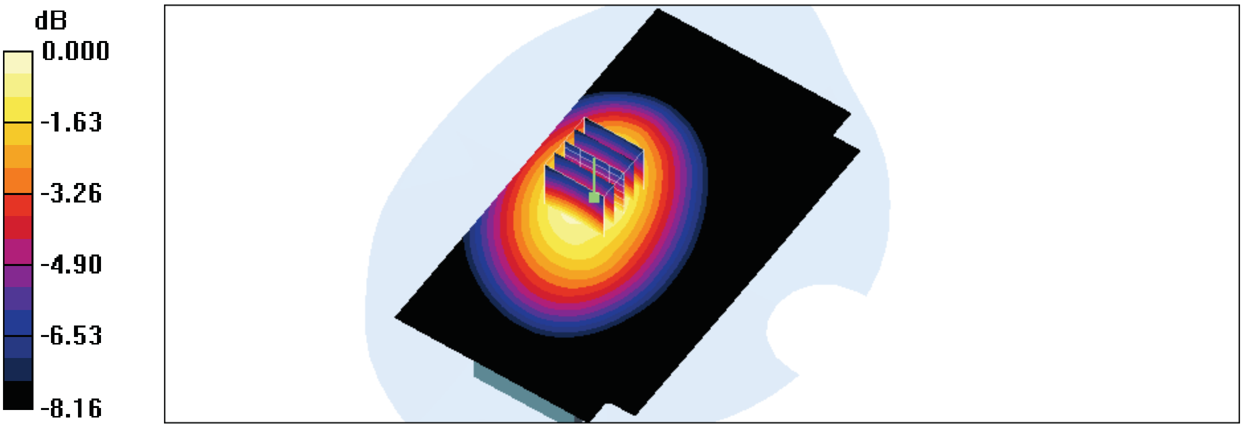
Communication System: FRS; Frequency: 467.7125 MHz;Duty Cycle: 1:1
Medium parameters used: f = 467.7125 MHz; σ = 0.951 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.363 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.4 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 0.483 W/kg
SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.247 mW/g
Maximum value of SAR (measured) = 0.356 mW/g



0 dB = 0.356mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 03:57:23

Flat_GMRS CH15_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

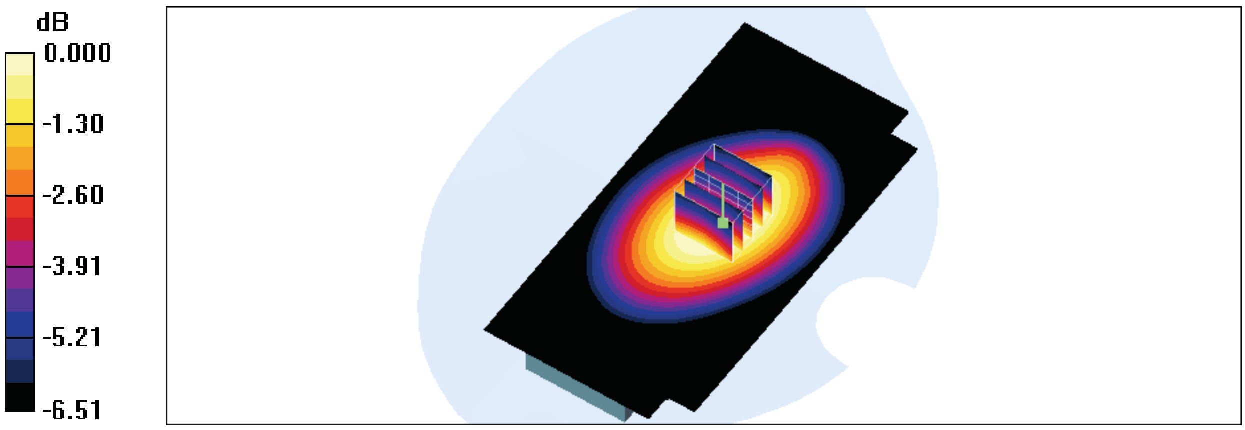
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.77 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.8 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 2.02 W/kg
SAR(1 g) = 1.5 mW/g; SAR(10 g) = 1.14 mW/g
Maximum value of SAR (measured) = 1.58 mW/g



0 dB = 1.58mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 04:24:32

Flat_GMRS CH4_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

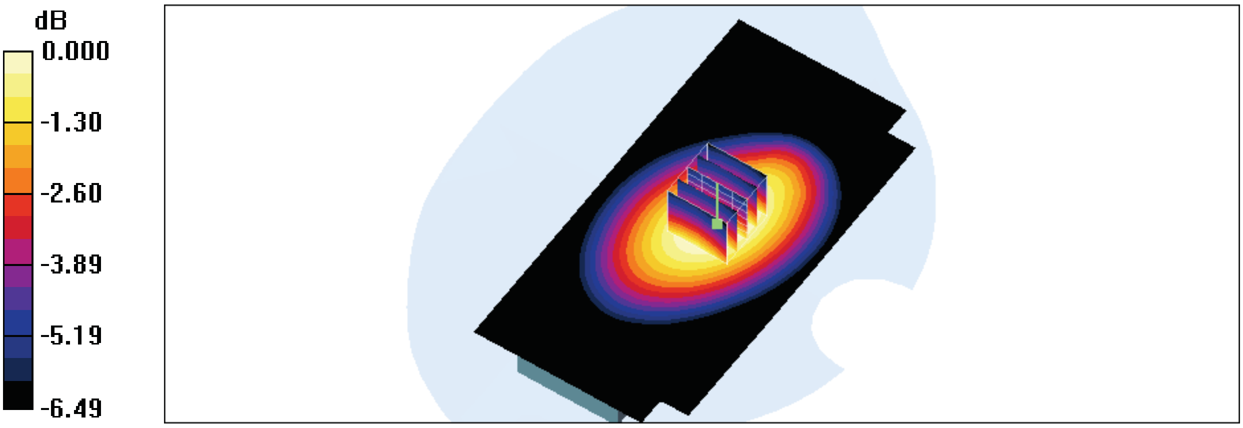
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.98 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.4 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 2.35 W/kg
SAR(1 g) = 1.75 mW/g; SAR(10 g) = 1.33 mW/g
Maximum value of SAR (measured) = 1.84 mW/g



0 dB = 1.84mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 05:18:32

Flat_GMRS CH4_Brain_Alkaline_15mm

DUT: MH230; Type Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

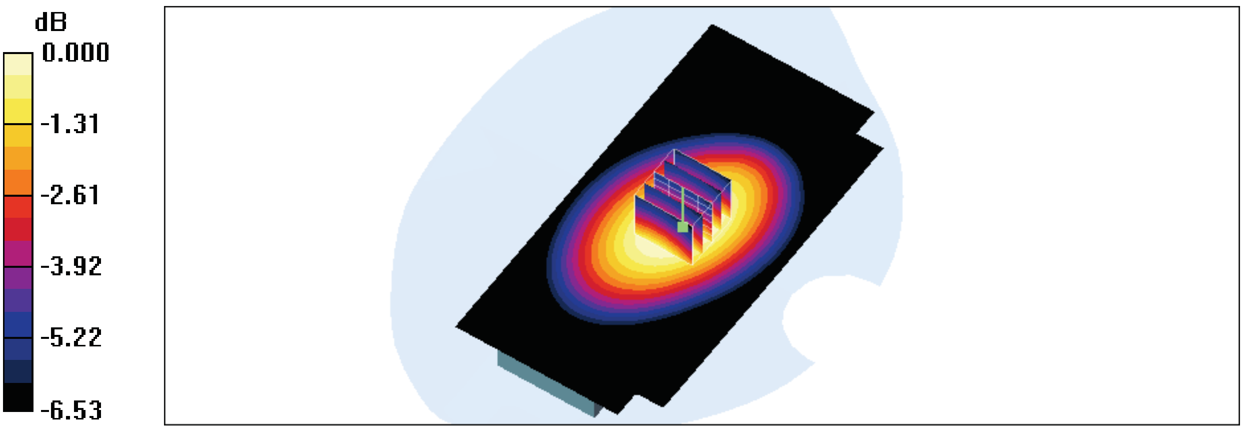
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.62 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.0 V/m; Power Drift = -0.065 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.39 mW/g; SAR(10 g) = 1.06 mW/g
Maximum value of SAR (measured) = 1.46 mW/g



0 dB = 1.46mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 05:00:20

Flat_GMRS CH4_Brain_Ni-MH_USB Cable_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

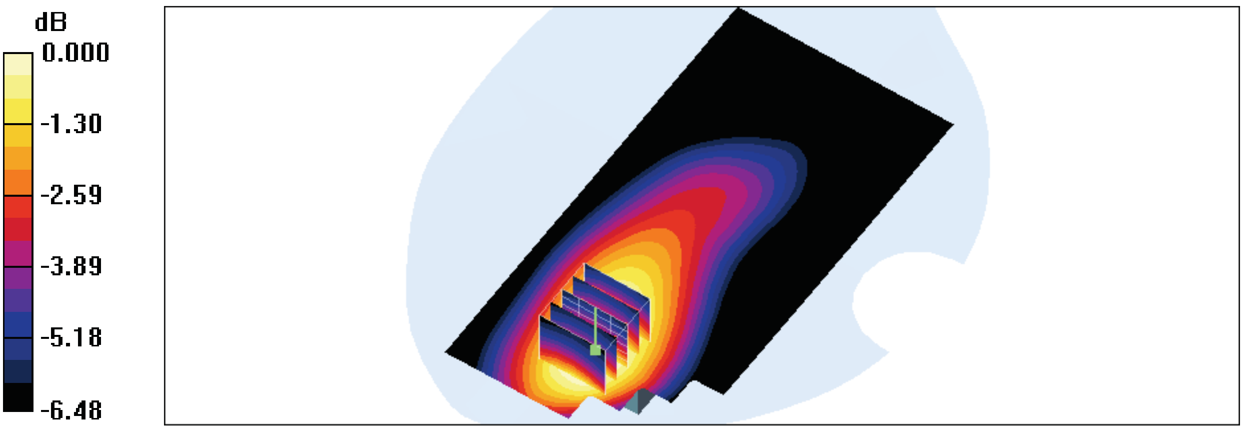
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.0 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.664 mW/g
Maximum value of SAR (measured) = 0.924 mW/g



0 dB = 0.924mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 05:42:07

Flat_GMRS CH4_Brain_Ni-MH_USB AC adaptor_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

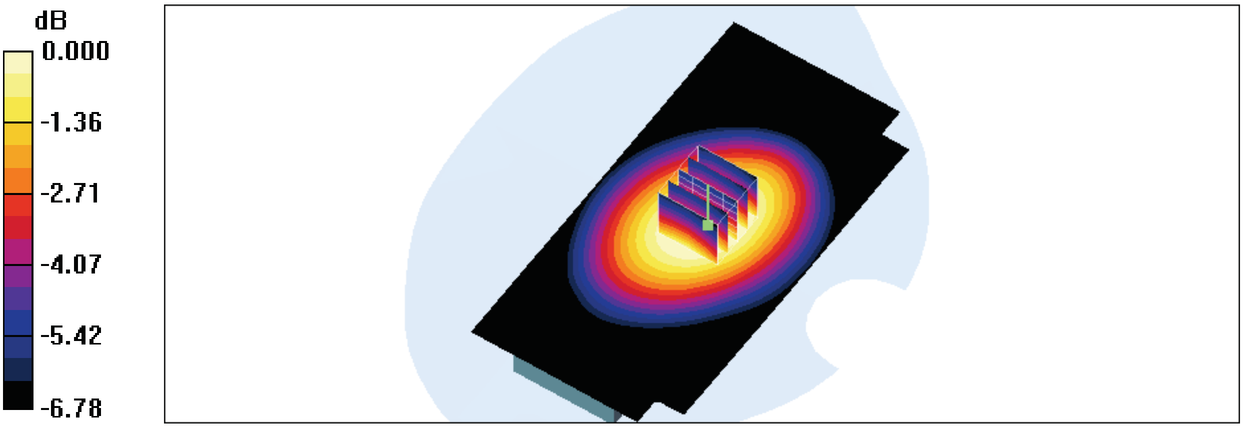
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.42 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 41.0 V/m; Power Drift = -0.034 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.896 mW/g
Maximum value of SAR (measured) = 1.24 mW/g



0 dB = 1.24mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 04:42:16

Flat_GMRS CH22_Brain_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

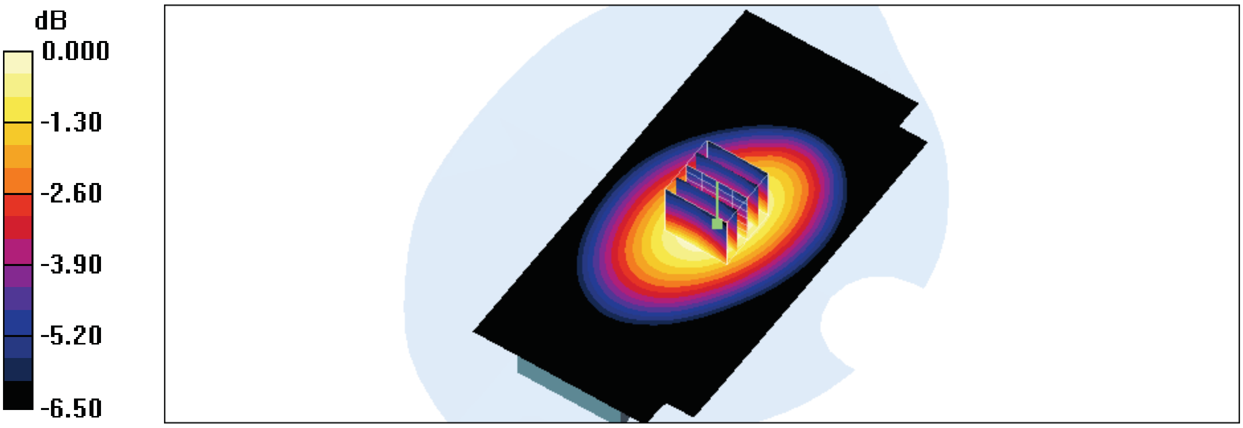
Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; σ = 0.888 mho/m; ε_r = 44.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.06, 7.06, 7.06); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.68 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.8 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 2.03 W/kg
SAR(1 g) = 1.51 mW/g; SAR(10 g) = 1.15 mW/g
Maximum value of SAR (measured) = 1.59 mW/g



0 dB = 1.59mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 PM 12:40:07

Flat_GMRS CH15_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

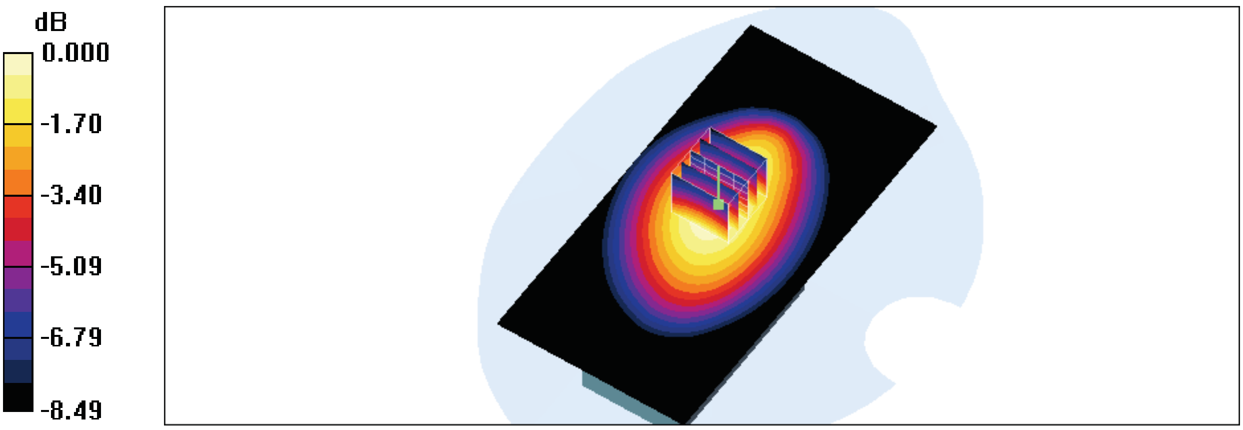
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.52 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.2 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 1.42 mW/g; SAR(10 g) = 1.02 mW/g
Maximum value of SAR (measured) = 1.50 mW/g



0 dB = 1.50mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 11:43:07

Flat_GMRS CH4_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

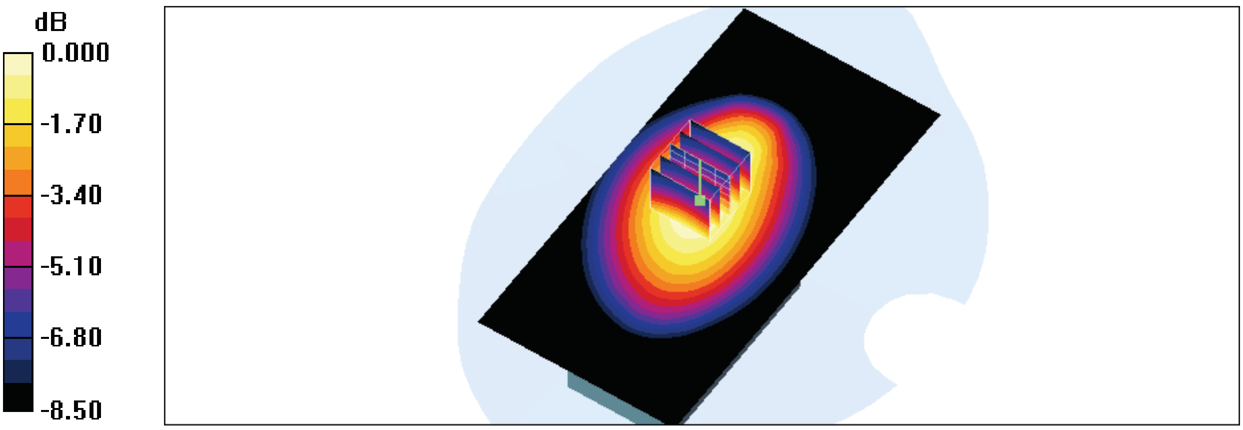
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.50 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.0 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 2.02 W/kg
SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.982 mW/g
Maximum value of SAR (measured) = 1.44 mW/g



0 dB = 1.44mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 11:23:26

Flat_GMRS CH22_Headset_muscle_Ni-MH_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

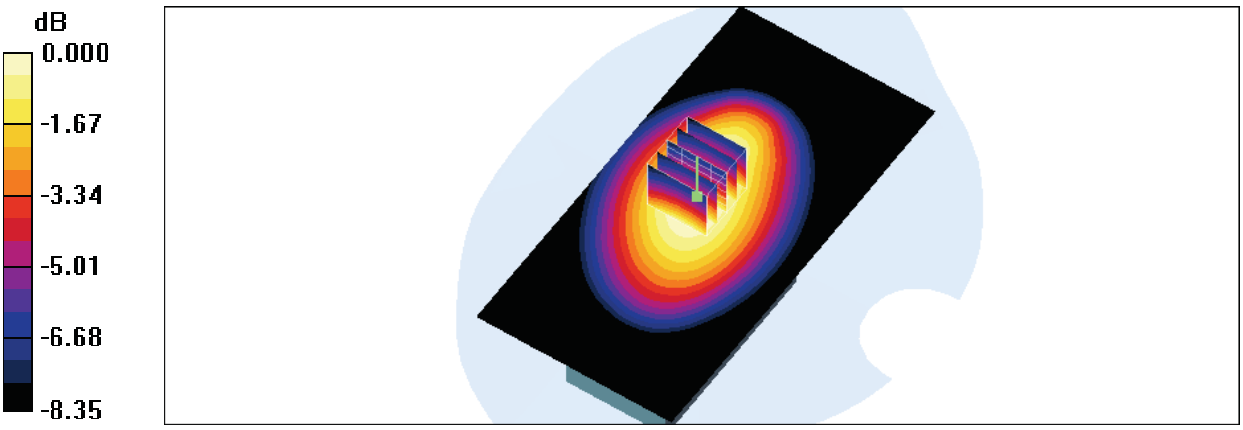
Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; $\sigma = 0.948$ mho/m; $\varepsilon_r = 56$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.79 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.9 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 2.33 W/kg
SAR(1 g) = 1.6 mW/g; SAR(10 g) = 1.15 mW/g
Maximum value of SAR (measured) = 1.68 mW/g



0 dB = 1.68mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 PM 12:59:53

Flat_GMRS CH22_Headset_muscle_Alkaline_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

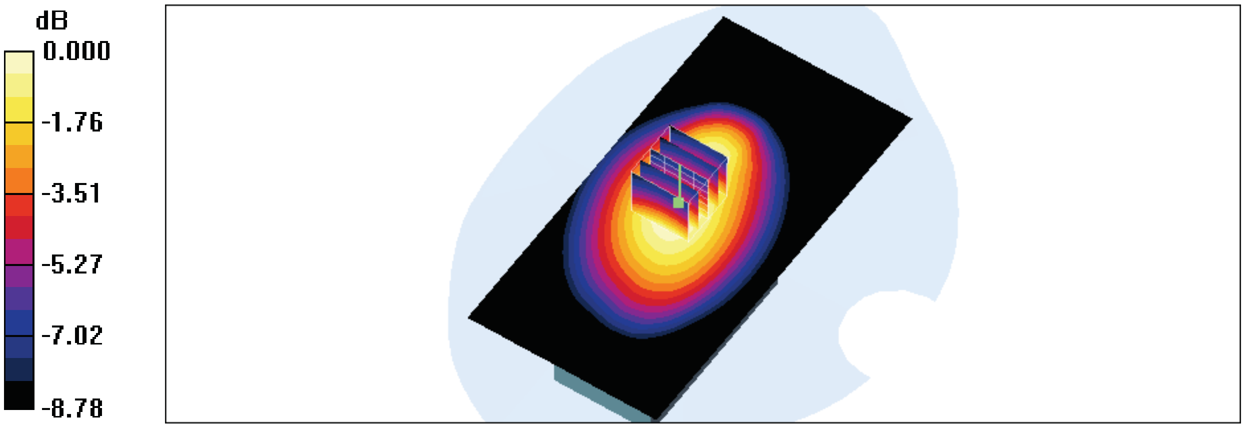
Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.47 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.1 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.949 mW/g
Maximum value of SAR (measured) = 1.42 mW/g



0 dB = 1.42mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 10:08:15

Flat_GMRS CH22_Headset_muscle_Ni-MH_USB Cable_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

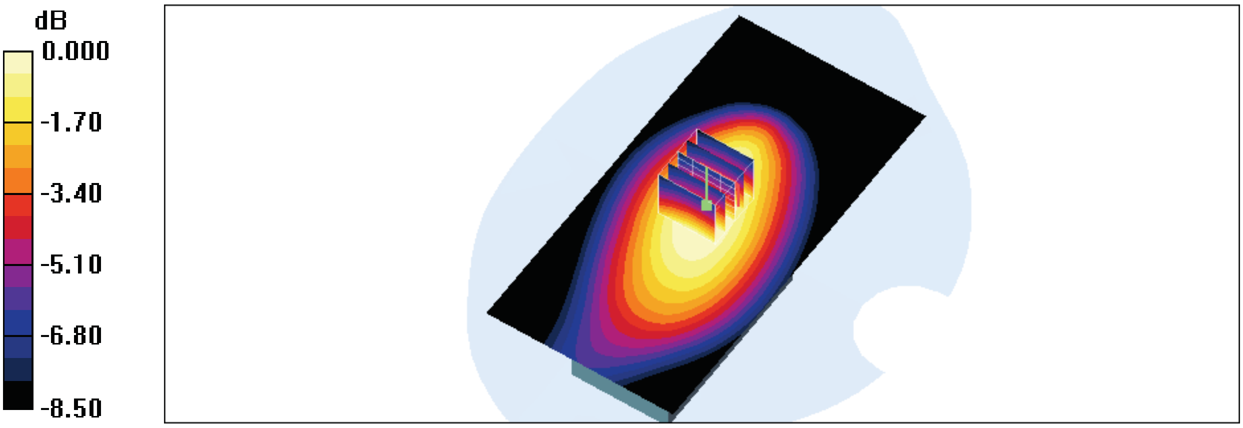
- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.916 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.0 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.593 mW/g
Maximum value of SAR (measured) = 0.860 mW/g



0 dB = 0.860mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 AM 10:26:41

Flat_GMRS CH22_Headset_muscle_Ni-MH_USB AC adaptor_15mm

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

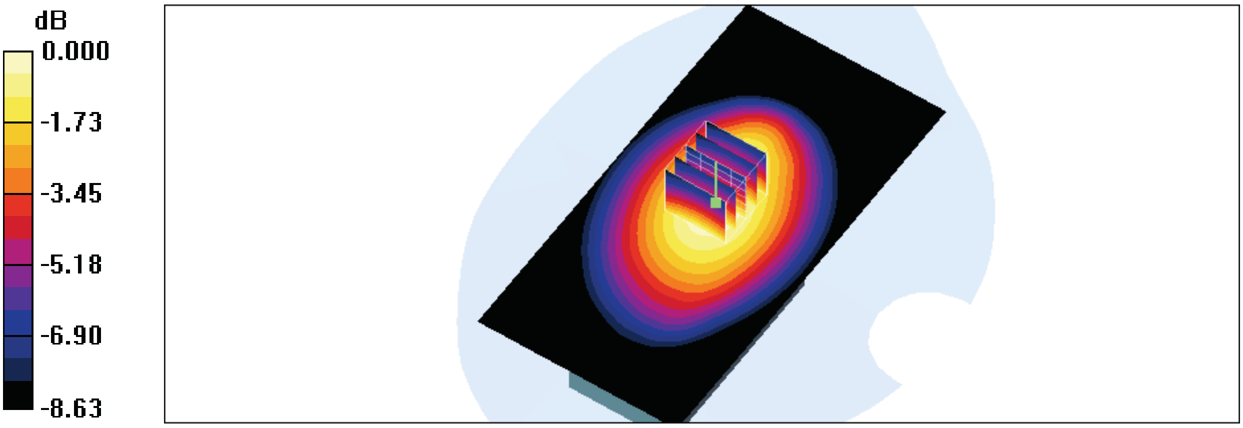
Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.9 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.750 mW/g
Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 02:30:10

Flat_GMRS CH15_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

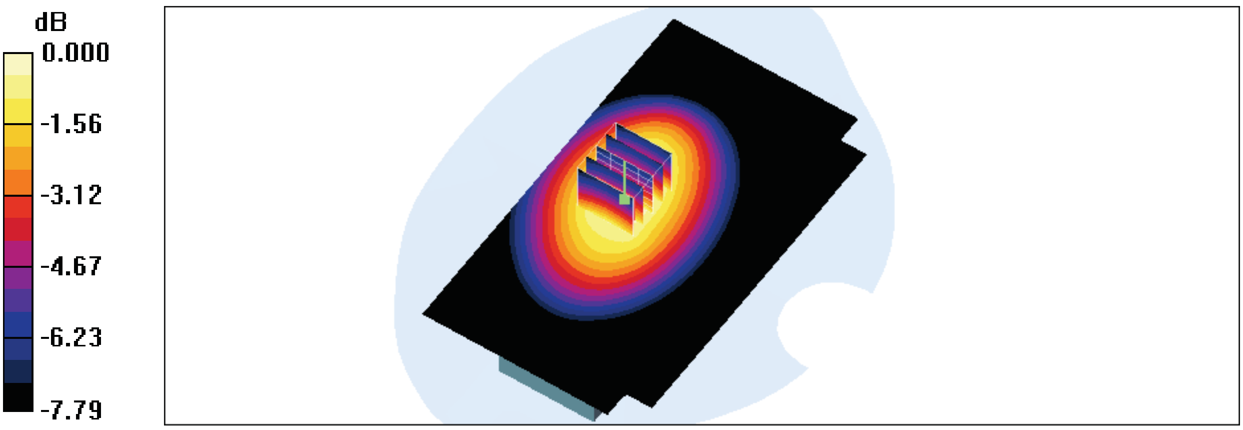
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.48 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.4 V/m; Power Drift = 0.105 dB
Peak SAR (extrapolated) = 1.90 W/kg
SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.968 mW/g
Maximum value of SAR (measured) = 1.40 mW/g



0 dB = 1.40mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 11:04:08

Flat_GMRS CH15_Headset_muscle_belt clip_Alkaline

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

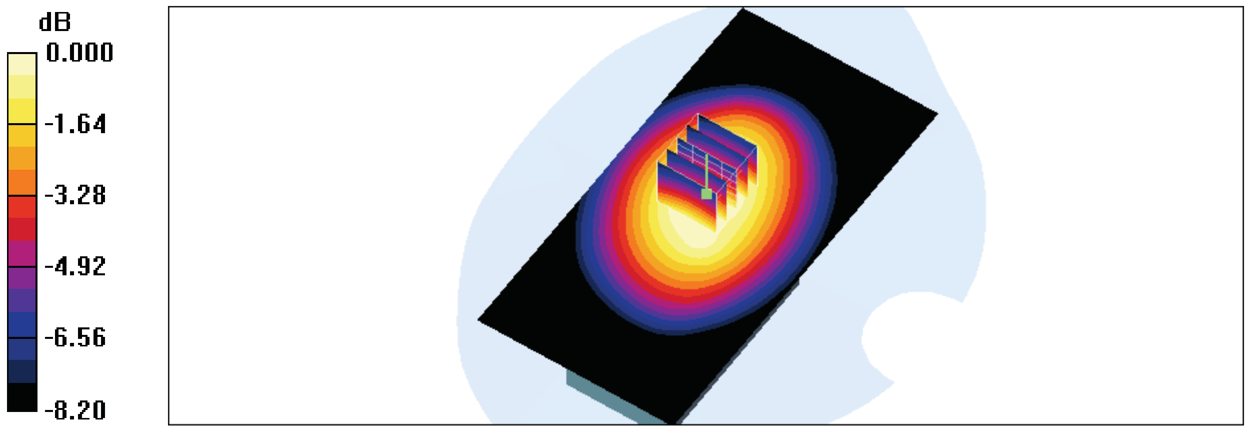
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.51 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.6 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.954 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



0 dB = 1.38mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 12:03:42

Flat_GMRS CH15_Headset_muscle_belt clip_Ni-MH_USB Cable

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

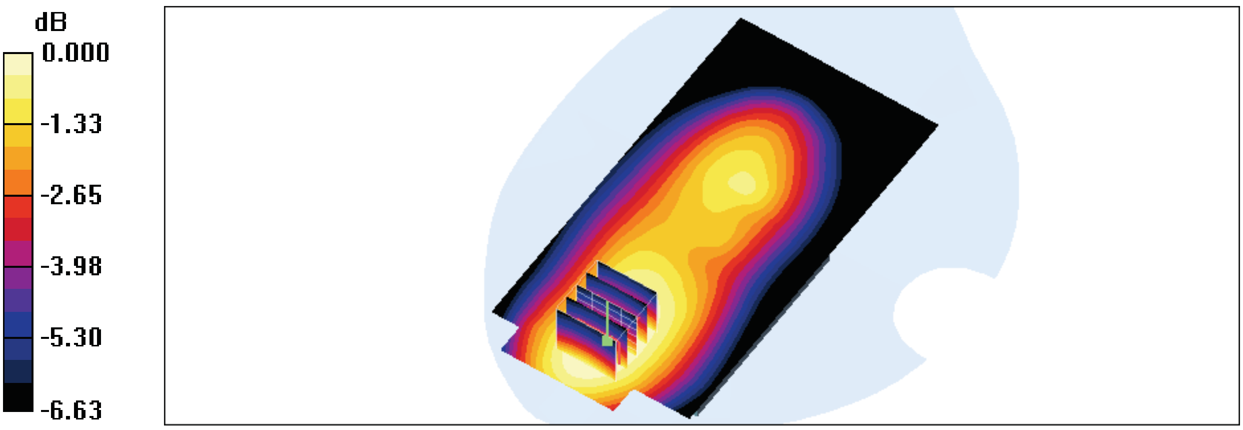
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.405 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.500 W/kg
SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.275 mW/g
Maximum value of SAR (measured) = 0.381 mW/g



0 dB = 0.381mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/15 PM 12:20:31

Flat_GMRS CH15_Headset_muscle_belt clip_Ni-MH_USB AC adaptor

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

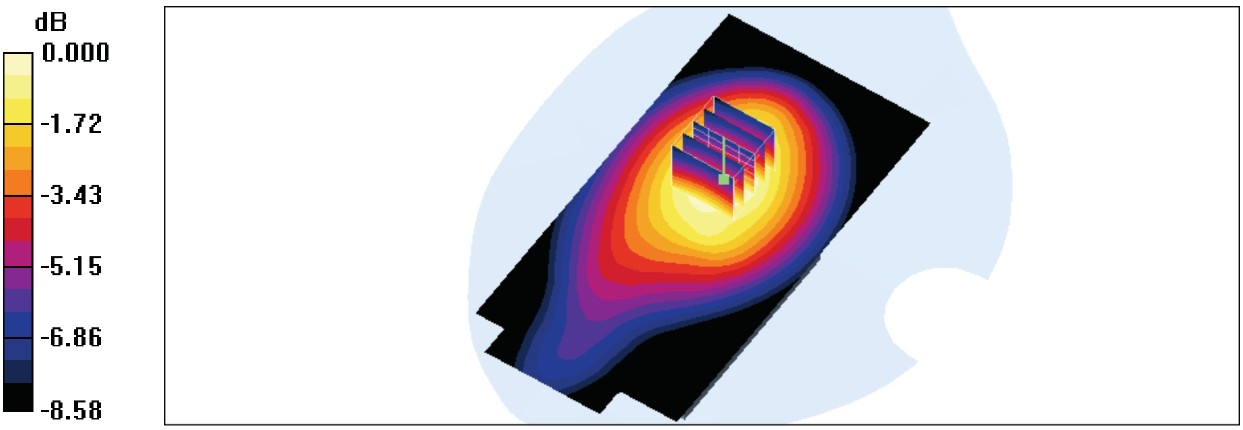
Communication System: GMRS; Frequency: 462.5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.5500 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.757 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.8 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.506 mW/g
Maximum value of SAR (measured) = 0.733 mW/g



0 dB = 0.733mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 02:06:37

Flat_GMRS CH4_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

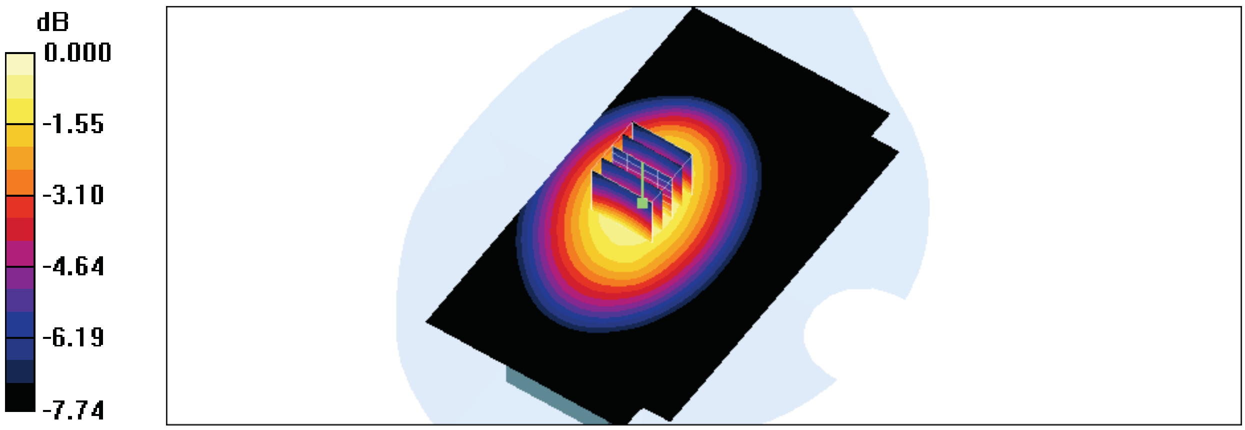
Communication System: GMRS; Frequency: 462.6375 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.6375 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (81x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.42 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.8 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.957 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



0 dB = 1.38mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2008/12/11 AM 10:23:37

Flat_GMRS CH22_Headset_muscle_belt clip_Ni-MH

DUT: MH230; Type: Two Way Radio with GMRS FRS and Weather Band Receiver;

FCC ID: K7GMHBCJ

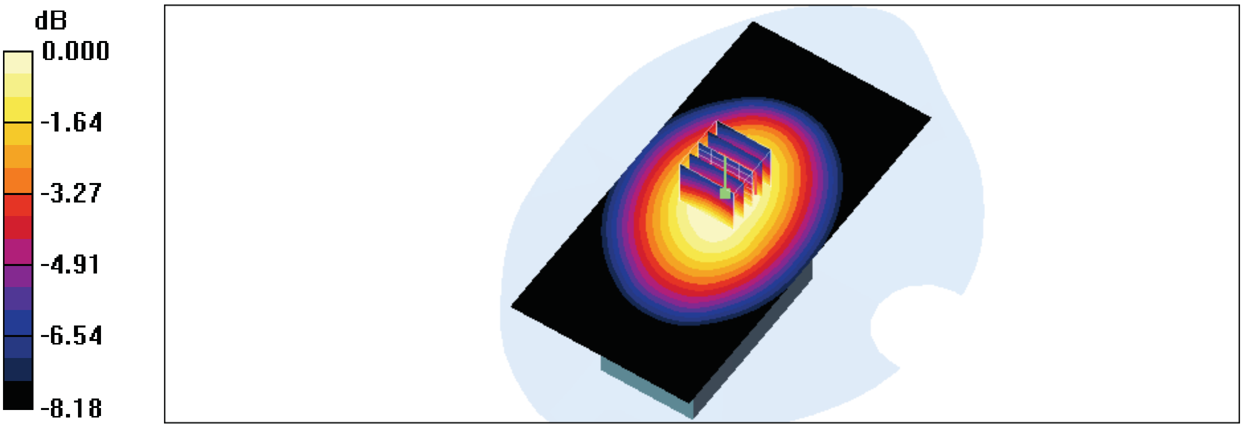
Communication System: GMRS; Frequency: 462.7250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 462.7250 MHz; σ = 0.948 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1530; ConvF(7.41, 7.41, 7.41); Calibrated: 2008/9/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2008/2/21
- Phantom: SAM 12; Type: SAM v4.0; Serial: TP:1009
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Flat/Area Scan (71x141x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.52 mW/g

Flat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.3 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 1.89 W/kg
SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.967 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



0 dB = 1.38mW/g

Appendix C -   Calibration

All of the instruments Calibration information are listed below.

- Dipole _ D450V2 SN:1021 Calibration No.D450V2-1021_Mar08
- Probe _ ET3DV6 SN:1530Calibration No.ET3-1530_Sep08
- DAE _ DAE4 SN:541 Calibration No.DAE4-541_Feb08

