


MOTOROLA

TESTING CERT # 2518.05
FCC ID: AZ489FT3822
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2

Government & Public Safety
EME Test Laboratory
Motorola Technology Sdn Bhd (455657-H)
Customer Solution Center

Plot 2, Bayan Lepas Technoplex Industrial Park,
Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.

Date of Report: 2/12/09
Report Revision: B
Report ID: SAR rpt_PMUD2444AAN_Rev A_090212_SR6789

Responsible Engineer: Veerapan Veeramani (EME Eng.)
Report Author: Veerapan Veeramani (EME Eng.)
Date/s Tested: 12/09/08 – 12/18/08
Manufacturer/Location: China
Sector/Group/Div.: G&PS
Date submitted for test: 11/30/08
DUT Description: LKP with channel knob 136-174MHz 5W 12.5/25kHz 16ch

Test TX mode(s): CW
Max. Power output: 6.0 Watts
Nominal Power: 5.0 Watts
Tx Frequency Bands: 136-174 MHz
Signaling type: FM
Model(s) Tested: PMUD2444AAN
Model(s) Certified: PMUD2444AAN
Serial Number(s): 1338JX0810
Classification: Occupational/Controlled
Rule Part(s): 90

DUT Photo
 (Refer to Exhibit 7B)

Approved Accessories:
Antenna(s):

NAD6502AR (146-174MHz, Heliflex ¼ wave antenna, -10dBi); NAD6579A (148-161MHz, Whip ¼ wave antenna, -6.25dBi); PMAD4012A (136-155MHz, Stubby ¼ antenna, -12dBi); PMAD4013A (155-174MHz, Stubby ¼ wave antenna, -14.5dBi); PMAD4014A (136-155MHz, Helical ¼ wave antenna, -13dBi); PMAD4015A (155-174MHz, Helical ¼ wave antenna, -12.5dBi); PMAD4049A (146-174MHz, Helical ¼ wave antenna, -4dBi); HAD9338BR (136-162MHz, Heliflex ¼ wave antenna, -10dBi); HAD9742A (146-162MHz, Stubby ¼ wave antenna, -11dBi); HAD9743A (162-174MHz, Stubby ¼ wave antenna, -11dBi)

Battery(ies):

PMNN4080A (LiIon High Capacity 2150mAh); PMNN4082A (NiMH-1300mAh); PMNN4081A (LiIon – 1500mAh)

Body worn accessory(ies):

HLN9844A (Spring Action Belt Clip – 2 inch); PMLN5334A (Protective Leather Case).

Audio/Data cable accessory(ies):

See section 3.0 for list of approved audio accessories.

Max. Calc. : 1-g Avg. SAR: 3.17 W/kg (Body); 10-g Avg. SAR: 1.76 W/kg (Body)
Max. Calc. : 1-g Avg. SAR: 1.57 W/kg (Face); 10-g Avg. SAR: 1.13 W/kg (Face)

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8W/kg per the requirements of 47 CFR 2.1093(d).

The test results clearly demonstrate compliance with ICNIRP (1998) Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300GHz), Health Physics 74, 494-522 RF Exposure limits of 10W/kg averaged over 10grams of contiguous tissue.

Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 2.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.

I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements. This reporting format is consistent with the suggested guidelines of the TIA TSB-150 December 2004. The results and statements contained in this report pertain only to the device(s) evaluated.

Signature on file – Deanna Zakharia

Deanna Zakharia G&PS EME Lab Senior Resource Manager,
Laboratory Director

Approval Date: 2/12/2009

Certification Date: 12/22/2008

Certification No.: L1081213

Appendix C

Dipole Calibration Certificates

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



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

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Motorola MY (Precision)**

Certificate No: **D300V3-1003_Dec07**

CALIBRATION CERTIFICATE

Object **D300V3 - SN: 1003**

Calibration procedure(s) **QA CAL-15.v4
Calibration Procedure for dipole validation kits below 800 MHz**

Calibration date: **December 15, 2007**

Condition of the calibrated item **In Tolerance**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	08-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference Probe ET3DV6 (LF)	SN 1507	11-Jul-07 (SPEAG, No. ET3-1507_Jul07)	Jul-08
DAE4	SN 601	30-Jan-07 (SPEAG, No. DAE4-601_Jan07)	Jan-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	30-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	19-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	

	Name	Function	Signature
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 18, 2007

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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



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

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
ConF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	ELI4 Flat Phantom	Shell thickness: 2 ± 0.2 mm
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	300 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	45.3	0.87 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	44.3 \pm 6 %	0.84 mho/m \pm 6 %
Head TSL temperature during test	(22.5 \pm 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	398 mW input power	1.09 mW / g
SAR normalized	normalized to 1W	2.74 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	2.75 mW / g \pm 18.1 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	398 mW input power	0.73 mW / g
SAR normalized	normalized to 1W	1.83 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	1.83 mW / g \pm 17.6 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	54.9 Ω - 10.5 j Ω
Return Loss	- 19.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.751 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 16, 2005

DASY4 Validation Report for Head TSL

Date/Time: 15.12.2007 19:34:29

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 300 MHz; Type: D300V3; Serial: D300V3 - SN:1003

Communication System: CW; Frequency: 300 MHz; Duty Cycle: 1:1

Medium: HSL300;

Medium parameters used: $f = 300 \text{ MHz}$; $\sigma = 0.84 \text{ mho/m}$; $\epsilon_r = 44.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (LF); ConvF(7.51, 7.51, 7.51); Calibrated: 11.07.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: ELI 4.0; Type: QDOVA001BA; ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=398mW=26dBm/Area Scan (71x181x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.16 mW/g

d=15mm, Pin=398mW=26dBm/Zoom Scan (7x7x7)/Cube 0:

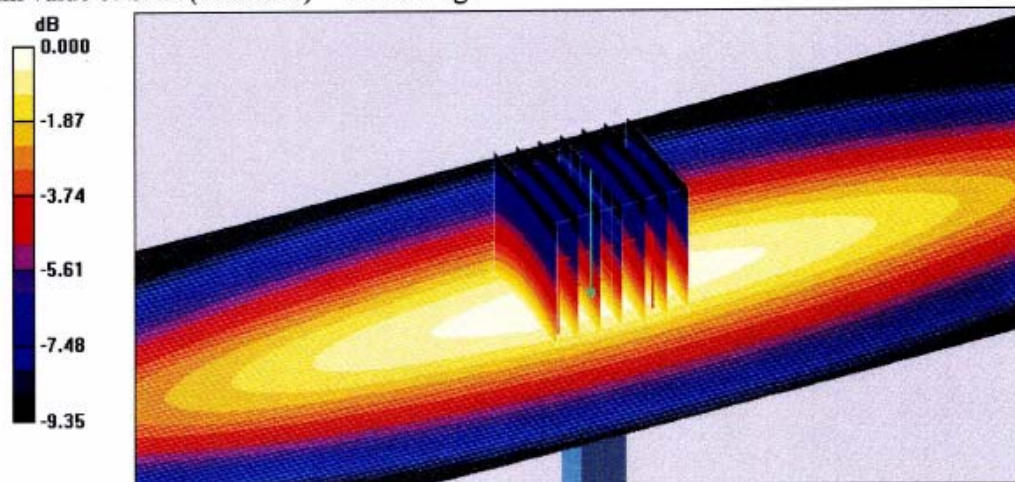
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 38.6 V/m; Power Drift = -0.056 dB

Peak SAR (extrapolated) = 1.71 W/kg

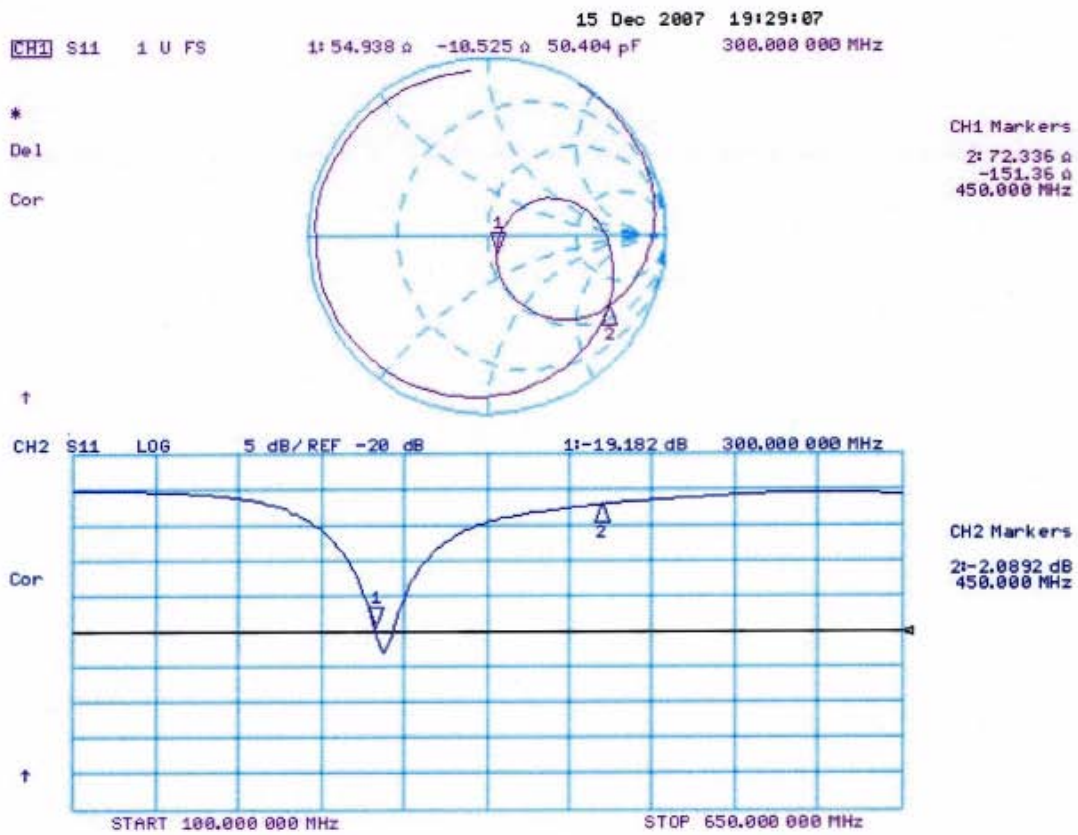
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.730 mW/g

Maximum value of SAR (measured) = 1.17 mW/g



0 dB = 1.17mW/g

Impedance Measurement Plot for Head TSL



Appendix D

Test System Verification Scans

Dipole Calibration certificate from SPEAG is provided in APPENDIX C. G&PS' EME lab validates its' dipole(s) to the applicable IEEE system performance targets. A system validation was performed using FCC body tissue parameters to generate the system performance target values for body at the applicable frequency. Dipole has assessed using a probe and measurements were performed using the isotropic assessment procedure mentioned below. To assess the isotropic characteristics of the measurement probe, a probe rotation was performed using the "Rotation (1D)" function in the DASY software with a measured isotropy tolerance of +/- 0.5dB.

The results obtained from the probe will be determined the new measured SAR targets.

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/9/2008 8:40:13 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-300B-081209-01

Phantom# / Tissue Temp.: ELI4 1028 / 21.3 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.72 mW/g (1g)

Calculated: 2.77 mW/g (1g)

Percent from Target (+/-): 1.90 % (1g)

Rotation (1D): 0.10 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 58.5$; $\rho = 1000$ kg/m³**System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.4 V/m; Power Drift = -0.0263 dB

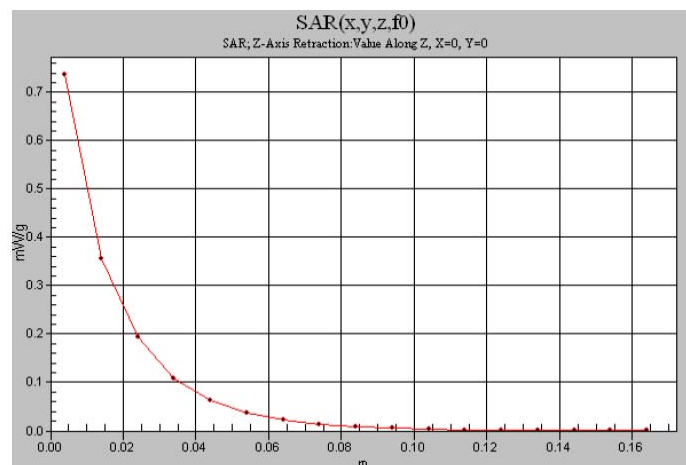
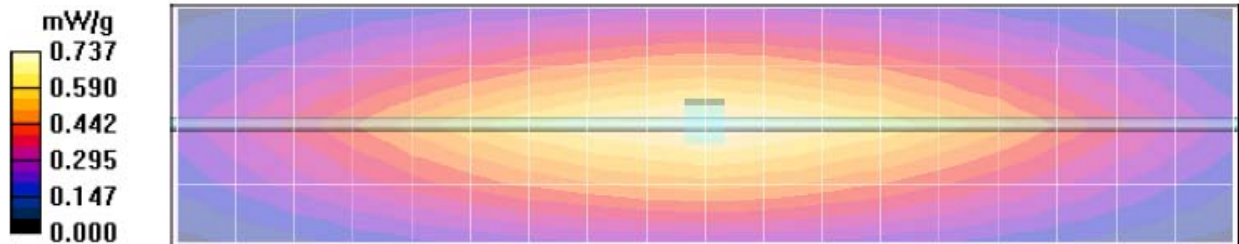
Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.472 mW/g

Maximum value of SAR (measured) = 0.738 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm**System Performance Check/Z-Axis Retraction (1x1x17):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.737 mW/g



Motorola Government & Public Safety EME Laboratory

Date/Time: 12/10/2008 7:06:23 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-300B-081210-01
 Phantom# / Tissue Temp.: ELI4 1028 / 21.2 (C)
 Dipole Model# / Serial#: D300V3 / 1003
 TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.72 mW/g (1g)
 Calculated: 2.74 mW/g (1g)
 Percent from Target (+/-): 0.70 % (1g)
 Rotation (1D): 0.097 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)
 Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 58.3$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.3 V/m; Power Drift = -0.00926 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.466 mW/g

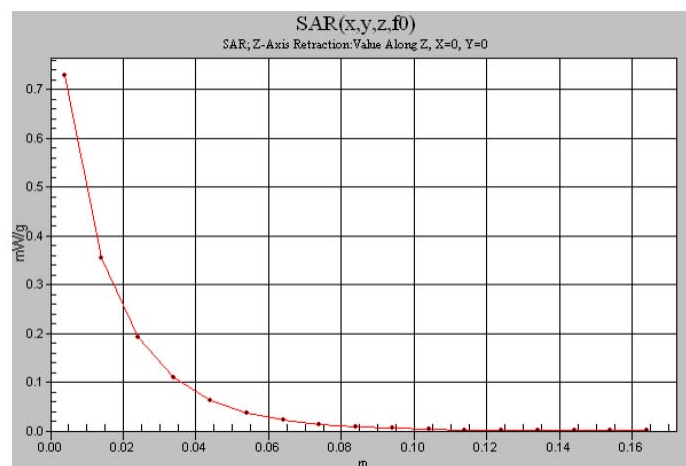
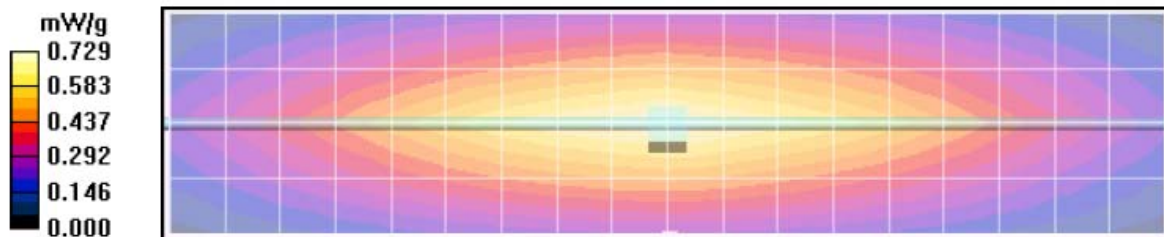
Maximum value of SAR (measured) = 0.731 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.730 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.729 mW/g



Motorola Government & Public Safety EME Laboratory

Date/Time: 12/11/2008 6:26:31 AM

Robot# / Run#: DASY4-PG-1 / PL-SYSP-300B-081211-01

Phantom# / Tissue Temp.: ELI4 1028 / 21.4 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.72 mW/g (1g)

Calculated: 2.67 mW/g (1g)

Percent from Target (+/-): 1.8 % (1g)

Rotation (1D): 0.14 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 58.1$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.2 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 1.02 W/kg

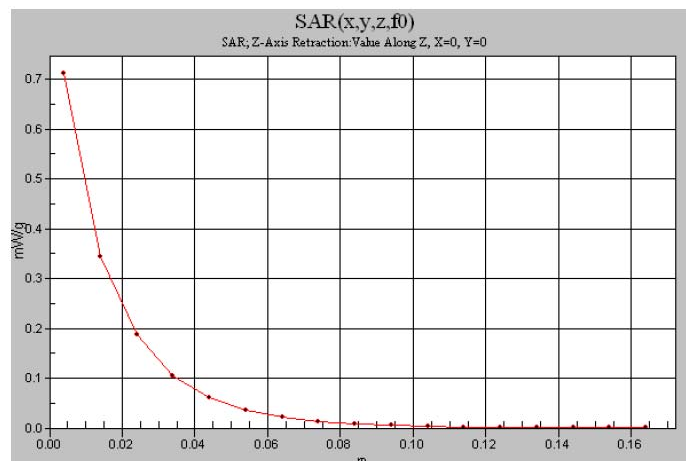
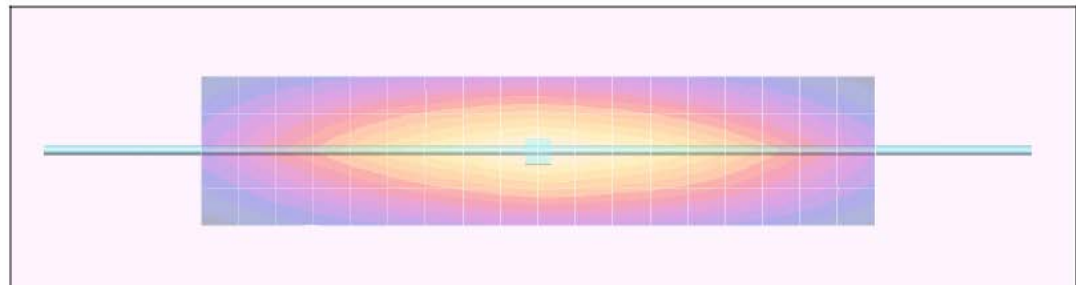
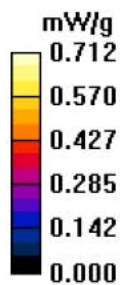
SAR(1 g) = 0.668 mW/g; SAR(10 g) = 0.455 mW/g

Maximum value of SAR (measured) = 0.711 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.712 mW/g



Motorola Government & Public Safety EME Laboratory

Date/Time: 12/12/2008 7:21:31 AM

Robot# / Run#: DASY4-PG-1 / Vee-SYSP-300B-081212-01

Phantom# / Tissue Temp.: ELI4 1028 / 22.2 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.72 mW/g (1g)

Calculated: 2.65 mW/g (1g)

Percent from Target (+/-): 2.5 % (1g)

Rotation (1D): 0.099 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 57.7$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.4 V/m; Power Drift = -0.0191 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.663 mW/g; SAR(10 g) = 0.453 mW/g

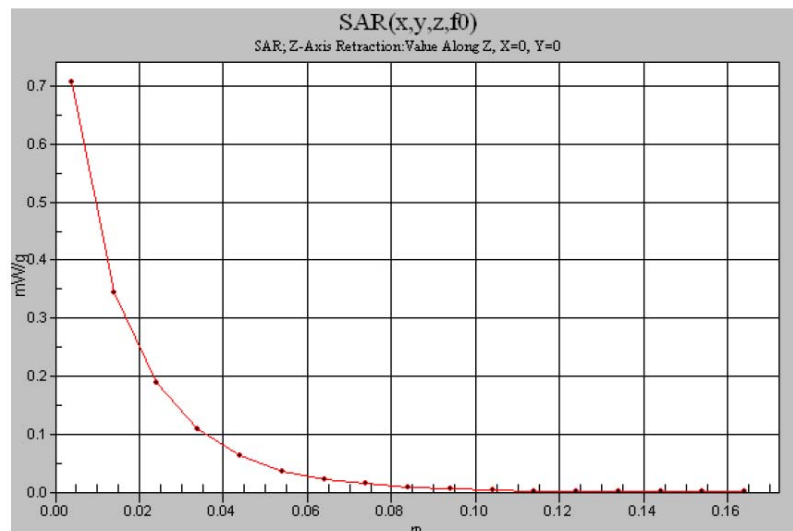
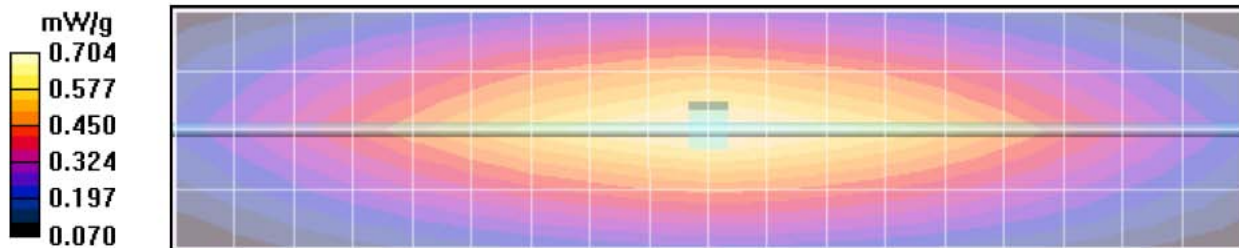
Maximum value of SAR (measured) = 0.706 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.704 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.707 mW/g



Motorola Government & Public Safety EME Laboratory

Date/Time: 12/13/2008 9:32:32 AM

Robot# / Run#: DASY4-PG-1 / PL-SYSP-300H-081213-01
Phantom# / Tissue Temp.: ELI4 1037 / 21.7 (C)
Dipole Model# / Serial#: D300V3 / 1003
TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.69 mW/g (1g)
Calculated: 2.74 mW/g (1g)
Percent from Target (+/-): 1.9 % (1g)
Rotation (1D): 0.10 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 46.2$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 29.4 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 1.06 W/kg

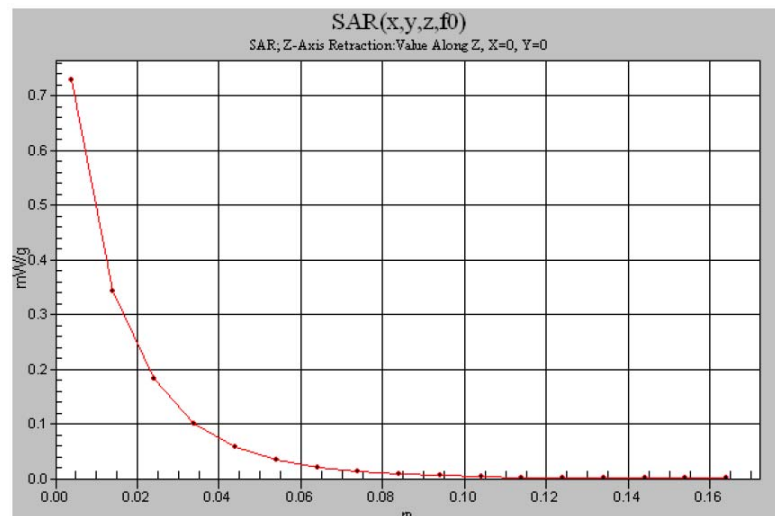
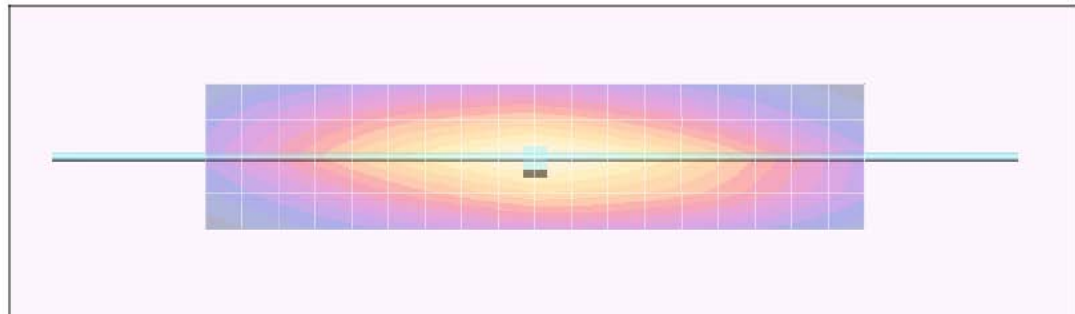
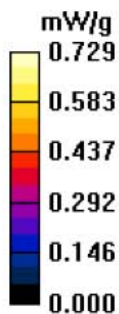
SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.462 mW/g

Maximum value of SAR (measured) = 0.729 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.727 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm



Motorola Government & Public Safety EME Laboratory

Date/Time: 12/14/2008 8:04:46 AM

Robot# / Run#: DASY4-PG-1 / Vee-SYSP-300H-081214-01

Phantom# / Tissue Temp.: ELI4 1037 / 21.9 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.69 mW/g (1g)

Calculated: 2.69 mW/g (1g)

Percent from Target (+/-): 0.1 % (1g)

Rotation (1D): 0.1 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 45.8$; $\rho = 1000$ kg/m³**System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 29.1 V/m; Power Drift = -0.0353 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.672 mW/g; SAR(10 g) = 0.454 mW/g

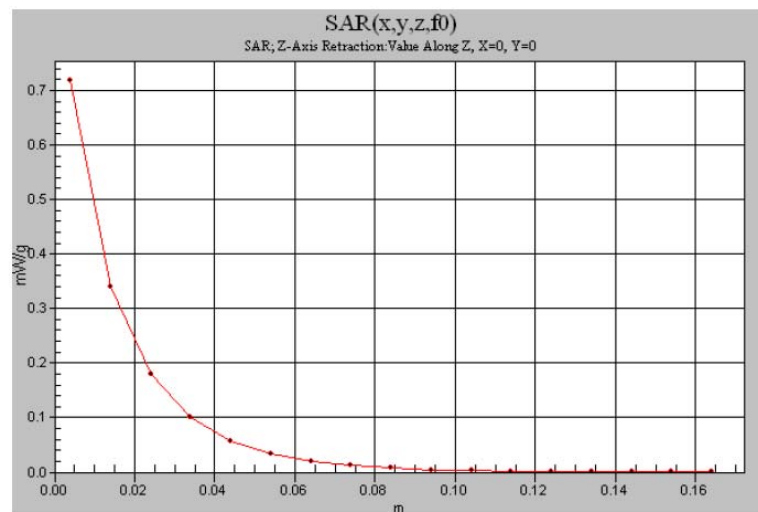
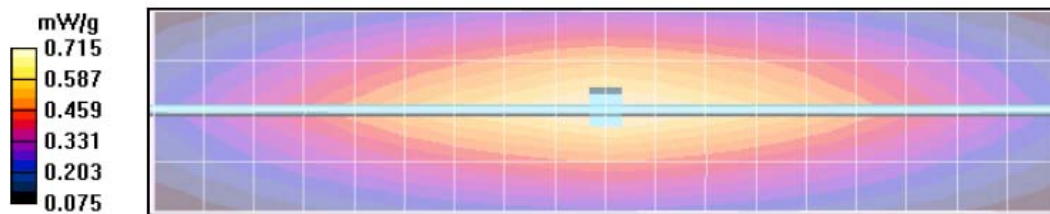
Maximum value of SAR (measured) = 0.716 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.715 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.718 mW/g



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Date/Time: 12/15/2008 7:44:06 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-300B-081215-01

Phantom# / Tissue Temp.: ELI4 1028 / 21.7 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.72 mW/g (1g)
Calculated: 2.71 mW/g (1g)
Percent from Target (+/-): 0.40 % (1g)
Rotation (1D): 0.092 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 57.9$; $\rho = 1000$ kg/m³**System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.4 V/m; Power Drift = -0.00262 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.677 mW/g; SAR(10 g) = 0.460 mW/g

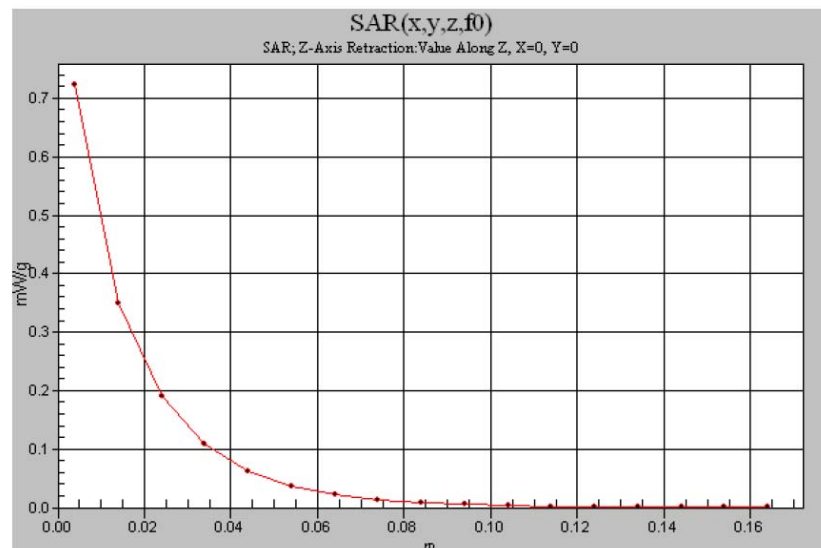
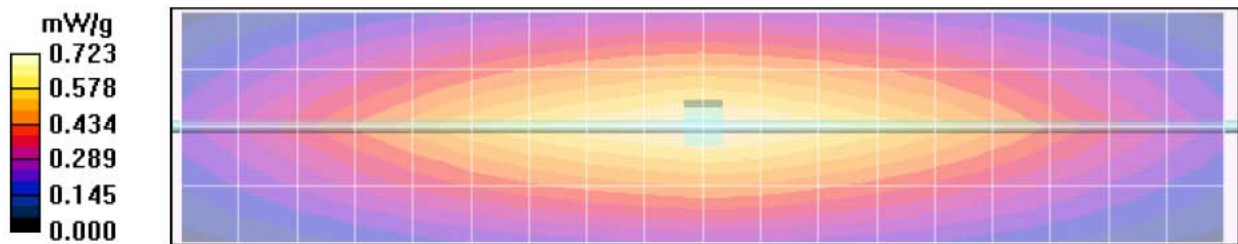
Maximum value of SAR (measured) = 0.725 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.720 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.723 mW/g



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Date/Time: 12/16/2008 1:25:41 PM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-300H-081216-01

Phantom# / Tissue Temp.: ELI4 1037 / 21.9 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.69 mW/g (1g)
 Calculated: 2.74 mW/g (1g)
 Percent from Target (+/-): 2.00 % (1g)
 Rotation (1D): 0.11 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.86$ mho/m; $\epsilon_r = 46.7$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 29.3 V/m; Power Drift = -0.0411 dB

Peak SAR (extrapolated) = 1.06 W/kg

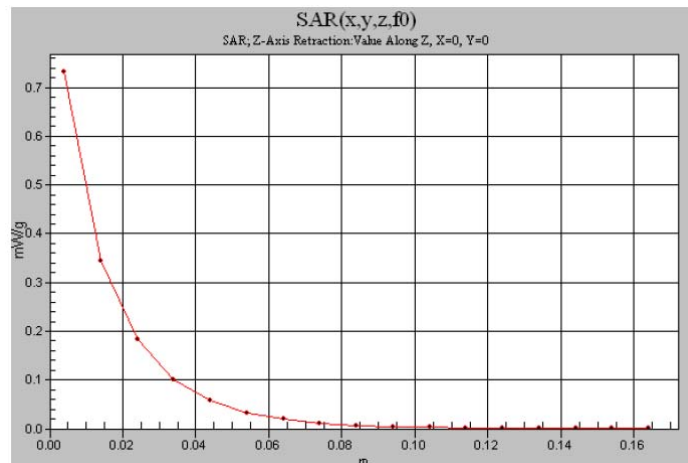
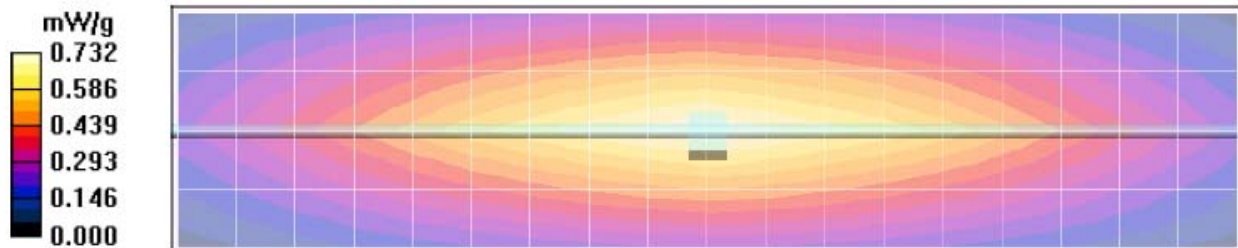
SAR(1 g) = 0.686 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.732 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.733 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm



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Date/Time: 12/18/2008 7:11:48 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-300H-081218-01

Phantom# / Tissue Temp.: ELI4 1037 / 20.8 (C)

Dipole Model# / Serial#: D300V3 / 1003

TX Freq. / Start power: 300 (MHz) / 250 (mW)

Target: 2.69 mW/g (1g)

Calculated: 2.70 mW/g (1g)

Percent from Target (+/-): 0.40 % (1g)

Rotation (1D): 0.10 dB

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7, 7, 7)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 300$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 46.5$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 29.1 V/m; Power Drift = -0.0459 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.675 mW/g; SAR(10 g) = 0.455 mW/g

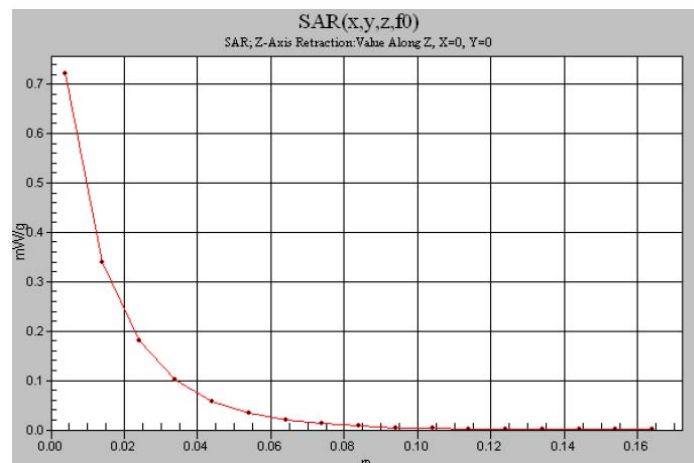
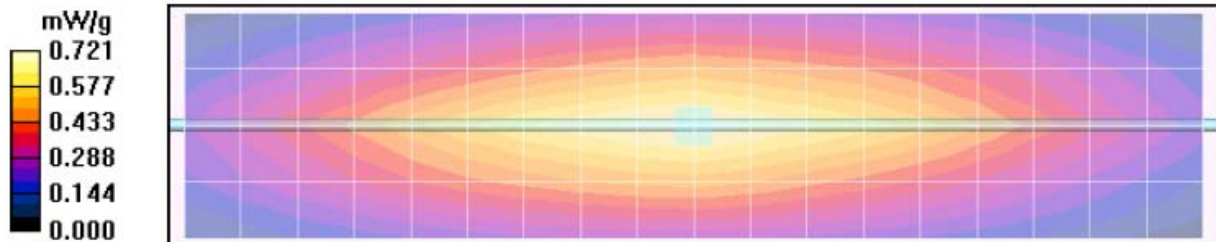
Maximum value of SAR (measured) = 0.722 mW/g

System Performance Check/Dipole Area Scan (5x19x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.714 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.721 mW/g



DIPOLE SAR TARGET - HEAD

Date:	<u>06/19/08</u>	Frequency (MHz):	<u>300</u>
Lab Location:	<u>PG-G&PS</u>	Mixture Type:	<u>IEEE Head</u>
DAE Serial #:	<u>688</u>	Ambient Temp.(°C):	<u>23</u>

Tissue Characteristics			
Permittivity:	<u>46.6</u>	Phantom Type/SN:	<u>ELI4 1028</u>
Conductivity:	<u>0.85</u>	Distance (mm):	<u>15</u>
Tissue Temp.(°C):	<u>21.7 C</u>		

Reference Source:	<u>Dipole</u>	Power to Dipole:	<u>250</u> mW
Reference SN:	<u>1003</u>		

Target 1g-SAR Value (mW/g, normalized to 1.0 W):

2.85

Difference from Target

-5.61% (1g-SAR)**New Target:**Average 1g-SAR value
(mW/g):**2.69****Passes K=2**

Percent Difference From Target (MUST be within k=2 Uncertainty):

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3122	2.69	0.0%	Rx
2		#DIV/0!	Rx
3		#DIV/0!	Rx
4		#DIV/0!	Rx
5		#DIV/0!	Rx
Average	2.6900	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: CC Chang Initial: CcC 06-19-08

Motorola Internal Use Only

FCD-0733 Rev. 5

DIPOLE SAR TARGET - BODY

Date: 06/19/08 Frequency (MHz): 300
 Lab Location: PG-G&PS Mixture Type: FCC Body
 DAE Serial #: 688 Ambient Temp.(°C): 23.1

Tissue Characteristics

Permittivity: 58.6 Phantom Type/SN: ELI4 1028
 Conductivity: 0.92 Distance (mm): 15
 Tissue Temp.(°C): 22.0

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 1003

New Target:

Average Measured SAR Value: 2.72 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3122	2.72	0.0%	Rx
2		-100.0%	Rx
3		-100.0%	Rx
4		-100.0%	Rx
5		-100.0%	Rx
Average	2.7200	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: CC Chang

Initial: C.C. 06-19-08

Motorola Internal Use Only

FCD-0733 Rev. 5

Appendix E

DUT Scans (Shortened Scans and Highest SAR configurations)

Shortened Scan Results

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/15/2008 11:26:06 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081215-07
 Phantom # / Tissue Temp: ELI4 1028 / 21.2 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: PMAD4015A / 164.5000 MHz
 Battery: PMNN4081A
 Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
 Start power: 5.89 W

Comments: Shorten scan

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155 \text{ MHz}$; $\sigma = 0.81 \text{ mho/m}$; $\epsilon_r = 60.9$; $\rho = 1000 \text{ kg/m}^3$

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 91.2 V/m; Power Drift = 0.00549 dB

Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 6.22 mW/g; SAR(10 g) = 3.46 mW/g

Maximum value of SAR (measured) = 6.78 mW/g

Ab Scan/Area Scan (51x181x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Reference Value = 62.4 V/m; Power Drift = 0.0773 dB

Motorola Fast SAR: SAR(1 g) = 5.39 mW/g; SAR(10 g) = 3.68 mW/g

Maximum value of SAR (interpolated) = 6.07 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=10\text{mm}$

Maximum value of SAR (measured) = 6.73 mW/g

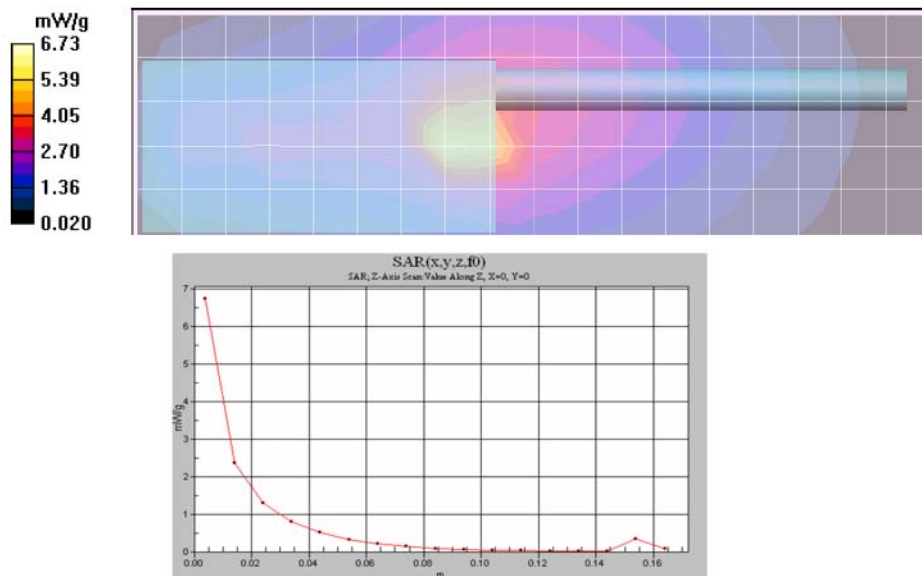
Shortened scan reflect highest SAR producing configuration; Run time 7 minutes.

Representative zoom scan run time was 22 minutes

“Shortened” scan max calculated SAR using SAR drift: 1-g Avg. = 3.17 mW/g; 10-g Avg. = 1.76 mW/g

Zoom scan max calculated SAR using SAR drift: 1-g Avg. = 3.15 mW/g; 10-g Avg. = 1.78 mW/g

(see part 1 of 2 section 9.0 run # CcC-AB-081215-06)



Body Highest SAR Configuration Result

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/15/2008 10:20:15 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081215-06
 Phantom # / Tissue Temp: ELI4 1028 / 21.2 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: PMAD4015A / 164.5000 MHz
 Battery: PMNN4081A
 Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
 Start power: 5.80 W

Comments: Full scan

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.81$ mho/m; $\epsilon_r = 60.9$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 63.8 V/m; Power Drift = -0.0184 dB

Peak SAR (extrapolated) = 14.1 W/kg

SAR(1 g) = 6.07 mW/g; SAR(10 g) = 3.43 mW/g

Maximum value of SAR (measured) = 6.55 mW/g

Ab Scan/Area Scan (51x181x1): Measurement grid: dx=15mm, dy=15mm

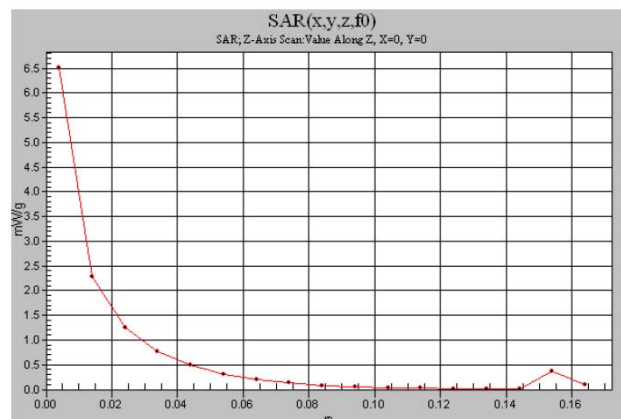
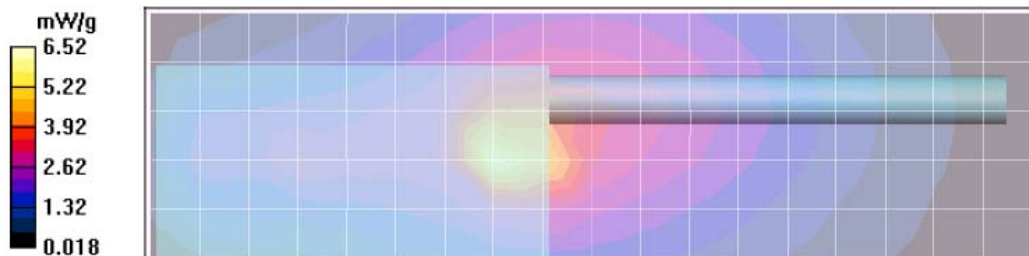
Reference Value = 63.8 V/m; Power Drift = -0.0184 dB

Motorola Fast SAR: SAR(1 g) = 5.48 mW/g; SAR(10 g) = 3.68 mW/g

Maximum value of SAR (interpolated) = 6.24 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 6.52 mW/g



Face Highest SAR Configuration Result

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/18/2008 9:26:52 AM

Robot # / Run #: DASY4-PG-1 / CcC-Face-081218-05
 Phantom # / Tissue Temp: ELI4 1037 / 21.2 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: HAD9743A / 168.0000 MHz
 Battery: PMNN4080A
 Carry Acc. / Cable Acc.: None / None
 Start power: 5.70 W

Comments: Full scan

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.8, 7.8, 7.8)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.73$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Face Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 60.2 V/m; Power Drift = 0.304 dB

Peak SAR (extrapolated) = 4.38 W/kg

SAR(1 g) = 2.98 mW/g; SAR(10 g) = 2.15 mW/g

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 3.12 mW/g

Face Scan/Area Scan (51x141x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

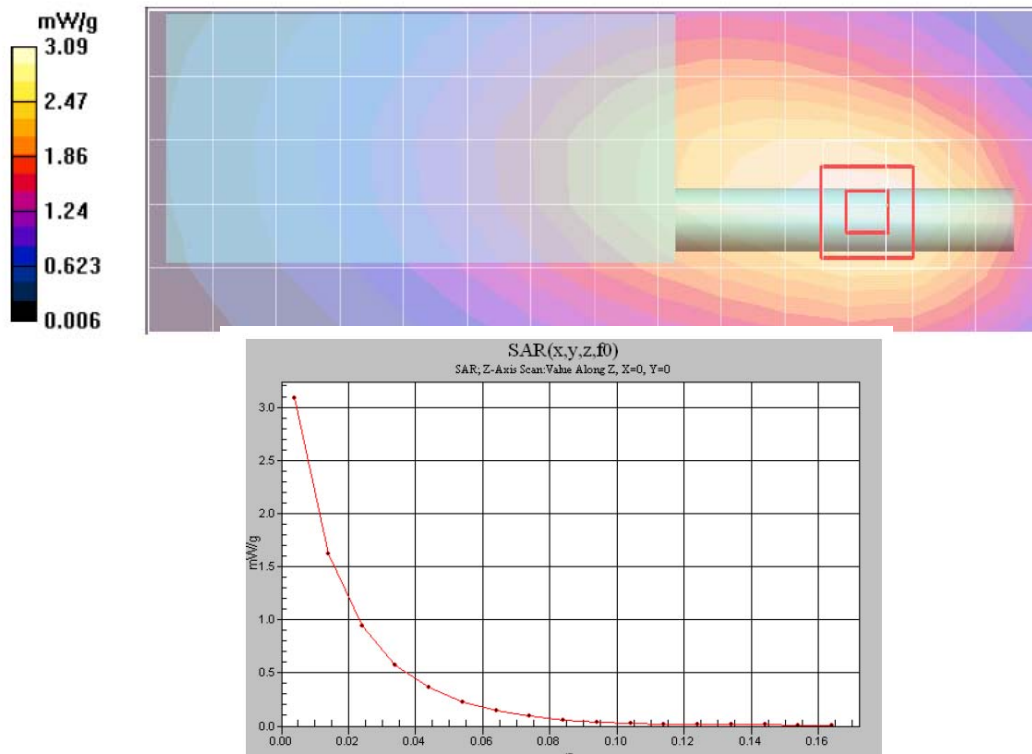
Reference Value = 60.2 V/m; Power Drift = 0.304 dB

Motorola Fast SAR: SAR(1 g) = 3.01 mW/g; SAR(10 g) = 2.24 mW/g

Maximum value of SAR (interpolated) = 3.17 mW/g

Face Scan/Z-Axis Scan (1x1x17): Measurement grid: $dx=20$ mm, $dy=20$ mm, $dz=10$ mm

Maximum value of SAR (measured) = 3.09 mW/g



Highest SAR Configuration Result for antenna HAD9338BR**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/11/2008 9:23:28 AM

Robot # / Run #: DASY4-PG-1 / PL-AB-081211-08
Phantom # / Tissue Temp: ELI4 1028 / 21.1 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: HAD9338BR / 136.00000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
Start power: 6.26 W

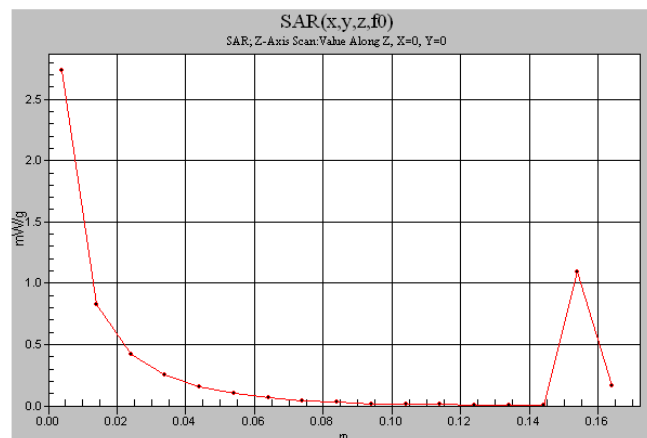
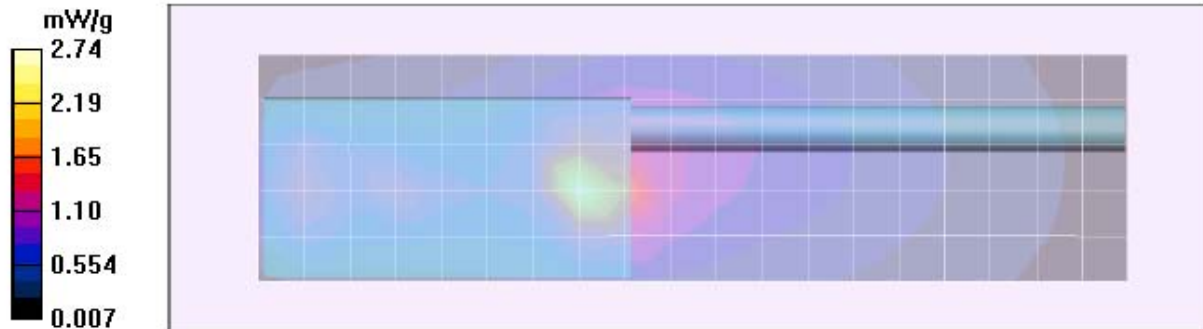
Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)
Electronics: DAE4 Sn688, Calibrated: 3/11/2008
Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.81$ mho/m; $\epsilon_r = 61.1$; $\rho = 1000$ kg/m³

Ab Scan/Area Scan (6x20x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.63 mW/g

Ab Scan/Area Scan (51x191x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 35.3 V/m; Power Drift = -0.249 dB
Motorola Fast SAR: SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.41 mW/g
Maximum value of SAR (interpolated) = 2.74 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 2.74 mW/g



Highest SAR Configuration Result for antenna HAD9742A

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/11/2008 11:03:22 AM

Robot # / Run #: DASY4-PG-1 / PL-AB-081211-12
 Phantom # / Tissue Temp: ELI4 1028 / 21.0 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: HAD9742A / 154.00000 MHz
 Battery: PMNN4081A
 Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
 Start power: 6.06 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.81$ mho/m; $\epsilon_r = 61.1$; $\rho = 1000$ kg/m³

Ab Scan/Area Scan (6x16x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.17 mW/g

Ab Scan/Area Scan (51x151x1): Measurement grid: dx=15mm, dy=15mm

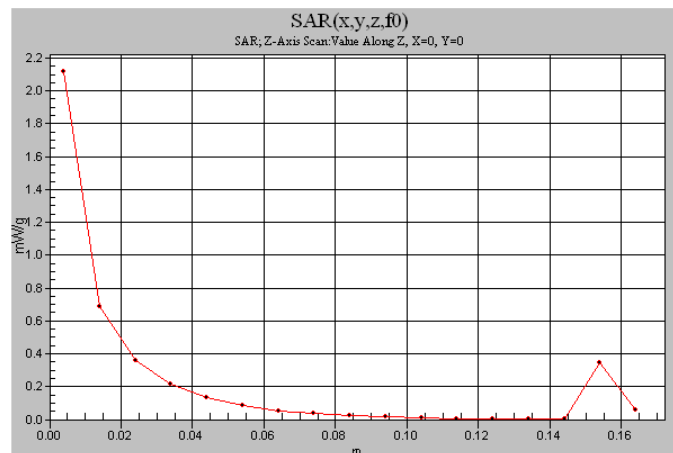
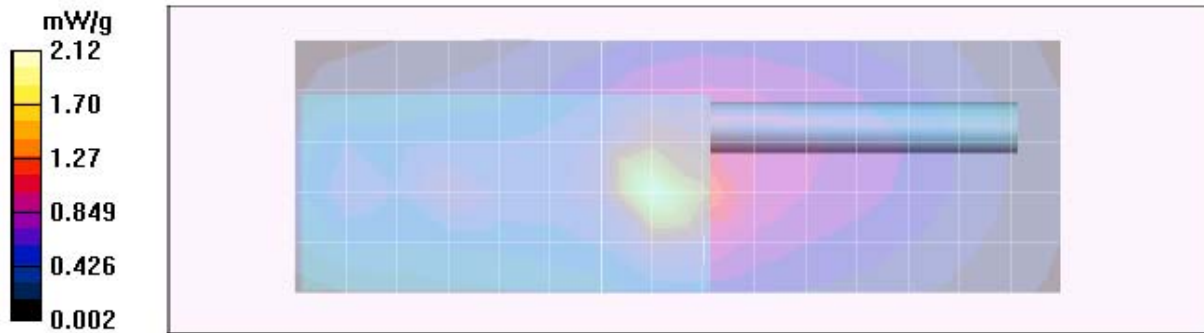
Reference Value = 33.1 V/m; Power Drift = -0.196 dB

Motorola Fast SAR: SAR(1 g) = 1.87 mW/g; SAR(10 g) = 1.16 mW/g

Maximum value of SAR (interpolated) = 2.22 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 2.12 mW/g



Highest SAR Configuration Result for antenna HAD9743A**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/11/2008 12:13:10 PM

Robot # / Run #: DASY4-PG-1 / PL-AB-081211-15
Phantom # / Tissue Temp: ELI4 1028 / 21.0 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: HAD9743A / 168.00000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
Start power: 5.71 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.81$ mho/m; $\epsilon_r = 61.1$; $\rho = 1000$ kg/m³**Ab Scan/Area Scan (6x15x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.54 mW/g

Ab Scan/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm

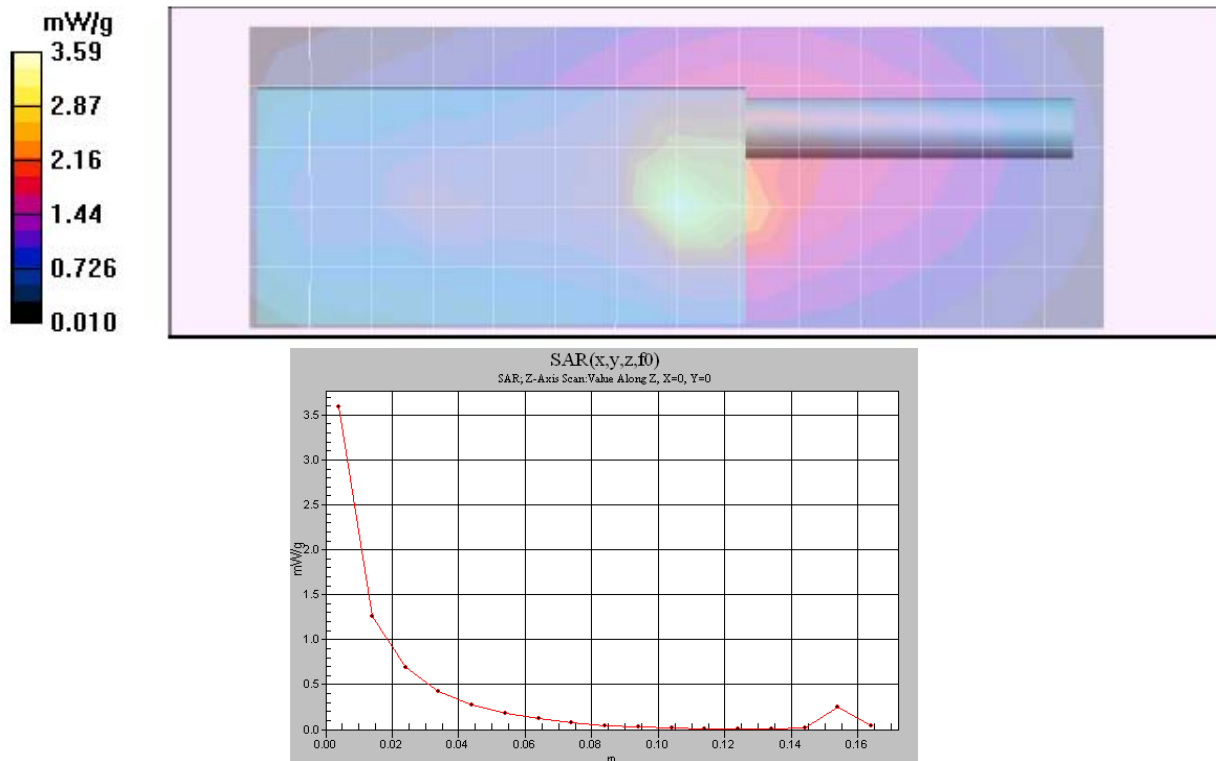
Reference Value = 49.1 V/m; Power Drift = -0.416 dB

Motorola Fast SAR: SAR(1 g) = 3.2 mW/g; SAR(10 g) = 2.11 mW/g

Maximum value of SAR (interpolated) = 3.69 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 3.59 mW/g



Highest SAR Configuration Result for antenna NAD6502AR**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/16/2008 4:54:20 PM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081216-08
Phantom # / Tissue Temp: ELI4 1028 / 21.5 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: NAD6502AR / 146.0000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
Start power: 6.06 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.8$ mho/m; $\epsilon_r = 61.3$; $\rho = 1000$ kg/m³**Ab Scan/Area Scan (61x191x1):** Measurement grid: dx=15mm, dy=15mm

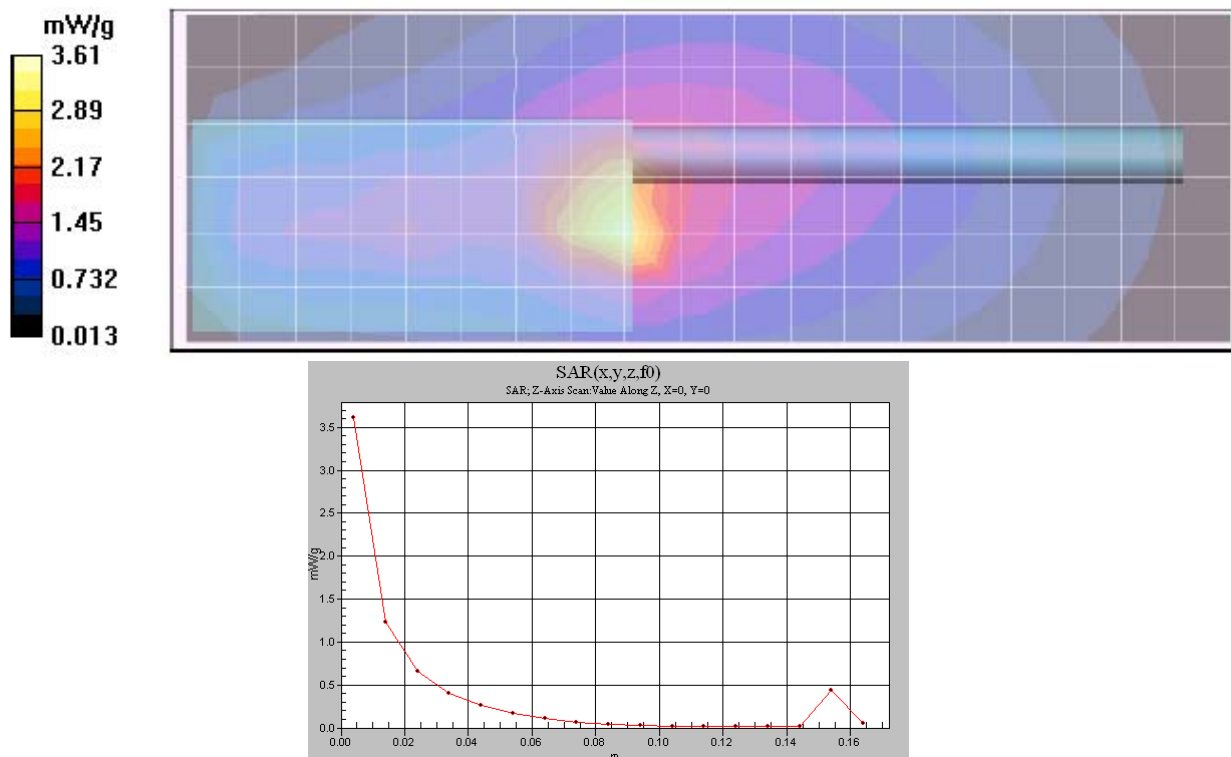
Reference Value = 51.7 V/m; Power Drift = -0.438 dB

Motorola Fast SAR: SAR(1 g) = 3.11 mW/g; SAR(10 g) = 2.07 mW/g

Maximum value of SAR (interpolated) = 3.52 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 3.61 mW/g



Highest SAR Configuration Result for antenna NAD6579A**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/11/2008 9:09:16 PM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081211-31
Phantom # / Tissue Temp: ELI4 1028 / 21.2 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: NAD6579A / 154.5000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: NONE / PMMN4008A
Start power: 6.15 W

Comments: Radio front @ 2.5cm

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155 \text{ MHz}$; $\sigma = 0.81 \text{ mho/m}$; $\epsilon_r = 61.1$; $\rho = 1000 \text{ kg/m}^3$ **Ab Scan/Area Scan (61x211x1):** Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

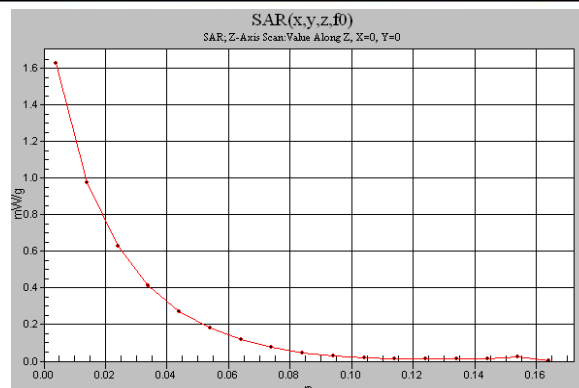
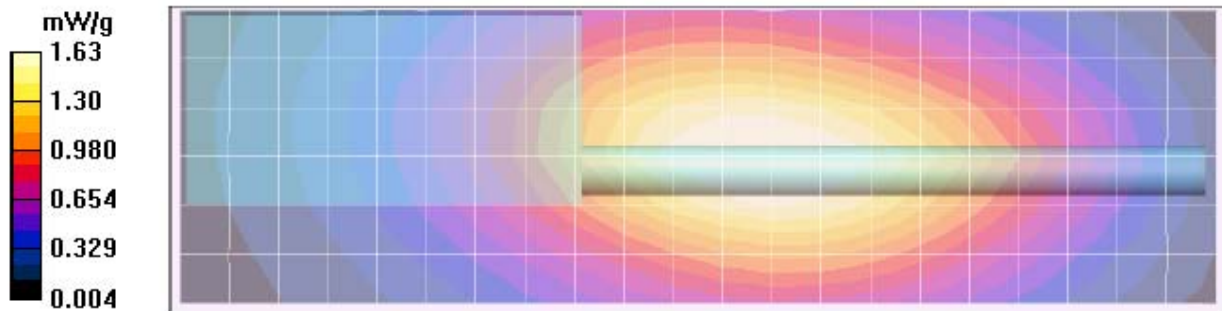
Reference Value = 47.3 V/m; Power Drift = -0.678 dB

Motorola Fast SAR: SAR(1 g) = 1.64 mW/g; SAR(10 g) = 1.24 mW/g

Maximum value of SAR (interpolated) = 1.72 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=10\text{mm}$

Maximum value of SAR (measured) = 1.63 mW/g



Highest SAR Configuration Result for antenna PMAD4012A**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/9/2008 4:45:23 PM

Robot # / Run #: DASY4-PG-1 / Vee-AB-081209-11
Phantom # / Tissue Temp: ELI4 1028 / 21.0 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: PMAD4012A / 145.5000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMMN4008A
Start power: 6.25 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.83$ mho/m; $\epsilon_r = 61.5$; $\rho = 1000$ kg/m³**Ab Scan/Area Scan (51x151x1):** Measurement grid: dx=15mm, dy=15mm

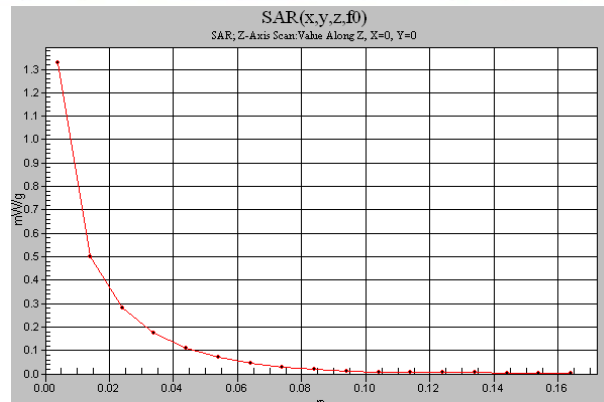
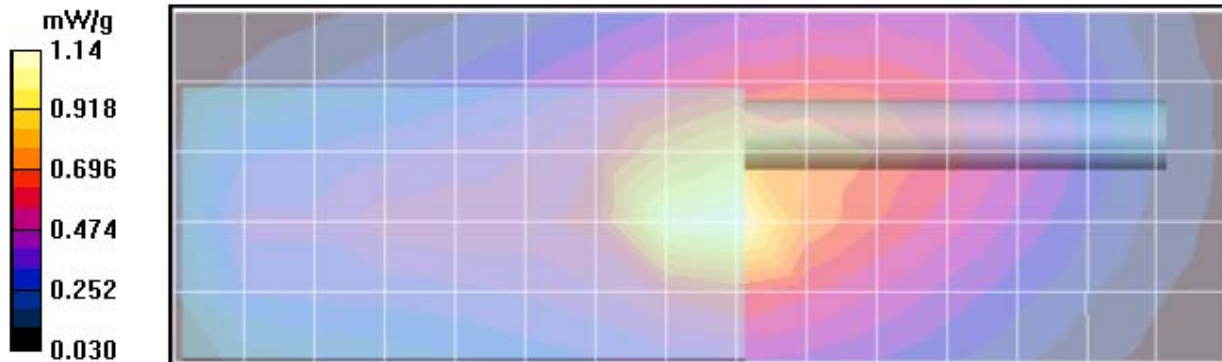
Reference Value = 31.6 V/m; Power Drift = -0.395 dB

Motorola Fast SAR: SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.764 mW/g

Maximum value of SAR (interpolated) = 1.20 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 1.33 mW/g



Highest SAR Configuration Result for antenna PMAD4013A

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/11/2008 1:59:08 PM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081211-17
 Phantom # / Tissue Temp: ELI4 1028 / 21.2 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: PMAD4013A / 164.5000 MHz
 Battery: PMNN4081A
 Carry Acc. / Cable Acc.: NONE / PMMN4001A
 Start power: 5.90 W

Comments: Radio back @ antenna 2.5cm

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155 \text{ MHz}$; $\sigma = 0.81 \text{ mho/m}$; $\epsilon_r = 61.1$; $\rho = 1000 \text{ kg/m}^3$

Ab Scan/Area Scan (51x151x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

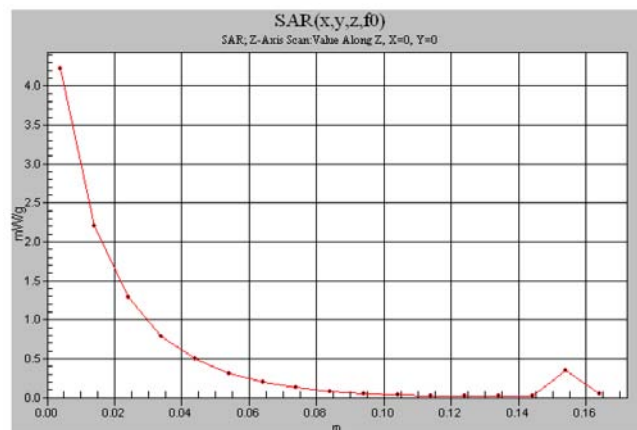
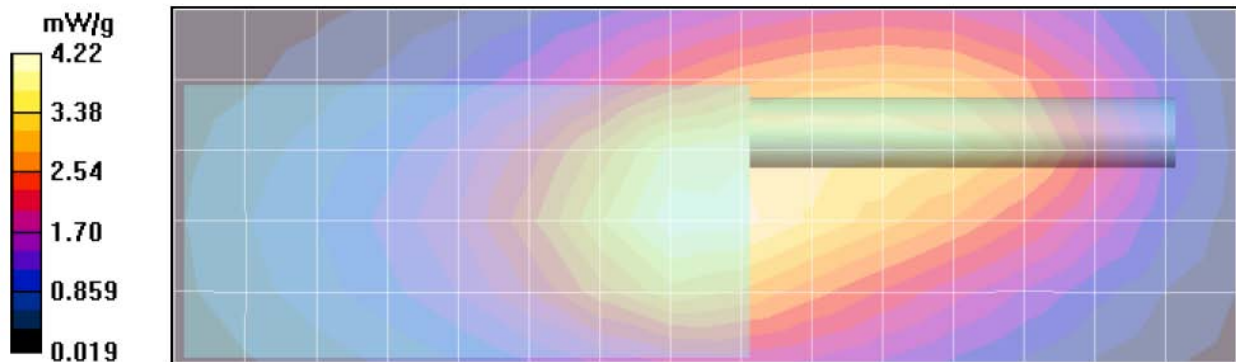
Reference Value = 68.5 V/m; Power Drift = -0.186 dB

Motorola Fast SAR: SAR(1 g) = 4.04 mW/g; SAR(10 g) = 3.02 mW/g

Maximum value of SAR (interpolated) = 4.26 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=10\text{mm}$

Maximum value of SAR (measured) = 4.22 mW/g



Highest SAR Configuration Result for antenna PMAD4014A

Motorola Government & Public Safety EME Laboratory

Date/Time: 12/11/2008 7:22:55 AM

Robot # / Run #: DASY4-PG-1 / PL-AB-081211-03
 Phantom # / Tissue Temp: ELI4 1028 / 21.4 (C)
 Model # / Serial#: PMUD2444AAN / 1338JX0810
 Antenna / TX Freq: PMAD4014A / 145.50000 MHz
 Battery: PMNN4081A
 Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
 Start power: 6.12 W

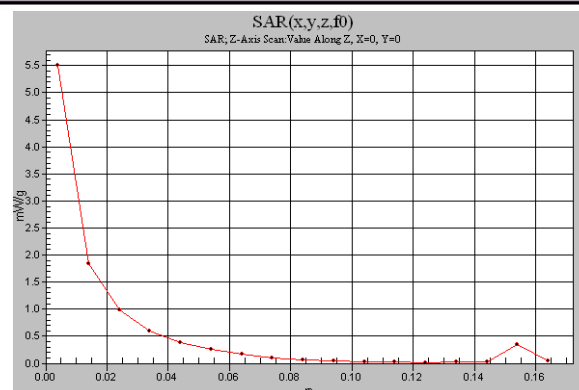
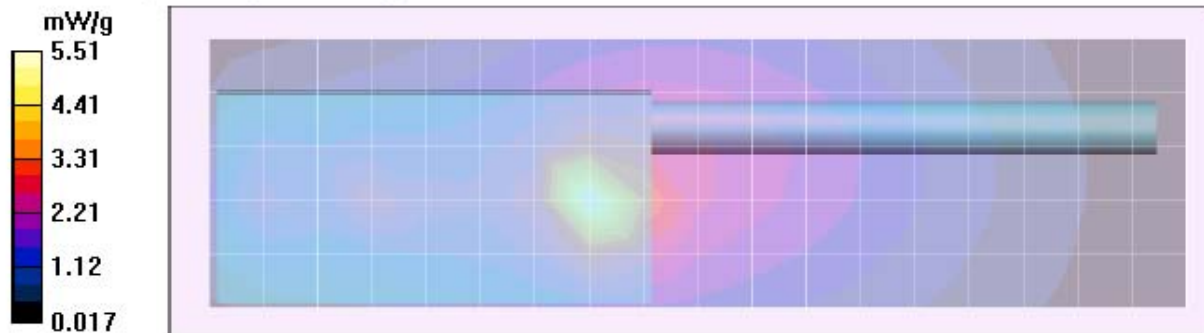
Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)
 Electronics: DAE4 Sn688, Calibrated: 3/11/2008
 Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.81$ mho/m; $\epsilon_r = 61.1$; $\rho = 1000$ kg/m³

Ab Scan/Area Scan (6x19x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 5.72 mW/g

Ab Scan/Area Scan (51x181x1): Measurement grid: dx=15mm, dy=15mm
 Reference Value = 54.4 V/m; Power Drift = -0.302 dB
Motorola Fast SAR: SAR(1 g) = 4.9 mW/g; SAR(10 g) = 3.05 mW/g
 Maximum value of SAR (interpolated) = 5.77 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 5.51 mW/g



Highest SAR Configuration Result for antenna PMAD4049A**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/10/2008 11:11:15 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081210-11
Phantom # / Tissue Temp: ELI4 1028 / 21.3 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: PMAD4049A / 160.0000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMMN4001A
Start power: 6.23 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155$ MHz; $\sigma = 0.82$ mho/m; $\epsilon_r = 61.3$; $\rho = 1000$ kg/m³**Ab Scan/Area Scan (51x191x1):** Measurement grid: dx=15mm, dy=15mm

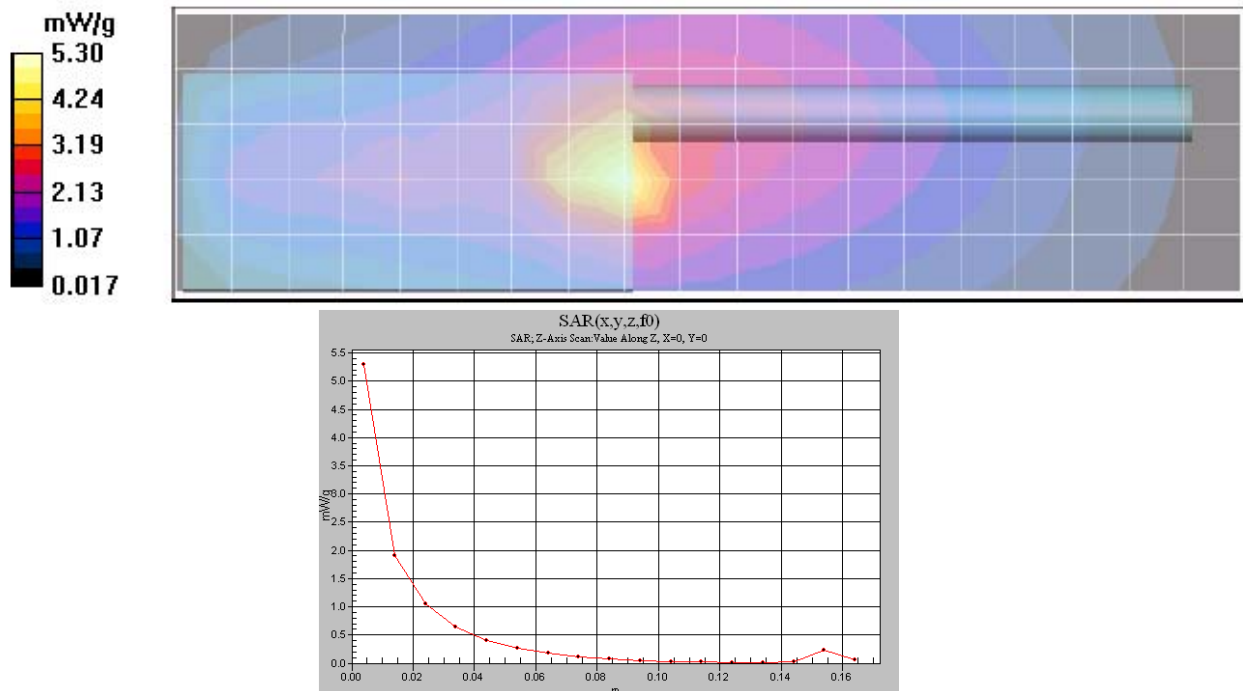
Reference Value = 63.7 V/m; Power Drift = -0.455 dB

Motorola Fast SAR: SAR(1 g) = 4.6 mW/g; SAR(10 g) = 3.07 mW/g

Maximum value of SAR (interpolated) = 5.16 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 5.30 mW/g



Lowest SAR Configuration Result observed during the audio accessory search**Motorola Government & Public Safety EME Laboratory**

Date/Time: 12/10/2008 11:34:56 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-081210-12
Phantom # / Tissue Temp: ELI4 1028 / 21.3 (C)
Model # / Serial#: PMUD2444AAN / 1338JX0810
Antenna / TX Freq: PMAD4049A / 160.0000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: HLN9844A / PMLN5001A
Start power: 6.28 W

Comments:

Probe: ES3DV3 - SN3122, Calibrated: 5/15/2008, ConvF(7.5, 7.5, 7.5)

Electronics: DAE4 Sn688, Calibrated: 3/11/2008

Duty Cycle: 1:1, Medium parameters used: $f = 155 \text{ MHz}$; $\sigma = 0.82 \text{ mho/m}$; $\epsilon_r = 61.3$; $\rho = 1000 \text{ kg/m}^3$ **Ab Scan/Area Scan (51x191x1):** Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

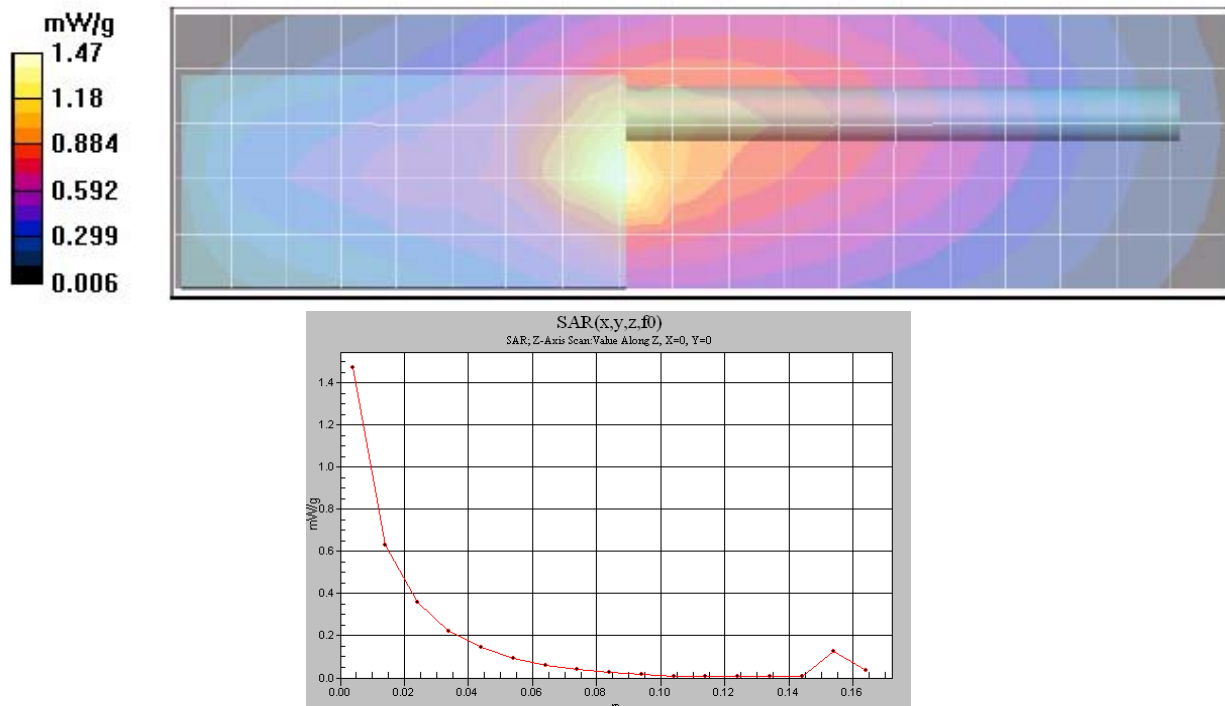
Reference Value = 36.3 V/m; Power Drift = -0.549 dB

Motorola Fast SAR: SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.939 mW/g

Maximum value of SAR (interpolated) = 1.53 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=10\text{mm}$

Maximum value of SAR (measured) = 1.47 mW/g



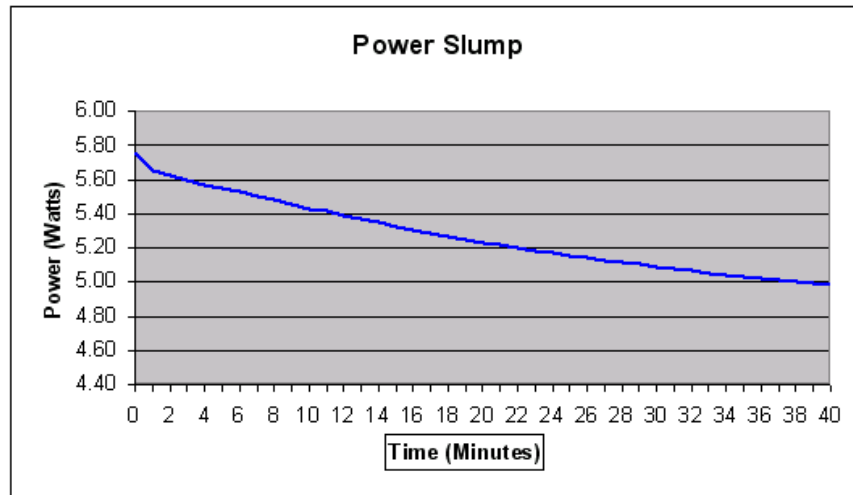
APPENDIX F

DUT Supplementary Data (Power slump)

Power Slump Model # : PMUD2444AAN
Serial # : 1338JX0810

Battery: PMNN4081A **Transmit Mode:** CW
Frequency: 164.5 MHz **Audio Accessory:** PMMN4001A
Date: 12/15/2008

Tx Time (Minutes)	Measure Power (Watts)
0.0	5.76
1.0	5.66
2.0	5.62
3.0	5.60
4.0	5.57
5.0	5.55
6.0	5.53
7.0	5.50
8.0	5.48
9.0	5.46
10.0	5.43
11.0	5.41
12.0	5.39
13.0	5.37
14.0	5.35
15.0	5.33
16.0	5.31
17.0	5.29
18.0	5.27
19.0	5.25
20.0	5.23
21.0	5.22
22.0	5.20
23.0	5.19
24.0	5.17
25.0	5.16
26.0	5.14
27.0	5.13
28.0	5.12
29.0	5.10
30.0	5.09
31.0	5.08
32.0	5.07
33.0	5.05
34.0	5.04
35.0	5.03
36.0	5.02
37.0	5.01
38.0	5.00
39.0	4.99
40.0	4.98



Appendix G DUT Test Position Photos

Photos available in Exhibit 7B - Temporary Confidentiality Requested

Appendix H
DUT and Body worn Accessory Photos

Photos available in Exhibit 7B - Temporary Confidentiality Requested

Appendix I

DUT Antenna Separation Distances and Offered Accessory Test Status

The following table(s) summarizes the separation distances and test status provided by each of the applicable body-worn accessory(ies):

Antenna Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
NAD6502AR	Yes	28-55	
NAD6579A	Yes	25-68	
PMAD4012A	Yes	28-50	
PMAD4013A	Yes	25-50	
PMAD4014A	Yes	28-58	
PMAD4015A	Yes	25-58	
PMAD4049A	Yes	25-64	
HAD9338BR	Yes	25-59	
HAD9742A	Yes	28-49	
HAD9743A	Yes	28-46	

Battery Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
PMNN4080A	Yes	NA	
PMNN4082A	Yes	NA	
PMNN4081A	Yes	NA	

Carry case Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
HLN9844A	Yes	36-68	
PMLN5334A	Yes	35-48	Tested with HLN9844A

Audio acc. Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
PMMN4008A	Yes	NA	
PMMN4013A	Yes	NA	
PMMN4029A	Yes	NA	
PMLN4442A	No	NA	Same physical connector, cable's thickness and length as PMLN4443A except for the earpiece.
PMLN4443A	Yes	NA	
PMLN4444A	Yes	NA	
PMLN4445A	Yes	NA	
HMN9754D	Yes	NA	
PMLN4606A	Yes	NA	
PMMN4001A	Yes	NA	

Audio acc. Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
PMLN4620A	No	NA	This is the received only earpiece that use in conjunction w/ the PMMN4013A, which is the same as the AARLN4885B.
AARLN4885B	Yes	NA	This received only earpiece is tested with PMMN4013A
WADN4190B	No	NA	This is the received only earpiece that use in conjunction w/ the PMMN4013A, which is the same as the AARLN4885B.
RLN4941A	Yes	NA	This received only earpiece is tested with PMMN4013A
HMN9013B	Yes	NA	
PMLN5003A	Yes	NA	
PMLN5001A	Yes	NA	
RLN6230A	Yes	NA	This plastic acoustic tube replacement part for the earpiece is tested with HMN9754D.
RLN6231A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is the same as the RLN6230A.
RLN6232A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is the same as the RLN6230A.
RLN6241A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is the same as the RLN6230A.
RLN6242A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is the same as the RLN6230A.