MOTOROLA

ACCREDITED

TESTING CERT # 2518.05

FCC ID: AZ489FT4885
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 3

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: 4/14/09
Report Revision: O
Report ID: SAR rpt_PMUE3325AAN_Rev O_090414_SR7161

Responsible Engineer:	Pei Loo, Tey (EME Eng.)
Report Author:	Pei Loo, Tey (EME Eng.)
Date/s Tested:	3/19/09~3/25/09
Manufacturer/Location:	China
Sector/Group/Div.:	G&PS
Date submitted for test:	3/17/09
DUT Description:	LKP with channel knob 403-447MHz 4W 12.5/25kHz 16ch
Test TX mode(s):	CW
Max. Power output:	4.8 Watts
Nominal Power:	4.0 Watts
Tx Frequency Bands:	403-447 MHz
Signaling type:	FM
Model(s) Tested:	PMUE3325AAN
Model(s) Certified:	PMUE3325AAN
Serial Number(s):	1338KD0676, 1338KD0674
Classification:	Occupational/Controlled
Rule Part(s):	90

DUT Photo
(Refer to Exhibit 7B)

Approved Accessories:
Antenna(s):
NAE6483AR (403-520MHz, Whip, ¼ wave antenna, 0.0dBi); PMAE4016A (403-520MHz, Whip, ¼ wave antenna, 1.0dBi); PMAE4002A (403-433MHz, Stubby, ¼ wave antenna, -4.5dBi); PMAE4003A (430-470MHz, Stubby, ¼ wave antenna, -4.5dBi); PMAE4014A (403-425MHz, Whip, ¼ wave antenna, 1.0dBi).

Battery(ies):
PMNN4080A (LiIon High Capacity 2150mAH); PMNN4082B (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: 4.99 W/kg (Body); 10-g Avg. SAR: 3.58 W/kg (Body)
Max. Calc. : 1-g Avg. SAR: 4.00 W/kg (Face); 10-g Avg. SAR: 2.96 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: 4/14/2009

Certification Date: 4/14/2009

Certification No.: L1090404

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: D450V3-1054_Dec07

CALIBRATION CERTIFICATE

Object	D450V3 - SN: 1054
Calibration procedure(s)	QA CAL-15.v5 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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	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	04-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	
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 18, 2007

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

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:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) 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
c) 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:

d) 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	450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	43.5	0.87 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	43.1 ± 6 %	0.83 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 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	1.87 mW / g
SAR normalized	normalized to 1W	4.68 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**4.73 mW / g ± 18.1 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	398 mW input power	1.25 mW / g
SAR normalized	normalized to 1W	3.13 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**3.16 mW / g ± 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	56.3 Ω - 5.0 jΩ
Return Loss	- 22.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.351 ns

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 21:20:11

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V3; Serial: D450V3 - SN:1054

Communication System: CW; Frequency: 450 MHz; Duty Cycle: 1:1
Medium: HSL450;
Medium parameters used: f = 450 MHz; σ = 0.83 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

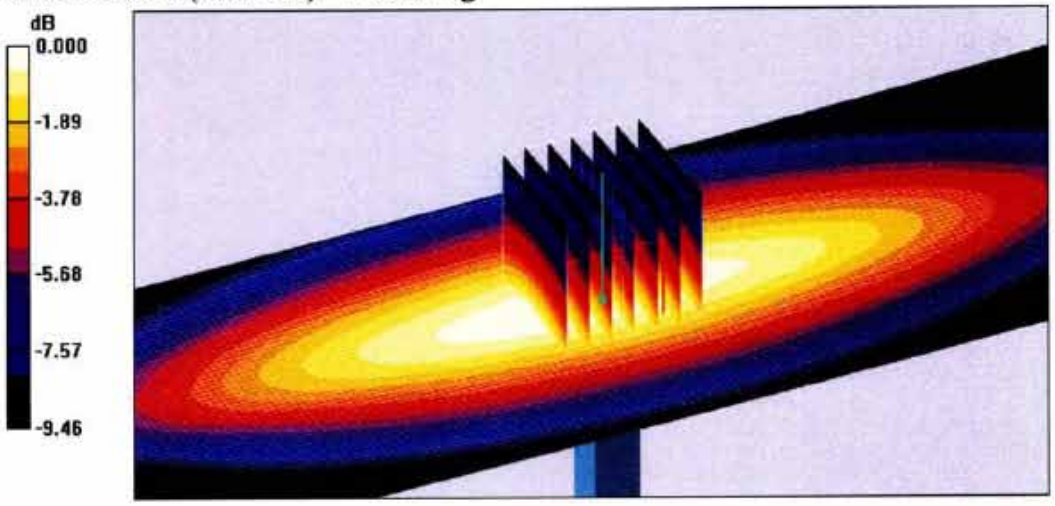
- Probe: ET3DV6 - SN1507 (LF); ConvF(6.61, 6.61, 6.61); Calibrated: 11.07.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: ELI 4.0; Type: QDOVA001BA; ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=398mW/Area Scan (61x171x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.99 mW/g

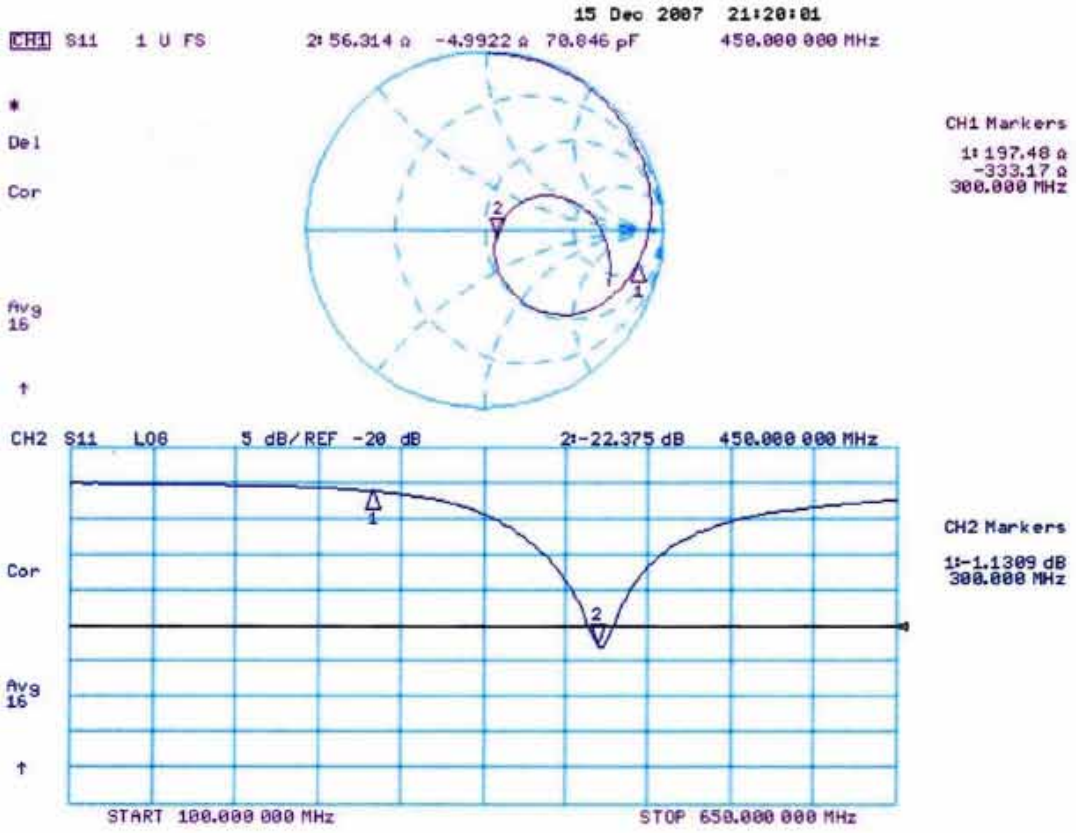
d=15mm, Pin=398mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.7 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.87 mW/g; SAR(10 g) = 1.25 mW/g
Maximum value of SAR (measured) = 1.99 mW/g



0 dB = 1.99mW/g

Impedance Measurement Plot for Head TSL



Appendix D
Test System Verification Scans

The SAR result indicated on the Manufacture's Calibrated certificate for dipole D450V3 S/N 1054 was not used due to the following:

-- The IEEE1528-2003 and the FCC OET-65 Supplement C, System Verification section indicated that "The measured 1-g SAR should be within 10% of the expected target values specified for the specific phantom and RF source used in the system verification measurement."

-- SPEAG calibration certificate indicated that the allowed tolerance for this dipole is higher than +/- 10% (e.g. 4.73 +/-18.1% at k=2 for the D450V3 S/N 1054).

-- The allowed tolerance for the probes is also higher than +/- 10% (e.g. 13.3% at k=2 at 450MHz for the probe being used to assess this product).

Due to probe, dipole and system tolerances noted above, the lab averages dipole results across multiple probes to establish a set of averaged targets for each dipole using the following procedure:
• The System Validation was conducted per IEEE1528-2003 and the latest draft of IEC62209-2 (10/3/08) standards using the simulated head tissue and multiple probes that are available and applicable for the dipole under test to verify the System Validation. Results for this dipole are within the measurement system uncertainty of the reference SAR values indicated within the latest draft of IEC62209-2 (10/3/08) when uses flat phantom with 2mm thickness is used. These results then are averaged and used as the target for the daily system performance check when the simulated head tissue is used.
•The dipole targets for the body are set immediately following the same process noted above. Since there is no standard referencing the SAR values for the System Validation using the simulated body tissue, the compliant System Validation results using the simulated head tissue are used to justify the use of the System Validation results using the simulated body tissue due to the same setup except for the simulated tissue type.

The targets set in this report were conducted following the above process. The System validation results included in this report was not averaged since there was only one probe available at the time when the System Validation targets were set for dipole D450V3 S/N 1054.

Noted that the target set for the tested dipole, when used the simulated head tissue, meets the requirement for the system validation per IEEE1528-2003 the latest draft of IEC62209-2 (10/3/08) standards, and the difference between this result and the result from the manufacture's dipole calibration certificate is 7.8% which is well within the measurement uncertainty of the measurement system at k=2.

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.

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Date/Time: 3/19/2009 6:34:26 AM

Robot# / Run#: DASY4-PG-1 / CcC(PS)-SYSP-450B-090319-01
Phantom# / Tissue Temp.: ELI4 1050 / 22.2 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target:	4.20 mW/g	(1g)
Calculated:	4.12 mW/g	(1g)
Percent from Target (+/-):	1.90 %	(1g)
Rotation (1D):	0.052 dB	

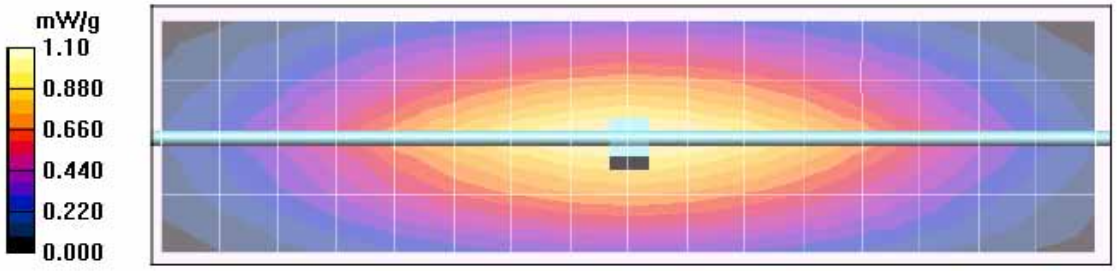
Comments:

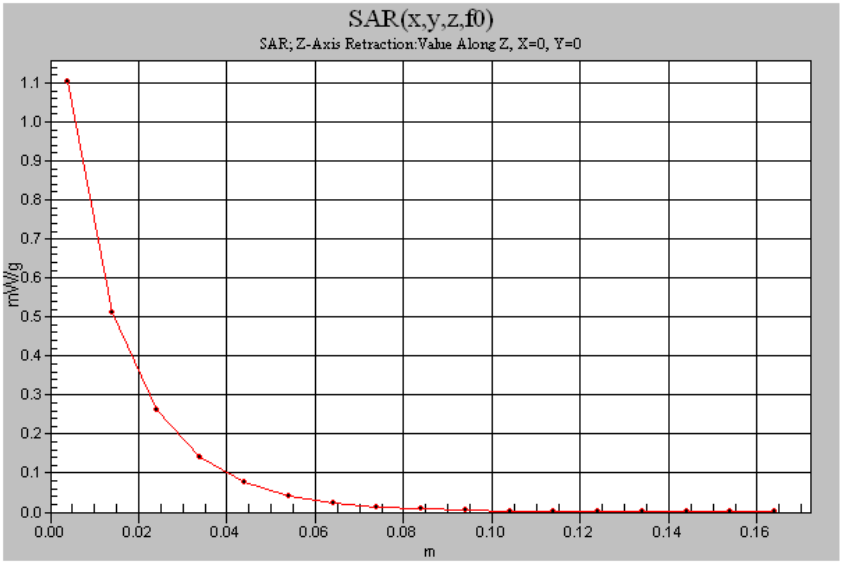
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 34.3 V/m; Power Drift = -0.00657 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.685 mW/g
Maximum value of SAR (measured) = 1.10 mW/g

System Performance Check/Dipole Area Scan 2 (5x17x1): Measurement grid: dx=15mm, dy=15mm

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





Motorola Government & Public Safety EME Laboratory

Date/Time: 3/20/2009 6:44:09 AM

Robot# / Run#: DASY4-PG-1 / CcC(PS)-SYSP-450B-090320-01
Phantom# / Tissue Temp.: ELI4 1050 / 22.1 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target:	4.20 mW/g (1g)
Calculated:	4.20 mW/g (1g)
Percent from Target (+/-):	0.00 % (1g)
Rotation (1D):	0.075 dB

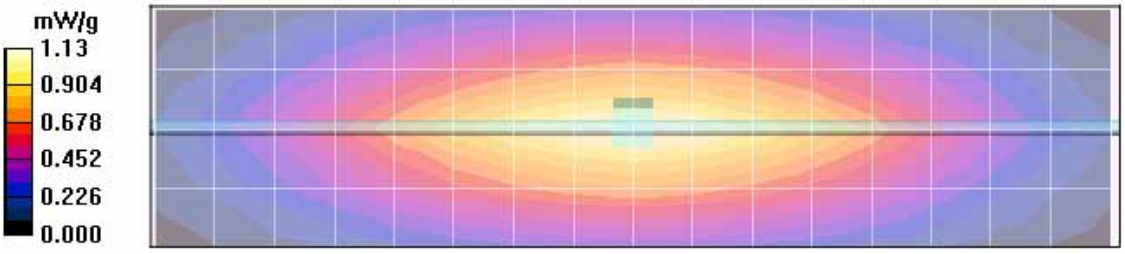
Comments:

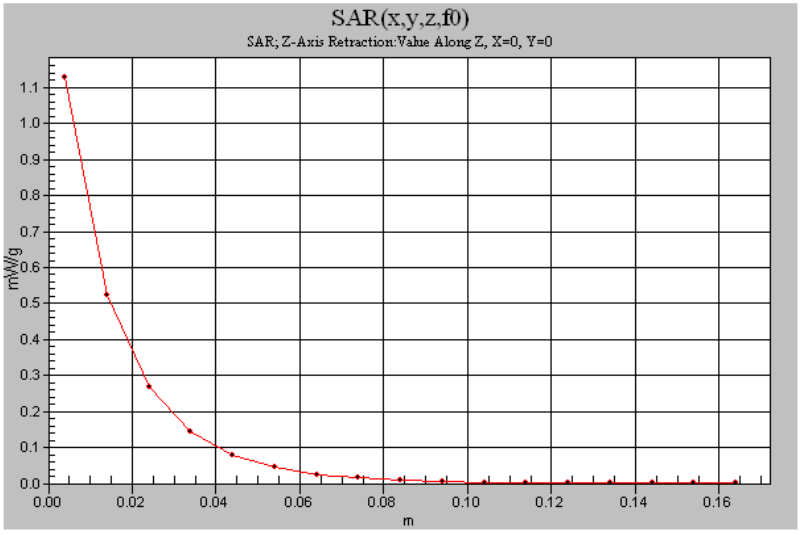
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 34.7 V/m; Power Drift = -0.00195 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.701 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

System Performance Check/Dipole Area Scan 2 (5x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 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: 3/23/2009 7:02:34 AM

Robot# / Run#: DASY4-PG-1 / Vee(PS)-SYSP-450B-090323-01
Phantom# / Tissue Temp.: ELI4 1050 / 22.3 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target:	4.20 mW/g (1g)
Calculated:	4.04 mW/g (1g)
Percent from Target (+/-):	3.8 % (1g)
Rotation (1D):	0.096 dB

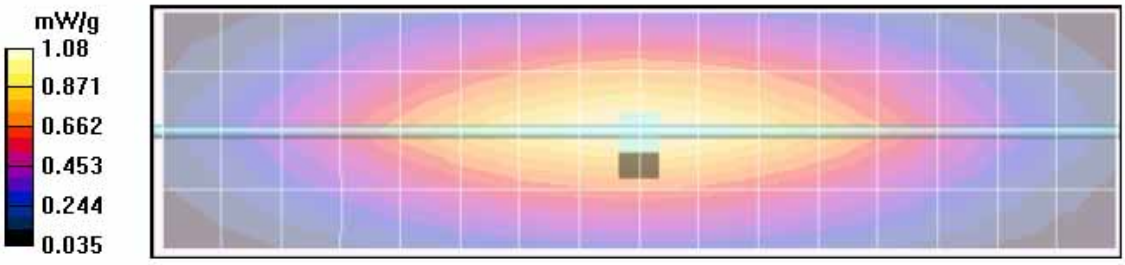
Comments:

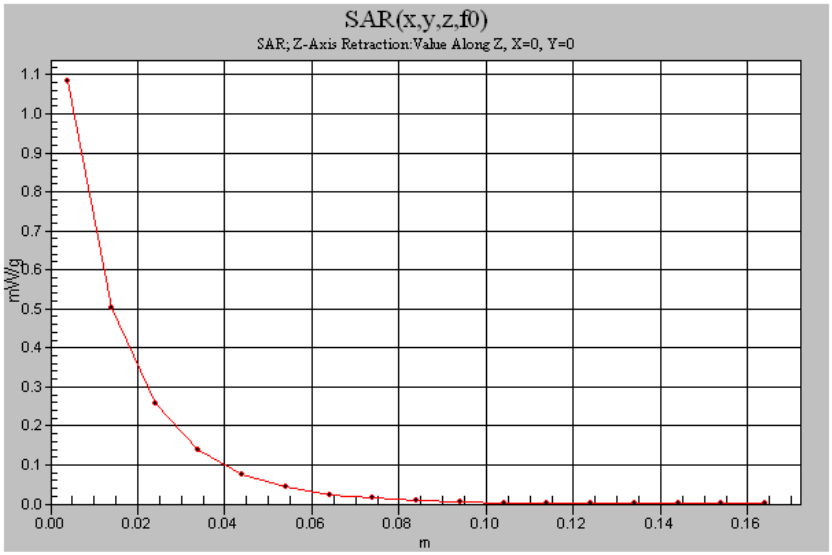
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.93 mho/m; ε_r = 55.1; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 34.2 V/m; Power Drift = -0.00119 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.677 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

System Performance Check/Dipole Area Scan 2 (5x17x1): Measurement grid: dx=15mm, dy=15mm

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





Motorola Government & Public Safety EME Laboratory

Date/Time: 3/24/2009 7:03:14 AM

Robot# / Run#: DASY4-PG-1 / Vee(PS)-SYSP-450H-090324-01
Phantom# / Tissue Temp.: ELI4 1037 / 22.3 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target:	4.36 mW/g (1g)
Calculated:	4.36 mW/g (1g)
Percent from Target (+/-):	0 % (1g)
Rotation (1D):	0.095 dB

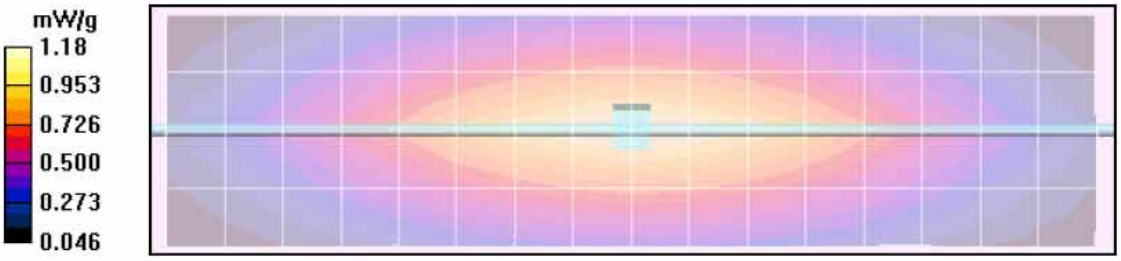
Comments:

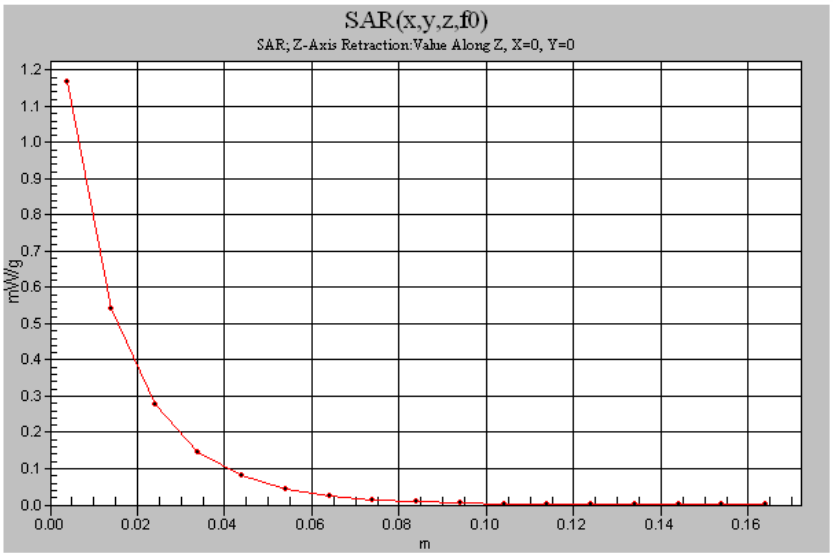
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.48, 6.48, 6.48)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.8; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 37.3 V/m; Power Drift = -0.00387 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.727 mW/g

System Performance Check/Dipole Area Scan 2 (5x17x1): 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) = 1.17 mW/g





Motorola Government & Public Safety EME Laboratory

Date/Time: 3/25/2009 7:56:00 AM

Robot# / Run#: DASY4-PG-1 / CcC(PS)-SYSP-450B-090325-01
Phantom# / Tissue Temp.: ELI4 1050 / 22.0 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target:	4.20 mW/g	(1g)
Calculated:	4.12 mW/g	(1g)
Percent from Target (+/-):	1.9 %	(1g)
Rotation (1D):	0.1 dB	

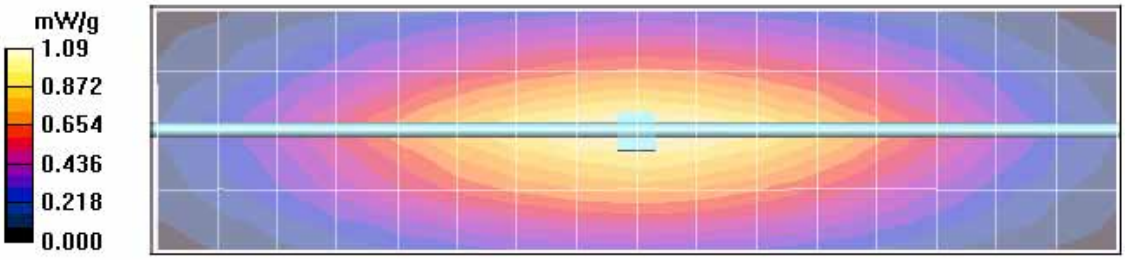
Comments:

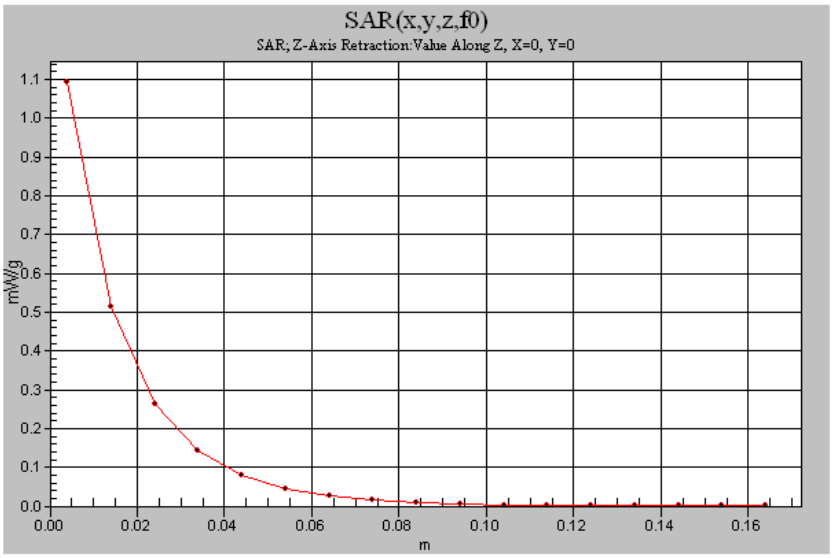
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.93 mho/m; ε_r = 55.2; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 34.4 V/m; Power Drift = -0.00293 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.684 mW/g
Maximum value of SAR (measured) = 1.10 mW/g

System Performance Check/Dipole Area Scan 2 (5x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.09 mW/g

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





DIPOLE SAR TARGET - HEAD

Date:	**01/14/09**	Frequency (MHz):	**450**
Lab Location:	PG-G&PS	Mixture Type:	**IEEE Head**
DAE Serial #:	684	Ambient Temp.(°C):	22.8
Tissue Characteristics			
Permitivity:	43.9	Phantom Type/SN:	ELI4 1037
Conductivity:	0.85	Distance (mm):	15
Tissue Temp.(°C):	21.7		
Reference Source:	Dipole	Power to Dipole:	250 mW
Reference SN:	**1054**		

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

4.58

Difference from Target

-4.80% **(1g-SAR)**

New Target:

Average 1g-SAR Value (mW/g):	**4.36**

Passes K=2

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

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3096	4.36	0.0%	R1
2		#DIV/0!	Rx
3		#DIV/0!	Rx
4		#DIV/0!	Rx
5		#DIV/0!	Rx
Average	**4.3600**	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: **CC Chang** Initial C-C-C. 01.14.09

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Motorola Government & Public Safety EME Laboratory

Date/Time: 1/14/2009 10:05:46 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450H-090114-02
Phantom# / Tissue Temp.: ELI4 1037 / 21.7 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

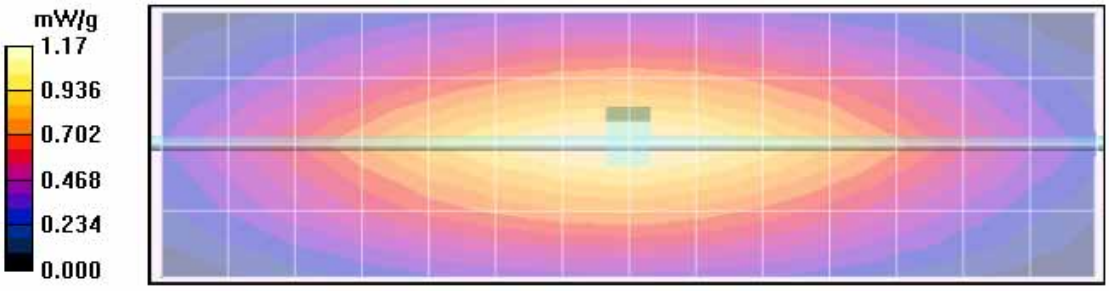
Target:	4.58 mW/g (1g)	
Calculated:	4.36 mW/g (1g)	
Percent from Target (+/-):	4.80 %	(1g)
Rotation (1D):	0.079 dB	

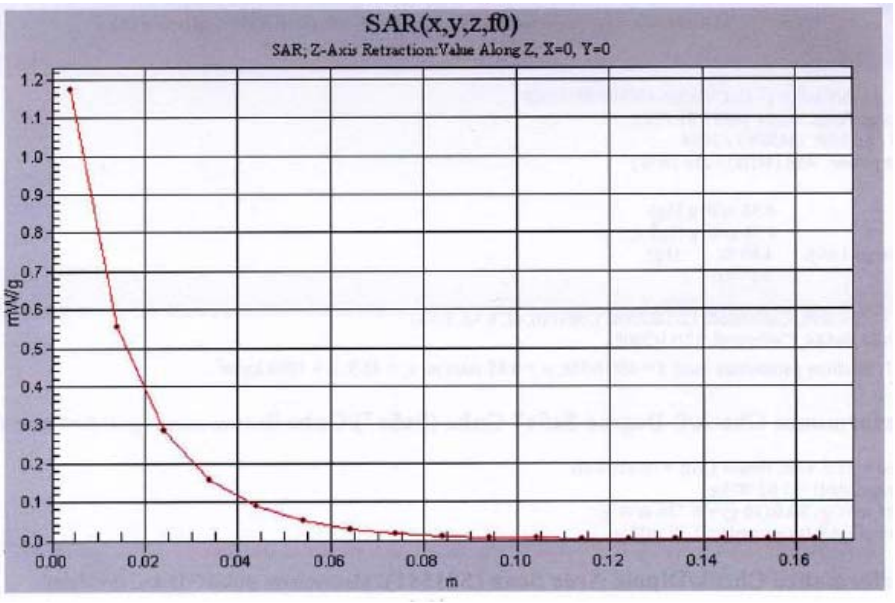
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.48, 6.48, 6.48)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.85 mho/m; ε_r = 43.9; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 37.7 V/m; Power Drift = -0.0254 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.736 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm

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





DIPOLE SAR TARGET - BODY

Date:	**01/14/09**	Frequency (MHz):	**450**
Lab Location:	PG-G&PS	Mixture Type:	**FCC Body**
DAE Serial #:	684	Ambient Temp.(°C):	22.8

Tissue Characteristics

Permitivity:	56.4	Phantom Type/SN:	ELI4 1050
Conductivity:	0.94	Distance (mm):	15
Tissue Temp.(°C):	21.5		

Reference Source:	Dipole	Power to Dipole:	250 mW
Reference SN:	**1054**		

New Target:
Average Measured SAR Value: **4.20** mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3096	4.20	0.0%	R1
2		-100.0%	Rx
3		-100.0%	Rx
4		-100.0%	Rx
5		-100.0%	Rx
Average	**4.2000**	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: **CC Chang** Initial: C.C. 01.14.09

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Motorola Government & Public Safety EME Laboratory

Date/Time: 1/14/2009 10:45:01 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-090114-03
Phantom# / Tissue Temp.: ELI4 1050 / 21.5 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Calculated: 4.20 mW/g (1g)
Rotation (1D): 0.084 dB

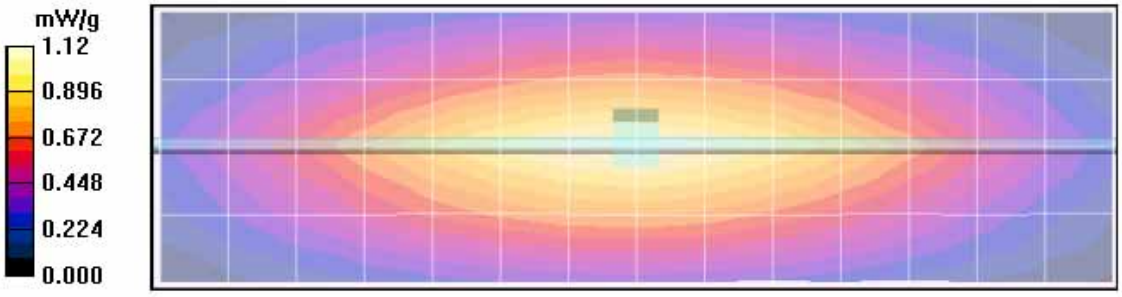
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008

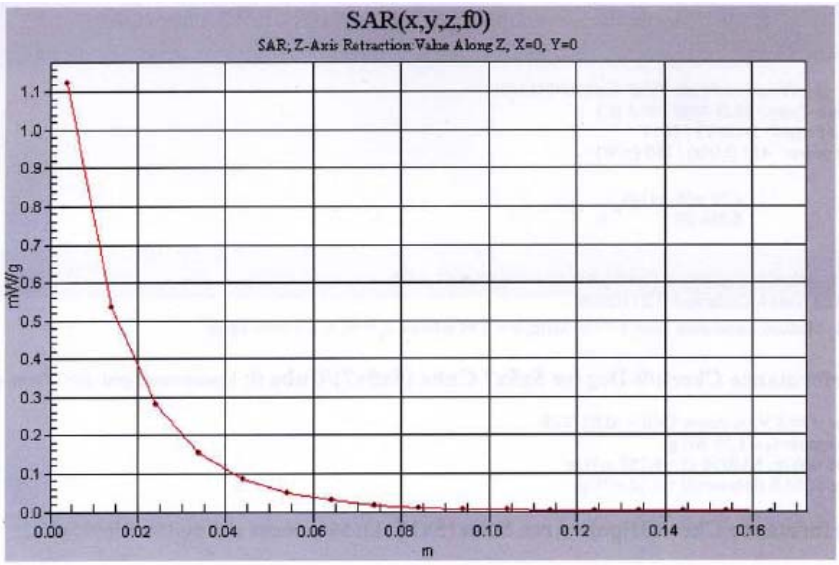
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; σ = 0.94 mho/m; ε_r = 56.4; ρ = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 34.8 V/m; Power Drift = -0.0272 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.707 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm

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





Appendix E
DUT Scans (Shortened Scan and Highest SAR configurations)

Shortened Scan Result
Motorola Government & Public Safety EME Laboratory
Date/Time: 3/24/2009 5:49:45 PM

Robot # / Run #: DASY4-PG-1 / CcC-AB-090324-14
Phantom # / Tissue Temp: ELI4 1050 / 21.8 (C)
Model # / Serial#: PMUE3325AAN / 1338KD0674
Antenna / TX Freq: PMAE4003A / 447.0000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: None / PMMN4001A
Start power: 4.76 W

Comments: Shorten scan; Radio back at ant 2.5cm

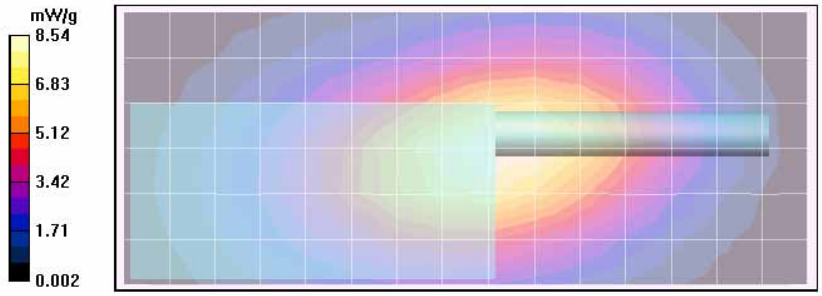
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 425 MHz; σ = 0.91 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3

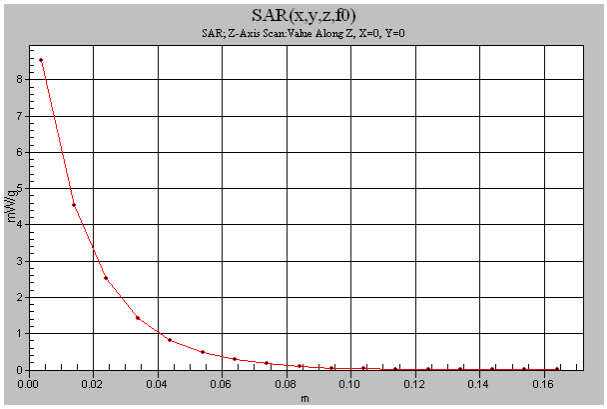
Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 103.3 V/m; Power Drift = -0.349 dB
Peak SAR (extrapolated) = 12.0 W/kg
SAR(1 g) = 8.62 mW/g; SAR(10 g) = 6.16 mW/g
Maximum value of SAR (measured) = 9.10 mW/g

Ab Scan/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 98.2 V/m; Power Drift = -0.403 dB
Motorola Fast SAR: SAR(1 g) = 8.37 mW/g; SAR(10 g) = 6.09 mW/g
Maximum value of SAR (interpolated) = 8.85 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 8.54 mW/g

Shortened scan reflect highest SAR producing configuration; Run time 7 minutes.
Representative zoom scan run time was 18 minutes
"Shortened" scan max calculated SAR using SAR drift: 1-g Avg. = 4.71 mW/g; 10-g Avg. = 3.37 mW/g
Zoom scan max calculated SAR using SAR drift: 1-g Avg. = 4.99 mW/g; 10-g Avg. = 3.58 mW/g
(see part 1 of 3 section 9.0 run # Vee(PS)-AB-090323-04)





Body Highest SAR Configuration Result

Motorola Government & Public Safety EME Laboratory

Date/Time: 3/23/2009 9:05:33 AM

Robot # / Run #: DASY4-PG-1 / Vee(PS)-AB-090323-04
Phantom # / Tissue Temp: ELI4 1050 / 22.0 (C)
Model # / Serial#: PMUE3325AAN / 1338KD0674
Antenna / TX Freq: PMAE4003A / 447.0000 MHz
Battery: PMNN4081A
Carry Acc. / Cable Acc.: None / PMMN4001A
Start power: 4.85 W

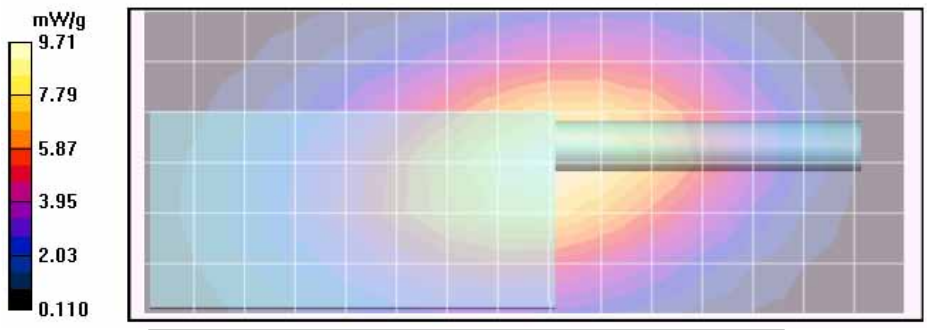
Comments: Full scan; Radio back at ant 2.5cm

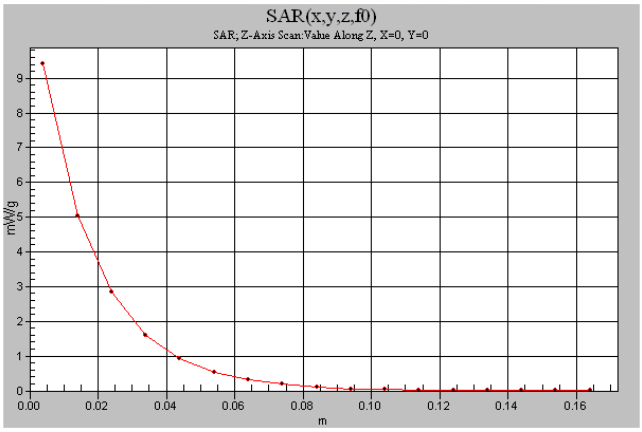
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.97, 6.97, 6.97)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 425 MHz; σ = 0.91 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 106.3 V/m; Power Drift = -0.455 dB
Peak SAR (extrapolated) = 12.5 W/kg
SAR(1 g) = 8.98 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 9.46 mW/g

Ab Scan/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 106.3 V/m; Power Drift = -0.332 dB
Motorola Fast SAR: SAR(1 g) = 9.2 mW/g; SAR(10 g) = 6.72 mW/g
Maximum value of SAR (interpolated) = 9.71 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 9.42 mW/g





Face Highest SAR Configuration Result

Motorola Government & Public Safety EME Laboratory

Date/Time: 3/24/2009 9:47:47 AM

Robot # / Run #: DASY4-PG-1 / Vee(PS)-FACE-090324-05
Phantom # / Tissue Temp: ELI4 1037 / 21.9 (C)
Model # / Serial#: PMUE3325AAN / 1338KD0674
Antenna / TX Freq: PMAE4016A / 403.0000 MHz
Battery: PMNN4080A
Carry Acc. / Cable Acc.: NONE / NONE
Start power: 4.49 W

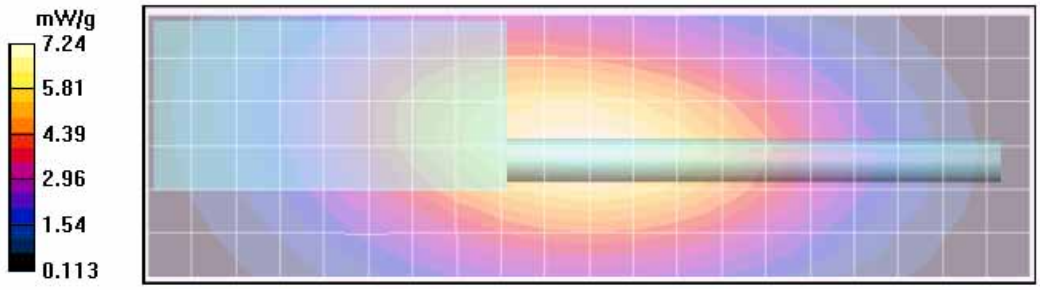
Comments: Full scan

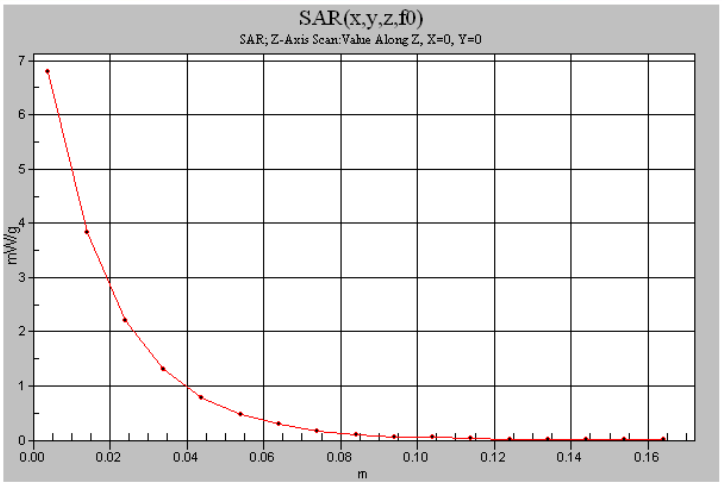
Probe: ES3DV3 - SN3096, Calibrated: 12/18/2008, ConvF(6.48, 6.48, 6.48)
Electronics: DAE4 Sn684, Calibrated: 12/11/2008
Duty Cycle: 1:1, Medium parameters used: f = 425 MHz; σ = 0.84 mho/m; ε_r = 44.4; ρ = 1000 kg/m^3

Face Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 96.4 V/m; Power Drift = -0.577 dB
Peak SAR (extrapolated) = 8.73 W/kg
SAR(1 g) = 6.56 mW/g; SAR(10 g) = 4.85 mW/g
Maximum value of SAR (measured) = 6.92 mW/g

Face Scan/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 96.4 V/m; Power Drift = -0.467 dB
Motorola Fast SAR: SAR(1 g) = 6.9 mW/g; SAR(10 g) = 5.13 mW/g
Maximum value of SAR (interpolated) = 7.24 mW/g

Face Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 6.80 mW/g



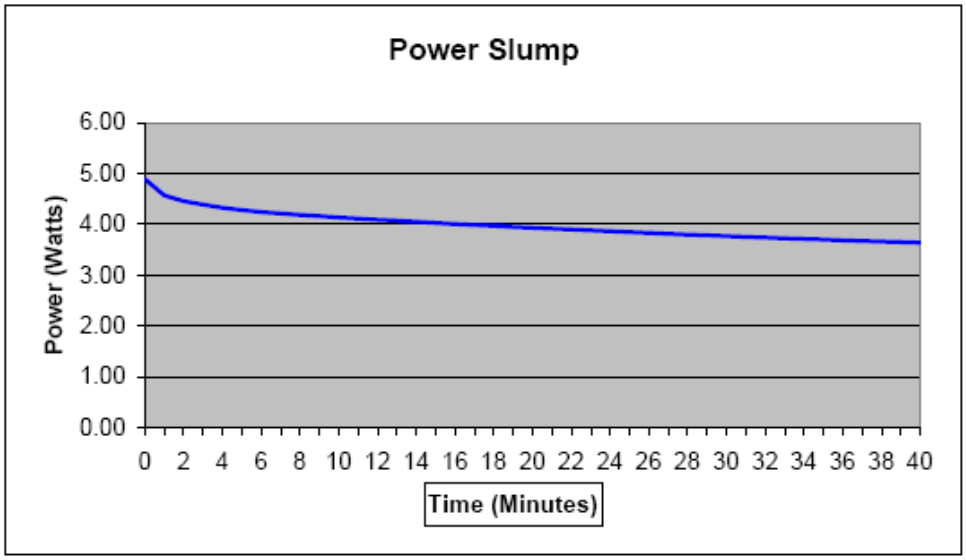


APPENDIX F
DUT Supplementary Data (Power slump)

Power Slump Model # : PMUE3325AAN
Serial # : 1338KD0674

Battery: PMNN4081A **Transmit Mode:** CW
Frequency: 447MHz **Audio Accessory:** PMMN4001A
Date: 3/24/2009

Tx Time (Minutes)	Measure Power (Watts)
0.0	4.89
1.0	4.57
2.0	4.46
3.0	4.39
4.0	4.33
5.0	4.28
6.0	4.24
7.0	4.21
8.0	4.18
9.0	4.16
10.0	4.14
11.0	4.11
12.0	4.09
13.0	4.07
14.0	4.05
15.0	4.03
16.0	4.01
17.0	3.99
18.0	3.97
19.0	3.95
20.0	3.93
21.0	3.91
22.0	3.90
23.0	3.88
24.0	3.87
25.0	3.85
26.0	3.83
27.0	3.81
28.0	3.80
29.0	3.78
30.0	3.77
31.0	3.75
32.0	3.74
33.0	3.73
34.0	3.71
35.0	3.70
36.0	3.69
37.0	3.67
38.0	3.66
39.0	3.65
40.0	3.64



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?	** Separation distances between DUT antenna and phantom surface (mm)		
		Body Test configuration		Face Test configuration
		with Carry accessories	2.5cm assessment	
NAE6483AR	Yes	41-68	25-25	28-36
PMAE4016A	Yes	41-70	25-34	28-34
PMAE4014A	Yes	41-74	25-25	28-40
PMAE4002A	Yes	41-55	25-25	28-32
PMAE4003A	Yes	35-55	25-32	28-32

Battery Models	Tested?	** Separation distances between DUT antenna and phantom surface (mm)
PMNN4080A	Yes	41-74
PMNN4082A	Yes	37-51
PMNN4081A	Yes	35-49

Body worn Models	Tested?	** Separation distances between DUT antenna and phantom surface. (mm)	Comments
HLN9844A	Yes	36-74	Tested with all the above antennas.
PMLN5334A	Yes	35-44	Tested with HLN9844A and antenna PMAE4003A only.

** The 1st number indicated the minimum separation distance that measured at the antenna's base while the second number reflects the separation distance measured at the antenna's tip.

Audio acc. Models	Tested?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
HMN9754D	Yes	NA	
PMLN4606A	Yes	NA	
PMMN4001A	Yes	NA	
PMMN4008A	Yes	NA	
PMMN4013A	Yes	NA	
PMMN4029A	Yes	NA	
PMLN4442A	No	NA	Same physical connector, cable thickness and length as PMLN4443A except for the earpiece.
PMLN4443A	Yes	NA	
PMLN4444A	Yes	NA	
PMLN4445A	Yes	NA	
PMLN4620A	No	NA	This is a received only earpiece that is used in conjunction w/ the PMMN4013A, which is same as the AARLN4885B.
AARLN4885B	Yes	NA	This is a received only earpiece that tested with PMMN4013A.
WADN4190B	No	NA	This is a received only earpiece that is used in conjunction w/ the PMMN4013A, which is same as the AARLN4885B.
RLN4941A	Yes	NA	This is a received only earpiece that 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 same as the RLN6230A.
RLN6232A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is same as the RLN6230A.
RLN6241A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is same as the RLN6230A.
RLN6242A	No	NA	This is the plastic acoustic tube replacement part for the earpiece, which is same as the RLN6230A.
RLN5317A	No	NA	Same physical connector, cable thickness and length are same as HMN9754D except for the earpiece.
RLN5318A	No	NA	Same physical connector, cable thickness and length are same as HMN9754D except for the earpiece.
RLN4895A	No	NA	Same physical connector, cable thickness and length are same as HMN9754D except for the earpiece.