



MOTOROLA



TESTING CERT # 2518.05

FCC ID: AZ489FT4884

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2

Government & Public Safety

EME Test Laboratory

Motorola Technology Sdn Bhd (455657-H)

Customer Solution Center

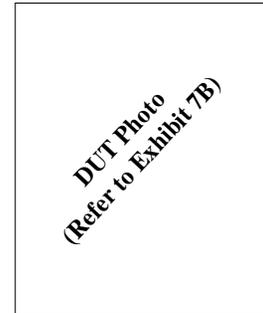
Plot 2, Bayan Lepas Technoplex Industrial Park,
Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.

Date of Report: 4/30/08

Report Revision: 0

Report ID: SAR rpt_PMUE3090AANAA_Rev O_080430
SR6208

Responsible Engineer: PeiLoo Tey (Sr. EME Engineer)
Date/s Tested: 3/21/08~3/31/08
Manufacturer/Location: Motorola – Penang
Sector/Group/Div.: G&PS
Date submitted for test: 3/14/08
DUT Description: XPR 6300 450-512MHz 4W 32CH, PLAIN W/O GPS
Test TX mode(s): CW
Max. Power output: 4.8W
Nominal Power: 4.0W
Tx Frequency Bands: 450-512MHz
Signaling type: FM
Model(s) Tested: PMUE3090AANAA
Model(s) Certified: PMUE3090AANAA
Serial Number(s): 977TUA0003
Classification: Occupational/Controlled
Rule Part(s): 90



Approved Accessories:

Antenna(s):

PMAE4049A (450-527MHz, Whip, ¼ wave, 1.9dBd); PMAE4050A (450-495MHz, GPS Fld Mnp, ¼ wave, 1.9dBd); PMAE4051A (495-527MHz, GPS Fld Mnp, ¼ wave, 0.8dBd); PMAE4052A (450-495MHz, GPS Stubby, ¼ wave, 1.3dBd); PMAE4048A (495-527MHz, GPS Stubby, ¼ wave, 1.4dBd)

Battery(ies):

PMNN4077B (LI-ION 2200mAH IMPRES Battery LTD); PMNN4066A (Impres LI-ION 1500mAH Submersible (IP57) Battery); PMNN4069A (Impres LI-ION 1400mAH Submersible (IP57) Intrinsically Safe (FM) Battery); PMNN4065A (NiMH 1300mAH Submersible (IP57) Battery)

Body worn accessory(ies):

PMLN5024A (Nylon carry case w/ 3-inch Fixed Belt Loop for Non-Display radio); PMLN5025A (Soft leather carry case w/ 2.5-inch Swivel Belt Loop for Non-Display radio); PMLN5026A (Soft leather carry case w/ 3-inch Swivel Belt Loop for Non-Display radio); PMLN5027A (Soft leather carry case w/ 3-inch Fixed Belt Loop for Non-Display radio); PMLN5028A (Hard Leather carry case w/ 2.5-inch Swivel Belt Loop for Non-Display radio); PMLN5029A ((Hard Leather carry case w/ 3-inch Swivel Belt Loop for Non-Display radio); PMLN5030A (Hard Leather carry case w/ 3-inch Fixed Belt Loop for Non-Display radio); PMLN4651A (2-inch Belt Clip); PMLN4652A (2.5-inch Belt Clip); HLN9985B (Waterproof bag); RLN4570A (Break-A-way Chest pack); RLN4815A (Universal RadioPak & Utility Case (Fanny Pack)); HLN6602A (Universal Chest Pack); 4280384F89 (Universal RadioPak Extension Belt); 4200865599 (1.75-inch black Leather Belt); NTN5243A (Shoulder Strap (attaches to D-rings on carry case)); 1505596Z02 (Replacement Strap for RLN4570 & HLN6602 Chest Pack)

Audio/Data cable accessory(ies):

See section 3.0 for list of approved audio accessories.

Max. Calc. : 1-g Avg. SAR: 6.74W/kg (Body); 10-g Avg. SAR: 4.95W/kg (Body)

Max. Calc. : 1-g Avg. SAR: 3.92W/kg (Face); 10-g Avg. SAR: 2.90W/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: 5/1/2008

Certification Date: 5/1/2008

Certification No.: L1080425P

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																																														
<p>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.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.</p> <p>Calibration Equipment used (M&TE critical for calibration)</p> <table border="1"> <thead> <tr> <th>Primary Standards</th> <th>ID #</th> <th>Cal Date (Calibrated by, Certificate No.)</th> <th>Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>Power meter E4419B</td> <td>GB41293874</td> <td>29-Mar-07 (METAS, No. 217-00670)</td> <td>Mar-08</td> </tr> <tr> <td>Power sensor E4412A</td> <td>MY41495277</td> <td>29-Mar-07 (METAS, No. 217-00670)</td> <td>Mar-08</td> </tr> <tr> <td>Power sensor E4412A</td> <td>MY41498087</td> <td>29-Mar-07 (METAS, No. 217-00670)</td> <td>Mar-08</td> </tr> <tr> <td>Reference 3 dB Attenuator</td> <td>SN: S5054 (3c)</td> <td>08-Aug-07 (METAS, No. 217-00719)</td> <td>Aug-08</td> </tr> <tr> <td>Reference 20 dB Attenuator</td> <td>SN: S5086 (20b)</td> <td>29-Mar-07 (METAS, No. 217-00671)</td> <td>Mar-08</td> </tr> <tr> <td>Reference Probe ET3DV6 (LF)</td> <td>SN 1507</td> <td>11-Jul-07 (SPEAG, No. ET3-1507_Jul07)</td> <td>Jul-08</td> </tr> <tr> <td>DAE4</td> <td>SN 601</td> <td>30-Jan-07 (SPEAG, No. DAE4-601_Jan07)</td> <td>Jan-08</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Secondary Standards</th> <th>ID #</th> <th>Check Date (in house)</th> <th>Scheduled Check</th> </tr> </thead> <tbody> <tr> <td>RF generator HP 8648C</td> <td>US3642U01700</td> <td>04-Aug-99 (SPEAG, in house check Oct-07)</td> <td>In house check: Oct-09</td> </tr> <tr> <td>Network Analyzer HP 8753E</td> <td>US37390585</td> <td>19-Oct-01 (SPEAG, in house check Oct-07)</td> <td>In house check: Oct 08</td> </tr> </tbody> </table>				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
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Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature 																																												
Approved by:	Name Katja Pokovic	Technical Manager																																													
			Issued: December 18, 2007																																												
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.																																															

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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 j Ω
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: $f = 450 \text{ MHz}$; $\sigma = 0.83 \text{ mho/m}$; $\epsilon_r = 43.1$; $\rho = 1000 \text{ kg/m}^3$

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:

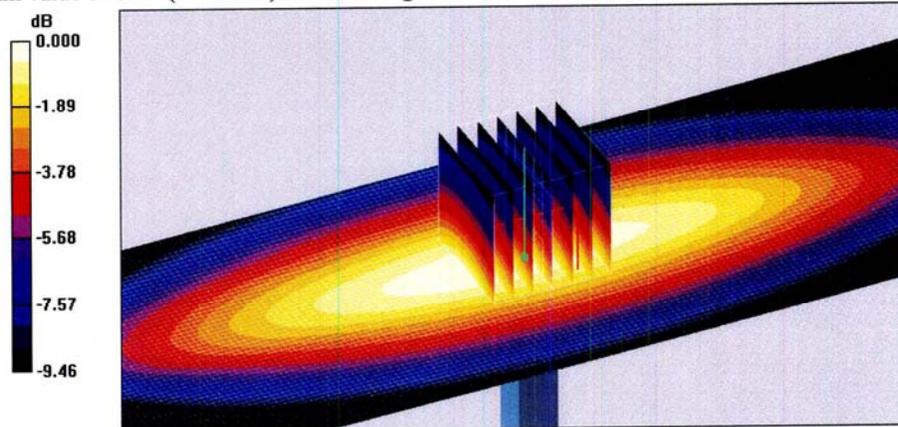
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.7 V/m; Power Drift = -0.043 dB

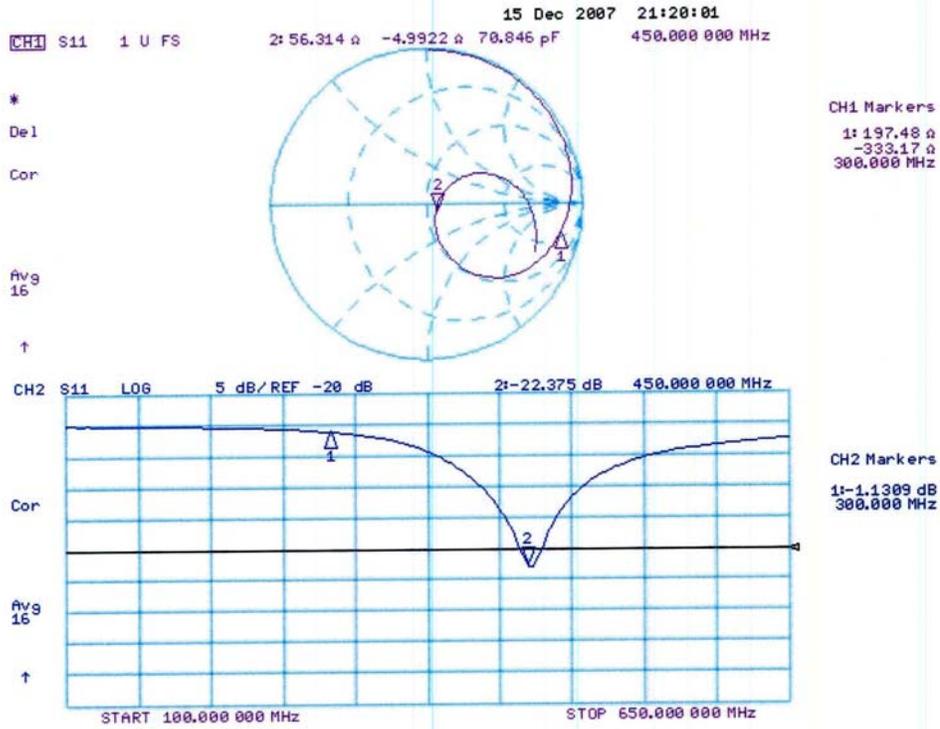
Peak SAR (extrapolated) = 2.76 W/kg

SAR(1 g) = 1.87 mW/g; SAR(10 g) = 1.25 mW/g

Maximum value of SAR (measured) = 1.99 mW/g



Impedance Measurement Plot for Head TSL



Appendix D

Test System Verification Scans

Dipole validation scans at the head from SPEAG are 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 is assessed using probe and measurement was performed using the isotropic assessment procedure mentioned below.

To assess the isotropic characteristics of the measurement probe, two system performance zoom scans (0 and 90 degrees) were measured. The measured results were averaged together in order to obtain the final calculated 1 gram results.

Motorola Government & Public Safety EME Laboratory
Date/Time: 3/21/2008 7:11:17 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-080321-01
Phantom# / Tissue Temp.: PG-80302002B/PG-S7 / 22.0 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.30 mW/g (1g)
Calculated: 4.40 mW/g (1g)
Percent from Target (+/-): 2.30 % (1g)

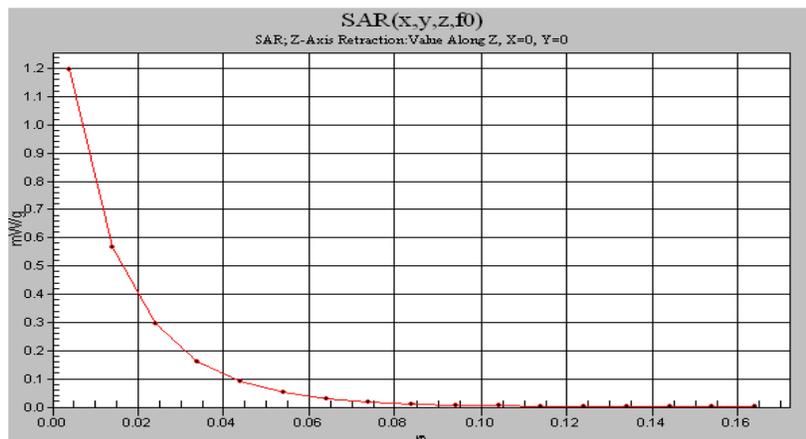
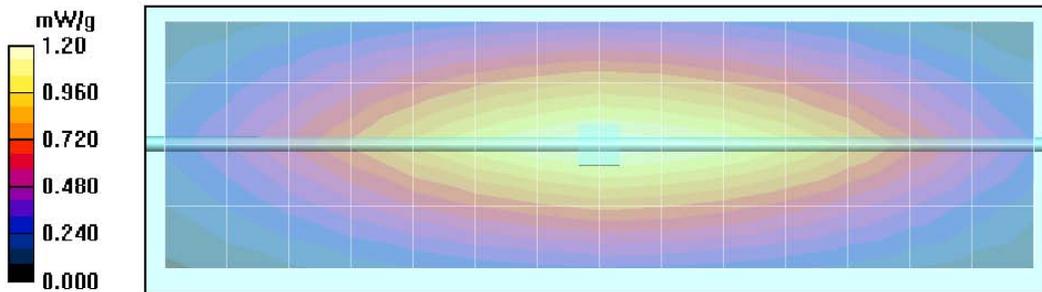
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 56.1$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.5 V/m; Power Drift = -0.0326 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.754 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.5 V/m; Power Drift = -0.0326 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.720 mW/g
Maximum value of SAR (measured) = 1.15 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
Maximum value of SAR (measured) = 1.20 mW/g



Motorola Government & Public Safety EME Laboratory
Date/Time: 3/24/2008 7:39:11 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-080324-01
Phantom# / Tissue Temp.: PG-80302002B/PG-S7 / 21.7 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.30 mW/g (1g)
Calculated: 4.34 mW/g (1g)
Percent from Target (+/-): 0.90 % (1g)

Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007

Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 55.9$; $\rho = 1000$ kg/m³

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

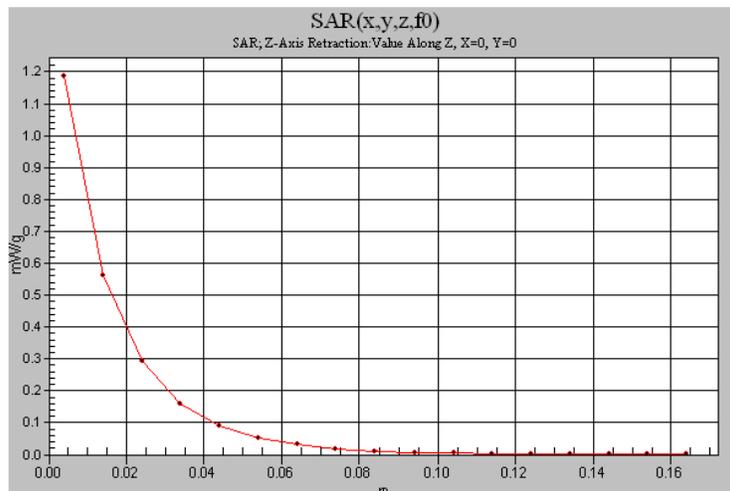
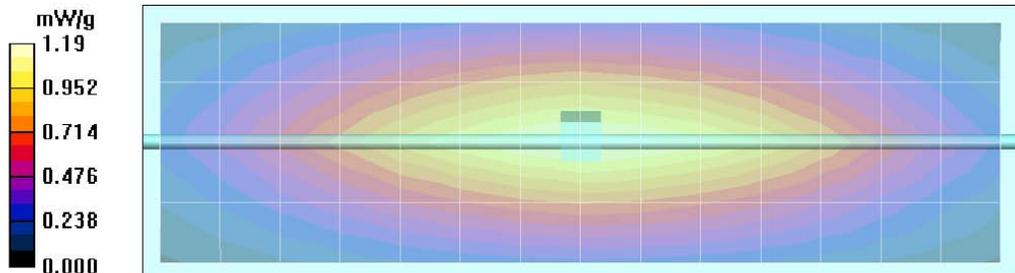
Reference Value = 36.3 V/m; Power Drift = -0.0108 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.742 mW/g
Maximum value of SAR (measured) = 1.18 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 36.3 V/m; Power Drift = -0.0108 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.710 mW/g
Maximum value of SAR (measured) = 1.14 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
Maximum value of SAR (measured) = 1.19 mW/g



Motorola Government & Public Safety EME Laboratory
Date/Time: 3/25/2008 10:19:14 AM

Robot# / Run#: DASY4-PG-1 / Vee-SYSP-450H-080325-01
Phantom# / Tissue Temp.: PG-80302002A/PG-S5 / 21.7 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.62 mW/g (1g)
Calculated: 4.42 mW/g (1g)
Percent from Target (+/-): 4.3 % (1g)

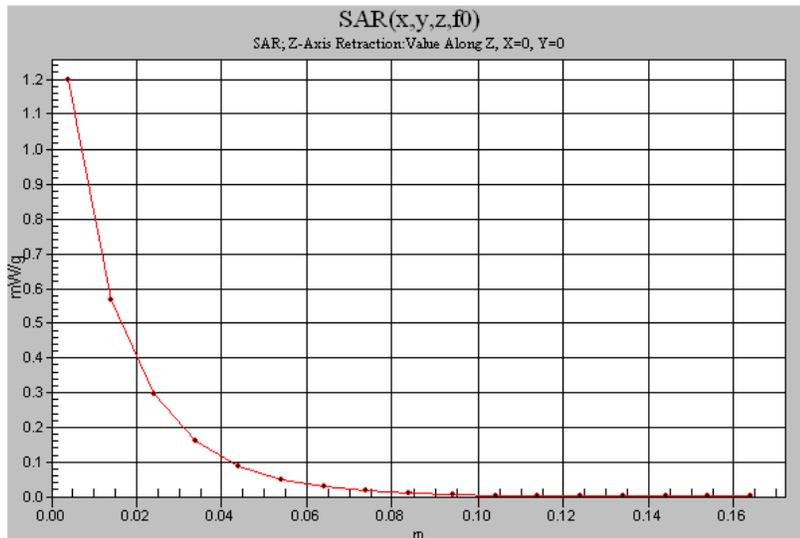
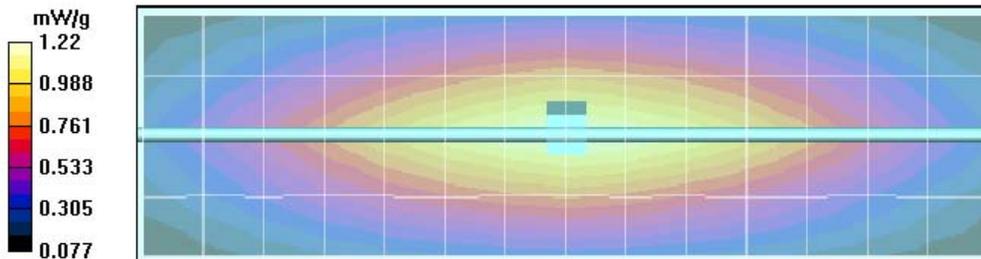
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.16, 6.16, 6.16)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.83$ mho/m; $\epsilon_r = 43.4$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 38.7 V/m; Power Drift = -0.0108 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.757 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 38.7 V/m; Power Drift = -0.0108 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.725 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.22 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 1.20 mW/g



Motorola Government & Public Safety EME Laboratory

Date/Time: 3/26/2008 7:15:44 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-080326-01
Phantom# / Tissue Temp.: PG-80302002B/PG-S7 / 21.7 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.30 mW/g (1g)
Calculated: 4.34 mW/g (1g)
Percent from Target (+/-): 0.90 % (1g)

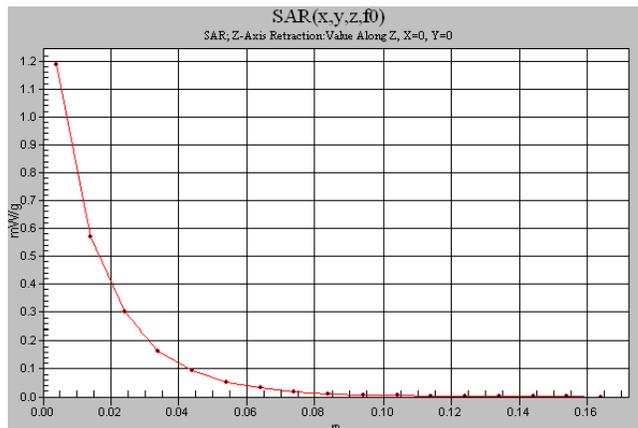
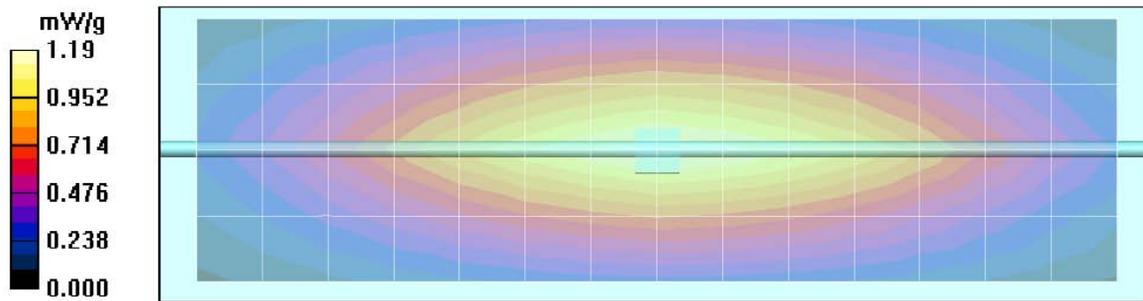
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; sigma = 0.91 mho/m; epsilon_r = 55.9; rho = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.3 V/m; Power Drift = 0.0199 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.746 mW/g
Maximum value of SAR (measured) = 1.19 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.3 V/m; Power Drift = 0.0199 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.712 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.18 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: 3/27/2008 7:02:18 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-080327-01
Phantom# / Tissue Temp.: PG-80302002B/PG-S7 / 21.5 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.30 mW/g (1g)
Calculated: 4.26 mW/g (1g)
Percent from Target (+/-): 0.90 % (1g)

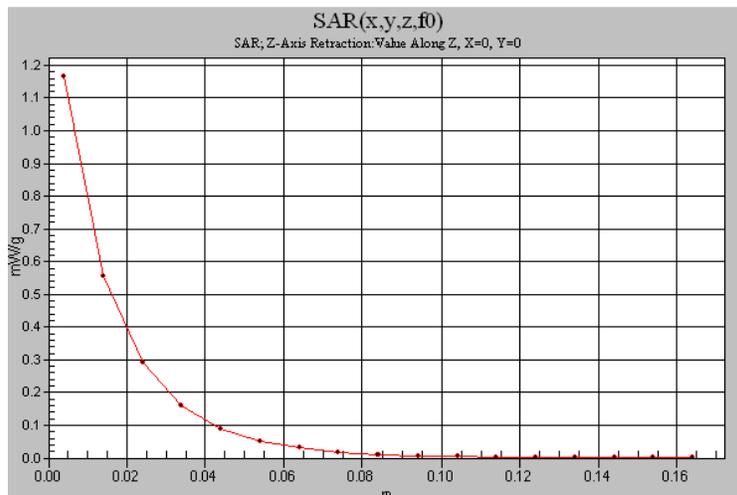
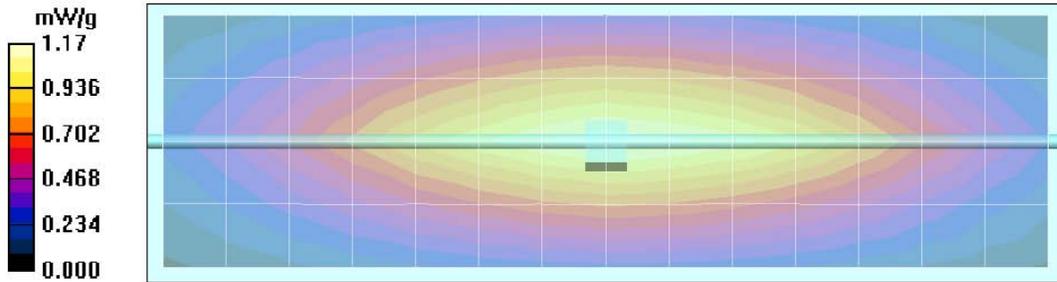
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; sigma = 0.91 mho/m; epsilon_r = 56.2; rho = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.1 V/m; Power Drift = 0.00386 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.731 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.1 V/m; Power Drift = 0.00386 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.699 mW/g
Maximum value of SAR (measured) = 1.11 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.16 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: 3/28/2008 7:02:24 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450H-080328-01
Phantom# / Tissue Temp.: PG-80302002A/PG-S5 / 21.8 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.62 mW/g (1g)
Calculated: 4.66 mW/g (1g)
Percent from Target (+/-): 0.90 % (1g)

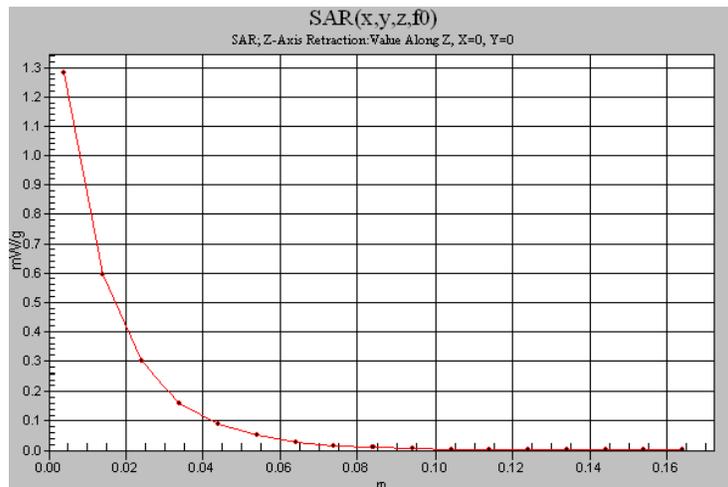
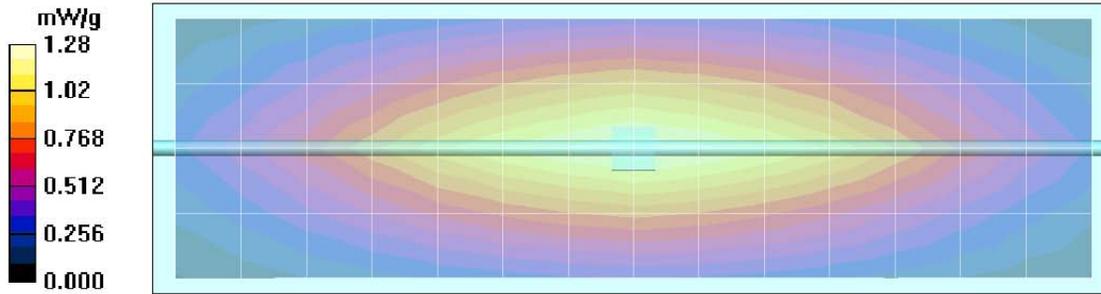
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.16, 6.16, 6.16)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 44.8$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 38.6 V/m; Power Drift = 0.000698 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.791 mW/g
Maximum value of SAR (measured) = 1.28 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 38.6 V/m; Power Drift = 0.000698 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.759 mW/g
Maximum value of SAR (measured) = 1.23 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



Motorola Government & Public Safety EME Laboratory

Date/Time: 3/31/2008 7:27:01 AM

Robot# / Run#: DASY4-PG-1 / CcC-SYSP-450B-080331-01
Phantom# / Tissue Temp.: PG-80302002B/PG-S7 / 21.7 (C)
Dipole Model# / Serial#: D450V3 / 1054
TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.30 mW/g (1g)
Calculated: 4.38 mW/g (1g)
Percent from Target (+/-): 1.90 % (1g)

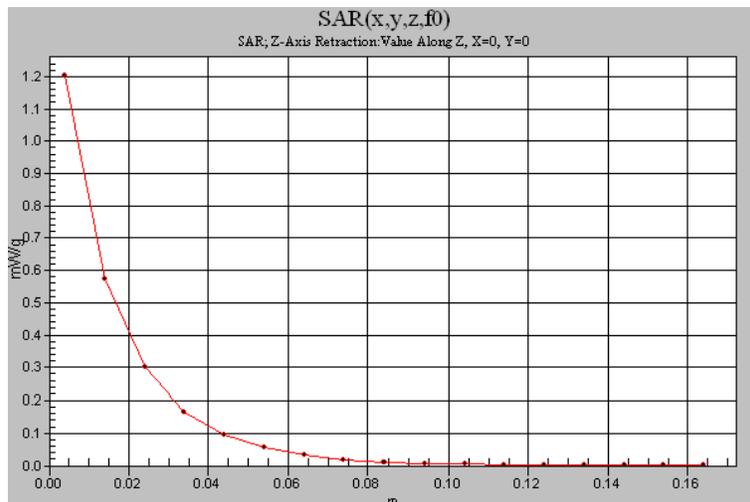
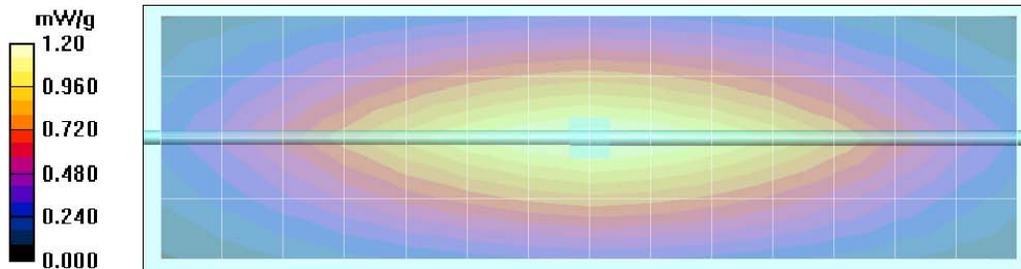
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; sigma = 0.91 mho/m; epsilon = 56.1; rho = 1000 kg/m^3

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.6 V/m; Power Drift = 0.00164 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.754 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 36.6 V/m; Power Drift = 0.00164 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.720 mW/g
Maximum value of SAR (measured) = 1.14 mW/g

System Performance Check/Dipole Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.20 mW/g

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



DIPOLE SAR TARGET - HEAD

Date: 02/27/08 Frequency (MHz): 450
 Lab Location: PG-G&PS Mixture Type: IEEE Head
 DAE Serial #: 684 Ambient Temp.(°C): 22.6

Tissue Characteristics
 Permittivity: 44.3 Phantom Type/SN: PG-80302002A
 Conductivity: 0.86 Distance (mm): 15
 Tissue Temp.(°C): 21.0

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

Target SAR Value: 4.9 mW/g (1g avg.), Difference from Target
 (normalized to 1.0 W) -5.71% (1g avg.)

New Target:
 Average Measured SAR Value: 4.62 mW/g (1g avg.), **Passes K=2**

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

Probe SN #s	1-G Cube	Diff from Ave	Robot
3096	4.62	#DIV/0!	Rx
2		#DIV/0!	Rx
3		#DIV/0!	Rx
4		#DIV/0!	Rx
5		#DIV/0!	Rx
Average	4.6200	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: CC Chang Initial: Cee. 02-27-08

DIPOLE SAR TARGET - BODY

Date: 02/27/08 Frequency (MHz): 450
 Lab Location: PG-G&PS Mixture Type: FCC Body
 DAE Serial #: 684 Ambient Temp.(°C): 22.7

Tissue Characteristics
 Permittivity: 56.5 Phantom Type/SN: PG-80302002B
 Conductivity: 0.91 Distance (mm): 15
 Tissue Temp.(°C): 20.7

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

New Target:

Average Measured SAR Value: 4.30 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3096	4.30	0.0%	Rx
2		-100.0%	Rx
3		-100.0%	Rx
4		-100.0%	Rx
5		-100.0%	Rx
Average	4.3000	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: CC Chang Initial: C.C.C. 02-27-08

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

Shortened Scan Result
Motorola Government & Public Safety EME Laboratory
Date/Time: 3/31/2008 9:52:55 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-080331-04
Phantom # / Tissue Temp: PG-80302002B/PG-S7 / 21.4 (C)
Model # / Serial#: PMUE3090AANAA / 977TUA0003
Antenna / TX Freq: PMAE4051A / 512.0000 MHz
Battery: PMNN4066A Carry Acc. / Cable Acc.: RLN4570A / NONE
Start power: 4.78 W
Comments: Shorten scan

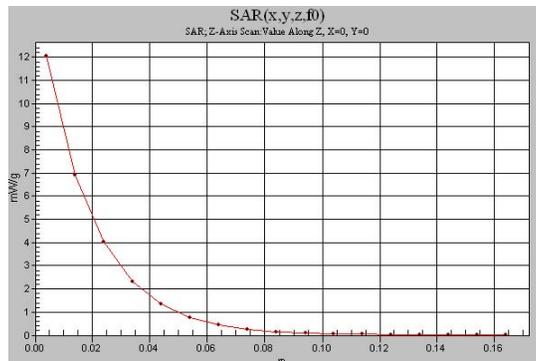
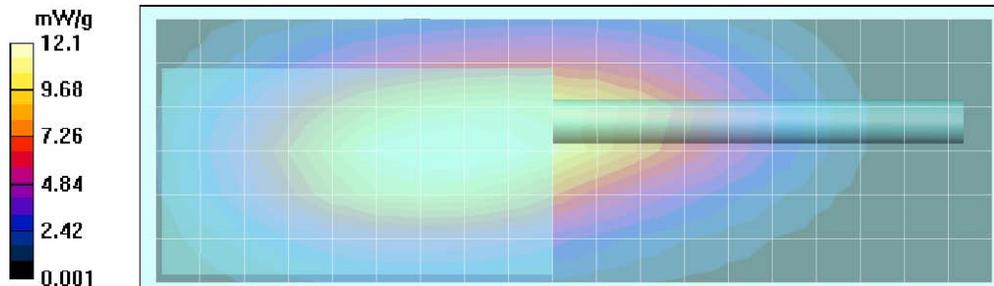
Shortened scan run time 8 minutes.
Representative "normal" scan run time was 18 minutes.
"Shortened" scan max. Calculated S.A.R. using S.A.R. drift: 1-g Avg. = 6.74mW/g; 10-g Avg. = 4.95mW/g
"Normal" scan max. Calculated S.A.R. using S.A.R. drift: 1-g Avg. = 6.66mW/g; 10-g Avg. = 4.93mW/g
(see part 1 of 2 section 9.0 run# CcC-AB-080331-02)

Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 481 MHz; sigma = 0.94 mho/m; epsilon_r = 55.6; rho = 1000 kg/m^3

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm Reference
Value = 121.7 V/m; Power Drift = -0.379 dB Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 12.3 mW/g; SAR(10 g) = 9.04 mW/g
Maximum value of SAR (measured) = 12.9 mW/g

Ab Scan/Area Scan (61x191x1): Measurement grid: dx=15mm, dy=15mm Reference
Value = 117.1 V/m; Power Drift = -0.524 dB
Motorola Fast SAR: SAR(1 g) = 11.9 mW/g; SAR(10 g) = 8.72 mW/g
Maximum value of SAR (interpolated) = 12.6 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 12.1 mW/g



Highest SAR at the Body
Motorola Government & Public Safety EME Laboratory
Date/Time: 3/31/2008 8:15:17 AM

Robot # / Run #: DASY4-PG-1 / CcC-AB-080331-02
Phantom # / Tissue Temp: PG-80302002B/PG-S7 / 21.7 (C)
Model # / Serial#: PMUE3090AANAA / 977TUA0003
Antenna / TX Freq: PMAE4051A / 512.0000 MHz
Battery: PMNN4066A
Carry Acc. / Cable Acc.: RLN4570A / NONE
Start power: 4.82 W
Comments: Full scan

Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.56, 6.56, 6.56)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007

Duty Cycle: 1:1, Medium parameters used: f = 481 MHz; sigma = 0.94 mho/m; epsilon_r = 55.6; rho = 1000 kg/m^3

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm Reference Value = 118.6 V/m; Power Drift = -0.714 dB Peak SAR (extrapolated) = 15.2 W/kg

SAR(1 g) = 11.3 mW/g; SAR(10 g) = 8.36 mW/g

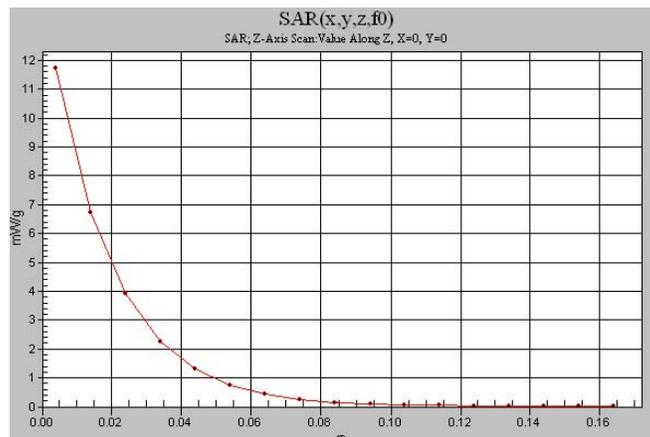
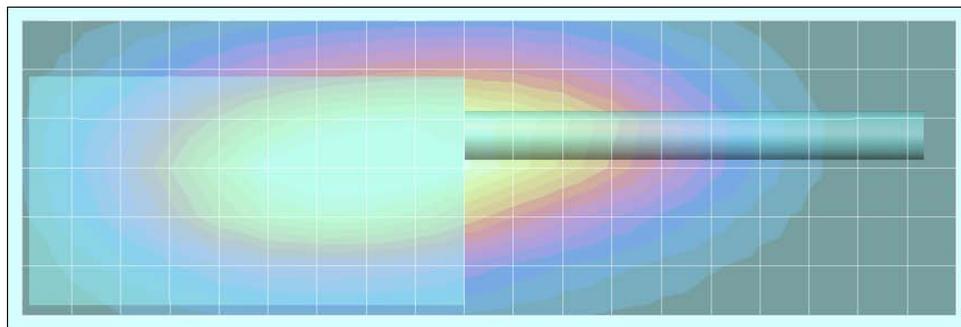
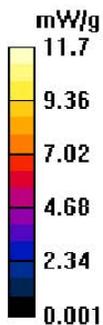
Maximum value of SAR (measured) = 11.9 mW/g

Ab Scan/Area Scan (61x191x1): Measurement grid: dx=15mm, dy=15mm Reference Value = 118.6 V/m; Power Drift = -0.714 dB

Motorola Fast SAR: SAR(1 g) = 12.1 mW/g; SAR(10 g) = 8.82 mW/g

Maximum value of SAR (interpolated) = 12.7 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 11.7 mW/g



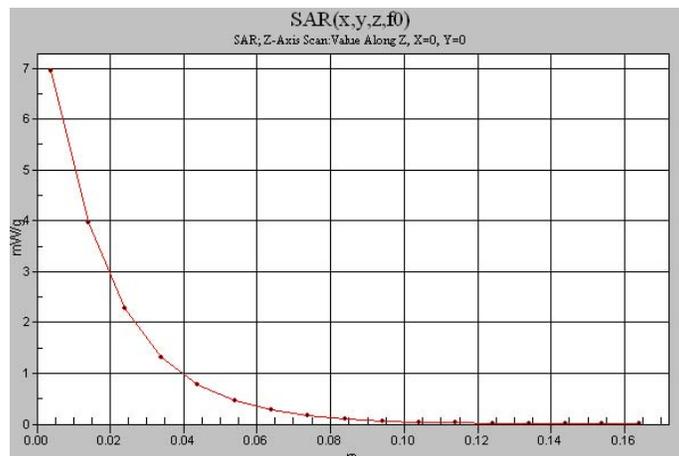
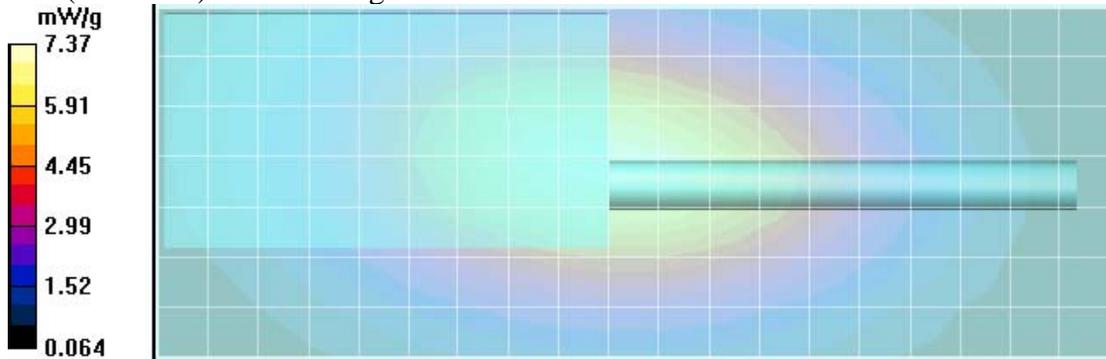
Highest SAR at the Face
Motorola Government & Public Safety EME Laboratory
Date/Time: 3/28/2008 4:32:46 PM

Robot # / Run #: DASY4-PG-1 / Vee-FACE-080328-13
Phantom # / Tissue Temp: PG-80302002A/PG-S5 / 21.8 (C)
Model # / Serial#: PMUE3090AANAA / 977TUA0003
Antenna / TX Freq: PMAE4050A / 472.5000 MHz
Battery: PMNN4077B
Carry Acc. / Cable Acc.: NONE / NONE Start power: 4.82 W
Comments: Full scan
Probe: ES3DV3 - SN3096, Calibrated: 12/19/2007, ConvF(6.16, 6.16, 6.16)
Electronics: DAE4 Sn684, Calibrated: 12/13/2007
Duty Cycle: 1:1, Medium parameters used: f = 481 MHz; sigma = 0.9 mho/m; epsilon_r = 44.1; rho = 1000 kg/m^3

Face Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 93.5 V/m; Power Drift = -0.686 dB Peak SAR (extrapolated) = 8.79 W/kg
SAR(1 g) = 6.7 mW/g; SAR(10 g) = 4.96 mW/g
Maximum value of SAR (measured) = 7.06 mW/g

Face Scan/Area Scan (71x191x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 93.5 V/m; Power Drift = -0.686 dB
Motorola Fast SAR: SAR(1 g) = 7.01 mW/g; SAR(10 g) = 5.17 mW/g
Maximum value of SAR (interpolated) = 7.37 mW/g

Face Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm Maximum value of SAR (measured) = 6.95 mW/g

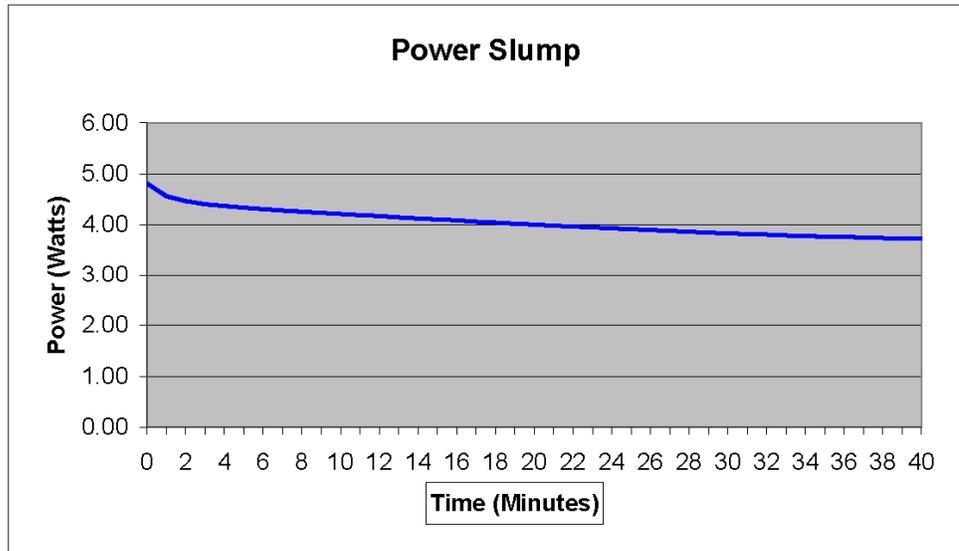


APPENDIX F DUT Supplementary Data (Power slump)

Power Slump Model # : PMUE3090AANAA
Serial # : 977TUA0003

Battery: PMNN4066A **Transmit Mode:** CW
Frequency: 512.000MHz **Audio Accessory:** None
Date:

Tx Time (Minutes)	Measure Power (Watts)
0.0	4.81
1.0	4.56
2.0	4.46
3.0	4.40
4.0	4.36
5.0	4.33
6.0	4.30
7.0	4.28
8.0	4.25
9.0	4.23
10.0	4.21
11.0	4.19
12.0	4.17
13.0	4.14
14.0	4.12
15.0	4.10
16.0	4.08
17.0	4.06
18.0	4.04
19.0	4.02
20.0	4.00
21.0	3.98
22.0	3.96
23.0	3.94
24.0	3.92
25.0	3.91
26.0	3.89
27.0	3.88
28.0	3.86
29.0	3.84
30.0	3.83
31.0	3.81
32.0	3.80
33.0	3.79
34.0	3.78
35.0	3.77
36.0	3.75
37.0	3.74
38.0	3.73
39.0	3.73
40.0	3.72



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.	Comments
		(mm)	
PMAE4049A	Yes	15-22	
PMAE4050A	Yes	15-22	
PMAE4051A	Yes	15-22	
PMAE4052A	Yes	15-21	
PMAE4048A	Yes	15-21	

Battery Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface.	Comments
		(mm)	
PMNN4077B	Yes	NA	
PMNN4065A	Yes	NA	
PMNN4066A	Yes	NA	
PMNN4069A	Yes	NA	

Carry Case Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface.	Comments
		(mm)	
PMLN4651A	Yes	27-48	NA
PMLN4652A	Yes	27-43	NA
PMLN5024A	Yes	32-51	NA
PMLN5025A	Yes	62-99	NA
PMLN5026A	Yes	62-90	NA
PMLN5027A	Yes	33-53	NA
PMLN5028A	Yes	66-115	NA
PMLN5029A	Yes	60-100	NA
PMLN5030A	Yes	46-80	NA
RLN4570A	Yes	15-22	NA
RLN4815A	Yes	33-41	NA
HLN6602A	Yes	18-21	NA
NTN5243A	Yes	31-86	NA
4200865599	No	NA	Leather Belt
1505596Z02	No	NA	Replacement Strap for chest pak
4280384F89	No	NA	Universal RadioPak Extension Belt
HLN9985B	No	NA	Waterproof bag

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface.	Comments
		(mm)	
RMN5058A	Yes	NA	NA
PMLN5096A	Yes	NA	NA
PMLN5097A	Yes	NA	NA
PMLN5101A	Yes	NA	NA
PMLN5102A	Yes	NA	NA
PMLN5106A	No	NA	By similarity to PMLN5097A
PMLN5111A	Yes	NA	NA
PMLN5112A	No	NA	By similarity to PMLN5111A
PMMN4024A	Yes	NA	NA
PMMN4025A	No	NA	By similarity to PMMN4024A
PMMN4040A	Yes	NA	NA
PMMN4046A	No	NA	By similarity to PMMN4050A
PMMN4050A	Yes	NA	NA
RLN4295A	No	NA	NA
RLN4941A	No	NA	By similarity to WADN4190B
RLN5878A	Yes	NA	NA
RLN5879A	No	NA	By similarity to RLN5878A
RLN5880A	Yes	NA	NA
RLN5881A	No	NA	By similarity to RLN5880A
RLN5882A	Yes	NA	NA
RLN5883A	No	NA	By similarity to RLN5882A
RLN5886A	No	NA	Acoustic tube
RLN5887A	No	NA	Acoustic tube
AARLN4885B	Yes	NA	NA
WADN4190B	No	NA	By similarity to AARLN4885B
PMLN4620A	No	NA	By similarity to AARLN4885B