


**MOTOROLA**

**TESTING CERT # 2518.01**
**DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 4**
**Enterprise Mobility Solutions**  
**EME Test Laboratory**  
 8000 West Sunrise Blvd  
 Fort Lauderdale, FL. 33322.

**Date of Report:** 6/08/10  
**Report Revision:** A  
**Report ID:** SAR rpt\_APX7000 U2 7-800\_Rev A\_100608  
**SR8265**

**Responsible Engineer:** Michael Sailsman (Sr. Staff EME Engineer)  
**Report Author:** Michael Sailsman (Sr. Staff EME Engineer)  
**Date/s Tested:** 4/9/10-5/11/10  
**Manufacturer/Location:** Motorola, Penang  
**Sector/Group/Div.:** G&PS  
**Date submitted for test:** 4/14/10  
**DUT Description:** 450-520 1-5W, 764-870 MHz 1-3W, 6.25K/12.5K/25K, Top/Dual Display Models W/GPS. Capable of digital and analog FM transmission. Also capable of TDMA transmission.  
**Test TX mode(s):** 50%  
**Max. Power output:** 5.6W(UHF R2) & 2.99W (700 MHz), 3.6W (800 MHz)  
**Nominal Power:** 5W (UHF R2) & 2.5W (700 MHz), 3W (800 MHz)  
**Tx Frequency Bands:** 450-520 MHz(UHF R2) & 764-775 MHz, 794-805 MHz, 806-824 MHz, 851-870 MHz (7/800 MHz)  
**Signaling type:** FM  
**Model(s) Tested:** H97TGD9PW1AN/MNUS1000A (QA00572AA & QA00573AA); H97TGD9PW1AN/MNUS1001A (w/Q792 keypad, QA00572AA & QA00573AA)  
**Model(s) Certified:** H97TGD9PW1AN/MNUS1000A (QA00572AA & QA00573AA); H97TGD9PW1AN/MNUS1001A (w/Q792 keypad, QA00572AA & QA00573AA)  
**Serial Number(s):** Q0BME02S, Q0BME02O, Q05ME0D5  
**Classification:** Occupational/Controlled Environment  
**FCC ID:** AZ489FT7042  
**FCC Rule Part(s):** 90; 450-512 MHz (UHF R2); 764-775 MHz, 794-805 MHz, 806-824 MHz, 851-870 MHz  
**IC ID:** 109U-89FT7042  
**IC standard(s):** RSS 102 issue 4; Safety Code 6

\* Refer to section 15.0 for a summary of SAR results.

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8 W/kg averaged over 1 gram per the requirements of 47 CFR 2.1093(d). The 10 grams results are not applicable to FCC filing. The test results clearly demonstrate compliance with ICNIRP (1998) Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz), Health Physics 74, 494-522 RF Exposure limits of 10 W/kg averaged over 10 grams 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 3.0 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**  
**EMS EME Lab Senior Resource Manager,**  
**Laboratory Director**

**Approval Date:** 6/8/10

**Certification Date:** 6/8/10

**Certification No.:** L1100611P

**APPENDIX B**  
**Probe Calibration Certificates**

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



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Accreditation No.: SCS 108

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Client **Motorola CGISS**

Certificate No: **ES3-3185\_Nov09**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3185**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-12.v6, QA CAL-14.v3, QA CAL-23.v3 and  
QA CAL-25.v2  
Calibration procedure for dosimetric E-field probes**

Calibration date **November 23, 2009**

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

Calibrated by: **Katja Pokovic** Technical Manager

Approved by: **Niels Kuster** Quality Manager

Signature  
  


Issued: November 23, 2009

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

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Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: **SCS 108**

### Glossary:

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

### 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

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>; A, B, C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

# Probe ES3DV3

## SN:3185

Manufactured:	March 25, 2008
Last calibrated:	November 18, 2008
Recalibrated:	November 23, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3185

November 23, 2009

**DASY - Parameters of Probe: ES3DV3 SN:3185****Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup>	1.36	1.27	1.11	± 10.1%
DCP (mV) <sup>B</sup>	93.1	92.7	92.9	

**Modulation Calibration Parameters**

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc <sup>E</sup> (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5%
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ES3DV3 SN:3185

November 23, 2009

**DASY - Parameters of Probe: ES3DV3 SN:3185****Calibration Parameter Determined in Head Tissue Simulating Media**

<b>f [MHz]</b>	<b>Validity [MHz]<sup>c</sup></b>	<b>Permittivity</b>	<b>Conductivity</b>	<b>ConvF X</b>	<b>ConvF Y</b>	<b>ConvF Z</b>	<b>Alpha</b>	<b>Depth Unc (k=2)</b>
300	± 50 / ± 100	45.3 ± 5%	0.87 ± 5%	6.68	6.68	6.68	0.24	0.92 ± 13.3%
450	± 50 / ± 100	43.5 ± 5%	0.87 ± 5%	6.08	6.08	6.08	0.22	1.49 ± 13.3%
750	± 50 / ± 100	41.9 ± 5%	0.89 ± 5%	5.96	5.96	5.96	0.92	1.04 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.63	5.63	5.63	0.64	1.21 ± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.83	4.83	4.83	0.41	1.71 ± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.65	4.65	4.65	0.55	1.44 ± 11.0%
2300	± 50 / ± 100	39.5 ± 5%	1.67 ± 5%	4.53	4.53	4.53	0.40	1.83 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.22	4.22	4.22	0.41	1.87 ± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	4.17	4.17	4.17	0.44	1.89 ± 11.0%
3500	± 50 / ± 100	37.9 ± 5%	2.91 ± 5%	3.99	3.99	3.99	0.85	1.21 ± 13.1%
3700	± 50 / ± 101	37.7 ± 5%	3.12 ± 5%	3.64	3.64	3.64	0.85	1.21 ± 13.1%

<sup>c</sup> The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

## DASY - Parameters of Probe: ES3DV3 SN:3185

### Calibration Parameter Determined in Body Tissue Simulating Media

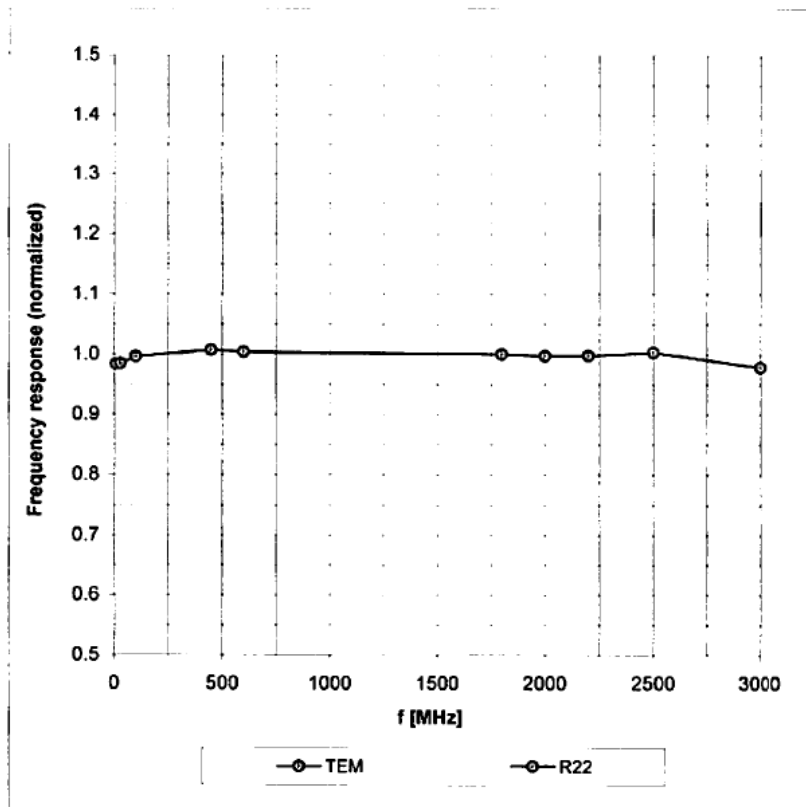
f [MHz]	Validity [MHz] <sup>c</sup>	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
450	± 50 / ± 100	56.7 ± 5%	0.94 ± 5%	6.55	6.55	6.55	0.17	1.00 ± 13.3%
750	± 50 / ± 100	55.5 ± 5%	0.96 ± 5%	5.60	5.60	5.60	0.76	1.15 ± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	5.48	5.48	5.48	0.94	1.10 ± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.57	4.57	4.57	0.29	2.39 ± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.52	4.52	4.52	0.30	2.70 ± 11.0%
2300	± 50 / ± 100	52.8 ± 5%	1.85 ± 5%	4.21	4.21	4.21	0.46	1.74 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.02	4.02	4.02	0.58	1.44 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	3.92	3.92	3.92	0.82	1.20 ± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	3.33	3.33	3.33	0.90	1.32 ± 13.1%
3700	± 50 / ± 101	51.0 ± 5%	3.55 ± 5%	3.26	3.26	3.26	0.90	1.46 ± 13.1%

<sup>c</sup> The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.



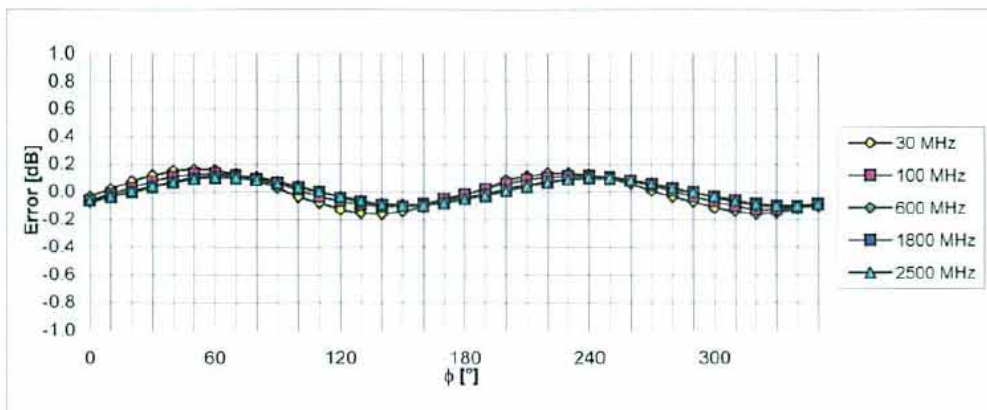
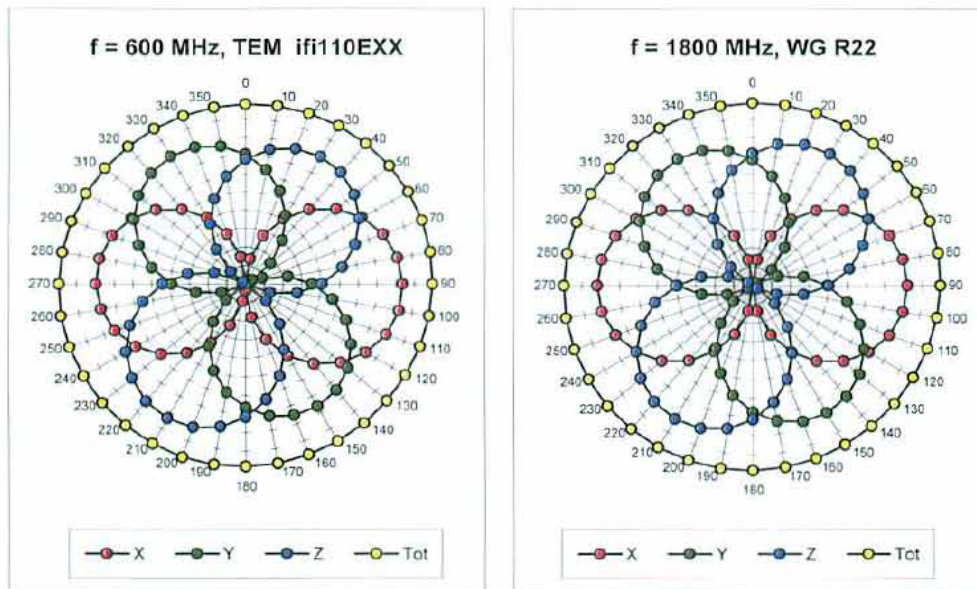
### Frequency Response of E-Field

(TEM-Cell: ifi110 EXX, Waveguide: R22)



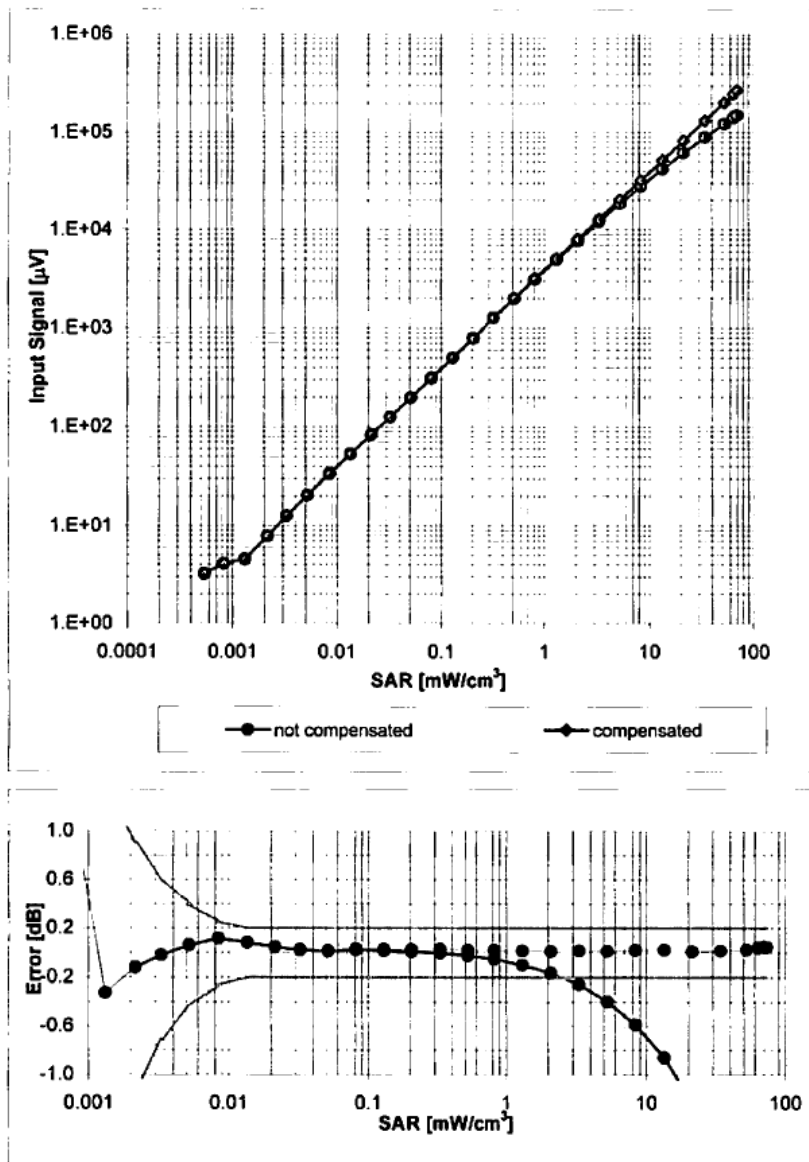
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

### Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$



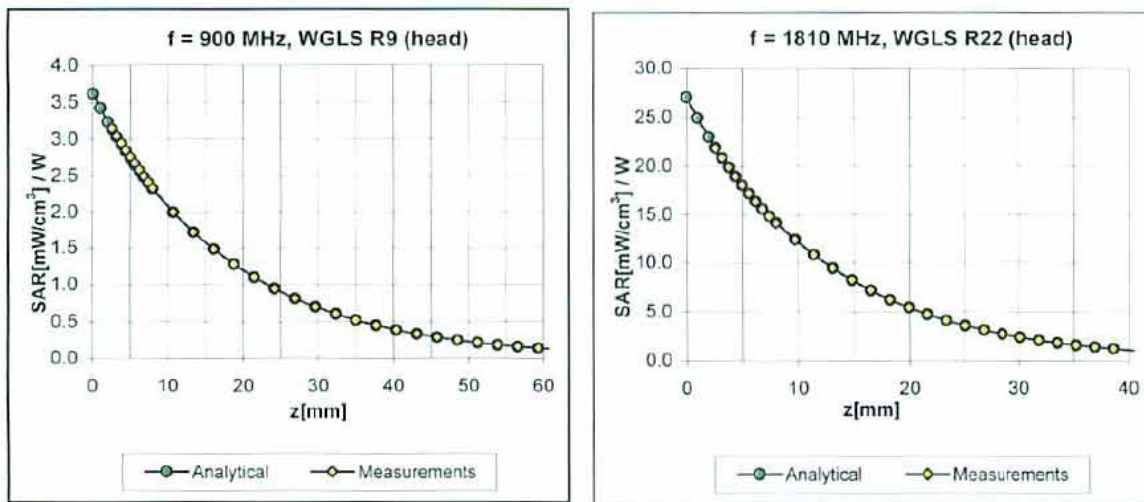
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

### Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$ )



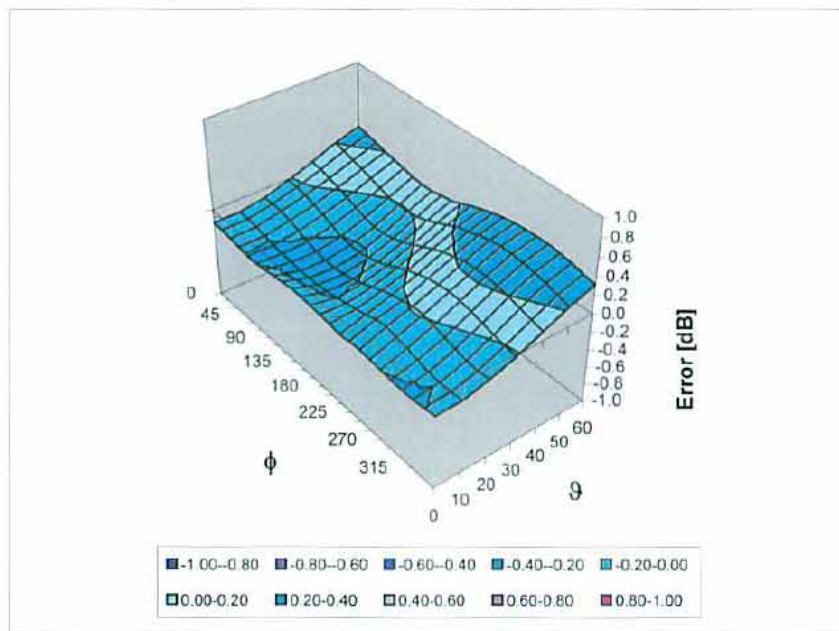
Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

### Conversion Factor Assessment



### Deviation from Isotropy in HSL

Error ( $\phi, \theta$ ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  (k=2)

## Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

**APPENDIX C**  
**Dipole Calibration Certificates**

**Calibration Laboratory of  
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Accreditation No.: **SCS 108**

Client **Motorola CGISS**

Certificate No: **D450V2-1002\_Sep08**

## CALIBRATION CERTIFICATE

Object **D450V2 - SN: 1002**

Calibration procedure(s) **QA CAL-15.v5  
Calibration Procedure for dipole validation kits below 800 MHz**

Calibration date: **September 26, 2008**

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 ( $22 \pm 3$ )°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	01-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	01-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	01-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Mar-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ET3DV6 (LF)	SN: 1507	27-Jun-08 (No. ET3-1507_Jun08)	Jun-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	04-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	19-Oct-01 (in house check Oct-07)	In house check: Oct-08

Calibrated by: **Jeton Kastrati**      Name: **Jeton Kastrati**      Function: **Laboratory Technician**      Signature:

Approved by: **Katja Pokovic**      Name: **Katja Pokovic**      Function: **Technical Manager**      Signature:

Issued: September 29, 2008

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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:

- 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:

- DASY4/5 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.

<b>DASY Version</b>	DASY5	V5.0
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Flat Phantom V4.4	Shell thickness: $6 \pm 0.2$ mm
<b>Distance Dipole Center - TSL</b>	15 mm	with Spacer
<b>Area Scan Resolution</b>	dx, dy = 15 mm	
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	450 MHz $\pm$ 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Head TSL parameters</b>	22.0 °C	43.5	0.87 mho/m
<b>Measured Head TSL parameters</b>	(22.0 $\pm$ 0.2) °C	43.1 $\pm$ 6 %	0.83 mho/m $\pm$ 6 %
<b>Head TSL temperature during test</b>	(21.8 $\pm$ 0.2) °C	—	—

### SAR result with Head TSL

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	condition	
SAR measured	398 mW input power	1.97 mW / g
SAR normalized	normalized to 1W	4.95 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	5.03 mW / g $\pm$ 18.1 % (k=2)

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	condition	
SAR measured	398 mW input power	1.33 mW / g
SAR normalized	normalized to 1W	3.34 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	3.37 mW / g $\pm$ 17.6 % (k=2)

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

## Appendix

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	56.3 $\Omega$ - 6.1 j $\Omega$
Return Loss	- 21.7 dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.348 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	March 22, 2002

**DASY5 Validation Report for Head TSL**

Date/Time: 26.09.2008 13:21:17

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 450 MHz; Type: D450V2; Serial: D450V2 - SN:1002**

Communication System: CW; Frequency: 450 MHz; Duty Cycle: 1:1

Medium: HSL450

Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.83$  mho/m;  $\epsilon_r = 43.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

**DASY5 Configuration:**

- Probe: ET3DV6 - SN1507 (LF); ConvF(6.66, 6.66, 6.66); Calibrated: 27.06.2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.4; Type: Flat Phantom 4.4
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

**d=15mm, Pin=398mW/Area Scan (41x111x1):** Measurement grid: dx=15mm, dy=15mm  
 Maximum value of SAR (interpolated) = 2.09 mW/g

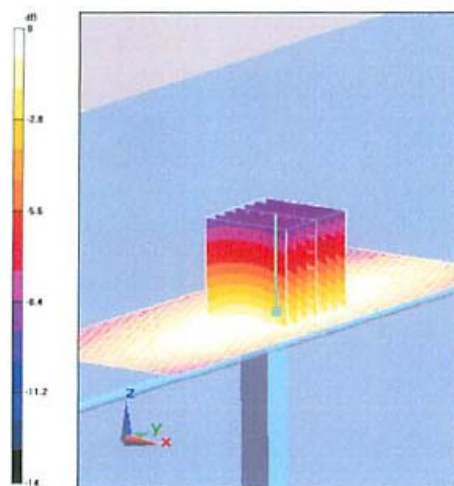
**d=15mm, Pin=398mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
 dz=5mm

Reference Value = 51.7 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 2.92 W/kg

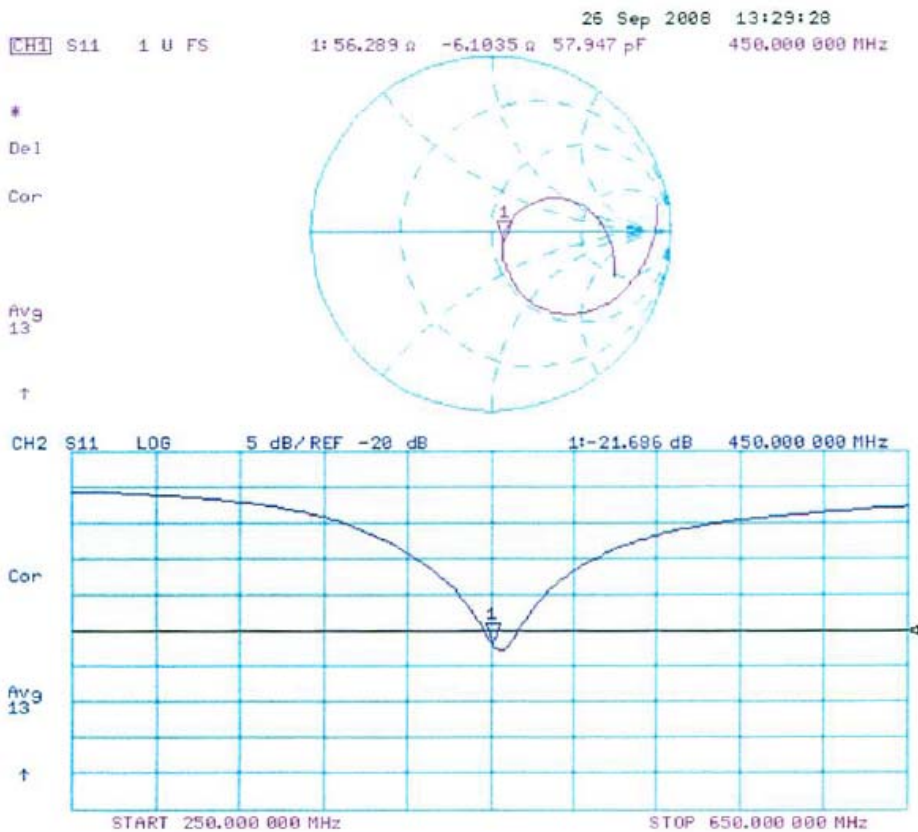
**SAR(1 g) = 1.97 mW/g; SAR(10 g) = 1.33 mW/g**

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



0 dB = 2.12mW/g

Impedance Measurement Plot for Head TSL



**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 CGISS**

Certificate No: **D835V2-435\_Sep08**

## CALIBRATION CERTIFICATE

Object **D835V2 - SN: 435**

Calibration procedure(s) **QA CAL-05.v7  
Calibration procedure for dipole validation kits**

Calibration date: **September 22, 2008**

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 ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 22, 2008

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)

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  
ConvF 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) DASY4/5 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.

<b>DASY Version</b>	DASY5	V5.0
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Modular Flat Phantom V4.9	
<b>Distance Dipole Center - TSL</b>	15 mm	with Spacer
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	835 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	<b>Temperature</b>	<b>Permittivity</b>	<b>Conductivity</b>
<b>Nominal Head TSL parameters</b>	22.0 °C	41.5	0.90 mho/m
<b>Measured Head TSL parameters</b>	(22.0 $\pm$ 0.2) °C	40.2 $\pm$ 6 %	0.88 mho/m $\pm$ 6 %
<b>Head TSL temperature during test</b>	(22.5 $\pm$ 0.2) °C	---	---

**SAR result with Head TSL**

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	<b>Condition</b>	
SAR measured	250 mW input power	2.39 mW / g
SAR normalized	normalized to 1W	9.56 mW / g
<b>SAR for nominal Head TSL parameters <sup>1</sup></b>	normalized to 1W	<b>9.51 mW /g <math>\pm</math> 17.0 % (k=2)</b>

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	<b>condition</b>	
SAR measured	250 mW input power	1.57 mW / g
SAR normalized	normalized to 1W	6.28 mW / g
<b>SAR for nominal Head TSL parameters <sup>1</sup></b>	normalized to 1W	<b>6.24 mW /g <math>\pm</math> 16.5 % (k=2)</b>

---

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

## Appendix

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.0 $\Omega$ -8.9 j $\Omega$
Return Loss	- 21.0 dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 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 15, 2000



**DASY5 Validation Report for Head TSL**

Date/Time: 22.09.2008 10:19:42

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:435**

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

**DASY5 Configuration:**

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

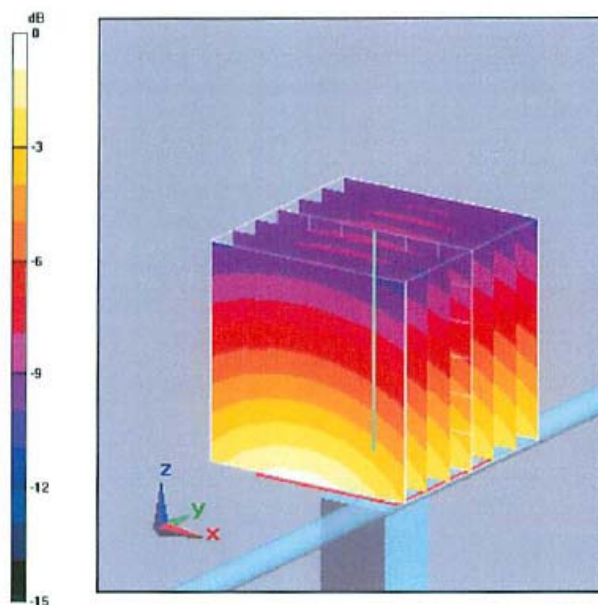
**Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 56 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 3.48 W/kg

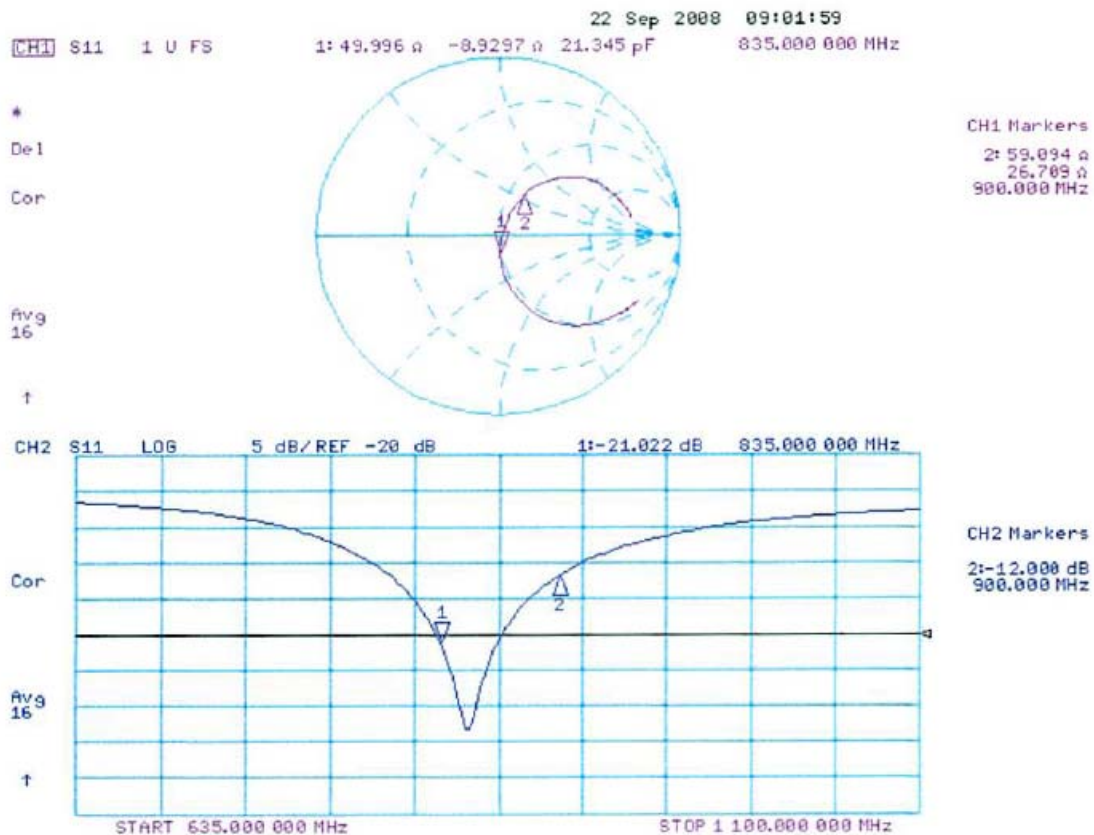
**SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.57 mW/g**

Maximum value of SAR (measured) = 2.69 mW/g



0 dB = 2.69mW/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 D450V2 SN 1002 and D835V2/435 were 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 certificates indicate that the allowed tolerance for this dipole is higher than +/- 10% (e.g. 5.03 +/- 18.1% at k=2 for the D450V2 S/N 1002 and 9.51 +/-17.0% at k=2 for the D835V2 S/N 435).

-- The allowed tolerance for the probes is also higher than +/- 10% (e.g. 13.3% at k=2 at 450MHz and 11.0% at k=2 at 835MHz 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 IEC62209-2 Edition 1.0 2010-03 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 IEC62209-2 Edition 1.0 2010-03 when using 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.

Note that the targets set for the tested dipoles, when using the simulated head tissue, meets the requirement for the system validation per IEEE1528-2003 and IEC62209-2 Edition 1.0 2010-03 standards. The difference between these results and the results from the manufacture's dipole calibration certificates are -8.95% for D450V2 S/N 1002 dipole and 5.57% for D835V2 S/N 435 dipole which are 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.

**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/9/2010 6:01:50 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450H-100409-01  
 Phantom# / Tissue Temp.: OVAL1011 / 20.6 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)  
 Adjusted SAR (1W): 4.48 mW/g (1g)  
 Percent from Target (+/-): 2.2 % (1g)  
 Rotation (1D): 0.19 dB

Note: Prior to recording the reported SAR values below,

the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.12 mW/g (1g); 0.741 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.86$  mho/m;  $\epsilon_r = 43.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 37.3 V/m; Power Drift = -0.016 dB

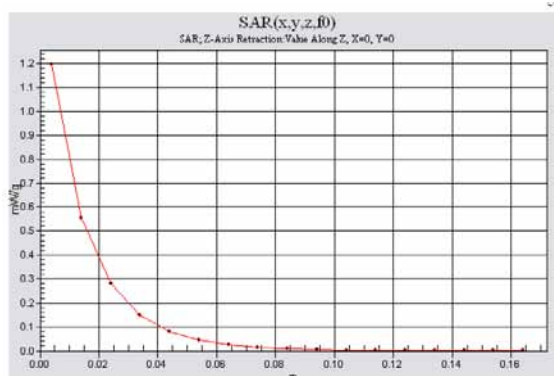
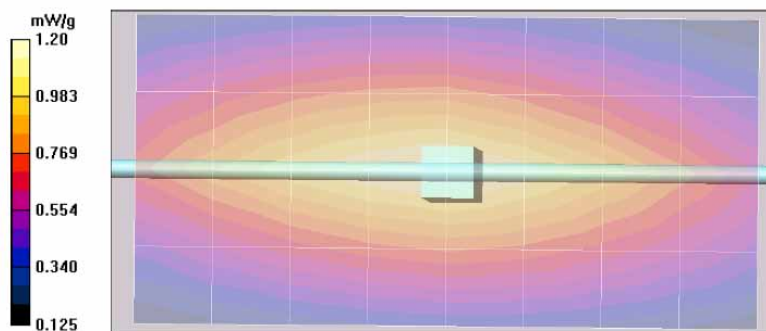
Peak SAR (extrapolated) = 1.68 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.739 mW/g

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

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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



Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 4/10/2010 4:57:15 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-450B-100410-01  
 Phantom# / Tissue Temp.: OVAL1018 / 22.0 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.28 mW/g (1g)  
 Percent from Target (+/-): 2.7 % (1g)  
 Rotation (1D): 0.17 dB

Note: Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.07 mW/g (1g); 0.71 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.6 V/m; Power Drift = -0.00123 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.710 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

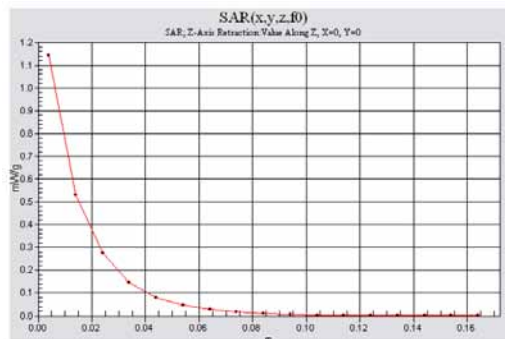
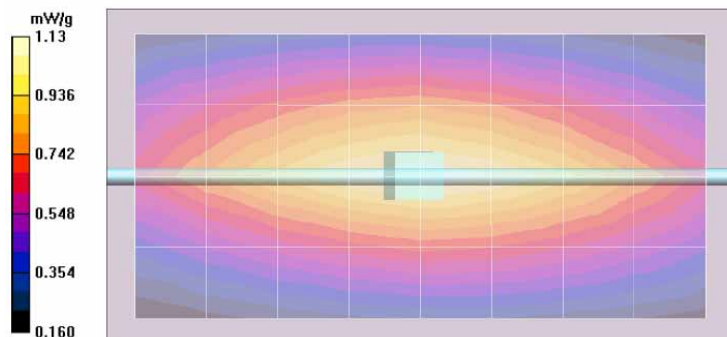
Reference Value = 34.6 V/m; Power Drift = -0.00123 dB

Motorola Fast SAR: SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.759 mW/g

Maximum value of SAR (interpolated) = 1.13 mW/g

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

Maximum value of SAR (measured) = 1.13 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/11/2010 4:58:39 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-450B-100411-01  
 Phantom# / Tissue Temp.: OVAL1018 / 22.2 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.24 mW/g (1g)  
 Percent from Target (+/-): 3.6 % (1g)  
 Rotation (1D): 0.12 dB

**Note:**

Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.06 mW/g (1g); 0.70 mW/g (10g)

**Comments:**

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.7 V/m; Power Drift = 0.000375 dB

Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.700 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

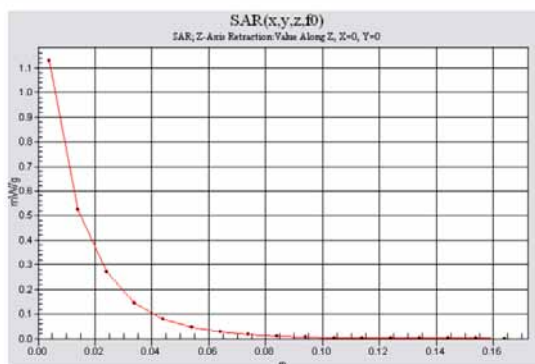
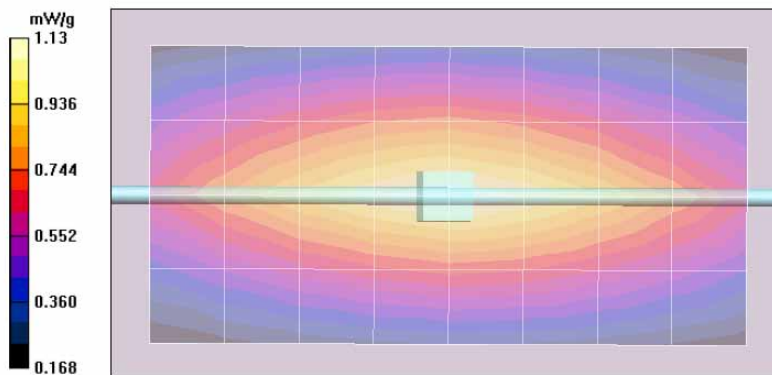
Reference Value = 34.7 V/m; Power Drift = 0.000375 dB

Motorola Fast SAR: SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.753 mW/g

Maximum value of SAR (interpolated) = 1.13 mW/g

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

Maximum value of SAR (measured) = 1.13 mW/g





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/12/2010 6:43:42 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450B-100412-01  
 Phantom# / Tissue Temp.: OVAL1018 / 21.9 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.28 mW/g (1g)  
 Percent from Target (+/-): 2.7 % (1g)  
 Rotation (1D): 0.13 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.07 mW/g (1g); 0.709 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.8 V/m; Power Drift = 0.00145 dB

Peak SAR (extrapolated) = 1.62 W/kg

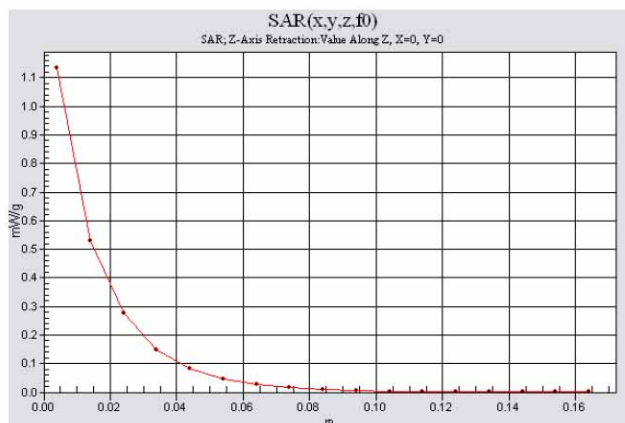
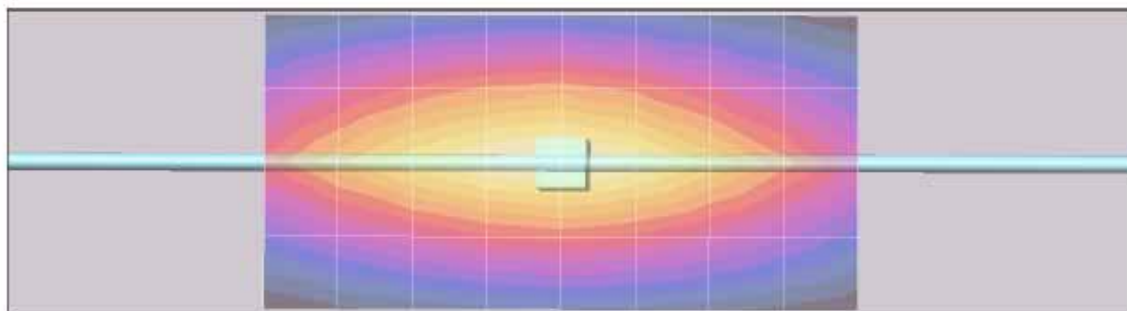
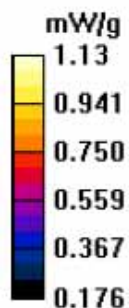
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.707 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.13 mW/g

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/13/2010 6:32:48 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450B-100413-01  
 Phantom# / Tissue Temp.: OVAL1018 / 21.6 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.24 mW/g (1g)  
 Percent from Target (+/-): 3.6 % (1g)  
 Rotation (1D): 0.051 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.06 mW/g (1g); 0.704 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 54.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.7 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 1.61 W/kg

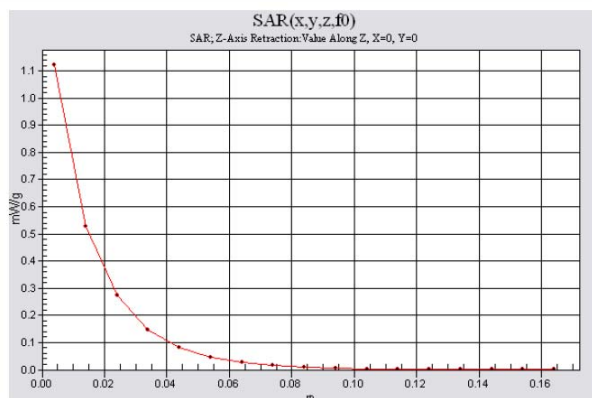
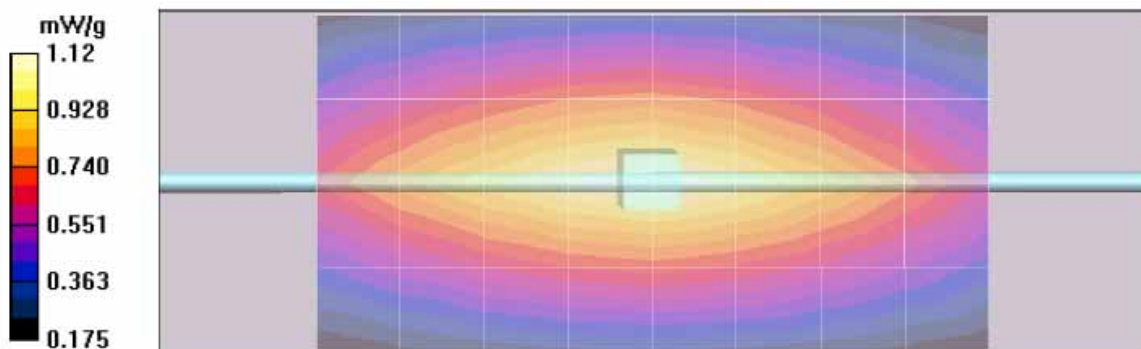
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.702 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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 Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/14/2010 8:00:44 AM

Robot# / Run#: DAS4-FL-1 / JsT-SYSP-450B-100414-01  
 Phantom# / Tissue Temp.: OVAL1018 / 21.4 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.28 mW/g (1g)  
 Percent from Target (+/-): 2.7 % (1g)  
 Rotation (1D): 0.047 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.07 mW/g (1g); 0.707 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 55.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 35.0 V/m; Power Drift = -0.002 dB

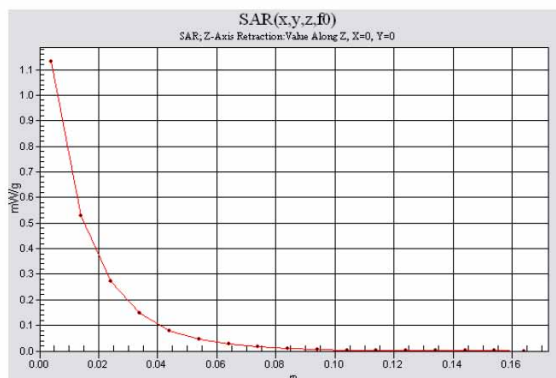
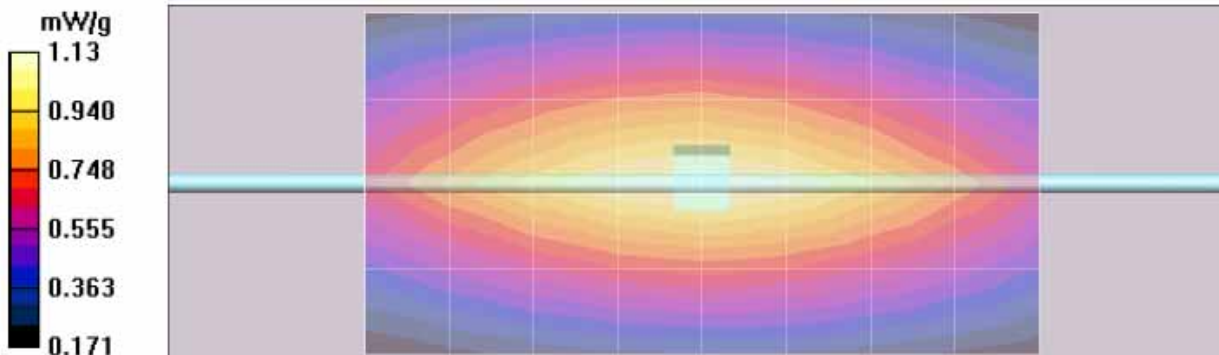
Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.705 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/15/2010 6:17:29 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450B-100415-01

Phantom# / Tissue Temp.: OVAL1018 / 21.2 (C)

Dipole Model# / Serial#: D450V2 / 1002

TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.32 mW/g (1g)  
 Percent from Target (+/-): 1.8 % (1g)  
 Rotation (1D): 0.056 dB

**Note:**

Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.08 mW/g (1g); 0.713 mW/g (10g)

**Comments:**

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

dy=7.5mm, dz=5mm

Reference Value = 35.0 V/m; Power Drift = -0.00257 dB

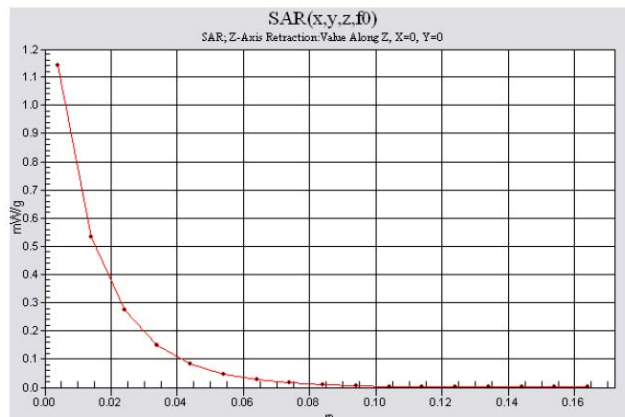
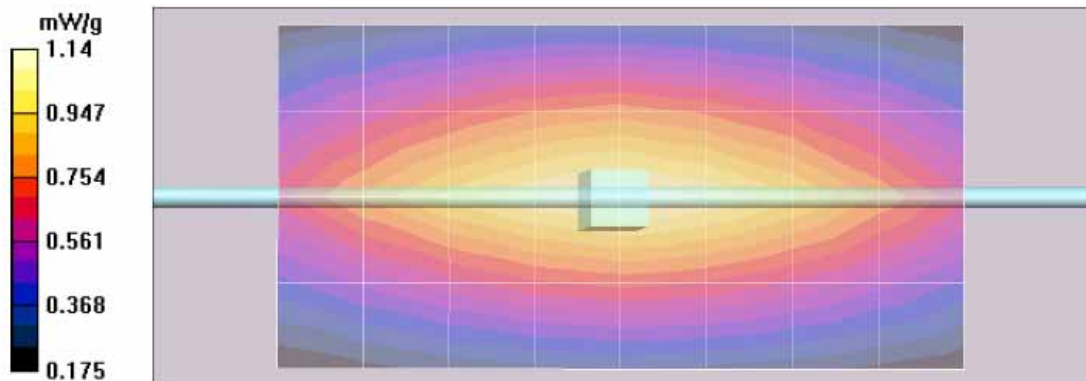
Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.711 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/16/2010 6:24:20 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450H-100416-01

Phantom# / Tissue Temp.: OVAL1011 / 21.3 (C)

Dipole Model# / Serial#: D450V2 / 1002

TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)

Adjusted SAR (1W): 4.48 mW/g (1g)

Percent from Target (+/-): 2.2 % (1g)

Rotation (1D): 0.048 dB

**Note:**

Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.12 mW/g (1g); 0.741 mW/g (10g)

**Comments:**

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.85$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 37.7 V/m; Power Drift = -0.0282 dB

Peak SAR (extrapolated) = 1.66 W/kg

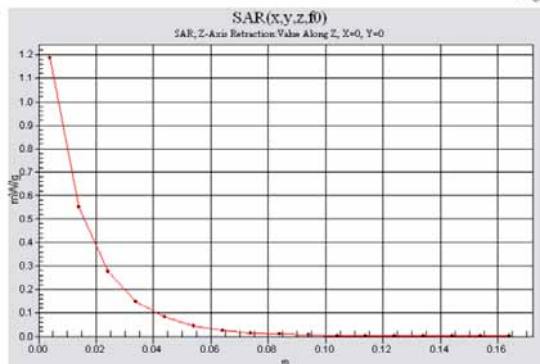
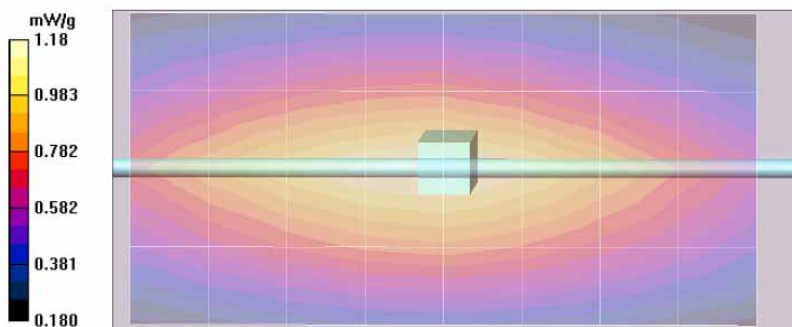
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.737 mW/g

Maximum value of SAR (measured) = 1.19 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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 Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/17/2010 7:12:04 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450H-100417-01

Phantom# / Tissue Temp.: OVAL1011 / 21.5 (C)

Dipole Model# / Serial#: D450V2 / 1002

TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)

Adjusted SAR (1W): 4.48 mW/g (1g)

Percent from Target (+/-): 2.2 % (1g)

Rotation (1D): 0.047 dB

Note:

Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.12 mW/g (1g); 0.745 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.85$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 37.6 V/m; Power Drift = -0.00103 dB

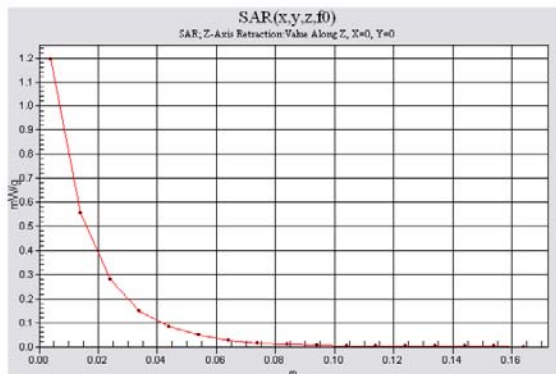
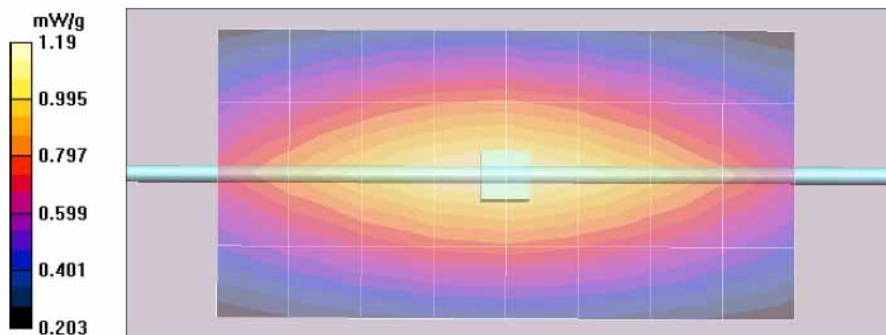
Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.741 mW/g

Maximum value of SAR (measured) = 1.19 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/18/2010 7:11:51 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450H-100418-01  
 Phantom# / Tissue Temp.: OVAL1011 / 21.7 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)  
 Adjusted SAR (1W): 4.56 mW/g (1g)  
 Percent from Target (+/-): 0.4 % (1g)  
 Rotation (1D): 0.062 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.14 mW/g (1g); 0.757 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.84$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 38.3 V/m; Power Drift = -0.0134 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.751 mW/g

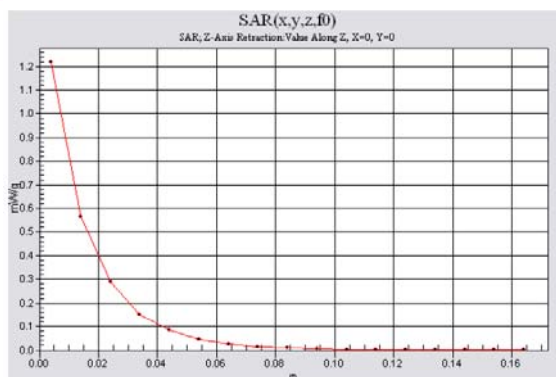
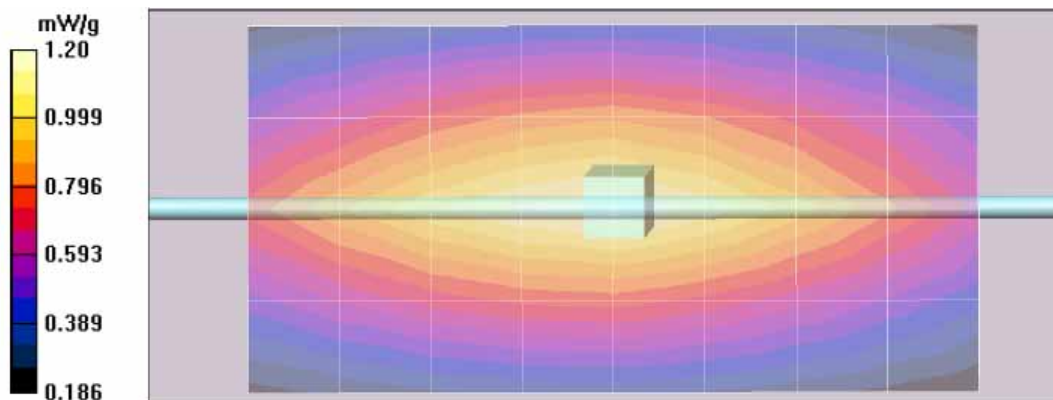
Maximum value of SAR (measured) = 1.21 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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

Maximum value of SAR (measured) = 1.22 mW/g





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/19/2010 6:25:53 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450H-100419-01  
 Phantom# / Tissue Temp.: OVAL1011 / 21.5 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)  
 Adjusted SAR (1W): 4.56 mW/g (1g)  
 Percent from Target (+/-): 0.4 % (1g)  
 Rotation (1D): 0.063 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.14 mW/g (1g); 0.755 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.84$  mho/m;  $\epsilon_r = 42.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 38.2 V/m; Power Drift = -0.00689 dB

Peak SAR (extrapolated) = 1.68 W/kg

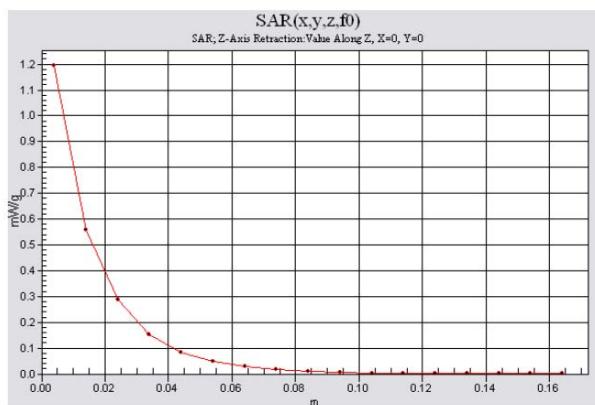
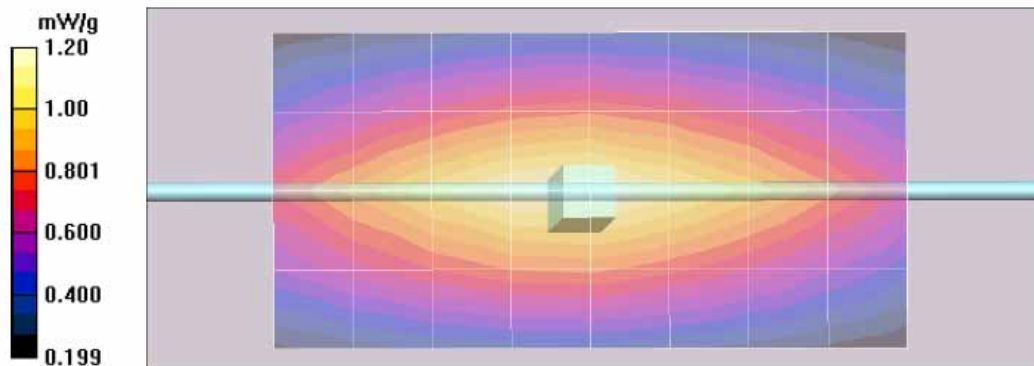
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.749 mW/g

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

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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 Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/20/2010 7:06:13 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450H-100420-01  
 Phantom# / Tissue Temp.: OVAL1011 / 21.5 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)  
 Adjusted SAR (1W): 4.32 mW/g (1g)  
 Percent from Target (+/-): 5.7 % (1g)  
 Rotation (1D): 0.071 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.08 mW/g (1g); 0.714 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.83$  mho/m;  $\epsilon_r = 42.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 37.1 V/m; Power Drift = -0.00961 dB

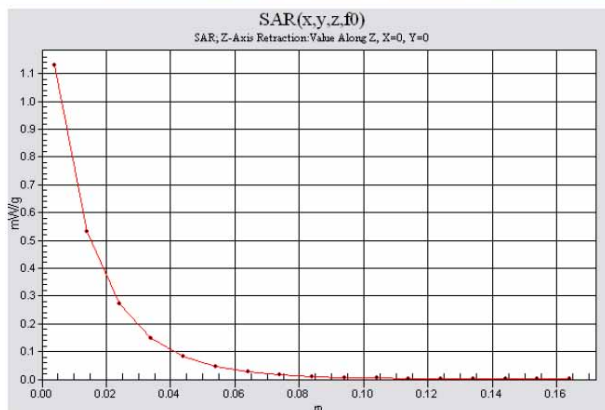
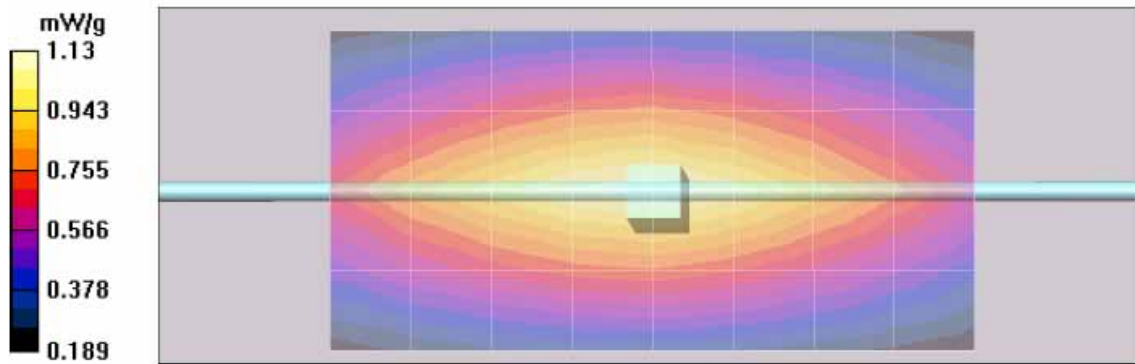
Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.707 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/21/2010 9:03:56 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-450H-100421-01  
 Phantom# / Tissue Temp.: OVAL1011 / 21.5 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.58 mW/g (1g)  
 Adjusted SAR (1W): 4.44 mW/g (1g)  
 Percent from Target (+/-): 3.1 % (1g)  
 Rotation (1D): 0.054 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.11 mW/g (1g); 0.731 mW/g (10g)

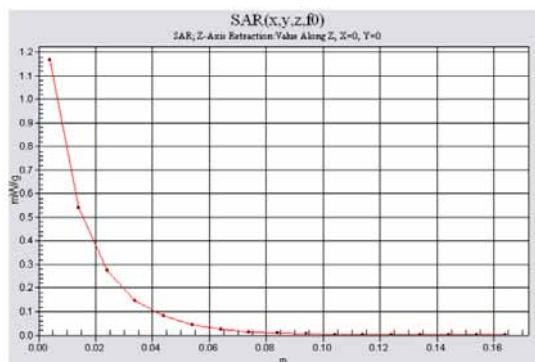
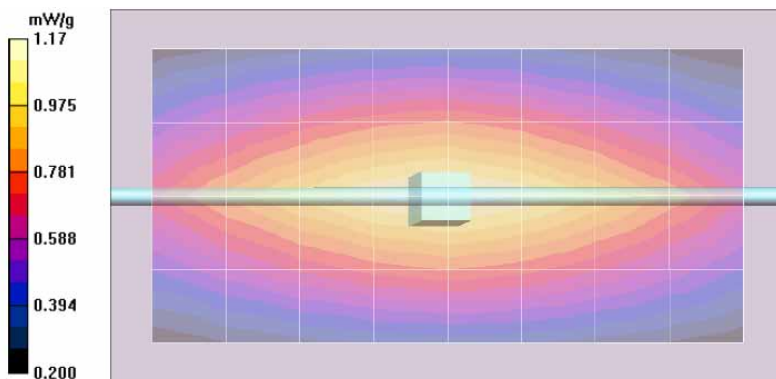
Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.08, 6.08, 6.08)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009  
 Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.86$  mho/m;  $\epsilon_r = 42.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

**System Performance Check/0-Degree Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm  
 Reference Value = 37.1 V/m; Power Drift = -0.00958 dB  
 Peak SAR (extrapolated) = 1.66 W/kg  
 SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.729 mW/g  
 Maximum value of SAR (measured) = 1.18 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm  
 Reference Value = 37.1 V/m; Power Drift = -0.00958 dB  
**Motorola Fast SAR:** SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.784 mW/g  
 Maximum value of SAR (interpolated) = 1.17 mW/g

**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 Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/21/2010 12:00:19 PM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-835B-100421-04  
 Phantom# / Tissue Temp.: OVAL1019 / 21.0 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.56 mW/g (1g)  
 Percent from Target (+/-): 4.8 % (1g)  
 Rotation (1D): 0.062 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.39 mW/g (1g); 1.57 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.98$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.9 V/m; Power Drift = 0.00311 dB

Peak SAR (extrapolated) = 3.53 W/kg

SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.57 mW/g

Maximum value of SAR (measured) = 2.58 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

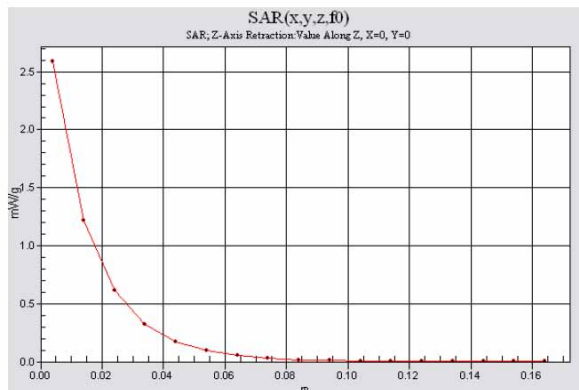
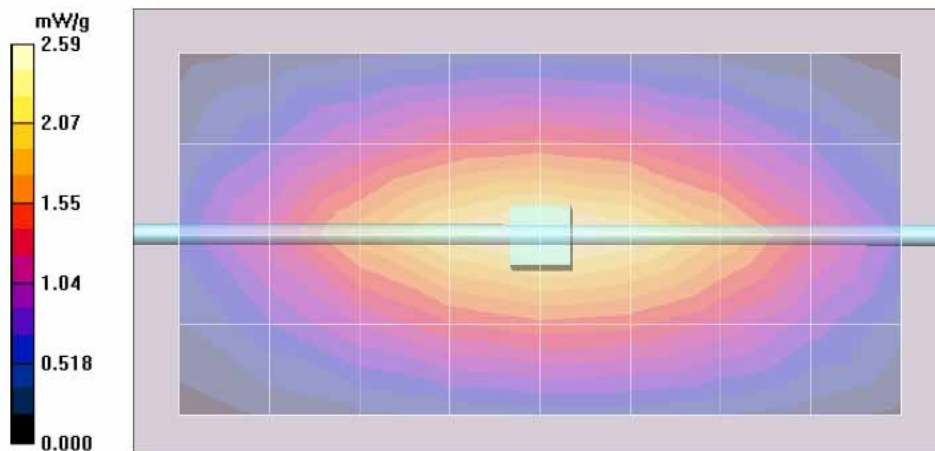
Reference Value = 51.9 V/m; Power Drift = 0.00311 dB

Motorola Fast SAR: SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (interpolated) = 2.59 mW/g

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

Maximum value of SAR (measured) = 2.59 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/22/2010 7:24:25 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835B-100422-01  
 Phantom# / Tissue Temp.: OVAL1019 / 21.2 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.60 mW/g (1g)  
 Percent from Target (+/-): 4.4 % (1g)  
 Rotation (1D): 0.078 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.40 mW/g (1g); 1.58 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009  
 Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

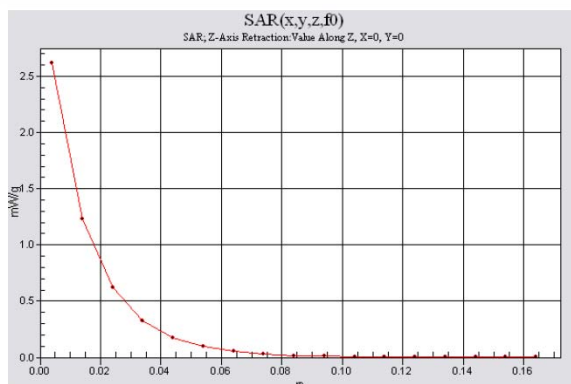
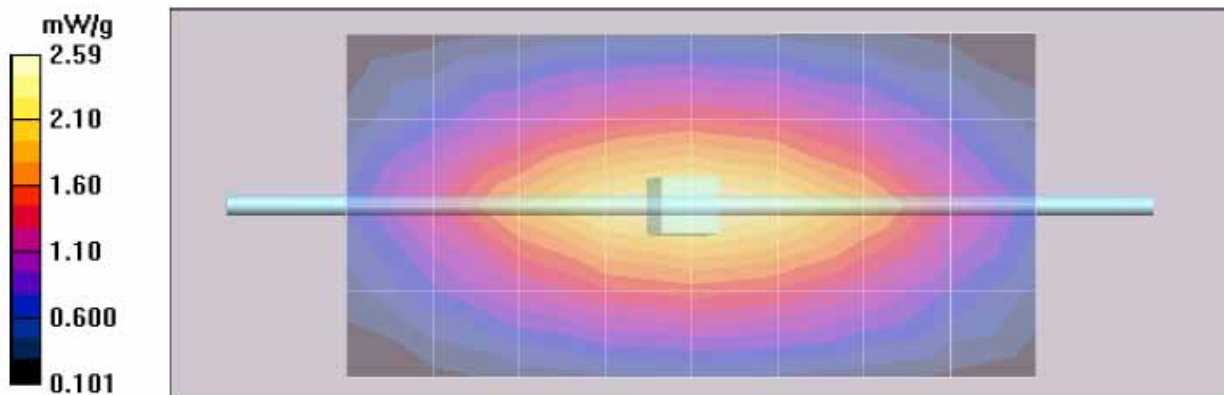
Reference Value = 51.6 V/m; Power Drift = -0.00306 dB

Peak SAR (extrapolated) = 3.55 W/kg  
 SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.58 mW/g  
 Maximum value of SAR (measured) = 2.59 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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) = 2.62 mW/g



Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 4/23/2010 5:52:16 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-835B-100423-01  
 Phantom# / Tissue Temp.: OVAL1019 / 21.1 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.64 mW/g (1g)  
 Percent from Target (+/-): 4.0 % (1g)  
 Rotation (1D): 0.12 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.41 mW/g (1g); 1.58 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.7 V/m; Power Drift = -0.00025 dB

Peak SAR (extrapolated) = 3.57 W/kg

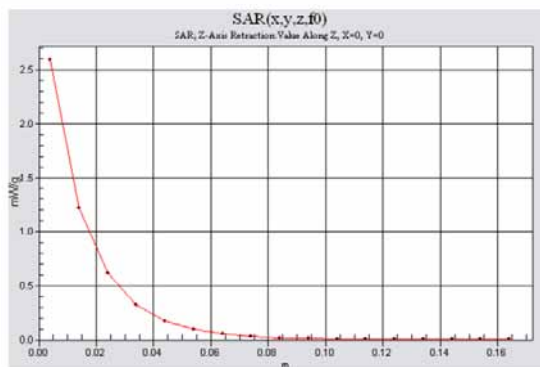
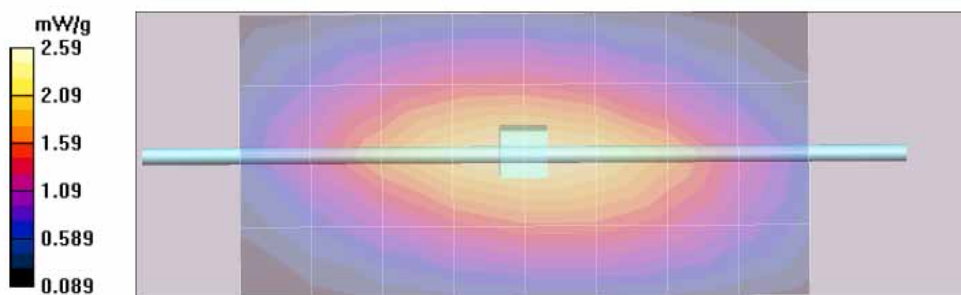
SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.62 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.59 mW/g

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/24/2010 4:16:30 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-835B-100424-01  
 Phantom# / Tissue Temp.: OVAL1019 / 21.1 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.64 mW/g (1g)  
 Percent from Target (+/-): 4.0 % (1g)  
 Rotation (1D): 0.068 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.41 mW/g (1g); 1.58 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.9 V/m; Power Drift = -0.00688 dB

Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.61 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

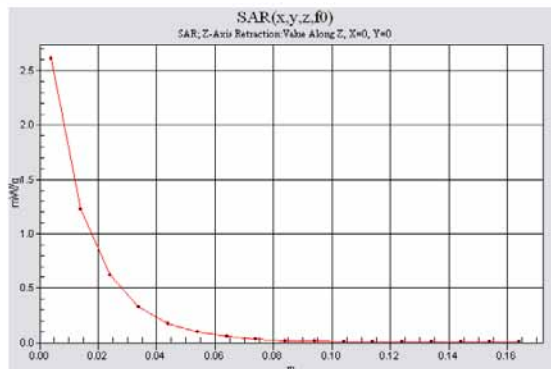
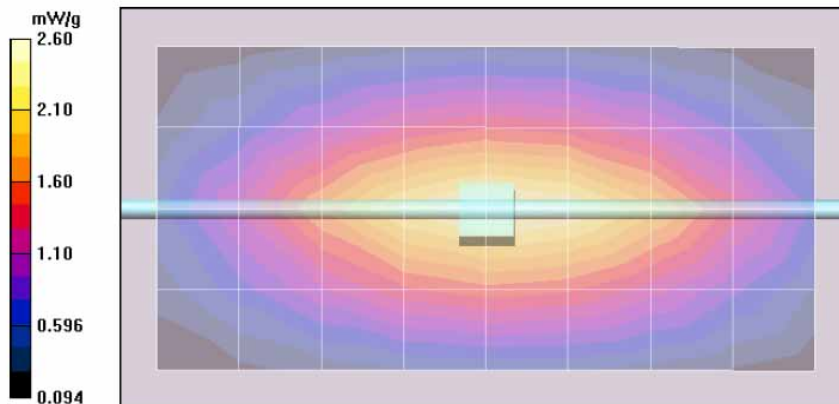
Reference Value = 51.9 V/m; Power Drift = -0.00688 dB

Motorola Fast SAR: SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.64 mW/g

Maximum value of SAR (interpolated) = 2.61 mW/g

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

Maximum value of SAR (measured) = 2.61 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/25/2010 5:03:04 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-835B-100425-01  
 Phantom# / Tissue Temp.: OVAL1019 / 22.0 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.52 mW/g (1g)  
 Percent from Target (+/-): 5.2 % (1g)  
 Rotation (1D): 0.066 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.38 mW/g (1g); 1.56 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.98$  mho/m;  $\epsilon_r = 52.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.8 V/m; Power Drift = -0.0182 dB

Peak SAR (extrapolated) = 3.53 W/kg

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.56 mW/g

Maximum value of SAR (measured) = 2.58 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

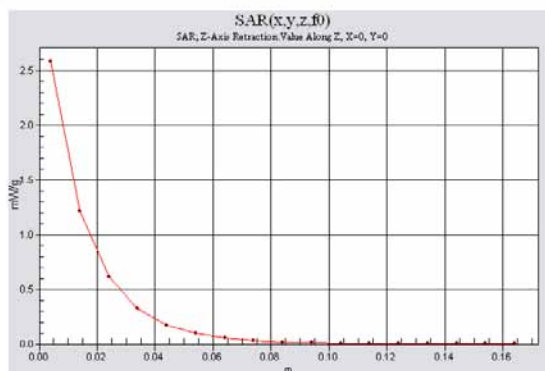
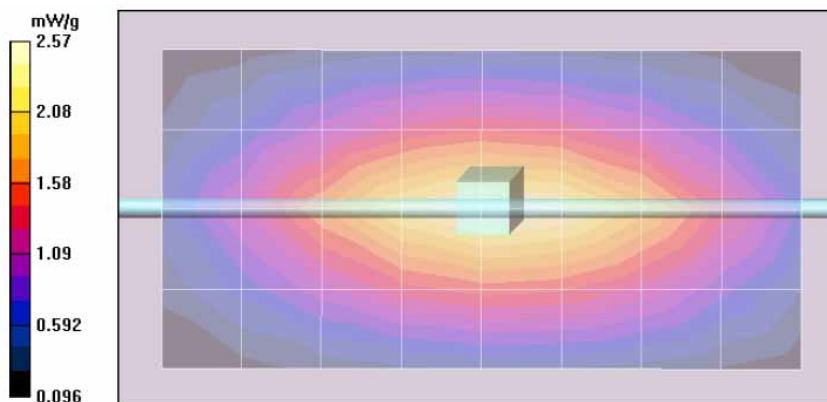
Reference Value = 51.8 V/m; Power Drift = -0.0182 dB

Motorola Fast SAR: SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (interpolated) = 2.58 mW/g

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

Maximum value of SAR (measured) = 2.58 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/26/2010 6:38:41 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835B-100426-01  
 Phantom# / Tissue Temp.: OVAL1019 / 22.7 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.64 mW/g (1g)  
 Percent from Target (+/-): 4.0 % (1g)  
 Rotation (1D): 0.073 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.41 mW/g (1g); 1.58 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.8 V/m; Power Drift = 0.00377 dB

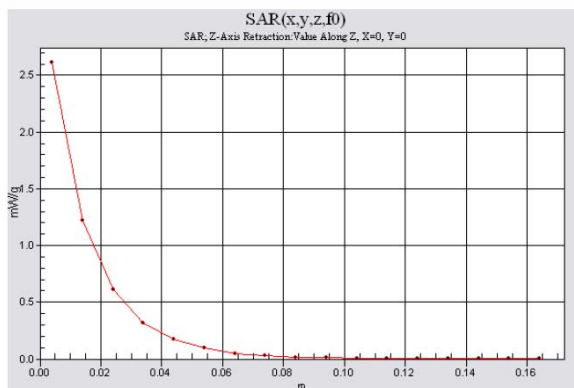
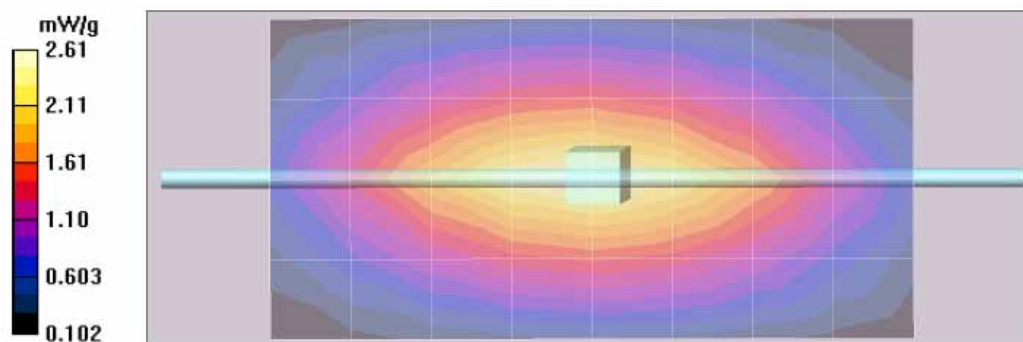
Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.61 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/27/2010 6:52:06 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835B-100427-01  
 Phantom# / Tissue Temp.: OVAL1019 / 21.2 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.64 mW/g (1g)  
 Percent from Target (+/-): 4.0 % (1g)  
 Rotation (1D): 0.14 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.41 mW/g (1g); 1.57 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.98$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 51.8 V/m; Power Drift = 0.00147 dB

Peak SAR (extrapolated) = 3.57 W/kg

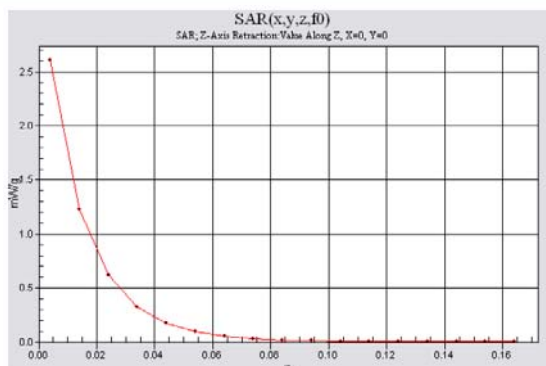
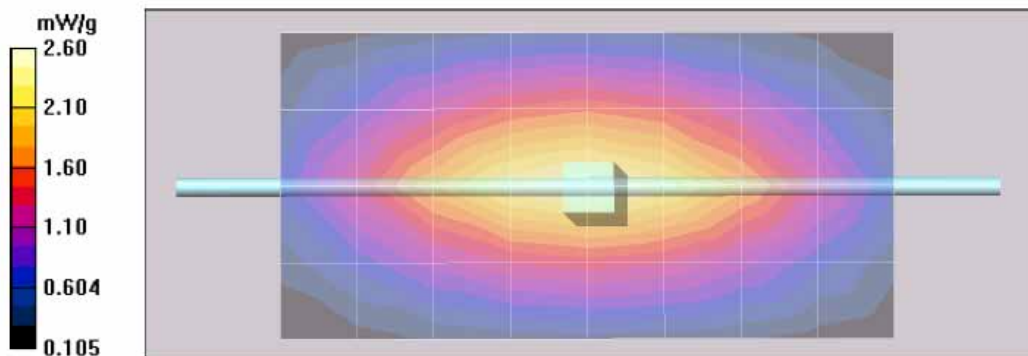
SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.57 mW/g

Maximum value of SAR (measured) = 2.61 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.60 mW/g

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





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/28/2010 7:04:28 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100428-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.5 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.20 mW/g (1g)  
 Percent from Target (+/-): 8.4 % (1g)  
 Rotation (1D): 0.14 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.30 mW/g (1g); 1.49 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 52.3 V/m; Power Drift = 0.00773 dB

Peak SAR (extrapolated) = 3.43 W/kg

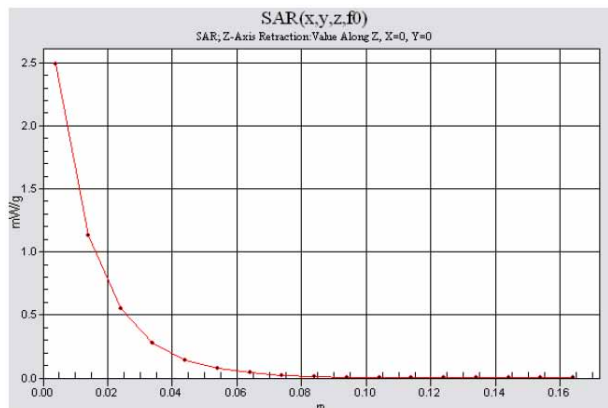
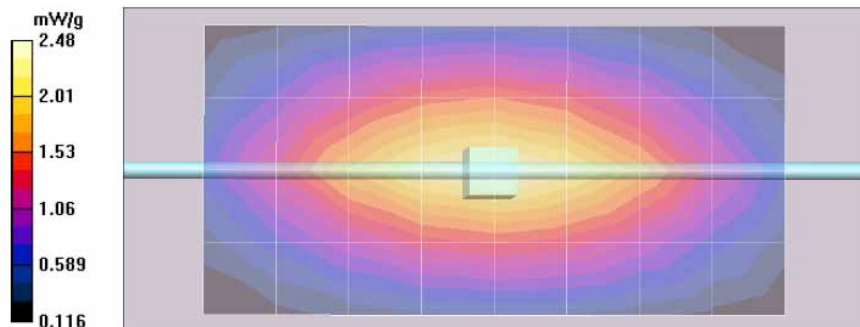
SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.49 mW/g

Maximum value of SAR (measured) = 2.48 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** 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) = 2.49 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/29/2010 9:44:05 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-835H-100429-01

Phantom# / Tissue Temp.: OVAL1020 / 21.5 (C)

Dipole Model# / Serial#: D835V2 / 435

TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)

Adjusted SAR (1W): 9.44 mW/g (1g)

Percent from Target (+/-): 6.0 % (1g)

Rotation (1D): 0.15 dB

**Note:**

Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.36 mW/g (1g); 1.53 mW/g (10g)

**Comments:**

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used: f = 835 MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 42.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

dy=7.5mm, dz=5mm

Reference Value = 52.6 V/m; Power Drift = -0.00884 dB

Peak SAR (extrapolated) = 3.50 W/kg

SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g

Maximum value of SAR (measured) = 2.53 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm,

dy=15mm

Reference Value = 52.6 V/m; Power Drift = -0.00884 dB

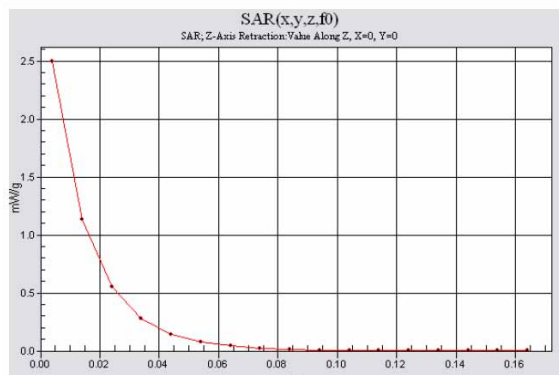
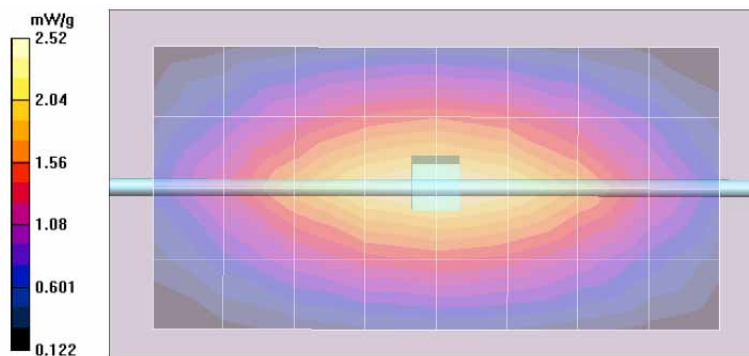
**Motorola Fast SAR: SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.59 mW/g**

Maximum value of SAR (interpolated) = 2.52 mW/g

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

dz=10mm

Maximum value of SAR (measured) = 2.50 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 4/30/2010 6:26:27 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-835H-100430-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.7 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.16 mW/g (1g)  
 Percent from Target (+/-): 8.8 % (1g)  
 Rotation (1D): 0.25 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.29 mW/g (1g); 1.48 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 52.3 V/m; Power Drift = -0.00932 dB

Peak SAR (extrapolated) = 3.43 W/kg

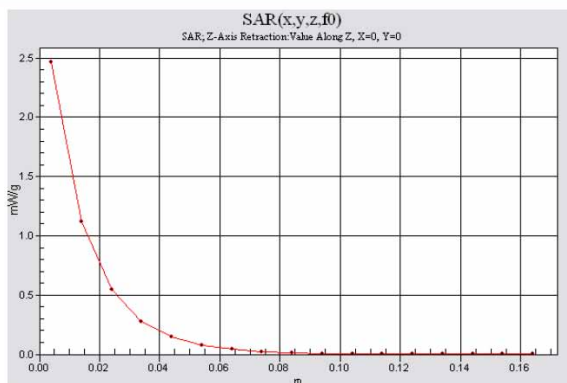
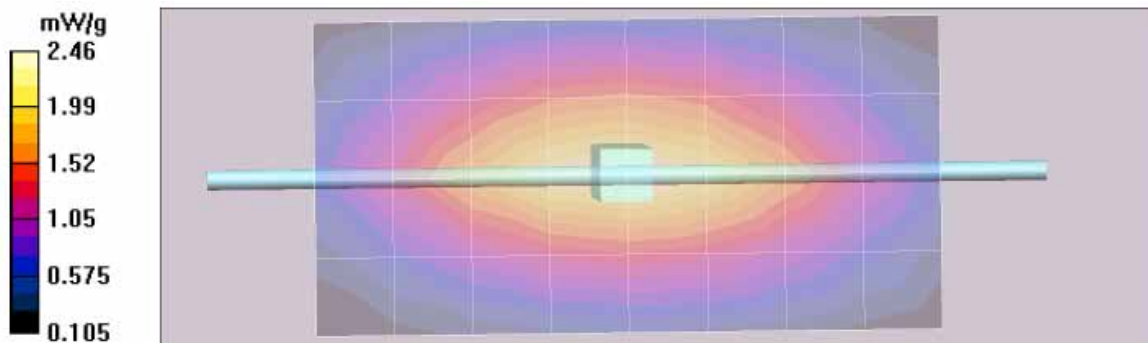
SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.48 mW/g

Maximum value of SAR (measured) = 2.47 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.46 mW/g

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



Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 5/1/2010 6:53:08 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100501-01  
 Phantom# / Tissue Temp.: OVAL1020 / 22.5 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.68 mW/g (1g)  
 Percent from Target (+/-): 3.6 % (1g)  
 Rotation (1D): 0.15 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.42 mW/g (1g); 1.57 mW/g (10g)

Comments:

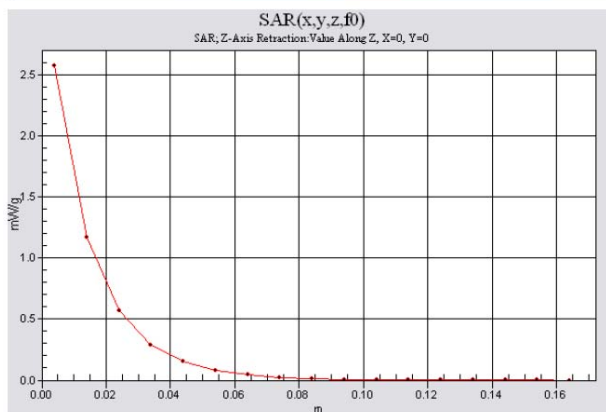
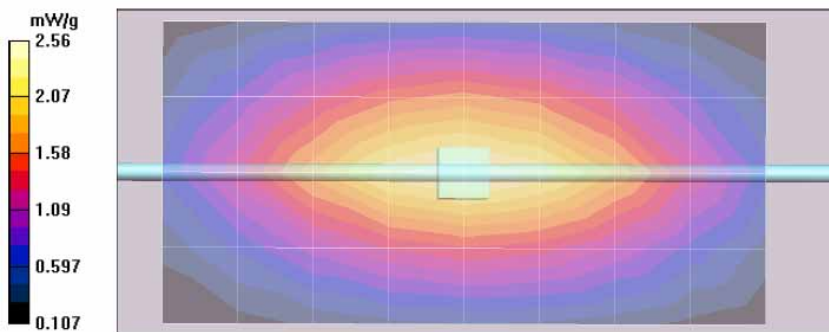
Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009  
 Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 42.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 53.1 V/m; Power Drift = -0.00595 dB  
 Peak SAR (extrapolated) = 3.56 W/kg  
 SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.55 mW/g  
 Maximum value of SAR (measured) = 2.57 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm  
 Maximum value of SAR (measured) = 2.56 mW/g

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/2/2010 7:45:02 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100502-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.5 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.04 mW/g (1g)  
 Percent from Target (+/-): 10.0 % (1g)  
 Rotation (1D): 0.19 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.26 mW/g (1g); 1.47 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 41.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 52.1 V/m; Power Drift = -0.00221 dB

Peak SAR (extrapolated) = 3.39 W/kg

SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.47 mW/g

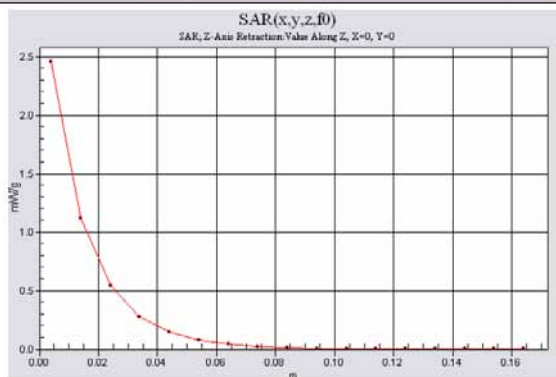
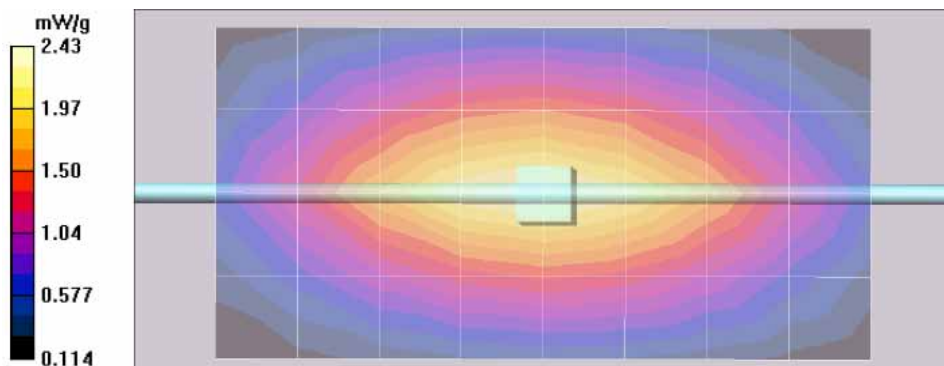
Maximum value of SAR (measured) = 2.45 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.43 mW/g

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

Maximum value of SAR (measured) = 2.46 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/3/2010 7:04:05 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100503-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.1 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.40 mW/g (1g)  
 Percent from Target (+/-): 6.4 % (1g)  
 Rotation (1D): 0.2 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.35 mW/g (1g); 1.53 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 52.9 V/m; Power Drift = -0.00242 dB

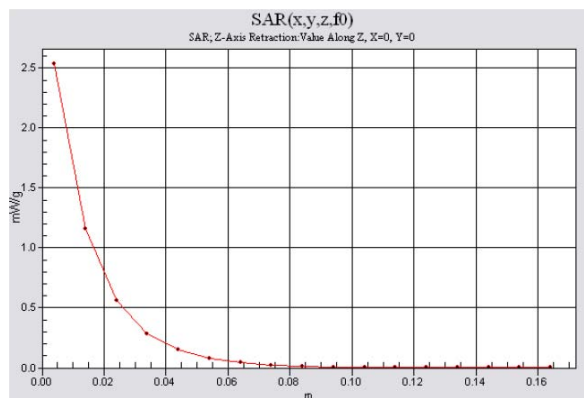
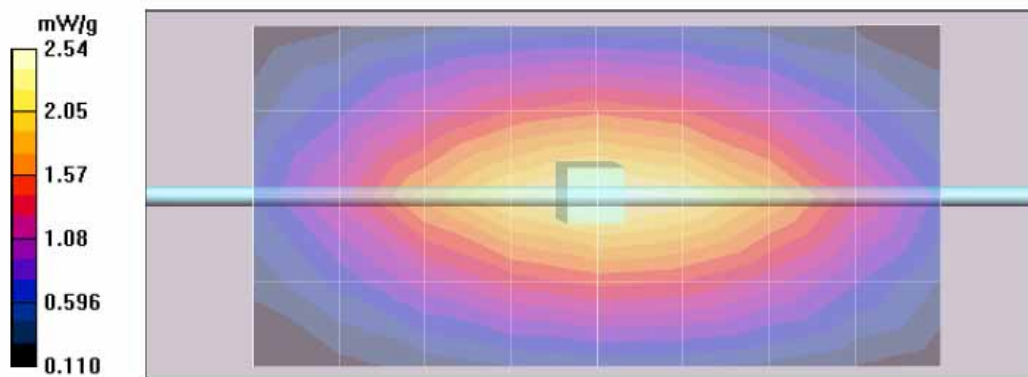
Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.53 mW/g

Maximum value of SAR (measured) = 2.54 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/4/2010 6:44:05 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100504-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.0 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.40 mW/g (1g)  
 Percent from Target (+/-): 6.4 % (1g)  
 Rotation (1D): 0.2 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.35 mW/g (1g); 1.53 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 42$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 52.5 V/m; Power Drift = -0.00278 dB

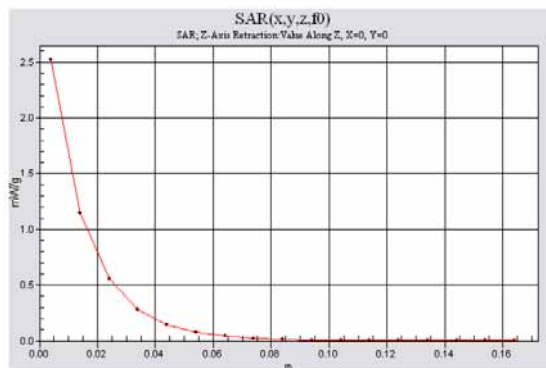
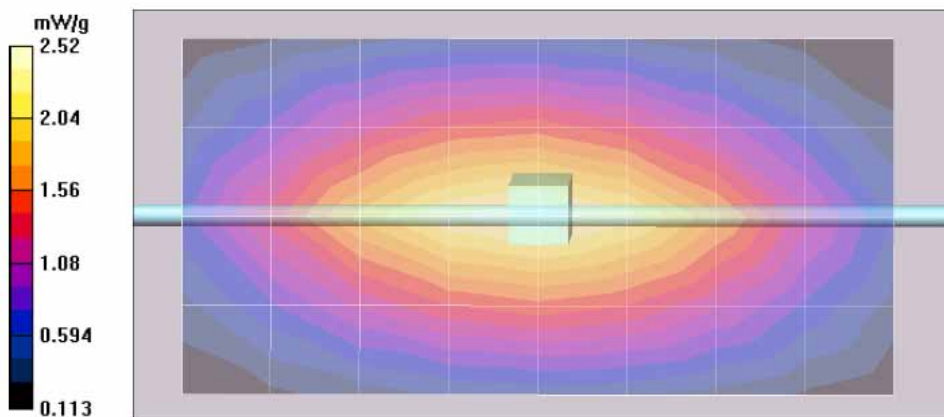
Peak SAR (extrapolated) = 3.50 W/kg

SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g

Maximum value of SAR (measured) = 2.52 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

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





**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/5/2010 6:49:37 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835H-100505-01  
 Phantom# / Tissue Temp.: OVAL1020 / 21.1 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.40 mW/g (1g)  
 Percent from Target (+/-): 6.4 % (1g)  
 Rotation (1D): 0.2 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.35 mW/g (1g); 1.53 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 41.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 53.1 V/m; Power Drift = -0.00697 dB

Peak SAR (extrapolated) = 3.54 W/kg

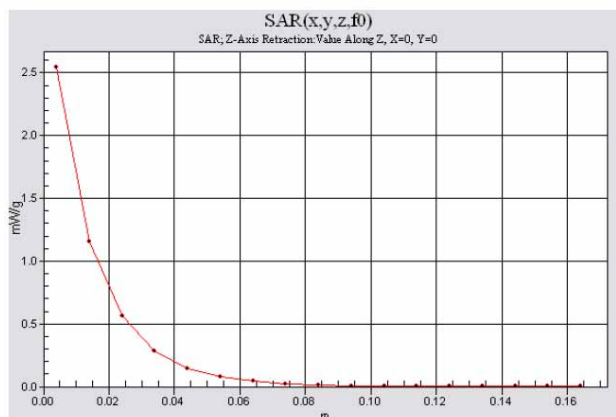
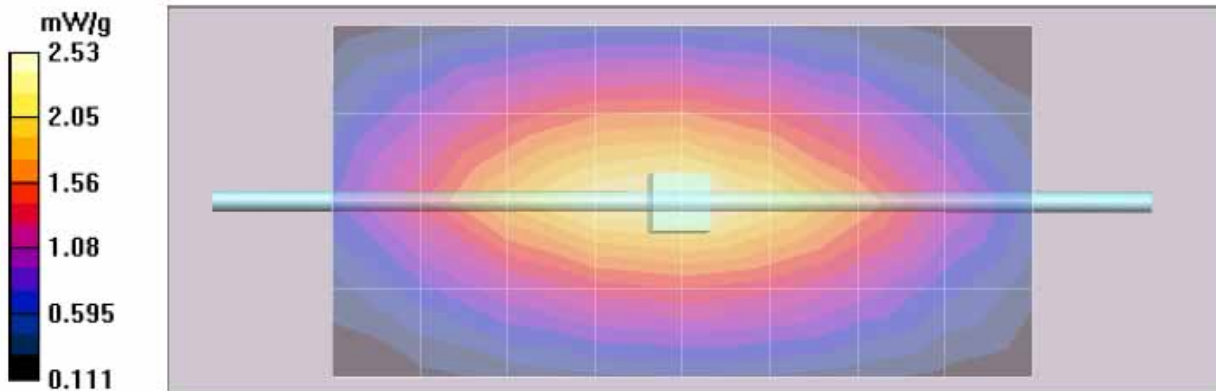
SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.53 mW/g

Maximum value of SAR (measured) = 2.54 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.53 mW/g

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



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/6/2010 8:49:39 PM

Robot# / Run#: DASY4-FL-1 / MeC-SYSP-835B-100506-14  
 Phantom# / Tissue Temp.: OVAL1019 / 20.7 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 9.64 mW/g (1g)  
 Percent from Target (+/-): 4.0 % (1g)  
 Rotation (1D): 0.16 dB

Note: Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.41 mW/g (1g); 1.58 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

dy=7.5mm, dz=5mm

Reference Value = 52.0 V/m; Power Drift = 0.00201 dB

Peak SAR (extrapolated) = 3.56 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.60 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm,

dy=15mm

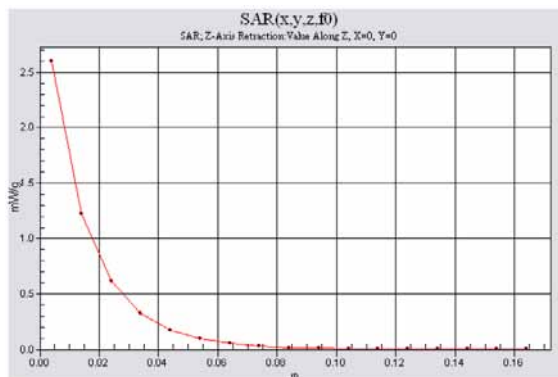
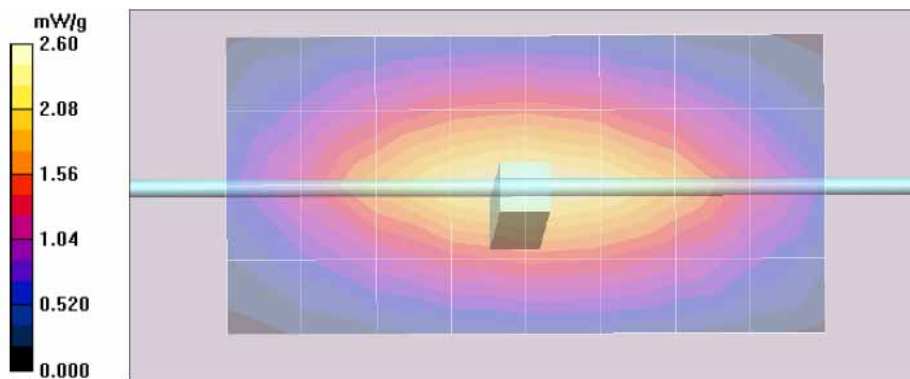
Reference Value = 52.0 V/m; Power Drift = 0.00201 dB

Motorola Fast SAR: SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (interpolated) = 2.60 mW/g

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

dz=10mm



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/6/2010 6:36:16 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-450B-100506-01  
 Phantom# / Tissue Temp.: OVAL1016 / 21.5 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.12 mW/g (1g)  
 Percent from Target (+/-): 6.4 % (1g)  
 Rotation (1D): 0.16 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.03 mW/g (1g); 0.689 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used: f = 450 MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.2 V/m; Power Drift = 0.00483 dB

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.689 mW/g

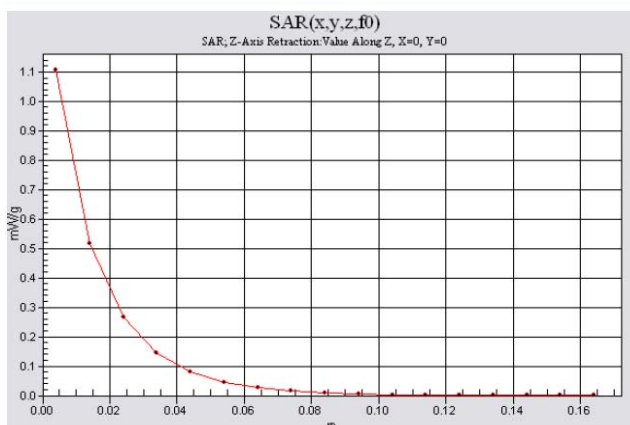
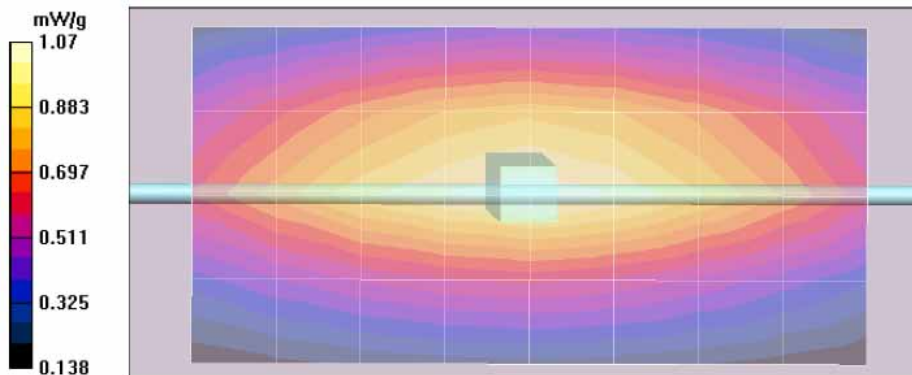
Maximum value of SAR (measured) = 1.10 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.07 mW/g

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

Maximum value of SAR (measured) = 1.11 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/11/2010 4:03:40 PM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-450B-100511-09  
 Phantom# / Tissue Temp.: OVAL1016 / 20.3 (C)  
 Dipole Model# / Serial#: D450V2 / 1002  
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target SAR (1W): 4.40 mW/g (1g)  
 Adjusted SAR (1W): 4.28 mW/g (1g)  
 Percent from Target (+/-): 2.7 % (1g)  
 Rotation (1D): 0.052 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 1.07 mW/g (1g); 0.715 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(6.55, 6.55, 6.55)  
 Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 450$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 34.9 V/m; Power Drift = 0.00324 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.715 mW/g

Maximum value of SAR (measured) = 1.15 mW/g

**System Performance Check/Dipole Area Scan 2 (41x81x1):** Measurement grid: dx=15mm, dy=15mm

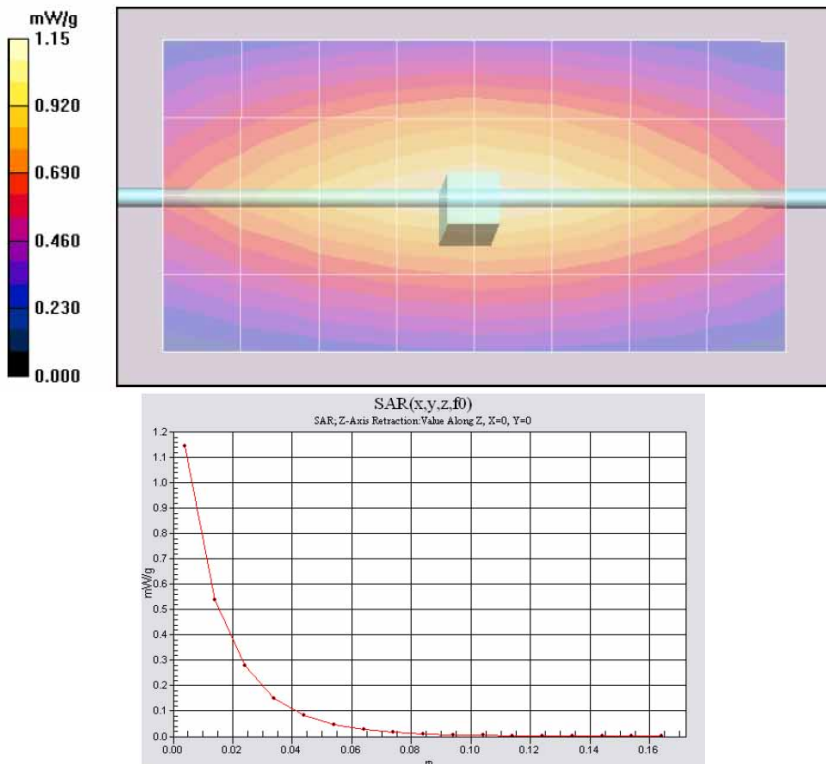
Reference Value = 34.9 V/m; Power Drift = 0.003 dB

Motorola Fast SAR: SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.763 mW/g

Maximum value of SAR (interpolated) = 1.14 mW/g

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

Maximum value of SAR (measured) = 1.15 mW/g



**Motorola Enterprise Mobility Solutions EME Laboratory**

Date/Time: 5/11/2010 6:32:10 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-835B-100511-01  
 Phantom# / Tissue Temp.: OVAL1019 / 21.1 (C)  
 Dipole Model# / Serial#: D835V2 / 435  
 TX Freq. / Start power: 835 (MHz) / 250 (mW)

Target SAR (1W): 10.04 mW/g (1g)  
 Adjusted SAR (1W): 10.08 mW/g (1g)  
 Percent from Target (+/-): 0.4 % (1g)  
 Rotation (1D): 0.039 dB

Note:  
 Prior to recording the reported SAR values below, the measured SAR values were corrected for tissue frequencies from 136 MHz to 3 GHz.

Reported: 2.52 mW/g (1g); 1.65 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn401, Calibrated: 7/9/2009

Duty Cycle: 1:1, Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 52.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Reference Value = 53.1 V/m; Power Drift = -0.0125 dB

Peak SAR (extrapolated) = 3.73 W/kg

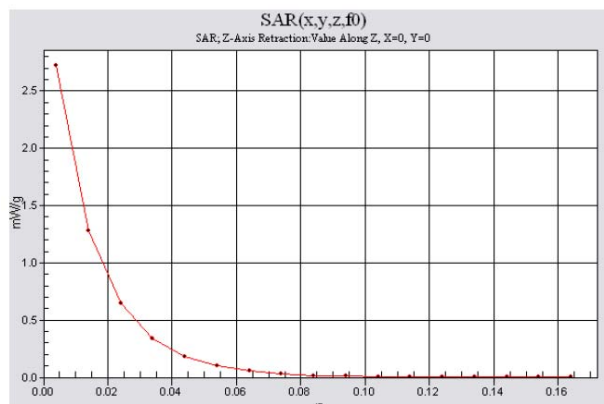
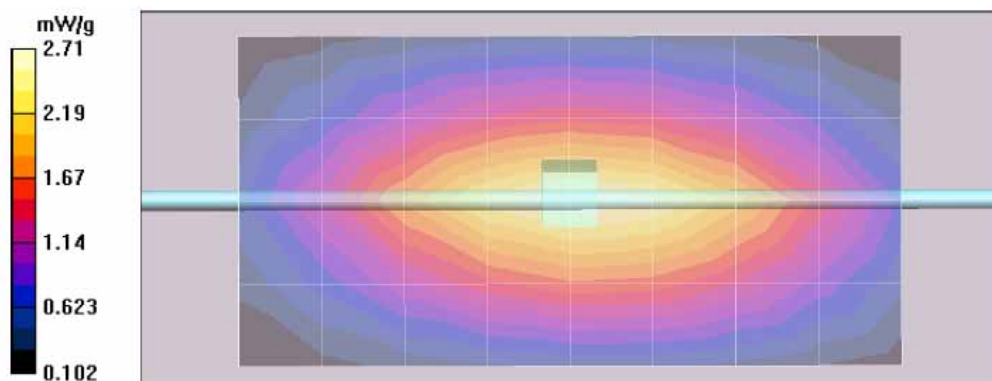
SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.72 mW/g

**System Performance Check/Dipole Area Scan 2 (5x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.71 mW/g

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





**DIPOLE SAR TARGET - HEAD**

Date: 10/28/09 Frequency (MHz): 450  
 Lab Location: FL08-G&PS Mixture Type: IEEE Head  
 DAE Serial #: 850 Ambient Temp.(°C): 22

Tissue Characteristics  
 Permittivity: 43.6 Phantom Type/SN: OVAL1011  
 Conductivity: 0.87 Distance (mm): 15  
 Tissue Temp.(°C): 20

Reference Source: Dipole Power to Dipole: 250 mW  
 Reference SN: 1002

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

**4.58**

Difference from Target

**0.00% (1g-SAR)**

**New Target:**

Average 1g-SAR Value (mW/g): **4.58**

**Passes K=2**

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

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3007	4.60	0.4%	R1
3163	4.56	-0.4%	R1
<b>Average</b>	<b>4.5800</b>	<b>New Measured SAR Value</b>	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: E.C.

DIPOLE SAR TARGET - BODY

Date: 10/28/09 Frequency (MHz): 450  
 Lab Location: FL08-G&PS Mixture Type: Body  
 DAE Serial #: 850 Ambient Temp.(°C): 22

Tissue Characteristics

Permittivity: 58.4 Phantom Type/SN: OVAL1016  
 Conductivity: 0.97 Distance (mm): 15  
 Tissue Temp.(°C): 20.1

Reference Source: Dipole Power to Dipole: 250 mW  
 Reference SN: 1002

**New Target:**

Average Measured SAR Value: 4.40 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3163	4.32	-1.8%	R1
3007	4.48	1.8%	R1
Average		New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: EC



**DIPOLE SAR TARGET - HEAD**

Date: 10/28/09 Frequency (MHz): 835  
 Lab Location: FL08-G&PS Mixture Type: IEEE Head  
 DAE Serial #: 850 Ambient Temp.(°C): 22

Tissue Characteristics  
 Permittivity: 41.7 Phantom Type/SN: OVAL1019  
 Conductivity: 0.91 Distance (mm): 15  
 Tissue Temp.(°C): 20

Reference Source: Dipole Power to Dipole: 250 mW  
 Reference SN: 435

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

**9.56**

**Difference from Target**

5.02% (1g-SAR)

**New Target:**

Average 1g-SAR Value (mW/g): **10.04**

**Passes K=2**

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

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3007	10.20	1.6%	R1
3163	9.88	-1.6%	R1
Average	<b>10.0400</b>	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: ERC

DIPOLE SAR TARGET - BODY

Date: 10/28/09 Frequency (MHz): 835  
 Lab Location: FL08-G&PS Mixture Type: Body  
 DAE Serial #: 850 Ambient Temp.(°C): 22

Tissue Characteristics

Permittivity: 54.0 Phantom Type/SN: OVAL1021  
 Conductivity: 0.98 Distance (mm): 15  
 Tissue Temp.(°C): 20.1

Reference Source: Dipole Power to Dipole: 250 mW  
 Reference SN: 435

**New Target:**

Average Measured SAR Value: 10.04 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3163	9.92	-1.2%	R1
3007	10.16	1.2%	R1
Average		New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: ELC