


MOTOROLA

TESTING CERT #2518.01

FCC ID: AZ489FT4826
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 3

Networks & Enterprise
EME Test Laboratory
8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322

Date of Report: Jan 11, 2007
Report Revision: B
Report ID: PCII rpt_PMUE1678B_RevB_070111_ SR4573

Responsible Engineer: Kim Uong (EME lead Eng.)
Date/s Tested: 12/8/06-12/18/06, 1/10/07
Manufacturer/Location: Motorola – Penang
Sector/Group/Div.: NE/GTDG
Date submitted for test: 11/13/06
DUT Description: 403-470 MHz 4W Trunking Popular w/o Keypad
Test TX mode(s): CW
Max. Power output: 4.8W
Nominal Power: 4.0W
Tx Frequency Bands: 403-470MHz
Signaling type: FM
Model(s) Tested: PMUE1678B
Model(s) Certified: PMUE1678B
Serial Number(s): 004TGL3002
Classification: Occupational/Controlled
Rule Part(s): 90



Approved Accessories:

Antenna(s):
 PMAE4002A (403-433 MHz Stubby ¼ wave antenna, -4.5dBi); PMAE4003A (430-470 MHz Stubby ¼ wave antenna, -4.5dBi);
 NAE6483AR (403-520 MHz Whip ¼ wave antenna, -2.0dBi).

Battery(ies):
 HNN9008A (NiMH High Capacity Battery); HNN9009A (NiMH Ultra High Capacity Battery); HNN9010A (NiMH Ultra High Capacity Battery Factory Mutual); HNN9011B (NiCd High Capacity Battery Factory Mutual); HNN9012B (NiCd High Capacity Battery); HNN9013D (Li Ion High Capacity Battery).

Body worn accessory(ies):
 HLN9670A (Leather Case, Thin Battery w/ Swivel); HLN9676A (Leather Case, Standard Battery w/ Swivel); HLN9714A (Belt Clip); HLN9952A (Belt Clip Carry Holder); HLN9677A (Leather DTMF case, Thin Battery w/ Belt Loop); HLN9689A (Leather DTMF case, Standard Battery w/ Belt Loop); HLN9690A (Leather DTMF case, Thin Battery w/ Swivel); HLN9694A (Leather DTMF case, Standard Battery w/ Swivel); HLN9701B (Hard Nylon Case, Belt Loop, D-ring, for all battery sizes); HLN9652A (Leather Case, Thin Battery w/ belt Loop); HLN9665A (Leather Case, Standard Battery w/ Belt Loop).

Audio/Data cable accessory(ies):
 See section 3.0 for list of approved audio accessories.

Max. Calc. : 1g Avg. SAR: 6.38 W/kg (Body); 10g Avg. SAR: 4.59 W/kg (Body)
Max. Calc. : 1g Avg. SAR: 3.60 W/kg (Face); 10g Avg. SAR: 2.71 W/kg (Face)

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

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

This reporting format is consistent with the test report guidelines of the TIA TSB-150 December 2004
 The results and statements contained in this report pertain only to the device(s) evaluated.

Signature on file – Deanna Zakharia
Deanna Zakharia N&E EME Lab Senior Resource Manager,
Laboratory Director,

Approval Date: 1/11/07

Certification Date: 1/11/07

Certification No.: L1070107

Appendix C

Dipole Calibration Certificates

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



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

Accredited by the Swiss Federal Office of Metrology and Accreditation
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: **D450V2-1001_May06**

CALIBRATION CERTIFICATE

Object **D450V2 - SN: 1001**

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

Calibration date: **May 25, 2006**

Condition of the calibrated item **In Tolerance**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41495277	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41498087	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Reference 3 dB Attenuator	SN: S5054 (3c)	11-Aug-05 (METAS, No. 251-00499)	Aug-06
Reference 20 dB Attenuator	SN: S5086 (20b)	4-Apr-06 (METAS, No. 251-00558)	Apr-07
Reference Probe ET3DV6	SN 1507	11-Jul-05 (SPEAG, No. ET3-1507_Jul05)	Jul-06
DAE4	SN 601	15-Dec-05 (SPEAG, No. DAE4-601_Dec05)	Dec-06
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-05)	In house check: Nov 06

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bornholt	R&D Director	

Issued: May 25, 2006

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

Certificate No: D450V2-1001_May06

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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
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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

- 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
- CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY4	V4.6
Extrapolation	Advanced Extrapolation	
Phantom	Flat Phantom V4.4	Shell thickness: 6 ± 0.2 mm
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	43.5	0.87 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	43.6 $\pm$ 6 %	0.86 mho/m $\pm$ 6 %
Head TSL temperature during test	(22.0 $\pm$ 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	398 mW input power	2.00 mW / g
SAR normalized	normalized to 1W	5.03 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	5.06 mW / g $\pm$ 18.1 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	398 mW input power	1.35 mW / g
SAR normalized	normalized to 1W	3.39 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	3.40 mW / g $\pm$ 17.6 % (k=2)

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

Appendix**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	51.0 Ω - 9.6 $\mu\Omega$
Return Loss	- 20.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.343 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	March 22, 2002

DASY4 Validation Report for Head TSL

Date/Time: 25.05.2006 13:20:31

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V2; Serial: D450V2 - SN:1001

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

Medium: HSL450;

Medium parameters used: $f = 450$ MHz; $\sigma = 0.86$ mho/m; $\epsilon_r = 43.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (LF); ConvF (6.59, 6.59, 6.59); Calibrated: 11.07.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.4; Type: Flat Phantom 4.4
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=398mW/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.14 mW/g

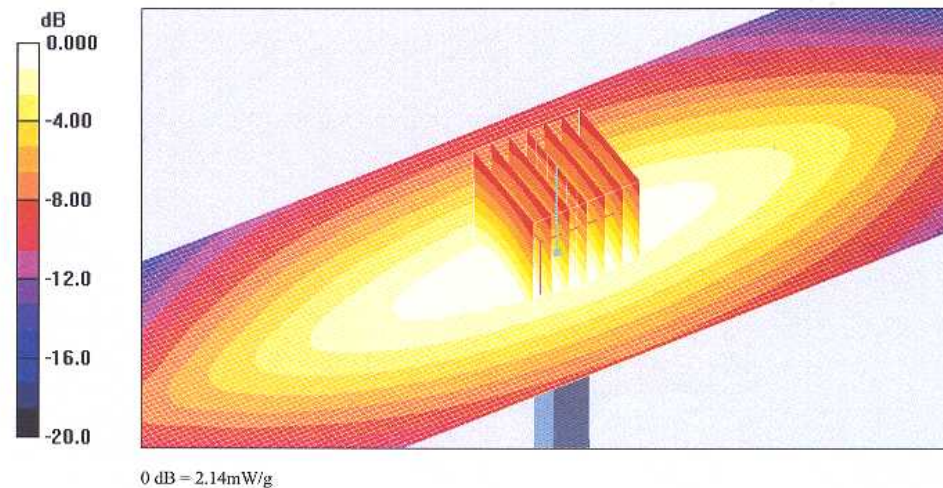
d=15mm, Pin=398mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.1 V/m; Power Drift = -0.014 dB

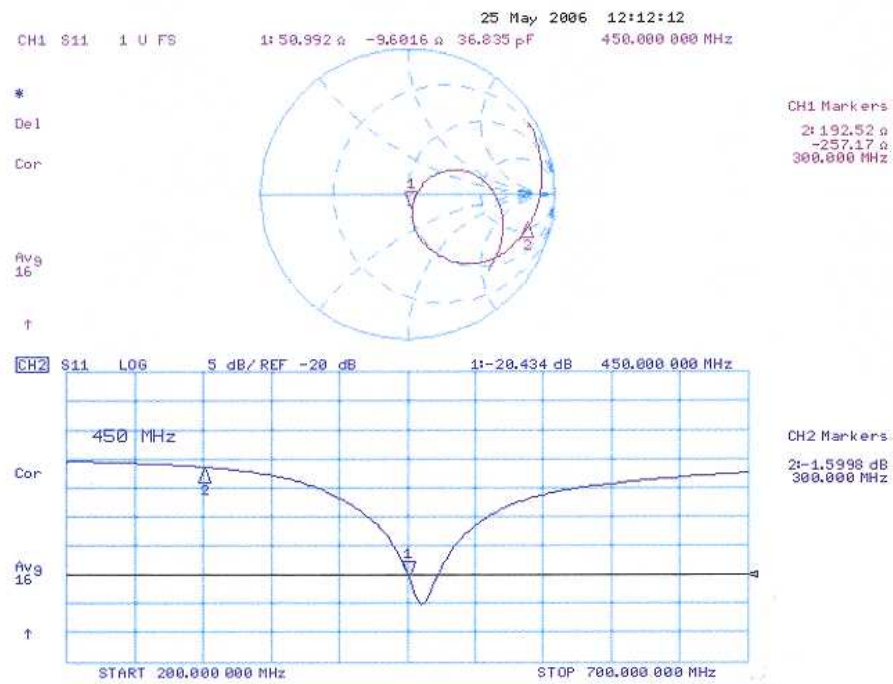
Peak SAR (extrapolated) = 2.85 W/kg

SAR(1 g) = 2 mW/g; SAR(10 g) = 1.35 mW/g

Maximum value of SAR (measured) = 2.14 mW/g



Impedance Measurement Plot for Head TSL



DIPOLE SAR TARGET - HEAD

Date: 06/17/06 Frequency (MHz): 450
 Lab Location: NE Mixture Type: IEEE Head
 DAE Serial #: 363 Ambient Temp.(°C): 22.6

Tissue Characteristics
 Permittivity: 45.2 Phantom Type/SN: 80302002B-S8
 Conductivity: 0.91 Distance (mm): 15
 Tissue Temp.(°C): 21.9

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 1001

Target SAR Value: 4.9 mW/g (1g avg.), 3.3 mW/g (10g avg.)
 (normalized to 1.0 W)

New Target:

Average Measured SAR Value: 5.11 mW/g (1g avg.), 3.34 mW/g (10g avg.)

Percent Difference From Target (MUST be within k=2 Uncertainty):
4.33% (1g ave)
1.33% (10g ave)

Test performed by: Ed Church Initial: Σ, C

Probe SN #s	1-G Cube	Diff from Ave	10-G Cube	Diff from Ave	Robot
1383	5.02	-1.80%	3.33	-0.42%	R3
1384	4.89	-4.34%	3.20	-4.31%	R3
1393	4.77	-6.69%	3.18	-4.90%	R3
1545	5.37	5.05%	3.46	3.47%	R3
1547	5.51	7.79%	3.55	6.16%	R3
Average	5.1120		3.3440	New Measured SAR Value	
(normalized to 1.0 W, including drift)					

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FCD-0733 Rev. 2

DIPOLE SAR TARGET - BODY

Date: 06/17/06 Frequency (MHz): 450
 Lab Location: NE Mixture Type: FCC Body
 DAE Serial #: 363 Ambient Temp.(°C): 22.7

Tissue Characteristics

Permittivity: 56.5 Phantom Type/SN: 80302002C-S9
 Conductivity: 0.92 Distance (mm): 15
 Tissue Temp.(°C): 21.4

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 1001

New Target:

Average Measured SAR Value: 4.43 mW/g(1g avg.), 2.96 mW/g (10g avg.)

Test performed by: Ed Church Initial: EC

Probe SN #s	1-G Cube	Diff from Ave	10-G Cube	Diff from Ave	Robot
1383	4.22	-4.7%	2.87	-3.1%	R3
1384	4.23	-4.5%	2.89	-2.4%	R3
193	4.09	-7.7%	2.81	-5.1%	R3
1545	4.79	8.1%	3.11	5.0%	R3
1547	4.82	8.8%	3.13	5.7%	R3
Average	4.4300		2.9620	New Measured SAR Value	
(nomalized to 1.0 W, including drift)					

Motorola Internal Use Only

FCD-0733 Rev. 2

Appendix D

Test System Verification Scans

Dipole validation scans at the head from SPEAG are provided in APPENDIX C. NE's EME lab validates its' dipole(s) to the applicable IEEE system performance targets. A system validation was performed using FCC body tissue parameters to generate the system performance target values for body at the applicable frequency. Dipoles are assessed using multiple probes and measurements were performed using the isotropic assessment procedure mentioned below.

To assess the isotropic characteristics of the measurement probe, two system performance zoom scans (0 and 90 degrees) were measured. The results were averaged together and adjusted to account for the power drift in order to obtain the final calculated 1 and 10 gram results. The results obtained from each probe were then averaged together to determine the new measured SAR target.

Motorola N&E EME Laboratory

Date/Time: 12/8/2006 7:36:26 PM

Robot#/Run#: DASY4-FL-1 / MeC-SYSP-450B-061208-01

Phantom#/ Tissue Temp.: 80302002D-S15 / 21.4 (C)

Dipole Model#/ Serial#: D450V2 / 1001

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

Target: 4.43 mW/g (1g); 2.96 mW/g (10g)
 Calculated: 4.21 mW/g (1g); 2.84 mW/g (10g)
 Percent from Target (+/-): 5.07 % (1g); 4.02 % (10g)
 (Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz, $\sigma = 0.92$ mho/m, $\epsilon_r = 57.8$; $\rho = 1000$ kg/m³

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

Reference Value = 36.7 V/m; Power Drift = -0.0262 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.708 mW/g

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

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

Reference Value = 36.7 V/m; Power Drift = -0.0262 dB

Peak SAR (extrapolated) = 1.50 W/kg

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.704 mW/g

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

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

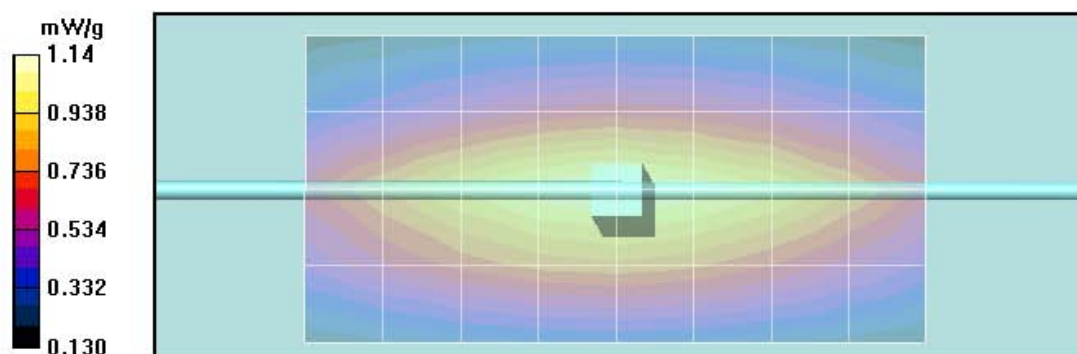
Reference Value = 36.7 V/m; Power Drift = -0.026 dB

Motorola Fast SAR: SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.742 mW/g

Maximum value of SAR (interpolated) = 1.12 mW/g

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

Maximum value of SAR (measured) = 1.12 mW/g



Motorola N&E EME Laboratory

Date/Time: 12/13/2006 11:37:49 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450B-061213-01

Phantom# / Tissue Temp.: 80302002D-S15 / 21.2 (C)

Dipole Model# / Serial#: D450V2 / 1001

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

Target: 4.43 mW/g (1g); 2.96 mW/g (10g)
 Calculated: 4.31 mW/g (1g); 2.93 mW/g (10g)
 Percent from Target (+/-): 1.11 % (1g); 0.81% (10g)
 (Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 57.4$; $\rho = 1000$ kg/m³

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

Reference Value = 37.2 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.739 mW/g

Maximum value of SAR (measured) = 1.18 mW/g

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

Reference Value = 37.2 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.728 mW/g

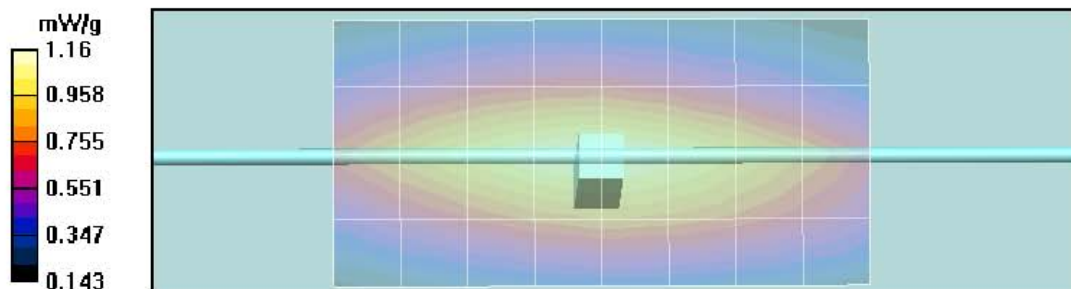
Maximum value of SAR (measured) = 1.15 mW/g

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

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

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

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



Motorola N&E EME Laboratory

Date/Time: 12/14/2006 8:14:42 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450B-061214-01

Phantom# / Tissue Temp.: 80302002D-S15 / 20.9 (C)

Dipole Model# / Serial#: D450V2 / 1001

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

Target: 4.43 mW/g (1g); 2.96 mW/g (10g)

Calculated: 4.27 mW/g (1g); 2.89 mW/g (10g)

Percent from Target (+/-): 3.60 % (1g); 2.32% (10g)
(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 57.3$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm,

dy=7.5mm, dz=5mm

Reference Value = 36.9 V/m; Power Drift = -0.0108 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.726 mW/g

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

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

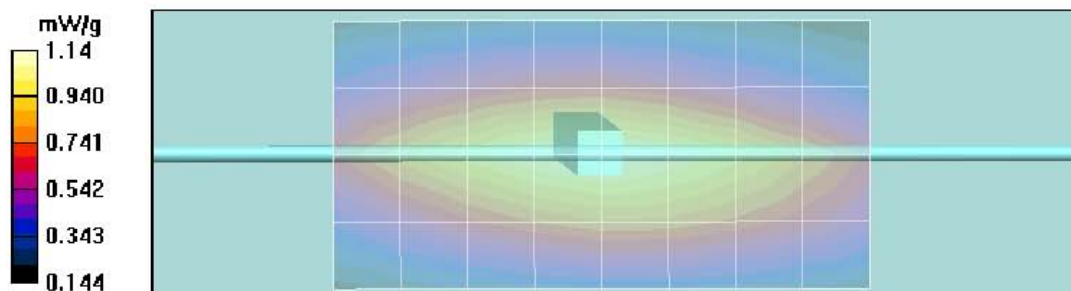
dy=7.5mm, dz=5mm

Reference Value = 36.9 V/m; Power Drift = -0.0108 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.716 mW/g

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

System Performance/Dipole Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm**System Performance/Z-Axis Retraction (1x1x17):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Motorola N&E EME Laboratory

Date/Time: 12/15/2006 7:25:42 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450B-061215-01

Phantom# / Tissue Temp.: 80302002D-S15 / 21.4 (C)

Dipole Model# / Serial#: D450V2 / 1001

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

Target: 4.43 mW/g (1g); 2.96 mW/g (10g)
 Calculated: 4.30 mW/g (1g); 2.92 mW/g (10g)
 Percent from Target (+/-): 3.03 % (1g); 1.26% (10g)
 (Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 57.3$; $\rho = 1000$ kg/m³

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

Reference Value = 37.3 V/m; Power Drift = -0.0159 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.735 mW/g

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

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

Reference Value = 37.3 V/m; Power Drift = -0.0159 dB

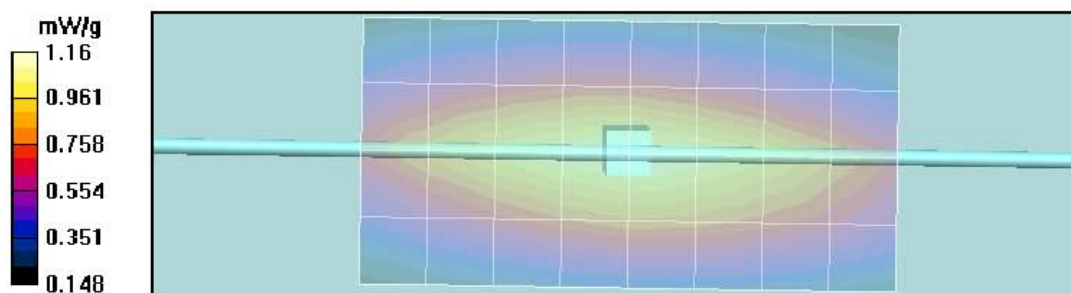
Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.721 mW/g

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

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

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



Motorola N&E EME Laboratory

Date/Time: 12/17/2006 10:49:58 AM

Robot# / Run#: DASY4-FL-1 / CM-SYSP-450H-061217-01

Phantom# / Tissue Temp.: 80302002C-S9 / 20.0 (C)

Dipole Model# / Serial#: D450V2 / 1001

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

Target: 5.11 mW/g (1g); 3.34 mW/g (10g)
 Calculated: 5.12 mW/g (1g); 3.43 mW/g (10g)
 Percent from Target (+/-): 0.15 % (1g); 2.81 % (10g)
 (Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(6.74, 6.74, 6.74)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 43.1$; $\rho = 1000$ kg/m³

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

Reference Value = 41.8 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 1.87 W/kg

SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.839 mW/g

Maximum value of SAR (measured) = 1.35 mW/g

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

Reference Value = 41.8 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.825 mW/g

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

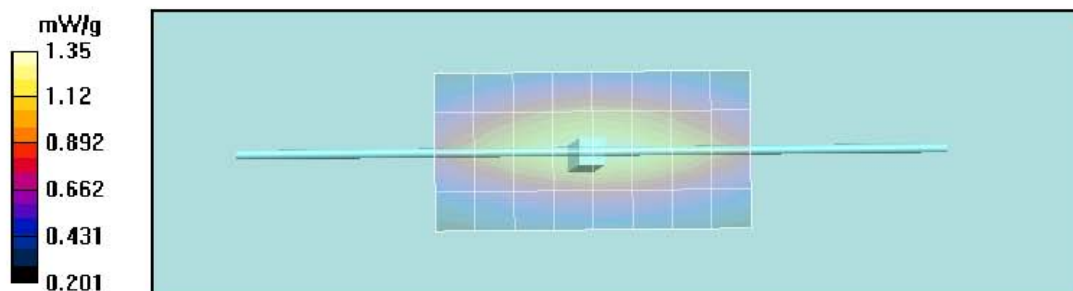
System Performance/Dipole Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 41.8 V/m; Power Drift = -0.136 dB

Motorola Fast SAR: SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.905 mW/g

Maximum value of SAR (interpolated) = 1.36 mW/g

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



Motorola N&E EME Laboratory

Date/Time: 12/18/2006 8:10:29 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-450H-061218-01

Phantom# / Tissue Temp.: 80302002C-S9 / 21.5 (C)

Dipole Model# / Serial#: D450V2 / 1001

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

Target: 5.11 mW/g (1g); 3.34 mW/g (10g)
 Calculated: 4.82 mW/g (1g); 3.22 mW/g (10g)
 Percent from Target (+/-): 5.69% (1g); 3.49 % (10g)
 (Including Drift)

Probe: ET3DVB6 - SN1383, Calibrated: 2/22/2006, ConvF(6.74, 6.74, 6.74)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 44.1$; $\rho = 1000$ kg/m³

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

Reference Value = 39.6 V/m; Power Drift = 0.000739 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.812 mW/g

Maximum value of SAR (measured) = 1.31 mW/g

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

Reference Value = 39.6 V/m; Power Drift = 0.000739 dB

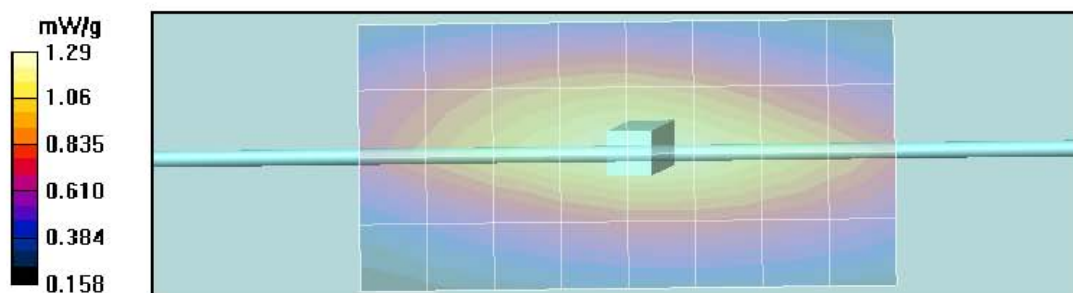
Peak SAR (extrapolated) = 1.78 W/kg

SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.800 mW/g

Maximum value of SAR (measured) = 1.29 mW/g

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

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



Motorola N&E EME Laboratory

Date/Time: 1/10/2007 5:03:08 PM

Robot# / Run#: DASY4-FL-1 / MeC-SYSP-450B-070110-08
 Phantom# / Tissue Temp.: 80302002D-S15 / 21.8 (C)
 Dipole Model# / Serial#: D450V2 / 1001
 TX Freq. / Start power: 450 (MHz) / 250 (mW)

Target: 4.43 mW/g (1g); 2.96 mW/g (10g)
 Calculated: 4.25 mW/g (1g); 2.83 mW/g (10g)
 Percent from Target (+/-): 3.98 % (1g); 4.34% (10g)
 (Including Drift)

Probe: ET3DV6R - SN1545, Calibrated: 9/21/2006, ConvF(7.46, 7.46, 7.46)

Electronics: DAE3 Sn406, Calibrated: 11/13/2006

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.95$ mho/m; $\epsilon_r = 57.4$; $\rho = 1000$ kg/m³

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

Reference Value = 35.5 V/m; Power Drift = 0.00663 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.719 mW/g

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

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

Reference Value = 35.5 V/m; Power Drift = 0.00663 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.698 mW/g

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

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

Reference Value = 35.5 V/m; Power Drift = 0.00663 dB

Motorola Fast SAR: SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.764 mW/g

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

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

