



MOTOROLA



Certificate Number: 2518.01

FCC ID: AZ489FT3814

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: 10/18/2006
Report Revision: 0
Report ID: XTS4000_Rev O_061018
SR4417**

Responsible Engineer: Stephen C. Whalen Sr. Staff EME Eng.
Date/s Tested: 9/21/06-10/2/06
Manufacturer/Location: Motorola – Schaumburg IL
Sector/Group/Div.: Networks and Enterprises
Date submitted for test: 9/18/2006
DUT Description: XTS 4000 PORTABLE ASTRO DIGITAL 136-174MHZ 1-2W
Test TX mode(s): FM APCO 25
Max. Power output: 2.8W
Nominal Power: 2 Watts, conducted, constant envelope (APCO)
Tx Frequency Bands: 136-174 MHz
Signaling type: FM APCO 25
Model(s) Tested: H18KCN9PW9AN
Model(s) Certified: H18KCN9PW9AN
Serial Number(s): 687T000506
Classification: Occupational/Controlled
Rule Part(s): 90



Antenna(s):
 NAD6583A retractable (162-174 MHz ¼ wave -13.3 dBi), NAD6582A retractable (136-151 MHz ¼ wave -13.3 dBi),
 NAD6581A retractable (145-166 MHz ¼ wave -13.3 dBi)

Battery(ies):
 NNTN6944A Li Ion

Body worn accessory(ies):
 NNTN6946A leather pouch, NNTN6945A plastic holster

Audio accessory(ies):
 SYN8390B Ear Piece, NNTN5006BP Ear Piece, NNTN5211A Ear Piece

Max. Calc. : 1-g Avg. SAR: 0.37W/kg (Body); 10-g Avg. SAR: 0.19W/kg (Body)
Max. Calc. : 1-g Avg. SAR: 0.17W/kg (Face); 10-g Avg. SAR: 0.13W/kg (Face)
Max. Calc. : 1-g Avg. SAR: 1.64W/kg (Head); 10-g Avg. SAR: 0.71W/kg (Head)

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
Ken Enger N&E EME Lab Senior Resource Manager,
Laboratory Director,

Approval Date: 10/20/06

Certification Date:

Certification No.:

Appendix C
Dipole Calibration Certificates

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



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C 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: **D300V2-1002_May06**

CALIBRATION CERTIFICATE

Object **D300V2 - SN: 1002**

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	28-Oct-05 (SPEAG, No. ET3-1507_Oct05)	Oct-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

Calibrated by:	Name	Function	Signature
	Katja Pokovic	Technical Manager	

Approved by:	Name	Function	Signature
	Fin Bomholt	R&D Director	

Issued: May 25, 2006

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 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**

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	300 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	45.3	0.87 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	0.87 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	398 mW input power	1.18 mW / g
SAR normalized	normalized to 1W	2.96 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	2.98 mW / g ± 18.1 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	398 mW input power	0.781 mW / g
SAR normalized	normalized to 1W	1.96 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	1.97 mW / g ± 17.6 % (k=2)

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.2 Ω - 14.4 j Ω
Return Loss	- 17.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.739 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	August 26, 2002

DASY4 Validation Report for Head TSL

Date/Time: 25.05.2006 18:09:27

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 300 MHz; Type: D300V2; Serial: D300V2 - SN:1002

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

Medium: HSL300;

Medium parameters used: $f = 300 \text{ MHz}$; $\sigma = 0.87 \text{ mho/m}$; $\epsilon_r = 46$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (LF); ConvF(7.51, 7.51, 7.51); Calibrated: 11.07.2005
- 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) = 1.24 mW/g

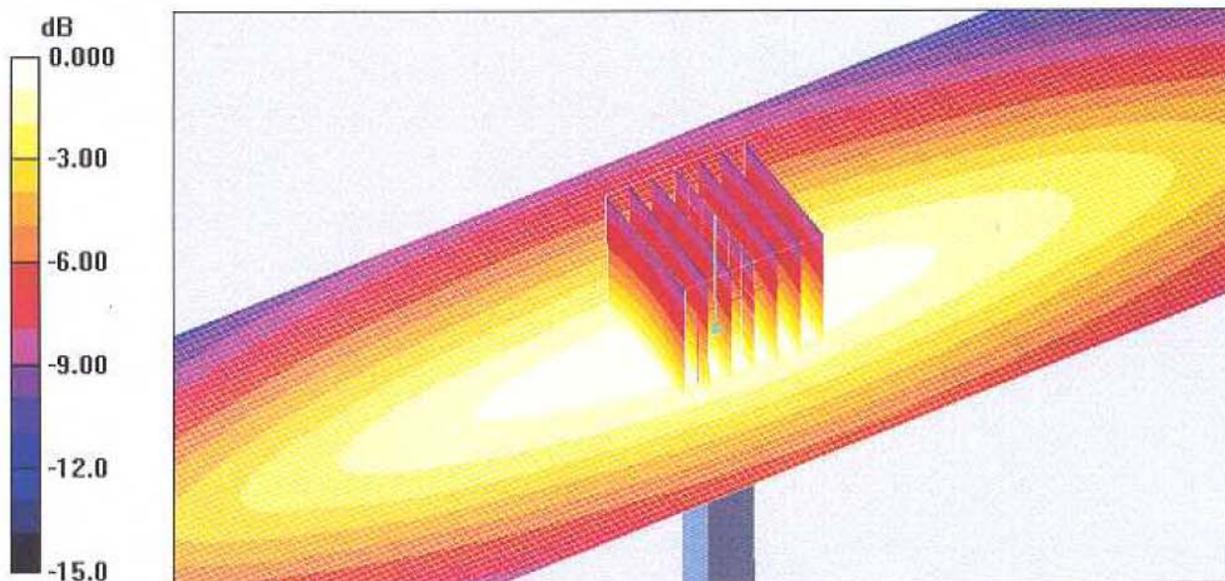
d=15mm, Pin=398mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 39.0 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 1.87 W/kg

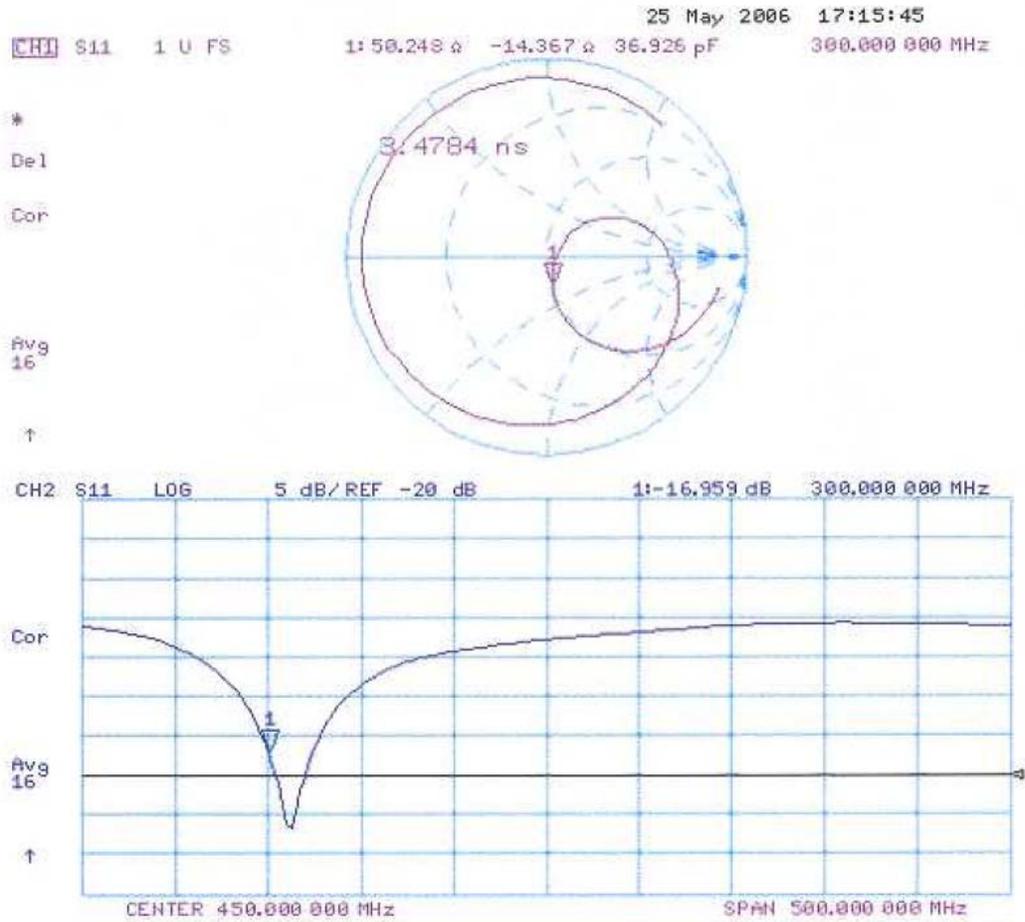
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.781 mW/g

Maximum value of SAR (measured) = 1.26 mW/g



0 dB = 1.26mW/g

Impedance Measurement Plot for Head TSL



Appendix D

Test System Verification Scans

Dipole validation scans at the head from SPEAG are provided in APPENDIX C. 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 NE EME Lab

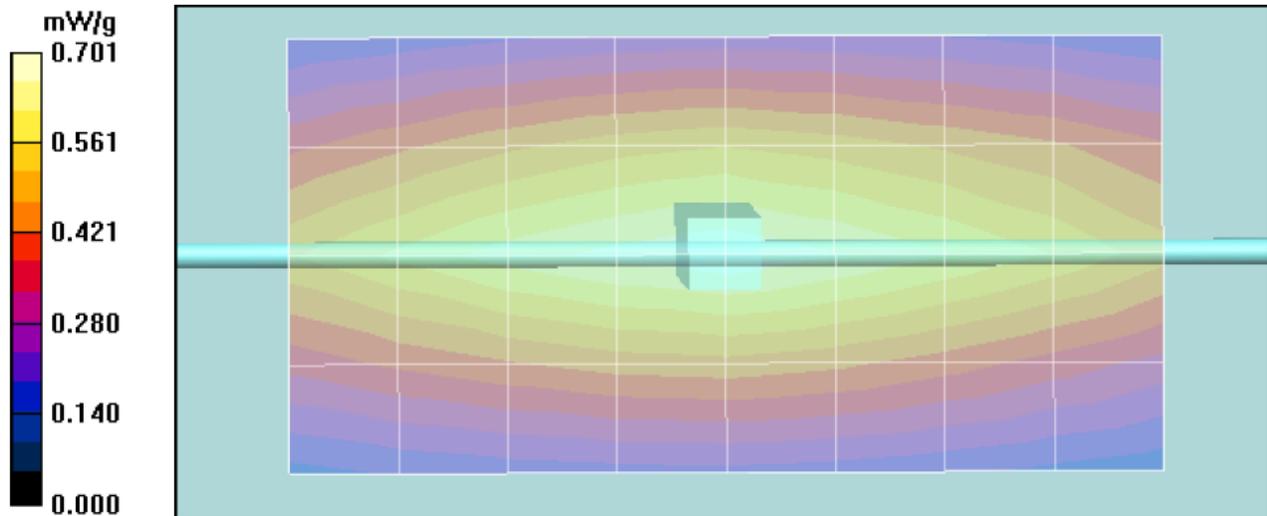
DUT: Dipole 300 MHz; Date/Time: 9/21/2006 4:41:07 PM
 Run #: MeC-SYSP-300B-060921-01 Sim.Tissue Temp: 21.8 (C)
 Robot # GEMS-3 Phantom #: 80602002C-S3
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.71 mW/g calculated 1g-SAR; -2.85 % from target (including drift)
 1.79 mW/g calculated 10g-SAR; -3.41 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 60$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = -0.0167 dB
 Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.440 mW/g
 Maximum value of SAR (measured) = 0.704 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = -0.0167 dB
 Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.450 mW/g
 Maximum value of SAR (measured) = 0.718 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 0.701 mW/g



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DUT: Dipole 300 MHz; Date/Time: 9/22/2006 8:48:44 AM
 Run #: JsT-SYSP-300B-060922-01 Sim.Tissue Temp: 22.3 (C)
 Robot # GEMS-3 Phantom #: 80602002C-S3
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.74 mW/g calculated 1g-SAR; -1.67% from target (including drift)
 1.81 mW/g calculated 10g-SAR; -2.22% from target (including drift)

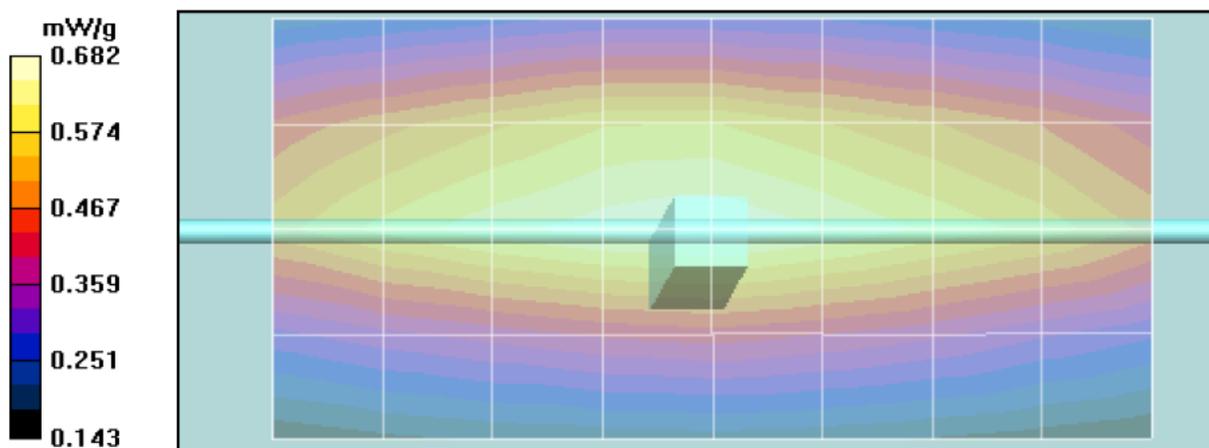
Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 59.8$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 27.8 V/m; Power Drift = -0.0119 dB
 Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.675 mW/g; SAR(10 g) = 0.446 mW/g
 Maximum value of SAR (measured) = 0.710 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 27.8 V/m; Power Drift = -0.0119 dB
 Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.456 mW/g
 Maximum value of SAR (measured) = 0.731 mW/g

System Performance Check/Dipole Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.682 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 0.711 mW/g



Motorola NE EME Lab

DUT: Dipole 300 MHz: Date/Time: 9/23/2006 12:09:26 AM
 Run #: MeC-SYSP-300B-060923-01 Sim.Tissue Temp: 21.1 (C)
 Robot # GEMS-3 Phantom #: 80602002C-S3
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.68 mW/g calculated 1g-SAR; -3.93% from target (including drift)
 1.78 mW/g calculated 10g-SAR; -3.84% from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 60.2$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

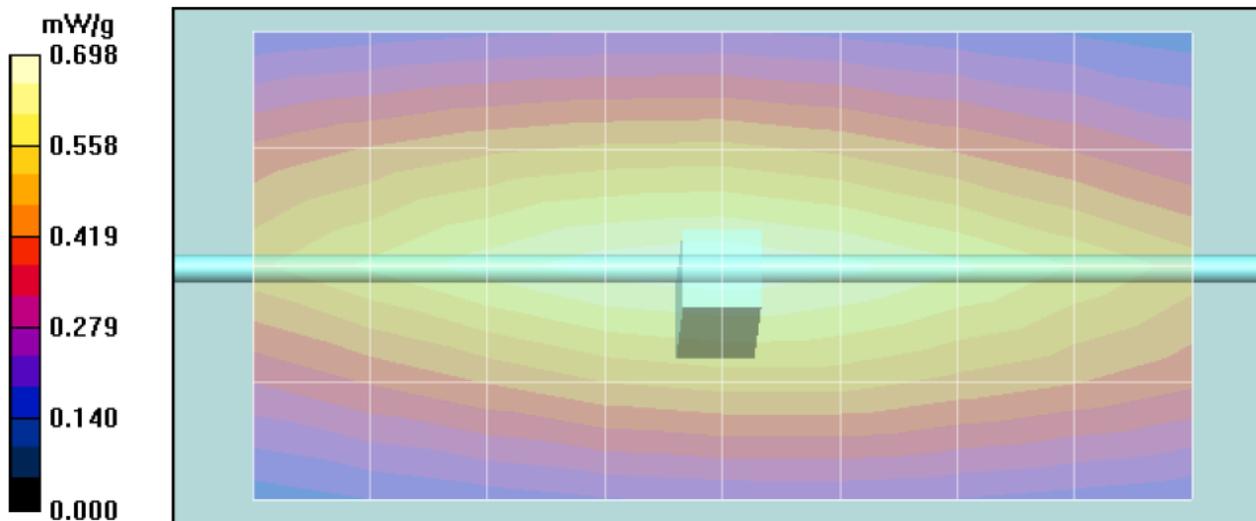
dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = 0.0315 dB
 Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.668 mW/g; SAR(10 g) = 0.443 mW/g
 Maximum value of SAR (measured) = 0.699 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = 0.0315 dB
 Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.452 mW/g
 Maximum value of SAR (measured) = 0.714 mW/g

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

dz=10mm
 Maximum value of SAR (measured) = 0.698 mW/g



Motorola NE EME Lab

DUT: Dipole 300 MHz; Date/Time: 9/25/2006 8:49:02 AM
 Run #: JsT-SYSP-300B-060925-01 Sim. Tissue Temp: 22.0 (C)
 Robot # GEMS-3 Phantom #: 80602002C-S3
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.76 mW/g calculated 1g-SAR; -1.07% from target (including drift)
 1.82 mW/g calculated 10g-SAR; -1.54% from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 59.8$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.3 V/m; Power Drift = 0.00615 dB
 Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.684 mW/g; SAR(10 g) = 0.451 mW/g
 Maximum value of SAR (measured) = 0.718 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

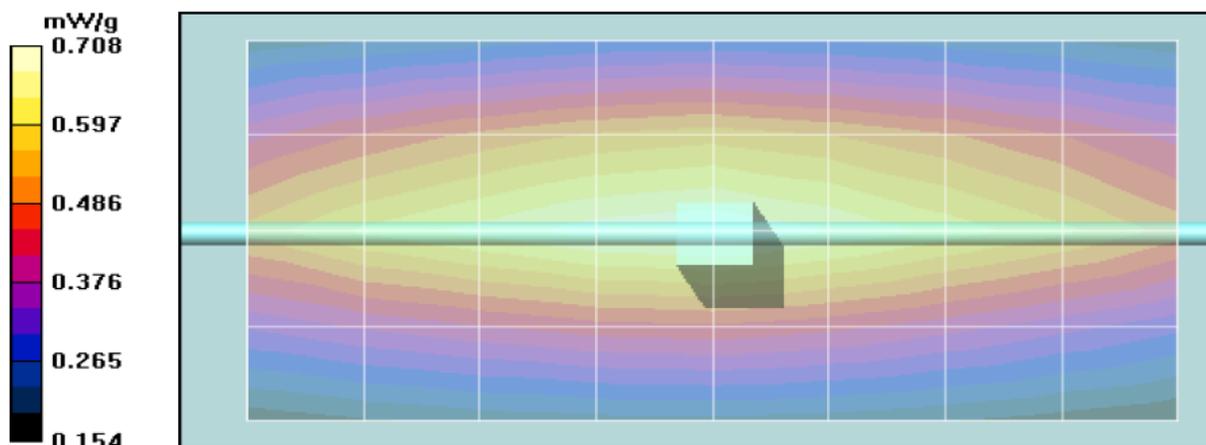
dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.3 V/m; Power Drift = 0.00615 dB
 Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.697 mW/g; SAR(10 g) = 0.460 mW/g
 Maximum value of SAR (measured) = 0.736 mW/g

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

Maximum value of SAR (measured) = 0.708 mW/g

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

dz=10mm
 Maximum value of SAR (measured) = 0.717 mW/g



Motorola NE EME Lab

DUT: Dipole 300 MHz; Date/Time: 9/26/2006 11:06:07 AM
 Run #: JsT-SYSP-300B-060926-01 Sim.Tissue Temp: 20.5 (C)
 Robot # GEMS-3 Phantom #: 80602002A-S1
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.85 mW/g calculated 1g-SAR; 2.32% from target (including drift)
 1.88 mW/g calculated 10g-SAR; 1.64% from target (including drift)

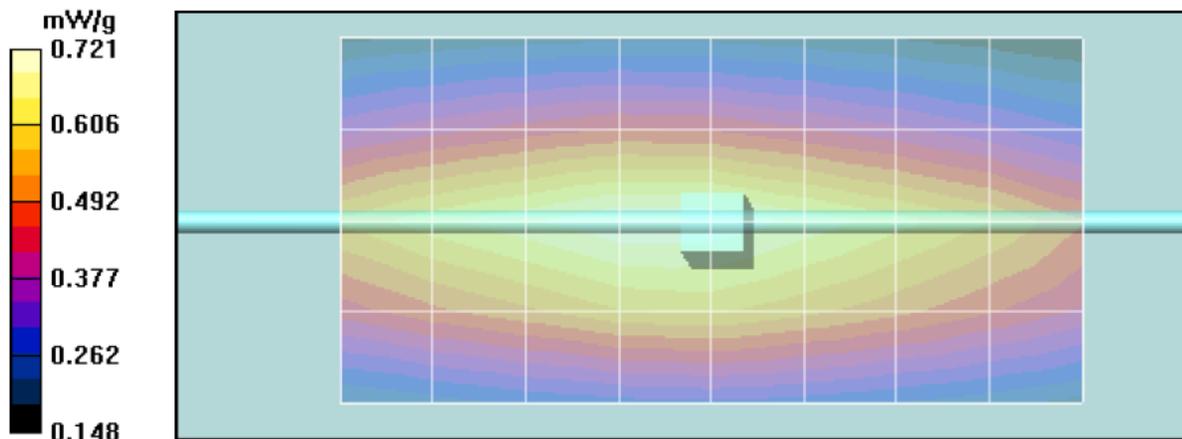
Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 57.1$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.3 V/m; Power Drift = -0.0284 dB
 Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.702 mW/g; SAR(10 g) = 0.462 mW/g
 Maximum value of SAR (measured) = 0.737 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.3 V/m; Power Drift = -0.0284 dB
 Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.716 mW/g; SAR(10 g) = 0.472 mW/g
 Maximum value of SAR (measured) = 0.751 mW/g

System Performance Check/Dipole Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.721 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 0.732 mW/g



Motorola NE EME Lab

DUT: Dipole 300 MHz: Date/Time: 9/27/2006 9:11:36 AM
 Run #: JsT-SYSP-300B-060927-01 Sim.Tissue Temp: 21.0 (C)
 Robot # GEMS-3 Phantom #: 80602002A-S1
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.91 mW/g calculated 1g-SAR; 4.34% from target (including drift)
 1.91 mW/g calculated 10g-SAR; 3.19% from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: $f = 300$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 57.6$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = 0.025 dB
 Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.724 mW/g; SAR(10 g) = 0.474 mW/g
 Maximum value of SAR (measured) = 0.757 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

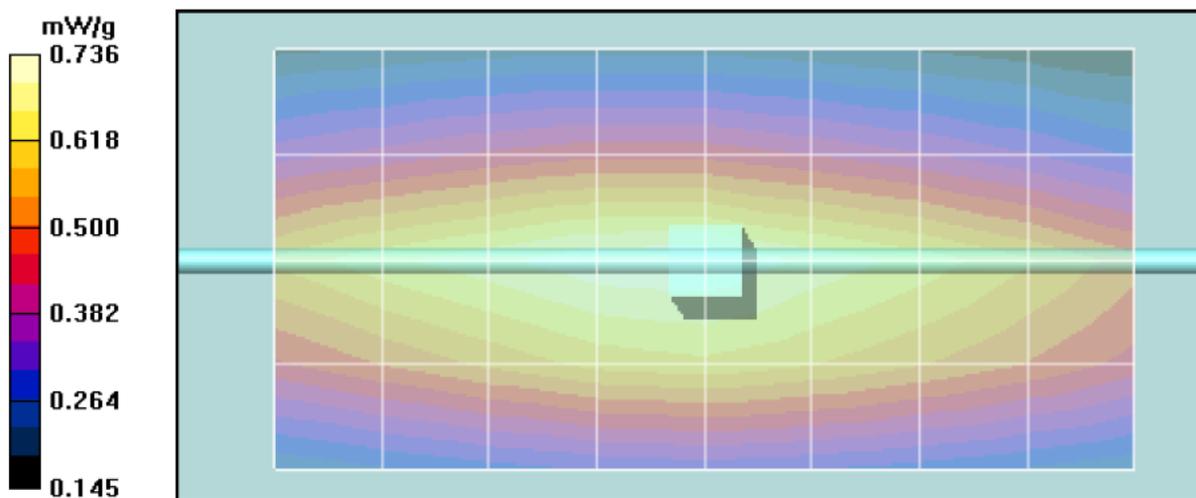
dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.1 V/m; Power Drift = 0.025 dB
 Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.739 mW/g; SAR(10 g) = 0.486 mW/g
 Maximum value of SAR (measured) = 0.770 mW/g

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

Maximum value of SAR (measured) = 0.736 mW/g

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

dz=10mm
 Maximum value of SAR (measured) = 0.756 mW/g



Motorola NE EME Lab

DUT: Dipole 300 MHz: Date/Time: 9/28/2006 8:49:46 AM
 Run #: JsT-SYSP-300B-060928-01 Sim.Tissue Temp: 21.5 (C)
 Robot # GEMS-3 Phantom #: 80602002A-S1
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.90 mW/g calculated 1g-SAR; 4.12% from target (including drift)
 1.91 mW/g calculated 10g-SAR; 3.30% from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 57.2$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.2 V/m; Power Drift = -0.0253 dB
 Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.714 mW/g; SAR(10 g) = 0.469 mW/g
 Maximum value of SAR (measured) = 0.749 mW/g

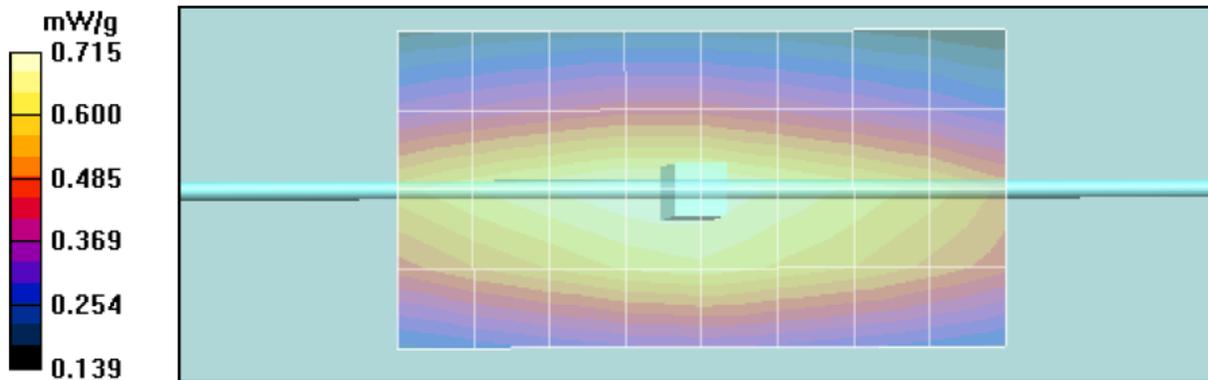
System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.2 V/m; Power Drift = -0.0253 dB
 Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.480 mW/g
 Maximum value of SAR (measured) = 0.762 mW/g

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

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

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



Motorola NE EME Lab

DUT: Dipole 300 MHz; Date/Time: 9/29/2006 8:58:08 AM
 Run #: JsT-SYSP-300H-060929-01 Sim.Tissue Temp: 21.1 (C)
 Robot # GEMS-3 Phantom #: 80602002B-S13
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 3.01 mW/g for 1g SAR 1.97 mW/g for 10g SAR
 2.98 mW/g calculated 1g-SAR; -1.03% from target (including drift)
 1.94 mW/g calculated 10g-SAR; -1.56% from target (including drift)

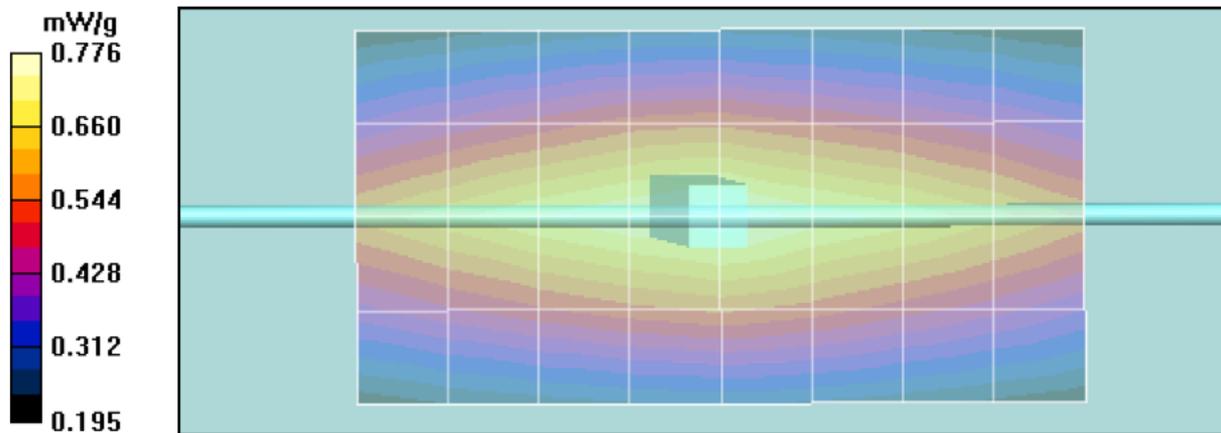
Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Head, Medium parameters used: $f = 300$ MHz; $\sigma = 0.86$ mho/m; $\epsilon_r = 45.5$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 30.0 V/m; Power Drift = 0.00142 dB
 Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.736 mW/g; SAR(10 g) = 0.479 mW/g
 Maximum value of SAR (measured) = 0.774 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 30.0 V/m; Power Drift = 0.00142 dB
 Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.754 mW/g; SAR(10 g) = 0.490 mW/g
 Maximum value of SAR (measured) = 0.798 mW/g

System Performance Check/Dipole Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.776 mW/g

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



Motorola NE EME Lab

DUT: Dipole 300 MHz: Date/Time: 10/1/2006 1:15:16 AM
 Run #: MeC-SYSP-300B-061001-01 Sim.Tissue Temp: 21.0 (C)
 Robot # GEMS-3 Phantom #: 80602002A-S1
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.88 mW/g calculated 1g-SAR; 3.16 % from target (including drift)
 1.90 mW/g calculated 10g-SAR; 2.78 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 59.9$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

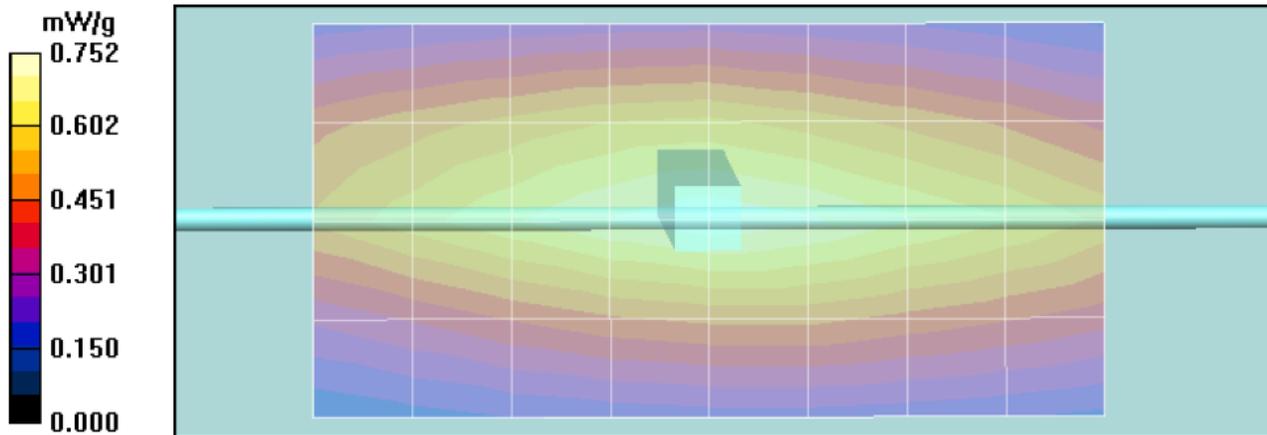
System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.5 V/m; Power Drift = 0.015 dB
 Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.715 mW/g; SAR(10 g) = 0.471 mW/g
 Maximum value of SAR (measured) = 0.752 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.5 V/m; Power Drift = 0.015 dB
 Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.728 mW/g; SAR(10 g) = 0.482 mW/g
 Maximum value of SAR (measured) = 0.757 mW/g

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



Motorola NE EME Lab

DUT: Dipole 300 MHz: Date/Time: 10/2/2006 9:29:37 AM
 Run #: JsT-SYSP-300B-061002-01 Sim.Tissue Temp: 21.2 (C)
 Robot # GEMS-3 Phantom #: 80602002A-S1
 Model #: D300V2 S/N: 1002
 TX Freq: 300 (MHz) Start power: 250 (mW)
 Target:
 2.79 mW/g for 1g SAR 1.85 mW/g for 10g SAR
 2.85 mW/g calculated 1g-SAR: 2.10% from target (including drift)
 1.88 mW/g calculated 10g-SAR: 1.50% from target (including drift)

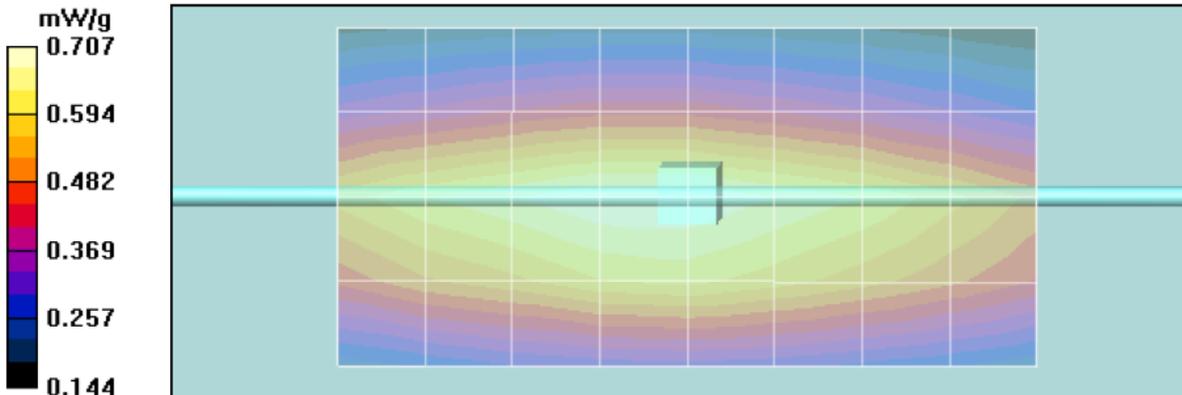
Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.5, 7.5, 7.5)
 Duty Cycle: 1:1, Medium: 300 MHz Body, Medium parameters used: f = 300 MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 56.7$; $\rho = 1000$ kg/m³
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.2 V/m; Power Drift = 0.00539 dB
 Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.465 mW/g
 Maximum value of SAR (measured) = 0.746 mW/g

System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:
 dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 28.2 V/m; Power Drift = 0.00539 dB
 Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.719 mW/g; SAR(10 g) = 0.474 mW/g
 Maximum value of SAR (measured) = 0.759 mW/g

System Performance Check/Dipole Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.707 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 0.743 mW/g



DIPOLE SAR TARGET - BODY

Date:	<u>06/04/06</u>	Frequency (MHz):	<u>300</u>
Lab Location:	<u>NE</u>	Mixture Type:	<u>FCC Body</u>
DAE Serial #:	<u>363</u>	Ambient Temp.(°C):	<u>22.4</u>

Tissue Characteristics

Permittivity:	<u>57.4</u>	Phantom Type/SN:	<u>80602002A-S1</u>
Conductivity:	<u>0.89</u>	Distance (mm):	<u>15</u>
Tissue Temp.(°C):	<u>21.3</u>		

Reference Source:	<u>Dipole</u>	Power to Dipole:	<u>250</u> mW
Reference SN:	<u>1002</u>		

New Target:

Average Measured SAR Value: 2.79 mW/g(1g avg.), 1.85 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	2.75	-1.6%	1.81	-2.2%	R3
1384	2.78	-0.5%	1.84	-0.5%	R3
1393	2.68	-4.1%	1.79	-3.2%	R3
1545	2.88	3.1%	1.91	3.2%	R3
1547	2.88	3.1%	1.90	2.7%	R3
Average	2.7940		1.8500	New Measured SAR Value	
(normalized to 1.0 W, including drift)					

DIPOLE SAR TARGET - HEAD

Date: 06/04/06 Frequency (MHz): 300
 Lab Location: NE Mixture Type: IEEE Head
 DAE Serial #: 363 Ambient Temp.(°C): 22.3

Tissue Characteristics
 Permittivity: 46.6 Phantom Type/SN: 80602002B-S8
 Conductivity: 0.89 Distance (mm): 15
 Tissue Temp.(°C): 20.9

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

Target SAR Value: 3.0 mW/g (1g avg.), 2.0 mW/g (10g avg.)
 (normalized to 1.0 W)

New Target:

Average Measured SAR Value: 3.01 mW/g (1g avg.), 1.97 mW/g (10g avg.)

Percent Difference From Target (MUST be within k=2 Uncertainty): 0.47% (1g ave)
-1.50% (10g ave)

Test performed by: Ed Church Initial: EJC

Probe SN #s	1-G Cube	Diff from Ave	10-G Cube	Diff from Ave	Robot
1383	2.97	-1.46%	1.94	-1.52%	R3
1384	2.98	-1.13%	1.94	-1.52%	R3
1393	2.94	-2.46%	1.93	-2.03%	R3
1545	3.10	2.85%	2.03	3.05%	R3
1547	3.08	2.19%	2.01	2.03%	R3
Average	3.0140		1.9700		New Measured SAR Value
(normalized to 1.0 W, including drift)					