

 MOTOROLA	 TESTING CERT # 2518.01		
FCC ID: IHDT56HF1 DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2			
Networks & Enterprise EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322	Date of Report: May 15, 2007 Report Revision: O Report ID: i876_Rev O_070515_SR4959		
<table border="0"> <tr> <td style="vertical-align: top;"> Responsible Engineer: Date/s Tested: Manufacturer/Location: Sector/Group/Div.: Date submitted for test: DUT Description: Test TX mode(s): Max. Power output: Nominal Power: Tx Frequency Bands: Signaling type: Model(s) Tested: Model(s) Certified: Serial Number(s): Classification: Rule Part(s): Approved Accessories: Antenna(s): Battery(ies): Body worn accessory(ies): Audio/Data cable accessory(ies): </td> <td style="vertical-align: top;"> Stephen C. Whalen (EME Principle Staff Engineer) 4/25/07-5/5/07 Motorola – Plantation iDEN MD Subscriber 4/25/07 TDMA: 236:310 WiDEN (76.1%), 81:120, 2:6, 1:12, and 1:6; 64 QAM, 16QAM, and QPSK Modulations; 0.6 W Pulse Avg, MOTotalk: 114:120 8FSK; 0.85 W nominal (GPS and Bluetooth Capable). 1:3, 1:6, 114:120, 236:310, 81:120 640 mW pulsed average (iDEN/WiDEN/NBPCS); 0.891 W (MOTotalk); 2.5mW(Bluetooth) 0.6 W Pulse Average Conducted Power (iDEN/WiDEN/NBPCS); 0.85 W (MOTotalk); 1mW (Bluetooth) 806-825, 896-901 MHz (iDEN/WiDEN); 901-902 MHz (NBPCS); 902-928 MHz (MOTotalk); 2.402-2.480 GHz (Bluetooth) TDMA: iDEN; WiDEN, NBPCS, MOTotalk - (FHSS 8FSK) H92XAH6RR4AN / NWF1232A H92XAH6RR4AN / NWF1232A 364AHG00C0, 364AHG00C7, 364AHG00KH General Population/Uncontrolled 15, 24 & 90 8575521B01 (806-928MHz retractable ¼ wave antenna, -0.828dBd, 806-825MHz; -1.009dBd, 896-901MHz; -1.053dBd, 901-902MHz; 0.75dBd, 902-928MHz) SNN5784A (BK60 Slim Li-Ion Battery), NTN2383A (i876 Slim Battery Door); SNN5793A (BK10 Extended Li-Ion Battery), NTN2386A (i876 Extended Battery Door) NNTN6755A (i876 Swivel Carry Holster); NNTN4747A (Belt Clip part of NNTN5113A Vehicular Dash Mount Accessory) NNTN5774B (Stereo Headset w/PTT), NNTN6365A (Stereo Headset Adapter), NNTN5330B (PTT Headset, Earbud), NNTN5004B (PTT headset, Over-the-Ear), NNTN5005B (PTT headset, Over-the-Head), NNTN5006B (PTT headset, Flexible Earwrap), NNTN5211B (2-Wire Surveillance Headset), NNTN6312A (3-Wire Surveillance Headset), NNTN5751A (Stereo mixing headset w/ PTT), NNTN5752A (Stereo mixing headset), NNTN6531A (Data cable), SKN6371C (Data cable) </td> </tr> </table> DUT Photo (Refer to Exhibit 7B) Max. Calc. : 1-g Avg. SAR: 1.51 W/kg (Body); 10-g Avg. SAR: 1.11 W/kg (Body) Max. Calc. : 1-g Avg. SAR: 0.65 W/kg (Face); 10-g Avg. SAR: 0.47 W/kg (Face) Max. Calc. : 1-g Avg. SAR: 1.31 W/kg (Head); 10-g Avg. SAR: 0.82 W/kg (Head)		Responsible Engineer: Date/s Tested: Manufacturer/Location: Sector/Group/Div.: Date submitted for test: DUT Description: Test TX mode(s): Max. Power output: Nominal Power: Tx Frequency Bands: Signaling type: Model(s) Tested: Model(s) Certified: Serial Number(s): Classification: Rule Part(s): Approved Accessories: Antenna(s): Battery(ies): Body worn accessory(ies): Audio/Data cable accessory(ies):	Stephen C. Whalen (EME Principle Staff Engineer) 4/25/07-5/5/07 Motorola – Plantation iDEN MD Subscriber 4/25/07 TDMA: 236:310 WiDEN (76.1%), 81:120, 2:6, 1:12, and 1:6; 64 QAM, 16QAM, and QPSK Modulations; 0.6 W Pulse Avg, MOTotalk: 114:120 8FSK; 0.85 W nominal (GPS and Bluetooth Capable). 1:3, 1:6, 114:120, 236:310, 81:120 640 mW pulsed average (iDEN/WiDEN/NBPCS); 0.891 W (MOTotalk); 2.5mW(Bluetooth) 0.6 W Pulse Average Conducted Power (iDEN/WiDEN/NBPCS); 0.85 W (MOTotalk); 1mW (Bluetooth) 806-825, 896-901 MHz (iDEN/WiDEN); 901-902 MHz (NBPCS); 902-928 MHz (MOTotalk); 2.402-2.480 GHz (Bluetooth) TDMA: iDEN; WiDEN, NBPCS, MOTotalk - (FHSS 8FSK) H92XAH6RR4AN / NWF1232A H92XAH6RR4AN / NWF1232A 364AHG00C0, 364AHG00C7, 364AHG00KH General Population/Uncontrolled 15, 24 & 90 8575521B01 (806-928MHz retractable ¼ wave antenna, -0.828dBd, 806-825MHz; -1.009dBd, 896-901MHz; -1.053dBd, 901-902MHz; 0.75dBd, 902-928MHz) SNN5784A (BK60 Slim Li-Ion Battery), NTN2383A (i876 Slim Battery Door); SNN5793A (BK10 Extended Li-Ion Battery), NTN2386A (i876 Extended Battery Door) NNTN6755A (i876 Swivel Carry Holster); NNTN4747A (Belt Clip part of NNTN5113A Vehicular Dash Mount Accessory) NNTN5774B (Stereo Headset w/PTT), NNTN6365A (Stereo Headset Adapter), NNTN5330B (PTT Headset, Earbud), NNTN5004B (PTT headset, Over-the-Ear), NNTN5005B (PTT headset, Over-the-Head), NNTN5006B (PTT headset, Flexible Earwrap), NNTN5211B (2-Wire Surveillance Headset), NNTN6312A (3-Wire Surveillance Headset), NNTN5751A (Stereo mixing headset w/ PTT), NNTN5752A (Stereo mixing headset), NNTN6531A (Data cable), SKN6371C (Data cable)
Responsible Engineer: Date/s Tested: Manufacturer/Location: Sector/Group/Div.: Date submitted for test: DUT Description: Test TX mode(s): Max. Power output: Nominal Power: Tx Frequency Bands: Signaling type: Model(s) Tested: Model(s) Certified: Serial Number(s): Classification: Rule Part(s): Approved Accessories: Antenna(s): Battery(ies): Body worn accessory(ies): Audio/Data cable accessory(ies):	Stephen C. Whalen (EME Principle Staff Engineer) 4/25/07-5/5/07 Motorola – Plantation iDEN MD Subscriber 4/25/07 TDMA: 236:310 WiDEN (76.1%), 81:120, 2:6, 1:12, and 1:6; 64 QAM, 16QAM, and QPSK Modulations; 0.6 W Pulse Avg, MOTotalk: 114:120 8FSK; 0.85 W nominal (GPS and Bluetooth Capable). 1:3, 1:6, 114:120, 236:310, 81:120 640 mW pulsed average (iDEN/WiDEN/NBPCS); 0.891 W (MOTotalk); 2.5mW(Bluetooth) 0.6 W Pulse Average Conducted Power (iDEN/WiDEN/NBPCS); 0.85 W (MOTotalk); 1mW (Bluetooth) 806-825, 896-901 MHz (iDEN/WiDEN); 901-902 MHz (NBPCS); 902-928 MHz (MOTotalk); 2.402-2.480 GHz (Bluetooth) TDMA: iDEN; WiDEN, NBPCS, MOTotalk - (FHSS 8FSK) H92XAH6RR4AN / NWF1232A H92XAH6RR4AN / NWF1232A 364AHG00C0, 364AHG00C7, 364AHG00KH General Population/Uncontrolled 15, 24 & 90 8575521B01 (806-928MHz retractable ¼ wave antenna, -0.828dBd, 806-825MHz; -1.009dBd, 896-901MHz; -1.053dBd, 901-902MHz; 0.75dBd, 902-928MHz) SNN5784A (BK60 Slim Li-Ion Battery), NTN2383A (i876 Slim Battery Door); SNN5793A (BK10 Extended Li-Ion Battery), NTN2386A (i876 Extended Battery Door) NNTN6755A (i876 Swivel Carry Holster); NNTN4747A (Belt Clip part of NNTN5113A Vehicular Dash Mount Accessory) NNTN5774B (Stereo Headset w/PTT), NNTN6365A (Stereo Headset Adapter), NNTN5330B (PTT Headset, Earbud), NNTN5004B (PTT headset, Over-the-Ear), NNTN5005B (PTT headset, Over-the-Head), NNTN5006B (PTT headset, Flexible Earwrap), NNTN5211B (2-Wire Surveillance Headset), NNTN6312A (3-Wire Surveillance Headset), NNTN5751A (Stereo mixing headset w/ PTT), NNTN5752A (Stereo mixing headset), NNTN6531A (Data cable), SKN6371C (Data cable)		
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 N&E EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 5/15/2007	Certification Date: L1070504P Certification No.: 5/15/2007		

Appendix C

Dipole Calibration Certificates

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



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 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: **D900V2-084_Apr06**

CALIBRATION CERTIFICATE

Object **D900V2 - SN: 084**

Calibration procedure(s) **QA CAL-05.v6**
Calibration procedure for dipole validation kits

Calibration date: **April 21, 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 $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-05 (METAS, No. 251-00516)	Oct-06
Power sensor HP 8481A	US37292783	04-Oct-05 (METAS, No. 251-00516)	Oct-06
Reference 20 dB Attenuator	SN: 5086 (20g)	11-Aug-05 (METAS, No 251-00498)	Aug-06
Reference 10 dB Attenuator	SN: 5047.2 (10r)	11-Aug-05 (METAS, No 251-00498)	Aug-06
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_Jan05)	Dec-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Nov-05)	In house check: Nov-06

Calibrated by:	Name Marcel Fehr	Function Laboratory Technician	Signature
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Approved by:	Katja Pokovic	Technical Manager	
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Issued: April 21, 2006

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Calibration Laboratory of
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 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:

- 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	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	900 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.8 $\pm$ 6 %	0.96 mho/m $\pm$ 6 %
Head TSL temperature during test	(21.5 $\pm$ 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	2.71 mW / g
SAR normalized	normalized to 1W	10.8 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	11.0 mW /g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.73 mW / g
SAR normalized	normalized to 1W	6.92 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.97 mW /g $\pm$ 16.5 % (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	50.1 Ω - 5.6 j Ω
Return Loss	- 25.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.388 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	September 20, 2000

DASY4 Validation Report for Head TSL

Date/Time: 21.04.2006 14:29:27

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:084

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB;

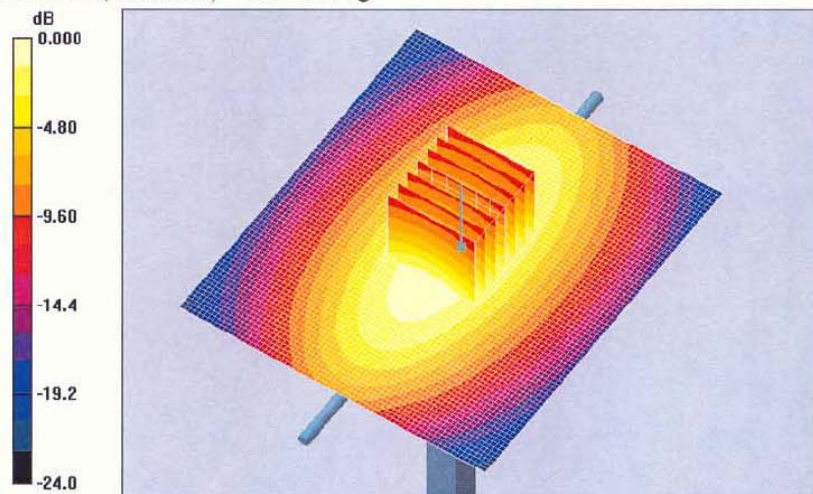
Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.954 \text{ mho/m}$; $\epsilon_r = 41.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

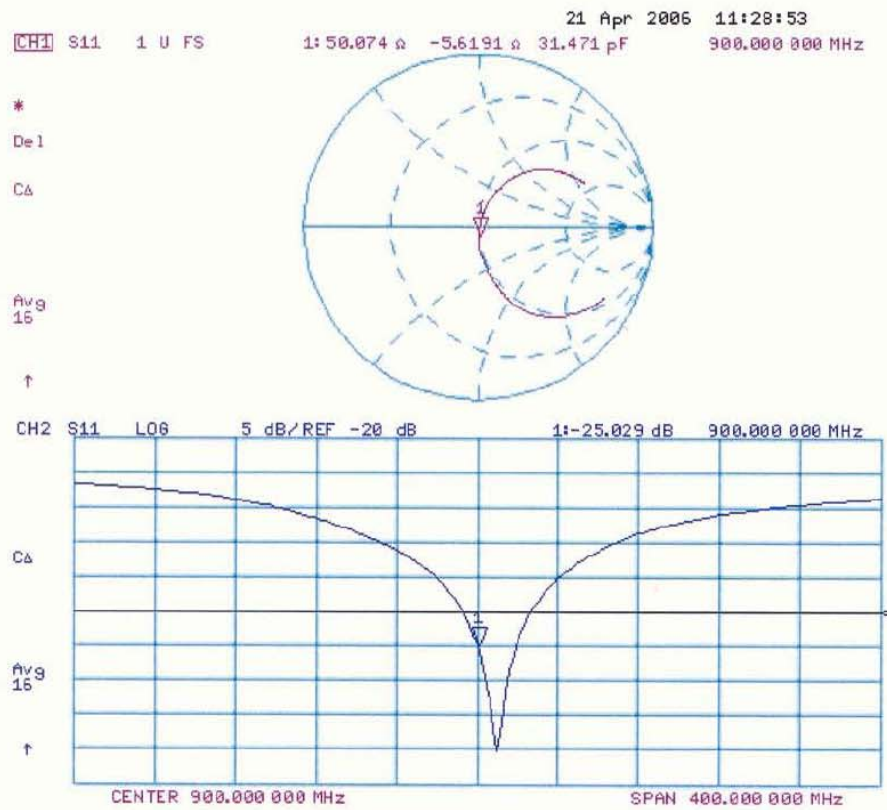
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(5.8, 5.8, 5.8); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 161

Pin = 250 mW; d = 10 mm/Area Scan (71x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ Maximum value of SAR (interpolated) = 2.94 mW/g **Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$ Reference Value = 57.9 V/m ; Power Drift = -0.037 dB Peak SAR (extrapolated) = 4.09 W/kg **SAR(1 g) = 2.71 mW/g ; SAR(10 g) = 1.73 mW/g** Maximum value of SAR (measured) = 2.92 mW/g 0 dB = 2.92 mW/g

Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 108**

Client **Motorola CGISS**

Certificate No: **D2450V2-704_Nov06**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 704**

Calibration procedure(s) **QA CAL-05.v6**
Calibration procedure for dipole validation kits

Calibration date: **November 10, 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 $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ES3DV2	SN 3025	19-Oct-06 (SPEAG, No. ES3-3025_Oct06)	Oct-07
DAE4	SN 601	15-Dec-05 (SPEAG, No. DAE4-601_Dec05)	Dec-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Marcel Fehr	Laboratory Technician	

	Name	Function	Signature
Approved by:	Katja Pokovic	Technical Manager	

Issued: November 14, 2006

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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:

- 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	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.3 $\pm$ 6 %	1.78 mho/m $\pm$ 6 %
Head TSL temperature during test	(21.0 $\pm$ 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	13.4 mW / g
SAR normalized	normalized to 1W	53.6 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	53.9 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.23 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	25.0 mW / g $\pm$ 16.5 % (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	$52.5 \Omega + 2.4 j\Omega$
Return Loss	- 29.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.152 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, 2001

DASY4 Validation Report for Head TSL

Date/Time: 10.11.2006 13:41:01

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN704

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB_060425;

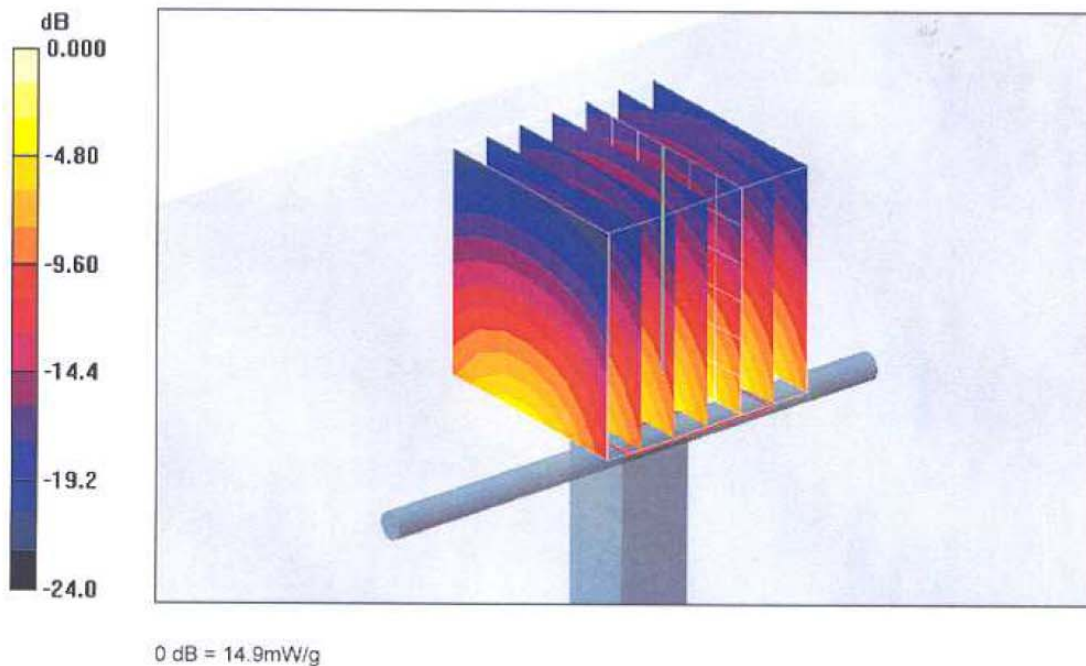
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.77 \text{ mho/m}$; $\epsilon_r = 39.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

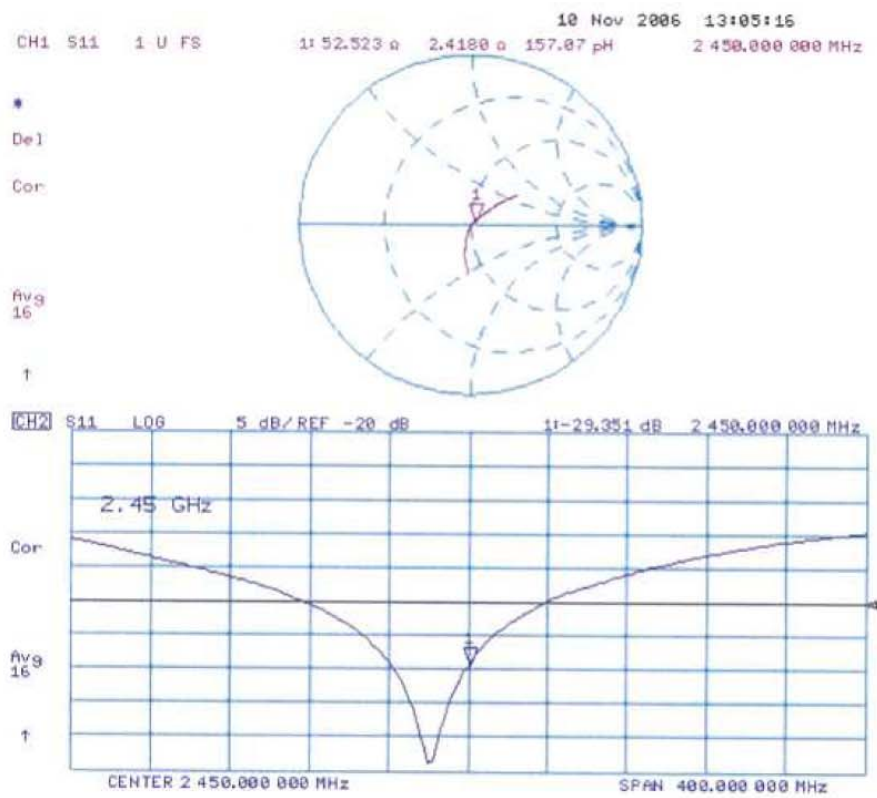
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.5, 4.5, 4.5); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$ Reference Value = 92.4 V/m ; Power Drift = -0.041 dB Peak SAR (extrapolated) = 27.9 W/kg **SAR(1 g) = 13.4 mW/g ; SAR(10 g) = 6.23 mW/g** Maximum value of SAR (measured) = 14.9 mW/g 

Impedance Measurement Plot for Head TSL



Appendix D

Test System Verification Scans

Dipole validation scans at the head from SPEAG are provided in APPENDIX C. 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: 4/25/2007 8:41:21 PM

Robot# / Run#: DASY4-FL-1 / CM-SYSP-900B-070425-09

Phantom# / Tissue Temp.: SAMTP1022 / 21.0 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.71 mW/g (1g); 6.90 mW/g (10g)

Percent from Target (+/-): 2.25 % (1g); 3.50 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 42.2$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.9 V/m; Power Drift = -0.00233 dB

Peak SAR (extrapolated) = 4.07 W/kg

SAR(1 g) = 2.69 mW/g; SAR(10 g) = 1.73 mW/g

Maximum value of SAR (measured) = 2.92 mW/g

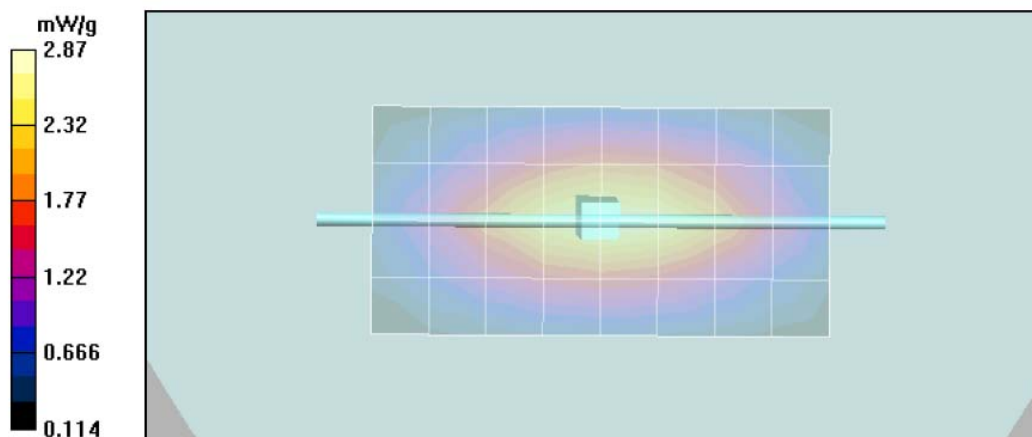
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.9 V/m; Power Drift = -0.00233 dB

Peak SAR (extrapolated) = 3.99 W/kg

SAR(1 g) = 2.66 mW/g; SAR(10 g) = 1.72 mW/g

Maximum value of SAR (measured) = 2.87 mW/g



Motorola N&E EME Laboratory

Date/Time: 4/26/2007 11:42:11 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900H-070426-03

Phantom# / Tissue Temp.: SAMTP1022 / 21.3 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.63 mW/g (1g); 6.86 mW/g (10g)

Percent from Target (+/-): 1.54 % (1g); 2.84 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.3 V/m; Power Drift = -0.0376 dB

Peak SAR (extrapolated) = 3.99 W/kg

SAR(1 g) = 2.66 mW/g; SAR(10 g) = 1.72 mW/g

Maximum value of SAR (measured) = 2.87 mW/g

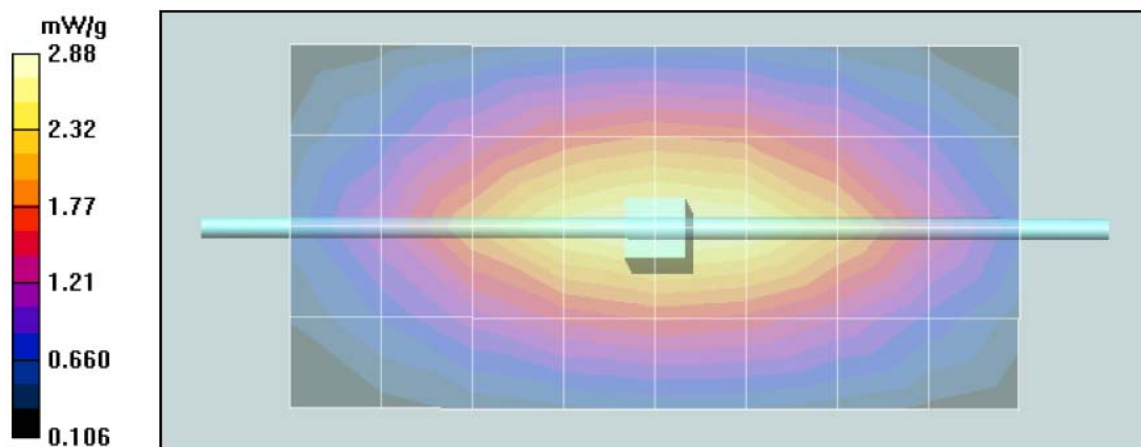
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.3 V/m; Power Drift = -0.0376 dB

Peak SAR (extrapolated) = 3.94 W/kg

SAR(1 g) = 2.61 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.83 mW/g



Motorola N&E EME Laboratory

Date/Time: 4/27/2007 8:43:38 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900H-070427-01

Phantom# / Tissue Temp.: SAMTP1022 / 21.0 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.82 mW/g (1g); 6.98 mW/g (10g)

Percent from Target (+/-): 3.32 % (1g); 4.59 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 42$; $\rho = 1000$ kg/m³

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

Reference Value = 55.9 V/m; Power Drift = -0.0475 dB

Peak SAR (extrapolated) = 4.01 W/kg

SAR(1 g) = 2.67 mW/g; SAR(10 g) = 1.72 mW/g

Maximum value of SAR (measured) = 2.89 mW/g

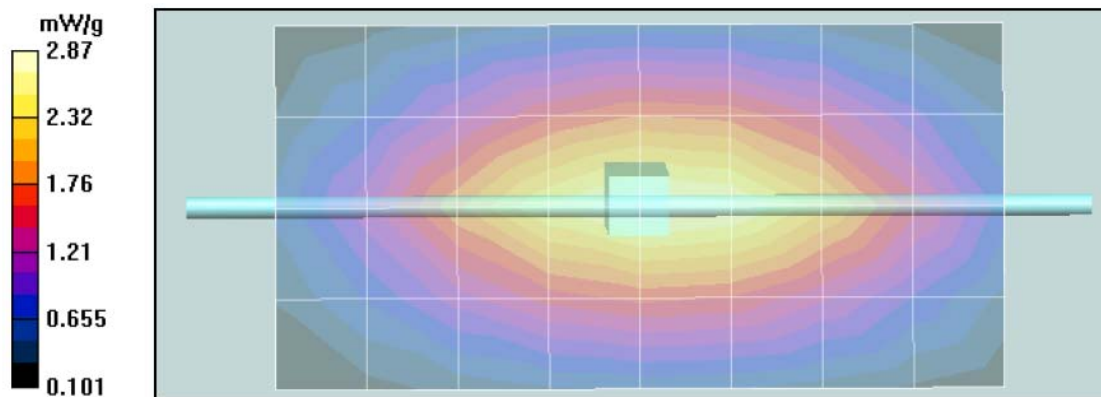
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.9 V/m; Power Drift = -0.0475 dB

Peak SAR (extrapolated) = 4.04 W/kg

SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.73 mW/g

Maximum value of SAR (measured) = 2.90 mW/g



Motorola N&E EME Laboratory

Date/Time: 4/28/2007 12:03:12 AM

Robot# / Run#: DASY4-FL-1 / CM-SYSP-900H-070428-01

Phantom# / Tissue Temp.: SAMTP1022 / 20.9 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.75 mW/g (1g); 6.94 mW/g (10g)

Percent from Target (+/-): 2.69 % (1g); 4.06 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.9 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 4.02 W/kg

SAR(1 g) = 2.67 mW/g; SAR(10 g) = 1.72 mW/g

Maximum value of SAR (measured) = 2.87 mW/g

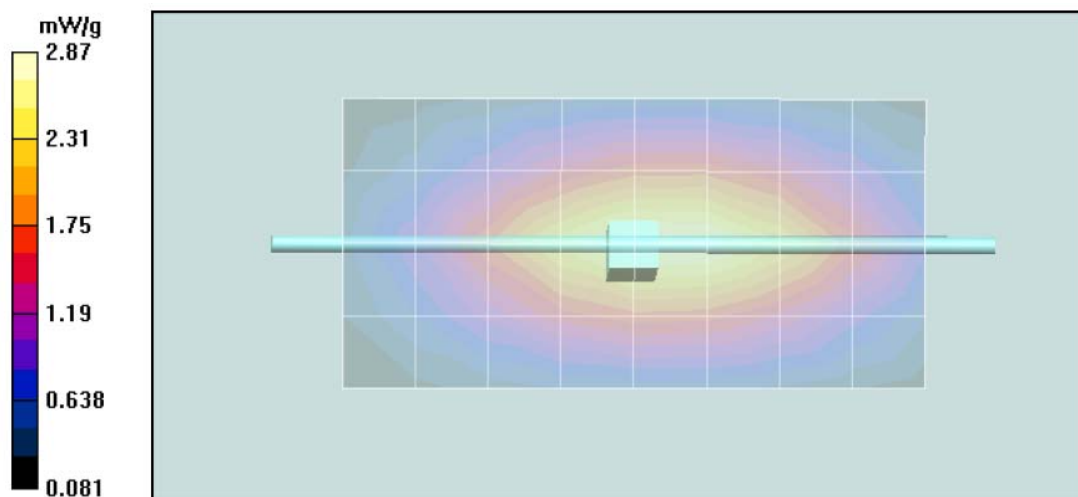
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.9 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 4.05 W/kg

SAR(1 g) = 2.69 mW/g; SAR(10 g) = 1.74 mW/g

Maximum value of SAR (measured) = 2.92 mW/g



Motorola N&E EME Laboratory

Date/Time: 4/29/2007 9:30:33 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900H-070429-01

Phantom# / Tissue Temp.: SAMTP1022 / 21.7 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.66 mW/g (1g); 6.90 mW/g (10g)

Percent from Target (+/-): 1.80 % (1g); 3.40 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.0 V/m; Power Drift = -0.0486 dB

Peak SAR (extrapolated) = 3.96 W/kg

SAR(1 g) = 2.63 mW/g; SAR(10 g) = 1.7 mW/g

Maximum value of SAR (measured) = 2.84 mW/g

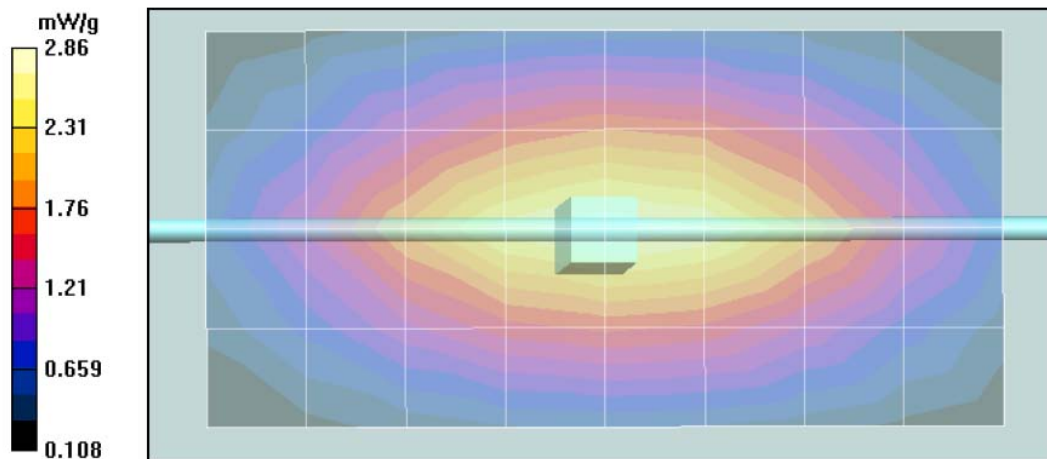
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.0 V/m; Power Drift = -0.0486 dB

Peak SAR (extrapolated) = 3.95 W/kg

SAR(1 g) = 2.64 mW/g; SAR(10 g) = 1.71 mW/g

Maximum value of SAR (measured) = 2.85 mW/g



Motorola N&E EME Laboratory

Date/Time: 4/30/2007 8:29:10 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900H-070430-01

Phantom# / Tissue Temp.: SAMTP1022 / 21.5 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 10.47 mW/g (1g); 6.67 mW/g (10g)

Calculated: 10.58 mW/g (1g); 6.84 mW/g (10g)

Percent from Target (+/-): 1.02 % (1g); 2.50 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.4 V/m; Power Drift = -0.0235 dB

Peak SAR (extrapolated) = 3.95 W/kg

SAR(1 g) = 2.62 mW/g; SAR(10 g) = 1.69 mW/g

Maximum value of SAR (measured) = 2.83 mW/g

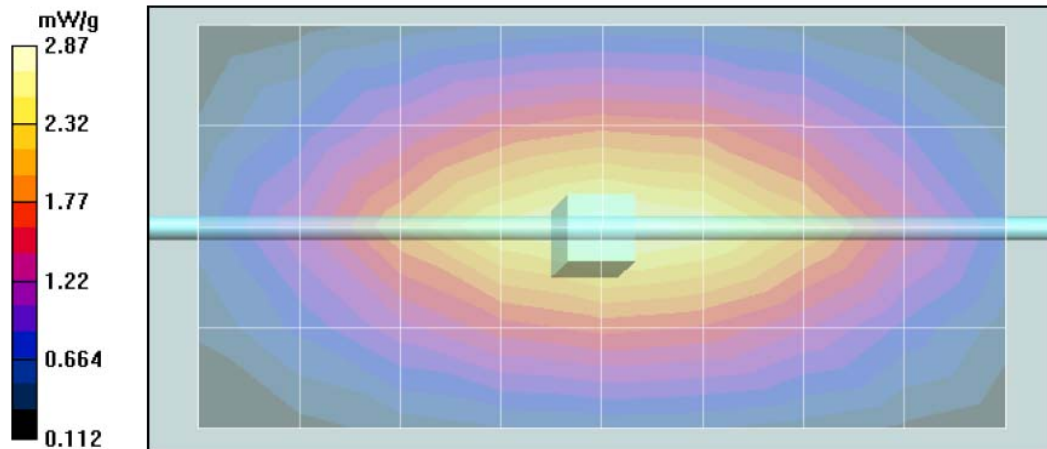
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.4 V/m; Power Drift = -0.0235 dB

Peak SAR (extrapolated) = 3.93 W/kg

SAR(1 g) = 2.64 mW/g; SAR(10 g) = 1.71 mW/g

Maximum value of SAR (measured) = 2.85 mW/g



Motorola N&E EME Laboratory**Date/Time: 5/1/2007 8:32:00 AM**

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900B-070501-01

Phantom# / Tissue Temp.: 80302002B-S8 / 21.0 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.06 mW/g (1g); 7.15 mW/g (10g)

Calculated: 10.18 mW/g (1g); 6.73 mW/g (10g)

Percent from Target (+/-): 7.95 % (1g); 5.91 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.5 V/m; Power Drift = 0.0339 dB

Peak SAR (extrapolated) = 3.41 W/kg

SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.69 mW/g

Maximum value of SAR (measured) = 2.80 mW/g

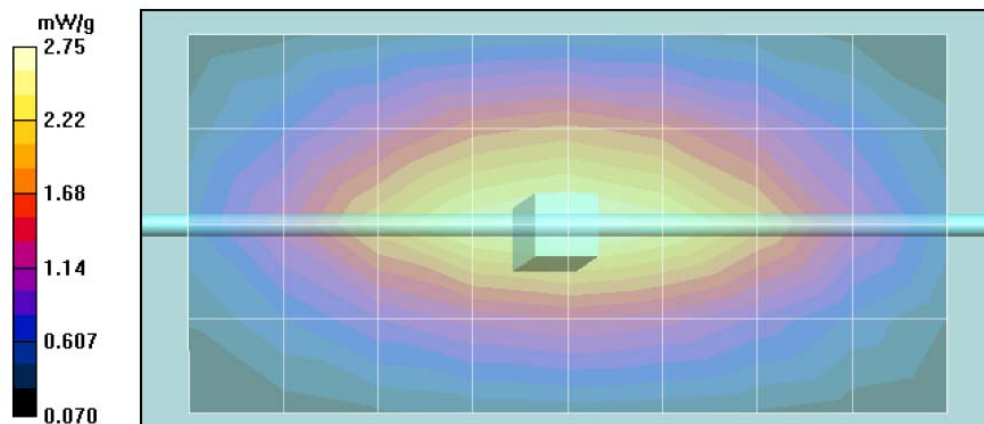
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.5 V/m; Power Drift = 0.0339 dB

Peak SAR (extrapolated) = 3.41 W/kg

SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.7 mW/g

Maximum value of SAR (measured) = 2.79 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/2/2007 8:37:49 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900B-070502-01

Phantom# / Tissue Temp.: 80302002B-S8 / 21.2 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.06 mW/g (1g); 7.15 mW/g (10g)

Calculated: 10.39 mW/g (1g); 6.86 mW/g (10g)

Percent from Target (+/-): 6.08 % (1g); 4.06 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 53.6$; $\rho = 1000$ kg/m³

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

Reference Value = 55.2 V/m; Power Drift = 0.0632 dB

Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.63 mW/g; SAR(10 g) = 1.74 mW/g

Maximum value of SAR (measured) = 2.87 mW/g

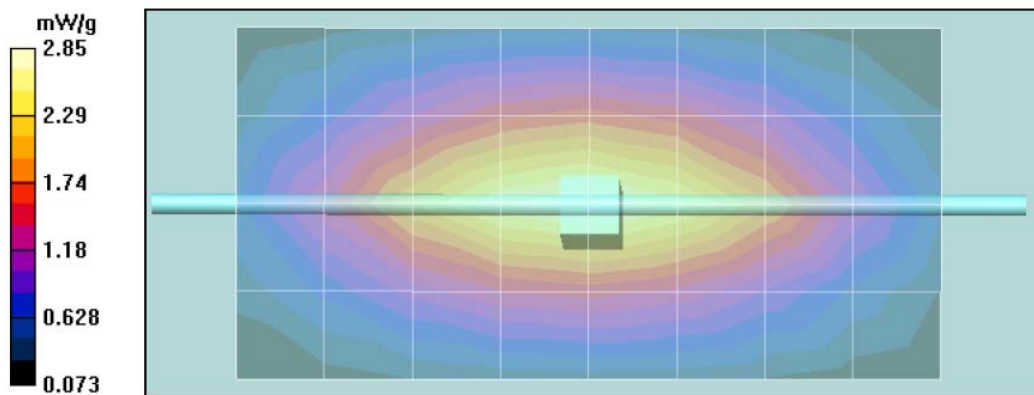
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.2 V/m; Power Drift = 0.0632 dB

Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.64 mW/g; SAR(10 g) = 1.74 mW/g

Maximum value of SAR (measured) = 2.89 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/3/2007 7:20:26 AM

Robot# / Run#: DASY4-FL-1 / ErC-SYSP-900B-070503-01

Phantom# / Tissue Temp.: 80302002B-S8 / 20.7 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.06 mW/g (1g); 7.15 mW/g (10g)

Calculated: 10.28 mW/g (1g); 6.80 mW/g (10g)

Percent from Target (+/-): 7.08 % (1g); 4.92 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.7 V/m; Power Drift = 0.00133 dB

Peak SAR (extrapolated) = 3.43 W/kg

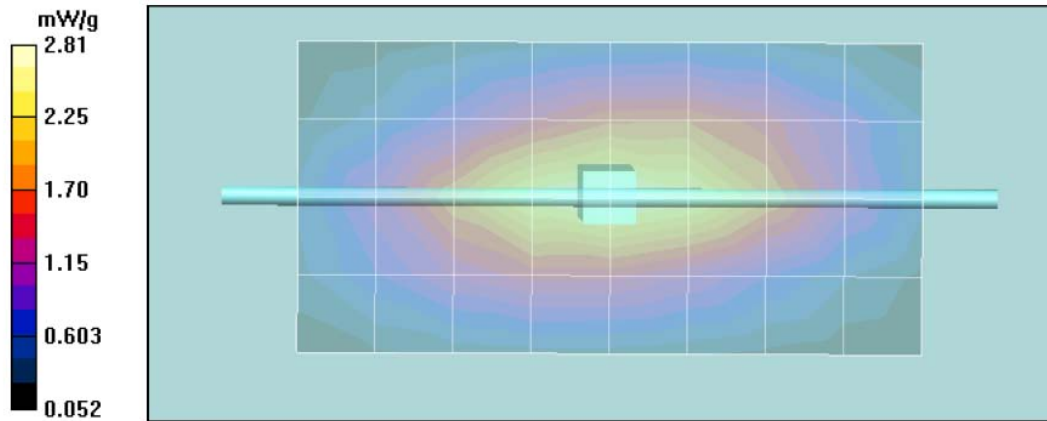
SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.7 mW/g

Maximum value of SAR (measured) = 2.81 mW/g

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

Reference Value = 54.7 V/m; Power Drift = 0.00133 dB

Peak SAR (extrapolated) = 3.41 W/kg

SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.7 mW/g

Motorola N&E EME Laboratory**Date/Time: 5/3/2007 3:34:18 PM**

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-2450B-070503-10

Phantom# / Tissue Temp.: 40302002B-S12 / 21.9 (C)

Dipole Model# / Serial#: D2450V2 / 704

TX Freq. / Start power: 2450 (MHz) / 250 (mW)

Target: 58.82 mW/g (1g); 26.59 mW/g (10g)

Calculated: 58.95 mW/g (1g); 26.81 mW/g (10g)

Percent from Target (+/-): 0.22 % (1g); 0.82 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(4.19, 4.19, 4.19)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 2450$ MHz; $\sigma = 2$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 93.2 V/m; Power Drift = 0.0183 dB

Peak SAR (extrapolated) = 36.1 W/kg

SAR(1 g) = 14.8 mW/g; SAR(10 g) = 6.75 mW/g

Maximum value of SAR (measured) = 16.2 mW/g

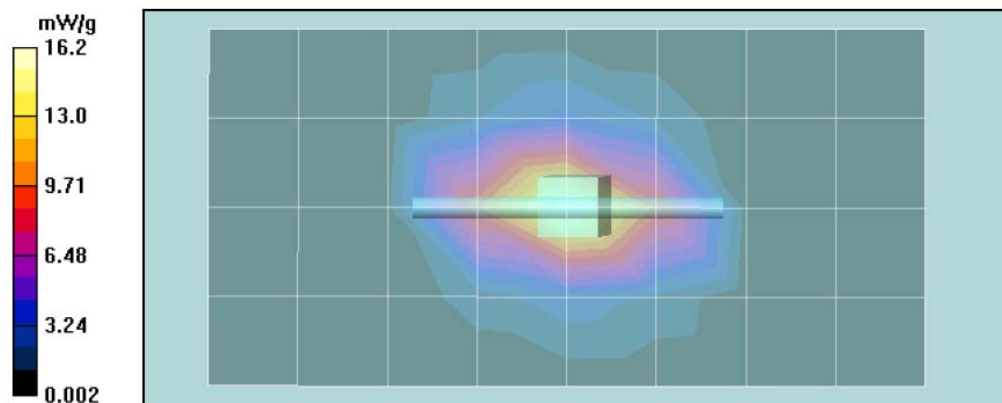
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 93.2 V/m; Power Drift = 0.0183 dB

Peak SAR (extrapolated) = 36.0 W/kg

SAR(1 g) = 14.8 mW/g; SAR(10 g) = 6.71 mW/g

Maximum value of SAR (measured) = 16.0 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/4/2007 8:26:34 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900B-070504-01

Phantom# / Tissue Temp.: 80302002B-S8 / 21.7 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.06 mW/g (1g); 7.15 mW/g (10g)

Calculated: 10.34 mW/g (1g); 6.83 mW/g (10g)

Percent from Target (+/-): 6.52 % (1g); 4.54 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.7 V/m; Power Drift = 0.00907 dB

Peak SAR (extrapolated) = 3.44 W/kg

SAR(1 g) = 2.59 mW/g; SAR(10 g) = 1.71 mW/g

Maximum value of SAR (measured) = 2.83 mW/g

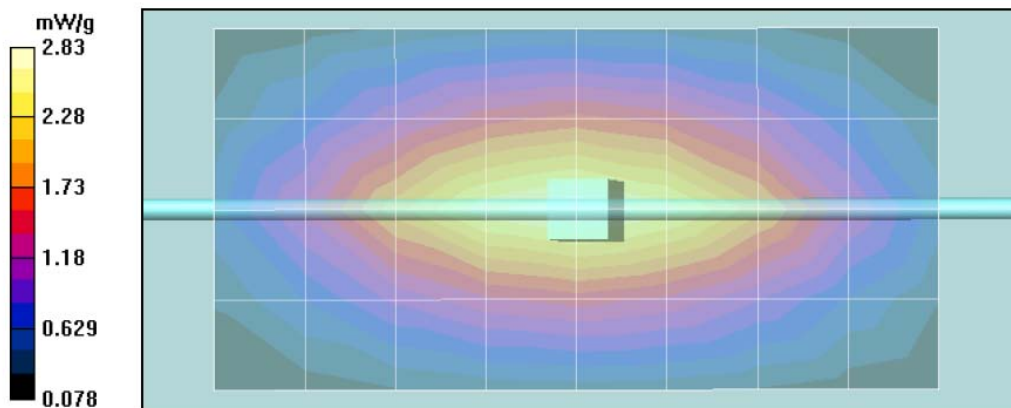
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.7 V/m; Power Drift = 0.00907 dB

Peak SAR (extrapolated) = 3.44 W/kg

SAR(1 g) = 2.59 mW/g; SAR(10 g) = 1.71 mW/g

Maximum value of SAR (measured) = 2.80 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/5/2007 8:11:23 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900B-070505-01

Phantom# / Tissue Temp.: 80302002B-S8 / 22.3 (C)

Dipole Model# / Serial#: D900V2 / 084

TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.06 mW/g (1g); 7.15 mW/g (10g)

Calculated: 10.30 mW/g (1g); 6.80 mW/g (10g)

Percent from Target (+/-): 6.90 % (1g); 4.92 % (10g)

(Including Drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

Duty Cycle: 1:1, Medium parameters used: $f = 900$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³**System Performance/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.5 V/m; Power Drift = 0.00135 dB

Peak SAR (extrapolated) = 3.43 W/kg

SAR(1 g) = 2.58 mW/g; SAR(10 g) = 1.7 mW/g

Maximum value of SAR (measured) = 2.81 mW/g

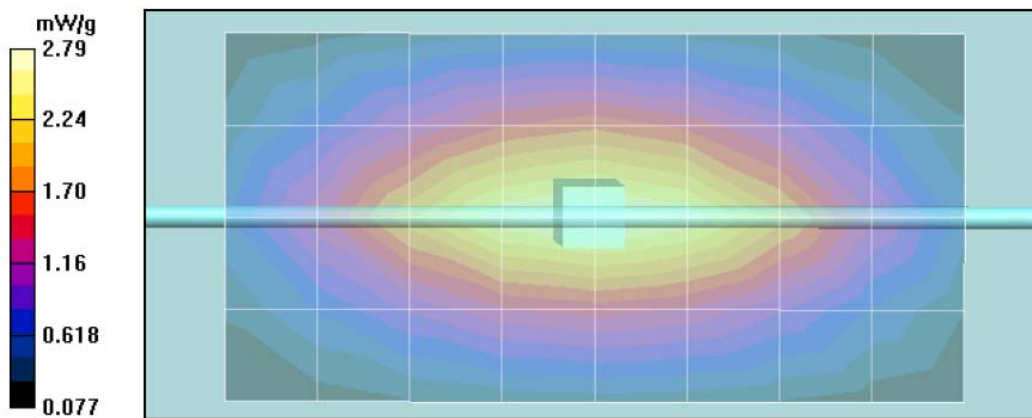
System Performance/90-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 54.5 V/m; Power Drift = 0.00135 dB

Peak SAR (extrapolated) = 3.40 W/kg

SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.7 mW/g

Maximum value of SAR (measured) = 2.80 mW/g



DIPOLE SAR TARGET - HEAD

Date: 03/13/07 Frequency (MHz): 900
 Lab Location: NE Mixture Type: IEEE Head
 DAE Serial #: 401 Ambient Temp.(°C): 22.1

Tissue Characteristics

Permittivity: 41.6 Phantom Type/SN: SAMTP1234
 Conductivity: 1.00 Distance (mm): 15
 Tissue Temp.(°C): 21.9

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 84

Target SAR Value: 10.8 mW/g (1g avg.), 6.9 mW/g (10g avg.)
 (normalized to 1.0 W)

New Target:

Average Measured SAR Value: 10.47 mW/g (1g avg.), 6.67 mW/g (10g avg.)

Percent Difference From Target (MUST be within k=2 Uncertainty):
-3.03% (1g ave)
-3.30% (10g ave)

Test performed by: Gene Von Holten Initial: HvH

Probe SN #s	1-G Cube	Diff from Ave	10-G Cube	Diff from Ave	Robot
1547	10.38	-0.88%	6.63	-0.64%	R2
1384	10.68	1.98%	6.80	1.91%	R2
1383	10.49	0.17%	6.66	-0.19%	R2
1545	10.34	-1.27%	6.60	-1.09%	R2
5		-100.00%		-100.00%	R2
Average					
	10.4725		6.6725		New Measured SAR Value
(normalized to 1.0 W, including drift)					

DIPOLE SAR TARGET - BODY

Date: 03/13/07 Frequency (MHz): 900
 Lab Location: NE Mixture Type: FCC Body
 DAE Serial #: 401 Ambient Temp.(°C):

Tissue Characteristics

Permittivity: 52.4 Phantom Type/SN: 80302002B-S8
 Conductivity: 1.07 Distance (mm): 15
 Tissue Temp.(°C): 21.3

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 84

New Target:

Average Measured SAR Value: 11.06 mW/g(1g avg.), 7.15 mW/g (10g avg.)

Test performed by: Gene Von Holten Initial: HvH

Probe SN #s	1-G Cube	Diff from Ave	10-G Cube	Diff from Ave	Robot
1545	11.10	0.4%	7.17	0.3%	R2
1547	10.88	-1.6%	7.05	-1.4%	R2
1384	10.99	-0.6%	7.11	-0.5%	R2
1383	11.25	1.8%	7.26	1.6%	R2
5		-100.0%		-100.0%	R2
Average	11.0550		7.1475	New Measured SAR Value	
(nomalized to 1.0 W, including drift)					

DIPOLE SAR TARGET - BODY

Date:	<u>12/10/06</u>	Frequency (MHz):	<u>2450</u>
Lab Location:	<u>NE</u>	Mixture Type:	<u>FCC Body</u>
DAE Serial #:	<u>406</u>	Ambient Temp.(°C):	<u>22.2</u>

Tissue Characteristics

Permittivity:	<u>50.3</u>	Phantom Type/SN:	<u>40302002B-S12</u>
Conductivity:	<u>2.02</u>	Distance (mm):	<u>10</u>
Tissue Temp.(°C):	<u>21.2</u>		

Reference Source:	<u>Dipole</u>	Power to Dipole:	<u>250</u> mW
Reference SN:	<u>704</u>		

New Target:

Average Measured SAR Value: 58.82 mW/g(1g avg.), 26.59 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	57.97	-1.4%	26.32	-1.0%	R1
1384	57.43	-2.4%	26.04	-2.1%	R1
1393	59.03	0.4%	26.77	0.7%	R1
1545	59.58	1.3%	26.80	0.8%	R1
1547	60.09	2.2%	27.03	1.6%	R1
Average	58.8200		26.5920	New Measured SAR Value	
(nomalized to 1.0 W, including drift)					

Appendix E

DUT Scans (Shortened Scans and Highest SAR configurations)

Shortened Scan Results

Motorola N&E EME Laboratory

Date/Time: 5/5/2007 5:14:21 PM

Robot# / Run#: DASY4-FL-1 / CM-Ab-070505-16
 Phantom# / Tissue Temp.: 80302002B-S8 / 22.6 (C)
 DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00C0
 Antenna / TX Freq.: Out / 902.0000 (MHz)
 Battery: SNN5793A w/ NTN2386A
 Carry Acc. / Cable Acc.: NNTN6755A / None
 Start Power: 0.631 (W)

Comments: Short Scan at the body w/ body worn accessory against phantom

Shortened scan reflect highest SAR producing configuration; Run time 8 minutes.

Representative “normal” scan run time was 25 minutes

“Shortened” scan max calculated SAR using SAR drift: 1-g Avg. = 1.51mW/g; 10-g Avg. = 1.11mW/g

“Normal” scan max calculated SAR using SAR drift: 1-g Avg. = 1.51mW/g; 10-g Avg. = 1.11mW/g
 (see part 1 of 3 section 9.0 run # CM-Ab-070502-31)

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

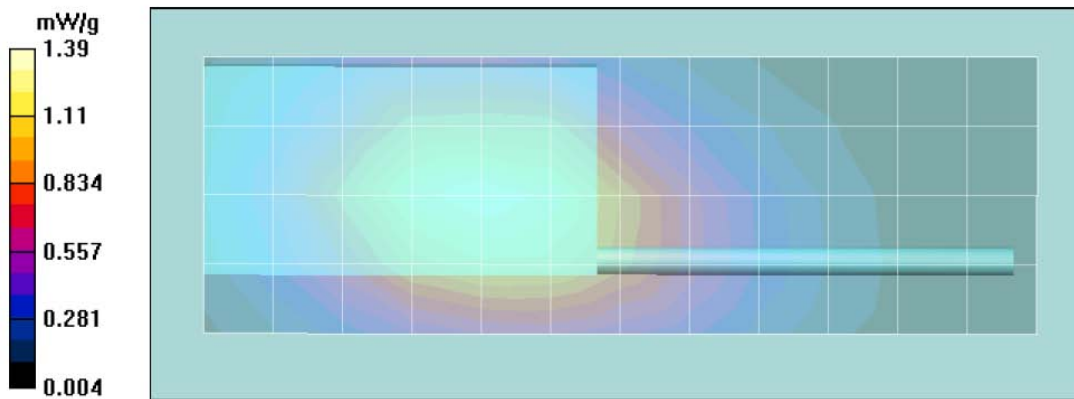
Duty Cycle: 1:1.33, Medium parameters used: $f = 901.5$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 34.6 V/m; Power Drift = -0.555 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.964 mW/g



Highest SAR Configurations Results

Motorola N&E EME Laboratory

Date/Time: 4/27/2007 10:27:42 PM

Robot# / Run#: DASY4-FL-1 / CM-Lear-070427-16
 Phantom# / Tissue Temp.: SAMTP1022 / 21.0 (C)
 DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00C0
 Antenna / TX Freq.: In / 901.0000 (MHz)
 Battery: SNN5784A w/ NTN2383A
 Carry Acc. / Cable Acc.: None / None
 Start Power: 0.668 (W)

Comments: Touch

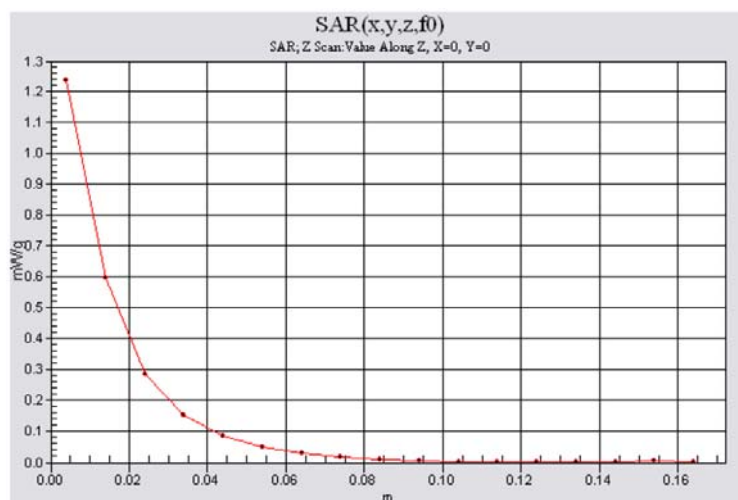
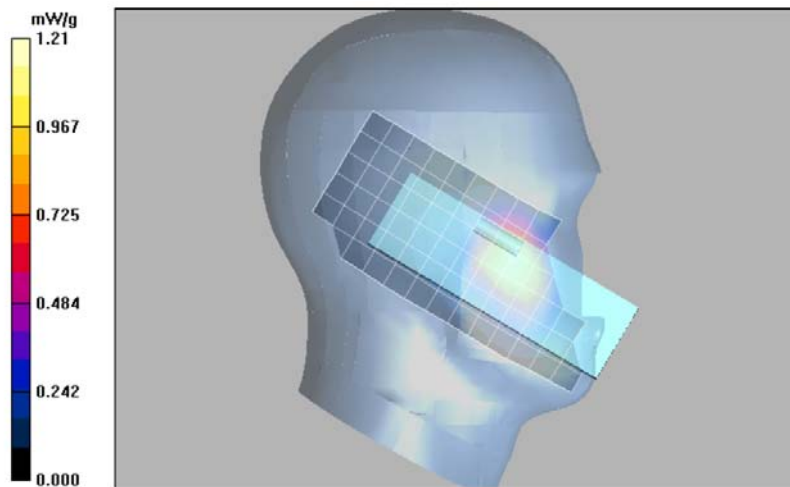
Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)
 Electronics: DAE3 Sn374, Calibrated: 2/14/2007
 Duty Cycle: 1:3, Medium parameters used: $f = 898.5$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 42$; $\rho = 1000$ kg/m³

Left Ear-Touch position/7x7x7 Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.2 V/m; Power Drift = -0.402 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.746 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/5/2007 4:13:22 PM

Robot# / Run#: DASY4-FL-1 / JsT-Face-070505-15
Phantom# / Tissue Temp.: SAMTP1022 / 22.8 (C)
DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00KH
Antenna / TX Freq.: Out / 902.5250 (MHz)
Battery: SNN5784A w/ NTN2383A
Carry Acc. / Cable Acc.: None / None
Start Power: 0.873 (W)

Comments: Flip closed and unit front @ 2.5 cm

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.31, 6.31, 6.31)
Electronics: DAE3 Sn374, Calibrated: 2/14/2007
Duty Cycle: 1:1.05, Medium parameters used: $f = 915$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

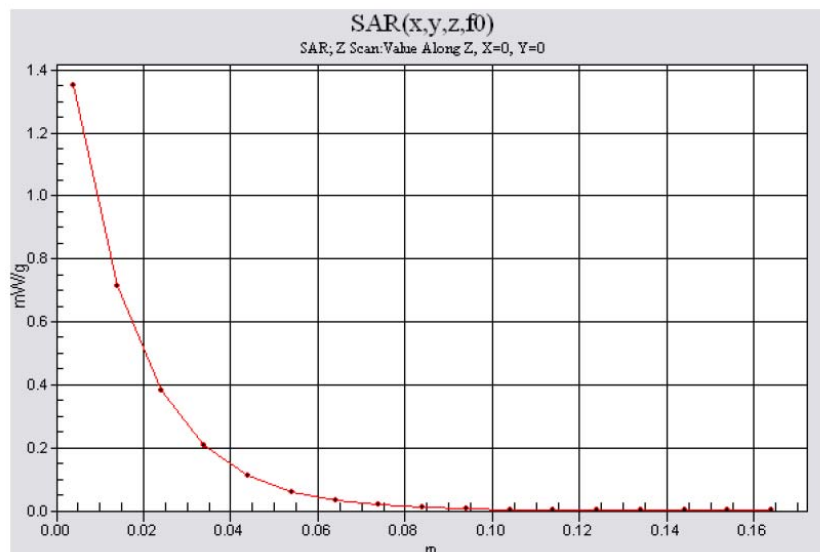
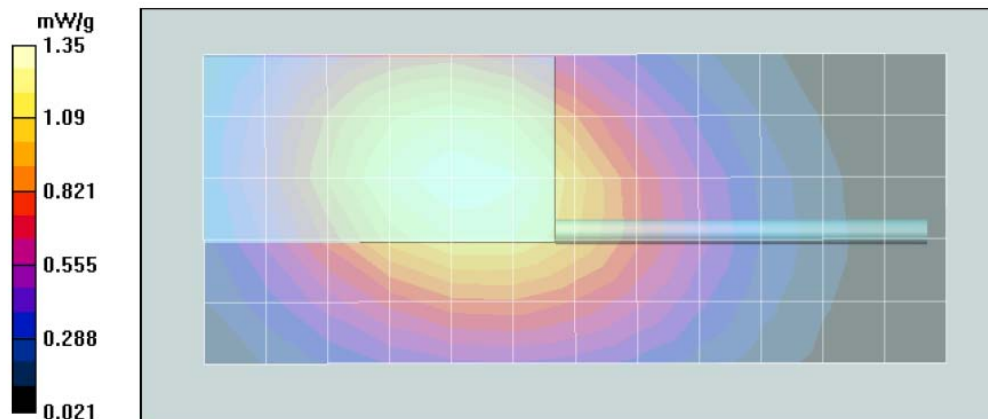
Face Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 35.8 V/m; Power Drift = 0.0129 dB

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.915 mW/g

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



Motorola N&E EME Laboratory

Date/Time: 5/2/2007 10:15:40 PM

Robot# / Run#: DASY4-FL-1 / CM-Ab-070502-31
 Phantom# / Tissue Temp.: 80302002B-S8 / 20.5 (C)
 DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00C0
 Antenna / TX Freq.: Out / 902.0000 (MHz)
 Battery: SNN5793A w/ NTN2386A
 Carry Acc. / Cable Acc.: NNTN6755A / None
 Start Power: 0.630 (W)

Comments:

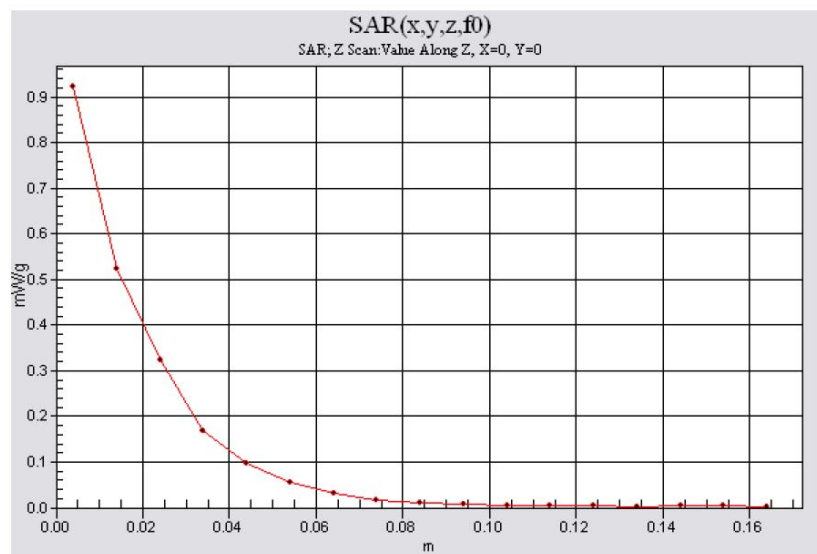
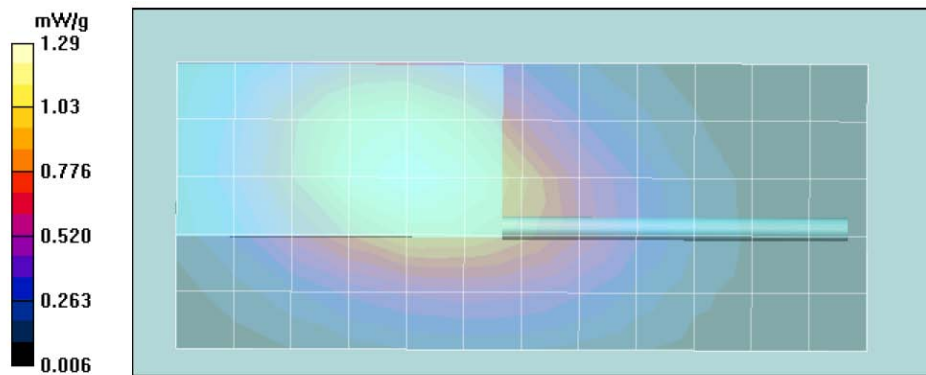
Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)
 Electronics: DAE3 Sn374, Calibrated: 2/14/2007
 Duty Cycle: 1:1.33, Medium parameters used: $f = 901.5$ MHz; $\sigma = 1.07$ mho/m; $\epsilon_r = 53.6$; $\rho = 1000$ kg/m³

Ab Scan/7x7x7 Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.4 V/m; Power Drift = -1.64 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.750 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/4/2007 9:01:21 PM

Robot# / Run#: DASY4-FL-1 / CM-Ab-070504-23
 Phantom# / Tissue Temp.: 80302002B-S8 / 21.7 (C)
 DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00C7
 Antenna / TX Freq.: Out / 915.5250 (MHz)
 Battery: SNN5784A w/ NTN2383A
 Carry Acc. / Cable Acc.: NNTN6755A / NNTN5330B
 Start Power: 0.885 (W)

Comments:

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(6.03, 6.03, 6.03)
 Electronics: DAE3 Sn374, Calibrated: 2/14/2007
 Duty Cycle: 1:1.05, Medium parameters used: $f = 915 \text{ MHz}$; $\sigma = 1.08 \text{ mho/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$

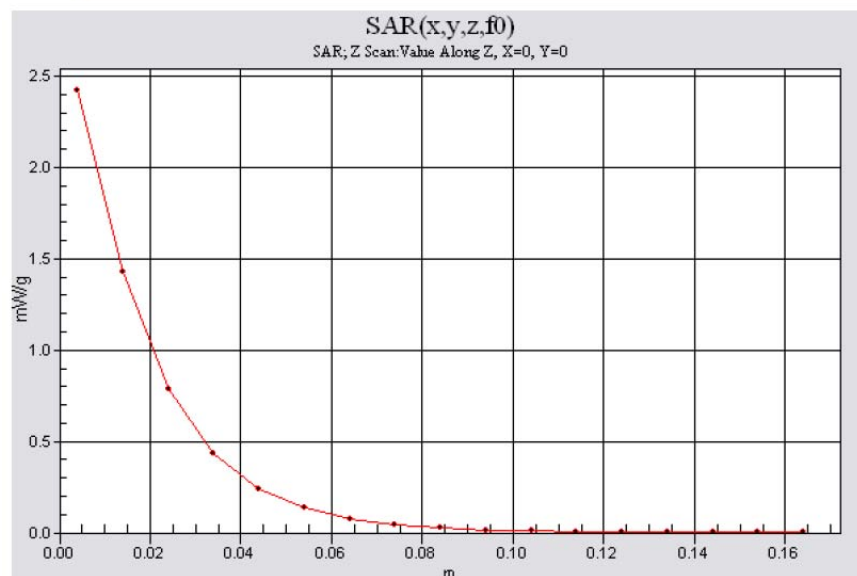
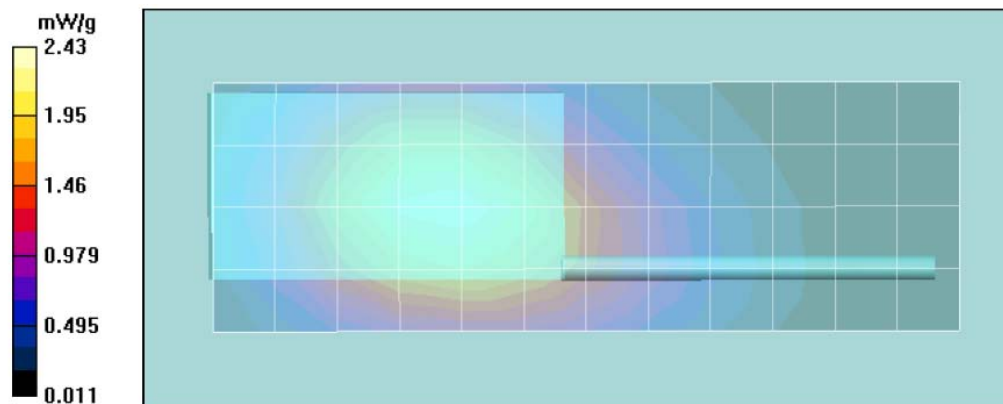
Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 45.5 V/m; Power Drift = -0.0974 dB

Peak SAR (extrapolated) = 2.61 W/kg

SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.39 mW/g



Motorola N&E EME Laboratory

Date/Time: 5/3/2007 9:18:05 PM

Robot# / Run#: DASY4-FL-1 / CM-Ab-070503-21
Phantom# / Tissue Temp.: 40302002B-S12 / 21.6 (C)
DUT Model# / Serial#: H92XAH6RR4AN-NWF1232A / 364AHG00C0
Antenna / TX Freq.: In / 2402.0000 (MHz)
Battery: SNN5793A w/ NTN2386A
Carry Acc. / Cable Acc.: None / None
Start Power: 0.0017 (W)

Comments: Back of DUT facing phantom at 2.5 cm parallel.

Probe: ET3DV6 - SN1383, Calibrated: 2/15/2007, ConvF(4.19, 4.19, 4.19)

Electronics: DAE3 Sn374, Calibrated: 2/14/2007

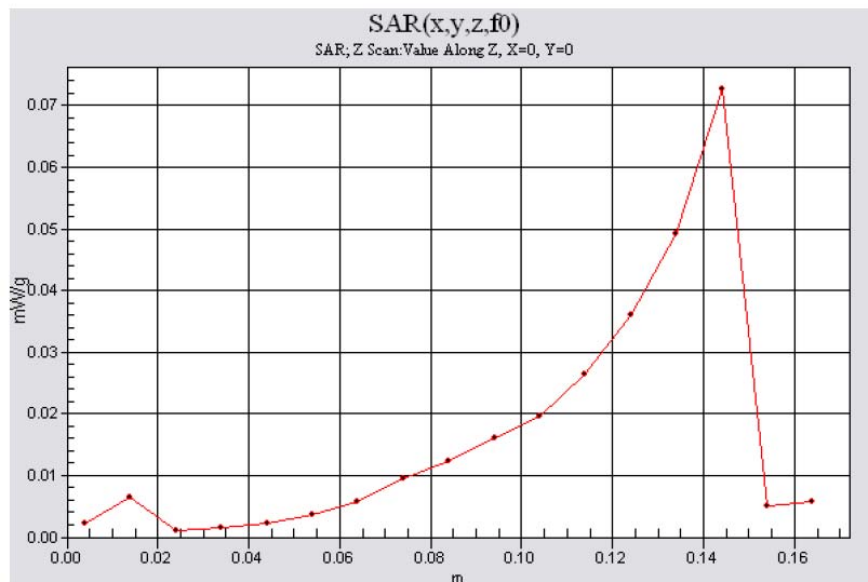
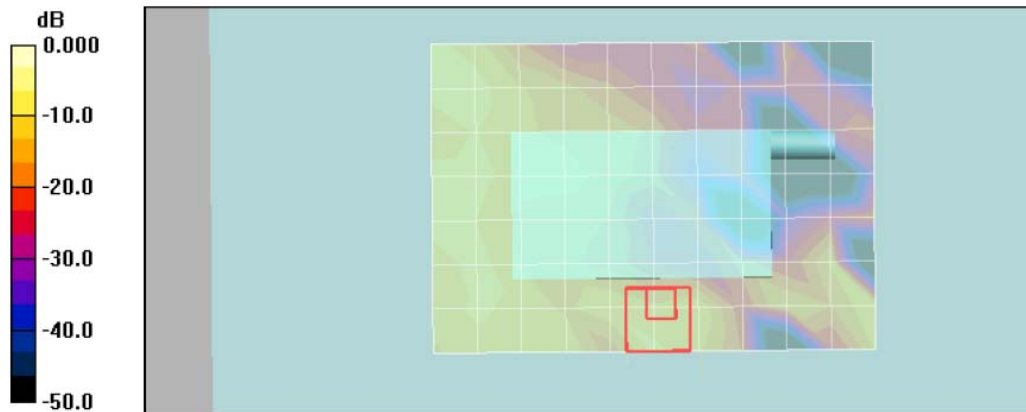
Duty Cycle: 1:1, Medium parameters used: $f = 2441$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ab Scan/7x7x7 Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.913 V/m; Power Drift = -1.62 dB

Peak SAR (extrapolated) = 0.022 W/kg

SAR(1 g) = 0.00114 mW/g; SAR(10 g) = 0.00031 mW/g



APPENDIX F

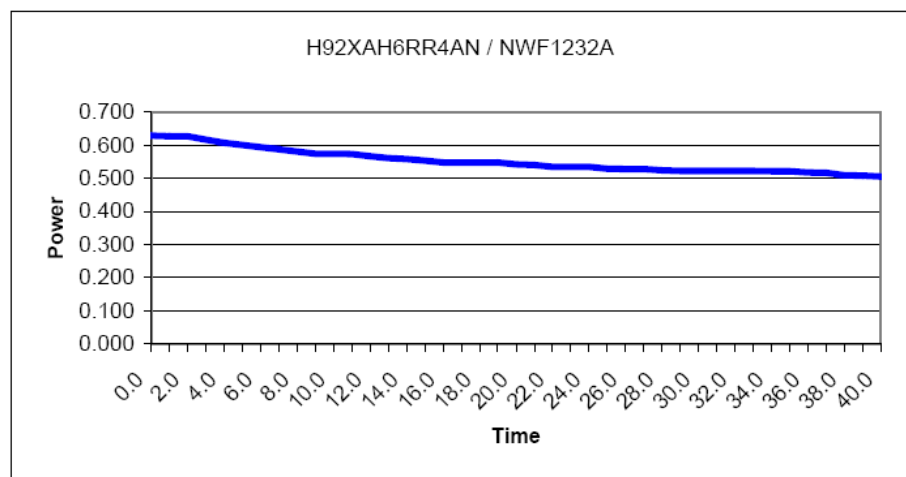
DUT Supplementary Data (Power slump)

Model #H92XAH6RR4AN / NWF1232A
Serial #364AHG00C0

Battery	#SNN5793A	Transmit Mode	WiDen 75%
Frequency	902.0000 MHz	Audio Accessory	None
Date	5/5/2007		

TX TIME (Minutes)	Measured Power (Watts)
-----------------------------	----------------------------------

0.0	0.629
1.0	0.627
2.0	0.627
3.0	0.617
4.0	0.607
5.0	0.601
6.0	0.594
7.0	0.588
8.0	0.581
9.0	0.574
10.0	0.574
11.0	0.573
12.0	0.567
13.0	0.561
14.0	0.558
15.0	0.554
16.0	0.548
17.0	0.548
18.0	0.548
19.0	0.548
20.0	0.542
21.0	0.540
22.0	0.535
23.0	0.535
24.0	0.535
25.0	0.529
26.0	0.528
27.0	0.528
28.0	0.524
29.0	0.522
30.0	0.522
31.0	0.522
32.0	0.522
33.0	0.522
34.0	0.521
35.0	0.521
36.0	0.518
37.0	0.517
38.0	0.509
39.0	0.508
40.0	0.505



Appendix G
DUT Test Position Photos

Photos are available in Exhibit 7B

Appendix H

DUT and Body worn Accessory Photos

The purpose of this appendix is to illustrate the offered body-worn carry accessory(ies). The sample that was used in the following photos represents the product used to obtain the results presented herein.

Photos are available in Exhibit 7B

Appendix I

DUT Antenna Separation Distances and Offered Accessory Test Status

The following table(s) summarizes the separation distances and test status provided by each of the applicable body-worn accessory(ies):

Carry Case Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN6755A	Yes	28-33	NA
NNTN4747A	Yes	23-37	NA

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN5774B	Yes	NA	NA
NNTN5330B	Yes	NA	NA
NNTN5004B	Yes	NA	NA
NNTN5005B	Yes	NA	NA
NNTN5006B	Yes	NA	NA
NNTN5211B	Yes	NA	NA
NNTN6312A	Yes	NA	NA
NNTN5751A	Yes	NA	NA
NNTN5752A	Yes	NA	Tested with NNTN6365A

Data cable Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN6531A	Yes	NA	NA
SKN6371C	Yes	NA	NA

Other attachment models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN6365A	Yes	NA	Tested with NNTN5752A