

 MOTOROLA	 Certificate Number: 1449-01		
FCC ID: AZ489FT5844 DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2			
Government & Enterprise Mobility Solutions EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322	Date of Report: 02/14/06 Report Revision: O Report ID: i850_Rev O_060214_SR3374		
<table border="0"> <tr> <td style="vertical-align: top;"> Responsible Engineer: Kim Uong (EME lead Eng.) Date/s Tested: 2/3/06-2/10/06 Manufacturer/Location: Motorola – Plantation Sector/Group/Div.: iDEN Subscriber Date submitted for test: 1/3/06 DUT Description: i850; TDMA: 236:310 (76.1%), 1:6, 2:6, 81:120, 1:12; 64QAM, 16 & QPSK Modulation; 0.6W Pulse Avg. MOTotalk (114:120 8FSK; 0.85 W nominal); GPS capable Test TX mode(s): 1:3, 1:6, 114:120 Max. Power output: MOTotalk - 0.891W, iDEN/WiDEN - 0.640W Nominal Power: MOTotalk - 0.85W, iDEN/WiDEN - 0.60W Tx Frequency Bands: MOTotalk - 902-928MHz, iDEN/WiDEN – 806-825, 896-902MHz Signaling type: TDMA: iDEN; WiDEN, MOTotalk - (FHSS 8FSK) Model(s) Tested: H65XAN6RR4AN/NWF1000A Model(s) Certified: H65XAN6RR4AN/NWF1000A Serial Number(s): 364AFA021M Classification: General Population/Uncontrolled Rule Part(s): 15 & 90 </td> <td style="vertical-align: top; text-align: center;">  </td> </tr> </table> Approved Accessories: Antenna(s): 8585744F04 (806-825MHz retractable ¼ wave antenna, -2.4dBd; 896-902MHz, -1.1dBd; 902-925MHz, -1.2dBd) Battery(ies): SNN5704C (Slim battery) Body worn accessory(ies): NNTN6026A Holster Audio/Data cable accessory(ies): NNTN6402A Wireless Wheels (ZigBEE transceiver Dongle) Max. Calc. 1-g/10-g Avg. SAR: 1.58/1.18 W/kg (Body) Max. Calc. 1-g/10-g Avg. SAR: 0.75/0.52 W/kg (Head) Max. Calc. 1-g/10-g Avg. SAR: 0.47/0.33 W/kg (Face) Max. Calc. 10-g Avg. SAR: 2.72 W/kg (Hand)		Responsible Engineer: Kim Uong (EME lead Eng.) Date/s Tested: 2/3/06-2/10/06 Manufacturer/Location: Motorola – Plantation Sector/Group/Div.: iDEN Subscriber Date submitted for test: 1/3/06 DUT Description: i850; TDMA: 236:310 (76.1%), 1:6, 2:6, 81:120, 1:12; 64QAM, 16 & QPSK Modulation; 0.6W Pulse Avg. MOTotalk (114:120 8FSK; 0.85 W nominal); GPS capable Test TX mode(s): 1:3, 1:6, 114:120 Max. Power output: MOTotalk - 0.891W, iDEN/WiDEN - 0.640W Nominal Power: MOTotalk - 0.85W, iDEN/WiDEN - 0.60W Tx Frequency Bands: MOTotalk - 902-928MHz, iDEN/WiDEN – 806-825, 896-902MHz Signaling type: TDMA: iDEN; WiDEN, MOTotalk - (FHSS 8FSK) Model(s) Tested: H65XAN6RR4AN/NWF1000A Model(s) Certified: H65XAN6RR4AN/NWF1000A Serial Number(s): 364AFA021M Classification: General Population/Uncontrolled Rule Part(s): 15 & 90	
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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.			
<i>Signature on file - Deanna Zakharia for Ken Enger</i> Ken Enger GEMS EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 2/14/06	Certification Date: NA Certification No.: NA		

Appendix C

Dipole Calibration Certificates

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

Client **Motorola CGISS**

CALIBRATION CERTIFICATE

Object(s) **D900V2 - SN:085**

Calibration procedure(s) **QA CAL-05.v2**
Calibration procedure for dipole validation kits

Calibration date: **August 19, 2004**

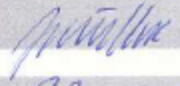
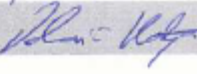
Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

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 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	US37292783	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: August 25, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, <http://www.speag.com>

DASY

Dipole Validation Kit

Type: D900V2

Serial: 085

Manufactured: September 20, 2000
Calibrated: August 19, 2004

1. Measurement Conditions

The measurements were performed in the half size flat phantom filled with **head simulating solution** c the following electrical parameters at 900 MHz:

Relative Dielectricity	41.0 $\pm 5\%$
Conductivity	0.97 mho/m $\pm 5\%$

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.18 at 900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15mm from dipole center to the solution surface. The included distance spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was $250\text{mW} \pm 3\%$. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	11.0 mW/g $\pm 16.8\%$ (k=2) ¹
averaged over 10 cm^3 (10 g) of tissue:	7.04 mW/g $\pm 16.2\%$ (k=2) ¹

¹ validation uncertainty

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	1.392 ns	(one direction)
Transmission factor:	0.987	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 900 MHz:	$\text{Re}\{Z\} = 48.8 \, \Omega$
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	$\text{Im}\{Z\} = -6.6 \, \Omega$
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Return Loss at 900 MHz	-22.7 dB
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4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

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.

6. Power Test

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN085

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

Medium: HSL 900 MHz;

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 41$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.18, 6.18, 6.18); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 7/22/2004
- Phantom: Flat Phantom half size; Type: QD000P49AA; Serial: SN:1001;
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 123

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.93 mW/g

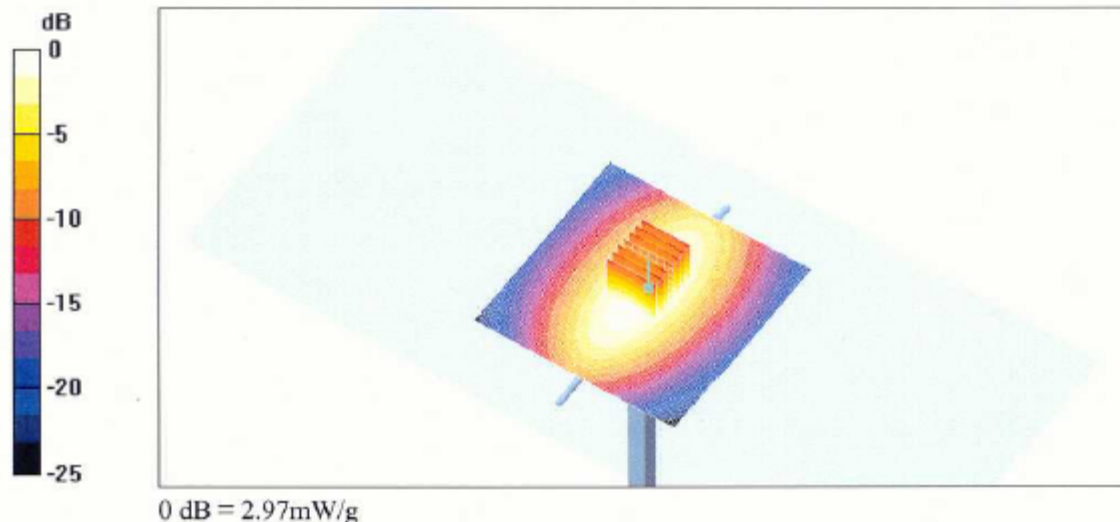
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

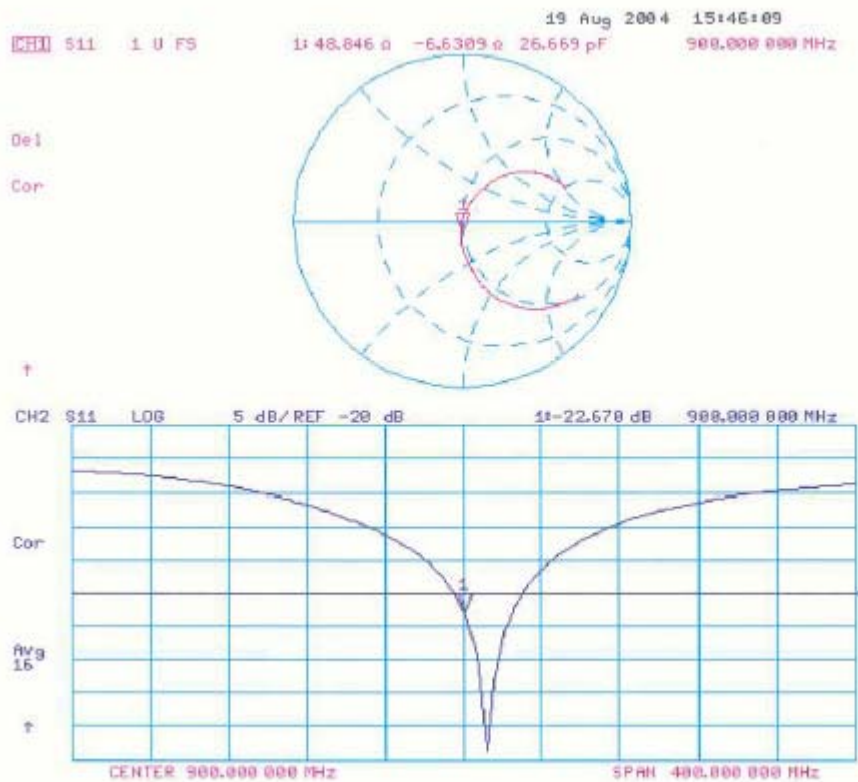
Reference Value = 57.2 V/m; Power Drift = -0.0 dB

Peak SAR (extrapolated) = 4.11 W/kg

SAR(1 g) = 2.74 mW/g; SAR(10 g) = 1.76 mW/g

Maximum value of SAR (measured) = 2.97 mW/g





Appendix D

Test System Verification Scans

Note: Dipole validation scans at the head from SPEAG are provided in APPENDIX D. The GEMS EME lab validated the dipole to the applicable IEEE system performance targets. Within the same day system validation was performed using FCC body tissue parameters to generate the system performance target values for body at the applicable frequency. The results of the GEMS EME system performance validation are provided herein. 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.

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/3/2006**

Run #: HvH-SYSP-900B-060203-01

Sim.Tissue Temp: 21.8 (C)

TX Freq: 900 (MHz)

Start power: 250 (mW)

Target: 11.41 mW/g for 1g SAR 7.43 mW/g for 10g SAR

11.71 mW/g calculated 1g-SAR; 2.63 % from target (including drift)

7.57 mW/g calculated 10g-SAR; 1.83 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19); Duty Cycle: 1:1, Medium: 900 MHz FCC Body,
Medium parameters used: $f = 900$ MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 53.8$; $\rho = 1000$ kg/m³;

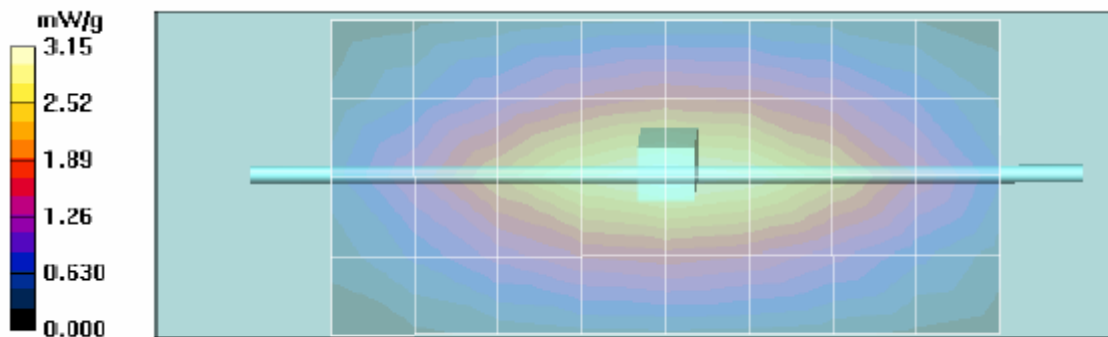
Electronics: DAE3 Sn374, Calibrated: 4/6/2005

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

Reference Value = 56.9 V/m; Power Drift = -0.00353 dB

SAR(1 g) = 2.9 mW/g; SAR(10 g) = 1.88 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.9 V/m; Power Drift = -0.00353 dB

SAR(1 g) = 2.95 mW/g; SAR(10 g) = 1.9 mW/g

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/6/2006**

Run #: HvH-SYSP-900B-060206-01

Sim.Tissue Temp: 22.1 (C)

TX Freq: 900 (MHz)

Start power: 250 (mW)

Target: 11.41 mW/g for 1g SAR 7.43 mW/g for 10g SAR

11.66 mW/g calculated 1g-SAR; 2.19 % from target (including drift)

7.51 mW/g calculated 10g-SAR; 1.03 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19); Duty Cycle: 1:1, Medium: 900 MHz FCC Body,

Medium parameters used: $f = 900$ MHz; $\sigma = 1.05$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

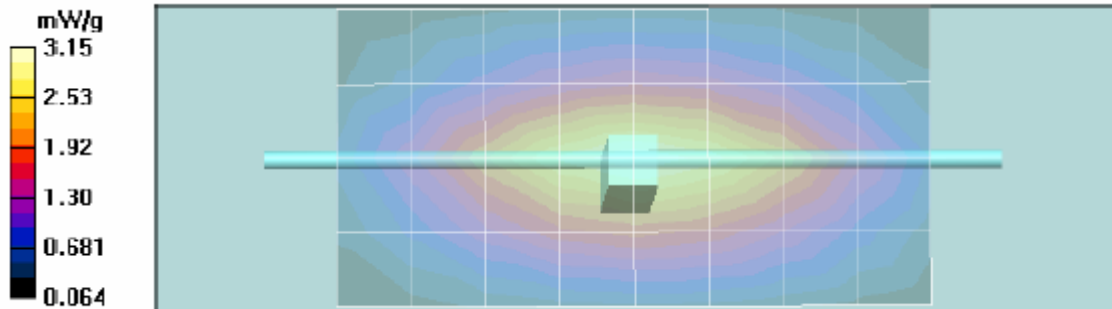
Electronics: DAE3 Sn374, Calibrated: 4/6/2005

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

Reference Value = 57.3 V/m; Power Drift = 0.00758 dB

SAR(1 g) = 2.88 mW/g; SAR(10 g) = 1.86 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 57.3 V/m; Power Drift = 0.00758 dB

SAR(1 g) = 2.96 mW/g; SAR(10 g) = 1.9 mW/g

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/7/2006**

Run #: MeS-SYSP-900B-060207-01

Sim.Tissue Temp: 21.5 (C)

TX Freq: 900 (MHz)

Start power: 250 (mW)

Target: 11.41 mW/g for 1g SAR 7.43 mW/g for 10g SAR

10.99 mW/g calculated 1g-SAR; -3.66 % from target (including drift)

7.10 mW/g calculated 10g-SAR; -4.50 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19); Duty Cycle: 1:1, Medium: 900 MHz FCC Body,
Medium parameters used: $f = 900$ MHz; $\sigma = 1.05$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

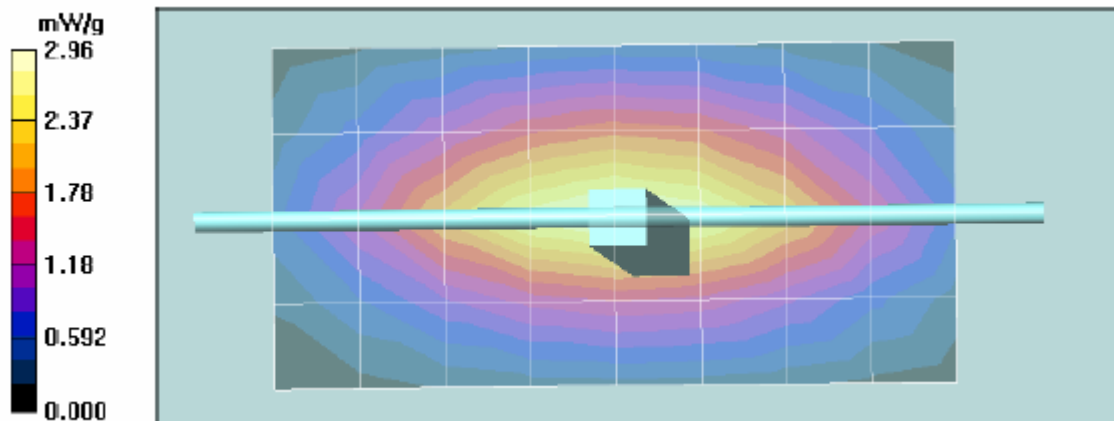
Electronics: DAE3 Sn374, Calibrated: 4/6/2005

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

Reference Value = 55.6 V/m; Power Drift = 0.00279 dB;

SAR(1 g) = 2.72 mW/g; SAR(10 g) = 1.76 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid:dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 55.6 V/m; Power Drift = 0.00279 dB;

SAR(1 g) = 2.78 mW/g; SAR(10 g) = 1.79 mW/g

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/8/2006**

Run #: MeS-SYSP-900B-060208-01

Sim.Tissue Temp: 21.3 (C)

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

Target: 11.41 mW/g for 1g SAR 7.43 mW/g for 10g SAR

11.53 mW/g calculated 1g-SAR; 1.07 % from target (including drift)

7.43 mW/g calculated 10g-SAR; -0.03 % from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19); Duty Cycle: 1:1, Medium: 900 MHz FCC Body,
Medium parameters used: $f = 900$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

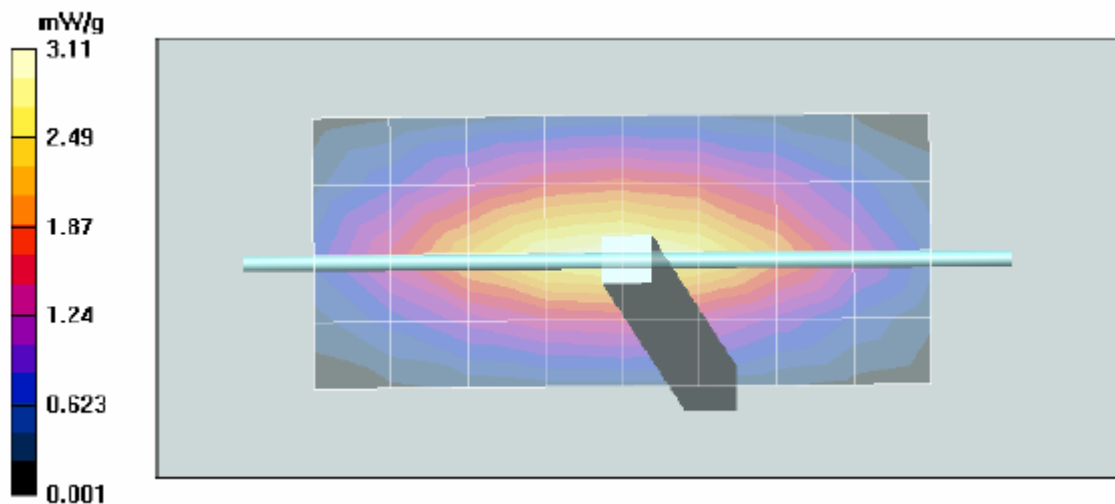
Electronics: DAE3 Sn374, Calibrated: 4/6/2005

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

Reference Value = 57.1 V/m; Power Drift = -0.005 dB;

SAR(1 g) = 2.86 mW/g; SAR(10 g) = 1.84 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 57.1 V/m; Power Drift = -0.005 dB;

SAR(1 g) = 2.9 mW/g; SAR(10 g) = 1.87 mW/g

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/9/2006**

Run #: MeS-SYSP-900H-060209-01

Sim.Tissue Temp: 21.5(C)

TX Freq: 900 (MHz)

Start power: 250 (mW)

Target: 11.26 mW/g for 1g SAR 7.21 mW/g for 10g SAR

11.30 mW/g calculated 1g-SAR; 0.33% from target (including drift)

7.18 mW/g calculated 10g-SAR; -0.36% from target (including drift)

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.53, 6.53, 6.53); Duty Cycle: 1:1, Medium: 900 MHz IEEE Head,
 Medium parameters used: $f = 900$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³

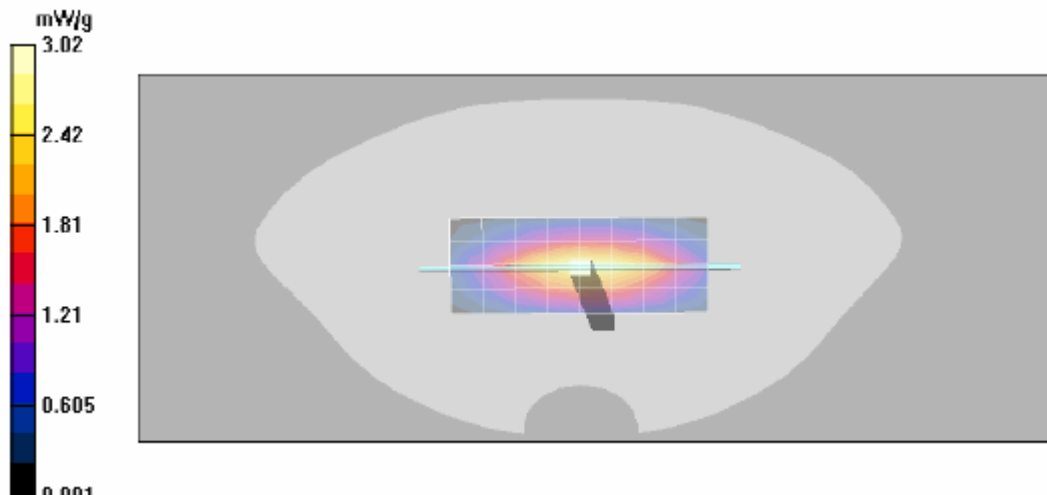
Electronics: DAE3 Sn374, Calibrated: 4/6/2005

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

Reference Value = 56.6 V/m; Power Drift = -0.0144 dB;

SAR(1 g) = 2.78 mW/g; SAR(10 g) = 1.77 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.6 V/m; Power Drift = -0.0144 dB;

SAR(1 g) = 2.85 mW/g; SAR(10 g) = 1.81 mW/g

Motorola GEMS EME Laboratory**SPEAG 900MHz Dipole; Model D900V2, SN085; Test Date: 2/10/2006**

Run #: KU-SYSP-900B-060210-01

Sim.Tissue Temp: 21.9(C)

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

Target: 11.41 mW/g for 1g SAR 7.43 mW/g for 10g SAR

11.74 mW/g calculated 1g-SAR; 2.90% from target (including drift)

7.60 mW/g calculated 10g-SAR; 2.31% from target (including drift)

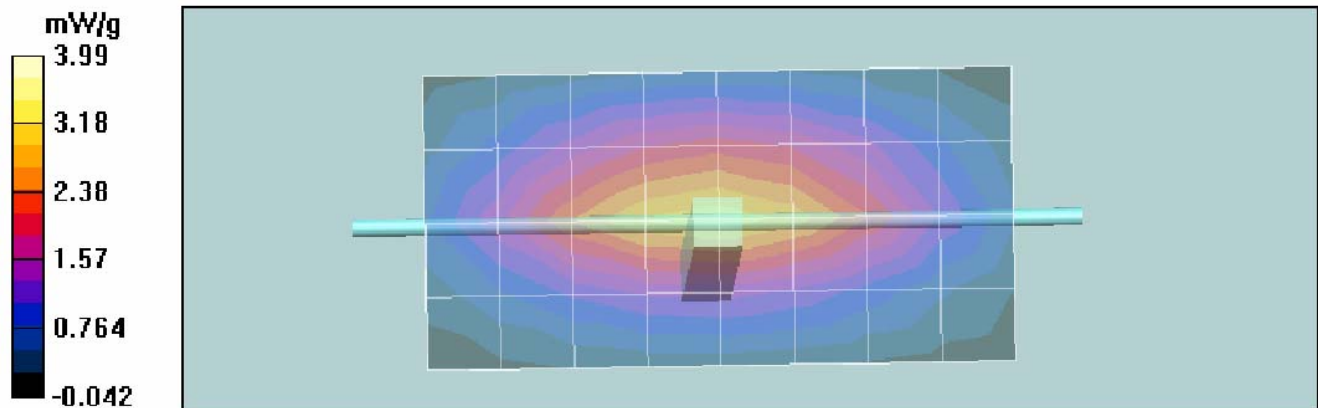
Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19)

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $f = 900$ MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 53.6$; $n = 1000$ kg/m³; Electronics: DAE3 Sn374, Calibrated: 4/6/2005**System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.9 V/m; Power Drift = 0.022 dB

SAR(1 g) = 2.92 mW/g; SAR(10 g) = 1.89 mW/g**System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.9 V/m; Power Drift = 0.022 dB

SAR(1 g) = 2.98 mW/g; SAR(10 g) = 1.93 mW/g

SYSTEM VALIDATION

Date: 03/25/05 Frequency (MHz): 900
Lab Location: GEMS-EME Mixture Type: 900-IEEE Head
Robot System: GEMS-EME -2 Ambient Temp.(°C): 22.0
Probe Serial #: 1393 Tissue Temp.(°C): 20.3
DAE Serial #: DAE3V1 SN406

Tissue Characteristics Phantom Type/SN: SAMTP1209
Permittivity: 41.6 Distance (mm): 15
Conductivity: 1.00

Reference Source: Dipole (Dipole/Handset)
Reference SN: 085

Power to Dipole: 250 mW
Power Output (radio): N/A mW

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

Measured SAR Value: 2.78 mW/g, 1.78 mW/g (10g avg.)
Power Drift: -0.0529 dB

Measured SAR Value: 11.26 mW/g, 7.21 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Percent Difference From Target (must be within System Uncertainty): 4.22 % (1g avg)
4.45 % (10g avg)

Test performed by: Dave Hopper Initial: 

IF 2/14/07

DUT: Dipole 900 MHz; Date/Time: 03/25/05 15:22:41

Run #: 050325-04

Test operator: Dave Hopper

Robot = GEMS-2

Phantom #: SAMTP1209

Sim.Tissue Temp: 20.9 (C)

Model #: D900V2

S/N: 085

TX Freq: 900(MHz)

Start power: 250 (mW)

Target:

11.2 mW/g for 1g SAR

7.16 mW/g for 10g SAR

11.26 mW/g calculated 1g-SAR; 0.50 % from target (including drift)

7.21 mW/g calculated 10g-SAR; 1.23 % from target (including drift)

Probe: ET3DV6 - SN1393, Calibrated: 4/28/2004, ConvF(6.73, 6.73, 6.73)

Duty Cycle: 1:1, Medium: 900 MHz IEEE Head, Medium parameters used: $\sigma = 1$; mho/m, $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Electronics: DAE3 Sn406, Calibrated: 11/17/2004

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

Reference Value = 56.7 V/m; Power Drift = -0.0529 dB

Peak SAR (extrapolated) = 4.11 W/kg

SAR(1 g) = 2.75 mW/g; SAR(10 g) = 1.76 mW/g

Maximum value of SAR (measured) = 2.98 mW/g

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

Reference Value = 56.7 V/m; Power Drift = -0.0529 dB

Peak SAR (extrapolated) = 4.18 W/kg

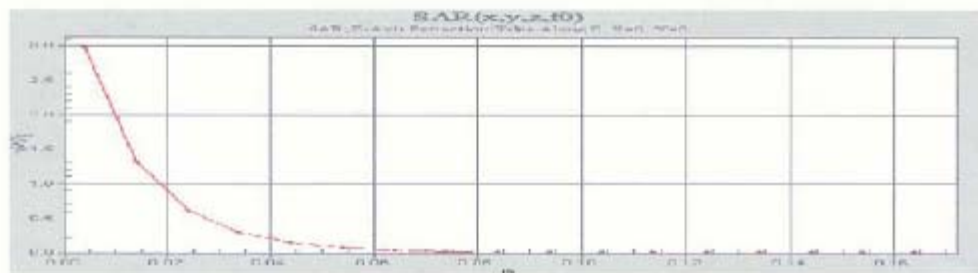
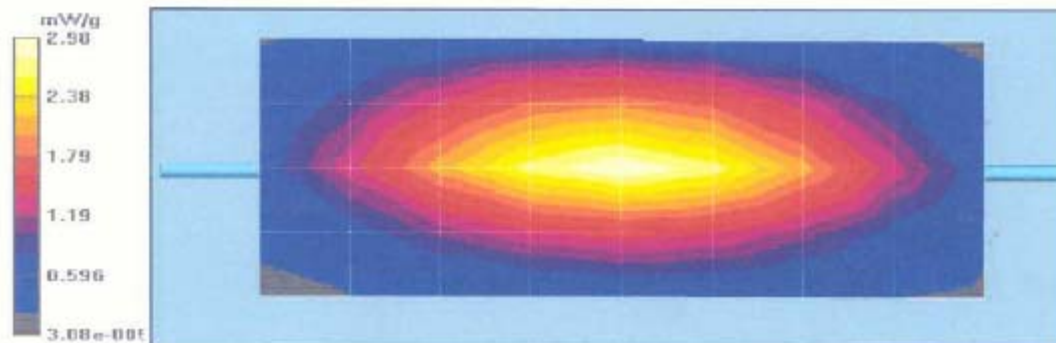
SAR(1 g) = 2.81 mW/g; SAR(10 g) = 1.8 mW/g

Maximum value of SAR (measured) = 3.05 mW/g

System Performance Check/Dipole Area Scan (5x9x1): Measurement grid: dx=1.5mm, dy=1.5mm

Maximum value of SAR (measured) = 2.96 mW/g

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



SYSTEM PERFORMANCE TARGET CHECK

Date: 25 March 2005 Frequency (MHz): 900
Lab Location: GEMS-EME Mixture Type: 900-Body
Robot System: GEMS-EME -2 Ambient Temp.(°C): 22.0
Probe Serial #: 1393 Tissue Temp.(°C): 21.6
DAE Serial #: DAE3V1 SN406

Tissue Characteristics Phantom Type/SN: 80302002D-S14
Permittivity: 52.9 Distance (mm): 15
Conductivity: 1.04

Reference Source: Dipole (Dipole/Handset)
Reference SN: 085

Power to Dipole: 250 mW
Power Output (radio): N/A mW

Measured SAR Value: 2.855 mW/g, 1.86 mW/g (10g avg.)
Power Drift: -0.003 dB

Measured SAR Value: 11.41 mW/g, 7.43 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Test performed by: Dave Hopper Initial: 

JF 2/14/02

DUT: Dipole 900 MHz; Date/Time: 03/25/05 17:01:42
 Run #: 050325-05 Test operator: Dave Hopper
 Robot = GEMS-2 Phantom #: 80302002D-S14 Sim.Tissue Temp: 21.6 (C)
 Model #: D900V2 S/N: 085
 TX Freq: 900(MHz) Start power: 250 (mW)
 Target:

Establishing New Body Targets
 11.41 mW/g calculated 1g-SAR; 0 % from target (including drift)
 7.43 mW/g calculated 10g-SAR; 0 % from target (including drift)

Probe: ET3DV6 - SN1393, Calibrated: 4/28/2004, ConvF(6.35, 6.35, 6.35)

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $\sigma = 1.04$; mho/m, $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Electronics: DAE3 Sn406, Calibrated: 11/17/2004

System Performance Check/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 = 0.003 dB

Peak SAR (extrapolated) = 4.06 W/kg

SAR(1 g) = 2.83 mW/g; SAR(10 g) = 1.84 mW/g

Maximum value of SAR (measured) = 3.07 mW/g

System Performance Check/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 = 0.003 dB

Peak SAR (extrapolated) = 4.1 W/kg

SAR(1 g) = 2.88 mW/g; SAR(10 g) = 1.88 mW/g

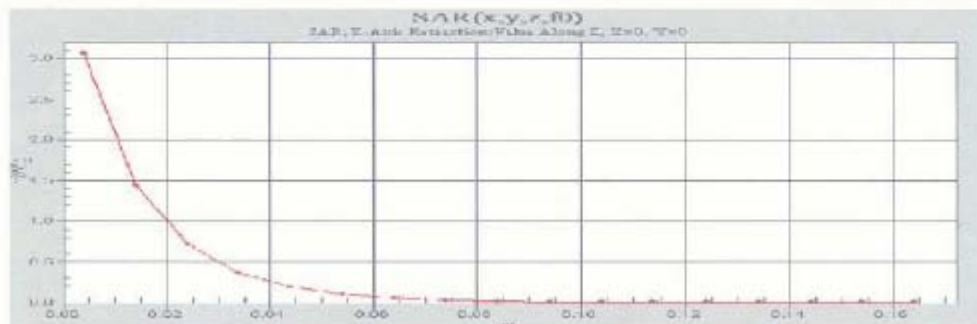
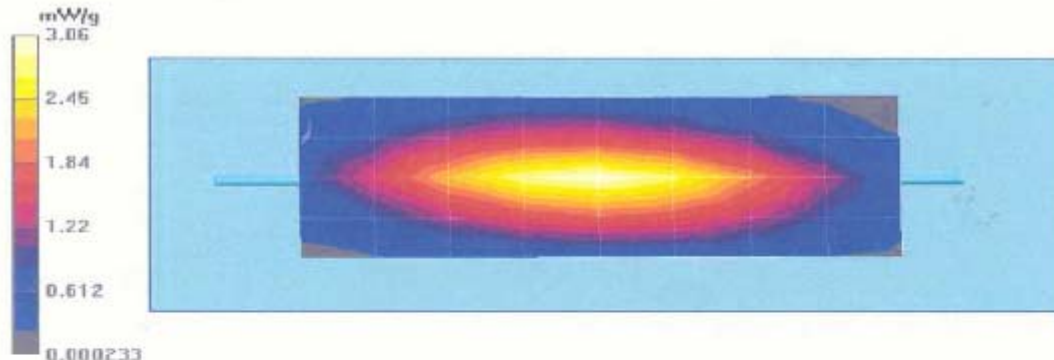
Maximum value of SAR (measured) = 3.14 mW/g

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

Maximum value of SAR (measured) = 3.04 mW/g

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

Maximum value of SAR (measured) = 3.06 mW/g



Appendix E

DUT Scans (Shortened scans & Highest SAR configurations)

Shorten Scan Result

Motorola GEMS EME Laboratory**FCC ID: AZ489FT5844; Test Date: 2/10/2006**

Run #: KU-Hand-060210-03

Sim. Tissue Temp: 21.7(C)

Model #: H65XAN6RR4AN-NWF1000A

SN: 364AFA021M

Antenna: In

Battery#: SNN5704C

Carry acc.#: None

TX Freq: 806.0125 MHz

Start power: 0.665 W

Audio/Data acc.: NNTN6402A Wireless Wheel (Dongle TX)

Back of DUT against the phantom; Flip open

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19)

Duty Cycle: 1:3, Medium: 813 MHz FCC Body, Medium parameters used: $f = 813$ MHz; $\sigma = 0.97$ mho/m; $\alpha_r = 54.5$; $\tilde{n} = 1000$ kg/m³ Electronics: DAE3 Sn374, Calibrated: 4/6/2005**Hand Template/5x5x7 Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 46.1 V/m; Power Drift = -0.471 dB

SAR(1 g) = 1.74 mW/g; SAR(10 g) = 1.07 mW/g**Comments: Short Scan at the hand with back of the DUT against phantom and Flip open**

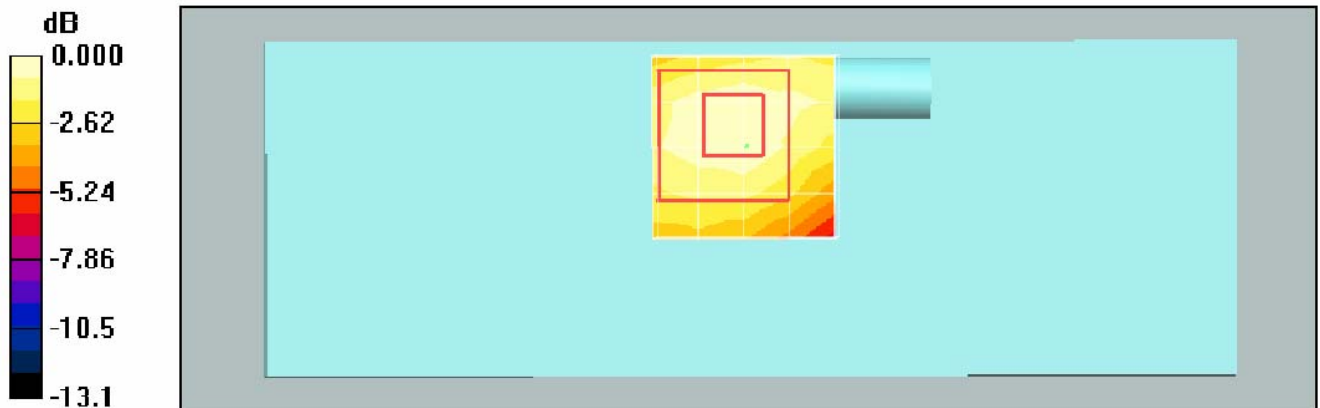
Shortened scan reflect highest S.A.R. producing configuration; Run time 8 minutes.

Representative "normal" scan run time was 25 minutes

"Shortened" scan max calculated S.A.R. using S.A.R. drift: 10-g Avg. = 2.72mW/g

"Normal" scan max calculated S.A.R. using S.A.R. drift: 10-g Avg. = 2.47mW/g

(see part 1 of 2 section 9.0 run # Jst-Hand-060207-08)



Highest SAR Configurations Results

Motorola GEMS EME Laboratory

FCC ID: AZ489FT5844; Test Date: 2/7/2006

Run #: JsT-Hand-060207-08

Sim. Tissue Temp: 21.3 (C)

Model #: H65XAN6RR4AN-NWF1000A

SN: 364AFA021M

Antenna: In

Battery#: SNN5704C

Carry acc.#: None

TX Freq: 806.0125 MHz

Start power: 0.661 W

Audio/Data acc.: NNTN6402A Wireless Wheel (Dongle TX)

Back of DUT against the phantom; Flip open.

Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19)

Duty Cycle: 1:3, Medium: 813 MHz FCC Body, Medium parameters used: $f = 813$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 53.5$; $\epsilon'' = 1000$ kg/m³; Electronics: DAE3 Sn374, Calibrated: 4/6/2005

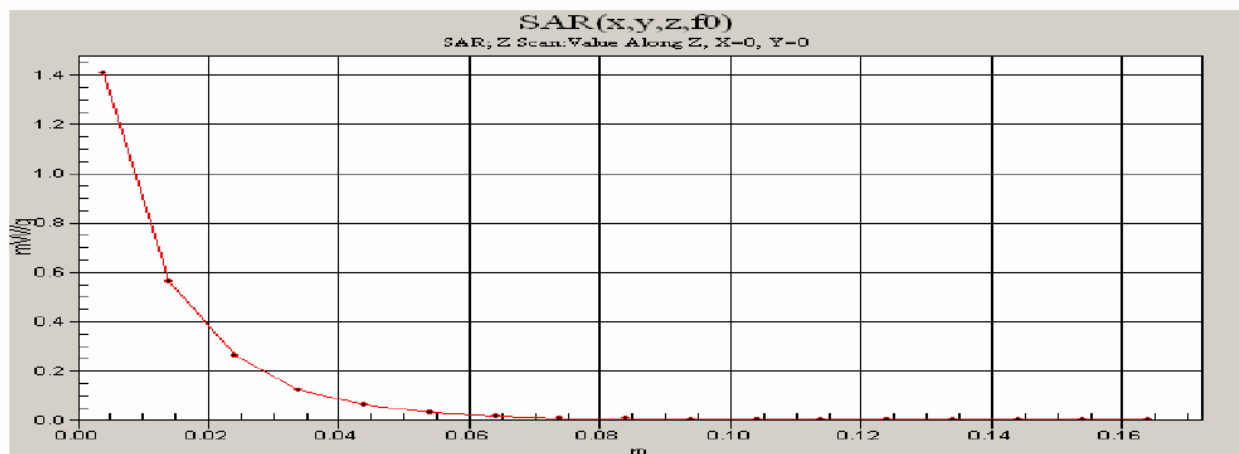
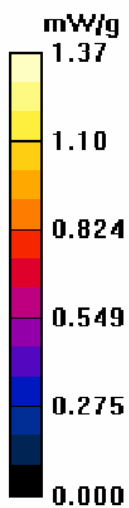
Hand Template/7x7x7 Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 43.6 V/m; Power Drift = -1.09 dB

SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.840 mW/g

Hand Template/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 1.41 mW/g



Motorola GEMS EME Laboratory**FCC ID: AZ489FT5844; Test Date: 2/10/2006**

Run #: KU-Ab-060210-04

Sim. Tissue Temp: 21.7 (C)

Model #: H65XAN6RR4AN-NWF1000A

SN: 364AFA021M

Antenna: In

Battery#: SNN5704C

Carry acc.#: NNTN6026A

TX Freq: 813.5125 MHz

Start power: 0.671W

Audio/Data acc.: NNTN6402A Wireless Wheel (Dongle TX)

DUT with carry accessory against the phantom

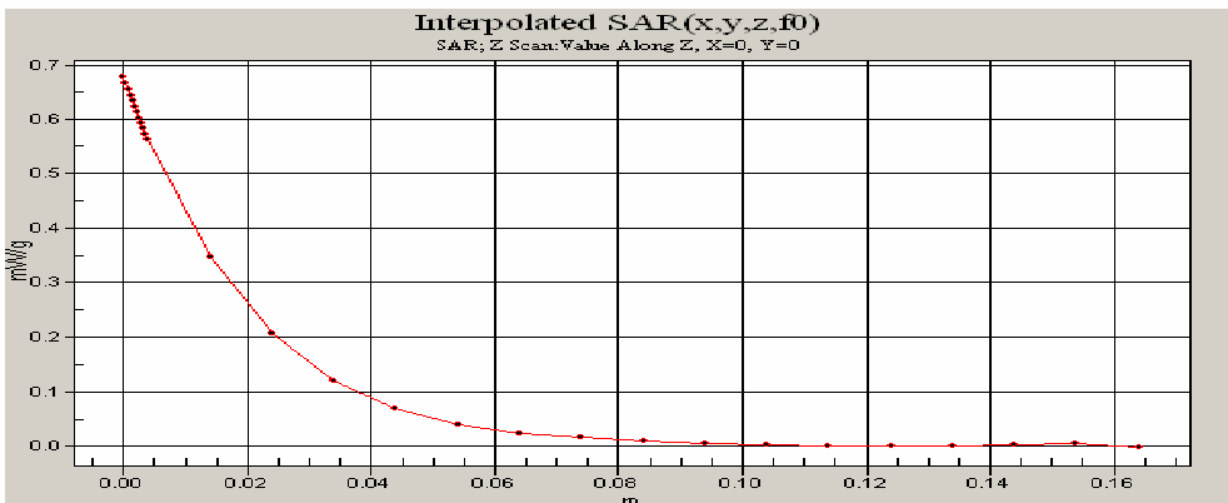
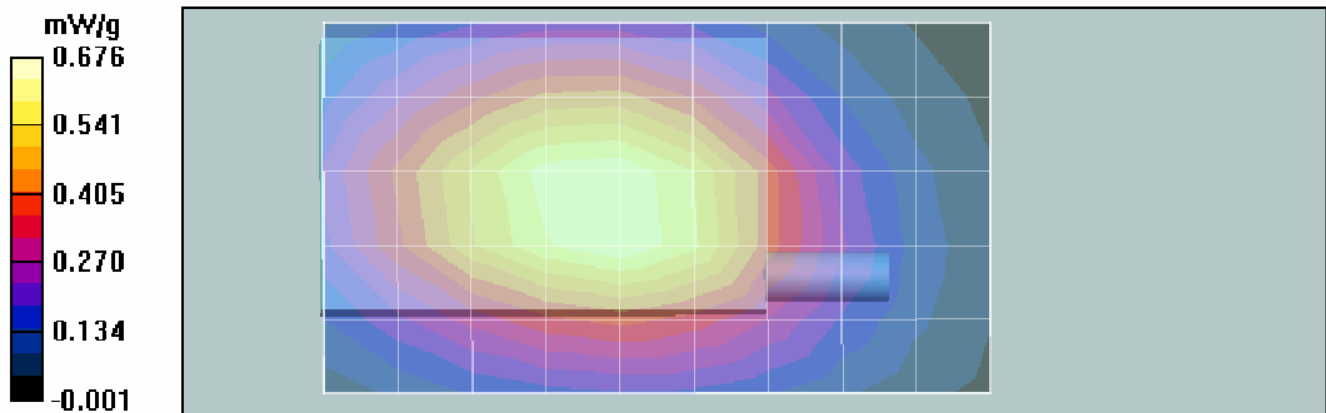
Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.19, 6.19, 6.19)

Duty Cycle: 1:3, Medium: 813 MHz FCC Body, Medium parameters used: $f = 813$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 54.5$; $\bar{n} = 1000$ kg/m³; Electronics: DAE3 Sn374, Calibrated: 4/6/2005**Ab Template/7x7x7 Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.4 V/m; Power Drift = -0.818 dB

SAR(1 g) = 0.573 mW/g; SAR(10 g) = 0.429 mW/g**Ab Template/Z Scan (1x1x28):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (interpolated) = 0.676 mW/g



Motorola GEMS EME Laboratory**FCC ID: AZ489FT5844; Test Date: 2/8/2006**

Run #: JsT-REAR-060208-07

Sim. Tissue Temp: 21.6 (C)

Model #: H65XAN6RR4AN-NWF1000A

SN: 364AFA021M

Antenna: In

Battery#: SNN5704C

Carry acc.#: None

TX Freq: 824.9875 MHz

Start power: 0.669 W

Audio/Data acc.: NNTN6402A Wireless Wheel (Dongle TX)

DUT in cheek touch position

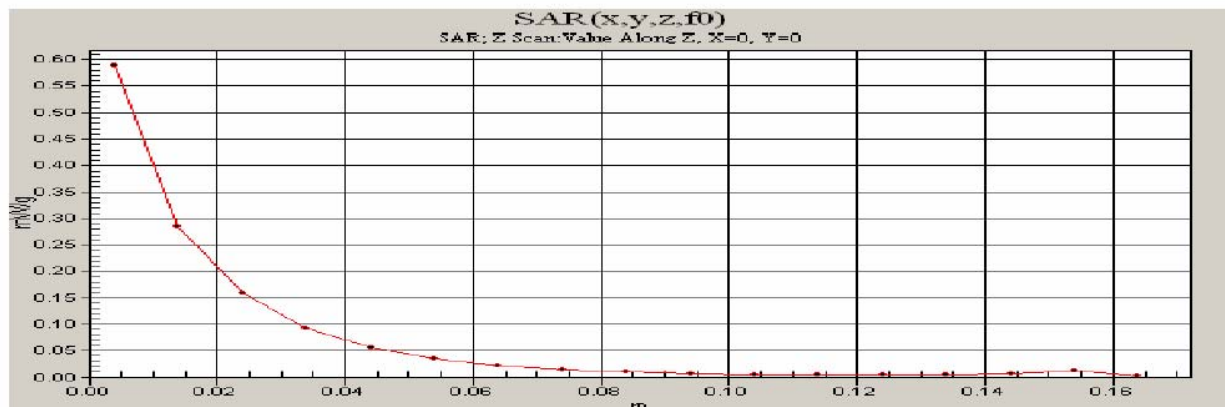
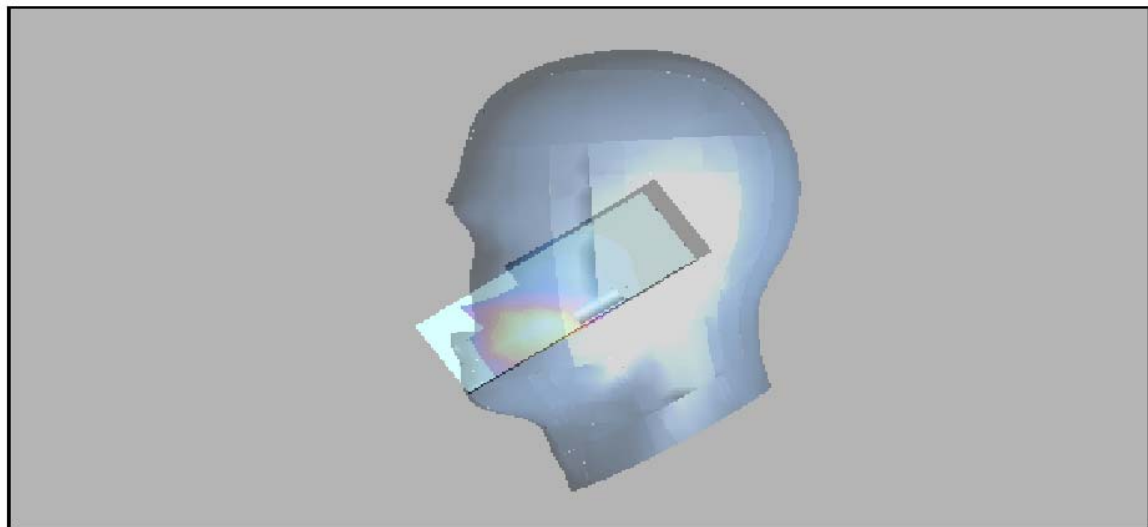
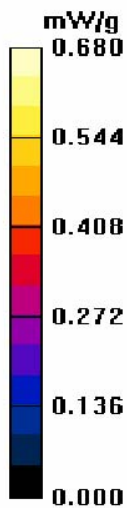
Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.53, 6.53, 6.53)

Duty Cycle: 1:3, Medium: 813 IEEE Head, Medium parameters used: $f = 813$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 42.4$; $\epsilon'' = 1000$ kg/m³; Electronics: DAE3 Sn374, Calibrated: 4/6/2005**Right Ear - Touch position/7x7x7 Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.5 V/m; Power Drift = -0.751 dB

SAR(1 g) = 0.633 mW/g; SAR(10 g) = 0.441 mW/g**Right Ear - Touch position/Z Scan (1x1x17):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.589 mW/g



Motorola GEMS EME Laboratory**FCC ID: AZ489FT5844; Test Date: 2/10/2006**

Run #: KU-Face-060210-02

Sim. Tissue Temp: 21. (C)

Model #: H65XAN6RR4AN-NWF1000A

SN: 364AFA021M

Antenna: Out

Battery#: SNN5704C

Carry acc.#: None

TX Freq: 902.525 MHz

Start power: 0.871W

Audio/Data acc.: NNTN6402A Wireless Wheel (Dongle)

DUT with front housing separated 2.5cm from the phantom; Flip close

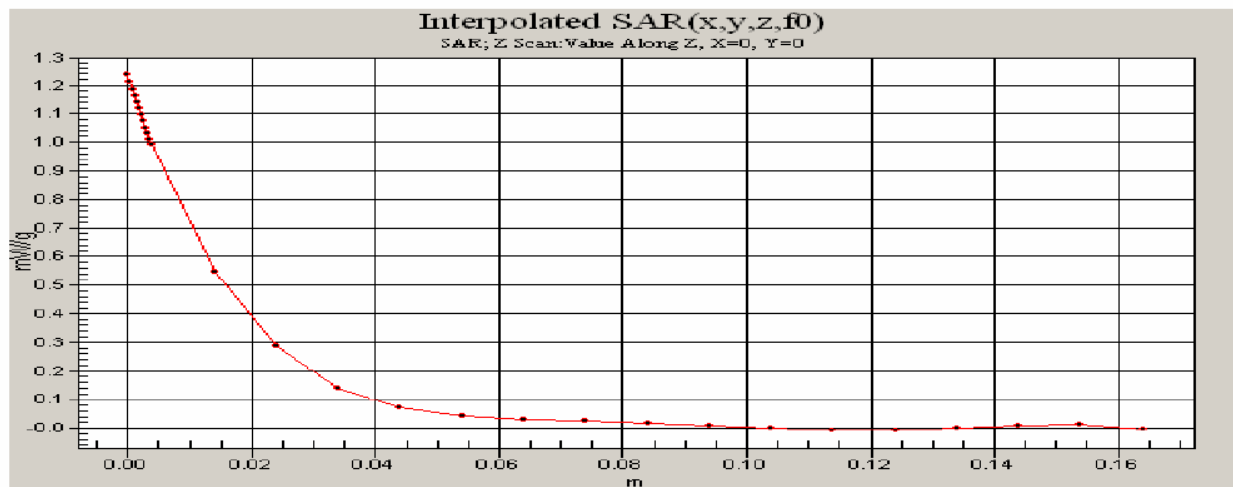
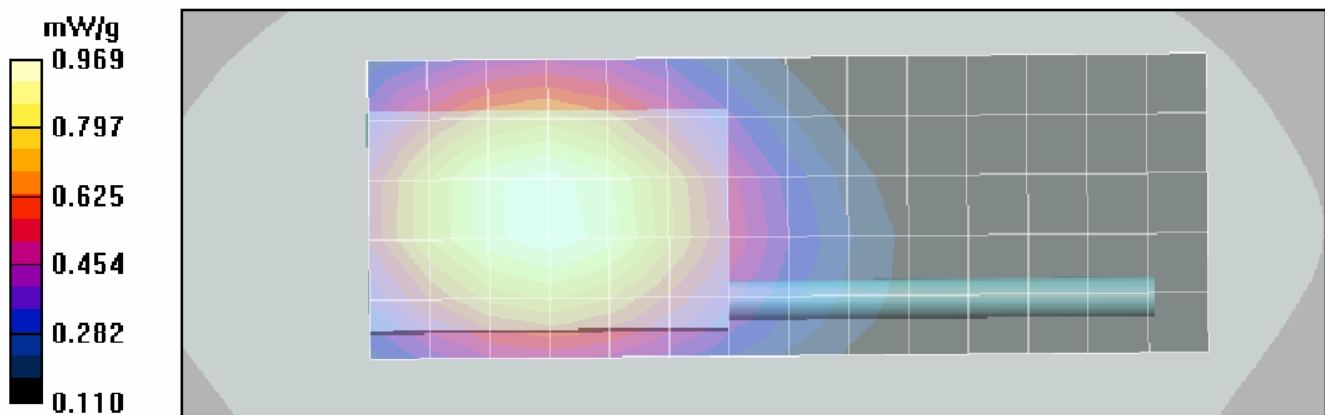
Probe: ET3DV6 - SN1384, Calibrated: 5/26/2005, ConvF(6.53, 6.53, 6.53)

Duty Cycle: 1:1.05, Medium: 915 IEEE Head, Medium parameters used: $f = 915$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 41.3$; $n = 1000$ kg/m³; Electronics: DAE3 Sn374, Calibrated: 4/6/2005**Face template/7x7x7 Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.0 V/m; Power Drift = 0.411 dB

SAR(1 g) = 0.911 mW/g; SAR(10 g) = 0.650 mW/g**Face template/Z Scan (1x1x28):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (interpolated) = 1.24 mW/g



APPENDIX F
DUT Supplementary Data (Power slump)

i850 (NWF1000A) Deer Key test with wireless wheels NNTN6402A (ZigBEE transceiver Dongle)

Model #: H65XAN6RR4AN/NWF1000A

S/N: 364AFA021M

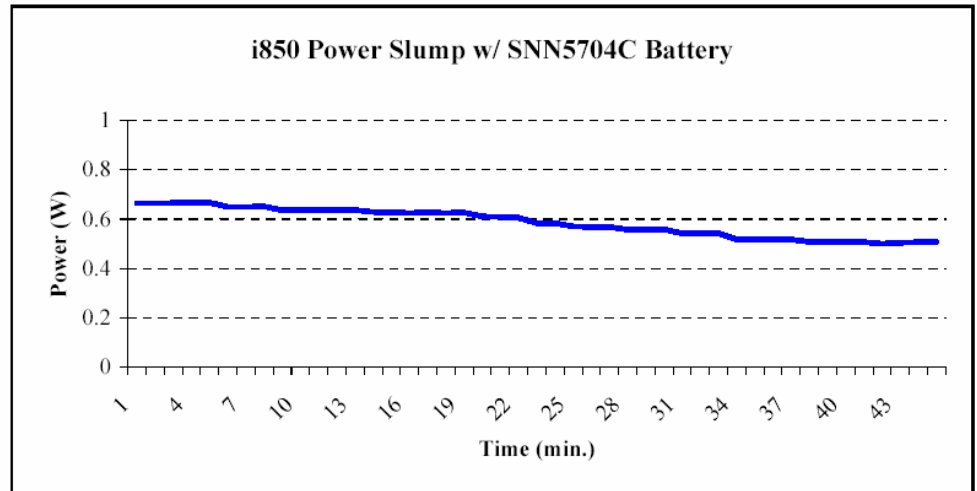
Battery: SNN5704C

Frequency: 806.0125 MHz

Test mode: 1:3

Time (Min) Power (W)

1	0.664
2	0.664
3	0.665
4	0.666
5	0.666
6	0.65
7	0.65
8	0.651
9	0.635
10	0.636
11	0.636
12	0.635
13	0.636
14	0.628
15	0.626
16	0.625
17	0.626
18	0.625
19	0.626
20	0.61
21	0.609
22	0.605
23	0.583
24	0.583
25	0.57
26	0.568
27	0.568
28	0.557
29	0.557
30	0.558
31	0.542
32	0.542
33	0.543
34	0.517
35	0.518
36	0.518
37	0.517
38	0.508
39	0.507
40	0.507
41	0.506
42	0.5
43	0.504
44	0.507
45	0.508



Appendix G

DUT Test Position Photos

Figure 1: Highest S.A.R. Test Position (Hand)
DUT with Wireless Wheel model NNTN6402A against the phantom.

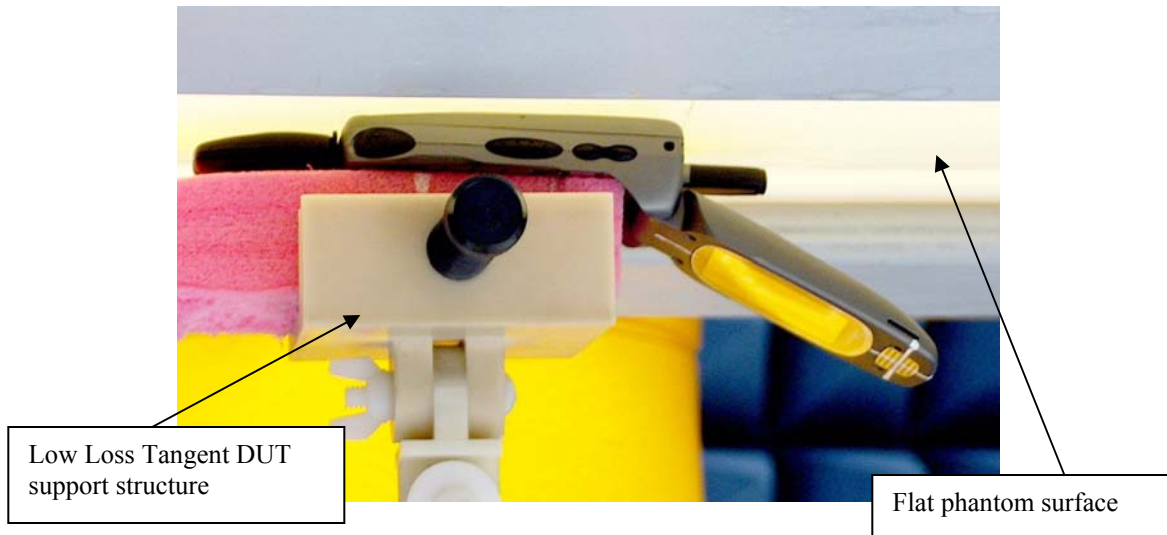


Figure 2: Highest S.A.R. Test Position (Body)
DUT with carry accessory model NNTN6026A against the phantom.



**Figure 3: Highest S.A.R. Test Position (Head)
DUT at right ear in cheek touch position**



**Figure 4: Head Assessment
DUT at the left ear in touch position.**



**Figure 5: Highest S.A.R. Test Position (face)
DUT front side separated 2.5cm from the phantom**



Appendix H

Wireless Wheel NNTN6402A Photos

