


MOTOROLA


Certificate Number: 1449-01

FCC ID: AZ489FT5852
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: September 22, 2005
Report Revision: Rev. O
Report ID: FCC rpt_RLN6081A_Rev O_050922
 SR2845

Responsible Engineer: Deanna Zakharia (Elect. Principal Staff Eng.)
Date/s Tested: 8/31/05-9/7/05 & 9/13/05
Manufacturer/Location: Motorola - China
Sector/Group/Div.: BRU
Date submitted for test: 8/23/05
DUT Description: ISM/RBR/1.0watts Digital two-way radio w/ display/removable antenna/10ch
 Black/Lithium Ion
Test TX mode(s): 114:120
Max. Power output: 1.0 watts
Nominal Power: 0.990 watts
Tx Frequency Bands: 902.525MHz – 927.475MHz
Signaling type: iDEN
Model(s) Tested: RLN6081A
Model(s) Certified: RLN6081A
Serial Number(s): 0002, 0003
Classification: Occupational/Controlled
Rule Part(s): 90

Approved Accessories:

Antenna(s): 8505241U04 (902-928MHz Whip ½ wave antenna; 3dBi); 8505241U06 (902-928MHz Whip ¼ wave antenna 0dBi)

Battery(ies): NNTN4655B (3.6V Li Ion 1450mAh); SNN5706B (3.6V Li Ion 1050mAh)

Body worn accessory(ies): RLN5713A (Holster)

Audio/Data cable accessory(ies): HMN9026C (Remote speaker microphone); NTN9159E (light headset); HMN9025C (Ear bud w/PTT microphone); HCSN4000C (Ear bud w/ PTT microphone); HCSN4001B (Earpiece w/ boom microphone); HMN9039D (Earpiece w/ boom microphone); HMN9038A (Headset w/swivel boom mic; RLN5714A (Earpiece with inline mic); NNTN5491A (mini keypad)

Max. Calc. 1-g/10-g Avg. SAR: 1.17/0.85 mW/g (Body)
Max. Calc. 1-g/10-g Avg. SAR: 0.69/0.51 mW/g (Face)



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 GEMS EME Lab Senior Resource Manager,
 Laboratory Director,

Approval Date: 9/26/05

Certification Date: 9/26/05

Certification No.: L1050956P

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**

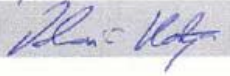
Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

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.

1. Measurement Conditions

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

Relative Dielectricity	41.0 ± 5%
Conductivity	0.97 mho/m ± 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 250mW ± 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 ± 16.8 % (k=2) ¹
averaged over 10 cm ³ (10 g) of tissue:	7.04 mW/g ± 16.2 % (k=2) ¹

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.

Date/Time: 08/19/04 15:25:59

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: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (interpolated) = 2.93 mW/g

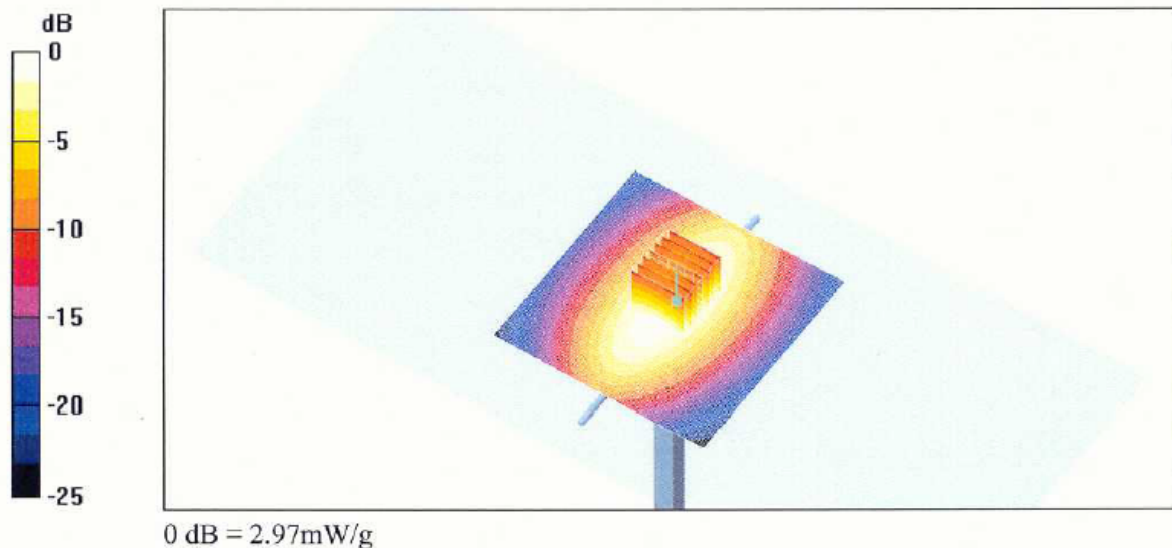
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

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 gram results.

Motorola GEMS EME Lab**SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/31/05**

Run #: CM-SYSP-900B-050830-01

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

11.57 mW/g calculated 1g-SAR; 1.37 % from target (including drift)

7.46 mW/g calculated 10g-SAR; 0.38 % from target (including drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03)

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $\sigma = 1.04$ mho/m, $\epsilon_r = 52.6$; $\rho = 1000$ 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;

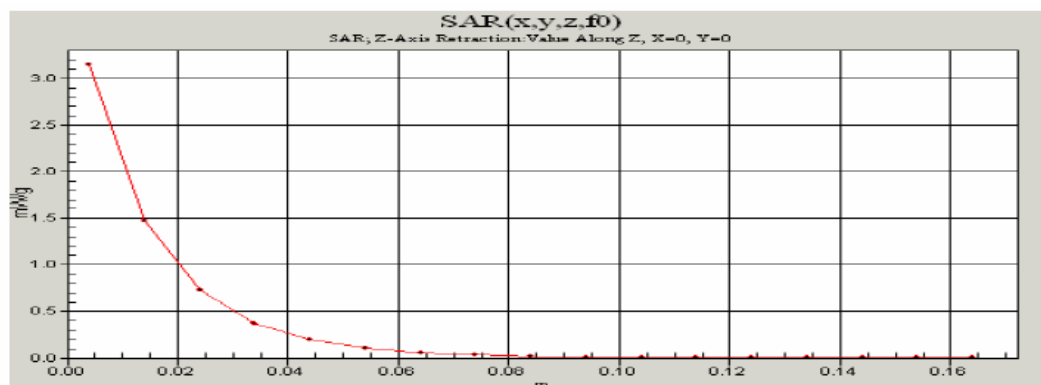
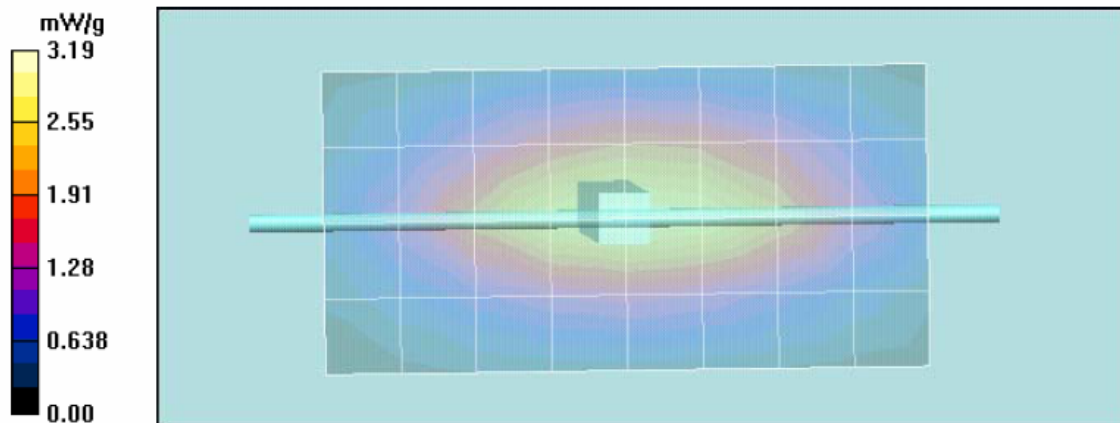
Reference Value = 57.2 V/m; Power Drift = 0.0126 dB

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

Maximum value of SAR (measured) = 3.16 mW/g

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

Reference Value = 57.2 V/m; Power Drift = 0.0126 dB

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

Motorola GEMS EME Lab**SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 9/1/05**

Run #: CM-SYSP-900B-050901-01

Sim.Tissue Temp: 21.7 (C)

TX Freq: 900(MHz)

Start power: 250 (mW)

Target:

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

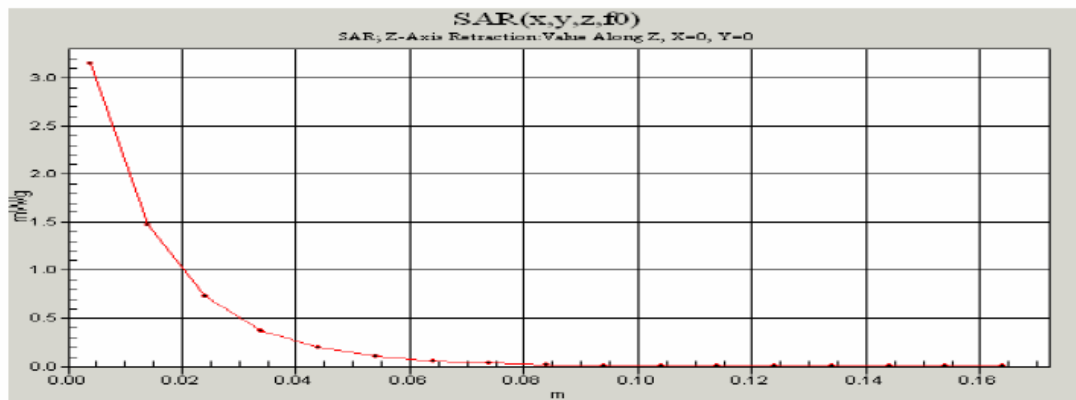
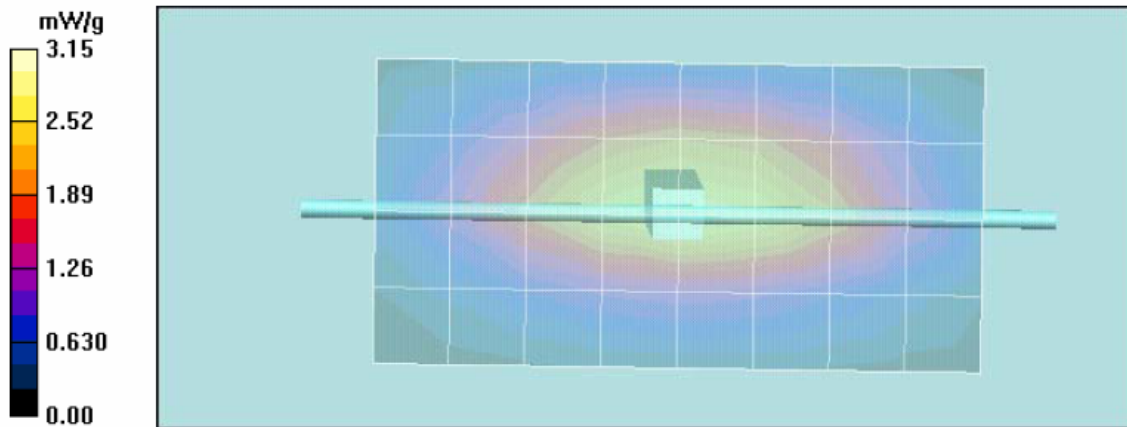
11.84 mW/g calculated 1g-SAR; 3.75 % from target (including drift)

7.67 mW/g calculated 10g-SAR; 3.22 % from target (including drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03)

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $\sigma = 1.06$ mho/m, $\epsilon_r = 52.7$; $\rho = 1000$ 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 = 56.5 V/m; Power Drift = -0.051 dB**SAR(1 g) = 2.87 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 = 56.5 V/m; Power Drift = -0.051 dB**SAR(1 g) = 2.88 mW/g; SAR(10 g) = 1.86 mW/g**

Motorola GEMS EME Lab**SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 9/6/05**

Run #: ErC-SYSP-900B-050906-01

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

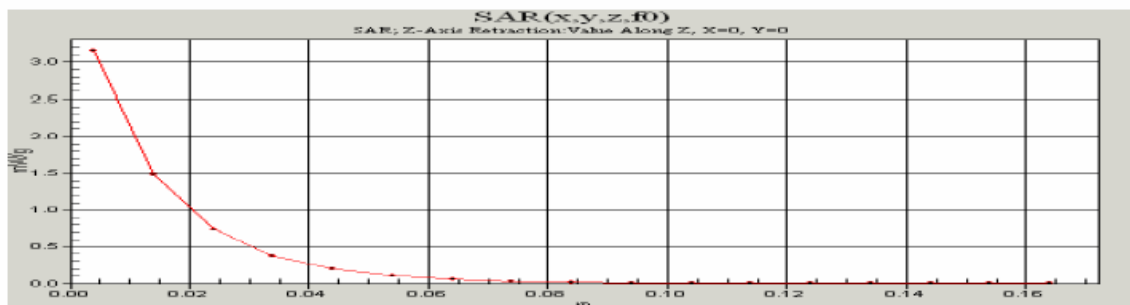
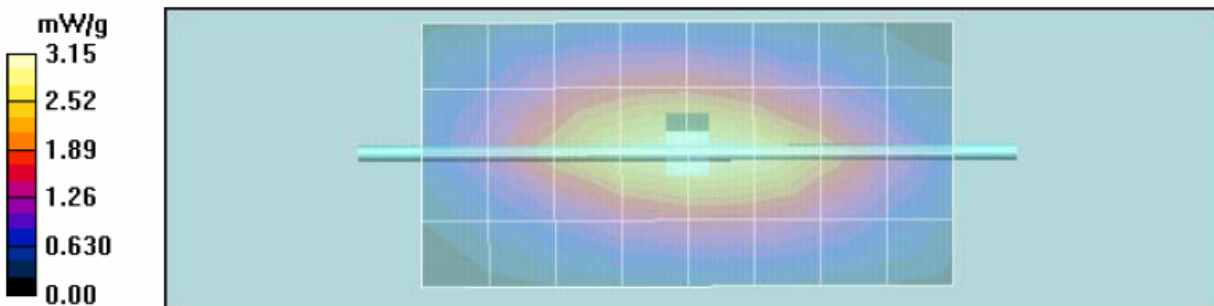
11.72 mW/g calculated 1g-SAR; 2.74 % from target (including drift)

7.57 mW/g calculated 10g-SAR; 1.86 % from target (including drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03),

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $\sigma = 1.05$ mho/m, $\epsilon_r = 52.7$; $\rho = 1000$ 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 = 57.7 V/m; Power Drift = -0.016 dB**SAR(1 g) = 2.93 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 = 57.7 V/m; Power Drift = -0.016 dB**SAR(1 g) = 2.91 mW/g; SAR(10 g) = 1.88 mW/g**

Motorola GEMS EME Lab**SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 9/7/05**

Run #: ErC-SYSP-900H-050907-01

Sim.Tissue Temp: 21.0 (C)

TX Freq: 900(MHz)

Start power: 250 (mW)

Target:

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

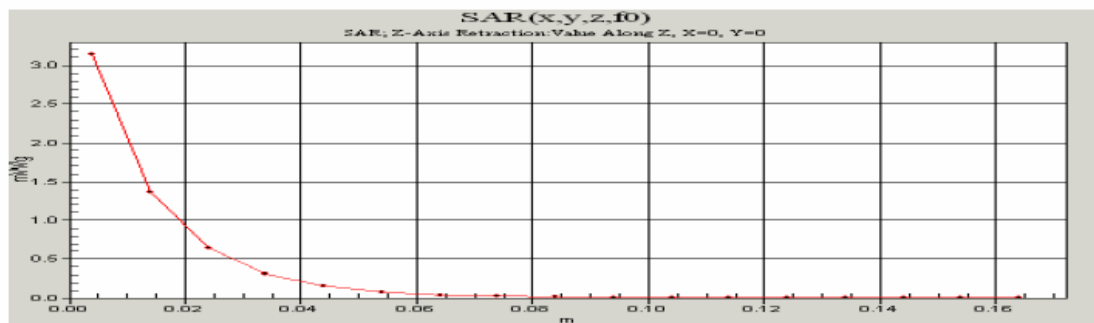
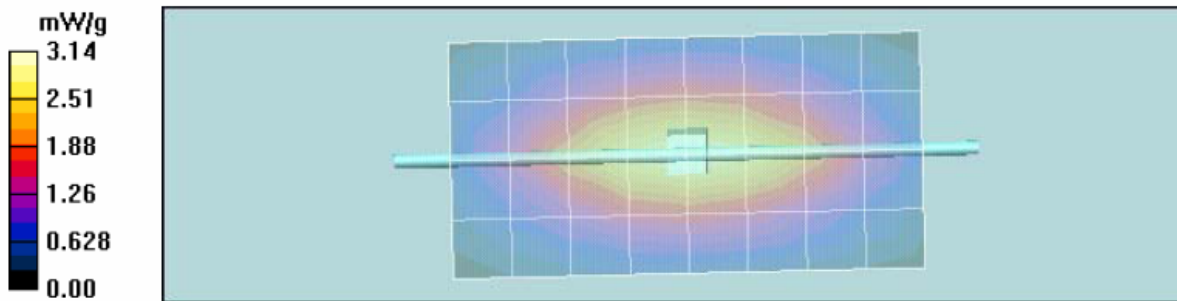
11.50 mW/g calculated 1g-SAR; 2.11 % from target (including drift)

7.293 mW/g calculated 10g-SAR; 1.15 % from target (including drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.35, 6.35, 6.35),

Duty Cycle: 1:1, Medium: 900 MHz IEEE Head, Medium parameters used: $\sigma = 1.01$ mho/m, $\epsilon_r = 40.9$; $\rho = 1000$ 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 = 57.9 V/m; Power Drift = 0.0162 dB**SAR(1 g) = 2.89 mW/g; SAR(10 g) = 1.83 mW/g****System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm, Reference Value = 57.9 V/m; Power Drift = 0.0162 dB**SAR(1 g) = 2.88 mW/g; SAR(10 g) = 1.83 mW/g**

Motorola GEMS EME Lab**SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 9/13/05**

Run #: ErC-SYSP-900B-050913-01

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

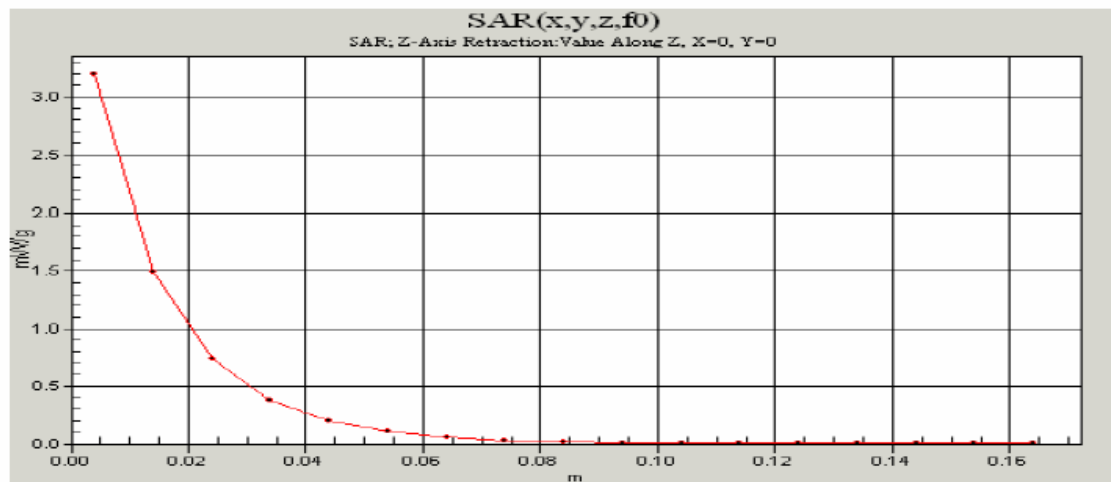
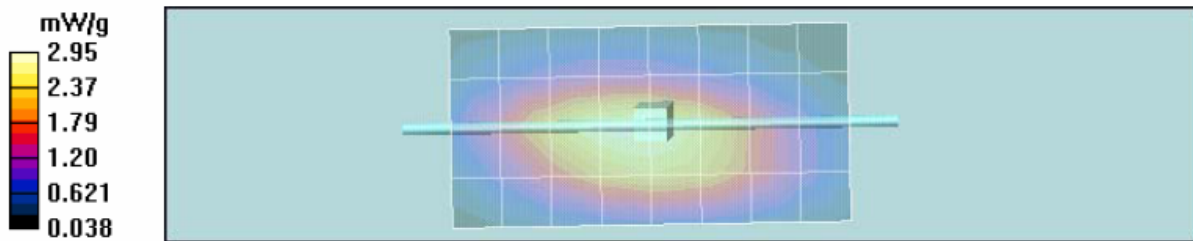
11.49 mW/g calculated 1g-SAR; 0.71 % from target (including drift)

7.43 mW/g calculated 10g-SAR; 0.04 % from target (including drift)

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03),

Duty Cycle: 1:1, Medium: 900 MHz FCC Body, Medium parameters used: $\sigma = 1.06$ 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 = 55.0 V/m; Power Drift = 0.108 dB**SAR(1 g) = 2.96 mW/g; SAR(10 g) = 1.91 mW/g****System Performance Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm, Reference Value = 55.0 V/m; Power Drift = 0.108 dB**SAR(1 g) = 2.93 mW/g; SAR(10 g) = 1.9 mW/g**

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: 

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

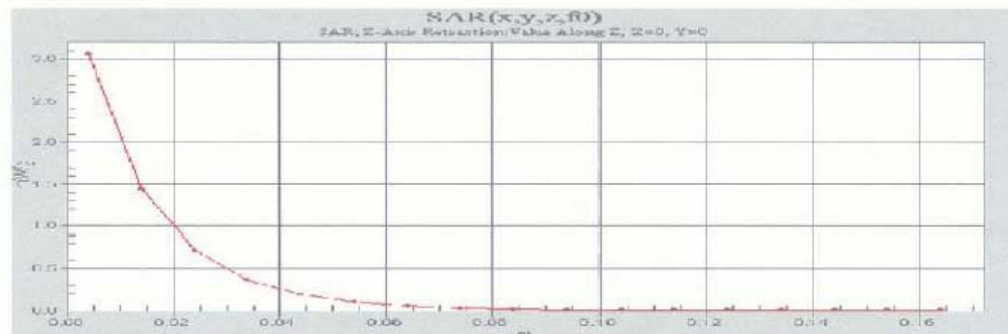
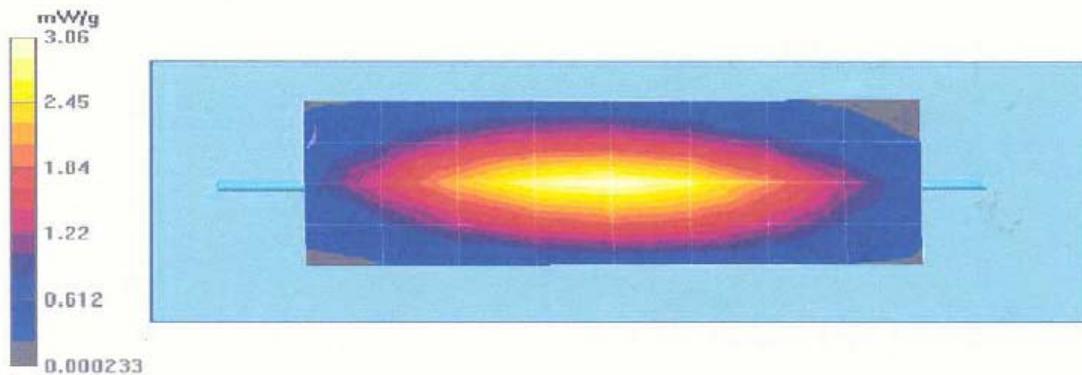
Maximum value of SAR (measured) = 3.14 mW/g

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



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: 

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

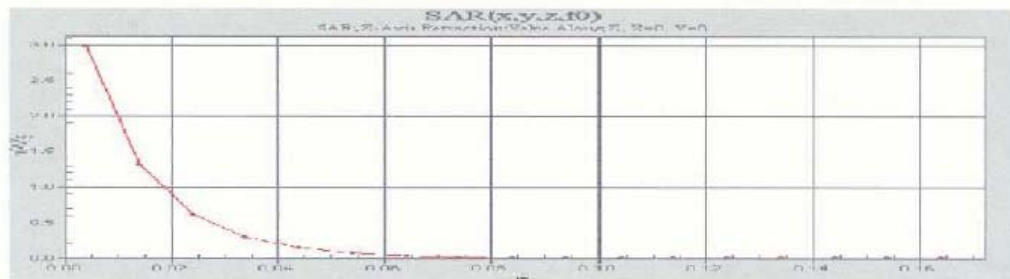
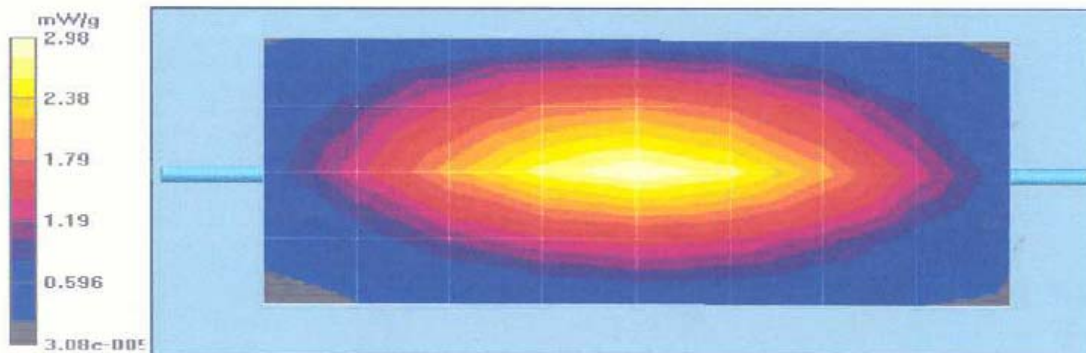
SAR(1 g) = 2.81 mW/g; SAR(10 g) = 1.8 mW/g

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

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

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

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



Appendix E

DUT Scans (Shortened scans & Highest SAR configurations)

Shortened Scan Results

FCC ID: AZ489FT5852; Test Date: 9/13/05

Motorola GEMS EME Laboratory

Run #: CM-Ab-050913-05

Sim. Tissue Temp: 21.6 (C)

Model #: RLN6081A SN: 0002

Antenna: 8505241U06 TX Freq: 927.475 MHz

Battery: SNN5706B Start power: 1.02 W

Carry acc.: RLN5713A Audio/Data acc.: NNTN5491A

Shortened scan reflect highest S.A.R. producing configuration; Run time 7 minutes.

Representative “normal” scan run time was 24 minutes

“Shortened” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.17mW/g; 10-g Avg. = 0.85mW/g

“Normal” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.10mW/g; 10-g Avg. = 0.79mW/g

(see part 1 of 2 section 9.0 run # ErC-Ab-050913-02)

Comments:

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03)

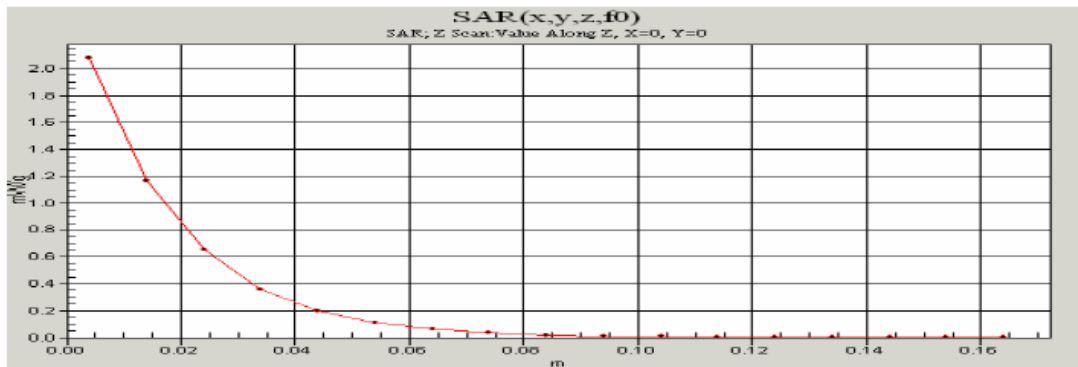
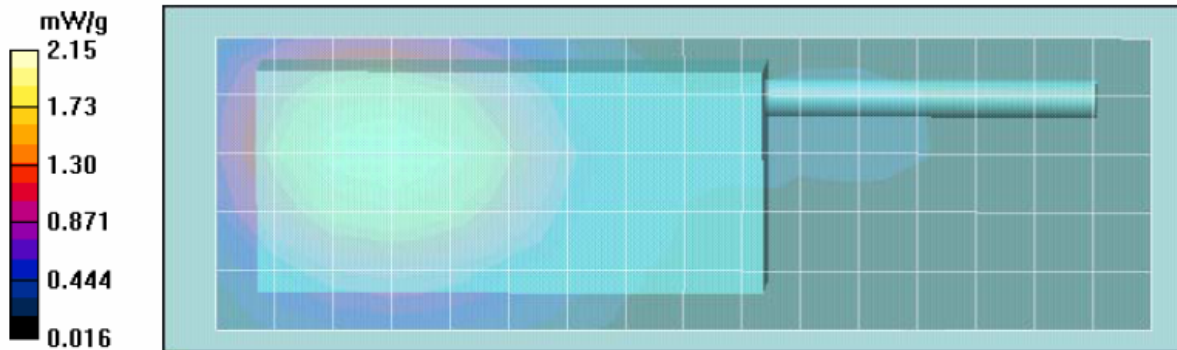
Duty Cycle: 1:1.05, Medium: 915 MHz FCC Body, Medium parameters used: $\sigma = 1.08$ mho/m, $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

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

Body template/5x5x7 Zoom Scan (5x5x5)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=7.5mm

Reference Value = 44.7 V/m; Power Drift = -0.586 dB

SAR(1 g) = 2.05 mW/g; SAR(10 g) = 1.48 mW/g



FCC ID: AZ489FT5852; Test Date: 9/13/05

Motorola GEMS EME Laboratory

Run #: ErC-Ab-050913-02

Sim. Tissue Temp: 21.6 (C)

Model #: RLN6081A SN: 0002

Antenna: 8505241U06 TX Freq: 927.475 MHz

Battery: SNN5706B Start power: 1.05 W

Carry acc.: RLN5713A Audio/Data acc.: NNTN5491A

DUT with carry accessory against the phantom:

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.03, 6.03, 6.03)

Duty Cycle: 1:1.05, Medium: 915 MHz FCC Body, Medium parameters used: $\sigma = 1.08$ mho/m, $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

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

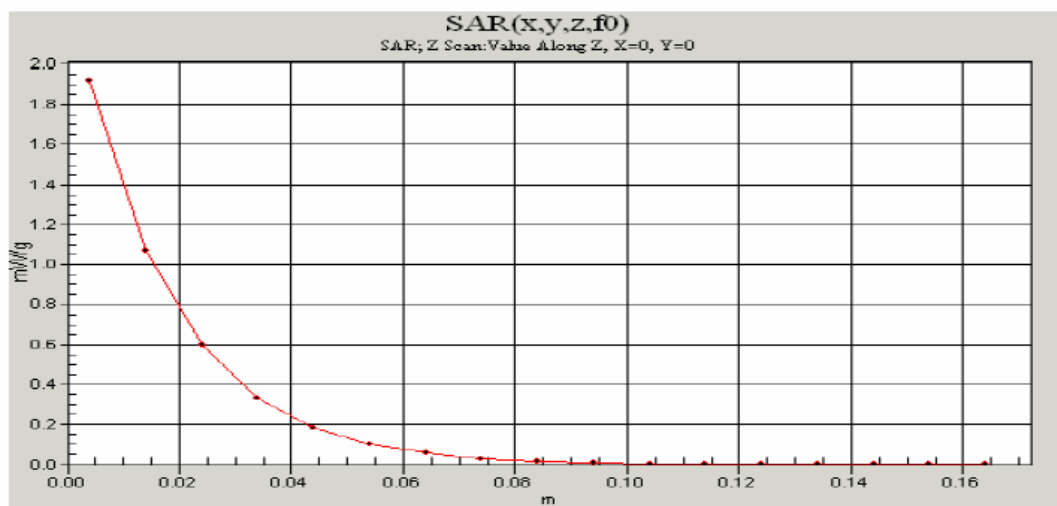
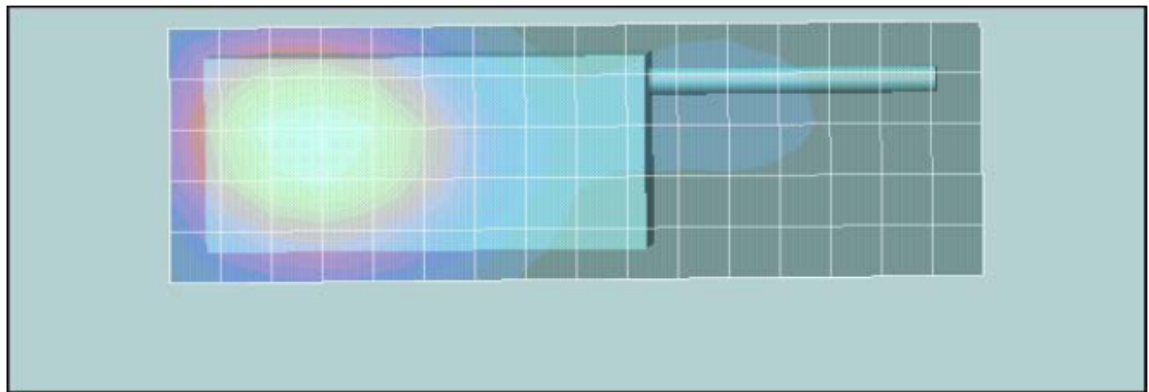
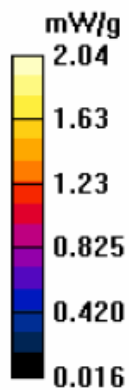
Full Scan/Area Scan (6x17x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.04 mW/g

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

Reference Value = 41.3 V/m; Power Drift = -0.728 dB

SAR(1 g) = 1.86 mW/g; SAR(10 g) = 1.34 mW/g



FCC ID: AZ489FT5852; Test Date: 9/06/05

Motorola GEMS EME Laboratory

Run #: CM-Face-050906-11

Sim. Tissue Temp: 21.3 (C)

Model #: RLN6081A SN: 0003

Antenna: 8505241U06 TX Freq: 927.475 MHz

Battery: NNTN4655B Start power: 1.01 W

Carry acc.: NONE Audio/Data acc.: NNTN5491A

DUT front separated 2.5cm from phantom

Probe: ET3DV6 - SN1383, Calibrated: 2/24/2005, ConvF(6.35, 6.35, 6.35)

Duty Cycle: 1:1.05, Medium: 915 IEEE Head, Medium parameters used: $\sigma = 1.02$ mho/m, $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

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

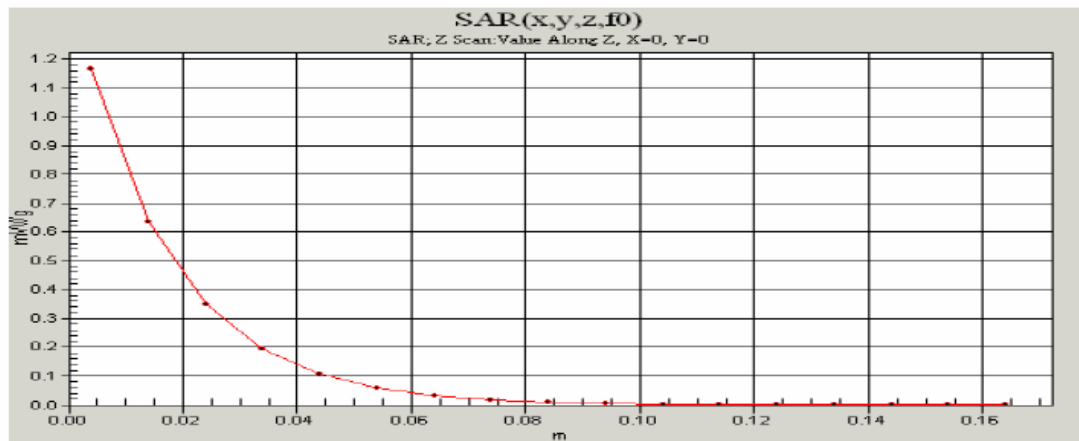
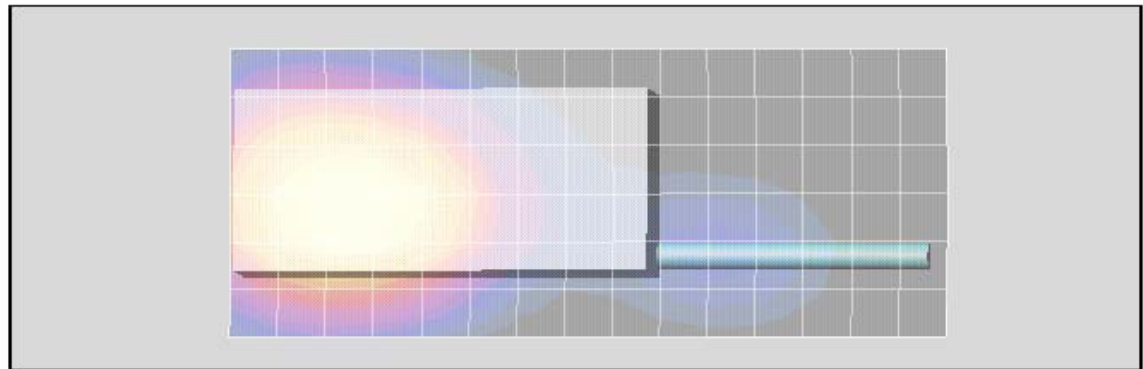
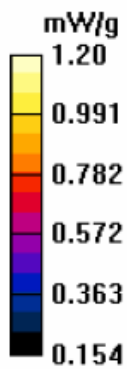
Face template/7x7x7 Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 34.5 V/m; Power Drift = -0.720 dB

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.819 mW/g

Face template/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 34.5 V/m; Power Drift = -0.720 dB



APPENDIX F

DUT Supplementary Data (Power slump)

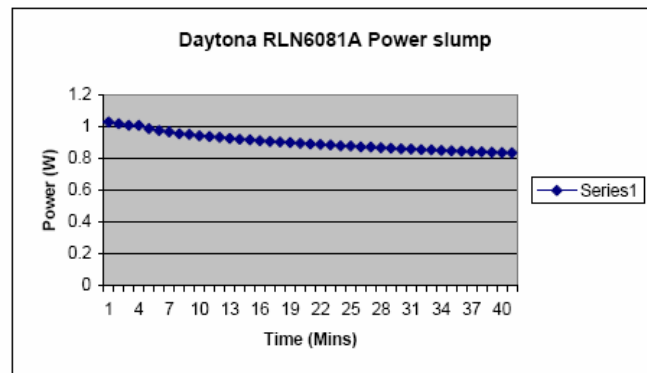
Date 09/08/2005 Daytona
RLN6081A

Bat # SNN5706B Ser # 0003

927.475 MHz

Power

9:30:00 AM	1.03
9:31:00 AM	1.02
9:32:00 AM	1.01
9:33:00 AM	1.01
9:34:00 AM	0.99
9:35:00 AM	0.978
9:36:00 AM	0.968
9:37:00 AM	0.957
9:38:00 AM	0.953
9:39:00 AM	0.945
9:40:00 AM	0.940
9:41:00 AM	0.934
9:42:00 AM	0.928
9:43:00 AM	0.923
9:44:00 AM	0.919
9:45:00 AM	0.914
9:46:00 AM	0.909
9:47:00 AM	0.905
9:48:00 AM	0.901
9:49:00 AM	0.896
9:50:00 AM	0.893
9:51:00 AM	0.889
9:52:00 AM	0.886
9:53:00 AM	0.882
9:54:00 AM	0.879
9:55:00 AM	0.875
9:56:00 AM	0.872
9:57:00 AM	0.869
9:58:00 AM	0.865
9:59:00 AM	0.863
10:00:00 AM	0.860
10:01:00 AM	0.857
10:02:00 AM	0.855
10:03:00 AM	0.852
10:04:00 AM	0.850
10:05:00 AM	0.847
10:06:00 AM	0.845
10:07:00 AM	0.843
10:08:00 AM	0.840
10:09:00 AM	0.838
10:10:00 AM	0.836



Appendix G

DUT Test Position Photos

Figure 1: Highest S.A.R. Test Position (Body)
DUT with body worn accessory model RLN5713A and attached data accessory model NNTN5491A
(Same position used for all other attached accessories at the body)



Figure 2: Body assessment
DUT back housing separated 2.5cm from phantom with attached data accessory model NNTN5491A

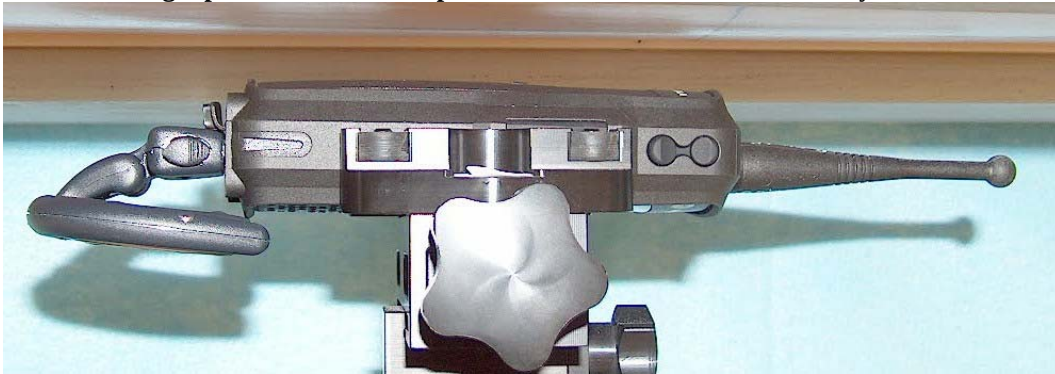


Figure 3: Body assessment
DUT with front housing separated 2.5cm from the phantom with attached data accessory model NNTN5491A

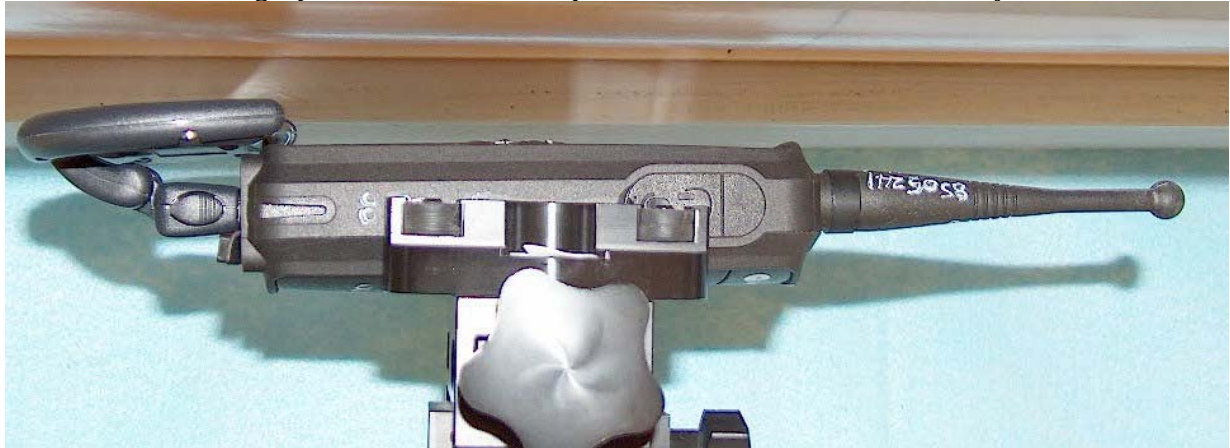


Figure 4: Face assessment**DUT with front housing separated 2.5cm from the phantom with attached data accessory model NNTN5491A**

Appendix H

DUT and Accessory Photos

The purpose of this appendix is to illustrate the body-worn carry accessory for FCC ID: AZ489FT5852. The sample that was used in the following photos represents the product used to obtain the results presented herein and was used in this section to demonstrate the body-worn accessory.

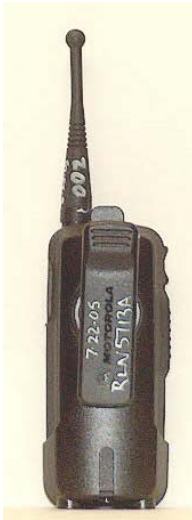


Photo 1.
Model RLN5713A
Back View



Photo 2.
Model RLN5713A
Front View



Photo 3.
Model RLN5713A
Side View

Appendix I

DUT Body-worn Separation Distances

The following table summarizes the test status and separation distance provided by each of the applicable body-worn accessories:

Carry Case Model(s)	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
RLN5713A	Yes	40-54	NA

Audio Acc. Model(s)	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
HMN9026C	Yes	NA	NA
NTN9159E	Yes	NA	NA
HMN9025C	Yes	NA	NA
HCSN4000C	Yes	NA	NA
NTN9159E	Yes	NA	NA
HCSN4001B	No	NA	By Similarity to NTN9159E
HMN9039D	No	NA	By Similarity to NTN9159E
RLN5714A	No	NA	By Similarity to HCSN4000C

Other Attachments Model(s)	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN5491A	Yes	NA	NA