

Schmid &amp; Partner Engineering AG

**s p e a g**

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info@speag.com, http://www.speag.com

## Additional Conversion Factors for Dosimetric E-Field Probe

Type:

**ET3DV6**

Serial Number:

**1604**

Place of Assessment:

**Zurich**

Date of Assessment:

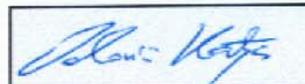
**May 4, 2006**

Probe Calibration Date:

**May 2, 2006**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1810 MHz.

Assessed by:



ET3DV6-SN:1604

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May 4, 2006

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## Dosimetric E-Field Probe ET3DV6 SN:1604

Conversion factor ( $\pm$  standard deviation)

**f = 300 MHz**      ConvF      **8.05  $\pm$  9%**

$\epsilon_r = 45.3 \pm 5\%$   
 $\sigma = 0.87 \pm 5\%$  mho/m  
 (head tissue)

**f = 300 MHz**      ConvF      **8.07  $\pm$  9%**

$\epsilon_r = 58.2 \pm 5\%$   
 $\sigma = 0.92 \pm 5\%$  mho/m  
 (body tissue)

### Important Note:

**For numerically assessed probe conversion factors, parameters Alpha and Delta in the DASY software must have the following entries: Alpha = 0 and Delta = 1.**

**Please see also Section 4.7 of the DASY4 Manual.**

# APPENDIX C – DIPOLE CALIBRATION CERTIFICATES

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



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

Accredited by the Swiss Federal Office of Metrology and Accreditation  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client

**BACL**

Certificate No: **D900V2-122\_Jun06**

## CALIBRATION CERTIFICATE

Object

**D900V2 - SN: 122**

Calibration procedure(s)

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

Calibration date:

**June 16, 2006**

Condition of the calibrated item

**In Tolerance**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter 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 (HF)	SN 1507	28-Oct-05 (SPEAG, No. ET3-1507_Oct05)	Oct-06
DAE4	SN 601	15-Dec-05 (SPEAG, No. DAE4-601_Dec05)	Dec-06
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
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

	Name	Function	Signature
Calibrated by:	<b>Claudio Leubler</b>	Laboratory Technician	
Approved by:	<b>Katja Pokovic</b>	Technical Manager	

Issued: June 19, 2006

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

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



**S** Schweizerischer Kalibrierdienst  
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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:**

- a) 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
- b) 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
- c) 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:**

- d) 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.

<b>DASY Version</b>	DASY4	V4.7
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Modular Flat Phantom V5.0	
<b>Distance Dipole Center - TSL</b>	15 mm	with Spacer
<b>Area Scan resolution</b>	dx, dy = 15 mm	
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	900 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Head TSL parameters</b>	22.0 °C	41.5	0.97 mho/m
<b>Measured Head TSL parameters</b>	(22.0 $\pm$ 0.2) °C	41.1 $\pm$ 6 %	0.96 mho/m $\pm$ 6 %
<b>Head TSL temperature during test</b>	(22.0 $\pm$ 0.2) °C	---	---

**SAR result with Head TSL**

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	2.73 mW / g
SAR normalized	normalized to 1W	10.9 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>10.9 mW / g <math>\pm</math> 17.0 % (k=2)</b>

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	condition	
SAR measured	250 mW input power	1.75mW / g
SAR normalized	normalized to 1W	7.00 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>6.99 mW / g <math>\pm</math> 16.5 % (k=2)</b>

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

**Appendix****Antenna Parameters with Head TSL**

Impedance, transformed to feed point	50.2 $\Omega$ - 6.4 j $\Omega$
Return Loss	- 24.0 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.412 ns
----------------------------------	----------

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.  
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	July 04, 2001

**DASY4 Validation Report for Head TSL**

Date/Time: 16.06.2006 11:35:14

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:122**

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

Medium: HSL 900 MHz;

Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.961$  mho/m;  $\epsilon_r = 41.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 5.0 (back); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 171

**Pin = 250 mW; d = 10 mm/Area Scan (71x81x1):** Measurement grid: dx=15mm, dy=15mm  
 Maximum value of SAR (interpolated) = 2.94 mW/g

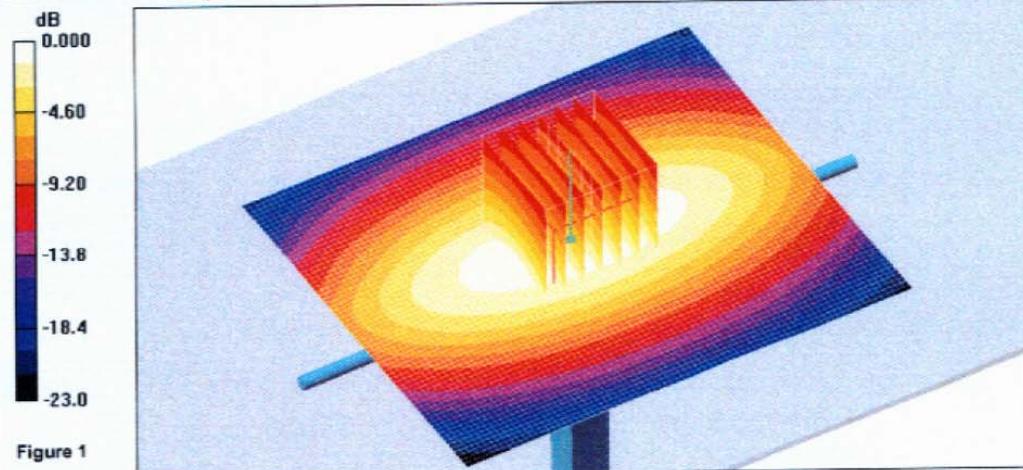
**Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
 dz=5mm

Reference Value = 57.7 V/m; Power Drift = -0.103 dB

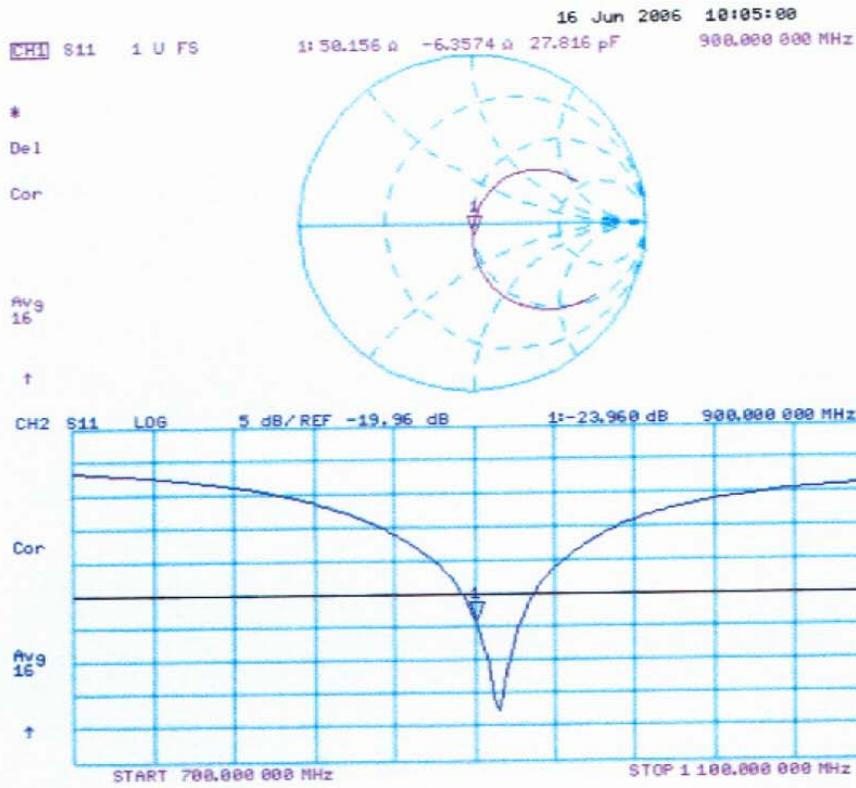
Peak SAR (extrapolated) = 4.12 W/kg

**SAR(1 g) = 2.73 mW/g; SAR(10 g) = 1.75 mW/g**

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



### Impedance Measurement Plot for Head TSL



## APPENDIX D - TEST SYSTEM VERIFICATIONS SCANS

### Liquid Measurement Result

2006-07-03

Simulation	Freq [MHz]	Parameters	Liquid Temp [°C]	Target Value	Measured Value	Deviation	Limits [%]
Body	835	$\epsilon_r$	22.0	55.2	54.9	-0.54	±5
		$\sigma$	22.0	0.97	0.96	-1.03	±5
		1g SAR	22.0	8.872	8.91	0.42	±10
Head	835	$\epsilon_r$	22.0	41.5	41.6	0.24	±5
		$\sigma$	22.0	0.90	0.881	-2.11	±5
		1g SAR	22.0	9.50	9.45	-0.53	±10

$\epsilon_r$  = relative permittivity,  $\sigma$  = conductivity and  $\rho=1000\text{kg/m}^3$

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****System Validation Check D835 Body****DUT: Dipole 835 MHz; Type: D900V2; Serial: D900V2 - SN:122**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.27, 6.27, 6.27); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**d=15mm, Pin=1W 2/Area Scan (61x121x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.4 mW/g

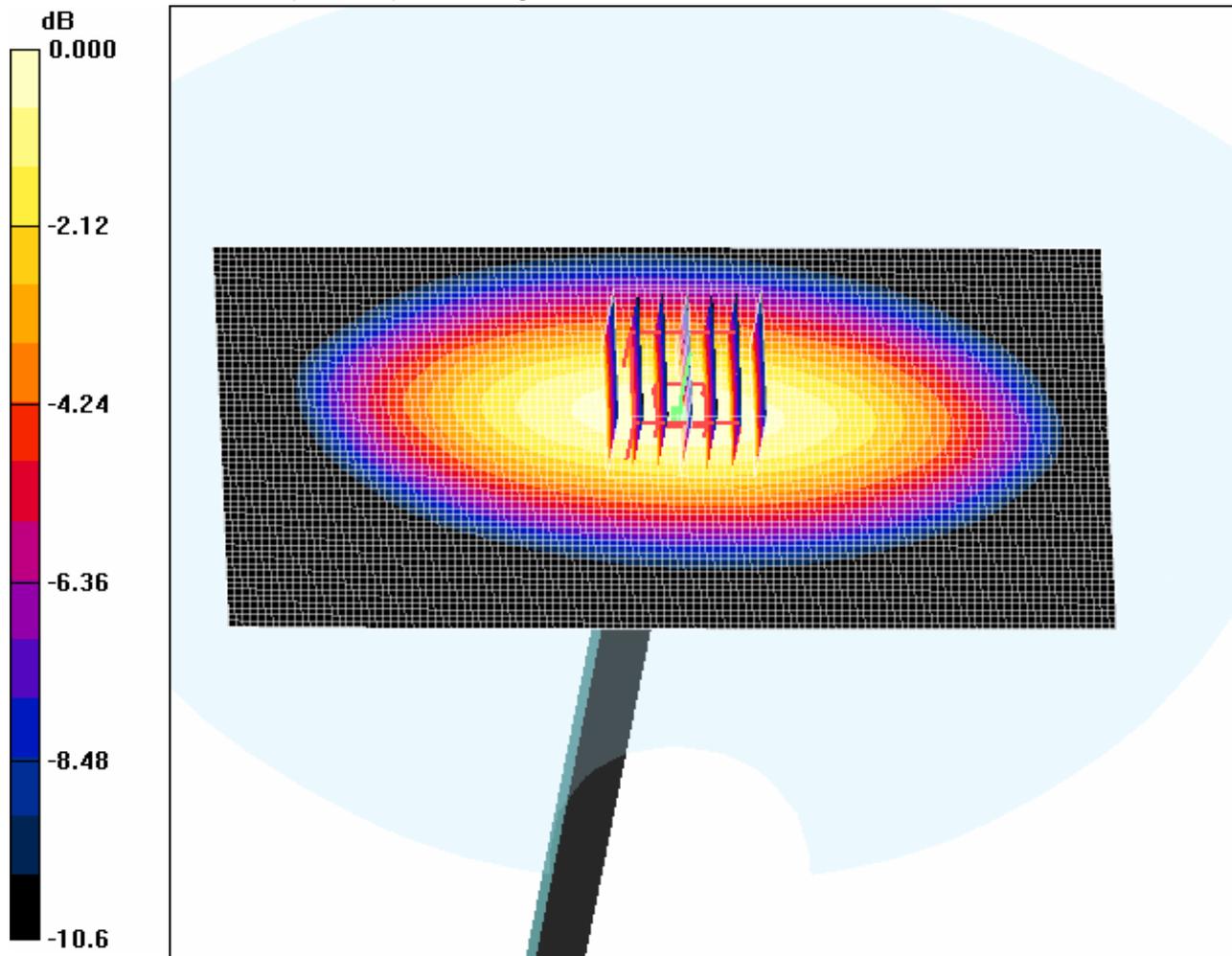
**d=15mm, Pin=1W 2/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 112.5 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 15.0 W/kg

**SAR(1 g) = 8.91 mW/g; SAR(10 g) = 5.68 mW/g**

Maximum value of SAR (measured) = 9.8 mW/g



0 dB = 9.8mW/g

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****System Validation Check D835 Head****DUT: Dipole 835 MHz; Type: D900V2; Serial: D900V2 - SN:122**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**d=15mm, Pin=1W 2/Area Scan (61x121x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 10.4 mW/g

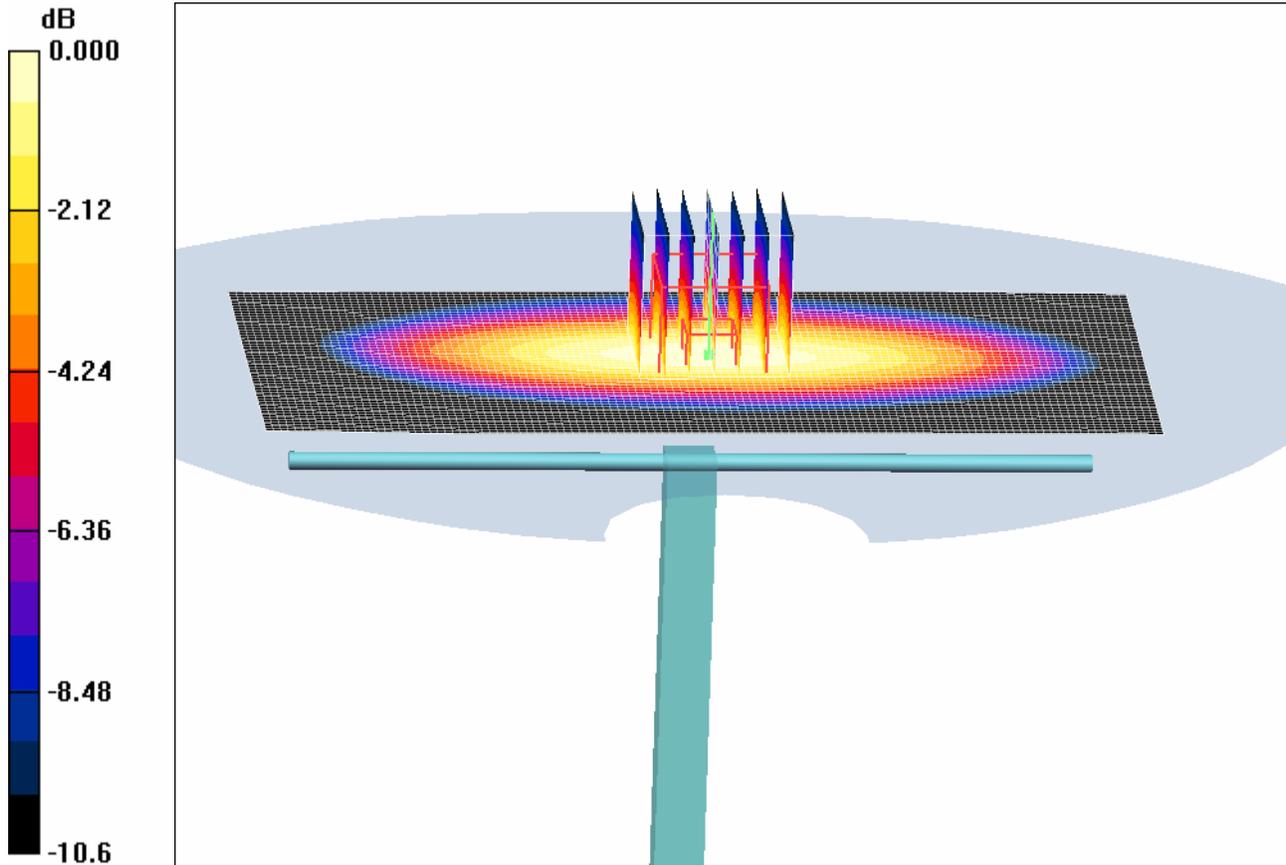
**d=15mm, Pin=1W 2/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 112.5 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 15.0 W/kg

**SAR(1 g) = 9.45 mW/g; SAR(10 g) = 6.48 mW/g**

Maximum value of SAR (measured) = 10.8 mW/g



0 dB = 10.8mW/g

## APPENDIX E - EUT SCANS

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)**

**1.5 cm separation to flat phantom with earphone**

**DUT: ZTE; Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.27, 6.27, 6.27); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**1.5cm separation to flat phantom with headset/Area Scan (101x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.381 mW/g

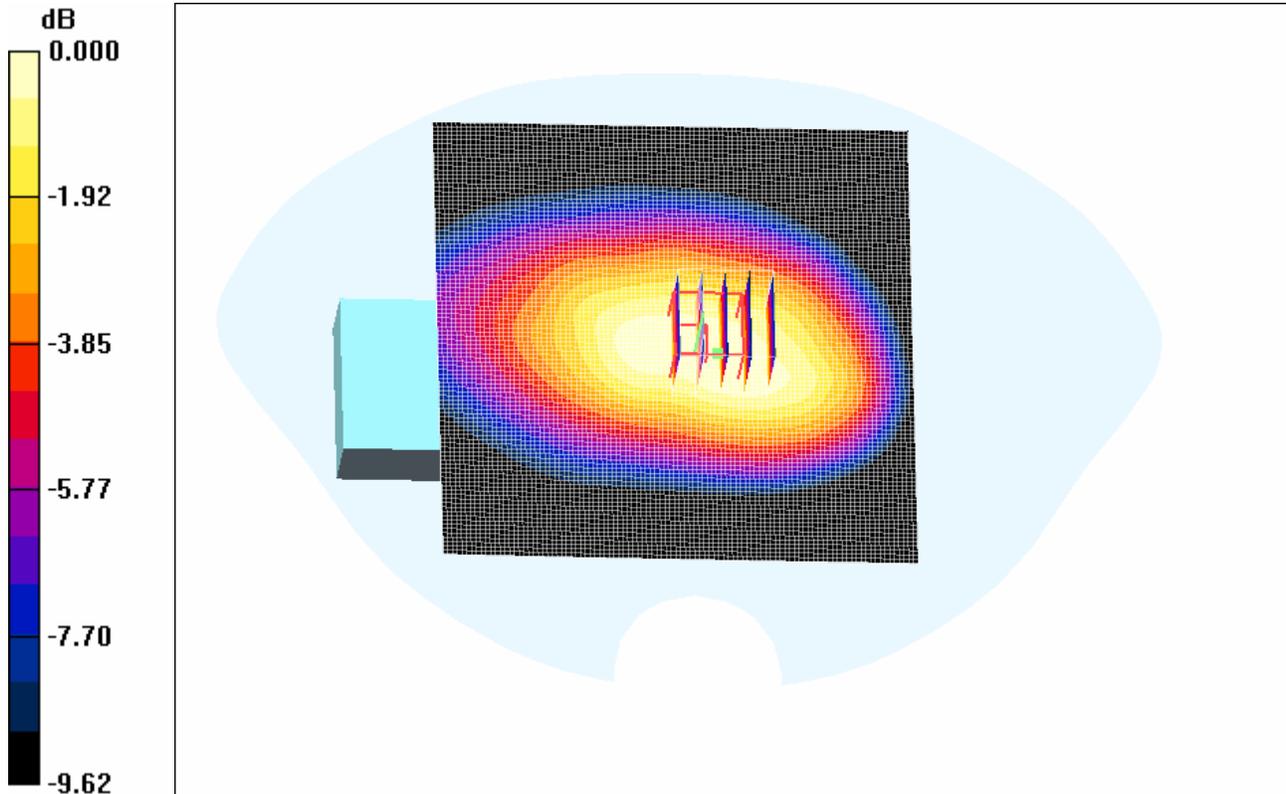
**1.5cm se with headset/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.4 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.472 W/kg

**SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.242 mW/g**

Maximum value of SAR (measured) = 0.371 mW/g



0 dB = 0.371mW/g

**Plot #1**

## Low Channel

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)**

**Left Head Tilt**

**DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 824.7$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/g

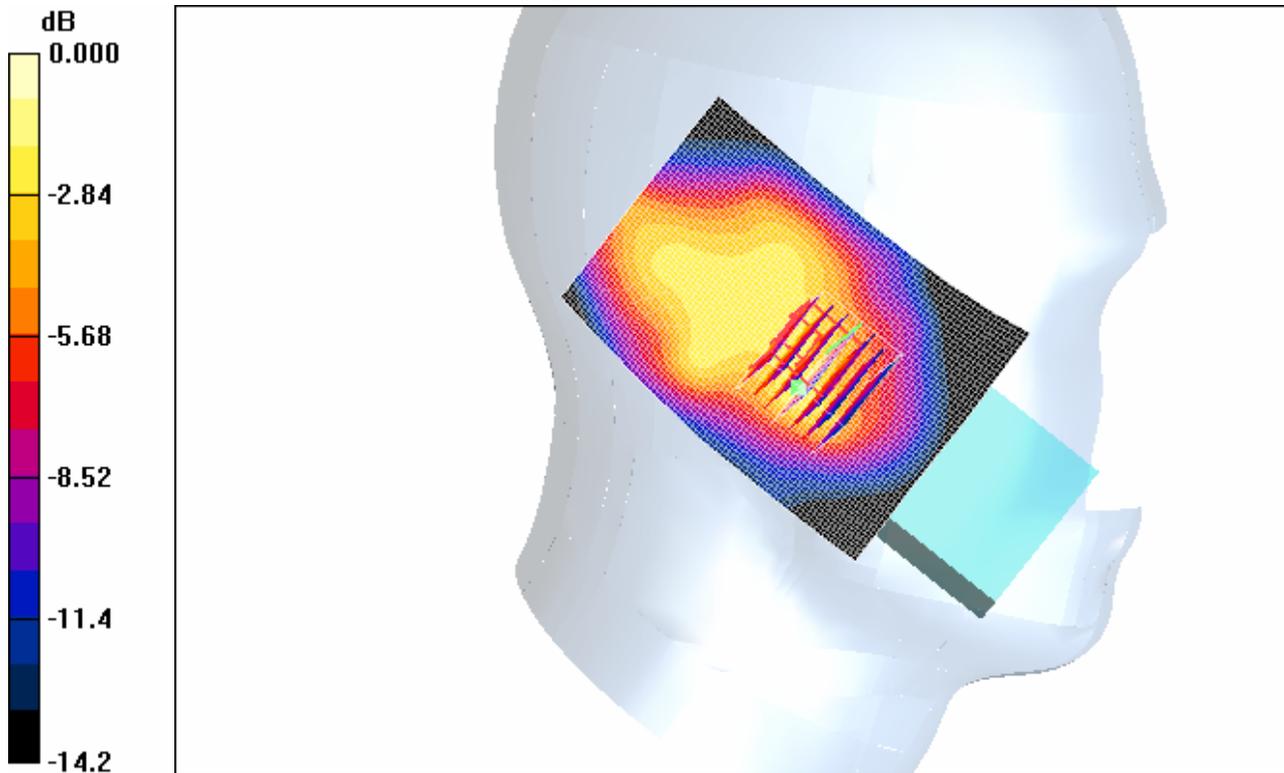
**Left Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.8 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.987 W/kg

**SAR(1 g) = 0.991 mW/g; SAR(10 g) = 0.626 mW/g**

Maximum value of SAR (measured) = 1.05 mW/g



0 dB = 1.05mW/g

**Plot #2**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Left Head Touch****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 824.7$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.09W/g

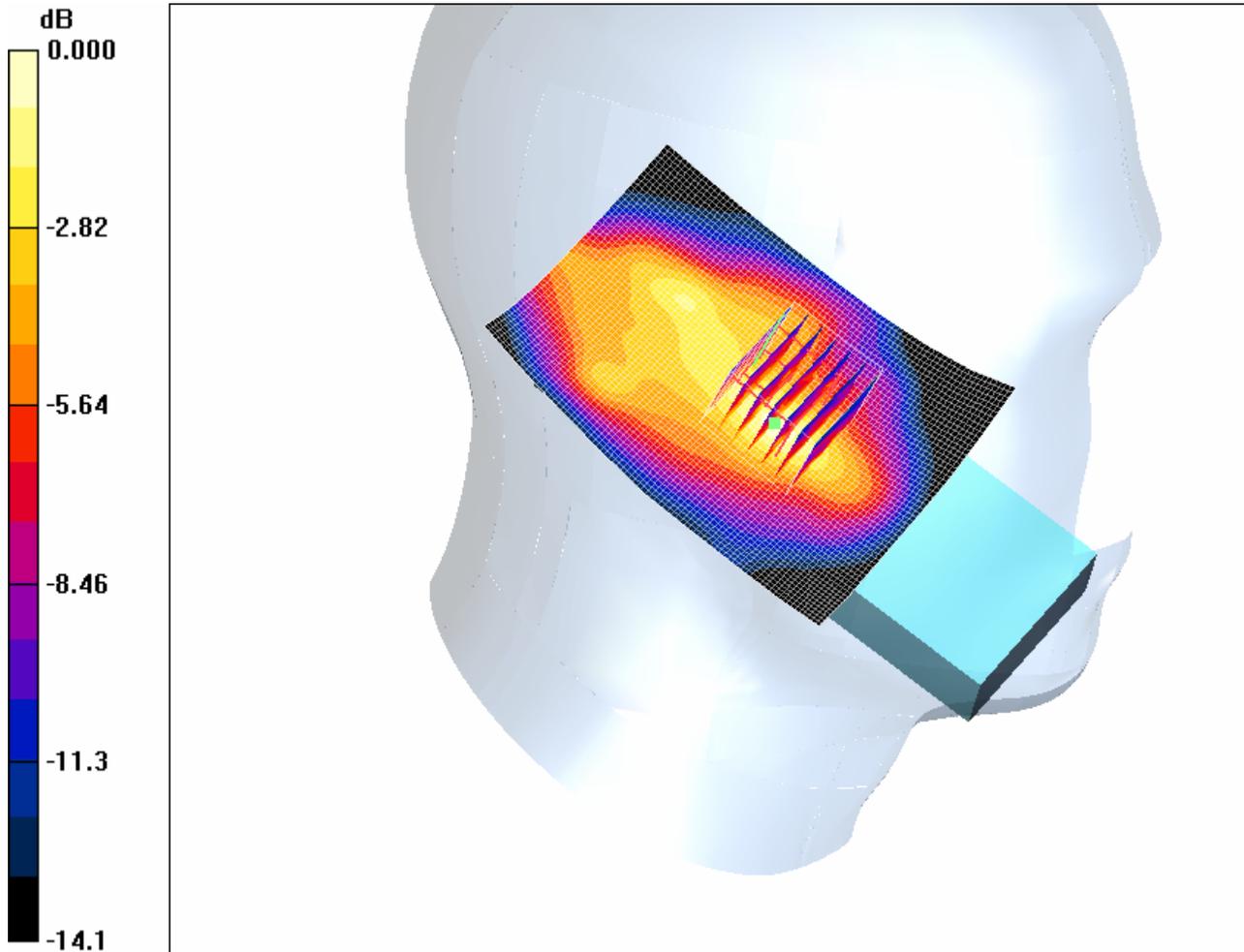
**Left Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.4 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.834 mW/g**

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



0 dB = 1.17mW/g

**Plot #3**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Tilt****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 824.7$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

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

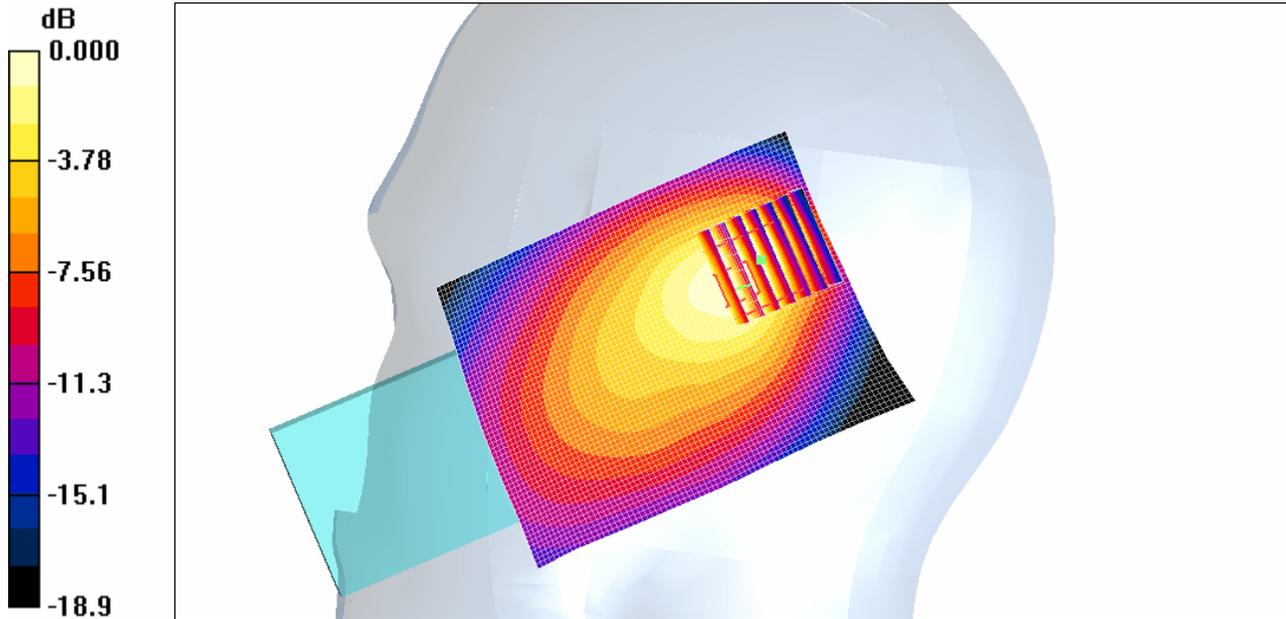
**Right Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.2 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.43 W/kg

**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.763 mW/g**

Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

**Plot #4**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Touch****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 824.7$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

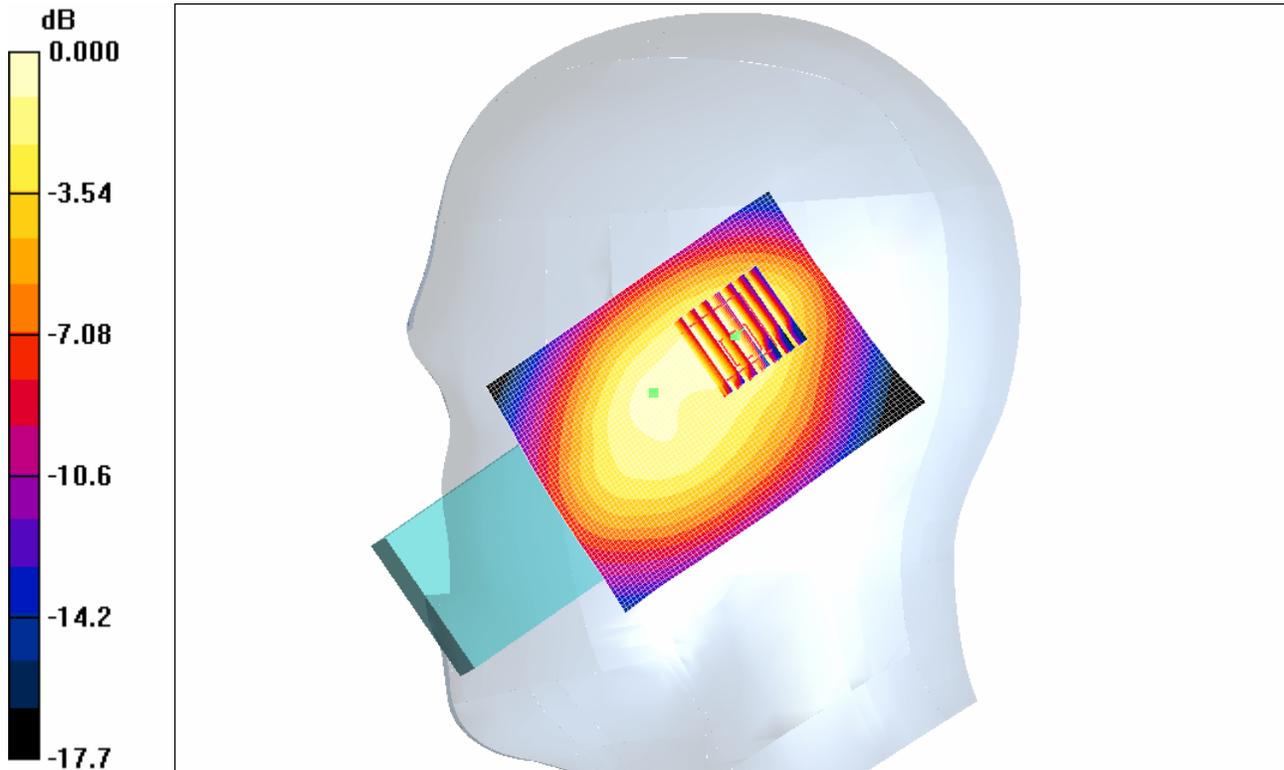
**Right Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.2 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 2.33 W/kg

**SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.624 mW/g**

Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

**Plot #5**

*Middle Channel***Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Left Head Tilt****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.97mW/g

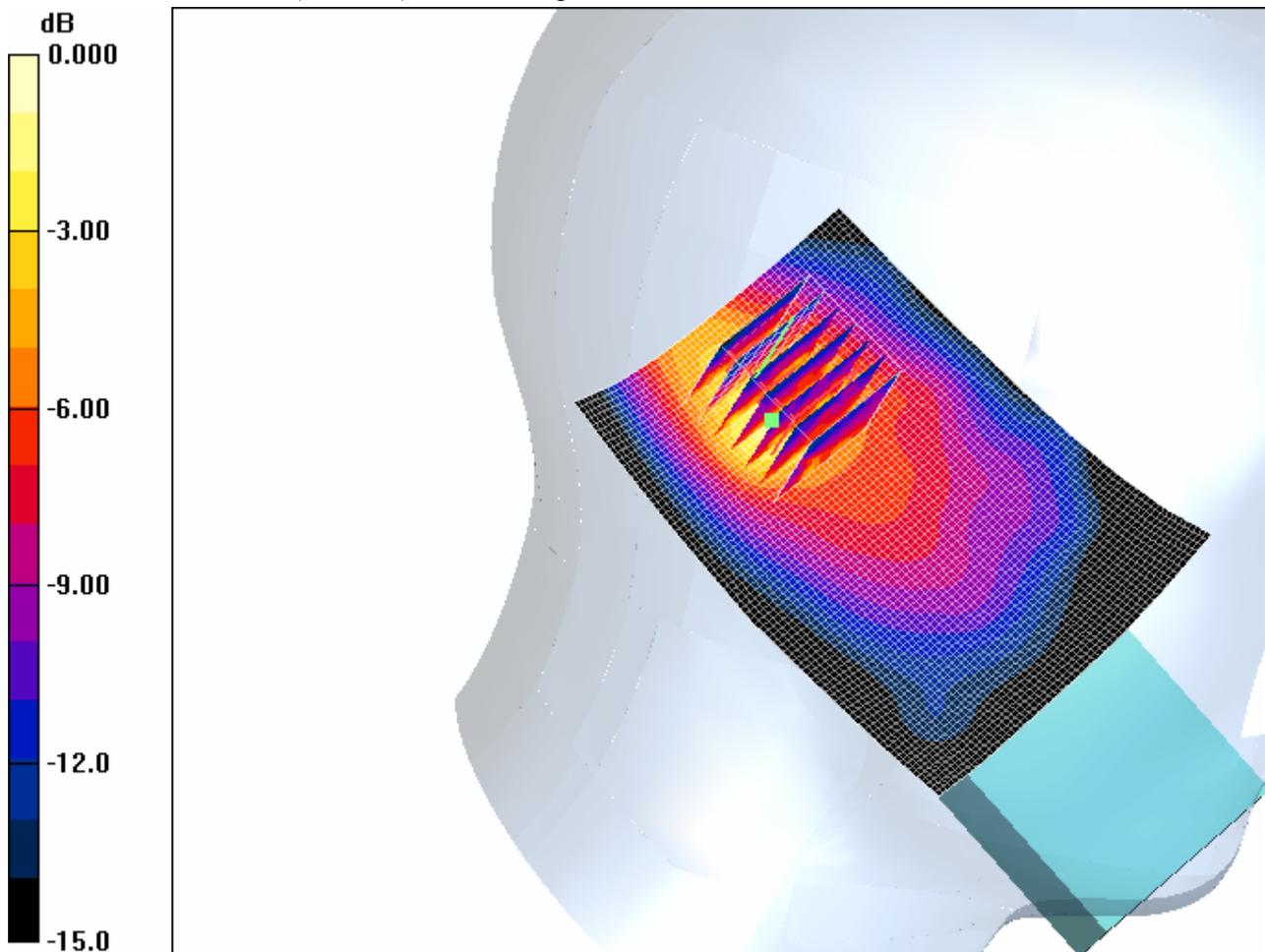
**Left Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.5 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.16 W/kg

**SAR(1 g) = 0.984 mW/g; SAR(10 g) = 0.715 mW/g**

Maximum value of SAR (measured) = 0.993 mW/g



0 dB = 0.993mW/g

**Plot #6**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Left Head Touch****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

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

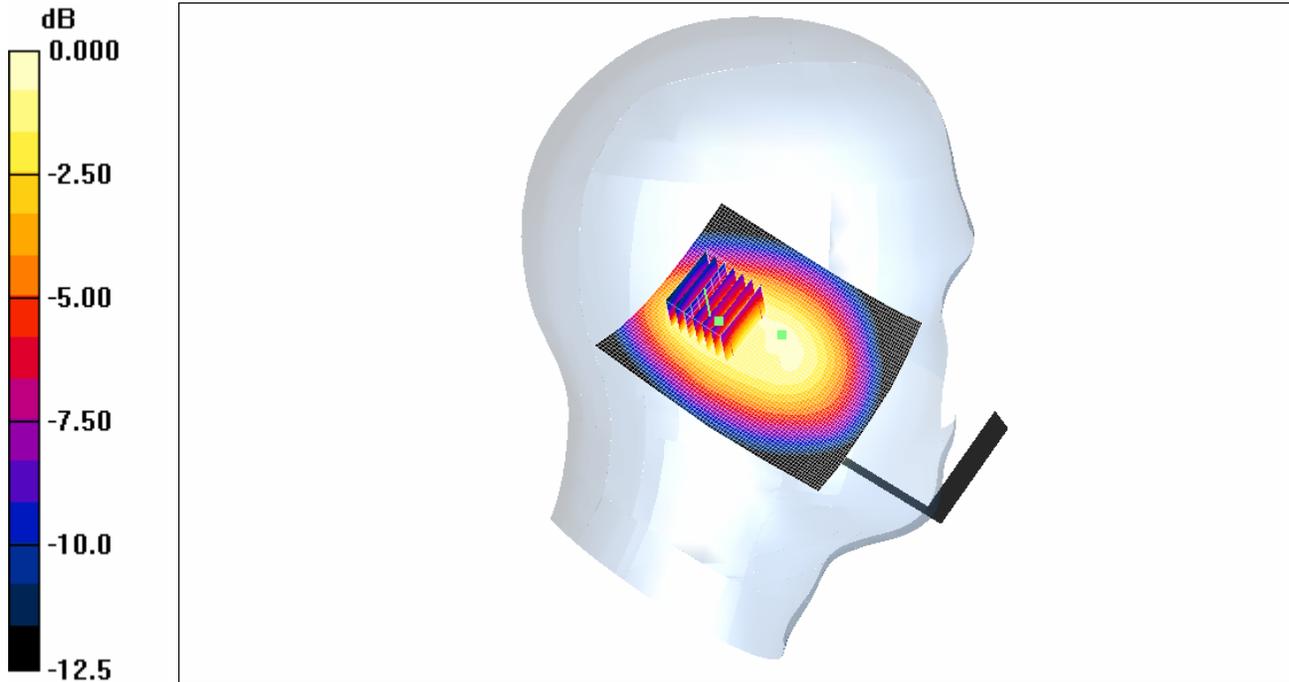
**Left Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.6 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 1.82 W/kg

**SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.729 mW/g**

Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

**Plot #7**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Tilt****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.28 mW/g

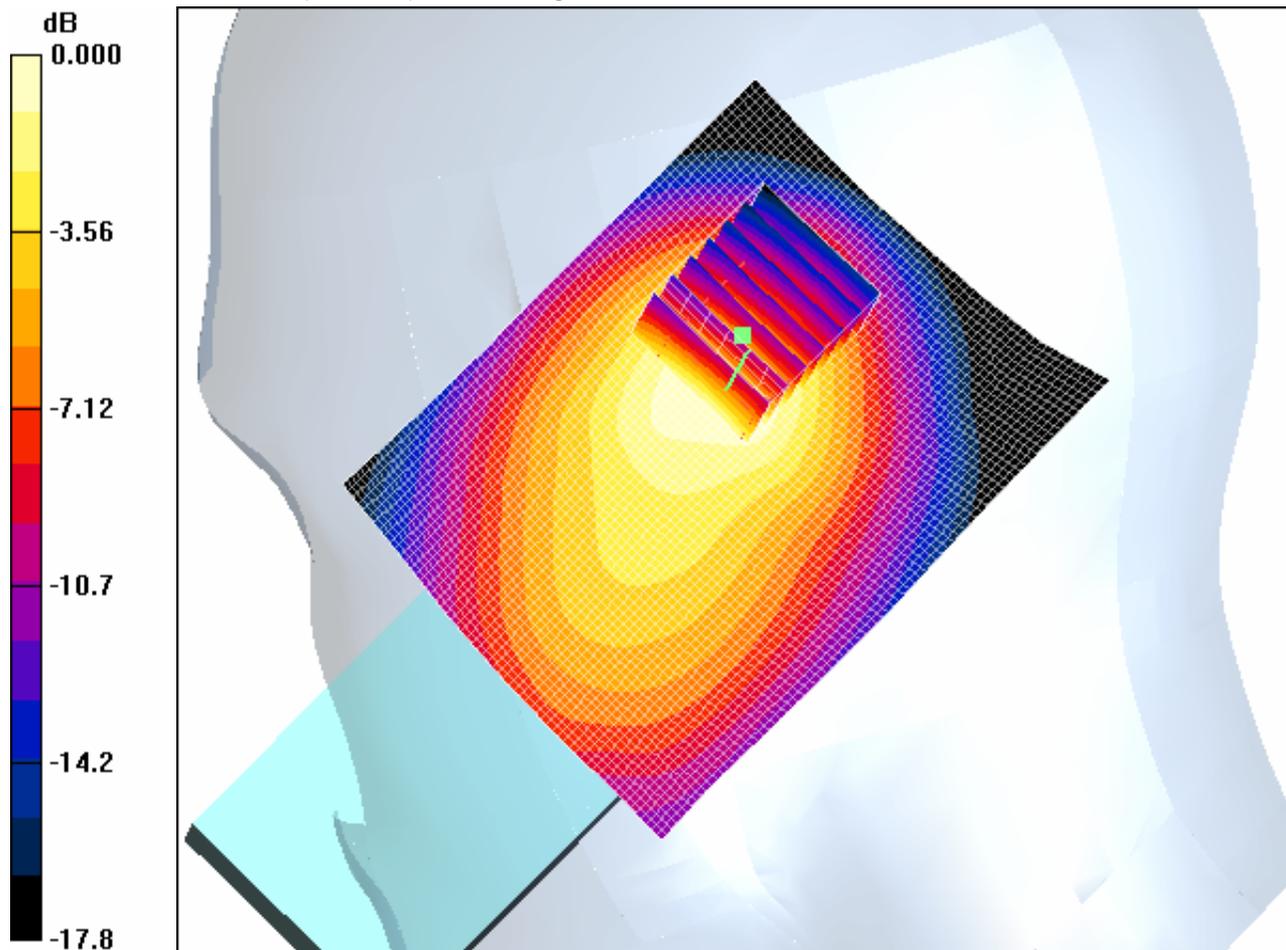
**Right Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.5 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 2.59 W/kg

**SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.617 mW/g**

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



0 dB = 1.16mW/g

**Plot #8**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Touch****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.22 mW/g

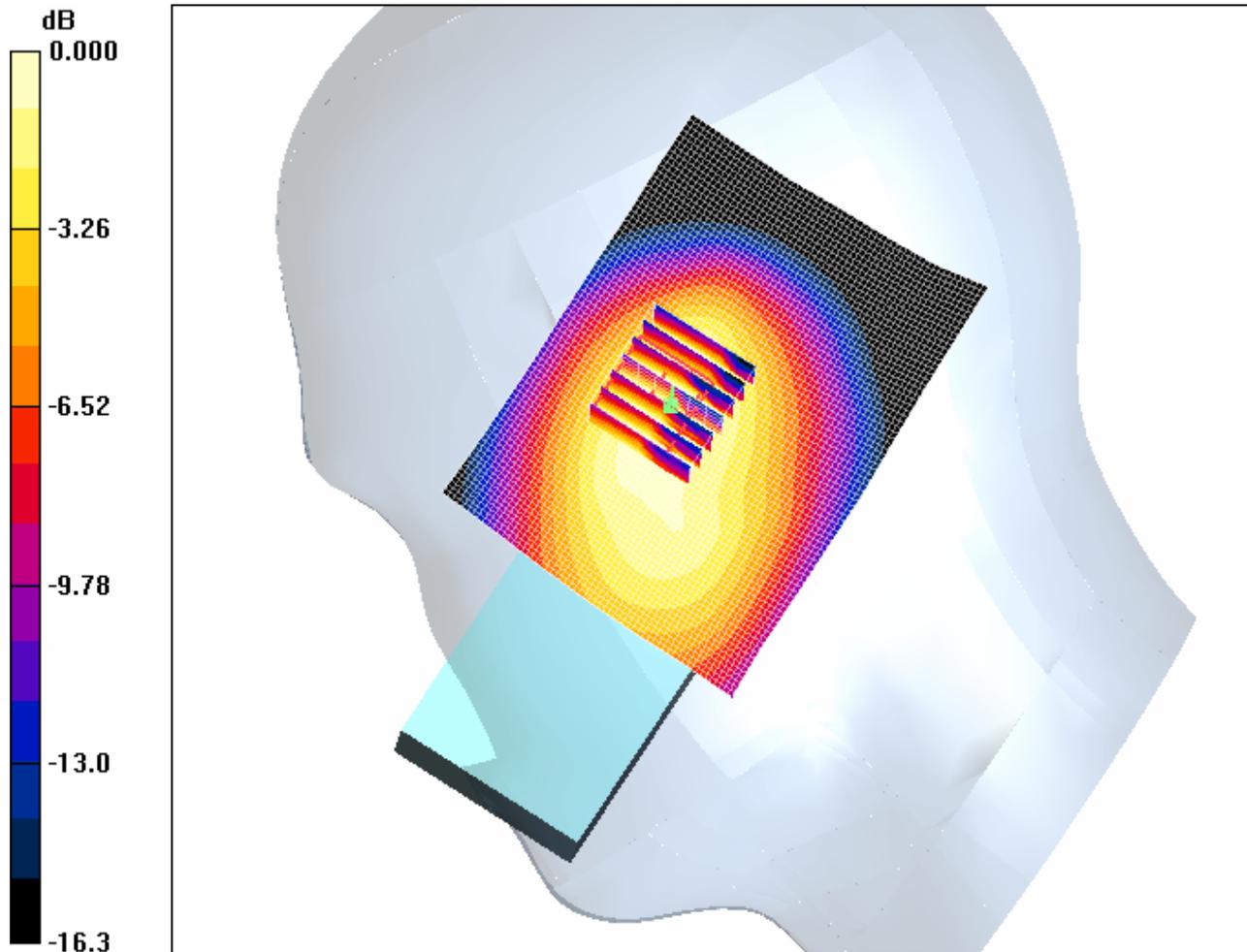
**Right Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.6 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 4.35 W/kg

**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.620 mW/g**

Maximum value of SAR (measured) = 1.21 mW/g



0 dB = 1.21mW/g

**Plot #9**

## High Channel

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)**

**Left Head Tilt Position**

**DUT: ZTE; Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 848.37 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.37$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

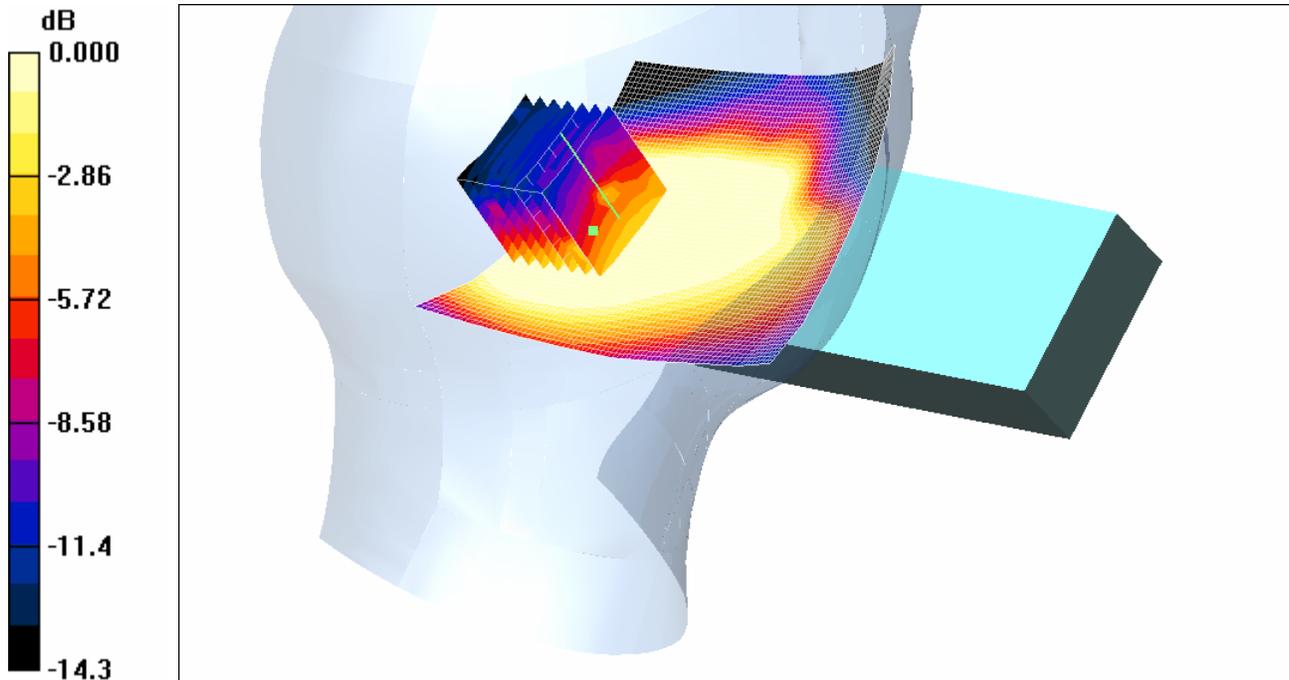
**Left Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.7 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 1.060 mW/g; SAR(10 g) = 0.823 mW/g**

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



0 dB = 1.12mW/g

**Plot #10**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Left Head Touch Position****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 848.37 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.37$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Left Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

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

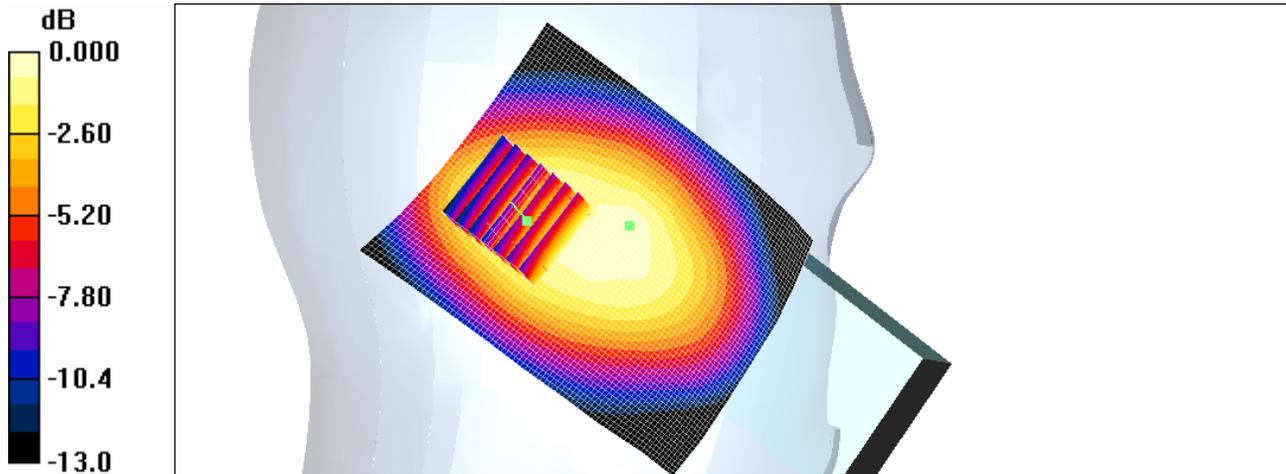
**Left Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.2 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.15 W/kg

**SAR(1 g) = 1.39 mW/g; SAR(10 g) = 1.08 mW/g**

Maximum value of SAR (measured) = 1.44 mW/g



0 dB = 1.44mW/g

**Plot #11**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Tilt****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Tilt/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.39 mW/g

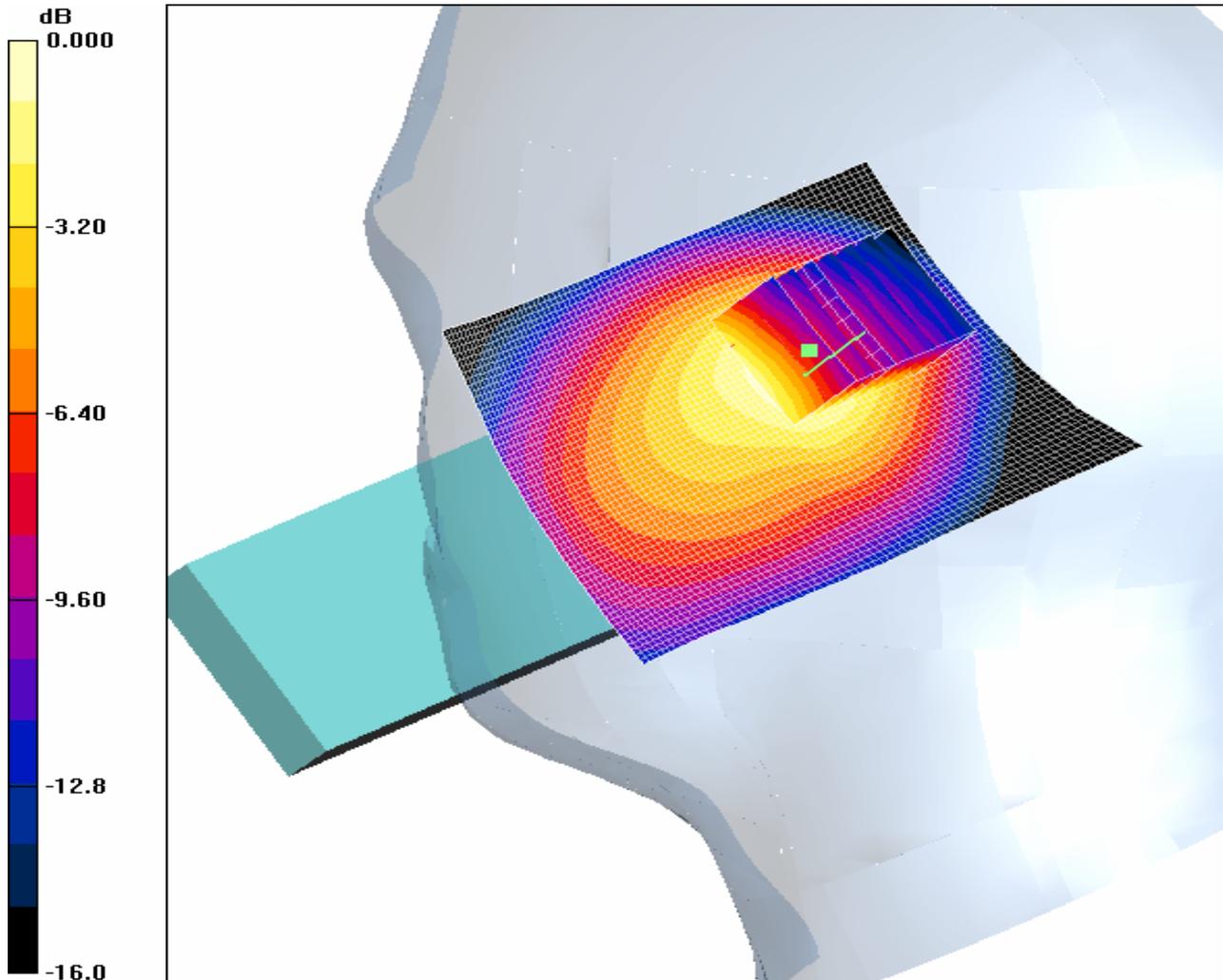
**Right Head Tilt/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 39.1 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 2.28 W/kg

**SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.943 mW/g**

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



0 dB = 1.35mW/g

**Plot #12**

**Test Laboratory: Bay Area Compliance Lab Corp.(BACL)****Right Head Touch****DUT Type: G650; Serial: 350501810039**

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.881$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.6, 6.6, 6.6); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 10/18/2005
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

**Right Head Touch/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.866 mW/g

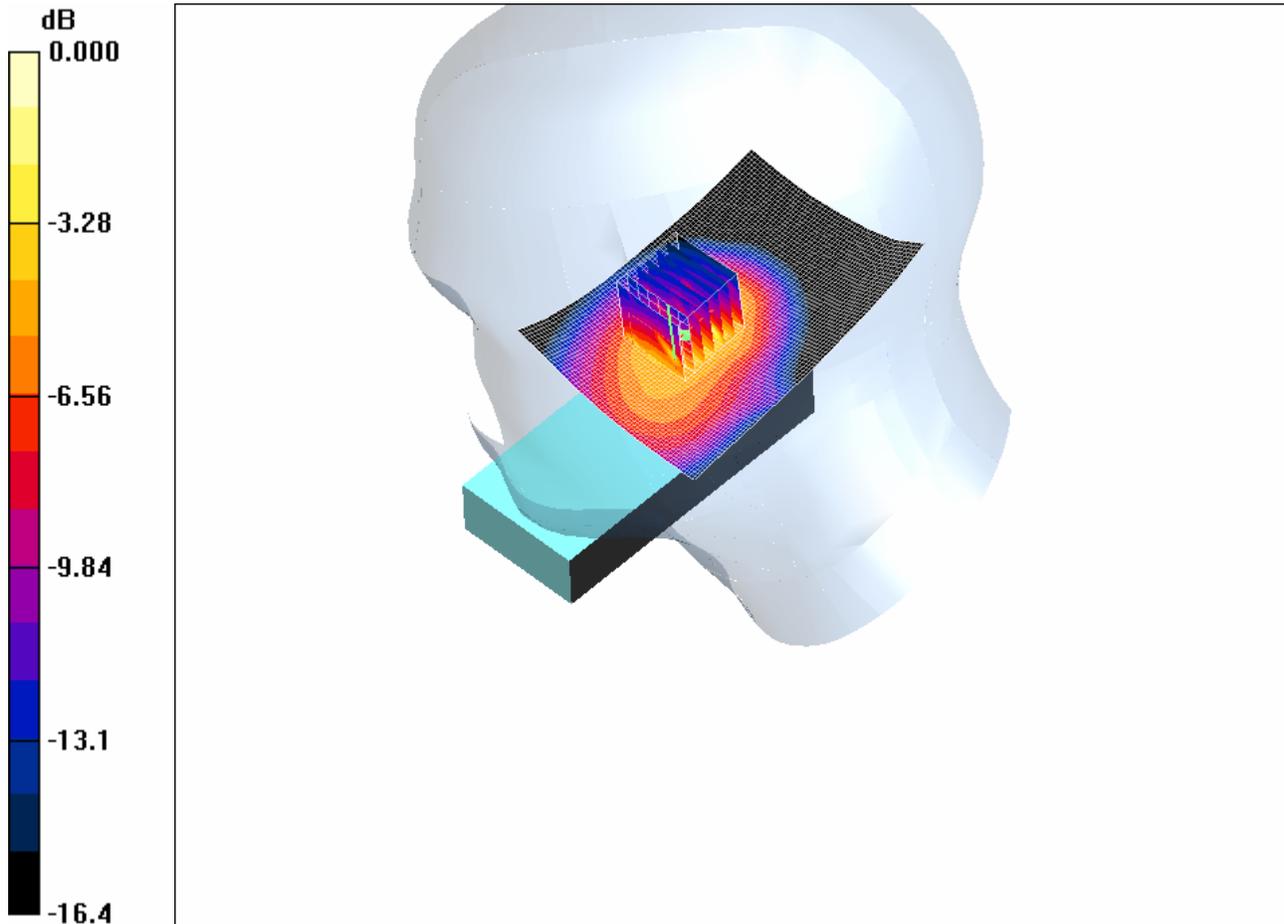
**Right Head Touch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.4 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 2.28 W/kg

**SAR(1 g) = 0.978 mW/g; SAR(10 g) = 0.709 mW/g**

Maximum value of SAR (measured) = 1.28 mW/g



0 dB = 1.28mW/g

**Plot #13**

## APPENDIX F – CONDUCTED OUTPUT POWER MEASUREMENT

### Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

### Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

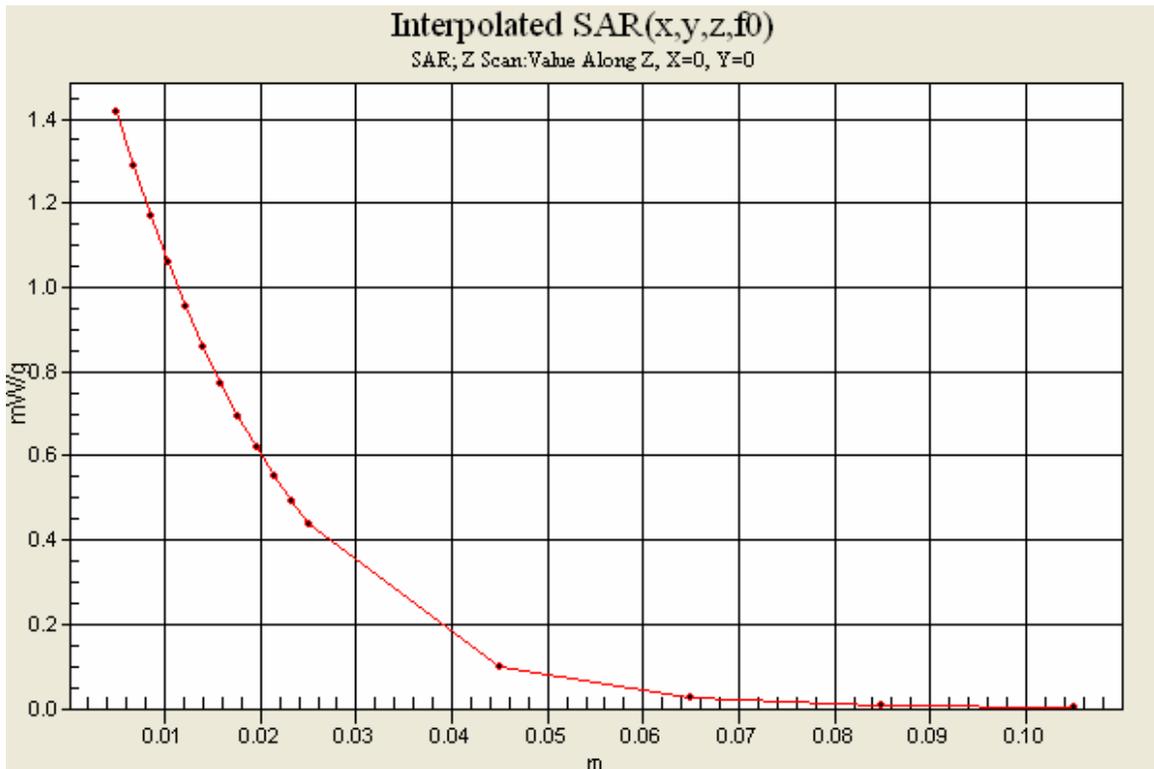
### Test equipment

Agilent PSA E4446A Spectrum Analyzer, Calibration Date: 2006-03-06

### Test Results

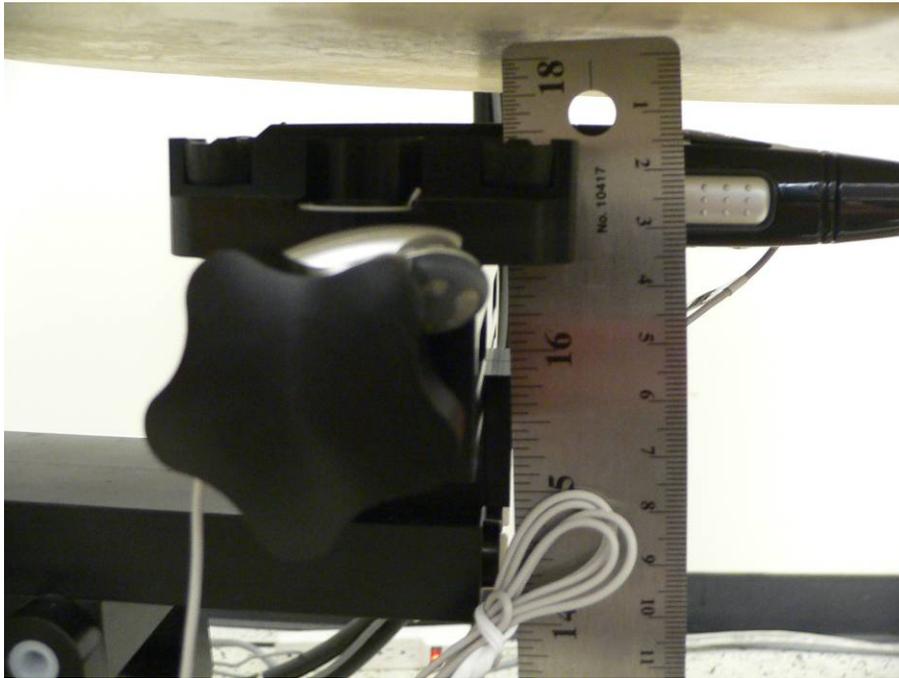
Channel	Radio Configuration and Conducted Power (dBm)				
	RC1	RC2	RC3	RC4	RC5
Low	23.45	23.46	23.51	23.51	23.48
Mid	23.80	23.78	23.81	23.80	23.78
High	23.81	23.89	23.90	23.88	23.85

Please refer to the following plots.

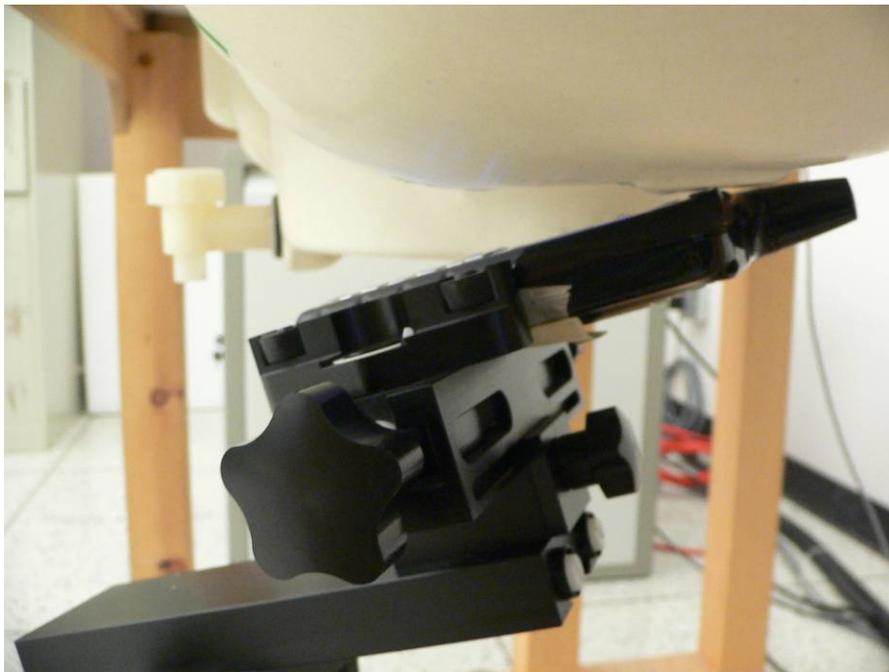


## APPENDIX G – EUT TEST POSITION PHOTOS

### 1.5 cm Separation to Flat Phantom with Headset



### Head – Left Tilt



### Head – Left Touch



### Head – Right Tilt



## Head – Right Touch



## APPENDIX H – EUT & ACCESSORIES PHOTOS

### EUT Front View



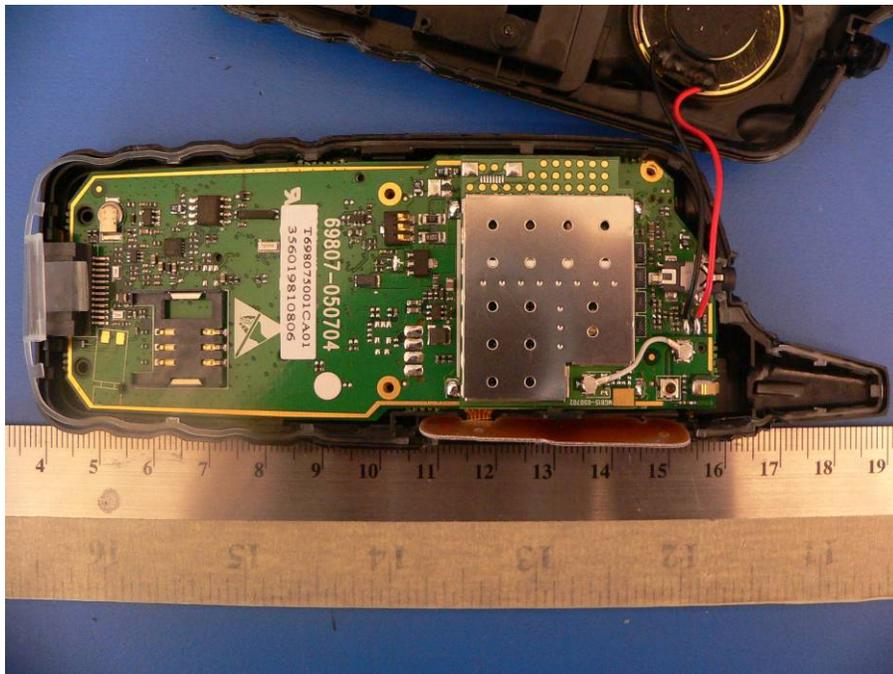
### EUT Rear View



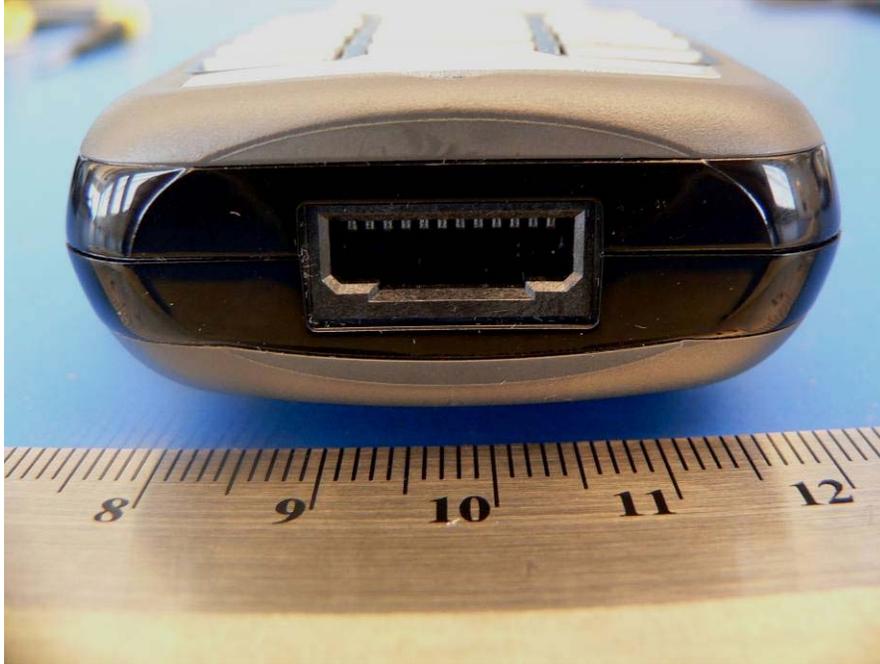
**EUT Battery off View**



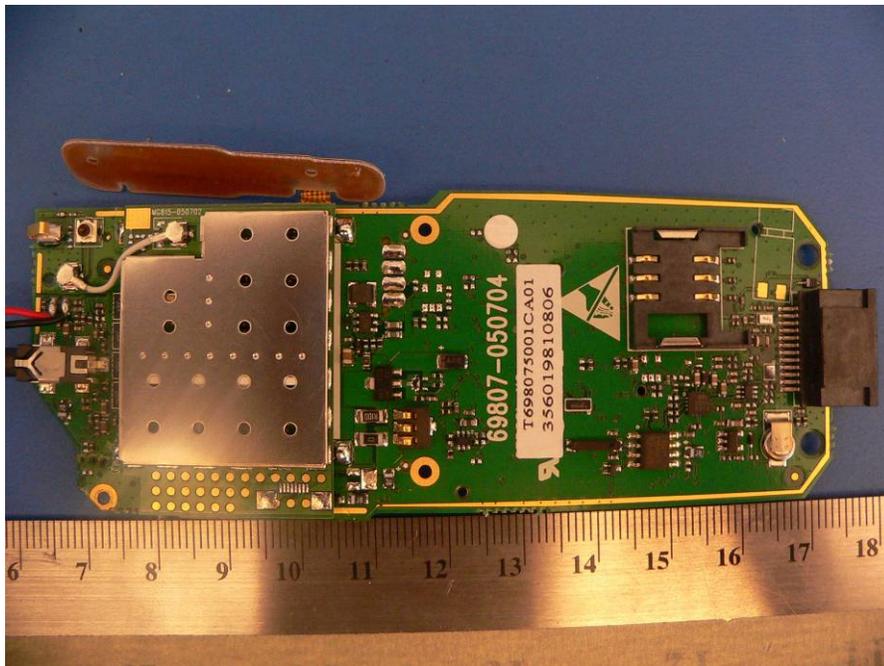
**EUT Cover off View**



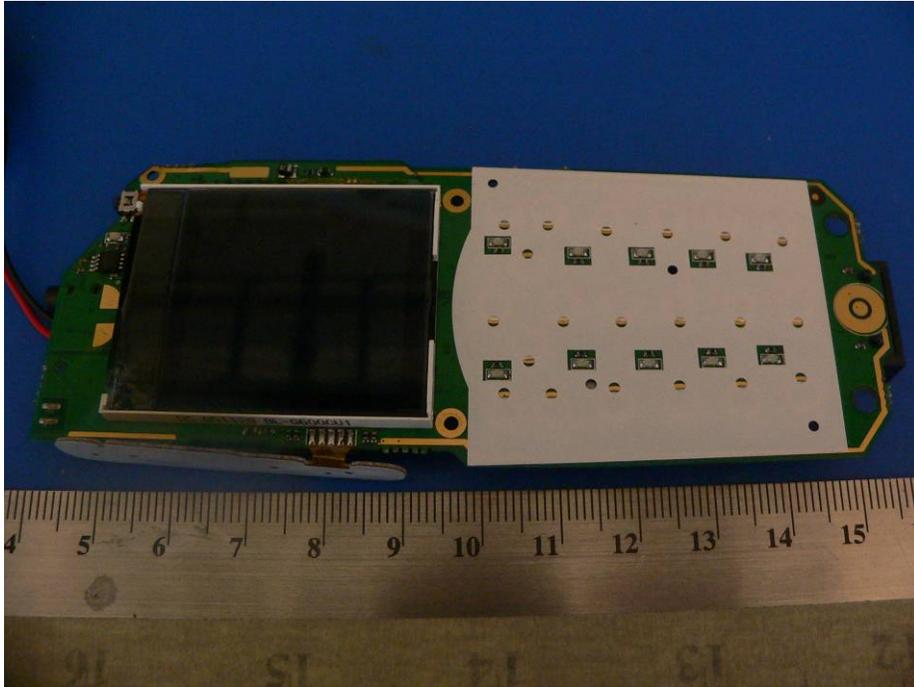
### EUT Port View



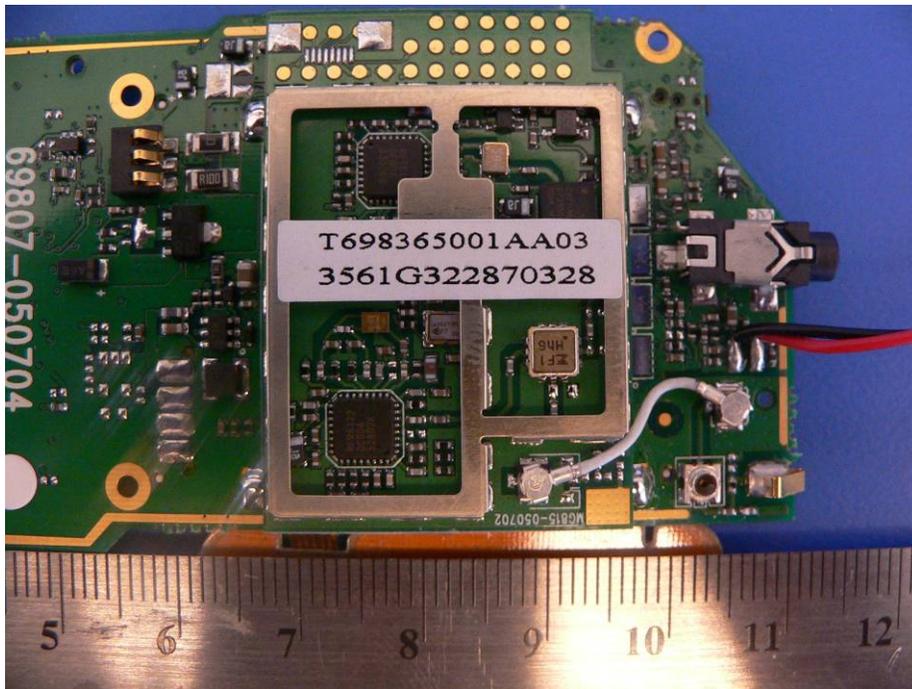
### EUT Components View



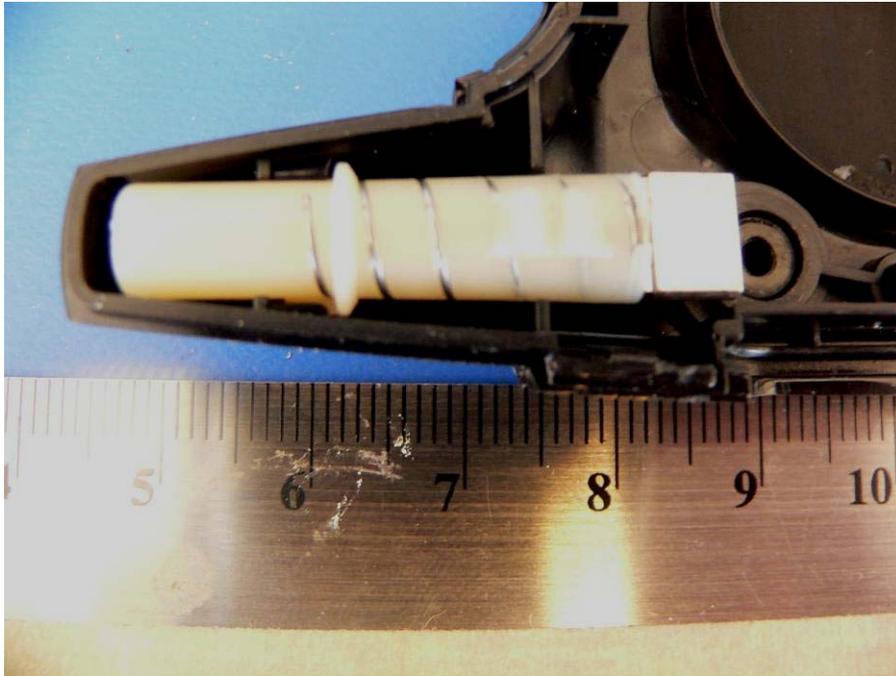
### EUT Display and keyboard View



### EUT RF portion View



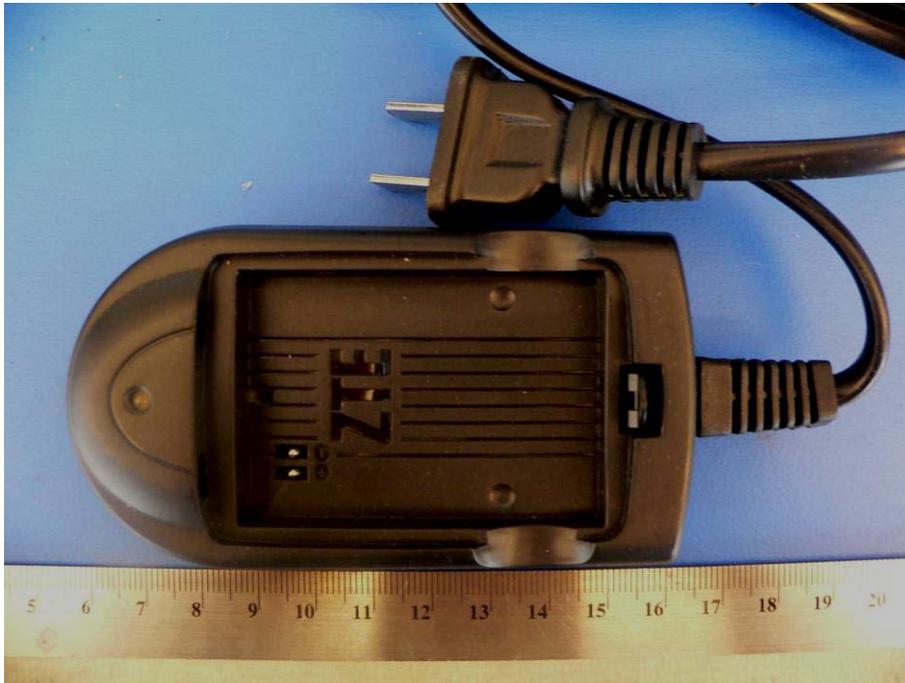
### EUT Antenna View



### EUT AC Adaptor View



### EUT Charger View



### EUT Battery View



**EUT Headset View**



## APPENDIX I - INFORMATIVE REFERENCES

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