





# SAR TEST REPORT

HCT CO., LTD

EUT Type:	Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN	
FCC ID:	ZNFLS696	
Model:	LS696, LG-LS696	
Date of Issue:	Jan. 27, 2012	
Test report No.:	HCTA1201FS06	
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Applicant :	<b>LG Electronics, MobileComm U.S.A., Inc.</b> 10101 Old Grove Road, San Diego, CA 92131	
Testing has been carried out in accordance with:	RSS-102 Issue 4; Health Canada Safety Code 6 47CFR §2.1093 FCC OET Bulletin 65(Edition 97-01), Supplement C (Edition 01-01) ANSI/ IEEE C95.1 – 1992 IEEE 1528-2003	
Test result:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.	
Signature	 _____ Report prepared by : Young-Soo Jang Test Engineer of SAR Part	 _____ Approved by : Jae-Sang So Manager of SAR Part

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# 1. INTRODUCTION

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices.

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. The measurement procedure described in IEEE/ANSI C95.3-1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave is used for guidance in measuring SAR due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

## SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body.

$$SAR = \frac{d}{dt} \left( \frac{dU}{dm} \right) = \frac{d}{dt} \left( \frac{dU}{\rho dV} \right)$$

**Figure 2. SAR Mathematical Equation**

**SAR is expressed in units of Watts per Kilogram (W/kg).**

where:

$$SAR = \sigma E^2 / \rho$$

$\sigma$  = conductivity of the tissue-simulant material (S/m)  
 $\rho$  = mass density of the tissue-simulant material (kg/m<sup>3</sup>)  
 $E$  = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

## 2. DESCRIPTION OF DEVICE

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

### 2.1 General Information

EUT Type	Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN			
FCC ID:	ZNFLS696			
Model:	LS696, LG-LS696			
Trade Name	LG	Serial Number(s)	#1	
Application Type	Permissive Change Class II			
Mode(s) of Operation	CDMA835(Part 22H)/PCS1900(Part 24E)/ CDMA835(Part 90S)/802.11bgn			
Tx Frequency	824.70 - 848.31 MHz (CDMA835) / 1 851.25 – 1 908.75 MHz (PCS CDMA) 2 412- 2 462 MHz (WLAN)/ 817.90 – 823.10 MHz (BC10)			
Rx Frequency	869.70 - 893.31 MHz (CDMA835) /1 931.25 – 1 988.75 MHz (PCS CDMA) 2 412- 2 462 MHz (WLAN)/ 817.90 – 823.10 MHz (BC10)			
FCC Classification	Licensed Portable Transmitter Held to Ear (PCE)/ DSS/ DTS			
Production Unit	Prototype			
Max SAR	Band	1g SAR (W/kg)		
		Head	Body-worn	Hotspot
	CDMA835	0.864	0.970	0.809
	BC10	0.592	0.730	0.655
	PCS1900	1.0	0.494	1.04
	802.11b	0.437	0.104	0.104
Date(s) of Tests	Jan. 19, 2012 ~ Jan. 20, 2012			
Antenna Type	Integral Antenna			
EVDO	Rev.0, A			
Key Features;	1x Advanced support, Mobile Hotspot support, Power reduction implement			

## 3. DESCRIPTION OF TEST EQUIPMENT

### 3.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Staubli), robot controller, Pentium III computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of mMaximum electromagnetic field (EMF) (see Figure.3.1).

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the HP Pentium IV 3.0 GHz computer with Windows XP system and SAR Measurement Software DASY4, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

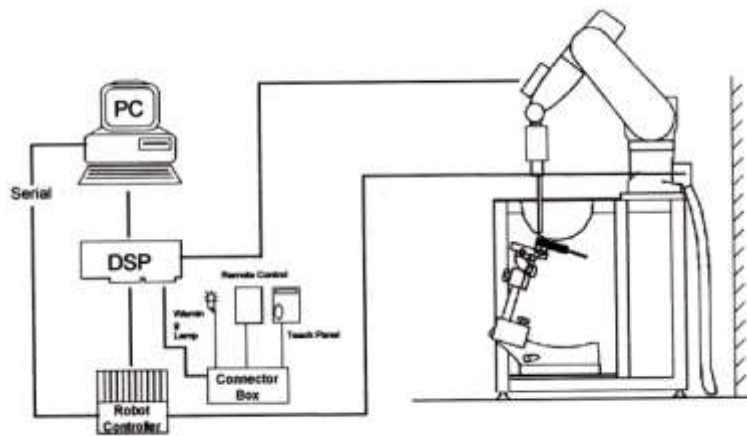


Figure 3.1 HCT SAR Lab. Test Measurement Set-up

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

## 3.2 DASY4 E-FIELD PROBE SYSTEM

### 3.1 ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 4 GHz)
Directivity	$\pm 0.2$ dB in HSL (rotation around probe axis) $\pm 0.3$ dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones



Figure 3.1 Photograph of the probe and the Phantom



Figure 3.3 ET3DV6 E-field Probe

The SAR measurements were conducted with the dosimetric probe ET3DV6, designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches a maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 software reads the reflection during a software approach and looks for the maximum using a 2<sup>nd</sup> order fitting. The approach is stopped at reaching the maximum.

### 3.3 PROBE CALIBRATION PROCESS

#### 3.3.1 E-Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with an accuracy better than ± 10 %. The spherical isotropy was evaluated with the proper procedure and found to be better than ± 0.25 dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe is tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a waveguide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C \frac{\Delta T}{\Delta t}$$

where:

- Δt = exposure time (30 seconds),
- C = heat capacity of tissue (brain or muscle),
- ΔT = temperature increase due to RF exposure.

SAR is proportional to ΔT/ Δt, the initial rate of tissue heating, before thermal diffusion takes place. Now it's possible to quantify the electric field in the simulated tissue by equating the thermally derived SAR to the E- field;

$$SAR = \frac{|E|^2 \cdot \sigma}{\rho}$$

where:

- σ = simulated tissue conductivity,
- ρ = Tissue density (1.25 g/cm<sup>3</sup> for brain tissue)

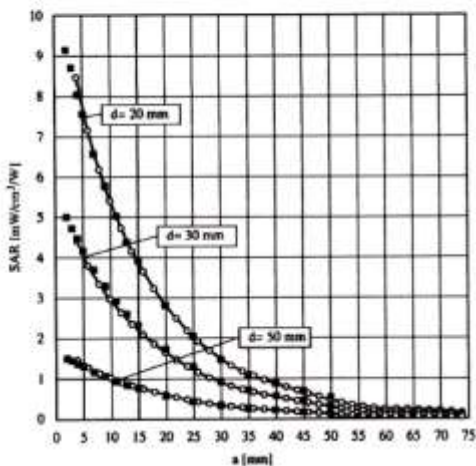


Figure 3.4 E-Field and Temperature measurements at 900 MHz

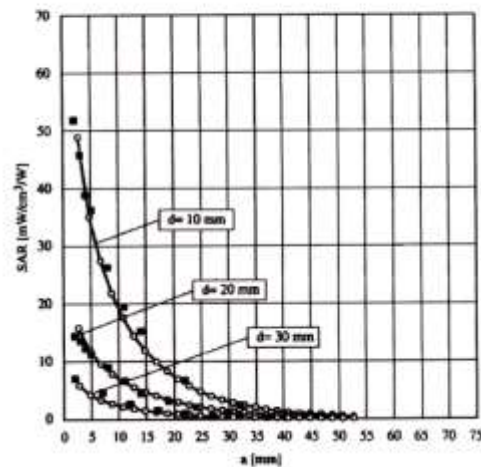


Figure 3.5 E-Field and temperature measurements at 1.8 GHz

### 3.3.2 Data Extrapolation

The DASY4 software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given like below;

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with  $V_i$  = compensated signal of channel i (i=x,y,z)  
 $U_i$  = input signal of channel i (i=x,y,z)  
 $cf$  = crest factor of exciting field (DASY parameter)  
 $dcp_i$  = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

with  $V_i$  = compensated signal of channel i (i = x,y,z)  
 $Norm_i$  = sensor sensitivity of channel i (i = x,y,z)  
 $\mu V/(V/m)^2$  for E-field probes  
 $ConvF$  = sensitivity of enhancement in solution  
 $E_i$  = electric field strength of channel i in V/m

The RSS value of the field components gives the total field strength (Hermetian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in W/g  
 $E_{tot}$  = total field strength in V/m  
 $\sigma$  = conductivity in [mho/m] or [Siemens/m]  
 $\rho$  = equivalent tissue density in g/cm<sup>3</sup>

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwr} = \frac{E_{tot}^2}{3770}$$

with  $P_{pwr}$  = equivalent power density of a plane wave in W/cm<sup>2</sup>  
 $E_{tot}$  = total electric field strength in V/m



### 3.4 SAM Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.



Figure 3.6 SAM Phantom

Shell Thickness	2.0 mm $\pm$ 0.2 mm (6 $\pm$ 0.2 mm at ear point)
Filling Volume	about 25 L
Dimensions	1 000 mm x 500 mm (L x W)

### 3.5 Device Holder for Transmitters

In combination with the SAM Phantom V 4.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produce an infinite number of configurations. To produce the Worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.



Figure 3.7 Device Holder

### 3.6 Brain & Muscle Simulating Mixture Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bactericide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The mixture characterizations used for the brain and muscle tissue simulating liquids are according to the data by C. Gabriel and G. Hartsgrove.

Ingredients (% by weight)	Frequency (MHz)											
	450		750		835		915		1 900		2 450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.2	51.7	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.4	1.0	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	57	47.2	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	0.2	0.0	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.2	0.1	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7

Salt:	99 % Pure Sodium Chloride	Sugar:	98 % Pure Sucrose
Water:	De-ionized, 16M resistivity	HEC:	Hydroxyethyl Cellulose
DGBE:	99 % Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy) ethanol]		
Triton X-100(ultra pure):	Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl] ether		

**Table 3.1 Composition of the Tissue Equivalent Matter**

### 3.7 SAR TEST EQUIPMENT

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
Staubli	Robot RX90L	F01/5K09A1/A/01	N/A	N/A	N/A
Staubli	Robot ControllerCS7MB	F99/5A82A1/C/01	N/A	N/A	N/A
HP	Pavilion t000_puffer	KRJ51201TV	N/A	N/A	N/A
SPEAG	Light Alignment Sensor	265	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	D221340.01	N/A	N/A	N/A
SPEAG	DAE4	869	Sep 22, 2011	Annual	Sep 22, 2012
SPEAG	E-Field Probe ET3DV6	1798	Apr. 14, 2011	Annual	Apr. 14, 2012
SPEAG	Validation Dipole D835V2	441	May 16, 2011	Annual	May 16, 2012
SPEAG	Validation Dipole D1900V2	5d032	July 22, 2011	Annual	July 22, 2012
SPEAG	Validation Dipole D2450V2	743	Aug. 29, 2011	Annual	Aug. 29, 2012
Agilent	Power Meter(F) E4419B	MY41291386	Nov. 04, 2011	Annual	Nov. 04, 2012
Agilent	Power Sensor(G) 8481	MY41090870	Nov. 04, 2011	Annual	Nov. 04, 2012
HP	Dielectric Probe Kit	00721521	N/A	N/A	N/A
HP	Dual Directional Coupler	16072	Nov. 04, 2011	Annual	Nov. 04, 2012
R&S	Base Station CMU200	110740	July 26, 2011	Annual	July 26, 2012
Agilent	Base Station E5515C	GB44400269	Feb. 10, 2011	Annual	Feb. 10, 2012
HP	Signal Generator E4438C	MY42082646	Nov. 11, 2011	Annual	Nov. 11, 2012
HP	Network Analyzer 8753ES	JP39240221	Mar. 30, 2011	Annual	Mar. 30, 2012

**NOTE:**

The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Validation measurement is performed by HCT Lab. before each test. The brain simulating material is calibrated by HCT using the dielectric probe system and network analyzer to determine the conductivity and permittivity (dielectric constant) of the brain-equivalent material.

## 4. SAR MEASUREMENT PROCEDURE

The evaluation was performed with the following procedure:

1. The SAR value at a fixed location above the ear point was measured and was used as a reference value for assessing the power drop.
2. The SAR distribution at the exposed side of the head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15 mm x 15 mm. Based on this data, the area of the mMaximum absorption was determined by spline interpolation.
3. Around this point, a volume of 32 mm x 32 mm x 30 mm was assessed by measuring 5 x 5 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:
  - a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
  - b. The mMaximum interpolated value was searched with a straight-forward algorithm. Around this mMaximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.
  - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR value, at the same location as procedure #1, was re-measured. If the value changed by more than 5 %, the evaluation is repeated.

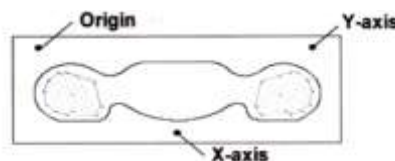


Figure 4.1 SAR Measurement Point in Area Scan

## 5. DESCRIPTION OF TEST POSITION

### 5.1 HEAD POSITION

The device was placed in a normal operating position with the Point A on the device, as illustrated in following drawing, aligned with the location of the RE(ERP) on the phantom. With the ear-piece pressed against the head, the vertical center line of the body of the handset was aligned with an imaginary plane consisting of the RE, LE and M. While maintaining these alignments, the body of the handset was gradually moved towards the cheek until any point on the mouth-piece or keypad contacted the cheek. This is a cheek/touch position. For ear/tilt position, while maintain the device aligned with the BM and FN lines, the device was pivot against ERP back for 15° or until the device antenna touch the phantom. Please refer to IEEE 1528-2003 illustration below.

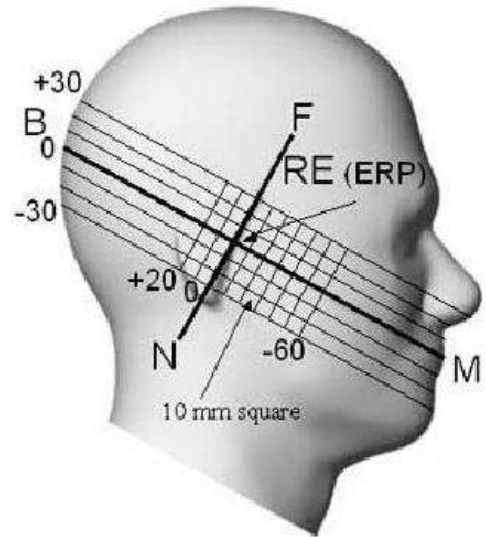


Figure 5.1 Side view of the phantom

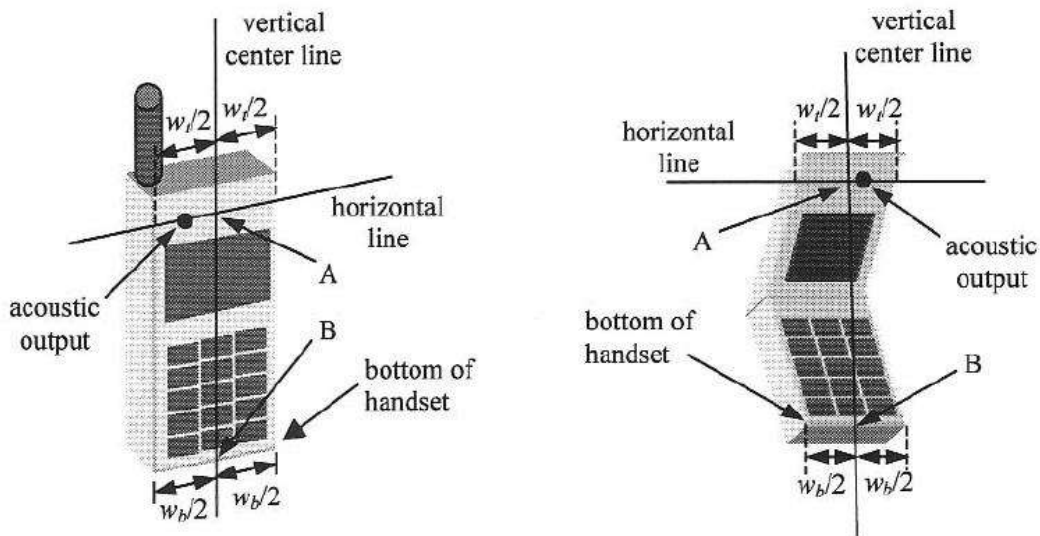


Figure 5.2 Handset vertical and horizontal reference lines

## **5.2 Body Holster/Belt Clip Configurations**

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. A device with a headset output is tested with a headset connected to the device. Body dielectric parameters are used.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with each accessory. If multiple accessory share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some Devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used.

Since this EUT does not supply any body worn accessory to the end user a distance of 1.0 cm from the EUT back surface to the liquid interface is configured for the generic test.

"See the Test SET-UP Photo"

Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessory(ies), including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

In all cases SAR measurements are performed to investigate the worst-case positioning. Worstcase positioning is then documented and used to perform Body SAR testing.

## 6. MEASUREMENT UNCERTAINTY

Error Description	Tol (± %)	Prob. dist.	Div.	$c_i$	Standard Uncertainty (± %)	$v_{eff}$	
<b>1. Measurement System</b>							
Probe Calibration	6.00	N	1	1	6.00	∞	
Axial Isotropy	4.70	R	1.73	0.7	1.90	∞	
Hemispherical Isotropy	9.60	R	1.73	0.7	3.88	∞	
Boundary Effects	1.00	R	1.73	1	0.58	∞	
Linearity	4.70	R	1.73	1	2.71	∞	
System Detection Limits	1.00	R	1.73	1	0.58	∞	
Readout Electronics	0.30	N	1.00	1	0.30	∞	
Response Time	0.8	R	1.73	1	0.46	∞	
Integration Time	2.6	R	1.73	1	1.50	∞	
RF Ambient Conditions	3.00	R	1.73	1	1.73	∞	
Probe Positioner	0.40	R	1.73	1	0.23	∞	
Probe Positioning	2.90	R	1.73	1	1.67	∞	
Max SAR Eval	1.00	R	1.73	1	0.58	∞	
<b>2. Test Sample Related</b>							
Device Positioning	2.90	N	1.00	1	2.90	145	
Device Holder	3.60	N	1.00	1	3.60	5	
Power Drift	5.00	R	1.73	1	2.89	∞	
<b>3. Phantom and Setup</b>							
Phantom Uncertainty	4.00	R	1.73	1	2.31	∞	
Liquid Conductivity(target)	5.00	R	1.73	0.64	1.85	∞	
Liquid Conductivity(meas.)	2.07	N	1	0.64	1.32	9	
Liquid Permittivity(target)	5.00	R	1.73	0.6	1.73	∞	
Liquid Permittivity(meas.)	5.02	N	1	0.6	3.01	9	
<b>Combine Standard Uncertainty</b>						11.13	
<b>Coverage Factor for 95 %</b>						$k=2$	
<b>Expanded STD Uncertainty</b>						22.25	

Table 6.1 Uncertainty

## 7. ANSI/ IEEE C95.1 - 1992 RF EXPOSURE LIMITS

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT Occupational (W/kg) or (mW/g)
SPATIAL PEAK SAR * (Brain)	1.60	8.00
SPATIAL AVERAGE SAR ** (Whole Body)	0.08	0.40
SPATIAL PEAK SAR *** (Hands / Feet / Ankle / Wrist)	4.00	20.00

**Table 7.1 Safety Limits for Partial Body Exposure**

**NOTES:**

\* The Spatial Peak value of the SAR averaged over any 1 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

\*\* The Spatial Average value of the SAR averaged over the whole-body.

\*\*\* The Spatial Peak value of the SAR averaged over any 10 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

**Uncontrolled Environments** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

**Controlled Environments** are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e.as a result of employment or occupation).



## 8. SYSTEM VERIFICATION

### 8.1 Tissue Verification

Freq. [MHz]	Date	Liquid	Liquid Temp.[°C]	Parameters	Target Value	Measured Value	Deviation [%]	Limit [%]
835	Jan. 19, 2012	Head	21.2	$\epsilon_r$	41.5	43.1	+ 3.86	$\pm 5$
				$\sigma$	0.90	0.903	+ 0.33	$\pm 5$
Body		$\epsilon_r$		55.2	54.4	- 1.45	$\pm 5$	
		$\sigma$		0.97	0.996	+ 2.68	$\pm 5$	
1 900	Jan. 20, 2012	Head	21.3	$\epsilon_r$	40.0	39.1	- 2.25	$\pm 5$
				$\sigma$	1.40	1.39	- 0.71	$\pm 5$
Body		$\epsilon_r$		53.3	55.2	+ 3.56	$\pm 5$	
		$\sigma$		1.52	1.47	- 3.29	$\pm 5$	
2 450	Jan. 20, 2012	Head	21.3	$\epsilon_r$	39.2	38.4	- 2.04	$\pm 5$
				$\sigma$	1.80	1.86	+ 3.33	$\pm 5$
Body		$\epsilon_r$		52.7	51.9	- 1.52	$\pm 5$	
		$\sigma$		1.95	1.89	- 3.08	$\pm 5$	

The dielectronic parameters of the liquids were verified prior to the SAR evaluation using an Agilent 85070C Dielectronic Probe Kit and Agilent Network Analyzer.

### 8.2 System Validation

Prior to assessment, the system is verified to the  $\pm 10\%$  of the specifications at 835 MHz/ 1 900 MHz/ 2 450 MHz by using the system validation kit. (Graphic Plots Attached) \* Input Power: 100 m W

Freq. [MHz]	Probe (SN)	Dipole (SN)	Date	Liquid	Liquid Temp. [°C]	SAR Average	Target Value (SPEAG) (mW/g)	*Measured Value (mW/g)	Deviation [%]	Limit [%]
CDMA	1798	441	Jan. 19, 2012	Head	21.2	1 g	9.34	0.945	+ 1.18	$\pm 10$
				Body	21.2	1 g	9.45	0.954	+ 0.95	$\pm 10$
PCS		5d032	Jan. 20, 2012	Head	21.3	1 g	39.9	4.02	+ 0.75	$\pm 10$
				Body	21.3	1 g	41.5	4.06	- 2.17	$\pm 10$
WIFI	743	Jan. 20, 2012	Head	21.3	1 g	53.8	5.13	- 4.65	$\pm 10$	
			Body	21.3	1 g	51.7	5.03	- 2.71	$\pm 10$	

### 8.3 System Validation Procedure

SAR measurement was Prior to assessment, the system is verified to the  $\pm 10\%$  of the specifications at target frequency by using the system validation kit. (Graphic Plots Attached)

- Cabling the system, using the validation kit equipments.
- Generate about 100 mW Input Level from the Signal generator to the Dipole Antenna.
- Dipole Antenna was placed below the Flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.

Note;

SAR Verification was performed according to the FCC KDB 450824.

## 9. RF CONDUCTED POWER MEASUREMENT

### 9.1 CDMA & EVDO

The handset was placed into a simulated call using a base station simulator in a shielded chamber. Such test signals offer a consistent means for testing SAR and are recommended for evaluating SAR. SAR measurements were taken with a fully charged battery. In order to verify that the device was tested and maintained at full power, this was configured with the base station simulator. The SAR measurement software calculates a reference point at the start and end of the test to check for power drifts. If conducted power deviations of more than 5% occurred, the tests were repeated.

Conducted output power measurements were performed using a base station simulator under digital average power.



These procedures were followed according to FCC "SAR Measurement Procedures for 3G Devices", May 2006.

#### 9.1.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by "SAR Measurement Procedures for 3G Devices", May 2006. MMaximum output power is verified on the High, Middle and Low channels according to procedures defined in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in "All Up" condition.

1. If the mobile station supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9 600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1 (Table 9.1) parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH0 and demodulation of RC 3, 4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9 600 bps Fundamental Channel and 9 600 bps SCH0 data rate Channel and 9 600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2(Table 9.2) was applied.
5. FCHs were configured at full rate for mMaximum SAR with "All Up" power control bits.

Parameter	Units	Value
$I_{or}$	dBm/1.23 MHz	-104
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table. 9.1

Parameter	Units	Value
$I_{or}$	dBm/1.23 MHz	-86
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table. 9.2

#### 9.1.2 Head SAR Measurement

SAR for head exposure configurations is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55. SAR for RC1 is not required when the mMaximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise,

SAR is measured on the mMaximum output channel in RC1 using the exposure configuration that results in the highest SAR for that channel in RC3.

### **9.1.3 Body SAR Measurement**

SAR for body exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. SAR for multiple code channels (FCH + SCHn) is not required when the mMaximum average output of each RF channel is less than ¼ dB higher than that measured with FCH only. Otherwise, SAR is measured on the mMaximum output channel (FCH + SCHn) with FCH at full rate and SCH0 enabled at 9 600 bps using the exposure configuration that results in the highest SAR for that channel with FCH only. When multiple code channels are enabled, the DUT output may shift by more than 0.5 dB and lead to higher SAR drifts and SCH dropouts.

Body SAR in RC1 is not required when the mMaximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the mMaximum output channel in RC1; with Loopback Service Option SO55, at full rate, using the body exposure configuration that results in the highest SAR for that channel in RC3.

### **9.1.4 Handsets with EV-DO**

For handsets with Ev-Do capabilities, when the mMaximum average output of each channel in Rev. 0 is less than ¼ dB higher than that measured in RC3 (1x RTT), body SAR for Ev-Do is not required. Otherwise, SAR for Rev. 0 is measured on the mMaximum output channel at 153.6 kbps using the body exposure configuration that results in the highest SAR for that channel in RC3. SAR for Rev. A is not required when the mMaximum average output of each channel is less than that measured in Rev. 0 or less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the mMaximum output channel for Rev. A using a Reverse Data Channel payload size of 4 096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations. A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with the ACK Channel transmitting in all slots should be configured in the downlink for both Rev. 0 and Rev. A.

### **9.1.5 CDMA2000 1x Advanced**

This device additionally supports 1x Advanced. Conducted power were measured according to KDB publication 941225 using SO75 with RC8 on the uplink and RC11 on the downlink. Smart blanking was disabled for all measurements. The EUT was configured with forward power control Mode 000 and reverse power control at 400 bps.

Based on the maximum output power measured for 1x Advanced, SAR would have to be evaluated for 1xadvanced if the maximum output for 1x Advanced is more than 0.25 dB higher than the maximum measured for 1x. Also, if the measured SAR in any 1x mode exposure conditions (head, body, etc.) is larger than 1.2 W/kg, the highest of those configurations above 1.2W/kg for each exposure condition in 1x Advanced has to be repeated. All measured SAR in 1x mode higher than 1.5 W/kg must be repeated for 1x Advanced.

### 9.1.6 Body SAR Measurement for EVDO Hotspot

Hotspot Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev.0. SAR for Subtype 2 Physical layer configurations is not required for Rev. A when the maximum average output of each RF channels is less than that measured is Subtype 0/1 Physical layer Configurations. Otherwise, SAR is measured on the maximum output channel for Rev.A using the Exposure configuration that results in the highest SAR for the RF channels in Rev.0. The AT is tested with a Reverse Date Channel rate of 153.6 kbps is Subtype 0/1 Physical Layer configurations, and a Reverse Date Channel payload size of 4096 bits and FETAP are configured with the ACK Channel ternsmittiong in all slots. AT power control should be in "All Bist Up" conditions for TAP/ETAP.

### 9.1.7 Hotspot Power Reduction Mode

This device utilizes a power reduction scheme during mobile hotspot mode operation. When hotspot mode is active on the device, the firmware applies power reduction in order to limit RF exposure levels. The mobile hotspot mode and power reduction software are programmed into the firmware at the factory and cannot be changed by the end-user or third-party applications, as described in the Operational Description.

#### Average Output Power Measurement for FCC ID: ZNFLS696

##### CDMA RF Conducted Powers with Hotspot Disabled

Band	Channel	SO55	SO55	SO75	TDSO	TDSO	1xEvDO	1xEvDO
		RC1/1	RC3/3	RC8/RC11	SO32	SO32	Rev.0	Rev.A
					FCH+SCH	FCH	(RTAP)	(RETAP)
CDMA	1013	25.35	25.17	25.3	25.34	25.25	25.2	25.12
	384	25.27	25.24	25.43	25.35	25.17	25.25	25.16
	777	25.14	25.1	25.3	25.27	25.08	25.22	25.25
PCS	25	24.74	24.66	24.8	24.5	24.59	24.72	24.62
	600	24.7	24.64	24.85	24.68	24.55	24.68	24.53
	1175	24.71	24.72	24.7	24.48	24.53	24.72	24.77
BC10	564	24.71	24.58	24.71	24.32	24.52	24.77	24.66

##### Power back-off CDMA RF Conducted Powers with Hotspot Enabled

Band	Channel	TDSO	TDSO	1xEvDO	1xEvDO
		SO32	SO32	Rev.0	Rev.A
		FCH+SCH	FCH	(RTAP)	(RETAP)
CDMA	1013	23.09	23.10	23.28	23.36
	384	23.08	23.12	23.46	23.44
	777	23.24	23.26	23.43	23.37
PCS	25	22.53	22.56	22.7	22.66
	600	22.95	22.79	22.7	22.68
	1175	22.67	22.45	22.69	22.6
BC10	564	22.31	22.3	22.53	22.55

## 9.2 WiFi

### 9.2.1 SAR Testing for 802.11a/b/g/n modes

#### General Device Setup

Normal Network operating configurations are not suitable for measuring the SAR of 802.11 a/b/g transmitters. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

#### Frequency Channel Configurations

80.11 a/b/g and 4.9 GHz operating modes are tested independently according to the service requirements in each frequency band. 80.211 b/g modes are tested on channels 1, 6 and 11. 802.11a is tested for UNII operations on channels 36 and 48 in the 5.15-5.25 GHz band; channels 52 and 64 in the 5.25-5.35 GHz band; Channels 104, 116, 124 and 136 in the 5.470-5.725 GHz band; and channels 149 and 161 in the 5.8 GHz band. When 5.8 GHz § 15.247 is also available, channels 149, 157 and 165 should be tested instead of the UNII channels. 4.9 GHz is tested on channels 1, 10 and 5 or 6, whichever has the higher output power, for 5 MHz channels; channels 11,15 and 19 for 10 MHz channels; and channels 21 and 25 for 20 MHz channels.

These are referred to as the “default test channels”. 802.11g mode was evaluated only if the output power was 0.25 dB higher than the 802.11b mode.

Mode	GHz	Channel	Turbo Channel	“Default Test Channels”		
				§15.247		UNII
				802.11b	802.11g	
802.11 b/g	2.412	1		√	∇	
	2.437	6	6	√	∇	
	2.462	11		√	∇	
802.11a	5.18	36				√
	5.20	40	42 (5.21 GHz)			*
	5.22	44				*
	5.24	48	50 (5.25 GHz)			√
	5.26	52				√
	5.28	56	58 (5.29 GHz)			*
	5.30	60				*
	5.32	64				√
	5.500	100	Unknown			*
	5.520	104				√
	5.540	108				*
	5.560	112				*
	5.580	116				√
	5.600	120				*
	5.620	124				√
	5.640	128				*
	5.660	132				*
	5.680	136			√	
	5.700	140			*	
UNII or §15.247	5.745	149		√		√
	5.765	153	152 (5.76 GHz)		*	*
	5.785	157		√		*
	5.805	161	160 (5.80 GHz)		*	√
§15.247	5.825	165		√		

802.11 Test Channels per FCC Requirements

Band	Channel	Conducted Power (dBm)			
		Data Rate (Mbps)			
		1	2	5.5	11
IEEE 802.11b	1	14.23	14.05	14.06	13.95
	6	13.81	13.54	13.66	13.41
	11	14.27	14.44	14.25	14.18

Average IEEE 802.11b Conducted output power

Band	Channel	Conducted Power (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
IEEE 802.11g	1	13.13	12.89	12.85	12.74	12.52	12.26	11.79	11.73
	6	12.74	12.64	12.57	12.36	12.10	11.85	11.44	11.36
	11	12.97	12.84	12.83	12.57	12.43	11.94	11.74	11.56

Average IEEE 802.11g Conducted output power

Band	Channel	Conducted Power (dBm)							
		Data Rate (Mbps)							
		6.5	13	20	26	39	52	58	65
IEEE 802.11n (HT-20)	1	12.24	12.18	11.68	11.75	11.27	11.01	10.88	10.69
	6	11.98	11.76	11.46	11.31	11.03	10.52	10.39	10.42
	11	11.95	12.04	11.44	11.59	11.26	10.70	10.76	10.60

Average IEEE 802.11n Conducted output power

Note;  
SAR testing was performed according to the FCC KDB 248227.

## **10. Mobile Hotspot Side for SAR Testing**

### **10.1 Personal Wireless Router Considerations**

Some battery-operated handsets have the capability to transmit and receive internet connectivity through simultaneous transmission of WIFI in conjunction with a separate licensed transmitter. The FCC has provided guidance in KDB publication 941225 D06 where SAR test considerations for handsets ( $L \times W \geq 9\text{cm} \times 5\text{cm}$ ) are based on a composite test separation distance 10mm from the front, back and edges of the device with antennas 2.5cm or closer to the edge of the device, determined from general mixed use conditions for this type of device. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

### **10.2 SAR Test Setup for Personal Wireless Router Features**

When the user enables the personal wireless router functions for the handsets, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. Therefore, SAR must be evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedure.

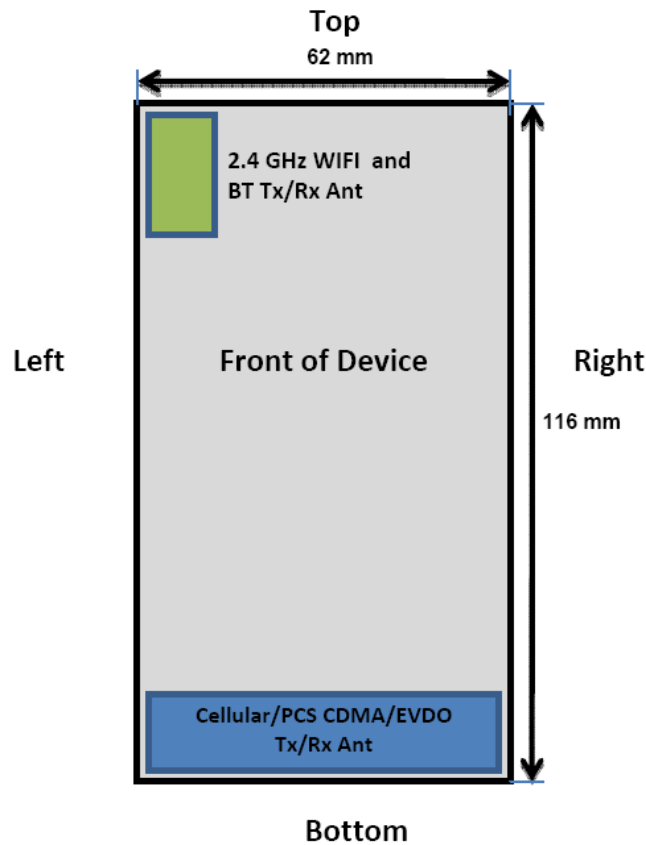
### **10.3 Power Reduction for Portable Hotspot Mode**

All Hotspot SAR testing was performed at reduced power tuned by the manufacturer. WIFI was disabled via a manufacturer software patch (not available to end-users) for all hotspot SAR testing to ensure a single transmitter was active during hotspot modes. The reduced powers were confirmed via conducted power measurements at the RF port when the user interface selection "Portable WIFI hotspot" was selected. Detailed description of the Hotspot power reduction implementation is included in the operational description. Powers are reduced immediately when hotspot is activated via the user interface. Powers will stay permanently reduced until the user deactivates hotspot. This was confirmed prior to SAR tests.

## 10.4 SAR Test configurations

Mode	Back	Front	Left	Right	Bottom	Top
CDMA835 Part 22H	Yes	Yes	Yes	Yes	Yes	No
PCS1900 Part 24E	Yes	Yes	Yes	Yes	Yes	No
CDMA835 Part 90S	Yes	Yes	Yes	Yes	Yes	No
WLAN	Yes	Yes	Yes	No	No	Yes

## 10.5 Antenna and Device Information



[Front side View]

**Note;**

Per KDB 941225 D06 hotspot procedures, we performed the SAR testing at 1 cm from the top & bottom surfaces and also from side edges with a transmitting antenna  $\leq 2.5$  cm from an edge.



# 11. SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas

## 11.1 SAR Evaluation Considerations

These procedures were followed according to FCC "SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas", May 2008. The procedures are applicable to phones with built-in unlicensed transmitters, such as 802.11 a/b/g and Bluetooth devices.

	2.45	5.15 - 5.35	5.47 - 5.85	GHz
$P_{Ref}$	12	6	5	mW

Device output power should be rounded to the nearest mW to compare with values specified in this

Table. 14.1 Output Power Thresholds for Unlicensed Transmitters

	Individual Transmitter	Simultaneous Transmission
<b>Licensed Transmitters</b>	<u>Routine evaluation required</u>	<b>SAR not required:</b> <u>Unlicensed only</u>
<b>Unlicensed Transmitters</b>	<p><u>When there is no simultaneous transmission –</u></p> <ul style="list-style-type: none"> <li>output <math>\leq 60</math>/f: SAR not required</li> <li>output <math>&gt; 60</math>/f: stand-alone SAR required</li> </ul> <p><u>When there is simultaneous transmission – Stand-alone SAR not required when</u></p> <ul style="list-style-type: none"> <li>output <math>\leq 2 \cdot P_{Ref}</math> and antenna is <math>\geq 5.0</math> cm from other antennas</li> <li>output <math>\leq P_{Ref}</math> and antenna is <math>\geq 2.5</math> cm from other antennas</li> <li>output <math>\leq P_{Ref}</math> and antenna is <math>&lt; 2.5</math> cm from other antennas, each with either output power <math>\leq P_{Ref}</math> or 1-g SAR <math>&lt; 1.2</math> W/kg</li> </ul> <p><u>Otherwise stand-alone SAR is required</u></p> <p><u>When stand-alone SAR is required</u></p> <ul style="list-style-type: none"> <li>test SAR on highest output channel for each wireless mode and exposure condition</li> <li>if SAR for highest output channel is <math>&gt; 50\%</math> of SAR limit, evaluate all channels according to normal procedures</li> </ul>	<ul style="list-style-type: none"> <li>when stand-alone 1-g SAR is not required and antenna is <math>\geq 5</math> cm from other antennas</li> </ul> <p><u>Licensed &amp; Unlicensed</u></p> <ul style="list-style-type: none"> <li>when the sum of the 1-g SAR is <math>&lt; 1.6</math> W/kg for all simultaneous transmitting antennas</li> <li>when SAR to peak location separation ratio of simultaneous transmitting antenna pair is <math>&lt; 0.3</math></li> </ul> <p><b>SAR required:</b> <u>Licensed &amp; Unlicensed</u></p> <p>antenna pairs with SAR to peak location separation ratio <math>\geq 0.3</math>; test is only required for the configuration that results in the highest SAR in stand-alone configuration for each wireless mode and exposure condition</p> <p><b>Note: simultaneous transmission exposure conditions for head and body can be different for different style phones; therefore, different test requirements may apply</b></p>
<b>Jaw, Mouth and Nose</b>	<p><u>Flat phantom SAR required</u></p> <ul style="list-style-type: none"> <li>when measurement is required in tight regions of SAM and it is not feasible or the results can be questionable due to probe tilt, calibration, positioning and orientation issues</li> <li>position rectangular and clam-shell phones according to flat phantom procedures and conduct SAR measurements for these specific locations</li> </ul>	When simultaneous transmission SAR testing is required, contact the FCC Laboratory for interim guidance.

Table. 14.2 SAR Evaluation Requirements for Cellphones with Multiple Transmitters

FCC ID: ZNFLS696

BT Max. RF output power: 2.624 mW

WLAN Max. RF output power: 14.27 dBm

## 11.2 SAR Summation Scenario

### Simultaneous Transmission Summation for Held to Ear

Simultaneous TX	configuration	CDMA835 Part 90S SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)	Simultaneous TX	configuration	CDMA835 Part 22H SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)
Head SAR	Left Cheek	0.549	0.184	0.733	Head SAR	Left Cheek	0.819	0.184	1.003
	Left Tilt	0.316	0.107	0.423		Left Tilt	0.495	0.107	0.602
	Right Cheek	0.592	0.437	1.029		Right Cheek	0.864	0.437	1.301
	Right Tilt	0.331	0.233	0.564		Right Tilt	0.455	0.233	0.688
Simultaneous TX	configuration	PCS CDMA Part 24E SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)					
Head SAR	Left Cheek	0.965	0.184	1.149					
	Left Tilt	0.372	0.107	0.479					
	Right Cheek	1	0.437	1.437					
	Right Tilt	0.603	0.233	0.836					

The above tables represent a held to ear voice call with 2.4 GHz WLAN.

### Simultaneous Transmission Summation for Body-Worn (1cm)

Simultaneous TX	configuration	CDMA835 Part 90S SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)	Simultaneous TX	configuration	CDMA835 Part 22H SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)
Body SAR	Back	0.73	0.104	0.834	Body SAR	Back	0.97	0.104	1.074
Simultaneous TX	configuration	PCS CDMA Part 24E SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)					
Body SAR	Back	0.494	0.104	0.598					

The above tables represent a body-worn call with 2.4 GHz WLAN.

### Simultaneous Transmission Summation for Hotspot

Simultaneous TX	configuration	CDMA835 Part 90S SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)	Simultaneous TX	configuration	CDMA835 Part 22H SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)
Body SAR	Back	0.655	0.104	0.759	Body SAR	Back	0.809	0.104	0.913
	Front	0.375	0.083	0.458		Front	0.552	0.083	0.635
	Left	0.304	0.069	0.373		Left	0.436	0.069	0.505
	Right	0.415	-	0.415		Right	0.582	-	0.582
	Bottom	0.062	0.019	0.081		Bottom	0.089	0.019	0.108
	Top	-	-	-		Top	-	-	-
Simultaneous TX	configuration	PCS CDMA Part 24E SAR(W/kg)	WIFI SAR (W/kg)	$\Sigma$ SAR (W/kg)					
Body SAR	Back	1.04	0.104	1.144					
	Front	0.749	0.083	0.832					
	Left	0.231	0.069	0.300					
	Right	0.194	-	0.194					
	Bottom	0.7	0.019	0.719					
	Top	-	-	-					

The above tables represent a portable hotspot condition.

## 11.3 Simultaneous Transmission Conclusion

The above numerical summed SAR was below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit. No volumetric SAR summation is required per FCC KDB Publication 648474.

The above tables represent the worst-case simultaneous transmission scenarios possibility with this device.

Because the conducted output power level of the BT transmitter is less than  $2 \cdot P_{ref}$ , and the BT antenna is more than 5 cm from the Main antenna, neither simultaneous SAR nor stand-alone BT SAR are required for the EUT.

## 12. SAR TEST DATA SUMMARY

### 12.1 Measurement Results (CDMA835 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	SAR(mW/g)
MHz	Channel						
824.7	1013 (low)	CDMA835	25.17	-0.029	Standard	Left Ear	0.591
836.52	384 (Mid)	CDMA835	25.24	-0.052	Standard	Left Ear	0.819
848.31	777(High)	CDMA835	25.10	-0.01	Standard	Left Ear	0.768
836.52	384 (Mid)	CDMA835	25.24	-0.066	Standard	Left Tilt 15°	0.495
824.7	1013 (low)	CDMA835	25.17	-0.015	Standard	Right Ear	0.637
836.52	384 (Mid)	CDMA835	25.24	0.154	Standard	Right Ear	0.864
848.31	777(High)	CDMA835	25.10	-0.04	Standard	Right Ear	0.845
836.52	384 (Mid)	CDMA835	25.24	-0.034	Standard	Right Tilt 15°	0.455
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>					<b>Head 1.6 W/kg (mW/g) Averaged over 1 gram</b>		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- Head SAR for CDMA2000 mode was tested under RC3/SO55 per KDB Publication 941225 D01.
- CDMA 1x Advanced technology was not required for SAR since the maximum output powers for 1x Advanced was not more than 0.25dB higher than the maximum measured powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg.

## 12.2 Measurement Results (CDMA BC10 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	SAR(mW/g)
MHz	Channel						
820.1	564 (Mid)	CDMA835	24.58	-0.175	Standard	Left Ear	0.549
820.1	564 (Mid)	CDMA835	24.58	-0.15	Standard	Left Tilt 15°	0.316
820.1	564 (Mid)	CDMA835	24.58	0.042	Standard	Right Ear	0.592
820.1	564 (Mid)	CDMA835	24.58	0.024	Standard	Right Tilt 15°	0.331
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>					<b>Head 1.6 W/kg (mW/g) Averaged over 1 gram</b>		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- Head SAR for CDMA2000 mode was tested under RC3/SO55 per KDB Publication 941225 D01.
- CDMA 1x Advanced technology was not required for SAR since the maximum output powers for 1x Advanced was not more than 0.25dB higher than the maximum measured powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg.

## 12.3 Measurement Results (PCS1900 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	SAR(mW/g)
MHz	Channel						
1851.25	25 (Low)	PCS1900	24.66	-0.059	Standard	Left Ear	0.944
1880.00	600 (Mid)	PCS1900	24.64	-0.041	Standard	Left Ear	0.965
1908.75	1175 (High)	PCS1900	24.72	0.064	Standard	Left Ear	0.882
1880.00	600 (Mid)	PCS1900	24.64	0.035	Standard	Left Tilt 15°	0.372
1851.25	25 (Low)	PCS1900	24.66	0.093	Standard	Right Ear	1.00
1880.00	600 (Mid)	PCS1900	24.64	0.061	Standard	Right Ear	0.987
1908.75	1175 (High)	PCS1900	24.72	0.011	Standard	Right Ear	0.890
1880.00	600 (Mid)	PCS1900	24.64	0.09	Standard	Right Tilt 15°	0.603
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>					<b>Head 1.6 W/kg (mW/g) Averaged over 1 gram</b>		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- Head SAR for CDMA2000 mode was tested under RC3/SO55 per KDB Publication 941225 D01.
- CDMA 1x Advanced technology was not required for SAR since the maximum output powers for 1x Advanced was not more than 0.25dB higher than the maximum measured powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg.

## 12.4 Measurement Results (802.11b/g/n Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	SAR(mW/g)
MHz	Channel						
2 442	11 (High)	802.11b	14.27	-0.007	Standard	Left Ear	0.184
2 442	11 (High)	802.11b	14.27	-0.07	Standard	Left Tilt 15°	0.107
2 442	11 (High)	802.11b	14.27	0.195	Standard	Right Ear	0.437
2 442	11 (High)	802.11b	14.27	0.02	Standard	Right Tilt 15	0.233
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit</b>						<b>Head</b>	
<b>Spatial Peak</b>						<b>1.6 W/kg (mW/g)</b>	
<b>Uncontrolled Exposure/ General Population</b>						<small>Averaged over 1 gram</small>	

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- IEEE 802.11g(including 802.11n) SAR testing is required when the conducted powers are equal to or greater than 0.25 dB Than the conducted powers in IEEE 802.11b.
- For 2.4GHz WLAN, Highest average power channel for the lowest data rate was selected for SAR evaluation based on KDB 248227. Other channels are not necessary because 1g-average SAR < 0.8 W/Kg and peak SAR < 1.6W/Kg per KDB 248227.

## 12.5 Measurement Results (Body-Worn SAR)

Frequency		Mode	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
824.7	1013 (low)	CDMA835 Part 22H	23.46	-0.005	Rear	1.5 cm	0.858
836.52	384 (Mid)	CDMA835 Part 22H	23.46	0.05	Rear	1.5 cm	0.970
848.31	777(High)	CDMA835 Part 22H	23.46	0.014	Rear	1.5 cm	0.753
820.1	564 (Mid)	CDMA835 Part 90S	24.52	-0.061	Rear	1.5 cm	0.730
1880	600 (Mid)	PCS1900 Part 24E	24.55	0.045	Rear	1.5 cm	0.494
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit</b>						<b>Body</b>	
<b>Spatial Peak</b>						<b>1.6 W/kg (mW/g)</b>	
<b>Uncontrolled Exposure/ General Population</b>						<small>Averaged over 1 gram</small>	

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- Test Configuration  With Holster  Without Holster
- Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- Body-Worn SAR was tested under RC3/SO32 with FCH only since the maximum average output power of FCH+SCH and EVDO modes are not greater than 0.25 dB of the RC3/SO32 FCH only mode per KDB Publication 941225 D01.
- CDMA 1x Advanced technology was not required for SAR since the maximum output powers for 1x Advanced was not more than 0.25dB higher than the maximum measured powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg.



## 12.5 Measurement Results (EVDO835 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
824.7	1013 (low)	EVDO	23.28	0.019	Rear	1.0 cm	0.787
836.52	384 (Mid)	EVDO	23.46	0.122	Rear	1.0 cm	0.809
848.31	777(High)	EVDO	23.43	0.053	Rear	1.0 cm	0.769
836.52	384 (Mid)	EVDO	23.28	-0.132	Front	1.0 cm	0.552
836.52	384 (Mid)	EVDO	23.46	-0.016	Left	1.0 cm	0.436
836.52	384 (Mid)	EVDO	23.43	-0.176	Right	1.0 cm	0.582
836.52	384 (Mid)	EVDO	23.28	0.079	Bottom	1.0 cm	0.089
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>						<b>Body 1.6 W/kg (mW/g) <small>Averaged over 1 gram</small></b>	

**NOTES:**

- 1 The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- 2 All modes of operation were investigated and the worst-case are reported.
- 3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- 4 Tissue parameters and temperatures are listed on the SAR plot.
- 5 Battery Type                     Standard                     Extended                     Slim  
Batteries are fully charged for all readings.
- 6 Test Signal Call Mode         Manual Test cord             Base Station Simulator
- 7 Test Configuration             With Holster                     Without Holster
- 8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- 9 EVDO SAR was tested under EVDO Rev.0 RTAP.
- 10 Hotspot SAR testing was performed at reduced power tuned by manufacturer. Reduced powers for Hotspot were used to meet internal SAR limits set by manufacturer.

## 12.6 Measurement Results (CDMA EVDO BC10 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
820.1	564 (Mid)	EVDO	22.53	0.107	Rear	1.0 cm	0.655
820.1	564 (Mid)	EVDO	22.53	-0.153	Front	1.0 cm	0.375
820.1	564 (Mid)	EVDO	22.53	-0.002	Left	1.0 cm	0.304
820.1	564 (Mid)	EVDO	22.53	-0.111	Right	1.0 cm	0.415
820.1	564 (Mid)	EVDO	22.53	0.109	Bottom	1.0 cm	0.062
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>						<b>Body 1.6 W/kg (mW/g) Averaged over 1 gram</b>	

**NOTES:**

- 1 The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- 2 All modes of operation were investigated and the worst-case are reported.
- 3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- 4 Tissue parameters and temperatures are listed on the SAR plot.
- 5 Battery Type                     Standard                     Extended                     Slim  
Batteries are fully charged for all readings.
- 6 Test Signal Call Mode        Manual Test cord        Base Station Simulator
- 7 Test Configuration          With Holster              Without Holster
- 8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- 9 EVDO SAR was tested under EVDO Rev.0 RTAP.
- 10 Hotspot SAR testing was performed at reduced power tuned by manufacturer. Reduced powers for Hotspot were used to meet internal SAR limits set by manufacturer.

## 12.7 Measurement Results (EVDO1900 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
1851.25	25 (Low)	EVDO	22.70	0.083	Rear	1.0 cm	1.04
1880.00	600 (Mid)	EVDO	22.70	0.113	Rear	1.0 cm	1.01
1908.75	1175 (High)	EVDO	22.69	0.025	Rear	1.0 cm	0.921
1880.00	600 (Mid)	EVDO	22.70	-0.127	Front	1.0 cm	0.749
1880.00	600 (Mid)	EVDO	22.70	0.128	Left	1.0 cm	0.231
1880.00	600 (Mid)	EVDO	22.70	0.172	Right	1.0 cm	0.194
1880.00	600 (Mid)	EVDO	22.70	-0.106	Bottom	1.0 cm	0.7
<b>ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>						<b>Body 1.6 W/kg (mW/g) Averaged over 1 gram</b>	

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test cord  Base Station Simulator
- Test Configuration  With Holster  Without Holster
- Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
- EVDO SAR was tested under EVDO Rev.0 RTAP.
- Hotspot SAR testing was performed at reduced power tuned by manufacturer. Reduced powers for Hotspot were used to meet internal SAR limits set by manufacturer.

## 12.8 Measurement Results (802.11b/g/n Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Data Rate	SAR(mW/g)
MHz	Channel							
2 442	11 (High)	802.11b	14.27	0.081	Rear	1.0 cm	1 Mbps	0.104
2 442	11 (High)	802.11b	14.27	-0.096	Front	1.0 cm	1 Mbps	0.083
2 442	11 (High)	802.11b	14.27	-0.086	Left	1.0 cm	1 Mbps	0.069
2 442	11 (High)	802.11b	14.27	-0.098	Bottom	1.0 cm	1 Mbps	0.019
<b>ANSI/ IEEE C95.1 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population</b>						<b>Body 1.6 W/kg (mW/g) Averaged over 1 gram</b>		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- Battery Type  Standard  Extended  Slim  
Batteries are fully charged for all readings.
- Test Signal Call Mode  Manual Test code  Base Station Simulator
- IEEE 802.11g(including 802.11n) SAR testing is required when the conducted powers are equal to or greater than 0.25 dB Than the conducted powers in IEEE 802.11b.
- For 2.4GHz WLAN, Highest average power channel for the lowest data rate was selected for SAR evaluation based on KDB 248227. Other channels are not necessary because 1g-average SAR < 0.8 W/Kg and peak SAR < 1.6W/Kg per KDB 248227.

## **13. CONCLUSION**

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The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/IEEE C95.1 1992.

These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests.

## 14. REFERENCES

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## Attachment 1. – SAR Test Plots

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.894$  mho/m;  $\epsilon_r = 43.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left touch 1013/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.822 mW/g

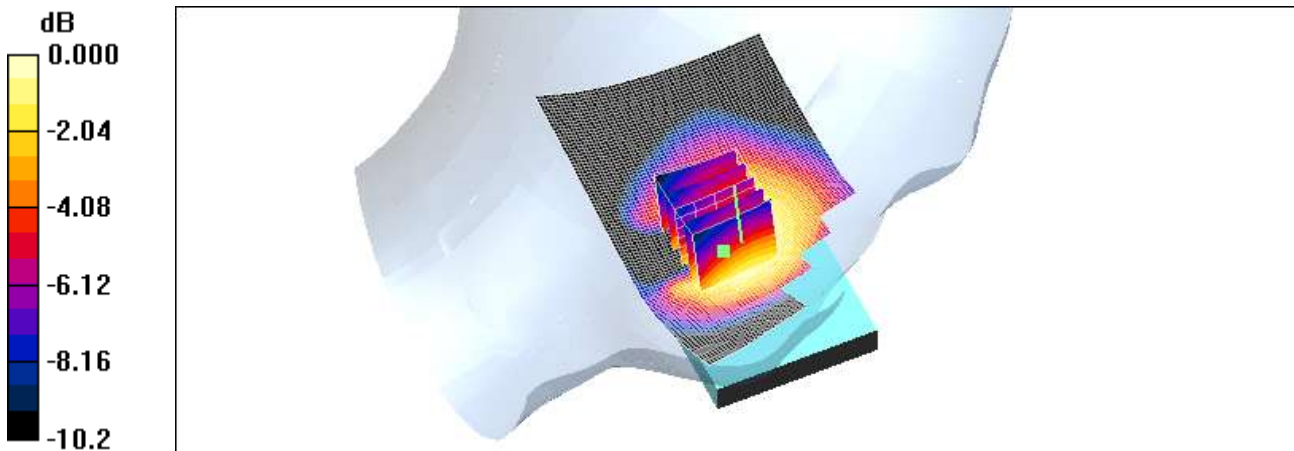
**Left touch 1013/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.29 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.711 W/kg

**SAR(1 g) = 0.591 mW/g; SAR(10 g) = 0.441 mW/g**

Maximum value of SAR (measured) = 0.623 mW/g



0 dB = 0.623mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.904$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left touch 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.859 mW/g

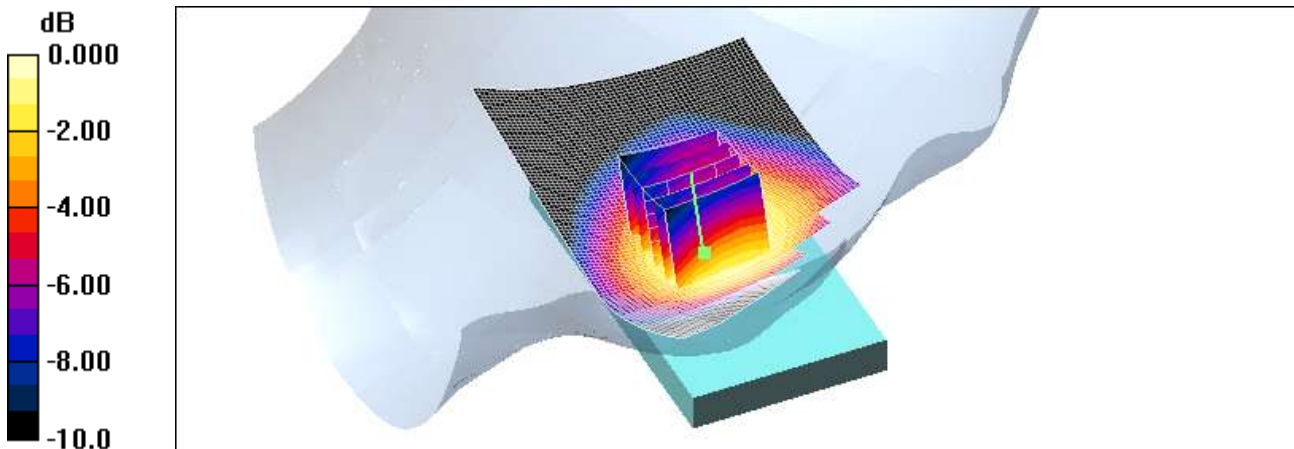
**Left touch 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 0.980 W/kg

**SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.614 mW/g**

Maximum value of SAR (measured) = 0.853 mW/g



0 dB = 0.853mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 0.916$  mho/m;  $\epsilon_r = 42.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left touch 777/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.804 mW/g

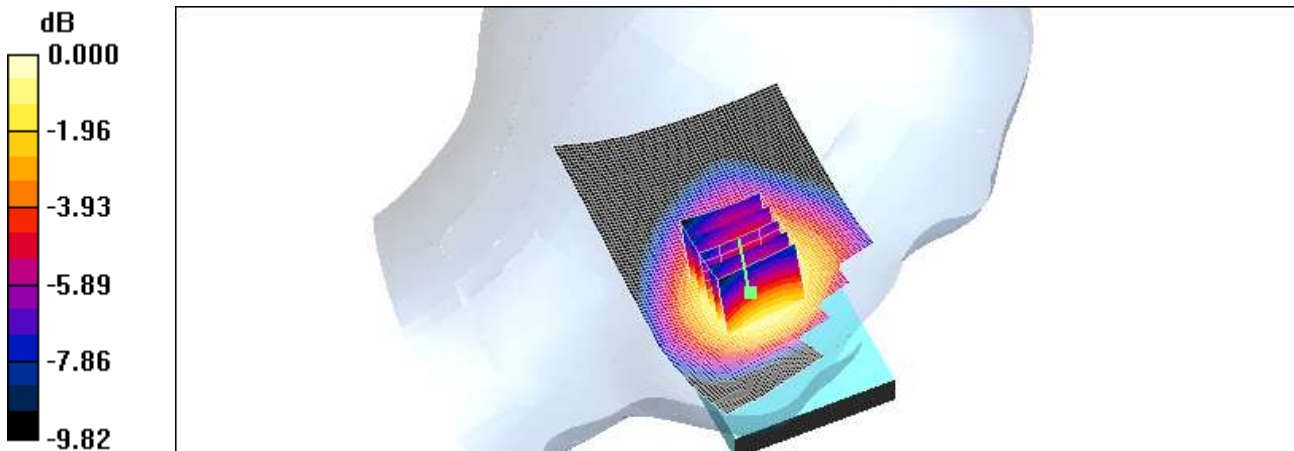
**Left touch 777/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.923 W/kg

**SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.574 mW/g**

Maximum value of SAR (measured) = 0.813 mW/g



0 dB = 0.813mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.904$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left tilt 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.523 mW/g

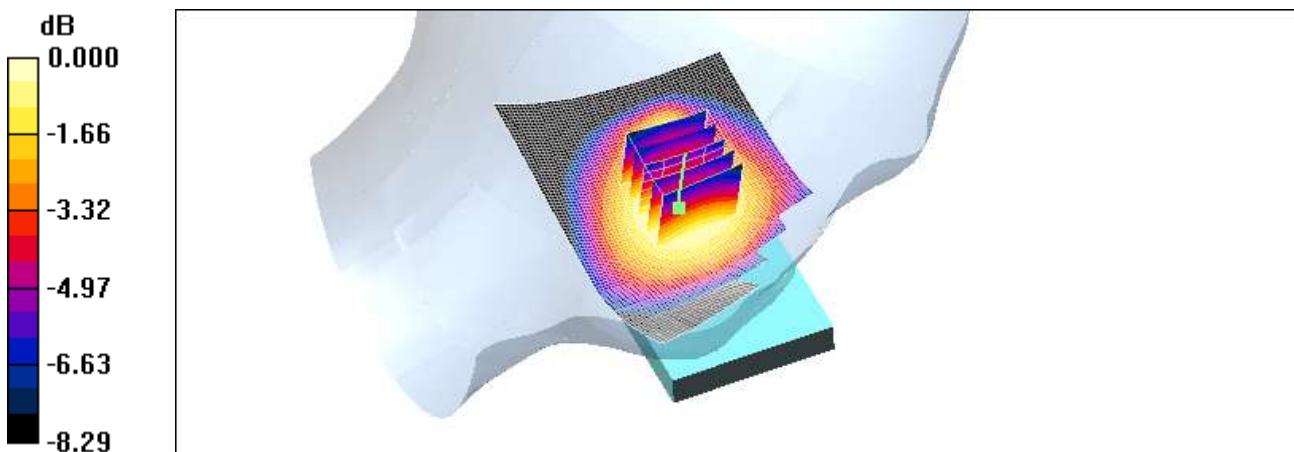
**Left tilt 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.4 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 0.582 W/kg

**SAR(1 g) = 0.495 mW/g; SAR(10 g) = 0.384 mW/g**

Maximum value of SAR (measured) = 0.515 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.894$  mho/m;  $\epsilon_r = 43.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 1013/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.655 mW/g

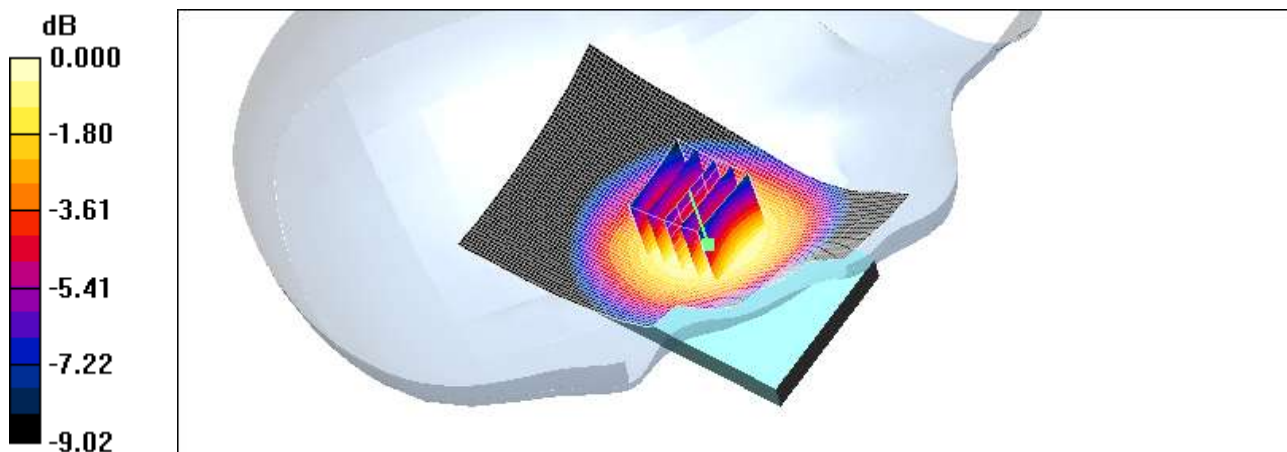
**Right touch 1013/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.771 W/kg

**SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.484 mW/g**

Maximum value of SAR (measured) = 0.670 mW/g



0 dB = 0.670mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.904$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.912 mW/g

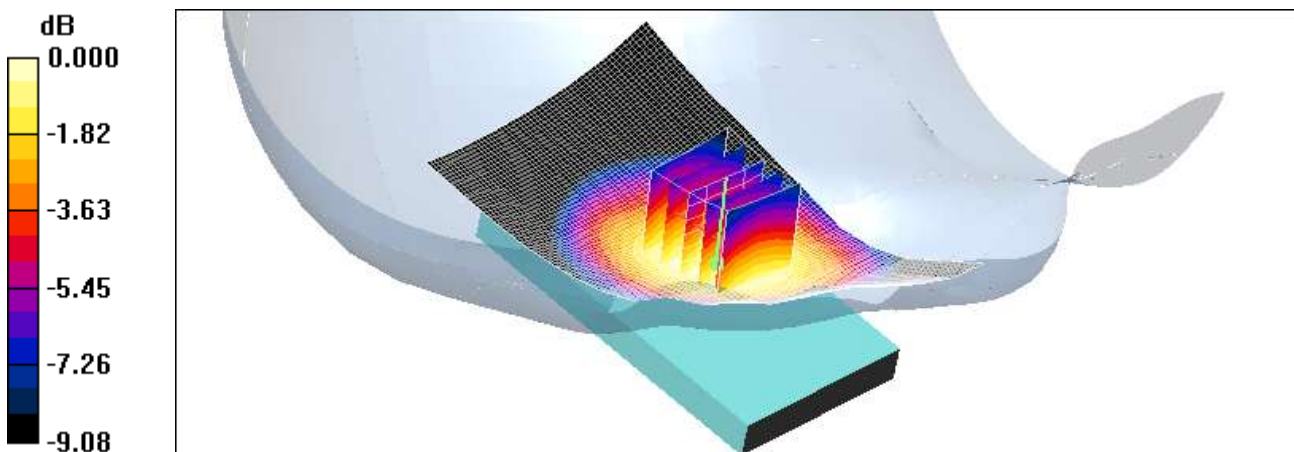
**Right touch 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = 0.154 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.660 mW/g**

Maximum value of SAR (measured) = 0.906 mW/g



0 dB = 0.906mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 0.916$  mho/m;  $\epsilon_r = 42.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 777/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.904 mW/g

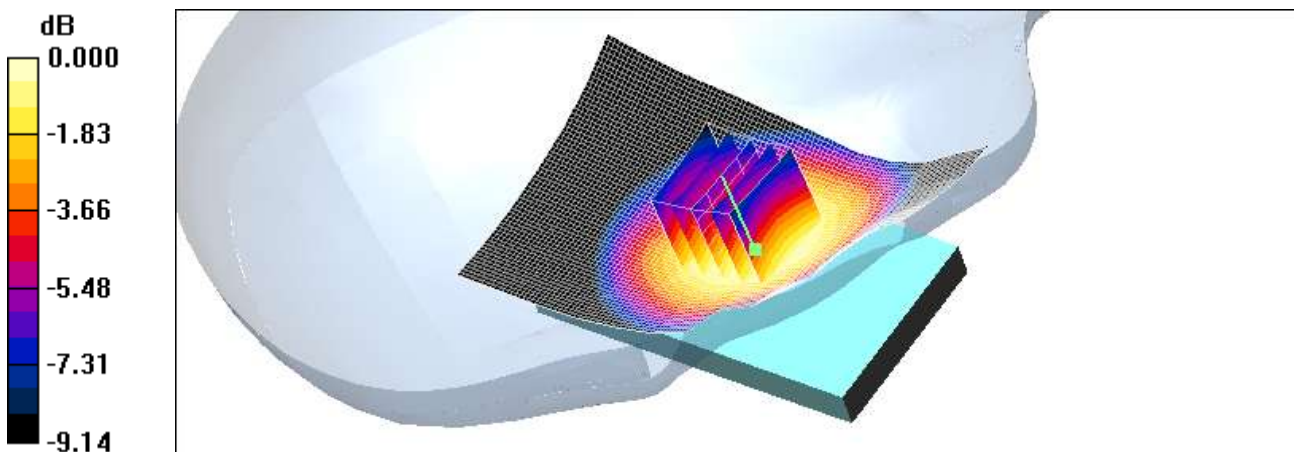
**Right touch 777/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.04 W/kg

**SAR(1 g) = 0.845 mW/g; SAR(10 g) = 0.643 mW/g**

Maximum value of SAR (measured) = 0.884 mW/g



0 dB = 0.884mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.904$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right tilt 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.478 mW/g

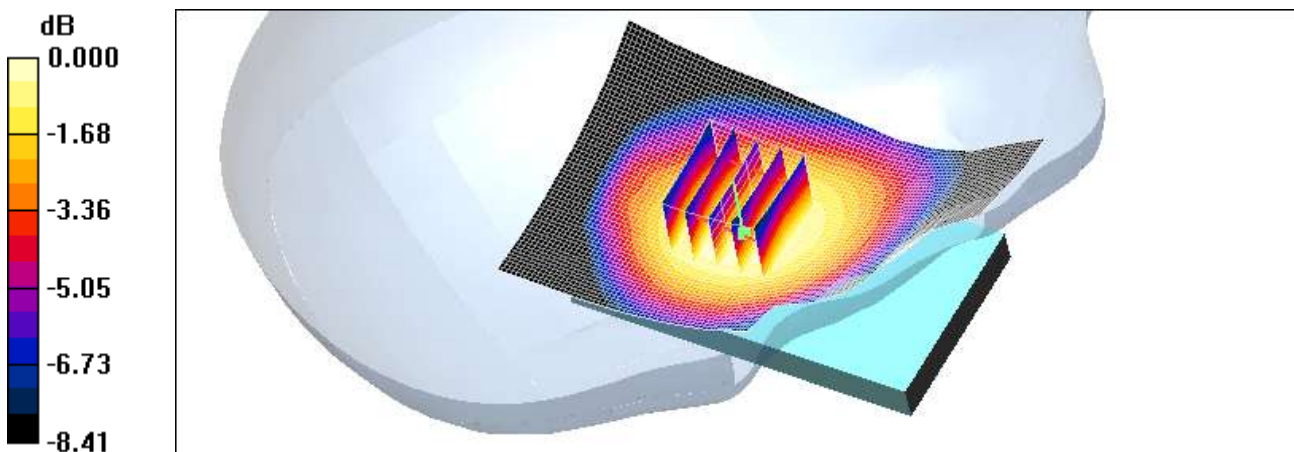
**Right tilt 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 0.532 W/kg

**SAR(1 g) = 0.455 mW/g; SAR(10 g) = 0.351 mW/g**

Maximum value of SAR (measured) = 0.476 mW/g



0 dB = 0.476mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.889$  mho/m;  $\epsilon_r = 43.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left touch 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.585 mW/g

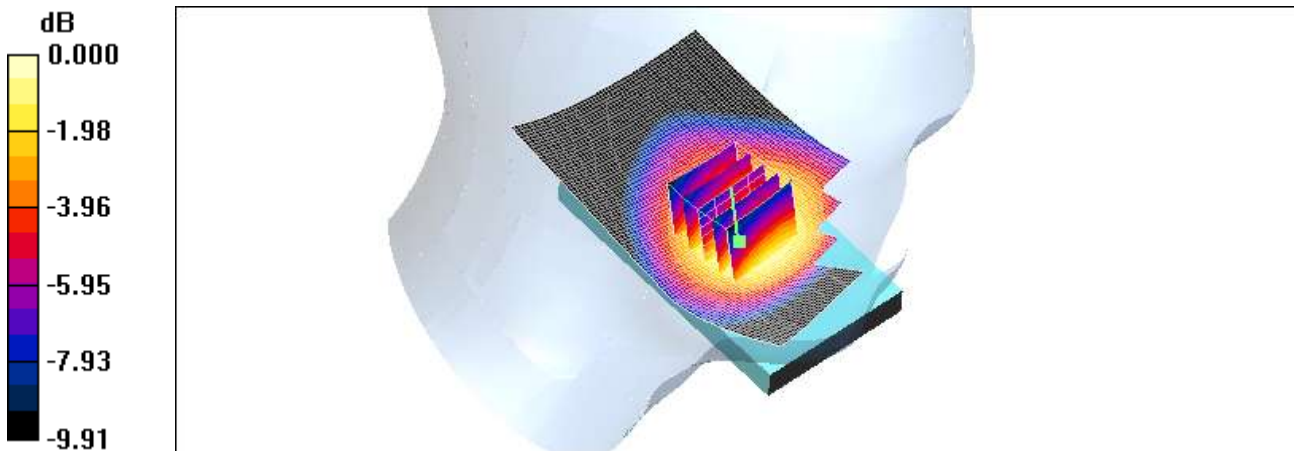
**Left touch 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.08 V/m; Power Drift = -0.175 dB

Peak SAR (extrapolated) = 0.670 W/kg

**SAR(1 g) = 0.549 mW/g; SAR(10 g) = 0.410 mW/g**

Maximum value of SAR (measured) = 0.576 mW/g



0 dB = 0.576mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.889$  mho/m;  $\epsilon_r = 43.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Left tilt 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.337 mW/g

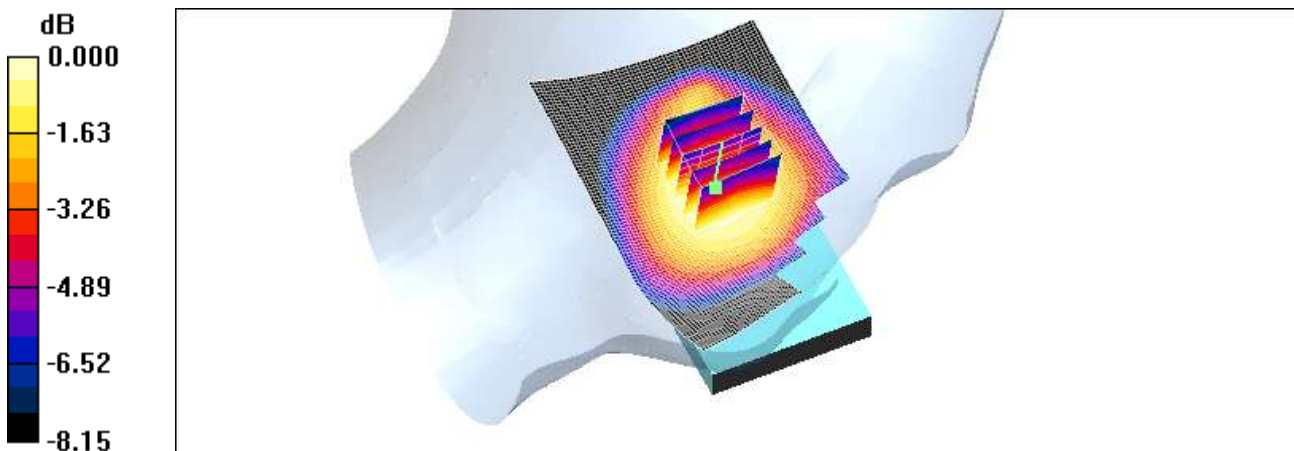
**Left tilt 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.367 W/kg

**SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.247 mW/g**

Maximum value of SAR (measured) = 0.329 mW/g



0 dB = 0.329mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.889$  mho/m;  $\epsilon_r = 43.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.625 mW/g

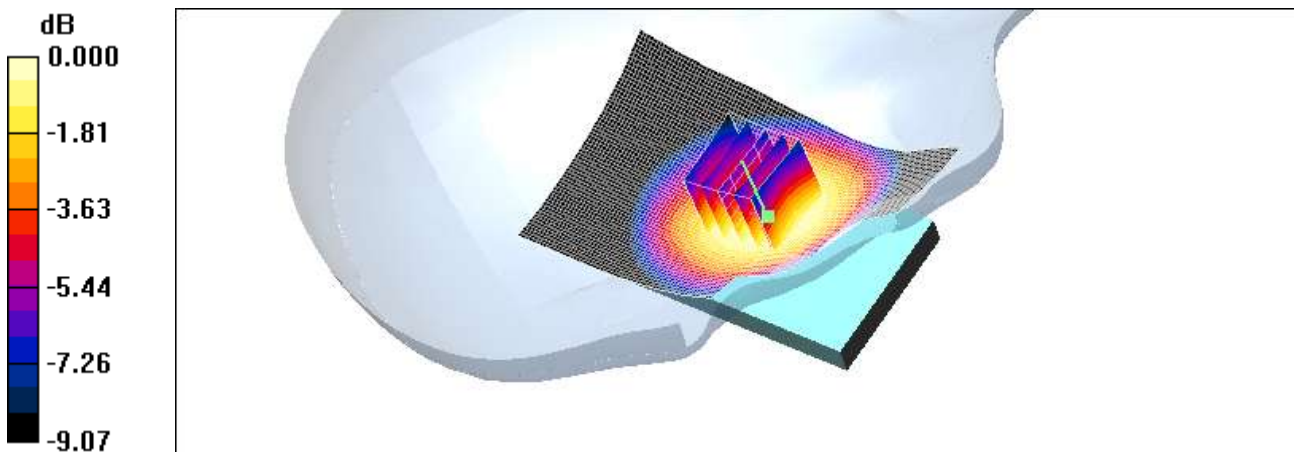
**Right touch 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.61 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.722 W/kg

**SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.453 mW/g**

Maximum value of SAR (measured) = 0.619 mW/g



0 dB = 0.619mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.889$  mho/m;  $\epsilon_r = 43.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right tilt 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.347 mW/g

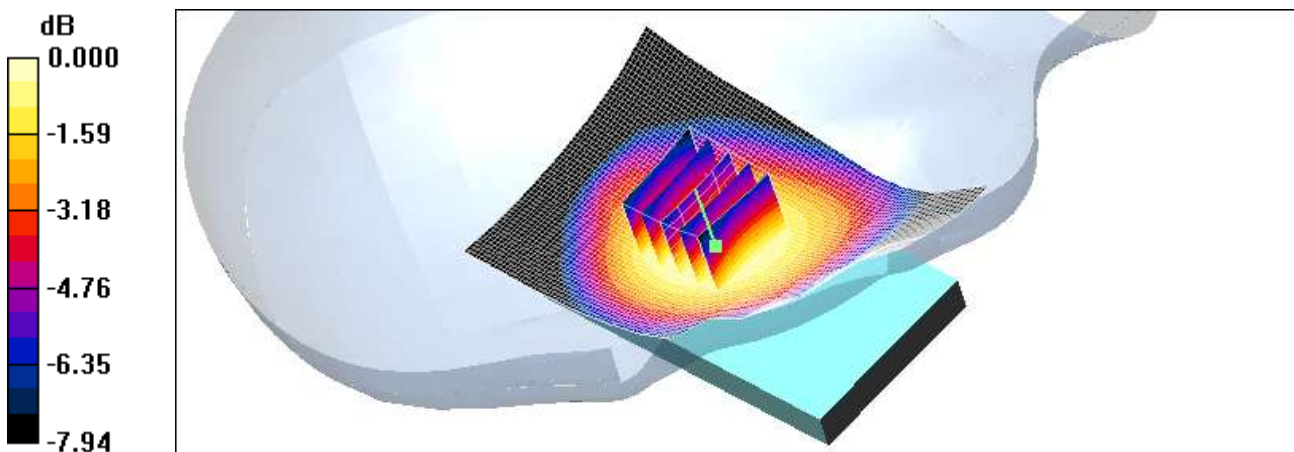
**Right tilt 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.382 W/kg

**SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.258 mW/g**

Maximum value of SAR (measured) = 0.344 mW/g



0 dB = 0.344mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Left touch 25/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.06 mW/g

**Left touch 25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

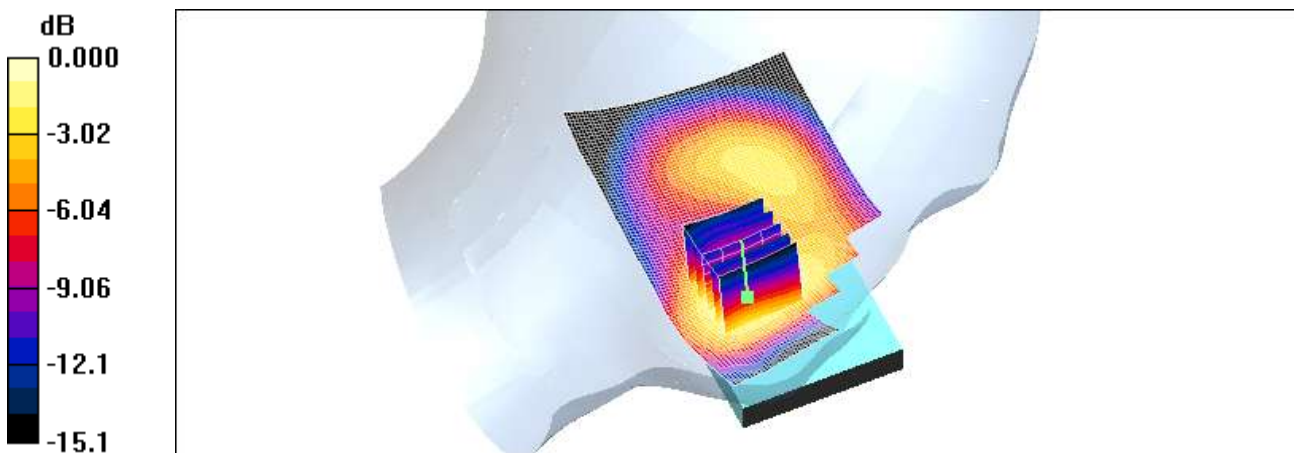
Reference Value = 16.9 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.944 mW/g; SAR(10 g) = 0.577 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.01 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Left touch 600/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

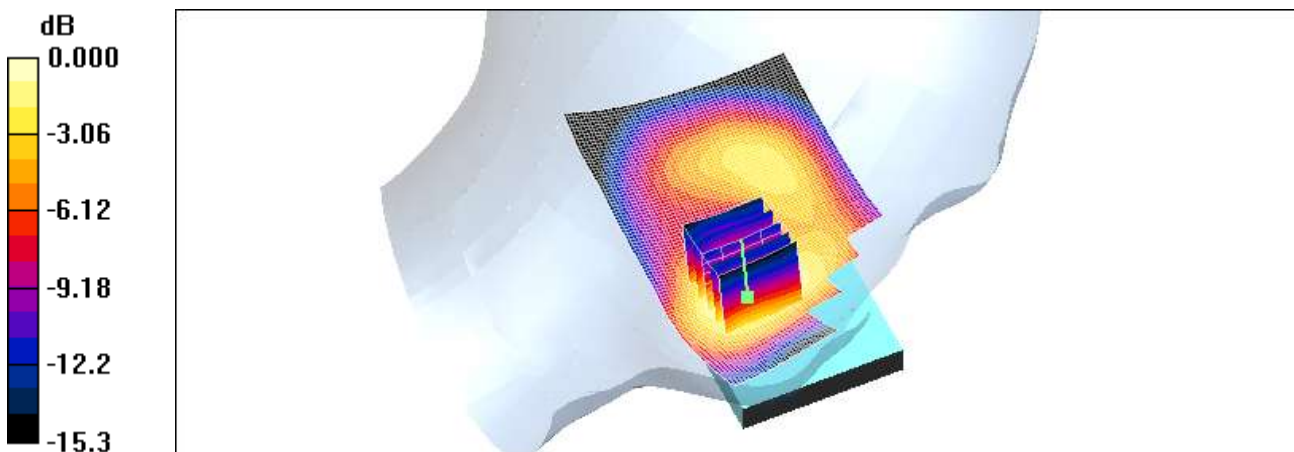
**Left touch 600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.8 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 1.38 W/kg

**SAR(1 g) = 0.965 mW/g; SAR(10 g) = 0.590 mW/g**

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



0 dB = 1.04mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Left touch 1175/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.969 mW/g

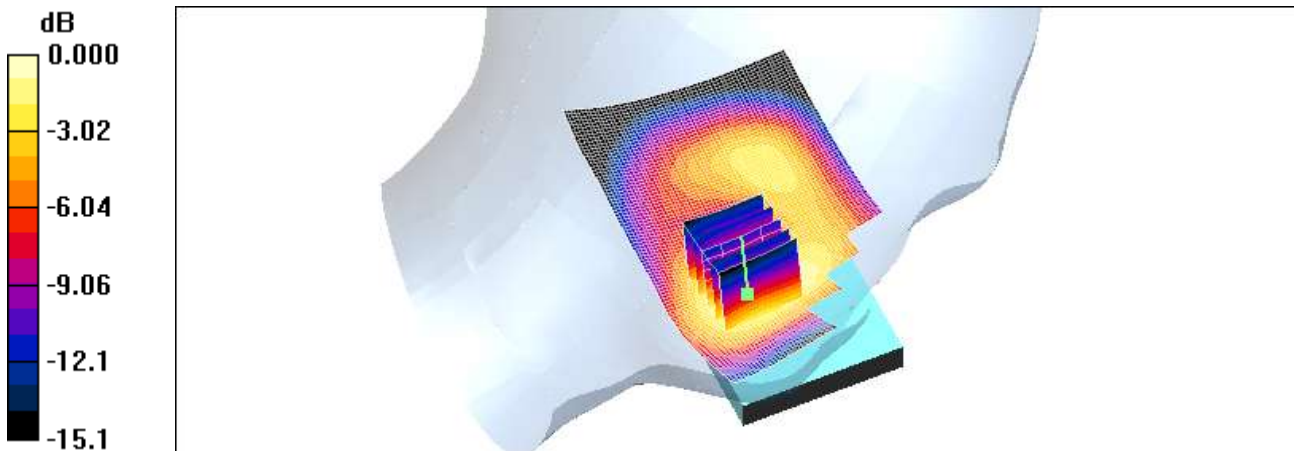
**Left touch 1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.0 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 1.26 W/kg

**SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.557 mW/g**

Maximum value of SAR (measured) = 0.932 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Left tilt 600/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.431 mW/g

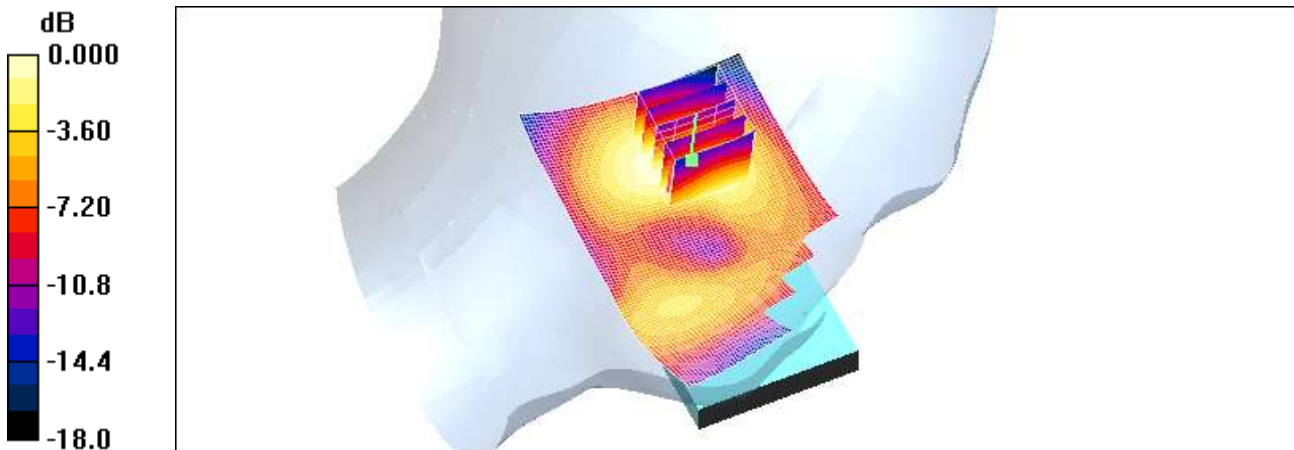
**Left tilt 600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.3 V/m; Power Drift = 0.035 dB

Peak SAR (extrapolated) = 0.551 W/kg

**SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.229 mW/g**

Maximum value of SAR (measured) = 0.402 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Right touch 25/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.14 mW/g

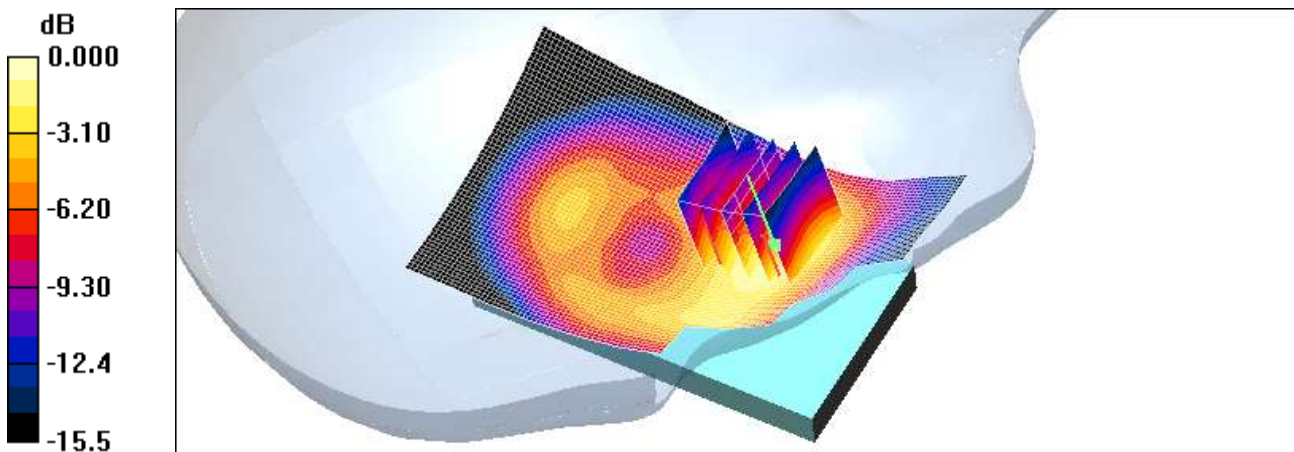
**Right touch 25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 1.31 W/kg

**SAR(1 g) = 1.00 mW/g; SAR(10 g) = 0.643 mW/g**

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



0 dB = 1.09mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Right touch 600/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

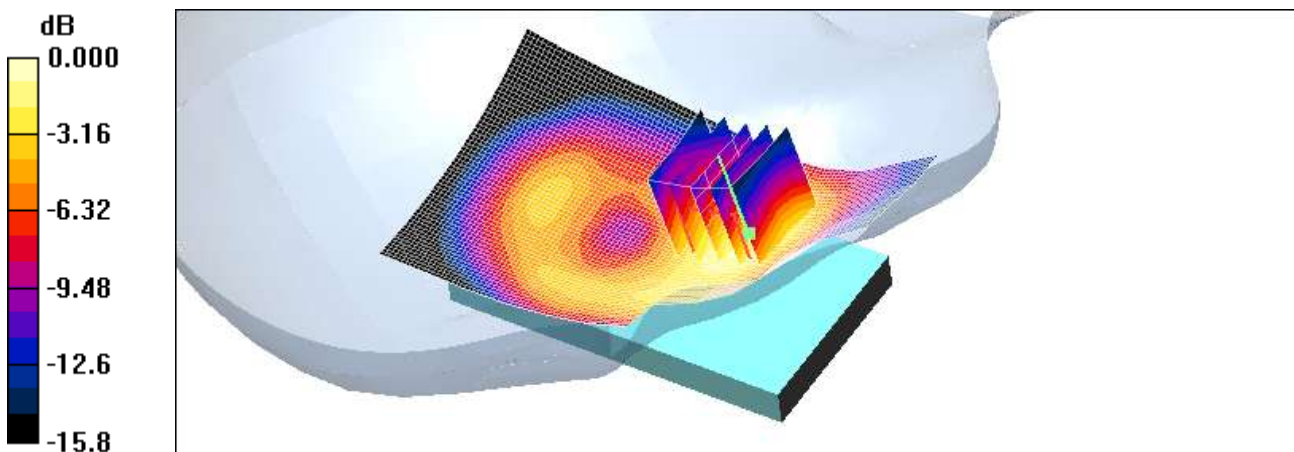
**Right touch 600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.9 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 1.30 W/kg

**SAR(1 g) = 0.987 mW/g; SAR(10 g) = 0.633 mW/g**

Maximum value of SAR (measured) = 1.07 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Right touch 1175/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.01 mW/g

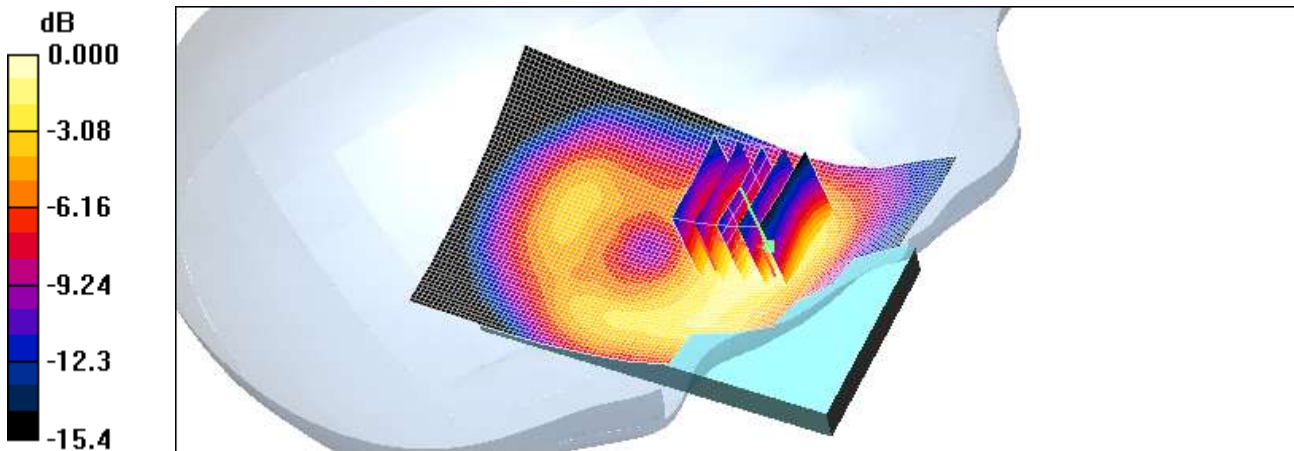
**Right touch 1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.5 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.890 mW/g; SAR(10 g) = 0.572 mW/g**

Maximum value of SAR (measured) = 0.961 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 39$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Right tilt 600/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.670 mW/g

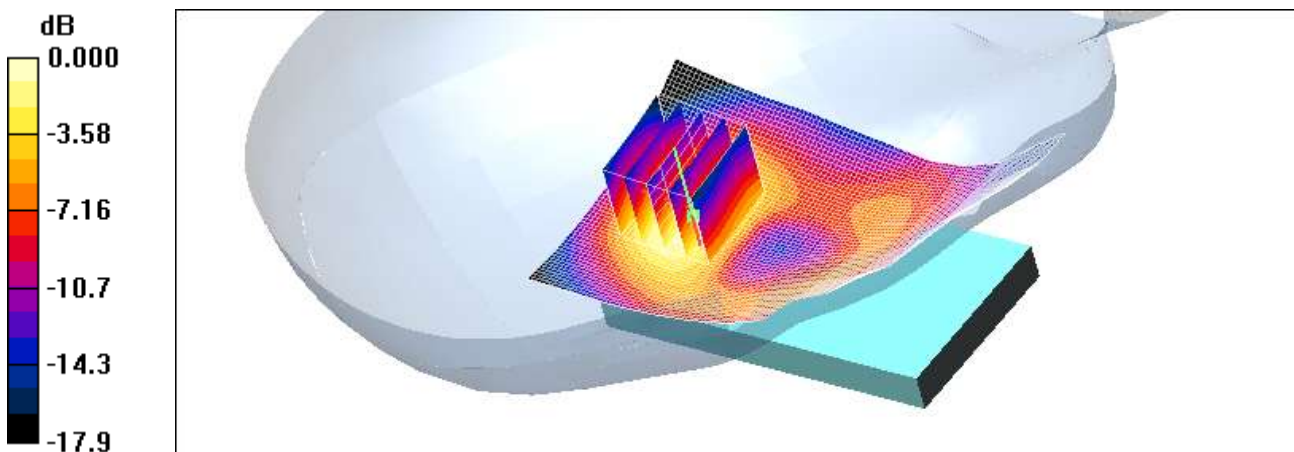
**Right tilt 600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.2 V/m; Power Drift = 0.090 dB

Peak SAR (extrapolated) = 0.898 W/kg

**SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.348 mW/g**

Maximum value of SAR (measured) = 0.660 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Left touch 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.178 mW/g

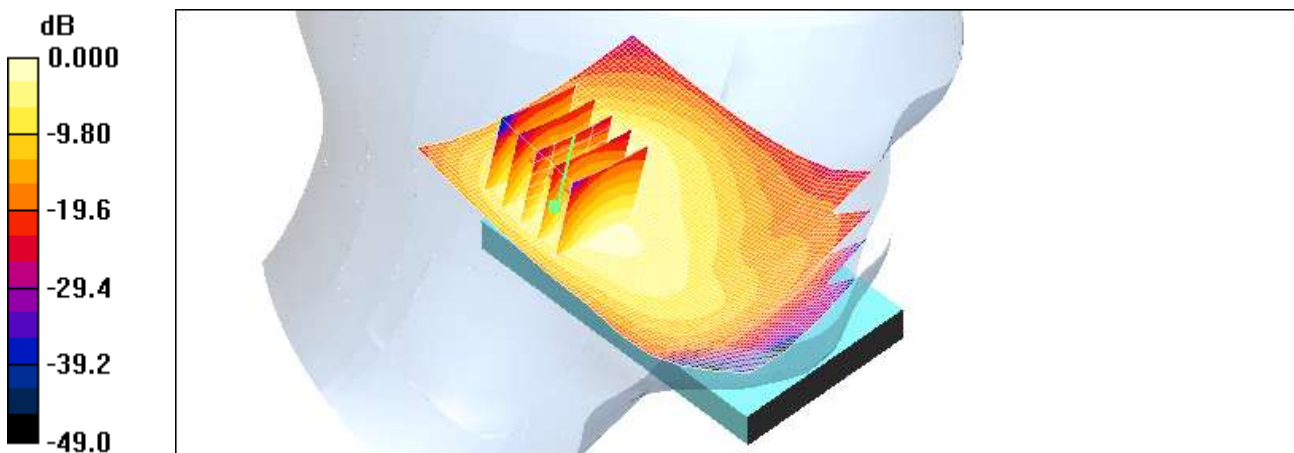
**Left touch 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.01 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.436 W/kg

**SAR(1 g) = 0.184 mW/g; SAR(10 g) = 0.084 mW/g**

Maximum value of SAR (measured) = 0.205 mW/g



0 dB = 0.205mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Left tilt 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.109 mW/g

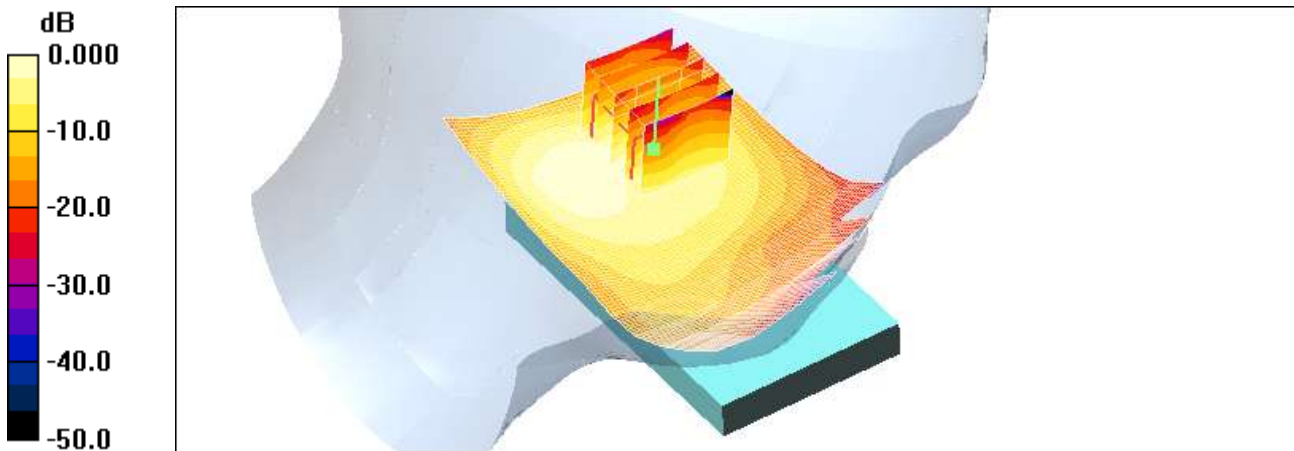
**Left tilt 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.34 V/m; Power Drift = -0.070 dB

Peak SAR (extrapolated) = 0.242 W/kg

**SAR(1 g) = 0.107 mW/g; SAR(10 g) = 0.048 mW/g**

Maximum value of SAR (measured) = 0.110 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Right touch 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.541 mW/g

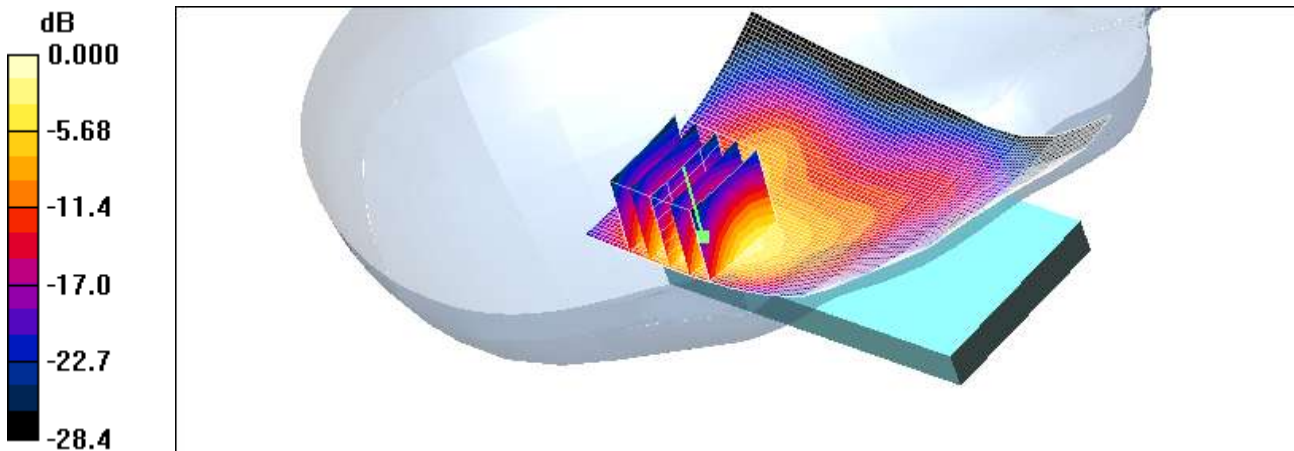
**Right touch 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.25 V/m; Power Drift = 0.195 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.437 mW/g; SAR(10 g) = 0.183 mW/g**

Maximum value of SAR (measured) = 0.487 mW/g



0 dB = 0.487mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Right tilt 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.257 mW/g

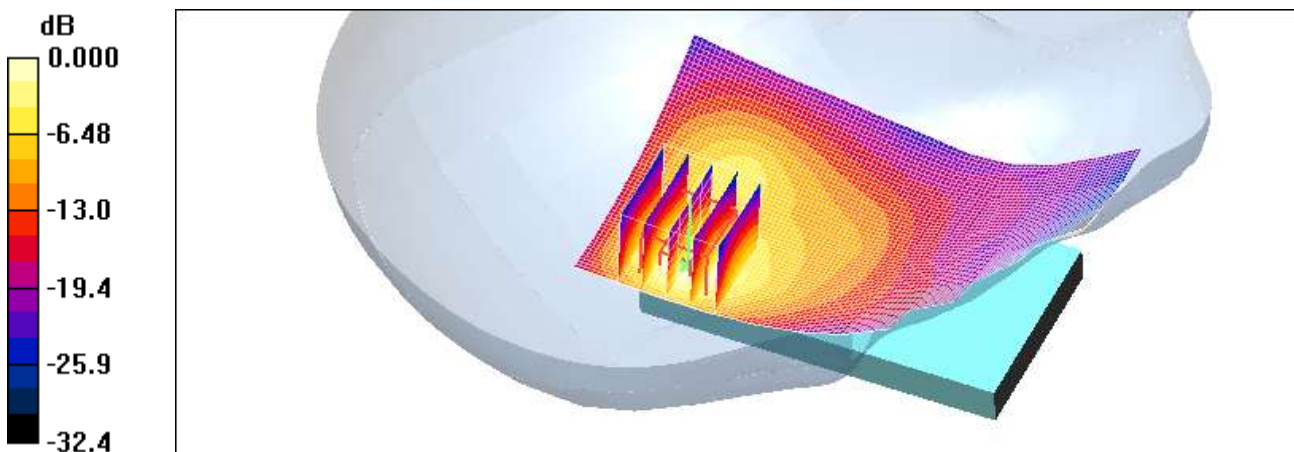
**Right tilt 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.28 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 0.577 W/kg

**SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.098 mW/g**

Maximum value of SAR (measured) = 0.255 mW/g



0 dB = 0.255mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.983$  mho/m;  $\epsilon_r = 54.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 1013/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.902 mW/g

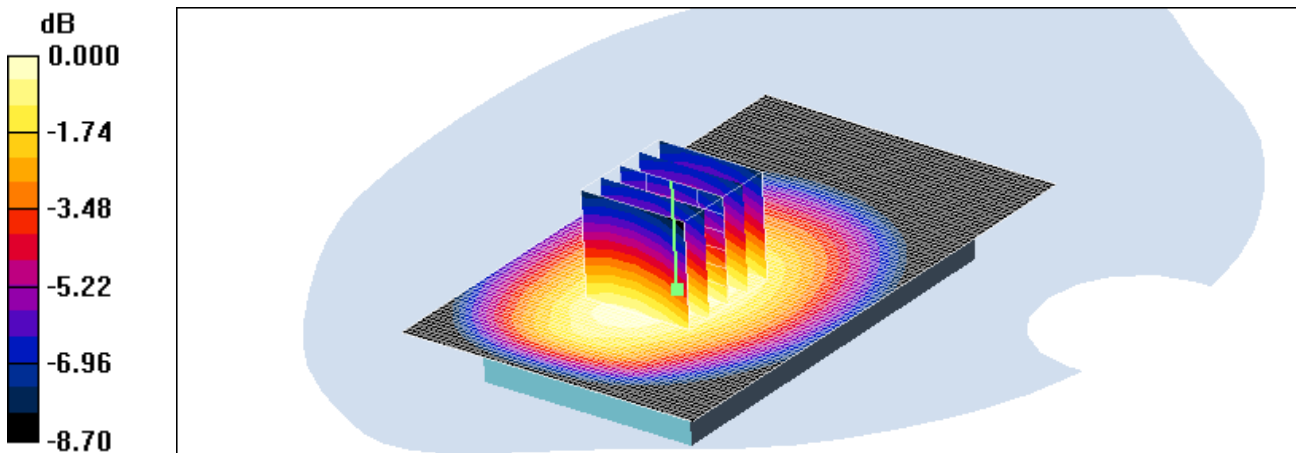
**Body rear 1013/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.0 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 1.04 W/kg

**SAR(1 g) = 0.858 mW/g; SAR(10 g) = 0.646 mW/g**

Maximum value of SAR (measured) = 0.909 mW/g



0 dB = 0.909mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.01 mW/g

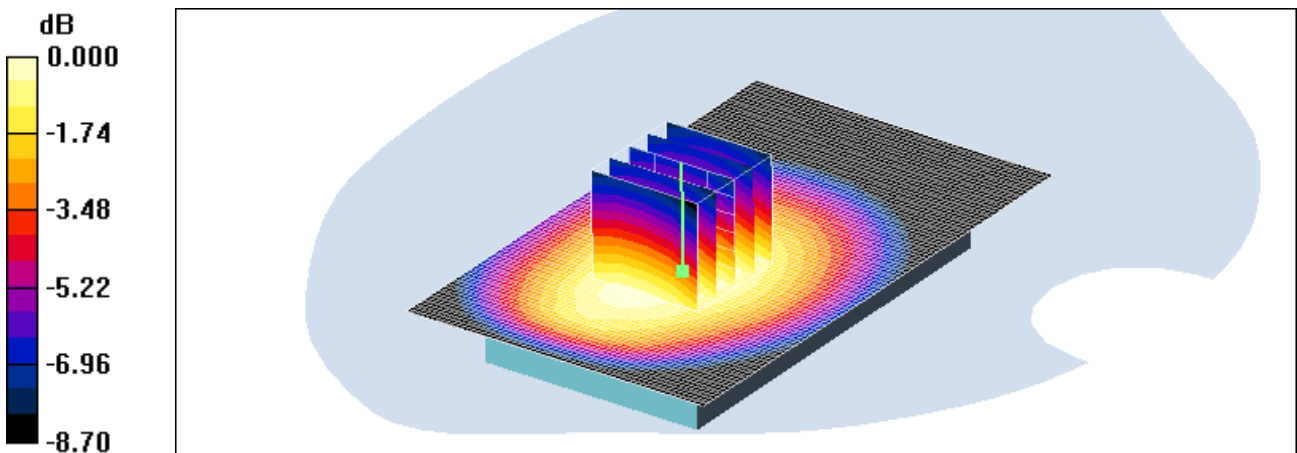
**Body rear 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.1 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.734 mW/g**

Maximum value of SAR (measured) = 1.02 mW/g



0 dB = 1.02mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 54.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 777/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.793 mW/g

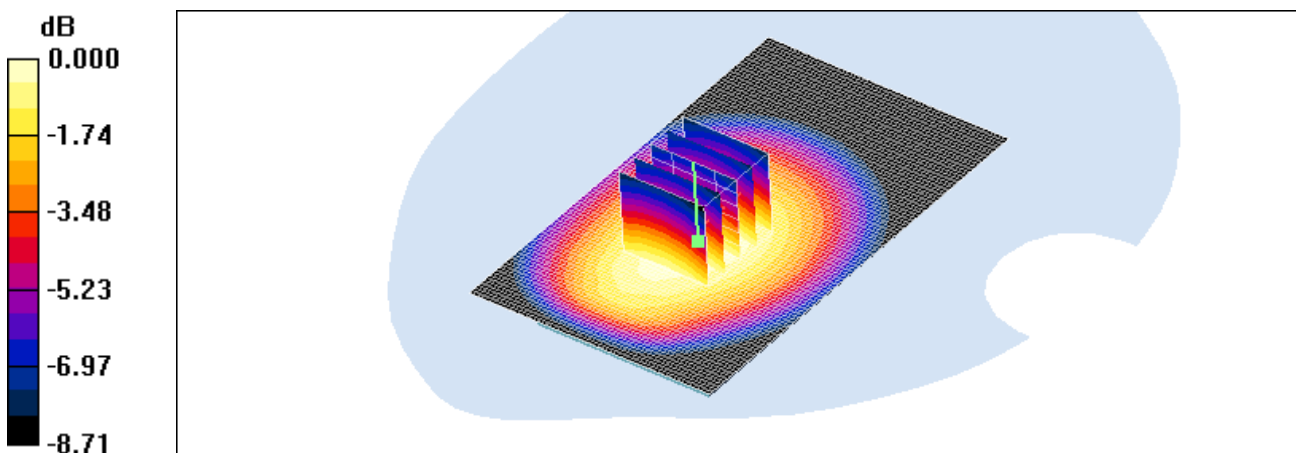
**Body rear 777/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.4 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 0.913 W/kg

**SAR(1 g) = 0.753 mW/g; SAR(10 g) = 0.565 mW/g**

Maximum value of SAR (measured) = 0.796 mW/g



0 dB = 0.796mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.777 mW/g

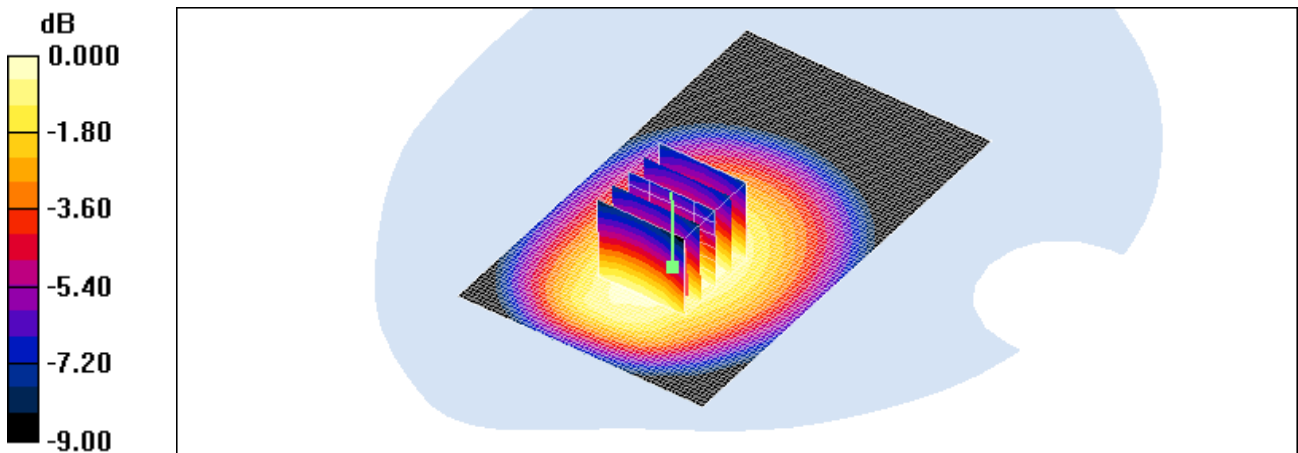
**Body rear 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 0.878 W/kg

**SAR(1 g) = 0.730 mW/g; SAR(10 g) = 0.553 mW/g**

Maximum value of SAR (measured) = 0.765 mW/g



0 dB = 0.765mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 600/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.536 mW/g

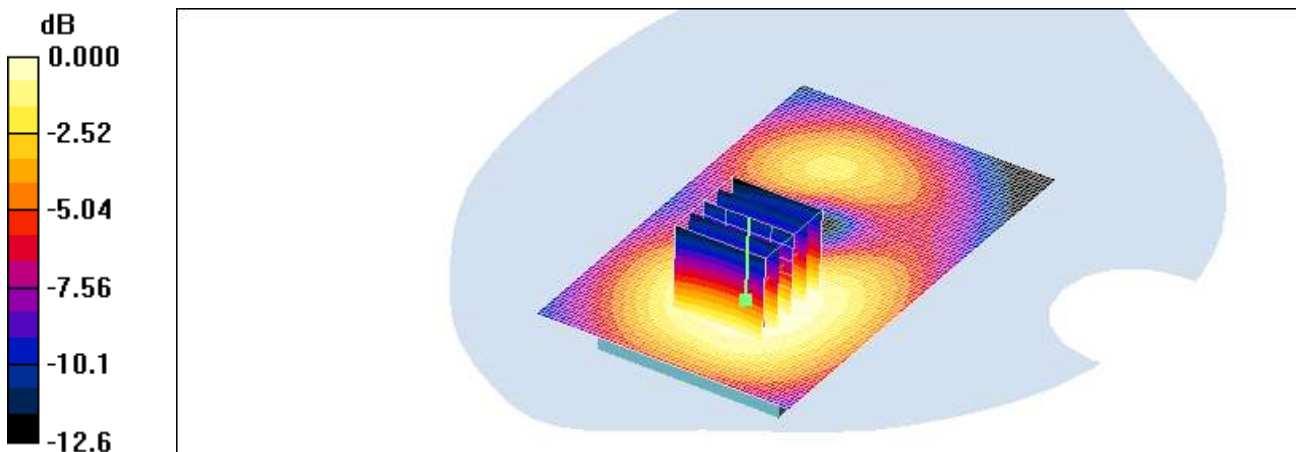
**Body rear 600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.9 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.751 W/kg

**SAR(1 g) = 0.494 mW/g; SAR(10 g) = 0.326 mW/g**

Maximum value of SAR (measured) = 0.522 mW/g



0 dB = 0.522mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.983$  mho/m;  $\epsilon_r = 54.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 1013 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.842 mW/g

**Body rear 1013 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.3 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.941 W/kg

**SAR(1 g) = 0.787 mW/g; SAR(10 g) = 0.599 mW/g**

Maximum value of SAR (measured) = 0.827 mW/g

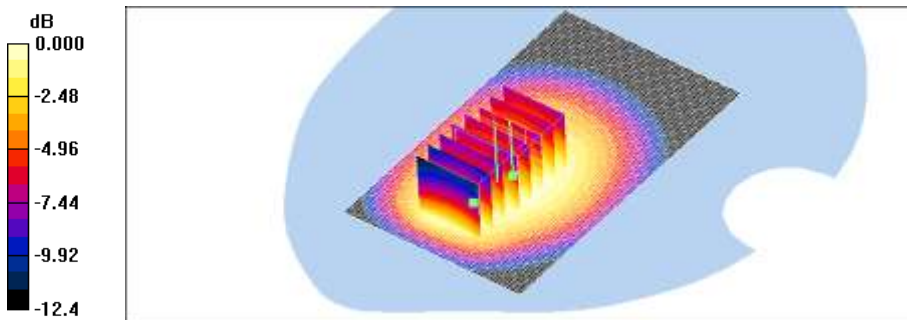
**Body rear 1013 EVDO/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.3 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.763 mW/g; SAR(10 g) = 0.565 mW/g

Maximum value of SAR (measured) = 0.818 mW/g



0 dB = 0.818mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 384 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.842 mW/g

**Body rear 384 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = 0.122 dB

Peak SAR (extrapolated) = 0.980 W/kg

**SAR(1 g) = 0.809 mW/g; SAR(10 g) = 0.616 mW/g**

Maximum value of SAR (measured) = 0.848 mW/g

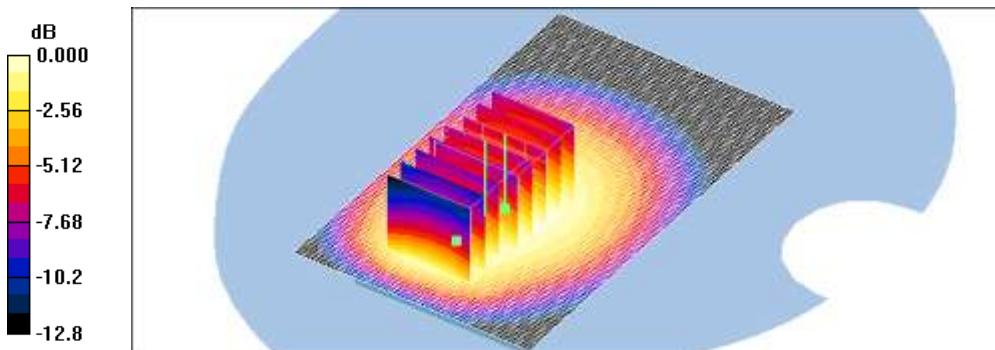
**Body rear 384 EVDO/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = 0.122 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.791 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 0.850 mW/g



0 dB = 0.850mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 54.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 777 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.791 mW/g

**Body rear 777 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.1 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.919 W/kg

**SAR(1 g) = 0.769 mW/g; SAR(10 g) = 0.580 mW/g**

Maximum value of SAR (measured) = 0.809 mW/g

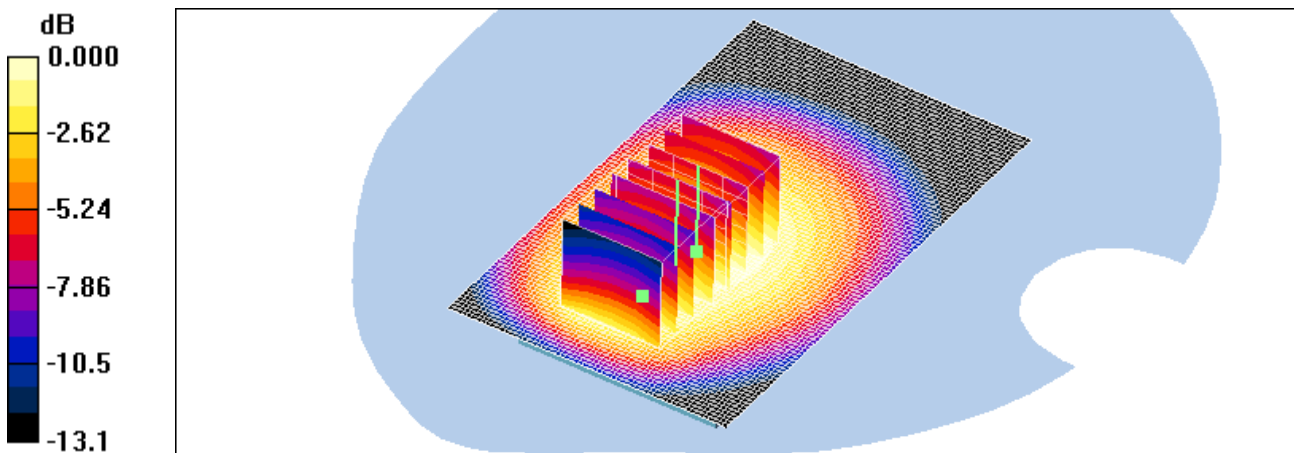
**Body rear 777 EVDO/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.1 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.995 W/kg

**SAR(1 g) = 0.710 mW/g; SAR(10 g) = 0.517 mW/g**

Maximum value of SAR (measured) = 0.767 mW/g



0 dB = 0.767mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body front 384 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.591 mW/g

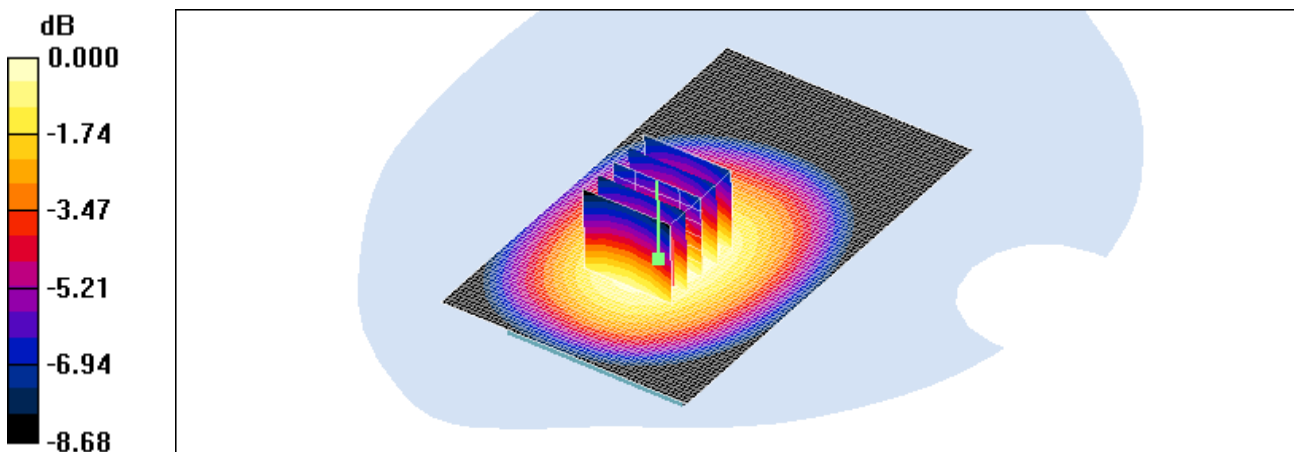
**Body front 384 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.132 dB

Peak SAR (extrapolated) = 0.652 W/kg

**SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.421 mW/g**

Maximum value of SAR (measured) = 0.582 mW/g





Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body left 384 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.469 mW/g

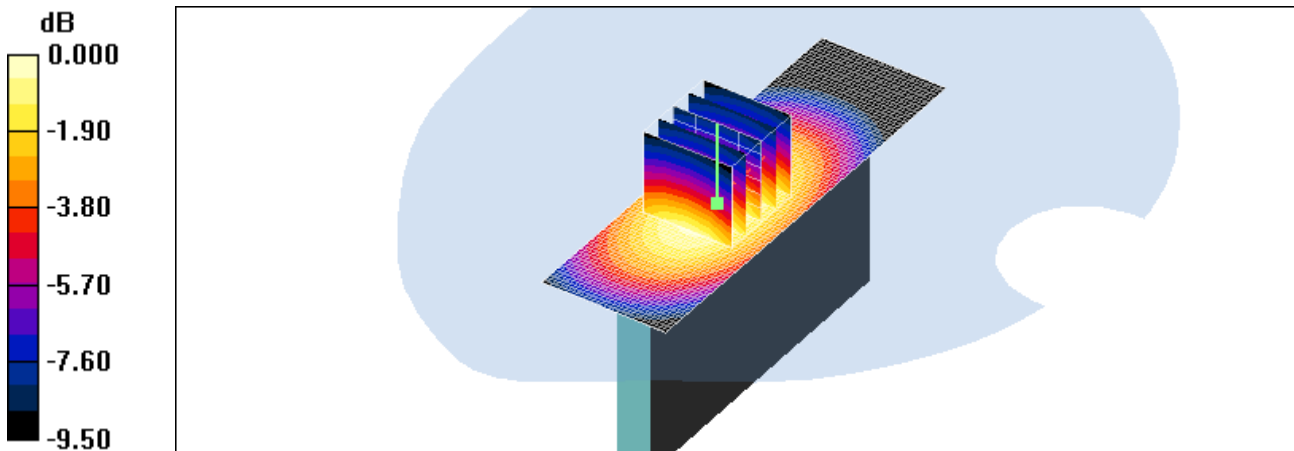
**Body left 384 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.576 W/kg

**SAR(1 g) = 0.436 mW/g; SAR(10 g) = 0.302 mW/g**

Maximum value of SAR (measured) = 0.466 mW/g



0 dB = 0.466mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body right 384 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.617 mW/g

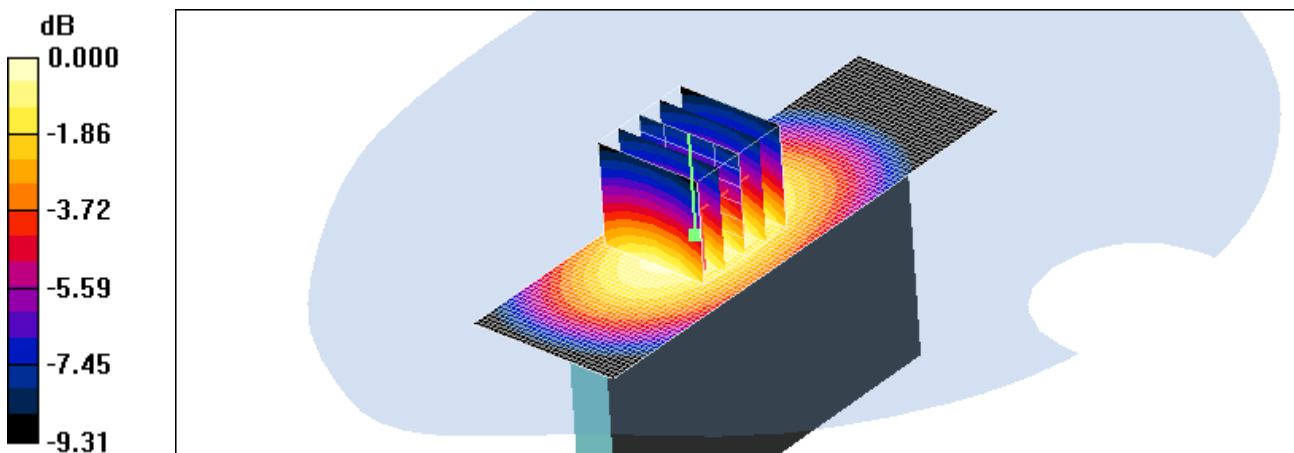
**Body right 384 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.4 V/m; Power Drift = -0.176 dB

Peak SAR (extrapolated) = 0.761 W/kg

**SAR(1 g) = 0.582 mW/g; SAR(10 g) = 0.409 mW/g**

Maximum value of SAR (measured) = 0.622 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(top); Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body bottom 384 EVDO/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.104 mW/g

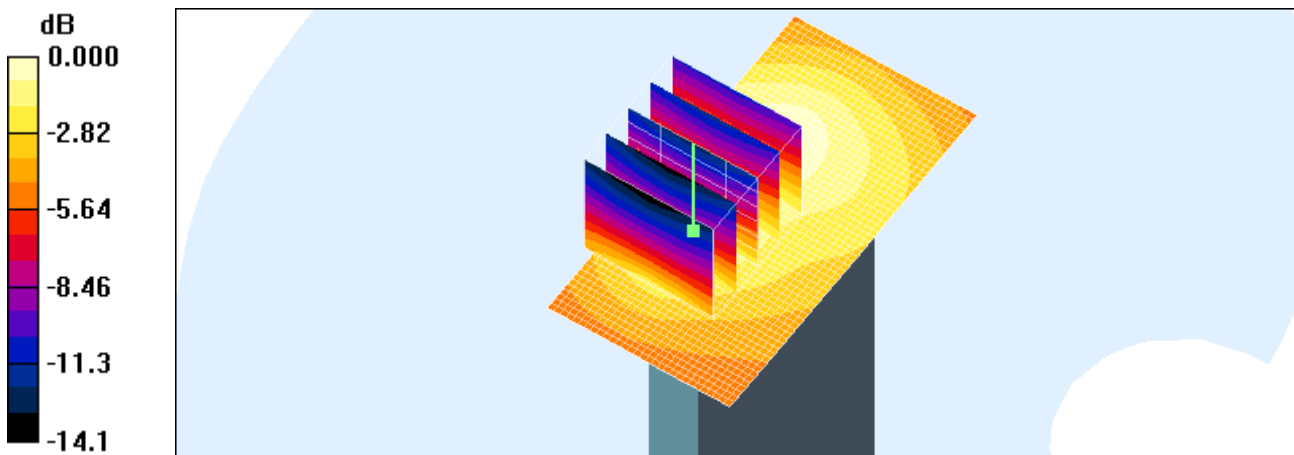
**Body bottom 384 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.87 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.203 W/kg

**SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.054 mW/g**

Maximum value of SAR (measured) = 0.097 mW/g



0 dB = 0.097mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 564 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.682 mW/g

**Body rear 564 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.892 W/kg

SAR(1 g) = 0.632 mW/g; SAR(10 g) = 0.472 mW/g

Maximum value of SAR (measured) = 0.675 mW/g

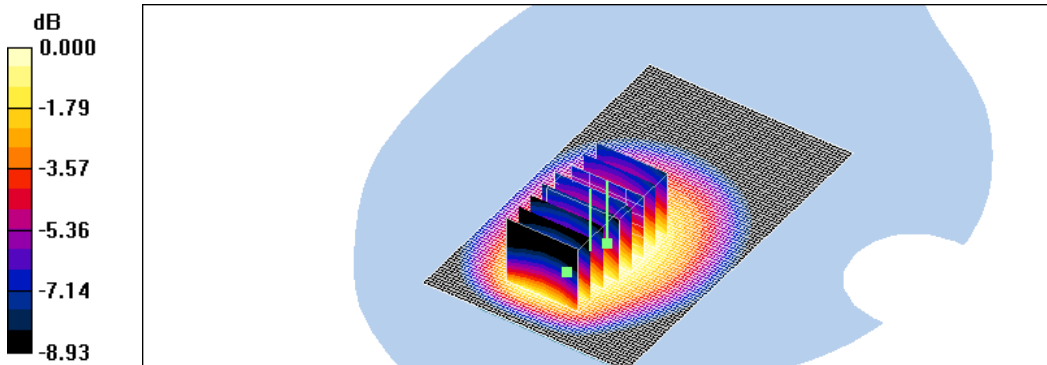
**Body rear 564 EVDO/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.781 W/kg

**SAR(1 g) = 0.655 mW/g; SAR(10 g) = 0.498 mW/g**

Maximum value of SAR (measured) = 0.688 mW/g



0 dB = 0.688mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body front 564 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.399 mW/g

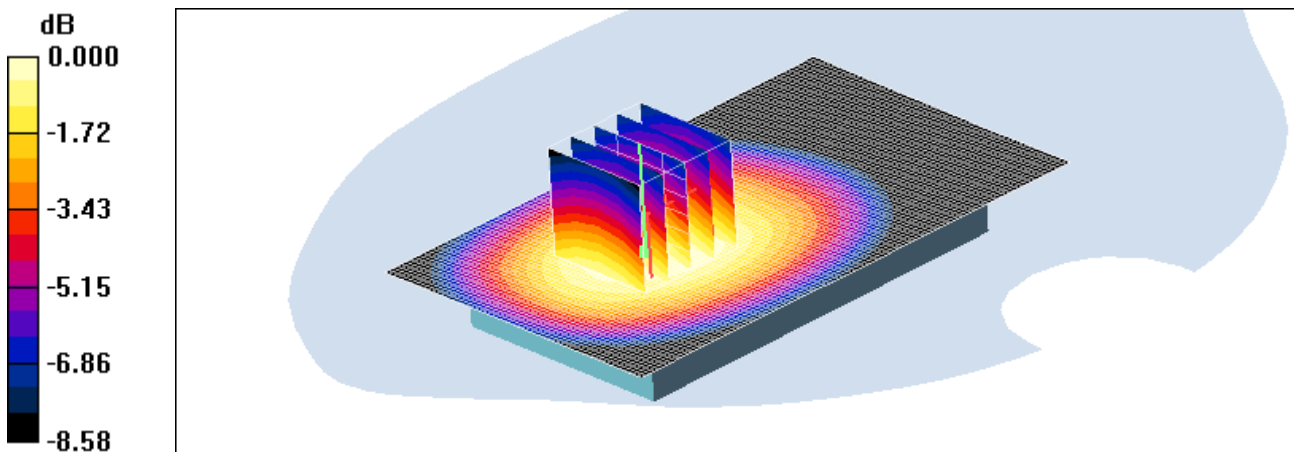
**Body front 564 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.8 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 0.440 W/kg

**SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.287 mW/g**

Maximum value of SAR (measured) = 0.393 mW/g



0 dB = 0.393mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body left 564 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.322 mW/g

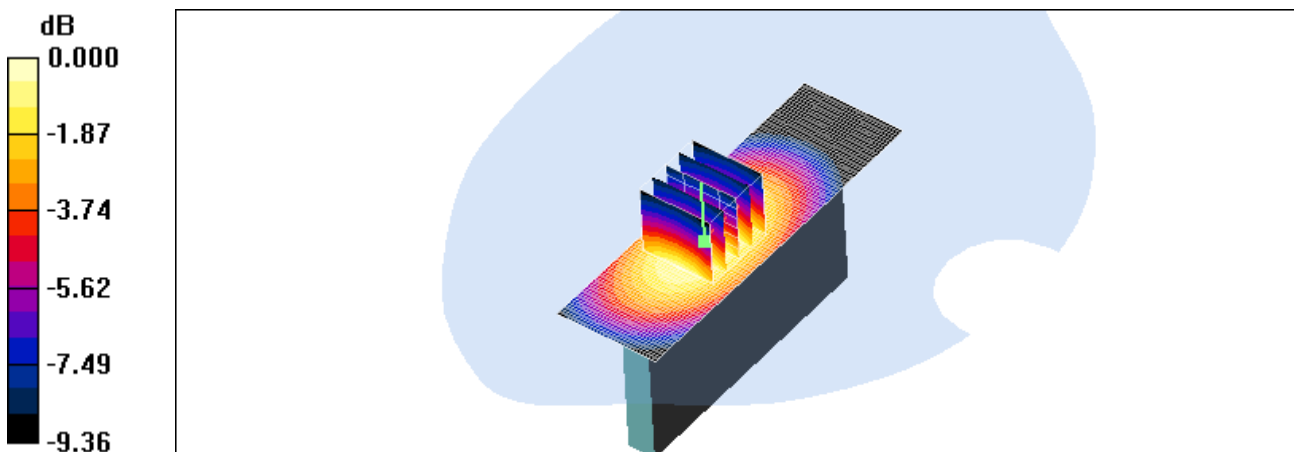
**Body left 564 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.402 W/kg

**SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.211 mW/g**

Maximum value of SAR (measured) = 0.325 mW/g



0 dB = 0.325mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body right 564 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.444 mW/g

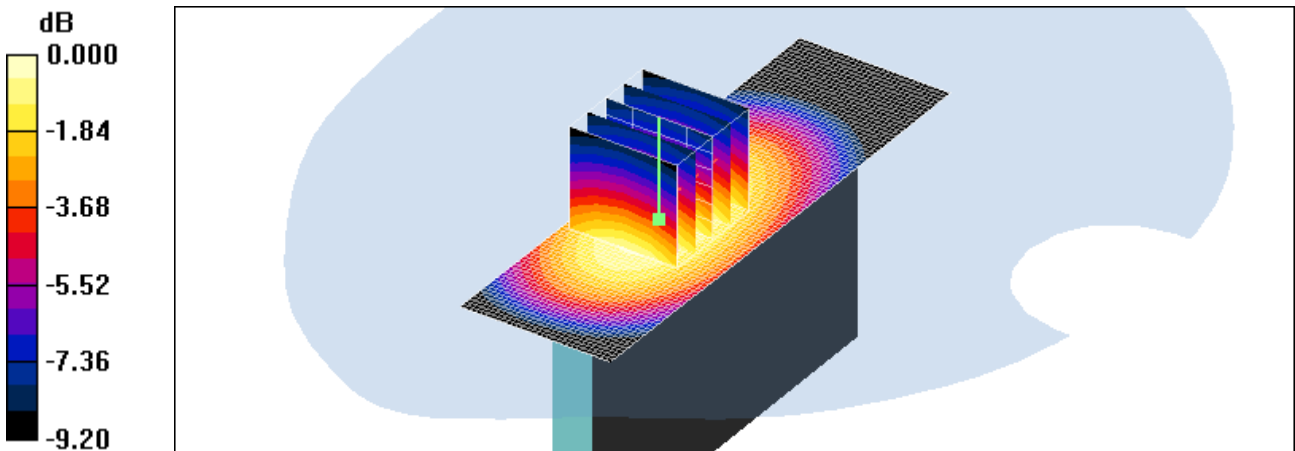
**Body right 564 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.111 dB

Peak SAR (extrapolated) = 0.540 W/kg

**SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.293 mW/g**

Maximum value of SAR (measured) = 0.444 mW/g



0 dB = 0.444mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696(top); Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body bottom 564 EVDO/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.072 mW/g

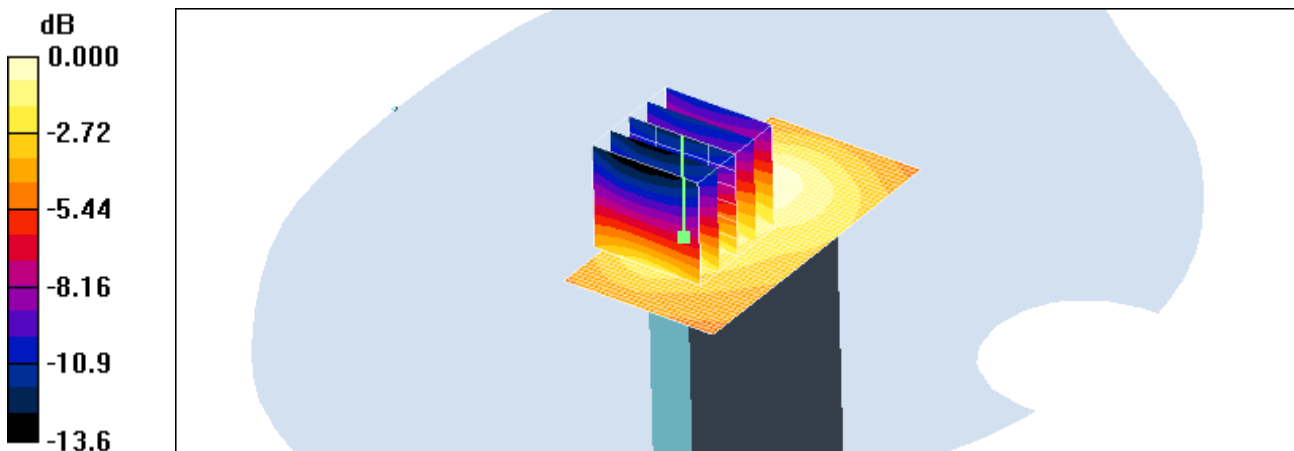
**Body bottom 564 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.51 V/m; Power Drift = 0.101 dB

Peak SAR (extrapolated) = 0.138 W/kg

**SAR(1 g) = 0.062 mW/g; SAR(10 g) = 0.038 mW/g**

Maximum value of SAR (measured) = 0.067 mW/g



0 dB = 0.067mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 25 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

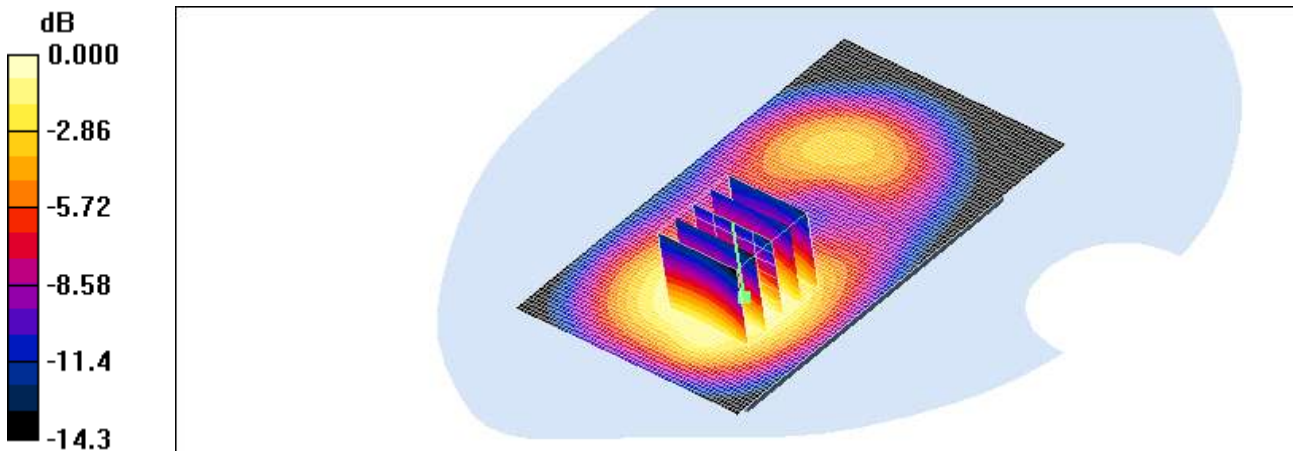
**Body rear 25 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 1.59 W/kg

**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.663 mW/g**

Maximum value of SAR (measured) = 1.13 mW/g



0 dB = 1.13mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 600 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.10 mW/g

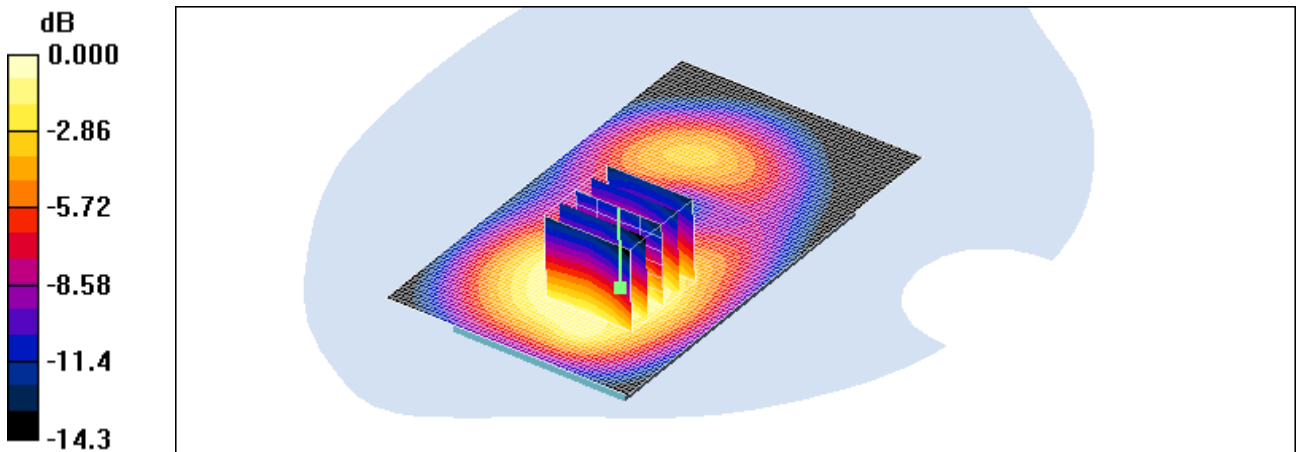
**Body rear 600 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.9 V/m; Power Drift = 0.113 dB

Peak SAR (extrapolated) = 1.55 W/kg

**SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.637 mW/g**

Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Test Laboratory: HCT CO., LTD  
 EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
 Liquid Temperature: 21.3 °C  
 Ambient Temperature: 21.5 °C  
 Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 1175 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.995 mW/g

**Body rear 1175 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 1.44 W/kg

**SAR(1 g) = 0.921 mW/g; SAR(10 g) = 0.577 mW/g**

Maximum value of SAR (measured) = 0.989 mW/g

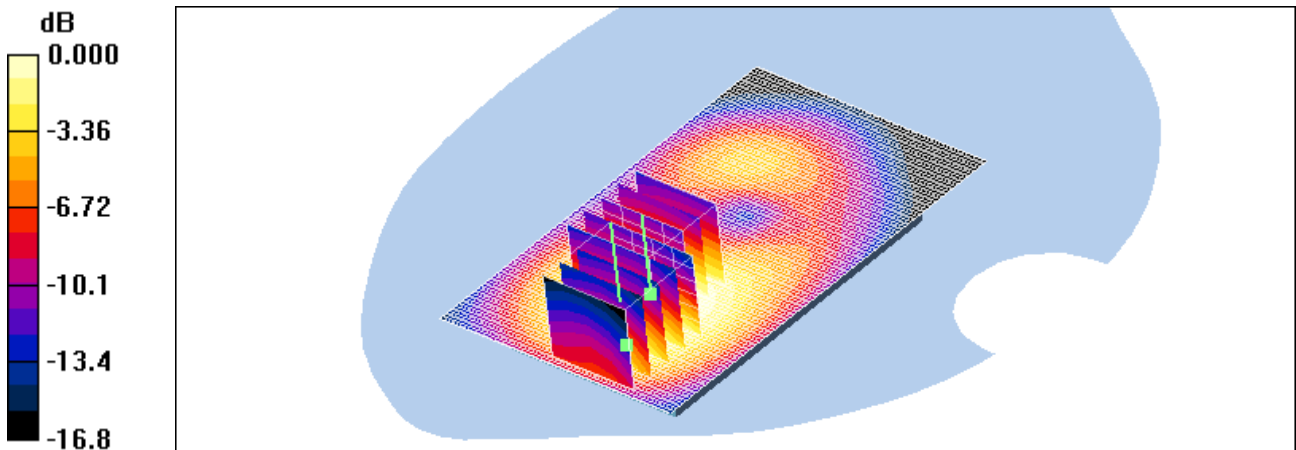
**Body rear 1175 EVDO/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.477 mW/g

Maximum value of SAR (measured) = 0.927 mW/g



0 dB = 0.927mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body front 600 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.790 mW/g

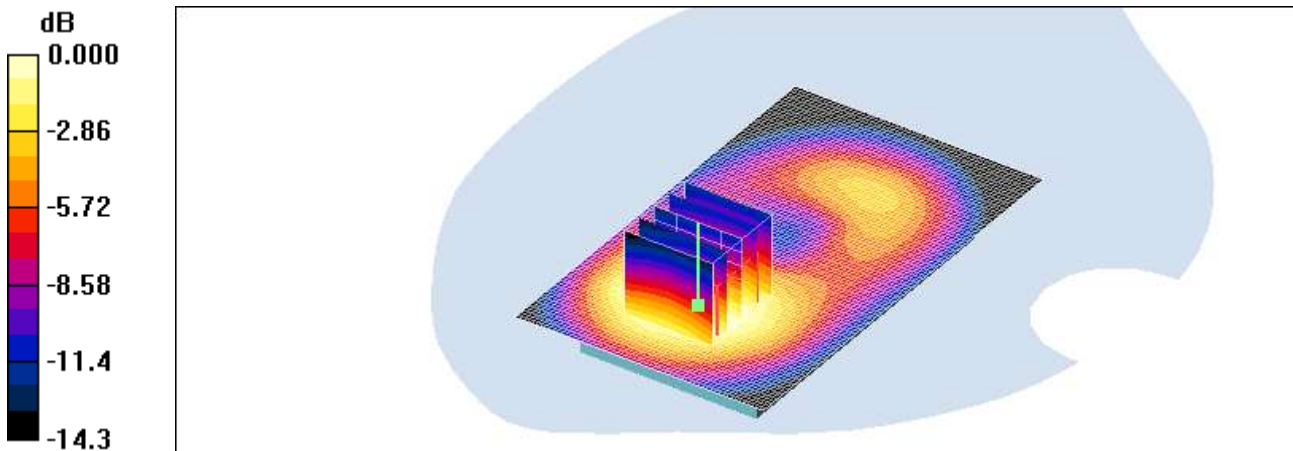
**Body front 600 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.1 V/m; Power Drift = -0.127 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.749 mW/g; SAR(10 g) = 0.469 mW/g**

Maximum value of SAR (measured) = 0.804 mW/g



0 dB = 0.804mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body left 600 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.251 mW/g

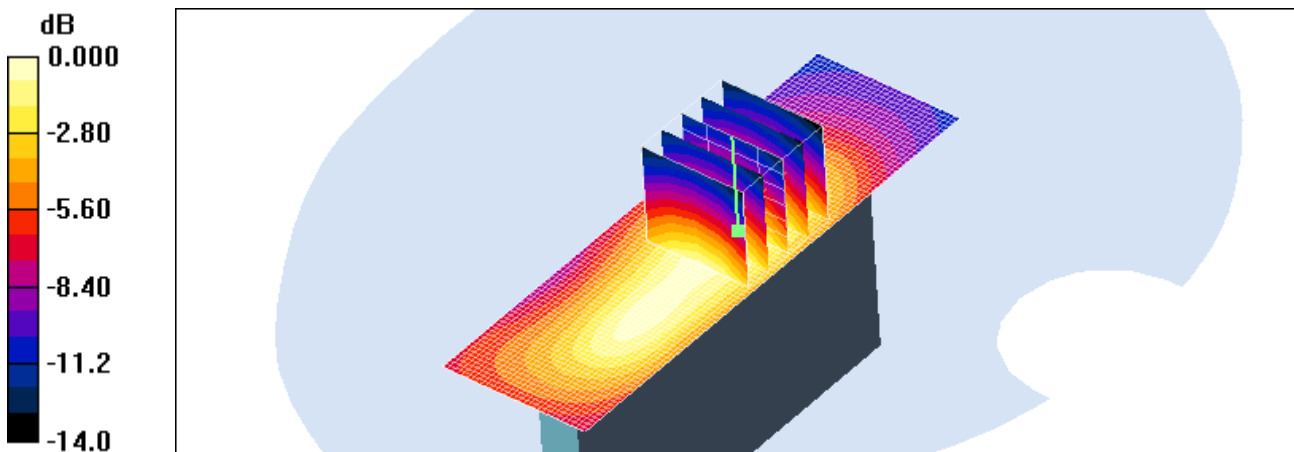
**Body left 600 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.6 V/m; Power Drift = 0.128 dB

Peak SAR (extrapolated) = 0.362 W/kg

**SAR(1 g) = 0.231 mW/g; SAR(10 g) = 0.142 mW/g**

Maximum value of SAR (measured) = 0.252 mW/g



0 dB = 0.252mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body right 600 EVDO/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.224 mW/g

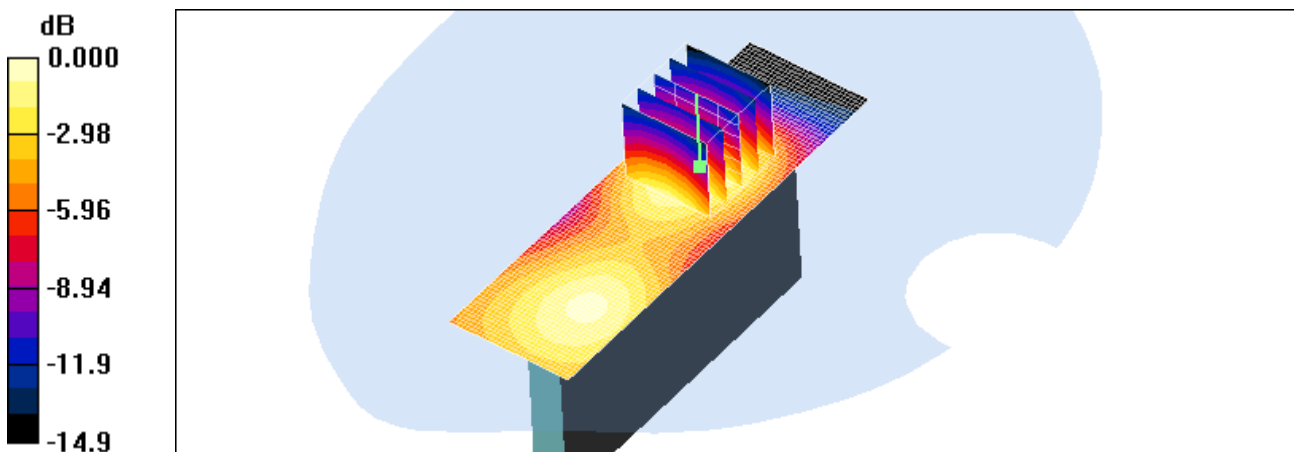
**Body right 600 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = 0.172 dB

Peak SAR (extrapolated) = 0.301 W/kg

**SAR(1 g) = 0.194 mW/g; SAR(10 g) = 0.118 mW/g**

Maximum value of SAR (measured) = 0.211 mW/g



0 dB = 0.211mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body bottom 600 EVDO/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.773 mW/g

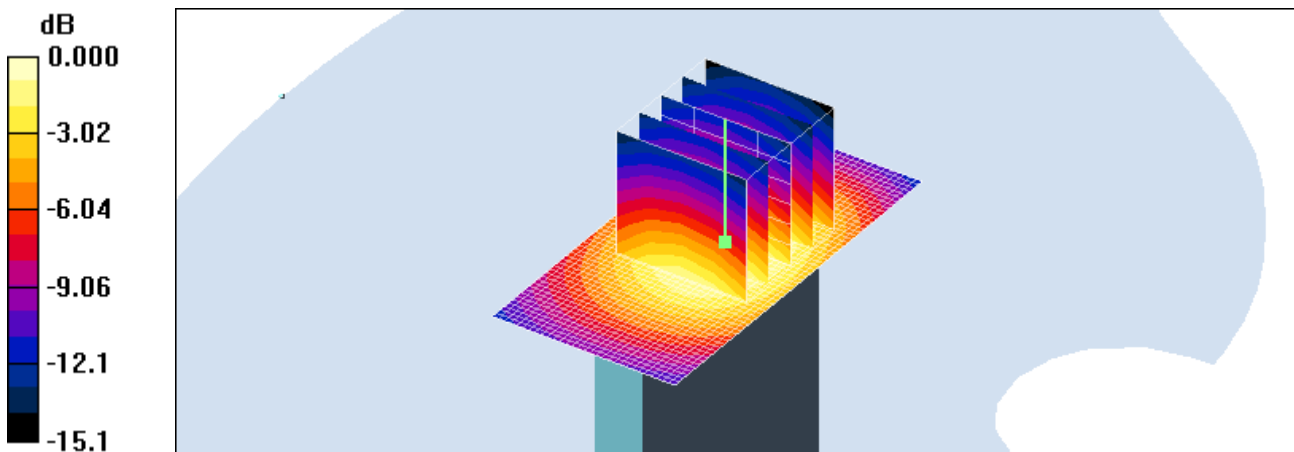
**Body bottom 600 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.6 V/m; Power Drift = -0.106 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.420 mW/g**

Maximum value of SAR (measured) = 0.762 mW/g



0 dB = 0.762mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 835/900 Phantom ; Type: SAM

**Body rear 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.107 mW/g

**Body rear 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

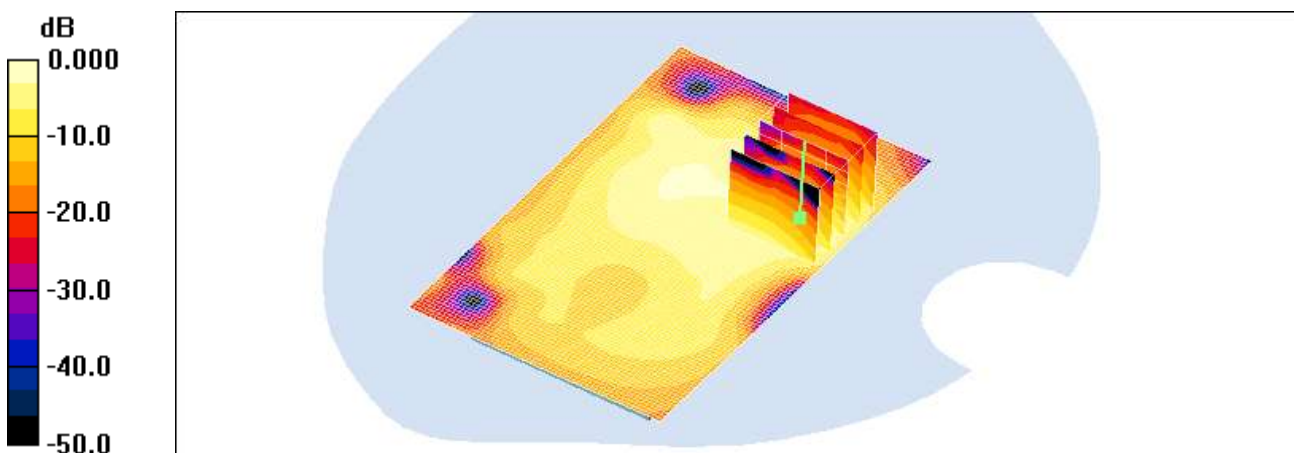
Reference Value = 4.97 V/m; Power Drift = 0.081 dB

Peak SAR (extrapolated) = 0.307 W/kg

**SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.044 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.107 mW/g





Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 835/900 Phantom ; Type: SAM

**Body front 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.087 mW/g

**Body front 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

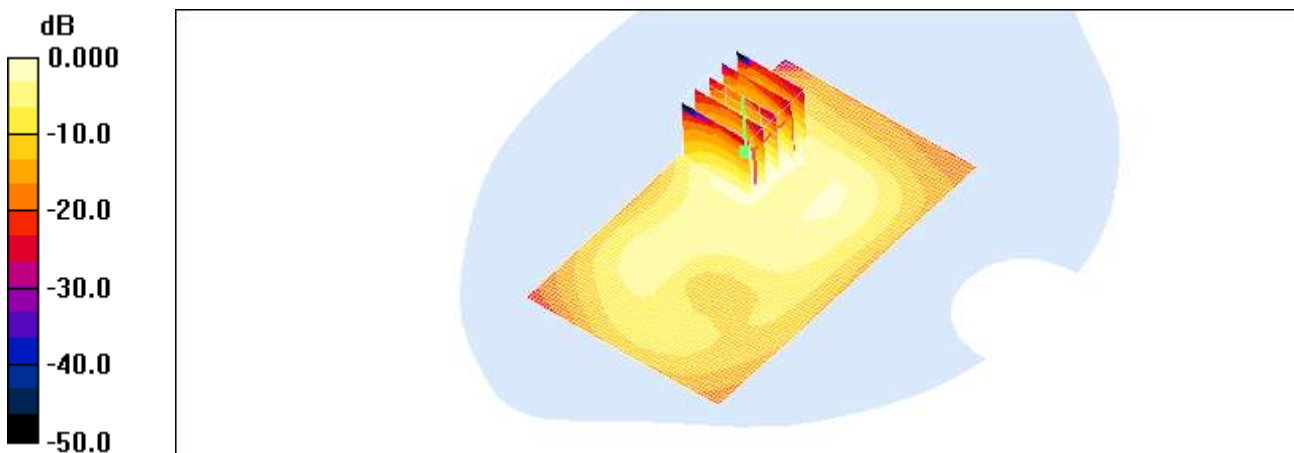
Reference Value = 4.13 V/m; Power Drift = -0.096 dB

Peak SAR (extrapolated) = 0.203 W/kg

**SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.039 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.087 mW/g



0 dB = 0.087mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696(side); Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 835/900 Phantom ; Type: SAM

**Body left 11/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.074 mW/g

**Body left 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

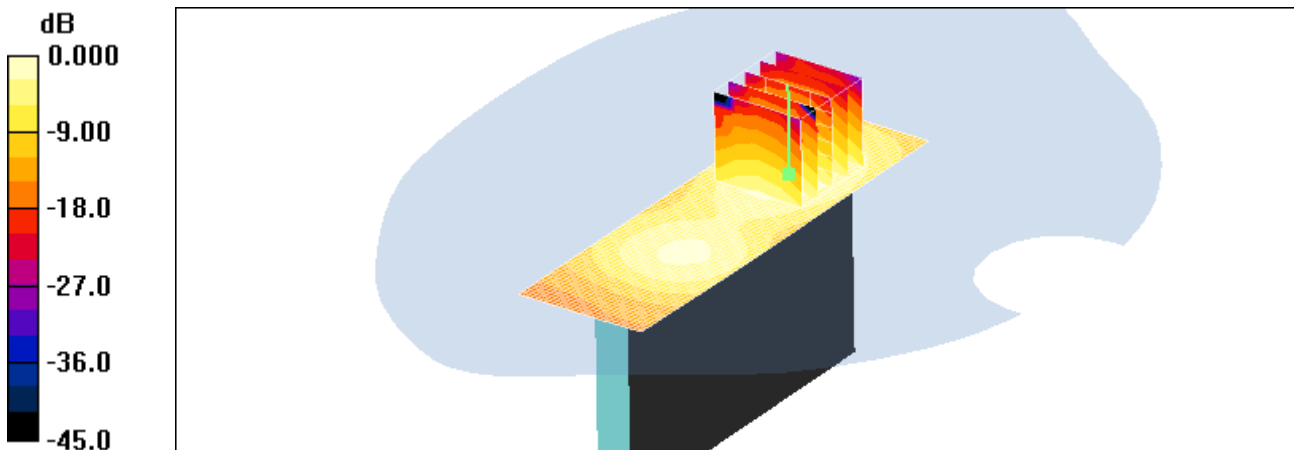
Reference Value = 6.25 V/m; Power Drift = -0.085 dB

Peak SAR (extrapolated) = 0.166 W/kg

**SAR(1 g) = 0.069 mW/g; SAR(10 g) = 0.033 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.073 mW/g



0 dB = 0.073mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696(top); Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 835/900 Phantom ; Type: SAM

**Body bottom 6/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.020 mW/g

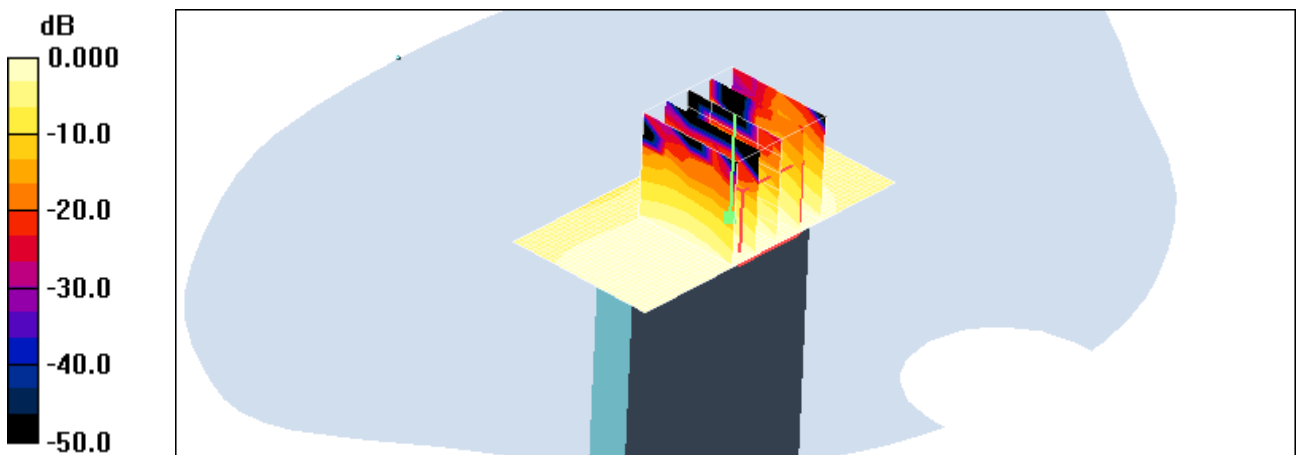
**Body bottom 6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.03 V/m; Power Drift = -0.098 dB

Peak SAR (extrapolated) = 0.044 W/kg

**SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.00972 mW/g**

Maximum value of SAR (measured) = 0.020 mW/g



0 dB = 0.020mW/g

Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.904$  mho/m;  $\epsilon_r = 43$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.912 mW/g

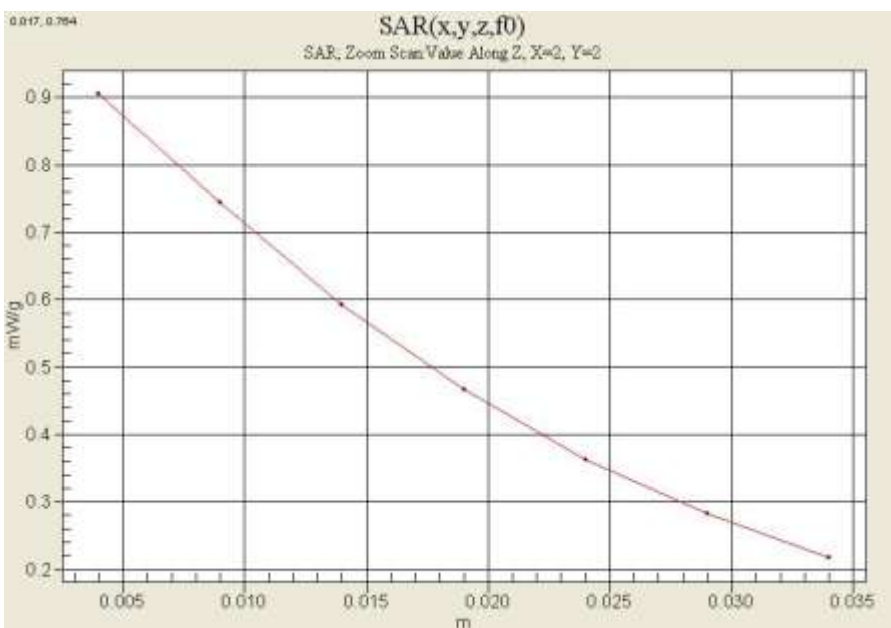
**Right touch 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = 0.154 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.660 mW/g**

Maximum value of SAR (measured) = 0.906 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.52$  MHz;  $\sigma = 0.997$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 384/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.01 mW/g

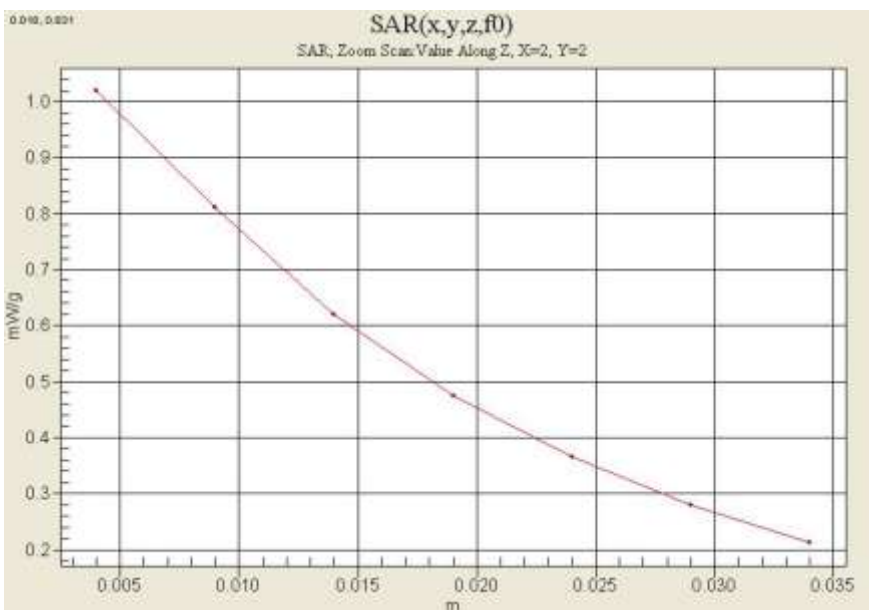
**Body rear 384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.1 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.734 mW/g**

Maximum value of SAR (measured) = 1.02 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.889$  mho/m;  $\epsilon_r = 43.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

**Right touch 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.625 mW/g

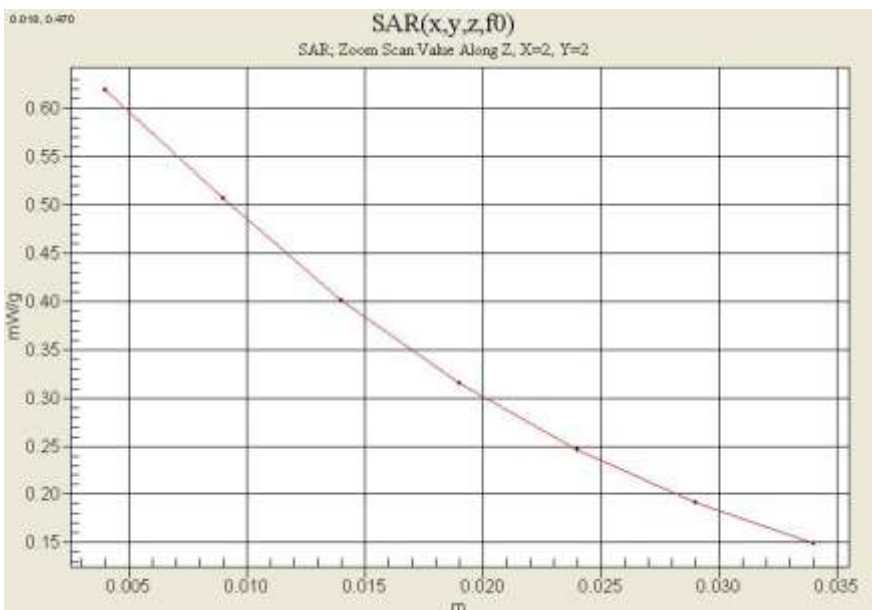
**Right touch 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.61 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.722 W/kg

**SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.453 mW/g**

Maximum value of SAR (measured) = 0.619 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.2 °C  
Ambient Temperature: 21.4 °C  
Test Date: Jan. 19, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: CDMA800(BC10); Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 820.1$  MHz;  $\sigma = 0.977$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 564/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.777 mW/g

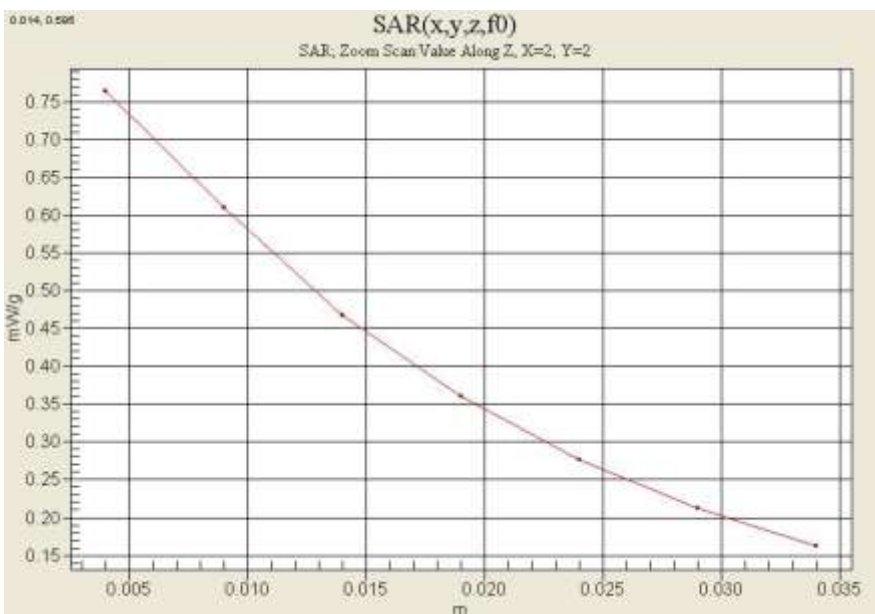
**Body rear 564/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 0.878 W/kg

**SAR(1 g) = 0.730 mW/g; SAR(10 g) = 0.553 mW/g**

Maximum value of SAR (measured) = 0.765 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Right touch 25/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.14 mW/g

**Right touch 25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 1.31 W/kg

**SAR(1 g) = 1.00 mW/g; SAR(10 g) = 0.643 mW/g**

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





Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 1800/1900 Phantom; Type: SAM

**Body rear 25 EVDO/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

**Body rear 25 EVDO/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 1.59 W/kg

**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.663 mW/g**

Maximum value of SAR (measured) = 1.13 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Right touch 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.541 mW/g

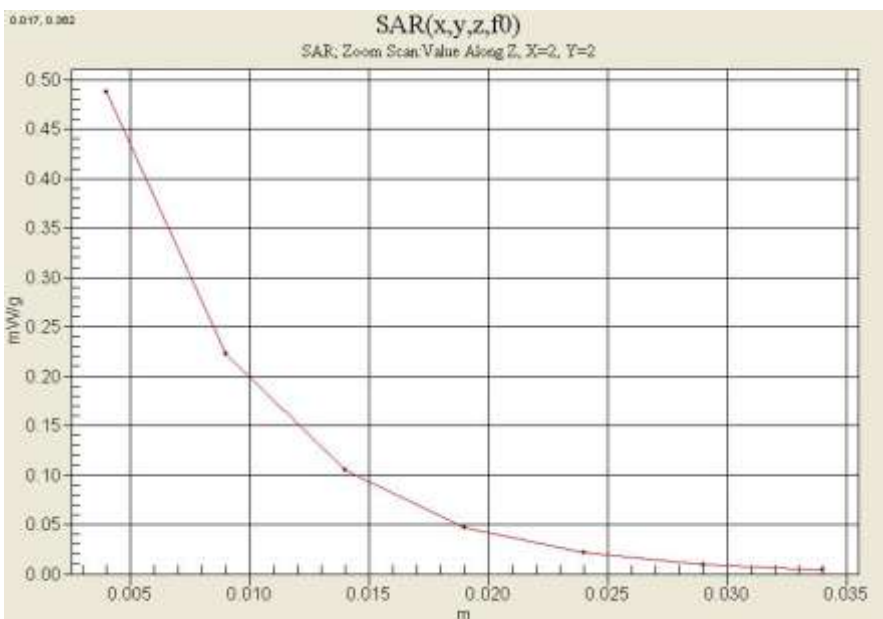
**Right touch 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.25 V/m; Power Drift = 0.195 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.437 mW/g; SAR(10 g) = 0.183 mW/g**

Maximum value of SAR (measured) = 0.487 mW/g



Test Laboratory: HCT CO., LTD  
EUT Type: Cellular/PCS CDMA/EVDO Phone with Bluetooth and WLAN  
Liquid Temperature: 21.3 °C  
Ambient Temperature: 21.5 °C  
Test Date: Jan. 20, 2012

**DUT: LG-LS696; Type: bar; Serial: #1**

Communication System: 2450MHz FCC; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 835/900 Phantom ; Type: SAM

**Body rear 11/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.107 mW/g

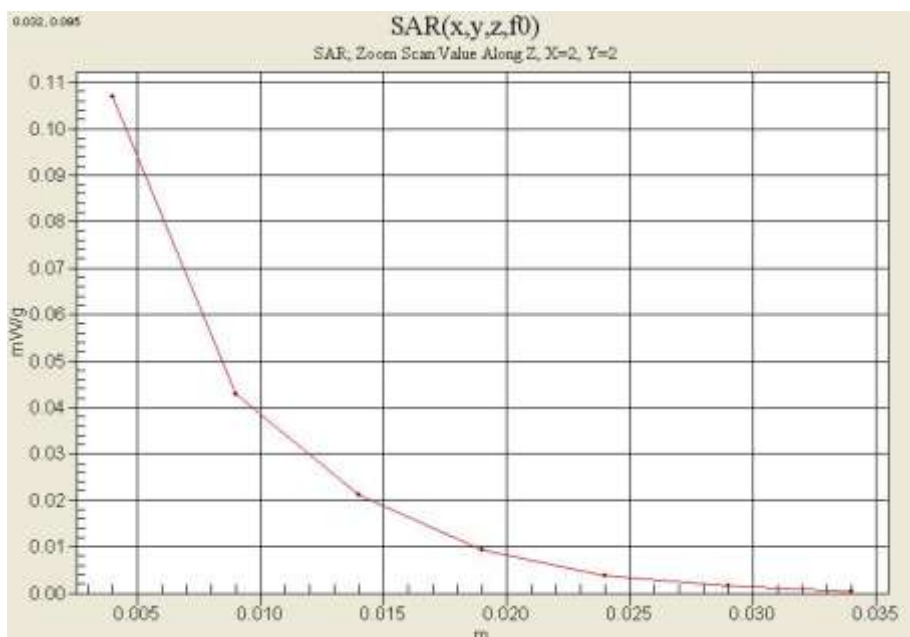
**Body rear 11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.97 V/m; Power Drift = 0.081 dB

Peak SAR (extrapolated) = 0.307 W/kg

**SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.044 mW/g**

Maximum value of SAR (measured) = 0.107 mW/g



## **Attachment 2. – Dipole Validation Plots**

## ■ Validation Data (835 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.2 °C

Test Date: Jan. 19, 2012

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 – SN:441**

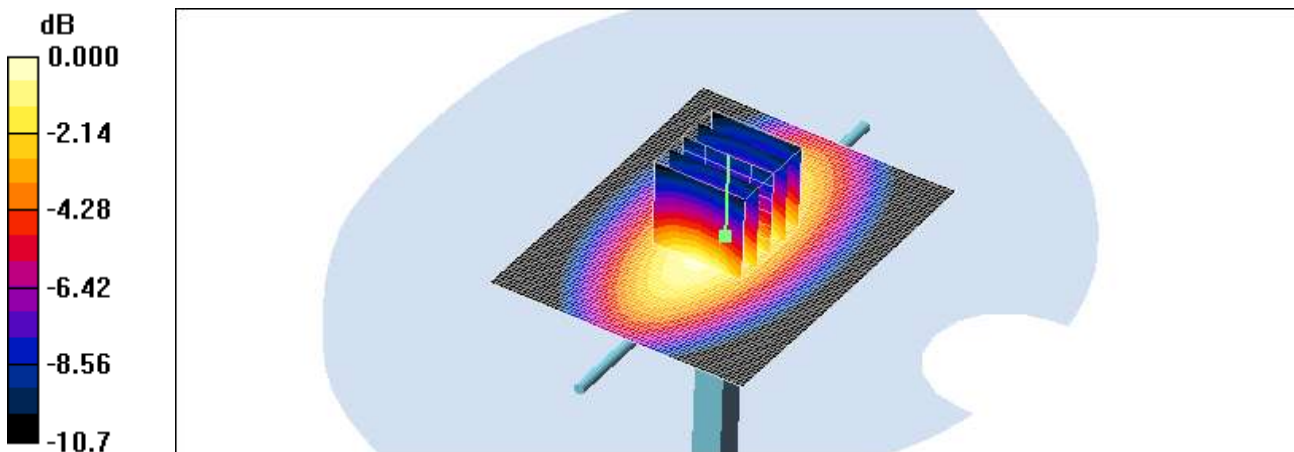
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.903$  mho/m;  $\epsilon_r = 43.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(6.72, 6.72, 6.72); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 835/900 MHz; Type: SAM

**Validation 835 MHz/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.02 mW/g**Validation 835 MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 35.5 V/m; Power Drift = -0.060 dB  
Peak SAR (extrapolated) = 1.37 W/kg  
**SAR(1 g) = 0.945 mW/g; SAR(10 g) = 0.621 mW/g**  
Maximum value of SAR (measured) = 1.02 mW/g

0 dB = 1.02mW/g

**Validation Data (835 MHz Body)**

Test Laboratory: HCT CO., LTD  
 Input Power 100 mW (20 dBm)  
 Liquid Temp: 21.2 °C  
 Test Date: Jan. 19, 2012

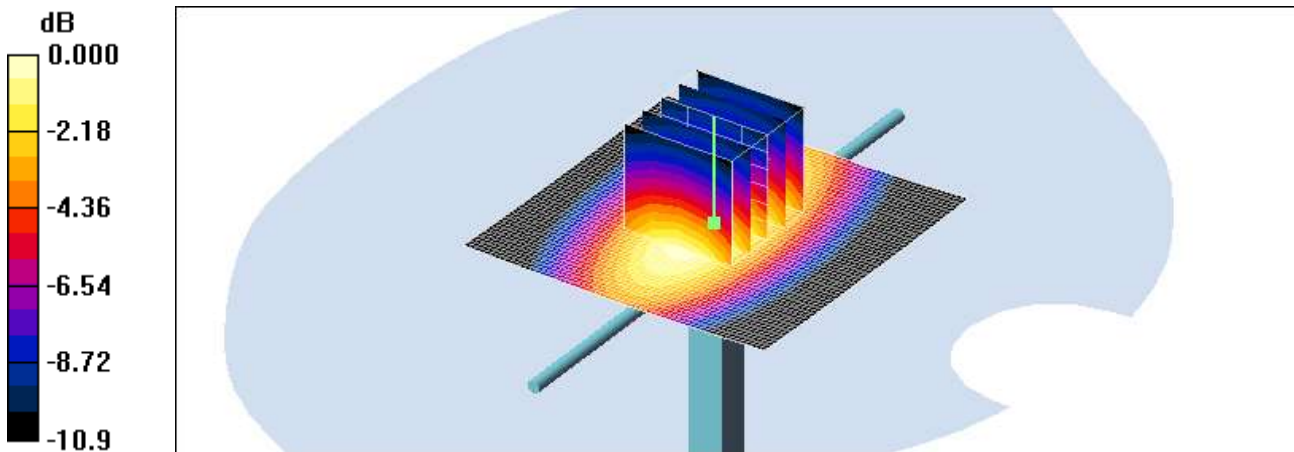
**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 – SN:441**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.996 \text{ mho/m}$ ;  $\epsilon_r = 54.4$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:  
 - Probe: ET3DV6 – SN1798; ConvF(6.5, 6.5, 6.5); Calibrated: 2011-04-14  
 - Sensor-Surface: 4mm (Mechanical Surface Detection)  
 - Electronics: DAE4 Sn869; Calibrated: 2011-09-22  
 - Phantom: SAM 1800/1900 MHz; Type: SAM

**Validation 835MHz/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
 Maximum value of SAR (interpolated) = 1.04 mW/g

**Validation 835MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$   
 Reference Value = 33.9 V/m; Power Drift = -0.009 dB  
 Peak SAR (extrapolated) = 1.39 W/kg  
**SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.617 mW/g**  
 Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

**Validation Data (1900 MHz Head)**

Test Laboratory: HCT CO., LTD  
 Input Power 100 mW (20 dBm)  
 Liquid Temp: 21.3 °C  
 Test Date: Jan. 20, 2012

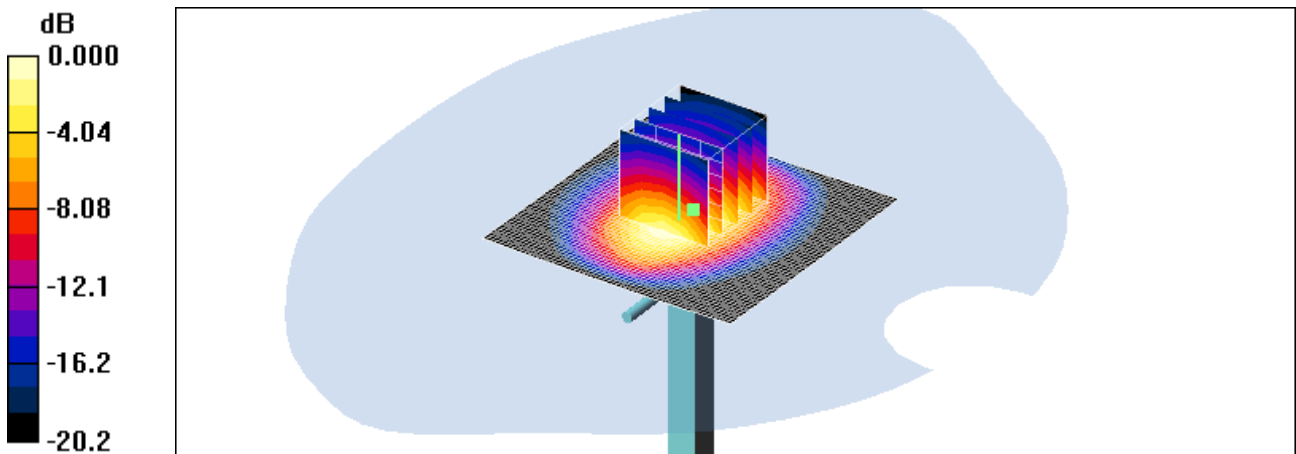
**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 – SN:5d032**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.39 \text{ mho/m}$ ;  $\epsilon_r = 39.1$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:  
 - Probe: ET3DV6 – SN1798; ConvF(5.24, 5.24, 5.24); Calibrated: 2011-04-14  
 - Sensor-Surface: 4mm (Mechanical Surface Detection)  
 - Electronics: DAE4 Sn869; Calibrated: 2011-09-22  
 - Phantom: SAM 1800/1900 MHz; Type: SAM

**Dipole 1900MHz Validation/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm  
 Maximum value of SAR (interpolated) = 4.83 mW/g

**Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
 Reference Value = 59.0 V/m; Power Drift = 0.016 dB  
 Peak SAR (extrapolated) = 7.23 W/kg  
**SAR(1 g) = 4.02 mW/g; SAR(10 g) = 2.06 mW/g**  
 Maximum value of SAR (measured) = 4.47 mW/g



0 dB = 4.47mW/g

## ■ Validation Data (1900 MHz Body)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.3 °C

Test Date: Jan. 20, 2012

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 – SN:5d032**

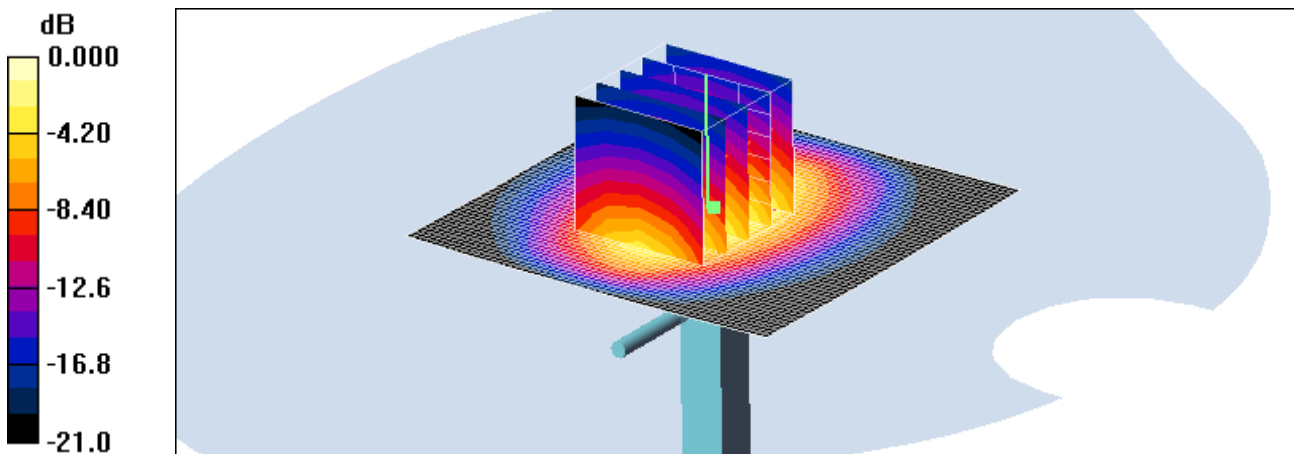
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.63, 4.63, 4.63); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Dipole 1900MHz Validation/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 4.75 mW/g**Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 58.0 V/m; Power Drift = -0.008 dB  
Peak SAR (extrapolated) = 7.26 W/kg  
**SAR(1 g) = 4.06 mW/g; SAR(10 g) = 2.08 mW/g**  
Maximum value of SAR (measured) = 4.58 mW/g

0 dB = 4.58mW/g



## ■ Validation Data (2450 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.3 °C

Test Date: Jan. 20, 2012

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 – SN: 743**

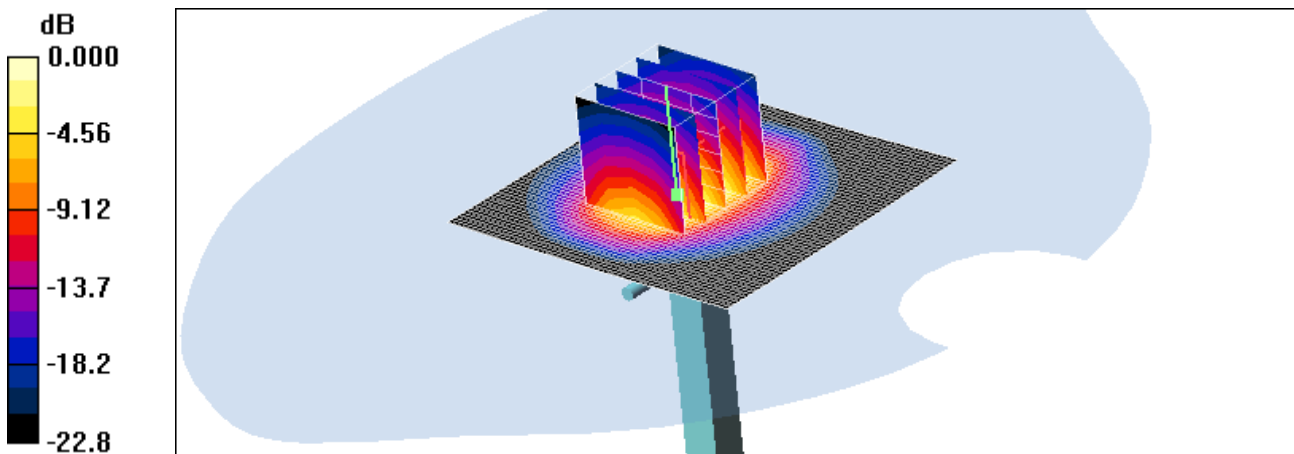
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.86$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.56, 4.56, 4.56); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Validation 2450MHz/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 6.27 mW/g**Validation 2450MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 58.5 V/m; Power Drift = -0.104 dB  
Peak SAR (extrapolated) = 11.8 W/kg  
**SAR(1 g) = 5.13 mW/g; SAR(10 g) = 2.36 mW/g**  
Maximum value of SAR (measured) = 5.61 mW/g

0 dB = 5.61mW/g

**Validation Data (2450 MHz Body)**

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.3 °C

Test Date: Jan. 20, 2012

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 – SN:743**

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

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.89$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

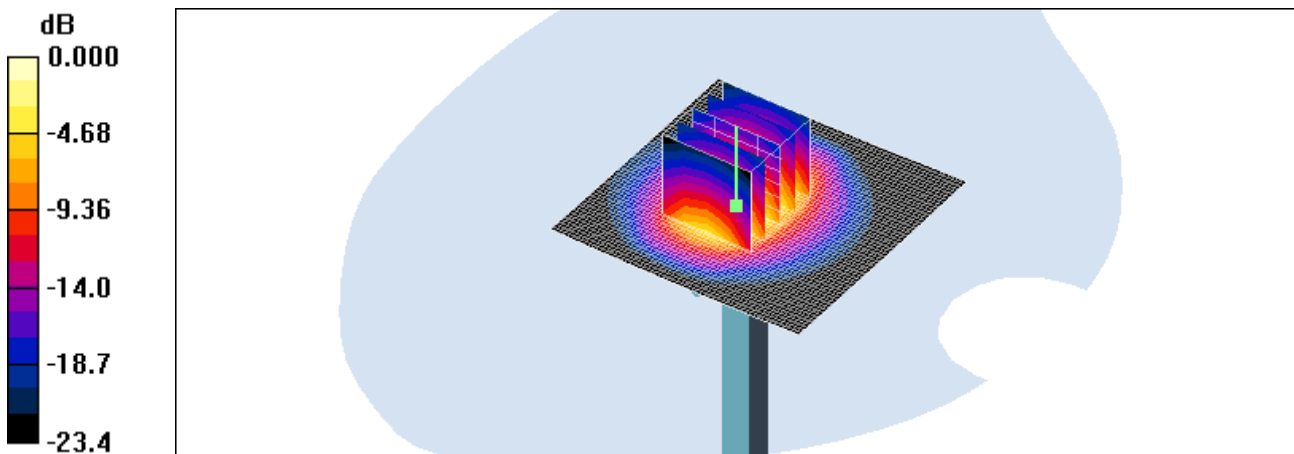
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: SAM 1800/1900 MHz; Type: SAM

**Validation 2450MHz/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 5.98 mW/g

**Validation 2450MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 54.9 V/m; Power Drift = -0.028 dB  
Peak SAR (extrapolated) = 12.9 W/kg  
**SAR(1 g) = 5.03 mW/g; SAR(10 g) = 2.26 mW/g**  
Maximum value of SAR (measured) = 5.37 mW/g



0 dB = 5.37mW/g

**■ Dielectric Parameter (835 MHz Head)**

Title LG-LS696  
SubTitle CDMA835(Head)  
Test Date Jan. 19, 2012

Frequency	e'	e''
800000000.0000	43.5300	19.5594
805000000.0000	43.4962	19.5446
810000000.0000	43.4202	19.5311
815000000.0000	43.3346	19.5368
820000000.0000	43.2823	19.4850
825000000.0000	43.2260	19.4723
830000000.0000	43.1545	19.4589
835000000.0000	43.0618	19.4415
840000000.0000	43.0091	19.4128
845000000.0000	42.9444	19.3934
850000000.0000	42.8795	19.4056
855000000.0000	42.7881	19.3946
860000000.0000	42.7284	19.3643
865000000.0000	42.6786	19.3469
870000000.0000	42.6118	19.3553
875000000.0000	42.5591	19.3393
880000000.0000	42.5286	19.3269
885000000.0000	42.4627	19.2952
890000000.0000	42.4308	19.2736
895000000.0000	42.3781	19.2637
900000000.0000	42.2952	19.2334

## ■ Dielectric Parameter (835 MHz Body)

Title LG-LS696  
 SubTitle CDMA 850(Body)  
 Test Date Jan. 19, 2012

Frequency	e'	e''
800000000.0000	54.9562	21.3395
805000000.0000	54.8782	21.3729
810000000.0000	54.8080	21.3920
815000000.0000	54.7158	21.4078
820000000.0000	54.6368	21.4247
825000000.0000	54.5423	21.4250
830000000.0000	54.4511	21.4300
835000000.0000	54.3614	21.4347
840000000.0000	54.2915	21.3993
845000000.0000	54.2325	21.3605
850000000.0000	54.1930	21.2984
855000000.0000	54.1359	21.2599
860000000.0000	54.1177	21.2071
865000000.0000	54.0917	21.1468
870000000.0000	54.0893	21.1047
875000000.0000	54.1021	21.0730
880000000.0000	54.0951	21.0168
885000000.0000	54.0773	20.9863
890000000.0000	54.0601	20.9556
895000000.0000	54.0491	20.9122
900000000.0000	53.9878	20.8993

**■ Dielectric Parameter (1900 MHz Head)**

Title LG-LS696  
SubTitle PCS1900(Head)  
Test Date Jan. 20, 2012

Frequency	e'	e''
1800000000.0000	39.4475	12.8662
1810000000.0000	39.3943	12.8849
1820000000.0000	39.3726	12.9236
1830000000.0000	39.3320	12.9587
1840000000.0000	39.2994	12.9949
1850000000.0000	39.2662	13.0136
1860000000.0000	39.2229	13.0476
1870000000.0000	39.1891	13.0519
1880000000.0000	39.1527	13.1025
1890000000.0000	39.1174	13.1198
1900000000.0000	39.0695	13.1480
1910000000.0000	39.0200	13.1717
1920000000.0000	38.9875	13.2110
1930000000.0000	38.9452	13.2421
1940000000.0000	38.9073	13.2646
1950000000.0000	38.8663	13.2804
1960000000.0000	38.8217	13.3250
1970000000.0000	38.7796	13.3535
1980000000.0000	38.7452	13.3742
1990000000.0000	38.7028	13.4119
2000000000.0000	38.6787	13.4406

**■ Dielectric Parameter (1900 MHz Body)**

Title LG-LS696  
SubTitle PCS1900(Body)  
Test Date Jan.20, 2012

Frequency	e'	e''
1850000000.0000	55.2955	13.8010
1855000000.0000	55.2642	13.8215
1860000000.0000	55.2646	13.8180
1865000000.0000	55.2377	13.8240
1870000000.0000	55.2189	13.8346
1875000000.0000	55.2083	13.8499
1880000000.0000	55.1942	13.8626
1885000000.0000	55.1976	13.8909
1890000000.0000	55.1912	13.9181
1895000000.0000	55.1944	13.9211
1900000000.0000	55.1733	13.9382
1905000000.0000	55.1831	13.9576
1910000000.0000	55.1737	13.9782
1915000000.0000	55.1690	13.9825
1920000000.0000	55.1713	13.9799
1925000000.0000	55.1615	13.9802
1930000000.0000	55.1591	13.9951
1935000000.0000	55.1516	14.0012
1940000000.0000	55.1490	13.9992
1945000000.0000	55.1356	13.9800
1950000000.0000	55.1073	13.9779

## ■ Dielectric Parameter ( 2450 MHz Head)

Title                    LG-LS696  
 SubTitle                2450MHz (Head)  
 Test Date                Jan. 20, 2012

Frequency	e'	e''
2400000000.0000	38.6122	13.4946
2405000000.0000	38.5914	13.5155
2410000000.0000	38.5725	13.5182
2415000000.0000	38.5570	13.5348
2420000000.0000	38.5269	13.5469
2425000000.0000	38.5016	13.5579
2430000000.0000	38.4902	13.5686
2435000000.0000	38.4779	13.5746
2440000000.0000	38.4589	13.5889
2445000000.0000	38.4501	13.5921
2450000000.0000	38.4232	13.6130
2455000000.0000	38.4020	13.6073
2460000000.0000	38.3728	13.6249
2465000000.0000	38.3589	13.6408
2470000000.0000	38.3388	13.6621
2475000000.0000	38.3333	13.6545
2480000000.0000	38.3026	13.6627
2485000000.0000	38.2808	13.6746
2490000000.0000	38.2650	13.6869
2495000000.0000	38.2484	13.7110
2500000000.0000	38.2307	13.7141

**■ Dielectric Parameter (2450 MHz Body)**

Title LG-LS696  
SubTitle 2450MHz (Body)  
Test Date Jan. 20, 2012

Frequency	e'	e''
2400000000.0000	52.0621	13.6527
2405000000.0000	52.0306	13.6613
2410000000.0000	52.0150	13.6763
2415000000.0000	52.0062	13.6904
2420000000.0000	51.9784	13.7099
2425000000.0000	51.9556	13.7271
2430000000.0000	51.9392	13.7550
2435000000.0000	51.9260	13.7791
2440000000.0000	51.9160	13.8142
2445000000.0000	51.9040	13.8181
2450000000.0000	51.8891	13.8487
2455000000.0000	51.8821	13.8616
2460000000.0000	51.8640	13.8891
2465000000.0000	51.8558	13.8889
2470000000.0000	51.8595	13.9034
2475000000.0000	51.8525	13.9094
2480000000.0000	51.8347	13.9069
2485000000.0000	51.8153	13.9143
2490000000.0000	51.8080	13.9135
2495000000.0000	51.7925	13.9235
2500000000.0000	51.7746	13.9142



## Attachment 3. – Probe Calibration Data

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



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

Accredited by the Swiss Accreditation Service (SAS)  
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: HCT (Dymstec)

Certificate No: ET3-1798\_Apr11

**CALIBRATION CERTIFICATE**

Object: ET3DV6 - SN:1798

Calibration procedure(s): QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3  
Calibration procedure for dosimetric E-field probes

Calibration date: April 14, 2011

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41495277	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP B648C	US3642U01700	4-Aug-09 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Jelon Kasrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 14, 2011

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

Calibration Laboratory of  
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Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: SCS 108

**Glossary:**

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\beta$	$\beta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\beta = 0$ is normal to probe axis

**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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

**Methods Applied and Interpretation of Parameters:**

- **NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\beta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- **NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- **DCP<sub>x,y,z</sub>:** DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- **PAR;** PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- **A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>** are numerical linearization parameters in dB assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media.
- **VR:** VR is the validity range of the calibration related to the average diode voltage or DAE voltage in mV.
- **ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- **Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- **Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ET3DV6 - SN:1798

April 14, 2011

# Probe ET3DV6

## SN:1798

Manufactured: August 14, 2003  
Calibrated: April 14, 2011

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

ET3DV6-SN:1798

April 14, 2011

**DASY/EASY - Parameters of Probe: ET3DV6 - SN:1798**

**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ( $\mu\text{V}/(\text{V/m})^2$ ) <sup>A</sup>	2.02	1.82	2.08	$\pm 10.1\%$
DCP (mV) <sup>B</sup>	98.8	96.3	96.2	

**Modulation Calibration Parameters**

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc <sup>C</sup> (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	113.1	$\pm 3.0\%$
			Y	0.00	0.00	1.00	145.9	
			Z	0.00	0.00	1.00	114.8	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of NormX, Y, Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter; uncertainty not required.

<sup>C</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ET3DV6-SN:1798

April 14, 2011

**DASY/EASY - Parameters of Probe: ET3DV6 - SN:1798**

**Calibration Parameter Determined in Head Tissue Simulating Media**

f (MHz) <sup>c</sup>	Relative Permittivity <sup>e</sup>	Conductivity (S/m) <sup>e</sup>	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	7.63	7.63	7.63	0.22	2.25	± 13.4 %
835	41.5	0.90	6.72	6.72	6.72	0.78	1.68	± 12.0 %
900	41.5	0.97	6.61	6.61	6.61	0.74	1.74	± 12.0 %
1750	40.1	1.37	5.46	5.46	5.46	0.52	2.60	± 12.0 %
1900	40.0	1.40	5.24	5.24	5.24	0.54	2.52	± 12.0 %
1950	40.0	1.40	5.08	5.08	5.08	0.53	2.57	± 12.0 %
2450	39.2	1.80	4.56	4.56	4.56	0.70	1.97	± 12.0 %

<sup>c</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>e</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

ET3DV6- SN:1798

April 14, 2011

## DASY/EASY - Parameters of Probe: ET3DV6- SN:1798

### Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) <sup>c</sup>	Relative Permittivity <sup>d</sup>	Conductivity (S/m) <sup>e</sup>	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	56.7	0.94	8.09	8.09	8.09	0.15	2.17	± 13.4 %
835	55.2	0.97	6.50	6.50	6.50	0.73	1.84	± 12.0 %
900	55.0	1.05	6.40	6.40	6.40	0.71	1.90	± 12.0 %
1750	53.4	1.49	4.84	4.84	4.84	0.55	2.94	± 12.0 %
1900	53.3	1.52	4.63	4.63	4.63	0.57	2.70	± 12.0 %
1950	53.3	1.52	4.76	4.76	4.76	0.59	2.49	± 12.0 %
2450	52.7	1.95	4.21	4.21	4.21	0.97	1.24	± 12.0 %

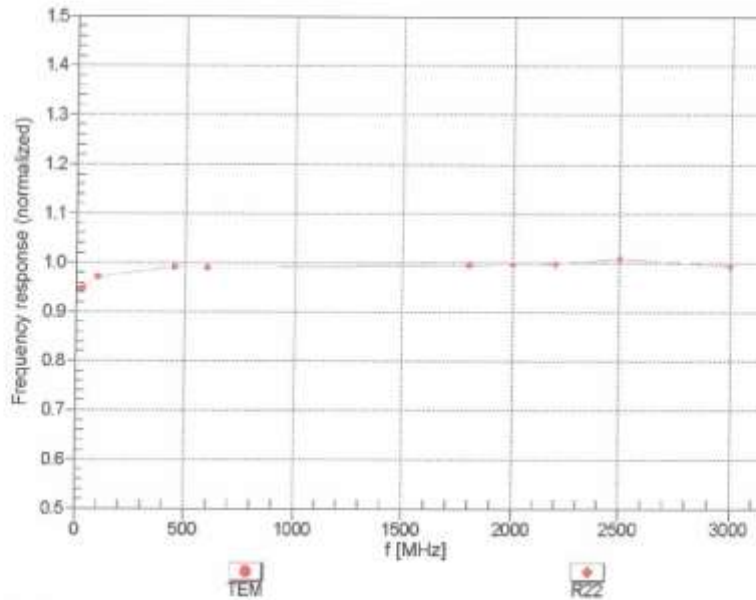
<sup>c</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>d</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

ET3DV6- SN:1798

April 14, 2011

### Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



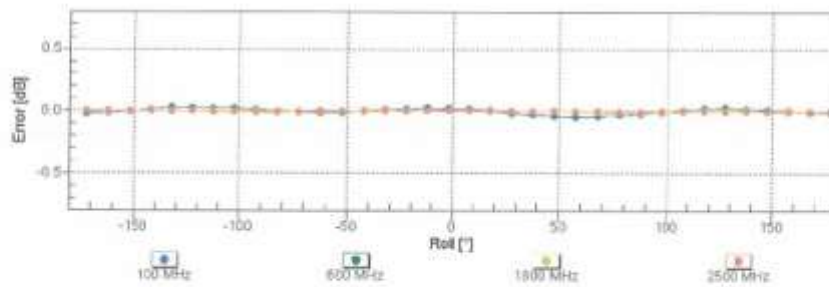
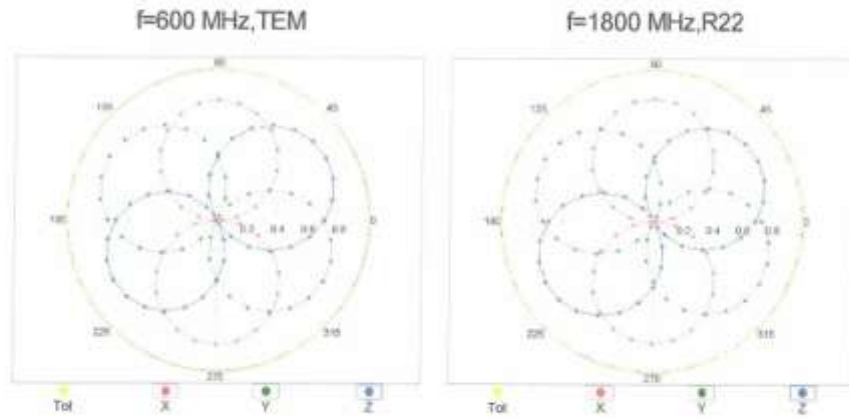
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)



ET3DV6-SN:1798

April 14, 2011

**Receiving Pattern ( $\phi$ ),  $\theta = 0^\circ$**

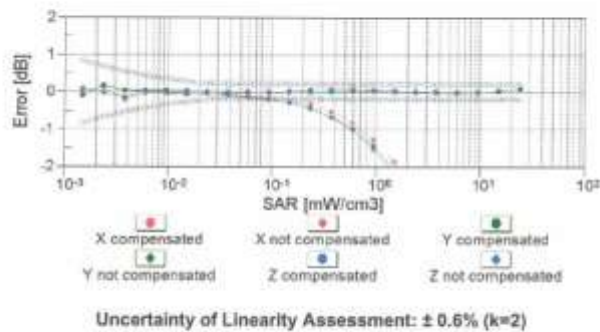
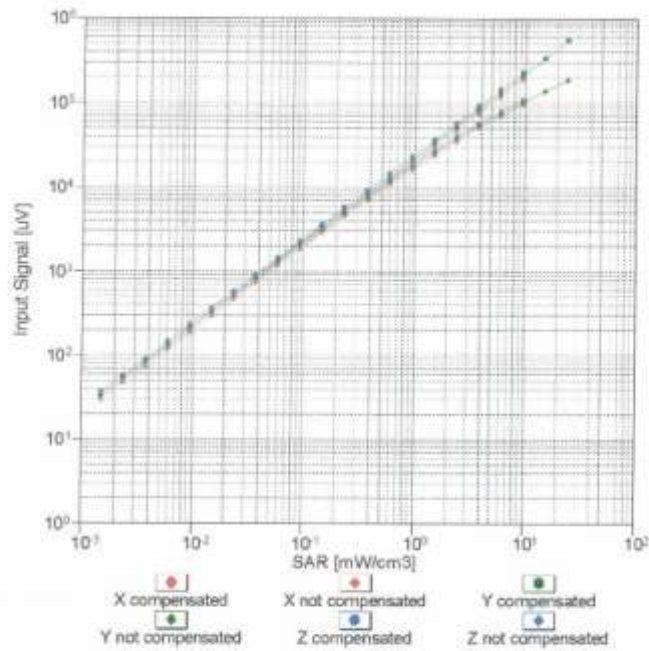


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

ET3DV6-SN:1798

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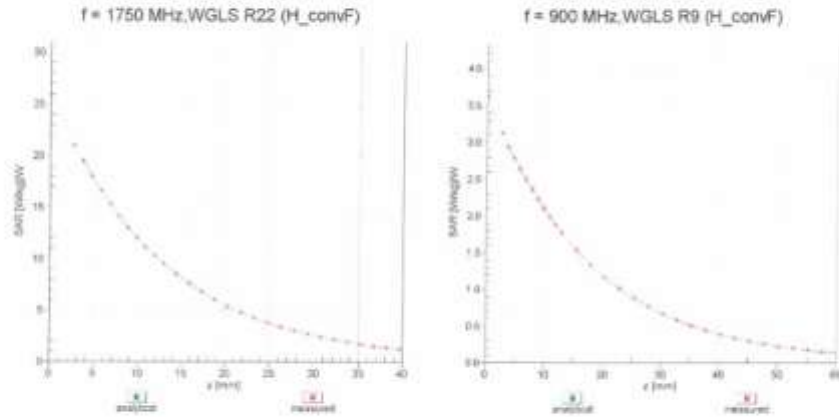
**Dynamic Range  $f(\text{SAR}_{\text{head}})$**   
(TEM cell,  $f = 900 \text{ MHz}$ )



ET3DV6-SN:1798

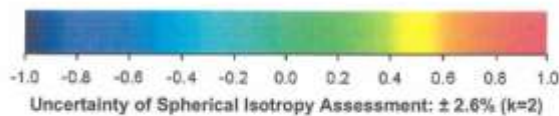
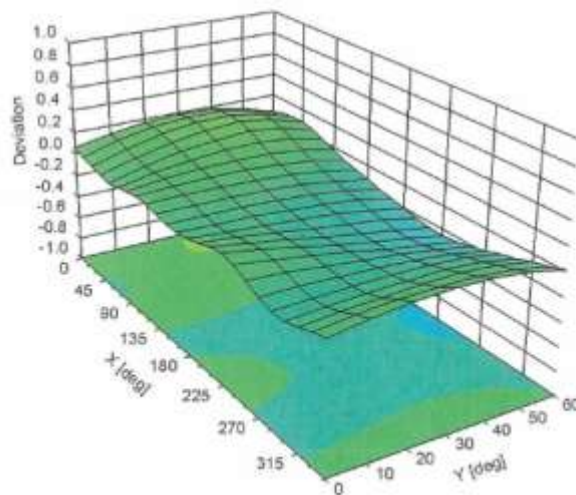
April 14, 2011

### Conversion Factor Assessment



### Deviation from Isotropy in Liquid

Error ( $\phi, \theta$ ),  $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

ET3DV6-SN:1798

April 14, 2011

**DASY/EASY - Parameters of Probe: ET3DV6 - SN:1798****Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm

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

### Additional Conversion Factors for Dosimetric E-Field Probe

Type:	ET3DV6
Serial Number:	1798
Place of Assessment:	Zurich
Date of Assessment:	July 13, 2011
Probe Calibration Date:	April 14, 2011

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 recalibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1750 MHz.

Assessed by:

Schmid &amp; Partner Engineering AG

**s p e e g**Zeughausstrasse 43, 8004 Zurich, Switzerland  
Phone +41 44 245 9700, Fax +41 44 245 9779  
info@speag.com, http://www.speag.com**Dosimetric E-Field Probe ET3DV6 - SN:1798**Conversion factor ( $\pm$  standard deviation)750  $\pm$  50 MHz      *ConvF*      6.94  $\pm$  7% $\epsilon_r = 41.9 \pm 5\%$   
 $\sigma = 0.89 \pm 5\%$  mho/m  
(head tissue)750  $\pm$  50 MHz      *ConvF*      6.79  $\pm$  7% $\epsilon_r = 55.5 \pm 5\%$   
 $\sigma = 0.96 \pm 5\%$  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 DASY Manual.**

## **Attachment 4. – Dipole Calibration Data**

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Accreditation No.: **SCS 108**

Client: **HCT (Dymstec)**

Certificate No: **D835V2-441\_May11**

CALIBRATION CERTIFICATE																																															
Object	D835V2 - SN: 441																																														
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz																																														
Calibration date:	May 16, 2011																																														
<p>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.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity &lt; 70%.</p> <p>Calibration Equipment used (M&amp;TE critical for calibration)</p> <table border="1"> <thead> <tr> <th>Primary Standards</th> <th>ID #</th> <th>Cal Date (Certificate No.)</th> <th>Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>Power meter EPM-442A</td> <td>GB37480704</td> <td>06-Oct-10 (No. 217-01266)</td> <td>Oct-11</td> </tr> <tr> <td>Power sensor HP 8481A</td> <td>US37292783</td> <td>06-Oct-10 (No. 217-01266)</td> <td>Oct-11</td> </tr> <tr> <td>Reference 20 dB Attenuator</td> <td>SN: S5086 (20b)</td> <td>29-Mar-11 (No. 217-01367)</td> <td>Apr-12</td> </tr> <tr> <td>Type-N mismatch combination</td> <td>SN: 5047.2 / 06327</td> <td>29-Mar-11 (No. 217-01371)</td> <td>Apr-12</td> </tr> <tr> <td>Reference Probe ES3DV3</td> <td>SN: 3205</td> <td>29-Apr-11 (No. ES3-3205_Apr11)</td> <td>Apr-12</td> </tr> <tr> <td>DAE4</td> <td>SN: 601</td> <td>10-Jun-10 (No. DAE4-601_Jun10)</td> <td>Jun-11</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Secondary Standards</th> <th>ID #</th> <th>Check Date (in house)</th> <th>Scheduled Check</th> </tr> </thead> <tbody> <tr> <td>Power sensor HP 8481A</td> <td>MY41092317</td> <td>18-Oct-02 (in house check Oct-09)</td> <td>In house check: Oct-11</td> </tr> <tr> <td>RF generator R&amp;S SMT-06</td> <td>100005</td> <td>4-Aug-99 (in house check Oct-09)</td> <td>In house check: Oct-11</td> </tr> <tr> <td>Network Analyzer HP 8753E</td> <td>US37390585 S4206</td> <td>18-Oct-01 (in house check Oct-10)</td> <td>In house check: Oct-11</td> </tr> </tbody> </table>				Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration	Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11	Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11	Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12	Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12	Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12	DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11	Secondary Standards	ID #	Check Date (in house)	Scheduled Check	Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11	RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11	Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11
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Approved by:	Katja Pokovic	Technical Manager																																													
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Accreditation No.: **SCS 108**

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**Calibration is Performed According to the Following Standards:**

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- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- DASY4/5 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**

DASYS system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.4 $\pm$ 6 %	0.88 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Head TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.31 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.34 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.51 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.09 mW / g $\pm$ 16.5 % (k=2)

**Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	53.9 $\pm$ 6 %	1.00 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.43 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.45 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.60 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.27 mW / g $\pm$ 16.5 % (k=2)

**Appendix**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	50.2 $\Omega$ - 9.8 $\mu\Omega$
Return Loss	- 20.2 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	46.3 $\Omega$ - 10.3 $\mu\Omega$
Return Loss	- 18.9 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.374 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	March 09, 2001

**DASY5 Validation Report for Head TSL**

Date: 16.05.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 441**Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1  
Medium: HSL900Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 40.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

## DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:**

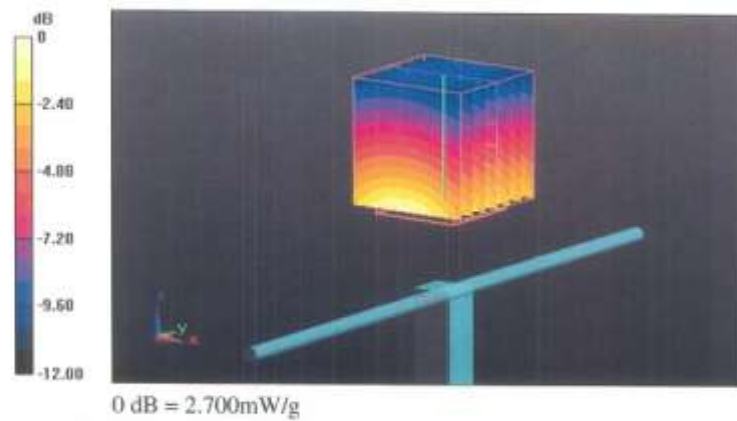
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.041 V/m; Power Drift = 0.03 dB

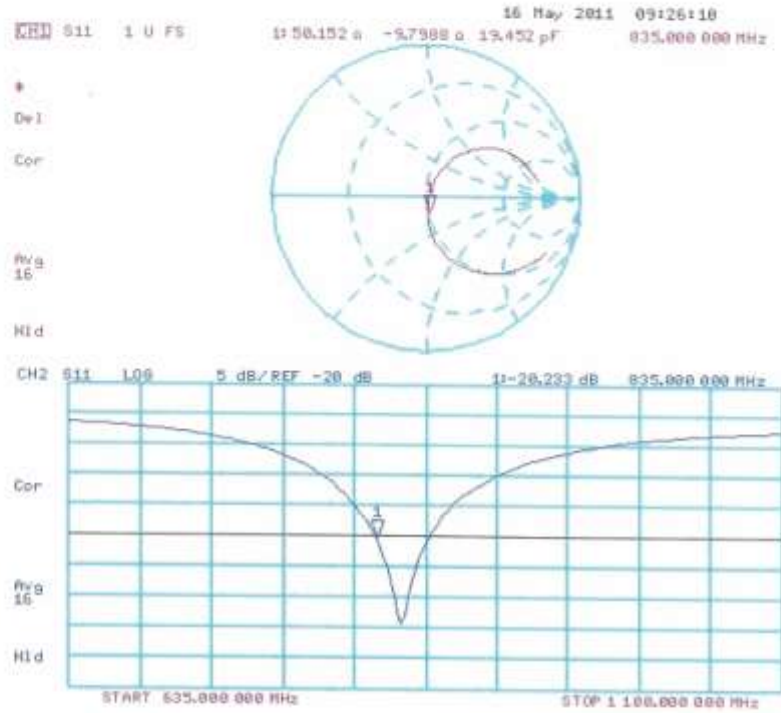
Peak SAR (extrapolated) = 3.442 W/kg

**SAR(1 g) = 2.31 mW/g; SAR(10 g) = 1.51 mW/g**

Maximum value of SAR (measured) = 2.703 mW/g



Impedance Measurement Plot for Head TSL



**DASY5 Validation Report for Body TSL**

Date: 16.05.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441**Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1  
Medium: MSL900Medium parameters used:  $f = 835$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

**DASY5 Configuration:**

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

**Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:**

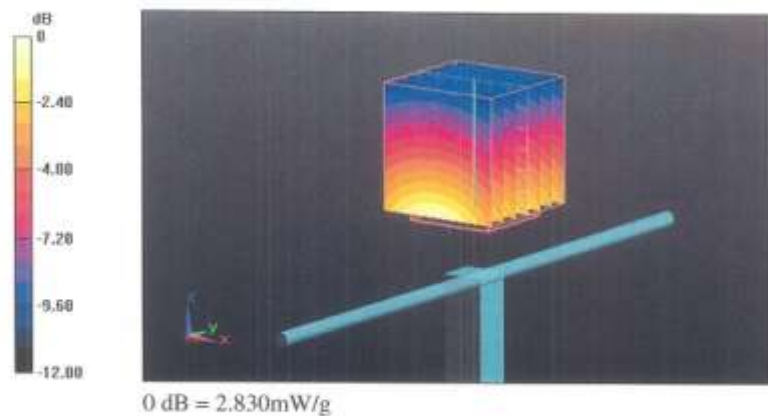
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.302 V/m; Power Drift = 0.02 dB

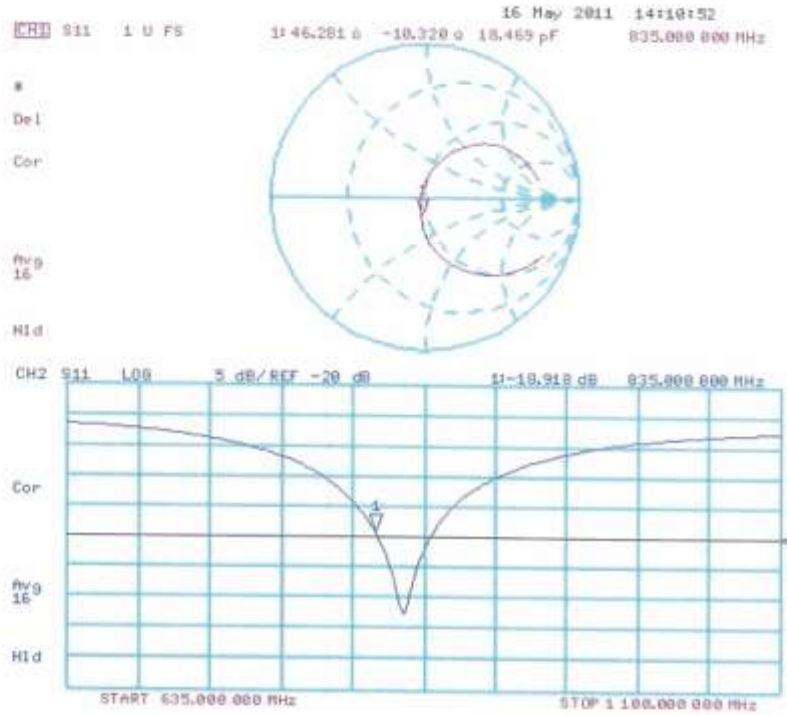
Peak SAR (extrapolated) = 3.553 W/kg

**SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.6 mW/g**

Maximum value of SAR (measured) = 2.833 mW/g



Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 108**

Client **HCT (Dymstec)**

Certificate No: **D1900V2-5d032\_Jul11**

**CALIBRATION CERTIFICATE**

Object: **D1900V2 - SN: 5d032**

Calibration procedure(s): **QA CAL-05.v8  
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **July 22, 2011**

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. E53-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by: **Name: Dimce Iliev, Function: Laboratory Technician, Signature: [Signature]**

Approved by: **Name: Katja Pokovic, Function: Technical Manager, Signature: [Signature]**

Issued: August 2, 2011

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Accreditation No.: **SCS 108**

**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:* SAR measured at the stated antenna input power.
- SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

**Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.1 $\pm$ 6 %	1.42 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Head TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	10.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	<b>39.9 mW / g <math>\pm</math> 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.29 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	<b>21.0 mW / g <math>\pm</math> 16.5 % (k=2)</b>

**Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	52.3 $\pm$ 6 %	1.53 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	<b>40.9 mW / g <math>\pm</math> 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.39 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	<b>21.5 mW / g <math>\pm</math> 16.5 % (k=2)</b>

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

Impedance, transformed to feed point	52.6 $\Omega$ + 6.5 j $\Omega$
Return Loss	- 23.3 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	48.6 $\Omega$ + 6.0 j $\Omega$
Return Loss	- 22.9 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.190 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	March 17, 2003

**DASY5 Validation Report for Head TSL**

Date: 20.07.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d032**

Communication System: CW; Frequency: 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**

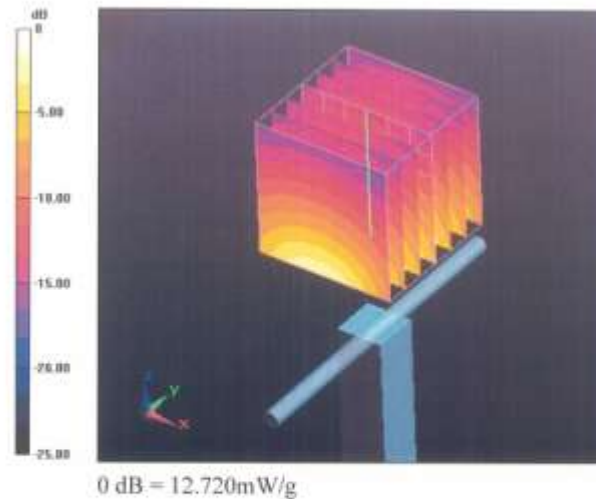
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 98.253 V/m; Power Drift = 0.03 dB

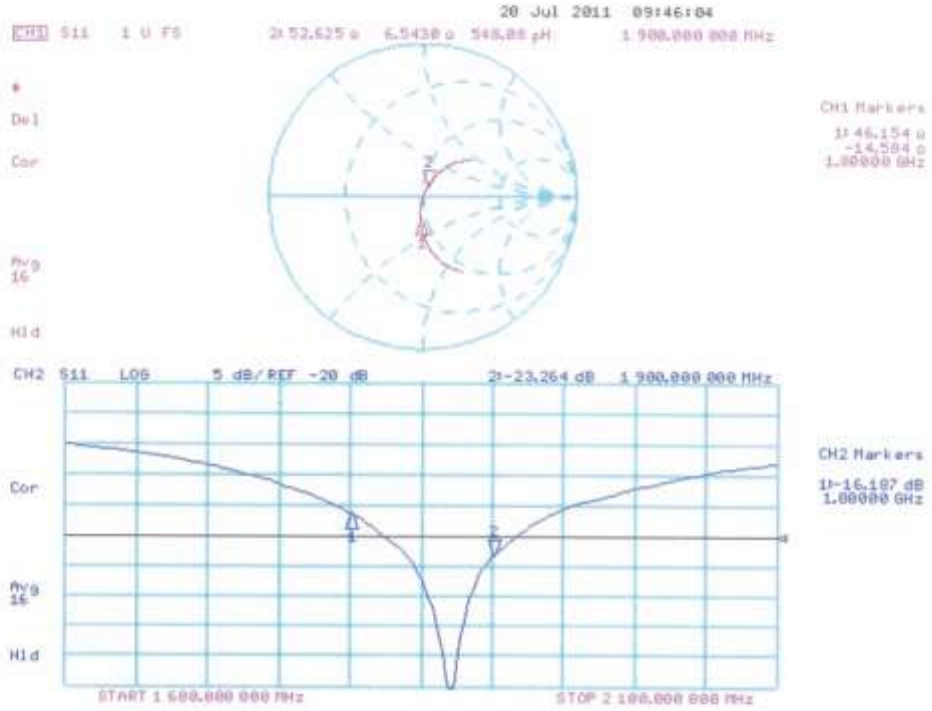
Peak SAR (extrapolated) = 18.469 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.29 mW/g**

Maximum value of SAR (measured) = 12.721 mW/g



**Impedance Measurement Plot for Head TSL**



**DASY5 Validation Report for Body TSL**

Date: 22.07.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d032**

Communication System: CW; Frequency: 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**

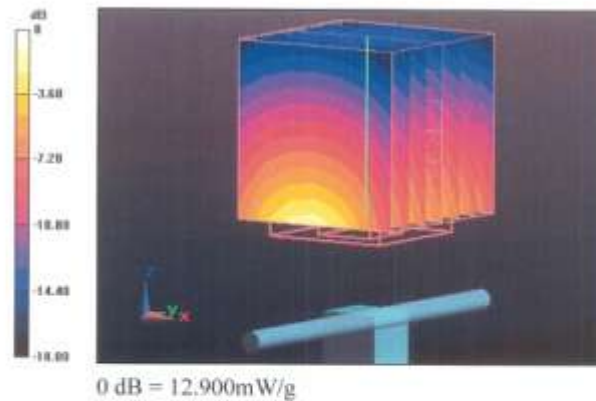
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.827 V/m; Power Drift = 0.0078 dB

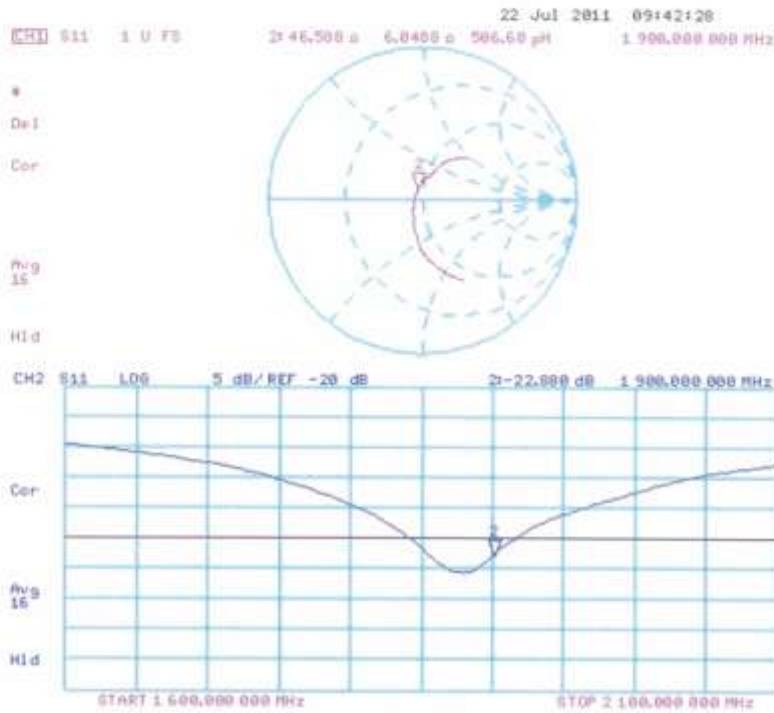
Peak SAR (extrapolated) = 18.111 W/kg

**SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.39 mW/g**

Maximum value of SAR (measured) = 12.898 mW/g



Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 108**

Client: **HCT (Dymstec)**

Certificate No: **D2450V2-743\_Aug11**

**CALIBRATION CERTIFICATE**

Object: **D2450V2 - SN: 743**

Calibration procedure(s): **QA CAL-05.v8  
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **August 29, 2011**

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: 55086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41082317	18-Oct-02 (in house check Oct-09)	in house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	in house check: Oct-11
Network Analyzer HP 8753E	US37390585 54206	18-Oct-01 (in house check Oct-10)	in house check: Oct-11

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

Issued: August 29, 2011

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Accreditation No.: **SCS 108**

**Glossary:**

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

**Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.4 $\pm$ 6 %	1.85 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

**SAR result with Head TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.7 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	53.8 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.40 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	25.4 mW / g $\pm$ 16.5 % (k=2)

**Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.8 $\pm$ 6 %	2.02 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

**SAR result with Body TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	51.7 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.11 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.2 mW / g $\pm$ 16.5 % (k=2)

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

Impedance, transformed to feed point	55.0 $\Omega$ + 4.8 j $\Omega$
Return Loss	- 23.6 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	50.3 $\Omega$ + 5.8 j $\Omega$
Return Loss	- 24.8 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.180 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	December 01, 2003

**DASY5 Validation Report for Head TSL**

Date: 29.08.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 743**

Communication System: CW; Frequency: 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.85$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**

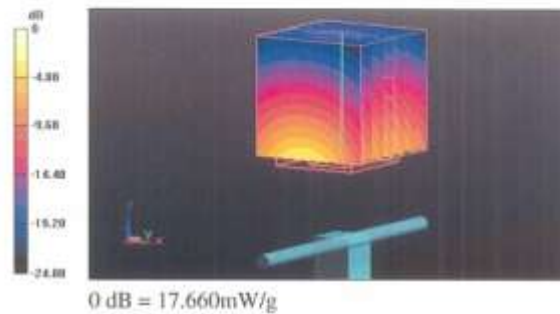
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 101.2 V/m; Power Drift = 0.03 dB

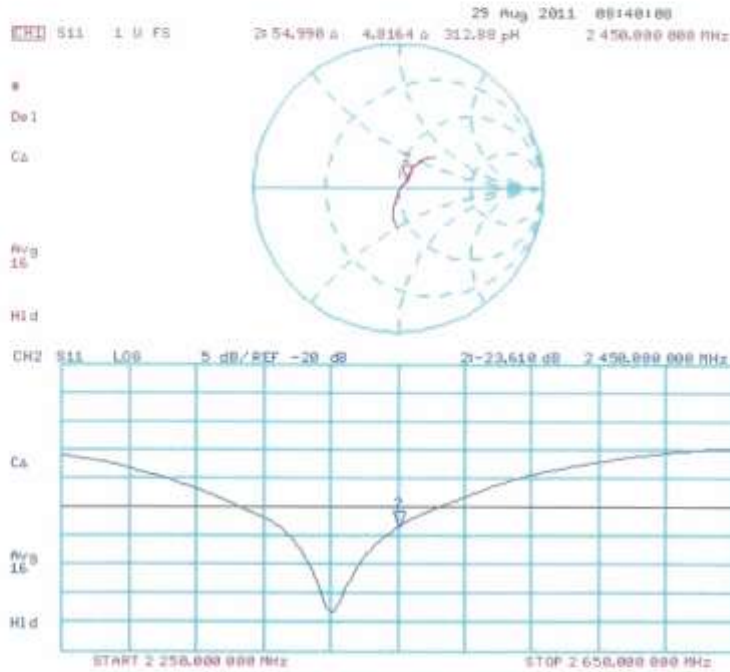
Peak SAR (extrapolated) = 28.291 W/kg

**SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.4 mW/g**

Maximum value of SAR (measured) = 17.657 mW/g



Impedance Measurement Plot for Head TSL



**DASY5 Validation Report for Body TSL**

Date: 29.08.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 743**

Communication System: CW; Frequency: 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 2.02$  mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**

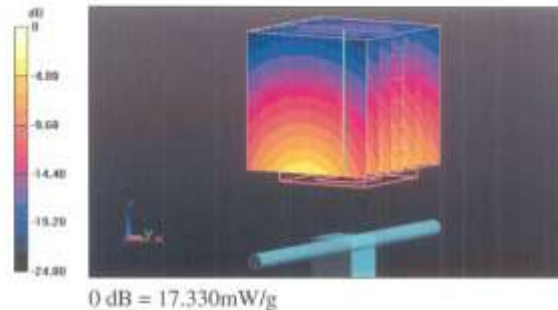
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.903 V/m; Power Drift = -0.0051 dB

Peak SAR (extrapolated) = 27.107 W/kg

**SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.11 mW/g**

Maximum value of SAR (measured) = 17.329 mW/g



Impedance Measurement Plot for Body TSL

