

SAR TEST REPORT

HCT CO., LTD

EUT Type:	Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth GPRS Class12 and GPRS mode class B(GPRS and GSM, but not simultaneously)	
FCC ID:	ZNFE730F	
Model:	LG-E730f	
Additional Model:	E730f,LGE730f	
Date of Issue:	Nov.24, 2011	
Test report No.:	HCTA1111FS04	
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Applicant :	LG Electronics, MobileComm U.S.A., Inc. 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 C95.1-2005 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).

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

where:

σ	=	conductivity of the tissue-simulant material (S/m)
ρ	=	mass density of the tissue-simulant material (kg/m ³)
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).

EUT Type	Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth GPRS Class12 and GPRS mode class B(GPRS and GSM, but not simultaneously)		
FCC ID:	ZNFE730F		
Model:	LG-E730f		
Additional Model:	E730f,LGE730f		
Trade Name	LG Electronics, MobileComm U.S.A., Inc.	Serial Number(s)	#1
Application Type	Certification		
Mode(s) of Operation	GSM850/GSM1900/ WCDMA850/802.11b/g/n		
Tx Frequency	824.20 - 848.80 MHz (GSM850) /1 850.20 – 1 909.80 MHz (GSM1900) 826.4~846.6 MHz (WCDMA850) /2 412- 2 462 MHz (WLAN)		
Rx Frequency	869.20 - 893.80 MHz (GSM850) /1 930.20 – 1 989.80 MHz (GSM1900) 871.4 - 891.6 MHz (WCDMA850) /2 412- 2 462 MHz (WLAN)		
FCC Classification	Licensed Portable Transmitter Held to Ear (PCE)		
Production Unit or Identical Prototype	Prototype		
Max SAR	Band	1g SAR (W/kg)	
		Head	Body-worn
	GSM850	0.418	1.06
	GSM1900	1.03	0.616
	WCDMA850	0.409	0.940
	802.11b	0.258	0.120
Date(s) of Tests	Nov. 18, 2011 ~ Nov. 19, 2011		
Antenna Type	Intenna		
GPRS	Multislot Class: 12, Mode Class: B		
Key Feature(s)	Mobile Hotspot support (But, this device doesn't support GPRS VoIP.)		

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 maximum 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.

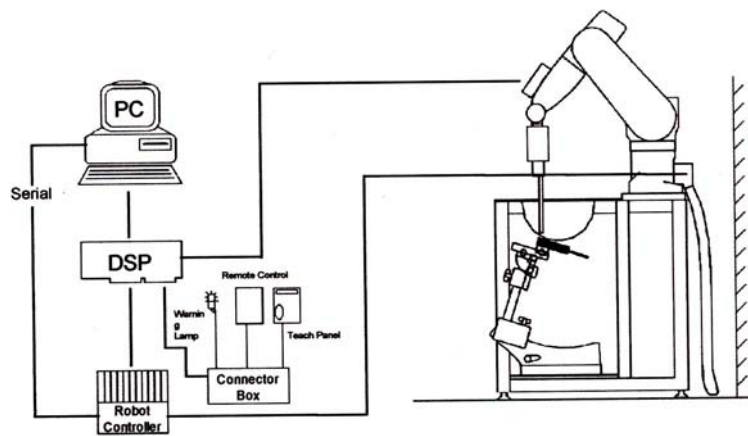


Figure 3.1 HCT SAR Lab. Test Measurement Set-up

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

3.2.1 ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System Built-in shielding against static charges
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at Frequencies of 450 MHz, 900 MHz and 1.8 GHz (accuracy: 8 %)
Frequency	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Directivity	± 0.2 dB in brain tissue (rotation around probe axis) ± 0.4 dB in brain tissue (rotation normal probe axis)
Dynamic	5 μ W/g to > 100 mW/g;
Range Linearity:	± 0.2 dB
Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces.
Dimensions	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application	General dissymmetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms



Figure 3.2 Photograph of the probe and the Phantom

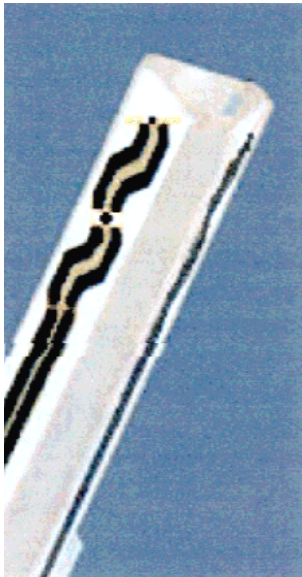


Figure 3.3 ET3DV6 E-field Probe

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 2nd 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 $\pm 10 \%$. 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 $\Delta T / \Delta t$, 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/cm³ for brain tissue)

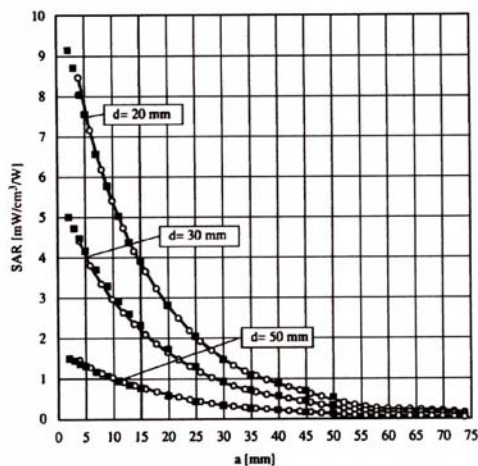


Figure 3.4 E-Field and Temperature measurements at 900 MHz

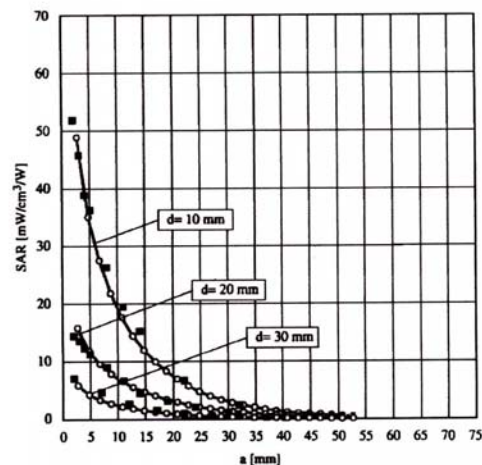


Figure 3.5 E-Field and temperature measurements at 1.8 GHz

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
 σ = conductivity in [mho/m] or [Siemens/m]
 ρ = equivalent tissue density in g/cm³

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

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

with P_{pwe} = equivalent power density of a plane wave in W/cm²
 E_{tot} = total electric field strength in V/m

3.4 SAM Phantom

The SAM Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90 % of all users. 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 the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

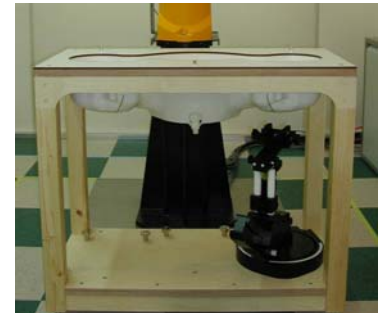


Figure 3.6 SAM Phantom

Shell Thickness	2.0 mm
Filling Volume	about 30 L
Dimensions	810 mm x 1 000 mm x 500 mm (H x 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 produced 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		835		915		1 900		2 450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	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 85070C	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
R&S	Base Station CMW500	101901	Aug.5,2011	Annual	Aug. 5, 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 maximum 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 maximum interpolated value was searched with a straight-forward algorithm. Around this maximum 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.

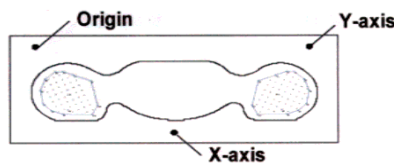


Figure 4.1 SAR Measurement Point in Area Scan

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.

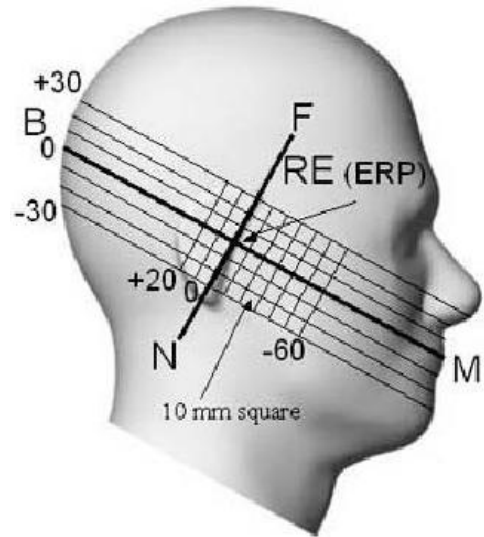


Figure 5.1 Side view of the phantom

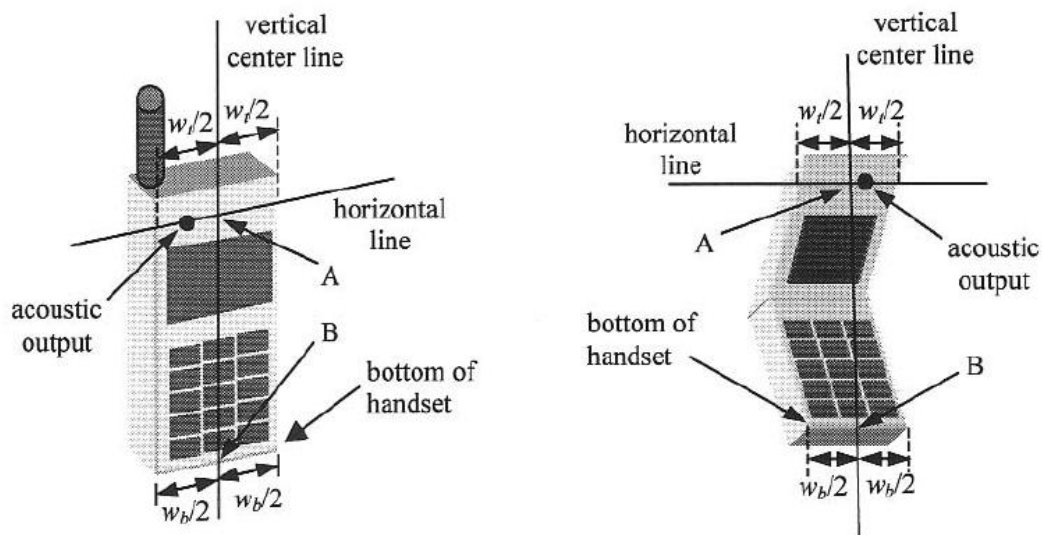


Figure 5.2 Handset vertical and horizontal reference lines

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 ($\pm$ %)	Prob. dist.	Div.	c_i	Standard Uncertainty ($\pm$ %)	v_{eff}
1. Measurement System						
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	∞
2. Test Sample Related						
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	∞
3. Phantom and Setup						
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
Combine Standard Uncertainty					11.13	
Coverage Factor for 95 %					$k=2$	
Expanded STD Uncertainty					22.25	

Table 6.1 Uncertainty (800 MHz- 2450 MHz)

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	Nov.18, 2011	Head	21.3	ϵ_r	41.5	43	+ 3.61	± 5
				σ	0.90	0.9	0.00	± 5
835	Nov.18, 2011	Body	21.3	ϵ_r	55.2	55.9	+ 1.27	± 5
				σ	0.97	0.95	- 2.06	± 5
1 900	Nov.19, 2011	Head	21.2	ϵ_r	40.0	41.5	+ 3.75	± 5
				σ	1.40	1.4	0.00	± 5
1 900	Nov.19, 2011	Body	21.2	ϵ_r	53.3	55	+ 3.19	± 5
				σ	1.52	1.47	- 3.29	± 5
2450	Nov.19, 2011	Head	21.2	ϵ_r	39.2	38.7	- 1.28	± 5
				σ	1.80	1.85	+ 2.78	± 5
2450	Nov.19, 2011	Body	21.2	ϵ_r	52.7	52.1	- 1.14	± 5
				σ	1.95	1.88	- 3.59	± 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]	Ambient Temp. [°C]	SAR Average	Target Value (SPEAG) (mW/g)	*Measured Value (mW/g)	Deviation [%]	Limit [%]
835	1798	441	Nov.18, 2011	Head	21.3	21.5	1 g	9.34	0.967	+ 3.53	± 10
835			Nov.18, 2011	Body	21.3	21.5	1 g	9.45	0.955	+ 1.06	± 10
1 900		5d032	Nov.19, 2011	Head	21.2	21.4	1 g	39.9	4.06	+ 1.75	± 10
1 900			Nov.19, 2011	Body	21.2	21.4	1 g	40.9	4.07	- 0.49	± 10
2 450		743	Nov.19, 2011	Head	21.2	21.4	1 g	53.8	5.05	- 6.13	± 10
2 450			Nov.19, 2011	Body	21.2	21.4	1 g	51.7	5.19	+ 0.39	± 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)

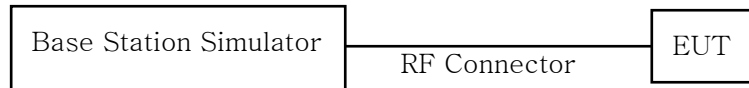
- Cabling the system, using the validation kit equipments.
- Generate about 100 mW Input Level from the Signal generator to the Dipole Antenna.
- Dipole Antenna was placed below the Flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10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

9. RF CONDUCTED POWER MEASUREMENT

Power measurements were performed using a base station simulator under digital average power. 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 evaluation 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.

9.1 GSM

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



SAR Test for WWAN were performed with a base station simulator Agilent E5515C. Communication between the device and the emulator was established by air link. Set base station emulator to allow DUT to radiate maximum output power during all tests. Please refer to the below worst case SAR operation setup.

- GSM voice: Head SAR
- GPRS Multi-slot Class 10: Body SAR with MCS 1 (GMSK)
-

GSM Conducted output powers (Burst-Average)

Band	Channel	Voice	GPRS Data- MCS1				EDGE Data			
		GSM (dBm)	GPRS 1 TX Slot (dBm)	GPRS 2 TX Slot (dBm)	GPRS 3 TX Slot (dBm)	GPRS 4 TX Slot (dBm)	EDGE 1 TX Slot (dBm)	EDGE 2 TX Slot (dBm)	EDGE 3 TX Slot (dBm)	EDGE 4 TX Slot (dBm)
GSM 850	128	33.60	33.60	30.80	29.90	27.70	30.30	27.70	26.10	24.50
	190	33.50	33.50	30.90	29.90	27.90	30.30	27.60	26.00	24.20
	251	33.50	33.70	30.90	29.60	27.50	30.10	27.60	25.90	23.90
GSM 1900	512	30.20	30.30	27.80	26.00	24.40	28.60	26.40	24.90	21.80
	661	30.30	30.30	27.80	26.00	24.60	28.60	26.30	24.80	21.90
	810	30.20	30.20	27.70	26.00	24.50	28.50	26.20	24.70	21.90

GSM Conducted output powers (Frame-Average)

Band	Channel	Voice	GPRS Data- MCS1				EDGE Data			
		GSM (dBm)	GPRS 1 TX Slot (dBm)	GPRS 2 TX Slot (dBm)	GPRS 3 TX Slot (dBm)	GPRS 4 TX Slot (dBm)	EDGE 1 TX Slot (dBm)	EDGE 2 TX Slot (dBm)	EDGE 3 TX Slot (dBm)	EDGE 4 TX Slot (dBm)
GSM 850	128	24.57	24.57	24.78	25.64	24.69	21.27	21.68	21.84	21.49
	190	24.47	24.47	24.88	25.64	24.89	21.27	21.58	21.74	21.19
	251	24.47	24.67	24.88	25.34	24.49	21.07	21.58	21.64	20.89
GSM 1900	512	21.17	21.27	21.78	21.74	21.39	19.57	20.38	20.64	18.79
	661	21.27	21.27	21.78	21.74	21.59	19.57	20.28	20.54	18.89
	810	21.17	21.17	21.68	21.74	21.49	19.47	20.18	20.44	18.89

Note:

Time slot average factor is as follows:

1 Tx slot = 9.03 dB, Frame-Average output power = Burst-Average output power – 9.03 dB

2 Tx slot = 6.02 dB, Frame-Average output power = Burst-Average output power – 6.02 dB

3 Tx slot = 4.26 dB, Frame-Average output power = Burst-Average output power – 4.26 dB

4 Tx slot = 3.01 dB, Frame-Average output power = Burst-Average output power – 3.01 dB

9.2 WCDMA

Body SAR is not required for handsets with HSDPA capabilities when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise, SAR is Measured for HSDPA, using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA, on the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel.

9.2.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3 GPP TS 34.121, using the appropriate RMC or AMR with TPC(transmit power control) set to all "1s".

9.2.2 Head SAR Measurements

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all "1s". SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4 kbps SRB (signaling radio bearer) using the exposure configuration that results in the highest SAR for that RF channel in 12.2 RMC.

9.2.3 Body SAR Measurement

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all "1s".

9.2.4 Handsets with Release 5 HSDPA

Body SAR is not required for handsets with HSDPA capabilities when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise, SAR is Measured for HSDPA, using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA, on the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel.

Sub-Test 1 Setup for Release 5 HSDPA

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	CM (dB) ⁽²⁾
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 ⁽³⁾	15/15 ⁽³⁾	64	12/15 ⁽³⁾	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5
Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$						
Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$.						
Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.						

9.2.5 Handsets with Release 6 HSPA (HSDPA/HSUPA)

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.1 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurement should be used to test for head exposure.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

3GPP Release Version	Mode	3GPP 34.121	Cellular Band [dBm]						MPR
		Subtest	UL 4132 (826.4)	Power reduction (dB)	UL 4183 (836.6)	Power reduction (dB)	UL 4233 (846.6)	Power reduction (dB)	
99	WCDMA	12.2 kbps RMC	23.26		23.30		23.69		-
5	HSDPA	Subtest 1	22.85		22.81		23.20		0
5		Subtest 2	22.76	0.09	22.83	-0.02	23.21	-0.01	0
5		Subtest 3	22.38	0.47	22.47	0.34	22.70	0.5	0.5
5		Subtest 4	22.55	0.3	22.43	0.38	22.72	0.48	0.5
6	HSUPA	Subtest 1	22.62		22.32		22.86		0
6		Subtest 2	21.24	1.38	21.25	1.07	21.50	1.36	2
6		Subtest 3	21.66	0.96	21.60	0.72	21.98	0.88	1
6		Subtest 4	21.42	1.2	21.46	0.86	21.62	1.24	2
6		Subtest 5	22.67	-0.05	22.58	-0.26	22.93	-0.07	0

Table 10.2 WCDMA Average Conducted output powers

9.3 WiFi

9.3.1 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				√	
	5.26	52	50 (5.25 GHz)			√	
	5.28	56					*
	5.30	60	58 (5.29 GHz)				*
	5.32	64				√	
	5.500	100					*
	5.520	104				√	
	5.540	108					*
	5.560	112					*
	5.580	116				√	
	5.600	120	Unknown				*
	5.620	124				√	
	5.640	128					*
	5.660	132					*
	5.680	136				√	
	5.700	140					*
	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	14.07	14.05	14.03	13.80
	6	14.05	13.97	13.94	13.82
	11	14.26	14.19	14.08	13.98

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	14.03	13.87	13.73	13.47	13.35	13.05	12.74	12.66
	6	13.91	13.77	13.75	13.47	13.33	12.98	12.72	12.55
	11	14.16	14.04	13.96	13.64	13.55	13.27	12.90	12.81

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	12.89	12.65	12.50	12.33	11.97	11.67	11.58	11.45
	6	12.82	12.63	12.43	12.24	11.96	11.60	11.49	11.36
	11	13.01	12.84	12.61	12.42	12.13	11.86	11.73	11.66

Average IEEE 802.11n Conducted output power

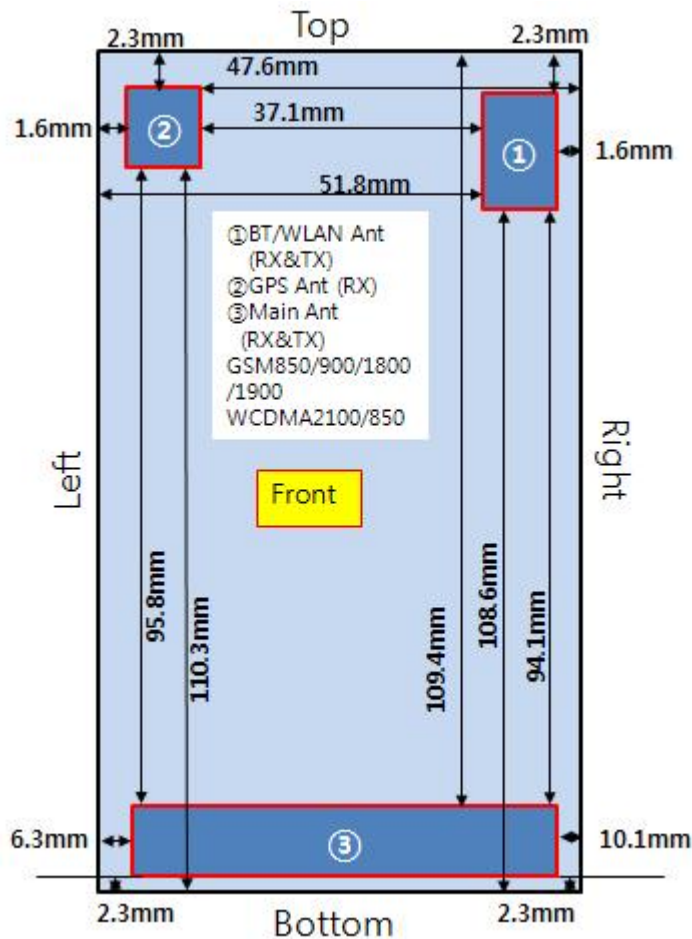
Note;
SAR testing was performed according to the FCC KDB 248227.

10. SAR Test configuration & Antenna Information

10.1 SAR Test configurations

Mode	Back	Front	Left	Right	Bottom	Top
850 GPRS	Yes	Yes	Yes	Yes	Yes	No
1900 GPRS	Yes	Yes	Yes	Yes	Yes	No
WCDMA850	Yes	Yes	Yes	Yes	Yes	No
WLAN	Yes	Yes	No	Yes	No	Yes

10.2 Antenna and Device Information



[Front side View]

Note;

Per FCC KDB Publication 941225 D06, we performed the SAR testing at 1 cm from the top & bottom surfaces and also from side edges with a transmitting antenna ≤ 2.5 cm from an edge.

11. SAR Considerations for 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. 12.1 Output Power Thresholds for Unlicensed Transmitters

	Individual Transmitter	Simultaneous Transmission
Licensed Transmitters	<u>Routine evaluation required</u>	SAR not required: <u>Unlicensed only</u> - when stand-alone 1-g SAR is not required and antenna is ≥ 5 cm from other antennas <u>Licensed & Unlicensed</u> - when the sum of the 1-g SAR is < 1.6 W/kg for all simultaneous transmitting antennas - when SAR to peak location separation ratio of simultaneous transmitting antenna pair is < 0.3 SAR required: <u>Licensed & Unlicensed</u> antenna pairs with SAR to peak location separation ratio ≥ 0.3 ; test is only required for the configuration that results in the highest SAR in stand-alone configuration for each wireless mode and exposure condition Note: simultaneous transmission exposure conditions for head and body can be different for different style phones; therefore, different test requirements may apply
Unlicensed Transmitters	<u>When there is no simultaneous transmission –</u> - output ≤ 60 f: SAR not required - output > 60 f: stand-alone SAR required <u>When there is simultaneous transmission –</u> <u>Stand-alone SAR not required when</u> - output $\leq 2 \cdot P_{Ref}$ and antenna is ≥ 5.0 cm from other antennas - output $\leq P_{Ref}$ and antenna is ≥ 2.5 cm from other antennas - output $\leq P_{Ref}$ and antenna is < 2.5 cm from other antennas, each with either output power $\leq P_{Ref}$ or 1-g SAR < 1.2 W/kg <u>Otherwise stand-alone SAR is required</u> <u>When stand-alone SAR is required</u> - test SAR on highest output channel for each wireless mode and exposure condition - if SAR for highest output channel is $> 50\%$ of SAR limit, evaluate all channels according to normal procedures	
Jaw, Mouth and Nose	<u>Flat phantom SAR required</u> - 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 - position rectangular and clam-shell phones according to flat phantom procedures and conduct SAR measurements for these specific locations	When simultaneous transmission SAR testing is required, contact the FCC Laboratory for interim guidance.

SAR Evaluation Requirements for Multiple Transmitters Handsets

FCC ID: ZNFE730F / BT Max. RF output power: 14.45 mW

Antenna separation distance between Main and BT/ WLAN: 94.1 mm

WLAN Max. RF output power: Wi-Fi 802.11b (14.26 dBm) / Wi-Fi 802.11g (14.16 dBm) / Wi-Fi 802.11n (13.01 dBm)

11.2 SAR Summation Scenario

Simultaneous Transmission Summation for Held to Ear

Simultaneous TX	configuration	850 GSM SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)	Simultaneous TX	configuration	1900 GSM SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Left Cheek	0.418	0.258	0.676	Head SAR	Left Cheek	1.03	0.258	1.288
	Left Tilt	0.276	0.209	0.485		Left Tilt	0.246	0.209	0.455
	Right Cheek	0.415	0.195	0.610		Right Cheek	0.405	0.195	0.600
	Right Tilt	0.26	0.182	0.442		Right Tilt	0.255	0.182	0.437
Simultaneous TX	configuration	850 WCDMA SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Left Cheek	0.395	0.258	0.653					
	Left Tilt	0.295	0.209	0.504					
	Right Cheek	0.409	0.195	0.604					
	Right Tilt	0.265	0.182	0.447					

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	850 GPRS SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)	Simultaneous TX	configuration	1900 GPRS SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.06	0.12	1.180	Body SAR	Back	0.616	0.12	0.736

Simultaneous TX	configuration	850 WCDMA SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.94	0.12	1.060

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

Simultaneous Transmission Summation for Hotspot

Simultaneous TX	configuration	850 GPRS SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)	Simultaneous TX	configuration	1900 GPRS SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.06	0.12	1.180	Body SAR	Back	0.616	0.12	0.736
	Front	0.575	0.074	0.649		Front	0.606	0.074	0.680
	Left	0.449	-	0.449		Left	0.222	-	0.222
	Right	0.543	0.082	0.625		Right	0.066	0.082	0.148
	Bottom	0.098	-	0.098		Bottom	0.404	-	0.404
	Top	-	0.092	0.092		Top	-	0.092	0.092
Simultaneous TX	configuration	850 WCDMA SAR(W/kg)	WIFI SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.94	0.12	1.060					
	Front	0.585	0.074	0.659					
	Left	0.445	-	0.445					
	Right	0.518	0.082	0.600					
	Bottom	0.128	-	0.128					
	Top	-	0.092	0.092					

The above tables represent a portable hotspot condition.

Note;

Body-Worn SAR : The Rear side hotspot SAR test configurations can be considered for body-worn accessory SAR

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.

The conducted output power level of the BT transmitter is less than $2 \cdot P_{\text{ref}}$, 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 (GSM850 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel							
836.6	190 (Mid)	GSM850	33.5	-0.095	Standard	Left Ear	Intenna	0.418
836.6	190 (Mid)	GSM850	33.5	-0.035	Standard	Left Tilt 15°	Intenna	0.276
836.6	190 (Mid)	GSM850	33.5	0.042	Standard	Right Ear	Intenna	0.415
836.6	190 (Mid)	GSM850	33.5	-0.06	Standard	Right Tilt 15°	Intenna	0.26
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population					Head 1.6 W/kg (mW/g) Averaged over 1 gram			

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).

12.2 Measurement Results (GSM1900 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel							
1850.2	512 (Low)	GSM1900	30.2	-0.072	Standard	Left Ear	Intenna	1.03
1880.0	661 (Mid)	GSM1900	30.3	-0.175	Standard	Left Ear	Intenna	0.882
1909.8	810 (High)	GSM1900	30.2	-0.019	Standard	Left Ear	Intenna	0.768
1 880.0	661 (Mid)	GSM1900	30.3	-0.014	Standard	Left Tilt 15°	Intenna	0.246
1880.0	661 (Mid)	GSM1900	30.3	-0.022	Standard	Right Ear	Intenna	0.405
1880.0	661 (Mid)	GSM1900	30.3	-0.002	Standard	Right Tilt 15°	Intenna	0.255
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population					Head 1.6 W/kg (mW/g) Averaged over 1 gram			

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).

12.3 Measurement Results (WCDMA850 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel							
836.6	4183 (Mid)	WCDMA850	23.30	-0.059	Standard	Left Ear	Intenna	0.395
836.6	4183 (Mid)	WCDMA850	23.30	-0.007	Standard	Left Tilt 15°	Intenna	0.295
836.6	4183 (Mid)	WCDMA850	23.30	-0.030	Standard	Right Ear	Intenna	0.409
836.6	4183 (Mid)	WCDMA850	23.30	0.012	Standard	Right Tilt 15°	Intenna	0.265
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population					Head 1.6 W/kg (mW/g) Averaged over 1 gram			

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).
- WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

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

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Antenna Type	Data Rate (Mbps)	SAR(mW/g)
MHz	Channel								
2 462	11 (High)	802.11b	14.26	-0.014	Standard	Left Ear	Intenna	1	0.258
2 462	11 (High)	802.11b	14.26	-0.037	Standard	Left Tilt 15°	Intenna	1	0.209
2 462	11 (High)	802.11b	14.26	-0.060	Standard	Right Ear	Intenna	1	0.195
2 462	11 (High)	802.11b	14.26	-0.027	Standard	Right Tilt 15	Intenna	1	0.182
ANSI/ IEEE C95.1 - 1992– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram			

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.

12.5 Measurement Results (GSM850 Body SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
824.2	128 (Low)	GPRS 3Tx	29.9	-0.082	Rear	1 cm	0.823
836.6	190 (Mid)	GPRS 3Tx	29.9	-0.03	Rear	1 cm	0.978
848.8	251 (High)	GPRS 3Tx	29.6	0.007	Rear	1 cm	1.06
836.6	190 (Mid)	GPRS 3Tx	29.9	-0.075	Front	1 cm	0.575
836.6	190 (Mid)	GPRS 3Tx	29.9	-0.179	Left	1 cm	0.449
836.6	190 (Mid)	GPRS 3Tx	29.9	0.006	Right	1 cm	0.543
836.6	190 (Mid)	GPRS 3Tx	29.9	-0.054	bottom	1 cm	0.098
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram	

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 $\pm$ 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).
- For body SAR testing, the EUT was set in GPRS multi-slot class11 with 3uplink slots for GSM850 due to maximum source-based time-averaged output power.
According to the KDB 941225 D03 SAR test reduction GSM/GPRS/EDGE, the maximum output power configuration were chosen for Body SAR testing.

12.6 Measurement Results (GSM1900 Body SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
1 880.0	661 (Mid)	GPRS 4Tx	24.60	-0.179	Rear	1 cm	0.616
1 880.0	661 (Mid)	GPRS 3Tx	26.00	-0.007	Rear	1 cm	0.594
1 880.0	661 (Mid)	GPRS 2Tx	27.80	-0.065	Rear	1 cm	0.603
1 880.0	661 (Mid)	GPRS 4Tx	24.60	-0.025	Front	1 cm	0.606
1 880.0	661 (Mid)	GPRS 4Tx	24.60	-0.012	Left	1 cm	0.222
1 880.0	661 (Mid)	GPRS 4Tx	24.60	0.016	Right	1 cm	0.066
1 880.0	661 (Mid)	GPRS 4Tx	24.60	-0.100	bottom	1 cm	0.404
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram	

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 $\pm$ 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).
- For body SAR testing, the EUT was set in GPRS multi-slot class 10 with 2uplink slots, GPRS multi-slot class 11 with 3uplink slots and GPRS multi-slot class 12 with 4uplink slots for GSM1900 due to maximum source-based time-averaged output power.
According to the KDB 941225 D03 SAR test reduction GSM/GPRS/EDGE, the maximum output power configuration were chosen for Body SAR testing.

12.7 Measurement Results (WCDMA850 Body SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	SAR(mW/g)
MHz	Channel						
826.4	4132 (Low)	WCDMA850	23.26	0.038	Rear	1 cm	0.94
836.6	4183 (Mid)	WCDMA850	23.30	0.102	Rear	1 cm	0.917
846.6	4233 (High)	WCDMA850	23.69	-0.020	Rear	1 cm	0.865
836.6	4183 (Mid)	WCDMA850	23.30	0.051	Front	1 cm	0.585
836.6	4183 (Mid)	WCDMA850	23.30	0.041	Left	1 cm	0.445
836.6	4183 (Mid)	WCDMA850	23.30	0.107	Right	1 cm	0.518
836.6	4183 (Mid)	WCDMA850	23.30	-0.119	bottom	1 cm	0.128
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram	

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 Both side of the phone were tested and the worst-case side is reported.
- 8 HEADSET was connected.
- 9 Test Configuration ☐ With Holster ☒ Without Holster
- 10 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).
- 11 WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

12.8 Measurement Results (802.11b/g Module Body SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Data Rate	SAR(mW/g)
MHz	Channel							
2 462	11 (High)	802.11b	14.26	0.122	Rear	1 cm	1 Mbps	0.12
2 462	11 (High)	802.11b	14.26	0.052	Front	1 cm	1 Mbps	0.074
2 462	11 (High)	802.11b	14.26	0.045	Right	1 cm	1 Mbps	0.082
2 462	11 (High)	802.11b	14.26	-0.076	Top	1 cm	1 Mbps	0.092
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram		

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 $\pm$ 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

13. CONCLUSION

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.

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Attachment 1. – SAR Test Plots

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Left touch 190/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.449 mW/g

Left touch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

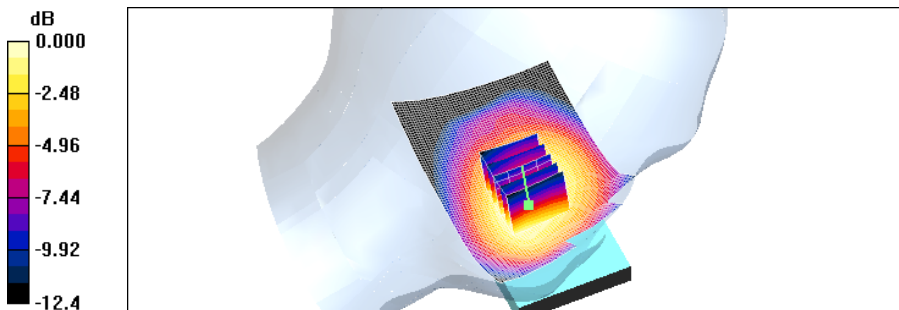
Reference Value = 8.41 V/m; Power Drift = -0.095 dB

Peak SAR (extrapolated) = 0.583 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.285 mW/g

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

Maximum value of SAR (measured) = 0.451 mW/g



0 dB = 0.451mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Left tilt 190/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.291 mW/g

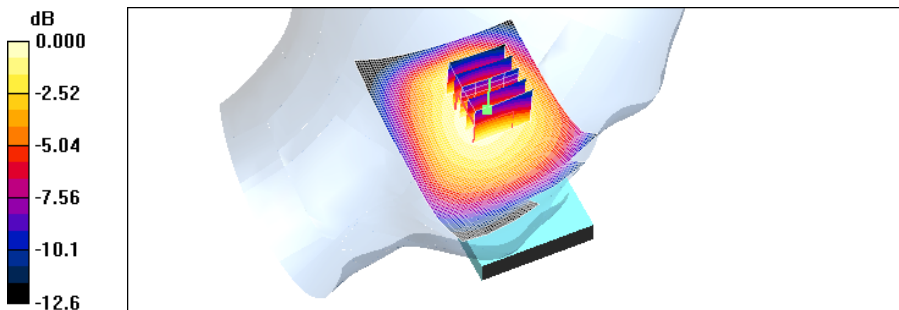
Left tilt 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.9 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.191 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.290 mW/g



0 dB = 0.290mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.902 \text{ mho/m}$; $\epsilon_r = 43$; $\rho = 1000 \text{ kg/m}^3$

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: SAM 1800/1900 MHz; Type: SAM

Right touch 190/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.451 mW/g

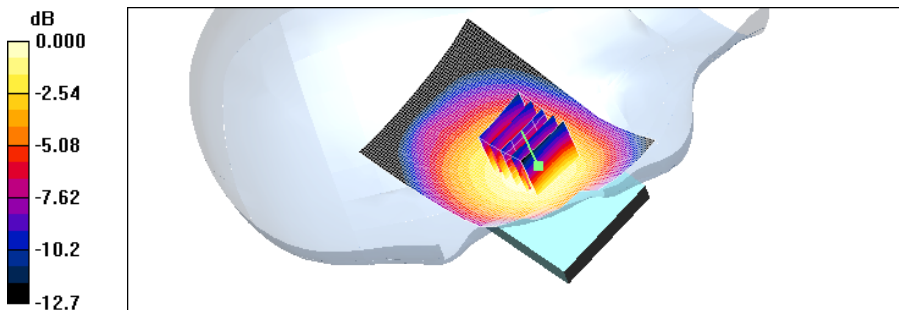
Right touch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.88 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.565 W/kg

SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.287 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.444mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Right tilt 190/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.284 mW/g

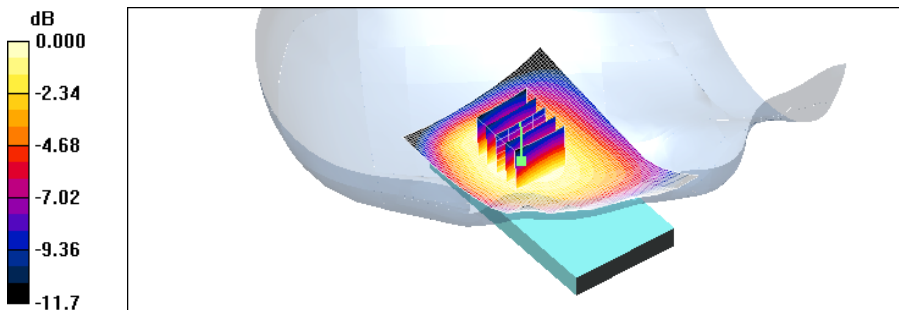
Right tilt 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.260 mW/g; SAR(10 g) = 0.179 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.277 mW/g



Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 1850.2 \text{ MHz}$; $\sigma = 1.35 \text{ mho/m}$; $\epsilon_r = 41.9$; $\rho = 1000 \text{ kg/m}^3$

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: SAM 835/900 MHz; Type: SAM

Left touch 512/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

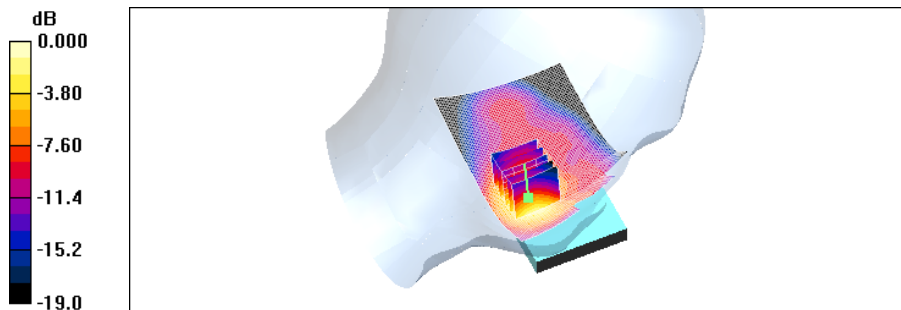
Left touch 512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = -0.072 dB

Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.598 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 1.11mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Left touch 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.981 mW/g

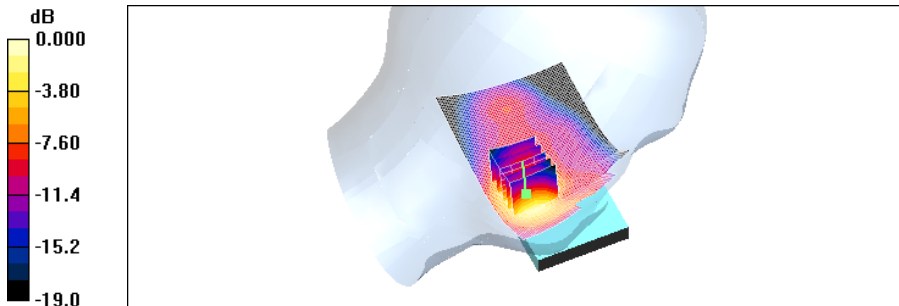
Left touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.97 V/m; Power Drift = -0.175 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.510 mW/g

Maximum value of SAR (measured) = 0.965 mW/g



0 dB = 0.965mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Left touch 810/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.851 mW/g

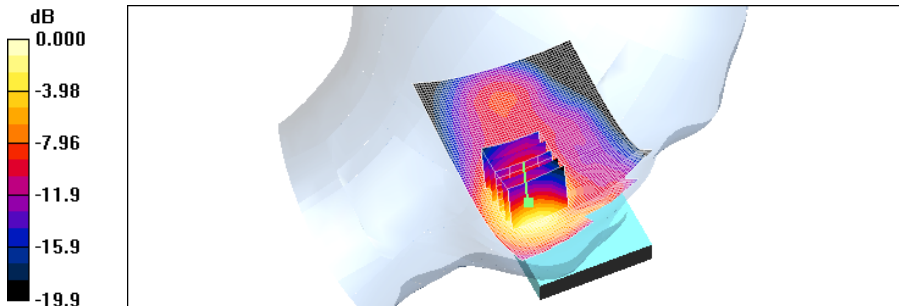
Left touch 810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.95 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.438 mW/g

Maximum value of SAR (measured) = 0.823 mW/g



0 dB = 0.823mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Left tilt 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.307 mW/g

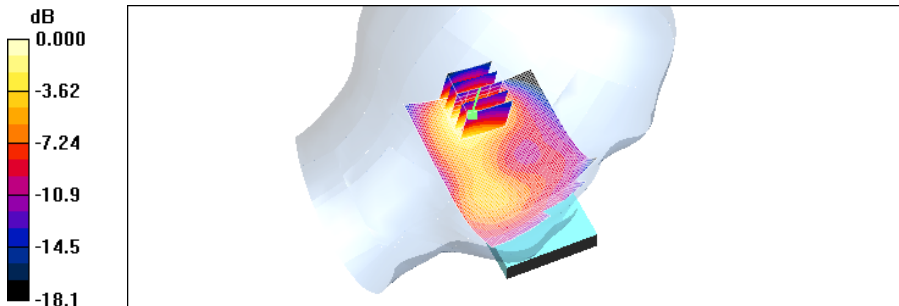
Left tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.1 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.142 mW/g

Maximum value of SAR (measured) = 0.271 mW/g



0 dB = 0.271mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Right touch 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

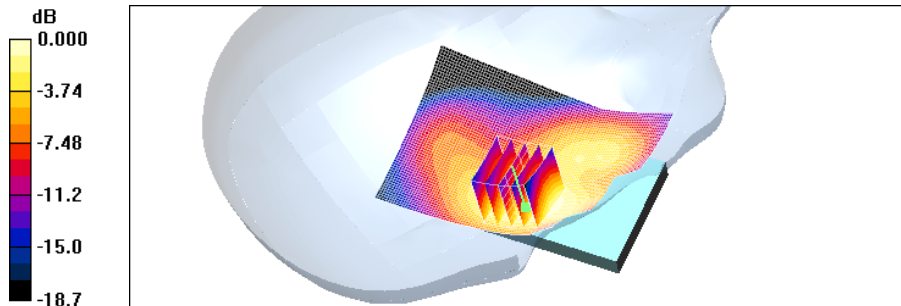
Right touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.99 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 0.609 W/kg

SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (measured) = 0.439 mW/g



0 dB = 0.439mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Right tilt 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.291 mW/g

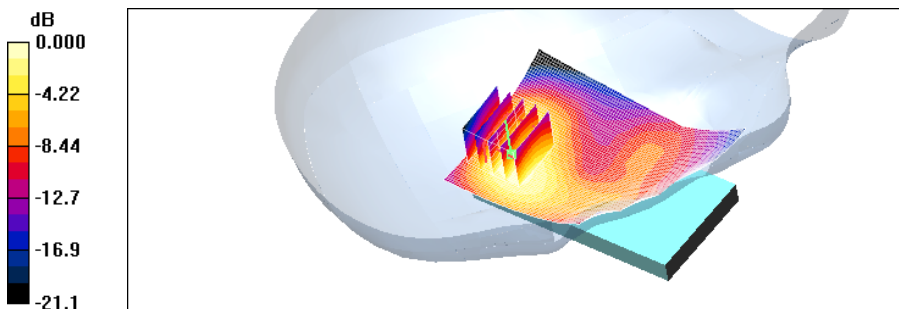
Right tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.410 W/kg

SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.153 mW/g

Maximum value of SAR (measured) = 0.276 mW/g



0 dB = 0.276mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Left touch 4183/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.423 mW/g

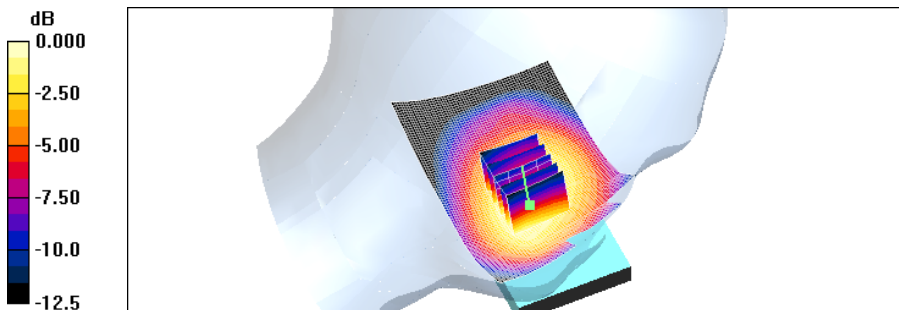
Left touch 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.15 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.267 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.426 mW/g



0 dB = 0.426mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.902 \text{ mho/m}$; $\epsilon_r = 43$; $\rho = 1000 \text{ kg/m}^3$

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: SAM 1800/1900 MHz; Type: SAM

Left tilt 4183/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.313 mW/g

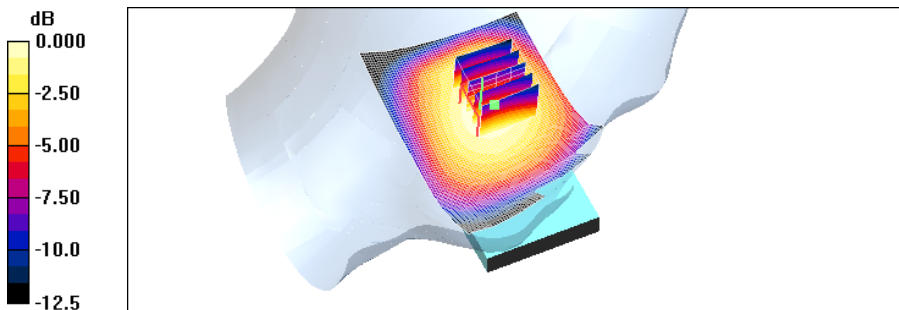
Left tilt 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.8 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.398 W/kg

SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.204 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.310 mW/g



0 dB = 0.310mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Right touch 4183/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.443 mW/g

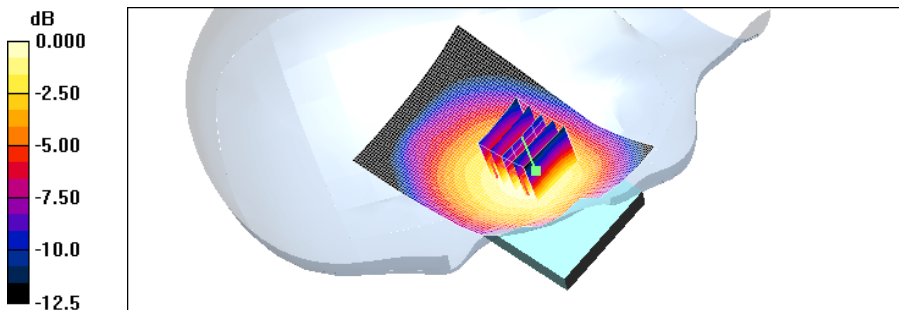
Right touch 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.09 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.552 W/kg

SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.282 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.439 mW/g



0 dB = 0.439mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.902 \text{ mho/m}$; $\epsilon_r = 43$; $\rho = 1000 \text{ kg/m}^3$

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: SAM 1800/1900 MHz; Type: SAM

Right tilt 4183/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.287 mW/g

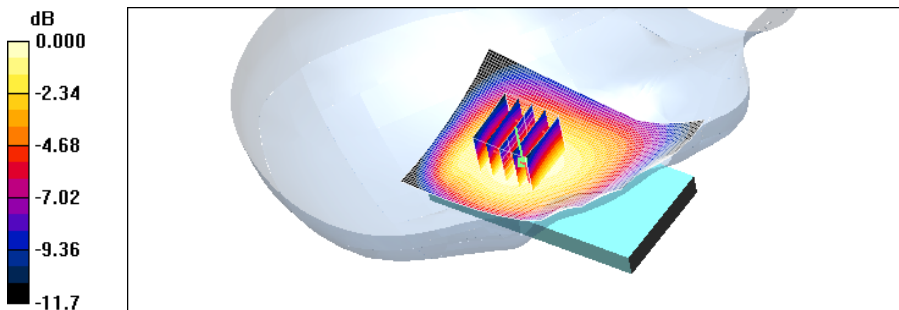
Right tilt 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.5 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.358 W/kg

SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.182 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.284 mW/g



Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

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: 1800/1900 Phantom; Type: SAM

Left touch 11/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.280 mW/g

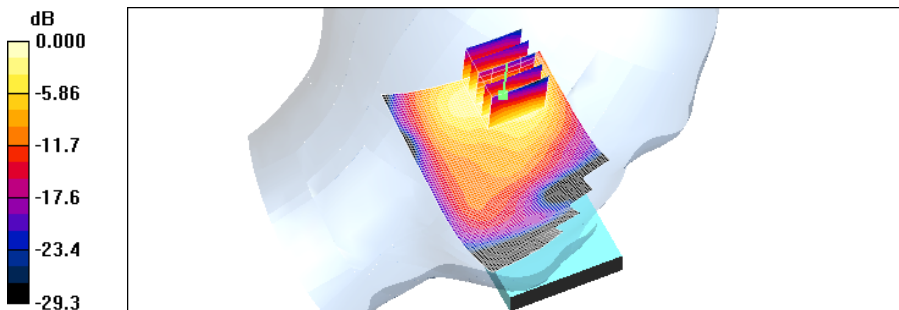
Left touch 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.58 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.121 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.263 mW/g



0 dB = 0.263mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

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: 1800/1900 Phantom; Type: SAM

Left tilt 11/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.213 mW/g

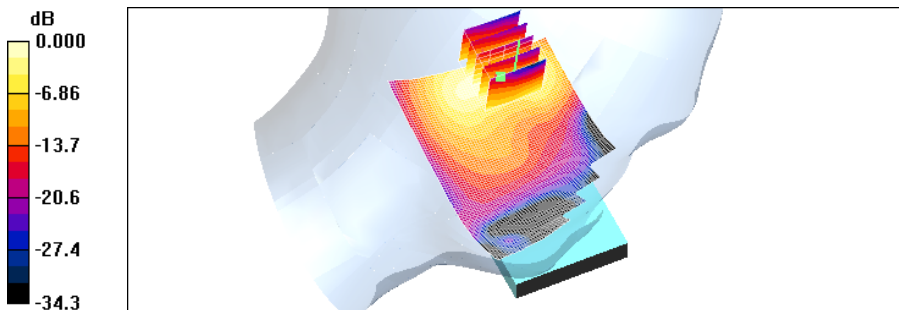
Left tilt 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.54 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 0.502 W/kg

SAR(1 g) = 0.209 mW/g; SAR(10 g) = 0.094 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.232 mW/g



0 dB = 0.232mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

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: 1800/1900 Phantom; Type: SAM

Right touch 11/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.221 mW/g

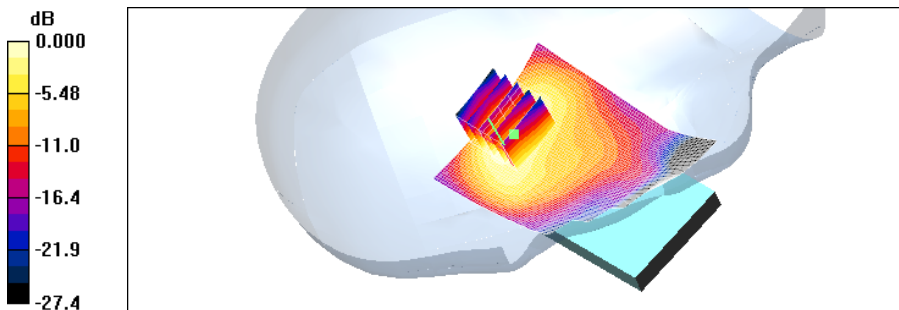
Right touch 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.2 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.195 mW/g; SAR(10 g) = 0.102 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.210 mW/g



Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

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: 1800/1900 Phantom; Type: SAM

Right tilt 11/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.193 mW/g

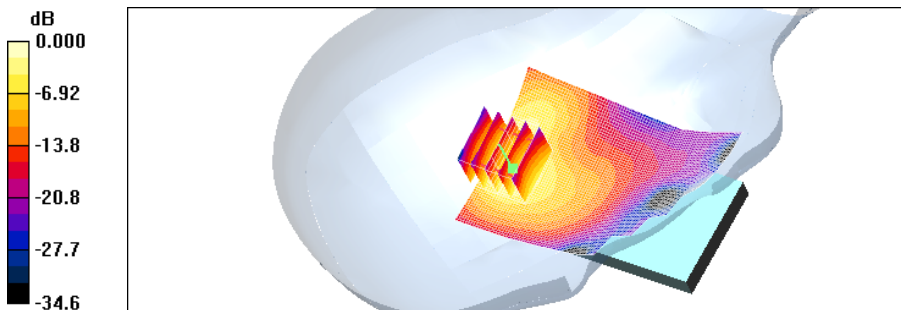
Right tilt 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.1 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 0.378 W/kg

SAR(1 g) = 0.182 mW/g; SAR(10 g) = 0.088 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:2.77
Medium parameters used: $f = 825$ MHz; $\sigma = 0.94$ mho/m; $\epsilon_r = 56$; $\rho = 1000$ kg/m³
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

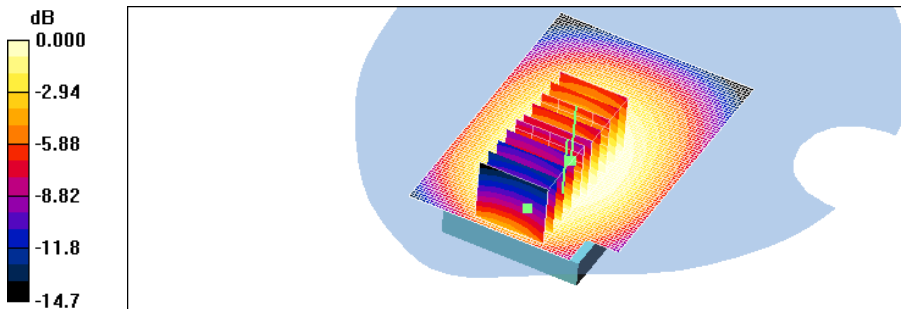
DASY4 Configuration:

- 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: 800/900 Phantom; Type: SAM

Body rear 128/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.914 mW/g

Body rear 128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = -0.082 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.607 mW/g
Maximum value of SAR (measured) = 0.869 mW/g

Body rear 128/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = -0.082 dB
Peak SAR (extrapolated) = 0.885 W/kg
SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.373 mW/g
Maximum value of SAR (measured) = 0.692 mW/g



0 dB = 0.692mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body rear 190/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

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

Body rear 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.3 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.978 mW/g; SAR(10 g) = 0.701 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.994 mW/g

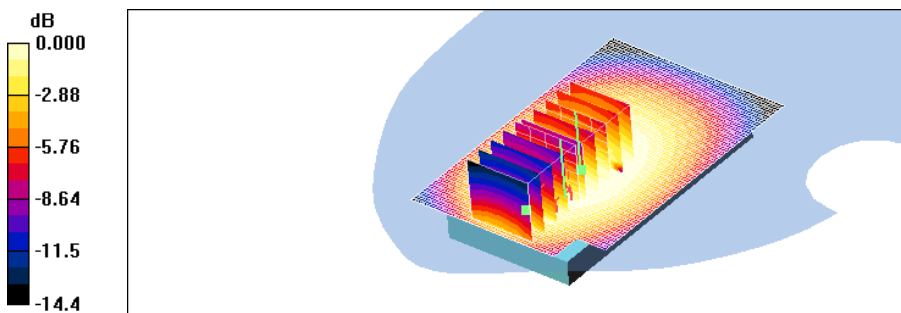
Body rear 190/Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.3 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.000 W/kg

SAR(1 g) = 0.652 mW/g; SAR(10 g) = 0.422 mW/g

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



0 dB = 0.790mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 55.8$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body rear 251/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

Body rear 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.778 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

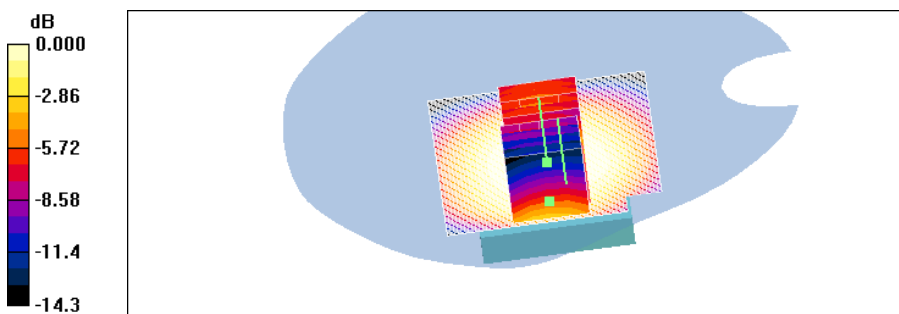
Body rear 251/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.441 mW/g

Maximum value of SAR (measured) = 0.855 mW/g



0 dB = 0.855mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.952$ mho/m; $\epsilon_r = 55.9$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body front 190/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.606 mW/g

Body front 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.075 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.425 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

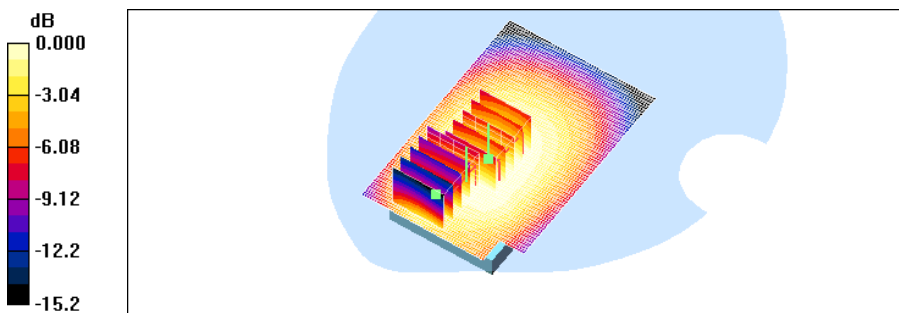
Body front 190/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.075 dB

Peak SAR (extrapolated) = 0.995 W/kg

SAR(1 g) = 0.489 mW/g; SAR(10 g) = 0.317 mW/g

Maximum value of SAR (measured) = 0.539 mW/g



0 dB = 0.539mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E739f(side); Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body left 190/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.480 mW/g

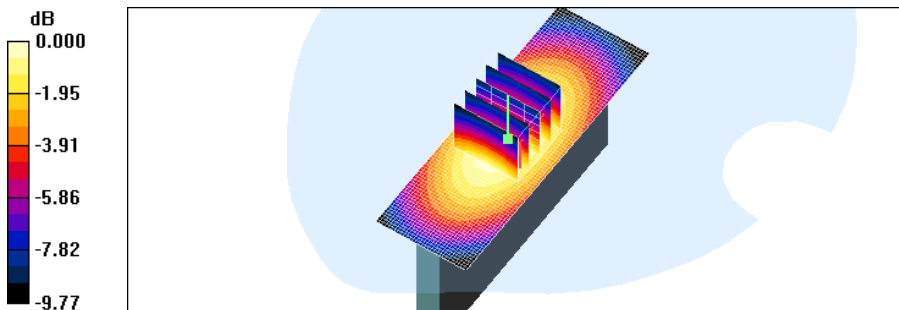
Body left 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.2 V/m; Power Drift = -0.179 dB

Peak SAR (extrapolated) = 0.601 W/kg

SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.311 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.480 mW/g



0 dB = 0.480mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E739f(side); Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.952$ mho/m; $\epsilon_r = 55.9$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body right 190/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.583 mW/g

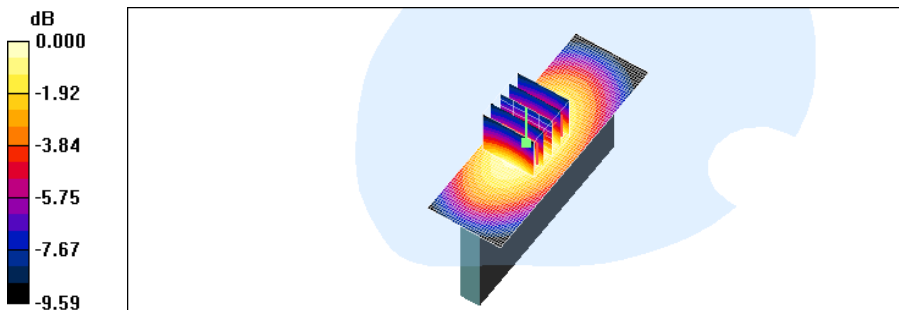
Body right 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 0.710 W/kg

SAR(1 g) = 0.543 mW/g; SAR(10 g) = 0.379 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.578 mW/g



0 dB = 0.578mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Nov.18, 2011

DUT: LG-E739f Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body bottom 190/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.100 mW/g

Body bottom 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

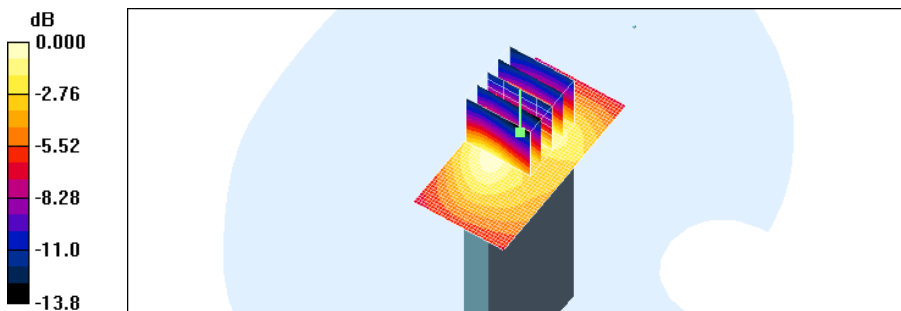
Reference Value = 9.52 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 0.171 W/kg

SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.057 mW/g

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

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



0 dB = 0.109mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Nov.19, 2011

DUT: LG-E739f; Type: bar; Serial: #1

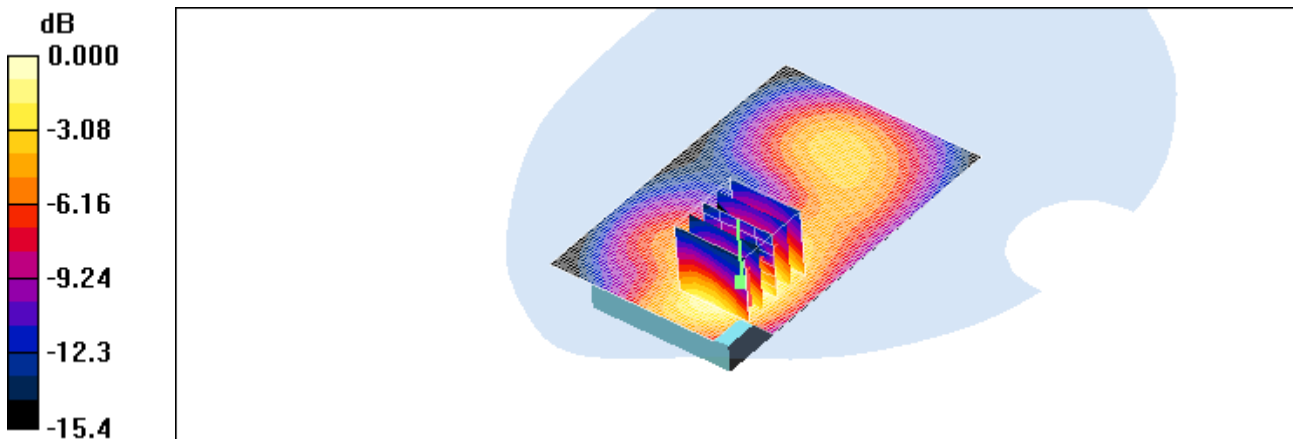
Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.55 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(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 661/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.652 mW/g

Body rear 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 13.9 V/m; Power Drift = -0.179 dB
Peak SAR (extrapolated) = 0.957 W/kg
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.374 mW/g
Maximum value of SAR (measured) = 0.677 mW/g



0 dB = 0.677mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.77

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.620 mW/g

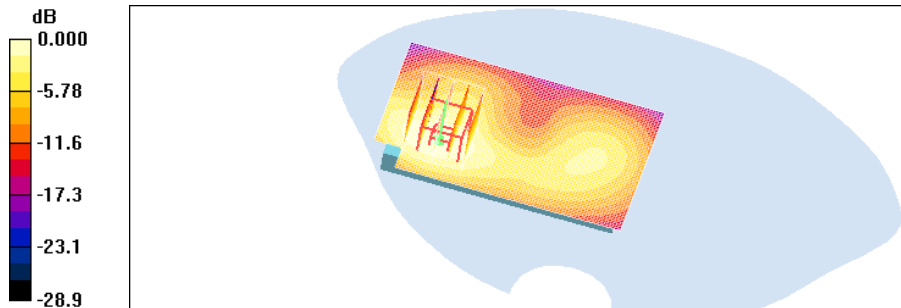
Body rear 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.8 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.931 W/kg

SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.359 mW/g

Maximum value of SAR (measured) = 0.654 mW/g



0 dB = 0.654mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

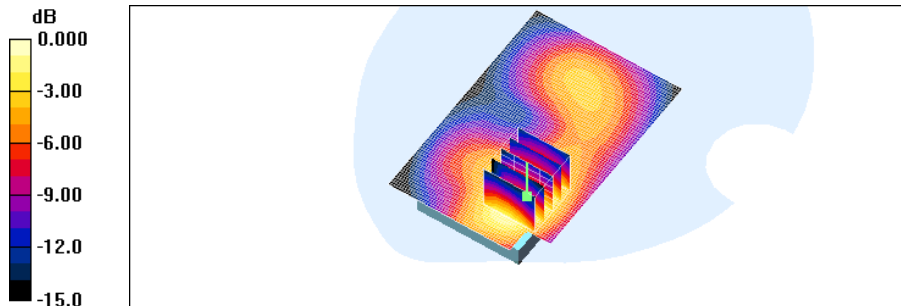
Body rear 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = -0.065 dB

Peak SAR (extrapolated) = 0.936 W/kg

SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.365 mW/g

Maximum value of SAR (measured) = 0.666 mW/g



0 dB = 0.666mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.643 mW/g

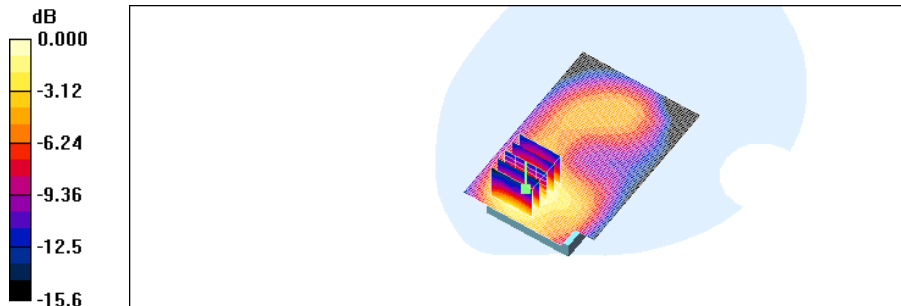
Body front 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.991 W/kg

SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.363 mW/g

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



0 dB = 0.660mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E739f(side); Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.246 mW/g

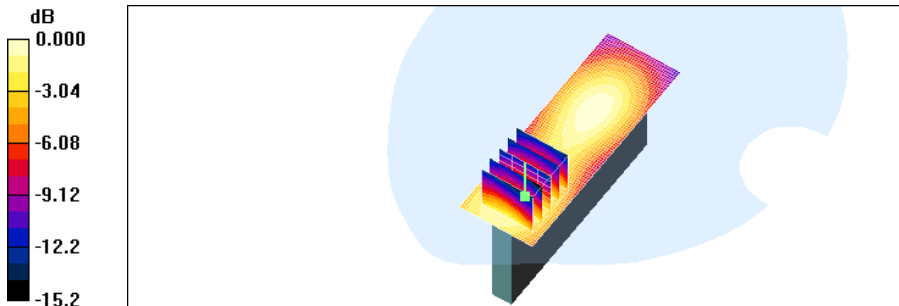
Body left 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.53 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.350 W/kg

SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.135 mW/g

Maximum value of SAR (measured) = 0.244 mW/g



0 dB = 0.244mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E739f(side); Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.070 mW/g

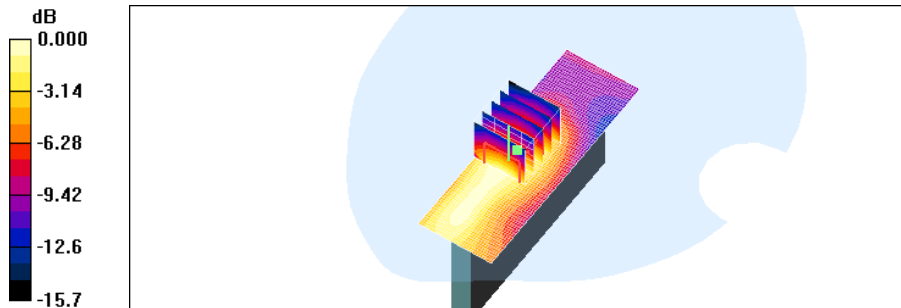
Body right 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.18 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.111 W/kg

SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.070 mW/g



0 dB = 0.070mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

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 661/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.436 mW/g

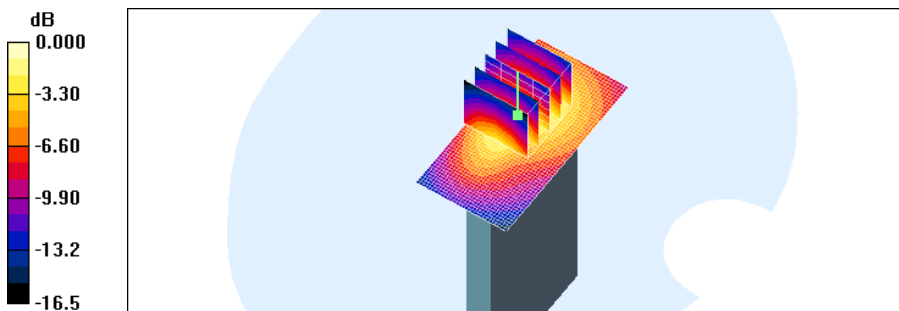
Body bottom 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = -0.100 dB

Peak SAR (extrapolated) = 0.638 W/kg

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.235 mW/g

Maximum value of SAR (measured) = 0.450 mW/g



0 dB = 0.450mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.941$ mho/m; $\epsilon_r = 56$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body rear 4132/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.990 mW/g

Body rear 4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.692 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.997 mW/g

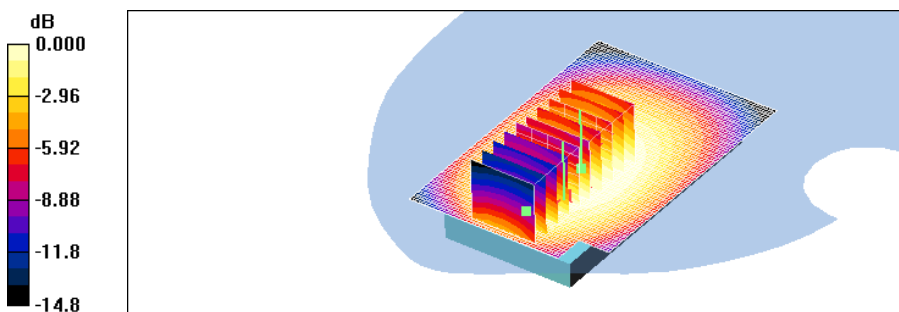
Body rear 4132/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.636 mW/g; SAR(10 g) = 0.420 mW/g

Maximum value of SAR (measured) = 0.775 mW/g



0 dB = 0.775mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.952$ mho/m; $\epsilon_r = 55.9$; $\rho = 1000$ kg/m³
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: 800/900 Phantom; Type: SAM

Body rear 4183/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.977 mW/g

Body rear 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.917 mW/g; SAR(10 g) = 0.674 mW/g

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

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

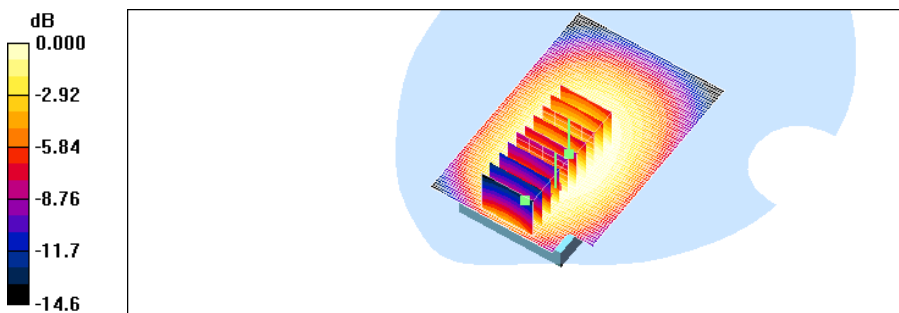
Body rear 4183/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 0.967 W/kg

SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.400 mW/g

Maximum value of SAR (measured) = 0.740 mW/g



0 dB = 0.740mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.962$ mho/m; $\epsilon_r = 55.8$; $\rho = 1000$ kg/m³
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: 800/900 Phantom; Type: SAM

Body rear 4233/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.928 mW/g

Body rear 4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.0 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.865 mW/g; SAR(10 g) = 0.637 mW/g

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

Maximum value of SAR (measured) = 0.914 mW/g

Body rear 4233/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

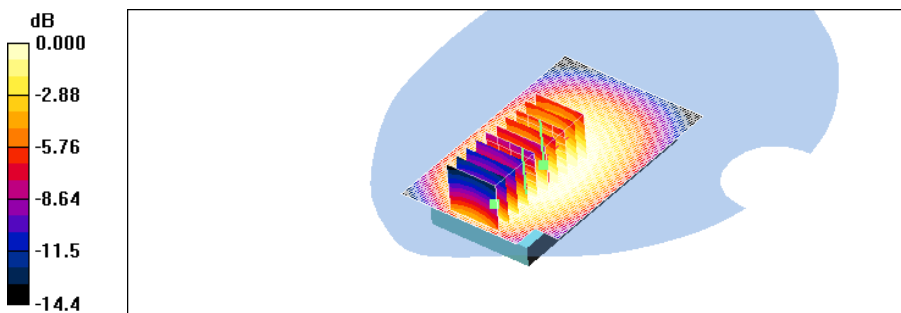
Reference Value = 14.0 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.940 W/kg

SAR(1 g) = 0.548 mW/g; SAR(10 g) = 0.370 mW/g

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

Maximum value of SAR (measured) = 0.677 mW/g



0 dB = 0.677mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.952$ mho/m; $\epsilon_r = 55.9$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body front 4183/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.605 mW/g

Body front 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.0 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.706 W/kg

SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.439 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.613 mW/g

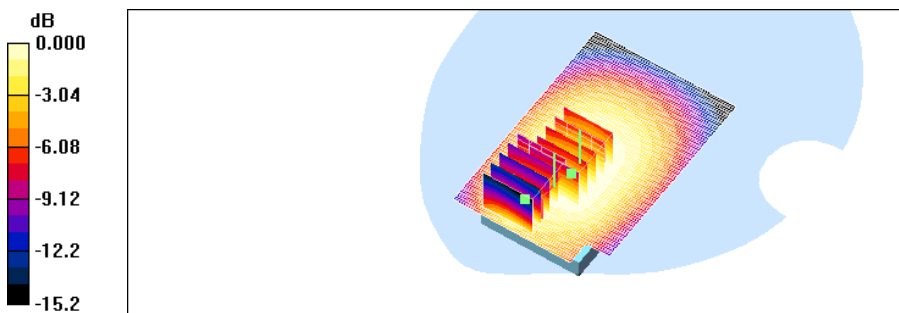
Body front 4183/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.0 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.713 W/kg

SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.565 mW/g



0 dB = 0.565mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f(side); Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body left 4183/Area Scan (31x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.473 mW/g

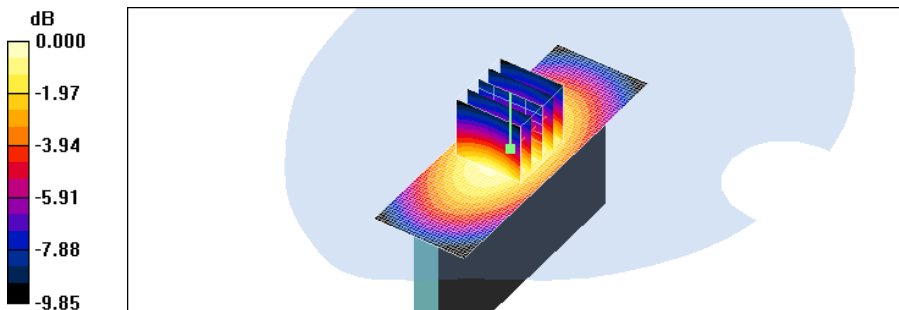
Body left 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.2 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 0.595 W/kg

SAR(1 g) = 0.445 mW/g; SAR(10 g) = 0.306 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.479 mW/g



0 dB = 0.479mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f(side); Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body right 4183/Area Scan (31x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.558 mW/g

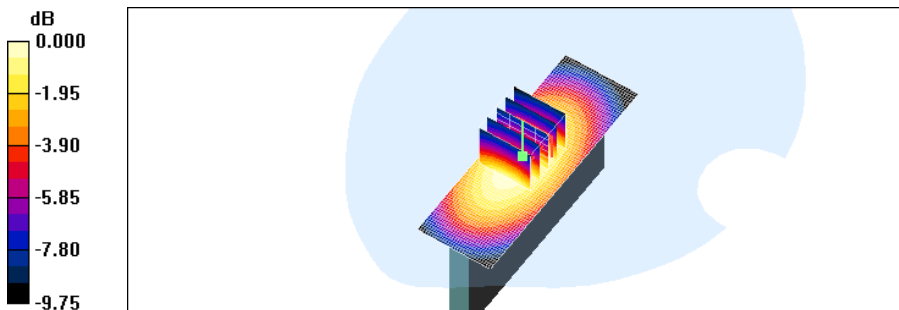
Body right 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.7 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.684 W/kg

SAR(1 g) = 0.518 mW/g; SAR(10 g) = 0.362 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.552 mW/g



0 dB = 0.552mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.952 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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: 800/900 Phantom; Type: SAM

Body bottom 4183/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.139 mW/g

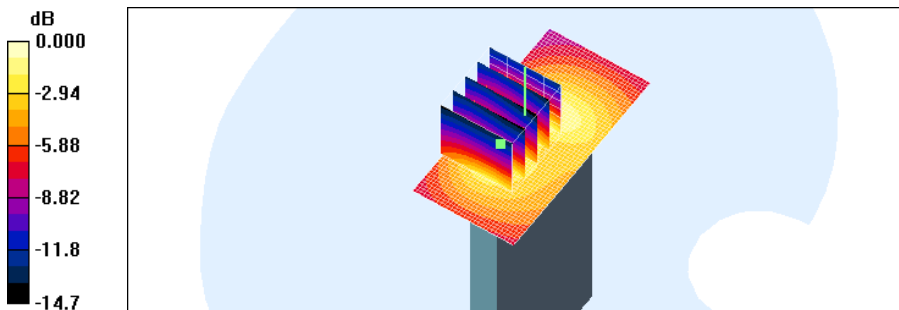
Body bottom 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 0.246 W/kg

SAR(1 g) = 0.128 mW/g; SAR(10 g) = 0.072 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.148 mW/g



0 dB = 0.148mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

body rear 11/Area Scan (61x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ [Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.122 mW/g

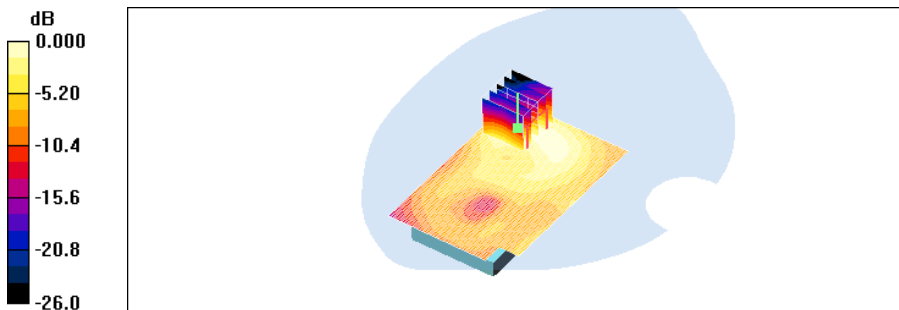
body rear 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.9 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.059 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.123 mW/g



0 dB = 0.123mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

body front 11/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.076 mW/g

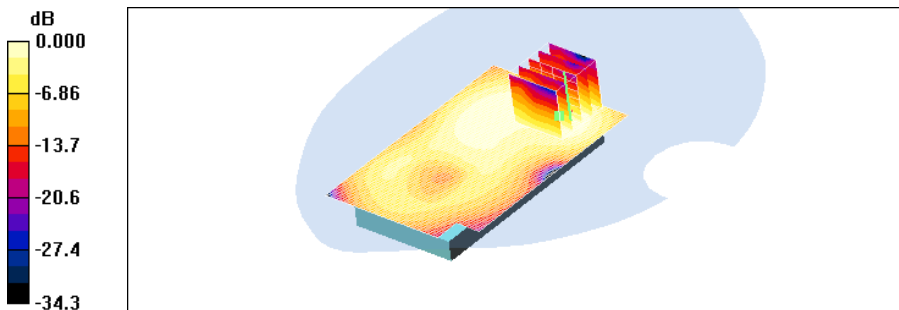
body front 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.29 V/m; Power Drift = 0.052 dB

Peak SAR (extrapolated) = 0.181 W/kg

SAR(1 g) = 0.074 mW/g; SAR(10 g) = 0.039 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.078 mW/g



0 dB = 0.078mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E739f(side); Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(4.21, 4.21, 4.21); Calibrated: 2011-04-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2011-09-22
- Phantom: 800/900 Phantom; Type: SAM

body right 11/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.102 mW/g

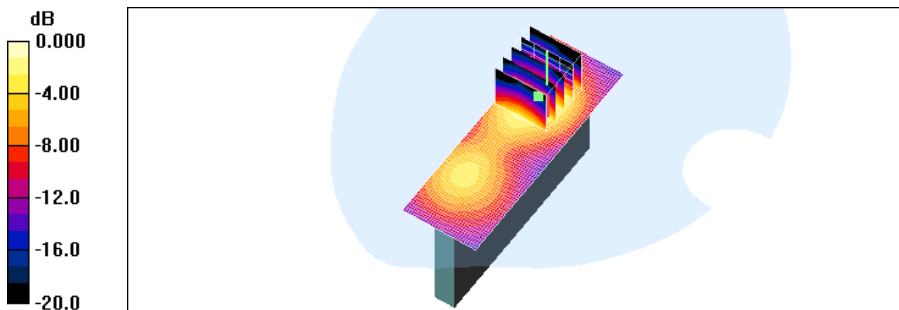
body right 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.11 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.198 W/kg

SAR(1 g) = 0.082 mW/g; SAR(10 g) = 0.040 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.086 mW/g



0 dB = 0.086mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body top 11/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.101 mW/g

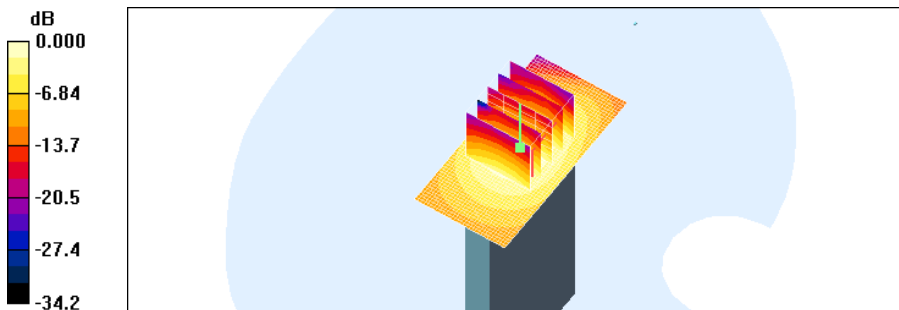
Body top 11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.38 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 0.218 W/kg

SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.047 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.096 mW/g



0 dB = 0.096mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Left touch 190/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.449 mW/g

Left touch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

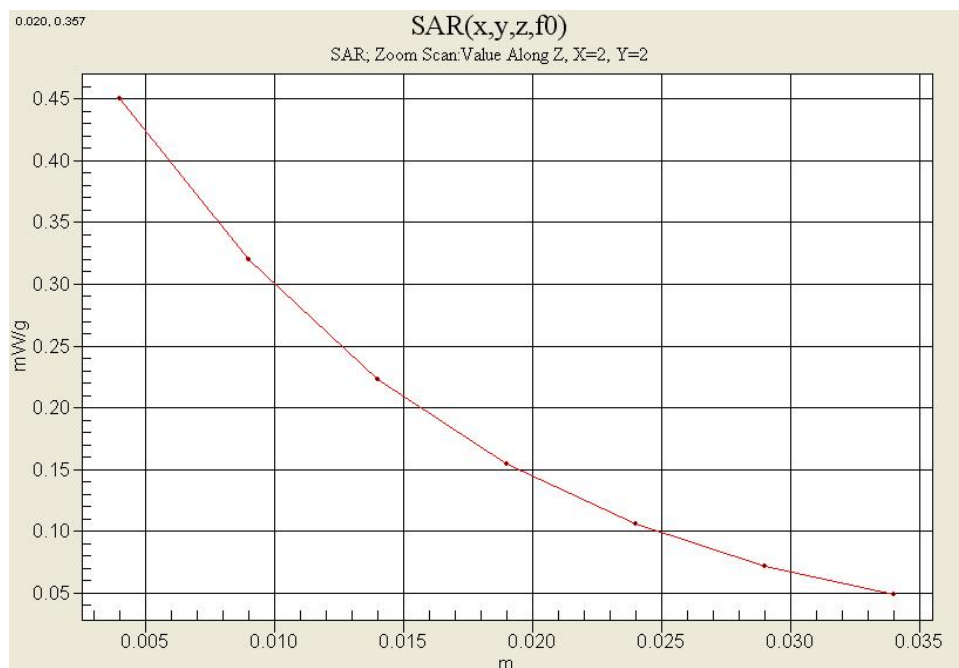
Reference Value = 8.41 V/m; Power Drift = -0.095 dB

Peak SAR (extrapolated) = 0.583 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.285 mW/g

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

Maximum value of SAR (measured) = 0.451 mW/g



0 dB = 0.451mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:2.77

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 55.8$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body rear 251/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Body rear 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.778 mW/g

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

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

Body rear 251/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

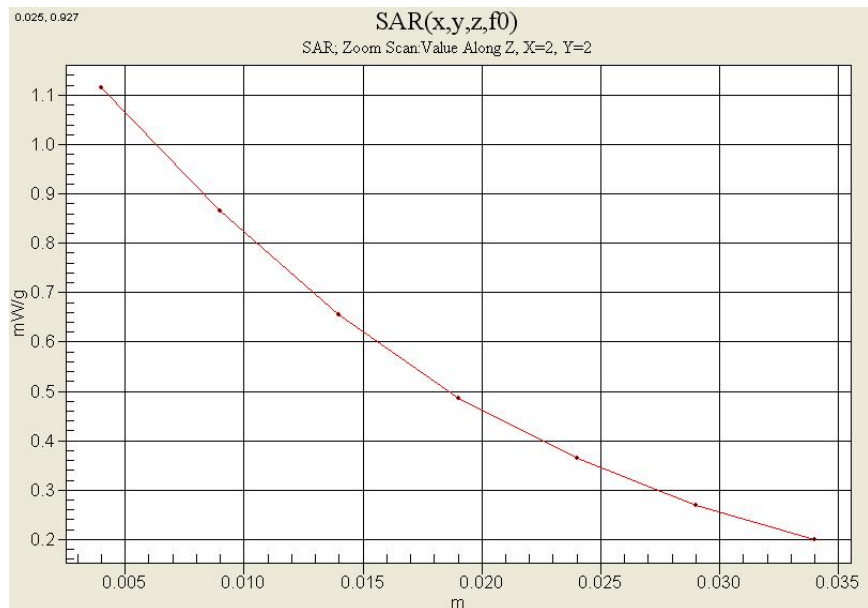
Reference Value = 15.0 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.441 mW/g

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

Maximum value of SAR (measured) = 0.855 mW/g



0 dB = 0.855mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.3 °C

Ambient Temperature: 21.5 °C

Test Date: Nov.18, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

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: SAM 835/900 MHz; Type: SAM

Left touch 512/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

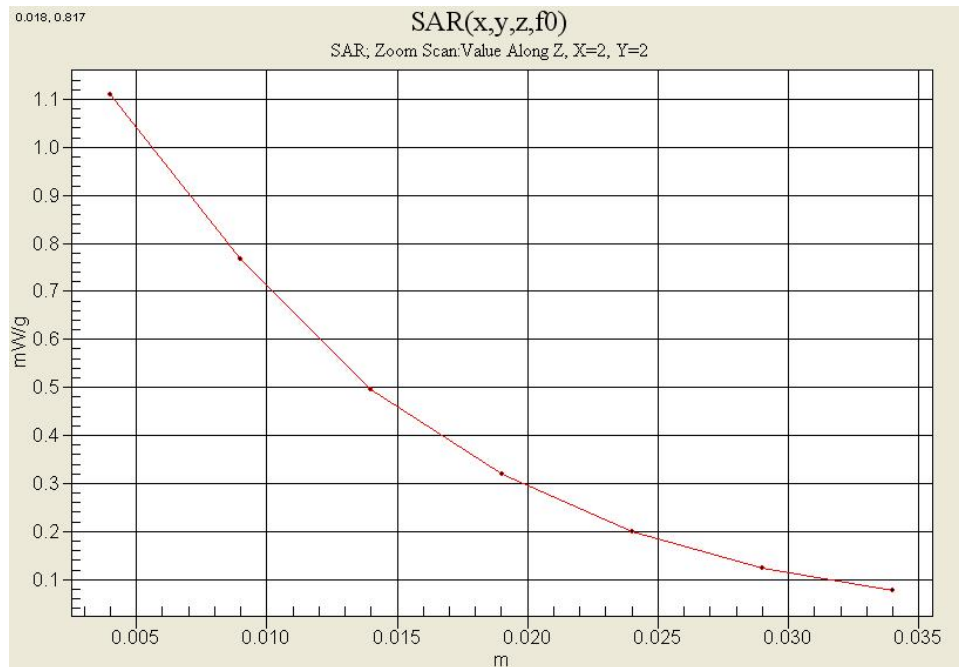
Left touch 512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = -0.072 dB

Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.598 mW/g[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 1.11mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Nov.18, 2011

DUT: LG-E739f; Type: bar; Serial: #1

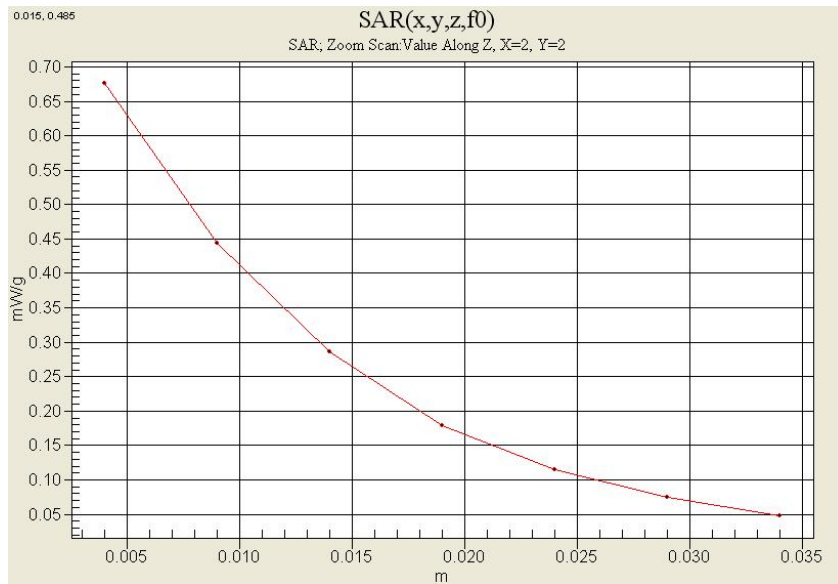
Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

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 661/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.652 mW/g

Body rear 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = -0.179 dB
Peak SAR (extrapolated) = 0.957 W/kg
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.374 mW/g
Maximum value of SAR (measured) = 0.677 mW/g



Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 43$; $\rho = 1000$ kg/m³

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: SAM 1800/1900 MHz; Type: SAM

Right touch 4183/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.443 mW/g

Right touch 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

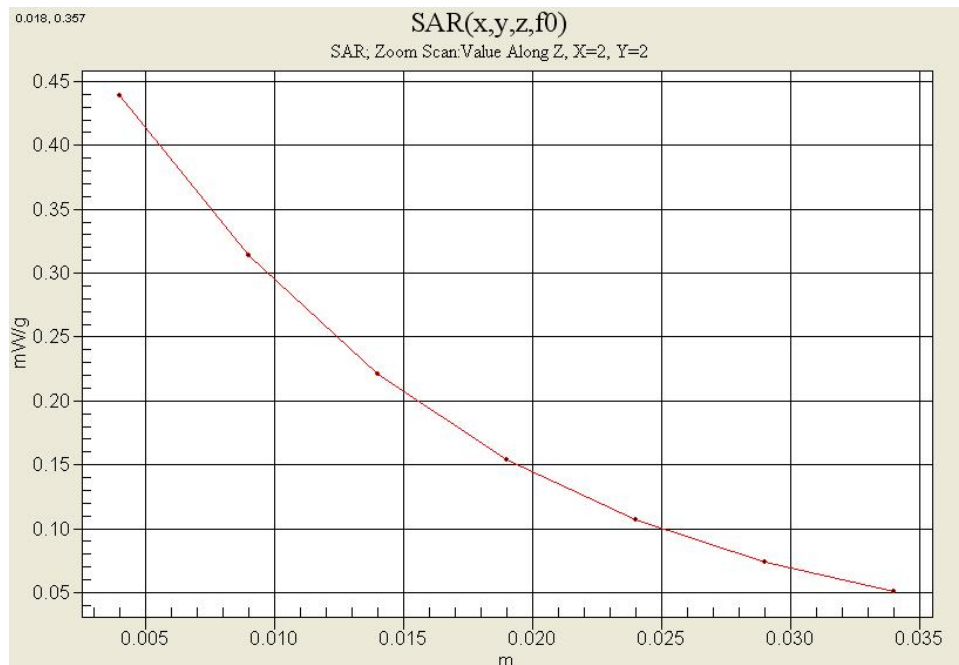
Reference Value = 8.09 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.552 W/kg

SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.282 mW/g

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

Maximum value of SAR (measured) = 0.439 mW/g



0 dB = 0.439mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.941$ mho/m; $\epsilon_r = 56$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

Body rear 4132/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.990 mW/g

Body rear 4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.692 mW/g

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

Maximum value of SAR (measured) = 0.997 mW/g

Body rear 4132/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

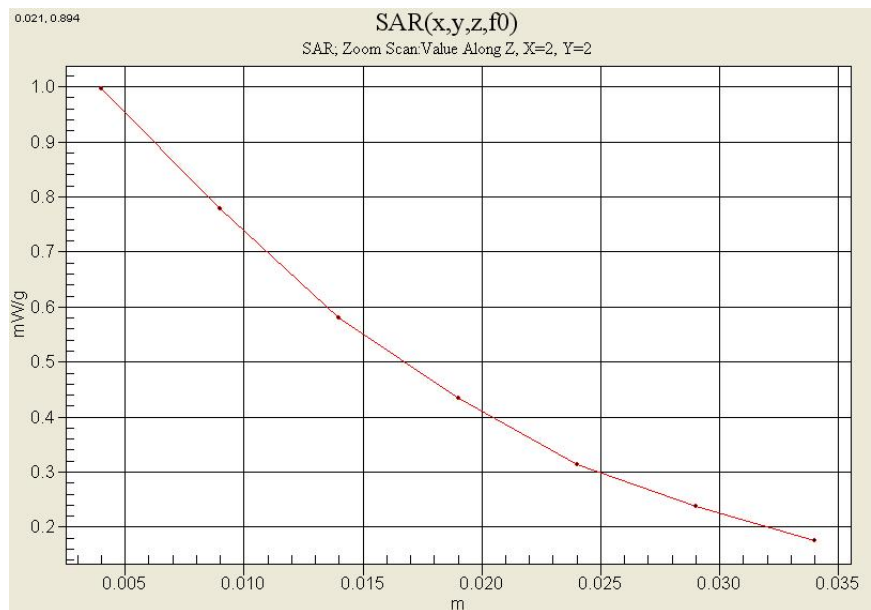
Reference Value = 14.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.636 mW/g; SAR(10 g) = 0.420 mW/g

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

Maximum value of SAR (measured) = 0.775 mW/g



0 dB = 0.775mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

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: 1800/1900 Phantom; Type: SAM

Left touch 11/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.280 mW/g

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

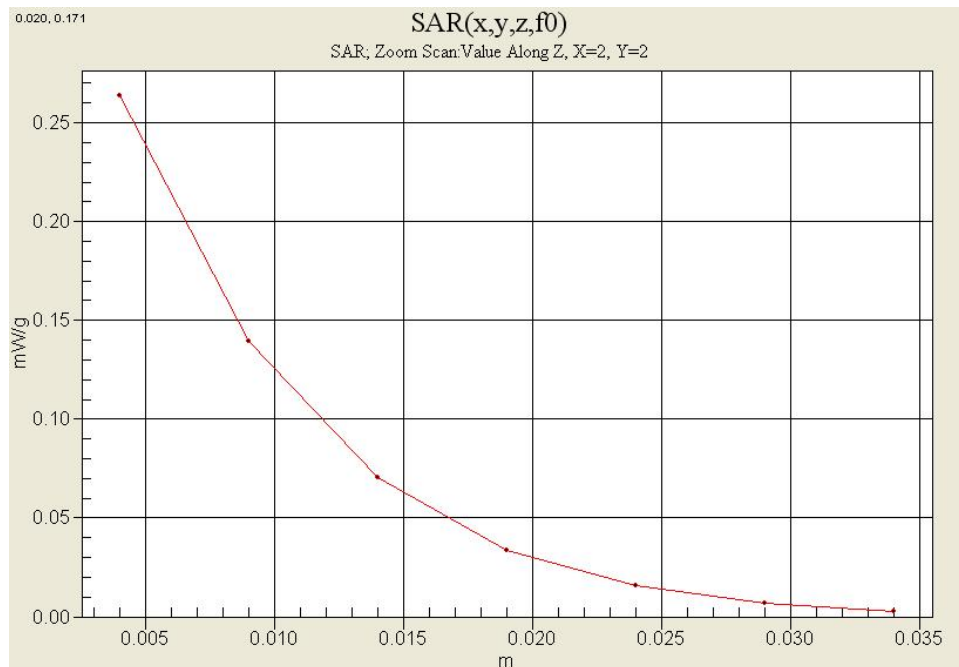
Reference Value = 9.58 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.121 mW/g

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

Maximum value of SAR (measured) = 0.263 mW/g



0 dB = 0.263mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/EDGE & Cellular WCDMA/HSPA Phone with WLAN & Bluetooth

Liquid Temperature: 21.2 °C

Ambient Temperature: 21.4 °C

Test Date: Nov.19, 2011

DUT: LG-E730f; Type: bar; Serial: #1

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

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

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: 800/900 Phantom; Type: SAM

body rear 11/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (interpolated) = 0.122 mW/g

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

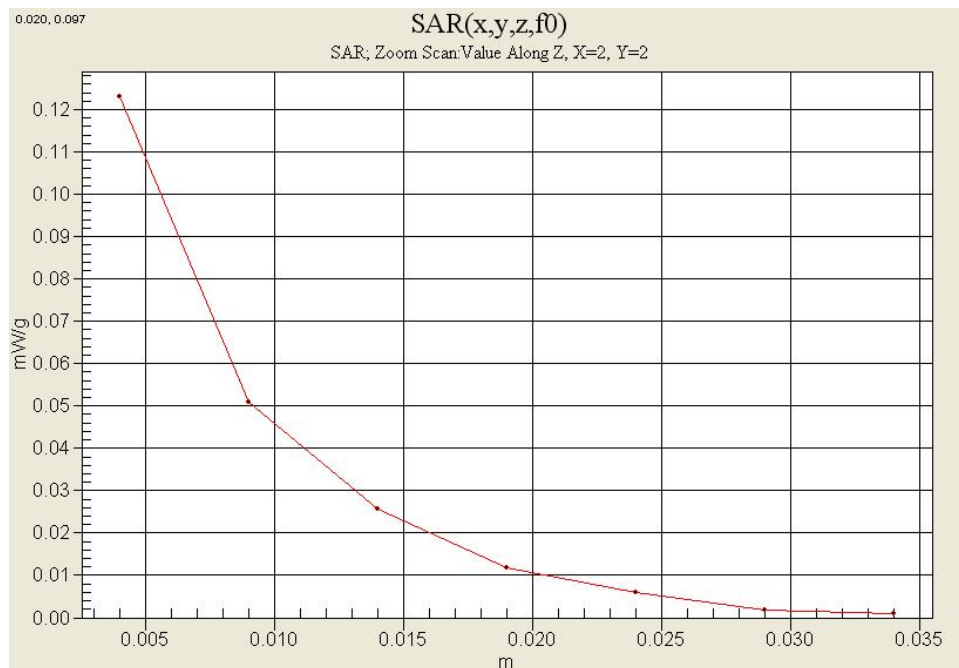
Reference Value = 10.9 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.059 mW/g

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

Maximum value of SAR (measured) = 0.123 mW/g



0 dB = 0.123mW/g

Attachment 2. – Dipole Validation Plots

■ Validation Data (835 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power 100 mW (20 dBm)
Liquid Temp: 21.3 °C
Test Date: Nov.18, 2011

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 – SN:441

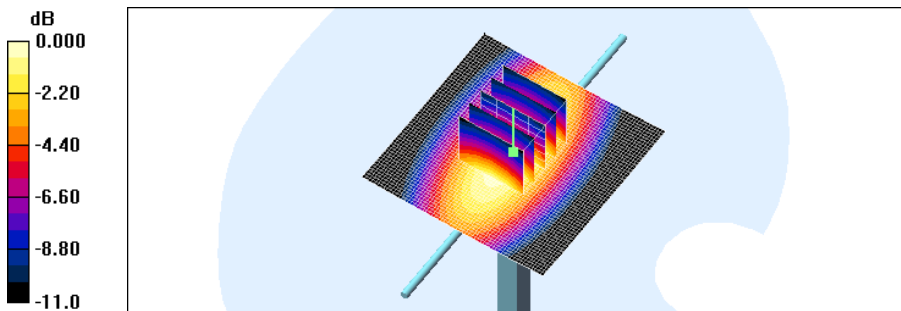
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.9 \text{ mho/m}$; $\epsilon_r = 43$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(6.72, 6.72, 6.72); 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) = 1.05 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 = 35.4 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.967 mW/g; SAR(10 g) = 0.619 mW/g
Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

■ Validation Data (835 MHz Body)

Test Laboratory: HCT CO., LTD
Input Power 100 mW (20 dBm)
Liquid Temp: 21.3 °C
Test Date: Nov.18, 2011

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 – SN:441

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 55.9$; $\rho = 1000 \text{ kg/m}^3$

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

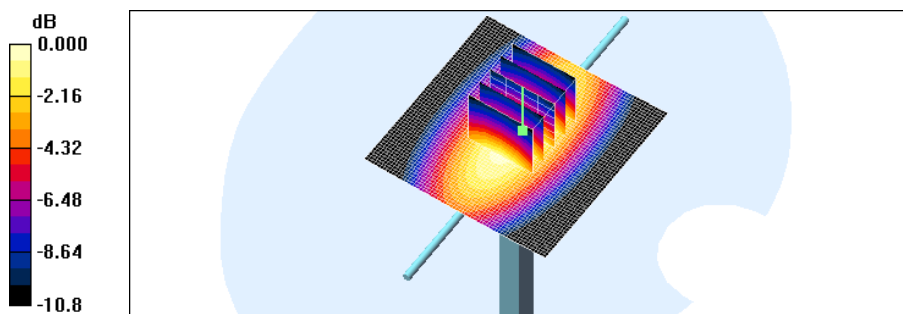
Validation 835MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 34.7 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.955 mW/g; SAR(10 g) = 0.616 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: 21.2 °C

Test Date: Nov.19, 2011

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; $\sigma = 1.4$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

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 835/900 MHz; Type: SAM

Dipole 1900MHz Validation/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 4.54 mW/g

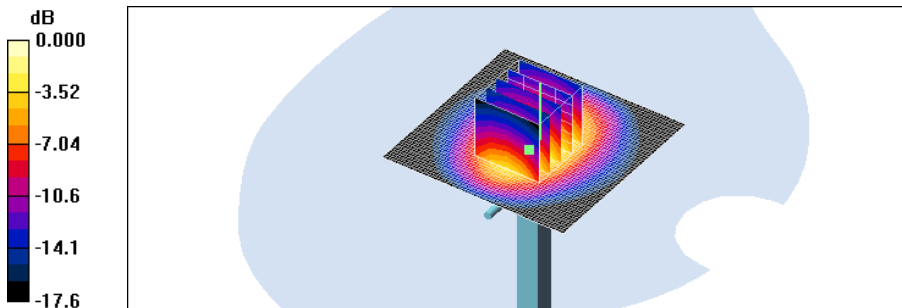
Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 59.8 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 6.74 W/kg

SAR(1 g) = 4.06 mW/g; SAR(10 g) = 2.28 mW/g

Maximum value of SAR (measured) = 4.49 mW/g



0 dB = 4.49mW/g

■ Validation Data (1900 MHz Body)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.2 °C

Test Date: Nov.19, 2011

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; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

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

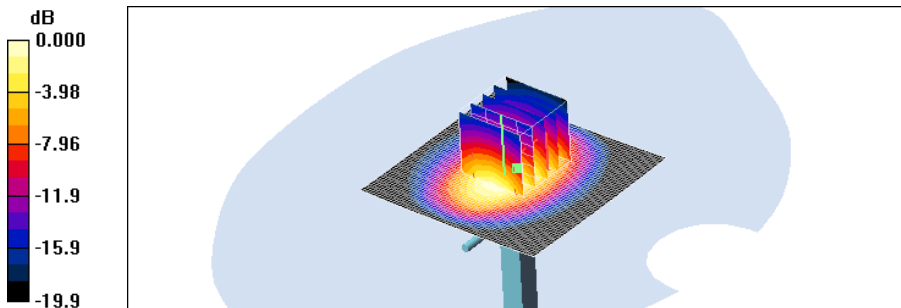
Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 58.6 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 7.01 W/kg

SAR(1 g) = 4.07 mW/g; SAR(10 g) = 2.12 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: 21.2 °C
Test Date: Nov.19, 2011

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:743

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

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.85 \text{ mho/m}$; $\epsilon_r = 38.7$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(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) = 6.12 mW/g

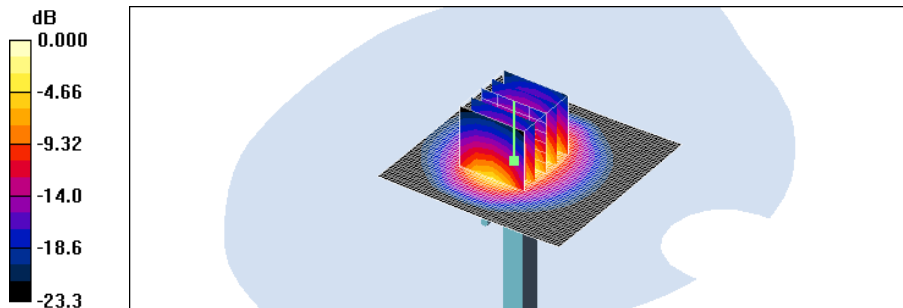
Validation 2450MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.7 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 11.8 W/kg

SAR(1 g) = 5.05 mW/g; SAR(10 g) = 2.3 mW/g

Maximum value of SAR (measured) = 5.54 mW/g



0 dB = 5.54mW/g

■ Validation Data (2450 MHz Body)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.2 °C

Test Date: Nov.19, 2011

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:743

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

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.88 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(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: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 6.12 mW/g

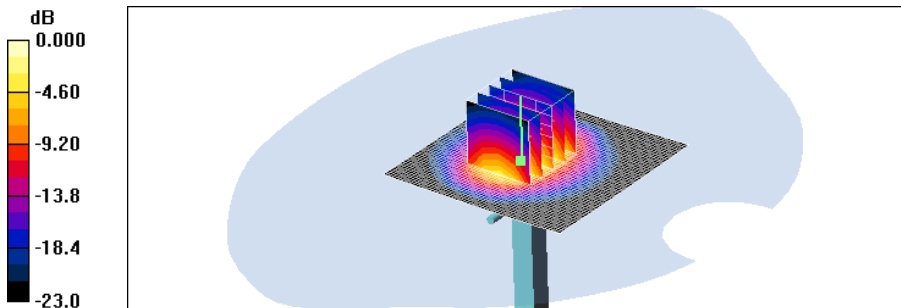
Validation 2450MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.2 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 13.3 W/kg

SAR(1 g) = 5.19 mW/g; SAR(10 g) = 2.32 mW/g

Maximum value of SAR (measured) = 5.61 mW/g



0 dB = 5.61mW/g

■ Dielectric Parameter (835 MHz Head)

Title LG-E730f
 SubTitle GSM850(Head)
 Test Date Nov.18, 2011

Frequency	e'	e''
800000000	43.4724	19.5099
805000000	43.4230	19.4782
810000000	43.3702	19.4694
815000000	43.2735	19.4734
820000000	43.2263	19.4206
825000000	43.1527	19.4400
830000000	43.0898	19.3820
835000000	43.0127	19.3817
840000000	42.9728	19.3603
845000000	42.8855	19.3531
850000000	42.8200	19.3449
855000000	42.7508	19.3382
860000000	42.6826	19.3314
865000000	42.6269	19.3109
870000000	42.5734	19.2952
875000000	42.5199	19.3103
880000000	42.4839	19.2796
885000000	42.4117	19.2602
890000000	42.3893	19.2361
895000000	42.3379	19.1811
900000000	42.2795	19.1984

■ Dielectric Parameter (835 MHz Body)

Title LG-E730f
 SubTitle GSM850(Body)
 Test Date Nov.18, 2011

Frequency	e'	e''
800000000	56.2636	20.6353
805000000	56.2014	20.6192
810000000	56.1923	20.5797
815000000	56.0899	20.5086
820000000	56.0428	20.5040
825000000	56.0334	20.4747
830000000	55.9539	20.4882
835000000	55.9149	20.4575
840000000	55.8880	20.4384
845000000	55.8329	20.4307
850000000	55.7814	20.3947
855000000	55.7318	20.3758
860000000	55.7018	20.3816
865000000	55.6264	20.3823
870000000	55.5898	20.3790
875000000	55.5779	20.3706
880000000	55.5144	20.3614
885000000	55.4727	20.3573
890000000	55.4620	20.3443
895000000	55.4377	20.2915
900000000	55.3750	20.2747

■ Dielectric Parameter (1900 MHz Head)

Title LG-E730f
 SubTitle WCDMA1900(Head)
 Test Date Nov.19, 2011

Frequency	e'	e''
1800000000	41.9898	12.9275
1810000000	41.9145	12.9458
1820000000	41.9211	13.0066
1830000000	41.9164	13.0808
1840000000	41.8835	13.0961
1850000000	41.8572	13.1285
1860000000	41.7950	13.1236
1870000000	41.7410	13.1657
1880000000	41.6297	13.1885
1890000000	41.6011	13.2231
1900000000	41.5492	13.2706
1910000000	41.5085	13.2833
1920000000	41.4417	13.3049
1930000000	41.4290	13.3503
1940000000	41.4514	13.3833
1950000000	41.4241	13.3780
1960000000	41.4443	13.4089
1970000000	41.4178	13.4363
1980000000	41.3634	13.4352
1990000000	41.3336	13.4712
2000000000	41.2804	13.4939

■ Dielectric Parameter (1900 MHz Body)

Title LG-E730f
 SubTitle WCDMA1900(Body)
 Test Date Nov.19, 2011

Frequency	e'	e''
1850000000	55.1452	13.7706
1855000000	55.1345	13.7935
1860000000	55.1131	13.7819
1865000000	55.0916	13.7969
1870000000	55.0831	13.8088
1875000000	55.0701	13.8283
1880000000	55.0537	13.8451
1885000000	55.0527	13.8548
1890000000	55.0424	13.8799
1895000000	55.0366	13.8937
1900000000	55.0402	13.9101
1905000000	55.0476	13.9337
1910000000	55.0403	13.9425
1915000000	55.0255	13.9462
1920000000	55.0260	13.9560
1925000000	55.0240	13.9613
1930000000	55.0232	13.9562
1935000000	55.0079	13.9580
1940000000	54.9968	13.9618
1945000000	54.9790	13.9507
1950000000	54.9608	13.9496

■ Dielectric Parameter (2450 MHz Head)

Title LG-E730f
 SubTitle 2450MHz (Body)
 Test Date Nov.19, 2011

Frequency	e'	e''
2400000000	38.8675	13.4606
2405000000	38.8483	13.4769
2410000000	38.8285	13.4855
2415000000	38.8094	13.5046
2420000000	38.7910	13.5177
2425000000	38.7744	13.5293
2430000000	38.7501	13.5447
2435000000	38.7366	13.5595
2440000000	38.7241	13.5652
2445000000	38.7098	13.5752
2450000000	38.6908	13.5892
2455000000	38.6622	13.5947
2460000000	38.6446	13.6132
2465000000	38.6375	13.6174
2470000000	38.6079	13.6407
2475000000	38.5960	13.6324
2480000000	38.5732	13.6501
2485000000	38.5382	13.6726
2490000000	38.5258	13.6761
2495000000	38.5241	13.6982
2500000000	38.4906	13.7087

■ Dielectric Parameter (2450 MHz Body)

Title LG-E730f
 SubTitle 2450MHz (Body)
 Test Date Nov.19, 2011

Frequency	e'	e''
2400000000	52.3128	13.5995
2405000000	52.2862	13.6090
2410000000	52.2659	13.6143
2415000000	52.2494	13.6224
2420000000	52.2080	13.6400
2425000000	52.1867	13.6584
2430000000	52.1601	13.6988
2435000000	52.1661	13.7203
2440000000	52.1405	13.7373
2445000000	52.1162	13.7492
2450000000	52.1047	13.7823
2455000000	52.0966	13.7886
2460000000	52.0774	13.8094
2465000000	52.0689	13.8089
2470000000	52.0418	13.8404
2475000000	52.0392	13.8324
2480000000	52.0165	13.8435
2485000000	51.9987	13.8407
2490000000	51.9911	13.8397
2495000000	51.9818	13.8487
2500000000	51.9527	13.8310