SAR TEST REPORT

HCT CO., LTD

EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
FCC ID:	ZNFP714
Model:	LG-P714,LG-P712 Additional: P714,LGP714,P712,LGP712
Date of Issue:	Jan.31, 2013
Test report No.:	HCTA1301FS04
Test Laboratory:	**HCT CO., LTD.** 105-1, Jangam-ri, Majang-myeon, Icheon-si, Gyeonggi-do, Korea 467-811 TEL: +82 31 645 6300 FAX: +82 31 645 6401
Applicant :	**LG Electronics, MobileComm U.S.A., Inc.** 1000 Sylvan Avenue, Englewood Cliffs NJ 07632
Testing has been carried out in accordance with:	RSS-102 Issue 4; Health Canada Safety Code 6 47CFR §2.1093 FCC OET Bulletin 65(Edition 97-01), Supplement C (Edition 01-01) ANSI/ IEEE C95.1 – 1992 IEEE 1528-2003
Test result:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.
Signature	Report prepared by : Young-Soo Jang Test Engineer of SAR Part Approved by : Jae-Sang So Manager of SAR Part

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1. INTRODUCTION

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

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

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (r). 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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C

01-01, IEEE Standard 1528-2003 & IEEE 1528a-2005 and the following published KDB procedures.

-. 447498 D01 General RF Exposure Guidance v05

-. 450824 D01 SAR Prob Cal and Ver Meas v01r01

-. 450824 D02 Dipole SAR Validation Verification v01

-. 648474 D04 SAR Handsets Multi Xmiter and Ant v01

-. 865664 D01 SAR measurement 100 MHz to 6 GHz v01

-. 865664 D02 SAR Reporting v01

-. 941225 D01 SAR test for 3G devices v02

-. 941225 D02 Guidance for 3GPP R6 and R7 HSPA v02v01

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3. 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/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN				
FCC ID:	ZNFP714				
Model:	LG-P714,LG-P712	Additional:	P714,LGP714,P712,LGP712		
Trade Name	LG Electronics, MobileComm U.S.A., Inc.				
Application Type	Certification				
Mode(s) of Operation	GSM850/GSM1900/WCDMA850/WCDMA1900/802.11b/g/n				
Tx Frequency	824.20 - 848.80 MHz (GSM850) /1 850.20 – 1 909.80 MHz (GSM1900) 826.4 - 846.6 MHz (WCDMA850) /1 852.4 – 1 907.6 MHz (WCDMA1900) 2 412- 2 462 MHz (802.11b/g/n)				
Rx Frequency	869.20 - 893.80 MHz (GSM850)/ 1 930.20 – 1 989.80 MHz (GSM1900) 871.4 - 891.6 MHz (WCDMA850))/ 1 932.4 – 1 987.6 MHz (WCDMA1900) 2 412- 2 462 MHz (802.11b/g/n)				
Production Unit or Identical Prototype	Prototype				

	Band	Tx Frequency (MHz)	Equipment Class	Reported 1g SAR (W/kg)		
				Head	Body-worn	Hotspot
Max SAR	GSM850	824.20 - 848.80	PCE	0.513	1.358	1.358
	GSM1900	1 850.20 - 1 909.80	PCE	0.188	0.160	0.160
	WCDMA850	826.4 - 846.6	PCE	0.337	0.084	0.084
	WCDMA1900	1 852.4 – 1 907.6	PCE	0.251	0.187	0.187
	802.11b	2 412- 2 462	DTS	0.122	0.092	0.092
	Bluetooth	2 402 - 2 480	DSS	-		
Simultaneous SAR per KDB 690783 D01				0.580	1.548	1.548

Date(s) of Tests	Jan.14, 2013 ~ Jan.16, 2013
Antenna Type	Integral Antenna
GPRS	Multislot Class: 12
Key Feature(s)	This device support Mobile Hotspot.

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4. DESCRIPTION OF TEST EQUIPMENT

4.1 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.4.1).

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.
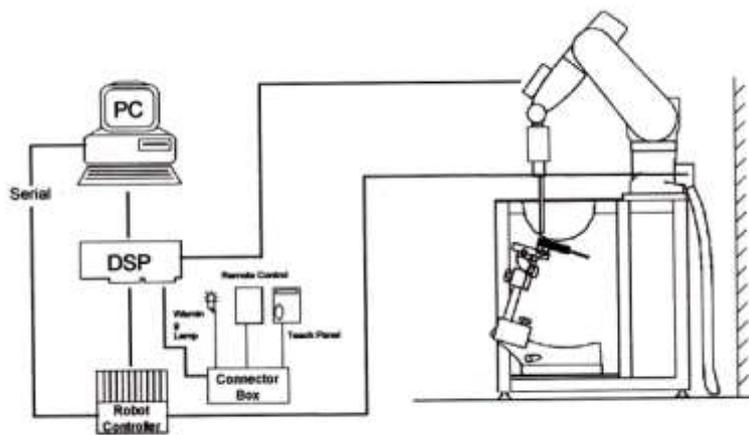
Figure 4.1 HCT SAR Lab. Test Measurement Set-up

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.

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4.2 DASY4 E-FIELD PROBE SYSTEM

4.2.1 EX3DV4 Probe Specification

Construction   Symmetrical design with triangular core Interleaved sensors
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration   Basic Broad Band Calibration in air
Conversion Factors (CF) for HSL 900 and HSL 1810
Additional CF for other liquids and frequencies upon request

Frequency   10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)

Directivity   ± 0.2 dB in HSL (rotation around probe axis)
± 0.3 dB in tissue material (rotation normal to probe axis)

Dynamic Range   5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB

Dimensions   Overall length: 330 mm (Tip: 20 mm)
Tip diameter: 3.9 mm (Body: 12 mm)
Distance from probe tip to dipole centers: 2.0 mm

Application   General dosimetry up to 4 GHz
Dosimetry in strong gradient fields
Compliance tests of mobile phones

Figure 4.2 Photograph of the probe and the Phantom

Figure 4.3 EX3DV4 E-field Probe

The SAR measurements were conducted with the dosimetric probe EX3DV4, 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.

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4.3 PROBE CALIBRATION PROCESS

4.3.1 E-Probe Calibration

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

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 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/cm^3 for brain tissue)
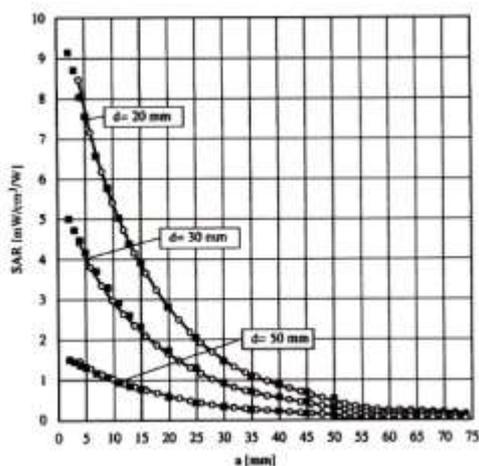

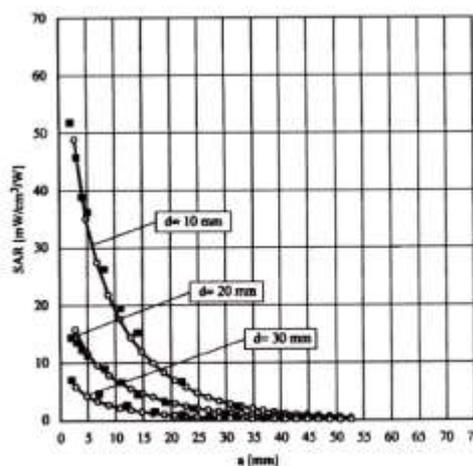Figure 4.4 E-Field and Temperature measurements at 900 MHz

Figure 4.5 E-Field and temperature measurements at 1.8 GHz

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4.3.2 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

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4.4 SAM Phantom

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

Figure 4.6 SAM Phantom

Shell Thickness	2.0 mm ± 0.2 mm (6 ± 0.2 mm at ear point)
Filling Volume	about 25 L
Dimensions	810 mm x 1 000 mm x 500 mm (H x L x W)

Triple Modular Phantom consists of tree identical modules which can be installed and removed separately without emptying the liquid. It includes three reference points for phantom installation. Covers prevent evaporation of the liquid. Phantom material is resistant to DGBE based tissue simulating liquids. The MFP V5.1 will be delivered including wooden support only (**non**-standard SPEAG support).

Applicable for system performance check from 700 MHz to 6 GHz (MFP V5.1C) or 800 MHz - 6 GHz (MFP V5.1A) as well as dosimetric evaluations for body-worn operation.

Figure 3.6 MFP V5.1 Triple Modular Phantom

Shell Thickness	2.0 mm ± 0.2 mm
Filling Volume	approx. 9.2 L
Dimensions	830 mm x 500 mm (L x W)

Figure 4.7 SAM Phantom

4.5 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 repeatable 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 4.8 Device Holder

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4.6 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 bacteriacide 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)											
	750		835		915		1 900		2 450		5200-5800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.2	51.7	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2	65.52	78.66
Salt (NaCl)	1.4	1.0	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04	0.0	0.0
Sugar	57	47.2	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0	0.0	0.0
HEC	0.2	0.0	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.2	0.1	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0	17.24	10.67
DGBE	0.00	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7	0.0	0.0
Diethylene glycol hexyl ether	-	-	-	-	-	-	-	-	-	-	17.24	10.67

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 4.1 Composition of the Tissue Equivalent Matter

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4.7 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	DAE3	466	Feb. 21, 2012	Annual	Feb. 21, 2013
SPEAG	DAE4	869	Sep 18, 2012	Annual	Sep 18, 2013
SPEAG	E-Field Probe EX3DV4	3797	Nov. 22, 2012	Annual	Nov. 22, 2013
SPEAG	E-Field Probe EX3DV4	3863	July 13, 2012	Annual	July 13, 2013
SPEAG	Verification Dipole D835V2	441	May 16, 2012	Annual	May 16, 2013
SPEAG	Verification Dipole D1900V2	5d032	July 20, 2012	Annual	July 20, 2013
SPEAG	Verification Dipole D2450V2	743	Aug. 23, 2012	Annual	Aug. 23, 2013
Agilent	Power Meter(F) E4419B	MY41291386	Nov. 02, 2012	Annual	Nov. 02, 2013
Agilent	Power Sensor(G) 8481	MY41090870	Nov. 02, 2012	Annual	Nov. 02, 2013
HP	Dielectric Probe Kit 85070C	00721521	CBT		
HP	Dual Directional Coupler 778D	16072	Nov. 02, 2012	Annual	Nov. 02, 2013
Agilent	Base Station CMU200	110740	July 23, 2012	Annual	July 23, 2013
HP	Base Station E5515C	GB44400269	Feb. 10, 2012	Annual	Feb. 10, 2013
HP	Signal Generator 8664A	3744A02069	Nov. 02, 2012	Annual	Nov. 02, 2013
Hewlett Packard	11636B/Power Divider	11377	Nov. 11. 2012	Annual	Nov. 11. 2013
Agilent	N9020A/ SIGNAL ANALYZER	MY51110020	Jul. 31.2012	Annual	Jul. 31.2013
TESCOM	TC-3000C / BLUETOOTH TESTER	3000C000276	Jul. 11, 2012	Annual	Jul. 11, 2013

NOTE:
1. The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body 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/body-equivalent material.

2. CBT(Calibrating Before Testing). Prior to testing, the dielectric probe kit was calibrated via the network analyzer, with the specified procedure(calibrated in pure water) and calibration kit(standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.

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5. 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.
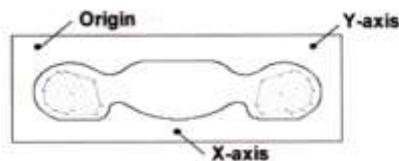
Figure 5.1 SAR Measurement Point in Area Scan

  First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extend, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the hightest E-field value to determine the averaged SASR-distribution over 10g.

Area scan and zoom scan resolution setting follow KDB 865664 D01v01 quoted below

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		≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30° \pm 1°$	$20° \pm 1°$
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}		≤ 2 GHz: ≤ 15 mm $2-3$ GHz: ≤ 12 mm	$3-4$ GHz: ≤ 12 mm $4-6$ GHz: ≤ 10 mm
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}		≤ 2 GHz: ≤ 8 mm $2-3$ GHz: ≤ 5 mm*	$3-4$ GHz: ≤ 5 mm* $4-6$ GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	$3-4$ GHz: ≤ 4 mm $4-5$ GHz: ≤ 3 mm $5-6$ GHz: ≤ 2 mm
	graded grid / $\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	$3-4$ GHz: ≤ 3 mm $4-5$ GHz: ≤ 2.5 mm $5-6$ GHz: ≤ 2 mm
	graded grid / $\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	≥ 30 mm	$3-4$ GHz: ≥ 28 mm $4-5$ GHz: ≥ 25 mm $5-6$ GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the area scan based *1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

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6. DESCRIPTION OF TEST POSITION

6.1 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 15⁰ or until the device antenna touch the phantom. Please refer to IEEE 1528-2003 illustration below.

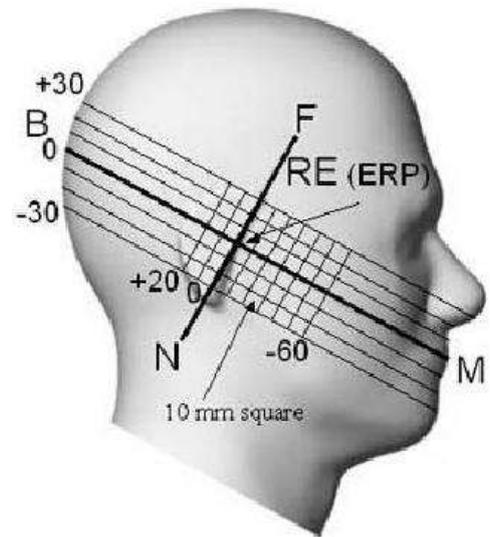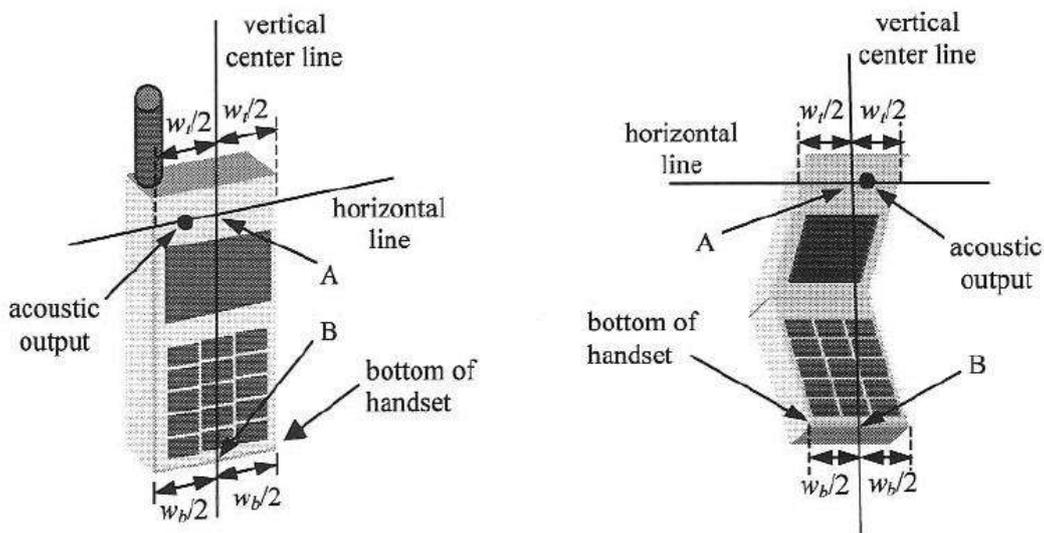Figure 6.1 Side view of the phantom

Figure 6.2 Handset vertical and horizontal reference lines

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6.2 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.

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7. MEASUREMENT UNCERTAINTY

Error Description	Tol (± %)	Prob. dist.	Div.	c_i	Standard Uncertainty (± %)	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 Permitivity(target)	5.00	R	1.73	0.6	1.73	∞
Liquid Permitivity(meas.)	5.02	N	1	0.6	3.01	9
Combind Standard Uncertainty					11.13	
Coverage Factor for 95 %					$k=2$	
Expanded STD Uncertainty					22.25	

Table 7.1 Uncertainty (800 MHz- 2450 MHz)

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8. 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 8.1 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).

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9. SAR SYSTEM VALIDATION

Per FCC KCB 865664 D02v01, SAR system validation status should be document to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2003 and FCC KDB 865664 D01 v01. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

SAR System Validation Summary

SAR Dasy System 1											
			CW Validation				**Modulated Validations**				
	Tissue	**Freq.**		**Dielectric Parameters**					**Dielectric Parameters**		
Probe	**Type**	**[MHz]**	**Date**	**Measured** $\sigma($**S/m**$)$	**Measured** ε_r	**Result**	**Data**	**Mod. Type**	**Measured** $\sigma($**S/m**$)$	**Measured** ε_r	**Result**
3863	Head	835	Dec.20,2012	40.4	0.92	Pass	Dec.20,2012	GMSK	40.4	0.92	Pass
3863	Head	1900	Dec.20,2012	39.8	1.40	Pass	Dec.20,2012	GMSK	39.8	1.40	Pass
3863	Head	2450	Dec.20,2012	38.1	1.83	Pass	Dec.20,2012	OFDM	38.1	1.83	Pass
3797	Body	835	Dec.17,2012	56.9	0.98	Pass	Dec.17,2012	GMSK	56.9	0.98	Pass
3797	Body	1900	Dec.17,2012	51.4	1.53	Pass	Dec.17,2012	GMSK	51.4	1.53	Pass
3797	Body	2450	Dec.17,2012	52.8	1.96	Pass	Dec.17,2012	OFDM	52.8	1.96	Pass

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10. SYSTEM VERIFICATION

10.1 Tissue Verification

Freq. [MHz]	Date	Liquid	Liquid Temp.[°C]	Parameters	Target Value	Measured Value	Deviation [%]	Limit [%]
835	Jan.14, 2013	Head	21.0	εr	41.5	40.4	- 2.65	± 5
				σ	0.90	0.918	+ 2.00	± 5
835	Jan.15, 2013	Body	21.1	εr	55.2	53	- 3.99	± 5
				σ	0.97	0.986	+ 1.65	± 5
1 900	Jan.14, 2013	Head	21.0	εr	40.0	40.8	+ 2.00	± 5
				σ	1.40	1.37	- 2.14	± 5
1 900	Jan.15, 2013	Body	21.1	εr	53.3	55.4	+ 3.94	± 5
				σ	1.52	1.48	- 2.63	± 5
2 450	Jan.16, 2013	Head	21.1	εr	39.2	38.9	- 0.77	± 5
				σ	1.80	1.79	- 0.56	± 5
2 450	Jan.17, 2013	Body	21.2	εr	52.7	53.7	+ 1.90	± 5
				σ	1.95	1.94	- 0.51	± 5

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

10.2 Test System Verification

Prior to assessment, the system is verified to the ± 10 % of the specifications at 835 MHz /1 900 MHz/ 2 450 MHz by using the system Verification kit. (Graphic Plots Attached)

Freq. [MHz]	Date	Probe (SN)	Dipole (SN)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR_{1g} (SPEAG) (mW/g)	Measured SAR_{1g} (mW/g)	1 W Normalized SAR_{1g} (mW/g)	Deviation [%]	Limit [%]
835	Jan.14, 2013	3863	441	Head	21.2	21.0	9.43	0.962	9.62	+ 2.01	± 10
835	Jan.15, 2013	3797		Body	21.3	21.1	9.50	0.975	9.75	+ 2.63	± 10
1 900	Jan.14, 2013	3863	5d032	Head	21.2	21.0	39.0	3.86	38.6	- 1.03	± 10
1 900	Jan.15, 2013	3797		Body	21.3	21.1	39.9	3.87	38.7	- 3.01	± 10
2 450	Jan.16, 2013	3863	743	Head	21.3	21.1	52.7	5.37	53.7	+ 1.90	± 10
2 450	Jan.17, 2013	3797		Body	21.4	21.2	51.2	5.15	51.5	+ 0.59	± 10

10.3 Test System Verification Procedure

SAR measurement was prior to assessment, the system is verified to the ± 10 % of the specifications at each frequency band by using the system Verification kit. (Graphic Plots Attached)
- Cabling the system, using the Verification 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.
- The results are normalized to 1 W input power.
Note;
SAR Verification was performed according to the FCC KDB 450824.

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11. 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 then 5 % occurred, the tests were repeated.

11.1 GSM

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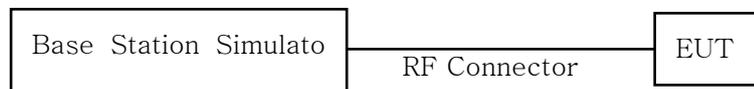
SAR Test for WWAN were performed with a base station simulator Agilent E5515C. Communication between the device and the emulator was established by air link. Set base station emulator to allow DUT to radiate maximum output power during all tests. Please refer to the below worst case SAR operation setup.

- GSM voice: Head SAR
- GPRS Multi-slots : Body SAR with GPRS Multi-slot Class12 with CS 1 (GMSK)

Note;

CS1/MCS7 coding scheme was used in GPRS/EDGE output power measurements and SAR Testing, as a condition where GMSK/8PSK modulation was ensured. Investigation has shown that CS1 - CS4/ MCS5 – MCS9 settings do not have any impact on the output levels in the GPRS/EDGE modes.

GSM850   GSM1900

Target Power : 33.2 dBm   Target Power : 29.7 dBm
Tune-up Tolerance : -1.5dB/ +0.5dB   Tune-up Tolerance : -1.5dB/ +0.5dB

GSM Conducted output powers (Burst-Average)

Band	Channel	Voice	GPRS(GMSK) Data – CS1			
		GSM (dBm)	GPRS 1 TX Slot (dBm)	GPRS 2 TX Slot (dBm)	GPRS 3 TX Slot (dBm)	GPRS 4 TX Slot (dBm)
GSM 850	128	33.67	33.67	31.02	29.52	28.03
	190	33.57	33.56	30.89	29.39	27.90
	251	33.43	33.42	30.78	29.27	27.78
GSM 1900	512	30.19	30.19	27.53	26.07	24.59
	661	29.87	29.87	27.22	25.76	24.28
	810	29.55	29.55	26.86	25.40	23.93

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GSM Conducted output powers (Frame-Average)

Band	Channel	Voice	GPRS(GMSK) Data – CS1			
		GSM (dBm)	GPRS 1 TX Slot (dBm)	GPRS 2 TX Slot (dBm)	GPRS 3 TX Slot (dBm)	GPRS 4 TX Slot (dBm)
GSM 850	128	24.64	24.64	25	25.26	25.02
	190	24.54	24.53	24.87	25.13	24.89
	251	24.4	24.39	24.76	25.01	24.77
GSM 1900	512	21.16	21.16	21.51	21.81	21.58
	661	20.84	20.84	21.2	21.5	21.27
	810	20.52	20.52	20.84	21.14	20.92

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

11.2 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 ≤ 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.

11.2.1 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".

11.2.2 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.

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11.2.3 Body SAR Measurement

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

11.2.4 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	β_{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: 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 β_c/β_d =12/15, β_{hs}/β_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 $\beta_d = 15/15$.

11.2.5 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	β_{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	β_{ed1}: 47/15 β_{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 β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, 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.

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WCDMA850

Target Power : 24.2 dBm

Tune-up Tolerance : -1.5dB/ +0.5dB

WCDMA1900

Target Power : 22.5 dBm

Tune-up Tolerance : -1.5dB/ +0.5dB

WCDMA Average Conducted output powers

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]						MPR Target
			4132	Power reduction (dB)	4183	Power reduction (dB)	4233	Power reduction (dB)	
99	WCDMA	12.2 kbps RMC	24.57		24.57		24.55		-
99	WCDMA	12.2 kbps AMR	24.6		24.58		24.53		
5	HSDPA	Subtest 1	24.42		24.44		24.38		0
5		Subtest 2	24.25	0.17	24.25	0.19	24.19	0.19	0
5		Subtest 3	23.79	0.63	23.81	0.63	23.77	0.61	-0.5
5		Subtest 4	23.77	0.65	23.8	0.64	23.75	0.63	-0.5
6	HSUPA	Subtest 1	24.11		23.66		23.69		0
6		Subtest 2	22.36	1.75	22.6	1.06	22.58	1.11	-2
6		Subtest 3	22.9	1.21	22.9	0.76	22.95	0.74	-1
6		Subtest 4	23.03	1.08	22.66	1	22.68	1.01	-2
6		Subtest 5	24	0.11	23.55	0.11	23.56	0.13	0

3GPP Release Version	Mode	3GPP 34.121 Subtest	PCS Band [dBm]						MPR Target
			9262	Power reduction (dB)	9400	Power reduction (dB)	9538	Power reduction (dB)	
99	WCDMA	12.2 kbps RMC	22.99		22.98		22.83		-
99	WCDMA	12.2 kbps AMR	22.99		22.99		22.87		
5	HSDPA	Subtest 1	22.95		22.96		22.77		0
5		Subtest 2	22.83	0.12	22.86	0.1	22.68	0.09	0
5		Subtest 3	22.46	0.49	22.5	0.46	22.32	0.45	-0.5
5		Subtest 4	22.46	0.49	22.45	0.51	22.27	0.5	-0.5
6	HSUPA	Subtest 1	22.42		22.5		22.24		0
6		Subtest 2	21.12	1.3	21.18	1.32	20.99	1.25	-2
6		Subtest 3	21.55	0.87	21.5	1	21.31	0.93	-1
6		Subtest 4	21.4	1.02	21.49	1.01	21.22	1.02	-2
6		Subtest 5	22.25	0.17	22.3	0.2	22.08	0.16	0

11.3 WiFi

11.3.1 SAR Testing for 802.11b/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

802.11 a/b/g and 4.9 GHz operating modes are tested independently according to the service requirements in each frequency band. 802.11 b/g modes are tested on channels 1, 6 and 11.802.11a is tested for UNII operations on channels 36 and 48 in the 5.15-5.25 GHz band; channels 52 and 64 in the 5.25-5.35 GHz band; Channels 104, 116, 124 and 136 in the 5.470-5.725 GHz band; and channels 149 and 161 in the 5.8 GHz band. When 5.8 GHz § 15.247 is also available, channels 149, 157 and 165 should be tested instead of the UNII channels. 4.9 GHz is tested on channels 1, 10 and 5 or 6, whichever has the higher output power, for 5 MHz channels; channels 11,15 and 19 for 10 MHz channels; and channels 21 and 25 for 20 MHz channels.

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

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

802.11 Test Channels per FCC Requirements

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2.4GHz

802.11b : 16 dBm
802.11g : 13 dBm
802.11n : 12 dBm

Tune-up Tolerance : -1.5dB/ +1.5dB

� **TEST RESULTS-Average**

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	1 Mbps	15.51	30
		2 Mbps	15.49	30
		5.5 Mbps	15.50	30
		11 Mbps	15.34	30
2437	6	1 Mbps	16.18	30
		2 Mbps	16.08	30
		5.5 Mbps	16.18	30
		11 Mbps	15.84	30
2462	11	1 Mbps	15.67	30
		2 Mbps	15.67	30
		5.5 Mbps	15.70	30
		11 Mbps	15.50	30

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	6 Mbps	12.38	30
		9 Mbps	12.24	30
		12 Mbps	12.10	30
		18 Mbps	11.81	30
		24 Mbps	11.80	30
		36 Mbps	11.43	30
		48 Mbps	11.11	30
		54 Mbps	10.93	30
2437	6	6 Mbps	12.02	30
		9 Mbps	11.95	30
		12 Mbps	11.77	30
		18 Mbps	11.65	30
		24 Mbps	11.39	30
		36 Mbps	11.09	30
		48 Mbps	10.81	30
		54 Mbps	10.69	30
2462	11	6 Mbps	12.27	30
		9 Mbps	12.08	30
		12 Mbps	11.99	30
		18 Mbps	11.81	30
		24 Mbps	11.71	30
		36 Mbps	11.50	30
		48 Mbps	11.13	30
		54 Mbps	10.97	30

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Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	6.5 Mbps	11.47	30
		13 Mbps	11.39	30
		19.5 Mbps	10.83	30
		26 Mbps	11.06	30
		39 Mbps	10.66	30
		52 Mbps	10.54	30
		58.5 Mbps	10.18	30
		65 Mbps	10.12	30
2437	6	6.5 Mbps	12.21	30
		13 Mbps	12.03	30
		19.5 Mbps	11.83	30
		26 Mbps	11.75	30
		39 Mbps	11.46	30
		52 Mbps	11.08	30
		58.5 Mbps	10.87	30
		65 Mbps	10.67	30
2462	11	6.5 Mbps	10.01	30
		13 Mbps	10.15	30
		19.5 Mbps	9.69	30
		26 Mbps	9.67	30
		39 Mbps	9.15	30
		52 Mbps	9.37	30
		58.5 Mbps	9.04	30
		65 Mbps	8.80	30

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

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11.4 Bluetooth Average Power

Test Configuration

```
┌─────────────────────┐      ┌─────────────────────┐
│  Bluetooth Tester   │      │                     │
│              ○ ○    │      │ ○Spectrum Analyzer  │
│                     │      │                     │
└─────────────────────┘      └─────────────────────┘

┌─────────┐   ┌─────────────────┐
│  EUT    │───│  Power Splitter │
└─────────┘   └─────────────────┘
```
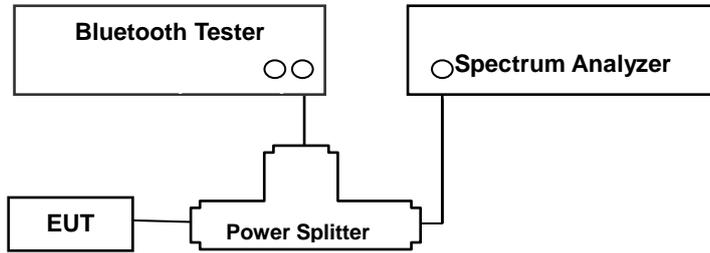
TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. The Spectrum Analyzer is set to the average detector mode. This test is performed with hopping off.

1. Span = 2 MHz (GFSK) / 5 MHz (π/4DQPSK and 8DPSK)
2. RBW = auto (GFSK) / auto (π/4DQPSK and 8DPSK)
3. VBW = auto (GFSK) / auto (π/4DQPSK and 8DPSK)
4. Sweep = 1 s
5. Packet type= DH5 (GFSK) / 2-DH5 (π/4DQPSK) / 3-DH5 (8DPSK)

GFSK : 8 dBm

8DPSK : 6.5 dBm

π /4DQPSK : 6.5 dBm

Power Tolerance: + 1.5dB/ - 1.5dB

Model	Channel	Frequency (MHz)	Conducted Average Power (dBm)		
			GFSK	8DPSK	π/4DQPSK
LG-P710	0	2402	7.52	6.27	5.99
	39	2440	8.23	6.71	6.70
	78	2480	7.55	6.17	6.36

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12. SAR Test configuration & Antenna Information

12.1 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
WCDMA1900	Yes	Yes	Yes	Yes	Yes	No
2.4 GHz WLAN	Yes	Yes	No	Yes	No	Yes

12.2 Antenna and Device Information
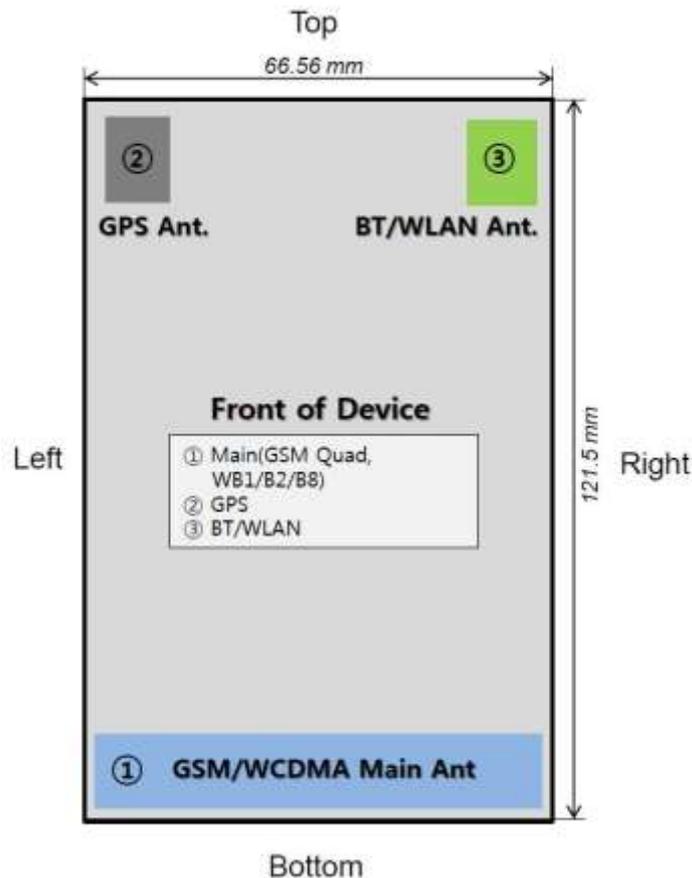
[Front side View]

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.

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13. SAR TEST DATA SUMMARY

13.1 Measurement Results (GSM850 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
836.6	190 (Mid)	GSM850	33.57	-0.021	Standard	Left Ear	0.327	0.337	1
			33.57	0.081	Standard	Left Tilt 15°	0.255	0.263	2
			33.57	-0.07	Standard	Right Ear	0.383	0.395	3
			33.57	0.055	Standard	Right Tilt 15°	0.285	0.294	4
836.6	190 (Mid)	Voip GPRS3Tx	29.39	-0.044	Standard	Left Ear	0.398	0.458	5
			29.39	-0.006	Standard	Left Tilt 15°	0.276	0.318	6
			29.39	0.032	Standard	Right Ear	0.446	0.513	7
			29.39	-0.029	Standard	Right Tilt 15°	0.357	0.411	8
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:

1 The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
   Batteries are fully charged for all readings.
6 Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7 According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
8 For Head SAR testing, the EUT was set in GPRS multi-slot class12 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.

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13.2 Measurement Results (GSM1900 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
1 880.0	661 (Mid)	GSM1900	29.87	-0.121	Standard	Left Ear	0.129	0.156	9
			29.87	0.053	Standard	Left Tilt 15°	0.056	0.068	10
			29.87	-0.146	Standard	Right Ear	0.06	0.073	11
			29.87	0.077	Standard	Right Tilt 15°	0.05	0.061	12
1 880.0	661 (Mid)	Voip GPRS3Tx	25.76	-0.161	Standard	Left Ear	0.017	0.188	13
			25.76	0.118	Standard	Left Tilt 15°	0.064	0.071	14
			25.76	-0.057	Standard	Right Ear	0.076	0.084	15
			25.76	-0.074	Standard	Right Tilt 15°	0.064	0.071	16
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:

1   The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2   All modes of operation were investigated and the worst-case are reported.
3   Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4   Tissue parameters and temperatures are listed on the SAR plot.
5   Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
    Batteries are fully charged for all readings.
6   Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7   According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
8   For Head SAR testing, the EUT was set in GPRS multi-slot class12 with 3uplink 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.

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13.3 Measurement Results (WCDMA850 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
836.6	4183 (Mid)	WCDMA850	24.57	-0.117	Standard	Left Ear	0.312	0.331	17
			24.57	0.078	Standard	Left Tilt 15°	0.234	0.241	18
			24.57	-0.092	Standard	Right Ear	0.327	0.337	19
			24.57	0.146	Standard	Right Tilt 15°	0.217	0.224	20
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:

1 The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
    Batteries are fully charged for all readings.
6 Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7 According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
8 WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

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13.4 Measurement Results (WCDMA1900 Head SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
1 880.0	9400 (Mid)	WCDMA1900	22.98	0.167	Standard	Left Ear	0.250	0.251	21
			22.98	0.124	Standard	Left Tilt 15°	0.085	0.085	22
			22.98	-0.047	Standard	Right Ear	0.119	0.120	23
			22.98	0.088	Standard	Right Tilt 15°	0.077	0.077	24
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						**Head 1.6 W/kg (mW/g)** Averaged over 1 gram			

NOTES:

1   The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2   All modes of operation were investigated and the worst-case are reported.
3   Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4   Tissue parameters and temperatures are listed on the SAR plot.
5   Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
      Batteries are fully charged for all readings.
6   Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7   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).
8   WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

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13.5 Measurement Results (802.11b/g/n Head)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Battery	Phantom Position	Data Rate	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel									
2 437	6 (Mid)	802.11b	16.18	-0.035	Standard	Left Ear	1Mbps	0.09	0.122	25
			16.18	0.175	Standard	Left Tilt 15°	1Mbps	0.067	0.091	26
			16.18	0.096	Standard	Right Ear	1Mbps	0.042	0.057	27
			16.18	-0.043	Standard	Right Tilt 15	1Mbps	0.057	0.077	28
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:

1　The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2　All modes of operation were investigated and the worst-case are reported.
3　Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4　Tissue parameters and temperatures are listed on the SAR plot.
5　Battery Type　　　　　⌧ Standard　　　　☐ Extended　　　　☐ Slim
　　Batteries are fully charged for all readings.
6　Test Signal Call Mode　⌧ Manual Test cord　☐ Base Station Simulator
7　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.
8　For 2.4GHz WLAN, Highest average power channel for the lowest data rate was selected for SAR evaluation based on KDB 248227. Other channels are not necessary because 1g-average SAR < 0.8 W/Kg and peak SAR < 1.6W/Kg per KDB 248227.

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13.6 Measurement Results (GSM850 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
824.2	128 (low)	GPRS 3Tx	29.52	-0.076	Rear	1.0 cm	1.18	1.358	29
836.6	190 (Mid)	GPRS 3Tx	29.39	0.017	Rear	1.0 cm	0.875	1.035	30
849.8	251 (High)	GPRS 3Tx	29.27	-0.042	Rear	1.0 cm	0.748	0.861	31
836.6	190 (Mid)	GPRS 3Tx	29.39	0.01	Front	1.0 cm	0.444	0.511	32
836.6	190 (Mid)	GPRS 3Tx	29.39	-0.036	Left	1.0 cm	0.538	0.619	33
824.2	128 (low)	GPRS 3Tx	29.52	-0.079	Right	1.0 cm	0.921	1.029	34
836.6	190 (Mid)	GPRS 3Tx	29.39	-0.041	Right	1.0 cm	0.705	0.811	35
849.8	251 (High)	GPRS 3Tx	29.27	-0.046	Right	1.0 cm	0.462	0.547	36
836.6	190 (Mid)	GPRS 3Tx	29.39	-0.112	Bottom	1.0 cm	0.115	0.132	37
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:

1　The test data reported are the worst-case SAR value with the antenna-body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].

2　All modes of operation were investigated and the worst-case are reported.

3　Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.

4　Tissue parameters and temperatures are listed on the SAR plot.

5　Battery Type　　☒ Standard　　☐ Extended　　☐ Slim
　　Batteries are fully charged for all readings.

6　Test Signal Call Mode　☐ Manual Test cord　☒ Base Station Simulator

7　Test Configuration　☐ With Holster　☒ Without Holster

8　According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.

9　For body SAR testing, the EUT was set in GPRS multi-slot class12 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.

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13.7 Measurement Results (GSM1900 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
1 880	661 (Mid)	GPRS 3Tx	25.76	-0.097	Rear	1.0 cm	0.145	0.160	38
			25.76	-0.035	Front	1.0 cm	0.130	0.144	39
			25.76	0.076	Left	1.0 cm	0.086	0.096	40
			25.76	-0.170	Right	1.0 cm	0.029	0.032	41
			25.76	0.088	Bottom	1.0 cm	0.083	0.092	42

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:

1. The test data reported are the worst-case SAR value with the antenna-body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2. All modes of operation were investigated and the worst-case are reported.
3. Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4. Tissue parameters and temperatures are listed on the SAR plot.
5. Battery Type　　　☒ Standard　　　☐ Extended　　　☐ Slim
   Batteries are fully charged for all readings.
6. Test Signal Call Mode　　☐ Manual Test cord　　☒ Base Station Simulator
7. Test Configuration　　☐ With Holster　　☒ Without Holster
8. According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
9. For body SAR testing, the EUT was set in GPRS multi-slot class12 with 3uplink 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.

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13.8 Measurement Results (WCDMA850 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
836.6	4183 (Mid)	WCDMA850	24.57	0.082	Rear	1.0 cm	0.075	0.077	43
			24.57	-0.072	Front	1.0 cm	0.082	0.084	44
			24.57	-0.039	Left	1.0 cm	0.052	0.054	45
			24.57	-0.035	Right	1.0 cm	0.019	0.02	46
			24.57	0.132	Bottom	1.0 cm	0.048	0.049	47
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:

1 The test data reported are the worst-case SAR value with the antenna-Body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
   Batteries are fully charged for all readings.
6 Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7 Test Configuration   ☐ With Holster   ☒ Without Holster
8 According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
9 WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

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13.9 Measurement Results (WCDMA1900 Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
1 880.0	9400 (Mid)	WCDMA1900	22.98	0.059	Rear	1.0 cm	0.186	0.187	48
1 880.0	9400 (Mid)	WCDMA1900	22.98	-0.071	Front	1.0 cm	0.18	0.181	49
1 880.0	9400 (Mid)	WCDMA1900	22.98	0.086	Left	1.0 cm	0.11	0.111	50
1 880.0	9400 (Mid)	WCDMA1900	22.98	-0.04	Right	1.0 cm	0.035	0.035	51
1 880.0	9400 (Mid)	WCDMA1900	22.98	0.006	Bottom	1.0 cm	0.081	0.081	52
ANSI/ IEEE C95.1 - 2005– Safety Limit **Spatial Peak** **Uncontrolled Exposure/ General Population**						**Body** **1.6 W/kg (mW/g)** Averaged over 1 gram			

1   The test data reported are the worst-case SAR value with the antenna-Body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2   All modes of operation were investigated and the worst-case are reported.
3   Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4   Tissue parameters and temperatures are listed on the SAR plot.
5   Battery Type   ☒ Standard   ☐ Extended   ☐ Slim
                                       Batteries are fully charged for all readings.
6   Test Signal Call Mode   ☐ Manual Test cord   ☒ Base Station Simulator
7   Test Configuration   ☐ With Holster   ☒ Without Holster
8   According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
9   WCDMA Mode was tested under RMC 12.2 kbps and HSPA Inactive.

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12.10 Measurement Results (802.11b/g/n Hotspot SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Data Rate	Measured SAR(mW/g)	Scaled SAR(mW/g)	Plot No.
MHz	Channel								
2 437	6 (Mid)	802.11b	16.18	-0.023	Rear	1Mbps	0.068	0.092	53
			16.18	0.022	Front	1Mbps	0.022	0.030	54
			16.18	0.128	Right	1Mbps	0.05	0.068	55
			16.18	-0.03	Top	1Mbps	0.013	0.018	56

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg (mW/g) Averaged over 1 gram

NOTES:

1   The test data reported are the worst-case SAR value with the antenna-body 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 code   ☐ Base Station Simulator

7   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.

8   For 2.4GHz WLAN, Highest average power channel for the lowest data rate was selected for SAR evaluation based on KDB 248227. Other channels are not necessary because 1g-average SAR < 0.8 W/Kg and peak SAR < 1.6W/Kg per KDB 248227.

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13. SAR Summation Scenario

	Position	Applicable Combination
Simultaneous Transmission	Head	GSM850 Voice + 2.4 GHz WiFi
		GSM1900 Voice + 2.4 GHz WiFi
		WCDMA850 Voice + 2.4 GHz WiFi
		WCDMA1900 Voice + 2.4 GHz WiFi
	Hotspot	GPRS850 Data + 2.4 GHz WiFi
		GPRS1900 Data + 2.4 GHz WiFi
		WCDMA850 Data + 2.4 GHz WiFi
		WCDMA1900 Data + 2.4 GHz WiFi
		GPRS850 Data + 2.4 GHz Bluetooth
		GPRS1900 Data + 2.4 GHz Bluetooth
		WCDMA850 Data + 2.4 GHz Bluetooth
		WCDMA1900 Data + 2.4 GHz Bluetooth
	Body-worn	GSM850 Voice + 2.4 GHz WiFi
		GSM1900 Voice + 2.4 GHz WiFi
		WCDMA850 Voice + 2.4 GHz WiFi
		WCDMA1900 Voice + 2.4 GHz WiFi
		GSM850 Voice + 2.4 GHz Bluetooth
		GSM1900 Voice + 2.4 GHz Bluetooth
		WCDMA850 Voice + 2.4 GHz Bluetooth
		WCDMA1900 Voice + 2.4 GHz Bluetooth
* BT and WLAN are not simultaneous transmission.		

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v05 IV.C.1iii, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is $\leq$ 1.6W/kg. when standalone SAR is not required to be measured per FCC KDB 447498 D01v05 4.3.22, the following equation must be used to estimate the standalone 1-g SAR for simultaneous transmission assessment involving that transmitter

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} * \frac{(\text{Max Power of channel,mW})}{\text{Min.Separation Distance}}$$

. Mode	Frequency	Maximum Allowed Power	Separatuin Distance (Body)	Estimated SAR (Body)
	[MHz]	[mW]	[mm]	[W/kg]
Bluetooth	2440	8.91	10	0.19

Note : Held-to ear configurations are not applicable to Bluetooth operations and therefore were not

considered for simultaneous transmission.

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Simultaneous Transmission Summation for Held to Ear

Simultaneous TX	configuration	GSM850 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GPRS850 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Head SAR	Left Cheek	0.337	0.122	0.459	Head SAR	Left Cheek	0.458	0.122	0.580
	Left Tilt	0.263	0.091	0.354		Left Tilt	0.318	0.091	0.409
	Right Cheek	0.395	0.057	0.452		Right Cheek	0.513	0.057	0.570
	Right Tilt	0.394	0.077	0.471		Right Tilt	0.411	0.077	0.488
Simultaneous TX	configuration	GSM1900 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GPRS1900 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Head SAR	Left Cheek	0.156	0.122	0.278	Head SAR	Left Cheek	0.188	0.122	0.310
	Left Tilt	0.068	0.091	0.159		Left Tilt	0.071	0.091	0.162
	Right Cheek	0.073	0.057	0.130		Right Cheek	0.084	0.057	0.141
	Right Tilt	0.061	0.077	0.138		Right Tilt	0.071	0.077	0.148
Simultaneous TX	configuration	WCDMA850 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	WCDMA1900 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Head SAR	Left Cheek	0.331	0.122	0.453	Head SAR	Left Cheek	0.251	0.122	0.373
	Left Tilt	0.241	0.091	0.332		Left Tilt	0.085	0.091	0.176
	Right Cheek	0.337	0.057	0.394		Right Cheek	0.12	0.057	0.177
	Right Tilt	0.224	0.077	0.301		Right Tilt	0.077	0.077	0.154

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Simultaneous Transmission Summation for Body-Worn (1cm)

Simultaneous TX	configuration	GSM850 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GSM1900 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	1.358	0.092	1.450	Body SAR	Back	0.160	0.092	0.252
Body SAR	Front	0.511	0.03	0.541	Body SAR	Front	0.144	0.030	0.174
Simultaneous TX	configuration	WCDMA850 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	WCDMA1900 Scaled SAR(W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	0.077	0.092	0.169	Body SAR	Back	0.187	0.092	0.279
Body SAR	Front	0.084	0.03	0.114	Body SAR	Front	0.181	0.030	0.211
Simultaneous TX	configuration	GSM850 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GSM1900 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	1.358	0.19	1.548	Body SAR	Back	0.160	0.19	0.350
Body SAR	Front	0.511	0.19	0.701	Body SAR	Front	0.144	0.19	0.334
Simultaneous TX	configuration	WCDMA850 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	WCDMA1900 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	0.077	0.19	0.267	Body SAR	Back	0.187	0.19	0.377
Body SAR	Front	0.084	0.19	0.274	Body SAR	Front	0.181	0.19	0.371

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Simultaneous Transmission Summation for Hotspot (1cm)

Simultaneous TX	configuration	GSM850 Scaled SAR(W/kg)	2.4GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GSM1900 Scaled SAR(W/kg)	2.4GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	1.358	0.092	1.450	Body SAR	Back	0.16	0.092	0.252
	Front	0.511	0.03	0.541		Front	0.144	0.03	0.174
	Left	0.619	-	0.619		Left	0.096	-	0.096
	Right	1.029	0.068	1.097		Right	0.032	0.068	0.100
	Bottom	0.132	-	0.132		Bottom	0.092	-	0.092
	Top	-	0.018	0.018		Top	-	0.018	0.018

Simultaneous TX	configuration	WCDMA850 Scaled SAR(W/kg)	2.4GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	WCDMA1900 Scaled SAR(W/kg)	2.4GHz WIFI Scaled SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	0.077	0.092	0.169	Body SAR	Back	0.187	0.092	0.279
	Front	0.084	0.03	0.114		Front	0.181	0.03	0.211
	Left	0.054	-	0.054		Left	0.111	-	0.111
	Right	0.02	0.068	0.088		Right	0.035	0.068	0.103
	Bottom	0.049	-	0.049		Bottom	0.081	-	0.081
	Top	-	0.018	0.018		Top	-	0.018	0.018

Simultaneous TX	configuration	GSM850 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	GSM1900 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	1.358	0.19	1.548	Body SAR	Back	0.16	0.19	0.350
	Front	0.511	0.19	0.701		Front	0.144	0.19	0.334
	Left	0.619	0.19	0.809		Left	0.096	0.19	0.286
	Right	1.029	0.19	1.219		Right	0.032	0.19	0.222
	Bottom	0.132	0.19	0.322		Bottom	0.092	0.19	0.282
	Top	-	0.19	0.190		Top	-	0.19	0.190

Simultaneous TX	configuration	WCDMA850 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)	Simultaneous TX	configuration	WCDMA1900 Scaled SAR(W/kg)	BT SAR (W/kg)	∑SAR (W/kg)
Body SAR	Back	0.077	0.19	0.267	Body SAR	Back	0.187	0.19	0.377
	Front	0.084	0.19	0.274		Front	0.181	0.19	0.371
	Left	0.054	0.19	0.244		Left	0.111	0.19	0.301
	Right	0.02	0.19	0.210		Right	0.035	0.19	0.225
	Bottom	0.049	0.19	0.239		Bottom	0.081	0.19	0.271
	Top	-	0.19	0.190		Top	-	0.19	0.190

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Note;

- Body-Worn SAR : Although body-worn accessory conditions are typically for voice configurations, the GPRS slot frame averaged output power was more conservative and was included for the body-worn accessory SAR assessment.
- The EUT front body-worn configuration is provided to cover any potential accessory that will position the EUT in this manner.

13.1 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.

Per FCC KDB 447498 D01v05, Bluetooth Body was not required based on the maximum conducted power and the Bluetooth antenna to user separation distance.

$$\frac{Max\ Power\ of\ Channel(mW)}{Test\ Separation\ Dist(mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

. Mode	Frequency	Maximum Allowed Power	Separatuin Distance	≤ 3.0
	[MHz]	[mW]	[mm]	
Bluetooth	2440	8.91	10	1.39

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14. SAR Measurement Variability and Uncertainty

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Frequency		Modulation	Battery	Configuration	Original SAR(mW/g)	Repeated SAR(mW/g)	Largest to Smallest SAR Ratio	Plot No.
MHz	Channel							
824.2	128 (low)	GPRS 3Tx	Standard	Rear	1.18	1.12	1.054	57

Note(s):

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

2. Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.

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15. 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

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO. 1

DUT: LG-P714; 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; σ = 0.919 mho/m; $ε_r$ = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

GSM850 Left touch 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.342 mW/g

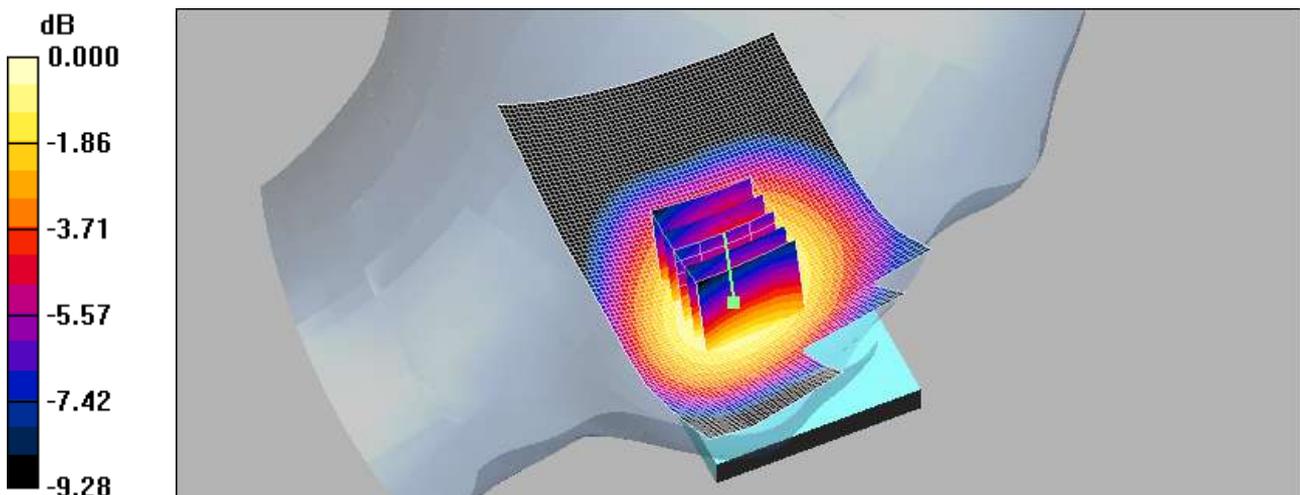**GSM850 Left touch 190/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.53 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.327 mW/g; SAR(10 g) = 0.245 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.345 mW/g

0 dB = 0.345mW/g

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Test Laboratory:	HCT CO., LTD
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:	21.0 ℃
Ambient Temperature:	21.2 ℃
Test Date:	Jan.14, 2013
Plot NO.	2

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184
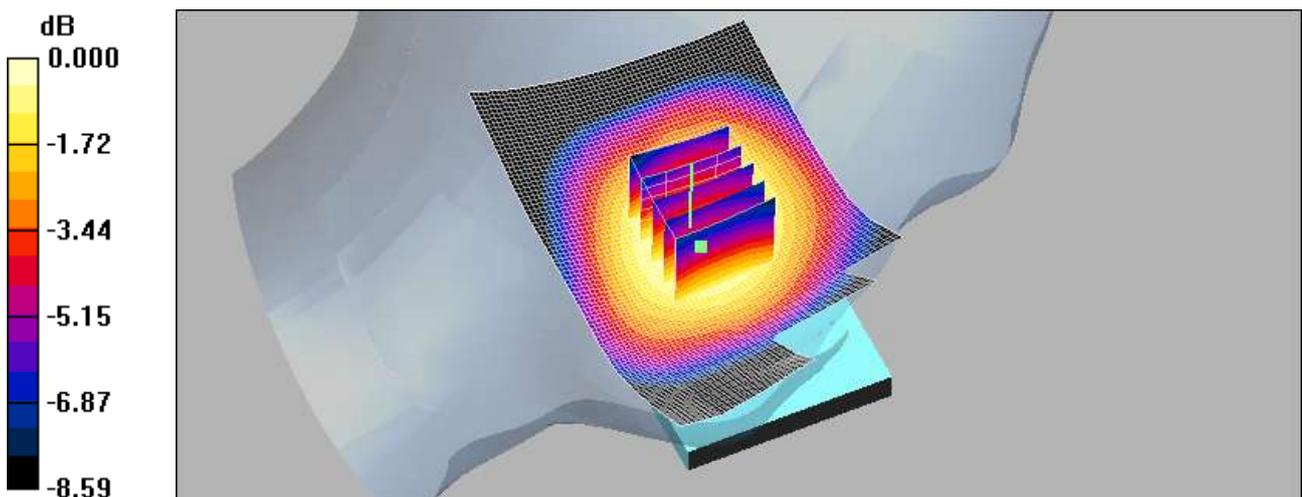
DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

GSM850 Left tilt 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.261 mW/g

GSM850 Left tilt 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.67 V/m; Power Drift = -0.081 dB
Peak SAR (extrapolated) = 0.311 W/kg
SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.197 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.265 mW/g

0 dB = 0.265mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   3

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Right touch 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.406 mW/g

GSM850 Right touch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
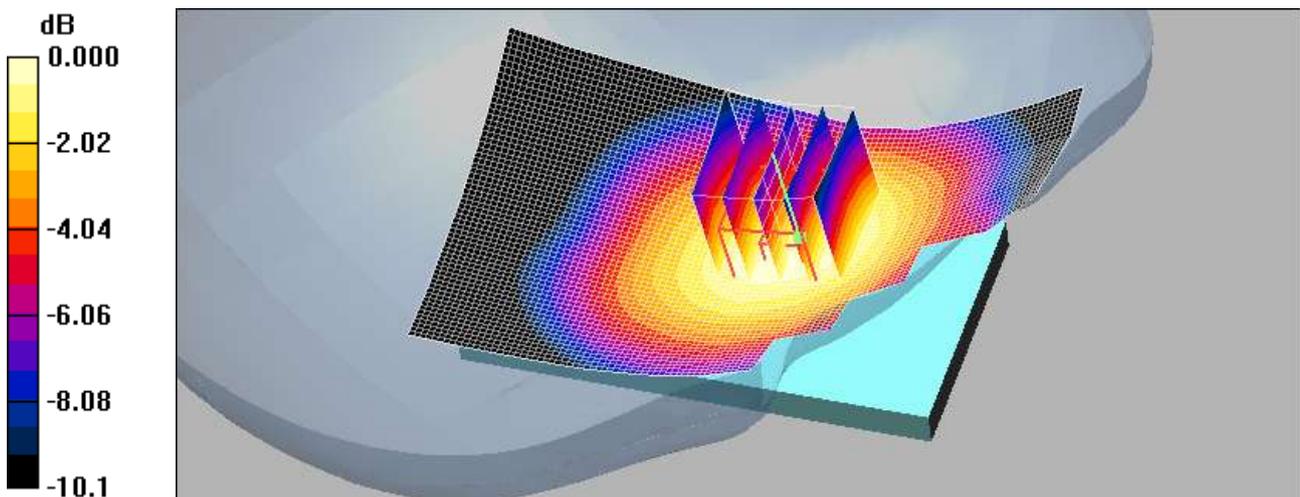Reference Value = 6.27 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.498 W/kg
SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.280 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.404 mW/g

0 dB = 0.404mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   4

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
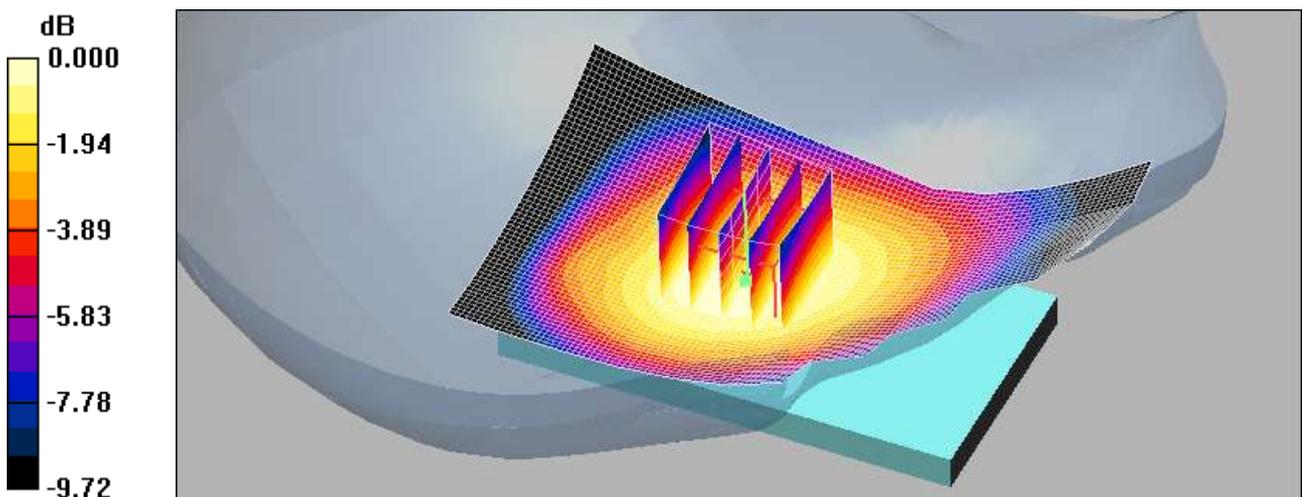Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Right tilt 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.298 mW/g

GSM850 Right tilt 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 0.364 W/kg
SAR(1 g) = 0.285 mW/g; SAR(10 g) = 0.213 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.299 mW/g

0 dB = 0.299mW/g

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Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN

Liquid Temperature: 21.0 ℃

Ambient Temperature: 21.2 ℃

Test Date: Jan.14, 2013

Plot NO. 5

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3

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

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Left touch GPRS 3Tx 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.

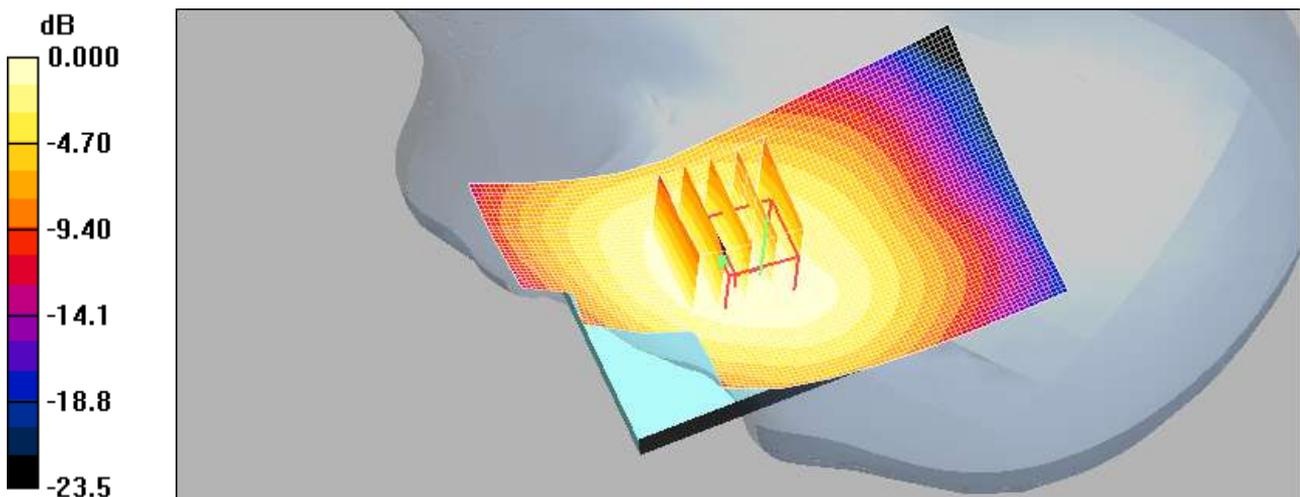Maximum value of SAR (interpolated) = 0.439 mW/g

GSM850 Left touch GPRS 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.49 V/m; Power Drift = -0.044 dB

Peak SAR (extrapolated) = 0.516 W/kg

SAR(1 g) = 0.398 mW/g; SAR(10 g) = 0.288 mW/g

Maximum value of SAR (measured) = 0.417 mW/g

0 dB = 0.417mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO. 6

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Left tilt GPRS 3Tx 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.299 mW/g

GSM850 Left tilt GPRS 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
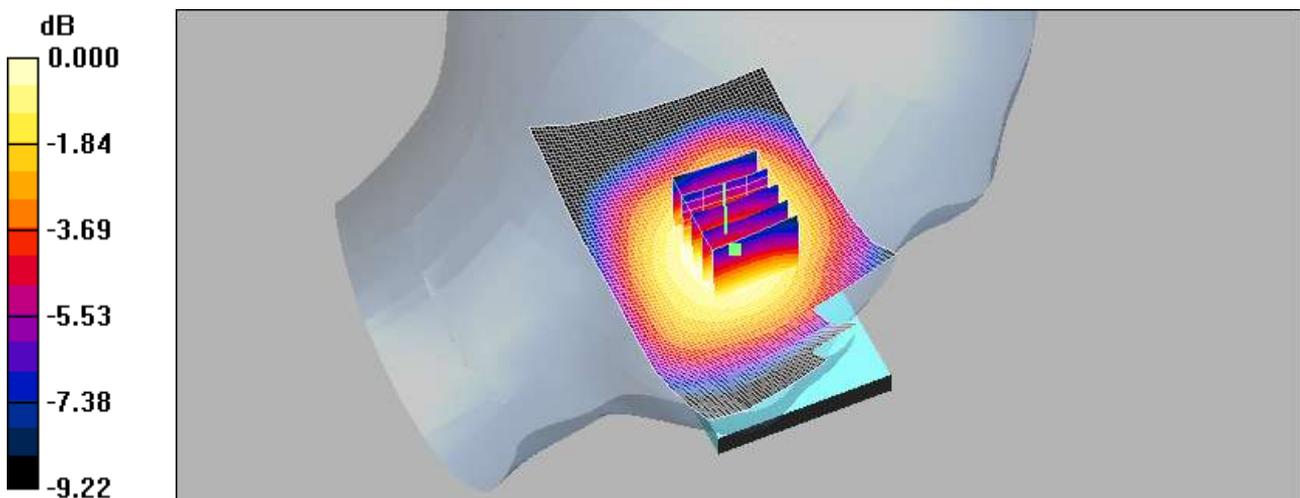Reference Value = 9.41 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 0.348 W/kg
SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.207 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.284 mW/g

0 dB = 0.284mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO. 7

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Right touch GPRS 3Tx 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
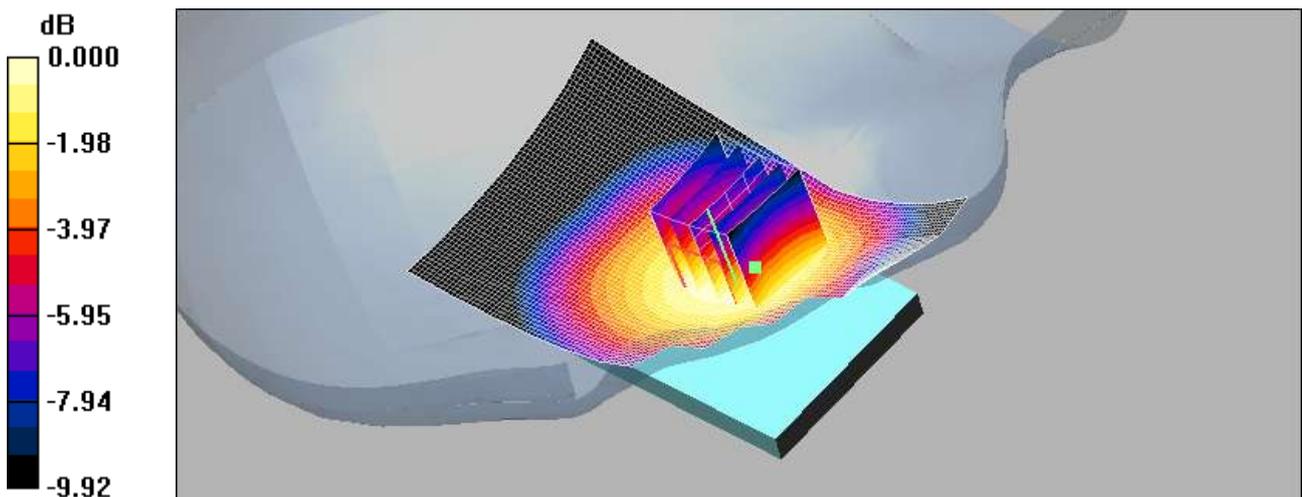Maximum value of SAR (interpolated) = 0.472 mW/g

GSM850 Right touch GPRS 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.81 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.572 W/kg
SAR(1 g) = 0.446 mW/g; SAR(10 g) = 0.328 mW/g
Maximum value of SAR (measured) = 0.464 mW/g

0 dB = 0.464mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   8

DUT: LG-P714; 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; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
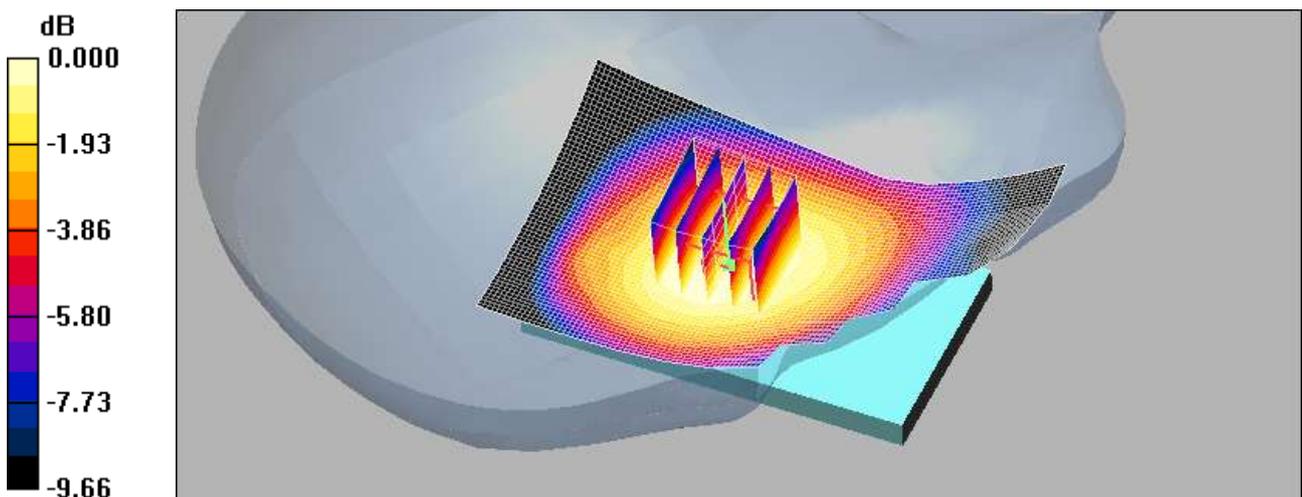Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: 1800/1900 Phantom; Type: SAM

GSM850 Right tilt GPRS 3Tx 190/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.378 mW/g

GSM850 Right tilt GPRS 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.8 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.451 W/kg
SAR(1 g) = 0.357 mW/g; SAR(10 g) = 0.268 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.374 mW/g

0 dB = 0.374mW/g

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Test Laboratory:	HCT CO., LTD
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:	21.0 ℃
Ambient Temperature:	21.2 ℃
Test Date:	Jan.14, 2013
Plot NO.	9

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3

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

DASY4 Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 Left touch 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

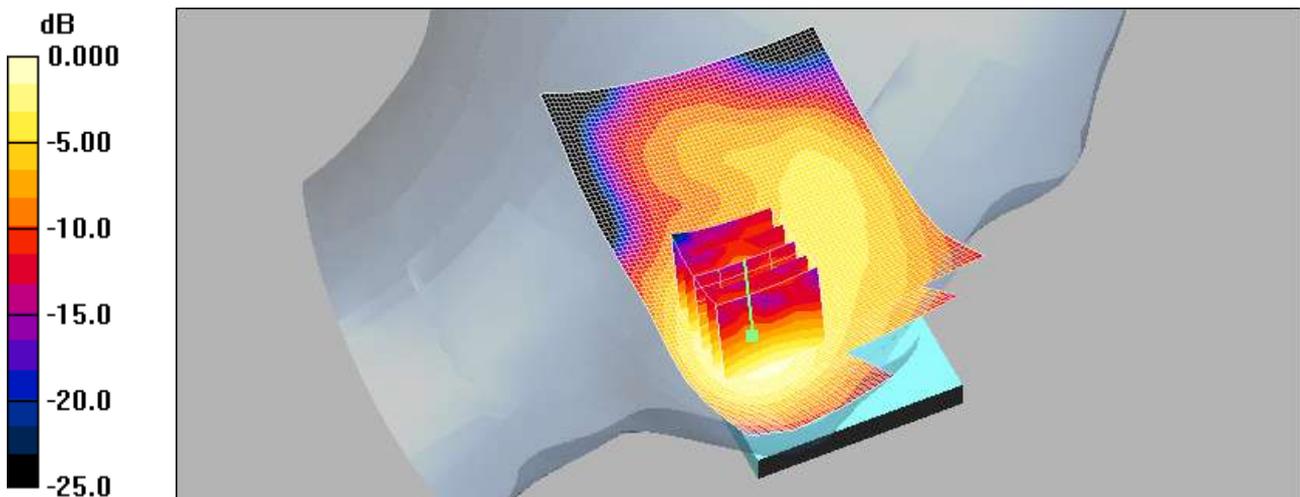Maximum value of SAR (interpolated) = 0.142 mW/g

GSM1900 Left touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.08 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 0.223 W/kg

SAR(1 g) = 0.129 mW/g; SAR(10 g) = 0.076 mW/g

Maximum value of SAR (measured) = 0.143 mW/g

0 dB = 0.143mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
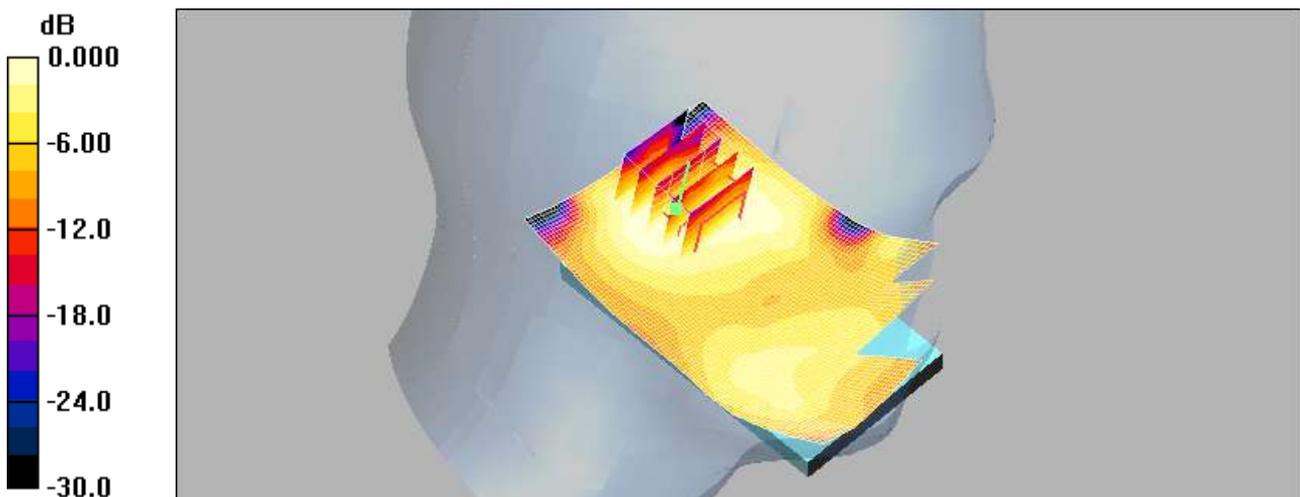Plot NO.   10

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 Left tilt 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.065 mW/g

GSM1900 Left tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.79 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.102 W/kg
SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.032 mW/g
Maximum value of SAR (measured) = 0.060 mW/g

0 dB = 0.060mW/g

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Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN

Liquid Temperature: 21.0 ℃

Ambient Temperature: 21.2 ℃

Test Date: Jan.14, 2013
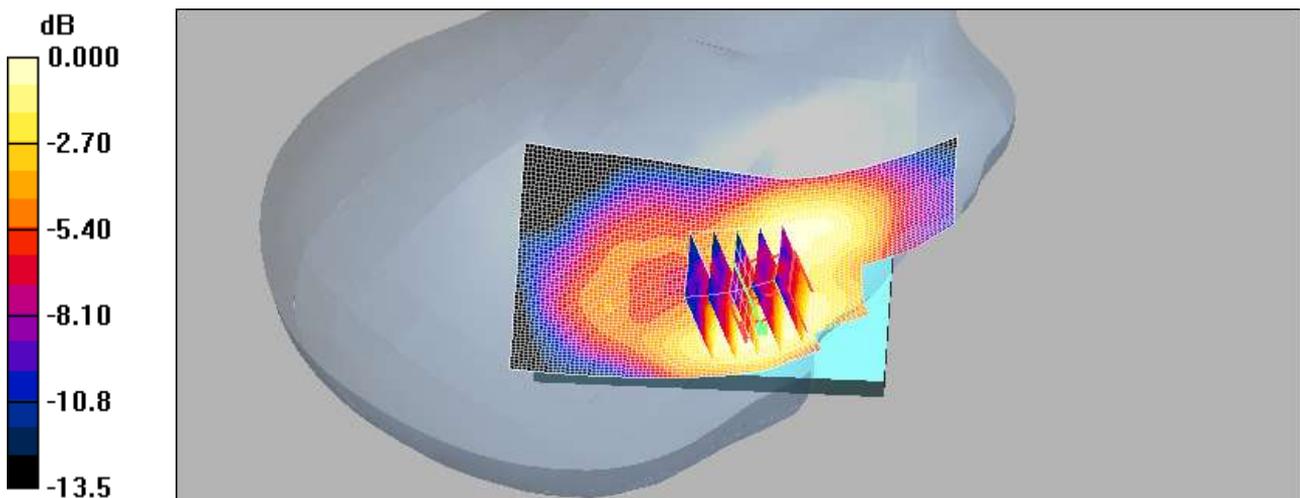
Plot NO. 11

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3

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

DASY4 Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 Right touch 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

GSM1900 Right touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.31 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.094 W/kg

SAR(1 g) = 0.060 mW/g; SAR(10 g) = 0.034 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/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                           Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   12

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 Right tilt 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.060 mW/g

GSM1900 Right tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.82 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.076 W/kg
SAR(1 g) = 0.050 mW/g; SAR(10 g) = 0.028 mW/g
Maximum value of SAR (measured) = 0.057 mW/g

0 dB = 0.057mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
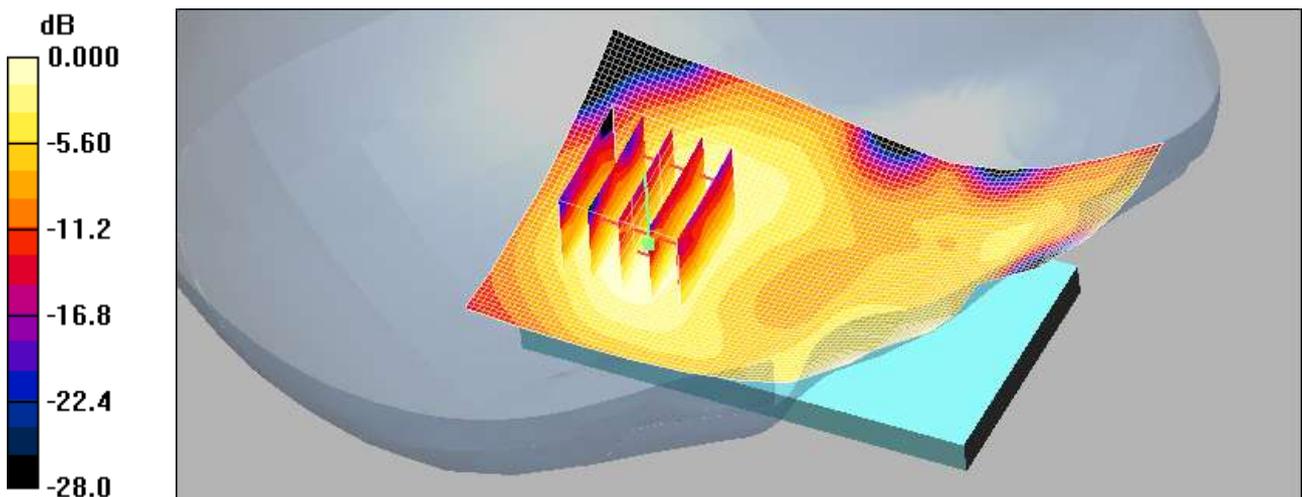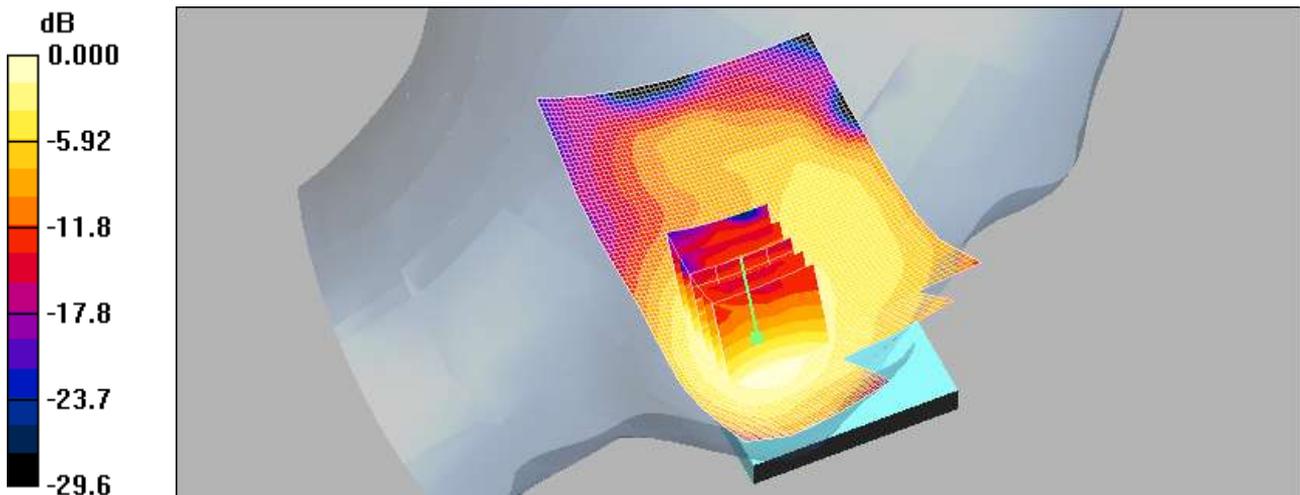Plot NO.   13

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 GPRS 3Tx Left touch 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.185 mW/g

GSM1900 GPRS 3Tx Left touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.98 V/m; Power Drift = -0.161 dB
Peak SAR (extrapolated) = 0.305 W/kg
SAR(1 g) = 0.170 mW/g; SAR(10 g) = 0.096 mW/g
Maximum value of SAR (measured) = 0.183 mW/g

0 dB = 0.183mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                              Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
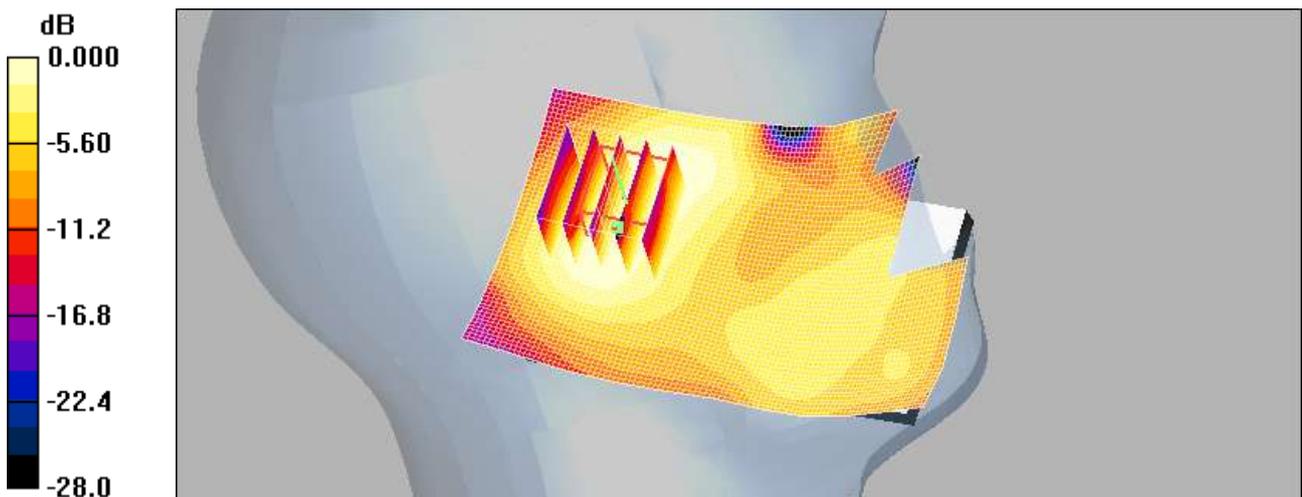Plot NO.   14

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 GPRS 3Tx Left tilt 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.072 mW/g

GSM1900 GPRS 3Tx Left tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.02 V/m; Power Drift = 0.118 dB
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.037 mW/g
Maximum value of SAR (measured) = 0.069 mW/g

0 dB = 0.069mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                         Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
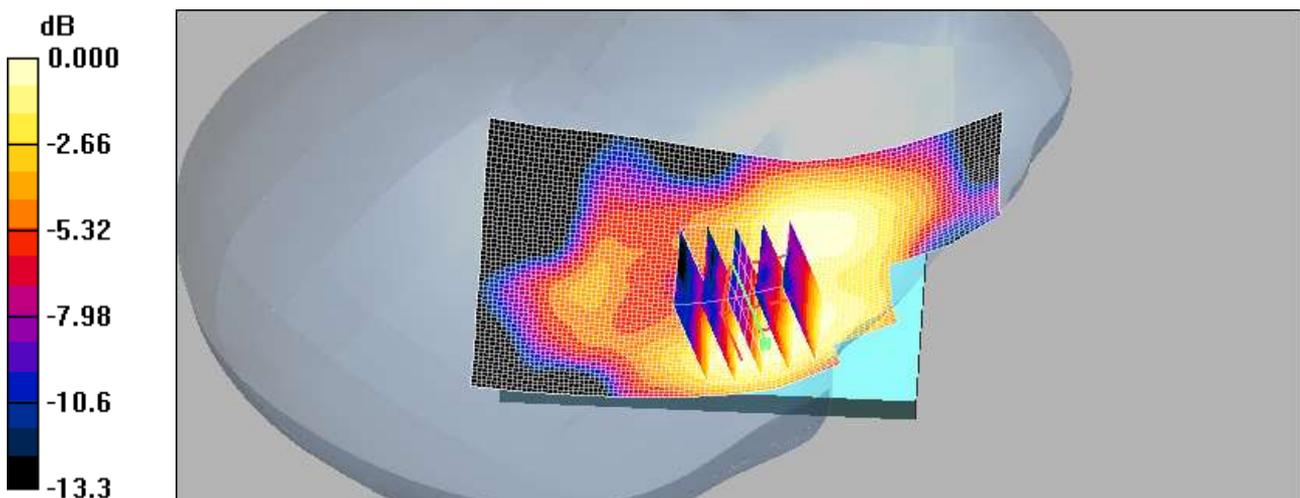Plot NO.   15

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 GPRS 3Tx Right touch 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.083 mW/g

GSM1900 GPRS 3Tx Right touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.42 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.121 W/kg
SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.083 mW/g

0 dB = 0.083mW/g

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Test Laboratory:　　　　　　　HCT CO., LTD
EUT Type:　　　　　　　　　　Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:　　　　　21.0 ℃
Ambient Temperature:　　　　21.2 ℃
Test Date:　　　　　　　　　Jan.14, 2013
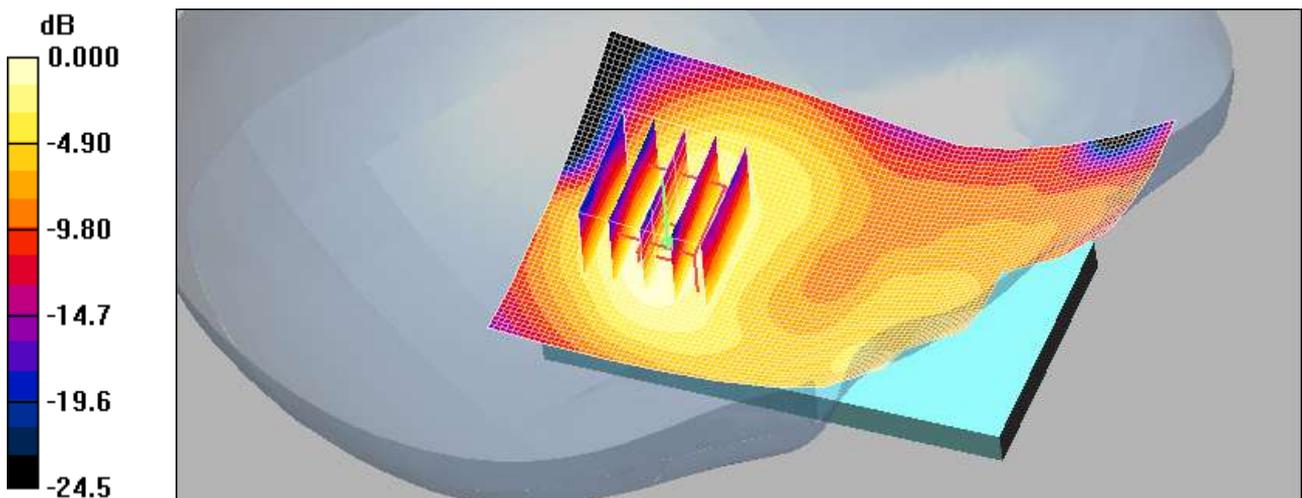Plot NO.　　　　　　　　　　16

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

GSM1900 GPRS 3Tx Right tilt 661/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.073 mW/g

GSM1900 GPRS 3Tx Right tilt 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.33 V/m; Power Drift = -0.074 dB
Peak SAR (extrapolated) = 0.122 W/kg
SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.036 mW/g
Maximum value of SAR (measured) = 0.070 mW/g

0 dB = 0.070mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                            Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   17

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
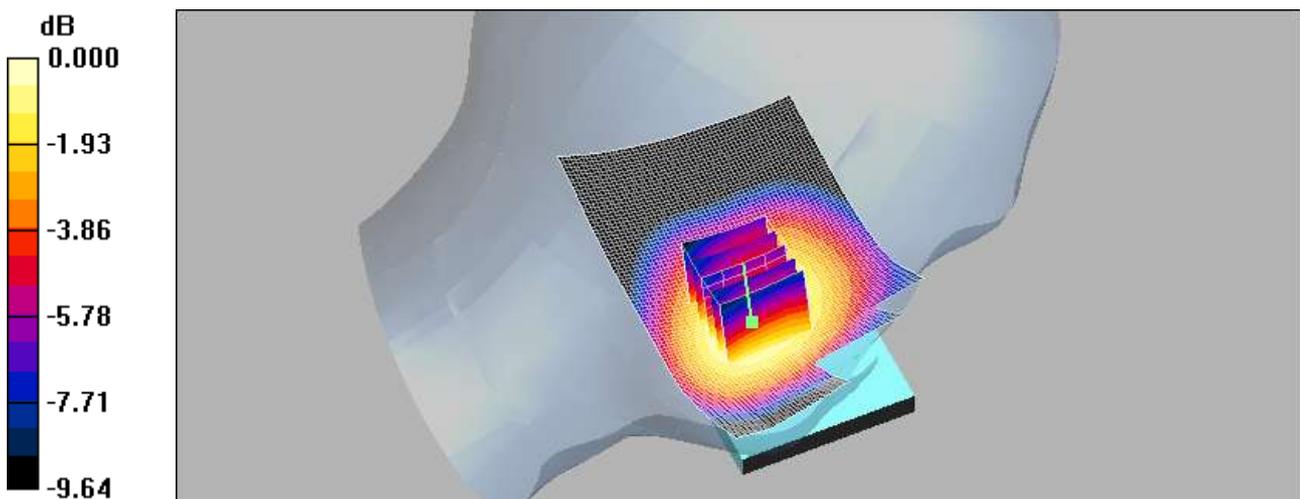Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

WCDMA850 Left touch 4183/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.327 mW/g

WCDMA850 Left touch 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.48 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.233 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.329 mW/g

0 dB = 0.329mW/g

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Test Laboratory:	HCT CO., LTD
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:	21.0 ℃
Ambient Temperature:	21.2 ℃
Test Date:	Jan.14, 2013
Plot NO.	18

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184
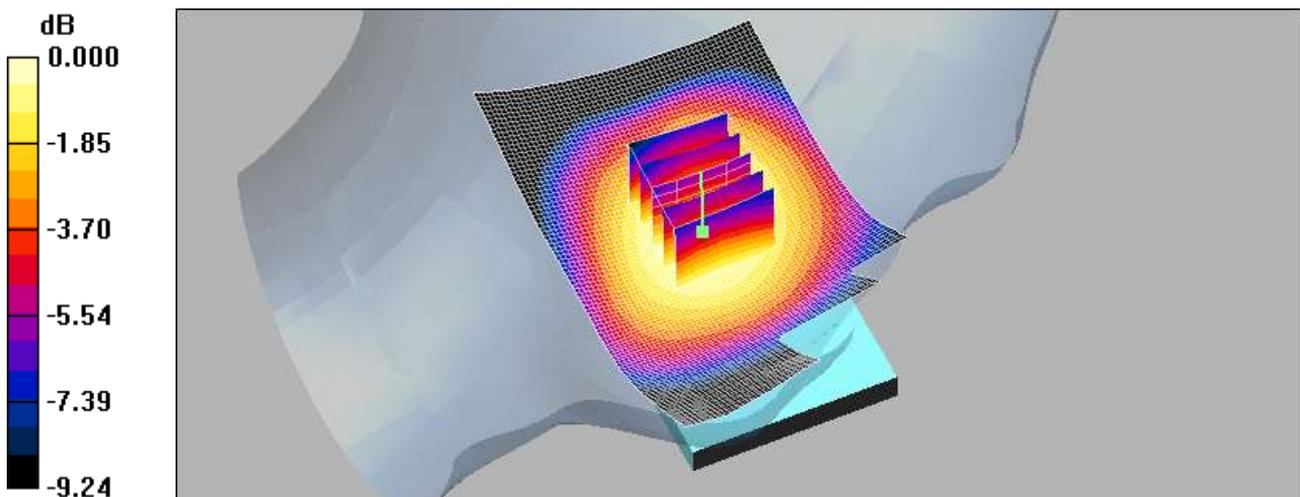
DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

WCDMA850 Left tilt 4183/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.242 mW/g

WCDMA850 Left tilt 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 0.286 W/kg
SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.180 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.243 mW/g

0 dB = 0.243mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   19

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

WCDMA850 Right touch 4183/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.341 mW/g

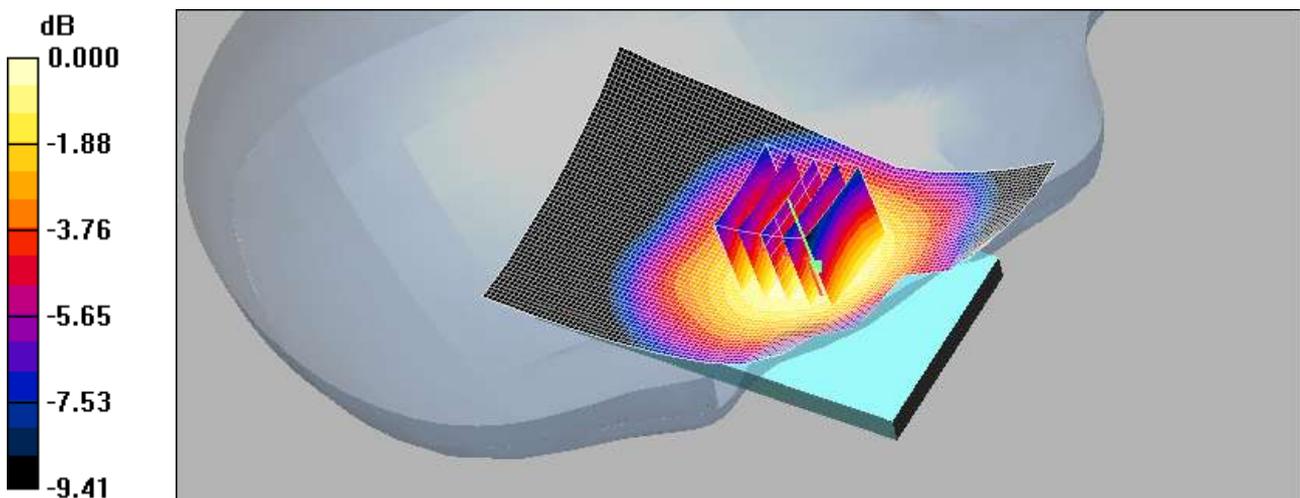**WCDMA850 Right touch 4183/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.57 V/m; Power Drift = -0.092 dB
Peak SAR (extrapolated) = 0.402 W/kg
SAR(1 g) = 0.327 mW/g; SAR(10 g) = 0.248 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.342 mW/g

0 dB = 0.342mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
Plot NO.   20

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.919 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 835/900 MHz; Type: SAM

WCDMA850 Right tilt 4183/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.225 mW/g

WCDMA850 Right tilt 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
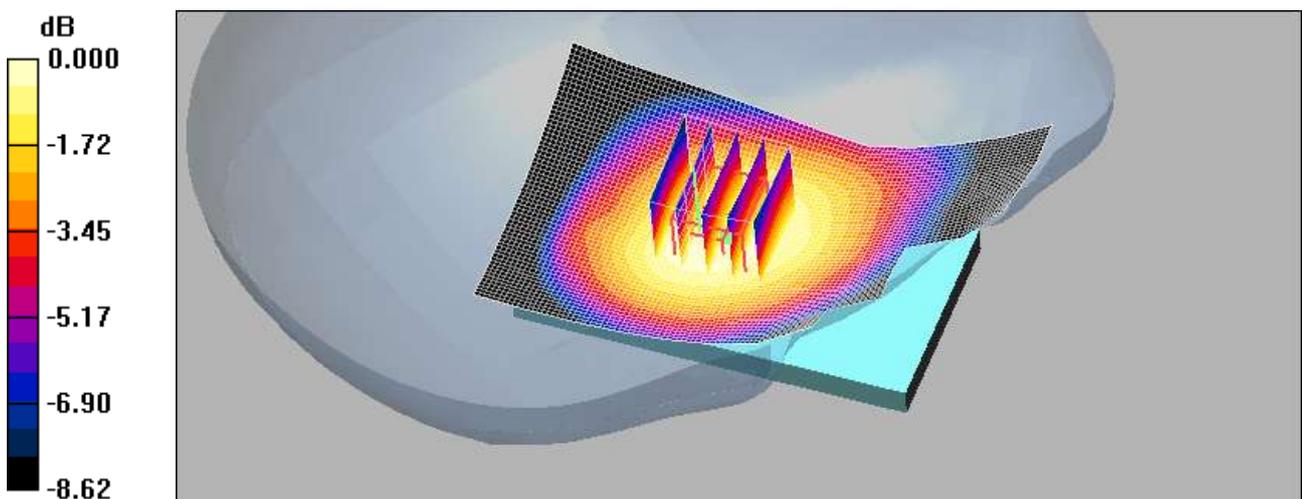Reference Value = 8.78 V/m; Power Drift = 0.146 dB
Peak SAR (extrapolated) = 0.268 W/kg
SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.166 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.225 mW/g

dB
0.000
-1.72
-3.45
-5.17
-6.90
-8.62

0 dB = 0.225mW/g

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Test Laboratory:	HCT CO., LTD
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:	21.0 ℃
Ambient Temperature:	21.2 ℃
Test Date:	Jan.14, 2013
Plot NO.	21

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

WCDMA1900 Left touch 9400/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.273 mW/g

WCDMA1900 Left touch 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.10 V/m; Power Drift = 0.167 dB
Peak SAR (extrapolated) = 0.460 W/kg
SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.271 mW/g

0 dB = 0.271mW/g

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Test Laboratory:　　　　　　HCT CO., LTD
EUT Type:　　　　　　　　Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:　　　　21.0 ℃
Ambient Temperature:　　　21.2 ℃
Test Date:　　　　　　　　Jan.14, 2013
Plot NO.　　　　　　　　　22
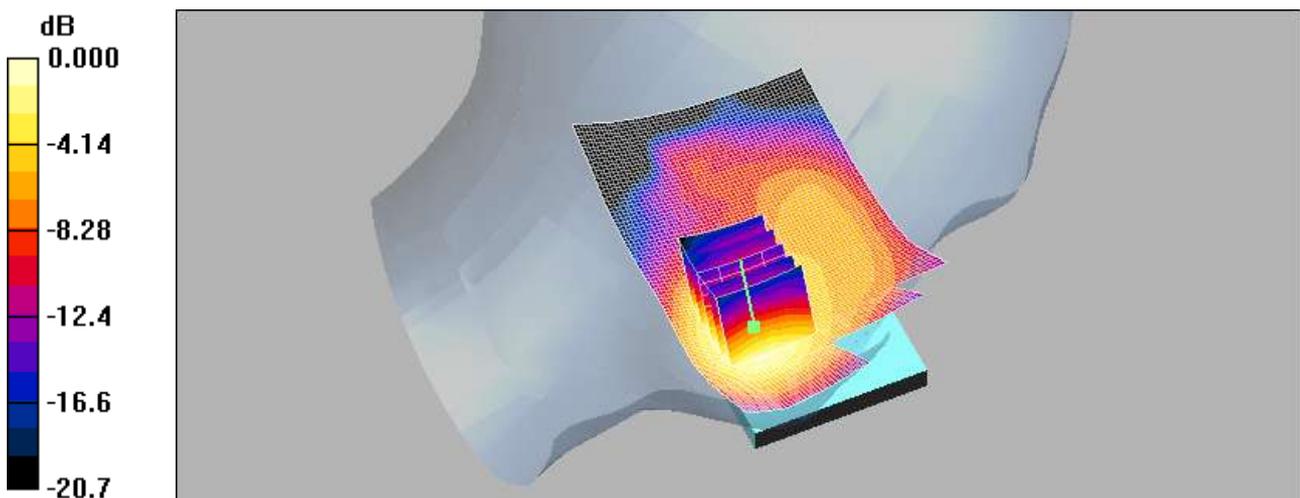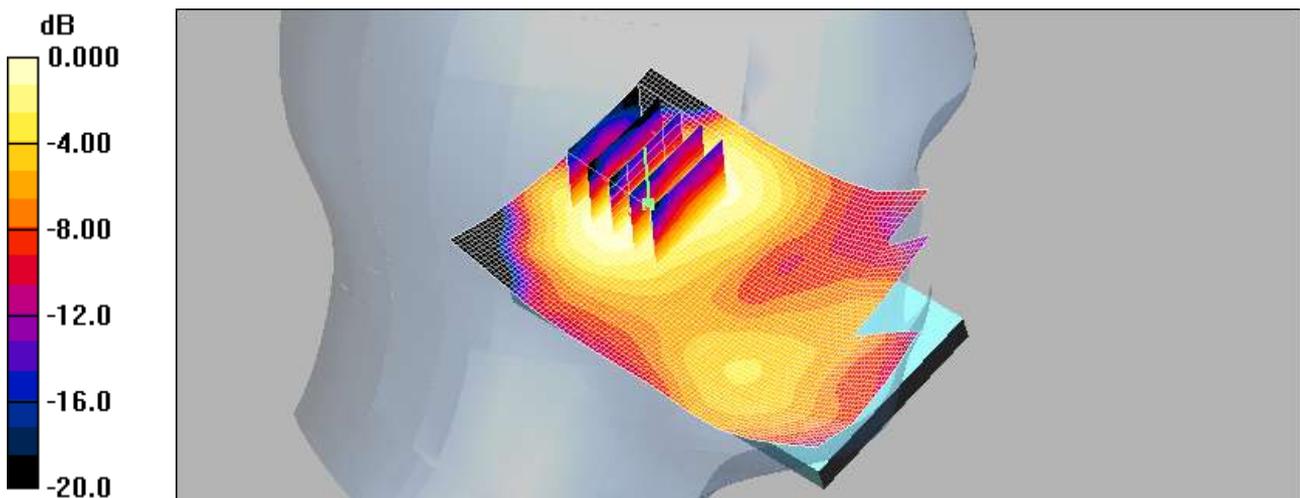
DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

WCDMA1900 Left tilt 9400/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.097 mW/g

WCDMA1900 Left tilt 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.05 V/m; Power Drift = 0.124 dB
Peak SAR (extrapolated) = 0.149 W/kg
SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.092 mW/g

0 dB = 0.092mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
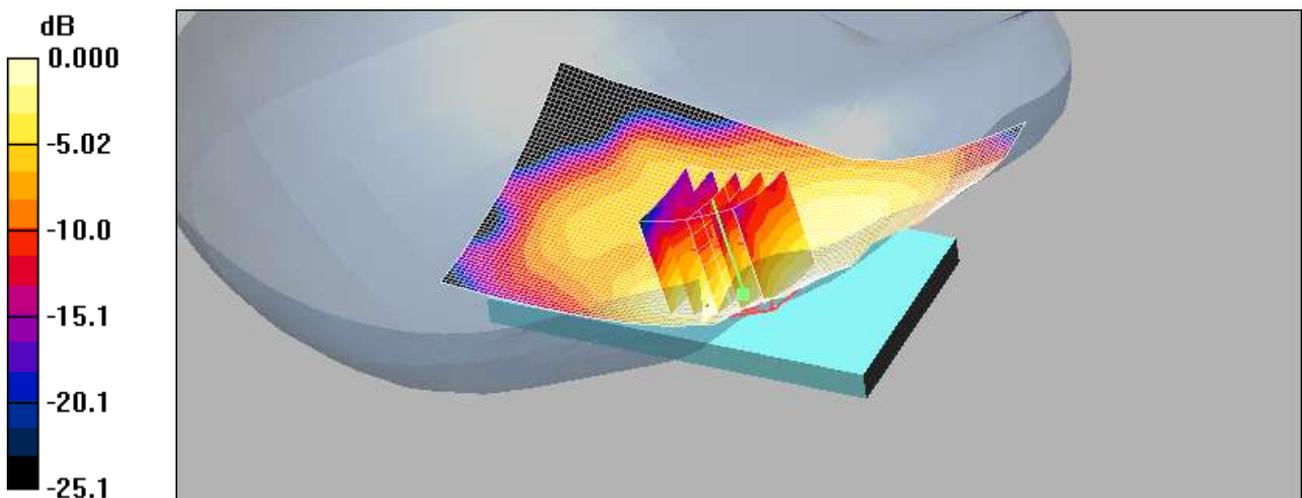Plot NO. 23

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

WCDMA1900 Right touch 9400/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.130 mW/g

WCDMA1900 Right touch 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.84 V/m; Power Drift = -0.047 dB
Peak SAR (extrapolated) = 0.202 W/kg
SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.071 mW/g
Maximum value of SAR (measured) = 0.127 mW/g

0 dB = 0.127mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.0 ℃
Ambient Temperature: 21.2 ℃
Test Date: Jan.14, 2013
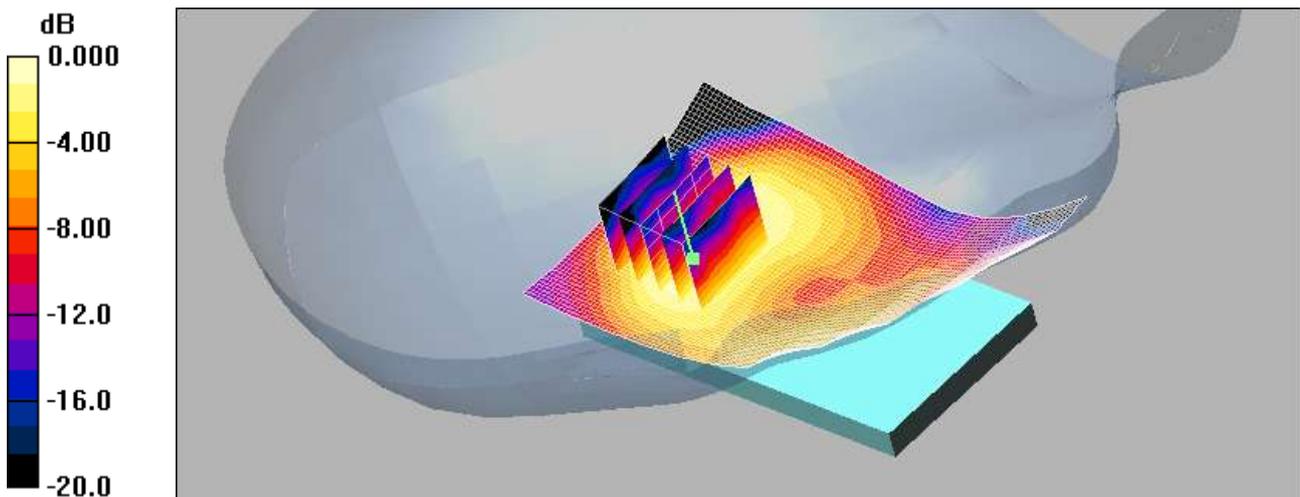Plot NO.   24

DUT: LG-P714; Type: bar; Serial: #1

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2012-09-18
- Phantom: SAM 1800/1900 MHz; Type: SAM

WCDMA1900 Right tilt 9400/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.087 mW/g

WCDMA1900 Right tilt 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.88 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.137 W/kg
SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.084 mW/g

0 dB = 0.084mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.16, 2013
Plot NO.   25

DUT: LG-P714; Type: bar; Serial: #1

Communication System: 2450MHz FCC; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.78 mho/m; $ε_r$ = 39; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(6.76, 6.76, 6.76); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: 835/900 Phamtom ; Type: SAM

WIFI2450MHz Left touch 1Mbps 6ch/Area Scan (81x121x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.096 mW/g

WIFI2450MHz Left touch 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
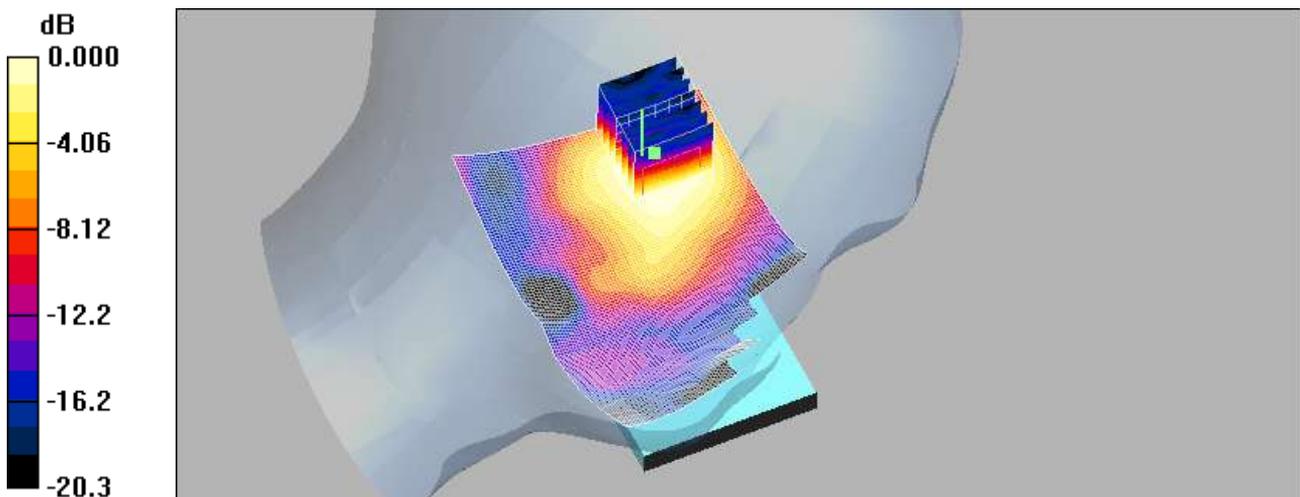Reference Value = 5.80 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.047 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.097 mW/g

0 dB = 0.097mW/g

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Test Laboratory:　　　　　　HCT CO., LTD
EUT Type:　　　　　　　　　Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:　　　　21.1 ℃
Ambient Temperature:　　　21.3 ℃
Test Date:　　　　　　　　　Jan.16, 2013
Plot NO.　　　　　　　　　　26

DUT: LG-P714; Type: bar; Serial: #1

Communication System: 2450MHz FCC; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.78 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184
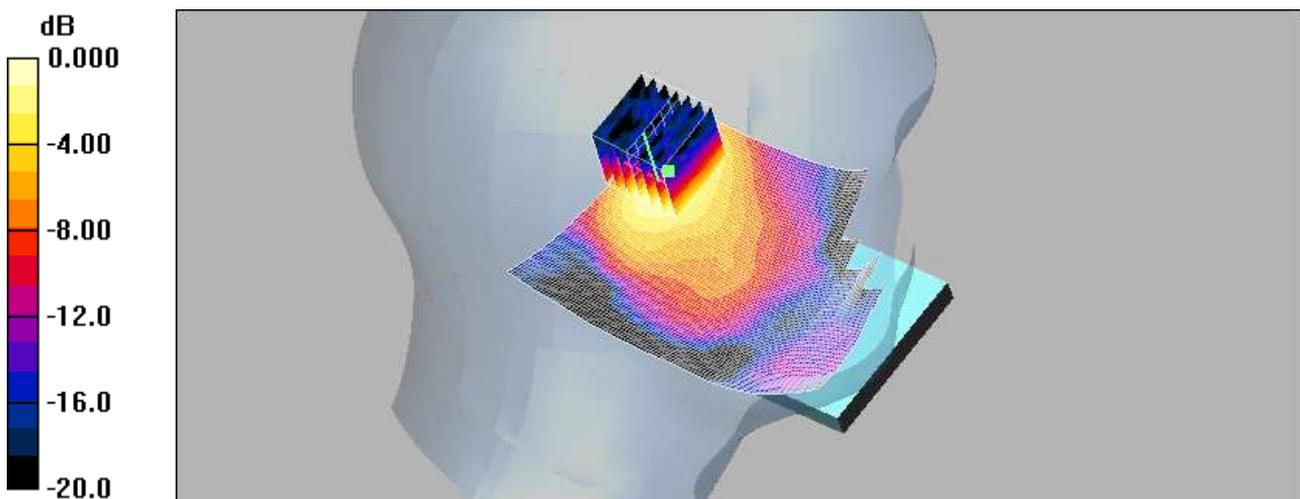
DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(6.76, 6.76, 6.76); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: 835/900 Phamtom ; Type: SAM

WIFI2450MHz Left tilt 1Mbps 6ch/Area Scan (81x121x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.071 mW/g

WIFI2450MHz Left tilt 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.69 V/m; Power Drift = 0.175 dB
Peak SAR (extrapolated) = 0.165 W/kg
SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.031 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.074 mW/g

0 dB = 0.074mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                            Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.16, 2013
Plot NO.   27

DUT: LG-P714; Type: bar; Serial: #1

Communication System: 2450MHz FCC; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.78 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(6.76, 6.76, 6.76); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: 835/900 Phamtom ; Type: SAM

WIFI2450MHz Right touch 1Mbps 6ch/Area Scan (81x121x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.049 mW/g

WIFI2450MHz Right touch 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
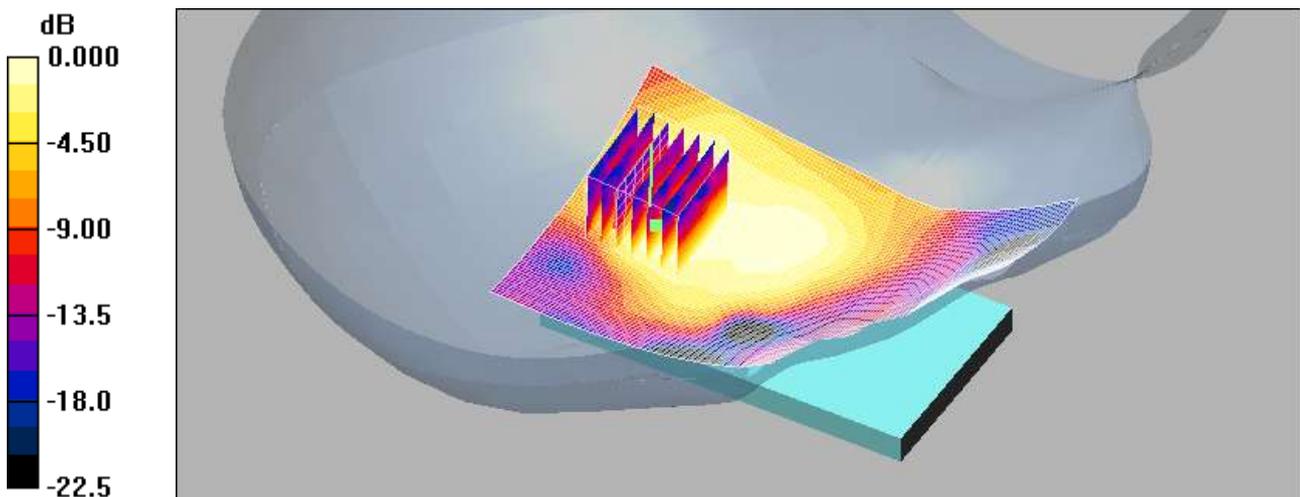Reference Value = 4.42 V/m; Power Drift = 0.096 dB
Peak SAR (extrapolated) = 0.084 W/kg
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.023 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.045 mW/g

0 dB = 0.045mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                         Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.16, 2013
Plot NO.   28

DUT: LG-P714; Type: bar; Serial: #1

Communication System: 2450MHz FCC; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.78 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
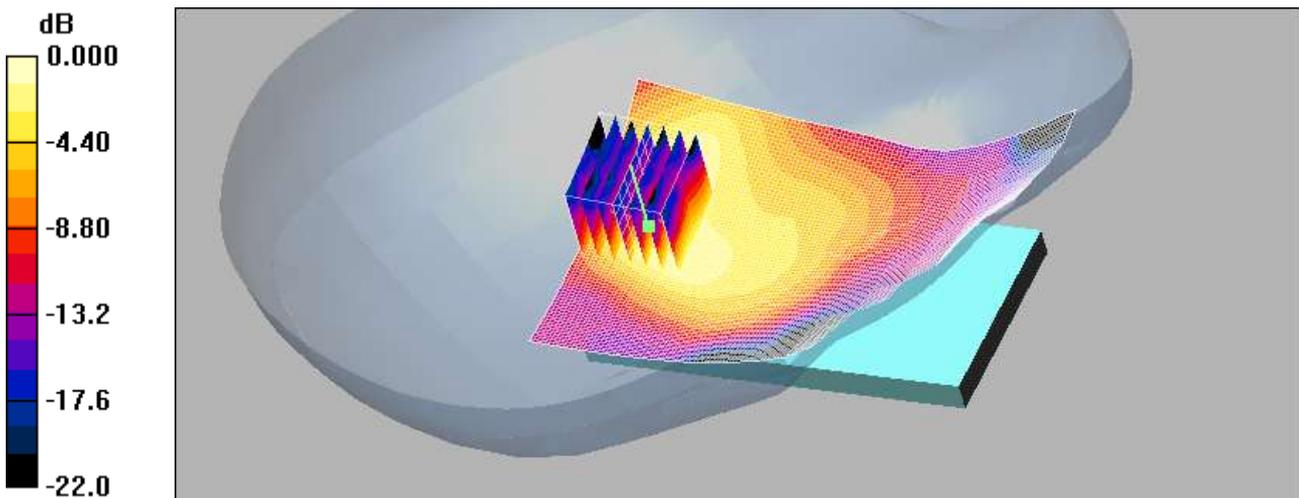Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(6.76, 6.76, 6.76); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: 835/900 Phamtom ; Type: SAM

WIFI2450MHz Right tilt 1Mbps 6ch/Area Scan (81x121x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.061 mW/g

WIFI2450MHz Right tilt 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.79 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 0.127 W/kg
SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.028 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.065 mW/g

0 dB = 0.065mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
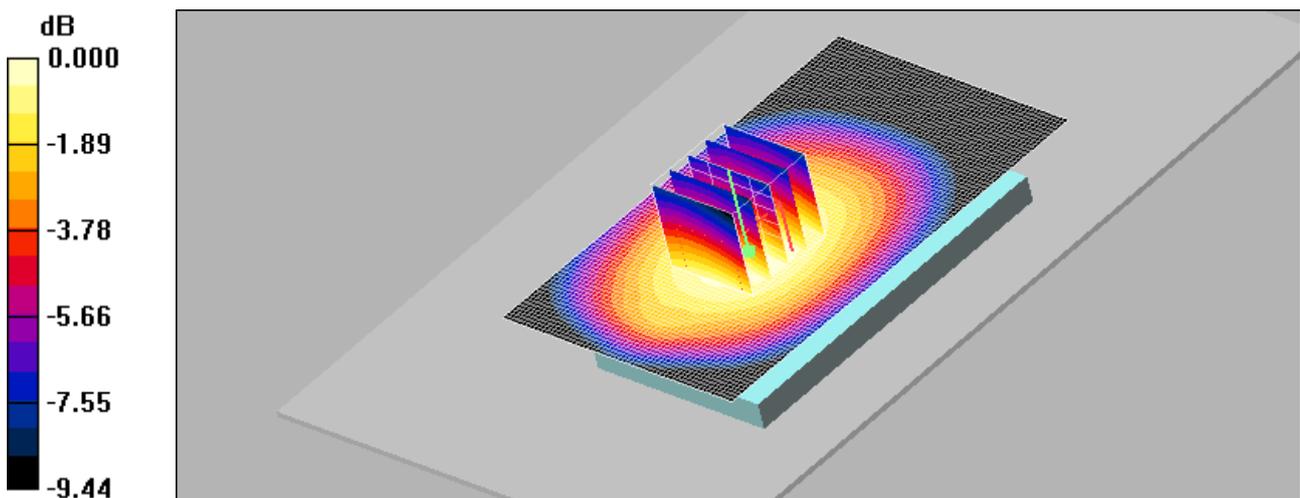Plot NO. 29

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 825 MHz; σ = 0.979 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Rear 3Tx 128/Area Scan (101x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

GSM850 Body Rear 3Tx 128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.2 V/m; Power Drift = -0.076 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.823 mW/g
Maximum value of SAR (measured) = 1.19 mW/g

0 dB = 1.19mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   30

DUT: LG-P714; 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; σ = 0.987 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Rear 3Tx 190/Area Scan (101x71x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.929 mW/g

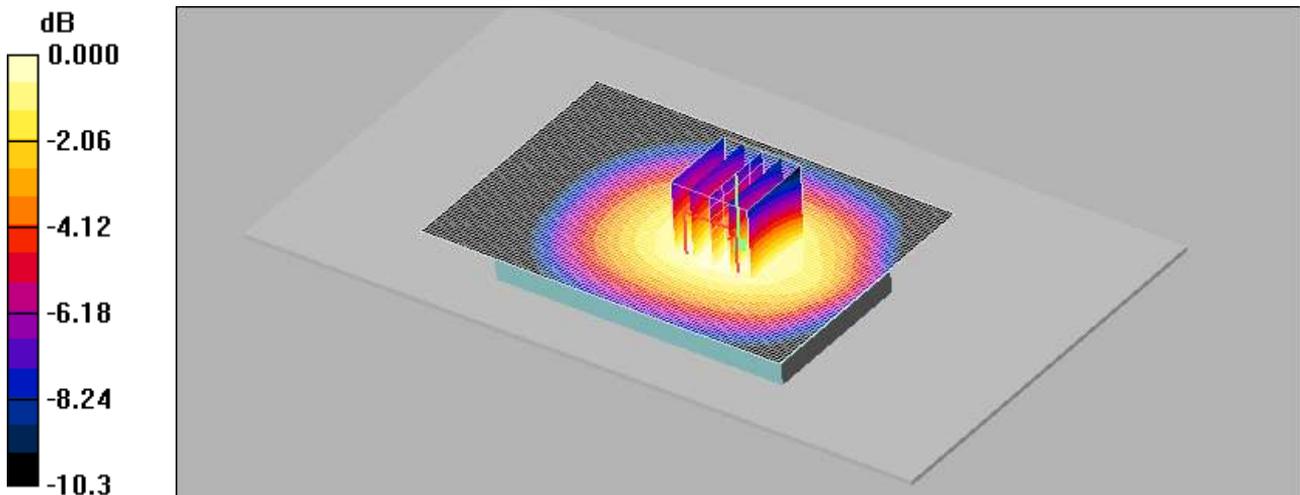**GSM850 Body Rear 3Tx 190/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.5 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.875 mW/g; SAR(10 g) = 0.644 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.925 mW/g

0 dB = 0.925mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
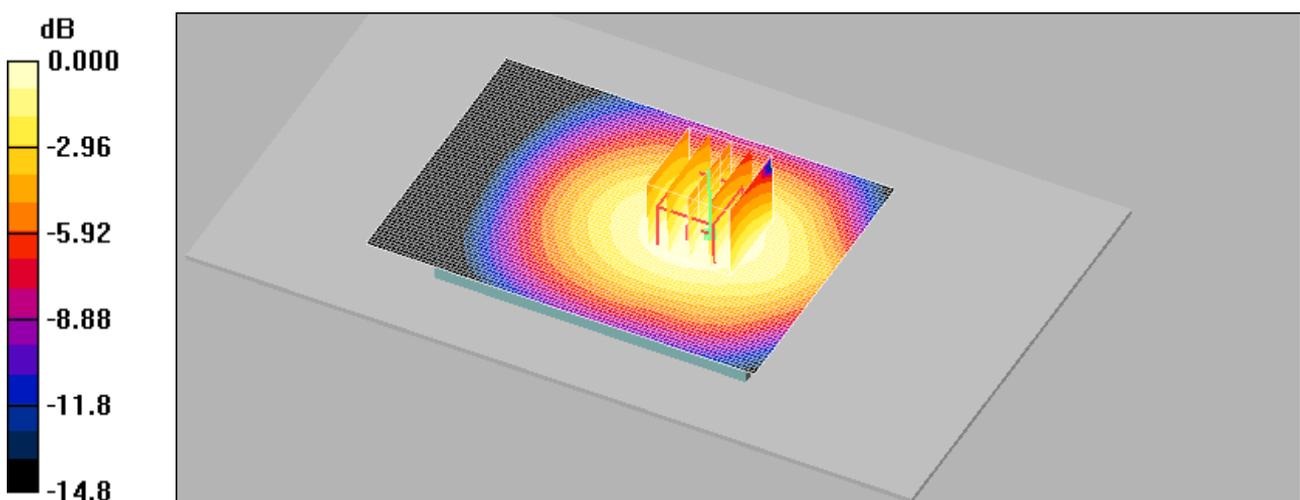Plot NO.   31

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 849.8 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 850 MHz; σ = 1 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Rear 3Tx 251/Area Scan (101x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.816 mW/g

GSM850 Body Rear 3Tx 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.042 dB
Peak SAR (extrapolated) = 0.875 W/kg
SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.599 mW/g
Maximum value of SAR (measured) = 0.779 mW/g

0 dB = 0.779mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   32

DUT: LG-P714; 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; σ = 0.987 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Front 3Tx 190/Area Scan (101x61x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.461 mW/g

GSM850 Body Front 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
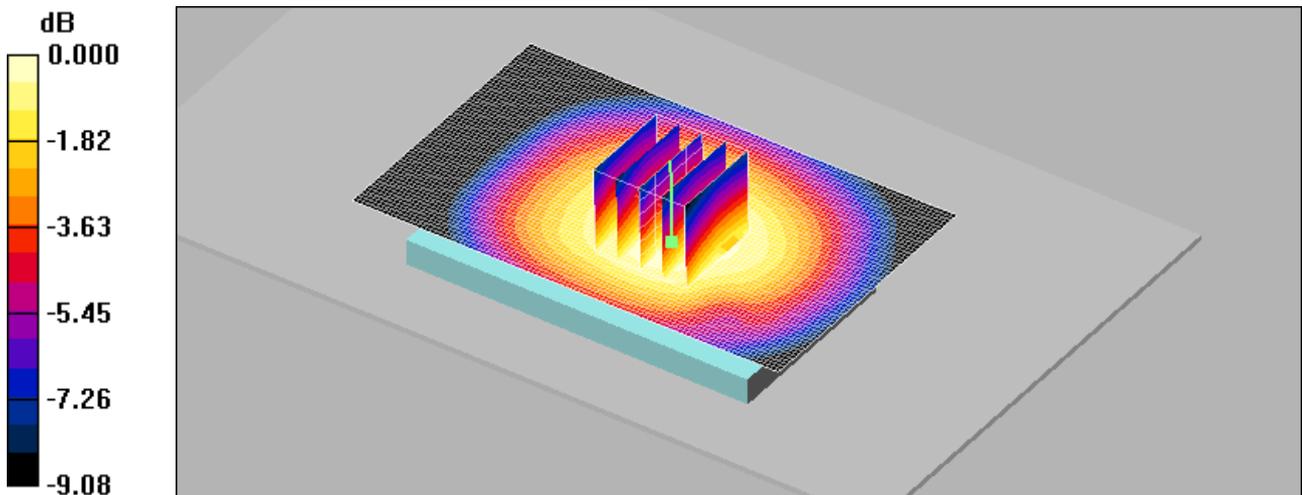Reference Value = 20.6 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.569 W/kg
SAR(1 g) = 0.444 mW/g; SAR(10 g) = 0.330 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.466 mW/g

0 dB = 0.466mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   33

DUT: LG-P714; 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; σ = 0.987 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Left side 3Tx 190/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.570 mW/g

GSM850 Body Left side 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
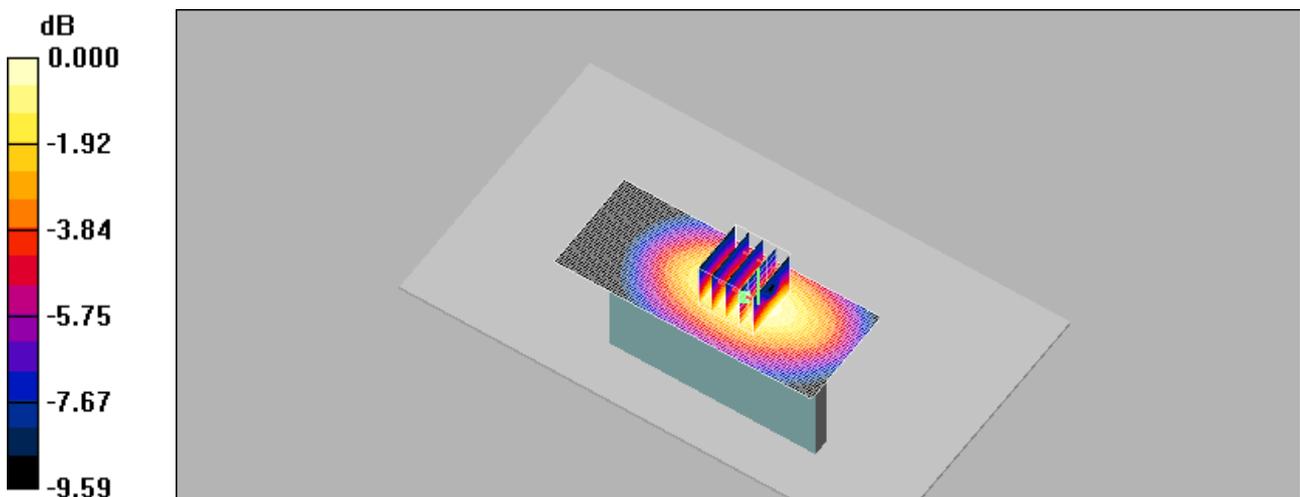Reference Value = 23.9 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 0.768 W/kg
SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.367 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.582 mW/g

0 dB = 0.582mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
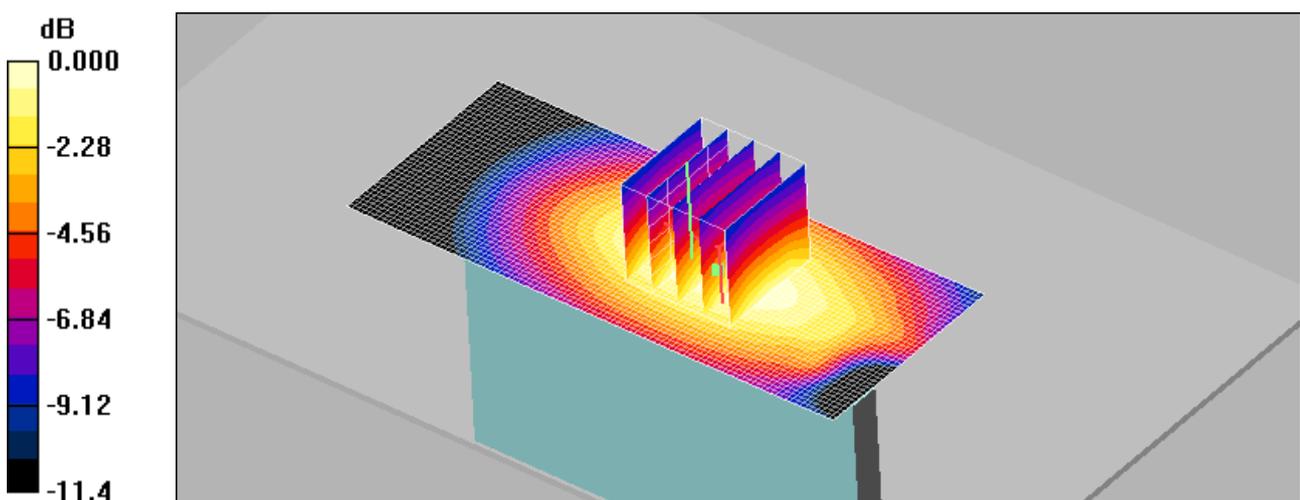Plot NO.   34

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:2.77
Medium parameters used: f = 825 MHz; σ = 0.979 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Right side 3Tx 128/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.00 mW/g

GSM850 Body Right side 3Tx 128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.0 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.921 mW/g; SAR(10 g) = 0.635 mW/g
Maximum value of SAR (measured) = 0.981 mW/g

0 dB = 0.981mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   35

DUT: LG-P714; 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; σ = 0.987 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Right side 3Tx 190/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.807 mW/g

GSM850 Body Right side 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
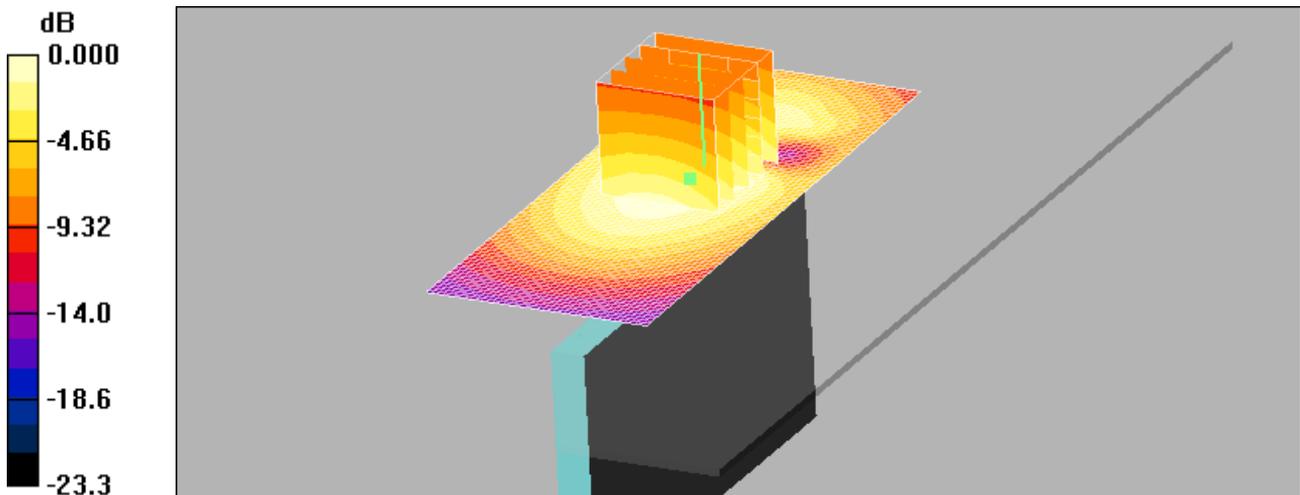Reference Value = 26.5 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.459 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.726 mW/g

0 dB = 0.726mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                            Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   36

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 850; Frequency: 849.8 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 850 MHz; σ = 1 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Right side 3Tx 251/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm
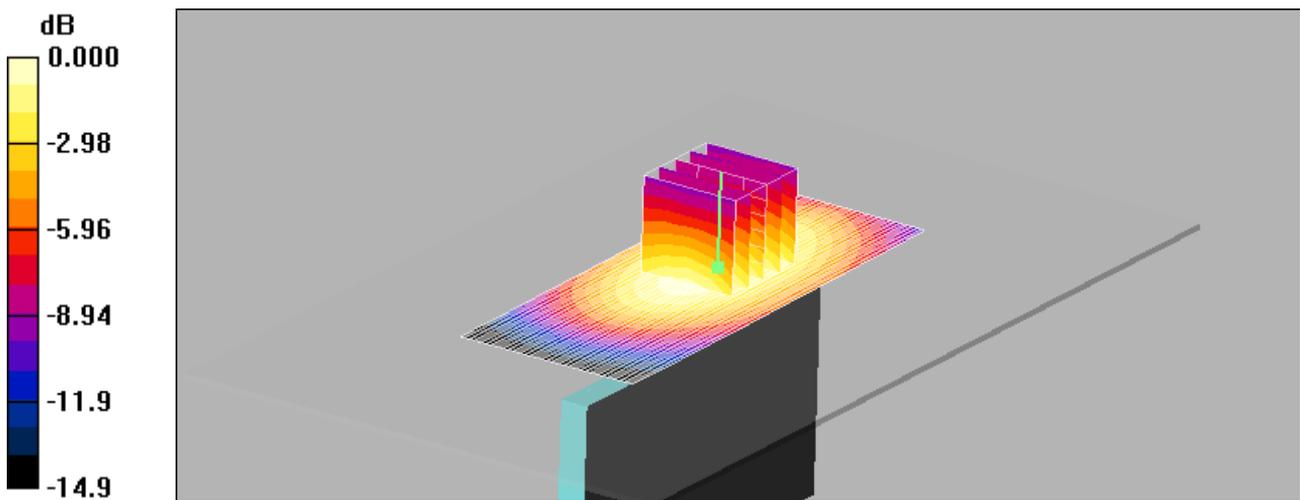Maximum value of SAR (interpolated) = 0.494 mW/g
GSM850 Body Right side 3Tx 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.6 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.664 W/kg
SAR(1 g) = 0.462 mW/g; SAR(10 g) = 0.314 mW/g
Maximum value of SAR (measured) = 0.496 mW/g

0 dB = 0.496mW/g

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Test Laboratory: HCT CO., LTD

EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                          Bluetooth, WLAN

Liquid Temperature: 21.1 ℃

Ambient Temperature: 21.3 ℃

Test Date: Jan.15, 2013

Separation Distance: 1.0 cm

Plot NO.   37

DUT: LG-P714; 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; σ = 0.987 mho/m; ε_r = 53; ρ = 1000 kg/m^3

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

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM850 Body Bottom GPRS 3Tx 190/Area Scan (51x71x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.

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

GSM850 Body Bottom GPRS 3Tx 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
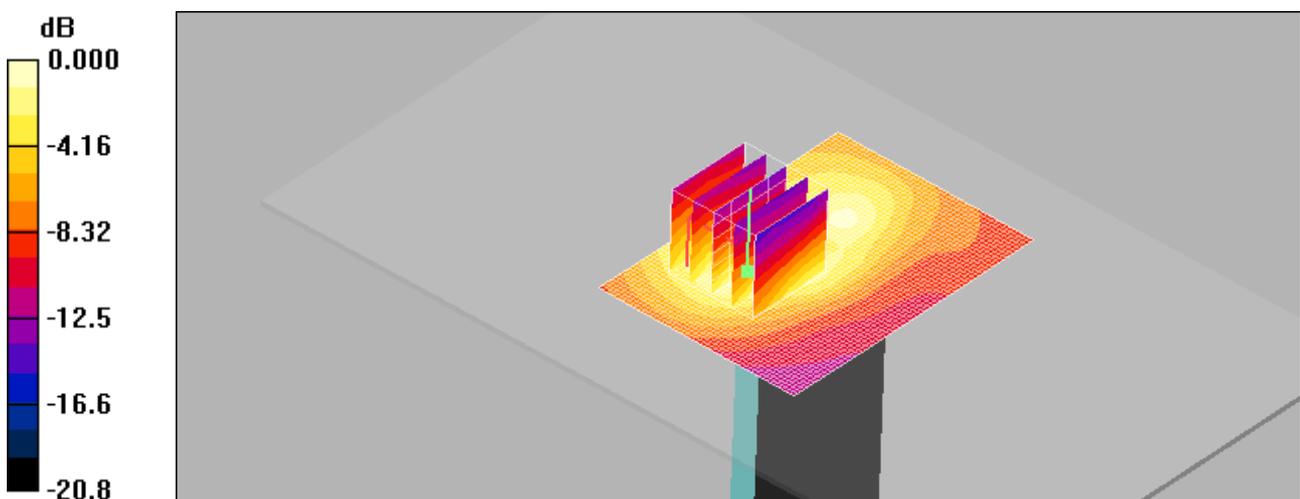
Reference Value = 9.47 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.288 W/kg

SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.065 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.132 mW/g

0 dB = 0.132mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                            Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
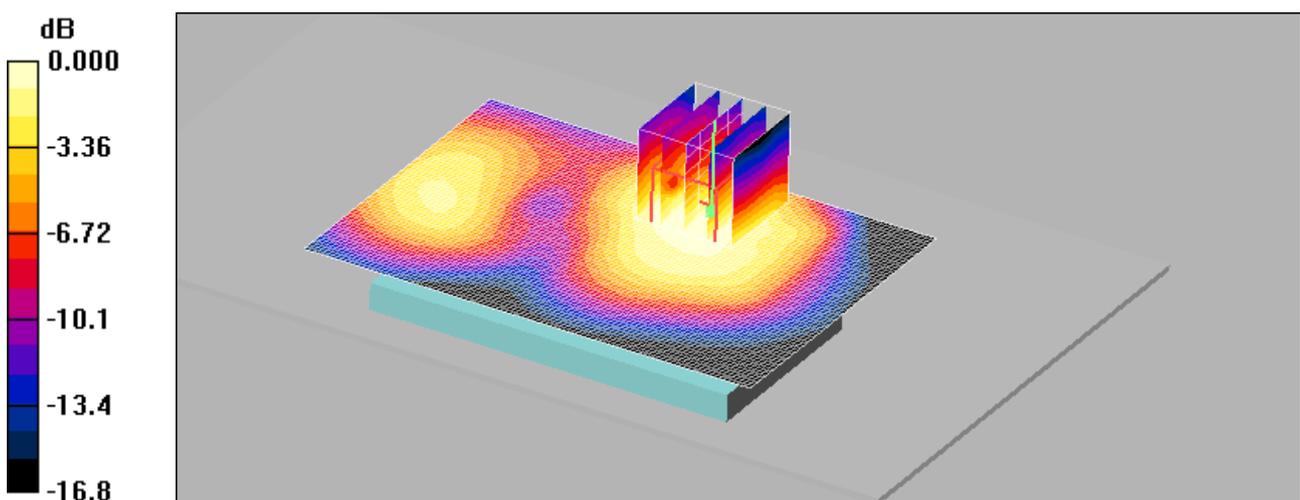Plot NO.   38

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM1900 Body Rear GPRS 3Tx/Area Scan (101x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.163 mW/g

GSM1900 Body Rear GPRS 3Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.60 V/m; Power Drift = -0.097 dB
Peak SAR (extrapolated) = 0.217 W/kg
SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.089 mW/g
Maximum value of SAR (measured) = 0.157 mW/g

0 dB = 0.157mW/g

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Test Laboratory:	HCT CO., LTD
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN
Liquid Temperature:	21.1 ℃
Ambient Temperature:	21.3 ℃
Test Date:	Jan.15, 2013
Separation Distance:	1.0 cm
Plot NO.	39

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM1900 Body Front GPRS 3Tx/Area Scan (101x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.140 mW/g

GSM1900 Body Front GPRS 3Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.27 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.204 W/kg
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.081 mW/g
Maximum value of SAR (measured) = 0.142 mW/g

0 dB = 0.142mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                                Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
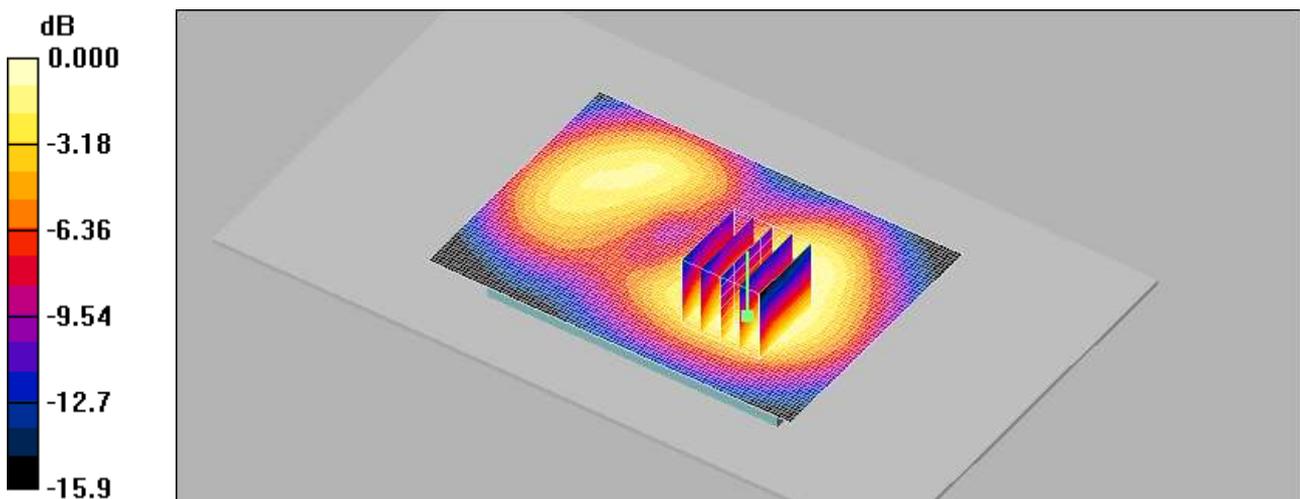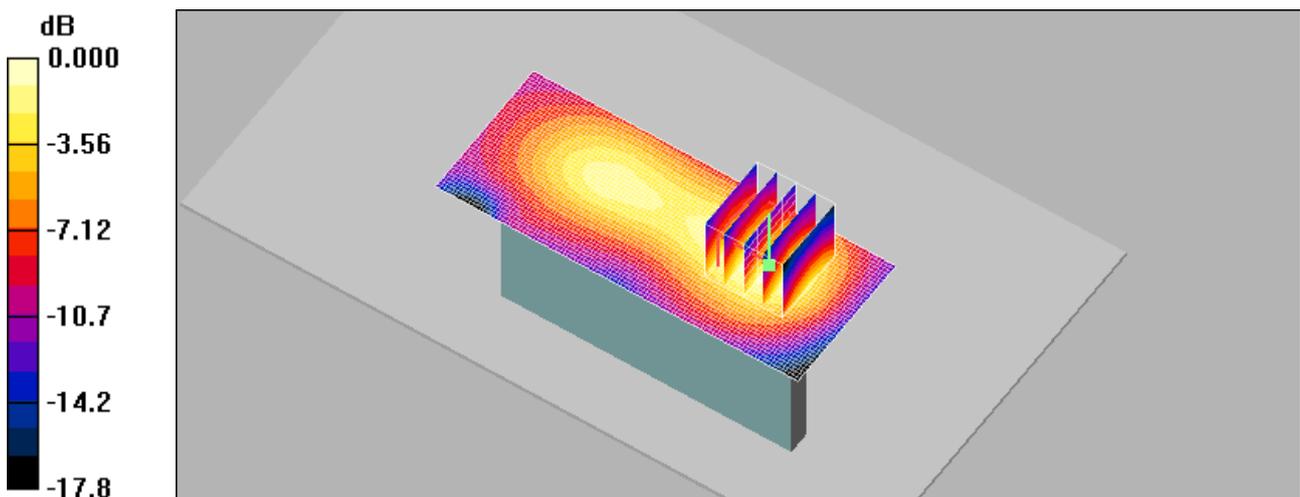Plot NO.   40

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM1900 Body Left side GPRS 3Tx/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.096 mW/g

GSM1900 Body Left side GPRS 3Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.74 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 0.141 W/kg
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.050 mW/g
Maximum value of SAR (measured) = 0.095 mW/g

0 dB = 0.095mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                            Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   41

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
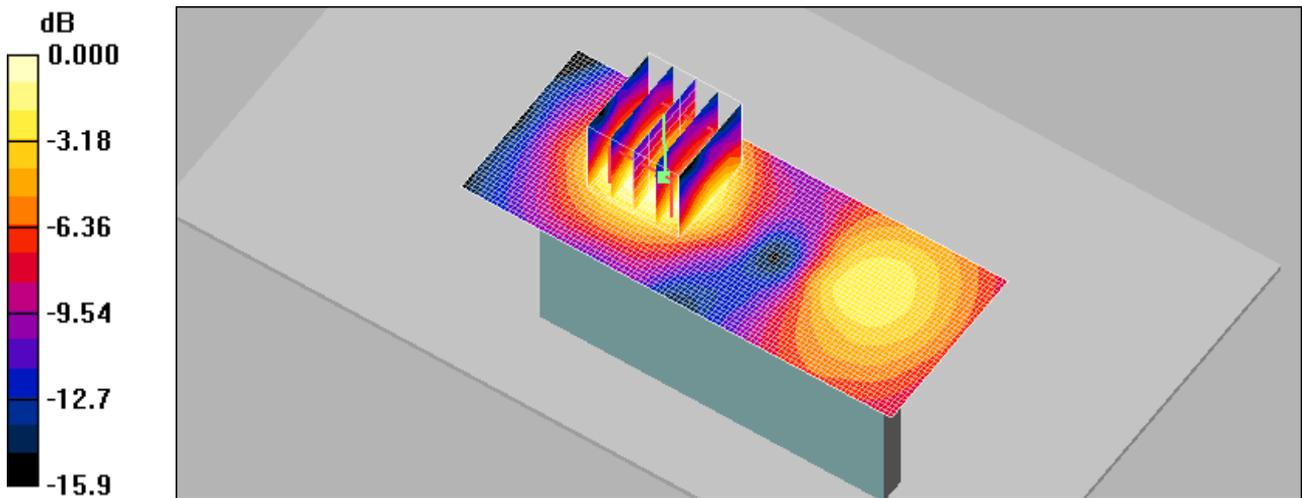- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM1900 Body Right side GPRS 3Tx/Area Scan (101x41x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.034 mW/g

GSM1900 Body Right side GPRS 3Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.65 V/m; Power Drift = -0.170 dB
Peak SAR (extrapolated) = 0.044 W/kg
SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.017 mW/g
Maximum value of SAR (measured) = 0.031 mW/g

0 dB = 0.031mW/g

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Test Laboratory: HCT CO., LTD
EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/WCDMA/HSDPA/HSUPA Phone with
                                Bluetooth, WLAN
Liquid Temperature: 21.1 ℃
Ambient Temperature: 21.3 ℃
Test Date: Jan.15, 2013
Separation Distance: 1.0 cm
Plot NO.   42

DUT: LG-P714; Type: bar; Serial: #1

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Center Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8
Build 184

DASY4 Configuration:
- Probe: EX3DV4 - SN3797; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-11-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2012-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA

GSM1900 Body Bottom 3Tx GPRS 661/Area Scan (51x71x1): Measurement grid: dx=15mm, dy=15mm
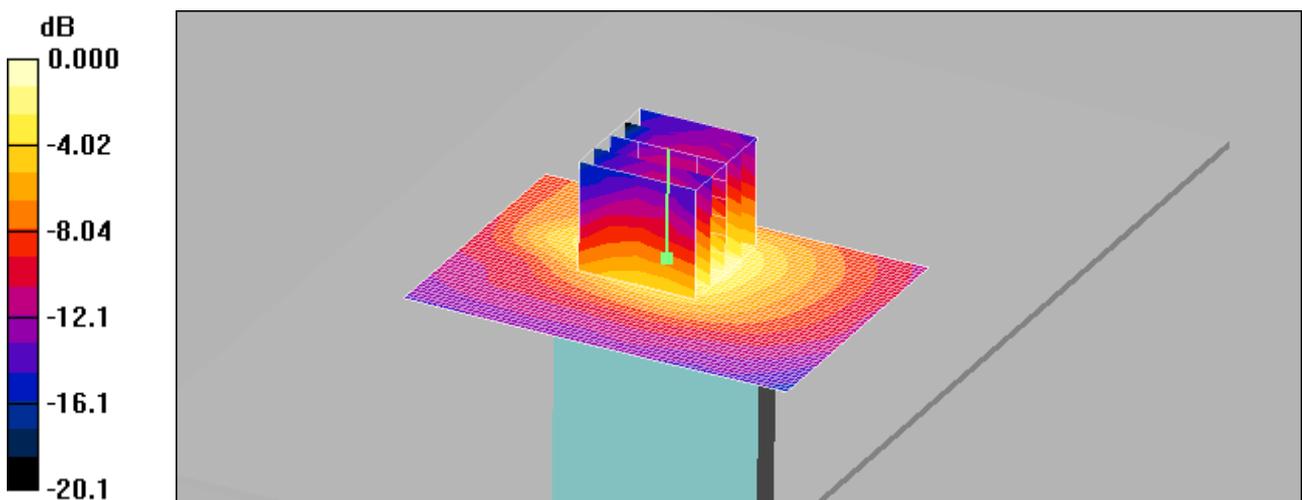Maximum value of SAR (interpolated) = 0.086 mW/g

GSM1900 Body Bottom 3Tx GPRS 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,
dz=5mm
Reference Value = 5.81 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.131 W/kg
SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.094 mW/g

0 dB = 0.094mW/g

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