SAR TEST REPORT

HCT CO., LTD

EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth		
FCC ID:	PP4ELVISPLUS		
Model:	TXT8026	Trade Name	PANTECH&CURITEL
Date of Issue:	Apr. 06, 2009		
Test report No.:	HCT-IA0903-1102-01		
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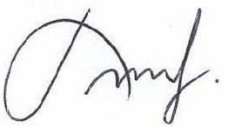
Testing has been carried out in accordance with:	47CFR §2.1093 FCC OET Bulletin 65(Edition 97-01), Supplement C (Edition 01-01) ANSI/ IEEE C95.1 – 2005 IEEE 1528-2003		
Test result:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and 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 : Sun-Hee Kim Test Engineer of SAR Part	 Approved by : Jae-Sang So Manager of SAR Part	

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1. INTRODUCTION

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

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-2005 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. The measurement procedure described in IEEE/ANSI C95.3-1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave is used for guidance in measuring SAR due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (d*W*) absorbed by (dissipated in) an incremental mass (d*m*) contained in a volume element (d*V*) 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.

2. DESCRIPTION OF DEVICE

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

EUT Type	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
FCC ID	PP4ELVISPLUS
Model(s)	TXT8026
Trade Name	PANTECH&CURITEL
Serial Number(s)	#1
Application Type	Certification
Modulation(s)	CDMA835/AWS1700/PCS1900
Tx Frequency	824.70 – 848.31 MHz (CDMA) 1 711.25 – 1 753.75 MHz (AWS CDMA) 1 851.25 – 1 908.75 MHz (PCS CDMA)
Rx Frequency	869.70 – 893.31 MHz (CDMA) 2 111.25 – 2 153.75 MHz (AWS CDMA) 1 931.25 – 1 988.75 MHz (PCS CDMA)
FCC Classification	Licensed Portable Transmitter Held to Ear (PCE)
Production Unit or Identical Prototype	Prototype
Max. SAR	1.18 W/kg CDMA835 Head SAR / 0.57 W/kg CDMA835 Body SAR 1.18 W/kg AWS1700 Head SAR / 0.208 W/kg AWS1700 Body SAR 1.41 W/kg PCS1900 Head SAR / 0.308 W/kg PCS1900 Body SAR
Date(s) of Tests	Mar. 22, 2009 ~ Mar. 23, 2009/ Apr. 6 2009
Antenna Type	Intenna

3. DESCRIPTION OF TEST EQUIPMENT

3.1 SAR MEASUREMENT SETUP

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

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

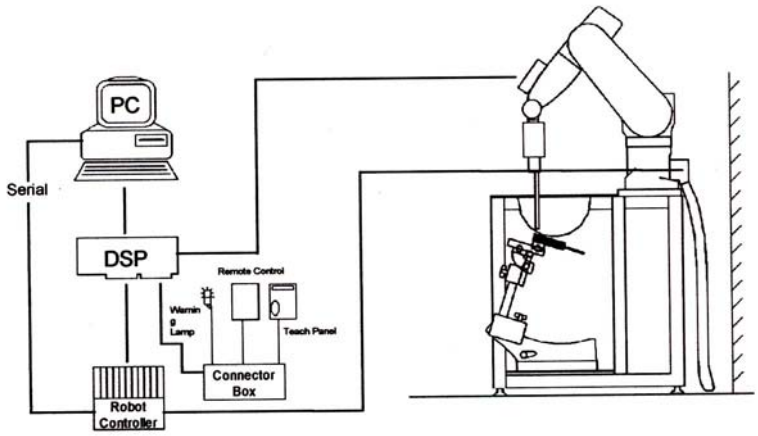

Figure 3.1 HCT SAR Lab. Test Measurement Set-up

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

3.2 DASY E-FIELD PROBE SYSTEM

3.2.1 ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors
	Built-in shielding against static charges
	PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air
	Conversion Factors (CF) for HSL 900 and HSL 1810
	Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: ± 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 4.1 Photograph of the probe and the Phantom

Figure 4.2 ES3DV3 E-field Probe

The SAR measurements were conducted with the dosimetric probe ET3DV3, designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches a maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped at reaching the maximum.

3.3 PROBE CALIBRATION PROCESS

3.3.1 E-Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with an accuracy better than ± 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)

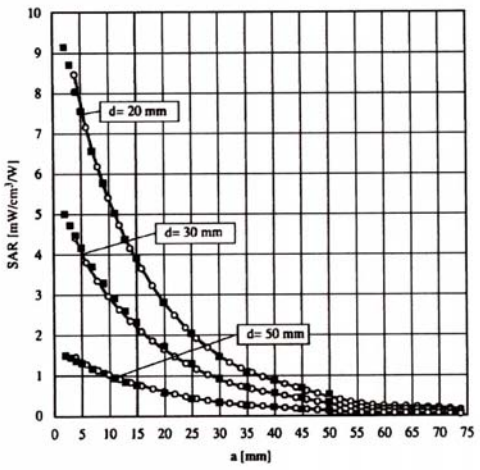

Figure 3.4 E-Field and Temperature measurements at 900 MHz

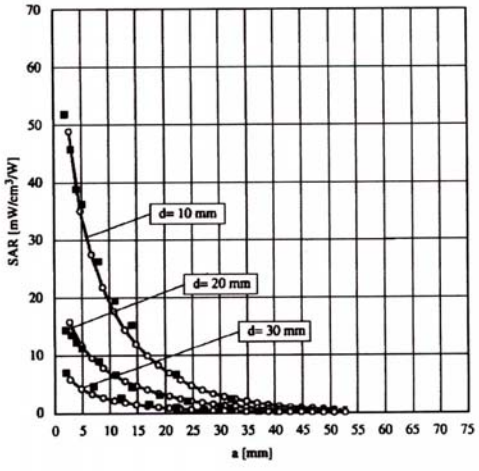

Figure 3.5 E-Field and temperature measurements at 1.8 GHz

3.3.2 Data Extrapolation

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

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

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

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

E-field probes:

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

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

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

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

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

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

with SAR = local specific absorption rate in W/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

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/cm^2
E_{tot} = total electric field strength in V/m

3.4 SAM Phantom

The SAM Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90 % of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

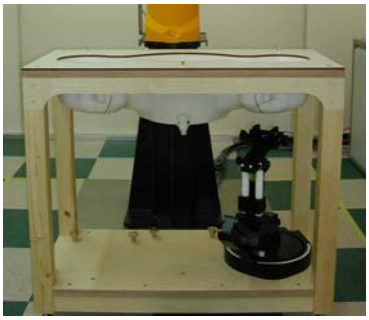

Figure 3.6 SAM Phantom

Shell Thickness	2.0 mm
Filling Volume	about 30 L
Dimensions	810 mm x 1 000 mm x 500 mm (H x L x W)

3.5 Device Holder for Transmitters

In combination with the SAM Phantom V 4.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and 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 3.7 Device Holder

3.6 Brain & Muscle Simulating Mixture Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a 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)									
	450		835		915		1 900		2 450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7

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

Table 3.1 Composition of the Tissue Equivalent Matter

3.7 SAR TEST EQUIPMENT

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
Staubli	Robot RX90L	F01/5K09A1/A/01	N/A	N/A	N/A
Staubli	Robot ControllerCS7MB	F99/5A82A1/C/01	N/A	N/A	N/A
HP	Pavilion t000_puffer	KRJ51201TV	N/A	N/A	N/A
SPEAG	Light Alignment Sensor	265	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	D221340.01	N/A	N/A	N/A
SPEAG	DAE4	869	Sept. 03, 2008	Annual	Sept. 03, 2009
SPEAG	DAE3	466	July 17, 2008	Annual	July 17, 2009
SPEAG	E-Field Probe ES3DV3	3161	April 7, 2008	Annual	April 7, 2009
SPEAG	E-Field Probe ES3DV6	1630	Aug. 25, 2008	Annual	Aug. 25, 2009
SPEAG	Validation Dipole D450V2	1007	July 15, 2008	Biennial	July 15, 2010
SPEAG	Validation Dipole D835V2	441	May 19, 2008	Biennial	May 19, 2010
SPEAG	Validation Dipole D900V2	130	Aug. 25, 2008	Biennial	Aug. 25, 2010
SPEAG	Validation Dipole D1800V2	2d007	May 20, 2008	Biennial	May 20, 2010
SPEAG	Validation Dipole D1900V2	5d032	July 22, 2008	Biennial	July 22, 2010
SPEAG	Validation Dipole D2450V2	743	Aug. 27, 2008	Biennial	Aug. 27, 2010
Agilent	Power Meter(F) E4419B	MY41291386	Nov. 05, 2008	Annual	Nov. 05, 2009
Agilent	Power Sensor(G) 8481	MY41090870	Nov. 05, 2008	Annual	Nov. 05, 2009
HP	Dielectric Probe Kit 85070C	00721521	N/A	N/A	N/A
HP	Dual Directional Coupler	16072	Nov. 05, 2008	Annual	Nov. 05, 2009
R&S	Base Station CMU200	110740	July 26, 2008	Annual	July 26, 2009
Agilent	Base Station E5515C	GB44400269	Feb. 10, 2009	Annual	Feb. 10, 2010
HP	Signal Generator E4438C	MY42082646	Dec. 24, 2008	Annual	Dec. 24, 2009
HP	Network Analyzer 8753ES	JP39240221	Apr. 11, 2008	Annual	Apr. 11, 2009
EM POWER	Power Amp BBS3Q7ELU	1009D/C0028	Nov. 05, 2008	Annual	Nov. 05, 2009
Tescom	TC-3000/ Bluetooth	3000A490112	Jan. 09, 2009	Annual	Jan. 09, 2010

NOTE:

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

4. SAR MEASUREMENT PROCEDURE

The evaluation was performed with the following procedure:

1. The SAR value at a fixed location above the ear point was measured and was used as a reference value for assessing the power drop.

2. The SAR distribution at the exposed side of the head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20 mm x 20 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

3. Around this point, a volume of 32 mm x 32 mm x 30 mm was assessed by measuring 5 x 5 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

    a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
    b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.
    c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR value, at the same location as procedure #1, was re-measured. If the value changed by more than 5 %, the evaluation is repeated.

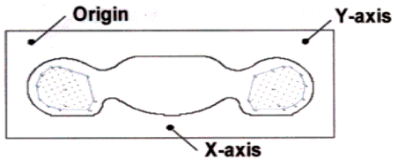

Figure 4.1 SAR Measurement Point in Area Scan

5. DESCRIPTION OF TEST POSITION

5.1 HEAD POSITION

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

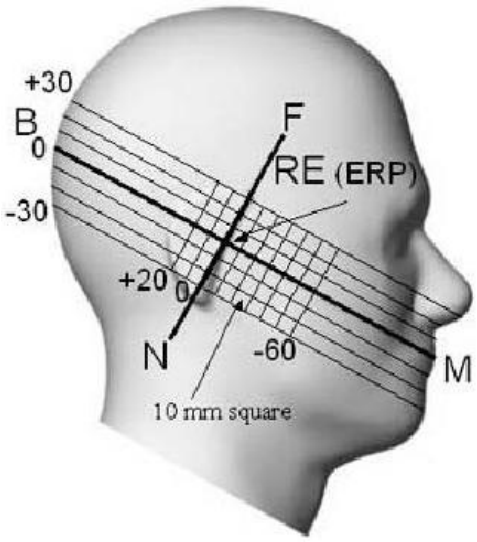

Figure 5.1 Side view of the phantom

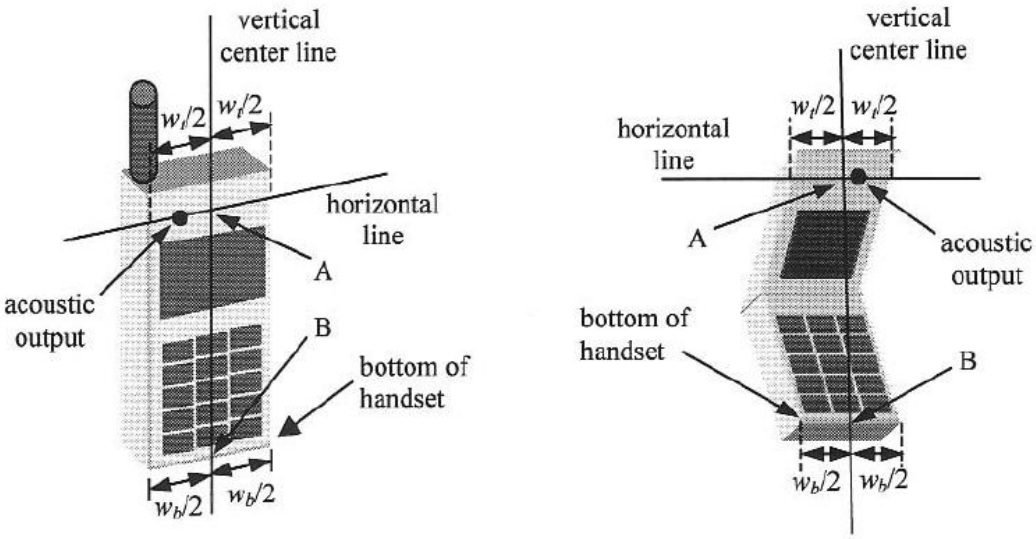

Figure 5.2 Handset vertical and horizontal reference lines

5.2 Body Holster/Belt Clip Configurations

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

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

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

Since this EUT does not supply any body worn accessory to the end user a distance of 2.0 cm from the EUT back surface to the liquid interface is configured for the generic test.

"See the Test SET-UP Photo"

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

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

6. MEASUREMENT UNCERTAINTY

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR to be less than 15 % - 25 %.

According to ANSI/IEEE C95.3, the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy's of 1 dB to ± 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ± 2 dB can be expected.

According to CENELEC, typical worst-case uncertainty of field measurements is 5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ± 3 dB.

Error Description	Uncertainty value [%]	Probability Distribution	Divisor	ci	ci^2	Standard Uncertainty [%]	Stand Uncert^2	(Stand Uncert^2) X (ci^2)	Vi & Veff
1. Measurement System									
Probe Calibration	5.5	Normal	1.00	1	1	5.50	30.25	30.25	∞
Axial Isotropy	4.7	Rectangular	1.73	0.7	0.49	2.71	7.36	3.61	∞
Hemispherical Isotropy	9.6	Rectangular	1.73	0.7	0.49	5.54	30.72	15.05	∞
Linearity	4.7	Rectangular	1.73	1	1	2.71	7.36	7.36	∞
System Detection limits	1.0	Rectangular	1.73	1	1	0.58	0.33	0.33	∞
Boundary effect	1.0	Rectangular	1.73	1	1	0.58	0.33	0.33	∞
Response time	0.8	Rectangular	1.73	1	1	0.46	0.21	0.21	∞
RF Ambient conditions	3.0	Rectangular	1.73	1	1	1.73	3.00	3.00	∞
Readout Electronics	0.3	Normal	1.00	1	1	0.30	0.09	0.09	∞
Integration time	2.6	Rectangular	1.73	1	1	1.50	2.25	2.25	∞
Probe positioner	0.4	Rectangular	1.73	1	1	0.23	0.05	0.05	∞
Probe positionering	2.9	Rectangular	1.73	1	1	1.67	2.80	2.80	∞
Maximum SAR evaluation	1.0	Rectangular	1.73	1	1	0.58	0.33	0.33	∞
2.Test Sample Related						Sub Total		65.69	
Device Positioning	1.8	Normal	1.00	1	1	1.81	3.28	3.28	9
Device Holder	3.6	Normal	1.00	1	1	3.60	12.96	12.96	∞
Power Drift	5.0	Rectangular	1.73	1	1	2.89	8.33	8.33	∞
3. Phantom and Setup						Sub Total		24.57	
Phantom Uncertainty	4.0	Rectangular	1.73	1	1	2.31	5.33	5.33	∞
Liquid conductivity (target)	5.0	Rectangular	1.73	0.5	0.25	2.89	8.33	2.08	∞
Liquid conductivity (measurement error)	2.5	Normal	1.00	0.5	0.25	2.50	6.25	1.56	∞
Liquid permittivity (target)	5.0	Rectangular	1.73	0.5	0.25	2.89	8.33	2.08	∞
Liquid permittivity (measurement error)	2.5	Normal	1.00	0.5	0.25	2.50	6.25	1.56	∞
						Sub Total		12.63	
Combined standard uncertainty [%]						**10.14**		102.88	-
Expanded uncertainty [*k*=2, approximately confidence level 95 %]						**± 20.28 %**			

Table 6.1 Breakdown of Errors

7. ANSI/ IEEE C95.1 - 2005 RF EXPOSURE LIMITS

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

Table 7.1 Safety Limits for Partial Body Exposure

NOTES:

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

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

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

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

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

8. SYSTEM VERIFICATION

8.1 Tissue Verification

Freq. [MHz]	Date	Liquid	Liquid Temp.[°C]	Parameters	Target Value	Measured Value	Deviation [%]	Limit [%]
835	Mar.22, 2009	Head	21.3	ε r	41.5	43.2	+ 4.10	± 5
				σ	0.90	0.884	- 1.78	± 5
835	Mar.22, 2009	Body	21.3	ε r	55.2	53.93	- 2.30	± 5
				σ	0.97	0.99	+ 2.06	± 5
1 800	Mar.23, 2009	Head	21.2	ε r	40.0	38.5	- 3.75	± 5
				σ	1.40	1.45	+ 3.57	± 5
1 800	Mar.23, 2009	Body	21.2	ε r	53.3	54.41	+ 2.08	± 5
				σ	1.52	1.47	- 3.29	± 5
1 900	Mar.22, 2009	Head	21.3	ε r	40.0	40.2	+ 0.50	± 5
				σ	1.40	1.36	- 2.86	± 5
1 900	Mar.22, 2009	Body	21.3	ε r	53.3	51.53	- 3.32	± 5
				σ	1.52	1.47	- 3.29	± 5
1 900	Apr. 06, 2009	Head	21.3	ε r	40.0	39	- 2.5	± 5
				σ	1.40	1.45	+ 3.57	± 5

8.2 System Validation

Prior to assessment, the system is verified to the ± 10 % of the specifications at 835 MHz / 1 800 MHz /1 900 MHz by using the system validation kit. (Graphic Plots Attached)

* *Input Power: 100 mW

Freq. [MHz]	Date	Liquid	Liquid Temp. [°C]	SAR Average	Target Value (SPEAG) (mW/g)	* Measured Value (mW/g)	Deviation [%]	Limit [%]
835	Mar.22, 2009	Head	21.3	1 g	9.17	0.935	+ 1.96	± 10
1 800	Mar.23, 2009	Head	21.2	1 g	38.9	3.98	+ 2.31	± 10
1 900	Mar.22, 2009	Head	21.3	1 g	37.7	3.89	+ 3.18	± 10
1 900	Apr. 06, 2009	Head	21.3	1 g	37.7	3.88	+ 2.91	± 10

9. 3G MEASUREMENT PROCEDURES

9.1 Procedures Used To Establish Test Signal

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

9.2 SAR Measurement Conditions for CDMA2000 1x

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

9.2.1 Output Power Verification

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

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

Parameters for Max. Power for RC1

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

Table. 9.1

Parameters for Max. Power for RC3

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

Table. 9.2

9.2.2 Head SAR Measurement

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

9.2.3 Body SAR Measurement

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

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

9.2.4 Handsets with EV-DO

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

Average Output Power Measurement for FCC ID: PP4ELVISPLUS

Band	Channel	SO2	SO2	SO55	SO55	TDSO SO32
		RC1/1	RC3/3	RC1/1	RC3/3	RC3/3
CDMA	1013	24.98	24.99	24.97	24.97	25.07
	384	24.78	24.78	24.83	24.81	24.84
	777	24.85	24.90	24.78	24.89	24.91
PCS	25	24.97	24.93	24.95	24.92	24.97
	600	24.89	24.85	24.84	24.86	24.92
	1175	24.78	24.78	24.79	24.80	24.81
AWS	25	24.70	24.73	24.67	24.76	24.78
	450	24.81	24.93	24.84	24.95	24.99
	875	24.71	24.76	24.72	24.77	24.79

10. SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas

10.1 SAR Evaluation Considerations

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

	2.45	5.15 - 5.35	5.47 - 5.85	GHz
P_{Ref}	12	6	5	mW
Device output power should be rounded to the nearest mW to compare with values specified in this table.				

Table. 10.1 Output Power Thresholds for Unlicensed Transmitters

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

Table. 10.2 SAR Evaluation Requirements for Cellphones with Multiple Transmitters

FCC ID: PP4ELVISPLUS
BT Max. RF output power: 0.32 dBm(1.08 mW)
Antenna separation distance: 0.6 cm

The conducted output power level of the BT transmitter is less than P_{ref}, the BT antenna is less than 2.5 cm from the Main antenna, and licensed Transmitter SAR is 0.570 W/kg for body, which are less than 1.2 W/kg, therefore, a stand-alone BT SAR evaluation is not required.

11. SAR TEST DATA SUMMARY

11.1 Measurement Results (CDMA835 Head SAR Touch Slide Up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
836.52	384 (Mid)	CDMA835	24.81	24.76	Standard	Left Ear	Intenna	0.601
836.52	384 (Mid)	CDMA835	24.81	24.76	Standard	Right Ear	Intenna	0.564
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.2 Measurement Results (CDMA835 Head SAR Tilt Slide Up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
836.52	384 (Mid)	CDMA835	24.81	24.87	Standard	Left Tilt 15°	Intenna	0.315
836.52	384 (Mid)	CDMA835	24.81	24.77	Standard	Right Tilt 15°	Intenna	0.284
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.3 Measurement Results (CDMA835 Head SAR Touch Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
824.70	1013 (Low)	CDMA835	24.97	24.82	Standard	Left Ear	Intenna	1.08
836.52	384 (Mid)	CDMA835	24.81	24.60	Standard	Left Ear	Intenna	1.06
848.31	777 (High)	CDMA835	24.89	24.83	Standard	Left Ear	Intenna	1.15
824.70	1013 (Low)	CDMA835	24.97	25.02	Standard	Right Ear	Intenna	1.11
836.52	384 (Mid)	CDMA835	24.81	24.75	Standard	Right Ear	Intenna	1.05
848.31	777 (High)	CDMA835	24.89	24.80	Standard	Right Ear	Intenna	1.18
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 Head SAR was tested under RC3/SO55.

11.4 Measurement Results (CDMA835 Head SAR Tilt Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
836.52	384 (Mid)	CDMA835	24.81	24.78	Standard	Left Tilt 15°	Intenna	0.442
836.52	384 (Mid)	CDMA835	24.81	24.85	Standard	Right Tilt 15°	Intenna	0.390
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 Head SAR was tested under RC3/SO55.

11.5 Measurement Results (AWS1700 Head SAR Touch Slide up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 732.5	450 (Mid)	AWS1700	24.95	24.90	Standard	Left Ear	Intenna	0.559
1 732.5	450 (Mid)	AWS1700	24.95	25.00	Standard	Right Ear	Intenna	0.474
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.6 Measurement Results (AWS 1700 Head SAR Tilt Slide up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 732.5	450 (Mid)	AWS1700	24.95	25.05	Standard	Left Tilt 15°	Intenna	0.491
1 732.5	450 (Mid)	AWS1700	24.95	25.04	Standard	Right Tilt 15°	Intenna	0.394
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.7 Measurement Results (AWS1700 Head SAR Touch Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 711.25	25 (Low)	AWS1700	24.76	24.71	Standard	Left Ear	Intenna	0.761
1 732.5	450 (Mid)	AWS1700	24.95	24.77	Standard	Left Ear	Intenna	1.08
1 753.75	875 (High)	AWS1700	24.77	24.71	Standard	Left Ear	Intenna	0.944
1 711.25	25 (Low)	AWS1700	24.76	24.66	Standard	Right Ear	Intenna	0.823
1 732.5	450 (Mid)	AWS1700	24.95	24.81	Standard	Right Ear	Intenna	1.18
1 753.75	875 (High)	AWS1700	24.77	24.67	Standard	Right Ear	Intenna	0.964
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.8 Measurement Results (AWS 1700 Head SAR Tilt Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 732.5	450 (Mid)	AWS1700	24.95	24.85	Standard	Left Tilt 15°	Intenna	0.454
1 732.5	450 (Mid)	AWS1700	24.95	24.89	Standard	Right Tilt 15°	Intenna	0.477
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.9 Measurement Results (PCS1900 Head SAR Touch Slide up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 880.00	600 (Mid)	PCS1900	24.86	24.85	Standard	Left Ear	Intenna	0.527
1 880.00	600 (Mid)	PCS1900	24.86	24.77	Standard	Right Ear	Intenna	0.367
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.10 Measurement Results (PCS1900 Head SAR Tilt Slide up)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 880.00	600 (Mid)	PCS1900	24.86	24.86	Standard	Left Tilt 15°	Intenna	0.297
1 880.00	600 (Mid)	PCS1900	24.86	24.87	Standard	Right Tilt 15°	Intenna	0.355
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.11 Measurement Results (PCS1900 Head SAR Touch Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 851.25	25 (Mid)	PCS1900	24.92	24.81	Standard	Left Ear	Intenna	1.34
1 880.00	600 (Mid)	PCS1900	24.86	24.96	Standard	Left Ear	Intenna	1.22
1 908.75	1175 (Mid)	PCS1900	24.80	24.92	Standard	Left Ear	Intenna	1.41
1 851.25	25 (Mid)	PCS1900	24.92	24.94	Standard	Right Ear	Intenna	1.15
1 880.00	600 (Mid)	PCS1900	24.86	24.99	Standard	Right Ear	Intenna	1.15
1 908.75	1175 (Mid)	PCS1900	24.80	24.94	Standard	Right Ear	Intenna	1.25
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.12 Measurement Results (PCS1900 Head SAR Tilt Slide Down)

Frequency		Modulation	Conducted Power (dBm)		Battery	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 880.00	600 (Mid)	PCS1900	24.86	24.91	Standard	Left Tilt 15°	Intenna	0.433
1 880.00	600 (Mid)	PCS1900	24.86	24.90	Standard	Right Tilt 15°	Intenna	0.504
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 Head SAR was tested under RC3/SO55.
8 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.13 Measurement Results (CDMA835 Body SAR)

Frequency		Modulation	Conducted Power (dBm)		Configuration	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
836.52	384 (Mid)	CDMA835	24.84	24.79	Rear	2.0 cm without Holster	Intenna	0.570
836.52	384 (Mid)	CDMA835	24.84	24.93	Front	2.0 cm without Holster	Intenna	0.362
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-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type ☒ Standard ☐ Extended ☐ Slim
Batteries are fully charged for all readings.
6 Test Signal Call Mode ☐ Manual Test cord ☒ Base Station Simulator
7 Both side of the phone were tested and the worst-case side is reported.
8 HEADSET was connected.
9 Test Configuration ☐ With Holster ☒ Without Holster
10 CDMA Body SAR was tested under RC3/SO32.
11 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.14 Measurement Results (AWS1700 Body SAR)

Frequency		Modulation	Conducted Power (dBm)		Configuration	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 732.5	450 (Mid)	AWS1700	24.99	25.05	Rear	2.0 cm without Holster	Intenna	0.205
1 732.5	450 (Mid)	AWS1700	24.99	25.01	Front	2.0 cm without Holster	Intenna	0.208
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-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type ☒ Standard ☐ Extended ☐ Slim
Batteries are fully charged for all readings.
6 Test Signal Call Mode ☐ Manual Test cord ☒ Base Station Simulator
7 Both side of the phone were tested and the worst-case side is reported.
8 HEADSET was connected.
9 Test Configuration ☐ With Holster ☒ Without Holster
10 AWS Body SAR was tested under RC3/SO32.
11 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

11.15 Measurement Results (PCS1900 Body SAR)

Frequency		Modulation	Conducted Power (dBm)		Configuration	Phantom Position	Antenna Type	SAR(mW/g)
MHz	Channel		Begin	End				
1 880.00	600 (Mid)	PCS1900	24.92	24.94	Rear	2.0 cm without Holster	Intenna	0.308
1 880.00	600 (Mid)	PCS1900	24.92	24.89	Front	2.0 cm without Holster	Intenna	0.182
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-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
2 All modes of operation were investigated and the worst-case are reported.
3 Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
4 Tissue parameters and temperatures are listed on the SAR plot.
5 Battery Type ☒ Standard ☐ Extended ☐ Slim
Batteries are fully charged for all readings.
6 Test Signal Call Mode ☐ Manual Test cord ☒ Base Station Simulator
7 Both side of the phone were tested and the worst-case side is reported.
8 HEADSET was connected.
9 Test Configuration ☐ With Holster ☒ Without Holster
10 PCS Body SAR was tested under RC3/SO32.
11 Justification for reduced test configurations: per FCC/OET Supplement C (July, 2001), if the SAR measured at the middle channel for each test configuration (Left, right, cheek/touch, tilt/ear, extended and retracted) is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

12. CONCLUSION

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 2005.

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

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Attachment 1. – SAR Test Plots

Test Laboratory: HCT CO., LTD
EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature: 21.3 ℃
Ambient Temperature: 21.5 ℃
Test Date: Mar.22, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

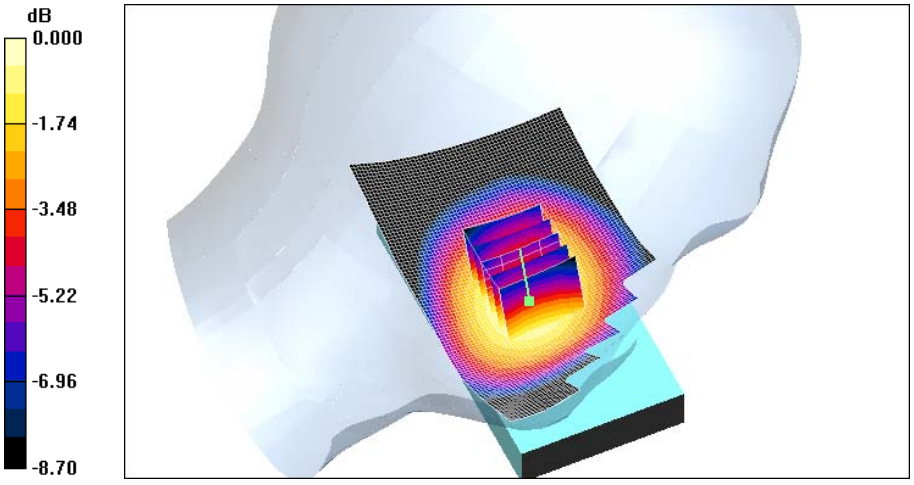
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

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

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.632 mW/g

Left touch 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.8 V/m; Power Drift = -0.049 dB
Peak SAR (extrapolated) = 0.714 W/kg
SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.464 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.639 mW/g



0 dB = 0.639mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

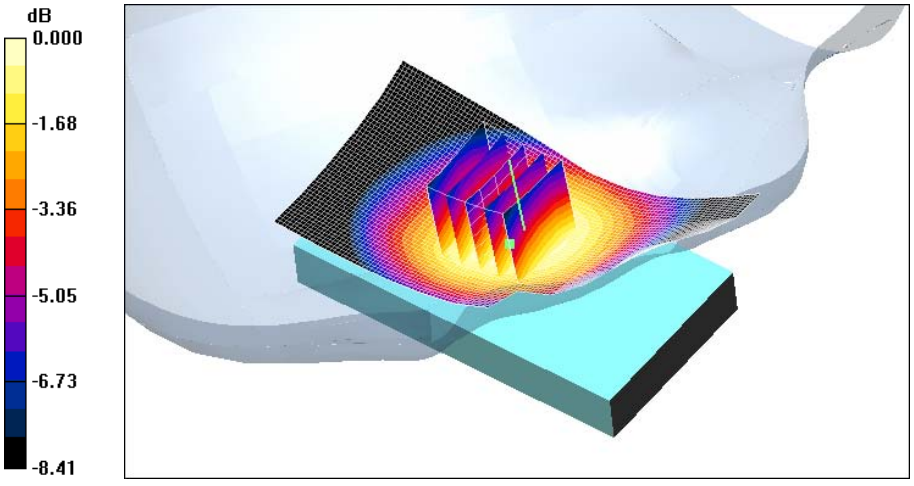
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right touch 384/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.593 mW/g

Right touch 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.0 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.660 W/kg
SAR(1 g) = 0.564 mW/g; SAR(10 g) = 0.438 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.583 mW/g



0 dB = 0.583mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

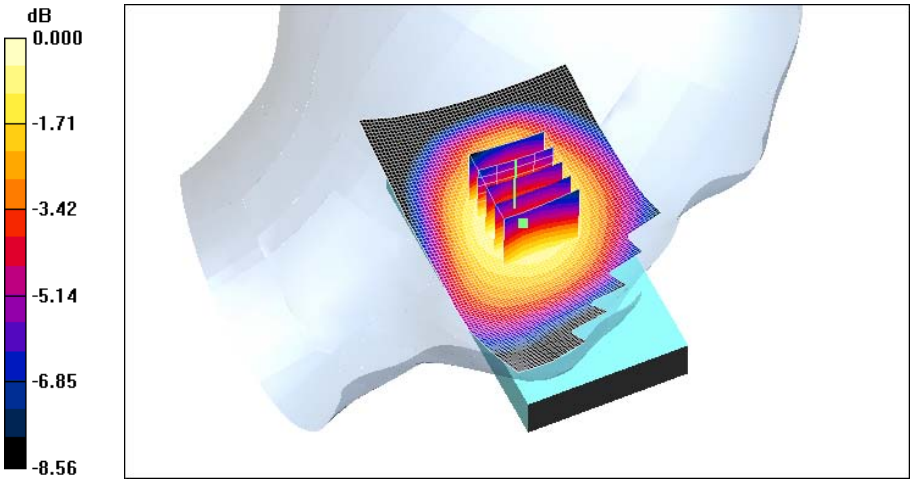
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

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

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.321 mW/g

Left tilt 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.2 V/m; Power Drift = 0.062 dB
Peak SAR (extrapolated) = 0.383 W/kg
SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.244 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.331 mW/g



0 dB = 0.331mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

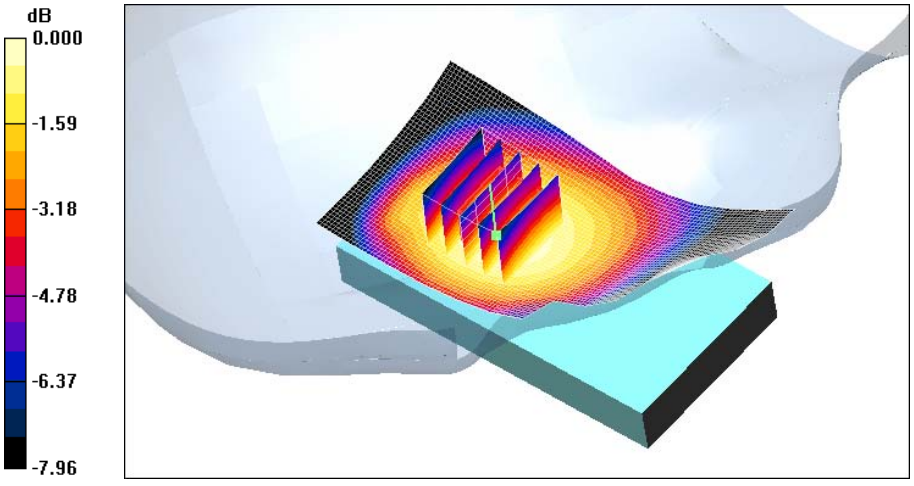
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right tilt 384/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.298 mW/g

Right tilt 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.2 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.221 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.296 mW/g



0 dB = 0.296mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature: 21.3 ℃
Ambient Temperature: 21.5 ℃
Test Date: Mar.22, 2009

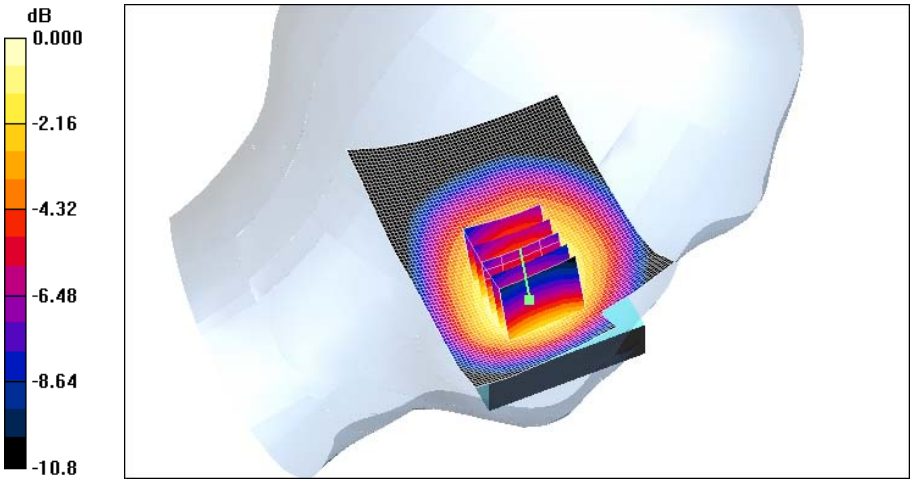
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium parameters used: f = 825 MHz; σ = 0.876 mho/m; ε_r = 43.3; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Left touch 1013/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Left touch 1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.808 mW/g
Maximum value of SAR (measured) = 1.14 mW/g



0 dB = 1.14mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

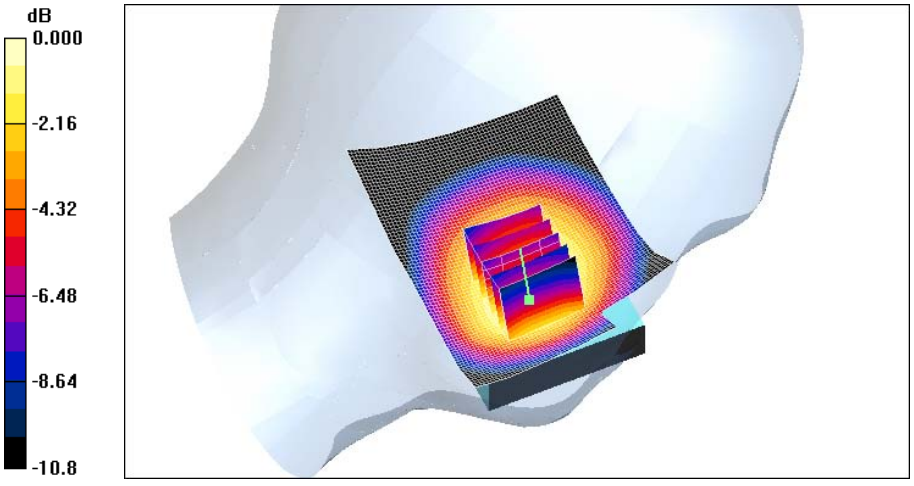
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Left touch 384/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.19 mW/g

Left touch 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.207 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.788 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.12 mW/g



0 dB = 1.12mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.898 mho/m; ε_r = 43; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

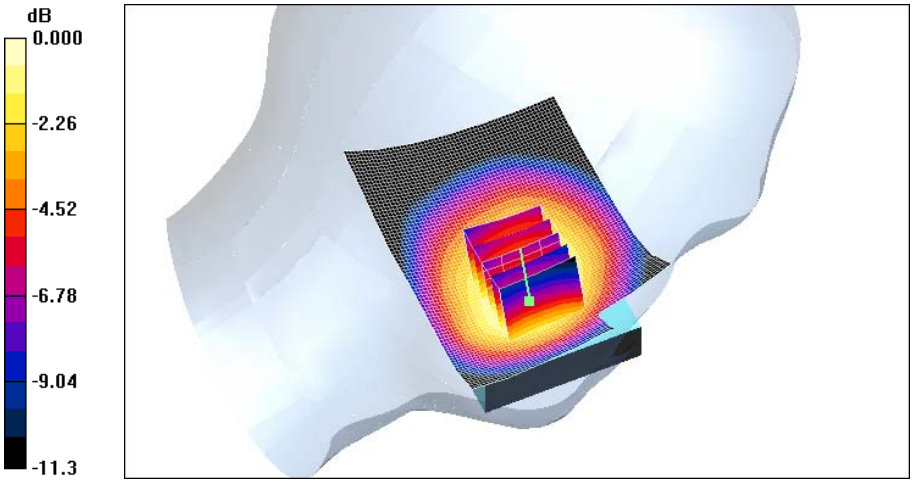
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Left touch 777/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.24 mW/g

Left touch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.852 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.21 mW/g



0 dB = 1.21mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

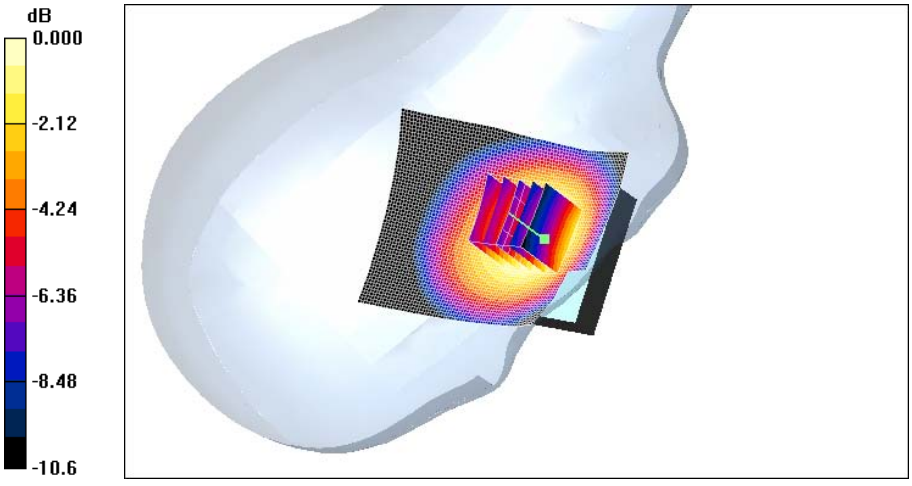
Communication System: CDMA 835MHz FCC; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium parameters used: f = 825 MHz; σ = 0.876 mho/m; ε_r = 43.3; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right touch 1013/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Right touch 1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = 0.054 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.834 mW/g

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



0 dB = 1.17mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

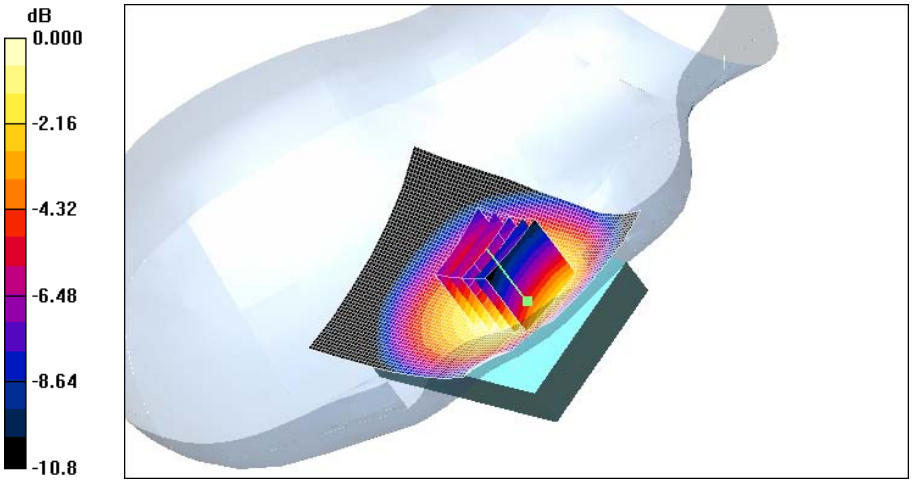
Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right touch 384/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.09 mW/g

Right touch 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.783 mW/g
Maximum value of SAR (measured) = 1.10 mW/g



0 dB = 1.10mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.898 mho/m; ε_r = 43; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

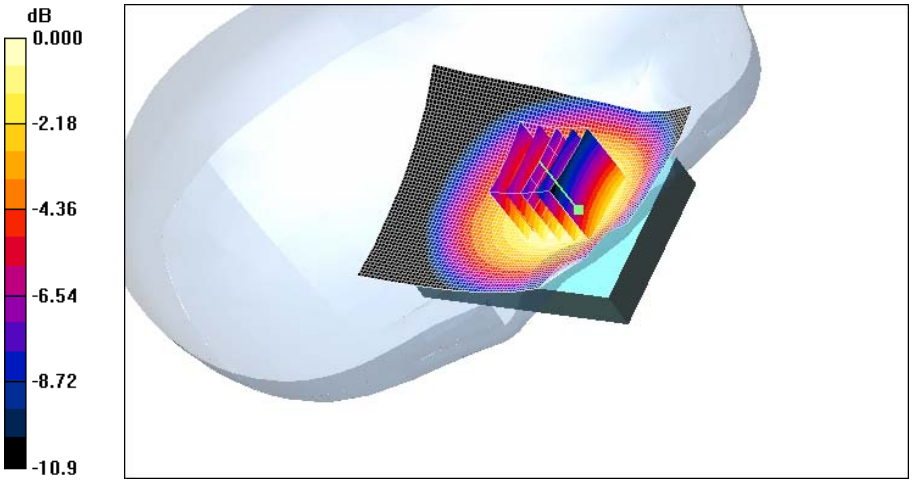
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right touch 777/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.24 mW/g

Right touch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = -0.093 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.885 mW/g

Maximum value of SAR (measured) = 1.24 mW/g



0 dB = 1.24mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

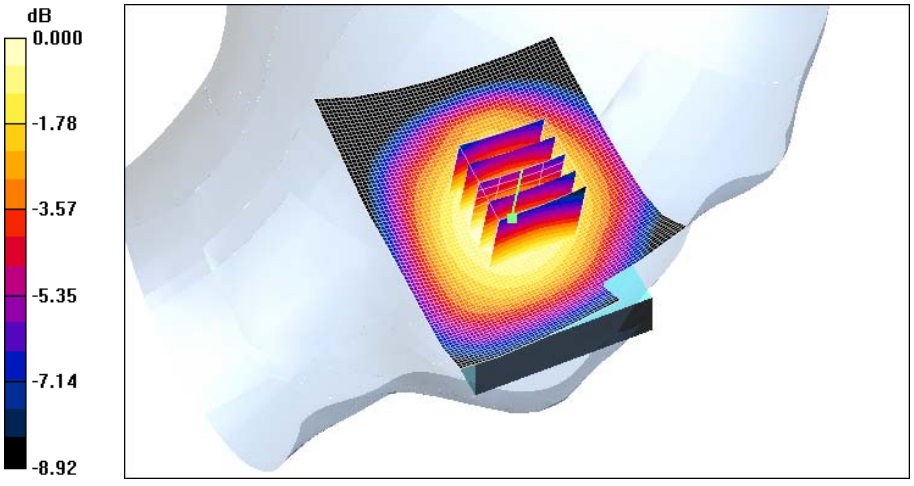
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Left tilt 384/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.455 mW/g

Left tilt 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 0.533 W/kg
SAR(1 g) = 0.442 mW/g; SAR(10 g) = 0.343 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.459 mW/g



0 dB = 0.459mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.886 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

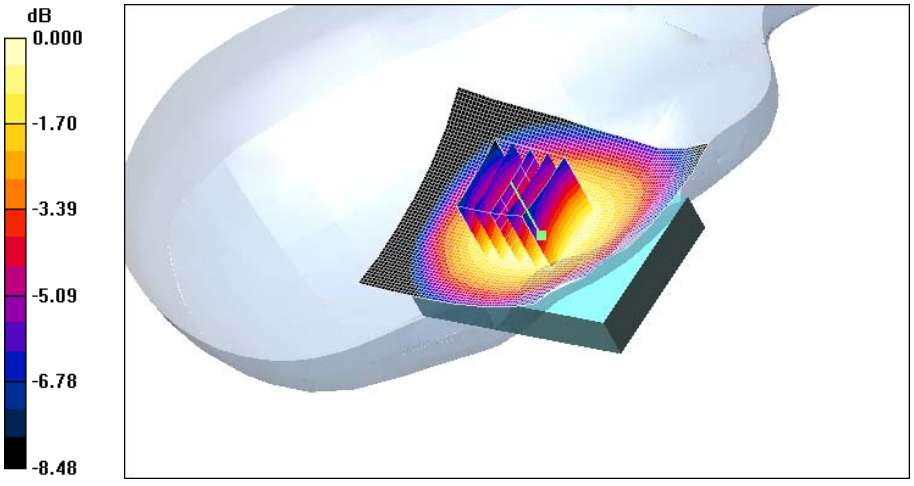
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right tilt 384/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

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

Right tilt 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 0.471 W/kg
SAR(1 g) = 0.390 mW/g; SAR(10 g) = 0.303 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.405 mW/g



0 dB = 0.405mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

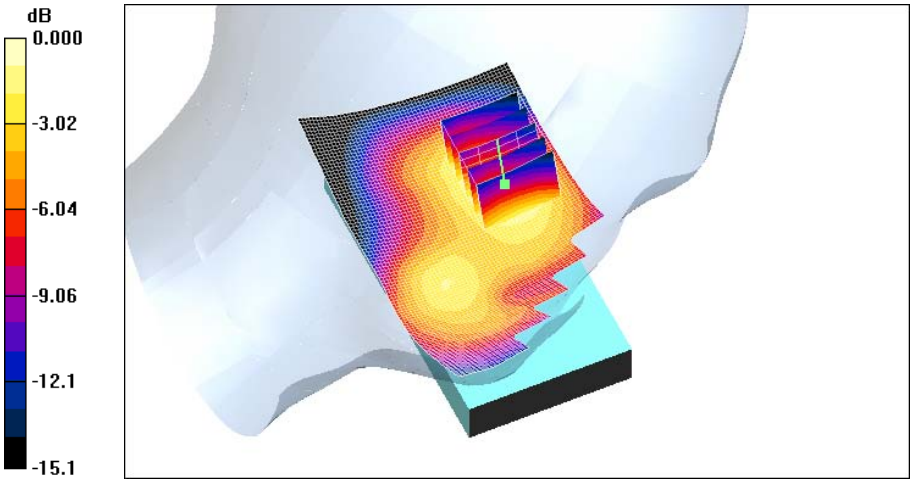
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left touch 450/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.626 mW/g

Left touch 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 0.858 W/kg
SAR(1 g) = 0.559 mW/g; SAR(10 g) = 0.349 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.607 mW/g



0 dB = 0.607mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature: 21.2 ℃
Ambient Temperature: 21.4 ℃
Test Date: Mar.23, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

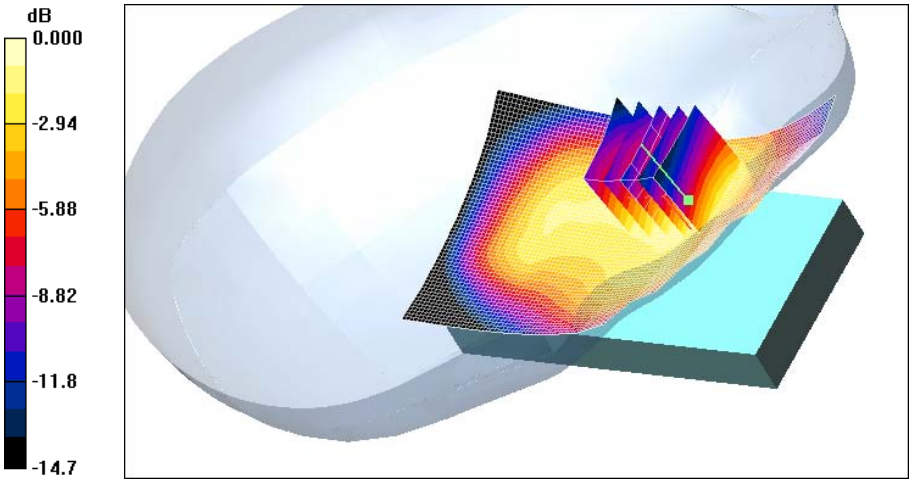
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right touch 450/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.516 mW/g

Right touch 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.5 V/m; Power Drift = 0.052 dB
Peak SAR (extrapolated) = 0.691 W/kg
SAR(1 g) = 0.474 mW/g; SAR(10 g) = 0.305 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.510 mW/g



0 dB = 0.510mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature: 21.2 ℃
Ambient Temperature: 21.4 ℃
Test Date: Mar.23, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

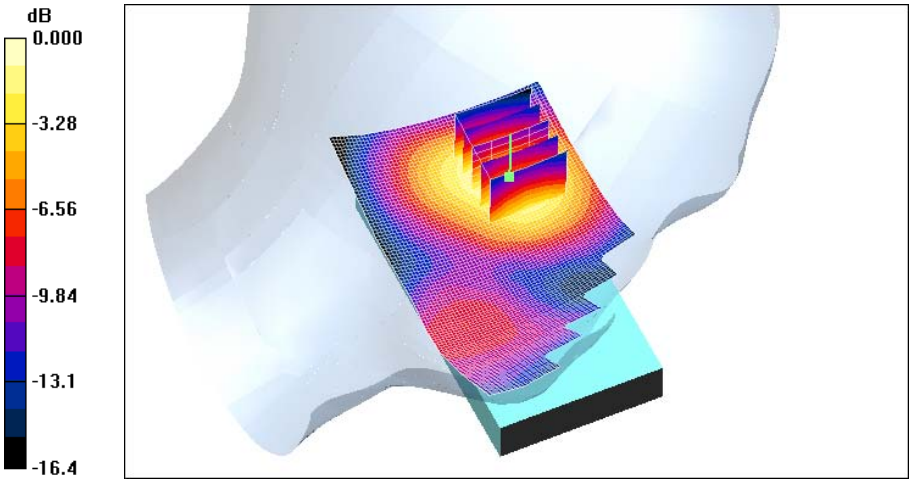
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left tilt 450/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.545 mW/g

Left tilt 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.71 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 0.728 W/kg
SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.306 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.534 mW/g



0 dB = 0.534mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

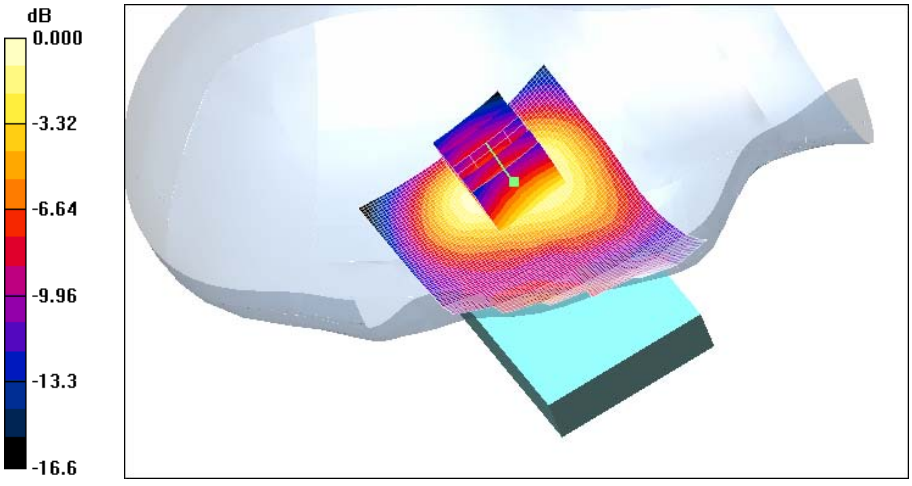
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right tilt 450/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.441 mW/g

Right tilt 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.59 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 0.578 W/kg
SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.252 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.417 mW/g



0 dB = 0.417mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1711.25 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1711.25 MHz; σ = 1.36 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

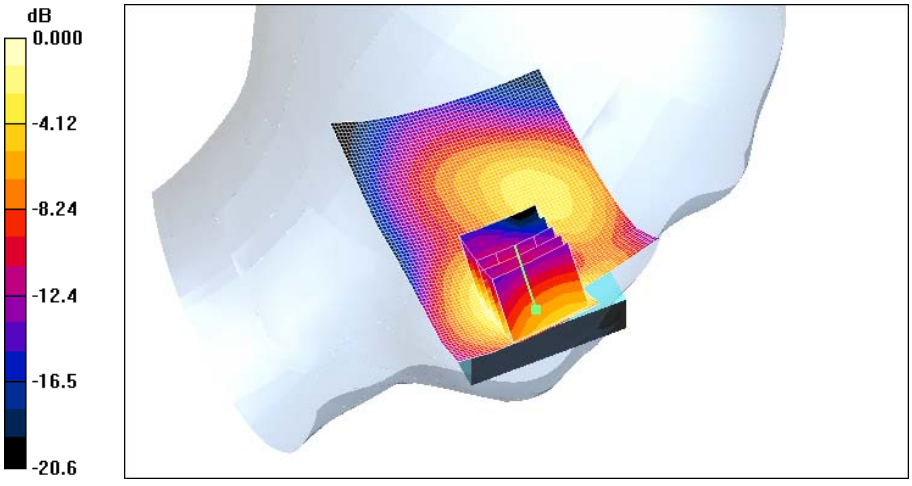
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left touch 25/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.853 mW/g

Left touch 25/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.14 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.420 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.835 mW/g



0 dB = 0.835mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

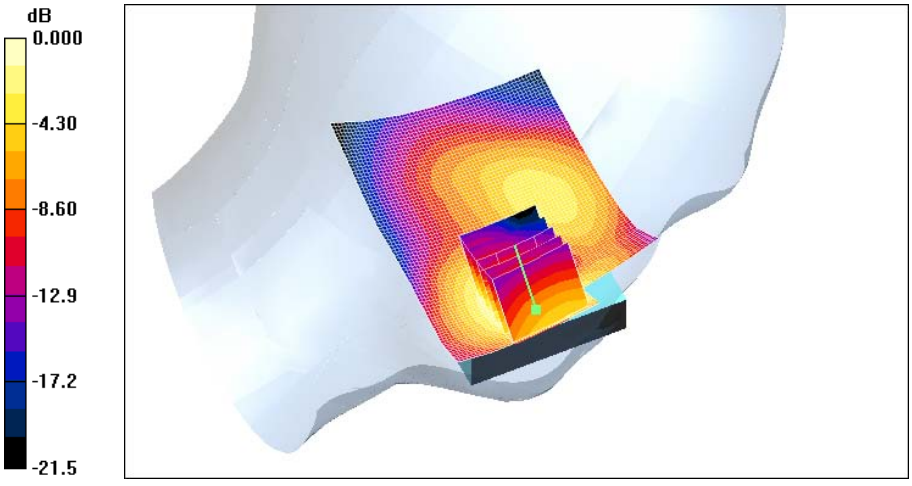
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left touch 450/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.20 mW/g

Left touch 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = -0.178 dB
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.598 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1753.75 MHz; σ = 1.41 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

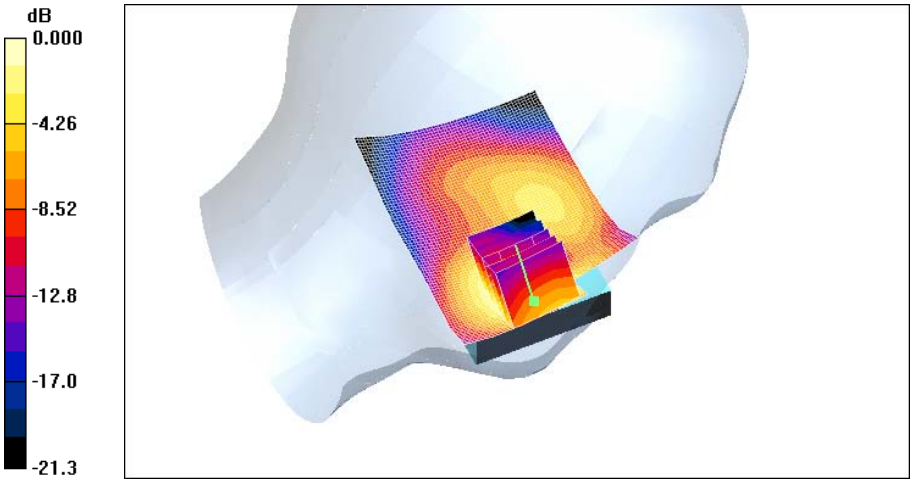
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left touch 875/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.05 mW/g

Left touch 875/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.944 mW/g; SAR(10 g) = 0.514 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.02 mW/g



0 dB = 1.02mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1711.25 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1711.25 MHz; σ = 1.36 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

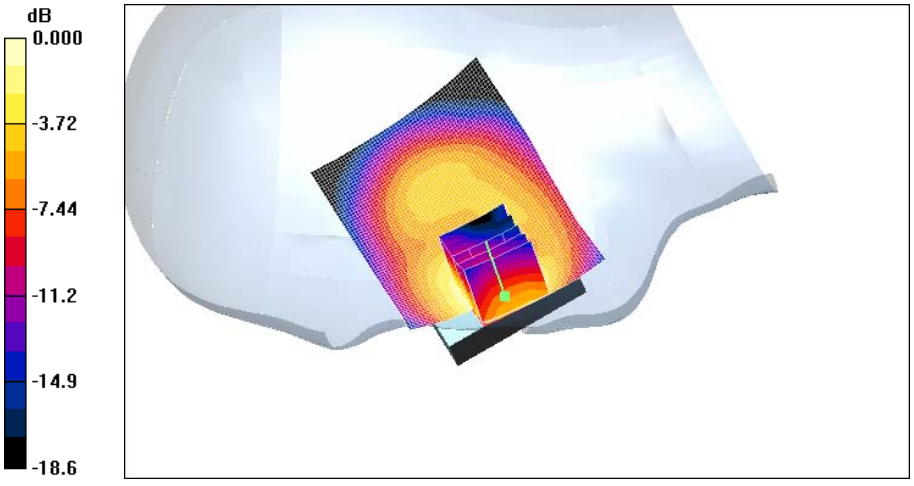
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right touch 25/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.907 mW/g

Right touch 25/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.2 V/m; Power Drift = 0.145 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.461 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.929 mW/g



0 dB = 0.929mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

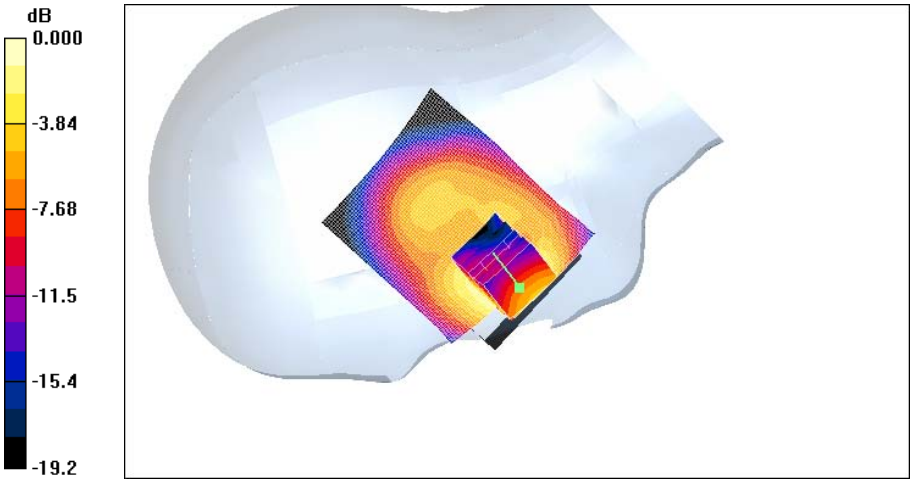
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right touch 450/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.27 mW/g

Right touch 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.5 V/m; Power Drift = -0.145 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.655 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.33 mW/g



0 dB = 1.33mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1753.75 MHz; σ = 1.41 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

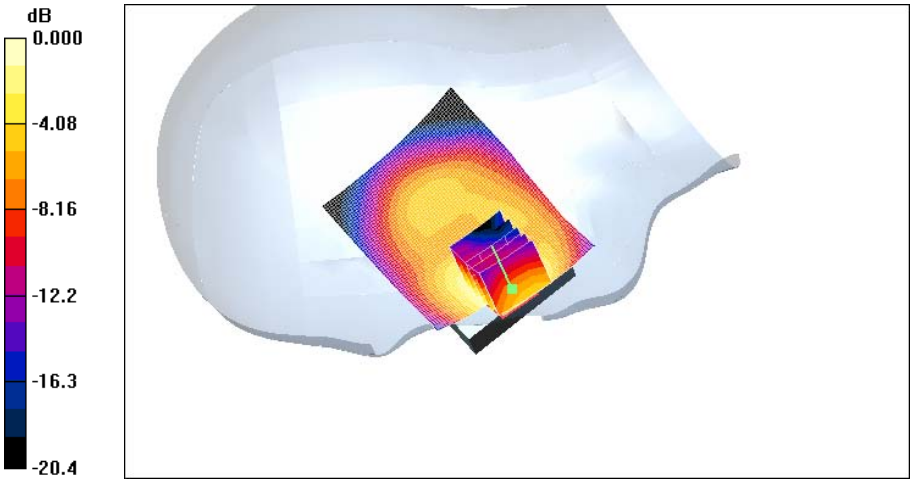
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right touch 875/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.03 mW/g

Right touch 875/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = -0.101 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.964 mW/g; SAR(10 g) = 0.525 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

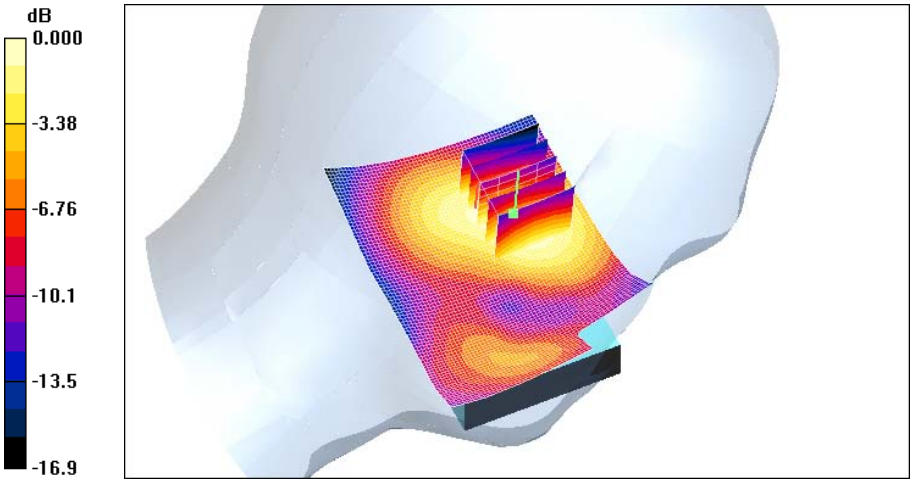
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Left tilt 450/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.510 mW/g

Left tilt 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.676 W/kg
SAR(1 g) = 0.454 mW/g; SAR(10 g) = 0.290 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.488 mW/g



0 dB = 0.488mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

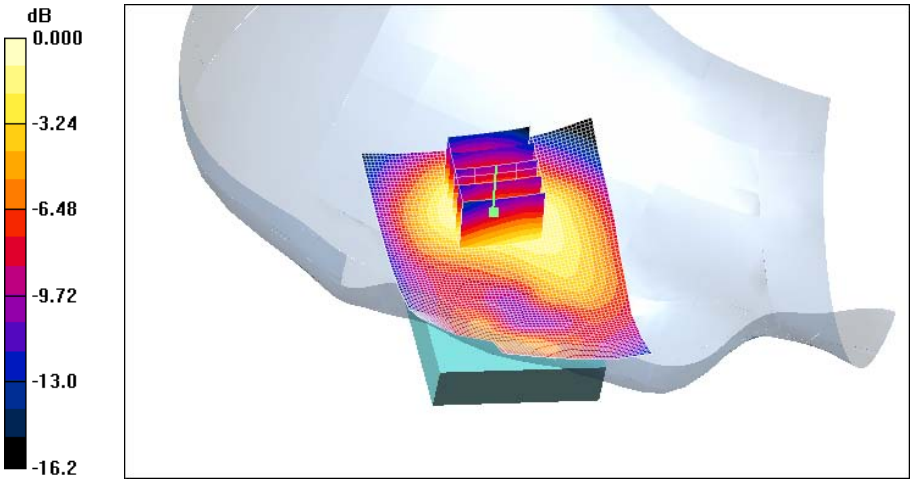
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right tilt 450/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.504 mW/g

Right tilt 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.706 W/kg
SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.301 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.510 mW/g



0 dB = 0.510mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

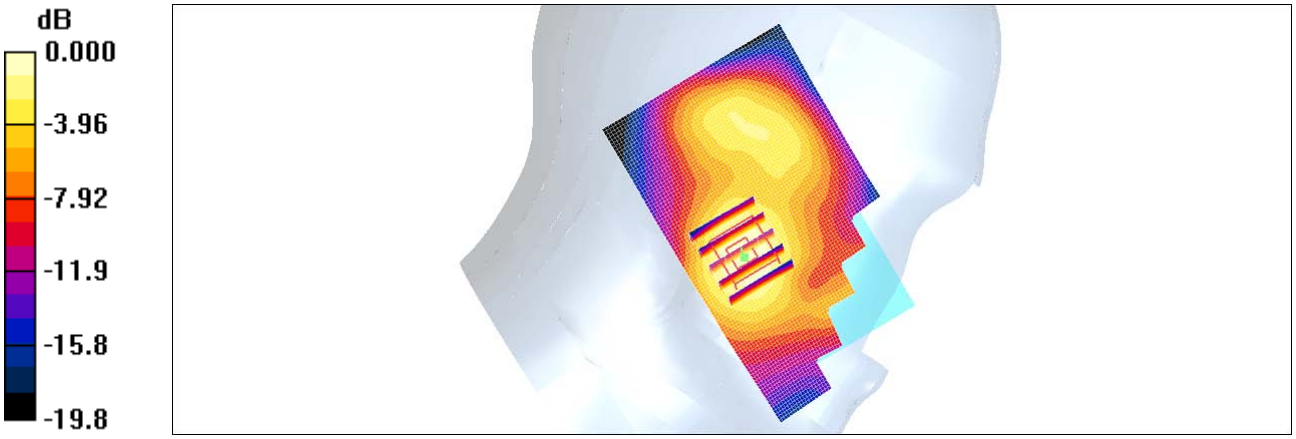
DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left touch 600/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.585 mW/g

Left touch 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 0.977 W/kg
SAR(1 g) = 0.527 mW/g; SAR(10 g) = 0.302 mW/g
Maximum value of SAR (measured) = 0.559 mW/g



0 dB = 0.559mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Apr. 6, 2009

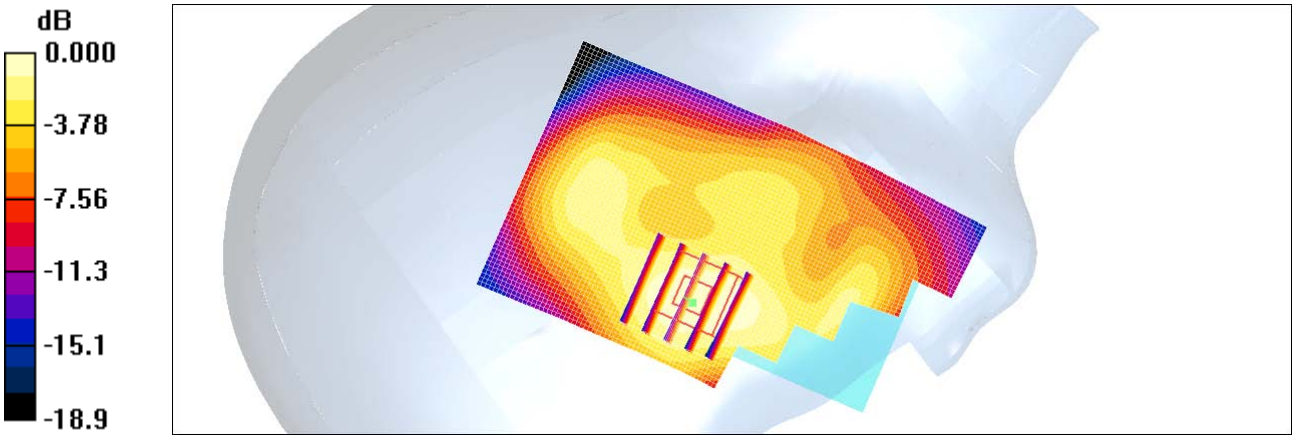
DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right touch 600/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.374 mW/g

Right touch 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.688 W/kg
SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.216 mW/g
Maximum value of SAR (measured) = 0.391 mW/g



0 dB = 0.391mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

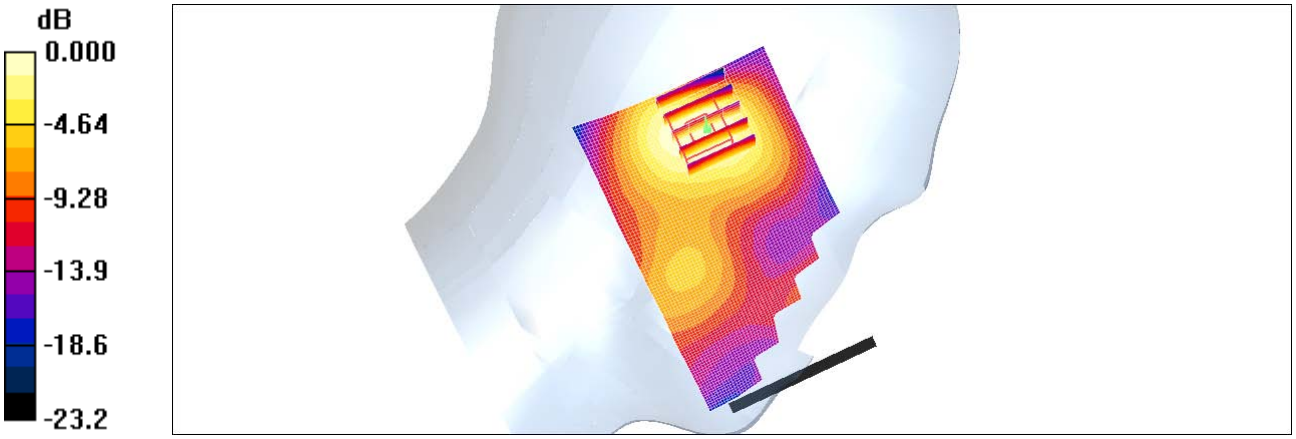
DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left tilt 600/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.364 mW/g

Left tilt 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.17 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 0.549 W/kg
SAR(1 g) = 0.297 mW/g; SAR(10 g) = 0.168 mW/g
Maximum value of SAR (measured) = 0.315 mW/g



0 dB = 0.315mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

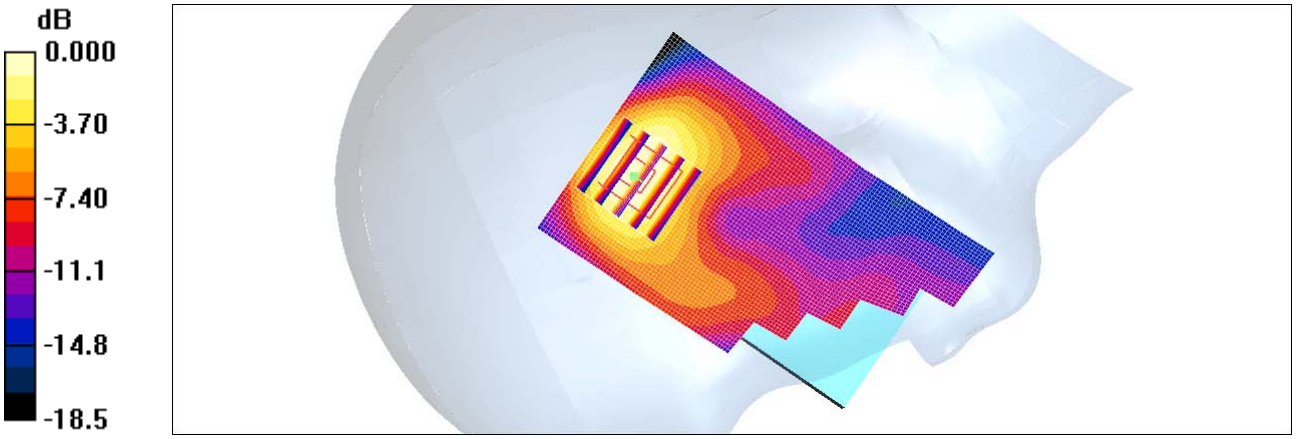
DUT: TXT8026; Type: Slide Up; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right tilt 600/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.410 mW/g

Right tilt 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.81 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.355 mW/g; SAR(10 g) = 0.201 mW/g
Maximum value of SAR (measured) = 0.380 mW/g



0 dB = 0.380mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

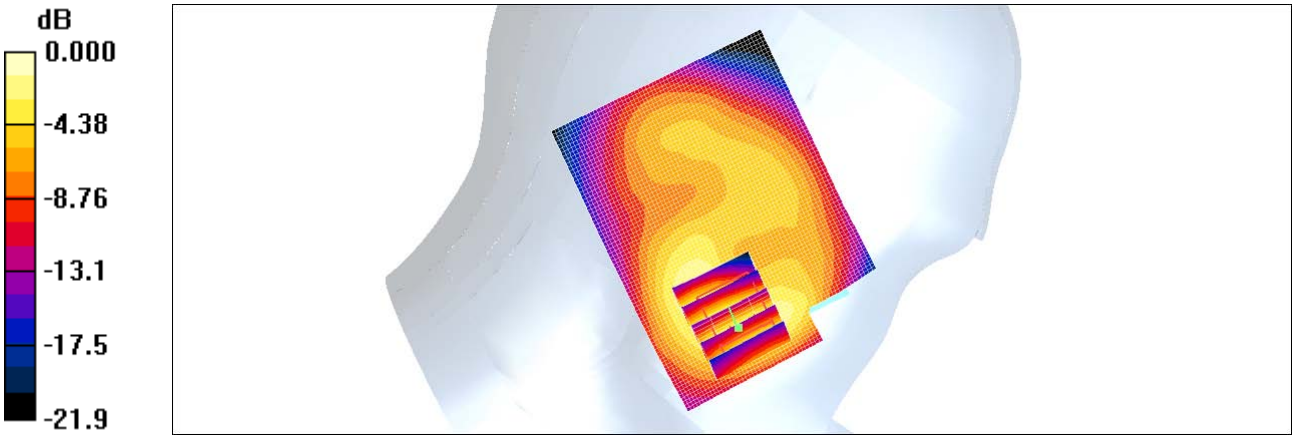
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1851.25 MHz; σ = 1.42 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left touch 25/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.31 mW/g

Left touch 25/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.8 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 2.75 W/kg
SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.694 mW/g
Maximum value of SAR (measured) = 1.47 mW/g



0 dB = 1.47mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

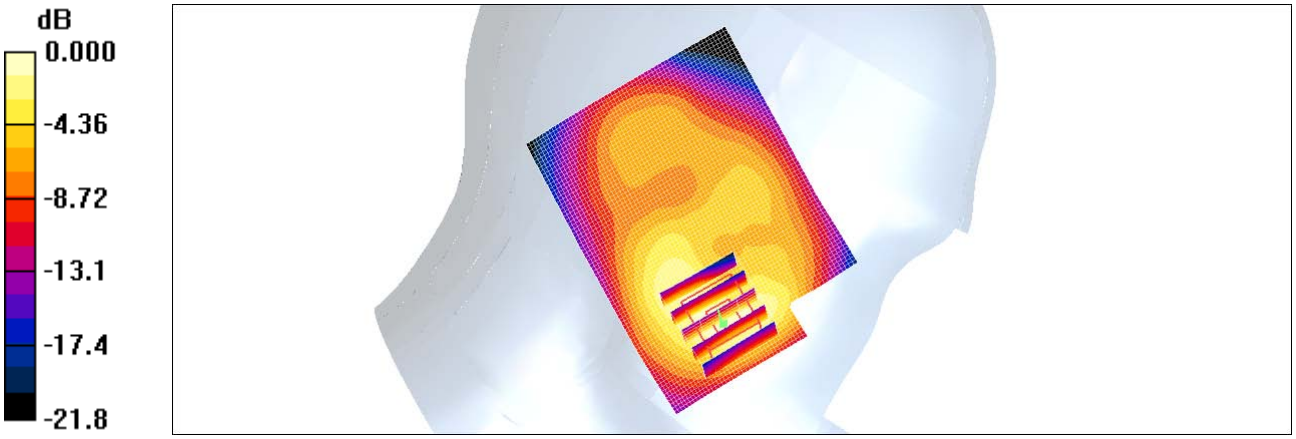
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left touch 600/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Left touch 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.4 V/m; Power Drift = 0.189 dB
Peak SAR (extrapolated) = 2.49 W/kg
SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.624 mW/g
Maximum value of SAR (measured) = 1.35 mW/g



0 dB = 1.35mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

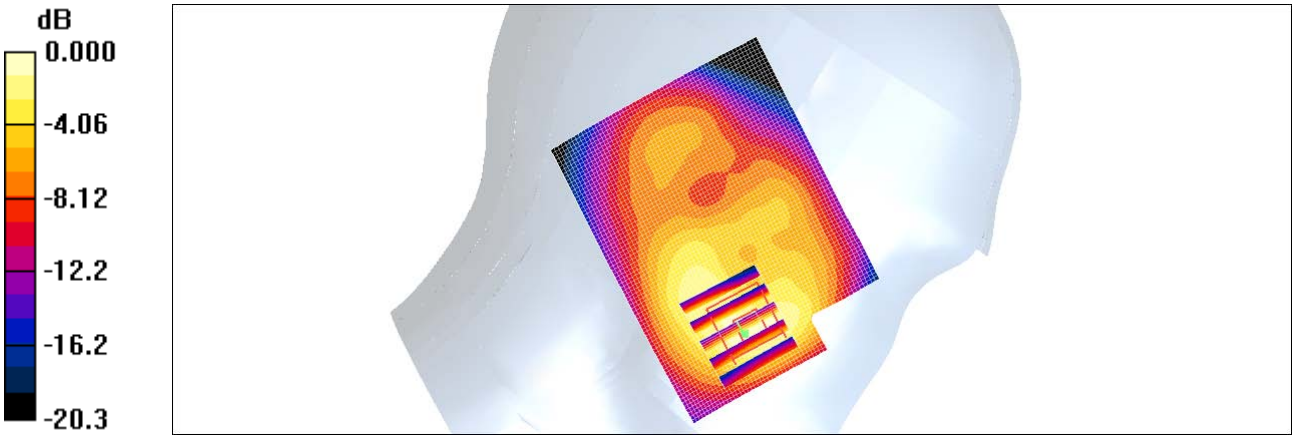
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.45 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left touch 1175/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.35 mW/g

Left touch 1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 2.89 W/kg
SAR(1 g) = 1.41 mW/g; SAR(10 g) = 0.721 mW/g
Maximum value of SAR (measured) = 1.54 mW/g



0 dB = 1.54mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

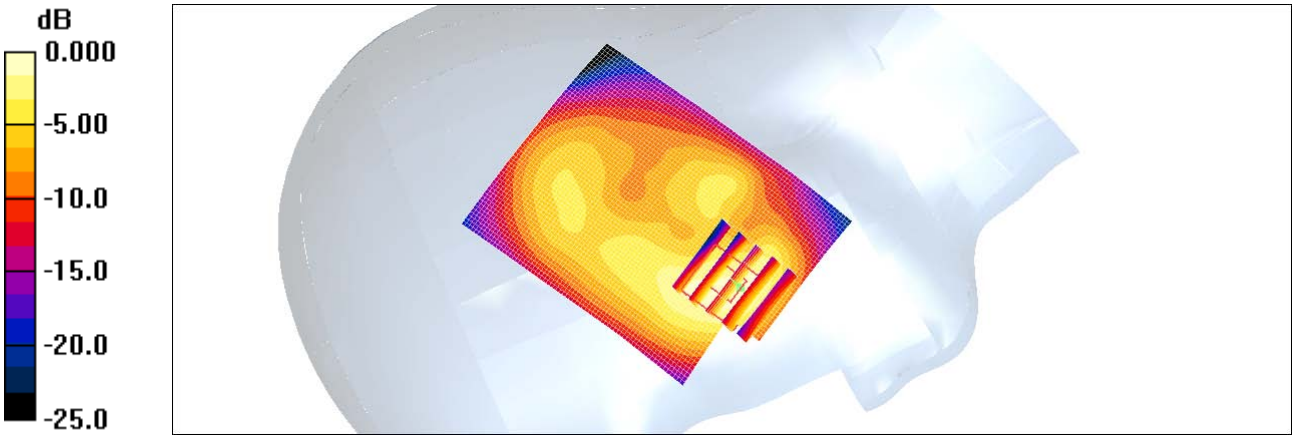
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1851.25 MHz; σ = 1.42 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right touch 25/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.08 mW/g

Right touch 25/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 2.59 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.565 mW/g
Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

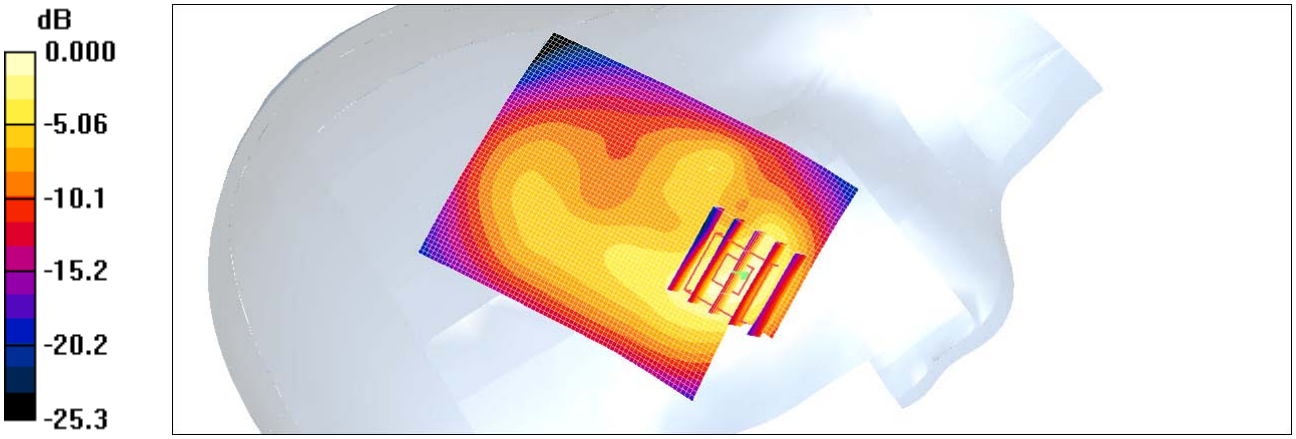
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right touch 600/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Right touch 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.1 V/m; Power Drift = 0.154 dB
Peak SAR (extrapolated) = 2.57 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.555 mW/g
Maximum value of SAR (measured) = 1.24 mW/g



0 dB = 1.24mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

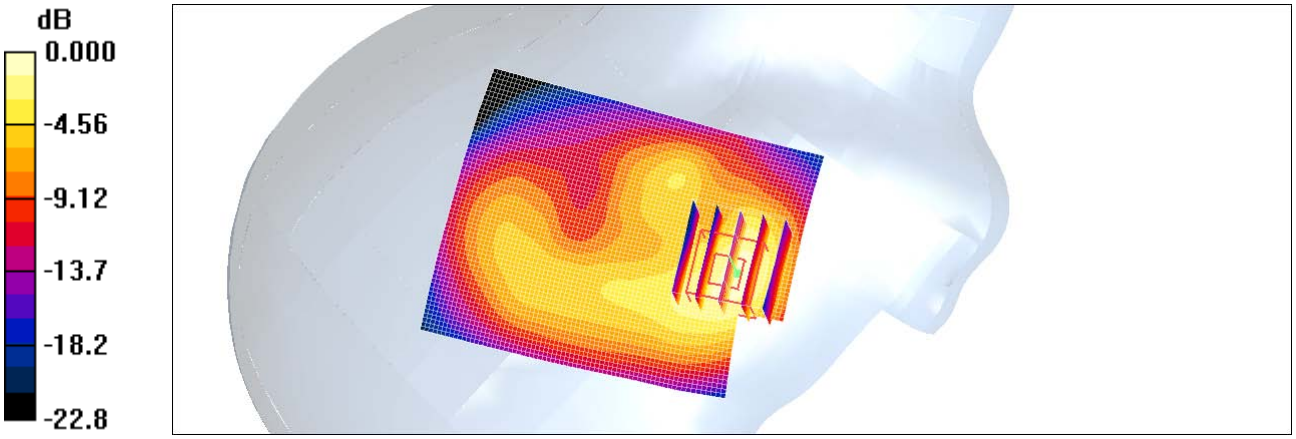
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.45 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right touch 1175/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.24 mW/g

Right touch 1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = 0.144 dB
Peak SAR (extrapolated) = 2.75 W/kg
SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.616 mW/g
Maximum value of SAR (measured) = 1.34 mW/g



0 dB = 1.34mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

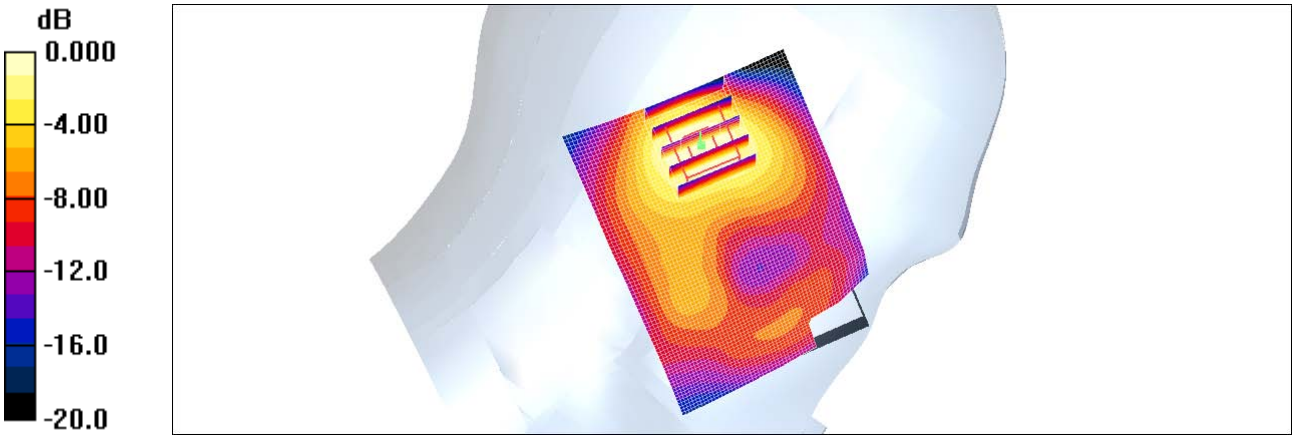
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left tilt 600/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.493 mW/g

Left tilt 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.9 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.806 W/kg
SAR(1 g) = 0.433 mW/g; SAR(10 g) = 0.242 mW/g
Maximum value of SAR (measured) = 0.471 mW/g



0 dB = 0.471mW/g

Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

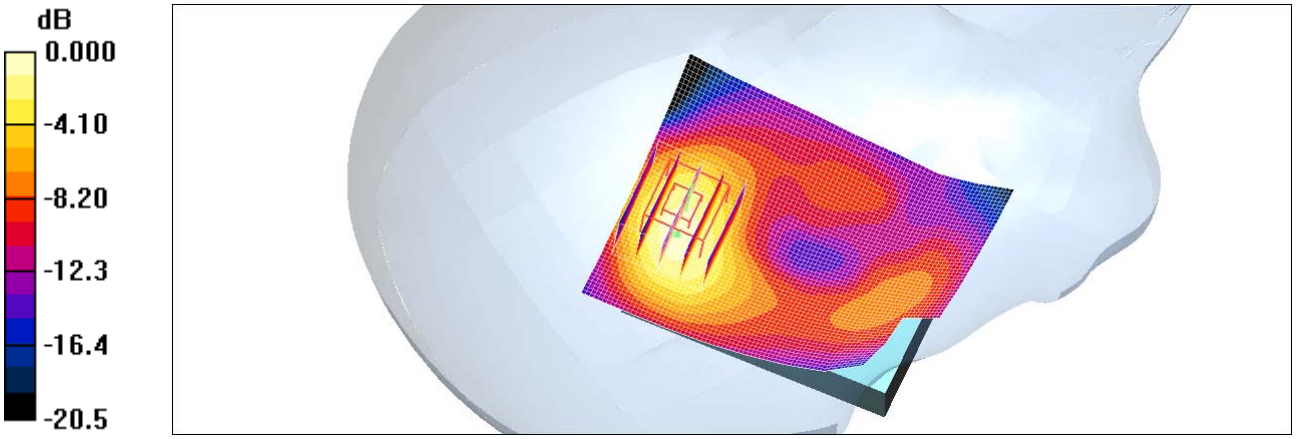
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Right tilt 600/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.514 mW/g

Right tilt 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.8 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.993 W/kg
SAR(1 g) = 0.502 mW/g; SAR(10 g) = 0.268 mW/g
Maximum value of SAR (measured) = 0.570 mW/g



0 dB = 0.570mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

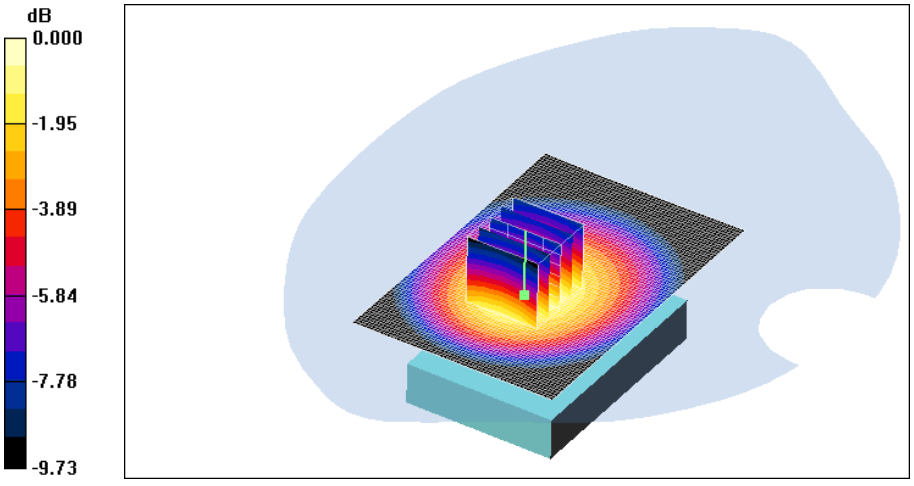
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.63, 5.63, 5.63); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

CDMA Body 384/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.538 mW/g

CDMA Body 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.0 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.751 W/kg
SAR(1 g) = 0.570 mW/g; SAR(10 g) = 0.410 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.605 mW/g



0 dB = 0.605mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

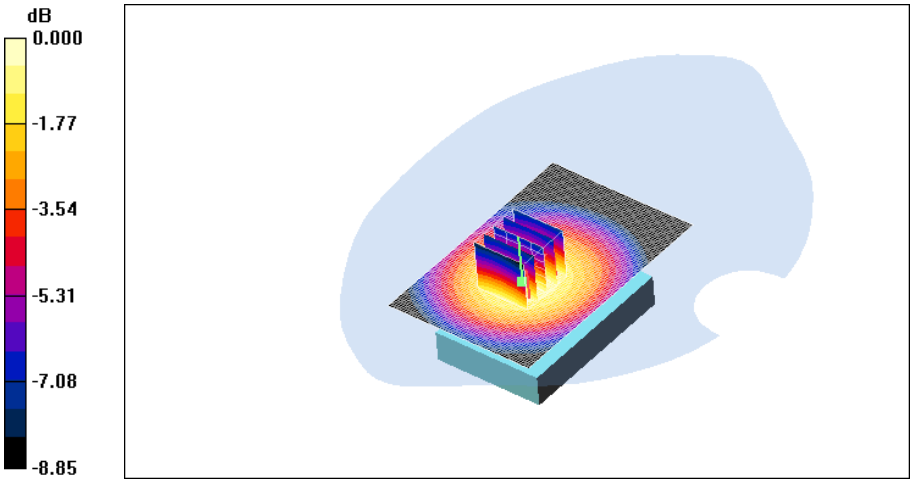
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.63, 5.63, 5.63); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

CDMA Body 384/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.340 mW/g

CDMA Body 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 0.464 W/kg
SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.269 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.381 mW/g



0 dB = 0.381mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.41 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

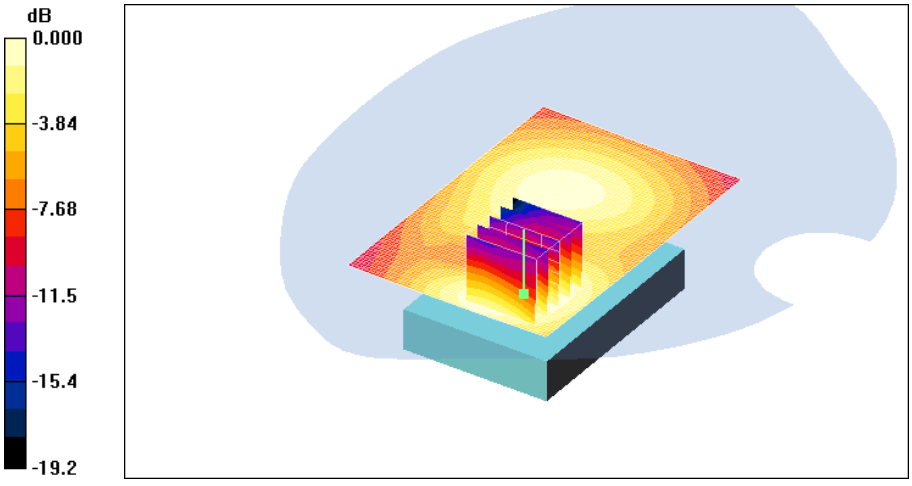
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.07, 5.07, 5.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

AWS Body 450/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.266 mW/g

AWS Body 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = 0.065 dB
Peak SAR (extrapolated) = 0.315 W/kg
SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.128 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.222 mW/g



0 dB = 0.222mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.41 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

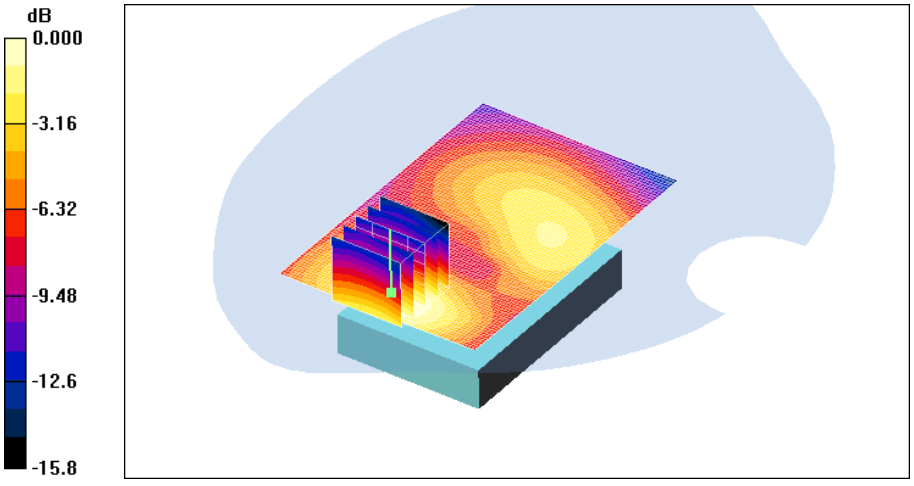
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.07, 5.07, 5.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

AWS Body 450/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.227 mW/g

AWS Body 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.21 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.128 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.223 mW/g



0 dB = 0.223mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

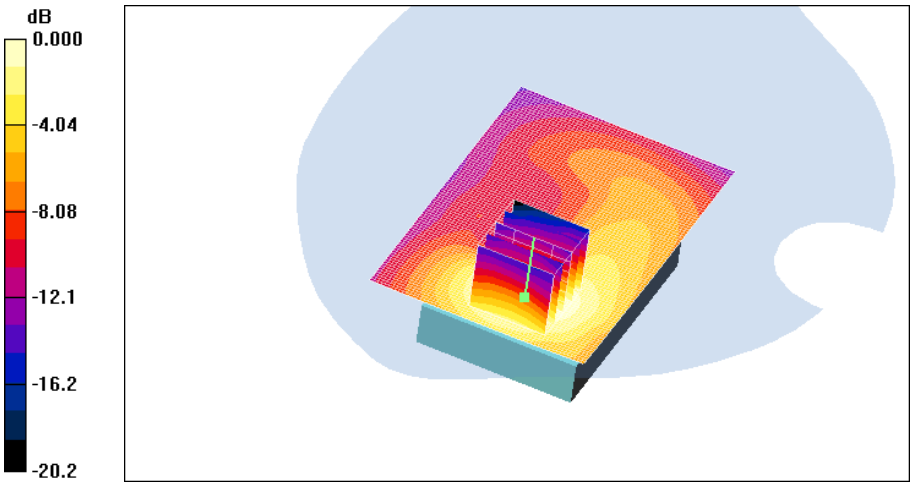
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(4.68, 4.68, 4.68); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

PCS Body 600/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.396 mW/g

PCS Body 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.71 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.508 W/kg
SAR(1 g) = 0.308 mW/g; SAR(10 g) = 0.180 mW/g
Maximum value of SAR (measured) = 0.335 mW/g



0 dB = 0.335mW/g

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

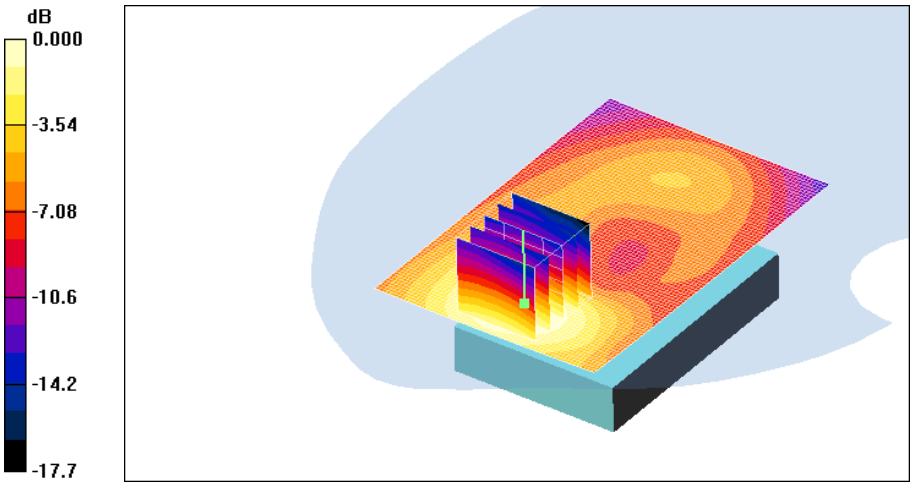
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(4.68, 4.68, 4.68); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

PCS Body 600/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.204 mW/g

PCS Body 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.97 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 0.297 W/kg
SAR(1 g) = 0.182 mW/g; SAR(10 g) = 0.110 mW/g
Maximum value of SAR (measured) = 0.197 mW/g



0 dB = 0.197mW/g

Test Laboratory: HCT CO., LTD
EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature: 21.3 ℃
Ambient Temperature: 21.5 ℃
Test Date: Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.898 mho/m; ε_r = 43; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

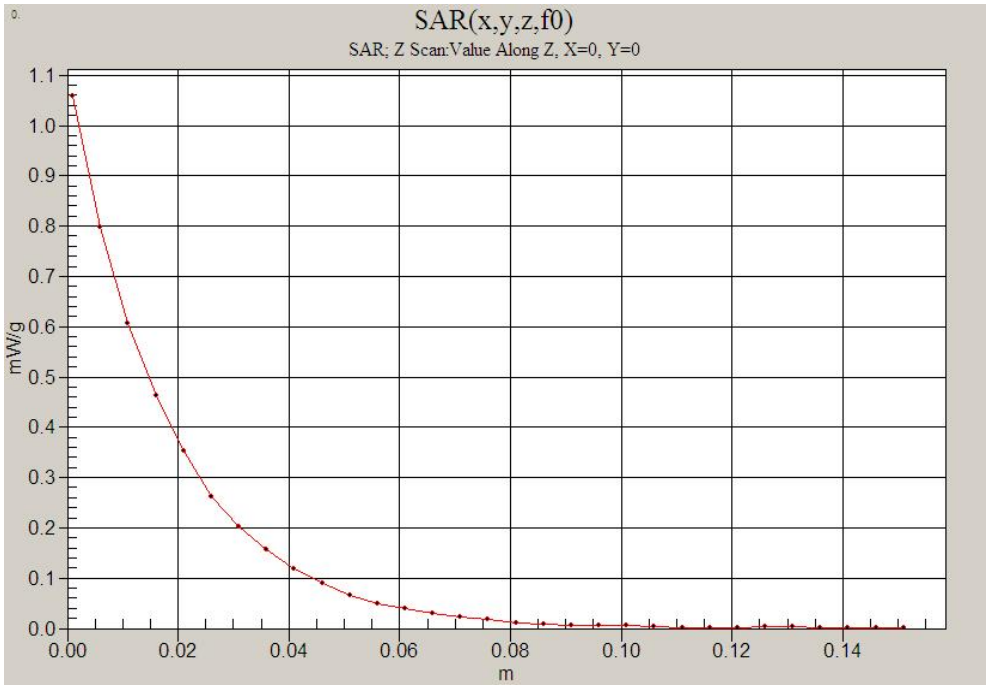
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Right touch 777/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.24 mW/g

Right touch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = -0.093 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.885 mW/g

Maximum value of SAR (measured) = 1.24 mW/g



Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.38 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

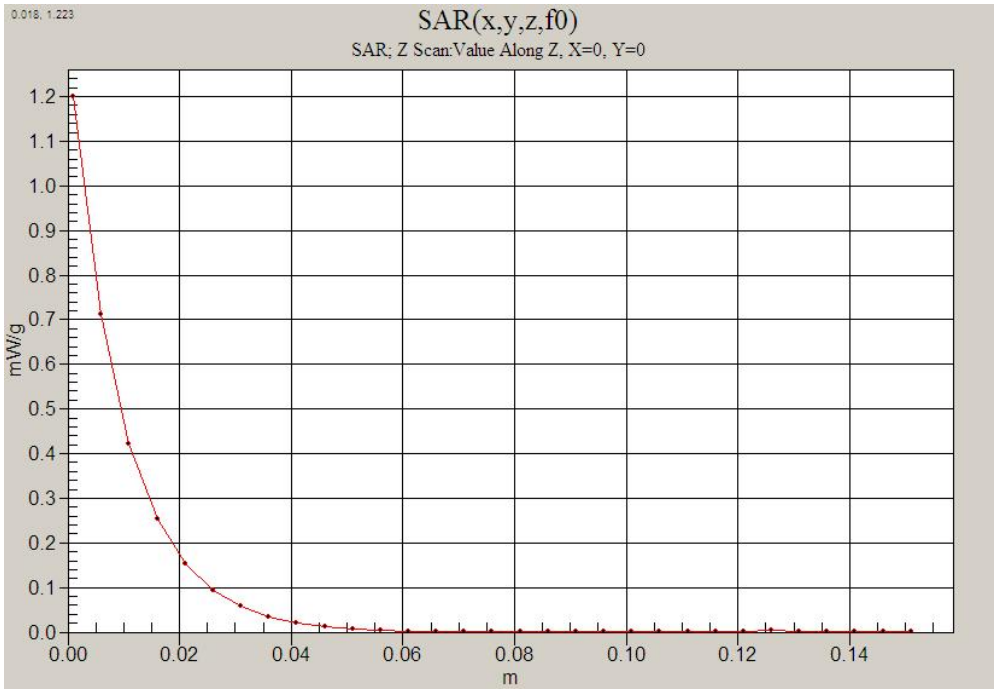
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Right touch 450/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.27 mW/g

Right touch 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.5 V/m; Power Drift = -0.145 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.655 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.33 mW/g



Test Laboratory: HCT CO., LTD

EUT Type: Tri-Band CDMA/PCS/AWS Phone with Bluetooth

Liquid Temperature: 21.3 ℃

Ambient Temperature: 21.5 ℃

Test Date: Apr. 6, 2009

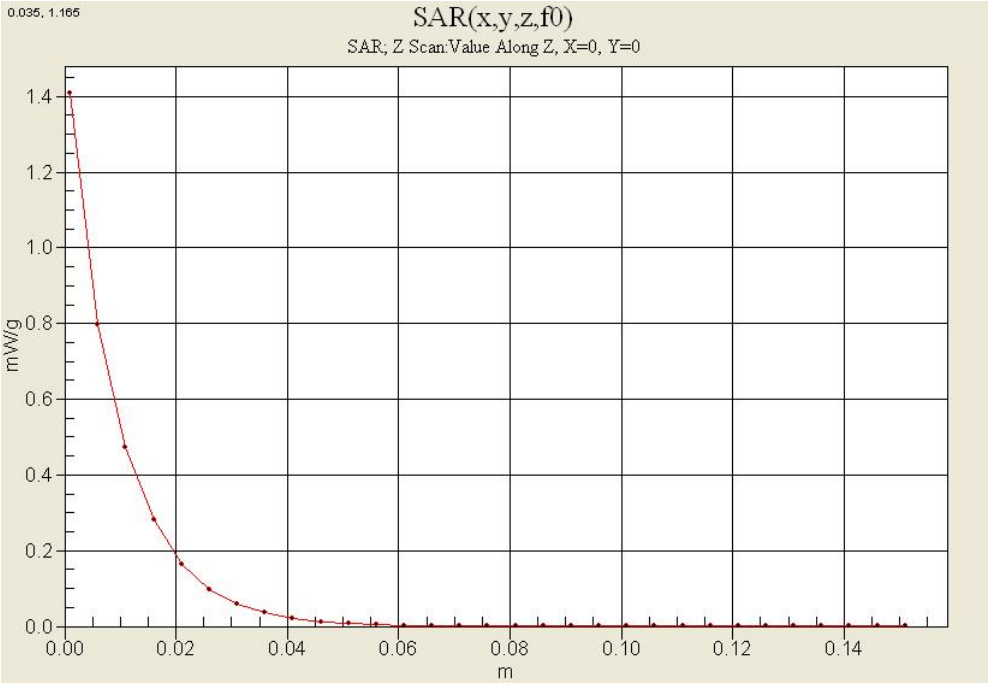
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.45 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Left touch 1175/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.35 mW/g

Left touch 1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 2.89 W/kg
SAR(1 g) = 1.41 mW/g; SAR(10 g) = 0.721 mW/g
Maximum value of SAR (measured) = 1.54 mW/g



Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

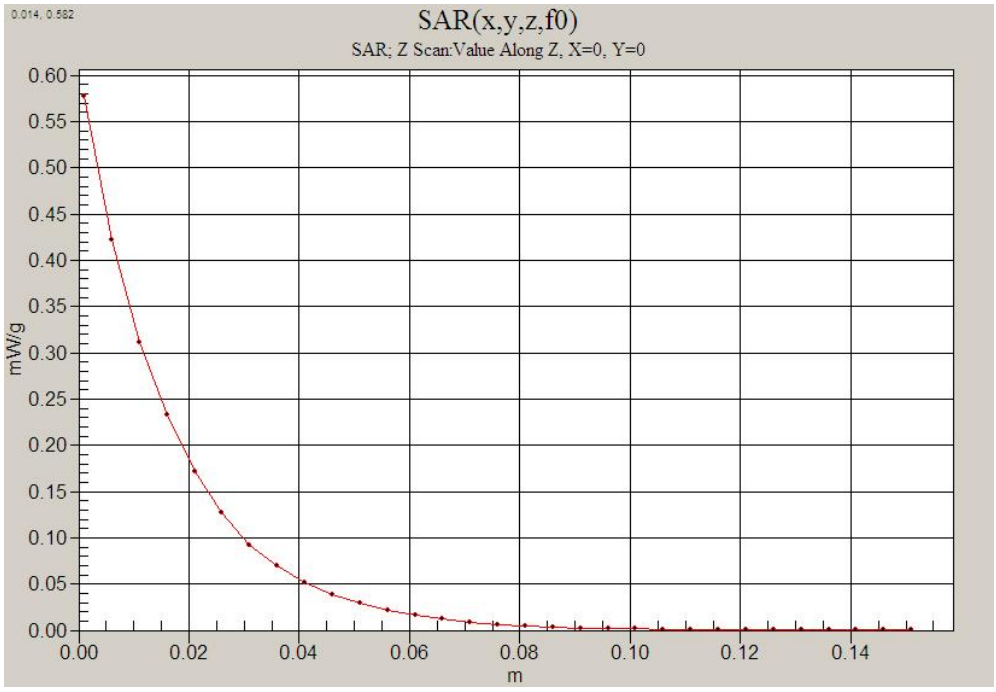
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.63, 5.63, 5.63); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

CDMA Body 384/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.538 mW/g

CDMA Body 384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.0 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.751 W/kg
SAR(1 g) = 0.570 mW/g; SAR(10 g) = 0.410 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.605 mW/g



Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.2 ℃
Ambient Temperature:	21.4 ℃
Test Date:	Mar.23, 2009

DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: AWS 1700 MHz FCC; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.41 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

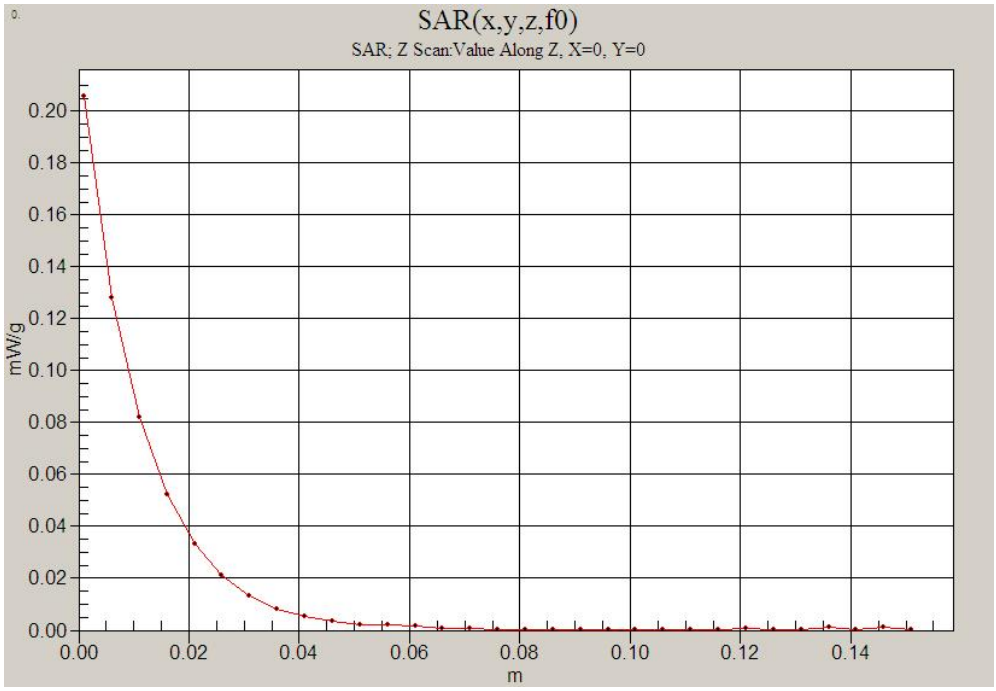
DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.07, 5.07, 5.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

AWS Body 450/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.227 mW/g

AWS Body 450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.21 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.128 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.223 mW/g



v

Test Laboratory:	HCT CO., LTD
EUT Type:	Tri-Band CDMA/PCS/AWS Phone with Bluetooth
Liquid Temperature:	21.3 ℃
Ambient Temperature:	21.5 ℃
Test Date:	Mar.22, 2009

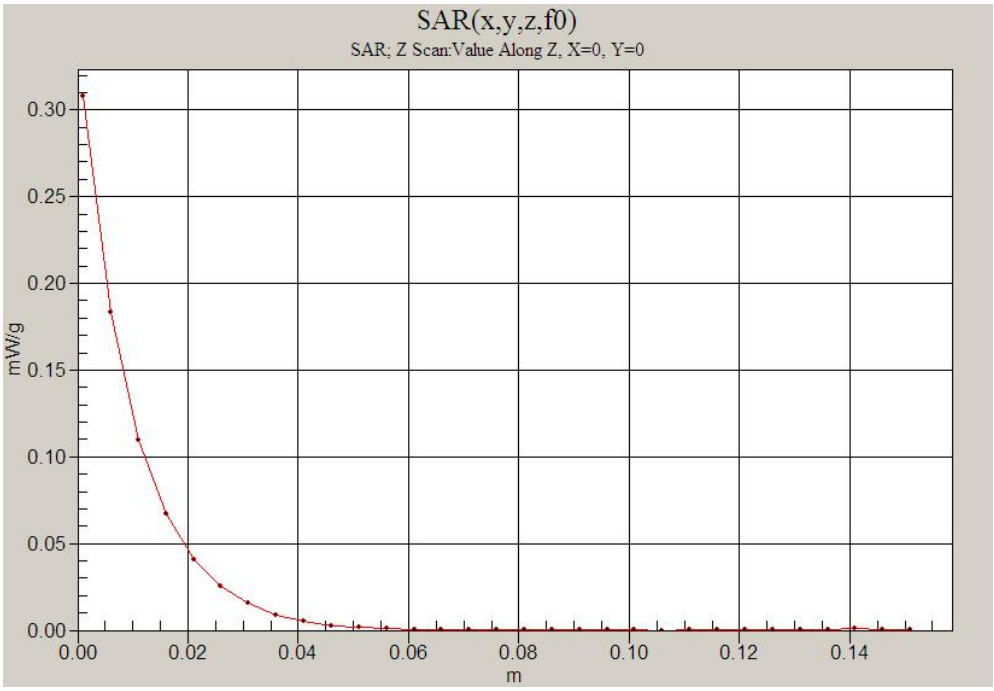
DUT: TXT8026; Type: Slide down; Serial: #1

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(4.68, 4.68, 4.68); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

PCS Body 600/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.396 mW/g

PCS Body 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.71 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.508 W/kg
SAR(1 g) = 0.308 mW/g; SAR(10 g) = 0.180 mW/g
Maximum value of SAR (measured) = 0.335 mW/g



Attachment 2. – Dipole Validation Plots

■ Validation Data (835 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20dBm)

Liquid Temp: 21.3 ℃

Test Date: Mar.22, 2009

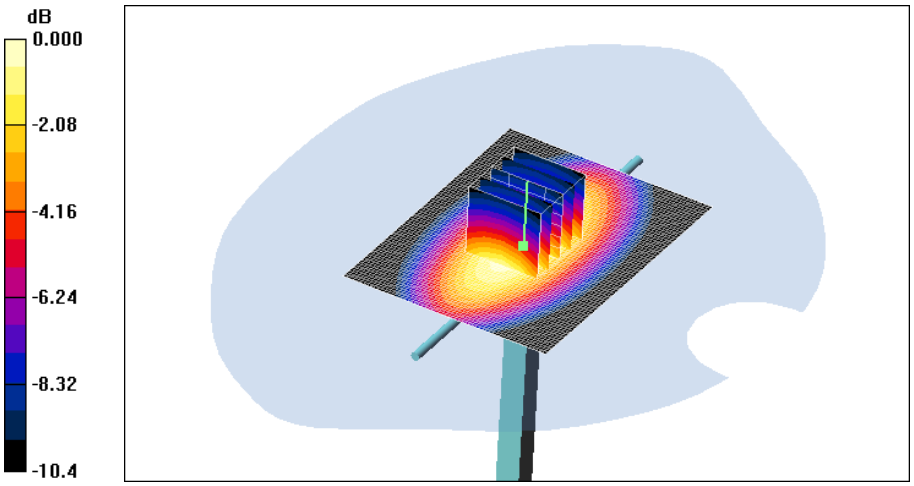
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.884 mho/m; ε_r = 43.2; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(6.07, 6.07, 6.07); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 835/900 Phamtom ; Type: SAM

Validation 835 MHz/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Validation 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.3 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.613 mW/g
Maximum value of SAR (measured) = 1.02 mW/g



0 dB = 1.02mW/g

■ Validation Data (1800 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.2 ℃

Test Date: Mar.23, 2009

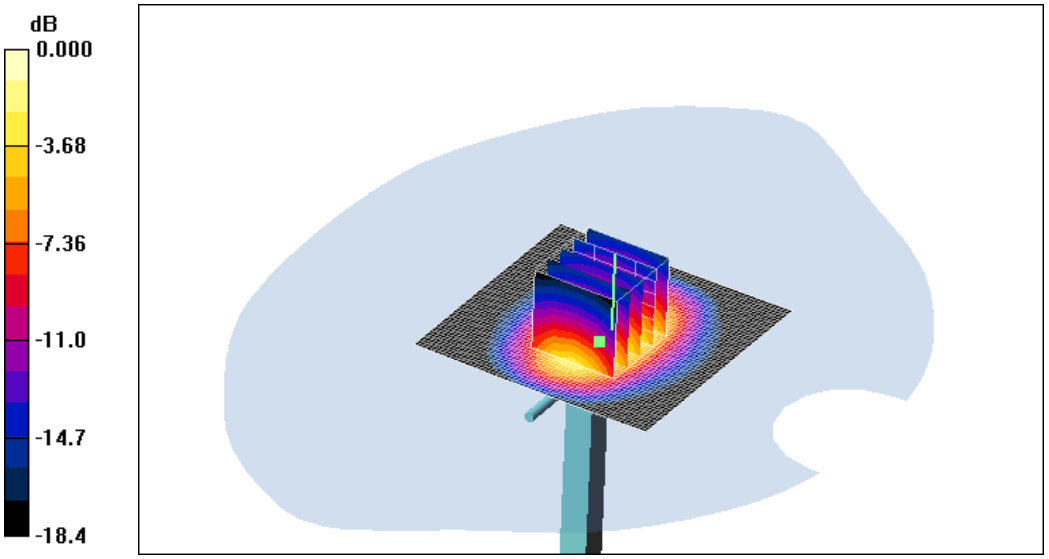
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 – SN:2d032

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.45 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 - SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Validation 1800 MHz/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.85 mW/g

Validation 1800 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.3 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 7.43 W/kg
SAR(1 g) = 3.98 mW/g; SAR(10 g) = 2.07 mW/g
Maximum value of SAR (measured) = 4.39 mW/g



0 dB = 4.39mW/g

■ Validation Data (1900 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.3 ℃

Test Date: Mar.22, 2009

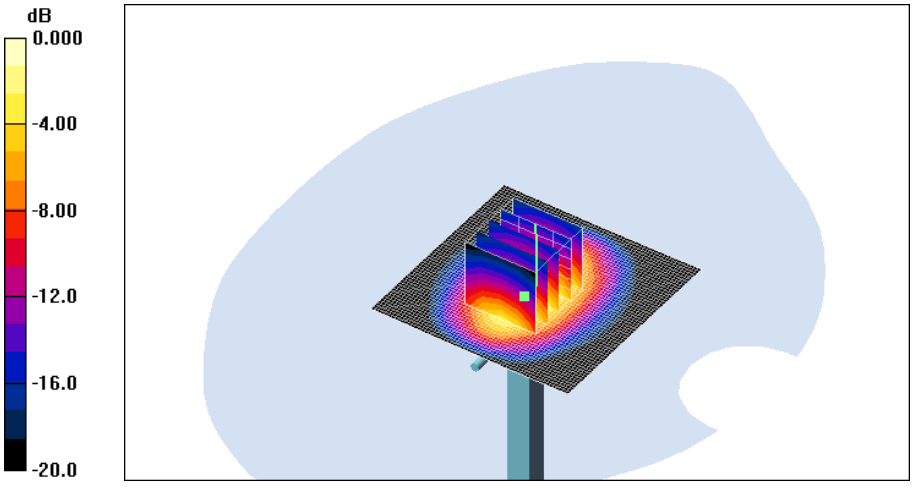
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 – SN:5d032

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.36 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ES3DV3 – SN3161; ConvF(5.04, 5.04, 5.04); Calibrated: 2008-04-07
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2008-09-03
- Phantom: 1800/1900 Phantom; Type: SAM

Validation 1900MHz/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.59 mW/g

Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 54.5 V/m; Power Drift = 0.040 dB
Peak SAR (extrapolated) = 7.60 W/kg
SAR(1 g) = 3.89 mW/g; SAR(10 g) = 1.97 mW/g
Maximum value of SAR (measured) = 4.29 mW/g



0 dB = 4.29mW/g

■ Validation Data (1900 MHz Head)

Test Laboratory: HCT CO., LTD

Input Power 100 mW (20 dBm)

Liquid Temp: 21.3 ℃

Test Date: Apr. 6, 2009

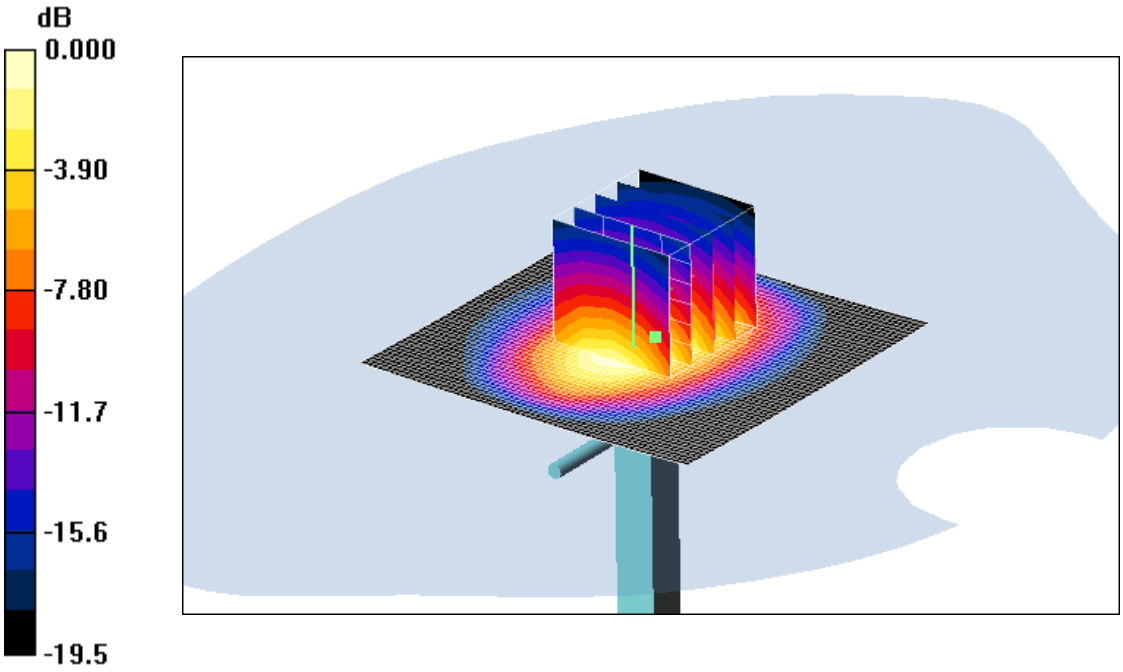
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 – SN:5d032

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1630; ConvF(5.26, 5.26, 5.26); Calibrated: 2008-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: SAM 1800/1900 MHz; Type: SAM

Dipole 1900MHz Validation/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.53 mW/g

Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.4 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 8.55 W/kg
SAR(1 g) = 3.88 mW/g; SAR(10 g) = 1.93 mW/g
Maximum value of SAR (measured) = 4.15 mW/g



0 dB = 4.15mW/g

■ Dielectric Parameter (835 MHz Head)

Title	TXT8026
SubTitle	CDMA835(Head)
Test Date	Mar.22, 2009

Frequency	e'	e''
800000000	43.6286	19.0944
805000000	43.6008	19.0691
810000000	43.4773	19.0658
815000000	43.4343	19.0561
820000000	43.3463	19.0542
825000000	43.3039	19.0767
830000000	43.2091	19.0612
835000000	43.1741	19.0288
840000000	43.1157	19.0403
845000000	43.0404	19.0255
850000000	42.9656	19.0264
855000000	42.8908	19.0586
860000000	42.8535	18.9870
865000000	42.7781	19.0094
870000000	42.7375	18.9908
875000000	42.6558	18.9848
880000000	42.6179	18.9861
885000000	42.5696	18.9504
890000000	42.4983	18.9522
895000000	42.4323	18.9026
900000000	42.4039	18.8918

■ Dielectric Parameter (835 MHz Body)

Title	TXT8026
SubTitle	CDMA835(Body)
Test Date	Mar.22, 2009

Frequency	e'	e''
800000000	54.3317	21.4126
805000000	54.2796	21.3987
810000000	54.1901	21.3871
815000000	54.1425	21.3945
820000000	54.0876	21.3934
825000000	53.9905	21.3799
830000000	53.9777	21.3805
835000000	53.9274	21.3063
840000000	53.8654	21.3032
845000000	53.7914	21.2937
850000000	53.7510	21.2829
855000000	53.7419	21.2661
860000000	53.6534	21.2519
865000000	53.6240	21.2052
870000000	53.5355	21.1704
875000000	53.5013	21.1210
880000000	53.4568	21.0707
885000000	53.4181	21.0609
890000000	53.3283	21.0393
895000000	53.3021	21.0565
900000000	53.2918	21.0047

■ Dielectric Parameter (1800 MHz Head)

Title	TXT8026
SubTitle	AWS1800(Head)
Test Date	Mar.23, 2009

Frequency	e'	e''
1.700000000 GHz	38.9396	14.2994
1.710000000 GHz	38.8462	14.3130
1.720000000 GHz	38.7439	14.3415
1.730000000 GHz	38.6654	14.3540
1.740000000 GHz	38.6193	14.4107
1.750000000 GHz	38.5928	14.4285
1.760000000 GHz	38.5587	14.4199
1.770000000 GHz	38.5634	14.4937
1.780000000 GHz	38.5618	14.4849
1.790000000 GHz	38.5327	14.5010
1.800000000 GHz	38.5133	14.5267
1.810000000 GHz	38.4539	14.5181
1.820000000 GHz	38.3715	14.5565
1.830000000 GHz	38.3125	14.5394
1.840000000 GHz	38.2125	14.5890
1.850000000 GHz	38.1288	14.6024
1.860000000 GHz	38.0872	14.6392
1.870000000 GHz	38.0067	14.6635
1.880000000 GHz	37.9983	14.7017
1.890000000 GHz	37.9938	14.7642
1.900000000 GHz	37.9938	14.7732

■ Dielectric Parameter (1800 MHz Body)

Title	TXT8026
SubTitle	AWS1800(Body)
Test Date	Mar.23, 2009

Frequency	e'	e''
1.700000000 GHz	54.7221	14.4810
1.710000000 GHz	54.7264	14.4979
1.720000000 GHz	54.6930	14.5389
1.730000000 GHz	54.6619	14.5667
1.740000000 GHz	54.6385	14.6182
1.750000000 GHz	54.5895	14.6243
1.760000000 GHz	54.5664	14.6234
1.770000000 GHz	54.5349	14.6450
1.780000000 GHz	54.4631	14.6909
1.790000000 GHz	54.4343	14.7108
1.800000000 GHz	54.4060	14.7416
1.810000000 GHz	54.3382	14.7968
1.820000000 GHz	54.3258	14.8029
1.830000000 GHz	54.3011	14.8389
1.840000000 GHz	54.2952	14.8766
1.850000000 GHz	54.2452	14.8802
1.860000000 GHz	54.2314	14.9292
1.870000000 GHz	54.2131	14.9266
1.880000000 GHz	54.1671	14.9724
1.890000000 GHz	54.1196	14.9864
1.900000000 GHz	54.0858	15.0328
1.910000000 GHz	54.0573	15.0784
1.920000000 GHz	54.0330	15.0755
1.930000000 GHz	53.9730	15.1073
1.940000000 GHz	53.9294	15.1463
1.950000000 GHz	53.9093	15.2113
1.960000000 GHz	53.9007	15.2246
1.970000000 GHz	53.8723	15.2537
1.980000000 GHz	53.8505	15.3103
1.990000000 GHz	53.8320	15.3454
2.000000000 GHz	53.8389	15.4077

■ Dielectric Parameter (1900 MHz Head)

Title	TXT8026
SubTitle	PCS1900(Head)
Test Date	Mar.22, 2009

Frequency	e'	e''
1850000000	40.4599	12.5922
1855000000	40.4623	12.5781
1860000000	40.4443	12.5831
1865000000	40.4024	12.6157
1870000000	40.3394	12.6289
1875000000	40.3240	12.6503
1880000000	40.3044	12.7015
1885000000	40.2491	12.7340
1890000000	40.2145	12.7561
1895000000	40.1716	12.8015
1900000000	40.1580	12.8546
1905000000	40.1147	12.8617
1910000000	40.0839	12.9053
1915000000	40.0597	12.9268
1920000000	40.0350	12.9515
1925000000	40.0066	12.9610
1930000000	40.0195	12.9787
1935000000	40.0059	12.9696
1940000000	39.9808	12.9740
1945000000	40.0459	12.9802
1950000000	40.0265	12.9661

■ Dielectric Parameter (1900 MHz Body)

Title	TXT8026
SubTitle	PCS1900(Body)
Test Date	Mar.22, 2009

Frequency	e'	e''
1850000000	51.3142	13.4622
1855000000	51.2848	13.5121
1860000000	51.2581	13.5563
1865000000	51.2548	13.5943
1870000000	51.2558	13.6286
1875000000	51.2592	13.6608
1880000000	51.3305	13.7780
1885000000	51.4279	13.8155
1890000000	51.4592	13.8651
1895000000	51.5082	13.9022
1900000000	51.5290	13.9146
1905000000	51.5613	13.9236
1910000000	51.5824	13.9354
1915000000	51.6356	13.9429
1920000000	51.6202	13.9448
1925000000	51.6009	13.9183
1930000000	51.5228	13.8853
1935000000	51.4672	13.8534
1940000000	51.3967	13.8320
1945000000	51.3126	13.7952
1950000000	51.2762	13.8103

■ Dielectric Parameter (1900 MHz Head)

Title	TXT8026
SubTitle	PCS1900(Head)
Test Date	Apr. 6, 2009

Frequency	e'	e''
1.800000000 GHz	39.2831	13.4698
1.810000000 GHz	39.2069	13.5407
1.820000000 GHz	39.2201	13.5969
1.830000000 GHz	39.2633	13.6406
1.840000000 GHz	39.3561	13.7045
1.850000000 GHz	39.3931	13.7443
1.860000000 GHz	39.4373	13.7067
1.870000000 GHz	39.4056	13.7103
1.880000000 GHz	39.3200	13.6789
1.890000000 GHz	39.1848	13.6617
1.900000000 GHz	39.0177	13.6715
1.910000000 GHz	38.8857	13.6780
1.920000000 GHz	38.7684	13.7146
1.930000000 GHz	38.6886	13.7985
1.940000000 GHz	38.7017	13.8736
1.950000000 GHz	38.7440	13.9325
1.960000000 GHz	38.8205	13.9833
1.970000000 GHz	38.8903	13.9995
1.980000000 GHz	38.9329	14.0268
1.990000000 GHz	38.9463	14.0083
2.000000000 GHz	38.8360	13.9783

Attachment 3. – Probe Calibration Data

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

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

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client H-CT (Dymstec)

Certificate No: ES3-3161_Apr08

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3161
Calibration procedure(s)	QA CAL-01.v6 and QA CAL-23.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	April 7, 2008
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 654	20-Apr-07 (No. DAE4-654_Apr07)	Apr-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: April 7, 2008

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

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

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3161

Manufactured: October 8, 2007
Calibrated: April 7, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3161 **April 7, 2008**

DASY - Parameters of Probe: ES3DV3 SN:3161

Sensitivity in Free Space[A] Diode Compression[B]

NormX	**1.09** ± 10.1%	μV/(V/m)^2	DCP X	**90** mV
NormY	**1.26** ± 10.1%	μV/(V/m)^2	DCP Y	**92** mV
NormZ	**0.94** ± 10.1%	μV/(V/m)^2	DCP Z	**94** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	9.7	5.5
SAR_{be} [%]	With Correction Algorithm	0.8	0.5

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	10.8	6.5
SAR_{be} [%]	With Correction Algorithm	0.9	0.8

Sensor Offset

Probe Tip to Sensor Center	**2.0** mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

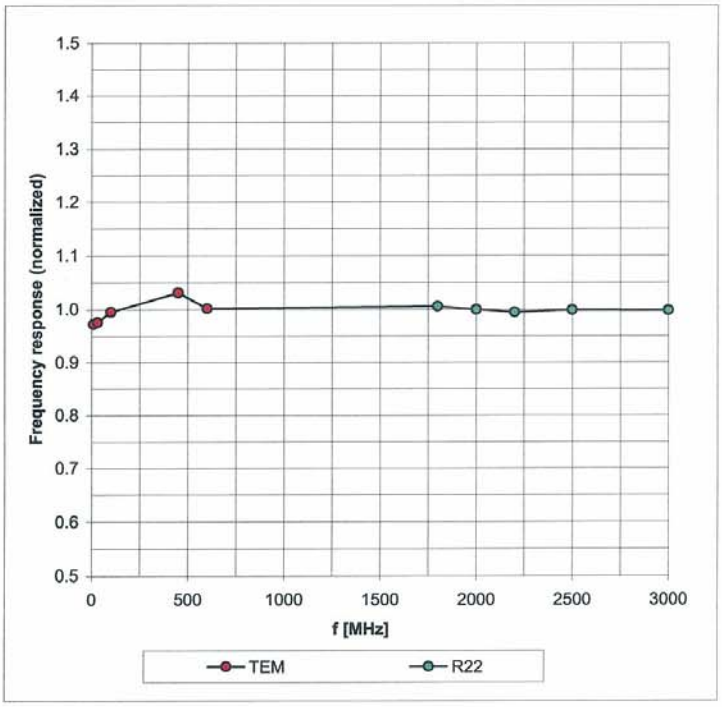
[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

ES3DV3 SN:3161 **April 7, 2008**

Frequency Response of E-Field

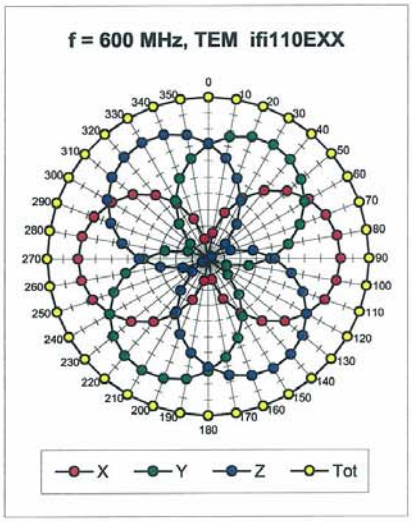
(TEM-Cell:ifi110 EXX, Waveguide: R22)

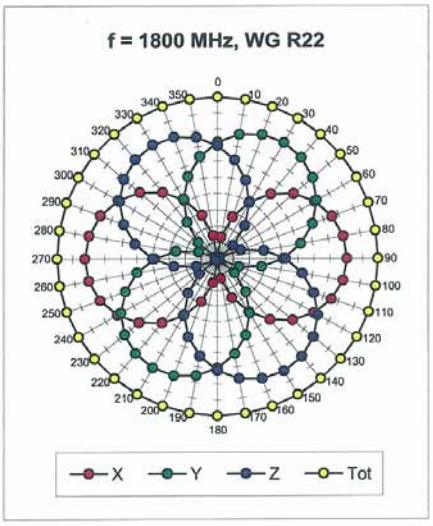


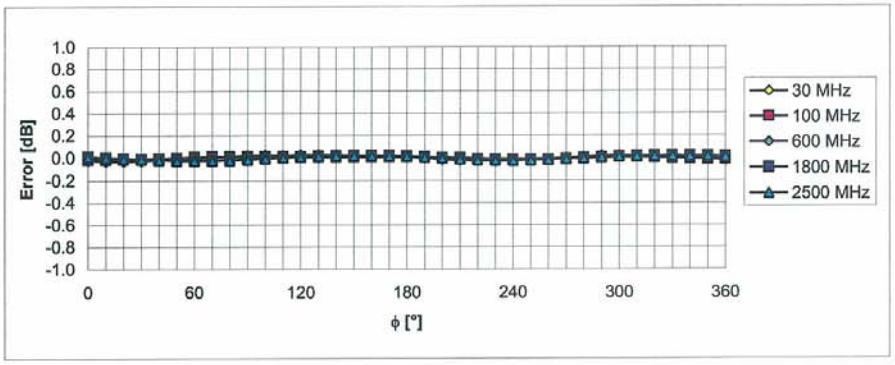
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

ES3DV3 SN:3161 **April 7, 2008**

Receiving Pattern (ϕ), ϑ = 0°







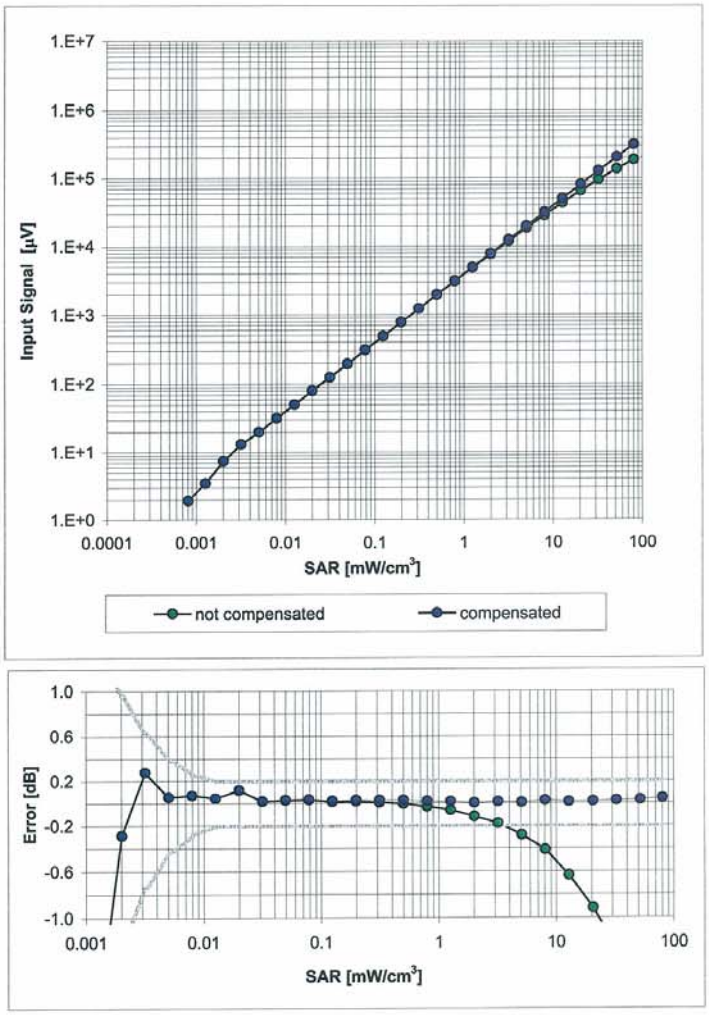
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Certificate No: ES3-3161_Apr08 Page 6 of 9

ES3DV3 SN:3161 **April 7, 2008**

Dynamic Range f(SAR_{head})

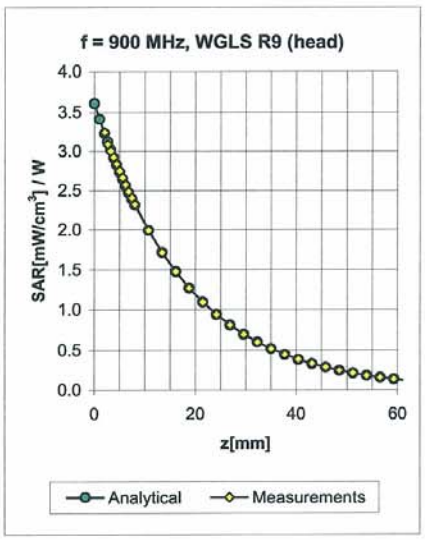
(Waveguide R22, f = 1800 MHz)

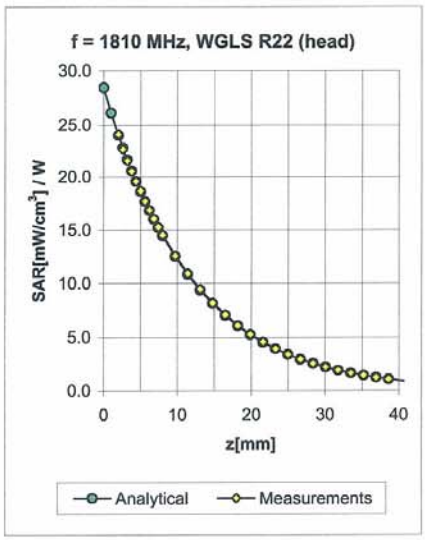


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ES3DV3 SN:3161 April 7, 2008

Conversion Factor Assessment





f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	1.00	1.12	6.07 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.86	1.19	5.04 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.76	1.26	4.77 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.70	1.32	4.47 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	1.00	1.17	5.63 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.81	1.22	5.07 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.74	1.31	4.68 ± 11.0% (k=2)
2300	± 50 / ± 100	Body	52.8 ± 5%	1.85 ± 5%	0.56	1.65	4.32 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.60	1.52	4.15 ± 11.0% (k=2)
2600	± 50 / ± 100	Body	52.5 ± 5%	2.16 ± 5%	0.61	1.50	3.97 ± 11.0% (k=2)

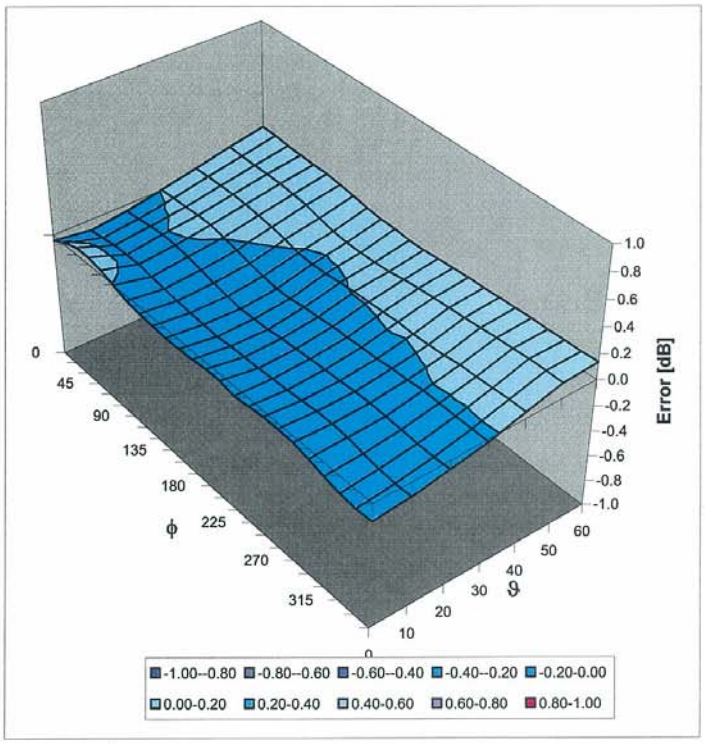
[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Certificate No: ES3-3161_Apr08 Page 8 of 9

ES3DV3 SN:3161 **April 7, 2008**

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1630**
Place of Assessment:	**Zurich**
Date of Assessment:	**March 30, 2009**
Probe Calibration Date:	**August 25, 2008**

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

Assessed by:

Schmid & Partner Engineering AG

s p e a g

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

Dosimetric E-Field Probe ET3DV6 - SN:1630

Conversion factor (± standard deviation)

835 ± 50 MHz	*ConvF*	6.53 ± 7%	ε_r = 41.5 ± 5% σ = 0.90 ± 5% mho/m (head tissue)
1900 ± 50 MHz	*ConvF*	5.26 ± 7%	ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m (head tissue)
1950 ± 50 MHz	*ConvF*	5.23 ± 7%	ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m (head tissue)
835 ± 50 MHz	*ConvF*	6.28 ± 7%	ε_r = 55.2 ± 5% σ = 0.97 ± 5% mho/m (body tissue)
1900 ± 50 MHz	*ConvF*	4.96 ± 7%	ε_r = 53.3 ± 5% σ = 1.52 ± 5% mho/m (body tissue)

Important Note:

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

Please see also Section 4.7 of the DASY4 Manual.

Attachment 4. – Dipole Calibration Data

Calibration Laboratory of
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Accreditation No.: SCS 108

Client HCT (Dymstec)

Certificate No: D835V2-441_May08

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 441
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	May 19, 2008
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	07-Aug-07 (METAS, No 217-00718)	Aug-08
Type-N mismatch combination	SN: 5047.2 / 06327	08-Aug-07 (No. 217-00721)	Aug-08
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	04-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 20, 2008

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Certificate No: D835V2-441_May08 Page 1 of 6

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result..

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.32 mW / g
SAR normalized	normalized to 1W	9.28 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**9.17 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.53 mW / g
SAR normalized	normalized to 1W	6.12 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.07 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.4 Ω - 7.6 jΩ
Return Loss	-22.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.377 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 09, 2001

DASY4 Validation Report for Head TSL

Date/Time: 19.05.2008 12:17:50

Test Laboratory: SPEAG, Zurich, Switzerland

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

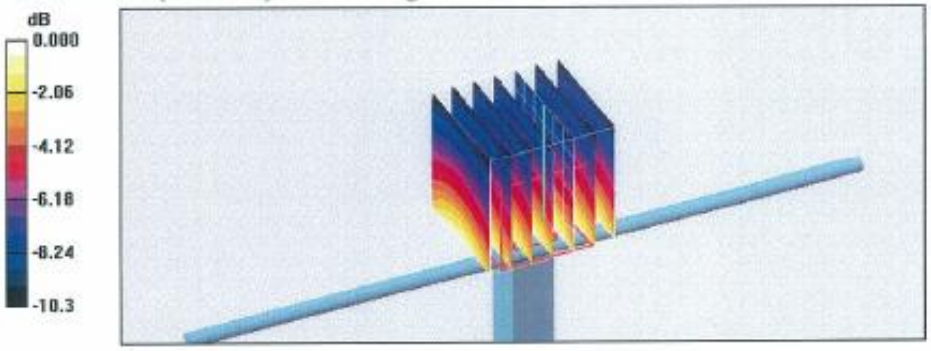
Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL 900 MHz;
Medium parameters used: f = 835 MHz; σ = 0.909 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

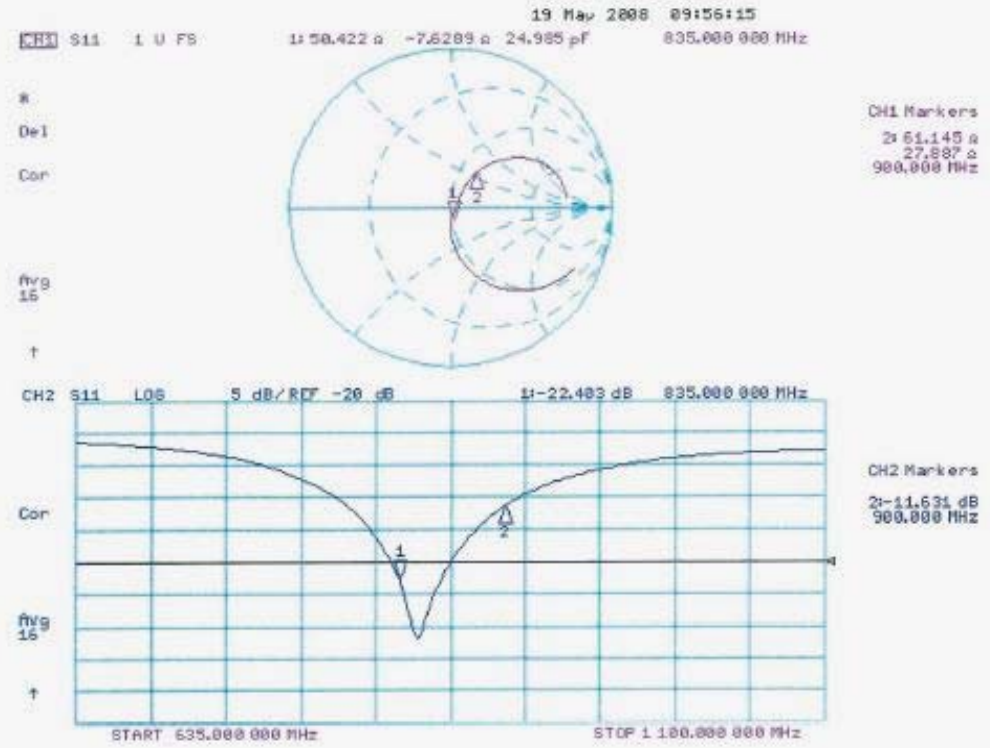
Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.1 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 3.38 W/kg
SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.53 mW/g
Maximum value of SAR (measured) = 2.62 mW/g



0 dB = 2.62mW/g

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 108

Client **HCT (Dymstec)** Certificate No: **D1800V2-2d007-May08**

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 2d007
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	May 20, 2008
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	07-Aug-07 (No. 217-00718)	Aug-08
Type-N mismatch combination	SN: 5047.2 / 06327	08-Aug-07 (No. 217-00721)	Aug-08
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-08
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 22, 2008

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Certificate No: D1800V2-2d007_May08 Page 1 of 6

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.6 ± 6 %	1.41 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.82 mW /g
SAR normalized	normalized to 1W	39.3 mW /g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**38.9 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.11 mW /g
SAR normalized	normalized to 1W	20.4 mW /g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**20.3 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	46.9 jΩ - 6.4 jΩ
Return Loss	- 22.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.454 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	July 23, 2001

DASY4 Validation Report for Head TSL

Date/Time: 20.05.2008 12:24:18

Test Laboratory: SPEAG, Zurich, Switzerland

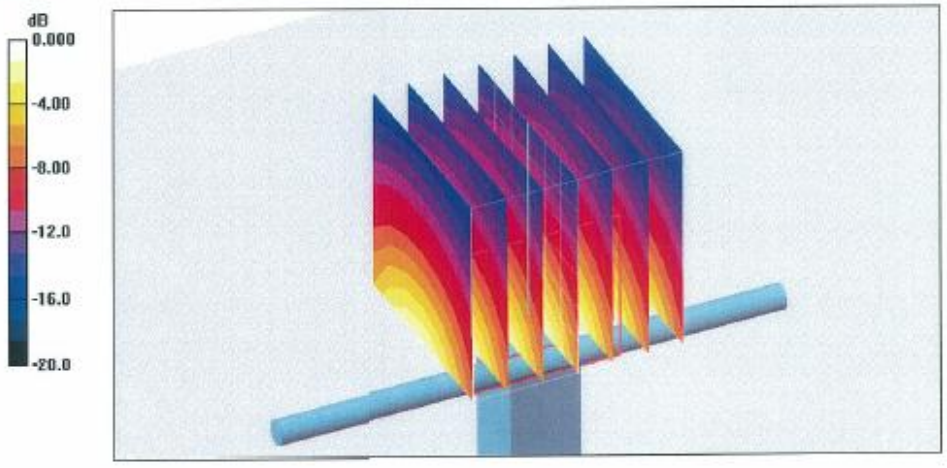
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: SN:2d007

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1
Medium: HSL U10 BB;
Medium parameters used: f = 1800 MHz; σ = 1.41 mho/m; ε_r = 39.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

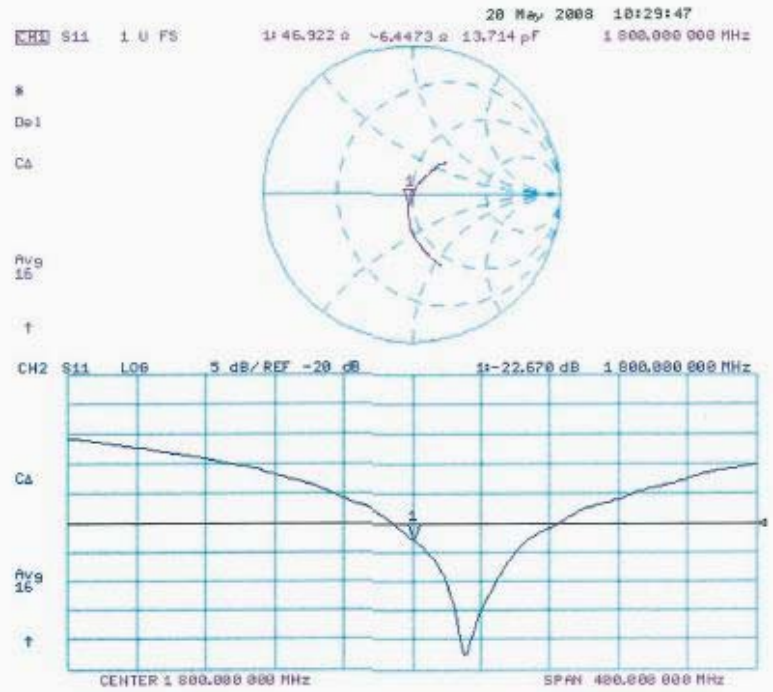
- Probe: ES3DV2 - SN3025; ConvF(4.96, 4.96, 4.96); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg)
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.1 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 9.82 mW/g; SAR(10 g) = 5.11 mW/g
Maximum value of SAR (measured) = 11.7 mW/g



0 dB = 11.7mW/g

Impedance Measurement Plot for Head TSL



Calibration Laboratory of
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Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client H-CT (Dymstec)

Certificate No: D1900V2-5d032-Jul08

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d032
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	July 22, 2008
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-05 (No. 217-00664)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 22, 2008

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.8 ± 6 %	1.47 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.82 mW / g
SAR normalized	normalized to 1W	39.3 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**37.7 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.05 mW / g
SAR normalized	normalized to 1W	20.2 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**19.7 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.5 Ω + 4.9 jΩ
Return Loss	- 24.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.185 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 17, 2003

DASY4 Validation Report for Head TSL

Date/Time: 22.07.2008 10:06:43

Test Laboratory: SPEAG, Zurich, Switzerland

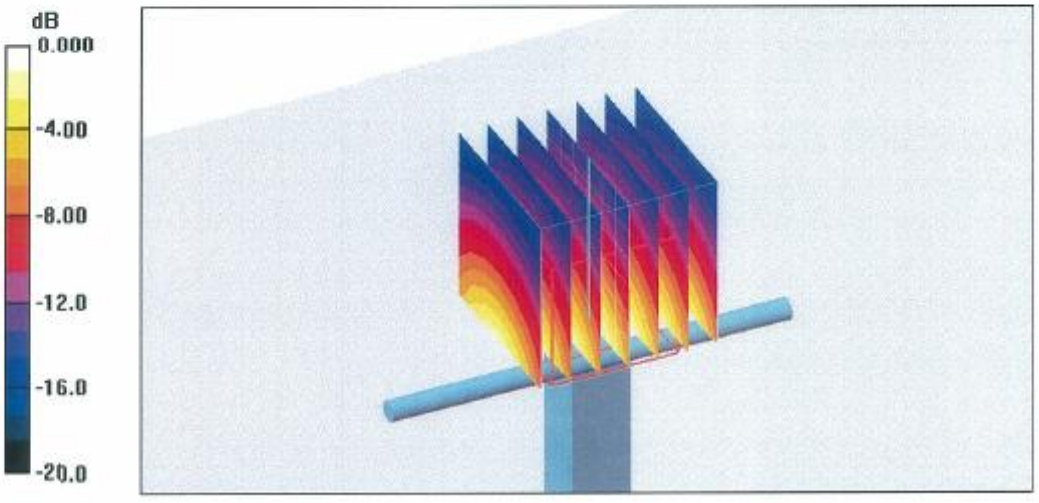
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL U10 BB;
Medium parameters used: f = 1900 MHz; σ = 1.47 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg)
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.2 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 9.82 mW/g; SAR(10 g) = 5.05 mW/g
Maximum value of SAR (measured) = 11.9 mW/g



0 dB = 11.9mW/g

Impedance Measurement Plot for Head TSL