SAR TEST REPORT

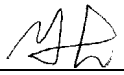
Equipment Under Test	:	Android Business Pad
Model No.	:	BP50
Applicant	:	Bluebird Soft Inc
Address of Applicant	:	SEI Tower 13-14F, 467-14, Dogok-dong, Kangnam-gu, Seoul, Korea
FCC ID	:	SS4BP50
Device Category	:	Portable Device
Exposure Category	:	General Population/Uncontrolled Exposure
Date of Receipt	:	2013-01-29
Date of Test(s)	:	2013-04-25 ~ 2013-04-29
Date of Issue	:	2013-05-23

Standards:

FCC OET Bulletin 65 supplement C
IEEE 1528, 2003
ANSI/IEEE C95.1, C95.3

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

Tested by	**:**	**Jongwon Ma**		**2013-05-23**
Approved by	**:**	**Nicky You**		**2013-05-23**

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1. General Information

1.1 Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
18-34, Sanbon-dong, Gunpo-si, Gyeonggi-do, 435-040, Korea
Telephone : +82 +31 428 5700
FAX : +82 +31 427 2371
Homepage : All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx

1.2 Details of Manufacturer

Manufacturer : Bluebird Soft Inc
Address : (Dogok-dong, SEI Tower 13~14),.,
39, Eonju-ro30-fil, Gangnam-gu, Seoul, Korea

Contact Person : Sanggon Lee
Phone No. : 070-7730-8755
Fax : 02-548-0870
E-mail : lsg5817@bluebird.co.kr

1.3 Version of Report

Version Number	Date	Revision
00	2013-05-03	Initial issue
01	2013-05-16	Revision 01
02	2013-05-23	Revision 02

1.4 Description of EUT(s)

EUT Type	: Android Business Pad
Model	: BP50
Serial Number	: N/A
Mode of Operation	: GSM850, PCS1900, WCDMA V, WCDMA II, WLAN, Bluetooth
Duty Cycle	: 8.3(GSM), 8.3(GPRS 1Tx Slot), 4.15(GPRS 2Tx Slot), 2.77(GPRS 3Tx Slot), 2.075(GPRS 4Tx Slot), 1(WCDMA II/V), 1(WLAN)
Body worn Accessory	: Audio Accessory
Tx Frequency Range	: 824.2 ㎒ ~ 848.8 ㎒ (GSM850) 1850.2 ㎒ ~ 1909.8 ㎒ (PCS1900) 826.4 ㎒ ~ 846.6 ㎒ (WCDMA V) 1852.4 ㎒ ~ 1907.6 ㎒ (WCDMA II) 2412 ㎒ ~ 2462 ㎒ (WLAN_11b/g/n) 5180 ㎒ ~ 5240 ㎒, 5260 ㎒ ~ 5320 ㎒ (WLAN_11a/n) 5500 ㎒ ~ 5700 ㎒, 5745 ㎒ ~ 5825 ㎒ (WLAN_11a/n) 2402 ㎒ ~ 2480 ㎒ (Bluetooth)
Battery Type	: 3.7V d.c. (Lithum-ion Battery)

The highest reported SAR values		
Equipment Class	**Band**	**Reported SAR**
		1g Body-Worn (W/kg)
PCE	GSM/GPRS/EDGE Rx Only 850	0.280
	GSM/GPRS/EDGE Rx Only 1900	0.385
	WCDMA V	0.458
	WCDMA II	0.952
DTS	2.45 GHz WLAN	0.035
	5.8 GHz WLAN	0.891
NII	5.2 GHz WLAN	0.564
	5.3 GHz WLAN	0.920
	5.5 GHz WLAN	1.166
DSS	Bluetooth	N/A
Simultaneous SAR per KDB 690783 D01v01r02		N/A

1.5 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 44798 D01v05.

Mode		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Solt	1 TX Slot	2 TX Slot	3TX Slot	4TX Slot	1 TX Slot	2 TX Slot	3TX Slot	4TX Slot
GSM/GPRS/EDGE 850	**Maximum**	**32.5**	**32.5**	**30.0**	**28.0**	**26.5**	**26.5**	**23.5**	**22.0**	**21.0**
	Nominal	32.0	32.0	29.5	27.5	26.0	26.0	23.0	21.5	20.5
GSM/GPRS/EDGE 1900	**Maximum**	**29.5**	**29.5**	**26.0**	**24.0**	**23.0**	**25.0**	**21.5**	**20.5**	**19.0**
	Nominal	29.0	29.0	25.5	23.5	22.5	24.5	21.0	20.0	18.5

Mode	Average power for Production (dBm)		
	Nominal & Maximum	WCDMA V	WCDMA II
RMC 12.2K	**Maximum**	**23.5**	**23.0**
	Nominal	23.0	22.5

	Average power for Production (dBm)			
Mode	Nominal & Maximum	b	g	n
2.45 GHz WLAN	**Maximum**	**12.5**	**12.0**	**12.0**
	Nominal	12.0	11.5	11.5
Mode	Nominal & Maximum	a		n
5 GHz WLAN	**Maximum**	**14.0**		**13.0**
	Nominal	13.0		12.0
Mode	Nominal & Maximum	1-DH5	2-DH5	3-DH5
Bluetooth	**Maximum**	**8.5**	**5.0**	**5.0**
	Nominal	7.5	4.0	4.0

1.6 Test Environment

Ambient temperature	: (22 ± 2) ° C
Tissue Simulating Liquid	: (22 ± 2) ° C
Relative Humidity	: (55 ± 5) % R.H.

1.7 Operation Configuration

The device in GSM and WCDMA was controlled by using a Communication tester. Communication between the device and the tester was established by air link. And the client provided a special driver and test program which can control the frequency and power of the WLAN module. Measurements were performed at the lowest, middle and highest channels of the operating band. The EUT was set to maximum power level during all tests and at the beginning of each test the battery was fully charged.

The DASY5 system measures power drift during SAR testing by comparing e-field in the same location at the beginning and at the end of measurement. Based on the RF Power and antenna separation distance, stand-alone BT SAR and simultaneous SAR evaluation are not required.

1.8 EVALUATION PROCEDURES

- Power Reference Measurement Procedures

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2 ㎜. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties (for example, 2.5 ㎜ for an EX3DV4 probe type).

1.9 SAR Measurement Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2 ㎜. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2 and 3: Area Scan & Zoom Scan Procedures

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)

3. The generation of a high-resolution mesh within the measured volume

4. The interpolation of all measured values from the measurement grid to the high-resolution grid

5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface

6. The calculation of the averaged SAR within masses of 1 g and 10 g.

< Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01 >

			≤3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

1.10 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (Speag DASY 5 professional system). A Model EX3DV4 3862 E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant. The DASY5 system for performing compliance tests consists of the following items:

•A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).

•A dosimeter probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

•A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

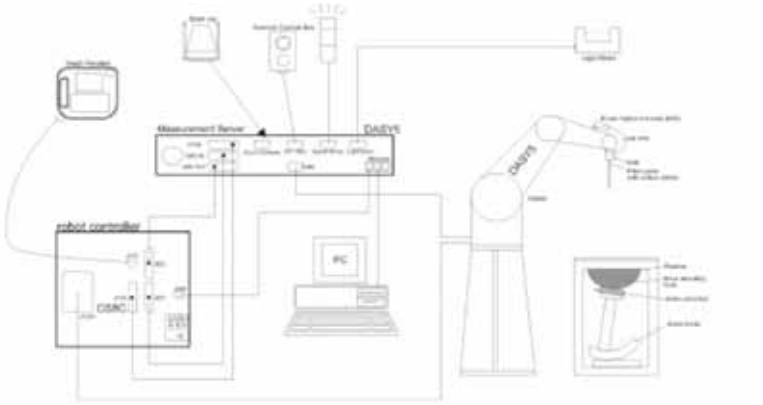


Fig a. The microwave circuit arrangement used for SAR system verification

• The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.

• The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.

• A probe alignment unit which improves the (absolute) accuracy of the probe positioning.

• A computer operating Windows 7.

• DASY5 Version 52.8.4.1052

• Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.

• The SAM phantom enabling testing body usage.

• The device holder for flat phantom.

• Tissue simulating liquid mixed according to the given recipes.

• Validation dipole kits allowing to validate the proper functioning of the system.

1.11 System Components

EX3DV4 E-Field Probe

Construction	:	Symmetrical design with triangular core. 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 835 and HSL1900. Additional CF-Calibration for other liquids and frequencies upon request.
Frequency	:	10 MHz to 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	:	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	:	10μW/g to > 100 m W/g; Linearity: ± 0.2 dB(noise: typically < 1 μW/g)
Dimensions	:	Overall length: 337 mm (Tip length: 20 mm) Tip diameter: 2.5 mm (Body diameter: 12 mm) Distance from probe tip to dipole centers: 1 mm
Application	:	High precision dosimetric measurements in any exposure scenario (e.g.,very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%
Construction		Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)


EX3DV4 E-Field Probe

NOTE:

1. The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX C” for the Calibration Certification Report.

ELI Phantom

Construction: Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure

ELI Phantom

Shell Thickness: 2.0 mm ± 0.2 mm

Dimensions Major axis: 600 mm
Minor axis: 400 mm

DEVICE HOLDER

Construction Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (a.q.. laptops, Cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioned.

Device Holder

1.12 SAR System verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10 % from the target SAR values. These tests were done at 835 MHz, 1900 MHz, 2450 MHz, 5200 MHz, 5500 MHz, 5600 MHz, 5800 MHz. The tests for EUT were conducted within 24 hours after each verification. The obtained results from the system accuracy verification are displayed in the table 1. During the tests, the ambient temperature of the laboratory was in the range (22 ± 2) ° C, the relative humidity was in the range (55 ± 5) % R.H. and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

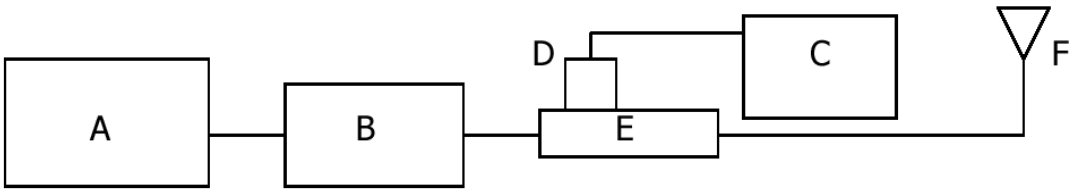


Fig b. The microwave circuit arrangement used for SAR system verification

A. Agilent Model E4421B Signal Generator
B. EMPOWER Model 2001-BBS3Q7ECK Amplifier
C. Agilent Model E4419B Power Meter
D. Agilent Model 9300H Power Sensor
E. Agilent Model 86205A Directional RF Bridges
F. Reference dipole Antenna

Photo of the dipole Antenna

System Verification Results

Verification Kit	Probe S/N	Tissue	Target SAR 1 g from Calibration Certificate (1 W)	Measured SAR 1 g (0.1 W)	Normalized SAR 1 g (1 W)	Deviation (%)	Date	Liquid Temp. (°C)
D835V2 S/N: 4d138	3862	835 MHz Body	9.56 W/kg	0.987 W/kg	**9.87 W/kg**	**3.24**	2013-04-26	21.9
D1900V2 S/N: 5d158	3862	1900 MHz Body	40.3 W/kg	3.82 W/kg	**38.2 W/kg**	**-4.50**	2013-05-11	21.3
D2450V2 S/N: 734	3862	2450 MHz Body	50.2 W/kg	5.17 W/kg	**51.7 W/kg**	**2.99**	2013-04-29	21.5
D5GHzV2 S/N: 1106	3862	5200 MHz Body	74.9 W/kg	7.49 W/kg	**74.9 W/kg**	**0.00**	2013-04-27	21.7
D5GHzV2 S/N: 1106	3862	5500 MHz Body	80.8 W/kg	8.02 W/kg	**80.2 W/kg**	**-0.74**	2013-04-28	21.8
D5GHzV2 S/N: 1106	3862	5600 MHz Body	81.4 W/kg	7.93 W/kg	**79.3 W/kg**	**-2.58**	2013-04-28	21.8
D5GHzV2 S/N: 1106	3862	5800 MHz Body	75.1 W/kg	7.64 W/kg	**76.4 W/kg**	**1.73**	2013-04-28	21.8

Table 1. Results system verification

1.13 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this simulant fluid were measured by using the Speag Model DAK-3.5 Dielectric Probe in conjunction with Agilent E5071C Network Analyzer(300 ㎑ - 6 ㎓) by using a procedure detailed in Section V.

f (㎒)	Tissue type	Limits / Measured	Dielectric Parameters		
			Permittivity	Conductivity	Simulated Tissue Temp(℃)
835	Body	Measured, 04/26/2013	53.0	0.96	21.9
		Recommended Limits	55.2	0.97	21.0 ~ 23.0
		Deviation(%)	**-3.99**	**-1.03**	-
1900	Body	Measured, 05/11/2013	52.0	1.51	21.3
		Recommended Limits	53.3	1.52	21.0 ~ 23.0
		Deviation(%)	**-2.44**	**-0.66**	-
2450	Body	Measured, 04/29/2013	52.8	1.99	21.5
		Recommended Limits	52.7	1.95	21.0 ~ 23.0
		Deviation(%)	**0.19**	**2.05**	-
5200	Body	Measured, 04/27/2013	47.7	5.20	21.7
		Recommended Limits	49.0	5.30	21.0 ~ 23.0
		Deviation(%)	**-2.65**	**-1.89**	-
5500	Body	Measured, 04/28/2013	47.8	5.55	21.8
		Recommended Limits	48.6	5.65	21.0 ~ 23.0
		Deviation(%)	**-1.65**	**-1.77**	-
5600	Body	Measured, 04/28/2013	47.6	5.69	21.8
		Recommended Limits	48.5	5.77	21.0 ~ 23.0
		Deviation(%)	**-1.86**	**-1.39**	-
5800	Body	Measured, 04/28/2013	47.2	5.90	21.8
		Recommended Limits	48.2	6.00	21.0 ~ 23.0
		Deviation(%)	**-2.07**	**-1.67**	-

The composition of the brain & muscle tissue simulating liquid

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% by weight)	Frequency (㎒)									
	450		835		915		1900		2450	
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
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Salt: 99 $^{+}$% Pure Sodium Chloride Sugar: 98 $^{+}$% Pure Sucrose

Water: De-ionized, 16 MΩ^{+} 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

Simulating Liquids for 5 ㎓, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral Oil	11
Emulsifiers	9
Additives and Salt	2

1.14 Test System Validation

Per FCC KDB 865664 D02v01, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the require tissue-equivalent media for system validation, according to the procedures outlined in IEEE 1528-2003 and FCC KDB 865664 D01v01. Since frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

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

f (MHz)	Date	Probe S/N	Probe Cal point	Tissue Type	Dielectric Parameters		CW Validation			Modulated Validation		
					Permittivity	Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
835	04/11/2013	3862	835	Body	54.04	0.96	PASS	PASS	PASS	GMSK	PASS	N/A
1900	04/11/2013	3862	1900	Body	51.78	1.50	PASS	PASS	PASS	GMSK	PASS	N/A
2450	04/11/2013	3862	2450	Body	51.84	2.02	PASS	PASS	PASS	OFDM	N/A	PASS
5200	04/07/2013	3862	5200	Body	48.15	5.37	PASS	PASS	PASS	OFDM	N/A	PASS
5500	04/01/2013	3862	5500	Body	47.86	5.55	PASS	PASS	PASS	OFDM	N/A	PASS
5600	04/01/2013	3682	5600	Body	47.73	5.69	PASS	PASS	PASS	OFDM	N/A	PASS
5800	04/01/2013	3682	5800	Body	47.32	5.91	PASS	PASS	PASS	OFDM	N/A	PASS

< SAR System Validation Summary>

1.15 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (“SAR”) in Section 4.2 of “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 ㎑ to 300 ㎓,” ANSI/IEEE C95.3–2003, Copyright 2003 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. 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, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 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. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 ㎑ to 6 ㎓. Portable devices that transmit at frequencies above 6 ㎓ are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to

demonstrate compliance with MPE field strength or power density limits for devices operating above 6 ㎓ should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .4)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Partial Peak SAR (Partial)	1.60 m W/g	8.00 m W/g
Partial Average SAR (Whole Body)	0.08 m W/g	0.40 m W/g
Partial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 m W/g	20.00 m W/g

Table .2 RF exposure limits

2. Instruments List

Maunfacturer	Device	Type	Serial Number	Cal Date	Cal Interval	Cal Due
Stäubli	Robot	RX90BL	F12/5LP8A1/01	N/A	N/A	N/A
Schmid& Partner Engineering AG	Dosimetric E-Field Probe	EX3DV3	3862	02/04/2013	Annual	02/04/2014
Schmid& Partner Engineering AG	835 ㎒ System Validation Dipole	D835V2	4d138	07/11/2012	Biennial	07/11/2014
Schmid& Partner Engineering AG	1900 ㎒ System Validation Dipole	D1900V2	5d158	07/10/2012	Biennial	07/10/2014
Schmid& Partner Engineering AG	2450 ㎒ System Validation Dipole	D2450V2	734	05/17/ 2012	Biennial	05/17/ 2014
Schmid& Partner Engineering AG	5000 ㎒ System Validation Dipole	D5GHzV2	1106	03/15/2013		
Schmid& Partner Engineering AG	Data acquisition Electronics	DAE4	1340	07/10/2012	Annual	07/10/2013
Schmid& Partner Engineering AG	Software	DASY52 V52.8.02	-	N/A	N/A	N/A
Schmid& Partner Engineering AG	Phantom	ELI Phantom	TP-1200	N/A	N/A	N/A
Agilent	Network Analyzer	E5071C	MY46111535	07/03/2013	Annual	07/03/2014
Schmid& Partner Engineering AG	Dielectric Assessment Kit	DAK-3.5	1108	03/05/2013	Annual	03/05/2014
Agilent	Power Meter	E4419B	GB43311125	07/01/2012	Annual	07/01/2013
Agilent	Power Sensor	E9300H	MY41495314	09/18/2012	Annual	09/18/2013
			MY41495307	09/18/2012	Annual	09/18/2013
Agilent	Signal Generator	E4421B	MY42082477	03/28/2013	Annual	03/28/2014
Empower RF Systems	Power Amplifier	2001-BBS3Q7ECK	1032 D/C 0336	03/29/2013	Annual	03/29/2014
Agilent	Directional RF Bridges	86205A	MY31402302	07/03/2012	Annual	07/03/2013
Microlab	LP Filter	LA-15N LA-30N LA-60N	N/A	09/14/2012	Annual	09/14/2013
Agilent	Attenuator	8491B	50566	09/14/2012	Annual	09/14/2013
Anritsu	Radio communication	MT8820C	6200863176	03/13/2013	Annual	03/13/2014

3.Summary of Results

3.1 FCC Power Measurement Procedures

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

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

3.2 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v05, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported SAR. Test highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r02.

3.3 RF Conducted Power

GSM

GSM	Channel	Frequency(㎒)	Burst-Conducted Average Power(dB m)				
			GSM	GPRS			
				1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850 Band	128	824.2	32.25	32.24	29.32	27.72	26.26
	190	836.6	32.01	31.94	29.34	27.64	26.19
	251	848.8	31.96	31.93	29.04	27.38	26.09
PCS 1900 Band	512	1850.2	29.11	29.05	25.68	23.93	22.65
	661	1880.0	28.99	28.95	25.62	23.87	22.12
	810	1909.8	29.03	29.01	25.68	23.95	22.62

GSM	Channel	Frequency(㎒)	Burst-Conducted Average Power(dB m)			
			EDGE			
			1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850 Band	128	824.2	26.36	23.37	21.88	20.88
	190	836.6	26.21	23.24	21.70	20.65
	251	848.8	26.04	23.07	21.57	20.51
PCS 1900 Band	512	1850.2	24.54	21.48	20.01	18.72
	661	1880.0	24.33	21.25	19.81	18.54
	810	1909.8	24.36	21.26	19.91	18.56

GSM	Channel	Frequency(㎒)	Calculated Frame-Conducted Average Power(㏈m)				
			GSM	GPRS			
				1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850 Band	128	824.2	23.22	23.21	23.30	**23.46**	23.25
	190	836.6	22.98	22.91	23.32	**23.38**	23.18
	251	848.8	22.93	22.90	23.02	**23.12**	23.08
PCS 1900 Band	512	1850.2	20.08	**20.02**	19.66	19.67	19.64
	661	1880.0	19.96	**19.92**	19.60	19.61	19.11
	810	1909.8	20.00	**19.98**	19.66	19.69	19.61

GSM	Channel	Frequency(㎒)	Calculated Frame-Conducted Average Power(㏈m)			
			EDGE			
			1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850 Band	128	824.2	17.33	17.35	17.62	17.87
	190	836.6	17.18	17.22	17.44	17.64
	251	848.8	17.01	17.05	17.31	17.50
PCS 1900 Band	512	1850.2	15.51	15.46	15.75	15.71
	661	1880.0	15.30	15.23	15.55	15.53
	810	1909.8	15.33	15.24	15.65	15.55

Notes

1. CS1/MCS7 coding scheme was used in GPRS/EDGE output power measurements and SAR Testing, as a condition where GMSK/8PSK modulation was ensured. Investigation has shown that CS1 - CS4/MCS5 – MCS9 settings do not have any impact on the output levels or modulation in the GPRS/EDGE modes.
2. Pre KDB 941225 D03v01, for Body SAR testing, the EUT was set in GPRS (3 Tx Slot or 1 Tx Slot) due to it is highest frame-average power.
3. Pre KDB 447498 D01v05, the maximum output power channel is used for SAR testing and for further SAR test reduction.

WCDMA V

Band	Mode	Channel		Frequency (MHz)	Conducted Power (dBm)
WCDMA V (RMC)	RMC	4132		826.4	23.20
	RMC	4183		836.6	23.01
	RMC	4233		846.6	23.13
WCDMA V (HSDPA Active)	Sub-test 1	4132		826.4	23.55
		4183		836.6	21.98
		4233		846.6	21.98
	Sub-test 2	4132		826.4	21.72
		4183		836.6	21.85
		4233		846.6	21.88
	Sub-test 3	4132		826.4	22.18
		4183		836.6	21.98
		4233		846.6	22.01
	Sub-test 4	4132		826.4	22.20
		4183		836.6	22.07
		4233		846.6	22.05
		βc	βd	△ACK, △NACK, △CQI	AGV
	Sub-test 1	2	15	8	-
	Sub-test 2	12	15	8	-
	Sub-test 3	15	8	8	-
	Sub-test 4	15	4	8	-
WCDMA V (HSUPA)	Sub-test 1	4132		826.4	22.84
		4183		836.6	22.61
		4233		846.6	22.06
	Sub-test 2	4132		826.4	20.34
		4183		836.6	20.56
		4233		846.6	20.30
	Sub-test 3	4132		826.4	21.46
		4183		836.6	21.10
		4233		846.6	20.97
	Sub-test 4	4132		826.4	20.82
		4183		836.6	21.23
		4233		846.6	20.92
	Sub-test 5	4132		826.4	21.56
		4183		836.6	21.97
		4233		846.6	21.79
		βc	βd	△ACK, △NACK, △CQI	AGV
	Sub-test 1	11	15	8	20
	Sub-test 2	6	15	8	12
	Sub-test 3	15	9	8	15
	Sub-test 4	2	15	8	17
	Sub-test 5	15	15	8	21

WCDMA II

Band	Mode	Channel		Frequency (MHz)	Conducted Power (dBm)
WCDMA II (RMC)	RMC	9262		1852.4	22.56
	RMC	9400		1880.0	21.93
	RMC	9538		1907.6	21.74
WCDMA II (HSDPA Active)	Sub-test 1	9262		1852.4	21.57
		9400		1880.0	21.38
		9538		1907.6	21.07
	Sub-test 2	9262		1852.4	21.29
		9400		1880.0	20.78
		9538		1907.6	20.41
	Sub-test 3	9262		1852.4	21.47
		9400		1880.0	21.21
		9538		1907.6	20.98
	Sub-test 4	9262		1852.4	21.53
		9400		1880.0	21.49
		9538		1907.6	21.32
		βc	βd	△ACK, △NACK, △CQI	AGV
	Sub-test 1	2	15	8	-
	Sub-test 2	12	15	8	-
	Sub-test 3	15	8	8	-
	Sub-test 4	15	4	8	-
WCDMA II (HSUPA)	Sub-test 1	9262		1852.4	21.23
		9400		1880.0	20.57
		9538		1907.6	20.77
	Sub-test 2	9262		1852.4	20.04
		9400		1880.0	19.90
		9538		1907.6	20.36
	Sub-test 3	9262		1852.4	20.56
		9400		1880.0	20.34
		9538		1907.6	20.31
	Sub-test 4	9262		1852.4	20.16
		9400		1880.0	20.13
		9538		1907.6	20.23
	Sub-test 5	9262		1852.4	21.46
		9400		1880.0	21.35
		9538		1907.6	21.45
		βc	βd	△ACK, △NACK, △CQI	AGV
	Sub-test 1	11	15	8	20
	Sub-test 2	6	15	8	12
	Sub-test 3	15	9	8	15
	Sub-test 4	2	15	8	17
	Sub-test 5	15	15	8	21

Notes

1. UMTS SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB Publication 941225 D01v02.
2. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.

Bluetooth

Channel	Frequency (㎒)	GFSK (dB m)	4DQPSK (dB m)	8DPSK (dB m)
Low	2402	7.19	3.43	3.39
Middle	2441	8.11	4.32	4.34
High	2480	**7.31**	4.47	3.48

WLAN

Frequency	Channel	WLAN 802.11b Average Power (dB m)			
		Data Rate (Mbps)			
		1	2	5.5	11
2512	1	11.53	11.60	11.62	11.66
2437	6	12.02	11.99	12.07	12.11
2462	11	11.66	11.73	11.77	11.81

Frequency	Channel	WLAN 802.11g Average Power (dB m)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
2512	1	11.21	11.25	11.23	11.24	11.35	11.39	11.43	11.47
2437	6	11.65	11.65	11.58	11.56	11.55	11.64	11.65	11.69
2462	11	11.38	11.35	11.31	11.36	11.43	11.57	11.60	11.62

Frequency	Channel	WLAN 802.11n HT20 Average Power (dB m)							
		Data Rate (Mbps)							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
2512	1	11.20	11.30	11.33	11.27	11.36	11.33	11.36	11.34
2437	6	11.78	11.75	11.72	11.75	11.73	11.71	11.72	11.74
2462	11	11.50	11.57	11.53	11.53	11.57	11.53	11.52	11.57

Frequency	Channel	WLAN 802.11a Average Power (dB m)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
5180	36	12.04	12.03	11.95	11.93	11.83	11.91	12.00	11.89
5200	40	11.86	11.69	11.65	11.66	11.70	11.80	11.83	11.79
5220	44	12.30	12.18	12.05	12.13	12.02	12.14	12.30	12.26
5240	48	12.41	12.39	12.42	12.28	12.35	12.37	12.34	12.36
5260	52	11.48	11.36	11.38	11.36	11.42	11.41	11.47	11.46
5280	56	12.15	11.98	11.93	11.92	11.96	12.00	12.15	12.12
5300	60	11.71	11.70	11.62	11.66	11.67	11.72	11.85	12.02
5320	64	11.84	11.70	11.69	11.67	11.59	11.73	11.82	11.86
5500	100	13.31	13.28	13.29	13.28	13.35	13.54	13.51	13.46
5520	104	13.28	13.26	13.25	13.22	13.28	13.37	13.38	13.35
5540	108	12.94	12.98	12.86	12.72	12.79	12.81	12.88	12.93
5560	112	13.06	13.03	12.99	12.99	13.05	13.18	13.20	13.26
5580	116	13.46	13.42	13.42	13.37	13.43	13.54	13.60	13.62
5660	132	13.48	13.40	13.26	13.27	13.23	13.35	13.40	13.40
5680	136	12.57	12.51	12.46	12.50	12.53	12.59	12.55	12.59
5700	140	11.38	11.40	11.29	11.25	11.29	11.40	11.43	11.37
5745	149	12.81	12.65	12.69	12.70	12.76	12.77	12.82	12.84
5765	153	11.40	11.36	11.39	11.32	11.40	11.49	11.57	11.59
5785	157	10.73	10.63	10.65	10.64	10.63	10.73	10.78	10.83
5805	161	12.48	12.45	12.46	12.55	12.56	12.68	12.67	12.68
5825	165	11.50	11.46	11.42	11.42	11.45	11.48	11.57	11.56

Frequency	Channel	WLAN 802.11n HT20 Average Power (dB m)							
		Data Rate (Mbps)							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
5180	36	11.20	11.31	11.20	11.17	11.23	11.34	11.24	11.15
5200	40	11.09	11.12	11.03	11.08	11.19	11.31	11.26	11.30
5220	44	11.62	11.67	11.73	11.74	11.75	11.80	11.78	11.74
5240	48	11.98	12.04	12.00	11.91	12.00	12.01	12.02	12.05
5260	52	10.99	11.07	11.02	11.07	11.06	11.10	10.98	11.01
5280	56	11.37	11.40	11.33	11.24	11.29	11.37	11.38	11.40
5300	60	10.92	10.97	10.97	10.97	11.12	11.11	11.13	11.19
5320	64	11.23	11.27	11.26	11.17	11.23	11.21	11.25	11.23
5500	100	12.85	12.88	12.86	12.82	12.96	12.91	12.98	12.94
5520	104	12.82	12.83	12.83	12.88	12.94	12.92	12.94	12.88
5540	108	12.58	12.48	12.44	12.39	12.43	12.47	12.36	12.37
5560	112	12.62	12.67	12.72	12.71	12.74	12.75	12.72	12.77
5580	116	12.89	12.80	12.73	12.65	12.79	12.86	12.88	12.91
5660	132	12.67	12.67	12.74	12.72	12.85	12.84	12.88	12.85
5680	136	11.80	11.78	11.80	11.80	11.90	11.93	11.91	11.90
5700	140	11.02	11.07	11.05	10.98	11.07	11.14	10.94	10.79
5745	149	11.50	11.48	11.53	11.50	11.50	11.54	11.55	11.49
5765	153	10.65	10.61	10.57	10.50	10.43	10.60	10.58	10.54
5785	157	9.74	9.73	9.79	9.75	9.85	9.84	9.87	9.84
5805	161	11.28	11.37	11.32	11.24	11.29	11.31	11.32	11.34
5825	165	10.47	10.57	10.52	10.58	10.65	10.70	10.71	10.74

Frequency	Channel	WLAN 802.11n HT40 Average Power (dB m)							
		Data Rate (Mbps)							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
5190	38	9.96	9.98	9.92	9.90	9.92	9.89	9.90	9.83
5230	46	10.79	10.90	10.92	10.89	10.92	10.93	10.91	10.90
5270	54	10.60	10.84	10.92	10.89	10.92	10.94	10.90	10.95
5310	62	10.62	10.61	10.71	10.80	10.92	10.94	10.91	10.95
5510	102	12.82	12.84	12.85	12.86	12.85	12.83	12.85	12.83
5550	110	12.14	12.14	12.27	12.21	12.25	12.23	12.27	12.23
5670	134	11.75	11.81	11.84	11.80	11.85	11.87	11.81	11.86
5755	151	10.52	10.54	10.52	10.48	10.52	10.67	10.58	10.55
5795	159	10.11	10.22	10.21	10.24	10.21	10.24	10.17	10.21

Notes

1. Per KDB 248227 D01v01r02choose the highest output power channel to test SAR and determine further SAR exclusion.

3.4 SAR Test Configuration

IEEE 802.11 Transmitters

802.11 a/b/g and 4.9 ㎓ operating modes are tested independently according to the service requirements in each frequency band. 802.11 b/g modes are tested on channel 1, 6, and 11. 802.11a is tested for UNII operations on channels 36 and 48 in the 5.15 ~ 5.25 ㎓ band, channels 52 and 64 in the 5.25 ~ 5.35 ㎓ band, channels 104, 116, 124 and 136 in the 5.470 ~ 5.725 ㎓ band, and channels 149 and 161 in the 5.8 ㎓ band. When 5.8 ㎓ §15.247 is also available, channels 149, 157 and 165 should be tested instead of the UNII channels. 802.11g mode was evaluated only if the output power was 0.25 ㏈ higher than the 802.11b mode.

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

- √ = "default test channels"
- * = possible 802.11a channels with maximum average output > the "default test channels"
- ∇ = possible 802.11g channels with maximum average output ¼ ㏈ ≥ the "default test channels"
- # = when output power is reduced for channel 1 and/or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested

1.

3.5 SAR Test Exclusions Applied

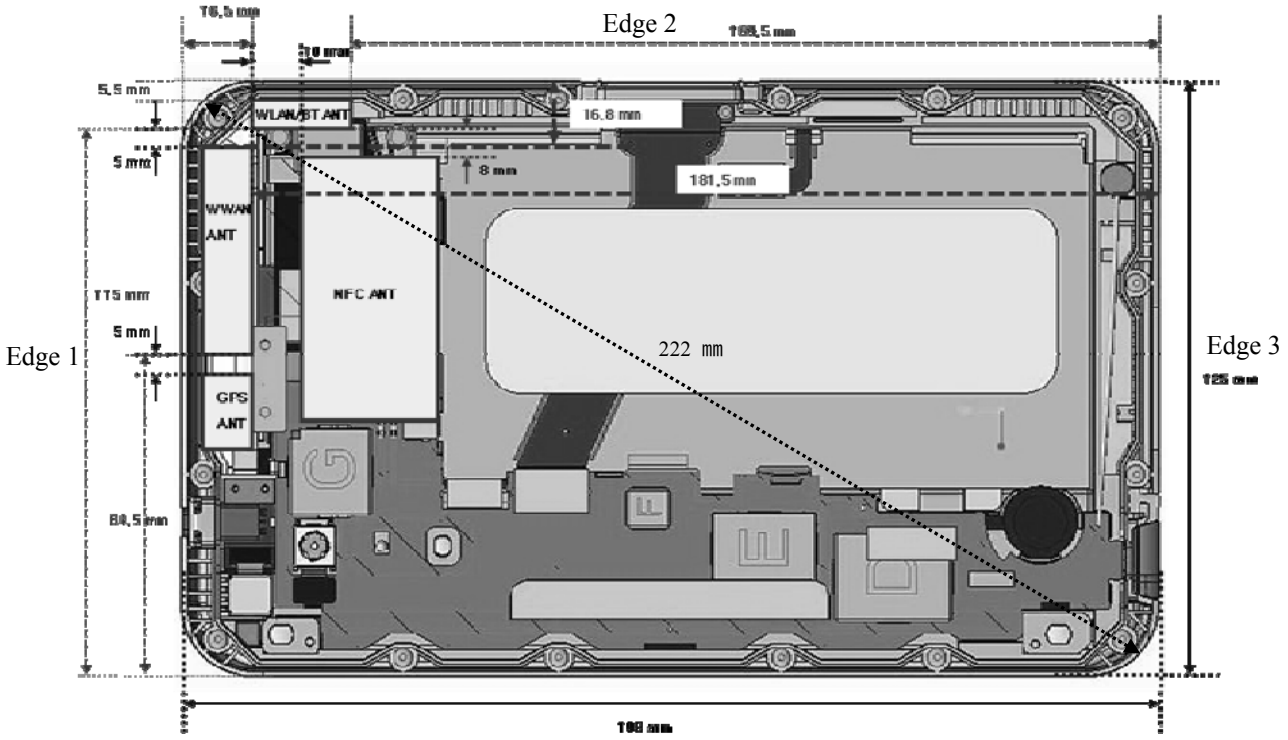
Per FCC KDB 447498 D01v05, the SAR exclusion threshold for distances < 50 ㎜ is defined by the following equation:

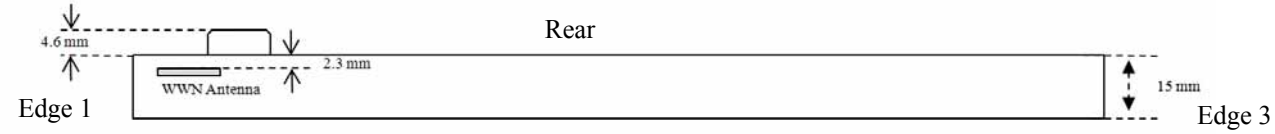
$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Distance (mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0$$

Per FCC KDB 447498 D01v05, At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following

[(Threshold at 50 ㎜ in step 1) + (test separation distance - 50 mm) * 10] mW
at > 1500 MHz and ≤ 6 GHz

<The Distance information of Antenna to Edges of EUT>





Exclusion table of RF Exposure.

Based on the maximum tune-up tolerance limit of WWAN and WLAN, Bluetooth the antenna to use separation distance, Table "EXEMPT" SAR was not required and Table "Measure" SAR was required.

Antenna	Tx	Frequency (MHz)	Output power[Note 2, 4]		Separation distances (mm)[Note 1 and 4]						SAR Exemption[Note 3 and 4]					
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
WWAN Main Antenna																
3G Main	GSM	850	32.50	1778	5	5	15	181	64.5		Measure	Measure	Measure	Measure	Measure	N/A
3G Main	GSM	1900	29.50	891	5	5	15	181	64.5		Measure	Measure	Measure	1419mW EXEMPT	Measure	N/A
3G Main	WCDMA	850	23.50	224	5	5	15	181	64.5		Measure	Measure	Measure	905mW EXEMPT	245mW EXEMPT	N/A
3G Main	WCDMA	1900	23.00	200	5	5	15	181	64.5		Measure	Measure	Measure	1419mW EXEMPT	254mW EXEMPT	N/A
WiFi - Main Antenna																
WLAN Main	WiFi	2437	12.50	18	5	16.5	5	169.5	115		Measure	1.65 EXEMPT	Measure	1291mW EXEMPT	746mW EXEMPT	N/A
WLAN Main	WiFi	5240	14.00	25	5	16.5	5	169.5	115		Measure	Measure	Measure	1261mW EXEMPT	716mW EXEMPT	N/A
WLAN Main	WiFi	5320	14.00	25	5	16.5	5	169.5	115		Measure	Measure	Measure	1260mW EXEMPT	715mW EXEMPT	N/A
WLAN Main	WiFi	5700	14.00	25	5	16.5	5	169.5	115		Measure	Measure	Measure	1258mW EXEMPT	713mW EXEMPT	N/A
WLAN Main	WiFi	5825	14.00	25	5	16.5	5	169.5	115		Measure	Measure	Measure	1257mW EXEMPT	712mW EXEMPT	N/A
Bluetooth - Antenna																
Bluetooth	BT	2441	8.50	7	5	16.5	5	169.5	115		2.19 EXEMPT	0.64 EXEMPT	2.19 EXEMPT	1291mW EXEMPT	746mW EXEMPT	N/A

Notes

1. Maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. For distances < 5mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.
3. Output power is the maximum rated power (including tune-up or manufacturing tolerances).
4. If the antenna separation distance is > 50mm then the value listed is the output power threshold, above which SAR measurement is required. For separation ≤ 50mm the value is the KDB 447498 calculated value and must be less than 3 for SAR exemption.
5. Formulas round separation distance to nearest mm and power to nearest mW before calculating thresholds or exemption values.

3.6 SAR Data Summary

Ambient Temperature (°C)	22.9
Liquid Temperature (°C)	21.9
Date	04/26/2013

GSM850 Body SAR

Test Mode	EUT Position	Slot	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
			Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
GPRS	Rear	3 Tx	836.6	190	0	27.64	28.0	0.138	0.150	1.6
	Rear Tilt	3 Tx	836.6	190	0	27.64	28.0	0.249	0.270	
	Edge 1	3 Tx	836.6	190	0	27.64	28.0	0.157	0.171	
	Edge 2	3 Tx	836.6	190	0	27.64	28.0	0.041	0.045	
	Edge 3	3 Tx	836.6	190	0	27.64	28.0	0.006	0.007	
	Edge 4	3 Tx	836.6	190	0	27.64	28.0	0.010	0.011	
	Rear Tilt	3 Tx	842.2	128	0	27.72	28.0	0.262	0.280	
			848.8	251	0	27.38	28.0	0.219	0.034	

Ambient Temperature (°C)	22.6
Liquid Temperature (°C)	21.3
Date	05/11/2013

PCS1900 Body SAR

Test Mode	EUT Position	Slot	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
			Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
GPRS	Rear	1 Tx	1880.0	661	0	28.95	29.5	0.141	0.160	1.6
	Rear Tilt	1 Tx	1880.0	661	0	28.95	29.5	0.295	0.335	
	Edge 1	1 Tx	1880.0	661	0	28.95	29.5	0.249	0.283	
	Edge 2	1 Tx	1880.0	661	0	28.95	29.5	0.045	0.051	
	Edge 4	1 Tx	1880.0	661	0	28.95	29.5	0.005	0.006	
	Rear Tilt	1 Tx	1850.2	512	0	29.05	29.5	0.339	0.385	
			1909.8	810	0	29.01	29.5	0.269	0.305	

Ambient Temperature (°C)	22.9
Liquid Temperature (°C)	21.9
Date	04/26/2013

WCMA V Body SAR

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
RMC	Rear	836.4	4182	0	23.01	23.5	0.227	0.254	1.6
	Rear Tilt	836.4	4182	0	23.01	23.5	0.409	0.458	
	Edge 1	836.4	4182	0	23.01	23.5	0.261	0.292	
	Edge 2	836.4	4182	0	23.01	23.5	0.066	0.074	
	Rear Tilt	826.4	4132	0	23.20	23.5	0.390	0.418	
		846.6	4233	0	23.13	23.5	0.403	0.439	

WCMA II Body SAR

Ambient Temperature (°C)	22.4
Liquid Temperature (°C)	21.6
Date	04/25/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
RMC	Rear	1880.0	9400	0	21.93	23.0	0.316	0.404	1.6
	Rear Tilt	1880.0	9400	0	21.93	23.0	0.744	0.952	
	Edge 1	1880.0	9400	0	21.93	23.0	0.578	0.739	
	Edge 2	1880.0	9400	0	21.93	23.0	0.084	0.107	
	Rear Tilt	1852.4	9262	0	22.56	23.0	0.665	0.736	
		1907.6	9538	0	21.74	23.0	0.455	0.608	

WLAN 2.45 GHz Body SAR

Ambient Temperature (°C)	22.3
Liquid Temperature (°C)	21.5
Date	04/29/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
802.11b	Rear	2437	6	0	12.02	12.5	0.002	0.002	1.6
	Rear Tilt	2437	6	0	12.02	12.5	0.028	0.031	
	Edge 2	2437	6	0	12.02	12.5	0.031	0.035	

WLAN 5.2 GHz Body SAR

Ambient Temperature (°C)	22.5
Liquid Temperature (°C)	21.7
Date	04/27/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
802.11a	Rear	5240	48	0	12.41	14.0	0.026	0.037	1.6
	Rear Tilt	5240	48	0	12.41	14.0	0.135	0.195	
	Edge 1	5240	48	0	12.41	14.0	0.008	0.012	
	Edge 2	5240	48	0	12.41	14.0	0.391	0.564	

WLAN 5.3 GHz Body SAR

Ambient Temperature (°C)	22.5
Liquid Temperature (°C)	21.7
Date	04/27/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
802.11a	Rear	5280	56	0	12.15	14.0	0.040	0.061	1.6
	Rear Tilt	5280	56	0	12.15	14.0	0.221	0.338	
	Edge 1	5280	56	0	12.15	14.0	0.029	0.044	
	Edge 2	5280	56	0	12.15	14.0	0.601	0.920	

WLAN 5.5 GHz Body SAR

Ambient Temperature (°C)	22.8
Liquid Temperature (°C)	21.8
Date	04/28/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
802.11a	Rear	5660	132	0	13.48	14.0	0.073	0.082	1.6
	Rear Tilt	5660	132	0	13.48	14.0	0.284	0.320	
	Edge 1	5660	132	0	13.48	14.0	N/A	N/A	
	Edge 2	5660	132	0	13.48	14.0	0.916	1.032	
	Edge 2	5500	100	0	13.31	14.0	0.929	1.089	
		5580	116	0	13.46	14.0	1.03	1.166	

WLAN 5.8 GHz Body SAR

Ambient Temperature (°C)	22.8
Liquid Temperature (°C)	21.8
Date	04/28/2013

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Power(dBm)		1-g SAR (W/kg)		1 g SAR Limits (W/kg)
		Frequency (MHz)	Channel		Measured Power	Tune-Up Limit	Measured SAR	Scaled SAR	
802.11a	Rear	5745	149	0	12.81	14.0	0.051	0.067	1.6
	Rear Tilt	5745	149	0	12.81	14.0	0.214	0.281	
	Edge 1	5745	149	0	12.81	14.0	N/A	N/A	
	Edge 2	5745	149	0	12.81	14.0	0.681	0.891	

SAR Test Notes

General Notes :

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2003, FCC/OET Bulletin 65, Supplement C [June 2001] and FCC KDB Publication 447498 D01v05.
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings and the standard batteries are the only options.
4. The EUT is tested 2nd hot-spot peak, if it is less than 2 dB below the highest peak.
5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05.
7. Per FCC KDB Publication 865664 D01v01, variability SAR tests were performed when the measured SAR results for a frequency band were greater than 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see section 3.8 for variability analysis.

GSM Test Notes :

1. Justification for reduced test configurations per KDB Publication 941225 Dv03v01: The source-based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power was evaluated for SAR.
2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is≤0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is＞1/2 dB, instead of the middle channel, the highest output power channel must be used.

WCDMA Notes :

1. WCDMA mode in Body SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB Publication 941225 D01v02. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is≤0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is＞1/2 dB, instead of the middle channel, the highest output power channel must be used

WLAN Notes :

1. For 2.4 GHz, justification for reduced test configuration for WIFI channels per KDB Publication 248227 and April 2010 FCC/TCB Meeting Notes: Highest average RF output power channel for the lowest data rate were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers were not greater than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11b modes
2. For 5 GHz, justification for reduced test configuration for WIFI channels per KDB Publication 248227 and April 2010 FCC/TCB Meeting Notes: Highest average RF output power channel for the lowest data rate were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11n HT20 MHz and HT40) were not investigated since the average output powers were not greater

than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11a modes

3. According to KDB248227 D01v01, when the maximum average output channel in each frequency band is not include in the "default test channels", the maximum average output power channel should be tested instead of an adjacent "default test channels".
4. According to KDB447498 D01v05 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 ㎒, testing for the other channels is not required.
5. According to KDB447498 D01v05 the 1-g SAR for the highest output channel is less than 0.4 W/kg, where the transmission band corresponding to all channels is ≤ 200 ㎒, testing for the other channels is not required.
6. WLAN transmission was verified using a spectrum analyzer.

3.7 FCC Multi-TX SAR considerations

3.7.1 The Simultaneous Transmission possibilities are listed as below

No	Capable TX Configuration	Body SAR
1	WLAN + Bluetooth	N/A
2	WWAN (GSM850, PCS1900, WCDMA II, WCDMA V) + WLAN	N/A
3	WWAN (GSM850, PCS1900, WCDMA II, WCDMA V) + Bluetooth	N/A
4	WWAN (GSM850, PCS1900, WCDMA II, WCDMA V) + WLAN + Bluetooth	N/A

Declaration by the manufacturer

- This device, the Bluetooth, WLAN and WWAN cannot transmit simultaneous with other transmitters.

3.8 Repeated SAR Measurement

Test Mode	EUT Position	Traffic Channel		Distance (mm)	Measured 1 g SAR (W/kg)	1st Repeated 1 g SAR (W/kg)	Deviation (%)
		Frequency (MHz)	Channel				
802.11a	Rear	5580	116	0	1.03	1.02	-0.97

<Note>

1. Per KDB 865664 D01v01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8 W/kg.
2. Per KDB 865664 D01v01, if the deviation among the repeated measurement is ≤20% and the measured SAR ＜1.45 W/kg, only one repeated measurement is required.
3. The deviation is the difference in percentage between original and repeated measured SAR.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

Appendix

List

Appendix A	DASY5 Report (Plots of the SAR Measurements)	- 835 ㎒, 1900 ㎒, 2450 ㎒, 5.2 ㎓, 5.5 ㎓, 5.6 ㎓, 5.8 ㎓ Verification Test - GSM850 Test - PCS1900 Test - WCDMA V Test - WCDMA II Test - WLAN Test
Appendix B	Uncertainty Analysis	
Appendix C	Calibration Certificate	- PROBE - DAE - DIPOLE

Appendix A

Test Plot - DASY5 Report

835 ㎒ Verification Test

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 850MHz System Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

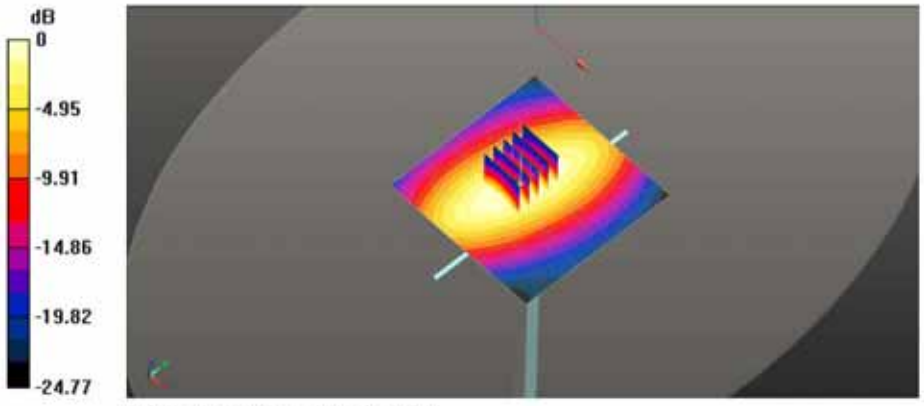
DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d138

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.96 S/m; ε_r = 53.009; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

System Verification/850MHz System Verification/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.10 W/kg

System Verification/850MHz System Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.627 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.897 W/kg; SAR(10 g) = 0.595 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

1900 ㎒ Verification Test

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 1900MHz System Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

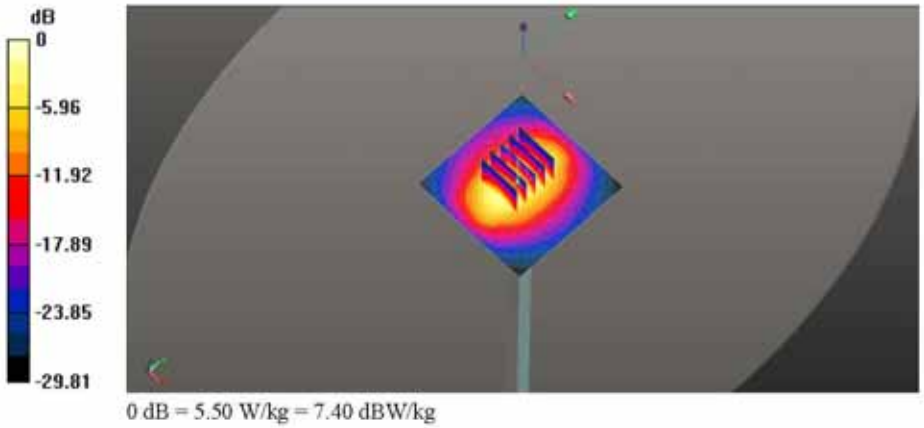
DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d158

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 S/m; ε_r = 51.957; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

System Verification/1900MHz System Verification/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 5.50 W/kg

System Verification/1900MHz System Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.712 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 6.99 W/kg
SAR(1 g) = 3.82 W/kg; SAR(10 g) = 1.98 W/kg
Maximum value of SAR (measured) = 5.46 W/kg



0 dB = 5.50 W/kg = 7.40 dBW/kg

2450 ㎒ Verification Test

Date: 2013-04-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2450MHz System Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.3 ℃ Tissue Temp : 21.5 ℃

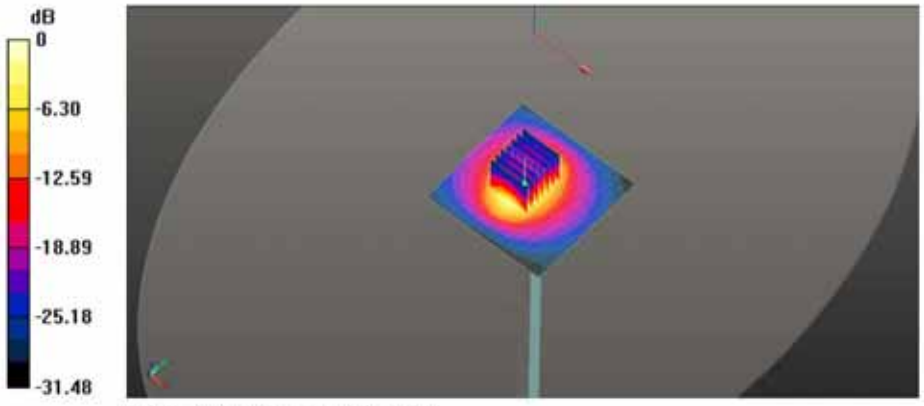
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: 734

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.989 S/m; ε_r = 52.819; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.25, 7.25, 7.25); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

2450MHz System Verification/2450MHz System Verification/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.21 W/kg

2450MHz System Verification/2450MHz System Verification/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.565 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 11.3 W/kg
SAR(1 g) = 5.17 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 8.11 W/kg



0 dB = 8.21 W/kg = 9.14 dBW/kg

5200 ㎒ Verification Test

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5200MHz Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

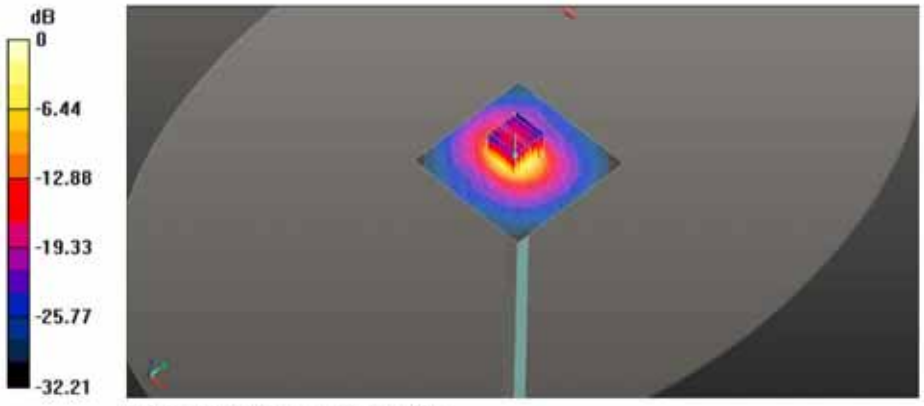
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1106

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.199 S/m; ε_r = 47.669; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.26, 4.26, 4.26); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

5200MHz Verification/5200MHz Verification/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 15.5 W/kg

5200MHz Verification/5200MHz Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 51.642 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 30.7 W/kg
SAR(1 g) = 7.49 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 15.5 W/kg = 11.90 dBW/kg

5500 ㎒ Verification Test

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5500MHz Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

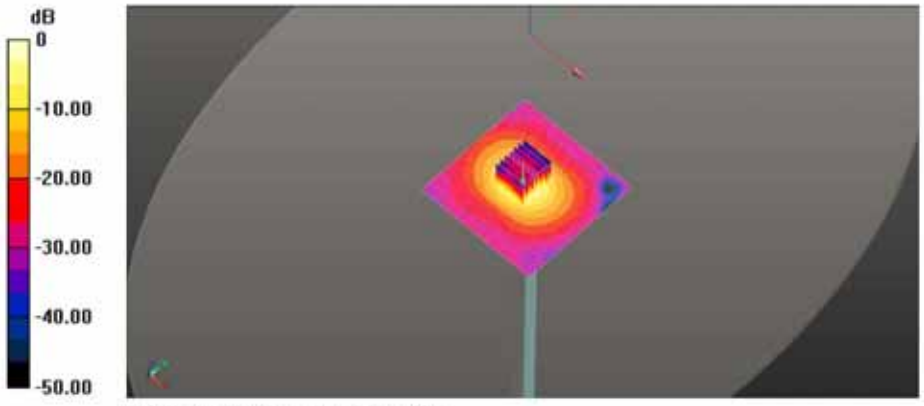
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1106

Communication System: CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.546 S/m; ε_r = 47.792; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.89, 3.89, 3.89); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

5500MHz Verification/5500MHz Verification/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.6 W/kg

5500MHz Verification/5500MHz Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 52.594 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 34.3 W/kg
SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 17.0 W/kg



0 dB = 16.6 W/kg = 12.20 dBW/kg

5600 ㎒ Verification Test

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5600MHz Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

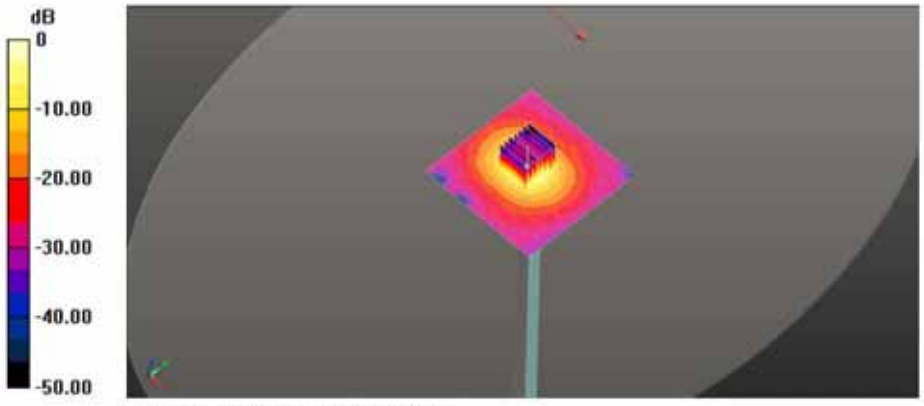
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1106

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.694 S/m; ε_r = 47.641; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.73, 3.73, 3.73); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

5600MHz Verification/5600MHz Verification/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.4 W/kg

5600MHz Verification/5600MHz Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 51.225 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 35.1 W/kg
SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 17.3 W/kg



0 dB = 16.4 W/kg = 12.15 dBW/kg

5800 ㎒ Verification Test

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5800MHz Verification.da53:0

Input Power : 100 mW

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

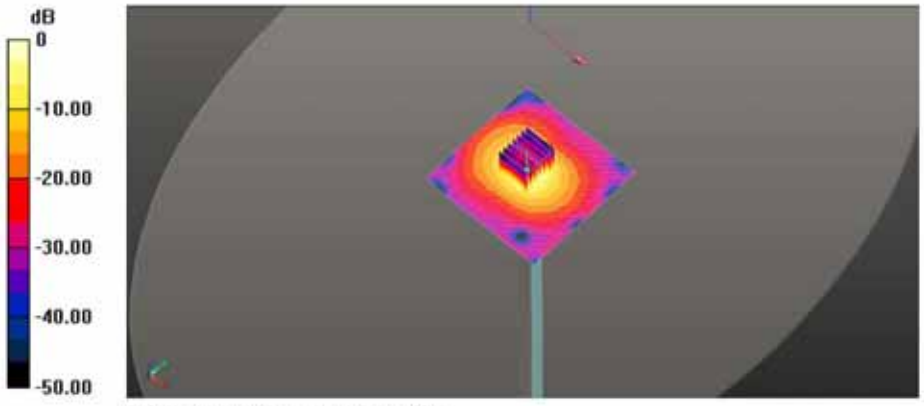
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1106

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.903 S/m; ε_r = 47.217; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.04, 4.04, 4.04); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

5800MHz Verification/5800MHz Verification/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.1 W/kg

5800MHz Verification/5800MHz Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 50.193 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 34.6 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 16.5 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

GSM 850 Body SAR Test

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Rear_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

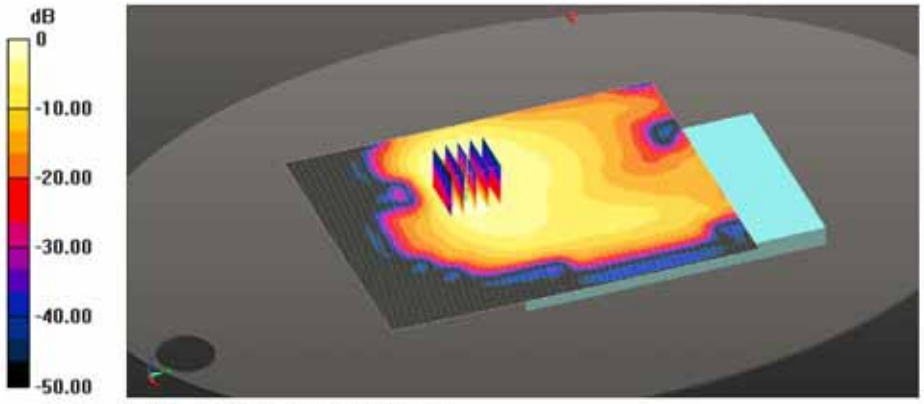
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Rear_CH190/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.183 W/kg

Body/GPRS850 3TX Rear_CH190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.180 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.263 W/kg
SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.077 W/kg
Maximum value of SAR (measured) = 0.207 W/kg



0 dB = 0.183 W/kg = -7.38 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Rear Tilt_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

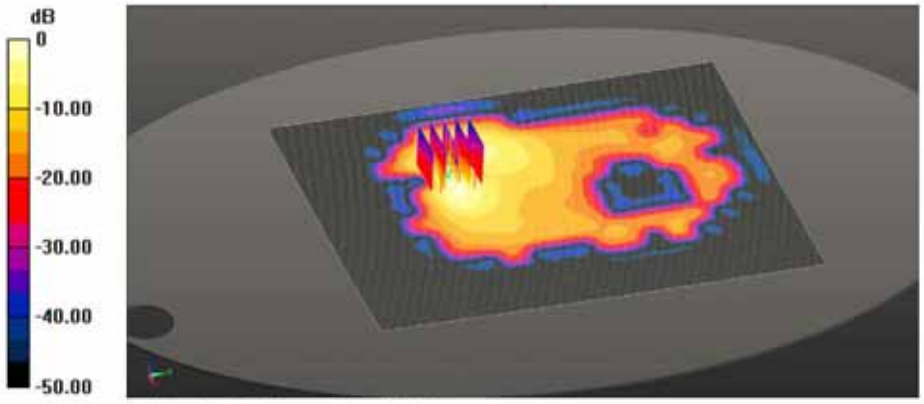
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Rear Tilt_CH190/Area Scan (151x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.443 W/kg

Body/GPRS850 3TX Rear Tilt_CH190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.966 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.547 W/kg
SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.120 W/kg
Maximum value of SAR (measured) = 0.424 W/kg



0 dB = 0.443 W/kg = -3.54 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Edge 1_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

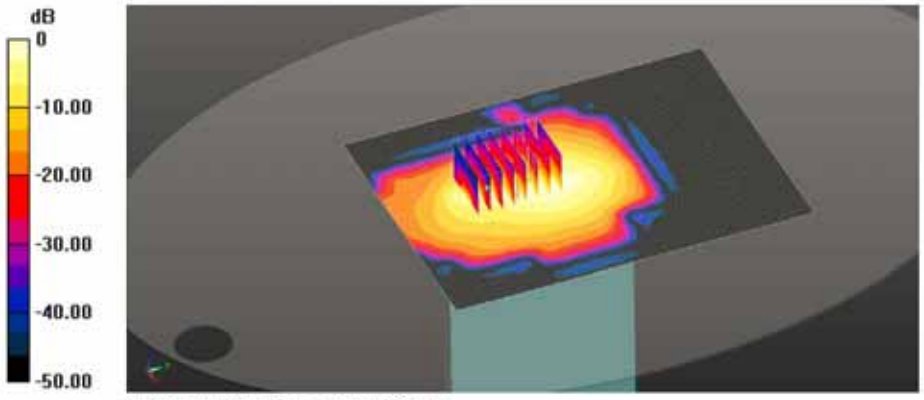
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Edge 1_CH190/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.194 W/kg

Body/GPRS850 3TX Edge 1_CH190/Zoom Scan (6x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.863 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.257 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.096 W/kg
Maximum value of SAR (measured) = 0.215 W/kg



0 dB = 0.194 W/kg = -7.12 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Edge 2_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

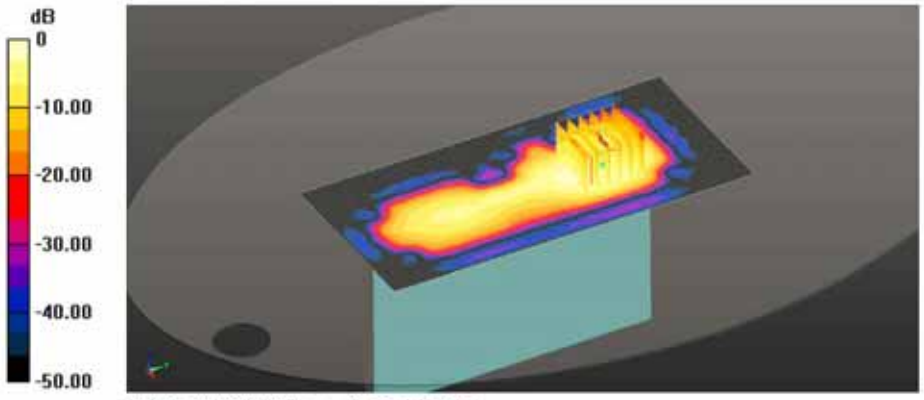
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Edge 2_CH190/Area Scan (81x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0609 W/kg

Body/GPRS850 3TX Edge 2_CH190/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.686 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0690 W/kg
SAR(1 g) = 0.041 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.0554 W/kg



0 dB = 0.0609 W/kg = -12.15 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Edge 3_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

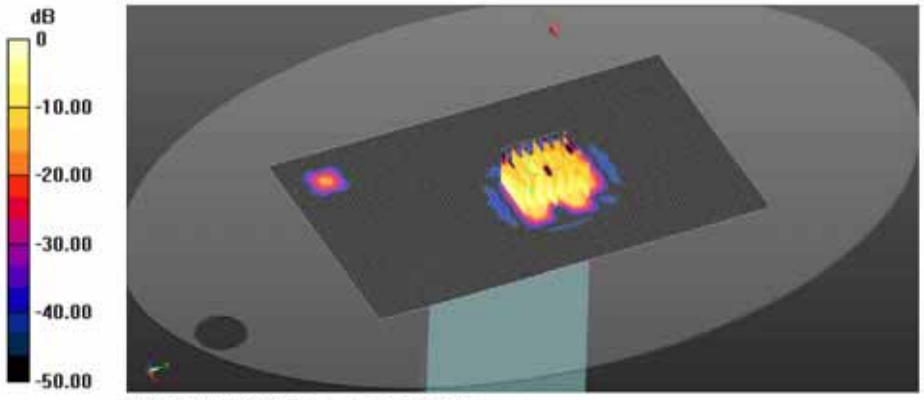
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Edge 3_CH190/Area Scan (121x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0175 W/kg

Body/GPRS850 3TX Edge 3_CH190/Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.771 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0130 W/kg
SAR(1 g) = 0.00574 W/kg; SAR(10 g) = 0.00323 W/kg
Maximum value of SAR (measured) = 0.00708 W/kg



0 dB = 0.0175 W/kg = -17.57 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Edge 4_CH190.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

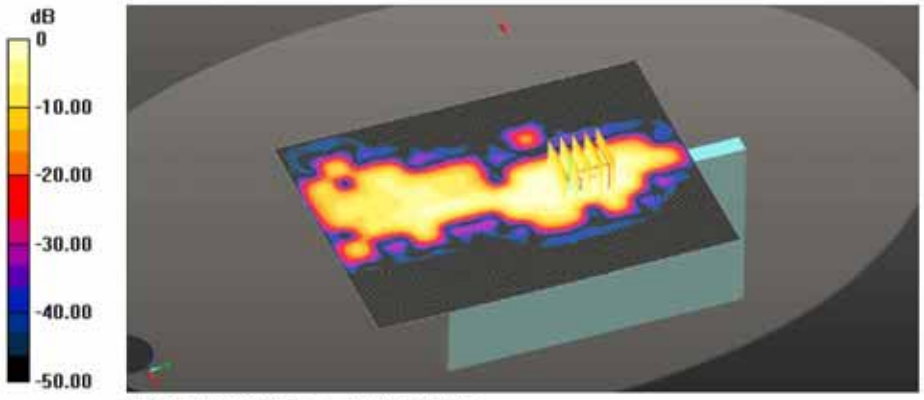
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 837 MHz; σ = 0.962 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Edge 4_CH190/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0155 W/kg

Body/GPRS850 3TX Edge 4_CH190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.729 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.0200 W/kg
SAR(1 g) = 0.010 W/kg; SAR(10 g) = 0.00652 W/kg
Maximum value of SAR (measured) = 0.0126 W/kg



0 dB = 0.0155 W/kg = -18.10 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Rear Tilt_CH128.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 824.2 MHz;Duty Cycle: 1:2.77013
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.948 S/m; ε_r = 53.119; ρ = 1000 kg/m^3
Phantom section: Flat Section

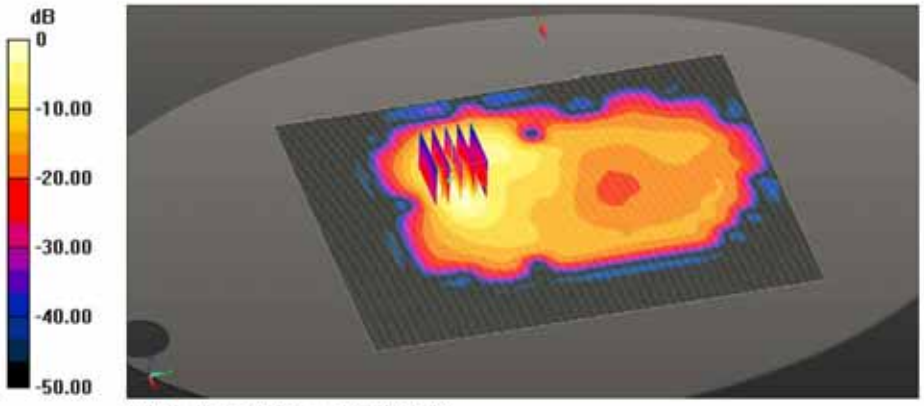
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Rear Tilt_CH128/Area Scan (151x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.411 W/kg

Body/GPRS850 3TX Rear Tilt_CH128/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.229 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.571 W/kg
SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.126 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.428 W/kg



0 dB = 0.411 W/kg = -3.86 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS850 3TX Rear Tilt_CH251.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

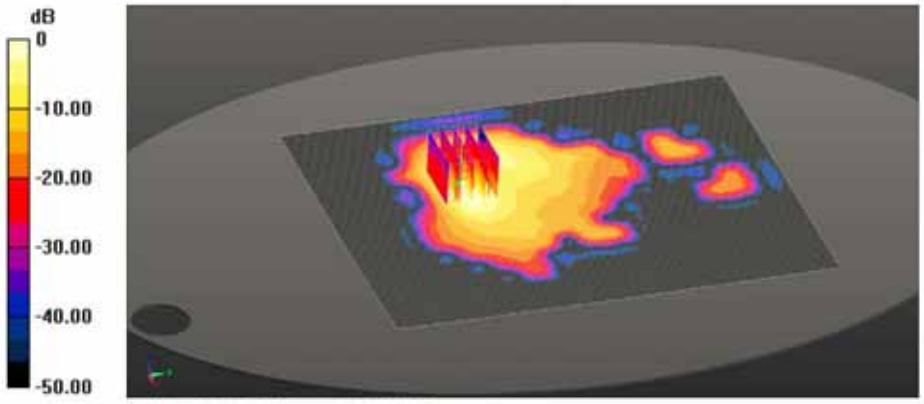
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS850 3TX; Frequency: 848.8 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 849 MHz; σ = 0.975 S/m; ε_r = 52.871; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS850 3TX Rear Tilt_CH251/Area Scan (151x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.341 W/kg

Body/GPRS850 3TX Rear Tilt_CH251/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.543 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.468 W/kg
SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.107 W/kg
Maximum value of SAR (measured) = 0.357 W/kg



0 dB = 0.341 W/kg = -4.67 dBW/kg

GSM 1900 Body SAR Test

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Rear_CH661.da53.0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

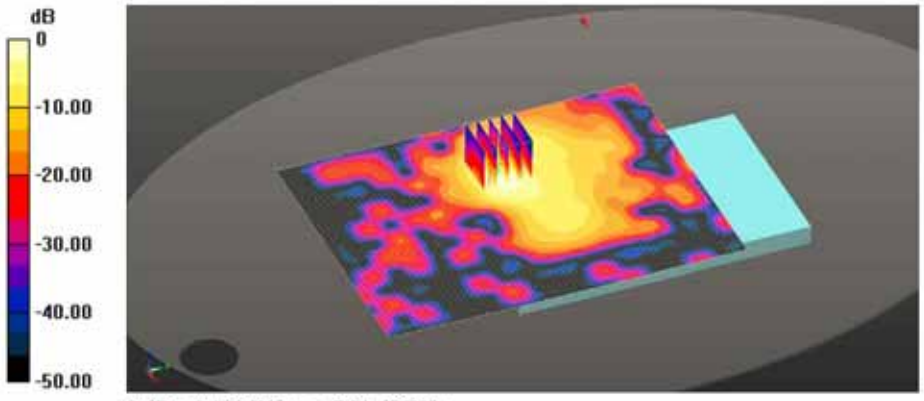
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.488 S/m; ε_r = 52.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Rear_CH661/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.190 W/kg

Body/GPRS1900 1TX_Rear_CH661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.916 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.259 W/kg
SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.071 W/kg
Maximum value of SAR (measured) = 0.204 W/kg



0 dB = 0.190 W/kg = -7.21 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Rear Tilt_CH661.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

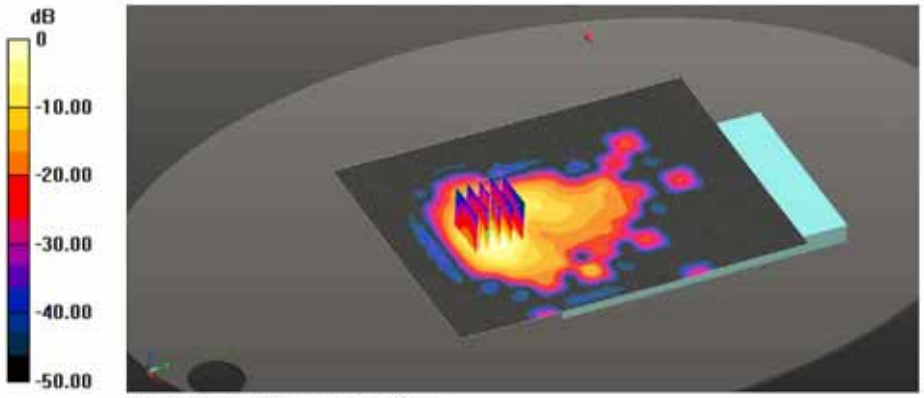
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.488 S/m; ε_r = 52.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Rear Tilt_CH661/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.455 W/kg

Body/GPRS1900 1TX_Rear Tilt_CH661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.040 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.585 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.141 W/kg
Maximum value of SAR (measured) = 0.434 W/kg



0 dB = 0.455 W/kg = -3.42 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Edge 1_CH661.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

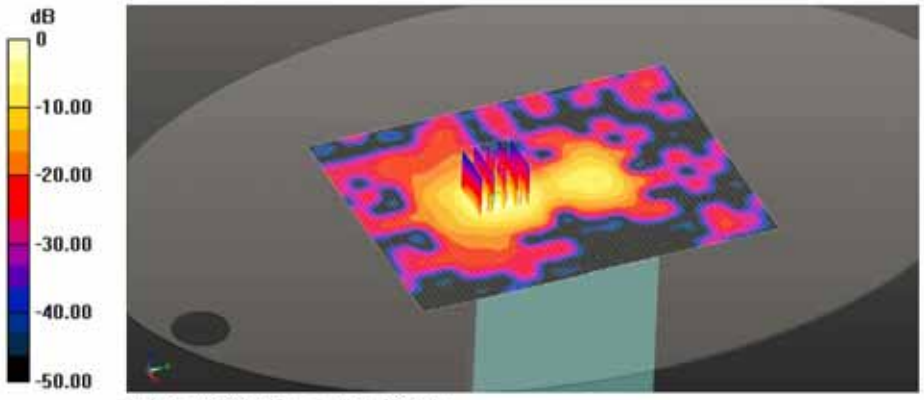
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.488 S/m; ε_r = 52.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Edge 1_CH661/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.368 W/kg

Body/GPRS1900 1TX_Edge 1_CH661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.447 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.464 W/kg
SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (measured) = 0.366 W/kg



0 dB = 0.368 W/kg = -4.34 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Edge 2_CH661.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

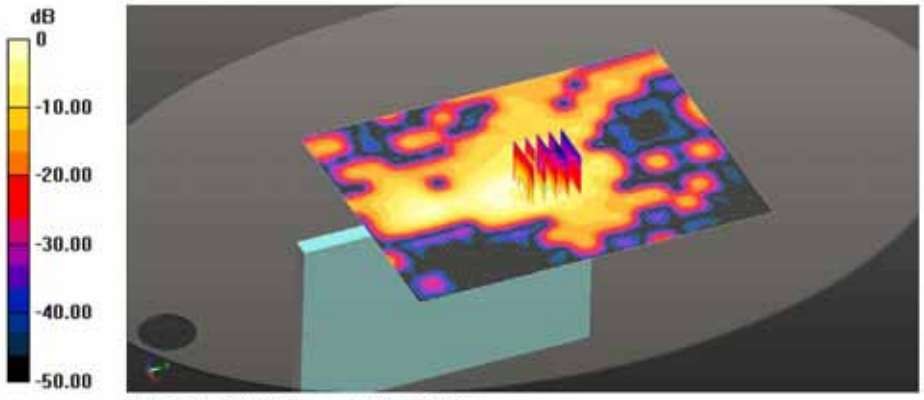
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.488 S/m; ε_r = 52.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Edge 2_CH661/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0487 W/kg

Body/GPRS1900 1TX_Edge 2_CH661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.732 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.0800 W/kg
SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.022 W/kg
Maximum value of SAR (measured) = 0.0612 W/kg



0 dB = 0.0487 W/kg = -13.12 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Edge 4_CH661.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

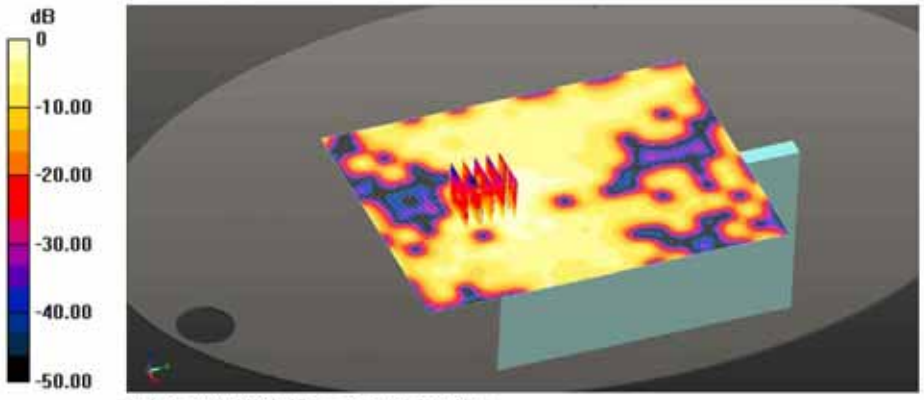
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.488 S/m; ε_r = 52.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Edge 4_CH661/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.00908 W/kg

Body/GPRS1900 1TX_Edge 4_CH661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.388 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.0140 W/kg
SAR(1 g) = 0.00508 W/kg; SAR(10 g) = 0.00294 W/kg
Maximum value of SAR (measured) = 0.00720 W/kg



0 dB = 0.00908 W/kg = -20.42 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Rear Tilt_CH512.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1850.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.457 S/m; ε_r = 52.161; ρ = 1000 kg/m^3
Phantom section: Flat Section

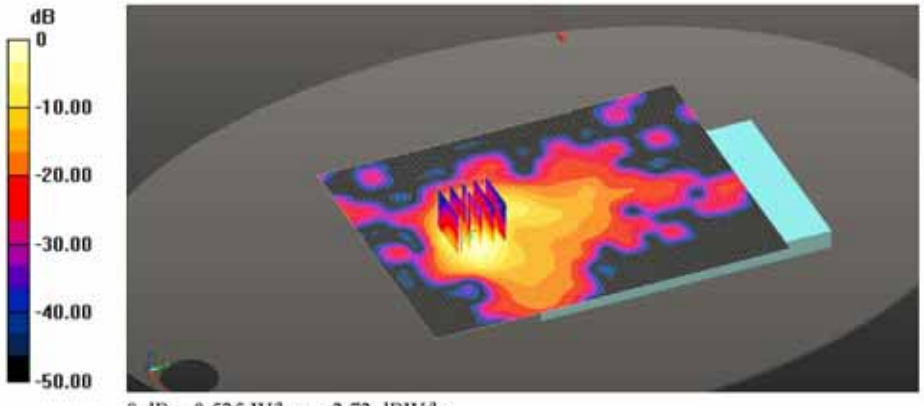
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Rear Tilt_CH512/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.535 W/kg

Body/GPRS1900 1TX_Rear Tilt_CH512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.531 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.665 W/kg
SAR(1 g) = 0.339 W/kg; SAR(10 g) = 0.166 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.477 W/kg



0 dB = 0.535 W/kg = -2.72 dBW/kg

Date: 2013-05-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GPRS1900 1TX Rear Tilt_CH810.da53:0

Ambient Temp : 22.6 ℃ Tissue Temp : 21.3 ℃

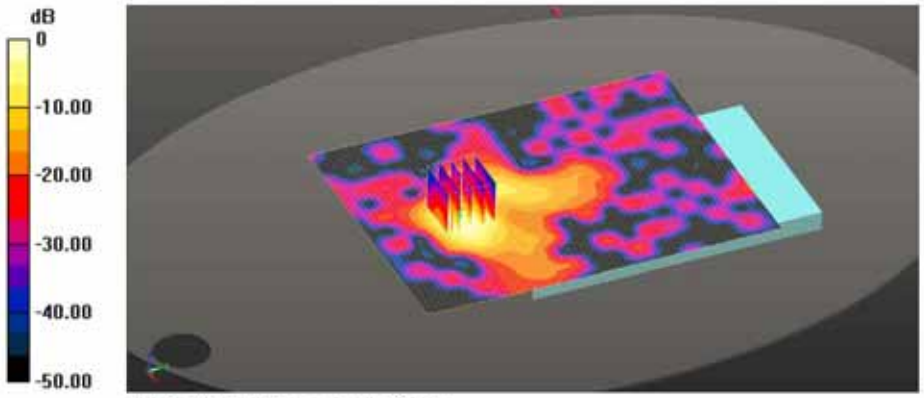
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: GPRS1900 1TX; Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1910 MHz; σ = 1.52 S/m; ε_r = 51.923; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/GPRS1900 1TX_Rear Tilt_CH810/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.427 W/kg

Body/GPRS1900 1TX_Rear Tilt_CH810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.699 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.538 W/kg
SAR(1 g) = 0.269 W/kg; SAR(10 g) = 0.127 W/kg
Maximum value of SAR (measured) = 0.402 W/kg



0 dB = 0.427 W/kg = -3.70 dBW/kg

WCDMA FDD V Body SAR Test

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Rear_CH4182.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.962 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section

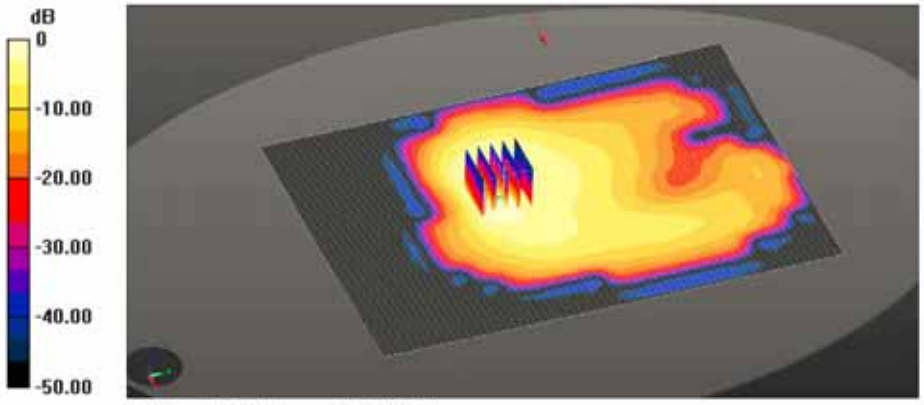
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Rear_CH4182/Area Scan (141x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.293 W/kg

Body/WCDMA V Rear_CH4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.873 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.426 W/kg
SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.127 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.313 W/kg



0 dB = 0.293 W/kg = -5.33 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Rear Tilt_CH4182.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.962 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section

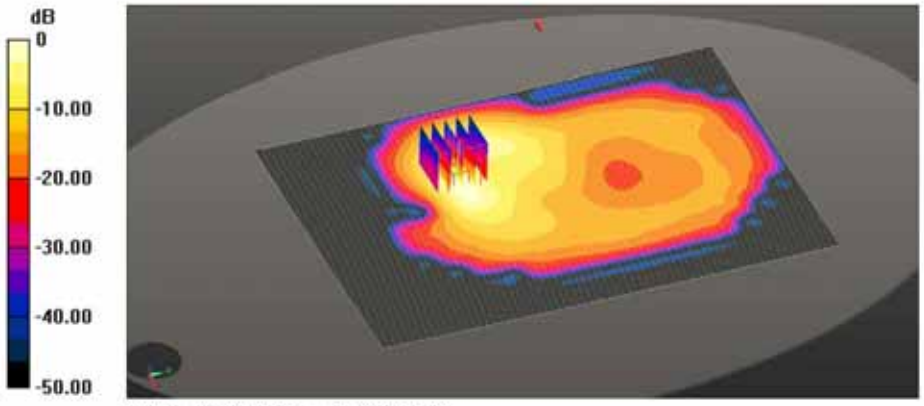
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Rear Tilt_CH4182/Area Scan (141x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.578 W/kg

Body/WCDMA V Rear Tilt_CH4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.591 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.863 W/kg
SAR(1 g) = 0.409 W/kg; SAR(10 g) = 0.198 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.659 W/kg



0 dB = 0.578 W/kg = -2.38 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Edge 1_CH4182.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.962 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section

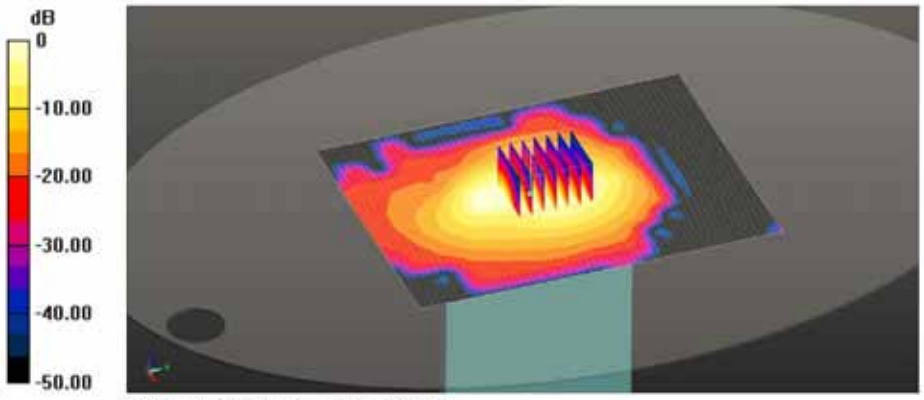
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Edge 1_CH4182/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.326 W/kg

Body/WCDMA V Edge 1_CH4182/Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.473 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.261 W/kg; SAR(10 g) = 0.162 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.361 W/kg



0 dB = 0.326 W/kg = -4.87 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Edge 2_CH4182.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.962 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section

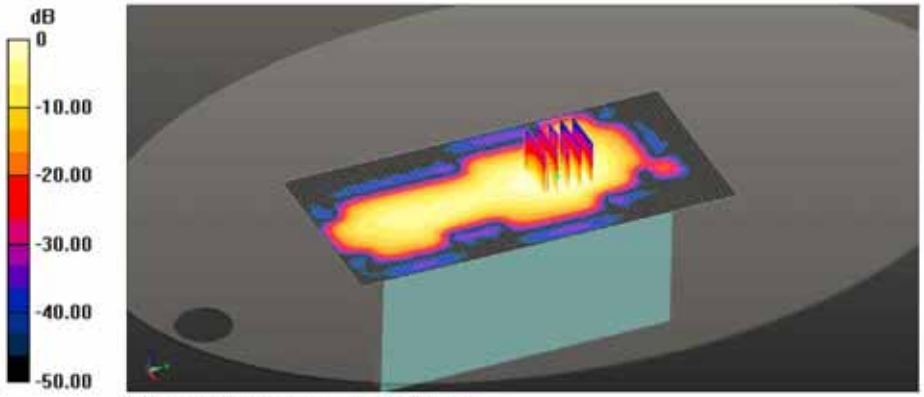
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Edge 2_CH4182/Area Scan (81x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.0839 W/kg

Body/WCDMA V Edge 2_CH4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.953 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.110 W/kg
SAR(1 g) = 0.066 W/kg; SAR(10 g) = 0.040 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.0862 W/kg



0 dB = 0.0839 W/kg = -10.76 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Rear Tilt_CH4132.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.951 S/m; ε_r = 53.096; ρ = 1000 kg/m^3
Phantom section: Flat Section

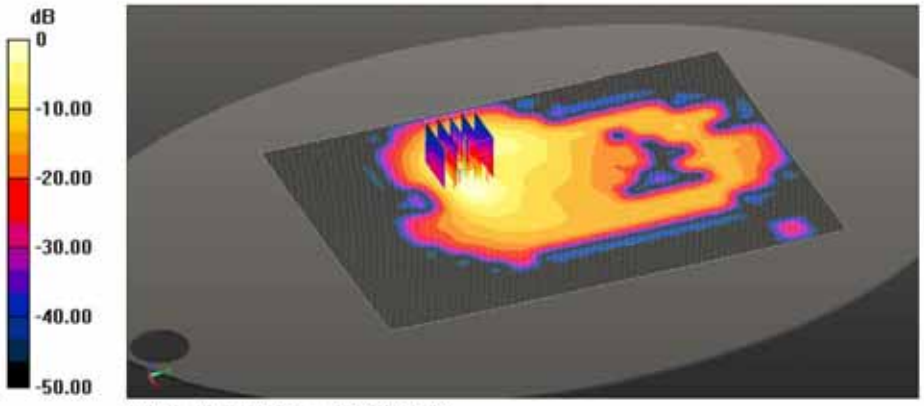
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Rear Tilt_CH4132/Area Scan (141x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.546 W/kg

Body/WCDMA V Rear Tilt_CH4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.601 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.826 W/kg
SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.189 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.626 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

Date: 2013-04-26

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA V Rear Tilt_CH4233.da53:0

Ambient Temp : 22.9 ℃ Tissue Temp : 21.9 ℃

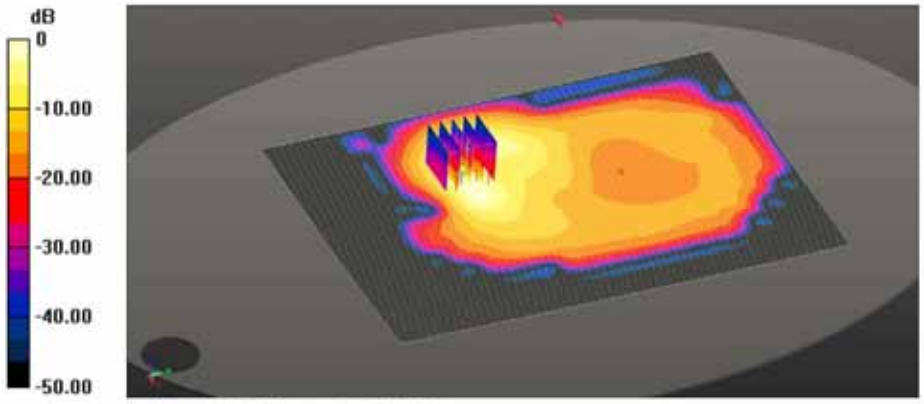
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA5; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.973 S/m; ε_r = 52.887; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(9.76, 9.76, 9.76); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA V Rear Tilt_CH4233/Area Scan (141x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.564 W/kg

Body/WCDMA V Rear Tilt_CH4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.701 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.853 W/kg
SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.195 W/kg
Maximum value of SAR (measured) = 0.649 W/kg



0 dB = 0.564 W/kg = -2.49 dBW/kg

WCDMA II Body SAR Test

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Rear_CH9400.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

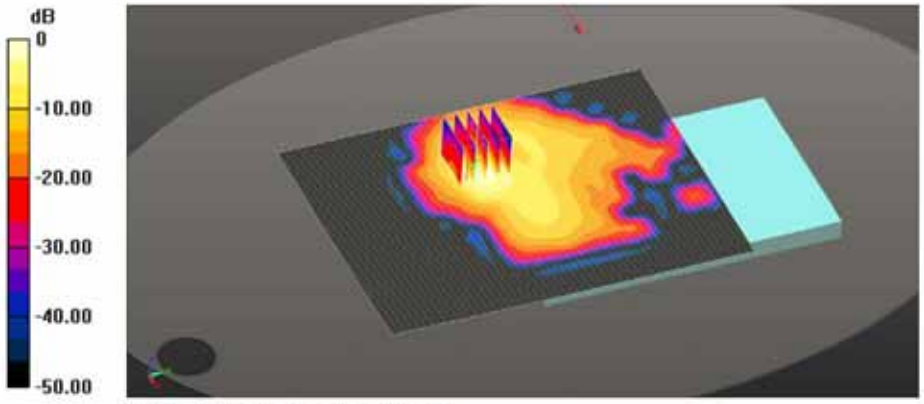
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.487 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Rear_CH9400/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.450 W/kg

Body/WCDMA 2_Rear_CH9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.441 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.574 W/kg
SAR(1 g) = 0.316 W/kg; SAR(10 g) = 0.159 W/kg
Maximum value of SAR (measured) = 0.458 W/kg



0 dB = 0.450 W/kg = -3.47 dBW/kg

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Rear Tilt_CH9400.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

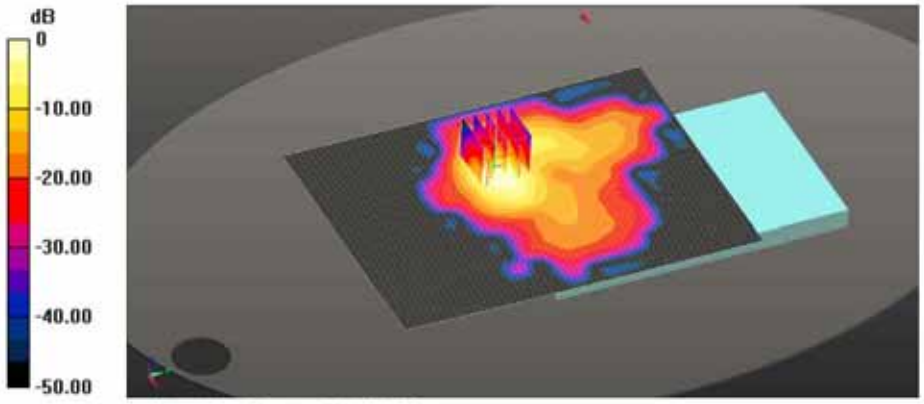
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.487 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Rear Tilt_CH9400/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Body/WCDMA 2_Rear Tilt_CH9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.643 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.744 W/kg; SAR(10 g) = 0.364 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Edge 1_CH9400.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

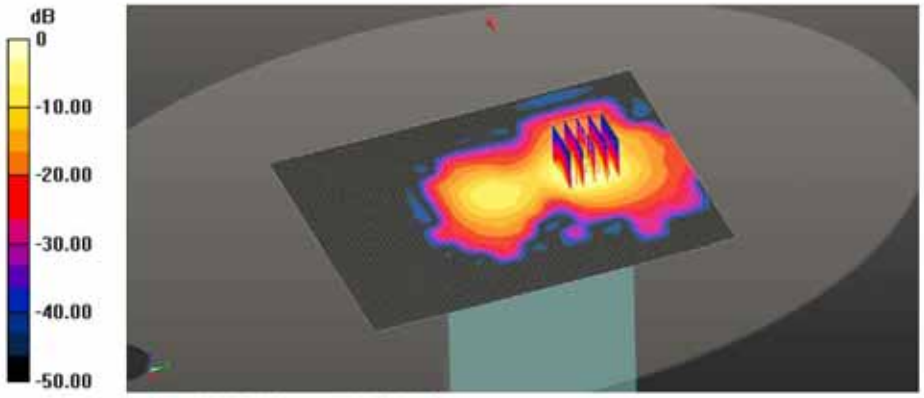
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.487 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Edge 1_CH9400/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.738 W/kg

Body/WCDMA 2_Edge 1_CH9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.317 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.578 W/kg; SAR(10 g) = 0.285 W/kg
Maximum value of SAR (measured) = 0.837 W/kg



0 dB = 0.738 W/kg = -1.32 dBW/kg

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Edge 2_CH9400.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

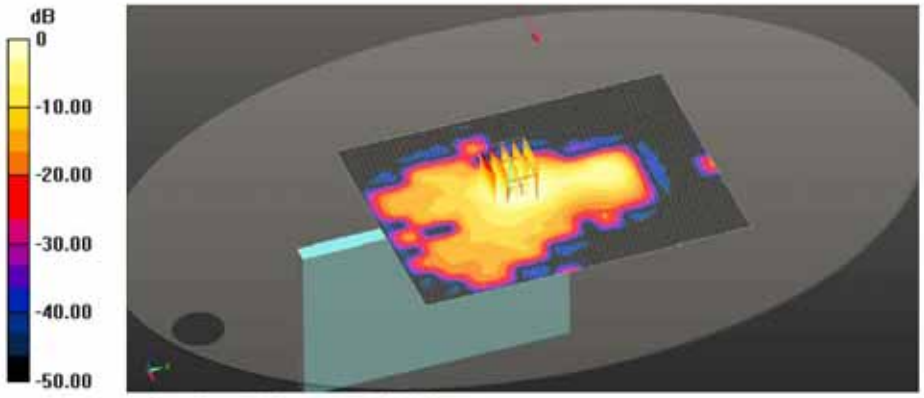
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.487 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Edge 2_CH9400/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.114 W/kg

Body/WCDMA 2_Edge 2_CH9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.849 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.142 W/kg
SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.114 W/kg



0 dB = 0.114 W/kg = -9.43 dBW/kg

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Rear Tilt_CH9262.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.452 S/m; ε_r = 51.521; ρ = 1000 kg/m^3
Phantom section: Flat Section

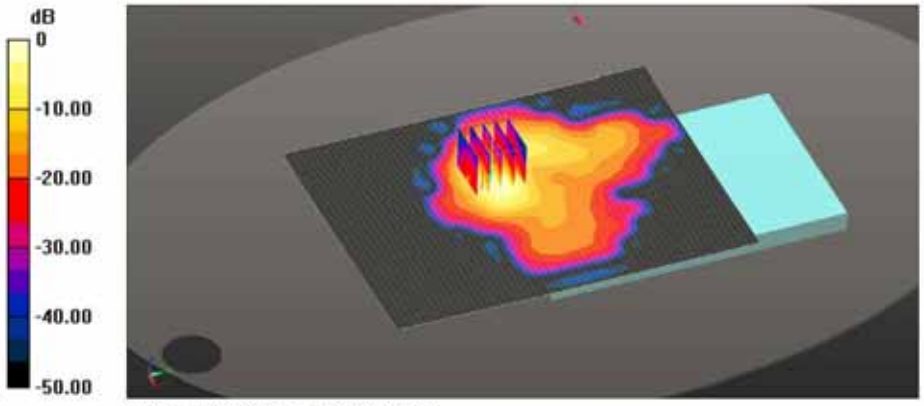
DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Rear Tilt_CH9262/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.02 W/kg

Body/WCDMA 2_Rear Tilt_CH9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.938 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.665 W/kg; SAR(10 g) = 0.325 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.964 W/kg



0 dB = 1.02 W/kg = 0.09 dBW/kg

Date: 2013-04-25

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WCDMA II_Rear Tilt_CH9538.da53:0

Ambient Temp : 22.4 ℃ Tissue Temp : 21.6 ℃

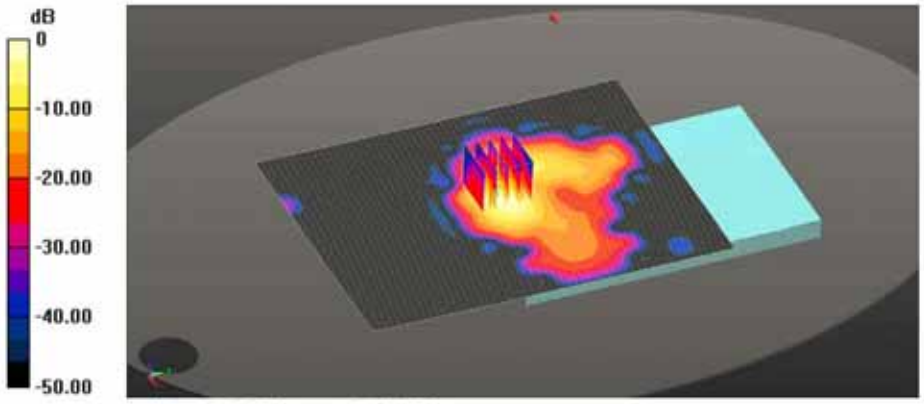
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WCDMA2; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.523 S/m; ε_r = 51.32; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.72, 7.72, 7.72); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1169
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/WCDMA 2_Rear Tilt_CH9538/Area Scan (121x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.701 W/kg

Body/WCDMA 2_Rear Tilt_CH9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.538 V/m; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.881 W/kg
SAR(1 g) = 0.455 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 0.684 W/kg



0 dB = 0.701 W/kg = -1.54 dBW/kg

WLAN 2450 ㎒ Body SAR Test

Date: 2013-04-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2.45GHz_802.11b_1Mbps_Rear_CH6.da53:0

Ambient Temp : 22.3 ℃ Tissue Temp : 21.5 ℃

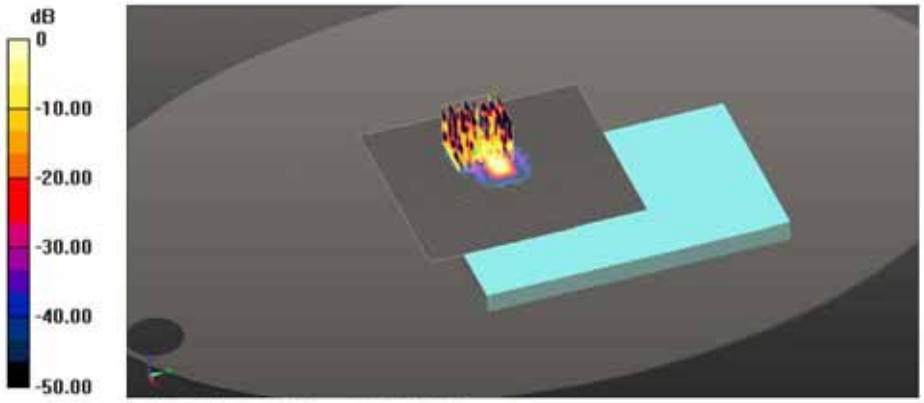
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WLAN 2.45GHZ; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.97 S/m; ε_r = 52.847; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.25, 7.25, 7.25); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/2.45GHz_802.11b_1Mbps_Rear_CH6/Area Scan (131x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00417 W/kg

Body/2.45GHz_802.11b_1Mbps_Rear_CH6/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.0170 W/kg
SAR(1 g) = 0.0024 W/kg; SAR(10 g) = 0.000608 W/kg
Maximum value of SAR (measured) = 0.00639 W/kg



0 dB = 0.00417 W/kg = -23.80 dBW/kg

Date: 2013-04-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2.45GHz_802.11b_1Mbps_Rear Tilt_CH6.da53:0

Ambient Temp : 22.3 ℃ Tissue Temp : 21.5 ℃

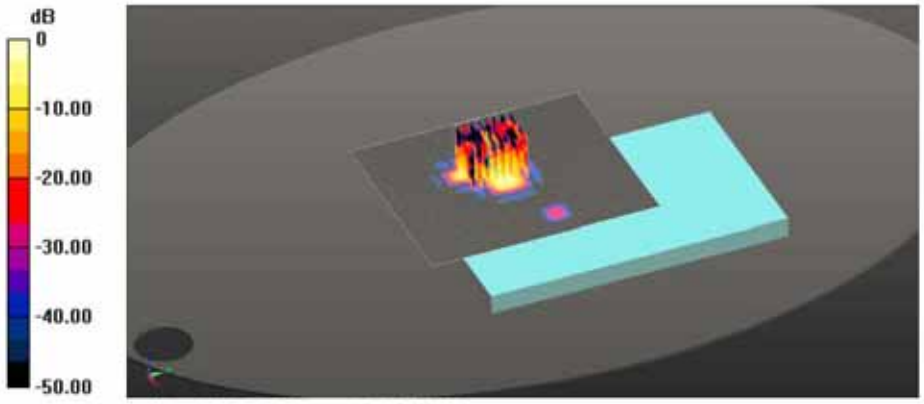
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WLAN 2.45GHZ; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.97 S/m; ε_r = 52.847; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.25, 7.25, 7.25); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/2.45GHz_802.11b_1Mbps_Rear Tilt_CH6/Area Scan (131x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0726 W/kg

Body/2.45GHz_802.11b_1Mbps_Rear Tilt_CH6/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.971 V/m; Power Drift = -0.28 dB
Peak SAR (extrapolated) = 0.0730 W/kg
SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.00744 W/kg
Maximum value of SAR (measured) = 0.0461 W/kg



0 dB = 0.0726 W/kg = -11.39 dBW/kg

Date: 2013-04-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2.45GHz_802.11b_1Mbps_Edge 2_CH6.da53:0

Ambient Temp : 22.3 ℃ Tissue Temp : 21.5 ℃

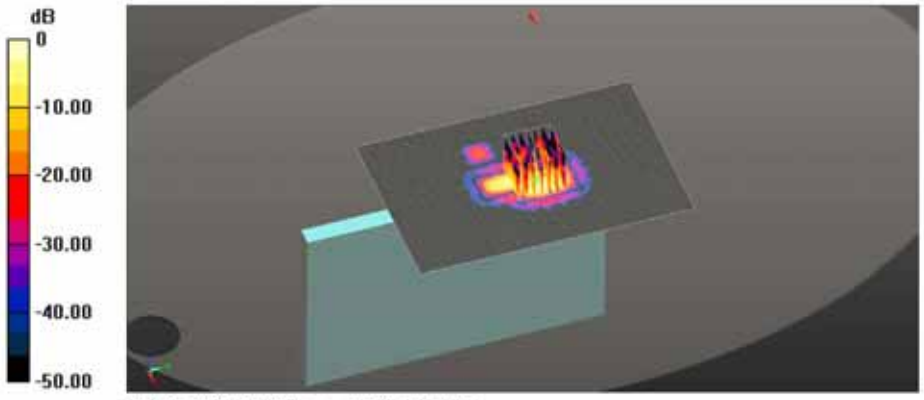
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: WLAN 2.45GHZ; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.97 S/m; ε_r = 52.847; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(7.25, 7.25, 7.25); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/2.45GHz_802.11b_1Mbps_Edge 2_CH6/Area Scan (121x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0398 W/kg

Body/2.45GHz_802.11b_1Mbps_Edge 2_CH6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.367 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.0720 W/kg
SAR(1 g) = 0.031 W/kg; SAR(10 g) = 0.00637 W/kg
Maximum value of SAR (measured) = 0.0538 W/kg



0 dB = 0.0398 W/kg = -14.00 dBW/kg

WLAN 5200 ㎒ Body SAR Test

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.2GHz_802.11a_6Mbps_Rear_CH48.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

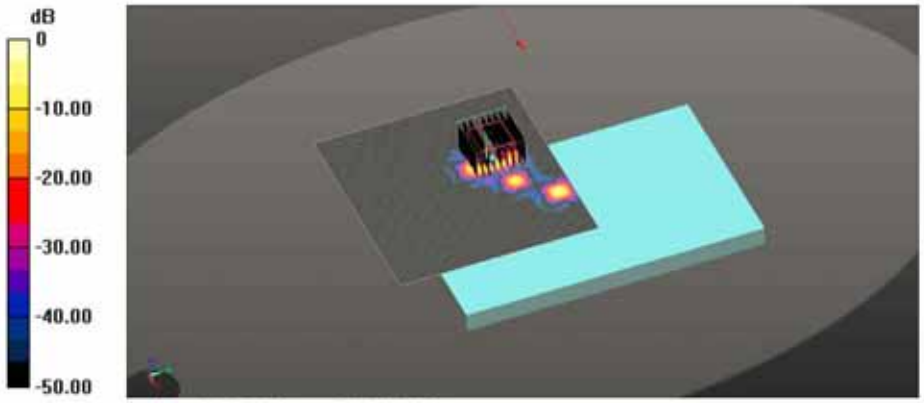
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.242 S/m; ε_r = 47.597; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.26, 4.26, 4.26); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.2GHz_802.11a_6Mbps_Rear_CH48/Area Scan (141x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.197 W/kg

Body/5.2GHz_802.11a_6Mbps_Rear_CH48/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.244 W/kg
SAR(1 g) = 0.026 W/kg; SAR(10 g) = 0.00738 W/kg
Maximum value of SAR (measured) = 0.0543 W/kg



0 dB = 0.197 W/kg = -7.06 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.2GHz_802.11a_6Mbps_Rear Tilt_CH48.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

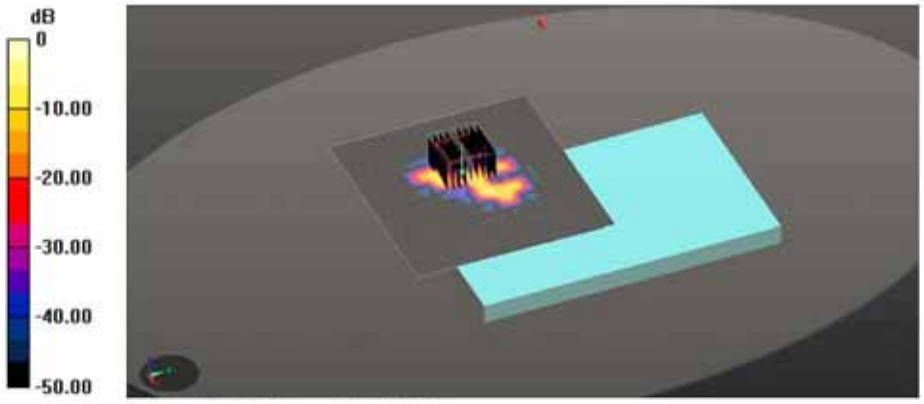
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.242 S/m; ε_r = 47.597; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.26, 4.26, 4.26); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.2GHz_802.11a_6Mbps_Rear Right Edge Tilt_CH48/Area Scan (141x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.630 W/kg

Body/5.2GHz_802.11a_6Mbps_Rear Right Edge Tilt_CH48/Zoom Scan (9x9x12)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.081 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.590 W/kg
SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.035 W/kg
Maximum value of SAR (measured) = 0.312 W/kg



0 dB = 0.630 W/kg = -2.01 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.2GHz_802.11a_6Mbps_Edge 1_CH48.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

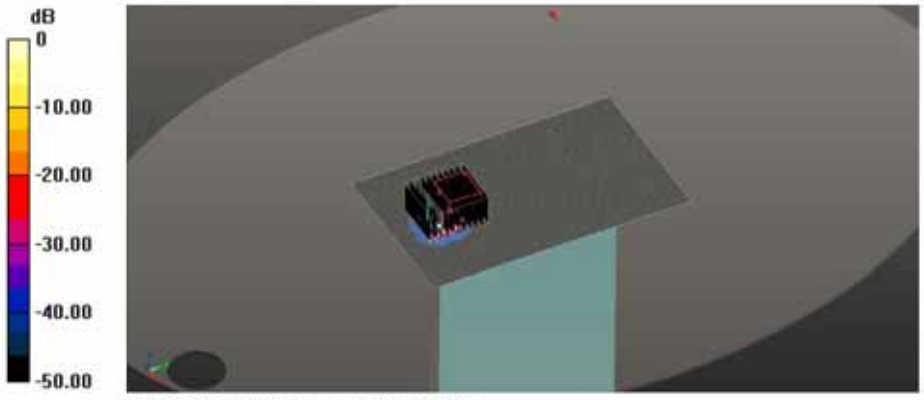
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.242 S/m; ε_r = 47.597; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.26, 4.26, 4.26); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.2GHz_802.11a_6Mbps_Edge 1_CH48/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0123 W/kg

Body/5.2GHz_802.11a_6Mbps_Edge 1_CH48/Zoom Scan (10x11x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.0075 W/kg; SAR(10 g) = 0.000823 W/kg
Maximum value of SAR (measured) = 0.0277 W/kg



0 dB = 0.0123 W/kg = -19.10 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.2GHz_802.11a_6Mbps_Edge 2_CH48.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

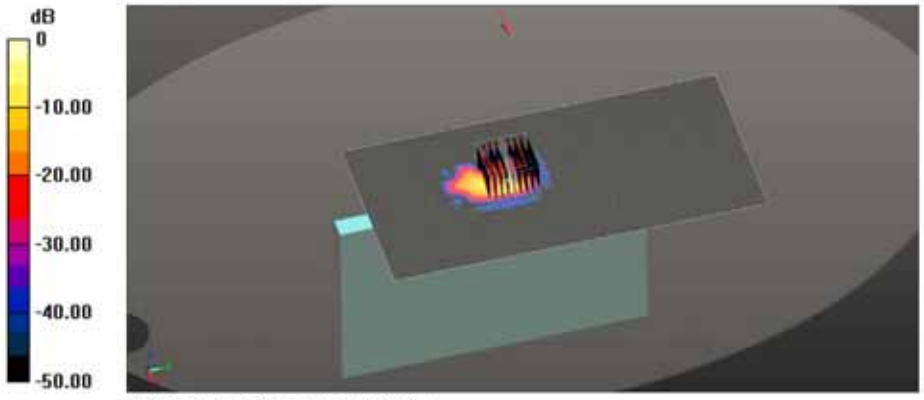
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.242 S/m; ε_r = 47.597; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.26, 4.26, 4.26); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.2GHz_802.11a_6Mbps_Edge 2_CH48/Area Scan (121x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

Body/5.2GHz_802.11a_6Mbps_Edge 2_CH48/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.467 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.391 W/kg; SAR(10 g) = 0.092 W/kg
Maximum value of SAR (measured) = 0.882 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

WLAN 5300 ㎒ Body SAR Test

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.3GHz_802.11a_6Mbps_Rear_CH56.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

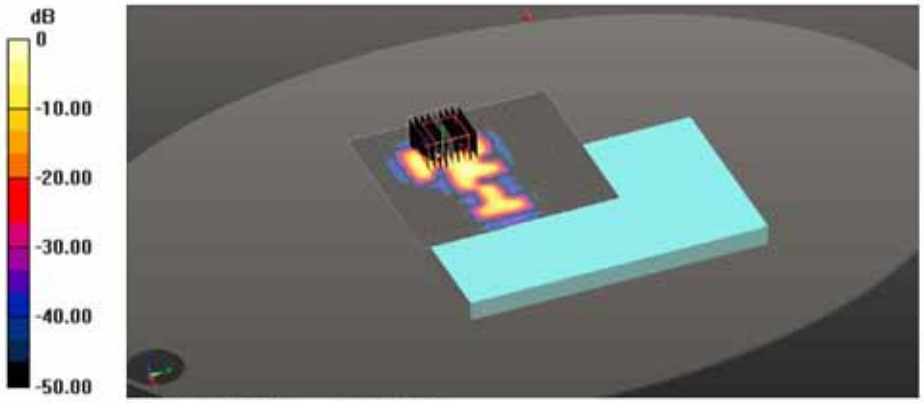
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5280 MHz; σ = 5.286 S/m; ε_r = 47.546; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.18, 4.18, 4.18); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.3GHz_802.11a_6Mbps_Rear_CH56/Area Scan (121x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.195 W/kg

Body/5.3GHz_802.11a_6Mbps_Rear_CH56/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.384 W/kg
SAR(1 g) = 0.040 W/kg; SAR(10 g) = 0.014 W/kg
Maximum value of SAR (measured) = 0.0970 W/kg



0 dB = 0.195 W/kg = -7.10 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.3GHz_802.11a_6Mbps_Rear Tilt_CH56.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

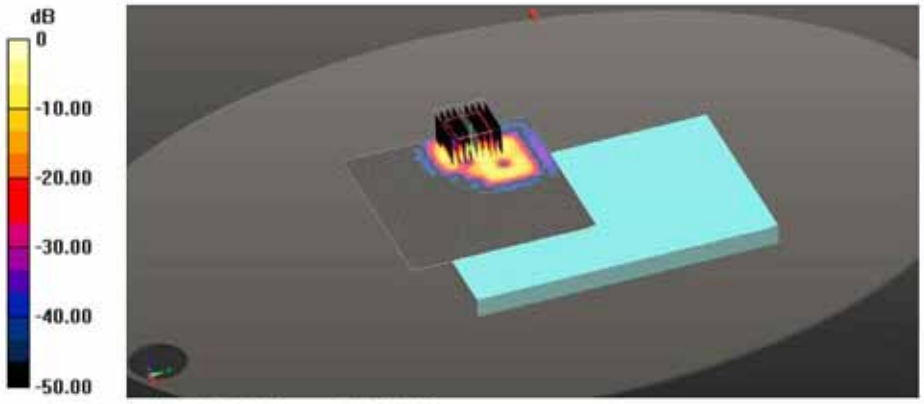
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5280 MHz; σ = 5.286 S/m; ε_r = 47.546; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.18, 4.18, 4.18); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.3GHz_802.11a_6Mbps_Rear Tilt_CH56/Area Scan (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.506 W/kg

Body/5.3GHz_802.11a_6Mbps_Rear Tilt_CH56/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.885 W/kg
SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.061 W/kg
Maximum value of SAR (measured) = 0.486 W/kg



0 dB = 0.506 W/kg = -2.96 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.3GHz_802.11a_6Mbps_Edge 1_CH56.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

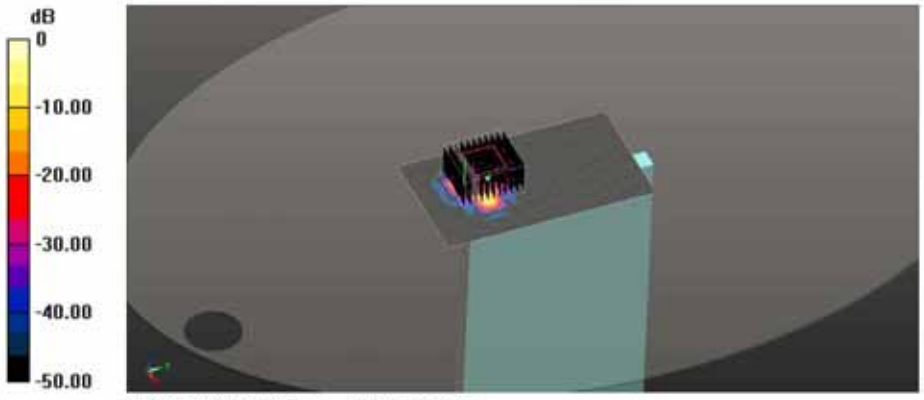
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5280 MHz; σ = 5.286 S/m; ε_r = 47.546; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.18, 4.18, 4.18); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.3GHz_802.11a_6Mbps_Edge 1_CH56/Area Scan (81x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0807 W/kg

Body/5.3GHz_802.11a_6Mbps_Edge 1_CH56/Zoom Scan (10x11x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.318 W/kg
SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.00793 W/kg
Maximum value of SAR (measured) = 0.0608 W/kg



0 dB = 0.0807 W/kg = -10.93 dBW/kg

Date: 2013-04-27

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.3GHz_802.11a_6Mbps_Edge 2_CH56.da53:0

Ambient Temp : 22.5 ℃ Tissue Temp : 21.7 ℃

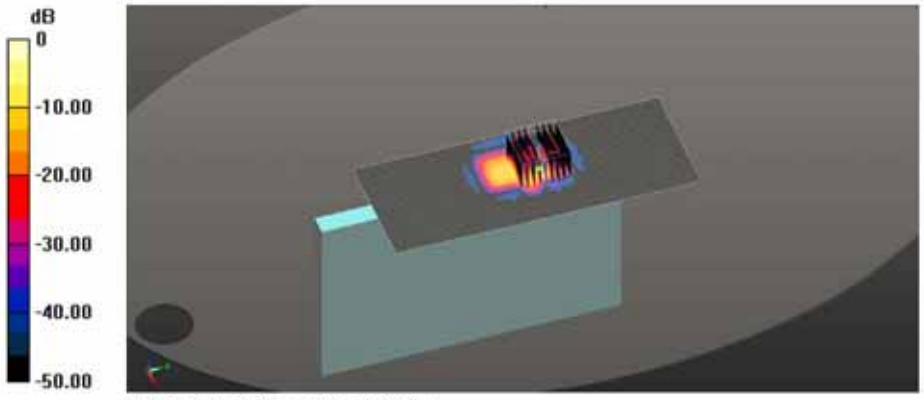
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5280 MHz; σ = 5.286 S/m; ε_r = 47.546; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(4.18, 4.18, 4.18); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.3GHz_802.11a_6Mbps_Edge 2_CH56/Area Scan (81x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.89 W/kg

Body/5.3GHz_802.11a_6Mbps_Edge 2_CH56/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.032 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.65 W/kg
SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.148 W/kg
Maximum value of SAR (measured) = 1.32 W/kg



0 dB = 1.89 W/kg = 2.76 dBW/kg

WLAN 5500 MHz Body SAR Test

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.5GHz_802.11a_6Mbps_Rear_CH132.da53:0

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

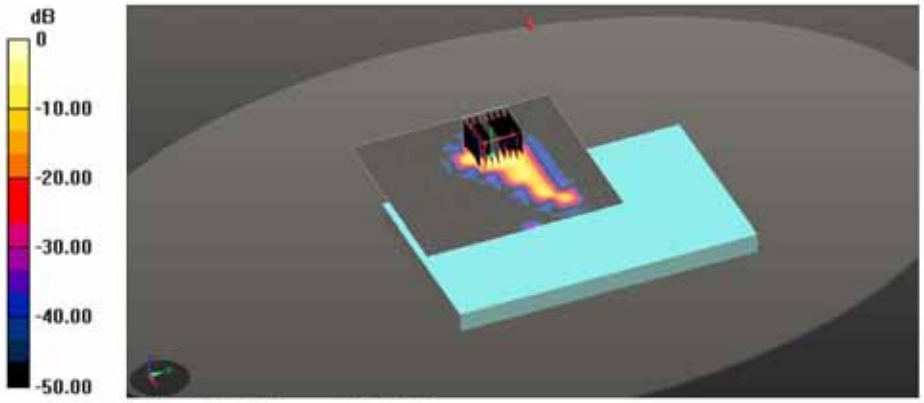
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5660 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5660 MHz; σ = 5.739 S/m; ε_r = 47.425; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.73, 3.73, 3.73); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.5GHz_802.11a_6Mbps_Rear_CH132/Area Scan (121x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.321 W/kg

Body/5.5GHz_802.11a_6Mbps_Rear_CH132/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.441 W/kg
SAR(1 g) = 0.073 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.185 W/kg



0 dB = 0.321 W/kg = -4.93 dBW/kg

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.5GHz_802.11a_6Mbps_Rear Tilt_CH132.da53:0

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

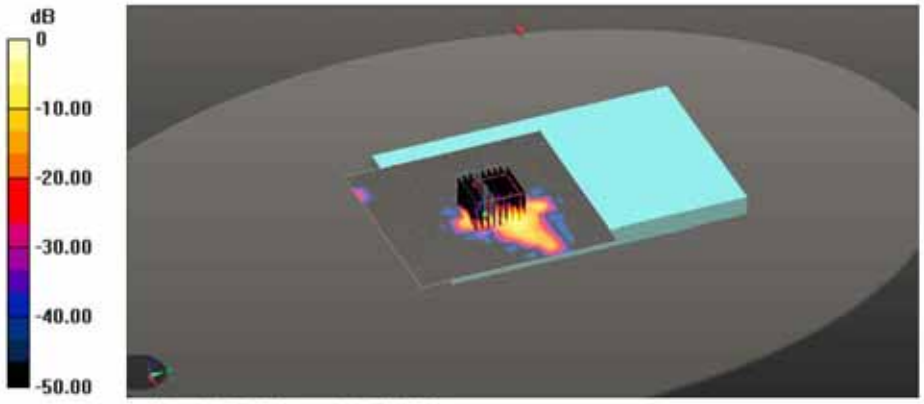
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5660 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5660 MHz; σ = 5.739 S/m; ε_r = 47.425; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.73, 3.73, 3.73); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.5GHz_802.11a_6Mbps_Rear Tilt_CH132/Area Scan (121x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.871 W/kg

Body/5.5GHz_802.11a_6Mbps_Rear Tilt_CH132/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.388 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.086 W/kg
Maximum value of SAR (measured) = 0.603 W/kg



0 dB = 0.871 W/kg = -0.60 dBW/kg

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.5GHz_802.11a_6Mbps_Edge 1_CH132.da53:0

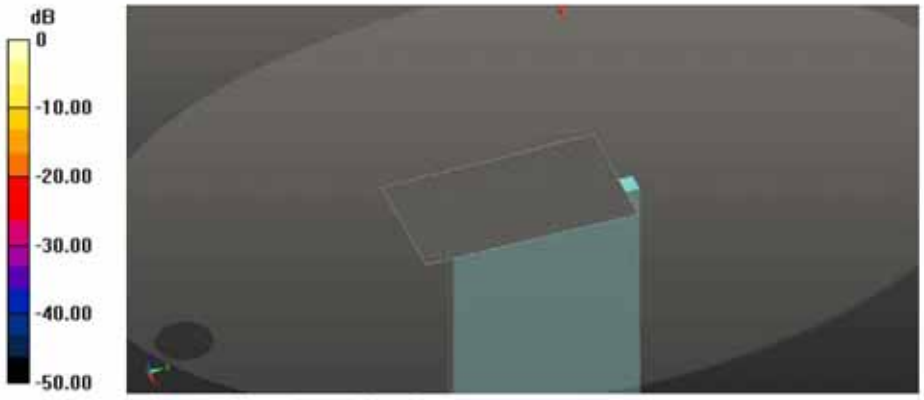
Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5660 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5660 MHz; σ = 5.739 S/m; ε_r = 47.425; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.73, 3.73, 3.73); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.5GHz_802.11a_6Mbps_Edge 1_CH132/Area Scan (81x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0 W/kg



0 dB = 0 W/kg = -999.00 dBW/kg

Date: 2013-04-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.5GHz_802.11a_6Mbps_Edge 2_CH132.da53:0

Ambient Temp : 22.8 ℃ Tissue Temp : 21.8 ℃

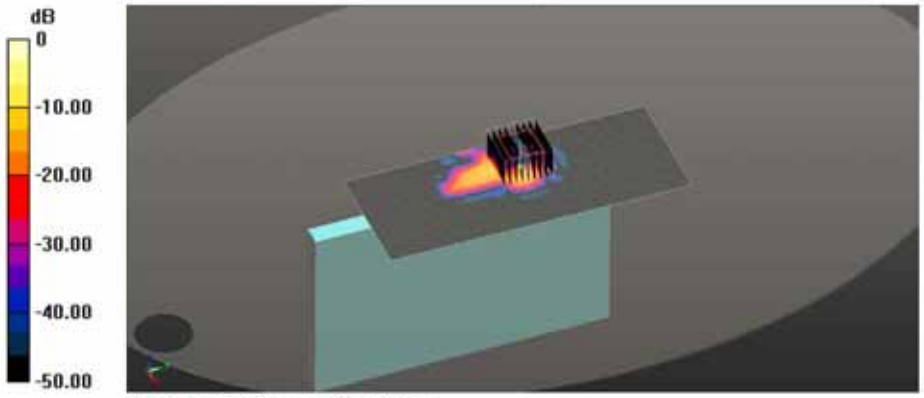
DUT: BP50; Type: Android Business Pad; Serial: N/A

Communication System: 5GHz WLAN; Frequency: 5660 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5660 MHz; σ = 5.739 S/m; ε_r = 47.425; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3862; ConvF(3.73, 3.73, 3.73); Calibrated: 04.02.2013;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1340; Calibrated: 10.07.2012
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1200
- DASY52 52.8.4(1052)SEMCAD X 14.6.8(7028)

Body/5.5GHz_802.11a_6Mbps_Edge 2_CH132/Area Scan (81x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.74 W/kg

Body/5.5GHz_802.11a_6Mbps_Edge 2_CH132/Zoom Scan (9x9x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 8.397 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 4.51 W/kg
SAR(1 g) = 0.916 W/kg; SAR(10 g) = 0.207 W/kg
Maximum value of SAR (measured) = 2.17 W/kg



0 dB = 2.74 W/kg = 4.38 dBW/kg