A Test Lab Techno Corp.

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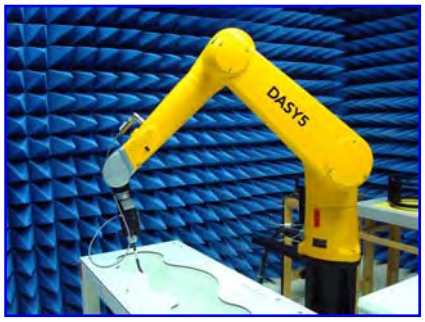
SAR EVALUATION REPORT

Test Report No.	:	1211FS15-02
Applicant	:	Sierra Wireless, Inc.
Product Type	:	Wireless Mobile Hotspot
Trade Name	:	AirCard
Model Number	:	AirCard 770S
Date of Received	:	Oct. 09, 2012
Test Period	:	Oct. 11 ~ Nov. 19, 2012
Date of Issued	:	Dec. 04, 2012
Test Environment	:	Ambient Temperature： 22 ±2 ° C
		Relative Humidity：40 - 70 %
Standard	:	ANSI/IEEE C95.1-1999
		IEEE Std. 1528-2003
		IEEE Std. 1528a-2005
		47 CFR Part §2.1093;
		FCC/OET Bulletin 65 Supplement C [July 2001]
Max. SAR	:	1.340 W/kg Body SAR
Test Lab Location	:	Chang-an Lab



1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp. The test results in the report only apply to the tested sample.

Approved By : Yung-Tan Tsai (Yung Tan Tsai)

Tested By : Bill Hu (Bill Hu)

Contents

1. Description of Equipment under Test (EUT)

Applicant	Sierra Wireless, Inc.	
Applicant Address	13811 Wireless Way, Richmond, BC, Canada, V6V 3A4	
Manufacture	Sierra Wireless, Inc.	
Manufacture Address	13811 Wireless Way, Richmond, BC, Canada, V6V 3A4	
Product Type	Wireless Mobile Hotspot	
Trade Name	AirCard	
Model Number	AirCard 770S	
FCC ID	N7NAC770S	
RF Function	GPRS/EGPRS 850 GPRS/EGPRS 1900 WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II WCDMA(RMC 12.2K) / HSDPA / HSUPA Band V LTE Band 2 / Band 4 / Band 5 / Band 17 IEEE 802.11b / 802.11g / IEEE 802.11n 20MHz (2.4GHz)	
Tx Frequency	Band	Operate Frequency (MHz)
	GPRS/EGPRS 850	824.2 - 848.8
	GPRS/EGPRS 1900	1850.2 - 1909.8
	WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II	1852.4 - 1907.6
	WCDMA (RMC 12.2K) / HSDPA / HSUPA Band V	826.4 - 846.6
	LTE Band 2 (BW 1.4, 3, 5, 10, 15, 20 MHz)	1850.0 - 1910.0
	LTE Band 4 (BW 1.4, 3, 5, 10, 15, 20 MHz)	1710.0 - 1754.9
	LTE Band 5 (BW 1.4, 3, 5, 10 MHz)	824.0 - 849.0
	LTE Band 17 (BW 5, 10 MHz)	704.0 - 715.9
	IEEE 802.11b / 802.11g / IEEE 802.11n 20MHz	2412 - 2462
RF Conducted Power (Avg.)	Band	Power (W / dBm)
	GPRS/EGPRS 850	1.603 / 32.05
	GPRS/EGPRS 1900	0.815 / 29.11
	WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II	0.172 / 22.36
	WCDMA (RMC 12.2K) / HSDPA / HSUPA Band V	0.177 / 22.47
	LTE Band 2	0.221 / 23.44
	LTE Band 4	0.215 / 23.32
	LTE Band 5	0.173 / 22.38
	LTE Band 17	0.175 / 22.44
	IEEE 802.11b	0.008 / 8.76
	IEEE 802.11g	0.008 / 8.83
	IEEE 802.11n 20MHz (2.4GHz)	0.006 / 7.46
Max. SAR Measurement	1.340 W/kg Body SAR	
dDevice Category	Portable Device	
RF Exposure Environment	General Population / Uncontrolled	
Application Type	Certification	

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment / general population exposure limits specified in Standard C95.1-1999 and had been tested in accordance with the measurement procedures specified in IEEE Std. 1528-2003 and IEEE Std. 1528a-2005.

The measurement refer KDB 941225 D01, D02, D03, D05, D06, D07, and KDB 447498 D01 ,KDB 248227 , and KDB 865664 3~6G.

2. Introduction

The A Test Lab Techno Corp. has performed measurements of the maximum potential exposure to the user of **Sierra Wireless, Inc. Trade Name：AirCard Model(s)：AirCard 770S**. The test procedures, as described in American National Standards, Institute C95.1-1999〔1〕, FCC/OET Bulletin 65 Supplement C [July 2001] were employed and they specify the maximum exposure limit of 1.6mW/g as averaged over any 1 gram of tissue for portable devices being used within 20cm between user and EUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.

2.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Figure 2).

$$SAR = \frac{d}{dt}\left(\frac{dw}{dm}\right) = \frac{d}{dt}\left(\frac{dw}{\rho dv}\right)$$

Figure 2. **SAR Mathematical Equation**

SAR is expressed in units of Watts per kilogram (W/kg)

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

Where：

σ = conductivity of the tissue (S/m)

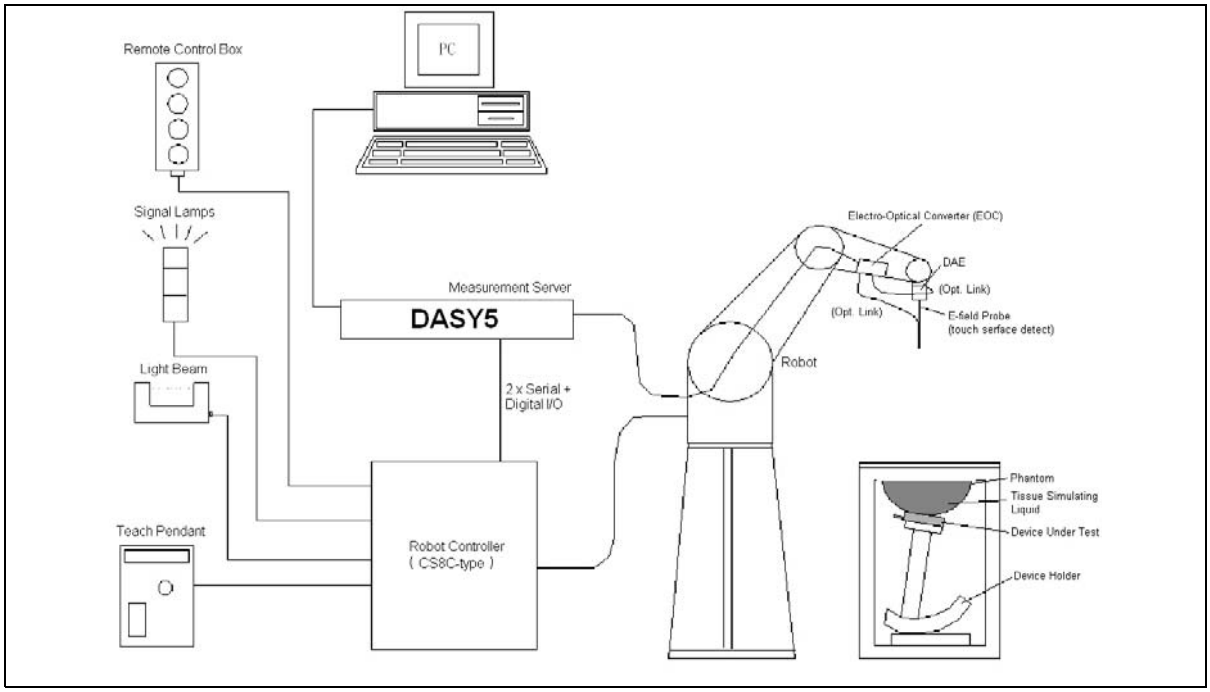
ρ = mass density of the tissue (kg/m^3)

E = RMS electric field strength (V/m)

＊Note：

The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane〔2〕

3. SAR Measurement Setup



The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli TX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric 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.
3. 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.
4. 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.
5. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
6. A computer operating Windows 2000 or Windows XP.
7. DASY5 software.
8. Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
9. The SAM twin phantom enabling testing left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. Validation dipole kits allowing validating the proper functioning of the system.

3.1 DASY5 E-Field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV3 (manufactured by SPEAG), designed in the classical triangular configuration〔3〕and optimized for dosimetric evaluation. The probes is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY5 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

3.1.1 E-Field Probe Specification

Construction	Symmetrical design with triangular core
	Built-in optical fiber for surface detection System
	Built-in shielding against static charges
	PEEK enclosure material (resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 6 GHz
	In brain and muscle simulating tissue at frequencies of 750MHz, 835MHz, 1750MHz, 1900MHz and 2450MHz (accuracy ±8%)
	Calibration for other liquids and frequencies upon request
Frequency	±0.2 dB (30 MHz to 6 GHz) for EX3DV3
Directivity	±0.3 dB in brain tissue (rotation around probe axis)
	±0.5 dB in brain tissue (rotation normal probe axis)
	Dynamic Range 10μW/g to > 100mW/g; Linearity: ±0.2dB
Dimensions	Overall length: 337mm
	Tip length: 20mm
	Body diameter: 12mm
	Tip diameter: 2.5mm for EX3DV3
	Distance from probe tip to dipole centers: 1.0mm for EX3DV3
Application	General dosimetry up to 6GHz
	Compliance tests of mobile phones
	Fast automatic scanning in arbitrary phantoms

Figure 3. E-field Probe

Figure 4. Probe setup on robot

3.1.2 E-Field Probe Calibration process

Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm^2) using an RF Signal generator, TEM cell, and RF Power Meter.

Free Space Assessment

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm^2.

Temperature Assessment

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

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

Where：

Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (head or body),

ΔT = Temperature increase due to RF exposure.

$$\text{Or} \quad SAR = \frac{|E|^2 \sigma}{\rho}$$

Where：

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

3.2 Data Acquisition Electronic (DAE) System

Cell Controller

Processor：	Intel Core(TM)2 CPU
Clock Speed：	@ 1.86GHz
Operating System：	Windows XP Professional

Data Converter

Features：	Signal Amplifier, multiplexer, A/D converter, and control logic
Software：	DASY5 v5.0 (Build 125) & SEMCAD X Version 13.4 Build 125
Connecting Lines：	Optical downlink for data and status info
	Optical uplink for commands and clock

3.3 Robot

Positioner：	Stäubli Unimation Corp. Robot Model: TX90XL
Repeatability：	±0.02 mm
No. of Axis：	6

3.4 Measurement Server

Processor：	PC/104 with a 400MHz intel ULV Celeron
I/O-board：	Link to DAE4 (or DAE3)
	16-bit A/D converter for surface detection system
	Digital I/O interface
	Serial link to robot
	Direct emergency stop output for robot

3.5 Device Holder

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

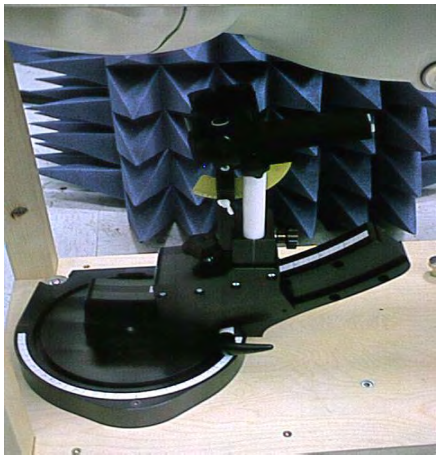


Figure 5. Device Holder

3.6 Phantom - SAM v4.0

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

Shell Thickness	2 ±0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	1000x500 mm (LxW)

Table 1. Specification of SAM v4.0

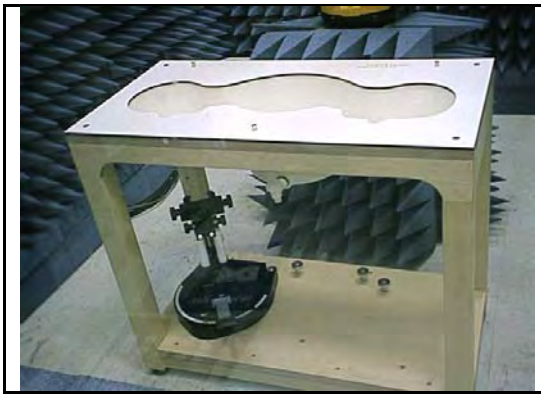


Figure 6. SAM Twin Phantom

3.7 Oval Flat Phantom - ELI 4.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (Oval Flat) phantom defined in IEEE 1528-2003, IEEE Std. 1528a-2005, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of wireless portable device usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Shell Thickness	2 ±0.2 mm
Filling Volume	Approx. 30 liters
Dimensions	190×600×400 mm (H×L×W)

Table 2. Specification of ELI 4.0

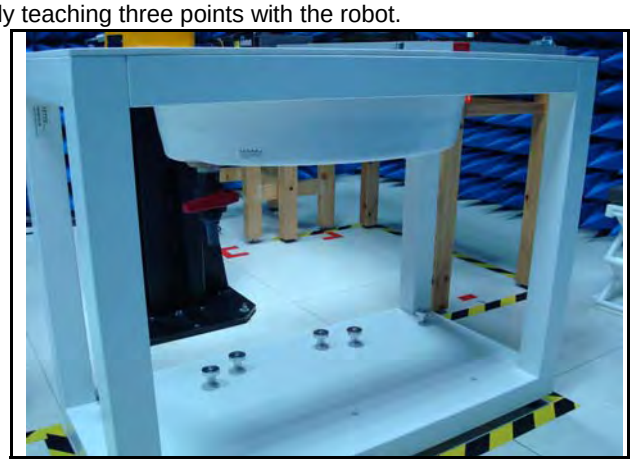


Figure 7. Oval Flat Phantom

3.8 Data Storage and Evaluation

3.8.1 Data Storage

The DASY5 software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension DA5 The post processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

3.8.2 Data Evaluation

The DASY5 post processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software：

Probe parameters：	- Sensitivity	*Normi, ai0, ai1, ai2*
	- Conversion factor	*ConvFi*
	- Diode compression point	*dcpi*
Device parameters：	- Frequency	*f*
	- Crest factor	*cf*
Media parameters：	- Conductivity	*σ*
	- Density	*ρ*

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.
The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as：

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

With *Vi* = compensated signal of channel i (i = x, y, z)
Ui = input signal of channel i (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcpi = diode compression point (DASY parameter)

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

E-field probes： $$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

H-field probes：

$$H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

with *Vi* = compensated signal of channel i (i = x, y, z)
Normi = sensor sensitivity of channel i (i = x, y, z)
μV/(V/m)2 for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel i in V/*m*
Hi = magnetic field strength of channel i in A/m

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

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

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

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

with *SAR* = local specific absorption rate in mW/g
Etot = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm3

＊Note：That the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

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

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \textit{or} \quad P_{pwe} = \frac{H_{tot}^2}{37.7}$$

with *Ppwe* = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m
Htot = total magnetic field strength in A/m

4. Tissue Simulating Liquids

The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.
The dielectric parameters of the liquids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an E5071B Network Analyzer.

IEEE SCC-34/SC-2 in 1528 recommended Tissue Dielectric Parameters

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified in 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equation and extrapolated according to the head parameter specified in 1528.

Target Frequency	Head		Body	
(MHz)	εr	σ (S/m)	εr	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 - 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00
(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m3)				

Table 3. Tissue dielectric parameters for head and body phantoms

4.1 Ingredients

The following ingredients are used:

- Water: deionized water (pure H_20), resistivity ≥ 16 M Ω -as basis for the liquid
- Sugar: refied white sugar (typically 99.7 % sucrose, available as crystal sugar in food shops) -to reduce relative permittivity
- Salt: pure NaCl -to increase conductivity
- Cellulose: Hydroxyethyl-cellulose, medium viscosity (75-125 mPa.s, 2% in water, 20°C), CAS # 54290 -to increase viscosity and to keep sugar in solution.
- Preservative: Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS # 55965-84-9 -to prevent the spread of bacteria and molds
- DGBE: Diethylenglycol-monobuthyl ether (DGBE), Fluka Chemie GmbH, CAS # 112-34-5 -to reduce relative permittivity

4.2 Recipes

The following tables give the recipes for tissue simulating liquids to be used in different frequency bands.
Note: The goal dielectric parameters (at 22 ℃) must be achieved within a tolerance of ±5% for εand ±5% for σ.

Ingredients (% by weight)	Frequency (MHz)									
	750		835		1750		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	39.28	51.30	41.45	52.40	54.50	40.20	54.90	40.40	62.70	73.20
Salt (NaCl)	1.47	1.42	1.45	1.50	0.17	0.49	0.18	0.50	0.50	0.10
Sugar	58.15	46.18	56.00	45.00	0.00	0.00	0.00	0.00	0.00	0.00
HEC	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Bactericide	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DGBE	0.00	0.00	0.00	0.00	45.33	59.31	44.92	59.10	36.80	26.70
Dielectric Constant	41.88	54.60	42.54	56.10	40.10	53.60	39.90	54.00	39.80	52.50
Conductivity (S/m)	0.90	0.97	0.91	0.95	1.39	1.49	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

4.3 Liquid Confirmation

4.3.1 Parameters

Liquid Verify								
Ambient Temperature： 22 ± 2 °C；Relative Humidity：40 -70%								
Liquid Type	Frequency	Temp (°C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
750MHz (Body)	698MHz	22.0	εr	55.73	54.93	-1.44%	± 5	2012/10/28
			σ	0.959	0.924	-3.68%	± 5	
	730MHz	22.0	εr	55.61	54.74	-1.56%	± 5	
			σ	0.962	0.957	-0.50%	± 5	
	750MHz	22.0	εr	55.53	54.58	-1.71%	± 5	
			σ	0.963	0.977	1.41%	± 5	
750MHz (Body)	698MHz	22.0	εr	55.73	54.93	-1.44%	± 5	2012/11/04
			σ	0.959	0.924	-3.68%	± 5	
	730MHz	22.0	εr	55.61	54.74	-1.56%	± 5	
			σ	0.962	0.957	-0.50%	± 5	
	750MHz	22.0	εr	55.53	54.58	-1.71%	± 5	
			σ	0.963	0.977	1.41%	± 5	
835MHz (Body)	820MHz	22.0	εr	55.26	54.96	-0.54%	± 5	2012/10/11
			σ	0.969	0.966	-0.29%	± 5	
	835MHz	22.0	εr	55.20	54.82	-0.69%	± 5	
			σ	0.970	0.982	1.24%	± 5	
	850MHz	22.0	εr	55.15	54.71	-0.80%	± 5	
			σ	0.988	1.001	1.27%	± 5	
835MHz (Body)	820MHz	22.0	εr	55.26	54.96	-0.54%	± 5	2012/10/16
			σ	0.969	0.966	-0.29%	± 5	
	835MHz	22.0	εr	55.20	54.82	-0.69%	± 5	
			σ	0.970	0.982	1.24%	± 5	
	850MHz	22.0	εr	55.15	54.71	-0.80%	± 5	
			σ	0.988	1.001	1.27%	± 5	
835MHz (Body)	820MHz	22.0	εr	55.26	54.96	-0.54%	± 5	2012/10/28
			σ	0.969	0.966	-0.29%	± 5	
	835MHz	22.0	εr	55.20	54.82	-0.69%	± 5	
			σ	0.970	0.982	1.24%	± 5	
	850MHz	22.0	εr	55.15	54.71	-0.80%	± 5	
			σ	0.988	1.001	1.27%	± 5	

Table 4. Measured Tissue dielectric parameters for body phantoms -1

Liquid Verify								
Ambient Temperature： 22 ± 2 °C；Relative Humidity：40 -70%								
Liquid Type	Frequency	Temp (°C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
835MHz (Body)	820MHz	22.0	εr	55.26	54.96	-0.54%	± 5	2012/11/04
			σ	0.969	0.966	-0.29%	± 5	
	835MHz	22.0	εr	55.20	54.82	-0.69%	± 5	
			σ	0.970	0.982	1.24%	± 5	
	850MHz	22.0	εr	55.15	54.71	-0.80%	± 5	
			σ	0.988	1.001	1.27%	± 5	
1750MHz (Body)	1700MHz	22.0	εr	53.56	53.75	0.35%	± 5	2012/10/27
			σ	1.457	1.444	-0.88%	± 5	
	1750MHz	22.0	εr	53.43	53.61	0.33%	± 5	
			σ	1.488	1.489	0.04%	± 5	
	1760MHz	22.0	εr	53.41	53.60	0.36%	± 5	
			σ	1.495	1.499	0.29%	± 5	
1750MHz (Body)	1700MHz	22.0	εr	53.56	53.75	0.35%	± 5	2012/11/03
			σ	1.457	1.444	-0.88%	± 5	
	1750MHz	22.0	εr	53.43	53.61	0.33%	± 5	
			σ	1.488	1.489	0.04%	± 5	
	1760MHz	22.0	εr	53.41	53.60	0.36%	± 5	
			σ	1.495	1.499	0.29%	± 5	
1900MHz (Body)	1850MHz	22.0	εr	53.30	53.60	0.57%	± 5	2012/10/17
			σ	1.520	1.453	-4.39%	± 5	
	1900MHz	22.0	εr	53.30	53.42	0.22%	± 5	
			σ	1.520	1.507	-0.87%	± 5	
	1930MHz	22.0	εr	53.30	53.27	-0.06%	± 5	
			σ	1.520	1.539	1.25%	± 5	
1900MHz (Body)	1850MHz	22.0	εr	53.30	53.60	0.57%	± 5	2012/10/27
			σ	1.520	1.453	-4.39%	± 5	
	1900MHz	22.0	εr	53.30	53.42	0.22%	± 5	
			σ	1.520	1.507	-0.87%	± 5	
	1930MHz	22.0	εr	53.30	53.27	-0.06%	± 5	
			σ	1.520	1.539	1.25%	± 5	

Table 5. Measured Tissue dielectric parameters for body phantoms -2

Liquid Verify								
Ambient Temperature： 22 ± 2 °C；Relative Humidity：40 -70%								
Liquid Type	Frequency	Temp (°C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
1900MHz (Body)	1850MHz	22.0	εr	53.30	53.60	0.57%	± 5	2012/11/03
			σ	1.520	1.453	-4.39%	± 5	
	1900MHz	22.0	εr	53.30	53.42	0.22%	± 5	
			σ	1.520	1.507	-0.87%	± 5	
	1930MHz	22.0	εr	53.30	53.27	-0.06%	± 5	
			σ	1.520	1.539	1.25%	± 5	
1900MHz (Body)	1850MHz	22.0	εr	53.30	53.60	0.57%	± 5	2012/11/15
			σ	1.520	1.453	-4.39%	± 5	
	1900MHz	22.0	εr	53.30	53.42	0.22%	± 5	
			σ	1.520	1.507	-0.87%	± 5	
	1930MHz	22.0	εr	53.30	53.27	-0.06%	± 5	
			σ	1.520	1.539	1.25%	± 5	
2450MHz (Body)	2400MHz	22.0	εr	52.77	52.15	-1.16%	± 5	2012/11/18
			σ	1.902	1.895	-0.39%	± 5	
	2450MHz	22.0	εr	52.70	51.91	-1.50%	± 5	
			σ	1.950	1.962	0.62%	± 5	
	2500MHz	22.0	εr	52.64	51.85	-1.49%	± 5	
			σ	2.021	2.015	-0.29%	± 5	

Table 6. Measured Tissue dielectric parameters for body phantoms -3

4.3.2 Liquid Depth

The liquid level was during measurement 15cm ±0.5cm.

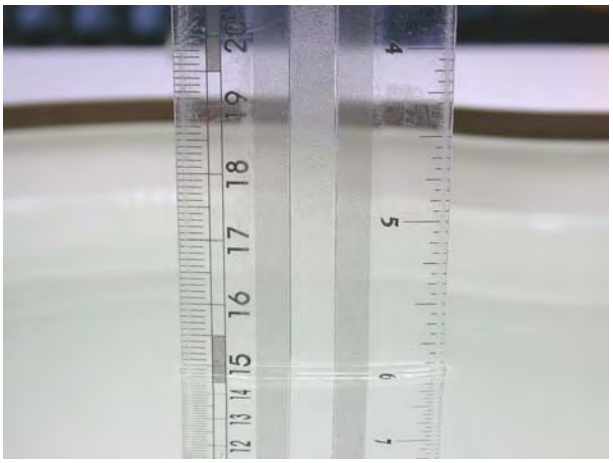


Figure 8. Head-Tissue-Simulating-Liquid

Figure 9. Body-Tissue-Simulating-Liquid

5. SAR Testing with RF Transmitters

5.1 SAR Testing with GSM/GPRS/EGPRS Transmitters

Configure the basestation to support GMSK and 8PSK call respectively, and set timeslot transmission for GMSK GSM/GPRS and 8PSK EDGE. Measure and record power outputs for both modulations, that test is applicable.

5.2 SAR Testing with WCDMA Transmitters

Configure the basestation to support all WCDMA tests in respect to the 3GPP 34.121.Measure the power at Ch4132, 4183 and 4233 for US cell; Ch9262, 9400 and 9538 for US PCS Band.

- Step 1: set a Test Mode 1 loop back with a 12.2kbps Reference Measurement Channel (RMC).
- Step 2: set and send continuously up power control commands to the device.
- Step 3: measure the power at the device antenna connector using the power meter with average detector and test SAR

5.3 SAR Testing with HSDPA Transmitters

HSDPA Date Devices setup for SAR Measurement

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Setup for Release 5 HSDPA							
Sub-test	βc	βd	βd (SF)	βc/βd	βhs(1,2)	CM(3) (dB)	MRP(3) (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15(4)	15/15(4)	64	12/15(4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note

1. Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ Ahs = βhs/βc = 30/15 ⇔ βhs= 30/15 *βc
2. For theHS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1A and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with βhs = 30/15 *βc and Δ_{CQI} = 24/15 with βhs = 24/15*βc
3. CM = 1 for βc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
4. For subtest 2 the βc/βd ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 11/15 and βd = 15/15.

HSPA Date Devices setup for SAR Measurement.

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. Body exposure conditions generally apply to these devices, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations without HSPA. The default test configuration is to establish a radio link between the DUT and a communication test set to configure a 12.2 kbps RMC (reference measurement channel) in Test Loop Mode 1. SAR for HSPA is selectively measured with HS-DPCCH, EDPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest SAR configuration in WCDMA with 12.2 kbps RMC only. An FRC is configured according to HSDPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Subtest 5 requirements. SAR for other HSPA sub-test configurations is also confirmed selectively according to output power, exposure conditions and E-DCH UE Category. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. The UE Categories for HSDPCCH and HSPA should be clearly identified in the SAR report. The following procedures are applicable only if Maximum Power Reduction (MPR) is implemented according to Cubic Metric (CM) requirements.

When voice transmission and head exposure conditions are applicable to a WCDMA/HSPA data device, head exposure is measured according to the 'Head SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. SAR for body exposure configurations are measured according to the 'Body SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. In addition, body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurements should be used to test for head exposure.

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of this document.

The highest body SAR measured in Antenna Extended & Retracted configurations on a channel in 12.2 kbps RMC. The possible channels are the High, Middle & Low channel. Contact the FCC Laboratory for test and approval requirements if the maximum output power measured in E-DCH Sub-test 2 - 4 is higher than Sub-test 5.

Setup for Release 6 HSPA / Release 7 HSPA+													
Sub-test	βc	βd	βd (SF)	βc/βd	βhs(1)	βec	βed	Bed (SF)	Bed (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	βed1: 47/15 βed2: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note

1. Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ Ahs = βhs/βc = 30/15 ⇔ βhs= 30/15 *βc.
2. CM = 1 for βc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
3. For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.
4. For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.
5. Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
6. βed can not be set directly; it is set by Absolute Grant Value.

5.4 SAR Testing with LTE Transmitters

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements.Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1,and set ch , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device. MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

5.4.1 LTE Document Checklist

1) Specify the UE category and uplink modulations used:
   - ◆ UE Category: 3
   - ◆ Uplink modulations: QPSK and 16QAM

2) Include descriptions of the LTE transmitter and antenna implementation; and also identify whether it is a standalone transmitter operating independently of other wireless transmitters in the device or sharing hardware components and/or antenna(s) with other transmitters etc.

   - ◆ The EUT has four LTE transmitters, one each for B2, B4, B5 and B17. The radio front-end and antenna are shared between LTE, GSM and UMTS RF paths. The WWAN radios may co-transmit with the embedded WiFi radio. There are three antennas in total, one MAIN, one DIVERSITY antenna for the WWAN and the third one is a printed antenna for the WLAN. The MAIN antenna is used for transmit in all three WWAN modes namely 2G, 3G and LTE all bands. For WWAN RX, MAIN antenna is the only one used for 2G. However both MAIN and DIVERSITY antennas are used for RX in 3G and LTE modes.

3) Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc
   - ◆ Data only device.

4) Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:
   - ◆ Maximum Power Reduction (MPR) is mandatory, i.e. built-in by design.
   - ◆ A-MPR (additional MPR) must be disabled
   - ◆ A-MPR was disabled during testing.

Maximum Power Reduction (MPR) for Power Class 3							
Channel bandwidth / Transmission bandwidth configuration [RB]							
Modulation	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	MPR (dB)
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

5) Identify the simultaneous transmission conditions for the voice and data configurations supported by all wireless modes, device configurations and frequency bands, for the head and body exposure conditions and device operating configurations (handset flip or cover positions, antenna diversity conditions etc.)

- The device is unable to transmit WCDMA/GPRS/EDGE/CDMA and LTE simultaneously.
- The EUT is able to transmit WWAN and WLAN simultaneously.

TX Condition	WCDMA	GPRS/EDGE	LTE	IEEE 802.11 b/g/n
1	ON	OFF	OFF	ON
2	OFF	ON	OFF	ON
3	OFF	OFF	ON	ON

5.5 SAR Testing with 802.11 Transmitters

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

5.5.1 General Device Setup

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

5.5.2 Frequency Channel Configurations

802.11 a/b/g and 4.9 GHz operating modes are tested independently according to the service requirements in each frequency band. 802.11 b/g modes are tested on channels 1, 6 and 11. 802.11a is tested for UNII operations on channels 36 and 48 in the 5.15-5.25 GHz band; channels 52 and 64 in the 5.25-5.35 GHz band; channels 104, 116, 124 and 136 in the 5.470-5.725 GHz band; and channels 149 and 161 in the 5.8 GHz band. When 5.8 GHz §15.247 is also available, channels 149, 157 and 165 should be tested instead of the UNII channels. 4.9 GHz is tested on channels 1, 10 and 5 or 6, whichever has the higher output power, for 5 MHz channels; channels 11, 15 and 19 for 10 MHz channels; and channels 21 and 25 for 20 MHz channels. These are referred to as the "default test channels". 802.11g mode was evaluated only if the output power was 0.25 dB higher than the 802.11b mode.

802.11 Test Channels per FCC Requirement							
Mode	GHz	Channel	Turbo Channel	Default Test "Channels"			
				§15.247		UNII	
				802.11b	802.11g		
IEEE 802.11 b/g	2412	1		✓	▽		
	2437	6	6	✓	▽		
	2462	11		✓	▽		

5.6 Conducted Power

Band	Modulation	Data Rate	CH	Frequency (MHz)	Average Power (dBm)	
					Time Average	Average burst
GPRS 850 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up Duty factor 1/8	Lowest	824.2	23.02	**32.05**
			Middle	836.6	23.01	32.04
			Highest	848.8	22.91	31.94
		3Down2Up Duty factor 2/8	Lowest	824.2	25.97	31.99
			Middle	836.6	**25.94**	31.96
			Highest	848.8	25.90	31.92
EGPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	824.2	17.73	26.76
			Middle	836.6	17.71	26.74
			Highest	848.8	17.68	26.71
		3Down2Up Duty factor 2/8	Lowest	824.2	20.62	26.64
			Middle	836.6	20.58	26.60
			Highest	848.8	20.55	26.57
		2Down3Up Duty factor 3/8	Lowest	824.2	22.35	26.61
			Middle	836.6	22.23	26.49
			Highest	848.8	22.27	26.53
		1Down4Up Duty factor 4/8	Lowest	824.2	23.43	26.44
			Middle	836.6	23.37	26.38
			Highest	848.8	23.42	26.43
GPRS 1900 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up Duty factor 1/8	Lowest	1850.2	19.98	29.01
			Middle	1880.0	20.04	29.07
			Highest	1909.8	20.08	**29.11**
		3Down2Up Duty factor 2/8	Lowest	1850.2	22.89	28.91
			Middle	1880.0	22.94	28.96
			Highest	1909.8	**22.99**	29.01
EGPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	1850.2	16.59	25.62
			Middle	1880.0	16.72	25.75
			Highest	1909.8	16.71	25.74
		3Down2Up Duty factor 2/8	Lowest	1850.2	19.56	25.58
			Middle	1880.0	19.71	25.73
			Highest	1909.8	19.70	25.72
		2Down3Up Duty factor 3/8	Lowest	1850.2	21.25	25.51
			Middle	1880.0	21.39	25.65
			Highest	1909.8	21.38	25.64
		1Down4Up Duty factor 4/8	Lowest	1850.2	22.40	25.41
			Middle	1880.0	22.55	25.56
			Highest	1909.8	22.54	25.55

Note: 1. Time Average power slot duty cycle factor calculate:

1up: Average burst power+10*LOG(1/8)

2up: Average burst power+10*LOG(2/8)

3up: Average burst power+10*LOG(3/8)

4up: Average burst power+10*LOG(4/8)

Band	Modulation	Sub-test	CH	Frequency (MHz)	Average Power (dBm)
					Time Average
WCDMA Band II	RMC12.2K	---	Lowest	1852.4	**22.36**
			Middle	1880.0	22.34
			Highest	1907.6	22.05
HSDPA Band II	QPSK	1	Lowest	1852.4	21.34
			Middle	1880.0	21.19
			Highest	1907.6	21.15
		2	Lowest	1852.4	21.32
			Middle	1880.0	21.13
			Highest	1907.6	21.11
		3	Lowest	1852.4	20.82
			Middle	1880.0	20.68
			Highest	1907.6	20.66
		4	Lowest	1852.4	20.78
			Middle	1880.0	20.66
			Highest	1907.6	20.62
HSUPA Band II		1	Lowest	1852.4	21.06
			Middle	1880.0	20.59
			Highest	1907.6	20.85
		2	Lowest	1852.4	19.00
			Middle	1880.0	18.58
			Highest	1907.6	18.80
		3	Lowest	1852.4	20.02
			Middle	1880.0	19.60
			Highest	1907.6	19.81
		4	Lowest	1852.4	18.97
			Middle	1880.0	18.55
			Highest	1907.6	18.86
		5	Lowest	1852.4	21.02
			Middle	1880.0	20.51
			Highest	1907.6	20.83

Band	Modulation	Sub-test	CH	Frequency (MHz)	Average Power (dBm)
					Time Average
WCDMA Band V	RMC12.2K	---	Lowest	826.4	**22.47**
			Middle	836.6	22.31
			Highest	846.6	22.29
HSDPA Band V	QPSK	1	Lowest	826.4	21.36
			Middle	836.6	21.27
			Highest	846.6	21.23
		2	Lowest	826.4	21.34
			Middle	836.6	21.24
			Highest	846.6	21.22
		3	Lowest	826.4	20.82
			Middle	836.6	20.80
			Highest	846.6	20.73
		4	Lowest	826.4	20.80
			Middle	836.6	20.75
			Highest	846.6	20.71
HSUPA Band V		1	Lowest	826.4	20.05
			Middle	836.6	20.93
			Highest	846.6	21.10
		2	Lowest	826.4	18.01
			Middle	836.6	18.89
			Highest	846.6	19.02
		3	Lowest	826.4	19.02
			Middle	836.6	19.95
			Highest	846.6	20.02
		4	Lowest	826.4	17.98
			Middle	836.6	18.86
			Highest	846.6	19.01
		5	Lowest	826.4	20.02
			Middle	836.6	20.90
			Highest	846.6	21.03

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	1.4MHz	QPSK	18607	1850.7	1	0	23.18
					1	3	23.16
					1	5	23.15
					3	1	22.96
					6	0	22.06
			18900	1880.0	1	0	23.09
					1	3	23.06
					1	5	23.04
					3	1	22.93
					6	0	22.02
			19193	1909.3	1	0	23.13
					1	3	23.10
					1	5	23.09
					3	1	22.91
					6	0	22.16
		16QAM	18607	1850.7	1	0	22.17
					1	3	22.12
					1	5	22.09
					3	1	21.93
					6	0	21.17
			18900	1880.0	1	0	22.15
					1	3	22.10
					1	5	22.05
					3	1	21.99
					6	0	21.19
			19193	1909.3	1	0	22.16
					1	3	22.13
					1	5	22.11
					3	1	22.03
					6	0	21.20

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	3MHz	QPSK	18615	1851.5	1	0	23.02
					1	7	23.00
					1	14	22.97
					8	4	21.84
					15	0	21.75
			18900	1880.0	1	0	23.27
					1	7	23.24
					1	14	23.21
					8	4	22.06
					15	0	22.01
			19185	1908.5	1	0	23.09
					1	7	23.04
					1	14	22.97
					8	4	22.14
					15	0	22.07
		16QAM	18615	1851.5	1	0	22.23
					1	7	22.19
					1	14	22.07
					8	4	20.95
					15	0	20.88
			18900	1880.0	1	0	22.31
					1	7	22.28
					1	14	22.16
					8	4	21.09
					15	0	20.91
			19185	1908.5	1	0	22.23
					1	7	22.20
					1	14	22.18
					8	4	21.09
					15	0	20.97

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	5MHz	QPSK	18625	1852.5	1	0	23.12
					1	12	23.10
					1	24	23.05
					12	6	22.13
					25	0	22.01
			18900	1880.0	1	0	23.27
					1	12	23.24
					1	24	23.18
					12	6	22.04
					25	0	21.94
			19175	1907.5	1	0	23.02
					1	12	23.00
					1	24	22.95
					12	6	22.08
					25	0	21.96
		16QAM	18625	1852.5	1	0	22.27
					1	12	22.21
					1	24	22.03
					12	6	20.95
					25	0	20.75
			18900	1880.0	1	0	22.28
					1	12	22.22
					1	24	22.17
					12	6	20.93
					25	0	20.88
			19175	1907.5	1	0	22.24
					1	12	22.19
					1	24	22.15
					12	6	20.98
					25	0	20.84

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	10MHz	QPSK	18650	1855.0	1	0	23.28
					1	24	23.18
					1	49	23.02
					25	12	21.84
					50	0	21.77
			18900	1880.0	1	0	23.13
					1	24	23.10
					1	49	22.99
					25	12	22.06
					50	0	22.01
			19150	1905.0	1	0	23.25
					1	24	23.21
					1	49	23.17
					25	12	21.95
					50	0	21.91
		16QAM	18650	1855.0	1	0	22.26
					1	24	22.20
					1	49	22.15
					25	12	20.93
					50	0	20.88
			18900	1880.0	1	0	22.41
					1	24	22.35
					1	49	22.22
					25	12	21.05
					50	0	20.88
			19150	1905.0	1	0	22.28
					1	24	22.23
					1	49	22.18
					25	12	20.61
					50	0	20.55

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	15MHz	QPSK	18675	1857.5	1	0	23.27
					1	37	23.22
					1	74	23.05
					36	18	21.81
					75	0	21.74
			18900	1880	1	0	23.33
					1	37	23.29
					1	74	23.23
					36	18	21.77
					75	0	21.73
			19125	1902.5	1	0	23.11
					1	37	23.08
					1	74	23.06
					36	18	21.81
					75	0	21.64
		16QAM	18675	1857.5	1	0	22.57
					1	37	22.48
					1	74	22.32
					36	18	20.70
					75	0	20.68
			18900	1880	1	0	22.61
					1	37	22.59
					1	74	22.27
					36	18	20.85
					75	0	20.70
			19125	1902.5	1	0	22.42
					1	37	22.37
					1	74	22.23
					36	18	20.80
					1	0	20.75

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 2	20MHz	QPSK	18700	1860	1	0	23.22
					1	49	23.18
					1	99	23.13
					50	0	21.73
					50	25	21.76
					50	50	21.70
					100	0	21.75
			18900	1880	1	0	**23.44**
					1	49	23.39
					1	99	23.33
					50	0	21.63
					50	25	21.66
					50	50	21.60
					100	0	21.61
			19100	1900	1	0	23.31
					1	49	23.27
					1	99	23.22
					50	0	21.79
					50	25	21.82
					50	50	21.74
					100	0	21.72
		16QAM	18700	1860	1	0	22.38
					1	49	22.31
					1	99	22.21
					50	25	20.74
					100	0	20.73
			18900	1880	1	0	22.48
					1	49	22.39
					1	99	22.24
					50	25	20.70
					100	0	20.52
			19100	1900	1	0	22.47
					1	49	22.37
					1	99	22.27
					50	25	20.76
					100	0	20.66

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	1.4MHz	QPSK	19957	1710.7	1	0	22.85
					1	3	22.80
					1	5	22.79
					3	1	22.62
					6	0	21.92
			20175	1732.5	1	0	22.88
					1	3	22.82
					1	5	22.74
					3	1	22.54
					6	0	21.82
			20393	1754.3	1	0	22.75
					1	3	22.69
					1	5	22.64
					3	1	22.55
					6	0	21.83
		16QAM	19957	1710.7	1	0	22.10
					1	3	22.05
					1	5	22.01
					3	1	21.85
					6	0	20.88
			20175	1732.5	1	0	22.11
					1	3	22.06
					1	5	22.03
					3	1	21.91
					6	0	20.82
			20393	1754.3	1	0	22.11
					1	3	22.05
					1	5	22.02
					3	1	21.91
					6	0	20.79

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	3MHz	QPSK	19965	1711.5	1	0	22.93
					1	7	22.87
					1	14	22.81
					8	4	21.85
					15	0	21.74
			20175	1732.5	1	0	22.84
					1	7	22.82
					1	14	22.79
					8	4	21.86
					15	0	21.78
			20385	1753.5	1	0	22.81
					1	7	22.69
					1	14	22.56
					8	4	21.75
					15	0	21.67
		16QAM	19965	1711.5	1	0	21.91
					1	7	21.85
					1	14	21.76
					8	4	20.79
					15	0	20.64
			20175	1732.5	1	0	22.06
					1	7	22.02
					1	14	21.99
					8	4	20.85
					15	0	20.75
			20385	1753.5	1	0	22.07
					1	7	22.01
					1	14	21.95
					8	4	20.76
					15	0	20.64

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	5MHz	QPSK	19975	1712.5	1	0	23.22
					1	12	23.07
					1	24	23.06
					12	6	22.05
					25	0	21.84
			20175	1732.5	1	0	23.18
					1	12	23.05
					1	24	23.01
					12	6	22.00
					25	0	21.85
			20375	1752.5	1	0	23.20
					1	12	23.09
					1	24	23.04
					12	6	22.01
					25	0	21.87
		16QAM	19975	1712.5	1	0	22.41
					1	12	22.38
					1	24	22.32
					12	6	21.31
					25	0	21.17
			20175	1732.5	1	0	22.47
					1	12	22.43
					1	24	22.42
					12	6	21.20
					25	0	21.06
			20375	1752.5	1	0	22.38
					1	12	22.31
					1	24	22.25
					12	6	21.14
					25	0	21.02

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	10MHz	QPSK	20000	1715.0	1	0	23.21
					1	24	23.20
					1	49	23.19
					25	12	21.91
					50	0	21.77
			20175	1732.5	1	0	**23.32**
					1	24	23.21
					1	49	23.07
					25	12	21.85
					50	0	21.68
			20350	1750.0	1	0	23.29
					1	24	23.26
					1	49	23.24
					25	12	21.83
					50	0	21.66
		16QAM	20000	1715.0	1	0	22.27
					1	24	22.21
					1	49	22.19
					25	12	20.78
					50	0	20.66
			20175	1732.5	1	0	22.44
					1	24	22.43
					1	49	22.43
					25	12	20.81
					50	0	20.68
			20350	1750.0	1	0	22.32
					1	24	22.31
					1	49	22.30
					25	12	20.83
					50	0	20.61

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	15MHz	QPSK	20025	1717.5	1	0	23.04
					1	37	23.00
					1	74	22.83
					36	18	21.51
					75	0	21.45
			20175	1732.5	1	0	22.93
					1	37	22.89
					1	74	22.83
					36	18	21.52
					75	0	21.40
			20325	1747.5	1	0	22.91
					1	37	22.88
					1	74	22.79
					36	18	21.53
					75	0	21.49
		16QAM	20025	1717.5	1	0	22.15
					1	37	22.11
					1	74	22.04
					36	18	20.49
					75	0	20.38
			20175	1732.5	1	0	22.03
					1	37	21.96
					1	74	21.92
					36	18	20.53
					75	0	20.41
			20325	1747.5	1	0	22.26
					1	37	22.19
					1	74	22.15
					36	18	20.77
					75	0	20.45

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 4	20MHz	QPSK	20050	1720.0	1	0	22.20
					1	49	22.11
					1	99	22.05
					50	0	21.40
					50	25	21.42
					50	50	21.41
					100	0	21.37
			20175	1732.5	1	0	22.98
					1	49	22.86
					1	99	22.77
					50	0	21.55
					50	25	21.59
					50	50	21.51
					100	0	21.48
			20300	1745.0	1	0	23.03
					1	49	22.96
					1	99	22.91
					50	0	21.36
					50	25	21.40
					50	50	21.33
					100	0	21.31
		16QAM	20050	1720.0	1	0	22.20
					1	49	22.11
					1	99	22.05
					50	25	20.42
					100	0	20.37
			20175	1732.5	1	0	22.31
					1	49	22.21
					1	99	22.15
					50	25	20.45
					100	0	20.39
			20300	1745.0	1	0	22.19
					1	49	22.12
					1	99	22.09
					50	25	20.46
					100	0	20.31

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 5	1.4MHz	QPSK	20407	824.7	1	0	22.10
					1	3	22.06
					1	5	22.04
					3	1	22.01
					6	0	21.31
			20525	836.5	1	0	22.31
					1	3	22.28
					1	5	22.24
					3	1	22.09
					6	0	21.27
			20643	848.3	1	0	22.15
					1	3	22.11
					1	5	22.07
					3	1	21.99
					6	0	21.12
		16QAM	20407	824.7	1	0	21.21
					1	3	21.18
					1	5	21.16
					3	1	20.89
					6	0	20.66
			20525	836.5	1	0	21.52
					1	3	21.45
					1	5	21.32
					3	1	21.13
					6	0	20.71
			20643	848.3	1	0	21.42
					1	3	21.38
					1	5	21.26
					3	1	21.03
					6	0	20.59

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 5	3MHz	QPSK	20415	825.5	1	0	22.15
					1	7	22.11
					1	14	22.06
					8	4	21.11
					15	0	21.03
			20525	836.5	1	0	22.30
					1	7	22.28
					1	14	22.25
					8	4	21.31
					15	0	21.21
			20635	847.5	1	0	22.24
					1	7	22.16
					1	14	22.09
					8	4	21.20
					15	0	21.06
		16QAM	20415	825.5	1	0	21.19
					1	7	21.15
					1	14	21.12
					8	4	20.32
					15	0	20.18
			20525	836.5	1	0	21.36
					1	7	21.31
					1	14	21.24
					8	4	20.33
					15	0	20.22
			20635	847.5	1	0	21.39
					1	7	21.33
					1	14	21.28
					8	4	21.30
					15	0	21.16

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 5	5MHz	QPSK	20425	826.5	1	0	**22.38**
					1	12	22.31
					1	24	22.24
					12	6	21.26
					25	0	21.16
			20525	836.5	1	0	22.36
					1	12	22.31
					1	24	22.22
					12	6	21.26
					25	0	21.20
			20625	846.5	1	0	22.24
					1	12	22.18
					1	24	22.06
					12	6	21.20
					25	0	21.11
		16QAM	20425	826.5	1	0	21.33
					1	12	21.25
					1	24	21.12
					12	6	20.31
					25	0	20.12
			20525	836.5	1	0	21.53
					1	12	21.48
					1	24	21.33
					12	6	20.30
					25	0	20.16
			20625	846.5	1	0	21.45
					1	12	21.40
					1	24	21.23
					12	6	20.33
					25	0	20.12

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 5	10MHz	QPSK	20450	829.0	1	0	22.24
					1	24	22.18
					1	49	22.13
					25	0	21.14
					25	12	21.16
					25	49	21.11
					50	0	21.09
			20525	836.5	1	0	22.30
					1	24	22.28
					1	49	22.27
					25	0	21.16
					25	12	21.18
					25	49	21.12
					50	0	21.06
			20600	844.0	1	0	22.35
					1	24	22.30
					1	49	22.21
					25	0	21.10
					25	12	21.13
					25	49	21.08
					50	0	21.07
		16QAM	20450	829.0	1	0	21.33
					1	24	21.28
					1	49	21.17
					25	12	19.95
					50	0	19.88
			20525	836.5	1	0	21.48
					1	24	21.41
					1	49	21.29
					25	12	20.14
					50	0	20.04
			20600	844.0	1	0	21.65
					1	24	21.51
					1	49	21.31
					25	12	20.33
					50	0	20.19

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 17	5MHz	QPSK	23755	706.5	1	0	**22.44**
					1	12	22.41
					1	24	22.39
					12	6	21.42
					25	0	21.12
			23790	710.0	1	0	22.40
					1	12	22.38
					1	24	22.36
					12	6	21.55
					25	0	21.42
			23825	713.5	1	0	22.39
					1	12	22.31
					1	24	22.16
					12	6	21.27
					25	0	21.19
		16QAM	23755	706.5	1	0	21.43
					1	12	21.40
					1	24	21.29
					12	6	20.27
					25	0	20.12
			23790	710.0	1	0	21.49
					1	12	21.42
					1	24	21.33
					12	6	20.48
					25	0	20.39
			23825	713.5	1	0	21.38
					1	12	21.33
					1	24	21.14
					12	6	20.31
					25	0	20.22

Band	Channel Bandwidt	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power (dBm)
					Size	Offset	
LTE Band 17	10MHz	QPSK	23780	709.0	1	0	22.38
					1	24	22.31
					1	49	22.28
					25	0	21.30
					25	12	21.32
					25	49	21.28
					50	0	21.16
			23790	710.0	1	0	22.22
					1	24	22.19
					1	49	22.16
					25	0	21.31
					25	12	21.31
					25	49	21.27
					50	0	21.19
			23800	711.0	1	0	22.18
					1	24	22.11
					1	49	22.02
					25	0	21.31
					25	12	21.33
					25	49	21.28
					50	0	21.20
		16QAM	23780	709.0	1	0	21.45
					1	24	21.41
					1	49	21.33
					25	12	20.24
					50	0	20.18
			23790	710.0	1	0	21.55
					1	24	21.48
					1	49	21.37
					25	12	20.34
					50	0	20.31
			23800	711.0	1	0	21.51
					1	24	21.48
					1	49	21.28
					25	12	20.32
					50	0	20.28

Band	Data Rate	CH	Frequency (MHz)	Average Power (dBm)
IEEE 802.11b	1 M	1	2412.0	8.27
		6	2437.0	**8.76**
		11	2462.0	8.55
	2 M	1	2412.0	8.16
		6	2437.0	8.71
		11	2462.0	8.53
	5.5 M	1	2412.0	8.11
		6	2437.0	8.69
		11	2462.0	8.51
	11 M	1	2412.0	8.05
		6	2437.0	8.59
		11	2462.0	8.43
IEEE 802.11g	6 M	1	2412.0	7.85
		6	2437.0	8.32
		11	2462.0	**8.83**
	9 M	1	2412.0	7.78
		6	2437.0	8.28
		11	2462.0	8.78
	12 M	1	2412.0	7.74
		6	2437.0	8.22
		11	2462.0	8.73
	18 M	1	2412.0	7.71
		6	2437.0	8.16
		11	2462.0	8.66
	24 M	1	2412.0	7.75
		6	2437.0	7.88
		11	2462.0	7.52
	36 M	1	2412.0	7.72
		6	2437.0	7.82
		11	2462.0	7.65
	48 M	1	2412.0	7.64
		6	2437.0	7.70
		11	2462.0	7.45
	54 M	1	2412.0	7.63
		6	2437.0	7.68
		11	2462.0	7.35

Band	Data Rate	CH	Frequency (MHz)	Average Power (dBm)
IEEE 802.11n 20MHz (2.4 GHz)	6.5 M	1	2412.0	7.36
		6	2437.0	7.34
		11	2462.0	**7.46**
	13.0 M	1	2412.0	7.33
		6	2437.0	7.32
		11	2462.0	7.44
	19.5 M	1	2412.0	7.28
		6	2437.0	7.27
		11	2462.0	7.35
	26.0 M	1	2412.0	6.48
		6	2437.0	7.35
		11	2462.0	6.29
	39.0 M	1	2412.0	6.44
		6	2437.0	7.28
		11	2462.0	6.21
	52.0 M	1	2412.0	6.41
		6	2437.0	7.21
		11	2462.0	6.13
	58.5 M	1	2412.0	6.35
		6	2437.0	7.11
		11	2462.0	6.09
	65.0 M	1	2412.0	6.28
		6	2437.0	7.08
		11	2462.0	6.01

5.7 Simultaneous Transmitting Evaluate

RF Conducted Power		
Band	dBm	W
GPRS/EGPRS 850	25.97	0.395
GPRS/EGPRS 1900	22.99	0.199
WCDMA/HSDPA/HSUPA Band II	22.36	0.172
WCDMA/HSDPA/HSUPA Band V	22.47	0.177
LTE Band 2	23.44	0.221
LTE Band 4	23.32	0.215
LTE Band 5	22.38	0.173
LTE Band 17	22.44	0.175
Wi-Fi 802.11b	8.76	0.008
Wi-Fi 802.11g	8.83	0.008
Wi-Fi 802.11n_2.4GHz	7.46	0.006

Antenna Distance	
WLAN to WWAN (License)	5.6 cm
Distance of WLAN to edge	
WLAN to Side 1	0.59 cm
WLAN to Side 2	0.81 cm
WLAN to Side 3	0.23 cm
WLAN to Side 4	5.87 cm
WLAN to Side 5	2.56 cm
WLAN to Side 6	6.99 cm
Distance of WWAN to edge	
WWAN to Side 1	0.14 cm
WWAN to Side 2	0.27 cm
WWAN to Side 3	0.39 cm
WWAN to Side 4	0.39 cm
WWAN to Side 5	9.07 cm
WWAN to Side 6	0.22 cm

WWAN and WLAN simultaneously SAR Description

(1) Antenna Distance WWAN & WLAN 5.6 cm

(2) WLAN/WWAN – with antenna separation distance greater than > 5cm
Max sum of WWAN (LTE Band 4) and WLAN is 1.34+0.028 =1.368 <1.6 mW/g
Therefore Simultaneous SAR is not required.

(3) WWAN/WLAN
Stand-alone SAR is required due to routine evaluation requirements.

(4) Highest Simultaneous SAR Evaluation:
Body SAR：∑SAR= WWAN +WLAN=1.368mW/g < SAR limit: 1.6mW/g,
Therefore Simultaneous SAR is not required.

Note: 1. Simultaneous Transmitting Summery, please find the table 7 as below.
2. Simultaneous Transmission Summation of SAR, please find the table 8 as below.
2.1 For (side 5) mode, that WWAN antenna to (side 5) >2.5cm (refer to Antenna to User distance), therefore the WWAN Stand-alone SAR is not required
2.2 For (side 4. side 5. side 6) mode, that WLAN antenna to (side 4. side 5. side 6)>2.5cm (refer to Antenna to User distance), therefore the WLAN Stand-alone SAR is not required

Table 7. Simultaneous Transmitting Summary

Simultaneous Transmitting	IEEE 802.11b	IEEE 802.11g	IEEE 802.11n
GPRS/EGPRS 850	V	V	V
GPRS/EGPRS 1900	V	V	V
WCDMA/HSDPA/HSUPA Band II	V	V	V
WCDMA/HSDPA/HSUPA Band V	V	V	V
LTE Band 2	V	V	V
LTE Band 4	V	V	V
LTE Band 5	V	V	V
LTE Band 17	V	V	V

Table 8.

Phantom Position		Spacing (mm)	ASSY	Simult Tx 1		Simult Tx 2		∑ SAR1g	Event
				Band	SAR1g (mW/g)	Band	SAR1g (mW/g)	(mW/g)	
Flat	Side 1	10	N/A	WLAN	0.028	GPRS 850	1.340	1.368	<1.6
		10	N/A	WLAN	0.028	GPRS 1900	1.270	1.298	<1.6
		10	N/A	WLAN	0.028	WCDMA Band II	1.060	1.088	<1.6
		10	N/A	WLAN	0.028	WCDMA Band V	0.781	0.809	<1.6
		10	N/A	WLAN	0.028	LTE Band 2	1.150	1.178	<1.6
		10	N/A	WLAN	0.028	LTE Band 4	1.290	1.318	<1.6
		10	N/A	WLAN	0.028	LTE Band 5	0.882	0.910	<1.6
		10	N/A	WLAN	0.028	LTE Band 17	0.867	0.895	<1.6
Flat	Side 2	10	N/A	WLAN	0.024	GPRS 850	1.060	1.084	<1.6
		10	N/A	WLAN	0.024	GPRS 1900	0.887	0.911	<1.6
		10	N/A	WLAN	0.024	WCDMA Band II	0.822	0.846	<1.6
		10	N/A	WLAN	0.024	WCDMA Band V	0.584	0.608	<1.6
		10	N/A	WLAN	0.024	LTE Band 2	0.910	0.934	<1.6
		10	N/A	WLAN	0.024	LTE Band 4	0.681	0.705	<1.6
		10	N/A	WLAN	0.024	LTE Band 5	0.670	0.694	<1.6
		10	N/A	WLAN	0.024	LTE Band 17	0.717	0.741	<1.6
Flat	Side 3	10	N/A	WLAN	0.048	GPRS 850	0.538	0.586	<1.6
		10	N/A	WLAN	0.048	GPRS 1900	0.151	0.199	<1.6
		10	N/A	WLAN	0.048	WCDMA Band II	0.183	0.231	<1.6
		10	N/A	WLAN	0.048	WCDMA Band V	0.246	0.294	<1.6
		10	N/A	WLAN	0.048	LTE Band 2	0.148	0.196	<1.6
		10	N/A	WLAN	0.048	LTE Band 4	0.197	0.245	<1.6
		10	N/A	WLAN	0.048	LTE Band 5	0.255	0.303	<1.6
		10	N/A	WLAN	0.048	LTE Band 17	0.353	0.401	<1.6

Note: 1.The "SAR 1g" is mean reported SAR.
2.Simult Tx 1: Wlan transmitter for worst case for each mode.
3.Simult Tx 2: WWAN transmitter for worst case for each mode.
4. For the value of Simula Tx 2 please refer 10.2 Reported SAR.

6. System Performance Check

6.1 Symmetric Dipoles for System Verification

Construction	Symmetrical dipole with l/4 balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.
Frequency	750, 835, 1750, 1900 and 2450 MHz
Return Loss	> 20 dB at specified verification position
Power Capability	> 100 W (f < 1GHz); > 40 W (f > 1GHz)
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request
Dimensions	D750V2: dipole length 177 mm; overall height 300 mm D835V2: dipole length 161 mm; overall height 340 mm D1750V2: dipole length 75.2 mm; overall height 301.5 mm D1900V2: dipole length 67.7 mm; overall height 300 mm D2450V2: dipole length 51.5 mm; overall height 300 mm

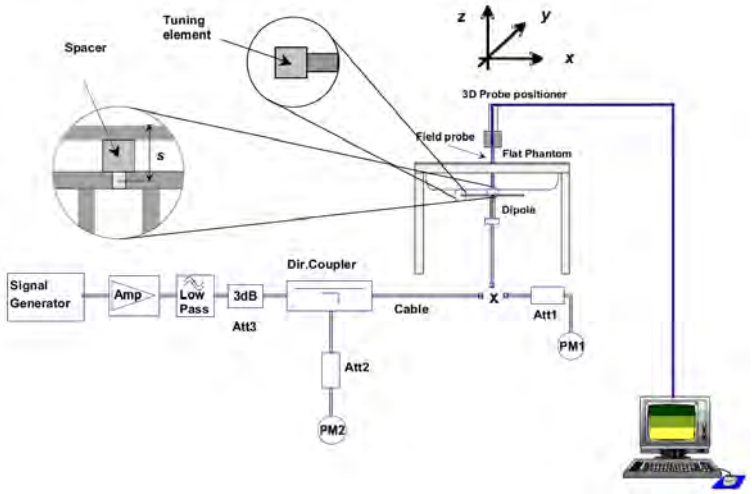


Figure 10. System Verification Setup Diagram

Figure 11. Validation Kit

6.2 Verification

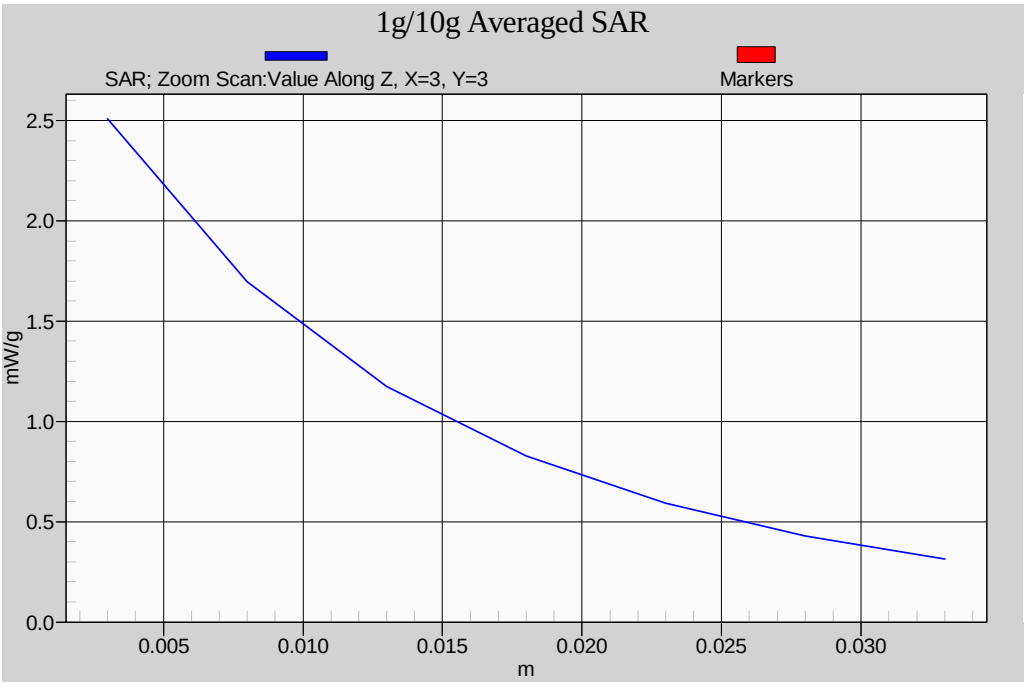
Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ± 7%. The verification was performed at 750, 835, 1750, 1900 and 2450MHz.

Validation kit		Mixture Type	SAR_{1g} [mW/g]		SAR_{10g} [mW/g]		Date of Calibration
D750V3 – SN1004		Body	8.76		5.80		2012/01/27
D835V2 – SN4d082		Body	9.54		6.29		2012/07/25
D1750V2 – SN1068		Body	36.80		19.90		2012/06/20
D1900V2 – SN5d111		Body	40.30		21.30		2012/07/20
Frequency (MHz)	Power (dBm)	SAR_{1g} (mW/g)	SAR_{10g} (mW/g)	Drift (dB)	Difference percentage		Date
					1g	10g	
750 (Body)	250mW	2.14	1.41	-0.004	-2.3%	-2.8%	2012/10/28
	Normalize to 1 Watt	8.56	5.64				
750 (Body)	250mW	2.21	1.48	0.027	0.9%	2.1%	2012/11/04
	Normalize to 1 Watt	8.84	5.92				
835 (Body)	250mW	2.40	1.59	-0.034	0.6%	1.1%	2012/10/11
	Normalize to 1 Watt	9.60	6.36				
835 (Body)	250mW	2.46	1.61	0.004	3.1%	2.4%	2012/10/16
	Normalize to 1 Watt	9.84	6.44				
835 (Body)	250mW	2.46	1.64	0.033	3.1%	4.3%	2012/10/28
	Normalize to 1 Watt	9.84	6.56				
835 (Body)	250mW	2.42	1.60	-0.005	1.5%	1.7%	2012/11/04
	Normalize to 1 Watt	9.68	6.40				
1750 (Body)	250mW	9.09	4.81	0.020	-1.2%	-3.3%	2012/10/27
	Normalize to 1 Watt	36.36	19.24				
1750 (Body)	250mW	9.12	4.76	0.009	-0.9%	-4.3%	2012/11/03
	Normalize to 1 Watt	36.48	19.04				
1900 (Body)	250mW	9.74	5.15	-0.117	-3.3%	-3.3%	2012/10/17
	Normalize to 1 Watt	38.96	20.60				

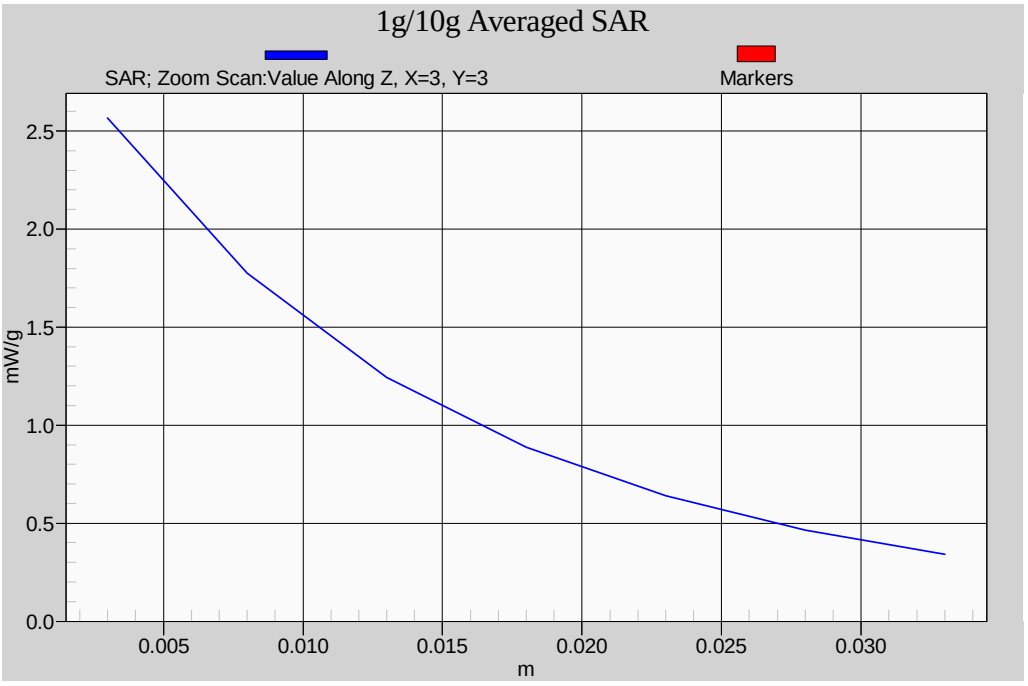
Validation kit		Mixture Type	SAR_{1g} [mW/g]		SAR_{10g} [mW/g]		Date of Calibration
D1900V2 – SN5d111		Body	40.30		21.30		2012/07/20
D2450V2 – SN712		Body	49.90		23.60		2012/02/23
Frequency (MHz)	Power (dBm)	SAR_{1g} (mW/g)	SAR_{10g} (mW/g)	Drift (dB)	Difference percentage		Date
					1g	10g	
1900 (Body)	250mW	9.97	5.26	0.069	-1.0%	-1.2%	2012/10/27
	Normalize to 1 Watt	39.88	21.04				
1900 (Body)	250mW	9.83	5.11	0.029	-2.4%	-4.0%	2012/11/03
	Normalize to 1 Watt	39.32	20.44				
1900 (Body)	250mW	9.80	5.15	0.022	-2.7%	-3.3%	2012/11/15
	Normalize to 1 Watt	39.20	20.60				
2450 (Body)	250mW	12.40	5.68	0.040	-0.6%	-3.7%	2012/11/18
	Normalize to 1 Watt	49.60	22.72				

Z-axis Plot of System Performance Check

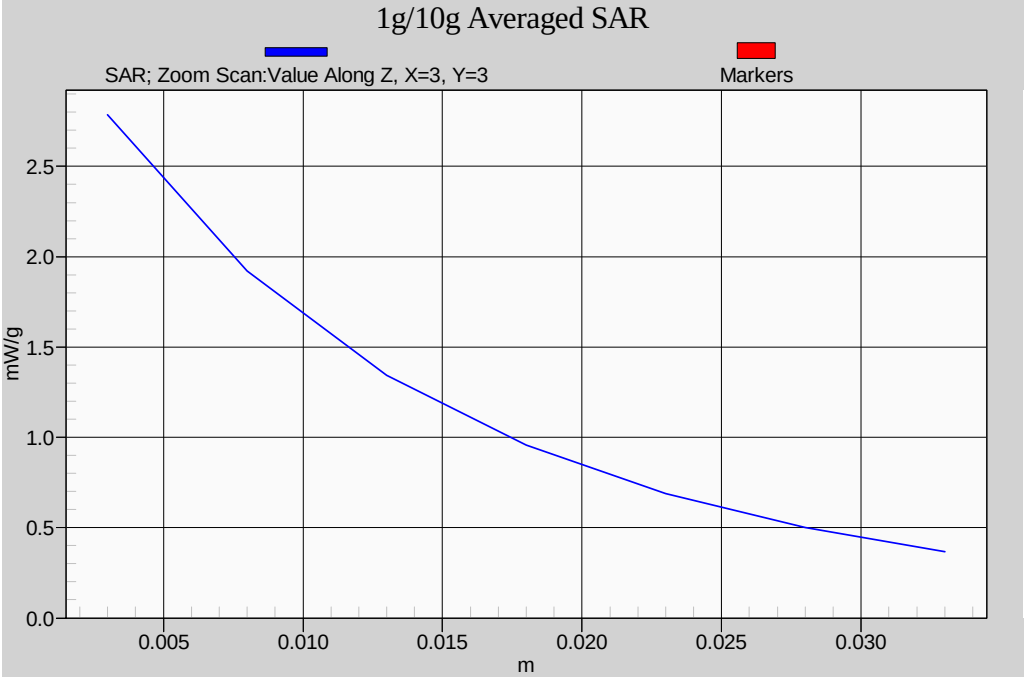
Tissue Type: Body	Simulating-Liquid: 750 MHz	Date: 2012/10/28



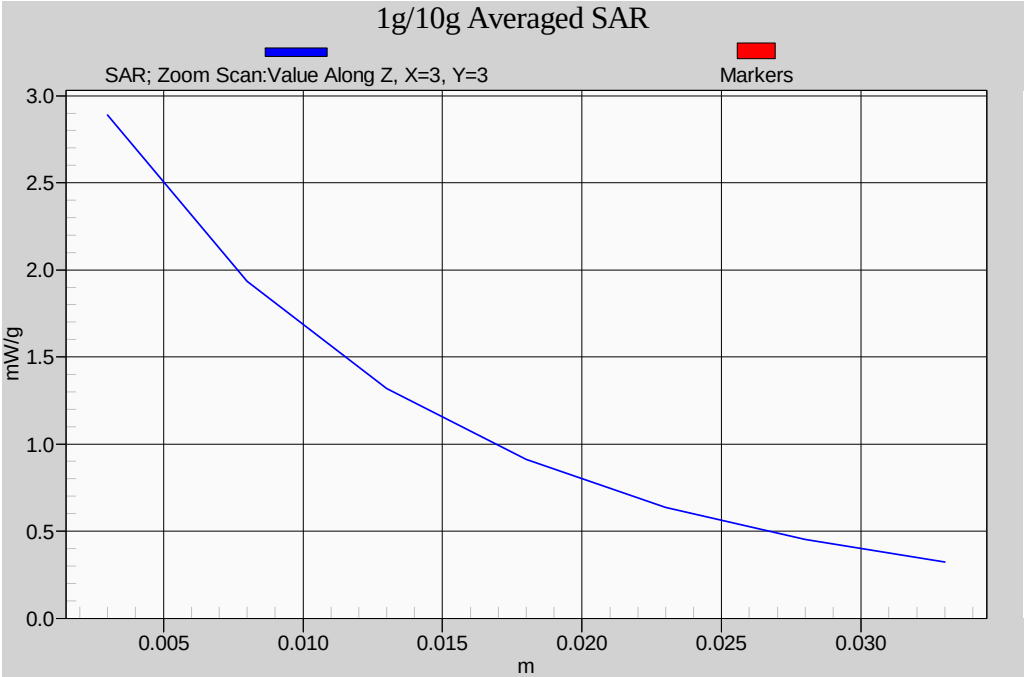
Tissue Type: Body	Simulating-Liquid: 750 MHz	Date: 2012/11/04



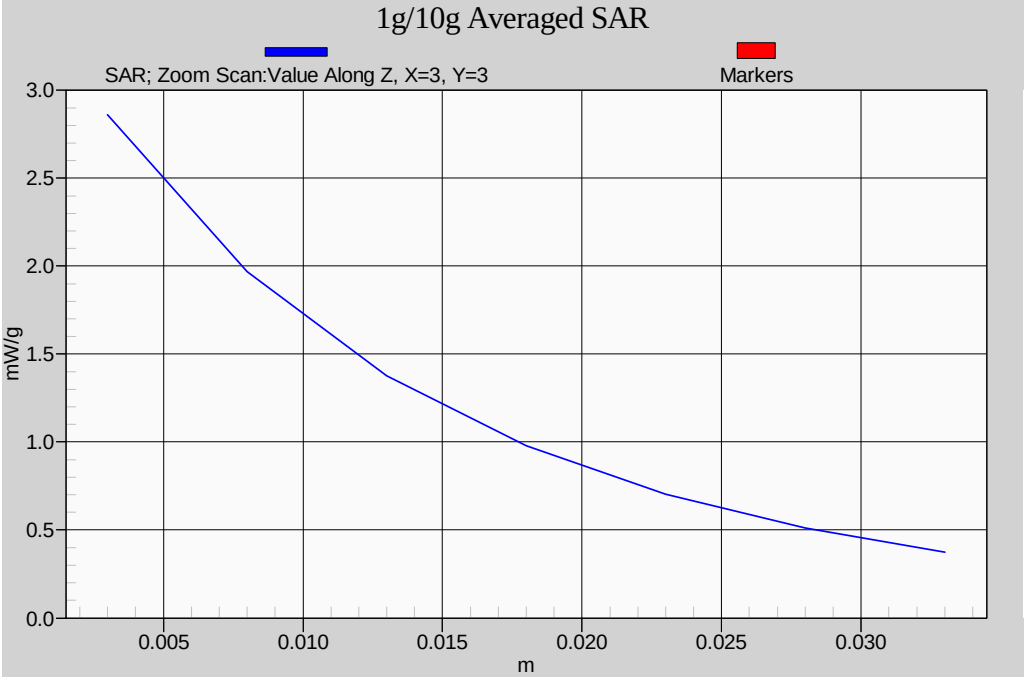
Tissue Type: Body	Simulating-Liquid: 835 MHz	Date: 2012/10/11



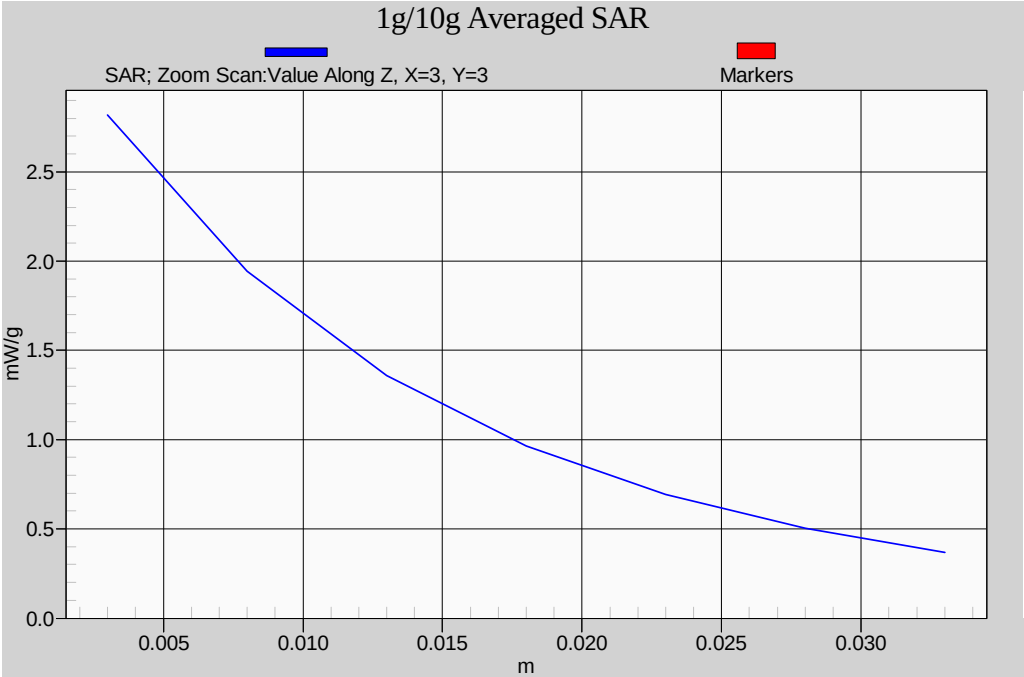
Tissue Type: Body	Simulating-Liquid: 835 MHz	Date: 2012/10/16



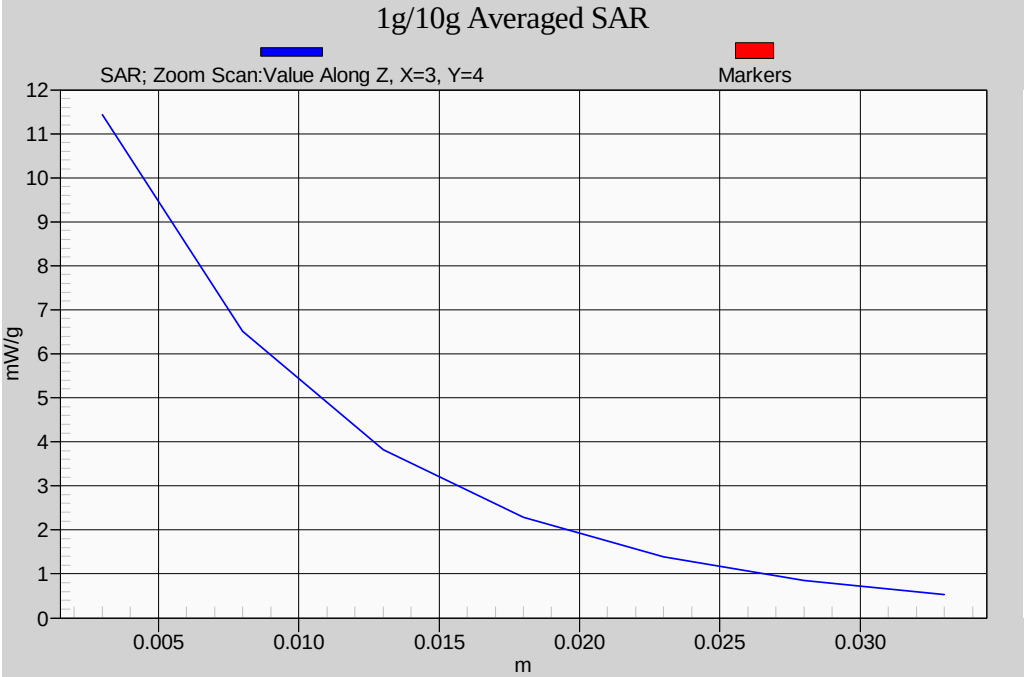
Tissue Type: Body	Simulating-Liquid: 835 MHz	Date: 2012/10/28



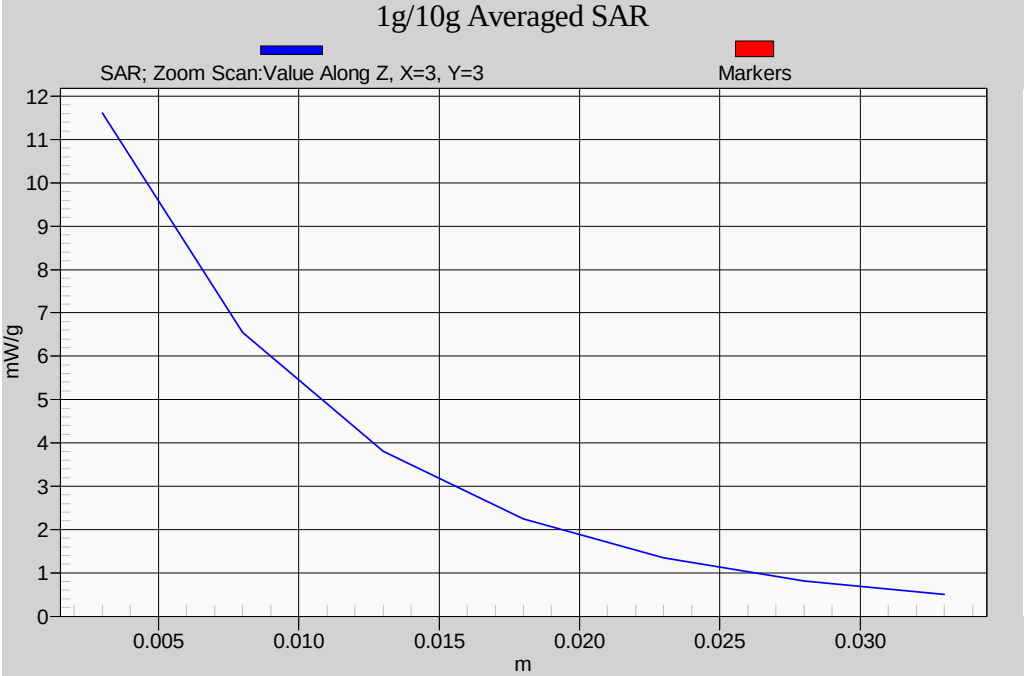
Tissue Type: Body	Simulating-Liquid: 835 MHz	Date: 2012/11/04



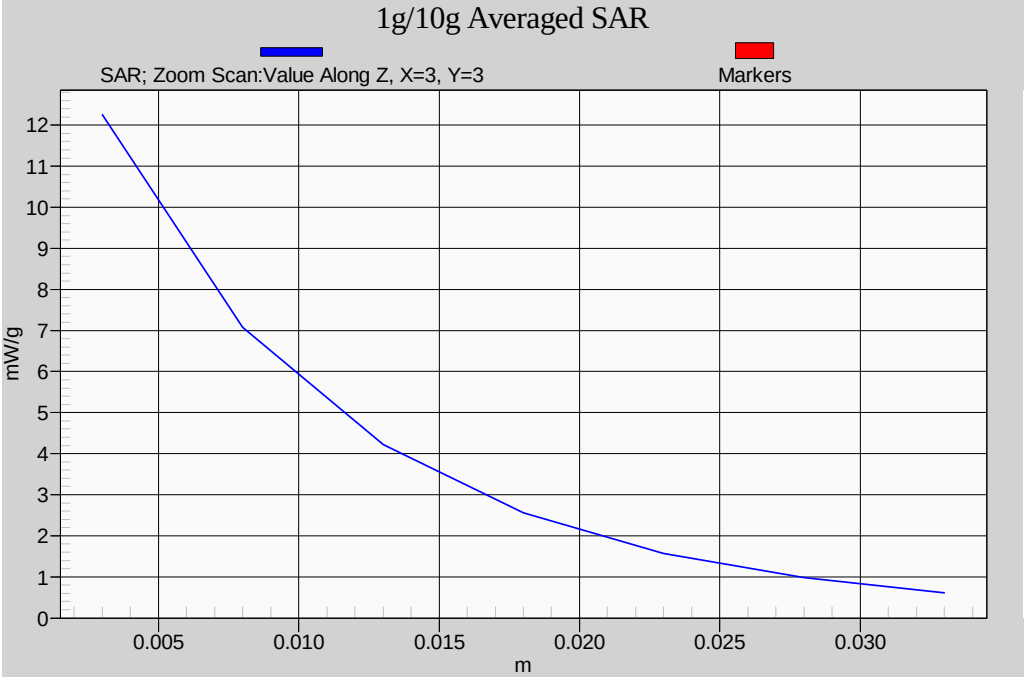
Tissue Type: Body	Simulating-Liquid: 1750 MHz	Date: 2012/10/27



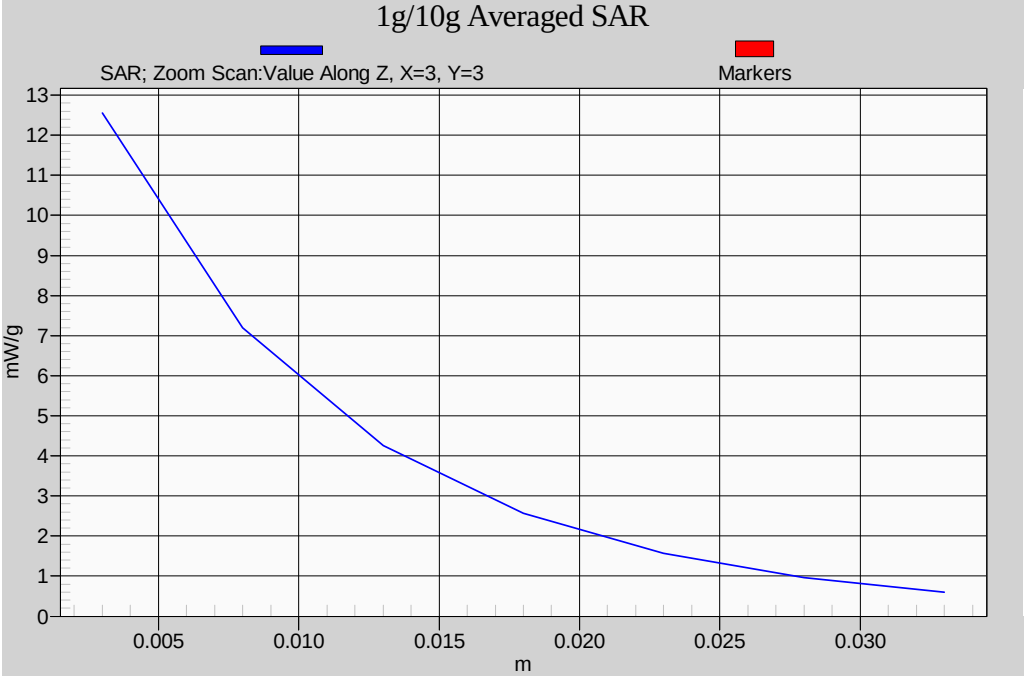
Tissue Type: Body	Simulating-Liquid: 1750 MHz	Date: 2012/11/03



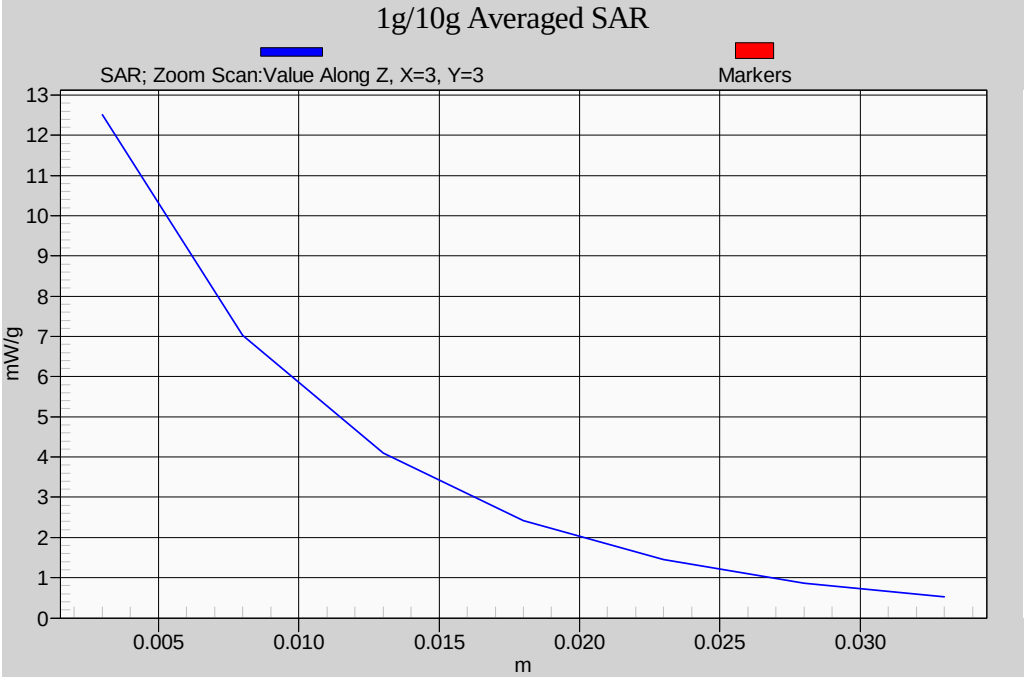
Tissue Type: Body	Simulating-Liquid: 1900 MHz	Date: 2012/10/17



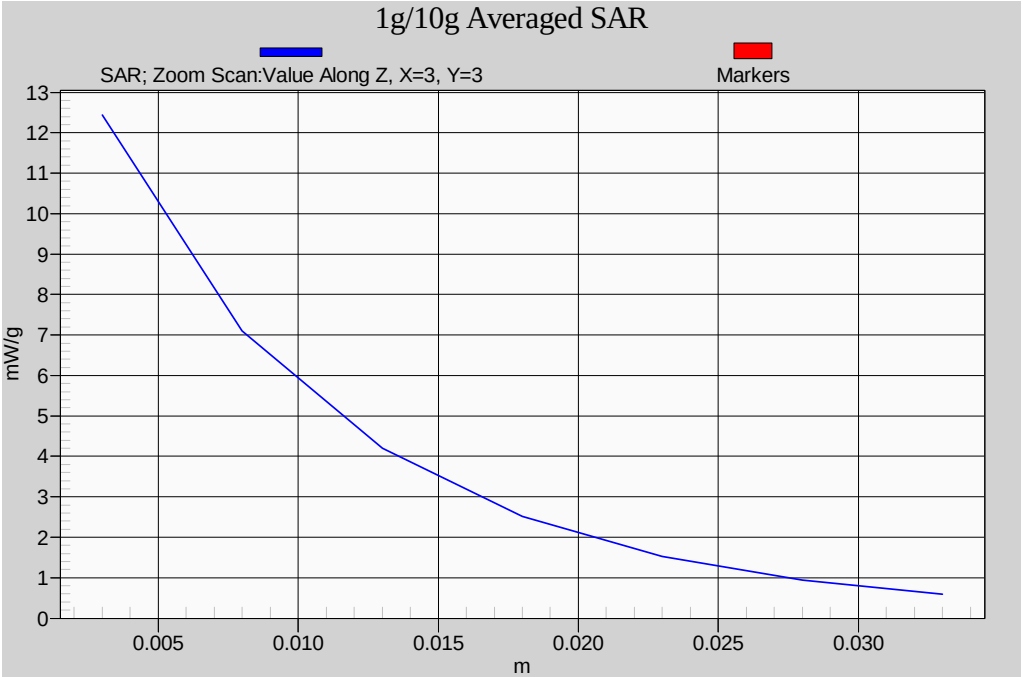
Tissue Type: Body	Simulating-Liquid: 1900 MHz	Date: 2012/10/27



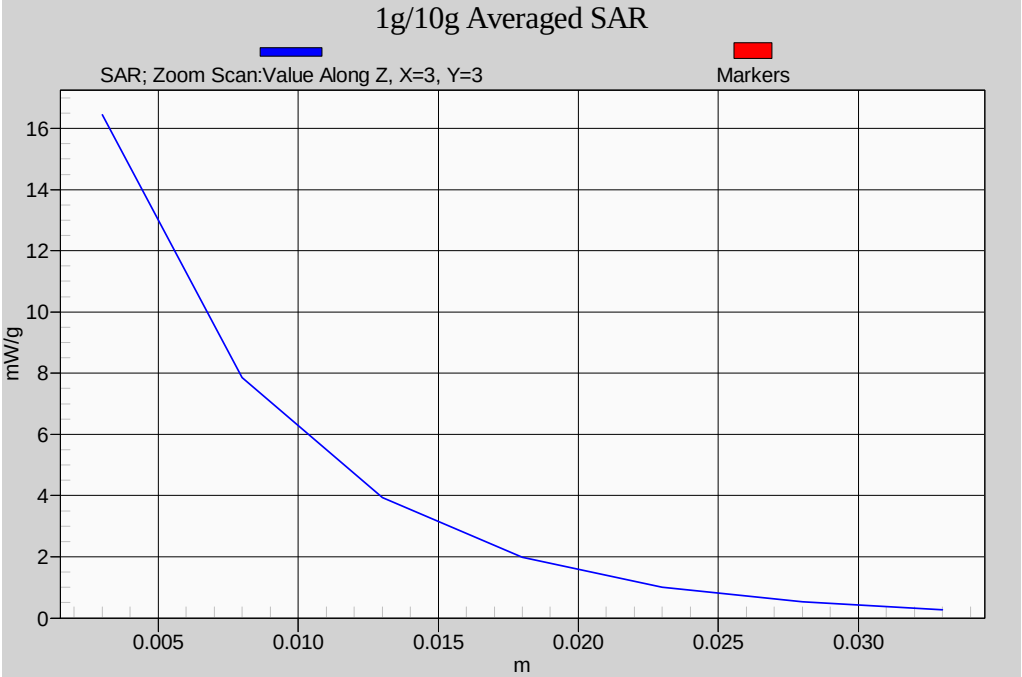
Tissue Type: Body	Simulating-Liquid: 1900 MHz	Date: 2012/11/03



Tissue Type: Body	Simulating-Liquid: 1900 MHz	Date: 2012/11/15



Tissue Type: Body	Simulating-Liquid: 2450 MHz	Date: 2012/11/18



7. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V2	1004	2012/01/27	2013/01/27
SPEAG	835MHz System Validation Kit	D835V2	4d082	2012/07/25	2013/07/25
SPEAG	1750MHz System Validation Kit	D1750V2	1068	2012/06/20	2013/06/20
SPEAG	1900MHz System Validation Kit	D1900V2	5d111	2012/07/20	2013/07/20
SPEAG	2450MHz System Validation Kit	D2450V2	712	2012/02/23	2013/02/23
SPEAG	Dosimetric E-Field Probe	EX3DV3	3519	2012/02/21	2013/02/21
SPEAG	Data Acquisition Electronics	DAE4	779	2012/01/23	2013/01/23
SPEAG	Measurement Server	SE UMS 011 AA	1025	NCR	
SPEAG	Device Holder	N/A	N/A	NCR	
SPEAG	Phantom	SAM V4.0	TP-1150	NCR	
SPEAG	Robot	Staubli TX90XL	F07/564ZA1/C/01	NCR	
SPEAG	Software	DASY5 V5.0 Build 125	N/A	NCR	
SPEAG	Software	SEMCAD V13.4 Build 125	N/A	NCR	
Agilent	Dielectric Probe Kit	85070C	US99360094	NCR	
Agilent	ENA Series Network Analyzer	E5071B	MY42404655	2012/04/05	2014/04/05
R&S	Power Sensor	NRP-Z22	100179	2012/05/16	2013/05/16
Agilent	MXG Vector Signal Generator	N5182A	MY47420962	2011/05/24	2013/05/24
Agilent	Dual Directional Coupler	778D	50334	NCR	
Mini-Circuits	Power Amplifier	ZHL-42W-SMA	D111103#5	NCR	
Mini-Circuits	Power Amplifier	ZVE-8G-SMA	D042005 671800514	NCR	
Aisi	Attenuator	IEAT 3dB	N/A	NCR	

Table 9. Test Equipment List

8. Measurement Uncertainty

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR to be less than ±19.62 %〔8〕. The frequency range of the measurement uncertainty is 750 ~ 5800MHz ±10.1 %

According to Std. C95.3〔9〕, the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy's of ±1 to 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ±2dB can be expected.

According to CENELEC〔10〕, typical worst-case uncertainty of field measurements is ±5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ±3 dB.

Item	Uncertainty Component	Uncertainty Value	Prob. Dist	Div.	c_i (1g)	c_i (10g)	Std. Unc. （1-g）	Std. Unc. （10-g）	v_i or V_{eff}
Measurement System									
u1	Probe Calibration (k=1)	±5.05%	Normal	1	1	1	±5.05%	±5.05%	∞
u2	Probe Isotropy	±7.6%	Rectangular	$\sqrt{3}$	0.7	0.7	±3.1%	±3.1%	∞
u3	Boundary Effect	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
u4	Linearity	±4.7%	Rectangular	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
u5	System Detection Limit	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.58%	±0.58%	∞
u6	Readout Electronics	±0.3%	Normal	1	1	1	±0.3%	±0.3%	∞
u7	Response Time	±0.8%	Rectangular	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
u8	Integration Time	±2.6%	Rectangular	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
u9	RF Ambient Conditions	±0%	Rectangular	$\sqrt{3}$	1	1	±0%	±0%	∞
u10	RF Ambient Reflections	±0%	Rectangular	$\sqrt{3}$	1	1	±0%	±0%	∞
u11	Probe Positioner Mechanical Tolerance	±0.4%	Rectangular	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
u12	Probe Positioning with respect to Phantom Shell	±2.9%	Rectangular	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
u13	Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test sample Related									
u14	Test sample Positioning	±3.6%	Normal	1	1	1	±3.6%	±3.6%	89
u15	Device Holder Uncertainty	±3.5%	Normal	1	1	1	±3.5%	±3.5%	5
u16	Output Power Variation - SAR drift measurement	±5.0%	Rectangular	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Tissue Parameters									
u17	Phantom Uncertainty (shape and thickness tolerances)	±4.0%	Rectangular	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
u18	Liquid Conductivity - deviation from target values	±5.0%	Rectangular	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
u19	Liquid Conductivity - measurement uncertainty	±1.93%	Normal	1	0.64	0.43	±1.24%	±0.83%	69
u20	Liquid Permittivity - deviation from target values	±5.0%	Rectangular	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
u21	Liquid Permittivity - measurement uncertainty	±1.4%	Normal	1	0.6	0.49	±0.84%	±1.69%	69
Combined standard uncertainty			RSS				±9.81%	±9.62%	313
Expanded uncertainty (95% CONFIDENCE LEVEL)			k=2				±19.62%	±19.24%	

Table 10. Uncertainty Budget of DASY

9. Measurement Procedure

The measurement procedures are as follows:

1. For WLAN function, engineering testing software installed on Notebook can provide continuous transmitting signal.
2. Measure output power through RF cable and power meter
3. Set scan area, grid size and other setting on the DASY software
4. Find out the largest SAR result on these testing positions of each band
5. Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

1. Power reference measurement
2. Area scan
3. Zoom scan
4. Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
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 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages

1. Extraction of the measured data (grid and values) from the Zoom Scan
2. Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. Generation of a high-resolution mesh within the measured volume
4. Interpolation of all measured values form the measurement grid to the high-resolution grid
5. Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. Calculation of the averaged SAR within masses of 1g and 10g

9.2 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 7x7x9 points with step size 5, 5 and 3 mm for 300 MHz to 3 GHz, and 7x7x9 points with step size 5, 5 and 3 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

9.3 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the DUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to
calculating the multiband SAR.

9.4 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation. Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

9.5 Power Drift Monitoring

All SAR testing is under the DUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of DUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

10. SAR Test Results Summary

10.1 Body Measurement SAR

Measurement Results										
Band	Index	CH	Power (dBm)	Phantom Position	EUT Side	Spacing (mm)	ASSY	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
GPRS 850 3Down2Up	#46	128	25.97	Flat	Side 1	10	N/A	1.190	-0.036	---
	#47	190	25.94	Flat	Side 1	10	N/A	1.130	-0.065	---
	#48	251	25.90	Flat	Side 1	10	N/A	1.110	-0.046	---
	#49	128	25.97	Flat	Side 2	10	N/A	0.939	-0.054	---
	#50	190	25.94	Flat	Side 2	10	N/A	0.936	0.055	---
	#51	251	25.90	Flat	Side 2	10	N/A	0.930	0.059	---
	#52	128	25.97	Flat	Side 3	10	N/A	0.478	-0.009	---
	#53	128	25.97	Flat	Side 4	10	N/A	0.908	-0.060	---
	#54	190	25.94	Flat	Side 4	10	N/A	0.940	-0.006	---
	#55	251	25.90	Flat	Side 4	10	N/A	0.979	-0.029	---
	#56	128	25.97	Flat	Side 6	10	N/A	0.118	-0.042	---
GPRS 1900 3Down2Up	#57	512	22.89	Flat	Side 1	10	N/A	0.988	0.004	---
	#58	661	22.94	Flat	Side 1	10	N/A	0.954	-0.034	---
	#59	810	22.99	Flat	Side 1	10	N/A	0.913	0.022	---
	#60	810	22.99	Flat	Side 2	10	N/A	0.706	0.018	---
	#61	810	22.99	Flat	Side 3	10	N/A	0.120	-0.014	---
	#62	810	22.99	Flat	Side 4	10	N/A	0.463	-0.026	---
	#63	810	22.99	Flat	Side 6	10	N/A	0.414	-0.061	---
WCDMA Band II	#64	9262	22.36	Flat	Side 1	10	N/A	0.801	-0.089	---
	#65	9400	22.34	Flat	Side 1	10	N/A	0.776	0.097	---
	#66	9538	22.05	Flat	Side 1	10	N/A	0.761	0.081	---
	#67	9262	22.36	Flat	Side 2	10	N/A	0.632	-0.018	---
	#68	9262	22.36	Flat	Side 3	10	N/A	0.141	-0.015	---
	#69	9262	22.36	Flat	Side 4	10	N/A	0.403	0.015	---
	#70	9262	22.36	Flat	Side 6	10	N/A	0.402	-0.083	---
WCDMA Band V	#71	4132	22.47	Flat	Side 1	10	N/A	0.616	-0.017	---
	#72	4132	22.47	Flat	Side 2	10	N/A	0.461	-0.070	---
	#73	4132	22.47	Flat	Side 3	10	N/A	0.194	0.018	---
	#74	4132	22.47	Flat	Side 4	10	N/A	0.491	0.118	---
	#75	4132	22.47	Flat	Side 6	10	N/A	0.042	0.004	---
IEEE 802.11b 1M	#81	06	8.76	Flat	Side 1	10	N/A	0.028	0.135	---
	#82	06	8.76	Flat	Side 2	10	N/A	0.024	0.034	---
	#83	06	8.76	Flat	Side 3	10	N/A	0.048	-0.062	---
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram				

Note: The power showed for GSM/GPRS by Time-average, otherwise showed by burst average power.

Measurement Results												
Band	Index	CH	BW (MHz)	RB Size	RB Offset	Power (dBm)	Phantom Position	EUT Side	Spacing (mm)	ASSY	SAR_{1g} [mW/g]	Power Drift (dB)
LTE Band 2 QPSK	#6	18700	20	1	0	23.44	Flat	Side 1	10	N/A	0.970	0.032
	#1	18900	20	1	0	23.44	Flat	Side 1	10	N/A	1.130	-0.054
	#7	19100	20	1	0	23.44	Flat	Side 1	10	N/A	0.924	0.013
	#9	18700	20	50	0	21.73	Flat	Side 1	10	N/A	0.706	0.112
	#8	18900	20	50	0	21.63	Flat	Side 1	10	N/A	0.815	0.064
	#10	19100	20	50	0	21.79	Flat	Side 1	10	N/A	0.686	-0.008
	#11	18900	20	100	0	21.61	Flat	Side 1	10	N/A	0.821	0.069
	#76	18700	20	1	0	23.22	Flat	Side 2	10	N/A	0.819	0.027
	#2	18900	20	1	0	23.44	Flat	Side 2	10	N/A	0.898	0.034
	#77	19100	20	1	0	23.31	Flat	Side 2	10	N/A	0.729	0.020
	#79	18700	20	50	0	21.73	Flat	Side 2	10	N/A	0.595	-0.062
	#78	18900	20	50	0	21.63	Flat	Side 2	10	N/A	0.578	0.089
	#80	19100	20	50	0	21.79	Flat	Side 2	10	N/A	0.568	-0.036
	#23	18900	20	100	0	21.61	Flat	Side 2	10	N/A	0.698	0.120
	#3	18900	20	1	0	23.44	Flat	Side 3	10	N/A	0.146	-0.143
	#4	18900	20	1	0	23.44	Flat	Side 4	10	N/A	0.567	0.015
	#5	18900	20	1	0	23.44	Flat	Side 6	10	N/A	0.469	0.065
LTE Band 4 QPSK	#17	20050	20M	1	0	22.20	Flat	Side 1	10	N/A	0.878	0.072
	#18	20175	20M	1	0	22.98	Flat	Side 1	10	N/A	0.903	0.027
	#12	20300	20M	1	0	23.03	Flat	Side 1	10	N/A	1.160	0.051
	#20	20050	20M	50	0	21.40	Flat	Side 1	10	N/A	0.622	0.017
	#21	20175	20M	50	0	21.55	Flat	Side 1	10	N/A	0.637	0.020
	#19	20300	20M	50	0	21.36	Flat	Side 1	10	N/A	0.911	0.128
	#22	20300	20M	100	0	21.31	Flat	Side 1	10	N/A	1.120	0.129
	#13	20300	20M	1	0	23.03	Flat	Side 2	10	N/A	0.611	-0.088
	#14	20300	20M	1	0	23.03	Flat	Side 3	10	N/A	0.177	-0.083
	#15	20300	20M	1	0	23.03	Flat	Side 4	10	N/A	0.587	-0.022
	#16	20300	20M	1	0	23.03	Flat	Side 6	10	N/A	0.625	0.034
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population							1.6 W/kg (mW/g) Averaged over 1 gram					

Note: The power showed by burst average power.

Measurement Results												
Band	Index	CH	BW (MHz)	RB Size	RB Offset	Power (dBm)	Phantom Position	EUT Side	Spacing (mm)	ASSY	SAR_{1g} [mW/g]	Power Drift (dB)
LTE Band 5 QPSK	#29	20450	10M	1	0	22.24	Flat	Side 1	10	N/A	0.582	-0.046
	#30	20525	10M	1	0	22.30	Flat	Side 1	10	N/A	0.606	-0.049
	#24	20600	10M	1	0	22.35	Flat	Side 1	10	N/A	0.677	-0.026
	#32	20450	10M	25	0	21.14	Flat	Side 1	10	N/A	0.465	0.032
	#33	20525	10M	25	0	21.16	Flat	Side 1	10	N/A	0.499	-0.019
	#31	20600	10M	25	0	21.10	Flat	Side 1	10	N/A	0.532	-0.030
	#34	20600	10M	50	0	21.07	Flat	Side 1	10	N/A	0.540	-0.011
	#25	20600	10M	1	0	22.35	Flat	Side 2	10	N/A	0.514	0.036
	#26	20600	10M	1	0	22.35	Flat	Side 3	10	N/A	0.196	0.038
	#27	20600	10M	1	0	22.35	Flat	Side 4	10	N/A	0.498	-0.012
	#28	20600	10M	1	0	22.35	Flat	Side 6	10	N/A	0.049	0.176
LTE Band 17 QPSK	#35	23780	10M	1	0	22.38	Flat	Side 1	10	N/A	0.670	-0.008
	#40	23790	10M	1	0	22.22	Flat	Side 1	10	N/A	0.586	-0.060
	#41	23800	10M	1	0	22.18	Flat	Side 1	10	N/A	0.599	-0.032
	#42	23780	10M	25	0	21.30	Flat	Side 1	10	N/A	0.580	0.053
	#43	23790	10M	25	0	21.31	Flat	Side 1	10	N/A	0.443	0.192
	#44	23800	10M	25	0	21.31	Flat	Side 1	10	N/A	0.498	0.015
	#45	23780	10M	50	0	21.16	Flat	Side 1	10	N/A	0.589	-0.029
	#36	23780	10M	1	0	22.38	Flat	Side 2	10	N/A	0.554	-0.062
	#37	23780	10M	1	0	22.38	Flat	Side 3	10	N/A	0.273	0.004
	#38	23780	10M	1	0	22.38	Flat	Side 4	10	N/A	0.304	0.118
	#39	23780	10M	1	0	22.38	Flat	Side 6	10	N/A	0.134	0.003
Std. C95.1-1999 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population							1.6 W/kg (mW/g) Averaged over 1 gram					

Note: The power showed by burst average power.

Note:
1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to FCC/OET Bulletin 65, Supplement C [June 2001], IEEE1528-2003 and IEEE Std. 1528a-2005.
2. All modes of operation were investigated, and worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plots.
4. Batteries are fully charged for all readings.
5. If the Channel's SAR 1g of maximum conducted power is > 0.8 mW/g, low, middle and high channel are supposed to be tested.(2G/3G/WLAN)
6. For (side 5) mode, that WWAN antenna to (side 5) >2.5cm, therefore the WWAN Stand-alone SAR is not required
7. HSDPA & (HSUPA HSPA+_QPSK UP Link) power are not more than WCDMA BII/BV 0.25dB and the SAR value of WCDMA BII/BV<1.2 mW/g ,therefore HSDPA & HSUPA Stand-alone SAR is not required.
6. If the conducted power of (802.11g . 802.11n) are higher than 802.11b 0.25dB, (802.11g . 802.11n) are supposed to be tested.
7. For (side 4 ,5 ,6) mode, that WLAN antenna to edge >2.5cm, therefore the WWAN Stand-alone SAR is not required
8. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

KDB 941225 D05 SAR for LTE Devices v02	
Section of KDB 941225 D05	Test Item (see Appendix B)
5.2.1. QPSK with 1 RB allocation	#1~ #7, #12 ~ #18 ,#24 ~ #30 , #35 ~ #41
5.2.2. QPSK with 50% RB allocation	#8~ #10, #19 ~ #21 ,#31 ~ #33 , #42 ~ #44 ,#78 ~#80
5.2.3. QPSK with 100% RB allocation	#11 ,#22 ,#34 ,#45 ,#23
5.2.4. Higher order modulations	N/A
5.3. Other channel bandwidth standalone SAR test requirements	N/A

According to 5.3 of KDB 941225 D05, that about the test reduction for other channel bandwidth, if the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.then SAR need to test.

10.2 Reported SAR

Reported SAR with 2G Results						
Index	Operate Band	Burst Avg Power (dBm)	Time-Avg Power (dBm)	Max Tune-up (dBm)	Time-Avg Tune-up (dBm)	Reported SAR_{1g} [mW/g]
#46	GPRS 850	31.99	25.97	32.50	26.48	1.340
#47	GPRS 850	31.96	25.94	32.50	26.48	1.280
#48	GPRS 850	31.92	25.90	32.50	26.48	1.270
#49	GPRS 850	31.99	25.97	32.50	26.48	1.060
#50	GPRS 850	31.96	25.94	32.50	26.48	1.060
#51	GPRS 850	31.92	25.90	32.50	26.48	1.060
#52	GPRS 850	31.99	25.97	32.50	26.48	0.538
#53	GPRS 850	31.99	25.97	32.50	26.48	1.020
#54	GPRS 850	31.96	25.94	32.50	26.48	1.060
#55	GPRS 850	31.92	25.90	32.50	26.48	1.120
#56	GPRS 850	31.99	25.97	32.50	26.48	0.133
#57	GPRS 1900	28.91	22.89	30.00	23.98	1.270
#58	GPRS 1900	28.96	22.94	30.00	23.98	1.212
#59	GPRS 1900	29.01	22.99	30.00	23.98	1.147
#60	GPRS 1900	29.01	22.99	30.00	23.98	0.887
#61	GPRS 1900	29.01	22.99	30.00	23.98	0.151
#62	GPRS 1900	29.01	22.99	30.00	23.98	0.582
#63	GPRS 1900	29.01	22.99	30.00	23.98	0.520

Reported SAR with 3G Results				
Index	Operate Band	Burst Avg Power (dBm)	Max Tune-up (dBm)	Reported SAR_{1g} [mW/g]
#64	WCDMA Band II	22.36	23.50	1.040
#65	WCDMA Band II	22.34	23.50	1.010
#66	WCDMA Band II	22.05	23.50	1.060
#67	WCDMA Band II	22.36	23.50	0.822
#68	WCDMA Band II	22.36	23.50	0.183
#69	WCDMA Band II	22.36	23.50	0.524
#70	WCDMA Band II	22.36	23.50	0.523
#71	WCDMA Band V	22.47	23.50	0.781
#72	WCDMA Band V	22.47	23.50	0.584
#73	WCDMA Band V	22.47	23.50	0.246
#74	WCDMA Band V	22.47	23.50	0.622
#75	WCDMA Band V	22.47	23.50	0.053

Reported SAR with 3G Results			
Index	Operate Band	Burst Avg Power (dBm)	Reported SAR_{1g} [mW/g]
#81	IEEE 802.11b	8.76	0.028
#82	IEEE 802.11b	8.76	0.024
#83	IEEE 802.11b	8.76	0.048

Reported SAR with LTE Results				
Index	Operate Band	Burst Avg Power (dBm)	Max Tune-up (dBm)	Reported SAR_{1g} [mW/g]
#6	LTE Band 2	23.44	23.50	0.983
#1	LTE Band 2	23.44	23.50	1.150
#7	LTE Band 2	23.44	23.50	0.937
#9	LTE Band 2	21.73	---	0.706
#8	LTE Band 2	21.63	---	0.815
#10	LTE Band 2	21.79	---	0.686
#11	LTE Band 2	21.61	---	0.821
#76	LTE Band 2	23.03	23.50	1.290
#2	LTE Band 2	23.44	23.50	0.910
#77	LTE Band 2	23.03	23.50	0.681
#79	LTE Band 2	23.03	23.50	0.654
#78	LTE Band 2	23.03	23.50	0.197
#80	LTE Band 2	23.03	23.50	0.696
#23	LTE Band 2	22.35	23.50	0.064
#3	LTE Band 2	23.44	23.50	0.148
#4	LTE Band 2	23.44	23.50	0.575
#5	LTE Band 2	23.44	23.50	0.476
#17	LTE Band 4	21.31	---	1.120
#18	LTE Band 4	21.61	---	0.698
#12	LTE Band 4	22.20	23.50	1.180
#20	LTE Band 4	22.35	23.50	0.670
#21	LTE Band 4	22.35	23.50	0.255
#19	LTE Band 4	22.35	23.50	0.882
#22	LTE Band 4	22.35	23.50	0.649
#13	LTE Band 4	22.98	23.50	1.020
#14	LTE Band 4	21.36	---	0.911
#15	LTE Band 4	21.40	---	0.622
#16	LTE Band 4	21.55	---	0.637

Reported SAR with LTE Results				
Index	Operate Band	Burst Avg Power (dBm)	Max Tune-up (dBm)	Reported SAR_{1g} [mW/g]
#29	LTE Band 5	21.07	---	0.540
#30	LTE Band 5	22.38	23.50	0.867
#24	LTE Band 5	22.24	23.50	0.778
#32	LTE Band 5	22.38	23.50	0.353
#33	LTE Band 5	22.38	23.50	0.393
#31	LTE Band 5	22.38	23.50	0.717
#34	LTE Band 5	22.38	23.50	0.173
#25	LTE Band 5	22.30	23.50	0.799
#26	LTE Band 5	21.10	---	0.532
#27	LTE Band 5	21.14	---	0.465
#28	LTE Band 5	21.16	---	0.499
#35	LTE Band 17	22.22	23.50	0.787
#40	LTE Band 17	21.16	---	0.589
#41	LTE Band 17	23.22	23.50	0.874
#42	LTE Band 17	23.31	23.50	0.762
#43	LTE Band 17	21.63	---	0.578
#44	LTE Band 17	21.73	---	0.595
#45	LTE Band 17	21.79	---	0.568
#36	LTE Band 17	22.18	23.50	0.812
#37	LTE Band 17	21.30	---	0.580
#38	LTE Band 17	21.31	---	0.443
#39	LTE Band 17	21.31	---	0.498

Note: 1. According KDB 447498 D01 V05 section 4.1.4, the “Reported” explanation as below:
“When SAR or MPE is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported.”
2. The formula of Reported SAR, that represent as below:
Reported SAR = Original SAR * 10^[(Tune-up power - Actual power)/10]
Ex: #46, Reported SAR = 1.19* 10^((26.48-25.97)/10)=1.34 mW/g
3. If actual power more than tune-up power, that Scaling SAR is not required.

10.3 Std. C95.1-1999 RF Exposure Limit

Human Exposure	Population Uncontrolled Exposure (W/kg) or (mW/g)	Occupational Controlled Exposure (W/kg) or (mW/g)
Spatial Peak SAR* (head)	1.60	8.00
Spatial Peak SAR** (Whole Body)	0.08	0.40
Spatial Peak SAR*** (Partial-Body)	1.60	8.00
Spatial Peak SAR**** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 11. Safety Limits for Partial Body Exposure

Notes：

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

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

******* The Spatial Average value of the SAR averaged over the partial – body.

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

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

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

11. Conclusion

The SAR test values found for the portable mobile phone **Sierra Wireless, Inc. Trade Name：AirCard Model(s)：AirCard 770S** is below the maximum recommended level of 1.6 W/kg (mW/g).

12. References

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[10] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10KHz-300GHz, Jan. 1995.

[11] IEEE Std 1528™-2003 - IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques

[12] IEEE Std 1528a™-2005 (Amendment to IEEE Std 1528™-2003), IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

[13] KDB248227 D01 SAR meas for 802 11 a b g v01r02.

[14] KDB 648474 D01 SAR Handsets Multi Xmiter and Ant v01r05

[15] KDB 941225 D01 SAR Test for 3G Devices 3G-SAR

[16] KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE

[17] KDB 941225 D04 SAR for GSM E GPRS Dual Xfer Mode v01

[18] KDB 941225 D05 SAR for LTE Devices v02

[19] KDB 941225 D06 Hot Spot SAR v01

Appendix A - System Performance Check

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 2:05:00 PM

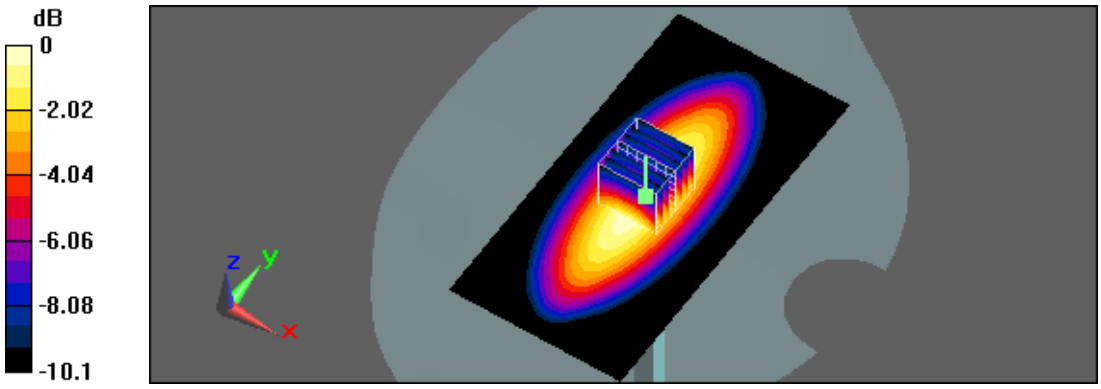
System Performance Check at 750MHz_20121028_Body
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1004

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.977 mho/m; ε_r = 54.58; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 750MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.5 mW/g

System Performance Check at 750MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.6 V/m; Power Drift = -0.00378 dB
Peak SAR (extrapolated) = 3.17 W/kg
SAR(1 g) = 2.14 mW/g; SAR(10 g) = 1.41 mW/g
Maximum value of SAR (measured) = 2.51 mW/g



0 dB = 2.51mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 4:03:06 AM

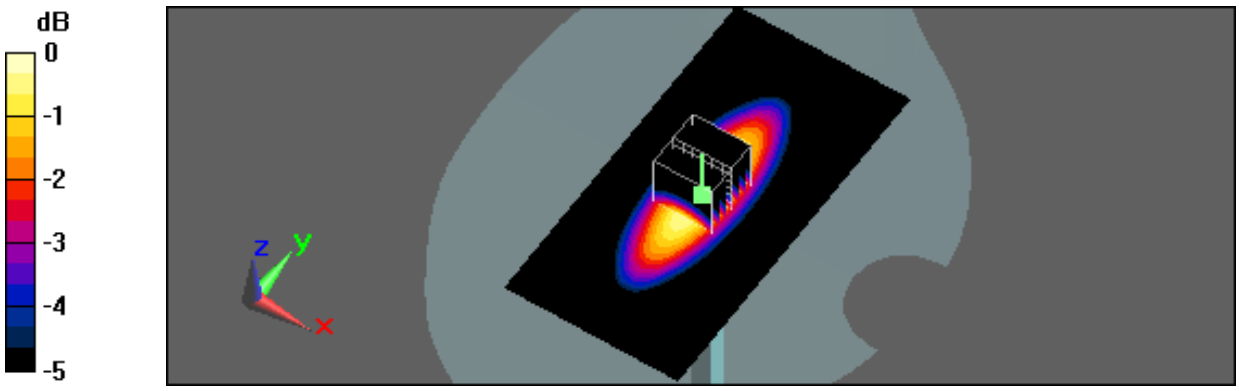
System Performance Check at 750MHz_20121104_Body
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1004

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.977 mho/m; ε_r = 54.58; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 750MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.55 mW/g

System Performance Check at 750MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 3.19 W/kg
SAR(1 g) = 2.21 mW/g; SAR(10 g) = 1.48 mW/g
Maximum value of SAR (measured) = 2.57 mW/g



0 dB = 2.57mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/11/2012 9:44:23 AM

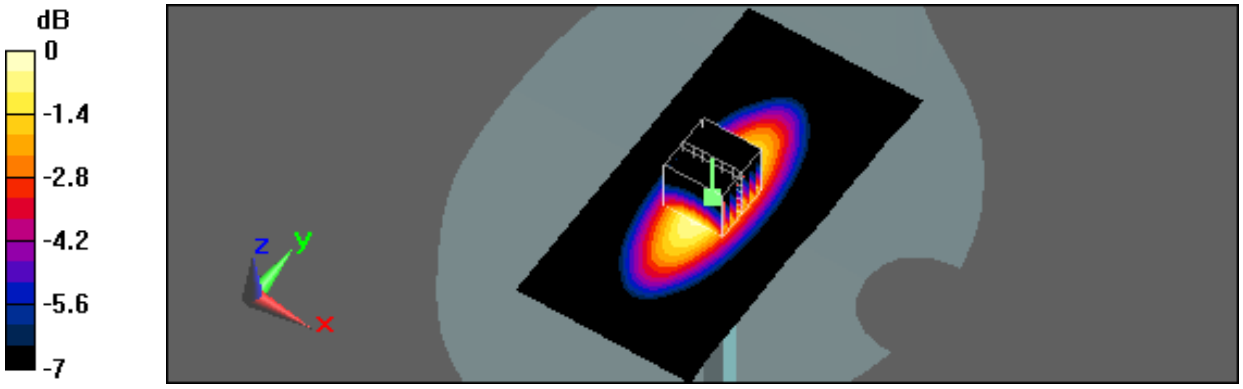
System Performance Check at 835MHz_20121011_Body
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 54.82; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.79 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.1 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 3.49 W/kg
SAR(1 g) = 2.40 mW/g; SAR(10 g) = 1.59 mW/g
Maximum value of SAR (measured) = 2.79 mW/g



0 dB = 2.79mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 6:17:47 PM

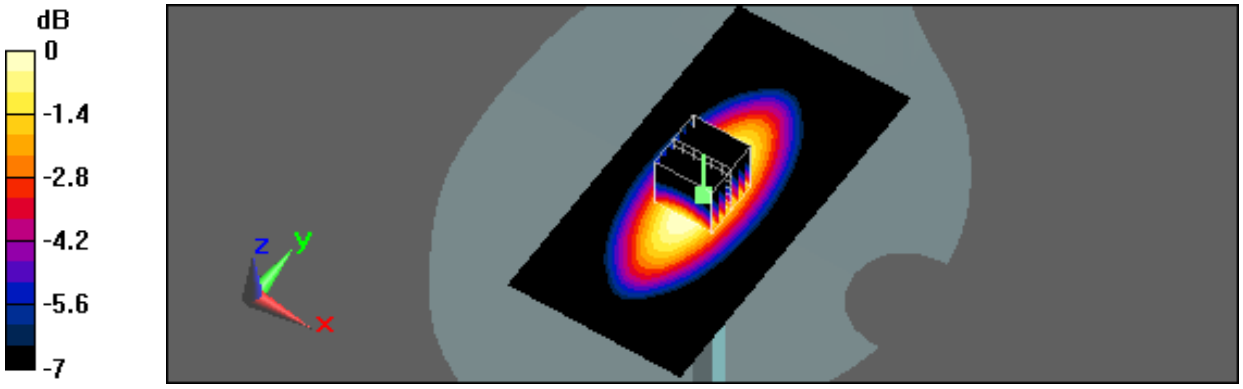
System Performance Check at 835MHz_20121016_Body
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 54.82; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.19 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.5 V/m; Power Drift = 0.00402 dB
Peak SAR (extrapolated) = 3.67 W/kg
SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.89 mW/g



0 dB = 2.89mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 2:48:58 AM

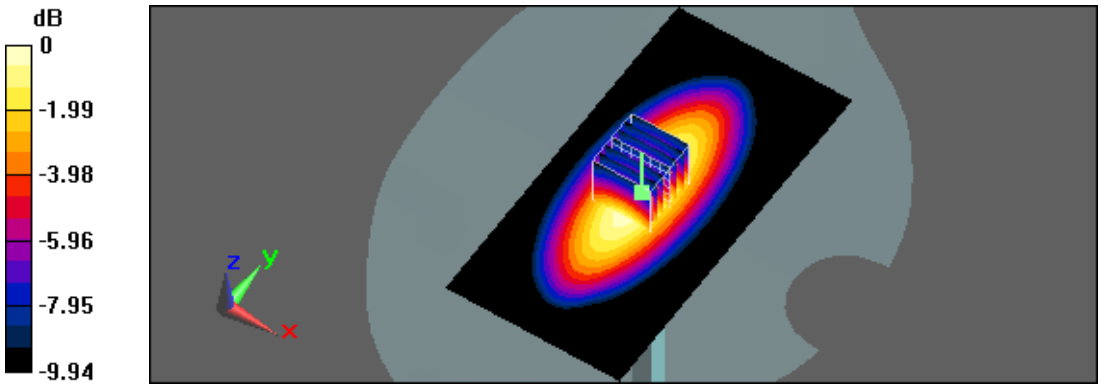
System Performance Check at 835MHz_20121028_Body
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 54.82; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.86 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.6 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 3.59 W/kg
SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.64 mW/g
Maximum value of SAR (measured) = 2.86 mW/g



0 dB = 2.86mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 12:49:39 AM

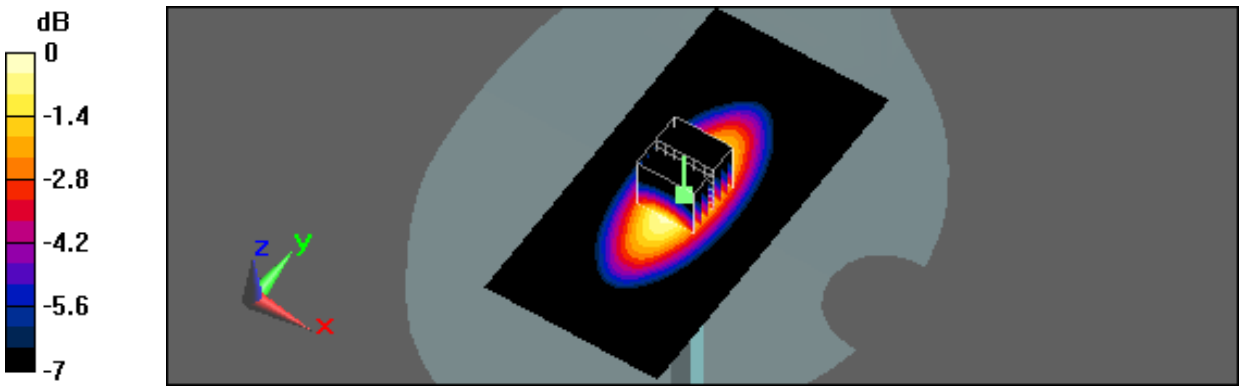
System Performance Check at 835MHz_20121104_Body
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 54.82; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.92 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 3.52 W/kg
SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.60 mW/g
Maximum value of SAR (measured) = 2.82 mW/g



0 dB = 2.82mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 5:53:37 PM

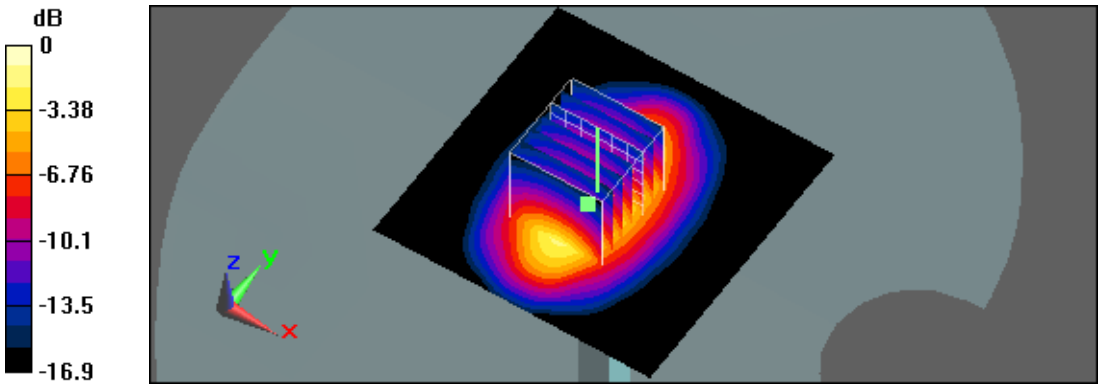
System Performance Check at 1750MHz_20121027_Body
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.489 mho/m; ε_r = 53.61; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1750MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.7 mW/g

System Performance Check at 1750MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.9 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 9.09 mW/g; SAR(10 g) = 4.81 mW/g
Maximum value of SAR (measured) = 11.4 mW/g



0 dB = 11.4mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 10:13:15 PM

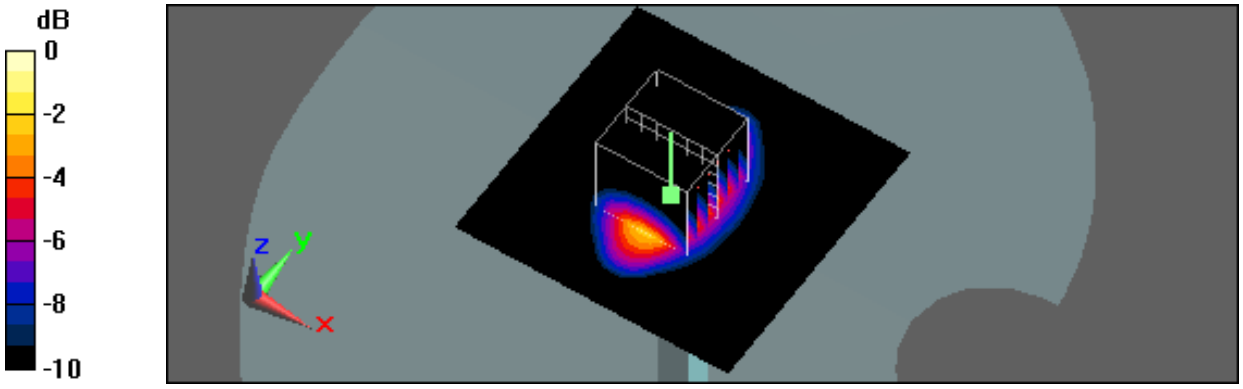
System Performance Check at 1750MHz_20121103_Body
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.489 mho/m; ε_r = 53.61; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1750MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11 mW/g

System Performance Check at 1750MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.1 V/m; Power Drift = 0.009 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 9.12 mW/g; SAR(10 g) = 4.76 mW/g
Maximum value of SAR (measured) = 11.6 mW/g



0 dB = 11.6mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 9:35:47 AM

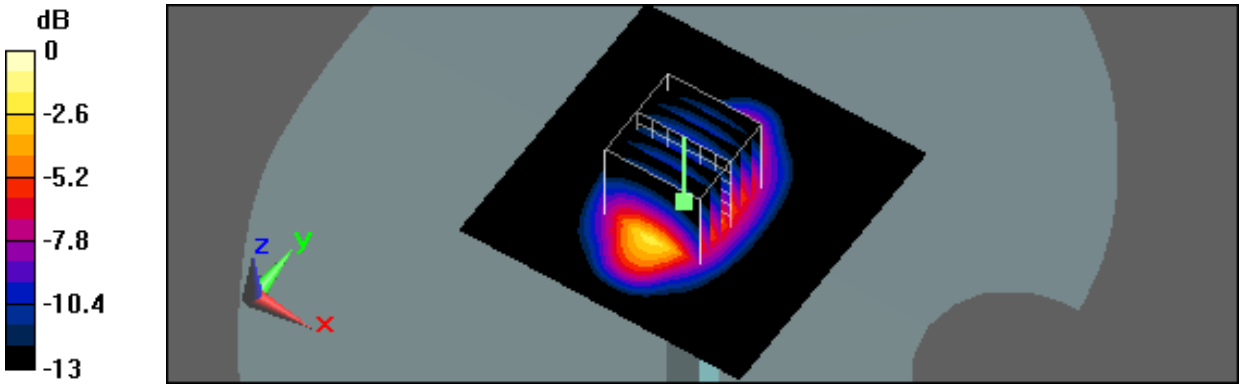
System Performance Check at 1900MHz_20121017_Body
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.507 mho/m; ε_r = 53.42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.6 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.7 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 9.74 mW/g; SAR(10 g) = 5.15 mW/g
Maximum value of SAR (measured) = 12.3 mW/g



0 dB = 12.3mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 10:11:37 AM

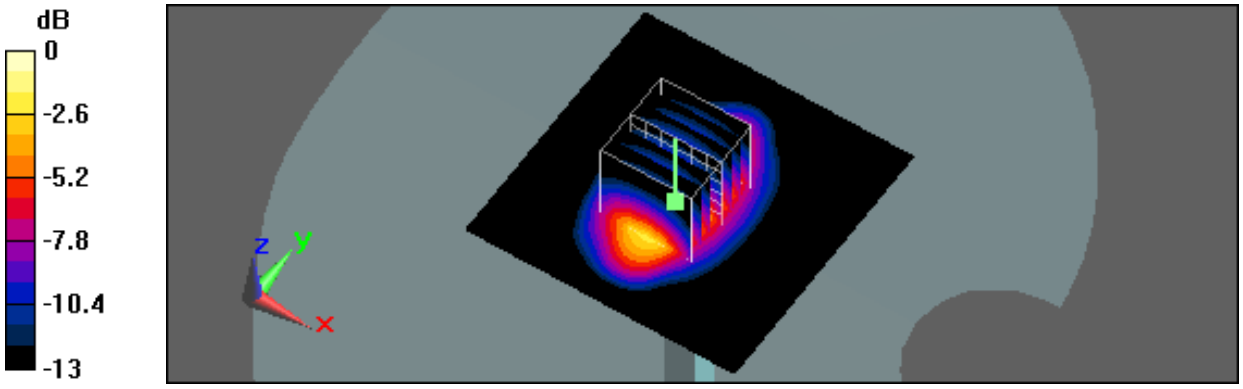
System Performance Check at 1900MHz_20121027_Body
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.507 mho/m; ε_r = 53.42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.3 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.97 mW/g; SAR(10 g) = 5.26 mW/g
Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 6:06:09 PM

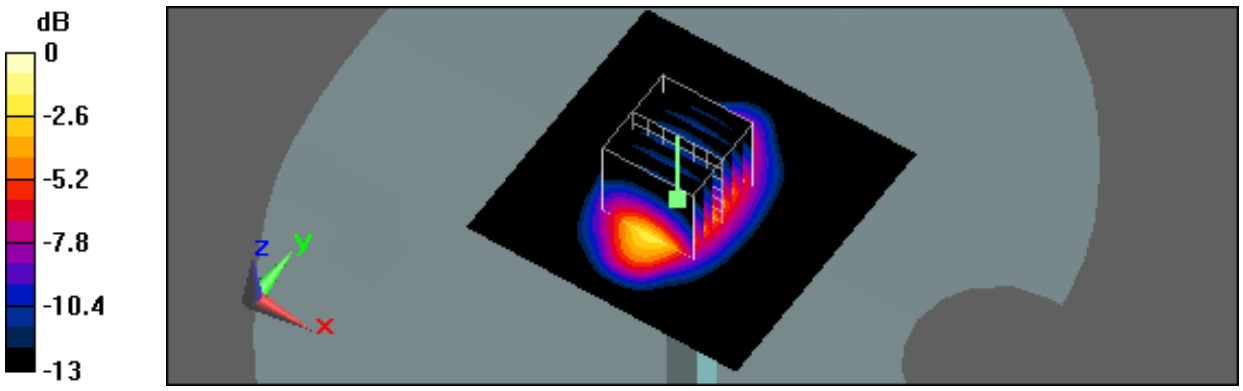
System Performance Check at 1900MHz_20121103_Body
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.507 mho/m; ε_r = 53.42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.83 mW/g; SAR(10 g) = 5.11 mW/g
Maximum value of SAR (measured) = 12.5 mW/g



0 dB = 12.5mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 6:34:22 PM

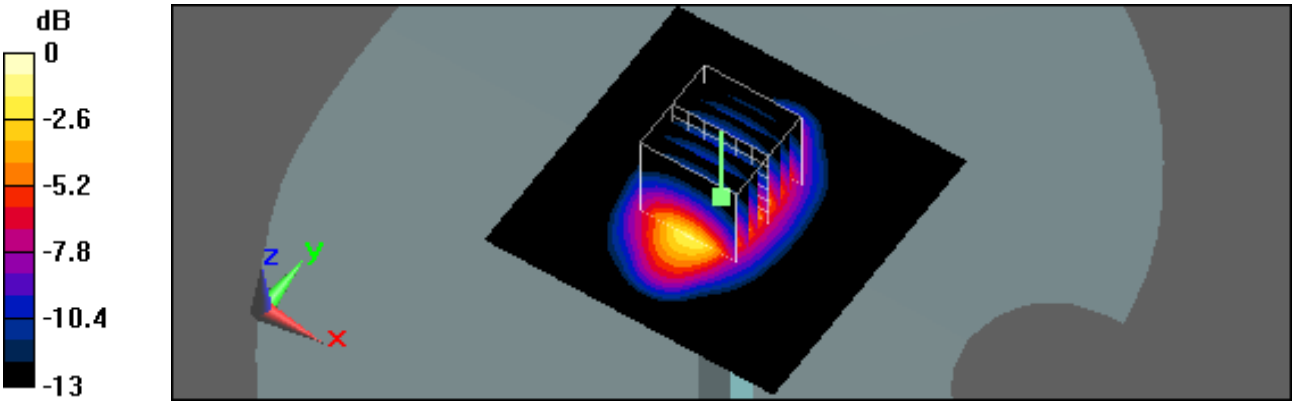
System Performance Check at 1900MHz_20121115_Body
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.507 mho/m; ε_r = 53.42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.4 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.8 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 17.6 W/kg
SAR(1 g) = 9.80 mW/g; SAR(10 g) = 5.15 mW/g
Maximum value of SAR (measured) = 12.4 mW/g



0 dB = 12.4mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/18/2012 7:08:02 PM

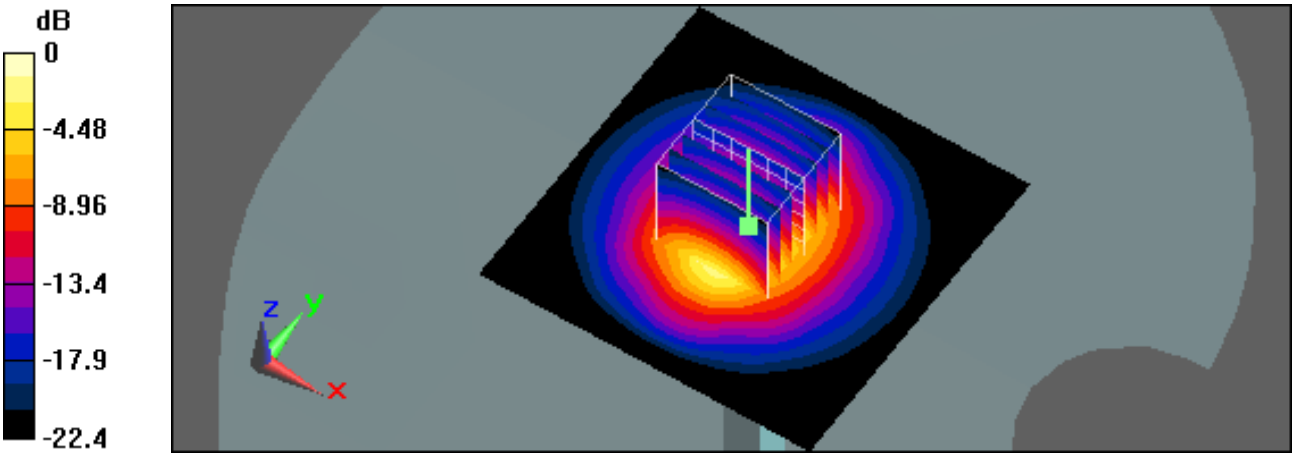
System Performance Check at 2450MHz_20121118_Body
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:712

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.962 mho/m; ε_r = 51.91; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(8.22, 8.22, 8.22); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 2450MHz/Area Scan (61x61x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 16.4 mW/g

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.4 V/m; Power Drift = 0.040 dB
Peak SAR (extrapolated) = 26.4 W/kg
SAR(1 g) = 12.40 mW/g; SAR(10 g) = 5.68 mW/g
Maximum value of SAR (measured) = 16.4 mW/g



0 dB = 16.4mW/g

Appendix B - SAR Measurement Data

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 7:10:56 PM

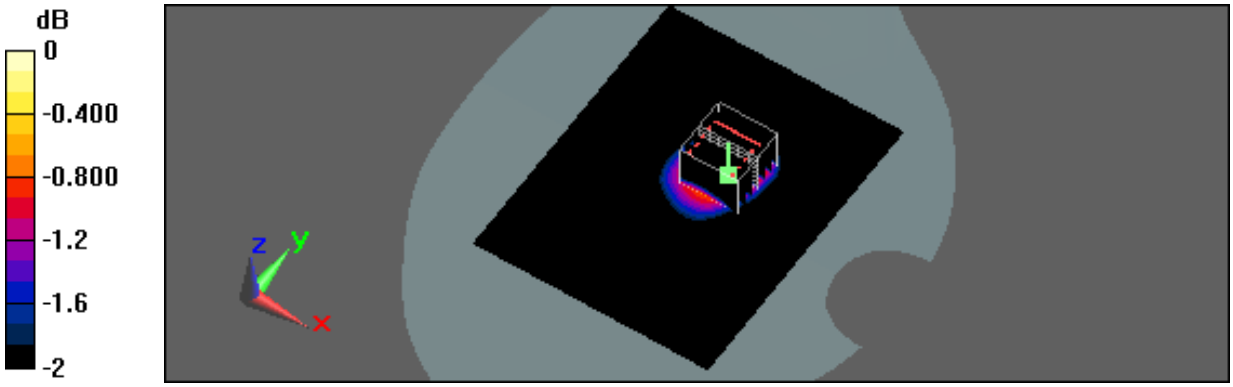
#46_Flat_GPRS 850 CH128_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.97 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

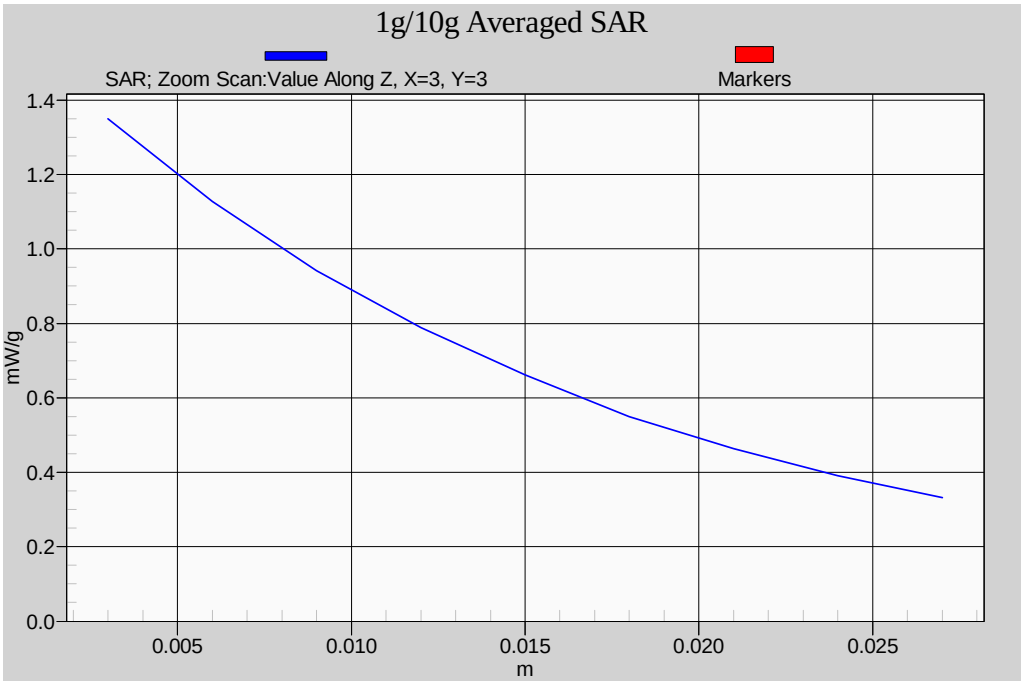
- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.29 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 34.1 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.860 mW/g
Maximum value of SAR (measured) = 1.35 mW/g



0 dB = 1.35mW/g



est Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 7:41:14 PM

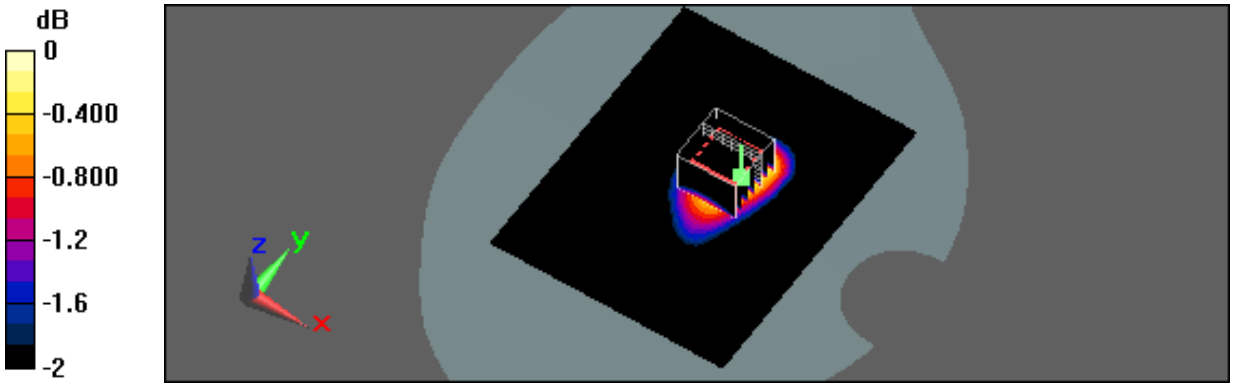
#47_Flat_GPRS 850 CH190_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.985 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.27 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 34.7 V/m; Power Drift = -0.065 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.824 mW/g
Maximum value of SAR (measured) = 1.26 mW/g



0 dB = 1.26mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 8:28:34 PM

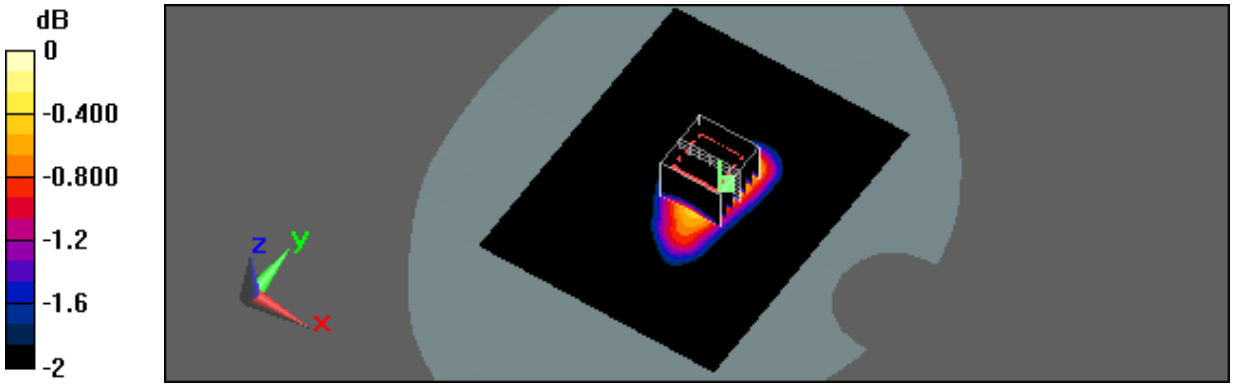
#48_Flat_GPRS 850 CH251_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 849 MHz; σ = 0.999 mho/m; εr = 54.7; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 34.1 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.813 mW/g
Maximum value of SAR (measured) = 1.24 mW/g



0 dB = 1.24mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 10:11:52 PM

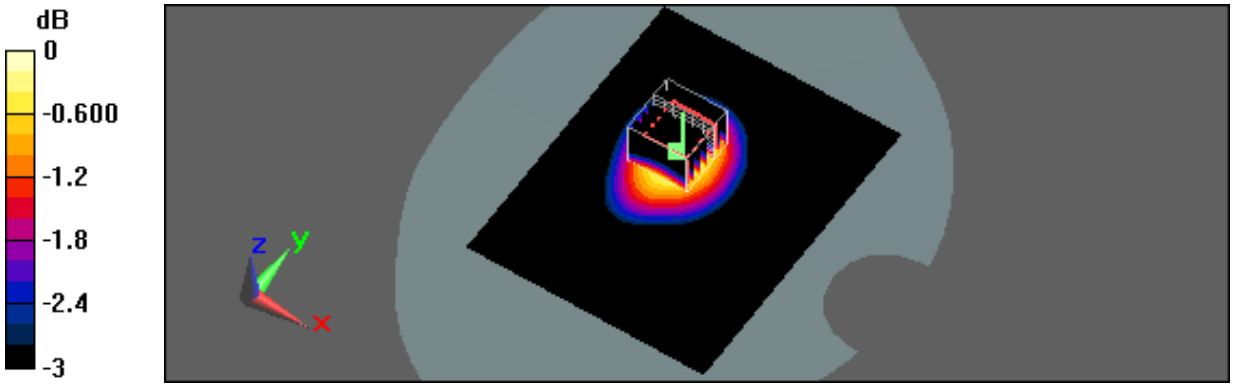
#49_Flat_GPRS 850 CH128_Side 2 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.97 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 31 V/m; Power Drift = -0.054 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.939 mW/g; SAR(10 g) = 0.701 mW/g
Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 11:02:25 PM

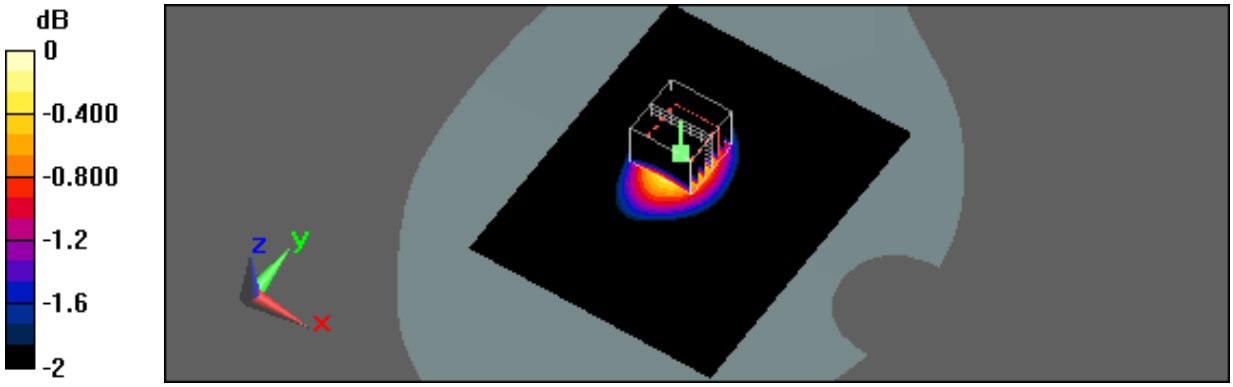
#50_Flat_GPRS 850 CH190_Side 2 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.985 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.04 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 30.1 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.700 mW/g
Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

est Laboratory: A Test Lab Techno Corp.
Date/Time: 10/16/2012 11:30:49 PM

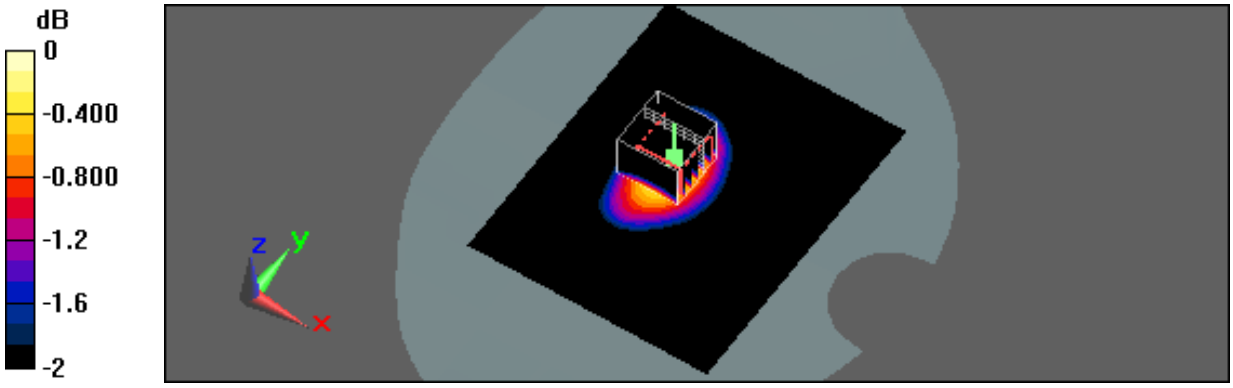
#51_Flat_GPRS 850 CH251_Side 2 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 849 MHz; σ = 0.999 mho/m; εr = 54.7; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 30.1 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.930 mW/g; SAR(10 g) = 0.699 mW/g
Maximum value of SAR (measured) = 1.03 mW/g



0 dB = 1.03mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 12:29:01 AM

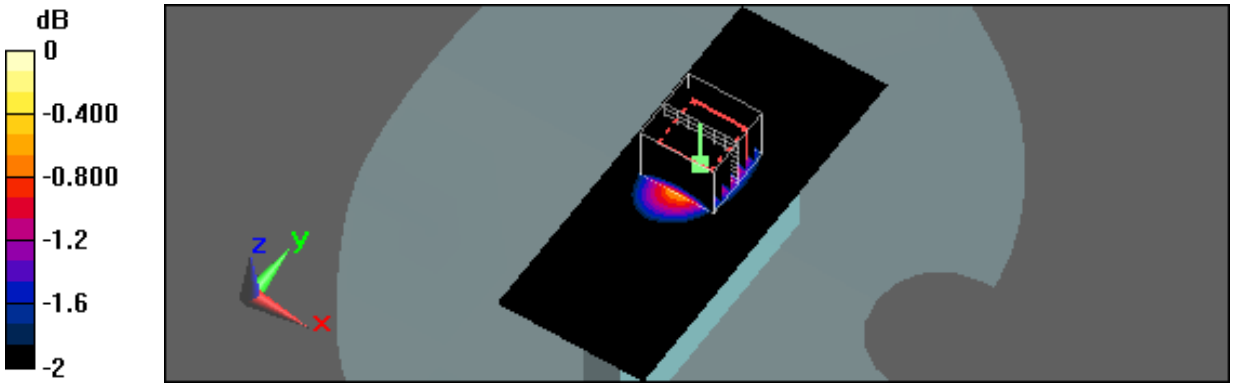
#52_Flat_GPRS 850 CH128_Side 3 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.97 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.514 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 22.3 V/m; Power Drift = -0.00898 dB
Peak SAR (extrapolated) = 0.644 W/kg
SAR(1 g) = 0.478 mW/g; SAR(10 g) = 0.340 mW/g
Maximum value of SAR (measured) = 0.541 mW/g



0 dB = 0.541mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 12:57:10 AM

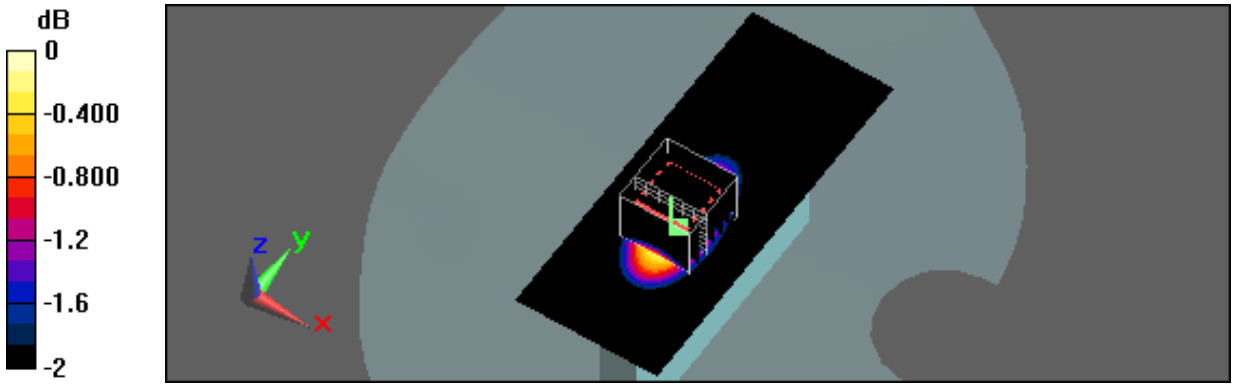
#53_Flat_GPRS 850 CH128_Side 4 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.97 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 32.1 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.908 mW/g; SAR(10 g) = 0.638 mW/g
Maximum value of SAR (measured) = 1.03 mW/g



0 dB = 1.03mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 1:21:46 AM

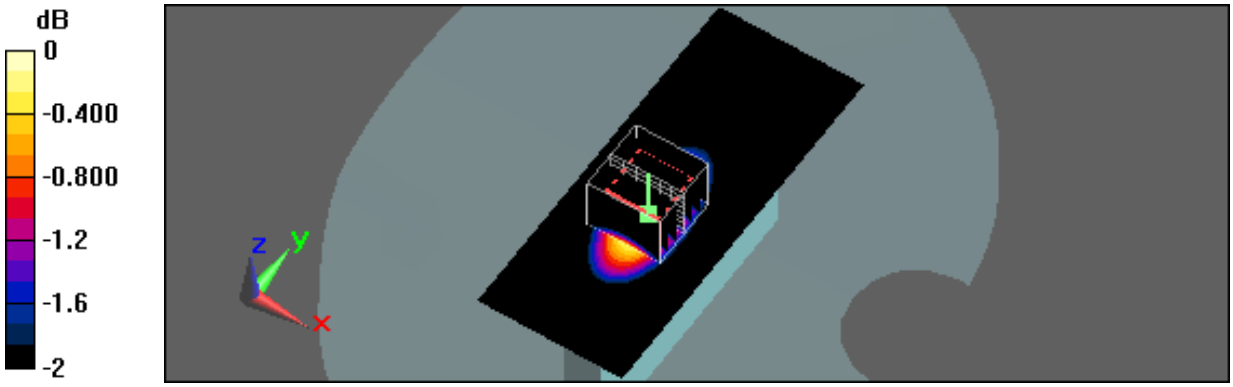
#54_Flat_GPRS 850 CH190_Side 4 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.985 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 32.4 V/m; Power Drift = -0.00586 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.661 mW/g
Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 1:46:04 AM

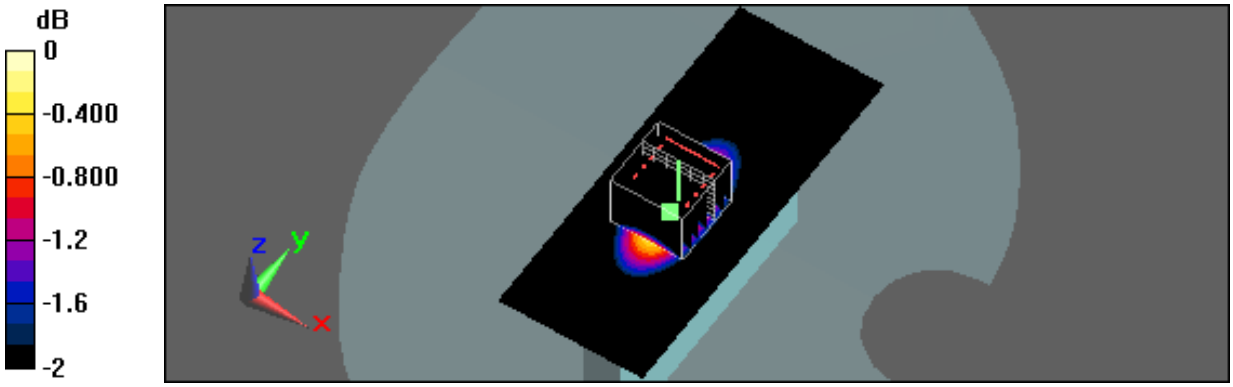
#55_Flat_GPRS 850 CH251_Side 4 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 849 MHz; σ = 0.999 mho/m; εr = 54.7; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 33.4 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.979 mW/g; SAR(10 g) = 0.688 mW/g
Maximum value of SAR (measured) = 1.12 mW/g



0 dB = 1.12mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 2:15:56 AM

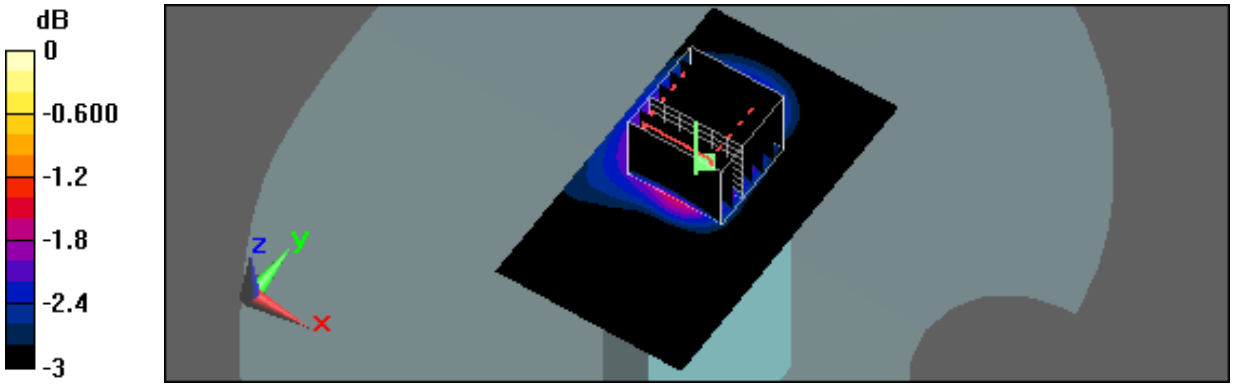
#56_Flat_GPRS 850 CH128_Side 6 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.97 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x71xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.146 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11 V/m; Power Drift = -0.042 dB
Peak SAR (extrapolated) = 0.193 W/kg
SAR(1 g) = 0.118 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.143 mW/g



0 dB = 0.143mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 6:08:03 PM

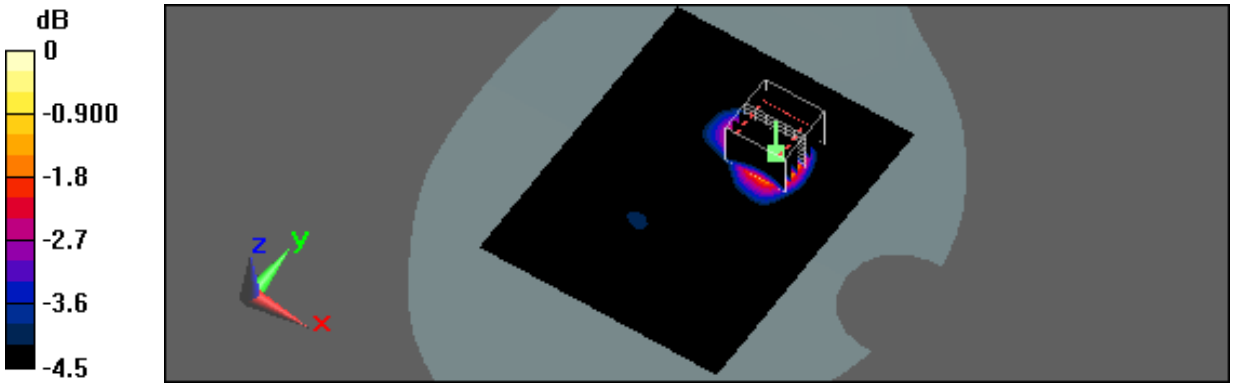
#57_Flat_GPRS PCS CH512_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.45 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.21 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.9 V/m; Power Drift = 0.0041 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 0.988 mW/g; SAR(10 g) = 0.575 mW/g
Maximum value of SAR (measured) = 1.2 mW/g



0 dB = 1.2mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 6:35:47 PM

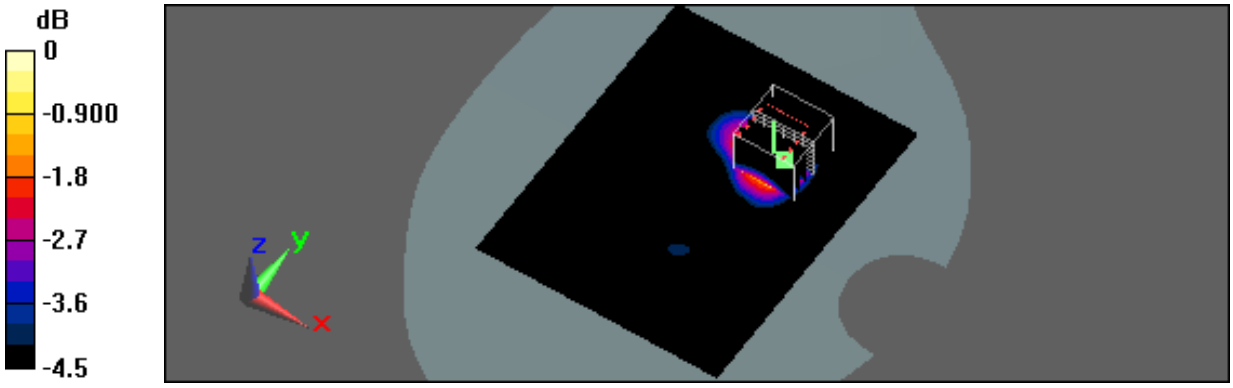
#58_Flat_GPRS PCS CH661_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11 V/m; Power Drift = -0.034 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.554 mW/g
Maximum value of SAR (measured) = 1.14 mW/g



0 dB = 1.14mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 5:39:14 PM

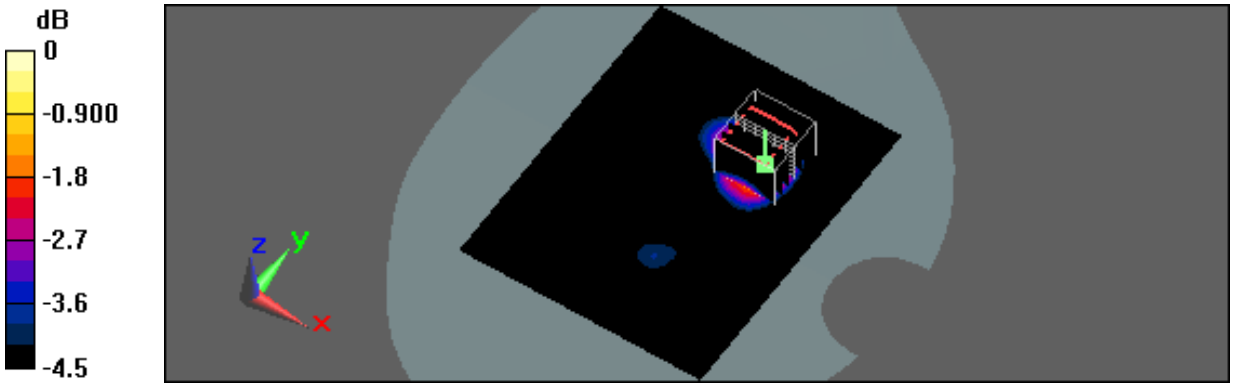
#59_Flat_GPRS PCS CH810_Side 1 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.13 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.4 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.913 mW/g; SAR(10 g) = 0.523 mW/g
Maximum value of SAR (measured) = 1.1 mW/g



0 dB = 1.1mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 7:06:47 PM

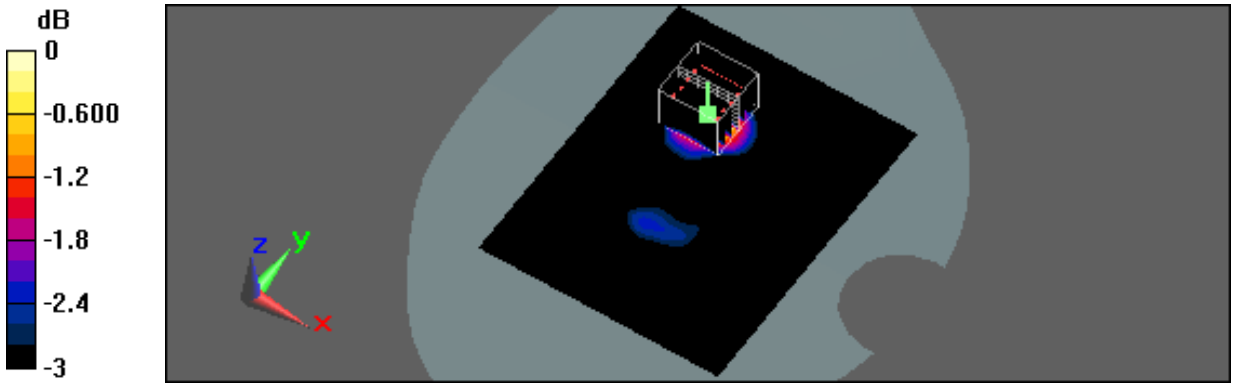
#60_Flat_GPRS PCS CH810_Side 2 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.841 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.8 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 1.1 W/kg
SAR(1 g) = 0.706 mW/g; SAR(10 g) = 0.424 mW/g
Maximum value of SAR (measured) = 0.845 mW/g



0 dB = 0.845mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 7:41:09 PM

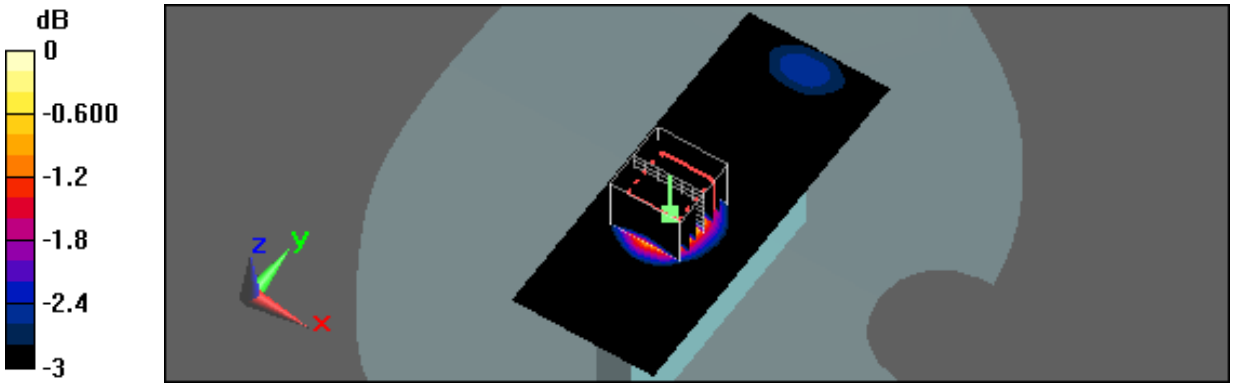
#61_Flat_GPRS PCS CH810_Side 3 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.147 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 8.6 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.183 W/kg
SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.075 mW/g
Maximum value of SAR (measured) = 0.142 mW/g



0 dB = 0.142mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 8:06:45 PM

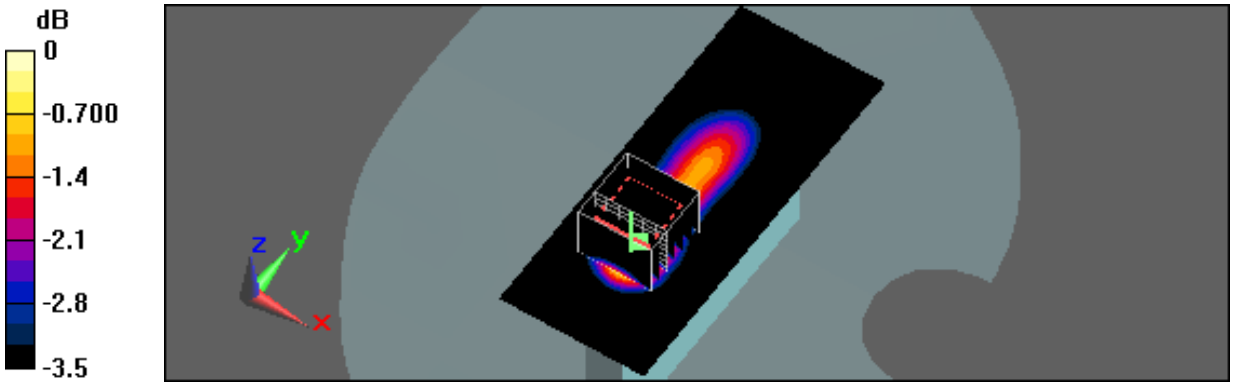
#62_Flat_GPRS PCS CH810_Side 4 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.569 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16.9 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.747 W/kg
SAR(1 g) = 0.463 mW/g; SAR(10 g) = 0.273 mW/g
Maximum value of SAR (measured) = 0.559 mW/g



0 dB = 0.559mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 4:43:24 PM

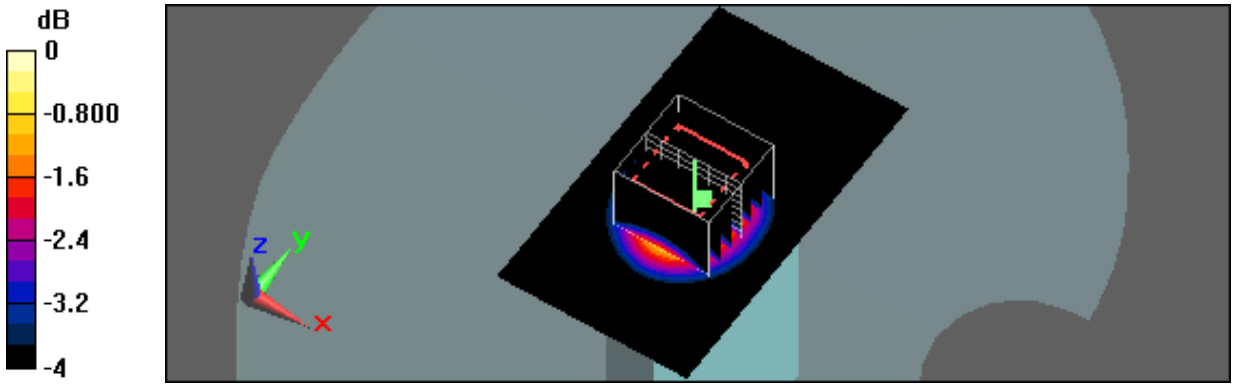
#63_Flat_GPRS PCS CH810_Side 6 to phantom 10mm_3D2U
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x71xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.509 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 18.1 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.634 W/kg
SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.250 mW/g
Maximum value of SAR (measured) = 0.489 mW/g



0 dB = 0.489mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 10:12:19 AM

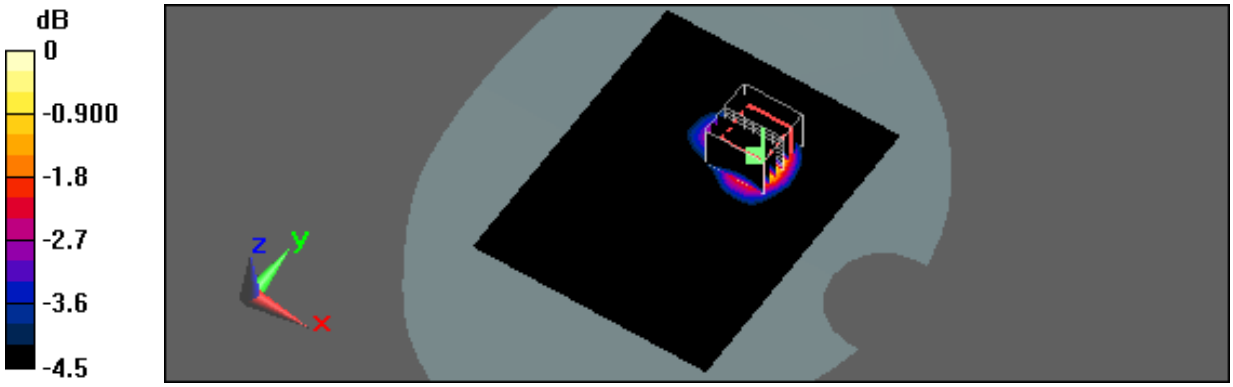
#64_Flat_WCDMA Band II CH9262_Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.992 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.5 V/m; Power Drift = -0.089 dB
Peak SAR (extrapolated) = 1.3 W/kg
SAR(1 g) = 0.801 mW/g; SAR(10 g) = 0.470 mW/g
Maximum value of SAR (measured) = 0.970 mW/g



0 dB = 0.970mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 10:43:22 AM

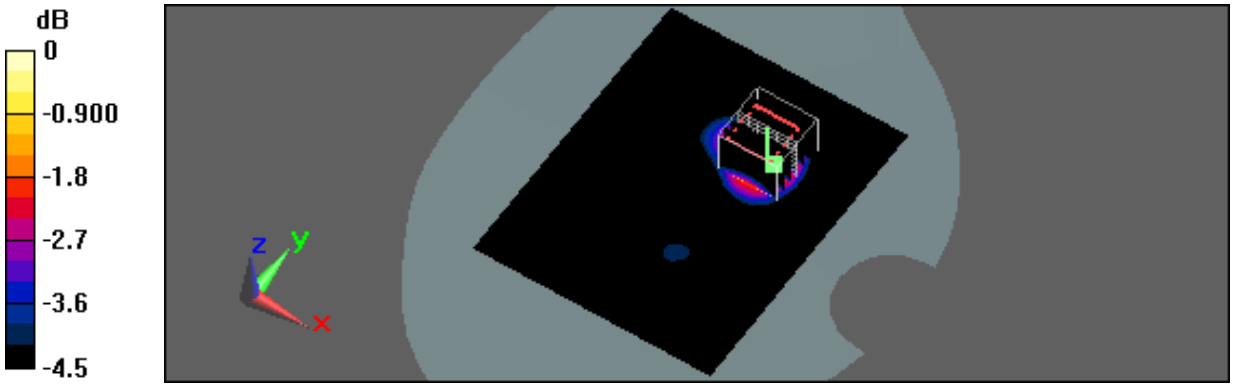
#65_Flat_WCDMA Band II CH9400_Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.935 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.2 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.776 mW/g; SAR(10 g) = 0.452 mW/g
Maximum value of SAR (measured) = 0.944 mW/g



0 dB = 0.944mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 11:27:17 AM

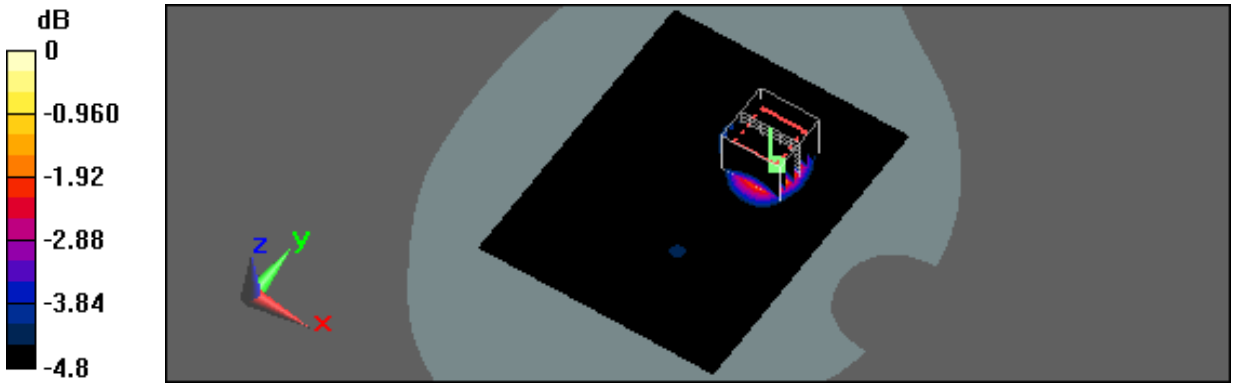
#66_Flat_WCDMA Band II CH9538_Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.52 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.910 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.03 V/m; Power Drift = 0.081 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.434 mW/g
Maximum value of SAR (measured) = 0.927 mW/g



0 dB = 0.927mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 11:56:44 AMD

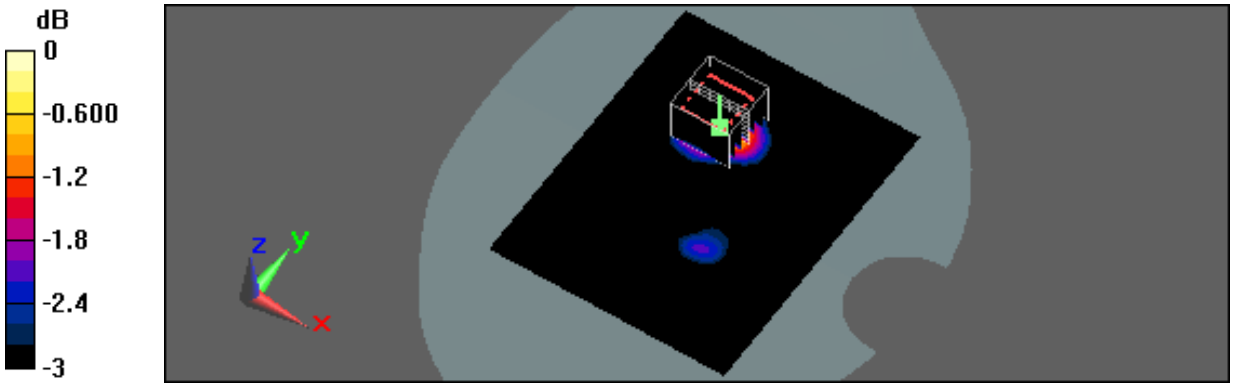
#67_Flat_WCDMA Band II CH9262_Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.759 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.7 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.948 W/kg
SAR(1 g) = 0.632 mW/g; SAR(10 g) = 0.390 mW/g
Maximum value of SAR (measured) = 0.746 mW/g



0 dB = 0.746mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 12:53:29 PM

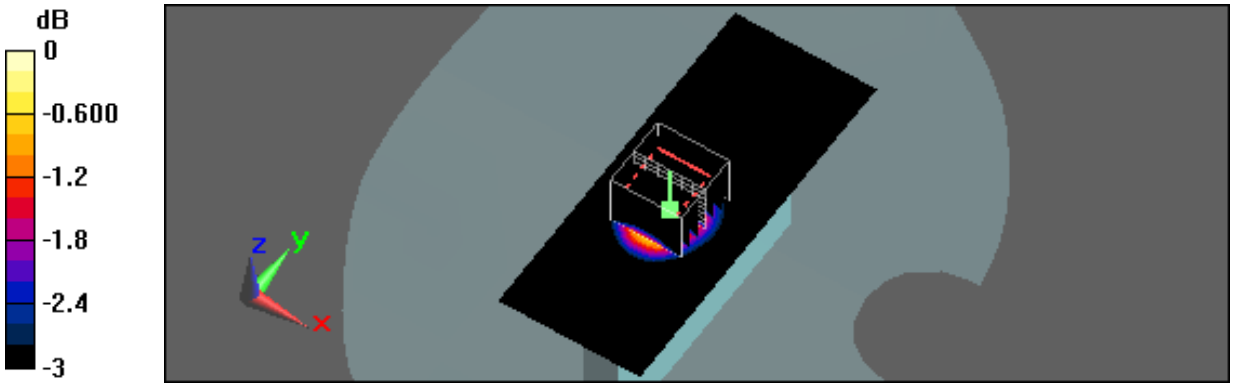
#68_Flat_WCDMA Band II CH9262_Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.172 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 0.212 W/kg
SAR(1 g) = 0.141 mW/g; SAR(10 g) = 0.088 mW/g
Maximum value of SAR (measured) = 0.166 mW/g



0 dB = 0.166mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 12:29:14 PM

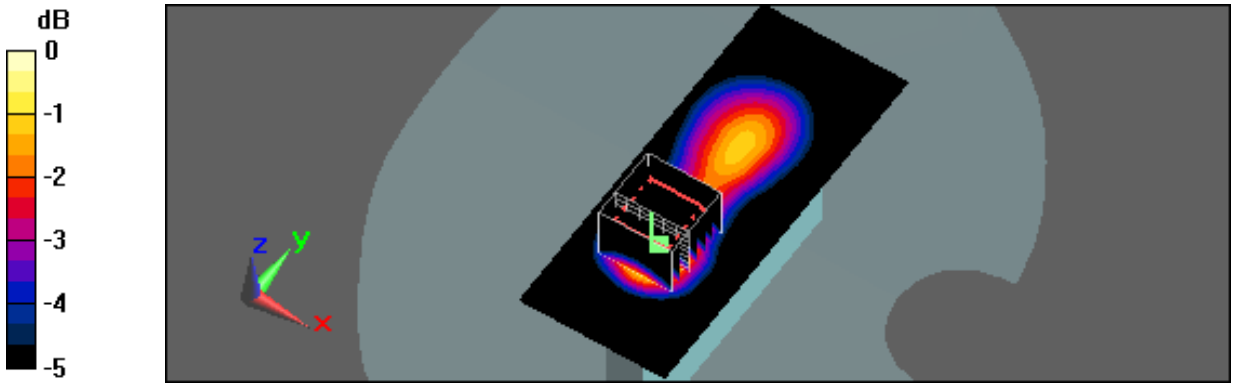
#69_Flat_WCDMA Band II CH9262_Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.491 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.6 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.635 W/kg
SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.239 mW/g
Maximum value of SAR (measured) = 0.486 mW/g



0 dB = 0.486mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/17/2012 1:21:57 PM

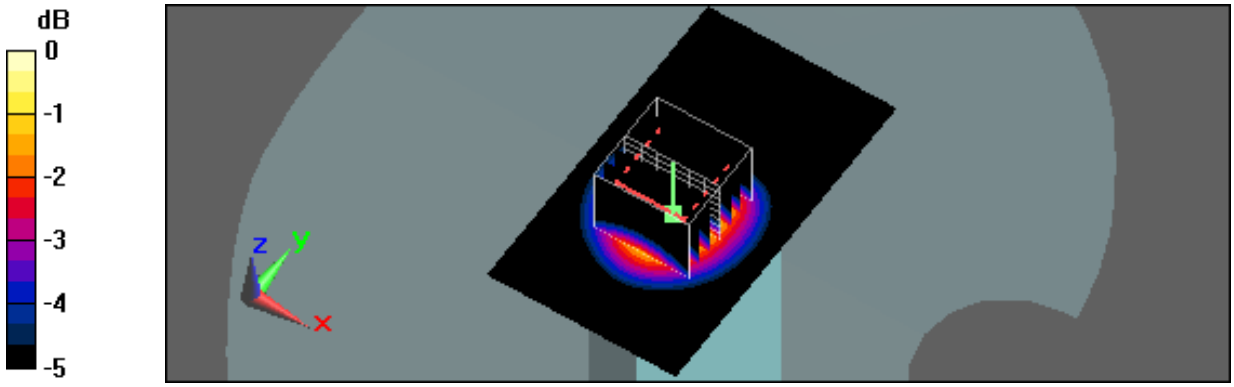
#70_Flat_WCDMA Band II CH9262_Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x71xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.482 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 17.9 V/m; Power Drift = -0.083 dB
Peak SAR (extrapolated) = 0.607 W/kg
SAR(1 g) = 0.402 mW/g; SAR(10 g) = 0.246 mW/g
Maximum value of SAR (measured) = 0.478 mW/g



0 dB = 0.478mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/11/2012 11:20:26 PM

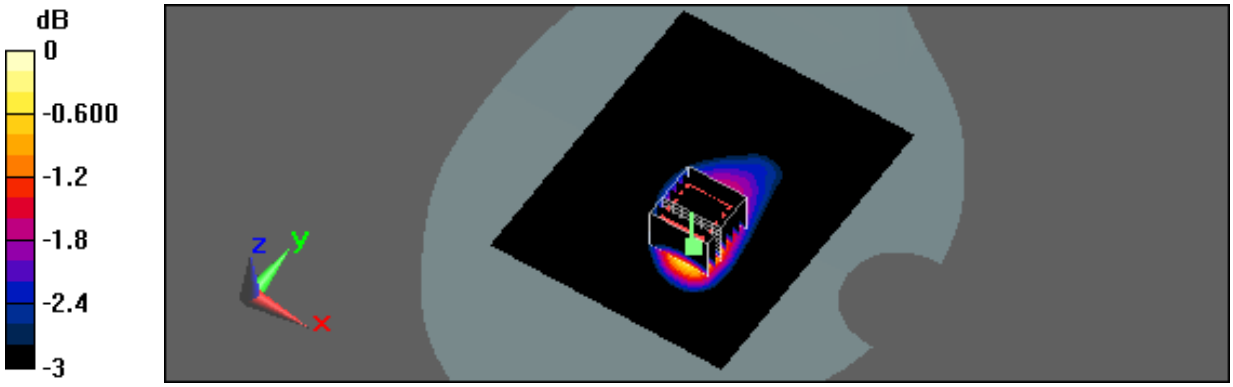
#71_Flat_WCDMA Band V CH4132_Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.724 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 23.2 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 0.825 W/kg
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.438 mW/g
Maximum value of SAR (measured) = 0.705 mW/g



0 dB = 0.705mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/11/2012 10:31:12 PM

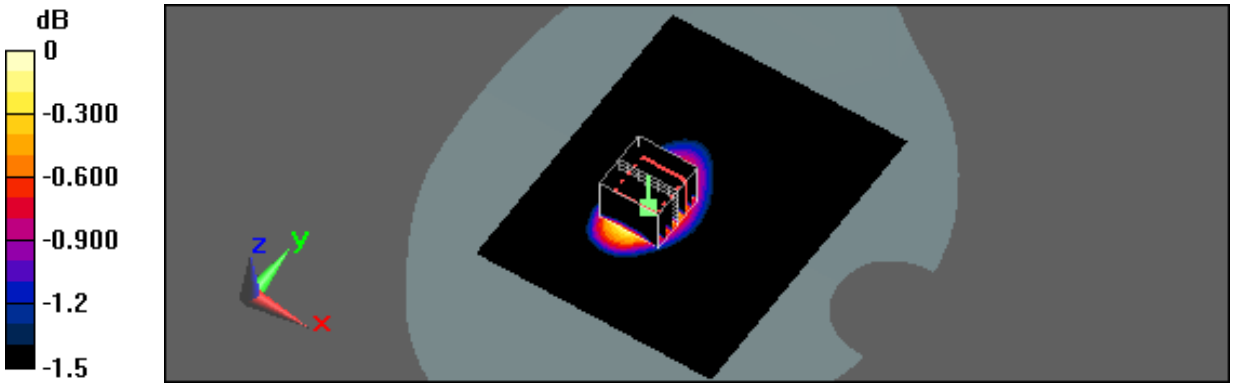
#72_Flat_WCDMA Band V CH4132_Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.527 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 21.7 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 0.586 W/kg
SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.347 mW/g
Maximum value of SAR (measured) = 0.511 mW/g



0 dB = 0.511mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/12/2012 12:23:54 AM

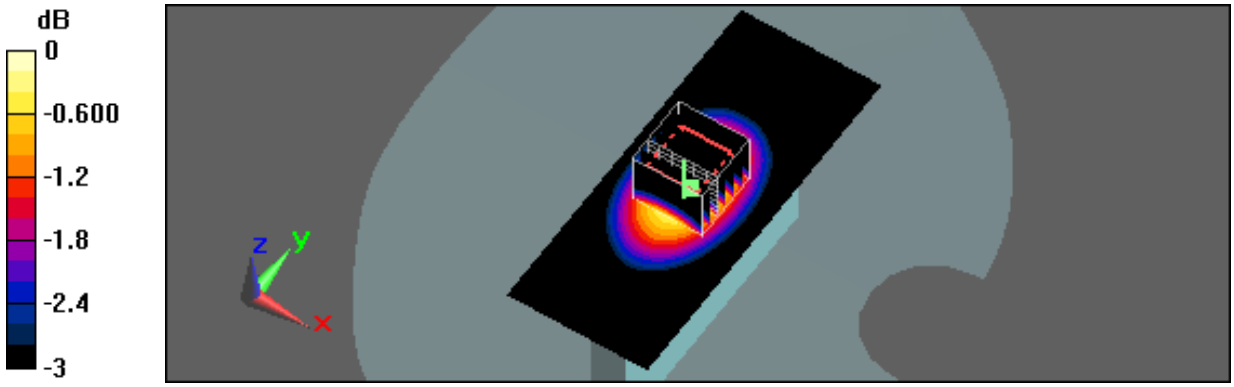
#73_Flat_WCDMA Band V CH4132_Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.221 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.1 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(1 g) = 0.194 mW/g; SAR(10 g) = 0.139 mW/g
Maximum value of SAR (measured) = 0.218 mW/g



0 dB = 0.218mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/12/2012 12:49:31 AM

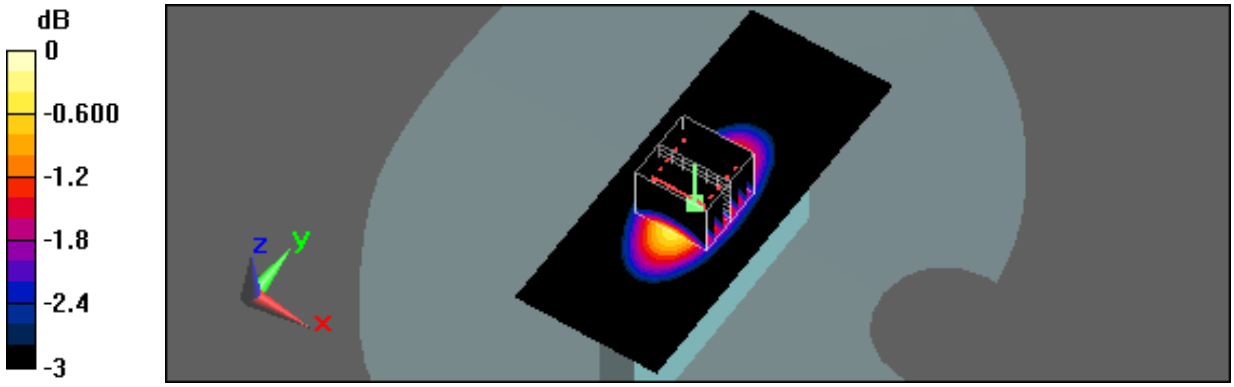
#74_Flat_WCDMA Band V CH4132_Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.547 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 23.8 V/m; Power Drift = 0.118 dB
Peak SAR (extrapolated) = 0.665 W/kg
SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.561 mW/g



0 dB = 0.561mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/12/2012 1:37:07 AM

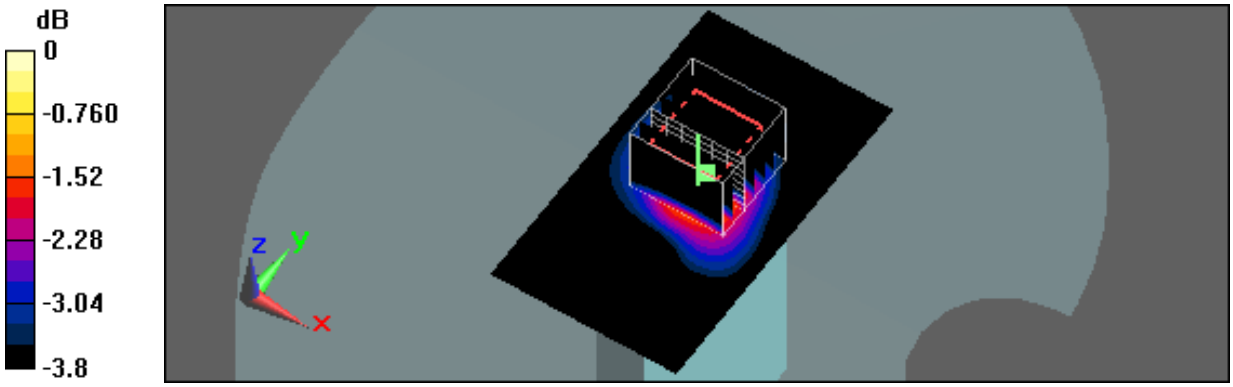
#75_Flat_WCDMA Band V CH4132_Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x71xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.051 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 6.86 V/m; Power Drift = 0.00445 dB
Peak SAR (extrapolated) = 0.068 W/kg
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.026 mW/g
Maximum value of SAR (measured) = 0.050 mW/g



0 dB = 0.050mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/18/2012 7:38:31 PM

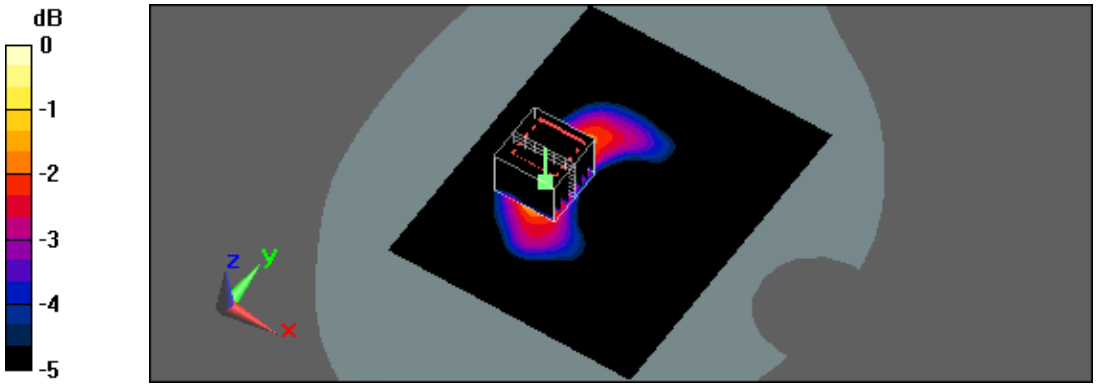
#81_Flat_802.11b CH6_Side 1 to phantom 10mm_1M
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.93 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(8.22, 8.22, 8.22); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.035 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.4 V/m; Power Drift = 0.135 dB
Peak SAR (extrapolated) = 0.061 W/kg
SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.015 mW/g
Maximum value of SAR (measured) = 0.036 mW/g



0 dB = 0.036mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/18/2012 8:08:25 PM

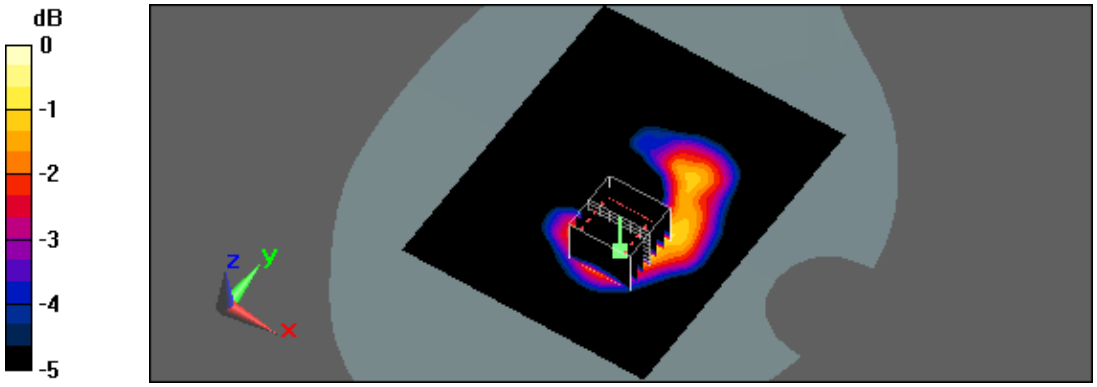
#82_Flat_802.11b CH6_Side 2 to phantom 10mm_1M
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.93 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(8.22, 8.22, 8.22); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.031 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.47 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.050 W/kg
SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.013 mW/g
Maximum value of SAR (measured) = 0.030 mW/g



0 dB = 0.030mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/18/2012 8:39:33 PM

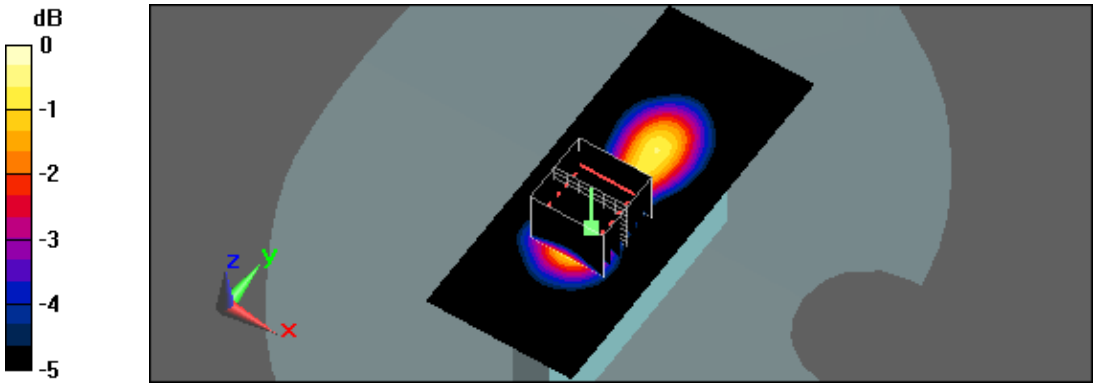
#83_Flat_802.11b CH6_Side 3 to phantom 10mm_1M
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.93 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(8.22, 8.22, 8.22); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (41x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.061 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.79 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 0.098 W/kg
SAR(1 g) = 0.048 mW/g; SAR(10 g) = 0.024 mW/g
Maximum value of SAR (measured) = 0.061 mW/g



0 dB = 0.061mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 8:04:14 PM

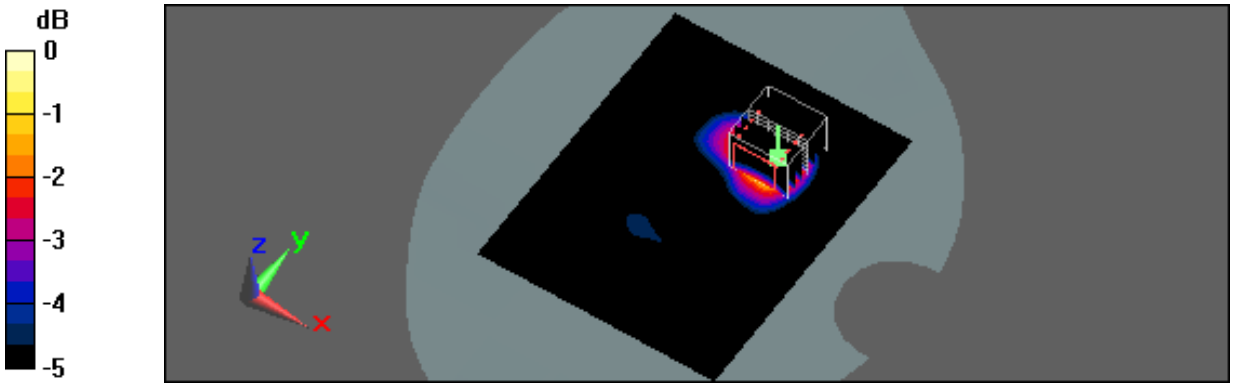
#6_Flat_LTE Band 2 BW 20M CH18700_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 1.6 W/kg
SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.569 mW/g
Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 1:16:46 PM

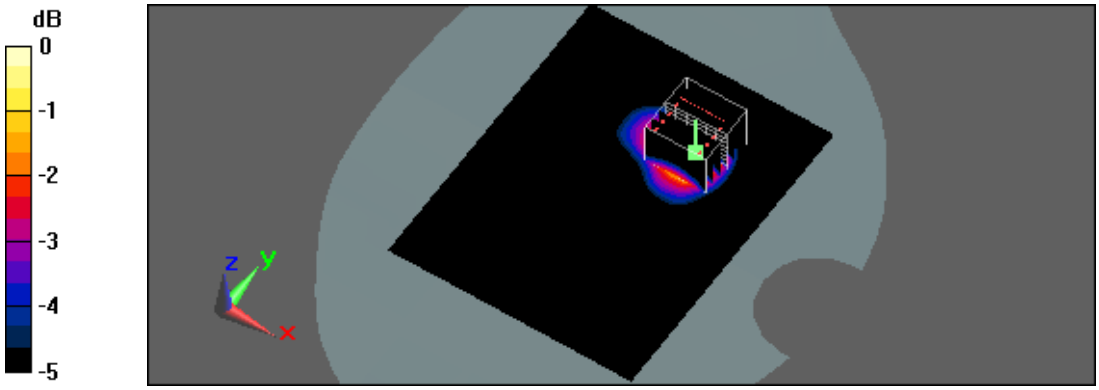
#1_Flat_LTE Band 2 BW 20M CH18900_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.39 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.5 V/m; Power Drift = -0.054 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.654 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



0 dB = 1.38mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 8:34:14 PM

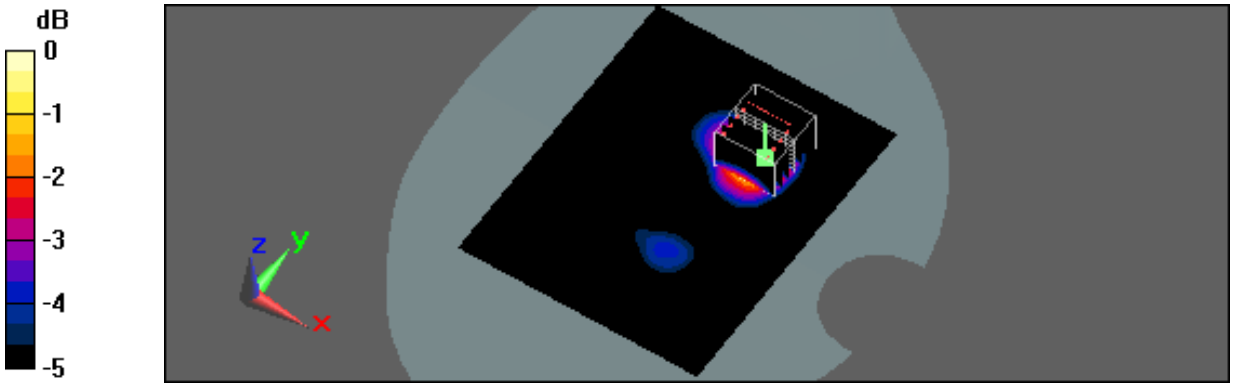
#7_Flat_LTE Band 2 BW 20M CH19100_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.14 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11.3 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.924 mW/g; SAR(10 g) = 0.534 mW/g
Maximum value of SAR (measured) = 1.12 mW/g



0 dB = 1.12mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 2:48:53 PM

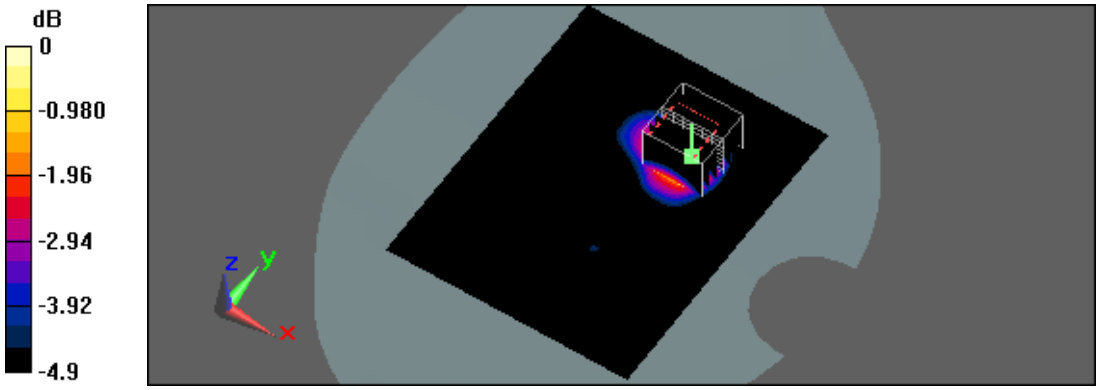
#8_Flat_LTE Band 2 BW 20M CH18900_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.974 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.5 V/m; Power Drift = 0.064 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.473 mW/g
Maximum value of SAR (measured) = 0.995 mW/g



0 dB = 0.995mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 9:29:07 PM

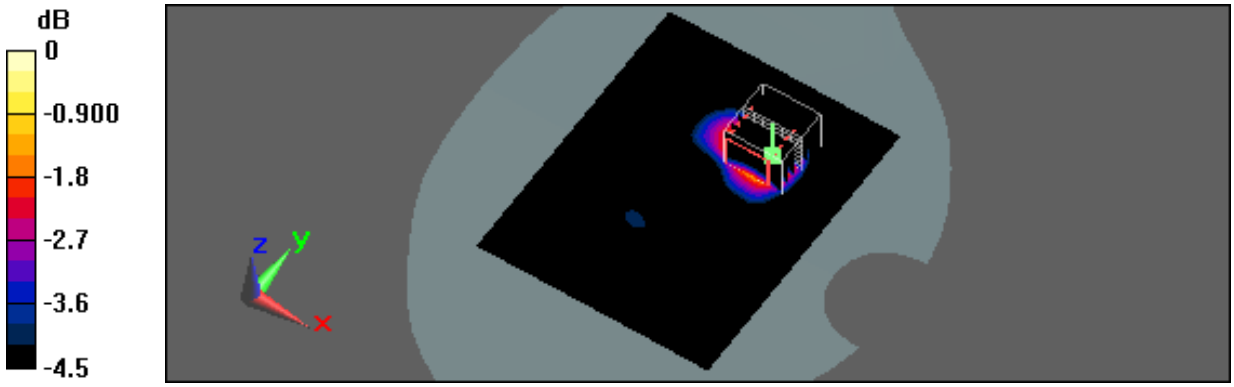
#9_Flat_LTE Band 2 BW 20M CH18700_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.46 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.872 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.2 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.706 mW/g; SAR(10 g) = 0.417 mW/g
Maximum value of SAR (measured) = 0.849 mW/g



0 dB = 0.849mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 9:02:24 PM

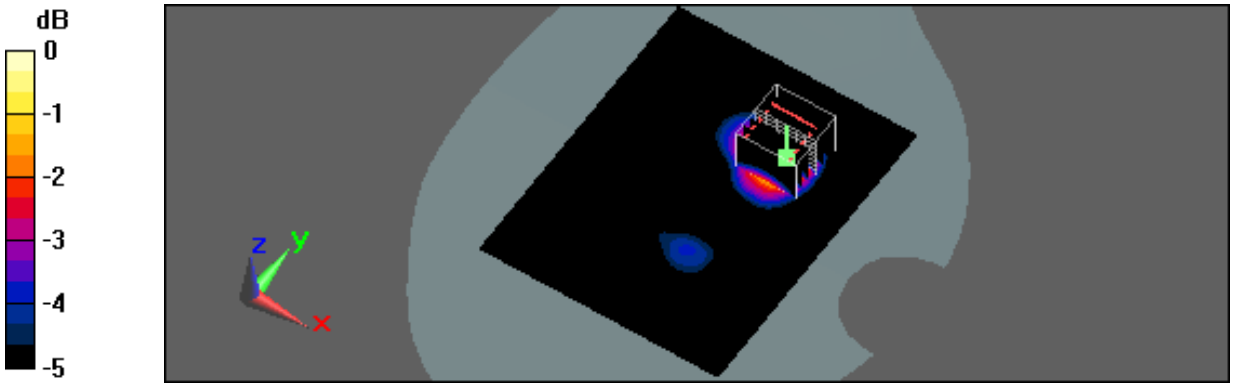
#10_Flat_LTE Band 2 BW 20M CH19100_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; εr = 53.4; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.851 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.56 V/m; Power Drift = -0.00832 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.686 mW/g; SAR(10 g) = 0.394 mW/g
Maximum value of SAR (measured) = 0.840 mW/g



0 dB = 0.840mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 4:11:01 PM

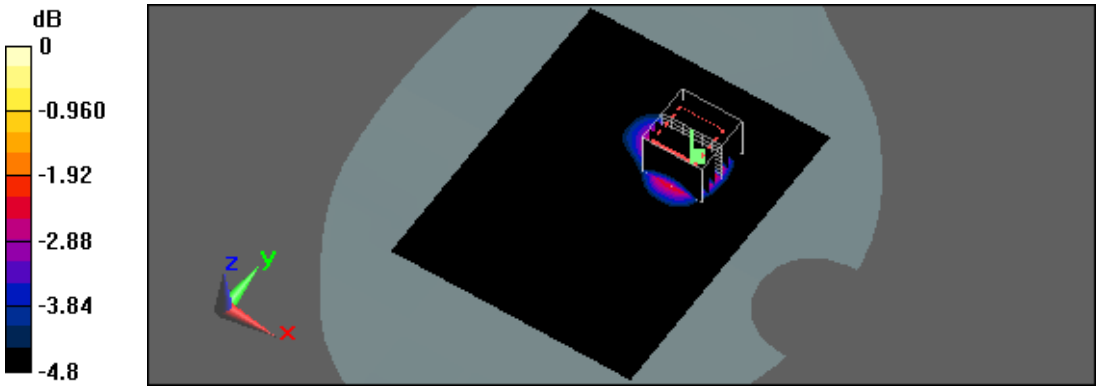
#11_Flat_LTE Band 2 BW 20M CH18900_QPSK with 100 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.5 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.473 mW/g
Maximum value of SAR (measured) = 0.996 mW/g



0 dB = 0.996mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 7:08:21 PM

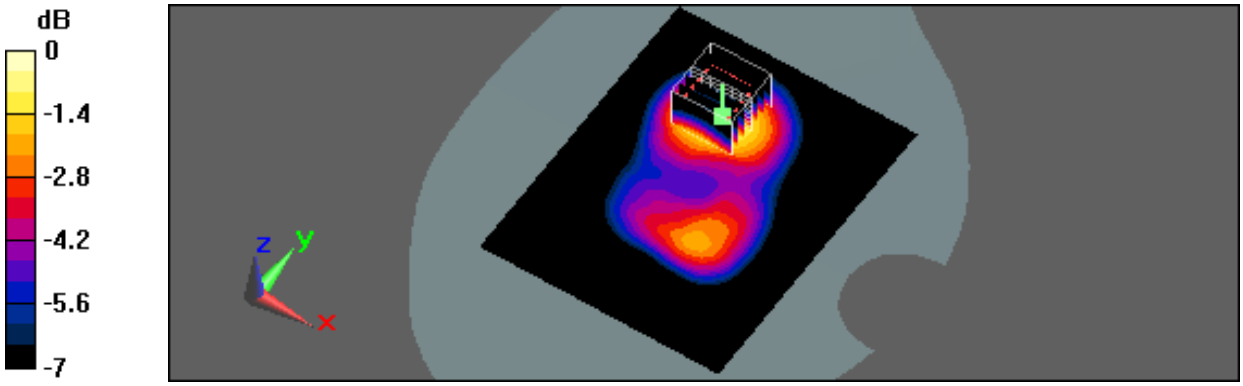
#76_Flat_LTE Band 2 BW 20M CH18700_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.46 mho/m; ε_r = 53.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.977 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.7 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.503 mW/g
Maximum value of SAR (measured) = 0.973 mW/g



0 dB = 0.973mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 10:52:12 AM

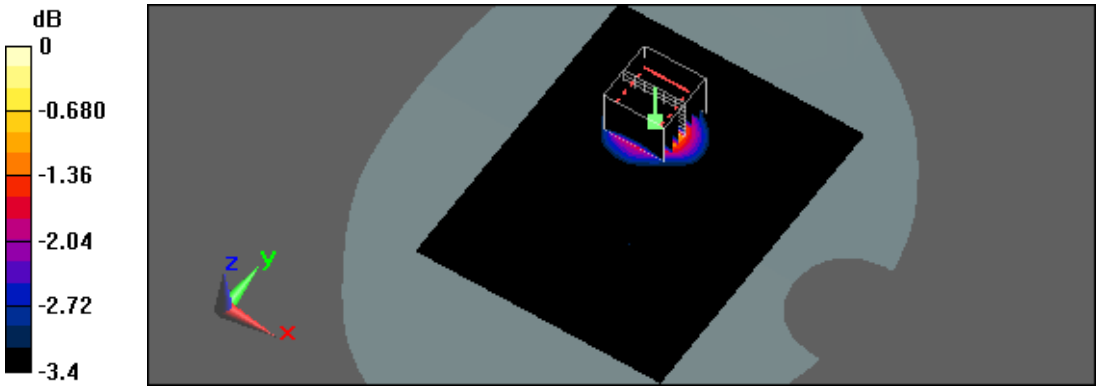
#2_Flat_LTE Band 2 BW 20M CH18900_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.8 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.898 mW/g; SAR(10 g) = 0.550 mW/g
Maximum value of SAR (measured) = 1.07 mW/g



0 dB = 1.07mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 7:36:30 PM

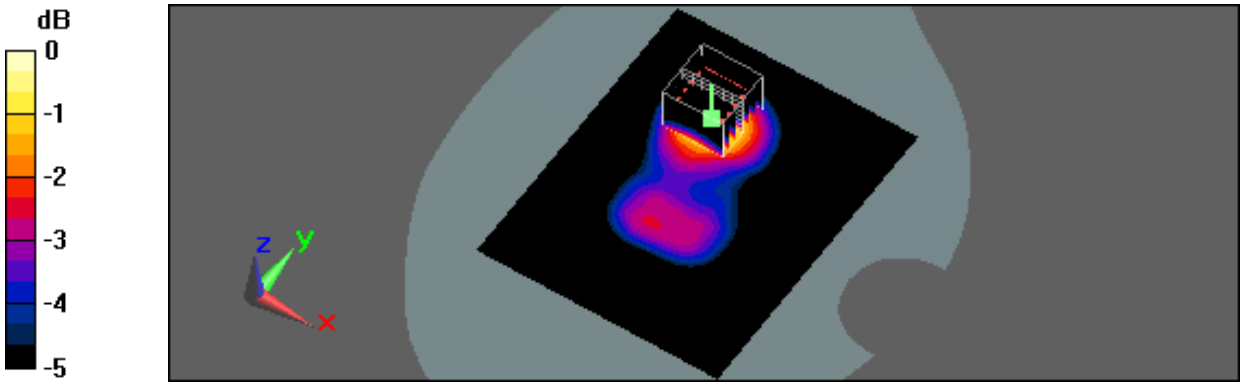
#77_Flat_LTE Band 2 BW 20M CH19100_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.862 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.8 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 1.1 W/kg
SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.443 mW/g
Maximum value of SAR (measured) = 0.870 mW/g



0 dB = 0.870mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 8:07:00 PM

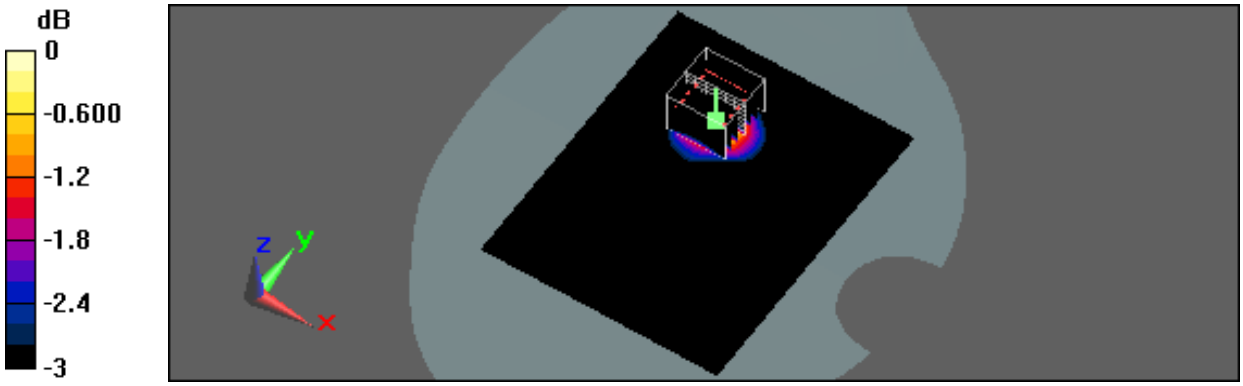
#78_Flat_LTE Band 2 BW 20M CH18900_QPSK with 50 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.686 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.3 V/m; Power Drift = 0.089 dB
Peak SAR (extrapolated) = 0.885 W/kg
SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.353 mW/g
Maximum value of SAR (measured) = 0.688 mW/g



0 dB = 0.688mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 9:18:12 PM

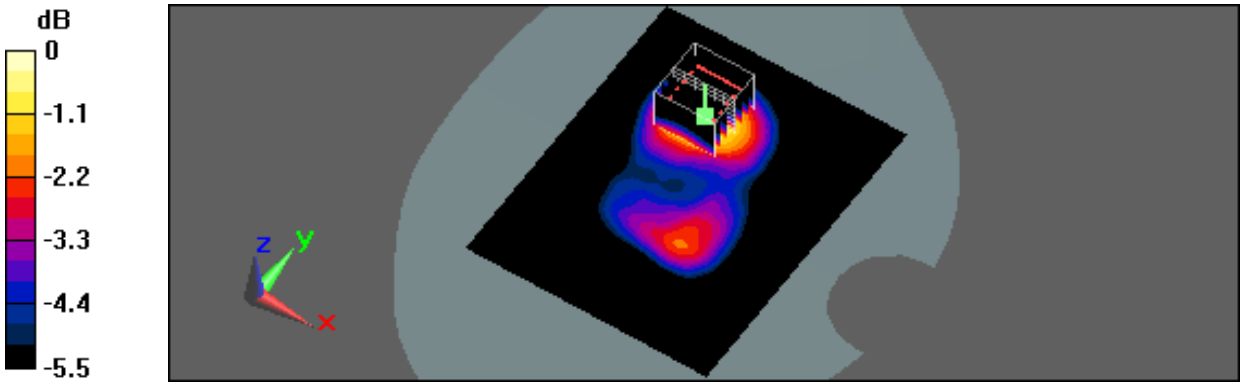
#79_Flat_LTE Band 2 BW 20M CH18700_QPSK with 50 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.46 mho/m; ε_r = 53.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.721 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.9 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 0.924 W/kg
SAR(1 g) = 0.595 mW/g; SAR(10 g) = 0.365 mW/g
Maximum value of SAR (measured) = 0.707 mW/g



0 dB = 0.707mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 9:45:02 PM

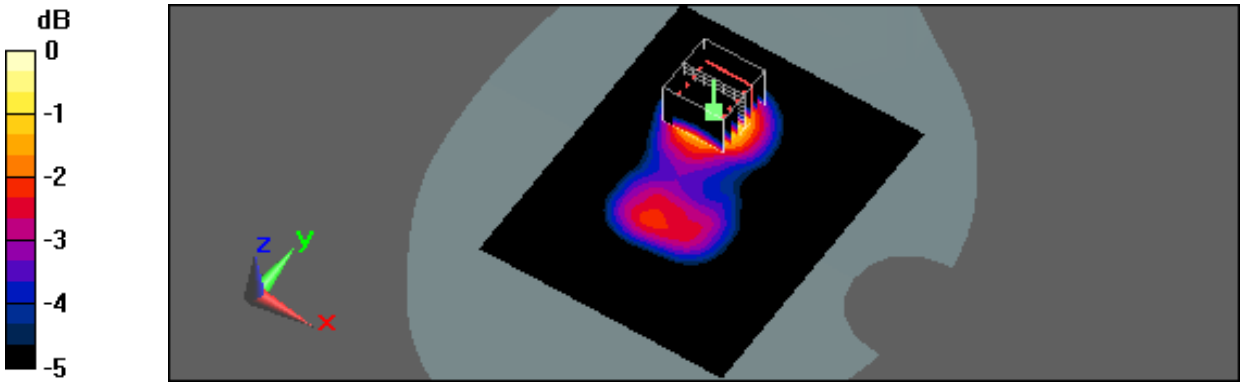
#80_Flat_LTE Band 2 BW 20M CH19100_QPSK with 50 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.621 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.5 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.568 mW/g; SAR(10 g) = 0.336 mW/g
Maximum value of SAR (measured) = 0.621 mW/g



0 dB = 0.621mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/15/2012 11:27:14 PM

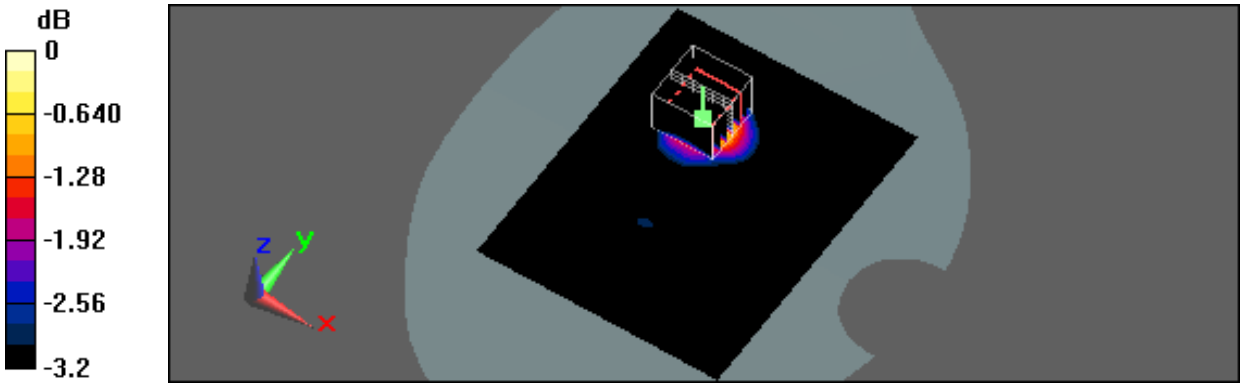
#23_Flat_LTE Band 2 BW 20M CH18900_QPSK with 100 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.821 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.5 V/m; Power Drift = 0.120 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.698 mW/g; SAR(10 g) = 0.422 mW/g
Maximum value of SAR (measured) = 0.827 mW/g



0 dB = 0.710mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 11:23:50 AM

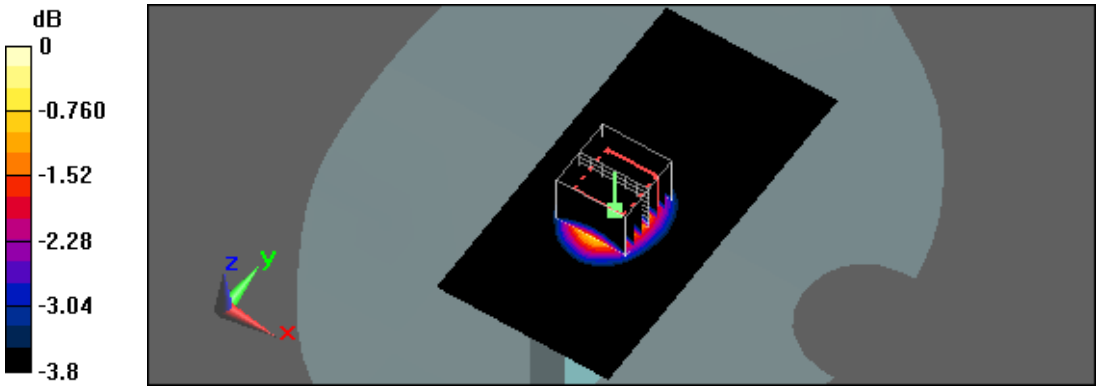
#3_Flat_LTE Band 2 BW 20M CH18900_QPSK with 1 RB Size 0 RB Offset Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.175 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.1 V/m; Power Drift = -0.143 dB
Peak SAR (extrapolated) = 0.230 W/kg
SAR(1 g) = 0.146 mW/g; SAR(10 g) = 0.090 mW/g
Maximum value of SAR (measured) = 0.175 mW/g



0 dB = 0.175mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 12:18:11 PM

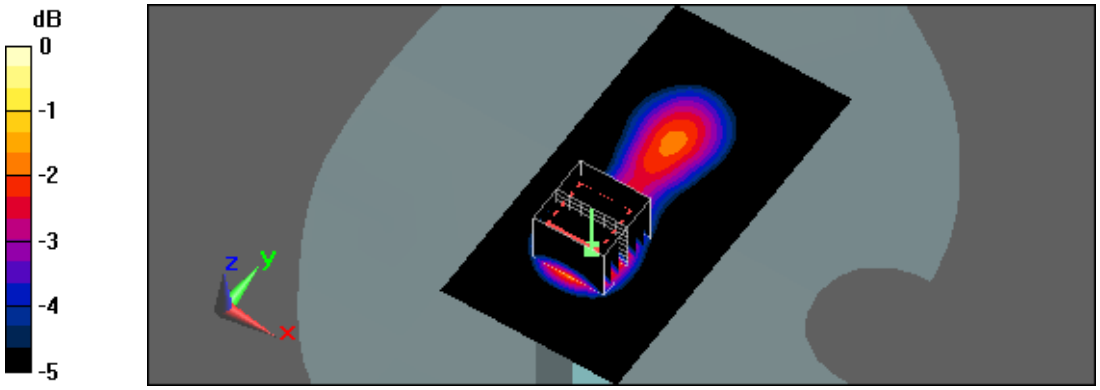
#4_Flat_LTE Band 2 BW 20M CH18900_QPSK with 1 RB Size 0 RB Offset Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.679 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16.3 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.896 W/kg
SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.333 mW/g
Maximum value of SAR (measured) = 0.683 mW/g



0 dB = 0.683mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 12:46:47 PM

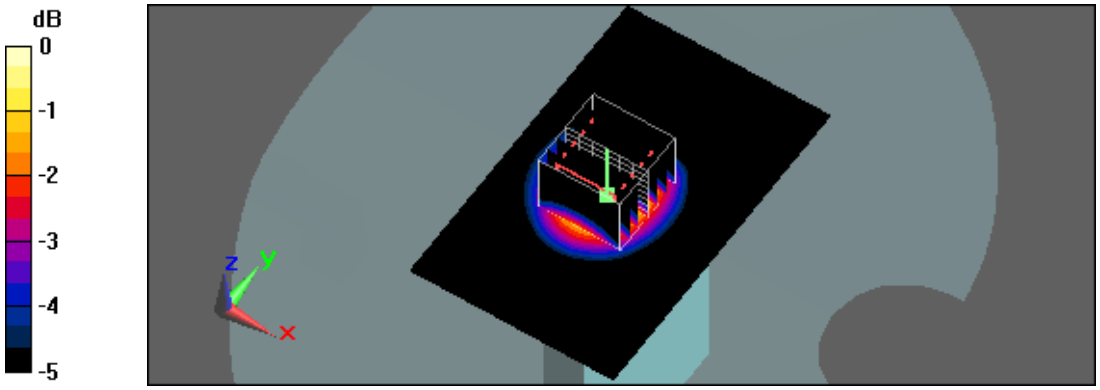
#5_Flat_LTE Band 2 BW 20M CH18900_QPSK with 1 RB Size 0 RB Offset Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 2 BW:20M; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 53.5; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.04, 9.04, 9.04); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x81xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.578 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 18.6 V/m; Power Drift = 0.065 dB
Peak SAR (extrapolated) = 0.718 W/kg
SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.287 mW/g
Maximum value of SAR (measured) = 0.558 mW/g



0 dB = 0.558mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 10:43:39 PM

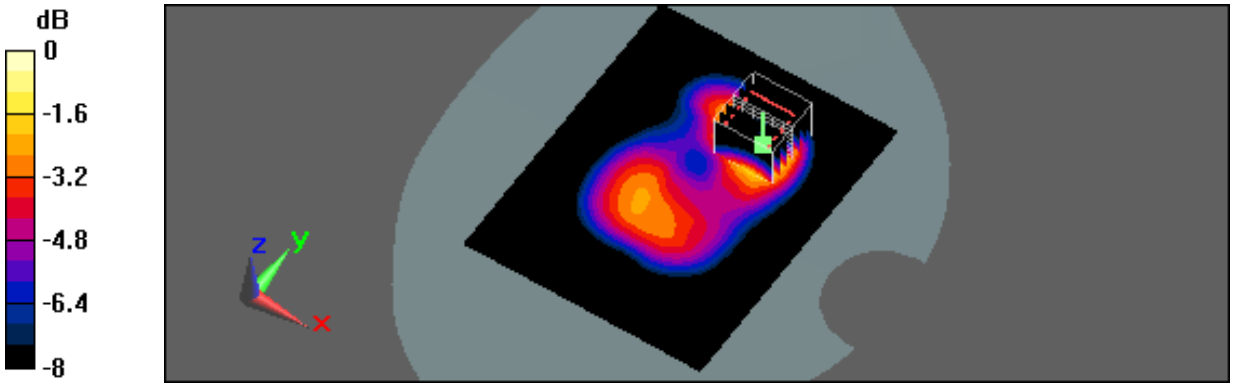
#17_Flat_LTE Band 4 BW 20M CH20050_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.46 mho/m; εr = 53.7; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16.6 V/m; Power Drift = 0.072 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.878 mW/g; SAR(10 g) = 0.494 mW/g
Maximum value of SAR (measured) = 1.08 mW/g



0 dB = 1.08mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 11:12:16 PM

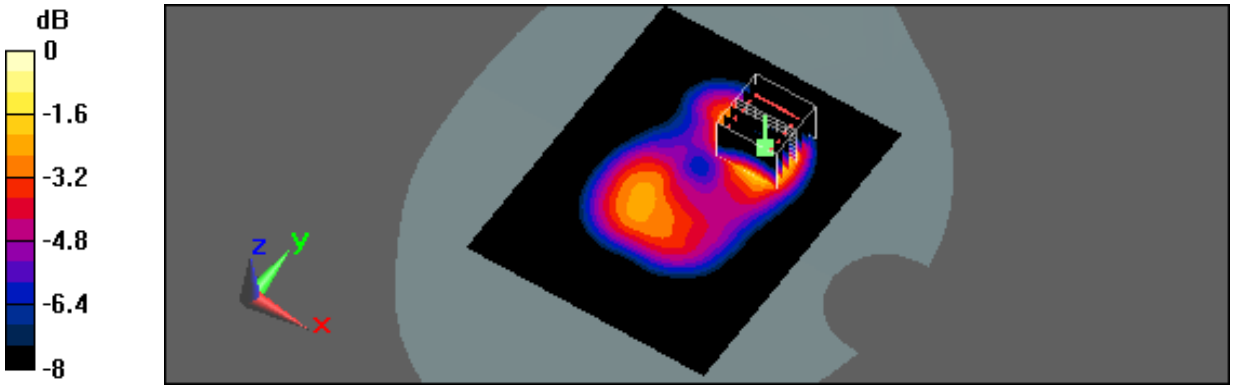
#18_Flat_LTE Band 4 BW 20M CH20175_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.47 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.903 mW/g; SAR(10 g) = 0.509 mW/g
Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 10:01:22 PM

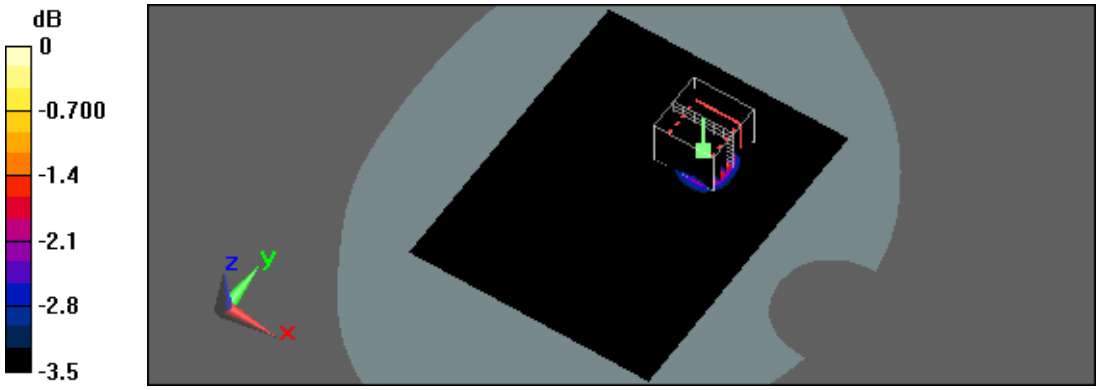
#12_Flat_LTE Band 4 BW 20M CH20300_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.45 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.7 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.648 mW/g
Maximum value of SAR (measured) = 1.4 mW/g



0 dB = 1.4mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/3/2012 11:40:56 PM

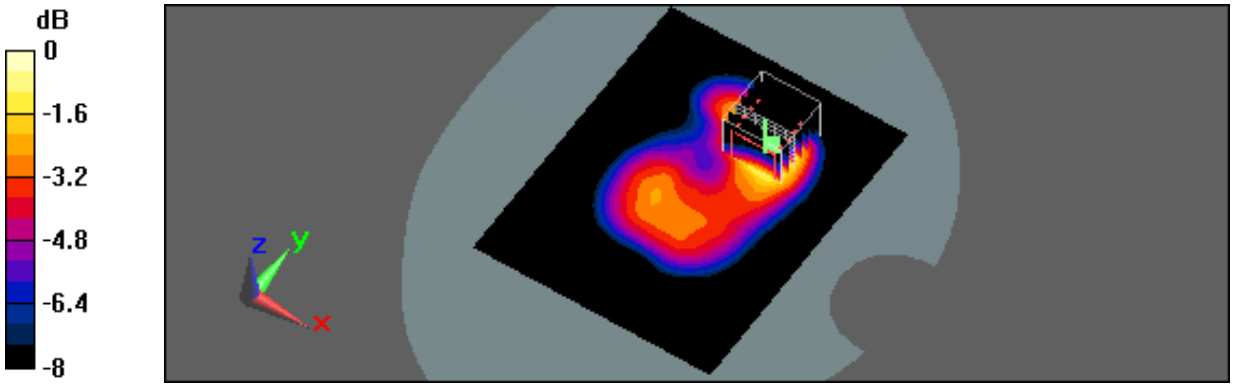
#20_Flat_LTE Band 4 BW 20M CH20050_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.46 mho/m; εr = 53.7; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.796 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.9 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.622 mW/g; SAR(10 g) = 0.351 mW/g
Maximum value of SAR (measured) = 0.753 mW/g



0 dB = 0.753mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 12:07:45 AM

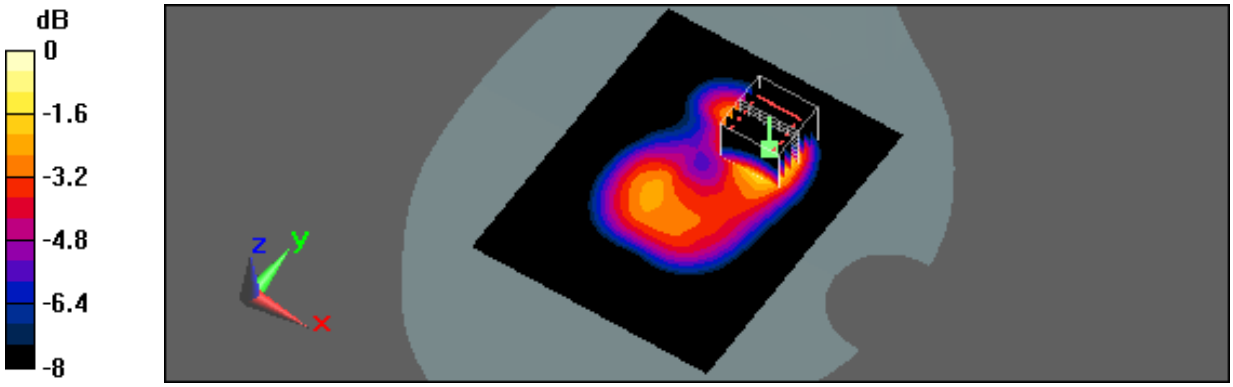
#21_Flat_LTE Band 4 BW 20M CH20175_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.47 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.788 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.3 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.360 mW/g
Maximum value of SAR (measured) = 0.784 mW/g



0 dB = 0.784mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 11:26:01 PM

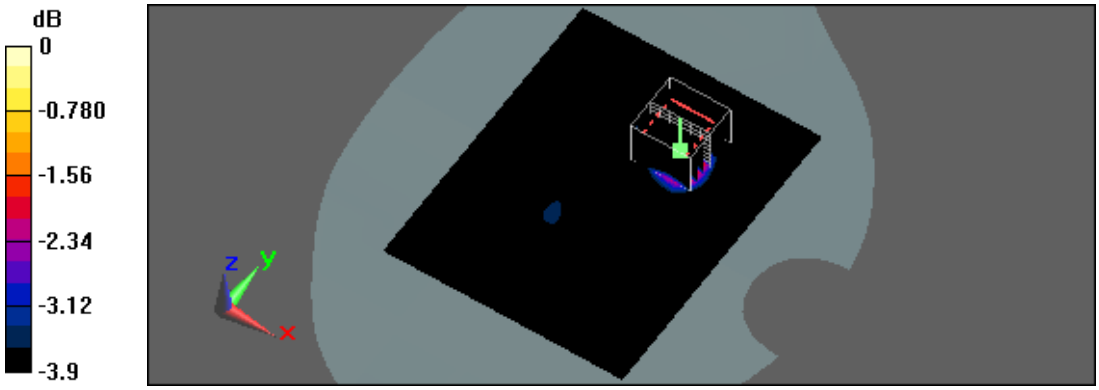
#19_Flat_LTE Band 4 BW 20M CH20300_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.2 V/m; Power Drift = 0.128 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.911 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 1.12 mW/g



0 dB = 1.12mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 1:21:43 AM

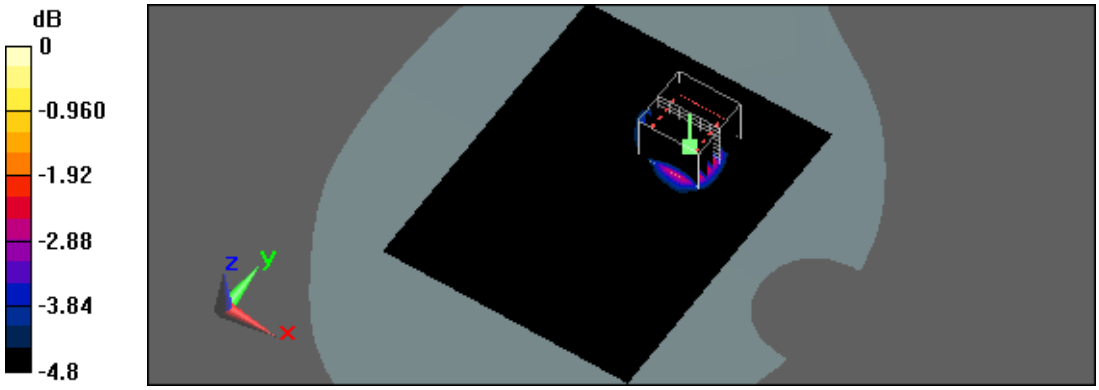
#22_Flat_LTE Band 4 BW 20M CH20300_QPSK with 100 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.33 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.8 V/m; Power Drift = 0.129 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.614 mW/g
Maximum value of SAR (measured) = 1.39 mW/g



0 dB = 1.39mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 9:02:45 PM

#13_Flat_LTE Band 4 BW 20M CH20300_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

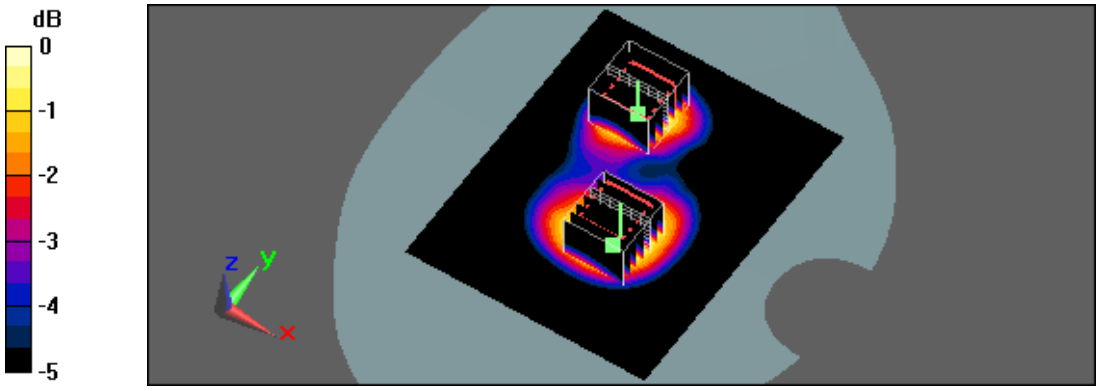
Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.754 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.9 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.959 W/kg
SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.362 mW/g
Maximum value of SAR (measured) = 0.730 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.9 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.813 W/kg
SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.368 mW/g
Maximum value of SAR (measured) = 0.649 mW/g



0 dB = 0.649mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 7:37:20 PM

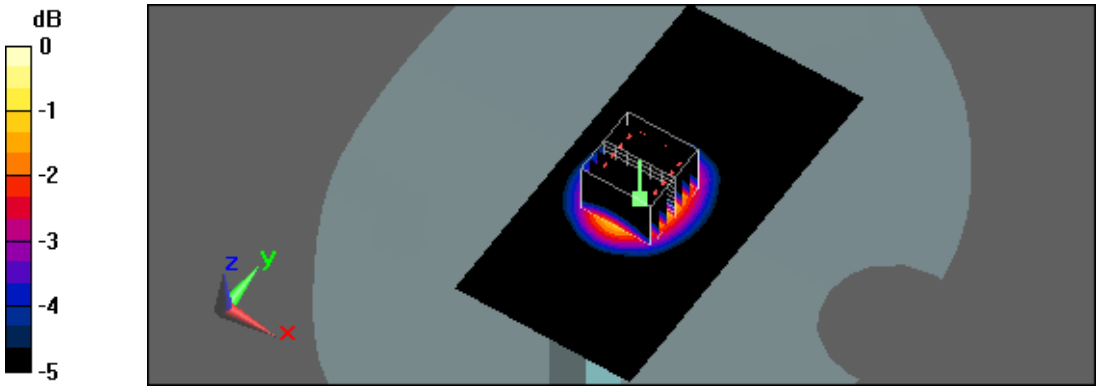
#14_Flat_LTE Band 4 BW 20M CH20300_QPSK with 1 RB Size 0 RB Offset Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.216 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.1 V/m; Power Drift = -0.083 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.177 mW/g; SAR(10 g) = 0.109 mW/g
Maximum value of SAR (measured) = 0.209 mW/g



0 dB = 0.209mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 8:04:48 PM

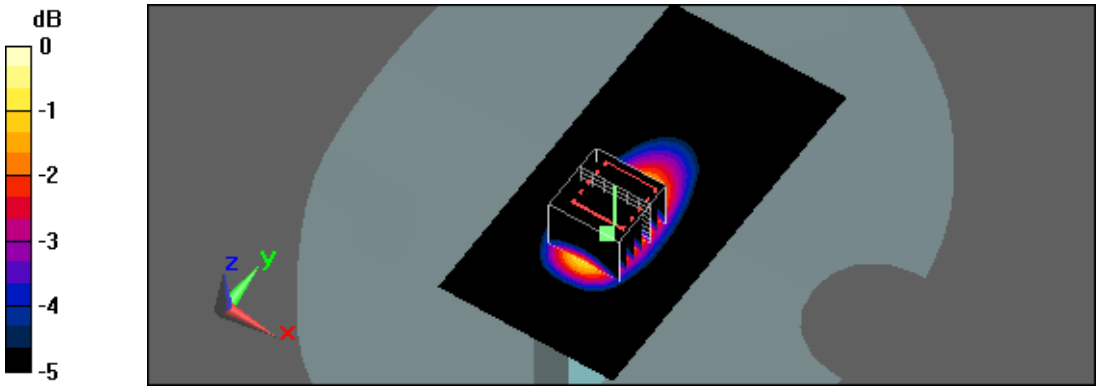
#15_Flat_LTE Band 4 BW 20M CH20300_QPSK with 1 RB Size 0 RB Offset Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.698 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 19.5 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.905 W/kg
SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.358 mW/g
Maximum value of SAR (measured) = 0.704 mW/g



0 dB = 0.704mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/27/2012 8:34:39 PM

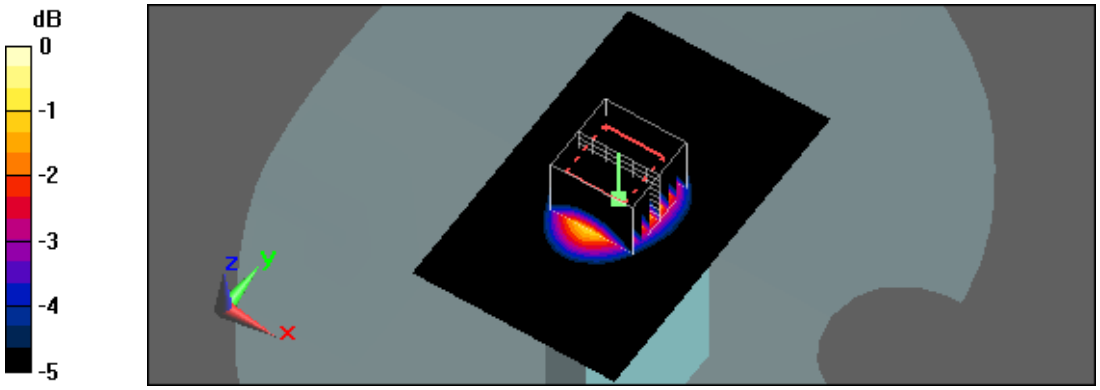
#16_Flat_LTE Band 4 BW 20M CH20300_QPSK with 1 RB Size 0 RB Offset Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 4 BW:20MHz; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.48 mho/m; εr = 53.6; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(9.7, 9.7, 9.7); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x81xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.795 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 22.3 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.937 W/kg
SAR(1 g) = 0.625 mW/g; SAR(10 g) = 0.379 mW/g
Maximum value of SAR (measured) = 0.746 mW/g



0 dB = 0.746mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 1:24:10 AM

#29_Flat_LTE Band 5 BW 10M CH20450_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

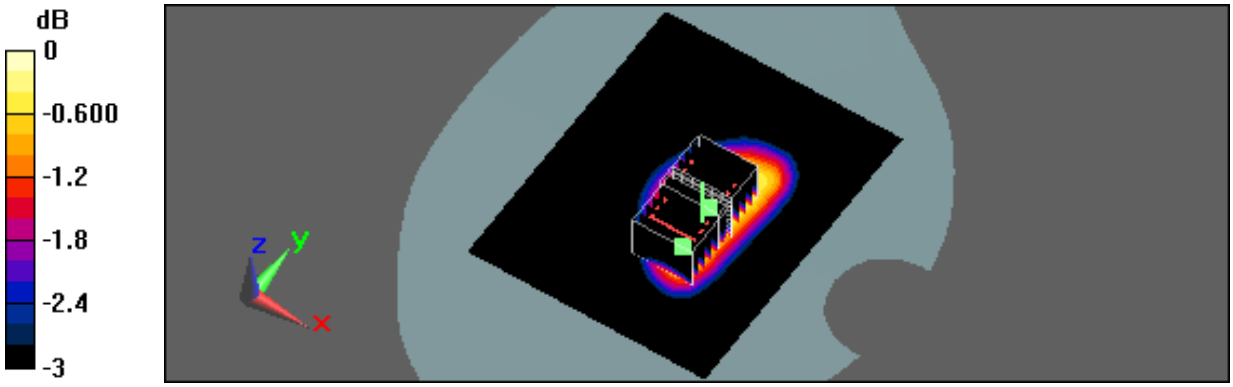
Communication System: LTE Band 5 BW:10M; Frequency: 829 MHz;Duty Cycle: 1:1
Medium parameters used: f = 829 MHz; σ = 0.976 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.655 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 25.1 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.728 W/kg
SAR(1 g) = 0.582 mW/g; SAR(10 g) = 0.440 mW/g
Maximum value of SAR (measured) = 0.647 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 25.1 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.731 W/kg
SAR(1 g) = 0.582 mW/g; SAR(10 g) = 0.425 mW/g



0 dB = 0.647mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 2:07:52 AM

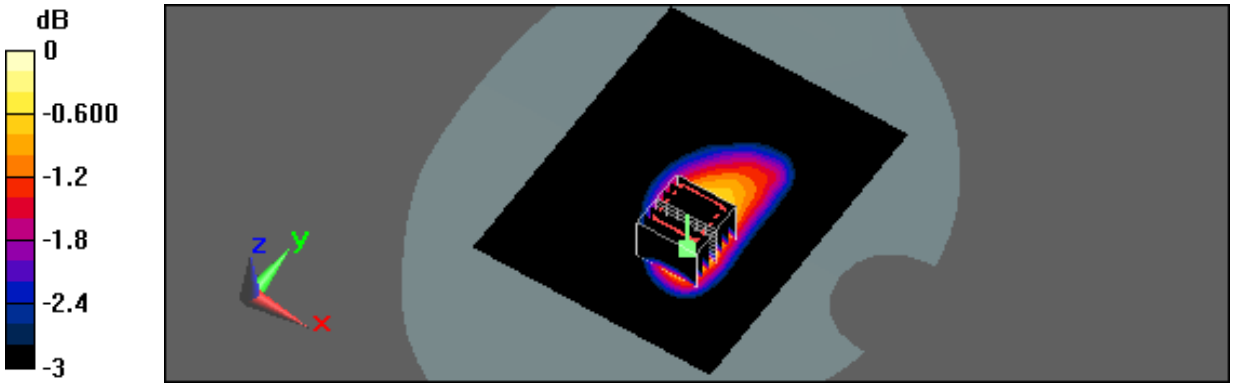
#30_Flat_LTE Band 5 BW 10M CH20525_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.984 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.684 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 24 V/m; Power Drift = -0.049 dB
Peak SAR (extrapolated) = 0.782 W/kg
SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.442 mW/g
Maximum value of SAR (measured) = 0.675 mW/g



0 dB = 0.675mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 8:54:12 AM

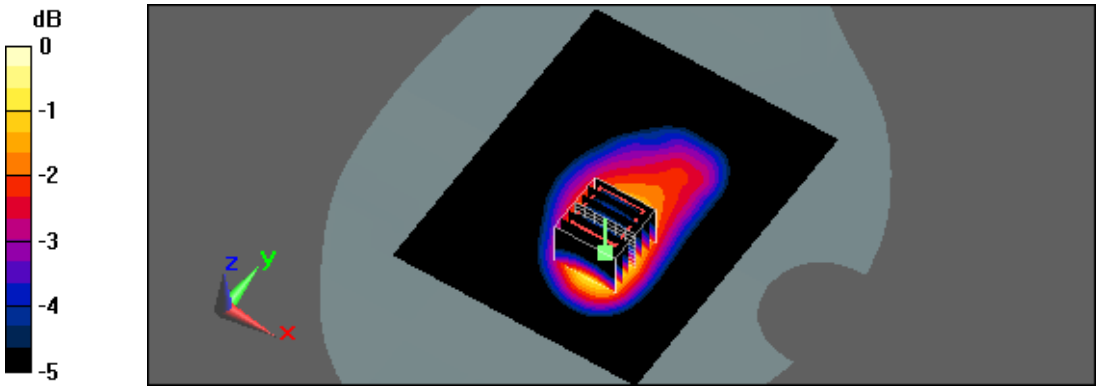
#24_Flat_LTE Band 5 BW 10M CH20600_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.779 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 23.5 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.922 W/kg
SAR(1 g) = 0.677 mW/g; SAR(10 g) = 0.482 mW/g
Maximum value of SAR (measured) = 0.766 mW/g



0 dB = 0.766mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 3:04:18 AM

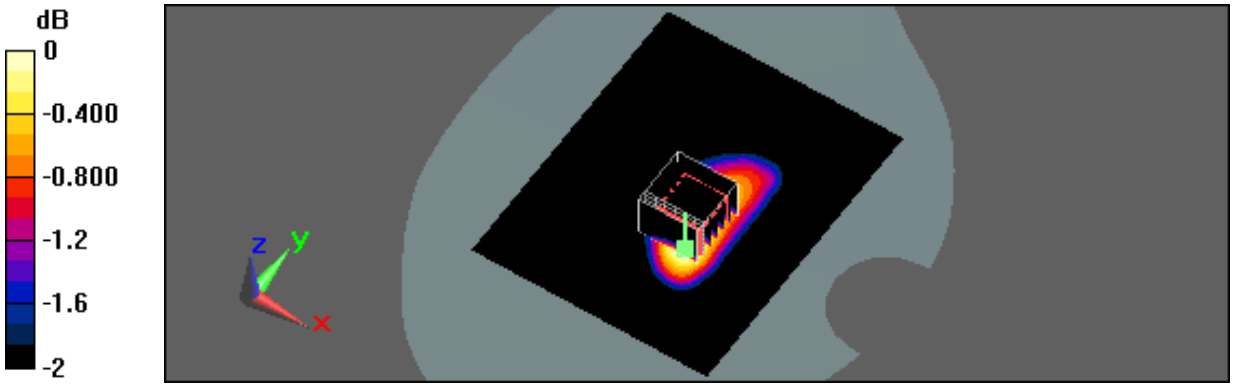
#32_Flat_LTE Band 5 BW 10M CH20450_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm-1
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 829 MHz;Duty Cycle: 1:1
Medium parameters used: f = 829 MHz; σ = 0.976 mho/m; εr = 54.9; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.528 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 21.5 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.598 W/kg
SAR(1 g) = 0.465 mW/g; SAR(10 g) = 0.346 mW/g
Maximum value of SAR (measured) = 0.517 mW/g



0 dB = 0.517mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 2:36:46 AM

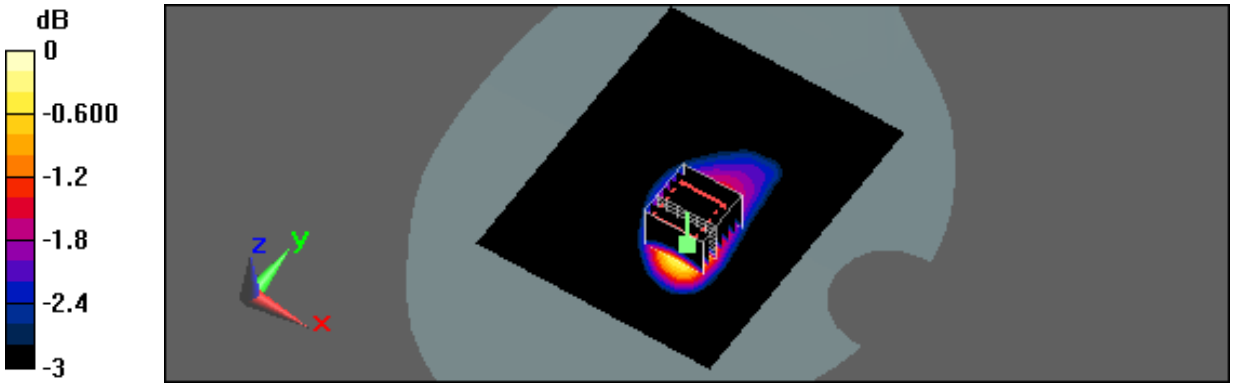
#33_Flat_LTE Band 5 BW 10M CH20525_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.984 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.572 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 20.6 V/m; Power Drift = -0.019 dB
Peak SAR (extrapolated) = 0.665 W/kg
SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.358 mW/g
Maximum value of SAR (measured) = 0.563 mW/g



0 dB = 0.563mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 11:13:46 AM

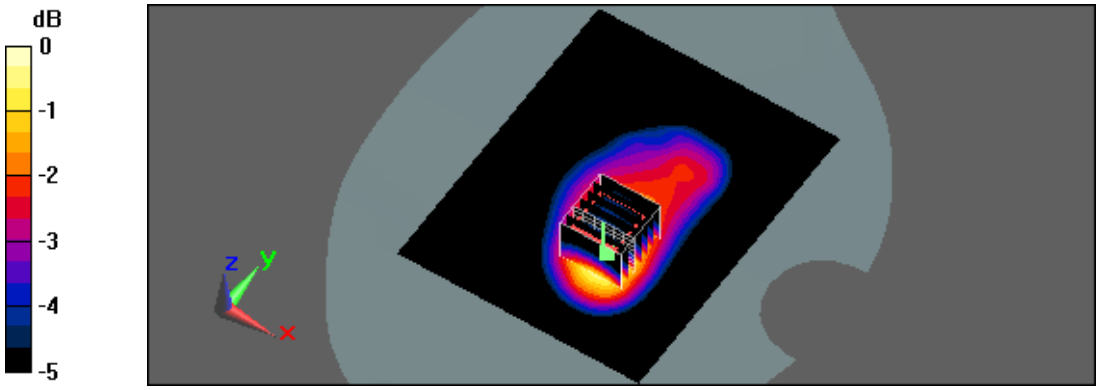
#31_Flat_LTE Band 5 BW 10M CH20600_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.615 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 20.1 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.723 W/kg
SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.374 mW/g
Maximum value of SAR (measured) = 0.605 mW/g



0 dB = 0.605mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 12:53:36 PM

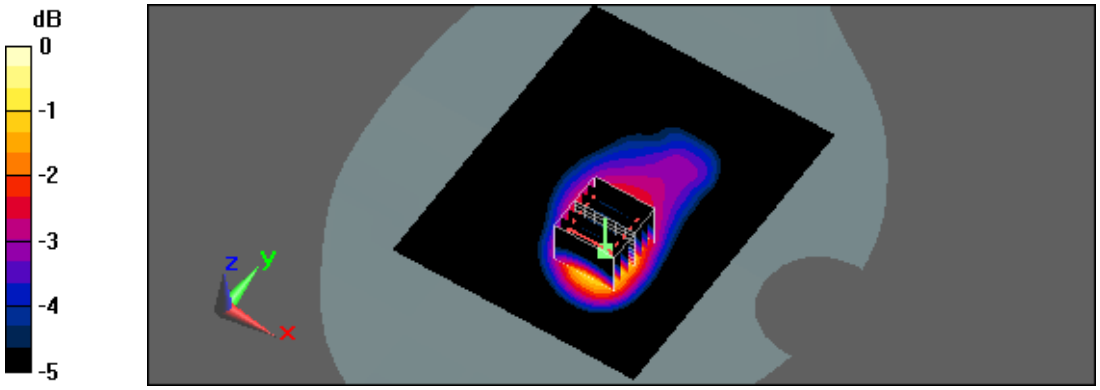
#34_Flat_LTE Band 5 BW 10M CH20600_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.623 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 19.3 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.752 W/kg
SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.373 mW/g
Maximum value of SAR (measured) = 0.621 mW/g



0 dB = 0.621mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 4:17:14 AM

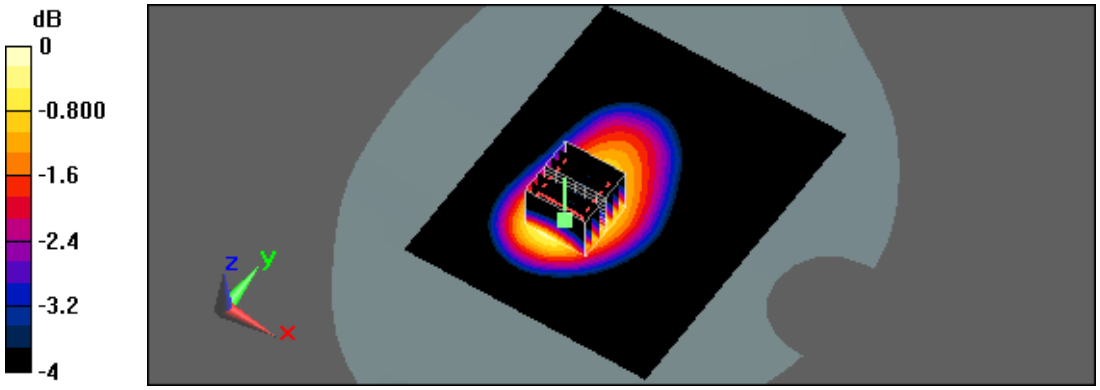
#25_Flat_LTE Band 5 BW 10M CH20600_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.572 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 21.4 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.660 W/kg
SAR(1 g) = 0.514 mW/g; SAR(10 g) = 0.381 mW/g
Maximum value of SAR (measured) = 0.569 mW/g



0 dB = 0.569mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 5:06:23 AM

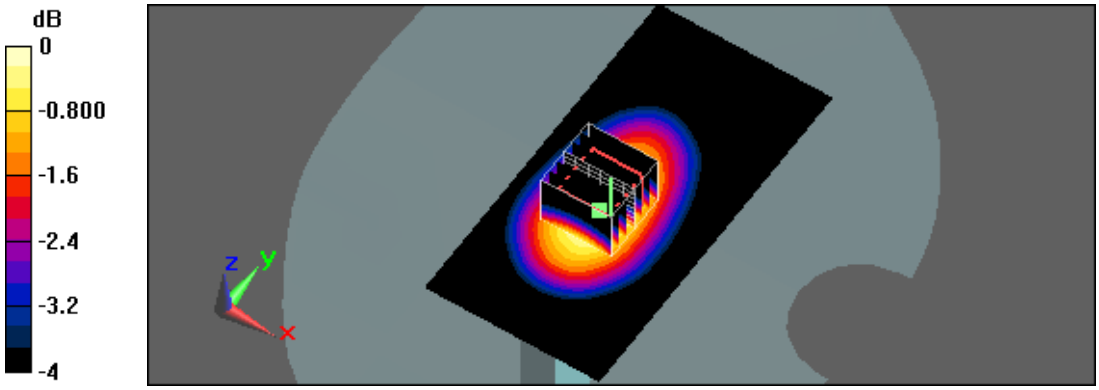
#26_Flat_LTE Band 5 BW 10M CH20600_QPSK with 1 RB Size 0 RB Offset Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.220 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14.7 V/m; Power Drift = 0.038 dB
Peak SAR (extrapolated) = 0.269 W/kg
SAR(1 g) = 0.196 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.221 mW/g



0 dB = 0.221mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 5:32:17 AM

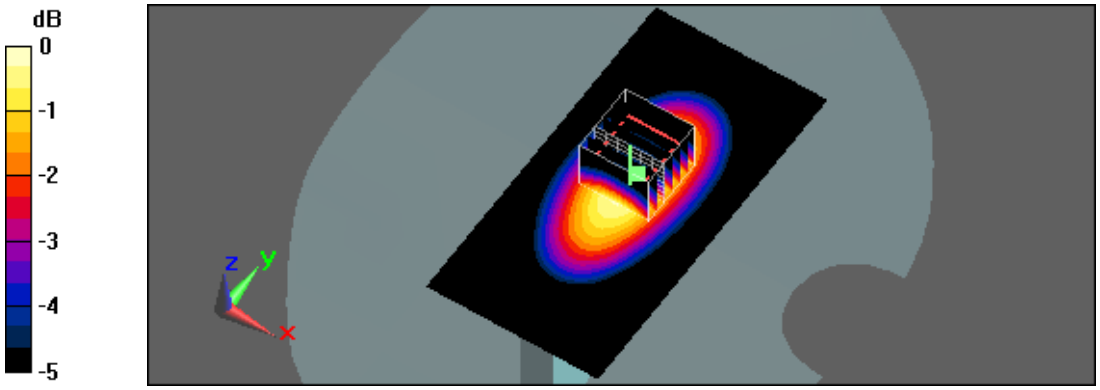
#27_Flat_LTE Band 5 BW 10M CH20600_QPSK with 1 RB Size 0 RB Offset Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.560 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 23.7 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.670 W/kg
SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.349 mW/g
Maximum value of SAR (measured) = 0.565 mW/g



0 dB = 0.565mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 5:59:32 AM

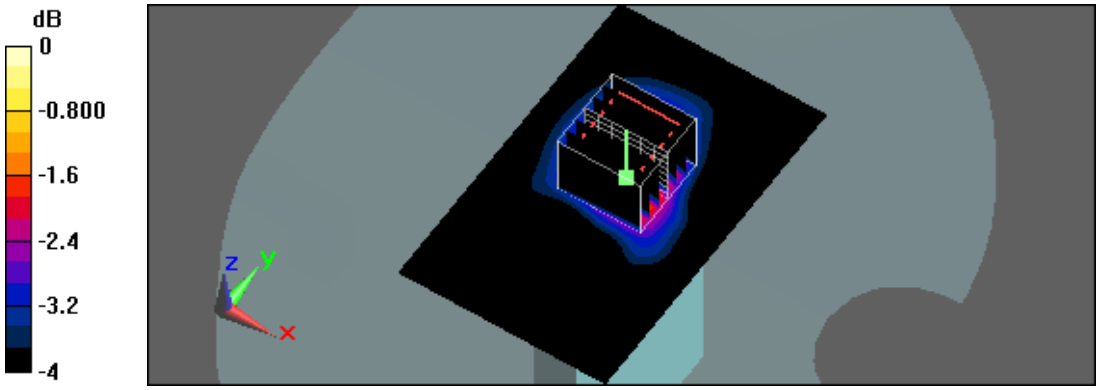
#28_Flat_LTE Band 5 BW 10M CH20600_QPSK with 1 RB Size 0 RB Offset Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 5 BW:10M; Frequency: 844 MHz;Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.994 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.36, 10.36, 10.36); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x81xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.053 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 7.02 V/m; Power Drift = 0.176 dB
Peak SAR (extrapolated) = 0.082 W/kg
SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.029 mW/g
Maximum value of SAR (measured) = 0.060 mW/g



0 dB = 0.060mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 4:31:37 PM

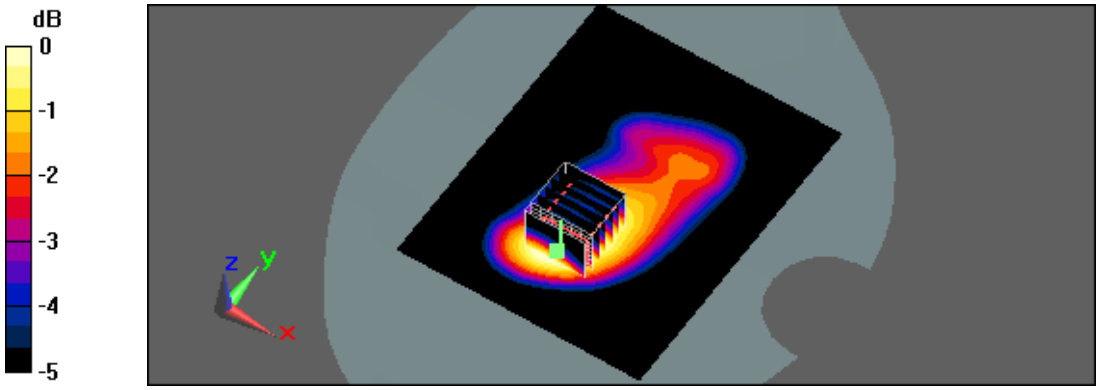
#35_Flat_LTE Band 17 BW 10M CH23780_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.811 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 24.3 V/m; Power Drift = -0.00784 dB
Peak SAR (extrapolated) = 0.926 W/kg
SAR(1 g) = 0.670 mW/g; SAR(10 g) = 0.486 mW/g
Maximum value of SAR (measured) = 0.757 mW/g



0 dB = 0.757mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 4:29:55 AM

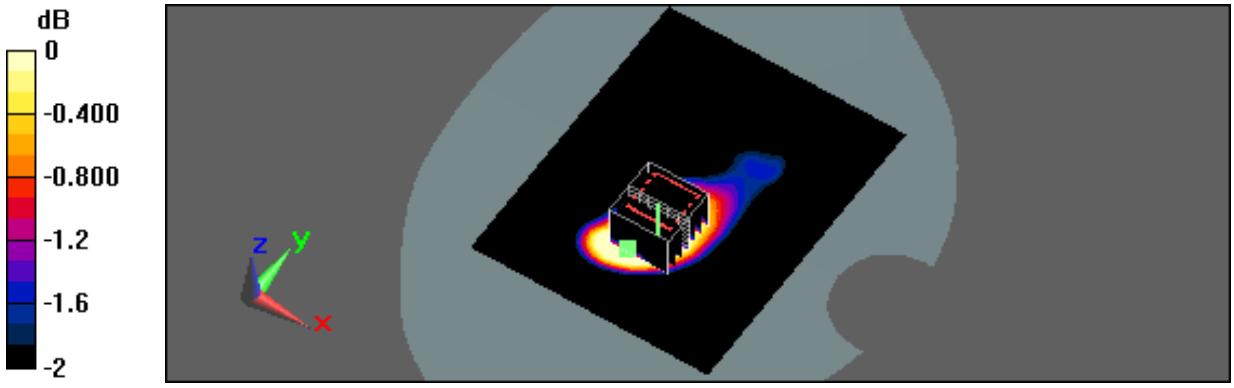
#40_Flat_LTE Band 17 BW 10M CH23790_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.819 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 24.8 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 0.755 W/kg
SAR(1 g) = 0.586 mW/g; SAR(10 g) = 0.435 mW/g
Maximum value of SAR (measured) = 0.653 mW/g



0 dB = 0.653mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 5:37:59 AM

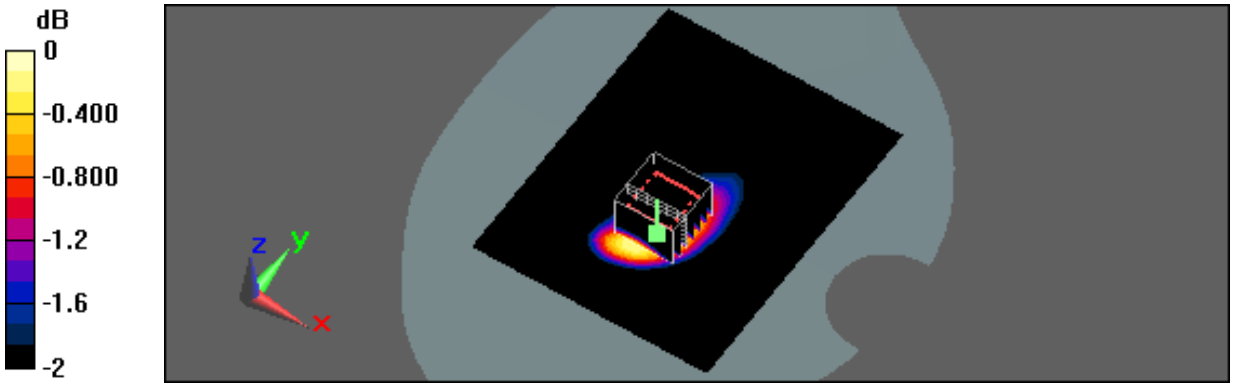
#41_Flat_LTE Band 17 BW 10M CH23800_QPSK with 1 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.938 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.682 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 24 V/m; Power Drift = -0.032 dB
Peak SAR (extrapolated) = 0.767 W/kg
SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.442 mW/g
Maximum value of SAR (measured) = 0.669 mW/g



0 dB = 0.669mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 11:05:54 PM

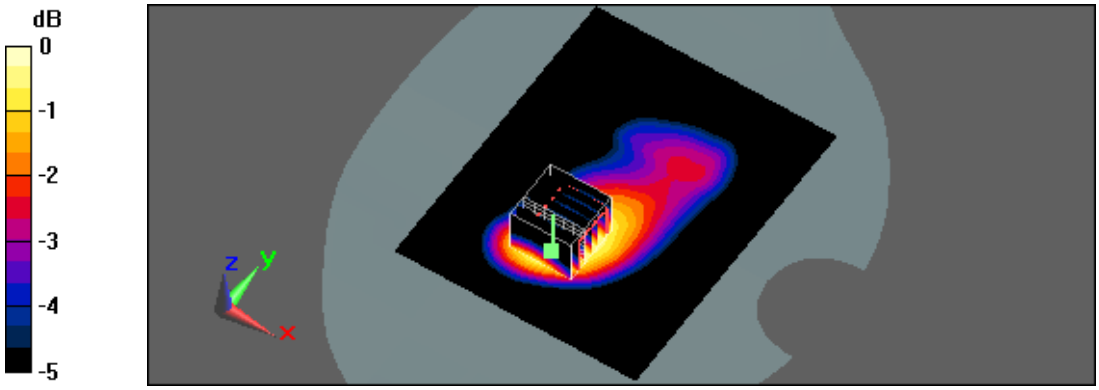
#42_Flat_LTE Band 17 BW 10M CH23780_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.679 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 21.2 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.836 W/kg
SAR(1 g) = 0.580 mW/g; SAR(10 g) = 0.407 mW/g
Maximum value of SAR (measured) = 0.659 mW/g



0 dB = 0.659mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 7:17:12 AM

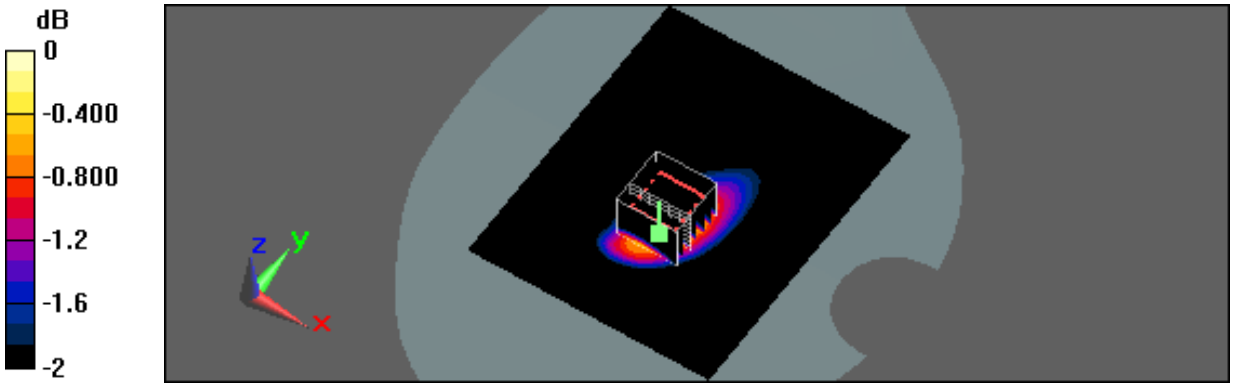
#43_Flat_LTE Band 17 BW 10M CH23790_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.463 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 20.8 V/m; Power Drift = 0.192 dB
Peak SAR (extrapolated) = 0.562 W/kg
SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.326 mW/g
Maximum value of SAR (measured) = 0.495 mW/g



0 dB = 0.495mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 11/4/2012 6:33:57 AM

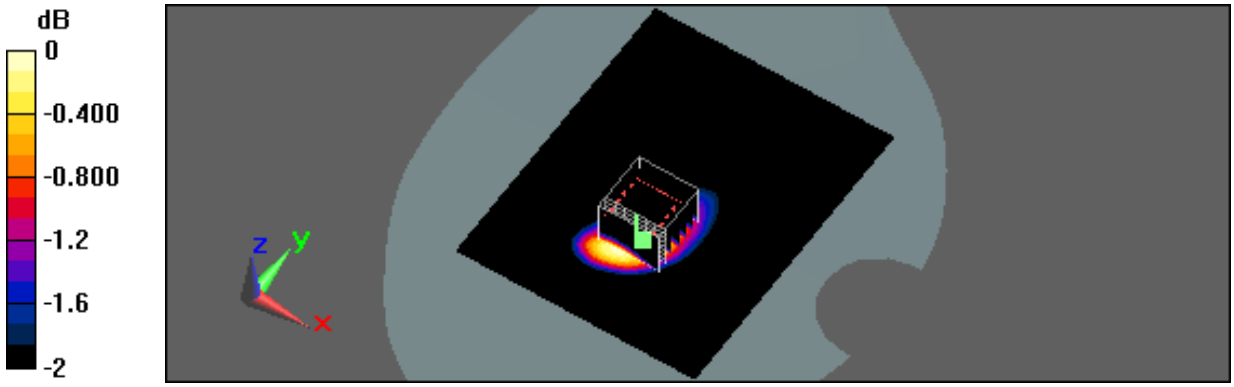
#44_Flat_LTE Band 17 BW 10M CH23800_QPSK with 25 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.938 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.557 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 20.9 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.648 W/kg
SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.363 mW/g
Maximum value of SAR (measured) = 0.557 mW/g



0 dB = 0.557mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/29/2012 12:45:38 AM

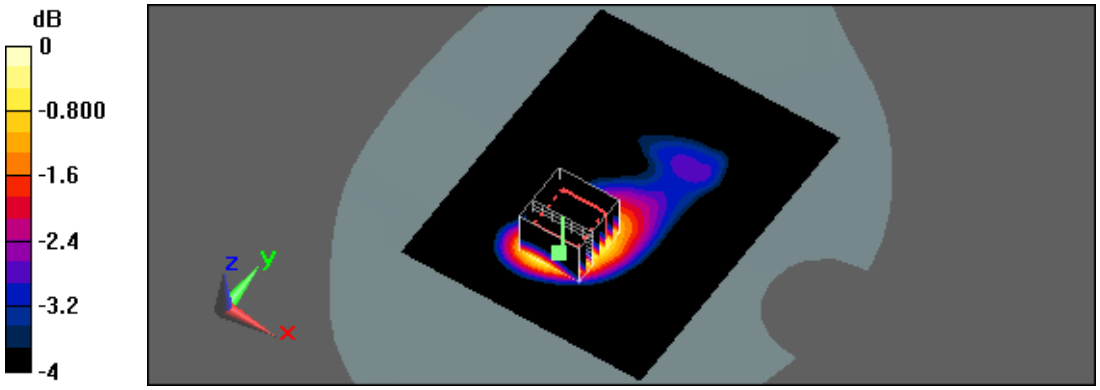
#45_Flat_LTE Band 17 BW 10M CH23780_QPSK with 50 RB Size 0 RB Offset Side 1 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.696 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 20.6 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.872 W/kg
SAR(1 g) = 0.589 mW/g; SAR(10 g) = 0.407 mW/g
Maximum value of SAR (measured) = 0.674 mW/g



0 dB = 0.674mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 2:37:29 PM

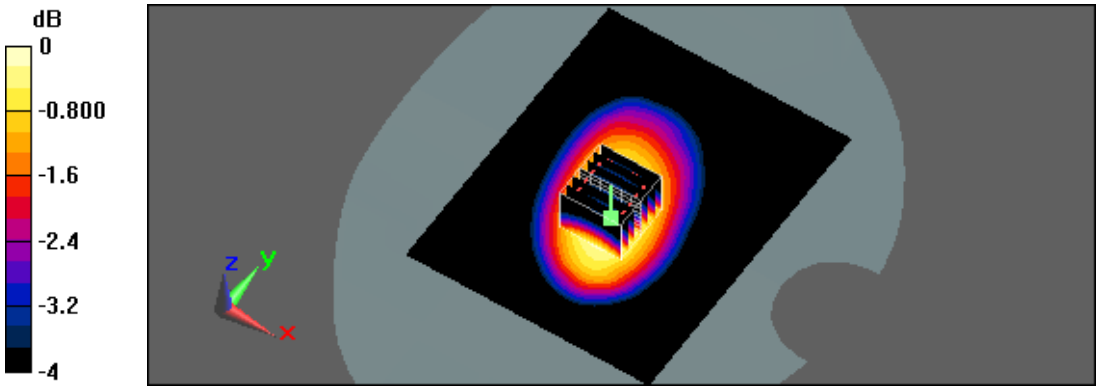
#36_Flat_LTE Band 17 BW 10M CH23780_QPSK with 1 RB Size 0 RB Offset Side 2 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (81x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.616 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 25.9 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 0.673 W/kg
SAR(1 g) = 0.554 mW/g; SAR(10 g) = 0.424 mW/g
Maximum value of SAR (measured) = 0.607 mW/g



0 dB = 0.607mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 3:10:05 PM

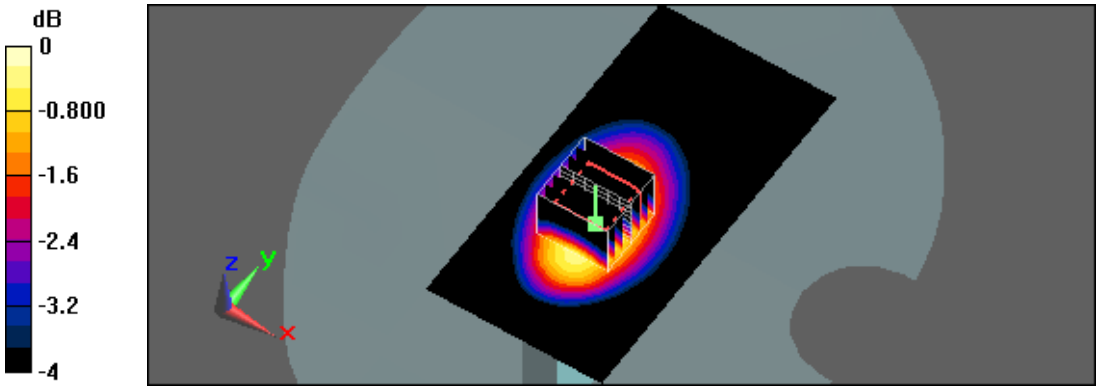
#37_Flat_LTE Band 17 BW 10M CH23780_QPSK with 1 RB Size 0 RB Offset Side 3 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.308 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 17.2 V/m; Power Drift = 0.00355 dB
Peak SAR (extrapolated) = 0.351 W/kg
SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.198 mW/g
Maximum value of SAR (measured) = 0.306 mW/g



0 dB = 0.306mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 3:36:50 PM

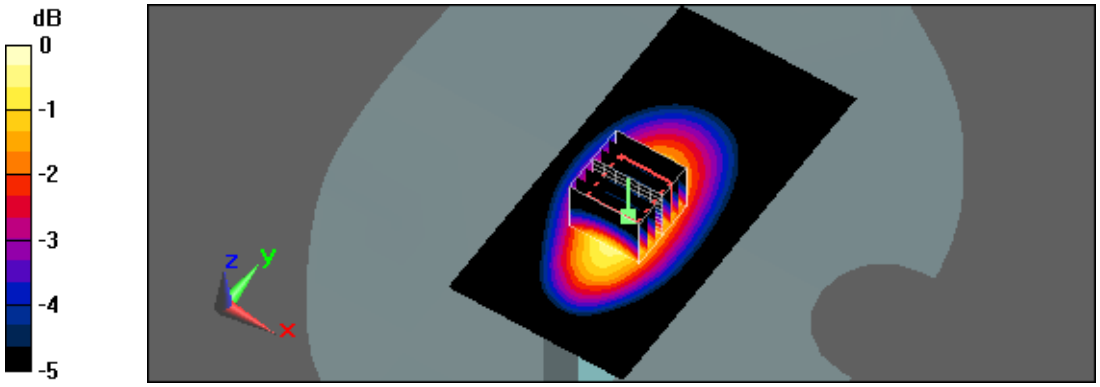
#38_Flat_LTE Band 17 BW 10M CH23780_QPSK with 1 RB Size 0 RB Offset Side 4 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x101xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.336 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 18.7 V/m; Power Drift = 0.118 dB
Peak SAR (extrapolated) = 0.408 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.216 mW/g
Maximum value of SAR (measured) = 0.356 mW/g



0 dB = 0.356mW/g

Test Laboratory: A Test Lab Techno Corp.
Date/Time: 10/28/2012 4:04:48 PM

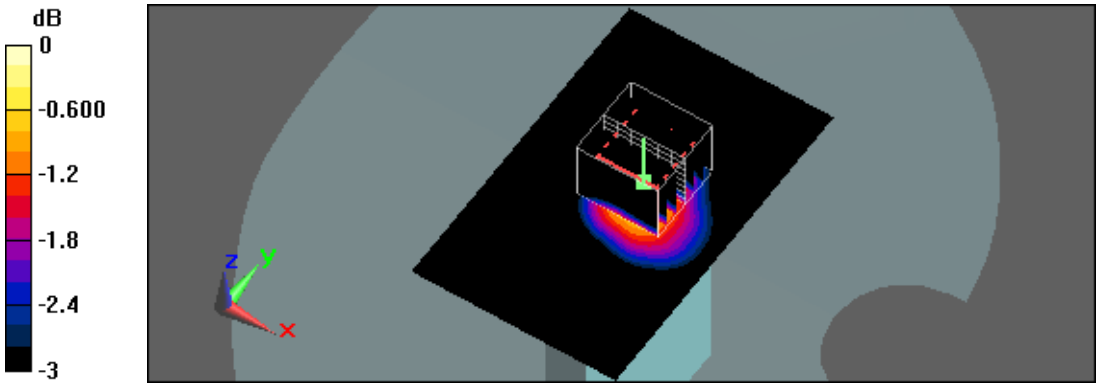
#39_Flat_LTE Band 17 BW 10M CH23780_QPSK with 1 RB Size 0 RB Offset Side 6 to phantom 10mm
DUT: AirCard 770S; Type: Wireless Mobile Hotspot; FCC ID: N7NAC770S

Communication System: LTE Band 17 BW:10M; Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.936 mho/m; εr = 54.8; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)
DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV3 - SN3519; ConvF(10.53, 10.53, 10.53); Calibrated: 2/21/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 1/23/2012
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (51x81xx1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.149 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.2 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.212 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.161 mW/g



0 dB = 0.161mW/g