
SAR Test Report

Report No.: AGC00037130901FH01

FCC ID : BB08500PRO
IC : 906A-8500PRO
APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : 7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH
BRAND NAME : Cobra
MODEL NAME : 8500 PRO HD
CLIENT : Cobra Electronics Corporation
DATE OF ISSUE : Oct.10, 2013
STANDARD(S) : IEEE Std. 1528:2003
47CFR § 2.1093
IEEE/ANSI C95.1
RSS 102: 2010
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd.



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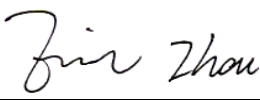
Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct.10, 2013	Valid	Original Report

The test plans were performed in accordance with IEEE Std. 1528:2003; 47CFR § 2.1093; IEEE/ANSI C95.1; RSS 102: 2010 and the following specific FCC Test Procedures:

- KDB 447498 D01 General RF Exposure Guidance v05r01
- KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01
- KDB 248227 D01 SAR Measurement for 802 11abg V01r02

<h1>Test Report Certification</h1>	
Applicant Name	Cobra Electronics Corporation
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Manufacturer Name	Shenzhen Unistrong Science & Technology Co., Ltd
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Product Designation	7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH
Brand Name	Cobra
Model Name	8500 PRO HD
Different Description	N/A
Applicable Standard	IEEE Std. 1528:2003 47CFR § 2.1093 IEEE/ANSI C95.1 RSS 102: 2010
Test Date	Oct.09, 2013
Performed Location	Attestation of Global Compliance(Shenzhen) Co., Ltd.
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1. SUMMARY OF MAXIMUM SAR VALUE

The maximum results of Specific Absorption Rate (SAR) found during testing for EUT are as follows:

Highest Report standalone SAR Summary

Exposure Position	Test Mode	Highest Reported 1g-SAR(W/Kg)	Highest Reported 1g-SAR(W/Kg)
Body	802.11b	1.007	1.007
	802.11g	0.717	
	802.11n(20)	0.525	

Highest Simultaneous transmission SAR Summary

Exposure Position	Test Mode	Highest Reported 1g-SAR(W/Kg)	Highest Reported 1g-SAR(W/Kg)
Body	WLAN+BT	1.1017	1.102

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/Kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1, and had been tested in accordance with measurement methods and procedures specified in IEEE 1528-2003 and the relevant KDB files like KDB 941225 D01 , KDB 941225 D03 ,KDB 865664 D02....etc.

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH
Test Model	8500 PRO HD
Hardware Version	E9610-V1.2
Software Version	B1.0
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
WIFI	
Frequency Range	802.11b/g/n:2412-2462 MHz
Channel Number	802.11b/g/n:11
Type of modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
Data Rate	802.11b:1/2/5.5/11Mbps 802.11g:6/9/12/18/24/36/48/54Mbps 802.11n:up to 150Mbps
Antenna Gain	-3.5dBi
Avg. Burst Power	11b: 13.13dBm; 11g: 10.35dBm; 11n(20): 10.44dBm
Bluetooth	
Bluetooth Version	<input type="checkbox"/> V2.0 <input type="checkbox"/> V2.1 <input type="checkbox"/> V2.1+EDR <input type="checkbox"/> V3.0 <input checked="" type="checkbox"/> V3.0+EDR <input type="checkbox"/> V4.0
Operation Frequency	2402~2480MHz
Type of modulation	<input checked="" type="checkbox"/> GFSK <input checked="" type="checkbox"/> II/4-DQPSK <input checked="" type="checkbox"/> 8-DPSK
Avg. Burst Power	3.53dBm
Antenna Gain	-3.5dBi

Accessories	
Battery	Brand name: B&K Model No. : E703450G Voltage and Capacitance: 3.7 V &1300mAh
Adapter	Brand name: TEKA Model No. : TEKA006-0501000UK Input: AC 10-24V, 1.2A Output: DC 5V, 2A
Earphone	Brand name: N/A Model No. : N/A

Note: The sample used for testing is end product.

2.2. Test Procedure

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	Make EUT into engineering mode for transmission, and test them respectively at U.S. bands

2.3. Test Environment

Ambient conditions in the laboratory:

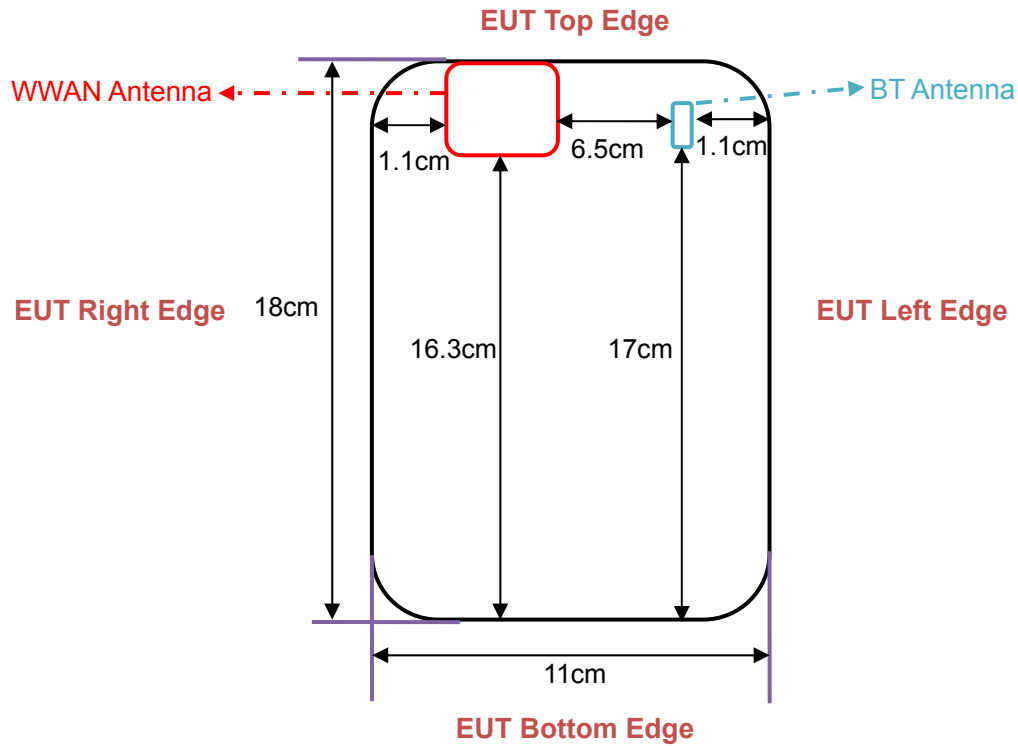
Items	Required	Actual
Temperature (°C)	18-25	21± 2
Humidity (%RH)	30-70	55±2

2.4. Test Configuration and setting

The EUT is a model of Portable Navigation Device. It supports BT and WIFI.

For WLAN testing, the EUT is configured with the WLAN continuous TX tool through engineering command.

Antenna Location:



The separation distance for antenna to edge:

Antenna	To Top Side(cm)	To Bottom Side(cm)	To Left Side(cm)	To Right Side(cm)
BT	0.5	17	1.1	10
WIFI	0	16.3	7.8	1.1

The simultaneous transmission possibilities are listed as below:

Simultaneous TX Combination	Configuration	Head	Body	Hotpot
1	WLAN+BT	NO	Yes	NO

3. SAR MEASUREMENT SYSTEM

3.1. Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and occupational/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume (dv) of given mass density (ρ). The equation description is as below:

$$SAR = \frac{d}{dt} \left(\frac{dW}{dm} \right) = \frac{d}{dt} \left(\frac{dW}{\rho dV} \right)$$

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

SAR can be obtained using either of the following equations:

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

$$SAR = c_h \left. \frac{dT}{dt} \right|_{t=0}$$

Where

SAR	is the specific absorption rate in watts per kilogram;
E	is the r.m.s. value of the electric field strength in the tissue in volts per meter;
σ	is the conductivity of the tissue in siemens per metre;
ρ	is the density of the tissue in kilograms per cubic metre;
c_h	is the heat capacity of the tissue in joules per kilogram and Kelvin;

$\left. \frac{dT}{dt} \right|_{t=0}$ is the initial time derivative of temperature in the tissue in kelvins per second

3.2. SAR Measurement Procedure

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

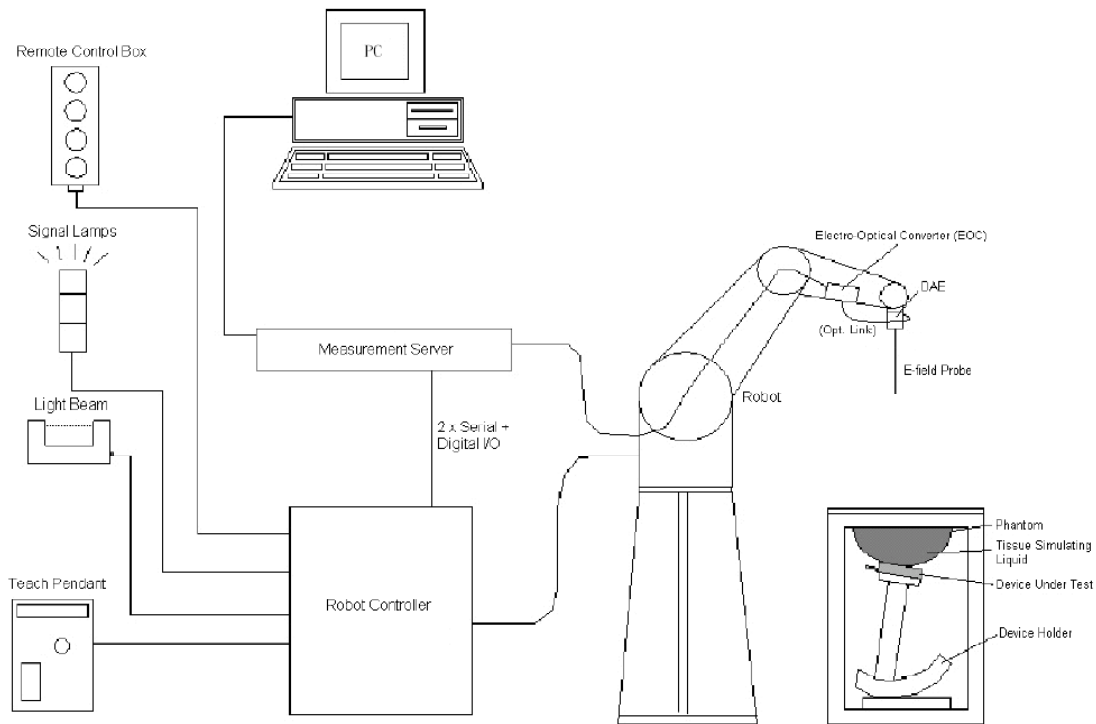
Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at 1mm^2) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at 1mm^3).

When multiple peak SAR location were found during the same configuration or test mode, Zoom scan shall performed on each peak SAR location, only the peak point with maximum SAR value will be reported for the configuration or test mode.

3.3. COMOSAR System Description



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

A standard high precision 6-axis robot with controller, teach pendant and software.

An arm extension for accommodating the data acquisition electronics (DAE).

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.

The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital Communicate Mobile to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.

The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.

A computer running WinXP and the Opensar software.

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

The phantom, the device holder and other accessories according to the targeted measurement.

3.3.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

3.3.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm² step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

3.3.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m³ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

3.3.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Post processor, COMOSAR allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528. The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x, y, z) = A e^{-\frac{z}{2a}} \cos^2 \left(\frac{\pi \sqrt{x'^2 + y'^2}}{2 \cdot 5a} \right)$$

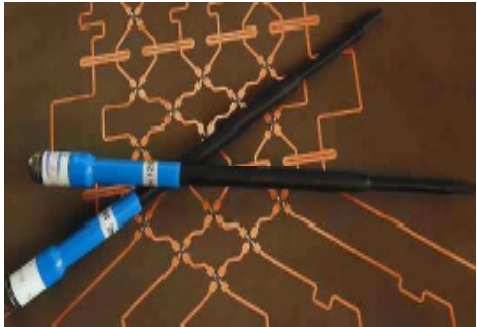
$$f_2(x, y, z) = A e^{-\frac{z}{a}} \frac{a^2}{a^2 + x'^2} \left(3 - e^{-\frac{2z}{a}} \right) \cos^2 \left(\frac{\pi y'}{2 \cdot 3a} \right)$$

$$f_3(x, y, z) = A \frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2} \left(e^{-\frac{2z}{a}} + \frac{a^2}{2(a + 2z)^2} \right)$$

3.4. COMOSAR E-Field Probe

The SAR measurement is conducted with the dissymmetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dissymmetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN62209-1, IEC 62209, etc.) Under ISO17025. The calibration data are in Appendix D.

3.5. Isotropic E-Field Probe Specification

Model	EP165	
Manufacture	SATIMO	
Frequency	0.03GHz-3 GHz Linearity:±0.2dB(30 MHz-3 GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity:±0.2dB	
Dimensions	Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precision of better 30%.	

3.6. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used. The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

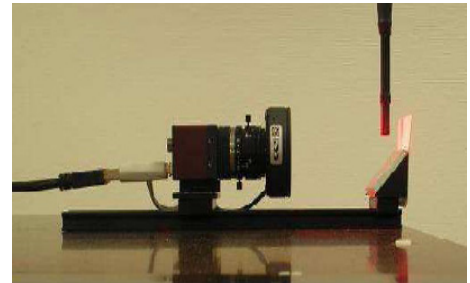


3.7. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link.

During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

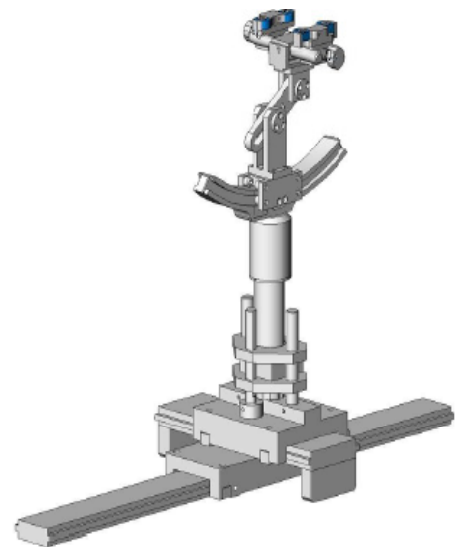


3.8. Device Holder

The COMOSAR device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).

Thus the device needs no repositioning when changing the angles.

The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon_r = 3$ and loss tangent $\delta = 0.02$. 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.



3.9. SAM Twin Phantom

The Elliptic Phantom is a fiberglass shell flat phantom with 2mm+/- 0.2 mm shell thickness. It has only one measurement area for Flat phantom



4. TISSUE SIMULATING LIQUID

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm For body SAR testing ,the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm.The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in 4.2

4.1. The composition of the tissue simulating liquid

Ingredient	2450MHz
(% Weight)	Body
Water	73.2
Salt	0.04
Sugar	0.00
HEC	0.00
Preventol	0.00
DGBE	26.7
TWEEN	48.34

4.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and R&S Network Analyzer ZVL6 .

Tissue Stimulant Measurement for 2450					
Frequency (MHz)	Parts	Description	Dielectric Parameters		Tissue Temp [°C]
2450MHz	Body	Reference result ±5% window	ϵ_r 52.7 50.065-55.335	δ [s/m] 1.95 1.8525-2.0475	N/A
		Oct.09, 2013	53.26	1.95	21

4.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 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 a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Target Frequency (MHz)	head		body	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
850	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	1.01	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

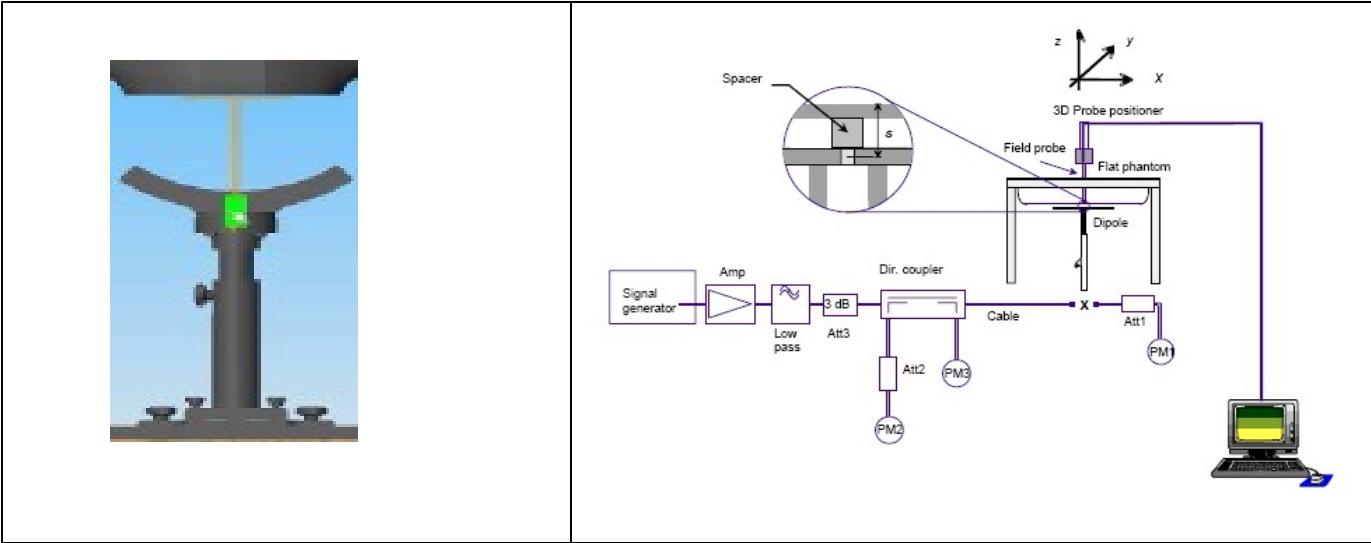
(ϵ_r = relative permittivity, σ = conductivity and $\rho = 1000$ kg/m³)

5. SAR MEASUREMENT PROCEDURE

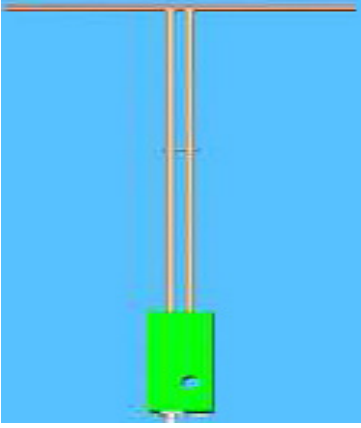
5.1. SAR System Verification Procedures

Each SATIMO system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.



5.2. SAR System Validation
5.2.1. Validation Dipoles

	<p>The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical Specifications for the dipoles.</p>
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Frequency	L (mm)	h (mm)	d (mm)
2450MHz	51.5	30.4	3.6

5.2.2. Validation Result

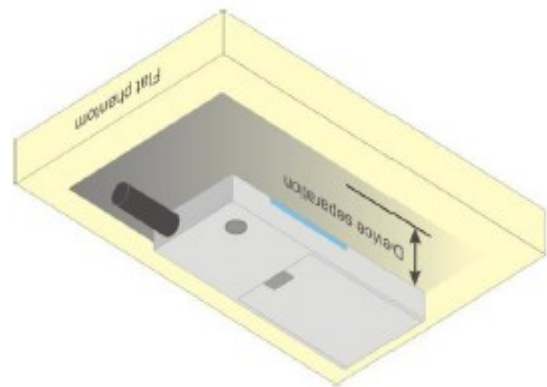
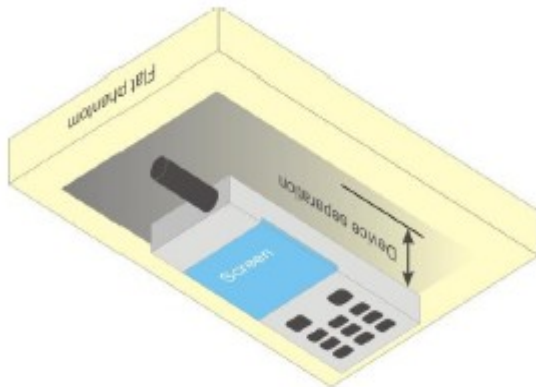
System Performance Check at 2450MHz for Body				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp.[°C]
2450 MHz	Reference result ± 10% window	52.4 47.16 to 57.64	24.0 21.6 to 26.4	N/A
	Oct.09, 2013	47.87	23.32	21
Note: All SAR values are normalized to 1W forward power.				

6. EUT TEST POSITION

This EUT was tested in body touch, front touch, horizontal near antenna, horizontal away from antenna, vertical near antenna and vertical away from antenna.

6.1. Body Worn Position

- (1) To position the EUT parallel to the phantom surface.
- (2) To adjust the EUT parallel to the flat phantom.
- (3) To adjust the distance between the EUT surface and the flat phantom to **0mm**.



7. SAR EXPOSURE LIMITS

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg

8. TEST EQUIPMENT LIST

Equipment description	Manufacturer/Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	SATIMO	SN 04/13 EP165	01/31/2013	01/30/2014
Phantom	SATIMO	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	-	Validated. No cal required.	Validated. No cal required.
Comm Tester	R&S - CMU200	069Y7-158-13-712	02/28/2013	02/27/2014
Comm Tester	Agilent-8960	GB46310822	10/22/2012	10/21/2013
Multimeter	Keithley 2000	1188656	02/28/2013	02/27/2014
Dipole	SATIMO SID2450	SN46/11 DIP 2G450-189	12/09/2011	12/08/2013
Amplifier	Aethercomm	SN 046	12/08/2012	12/07/2013
Signal Generator	Agilent-E4421B	MY43351603	05/13/2013	05/12/2014
Power Probe	NRP-Z23	US38261498	02/28/2013	02/27/2014
SPECTRUM ANALYZER	Agilent	E4440A	07/18/2012	07/17/2013
Power Attenuator	BED	DLA-5W	07/30/2013	07/29/2014
Network Analyzer	Rhode & Schwarz ZVA	SN100132	02/28/2013	02/27/2014

Note: Per KDB 50824 Dipole SAR Validation Verification, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

9. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty									
Measurement uncertainty for 30 MHz to 3 GHz averaged over 1 gram / 10 gram.									
Error Description	Sec	Tol (±%)	Prob. Dist.	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g) (±%)	Std. Unc. (10g)(±%)	(Vi) Veff
Measurement System									
Probe Calibration	E.2.1	6	N	1	1	1	6	6	∞
Axial Isotropy	E.2.2	3	R	$\sqrt{3}$	$(1-c_p)^{1/2}$	$(1-c_p)^{1/2}$	1.22474	1.22474	∞
Hemispherical Isotropy	E.2.2	5	R	$\sqrt{3}$	$\sqrt{c_p}$	$\sqrt{c_p}$	2.04124	2.04124	∞
Boundary Effects	E.2.3	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Linearity	E.2.4	5	R	$\sqrt{3}$	1	1	2.88675	2.88675	∞
System Detection Limits	E.2.5	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	∞
Response Time	E.2.7	0.2	R	$\sqrt{3}$	1	1	0.11547	0.11547	∞
Integration Time	E.2.8	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
RF Ambient Noise	E.6.1	3	R	$\sqrt{3}$	1	1	1.73205	1.73205	∞
Probe Positioner Mechanical Tolerance	E.6.2	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
Probe Positioning with Respect to Phantom Shell	E.6..3	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Extrapolation,interpolation and Integration Algorithms for Max. SAR Evaluation	E.5.2	1.5	R	$\sqrt{3}$	1	1	0.86603	0.86603	∞
Dipole									
Device Positioning	8,E.4.2	1	N	$\sqrt{3}$	1	1	0.57735	0.57735	N-1
Power Drift	8.6.6.2	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4	R	$\sqrt{3}$	1	1	2.3094	2.3094	∞
Liquid Conductivity (target)	E.3.2	5	R	$\sqrt{3}$	0.64	0.43	1.84752	1.2413	∞
Liquid Conductivity (meas.)	E.3.3	2.5	N	1	0.64	0.43	1.6	1.075	∞
Liquid Permittivity (target)	E.3.2	3	R	$\sqrt{3}$	0.6	0.49	1.03923	0.8487	∞
Liquid Permittivity (meas.)	E.3.3	2.5	N	1	0.6	0.49	1.5	1.225	M
Combined Standard Uncertainty			RSS				8.09272	7.9296	
Expanded Uncertainty (95%CONFIDENCE INTERVAL)			k				16.18544	15.8592	

10. CONDUCTED POWER MEASUREMENT

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Avg. Burst Power(dBm)
802.11b	1	01	2412	12.98
		06	2437	13.11
		11	2462	13.13
802.11g	6	01	2412	9.14
		06	2437	10.35
		11	2462	7.92
802.11n(20)	6.5	01	2412	8.98
		06	2437	10.44
		11	2462	8.52

Bluetooth

Modulation	Channel	Frequency(MHz)	Average Power (dBm)
GFSK	0	2402	0.56
	39	2441	2.64
	78	2480	3.53
$\pi/4$ -DQPSK	0	2402	-2.03
	39	2441	0.28
	78	2480	1.32
8-DPSK	0	2402	-1.68
	39	2441	0.78
	78	2480	1.64

11. TEST RESULTS

11.1. SAR Test Results Summary

11.1.1. Test position and configuration

Body SAR was performed with the device configured in the positions according to IEEE 1528. SAR test was performed with the device 0mm from the phantom for the worst case due to antenna position.

Test position: body touch, front touch, horizontal near antenna, horizontal away from antenna, vertical near antenna, vertical away from antenna

11.1.2. Operation Mode

- According to KDB 447498 D01 v05r01 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
- Per KDB 865664 D01 v01r01,for each frequency band, if the measured SAR is ≥ 0.8 W/Kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.
 - (1) When the original highest measured SAR is ≥ 0.8 W/Kg, repeat that measurement once.
 - (2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/Kg.
 - (3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥ 1.5 W/Kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥ 1.20 .
- According to KDB 248227 D01, SAR is not required for 802.11g channels when the maximum average output power is less than 1/4dB higher than measured on the corresponding 802.11b channels.

11.1.3. Test Result

SAR MEASUREMENT						
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55		
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15		
Product: 7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH						
Test Mode: 802.11b						
Test Position Body	Antenna Position	Frequency		Power Drift (<±5%)	SAR (1g) (W/kg)	Limit (W/kg)
		channel	MHz			
Body touch	Fixed	1	2412	1.02	0.891	1.6
Body touch	Fixed	6	2437	0.22	1.007	1.6
Body touch	Fixed	11	2462	-0.21	0.884	1.6
Front touch	Fixed	6	2437	0.67	0.218	1.6
Horizontal near antenna (1)	Fixed	6	2437	-1.48	0.055	1.6
Horizontal away from antenna(2)	Fixed	6	2437	-1.03	0.027	1.6
Vertical near antenna (3)	Fixed	6	2437	0.94	0.739	1.6
Vertical away from antenna (4)	Fixed	6	2437	-0.77	0.002	1.6
Note 1: when the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional. Note 2: IEEE802.11b support DBPSK, DQPSK, CCK modulation mode, IEEE802.11g/n support OFDM, 16-QAM, 64-QAM modulation mode. Note 3: above test model see the Photographs						

SAR MEASUREMENT						
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%) : 55		
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15		
Product: 7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH						
Test Mode: 802.11g						
Test Position Body	Antenna Position	Frequency		Power Drift (<±5%)	SAR (1g) (W/kg)	Limit (W/kg)
		channel	MHz			
Body touch	Fixed	6	2437	0.12	0.717	1.6
Front touch	Fixed	6	2437	-0.25	0.321	1.6
Horizontal near antenna (1)	Fixed	6	2437	0.47	0.437	1.6
Horizontal away from antenna(2)	Fixed	6	2437	1.02	0.254	1.6
Vertical near antenna (3)	Fixed	6	2437	0.63	0.572	1.6
Vertical away from antenna (4)	Fixed	6	2437	0.55	0.063	1.6
Note 1: when the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional. Note 2: IEEE802.11b support DBPSK, DQPSK, CCK modulation mode, IEEE802.11g/n support OFDM, 16-QAM, 64-QAM modulation mode. Note 3: above test model see the Photographs						

SAR MEASUREMENT						
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55		
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15		
Product: 7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH						
Test Mode: 802.11n(20)						
Test Position Body	Antenna Position	Frequency		Power Drift (<±5%)	SAR (1g) (W/kg)	Limit (W/kg)
		channel	MHz			
Body touch	Fixed	6	2437	0.02	0.525	1.6
Front touch	Fixed	6	2437	-0.45	0.324	1.6
Horizontal near antenna (1)	Fixed	6	2437	0.78	0.474	1.6
Horizontal away from antenna(2)	Fixed	6	2437	1.56	0.236	1.6
Vertical near antenna (3)	Fixed	6	2437	0.87	0.656	1.6
Vertical away from antenna (4)	Fixed	6	2437	-0.96	0.061	1.6
Note 1: when the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional. Note 2: IEEE802.11b support DBPSK, DQPSK, CCK modulation mode, IEEE802.11g/n support OFDM, 16-QAM, 64-QAM modulation mode. Note 3: above test model see the Photographs						

Repeated SAR						
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%) : 55		
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15		
Product: 7" NAV FOR PROF DRIVERS W/WIFI &BLUETOOTH						
Test Mode: 802.11b						
Test Position Body	Antenna Position	Frequency		Power Drift (<±5%)	SAR (1g) (W/kg)	Limit (W/kg)
		channel	MHz			
Body touch	Fixed	1	2412	-0.11	0.872	1.6
Body touch	Fixed	6	2437	-1.30	1.000	1.6
Body touch	Fixed	11	2462	0.81	0.815	1.6
Test Mode: 802.11g						
Body touch	Fixed	6	2437	1.62	0.702	1.6
Test Mode: 802.11n(20)						
Body touch	Fixed	6	2437	-0.45	0.514	1.6

Simultaneous Multi-band Transmission Evaluation:
Application Simultaneous Transmission information:

Position	Simultaneous state
Body	WLAN 2.4GHz band+ Bluetooth

NOTE:

1. WLAN and BT with different antenna.
2. For simultaneous transmission at body exposure position, 1 transmitter simultaneous transmission was the worst state.
3. Based upon KDB 447498 D01 v05, BT SAR is excluded as below table.
4. Based upon KDB 447498 D01 v05, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user; which is 0mm for body-worn SAR.
5. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
6. For minimum test separation distance ≤ 50 mm, Bluetooth standalone SAR is excluded according to $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot \sqrt{f \text{ (GHz)}} / x] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g SAR
7. KDB 447498 / 4.3.2 (2) when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
 - a) $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot \sqrt{f \text{ (GHz)}} / x$ W/kg for test separation distances ≤ 50 mm; Where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.
 - b) 0.4 W/Kg for 1-g SAR and 1.0 W/Kg for 10-g SAR, when the separation distance is >50 mm.

		Maximum Average Power		Antenna to user (mm)	SAR exclusion threshold (mW)	SAR testing required (Yes/No)	Body (5mm gap)
		dBm	mW				
BT	Body	3.53	2.254	5	10	NO	0.0947 W/kg

Maximum test results with BT and WIFI Simultaneous Transmission SAR:

BT: Body (0.5 cm gap): 0.0947 W/kg

Body (WLAN+BT): 1.007 W/kg + 0.0947 W/kg = 1.1017 W/kg

APPENDIX A. SAR SYSTEM VALIDATION DATA

Test Laboratory: AGC Lab

Date: Oct.09, 2013

System Check Body 2450 MHz

DUT: Dipole 2450 MHz Type: SID 2450

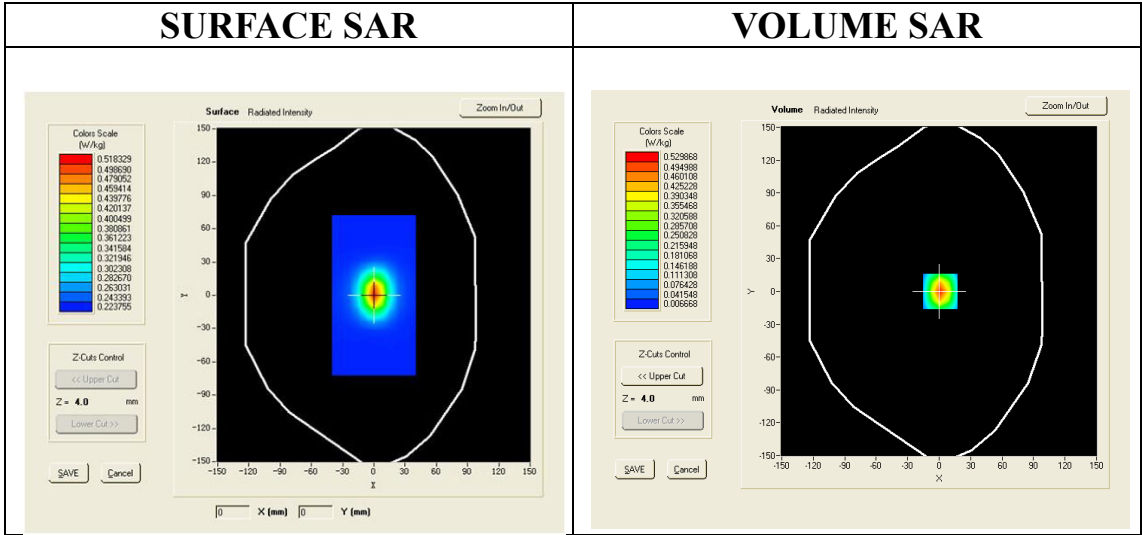
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.32
 Frequency: 2450 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
 Phantom section: Flat Section; Input Power=10dBm
 Ambient temperature (°C): 21, Liquid temperature (°C): 21

SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

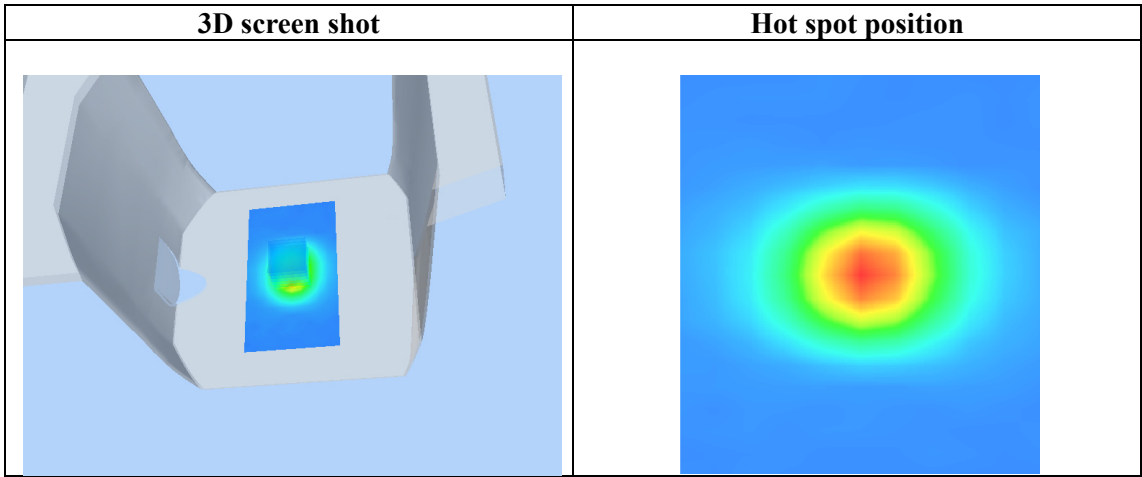
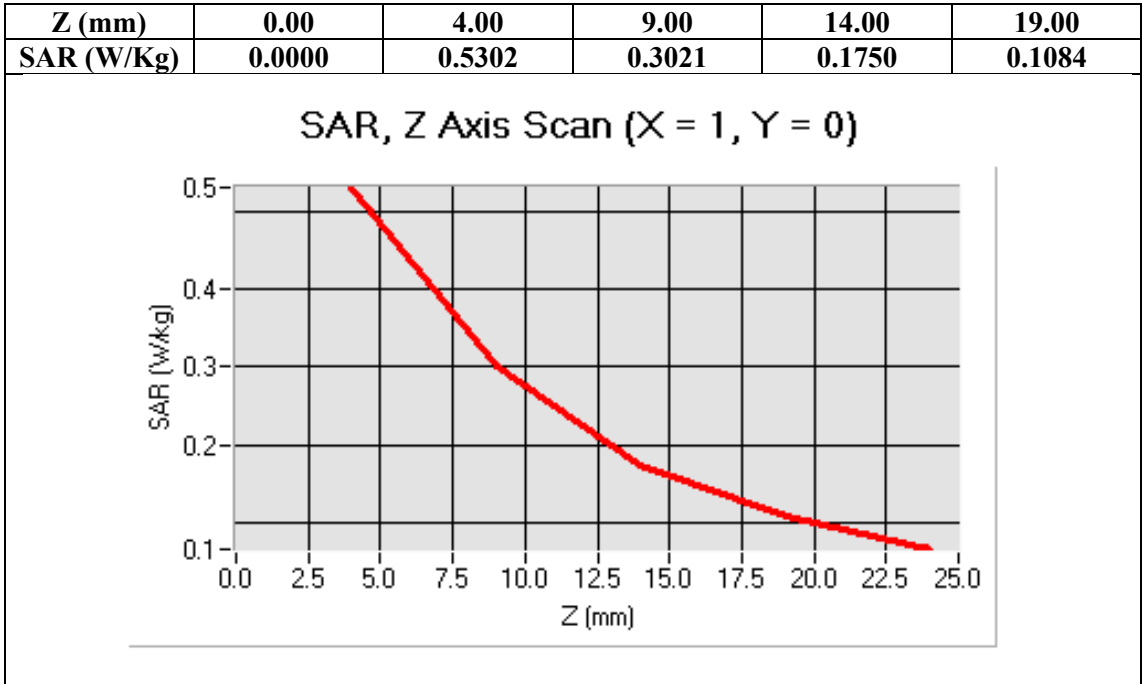
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/System Check 2450 MHz Body /Area Scan: Measurement grid: dx=8mm,dy=8mm
 Configuration/System Check 2450 MHz Body /Zoom Scan: Measurement grid: dx=8mm,
 dy=8mm, dz=5mm



Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	0.233215
SAR 1g (W/Kg)	0.478727



APPENDIX B. SAR MEASUREMENT DATA

Test Laboratory: AGC Lab
802.11b Low-Body-Worm- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

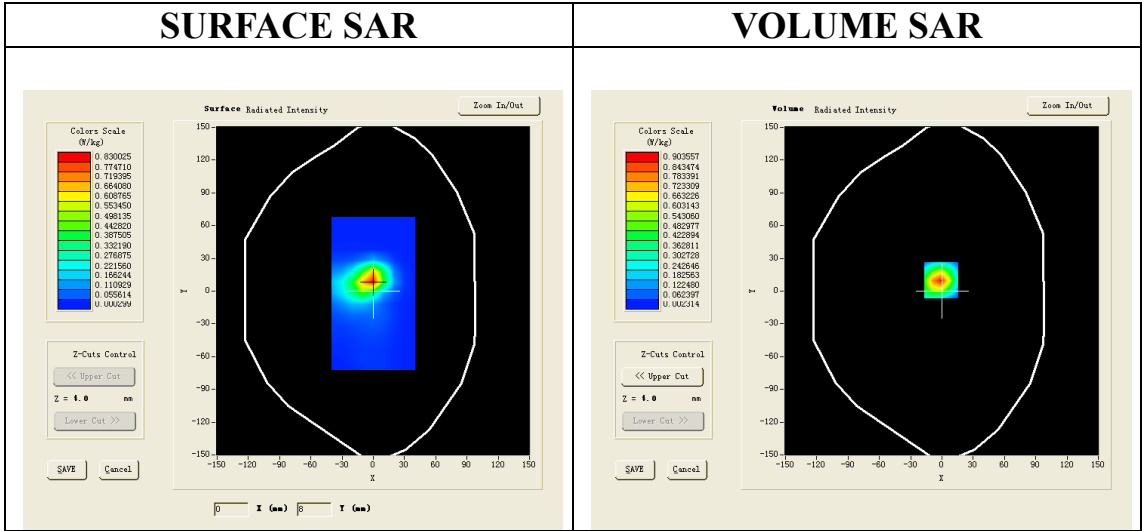
Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2412 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho= 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

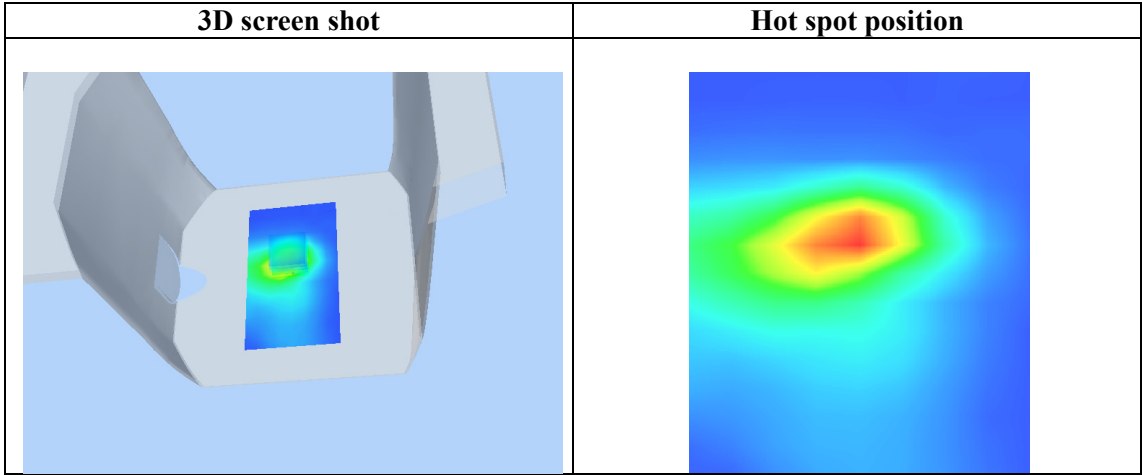
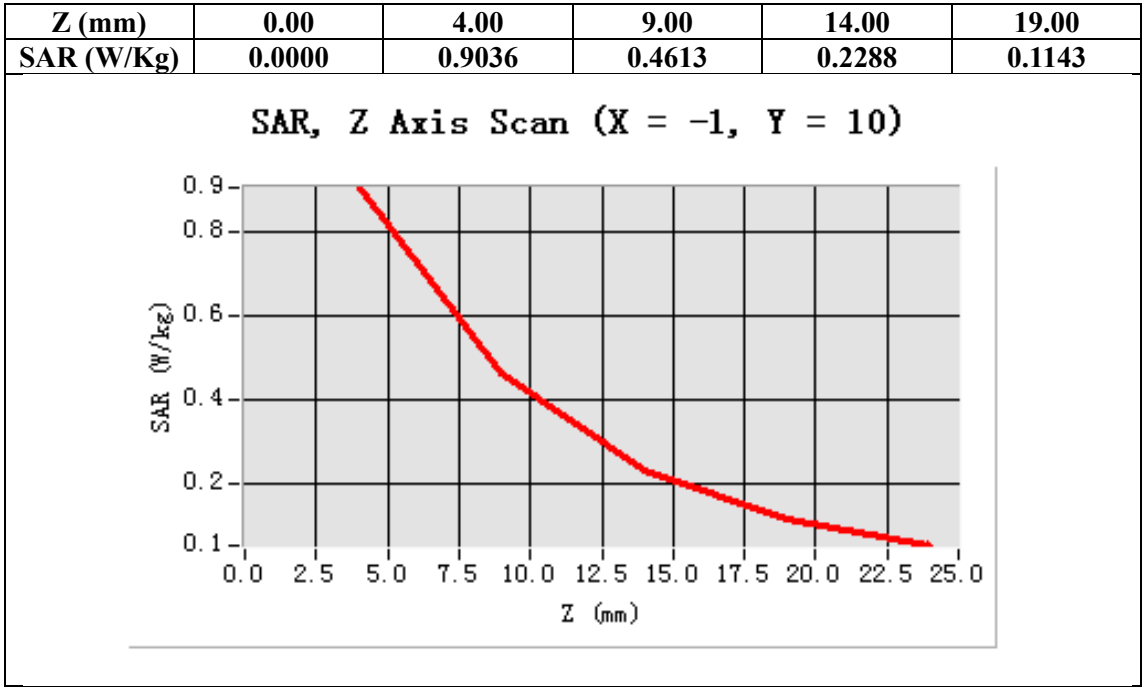
Configuration/802.11b Low- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Low- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Low
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-1.00, Y=10.00

SAR 10g (W/Kg)	0.403006
SAR 1g (W/Kg)	0.891310



Test Laboratory: AGC Lab
802.11b Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

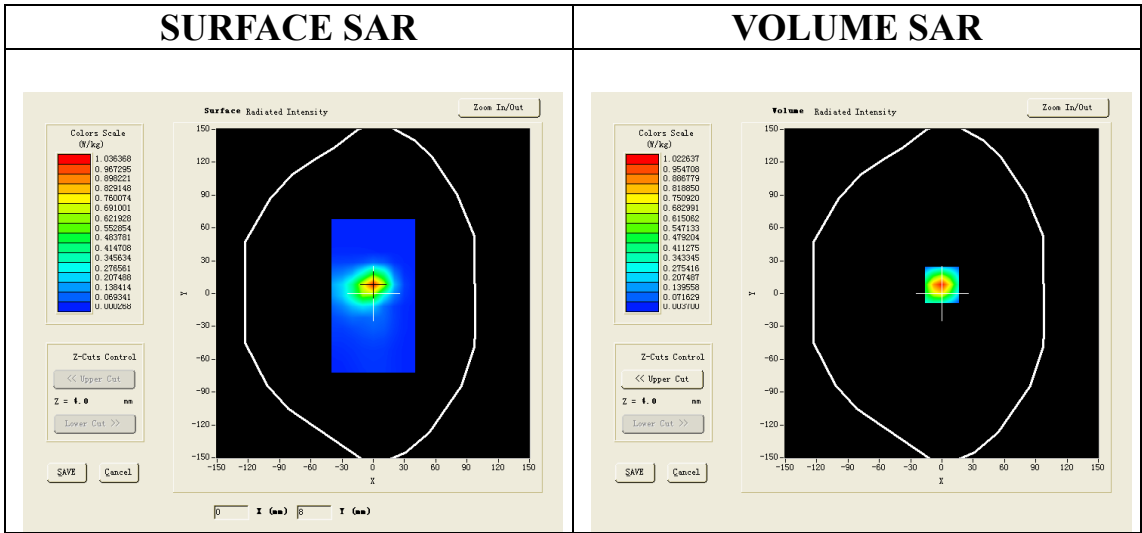
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

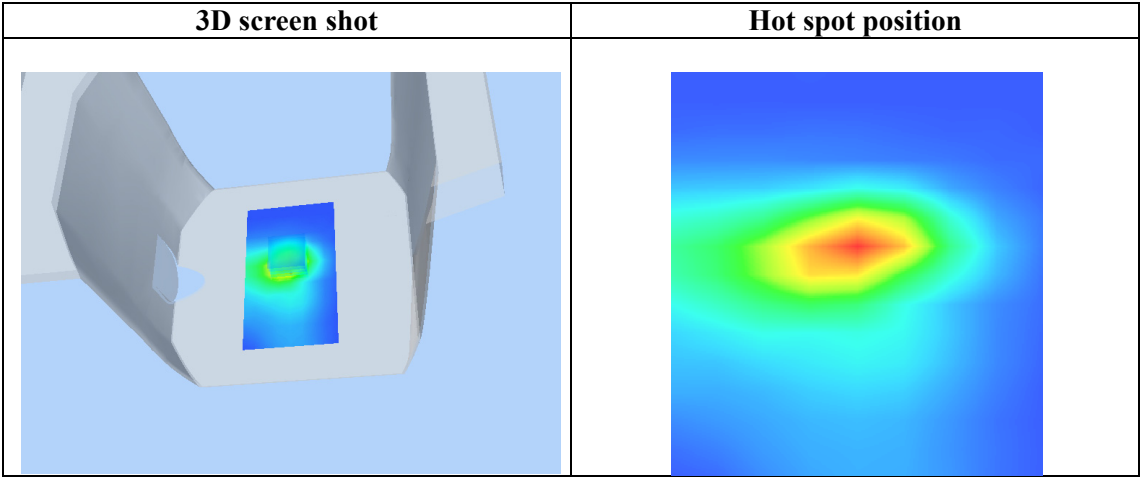
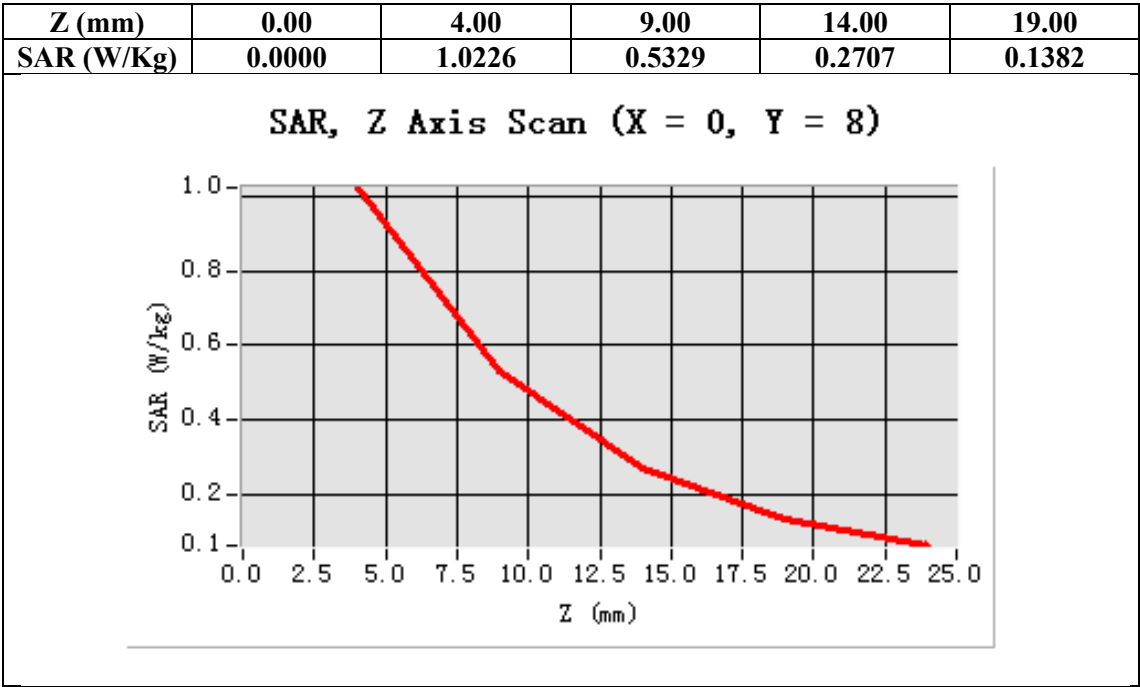
Configuration/802.11b Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	0.462088
SAR 1g (W/Kg)	1.006969



Test Laboratory: AGC Lab
802.11b High-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

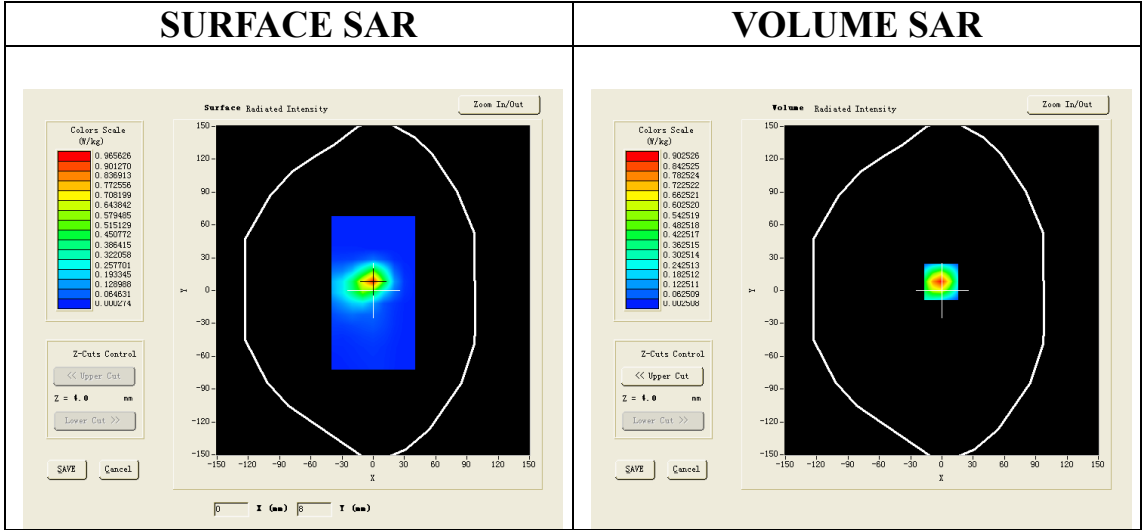
Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2462 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

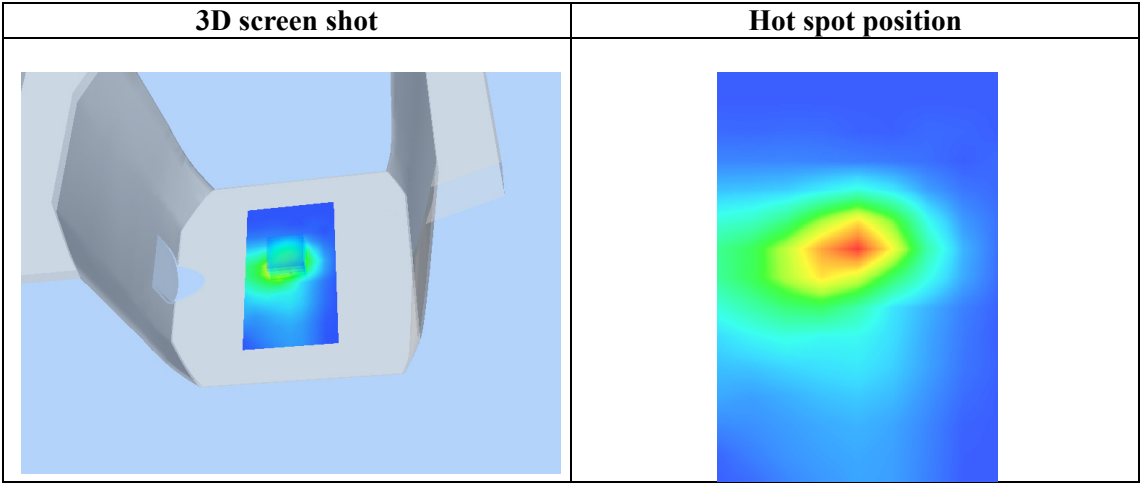
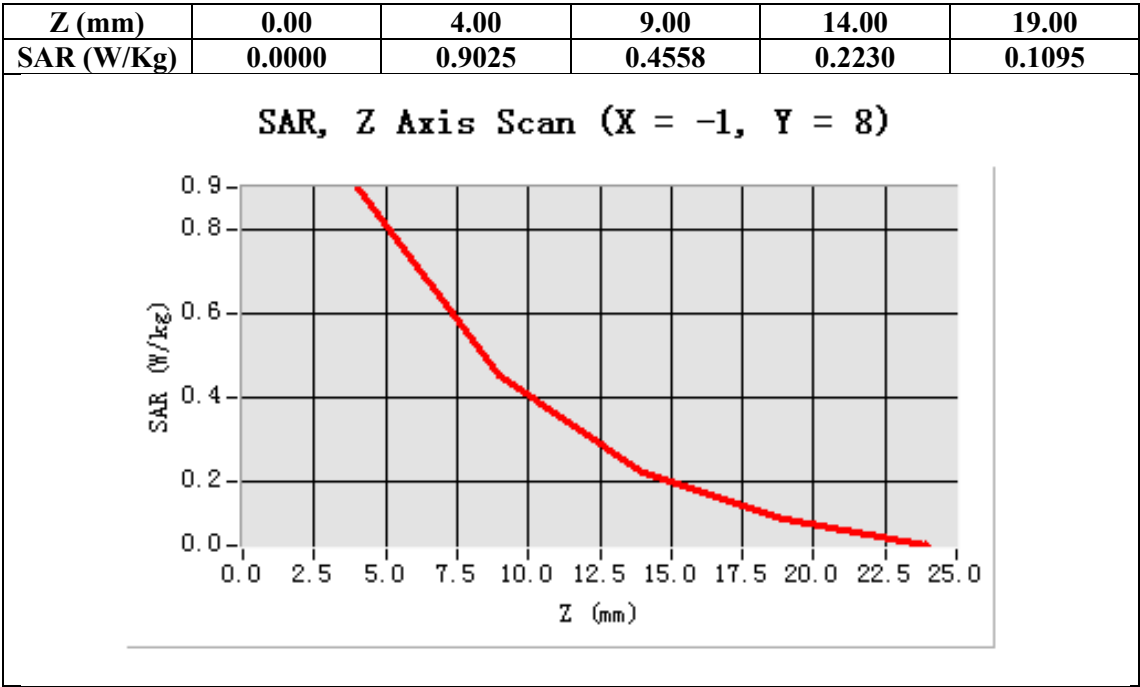
Configuration/802.11b High- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b High- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	High
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-1.00, Y=8.00

SAR 10g (W/Kg)	0.395414
SAR 1g (W/Kg)	0.883670



Test Laboratory: AGC Lab
802.11b Mid- Body- Front

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

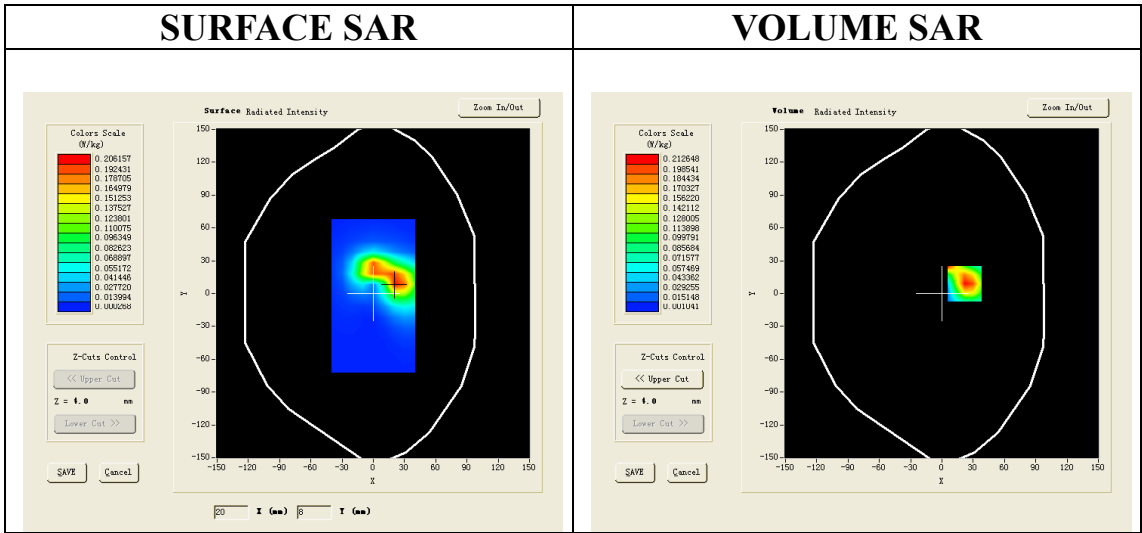
Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho= 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

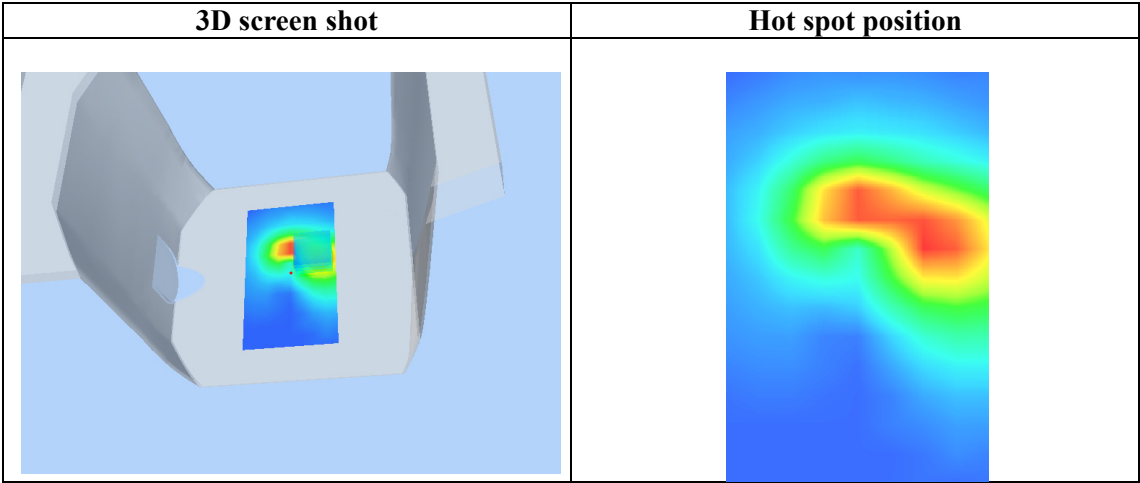
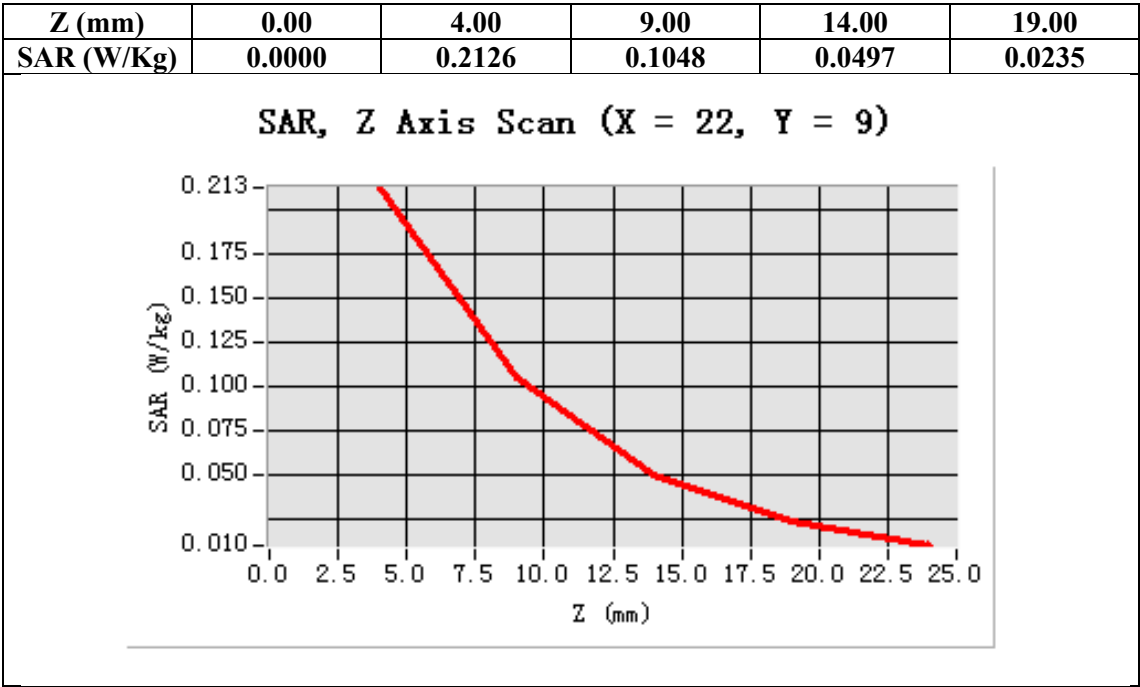
Configuration/802.11b Mid-Body- Front /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid-Body- Front Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=22.00, Y=9.00

SAR 10g (W/Kg)	0.102409
SAR 1g (W/Kg)	0.217564



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11b Mid -Horizontal near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section

Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

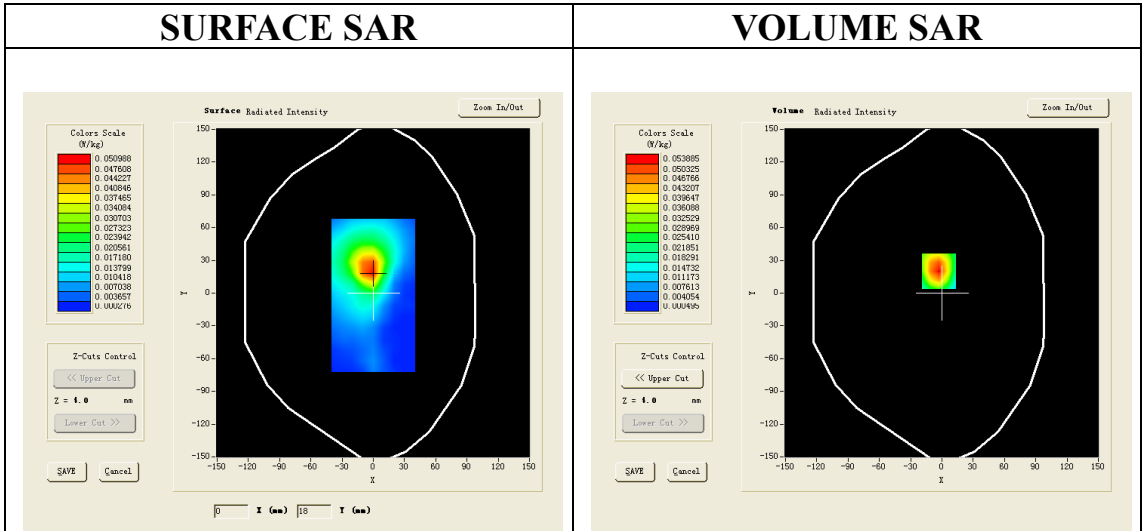
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

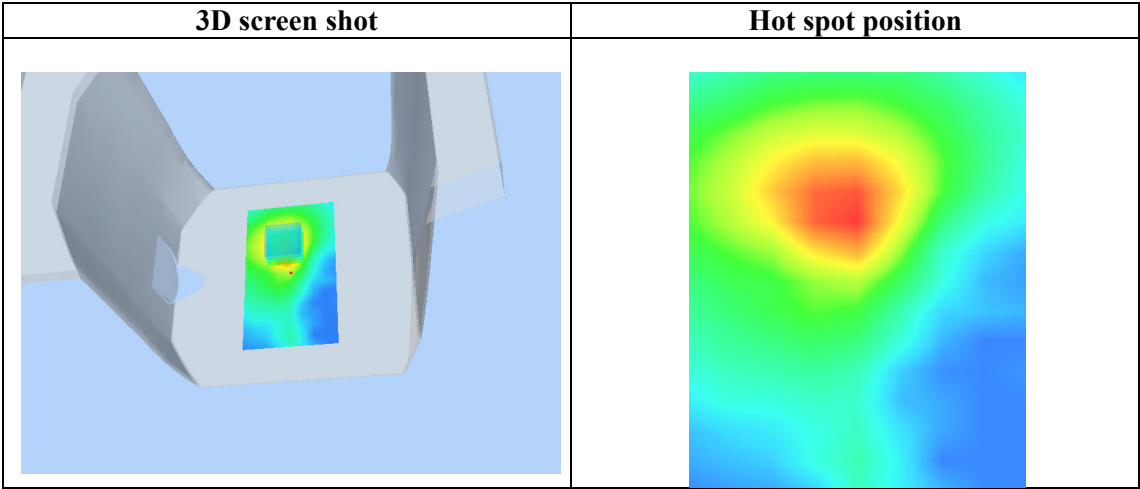
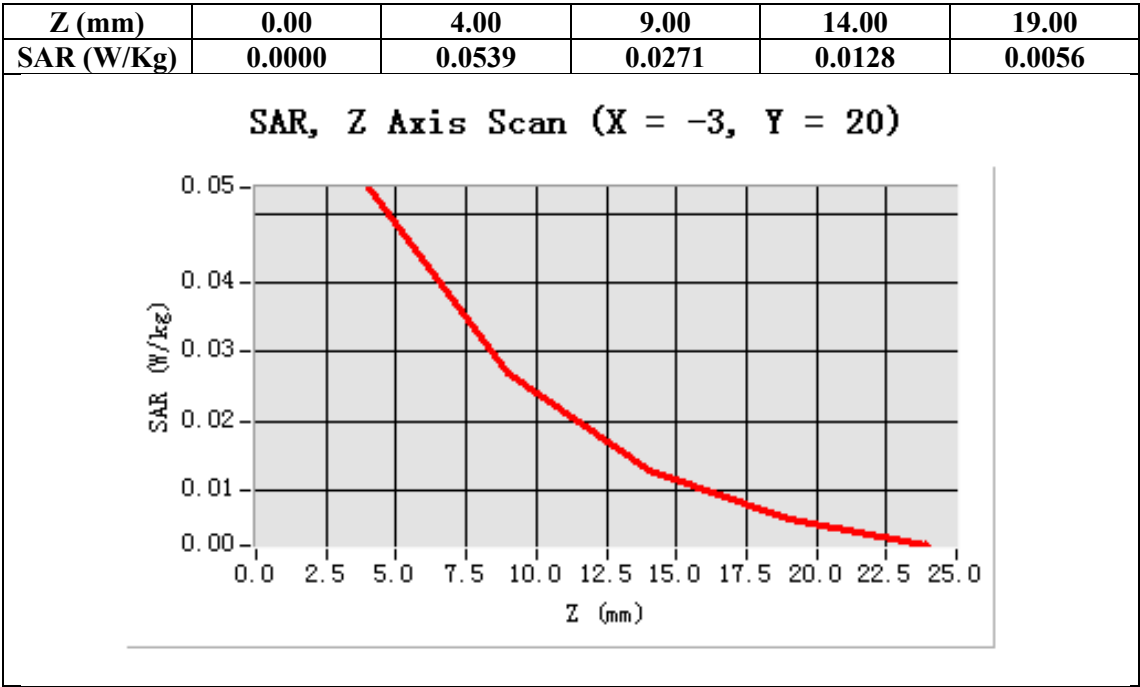
Configuration/802.11b Mid -Horizontal near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid-Horizontal near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid:
dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=-3.00, Y=20.00

SAR 10g (W/Kg)	0.027039
SAR 1g (W/Kg)	0.054744



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11b Mid -Horizontal away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

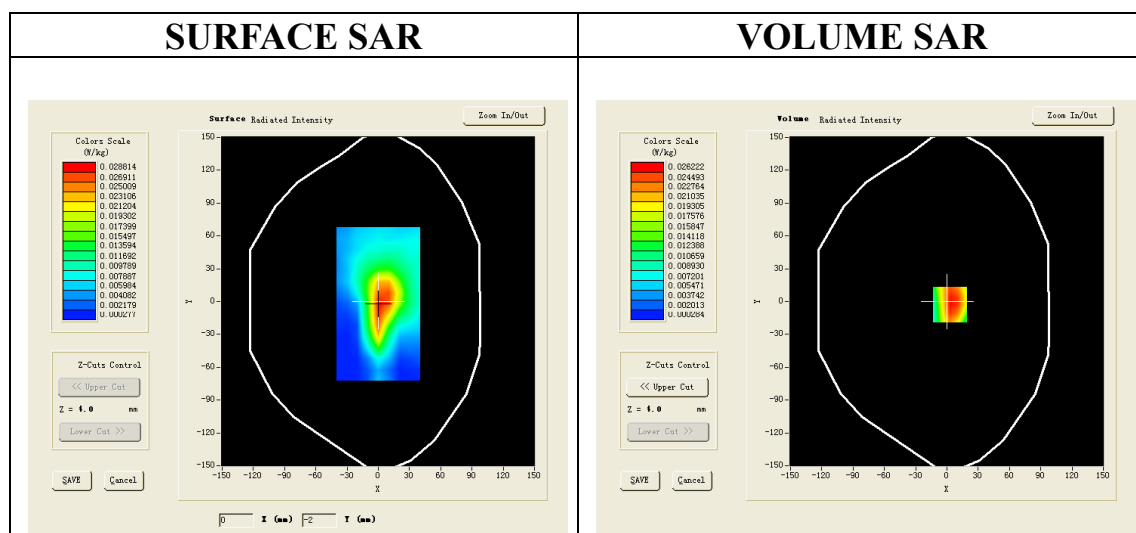
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11b Mid -Horizontal away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

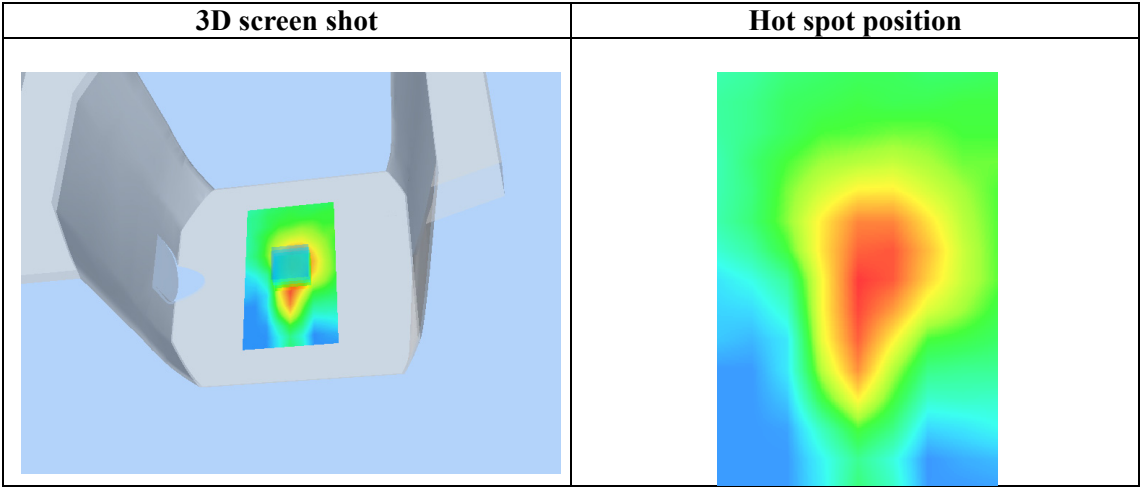
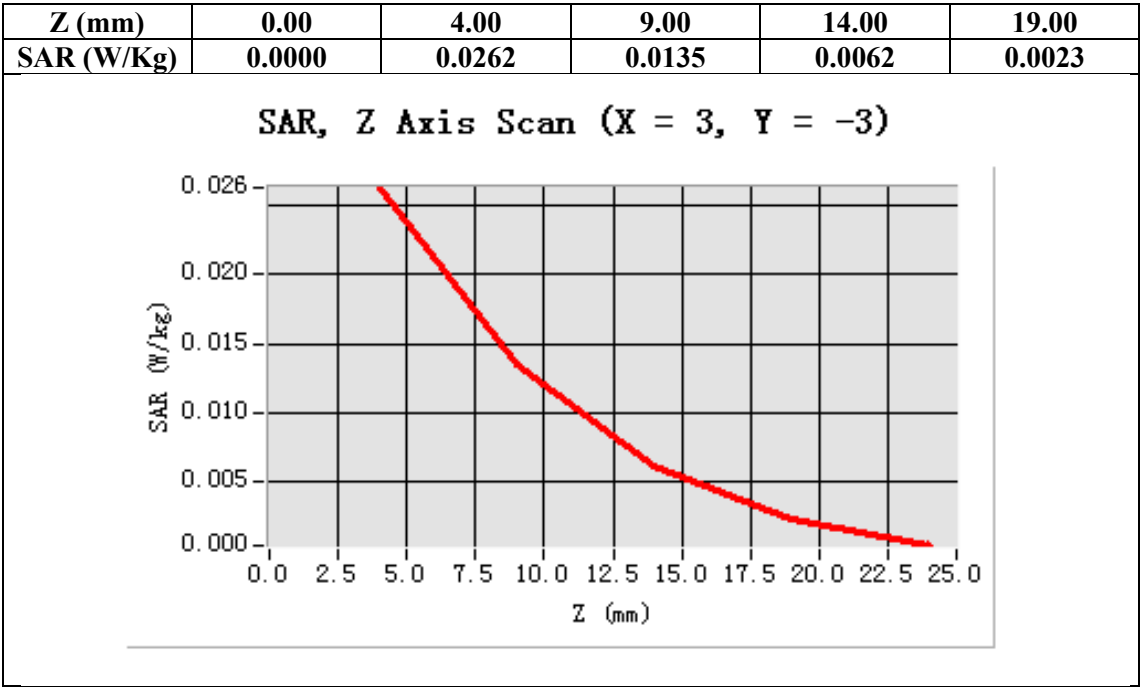
Configuration/802.11b Mid-Horizontal away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=3.00, Y=-3.00

SAR 10g (W/Kg)	0.013956
SAR 1g (W/Kg)	0.027310



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11b Mid -Vertical near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

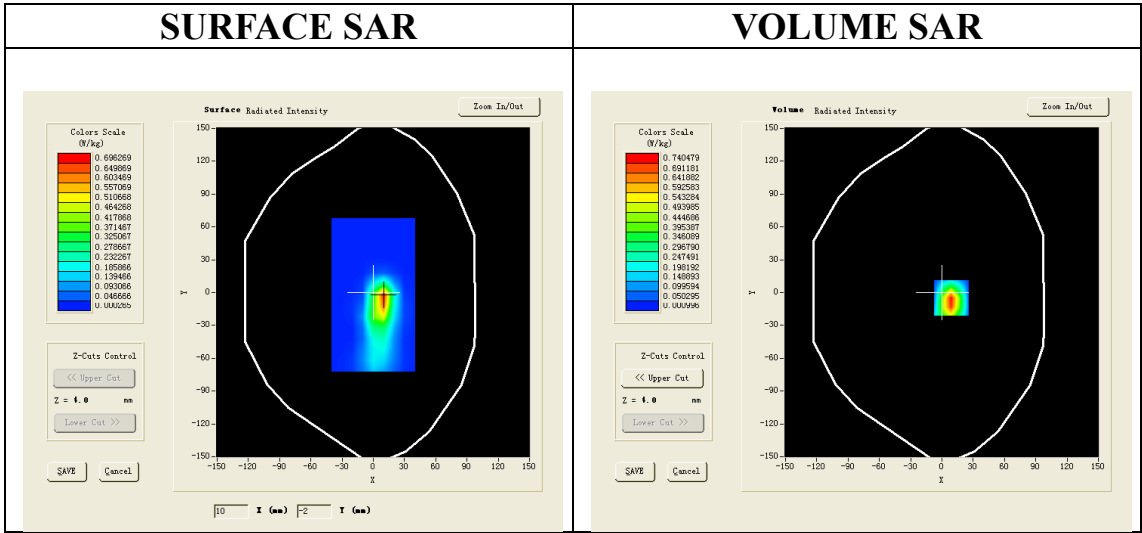
Satimo Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

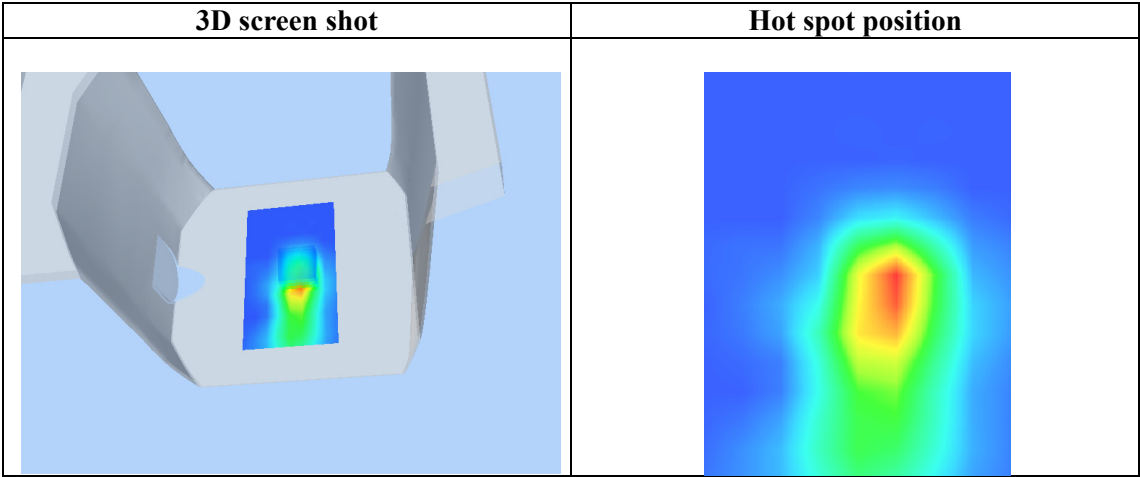
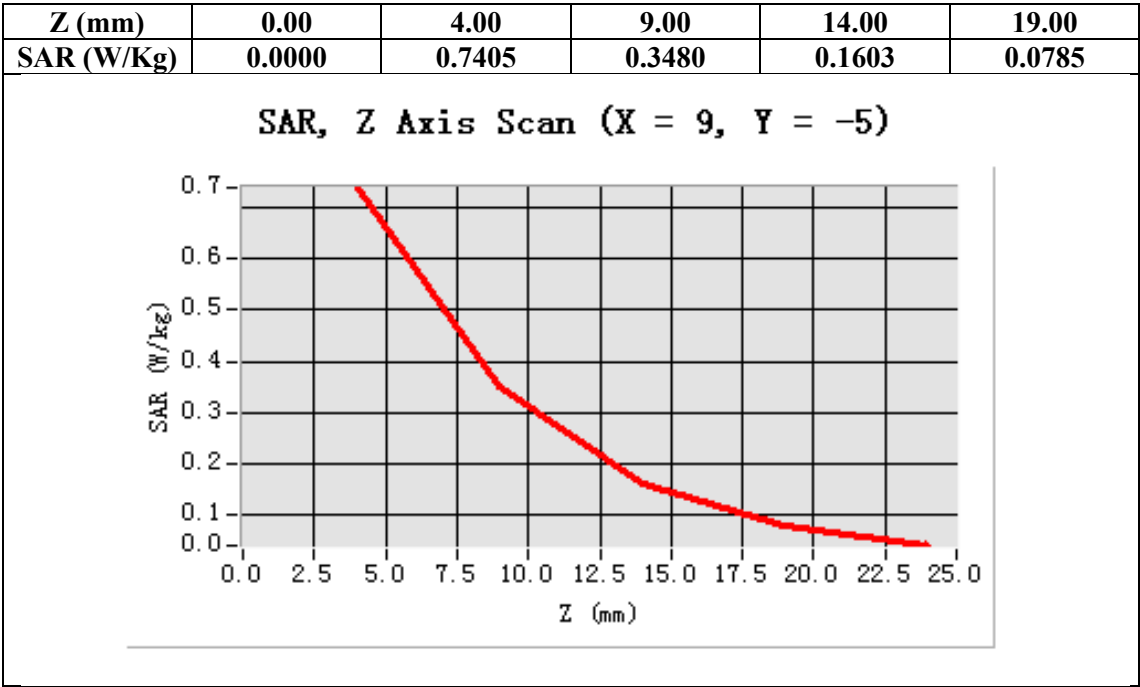
Configuration/802.11b Mid-Vertical near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid -Vertical near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=9.00, Y=-5.00

SAR 10g (W/Kg)	0.315830
SAR 1g (W/Kg)	0.739160



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11b Mid -Vertical away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

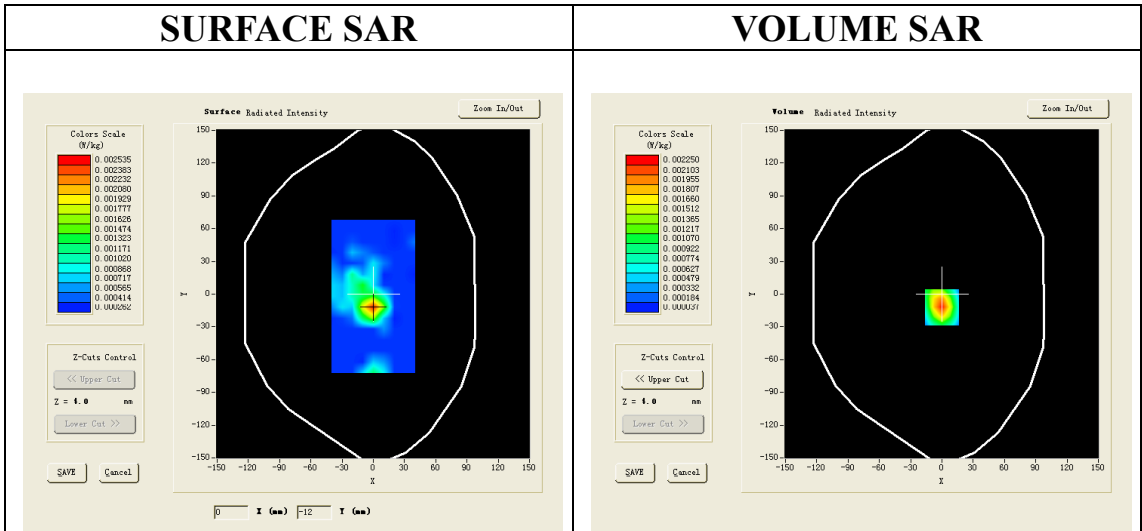
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11b Mid-Vertical away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

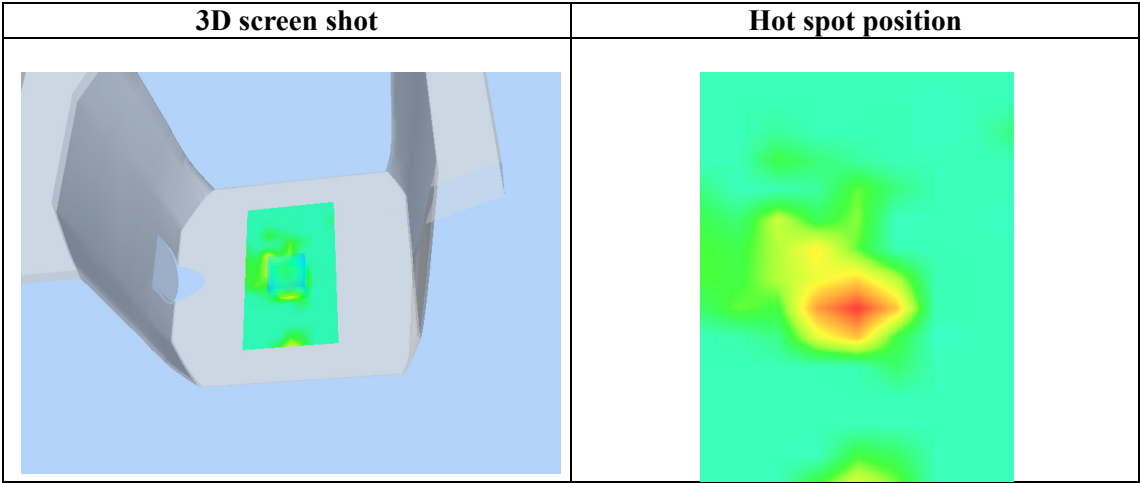
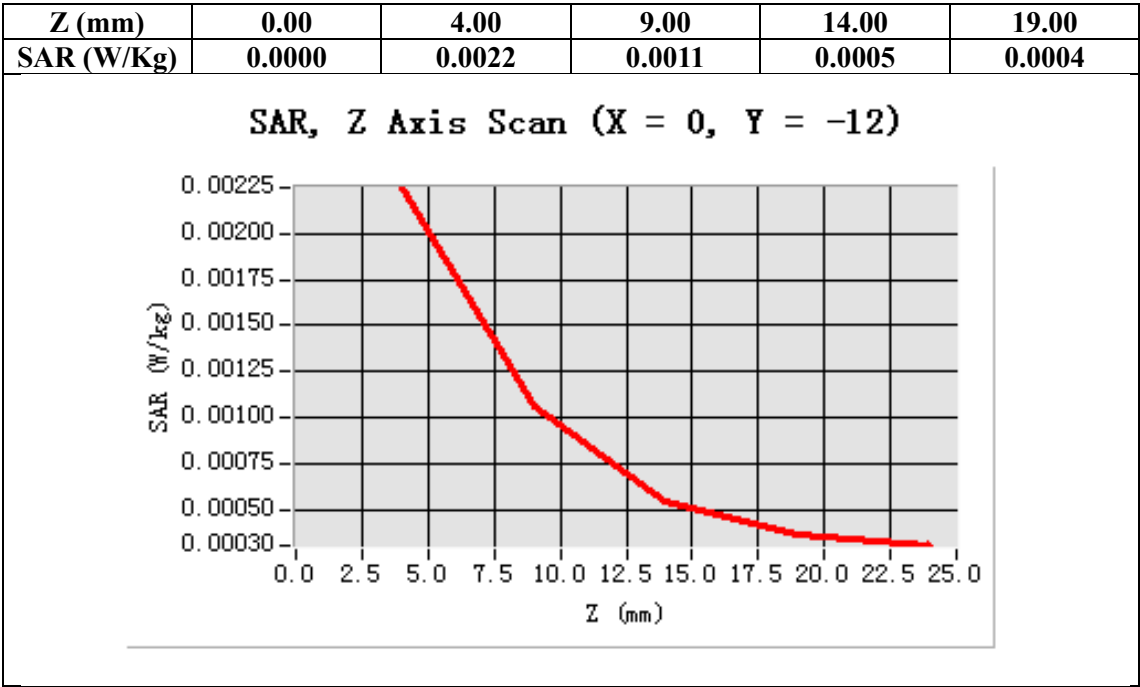
Configuration/802.11b Mid -Vertical away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=0.00, Y=-12.00

SAR 10g (W/Kg)	0.001104
SAR 1g (W/Kg)	0.002268



Test Laboratory: AGC Lab
802.11g Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

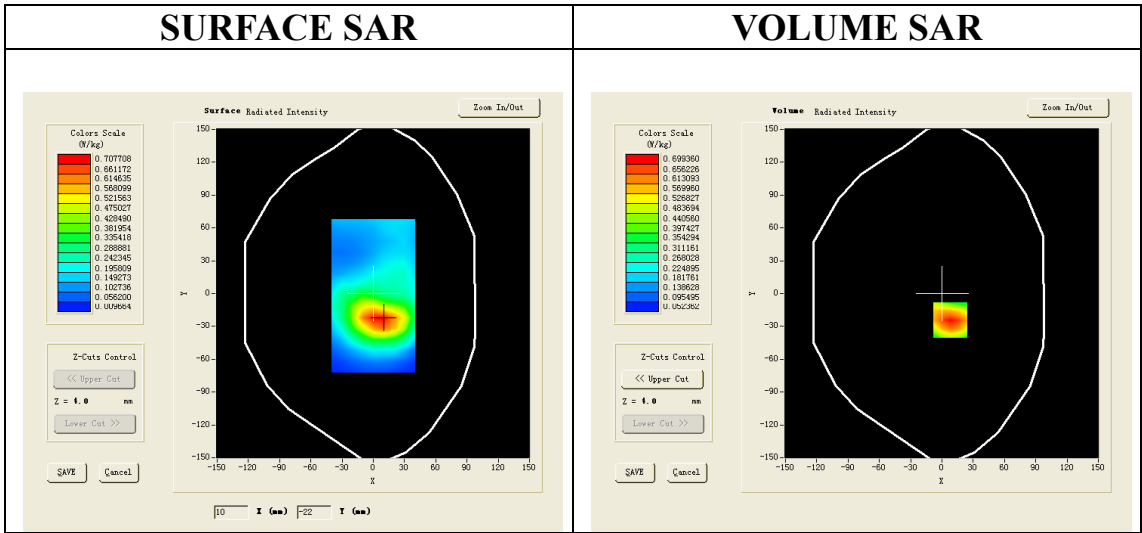
Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho= 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

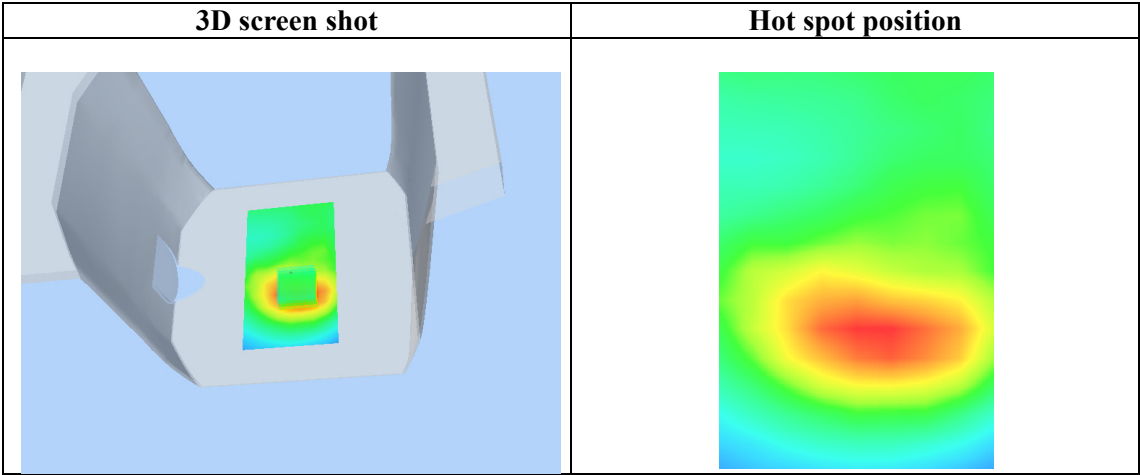
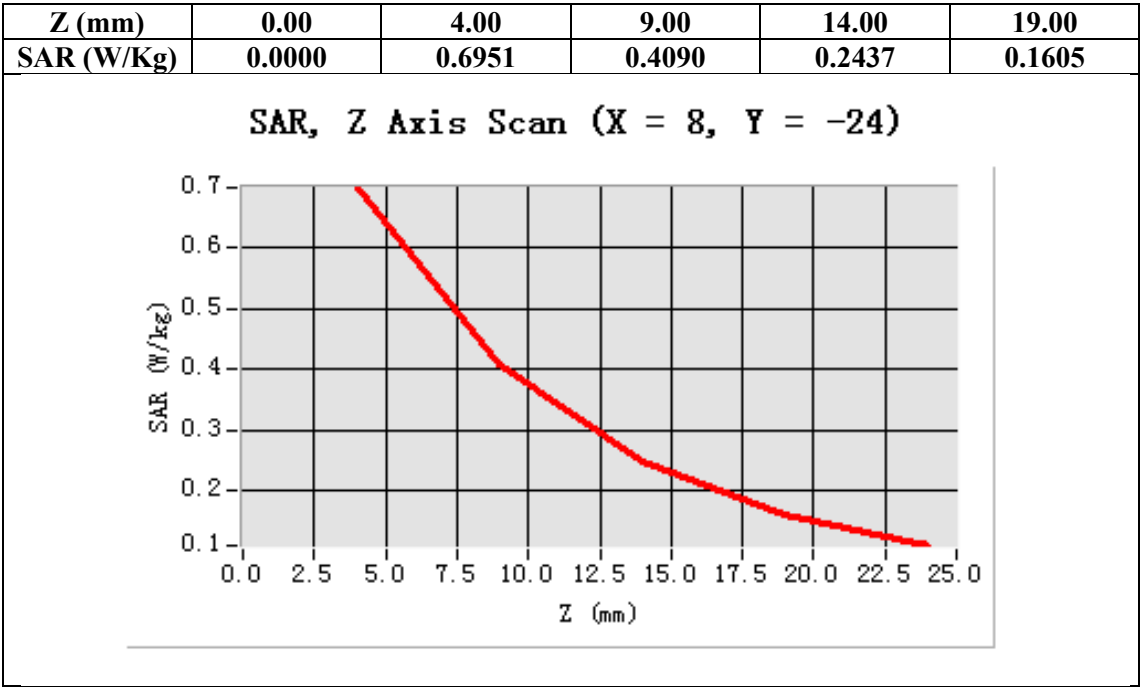
Configuration/802.11g Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11g Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=8.00, Y=-24.00

SAR 10g (W/Kg)	0.424571
SAR 1g (W/Kg)	0.716538



Test Laboratory: AGC Lab
802.11g Mid- Body- Front

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

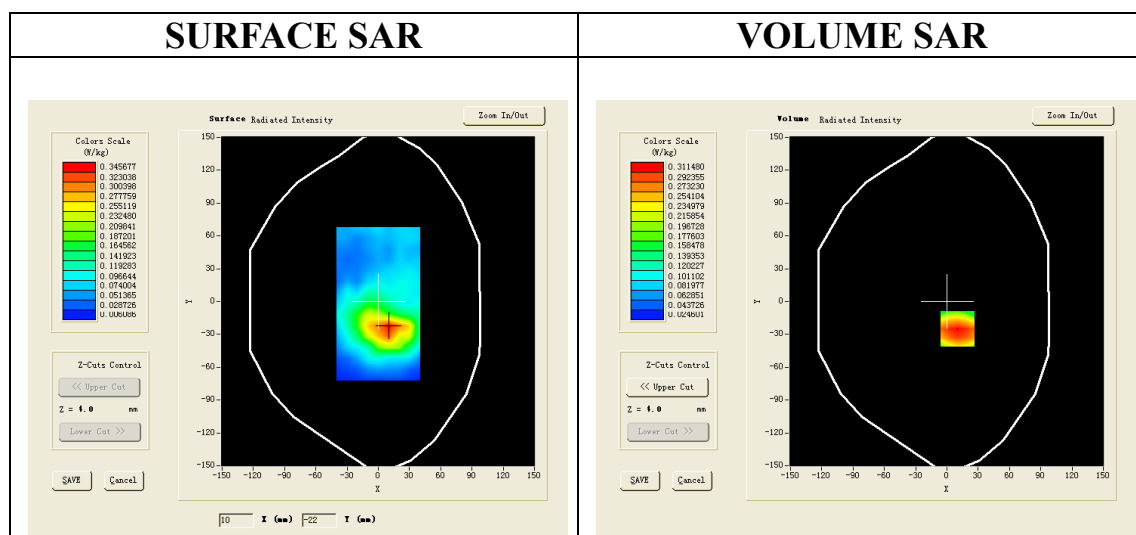
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

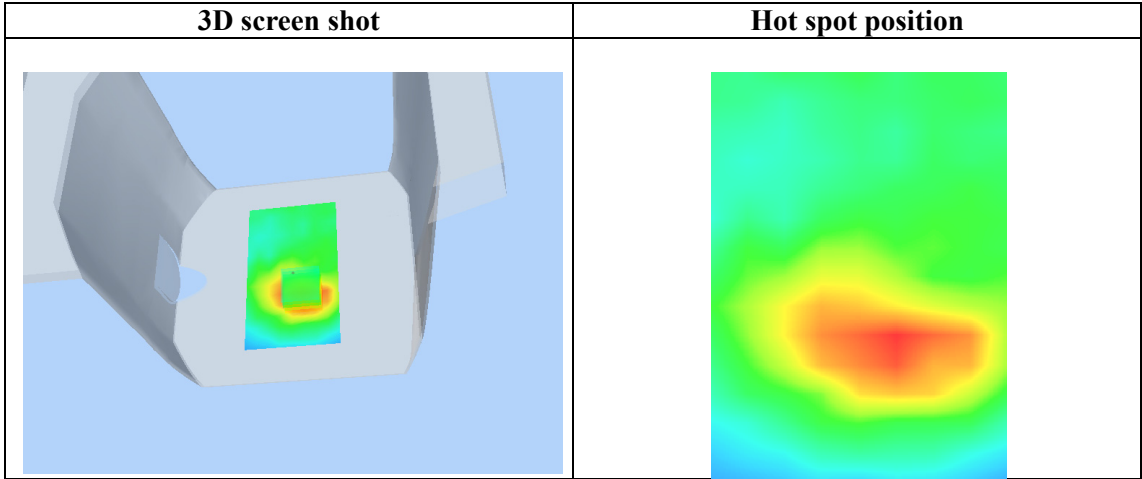
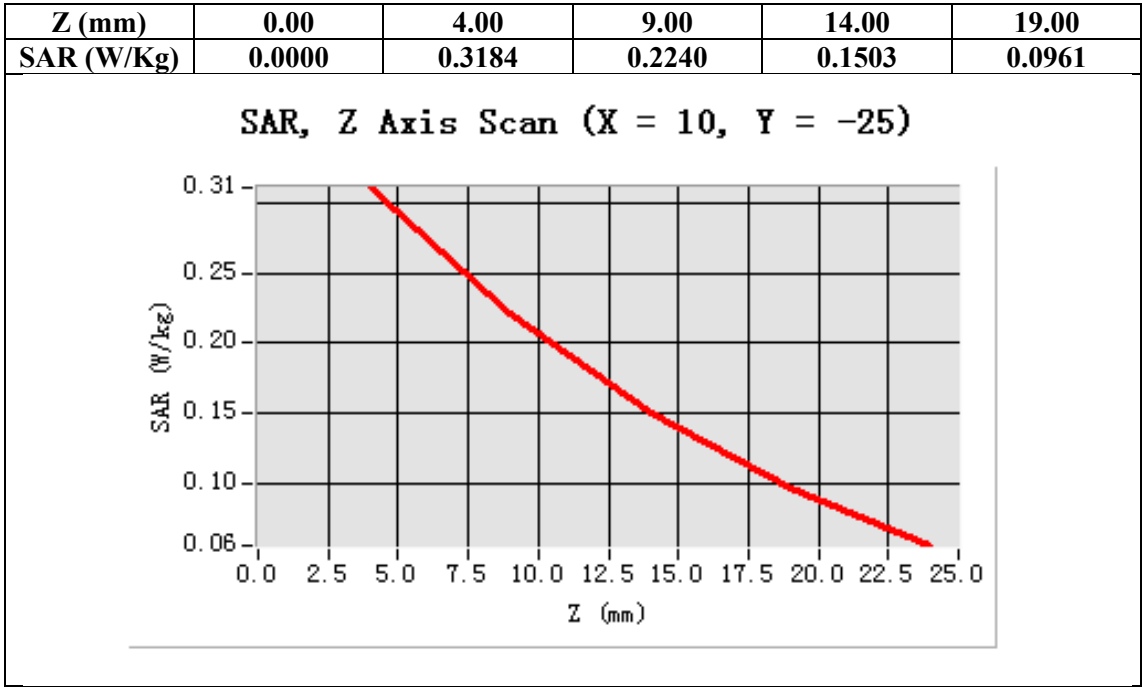
Configuration/802.11g Mid-Body- Front /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11g Mid-Body- Front Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=10.00, Y=-25.00

SAR 10g (W/Kg)	0.204204
SAR 1g (W/Kg)	0.321350



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11g Mid -Horizontal near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section

Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

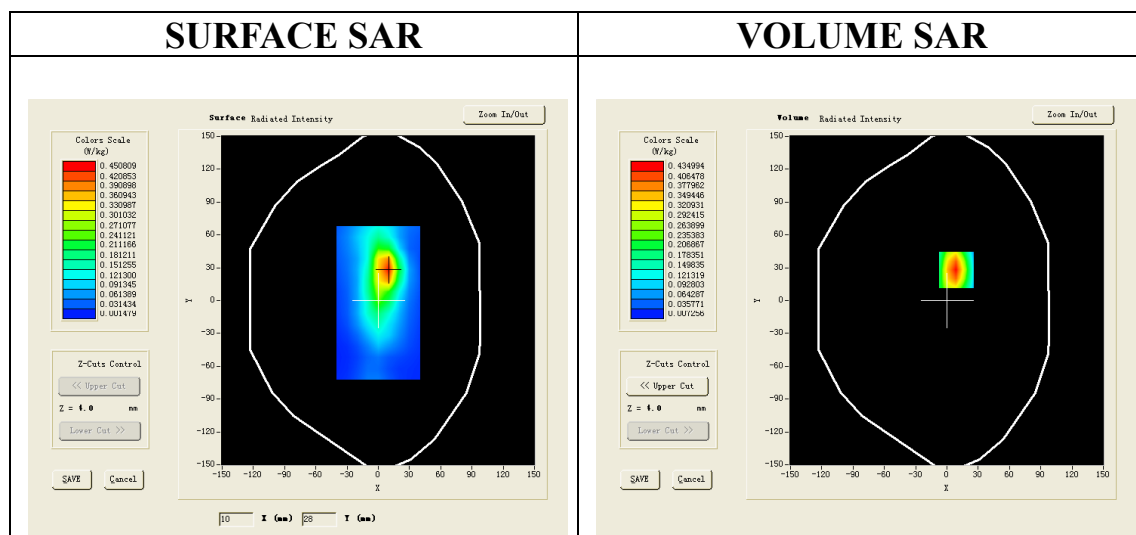
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

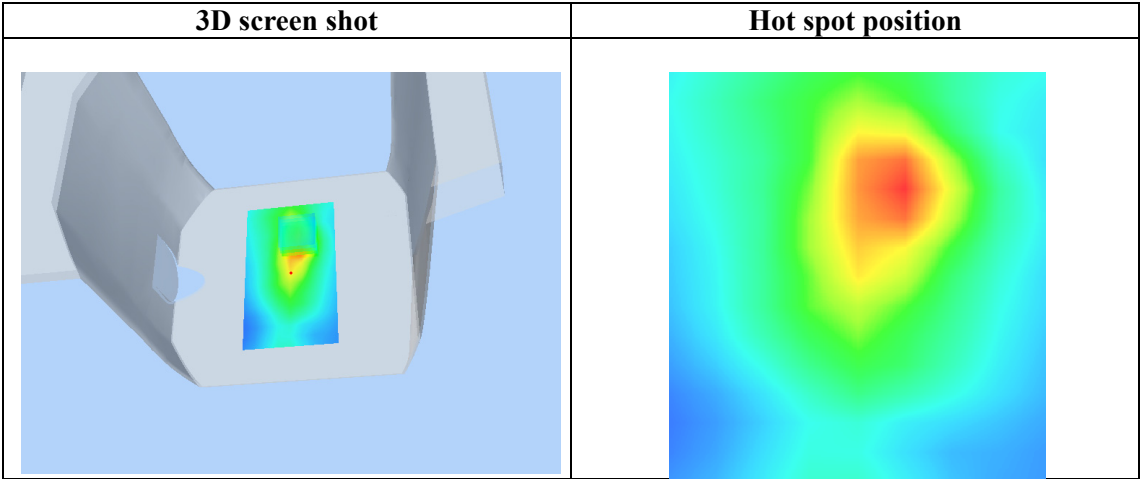
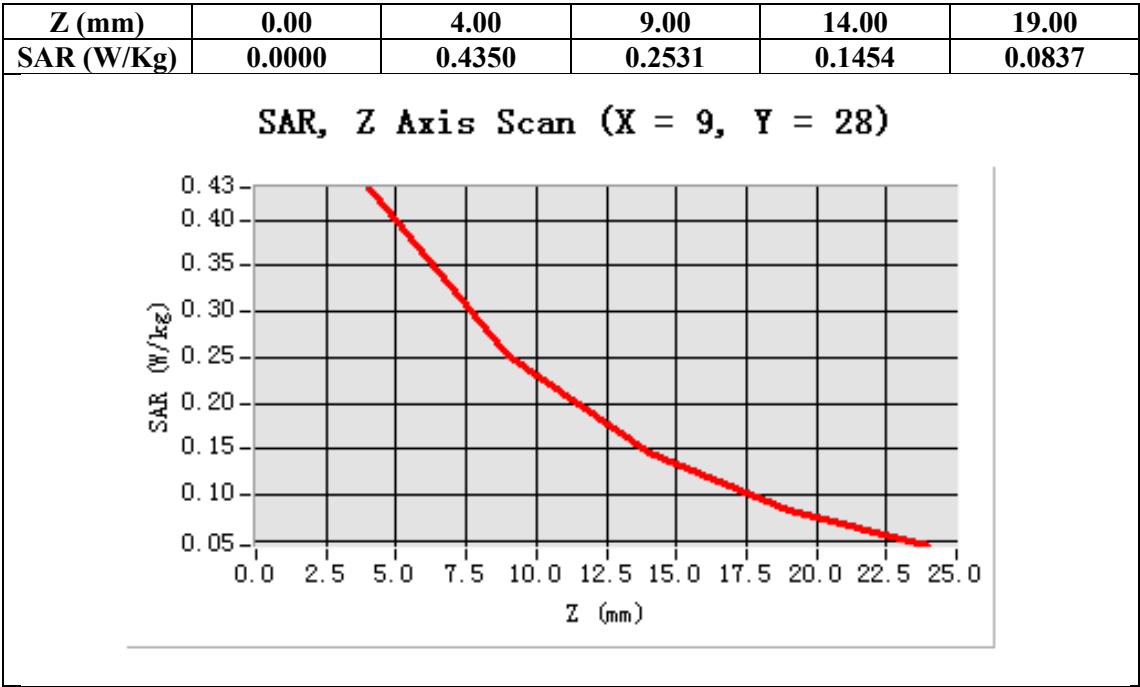
Configuration/802.11g Mid -Horizontal near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11g Mid-Horizontal near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid:
dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=9.00, Y=28.00

SAR 10g (W/Kg)	0.231077
SAR 1g (W/Kg)	0.436627



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11g Mid -Horizontal away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

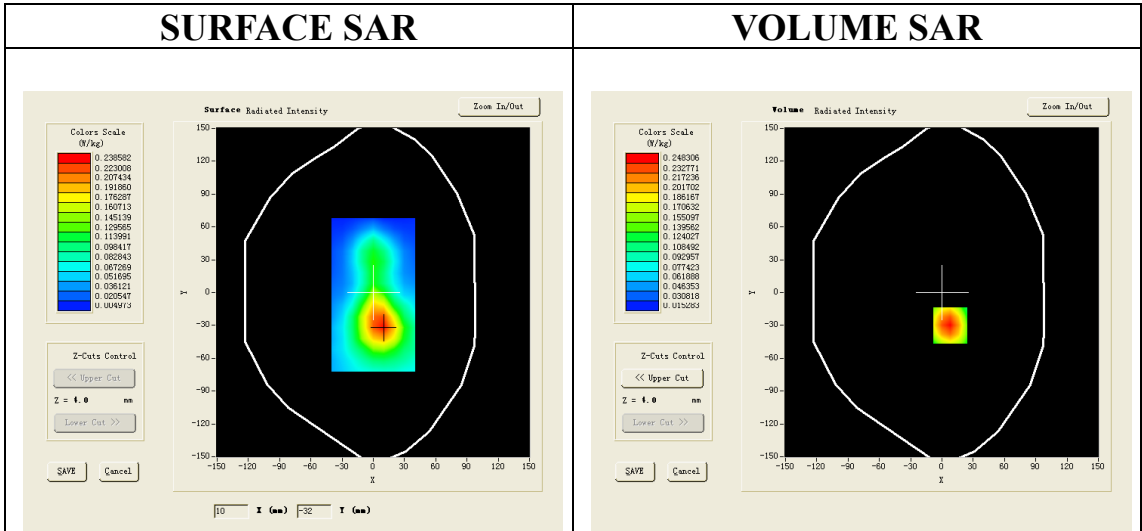
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11g Mid -Horizontal away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

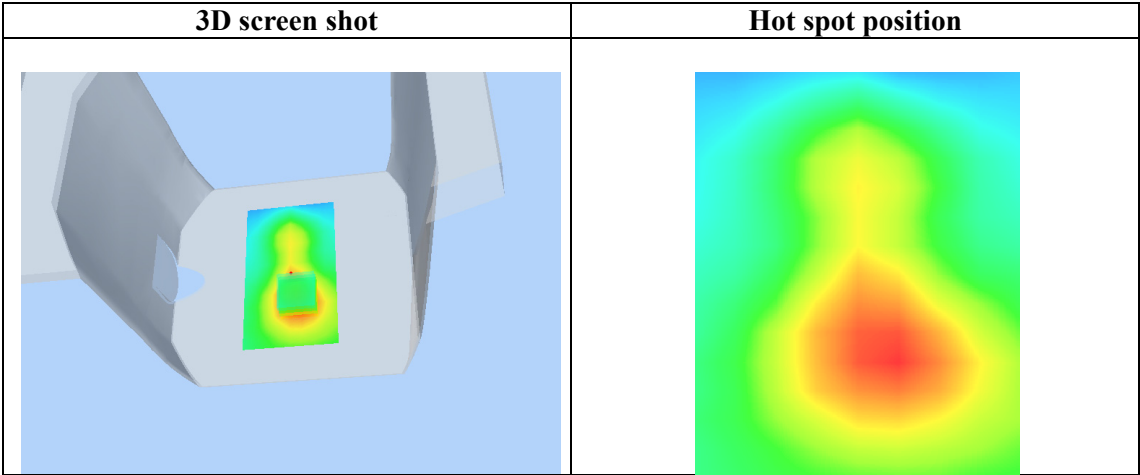
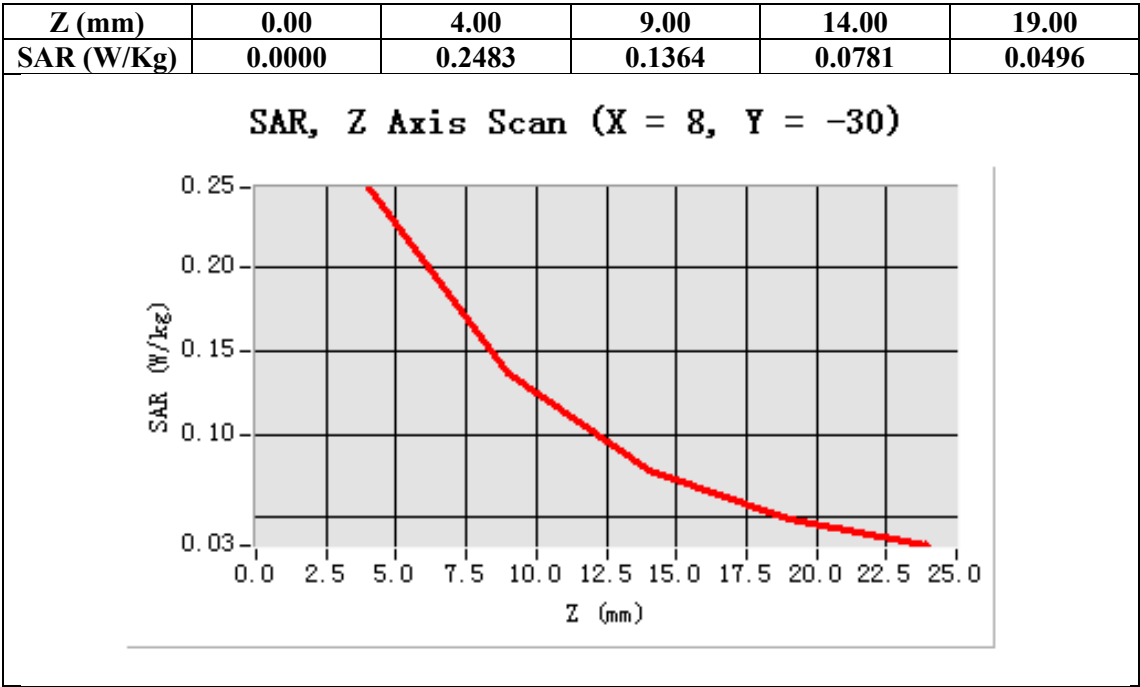
Configuration/802.11g Mid-Horizontal away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=8.00, Y=-30.00

SAR 10g (W/Kg)	0.147710
SAR 1g (W/Kg)	0.253542



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11g Mid -Vertical near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

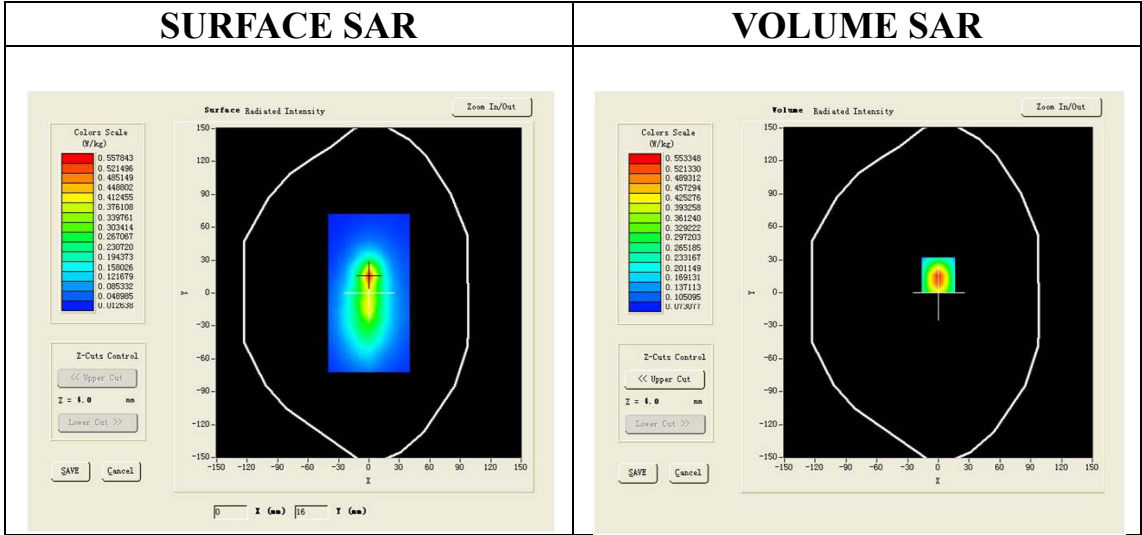
Satimo Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

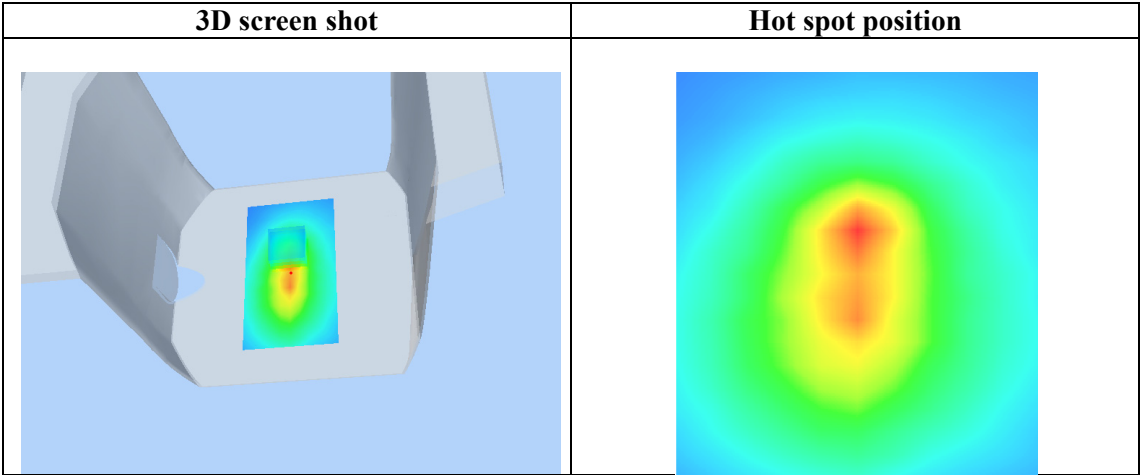
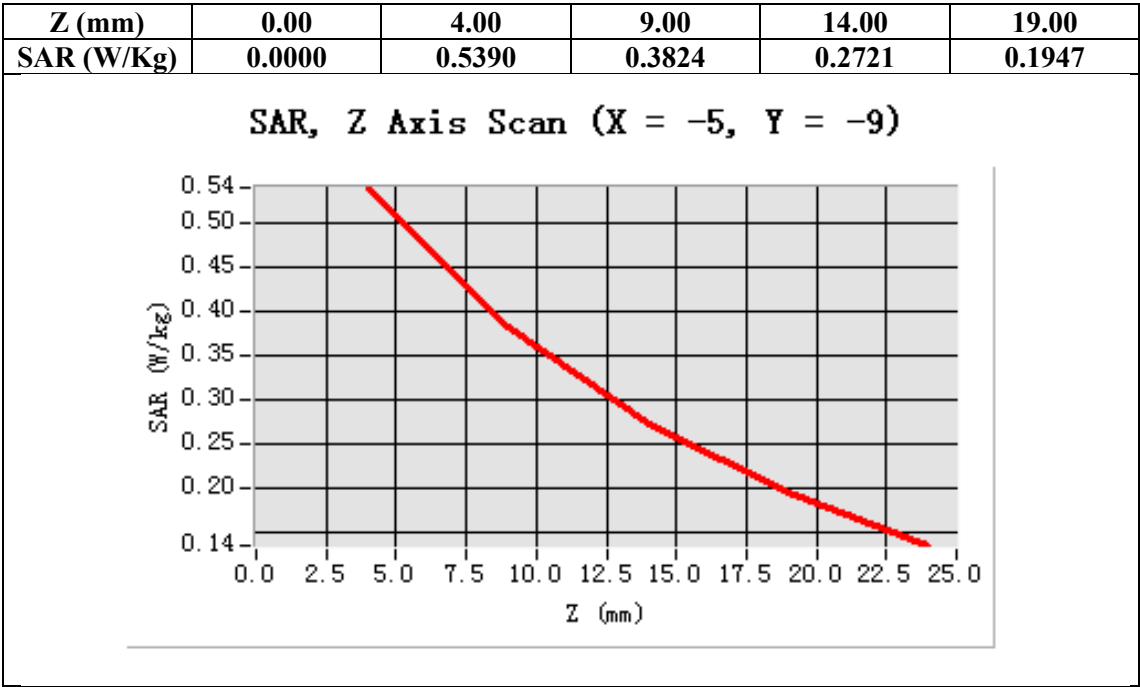
Configuration/802.11g Mid-Vertical near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11g Mid -Vertical near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=-5.00, Y=-9.00

SAR 10g (W/Kg)	0.397140
SAR 1g (W/Kg)	0.572470



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11g Mid -Vertical away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

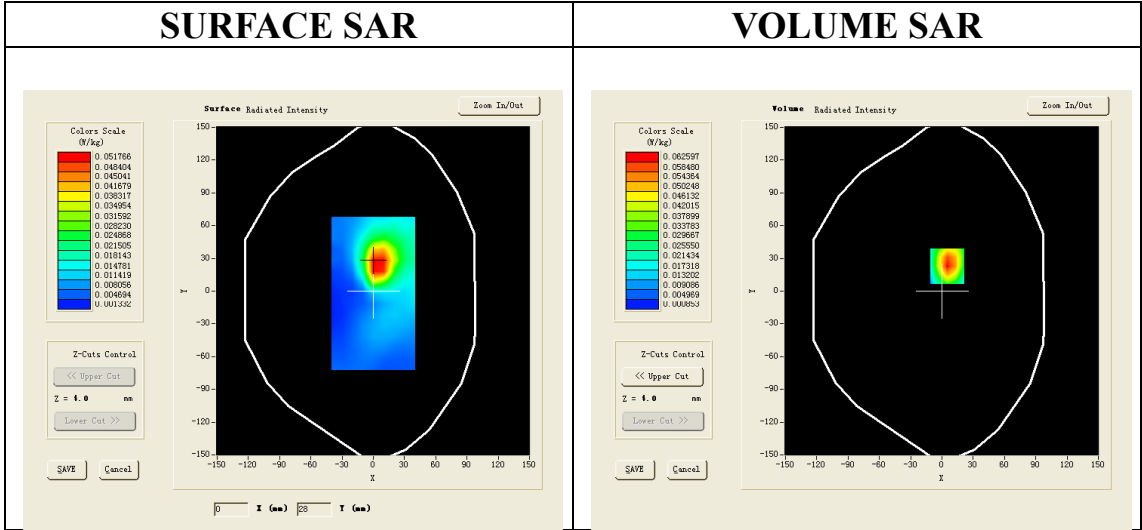
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11g Mid-Vertical away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

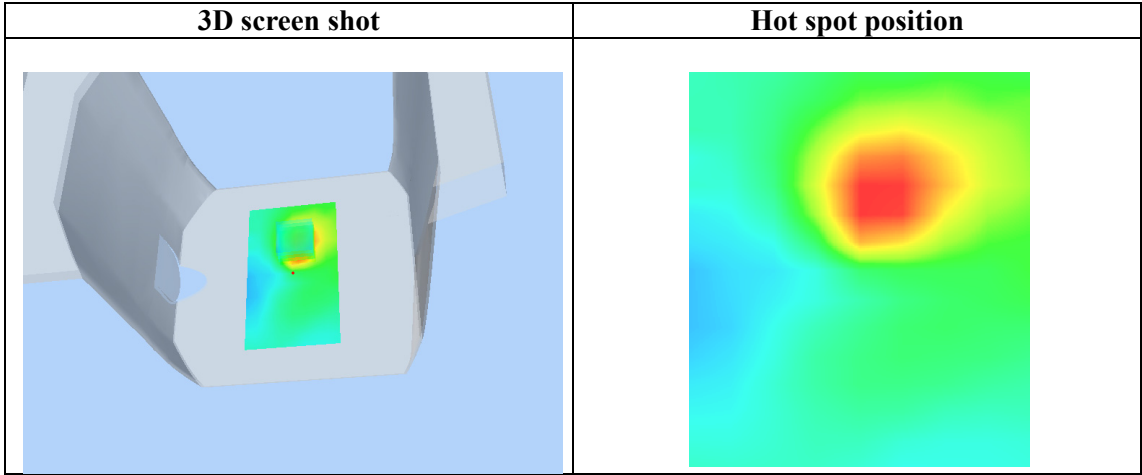
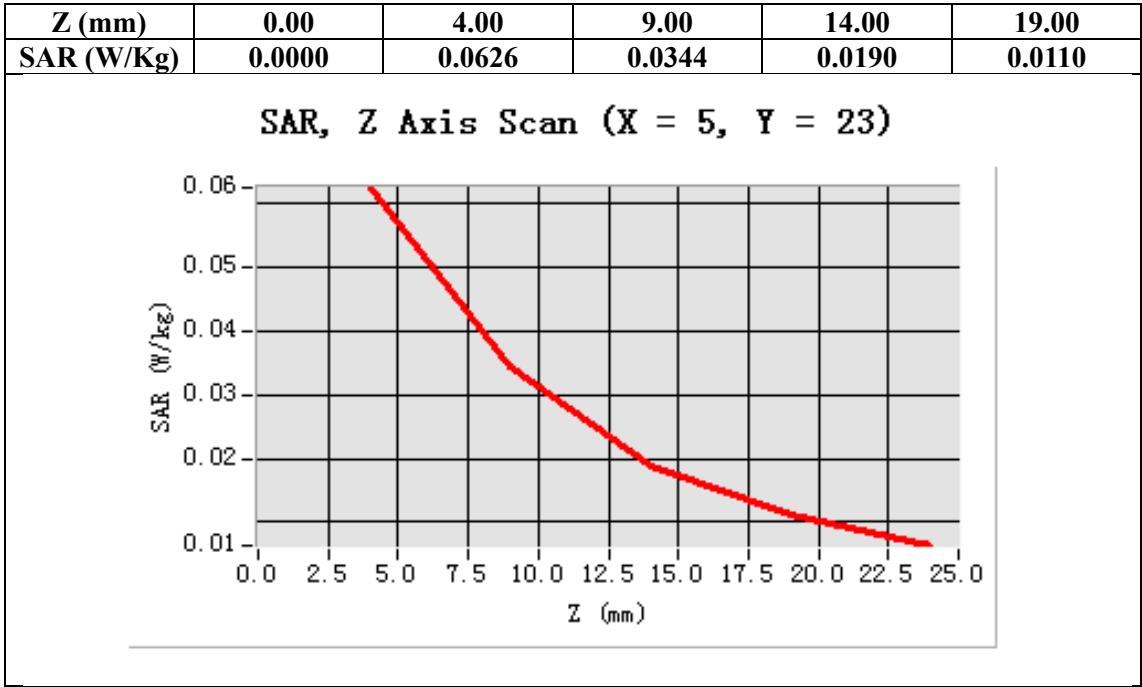
Configuration/802.11g Mid -Vertical away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=5.00, Y=23.00

SAR 10g (W/Kg)	0.034417
SAR 1g (W/Kg)	0.062846



Test Laboratory: AGC Lab
802.11n(20) Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

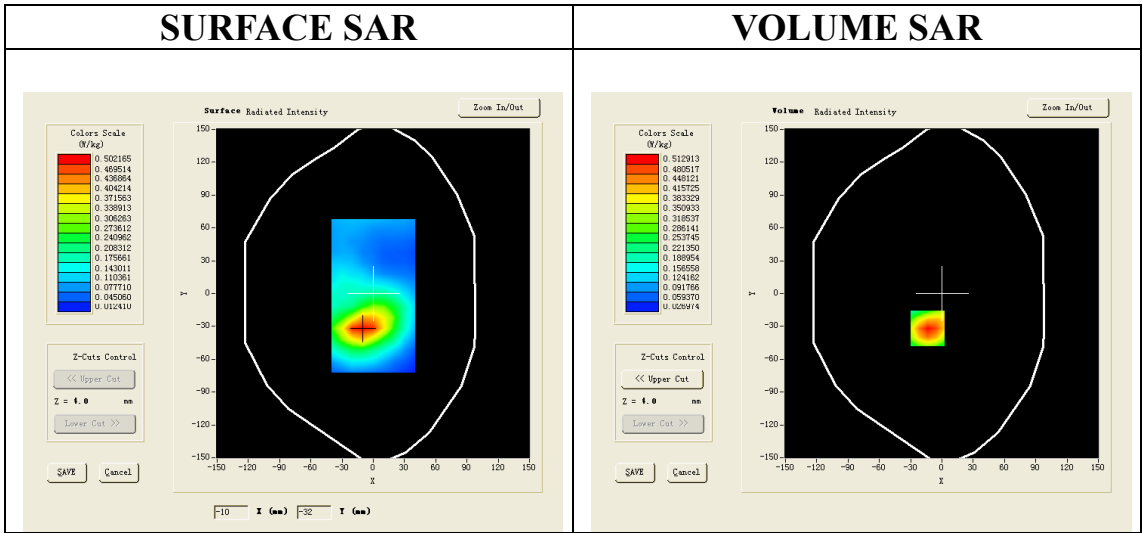
Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

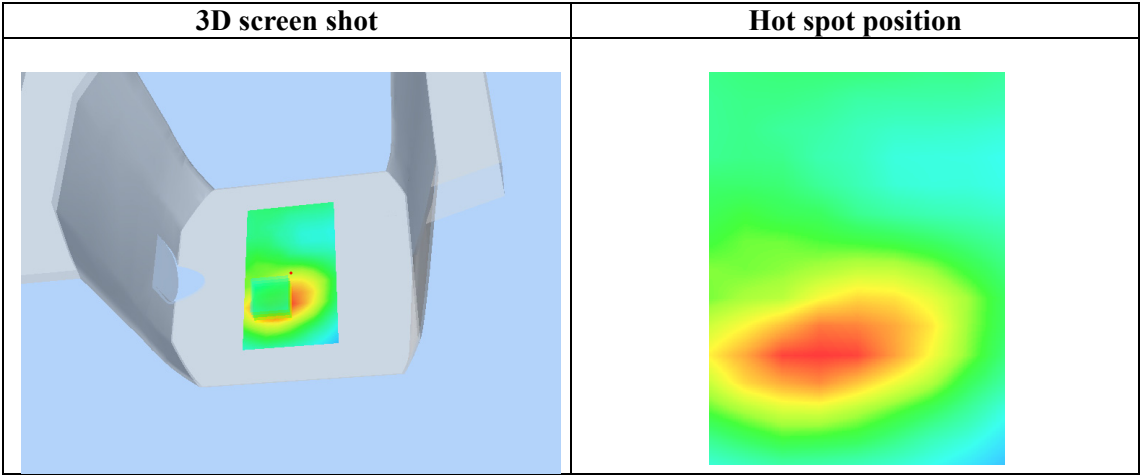
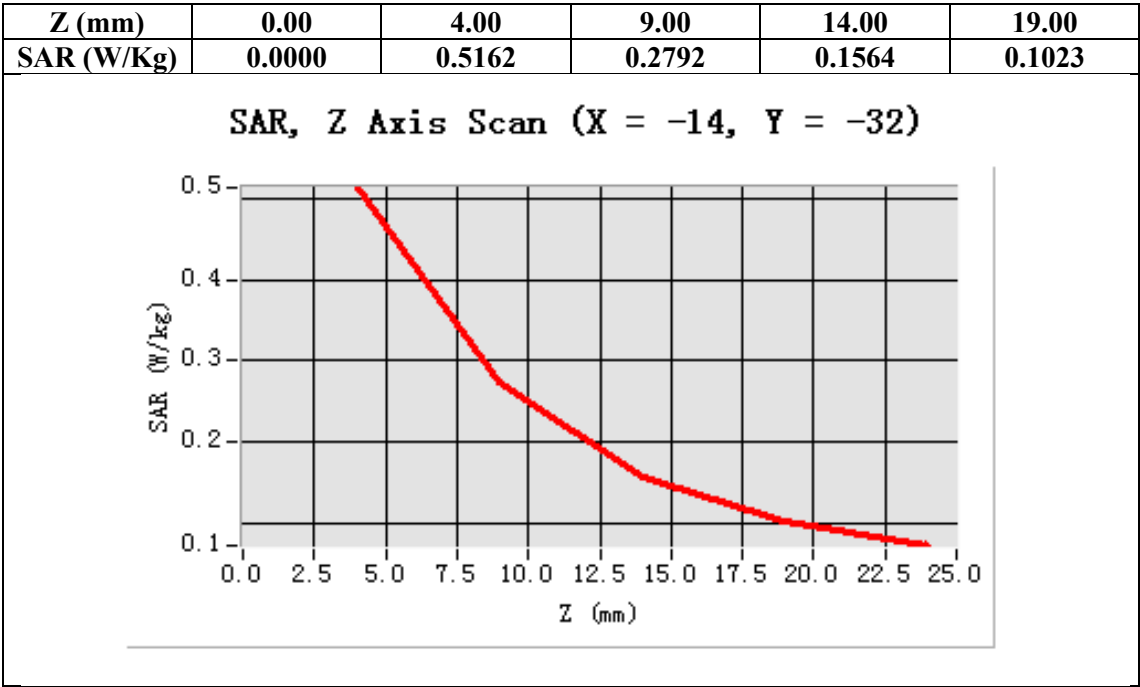
Configuration/802.11n(20) Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11n(20) Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-14.00, Y=-32.00

SAR 10g (W/Kg)	0.294127
SAR 1g (W/Kg)	0.525102



Test Laboratory: AGC Lab
802.11n(20) Mid- Body- Front

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

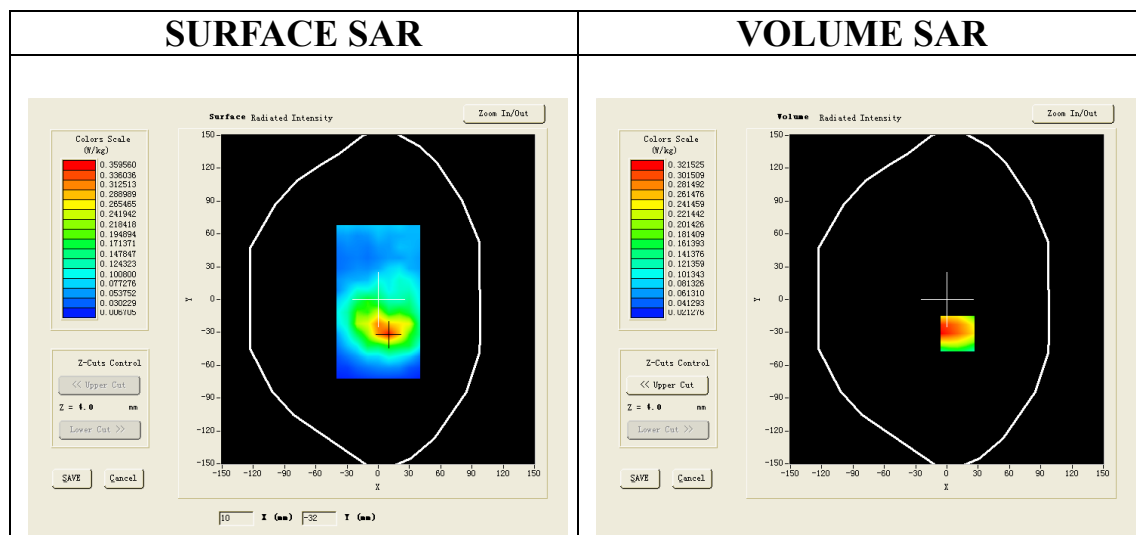
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

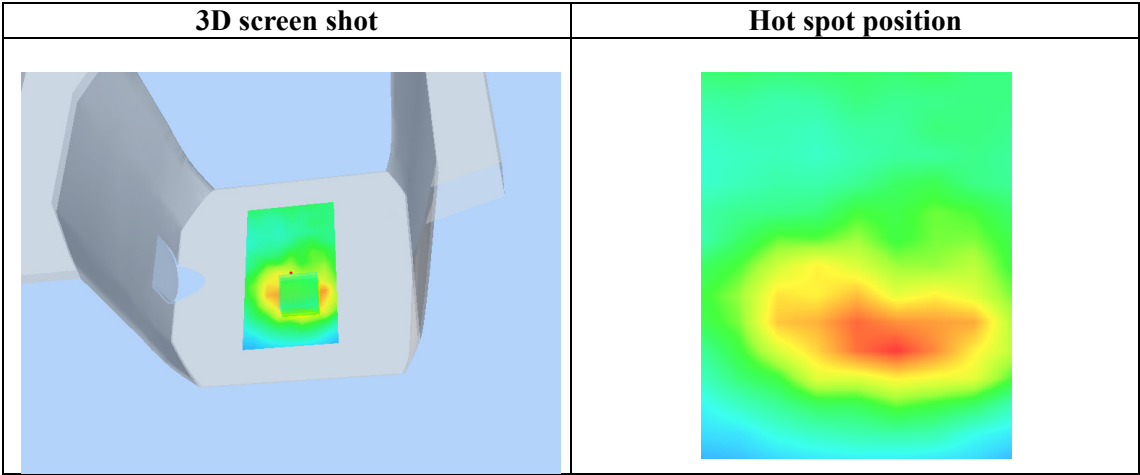
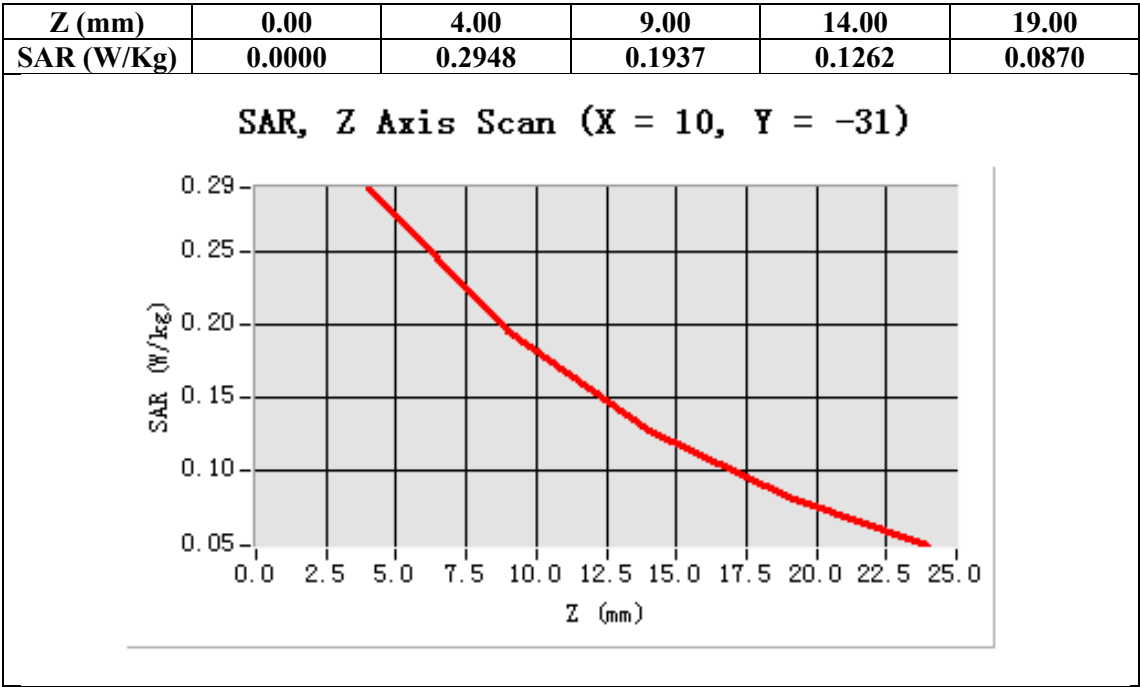
Configuration/802.11n(20) Mid-Body- Front /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11n(20) Mid-Body- Front Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=10.00, Y=-31.00

SAR 10g (W/Kg)	0.202473
SAR 1g (W/Kg)	0.323581



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11n(20) Mid -Horizontal near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32; Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ; Phantom section: Flat Section

Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

SATIMO Configuration:

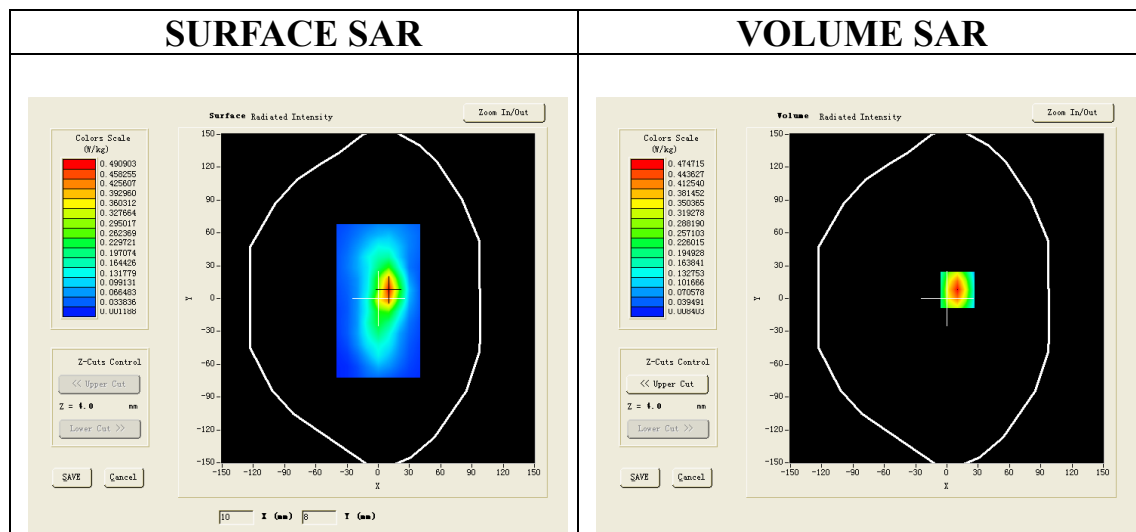
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11n(20) Mid -Horizontal near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

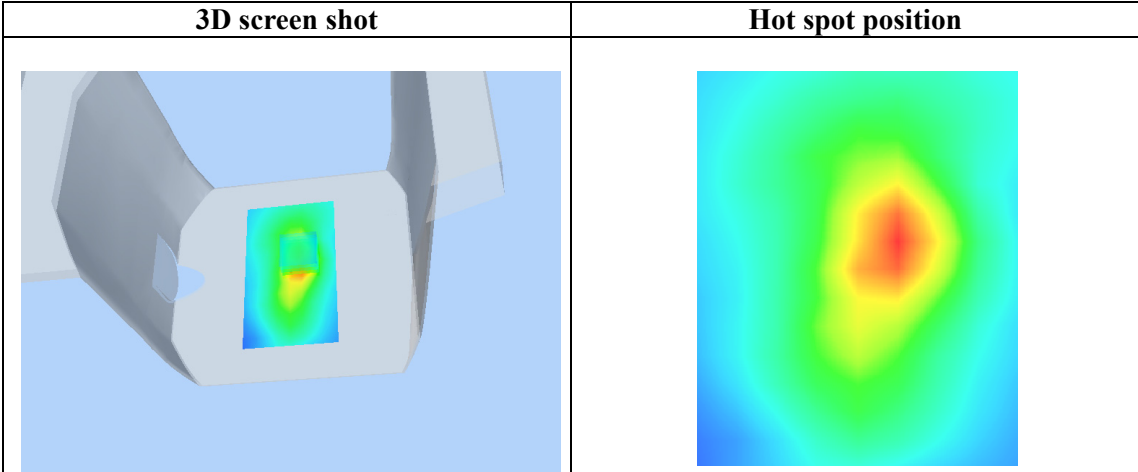
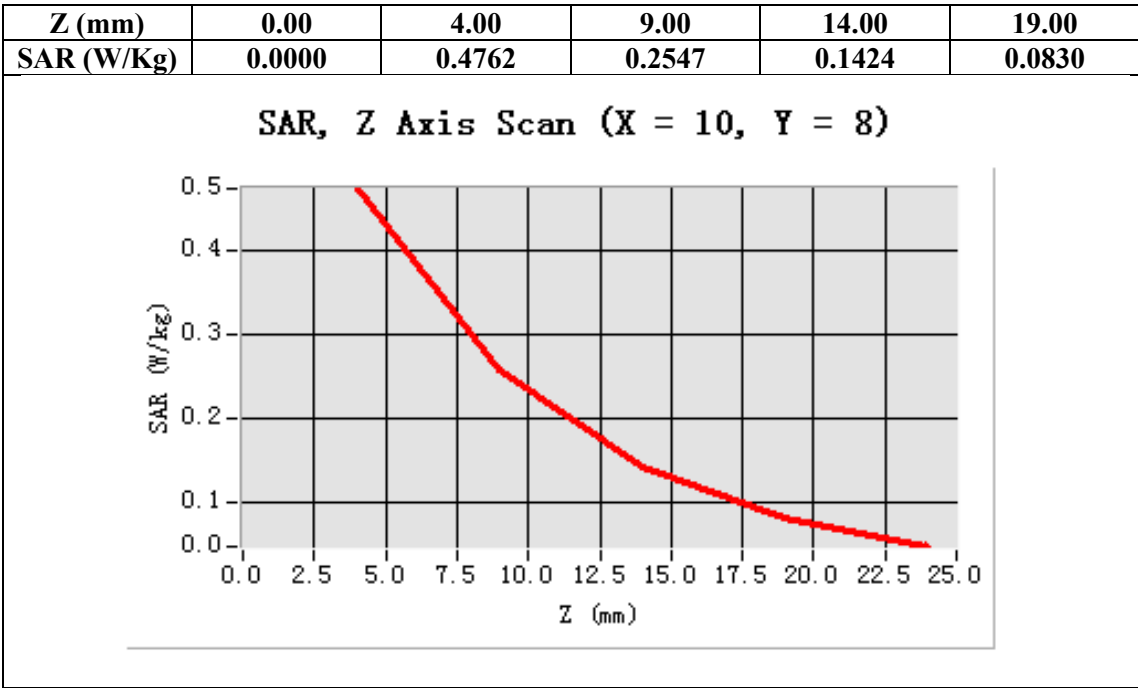
Configuration/802.11n(20) Mid-Horizontal near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=10.00, Y=8.00

SAR 10g (W/Kg)	0.247104
SAR 1g (W/Kg)	0.473574



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11n(20) Mid -Horizontal away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

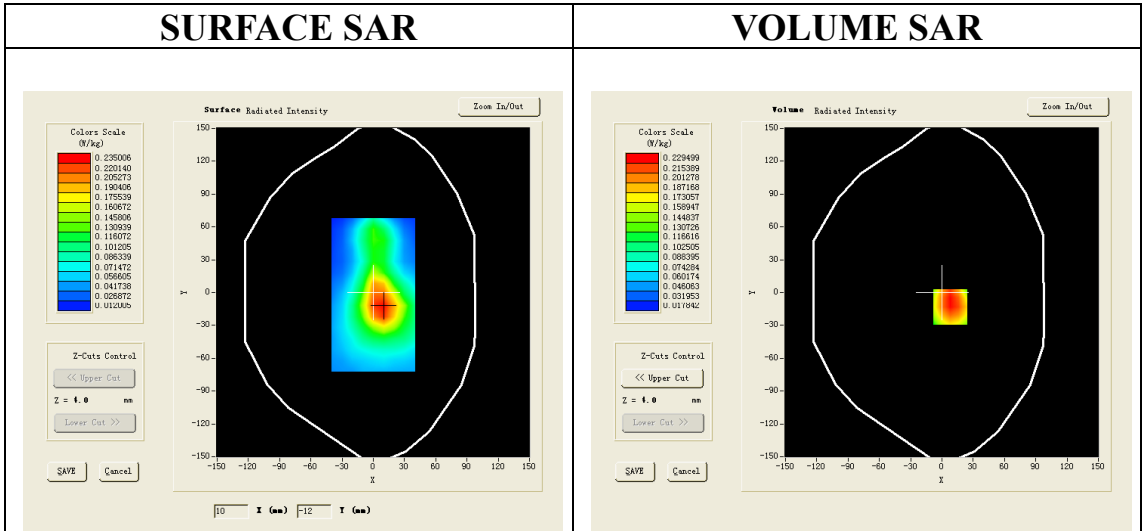
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11n(20) Mid -Horizontal away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

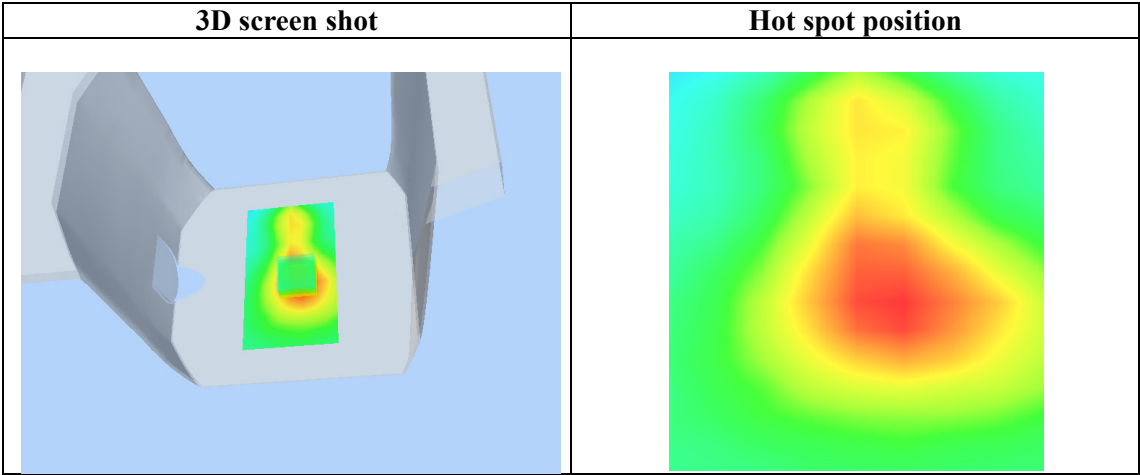
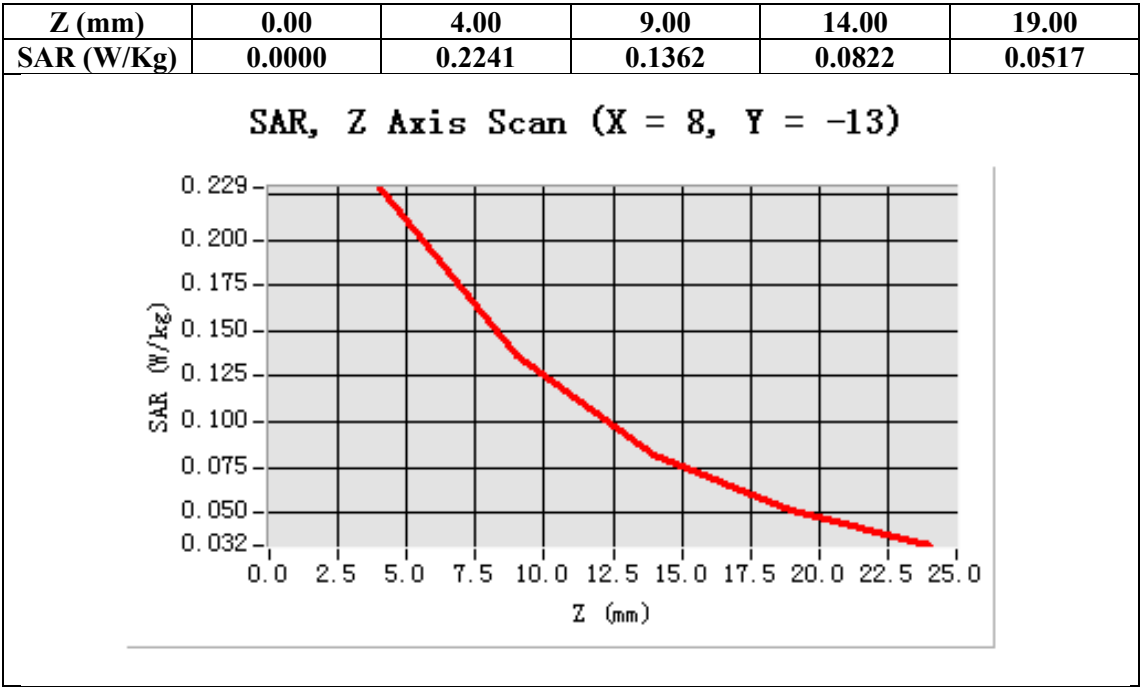
Configuration/802.11n(20) Mid-Horizontal away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Horizontal
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=8.00, Y=-13.00

SAR 10g (W/Kg)	0.144102
SAR 1g (W/Kg)	0.235527



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11n(20) Mid -Vertical near antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

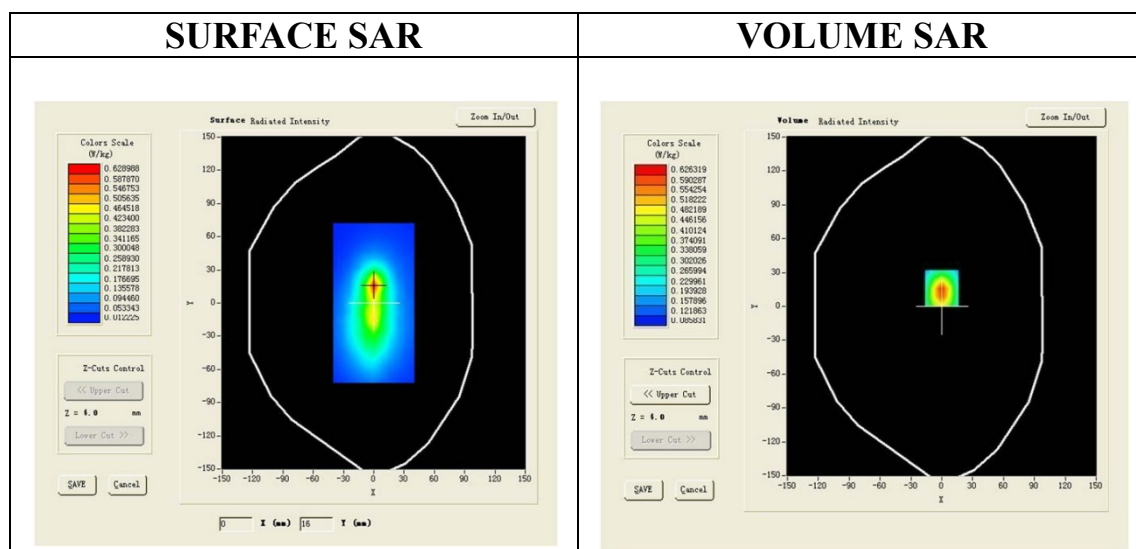
Satimo Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

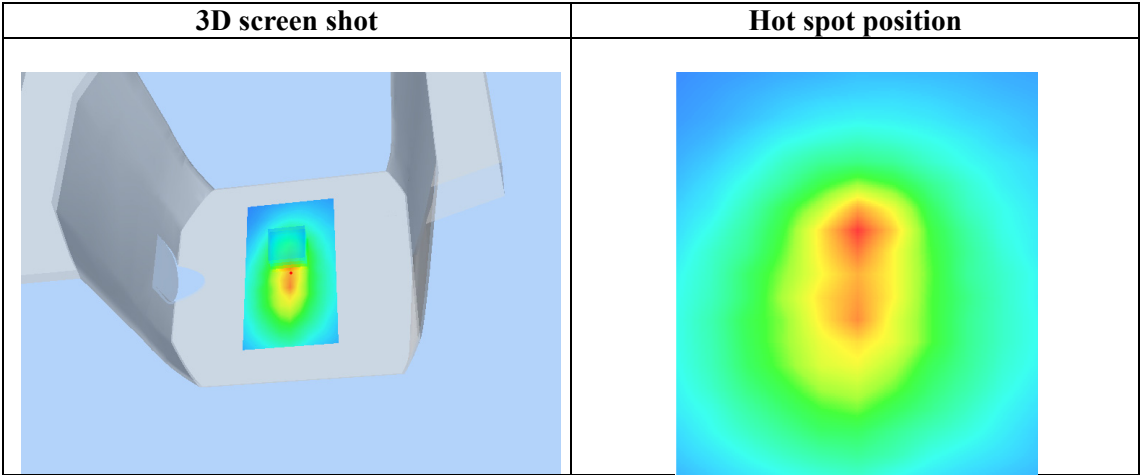
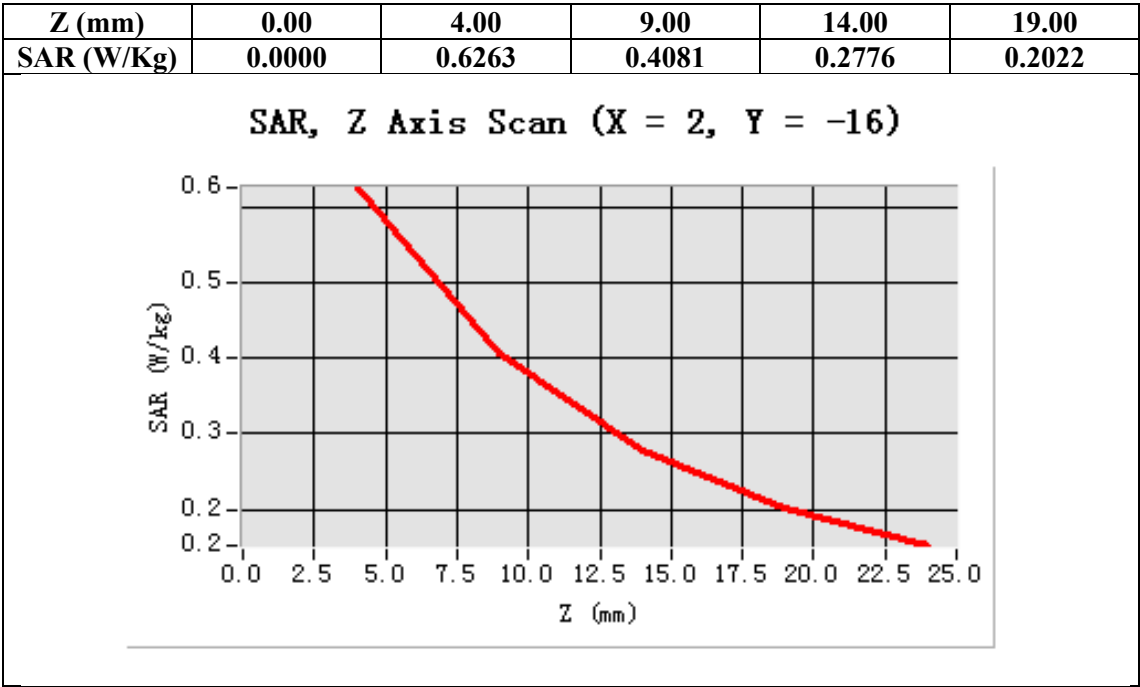
Configuration/802.11n(20) Mid-Vertical near antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11n(20) Mid -Vertical near antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=2.00, Y=-16.00

SAR 10g (W/Kg)	0.426271
SAR 1g (W/Kg)	0.656205



Test Laboratory: AGC Lab

Date: Oct.09, 2013

802.11n(20) Mid -Vertical away from antenna

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
 Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
 Phantom section: Flat Section
 Ambient temperature (°C): 21.0, Liquid temperature (°C): 21.0

Satimo Configuration:

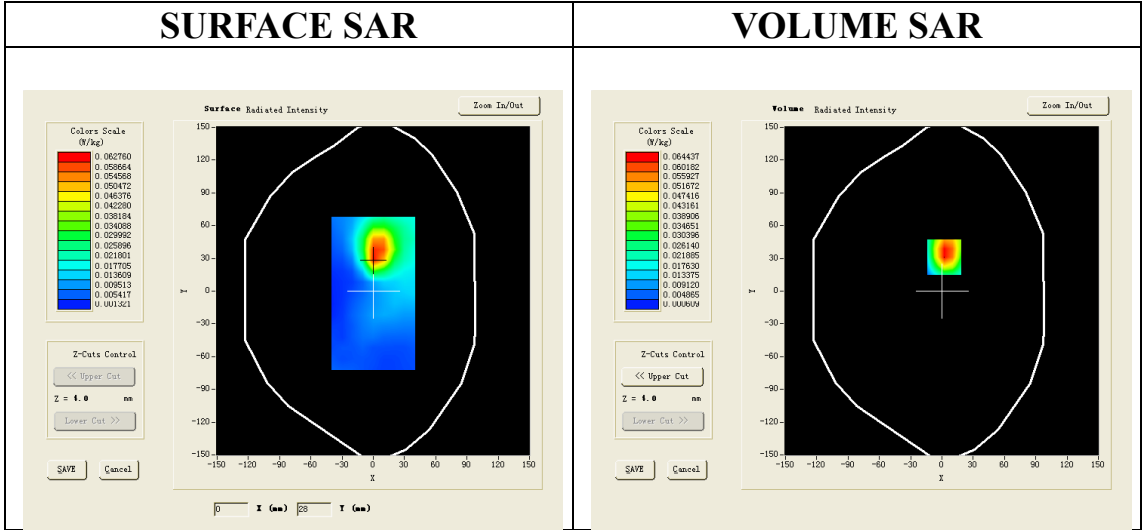
Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11n(20) Mid-Vertical away from antenna /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm

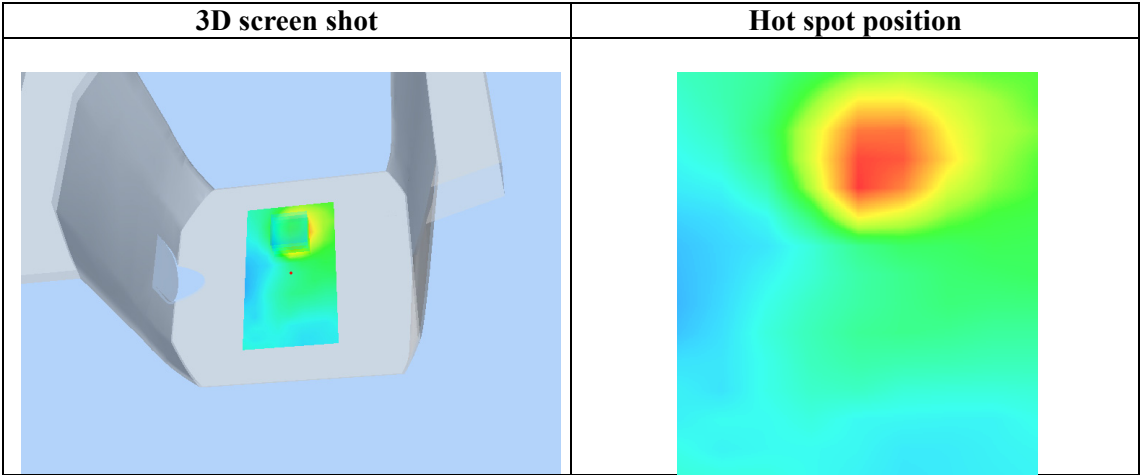
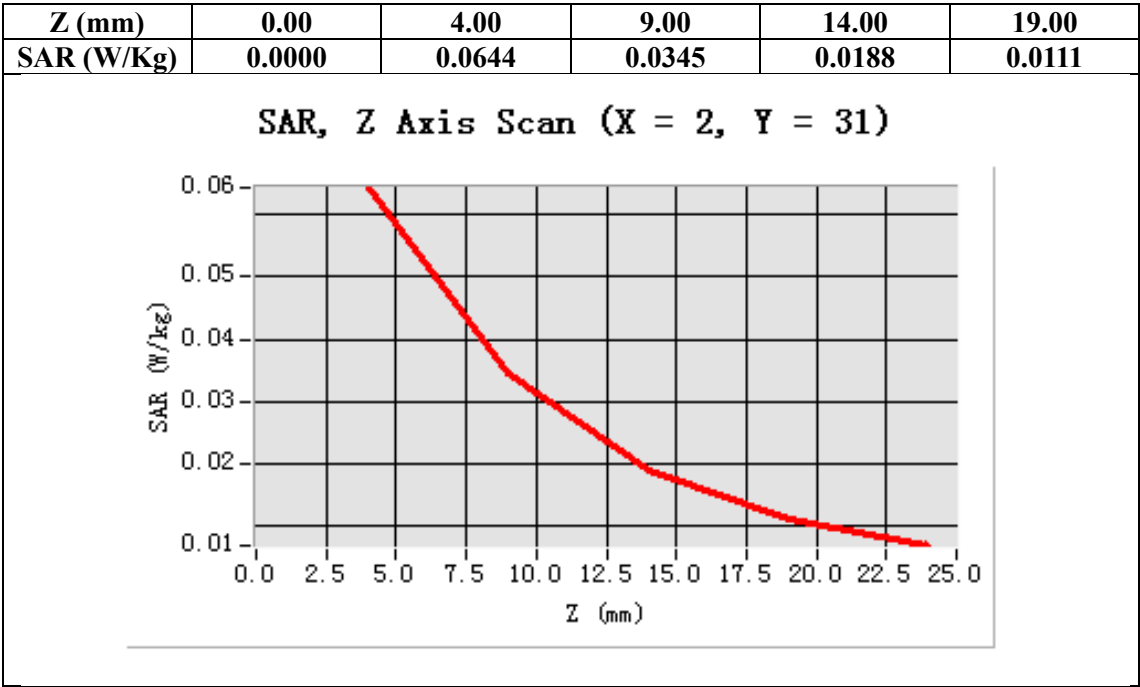
Configuration/802.11n(20) Mid -Vertical away from antenna /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Vertical
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 1.0)



Maximum location: X=2.00, Y=31.00

SAR 10g (W/Kg)	0.033241
SAR 1g (W/Kg)	0.061128



Repeated SAR

Test Laboratory: AGC Lab
802.11b Low-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2412 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

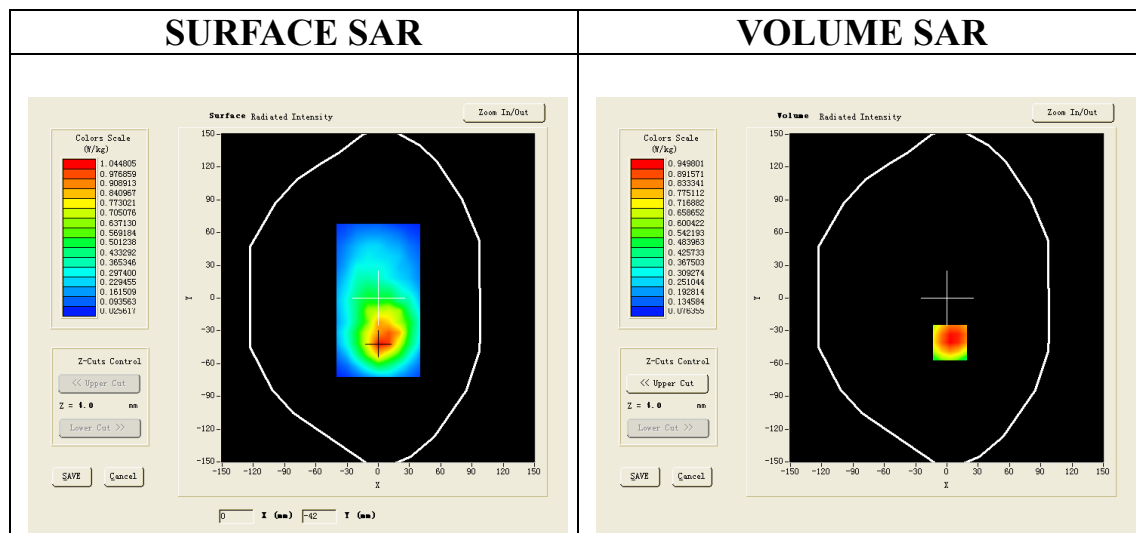
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

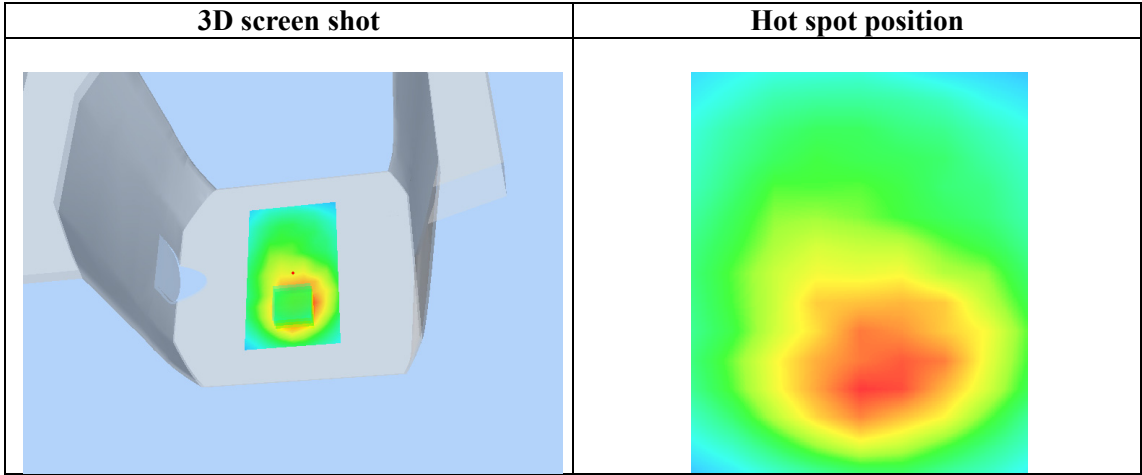
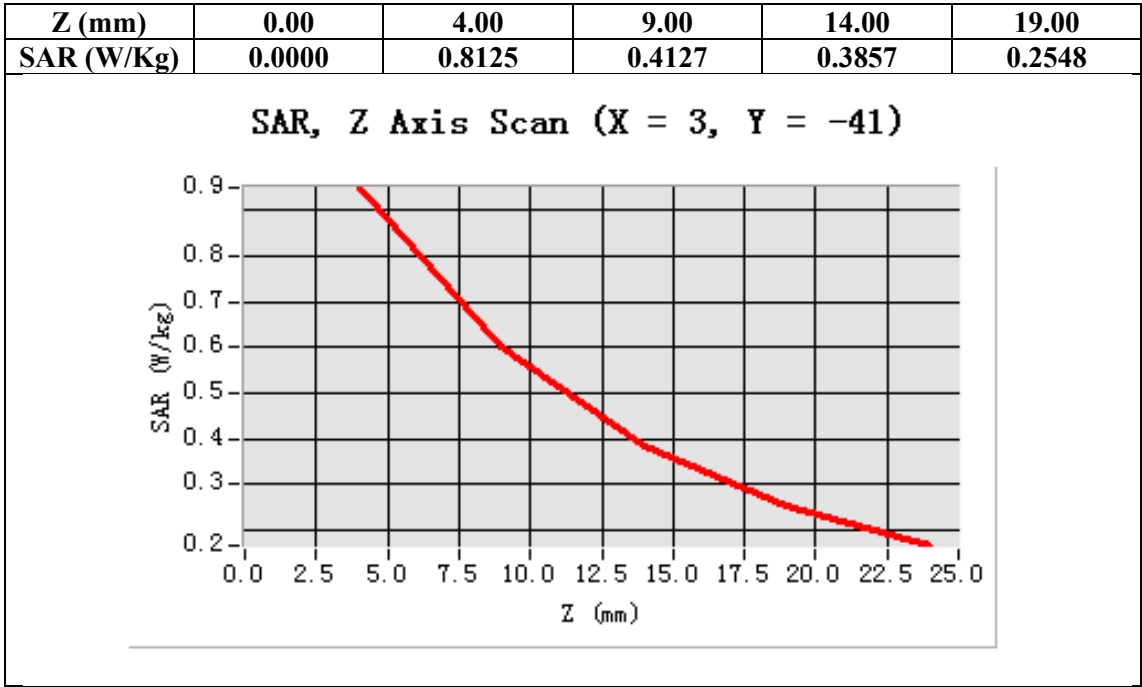
Configuration/802.11b Low- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Low- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Low
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=3.00, Y=-41.00

SAR 10g (W/Kg)	0.410745
SAR 1g (W/Kg)	0.872238



Test Laboratory: AGC Lab
 802.11b Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

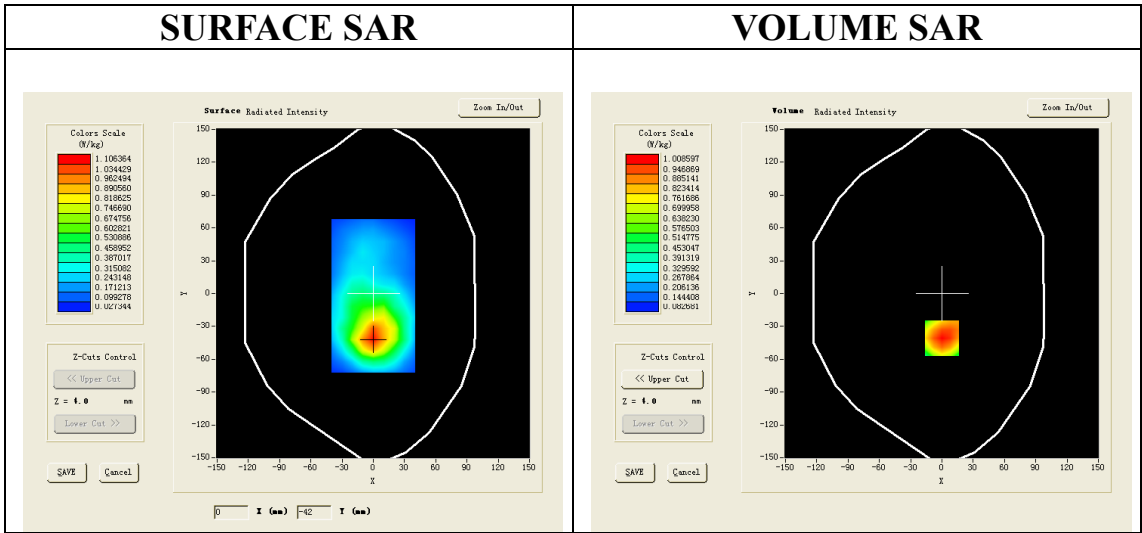
Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
 Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho=1000$ kg/m³ ;
 Phantom section: Flat Section
 Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

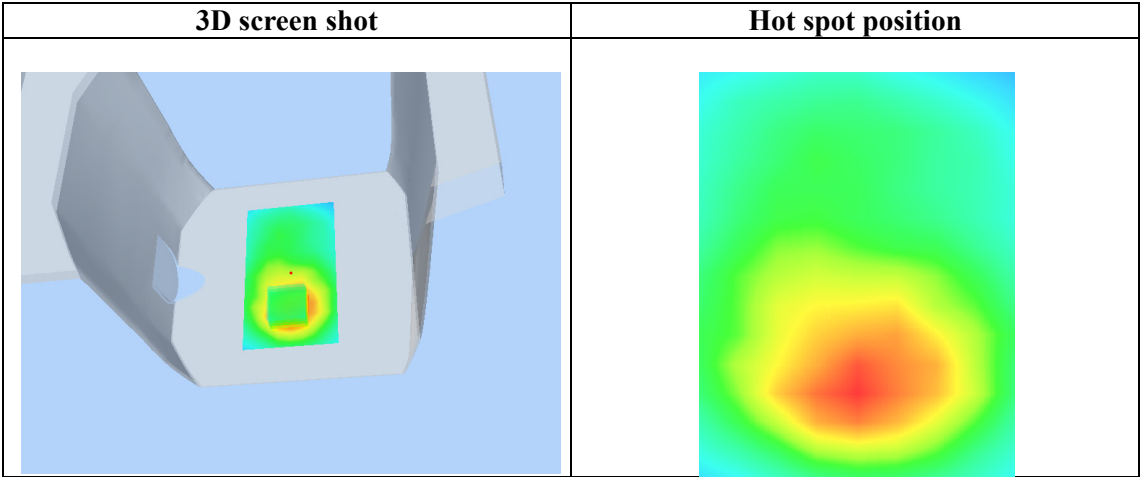
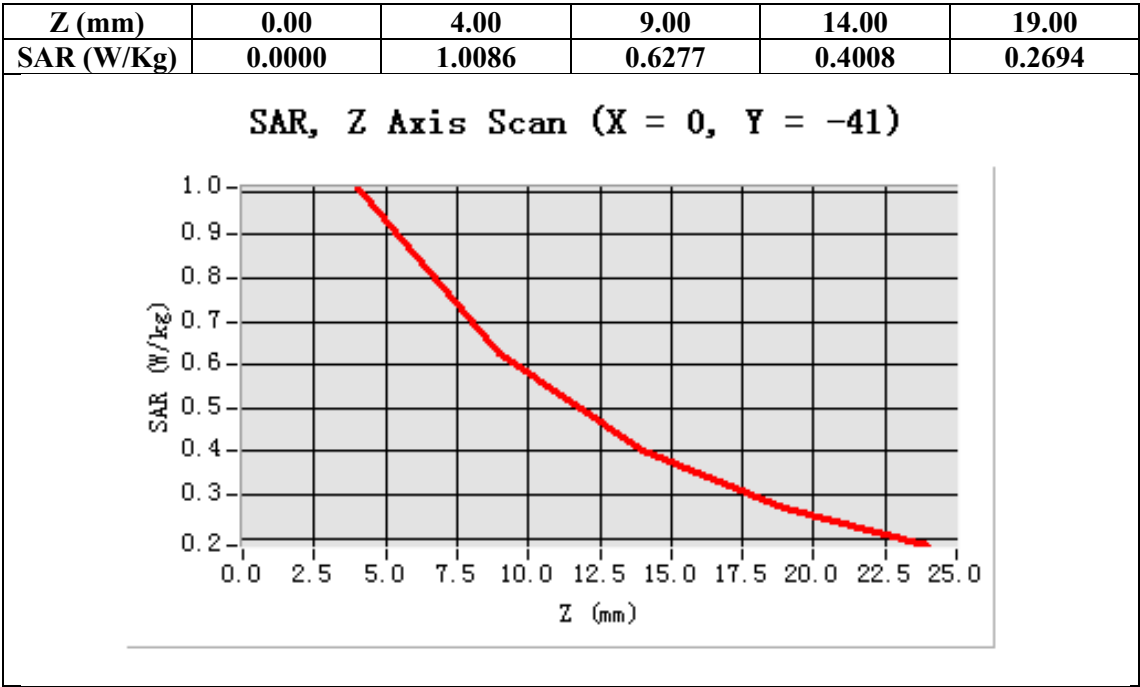
Configuration/802.11b Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
 Configuration/802.11b Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=0.00, Y=-41.00

SAR 10g (W/Kg)	0.552768
SAR 1g (W/Kg)	1.000125



Test Laboratory: AGC Lab
802.11b High-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2462 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

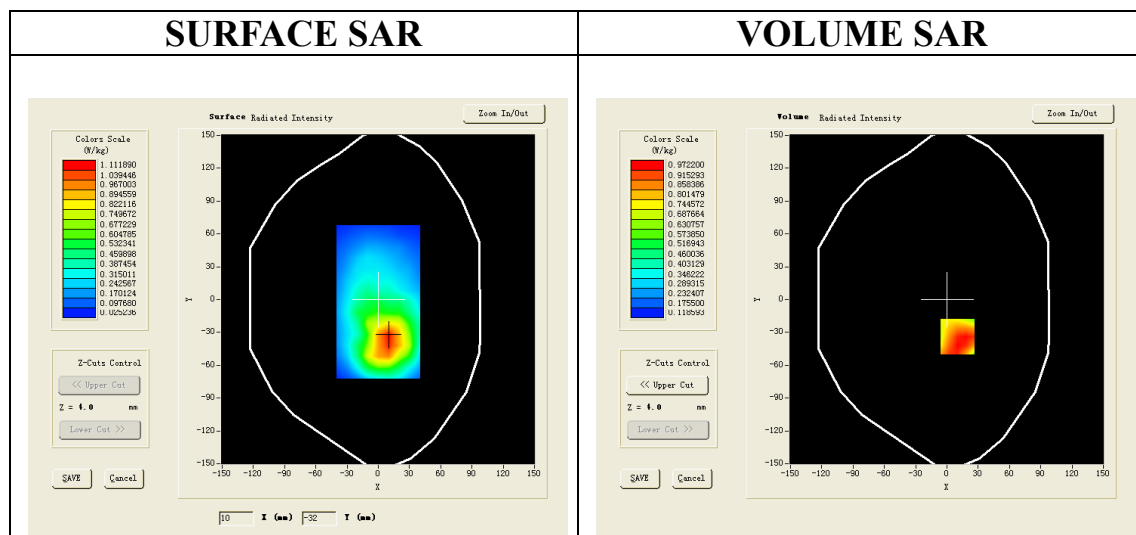
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

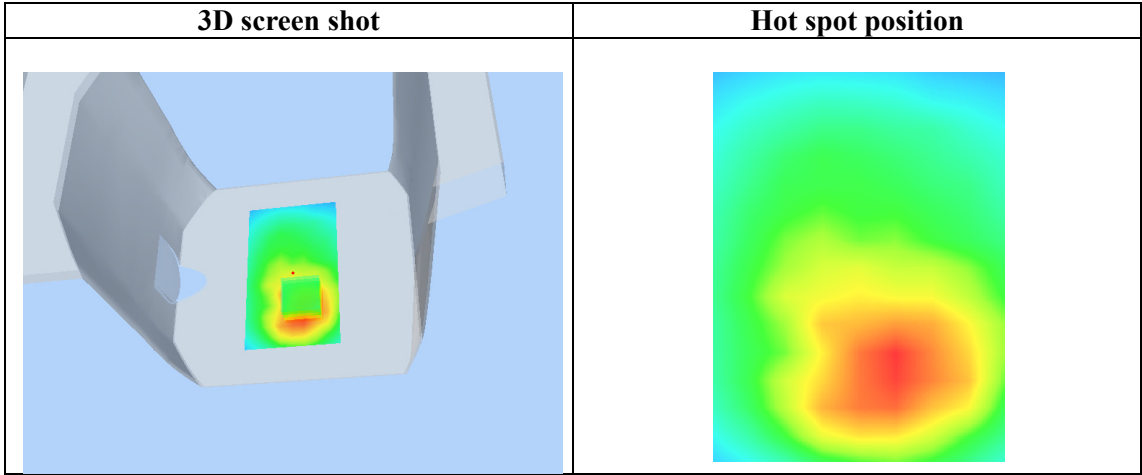
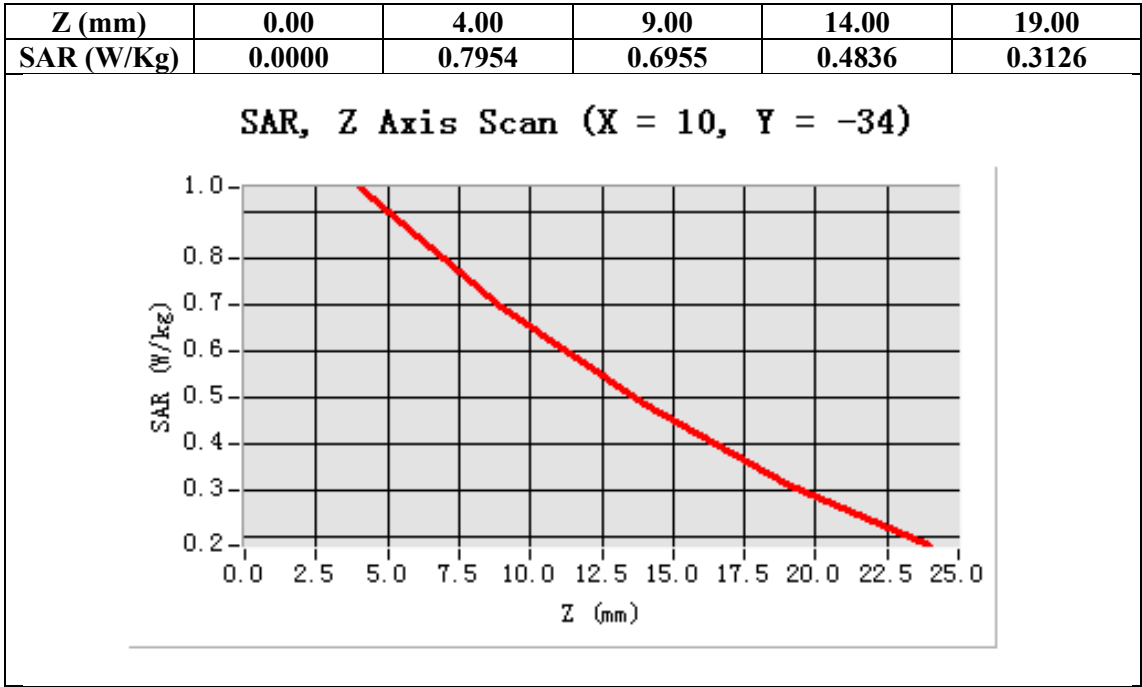
Configuration/802.11b High- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b High- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	High
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=10.00, Y=-34.00

SAR 10g (W/Kg)	0.673927
SAR 1g (W/Kg)	0.814924



Test Laboratory: AGC Lab
802.11g Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

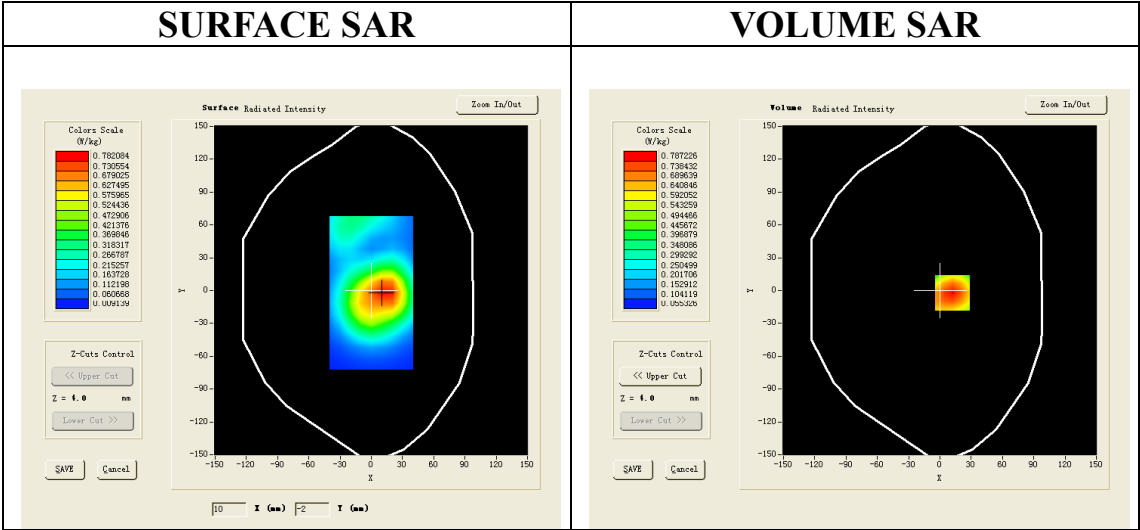
Communication System: Wi-Fi; Communication System Band: 802.11g; Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; $\sigma=1.95$ mho/m; $\epsilon_r=53.26$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

SATIMO Configuration:

- Probe: EP165; Calibrated: 01/31/2013
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

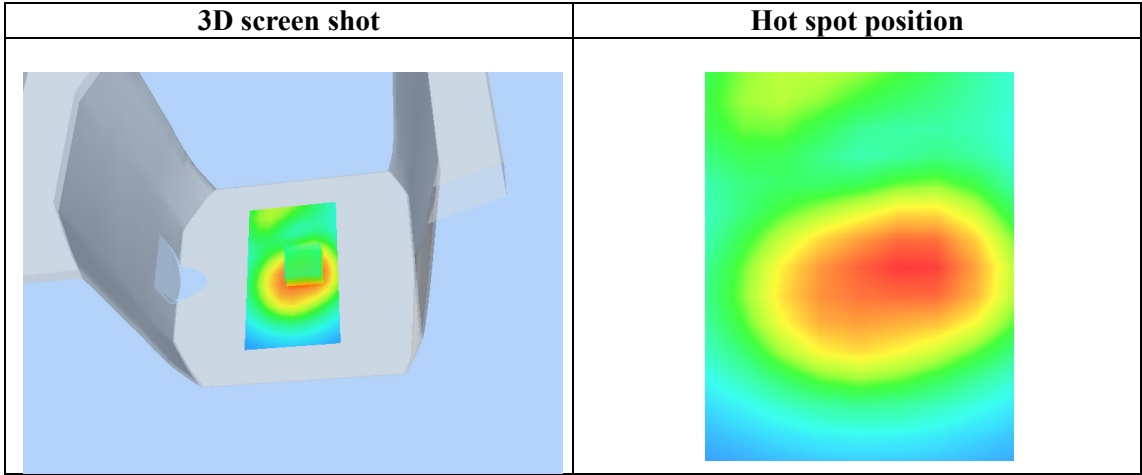
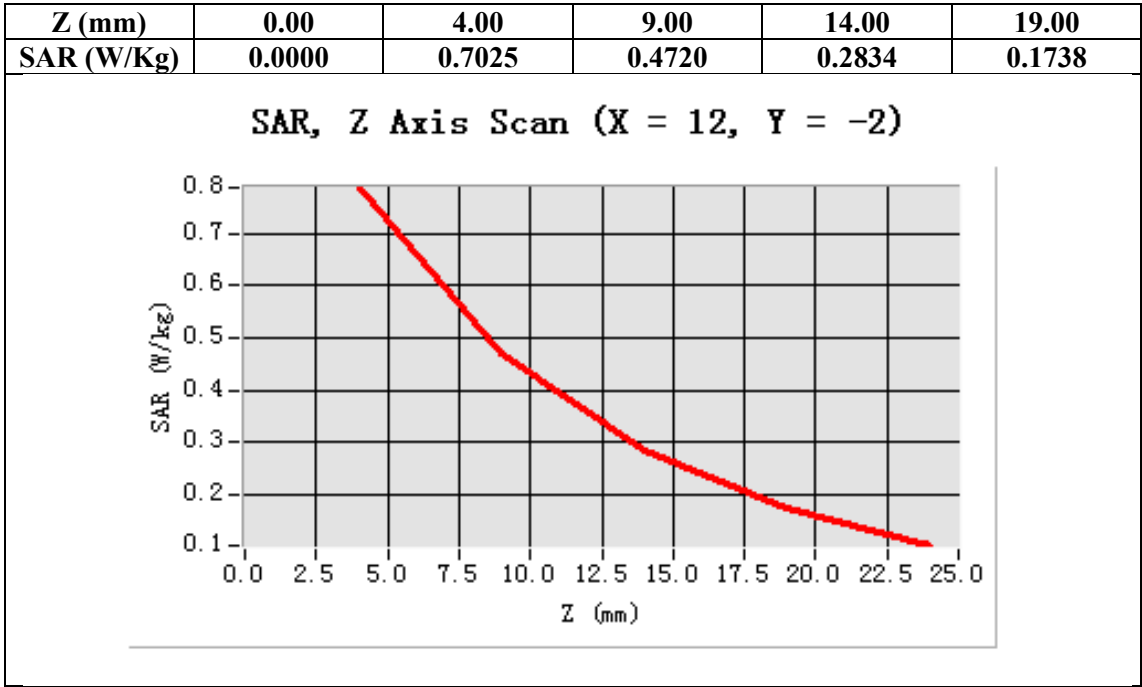
Configuration/802.11g Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11g Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=12.00, Y=-2.00

SAR 10g (W/Kg)	0.412368
SAR 1g (W/Kg)	0.701582



Test Laboratory: AGC Lab
802.11n(20) Mid-Body-Worn- Touch

Date: Oct.09, 2013

DUT: 7" NAV FOR PROF DRIVERS WWIFI &BLUETOOTH; Type: 8500 PRO HD

Communication System: Wi-Fi; Communication System Band: 802.11n(20); Duty Cycle: 1:1; Conv.F=4.32;
Frequency: 2437 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 53.26$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21, Liquid temperature (°C):21

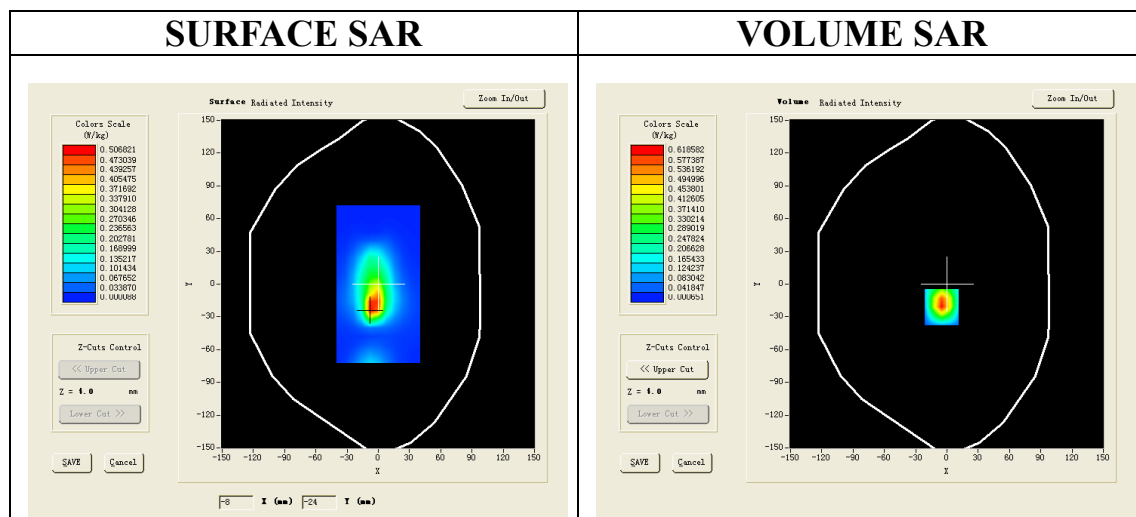
SATIMO Configuration:

Probe: EP165; Calibrated: 01/31/2013

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11n(20) Mid- Body- Touch /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/802.11n(20) Mid- Body- Touch /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Touch
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-5.00, Y=-21.00

SAR 10g (W/Kg)	0.237095
SAR 1g (W/Kg)	0.513752

