S T S L A B

FCC SAR TEST REPORT

Report No: STS1705018H02

Issued for

Powervision Tech Inc.

Room 301, Building A,No.9 Fulin Road, Chaoyang District, Beijing, 100107, China

Product Name:	PowerRay Standard Controller
Brand Name:	PowerVision
Model Name:	PRASC10
Series Model:	N/A
FCC ID:	2AKBMPRASC10
IC:	22111-PRASC10
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
	IEC 62209-2:2010
	RSS 102 Issue 5,March 2015
Max. SAR (10g):	Limb-worn: 0.036 W/kg
Max. SAR (1g)	Body: 0.070 W/kg

TESTING • CONSULTING • SOLUTION • CERTIFICATION • STS APPROVAL

Shenzhen STS Test Services Co., Ltd.
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Fuyong Street, Bao'an District, Shenzhen, Guangdong,China
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Test Report Certification

Applicant's name ....:	Powervision Tech Inc.
Address ....:	Room 301, Building A,No.9 Fulin Road, Chaoyang District, Beijing, 100107, China
Manufacture's Name ....:	Powervision Tech Inc.
Address ....:	Room 301, Building A,No.9 Fulin Road, Chaoyang District, Beijing, 100107, China

Product description

Product name ....:	PowerRay Standard Controller
Trademark ....:	PowerVision
Model and/or type reference :	PRASC10
Series Model..........................:	N/A
Standards ....:	ANSI/IEEE Std. C95.1-1992 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013 IEC 62209-2:2010 RSS 102 Issue 5,March 2015

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test ....:	
Date (s) of performance of tests.............:	06 May 2017
Date of Issue..:	09 May 2017
Test Result..:	**Pass**

Testing Engineer : Aaron Bu

(Aaron Bu)

Technical Manager : John Zou

(John Zou)

Authorized Signatory : Vita Li

(Vita Li)

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Table of Contents

1.General Information

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

1.1 EUT Description

Equipment	PowerRay Standard Controller			
Brand Name	PowerVision			
Model No.	PRASC10			
Series Model	N/A			
FCC ID	2AKBMPRASC10			
IC	22111-PRASC10			
Model Difference	N/A			
Battery	Rated Voltage: 3.7V; Capacity: 1500mAh			
Device Category	Portable			
Product stage	Production unit			
RF Exposure Environment	General Population / Uncontrolled			
Hardware Version	V1.0-H			
Software Version	V1.0-S			
Frequency Range	WLAN 802.11b/g/n(HT20/40):2412~2462MHz			
Max. Reported SAR(1g):	Band	Mode	Body (W/kg)	Limb-worn (W/kg)
	DTS	WIFI	0.070	0.036
Limit			1.6	4.0
Operating Mode:	WLAN: 802.11 b/g/n(HT20/40);			
Antenna Specification:	WIFI: PCB Antenna			
Hotspot Mode:	Not Support			
DTM Mode:	Not Support			

Note:
1. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power

1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required	Actual
Temperature (℃)	18-25	22~23
Humidity (%RH)	30-70	55~65

1.3 Test Factory

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F, Building B, Zhuoke Science Park,No.190, Chongqing Road, Fuyong, Baoan District, Shenzhen, Guangdong, China

2.Test Standards And Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
3	Health Canada's Safety Code 6	Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3KHz to 300 GHz - Safety Code 6 (2009)
4	RSS 102 Issue 5,March 2015	Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)
5	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
6	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
7	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
8	FCC KDB 941225 D07 v01r02	UMPC Mini Tablet
9	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

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 people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

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3. SAR Measurement System

3.1 Definition Of Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in an 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 general population/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 element (dv) of a given density (ρ). The equation description is as below:

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

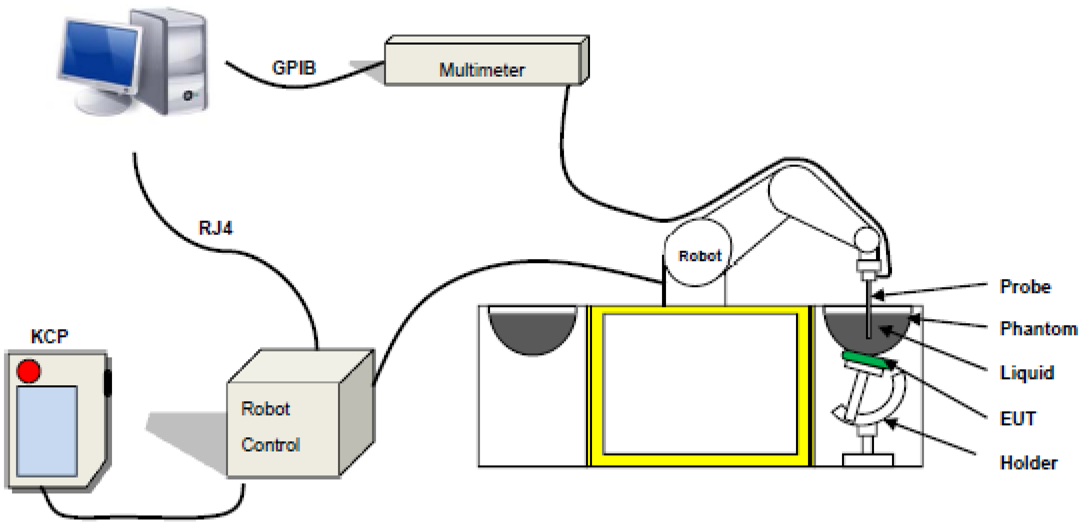
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue,
ρ is the mass density of the tissue and E is the RMS electrical field strength.

3.2 SAR System

SATIMO SAR System Diagram:



Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 14/16 EP309 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter: 5 mm
- Length of Individual Dipoles: 4.5 mm
- Maximum external diameter: 8 mm
- Distance between dipole/probe extremity: 8 mm (repeatability better than +/- 2.7mm)
- Probe linearity: 0±2.27%(±0.10dB)
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 400 MHz to 3 GHz for head & body simulating liquid.
- Angle between probe axis (evaluation axis) and surface normal line: less than 30°

Figure 1-MVG COMOSAR Dosimetric E field Dipole

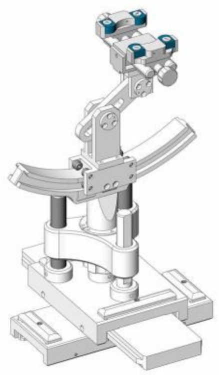
3.2.2 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

Figure-SN 32/14 SAM115

Figure-SN 32/14 SAM116

3.2.3 Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

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.

Frequency (MHz)	Bactericide	DGBE	HEC	NaCl	Sucrose	1,2-Propanediol	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
835	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
900	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
1800	/	13.84	/	0.35	/	/	30.45	55.36	1.38	41.0
1900	/	13.84	/	0.35	/	/	30.45	55.36	1.38	41.0
2000	/	7.99	/	0.16	/	/	19.97	71.88	1.55	41.1
2450	/	7.99	/	0.16	/	/	19.97	71.88	1.88	40.3
2600	/	7.99	/	0.16	/	/	19.97	71.88	1.88	40.3

Tissue dielectric parameters for head and body phantoms				
Frequency	εr		σ S/m	
	Head	Body	Head	Body
300	45.3	58.2	0.87	0.92
450	43.5	58.7	0.87	0.94
900	41.5	55.0	0.97	1.05
1450	40.5	54.0	1.20	1.30
1800	40.0	53.3	1.40	1.52
2450	39.2	52.7	1.80	1.95
3000	38.5	52.0	2.40	2.73
5800	35.3	48.2	5.27	6.00

LIQUID MEASUREMENT RESULTS

Date: 06 May 2017 **Ambient condition:** Temperature 23.2°C **Relative humidity:** 54%

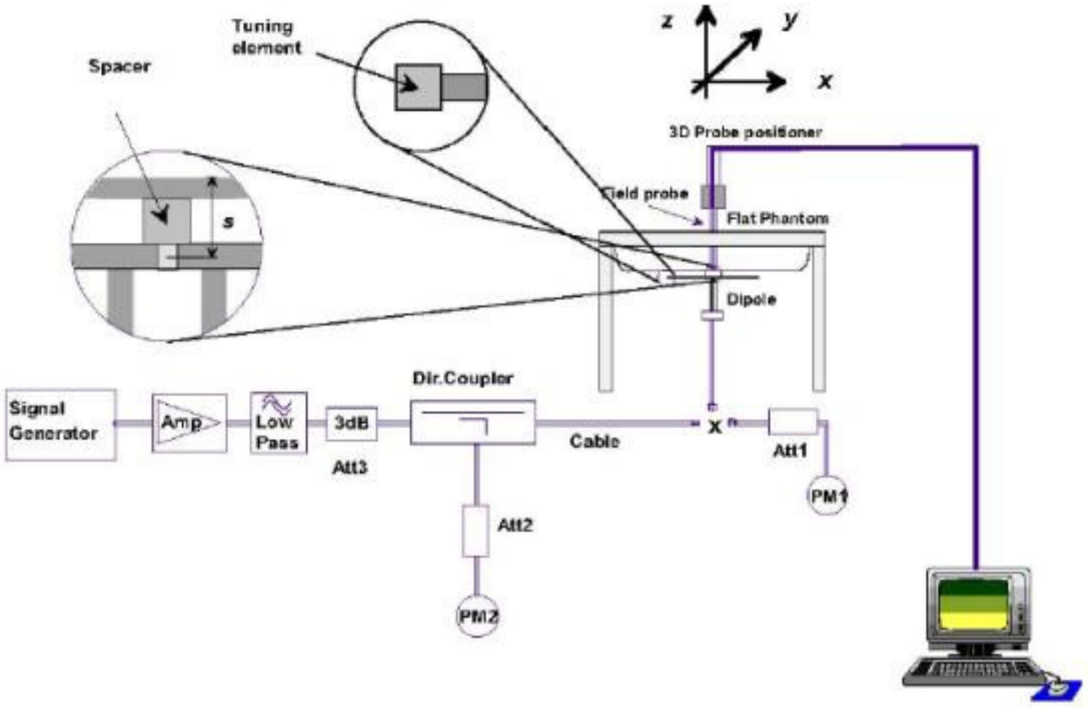
Body Simulating Liquid		Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]					
2450 MHz	22.8	Permitivity:	52.70	50.98	-3.26	± 5
		Conductivity:	1.95	1.98	1.54	± 5

5. SAR System Validation

5.1 Validation System

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 validation setup is shown as below.



5.2 Validation Result

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %.

Ambient condition: Temperature 23.8°C **Relative humidity:** 61%

Freq.(MHz)	Power(mW)	Tested Value (W/Kg)	Normalized SAR (W/kg)	Target(W/Kg)	Tolerance(%)	Date
2450 Body	100	5.384	53.84	52.4	2.75	2017-05-06

Note: The tolerance limit of System validation ±10%.

5.3 Extend Dipole Calibrations

Dipole	Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2450MHz Body	2014-09-01	-32.75		48.8		1.9	
	2015-09-01	-33.75	3.1	47.9	-0.9	2.8	0.9
	2016-09-01	-33.92	3.6	47.4	-1.4	3.5	1.6

6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:
The following steps are used for each test position
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

Area Scan& Zoom Scan:

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid 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 is performed around the highest E-field value to determine the averaged SAR -distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r01 quoted below.

When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

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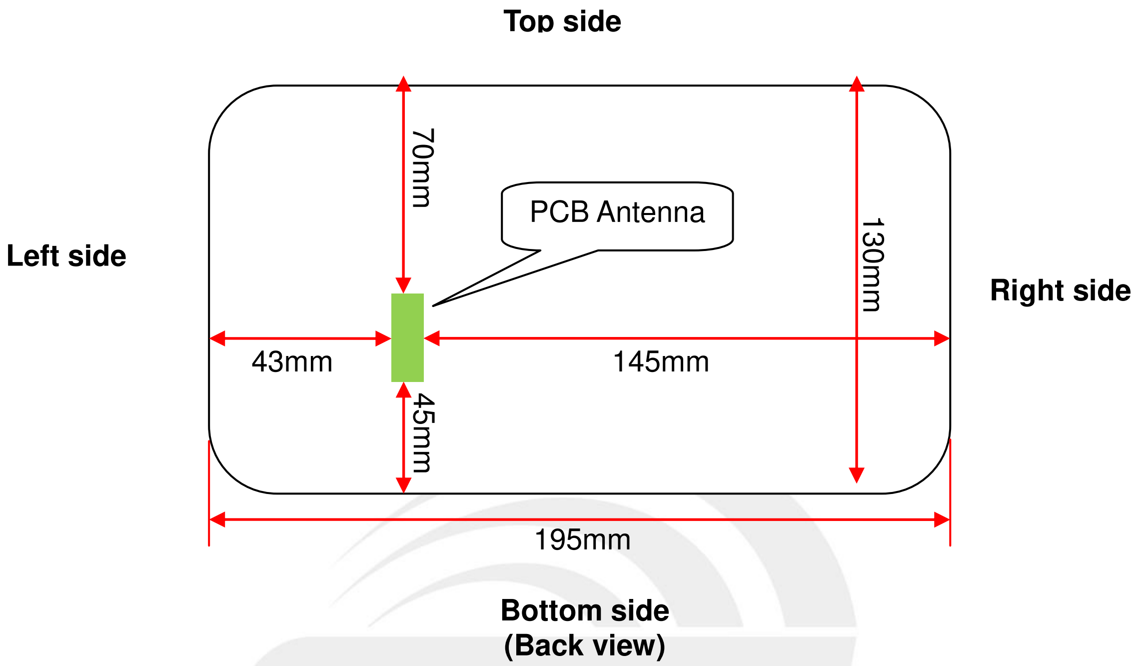
7. EUT Antenna Location Sketch

It is a PowerRay Standard Controller, support WIFI mode.



7.1 SAR test exclusion consider table

Test position configurations					
Front	**Back**	**Right edge**	**Left edge**	**Top edge**	**Bottom edge**
Yes	Yes	No	No	No	No
Yes	Yes	No	No	No	No

Note：

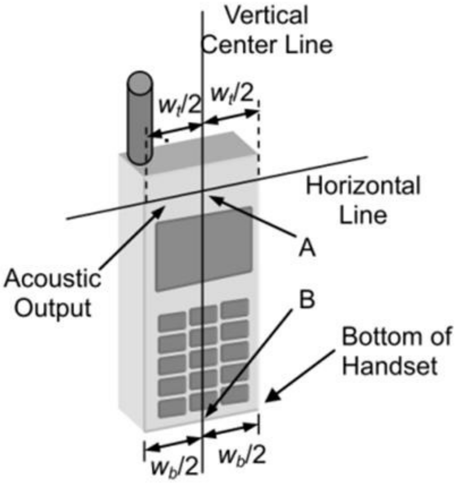
1. Per KDB 941225 D07 UMPC Mini Tablet v01r02: UMPC mini-tablet devices must be tested for 1-g SAR on all surfaces and side edges with a transmitting antenna located at ≤25mm from that suface or edge.

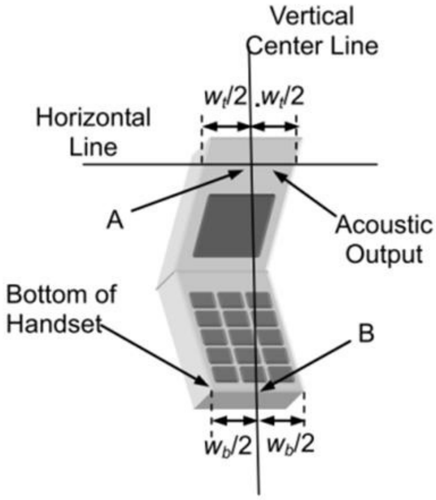
8. EUT Test Position

This EUT was tested in Front Face and Rear Face.

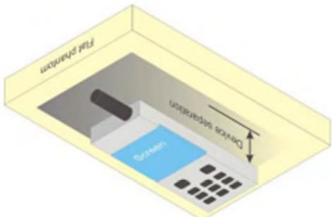
8.1 Define Two Imaginary Lines On The Handset

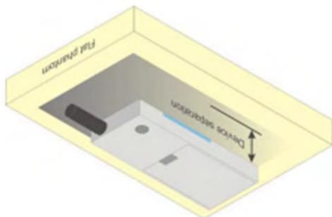
(1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.
(2)The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
(3)The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.





Body-worn Position Conditions:
Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative *test separation distance* configuration may be used to support both SAR conditions. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.





9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

NO	Source	Tol(%)	Prob. Dist.	Div. k	ci (1g)	ci (10g)	1gUi	10gUi	Veff
Measurement System									
1	Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
2	Axial isotropy	3.5	R	√3	$(1\text{-cp})^{1/2}$	$(1\text{-cp})^{1/2}$	1.43	1.43	∞
3	Hemispherical isotropy	5.9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
4	Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
5	Linearity	4.7	R	√3	1	1	2.71	2.71	∞
6	System Detection limits	1.0	R	√3	1	1	0.58	0.58	∞
7	Readout electronics	0.5	N	1	1	1	0.50	0.50	∞
8	Response time	0	R	√3	1	1	0	0	∞
9	Integration time	1.4	R	√3	1	1	0.81	0.81	∞
10	Ambient noise	3.0	R	√3	1	1	1.73	1.73	∞
11	Ambient reflections	3.0	R	√3	1	1	1.73	1.73	∞
12	Probe positioner mech. restrictions	1.4	R	√3	1	1	0.81	0.81	∞
13	Probe positioning with respect to	1.4	R	√3	1	1	0.81	0.81	∞
14	Max.SAR evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Test sample related									
15	Device positioning	2.6	N	1	1	1	2.6	2.6	11
16	Device holder	3	N	1	1	1	3.0	3.0	7
17	Drift of output power	5.0	R	√3	1	1	2.89	2.89	∞
Phantom and set-up									
18	Phantom uncertainty	4.0	R	√3	1	1	2.31	2.31	∞
19	Liquid conductivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	5
20	Liquid conductivity (meas)	4	N	1	0.23	0.26	0.92	1.04	5
21	Liquid Permittivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	∞
22	Liquid Permittivity (meas)	5.0	N	1	0.23	0.26	1.15	1.30	∞
Combined standard			RSS	$U_C = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			10.63%	10.54%	
Expanded uncertainty (P=95%)		$U = k\, U_C$,k=2					21.26%	21.08%	

9.2 System validation Uncertainty

NO	Source	Tol(%)	Prob. Dist.	Div. k	ci (1g)	ci (10g)	1gUi	10gUi	Veff
Measurement System									
1	Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
2	Axial isotropy	3.5	R	√3	$(1\text{-}cp)^{1/2}$	$(1\text{-}cp)^{1/2}$	1.43	1.43	∞
3	Hemispherical isotropy	5.9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
4	Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
5	Linearity	4.7	R	√3	1	1	2.71	2.71	∞
6	System Detection limits	1.0	R	√3	1	1	0.58	0.58	∞
7	Modulation response	0	N	1	1	1	0	0	∞
8	Readout electronics	0.5	N	1	1	1	0.50	0.50	∞
9	Response time	0	R	√3	1	1	0	0	∞
10	Integration time	1.4	R	√3	1	1	0.81	0.81	∞
11	Ambient noise	3.0	R	√3	1	1	1.73	1.73	∞
12	Ambient reflections	3.0	R	√3	1	1	1.73	1.73	∞
13	Probe positioner mech. restrictions	1.4	R	√3	1	1	0.81	0.81	∞
14	Probe positioning with respect to phantom shell	1.4	R	√3	1	1	0.81	0.81	∞
15	Max.SAR evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Dipole									
16	Deviation of experimental source from	4	N	1	1	1	4.00	4.00	∞

17	Input power and SAR drit measurement	5	R	√3	1	1	2.89	2.89	∞
18	Dipole Axis to liquid Distance	2	R	√3	1	1			∞
Phantom and set-up									
19	Phantom uncertainty	4.0	R	√3	1	1	2.31	2.31	∞
20	Uncertainty in SAR correction for deviation(in	2.0	N	1	1	0.84	2	1.68	∞
21	Liquid conductivity (target)	2	N	1	1	0.84	2.00	1.68	∞
22	Liquid conductivity (temperature uncertainty)	2.5	N	1	0.78	0.71	1.95	1.78	5
23	Liquid conductivity (meas)	4	N	1	0.23	0.26	0.92	1.04	5
24	Liquid Permittivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	∞
25	Liquid Permittivity (temperature uncertainty)	2.5	N	1	0.78	0.71	1.95	1.78	5
26	Liquid Permittivity (meas)	5.0	N	1	0.23	0.26	1.15	1.30	∞
Combined standard			RSS	$U_C = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			10.15%	10.05%	
Expanded uncertainty (P=95%)		$U = k\ U_C$,k=2					20.29%	20.10%	

10. Conducted Power Measurement

10.1 Test Result

WIFI

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
802.11b	1	2412	16.70
	6	2437	16.70
	11	2462	16.70
802.11g	1	2412	16.70
	6	2437	15.90
	11	2462	15.00
802.11n(HT 20)	1	2412	15.40
	6	2437	15.40
	11	2462	15.40
802.11n(HT 40)	3	2422	16.50
	6	2437	16.10
	9	2452	15.20

10.2 Tune-up Power

Mode	WIFI(AVG)
IEEE 802.11b	16±1dBm
IEEE 802.11g	15.8±1dBm
IEEE 802.11n(HT 20)	15±1dBm
IEEE 802.11n(HT 40)	16±1dBm

11. EUT And Test Setup Photo

11.1 EUT Photo

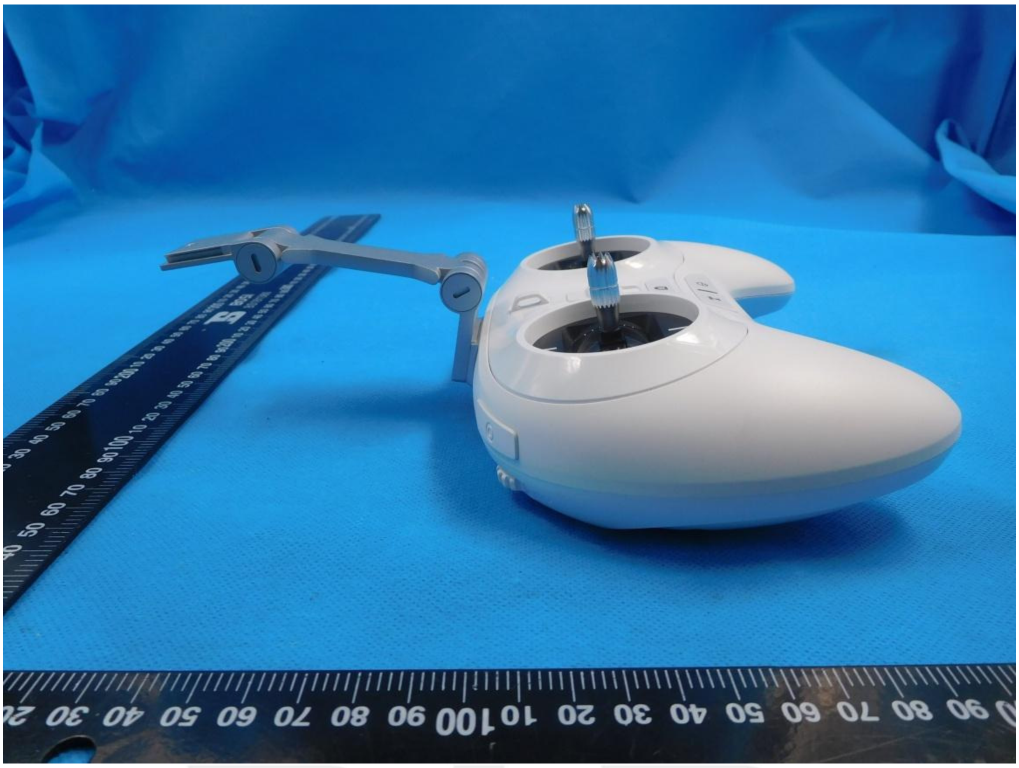
Front side

Back side

Top side

Bottom side

Left side



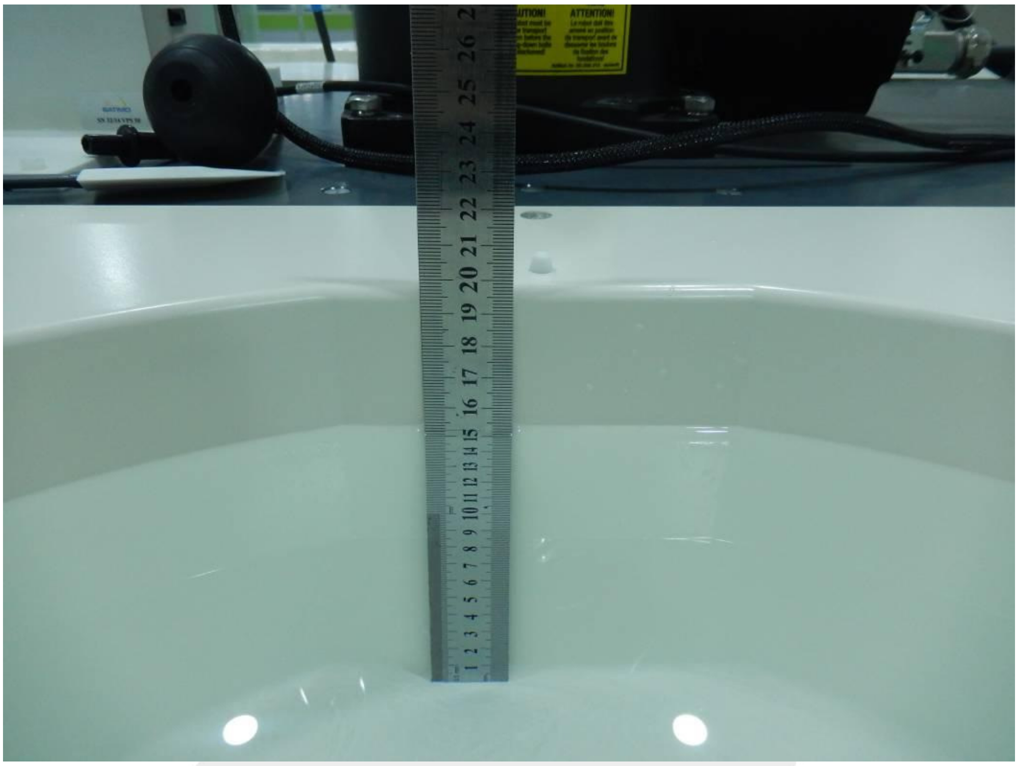
Right side

11.2 Setup Photo

Body front side

Body back side

Liquid depth (15 cm)



12. SAR Result Summary

12.1 Body-worn SAR

802.11b：

Band	Test Position	Freq. (MHz)	Result SAR_{1-g} (W/Kg)	Result SAR_{10-g} (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR_{1-g} (W/Kg)	Scaled SAR_{10-g} (W/Kg)	Meas. No.
WIFI	Front Side	2437	0.034	0.019	1.07	17	16.70	100%	0.036	0.020	-
	Back side	2437	0.065	0.034	-0.82	17	16.70	100%	**0.070**	**0.036**	1

802.11n(HT 20)：

Band	Test Position	Freq. (MHz)	Result SAR_{1-g} (W/Kg)	Result SAR_{10-g} (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR_{1-g} (W/Kg)	Scaled SAR_{10-g} (W/Kg)	Meas. No.
WIFI	Front Side	2437	0.016	0.009	-1.34	16	15.40	100%	0.018	0.010	-
	Back side	2437	0.028	0.015	-1.28	16	15.40	100%	0.032	0.017	2

Note:

1. The test separation of all above table is 0mm.
2. Per KDB 248227 D01-When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
3. Per KDB 248227 D01- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM(802.11g)to DSSS specified maximum output power and the adjusted SAR is **0.070**W/Kg≤ 1.2 W/Kg. So ODFM(802.11g) SAR test is not required.
4. When the highest reported SAR at 802.11 n20 is adjusted by the ratio of802.11 n40 to 802.11 n20specified maximum output power and the adjusted SAR is **0.041** W/Kg≤ 1.2 W/Kg. So SAR test for 802.11 n40 mode is not required.

13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
2450MHz Dipole	SATIMO	SID2450	SN 30/14 DIP2G450-335	2014.09.01	2017.08.31
E-Field Probe	MVG	SSE5	SN 14/16 EP309	2016.12.05	2017.12.04
Phantom1	SATIMO	SAM	SN 32/14 SAM115	N/A	N/A
Phantom2	SATIMO	SAM	SN 32/14 SAM116	N/A	N/A
SAR TEST BENCH	SATIMO	MOBILE PHONE POSITIONNIN G SYSTEM	SN 32/14 MSH97	N/A	N/A
SAR TEST BENCH	SATIMO	LAPTOP POSITIONNIN G SYSTEM	SN 32/14 LSH29	N/A	N/A
Dielectric Probe Kit	SATIMO	SCLMP	SN 32/14 OCPG52	2016.08.30	2017.08.29
Multi Meter	Keithley	Multi Meter 2000	4050073	2016.10.23	2017.10.22
Signal Generator	Agilent	N5182A	MY50140530	2016.10.23	2017.10.22
Power Meter	R&S	NRP	100510	2016.10.23	2017.10.22
Power Meter	HP	EPM-442A	GB37170267	2016.10.23	2017.10.22
Power Sensor	R&S	NRP-Z11	101919	2016.10.23	2017.10.22
Power Sensor	HP	8481A	2702A65976	2016.10.23	2017.10.22
Power Sensor	R&S	NRP-Z21	103971	2016.10.23	2017.10.22
Network Analyzer	Agilent	5071C	EMY46103472	2016.10.23	2017.10.22
Attenuator 1	PE	PE7005-10	N/A	2016.10.23	2017.10.22
Attenuator 2	PE	PE7005-3	N/A	2016.10.23	2017.10.22
Attenuator 3	Woken	WK0602-XX	N/A	2016.10.23	2017.10.22
Dual Directional Coupler	Agilent	778D	50422	2016.10.23	2017.10.22

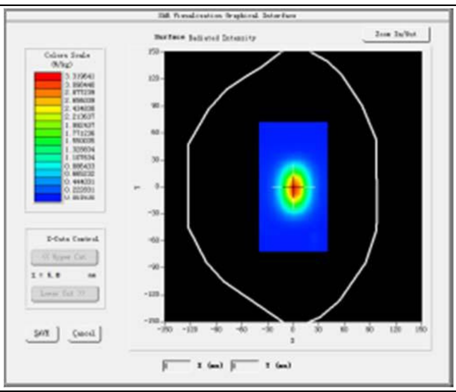
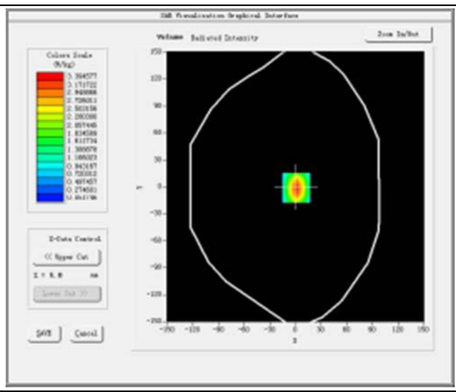
Appendix A. System Validation Plots

System Performance Check Data (2450MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2017-05-06
Measurement duration: 14 minutes 23 seconds

Experimental conditions.

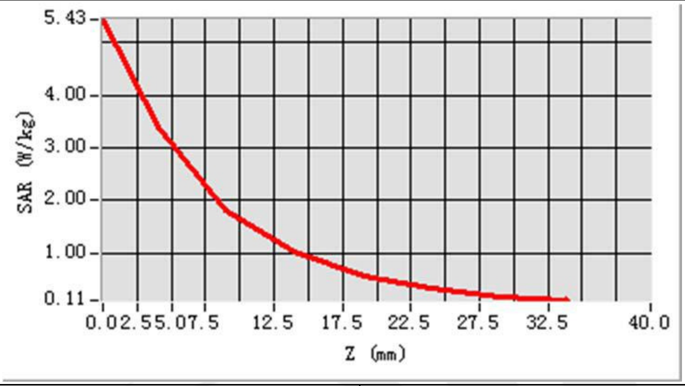
Device Position	Validation plane
Band	2450 MHz
Input Power	100mW
Signal	CW
Frequency (MHz)	2450
Relative permittivity	50.98
Conductivity (S/m)	1.98
Power drift (%)	2.11
Probe	SN 14/16 EP309
ConvF	5.24
Crest factor:	1:1

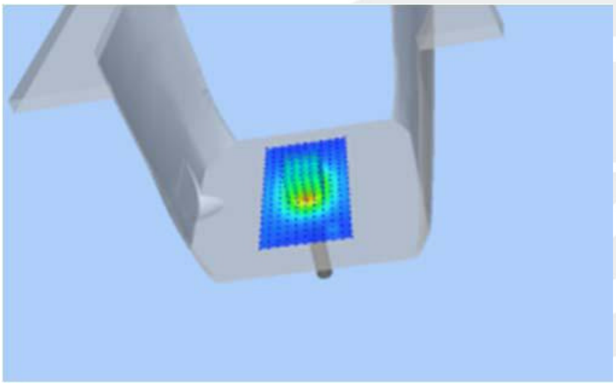
SURFACE SAR	VOLUME SAR
	

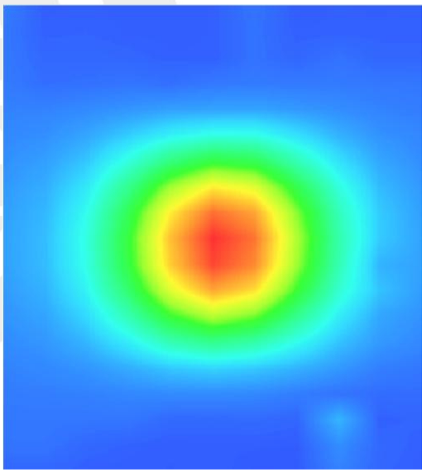
Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	2.325486
SAR 1g (W/Kg)	5.384526

Z Axis Scan







Appendix B. SAR Test Plots

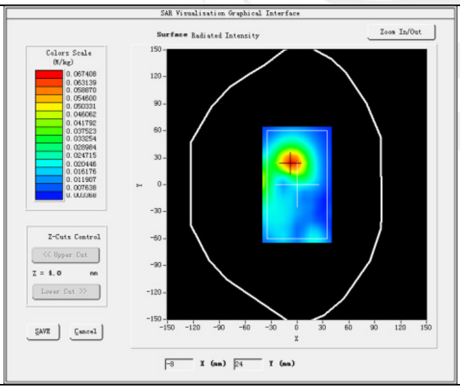
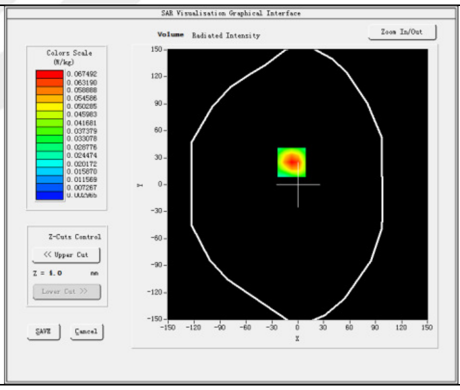
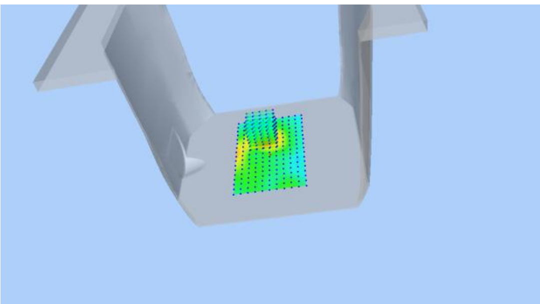
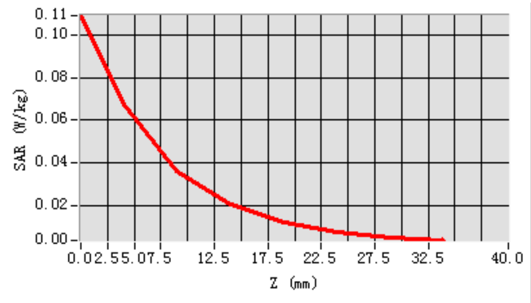
Plot 1: DUT: PowerRay Standard Controller; EUT Model: PRASC10

Test Date	2017-05-06
Probe	SN 14/16 EP309
ConvF	5.24
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm,
Phantom	Validation plane
Device Position	Body Back side
Band	IEEE 802.11b ISM
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	51.50
Conductivity (S/m)	1.97
Variation (%)	-0.82

Maximum location: X=-7.00, Y=25.00

SAR Peak: 0.11 W/kg

SAR 10g (W/Kg)	0.033873
SAR 1g (W/Kg)	0.064576

SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

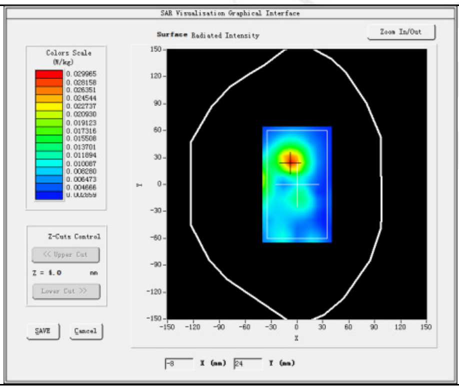
Plot 2: DUT: PowerRay Standard Controller; EUT Model: PRASC10

Test Date	2017-05-06
Probe	SN 14/16 EP309
ConvF	5.24
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm,
Phantom	Validation plane
Device Position	Body Back side
Band	IEEE 802.11n (HT20)
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	51.50
Conductivity (S/m)	1.97
Variation (%)	-1.28

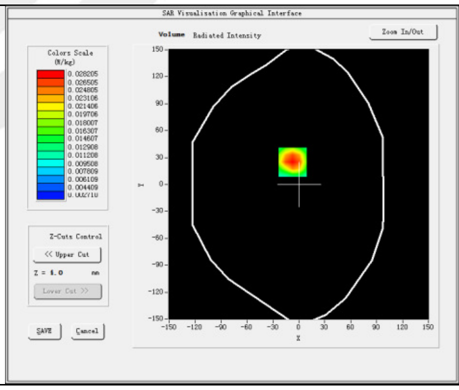
Maximum location: X=-7.00, Y=25.00
SAR Peak: 0.04 W/kg

SAR 10g (W/Kg)	0.015175
SAR 1g (W/Kg)	0.026777

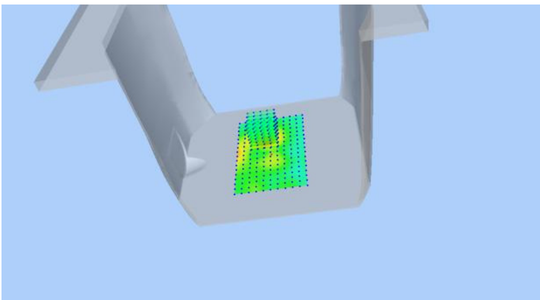
SURFACE SAR



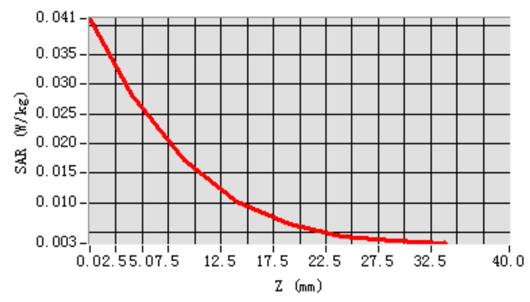
VOLUME SAR



3D



Z Axis Scan



Appendix C. Probe Calibration And Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※

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