FCC SAR Test Report

APPLICANT	:	HTC Corporation
EQUIPMENT	:	Smartphone
MODEL NAME	:	0PFH100
FCC ID	:	NM80PFH100
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2003

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Deputy Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA472933	Rev. 01	Initial issue of report	Oct. 08, 2014

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **HTC Corporation, Smartphone, 0PFH100**, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary			
		Head (Separation 0mm) 1g SAR (W/kg)	Body-worn (Separation 10mm) 1g SAR (W/kg)	Wireless Router (Separation 10mm) 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
PCE	GSM850	0.37	0.59	0.59	1.21
	GSM1900	0.21	0.77	0.77	
	WCDMA Band V	0.25	0.37	0.37	
	WCDMA Band IV	0.33	**0.91**	**0.91**	
	WCDMA Band II	0.30	0.90	0.90	
	LTE Band 17	**0.61**	0.37	0.37	
	LTE Band 5	0.19	0.28	0.28	
	LTE Band 4	0.19	0.71	0.71	
	LTE Band 2	0.26	0.75	0.75	
	LTE Band 7	0.12	0.70	0.70	
DTS	WLAN 2.4GHz Band	0.19	0.30	0.30	1.21
NII	WLAN 5.2GHz Band	0.08	0.18		1.10
	WLAN 5.3GHz Band	0.06	0.15		
	WLAN 5.5GHz Band	0.07	0.15		
	WLAN 5.8GHz Band	0.09	0.19		
Date of Testing:		8/17/2014~10/07/2014			

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003.

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	HTC Corporation
Address	No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

Manufacturer	
Company Name	HTC Corporation
Address	No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

3. Guidance Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03
- FCC KDB 865664 D02 SAR Reporting v01r01
- FCC KDB 447498 D01 General RF Exposure Guidance v05r02
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r02
- FCC KDB 248227 D01 SAR meas for 802 11abg v01r02
- FCC KDB 941225 D01 SAR test for 3G devices v02
- FCC KDB 941225 D02 HSPA and 1x Advanced v02r02
- FCC KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- FCC KDB 941225 D05 SAR for LTE Devices v02r03
- FCC KDB 941225 D06 Hotspot Mode SAR v01r01

4. Equipment Under Test (EUT)

4.1 General Information

Product Feature & Specification	
Equipment Name	Smartphone
Model Name	0PFH100
FCC ID	NM80PFH100
IMEI Code	Sample for Sample1 WWAN SAR testing: 355281060010896 Sample for Sample3 WWAN SAR testing: 355281060040646 Sample for WLAN SAR testing: 355281060010904
Sample 1	EUT with Main Camera 1, Speaker(top) 1, Speaker(bottom) 1, Microphone 1, RAM 1, and RF PA 1
Sample 2	EUT with Main Camera 1, Speaker(top) 2, Speaker(bottom) 2, Microphone 2, RAM 2, and RF PA 1
Sample 3	EUT with Main Camera 2, Speaker(top) 2, Speaker(bottom) 2, Microphone 2, RAM 2, and RF PA 2
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	• GSM/GPRS/EGPRS • AMR / RMC 12.2Kbps • HSDPA • HSUPA • LTE: QPSK, 16QAM • 802.11a/b/g/n HT20/HT40 • Bluetooth v2.1 and v4.0 • NFC:ASK
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This product have three kinds of sample, since difference between the sample1 and sample2 is speaker, microphone and RAM, therefore RF exposure evaluation was selected Sample1 perform testing, and since the sample3 WWAN PA is difference between sample1, therefore sample3 will spot-check worse case find in sample1.
2. 802.11n-HT40 is not supported in 2.4GHz WLAN.
3. This device supported VoIP in EGPRS, WCDMA, LTE (e.g. 3rd party VoIP).
4. This device 2.4GHz WLAN supports Hotspot and WiFi Direct (Group Client / Group Owner), and 5GHz WLAN supports WiFi Direct (Group Client only).

4.2 Maximum Tune-up Limit

Mode	Burst average power(dBm)	
	GSM 850	GSM 1900
GSM (GMSK, 1 Tx slot)	33.00	30.00
GPRS/EDGE (GMSK, 1 Tx slot)	33.00	30.00
GPRS/EDGE (GMSK, 2 Tx slots)	31.50	29.00
GPRS/EDGE (GMSK, 3 Tx slots)	29.50	27.00
GPRS/EDGE (GMSK, 4 Tx slots)	29.00	26.00
EDGE (8PSK, 1 Tx slot)	27.50	26.50
EDGE (8PSK, 2 Tx slots)	26.50	25.50
EDGE (8PSK, 3 Tx slots)	26.50	24.50
EDGE (8PSK, 4 Tx slots)	25.50	24.00

Mode	Average power(dBm)		
	WCDMA Band V	WCDMA Band II	WCDMA Band IV
AMR / RMC 12.2Kbps	24.00	24.00	24.00
HSDPA Subtest-1	24.00	24.00	24.00
HSUPA Subtest-5	23.50	23.50	23.50

LTE Band 17				
Modulation	BW (MHz)	RB size	MPR	Average power(dBm)
QPSK	10	≤ 12	0	23.0
QPSK	10	> 12	1	22.0
16QAM	10	≤ 12	1	22.0
16QAM	10	> 12	2	21.0
QPSK	5	≤ 8	0	23.0
QPSK	5	> 8	1	22.0
16QAM	5	≤ 8	1	22.0
16QAM	5	> 8	2	21.0

LTE Band 5				
Modulation	BW (MHz)	RB size	MPR	Average power(dBm)
QPSK	10	≤ 12	0	23.0
QPSK	10	> 12	1	22.0
16QAM	10	≤ 12	1	22.0
16QAM	10	> 12	2	21.0
QPSK	5	≤ 8	0	23.0
QPSK	5	> 8	1	22.0
16QAM	5	≤ 8	1	22.0
16QAM	5	> 8	2	21.0
QPSK	3	≤ 4	0	23.0
QPSK	3	> 4	1	22.0
16QAM	3	≤ 4	1	22.0
16QAM	3	> 4	2	21.0
QPSK	1.4	≤ 5	0	23.0
QPSK	1.4	> 5	1	22.0
16QAM	1.4	≤ 5	1	22.0
16QAM	1.4	> 5	2	21.0

LTE Band 4				
Modulation	BW (MHz)	RB size	MPR	Average power(dBm)
QPSK	20	≤ 18	0	23.0
QPSK	20	> 18	1	22.0
16QAM	20	≤ 18	1	22.0
16QAM	20	> 18	2	21.0
QPSK	15	≤ 16	0	23.0
QPSK	15	> 16	1	22.0
16QAM	15	≤ 16	1	22.0
16QAM	15	> 16	2	21.0
QPSK	10	≤ 12	0	23.0
QPSK	10	> 12	1	22.0
16QAM	10	≤ 12	1	22.0
16QAM	10	> 12	2	21.0
QPSK	5	≤ 8	0	23.0
QPSK	5	> 8	1	22.0
16QAM	5	≤ 8	1	22.0
16QAM	5	> 8	2	21.0
QPSK	3	≤ 4	0	23.0
QPSK	3	> 4	1	22.0
16QAM	3	≤ 4	1	22.0
16QAM	3	> 4	2	21.0
QPSK	1.4	≤ 5	0	23.0
QPSK	1.4	> 5	1	22.0
16QAM	1.4	≤ 5	1	22.0
16QAM	1.4	> 5	2	21.0

LTE Band 2				
Modulation	BW (MHz)	RB size	MPR	Average power(dBm)
QPSK	20	≤ 18	0	23.0
QPSK	20	> 18	1	22.0
16QAM	20	≤ 18	1	22.0
16QAM	20	> 18	2	21.0
QPSK	15	≤ 16	0	23.0
QPSK	15	> 16	1	22.0
16QAM	15	≤ 16	1	22.0
16QAM	15	> 16	2	21.0
QPSK	10	≤ 12	0	23.0
QPSK	10	> 12	1	22.0
16QAM	10	≤ 12	1	22.0
16QAM	10	> 12	2	21.0
QPSK	5	≤ 8	0	23.0
QPSK	5	> 8	1	22.0
16QAM	5	≤ 8	1	22.0
16QAM	5	> 8	2	21.0
QPSK	3	≤ 4	0	23.0
QPSK	3	> 4	1	22.0
16QAM	3	≤ 4	1	22.0
16QAM	3	> 4	2	21.0
QPSK	1.4	≤ 5	0	23.0
QPSK	1.4	> 5	1	22.0
16QAM	1.4	≤ 5	1	22.0
16QAM	1.4	> 5	2	21.0

LTE Band 7				
Modulation	BW (MHz)	RB size	MPR	Average power(dBm)
QPSK	20	≤ 18	0	23.0
QPSK	20	> 18	1	22.0
16QAM	20	≤ 18	1	22.0
16QAM	20	> 18	2	21.0
QPSK	15	≤ 16	0	23.0
QPSK	15	> 16	1	22.0
16QAM	15	≤ 16	1	22.0
16QAM	15	> 16	2	21.0
QPSK	10	≤ 12	0	23.0
QPSK	10	> 12	1	22.0
16QAM	10	≤ 12	1	22.0
16QAM	10	> 12	2	21.0
QPSK	5	≤ 8	0	23.0
QPSK	5	> 8	1	22.0
16QAM	5	≤ 8	1	22.0
16QAM	5	> 8	2	21.0

Band / Mode	Average Power (dBm)	
	v2.1	v4.0
Bluetooth	9.0	7.0

Band / Frequency (MHz)		IEEE 802.11 Average Power (dBm)		
		11b	11g	HT20
2.4GHz Band	2412	18.5	13.5	13.5
	2437	18.5	13.5	13.5
	2462	18.5	13.5	13.5

Band	IEEE 802.11 Average Power (dBm)		
	11a	HT20	HT40
5.2GHz Band	13.5	13.5	13.5
5.3GHz Band	13.0	13.0	13.0
5.5GHz Band	13.5	13.5	13.5
5.8GHz Band	13.5	13.5	13.5

4.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r03	
FCC ID	NM80PFH100
Equipment Name	Smartphone
Operating Frequency Range of each LTE transmission band	LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 05: 824.7 MHz ~ 848.3 MHz LTE Band 04: 1710.7 MHz ~ 1754.3 MHz LTE Band 02: 1850.7 MHz ~ 1909.3 MHz LTE Band 07: 2502.5 MHz ~ 2567.5 MHz
Channel Bandwidth	LTE Band 17: 5MHz, 10MHz LTE Band 05: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 04: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 02: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz
Version	Rel.9, Cat4
uplink modulations used	QPSK, and 16QAM
LTE Voice / Data requirements	Data only
LTE MPR permanently built-in by design	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 17

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 5

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 7

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram 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.

6. Specific Absorption Rate (SAR)

6.1 Introduction

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.

6.2 SAR Definition

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:

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

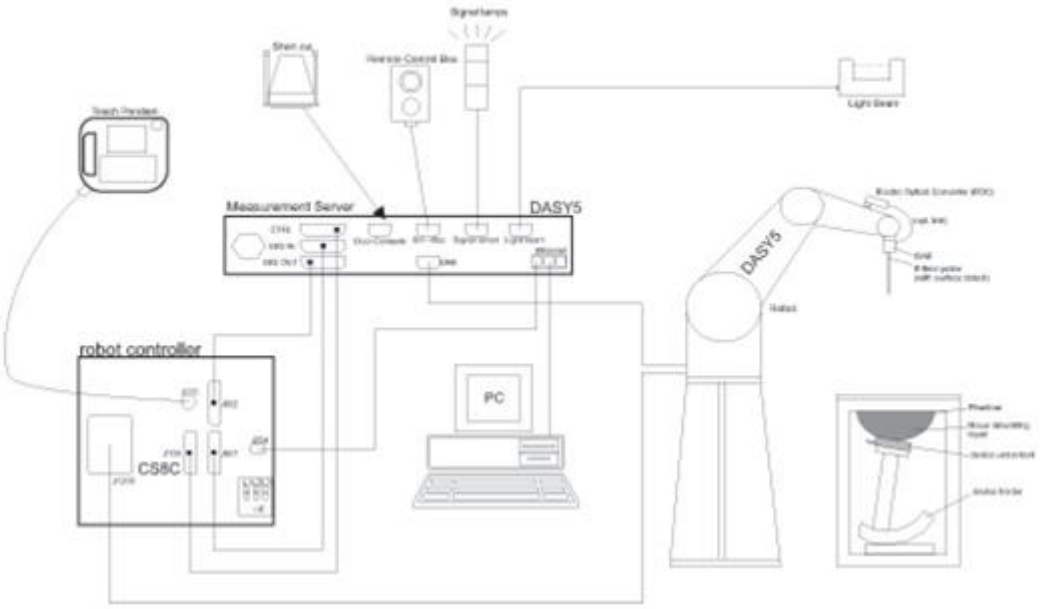
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

The DASY system used 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).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- 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 communication 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 function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 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.

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

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

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

8.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	May. 16, 2014	May. 15, 2015
SPEAG	835MHz System Validation Kit	D835V2	499	Mar. 24, 2014	Mar. 23, 2015
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 27, 2013	Nov. 26, 2014
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Mar. 21, 2014	Mar. 20, 2015
SPEAG	2450MHz System Validation Kit	D2450V2	869	Jun. 13, 2014	Jun. 12, 2015
SPEAG	2600MHz System Validation Kit	D2600V2	1058	Jun. 23, 2014	Jun. 22, 2015
SPEAG	5GHz System Validation Kit	D5GHzV2	1128	Jul. 22, 2014	Jul. 21, 2015
SPEAG	Data Acquisition Electronics	DAE4	778	Aug. 21, 2014	Aug. 20, 2015
SPEAG	Data Acquisition Electronics	DAE4	1338	Nov. 05, 2013	Nov. 04, 2014
SPEAG	Data Acquisition Electronics	DAE3	360	Feb. 17, 2014	Feb. 16, 2015
SPEAG	Data Acquisition Electronics	DAE3	577	May. 15, 2014	May. 14, 2015
SPEAG	Data Acquisition Electronics	DAE4	1279	Jul. 23, 2014	Jul. 22, 2015
SPEAG	Data Acquisition Electronics	DAE4	1399	Nov. 07, 2013	Nov. 06, 2014
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Sep. 24, 2013	Sep. 23, 2014
SPEAG	Dosimetric E-Field Probe	ES3DV3	3296	Apr. 30, 2014	Apr. 29, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3935	Nov. 04, 2013	Nov. 03, 2014
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Sep. 10, 2013	Sep. 09, 2014
SPEAG	Dosimetric E-Field Probe	EX3DV4	3954	Nov. 04, 2013	Nov. 03, 2014
SPEAG	Dosimetric E-Field Probe	EX3DV4	3873	Aug. 26, 2014	Aug. 25, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3955	Nov. 12, 2013	Nov. 11, 2014
Wisewind	Thermometer	ETP-101	TM560	Oct. 22, 2013	Oct. 21, 2014
Wisewind	Thermometer	ETP-101	TM685	Oct. 22, 2013	Oct. 21, 2014
Wisewind	Thermometer	HTC-1	TM642	Oct. 22, 2013	Oct. 21, 2014
Wisewind	Thermometer	HTC-1	TM281	Oct. 22, 2013	Oct. 21, 2014
H.M.IRIS	Thermometer	TH-08	TM658	Oct. 22, 2013	Oct. 21, 2014
WonDer	Thermometer	WD-5015	TM225	Dec. 02, 2013	Dec. 01, 2014
Anritsu	Radio Communication Analyzer	MT8820C	6201074414	Feb. 11, 2014	Feb. 10, 2015
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 27, 2014	May. 26, 2015
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Agilent	Signal Generator	E4438C	MY49070755	Oct. 08, 2013	Oct. 07, 2014
SPEAG	Dielectric Probe Kit	DAKS-3.5	0004	Mar. 04, 2014	Mar. 03, 2015
Agilent	ENA Network Analyzer	E5071C	MY46316648	Feb. 07, 2014	Feb. 06, 2015
Anritsu	Power Meter	ML2495A	1349001	Dec. 04, 2013	Dec. 03, 2014
Anritsu	Power Sensor	MA2411B	1306099	Dec. 03, 2013	Dec. 02, 2014
R&S	Spectrum Analyzer	FSP30	101067	Nov. 20, 2013	Nov. 19, 2014
Agilent	Dual Directional Coupler	778D	50422	Note 1	
Woken	Attenuator	WK0602-XX	N/A	Note 1	
PE	Attenuator	PE7005-10	N/A	Note 1	
PE	Attenuator	PE7005- 3	N/A	Note 1	
AR	Power Amplifier	5S1G4M2	0328767	Note 1	
Mini-Circuits	Power Amplifier	ZVE-3W	162601250	Note 1	
Mini-Circuits	Power Amplifier	ZHL-42W+	13440021344	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

10. System Verification

10.1 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.5	0.895	41.000	0.89	41.90	0.56	-2.15	±5	2014/8/20
750	Body	22.4	0.963	54.200	0.96	55.50	0.31	-2.34	±5	2014/8/20
750	Body	22.5	0.961	53.900	0.96	55.50	0.10	-2.88	±5	2014/8/21
750	Body	22.3	0.970	54.600	0.96	55.50	1.04	-1.62	±5	2014/9/30
750	Head	22.3	0.891	43.446	0.89	41.90	0.11	3.69	±5	2014/10/7
835	Head	22.7	0.885	42.000	0.90	41.50	-1.67	1.20	±5	2014/8/19
835	Body	22.3	0.967	54.200	0.97	55.20	-0.31	-1.81	±5	2014/8/21
835	Body	22.5	0.963	54.500	0.97	55.20	-0.72	-1.27	±5	2014/9/24
835	Head	22.3	0.876	42.700	0.90	41.50	-2.67	2.89	±5	2014/9/30
835	Head	22.6	0.879	42.700	0.90	41.50	-2.33	2.89	±5	2014/10/1
835	Body	22.6	0.985	54.500	0.97	55.20	1.55	-1.27	±5	2014/10/1
1750	Body	22.3	1.550	51.700	1.49	53.40	4.03	-3.18	±5	2014/8/18
1750	Head	22.5	1.400	38.700	1.37	40.10	2.19	-3.49	±5	2014/8/19
1750	Head	22.5	1.400	39.100	1.37	40.10	2.19	-2.49	±5	2014/9/25
1750	Body	22.5	1.530	52.000	1.49	53.40	2.68	-2.62	±5	2014/9/25
1750	Head	22.5	1.339	41.092	1.37	40.10	-2.26	2.47	±5	2014/10/7
1750	Body	22.6	1.525	51.728	1.49	53.40	2.35	-3.13	±5	2014/10/7
1900	Body	22.2	1.565	52.909	1.52	53.30	2.96	-0.73	±5	2014/8/17
1900	Body	22.4	1.530	51.600	1.52	53.30	0.66	-3.19	±5	2014/8/18
1900	Head	22.5	1.430	39.000	1.40	40.00	2.14	-2.50	±5	2014/8/19
1900	Body	22.5	1.550	51.900	1.52	53.30	1.97	-2.63	±5	2014/9/24
1900	Head	22.5	1.430	39.200	1.40	40.00	2.14	-2.00	±5	2014/9/25
1900	Body	22.3	1.530	52.700	1.52	53.30	0.66	-1.13	±5	2014/10/1
1900	Body	22.6	1.544	51.591	1.52	53.30	1.58	-3.21	±5	2014/10/7
2450	Head	22.3	1.840	38.600	1.80	39.20	2.22	-1.53	±5	2014/8/25
2450	Body	22.3	1.960	51.600	1.95	52.70	0.51	-2.09	±5	2014/8/26
2600	Head	22.6	2.050	38.100	1.96	39.00	4.59	-2.31	±5	2014/8/22
2600	Body	22.6	2.200	52.800	2.16	52.50	1.85	0.57	±5	2014/8/22
2600	Head	22.5	1.980	38.300	1.96	39.00	1.02	-1.79	±5	2014/9/25
2600	Body	22.4	2.170	53.800	2.16	52.50	0.46	2.48	±5	2014/9/30
5200	Body	22.2	5.400	47.300	5.30	49.00	1.89	-3.47	±5	2014/8/30
5200	Head	22.2	4.810	35.400	4.66	36.00	3.22	-1.67	±5	2014/8/31
5300	Body	22.2	5.520	47.000	5.42	48.90	1.85	-3.89	±5	2014/8/30
5300	Head	22.2	4.920	35.300	4.76	35.90	3.36	-1.67	±5	2014/8/31
5600	Body	22.2	5.900	46.600	5.77	48.50	2.25	-3.92	±5	2014/8/30
5600	Head	22.2	5.230	34.700	5.07	35.50	3.16	-2.25	±5	2014/8/31
5800	Body	22.2	6.170	46.200	6.00	48.20	2.83	-4.15	±5	2014/8/30
5800	Head	22.2	5.420	34.300	5.27	35.30	2.85	-2.83	±5	2014/8/31

10.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2014/8/20	750	Head	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.05	8.12	8.20	0.99
2014/8/20	750	Body	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.05	8.65	8.20	-5.20
2014/8/21	750	Body	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.06	8.65	8.24	-4.74
2014/9/30	750	Body	250	D750V3-1012	EX3DV4 - SN3873	DAE3 Sn360	1.99	8.65	7.96	-7.98
2014/10/7	750	Head	250	D750V3-1012	ES3DV3 - SN3296	DAE4 Sn778	2.01	8.12	8.04	-0.99
2014/8/19	835	Head	250	D835V2-499	EX3DV4 - SN3931	DAE3 Sn577	2.23	9.13	8.92	-2.30
2014/8/21	835	Body	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.26	9.46	9.04	-4.44
2014/9/24	835	Body	250	D835V2-499	EX3DV4 - SN3954	DAE3 Sn360	2.56	9.46	10.24	8.25
2014/9/30	835	Head	250	D835V2-499	EX3DV4 - SN3954	DAE4 Sn1279	2.27	9.13	9.08	-0.55
2014/10/1	835	Head	250	D835V2-499	EX3DV4 - SN3873	DAE3 Sn360	2.38	9.13	9.52	4.27
2014/10/1	835	Body	250	D835V2-499	EX3DV4 - SN3873	DAE3 Sn360	2.55	9.46	10.20	7.82
2014/8/18	1750	Body	250	D1750V2-1068	EX3DV4 - SN3931	DAE3 Sn577	9.37	37.50	37.48	-0.05
2014/8/19	1750	Head	250	D1750V2-1068	EX3DV4 - SN3931	DAE3 Sn577	8.93	37.30	35.72	-4.24
2014/9/25	1750	Head	250	D1750V2-1068	EX3DV4 - SN3935	DAE4 Sn1338	9.71	37.30	38.84	4.13
2014/9/25	1750	Body	250	D1750V2-1068	EX3DV4 - SN3935	DAE4 Sn1338	9.15	37.50	36.60	-2.40
2014/10/7	1750	Head	250	D1750V2-1068	EX3DV4 - SN3873	DAE3 Sn360	8.98	37.30	35.92	-3.70
2014/10/7	1750	Body	250	D1750V2-1068	EX3DV4 - SN3873	DAE4 Sn1279	9.72	37.50	38.88	3.68
2014/8/17	1900	Body	250	D1900V2-5d041	EX3DV4 - SN3931	DAE3 Sn577	10.50	41.00	42.00	2.44
2014/8/18	1900	Body	250	D1900V2-5d041	EX3DV4 - SN3931	DAE3 Sn577	10.30	41.00	41.20	0.49
2014/8/19	1900	Head	250	D1900V2-5d041	EX3DV4 - SN3931	DAE3 Sn577	10.20	41.00	40.80	-0.49
2014/9/24	1900	Body	250	D1900V2-5d041	EX3DV4 - SN3954	DAE3 Sn360	10.00	41.00	40.00	-2.44
2014/9/25	1900	Head	250	D1900V2-5d041	EX3DV4 - SN3954	DAE3 Sn360	9.99	41.00	39.96	-2.54
2014/10/1	1900	Body	250	D1900V2-5d041	EX3DV4 - SN3873	DAE3 Sn360	10.50	41.00	42.00	2.44
2014/10/7	1900	Body	250	D1900V2-5d041	EX3DV4 - SN3873	DAE4 Sn1279	10.40	41.00	41.60	1.46
2014/8/25	2450	Head	250	D2450V2-869	ES3DV3 - SN3270	DAE4 Sn1279	13.50	52.80	54.00	2.27
2014/8/26	2450	Body	250	D2450V2-869	ES3DV3 - SN3270	DAE4 Sn1279	13.10	50.30	52.40	4.17
2014/8/22	2600	Head	250	D2600V2-1058	EX3DV4 - SN3955	DAE4 Sn1399	13.40	57.90	53.60	-7.43
2014/8/22	2600	Body	250	D2600V2-1058	EX3DV4 - SN3955	DAE4 Sn1399	13.50	56.80	54.00	-4.93
2014/9/25	2600	Head	250	D2600V2-1058	EX3DV4 - SN3935	DAE4 Sn1338	13.90	57.90	55.60	-3.97
2014/9/30	2600	Body	250	D2600V2-1058	EX3DV4 - SN3873	DAE3 Sn360	14.30	56.80	57.20	0.70
2014/8/30	5200	Body	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	7.52	76.20	75.20	-1.31
2014/8/31	5200	Head	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	8.04	79.80	80.40	0.75
2014/8/30	5300	Body	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	7.99	77.70	79.90	2.83
2014/8/31	5300	Head	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	8.32	81.60	83.20	1.96
2014/8/30	5600	Body	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	7.54	81.50	75.40	-7.48
2014/8/31	5600	Head	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	8.70	84.00	87.00	3.57
2014/8/30	5800	Body	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	7.36	75.90	73.60	-3.03
2014/8/31	5800	Head	100	D5GHzV2-1128	EX3DV4 - SN3955	DAE3 Sn577	8.28	78.90	82.80	4.94

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled "M," the left ear reference point (ERP) is marked "LE," and the right ERP is marked "RE." Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

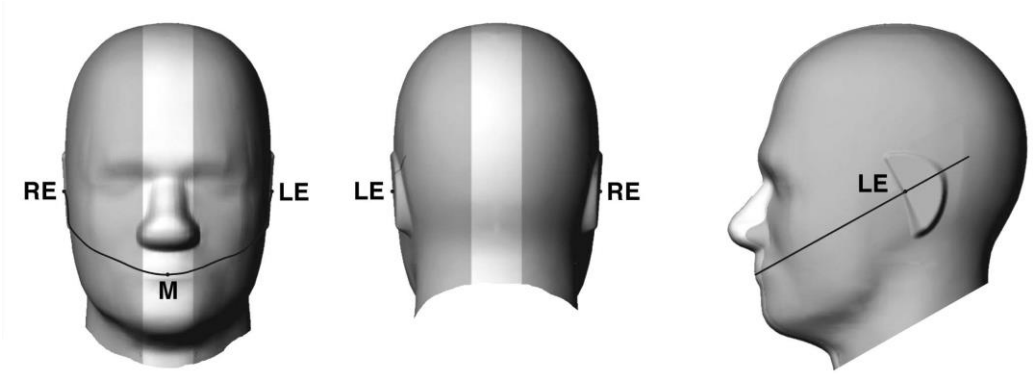


Fig 9.1.1 Front, back, and side views of SAM twin phantom

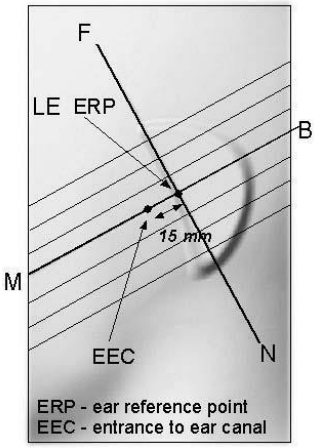


Fig 9.1.2 Close-up side view of phantom showing the ear region.

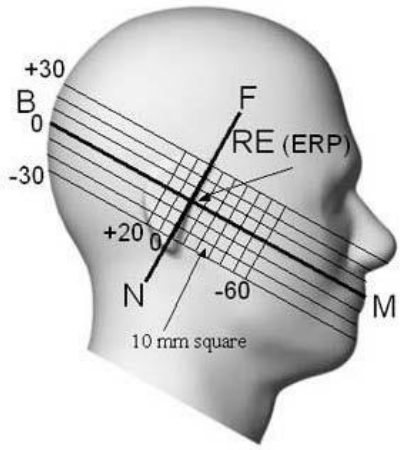


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. 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 (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). 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 parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

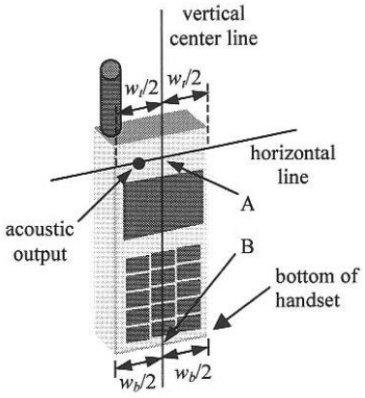


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

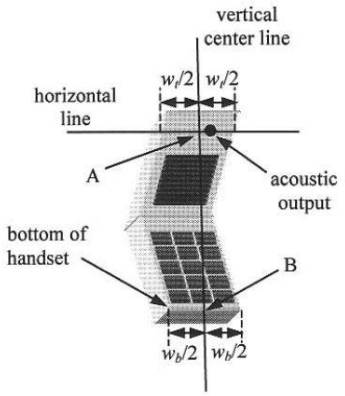


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

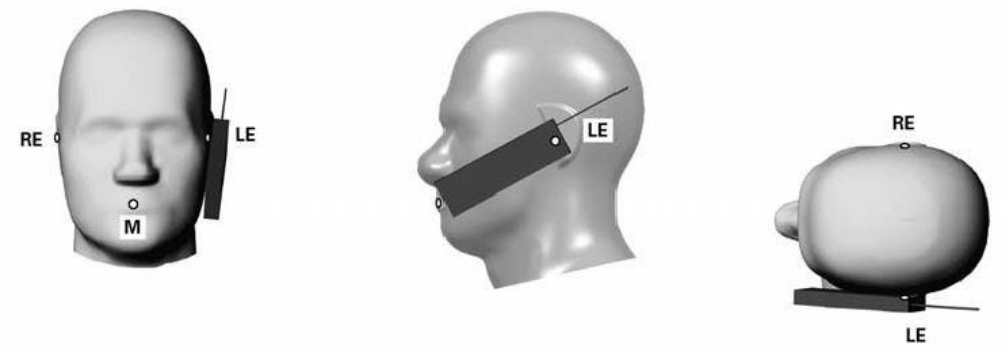


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

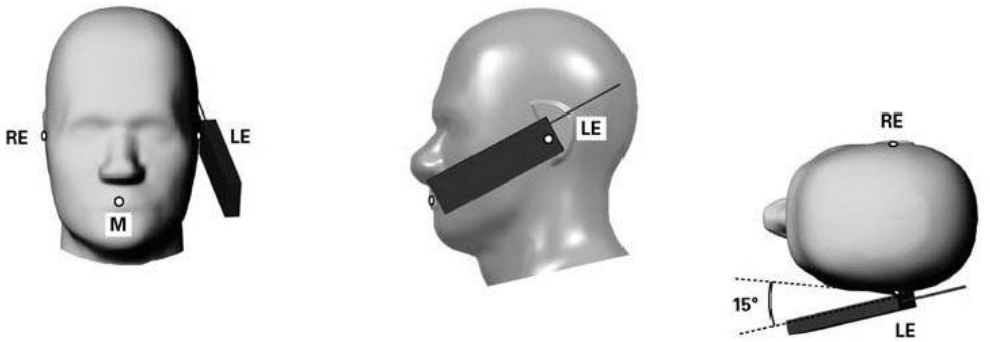


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB 648474 D04v01r02, 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 FCC KDB 447498 D01v05r02 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for 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 that body-worn accessory with a handset attached to the handset.

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

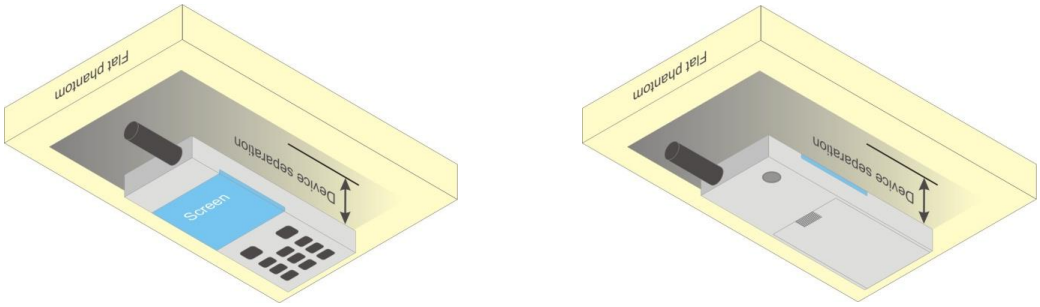


Fig 9.4 Body Worn Position

11.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC HDB Publication 941225 D06v01r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v05r02 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

12. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v05r02, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. According to October 2013TCB Workshop, For GSM / EGPRS, the number of time slots to test for SAR should correspond to the highest source-based time-averaged maximum output power configuration, Considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR testing, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900 band due to its highest frame-average power.
3. For hotspot mode SAR testing, GPRS / EDGE should be evaluated, therefore the EUT was set in GPRS 4 Tx slots for GSM850/GSM1900 band due to its highest frame-average power.

Band GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM (GMSK, 1 Tx slot)	32.78	32.70	32.89	33.00	23.78	23.70	23.89	24.00
GPRS (GMSK, 1 Tx slot)	32.81	32.72	32.92	33.00	23.81	23.72	23.92	24.00
GPRS (GMSK, 2 Tx slots)	31.27	31.18	31.44	31.50	25.27	25.18	25.44	25.50
GPRS (GMSK, 3 Tx slots)	29.19	29.17	29.24	29.50	24.93	24.91	24.98	25.24
GPRS (GMSK, 4 Tx slots)	28.76	28.74	28.71	29.00	25.76	25.74	25.71	26.00
EDGE (8PSK, 1 Tx slot)	27.32	27.38	27.34	27.50	18.32	18.38	18.34	18.50
EDGE (8PSK, 2 Tx slots)	26.31	26.24	26.29	26.50	20.31	20.24	20.29	20.50
EDGE (8PSK, 3 Tx slots)	26.14	26.18	26.20	26.50	21.88	21.92	21.94	22.24
EDGE (8PSK, 4 Tx slots)	25.23	25.30	25.27	25.50	22.23	22.30	22.27	22.50

Band GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM (GMSK, 1 Tx slot)	29.78	29.91	29.80	30.00	20.78	20.91	20.80	21.00
GPRS (GMSK, 1 Tx slot)	29.81	29.94	29.82	30.00	20.81	20.94	20.82	21.00
GPRS (GMSK, 2 Tx slots)	28.88	28.89	28.98	29.00	22.88	22.89	22.98	23.00
GPRS (GMSK, 3 Tx slots)	26.94	26.84	26.90	27.00	22.68	22.58	22.64	22.74
GPRS (GMSK, 4 Tx slots)	25.89	25.92	25.93	26.00	22.89	22.92	22.93	23.00
EDGE (8PSK, 1 Tx slot)	26.49	26.44	26.43	26.50	17.49	17.44	17.43	17.50
EDGE (8PSK, 2 Tx slots)	25.48	25.43	25.45	25.50	19.48	19.43	19.45	19.50
EDGE (8PSK, 3 Tx slots)	24.42	24.35	24.35	24.50	20.16	20.09	20.09	20.24
EDGE (8PSK, 4 Tx slots)	23.61	23.56	23.47	24.00	20.61	20.56	20.47	21.00

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. SAR testing in AMR configuration is not required when the maximum average output of each RF channel for AMR 12.2Kbps is less than 0.25dB higher than that measured in RMC 12.2Kbps
2. Per KDB 941225 D02v02r02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA output power is < 0.25dB higher than RMC, or reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA SAR evaluation can be excluded.

Band			WCDMA V			WCDMA II			WCDMA IV		
TX Channel			4132	4182	4233	9262	9400	9538	1312	1413	1513
Frequency (MHz)			826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
MPR(dB)	3GPP Rel 99	AMR 12.2Kbps	23.21	23.10	23.22	22.98	23.07	23.11	23.20	23.15	23.25
	3GPP Rel 99	RMC 12.2Kbps	23.25	23.12	23.24	23.00	23.09	23.13	23.22	23.17	23.29
0	3GPP Rel 6	HSDPA Subtest-1	22.27	22.20	22.30	22.07	22.19	22.21	22.23	22.31	22.42
0	3GPP Rel 6	HSDPA Subtest-2	22.29	22.19	22.27	22.04	22.13	22.19	22.25	22.35	22.42
0.5	3GPP Rel 6	HSDPA Subtest-3	21.77	21.57	21.82	21.58	21.63	21.64	21.75	21.72	21.84
0.5	3GPP Rel 6	HSDPA Subtest-4	21.81	21.57	21.76	21.53	21.62	21.63	21.72	21.76	21.87
0	3GPP Rel 6	HSUPA Subtest-1	21.57	21.64	21.56	21.50	21.51	21.86	21.62	21.79	21.52
2	3GPP Rel 6	HSUPA Subtest-2	21.05	21.04	20.78	20.53	20.51	20.78	21.03	21.11	21.20
1	3GPP Rel 6	HSUPA Subtest-3	20.61	20.58	20.66	21.09	21.18	21.43	21.04	21.20	21.23
2	3GPP Rel 6	HSUPA Subtest-4	21.48	21.55	21.47	21.37	21.42	21.53	21.26	21.32	21.37
0	3GPP Rel 6	HSUPA Subtest-5	22.25	22.14	22.24	21.61	21.52	21.50	21.51	21.50	21.53

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r03, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.50	22.36	22.60	23	0
10	QPSK	1	24	22.36	22.31	22.19		
10	QPSK	1	49	22.41	22.19	22.33		
10	QPSK	25	0	21.34	21.53	21.38	22	1
10	QPSK	25	12	21.41	21.35	21.35		
10	QPSK	25	24	21.41	21.39	21.31		
10	QPSK	50	0	21.41	21.44	21.40		
10	16QAM	1	0	21.56	21.61	21.49	22	1
10	16QAM	1	24	21.33	21.19	21.44		
10	16QAM	1	49	21.41	21.39	21.36		
10	16QAM	25	0	20.36	20.39	20.28	21	2
10	16QAM	25	12	20.29	20.45	20.38		
10	16QAM	25	24	20.45	20.45	20.37		
10	16QAM	50	0	20.57	20.46	20.40		
Channel				23755	23790	23825	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.53	22.53	22.38	23	0
5	QPSK	1	12	22.24	22.38	22.31		
5	QPSK	1	24	22.42	22.06	22.34		
5	QPSK	12	0	21.33	21.39	21.32	22	1
5	QPSK	12	6	21.38	21.35	21.57		
5	QPSK	12	11	21.43	21.34	21.56		
5	QPSK	25	0	21.37	21.35	21.26		
5	16QAM	1	0	21.26	21.25	21.34	22	1
5	16QAM	1	12	21.10	21.06	21.07		
5	16QAM	1	24	21.13	21.18	21.09		
5	16QAM	12	0	20.41	20.33	20.44	21	2
5	16QAM	12	6	20.45	20.45	20.39		
5	16QAM	12	11	20.59	20.51	20.38		
5	16QAM	25	0	20.47	20.48	20.40		

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.48	22.43	22.47	23	0
10	QPSK	1	24	22.37	22.37	22.46		
10	QPSK	1	49	22.46	22.32	22.36		
10	QPSK	25	0	21.51	21.45	21.46	22	1
10	QPSK	25	12	21.53	21.47	21.47		
10	QPSK	25	24	21.46	21.44	21.55		
10	QPSK	50	0	21.47	21.53	21.50		
10	16QAM	1	0	21.53	21.38	21.48	22	1
10	16QAM	1	24	21.50	21.37	21.46		
10	16QAM	1	49	21.52	21.26	21.47		
10	16QAM	25	0	20.46	20.73	20.77	21	2
10	16QAM	25	12	20.52	20.73	20.77		
10	16QAM	25	24	20.43	20.74	20.78		
10	16QAM	50	0	20.46	20.33	20.46		
Channel				20425	20525	20625	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.46	22.41	22.45	23	0
5	QPSK	1	12	22.31	22.33	22.37		
5	QPSK	1	24	22.40	22.32	22.29		
5	QPSK	12	0	21.47	21.44	21.38	22	1
5	QPSK	12	6	21.50	21.47	21.44		
5	QPSK	12	11	21.36	21.42	21.49		
5	QPSK	25	0	21.44	21.44	21.46		
5	16QAM	1	0	21.43	21.37	21.42	22	1
5	16QAM	1	12	21.47	21.31	21.38		
5	16QAM	1	24	21.49	21.25	21.41		
5	16QAM	12	0	20.41	20.78	20.77	21	2
5	16QAM	12	6	20.52	20.77	20.75		
5	16QAM	12	11	20.43	20.76	20.75		
5	16QAM	25	0	20.43	20.24	20.36		
Channel				20415	20525	20635	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.43	22.39	22.42	23	0
3	QPSK	1	7	22.30	22.29	22.41		
3	QPSK	1	14	22.40	22.30	22.31		
3	QPSK	8	0	21.48	21.36	21.36	22	1
3	QPSK	8	4	21.53	21.38	21.39		
3	QPSK	8	7	21.46	21.39	21.54		
3	QPSK	15	0	21.45	21.49	21.50		
3	16QAM	1	0	21.51	21.33	21.45	22	1
3	16QAM	1	7	21.49	21.32	21.44		
3	16QAM	1	14	21.50	21.18	21.40		
3	16QAM	8	0	20.43	20.78	20.73	21	2
3	16QAM	8	4	20.48	20.72	20.76		
3	16QAM	8	7	20.43	20.72	20.78		
3	16QAM	15	0	20.45	20.30	20.44		

Channel				20407	20525	20643	Tune up Limit (dBm)	Target MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.47	22.42	22.41	23	0
1.4	QPSK	1	2	22.35	22.36	22.40		
1.4	QPSK	1	5	22.44	22.22	22.35		
1.4	QPSK	3	0	21.82	21.75	21.75		
1.4	QPSK	3	1	21.80	21.74	21.74		
1.4	QPSK	3	2	21.78	21.73	21.73		
1.4	QPSK	6	0	21.37	21.46	21.45	22	1
1.4	16QAM	1	0	21.50	21.36	21.48	22	1
1.4	16QAM	1	2	21.43	21.35	21.42		
1.4	16QAM	1	5	21.42	21.21	21.43		
1.4	16QAM	3	0	20.80	20.72	20.72		
1.4	16QAM	3	1	20.77	20.75	20.71		
1.4	16QAM	3	2	20.77	20.73	20.73		
1.4	16QAM	6	0	20.40	20.30	20.39	21	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.26	22.44	22.47	23	0
20	QPSK	1	49	22.21	22.38	22.32		
20	QPSK	1	99	22.20	22.32	22.22		
20	QPSK	50	0	21.13	21.99	21.22	22	1
20	QPSK	50	24	21.25	21.92	21.20		
20	QPSK	50	49	21.26	21.91	21.26		
20	QPSK	100	0	21.32	21.98	21.24		
20	16QAM	1	0	21.41	22.00	21.20	22	1
20	16QAM	1	49	21.35	21.98	21.18		
20	16QAM	1	99	21.38	21.93	21.16		
20	16QAM	50	0	20.24	20.95	20.39	21	2
20	16QAM	50	24	20.37	20.88	20.40		
20	16QAM	50	49	20.36	20.95	20.43		
20	16QAM	100	0	20.23	20.94	20.37		
Channel				20025	20175	20325	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.13	22.15	22.24	23	0
15	QPSK	1	37	21.96	22.04	21.96		
15	QPSK	1	74	21.94	21.90	22.00		
15	QPSK	36	0	21.43	21.55	21.46	22	1
15	QPSK	36	18	21.41	21.50	21.41		
15	QPSK	36	37	21.32	21.52	21.47		
15	QPSK	75	0	21.44	21.56	21.54		
15	16QAM	1	0	21.60	21.57	21.48	22	1
15	16QAM	1	37	21.40	21.53	21.47		
15	16QAM	1	74	21.58	21.51	21.37		
15	16QAM	36	0	20.55	20.52	20.56	21	2
15	16QAM	36	18	20.41	20.48	20.42		
15	16QAM	36	37	20.38	20.50	20.40		
15	16QAM	75	0	20.47	20.54	20.54		
Channel				20000	20175	20350	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	21.89	21.97	21.85	23	0
10	QPSK	1	24	21.86	21.94	21.84		
10	QPSK	1	49	21.88	21.95	21.71		
10	QPSK	25	0	21.48	21.50	21.46	22	1
10	QPSK	25	12	21.45	21.50	21.48		
10	QPSK	25	24	21.37	21.51	21.46		
10	QPSK	50	0	21.46	21.48	21.46		
10	16QAM	1	0	21.26	21.43	21.40	22	1
10	16QAM	1	24	21.18	21.33	21.38		
10	16QAM	1	49	21.24	21.41	21.26		
10	16QAM	25	0	20.61	20.60	20.55	21	2
10	16QAM	25	12	20.55	20.62	20.52		
10	16QAM	25	24	20.54	20.59	20.51		
10	16QAM	50	0	20.54	20.49	20.50		

Channel				19975	20175	20375	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.00	22.02	22.10	23	0
5	QPSK	1	12	21.98	21.86	21.96		
5	QPSK	1	24	21.95	21.98	22.06		
5	QPSK	12	0	21.36	21.48	21.47	22	1
5	QPSK	12	6	21.45	21.46	21.43		
5	QPSK	12	11	21.45	21.51	21.40		
5	QPSK	25	0	21.45	21.48	21.43		
5	16QAM	1	0	21.17	21.01	21.12	22	1
5	16QAM	1	12	21.16	21.00	20.93		
5	16QAM	1	24	21.12	20.92	21.10		
5	16QAM	12	0	20.44	20.62	20.54	21	2
5	16QAM	12	6	20.64	20.61	20.50		
5	16QAM	12	11	20.54	20.45	20.54		
5	16QAM	25	0	20.48	20.48	20.48		
Channel				19965	20175	20385	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.11	22.28	22.30	23	0
3	QPSK	1	7	22.08	22.22	22.16		
3	QPSK	1	14	22.06	22.12	22.11		
3	QPSK	8	0	21.67	21.79	21.84	22	1
3	QPSK	8	4	21.62	21.72	21.68		
3	QPSK	8	7	21.72	21.71	21.66		
3	QPSK	15	0	21.83	21.78	21.72		
3	16QAM	1	0	21.55	21.84	21.98	22	1
3	16QAM	1	7	21.40	21.83	21.75		
3	16QAM	1	14	21.54	21.73	21.77		
3	16QAM	8	0	20.68	20.75	20.79	21	2
3	16QAM	8	4	20.66	20.68	20.75		
3	16QAM	8	7	20.66	20.75	20.68		
3	16QAM	15	0	20.76	20.74	20.68		
Channel				19957	20175	20393	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.34	22.43	22.39	23	0
1.4	QPSK	1	2	22.32	22.39	22.37		
1.4	QPSK	1	5	22.30	22.37	22.38		
1.4	QPSK	3	0	22.33	22.41	22.35		
1.4	QPSK	3	1	22.32	22.40	22.36		
1.4	QPSK	3	2	22.33	22.39	22.36		
1.4	QPSK	6	0	21.32	21.54	21.54	22	1
1.4	16QAM	1	0	21.37	21.52	21.47	22	1
1.4	16QAM	1	2	21.24	21.16	21.00		
1.4	16QAM	1	5	21.18	21.05	21.17		
1.4	16QAM	3	0	21.32	21.44	21.45		
1.4	16QAM	3	1	21.31	21.48	21.43		
1.4	16QAM	3	2	21.34	21.43	21.43		
1.4	16QAM	6	0	20.30	20.29	20.24	21	2

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.42	22.40	22.48	23	0
20	QPSK	1	49	22.15	22.21	22.18		
20	QPSK	1	99	22.19	22.08	22.25		
20	QPSK	50	0	21.83	21.72	21.72	22	1
20	QPSK	50	24	21.76	21.71	21.71		
20	QPSK	50	49	21.78	21.71	21.69		
20	QPSK	100	0	21.83	21.69	21.74		
20	16QAM	1	0	21.86	21.96	21.98	22	1
20	16QAM	1	49	21.74	21.77	21.83		
20	16QAM	1	99	21.80	21.75	21.95		
20	16QAM	50	0	20.78	20.71	20.73	21	2
20	16QAM	50	24	20.72	20.73	20.73		
20	16QAM	50	49	20.77	20.71	20.73		
20	16QAM	100	0	20.73	20.65	20.71		
Channel				18675	18900	19125	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.36	22.36	22.41	23	0
15	QPSK	1	37	22.22	22.18	22.20		
15	QPSK	1	74	22.16	22.10	22.25		
15	QPSK	36	0	21.73	21.59	21.62	22	1
15	QPSK	36	18	21.71	21.68	21.80		
15	QPSK	36	37	21.70	21.65	21.66		
15	QPSK	75	0	21.74	21.66	21.74		
15	16QAM	1	0	21.63	21.58	21.82	22	1
15	16QAM	1	37	21.62	21.44	21.80		
15	16QAM	1	74	21.58	21.57	21.81		
15	16QAM	36	0	20.67	20.62	20.63	21	2
15	16QAM	36	18	20.69	20.60	20.64		
15	16QAM	36	37	20.59	20.59	20.62		
15	16QAM	75	0	20.78	20.78	20.74		
Channel				18650	18900	19150	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.35	22.26	22.38	23	0
10	QPSK	1	24	22.12	22.03	22.18		
10	QPSK	1	49	22.06	21.99	22.20		
10	QPSK	25	0	21.69	21.63	21.73	22	1
10	QPSK	25	12	21.64	21.60	21.76		
10	QPSK	25	24	21.74	21.59	21.79		
10	QPSK	50	0	21.74	21.63	21.70		
10	16QAM	1	0	21.65	21.56	21.95	22	1
10	16QAM	1	24	21.52	21.49	21.93		
10	16QAM	1	49	21.62	21.53	21.84		
10	16QAM	25	0	20.68	20.69	20.79	21	2
10	16QAM	25	12	20.74	20.71	20.82		
10	16QAM	25	24	20.69	20.69	20.73		
10	16QAM	50	0	20.78	20.67	20.68		

Channel				18625	18900	19175	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.30	22.31	22.41	23	0
5	QPSK	1	12	22.13	22.20	22.31		
5	QPSK	1	24	22.18	22.16	22.31		
5	QPSK	12	0	21.72	21.59	21.71	22	1
5	QPSK	12	6	21.67	21.62	21.79		
5	QPSK	12	11	21.71	21.56	21.70		
5	QPSK	25	0	21.72	21.67	21.73		
5	16QAM	1	0	21.93	21.38	21.58	22	1
5	16QAM	1	12	21.76	21.35	21.39		
5	16QAM	1	24	21.90	21.27	21.55		
5	16QAM	12	0	20.66	20.66	20.76	21	2
5	16QAM	12	6	20.61	20.70	20.84		
5	16QAM	12	11	20.66	20.76	20.78		
5	16QAM	25	0	20.60	20.75	20.81		
Channel				18615	18900	19185	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.35	22.32	22.39	23	0
3	QPSK	1	7	22.14	22.21	22.10		
3	QPSK	1	14	22.19	22.07	22.22		
3	QPSK	8	0	21.83	21.62	21.62	22	1
3	QPSK	8	4	21.76	21.67	21.64		
3	QPSK	8	7	21.76	21.62	21.62		
3	QPSK	15	0	21.81	21.69	21.69		
3	16QAM	1	0	21.83	21.96	21.92	22	1
3	16QAM	1	7	21.70	21.77	21.78		
3	16QAM	1	14	21.80	21.75	21.91		
3	16QAM	8	0	20.73	20.61	20.68	21	2
3	16QAM	8	4	20.72	20.65	20.67		
3	16QAM	8	7	20.73	20.70	20.69		
3	16QAM	15	0	20.69	20.58	20.71		
Channel				18607	18900	19193	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.36	22.32	22.34	23	0
1.4	QPSK	1	2	22.05	22.15	22.12		
1.4	QPSK	1	5	22.11	22.04	22.17		
1.4	QPSK	3	0	21.77	21.66	21.72		
1.4	QPSK	3	1	21.67	21.70	21.71		
1.4	QPSK	3	2	21.68	21.63	21.74		
1.4	QPSK	6	0	21.80	21.67	21.71	22	1
1.4	16QAM	1	0	21.83	21.95	21.94	22	1
1.4	16QAM	1	2	21.74	21.70	21.82		
1.4	16QAM	1	5	21.77	21.72	21.93		
1.4	16QAM	3	0	20.70	20.65	20.71		
1.4	16QAM	3	1	20.69	20.63	20.71		
1.4	16QAM	3	2	20.69	20.70	20.64		
1.4	16QAM	6	0	20.68	20.63	20.69	21	2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.13	21.88	21.67	23	0
20	QPSK	1	49	21.73	21.79	21.61		
20	QPSK	1	99	21.78	21.70	21.65		
20	QPSK	50	0	20.61	20.87	20.58	22	1
20	QPSK	50	24	20.89	20.85	20.54		
20	QPSK	50	49	20.92	20.90	20.57		
20	QPSK	100	0	20.75	20.81	20.63		
20	16QAM	1	0	20.69	20.76	20.42	22	1
20	16QAM	1	49	20.48	20.50	20.35		
20	16QAM	1	99	20.63	20.57	20.41		
20	16QAM	50	0	19.60	19.99	19.58	21	2
20	16QAM	50	24	19.88	19.88	19.59		
20	16QAM	50	49	19.93	19.75	19.62		
20	16QAM	100	0	19.76	19.84	19.68		
Channel				20825	21100	21375	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.97	21.87	21.66	23	0
15	QPSK	1	37	21.69	21.80	21.55		
15	QPSK	1	74	21.93	21.71	21.65		
15	QPSK	36	0	20.61	20.85	20.55	22	1
15	QPSK	36	18	20.62	20.80	20.58		
15	QPSK	36	37	20.85	20.76	20.58		
15	QPSK	75	0	20.67	20.83	20.57		
15	16QAM	1	0	21.12	20.98	20.84	22	1
15	16QAM	1	37	20.70	20.60	20.70		
15	16QAM	1	74	21.11	20.73	20.83		
15	16QAM	36	0	19.54	19.77	19.58	21	2
15	16QAM	36	18	19.68	19.83	19.54		
15	16QAM	36	37	19.82	19.79	19.58		
15	16QAM	75	0	19.64	19.86	19.54		
Channel				20800	21100	21400	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.78	21.95	21.64	23	0
10	QPSK	1	24	21.62	21.88	21.49		
10	QPSK	1	49	21.76	21.69	21.62		
10	QPSK	25	0	20.48	20.78	20.55	22	1
10	QPSK	25	12	20.55	20.72	20.61		
10	QPSK	25	24	20.62	20.85	20.55		
10	QPSK	50	0	20.65	20.80	20.52		
10	16QAM	1	0	20.93	21.07	20.74	22	1
10	16QAM	1	24	20.74	20.96	20.70		
10	16QAM	1	49	20.92	20.67	20.72		
10	16QAM	25	0	19.67	19.87	19.67	21	2
10	16QAM	25	12	19.71	19.91	19.74		
10	16QAM	25	24	19.71	19.97	19.69		
10	16QAM	50	0	19.54	19.89	19.65		

Channel				20775	21100	21425	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.61	21.86	21.76	23	0
5	QPSK	1	12	21.55	21.79	21.60		
5	QPSK	1	24	21.58	21.79	21.59		
5	QPSK	12	0	20.30	20.77	20.54	22	1
5	QPSK	12	6	20.45	20.63	20.54		
5	QPSK	12	11	20.55	20.71	20.57		
5	QPSK	25	0	20.48	20.71	20.52		
5	16QAM	1	0	20.79	21.03	20.82	22	1
5	16QAM	1	12	20.73	21.02	20.72		
5	16QAM	1	24	20.77	20.99	20.81		
5	16QAM	12	0	19.35	19.65	19.60	21	2
5	16QAM	12	6	19.49	19.68	19.53		
5	16QAM	12	11	19.61	19.76	19.67		
5	16QAM	25	0	19.59	19.83	19.68		

<WLAN Conducted Power>

General Note:

1. For 2.4GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were selected for SAR evaluation. 802.11g/n HT20 were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11b mode.
2. For 5 GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11a were selected for SAR evaluation. 802.11n HT20/HT40 modes were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11a mode.

<2.4GHz WLAN>

WLAN 2.4GHz 802.11b Average Power (dBm)					
Power vs. Channel			Power vs. Data Rate		
Channel	Frequency (MHz)	Data Rate	2Mbps	5.5Mbps	11Mbps
		1Mbps			
CH 1	2412	17.89	18.00	18.03	18.02
CH 6	2437	18.04			
CH 11	2462	17.73			

WLAN 2.4GHz 802.11g Average Power (dBm)									
Power vs. Channel			Power vs. Data Rate						
Channel	Frequency (MHz)	Data Rate	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
		6Mbps							
CH 1	2412	12.98	13.22	13.14	13.19	13.22	13.20	13.11	13.15
CH 6	2437	13.20							
CH 11	2462	13.24							

WLAN 2.4GHz 802.11n-HT20 Average Power (dBm)									
Power vs. Channel			Power vs. MCS Index						
Channel	Frequency (MHz)	MCS Index	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		MCS0							
CH 1	2412	12.05	13.23	13.14	13.16	13.01	13.22	13.02	13.22
CH 6	2437	13.24							
CH 11	2462	13.28							

<5GHz WLAN >

WLAN 5GHz 802.11a Average Power (dBm)									
Power vs. Channel			Power vs. Data Rate						
Channel	Frequency (MHz)	Data Rate 6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	13.18	13.17	13.13	13.05	13.12	13.11	13.10	13.10
CH 40	5200	13.00							
CH 44	5220	12.99							
CH 48	5240	12.92							
CH 52	5260	12.83	12.79	12.69	12.76	12.74	12.66	12.66	12.81
CH 56	5280	12.75							
CH 60	5300	12.80							
CH 64	5320	12.71							
CH 100	5500	13.08	13.07	13.02	12.93	12.94	13.06	12.85	12.90
CH 104	5520	13.00							
CH 108	5540	12.99							
CH 112	5560	12.97							
CH 116	5580	12.95							
CH 120	5600	12.90							
CH 124	5620	13.00							
CH 128	5640	12.95							
CH 132	5660	12.93							
CH 136	5680	12.80							
CH 140	5700	12.85							
CH 149	5745	13.39	13.16	13.30	13.37	13.25	13.20	13.17	13.22
CH 153	5765	13.25							
CH 157	5785	13.23							
CH 161	5805	13.21							
CH 165	5825	13.36							

WLAN 5GHz 802.11n-HT20 Average Power (dBm)									
Power vs. Channel			Power vs. MCS Index						
Channel	Frequency (MHz)	MCS Index MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	13.34	13.31	13.30	13.22	13.22	13.31	13.13	13.26
CH 40	5200	13.21							
CH 44	5220	13.14							
CH 48	5240	13.01							
CH 52	5260	12.98	12.83	12.73	12.65	12.82	12.82	12.71	12.74
CH 56	5280	12.90							
CH 60	5300	12.82							
CH 64	5320	12.73							
CH 100	5500	13.06	13.05	12.99	12.95	13.00	12.96	12.93	13.03
CH 104	5520	13.00							
CH 108	5540	12.95							
CH 112	5560	12.91							
CH 116	5580	13.00							
CH 120	5600	13.04							
CH 124	5620	13.00							
CH 128	5640	12.95							
CH 132	5660	12.90							
CH 136	5680	12.91							
CH 140	5700	12.88							
CH 149	5745	13.45	13.31	13.37	13.40	13.39	13.42	13.33	13.33
CH 153	5765	13.50							
CH 157	5785	13.32							
CH 161	5805	13.42							
CH 165	5825	13.37							

WLAN 5GHz 802.11n-HT40 Average Power (dBm)									
Power vs. Channel			Power vs. MCS Index						
Channel	Frequency (MHz)	MCS Index MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	13.16	13.11	13.14	13.12	13.15	13.15	13.11	13.10
CH 46	5230	13.02							
CH 54	5270	12.85	12.80	12.73	12.58	12.77	12.57	12.61	12.83
CH 62	5310	12.72							
CH 102	5510	13.33	13.06	13.30	13.06	13.26	13.28	13.28	13.29
CH 110	5550	13.12							
CH 126	5630	13.10							
CH 134	5670	12.88							
CH 151	5755	10.53	12.65	12.61	12.58	12.55	12.53	12.61	12.66
CH 159	5795	12.78							

13. Bluetooth Exclusions Applied

Mode Band	Average power(dBm)	
	Bluetooth v2.1	Bluetooth v4.0
2.4GHz Bluetooth	9.0	7.0

Note:

1. Per KDB 447498 D01v05r02, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

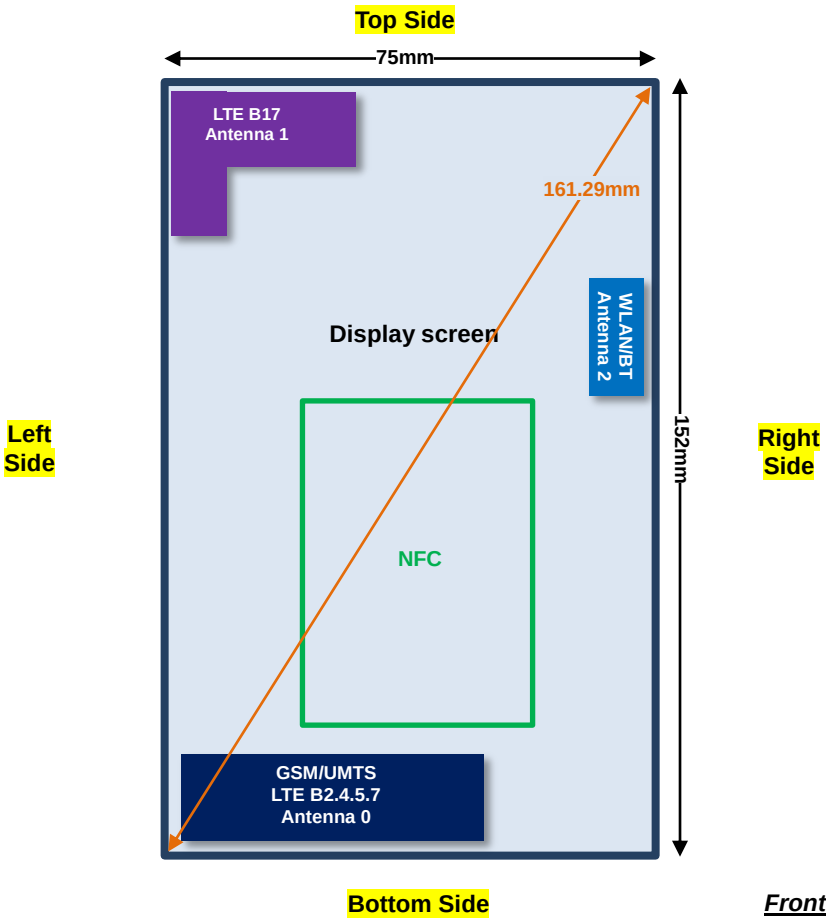
Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	exclusion thresholds
9	< 5	2.48	2.52

Note:

Per KDB 447498 D01v05r02, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. The test exclusion threshold is 2.52 which is <= 3, SAR testing is not required.

14. Antenna Location

<Mobile Phone>



Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
Antenna 0	≤ 25mm	≤ 25mm	129 mm	≤ 25mm	≤ 25mm	≤ 25mm
Antenna 1	≤ 25mm	≤ 25mm	≤ 25mm	124mm	43mm	≤ 25mm
Antenna 2	≤ 25mm	≤ 25mm	40mm	90mm	≤ 25mm	65mm
Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
Antenna 0	Yes	Yes	No	Yes	Yes	Yes
Antenna 1	Yes	Yes	Yes	No	No	Yes
Antenna 2	Yes	Yes	No	No	Yes	No

General Note:

1. Referring to KDB 941225 D06 v01r01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v05r02, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v05r02, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. According to October 2013TCB Workshop, For GSM / EGPRS, the number of time slots to test for SAR should correspond to the highest source-based time-averaged maximum output power configuration, Considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR testing, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900 band due to its highest frame-average power.
4. For hotspot mode SAR testing, GPRS and EDGE should be evaluated, therefore the EUT was set in GPRS 4 Tx slots for GSM850/GSM1900 band due to its highest frame-average power.
5. Per KDB 941225 D02v02r02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA output power is < 0.25dB higher than RMC, or reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA SAR evaluation can be excluded.
6. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
7. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
8. Per KDB 941225 D05v02r03, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
9. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
10. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.
11. Per KDB 648474 D04v01r02, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
12. Per KDB 648474 D04v01r02, if the device diagonal dimension is > 160mm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g report SAR > 1.2 W/kg.
13. When the WLAN transmission was verified using a spectrum analyzer.

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Right Cheek	Sample 1	128	824.2	28.76	29.00	1.057	-0.07	0.166	0.175
01	GSM850	GPRS (4 Tx slots)	Right Cheek	Sample 3	128	824.2	28.76	29.00	1.057	0.005	0.346	**0.366**
	GSM850	GPRS (4 Tx slots)	Right Tilted	Sample 1	128	824.2	28.76	29.00	1.057	-0.09	0.104	0.110
	GSM850	GPRS (4 Tx slots)	Left Cheek	Sample 1	128	824.2	28.76	29.00	1.057	0.037	0.149	0.157
	GSM850	GPRS (4 Tx slots)	Left Tilted	Sample 1	128	824.2	28.76	29.00	1.057	0.021	0.117	0.124
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Sample 1	810	1909.8	25.93	26.00	1.016	-0.085	0.088	0.089
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Sample 1	810	1909.8	25.93	26.00	1.016	-0.009	0.047	0.048
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Sample 1	810	1909.8	25.93	26.00	1.016	0.021	0.126	0.128
02	GSM1900	GPRS (4 Tx slots)	Left Cheek	Sample 3	810	1909.8	25.93	26.00	1.016	-0.037	0.205	**0.208**
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Sample 1	810	1909.8	25.93	26.00	1.016	0.013	0.030	0.030

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Right Cheek	Sample 1	4132	826.4	23.25	24.00	1.189	0.072	0.099	0.118
	WCDMA V	RMC 12.2Kbps	Right Tilted	Sample 1	4132	826.4	23.25	24.00	1.189	-0.022	0.072	0.086
	WCDMA V	RMC 12.2Kbps	Left Cheek	Sample 1	4132	826.4	23.25	24.00	1.189	-0.02	0.106	0.126
03	WCDMA V	RMC 12.2Kbps	Left Cheek	Sample 3	4132	826.4	23.25	24.00	1.189	0.131	0.206	**0.245**
	WCDMA V	RMC 12.2Kbps	Left Tilted	Sample 1	4132	826.4	23.25	24.00	1.189	-0.144	0.093	0.111
	WCDMA IV	RMC 12.2Kbps	Right Cheek	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.012	0.162	0.191
	WCDMA IV	RMC 12.2Kbps	Right Tilted	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.026	0.071	0.084
04	WCDMA IV	RMC 12.2Kbps	Left Cheek	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.014	0.278	**0.327**
	WCDMA IV	RMC 12.2Kbps	Left Cheek	Sample 3	1513	1752.6	23.29	24.00	1.178	0.13	0.258	0.304
	WCDMA IV	RMC 12.2Kbps	Left Tilted	Sample 1	1513	1752.6	23.29	24.00	1.178	0.144	0.072	0.085
	WCDMA II	RMC 12.2Kbps	Right Cheek	Sample 1	9538	1907.6	23.13	24.00	1.222	-0.057	0.102	0.125
	WCDMA II	RMC 12.2Kbps	Right Tilted	Sample 1	9538	1907.6	23.13	24.00	1.222	-0.026	0.055	0.067
	WCDMA II	RMC 12.2Kbps	Left Cheek	Sample 1	9538	1907.6	23.13	24.00	1.222	-0.016	0.164	0.200
05	WCDMA II	RMC 12.2Kbps	Left Cheek	Sample 3	9538	1907.6	23.13	24.00	1.222	0.066	0.247	**0.302**
	WCDMA II	RMC 12.2Kbps	Left Tilted	Sample 1	9538	1907.6	23.13	24.00	1.222	-0.021	0.044	0.054

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 17	10M	QPSK	1RB	0Offset	Right Cheek	Sample 1	23800	711	22.60	23.00	1.096	-0.023	0.554	**0.607**
	LTE Band 17	10M	QPSK	1RB	0Offset	Right Cheek	Sample 3	23800	711	22.60	23.00	1.096	-0.04	0.414	0.454
	LTE Band 17	10M	QPSK	25RB	0Offset	Right Cheek	Sample 1	23790	710	21.53	22.00	1.114	-0.059	0.444	0.495
	LTE Band 17	10M	QPSK	1RB	0Offset	Right Tilted	Sample 1	23800	711	22.60	23.00	1.096	-0.02	0.449	0.492
	LTE Band 17	10M	QPSK	25RB	0Offset	Right Tilted	Sample 1	23790	710	21.53	22.00	1.114	-0.017	0.362	0.403
	LTE Band 17	10M	QPSK	1RB	0Offset	Left Cheek	Sample 1	23800	711	22.60	23.00	1.096	0.057	0.288	0.316
	LTE Band 17	10M	QPSK	25RB	0Offset	Left Cheek	Sample 1	23790	710	21.53	22.00	1.114	0.045	0.233	0.260
	LTE Band 17	10M	QPSK	1RB	0Offset	Left Tilted	Sample 1	23800	711	22.60	23.00	1.096	0.071	0.235	0.258
	LTE Band 17	10M	QPSK	25RB	0Offset	Left Tilted	Sample 1	23790	710	21.53	22.00	1.114	0.08	0.188	0.209
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Cheek	Sample 1	20450	829	22.48	23.00	1.127	0.085	0.159	0.179
07	LTE Band 5	10M	QPSK	1RB	0Offset	Right Cheek	Sample 3	20450	829	22.48	23.00	1.127	0.015	0.165	**0.186**
	LTE Band 5	10M	QPSK	25RB	24Offset	Right Cheek	Sample 1	20600	844	21.55	22.00	1.109	0.094	0.152	0.169
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Tilted	Sample 1	20450	829	22.48	23.00	1.127	-0.007	0.116	0.131
	LTE Band 5	10M	QPSK	25RB	24Offset	Right Tilted	Sample 1	20600	844	21.55	22.00	1.109	-0.038	0.112	0.124
	LTE Band 5	10M	QPSK	1RB	0Offset	Left Cheek	Sample 1	20450	829	22.48	23.00	1.127	0.116	0.149	0.168
	LTE Band 5	10M	QPSK	25RB	24Offset	Left Cheek	Sample 1	20600	844	21.55	22.00	1.109	0.109	0.138	0.153
	LTE Band 5	10M	QPSK	1RB	0Offset	Left Tilted	Sample 1	20450	829	22.48	23.00	1.127	0.052	0.119	0.134
	LTE Band 5	10M	QPSK	25RB	24Offset	Left Tilted	Sample 1	20600	844	21.55	22.00	1.109	0.006	0.115	0.128
	LTE Band 4	20M	QPSK	1RB	0Offset	Right Cheek	Sample 1	20300	1745	22.47	23.00	1.130	-0.095	0.142	0.160
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Cheek	Sample 1	20175	1732.5	21.99	22.00	1.002	-0.097	0.112	0.112
	LTE Band 4	20M	QPSK	1RB	0Offset	Right Tilted	Sample 1	20300	1745	22.47	23.00	1.130	0.028	0.063	0.071
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Tilted	Sample 1	20175	1732.5	21.99	22.00	1.002	0.06	0.048	0.048
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Cheek	Sample 1	20300	1745	22.47	23.00	1.130	0.147	0.159	0.180
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Cheek	Sample 1	20175	1732.5	21.99	22.00	1.002	0.161	0.134	0.134
08	LTE Band 4	20M	QPSK	1RB	0Offset	Left Tilted	Sample 1	20300	1745	22.47	23.00	1.130	-0.061	0.172	**0.194**
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Tilted	Sample 3	20300	1745	22.47	23.00	1.130	0.132	0.078	0.088
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Tilted	Sample 1	20175	1732.5	21.99	22.00	1.002	-0.026	0.135	0.135
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Cheek	Sample 1	19100	1900	22.48	23.00	1.127	-0.055	0.102	0.115
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Cheek	Sample 1	18700	1860	21.83	22.00	1.040	0.027	0.085	0.088
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Tilted	Sample 1	19100	1900	22.48	23.00	1.127	0.019	0.058	0.065
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Tilted	Sample 1	18700	1860	21.83	22.00	1.040	0.029	0.050	0.052
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Cheek	Sample 1	19100	1900	22.48	23.00	1.127	-0.044	0.180	0.203
09	LTE Band 2	20M	QPSK	1RB	0Offset	Left Cheek	Sample 3	19100	1900	22.48	23.00	1.127	0.002	0.230	**0.259**
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Cheek	Sample 1	18700	1860	21.83	22.00	1.040	-0.008	0.165	0.172
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Tilted	Sample 1	19100	1900	22.48	23.00	1.127	0.089	0.049	0.055
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Tilted	Sample 1	18700	1860	21.83	22.00	1.040	0.034	0.044	0.046
	LTE Band 7	20M	QPSK	1RB	0Offset	Right Cheek	Sample 1	20850	2510	22.13	23.00	1.222	0.099	0.056	0.068
10	LTE Band 7	20M	QPSK	1RB	0Offset	Right Cheek	Sample 3	20850	2510	22.13	23.00	1.222	0.01	0.096	**0.117**
	LTE Band 7	20M	QPSK	50RB	49Offset	Right Cheek	Sample 1	20850	2510	20.92	22.00	1.282	0.075	0.050	0.064
	LTE Band 7	20M	QPSK	1RB	0Offset	Right Tilted	Sample 1	20850	2510	22.13	23.00	1.222	-0.027	0.024	0.029
	LTE Band 7	20M	QPSK	50RB	49Offset	Right Tilted	Sample 1	20850	2510	20.92	22.00	1.282	0.041	0.021	0.027
	LTE Band 7	20M	QPSK	1RB	0Offset	Left Cheek	Sample 1	20850	2510	22.13	23.00	1.222	0.064	0.039	0.048
	LTE Band 7	20M	QPSK	50RB	49Offset	Left Cheek	Sample 1	20850	2510	20.92	22.00	1.282	0.08	0.036	0.046
	LTE Band 7	20M	QPSK	1RB	0Offset	Left Tilted	Sample 1	20850	2510	22.13	23.00	1.222	-0.033	0.013	0.016
	LTE Band 7	20M	QPSK	50RB	49Offset	Left Tilted	Sample 1	20850	2510	20.92	22.00	1.282	0	0.001	0.001

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	6	2437	18.04	18.50	97.63	1.024	0.108	0.114	0.130
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	6	2437	18.04	18.50	97.63	1.024	0.11	0.040	0.046
11	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	6	2437	18.04	18.50	97.63	1.024	0.103	0.164	**0.187**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	6	2437	18.04	18.50	97.63	1.024	0.085	0.066	0.075
	WLAN5GHz	802.11a 6Mbps	Right Cheek	36	5180	13.18	13.50	87.18	1.147	0.088	0.025	0.031
	WLAN5GHz	802.11a 6Mbps	Right Tilted	36	5180	13.18	13.50	87.18	1.147	0.009	0.014	0.017
12	WLAN5GHz	802.11a 6Mbps	Left Cheek	36	5180	13.18	13.50	87.18	1.147	0.055	0.064	**0.079**
	WLAN5GHz	802.11a 6Mbps	Left Tilted	36	5180	13.18	13.50	87.18	1.147	-0.032	0.022	0.027
	WLAN5GHz	802.11a 6Mbps	Right Cheek	52	5260	12.83	13.00	87.18	1.147	-0.11	0.026	0.031
	WLAN5GHz	802.11a 6Mbps	Right Tilted	52	5260	12.83	13.00	87.18	1.147	0.09	0.015	0.018
13	WLAN5GHz	802.11a 6Mbps	Left Cheek	52	5260	12.83	13.00	87.18	1.147	0.091	0.054	**0.064**
	WLAN5GHz	802.11a 6Mbps	Left Tilted	52	5260	12.83	13.00	87.18	1.147	-0.051	0.009	0.010
	WLAN5GHz	802.11a 6Mbps	Right Cheek	100	5500	13.08	13.50	87.18	1.147	0.031	0.026	0.033
	WLAN5GHz	802.11a 6Mbps	Right Titled	100	5500	13.08	13.50	87.18	1.147	0.08	0.012	0.015
14	WLAN5GHz	802.11a 6Mbps	Left Cheek	100	5500	13.08	13.50	87.18	1.147	-0.061	0.057	**0.072**
	WLAN5GHz	802.11a 6Mbps	Left Titled	100	5500	13.08	13.50	87.18	1.147	0.015	0.013	0.016
	WLAN5GHz	802.11a 6Mbps	Right Cheek	149	5745	13.39	13.50	87.18	1.147	0.05	0.021	0.025
	WLAN5GHz	802.11a 6Mbps	Right Tilted	149	5745	13.39	13.50	87.18	1.147	-0.036	0.010	0.011
15	WLAN5GHz	802.11a 6Mbps	Left Cheek	149	5745	13.39	13.50	87.18	1.147	-0.051	0.073	**0.086**
	WLAN5GHz	802.11a 6Mbps	Left Titled	149	5745	13.39	13.50	87.18	1.147	0.04	0.026	0.031

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	1cm	Sample 1	128	824.2	28.76	29.00	1.057	0.092	0.211	0.223
	GSM850	GPRS (4 Tx slots)	Back	1cm	Sample 1	128	824.2	28.76	29.00	1.057	-0.05	0.315	0.333
16	GSM850	GPRS (4 Tx slots)	Back	1cm	Sample 3	128	824.2	28.76	29.00	1.057	0.029	0.555	**0.587**
	GSM850	GPRS (4 Tx slots)	Left Side	1cm	Sample 1	128	824.2	28.76	29.00	1.057	-0.094	0.167	0.176
	GSM850	GPRS (4 Tx slots)	Right Side	1cm	Sample 1	128	824.2	28.76	29.00	1.057	-0.015	0.233	0.246
	GSM850	GPRS (4 Tx slots)	Bottom Side	1cm	Sample 1	128	824.2	28.76	29.00	1.057	-0.051	0.095	0.100
	GSM1900	GPRS (4 Tx slots)	Front	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	-0.011	0.265	0.269
	GSM1900	GPRS (4 Tx slots)	Back	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	-0.14	0.547	0.556
17	GSM1900	GPRS (4 Tx slots)	Back	1cm	Sample 3	810	1909.8	25.93	26.00	1.016	0	0.761	**0.773**
	GSM1900	GPRS (4 Tx slots)	Left Side	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	-0.118	0.163	0.166
	GSM1900	GPRS (4 Tx slots)	Right Side	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	0.052	0.055	0.056
	GSM1900	GPRS (4 Tx slots)	Bottom Side	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	0.004	0.427	0.434

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Front	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.105	0.119	0.141
	WCDMA V	RMC 12.2Kbps	Back	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.143	0.222	0.264
18	WCDMA V	RMC 12.2Kbps	Back	1cm	Sample 3	4132	826.4	23.25	24.00	1.189	0.048	0.307	**0.365**
	WCDMA V	RMC 12.2Kbps	Left Side	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.015	0.083	0.099
	WCDMA V	RMC 12.2Kbps	Right Side	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.022	0.146	0.174
	WCDMA V	RMC 12.2Kbps	Bottom Side	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	0.047	0.052	0.062
	WCDMA IV	RMC 12.2Kbps	Front	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	0.059	0.454	0.535
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.025	0.683	0.804
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1312	1712.4	23.22	24.00	1.197	0.07	0.745	0.892
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1413	1732.6	23.17	24.00	1.211	0.024	0.752	0.910
19	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1413	1732.6	23.17	24.00	1.211	0.026	0.752	**0.910**
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1312	1712.4	23.22	24.00	1.197	-0.03	0.731	0.875
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1513	1752.6	23.29	24.00	1.178	-0.06	0.754	0.888
	WCDMA IV	RMC 12.2Kbps	Left Side	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	0.015	0.300	0.353
	WCDMA IV	RMC 12.2Kbps	Right Side	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.108	0.085	0.100
	WCDMA IV	RMC 12.2Kbps	Bottom Side	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.099	0.590	0.695
	WCDMA II	RMC 12.2Kbps	Front	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.1	0.313	0.382
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.07	0.618	0.755
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9538	1907.6	23.13	24.00	1.222	0.074	0.672	0.821
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9262	1852.4	23.00	24.00	1.259	0	0.691	0.870
20	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9400	1880	23.09	24.00	1.233	0.11	0.730	**0.900**
	WCDMA II	RMC 12.2Kbps	Left Side	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.13	0.214	0.261
	WCDMA II	RMC 12.2Kbps	Right Side	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.1	0.079	0.097
	WCDMA II	RMC 12.2Kbps	Bottom Side	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0	0.534	0.652

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 17	10M	QPSK	1RB	0Offset	Front	1cm	Sample 1	23800	711	22.60	23.00	1.096	-0.041	0.234	0.257
	LTE Band 17	10M	QPSK	25RB	0Offset	Front	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.026	0.188	0.209
21	LTE Band 17	10M	QPSK	1RB	0Offset	Back	1cm	Sample 1	23800	711	22.60	23.00	1.096	-0.064	0.338	**0.371**
	LTE Band 17	10M	QPSK	1RB	0Offset	Back	1cm	Sample 3	23800	711	22.60	23.00	1.096	-0.035	0.300	0.329
	LTE Band 17	10M	QPSK	25RB	0Offset	Back	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.049	0.276	0.308
	LTE Band 17	10M	QPSK	1RB	0Offset	Left Side	1cm	Sample 1	23800	711	22.60	23.00	1.096	-0.001	0.226	0.248
	LTE Band 17	10M	QPSK	25RB	0Offset	Left Side	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.019	0.184	0.205
	LTE Band 17	10M	QPSK	1RB	0Offset	Top Side	1cm	Sample 1	23800	711	22.60	23.00	1.096	0.082	0.087	0.095
	LTE Band 17	10M	QPSK	25RB	0Offset	Top Side	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.042	0.070	0.078
	LTE Band 5	10M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20450	829	22.48	23.00	1.127	-0.01	0.131	0.148
	LTE Band 5	10M	QPSK	25RB	24Offset	Front	1cm	Sample 1	20600	844	21.55	22.00	1.109	0.025	0.085	0.094
	LTE Band 5	10M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20450	829	22.48	23.00	1.127	-0.046	0.191	0.215
22	LTE Band 5	10M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20450	829	22.48	23.00	1.127	-0.039	0.249	**0.281**
	LTE Band 5	10M	QPSK	25RB	24Offset	Back	1cm	Sample 1	20600	844	21.55	22.00	1.109	0	0.123	0.136
	LTE Band 5	10M	QPSK	1RB	0Offset	Left Side	1cm	Sample 1	20450	829	22.48	23.00	1.127	0.029	0.102	0.115
	LTE Band 5	10M	QPSK	25RB	24Offset	Left Side	1cm	Sample 1	20600	844	21.55	22.00	1.109	-0.062	0.055	0.061
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Side	1cm	Sample 1	20450	829	22.48	23.00	1.127	-0.022	0.170	0.192
	LTE Band 5	10M	QPSK	25RB	24Offset	Right Side	1cm	Sample 1	20600	844	21.55	22.00	1.109	-0.049	0.108	0.120
	LTE Band 5	10M	QPSK	1RB	0Offset	Bottom Side	1cm	Sample 1	20450	829	22.48	23.00	1.127	0.006	0.050	0.056
	LTE Band 5	10M	QPSK	25RB	24Offset	Bottom Side	1cm	Sample 1	20600	844	21.55	22.00	1.109	-0.125	0.038	0.042
	LTE Band 4	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20300	1745	22.47	23.00	1.130	-0.071	0.387	0.437
	LTE Band 4	20M	QPSK	50RB	0Offset	Front	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.025	0.302	0.303
	LTE Band 4	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20300	1745	22.47	23.00	1.130	0.012	0.609	0.688
23	LTE Band 4	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20300	1745	22.47	23.00	1.130	0.052	0.627	**0.708**
	LTE Band 4	20M	QPSK	50RB	0Offset	Back	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.105	0.480	0.481
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Side	1cm	Sample 1	20300	1745	22.47	23.00	1.130	-0.001	0.239	0.270
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Side	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.005	0.193	0.193
	LTE Band 4	20M	QPSK	1RB	0Offset	Right Side	1cm	Sample 1	20300	1745	22.47	23.00	1.130	0.004	0.077	0.087
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Side	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	-0.096	0.061	0.061
	LTE Band 4	20M	QPSK	1RB	0Offset	Bottom Side	1cm	Sample 1	20300	1745	22.47	23.00	1.130	-0.039	0.488	0.551
	LTE Band 4	20M	QPSK	50RB	0Offset	Bottom Side	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.134	0.383	0.384
	LTE Band 2	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	19100	1900	22.48	23.00	1.127	0.1	0.298	0.336
	LTE Band 2	20M	QPSK	50RB	0Offset	Front	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0.14	0.248	0.258
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	19100	1900	22.48	23.00	1.127	-0.01	0.551	0.621
24	LTE Band 2	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	19100	1900	22.48	23.00	1.127	0.02	0.667	**0.752**
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0	0.445	0.463
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Side	1cm	Sample 1	19100	1900	22.48	23.00	1.127	0.1	0.226	0.255
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Side	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0.17	0.209	0.217
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Side	1cm	Sample 1	19100	1900	22.48	23.00	1.127	0.15	0.070	0.079
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Side	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0.17	0.064	0.067
	LTE Band 2	20M	QPSK	1RB	0Offset	Bottom Side	1cm	Sample 1	19100	1900	22.48	23.00	1.127	0	0.502	0.566
	LTE Band 2	20M	QPSK	50RB	0Offset	Bottom Side	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0.02	0.391	0.407

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.143	0.182	0.222
	LTE Band 7	20M	QPSK	50RB	49Offset	Front	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.09	0.190	0.244
	LTE Band 7	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.071	0.466	0.569
25	LTE Band 7	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20850	2510	22.13	23.00	1.222	-0.016	0.576	**0.704**
	LTE Band 7	20M	QPSK	50RB	49Offset	Back	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.083	0.438	0.562
	LTE Band 7	20M	QPSK	1RB	0Offset	Left Side	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.075	0.078	0.095
	LTE Band 7	20M	QPSK	50RB	49Offset	Left Side	1cm	Sample 1	20850	2510	20.92	22.00	1.282	0.001	0.064	0.082
	LTE Band 7	20M	QPSK	1RB	0Offset	Right Side	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.122	0.033	0.040
	LTE Band 7	20M	QPSK	50RB	49Offset	Right Side	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.05	0.031	0.040
	LTE Band 7	20M	QPSK	1RB	0Offset	Bottom Side	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.077	0.372	0.455
	LTE Band 7	20M	QPSK	50RB	49Offset	Bottom Side	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.047	0.313	0.401

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	1cm	6	2437	18.04	18.50	97.63	1.024	-0.063	0.065	0.074
26	WLAN2.4GHz	802.11b 1Mbps	Back	1cm	6	2437	18.04	18.50	97.63	1.024	-0.048	0.267	**0.304**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	1cm	6	2437	18.04	18.50	97.63	1.024	0.028	0.129	0.147
	WLAN2.4GHz	802.11b 1Mbps	Top Side	1cm	6	2437	18.04	18.50	97.63	1.024	-0.063	0.021	0.024

15.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	1cm	Sample 1	128	824.2	28.76	29.00	1.057	0.092	0.211	0.223
	GSM850	GPRS (4 Tx slots)	Back	1cm	Sample 1	128	824.2	28.76	29.00	1.057	-0.05	0.315	0.333
27	GSM850	GPRS (4 Tx slots)	Back	1cm	Sample 3	128	824.2	28.76	29.00	1.057	0.029	0.555	**0.587**
	GSM1900	GPRS (4 Tx slots)	Front	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	-0.011	0.265	0.269
	GSM1900	GPRS (4 Tx slots)	Back	1cm	Sample 1	810	1909.8	25.93	26.00	1.016	-0.14	0.547	0.556
28	GSM1900	GPRS (4 Tx slots)	Back	1cm	Sample 3	810	1909.8	25.93	26.00	1.016	0	0.761	**0.773**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Front	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.105	0.119	0.141
	WCDMA V	RMC 12.2Kbps	Back	1cm	Sample 1	4132	826.4	23.25	24.00	1.189	-0.143	0.222	0.264
29	WCDMA V	RMC 12.2Kbps	Back	1cm	Sample 3	4132	826.4	23.25	24.00	1.189	0.048	0.307	**0.365**
	WCDMA IV	RMC 12.2Kbps	Front	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	0.059	0.454	0.535
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1513	1752.6	23.29	24.00	1.178	-0.025	0.683	0.804
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1312	1712.4	23.22	24.00	1.197	0.07	0.745	0.892
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 1	1413	1732.6	23.17	24.00	1.211	0.024	0.752	0.910
30	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1413	1732.6	23.17	24.00	1.211	0.026	0.752	**0.910**
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1312	1712.4	23.22	24.00	1.197	-0.03	0.731	0.875
	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1513	1752.6	23.29	24.00	1.178	-0.06	0.754	0.888
	WCDMA II	RMC 12.2Kbps	Front	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.1	0.313	0.382
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 1	9538	1907.6	23.13	24.00	1.222	0.07	0.618	0.755
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9538	1907.6	23.13	24.00	1.222	0.074	0.672	0.821
	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9262	1852.4	23.00	24.00	1.259	0	0.691	0.870
31	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9400	1880	23.09	24.00	1.233	0.11	0.730	**0.900**

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 17	10M	QPSK	1RB	0Offset	Front	1cm	Sample 1	23800	711	22.60	23.00	1.096	-0.041	0.234	0.257
	LTE Band 17	10M	QPSK	25RB	0Offset	Front	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.026	0.188	0.209
32	LTE Band 17	10M	QPSK	1RB	0Offset	Back	1cm	Sample 1	23800	711	22.60	23.00	1.096	-0.064	0.338	**0.371**
	LTE Band 17	10M	QPSK	1RB	0Offset	Back	1cm	Sample 3	23800	711	22.60	23.00	1.096	-0.035	0.300	0.329
	LTE Band 17	10M	QPSK	25RB	0Offset	Back	1cm	Sample 1	23790	710	21.53	22.00	1.114	-0.049	0.276	0.308
	LTE Band 5	10M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20450	829	22.48	23.00	1.127	-0.01	0.131	0.148
	LTE Band 5	10M	QPSK	25RB	24Offset	Front	1cm	Sample 1	20600	844	21.55	22.00	1.109	0.025	0.085	0.094
	LTE Band 5	10M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20450	829	22.48	23.00	1.127	-0.046	0.191	0.215
33	LTE Band 5	10M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20450	829	22.48	23.00	1.127	-0.039	0.249	**0.281**
	LTE Band 5	10M	QPSK	25RB	24Offset	Back	1cm	Sample 1	20600	844	21.55	22.00	1.109	0	0.123	0.136
	LTE Band 4	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20300	1745	22.47	23.00	1.130	-0.071	0.387	0.437
	LTE Band 4	20M	QPSK	50RB	0Offset	Front	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.025	0.302	0.303
	LTE Band 4	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20300	1745	22.47	23.00	1.130	0.012	0.609	0.688
34	LTE Band 4	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20300	1745	22.47	23.00	1.130	0.052	0.627	**0.708**
	LTE Band 4	20M	QPSK	50RB	0Offset	Back	1cm	Sample 1	20175	1732.5	21.99	22.00	1.002	0.105	0.480	0.481
	LTE Band 2	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	19100	1900	22.48	23.00	1.127	0.1	0.298	0.336
	LTE Band 2	20M	QPSK	50RB	0Offset	Front	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0.14	0.248	0.258
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	19100	1900	22.48	23.00	1.127	-0.01	0.551	0.621
35	LTE Band 2	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	19100	1900	22.48	23.00	1.127	0.02	0.667	**0.752**
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	1cm	Sample 1	18700	1860	21.83	22.00	1.040	0	0.445	0.463
	LTE Band 7	20M	QPSK	1RB	0Offset	Front	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.143	0.182	0.222
	LTE Band 7	20M	QPSK	50RB	49Offset	Front	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.09	0.190	0.244
	LTE Band 7	20M	QPSK	1RB	0Offset	Back	1cm	Sample 1	20850	2510	22.13	23.00	1.222	-0.071	0.466	0.569
36	LTE Band 7	20M	QPSK	1RB	0Offset	Back	1cm	Sample 3	20850	2510	22.13	23.00	1.222	-0.016	0.576	**0.704**
	LTE Band 7	20M	QPSK	50RB	49Offset	Back	1cm	Sample 1	20850	2510	20.92	22.00	1.282	-0.083	0.438	0.562

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	1cm	6	2437	18.04	18.50	97.63	1.024	-0.063	0.065	0.074
37	WLAN2.4GHz	802.11b 1Mbps	Back	1cm	6	2437	18.04	18.50	97.63	1.024	-0.048	0.267	**0.304**
	WLAN5GHz	802.11a 6Mbps	Front	1cm	36	5180	13.18	13.50	87.18	1.147	-0.188	0.031	0.038
38	WLAN5GHz	802.11a 6Mbps	Back	1cm	36	5180	13.18	13.50	87.18	1.147	0.147	0.145	**0.179**
	WLAN5GHz	802.11a 6Mbps	Front	1cm	52	5260	12.83	13.00	87.18	1.147	0.136	0.025	0.030
39	WLAN5GHz	802.11a 6Mbps	Back	1cm	52	5260	12.83	13.00	87.18	1.147	-0.079	0.123	**0.147**
	WLAN5GHz	802.11a 6Mbps	Front	1cm	100	5500	13.08	13.50	87.18	1.147	-0.161	0.023	0.029
40	WLAN5GHz	802.11a 6Mbps	Back	1cm	100	5500	13.08	13.50	87.18	1.147	0.028	0.118	**0.149**
	WLAN5GHz	802.11a 6Mbps	Front	1cm	149	5745	13.39	13.50	87.18	1.147	0.187	0.030	0.035
41	WLAN5GHz	802.11a 6Mbps	Back	1cm	149	5745	13.39	13.50	87.18	1.147	-0.159	0.163	**0.192**

15.4 Repeated SAR Measurement

General Note:

1. Per KDB 865664 D01v01r03, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg
2. Per KDB 865664 D01v01r03, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

No.	Band	Mode	Test Position	Gap (cm)	Sample	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1513	1752.6	23.29	24.00	1.178	-0.06	0.854	-	1.006
2nd	WCDMA IV	RMC 12.2Kbps	Back	1cm	Sample 3	1513	1752.6	23.29	24.00	1.178	0.04	0.814	1.05	0.959
1st	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9400	1880	23.09	24.00	1.233	0.11	0.938	-	1.157
2nd	WCDMA II	RMC 12.2Kbps	Back	1cm	Sample 3	9400	1880	23.09	24.00	1.233	-0.09	0.916	1.03	1.130

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset			Note
		Head	Body-worn	Hotspot	
1.	GSM(Voice) + WLAN2.4GHz(data)	Yes	Yes		
2.	WCDMA(Voice) + WLAN2.4GHz(data)	Yes	Yes		
3.	GSM(Voice) + Bluetooth(data)	Yes	Yes		
4.	WCDMA((Voice) + Bluetooth(data)	Yes	Yes		
5.	GSM(Voice) + WLAN5GHz(data)	Yes	Yes		
6.	WCDMA((Voice) + WLAN5GHz(data)	Yes	Yes		
7.	GPRS/EDGE(Data) + WLAN2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
8.	WCDMA(Data) + WLAN2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
9.	LTE(Data) + WLAN2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
10.	GPRS/EDGE(Data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
11.	WCDMA(Data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
12.	LTE(Data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
13.	GPRS/EDGE(data) + WLAN5GHz(data)	Yes	Yes		WiFi Direct GC
14.	WCDMA(data) + WLAN5GHz(data)	Yes	Yes		WiFi Direct GC
15.	LTE(data) + WLAN5GHz(data)	Yes	Yes		WiFi Direct GC

General Note:

1. This device supported VoIP in EGPRS, WCDMA, LTE (e.g. 3rd party VoIP).
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. This device 2.4GHz WLAN supports Hotspot and WiFi Direct (Group Client / Group Owner), and 5GHz WLAN supports WiFi Direct (Group Client only).
4. The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WiFi Direct and Hotspot capability. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.
5. The Scaled SAR summation is calculated based on the same configuration and test position.
6. Per KDB 447498 D01v05r02, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
7. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05r02 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[$\sqrt{}$f(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.
   ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

Bluetooth Max Power	Exposure Position	Head	Hotspot	Body worn
	Test separation	0 mm	10 mm	10 mm
9.0 dBm	Estimated SAR (W/kg)	0.336 W/kg	0.168 W/kg	0.168 W/kg

16.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	1+2 Summed SAR (W/kg)	1+3 Summed SAR (W/kg)
			WWAN	2.4GHz WLAN	2.4GHz Bluetooth		
			SAR (W/kg)	SAR (W/kg)	Estimated SAR (W/kg)		
GSM	GSM850	Right Cheek	0.366	0.130	0.336	**0.50**	**0.70**
		Right Tilted	0.110	0.046	0.336	**0.16**	**0.45**
		Left Cheek	0.157	0.187	0.336	**0.34**	**0.49**
		Left Tilted	0.124	0.075	0.336	**0.20**	**0.46**
	GSM1900	Right Cheek	0.089	0.130	0.336	**0.22**	**0.43**
		Right Tilted	0.048	0.046	0.336	**0.09**	**0.38**
		Left Cheek	0.208	0.187	0.336	**0.40**	**0.54**
		Left Tilted	0.030	0.075	0.336	**0.11**	**0.37**
WCDMA	Band V	Right Cheek	0.118	0.130	0.336	**0.25**	**0.45**
		Right Tilted	0.086	0.046	0.336	**0.13**	**0.42**
		Left Cheek	0.245	0.187	0.336	**0.43**	**0.58**
		Left Tilted	0.111	0.075	0.336	**0.19**	**0.45**
	Band IV	Right Cheek	0.191	0.130	0.336	**0.32**	**0.53**
		Right Tilted	0.084	0.046	0.336	**0.13**	**0.42**
		Left Cheek	0.327	0.187	0.336	**0.51**	**0.66**
		Left Tilted	0.085	0.075	0.336	**0.16**	**0.42**
	Band II	Right Cheek	0.125	0.130	0.336	**0.26**	**0.46**
		Right Tilted	0.067	0.046	0.336	**0.11**	**0.40**
		Left Cheek	0.302	0.187	0.336	**0.49**	**0.64**
		Left Tilted	0.054	0.075	0.336	**0.13**	**0.39**
LTE	Band 17	Right Cheek	0.607	0.130	0.336	**0.74**	**0.94**
		Right Tilted	0.492	0.046	0.336	**0.54**	**0.83**
		Left Cheek	0.316	0.187	0.336	**0.50**	**0.65**
		Left Tilted	0.258	0.075	0.336	**0.33**	**0.59**
	Band 5	Right Cheek	0.186	0.130	0.336	**0.32**	**0.52**
		Right Tilted	0.131	0.046	0.336	**0.18**	**0.47**
		Left Cheek	0.168	0.187	0.336	**0.36**	**0.50**
		Left Tilted	0.134	0.075	0.336	**0.21**	**0.47**
	Band 4	Right Cheek	0.160	0.130	0.336	**0.29**	**0.50**
		Right Tilted	0.071	0.046	0.336	**0.12**	**0.41**
		Left Cheek	0.180	0.187	0.336	**0.37**	**0.52**
		Left Tilted	0.194	0.075	0.336	**0.27**	**0.53**
	Band 2	Right Cheek	0.115	0.130	0.336	**0.25**	**0.45**
		Right Tilted	0.065	0.046	0.336	**0.11**	**0.40**
		Left Cheek	0.259	0.187	0.336	**0.45**	**0.60**
		Left Tilted	0.055	0.075	0.336	**0.13**	**0.39**
	Band 7	Right Cheek	0.117	0.130	0.336	**0.25**	**0.45**
		Right Tilted	0.029	0.046	0.336	**0.08**	**0.37**
		Left Cheek	0.048	0.187	0.336	**0.24**	**0.38**
		Left Tilted	0.016	0.075	0.336	**0.09**	**0.35**

WWAN Band		Exposure Position	1	2		1+2 Summed SAR (W/kg)
			WWAN	5GHz WLAN		
			SAR (W/kg)	Band	SAR (W/kg)	
GSM	GSM850	Right Cheek	0.366	5.5GHz WLAN	0.033	**0.40**
		Right Tilted	0.110	5.3GHz WLAN	0.018	**0.13**
		Left Cheek	0.157	5.8GHz WLAN	0.086	**0.24**
		Left Tilted	0.124	5.8GHz WLAN	0.031	**0.16**
	GSM1900	Right Cheek	0.089	5.5GHz WLAN	0.033	**0.12**
		Right Tilted	0.048	5.3GHz WLAN	0.018	**0.07**
		Left Cheek	0.208	5.8GHz WLAN	0.086	**0.29**
		Left Tilted	0.030	5.8GHz WLAN	0.031	**0.06**
WCDMA	Band V	Right Cheek	0.118	5.5GHz WLAN	0.033	**0.15**
		Right Tilted	0.086	5.3GHz WLAN	0.018	**0.10**
		Left Cheek	0.245	5.8GHz WLAN	0.086	**0.33**
		Left Tilted	0.111	5.8GHz WLAN	0.031	**0.14**
	Band IV	Right Cheek	0.191	5.5GHz WLAN	0.033	**0.22**
		Right Tilted	0.084	5.3GHz WLAN	0.018	**0.10**
		Left Cheek	0.327	5.8GHz WLAN	0.086	**0.41**
		Left Tilted	0.085	5.8GHz WLAN	0.031	**0.12**
	Band II	Right Cheek	0.125	5.5GHz WLAN	0.033	**0.16**
		Right Tilted	0.067	5.3GHz WLAN	0.018	**0.09**
		Left Cheek	0.302	5.8GHz WLAN	0.086	**0.39**
		Left Tilted	0.054	5.8GHz WLAN	0.031	**0.09**
LTE	Band 17	Right Cheek	0.607	5.5GHz WLAN	0.033	**0.64**
		Right Tilted	0.492	5.3GHz WLAN	0.018	**0.51**
		Left Cheek	0.316	5.8GHz WLAN	0.086	**0.40**
		Left Tilted	0.258	5.8GHz WLAN	0.031	**0.29**
	Band 5	Right Cheek	0.186	5.5GHz WLAN	0.033	**0.22**
		Right Tilted	0.131	5.3GHz WLAN	0.018	**0.15**
		Left Cheek	0.168	5.8GHz WLAN	0.086	**0.25**
		Left Tilted	0.134	5.8GHz WLAN	0.031	**0.17**
	Band 4	Right Cheek	0.160	5.5GHz WLAN	0.033	**0.19**
		Right Tilted	0.071	5.3GHz WLAN	0.018	**0.09**
		Left Cheek	0.180	5.8GHz WLAN	0.086	**0.27**
		Left Tilted	0.194	5.8GHz WLAN	0.031	**0.23**
	Band 2	Right Cheek	0.115	5.5GHz WLAN	0.033	**0.15**
		Right Tilted	0.065	5.3GHz WLAN	0.018	**0.08**
		Left Cheek	0.259	5.8GHz WLAN	0.086	**0.35**
		Left Tilted	0.055	5.8GHz WLAN	0.031	**0.09**
	Band 25	Right Cheek	0.117	5.5GHz WLAN	0.033	**0.15**
		Right Tilted	0.029	5.3GHz WLAN	0.018	**0.05**
		Left Cheek	0.048	5.8GHz WLAN	0.086	**0.13**
		Left Tilted	0.016	5.8GHz WLAN	0.031	**0.05**

16.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1	2	3	1+2 Summed SAR (W/kg)	1+3 Summed SAR (W/kg)
			WWAN	2.4GHz WLAN	2.4GHz Bluetooth		
			SAR (W/kg)	SAR (W/kg)	Estimated SAR (W/kg)		
GSM	GSM850	Front	0.223	0.074	0.168	**0.30**	**0.39**
		Back	0.587	0.304	0.168	**0.89**	**0.76**
		Left side	0.176			**0.18**	**0.18**
		Right side	0.246	0.147	0.168	**0.39**	**0.41**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.1			**0.10**	**0.10**
	GSM1900	Front	0.269	0.074	0.168	**0.34**	**0.44**
		Back	0.773	0.304	0.168	**1.08**	**0.94**
		Left side	0.166			**0.17**	**0.17**
		Right side	0.056	0.147	0.168	**0.20**	**0.22**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.434			**0.43**	**0.43**
WCDMA	Band V	Front	0.141	0.074	0.168	**0.22**	**0.31**
		Back	0.365	0.304	0.168	**0.67**	**0.53**
		Left side	0.099			**0.10**	**0.10**
		Right side	0.174	0.147	0.168	**0.32**	**0.34**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.062			**0.06**	**0.06**
	Band IV	Front	0.535	0.074	0.168	**0.61**	**0.70**
		Back	0.910	0.304	0.168	**1.21**	**1.08**
		Left side	0.353			**0.35**	**0.35**
		Right side	0.100	0.147	0.168	**0.25**	**0.27**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.695			**0.70**	**0.70**
	Band II	Front	0.382	0.074	0.168	**0.46**	**0.55**
		Back	0.900	0.304	0.168	**1.20**	**1.07**
		Left side	0.261			**0.26**	**0.26**
		Right side	0.097	0.147	0.168	**0.24**	**0.27**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.652			**0.65**	**0.65**

WWAN Band		Exposure Position	1	2	3	1+2 Summed SAR (W/kg)	1+3 Summed SAR (W/kg)
			WWAN	2.4GHz WLAN	2.4GHz Bluetooth		
			SAR (W/kg)	SAR (W/kg)	Estimated SAR (W/kg)		
LTE	Band 17	Front	0.257	0.074	0.168	**0.33**	**0.43**
		Back	0.371	0.304	0.168	**0.68**	**0.54**
		Left side	0.248			**0.25**	**0.25**
		Right side		0.147	0.168	**0.15**	**0.17**
		Top side	0.095	0.024	0.168	**0.12**	**0.26**
		Bottom side				**0.00**	**0.00**
	Band 5	Front	0.148	0.074	0.168	**0.22**	**0.32**
		Back	0.281	0.304	0.168	**0.59**	**0.45**
		Left side	0.115			**0.12**	**0.12**
		Right side	0.192	0.147	0.168	**0.34**	**0.36**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.056			**0.06**	**0.06**
	Band 4	Front	0.437	0.074	0.168	**0.51**	**0.61**
		Back	0.708	0.304	0.168	**1.01**	**0.88**
		Left side	0.270			**0.27**	**0.27**
		Right side	0.087	0.147	0.168	**0.23**	**0.26**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.551			**0.55**	**0.55**
	Band 2	Front	0.336	0.074	0.168	**0.41**	**0.50**
		Back	0.752	0.304	0.168	**1.06**	**0.92**
		Left side	0.255			**0.26**	**0.26**
		Right side	0.079	0.147	0.168	**0.23**	**0.25**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.566			**0.57**	**0.57**
	Band 7	Front	0.244	0.074	0.168	**0.32**	**0.41**
		Back	0.704	0.304	0.168	**1.01**	**0.87**
		Left side	0.095			**0.10**	**0.10**
		Right side	0.040	0.147	0.168	**0.19**	**0.21**
		Top side		0.024	0.168	**0.02**	**0.17**
		Bottom side	0.455			**0.46**	**0.46**

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1 WWAN SAR (W/kg)	2 2.4GHz WLAN SAR (W/kg)	3 2.4GHz Bluetooth Estimated SAR (W/kg)	1+2 Summed SAR (W/kg)	1+3 Summed SAR (W/kg)
GSM	GSM850	Front	0.223	0.074	0.168	**0.30**	**0.39**
		Back	0.587	0.304	0.168	**0.89**	**0.76**
	GSM1900	Front	0.269	0.074	0.168	**0.34**	**0.44**
		Back	0.773	0.304	0.168	**1.08**	**0.94**
WCDMA	Band V	Front	0.141	0.074	0.168	**0.22**	**0.31**
		Back	0.365	0.304	0.168	**0.67**	**0.53**
	Band IV	Front	0.535	0.074	0.168	**0.61**	**0.70**
		Back	0.910	0.304	0.168	**1.21**	**1.08**
	Band II	Front	0.382	0.074	0.168	**0.46**	**0.55**
		Back	0.900	0.304	0.168	**1.20**	**1.07**
LTE	Band 17	Front	0.257	0.074	0.168	**0.33**	**0.43**
		Back	0.371	0.304	0.168	**0.68**	**0.54**
	Band 5	Front	0.148	0.074	0.168	**0.22**	**0.32**
		Back	0.281	0.304	0.168	**0.59**	**0.45**
	Band 4	Front	0.437	0.074	0.168	**0.51**	**0.61**
		Back	0.708	0.304	0.168	**1.01**	**0.88**
	Band 2	Front	0.336	0.074	0.168	**0.41**	**0.50**
		Back	0.752	0.304	0.168	**1.06**	**0.92**
	Band 7	Front	0.244	0.074	0.168	**0.32**	**0.41**
		Back	0.704	0.304	0.168	**1.01**	**0.87**

WWAN Band		Exposure Position	1 WWAN SAR (W/kg)	2 5GHz WLAN Band	2 5GHz WLAN SAR (W/kg)	1+2 Summed SAR (W/kg)
GSM	GSM850	Front	0.223	5.2GHz WLAN	0.038	**0.26**
		Back	0.587	5.8GHz WLAN	0.192	**0.78**
	GSM1900	Front	0.269	5.2GHz WLAN	0.038	**0.31**
		Back	0.773	5.8GHz WLAN	0.192	**0.97**
WCDMA	Band V	Front	0.141	5.2GHz WLAN	0.038	**0.18**
		Back	0.365	5.8GHz WLAN	0.192	**0.56**
	Band IV	Front	0.535	5.2GHz WLAN	0.038	**0.57**
		Back	0.910	5.8GHz WLAN	0.192	**1.10**
	Band II	Front	0.382	5.2GHz WLAN	0.038	**0.42**
		Back	0.900	5.8GHz WLAN	0.192	**1.09**
LTE	Band 17	Front	0.257	5.2GHz WLAN	0.038	**0.30**
		Back	0.371	5.8GHz WLAN	0.192	**0.56**
	Band 5	Front	0.148	5.2GHz WLAN	0.038	**0.19**
		Back	0.281	5.8GHz WLAN	0.192	**0.47**
	Band 4	Front	0.437	5.2GHz WLAN	0.038	**0.48**
		Back	0.708	5.8GHz WLAN	0.192	**0.90**
	Band 2	Front	0.336	5.2GHz WLAN	0.038	**0.37**
		Back	0.752	5.8GHz WLAN	0.192	**0.94**
	Band 7	Front	0.244	5.2GHz WLAN	0.038	**0.28**
		Back	0.704	5.8GHz WLAN	0.192	**0.90**

Test Engineer： Kurt Liu, Lawrence Chen, Poa Pan, Iran Wang, Jerry Hu, Ken Lee, and Mickeal Yang

17. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[(a)]	1/k[(b)]	1/√3	1/√6	1/√2

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 17.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.0	Normal	1	1	1	± 6.0 %	± 6.0 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.4	Rectangular	√3	1	1	± 0.2 %	± 0.2 %
Probe Positioning	2.9	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Max. SAR Eval.	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 11.0 %	± 10.8 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						**± 22.0 %**	**± 21.5 %**

Table 17.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.55	Normal	1	1	1	± 6.55 %	± 6.55 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Probe Positioning	9.9	Rectangular	√3	1	1	± 5.7 %	± 5.7 %
Max. SAR Eval.	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 12.8 %	± 12.6 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						**± 25.6 %**	**± 25.2 %**

Table 17.3. Uncertainty Budget for frequency range 3 GHz to 6 GHz

18. References

[1] FCC 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”, September 1992

[3] IEEE Std. 1528-2003, “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, December 2003

[4] SPEAG DASY System Handbook

[5] FCC KDB 248227 D01 v01r02, “SAR Measurement Procedures for 802.11 a/b/g Transmitters”, May 2007

[6] FCC KDB 447498 D01 v05r02, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Feb 2014

[7] FCC KDB 648474 D04 v01r02, “SAR Evaluation Considerations for Wireless Handsets”, Dec 2013.

[8] FCC KDB 941225 D01 v02, “SAR Measurement Procedures for 3G Devices – CDMA 2000 / Ev-Do / WCDMA / HSDPA / HSPA”, October 2007

[9] FCC KDB 941225 D02 v02r02, “SAR Guidance for HSPA, HSPA+, DC-HSDPA and 1x-Advanced”, May 2013.

[10] FCC KDB 941225 D03 v01, “Recommended SAR Test Reduction Procedures for GSM / GPRS / EDGE”, December 2008

[11] FCC KDB 941225 D05 v02r03, “SAR Evaluation Considerations for LTE Devices”, Dec 2013

[12] FCC KDB 941225 D06 v01r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", May 2013.

[13] FCC KDB 865664 D01 v01r03, "SAR Measurement Requirements for 100 MHz to 6 GHz", Feb 2014.

[14] FCC KDB 865664 D02 v01r01, “RF Exposure Compliance Reporting and Documentation Considerations” May 2013.

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/20

System Check_Head_750MHz_140820

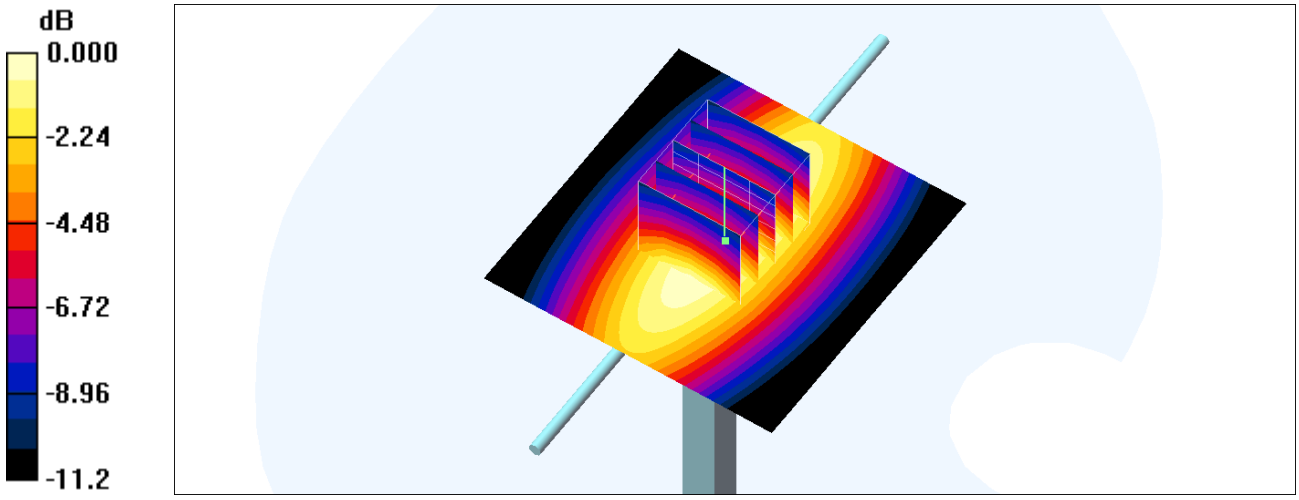
DUT: D750V3-1012

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_140820 Medium parameters used: f = 750 MHz; σ = 0.895 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(10.24, 10.24, 10.24); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.61 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.2 V/m; Power Drift = 0.146 dB
Peak SAR (extrapolated) = 2.94 W/kg
SAR(1 g) = 2.05 mW/g; SAR(10 g) = 1.36 mW/g
Maximum value of SAR (measured) = 2.55 mW/g



0 dB = 2.55mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/7

System Check_Head_750MHz_141007

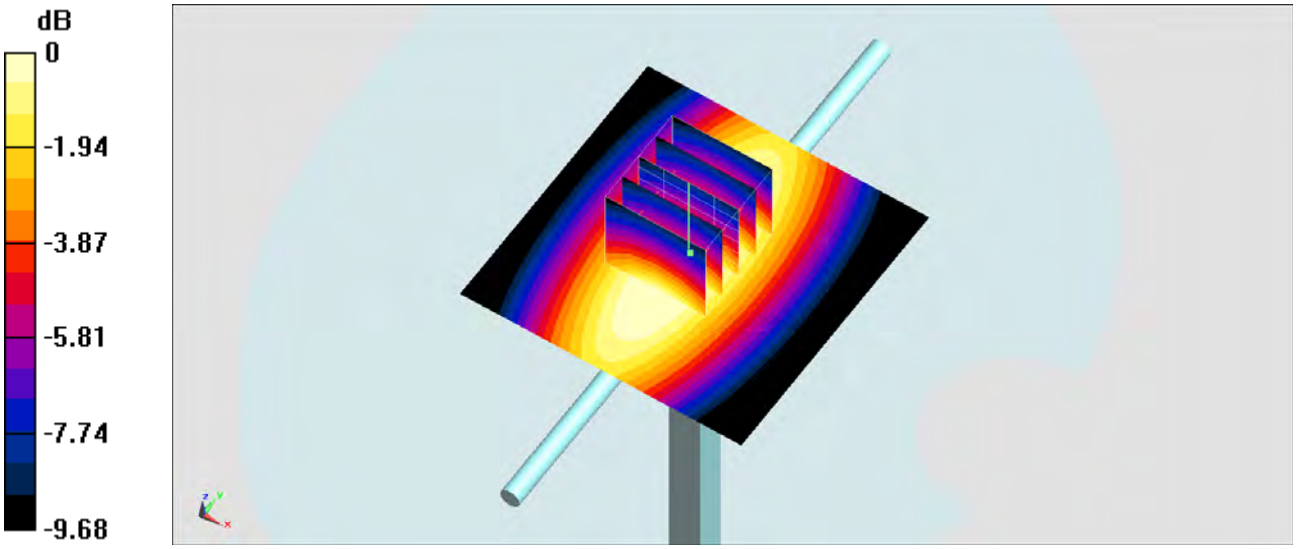
DUT: D750V3-1012

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_141007 Medium parameters used: f = 750 MHz; σ = 0.891 S/m; ε_r = 43.446; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration
- Probe: ES3DV3 - SN3296; ConvF(6.33, 6.33, 6.33); Calibrated: 2014/4/30
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2014/8/21
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.70 W/kg

Configuration/Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.674 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.94 W/kg
SAR(1 g) = 2.01 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 2.33 W/kg



0 dB = 2.33 W/kg = 3.67 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/20

System Check_Body_750MHz_140820

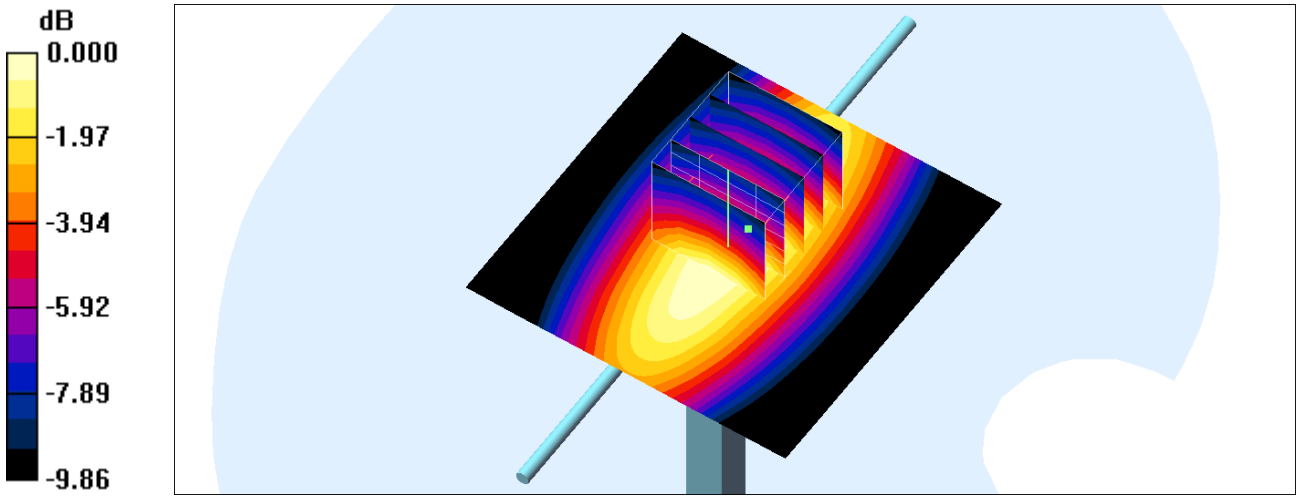
DUT: D750V3-1012

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_140820 Medium parameters used: f = 750 MHz; σ = 0.963 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(9.89, 9.89, 9.89); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.60 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.1 V/m; Power Drift = -0.121 dB
Peak SAR (extrapolated) = 2.93 W/kg
SAR(1 g) = 2.05 mW/g; SAR(10 g) = 1.38 mW/g
Maximum value of SAR (measured) = 2.54 mW/g



0 dB = 2.54mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/21

System Check_Body_750MHz_140821

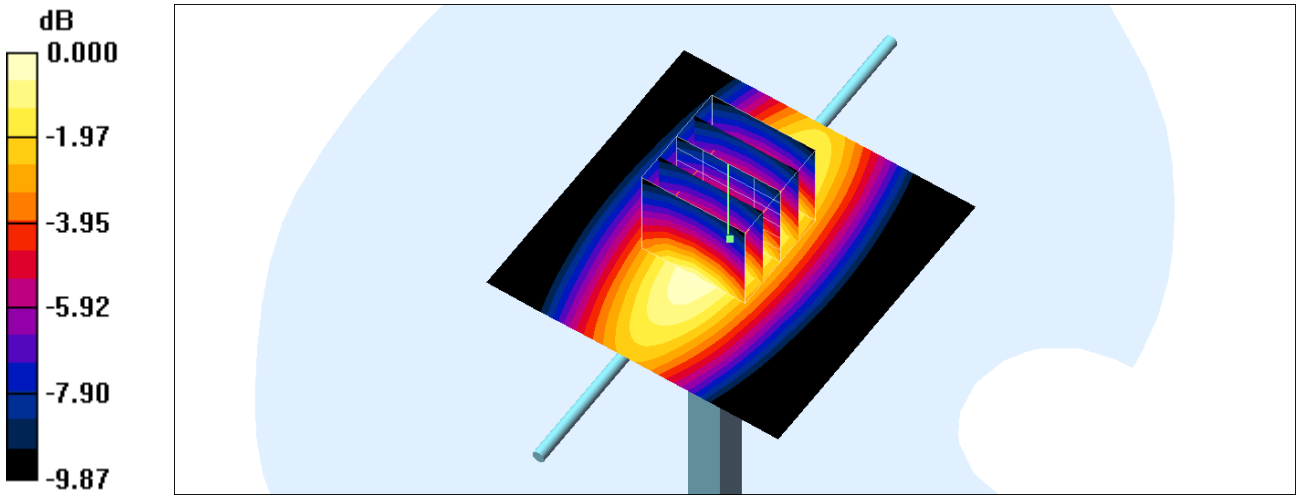
DUT: D750V3-1012

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_140821 Medium parameters used: f = 750 MHz; σ = 0.961 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(9.89, 9.89, 9.89); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.61 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.8 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 2.06 mW/g; SAR(10 g) = 1.38 mW/g
Maximum value of SAR (measured) = 2.57 mW/g



0 dB = 2.57mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

System Check_Body_750MHz_140930

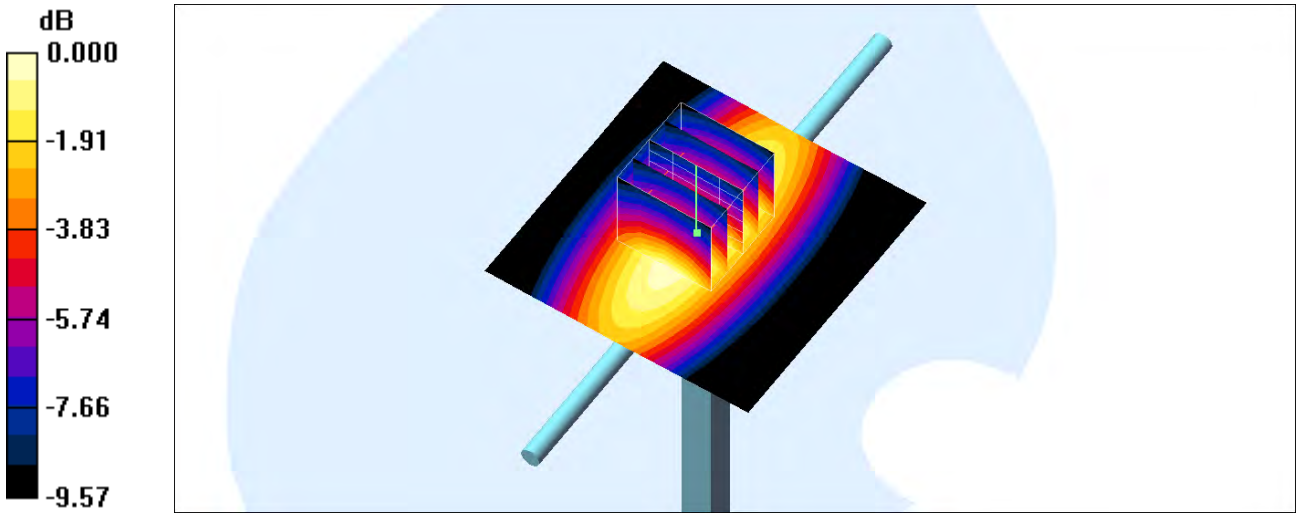
DUT: D750V3-1012

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_140930 Medium parameters used: f = 750 MHz; σ = 0.97 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.54, 9.54, 9.54); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.44 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.8 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 2.86 W/kg
SAR(1 g) = 1.99 mW/g; SAR(10 g) = 1.35 mW/g
Maximum value of SAR (measured) = 2.47 mW/g



0 dB = 2.47mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/19

System Check_Head_835MHz_140819

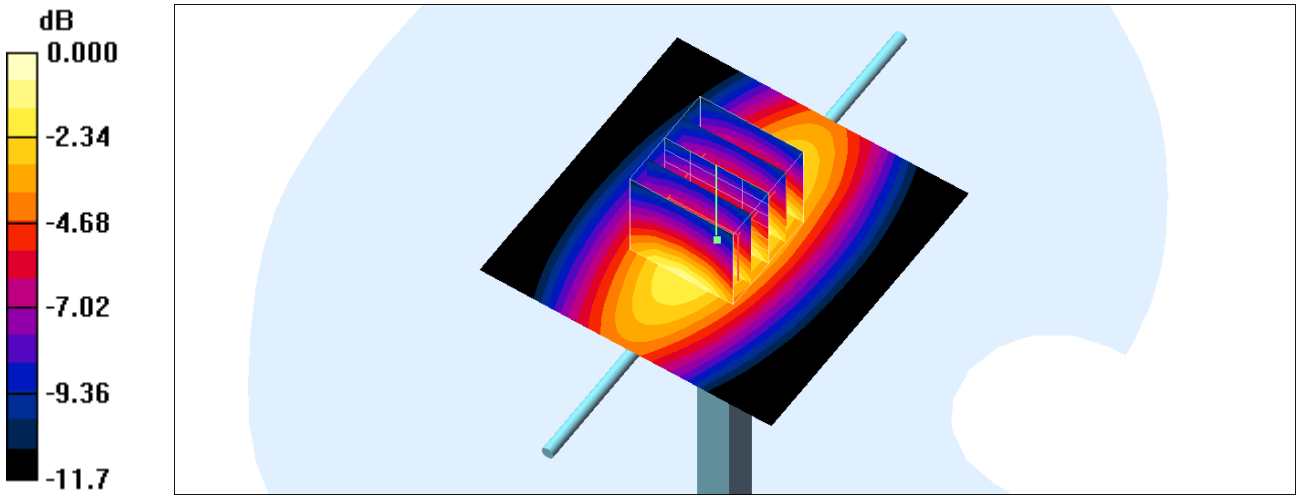
DUT: D835V2-499

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_850_140819 Medium parameters used: f = 835 MHz; σ = 0.885 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.7 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(9.87, 9.87, 9.87); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.18 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.1 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.23 W/kg
SAR(1 g) = 2.23 mW/g; SAR(10 g) = 1.47 mW/g
Maximum value of SAR (measured) = 2.79 mW/g



0 dB = 2.79mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

System Check_Head_835MHz_140930

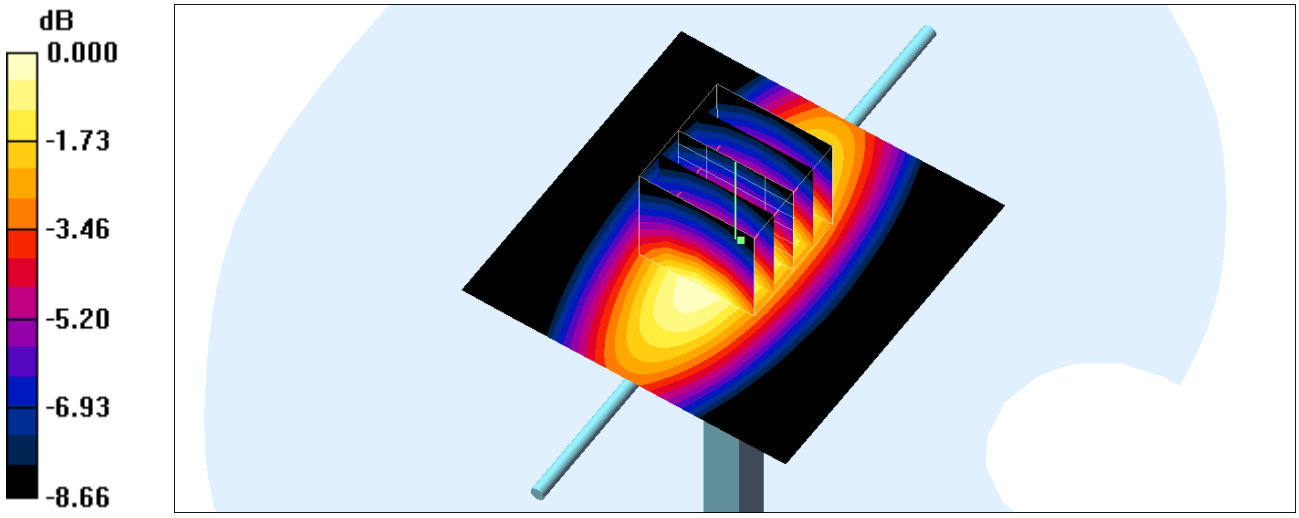
DUT: D835V2-499

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_850_140930 Medium parameters used: f = 835 MHz; σ = 0.876 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.76, 9.76, 9.76); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.88 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.3 V/m; Power Drift = -0.098 dB
Peak SAR (extrapolated) = 3.16 W/kg
SAR(1 g) = 2.27 mW/g; SAR(10 g) = 1.54 mW/g
Maximum value of SAR (measured) = 2.78 mW/g



0 dB = 2.78mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

System Check_Head_835MHz_141001

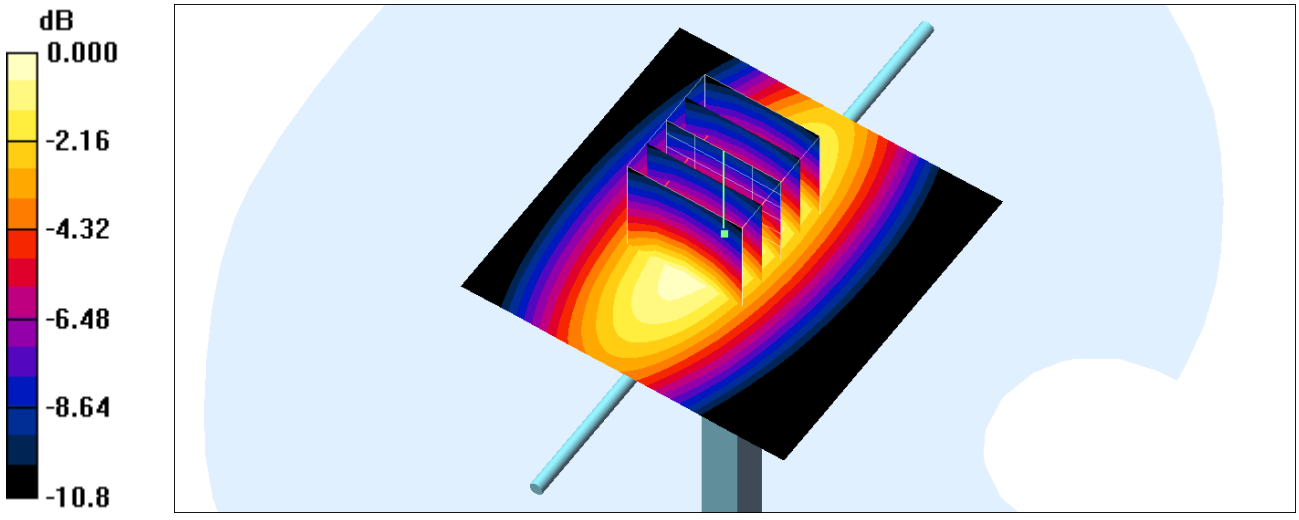
DUT: D835V2-499

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_850_141001 Medium parameters used: f = 835 MHz; σ = 0.879 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.77, 9.77, 9.77); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.00 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.7 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.56 mW/g
Maximum value of SAR (measured) = 3.01 mW/g



0 dB = 3.01mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/21

System Check_Body_835MHz_140821

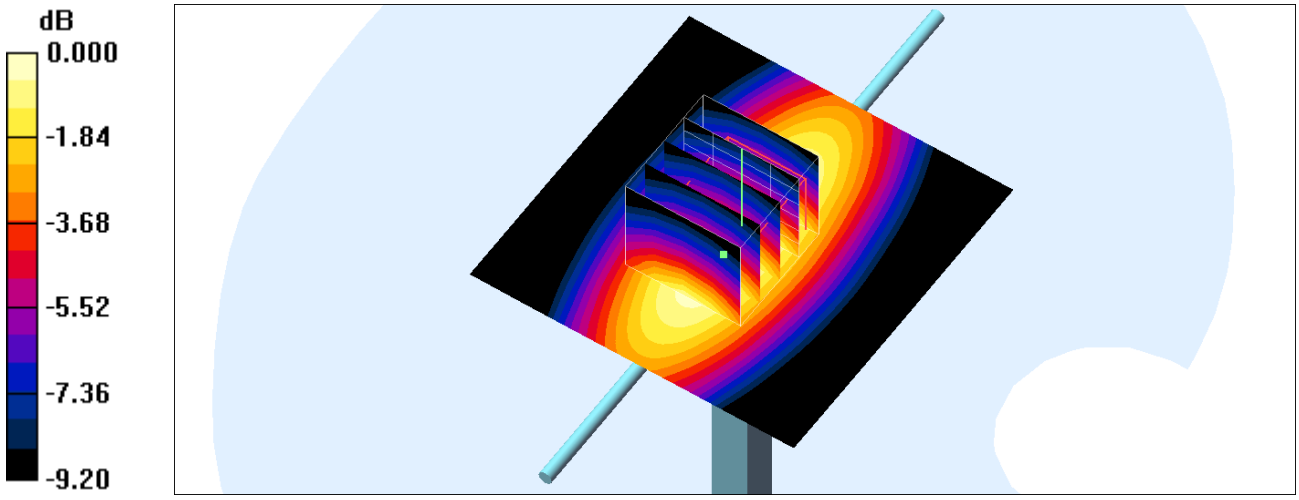
DUT: D835V2-499

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_850_140821 Medium parameters used: f = 835 MHz; σ = 0.967 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(9.81, 9.81, 9.81); Calibrated: 2013/12/23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.85 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.5 V/m; Power Drift = -0.130 dB
Peak SAR (extrapolated) = 3.25 W/kg
SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.51 mW/g
Maximum value of SAR (measured) = 2.78 mW/g



0 dB = 2.78mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

System Check_Body_835MHz_140924

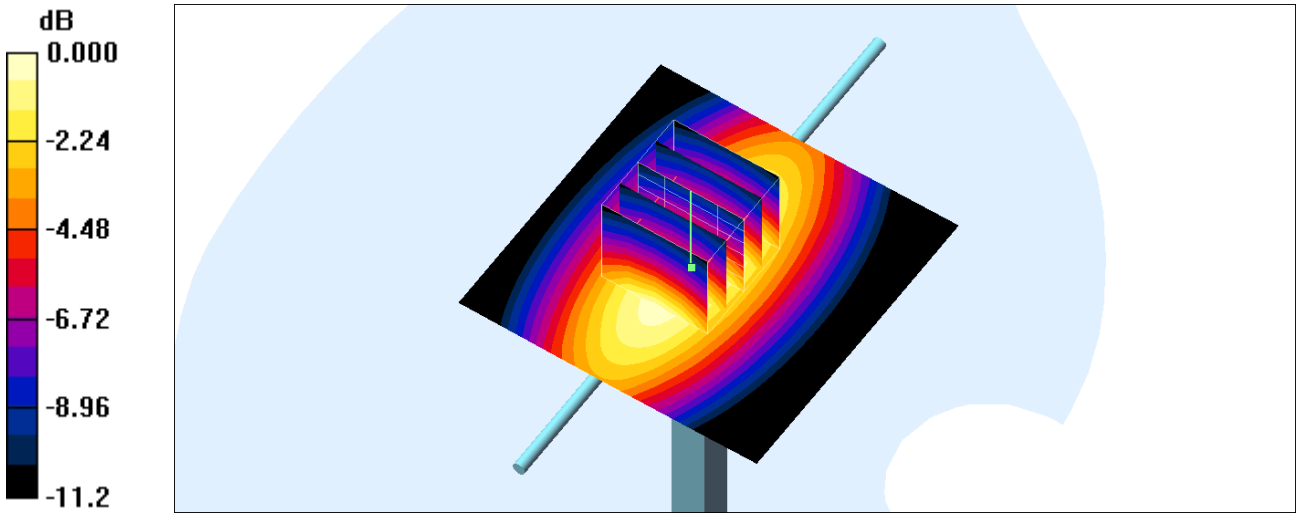
DUT: D835V2-499

Communication System: CW ; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_850_140924 Medium parameters used: f = 835 MHz; σ = 0.963 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.61, 9.61, 9.61); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.24 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.8 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 3.81 W/kg
SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.66 mW/g
Maximum value of SAR (measured) = 3.25 mW/g



0 dB = 3.25mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

System Check_Body_835MHz_141001

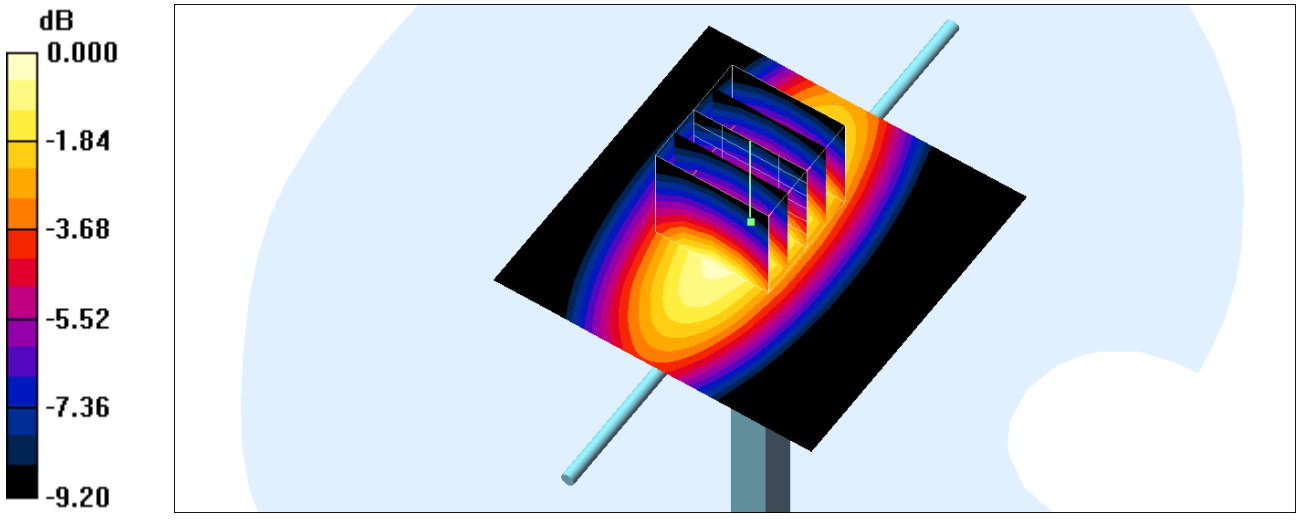
DUT: D835V2-499

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_850_141001 Medium parameters used: f = 835 MHz; σ = 0.985 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.5, 9.5, 9.5); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.20 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.2 V/m; Power Drift = 0.009 dB
Peak SAR (extrapolated) = 3.72 W/kg
SAR(1 g) = 2.55 mW/g; SAR(10 g) = 1.69 mW/g
Maximum value of SAR (measured) = 3.19 mW/g



0 dB = 3.19mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/19

System Check_Head_1750MHz_140819

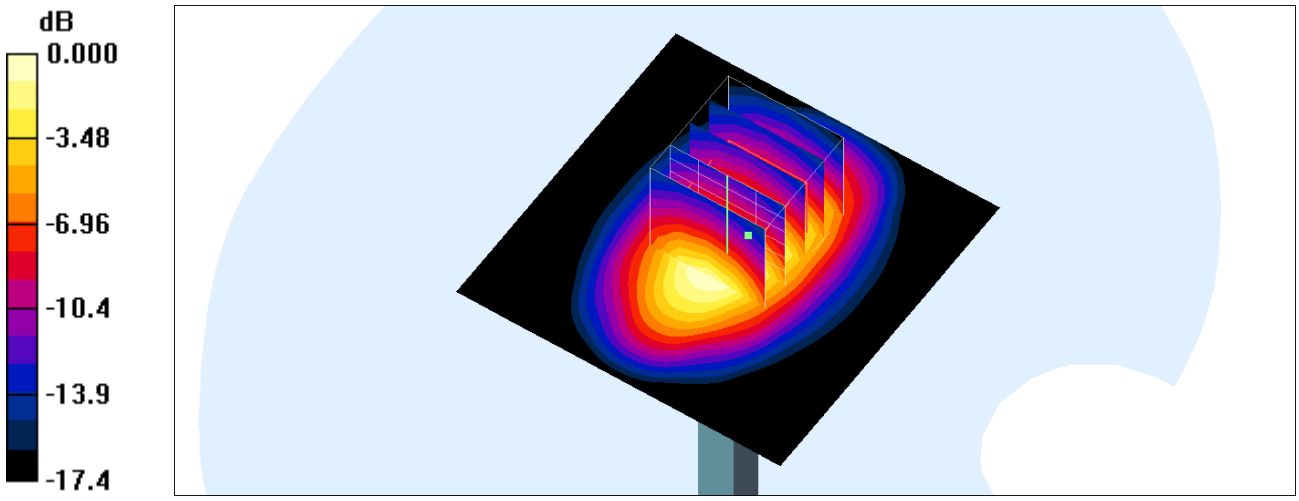
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_140819 Medium parameters used: f = 1750 MHz; σ = 1.4 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(8.82, 8.82, 8.82); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.7 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 95.4 V/m; Power Drift = 0.044 dB
Peak SAR (extrapolated) = 15.2 W/kg
SAR(1 g) = 8.93 mW/g; SAR(10 g) = 4.83 mW/g
Maximum value of SAR (measured) = 12.2 mW/g



0 dB = 12.2mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

System Check_Head_1750MHz_140925

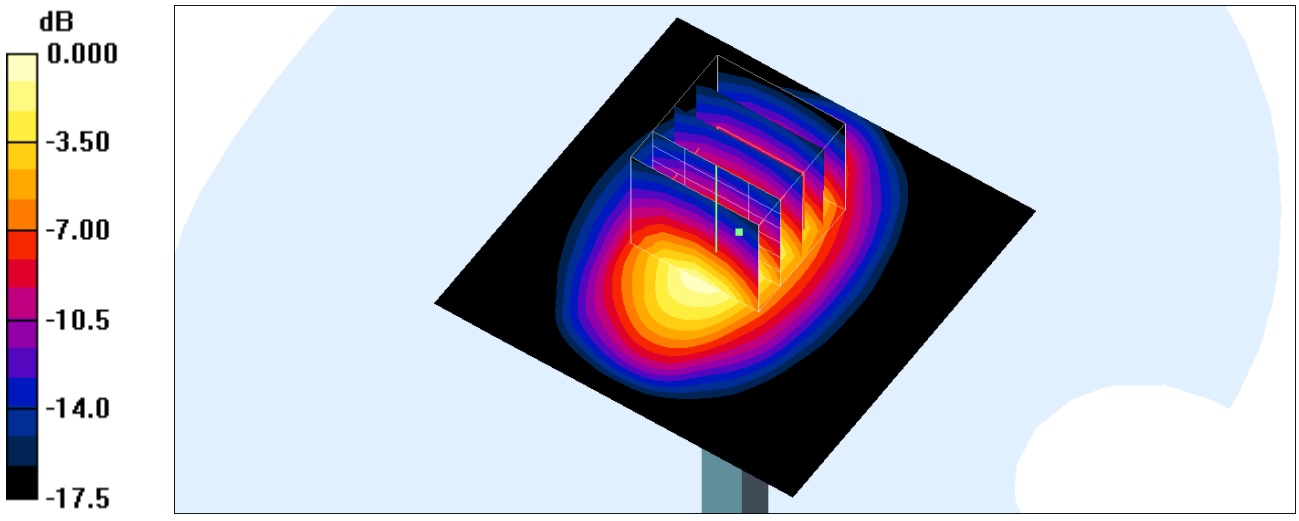
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_140925 Medium parameters used: f = 1750 MHz; σ = 1.4 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.54, 8.54, 8.54); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 15.0 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.2 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.71 mW/g; SAR(10 g) = 5.1 mW/g
Maximum value of SAR (measured) = 13.6 mW/g



0 dB = 13.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/7

System Check_Head_1750MHz_141007

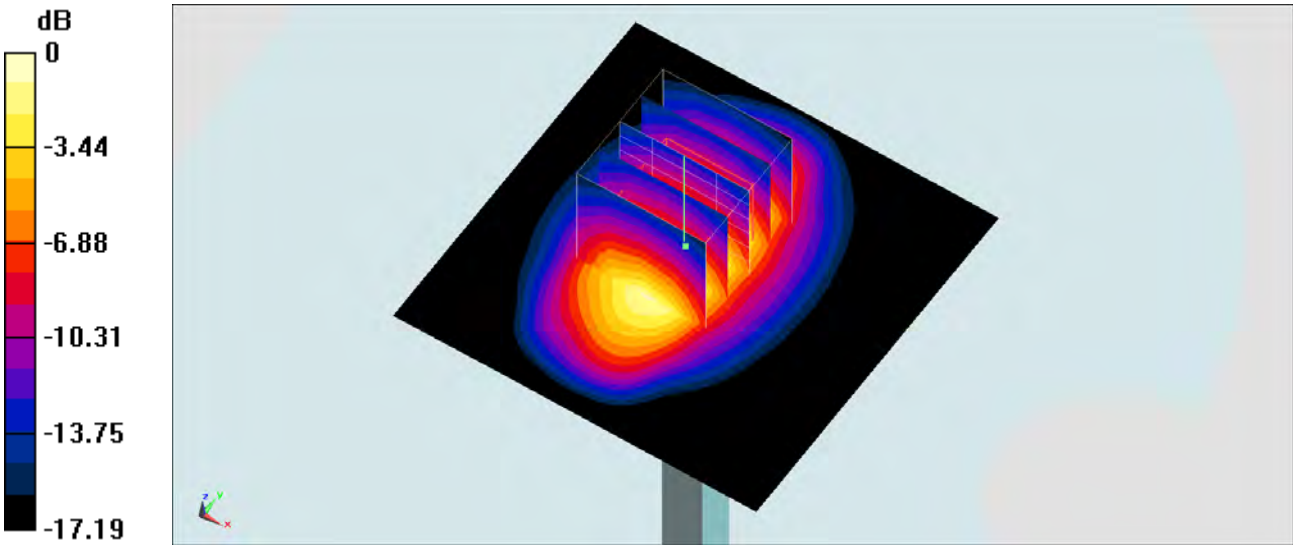
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_141007 Medium parameters used: f = 1750 MHz; σ = 1.339 S/m; ε_r = 41.092; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(8.06, 8.06, 8.06); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.0 W/kg

Configuration/Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 93.052 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 16.0 W/kg
SAR(1 g) = 8.98 W/kg; SAR(10 g) = 4.74 W/kg
Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg = 11.00 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/18

System Check_Body_1750MHz_140818

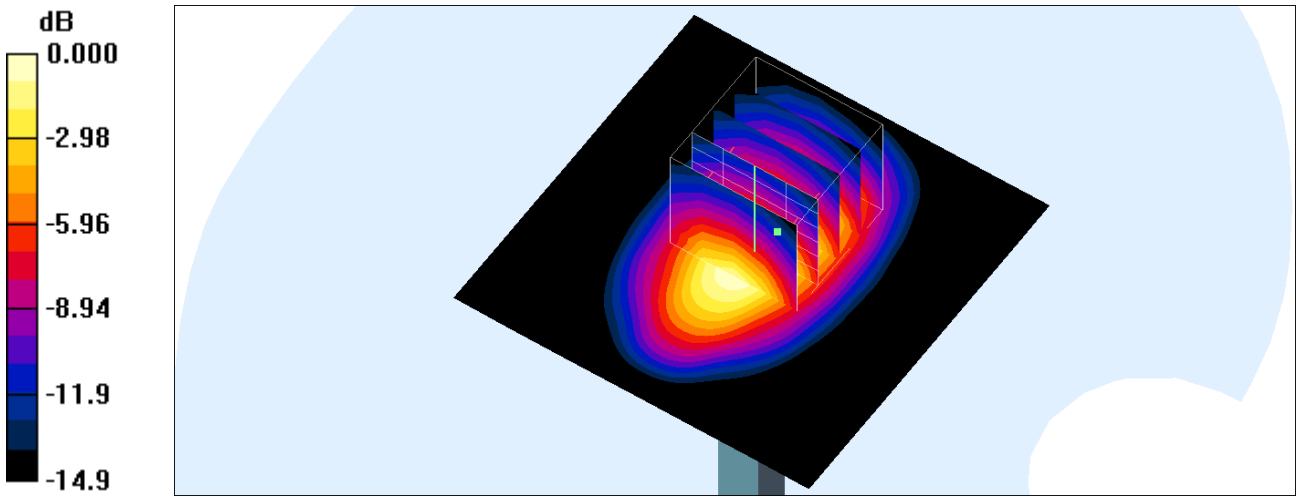
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140818 Medium parameters used: f = 1750 MHz; σ = 1.55 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(7.99, 7.99, 7.99); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.4 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 92.2 V/m; Power Drift = -0.032 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(1 g) = 9.37 mW/g; SAR(10 g) = 5.09 mW/g
Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

System Check_Body_1750MHz_140925

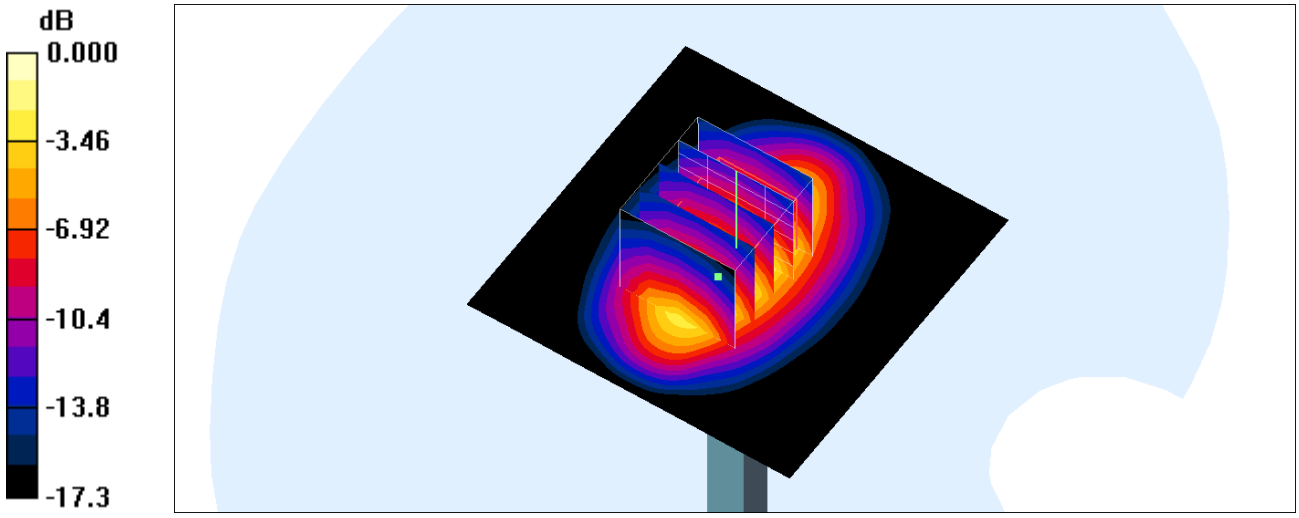
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140925 Medium parameters used: f = 1750 MHz; σ = 1.53 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.3 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 93.3 V/m; Power Drift = -0.111 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 9.15 mW/g; SAR(10 g) = 4.93 mW/g
Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/7

System Check_Body_1750MHz_141007

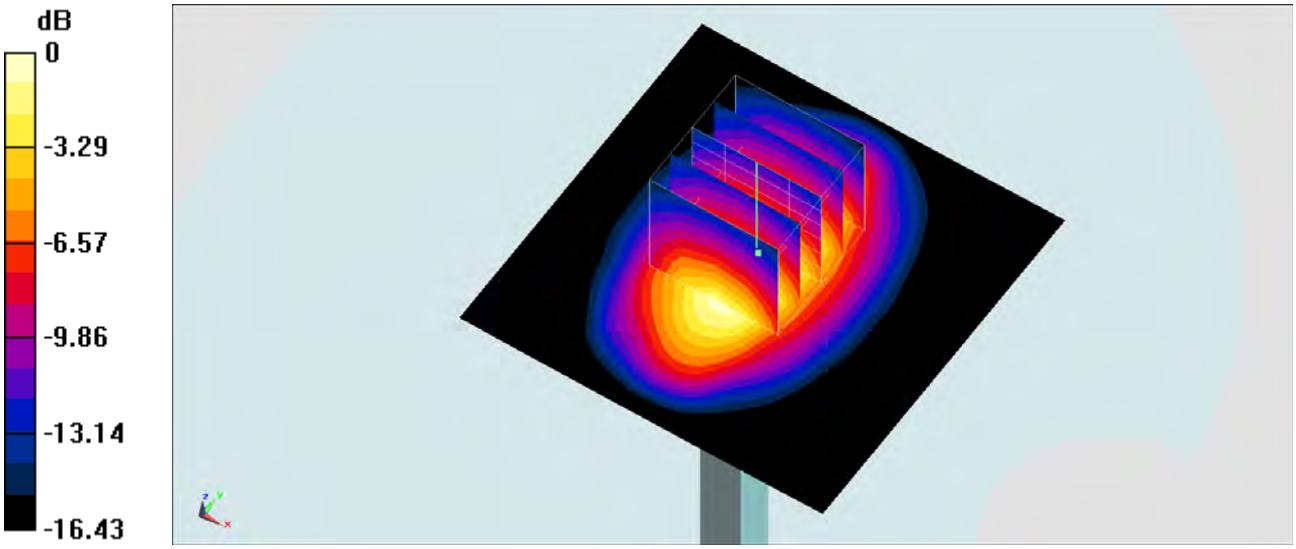
DUT: D1750V2-1068

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_141007 Medium parameters used: f = 1750 MHz; σ = 1.525 S/m; ε_r = 51.728; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.72, 7.72, 7.72); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 15.2 W/kg

Configuration/Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.169 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.72 W/kg; SAR(10 g) = 5.28 W/kg
Maximum value of SAR (measured) = 13.3 W/kg



0 dB = 13.3 W/kg = 11.24 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/19

System Check_Head_1900MHz_140819

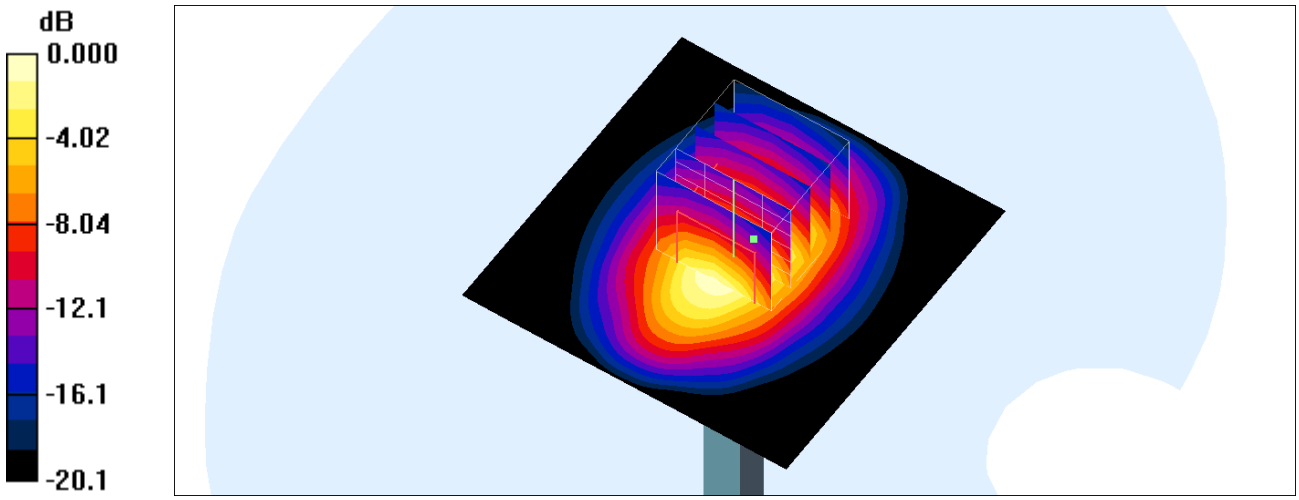
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_140819 Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(8.4, 8.4, 8.4); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.8 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.7 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.27 mW/g
Maximum value of SAR (measured) = 14.4 mW/g



0 dB = 14.4mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

System Check_Head_1900MHz_140925

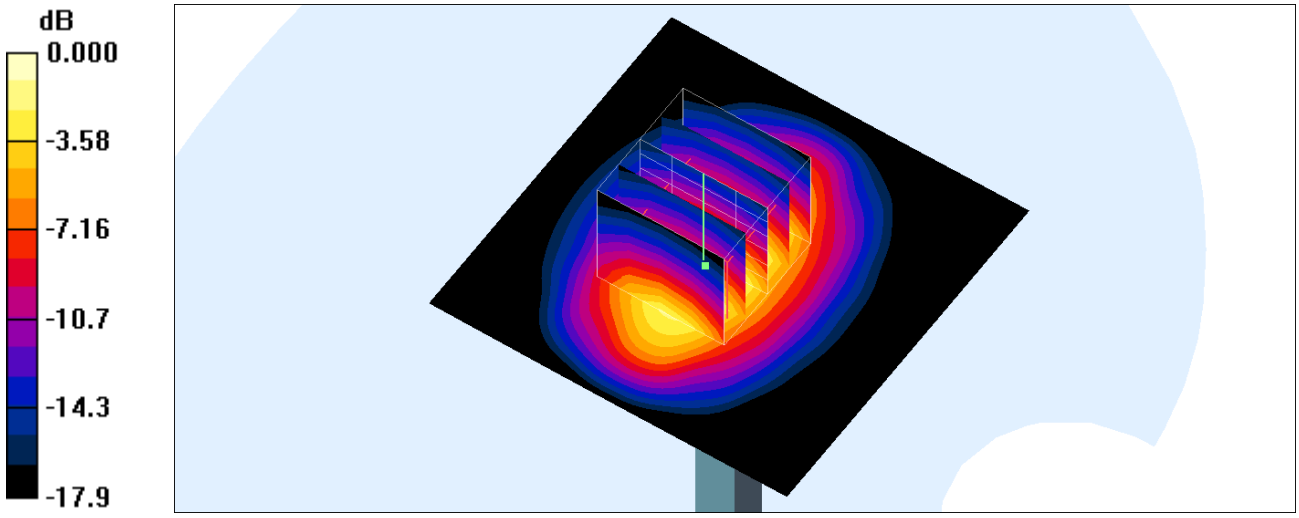
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_140925 Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(8.13, 8.13, 8.13); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.6 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.8 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 9.99 mW/g; SAR(10 g) = 5.15 mW/g
Maximum value of SAR (measured) = 14.3 mW/g



0 dB = 14.3mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/17

System Check_Body_1900MHz_140817

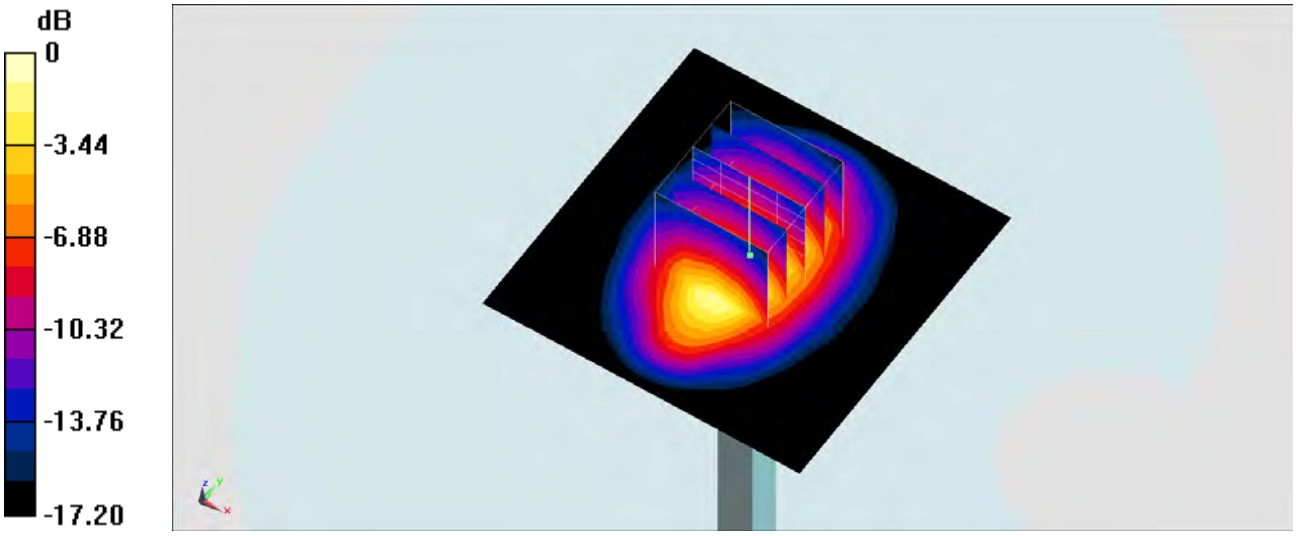
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_140817 Medium parameters used: f = 1900 MHz; σ = 1.565 S/m; ε_r = 52.909; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(7.61, 7.61, 7.61); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_RIGHT; Type: SAM; Serial: 1801
- Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.8 W/kg

Configuration/Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.36 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.6 W/kg
Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg = 11.61 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/18

System Check_Body_1900MHz_140818

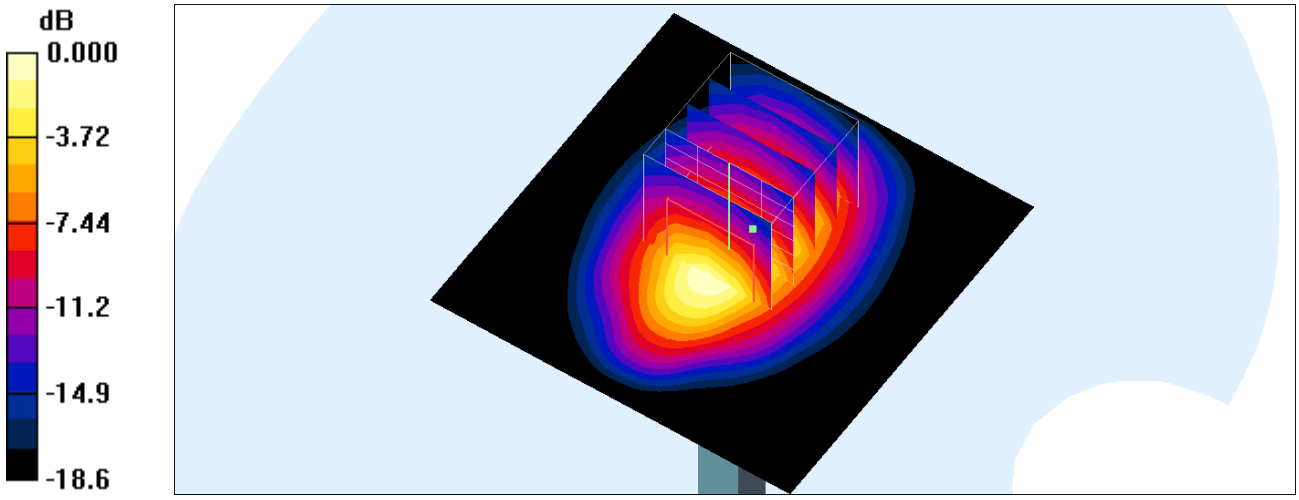
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_140818 Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(7.61, 7.61, 7.61); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 15.4 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.9 V/m; Power Drift = -0.141 dB
Peak SAR (extrapolated) = 17.6 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.41 mW/g
Maximum value of SAR (measured) = 14.4 mW/g



0 dB = 14.4mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

System Check_Body_1900MHz_140924

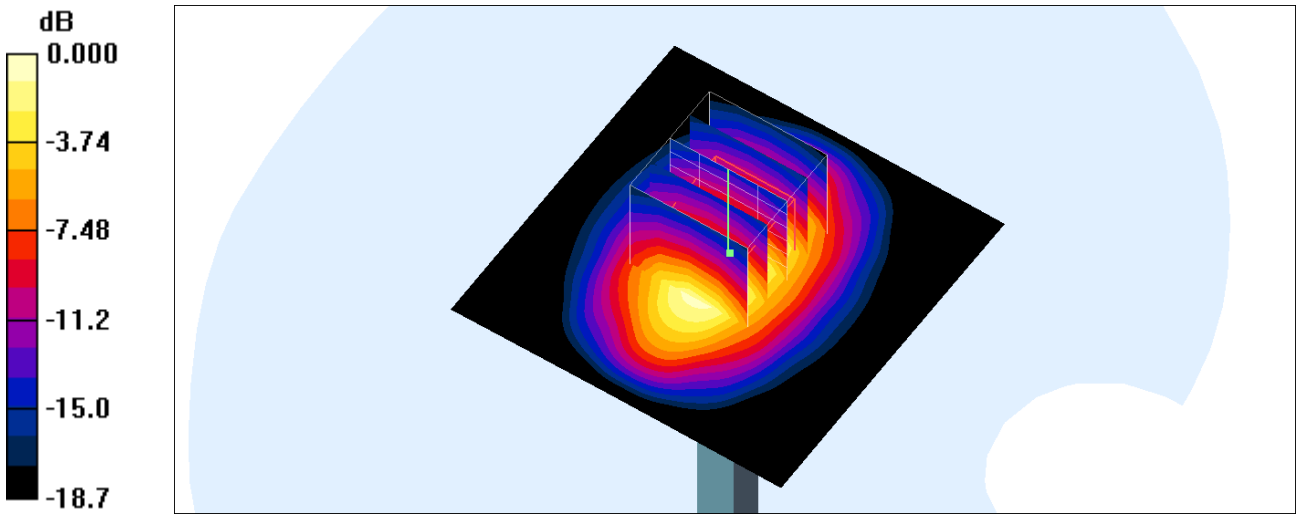
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_140924 Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(7.95, 7.95, 7.95); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.6 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.0 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10 mW/g; SAR(10 g) = 5.23 mW/g
Maximum value of SAR (measured) = 14.0 mW/g



0 dB = 14.0mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

System Check_Body_1900MHz_141001

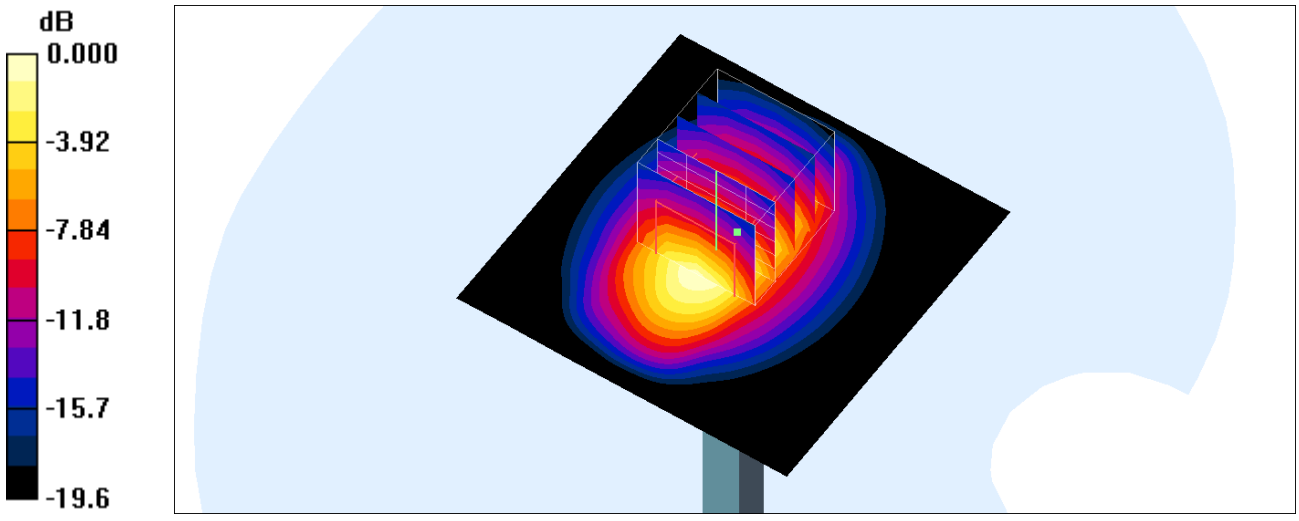
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141001 Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 15.6 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.9 V/m; Power Drift = -0.096 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.42 mW/g
Maximum value of SAR (measured) = 15.0 mW/g



0 dB = 15.0mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/7

System Check_Body_1900MHz_141007

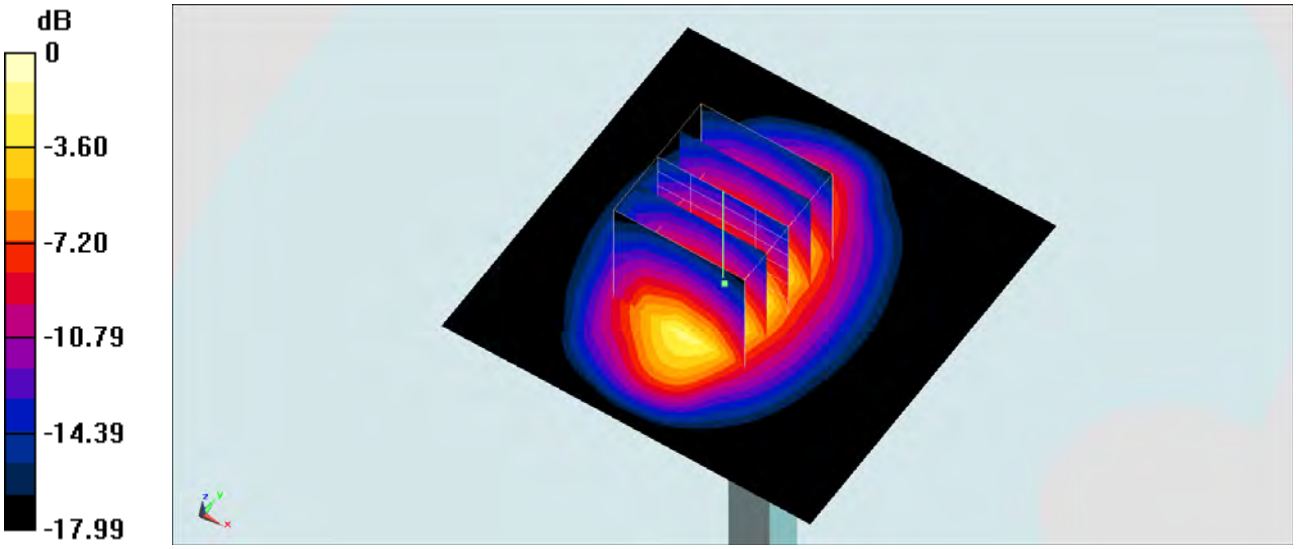
DUT: D1900V2-5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141007 Medium parameters used: f = 1900 MHz; σ = 1.544 S/m; ε_r = 51.591; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 16.2 W/kg

Configuration/Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 101.0 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.39 W/kg
Maximum value of SAR (measured) = 14.9 W/kg



0 dB = 14.9 W/kg = 11.73 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/25

System Check_Head_2450MHz_140825

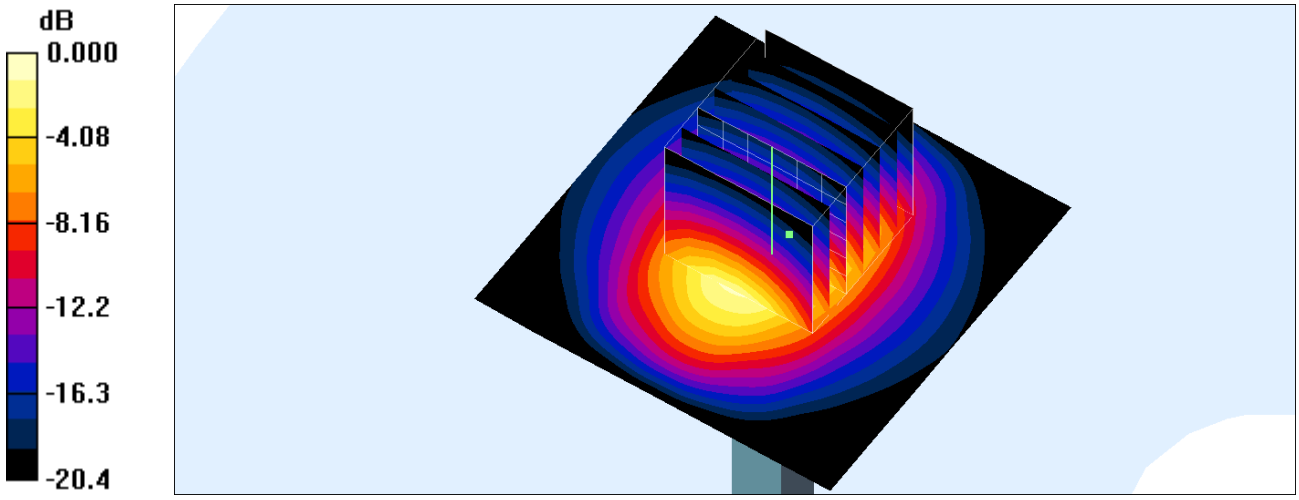
DUT: D2450V2-869

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_140825 Medium parameters used: f = 2450 MHz; σ = 1.84 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: ES3DV3 - SN3270; ConvF(4.53, 4.53, 4.53); Calibrated: 2013/9/24
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 18.3 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.3 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 28.7 W/kg
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.12 mW/g
Maximum value of SAR (measured) = 17.7 mW/g



0 dB = 17.7mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/26

System Check_Body_2450MHz_140826

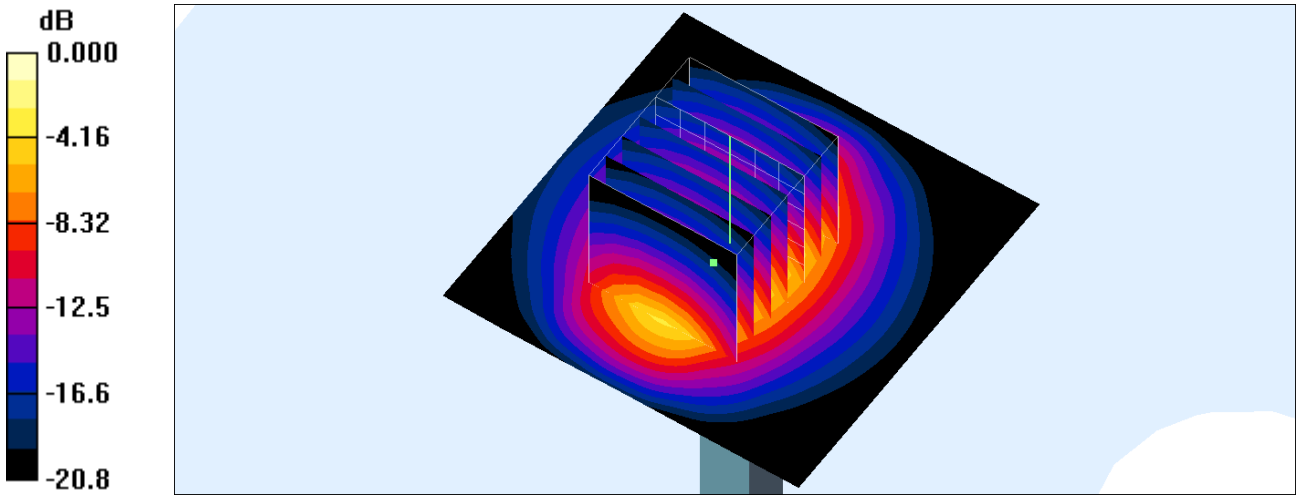
DUT: D2450V2-869

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_140826 Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: ES3DV3 - SN3270; ConvF(4.28, 4.28, 4.28); Calibrated: 2013/9/24
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 18.2 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.5 V/m; Power Drift = 0.044 dB
Peak SAR (extrapolated) = 28.0 W/kg
SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6 mW/g
Maximum value of SAR (measured) = 17.3 mW/g



0 dB = 17.3mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/22

System Check_Head_2600MHz_140822

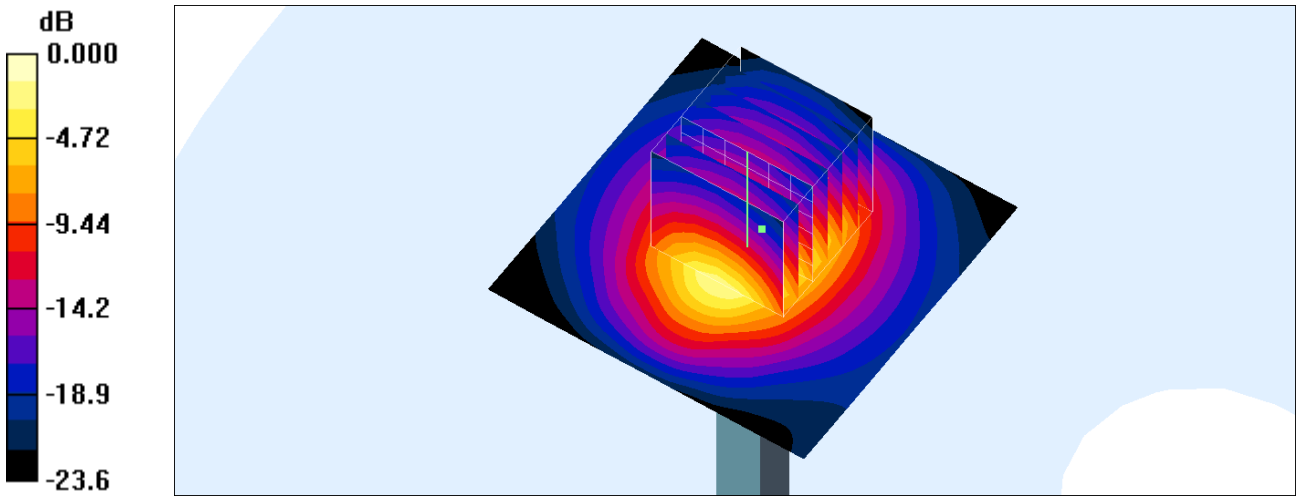
DUT: D2600V2-1058

Communication System: CW ; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_140822 Medium parameters used: f = 2600 MHz; σ = 2.05 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(7.55, 7.55, 7.55); Calibrated: 2013/12/23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 22.1 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.5 V/m; Power Drift = -0.096 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 5.93 mW/g
Maximum value of SAR (measured) = 20.5 mW/g



0 dB = 20.5mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

System Check_Head_2600MHz_140925

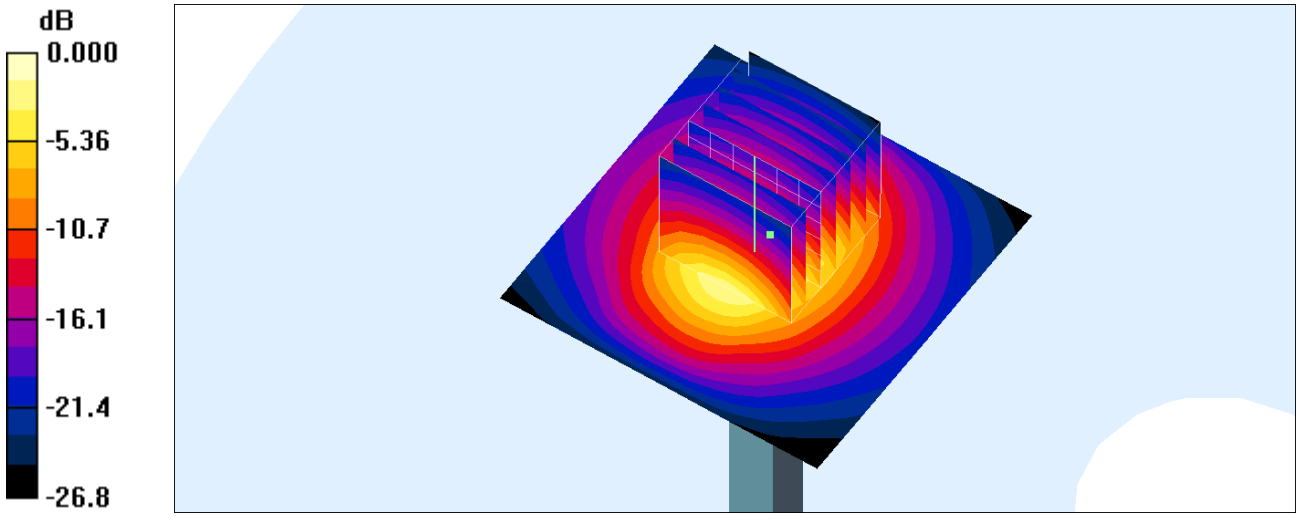
DUT: D2600V2-1058

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_140925 Medium parameters used: f = 2600 MHz; σ = 1.98 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.27, 7.27, 7.27); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 23.7 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.0 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 31.0 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.05 mW/g
Maximum value of SAR (measured) = 21.7 mW/g



0 dB = 21.7mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/22

System Check_Body_2600MHz_140822

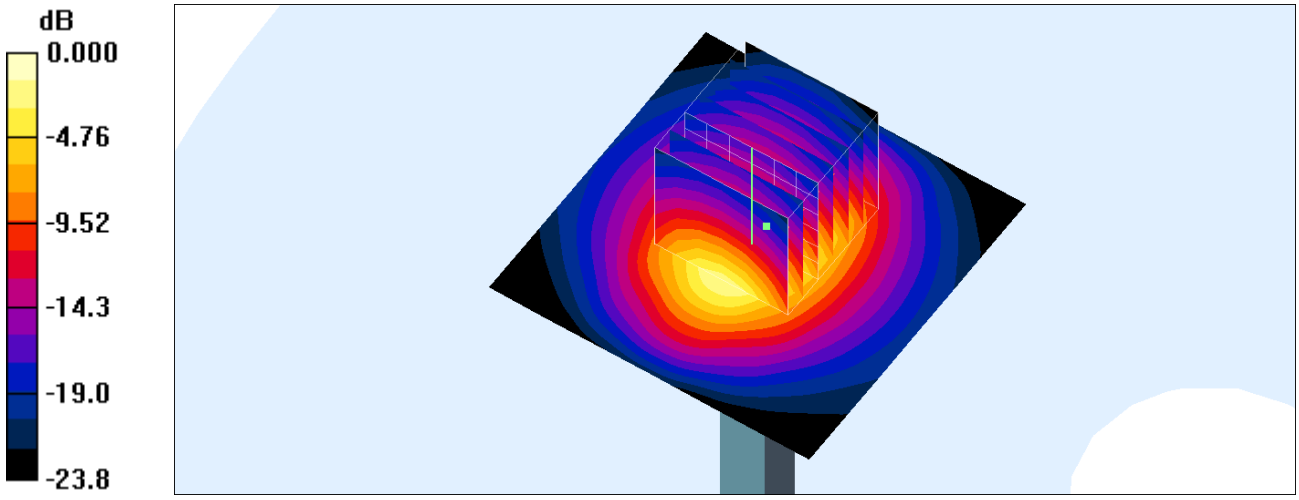
DUT: D2600V2-1058

Communication System: CW ; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_140822 Medium parameters used: f = 2600 MHz; σ = 2.2 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(7.58, 7.58, 7.58); Calibrated: 2013/12/23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 22.7 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.4 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 5.99 mW/g
Maximum value of SAR (measured) = 20.6 mW/g



0 dB = 20.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

System Check_Body_2600MHz_140930

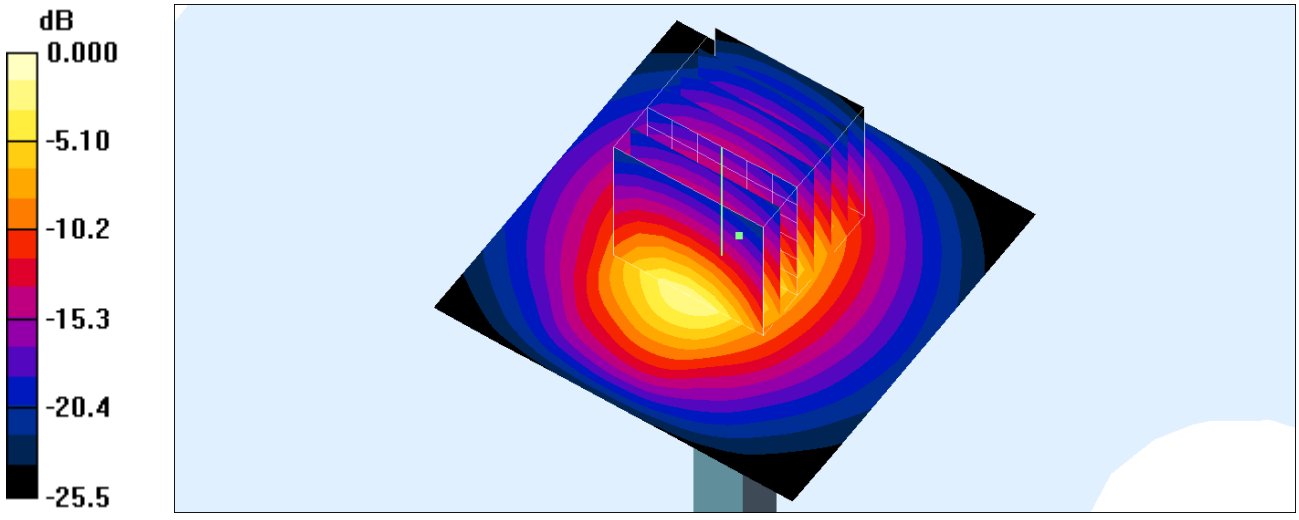
DUT: D2600V2-1058

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_140930 Medium parameters used: f = 2600 MHz; σ = 2.17 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(6.94, 6.94, 6.94); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 23.9 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.4 V/m; Power Drift = -0.112 dB
Peak SAR (extrapolated) = 31.7 W/kg
SAR(1 g) = 14.3 mW/g; SAR(10 g) = 6.2 mW/g
Maximum value of SAR (measured) = 22.6 mW/g



0 dB = 22.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

System Check_Head_5200MHz_140831

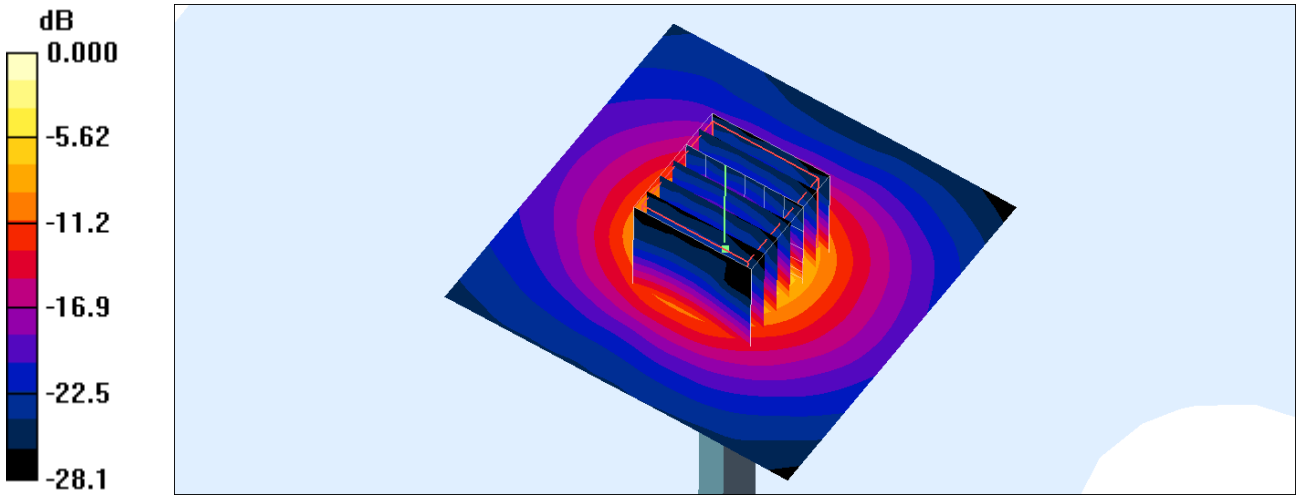
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: HSL_5G_140831 Medium parameters used: f = 5200 MHz; σ = 4.81 mho/m; ε_r = 35.4; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(5.14, 5.14, 5.14); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.0 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.1 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 8.04 mW/g; SAR(10 g) = 2.27 mW/g
Maximum value of SAR (measured) = 19.6 mW/g



0 dB = 19.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

System Check_Body_5200MHz_140830

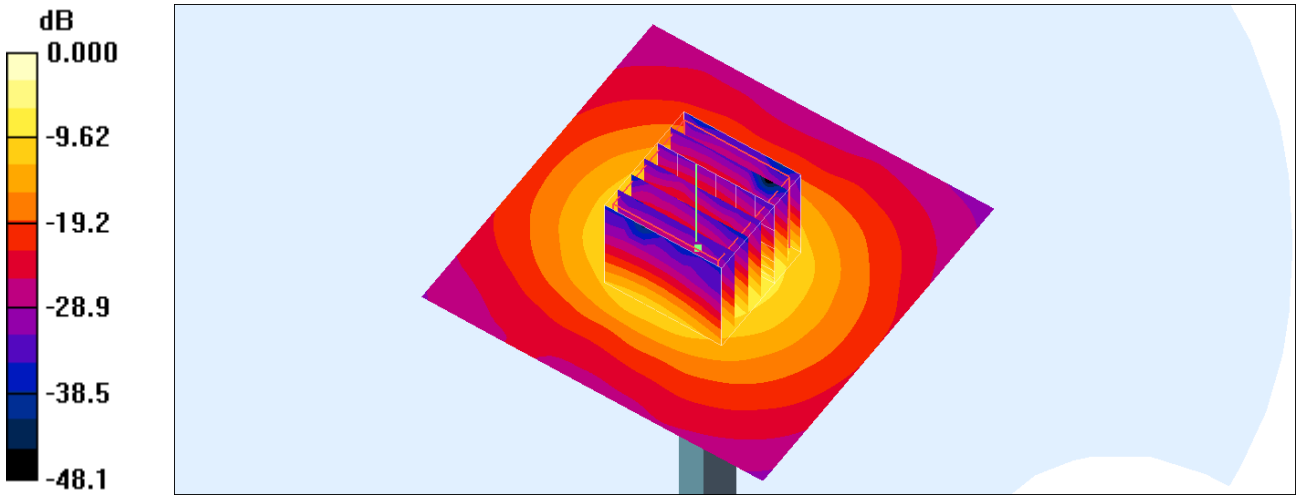
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: MSL_5G_140830 Medium parameters used: f = 5200 MHz; σ = 5.4 mho/m; ε_r = 47.3; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.64, 4.64, 4.64); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 18.3 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.9 V/m; Power Drift = -0.158 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 7.52 mW/g; SAR(10 g) = 2.05 mW/g
Maximum value of SAR (measured) = 18.5 mW/g



0 dB = 18.5mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

System Check_Head_5300MHz_140831

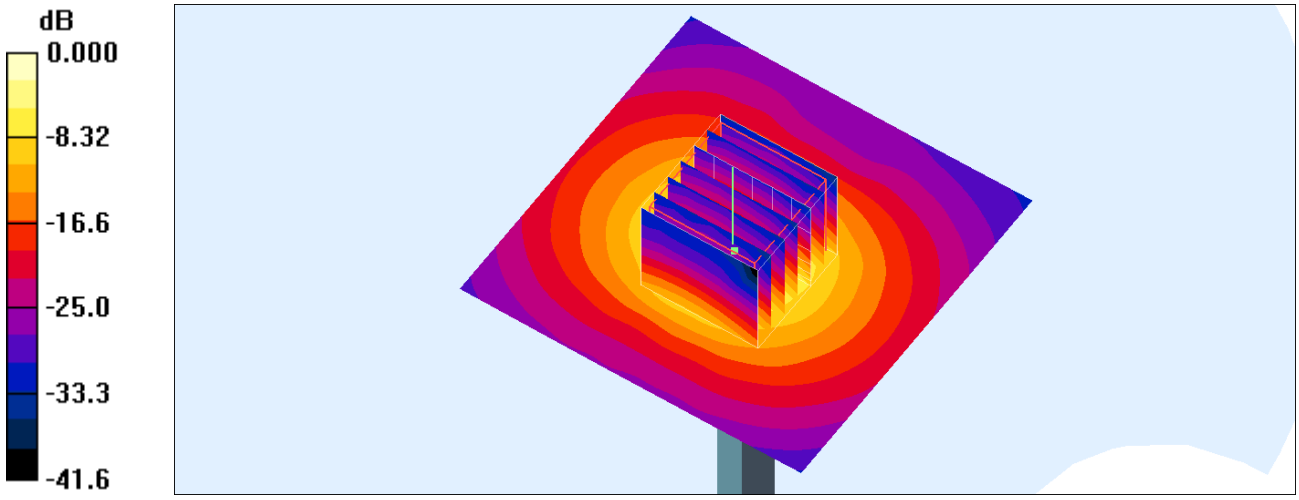
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: HSL_5G_140831 Medium parameters used: f = 5300 MHz; σ = 4.92 mho/m; ε_r = 35.3; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.86, 4.86, 4.86); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 20.2 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 52.4 V/m; Power Drift = -0.127 dB
Peak SAR (extrapolated) = 33.4 W/kg
SAR(1 g) = 8.32 mW/g; SAR(10 g) = 2.31 mW/g
Maximum value of SAR (measured) = 20.6 mW/g



0 dB = 20.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

System Check_Body_5300MHz_140830

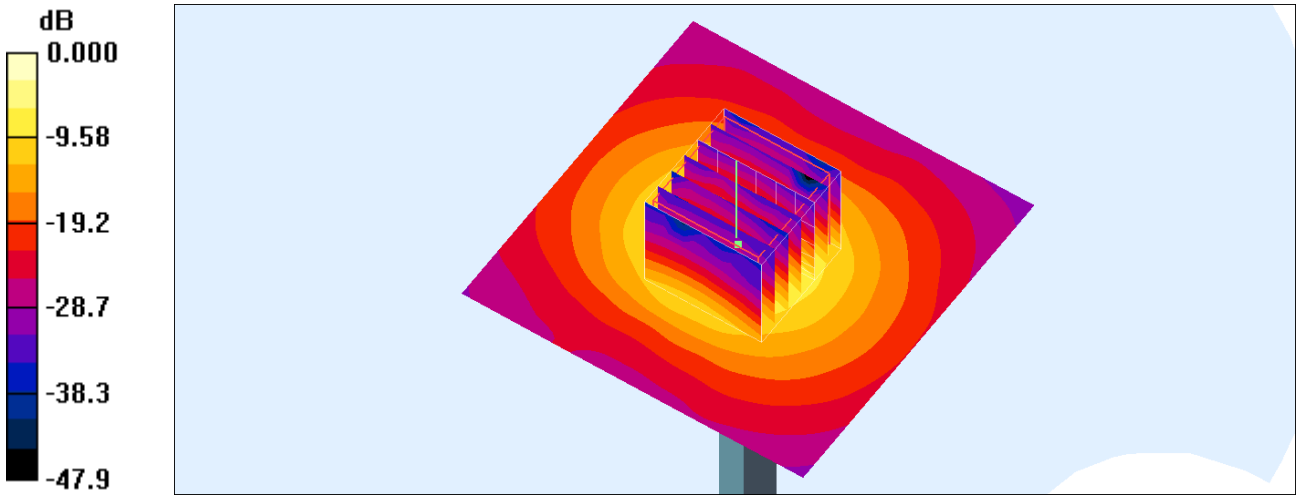
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: MSL_5G_140830 Medium parameters used: f = 5300 MHz; σ = 5.52 mho/m; ε_r = 47; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.36, 4.36, 4.36); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.3 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.0 V/m; Power Drift = -0.158 dB
Peak SAR (extrapolated) = 33.1 W/kg
SAR(1 g) = 7.99 mW/g; SAR(10 g) = 2.19 mW/g
Maximum value of SAR (measured) = 19.6 mW/g



0 dB = 19.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

System Check_Head_5600MHz_140831

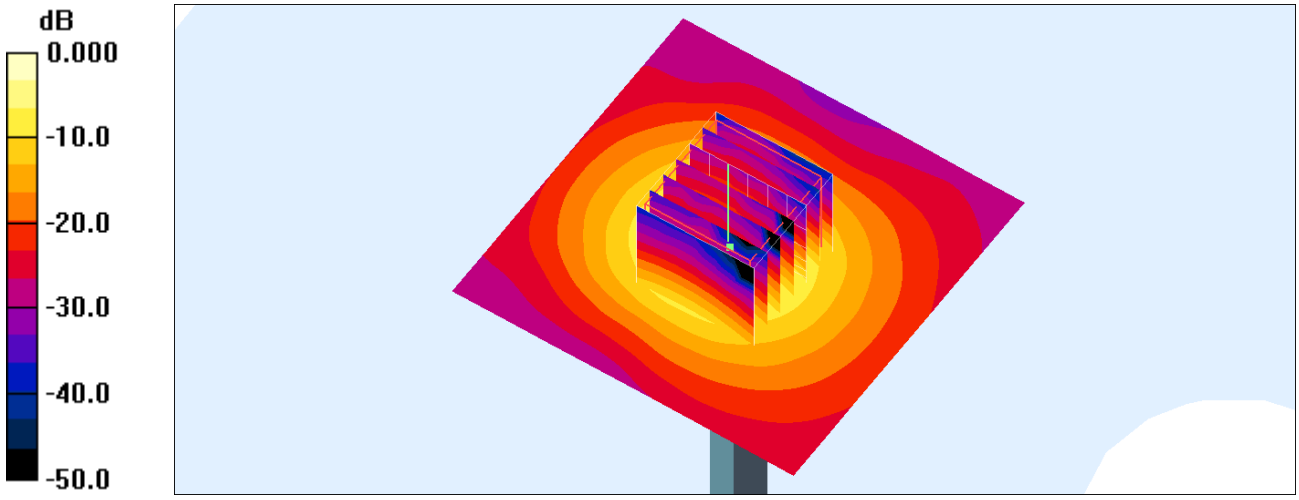
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5G_140831 Medium parameters used: f = 5600 MHz; σ = 5.23 mho/m; ε_r = 34.7; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.64, 4.64, 4.64); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 22.4 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.6 V/m; Power Drift = -0.163 dB
Peak SAR (extrapolated) = 38.2 W/kg
SAR(1 g) = 8.7 mW/g; SAR(10 g) = 2.44 mW/g
Maximum value of SAR (measured) = 21.6 mW/g



0 dB = 21.6mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

System Check_Body_5600MHz_140830

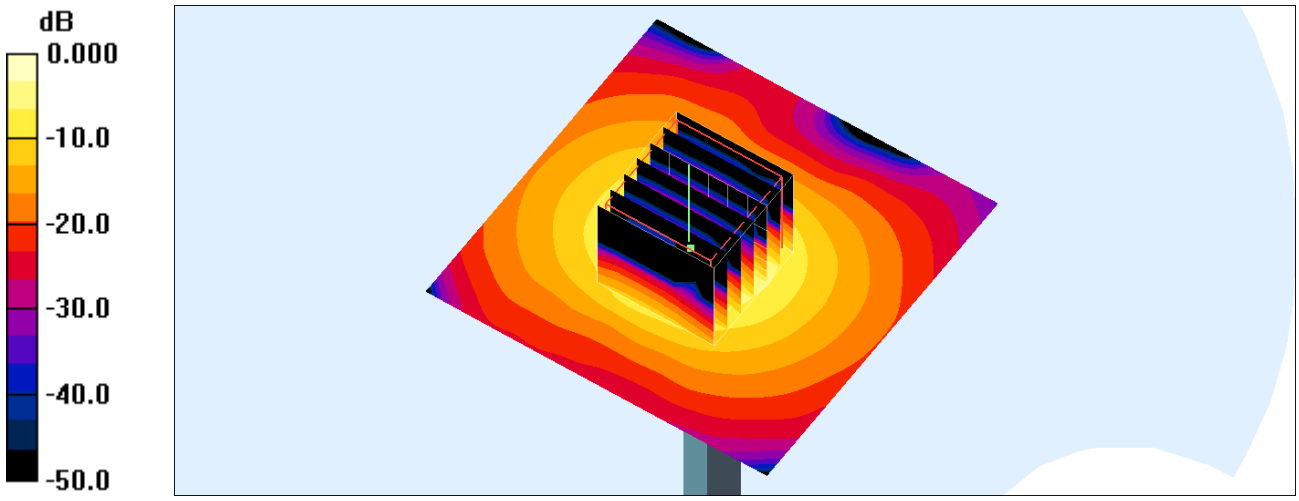
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: MSL_5G_140830 Medium parameters used: f = 5600 MHz; σ = 5.9 mho/m; ε_r = 46.6; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.27, 4.27, 4.27); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 27.9 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 60.7 V/m; Power Drift = -0.107 dB
Peak SAR (extrapolated) = 40.3 W/kg
SAR(1 g) = 7.54 mW/g; SAR(10 g) = 2.02 mW/g
Maximum value of SAR (measured) = 20.1 mW/g



0 dB = 20.1mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

System Check_Head_5800MHz_140831

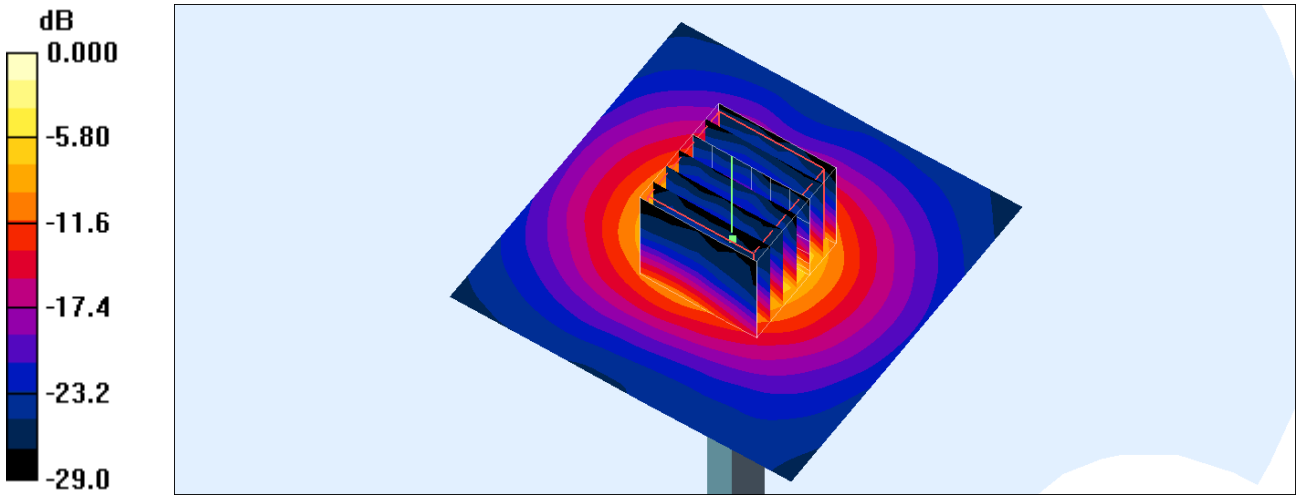
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL_5G_140831 Medium parameters used: f = 5800 MHz; σ = 5.42 mho/m; ε_r = 34.3; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.61, 4.61, 4.61); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.4 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.2 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 35.0 W/kg
SAR(1 g) = 8.28 mW/g; SAR(10 g) = 2.33 mW/g
Maximum value of SAR (measured) = 20.2 mW/g



0 dB = 20.2mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

System Check_Body_5800MHz_140830

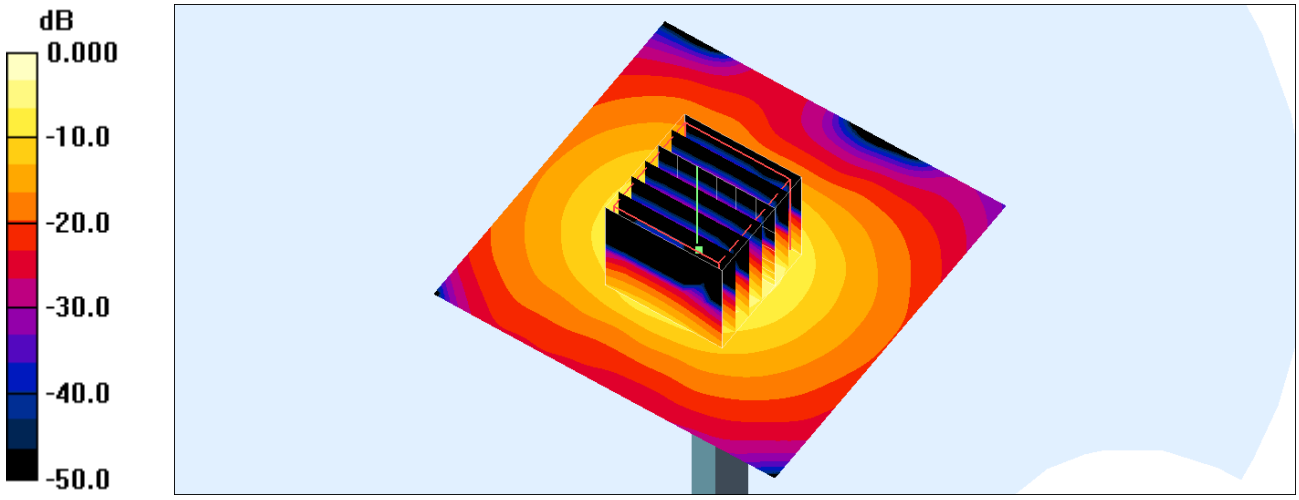
DUT: D5GHzV2-1128

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: MSL_5G_140830 Medium parameters used: f = 5800 MHz; σ = 6.17 mho/m; ε_r = 46.2; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.25, 4.25, 4.25); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 26.8 mW/g

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 60.8 V/m; Power Drift = -0.107 dB
Peak SAR (extrapolated) = 35.5 W/kg
SAR(1 g) = 7.36 mW/g; SAR(10 g) = 1.98 mW/g
Maximum value of SAR (measured) = 19.3 mW/g



0 dB = 19.3mW/g

Appendix B. Plots of SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

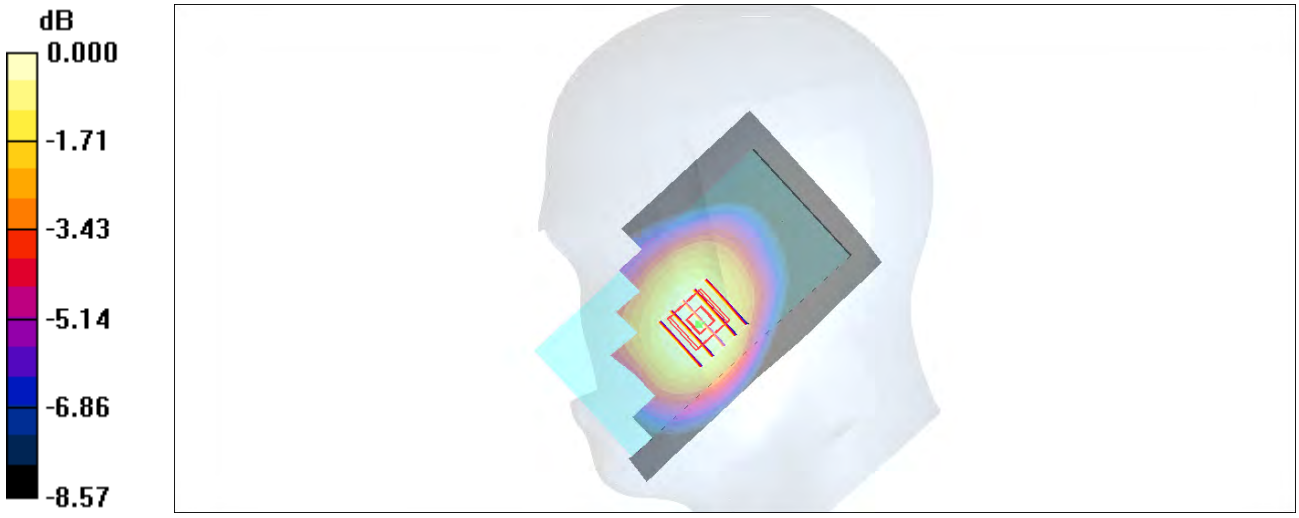
#01_GSM850_GPRS (4 Tx slots)_Right Cheek_Ch128

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium: HSL_850_140930 Medium parameters used: f = 824.2 MHz; σ = 0.867 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.76, 9.76, 9.76); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch128/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.398 mW/g

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.6 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.419 W/kg
SAR(1 g) = 0.346 mW/g; SAR(10 g) = 0.270 mW/g
Maximum value of SAR (measured) = 0.390 mW/g



0 dB = 0.390mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

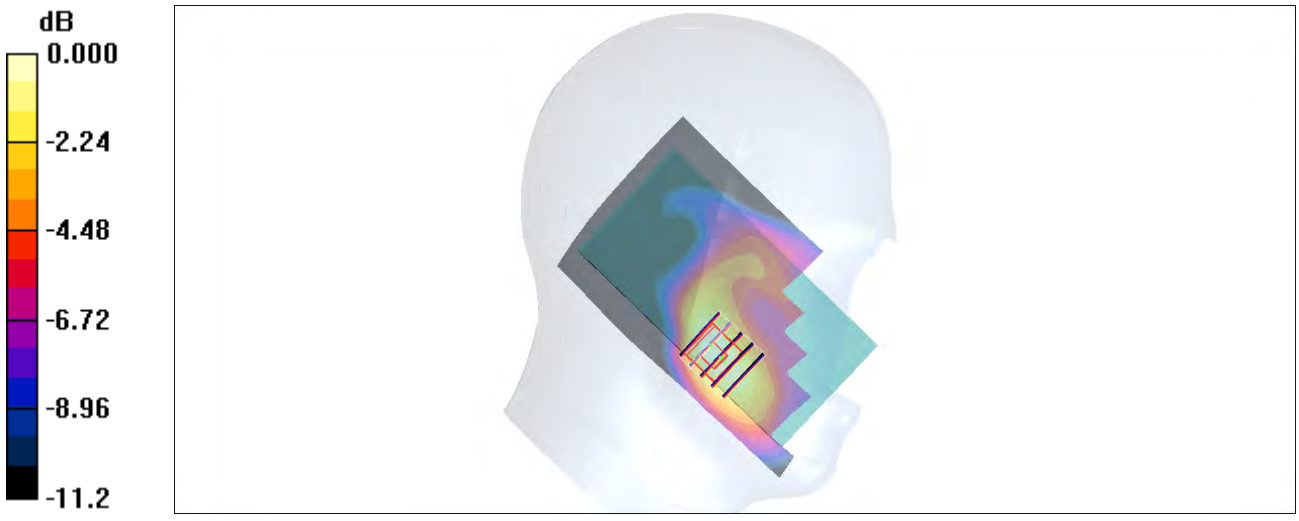
#02_GSM1900_GPRS (4 Tx slots)_Left Cheek_Ch810

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900_140925 Medium parameters used: f = 1910 MHz; σ = 1.44 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(8.13, 8.13, 8.13); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch810/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.263 mW/g

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = -0.037 dB
Peak SAR (extrapolated) = 0.319 W/kg
SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.126 mW/g
Maximum value of SAR (measured) = 0.259 mW/g



0 dB = 0.259mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

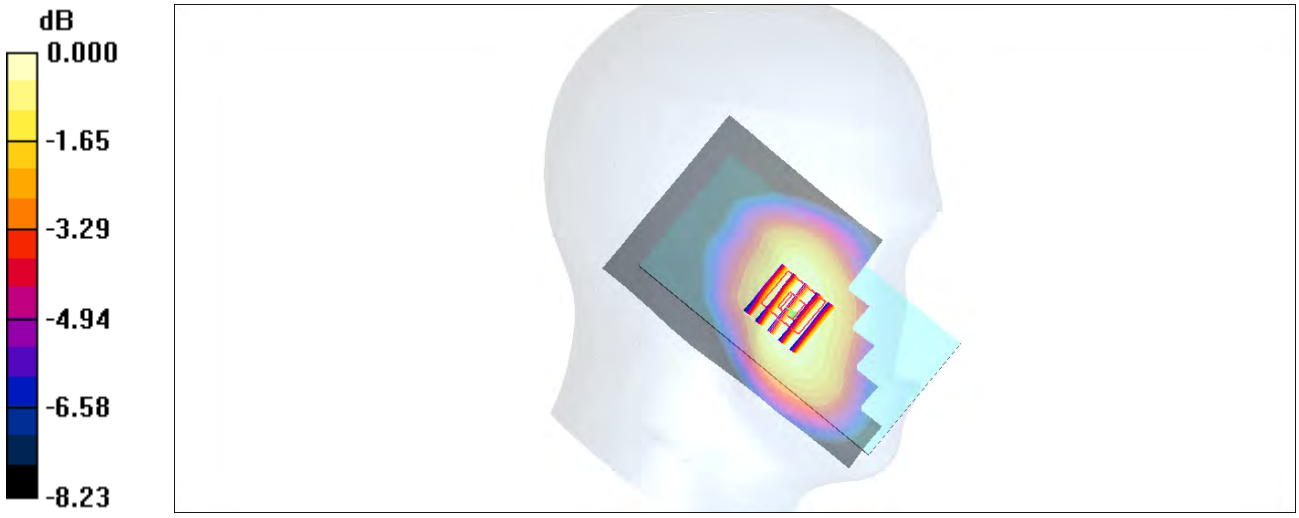
#03_WCDMA V_RMC 12.2Kbps_Left Cheek_Ch4132

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL_850_140930 Medium parameters used : f = 826.4 MHz; σ = 0.869 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.76, 9.76, 9.76); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch4132/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.233 mW/g

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.7 V/m; Power Drift = 0.131 dB
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.206 mW/g; SAR(10 g) = 0.161 mW/g
Maximum value of SAR (measured) = 0.234 mW/g



0 dB = 0.234mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/19

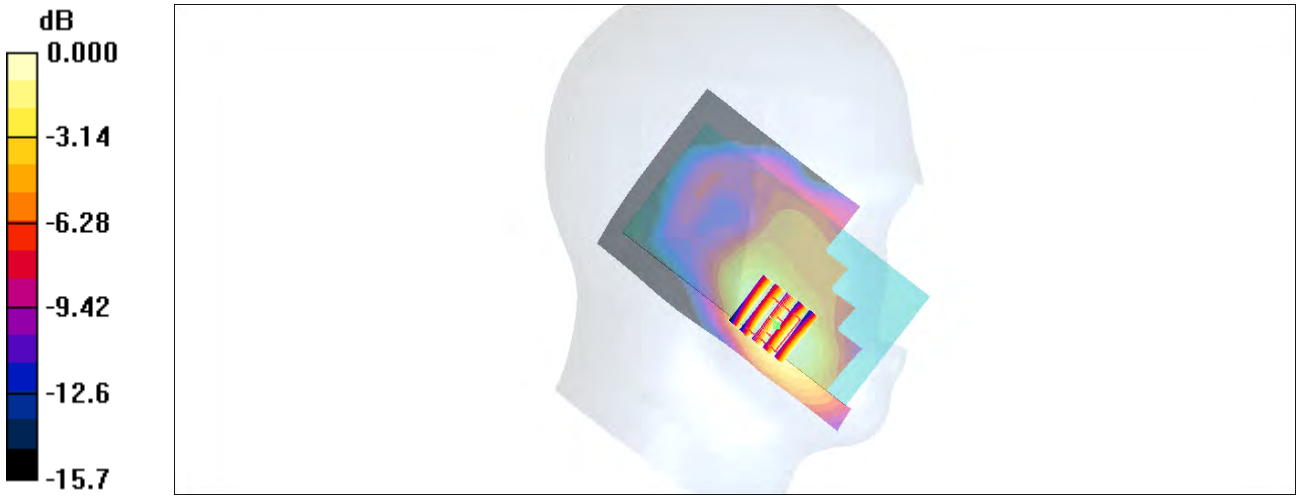
#04_WCDMA IV_RMC 12.2Kbps_Left Cheek_Ch1513

Communication System: WCDMA; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750_140819 Medium parameters used: f = 1753 MHz; σ = 1.4 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(8.82, 8.82, 8.82); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch1513/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.341 mW/g

Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.407 W/kg
SAR(1 g) = 0.278 mW/g; SAR(10 g) = 0.177 mW/g
Maximum value of SAR (measured) = 0.333 mW/g



0 dB = 0.333mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

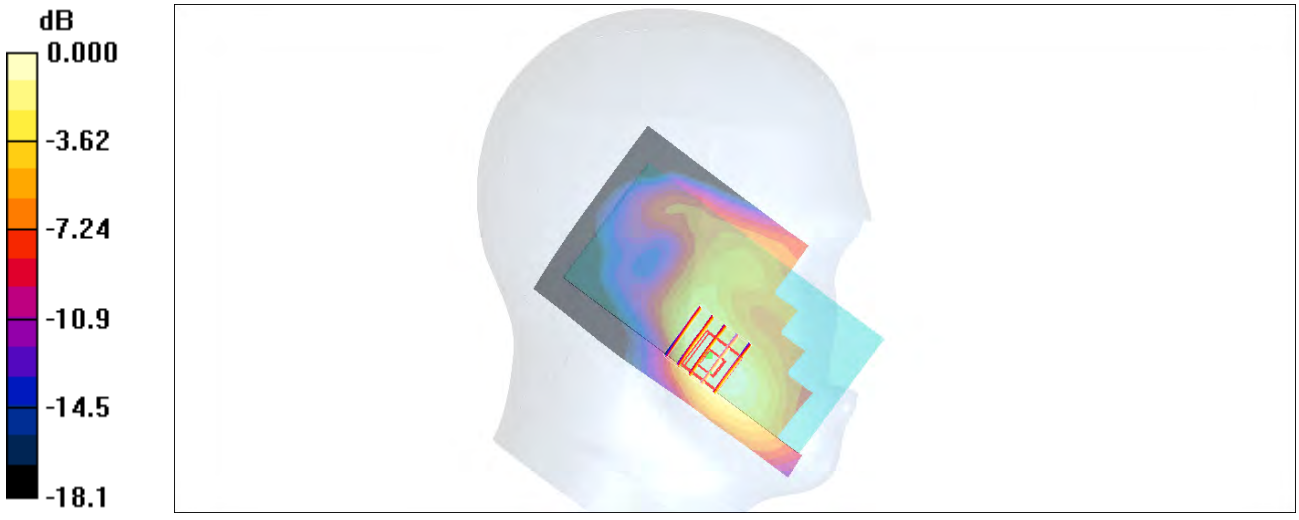
#05_WCDMA II_RMC 12.2Kbps_Left Cheek_Ch9538

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_140925 Medium parameters used: f = 1908 MHz; σ = 1.44 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(8.13, 8.13, 8.13); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch9538/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.322 mW/g

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 0.384 W/kg
SAR(1 g) = 0.247 mW/g; SAR(10 g) = 0.152 mW/g
Maximum value of SAR (measured) = 0.305 mW/g



0 dB = 0.305mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/20

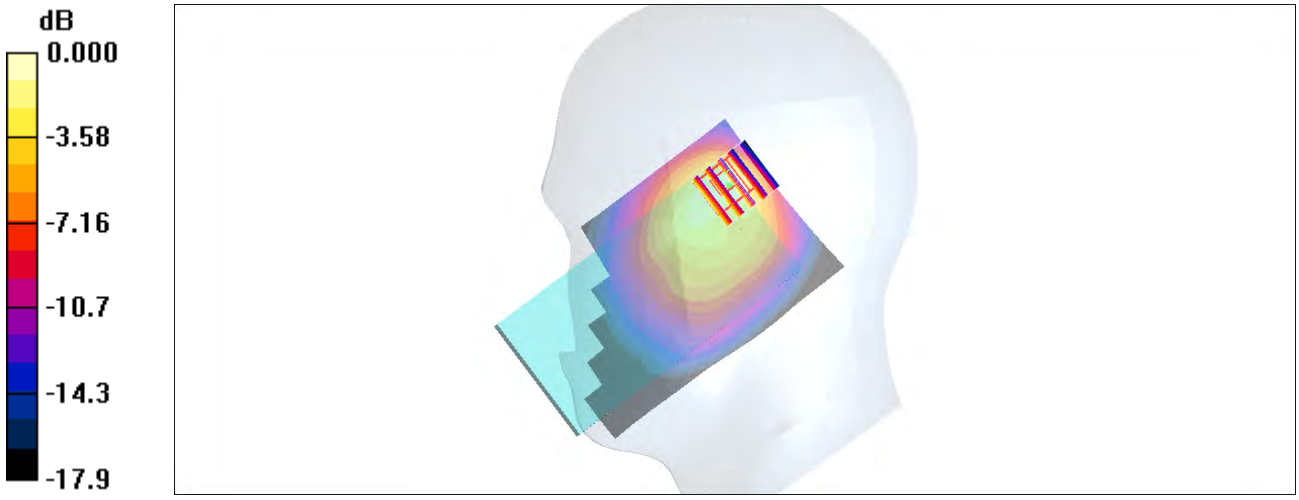
#06_LTE Band 17_10M_QPSK_1RB_0Offset_Right Cheek_Ch23800

Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: HSL_750_140820 Medium parameters used: f = 711 MHz; σ = 0.876 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(10.24, 10.24, 10.24); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch23800/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.860 mW/g

Ch23800/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.5 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.554 mW/g; SAR(10 g) = 0.301 mW/g
Maximum value of SAR (measured) = 0.817 mW/g



0 dB = 0.817mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

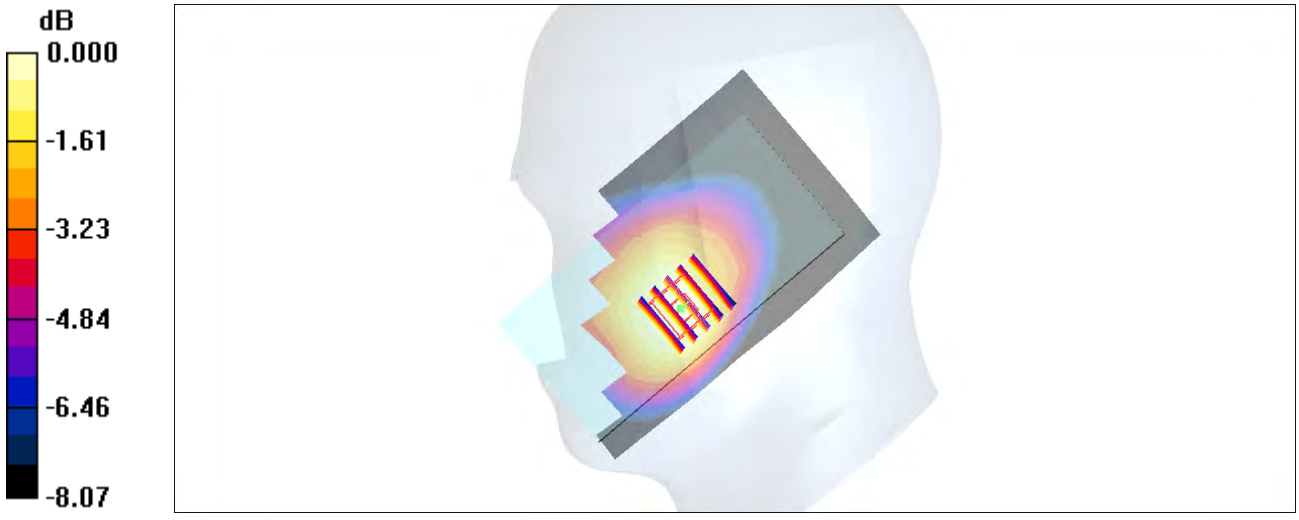
#07_LTE Band 5_10M_QPSK_1RB_0Offset_Right Cheek_Ch20450

Communication System: LTE; Frequency: 829 MHz;Duty Cycle: 1:1
Medium: HSL_850_140930 Medium parameters used: f = 829 MHz; σ = 0.871 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.76, 9.76, 9.76); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20450/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.190 mW/g

Ch20450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.200 W/kg
SAR(1 g) = 0.165 mW/g; SAR(10 g) = 0.128 mW/g
Maximum value of SAR (measured) = 0.185 mW/g



0 dB = 0.185mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/19

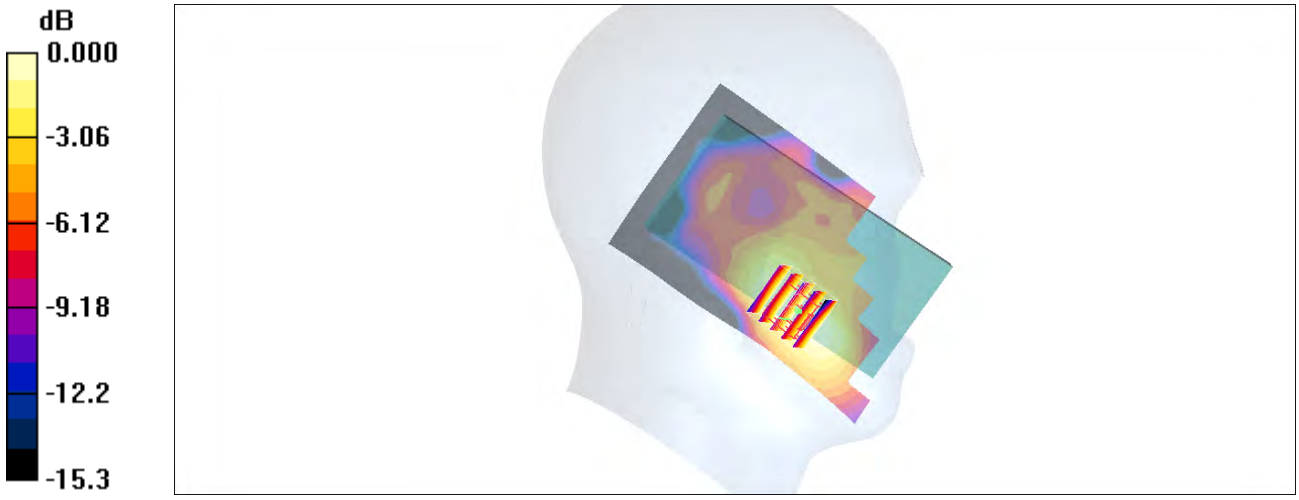
#08_LTE Band 4_20M_QPSK_1RB_0Offset_Left Tilted_Ch20300

Communication System: LTE; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: HSL_1750_140819 Medium parameters used: f = 1745 MHz; σ = 1.39 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3931; ConvF(8.82, 8.82, 8.82); Calibrated: 2013/9/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20300/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.208 mW/g

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.249 W/kg
SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.113 mW/g
Maximum value of SAR (measured) = 0.205 mW/g



0 dB = 0.205mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

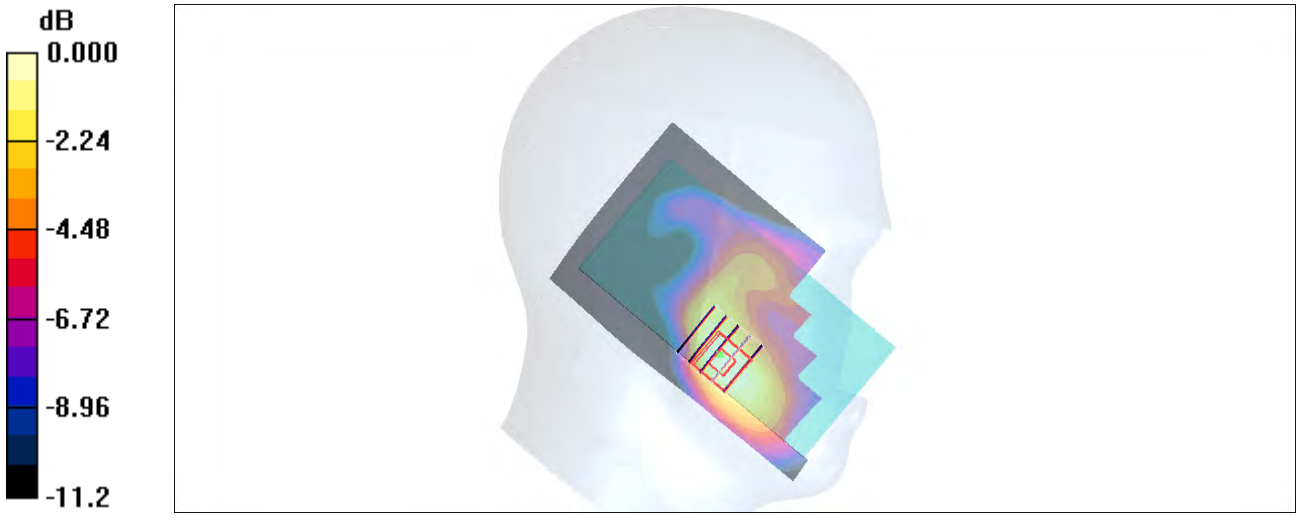
#09_LTE Band 2_20M_QPSK_1RB_0Offset_Left Cheek_Ch19100

Communication System: LTE; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_140925 Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(8.13, 8.13, 8.13); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch19100/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.291 mW/g

Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.3 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.354 W/kg
SAR(1 g) = 0.230 mW/g; SAR(10 g) = 0.143 mW/g
Maximum value of SAR (measured) = 0.286 mW/g



0 dB = 0.286mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

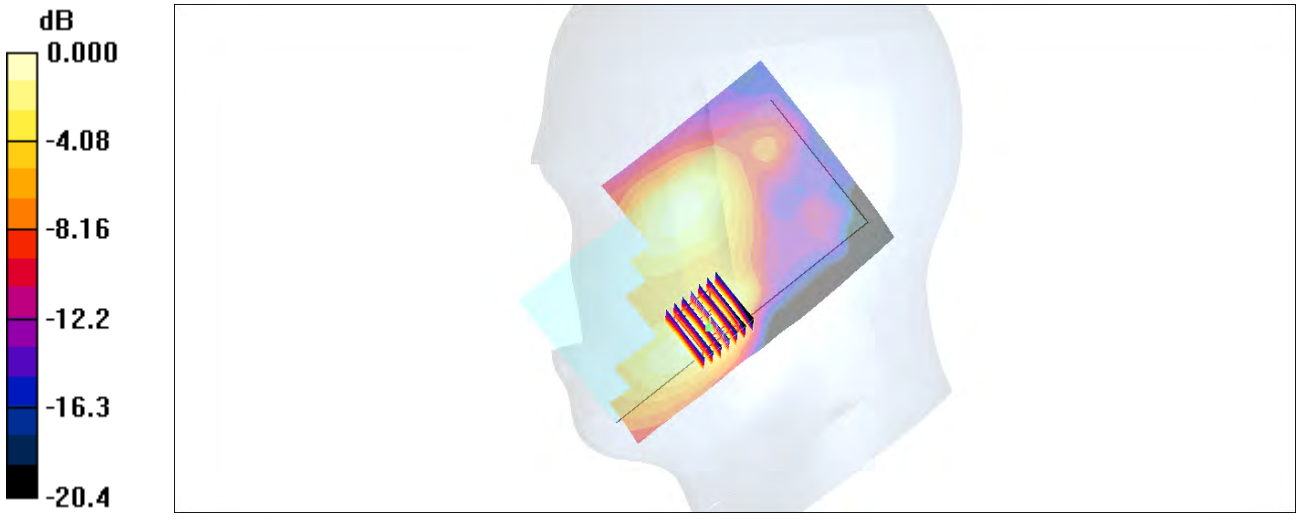
#10_LTE Band 7_20M_QPSK_1RB_0Offset_Right Cheek_Ch20850

Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: HSL_2600_140925 Medium parameters used: f = 2510 MHz; σ = 1.9 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.27, 7.27, 7.27); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Left; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20850/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.148 mW/g

Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.75 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.180 W/kg
SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.138 mW/g



0 dB = 0.138mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/25

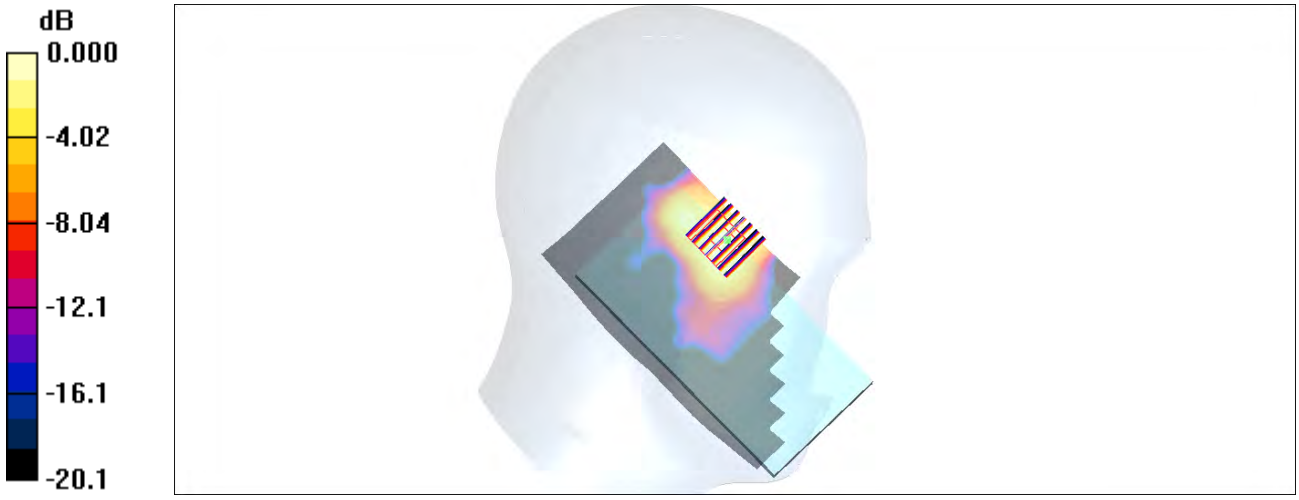
#11_WLAN2.4GHz_802.11b 1Mbps_Left Cheek_Ch6

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1.024
Medium: HSL_2450_140825 Medium parameters used: f = 2437 MHz; σ = 1.83 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: ES3DV3 - SN3270; ConvF(4.53, 4.53, 4.53); Calibrated: 2013/9/24
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch6/Area Scan (81x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.211 mW/g

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = 0.103 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.164 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.210 mW/g



0 dB = 0.210mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

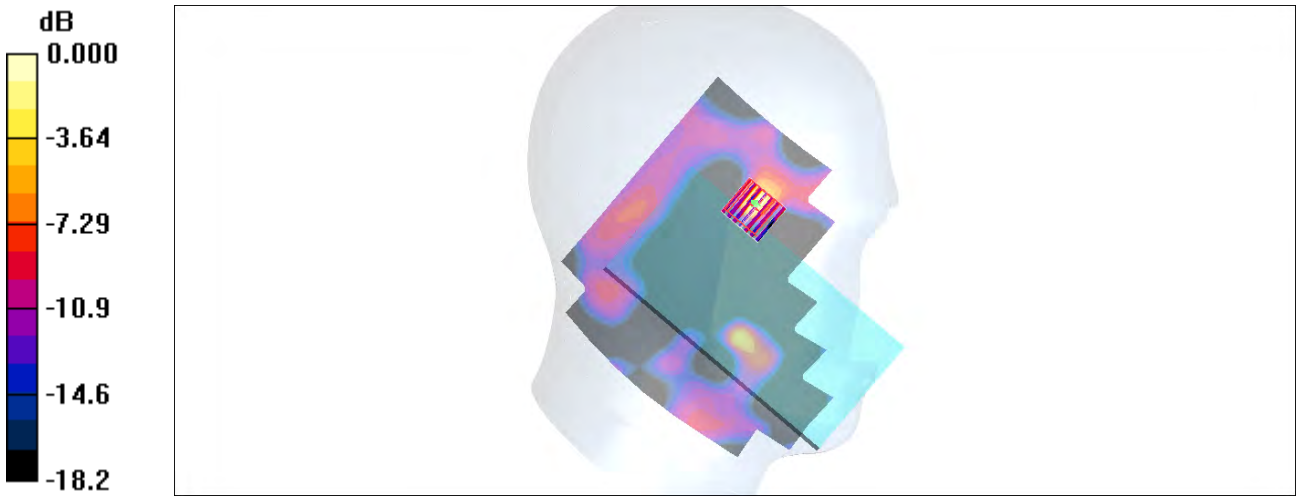
#12_WLAN5GHz_802.11a 6Mbps_Left Cheek_Ch36

Communication System: 802.11a; Frequency: 5180 MHz;Duty Cycle: 1:1.147
Medium: HSL_5G_140831 Medium parameters used: f = 5180 MHz; σ = 4.79 mho/m; ε_r = 35.5; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(5.14, 5.14, 5.14); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch36/Area Scan (161x201x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.128 mW/g

Ch36/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.01 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 0.211 W/kg
SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.024 mW/g
Maximum value of SAR (measured) = 0.143 mW/g



0 dB = 0.143mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

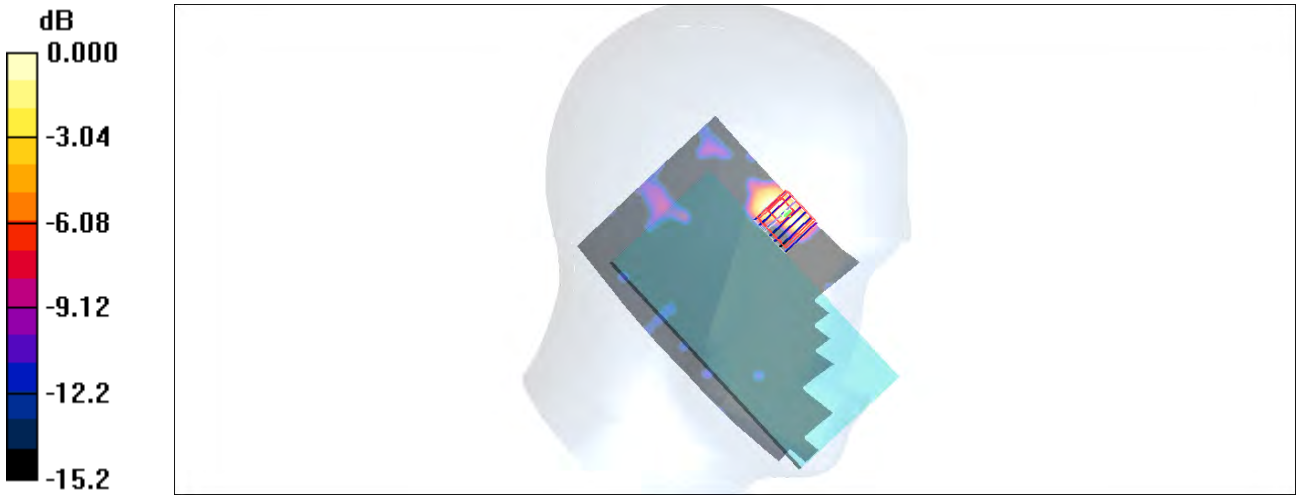
#13_WLAN5GHz_802.11a 6Mbps_Left Cheek_Ch52

Communication System: 802.11a; Frequency: 5260 MHz;Duty Cycle: 1:1.147
Medium: HSL_5G_140831 Medium parameters used: f = 5260 MHz; σ = 4.88 mho/m; ε_r = 35.4; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.86, 4.86, 4.86); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch52/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.151 mW/g

Ch52/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.37 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.019 mW/g
Maximum value of SAR (measured) = 0.130 mW/g



0 dB = 0.130mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

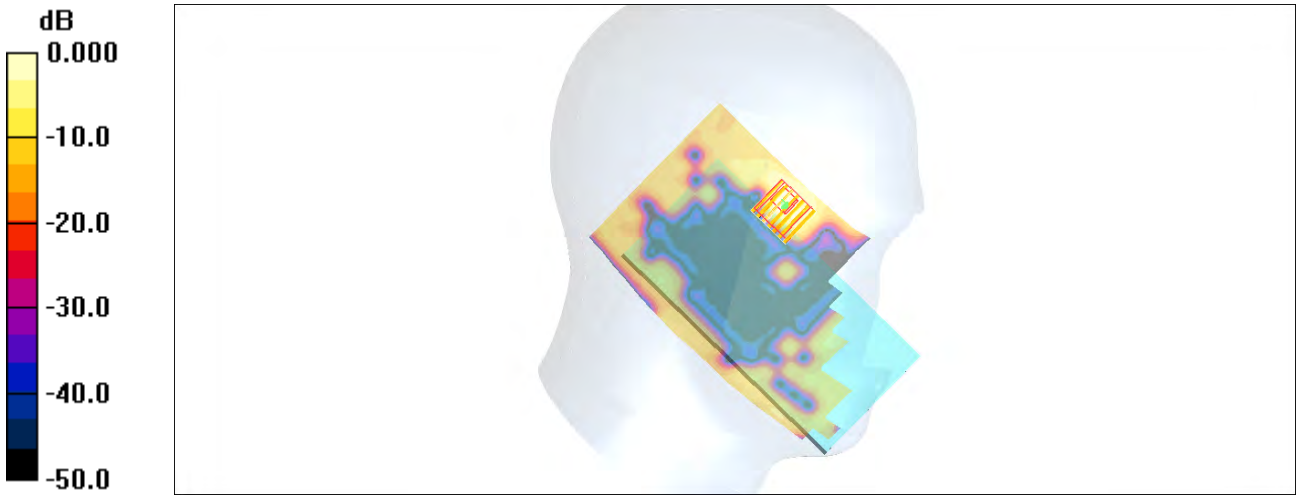
#14_WLAN5GHz_802.11a 6Mbps_Left Cheek_Ch100

Communication System: 802.11a; Frequency: 5500 MHz;Duty Cycle: 1:1.147
Medium: HSL_5G_140831 Medium parameters used: f = 5500 MHz; σ = 5.13 mho/m; ε_r = 35; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.83, 4.83, 4.83); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch100/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.156 mW/g

Ch100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 4.77 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.019 mW/g
Maximum value of SAR (measured) = 0.141 mW/g



0 dB = 0.141mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/31

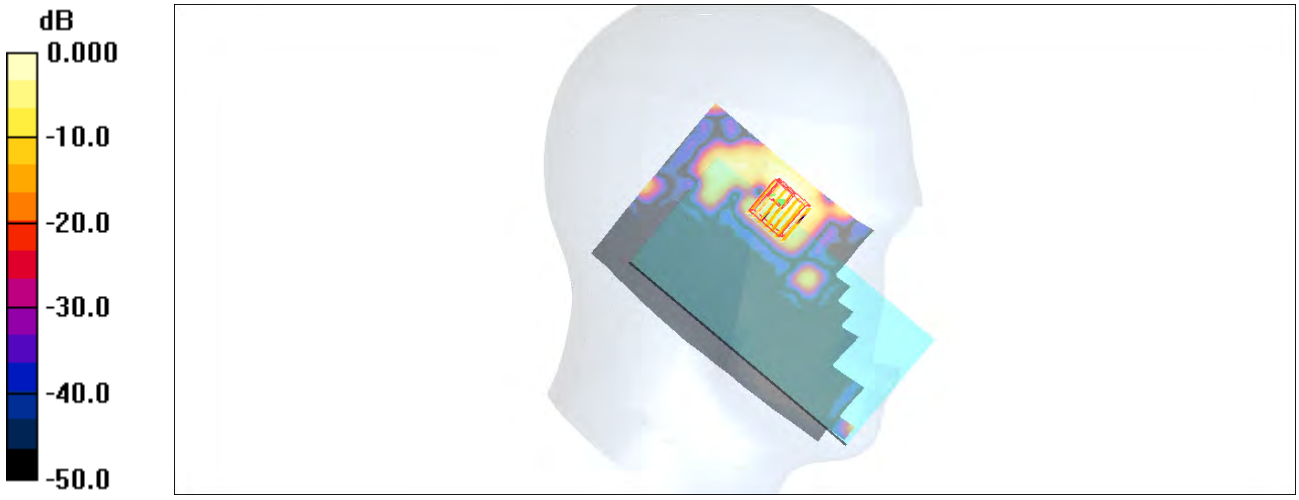
#15_WLAN5GHz_802.11a 6Mbps_Left Cheek_Ch149

Communication System: 802.11a; Frequency: 5745 MHz;Duty Cycle: 1:1.147
Medium: HSL_5G_140831 Medium parameters used: f = 5745 MHz; σ = 5.38 mho/m; ε_r = 34.5; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.61, 4.61, 4.61); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch149/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.155 mW/g

Ch149/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 4.96 V/m; Power Drift = -0.051 dB
Peak SAR (extrapolated) = 0.281 W/kg
SAR(1 g) = 0.073 mW/g; SAR(10 g) = 0.019 mW/g
Maximum value of SAR (measured) = 0.170 mW/g



0 dB = 0.170mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

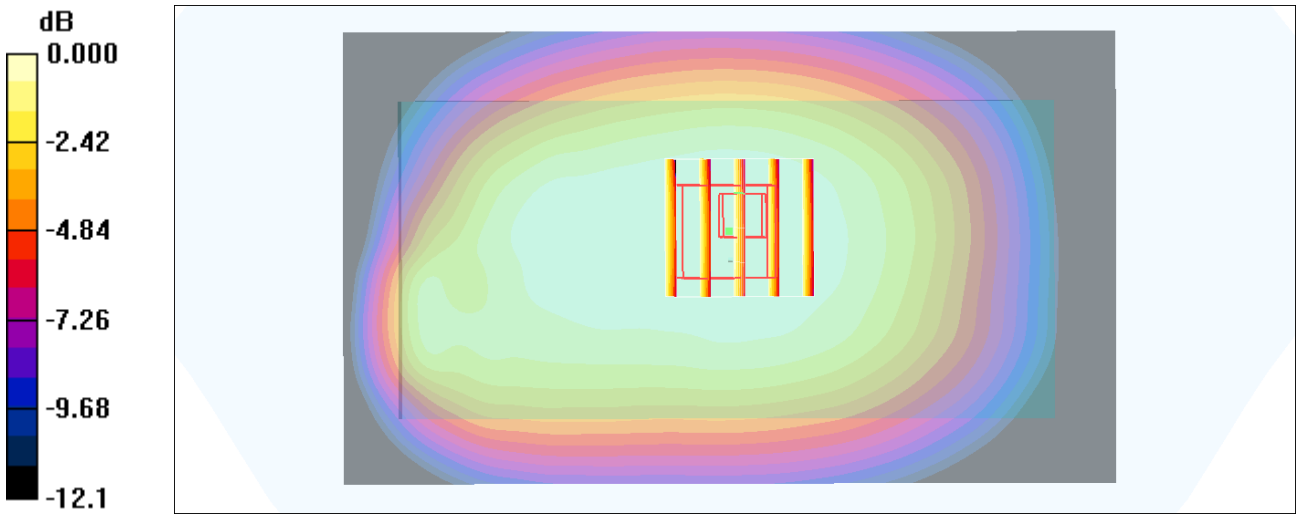
#16_GSM850_GPRS (4 Tx slots)_Back_1cm_Ch128

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium: MSL_850_141001 Medium parameters used: f = 824.2 MHz; σ = 0.974 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.5, 9.5, 9.5); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch128/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.629 mW/g

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.8 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.706 W/kg
SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.434 mW/g
Maximum value of SAR (measured) = 0.634 mW/g



0 dB = 0.634mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

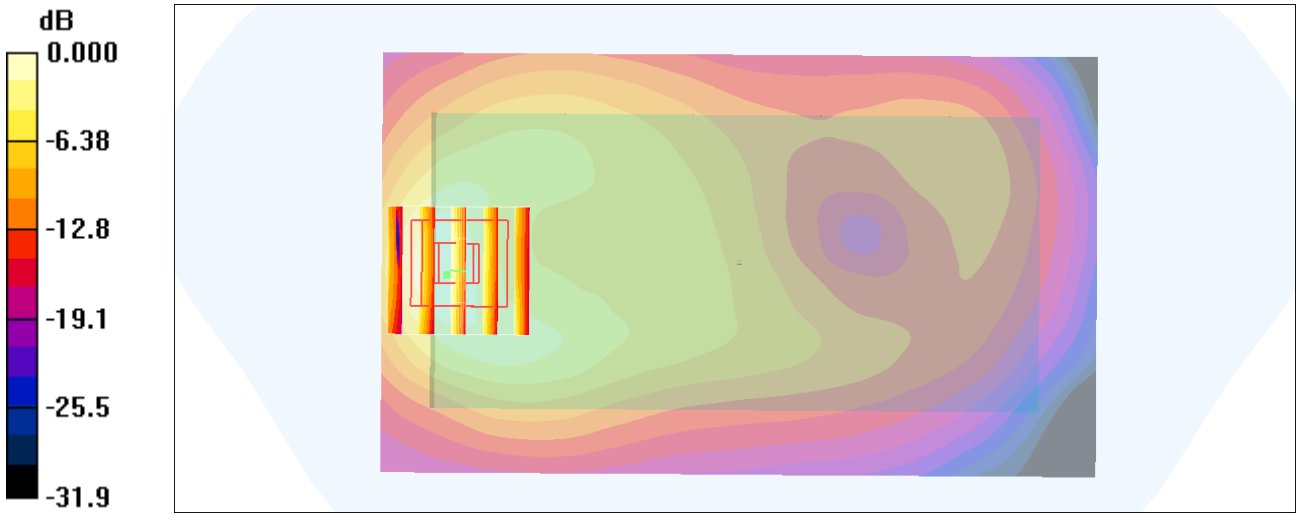
#17_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch810

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: MSL_1900_141001 Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch810/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 mW/g

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.8 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.399 mW/g
Maximum value of SAR (measured) = 1.07 mW/g



0 dB = 1.07mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

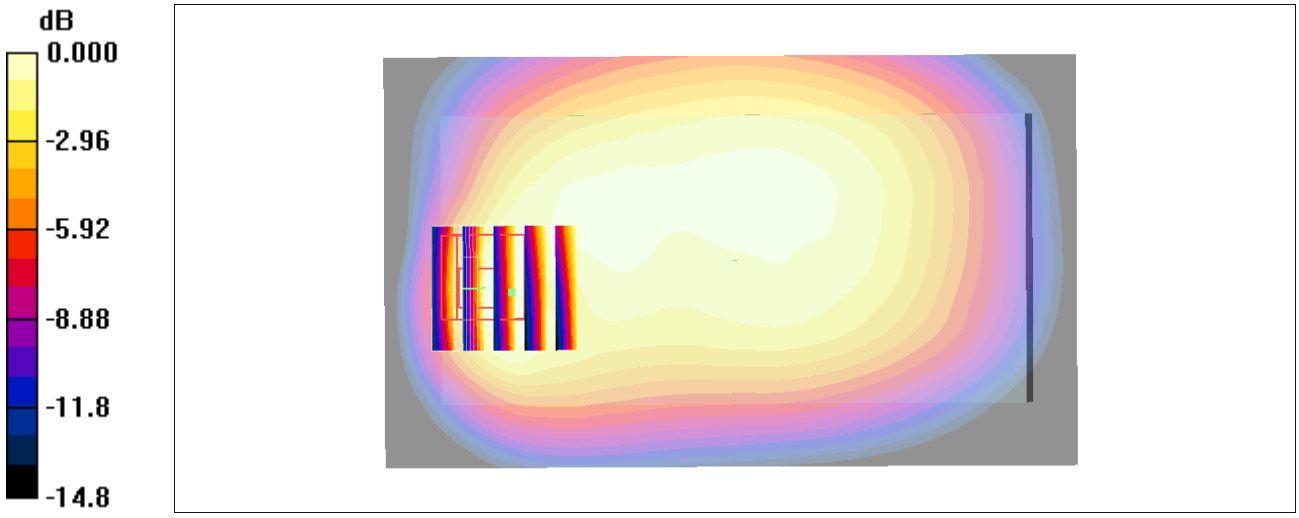
#18_WCDMA V_RMC 12.2Kbps_Back_1cm_Ch4132

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_140924 Medium parameters used: f = 826.4 MHz; σ = 0.955 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.61, 9.61, 9.61); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch4132/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.456 mW/g

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 0.556 W/kg
SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.173 mW/g
Maximum value of SAR (measured) = 0.453 mW/g



0 dB = 0.453mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

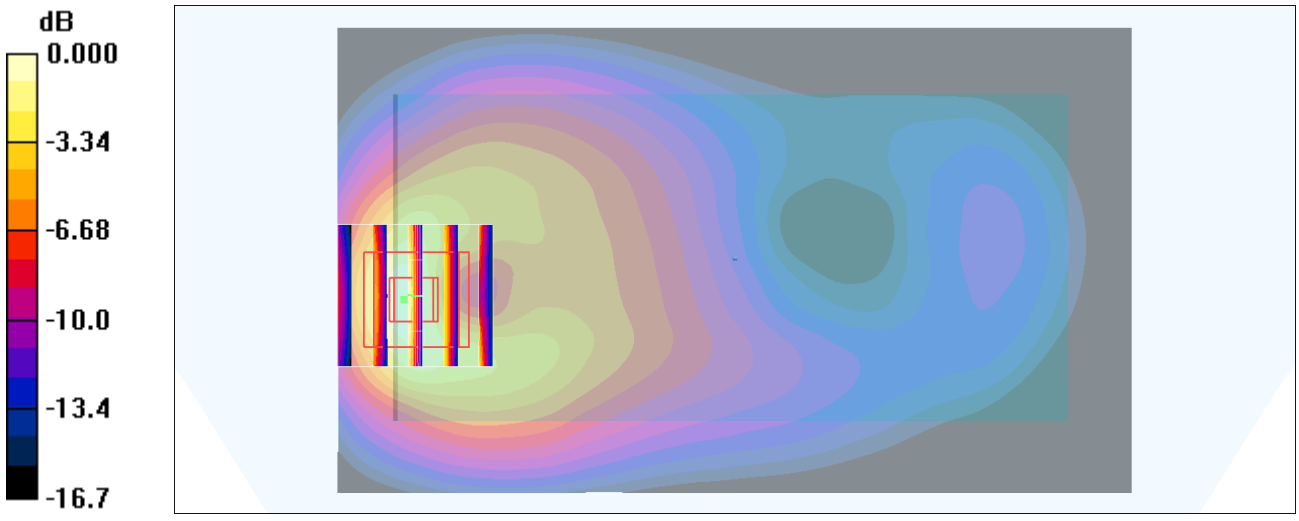
#19_WCDMA IV_RMC 12.2Kbps_Back_1cm_Ch1413

Communication System: WCDMA; Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140925 Medium parameters used: f = 1733 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch1413/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.17 mW/g

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.752 mW/g; SAR(10 g) = 0.449 mW/g
Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

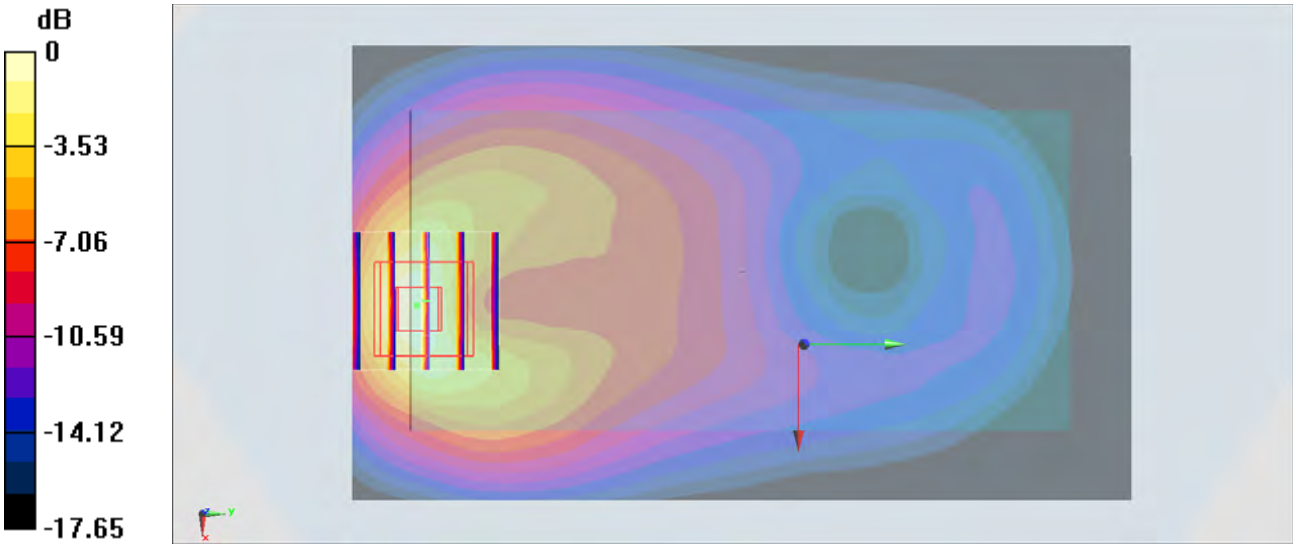
#20_WCDMA II_RMC 12.2Kbps_Back_1cm_Ch9400

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141007 Medium parameters used: f = 1880 MHz; σ = 1.526 S/m; ε_r = 51.686; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Ch9400/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

Configuration/Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.632 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 0.730 W/kg; SAR(10 g) = 0.490 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg = 1.24 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/21

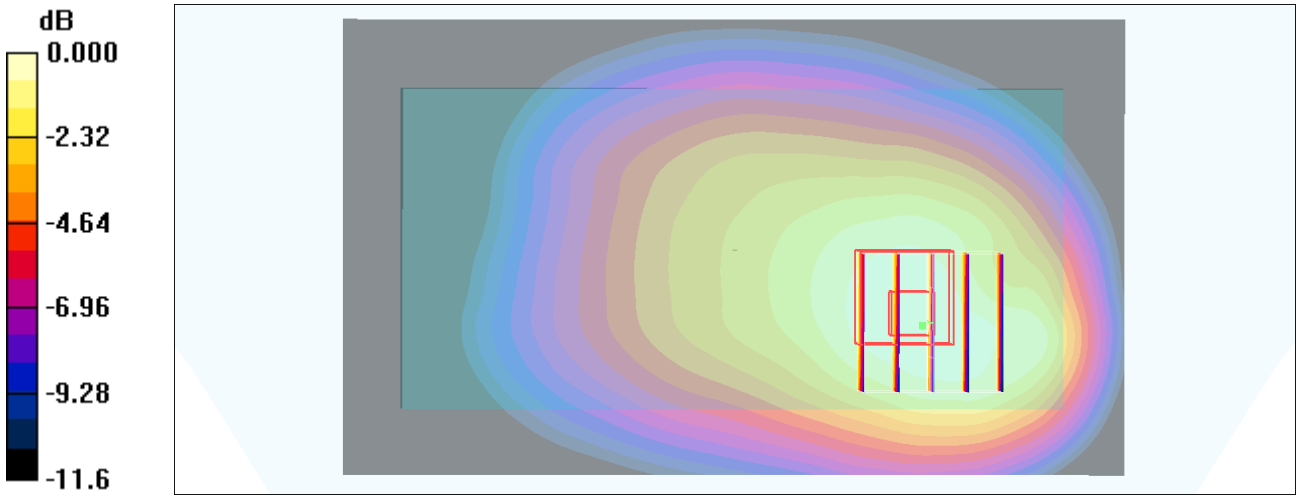
#21_LTE Band 17_10M_QPSK_1RB_0Offset_Back_1cm_Ch23800

Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: MSL_750_140821 Medium parameters used: f = 711 MHz; σ = 0.935 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(9.89, 9.89, 9.89); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch23800/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.422 mW/g

Ch23800/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.4 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 0.498 W/kg
SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.241 mW/g
Maximum value of SAR (measured) = 0.416 mW/g



0 dB = 0.416mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

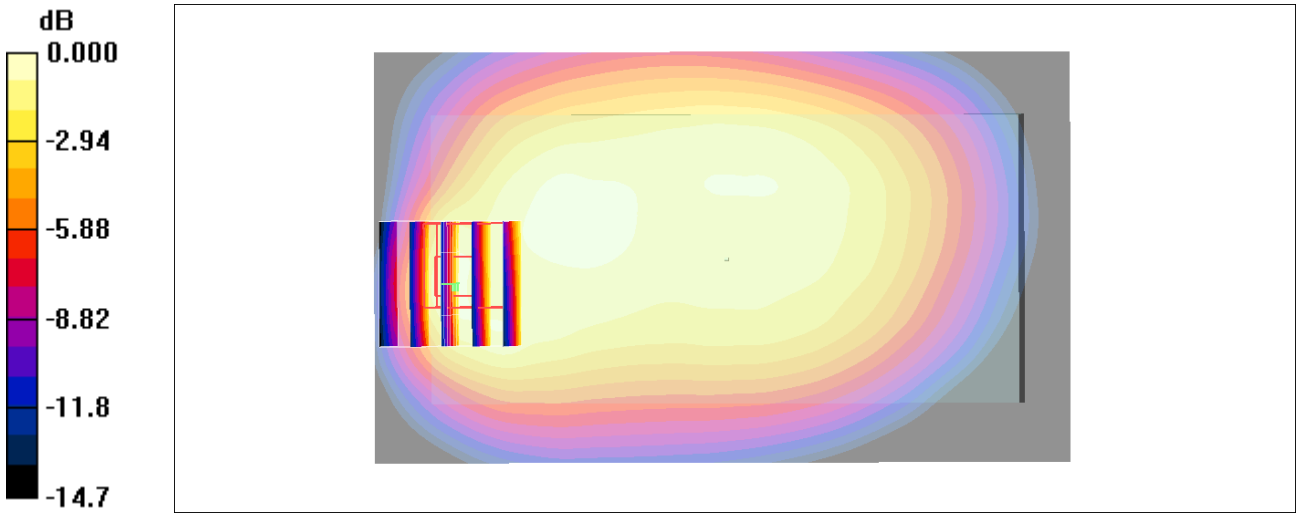
#22_LTE Band 5_10M_QPSK_1RB_0Offset_Back_1cm_Ch20450

Communication System: LTE; Frequency: 829 MHz;Duty Cycle: 1:1
Medium: MSL_850_140924 Medium parameters used: f = 829 MHz; σ = 0.958 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.61, 9.61, 9.61); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20450/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.326 mW/g

Ch20450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.8 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.444 W/kg
SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.144 mW/g
Maximum value of SAR (measured) = 0.356 mW/g



0 dB = 0.356mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

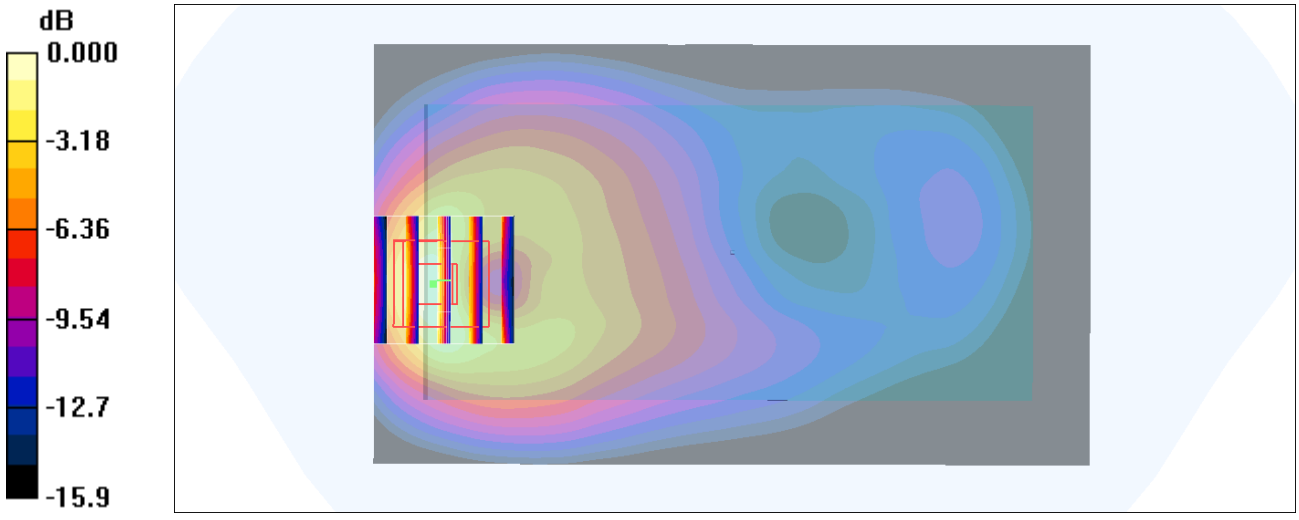
#23_LTE Band 4_20M_QPSK_1RB_0Offset_Back_1cm_Ch20300

Communication System: LTE; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140925 Medium parameters used: f = 1745 MHz; σ = 1.52 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20300/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.887 mW/g

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.6 V/m; Power Drift = 0.052 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.333 mW/g
Maximum value of SAR (measured) = 0.889 mW/g



0 dB = 0.889mW/g

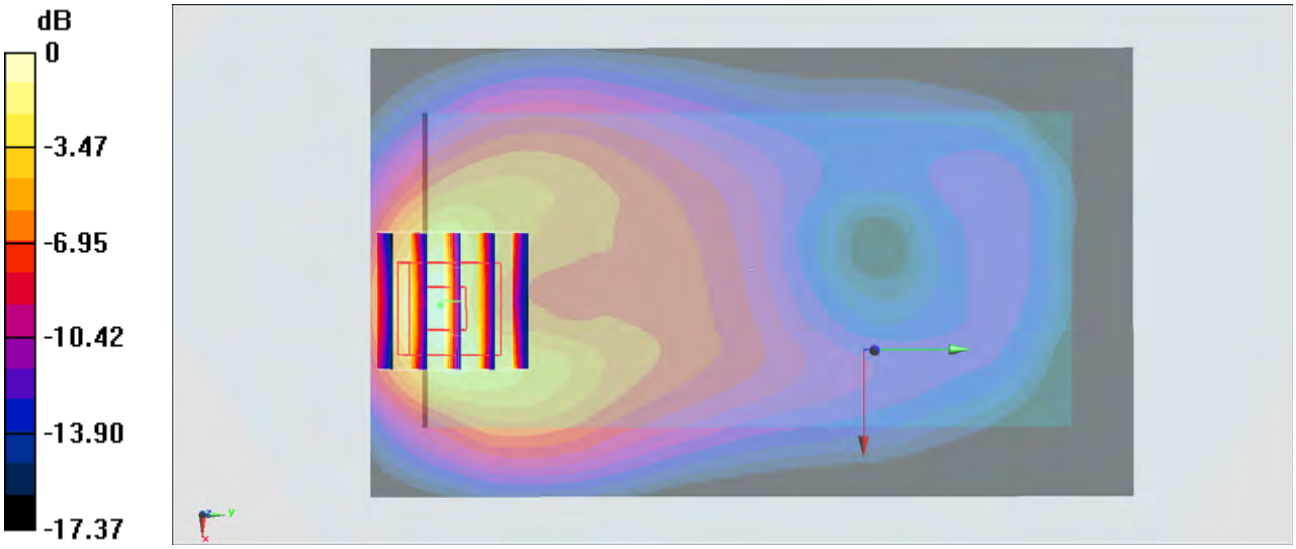
#24_LTE Band 2_20M_QPSK_1RB_0Offset_Back_1cm_Ch19100

Communication System: LTE; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141007 Medium parameters used: f = 1900 MHz; σ = 1.544 S/m; ε_r = 51.591; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Ch19100/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.973 W/kg

Configuration/Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.112 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.667 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.937 W/kg



0 dB = 0.937 W/kg = -0.28 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

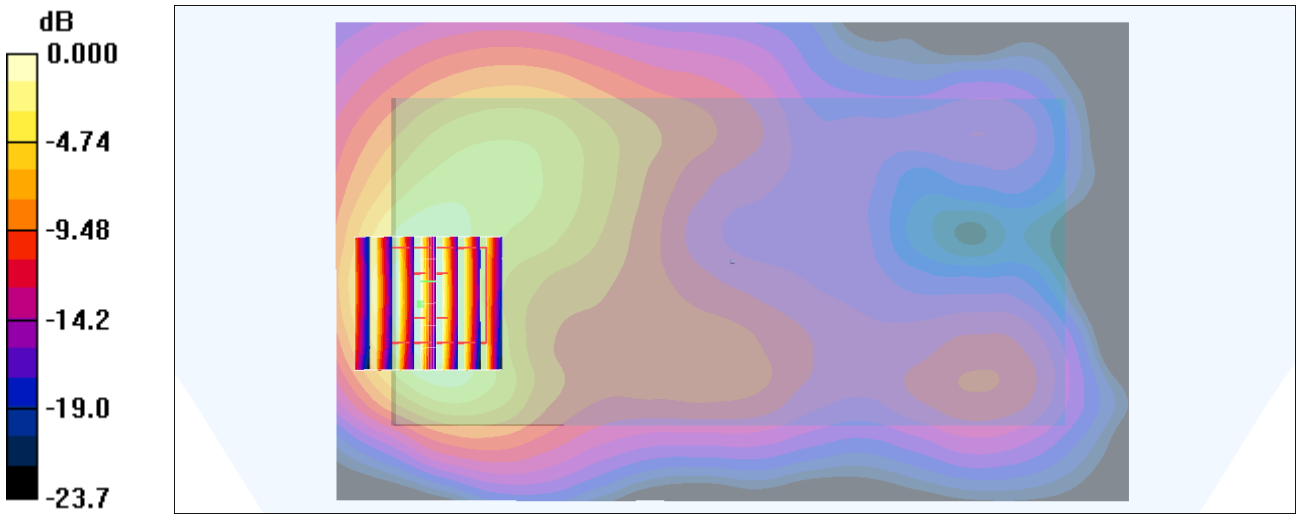
#25_LTE Band 7_20M_QPSK_1RB_0Offset_Back_1cm_Ch20850

Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: MSL_2600_140930 Medium parameters used: f = 2510 MHz; σ = 2.07 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(6.94, 6.94, 6.94); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20850/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.876 mW/g

Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.576 mW/g; SAR(10 g) = 0.276 mW/g
Maximum value of SAR (measured) = 0.835 mW/g



0 dB = 0.835mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/26

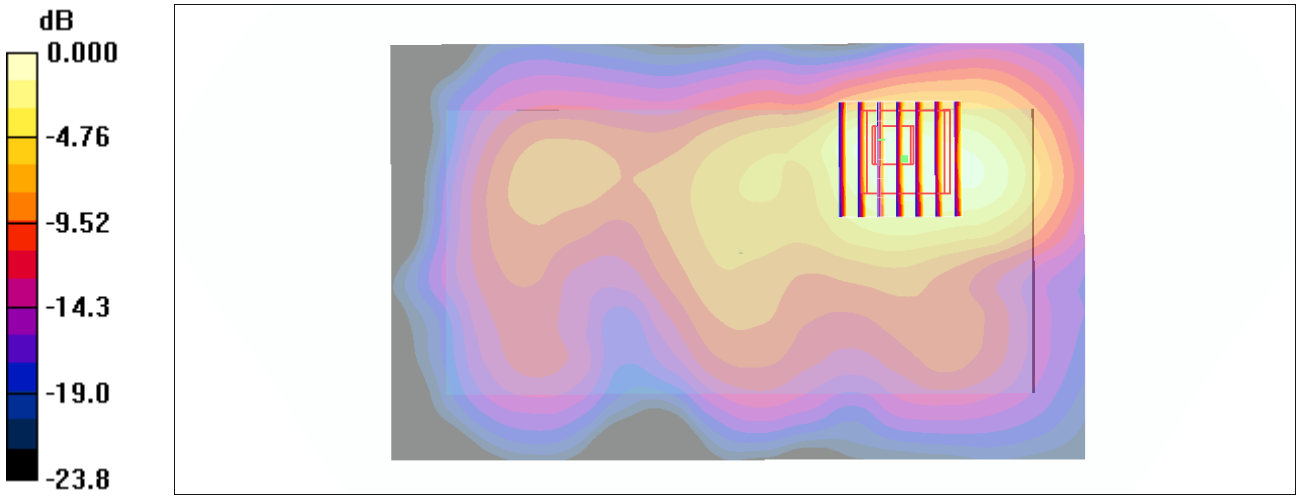
#26_WLAN2.4GHz_802.11b 1Mbps_Back_1cm_Ch6

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1.024
Medium: MSL_2450_140826 Medium parameters used: f = 2437 MHz; σ = 1.95 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: ES3DV3 - SN3270; ConvF(4.28, 4.28, 4.28); Calibrated: 2013/9/24
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch6/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.357 mW/g

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.267 mW/g; SAR(10 g) = 0.136 mW/g
Maximum value of SAR (measured) = 0.344 mW/g



0 dB = 0.344mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

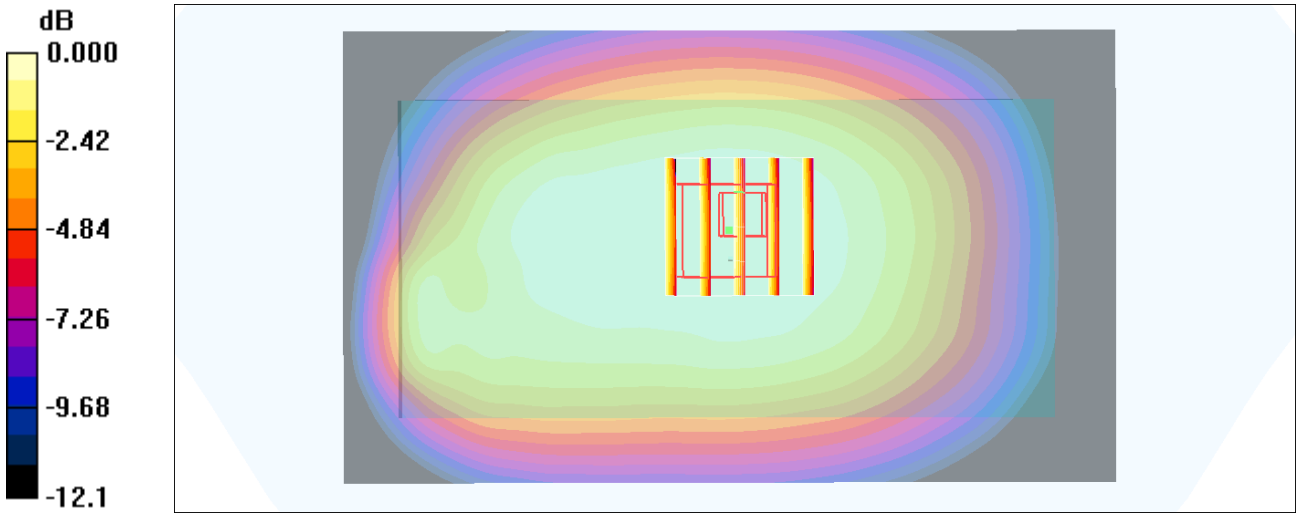
#27_GSM850_GPRS (4 Tx slots)_Back_1cm_Ch128

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium: MSL_850_141001 Medium parameters used: f = 824.2 MHz; σ = 0.974 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.5, 9.5, 9.5); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch128/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.629 mW/g

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.8 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.706 W/kg
SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.434 mW/g
Maximum value of SAR (measured) = 0.634 mW/g



0 dB = 0.634mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/10/1

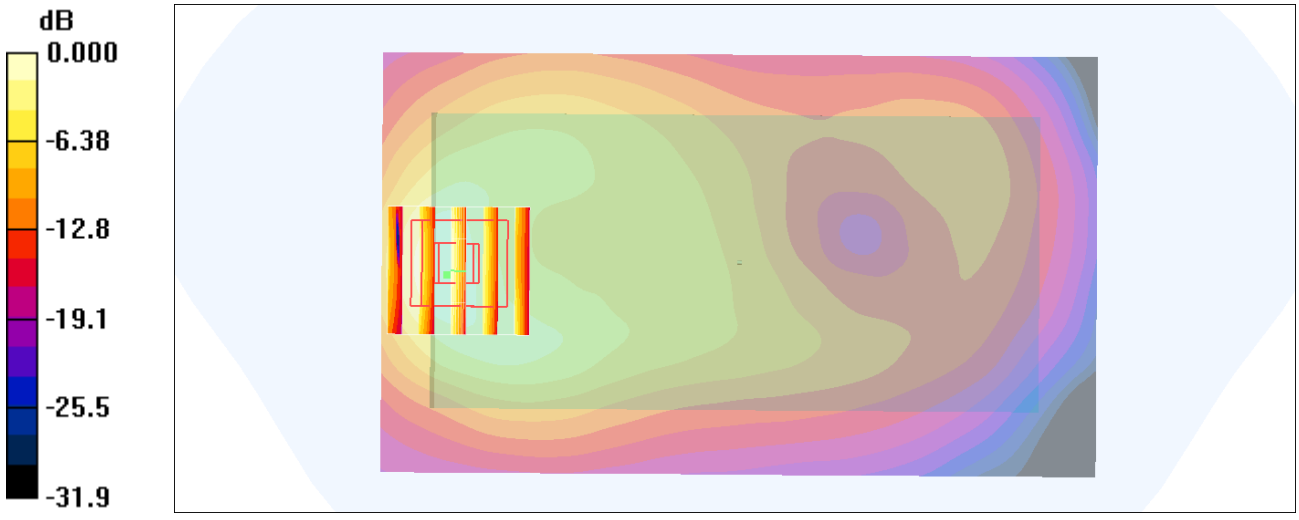
#28_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch810

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: MSL_1900_141001 Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch810/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 mW/g

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.8 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.399 mW/g
Maximum value of SAR (measured) = 1.07 mW/g



0 dB = 1.07mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

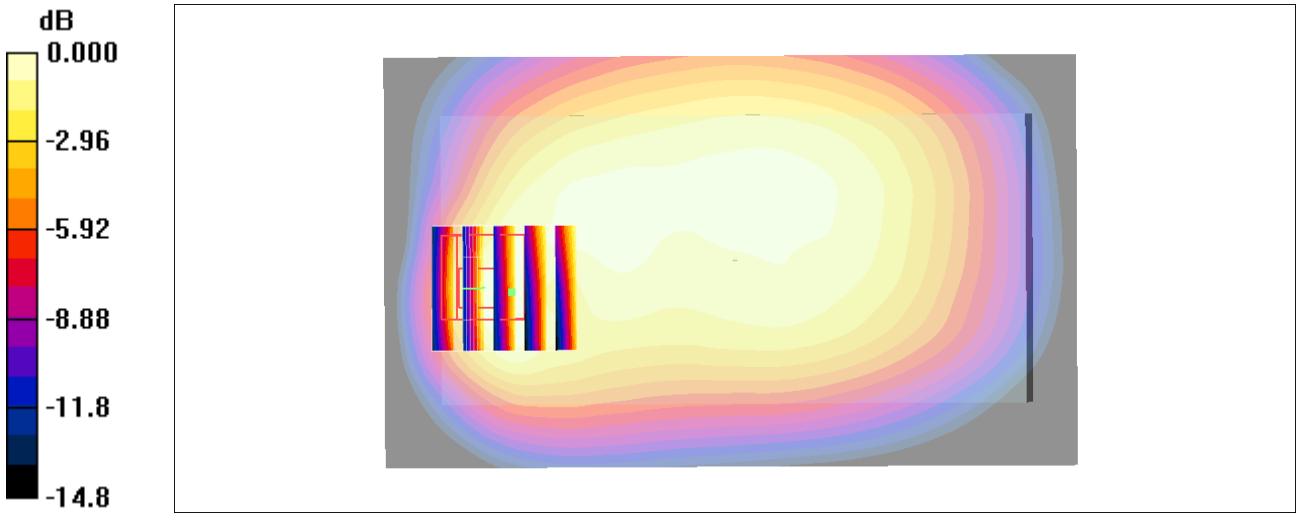
#29_WCDMA V_RMC 12.2Kbps_Back_1cm_Ch4132

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_140924 Medium parameters used: f = 826.4 MHz; σ = 0.955 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.61, 9.61, 9.61); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch4132/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.456 mW/g

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 0.556 W/kg
SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.173 mW/g
Maximum value of SAR (measured) = 0.453 mW/g



0 dB = 0.453mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

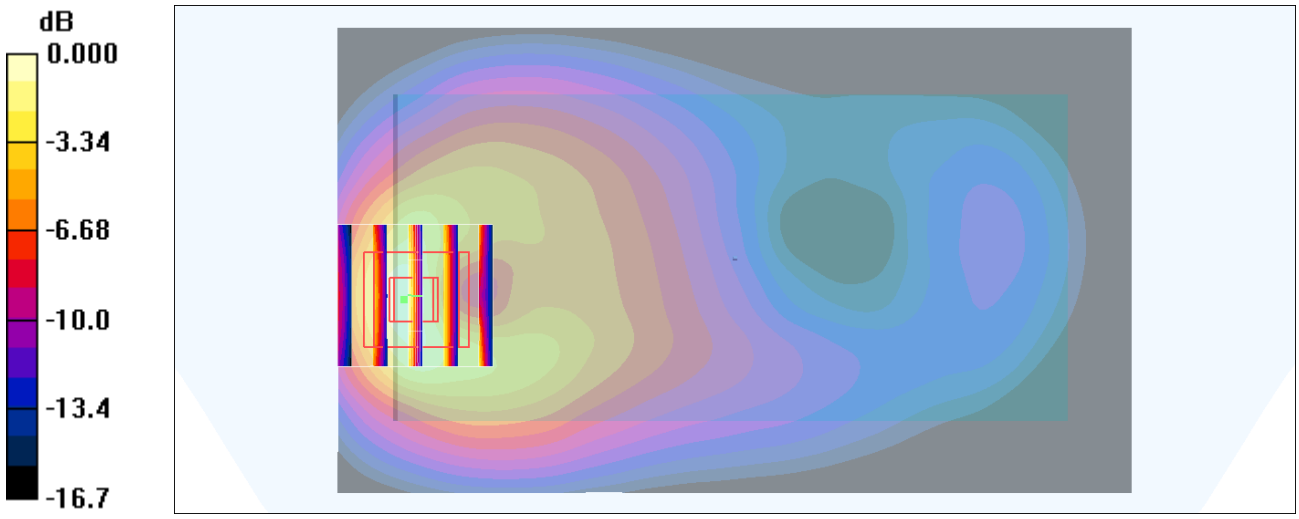
#30_WCDMA IV_RMC 12.2Kbps_Back_1cm_Ch1413

Communication System: WCDMA; Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140925 Medium parameters used: f = 1733 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch1413/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.17 mW/g

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.752 mW/g; SAR(10 g) = 0.449 mW/g
Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

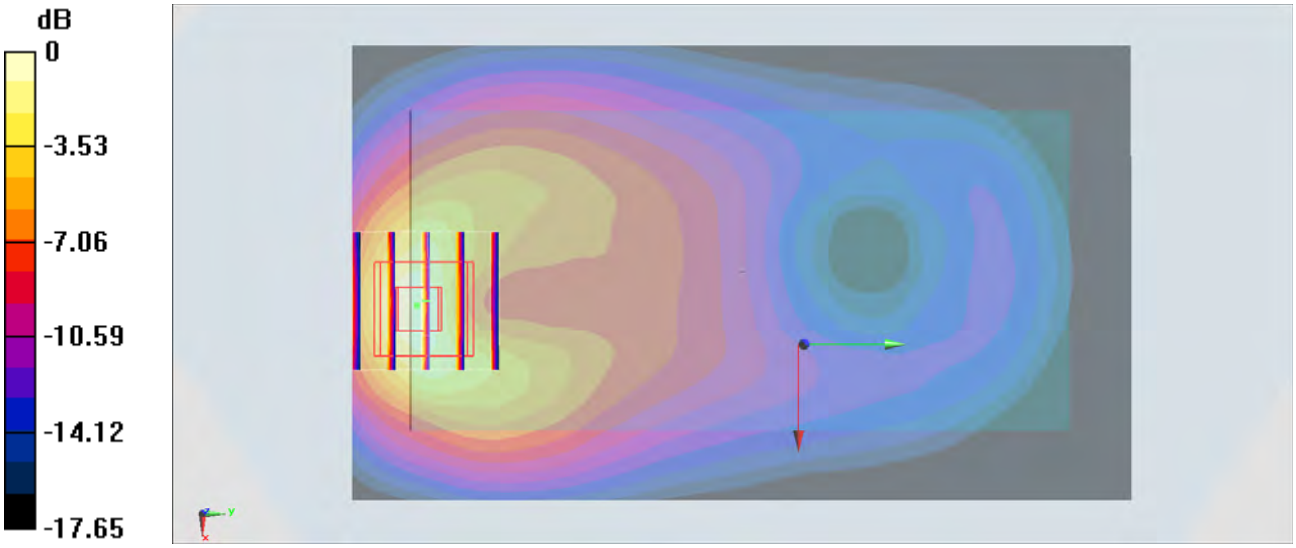
#31_WCDMA II_RMC 12.2Kbps_Back_1cm_Ch9400

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141007 Medium parameters used: f = 1880 MHz; σ = 1.526 S/m; ε_r = 51.686; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Ch9400/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

Configuration/Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.632 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 0.730 W/kg; SAR(10 g) = 0.490 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg = 1.24 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/21

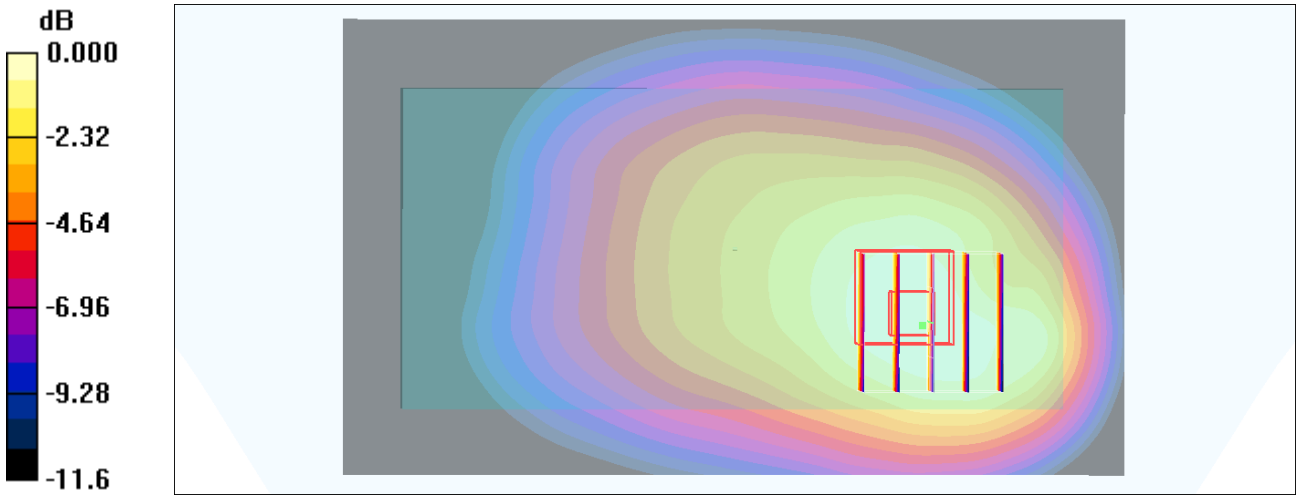
#32_LTE Band 17_10M_QPSK_1RB_0Offset_Back_1cm_Ch23800

Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: MSL_750_140821 Medium parameters used: f = 711 MHz; σ = 0.935 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(9.89, 9.89, 9.89); Calibrated: 2013/11/12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1399; Calibrated: 2013/11/7
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch23800/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.422 mW/g

Ch23800/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.4 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 0.498 W/kg
SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.241 mW/g
Maximum value of SAR (measured) = 0.416 mW/g



0 dB = 0.416mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/24

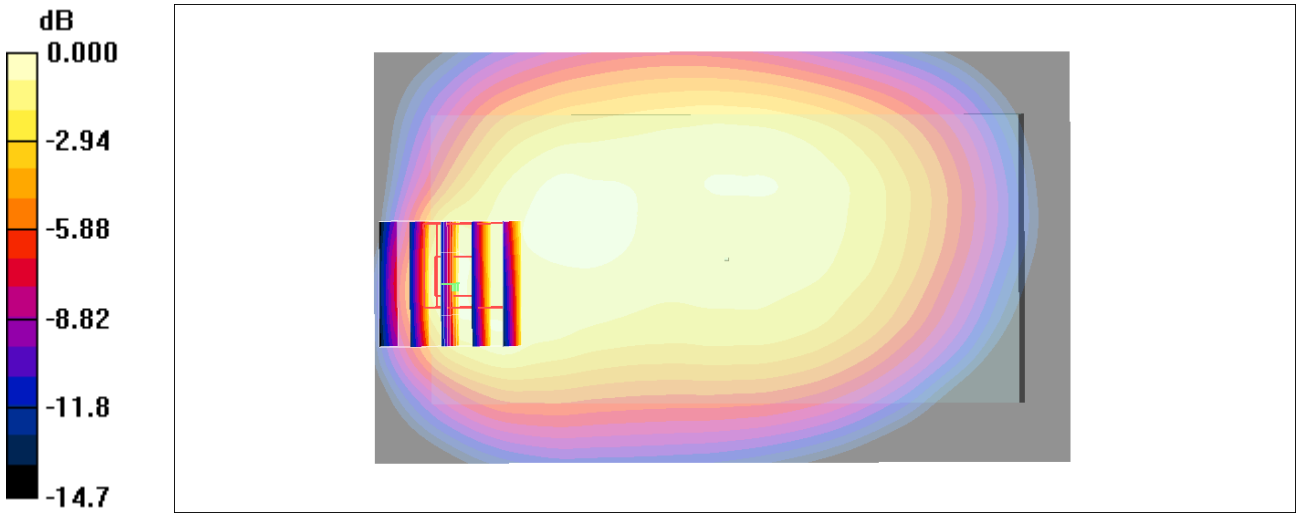
#33_LTE Band 5_10M_QPSK_1RB_0Offset_Back_1cm_Ch20450

Communication System: LTE; Frequency: 829 MHz;Duty Cycle: 1:1
Medium: MSL_850_140924 Medium parameters used: f = 829 MHz; σ = 0.958 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(9.61, 9.61, 9.61); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20450/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.326 mW/g

Ch20450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.8 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.444 W/kg
SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.144 mW/g
Maximum value of SAR (measured) = 0.356 mW/g



0 dB = 0.356mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/25

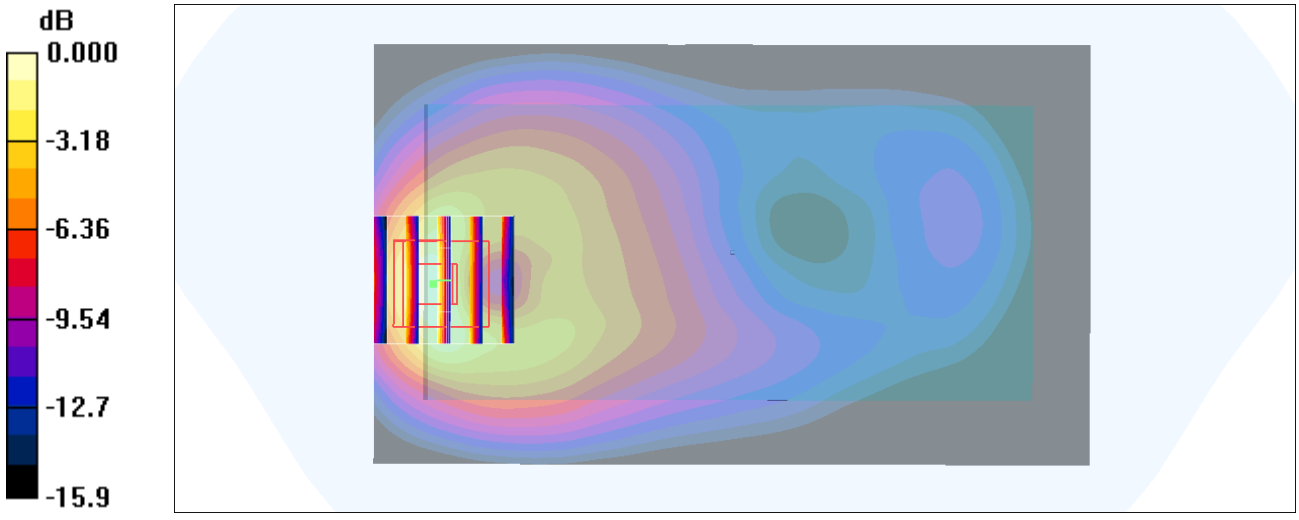
#34_LTE Band 4_20M_QPSK_1RB_0Offset_Back_1cm_Ch20300

Communication System: LTE; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: MSL_1750_140925 Medium parameters used: f = 1745 MHz; σ = 1.52 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2013/11/4
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2013/11/5
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20300/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.887 mW/g

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.6 V/m; Power Drift = 0.052 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.333 mW/g
Maximum value of SAR (measured) = 0.889 mW/g



0 dB = 0.889mW/g

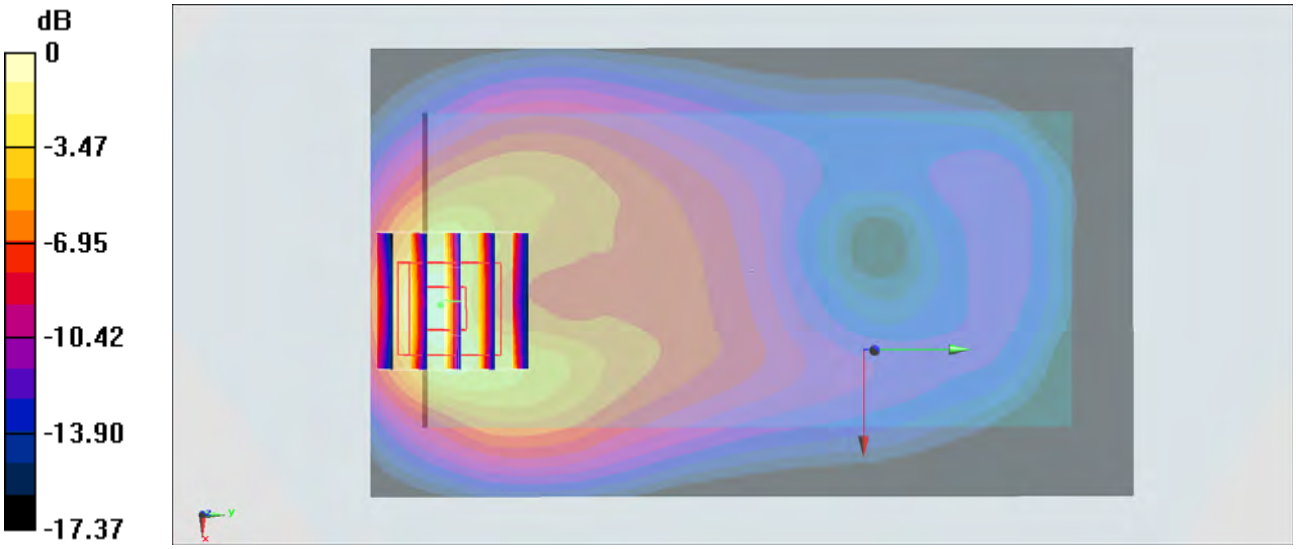
#35_LTE Band 2_20M_QPSK_1RB_0Offset_Back_1cm_Ch19100

Communication System: LTE; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_141007 Medium parameters used: f = 1900 MHz; σ = 1.544 S/m; ε_r = 51.591; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration
- Probe: EX3DV4 - SN3873; ConvF(7.44, 7.44, 7.44); Calibrated: 2014/8/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM LEFT; Type: QD000P40CD; Serial: TP:1718
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Configuration/Ch19100/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.973 W/kg

Configuration/Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.112 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.667 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.937 W/kg



0 dB = 0.937 W/kg = -0.28 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/9/30

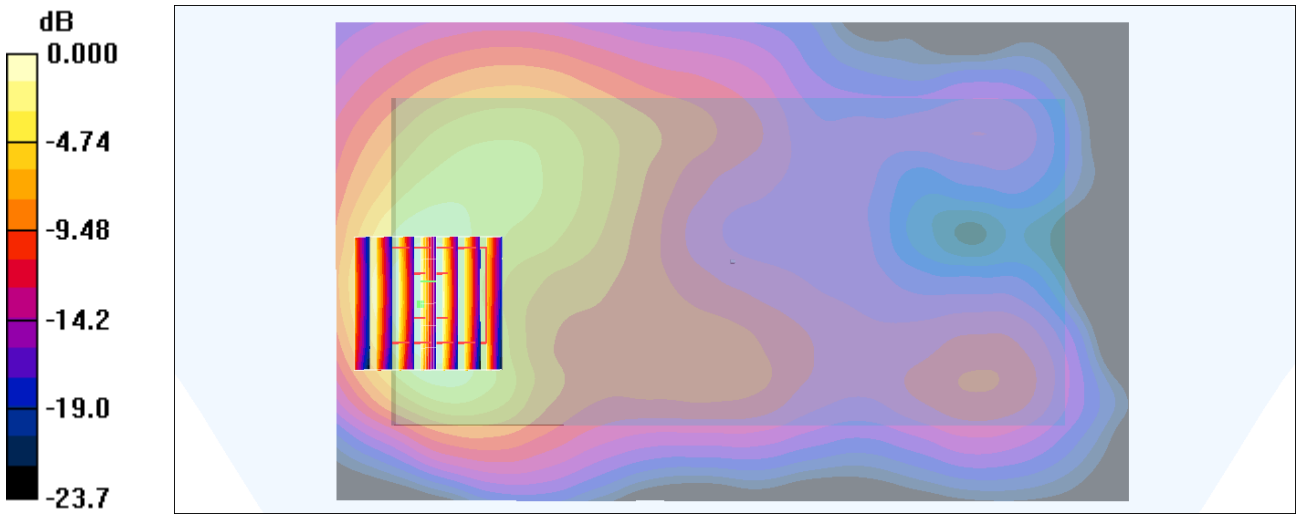
#36_LTE Band 7_20M_QPSK_1RB_0Offset_Back_1cm_Ch20850

Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: MSL_2600_140930 Medium parameters used: f = 2510 MHz; σ = 2.07 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(6.94, 6.94, 6.94); Calibrated: 2014/8/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn360; Calibrated: 2014/2/17
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch20850/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.876 mW/g

Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.576 mW/g; SAR(10 g) = 0.276 mW/g
Maximum value of SAR (measured) = 0.835 mW/g



0 dB = 0.835mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/26

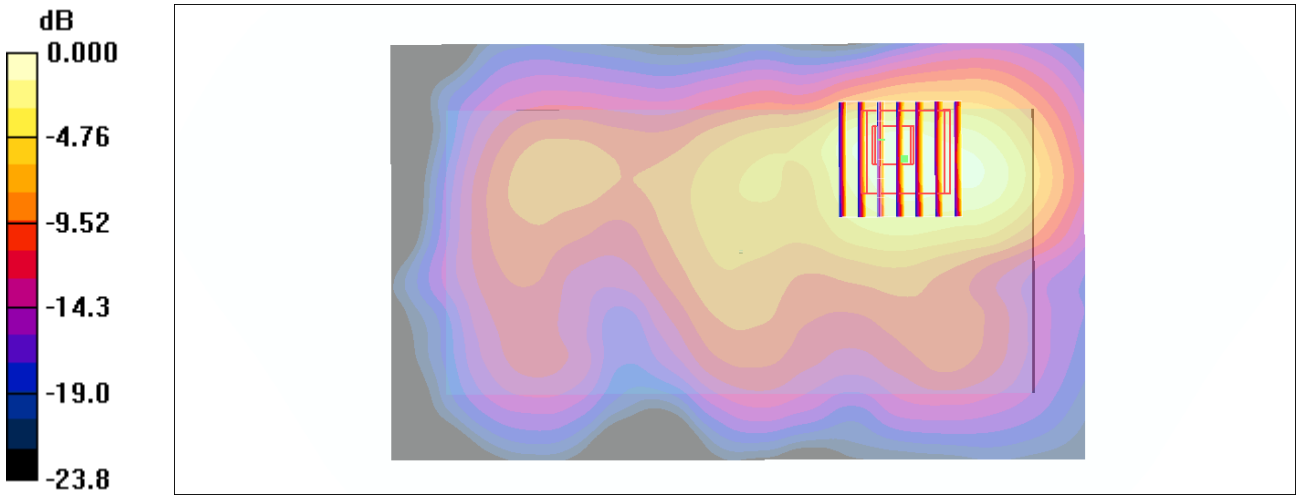
#37_WLAN2.4GHz_802.11b 1Mbps_Back_1cm_Ch6

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1.024
Medium: MSL_2450_140826 Medium parameters used: f = 2437 MHz; σ = 1.95 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.3 ℃

DASY4 Configuration:
- Probe: ES3DV3 - SN3270; ConvF(4.28, 4.28, 4.28); Calibrated: 2013/9/24
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2014/7/23
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch6/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.357 mW/g

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.267 mW/g; SAR(10 g) = 0.136 mW/g
Maximum value of SAR (measured) = 0.344 mW/g



0 dB = 0.344mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

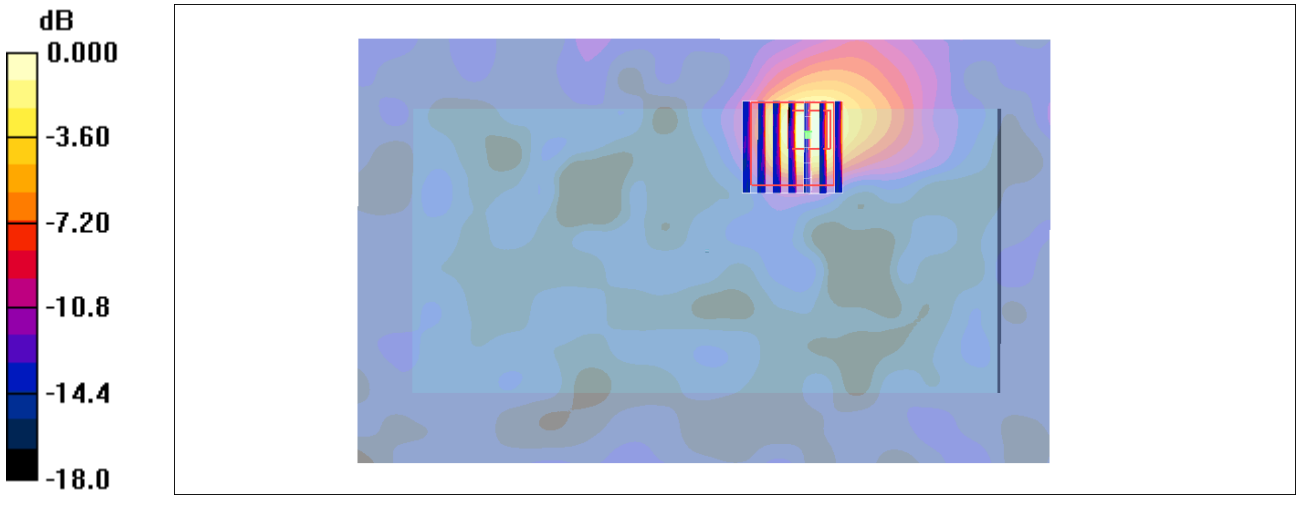
#38_WLAN5GHz_802.11a 6Mbps_Back_1cm_Ch36

Communication System: 802.11a; Frequency: 5180 MHz;Duty Cycle: 1:1.147
Medium: MSL_5G_140830 Medium parameters used : f = 5180 MHz; σ = 5.36 mho/m; ε_r = 47.3; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.64, 4.64, 4.64); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch36/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.333 mW/g

Ch36/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 8.75 V/m; Power Drift = 0.147 dB
Peak SAR (extrapolated) = 0.531 W/kg
SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.334 mW/g



0 dB = 0.334mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

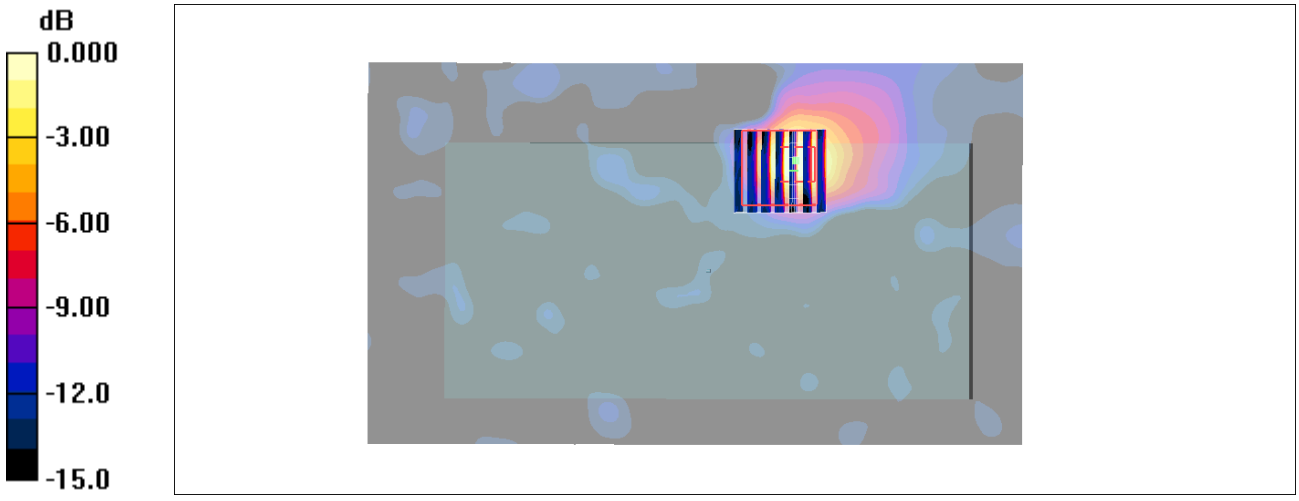
#39_WLAN5GHz_802.11a 6Mbps_Back_1cm_Ch52

Communication System: 802.11a; Frequency: 5260 MHz;Duty Cycle: 1:1.147
Medium: MSL_5G_140830 Medium parameters used : f = 5260 MHz; σ = 5.46 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.36, 4.36, 4.36); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch52/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.315 mW/g

Ch52/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 7.95 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.123 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.282 mW/g



0 dB = 0.282mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

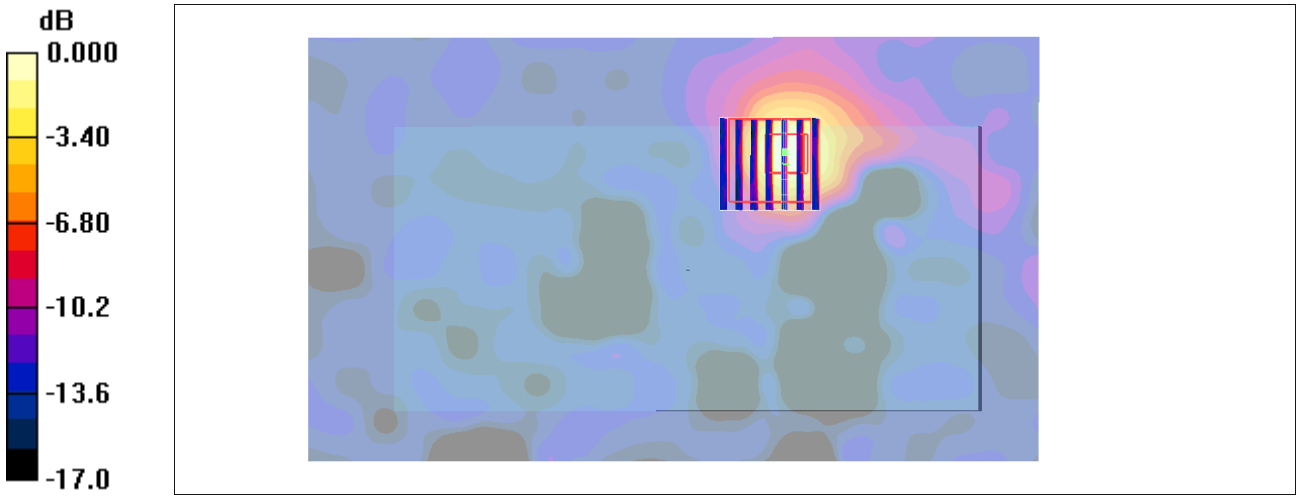
#40_WLAN5GHz_802.11a 6Mbps_Back_1cm_Ch100

Communication System: 802.11a; Frequency: 5500 MHz;Duty Cycle: 1:1.147
Medium: MSL_5G_140830 Medium parameters used: f = 5500 MHz; σ = 5.76 mho/m; ε_r = 46.7; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.32, 4.32, 4.32); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch100/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.275 mW/g

Ch100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 7.55 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.118 mW/g; SAR(10 g) = 0.042 mW/g
Maximum value of SAR (measured) = 0.273 mW/g



0 dB = 0.273mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2014/8/30

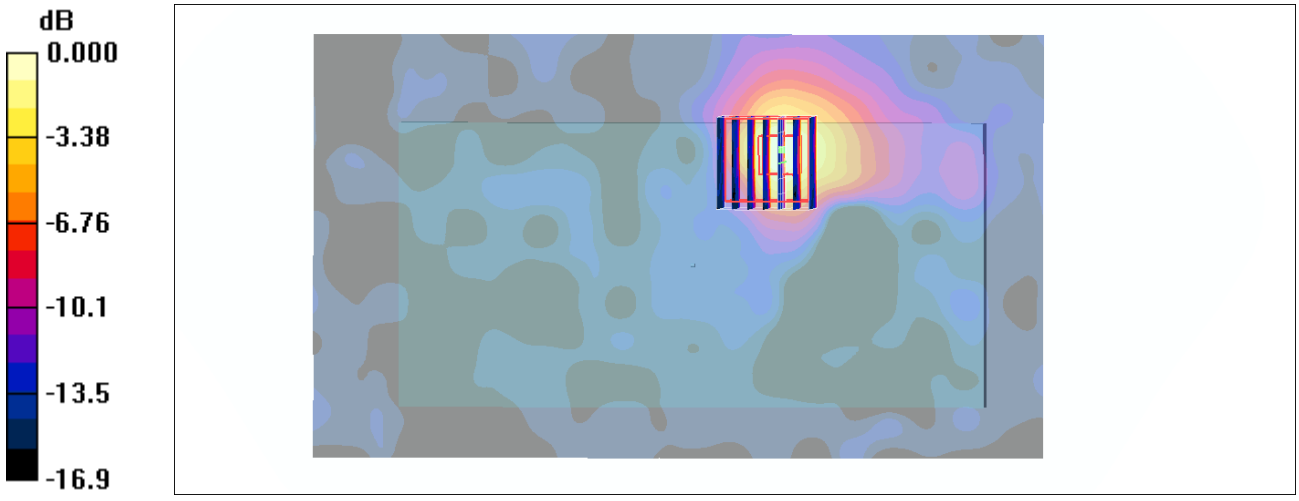
#41_WLAN5GHz_802.11a 6Mbps_Back_1cm_Ch149

Communication System: 802.11a; Frequency: 5745 MHz;Duty Cycle: 1:1.147
Medium: MSL_5G_140830 Medium parameters used : f = 5745 MHz; σ = 6.06 mho/m; ε_r = 46.4; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.2 ℃

DASY4 Configuration:
- Probe: EX3DV4 - SN3955; ConvF(4.25, 4.25, 4.25); Calibrated: 2013/11/12
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2014/5/15
- Phantom: SAM_Right; Type: SAM; Serial: TP-1303
- ;Postprocessing SW: SEMCAD, V1.8 Build 159

Ch149/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.391 mW/g

Ch149/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 8.85 V/m; Power Drift = -0.159 dB
Peak SAR (extrapolated) = 0.676 W/kg
SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.057 mW/g
Maximum value of SAR (measured) = 0.378 mW/g



0 dB = 0.378mW/g