FCC SAR Test Report

Report No.	:	**SA121211C15**
Applicant	:	**HTC Corporation**
Address	:	**No. 23, Xinghua Rd., Taoyuan City, Taiwan**
Product	:	**Smartphone**
FCC ID	:	**NM8PN07200**
Brand	:	**HTC**
Model No.	:	**PN07200**
Standards	:	**FCC 47 CFR Part 2 (2.1093) / IEEE C95.1:1991 / IEEE 1528:2003** **FCC OET Bulletin 65 Supplement C (Edition 01-01)** **KDB 248227 D01 v01r02 / KDB 447498 D01 v05 / KDB 648474 D04 v01** **KDB 941225 D01 v02 / KDB 941225 D05 v02 / KDB 941225 D06 v01**
Date of Testing	:	**Dec. 21, 2012 ~ Jan. 16, 2013**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch - Taiwan HwaYa Lab**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

Prepared By : Ivonne Wu / Senior Specialist

Approved By : Roy Wu / Manager

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Release Control Record

Issue No.	Reason for Change	Date Issued
R01	Initial release	Jan. 30, 2013

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest Reported Head SAR_{1g} (W/kg)	Highest Reported Body-Worn SAR_{1g} Body SAR_{1g} (1.0 cm Gap) (W/kg)	Highest Reported Hotspot SAR_{1g} (1.0 cm Gap) (W/kg)
PCE	CDMA BC0	1.05	0.63	0.63
	CDMA BC1	0.47	0.76	0.76
	CDMA BC10	0.91	0.61	0.61
	LTE 25	0.55	0.71	0.71
DTS	2.4G WLAN	0.60	0.07	0.07
	5.8G WLAN	0.46	0.04	N/A
NII	5.2G WLAN	0.26	0.06	N/A
	5.3G WLAN	0.44	0.07	N/A
	5.5G WLAN	0.46	0.03	N/A
DSS	Bluetooth	N/A	N/A	N/A
DXX	NFC	N/A	N/A	N/A
Highest Simultaneous Transmission SAR		Head (W/kg)	Body-Worn (W/kg)	Hotspot (W/kg)
PCE + DTS		1.60	0.88	1.39
PCE + NII		1.60	0.90	N/A
PCE + DSS		1.60	0.95	N/A

Note:

1. The SAR limit **(Head & Body: SAR_{1g} 1.6 W/kg, Extremity: SAR_{10g} 4.0 W/kg)** for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1991.

2. Description of Equipment Under Test

EUT Type	Smartphone
FCC ID	NM8PN07200
Brand Name	HTC
Model Name	PN07200
Tx Frequency Bands (Unit: MHz)	CDMA BC0 : 824.7 ~ 848.31 CDMA BC1 : 1851.25 ~ 1908.75 CDMA BC10 : 817.9 ~ 823.1 LTE Band 25 : 1852.5 ~ 1912.5 WLAN : 2412 ~ 2462, 5180 ~ 5320, 5500 ~ 5700, 5745 ~ 5805 Bluetooth : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	CDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n/ac : OFDM Bluetooth : GFSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	CDMA BC0 : 24.80 CDMA BC1 : 24.80 CDMA BC10 : 24.80 LTE Band 25 : 24.80 802.11b : 18.0 802.11g : 16.7 802.11n HT20 (2.4GHz) : 16.6 802.11a : 16.7 802.11n HT20 (5GHz) : 16.7 802.11n HT40 (5GHz) : 13.9 802.11ac VHT80 : 13.7 Bluetooth : 6.0
Antenna Type	Fixed Internal Antenna
EUT Stage	Identical Prototype

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

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

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

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

3.2 SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY4/5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

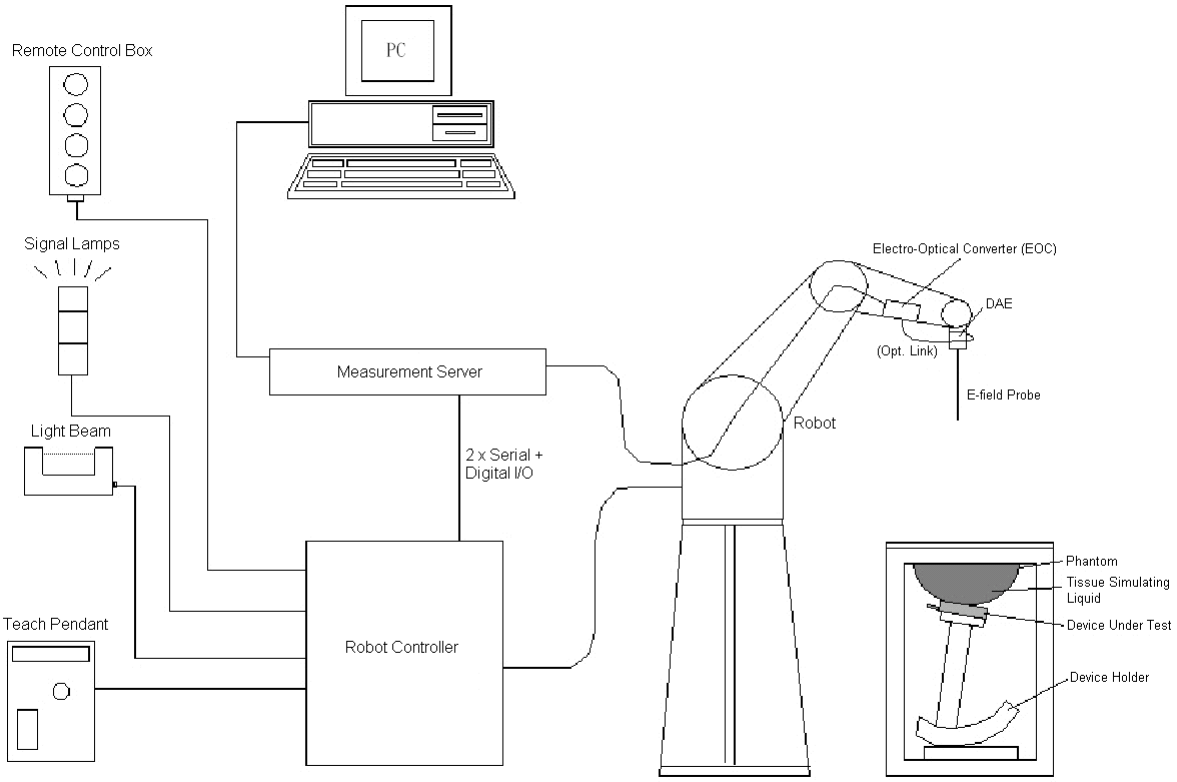


Fig-3.1 DASY System Setup

3.2.1 Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY4: CS7MB; DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

Fig-3.2 DASY4

Fig-3.3 DASY5

3.2.2 Probes

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

Model	ES3DV3	
Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	5 µW/g to 100 mW/g Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm	

3.2.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

3.2.4 Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

3.2.5 Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

3.2.6 System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with l/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.

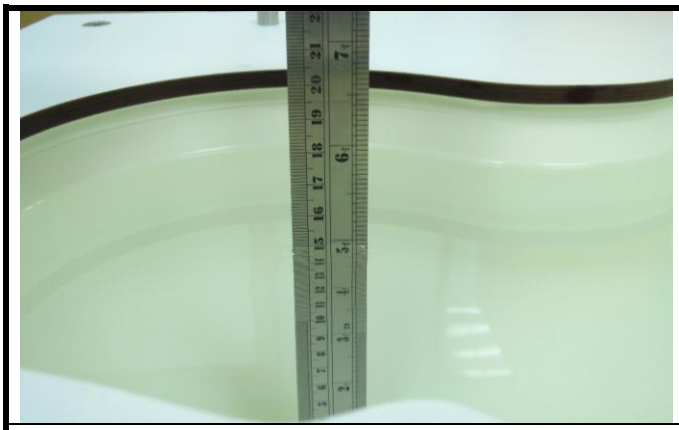
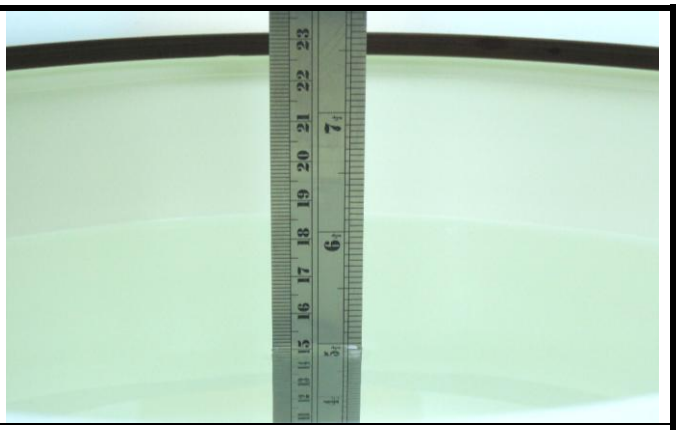
	

Photo of Liquid Height for Head Position	**Photo of Liquid Height for Body Position**

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528 and FCC OET 65 Supplement C Appendix C. For the body tissue simulating liquids, the dielectric properties are defined in FCC OET 65 Supplement C Appendix C. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using an Agilent 85070D Dielectric Probe Kit and an Agilent Network Analyzer.

Table-3.1 Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of ±5%	Target Conductivity	Range of ±5%
For Head				
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53
For Body				
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

The following table gives the recipes for tissue simulating liquids.

Table-3.2 Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.3 SAR System Verification

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

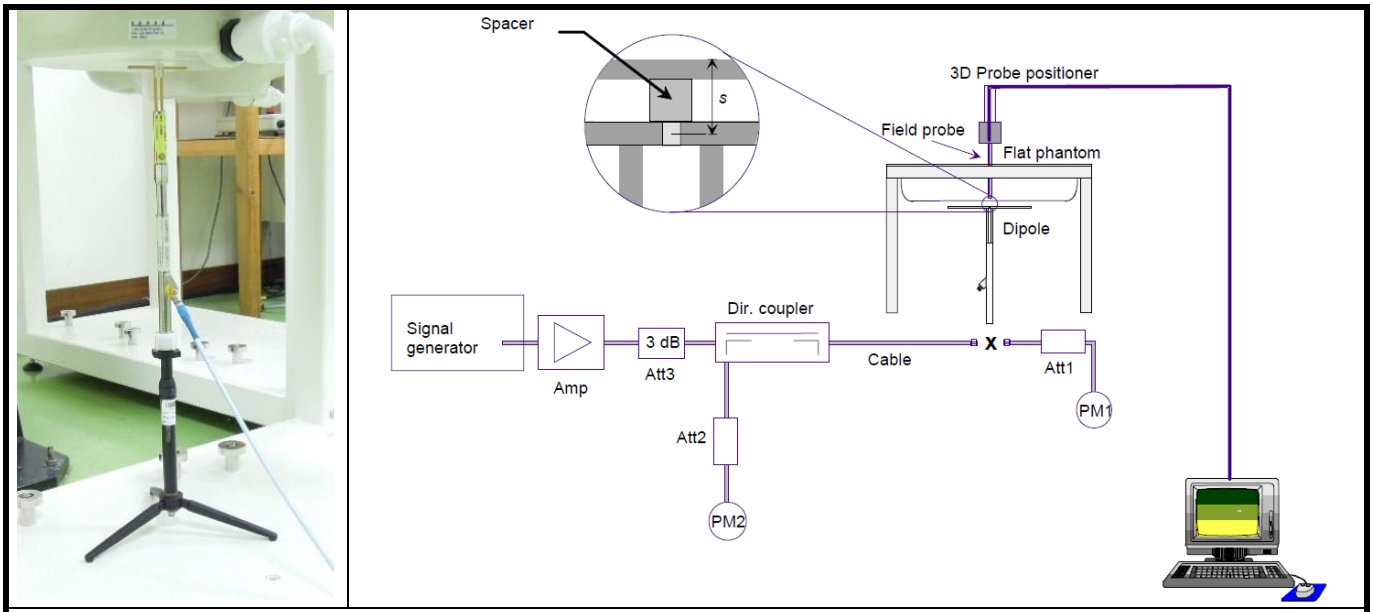


Fig-3.4 System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The power meter PM1 measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter PM2 is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

3.4 SAR Measurement Procedure

According to the SAR 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

The SAR measurement procedures for each of test conditions are as follows:

(a) Make EUT to transmit maximum output power
(b) Measure conducted output power through RF cable
(c) Place the EUT in the specific position of phantom
(d) Perform SAR testing steps on the DASY system
(e) Record the SAR value

3.4.1 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664D01v01, the resolution for Area and Zoom scan is specified in the table below.

Items	<= 2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan (Δx, Δy)	<= 15 mm	<= 12 mm	<= 12 mm	<= 10 mm	<= 10 mm
Zoom Scan (Δx, Δy)	<= 8 mm	<= 5 mm	<= 5 mm	<= 4 mm	<= 4 mm
Zoom Scan (Δz)	<= 5 mm	<= 5 mm	<= 4 mm	<= 3 mm	<= 2 mm
Zoom Scan Volume	>= 30 mm	>= 30 mm	>= 28 mm	>= 25 mm	>= 22 mm

Note:

When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of Δx / Δy (2-3GHz: <= 8 mm, 3-4GHz: <= 7 mm, 4-6GHz: <= 5 mm) may be applied.

3.4.2 Volume Scan Procedure

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.

3.4.3 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 drift more than 5%, the SAR will be retested.

3.4.4 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

3.4.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

4. SAR Measurement Evaluation

4.1 EUT Configuration and Setting

The EUT is a voice/data transmitter device that contains two WWAN transmitters (one is for CDMA2000, and the other is for LTE), and two WWAN antennas for transmit diversity. Confirming the LTE transmitter follows 3GPP standards, is category 3, BW 5/10 MHz, band 25, supports QPSK / 16QAM modulations, and supports data transmission only (No VoLTE). Tested per 3GPP 36.521 maximum transmit procedures for both QPSK / 16QAM.

LTE Maximum Power Reduction in accordance with 3GPP 36.101: Power Reduction in accordance to 3GPP is active all times during LTE operation.

Modulation	Channel bandwidth / Transmission bandwidth configuration (RB)		3GPP Requirement (dB)	LTE MPR Setting (dB)
	BW 5 MHz	BW 10 MHz		
QPSK	> 8	> 12	<= 1	1
16QAM	<= 8	<= 12	<= 1	1
16QAM	> 8	> 12	<= 2	2

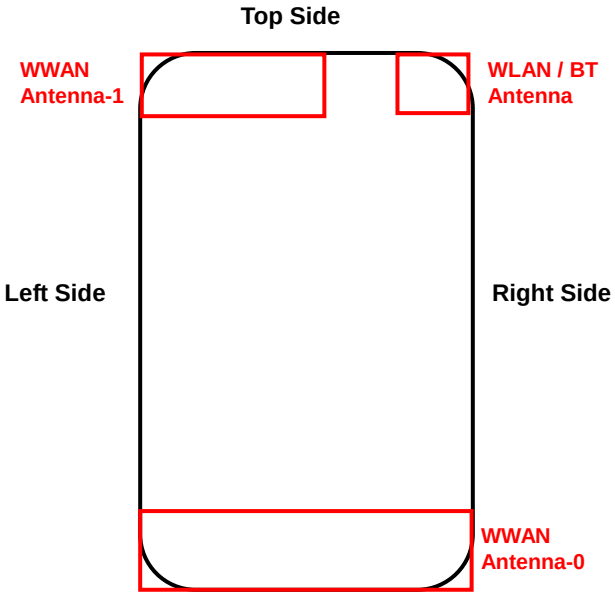
Note: MPR is according to the standard and implemented in the circuit (mandatory).

In addition, the device is compliant with A-MPR requirements defined in 36.101 section 6.2.4 that may be required to meet 3GPP Adjacent Channel Leakage Ratio (“ACLR”) requirements. A-MPR was disabled for all FCC compliance testing.

A simultaneous CDMA 1xRTT voice and LTE data connection is referred to as “SVLTE”. The transmitters are independent in respect to the RF chains as each transmitter has dedicated RF circuitry (PA and RF filtering) and a unique transmit antenna. The device also contains an additional antenna associated with receiver diversity or unlicensed transmitters. The LTE Uplink MIMO configuration is 1x2 (1 Uplink antenna and 2 Downlink antennas).

Although the RF circuits are independent for both transmitters, the chipset solution incorporated SVLTE implementation does include electrical connections between the voice and data transmitters such that the device can coordinate the transmit power of both transmitters. That said the transmitters operate independently in the sense that they independently support voice or data connection without interaction between the modems or signaling from the WWAN network.

<Antenna Location>



<EUT Front View>

The separation distance for antenna to edge:

Antenna	To Top Side (mm)	To Bottom Side (mm)	To Left Side (mm)	To Right Side (mm)
WWAN Ant-0	127.4	< 5	< 5	< 5
WWAN Ant-1	< 5	127.4	< 5	24.9
WLAN / BT	< 5	127.4	48.9	< 5

Note:

1. Both CDMA and LTE can transmit though either antenna-0 or antenna-1. However, only one technology (CDMA or LTE) can transmit from an antenna at a time, and the other technology transmits though the other antenna.
2. The WLAN and BT cannot transmit simultaneously.

The simultaneous transmission possibilities are listed as below.

Simultaneous TX Combination	Configuration	Head (Voice / VoIP)	Body Worn (Voice / VoIP)	Hotspot (Data)
1	CDMA2000 BC0 (Voice / Data) + WLAN (Data)	Yes	Yes	Yes
2	CDMA2000 BC1 (Voice / Data) + WLAN (Data)	Yes	Yes	Yes
3	CDMA2000 BC10 (Voice / Data) + WLAN (Data)	Yes	Yes	Yes
4	LTE 25 (Data) + WLAN (Data)	Yes	Yes	Yes
5	CDMA2000 BC0 (Voice / Data) + BT (Data)	Yes	Yes	No
6	CDMA2000 BC1 (Voice / Data) + BT (Data)	Yes	Yes	No
7	CDMA2000 BC10 (Voice / Data) + BT (Data)	Yes	Yes	No
8	LTE 25 (Data) + BT (Data)	Yes	Yes	No
9	CDMA2000 BC0 (Voice) + LTE 25 (Data) + WLAN (Data)	Yes	Yes	Yes
10	CDMA2000 BC1 (Voice) + LTE 25 (Data) + WLAN (Data)	Yes	Yes	Yes
11	CDMA2000 BC10 (Voice) + LTE 25 (Data) + WLAN (Data)	Yes	Yes	Yes
12	CDMA2000 BC0 (Voice) + LTE 25 (Data) + BT (Data)	Yes	Yes	No
13	CDMA2000 BC1 (Voice) + LTE 25 (Data) + BT (Data)	Yes	Yes	No
14	CDMA2000 BC10 (Voice) + LTE 25 (Data) + BT (Data)	Yes	Yes	No

For WWAN SAR testing, the EUT was linked and controlled by base station emulator (Agilent E5515C is used for CDMA2000, and Anritsu MT8820C is used for LTE). Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

For CDMA, SAR is tested under 1xRTT mode using RC3 with the EUT configured to transmit at full rate using Loopback Service Option SO55 on head position, and RC3 with the EUT configured using TDSO/SO32, to transmit at full rate on FCH with all other code channels disabled on body position. SAR for RC1 is not required when the maximum power is less than 1/4 dB higher than RC3. SAR for multiple code channels (FCH+SCH_n) is not required when the maximum power is less than 1/4 dB higher than that measured with FCH only. SAR for EVDO Rev.0 is not required when the maximum power is less than 1/4 dB higher than RC3 (1xRTT). SAR for EVDO Rev.A is not required when the maximum power is less than Rev.0 or less than 1/4 dB higher than RC3. The steps for system simulator (Agilent E5515C) setup are as below.

1. Set the System ID and Network ID
2. Set the Cell Band and connecting Channel
3. Set the power control to All Up Bits
4. Press “Originate Call” button

For LTE, set the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB in base station simulator. When the EUT has registered and communicated to base station simulator, set the simulator to make EUT transmitting the maximum radiated power. The steps for system simulator (Anritsu MT8820C) setup are as below.

1. Press the “Std” button to select “LTE 22.20S” function
2. Choose the “Screen Select” item to “Fundamental Measurement”
3. Enter the “Common” item
4. Set the Operating Band
5. Set the Channel Bandwidth
6. Set the UL Channel & Frequency
7. Set the Modulation
8. Set the RB number and RB shift
9. Press “Start Call” button when EUT register to the system simulator
10. Set the TX-1 Max. Power to make the EUT transmit maximum output power

For WLAN SAR testing, the EUT has installed WLAN engineering testing software which can provide continuous transmitting RF signal. According to KDB 248227 D01, WLAN SAR should tested at the lowest data rate, and testing at higher data rate is not required when the maximum average output power is less than 1/4 dB higher than those measured at the lowest data rate. Since the WLAN power at lowest data rate has highest output power, WLAN SAR for this device was performed at the lowest data rate as set in 1 Mbps for 802.11b and 6 Mbps for 802.11a. This RF signal utilized in SAR measurement has almost 100% duty cycle, and the duty factor is 1 during WLAN SAR testing.

4.2 EUT Testing Position

According to KDB 648474 D04v01, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

4.2.1 Head Exposure Conditions

Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2003 using the SAM phantom illustrated as below.

1. Define two imaginary lines on the handset

(a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

(c) 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, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

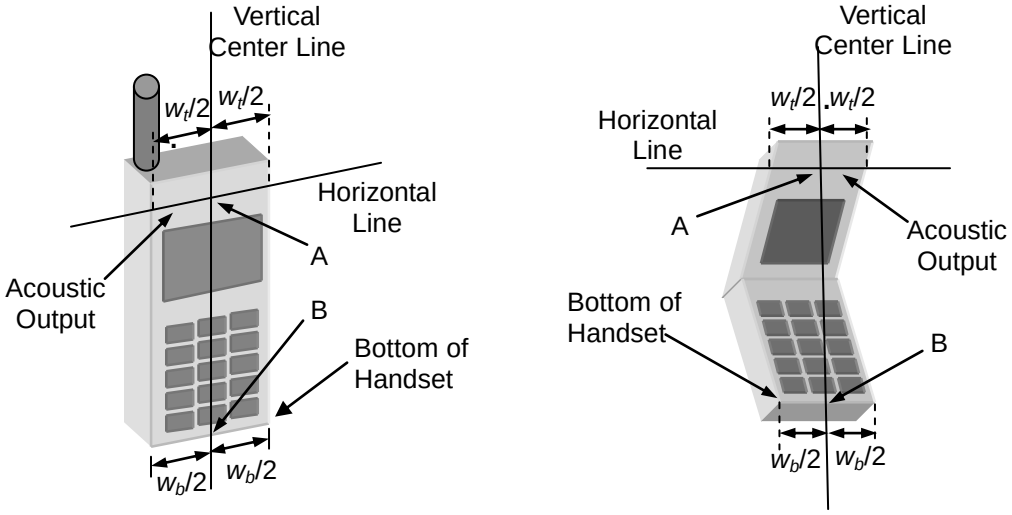


Fig-4.1 Illustration for Handset Vertical and Horizontal Reference Lines

2. Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see Fig-4.2).

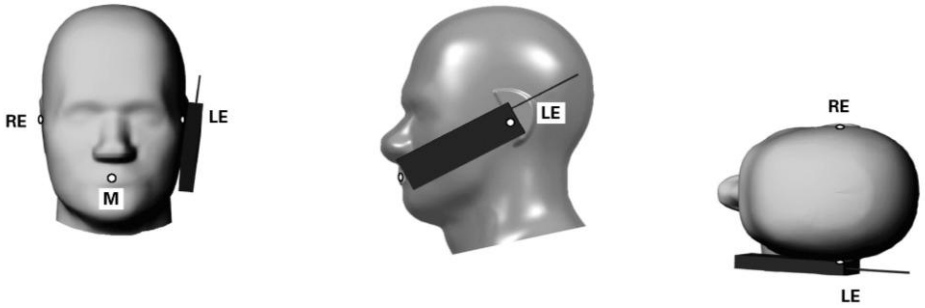


Fig-4.2 Illustration for Cheek Position

3. Tilted Position

(a) To position the device in the “cheek” position described above.

(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig-4.3).

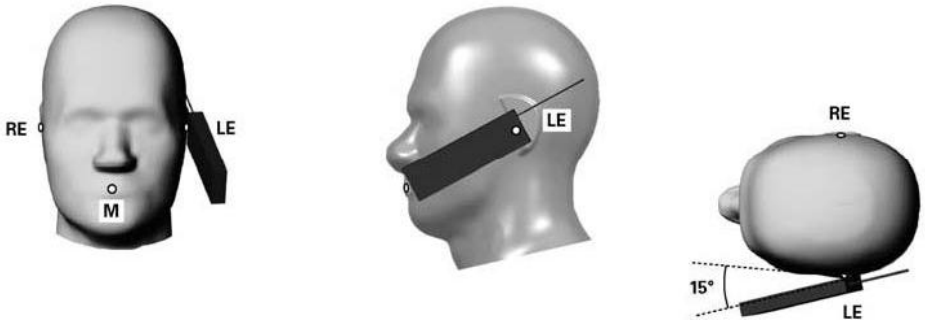


Fig-4.3 Illustration for Tilted Position

4.2.2 Body-Worn Accessory Exposure Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are 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 the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required.

A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.

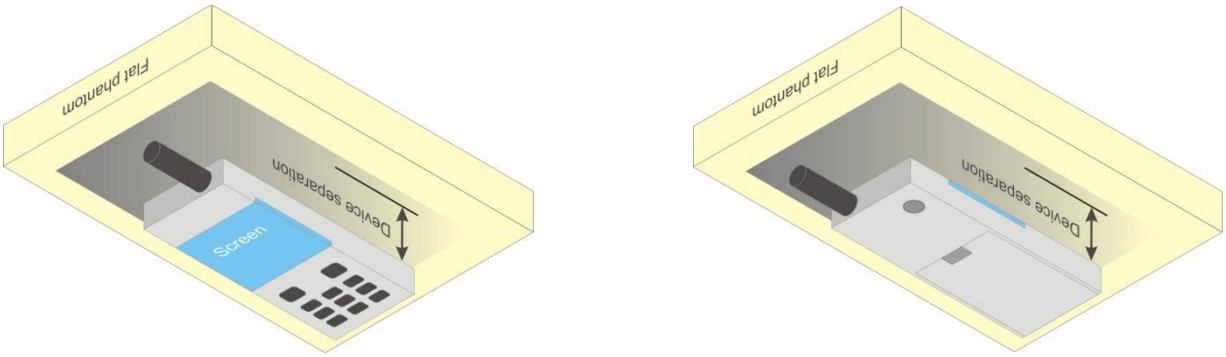
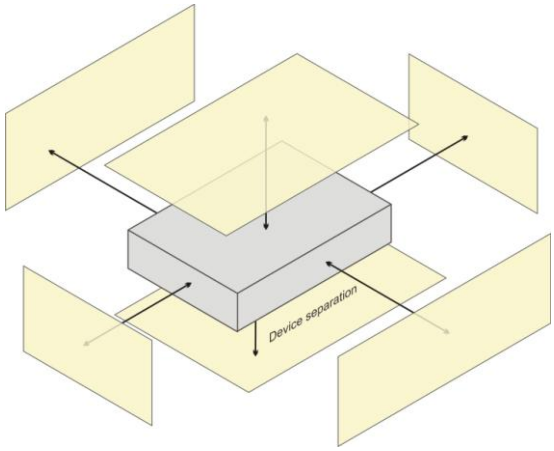


Fig-4.4 Illustration for Body Worn Position

4.2.3 Hotspot Mode Exposure conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



Based on the antenna location shown on section 4.1 of this report, the SAR testing required for hotspot mode is listed as below.

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
WWAN Ant-0	V	V	V	V		V
WWAN Ant-1	V	V	V		V	
WLAN / BT	V	V		V	V	

4.2.4 SAR Test Exclusions

According to KDB 447498 D01v05, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

$$\frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \sqrt{f_{(\text{GHz})}} \leq 3.0$$

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Head			Body-Worn			Hotspot		
			Ant. to Surface (mm)	Exclusion Threshold (mW)	SAR Tested?	Ant. to Surface (mm)	Exclusion Threshold (mW)	SAR Tested?	Ant. to Surface (mm)	Exclusion Threshold (mW)	SAR Tested?
BT	6	4	5	10	No	10	19	No	10	19	No

4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Tissue Type	Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Dec. 21, 2012	Head	835	20.8	0.904	42.285	0.90	41.5	0.44	1.89
Jan. 14, 2013	Head	835	21.0	0.935	40.871	0.90	41.5	3.89	-1.52
Dec. 29, 2012	Head	1900	20.9	1.428	40.332	1.40	40.0	2.00	0.83
Jan. 03, 2013	Head	1900	20.3	1.422	40.423	1.40	40.0	1.57	1.06
Jan. 07, 2013	Head	2450	20.6	1.865	40.552	1.80	39.2	3.61	3.45
Jan. 16, 2013	Head	5200	20.3	4.592	36.805	4.66	36.0	-1.46	2.24
Jan. 16, 2013	Head	5300	20.3	4.687	36.753	4.76	35.9	-1.53	2.38
Jan. 13, 2013	Head	5600	20.5	5.207	36.213	5.07	35.5	2.70	2.01
Jan. 13, 2013	Head	5800	20.5	5.44	35.757	5.27	35.3	3.23	1.29
Jan. 09, 2013	Body	835	20.5	0.988	56.906	0.97	55.2	1.86	3.09
Jan. 10, 2013	Body	835	20.6	0.992	56.671	0.97	55.2	2.27	2.66
Jan. 04, 2013	Body	1900	20.7	1.544	53.431	1.52	53.3	1.58	0.25
Jan. 08, 2013	Body	1900	20.8	1.552	51.129	1.52	53.3	2.11	-4.07
Jan. 09, 2013	Body	1900	20.3	1.537	50.827	1.52	53.3	1.12	-4.64
Jan. 10, 2013	Body	1900	20.6	1.545	51.125	1.52	53.3	1.64	-4.08
Jan. 08, 2013	Body	2450	20.3	1.958	50.929	1.95	52.7	0.41	-3.36
Jan. 09, 2013	Body	5200	20.4	5.278	48.936	5.30	49.0	-0.42	-0.13
Jan. 09, 2013	Body	5300	20.4	5.413	48.764	5.42	48.9	-0.13	-0.28
Jan. 09, 2013	Body	5600	20.4	5.871	48.168	5.77	48.5	1.75	-0.68
Jan. 10, 2013	Body	5800	20.5	6.123	47.668	6.00	48.2	2.05	-1.10

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 ℃.

4.4 System Validation

The SAR measurement system was validated according to procedures in KDB 865664 D01v01. The validation status in tabulated summary is as below.

Test Date	Probe S/N	Calibration Point		Measured Conductivity (σ)	Measured Permittivity (ε_r)	Validation for CW			Validation for Modulation		
						Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR
Dec. 21, 2012	3864	Head	835	0.904	42.285	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 14, 2013	3650	Head	835	0.935	40.871	Pass	Pass	Pass	N/A	N/A	N/A
Dec. 29, 2012	3864	Head	1900	1.428	40.332	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 03, 2013	3801	Head	1900	1.422	40.423	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 07, 2013	3864	Head	2450	1.865	40.552	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 16, 2013	3650	Head	5200	4.592	36.805	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 16, 2013	3650	Head	5300	4.687	36.753	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 13, 2013	3650	Head	5600	5.207	36.213	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 13, 2013	3650	Head	5800	5.44	35.757	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 09, 2013	3801	Body	835	0.988	56.906	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 10, 2013	3801	Body	835	0.992	56.671	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 04, 2013	3801	Body	1900	1.544	53.431	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2013	3801	Body	1900	1.552	51.129	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 09, 2013	3801	Body	1900	1.537	50.827	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 10, 2013	3801	Body	1900	1.545	51.125	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2013	3864	Body	2450	1.958	50.929	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 09, 2013	3590	Body	5200	5.278	48.936	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 09, 2013	3590	Body	5300	5.413	48.764	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 09, 2013	3590	Body	5600	5.871	48.168	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 10, 2013	3590	Body	5800	6.123	47.668	Pass	Pass	Pass	OFDM	N/A	Pass

4.5 System Verification

The measuring result for system verification is tabulated as below.

Test Date	Mode	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Dec. 21, 2012	Head	835	9.46	2.34	9.36	-1.06	4d021	3864	579
Jan. 14, 2013	Head	835	9.46	2.52	10.08	6.55	4d021	3650	1277
Dec. 29, 2012	Head	1900	38.90	10.1	40.40	3.86	5d036	3864	579
Jan. 03, 2013	Head	1900	38.90	9.77	39.08	0.46	5d036	3801	861
Jan. 07, 2013	Head	2450	52.90	13.0	52.00	-1.70	737	3864	1277
Jan. 16, 2013	Head	5200	79.60	7.55	75.50	-5.15	1019	3650	1277
Jan. 16, 2013	Head	5300	82.20	8.12	81.20	-1.22	1019	3650	1277
Jan. 13, 2013	Head	5600	83.80	8.58	85.80	2.39	1019	3650	579
Jan. 13, 2013	Head	5800	78.90	7.94	79.40	0.63	1019	3650	579
Jan. 09, 2013	Body	835	9.60	2.49	9.96	3.75	4d021	3801	861
Jan. 10, 2013	Body	835	9.60	2.26	9.04	-5.83	4d021	3801	861
Jan. 04, 2013	Body	1900	38.90	9.50	38.00	-2.31	5d036	3801	861
Jan. 08, 2013	Body	1900	38.90	9.75	39.00	0.26	5d036	3801	861
Jan. 09, 2013	Body	1900	38.90	9.58	38.32	-1.49	5d036	3801	861
Jan. 10, 2013	Body	1900	38.90	9.63	38.52	-0.98	5d036	3801	861
Jan. 08, 2013	Body	2450	50.00	12.9	51.60	3.20	737	3864	1277
Jan. 09, 2013	Body	5200	73.00	7.62	76.20	4.38	1019	3590	687
Jan. 09, 2013	Body	5300	74.60	7.48	74.80	0.27	1019	3590	687
Jan. 09, 2013	Body	5600	79.90	7.61	76.10	-4.76	1019	3590	687
Jan. 10, 2013	Body	5800	73.40	6.94	69.40	-5.45	1019	3590	687

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

4.6 Maximum Output Power

4.6.1 Nominal Conducted Power

The nominal conducted power (Unit: dBm) including tune-up tolerance is shown as below.

Mode	CDMA BC0	CDMA BC1	CDMA BC10
1xRTT	24.8	24.8	24.8
1xEVDO Rev.0	24.8	24.8	24.8
1xEVDO Rev.A	24.8	24.8	24.8

Mode	LTE 25
QPSK / 16QAM	24.8

Mode	2.4G WLAN	5.2G WLAN	5.3G WLAN	5.5G WLAN	5.8G WLAN
802.11b	18.0	N/A	N/A	N/A	N/A
802.11g	16.7	N/A	N/A	N/A	N/A
802.11a	N/A	15.9	16.1	16.2	16.7
802.11n HT20	16.6	16.0	16.1	16.1	16.7
802.11n HT40	N/A	13.4	13.9	13.2	13.5
802.11ac VHT80	N/A	13.7	13.2	13.0	13.1

Mode	Bluetooth
All	6.0

4.6.2 Measured Conducted Power Result

The measuring conducted power (Unit: dBm) is shown as below.

Band	CDMA BC0			CDMA BC1		
Channel	1013	384	777	25	600	1175
Frequency (MHz)	824.70	836.52	848.31	1851.25	1880.00	1908.75
1xRTT RC1+SO55	24.53	24.65	24.42	24.46	24.66	24.34
1xRTT RC3+SO55	24.68	**24.80**	24.76	24.60	**24.80**	24.38
1xRTT RC3+SO32 (FCH)	24.49	24.61	24.38	24.49	24.69	24.27
1xRTT RC3+SO32 (SCH)	24.52	24.64	24.41	24.48	24.68	24.26
1xEVDO Rev.0 RTAP 153.6	24.60	24.72	24.49	24.59	24.79	24.37
1xEVDO Rev.A RETAP 4096	24.54	24.66	24.43	24.56	24.76	24.34

Band	CDMA BC10		
Channel	476	580	684
Frequency (MHz)	817.9	820.5	823.1
1xRTT RC1+SO55	24.66	24.54	24.36
1xRTT RC3+SO55	**24.80**	24.68	24.50
1xRTT RC3+SO32 (FCH)	24.64	24.52	24.34
1xRTT RC3+SO32 (SCH)	24.73	24.61	24.43
1xEVDO Rev.0 RTAP 153.6	24.76	24.64	24.46
1xEVDO Rev.A RETAP 4096	24.70	24.58	24.40

Band / BW	Modulation	RB Size	RB Offset	Low CH 26065 Frequency 1852.5 MHz	Mid CH 26365 Frequency 1882.5 MHz	High CH 26665 Frequency 1912.5 MHz	3PGG MPR (dB)
25 / 5M	QPSK	1	0	24.40	24.57	**24.72**	0
		1	12	24.33	24.50	24.65	0
		1	24	24.16	24.33	24.48	0
		12	0	23.30	23.47	23.62	1
		12	6	23.24	23.41	23.56	1
		12	13	23.06	23.23	23.38	1
		25	0	23.05	23.22	23.37	1
	16QAM	1	0	23.40	23.57	23.72	1
		1	12	23.30	23.47	23.62	1
		1	24	23.60	23.77	**23.92**	1
		12	0	22.36	22.53	22.68	2
		12	6	22.31	22.48	22.63	2
		12	13	22.09	22.26	22.41	2
		25	0	22.10	22.27	22.42	2

Band / BW	Modulation	RB Size	RB Offset	Low CH 26090 Frequency 1855.0 MHz	Mid CH 26365 Frequency 1882.5 MHz	High CH 26640 Frequency 1910.0 MHz	3PGG MPR (dB)
25 / 10M	QPSK	1	0	24.57	24.35	24.49	0
		1	24	24.45	24.63	**24.80**	0
		1	49	24.50	24.53	24.64	0
		25	0	23.23	23.32	23.49	1
		25	12	23.27	23.28	23.46	1
		25	25	23.25	23.08	23.23	1
		50	0	23.24	23.20	23.22	1
	16QAM	1	0	23.24	23.23	23.32	1
		1	24	23.19	23.46	**23.76**	1
		1	49	23.12	23.42	23.44	1
		25	0	22.16	22.29	22.37	2
		25	12	22.17	22.32	22.37	2
		25	25	22.13	22.11	22.21	2
		50	0	22.14	22.12	22.22	2

Band	802.11b			802.11g		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Average Power	**17.95**	17.80	17.31	**16.62**	16.55	16.08

Band	802.11n (HT20)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	**16.55**	16.40	15.92

Band	802.11a							
Channel	36	40	44	48	52	56	60	64
Frequency (MHz)	5180	5200	5220	5240	5260	5280	5300	5320
Average Power	14.22	15.73	14.42	**15.84**	15.84	15.87	15.93	**16.04**

Band	802.11a							
Channel	100	104	108	112	116	132	136	140
Frequency (MHz)	5500	5520	5540	5560	5580	5660	5680	5700
Average Power	15.83	15.84	16.01	15.85	16.04	16.05	16.07	**16.15**

Band	802.11a			
Channel	149	153	157	161
Frequency (MHz)	5745	5765	5785	5805
Average Power	16.55	16.67	**16.68**	16.62

Band	802.11n (HT20)							
Channel	36	40	44	48	52	56	60	64
Frequency (MHz)	5180	5200	5220	5240	5260	5280	5300	5320
Average Power	14.11	**15.92**	14.37	14.53	15.80	15.91	15.97	**16.01**

Band	802.11n (HT20)							
Channel	100	104	108	112	116	132	136	140
Frequency (MHz)	5500	5520	5540	5560	5580	5660	5680	5700
Average Power	15.85	15.80	15.81	15.98	15.95	16.07	16.03	**16.10**

Band	802.11n (HT20)			
Channel	149	153	157	161
Frequency (MHz)	5745	5765	5785	5805
Average Power	16.52	16.49	16.49	**16.68**

Band	802.11n (HT40)							
Channel	38	46	54	62	102	134	151	159
Frequency (MHz)	5190	5230	5270	5310	5510	5670	5755	5795
Average Power	**13.35**	13.32	13.62	**13.83**	12.90	**13.12**	13.26	**13.48**

Band	802.11ac (VHT80)			
Channel	42	58	106	155
Frequency (MHz)	5210	5290	5530	5775
Average Power	**13.64**	**13.17**	**12.79**	**13.01**

4.7 SAR Testing Results

4.7.1 SAR Results for Head

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
401	CDMA BC0	RC3+SO55	Right Cheek	384	0	24.8	24.80	1.00	0.04	0.412	0.41
402	CDMA BC0	RC3+SO55	Right Tilted	384	0	24.8	24.80	1.00	-0.03	0.292	0.29
431	CDMA BC0	RC3+SO55	Left Cheek	384	0	24.8	24.80	1.00	-0.1	0.5	0.50
404	CDMA BC0	RC3+SO55	Left Tilted	384	0	24.8	24.80	1.00	0.01	0.326	0.33
1	CDMA BC0	RC3+SO55	Right Cheek	384	1	24.8	24.80	1.00	0.13	1.02	1.02
2	CDMA BC0	RC3+SO55	Right Tilted	384	1	24.8	24.80	1.00	0.08	0.46	0.46
22	CDMA BC0	RC3+SO55	Left Cheek	384	1	24.8	24.80	1.00	-0.07	0.604	0.60
4	CDMA BC0	RC3+SO55	Left Tilted	384	1	24.8	24.80	1.00	0.03	0.28	0.28
5	CDMA BC0	RC3+SO55	Right Cheek	1013	1	24.8	24.68	1.03	0.1	0.936	0.96
41	CDMA BC0	RC3+SO55	Right Cheek	777	1	24.8	24.76	1.01	-0.11	1.04	**1.05**
42	CDMA BC0	RC3+SO55	Right Cheek	777	1	24.8	24.76	1.01	-0.04	1.01	1.02
420	CDMA BC1	RC3+SO55	Right Cheek	600	0	24.8	24.80	1.00	0.01	0.3	0.30
421	CDMA BC1	RC3+SO55	Right Tilted	600	0	24.8	24.80	1.00	0.07	0.136	0.14
426	CDMA BC1	RC3+SO55	Left Cheek	600	0	24.8	24.80	1.00	0.01	0.467	**0.47**
423	CDMA BC1	RC3+SO55	Left Tilted	600	0	24.8	24.80	1.00	-0.08	0.178	0.18
22	CDMA BC1	RC3+SO55	Right Cheek	600	1	24.8	24.80	1.00	0.14	0.412	0.41
9	CDMA BC1	RC3+SO55	Right Tilted	600	1	24.8	24.80	1.00	0.15	0.215	0.22
10	CDMA BC1	RC3+SO55	Left Cheek	600	1	24.8	24.80	1.00	-0.06	0.215	0.22
11	CDMA BC1	RC3+SO55	Left Tilted	600	1	24.8	24.80	1.00	0.03	0.128	0.13
413	CDMA BC10	RC3+SO55	Right Cheek	476	0	24.8	24.80	1.00	-0.02	0.3	0.30
414	CDMA BC10	RC3+SO55	Right Tilted	476	0	24.8	24.80	1.00	0.1	0.211	0.21
432	CDMA BC10	RC3+SO55	Left Cheek	476	0	24.8	24.80	1.00	-0.12	0.375	0.38
416	CDMA BC10	RC3+SO55	Left Tilted	476	0	24.8	24.80	1.00	0.01	0.253	0.25
23	CDMA BC10	RC3+SO55	Right Cheek	476	1	24.8	24.80	1.00	-0.05	0.908	**0.91**
15	CDMA BC10	RC3+SO55	Right Tilted	476	1	24.8	24.80	1.00	0.13	0.357	0.36
21	CDMA BC10	RC3+SO55	Left Cheek	476	1	24.8	24.80	1.00	-0.02	0.541	0.54
17	CDMA BC10	RC3+SO55	Left Tilted	476	1	24.8	24.80	1.00	-0.02	0.207	0.21
18	CDMA BC10	RC3+SO55	Right Cheek	580	1	24.8	24.68	1.03	0.16	0.834	0.86
19	CDMA BC10	RC3+SO55	Right Cheek	684	1	24.8	24.50	1.07	0.04	0.794	0.85
20	CDMA BC10	RC3+SO55	Right Cheek	476	1	24.8	24.80	1.00	0.01	0.906	0.91

Note:

1. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
213	LTE 25	QPSK_10M	Right Cheek	26640	0	1	24	24.8	24.80	1.00	-0.1	0.352	0.35
214	LTE 25	QPSK_10M	Right Tilted	26640	0	1	24	24.8	24.80	1.00	0.08	0.179	0.18
219	LTE 25	QPSK_10M	Left Cheek	26640	0	1	24	24.8	24.80	1.00	0.15	0.541	0.54
216	LTE 25	QPSK_10M	Left Tilted	26640	0	1	24	24.8	24.80	1.00	0.03	0.224	0.22
220	LTE 25	QPSK_10M	Right Cheek	26640	0	25	0	23.8	23.49	1.07	0.01	0.307	0.33
221	LTE 25	QPSK_10M	Right Tilted	26640	0	25	0	23.8	23.49	1.07	0.02	0.161	0.17
226	LTE 25	QPSK_10M	Left Cheek	26640	0	25	0	23.8	23.49	1.07	0.13	0.448	0.48
223	LTE 25	QPSK_10M	Left Tilted	26640	0	25	0	23.8	23.49	1.07	-0.07	0.185	0.20
207	LTE 25	QPSK_10M	Right Cheek	26640	1	1	24	24.8	24.80	1.00	0.16	0.554	**0.55**
202	LTE 25	QPSK_10M	Right Tilted	26640	1	1	24	24.8	24.80	1.00	-0.1	0.239	0.24
203	LTE 25	QPSK_10M	Left Cheek	26640	1	1	24	24.8	24.80	1.00	0.1	0.263	0.26
204	LTE 25	QPSK_10M	Left Tilted	26640	1	1	24	24.8	24.80	1.00	-0.06	0.158	0.16
212	LTE 25	QPSK_10M	Right Cheek	26640	1	25	0	23.8	23.49	1.07	0.17	0.442	0.47
209	LTE 25	QPSK_10M	Right Tilted	26640	1	25	0	23.8	23.49	1.07	-0.04	0.207	0.22
210	LTE 25	QPSK_10M	Left Cheek	26640	1	25	0	23.8	23.49	1.07	0.13	0.220	0.24
211	LTE 25	QPSK_10M	Left Tilted	26640	1	25	0	23.8	23.49	1.07	-0.01	0.121	0.13

Note:

1. Since LTE of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head.
2. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.
3. According to KDB 941225, LTE SAR testing for remaining configurations for 1RB allocation is not required when the reported SAR is <= 0.8 W/kg.
4. According to KDB 941225, LTE SAR testing for remaining configurations for 50%RB allocation is not required when the reported SAR is <= 0.8 W/kg.
5. According to KDB 941225, LTE SAR testing for 16QAM is not required when the maximum power of 16QAM is less 1/2 dB higher than QPSK and the highest reported SAR of QPSK is less than 1.45 W/kg.
6. According to KDB 941225, the LTE SAR testing for other channel bandwidths is not required when the maximum power of smaller channel bandwidth is less 1/2 dB higher than largest channel bandwidth, and maximum SAR of largest channel bandwidth is less than 1.45 W/kg.

Plot No.	Band	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
101	802.11b	Right Cheek	1	18.0	17.95	1.01	0.14	0.151	0.15
102	802.11b	Right Tilted	1	18.0	17.95	1.01	0.17	0.101	0.10
103	802.11b	Left Cheek	1	18.0	17.95	1.01	-0.04	0.596	**0.60**
104	802.11b	Left Tilted	1	18.0	17.95	1.01	0.02	0.323	0.33
163	802.11a	Right Cheek	157	16.7	16.68	1.00	0.07	0.199	0.20
164	802.11a	Right Tilted	157	16.7	16.68	1.00	0.031	0.148	0.15
165	802.11a	Left Cheek	157	16.7	16.68	1.00	0.10	0.457	**0.46**
166	802.11a	Left Tilted	157	16.7	16.68	1.00	0.04	0.314	0.31
167	802.11a	Right Cheek	48	15.9	15.84	1.01	0.15	0.202	0.20
168	802.11a	Right Tilted	48	15.9	15.84	1.01	0.07	0.184	0.19
169	802.11a	Left Cheek	48	15.9	15.84	1.01	0.12	0.26	**0.26**
170	802.11a	Left Tilted	48	15.9	15.84	1.01	0.12	0.243	0.25
171	802.11a	Right Cheek	64	16.1	16.04	1.01	0.01	0.307	0.31
172	802.11a	Right Tilted	64	16.1	16.04	1.01	-0.07	0.164	0.17
173	802.11a	Left Cheek	64	16.1	16.04	1.01	0.05	0.432	**0.44**
174	802.11a	Left Tilted	64	16.1	16.04	1.01	0.09	0.2	0.20
159	802.11a	Right Cheek	140	16.2	16.15	1.01	0.09	0.189	0.19
160	802.11a	Right Tilted	140	16.2	16.15	1.01	0.18	0.143	0.14
161	802.11a	Left Cheek	140	16.2	16.15	1.01	0.15	0.453	**0.46**
162	802.11a	Left Tilted	140	16.2	16.15	1.01	0.13	0.269	0.27

Note:

1. Since WLAN of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head.
2. According to KDB 248227 D01, when the extrapolated maximum peak SAR for the maximum output power channel is <= 1.6 W/kg and the 1g averaged SAR is <= 0.8 W/kg, WLAN SAR testing for other channels is not required.
3. SAR testing for 802.11g/n is not required when its maximum power is less than 1/4 dB higher than 802.11b.
4. SAR testing for 802.11n/ac is not required when its maximum power is less than 1/4 dB higher than 802.11a.

4.7.2 SAR Results for Body-Worn (Separation Distance is 1.0 cm)

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
481	CDMA BC0	RTAP153.6	Front Face	384	0	24.8	24.72	1.02	-0.04	0.446	0.45
483	CDMA BC0	RTAP153.6	Rear Face	384	0	24.8	24.72	1.02	-0.05	0.613	**0.63**
490	CDMA BC0	RTAP153.6	Front Face	384	1	24.8	24.72	1.02	-0.12	0.115	0.12
492	CDMA BC0	RTAP153.6	Rear Face	384	1	24.8	24.72	1.02	0.12	0.134	0.14
484	CDMA BC1	RTAP153.6	Front Face	600	0	24.8	24.79	1.00	0.02	0.448	0.45
486	CDMA BC1	RTAP153.6	Rear Face	600	0	24.8	24.79	1.00	-0.02	0.761	**0.76**
495	CDMA BC1	RTAP153.6	Front Face	600	1	24.8	24.79	1.00		0.068	0.07
494	CDMA BC1	RTAP153.6	Rear Face	600	1	24.8	24.79	1.00	-0.05	0.054	0.05
472	CDMA BC10	RTAP153.6	Front Face	476	0	24.8	24.76	1.01	0.03	0.493	0.50
477	CDMA BC10	RTAP153.6	Rear Face	476	0	24.8	24.76	1.01	0.14	0.605	**0.61**
496	CDMA BC10	RTAP153.6	Front Face	476	1	24.8	24.76	1.01	0.1	0.114	0.12
498	CDMA BC10	RTAP153.6	Rear Face	476	1	24.8	24.76	1.01	0.01	0.137	0.14

Note:

1. According to KDB 648474, when the test separation distance for body-worn is >= hotspot mode, the test results required for hotspot mode can be compatible.
2. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
240	LTE 25	QPSK_10M	Front Face	26640	0	1	24	24.8	24.80	1.00	0.01	0.407	0.41
250	LTE 25	QPSK_10M	Rear Face	26640	0	1	24	24.8	24.80	1.00	-0.06	0.712	**0.71**
270	LTE 25	QPSK_10M	Front Face	26640	0	25	0	23.8	23.49	1.07	-0.02	0.422	0.45
279	LTE 25	QPSK_10M	Rear Face	26640	0	25	0	23.8	23.49	1.07	-0.08	0.527	0.56
487	LTE 25	QPSK_10M	Front Face	26640	1	1	24	24.8	24.80	1.00	0.09	0.059	0.06
252	LTE 25	QPSK_10M	Rear Face	26640	1	1	24	24.8	24.80	1.00	-0.08	0.049	0.05
262	LTE 25	QPSK_10M	Front Face	26640	1	25	0	23.8	23.49	1.07	0.04	0.055	0.06
269	LTE 25	QPSK_10M	Rear Face	26640	1	25	0	23.8	23.49	1.07	-0.1	0.061	0.07

Note:

1. Since LTE of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for body-worn.
2. According to KDB 648474, when the test separation distance for body-worn is >= hotspot mode, the test results required for hotspot mode can be compatible.
3. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.
4. According to KDB 941225, LTE SAR testing for remaining configurations for 1RB allocation is not required when the reported SAR is <= 0.8 W/kg.
5. According to KDB 941225, LTE SAR testing for remaining configurations for 50%RB allocation is not required when the reported SAR is <= 0.8 W/kg.
6. According to KDB 941225, LTE SAR testing for 16QAM is not required when the maximum power of 16QAM is less 1/2 dB higher than QPSK and the highest reported SAR of QPSK is less than 1.45 W/kg.
7. According to KDB 941225, the LTE SAR testing for other channel bandwidths is not required when the maximum power of smaller channel bandwidth is less 1/2 dB higher than largest channel bandwidth, and maximum SAR of largest channel bandwidth is less than 1.45 W/kg.

Plot No.	Band	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
301	802.11b	Front Face	1	18.0	17.95	1.01	0.051	0.072	**0.07**
302	802.11b	Rear Face	1	18.0	17.95	1.01	0.022	0.031	0.03
314	802.11a	Front Face	157	16.7	16.68	1.00	0	0.038	**0.04**
315	802.11a	Rear Face	157	16.7	16.68	1.00	0.076	0.034	0.03
307	802.11a	Front Face	48	15.9	15.84	1.01	-0.14	0.055	**0.06**
308	802.11a	Rear Face	48	15.9	15.84	1.01	-0.13	0.048	0.05
310	802.11a	Front Face	64	16.1	16.04	1.01	-0.13	0.074	**0.07**
311	802.11a	Rear Face	64	16.1	16.04	1.01	-0.18	0.00377	0.01
312	802.11a	Front Face	140	16.2	16.15	1.01	-0.16	0.0000775	0.01
313	802.11a	Rear Face	140	16.2	16.15	1.01	0.14	0.032	**0.03**

Note:

1. Since WLAN of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for body-worn.
2. According to KDB 648474, when the test separation distance for body-worn is >= hotspot mode, the test results required for hotspot mode can be compatible.
3. According to KDB 248227 D01, when the extrapolated maximum peak SAR for the maximum output power channel is <= 1.6 W/kg and the 1g averaged SAR is <= 0.8 W/kg, WLAN SAR testing for other channels is not required.
4. SAR testing for 802.11g/n is not required when its maximum power is less than 1/4 dB higher than 802.11b.
5. SAR testing for 802.11n/ac is not required when its maximum power is less than 1/4 dB higher than 802.11a.

4.7.3 SAR Results for Hotspot (Separation Distance is 1.0 cm)

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
481	CDMA BC0	RTAP153.6	Front Face	384	0	24.8	24.72	1.02	-0.04	0.446	0.45
483	CDMA BC0	RTAP153.6	Rear Face	384	0	24.8	24.72	1.02	-0.05	0.613	**0.63**
442	CDMA BC0	RTAP153.6	Left Side	384	0	24.8	24.72	1.02	0.09	0.400	0.41
443	CDMA BC0	RTAP153.6	Right Side	384	0	24.8	24.72	1.02	0.09	0.185	0.19
444	CDMA BC0	RTAP153.6	Bottom Side	384	0	24.8	24.72	1.02	0.18	0.203	0.21
490	CDMA BC0	RTAP153.6	Front Face	384	1	24.8	24.72	1.02	-0.12	0.115	0.12
492	CDMA BC0	RTAP153.6	Rear Face	384	1	24.8	24.72	1.02	0.12	0.134	0.14
433	CDMA BC0	RTAP153.6	Left Side	384	1	24.8	24.72	1.02	0.12	0.115	0.12
434	CDMA BC0	RTAP153.6	Right Side	384	1	24.8	24.72	1.02	0.07	0.074	0.08
435	CDMA BC0	RTAP153.6	Top Side	384	1	24.8	24.72	1.02	-0.06	0.036	0.04
484	CDMA BC1	RTAP153.6	Front Face	600	0	24.8	24.79	1.00	0.02	0.448	0.45
486	CDMA BC1	RTAP153.6	Rear Face	600	0	24.8	24.79	1.00	-0.02	0.761	**0.76**
448	CDMA BC1	RTAP153.6	Left Side	600	0	24.8	24.79	1.00	0.13	0.539	0.54
449	CDMA BC1	RTAP153.6	Right Side	600	0	24.8	24.79	1.00	0.17	0.098	0.10
470	CDMA BC1	RTAP153.6	Bottom Side	600	0	24.8	24.79	1.00	0.17	0.592	0.59
495	CDMA BC1	RTAP153.6	Front Face	600	1	24.8	24.79	1.00		0.068	0.07
494	CDMA BC1	RTAP153.6	Rear Face	600	1	24.8	24.79	1.00	-0.05	0.054	0.05
452	CDMA BC1	RTAP153.6	Left Side	600	1	24.8	24.79	1.00	-0.02	0.050	0.05
453	CDMA BC1	RTAP153.6	Right Side	600	1	24.8	24.79	1.00	-0.15	0.007	0.01
454	CDMA BC1	RTAP153.6	Top Side	600	1	24.8	24.79	1.00	0.16	0.051	0.05
472	CDMA BC10	RTAP153.6	Front Face	476	0	24.8	24.76	1.01	0.03	0.493	0.50
477	CDMA BC10	RTAP153.6	Rear Face	476	0	24.8	24.76	1.01	0.14	0.605	**0.61**
474	CDMA BC10	RTAP153.6	Left Side	476	0	24.8	24.76	1.01	0.11	0.450	0.45
475	CDMA BC10	RTAP153.6	Right Side	476	0	24.8	24.76	1.01	0.12	0.272	0.27
476	CDMA BC10	RTAP153.6	Bottom Side	476	0	24.8	24.76	1.01	0.13	0.224	0.23
496	CDMA BC10	RTAP153.6	Front Face	476	1	24.8	24.76	1.01	0.1	0.114	0.12
498	CDMA BC10	RTAP153.6	Rear Face	476	1	24.8	24.76	1.01	0.01	0.137	0.14
458	CDMA BC10	RTAP153.6	Left Side	476	1	24.8	24.76	1.01	0.11	0.120	0.12
459	CDMA BC10	RTAP153.6	Right Side	476	1	24.8	24.76	1.01	0.12	0.083	0.08
460	CDMA BC10	RTAP153.6	Top Side	476	1	24.8	24.76	1.01	-0.09	0.030	0.03

Note:

1. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.

Plot No.	Band	Mode	Test Position	Ch.	Tx Antenna	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
240	LTE 25	QPSK_10M	Front Face	26640	0	1	24	24.8	24.80	1.00	0.01	0.407	0.41
250	LTE 25	QPSK_10M	Rear Face	26640	0	1	24	24.8	24.80	1.00	-0.06	0.712	**0.71**
242	LTE 25	QPSK_10M	Left Side	26640	0	1	24	24.8	24.80	1.00	-0.01	0.534	0.53
243	LTE 25	QPSK_10M	Right Side	26640	0	1	24	24.8	24.80	1.00	0.01	0.097	0.10
245	LTE 25	QPSK_10M	Bottom Side	26640	0	1	24	24.8	24.80	1.00	-0.04	0.535	0.54
270	LTE 25	QPSK_10M	Front Face	26640	0	25	0	23.8	23.49	1.07	-0.02	0.422	0.45
279	LTE 25	QPSK_10M	Rear Face	26640	0	25	0	23.8	23.49	1.07	-0.08	0.527	0.56
272	LTE 25	QPSK_10M	Left Side	26640	0	25	0	23.8	23.49	1.07	0.1	0.412	0.44
273	LTE 25	QPSK_10M	Right Side	26640	0	25	0	23.8	23.49	1.07	-0.09	0.084	0.09
274	LTE 25	QPSK_10M	Bottom Side	26640	0	25	0	23.8	23.49	1.07	0.12	0.381	0.41
487	LTE 25	QPSK_10M	Front Face	26640	1	1	24	24.8	24.80	1.00	0.09	0.059	0.06
252	LTE 25	QPSK_10M	Rear Face	26640	1	1	24	24.8	24.80	1.00	-0.08	0.049	0.05
261	LTE 25	QPSK_10M	Left Side	26640	1	1	24	24.8	24.80	1.00	-0.16	0.06	0.06
254	LTE 25	QPSK_10M	Right Side	26640	1	1	24	24.8	24.80	1.00	-0.17	0.004	0.01
255	LTE 25	QPSK_10M	Top Side	26640	1	1	24	24.8	24.80	1.00	0.08	0.040	0.04
262	LTE 25	QPSK_10M	Front Face	26640	1	25	0	23.8	23.49	1.07	0.04	0.055	0.06
269	LTE 25	QPSK_10M	Rear Face	26640	1	25	0	23.8	23.49	1.07	-0.1	0.061	0.07
264	LTE 25	QPSK_10M	Left Side	26640	1	25	0	23.8	23.49	1.07	0.08	0.047	0.05
265	LTE 25	QPSK_10M	Right Side	26640	1	25	0	23.8	23.49	1.07	-0.04	0.006	0.01
266	LTE 25	QPSK_10M	Top Side	26640	1	25	0	23.8	23.49	1.07	0.18	0.043	0.05

Note:

1. SAR is performed on the highest power channel. When the reported SAR value of highest power channel is <= 0.8 W/kg, SAR testing for optional channel is not required.
2. According to KDB 941225, LTE SAR testing for remaining configurations for 1RB allocation is not required when the reported SAR is <= 0.8 W/kg.
3. According to KDB 941225, LTE SAR testing for remaining configurations for 50%RB allocation is not required when the reported SAR is <= 0.8 W/kg.
4. According to KDB 941225, LTE SAR testing for 16QAM is not required when the maximum power of 16QAM is less 1/2 dB higher than QPSK and the highest reported SAR of QPSK is less than 1.45 W/kg.
5. According to KDB 941225, the LTE SAR testing for other channel bandwidths is not required when the maximum power of smaller channel bandwidth is less 1/2 dB higher than largest channel bandwidth, and maximum SAR of largest channel bandwidth is less than 1.45 W/kg.

Plot No.	Band	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
301	802.11b	Front Face	1	18.0	17.95	1.01	0.051	0.072	**0.07**
302	802.11b	Rear Face	1	18.0	17.95	1.01	0.022	0.031	0.03
306	802.11b	Right Side	1	18.0	17.95	1.01	0.04	0.032	0.03
305	802.11b	Top Side	1	18.0	17.95	1.01	0.05	0.031	0.03

Note:

1. According to KDB 248227 D01, when the extrapolated maximum peak SAR for the maximum output power channel is <= 1.6 W/kg and the 1g averaged SAR is <= 0.8 W/kg, WLAN SAR testing for other channels is not required.
2. SAR testing for 802.11g/n is not required when its maximum power is less than 1/4 dB higher than 802.11b.
3. WLAN 5G does not support wireless hotspot mode.

4.7.4 SAR Measurement Variability

According to KDB 865664 D01v01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20, or when the original or repeated measurement is >= 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Tx Antenna	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
CDMA BC0	RC3+SO55	Right Cheek	1	777	1.04	1.01	1.03	N/A	N/A	N/A	N/A
CDMA BC10	RC3+SO55	Right Cheek	1	476	0.908	0.906	1.00	N/A	N/A	N/A	N/A

4.7.5 Simultaneous Multi-band Transmission Evaluation

<Estimated SAR Calculation>

According to KDB 447498 D01v05, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR was estimated according to following to determine simultaneous transmission SAR test exclusion.

$$\text{Estimated SAR} = \frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \frac{\sqrt{f_{(\text{GHz})}}}{7.5}$$

If the minimum test separation distance is < 5 mm, a distance of 5 mm is used for estimated SAR calculation. When the test separation distance is > 50 mm, the 0.4 W/kg is used for SAR-1g.

Mode / Band	Frequency (GHz)	Max. Tune-up Power (dBm)	Test Position	Separation Distance (mm)	Estimated SAR (W/kg)
CDMA BC0	0.848	24.8	Ant-0: Top Side	127.4	0.4
CDMA BC0	0.848	24.8	Ant-1: Bottom Side	127.4	0.4
CDMA BC1	1.908	24.8	Ant-0: Top Side	127.4	0.4
CDMA BC1	1.908	24.8	Ant-1: Bottom Side	127.4	0.4
CDMA BC10	0.823	24.8	Ant-0: Top Side	127.4	0.4
CDMA BC10	0.823	24.8	Ant-1: Bottom Side	127.4	0.4
LTE 25	1.912	24.8	Ant-0: Top Side	127.4	0.4
LTE 25	1.912	24.8	Ant-1: Bottom Side	127.4	0.4
WLAN (DTS)	2.462	18.0	Left Side	58.9	0.4
WLAN (DTS)	2.462	18.0	Bottom Side	137.4	0.4
Bluetooth	2.48	6.0	Head	< 5	0.2
Bluetooth	2.48	6.0	Body	10	0.1

<SAR Summation Analysis>

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR
1	CDMA BC0 + WLAN (DTS)	Head	Right Cheek	1.05	0.20	1.25	N/A
			Right Tilted	0.46	0.15	0.61	N/A
			Left Cheek	0.60	0.60	1.20	N/A
			Left Tilted	0.33	0.33	0.66	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.63	0.03	0.66	N/A
		Hotspot	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.63	0.03	0.66	N/A
			Left Side	0.41	0.4	0.81	N/A
			Right Side	0.19	0.03	0.22	N/A
			Top Side	0.04	0.03	0.07	N/A
			Bottom Side	0.21	0.4	0.61	N/A
2	CDMA BC0 + WLAN (NII)	Head	Right Cheek	1.05	0.31	1.36	N/A
			Right Tilted	0.46	0.19	0.65	N/A
			Left Cheek	0.60	0.46	1.06	N/A
			Left Tilted	0.33	0.27	0.60	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.63	0.05	0.68	N/A
3	CDMA BC0 + BT (DSS)	Head	Right Cheek	1.05	0.2	1.25	N/A
			Right Tilted	0.46	0.2	0.66	N/A
			Left Cheek	0.60	0.2	0.80	N/A
			Left Tilted	0.33	0.2	0.53	N/A
		Body-Worn	Front Face	0.45	0.1	0.55	N/A
			Rear Face	0.63	0.1	0.73	N/A

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR
4	CDMA BC1 + WLAN (DTS)	Head	Right Cheek	0.41	0.20	0.61	N/A
			Right Tilted	0.22	0.15	0.37	N/A
			Left Cheek	0.47	0.60	1.07	N/A
			Left Tilted	0.18	0.33	0.51	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.76	0.03	0.79	N/A
		Hotspot	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.76	0.03	0.79	N/A
			Left Side	0.54	0.4	0.94	N/A
			Right Side	0.10	0.03	0.13	N/A
			Top Side	0.05	0.03	0.08	N/A
			Bottom Side	0.59	0.4	0.99	N/A
5	CDMA BC1 + WLAN (NII)	Head	Right Cheek	0.41	0.31	0.72	N/A
			Right Tilted	0.22	0.19	0.41	N/A
			Left Cheek	0.47	0.46	0.93	N/A
			Left Tilted	0.18	0.27	0.45	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.76	0.05	0.81	N/A
6	CDMA BC1 + BT (DSS)	Head	Right Cheek	0.41	0.2	0.61	N/A
			Right Tilted	0.22	0.2	0.42	N/A
			Left Cheek	0.47	0.2	0.67	N/A
			Left Tilted	0.18	0.2	0.38	N/A
		Body-Worn	Front Face	0.45	0.1	0.55	N/A
			Rear Face	0.76	0.1	0.86	N/A

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR
7	CDMA BC10 + WLAN (DTS)	Head	Right Cheek	0.91	0.20	1.11	N/A
			Right Tilted	0.36	0.15	0.51	N/A
			Left Cheek	0.54	0.60	1.14	N/A
			Left Tilted	0.25	0.33	0.58	N/A
		Body-Worn	Front Face	0.50	0.07	0.57	N/A
			Rear Face	0.61	0.03	0.64	N/A
		Hotspot	Front Face	0.50	0.07	0.57	N/A
			Rear Face	0.61	0.03	0.64	N/A
			Left Side	0.45	0.4	0.85	N/A
			Right Side	0.27	0.03	0.30	N/A
			Top Side	0.03	0.03	0.06	N/A
			Bottom Side	0.23	0.4	0.63	N/A
8	CDMA BC10 + WLAN (NII)	Head	Right Cheek	0.91	0.31	1.22	N/A
			Right Tilted	0.36	0.19	0.55	N/A
			Left Cheek	0.54	0.46	1.00	N/A
			Left Tilted	0.25	0.27	0.52	N/A
		Body-Worn	Front Face	0.50	0.07	0.57	N/A
			Rear Face	0.61	0.05	0.66	N/A
9	CDMA BC10 + BT (DSS)	Head	Right Cheek	0.91	0.2	1.11	N/A
			Right Tilted	0.36	0.2	0.56	N/A
			Left Cheek	0.54	0.2	0.74	N/A
			Left Tilted	0.25	0.2	0.45	N/A
		Body-Worn	Front Face	0.50	0.1	0.60	N/A
			Rear Face	0.61	0.1	0.71	N/A

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR
10	LTE 25 + WLAN (DTS)	Head	Right Cheek	0.55	0.20	0.75	N/A
			Right Tilted	0.24	0.15	0.39	N/A
			Left Cheek	0.54	0.60	1.14	N/A
			Left Tilted	0.22	0.33	0.55	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.71	0.03	0.74	N/A
		Hotspot	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.71	0.03	0.74	N/A
			Left Side	0.53	0.4	0.93	N/A
			Right Side	0.10	0.03	0.13	N/A
			Top Side	0.05	0.03	0.08	N/A
			Bottom Side	0.54	0.4	0.94	N/A
11	LTE 25 + WLAN (NII)	Head	Right Cheek	0.55	0.31	0.86	N/A
			Right Tilted	0.24	0.19	0.43	N/A
			Left Cheek	0.54	0.46	1.00	N/A
			Left Tilted	0.22	0.27	0.49	N/A
		Body-Worn	Front Face	0.45	0.07	0.52	N/A
			Rear Face	0.71	0.05	0.76	N/A
12	LTE 25 + BT (DSS)	Head	Right Cheek	0.55	0.2	0.75	N/A
			Right Tilted	0.24	0.2	0.44	N/A
			Left Cheek	0.54	0.2	0.74	N/A
			Left Tilted	0.22	0.2	0.42	N/A
		Body-Worn	Front Face	0.45	0.1	0.55	N/A
			Rear Face	0.71	0.1	0.81	N/A

No.	Conditions (SAR1 + SAR2 + SAR3)	Exposure Condition	Test Position	Tx Antenna	Max. SAR1	Max. SAR2	Max. SAR3	SAR Summation	SPLSR
13	CDMA BC0 + LTE 25 + WLAN (DTS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.41	0.55	0.20	1.16	N/A
				Ant-0:LTE Ant-1:CDMA	1.05	0.35	0.20	1.60	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.29	0.24	0.15	0.68	N/A
				Ant-0:LTE Ant-1:CDMA	0.46	0.18	0.15	0.79	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.50	0.26	0.60	1.36	N/A
				Ant-0:LTE Ant-1:CDMA	0.60	0.54	0.60	**1.74**	**Analyzed as below**
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.33	0.16	0.33	0.82	N/A
				Ant-0:LTE Ant-1:CDMA	0.28	0.22	0.33	0.83	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.63	0.07	0.03	0.73	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.03	0.88	N/A
		Hotspot	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.63	0.07	0.03	0.73	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.03	0.88	N/A
			Left Side	Ant-0:CDMA Ant-1:LTE	0.41	0.06	0.4	0.87	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.53	0.4	1.05	N/A
			Right Side	Ant-0:CDMA Ant-1:LTE	0.19	0.01	0.03	0.23	N/A
				Ant-0:LTE Ant-1:CDMA	0.08	0.10	0.03	0.21	N/A
			Top Side	Ant-0:CDMA Ant-1:LTE	0.4	0.05	0.03	0.48	N/A
				Ant-0:LTE Ant-1:CDMA	0.04	0.4	0.03	0.47	N/A
			Bottom Side	Ant-0:CDMA Ant-1:LTE	0.21	0.4	0.4	1.01	N/A
				Ant-0:LTE Ant-1:CDMA	0.4	0.54	0.4	1.34	N/A
14	CDMA BC0 + LTE 25 + WLAN (NII)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.41	0.55	0.31	1.27	N/A
				Ant-0:LTE Ant-1:CDMA	1.05	0.35	0.31	**1.71**	**Analyzed as below**
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.29	0.24	0.19	0.72	N/A
				Ant-0:LTE Ant-1:CDMA	0.46	0.18	0.19	0.83	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.50	0.26	0.46	1.22	N/A
				Ant-0:LTE Ant-1:CDMA	0.60	0.54	0.46	1.60	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.33	0.16	0.27	0.76	N/A
				Ant-0:LTE Ant-1:CDMA	0.28	0.22	0.27	0.77	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.63	0.07	0.05	0.75	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.05	0.90	N/A
15	CDMA BC0 + LTE 25 + BT (DSS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.41	0.55	0.2	1.16	N/A
				Ant-0:LTE Ant-1:CDMA	1.05	0.35	0.2	1.60	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.29	0.24	0.2	0.73	N/A
				Ant-0:LTE Ant-1:CDMA	0.46	0.18	0.2	0.84	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.50	0.26	0.2	0.96	N/A
				Ant-0:LTE Ant-1:CDMA	0.60	0.54	0.2	1.34	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.33	0.16	0.2	0.69	N/A
				Ant-0:LTE Ant-1:CDMA	0.28	0.22	0.2	0.70	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.1	0.61	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.1	0.67	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.63	0.07	0.1	0.80	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.1	0.95	N/A

No.	Conditions (SAR1 + SAR2 + SAR3)	Exposure Condition	Test Position	Tx Antenna	Max. SAR1	Max. SAR2	Max. SAR3	SAR Summation	SPLSR
16	CDMA BC1 + LTE 25 + WLAN (DTS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.20	1.05	N/A
				Ant-0:LTE Ant-1:CDMA	0.41	0.35	0.20	0.96	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.14	0.24	0.15	0.53	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.18	0.15	0.55	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.47	0.26	0.60	1.33	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.54	0.60	1.36	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.18	0.16	0.33	0.67	N/A
				Ant-0:LTE Ant-1:CDMA	0.13	0.22	0.33	0.68	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.07	0.45	0.07	0.59	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.76	0.07	0.03	0.86	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.71	0.03	0.79	N/A
		Hotspot	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.07	0.45	0.07	0.59	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.76	0.07	0.03	0.86	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.71	0.03	0.79	N/A
			Left Side	Ant-0:CDMA Ant-1:LTE	0.54	0.06	0.4	1.00	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.53	0.4	0.98	N/A
			Right Side	Ant-0:CDMA Ant-1:LTE	0.10	0.01	0.03	0.14	N/A
				Ant-0:LTE Ant-1:CDMA	0.01	0.10	0.03	0.14	N/A
			Top Side	Ant-0:CDMA Ant-1:LTE	0.4	0.05	0.03	0.48	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.4	0.03	0.48	N/A
			Bottom Side	Ant-0:CDMA Ant-1:LTE	0.59	0.4	0.4	1.39	N/A
				Ant-0:LTE Ant-1:CDMA	0.4	0.54	0.4	1.34	N/A
17	CDMA BC1 + LTE 25 + WLAN (NII)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.31	1.16	N/A
				Ant-0:LTE Ant-1:CDMA	0.41	0.35	0.31	1.07	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.14	0.24	0.19	0.57	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.18	0.19	0.59	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.47	0.26	0.46	1.19	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.54	0.46	1.22	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.18	0.16	0.27	0.61	N/A
				Ant-0:LTE Ant-1:CDMA	0.13	0.22	0.27	0.62	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.07	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.07	0.45	0.07	0.59	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.76	0.07	0.05	0.88	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.71	0.05	0.81	N/A
18	CDMA BC1 + LTE 25 + BT (DSS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.2	1.05	N/A
				Ant-0:LTE Ant-1:CDMA	0.41	0.35	0.2	0.96	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.14	0.24	0.2	0.58	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.18	0.2	0.60	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.47	0.26	0.2	0.93	N/A
				Ant-0:LTE Ant-1:CDMA	0.22	0.54	0.2	0.96	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.18	0.16	0.2	0.54	N/A
				Ant-0:LTE Ant-1:CDMA	0.13	0.22	0.2	0.55	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.1	0.61	N/A
				Ant-0:LTE Ant-1:CDMA	0.07	0.45	0.1	0.62	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.76	0.07	0.1	0.93	N/A
				Ant-0:LTE Ant-1:CDMA	0.05	0.71	0.1	0.86	N/A

No.	Conditions (SAR1 + SAR2 + SAR3)	Exposure Condition	Test Position	Tx Antenna	Max. SAR1	Max. SAR2	Max. SAR3	SAR Summation	SPLSR
19	CDMA BC10 + LTE 25 + WLAN (DTS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.20	1.05	N/A
				Ant-0:LTE Ant-1:CDMA	0.91	0.35	0.20	1.46	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.21	0.24	0.15	0.60	N/A
				Ant-0:LTE Ant-1:CDMA	0.36	0.18	0.15	0.69	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.38	0.26	0.60	1.24	N/A
				Ant-0:LTE Ant-1:CDMA	0.54	0.54	0.60	**1.68**	**Analyzed as below**
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.25	0.16	0.33	0.74	N/A
				Ant-0:LTE Ant-1:CDMA	0.21	0.22	0.33	0.76	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.50	0.06	0.07	0.63	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.61	0.07	0.03	0.71	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.03	0.88	N/A
		Hotspot	Front Face	Ant-0:CDMA Ant-1:LTE	0.50	0.06	0.07	0.63	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.61	0.07	0.03	0.71	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.03	0.88	N/A
			Left Side	Ant-0:CDMA Ant-1:LTE	0.45	0.06	0.4	0.91	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.53	0.4	1.05	N/A
			Right Side	Ant-0:CDMA Ant-1:LTE	0.27	0.01	0.03	0.31	N/A
				Ant-0:LTE Ant-1:CDMA	0.08	0.10	0.03	0.21	N/A
			Top Side	Ant-0:CDMA Ant-1:LTE	0.4	0.05	0.03	0.48	N/A
				Ant-0:LTE Ant-1:CDMA	0.03	0.4	0.03	0.46	N/A
			Bottom Side	Ant-0:CDMA Ant-1:LTE	0.23	0.4	0.4	1.03	N/A
				Ant-0:LTE Ant-1:CDMA	0.4	0.54	0.4	1.34	N/A
20	CDMA BC10 + LTE 25 + WLAN (NII)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.31	1.16	N/A
				Ant-0:LTE Ant-1:CDMA	0.91	0.35	0.31	1.57	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.21	0.24	0.19	0.64	N/A
				Ant-0:LTE Ant-1:CDMA	0.36	0.18	0.19	0.73	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.38	0.26	0.46	1.10	N/A
				Ant-0:LTE Ant-1:CDMA	0.54	0.54	0.46	1.54	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.25	0.16	0.27	0.68	N/A
				Ant-0:LTE Ant-1:CDMA	0.21	0.22	0.27	0.70	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.50	0.06	0.07	0.63	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.07	0.64	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.61	0.07	0.05	0.73	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.05	0.90	N/A
21	CDMA BC10 + LTE 25 + BT (DSS)	Head	Right Cheek	Ant-0:CDMA Ant-1:LTE	0.30	0.55	0.2	1.05	N/A
				Ant-0:LTE Ant-1:CDMA	0.91	0.35	0.2	1.46	N/A
			Right Tilted	Ant-0:CDMA Ant-1:LTE	0.21	0.24	0.2	0.65	N/A
				Ant-0:LTE Ant-1:CDMA	0.36	0.18	0.2	0.74	N/A
			Left Cheek	Ant-0:CDMA Ant-1:LTE	0.38	0.26	0.2	0.84	N/A
				Ant-0:LTE Ant-1:CDMA	0.54	0.54	0.2	1.28	N/A
			Left Tilted	Ant-0:CDMA Ant-1:LTE	0.25	0.16	0.2	0.61	N/A
				Ant-0:LTE Ant-1:CDMA	0.21	0.22	0.2	0.63	N/A
		Body-Worn	Front Face	Ant-0:CDMA Ant-1:LTE	0.50	0.06	0.1	0.66	N/A
				Ant-0:LTE Ant-1:CDMA	0.12	0.45	0.1	0.67	N/A
			Rear Face	Ant-0:CDMA Ant-1:LTE	0.61	0.07	0.1	0.78	N/A
				Ant-0:LTE Ant-1:CDMA	0.14	0.71	0.1	0.95	N/A

<SAR to Peak Location Separation Ratio Analysis>

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR. When SAR is measured for both antennas in the pair, the peak location separation distance is computed by the following formula.

$$\text{Peak Location Separation Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

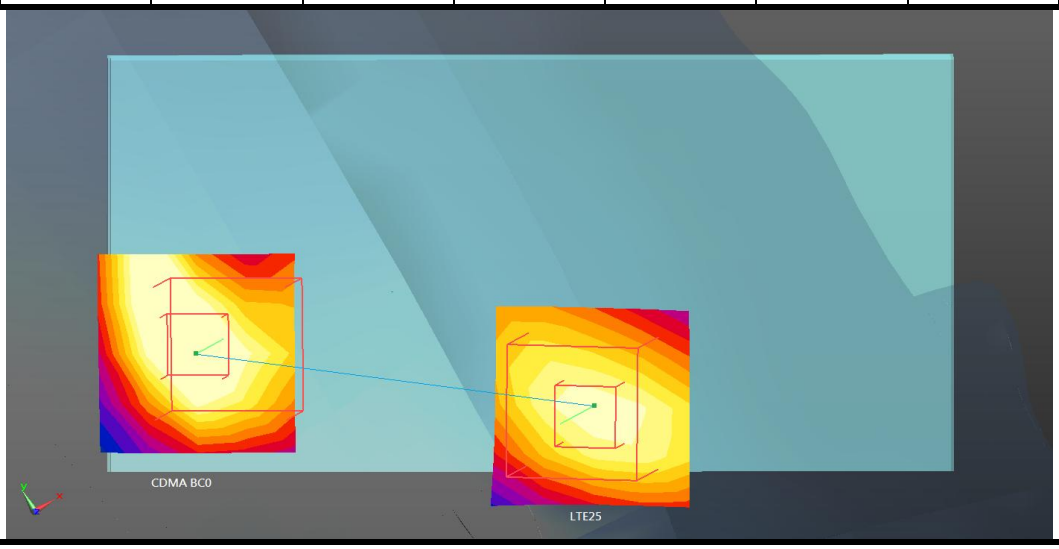
The SPLSR is determined by the following formula.

$$\text{SPLSR} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{R_i}$$

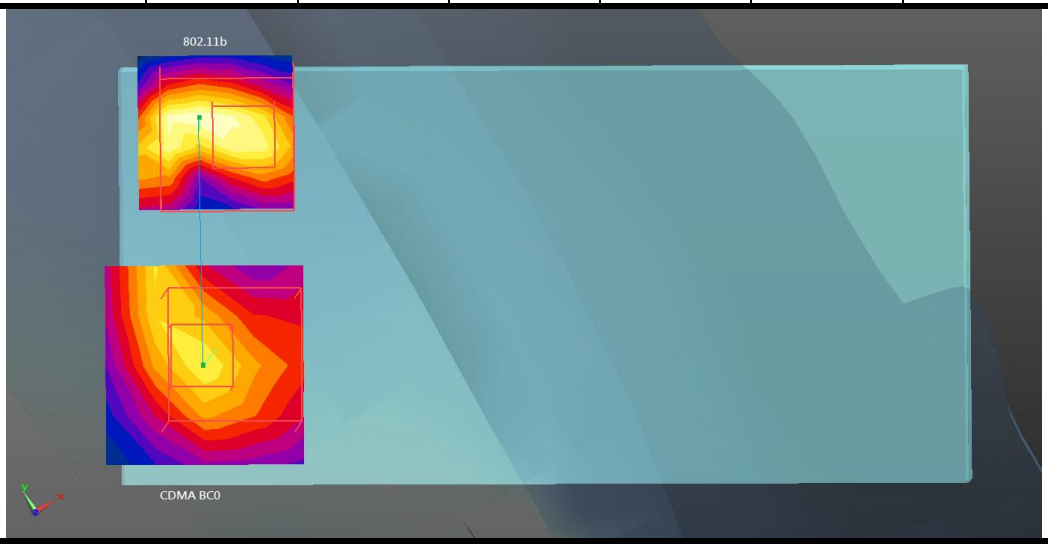
Where SAR_1 and SAR_2 are the highest reported or estimated SAR for each antenna in the pair, and R_i is the separation distance between the peak SAR locations for the antenna pair in mm.

When the SPLSR is <= 0.04, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

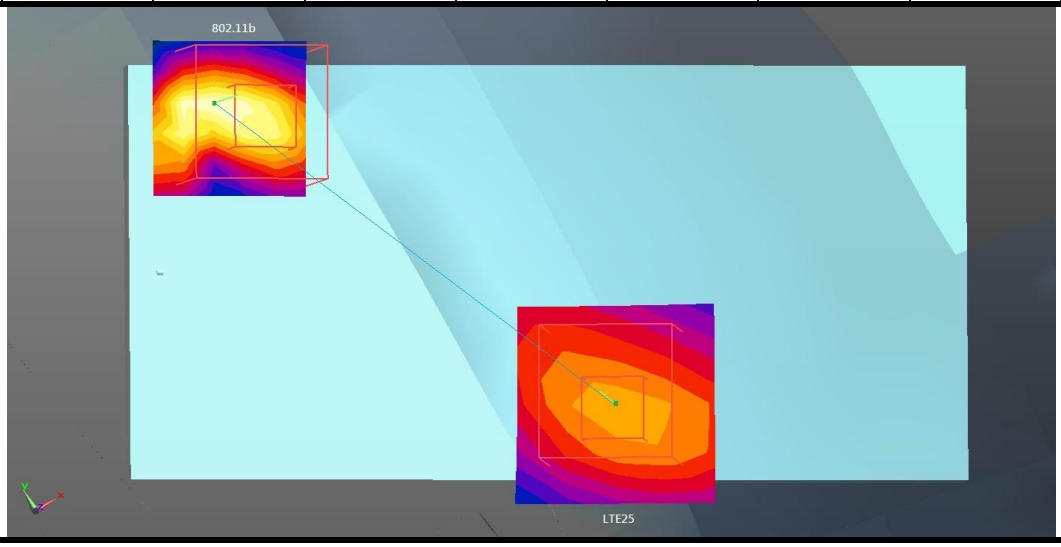
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC0	Head	Left Cheek	0.60	1.43	29.53	-17.26	69.6	0.017
LTE 25			0.54	6.7	24.98	-17.34		



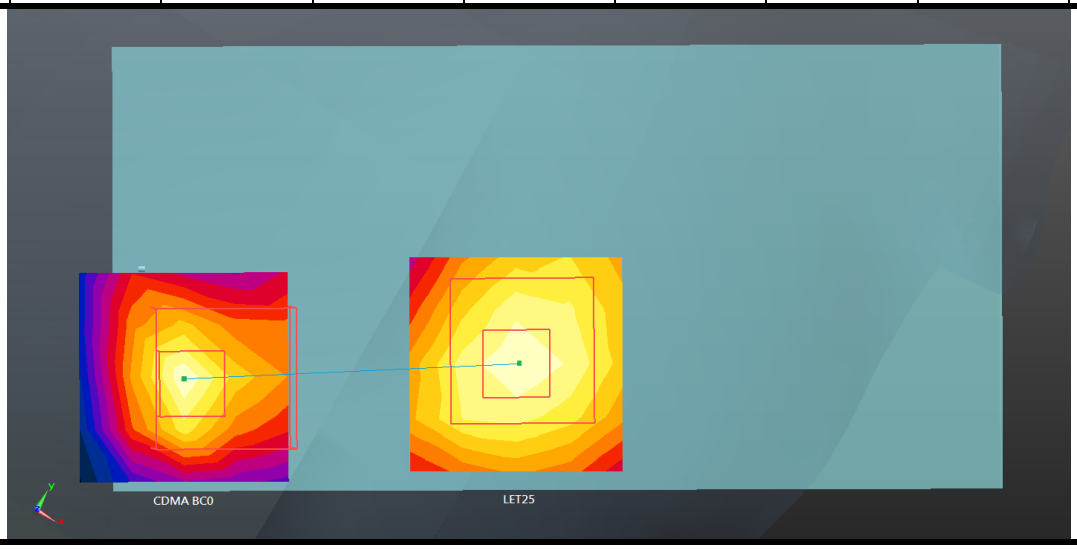
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC0	Head	Left Cheek	0.60	1.43	29.53	-17.26	38.1	0.034
WLAN(DTS)			0.60	3.18	32.91	-17.44		



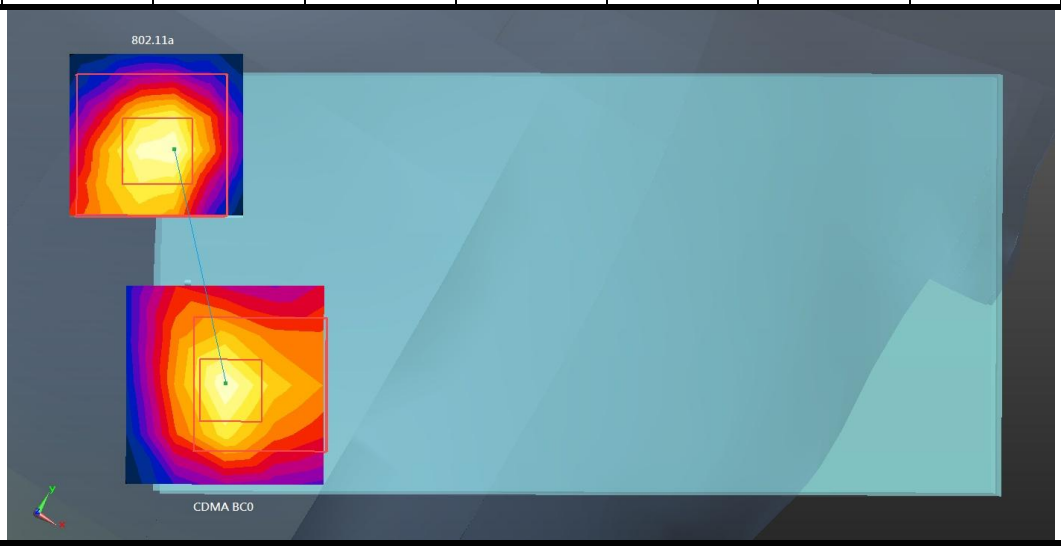
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
LTE 25	Head	Left Cheek	0.54	6.7	24.98	-17.34	86.8	0.014
WLAN(DTS)			0.60	3.18	32.91	-17.44		



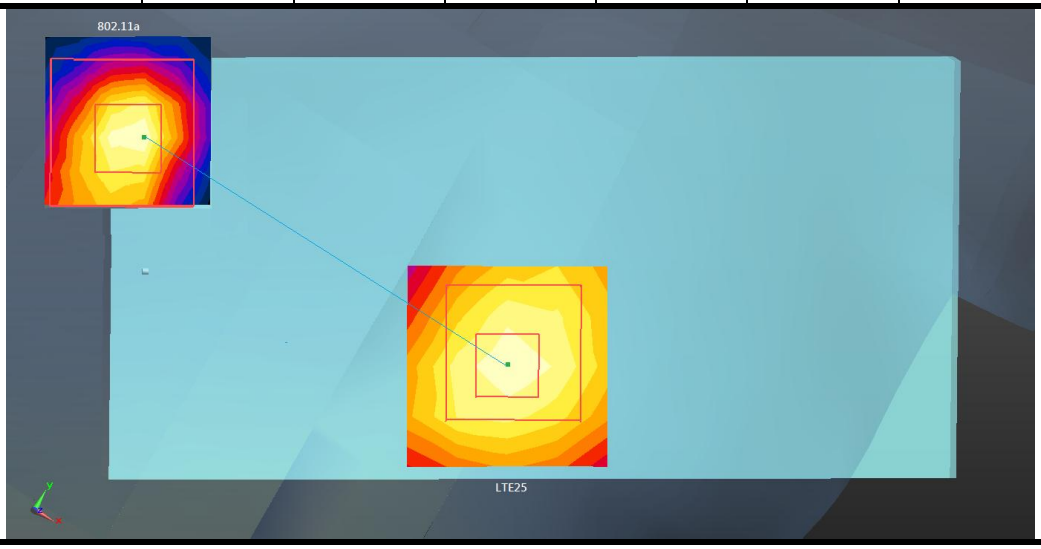
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC0	Head	Right Cheek	1.05	2.86	-32.38	-17.46	53.5	0.031
LTE 25			0.35	7.24	-29.31	-17.46		



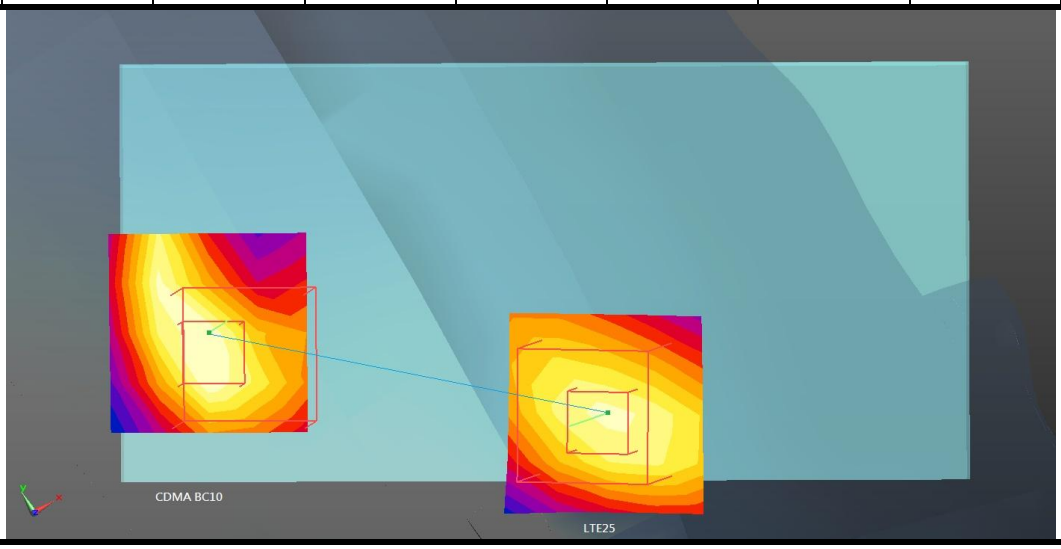
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC0	Head	Right Cheek	1.05	2.86	-32.38	-17.46	43.8	0.036
WLAN(NII)			0.31	-0.09	-29.23	-16.69		



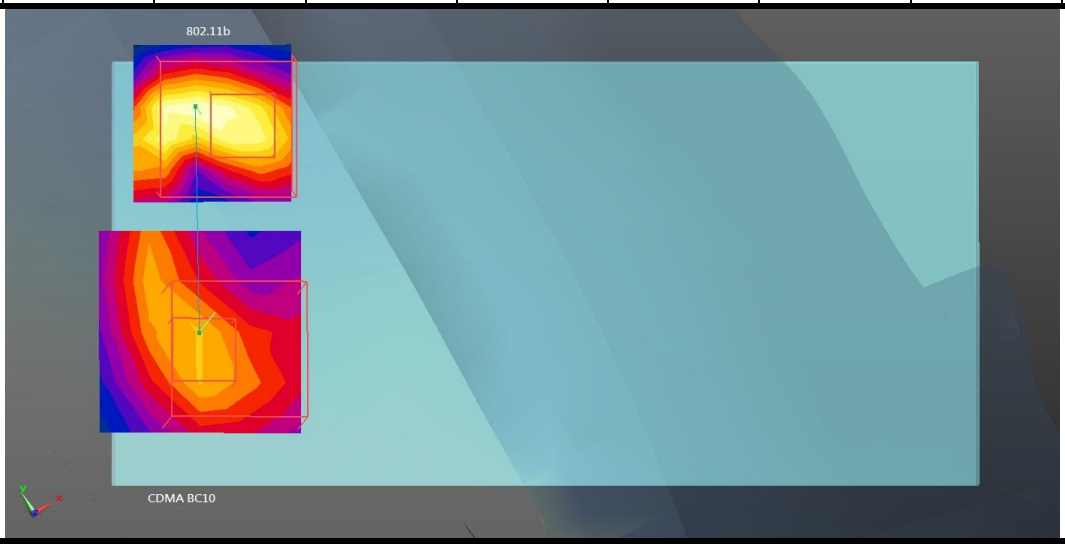
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
LTE 25	Head	Right Cheek	0.35	7.24	-29.31	-17.46	73.7	0.007
WLAN(NII)			0.31	-0.09	-29.23	-16.69		



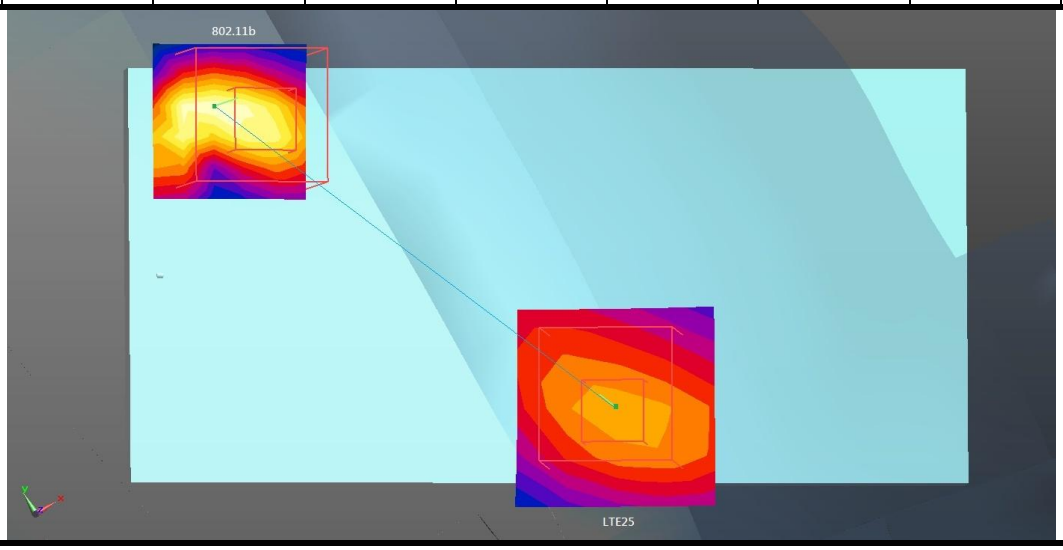
Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC10	Head	Left Cheek	0.54	1.42	29.51	-17.26	69.6	0.016
LTE 25			0.54	6.7	24.98	-17.34		



Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
CDMA BC10	Head	Left Cheek	0.54	1.42	29.51	-17.26	38.3	0.032
WLAN(DTS)			0.60	3.18	32.91	-17.44		



Conditions	Exposure Condition	Test Position	Max. SAR	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR
				x	y	z		
LTE 25	Head	Left Cheek	0.54	6.7	24.98	-17.34	86.8	0.014
WLAN(DTS)			0.60	3.18	32.91	-17.44		



Test Engineer： Isaac Liao, and Keith Wang

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Kit	SPEAG	D835V2	4d021	Apr. 20, 2012	Annual
System Validation Kit	SPEAG	D1900V2	5d036	Jan. 26, 2012	Annual
System Validation Kit	SPEAG	D2450V2	737	Jan. 24, 2012	Annual
System Validation Kit	SPEAG	D5GHzV2	1019	Nov. 16, 2012	Annual
Dosimetric E-Field Probe	SPEAG	EX3DV4	3590	Feb. 23, 2012	Annual
Dosimetric E-Field Probe	SPEAG	EX3DV4	3650	Oct. 26, 2012	Annual
Dosimetric E-Field Probe	SPEAG	EX3DV4	3801	Jun. 22, 2012	Annual
Dosimetric E-Field Probe	SPEAG	EX3DV4	3864	Jul. 19, 2012	Annual
Data Acquisition Electronics	SPEAG	DAE3	579	Apr. 27, 2012	Annual
Data Acquisition Electronics	SPEAG	DAE4	687	Aug. 23, 2012	Annual
Data Acquisition Electronics	SPEAG	DAE4	861	Aug. 23, 2012	Annual
Data Acquisition Electronics	SPEAG	DAE4	1277	Jul. 19, 2012	Annual
SAM Phantom	SPEAG	QD000P40CD	TP-1485	N/A	N/A
SAM Phantom	SPEAG	QD000P40CD	TP-1202	N/A	N/A
SAM Phantom	SPEAG	QD000P40CD	TP-1653	N/A	N/A
SAM Phantom	SPEAG	QD000P40CD	TP-1127	N/A	N/A
Radio Communication Tester	Agilent	E5515C	MY50266628	Nov. 22, 2012	Biennial
Radio Communication Analyzer	Anritsu	MT8820C	6201010284	Aug. 18, 2012	Biennial
ENA Series Network Analyzer	Agilent	E5071C	MY46214281	May 14, 2012	Annual
MXG Analog Signal Generator	Agilent	N5181A	MY50143868	May 06, 2012	Annual
Power Meter	Anritsu	ML2495A	1218009	May 07, 2012	Annual
Power Sensor	Anritsu	MA2411B	1207252	May 07, 2012	Annual
EXA Spectrum Analyzer	Agilent	N9010A	MY52100136	Apr. 23, 2012	Annual
Dielectric Probe Kit	Agilent	85070D	E2-020018	May 14, 2012	Annual
Thermometer	YFE	YF-160A	110600361	Feb. 21, 2012	Annual
Directional Coupler	Woken	0110A05602O-10	11122702	Apr. 19, 2012	Annual
Power Amplifier	AR	5S1G4	0339656	Apr. 23, 2012	Annual
Power Amplifier	Mini-Circuit	ZVE-8G	001000422	Apr. 23, 2012	Annual
Attenuator	Woken	00800A1G01L-03	N/A	Apr. 19, 2012	Annual

6. Measurement Uncertainty

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Standard Uncertainty (1g)	Vi
Measurement System						
Probe Calibration	6.0	Normal	1	1	± 6.0 %	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	± 1.9 %	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	± 3.9 %	∞
Boundary Effects	1.0	Rectangular	√3	1	± 0.6 %	∞
Linearity	4.7	Rectangular	√3	1	± 2.7 %	∞
System Detection Limits	1.0	Rectangular	√3	1	± 0.6 %	∞
Readout Electronics	0.6	Normal	1	1	± 0.6 %	∞
Response Time	0.0	Rectangular	√3	1	± 0.0 %	∞
Integration Time	1.7	Rectangular	√3	1	± 1.0 %	∞
RF Ambient Noise	3.0	Rectangular	√3	1	± 1.7 %	∞
RF Ambient Reflections	3.0	Rectangular	√3	1	± 1.7 %	∞
Probe Positioner	0.5	Rectangular	√3	1	± 0.3 %	∞
Probe Positioning	2.9	Rectangular	√3	1	± 1.7 %	∞
Max. SAR Eval.	2.3	Rectangular	√3	1	± 1.3 %	∞
Test Sample Related						
Device Positioning	3.9	Normal	1	1	± 3.9 %	31
Device Holder	2.7	Normal	1	1	± 2.7 %	19
Power Drift	5.0	Rectangular	√3	1	± 2.9 %	∞
Phantom and Setup						
Phantom Uncertainty	4.0	Rectangular	√3	1	± 2.3 %	∞
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	± 1.8 %	∞
Liquid Conductivity (Meas.)	5.0	Normal	1	0.64	± 3.2 %	29
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	± 1.7 %	∞
Liquid Permittivity (Meas.)	5.0	Normal	1	0.6	± 3.0 %	29
Combined Standard Uncertainty					± 11.7 %	
Expanded Uncertainty (K=2)					**± 23.4 %**	

Uncertainty budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Standard Uncertainty (1g)	Vi
Measurement System						
Probe Calibration	6.55	Normal	1	1	± 6.55 %	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	± 1.9 %	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	± 3.9 %	∞
Boundary Effects	2.0	Rectangular	√3	1	± 1.2 %	∞
Linearity	4.7	Rectangular	√3	1	± 2.7 %	∞
System Detection Limits	1.0	Rectangular	√3	1	± 0.6 %	∞
Readout Electronics	0.3	Normal	1	1	± 0.3 %	∞
Response Time	0.8	Rectangular	√3	1	± 0.5 %	∞
Integration Time	2.6	Rectangular	√3	1	± 1.5 %	∞
RF Ambient Noise	3.0	Rectangular	√3	1	± 1.7 %	∞
RF Ambient Reflections	3.0	Rectangular	√3	1	± 1.7 %	∞
Probe Positioner	0.8	Rectangular	√3	1	± 0.5 %	∞
Probe Positioning	9.9	Rectangular	√3	1	± 5.7 %	∞
Max. SAR Eval.	4.0	Rectangular	√3	1	± 2.3 %	∞
Test Sample Related						
Device Positioning	3.9	Normal	1	1	± 3.9 %	31
Device Holder	2.7	Normal	1	1	± 2.7 %	19
Power Drift	5.0	Rectangular	√3	1	± 2.9 %	∞
Phantom and Setup						
Phantom Uncertainty	4.0	Rectangular	√3	1	± 2.3 %	∞
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	± 1.8 %	∞
Liquid Conductivity (Meas.)	5.0	Normal	1	0.64	± 3.2 %	30
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	± 1.7 %	∞
Liquid Permittivity (Meas.)	5.0	Normal	1	0.6	± 3.0 %	30
Combined Standard Uncertainty					± 13.4 %	
Expanded Uncertainty (K=2)					**± 26.8 %**	

Uncertainty budget for frequency range 3 GHz to 6 GHz

7. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Taiwan HwaYa EMC/RF/Safety/Telecom Lab:
Add: No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil., Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-318-3232
Fax: 886-3-327-0892

Taiwan LinKo EMC/RF Lab:
Add: No. 47, 14th Ling, Chia Pau Vil., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
Tel: 886-2-2605-2180
Fax: 886-2-2605-1924

Taiwan HsinChu EMC/RF Lab:
Add: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Vil., Chiung Lin Township, Hsinchu County 307, Taiwan, R.O.C.
Tel: 886-3-593-5343
Fax: 886-3-593-5342

Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

The road map of all our labs can be found in our web site also.

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Appendix A. SAR Plots of System Verification

The plots for system verification are shown as follows.

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2012/12/21

System Check_H835_121221

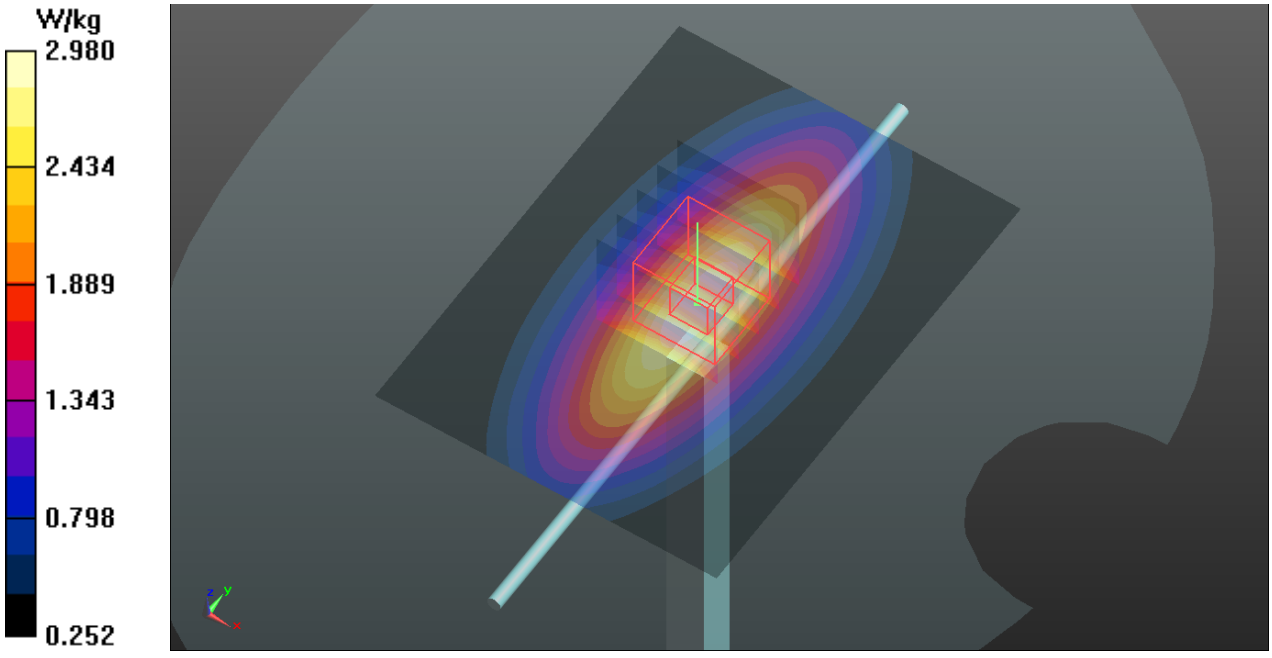
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d021

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: H835_1221 Medium parameters used: f = 835 MHz; σ = 0.904 mho/m; ε_r = 42.285; ρ = 1000 kg/m^3
Ambient Temperature：21.2 ℃； Liquid Temperature：20.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(9.8, 9.8, 9.8); Calibrated: 2012/7/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/4/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.99 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.165 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.55 W/kg
SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (measured) = 2.98 W/kg



System Check_H835_130114

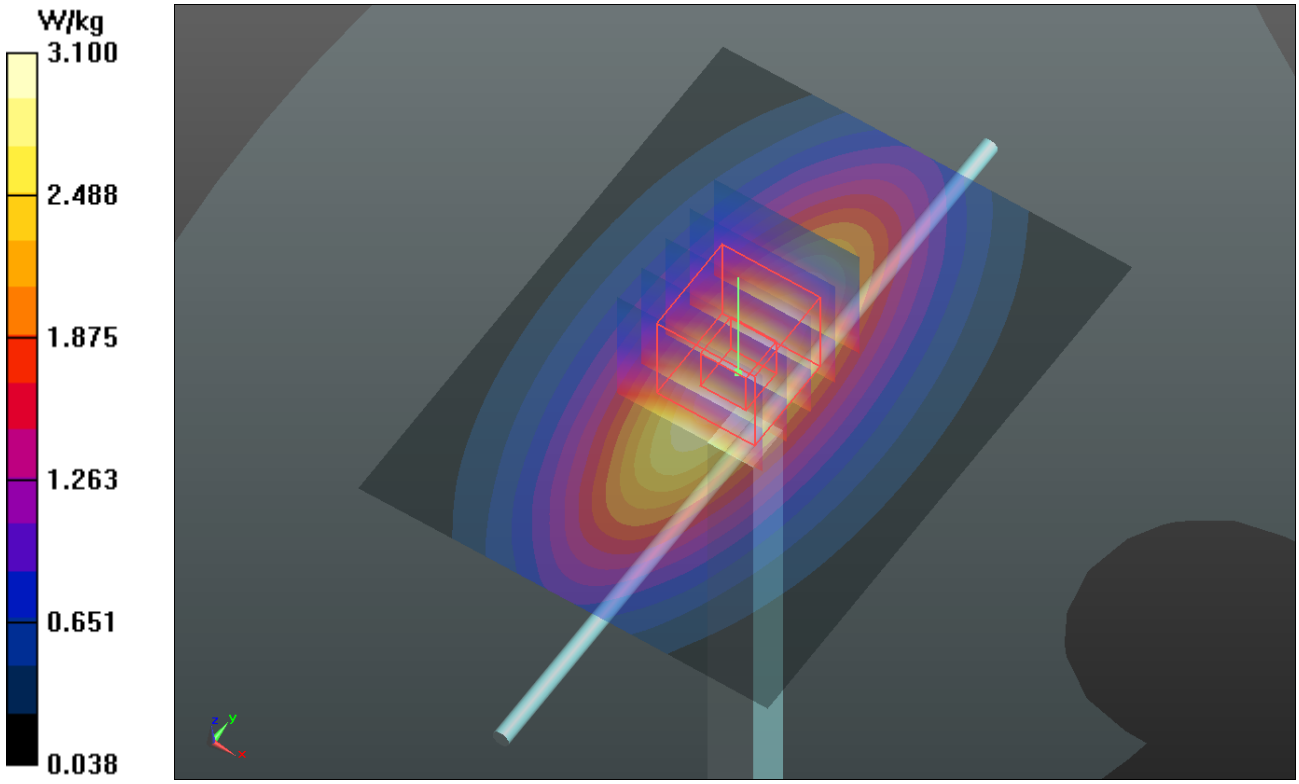
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d021

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: H835_0114 Medium parameters used : f = 835 MHz; σ = 0.935 mho/m; ε_r = 40.871; ρ = 1000 kg/m^3
Ambient Temperature：22.0 ℃; Liquid Temperature：21.0 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.89, 8.89, 8.89); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: TP:1653
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.10 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.769 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.66 W/kg
Maximum value of SAR (measured) = 3.19 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2012/12/29

System Check_H1900_121229

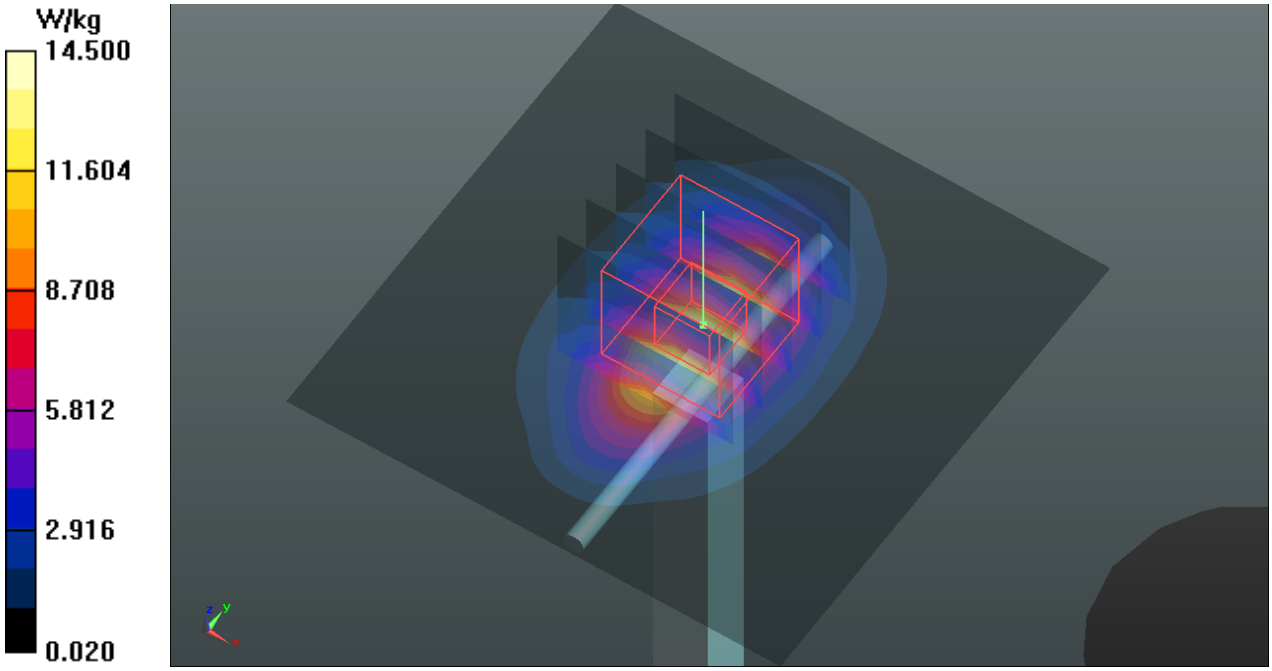
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: H1900_1229 Medium parameters used: f = 1900 MHz; σ = 1.428 mho/m; ε_r = 40.332; ρ = 1000 kg/m^3
Ambient Temperature：21.7 ℃; Liquid Temperature：20.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(8.13, 8.13, 8.13); Calibrated: 2012/7/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/4/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.5 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.6 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 18.4 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.23 W/kg
Maximum value of SAR (measured) = 14.5 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/03

System Check_H1900_130103

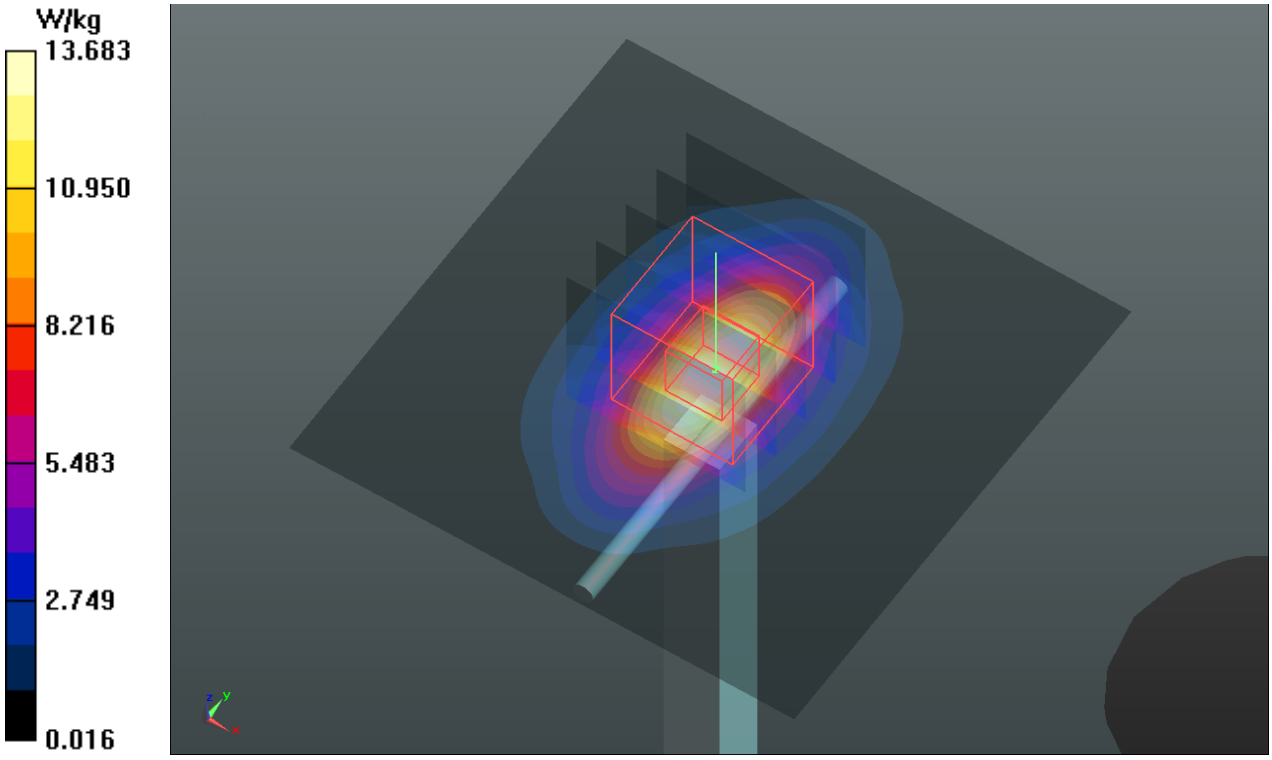
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: H1900_0103 Medium parameters used: f = 1900 MHz; σ = 1.422 mho/m; ε_r = 40.423; ρ = 1000 kg/m^3
Ambient Temperature：21.6 ℃; Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/8/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.7 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 100.7 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 9.77 W/kg; SAR(10 g) = 4.91 W/kg
Maximum value of SAR (measured) = 14.5 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/07

System Check_H2450_130107

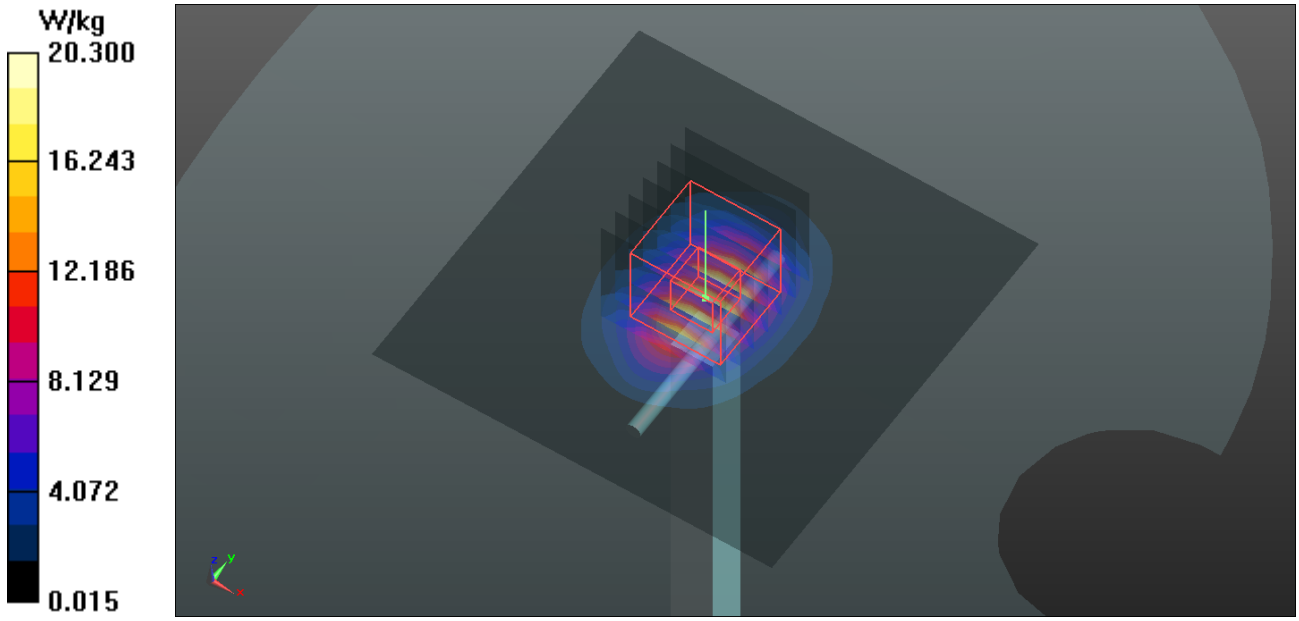
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: H2450_0107 Medium parameters used: f = 2450 MHz; σ = 1.865 mho/m; ε_r = 40.552; ρ = 1000 kg/m^3
Ambient Temperature：21.6℃; Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(7.28, 7.28, 7.28); Calibrated: 2012/07/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 20.3 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.3 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 27.8 W/kg
SAR(1 g) = 13 W/kg; SAR(10 g) = 5.94 W/kg
Maximum value of SAR (measured) = 20.3 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/16

System Check_H5200_130116

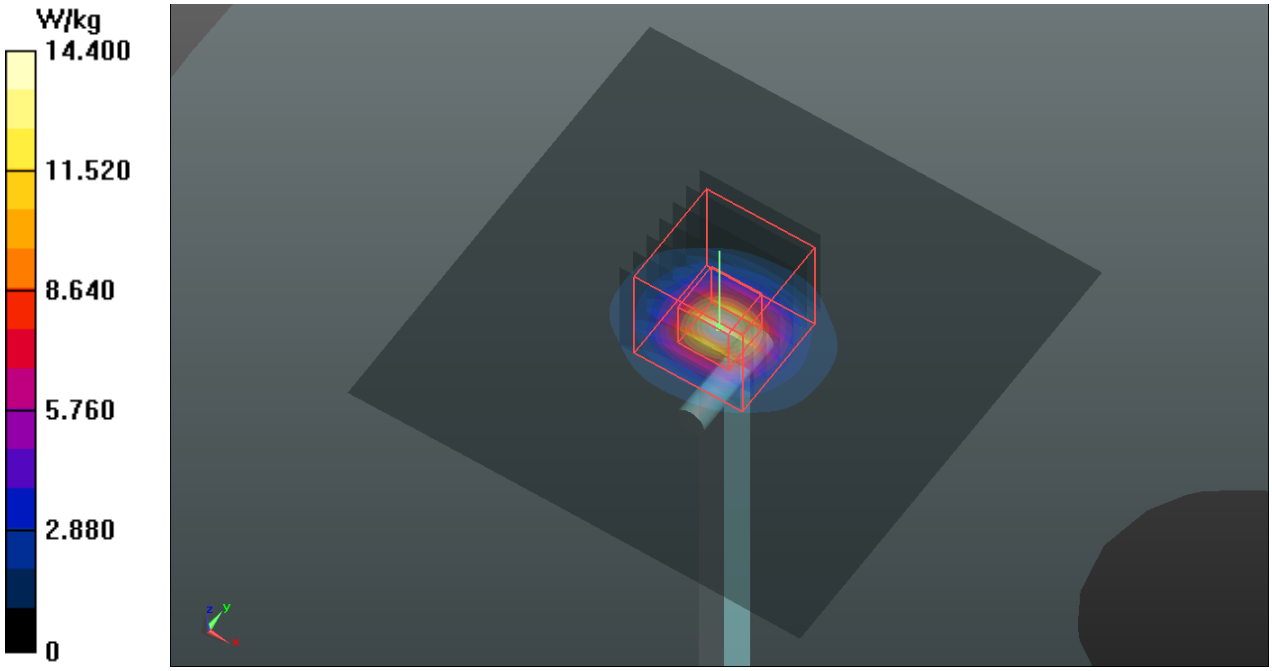
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: H5G_0116 Medium parameters used: f = 5200 MHz; σ = 4.592 mho/m; ε_r = 36.805; ρ = 1000 kg/m^3
Ambient Temperature：21.9 ℃； Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.14, 5.14, 5.14); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 14.4 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 61.948 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 31.9 W/kg
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 15.8 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/16

System Check_H5300_130116

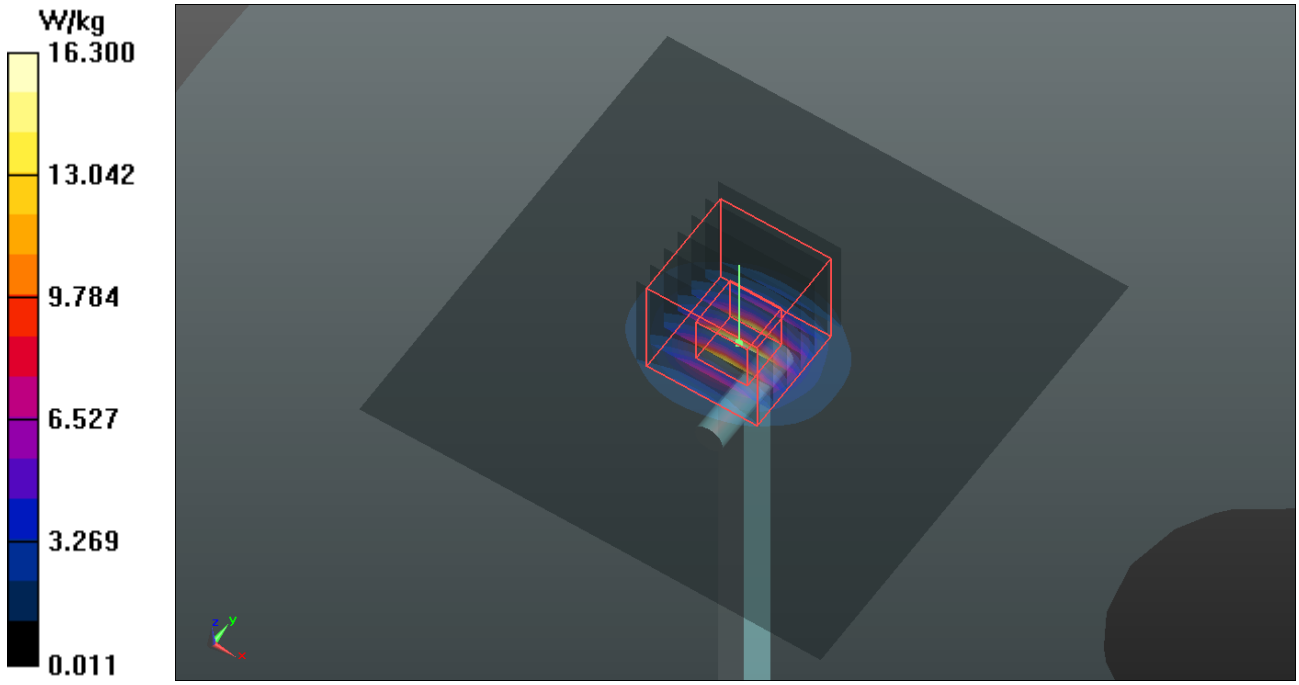
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: H5G_0116 Medium parameters used: f = 5300 MHz; σ = 4.687 mho/m; ε_r = 36.753; ρ = 1000 kg/m^3
Ambient Temperature：21.9 ℃； Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.83, 4.83, 4.83); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 16.3 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 64.561 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 34.2 W/kg
SAR(1 g) = 8.12 W/kg; SAR(10 g) = 2.29 W/kg
Maximum value of SAR (measured) = 17.1 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/13

System Check_H5600_130113

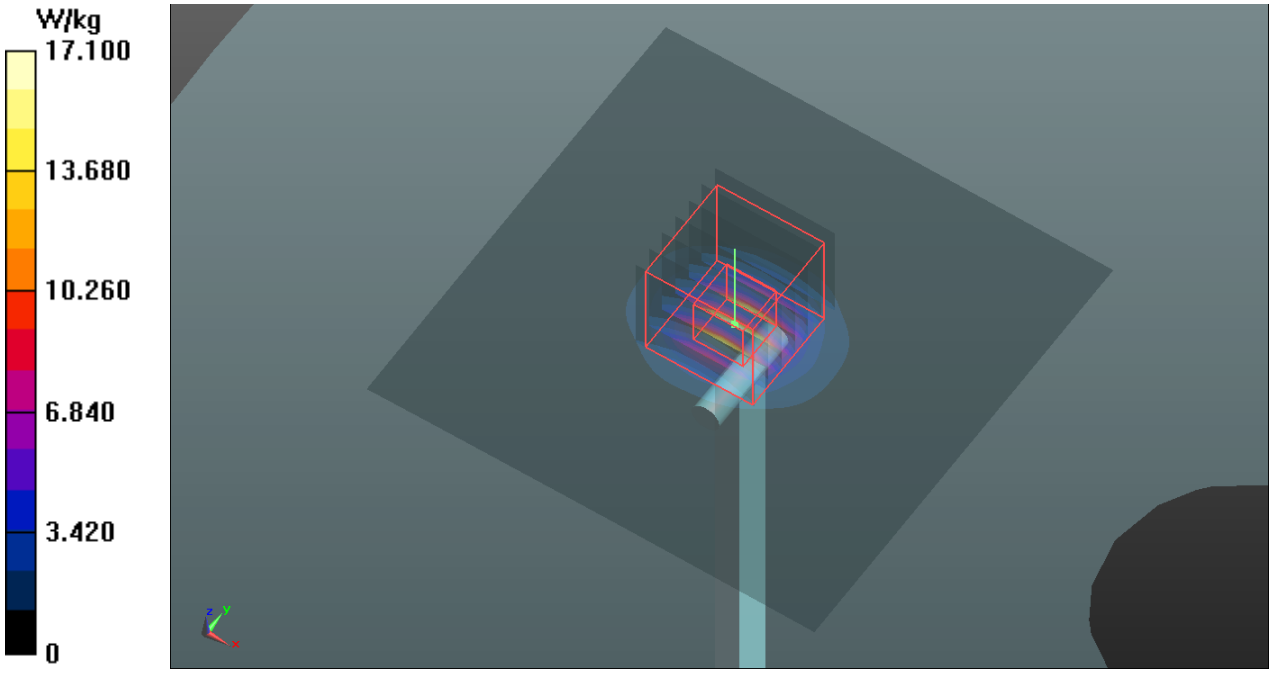
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: H5G_0113 Medium parameters used: f = 5600 MHz; σ = 5.207 mho/m; ε_r = 36.213; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.22, 4.22, 4.22); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/04/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 17.1 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 64.316 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 36.1 W/kg
SAR(1 g) = 8.58 W/kg; SAR(10 g) = 2.43 W/kg
Maximum value of SAR (measured) = 18.2 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/13

System Check_H5800_130113

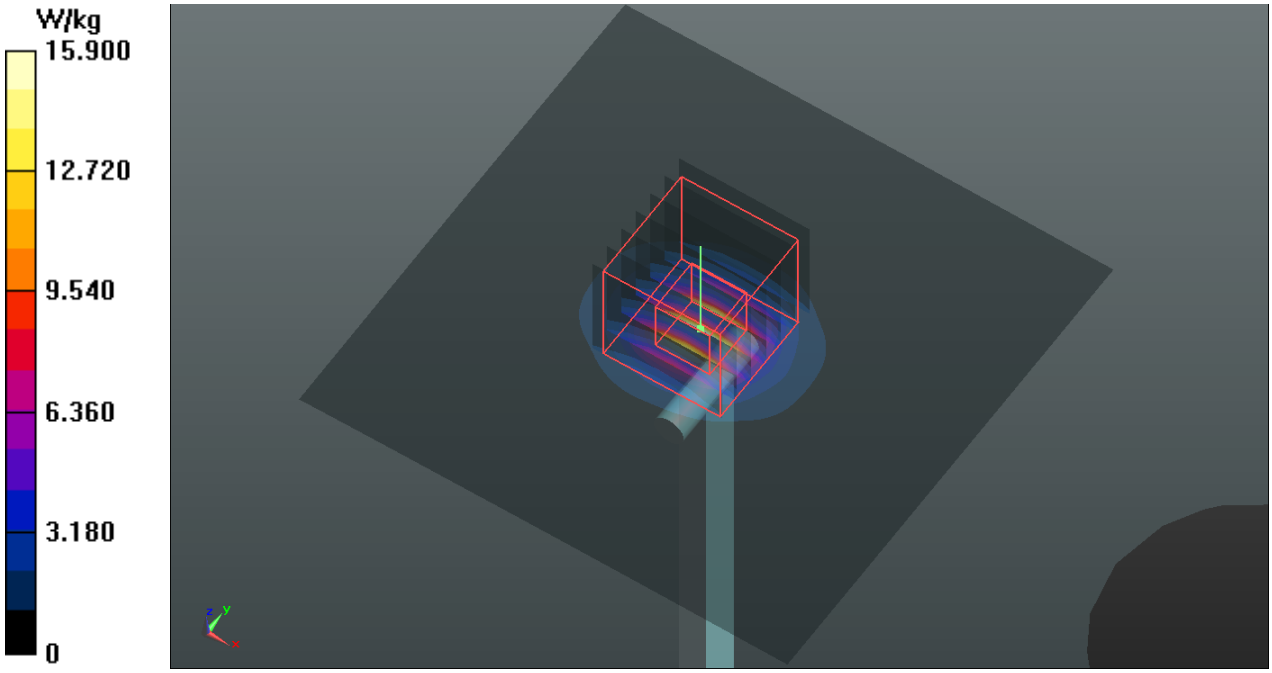
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: H5G_0113 Medium parameters used: f = 5800 MHz; σ = 5.44 mho/m; ε_r = 35.757; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.34, 4.34, 4.34); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/04/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 15.9 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.818 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 34.9 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 16.9 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/09

System Check_B835_130109

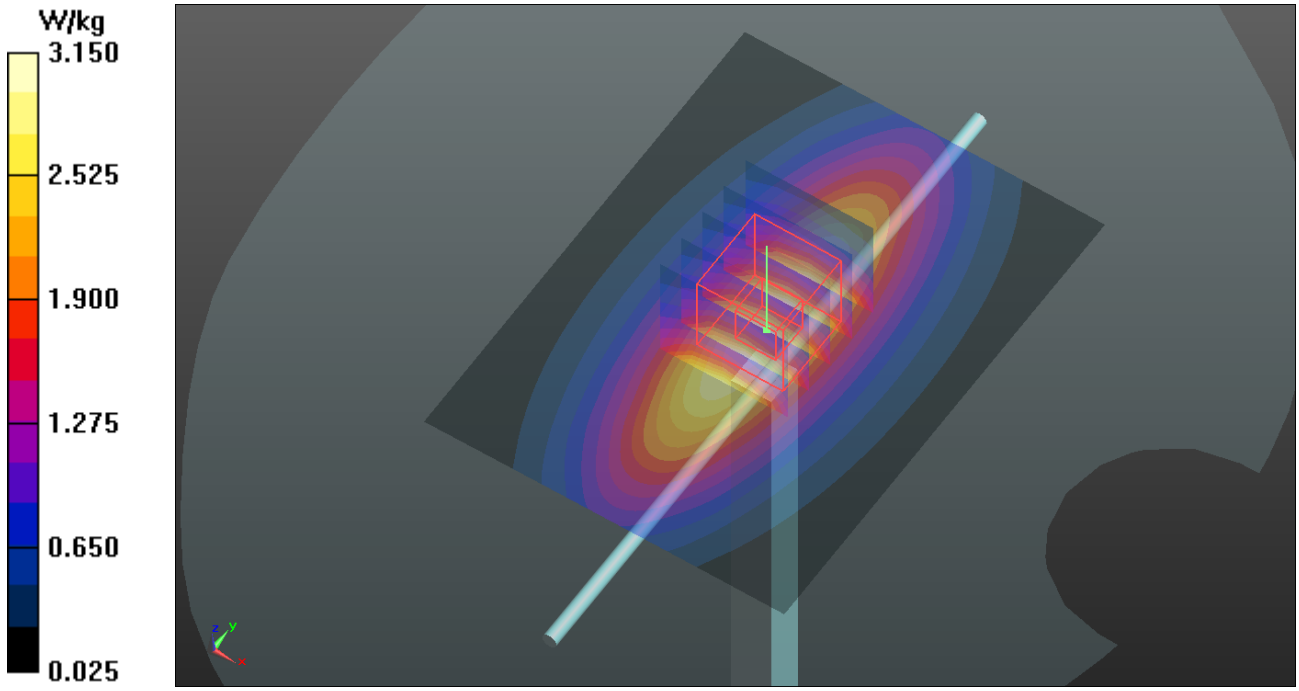
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d021

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: B835_0109 Medium parameters used: f = 835 MHz; σ = 0.988 mho/m; ε_r = 56.906; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.15 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.280 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 2.49 W/kg; SAR(10 g) = 1.64 W/kg
Maximum value of SAR (measured) = 3.15 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/10

System Check_B835_130110

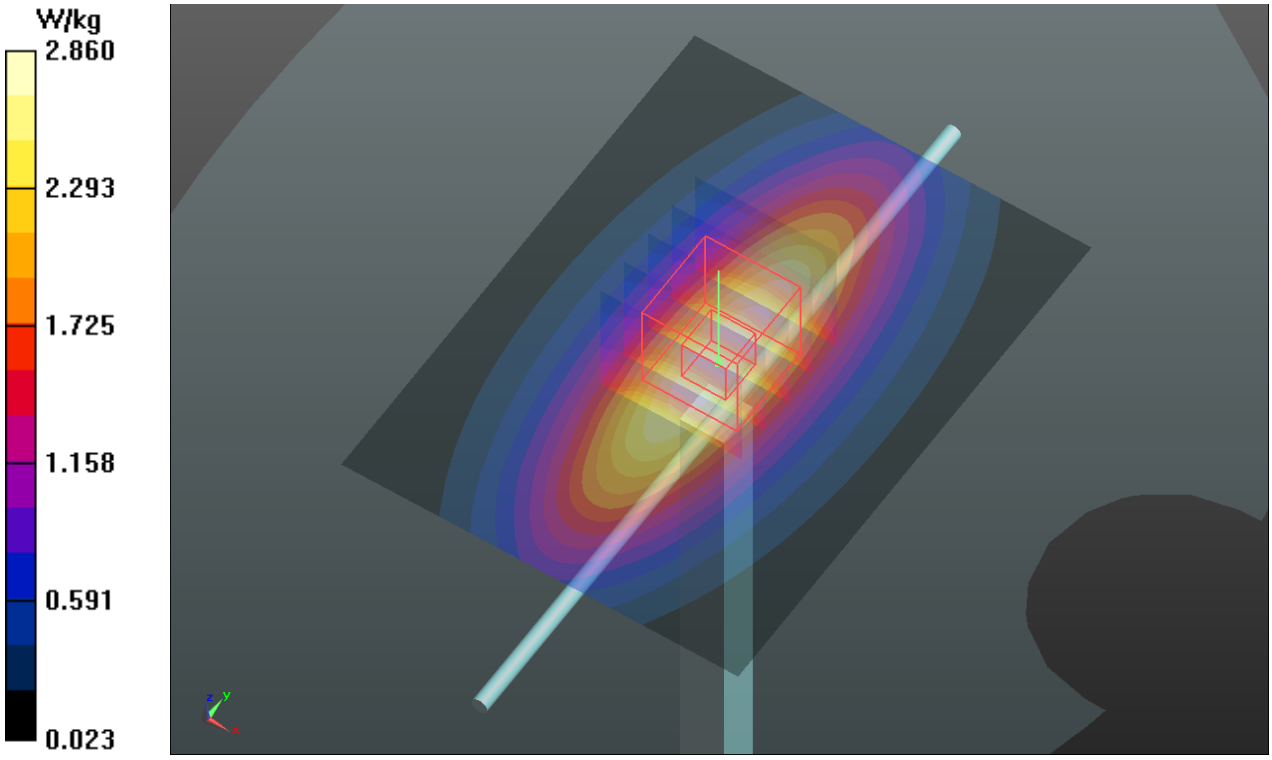
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d021

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: B835_0110 Medium parameters used: f = 835 MHz; σ = 0.992 mho/m; ε_r = 56.671; ρ = 1000 kg/m^3
Ambient Temperature：21.6 ℃； Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.86 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 54.437 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.39 W/kg
SAR(1 g) = 2.26 W/kg; SAR(10 g) = 1.49 W/kg
Maximum value of SAR (measured) = 2.88 W/kg



System Check_B1900_130104

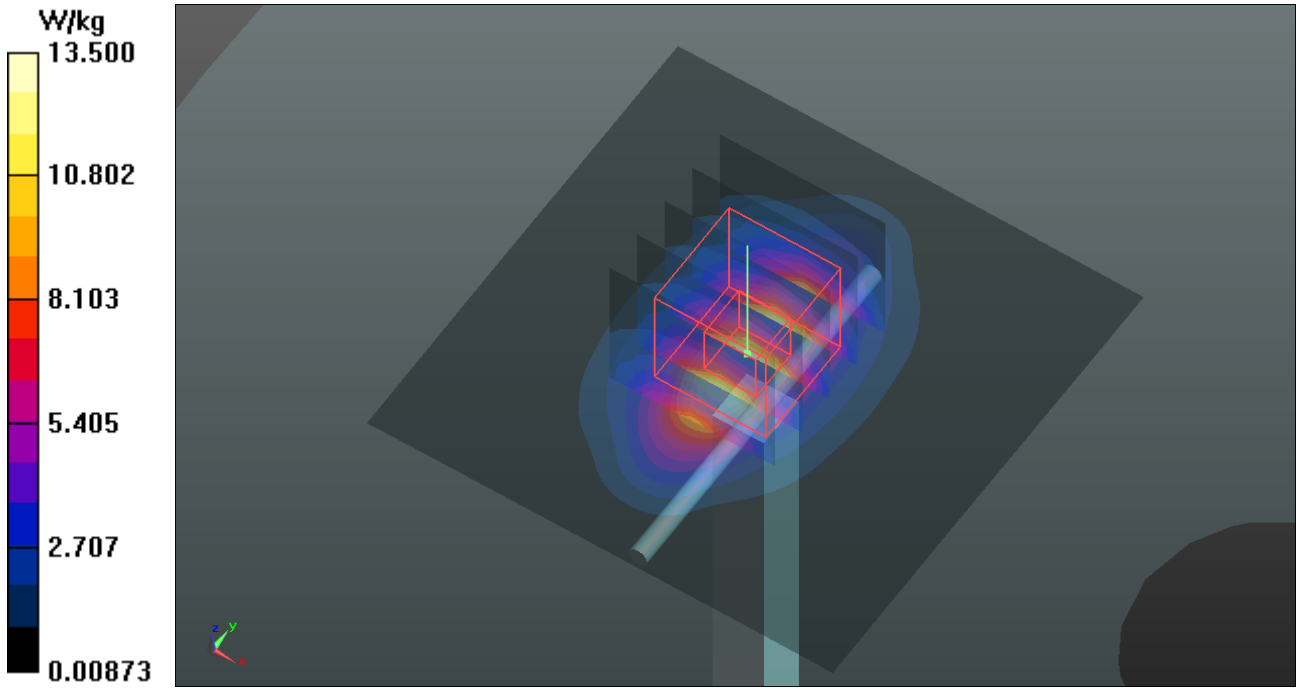
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B1900_0104 Medium parameters used: f = 1900 MHz; σ = 1.544 mho/m; ε_r = 53.431; ρ = 1000 kg/m^3
Ambient Temperature：21.8 ℃; Liquid Temperature：20.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/8/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.5 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 95.188 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 9.5 W/kg; SAR(10 g) = 4.93 W/kg
Maximum value of SAR (measured) = 13.6 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/08

System Check_B1900_130108

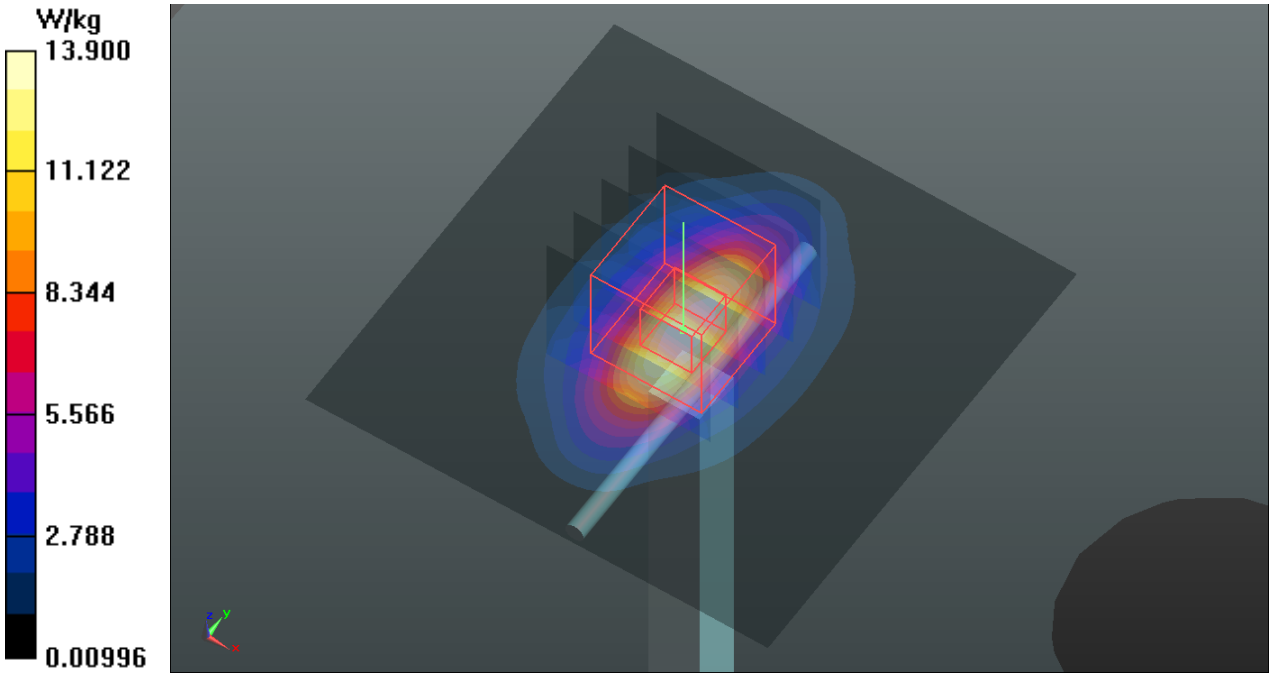
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B1900_0108 Medium parameters used: f = 1900 MHz; σ = 1.552 mho/m; ε_r = 51.129; ρ = 1000 kg/m^3
Ambient Temperature：21.7 ℃； Liquid Temperature：20.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1485
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.9 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.277 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 9.75 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 14.0 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/09

System Check_B1900_130109

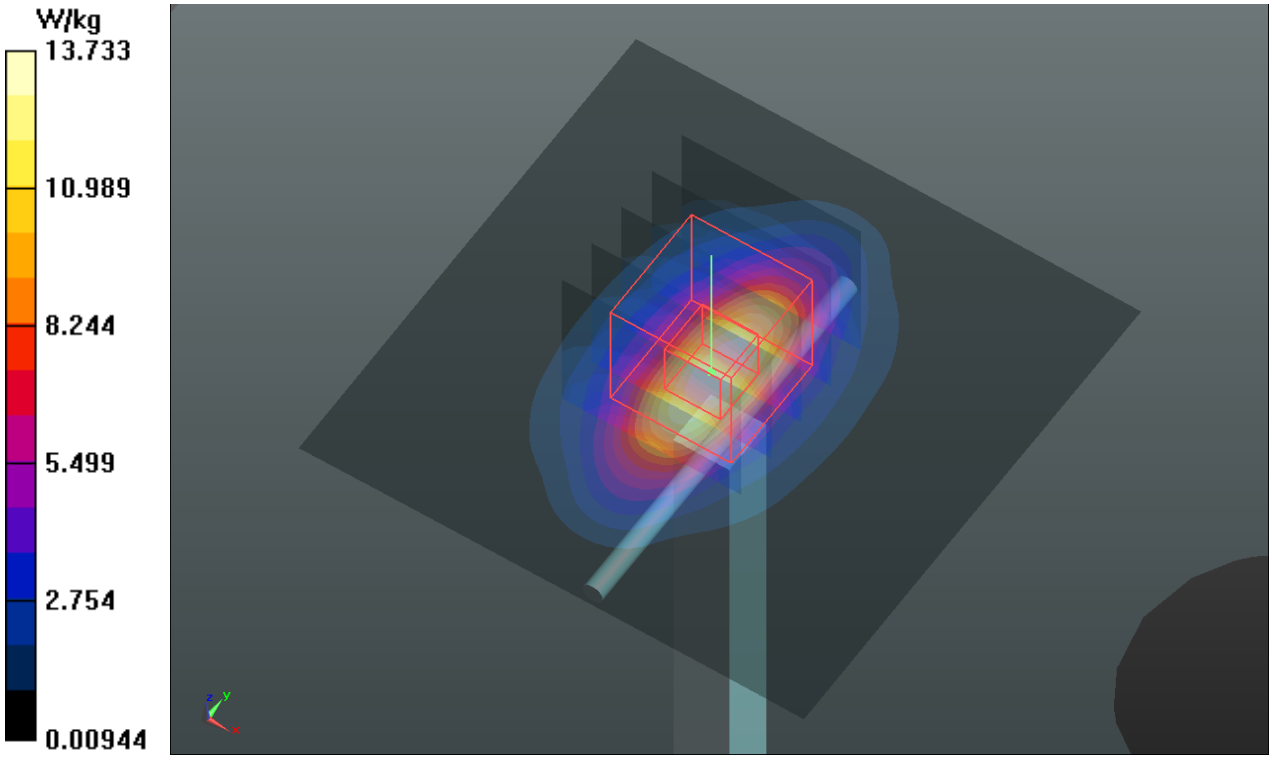
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B1900_0109 Medium parameters used: f = 1900 MHz; σ = 1.537 mho/m; ε_r = 50.827; ρ = 1000 kg/m^3
Ambient Temperature：21.6 ℃; Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1485
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

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

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.031 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.58 W/kg; SAR(10 g) = 4.96 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/10

System Check_B1900_130110

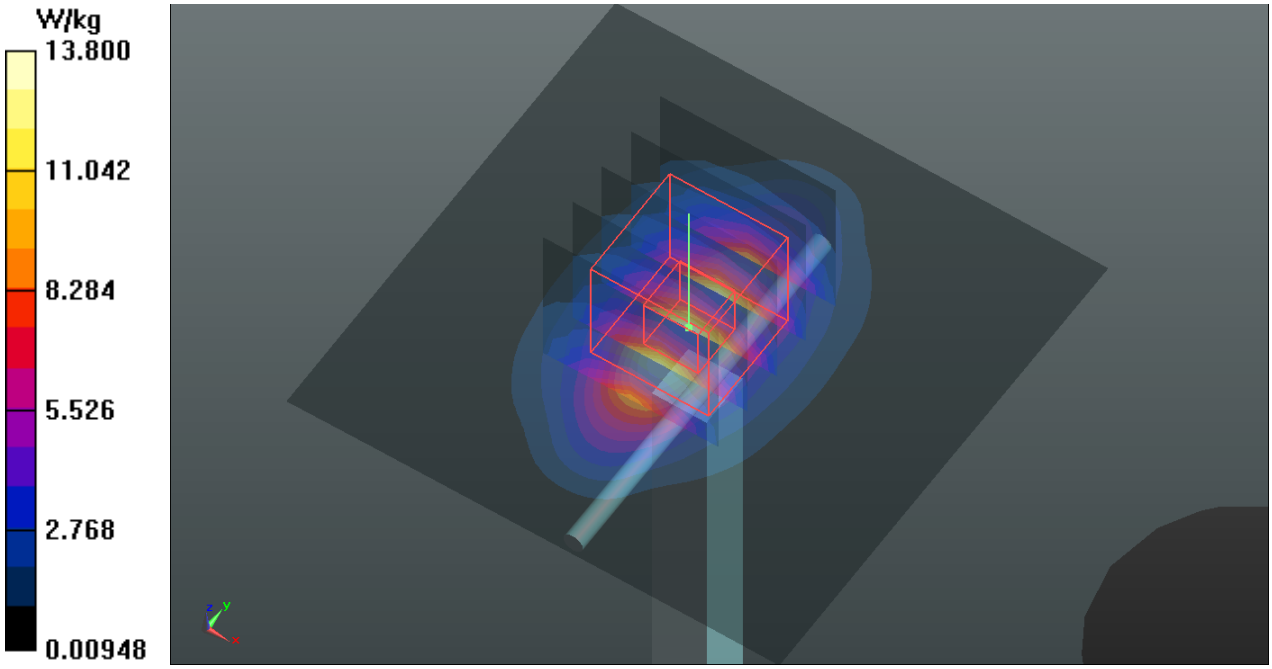
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B1900_0110 Medium parameters used: f = 1900 MHz; σ = 1.545 mho/m; ε_r = 51.125; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1485
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.8 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.031 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 9.63 W/kg; SAR(10 g) = 4.99 W/kg
Maximum value of SAR (measured) = 13.8 W/kg



System Check_B2450_130108

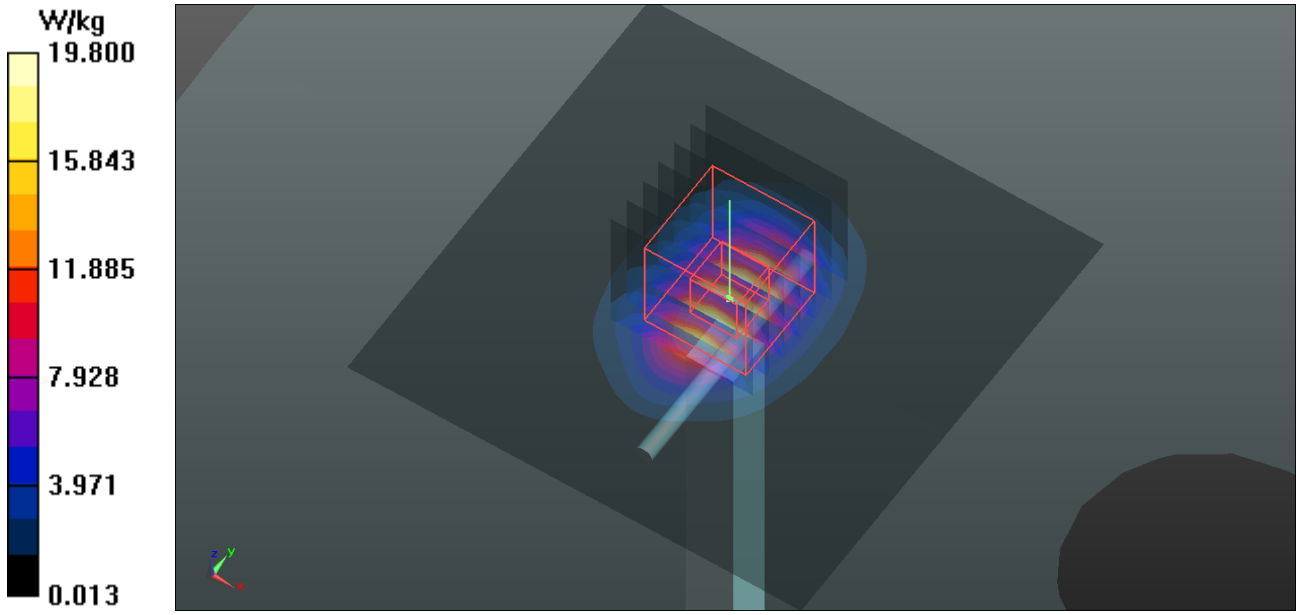
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: B2450_0108 Medium parameters used: f = 2450 MHz; σ = 1.958 mho/m; ε_r = 50.929; ρ = 1000 kg/m^3
Ambient Temperature：21.3℃; Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(7.49, 7.49, 7.49); Calibrated: 2012/07/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 19.8 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.2 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 27.4 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.86 W/kg
Maximum value of SAR (measured) = 19.9 W/kg



System Check_B5200_130109

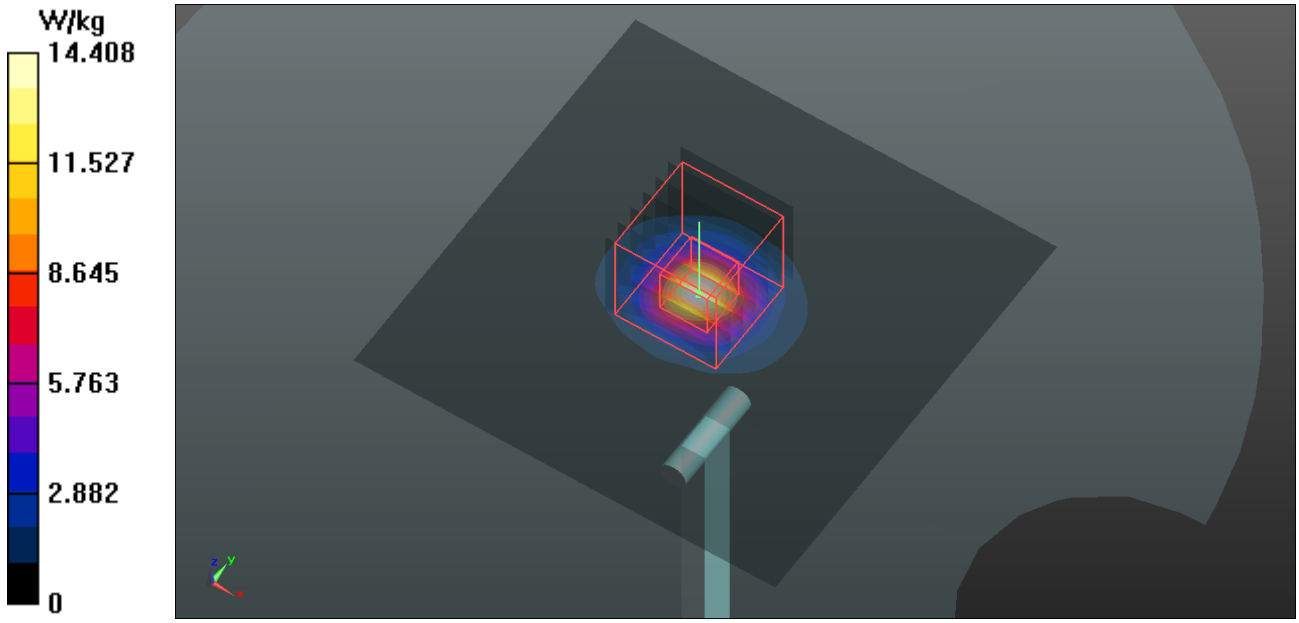
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5200 MHz; σ = 5.278 mho/m; ε_r = 48.936; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃; Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.89, 4.89, 4.89); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 14.4 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.946 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 7.62 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 15.7 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/09

System Check_B5300_130109

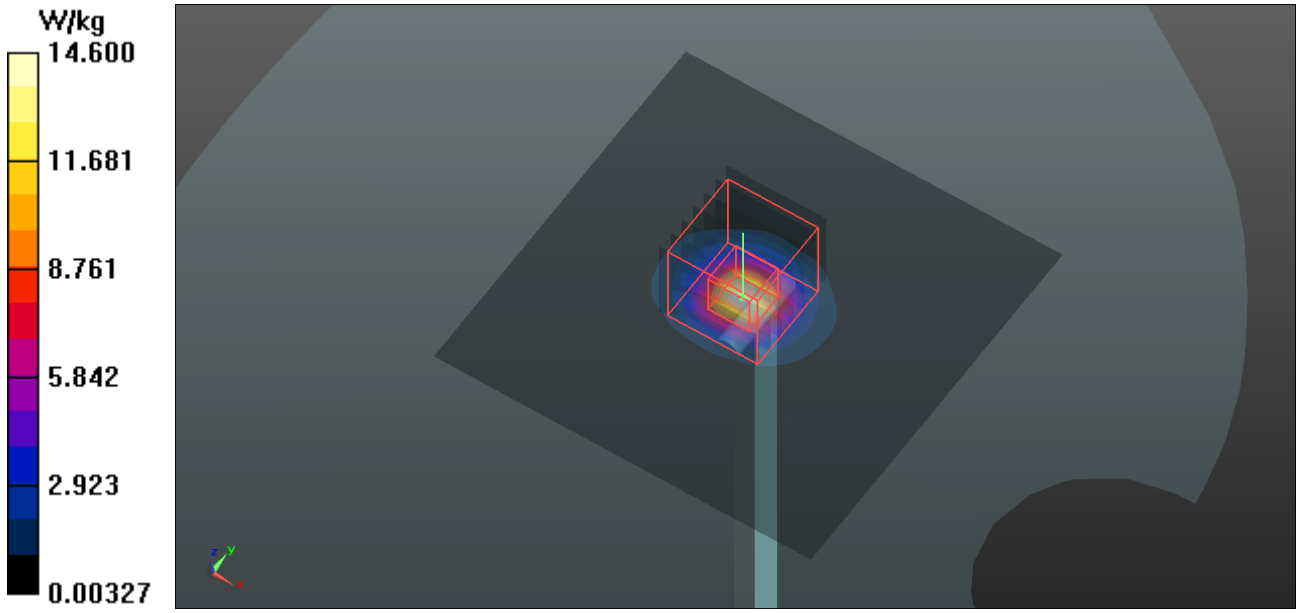
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5300 MHz; σ = 5.413 mho/m; ε_r = 48.764; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃; Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.81, 4.81, 4.81); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 14.6 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.386 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 29.7 W/kg
SAR(1 g) = 7.48 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 15.7 W/kg



System Check_B5600_130109

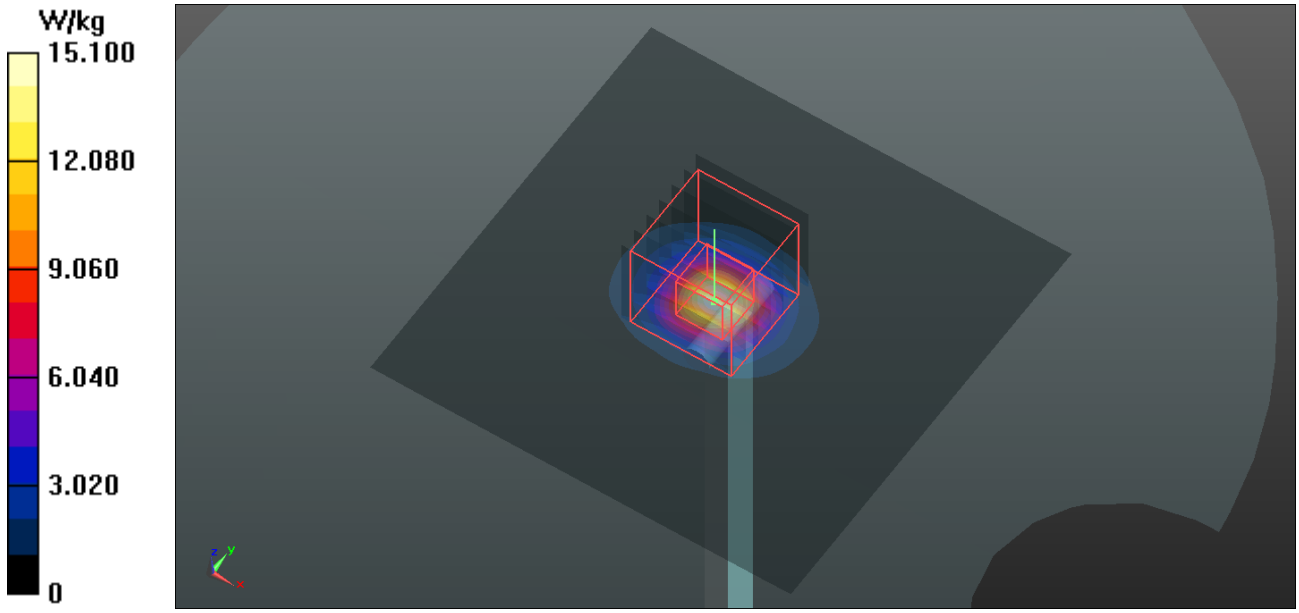
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5600 MHz; σ = 5.871 mho/m; ε_r = 48.168; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃; Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(3.92, 3.92, 3.92); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 15.1 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.235 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 7.61 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 16.2 W/kg



System Check_B5800_130110

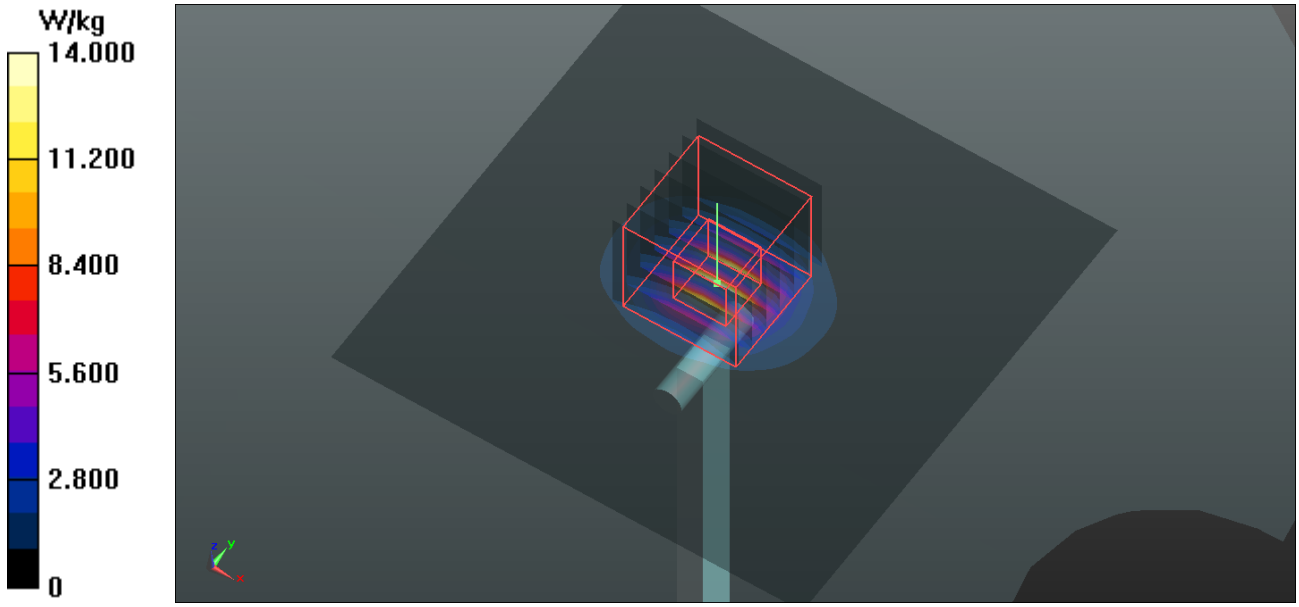
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: B5G_0110 Medium parameters used: f = 5800 MHz; σ = 6.123 mho/m; ε_r = 47.668; ρ = 1000 kg/m^3
Ambient Temperature：21.3℃; Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.54, 4.54, 4.54); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Pin=100mW/Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 14.0 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 52.806 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 29.9 W/kg
SAR(1 g) = 6.94 W/kg; SAR(10 g) = 1.94 W/kg
Maximum value of SAR (measured) = 14.9 W/kg



Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR and measured SAR > 1.5 W/kg are shown as follows.

P41 CDMA2000 BC0_RC3+SO55_Right Cheek_Ch777_Ant 1

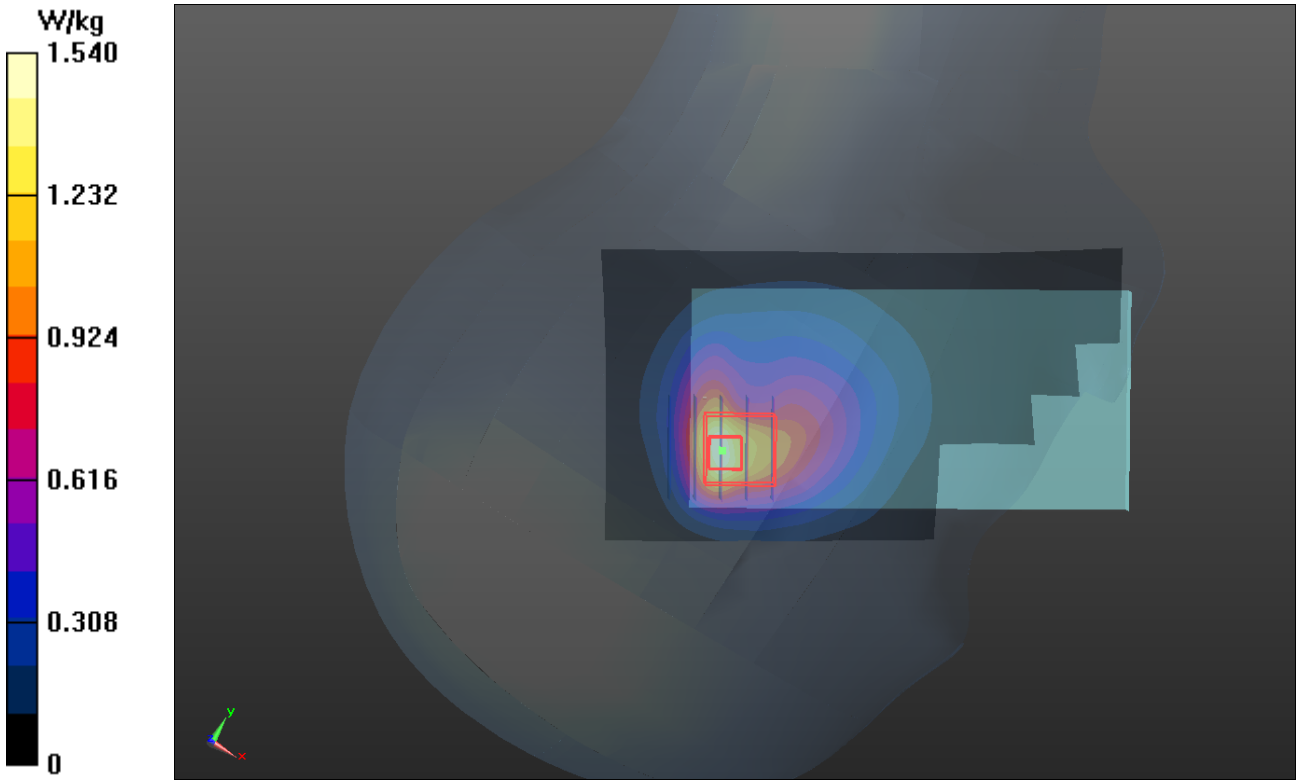
DUT: 121211C15

Communication System: CDMA2000; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: H835_0114 Medium parameters used : f = 848.31 MHz; σ = 0.94 mho/m; ε_r = 40.805; ρ = 1000 kg/m^3
Ambient Temperature：22.0 ℃； Liquid Temperature：21.0 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.89, 8.89, 8.89); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: TP:1653
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch777/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Ch777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.338 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.99 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.604 W/kg
Maximum value of SAR (measured) = 1.49 W/kg



P426 CDMA2000 BC1_RC3+SO55_Left Cheek_Ch600_Ant 0

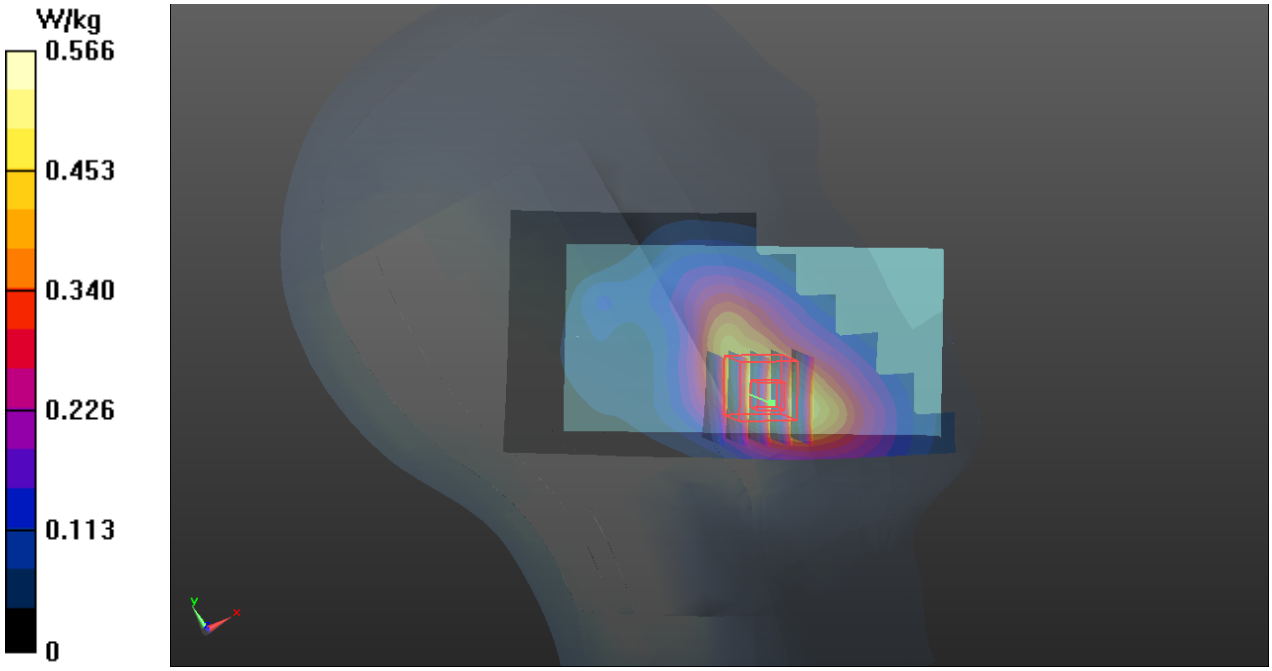
DUT: 121211C15

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: H1900_1229 Medium parameters used: f = 1880 MHz; σ = 1.409 mho/m; ε_r = 40.409; ρ = 1000 kg/m^3
Ambient Temperature：21.7 ℃; Liquid Temperature：20.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(8.13, 8.13, 8.13); Calibrated: 2012/7/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/4/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch600/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.566 W/kg

Ch600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.803 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.700 W/kg
SAR(1 g) = 0.467 W/kg; SAR(10 g) = 0.297 W/kg
Maximum value of SAR (measured) = 0.591 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2012/12/21

P23 CDMA2000 BC10_RC3+SO55_Right Cheek_Ch476_Ant 1

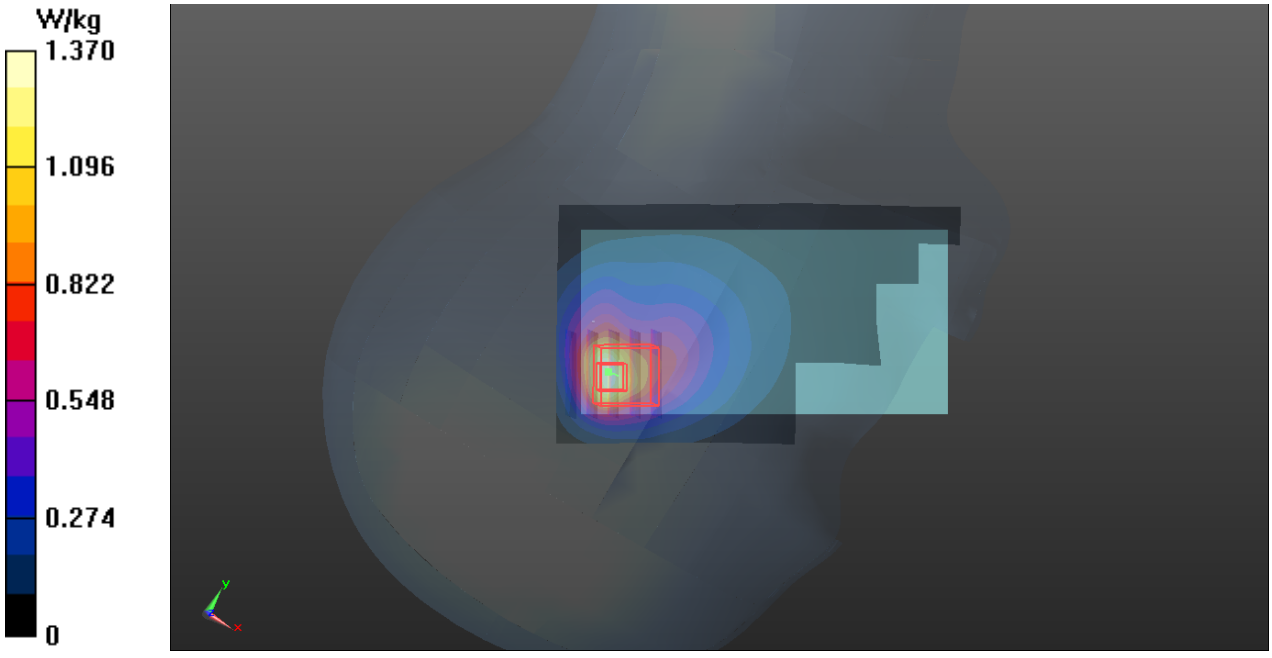
DUT: 121211C15

Communication System: CDMA2000; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: H835_1221 Medium parameters used: f = 818 MHz; σ = 0.888 mho/m; ε_r = 42.491; ρ = 1000 kg/m^3
Ambient Temperature：21.2 ℃； Liquid Temperature：20.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(9.8, 9.8, 9.8); Calibrated: 2012/7/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/4/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch476/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.37 W/kg

Ch476/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.046 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.505 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/03

P207 LTE 25_QPSK_10M_Right Cheek_Ch26640_Ant 1_1RB_Offset 24

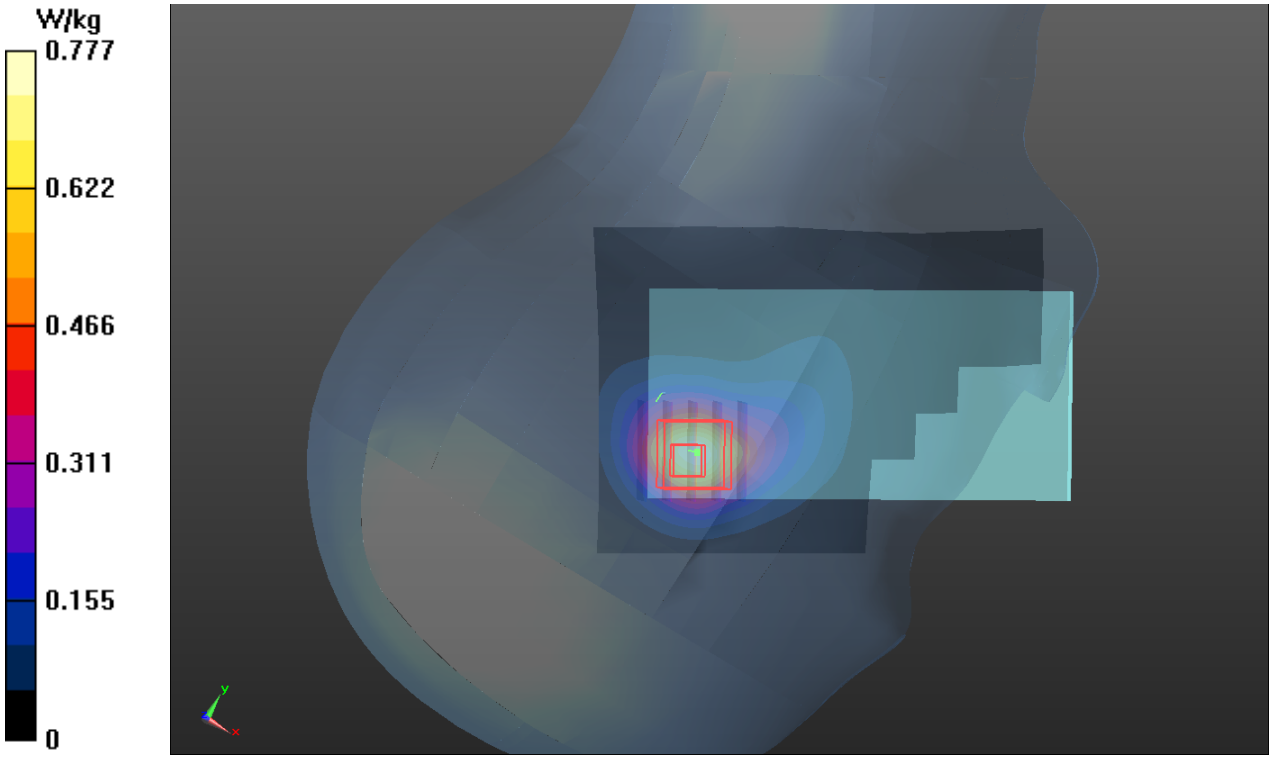
DUT: 121211C15

Communication System: LTE; Frequency: 1910 MHz;Duty Cycle: 1:1
Medium: H1900_0103 Medium parameters used: f = 1910 MHz; σ = 1.435 mho/m; ε_r = 40.382; ρ = 1000 kg/m^3
Ambient Temperature：21.6 ℃； Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2012/8/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch26640/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.777 W/kg

Ch26640/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.867 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.554 W/kg; SAR(10 g) = 0.291 W/kg
Maximum value of SAR (measured) = 0.724 W/kg



P103 802.11b_Left Cheek_ch1

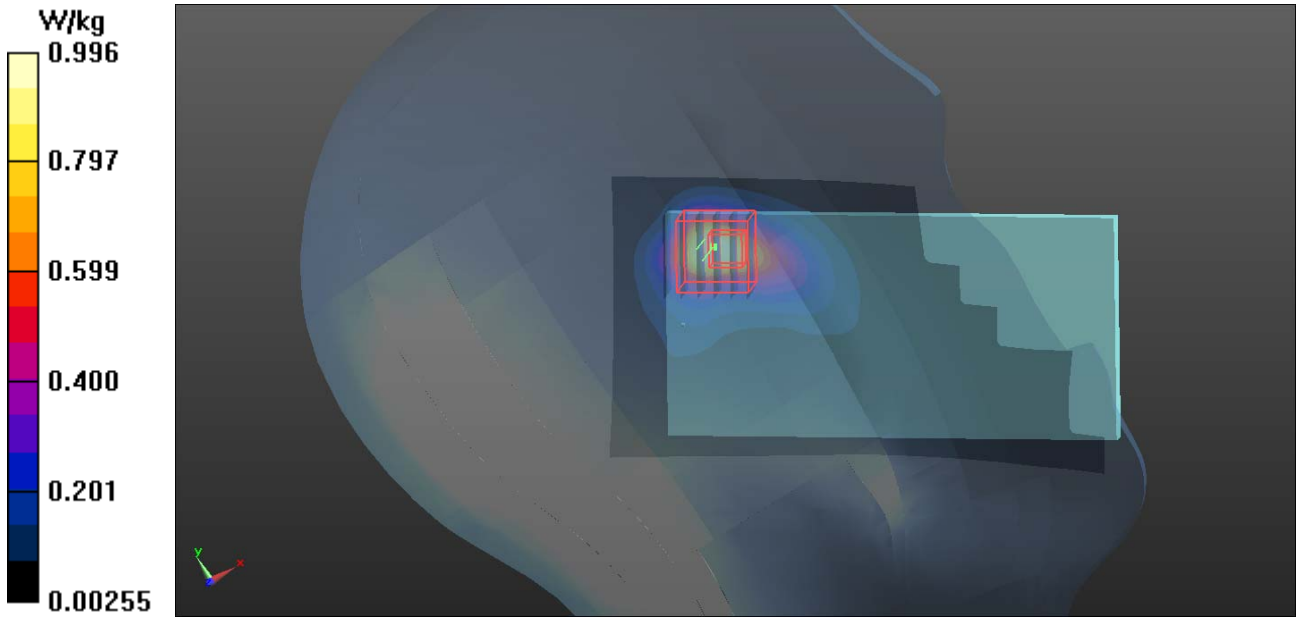
DUT: 121211C15

Communication System: WLAN_2.4G; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: H2450_0107 Medium parameters used: f = 2412 MHz; σ = 1.822 mho/m; ε_r = 40.692; ρ = 1000 kg/m^3
Ambient Temperature：21.6℃; Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(7.28, 7.28, 7.28); Calibrated: 2012/07/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch1/Area Scan (71x131x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

Ch1/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 7.566 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.596 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 0.978 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/16

P169 802.11a_Left Cheek_ch48

DUT: 121211C15

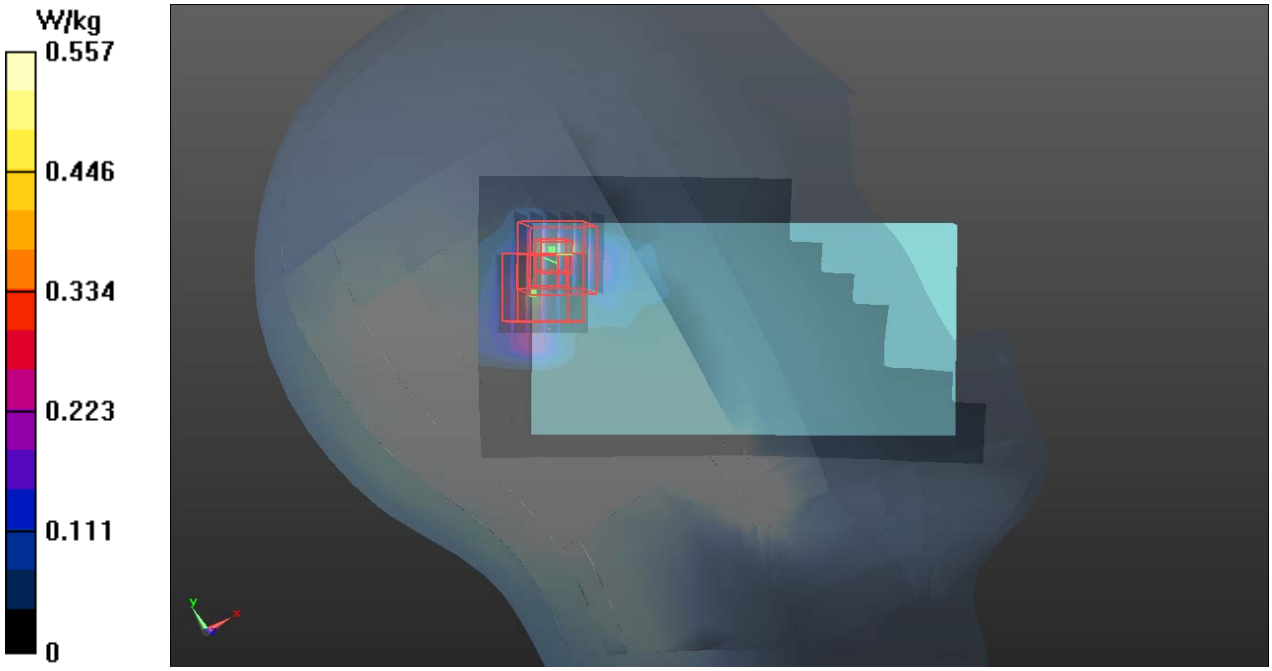
Communication System: WLAN_5G; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium: H5G_0116 Medium parameters used: f = 5240 MHz; σ = 4.75 mho/m; ε_r = 36.987; ρ = 1000 kg/m^3
Ambient Temperature：21.9 ℃; Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.14, 5.14, 5.14); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch48/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.557 W/kg

Ch48/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 6.109 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (measured) = 0.489 W/kg

Ch48/Zoom Scan (6x6x12)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 6.109 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.908 W/kg
SAR(1 g) = 0.234 W/kg; SAR(10 g) = 0.079 W/kg
Maximum value of SAR (measured) = 0.500 W/kg



P173 802.11a_Left Cheek_ch64

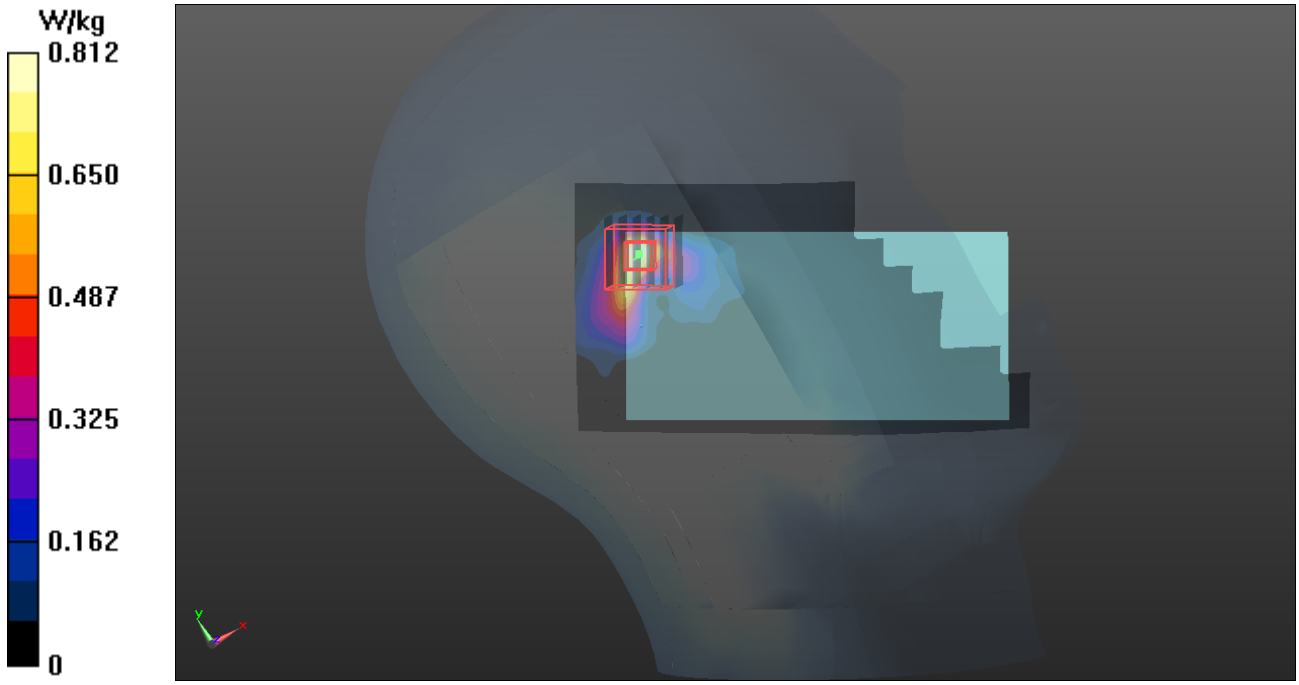
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5320 MHz;Duty Cycle: 1:1
Medium: H5G_0116 Medium parameters used: f = 5320 MHz; σ = 4.848 mho/m; ε_r = 36.815; ρ = 1000 kg/m^3
Ambient Temperature：21.9 ℃； Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.83, 4.83, 4.83); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch64/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.875 W/kg

Ch64/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 6.569 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.432 W/kg; SAR(10 g) = 0.132 W/kg
Maximum value of SAR (measured) = 0.812 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/13

P161 802.11a_Left Cheek_ch140

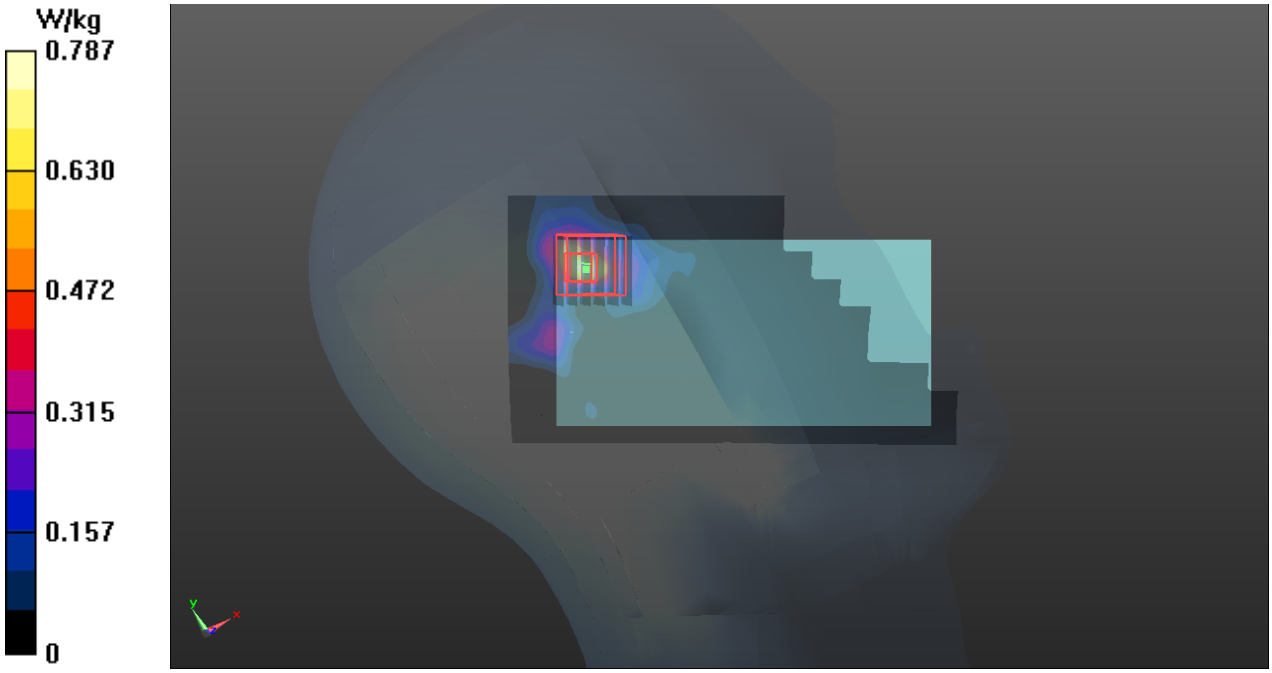
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5700 MHz;Duty Cycle: 1:1
Medium: H5G_0113 Medium parameters used: f = 5700 MHz; σ = 5.326 mho/m; ε_r = 35.975; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.34, 4.34, 4.34); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/04/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch140/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.787 W/kg

Ch140/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 5.479 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.82 W/kg
SAR(1 g) = 0.453 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.897 W/kg



P165 802.11a_Left Cheek_ch157

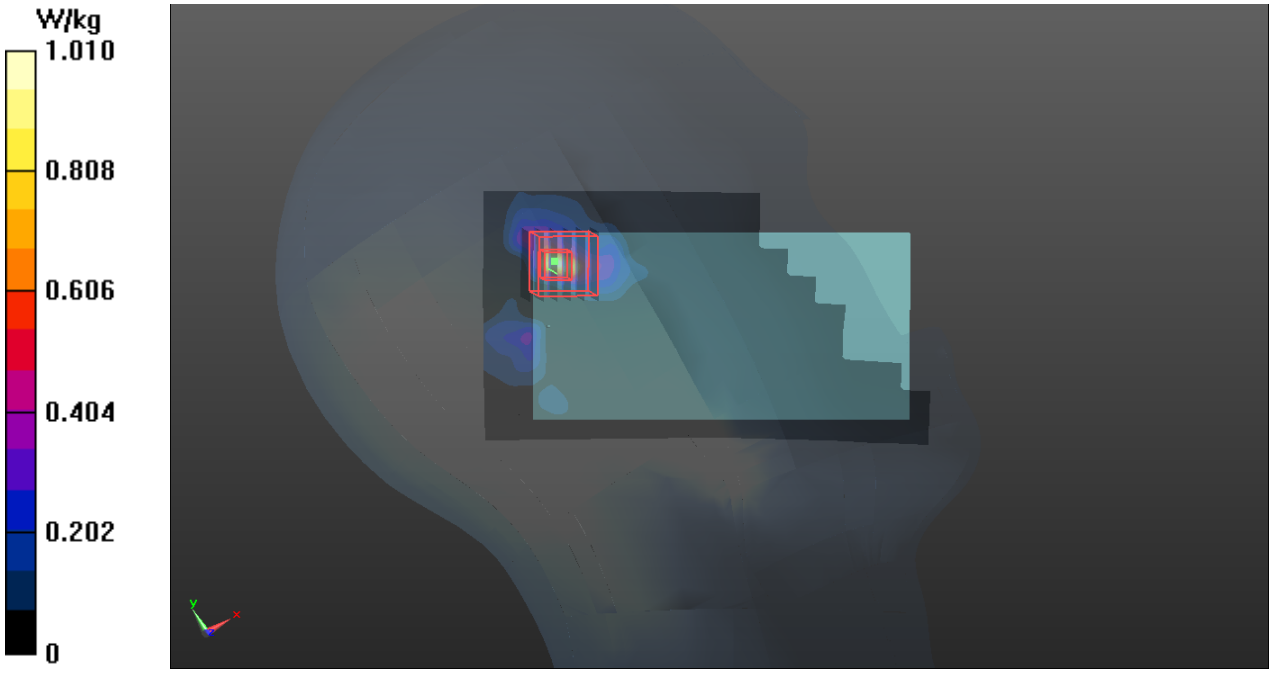
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: H5G_0113 Medium parameters used: f = 5785 MHz; σ = 5.412 mho/m; ε_r = 35.82; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.34, 4.34, 4.34); Calibrated: 2012/10/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2012/04/27
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch157/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Ch157/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 4.929 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.457 W/kg; SAR(10 g) = 0.126 W/kg
Maximum value of SAR (measured) = 0.892 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/09

P483 CDMA2000 BC0_RTAP153.6_Rear Face_1cm_Ch384_Ant 0

DUT: 121211C15

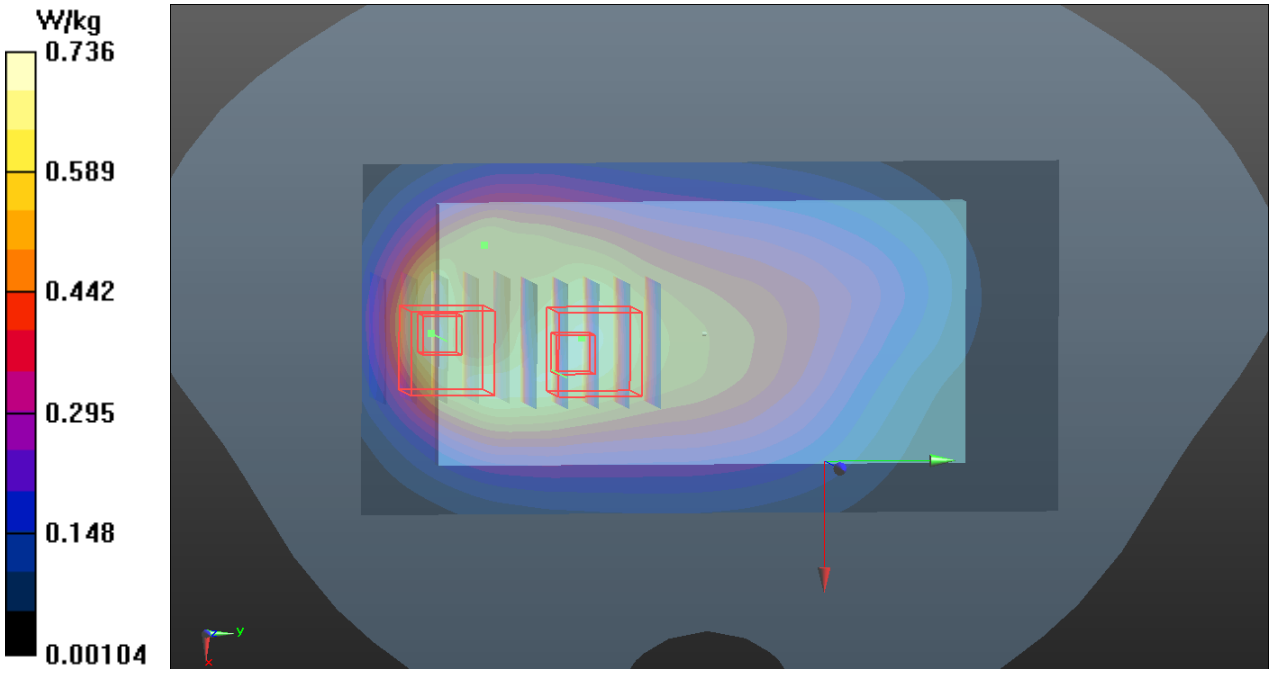
Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: B835_0109 Medium parameters used: f = 837 MHz; σ = 0.99 mho/m; ε_r = 56.889; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃; Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch384/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.736 W/kg

Ch384/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.713 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.860 W/kg
SAR(1 g) = 0.613 W/kg; SAR(10 g) = 0.434 W/kg
Maximum value of SAR (measured) = 0.725 W/kg

Ch384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.713 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.574 W/kg; SAR(10 g) = 0.337 W/kg
Maximum value of SAR (measured) = 0.765 W/kg



P486 CDMA2000 BC1_RTAP153.6_Rear Face_1cm_Ch600_Ant 0

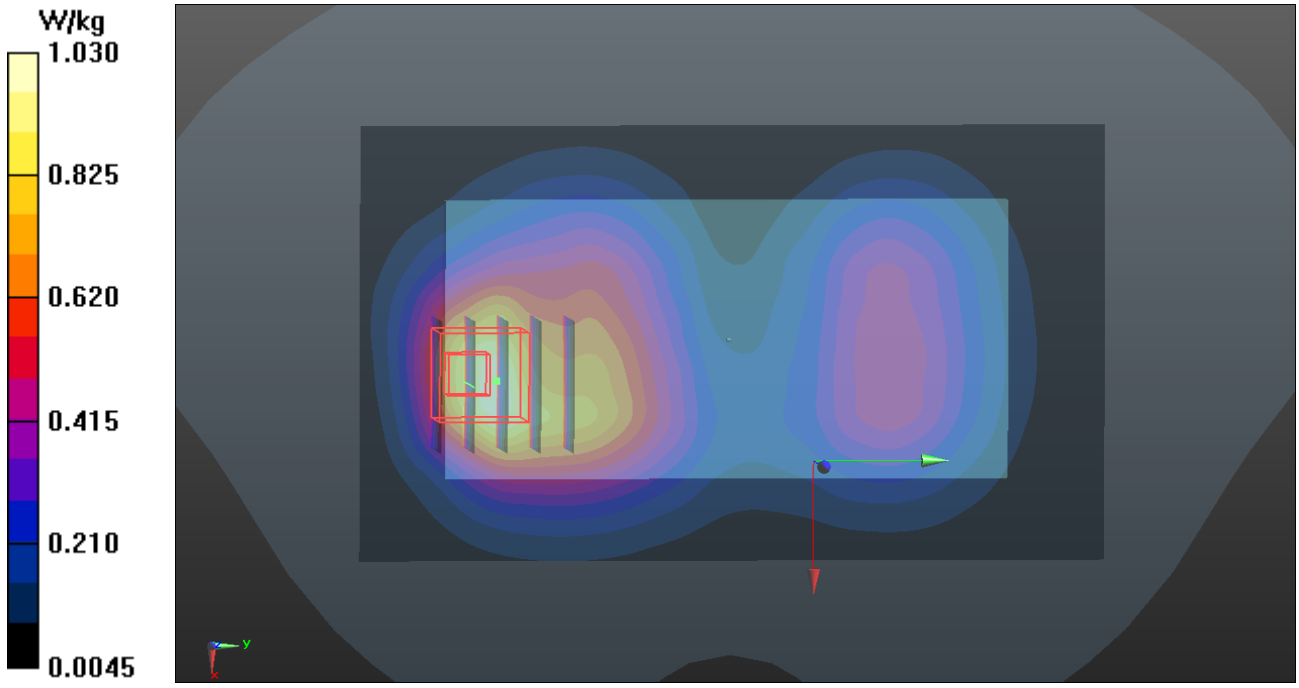
DUT: 121211C15

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: B1900_0110 Medium parameters used: f = 1880 MHz; σ = 1.513 mho/m; ε_r = 50.875; ρ = 1000 kg/m^3
Ambient Temperature：21.5 ℃； Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1485
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch600/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Ch600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.659 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.761 W/kg; SAR(10 g) = 0.416 W/kg
Maximum value of SAR (measured) = 1.09 W/kg



P477 CDMA2000 BC10_RTAP153.6_Rear Face_1cm_Ch476_Ant 0

DUT: 121211C15

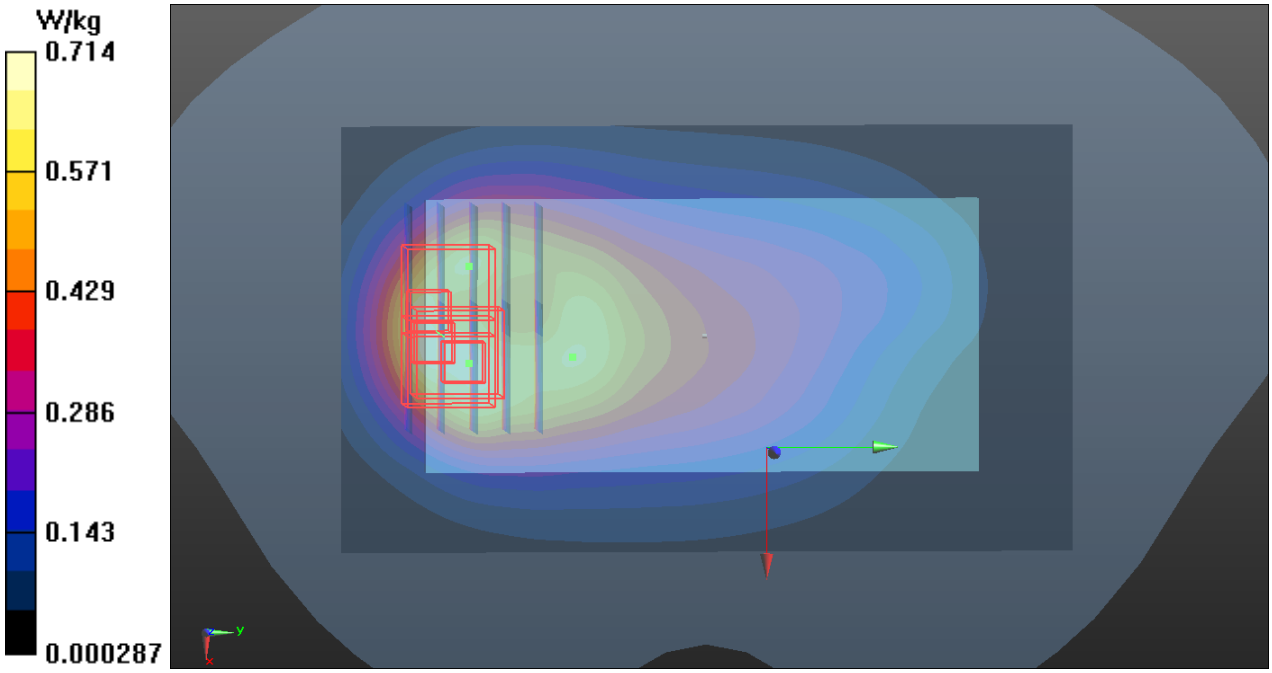
Communication System: CDMA2000; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: B835_0110 Medium parameters used: f = 818 MHz; σ = 0.975 mho/m; ε_r = 56.73; ρ = 1000 kg/m^3
Ambient Temperature：21.6 ℃; Liquid Temperature：20.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/06/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch476/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 19.699 V/m; Power Drift = 0.14 dB
Fast SAR: SAR(1 g) = 0.581 W/kg; SAR(10 g) = 0.398 W/kg
Maximum value of SAR (interpolated) = 0.714 W/kg

Ch476/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.699 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.605 W/kg; SAR(10 g) = 0.339 W/kg
Maximum value of SAR (measured) = 0.865 W/kg

Ch476/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.699 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.578 W/kg; SAR(10 g) = 0.293 W/kg
Maximum value of SAR (measured) = 0.864 W/kg


W/kg
0.714
0.571
0.429
0.286
0.143
0.000287

P250 LTE 25_QPSK_10M_Rear Face_1cm_Ch26640_Ant 0_1RB_Offset 24

DUT: 121211C15

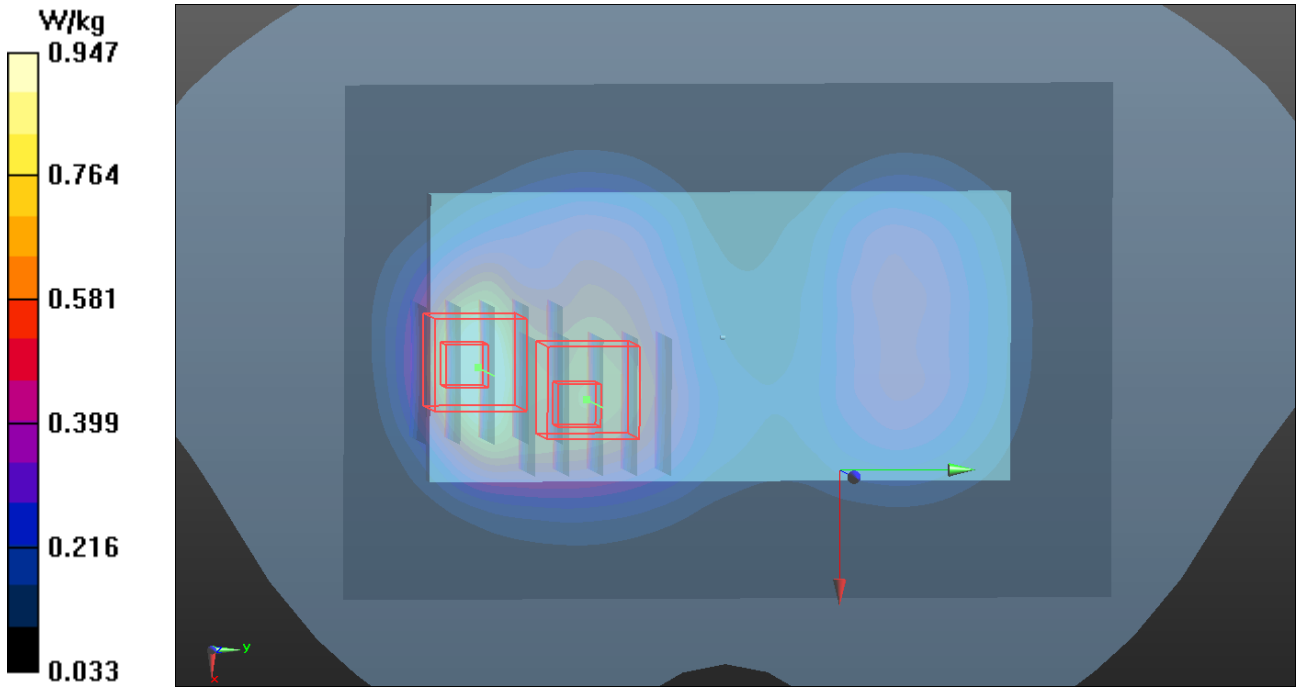
Communication System: LTE; Frequency: 1910 MHz;Duty Cycle: 1:1
Medium: B1900_0104 Medium parameters used: f = 1910 MHz; σ = 1.555 mho/m; ε_r = 53.414; ρ = 1000 kg/m^3
Ambient Temperature：21.8 ℃; Liquid Temperature：20.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2012/8/23
- Phantom: SAM Phantom_Left; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch26640/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.09 W/kg

Ch26640/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.259 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.712 W/kg; SAR(10 g) = 0.375 W/kg
Maximum value of SAR (measured) = 0.925 W/kg

Ch26640/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.259 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.870 W/kg
SAR(1 g) = 0.563 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.711 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2013/01/08

P301 802.11b_1cm_Front Face _ch1

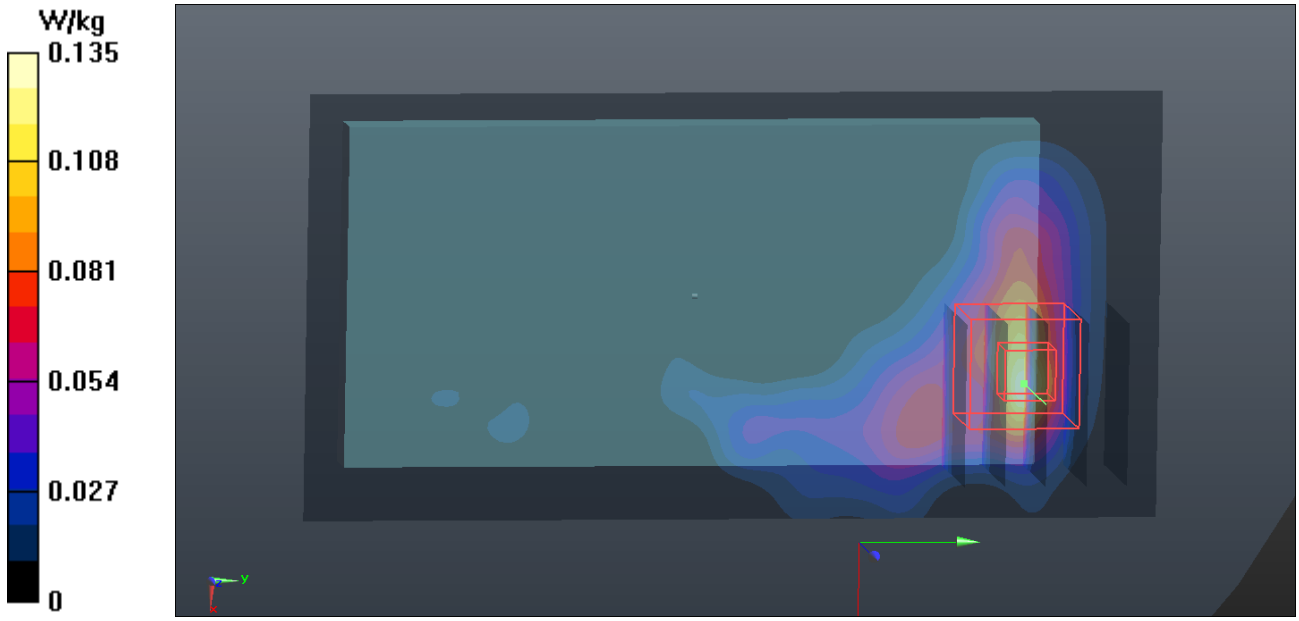
DUT: 121211C15

Communication System: WLAN_2.4G; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: B2450_0108 Medium parameters used: f = 2412 MHz; σ = 1.892 mho/m; ε_r = 51.116; ρ = 1000 kg/m^3
Ambient Temperature：21.3℃； Liquid Temperature：20.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3864; ConvF(7.49, 7.49, 7.49); Calibrated: 2012/07/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2012/07/19
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch1/Area Scan (71x141x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.135 W/kg

Ch1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.030 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.033 W/kg
Maximum value of SAR (measured) = 0.122 W/kg



P307 802.11a_Front Face_1cm_ch48

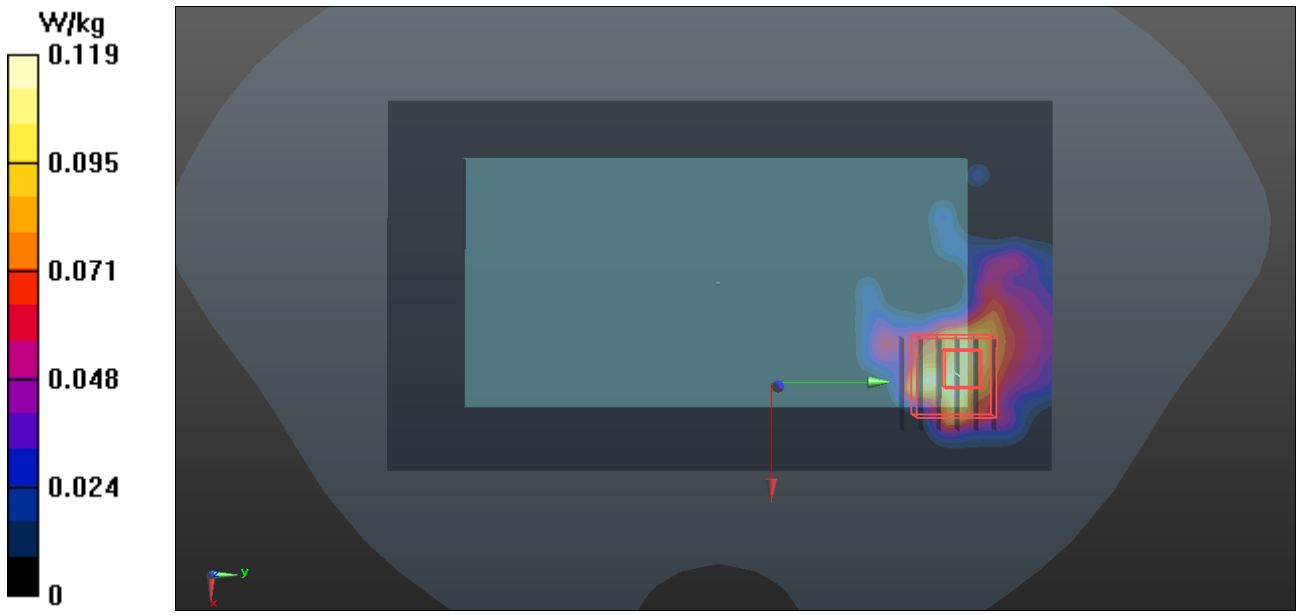
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5240 MHz; σ = 5.359 mho/m; ε_r = 48.851; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃; Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.89, 4.89, 4.89); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch48/Area Scan (101x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.119 W/kg

CH48/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 0.572 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.055 W/kg; SAR(10 g) = 0.018 W/kg
Maximum value of SAR (measured) = 0.106 W/kg



P310 802.11a_Front Face_1cm_ch64

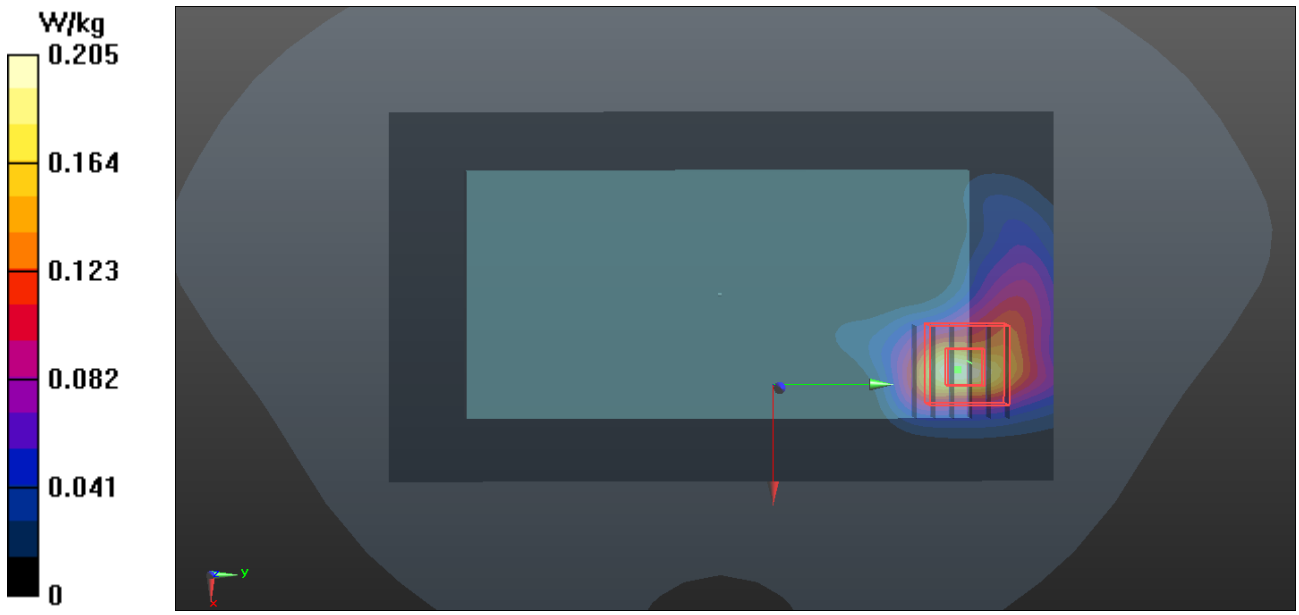
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5320 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5320 MHz; σ = 5.438 mho/m; ε_r = 48.649; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃； Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.81, 4.81, 4.81); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch64/Area Scan (101x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.205 W/kg

Ch64/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 1.435 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.256 W/kg
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.027 W/kg
Maximum value of SAR (measured) = 0.143 W/kg



P313 802.11a_Rear Face_1cm_ch140

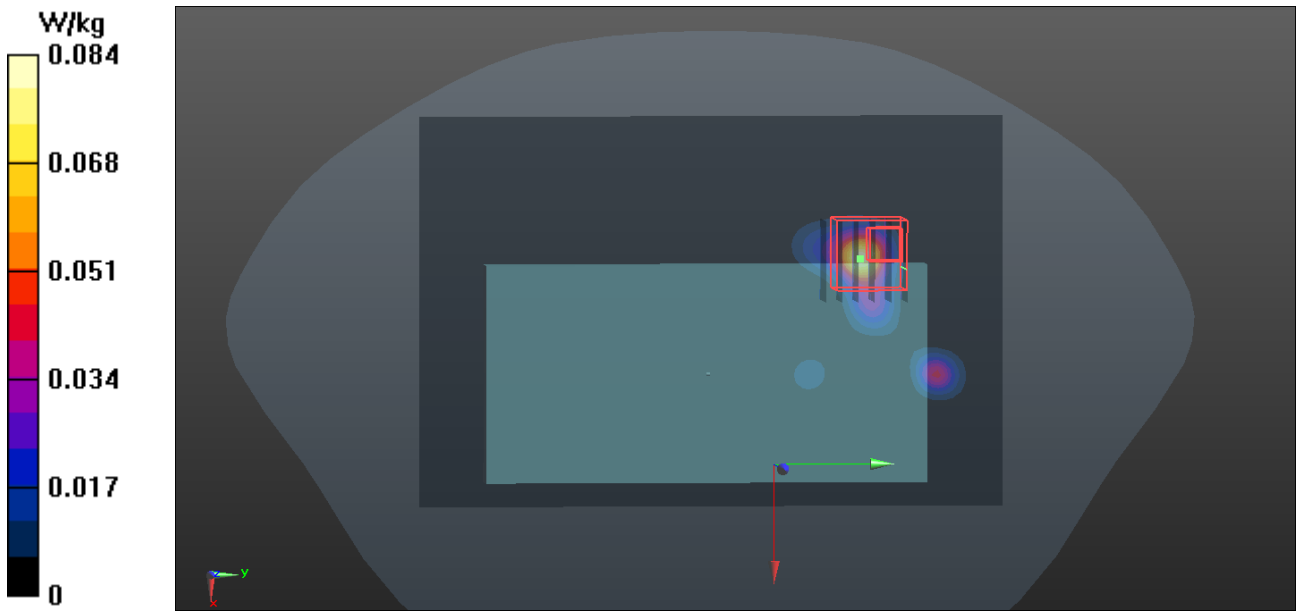
DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5700 MHz;Duty Cycle: 1:1
Medium: B5G_0109 Medium parameters used: f = 5700 MHz; σ = 6.005 mho/m; ε_r = 47.917; ρ = 1000 kg/m^3
Ambient Temperature：21.4℃； Liquid Temperature：20.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(3.92, 3.92, 3.92); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch140/Area Scan (121x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0845 W/kg

Ch140/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 0.635 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.303 W/kg
SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.010 W/kg
Maximum value of SAR (measured) = 0.0817 W/kg



P314 802.11a_Front Face_1cm_ch157

DUT: 121211C15

Communication System: WLAN_5G; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: B5G_0110 Medium parameters used: f = 5785 MHz; σ = 6.073 mho/m; ε_r = 47.741; ρ = 1000 kg/m^3
Ambient Temperature：21.3℃； Liquid Temperature：20.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3590; ConvF(4.54, 4.54, 4.54); Calibrated: 2012/02/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn687; Calibrated: 2012/08/23
- Phantom: SAM Phantom_Front; Type: SAM V4.0; Serial: TP 1127
- Measurement SW: DASY52, Version 52.8 (3); SEMCAD X Version 14.6.7 (6848)

Ch157/Area Scan (101x181x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.0612 W/kg

Ch157/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.226 W/kg
SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.014 W/kg
Maximum value of SAR (measured) = 0.0978 W/kg