FCC SAR Test Report

APPLICANT	:	**CT Asia**
EQUIPMENT	:	**GSM850/1900 WCDMA850/1900 BT/WIFI Mobile Phone**
BRAND NAME	:	**BLU**
MODEL NAME	:	**Dash3.2**
FCC ID	:	**YHLBLUDASH32**
STANDARD	:	**FCC 47 CFR Part 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2003** **FCC OET Bulletin 65 Supplement C (Edition 01-01)**

The product was completely tested on Dec. 12, 2012. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager

Testing Laboratory
2353

SPORTON INTERNATIONAL (SHENZHEN) INC.
No. 101, Complex Building C, Guanglong Village, Xili Town, Nanshan District, Shenzhen, Guangdong, P.R.C.

Table of Contents

1. Statement of Compliance 4
2. Administration Data 5
2.1 Testing Laboratory....5
2.2 Applicant 5
2.3 Manufacturer....5
2.4 Application Details....5
3. General Information 6
3.1 Description of Equipment Under Test (EUT) 6
3.2 Product Photos 7
3.3 Applied Standard....7
3.4 Device Category and SAR Limits....7
3.5 Test Conditions....7
4. Specific Absorption Rate (SAR)....8
4.1 Introduction 8
4.2 SAR Definition....8
5. SAR Measurement System....9
5.1 E-Field Probe 10
5.2 Data Acquisition Electronics (DAE) 10
5.3 Robot 11
5.4 Measurement Server....11
5.5 Phantom....12
5.6 Device Holder 12
5.7 Data Storage and Evaluation 13
5.8 Test Equipment List....15
6. Tissue Simulating Liquids....16
7. SAR Measurement Evaluation 17
7.1 Purpose of System Performance check 17
7.2 System Setup....17
7.3 Verification Results....18
8. EUT Testing Position 19
8.1 Define two imaginary lines on the handset....19
8.2 Cheek Position....20
8.3 Tilted Position....20
8.4 Body Worn Position....21
9. Measurement Procedures 22
9.1 Spatial Peak SAR Evaluation....22
9.2 Area & Zoom Scan Procedures....22
9.3 Volume Scan Procedures....23
9.4 SAR Averaged Methods....23
9.5 Power Drift Monitoring....23
10. SAR Test Configurations....24
10.1 Exposure Positions Consideration 24
10.2 Conducted RF Output Power (Unit: dBm)....26
11. SAR Test Results 29
11.1 Test Records for Head SAR Test....29
11.2 Test Records for Hotspot SAR Test 30
11.3 Test Records for Body-worn SAR Test 32
11.4 Simultaneous Multi-band Transmission Analysis....33
12. Uncertainty Assessment 36
13. References....38
Appendix A. Plots of System Performance Check
Appendix B. Plots of SAR Measurement
Appendix C. DASY Calibration Certificate
Appendix D. Product Photos
Appendix E. Test Setup Photos

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA2N2401	Rev. 01	Initial issue of report	Dec. 17, 2012

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **CT Asia; DUT: GSM850/1900 WCDMA850/1900 BT/WIFI Mobile Phone; Brand Name: BLU; Model Name: Dash3.2** are as follows.

<Standalone SAR>

Band	Position	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)
GSM850	Head	0.620	0.808
GSM1900	Head	0.705	0.919
WCDMA Band V	Head	0.601	0.765
WCDMA Band II	Head	1.240	1.454
WLAN 2.4G	Head	0.180	0.191
GSM850	Hotspot (1 cm Gap)	1.120	1.203
GSM1900	Hotspot (1 cm Gap)	0.932	1.152
WCDMA Band V	Hotspot (1 cm Gap)	0.896	1.141
WCDMA Band II	Hotspot (1 cm Gap)	0.653	0.745
WLAN 2.4G	Hotspot (1 cm Gap)	0.338	0.359
GSM850	Body-worn (1 cm Gap)	1.120	1.203
GSM1900	Body-worn (1 cm Gap)	0.932	1.152
WCDMA Band V	Body-worn (1 cm Gap)	0.896	1.141
WCDMA Band II	Body-worn (1 cm Gap)	0.653	0.745
WLAN 2.4G	Body-worn (1 cm Gap)	0.338	0.359

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003 and FCC OET Bulletin 65 Supplement C (Edition 01-01).

2. Administration Data

2.1 Testing Laboratory

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.
Test Site Location	No. 101, Complex Building C, Guanglong Village, Xili Town, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755-8637-9589 Fax: +86-755-8637-9595

2.2 Applicant

Company Name	CT Asia
Address	Unit 01, 15/F, Seaview Centre, 139-141 Hoi bun road, Kwun Tong, Kowloon, Hongkong

2.3 Manufacturer

Company Name	Gionee Communication Equipment Co., Ltd.
Address	21/F, Times Technology Building, No. 7028, Shennan Avenue, Futian District, Shenzhen, China

2.4 Application Details

Date of Start during the Test	Nov. 29, 2012
Date of End during the Test	Dec. 12, 2012

3. General Information

3.1 Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT	GSM850/1900 WCDMA850/1900 BT/WIFI Mobile Phone
Brand Name	BLU
Model Name	Dash3.2
FCC ID	YHLBLUDASH32
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WLAN2.4G: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz WLAN2.4G: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Maximum Average Output Power to Antenna	GSM850: 31.85 dBm GSM1900: 28.85 dBm WCDMA Band V: 22.95 dBm WCDMA Band II: 21.43 dBm 802.11b: 13.74 dBm 802.11g: 8.07 dBm 802.11n-HT20: 4.15 dBm 802.11n-HT40: 4.85 dBm Bluetooth: 2.13 dBm
Antenna Type	WWAN: Fixed Internal Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna
HW Version	DASH 3.2_MAINBOARD_P4
SW Version	DASH 3.2_0401_V1418
Type of Modulation	GSM: GMSK GPRS: GMSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink)) 802.11b: DSSS (BPSK / QPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth 3.0 BDR (1Mbps) : GFSK Bluetooth 3.0 EDR (2Mbps) : π/4-DQPSK Bluetooth 3.0 EDR (3Mbps) : 8-DPSK
Dual Transfer Mode (DTM) Category	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two SIM cards for EUT. They are SIM1 card and SIM2 card. After pre-scan two SIM cards, we found test result with SIM1 card was the worst, so we choose SIM1 card to perform all tests.

3.2 Product Photos

Please refer to Appendix D.

3.3 Applied Standard

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
- FCC KDB 447498 D01 v04
- FCC KDB 648474 D01 v01r05
- FCC KDB 941225 D01 v02
- FCC KDB 941225 D03 v01
- FCC KDB 941225 D06 v01
- FCC KDB 248227 D01 v01r02

3.4 Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

3.5 Test Conditions

3.5.1 Ambient Condition

Ambient Temperature	20 to 24 ℃
Humidity	< 60 %

3.5.2 Test Configuration

The device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the 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 all tests.

For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal.

The maximum rated power of WWAN and WLAN is listed in "Tune-Up Procedure" exhibit; The scaling factor is calculated according to the difference between measured output power and maximum tolerance power on this device.

4. Specific Absorption Rate (SAR)

4.1 Introduction

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

4.2 SAR Definition

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

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

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

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or 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.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

5. SAR Measurement System

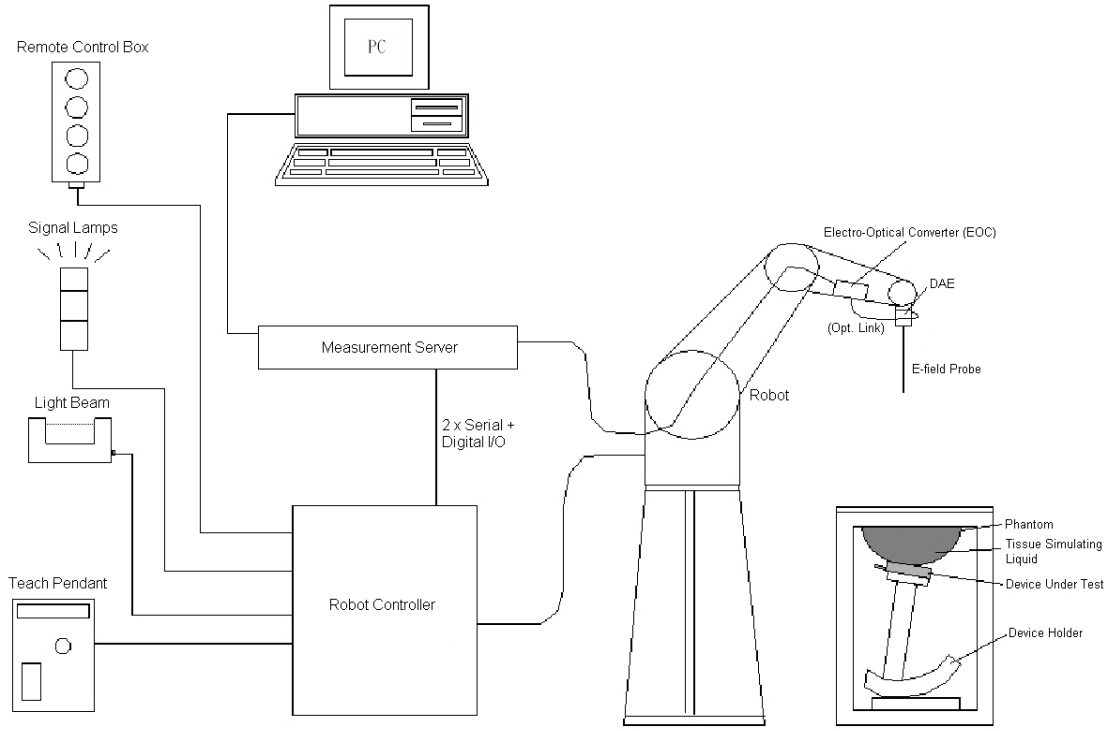


Fig 5.1 SPEAG DASY System Configurations

The DASY system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY software
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

Component details are described in in the following sub-sections.

5.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).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. This probe has a built in optical surface detection system to prevent from collision with phantom.

5.1.1 E-Field Probe Specification

<EX3DV4 Probe>

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: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

Fig 5.2 Photo of EX3DV4

5.1.2 E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25 dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

5.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.3 Photo of DAE

5.3 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (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 5.4 Photo of DASY5

5.4 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chipdisk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Fig 5.5 Photo of Server for DASY5

5.5 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom

Fig 5.6 Photo of SAM Phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

5.6 Device Holder

<Device Holder for SAM Twin Phantom>

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

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR). Thus the device needs no repositioning when changing the angles.

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

Fig 5.7 Device Holder

5.7 Data Storage and Evaluation

5.7.1 Data Storage

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

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [mW/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

5.7.2 Data Evaluation

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

Probe parameters：	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters：	- Frequency	f
	- Crest factor	cf
Media parameters：	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as：

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

with V_i = compensated signal of channel i, (i = x, y, z)
U_i = input signal of channel i, (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

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

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

H-field Probes：$\mathbf{H_i = \sqrt{V_i} \cdot \frac{a_{i0}+a_{i1}f+a_{i2}f^2}{f}}$

with V_i = compensated signal of channel i, (i = x, y, z)
$Norm_i$ = sensor sensitivity of channel i, (i = x, y, z), μV/(V/m)^2 for E-field Probes
ConvF = sensitivity enhancement in solution
a_{ij} = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i = electric field strength of channel i in V/m
H_i = magnetic field strength of channel i in A/m

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

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

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

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

with SAR = local specific absorption rate in mW/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

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

5.8 Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 18, 2011	Nov. 16, 2013
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	Nov. 21, 2011	Nov. 16, 2013
SPEAG	2450MHz System Validation Kit	D2450V2	736	Jul. 25, 2011	Jul. 24, 2013
SPEAG	Data Acquisition Electronics	DAE4	905	Jun. 21, 2012	Jun. 20, 2013
SPEAG	Dosimetric E-Field Probe	EX3DV4	3661	Jan. 27, 2012	Jan. 26, 2013
SPEAG	SAM Twin Phantom	QD 000 P40 CD	TP-1670	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CD	TP-1671	NCR	NCR
SPEAG	Test Arch Phantom	Par phantom	1105	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Agilent	Base Station	E5515C	MY50267224	Dec. 29, 2011	Dec. 28, 2012
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	Apr. 13, 2012	Apr. 12, 2013
R&S	Signal Generator	SMR40	100455	Dec. 30, 2011	Dec. 29, 2012
Agilent	Power Meter	E4416A	MY45101555	Aug. 22, 2012	Aug. 21, 2013
Agilent	Power Sensor	E9327A	MY44421198	Aug. 22, 2012	Aug. 21, 2013
R&S	Spectrum Analyzer	FSP30	101400	Jun. 01, 2012	May 31, 2013

Table 5.1 Test Equipment List

Note:

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. Referring to KDB 450824 D02, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D835V2, SN: 4d091, D1900V2, SN: 5d118, D2450V2, SN: 736, can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. 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, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.2.

Fig 6.1 Photo of Liquid Height for Head SAR

Fig 6.2 Photo of Liquid Height for Body SAR

The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ε_r)
For Head								
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
For Body								
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7

Table 6.1 Recipes of Tissue Simulating Liquid

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an Agilent 85070D Dielectric Probe Kit and an Agilent Network Analyzer.

The following table shows the measuring results for simulating liquid.

Freq. (MHz)	Liquid Type	Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
835	Head	21.3	0.916	41.029	0.90	41.5	1.78	-1.13	±5	Dec. 12, 2012
835	Body	21.4	0.976	54.369	0.97	55.2	0.62	-1.51	±5	Dec. 10, 2012
1900	Head	21.5	1.412	39.311	1.40	40.0	0.86	-1.72	±5	Dec. 10, 2012
1900	Body	21.6	1.528	53.974	1.52	53.3	0.53	1.26	±5	Dec. 11, 2012
2450	Head	21.7	1.856	37.685	1.80	39.2	3.11	-3.86	±5	Nov. 29, 2012
2450	Body	21.7	1.951	53.859	1.95	52.7	0.05	2.20	±5	Dec. 12, 2012

Table 6.2 Measuring Results for Simulating Liquid

7. SAR Measurement Evaluation

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

7.1 Purpose of System Performance check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

7.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:

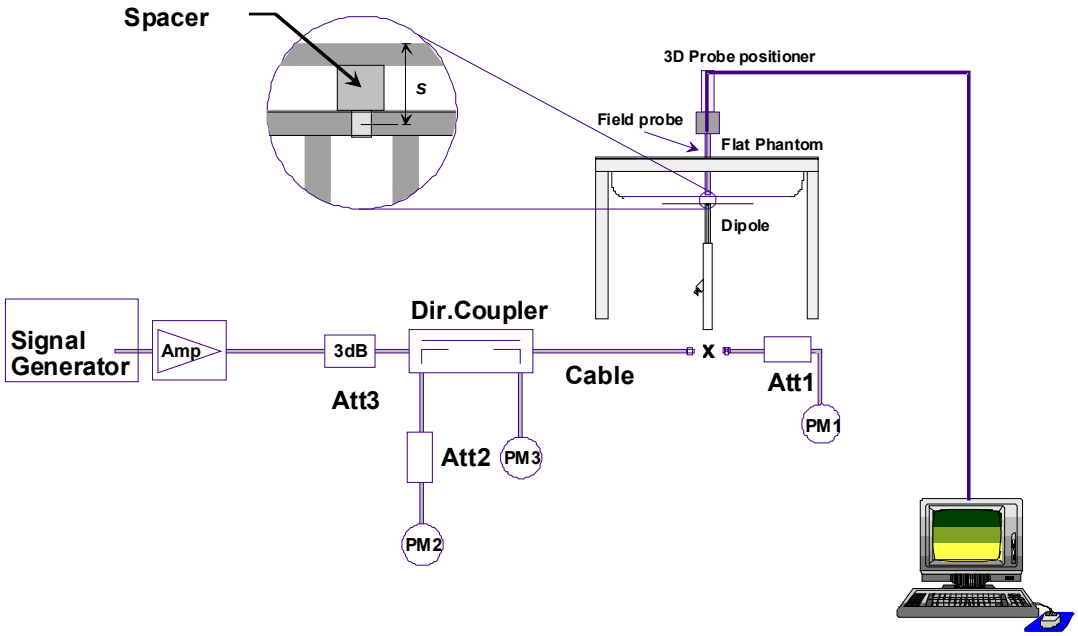


Fig 7.1 System Setup for System Evaluation

1. Signal Generator
2. Amplifier
3. Directional Coupler
4. Power Meter
5. Calibrated Dipole

The output power on dipole port must be calibrated to 24 dBm (250 mW) before dipole is connected.

Fig 7.2 Photo of Dipole Setup

7.3 Verification Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Table 7.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Measurement Date	Frequency (MHz)	Liquid Type	Targeted SAR_{1g} (W/kg)	Measured SAR_{1g} (W/kg)	Normalized SAR_{1g} (W/kg)	Deviation (%)
Dec. 12, 2012	835	Head	9.40	2.44	9.76	3.83
Dec. 10, 2012	835	Body	9.42	2.4	9.60	1.91
Dec. 10, 2012	1900	Head	40.3	10.4	41.60	3.23
Dec. 11, 2012	1900	Body	41.8	10.5	42.00	0.48
Nov. 29, 2012	2450	Head	54.8	14.2	56.80	3.65
Dec. 12, 2012	2450	Body	52.3	13.9	55.60	6.31

Table 7.1 Target and Measurement SAR after Normalized

8. EUT Testing Position

This EUT was tested in ten different positions. They are right cheek, right tilted, left cheek, left tilted, front of the EUT with phantom 1 cm gap, back of the EUT with phantom 1 cm gap, Top Side of the EUT with phantom 1 cm gap, Bottom Side of the EUT with phantom 1 cm gap, Right Side of the EUT with phantom 1 cm gap, and Left Side of the EUT with phantom 1 cm gap, as illustrated below:

8.1 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.

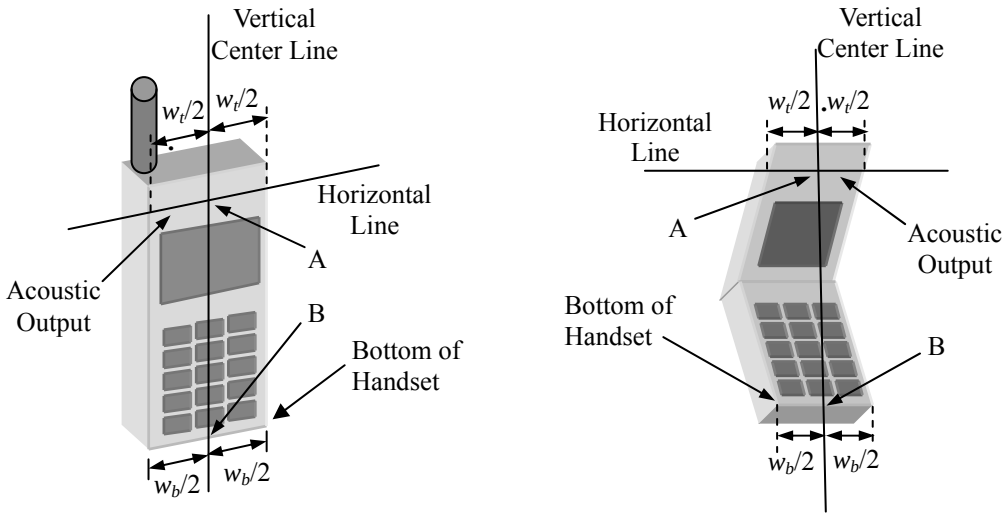


Fig 9.1 Illustration for Handset Vertical and Horizontal Reference Lines

8.2 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. 9.2).

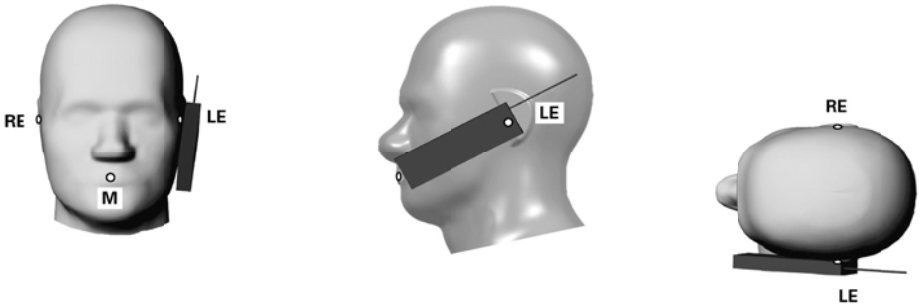


Fig 9.2 Illustration for Cheek Position

8.3 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. 9.3).

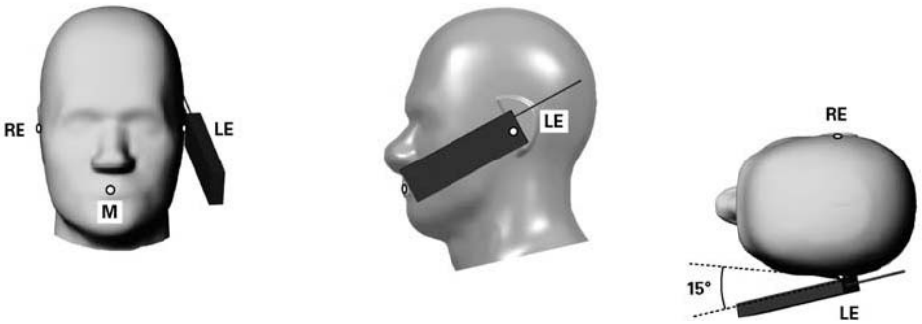


Fig 9.3 Illustration for Tilted Position

8.4 Body Worn Position

(a) To position the device parallel to the phantom surface with either keypad up or down.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 1 cm.

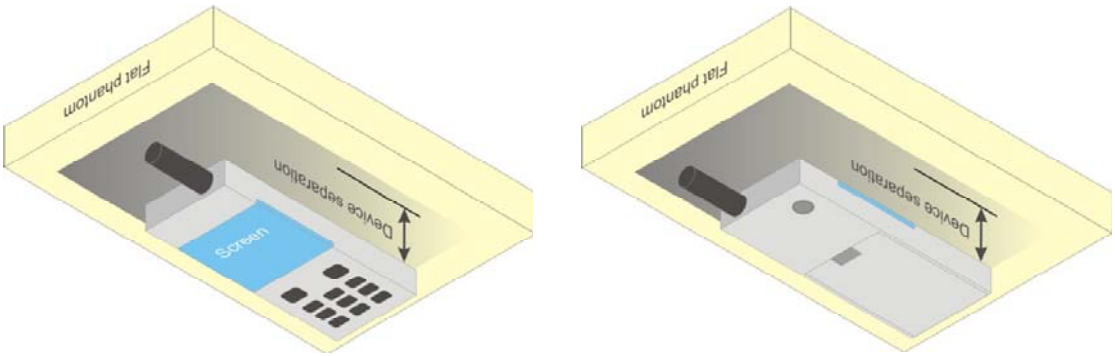


Fig 9.4 Illustration for Body Worn Position

<EUT Setup Photos>

Please refer to Appendix E for the test setup photos.

9. Measurement Procedures

The measurement procedures are as follows:

(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
(b) Keep EUT to radiate maximum output power or 100% EUTy factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as Appendix E demonstrates.
(e) Set scan area, grid size and other setting on the DASY software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

(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

9.2 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

9.3 Volume Scan Procedures

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

9.4 SAR Averaged Methods

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

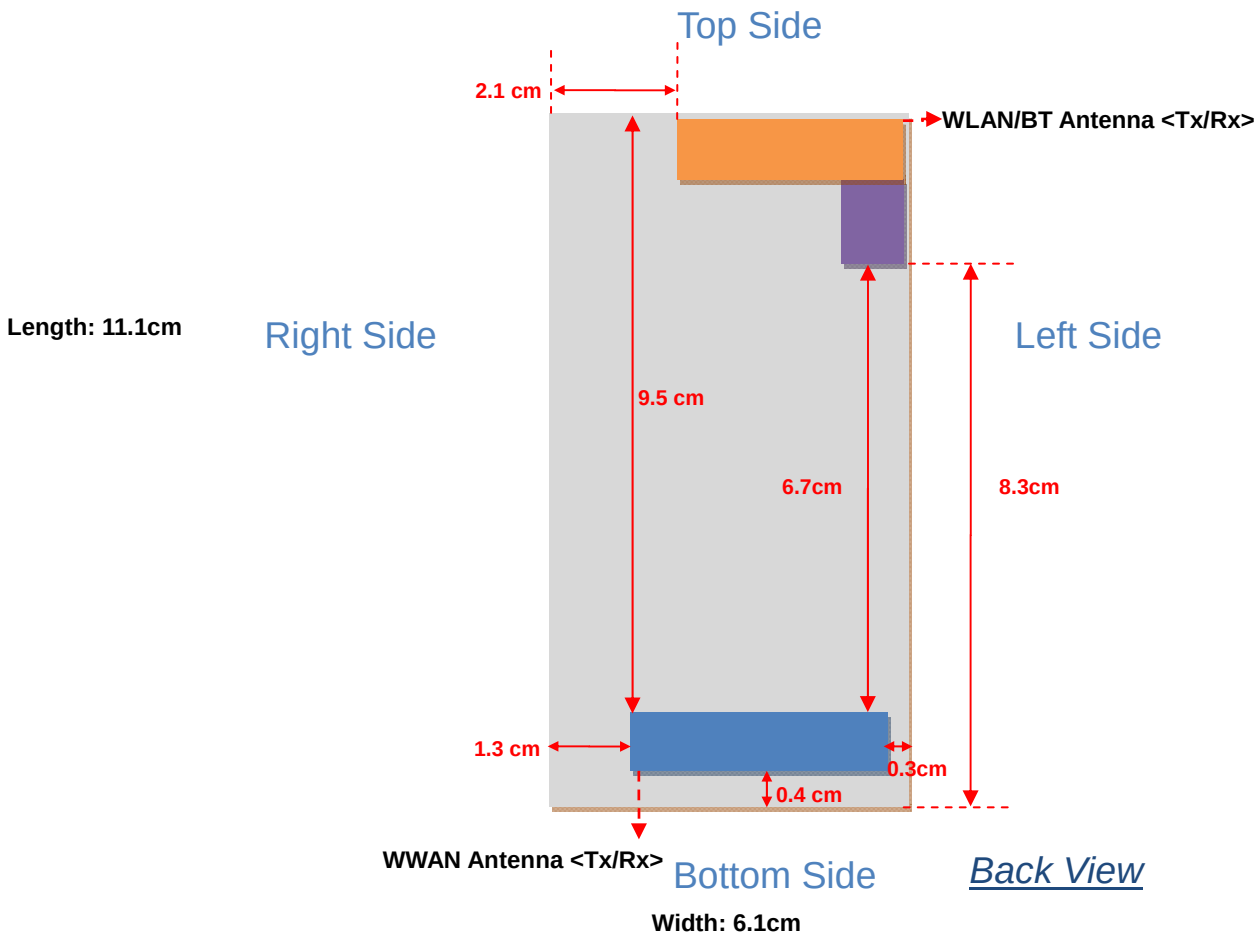
Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty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

9.5 Power Drift Monitoring

All SAR testing is under the 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.

10. SAR Test Configurations

10.1 Exposure Positions Consideration



Antennas	Wireless Interface
WWAN Antenna (Tx / Rx)	GSM: 850/1900 WCDMA: Band V/II
WLAN &BT Antenna (Tx / Rx)	WLAN 2.4GHz Bluetooth

Sides for SAR tests; Hotspot mode Test distance: 10 mm						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
WWAN	YES	YES	NO	YES	YES	YES
WLAN & BT	YES	YES	YES	NO	YES	YES

Note:

1. Head/Body-worn/Hotspot mode SAR assessments are required.
2. Referring to KDB 941225 D06, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
3. For WWAN antenna, SAR measurement at Top Side is not required since the distance between WWAN transmitting antenna and surface or edge > 25mm.
4. For WLAN & BT antenna, SAR measurement Bottom Side is not required since the distance between WLAN & BT transmitting antenna and surface or edge > 25mm.

10.2 Conducted RF Output Power (Unit: dBm)

<GSM/GPRS>

Burst Average Power						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency (MHz)	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM (GMSK, 1 Tx slot)	**31.85**	31.75	31.68	28.36	28.52	**28.85**
GPRS (GMSK, 1 Tx slot) – CS1	31.83	31.74	31.64	28.32	28.46	28.81
GPRS (GMSK, 2 Tx slots) – CS1	30.69	30.59	30.50	27.73	27.87	28.22
GPRS (GMSK, 3 Tx slots) – CS1	28.34	28.20	28.09	26.42	26.51	26.87
GPRS (GMSK, 4 Tx slots) – CS1	27.31	27.15	27.01	25.58	25.70	26.04

Source-Based Time-Averaged Power						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency (MHz)	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM (GMSK, 1 Tx slot)	22.85	22.75	22.68	19.36	19.52	19.85
GPRS (GMSK, 1 Tx slot) – CS1	22.83	22.74	22.64	19.32	19.46	19.81
GPRS (GMSK, 2 Tx slots) – CS1	**24.69**	24.59	24.50	21.73	21.87	22.22
GPRS (GMSK, 3 Tx slots) – CS1	24.08	23.94	23.83	22.16	22.25	22.61
GPRS (GMSK, 4 Tx slots) – CS1	24.31	24.15	24.01	22.58	22.70	**23.04**

Remark: The source-based time-averaged power is linearly scaled the maximum burst averaged power based on time slots. The calculated method are shown as below:
Source based time averaged power = Maximum burst averaged power (1 Tx slot) - 9 dB
Source based time averaged power = Maximum burst averaged power (2 Tx slots) - 6 dB
Source based time averaged power = Maximum burst averaged power (3 Tx slots) - 4.26 dB
Source based time averaged power = Maximum burst averaged power (4 Tx slots) - 3 dB

Note:

1. For Head SAR testing, GSM should be evaluated, therefore the EUT was set in GSM for GSM850 and GSM1900 due to its highest source-based time-average power.
2. For Body SAR testing, GPRS should be evaluated, therefore the EUT was set in GPRS (2 Tx slots) for GSM850 and set in GPRS (4 Tx slots) for GSM1900 due to its highest source-based time-average power.
3. Per KDB 447498, the maximum output power channel is used for SAR testing and for further SAR test reduction.
4. The EUT do not support DTM function.

<WCDMA>

Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency (MHz)	826.4	836.4	846.6	1852.4	1880.0	1907.6
AMR	22.92	22.94	22.57	21.30	21.24	21.41
RMC 12.2K	22.94	22.95	22.57	21.31	21.25	21.43
HSDPA Subtest-1	21.42	21.44	21.05	20.34	20.28	20.45
HSDPA Subtest-2	21.31	21.33	20.98	20.20	20.10	20.31
HSDPA Subtest-3	21.02	21.03	20.64	20.08	19.95	20.18
HSDPA Subtest-4	20.95	20.96	20.59	19.87	19.81	19.99

MPR (dB)							
3GPP MPR	Subtest	WCDMA Band V			WCDMA Band II		
0	HSDPA Subtest-1	0.00	0.00	0.00	0.00	0.00	0.00
0	HSDPA Subtest-2	0.11	0.11	0.07	0.14	0.18	0.14
≤ 0.5	HSDPA Subtest-3	0.40	0.41	0.41	0.26	0.33	0.27
≤ 0.5	HSDPA Subtest-4	0.47	0.48	0.46	0.47	0.47	0.46

Note:

1. For Head SAR, per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If AMR 12.2kbps power is < 1/4 dB higher than RMC, SAR tests with AMR 12.2kbps can be excluded.
2. For Body SAR, per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA subset-1 output power is < 1/4 dB higher than RMC, and SAR with RMC 12.2kbps setting is ≦1.2W/kg, HSDPA SAR evaluation can be excluded.
3. EUT is designed to follow the MPR of 3GPP Table 5.2B.1 specification. In production units, MPR result deviation from 3GPP is expected; the implementation and expected deviation is detailed in tune-up procedure exhibit.

<WLAN 2.4GHz>

Mode	Channel	Frequency (MHz)	Average power (dBm) Data Rate (bps)			
			1M	2M	5.5M	11M
802.11b	CH 01	2412	13.64	12.43	12.53	12.48
	CH 06	2437	12.77	12.76	12.76	12.80
	CH 11	2462	13.63	13.54	13.70	**13.74**

Mode	Channel	Frequency (MHz)	Average power (dBm) Data Rate (bps)							
			6M	9M	12M	18M	24M	36M	48M	54M
802.11g	CH 01	2412	7.65	7.08	6.99	7.23	7.15	7.14	7.28	7.23
	CH 06	2437	6.81	6.50	6.57	6.71	6.60	6.60	6.70	6.66
	CH 11	2462	7.75	7.81	7.94	8.03	7.94	7.98	**8.07**	7.99

Mode	Channel	Frequency (MHz)	Average power (dBm) Data Rate (bps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n HT20	CH 01	2412	3.43	3.36	3.46	3.42	3.41	3.45	3.41	3.36
	CH 06	2437	3.28	3.22	3.32	3.32	3.29	3.36	3.31	3.25
	CH 11	2462	4.11	4.04	4.09	**4.15**	4.13	4.14	4.13	4.11

Mode	Channel	Frequency (MHz)	Average power (dBm) Data Rate (bps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n HT40	CH 03	2422	3.10	3.13	3.12	3.16	3.26	3.28	3.35	3.57
	CH 06	2437	3.32	3.35	3.41	3.42	3.49	3.61	3.58	3.52
	CH 09	2452	4.09	4.20	4.55	4.62	4.73	4.37	**4.85**	4.25

Note:

1. Per KDB 248227, choose the highest output power channel to test SAR and determine further SAR exclusion
2. Per KDB 248227, 11g and 11n output power is less than 1/4 dB higher than 11b mode, thus the SAR can be excluded.
3. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4 dB higher than those measured at the lowest data rate. The SAR test for b is selected the highest Power with the highest data rate.

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power (dBm) Data Rate								
			DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3DH5
Bluetooth	CH 00	2402	**2.13**	-0.67	-1.46	-4.19	-4.64	-4.92	-4.17	-4.59	-4.91
	CH 39	2441	0.30	-0.38	0.05	-2.22	-3.13	-3.28	-2.26	-3.44	-3.28
	CH 78	2480	1.38	1.28	1.14	-1.09	-1.87	-2.11	-1.13	-2.15	-2.12

11. SAR Test Results

11.1 Test Records for Head SAR Test

<GSM>

Plot No.	Band	Mode	Test Position	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
51	GSM850	GSM	Right Cheek	128	31.85	33	1.30	0.539	0.702	0.01
52	GSM850	GSM	Right Tilted	128	31.85	33	1.30	0.277	0.361	0.01
53	**GSM850**	**GSM**	**Left Cheek**	**128**	**31.85**	**33**	**1.30**	**0.620**	**0.808**	**-0.02**
54	GSM850	GSM	Left Tilted	128	31.85	33	1.30	0.318	0.414	-0.04
11	GSM1900	GSM	Right Cheek	810	28.85	30	1.30	0.435	0.567	0.05
12	GSM1900	GSM	Right Tilted	810	28.85	30	1.30	0.163	0.212	-0.02
13	**GSM1900**	**GSM**	**Left Cheek**	**810**	**28.85**	**30**	**1.30**	**0.705**	**0.919**	**0.03**
14	GSM1900	GSM	Left Tilted	810	28.85	30	1.30	0.164	0.214	-0.02

Note: Per KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

<WCDMA>

Plot No.	Band	Mode	Test Position	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
55	WCDMA Band V	RMC 12.2K	Right Cheek	4182	22.95	24	1.27	0.525	0.669	0.08
56	WCDMA Band V	RMC 12.2K	Right Tilted	4182	22.95	24	1.27	0.266	0.339	0.09
57	**WCDMA Band V**	**RMC 12.2K**	**Left Cheek**	**4182**	**22.95**	**24**	**1.27**	**0.601**	**0.765**	**-0.01**
58	WCDMA Band V	RMC 12.2K	Left Tilted	4182	22.95	24	1.27	0.300	0.382	-0.01
5	WCDMA Band II	RMC 12.2K	Right Cheek	9538	21.43	22	1.14	0.699	0.797	-0.01
6	WCDMA Band II	RMC 12.2K	Right Tilted	9538	21.43	22	1.14	0.256	0.292	-0.03
7	WCDMA Band II	RMC 12.2K	Left Cheek	9538	21.43	22	1.14	1.110	1.266	0.01
8	WCDMA Band II	RMC 12.2K	Left Tilted	9538	21.43	22	1.14	0.256	0.292	-0.02
9	**WCDMA Band II**	**RMC 12.2K**	**Left Cheek**	**9262**	**21.31**	**22**	**1.17**	**1.240**	**1.454**	**0.02**
10	WCDMA Band II	RMC 12.2K	Left Cheek	9400	21.25	22	1.19	1.180	1.402	0.03

Note: Per KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

<WLAN>

Plot No.	Band	Mode	Test Position	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
1	**WLAN 2.4G**	**802.11b**	**Right Cheek**	**11**	**13.74**	**14**	**1.06**	**0.180**	**0.191**	**0.01**
2	WLAN 2.4G	802.11b	Right Tilted	11	13.74	14	1.06	0.168	0.178	-0.02
3	WLAN 2.4G	802.11b	Left Cheek	11	13.74	14	1.06	0.050	0.053	0.09
4	WLAN 2.4G	802.11b	Left Tilted	11	13.74	14	1.06	0.079	0.084	0.12

Note: Per KDB 248227, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

11.2 Test Records for Hotspot SAR Test

<GSM>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
15	GSM850	GPRS(2 Tx slots)	Front	1	128	30.69	31	1.07	0.906	0.973	-0.03
16	**GSM850**	**GPRS(2 Tx slots)**	**Back**	**1**	**128**	**30.69**	**31**	**1.07**	**1.120**	**1.203**	**0.04**
17	GSM850	GPRS(2 Tx slots)	Left Side	1	128	30.69	31	1.07	0.669	0.718	0.04
18	GSM850	GPRS(2 Tx slots)	Right Side	1	128	30.69	31	1.07	0.443	0.476	-0.01
19	GSM850	GPRS(2 Tx slots)	Bottom Side	1	128	30.69	31	1.07	0.075	0.081	-0.04
20	GSM850	GPRS(2 Tx slots)	Front	1	189	30.59	31	1.10	0.900	0.989	-0.01
21	GSM850	GPRS(2 Tx slots)	Front	1	251	30.50	31	1.12	0.877	0.984	-0.03
22	GSM850	GPRS(2 Tx slots)	Back	1	189	30.59	31	1.10	1.100	1.209	-0.01
23	GSM850	GPRS(2 Tx slots)	Back	1	251	30.50	31	1.12	1.060	1.189	0.02
35	GSM1900	GPRS(4 Tx slots)	Front	1	810	26.04	26.5	1.11	0.773	0.859	-0.01
36	GSM1900	GPRS(4 Tx slots)	Back	1	810	26.04	26.5	1.11	0.819	0.911	0.04
37	GSM1900	GPRS(4 Tx slots)	Left Side	1	810	26.04	26.5	1.11	0.255	0.283	-0.02
38	GSM1900	GPRS(4 Tx slots)	Right Side	1	810	26.04	26.5	1.11	0.152	0.169	0.07
39	GSM1900	GPRS(4 Tx slots)	Bottom Side	1	810	26.04	26.5	1.11	0.456	0.507	-0.03
40	**GSM1900**	**GPRS(4 Tx slots)**	**Back**	**1**	**512**	**25.58**	**26.5**	**1.24**	**0.932**	**1.152**	**-0.02**
41	GSM1900	GPRS(4 Tx slots)	Back	1	661	25.70	26.5	1.20	0.851	1.023	-0.01

Note:

1. Per KDB 941225 D06, for EUT dimension ≥ 9cm*5cm, the test distance is 1cm. SAR must be measured for all surfaces and sides with a transmitting antenna located within 2.5cm from that surface or edge.
2. As in (1), SAR for Front/Back/Bottom Side/Left Side/Right Side is necessary.
3. Per KDB 447498 if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

<WCDMA>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
27	WCDMA Band V	RMC 12.2K	Front	1	4182	22.95	24	1.27	0.706	0.899	0.04
28	**WCDMA Band V**	**RMC 12.2K**	**Back**	**1**	**4182**	**22.95**	**24**	**1.27**	**0.896**	**1.141**	**0.03**
29	WCDMA Band V	RMC 12.2K	Left Side	1	4182	22.95	24	1.27	0.505	0.643	-0.01
30	WCDMA Band V	RMC 12.2K	Right Side	1	4182	22.95	24	1.27	0.383	0.488	0.03
31	WCDMA Band V	RMC 12.2K	Bottom Side	1	4182	22.95	24	1.27	0.042	0.053	-0.06
32	WCDMA Band V	RMC 12.2K	Back	1	4132	22.94	24	1.28	0.782	0.998	0.01
33	WCDMA Band V	RMC 12.2K	Back	1	4233	22.57	24	1.39	0.813	1.130	-0.01
45	WCDMA Band II	RMC 12.2K	Front	1	9538	21.43	22	1.14	0.642	0.732	-0.03
46	**WCDMA Band II**	**RMC 12.2K**	**Back**	**1**	**9538**	**21.43**	**22**	**1.14**	**0.653**	**0.745**	**-0.09**
47	WCDMA Band II	RMC 12.2K	Left Side	1	9538	21.43	22	1.14	0.224	0.255	-0.05
48	WCDMA Band II	RMC 12.2K	Right Side	1	9538	21.43	22	1.14	0.130	0.148	0.04
49	WCDMA Band II	RMC 12.2K	Bottom Side	1	9538	21.43	22	1.14	0.345	0.393	-0.02

Note:

1. Per KDB 941225 D06, for EUT dimension ≥ 9cm*5cm, the test distance is 1cm. SAR must be measured for all surfaces and sides with a transmitting antenna located within 2.5cm from that surface or edge.
2. As in (1), SAR for Front/Back/Bottom Side/Left Side/Right Side is necessary.
3. Per KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

<WLAN>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
59	WLAN 2.4G	802.11b	Front	1	11	13.74	14	1.06	0.040	0.042	-0.01
60	**WLAN 2.4G**	**802.11b**	**Back**	**1**	**11**	**13.74**	**14**	**1.06**	**0.338**	**0.359**	**0.10**
61	WLAN 2.4G	802.11b	Left Side	1	11	13.74	14	1.06	0.070	0.074	0.10
62	WLAN 2.4G	802.11b	Right Side	1	11	13.74	14	1.06	0.000223	0.000	0.04
63	WLAN 2.4G	802.11b	Top Side	1	11	13.74	14	1.06	0.198	0.210	-0.08

Note:

1. Per KDB 941225 D06, for EUT dimension ≥ 9cm*5cm, the test distance is 1cm. SAR must be measured for all surfaces and sides with a transmitting antenna located within 2.5cm from that surface or edge.
2. As in (1), SAR for Front / Back / Top Side / Right Side / Left Side is necessary.
3. Per KDB 248227, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

11.3 Test Records for Body-worn SAR Test

<GSM>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Headset	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
15	GSM850	GPRS(2 Tx slots)	Front	1	128	-	30.69	31	1.07	0.906	0.973	-0.03
16	**GSM850**	**GPRS(2 Tx slots)**	**Back**	**1**	**128**	**-**	**30.69**	**31**	**1.07**	**1.120**	**1.203**	**0.04**
20	GSM850	GPRS(2 Tx slots)	Front	1	189	-	30.59	31	1.10	0.900	0.989	-0.01
21	GSM850	GPRS(2 Tx slots)	Front	1	251	-	30.50	31	1.12	0.877	0.984	-0.03
22	GSM850	GPRS(2 Tx slots)	Back	1	189	-	30.59	31	1.10	1.100	1.209	-0.01
23	GSM850	GPRS(2 Tx slots)	Back	1	251	-	30.50	31	1.12	1.060	1.189	0.02
24	GSM850	GPRS(2 Tx slots)	Back	1	128	V	30.69	31	1.07	0.896	0.962	0.02
25	GSM850	GPRS(2 Tx slots)	Back	1	189	V	30.59	31	1.10	0.819	0.900	0.03
26	GSM850	GPRS(2 Tx slots)	Back	1	251	V	30.50	31	1.12	0.859	0.964	-0.04
35	GSM1900	GPRS(4 Tx slots)	Front	1	810	-	26.04	26.5	1.11	0.773	0.859	-0.01
36	GSM1900	GPRS(4 Tx slots)	Back	1	810	-	26.04	26.5	1.11	0.819	0.911	0.04
40	**GSM1900**	**GPRS(4 Tx slots)**	**Back**	**1**	**512**	**-**	**25.58**	**26.5**	**1.24**	**0.932**	**1.152**	**-0.02**
41	GSM1900	GPRS(4 Tx slots)	Back	1	661	-	25.70	26.5	1.20	0.851	1.023	-0.01
42	GSM1900	GPRS(4 Tx slots)	Back	1	512	V	25.58	26.5	1.24	0.847	1.047	-0.01
43	GSM1900	GPRS(4 Tx slots)	Back	1	661	V	25.70	26.5	1.20	0.785	0.944	0.02
44	GSM1900	GPRS(4 Tx slots)	Back	1	810	V	26.04	26.5	1.11	0.749	0.833	0.04

Note:

1. Per KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
2. "V" in the headset column means the earphone is plugged during SAR testing.

<WCDMA>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Headset	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
27	WCDMA Band V	RMC 12.2K	Front	1	4182	-	22.95	24	1.27	0.706	0.899	0.04
28	**WCDMA Band V**	**RMC 12.2K**	**Back**	**1**	**4182**	**-**	**22.95**	**24**	**1.27**	**0.896**	**1.141**	**0.03**
32	WCDMA Band V	RMC 12.2K	Back	1	4132	-	22.94	24	1.28	0.782	0.998	0.01
33	WCDMA Band V	RMC 12.2K	Back	1	4233	-	22.57	24	1.39	0.813	1.130	-0.01
34	WCDMA Band V	RMC 12.2K	Back	1	4182	V	22.95	24	1.27	0.704	0.897	0.05
45	WCDMA Band II	RMC 12.2K	Front	1	9538	-	21.43	22	1.14	0.642	0.732	-0.03
46	**WCDMA Band II**	**RMC 12.2K**	**Back**	**1**	**9538**	**-**	**21.43**	**22**	**1.14**	**0.653**	**0.745**	**-0.09**
50	WCDMA Band II	RMC 12.2K	Back	1	9538	V	21.43	22	1.14	0.624	0.712	0.02

Note:

1. Per KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
2. "V" in the headset column means the earphone is plugged during SAR testing.

<WLAN>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Headset	Output Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	SAR_{1g} (W/kg)	Scaled SAR_{1g} (W/kg)	Power Drift (dB)
59	WLAN2.4G	802.11b	Front	1	11	-	13.74	14	1.06	0.040	0.042	-0.01
60	**WLAN2.4G**	**802.11b**	**Back**	**1**	**11**	**-**	**13.74**	**14**	**1.06**	**0.338**	**0.359**	**0.10**
64	WLAN2.4G	802.11b	Back	1	11	V	13.74	14	1.06	0.306	0.325	0.01

Note:

1. Per KDB 248227, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
2. "V" in the headset column means the earphone is plugged during SAR testing.

11.4 Simultaneous Multi-band Transmission Analysis

No.	Applicable Simultaneous Transmission Combination
1	WWAN + Bluetooth
2	WWAN + WLAN 2.4G

Note:
1. WLAN 2.4G and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. GSM and WCDMA share the same antenna, and cannot transmit simultaneously.
3. Per KDB 648474 D01, Bluetooth output power (2.13 dBm) ≤ P_{Ref} and the distance to WWAN transmitting antenna ≥ 2.5cm, therefore, Bluetooth stand-alone SAR is not required; the simultaneous transmission SAR for WWAN + Bluetooth is not required, because Bluetooth standalone SAR is not required and the maximum WWAN SAR is 1.240 W/kg, thus the SAR summation is less than 1.6 W/kg.
4. Per KDB 648474 D01, the simultaneous transmission SAR for WWAN and WLAN was not required, because the Scaled WWAN and WLAN SAR summation (Head: 1.51 W/kg; Body: 1.56 W/kg) is less than 1.6 W/kg.

<Head SAR>

	WWAN			WLAN		Max. SAR Sum	Scaled WWAN (W/kg)	Scaled WLAN (W/kg)	Scaled WWAN + Scaled WLAN
Position	WWAN Band	Plot No	Max. WWAN SAR (W/kg)	Plot No	Max. WLAN SAR (W/kg)				
Right Cheek	GSM850	51	0.539	1	0.18	**0.72**	0.702	0.191	0.89
	GSM1900	11	0.435	1	0.18	**0.62**	0.567	0.191	0.76
	WCDMA Band V	55	0.525	1	0.18	**0.71**	0.669	0.191	0.86
	WCDMA Band II	5	0.699	1	0.18	**0.88**	0.797	0.191	0.99
Right Tilted	GSM850	52	0.277	2	0.168	**0.45**	0.361	0.178	0.54
	GSM1900	12	0.163	2	0.168	**0.33**	0.212	0.178	0.39
	WCDMA Band V	56	0.266	2	0.168	**0.43**	0.339	0.178	0.52
	WCDMA Band II	6	0.256	2	0.168	**0.42**	0.292	0.178	0.47
Left Cheek	GSM850	53	0.620	3	0.050	**0.67**	0.808	0.053	0.86
	GSM1900	13	0.705	3	0.050	**0.76**	0.919	0.053	0.97
	WCDMA Band V	57	0.601	3	0.050	**0.65**	0.765	0.053	0.82
	WCDMA Band II	9	1.240	3	0.050	**1.29**	1.454	0.053	**1.51**
Left Tilted	GSM850	54	0.318	4	0.079	**0.40**	0.414	0.084	0.50
	GSM1900	14	0.164	4	0.079	**0.24**	0.214	0.084	0.30
	WCDMA Band V	58	0.300	4	0.079	**0.38**	0.382	0.084	0.47
	WCDMA Band II	8	0.256	4	0.079	**0.34**	0.292	0.084	0.38

Note:
1. The maximum SAR summation is calculated based on the same configuration and test position.
2. When stand-alone 1-g SAR is not required for a transmitter or antenna, its SAR is considered zero in the 1-g SAR summing process to determine simultaneous transmission SAR evaluation requirements
3. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement is not necessary.
4. If 1g-SAR summation > 1.6W/kg, SPLSR calculation is necessary.

<Hotspot SAR>

Position	WWAN			WLAN		Max. SAR Sum	Scaled WWAN (W/kg)	Scaled WLAN (W/kg)	Scaled WWAN + Scaled WLAN
	WWAN Band	Plot No	Max. WWAN SAR (W/kg)	Plot No	Max. WLAN SAR (W/kg)				
Front	GSM850	15	0.906	59	0.040	**0.95**	0.973	0.042	1.02
	GSM1900	35	0.773	59	0.040	**0.81**	0.859	0.042	0.90
	WCDMA Band V	27	0.706	59	0.040	**0.75**	0.899	0.042	0.94
	WCDMA Band II	45	0.642	59	0.040	**0.68**	0.732	0.042	0.77
Back	GSM850	16	1.120	60	0.338	**1.46**	1.203	0.359	**1.56**
	GSM1900	40	0.932	60	0.338	**1.27**	1.152	0.359	1.51
	WCDMA Band V	28	0.896	60	0.338	**1.23**	1.141	0.359	1.50
	WCDMA Band II	46	0.653	60	0.338	**0.99**	0.745	0.359	1.10
Left Side	GSM850	17	0.669	61	0.070	**0.74**	0.718	0.074	0.79
	GSM1900	37	0.255	61	0.070	**0.33**	0.283	0.074	0.36
	WCDMA Band V	29	0.505	61	0.070	**0.58**	0.643	0.074	0.72
	WCDMA Band II	47	0.224	61	0.070	**0.29**	0.255	0.074	0.33
Right Side	GSM850	18	0.443	62	0.000223	**0.44**	0.476	0.000	0.48
	GSM1900	38	0.152	62	0.000223	**0.15**	0.169	0.000	0.17
	WCDMA Band V	30	0.383	62	0.000223	**0.38**	0.488	0.000	0.49
	WCDMA Band II	48	0.130	62	0.000223	**0.13**	0.148	0.000	0.15
Top Side	GSM850	-	-	63	0.198	0.20	-	0.210	0.21
	GSM1900	-	-	63	0.198	0.20	-	0.210	0.21
	WCDMA Band V	-	-	63	0.198	0.20	-	0.210	0.21
	WCDMA Band II	-	-	63	0.198	0.20	-	0.210	0.21
Bottom Side	GSM850	19	0.075	-	-	0.08	0.081	-	0.08
	GSM1900	39	0.456	-	-	0.46	0.507	-	0.51
	WCDMA Band V	31	0.042	-	-	0.04	0.053	-	0.05
	WCDMA Band II	49	0.345	-	-	0.35	0.393	-	0.39

Note:

1. The maximum SAR summation is calculated based on the same configuration and test position.
2. When stand-alone 1-g SAR is not required for a transmitter or antenna, its SAR is considered zero in the 1-g SAR summing process to determine simultaneous transmission SAR evaluation requirements
3. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement is not necessary.
4. If 1g-SAR summation > 1.6W/kg, SPLSR calculation is necessary.

<Body-worn SAR>

Position	WWAN			WLAN		Max. SAR Sum	Scaled WWAN (W/kg)	Scaled WLAN (W/kg)	Scaled WWAN + Scaled WLAN
	WWAN Band	Plot No	Max. WWAN SAR (W/kg)	Plot No	Max. WLAN SAR (W/kg)				
Front	GSM850	15	0.906	59	0.040	**0.95**	0.973	0.042	1.02
	GSM1900	35	0.773	59	0.040	**0.81**	0.859	0.042	0.90
	WCDMA Band V	27	0.706	59	0.040	**0.75**	0.899	0.042	0.94
	WCDMA Band II	45	0.642	59	0.040	**0.68**	0.732	0.042	0.77
Back	GSM850	16	1.120	60	0.338	**1.46**	1.203	0.359	**1.56**
	GSM1900	40	0.932	60	0.338	**1.27**	1.152	0.359	1.51
	WCDMA Band V	28	0.896	60	0.338	**1.23**	1.141	0.359	1.50
	WCDMA Band II	46	0.653	60	0.338	**0.99**	0.745	0.359	1.10
Back (w/ Headset)	GSM850	24	0.896	64	0.306	**1.20**	0.962	0.325	1.29
	GSM1900	42	0.847	64	0.306	**1.15**	1.047	0.325	1.37
	WCDMA Band V	34	0.704	64	0.306	**1.01**	0.897	0.325	1.22
	WCDMA Band II	50	0.624	64	0.306	**0.93**	0.712	0.325	1.04

Note:

1. The maximum SAR summation is calculated based on the same configuration and test position.
2. When stand-alone 1-g SAR is not required for a transmitter or antenna, its SAR is considered zero in the 1-g SAR summing process to determine simultaneous transmission SAR evaluation requirements
3. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement is not necessary.
4. If 1g-SAR summation > 1.6W/kg, SPLSR calculation is necessary.

Test Engineer : Krin Wu and Jeme Li

12. Uncertainty Assessment

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

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

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in Table 12.1

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[(a)]	1/k[(b)]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

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

(b) κ is the coverage factor

Table 12.1 Standard Uncertainty for Assumed Distribution

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

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

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

Table 12.2 Uncertainty Budget of DASY for frequency range 300 MHz to 3 GHz

13. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

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

[4] FCC OET Bulletin 65 (Edition 97-01) Supplement C (Edition 01-01), “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, June 2001

[5] SPEAG DASY System Handbook

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

[7] FCC KDB 447498 D01 v04, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, November 2009

[8] FCC KDB 648474 D01 v01r05, “SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas”, September 2008

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

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

[11] FCC KDB 941225 D06 v01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", April 2011

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

System Check_Head_835MHz_121212

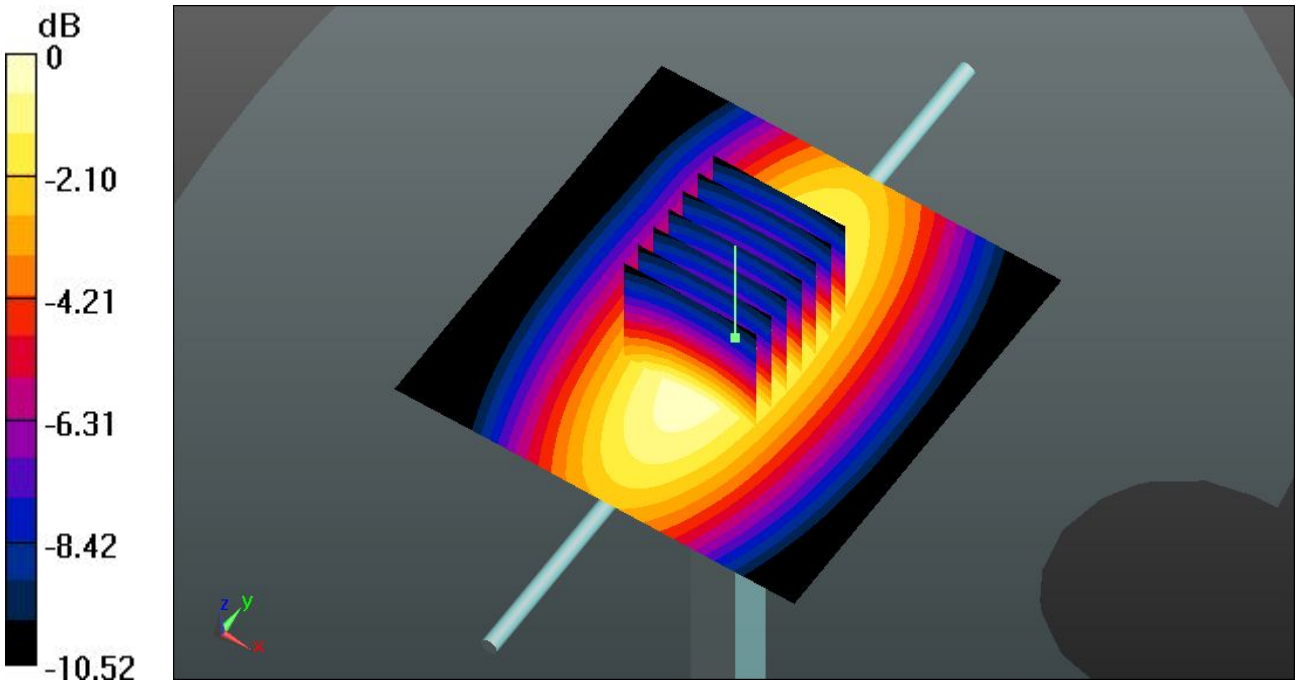
DUT: D835V2-SN:4d091

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 41.029; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.83 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.237 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.987 mW/g
SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.53 mW/g
Maximum value of SAR (measured) = 2.84 W/kg



0 dB = 2.84 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

System Check_Body_835MHz_121210

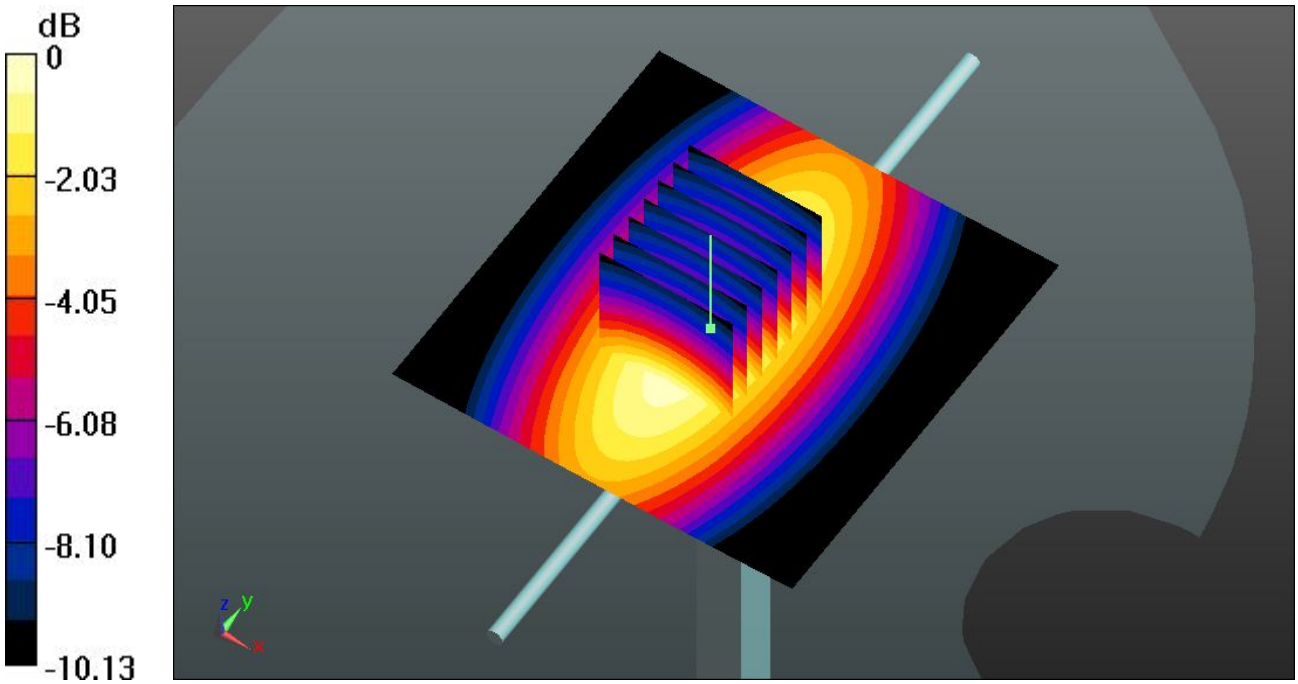
DUT: D835V2-SN:4d091

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 835 MHz; σ = 0.976 mho/m; ε_r = 54.369; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.59 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.708 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.523 mW/g
SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.58 mW/g
Maximum value of SAR (measured) = 2.60 W/kg



0 dB = 2.60 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

System Check_Head_1900MHz_121210

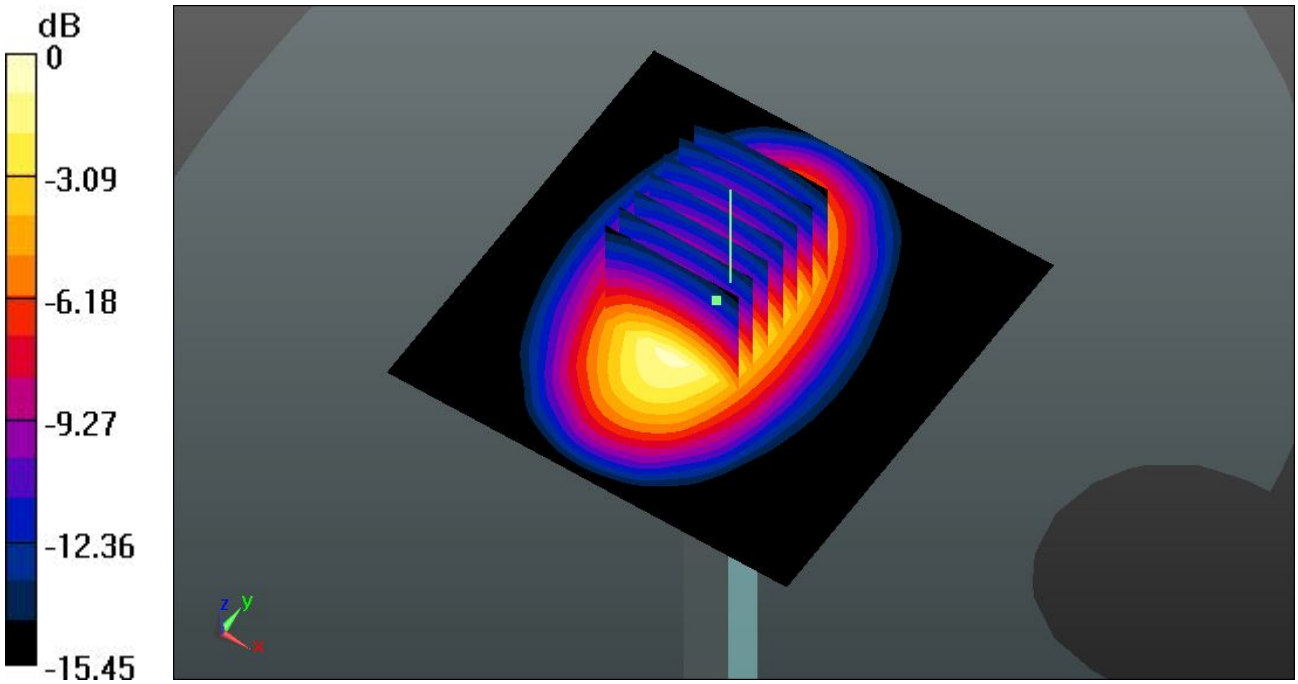
DUT: D1900V2-SN:5d118

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1900 MHz; σ = 1.412 mho/m; ε_r = 39.311; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (91x91x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.538 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 19.025 mW/g
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.75 mW/g
Maximum value of SAR (measured) = 11.4 W/kg



0 dB = 11.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

System Check_Body_1900MHz_121211

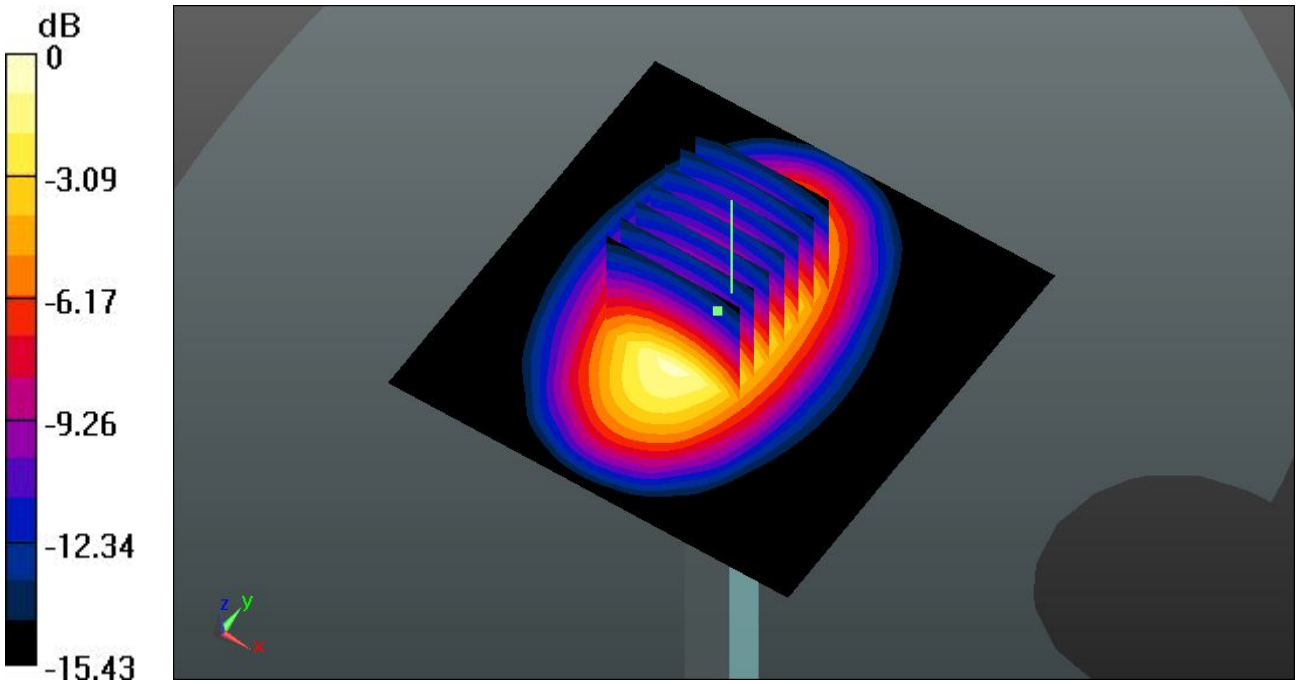
DUT: D1900V2-SN:5d118

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1900 MHz; σ = 1.528 mho/m; ε_r = 53.974; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (91x91x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.6 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.501 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 19.186 mW/g
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.8 mW/g
Maximum value of SAR (measured) = 11.6 W/kg



0 dB = 11.6 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

System Check_Head_2450MHz_121129

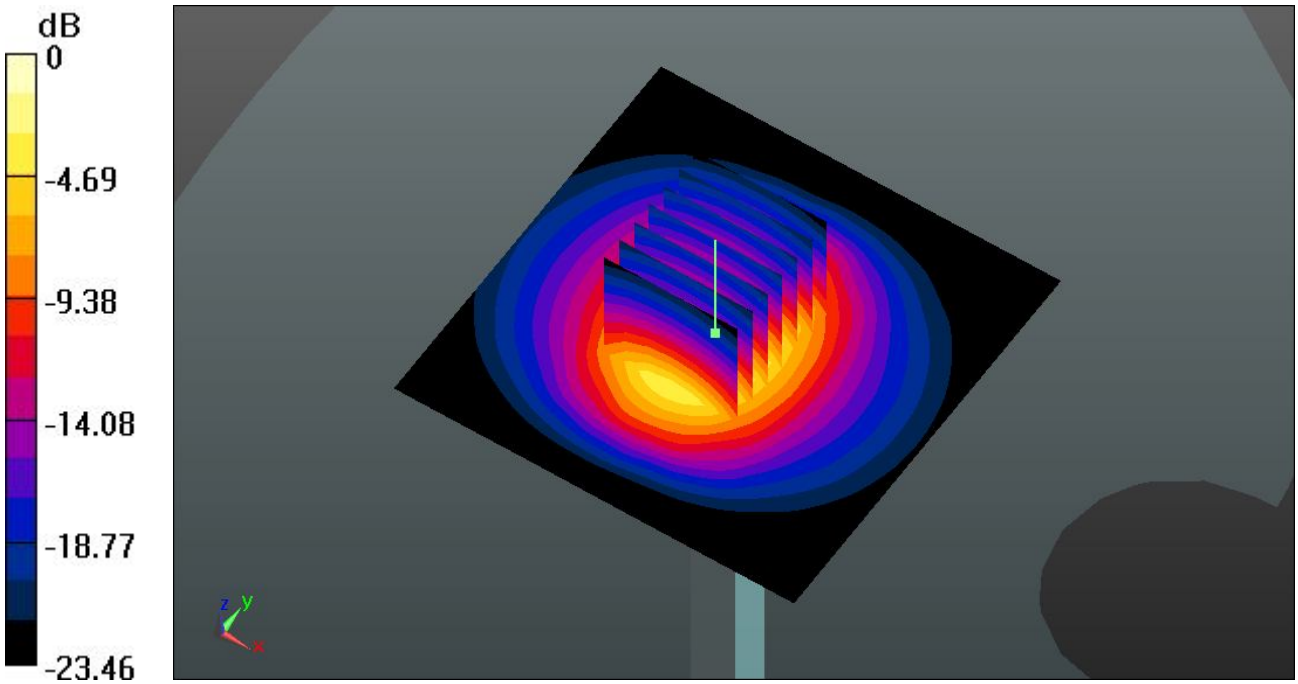
DUT: D2450V2-SN:736

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_121129 Medium parameters used: f = 2450 MHz; σ = 1.856 mho/m; ε_r = 37.685; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (91x91x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 16.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.827 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 32.189 mW/g
SAR(1 g) = 14.2 mW/g; SAR(10 g) = 6.32 mW/g
Maximum value of SAR (measured) = 16.2 W/kg



0 dB = 16.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

System Check_Body_2450MHz_121212

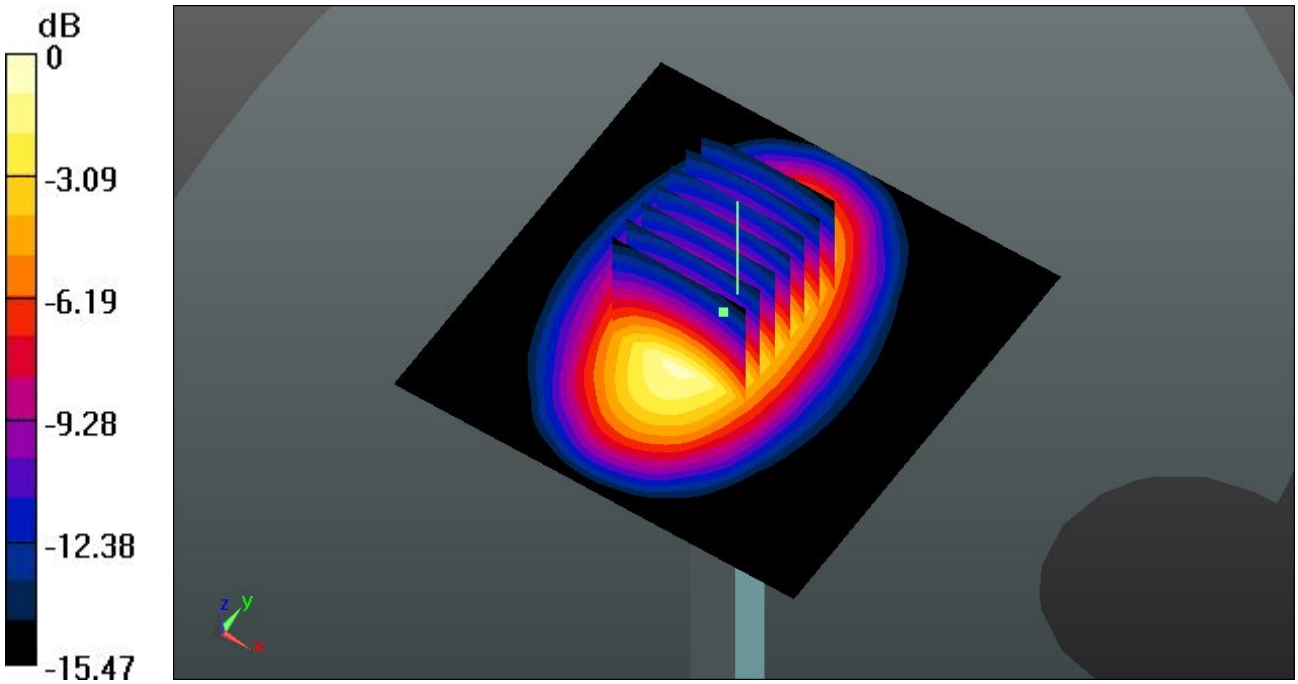
DUT: D2450V2-SN:736

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121212 Medium parameters used: f = 2450 MHz; σ = 1.951 mho/m; ε_r = 53.859; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Pin=250mW/Area Scan (91x91x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 15.4 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.860 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 25.711 mW/g
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 7.69 mW/g
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg

Appendix B. Plots of SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

51_GSM850_GSM_Right Cheek_Ch128

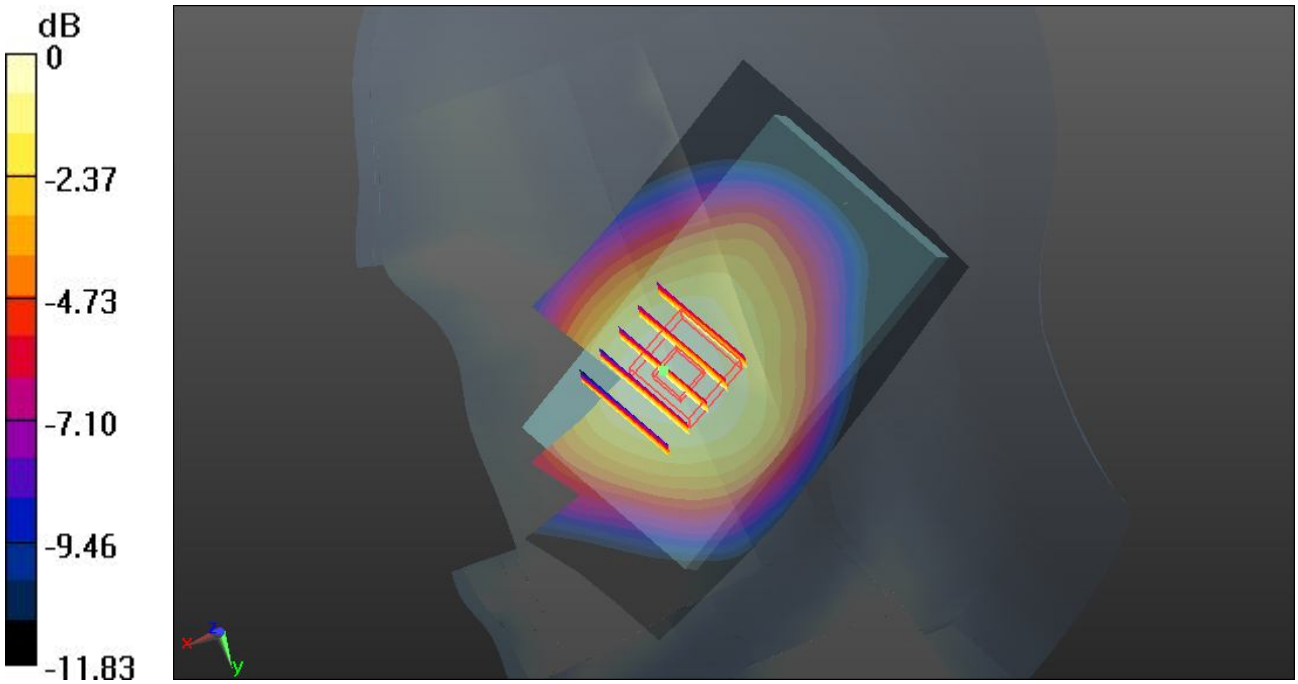
DUT: 2N2401

Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_835_121212 Medium parameters used: f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.633 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.760 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.696 mW/g
SAR(1 g) = 0.539 mW/g; SAR(10 g) = 0.401 mW/g
Maximum value of SAR (measured) = 0.628 W/kg



0 dB = 0.628 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

52_GSM850_GSM_Right Tilted_Ch128

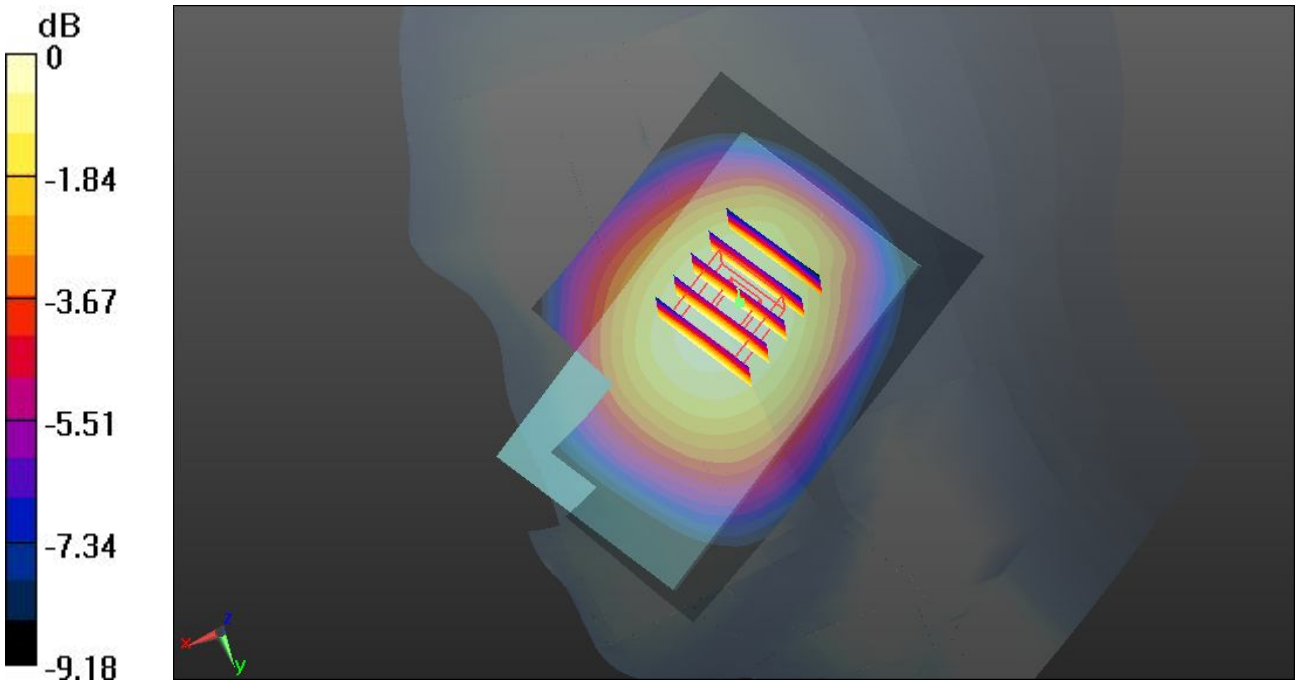
DUT: 2N2401

Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_835_121212 Medium parameters used: f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.320 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.223 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.343 mW/g
SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.211 mW/g
Maximum value of SAR (measured) = 0.317 W/kg



0 dB = 0.317 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

53_GSM850_GSM_Left Cheek_Ch128

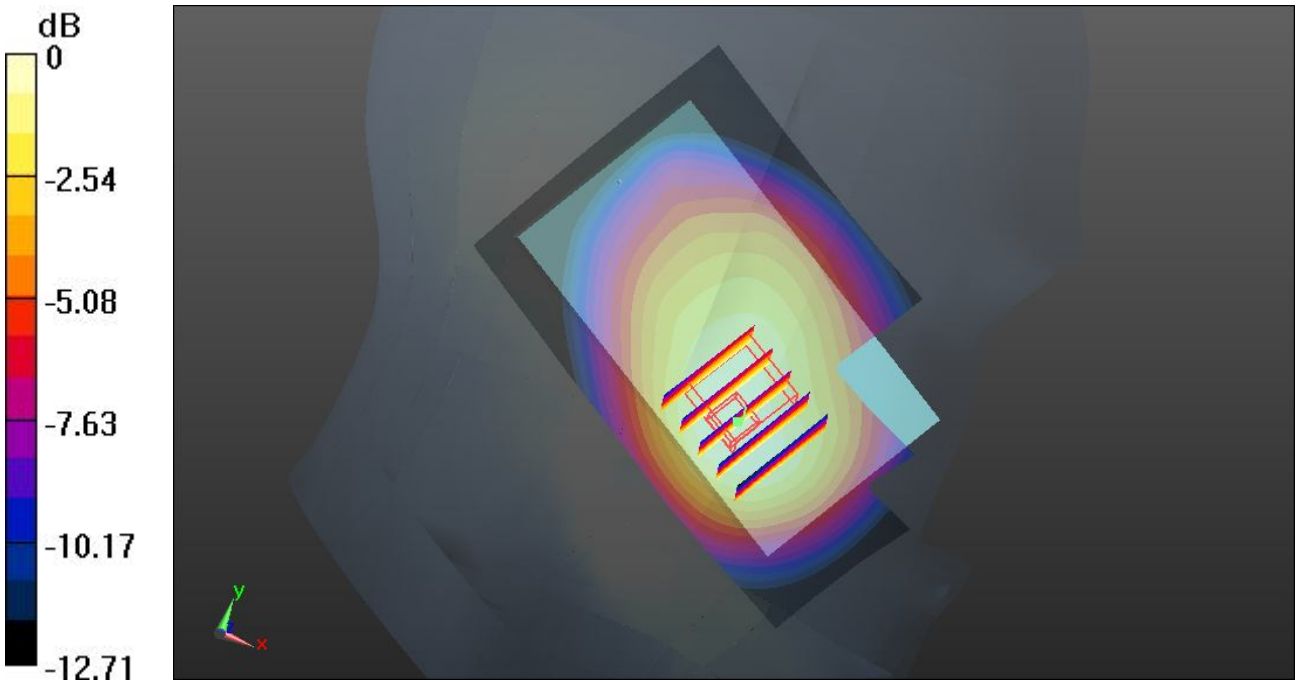
DUT: 2N2401

Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_835_121212 Medium parameters used: f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.775 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.973 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.933 mW/g
SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.428 mW/g
Maximum value of SAR (measured) = 0.762 W/kg



0 dB = 0.762 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

53_GSM850_GSM_Left Cheek_Ch128_2D

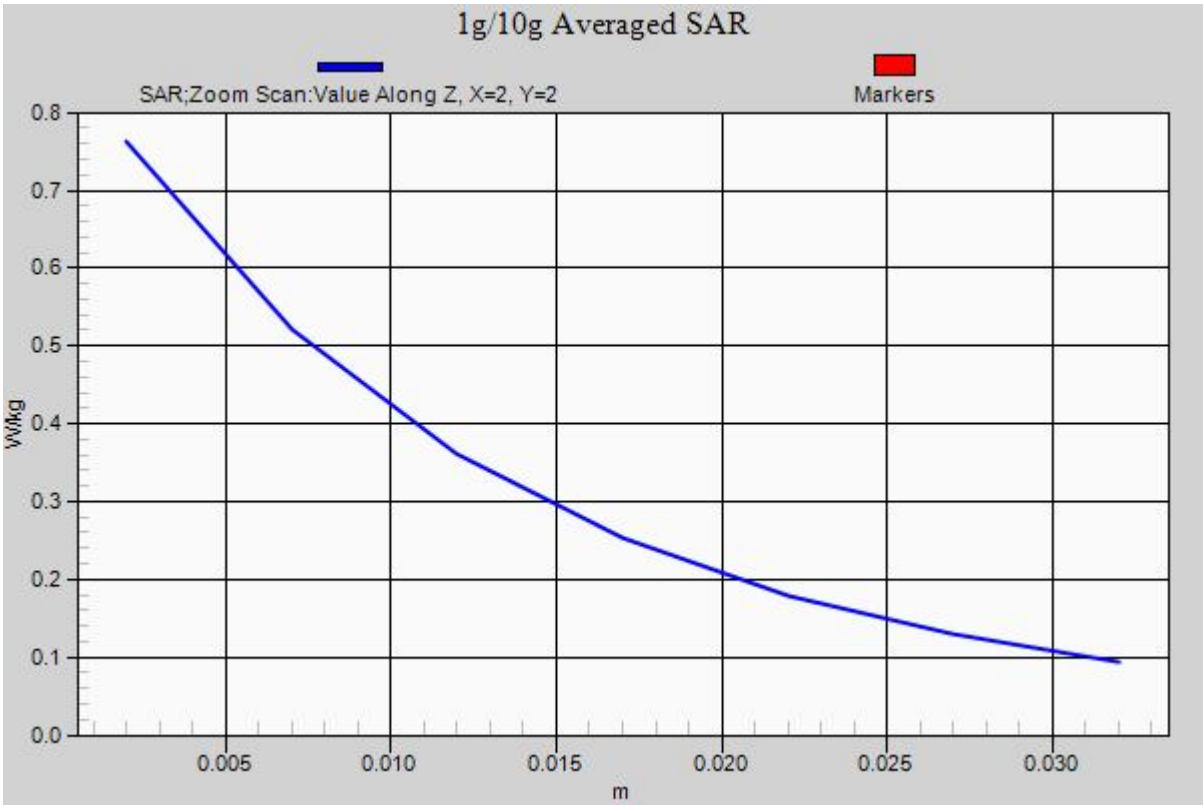
DUT: 2N2401

Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_835_121212 Medium parameters used: f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.775 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.973 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.933 mW/g
SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.428 mW/g
Maximum value of SAR (measured) = 0.762 W/kg



54_GSM850_GSM_Left Tilted_Ch128

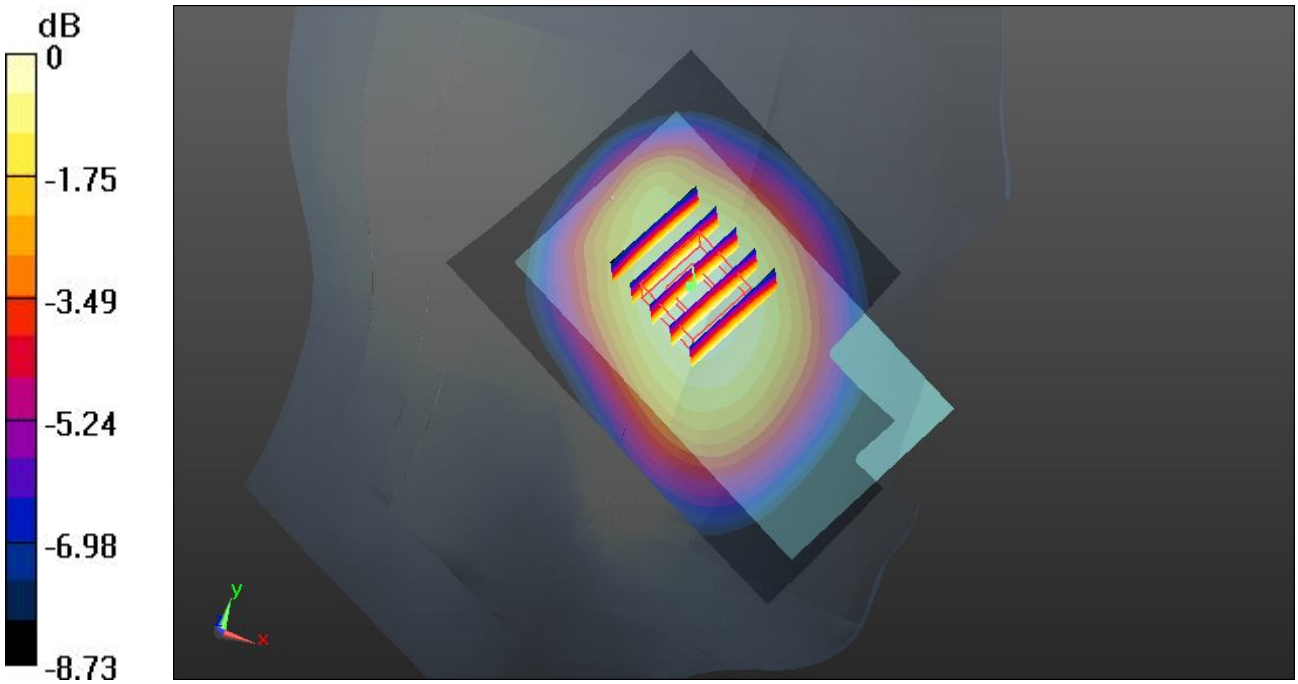
DUT: 2N2401

Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_835_121212 Medium parameters used: f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.366 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.474 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.398 mW/g
SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.241 mW/g
Maximum value of SAR (measured) = 0.366 W/kg



0 dB = 0.366 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

11_GSM1900_GSM_Right Cheek_Ch810

DUT: 2N2401

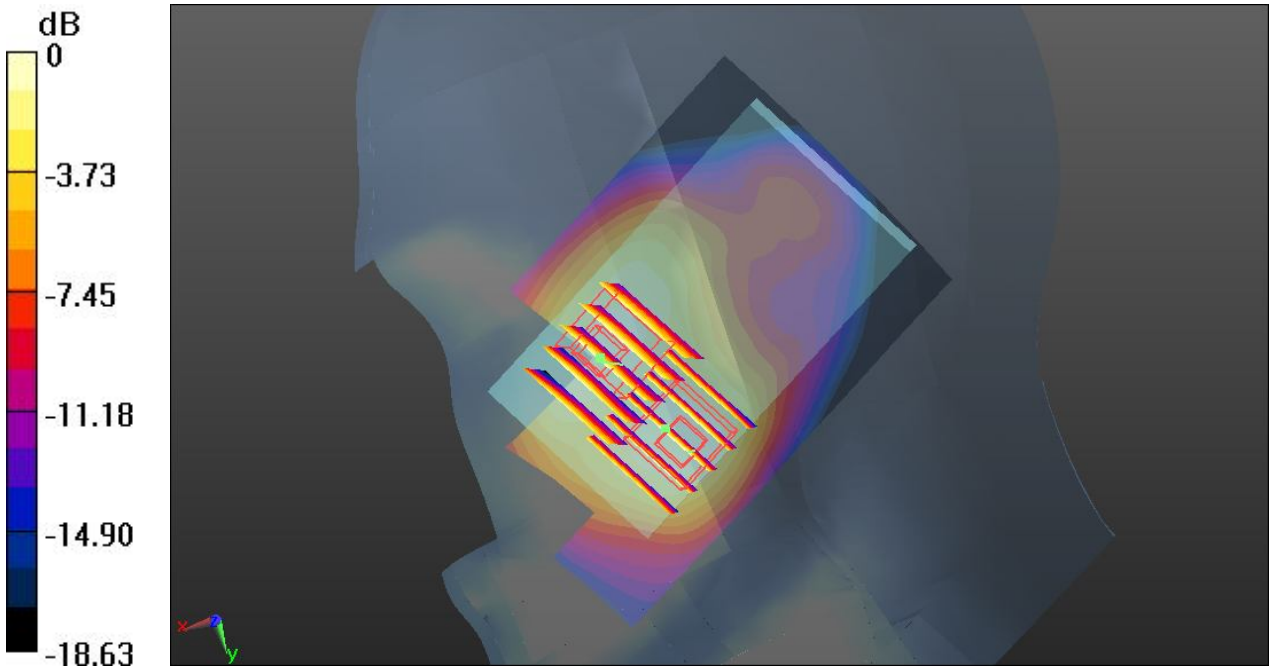
Communication System: Generic GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_1900_121210 Medium parameters used: f = 1910 MHz; σ = 1.422 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.544 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.039 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.709 mW/g
SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.245 mW/g
Maximum value of SAR (measured) = 0.555 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.039 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.653 mW/g
SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.522 W/kg



0 dB = 0.522 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

12_GSM1900_GSM_Right Tilted_Ch810

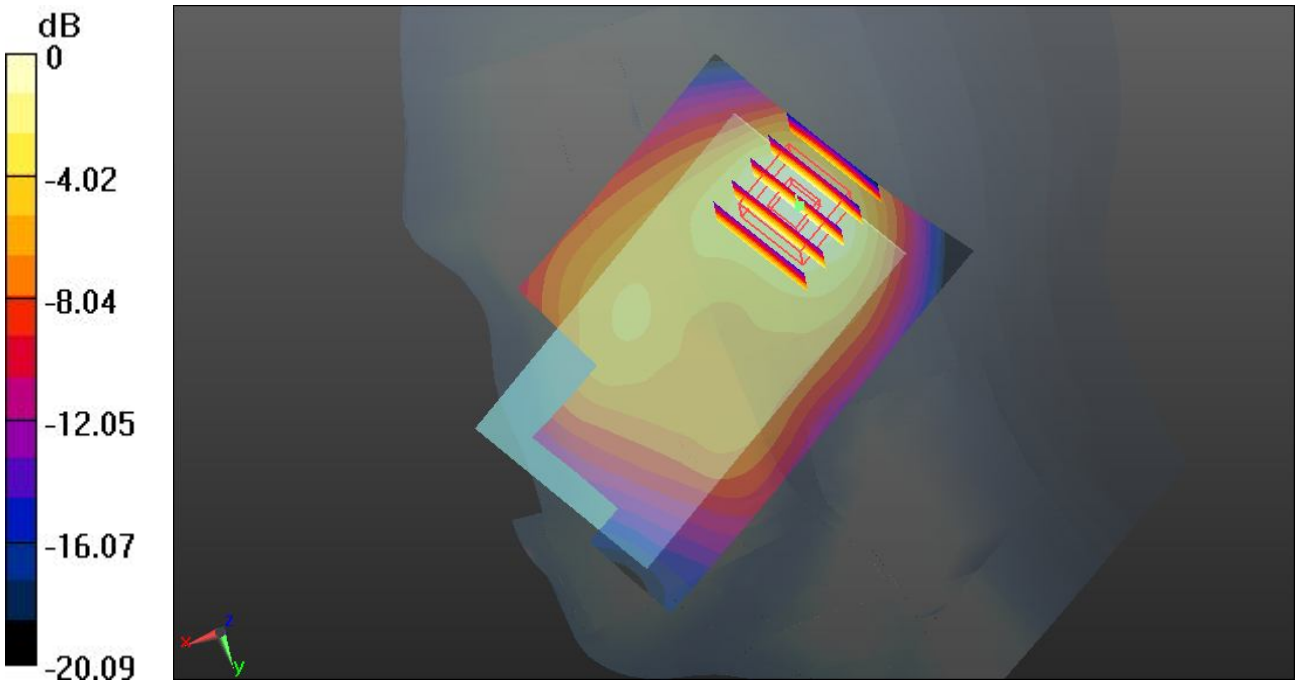
DUT: 2N2401

Communication System: Generic GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_1900_121210 Medium parameters used: f = 1910 MHz; σ = 1.422 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.215 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.233 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.254 mW/g
SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.213 W/kg



0 dB = 0.213 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

13_GSM1900_GSM_Left Cheek_Ch810

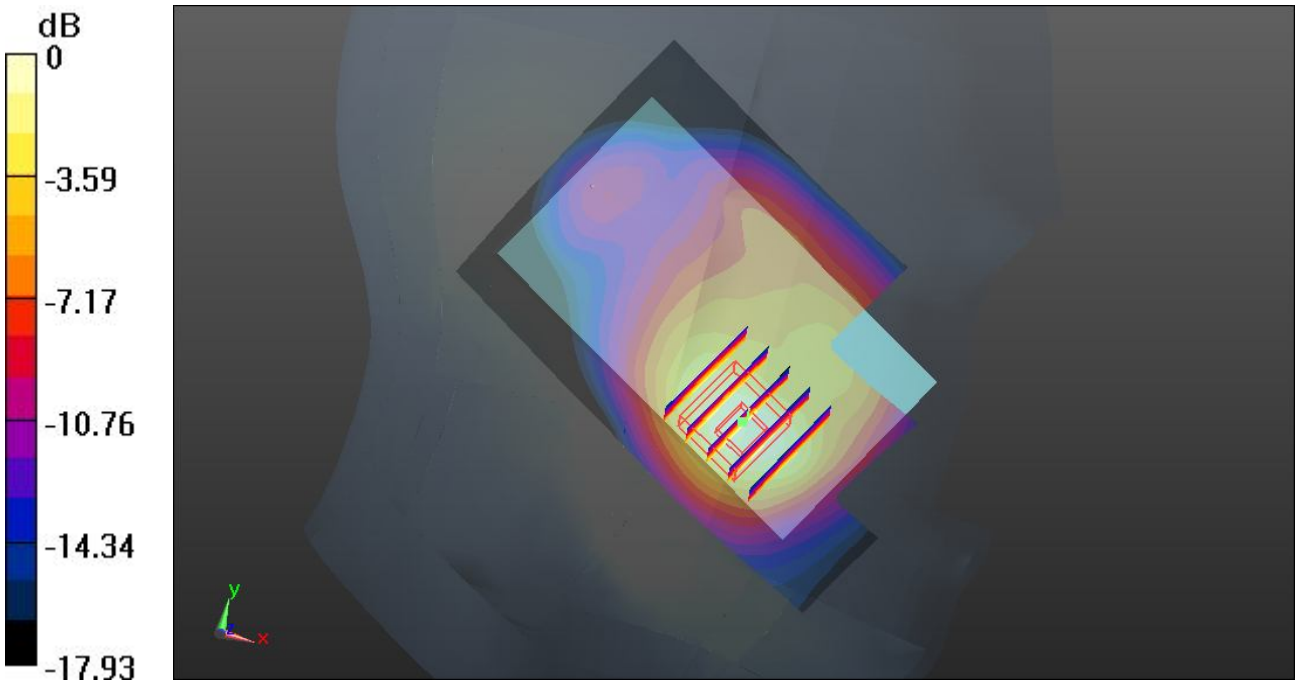
DUT: 2N2401

Communication System: Generic GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_1900_121210 Medium parameters used: f = 1910 MHz; σ = 1.422 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.908 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.282 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.218 mW/g
SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.376 mW/g
Maximum value of SAR (measured) = 0.913 W/kg



0 dB = 0.913 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

13_GSM1900_GSM_Left Cheek_Ch810_2D

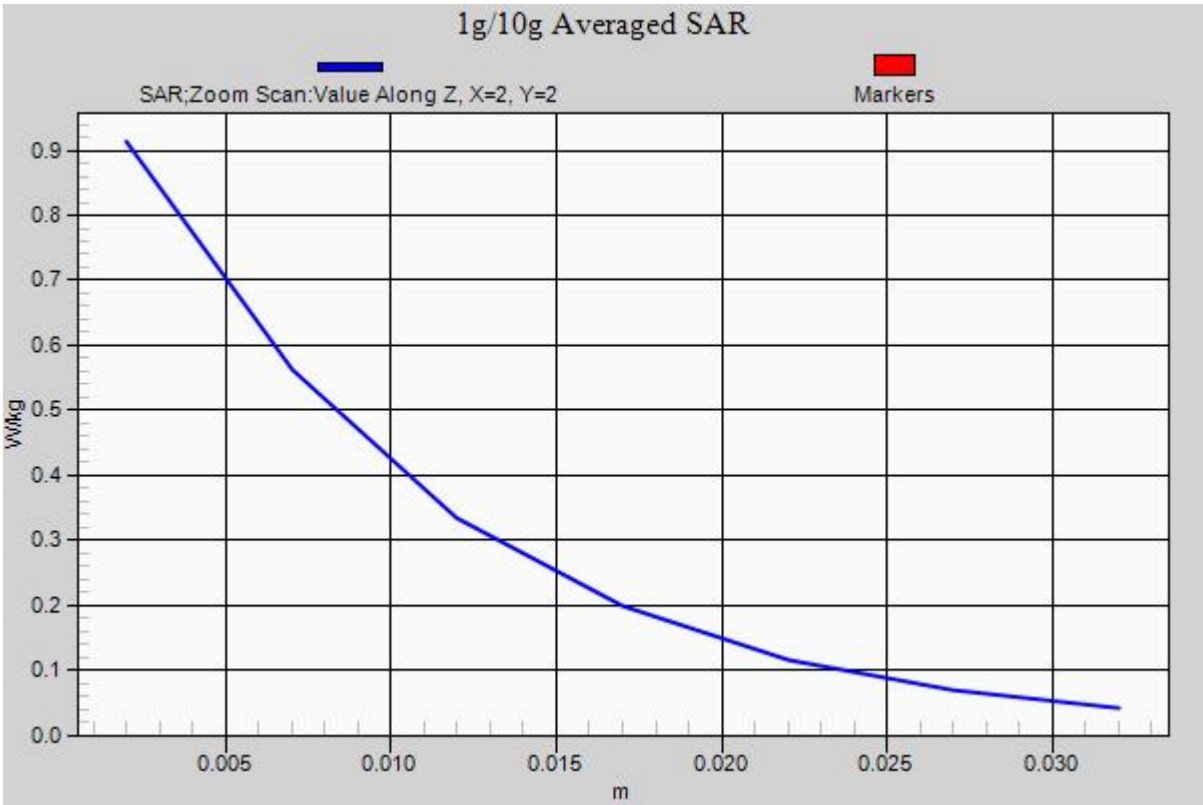
DUT: 2N2401

Communication System: Generic GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_1900_121210 Medium parameters used: f = 1910 MHz; σ = 1.422 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.908 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.282 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.218 mW/g
SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.376 mW/g
Maximum value of SAR (measured) = 0.913 W/kg



14_GSM1900_GSM_Left Tilted_Ch810

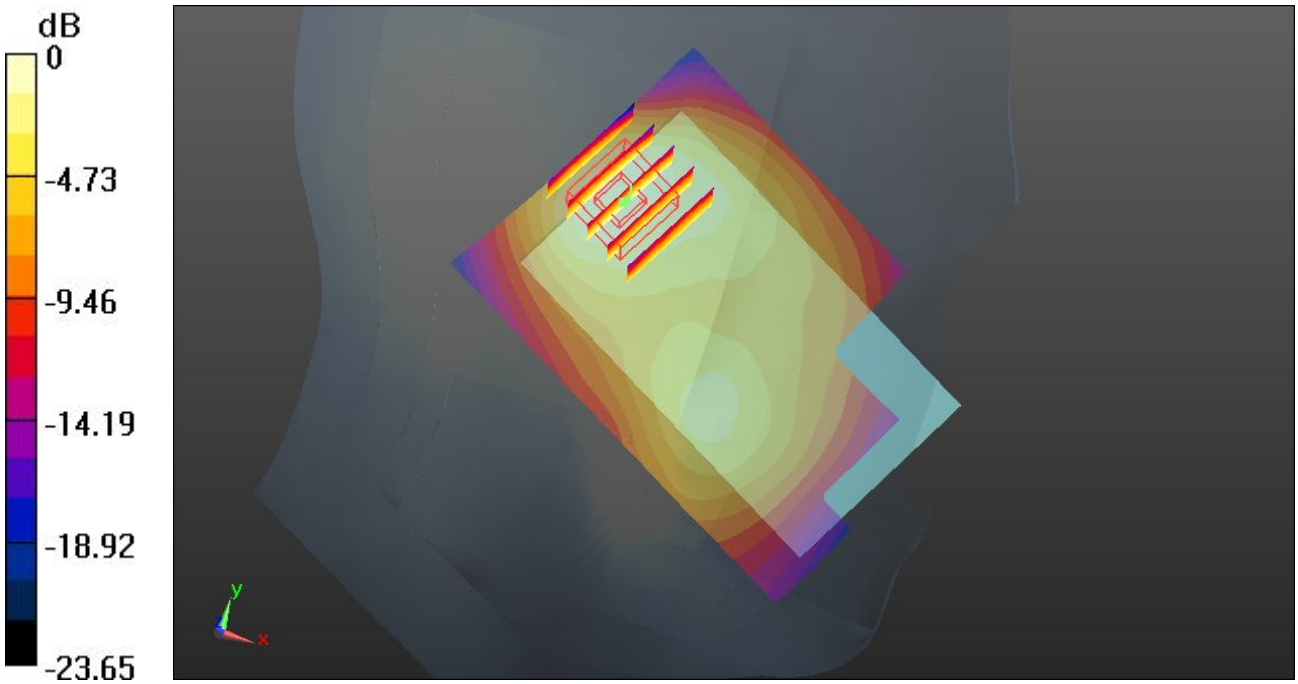
DUT: 2N2401

Communication System: Generic GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_1900_121210 Medium parameters used: f = 1910 MHz; σ = 1.422 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.221 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.177 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.257 mW/g
SAR(1 g) = 0.164 mW/g; SAR(10 g) = 0.096 mW/g
Maximum value of SAR (measured) = 0.212 W/kg



0 dB = 0.212 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

55_WCDMA Band V_RMC 12.2K_Right Cheek_Ch4182

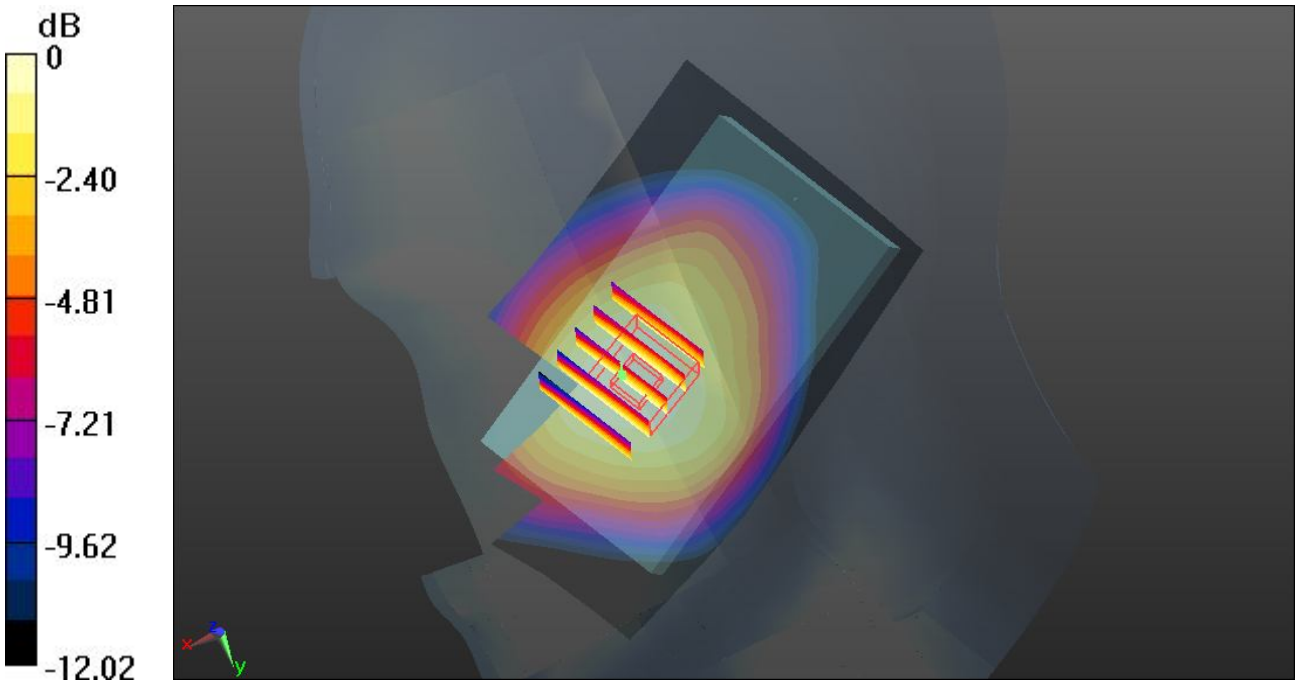
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 836.5 MHz; σ = 0.917 mho/m; ε_r = 41.014; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.610 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.121 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.680 mW/g
SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.389 mW/g
Maximum value of SAR (measured) = 0.611 W/kg



0 dB = 0.611 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

56_WCDMA Band V_RMC 12.2K_Right Tilted_Ch4182

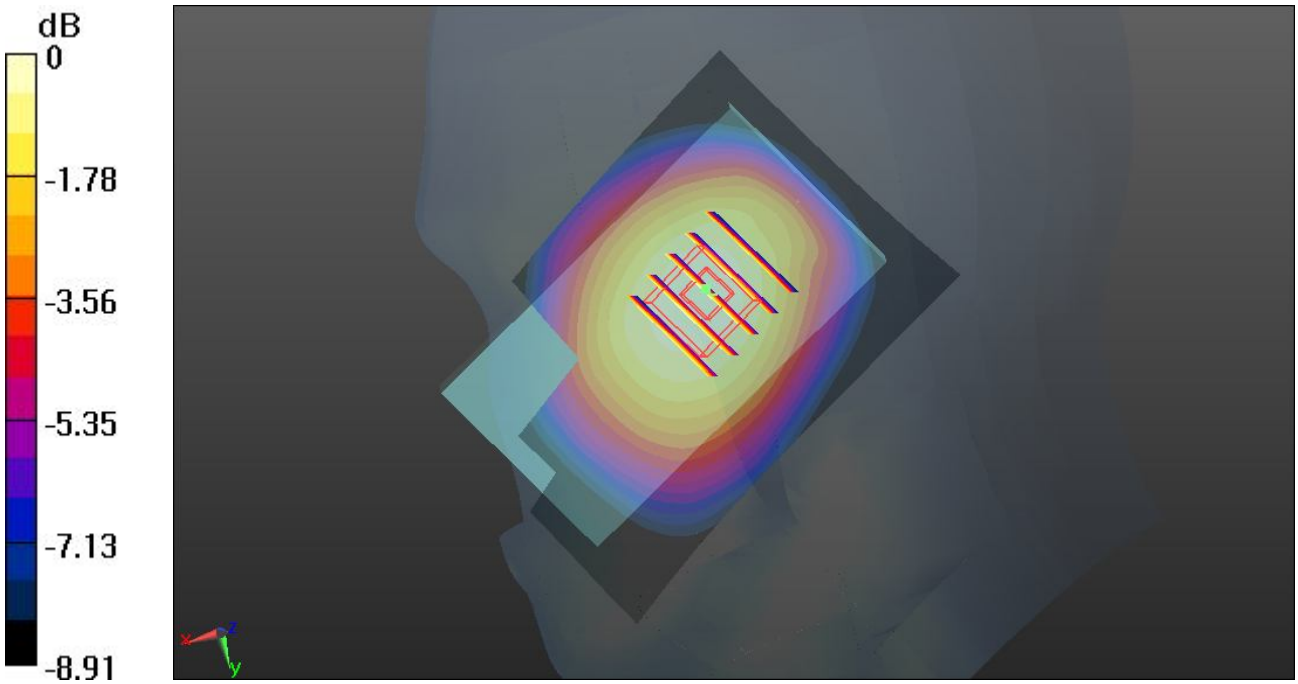
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 836.5 MHz; σ = 0.917 mho/m; ε_r = 41.014; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.303 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.660 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.330 mW/g
SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.203 mW/g
Maximum value of SAR (measured) = 0.304 W/kg



0 dB = 0.304 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

57_WCDMA Band V_RMC 12.2K_Left Cheek_Ch4182

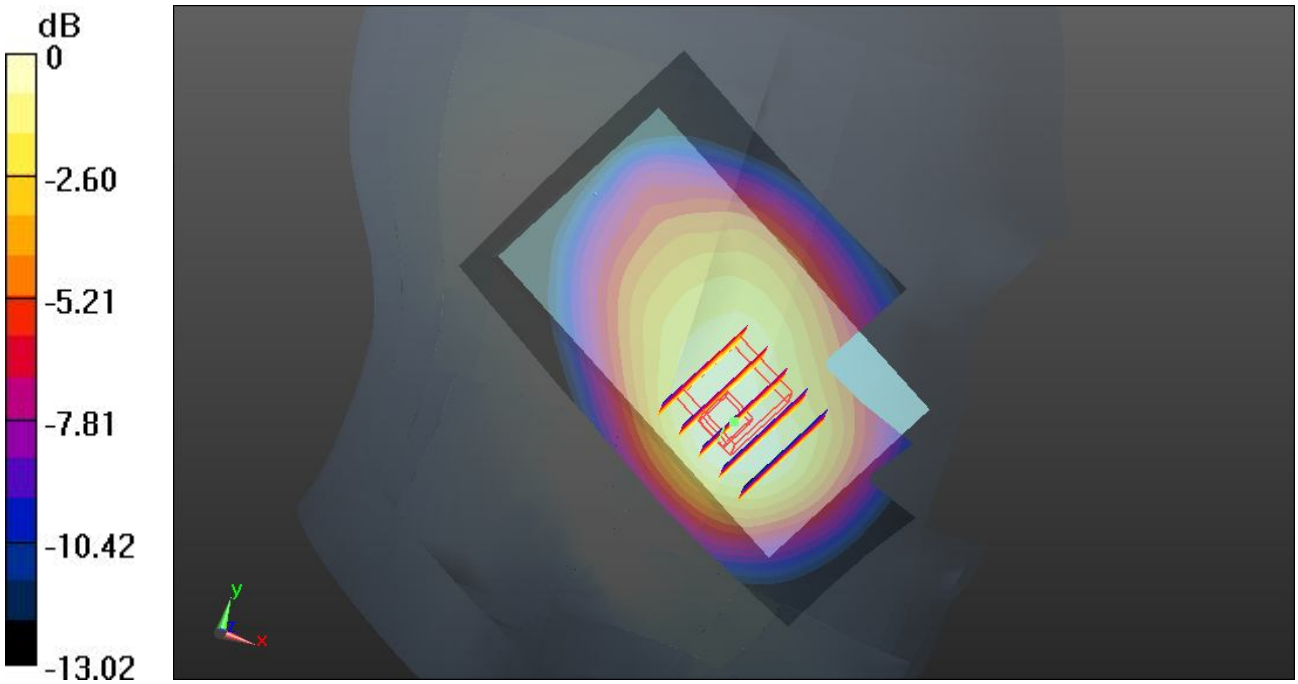
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 836.5 MHz; σ = 0.917 mho/m; ε_r = 41.014; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.764 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.155 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.905 mW/g
SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.410 mW/g
Maximum value of SAR (measured) = 0.741 W/kg



0 dB = 0.741 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

57_WCDMA Band V_RMC 12.2K_Left Cheek_Ch4182_2D

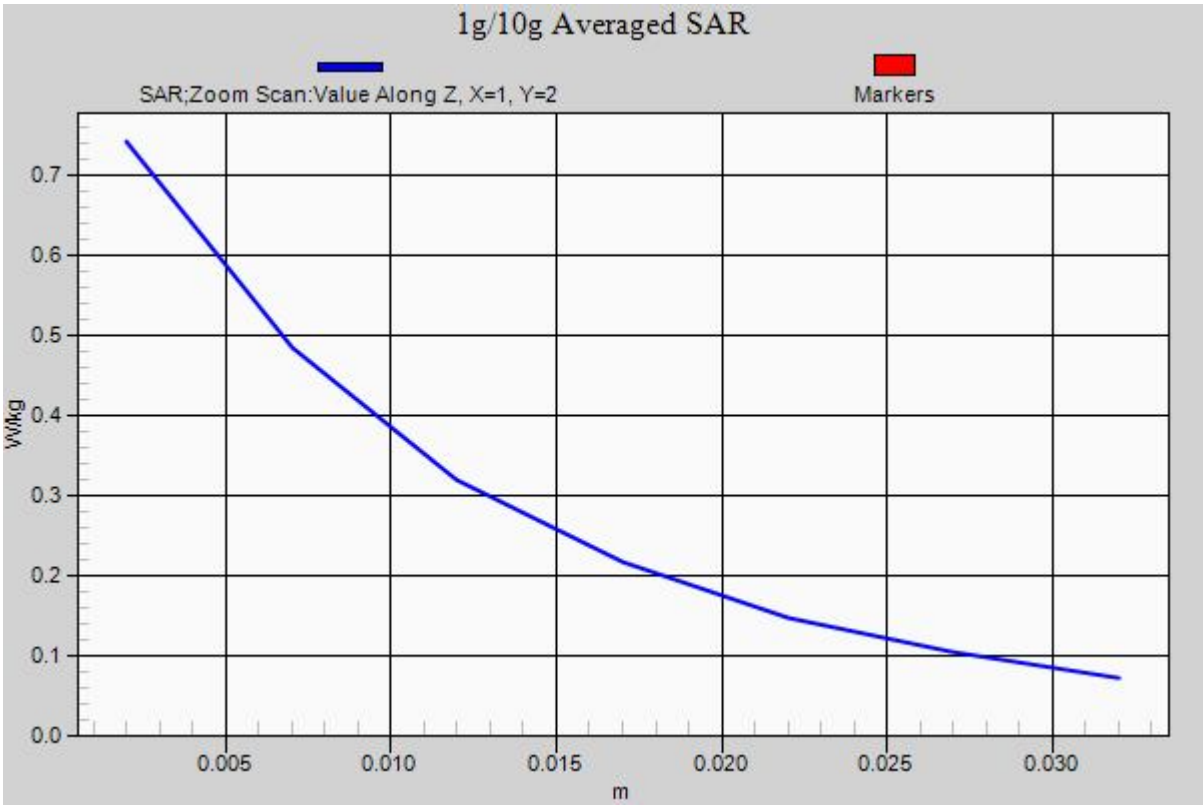
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 836.5 MHz; σ = 0.917 mho/m; ε_r = 41.014; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.764 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.155 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.905 mW/g
SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.410 mW/g
Maximum value of SAR (measured) = 0.741 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

58_WCDMA Band V_RMC 12.2K_Left Tilted_Ch4182

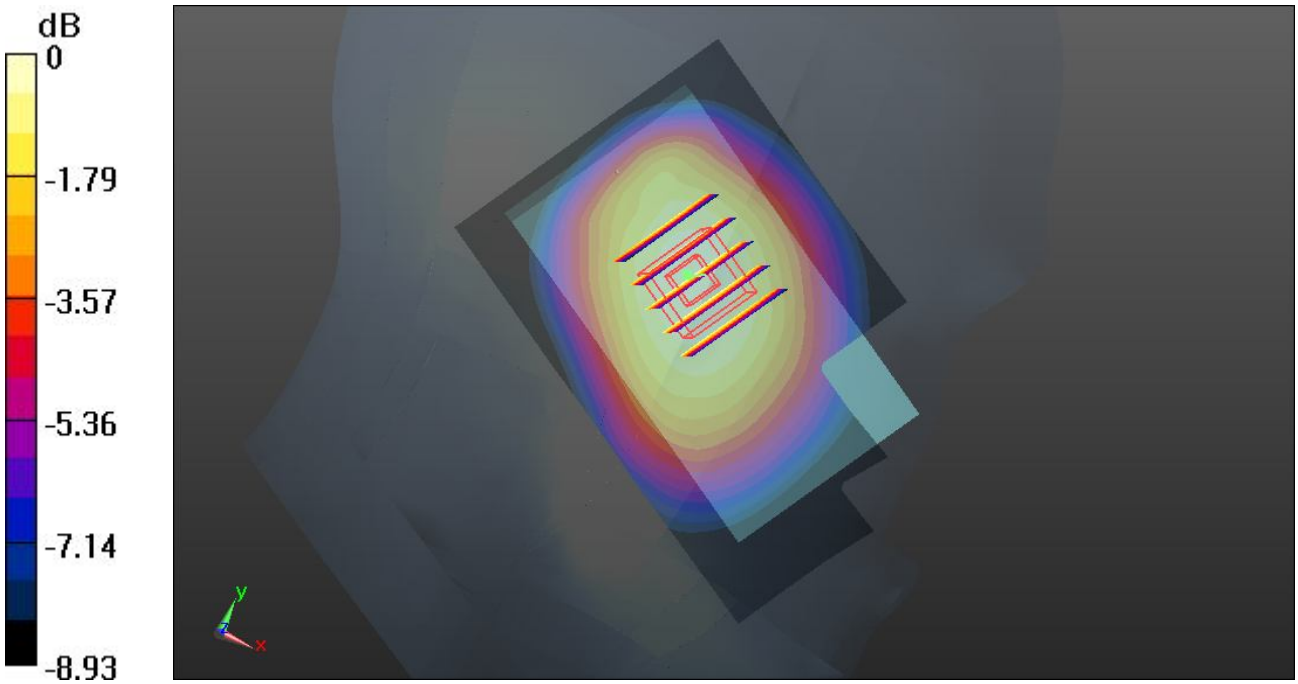
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_121212 Medium parameters used: f = 836.5 MHz; σ = 0.917 mho/m; ε_r = 41.014; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.46, 9.46, 9.46); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.340 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.719 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.375 mW/g
SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.226 mW/g
Maximum value of SAR (measured) = 0.345 W/kg



0 dB = 0.345 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

05_WCDMA Band II_RMC 12.2K_Right Cheek_Ch9538

DUT: 2N2401

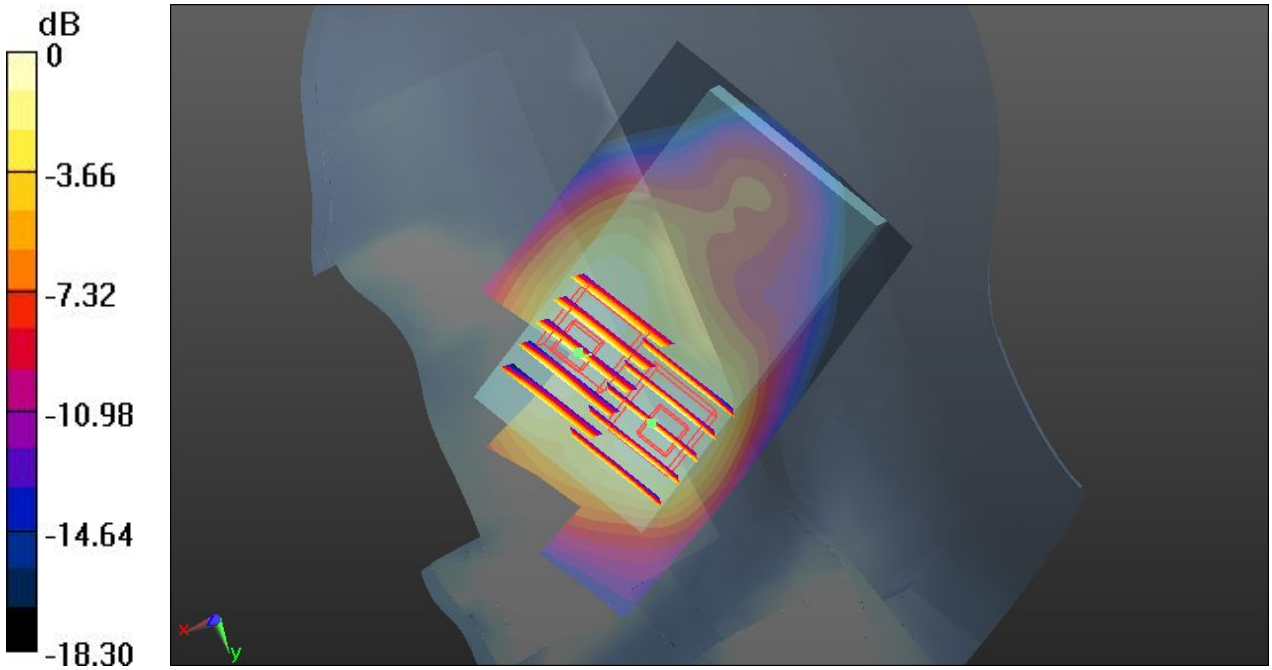
Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1908 MHz; σ = 1.42 mho/m; ε_r = 39.311; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.877 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.110 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.124 mW/g
SAR(1 g) = 0.699 mW/g; SAR(10 g) = 0.398 mW/g
Maximum value of SAR (measured) = 0.892 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.110 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.031 mW/g
SAR(1 g) = 0.646 mW/g; SAR(10 g) = 0.386 mW/g
Maximum value of SAR (measured) = 0.825 W/kg



0 dB = 0.825 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

06_WCDMA Band II_RMC 12.2K_Right Tilted_Ch9538

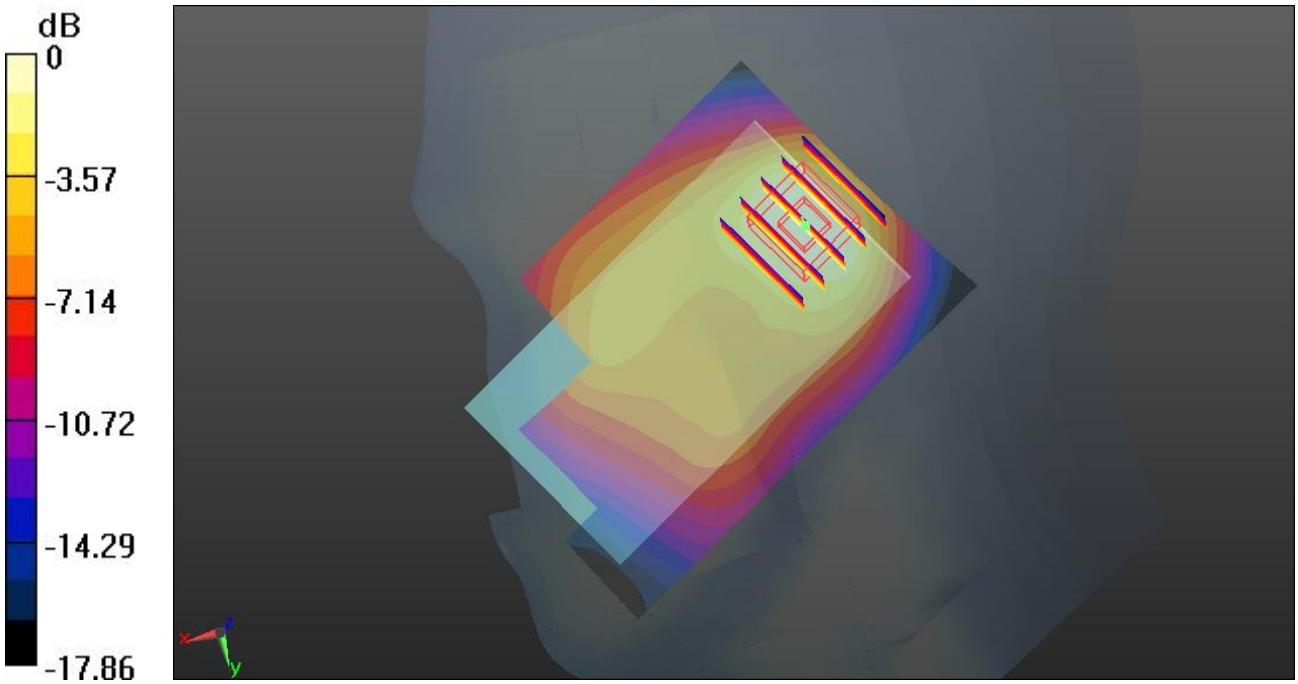
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1908 MHz; σ = 1.42 mho/m; ε_r = 39.311; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.344 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.334 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.397 mW/g
SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.151 mW/g
Maximum value of SAR (measured) = 0.333 W/kg



0 dB = 0.333 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

07_WCDMA Band II_RMC 12.2K_Left Cheek_Ch9538

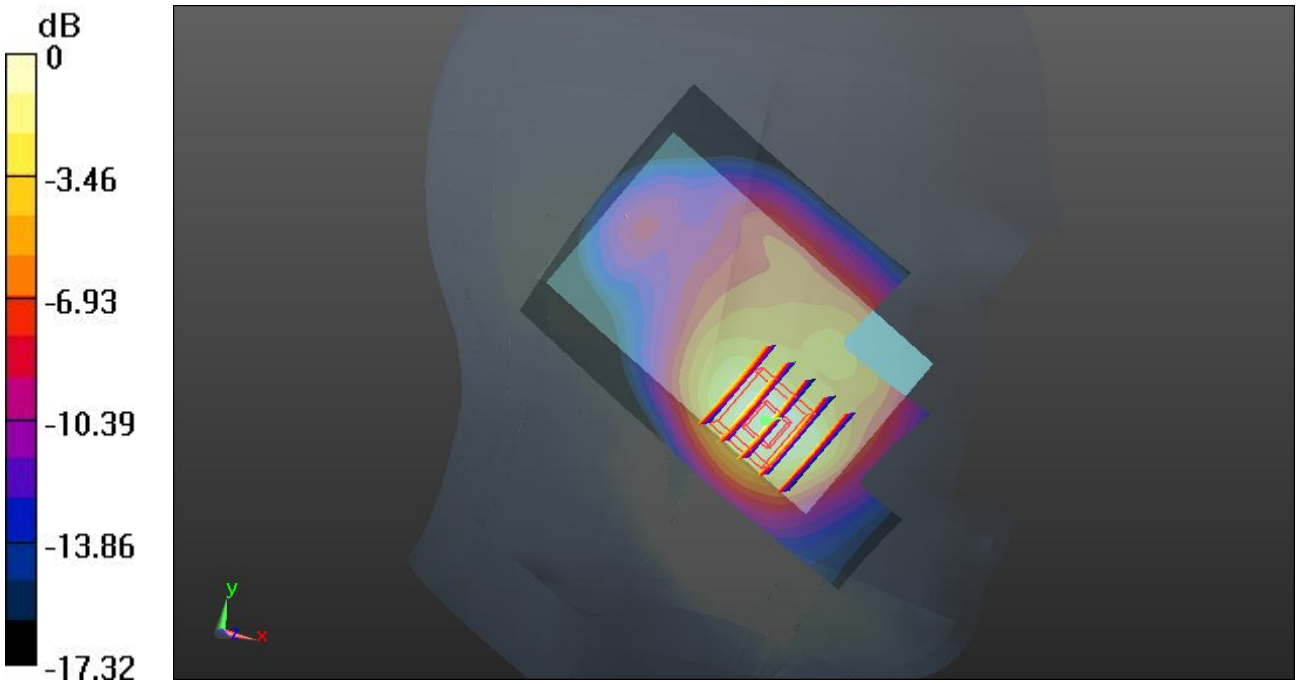
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1908 MHz; σ = 1.42 mho/m; ε_r = 39.311; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.237 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.872 mW/g
SAR(1 g) = 1.110 mW/g; SAR(10 g) = 0.604 mW/g
Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

08_WCDMA Band II_RMC 12.2K_Left Tilted_Ch9538

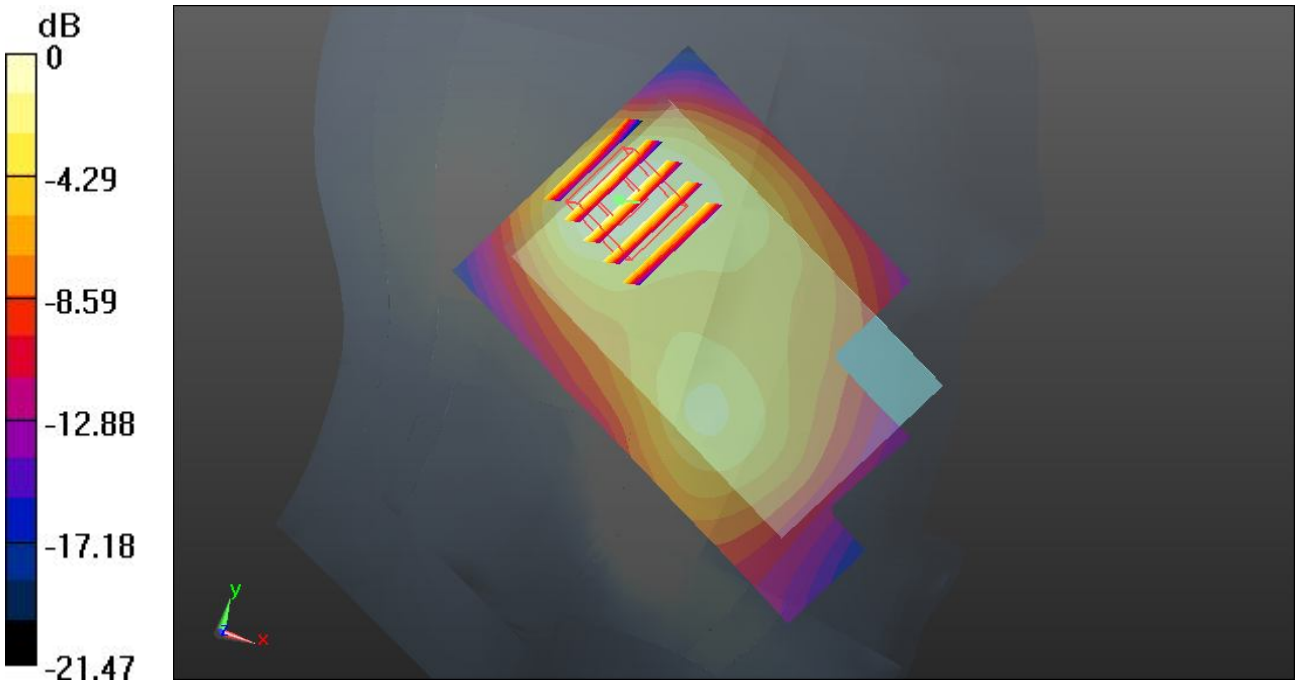
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1908 MHz; σ = 1.42 mho/m; ε_r = 39.311; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.349 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.337 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.400 mW/g
SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.151 mW/g
Maximum value of SAR (measured) = 0.333 W/kg



0 dB = 0.333 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

09_WCDMA Band II_RMC 12.2K_Left Cheek_Ch9262

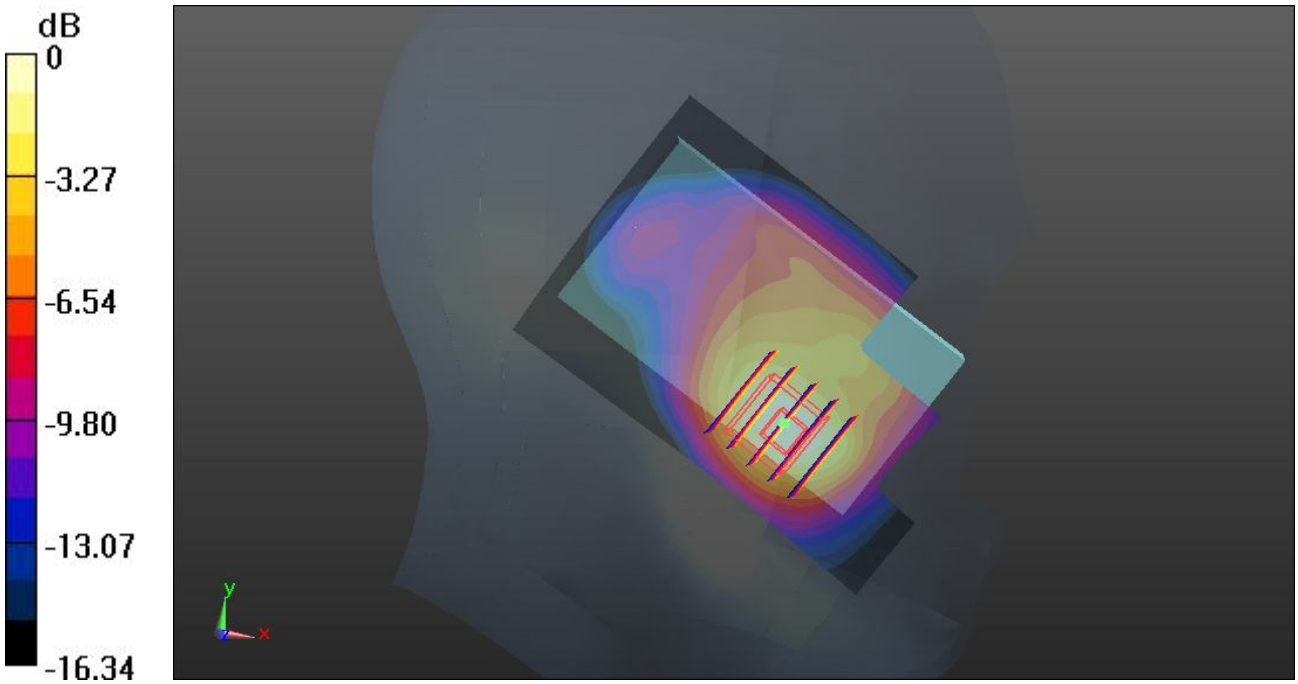
DUT: 2N2401

Communication System: UMTS; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1852.4 MHz; σ = 1.353 mho/m; ε_r = 39.378; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9262/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.57 W/kg

Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.362 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.060 mW/g
SAR(1 g) = 1.240 mW/g; SAR(10 g) = 0.692 mW/g
Maximum value of SAR (measured) = 1.59 W/kg



0 dB = 1.59 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

09_WCDMA Band II_RMC 12.2K_Left Cheek_Ch9262_2D

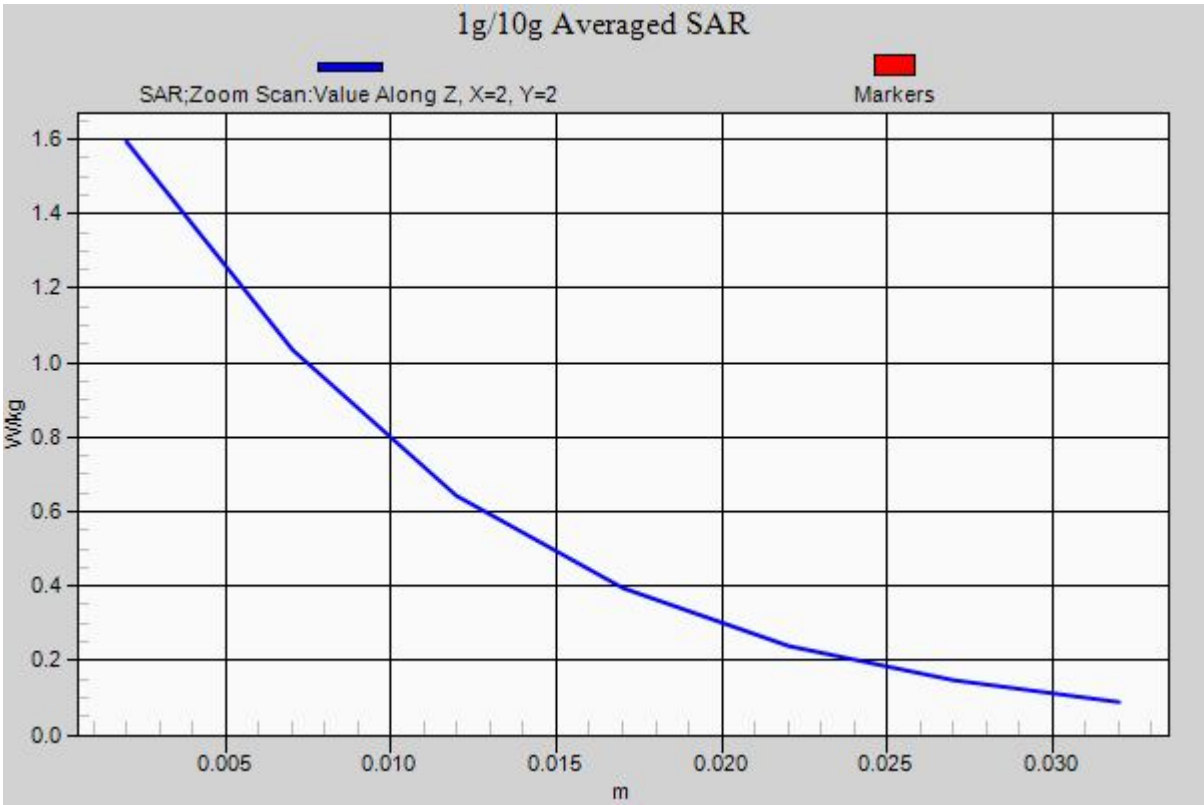
DUT: 2N2401

Communication System: UMTS; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1852.4 MHz; σ = 1.353 mho/m; ε_r = 39.378; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9262/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.57 W/kg

Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.362 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.060 mW/g
SAR(1 g) = 1.240 mW/g; SAR(10 g) = 0.692 mW/g
Maximum value of SAR (measured) = 1.59 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

10_WCDMA Band II_RMC 12.2K_Left Cheek_Ch9400

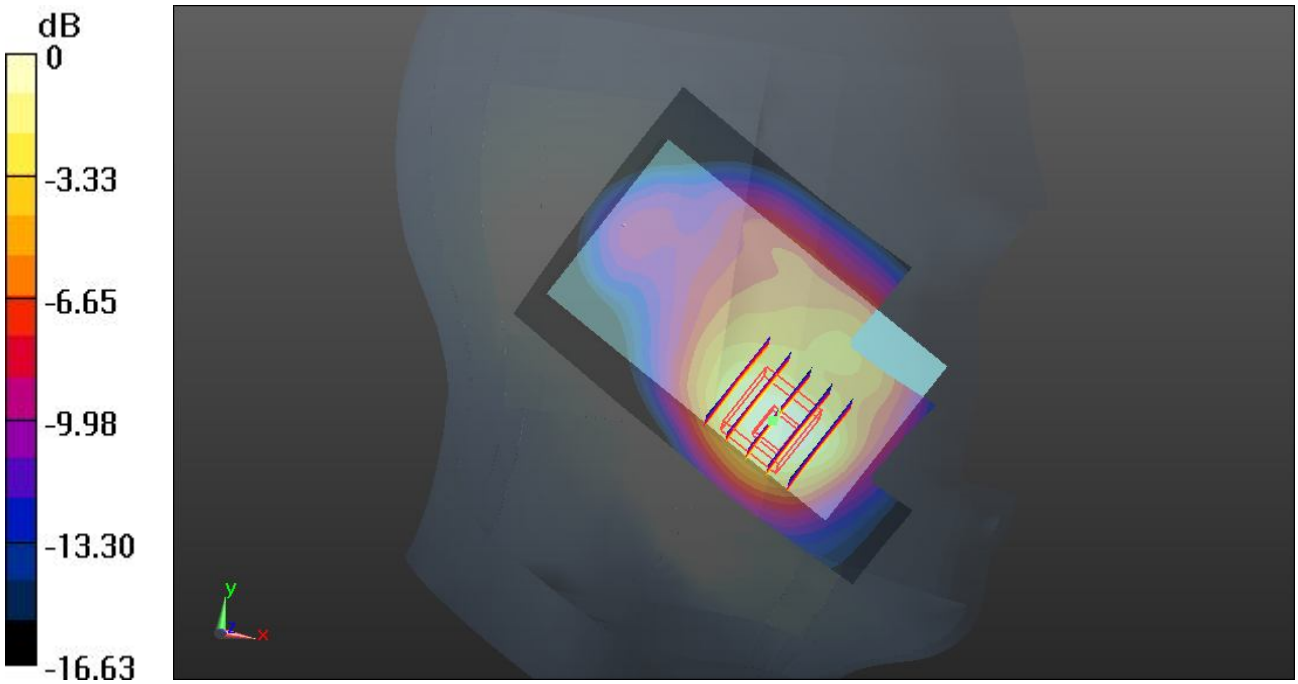
DUT: 2N2401

Communication System: UMTS; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121210 Medium parameters used: f = 1880 MHz; σ = 1.387 mho/m; ε_r = 39.308; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(8.33, 8.33, 8.33); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9400/Area Scan (61x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.49 W/kg

Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.090 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.977 mW/g
SAR(1 g) = 1.180 mW/g; SAR(10 g) = 0.649 mW/g
Maximum value of SAR (measured) = 1.52 W/kg



0 dB = 1.52 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

01_WLAN2.4G_802.11b_Right Cheek_Ch11

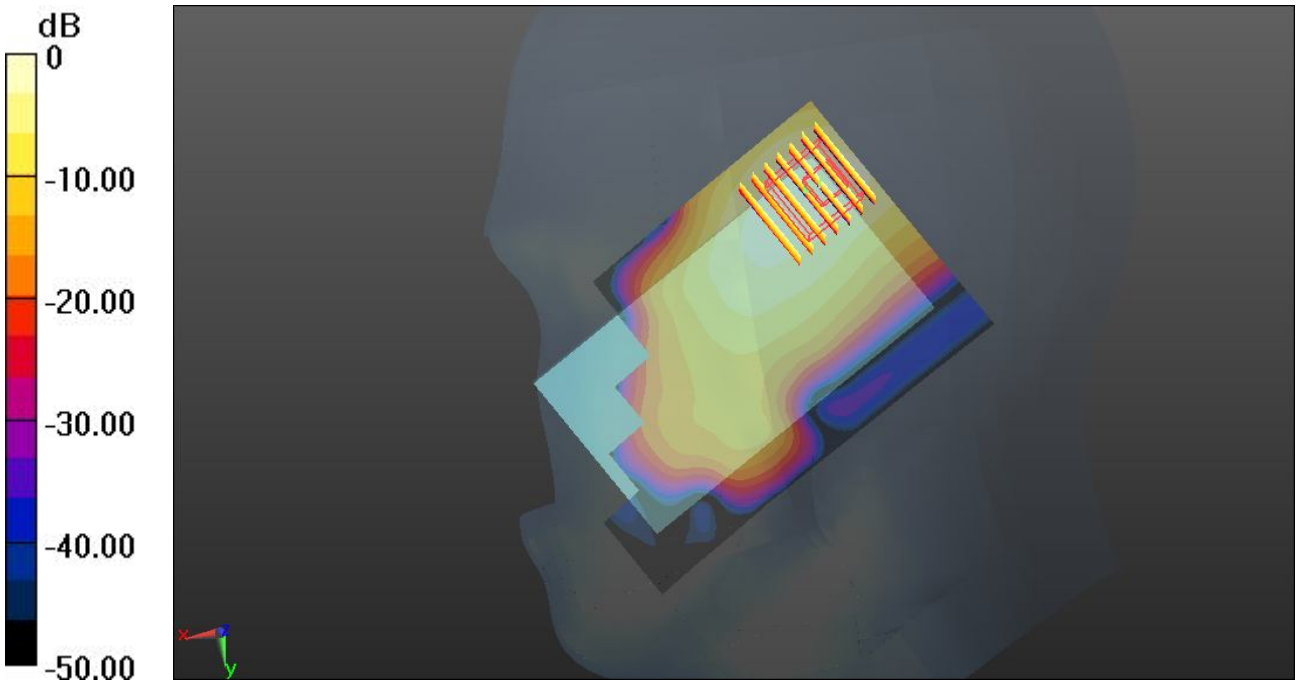
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: HSL_2450_121129 Medium parameters used: f = 2462 MHz; σ = 1.87 mho/m; ε_r = 37.641; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (71x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.269 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.882 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.393 mW/g
SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.085 mW/g
Maximum value of SAR (measured) = 0.278 W/kg



0 dB = 0.278 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

01_WLAN2.4G_802.11b_Right Cheek_Ch11_2D

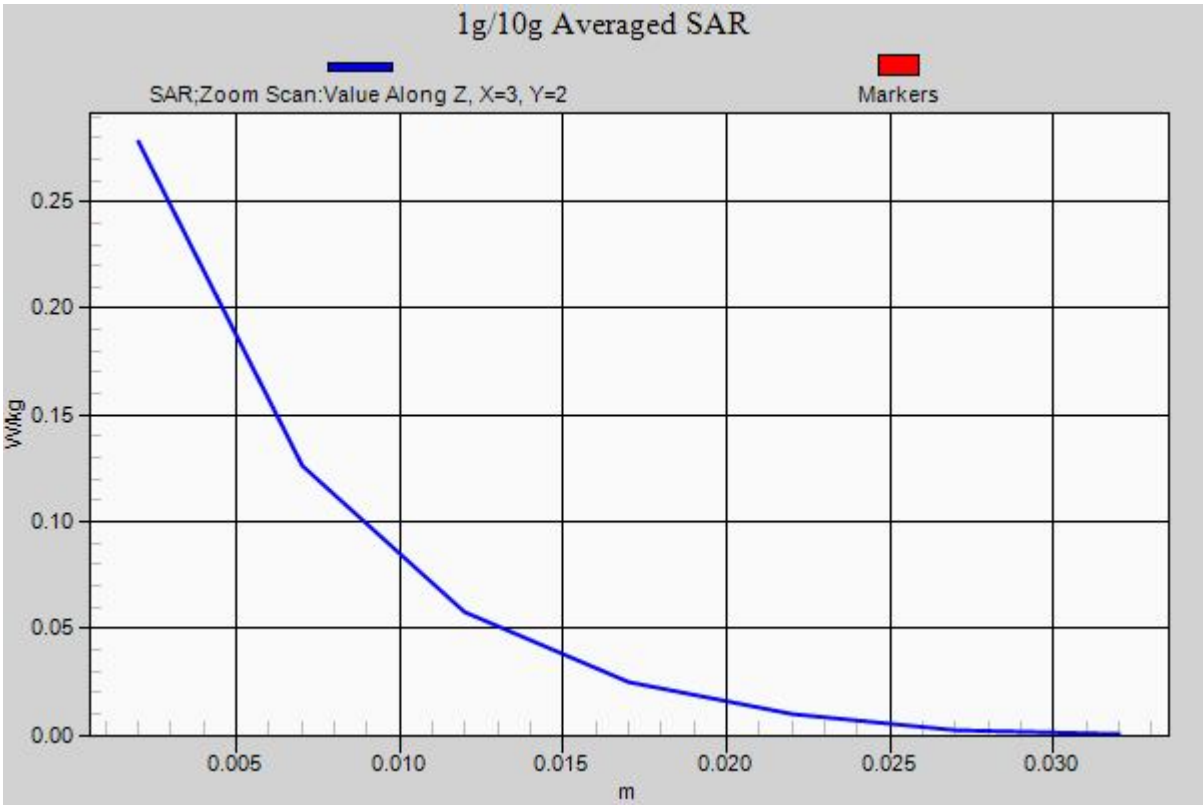
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: HSL_2450_121129 Medium parameters used: f = 2462 MHz; σ = 1.87 mho/m; ε_r = 37.641; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (71x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.269 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.882 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.393 mW/g
SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.085 mW/g
Maximum value of SAR (measured) = 0.278 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

02_WLAN2.4G_802.11b_Right Tilted_Ch11

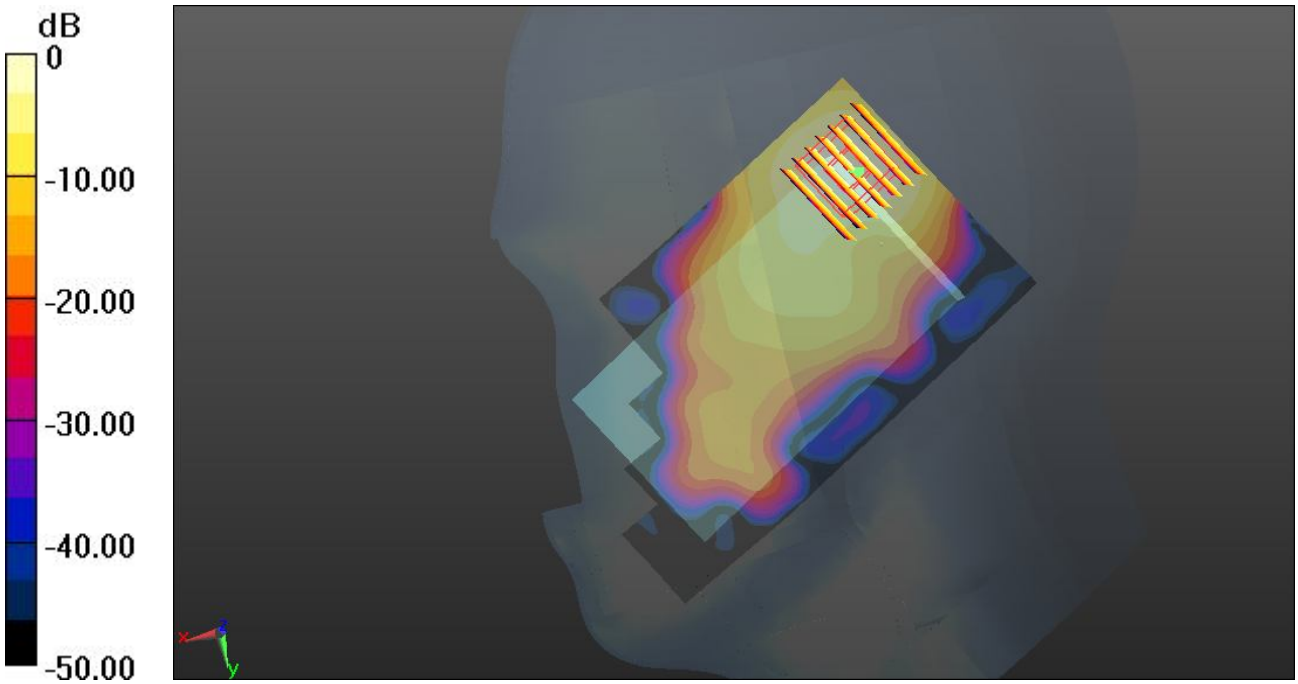
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: HSL_2450_121129 Medium parameters used: f = 2462 MHz; σ = 1.87 mho/m; ε_r = 37.641; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (71x121x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.242 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.876 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.361 mW/g
SAR(1 g) = 0.168 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.252 W/kg



0 dB = 0.252 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

03_WLAN2.4G_802.11b_Left Cheek_Ch11

DUT: 2N2401

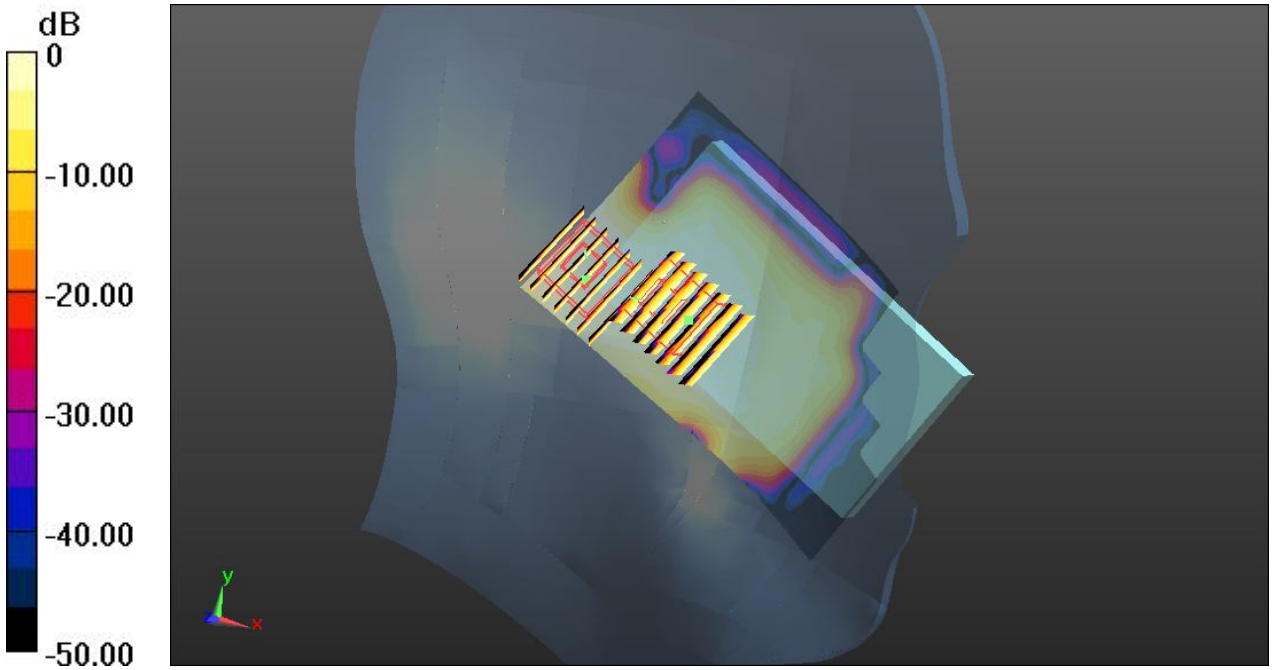
Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: HSL_2450_121129 Medium parameters used: f = 2462 MHz; σ = 1.87 mho/m; ε_r = 37.641; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (71x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.0755 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.188 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.107 mW/g
SAR(1 g) = 0.050 mW/g; SAR(10 g) = 0.022 mW/g
Maximum value of SAR (measured) = 0.0767 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.188 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.064 mW/g
SAR(1 g) = 0.035 mW/g; SAR(10 g) = 0.020 mW/g
Maximum value of SAR (measured) = 0.0506 W/kg



0 dB = 0.0506 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 29.11.2012

04_WLAN2.4G_802.11b_Left Tilted_Ch11

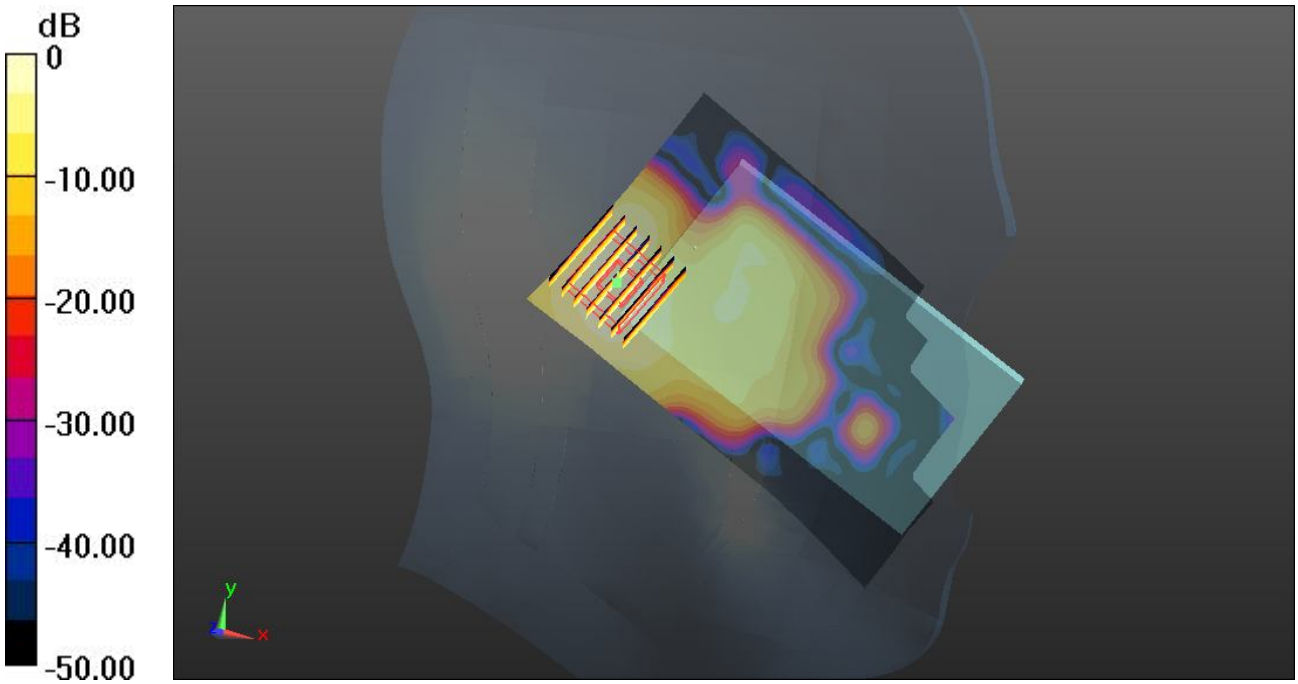
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: HSL_2450_121129 Medium parameters used: f = 2462 MHz; σ = 1.87 mho/m; ε_r = 37.641; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.48, 7.48, 7.48); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (71x121x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.115 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.058 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.161 mW/g
SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.036 mW/g
Maximum value of SAR (measured) = 0.118 W/kg



0 dB = 0.118 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

15_GSM850_GPRS(2 Tx slots)_Front_1cm_Ch128

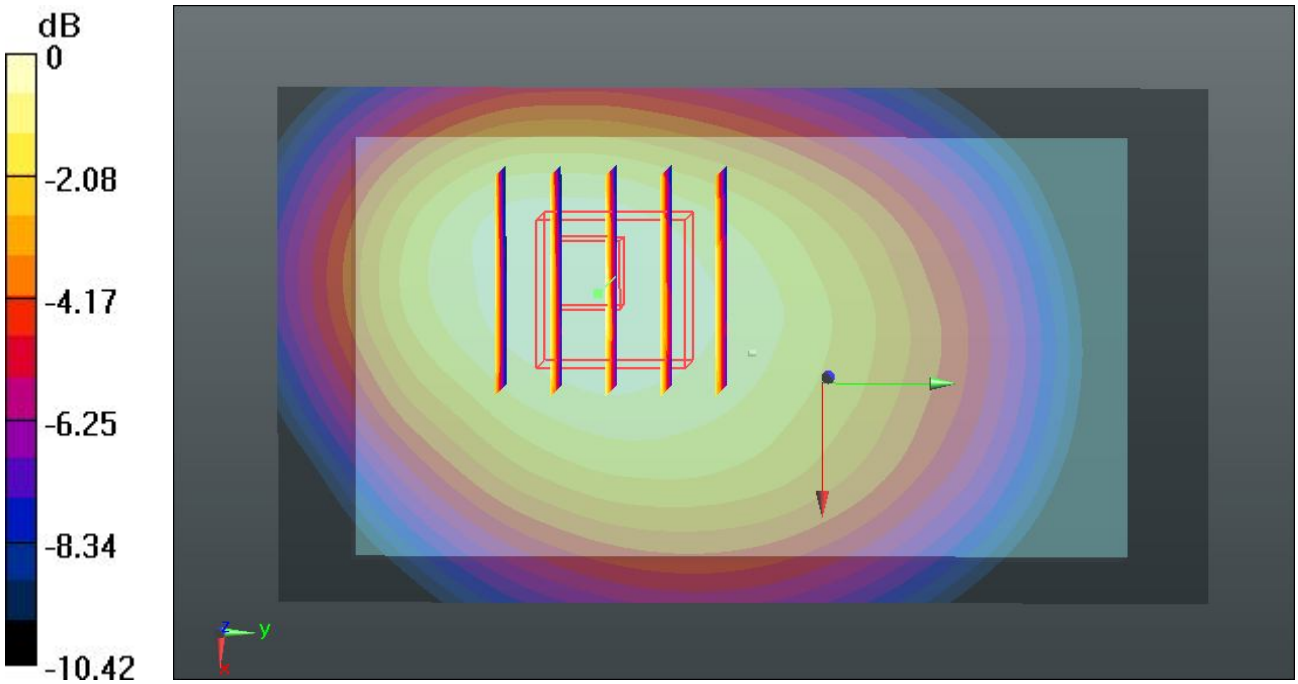
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.135 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.235 mW/g
SAR(1 g) = 0.906 mW/g; SAR(10 g) = 0.652 mW/g
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

16_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch128

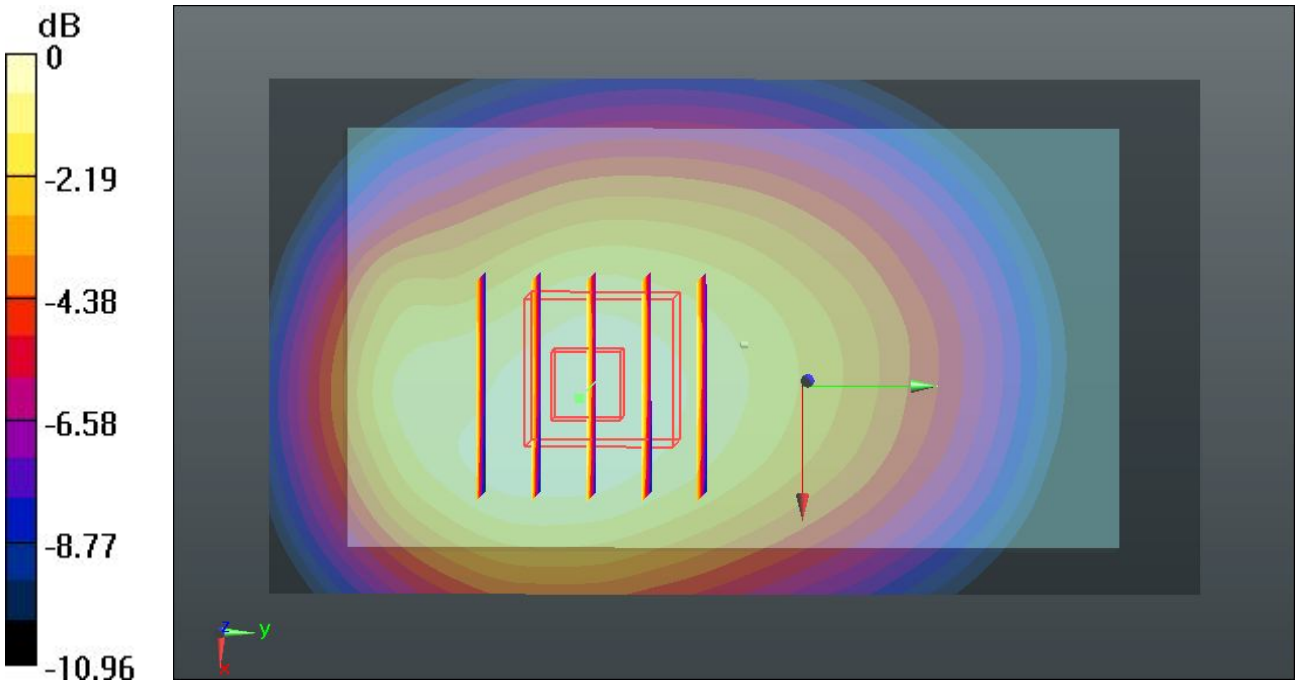
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.36 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.207 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.535 mW/g
SAR(1 g) = 1.120 mW/g; SAR(10 g) = 0.800 mW/g
Maximum value of SAR (measured) = 1.34 W/kg



0 dB = 1.34 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

16_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch128_2D

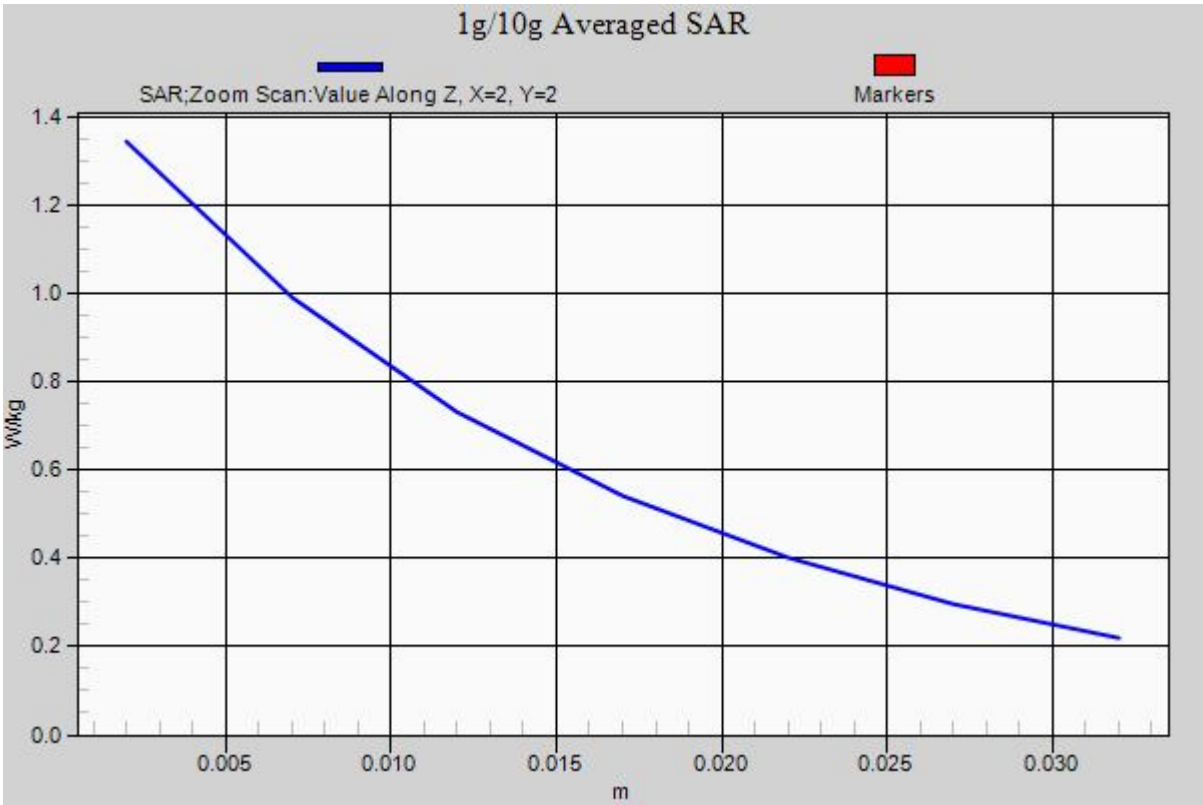
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.36 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.207 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.535 mW/g
SAR(1 g) = 1.120 mW/g; SAR(10 g) = 0.800 mW/g
Maximum value of SAR (measured) = 1.34 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

17_GSM850_GPRS(2 Tx slots)_Left Side_1cm_Ch128

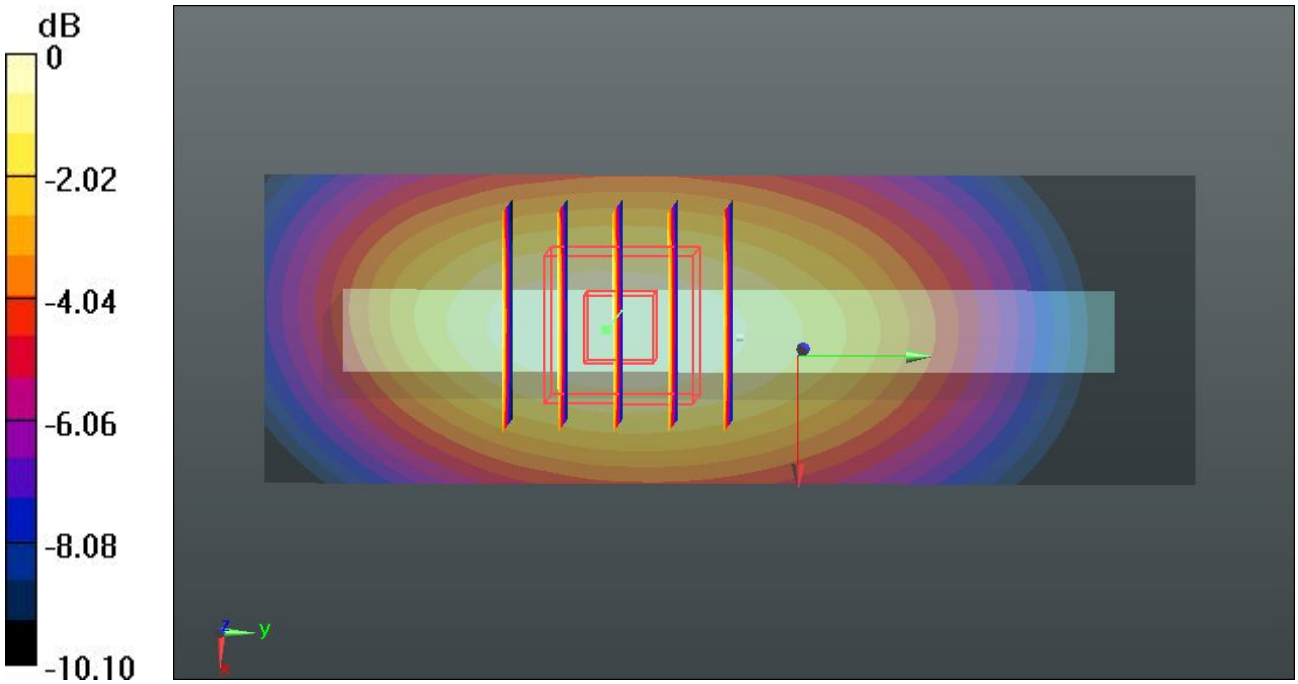
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (31x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.820 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.863 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.938 mW/g
SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.459 mW/g
Maximum value of SAR (measured) = 0.819 W/kg



0 dB = 0.819 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

18_GSM850_GPRS(2 Tx slots)_Right Side_1cm_Ch128

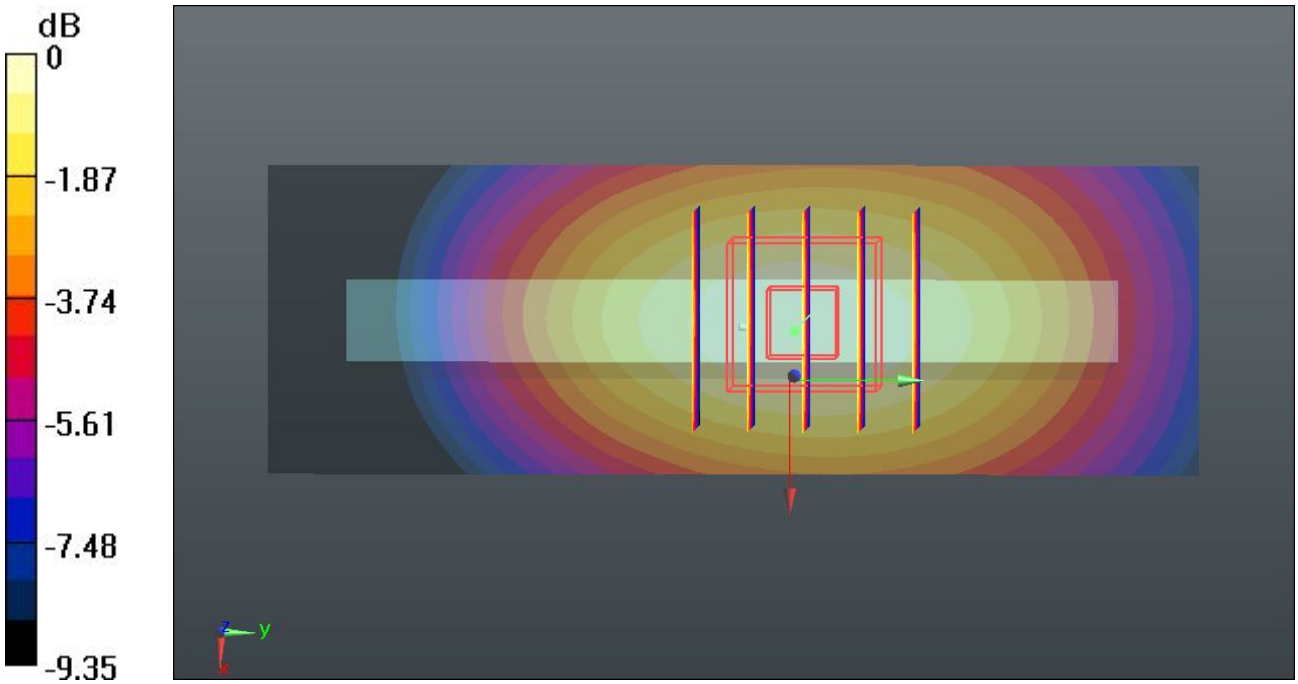
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (31x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.533 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.285 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.613 mW/g
SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.537 W/kg



0 dB = 0.537 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

19_GSM850_GPRS(2 Tx slots)_Bottom Side_1cm_Ch128

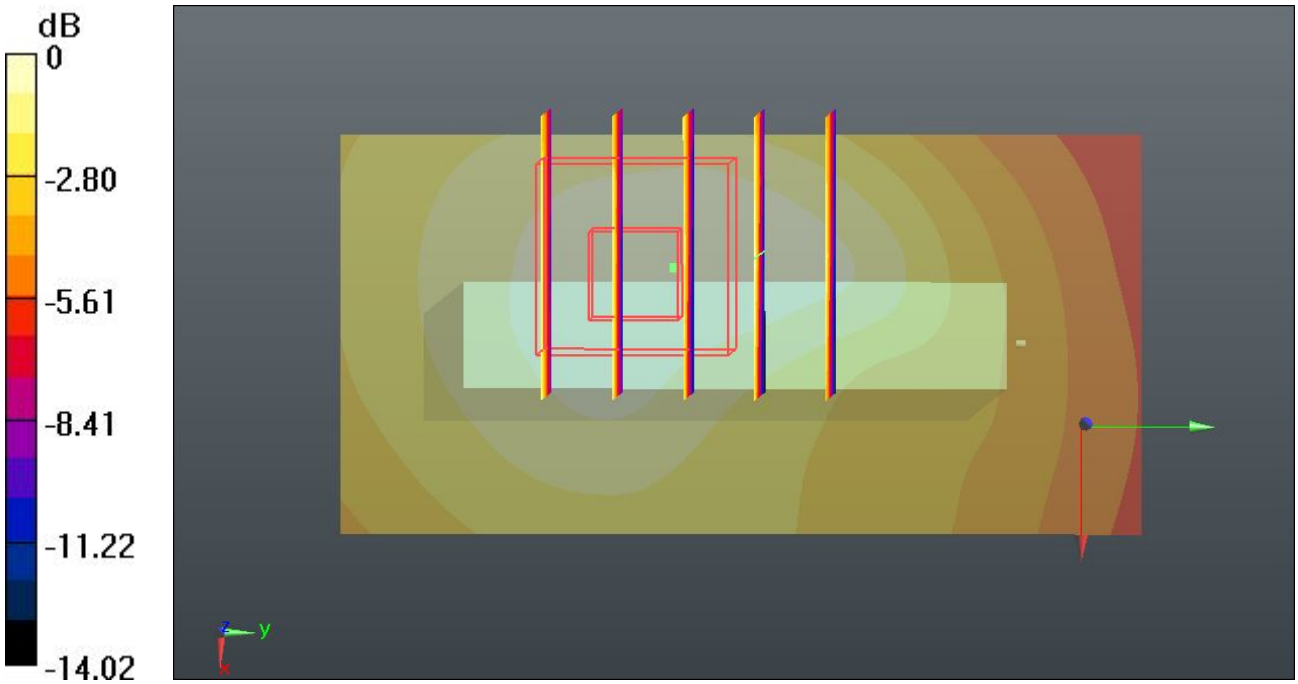
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (31x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.0994 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.414 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.124 mW/g
SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.0976 W/kg



0 dB = 0.0976 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

20_GSM850_GPRS(2 Tx slots)_Front_1cm_Ch189

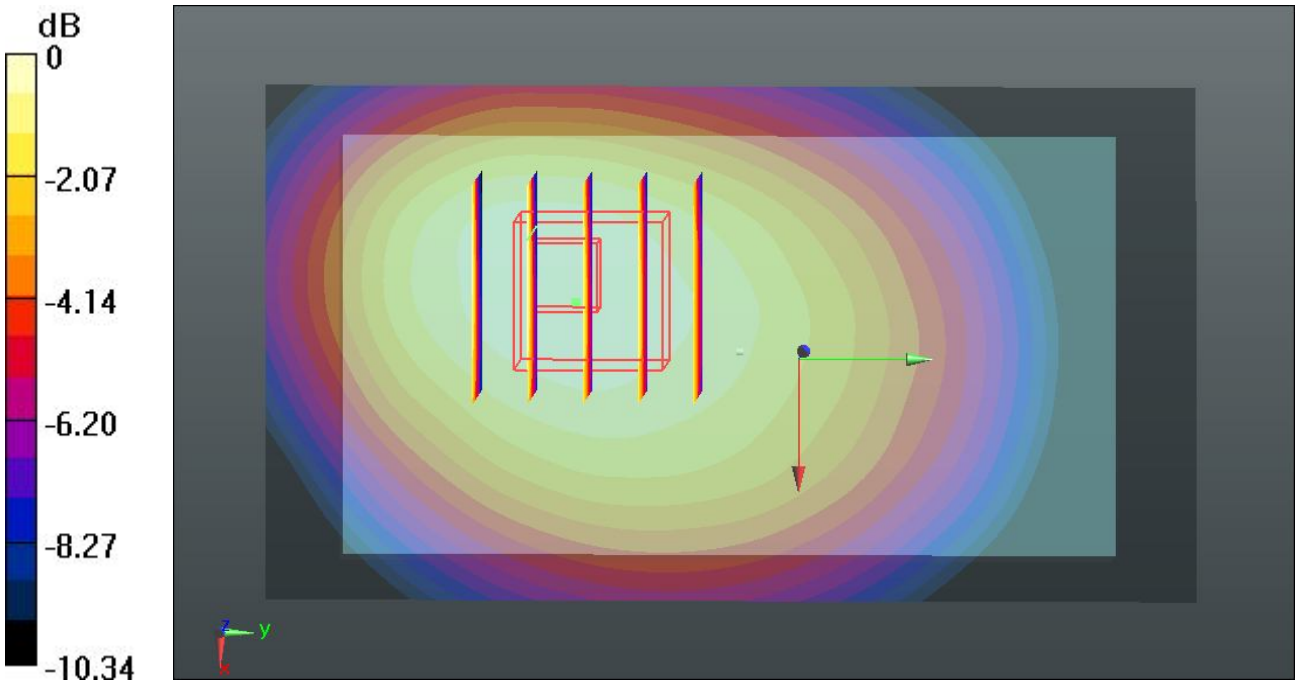
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 836.4 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch189/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.545 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.228 mW/g
SAR(1 g) = 0.900 mW/g; SAR(10 g) = 0.652 mW/g
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

21_GSM850_GPRS(2 Tx slots)_Front_1cm_Ch251

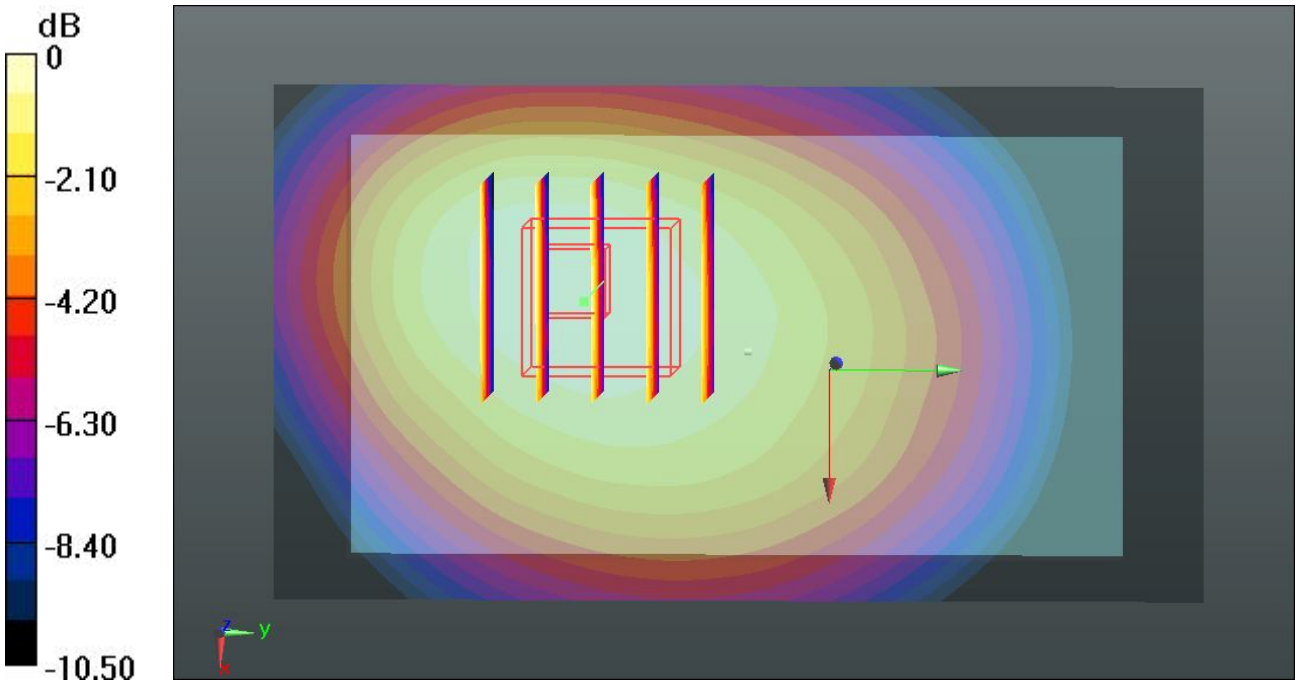
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 849 MHz; σ = 0.989 mho/m; ε_r = 54.251; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch251/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.04 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.069 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.190 mW/g
SAR(1 g) = 0.877 mW/g; SAR(10 g) = 0.635 mW/g
Maximum value of SAR (measured) = 1.03 W/kg



0 dB = 1.03 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

22_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch189

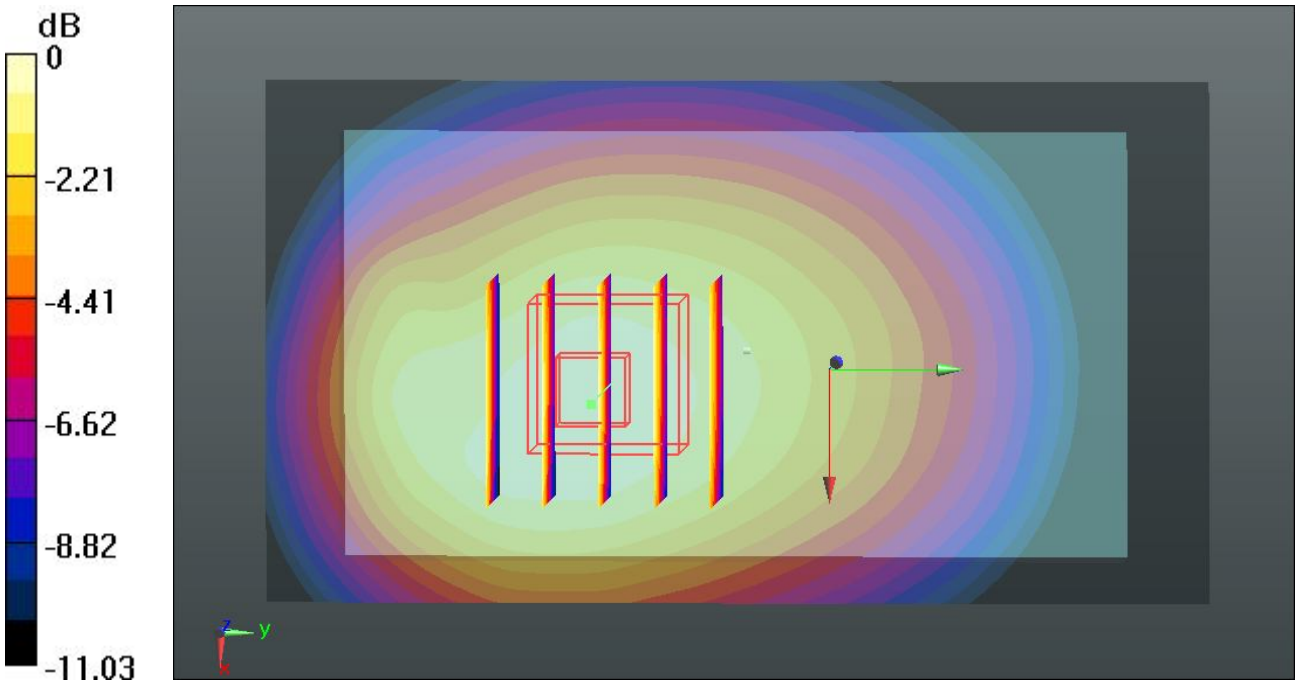
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 836.4 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch189/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.771 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.518 mW/g
SAR(1 g) = 1.100 mW/g; SAR(10 g) = 0.788 mW/g
Maximum value of SAR (measured) = 1.32 W/kg



0 dB = 1.32 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

23_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch251

DUT: 2N2401

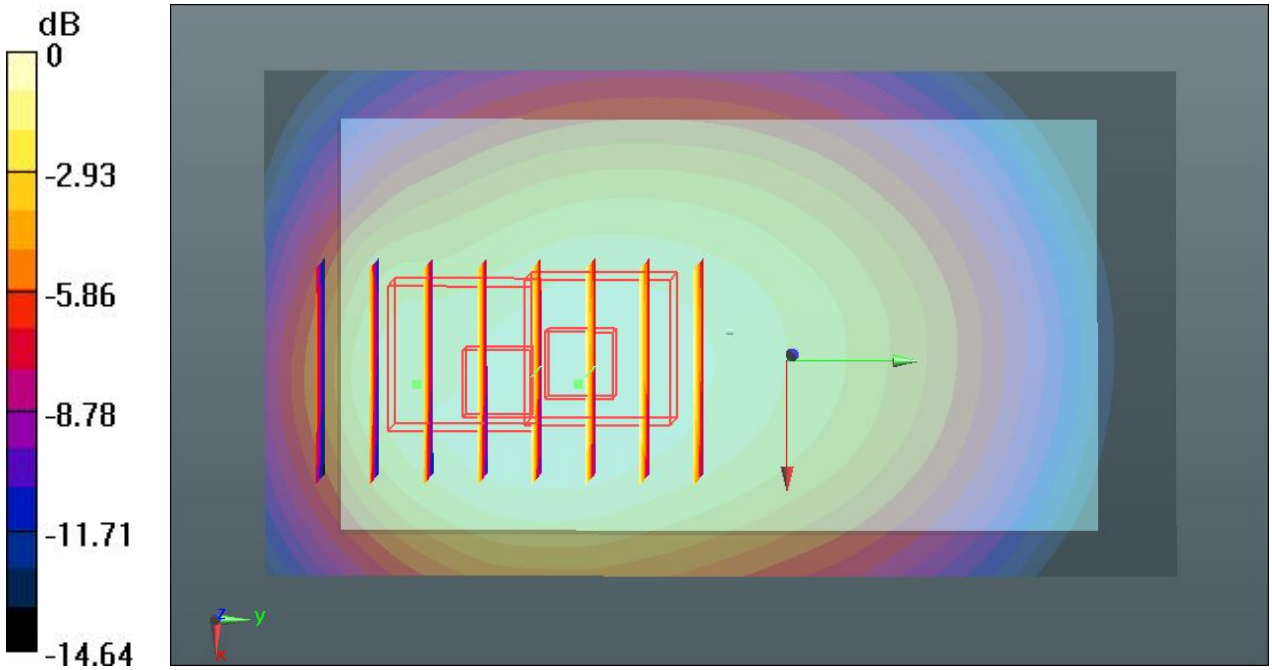
Communication System: GPRS/EDGE10; Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 849 MHz; σ = 0.989 mho/m; ε_r = 54.251; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch251/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.540 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.445 mW/g
SAR(1 g) = 1.060 mW/g; SAR(10 g) = 0.755 mW/g
Maximum value of SAR (measured) = 1.26 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.540 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.431 mW/g
SAR(1 g) = 0.925 mW/g; SAR(10 g) = 0.599 mW/g
Maximum value of SAR (measured) = 1.24 W/kg



0 dB = 1.24 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

24_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch128_Headset

DUT: 2N2401

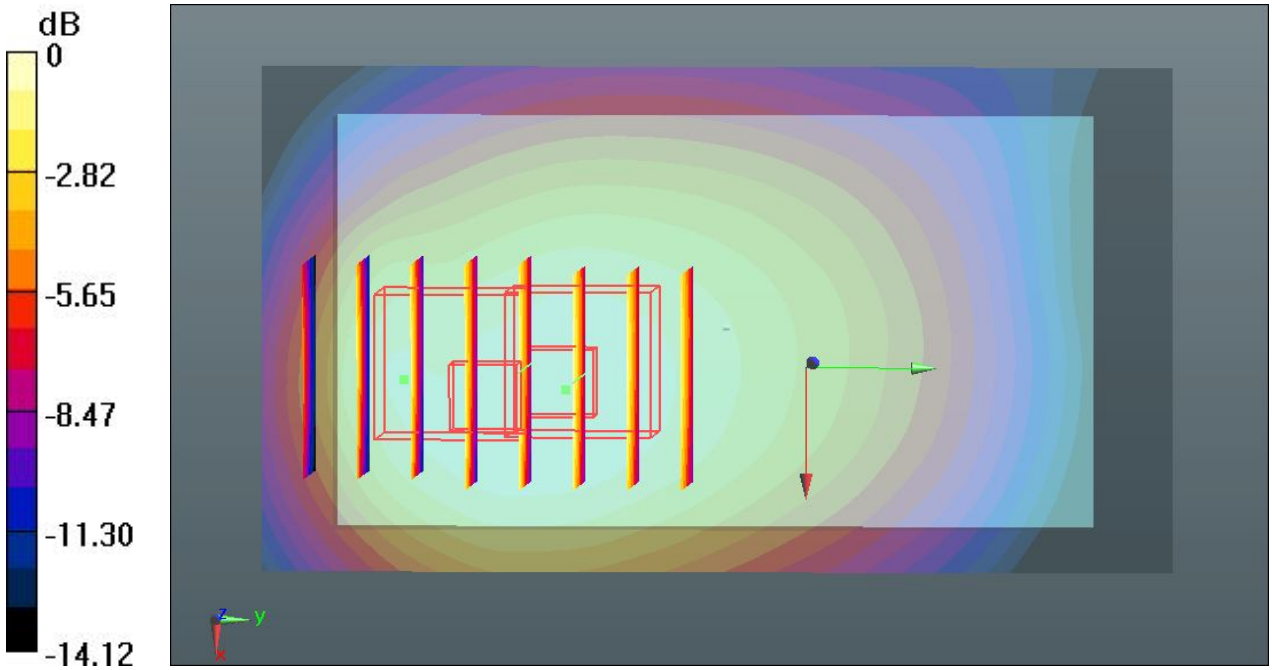
Communication System: GPRS/EDGE10; Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 824.2 MHz; σ = 0.966 mho/m; ε_r = 54.448; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch128/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.08 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.378 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.264 mW/g
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.628 mW/g
Maximum value of SAR (measured) = 1.08 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.378 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.246 mW/g
SAR(1 g) = 0.795 mW/g; SAR(10 g) = 0.521 mW/g
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

25_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch189_Headset

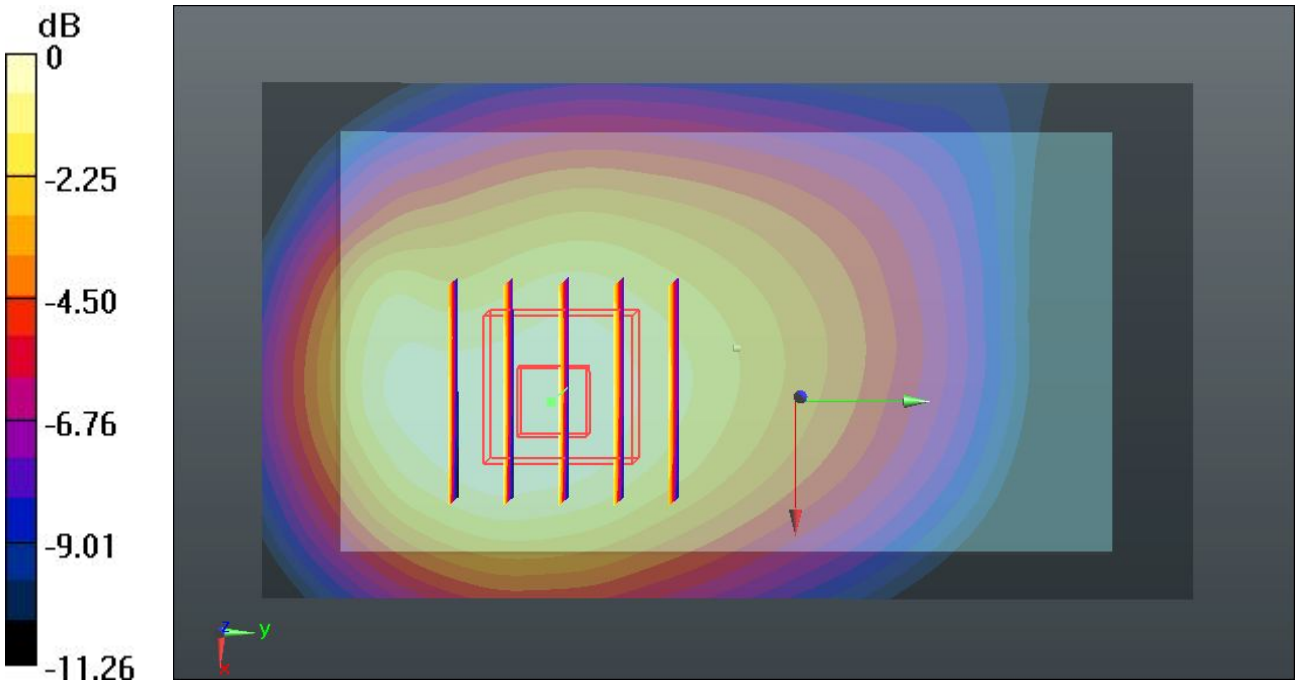
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 836.4 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch189/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.996 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.728 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.171 mW/g
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.567 mW/g
Maximum value of SAR (measured) = 1.00 W/kg



0 dB = 1.00 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

26_GSM850_GPRS(2 Tx slots)_Back_1cm_Ch251_Headset

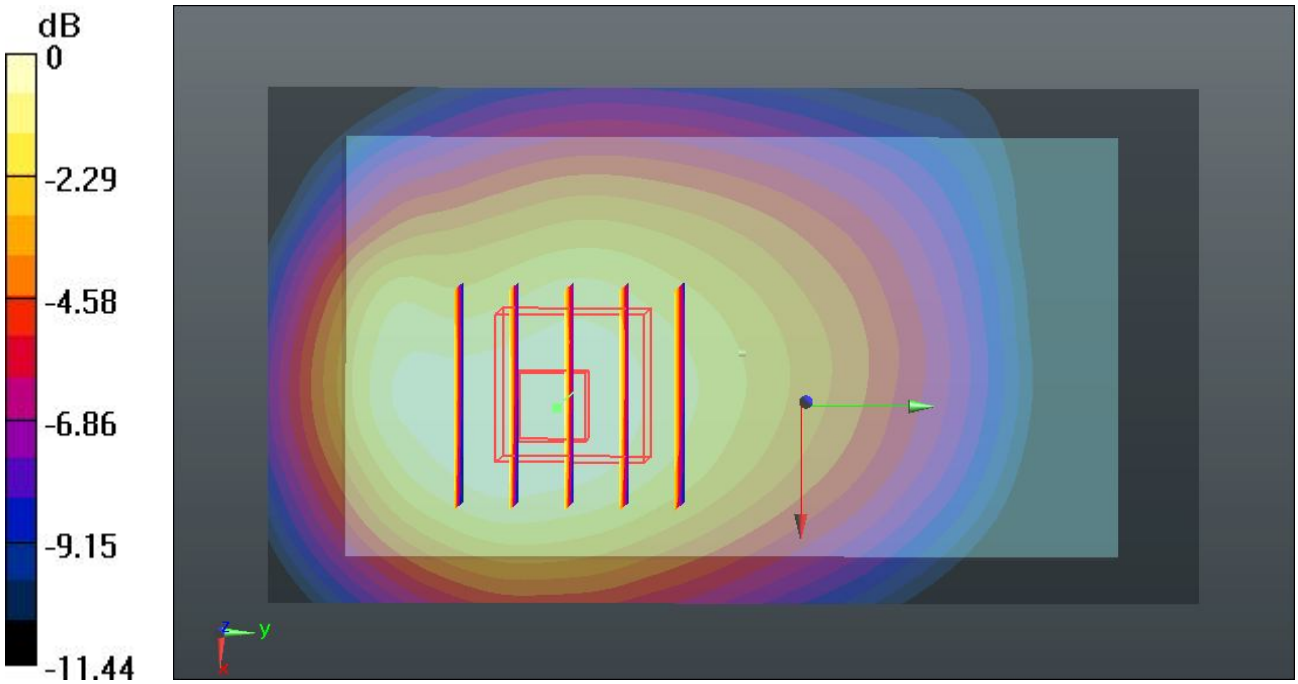
DUT: 2N2401

Communication System: GPRS/EDGE10; Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium: MSL_835_121210 Medium parameters used: f = 849 MHz; σ = 0.989 mho/m; ε_r = 54.251; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch251/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.513 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.231 mW/g
SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.593 mW/g
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 1.05 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

35_GSM1900_GPRS(4 Tx slots)_Front_1cm_Ch810

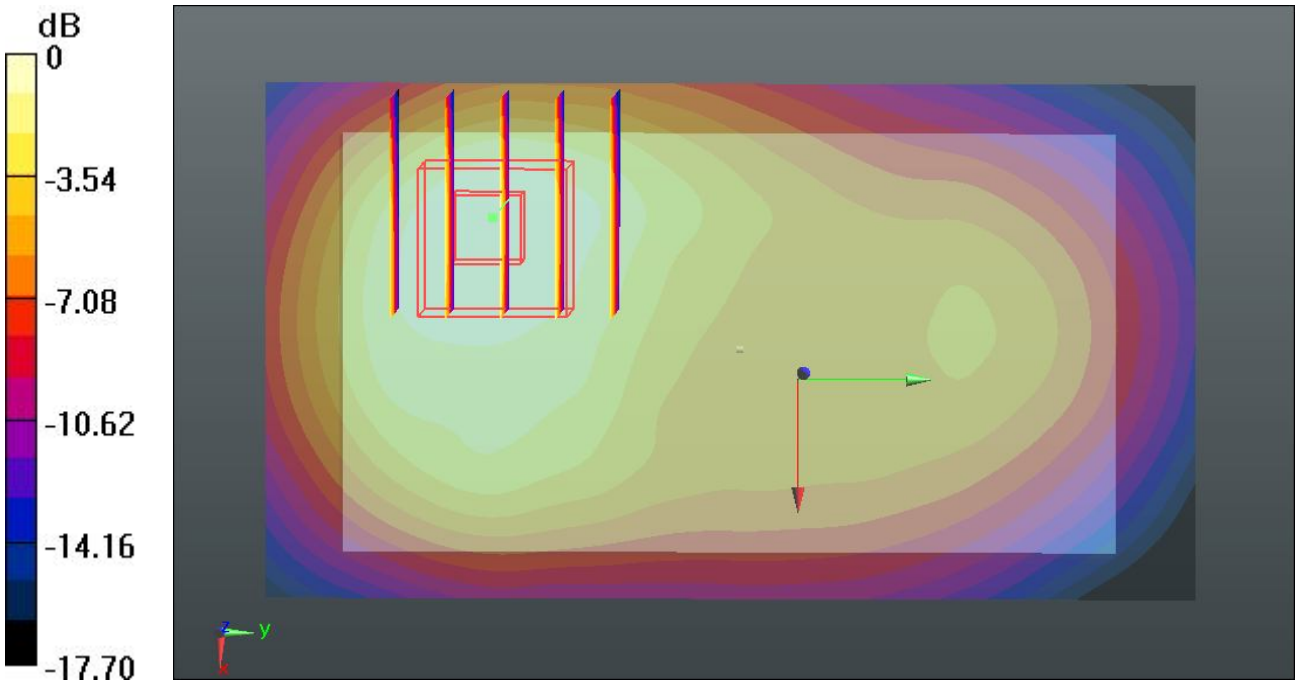
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.327 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.270 mW/g
SAR(1 g) = 0.773 mW/g; SAR(10 g) = 0.454 mW/g
Maximum value of SAR (measured) = 0.995 W/kg



0 dB = 0.995 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

36_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch810

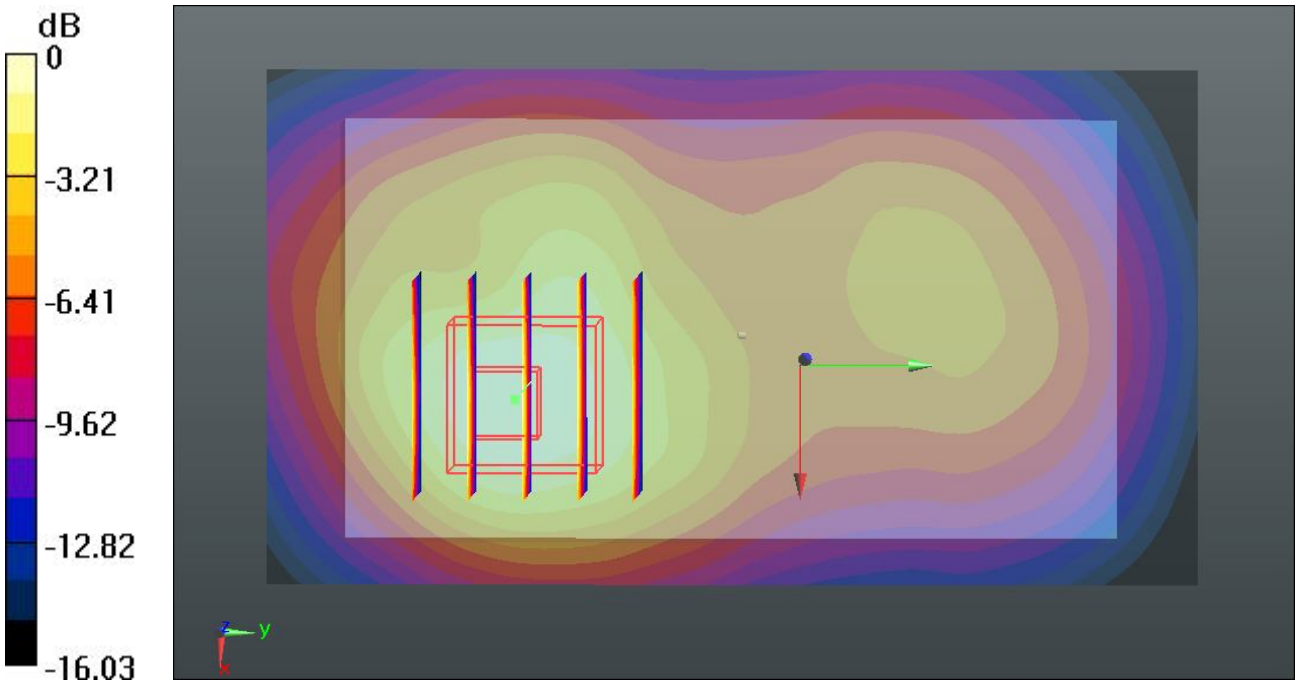
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.09 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.845 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.330 mW/g
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.476 mW/g
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

37_GSM1900_GPRS(4 Tx slots)_Left Side_1cm_Ch810

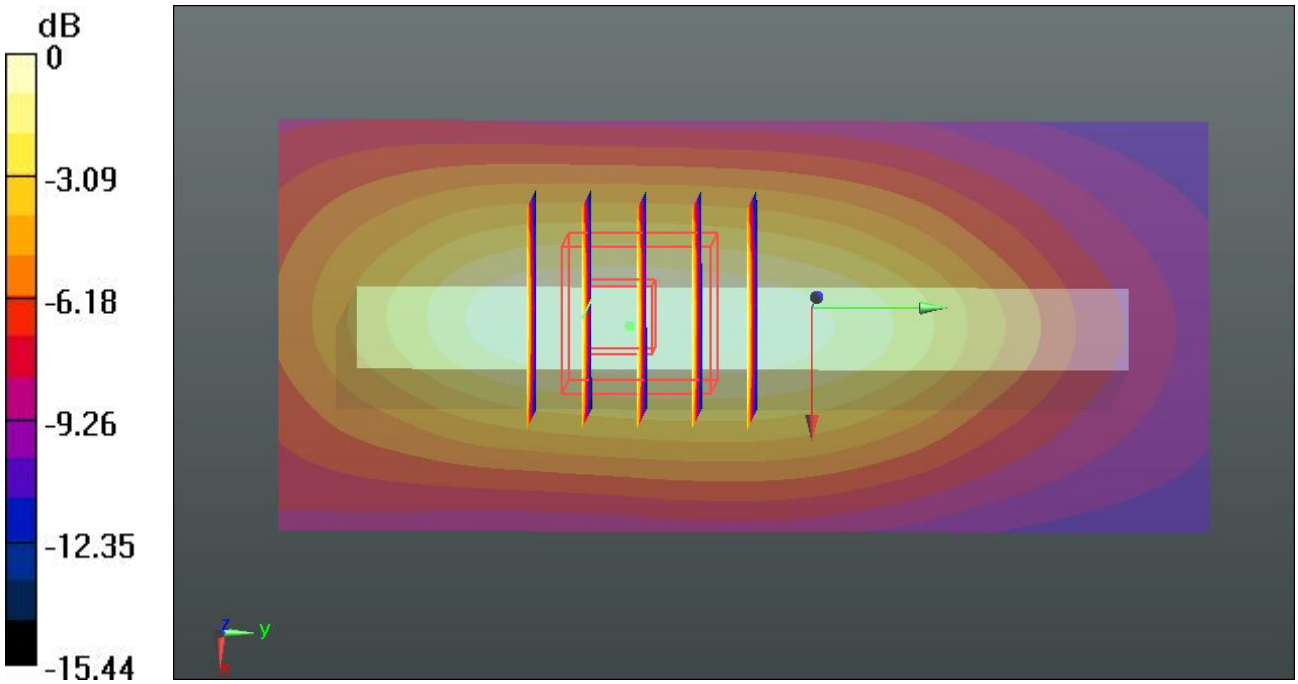
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (41x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.350 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.132 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.405 mW/g
SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.154 mW/g
Maximum value of SAR (measured) = 0.336 W/kg



0 dB = 0.336 W/kg

38_GSM1900_GPRS(4 Tx slots)_Right Side_1cm_Ch810

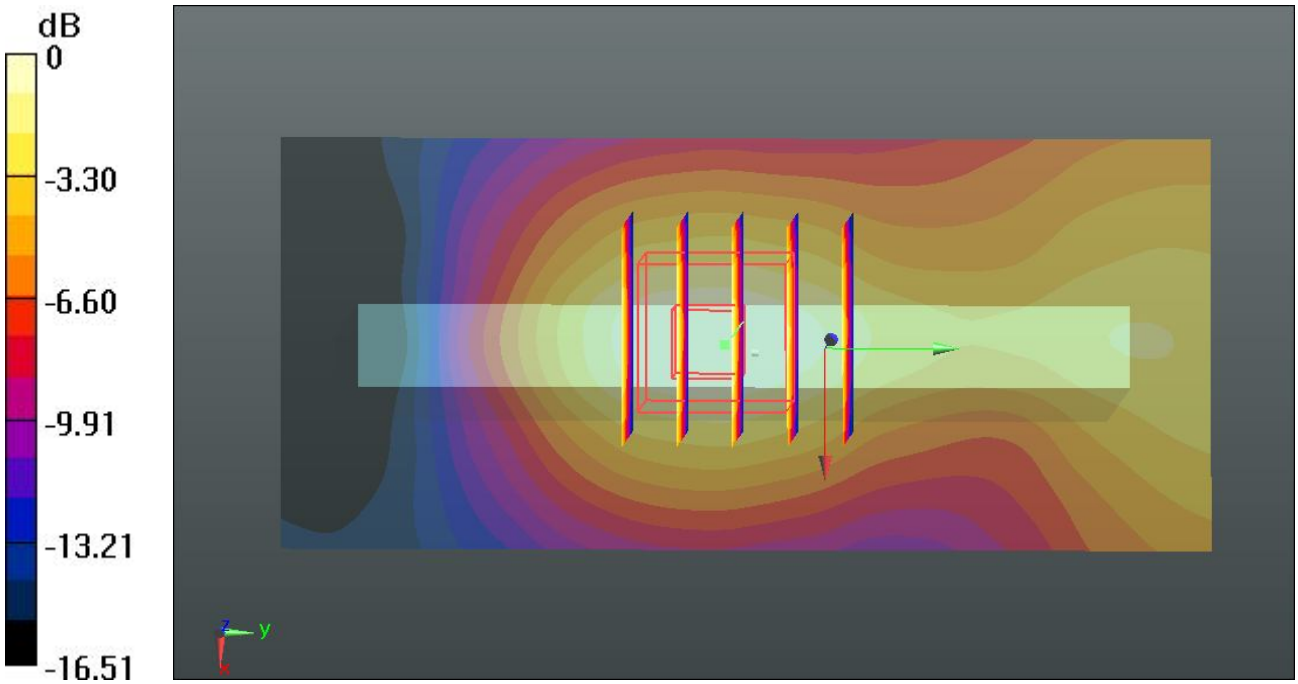
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (41x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.203 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.590 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.242 mW/g
SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.090 mW/g
Maximum value of SAR (measured) = 0.198 W/kg



0 dB = 0.198 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

39_GSM1900_GPRS(4 Tx slots)_Bottom Side_1cm_Ch810

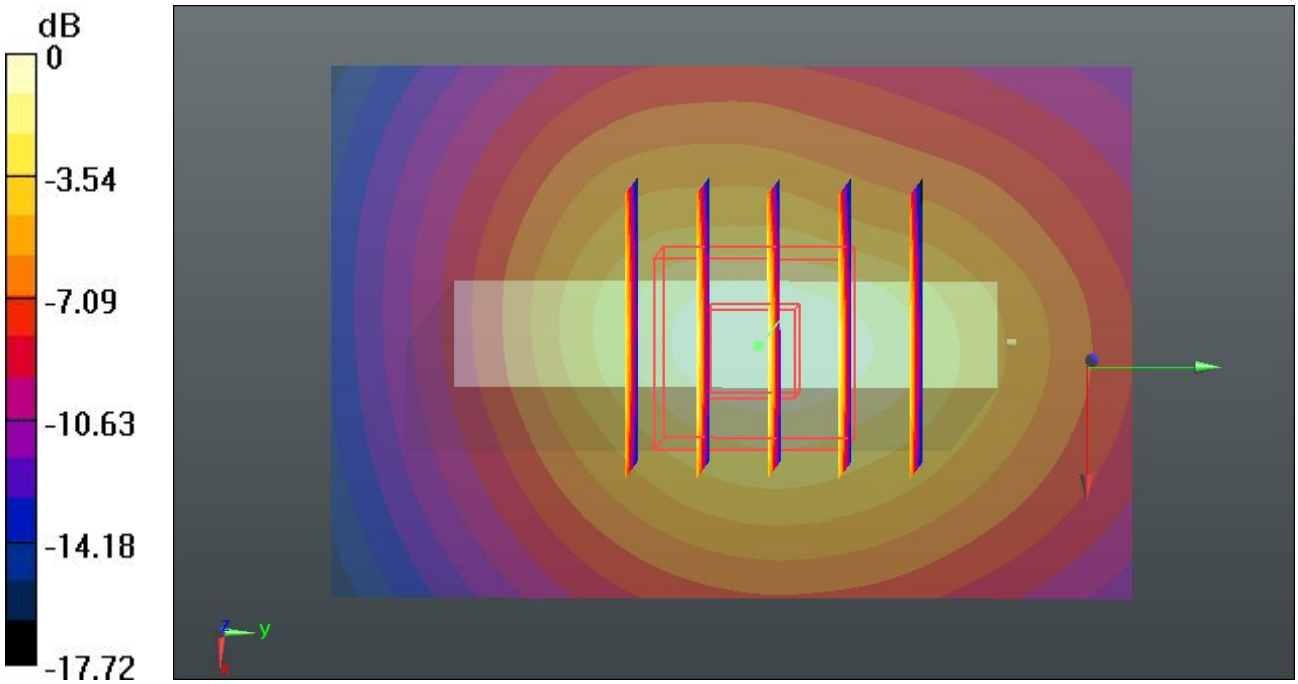
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (41x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.613 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.478 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.732 mW/g
SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.258 mW/g
Maximum value of SAR (measured) = 0.605 W/kg



0 dB = 0.605 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

40_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch512

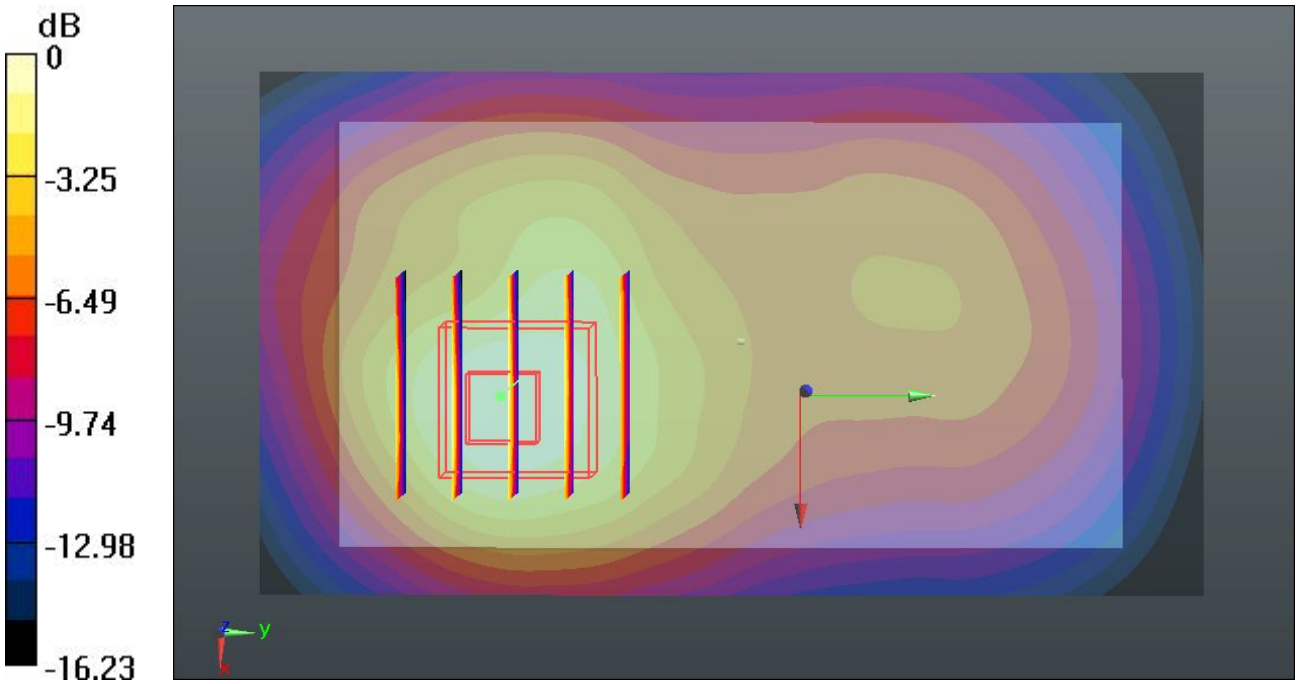
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1850.2 MHz; σ = 1.469 mho/m; ε_r = 54.083; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch512/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.24 W/kg

Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.420 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.481 mW/g
SAR(1 g) = 0.932 mW/g; SAR(10 g) = 0.548 mW/g
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

40_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch512_2D

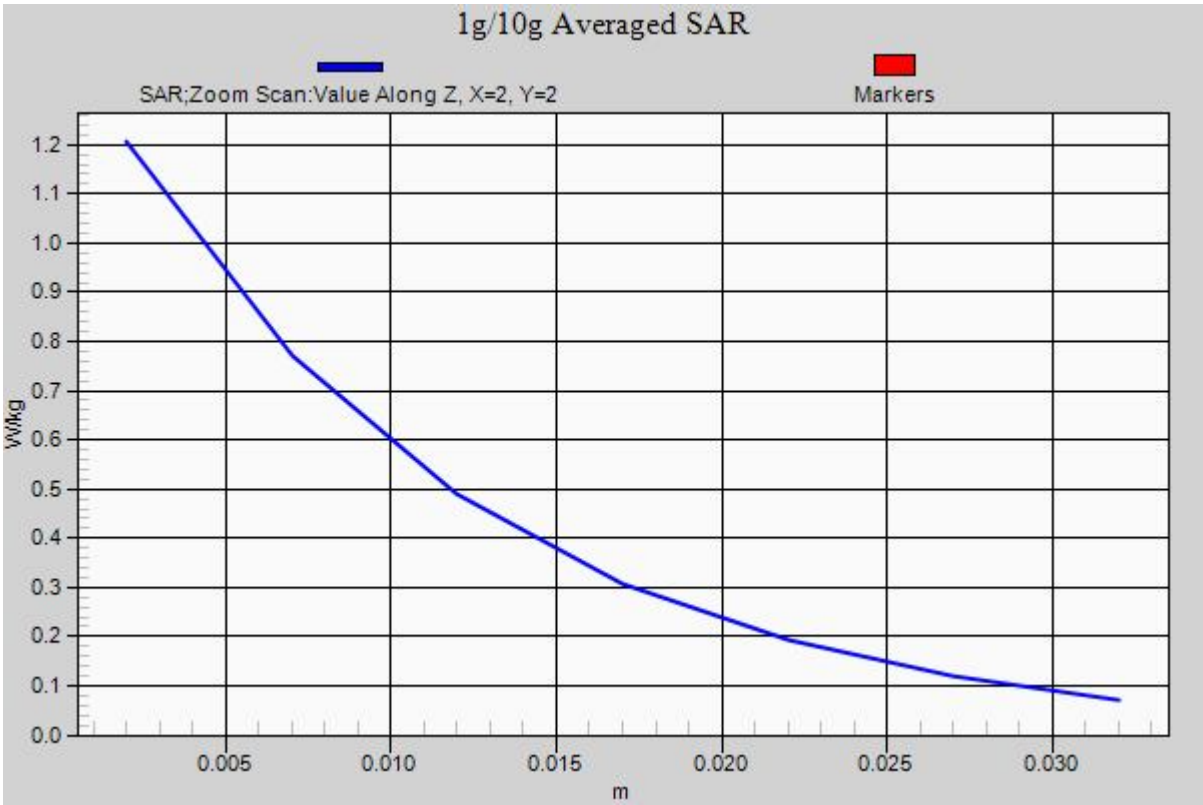
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1850.2 MHz; σ = 1.469 mho/m; ε_r = 54.083; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch512/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.24 W/kg

Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.420 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.481 mW/g
SAR(1 g) = 0.932 mW/g; SAR(10 g) = 0.548 mW/g
Maximum value of SAR (measured) = 1.21 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

41_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch661

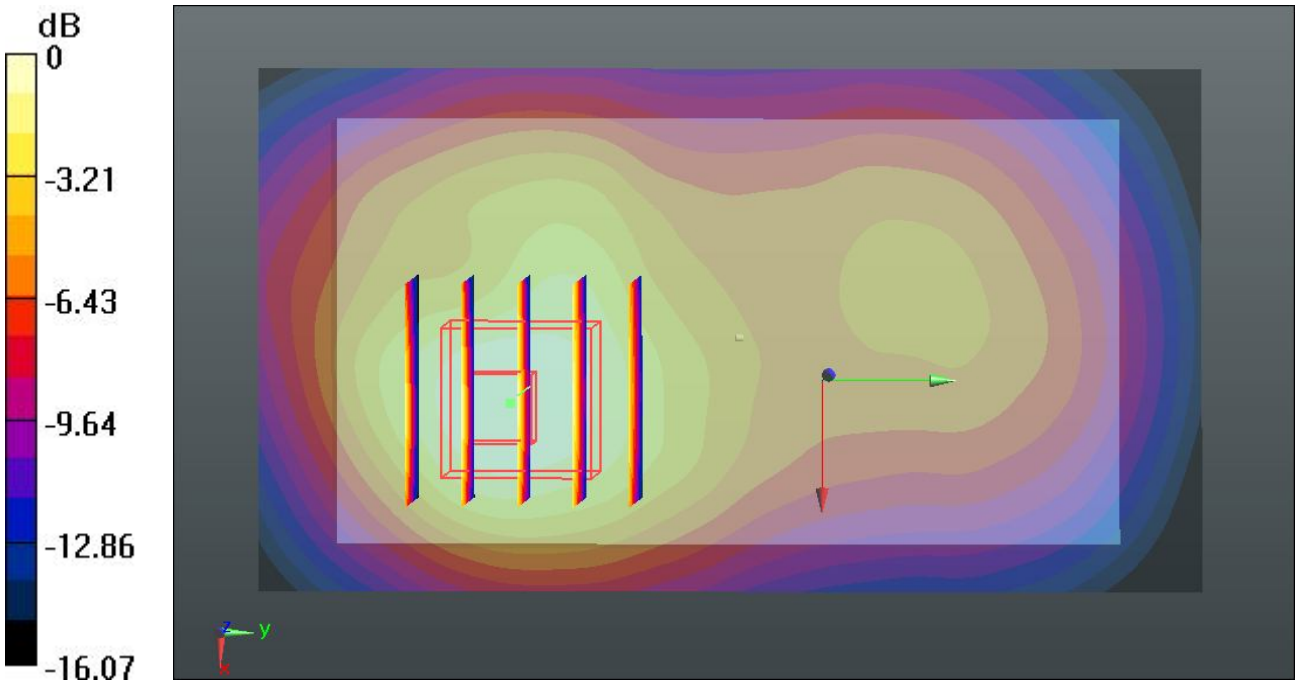
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1880 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1880 MHz; σ = 1.507 mho/m; ε_r = 54.011; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch661/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.699 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.368 mW/g
SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.499 mW/g
Maximum value of SAR (measured) = 1.09 W/kg



0 dB = 1.09 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

42_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch512_Headset

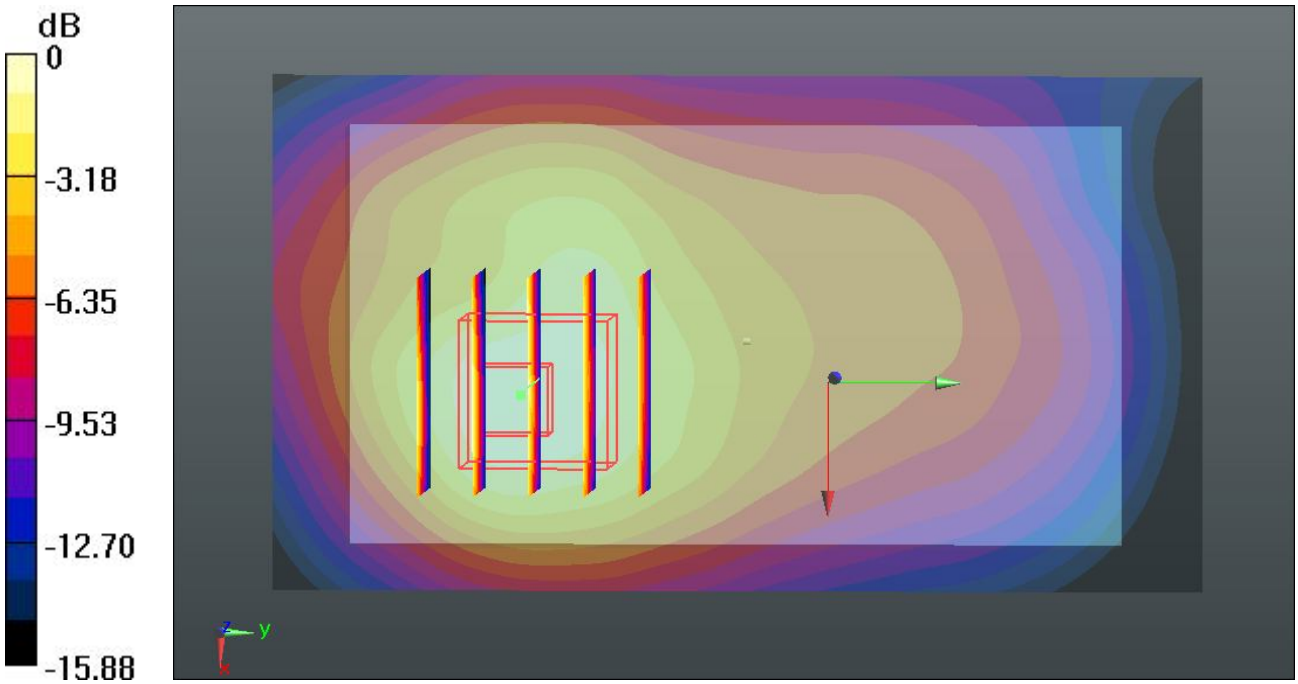
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1850.2 MHz; σ = 1.469 mho/m; ε_r = 54.083; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch512/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.11 W/kg

Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.906 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.337 mW/g
SAR(1 g) = 0.847 mW/g; SAR(10 g) = 0.506 mW/g
Maximum value of SAR (measured) = 1.09 W/kg



0 dB = 1.09 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

43_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch661_Headset

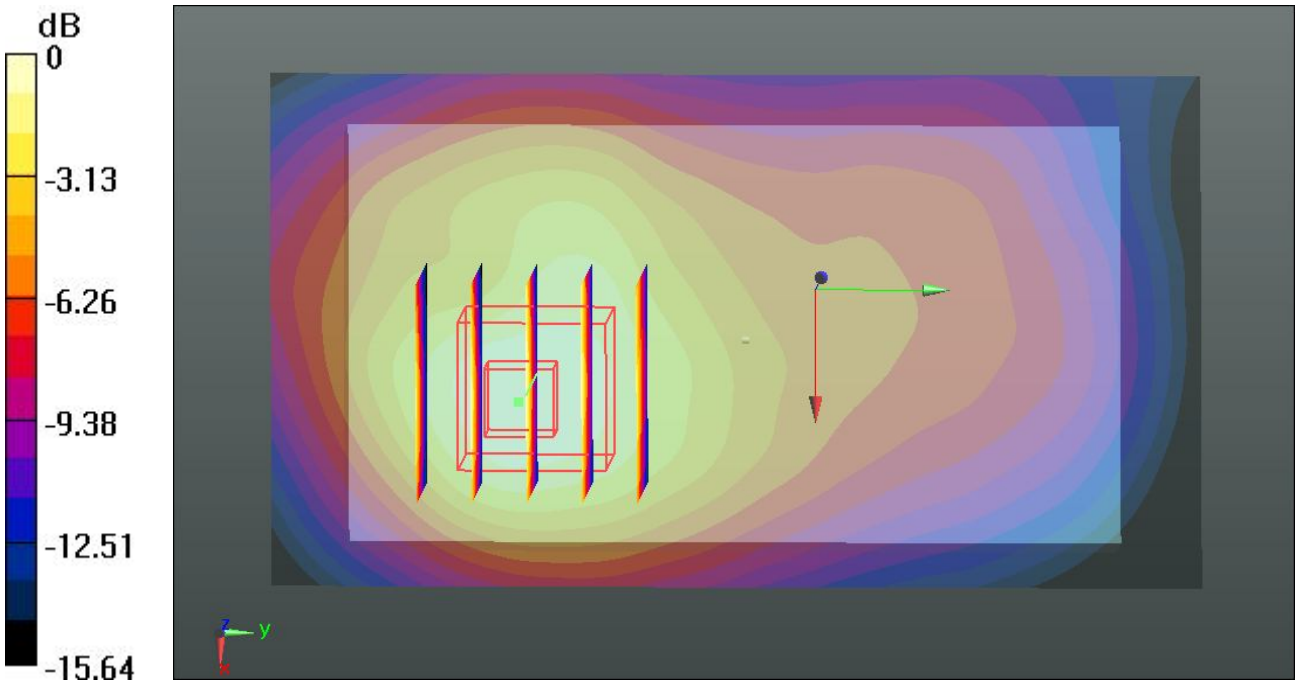
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1880 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1880 MHz; σ = 1.507 mho/m; ε_r = 54.011; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch661/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.451 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.247 mW/g
SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.469 mW/g
Maximum value of SAR (measured) = 1.02 W/kg



0 dB = 1.02 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

44_GSM1900_GPRS(4 Tx slots)_Back_1cm_Ch810_Headset

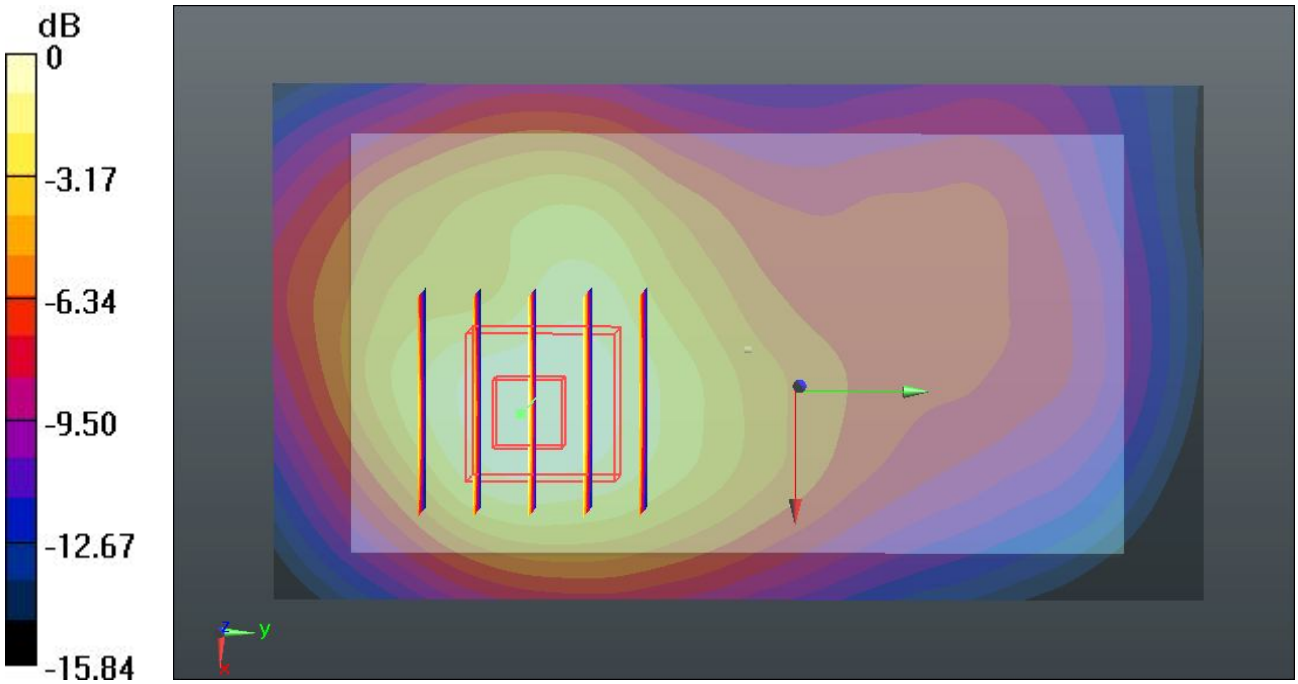
DUT: 2N2401

Communication System: GPRS/EDGE12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121211 Medium parameters used: f = 1910 MHz; σ = 1.537 mho/m; ε_r = 53.954; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch810/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.979 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.686 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.191 mW/g
SAR(1 g) = 0.749 mW/g; SAR(10 g) = 0.449 mW/g
Maximum value of SAR (measured) = 0.979 W/kg



0 dB = 0.979 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

27_WCDMA Band V_RMC 12.2K_Front_1cm_Ch4182

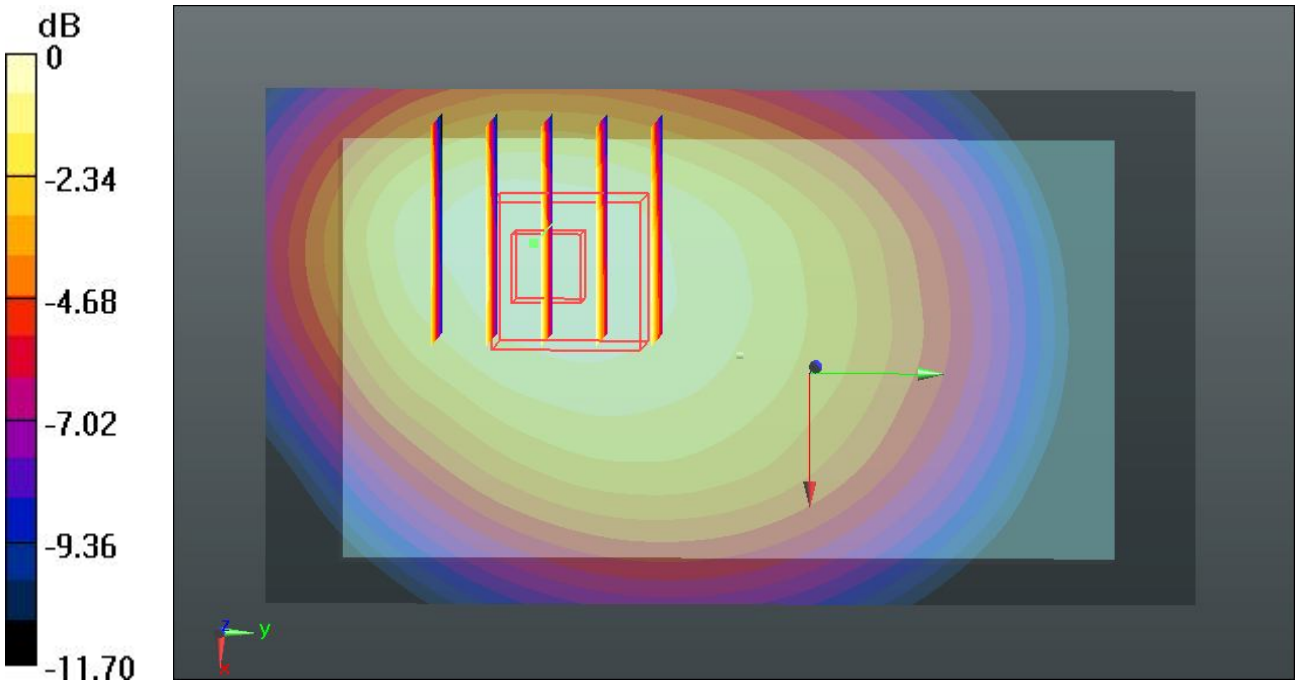
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.833 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.038 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.965 mW/g
SAR(1 g) = 0.706 mW/g; SAR(10 g) = 0.508 mW/g
Maximum value of SAR (measured) = 0.837 W/kg



0 dB = 0.837 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

28_WCDMA Band V_RMC 12.2K_Back_1cm_Ch4182

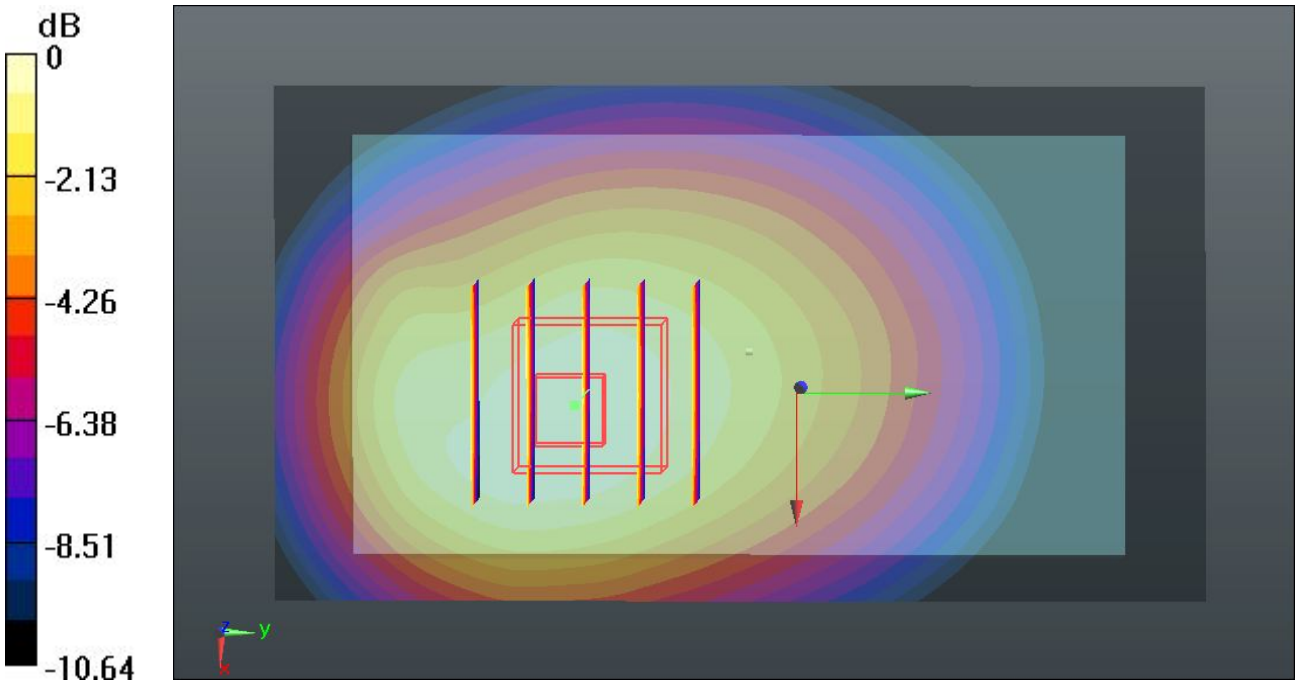
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.905 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.242 mW/g
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.634 mW/g
Maximum value of SAR (measured) = 1.07 W/kg



0 dB = 1.07 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

28_WCDMA Band V_RMC 12.2K_Back_1cm_Ch4182_2D

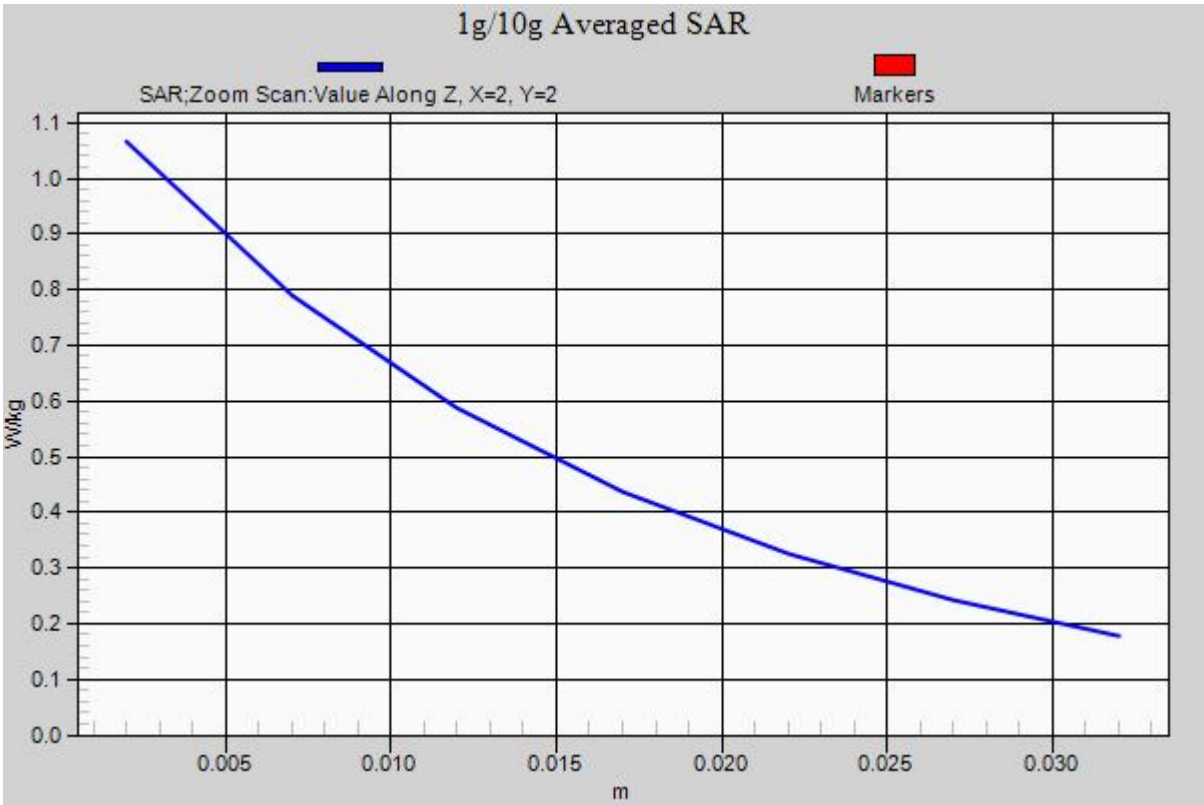
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.905 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.242 mW/g
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.634 mW/g
Maximum value of SAR (measured) = 1.07 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

29_WCDMA Band V_RMC 12.2K_Left Side_1cm_Ch4182

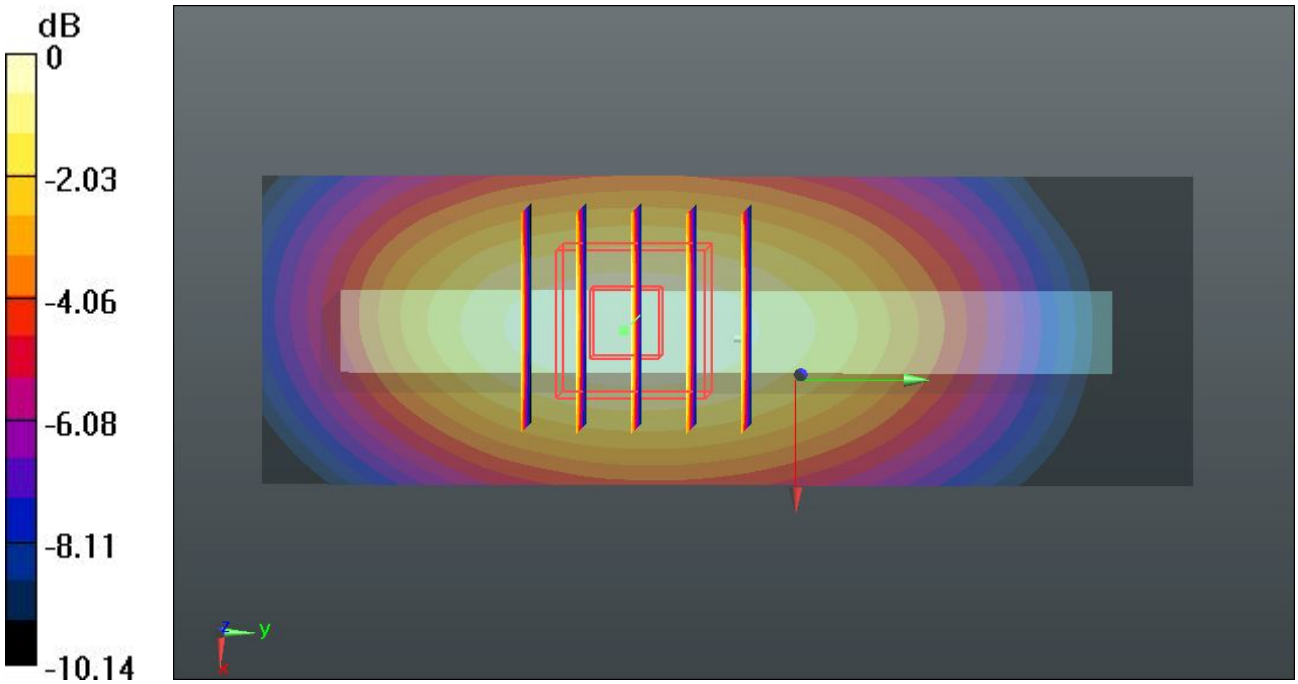
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (31x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.615 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.822 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.716 mW/g
SAR(1 g) = 0.505 mW/g; SAR(10 g) = 0.345 mW/g
Maximum value of SAR (measured) = 0.623 W/kg



0 dB = 0.623 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

30_WCDMA Band V_RMC 12.2K_Right Side_1cm_Ch4182

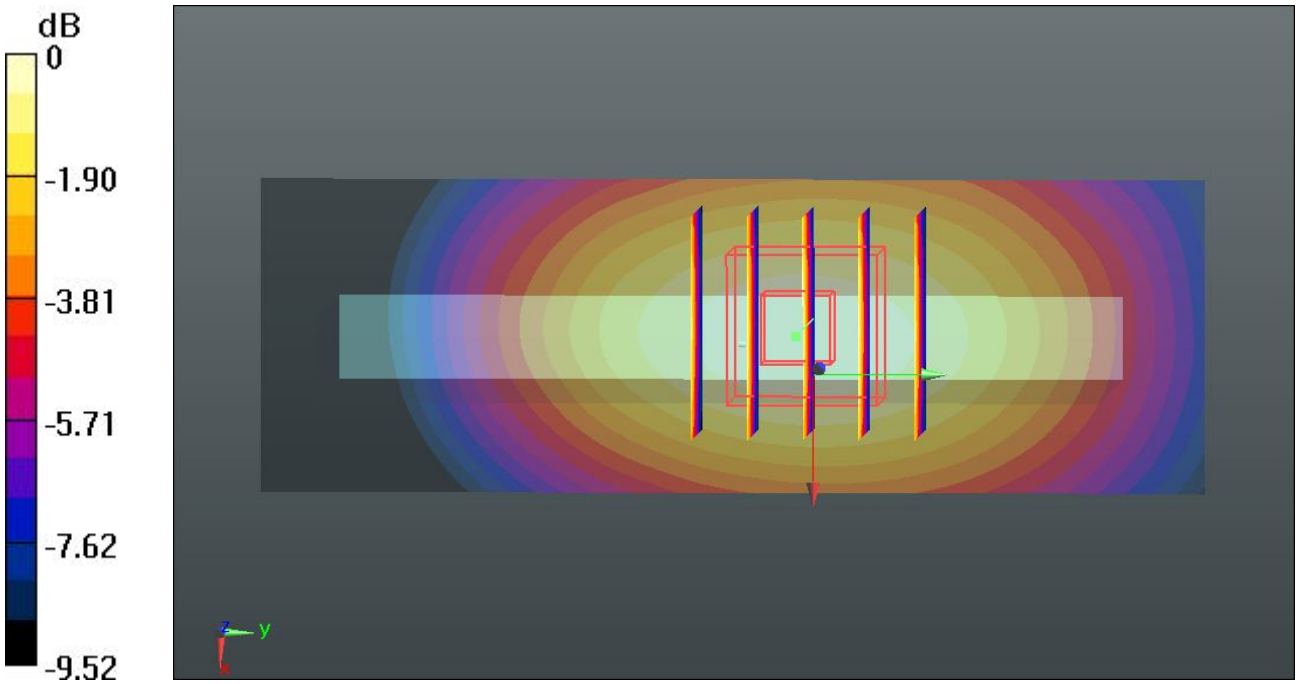
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (31x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.461 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.413 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.536 mW/g
SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.267 mW/g
Maximum value of SAR (measured) = 0.469 W/kg



0 dB = 0.469 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

31_WCDMA Band V_RMC 12.2K_Bottom Side_1cm_Ch4182

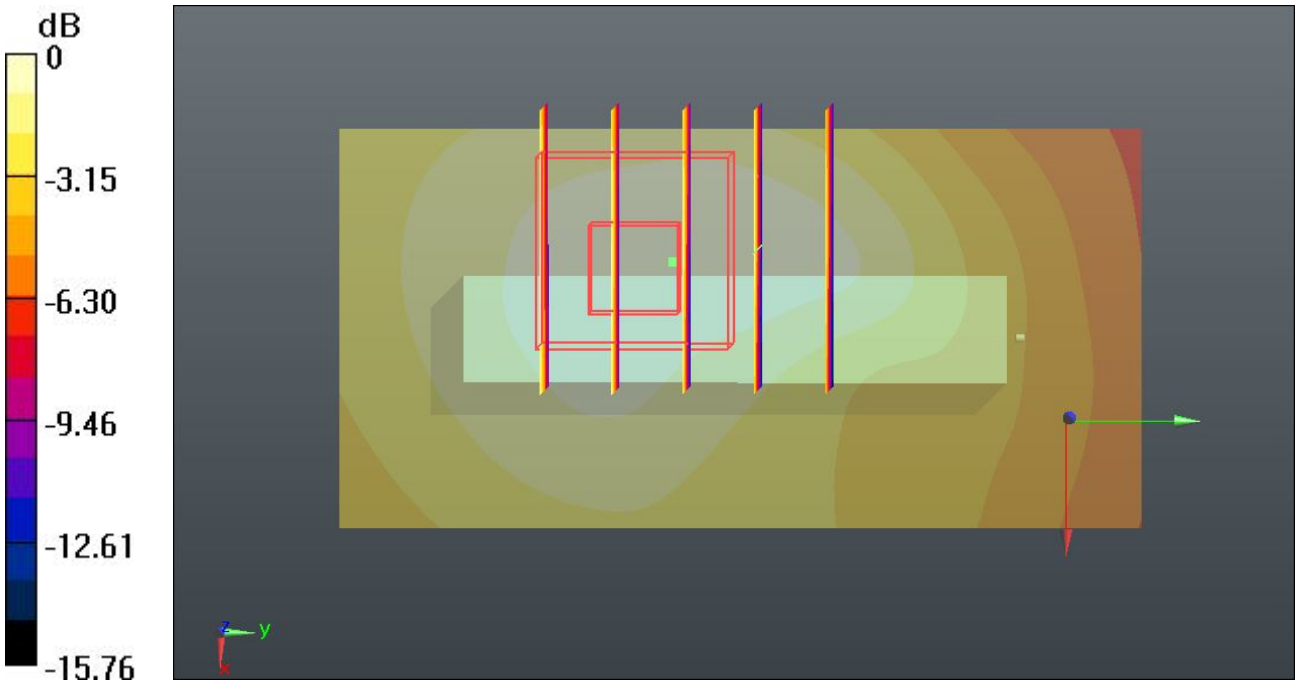
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (31x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.0562 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.850 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.072 mW/g
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.027 mW/g
Maximum value of SAR (measured) = 0.0563 W/kg



0 dB = 0.0563 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

32_WCDMA Band V_RMC 12.2K_Back_1cm_Ch4132

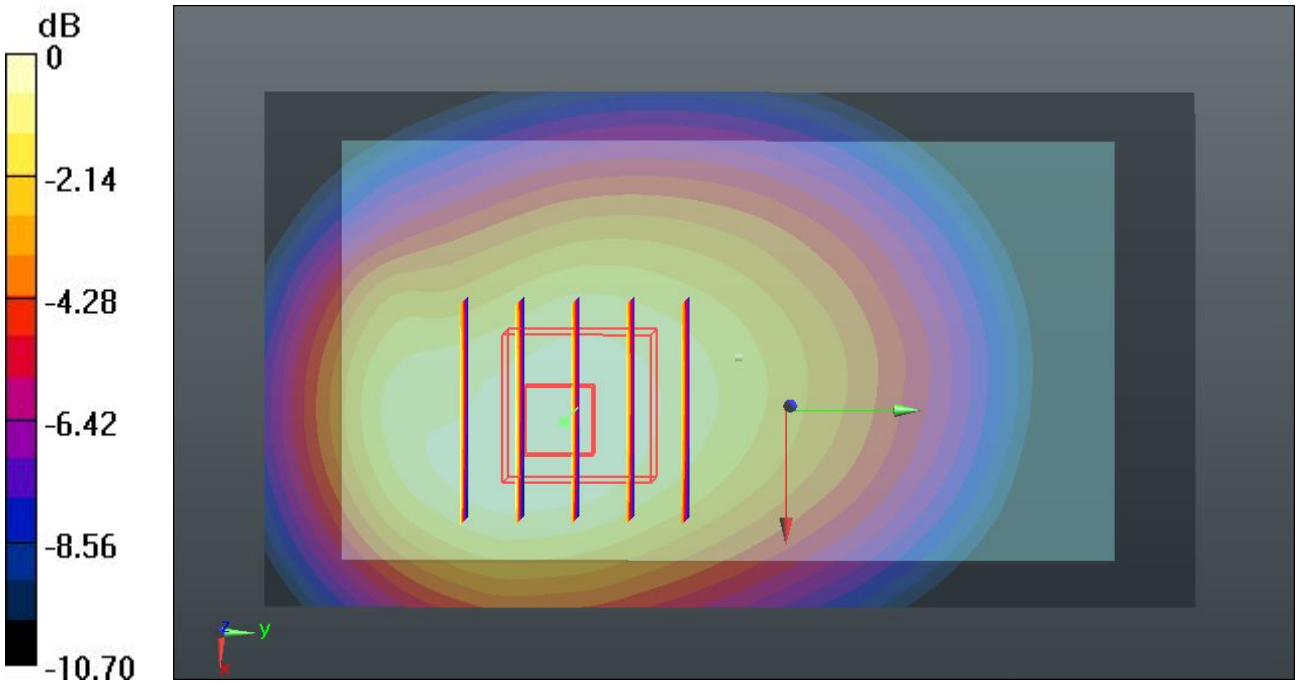
DUT: 2N2401

Communication System: UMTS; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 826.4 MHz; σ = 0.968 mho/m; ε_r = 54.429; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4132/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.936 W/kg

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.955 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.086 mW/g
SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.554 mW/g
Maximum value of SAR (measured) = 0.932 W/kg



0 dB = 0.932 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

33_WCDMA Band V_RMC 12.2K_Back_1cm_Ch4233

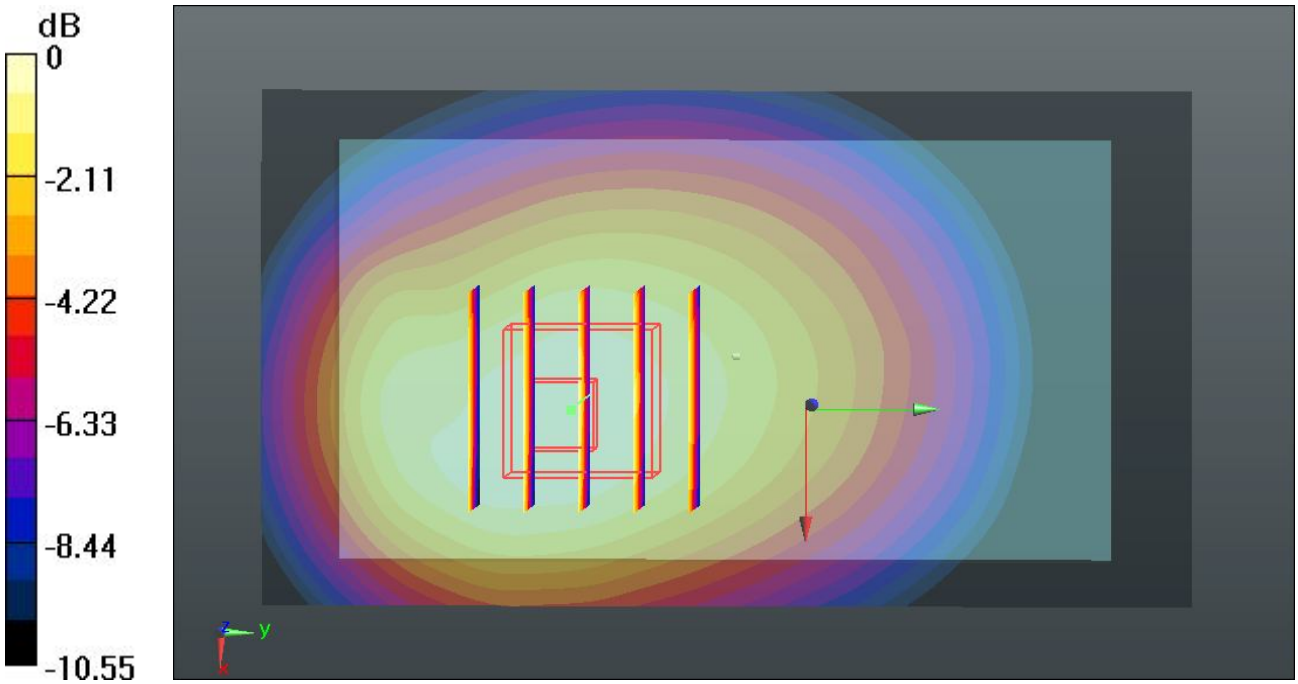
DUT: 2N2401

Communication System: UMTS; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 847 MHz; σ = 0.987 mho/m; ε_r = 54.269; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4233/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.978 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.089 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.123 mW/g
SAR(1 g) = 0.813 mW/g; SAR(10 g) = 0.576 mW/g
Maximum value of SAR (measured) = 0.963 W/kg



0 dB = 0.963 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 10.12.2012

34_WCDMA Band V_RMC 12.2K_Back_1cm_Ch4182_Headset

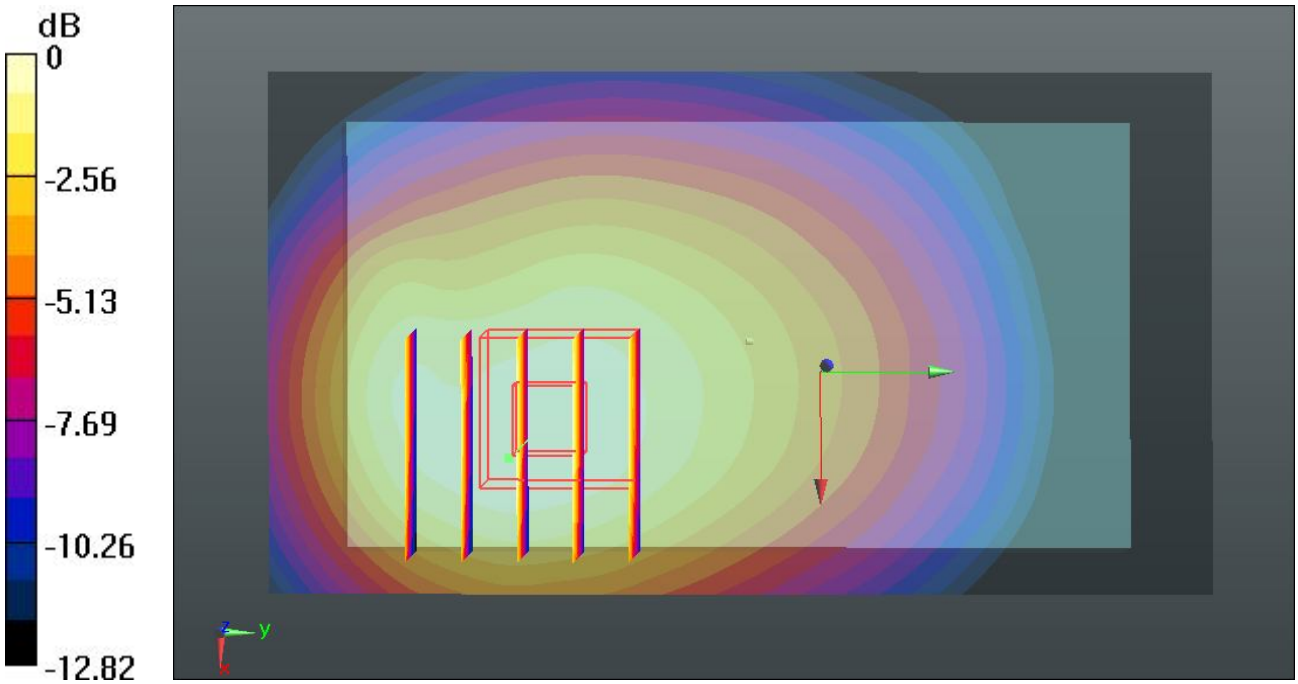
DUT: 2N2401

Communication System: UMTS; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_121210 Medium parameters used: f = 836.4 MHz; σ = 0.978 mho/m; ε_r = 54.357; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(9.64, 9.64, 9.64); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch4182/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.856 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.055 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.011 mW/g
SAR(1 g) = 0.704 mW/g; SAR(10 g) = 0.485 mW/g
Maximum value of SAR (measured) = 0.859 W/kg



0 dB = 0.859 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

45_WCDMA Band II_RMC 12.2K_Front_1cm_Ch9538

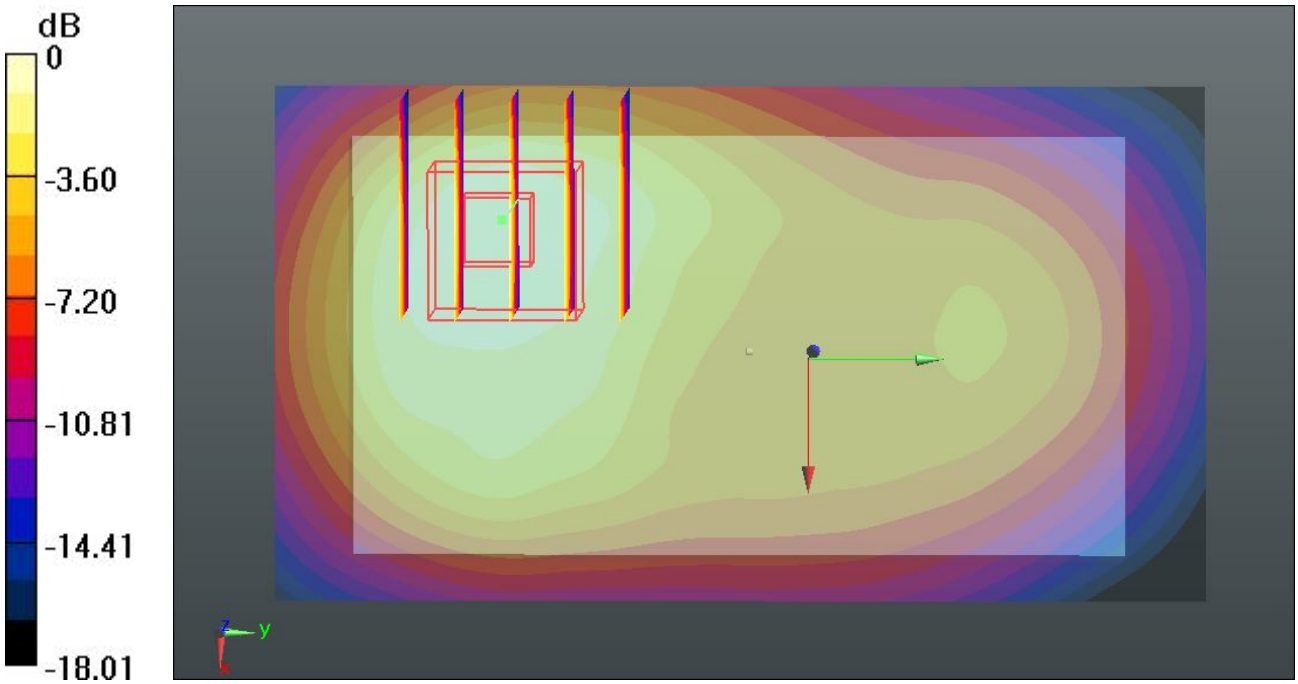
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.909 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.999 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.055 mW/g
SAR(1 g) = 0.642 mW/g; SAR(10 g) = 0.377 mW/g
Maximum value of SAR (measured) = 0.826 W/kg



0 dB = 0.826 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

46_WCDMA Band II_RMC 12.2K_Back_1cm_Ch9538

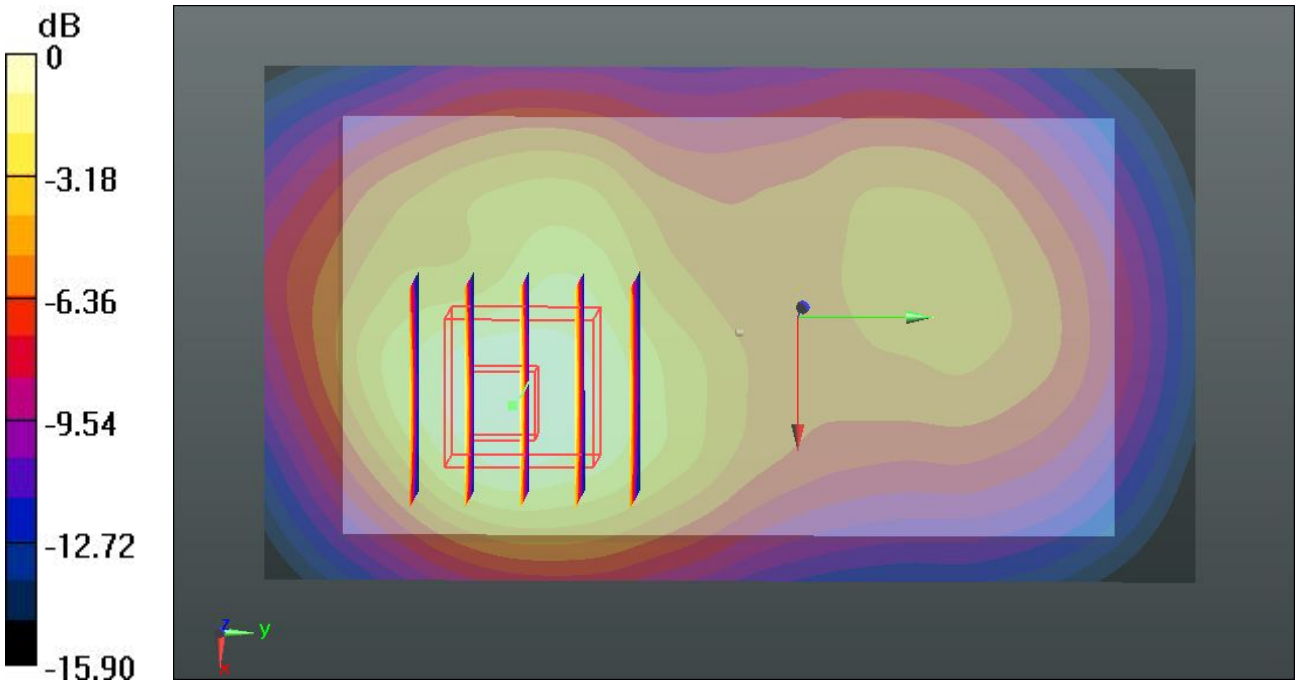
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.876 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.115 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.053 mW/g
SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.383 mW/g
Maximum value of SAR (measured) = 0.846 W/kg



0 dB = 0.846 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

46_WCDMA Band II_RMC 12.2K_Back_1cm_Ch9538_2D

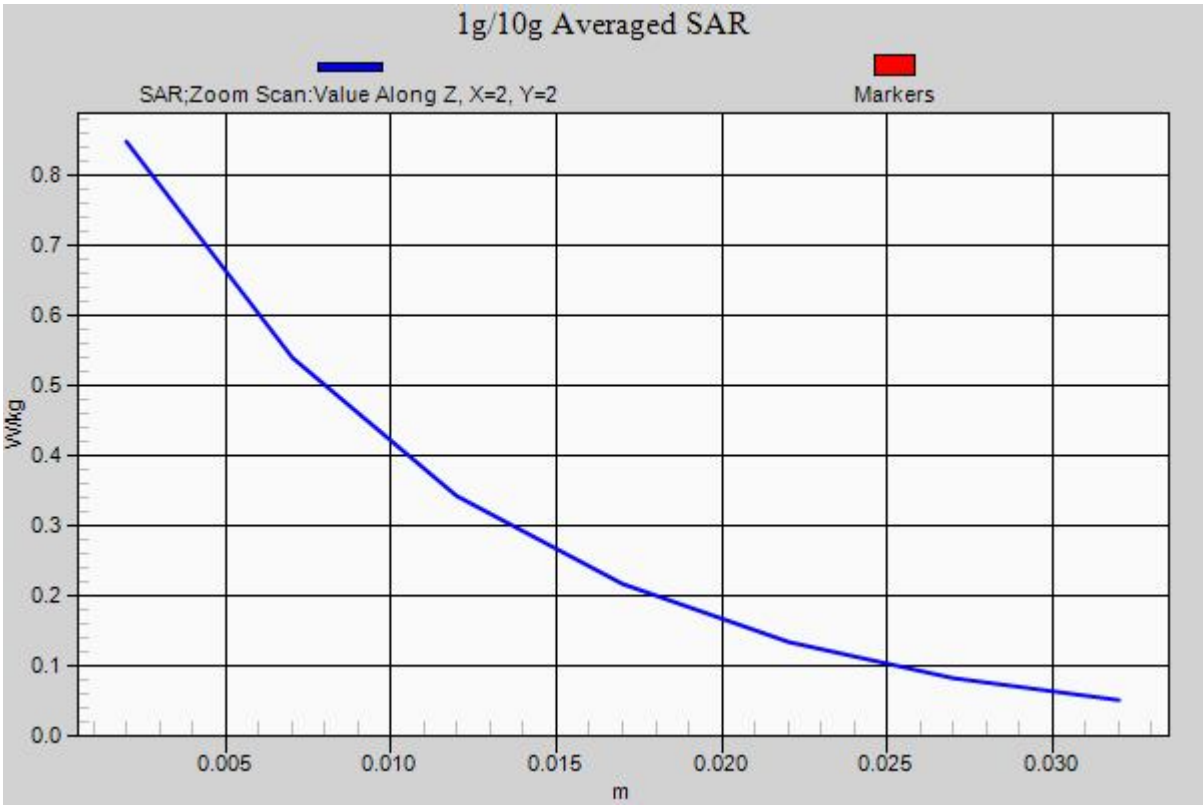
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.876 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.115 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.053 mW/g
SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.383 mW/g
Maximum value of SAR (measured) = 0.846 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

47_WCDMA Band II_RMC 12.2K_Left Side_1cm_Ch9538

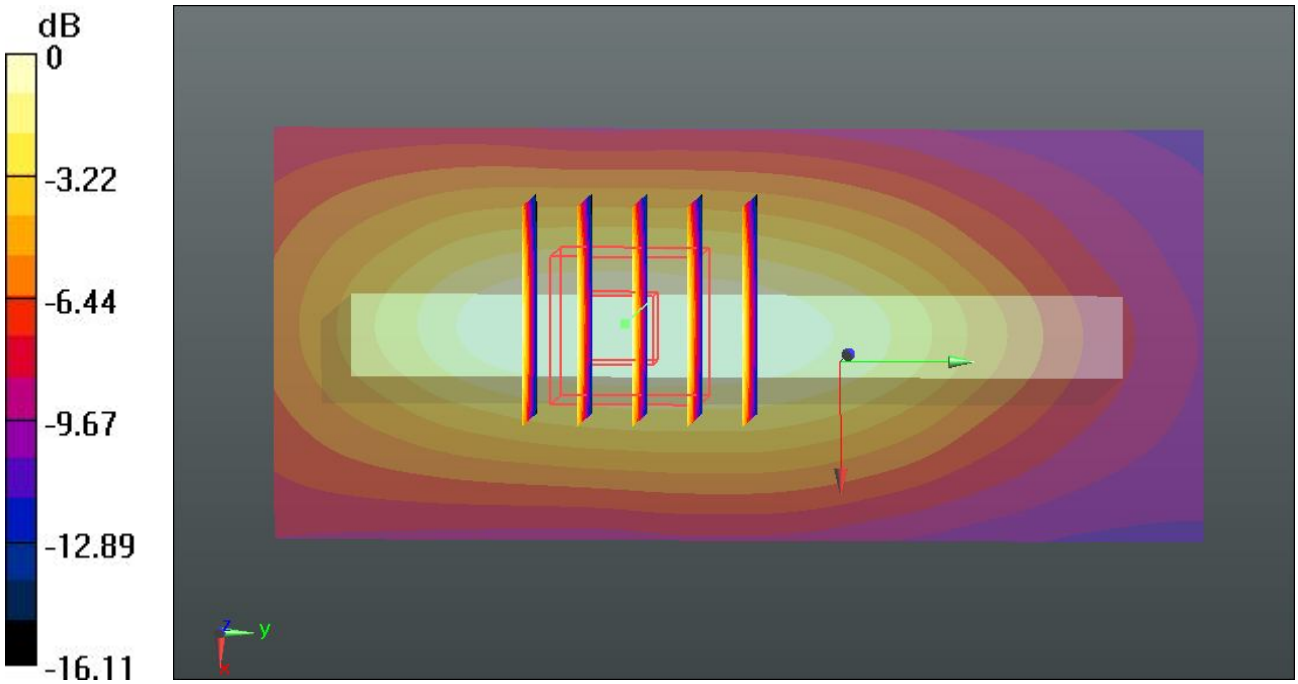
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (41x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.308 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.117 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.355 mW/g
SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.135 mW/g
Maximum value of SAR (measured) = 0.291 W/kg



0 dB = 0.291 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

48_WCDMA Band II_RMC 12.2K_Right Side_1cm_Ch9538

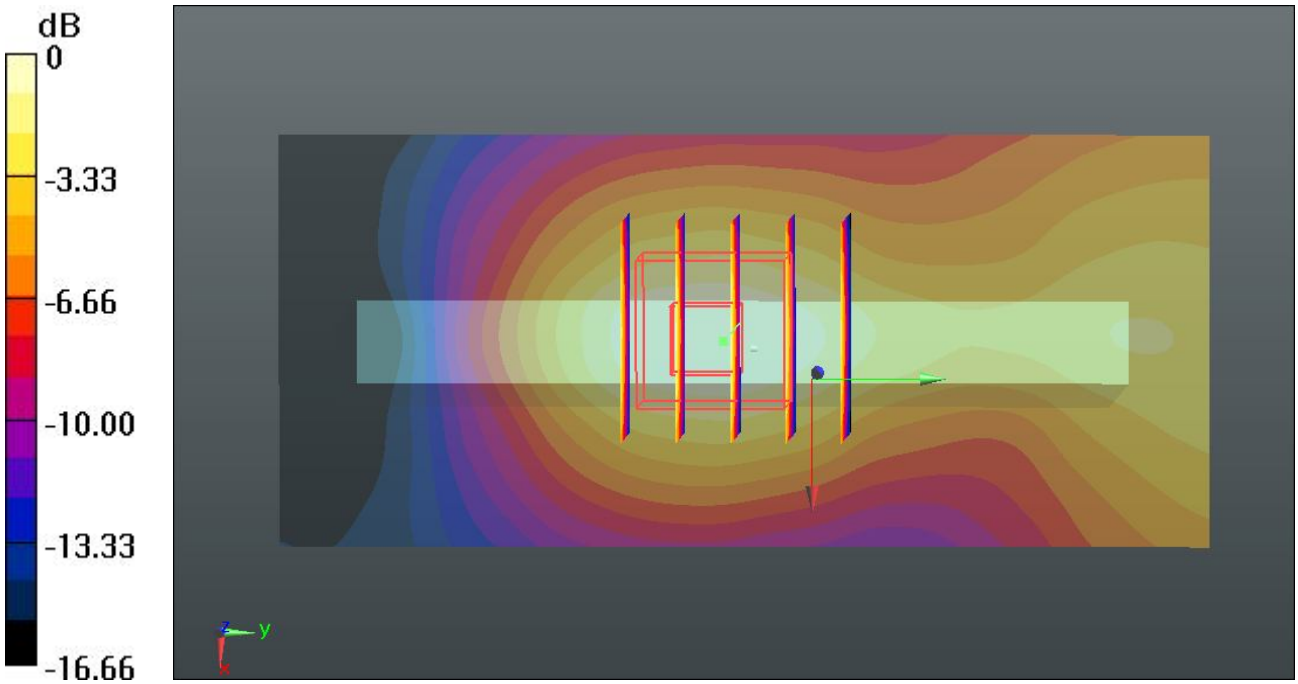
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (41x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.173 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.731 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.208 mW/g
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.169 W/kg



0 dB = 0.169 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

49_WCDMA Band II_RMC 12.2K_Bottom Side_1cm_Ch9538

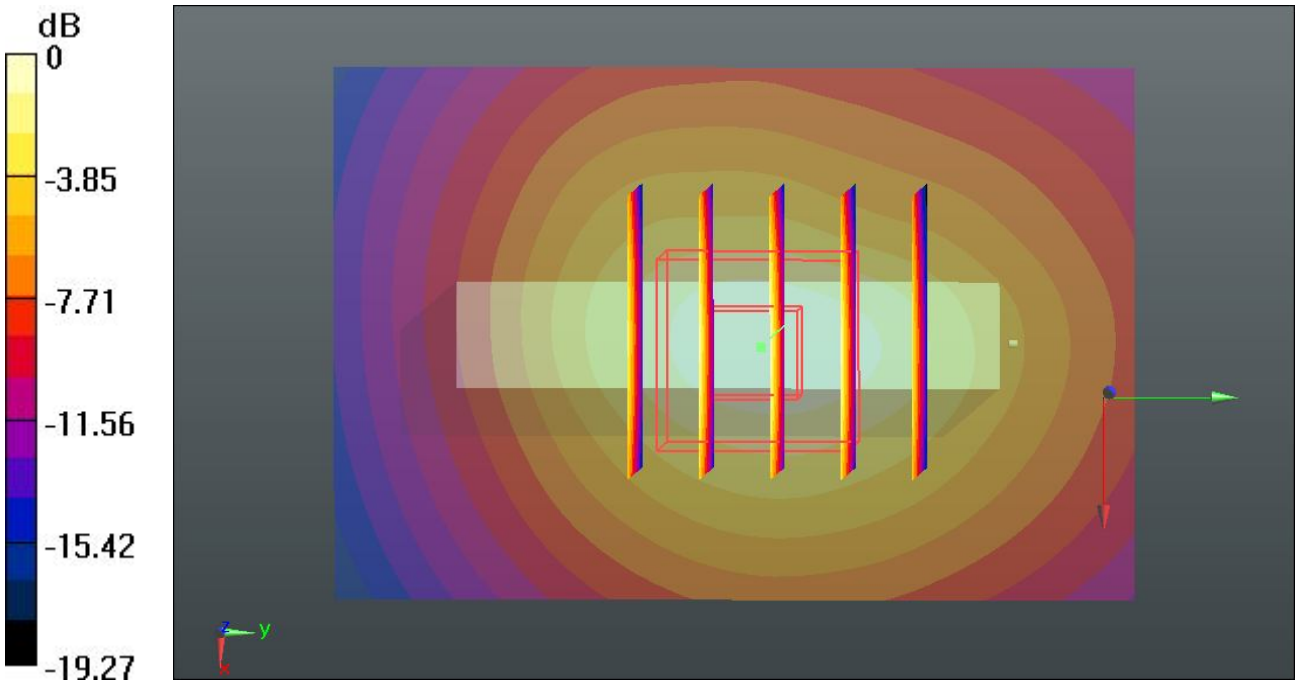
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (41x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.463 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.806 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.554 mW/g
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.195 mW/g
Maximum value of SAR (measured) = 0.459 W/kg



0 dB = 0.459 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 11.12.2012

50_WCDMA Band II_RMC 12.2K_Back_1cm_Ch9538_Headset

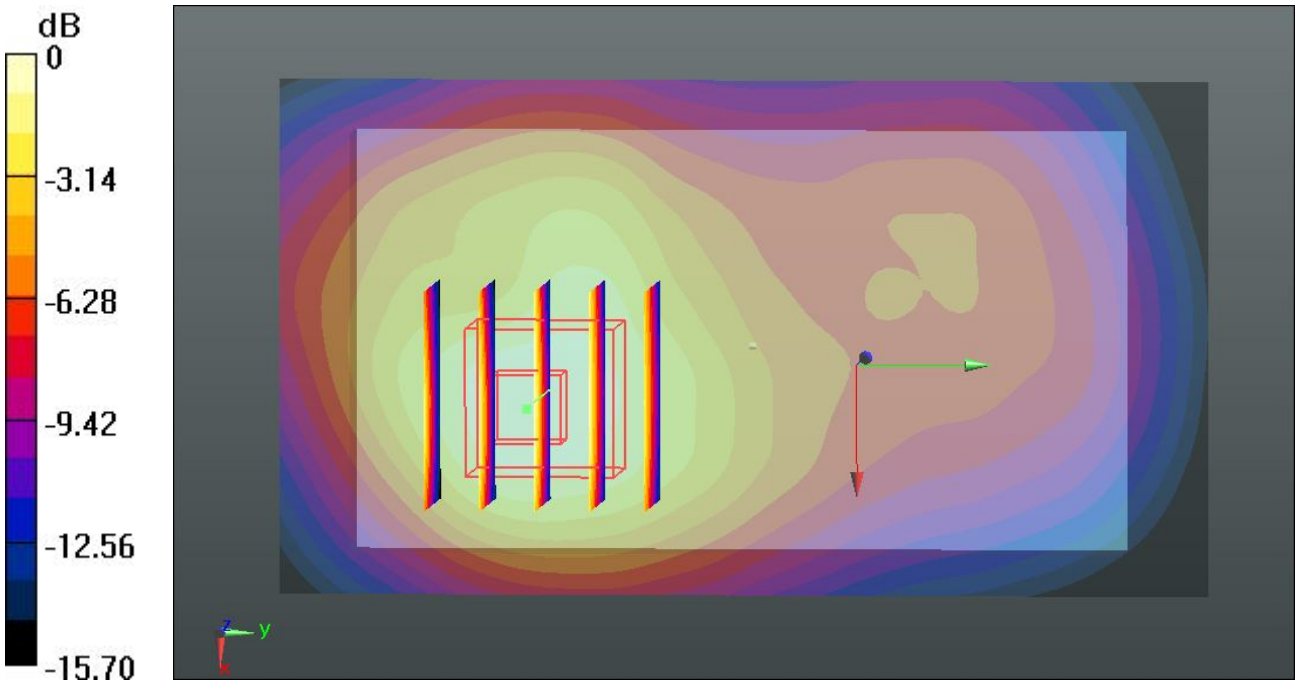
DUT: 2N2401

Communication System: UMTS; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121211 Medium parameters used: f = 1908 MHz; σ = 1.535 mho/m; ε_r = 53.96; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.89, 7.89, 7.89); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch9538/Area Scan (51x91x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.818 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.554 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.006 mW/g
SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.814 W/kg



0 dB = 0.814 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

59_WLAN2.4G_802.11b_Front_1cm_Ch11

DUT: 2N2401

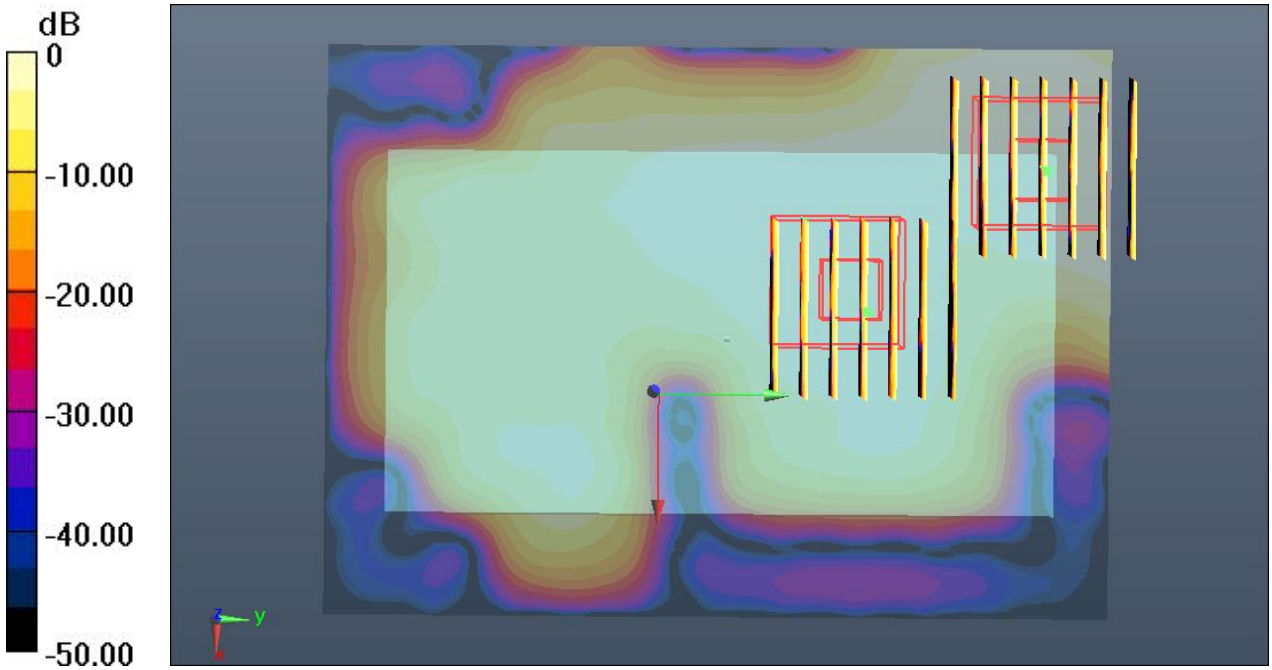
Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (81x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.0577 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.597 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.083 mW/g
SAR(1 g) = 0.040 mW/g; SAR(10 g) = 0.019 mW/g
Maximum value of SAR (measured) = 0.0597 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.597 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.055 mW/g
SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.015 mW/g
Maximum value of SAR (measured) = 0.0419 W/kg



0 dB = 0.0419 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

60_WLAN2.4G_802.11b_Back_1cm_Ch11

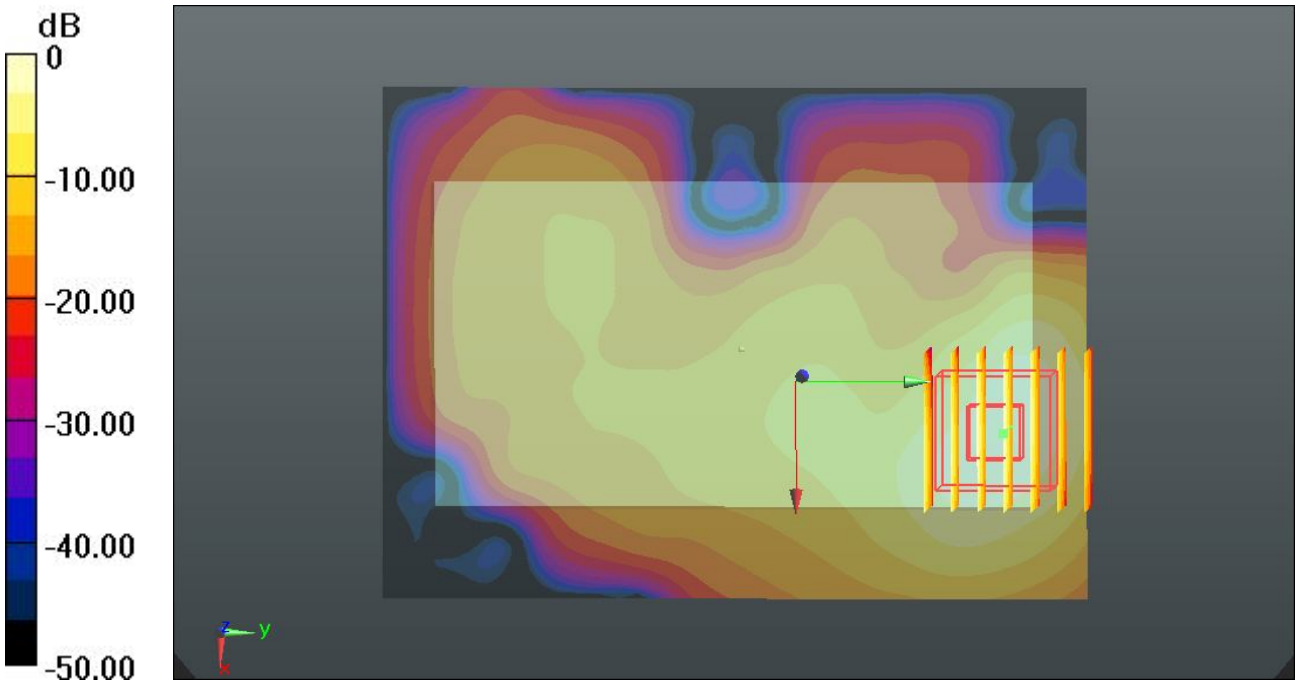
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (81x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.487 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.840 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.674 mW/g
SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.153 mW/g
Maximum value of SAR (measured) = 0.488 W/kg



0 dB = 0.488 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

60_WLAN2.4G_802.11b_Back_1cm_Ch11_2D

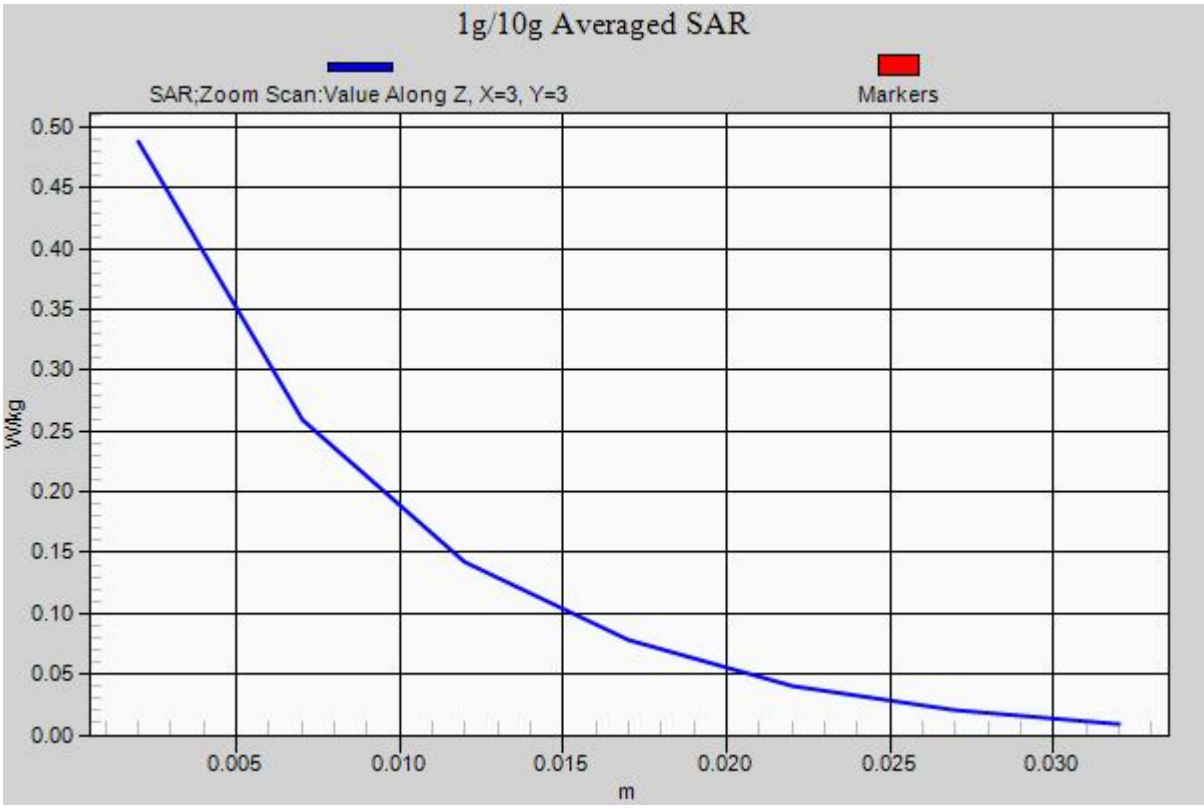
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (81x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.487 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.840 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.674 mW/g
SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.153 mW/g
Maximum value of SAR (measured) = 0.488 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

61_WLAN2.4G_802.11b_Left Side_1cm_Ch11

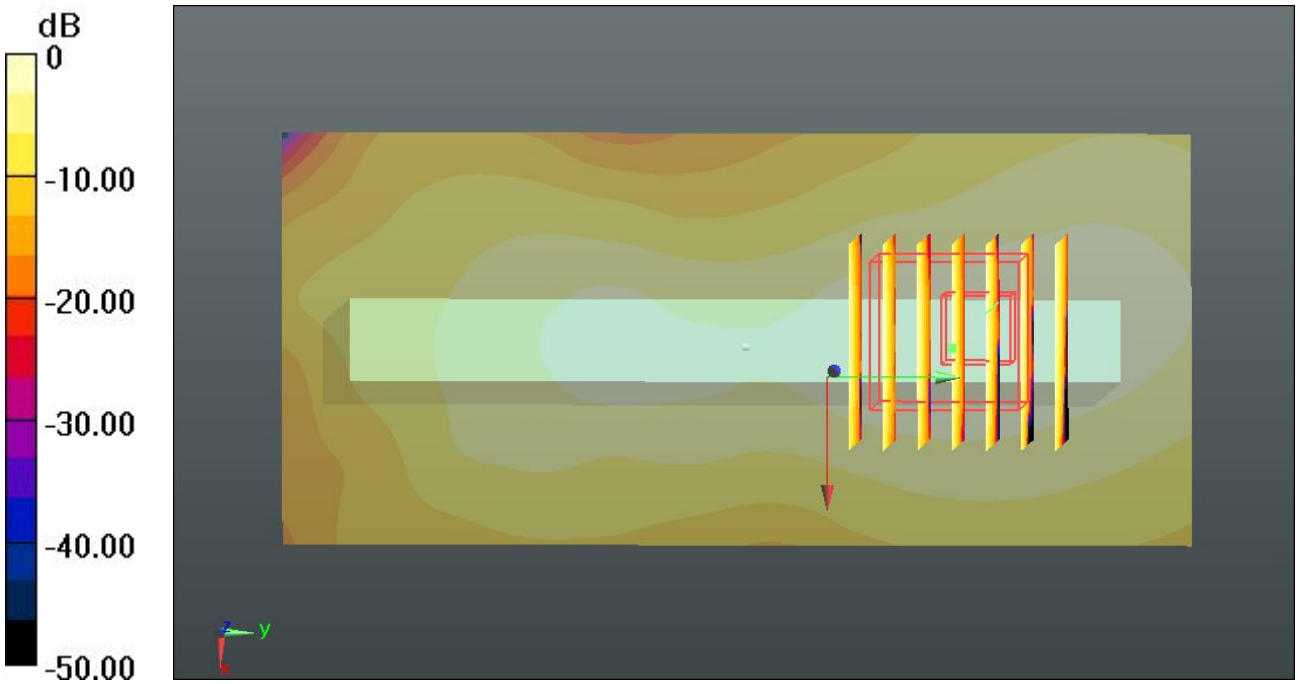
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (51x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.107 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.005 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.142 mW/g
SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.035 mW/g
Maximum value of SAR (measured) = 0.103 W/kg



0 dB = 0.103 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

62_WLAN2.4G_802.11b_Right Side_1cm_Ch11

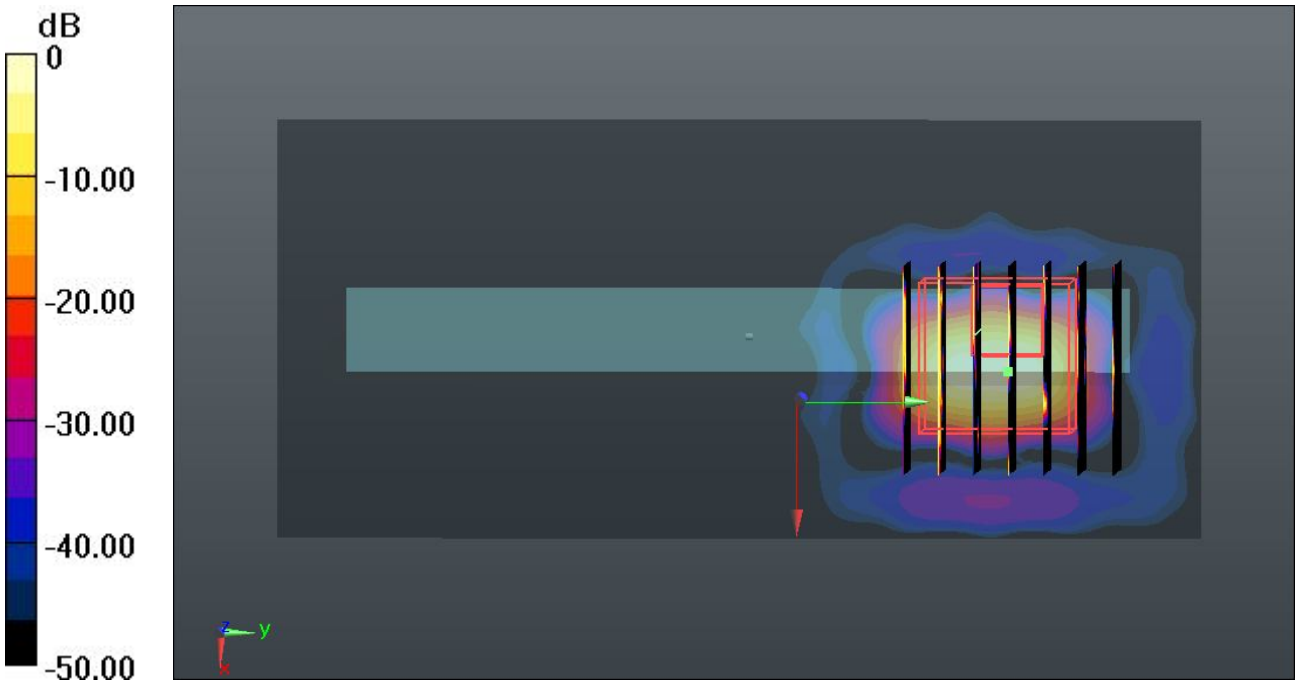
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (51x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.00302 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.176 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.00911 mW/g
SAR(1 g) = 0.000223 mW/g; SAR(10 g) = 3.08e-005 mW/g
Maximum value of SAR (measured) = 0.00350 W/kg



0 dB = 0.00350 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 12.12.2012

63_WLAN2.4G_802.11b_Top Side_1cm_Ch11

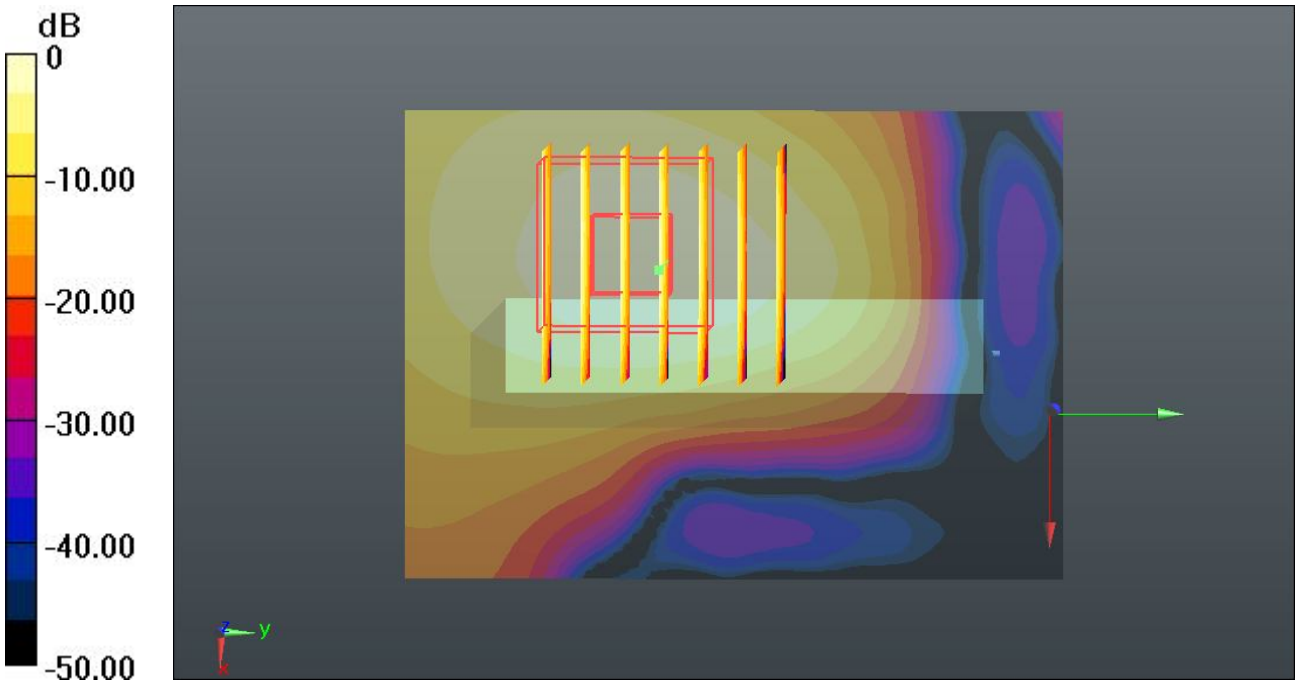
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (51x71x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.304 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.043 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.390 mW/g
SAR(1 g) = 0.198 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.283 W/kg



0 dB = 0.283 W/kg

64_WLAN2.4G_802.11b_Back_1cm_Ch11_Headset

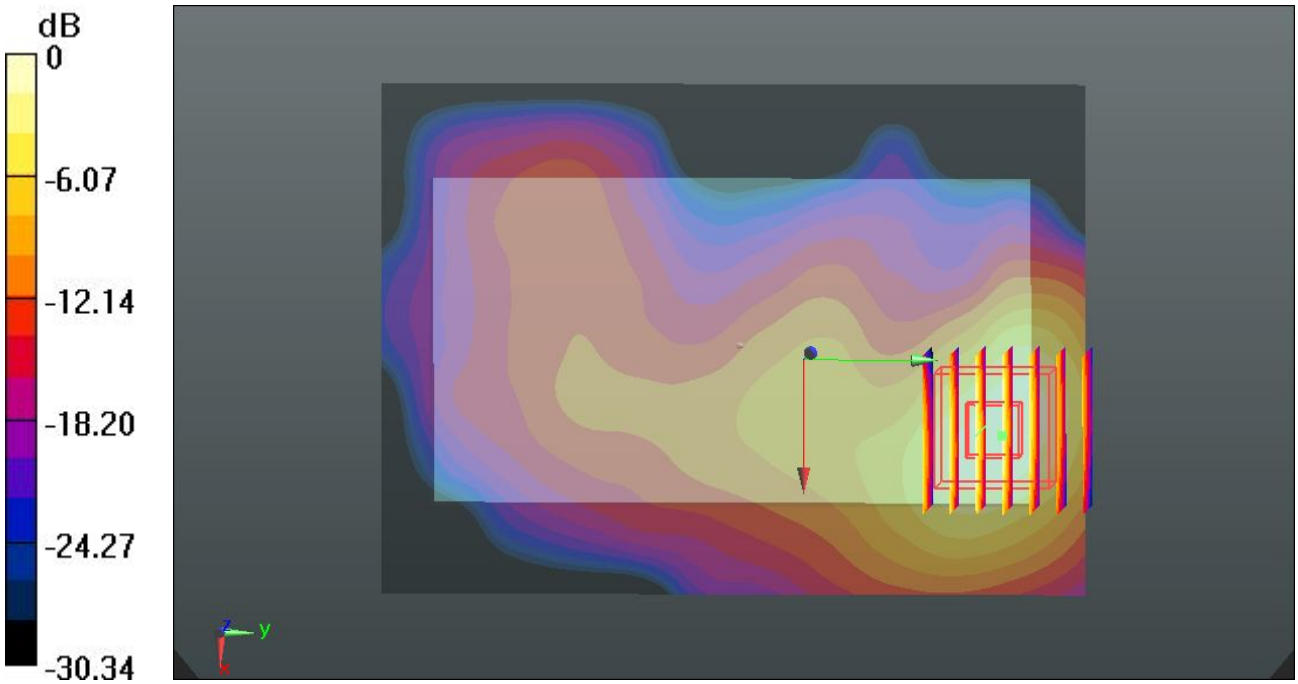
DUT: 2N2401

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1.11
Medium: MSL_2450_121212 Medium parameters used: f = 2462 MHz; σ = 1.977 mho/m; ε_r = 53.795; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3661; ConvF(7.5, 7.5, 7.5); Calibrated: 27.01.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn905; Calibrated: 21.06.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch11/Area Scan (81x111x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.440 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.051 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.613 mW/g
SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.440 W/kg



0 dB = 0.440 W/kg