# SAR Test Report

| | | |
|---|---|---|
| APPLICANT | : | Sony Mobile Communications AB |
| EQUIPMENT | : | Smart phone |
| BRAND NAME | : | Sony |
| MODEL NAME | : | PM-0261-BV |
| MARKETING NAME | : | C1604 |
| FCC ID | : | PY7PM-0261 |
| IC | : | 4170B-PM0261 |
| STANDARD | : | FCC 47 CFR Part 2 (2.1093)<br>ANSI/IEEE C95.1-1992<br>IEEE 1528-2003<br>FCC OET Bulletin 65 Supplement C (Edition 01-01)<br>IC RSS-102 Issue 4 (2010)<br>IEC 62209-2 (2010) |

**The product was completely tested on Oct. 31, 2012. We, SPORTON INTERNATIONAL 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 INC., the test report shall not be reproduced except in full.**

**Reviewed by:**

Jones Tsai

**Jones Tsai / Manager**

Testing Laboratory 1190

***SPORTON INTERNATIONAL INC.***
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# Revision History

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FA290405 | Rev. 01 | Initial issue of report | Nov. 09, 2012 |
| FA290405 | Rev. 02 | Updated report for adding Scaled SAR value in the section 12.5. | Nov. 21, 2012 |
| FA290405 | Rev. 03 | Removed battery picture | Nov. 26, 2012 |
| FA290405 | Rev. 04 | Updated IC ID | Nov. 27, 2012 |
| FA290405 | Rev. 05 | 1. In section 11, the base station simulator used for measurement was added.<br>2. In page 38 and 39, the symbol "V" was added into the tablet to indicate headset plugged<br>3. In section 12, the modulation information was inserted in the SAR measurement data table.<br>4. Updated the zoom-scan procedure in page 26 to include 2nd peak zoom-scan procedure. | Dec. 11, 2012 |
| FA290405 | Rev. 06 | 1. Revised the SAR table and a statement in the section 1.<br>2. Revised the name of RMC12.2Kbps and added modulation type in section 12.<br>3. Removed the section 12.5.<br>4. Add description for DTM mode measurement in page 30 and 31 | Dec. 13, 2012 |
| FA290405 | Rev. 07 | 1. Modify the Body-worn test gap to 1.5cm gap<br>2. Address the test reduction used for normal voice call and DTM multi-slot by the test lab and their rational that address the FCC KDB.<br>3. Clarify the head hotspot is not required. | Dec. 14, 2012 |
| | | | |
| | | | |
| | | | |
| | | | |

# 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Sony Mobile Communications AB Smart phone, Sony, PM-0261-BV, C1604** are as follows.

<Standalone SAR>

| Technology Mode/Band | Configuration | Channel Number | Mode | Measured output power [dBm] | Maximum Rated Power Including Tolerance [dBm] | Measured SAR(W/kg) | Scaled-up SAR(W/kg) |
|---|---|---|---|---|---|---|---|
| | | | | | | 1g mass | 1g mass |
| GSM850 | Head | 251 | Data / Voice | 33.72 | 34 | 1.08 | 1.15 |
| | Hotspot(1cm gap) | 189 | Data | 33.82 | 34 | 1.24 | 1.29 |
| | Body-worn(1.5cm gap) | 189 | Voice | 33.80 | 34 | 0.66 | 0.69 |
| | | | | | | | |
| PCS1900 | Head | 810 | Data / Voice | 28.4 | 28.98 | 0.79 | 0.91 |
| | Hotspot(1cm gap) | 810 | Data | 25.5 | 26 | 0.90 | 1.01 |
| | Body-worn(1.5cm gap) | 810 | Voice | 28.4 | 28.98 | 0.55 | 0.63 |
| | | | | | | | |
| WCDMA FDD V | Head | 4233 | Voice(RMC) | 24.83 | 25 | 0.98 | 1.02 |
| | Hotspot(1cm gap) | 4233 | Data(RMC) | 24.83 | 25 | 1.32 | 1.37 |
| | Body-worn(1.5cm gap) | 4233 | Voice(RMC) | 24.83 | 25 | 0.69 | 0.72 |
| | | | | | | | |
| WCDMA FDD II | Head | 9400 | Voice(RMC) | 23.46 | 23.5 | 1.11 | 1.12 |
| | Hotspot(1cm gap) | 9538 | Data(RMC) | 23.42 | 23.5 | 1.34 | 1.37 |
| | Body-worn(1.5cm gap) | 9400 | Voice(RMC) | 23.46 | 23.5 | 0.78 | 0.79 |
| | | | | | | | |
| WiFi 802.11b | Head | 6 | Data | 15.59 | 16 | 0.16 | 0.18 |
| | Hotspot(1cm gap) | 6 | Data | 15.59 | 16 | 0.06 | 0.06 |
| | Body-worn(1.5cm gap) | 6 | Data | 15.59 | 16 | 0.03 | 0.04 |

<Simultaneous transmission SAR>

| | WWAN SAR | | | Scale WWAN SAR | | | | WLANSAR | | Scale WLAN SAR | | | | Sum | Sum(Scaled) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Position | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Average Power (dBm) | Tune-up Limit (dBm) | Scaling Factor | Scaled WWAN (W/kg) | Plot No | Max. WLAN SAR (W/kg) | Average Power (dBm) | Tune-up Limit (dBm) | Scaling Factor | Scaled WWAN (W/kg) | WWANSAR + WLAN SAR | WWANSAR + WLANSAR |
| Back | GSM850 | 54 | 1.24 | 33.82 | 34 | 1.042 | 1.292 | 84 | 0.058 | 15.59 | 16 | 1.099 | 0.064 | 1.30 | 1.36 |
| | GSM1900 | 45 | 0.899 | 25.50 | 26 | 1.122 | 1.009 | 84 | 0.058 | 15.59 | 16 | 1.099 | 0.064 | 0.96 | 1.07 |
| | WCDMA Band V | 75 | 1.29 | 24.62 | 25 | 1.091 | 1.408 | 84 | 0.058 | 15.59 | 16 | 1.099 | 0.064 | 1.35 | 1.47 |
| | WCDMA Band II | 33 | 1.34 | 23.42 | 23.5 | 1.019 | 1.365 | 84 | 0.058 | 15.59 | 16 | 1.099 | 0.064 | 1.40 | 1.43 |

**Note:**

"Simultaneous transmission was not evaluated as the sum of the individual SAR for WWAN including DTM mode and WLAN was < 1.6 W/kg. This meets the requirements and simultaneous transmission exclusion specified in FCC KDB publication "648474 D01 - SAR Handsets Multi Xmiter and Ant, v01r05" ".

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in IC RSS-102 Issue 4 (2010), 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 INC. |
| **Test Site Location** | No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,<br>Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |

## 2.2 Applicant

| | |
|---|---|
| **Company Name** | Sony Mobile Communications AB |
| **Address** | Nya Vattentornet, 22188 Lund, Sweden |

## 2.3 Manufacturer

| | |
|---|---|
| **Company Name** | Arima Communications Corp. |
| **Address** | 6F., No. 866, Jhongjheng Rd., Jhonghe City, Taipei County 23586, Taiwan |

## 2.4 Application Details

| | |
|---|---|
| **Date of Start during the Test** | Oct. 29, 2012 |
| **Date of End during the Test** | Oct. 31, 2012 |

# 3. General Information

## 3.1 Description of Equipment Under Test (EUT)

| Product Feature & Specification | |
|---|---|
| **EUT** | Smart phone |
| **Brand Name** | Sony |
| **Model Name** | PM-0261-BV |
| **Marketing Name** | C1604 |
| **FCC ID** | PY7PM-0261 |
| **IC** | 4170B-PM0261 |
| **EUT Serial No** | WUJ012D9H4 |
| **IMEI Code** | 004402146214212 |
| **Tx Frequency** | GSM850: 824.2 MHz ~ 848.8 MHz<br>GSM1900: 1850.2 MHz ~ 1909.8 MHz<br>WCDMA Band V: 826.4 MHz ~ 846.6 MHz<br>WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz<br>WLAN2.4G: 2412 MHz ~ 2462 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz |
| **Measure Maximum Average Output Power to Antenna** | GSM850: 33.82 dBm<br>GSM1900: 30.83 dBm<br>WCDMA Band V: 24.83 dBm<br>WCDMA Band II: 23.46 dBm<br>802.11b: 15.59 dBm<br>802.11g: 15.10 dBm<br>802.11n-HT20 (2.4GHz) : 12.71 dBm<br>Bluetooth: 5.65 dBm |
| **Antenna Type** | WWAN: PIFA Antenna<br>WLAN: PIFA Antenna<br>Bluetooth: PIFA Antenna |
| **HW Version** | AP |
| **SW Version** | 11.1.A.0.21 |
| **Uplink Modulations** | GSM: GMSK<br>GPRS: GMSK<br>EDGE: GMSK / 8PSK<br>WCDMA (Rel 99): QPSK<br>HSDPA (Rel 6): QPSK<br>HSUPA (Rel 6): QPSK<br>802.11b: DSSS (DBPSK / QPSK / CCK)<br>802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>Bluetooth : GFSK<br>Bluetooth EDR : π/4-DQPSK, 8-DPSK |
| **Dual Transfer Mode (DTM) Category** | Class A – EUT can support Packet Switched and Circuit Switched Network simultaneously. |
| **EUT Stage** | Production Unit |
| **Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description. | |

Per KDB 941225 D04 requirement, the required test configuration for this device is as below:

1. This EUT is class A device
2. This EUT supports (E)GPRS multi-slot class 12 (max. uplink : 4, max. downlink : 4, total timeslots : 5)
3. This EUT supports DTM multi-slot class 11 (max. uplink : 3 for 1 CS & 2 PS, max. downlink : 4, total timeslots : 5)
4. The measured maximum conducted power can be referred to section 10.2 of this report
5. For DTM multi-slot class 11 link mode, the device was linked with system emulator (Agilent E5515C) and transmit maximum power on maximum number of Tx slots (one CS timeslot and two PS timeslots per frame).

## 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
- IC RSS-102 Issue 4 (2010)
- IEC 62209-2 (2010)
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
- FCC KDB 447498 D01 v04
- FCC KDB 648474 D01 v01r05
- FCC KDB 941225 D03 v01
- FCC KDB 941225 D04 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

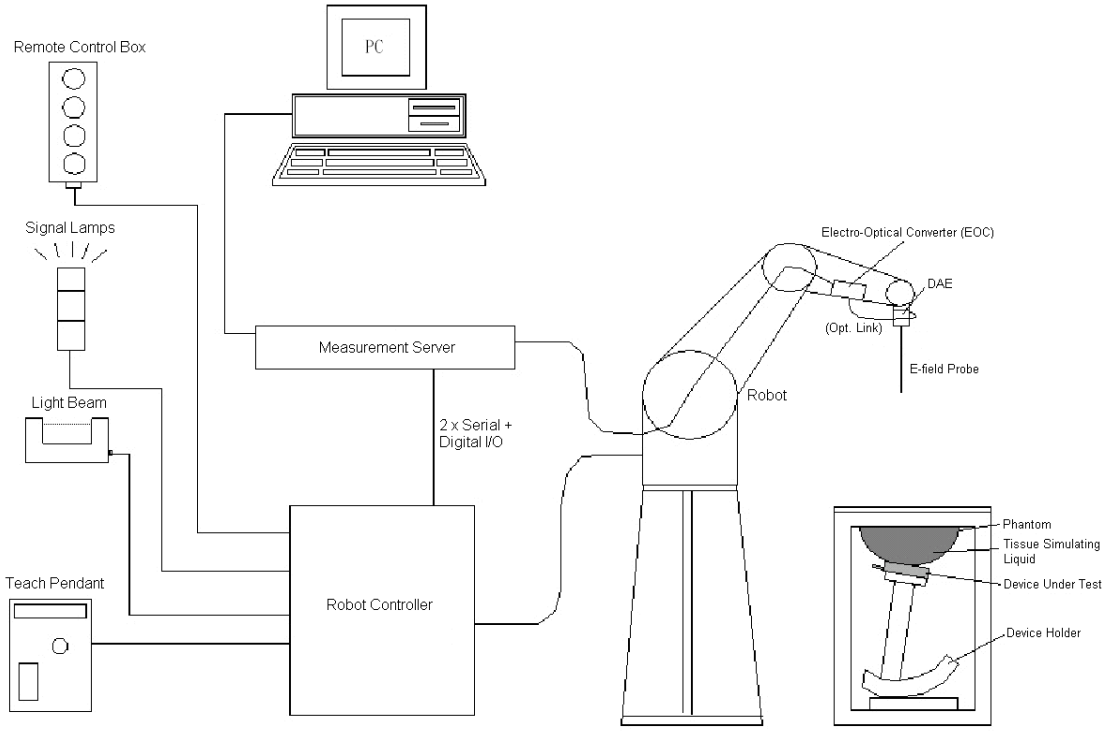



**Fig 5.1 SPEAG DASY System Configurations**

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 / ES3DV4 Probe>**

| | |
|---|---|
| **Construction** | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>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)<br>± 0.5 dB in tissue material (rotation normal to probe axis) |
| **Dynamic Range** | 10 µW/g to 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g) |
| **Dimensions** | Overall length: 337 mm (Tip: 9 mm)<br>Tip diameter: 2.5 mm (Body: 10 mm)<br>Typical distance from probe tip to dipole centers: 1 mm |

**Fig 5.2 Photo of EX3DV4/ES3DV4**

### 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 ± 0.25dB. 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 (DASY4: RX90BL; DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY4: CS7MB; DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

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

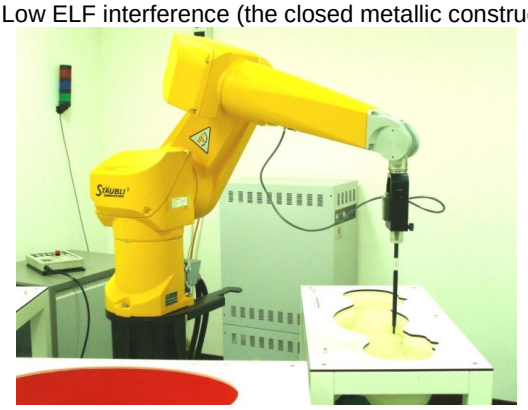


**Fig 5.4 Photo of DASY4**

**Fig 5.5 Photo of DASY5**

## 5.4 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chipdisk (DASY4: 32 MB; DASY5: 128 MB), RAM (DASY4: 64 MB, 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 5.6 Photo of Server for DASY4**


**Fig 5.7 Photo of Server for DASY5**

## 5.5 Phantom

**<SAM Twin Phantom>**

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

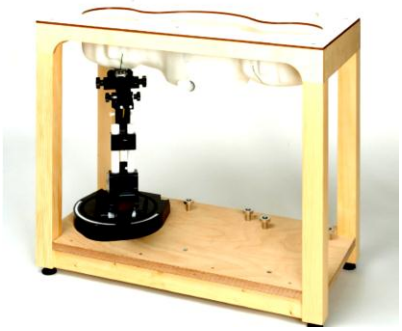


**Fig 5.8 Photo of SAM Phantom**

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.

**<ELI4 Phantom>**

| | |
|---|---|
| **Shell Thickness** | 2 ± 0.2 mm (sagging: <1%) |
| **Filling Volume** | Approx. 30 liters |
| **Dimensions** | Major ellipse axis: 600 mm<br>Minor axis: 400 mm |

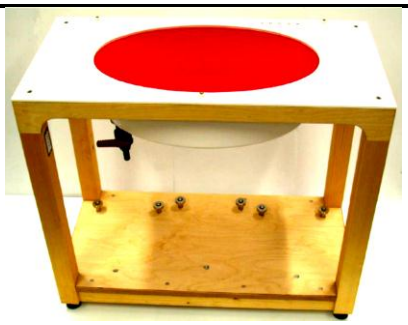


**Fig 5.9 Photo of ELI4 Phantom**

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

## 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 (ERP). 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 ε = 3 and loss tangent δ = 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 5.10 Device Holder**

### <Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

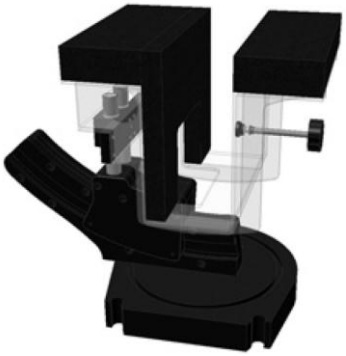


**Fig 5.11 Laptop Extension Kit**

## 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 | 499 | Mar. 22, 2010 | Mar. 21, 2013 |
| SPEAG | 1900MHz System Validation Kit | D1900V2 | 5d041 | Mar. 23, 2010 | Mar. 22, 2013 |
| SPEAG | 2450MHz System Validation Kit | D2450V2 | 736 | Jul. 25, 2011 | Jul. 24, 2013 |
| SPEAG | Data Acquisition Electronics | DAE4 | 778 | Aug. 27, 2012 | Aug. 26, 2013 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3801 | Jun. 22, 2012 | Jun. 21, 2013 |
| SPEAG | Device Holder | N/A | N/A | NCR | NCR |
| Wisewind | Thermometer | ETP-101 | TM560 | Nov. 16, 2011 | Nov. 15, 2012 |
| Wisewind | Thermometer | HTC-1 | TM685 | Nov. 16, 2011 | Nov. 15, 2012 |
| SPEAG | SAM Phantom | QD 000 P40 CD | TP-1644 | NCR | NCR |
| SPEAG | SAM Phantom | SM 000 T01 DA | TP-1542 | NCR | NCR |
| Agilent | Network Analyzer | E5071C | MY46101588 | May 11, 2012 | May 10, 2013 |
| Agilent | ESG Vector Series Signal Generator | E4438C | MY49070755 | Oct. 02, 2012 | Oct. 01, 2013 |
| Anritsu | Power Meter | ML2495A | 1132003 | Aug. 14, 2012 | Aug. 13, 2013 |
| Agilent | Wireless Communication Test Set | E5515C | MY48360820 | Jan. 05, 2012 | Jan. 04, 2014 |
| Agilent | Dual Directional Coupler | 778D | 50422 | Note 4 | |
| Woken | Attenuator 1 | WK0602-XX | N/A | Note 4 | |
| PE | Attenuator 2 | PE7005-10 | N/A | Note 4 | |
| PE | Attenuator 3 | PE7005- 3 | N/A | Note 4 | |
| Agilent | Dielectric Probe Kit | 85070D | US01440205 | Note 5 | |
| AR | Power Amplifier | 5S1G4M2 | 0328767 | Note 6 | |
| R&S | Spectrum Analyzer | FSP | 101131 | Jul. 23, 2012 | Jul. 22, 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: 499, D1900V2, SN: 5d041, and 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.
4. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
5. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.
6. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have 24dBm to the dipole. For system check, power amplifier is deemed not required for correct measurement; the power meter is critical and we do have calibration for it
7. Attenuator 1 insertion loss is calibrated by the network Analyzer, which the calibration is valid, before system check.

# 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.

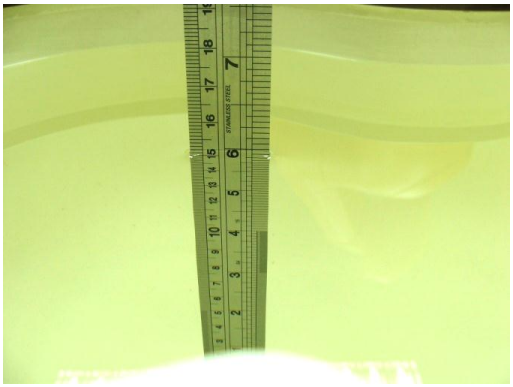


**Fig 6.1 Photo of Liquid Height for Head SAR**

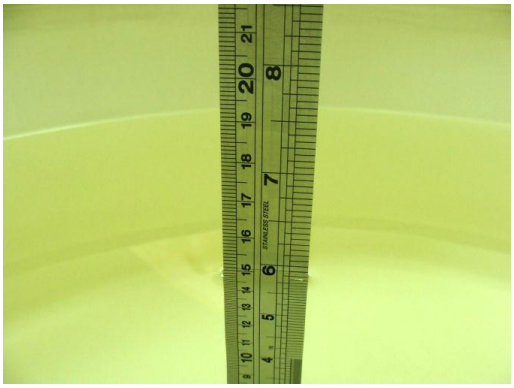


**Fig 6.2 Photo of Liquid Height for Body SAR**

The following table gives the recipes for tissue simulating liquid.

| Frequency (MHz) | Water (%) | Sugar (%) | Cellulose (%) | Salt (%) | Preventol (%) | DGBE (%) | Conductivity (σ) | Permittivity ($\varepsilon_r$) |
|---|---|---|---|---|---|---|---|---|
| **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 ($\varepsilon_r$) | Conductivity Target (σ) | Permittivity Target ($\varepsilon_r$) | Delta (σ) (%) | Delta ($\varepsilon_r$) (%) | Limit (%) | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 835 | Head | 21.4 | 0.909 | 43.261 | 0.90 | 41.5 | 1.00 | 4.24 | ±5 | Oct. 29, 2012 |
| 835 | Body | 21.6 | 0.963 | 54.541 | 0.97 | 55.2 | -0.72 | -1.19 | ±5 | Oct. 30, 2012 |
| 1900 | Head | 21.6 | 1.422 | 40.021 | 1.4 | 40 | 1.57 | 0.05 | ±5 | Oct. 29, 2012 |
| 1900 | Body | 21.5 | 1.545 | 53.277 | 1.52 | 53.3 | 1.64 | -0.04 | ±5 | Oct. 30, 2012 |
| 2450 | Head | 21.6 | 1.827 | 39.417 | 1.8 | 39.2 | 1.50 | 0.55 | ±5 | Oct. 31, 2012 |
| 2450 | Body | 21.1 | 2.015 | 53.957 | 1.95 | 52.7 | 3.33 | 2.39 | ±5 | Oct. 31, 2012 |

**Table 6.2 Measuring Results for Simulating Liquid**

| CH | Freq. (MHz) | Liquid Type | Conductivity (σ) | Permittivity ($\varepsilon_r$) | Conductivity Target (σ) | Permittivity Target ($\varepsilon_r$) | Delta (σ) (%) | Delta ($\varepsilon_r$) (%) | Limit (%) | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 128 | 824.2 | Head | 0.9 | 43.386 | 0.90 | 41.6 | 0.00 | 4.29 | ±5 | Oct. 29, 2012 |
| 189 | 836.4 | Head | 0.909 | 43.247 | 0.90 | 41.5 | 1.00 | 4.21 | ±5 | Oct. 29, 2012 |
| 251 | 848.8 | Head | 0.918 | 43.079 | 0.91 | 41.5 | 0.88 | 3.80 | ±5 | Oct. 29, 2012 |
| 4132 | 826.4 | Head | 0.902 | 43.35 | 0.90 | 41.5 | 0.22 | 4.46 | ±5 | Oct. 29, 2012 |
| 4182 | 836.4 | Head | 0.909 | 43.247 | 0.90 | 41.5 | 1.00 | 4.21 | ±5 | Oct. 29, 2012 |
| 4233 | 846.6 | Head | 0.917 | 43.112 | 0.91 | 41.5 | 0.77 | 3.88 | ±5 | Oct. 29, 2012 |
| 512 | 1850.2 | Head | 1.381 | 40.22 | 1.38 | 40.1 | 0.07 | 0.30 | ±5 | Oct. 29, 2012 |
| 661 | 1880 | Head | 1.407 | 40.07 | 1.39 | 40.0 | 1.22 | 0.18 | ±5 | Oct. 29, 2012 |
| 810 | 1909.8 | Head | 1.431 | 40.004 | 1.39 | 40.0 | 2.95 | 0.01 | ±5 | Oct. 29, 2012 |
| 9262 | 1852.4 | Head | 1.383 | 40.204 | 1.38 | 40.1 | 0.22 | 0.26 | ±5 | Oct. 29, 2012 |
| 9400 | 1880 | Head | 1.407 | 40.072 | 1.39 | 40.0 | 1.22 | 0.18 | ±5 | Oct. 29, 2012 |
| 9538 | 1907.6 | Head | 1.429 | 40.001 | 1.39 | 40.0 | 2.81 | 0.00 | ±5 | Oct. 29, 2012 |
| 512 | 1850.2 | Body | 1.488 | 53.41 | 1.50 | 53.36 | -0.80 | 0.02 | ±5 | Oct. 30, 2012 |
| 661 | 1880 | Body | 1.523 | 53.341 | 1.51 | 53.35 | 0.86 | 0.08 | ±5 | Oct. 30, 2012 |
| 810 | 1909.8 | Body | 1.557 | 53.214 | 1.51 | 53.34 | 3.11 | -0.16 | ±5 | Oct. 30, 2012 |
| 9262 | 1852.4 | Body | 1.49 | 53.406 | 1.50 | 53.36 | -0.67 | 0.01 | ±5 | Oct. 30, 2012 |
| 9400 | 1880 | Body | 1.523 | 53.341 | 1.51 | 53.35 | 0.86 | 0.08 | ±5 | Oct. 30, 2012 |
| 9538 | 1907.6 | Body | 1.554 | 53.222 | 1.51 | 53.34 | 2.91 | -0.15 | ±5 | Oct. 30, 2012 |
| 128 | 824.2 | Body | 0.952 | 54.662 | 0.97 | 55.2 | -1.86 | -0.97 | ±5 | Oct. 30, 2012 |
| 189 | 836.4 | Body | 0.964 | 54.526 | 0.97 | 55.2 | -0.62 | -1.22 | ±5 | Oct. 30, 2012 |
| 251 | 848.8 | Body | 0.976 | 54.414 | 0.99 | 55.2 | -1.41 | -1.42 | ±5 | Oct. 30, 2012 |
| 4132 | 826.4 | Body | 0.955 | 54.63 | 0.97 | 55.2 | -1.55 | -1.03 | ±5 | Oct. 30, 2012 |
| 4182 | 836.4 | Body | 0.964 | 54.526 | 0.97 | 55.2 | -0.62 | -1.22 | ±5 | Oct. 30, 2012 |
| 4233 | 846.6 | Body | 0.974 | 54.432 | 0.98 | 55.2 | -0.61 | -1.39 | ±5 | Oct. 30, 2012 |
| 1 | 2412 | Head | 1.784 | 39.53 | 1.76 | 39.25 | 1.36 | 0.84 | ±5 | Oct. 31, 2012 |
| 6 | 2437 | Head | 1.812 | 39.457 | 1.79 | 39.22 | 1.23 | 0.66 | ±5 | Oct. 31, 2012 |
| 11 | 2462 | Head | 1.841 | 39.37 | 1.81 | 39.19 | 1.71 | 0.43 | ±5 | Oct. 31, 2012 |
| 1 | 2412 | Body | 1.959 | 54.05 | 1.90 | 52.75 | 3.11 | 2.56 | ±5 | Oct. 31, 2012 |
| 6 | 2437 | Body | 1.996 | 53.979 | 1.93 | 52.72 | 3.42 | 2.43 | ±5 | Oct. 31, 2012 |
| 11 | 2462 | Body | 2.032 | 53.94 | 1.97 | 52.68 | 3.15 | 2.35 | ±5 | Oct. 31, 2012 |

**Table 6.3 Low/Middle/High Channel for Liquid Validation**

# 7. SAR Measurement Evaluation

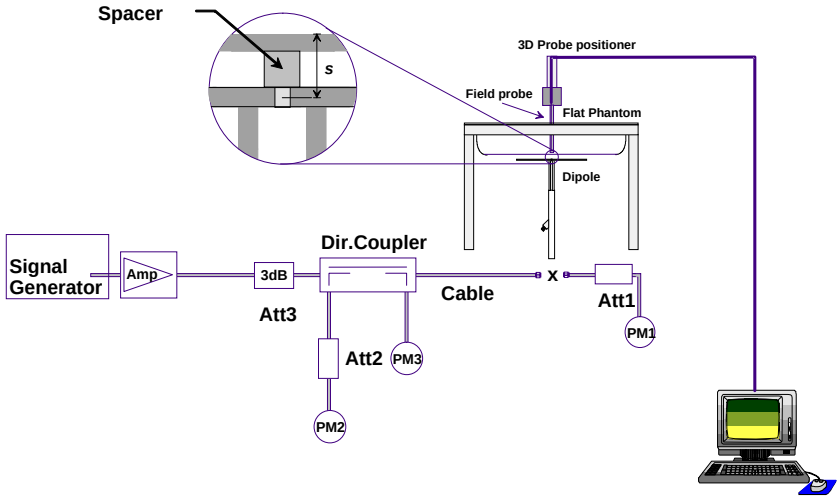
Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix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



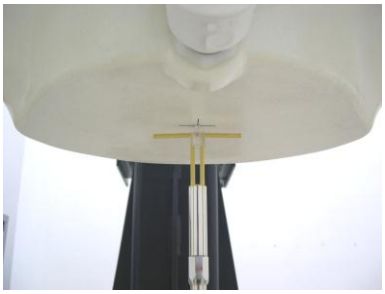



**Fig 7.1 System Setup for System Evaluation**

**Fig 7.2 Photo of Dipole Setup**

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.

## 7.3 SAR System 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 verification 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 (%) |
|---|---|---|---|---|---|---|
| Oct. 29, 2012 | 835 | Head | 9.71 | 2.46 | 9.84 | 1.34 |
| Oct. 30, 2012 | 835 | Body | 9.82 | 2.32 | 9.28 | -5.50 |
| Oct. 29, 2012 | 1900 | Head | 39.8 | 10.2 | 40.80 | 2.51 |
| Oct. 30, 2012 | 1900 | Body | 40 | 10.4 | 41.60 | 4.00 |
| Oct. 31, 2012 | 2450 | Head | 54.8 | 13.4 | 53.60 | -2.19 |
| Oct. 31, 2012 | 2450 | Body | 52.3 | 13.1 | 52.40 | 0.19 |

**Table 7.1 Target and Measurement SAR after Normalized**

# 8. EUT Testing Position

## 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.

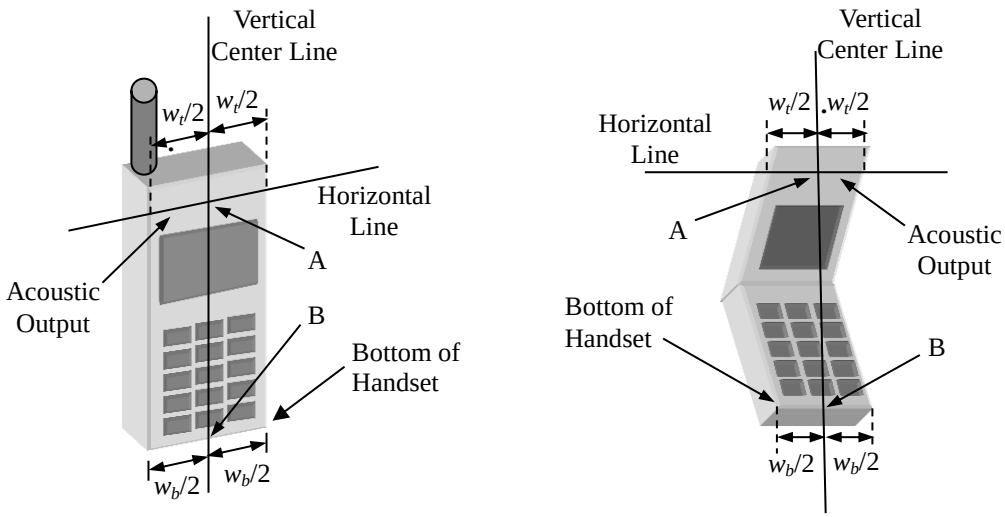



**Fig 8.1 Illustration for Handset Vertical and Horizontal Reference Lines**

## 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. 8.2).

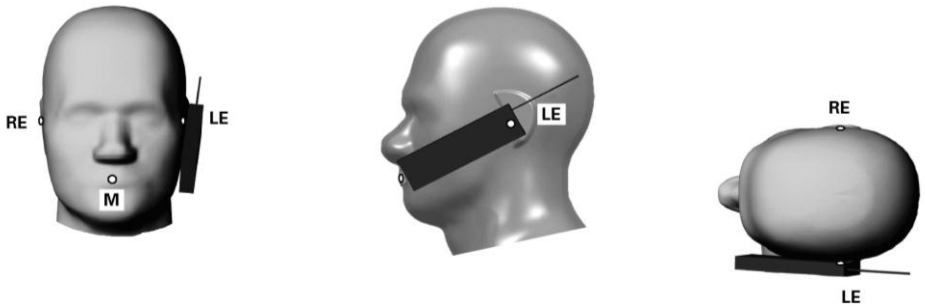



**Fig 8.2 Illustration for Cheek Position**

## 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. 8.3).

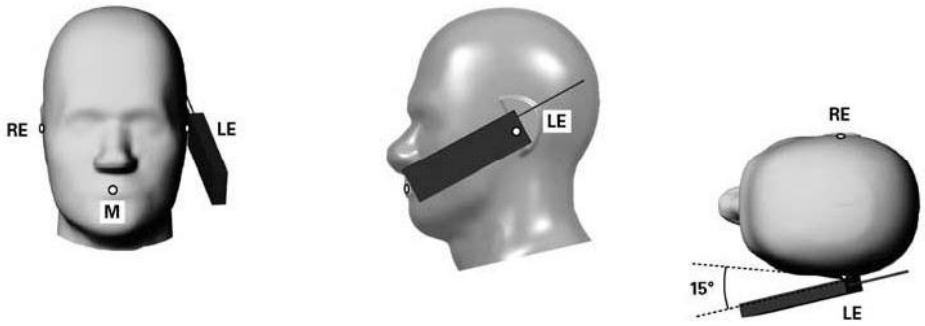



**Fig 8.3 Illustration for Tilted Position**

## 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 1.5cm.

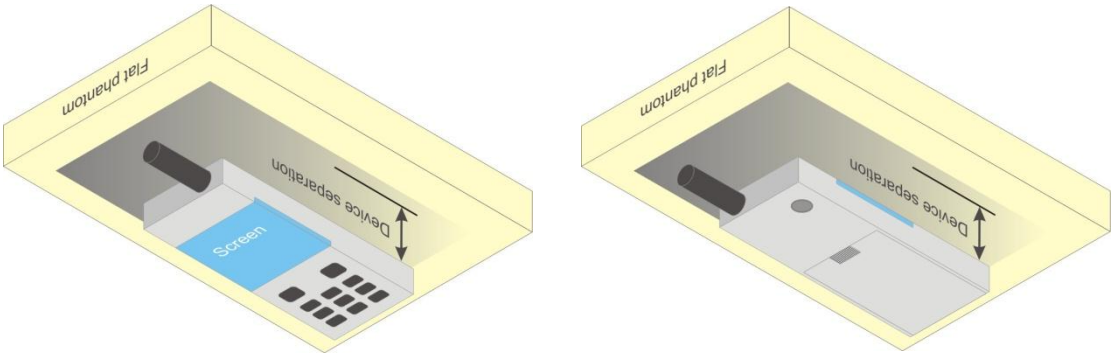



**Fig 8.4 Illustration for Body Worn Position**

## 8.5 Hotspot Position

(a) To position the device parallel to the phantom surface with all sides and either keypad up or down.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device and the flat phantom to 1.0cm.

**<EUT Setup Photos>**

Please refer to Appendix E for the test setup photos.

# 9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

For any secondary peaks found in the area scan which are within 2 dB of the maximum peak and are not within this zoom scan, the zoom scan should be repeated.

## 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.

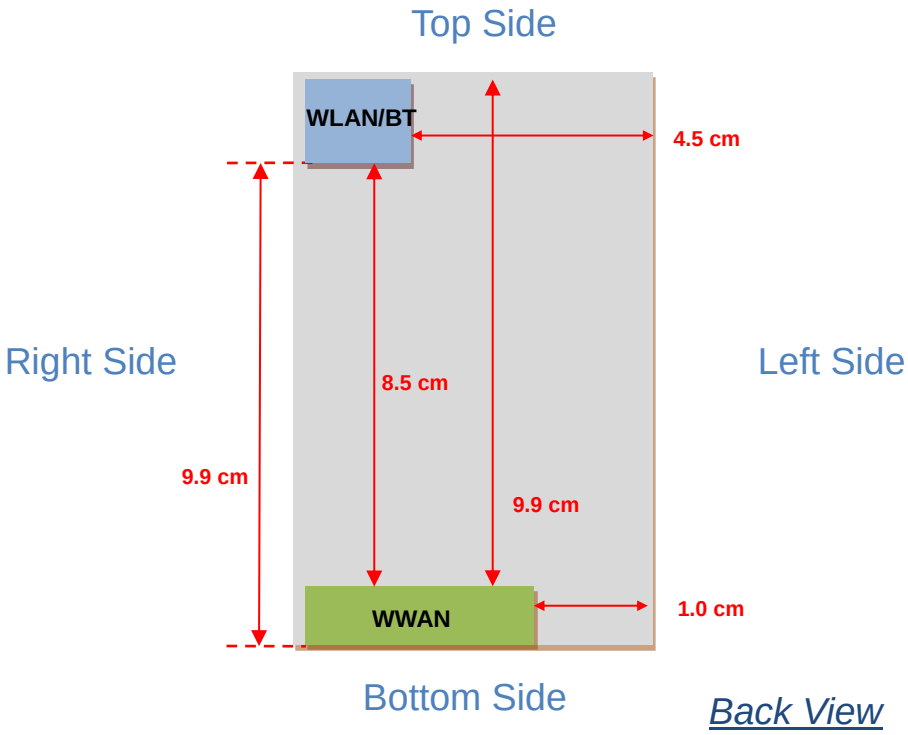
Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty 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 drifts more than 5%, the SAR will be retested.

# 10. SAR Test Configurations

## 10.1 Exposure Positions Consideration




**EUT Length: 11.3 cm**
**EUT Width: 6.3 cm**

| Antennas | Wireless Interface |
|---|---|
| **WWAN Antenna (Tx / Rx)** | GSM 850<br>GSM 1900<br>WCDMA Band V<br>WCDMA Band II |
| **WLAN/BT Antenna (Tx / Rx)** | WLAN 2.4GHz<br>Bluetooth |

| Sides for Head SAR tests | | | | |
|---|---|---|---|---|
| **Antennas** | **Right Cheek** | **Left Cheek** | **Right Tilt** | **Left Tilt** |
| **WWAN** | YES | YES | YES | YES |
| **WLAN/BT** | YES | YES | YES | YES |

| Sides for SAR tests; Hotspot mode<br>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 | NO |

| Sides for SAR tests; Body-worn mode<br>Test distance: 15 mm | | |
|---|---|---|
| **Antennas** | **Back w/ headset** | **Front w/ headset** |
| **WWAN** | YES | YES |
| **WLAN/BT** | 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 2G/3G antenna, SAR measurements at Top side is not required since the distance between the transmitting antenna and surface of device is > 25mm.
4. For BT&WLAN antenna, SAR measurements Bottom/Left side are not required since the distance between the transmitting antenna and surface of device is > 25mm.
5. Per KDB 648474 D01, Bluetooth output power ≤ 2*$P_{Ref}$ and the distance to other antennas ≥ 5cm, therefore, stand-alone SAR is not required.

# 11. Conducted RF Output Power (Unit: dBm)

**<GSM Conducted Power>**

| Band: GSM850 | | Burst Average Power (dBm) | | | Frame-Average Power (dBm) | | |
|---|---|---|---|---|---|---|---|
| Channel | | 128 | 189 | 251 | 128 | 189 | 251 |
| Frequency (MHz) | | 824.2 | 836.4 | 848.8 | 824.2 | 836.4 | 848.8 |
| GSM (GMSK, 1 Tx slot) | | 33.79 | 33.80 | 33.72 | 24.79 | 24.80 | 24.72 |
| GPRS (GMSK, 1 Tx slot) – CS1 | | 33.81 | 33.82 | 33.73 | 24.81 | 24.82 | 24.73 |
| GPRS (GMSK, 2 Tx slots) – CS1 | | 30.79 | 30.80 | 30.71 | 24.79 | 24.80 | 24.71 |
| GPRS (GMSK, 3 Tx slots) – CS1 | | 28.88 | 28.94 | 28.80 | 24.62 | 24.68 | 24.54 |
| GPRS (GMSK, 4 Tx slots) – CS1 | | 27.71 | 27.75 | 27.70 | 24.71 | 24.75 | 24.70 |
| EDGE (GMSK, 1 Tx slot) – MCS1 | | 33.81 | 33.80 | 33.72 | 24.81 | 24.80 | 24.72 |
| EDGE (GMSK, 2 Tx slots) – MCS1 | | 30.74 | 30.76 | 30.70 | 24.74 | 24.76 | 24.70 |
| EDGE (GMSK, 3 Tx slots) – MCS1 | | 28.85 | 28.93 | 28.75 | 24.59 | 24.67 | 24.49 |
| EDGE (GMSK, 4 Tx slots) – MCS1 | | 27.68 | 27.73 | 27.68 | 24.68 | 24.73 | 24.68 |
| EDGE (8PSK, 1 Tx slot) – MCS5 | | 28.88 | 28.91 | 28.84 | 19.88 | 19.91 | 19.84 |
| EDGE (8PSK, 2 Tx slots) – MCS5 | | 25.91 | 25.90 | 25.81 | 19.91 | 19.90 | 19.81 |
| EDGE (8PSK, 3 Tx slots) – MCS5 | | 24.00 | 24.01 | 23.94 | 19.74 | 19.75 | 19.68 |
| EDGE (8PSK, 4 Tx slots) – MCS5 | | 22.86 | 22.89 | 22.81 | 19.86 | 19.89 | 19.81 |
| DTM 5 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 30.79 | 30.77 | 30.70 | 24.76 | 24.74 | 24.67 |
| | GPRS (GMSK, 1 Tx slot) – CS1 | 30.78 | 30.76 | 30.68 | | | |
| DTM 9 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 30.78 | 30.76 | 30.69 | 24.75 | 24.74 | 24.66 |
| | GPRS (GMSK, 1 Tx slot) – CS1 | 30.77 | 30.76 | 30.68 | | | |
| DTM 11(3Tx slots) | GSM (GMSK, 1 Tx slot) | 28.85 | 28.89 | 28.80 | 24.58 | 24.61 | 24.53 |
| | GPRS (GMSK, 2 Tx slots) – CS1 | 28.83 | 28.86 | 28.79 | | | |
| DTM 5 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 30.79 | 30.80 | 30.71 | 22.96 | 22.97 | 22.88 |
| | EDGE (8PSK, 1 Tx slot) – MCS5 | 25.83 | 25.84 | 25.76 | | | |
| DTM 9(2Tx slots) | GSM (GMSK, 1 Tx slot) | 30.78 | 30.78 | 30.70 | 22.95 | 22.95 | 22.87 |
| | EDGE (8PSK, 1 Tx slot) – MCS5 | 25.81 | 25.83 | 25.74 | | | |
| DTM 11(3Tx slots) | GSM (GMSK, 1 Tx slot) | 28.90 | 28.92 | 28.82 | 22.02 | 22.04 | 21.95 |
| | EDGE (8PSK, 2 Tx slots) – MCS5 | 23.95 | 23.97 | 23.90 | | | |

**Remark:** The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx slots) - 3 dB

**Note:**

1. For Head SAR testing, GSM and DTM should be evaluated, therefore the EUT was set in GSM Voice for GSM850 due to its highest frame-average power.
2. For Body worn SAR testing, GSM and DTM should be evaluated, therefore the EUT was set in GSM Voice for GSM850 due to its highest frame-average power.
3. For hotspot mode SAR testing, GPRS, EDGE and DTM should be evaluated, therefore the EUT was set in GPRS 1 Tx slot for GSM850 due to its highest frame-average power.
4. Per KDB 648474, the maximum output power channel is used for SAR testing and for further SAR test reduction.
5. Agilent E5515C was used to setup the device operated under DTM mode for power measurement and SAR testing. For conducted power, the power of the burst for voice and the power of the bursts for data was reported separately in the table above, and the frame-average power is derived below to determine SAR testing.

*DTM frame average power (dBm) = 10*log [∑(power of each slot, in mW)/8]*

| Band: GSM1900 | | Burst Average Power (dBm) | | | Frame-Average Power (dBm) | | |
|---|---|---|---|---|---|---|---|
| Channel | | 512 | 661 | 810 | 512 | 661 | 810 |
| Frequency (MHz) | | 1850.2 | 1880.0 | 1909.8 | 1850.2 | 1880.0 | 1909.8 |
| GSM (GMSK, 1 Tx slot) | | 30.48 | 30.67 | 30.82 | 21.48 | 21.67 | 21.82 |
| GPRS (GMSK, 1 Tx slot) – CS1 | | 30.49 | 30.68 | 30.83 | 21.49 | 21.68 | 21.83 |
| GPRS (GMSK, 2 Tx slots) – CS1 | | 28.11 | 28.36 | 28.47 | 22.11 | 22.36 | 22.47 |
| GPRS (GMSK, 3 Tx slots) – CS1 | | 26.26 | 26.44 | 26.58 | 22.00 | 22.18 | 22.32 |
| GPRS (GMSK, 4 Tx slots) – CS1 | | 25.10 | 25.34 | 25.50 | 22.10 | 22.34 | 22.50 |
| EDGE (GMSK, 1 Tx slot) – MCS1 | | 30.45 | 30.66 | 30.82 | 21.45 | 21.66 | 21.82 |
| EDGE (GMSK, 2 Tx slots) – MCS1 | | 28.10 | 28.32 | 28.46 | 22.10 | 22.32 | 22.46 |
| EDGE (GMSK, 3 Tx slots) – MCS1 | | 26.24 | 26.43 | 26.55 | 21.98 | 22.17 | 22.29 |
| EDGE (GMSK, 4 Tx slots) – MCS1 | | 25.08 | 25.32 | 25.48 | 22.08 | 22.32 | 22.48 |
| EDGE (8PSK, 1 Tx slot) – MCS5 | | 28.20 | 28.49 | 28.60 | 19.20 | 19.49 | 19.60 |
| EDGE (8PSK, 2 Tx slots) – MCS5 | | 25.27 | 25.40 | 25.57 | 19.27 | 19.40 | 19.57 |
| EDGE (8PSK, 3 Tx slots) – MCS5 | | 23.30 | 23.49 | 23.64 | 19.04 | 19.23 | 19.38 |
| EDGE (8PSK, 4 Tx slots) – MCS5 | | 22.17 | 22.36 | 22.53 | 19.17 | 19.36 | 19.53 |
| DTM 5 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 28.07 | 28.24 | 28.40 | 22.04 | 22.21 | 22.37 |
| | GPRS (GMSK, 1 Tx slot) – CS1 | 28.06 | 28.23 | 28.38 | | | |
| DTM 9 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 28.06 | 28.23 | 28.39 | 22.04 | 22.20 | 22.37 |
| | GPRS (GMSK, 1 Tx slot) – CS1 | 28.06 | 28.21 | 28.39 | | | |
| DTM 11(3Tx slots) | GSM (GMSK, 1 Tx slot) | 26.22 | 26.45 | 26.56 | 21.95 | 22.18 | 22.29 |
| | GPRS (GMSK, 2 Tx slots) –CS1 | 26.21 | 26.43 | 26.55 | | | |
| DTM 5 (2Tx slots) | GSM (GMSK, 1 Tx slot) | 28.15 | 28.32 | 28.45 | 20.89 | 21.06 | 21.21 |
| | EDGE (8PSK, 1 Tx slot) –MCS5 | 25.16 | 25.34 | 25.52 | | | |
| DTM 9(2Tx slots) | GSM (GMSK, 1 Tx slot) | 28.14 | 28.31 | 28.44 | 20.87 | 21.05 | 21.20 |
| | EDGE (8PSK, 1 Tx slot) –MCS5 | 25.13 | 25.32 | 25.51 | | | |
| DTM 11(3Tx slots) | GSM (GMSK, 1 Tx slot) | 26.28 | 26.46 | 26.65 | 20.26 | 20.46 | 20.64 |
| | EDGE (8PSK, 2 Tx slots) MCS5 | 23.28 | 23.50 | 23.66 | | | |

**Remark:** The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx slots) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx slots) - 3 dB

**Note:**

1. For Head SAR testing, GSM and DTM should be evaluated, therefore the EUT was set in DTM Multi-slot class 5 for GSM1900 due to its highest frame-average power.
2. For Body worn SAR testing, GSM and DTM should be evaluated, therefore the EUT was set in DTM Multi-slot class 5 for GSM1900 due to its highest frame-average power.
3. For hotspot mode SAR testing, GPRS, EDGE and DTM should be evaluated, therefore the EUT was set in GPRS 4 Tx slots for GSM1900 due to its highest frame-average power.
4. Per KDB 648474, the maximum output power channel is used for SAR testing and for further SAR test reduction.
5. Agilent E5515C was used to setup the device operated under DTM mode for power measurement and SAR testing. For conducted power, the power of the burst for voice and the power of the bursts for data was reported separately in the table above, and the frame-average power is derived below to determine SAR testing.

*DTM frame average power (dBm) = 10*log [∑(power of each slot, in mW)/8]*

**<WCDMA Conducted Power>**

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.

A summary of these settings are illustrated below:

**HSDPA Setup Configuration:**

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

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

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{HS}$ (Note1, Note 2) | CM (dB) (Note 3) | MPR (dB) (Note 3) |
|---|---|---|---|---|---|---|---|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 | 0.0 |
| 2 | 12/15 (Note 4) | 15/15 (Note 4) | 64 | 12/15 (Note 4) | 24/15 | 1.0 | 0.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 | 0.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 | 0.5 |

Note 1: $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$.

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

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

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

**Setup Configuration**

**HSUPA Setup Configuration:**

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

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

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

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

**Setup Configuration**

| WCDMA Average power (dBm) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 |
| 3GPP Rel 99 | AMR 12.2Kbps | 24.70 | 24.64 | 24.80 | 23.34 | 23.44 | 23.38 |
| 3GPP Rel 99 | RMC 12.2Kbps | 24.73 | 24.70 | **24.83** | 23.36 | **23.46** | 23.42 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 24.49 | 24.45 | 24.62 | 23.24 | 23.42 | 23.38 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 24.31 | 24.20 | 24.46 | 23.21 | 23.34 | 23.40 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 23.88 | 23.83 | 23.96 | 22.81 | 22.97 | 22.87 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 23.82 | 23.73 | 23.94 | 22.76 | 22.89 | 22.84 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 24.40 | 24.10 | 24.17 | 22.89 | 22.91 | 22.76 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 22.34 | 22.28 | 22.56 | 21.76 | 21.84 | 21.80 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 23.72 | 23.87 | 23.67 | 21.50 | 21.61 | 21.70 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 23.42 | 23.52 | 23.69 | 21.63 | 21.72 | 21.62 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 24.64 | 24.57 | 24.72 | 22.87 | 22.96 | 22.92 |

| MPR (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3GPP MPR | Subtest | | WCDMA Band V | | | WCDMA Band II | | |
| 0 | 3GPP Rel 6 | HSDPA Subtest-1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0 | 3GPP Rel 6 | HSDPA Subtest-2 | 0.18 | 0.25 | 0.16 | 0.03 | 0.08 | -0.02 |
| ≤ 0.5 | 3GPP Rel 6 | HSDPA Subtest-3 | 0.61 | 0.62 | 0.66 | 0.43 | 0.45 | 0.51 |
| ≤ 0.5 | 3GPP Rel 6 | HSDPA Subtest-4 | 0.67 | 0.72 | 0.68 | 0.48 | 0.53 | 0.54 |
| 0 | 3GPP Rel 6 | HSUPA Subtest-1 | 0.24 | 0.47 | 0.55 | -0.02 | 0.05 | 0.16 |
| ≤ 2 | 3GPP Rel 6 | HSUPA Subtest-2 | 2.30 | 2.29 | 2.16 | 1.11 | 1.12 | 1.12 |
| ≤ 1 | 3GPP Rel 6 | HSUPA Subtest-3 | 0.92 | 0.70 | 1.05 | 1.37 | 1.35 | 1.22 |
| ≤ 2 | 3GPP Rel 6 | HSUPA Subtest-4 | 1.22 | 1.05 | 1.03 | 1.24 | 1.24 | 1.30 |
| 0 | 3GPP Rel 6 | HSUPA Subtest-5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Note:**

1. Applying the subtest setup in Table C.11.1.3 of 3GPP TS 34.121-1 V9.1.0 to Rel. 6 HSPA.
2. For Head SAR, per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If AMR 12.2kbps power is < 0.25dB higher than RMC 12.2kbps, SAR tests with AMR 12.2kbps can be excluded.
3. For Body SAR, per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA output power is < 0.25dB higher than RMC, or SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA SAR evaluation can be excluded.
4. By design, AMR, HSDPA/HSUPA RF power will not be larger than RMC 12.2kbps, detailed information is included in Tune-up Procure exhibit.
5. It is expected by the manufacturer that MPR for some HSDPA/HSUPA, subtests may differ from the specification of 3GPP, according to the chipset implementation in this model. The implementation and expected deviation are detailed in tune-up procedure exhibit.

## <WLAN 2.4GHz Conducted Power>

| WLAN 2.4G 802.11b Average Power (dBm) | | | | | | |
|---|---|---|---|---|---|---|
| Power vs. Channel | | | Power vs. Data Rate | | | |
| Channel | Frequency (MHz) | Data Rate (bps) | Channel | Data Rate (bps) | | |
| | | 1M | | 2M | 5.5M | 11M |
| CH 01 | 2412 | 15.30 | 06 | 15.58 | 15.58 | 15.55 |
| CH 06 | 2437 | **15.59** | | | | |
| CH 11 | 2462 | 14.99 | | | | |

| WLAN 2.4G 802.11g Average Power (dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Power vs. Channel | | | Power vs. Data Rate | | | | | | |
| Channel | Frequency (MHz) | Data Rate (bps) | Channel | Data Rate (bps) | | | | | |
| | | 6M | | 9M | 12M | 18M | 24M | 36M | 48M | 54M |
| CH 01 | 2412 | **15.10** | 01 | 15.07 | 14.96 | 15.00 | 15.05 | 14.68 | 14.66 | 14.61 |
| CH 06 | 2437 | 14.71 | | | | | | | | |
| CH 11 | 2462 | 14.41 | | | | | | | | |

| WLAN 2.4G 802.11n (BW 20MHz) Average Power (dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Power vs. Channel | | | Power vs. Data Rate | | | | | | |
| Channel | Frequency (MHz) | MCS Index | Channel | MCS Index | | | | | |
| | | MCS0 | | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
| CH 01 | 2412 | **12.71** | 01 | 12.61 | 12.70 | 12.48 | 12.39 | 12.48 | 11.53 | 8.84 |
| CH 06 | 2437 | 12.65 | | | | | | | | |
| CH 11 | 2462 | 12.28 | | | | | | | | |

**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-HT20 output power is less than 0.25dB 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 0.25dB higher than those measured at the lowest data rate.

## <Bluetooth Conducted Power>

| Channel | Frequency (MHz) | Average power (dBm) | | |
|---|---|---|---|---|
| | | Mode | | |
| | | GFSK | π/4-DQPSK | 8-DPSK |
| CH 0 | 2402 | 4.83 | 3.26 | 3.32 |
| CH 39 | 2441 | 5.37 | 3.79 | 3.81 |
| CH 78 | 2480 | **5.65** | 4.05 | 4.09 |

**Note:** Per KDB 648474, 2.4GHz Bluetooth SAR is excluded due to highest output power ≤ 60/f (GHz) mW, where 60/f (GHz) = 24mW = 13.8dBm.

# 12. SAR Test Results

## 12.1 Test Records for Head SAR Test

**<GSM SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Ch. | Freq. (MHz) | Burst Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GSM850 | GSM Voice | GMSK | Right Cheek | 189 | 836.4 | 33.80 | -0.03 | 0.902 | 0.684 |
| 2 | GSM850 | GSM Voice | GMSK | Right Tilted | 189 | 836.4 | 33.80 | -0.08 | 0.534 | 0.407 |
| 3 | GSM850 | GSM Voice | GMSK | Left Cheek | 189 | 836.4 | 33.80 | 0.124 | 0.781 | 0.582 |
| 4 | GSM850 | GSM Voice | GMSK | Left Tilted | 189 | 836.4 | 33.80 | -0.09 | 0.519 | 0.394 |
| 5 | GSM850 | GSM Voice | GMSK | Right Cheek | 128 | 824.2 | 33.79 | 0.05 | 0.779 | 0.592 |
| **6** | **GSM850** | **GSM Voice** | **GMSK** | **Right Cheek** | **251** | **848.8** | **33.72** | **0.1** | **1.08** | **0.811** |
| 15 | GSM1900 | DTM Multi-slot class 5 | GMSK | Right Cheek | 810 | 1909.8 | 28.40 | -0.01 | 0.499 | 0.324 |
| 16 | GSM1900 | DTM Multi-slot class 5 | GMSK | Right Tilted | 810 | 1909.8 | 28.40 | -0.03 | 0.337 | 0.193 |
| **17** | **GSM1900** | **DTM Multi-slot class 5** | **GMSK** | **Left Cheek** | **810** | **1909.8** | **28.40** | **0.17** | **0.794** | **0.466** |
| 18 | GSM1900 | DTM Multi-slot class 5 | GMSK | Left Tilted | 810 | 1909.8 | 28.40 | -0.02 | 0.294 | 0.181 |

**Note:**

1. Per KDB 648474 and KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
2. Considering GSM voice call and DTM mode RF exposure at the head exposure positions, per KDB 941225 D03 for TDMA application, the mode of the highest source-based time-averaged power was selected for SAR testing to show RF exposure compliance and cover the mode with lower source-based time-average power. GSM voice call was chosen for cellular band, and DTM (1CS, 1PS) was chosen for PCS band.

**<WCDMA SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| **7** | **WCDMA V** | **RMC12.2Kbps** | **QPSK** | **Right Cheek** | **4233** | **846.6** | **24.83** | **0.01** | **0.981** | **0.739** |
| 8 | WCDMA V | RMC12.2Kbps | QPSK | Right Tilted | 4233 | 846.6 | 24.83 | -0.11 | 0.569 | 0.433 |
| 9 | WCDMA V | RMC12.2Kbps | QPSK | Left Cheek | 4233 | 846.6 | 24.83 | 0.09 | 0.838 | 0.624 |
| 10 | WCDMA V | RMC12.2Kbps | QPSK | Left Tilted | 4233 | 846.6 | 24.83 | 0.02 | 0.541 | 0.411 |
| 11 | WCDMA V | RMC12.2Kbps | QPSK | Right Cheek | 4132 | 826.4 | 24.73 | 0.1 | 0.783 | 0.593 |
| 12 | WCDMA V | RMC12.2Kbps | QPSK | Right Cheek | 4182 | 836.4 | 24.70 | -0.02 | 0.88 | 0.666 |
| 13 | WCDMA V | RMC12.2Kbps | QPSK | Left Cheek | 4132 | 826.4 | 24.73 | 0.06 | 0.659 | 0.495 |
| 14 | WCDMA V | RMC12.2Kbps | QPSK | Left Cheek | 4182 | 836.4 | 24.70 | 0.123 | 0.755 | 0.565 |
| 19 | WCDMA II | RMC12.2Kbps | QPSK | Right Cheek | 9400 | 1880 | 23.46 | 0.05 | 0.722 | 0.47 |
| 20 | WCDMA II | RMC12.2Kbps | QPSK | Right Tilted | 9400 | 1880 | 23.46 | 0.06 | 0.478 | 0.278 |
| **21** | **WCDMA II** | **RMC12.2Kbps** | **QPSK** | **Left Cheek** | **9400** | **1880** | **23.46** | **0.06** | **1.11** | **0.656** |
| 22 | WCDMA II | RMC12.2Kbps | QPSK | Left Tilted | 9400 | 1880 | 23.46 | -0.09 | 0.44 | 0.275 |
| 23 | WCDMA II | RMC12.2Kbps | QPSK | Left Cheek | 9262 | 1852.4 | 23.36 | -0.03 | 0.955 | 0.565 |
| 24 | WCDMA II | RMC12.2Kbps | QPSK | Left Cheek | 9538 | 1907.6 | 23.42 | 0.15 | 1.09 | 0.638 |

**Note:**

1. Per KDB 648474 and KDB 447498, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

**<WLAN SAR>**

| Plot No. | Band | Mode | Modulation Type | Data Rate | Test Position | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Right Cheek | 6 | 2437 | 15.59 | 0.18 | 0.106 | 0.058 |
| 90 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Right Tilted | 6 | 2437 | 15.59 | 0.01 | 0.114 | 0.059 |
| **91** | **WLAN2.4G** | **802.11b** | **DBPSK** | **1Mbps** | **Left Cheek** | **6** | **2437** | **15.59** | **0.19** | **0.16** | **0.082** |
| 92 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Left Tilted | 6 | 2437 | 15.59 | 0.05 | 0.11 | 0.056 |

**Note:**

1. Per KDB 648474 and KDB 248227, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

## *12.2 Test Records for Hotspot SAR Test*

**<GSM SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Gap (cm) | Ch. | Freq. (MHz) | Burst Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | GSM850 | GPRS (1 Tx slots) | GMSK | Front | 1cm | 189 | 836.4 | 33.82 | -0.07 | 0.866 | 0.65 |
| 58 | GSM850 | GPRS (1 Tx slots) | GMSK | Front | 1cm | 128 | 824.2 | 33.81 | 0.07 | 0.728 | 0.548 |
| 59 | GSM850 | GPRS (1 Tx slots) | GMSK | Front | 1cm | 251 | 848.8 | 33.73 | 0.06 | 0.884 | 0.663 |
| **54** | **GSM850** | **GPRS (1 Tx slots)** | **GMSK** | **Back** | **1cm** | **189** | **836.4** | **33.82** | **-0.14** | **1.24** | **0.898** |
| 60 | GSM850 | GPRS (1 Tx slots) | GMSK | Back | 1cm | 128 | 824.2 | 33.81 | -0.02 | 1.19 | 0.866 |
| 61 | GSM850 | GPRS (1 Tx slots) | GMSK | Back | 1cm | 251 | 848.8 | 33.73 | -0.04 | 1.1 | 0.802 |
| 55 | GSM850 | GPRS (1 Tx slots) | GMSK | Left Side | 1cm | 189 | 836.4 | 33.82 | -0.01 | 0.668 | 0.461 |
| 56 | GSM850 | GPRS (1 Tx slots) | GMSK | Right Side | 1cm | 189 | 836.4 | 33.82 | 0.01 | 0.737 | 0.517 |
| 57 | GSM850 | GPRS (1 Tx slots) | GMSK | Bottom Side | 1cm | 189 | 836.4 | 33.82 | 0.13 | 0.174 | 0.104 |
| 44 | GSM1900 | GPRS (4 Tx slots) | GMSK | Front | 1cm | 810 | 1909.8 | 25.50 | 0.04 | 0.598 | 0.365 |
| **45** | **GSM1900** | **GPRS (4 Tx slots)** | GMSK | **Back** | **1cm** | **810** | **1909.8** | **25.50** | **-0.01** | **0.899** | **0.51** |
| 49 | GSM1900 | GPRS (4 Tx slots) | GMSK | Back | 1cm | 512 | 1850.2 | 25.10 | 0.05 | 0.805 | 0.469 |
| 50 | GSM1900 | GPRS (4 Tx slots) | GMSK | Back | 1cm | 661 | 1880 | 25.34 | 0.05 | 0.882 | 0.496 |
| 46 | GSM1900 | GPRS (4 Tx slots) | GMSK | Left Side | 1cm | 810 | 1909.8 | 25.50 | -0.11 | 0.242 | 0.135 |
| 47 | GSM1900 | GPRS (4 Tx slots) | GMSK | Right Side | 1cm | 810 | 1909.8 | 25.50 | 0.1 | 0.161 | 0.091 |
| 48 | GSM1900 | GPRS (4 Tx slots) | GMSK | Bottom Side | 1cm | 810 | 1909.8 | 25.50 | 0.07 | 0.693 | 0.374 |

**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 648474 and KDB 447498 if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
4. Hotspot mode for head was addressed as the device was tested using the highest source-based time-average power channel of GSM850 voice mode. DTM mode which address data allocated and voice call simultaneously was found to have a lower output power which would not result in the most conservative SAR level. The sum of SAR level for simultaneous transmission for head mode WWAN and WLAN was also < 1.6 w/kg. For GSM1900 mode DTM mode was found to give the highest source-based time-average power, this mode addressed data allocated mode and the possible use of hotspot mode in the head configuration. The sum of SAR level for simultaneous transmission for head mode WWAN and WLAN was also < 1.6 w/kg.

**<WCDMA SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Gap (cm) | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 64 | WCDMA V | RMC12.2Kbps | QPSK | Front | 1cm | 4233 | 846.6 | 24.83 | 0.16 | 0.97 | 0.725 |
| 69 | WCDMA V | RMC12.2Kbps | QPSK | Front | 1cm | 4132 | 826.4 | 24.73 | -0.08 | 0.809 | 0.608 |
| 70 | WCDMA V | RMC12.2Kbps | QPSK | Front | 1cm | 4182 | 836.4 | 24.70 | 0.11 | 0.874 | 0.654 |
| **65** | **WCDMA V** | **RMC12.2Kbps** | **QPSK** | **Back** | **1cm** | **4233** | **846.6** | **24.83** | **-0.13** | **1.32** | **0.959** |
| 71 | WCDMA V | RMC12.2Kbps | QPSK | Back | 1cm | 4132 | 826.4 | 24.73 | 0.03 | 1.31 | 0.948 |
| 72 | WCDMA V | RMC12.2Kbps | QPSK | Back | 1cm | 4182 | 836.4 | 24.70 | 0 | 1.28 | 0.927 |
| 73 | WCDMA V | HSDPA Subtest 1 | QPSK | Back | 1cm | 4132 | 826.4 | 24.49 | 0.06 | 1.25 | 0.907 |
| 74 | WCDMA V | HSDPA Subtest 1 | QPSK | Back | 1cm | 4182 | 836.4 | 24.45 | -0.02 | 1.21 | 0.874 |
| 75 | WCDMA V | HSDPA Subtest 1 | QPSK | Back | 1cm | 4233 | 846.6 | 24.62 | 0.03 | 1.29 | 0.932 |
| 76 | WCDMA V | HSUPA Subtest 5 | QPSK | Back | 1cm | 4132 | 826.4 | 24.64 | -0.02 | 1.23 | 0.889 |
| 77 | WCDMA V | HSUPA Subtest 5 | QPSK | Back | 1cm | 4182 | 836.4 | 24.57 | 0.01 | 1.19 | 0.864 |
| 78 | WCDMA V | HSUPA Subtest 5 | QPSK | Back | 1cm | 4233 | 846.6 | 24.72 | 0.05 | 1.29 | 0.927 |
| 66 | WCDMA V | RMC12.2Kbps | QPSK | Left Side | 1cm | 4233 | 846.6 | 24.83 | 0.16 | 0.701 | 0.483 |
| 81 | WCDMA V | RMC12.2Kbps | QPSK | Right Side | 1cm | 4132 | 826.4 | 24.73 | 0.09 | 0.708 | 0.497 |
| 82 | WCDMA V | RMC12.2Kbps | QPSK | Right Side | 1cm | 4182 | 836.4 | 24.70 | 0.01 | 0.727 | 0.51 |
| 67 | WCDMA V | RMC12.2Kbps | QPSK | Right Side | 1cm | 4233 | 846.6 | 24.83 | 0.06 | 0.805 | 0.563 |
| 68 | WCDMA V | RMC12.2Kbps | QPSK | Bottom Side | 1cm | 4233 | 846.6 | 24.83 | -0.03 | 0.195 | 0.115 |
| 25 | WCDMA II | RMC12.2Kbps | QPSK | Front | 1cm | 9400 | 1880 | 23.46 | 0.02 | 0.895 | 0.544 |
| 30 | WCDMA II | RMC12.2Kbps | QPSK | Front | 1cm | 9262 | 1852.4 | 23.36 | -0.02 | 0.772 | 0.465 |
| 31 | WCDMA II | RMC12.2Kbps | QPSK | Front | 1cm | 9538 | 1907.6 | 23.42 | -0.09 | 0.87 | 0.528 |
| 26 | WCDMA II | RMC12.2Kbps | QPSK | Back | 1cm | 9400 | 1880 | 23.46 | 0.14 | 1.31 | 0.753 |
| 32 | WCDMA II | RMC12.2Kbps | QPSK | Back | 1cm | 9262 | 1852.4 | 23.36 | 0.04 | 1.12 | 0.653 |
| **33** | **WCDMA II** | **RMC12.2Kbps** | **QPSK** | **Back** | **1cm** | **9538** | **1907.6** | **23.42** | **-0.03** | **1.34** | **0.757** |
| 34 | WCDMA II | HSDPA Subtest 1 | QPSK | Back | 1cm | 9262 | 1852.4 | 23.24 | 0.1 | 1.09 | 0.639 |
| 35 | WCDMA II | HSDPA Subtest 1 | QPSK | Back | 1cm | 9400 | 1880 | 23.42 | 0.03 | 1.29 | 0.742 |
| 36 | WCDMA II | HSDPA Subtest 1 | QPSK | Back | 1cm | 9538 | 1907.6 | 23.38 | 0.02 | 1.32 | 0.746 |
| 37 | WCDMA II | HSUPA Subtest 5 | QPSK | Back | 1cm | 9262 | 1852.4 | 22.87 | 0.16 | 1.09 | 0.637 |
| 38 | WCDMA II | HSUPA Subtest 5 | QPSK | Back | 1cm | 9400 | 1880 | 22.96 | 0.03 | 1.32 | 0.76 |
| 39 | WCDMA II | HSUPA Subtest 5 | QPSK | Back | 1cm | 9538 | 1907.6 | 22.92 | 0.01 | 1.32 | 0.746 |
| 27 | WCDMA II | RMC12.2Kbps | QPSK | Left Side | 1cm | 9400 | 1880 | 23.46 | 0.06 | 0.43 | 0.237 |
| 28 | WCDMA II | RMC12.2Kbps | QPSK | Right Side | 1cm | 9400 | 1880 | 23.46 | 0.13 | 0.236 | 0.136 |
| 29 | WCDMA II | RMC12.2Kbps | QPSK | Bottom Side | 1cm | 9400 | 1880 | 23.46 | 0.12 | 1.01 | 0.551 |
| 42 | WCDMA II | RMC12.2Kbps | QPSK | Bottom Side | 1cm | 9262 | 1852.4 | 23.36 | 0.13 | 0.846 | 0.464 |
| 43 | WCDMA II | RMC12.2Kbps | QPSK | Bottom Side | 1cm | 9538 | 1907.6 | 23.42 | 0.06 | 1.01 | 0.547 |

**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 648474 and KDB 447498 if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.
4. For Body SAR, per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA output power is < 0.25dB higher than RMC, or SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA SAR evaluation can be excluded.

**<WLAN SAR>**

| Plot No. | Band | Mode | Modulation Type | Data Rate | Test Position | Gap (cm) | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Front | 1cm | 6 | 2437 | 15.59 | 0.17 | 0.037 | 0.022 |
| **84** | **WLAN2.4G** | **802.11b** | **DBPSK** | **1Mbps** | **Back** | **1cm** | **6** | **2437** | **15.59** | **0.11** | **0.058** | **0.033** |
| 85 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Right Side | 1cm | 6 | 2437 | 15.59 | 0.09 | 0.039 | 0.02 |
| 86 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Top Side | 1cm | 6 | 2437 | 15.59 | 0.19 | 0.042 | 0.022 |

**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 is necessary.
3. Per KDB 648474 and KDB 248227, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

## 12.3 Test Records for Body-worn SAR Test

**<GSM SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Burst Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | GSM850 | GSM Voice | GMSK | Front | 1.5cm | v | 189 | 836.4 | 33.80 | 0.05 | 0.414 | 0.305 |
| **63** | **GSM850** | **GSM Voice** | **GMSK** | **Back** | **1.5cm** | **v** | **189** | **836.4** | **33.80** | **-0.01** | **0.662** | **0.479** |
| 51 | GSM1900 | DTM Multi-slot class 5 | GMSK | Front | 1.5cm | v | 810 | 1909.8 | 28.40 | 0.08 | 0.393 | 0.24 |
| **52** | **GSM1900** | **DTM Multi-slot class 5** | **GMSK** | **Back** | **1.5cm** | **v** | **810** | **1909.8** | **28.40** | **-0.02** | **0.547** | **0.32** |

**Note:**
1. Per KDB 648474 and 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 Headset is plugged during SAR testing.

**<WCDMA SAR>**

| Plot No. | Band | Mode | Modulation Type | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79 | WCDMA V | RMC12.2Kbps | QPSK | Front | 1.5cm | v | 4233 | 846.6 | 24.83 | 0.07 | 0.468 | 0.348 |
| **80** | **WCDMA V** | **RMC12.2Kbps** | **QPSK** | **Back** | **1.5cm** | **v** | **4233** | **846.6** | **24.83** | **0.18** | **0.694** | **0.508** |
| 40 | WCDMA II | RMC12.2Kbps | QPSK | Front | 1.5cm | v | 9400 | 1880 | 23.46 | 0.01 | 0.571 | 0.351 |
| **41** | **WCDMA II** | **RMC12.2Kbps** | **QPSK** | **Back** | **1.5cm** | **v** | **9400** | **1880** | **23.46** | **0.04** | **0.782** | **0.466** |

**Note:**
1. Per KDB 648474 and 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 Headset is plugged during SAR testing.

**<WLAN SAR>**

| Plot No. | Band | Mode | Modulation Type | Data Rate | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Power Drift (dB) | $SAR_{1g}$ (W/kg) | $SAR_{10g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 87 | WLAN2.4G | 802.11b | DBPSK | 1Mbps | Front | 1.5cm | v | 6 | 2437 | 15.59 | 0.18 | 0.018 | 0.01 |
| **88** | **WLAN2.4G** | **802.11b** | **DBPSK** | **1Mbps** | **Back** | **1.5cm** | **v** | **6** | **2437** | **15.59** | **0.14** | **0.033** | **0.018** |

**Note:**

1. Per KDB 648474 and 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 Headset is plugged during SAR testing.

## 12.4 Simultaneous Multi-band Transmission Analysis

| No. | Applicable Simultaneous Transmission Combination |
|---|---|
| 1. | GSM/WCDMA(voice) + BT |
| 2. | GSM/WCDMA(voice) + WLAN 2.4G (data) |
| 3. | GPRS/EGPRS/WCDMA(data) + WLAN 2.4G (router) |
| 4. | DTM(voice/data)+ WLAN(router) |

**Note:**

1. WLAN and BT share the same antenna, and cannot transmit simultaneously.
2. The maximum SAR summation is calculated based on the same configuration and test position.
3. Per KDB 648474, Bluetooth simultaneous SAR consideration is not required due to power < 2*$P_{ref}$ and the distance to the WWAN antenna is >5cm.
4. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement is not necessary.
5. Per “IC RSS102 Issue 4”, Bluetooth output power ≤ 20mw therefore, stand-alone SAR is not required.

**<Head SAR>**

| Position | WWAN | | | WLAN | | WWAN + WLAN |
|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN SAR (W/kg) | |
| Right Cheek | GSM850 | 6 | 1.08 | 89 | 0.106 | 1.19 |
| | GSM1900 | 15 | 0.499 | 89 | 0.106 | 0.61 |
| | WCDMA Band V | 7 | 0.981 | 89 | 0.106 | 1.09 |
| | WCDMA Band II | 19 | 0.722 | 89 | 0.106 | 0.83 |
| Right Tilted | GSM850 | 2 | 0.534 | 90 | 0.114 | 0.65 |
| | GSM1900 | 16 | 0.337 | 90 | 0.114 | 0.45 |
| | WCDMA Band V | 8 | 0.569 | 90 | 0.114 | 0.68 |
| | WCDMA Band II | 20 | 0.478 | 90 | 0.114 | 0.59 |
| Left Cheek | GSM850 | 3 | 0.781 | 91 | 0.16 | 0.94 |
| | GSM1900 | 17 | 0.794 | 91 | 0.16 | 0.95 |
| | WCDMA Band V | 9 | 0.838 | 91 | 0.16 | 1.00 |
| | WCDMA Band II | 21 | 1.11 | 91 | 0.16 | 1.27 |
| Left Tilted | GSM850 | 4 | 0.519 | 92 | 0.11 | 0.63 |
| | GSM1900 | 18 | 0.294 | 92 | 0.11 | 0.40 |
| | WCDMA Band V | 10 | 0.541 | 92 | 0.11 | 0.65 |
| | WCDMA Band II | 22 | 0.44 | 92 | 0.11 | 0.55 |

## <Hotspot SAR>

| Position | WWAN | | | WLAN | | WWAN + WLAN |
|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN SAR (W/kg) | |
| Front | GSM850 | 59 | 0.884 | 83 | 0.037 | 0.92 |
| | GSM1900 | 44 | 0.598 | 83 | 0.037 | 0.64 |
| | WCDMA Band V | 64 | 0.97 | 83 | 0.037 | 1.01 |
| | WCDMA Band II | 25 | 0.895 | 83 | 0.037 | 0.93 |
| Back | GSM850 | 54 | 1.24 | 84 | 0.058 | 1.30 |
| | GSM1900 | 45 | 0.899 | 84 | 0.058 | 0.96 |
| | WCDMA Band V | 75 | 1.29 | 84 | 0.058 | 1.35 |
| | WCDMA Band II | 33 | 1.34 | 84 | 0.058 | **1.40** |
| Left Side | GSM850 | 55 | 0.668 | - | - | 0.67 |
| | GSM1900 | 46 | 0.242 | - | - | 0.24 |
| | WCDMA Band V | 66 | 0.701 | - | - | 0.70 |
| | WCDMA Band II | 27 | 0.43 | - | - | 0.43 |
| Right Side | GSM850 | 56 | 0.737 | 85 | 0.039 | 0.78 |
| | GSM1900 | 47 | 0.161 | 85 | 0.039 | 0.20 |
| | WCDMA Band V | 67 | 0.805 | 85 | 0.039 | 0.84 |
| | WCDMA Band II | 28 | 0.236 | 85 | 0.039 | 0.28 |
| Top Side | GSM850 | - | - | 86 | 0.042 | 0.04 |
| | GSM1900 | - | - | 86 | 0.042 | 0.04 |
| | WCDMA Band V | - | - | 86 | 0.042 | 0.04 |
| | WCDMA Band II | - | - | 86 | 0.042 | 0.04 |
| Bottom Side | GSM850 | 57 | 0.174 | - | - | 0.17 |
| | GSM1900 | 48 | 0.693 | - | - | 0.69 |
| | WCDMA Band V | 68 | 0.195 | - | - | 0.20 |
| | WCDMA Band II | 43 | 1.01 | - | - | 1.01 |

## <Body-worn SAR>

| Position | WWAN | | | WLAN | | WWAN + WLAN |
|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN SAR (W/kg) | |
| Front (w/ Headset) | GSM850 | 62 | 0.414 | 87 | 0.018 | 0.43 |
| | GSM1900 | 51 | 0.393 | 87 | 0.018 | 0.41 |
| | WCDMA Band V | 79 | 0.468 | 87 | 0.018 | 0.49 |
| | WCDMA Band II | 40 | 0.571 | 87 | 0.018 | 0.59 |
| Back (w/ Headset) | GSM850 | 63 | 0.662 | 88 | 0.033 | 0.70 |
| | GSM1900 | 52 | 0.547 | 88 | 0.033 | 0.58 |
| | WCDMA Band V | 80 | 0.694 | 88 | 0.033 | 0.73 |
| | WCDMA Band II | 41 | 0.782 | 88 | 0.033 | 0.82 |

**Test Engineer：** San Lin, Bevis Chang, and Nick Yu

# 13. 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) $\kappa$ is the coverage factor

**Table 13.1 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 13.2 Uncertainty Budget of DASY for frequency range 300 MHz to 3 GHz**
**According to IEEE1528-2003**

| 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 % |
| Linearity | 4.7 | Rectangular | √3 | 1 | 1 | ± 2.7 % | ± 2.7 % |
| Modulation Response | 2.4 | Rectangular | √3 | 1 | 1 | ± 1.4 % | ± 1.4 % |
| System Detection Limits | 1.0 | Rectangular | √3 | 1 | 1 | ± 0.6 % | ± 0.6 % |
| Readout Electronics | 2.0 | Normal | 1 | 1 | 1 | ± 2.0 % | ± 2.0 % |
| Response Time | 0.8 | Rectangular | √3 | 1 | 1 | ± 0.5 % | ± 0.5 % |
| Integration Time | 2.6 | Rectangular | √3 | 1 | 1 | ± 1.5 % | ± 1.5 % |
| RF Ambient Noise | 3.0 | Rectangular | √3 | 1 | 1 | ± 1.7 % | ± 1.7 % |
| RF Ambient Reflections | 3.0 | Rectangular | √3 | 1 | 1 | ± 1.7 % | ± 1.7 % |
| Probe Positioner | 0.8 | Rectangular | √3 | 1 | 1 | ± 0.5 % | ± 0.5 % |
| Probe Positioning | 6.7 | Rectangular | √3 | 1 | 1 | ± 3.9 % | ± 3.9 % |
| Post-processing | 4.0 | Rectangular | √3 | 1 | 1 | ± 2.3 % | ± 2.3 % |
| **Test Sample Related** | | | | | | | |
| Device Positioning | 3.6 | Normal | 1 | 1 | 1 | ± 3.6 % | ± 3.6 % |
| Device Holder | 2.9 | Normal | 1 | 1 | 1 | ± 2.9 % | ± 2.9 % |
| Power Drift | 5.0 | Rectangular | √3 | 1 | 1 | ± 0.0 % | ± 2.9 % |
| Power Scaling | 0 | Rectangular | √3 | 1 | 1 | ± 2.9 % | ± 0 % |
| **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 Permittivity (Target.) | 5.0 | Rectangular | √3 | 0.6 | 0.49 | ± 1.7 % | ± 1.4 % |
| Liquid Conductivity (Meas.) | 2.5 | Normal | 1 | 0.78 | 0.71 | ± 2.0 % | ± 1.8 % |
| Liquid Permittivity (Meas.) | 2.5 | Normal | 1 | 0.26 | 0.26 | ± 0.7 % | ± 0.7 % |
| Temp. unc. - Conductivity | 1.7 | Rectangular | √3 | 0.78 | 0.71 | ± 0.8 % | ± 0.7 % |
| Temp. unc. - Permittivity | 0.3 | Rectangular | √3 | 0.23 | 0.26 | ± 0.0 % | ± 0.0 % |
| **Combined Standard Uncertainty** | | | | | | ± 11.8 % | ± 11.7 % |
| **Coverage Factor for 95 %** | | | | | | K=2 | |
| **Expanded Uncertainty** | | | | | | **± 23.7 %** | **± 23.4 %** |

**Table 13.3 Uncertainty Budget of DASY for frequency range 30 MHz to 3 GHz**
**According to IEC 62209-2/2010**

# 14. 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] IC RSS-102 Issue 4, “Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)”, March 2010

[7] IEC 62209-2, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices. Human models, instrumentation, and procedures. Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010

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

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

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

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

[12] FCC KDB 941225 D02 v02 "3GPP R6 HSPA and R7 HSPA+ SAR Guidance", December 2009.

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

[14] FCC KDB 941225 D04 v01, “Evaluating SAR for GSM/(E)GPRS Dual Transfer Mode”, January 27 2010

[15] 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.

# Appendix B. Plots of SAR Measurement

The plots are shown as follows.

# Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## System Check_Head_1900MHz_121029

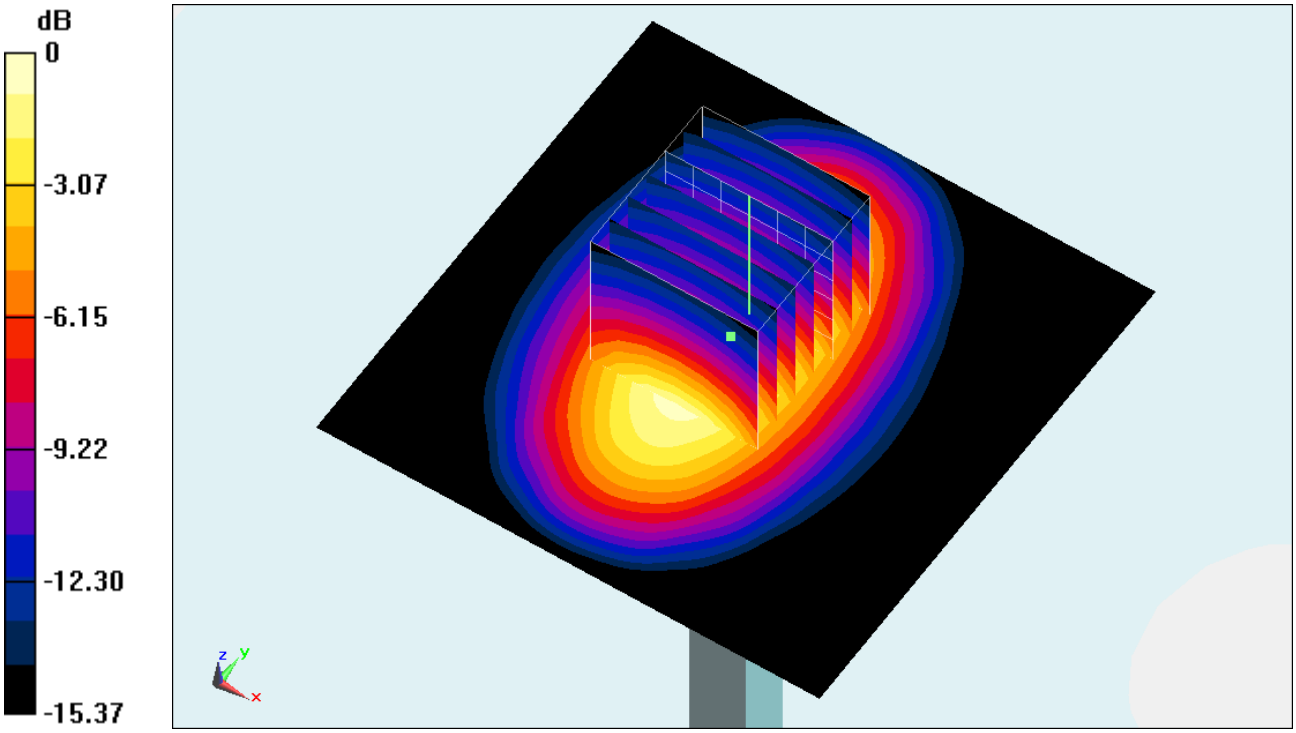
### DUT: D1900V2-SN:5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1900 MHz; $\sigma$ = 1.422 mho/m; $\varepsilon_r$ = 40.021; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Pin=250mW/Area Scan (91x91x1):** Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 11.3 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.570 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 18.469 mW/g
**SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.66 mW/g**
Maximum value of SAR (measured) = 11.2 W/kg




0 dB = 11.2 W/kg = 20.98 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## System Check_Body_1900MHz_121030

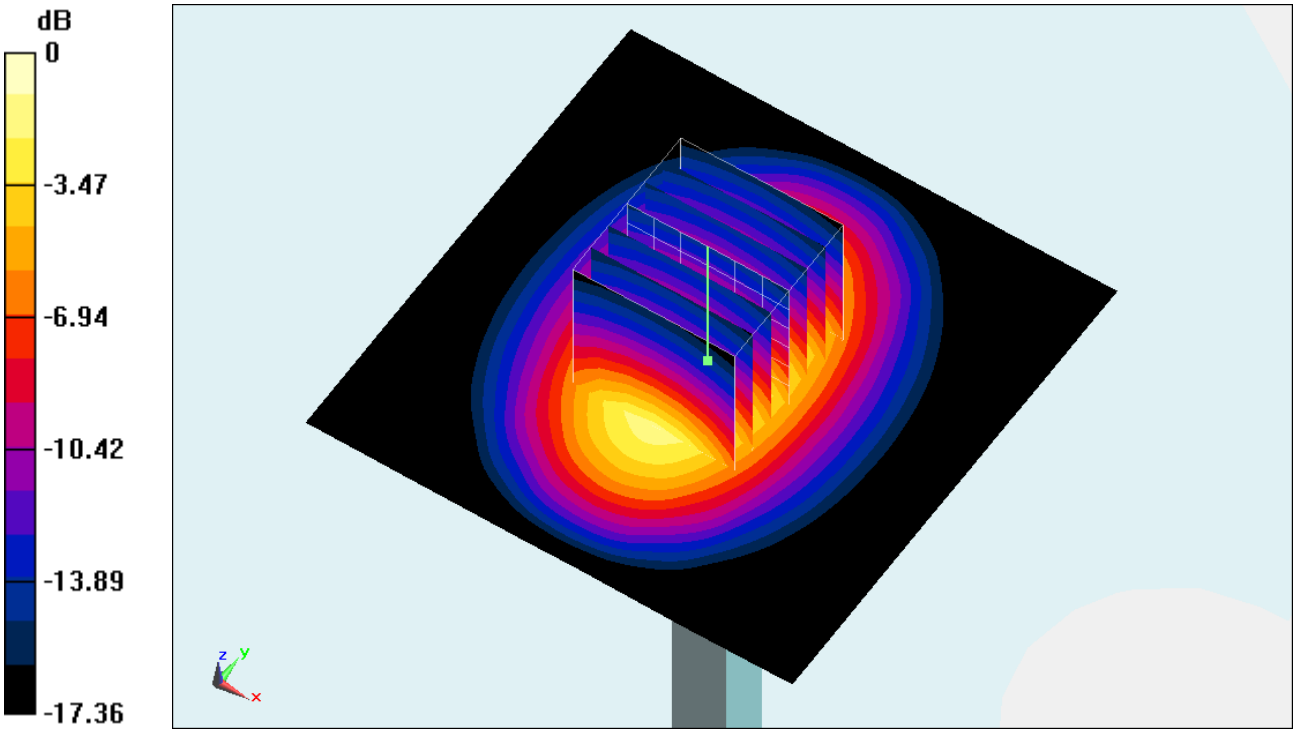
### DUT: D1900V2-SN:5d041

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1900 MHz; $\sigma$ = 1.545 mho/m; $\varepsilon_r$ = 53.277; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 11.7 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.964 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 19.309 mW/g
**SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.42 mW/g**
Maximum value of SAR (measured) = 11.6 W/kg




0 dB = 11.6 W/kg = 21.29 dB W/kg

## System Check_Head_2450MHz_121031

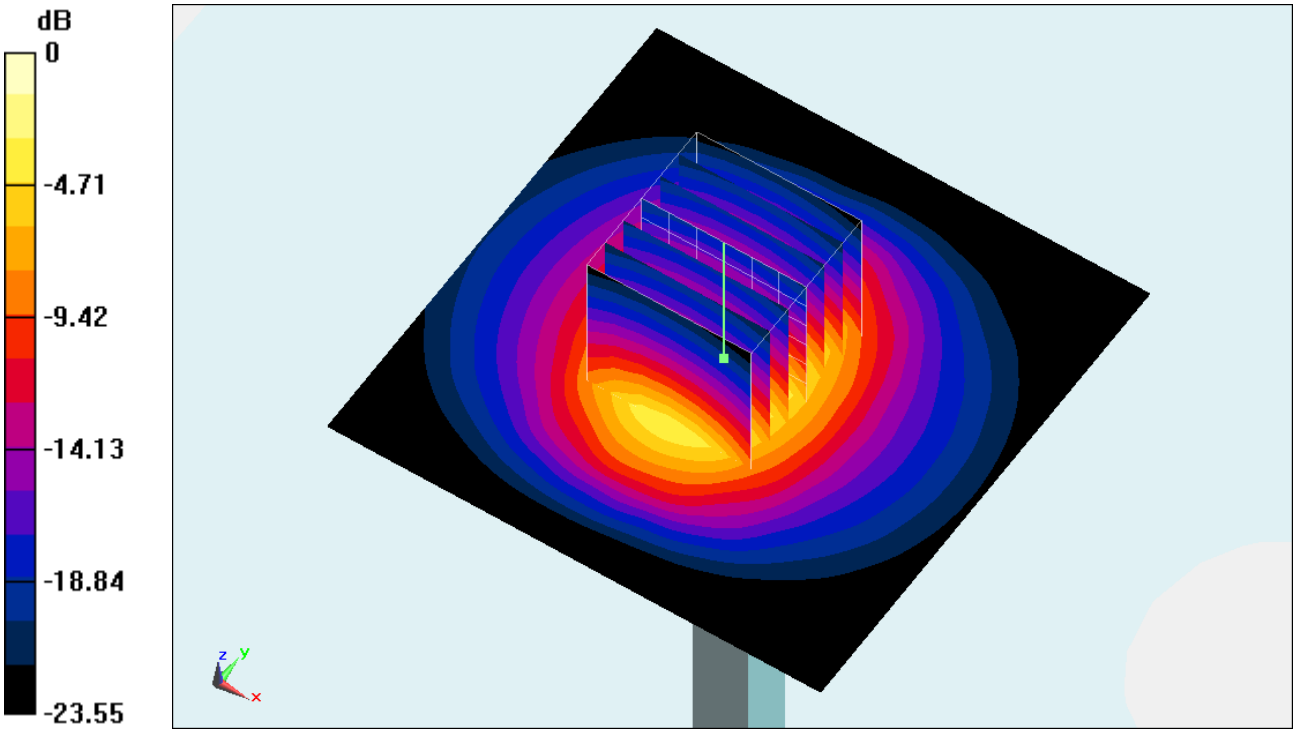
### DUT: D2450V2-SN:736

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2450 MHz; $\sigma$ = 1.827 mho/m; $\varepsilon_r$ = 39.417; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Pin=250mW/Area Scan (91x91x1):** Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 15.6 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.952 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 30.266 mW/g
**SAR(1 g) = 13.4 mW/g; SAR(10 g) = 5.98 mW/g**
Maximum value of SAR (measured) = 15.3 W/kg




0 dB = 15.3 W/kg = 23.69 dB W/kg

## System Check_Body_2450MHz_121031

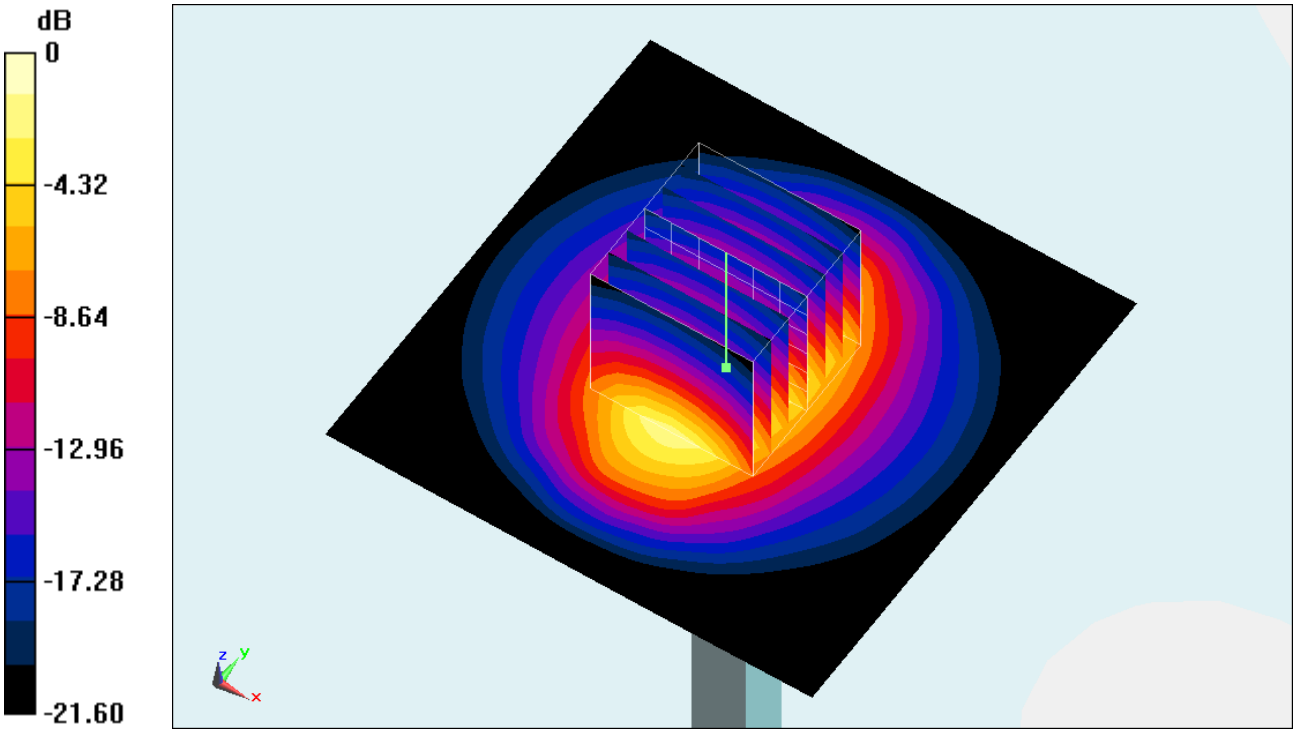
### DUT: D2450V2-SN:736

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2450 MHz; $\sigma$ = 2.015 mho/m; $\varepsilon_r$ = 53.957; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Pin=250mW/Area Scan (91x91x1):** Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 15.1 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.288 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 26.813 mW/g
**SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.25 mW/g**
Maximum value of SAR (measured) = 14.8 W/kg




0 dB = 14.8 W/kg = 23.41 dB W/kg

# Appendix B. Plots of SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #01_GSM850_GSM Voice_Right Cheek_Ch189

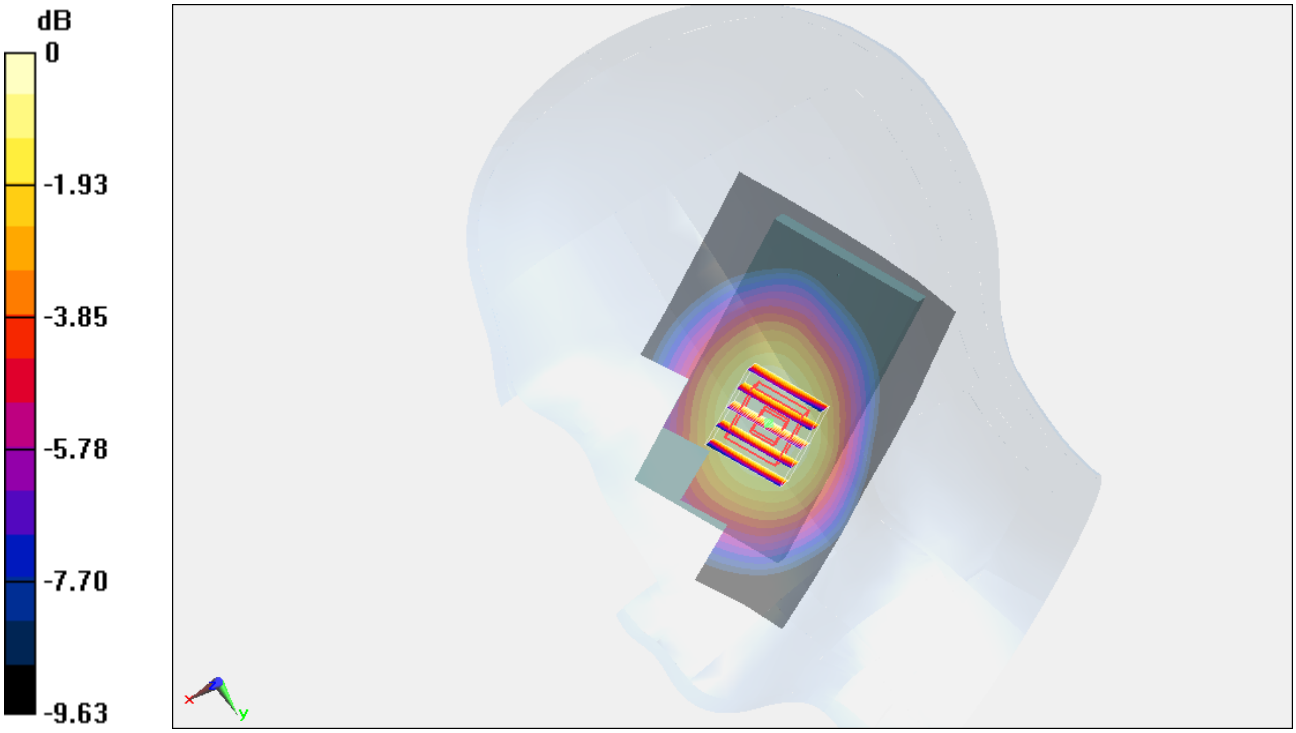
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.962 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.204 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.088 mW/g
**SAR(1 g) = 0.902 mW/g; SAR(10 g) = 0.684 mW/g**
Maximum value of SAR (measured) = 0.947 W/kg




0 dB = 0.947 W/kg = -0.47 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #02_GSM850_GSM Voice_Right Tilted_Ch189

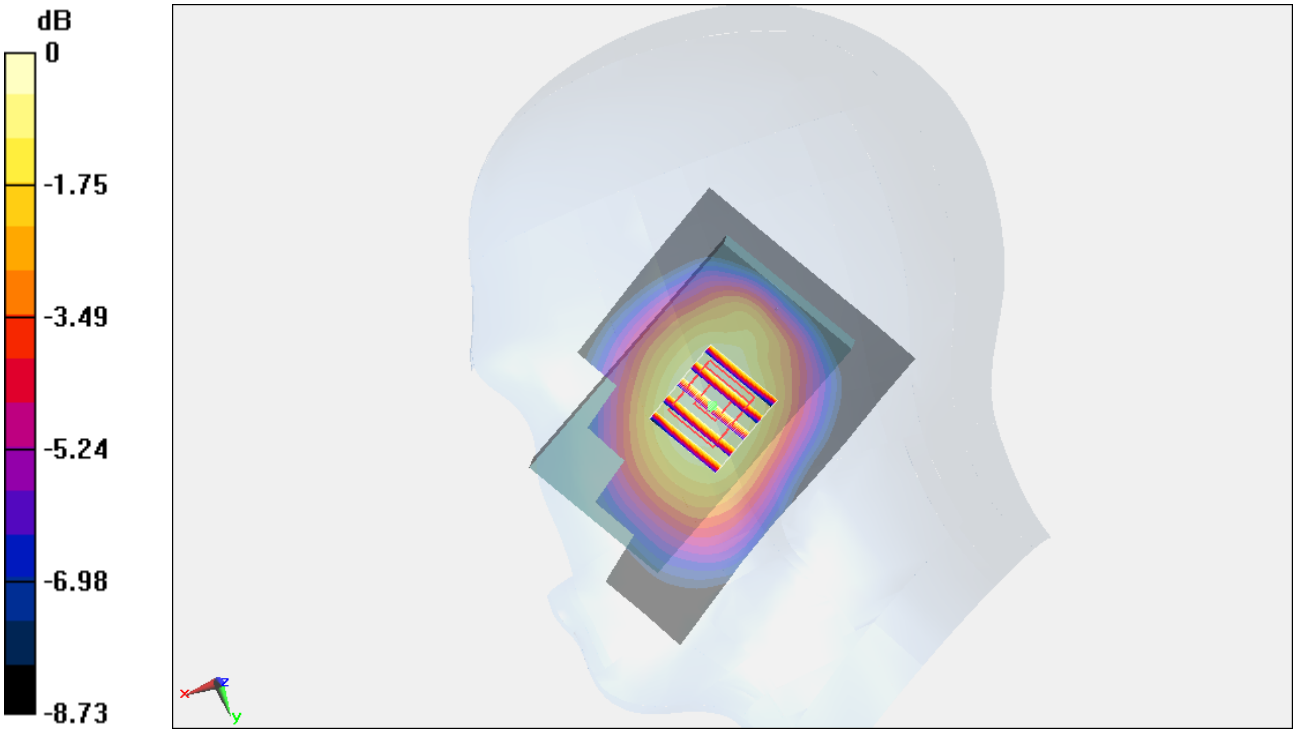
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.563 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.465 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.662 mW/g
**SAR(1 g) = 0.534 mW/g; SAR(10 g) = 0.407 mW/g**
Maximum value of SAR (measured) = 0.558 W/kg




0 dB = 0.558 W/kg = -5.07 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #03_GSM850_GSM Voice_Left Cheek_Ch189

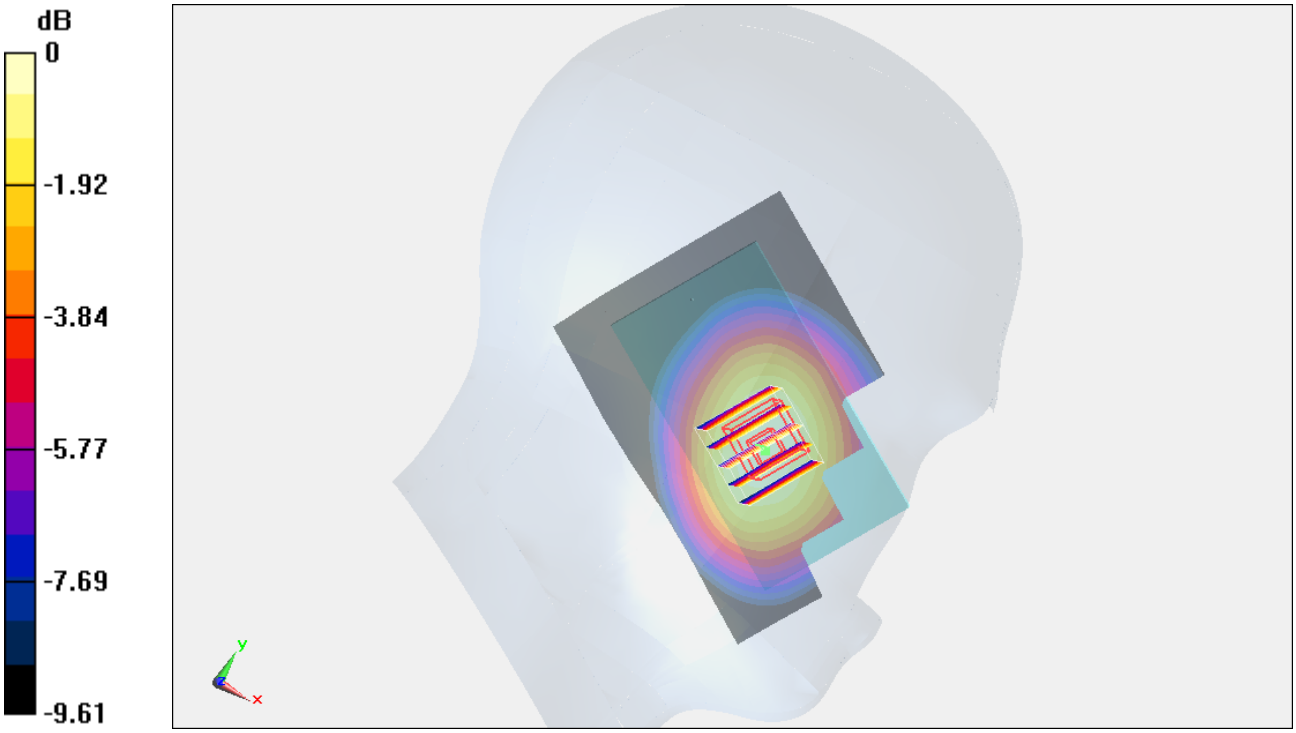
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.837 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.640 V/m; Power Drift = 0.124 dB
Peak SAR (extrapolated) = 1.003 mW/g
**SAR(1 g) = 0.781 mW/g; SAR(10 g) = 0.582 mW/g**
Maximum value of SAR (measured) = 0.828 W/kg




0 dB = 0.828 W/kg = -1.64 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #04_GSM850_GSM Voice_Left Tilted_Ch189

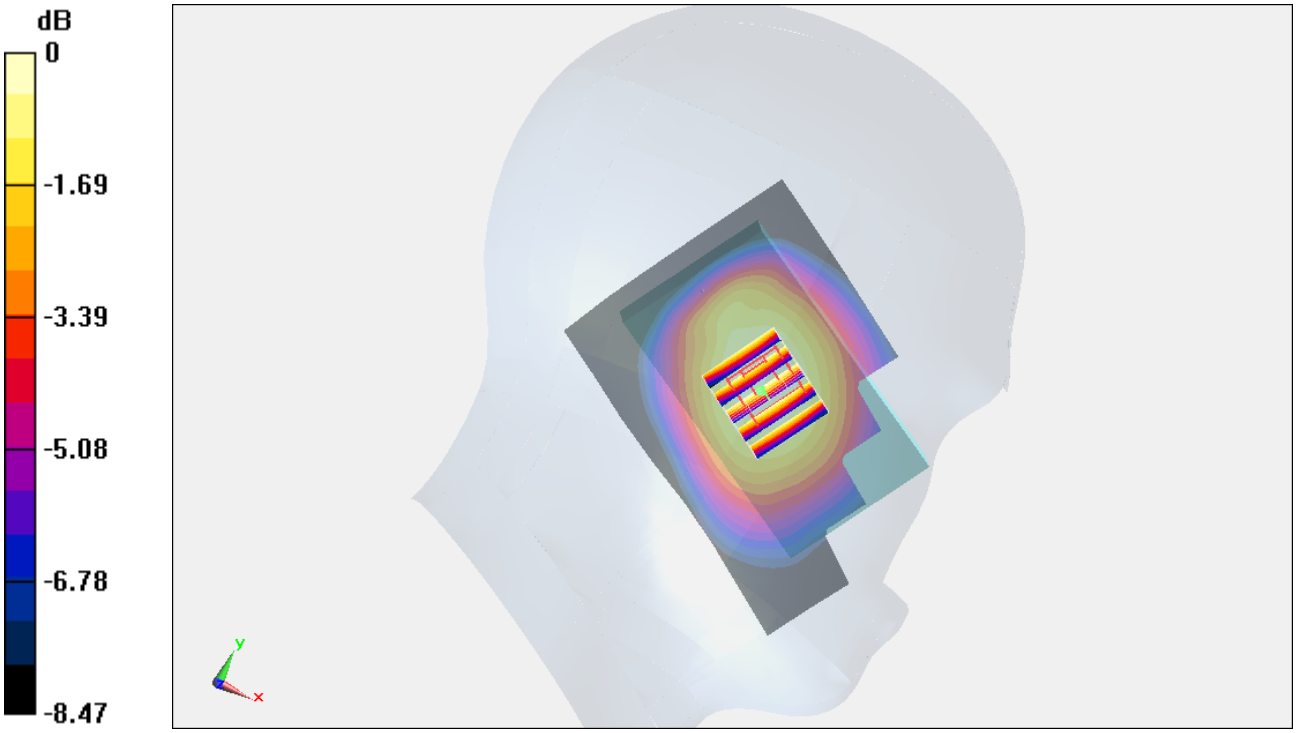
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.544 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.384 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.646 mW/g
**SAR(1 g) = 0.519 mW/g; SAR(10 g) = 0.394 mW/g**
Maximum value of SAR (measured) = 0.540 W/kg




0 dB = 0.540 W/kg = -5.35 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #05_GSM850_GSM Voice_Right Cheek_Ch128

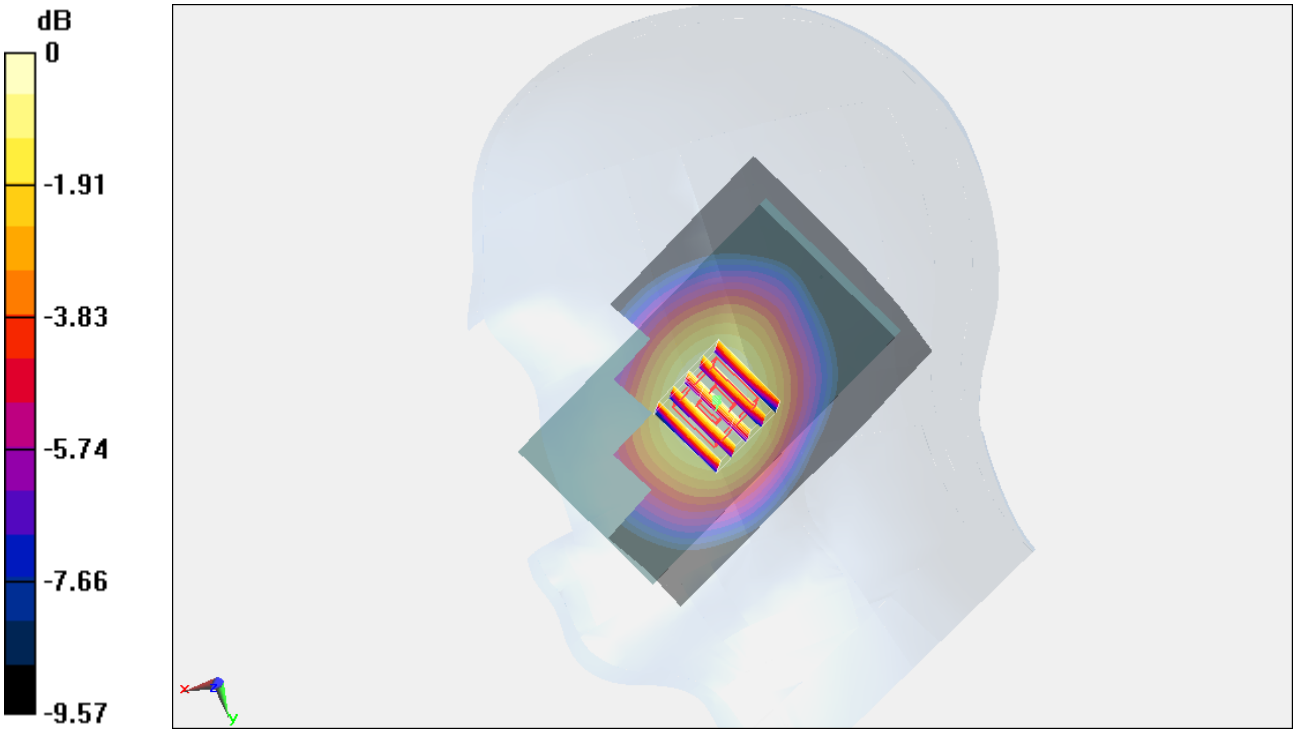
**DUT: 290405**

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used: f = 824.2 MHz; $\sigma$ = 0.9 mho/m; $\varepsilon_r$ = 43.386; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch128/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.839 W/kg

**Ch128/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.451 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.940 mW/g
**SAR(1 g) = 0.779 mW/g; SAR(10 g) = 0.592 mW/g**
Maximum value of SAR (measured) = 0.820 W/kg




0 dB = 0.820 W/kg = -1.72 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #06_GSM850_GSM Voice_Right Cheek_Ch251

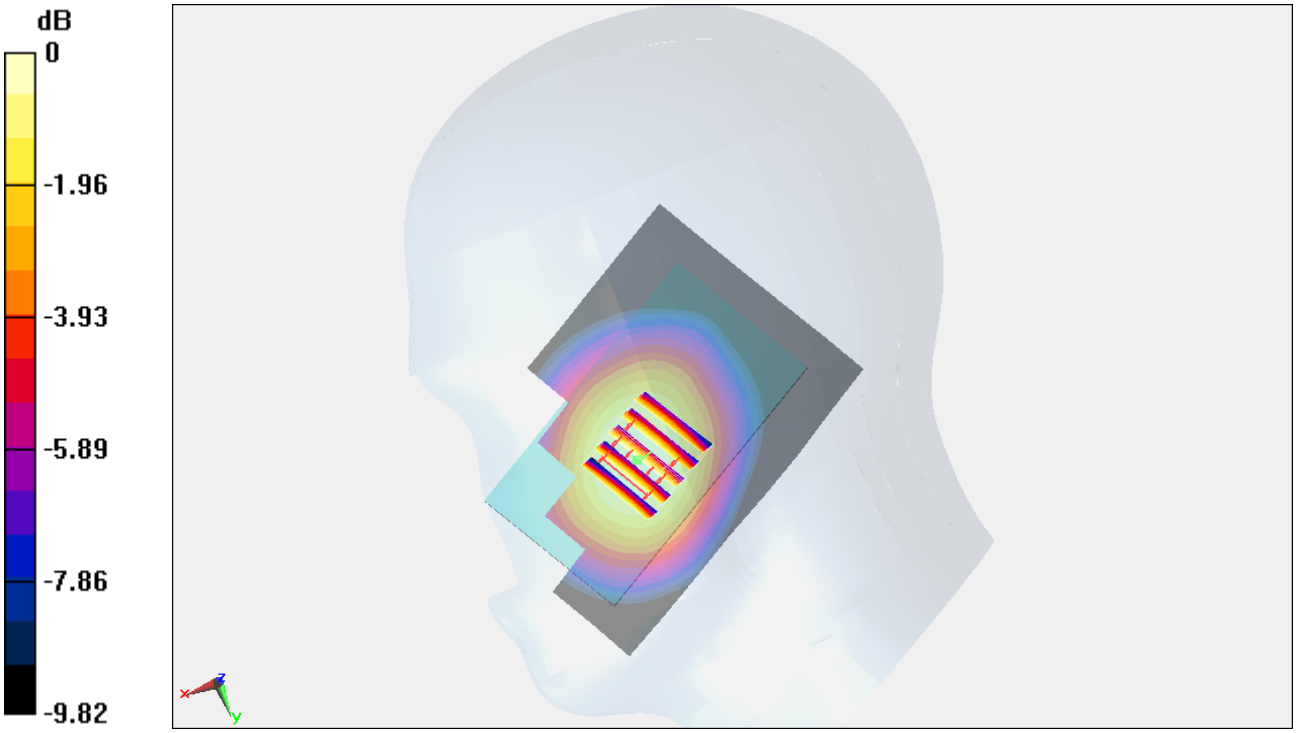
**DUT: 290405**

Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used: f = 849 MHz; $\sigma$ = 0.918 mho/m; $\varepsilon_r$ = 43.079; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch251/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

**Ch251/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.773 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.311 mW/g
**SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.811 mW/g**
Maximum value of SAR (measured) = 1.13 W/kg




0 dB = 1.13 W/kg = 1.06 dB W/kg

## #06_GSM850_GSM Voice_Right Cheek_Ch251_2D

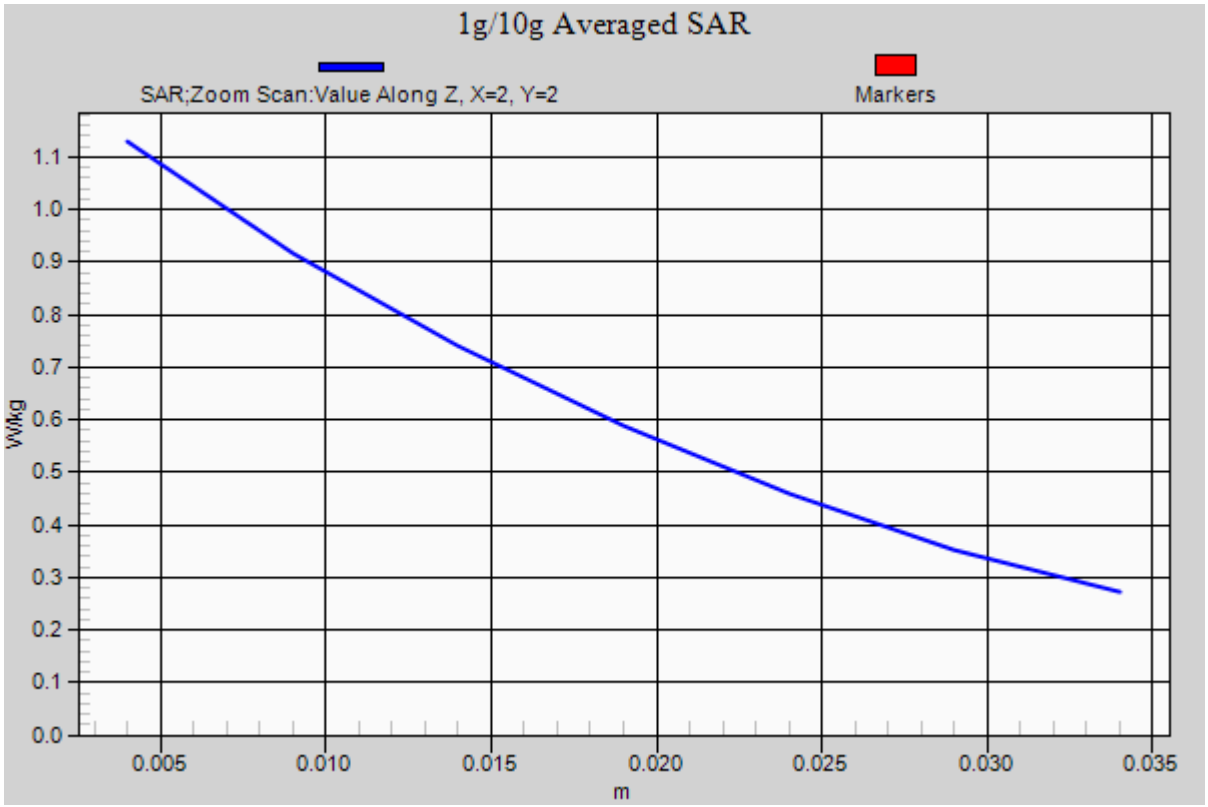
**DUT: 290405**

Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL_850_121029 Medium parameters used: f = 849 MHz; $\sigma$ = 0.918 mho/m; $\varepsilon_r$ = 43.079; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch251/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

**Ch251/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.773 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.311 mW/g
**SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.811 mW/g**
Maximum value of SAR (measured) = 1.13 W/kg



## #15_GSM1900_DTM Multi-slot class 5_Right Cheek_Ch810

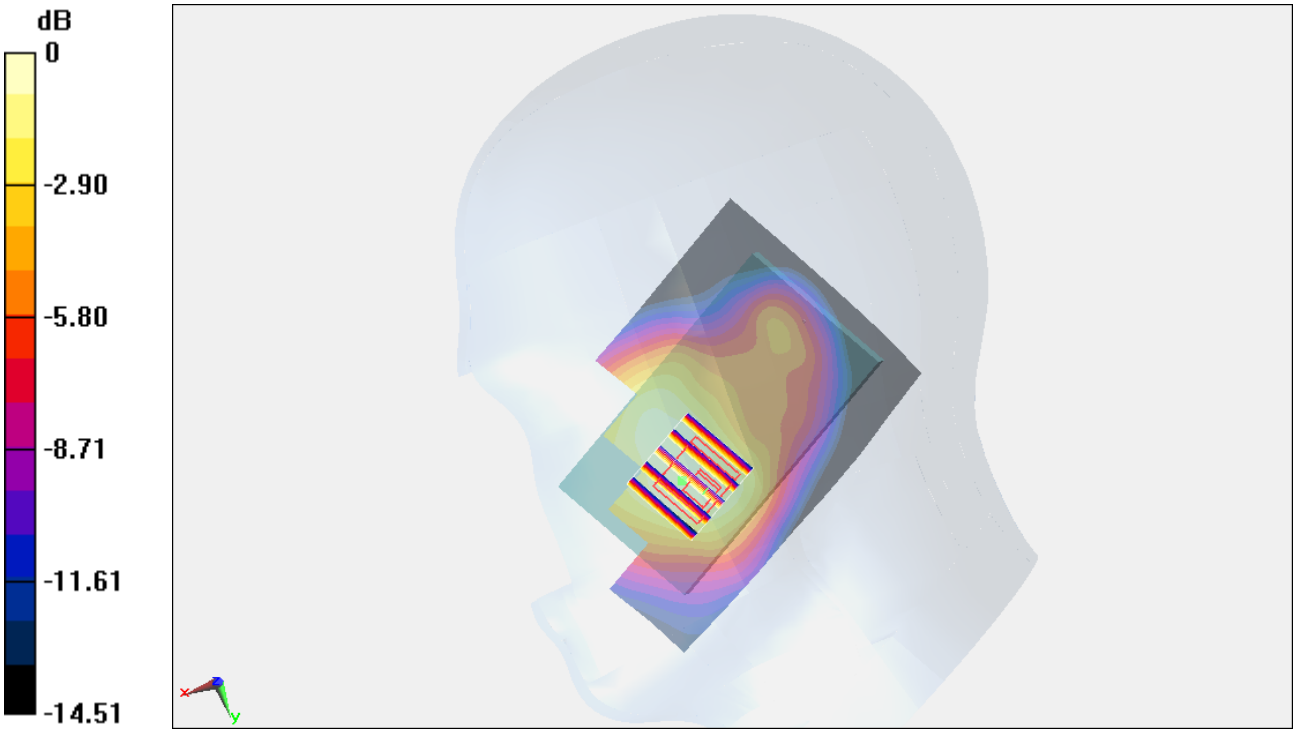
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: HSL_1900_121029 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.431 mho/m; $\varepsilon_r$ = 40.004; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.555 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.669 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.713 mW/g
**SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.324 mW/g**
Maximum value of SAR (measured) = 0.533 W/kg




0 dB = 0.533 W/kg = -5.47 dB W/kg

## #16_GSM1900_DTM Multi-slot class 5_Right Tilted_Ch810

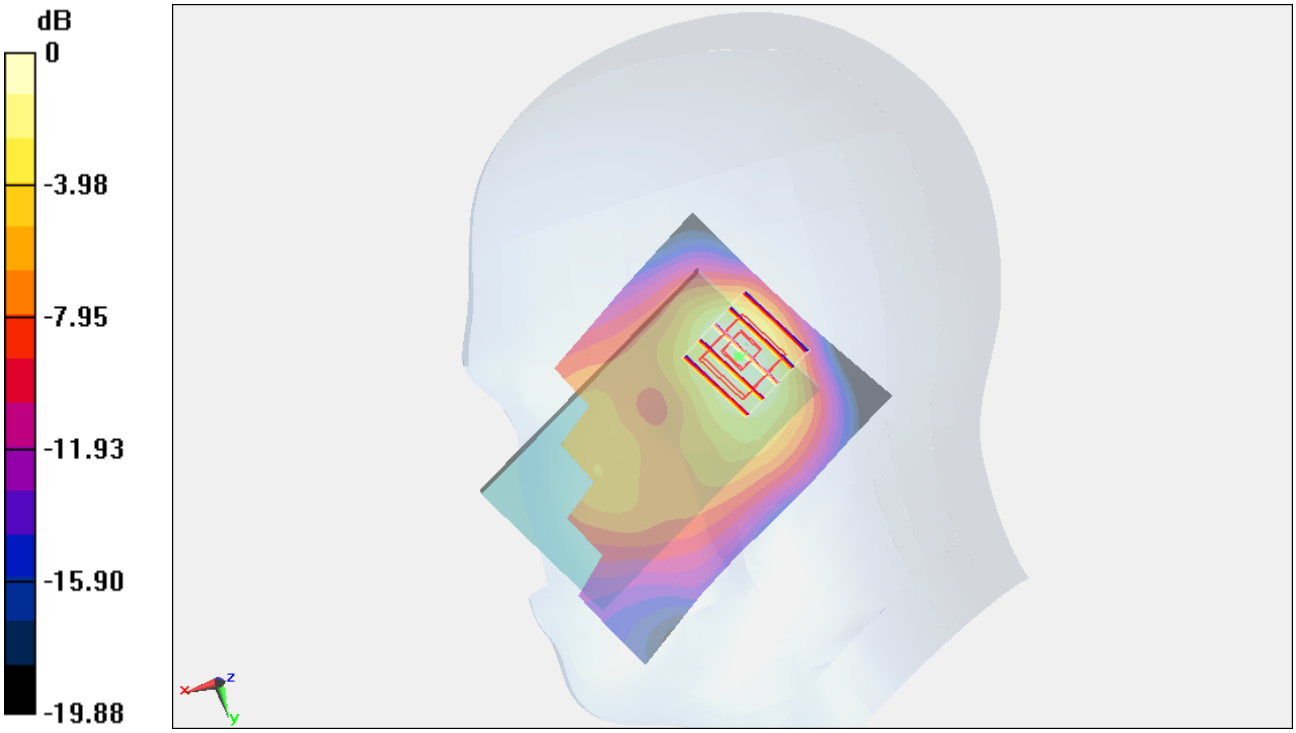
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: HSL_1900_121029 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.431 mho/m; $\varepsilon_r$ = 40.004; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.407 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.681 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.549 mW/g
**SAR(1 g) = 0.337 mW/g; SAR(10 g) = 0.193 mW/g**
Maximum value of SAR (measured) = 0.373 W/kg




0 dB = 0.373 W/kg = -8.57 dB W/kg

## #17_GSM1900_DTM Multi-slot class 5_Left Cheek_Ch810

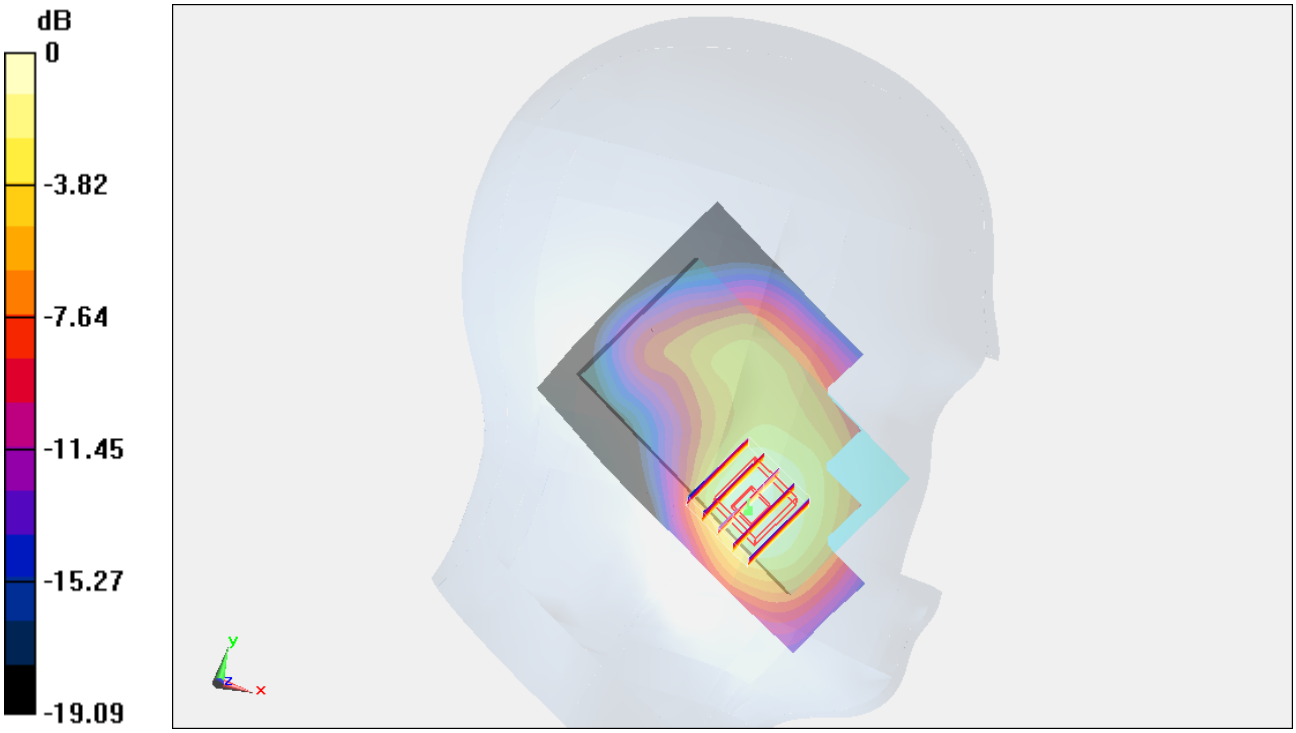
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: HSL_1900_121029 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.431 mho/m; $\varepsilon_r$ = 40.004; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.833 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.493 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.315 mW/g
**SAR(1 g) = 0.794 mW/g; SAR(10 g) = 0.466 mW/g**
Maximum value of SAR (measured) = 0.873 W/kg




0 dB = 0.873 W/kg = -1.18 dB W/kg

## #17_GSM1900_DTM Multi-slot class 5_Left Cheek_Ch810_2D

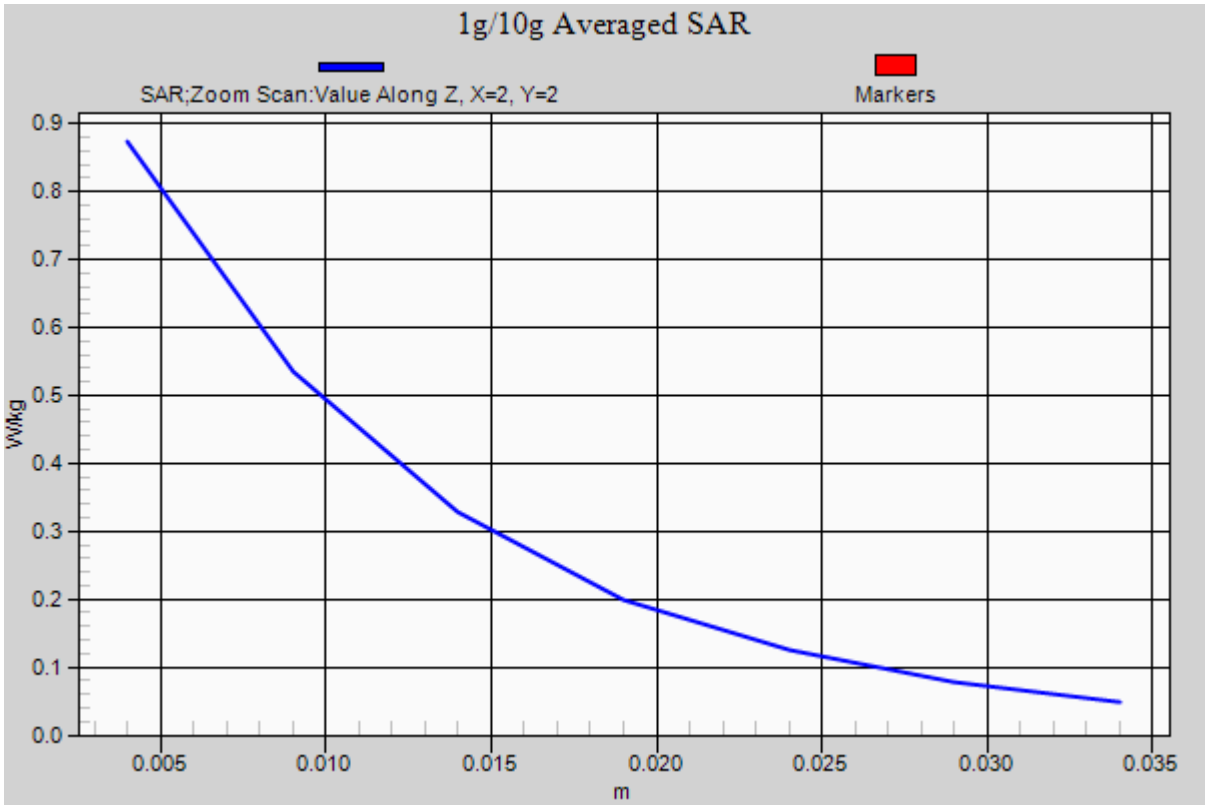
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: HSL_1900_121029 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.431 mho/m; $\varepsilon_r$ = 40.004; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.833 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.493 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.315 mW/g
**SAR(1 g) = 0.794 mW/g; SAR(10 g) = 0.466 mW/g**
Maximum value of SAR (measured) = 0.873 W/kg



## #18_GSM1900_DTM Multi-slot class 5_Left Tilted_Ch810

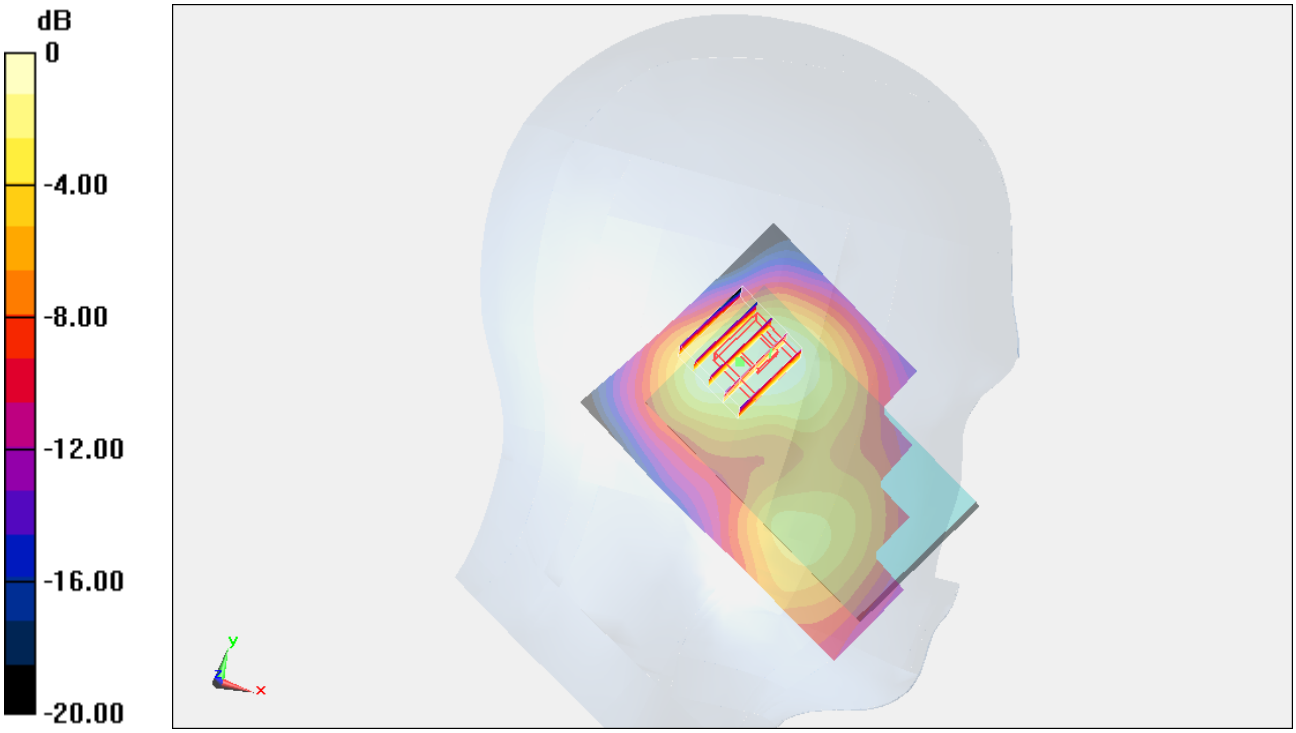
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: HSL_1900_121029 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.431 mho/m; $\varepsilon_r$ = 40.004; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.401 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.223 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.450 mW/g
**SAR(1 g) = 0.294 mW/g; SAR(10 g) = 0.181 mW/g**
Maximum value of SAR (measured) = 0.313 W/kg




0 dB = 0.313 W/kg = -10.09 dB W/kg

## #07_WCDMA V_RMC12.2K_Right Cheek_Ch4233

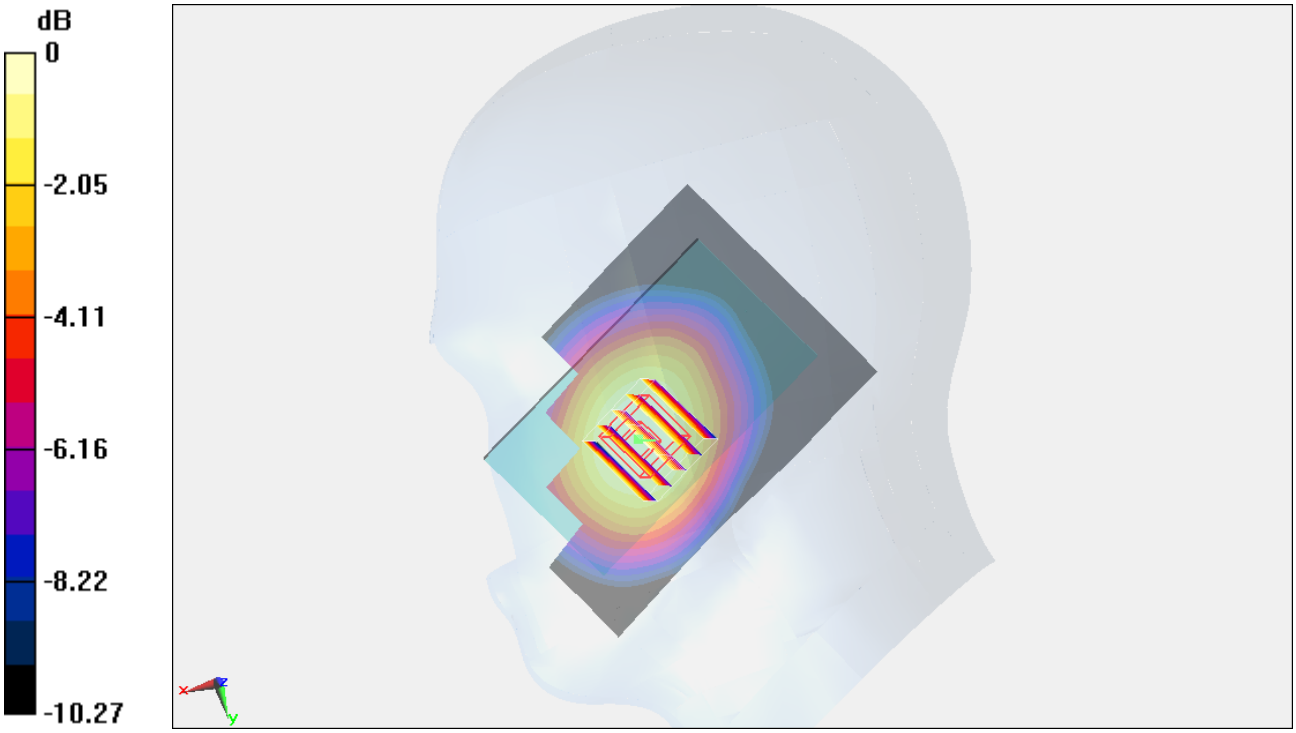
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 847 MHz; $\sigma$ = 0.917 mho/m; $\varepsilon_r$ = 43.112; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.785 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.197 mW/g
**SAR(1 g) = 0.981 mW/g; SAR(10 g) = 0.739 mW/g**
Maximum value of SAR (measured) = 1.04 W/kg




0 dB = 1.04 W/kg = 0.34 dB W/kg

## #07_WCDMA V_RMC12.2K_Right Cheek_Ch4233_2D

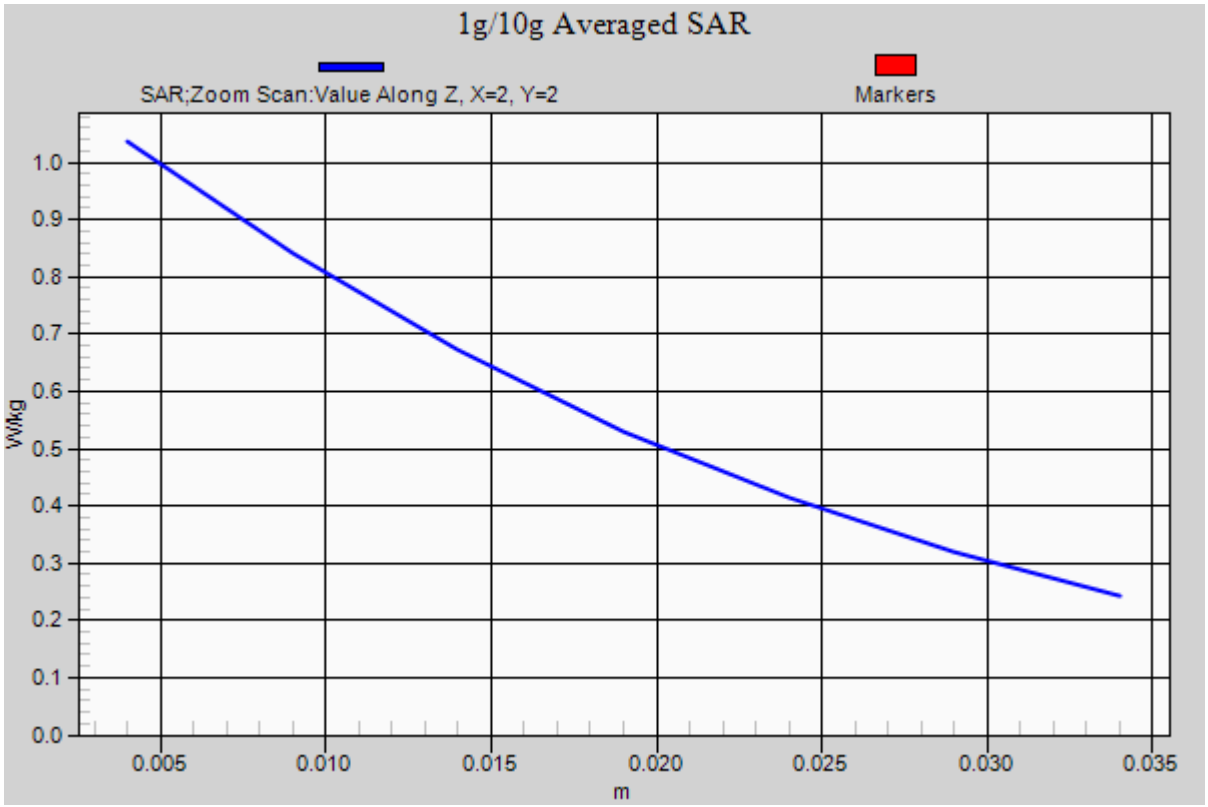
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 847 MHz; $\sigma$ = 0.917 mho/m; $\varepsilon_r$ = 43.112; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.785 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.197 mW/g
**SAR(1 g) = 0.981 mW/g; SAR(10 g) = 0.739 mW/g**
Maximum value of SAR (measured) = 1.04 W/kg



## #08_WCDMA V_RMC12.2K_Right Tilted_Ch4233

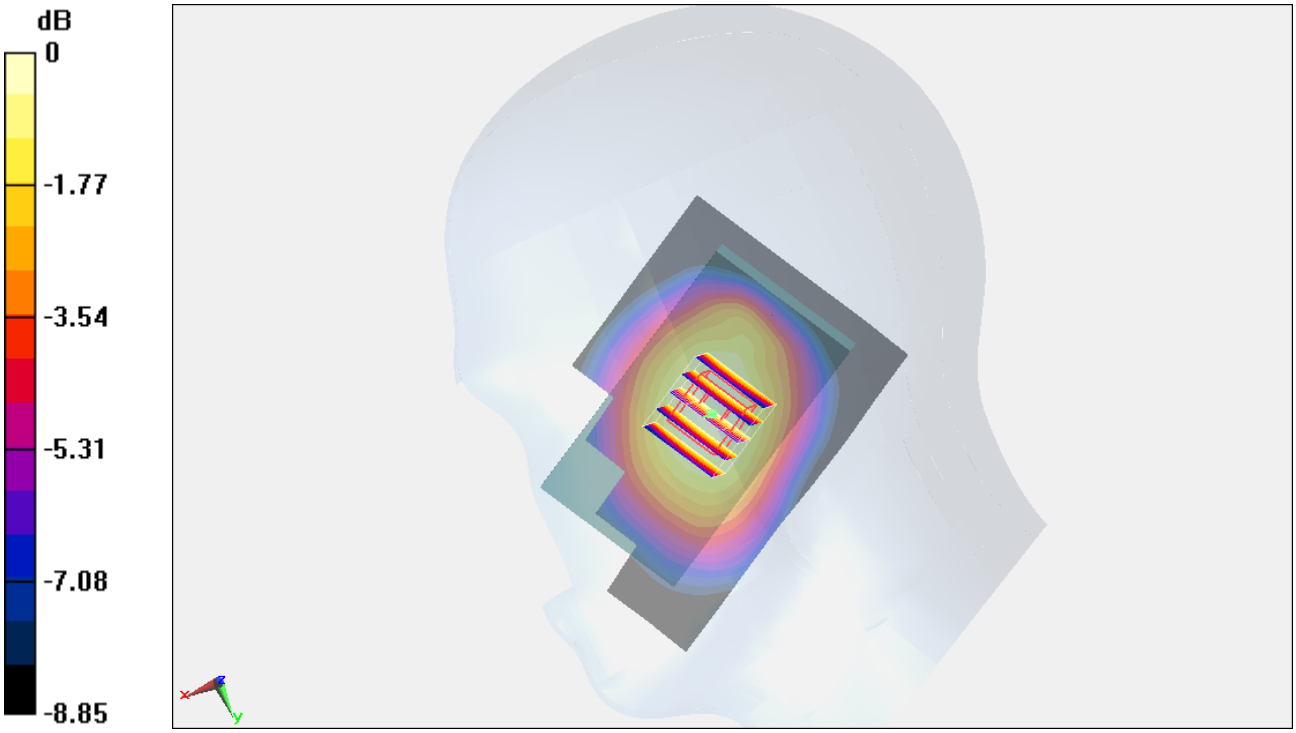
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 847 MHz; $\sigma$ = 0.917 mho/m; $\varepsilon_r$ = 43.112; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.603 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.819 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.703 mW/g
**SAR(1 g) = 0.569 mW/g; SAR(10 g) = 0.433 mW/g**
Maximum value of SAR (measured) = 0.595 W/kg




0 dB = 0.595 W/kg = -4.51 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #09_WCDMA V_RMC12.2K_Left Cheek_Ch4233

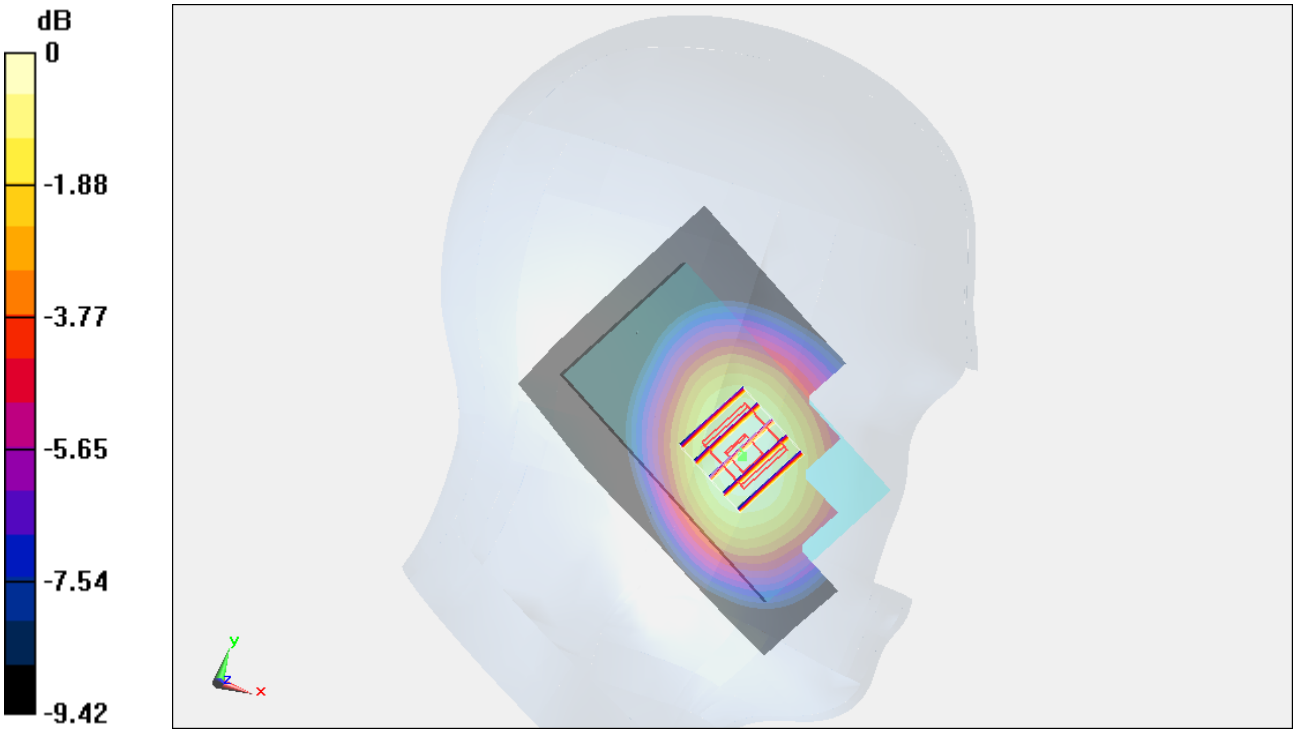
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 847 MHz; $\sigma$ = 0.917 mho/m; $\varepsilon_r$ = 43.112; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.903 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.842 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.068 mW/g
**SAR(1 g) = 0.838 mW/g; SAR(10 g) = 0.624 mW/g**
Maximum value of SAR (measured) = 0.887 W/kg




0 dB = 0.887 W/kg = -1.04 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #10_WCDMA V_RMC12.2K_Left Tilted_Ch4233

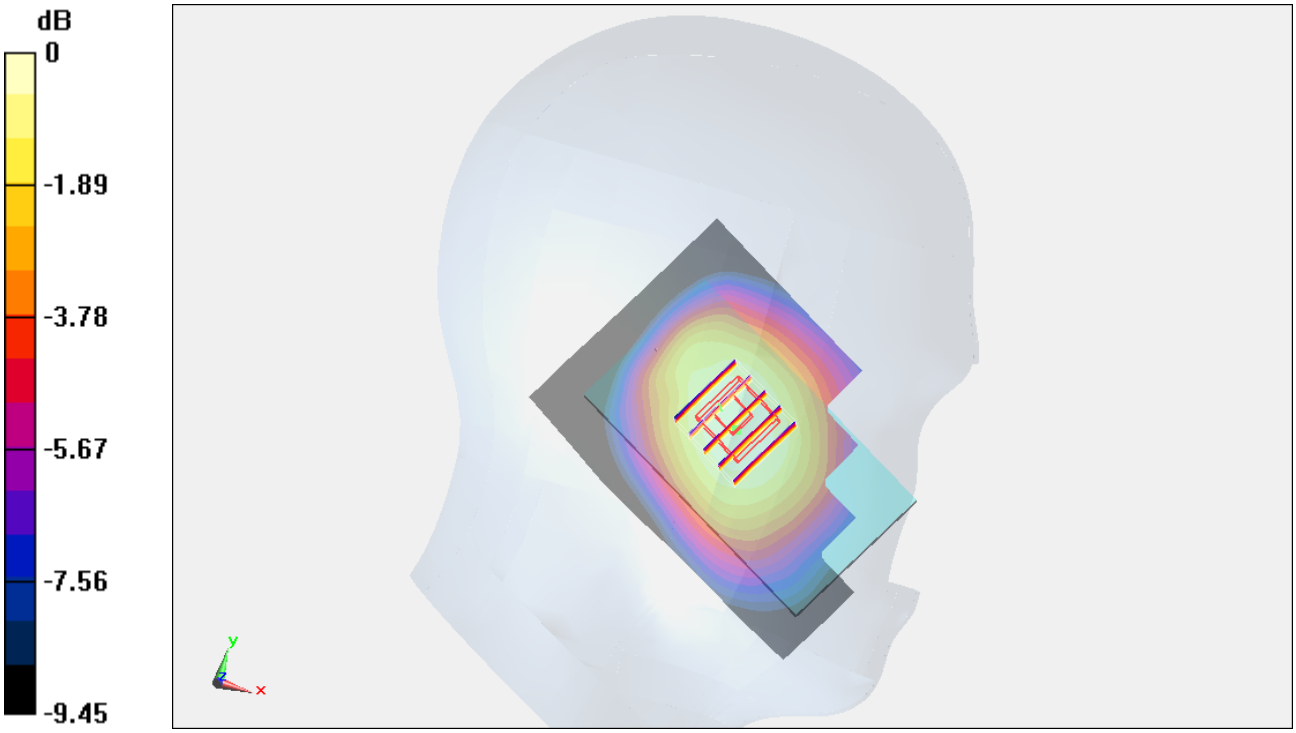
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 847 MHz; $\sigma$ = 0.917 mho/m; $\varepsilon_r$ = 43.112; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.568 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.040 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.672 mW/g
**SAR(1 g) = 0.541 mW/g; SAR(10 g) = 0.411 mW/g**
Maximum value of SAR (measured) = 0.559 W/kg




0 dB = 0.559 W/kg = -5.05 dB W/kg

## #11_WCDMA V_RMC12.2K_Right Cheek_Ch4132

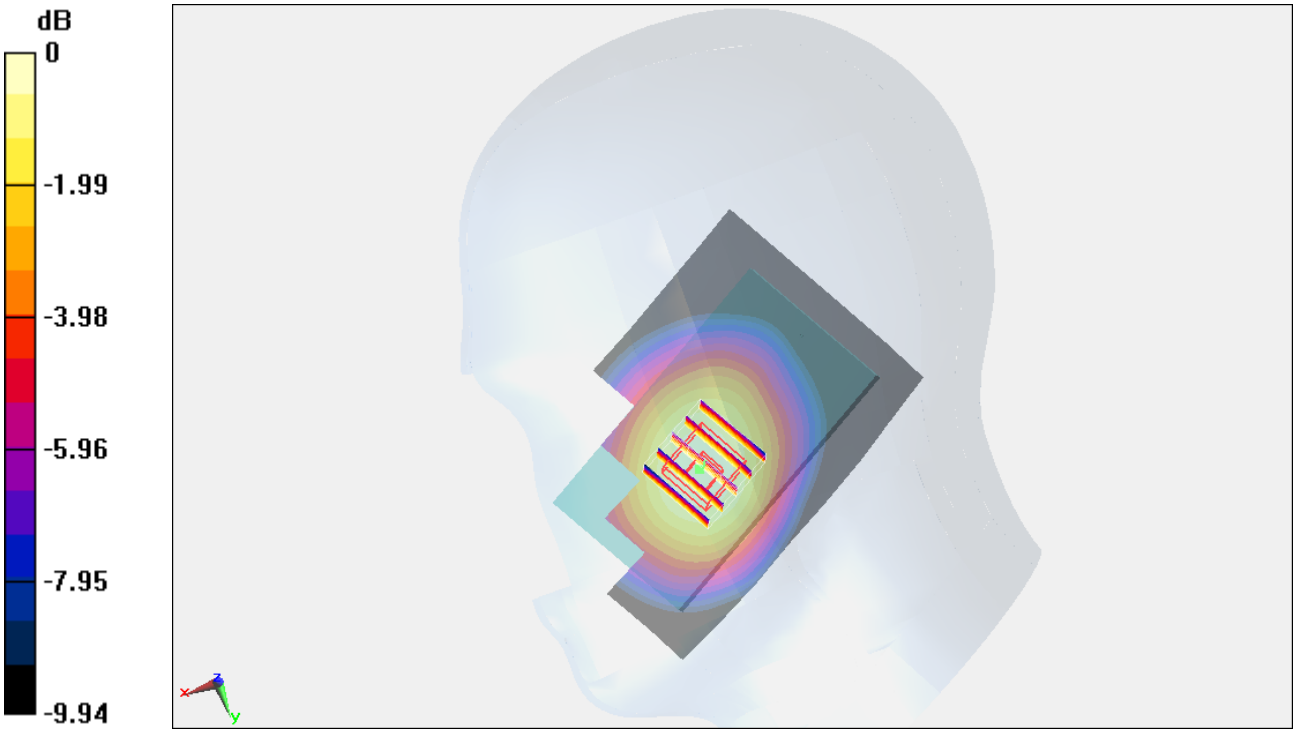
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used: f = 826.4 MHz; $\sigma$ = 0.902 mho/m; $\varepsilon_r$ = 43.35; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.837 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.836 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.950 mW/g
**SAR(1 g) = 0.783 mW/g; SAR(10 g) = 0.593 mW/g**
Maximum value of SAR (measured) = 0.826 W/kg




0 dB = 0.826 W/kg = -1.66 dB W/kg

## #12_WCDMA V_RMC12.2K_Right Cheek_Ch4182

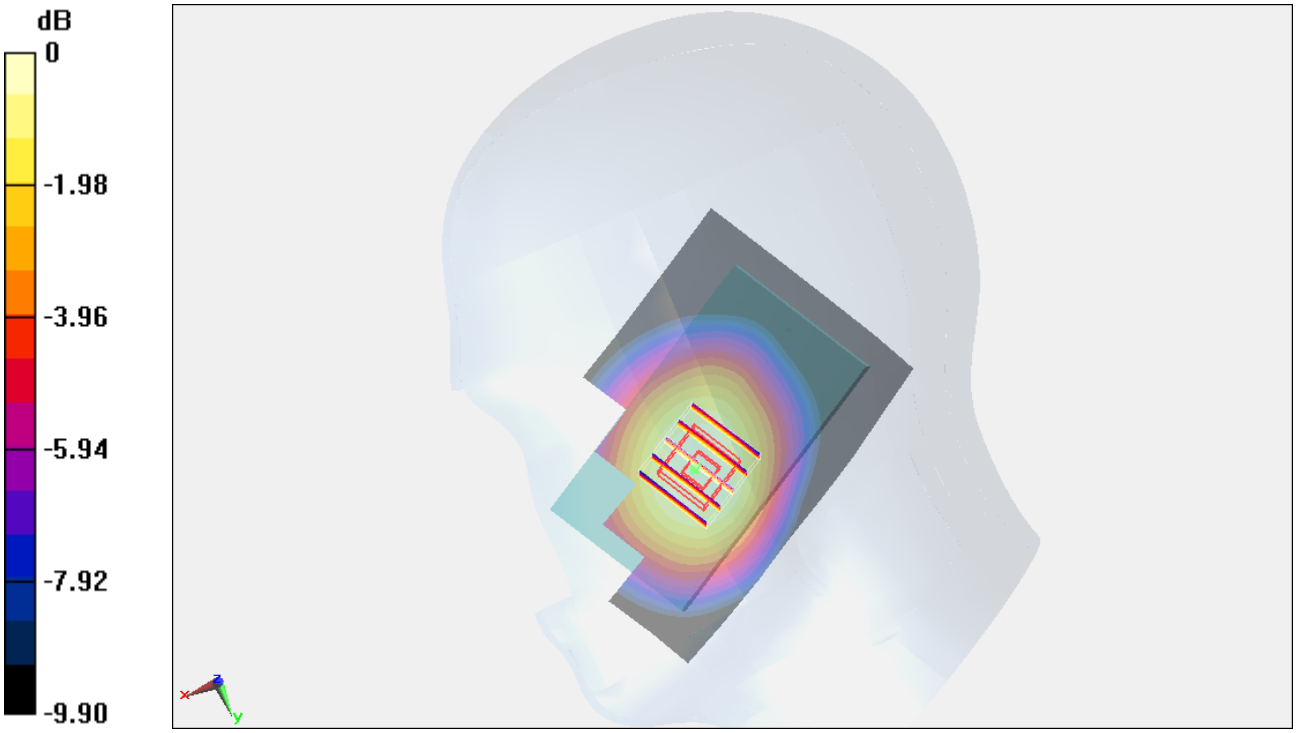
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.968 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.094 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.074 mW/g
**SAR(1 g) = 0.880 mW/g; SAR(10 g) = 0.666 mW/g**
Maximum value of SAR (measured) = 0.928 W/kg




0 dB = 0.928 W/kg = -0.65 dB W/kg

## #13_WCDMA V_RMC12.2K_Left Cheek_Ch4132

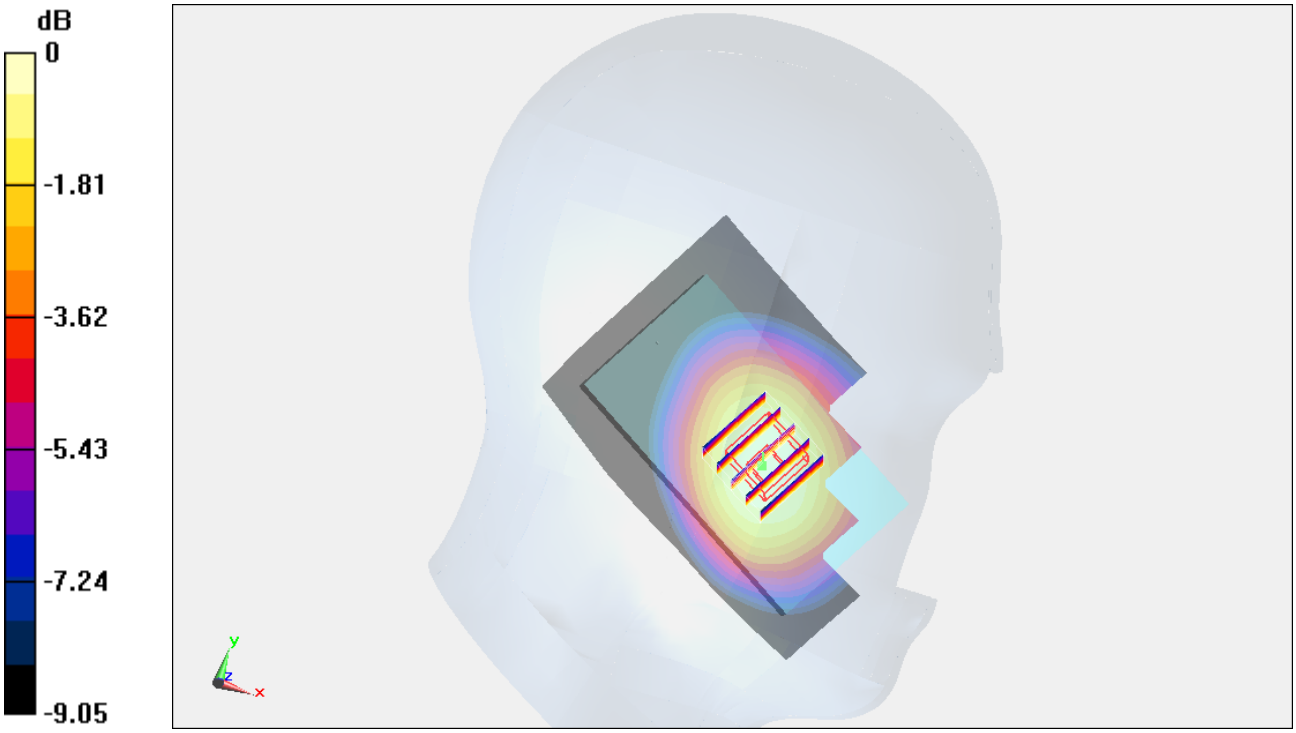
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used : f = 826.4 MHz; $\sigma$ = 0.902 mho/m; $\varepsilon_r$ = 43.35; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.719 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.233 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.837 mW/g
**SAR(1 g) = 0.659 mW/g; SAR(10 g) = 0.495 mW/g**
Maximum value of SAR (measured) = 0.693 W/kg




0 dB = 0.693 W/kg = -3.19 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/29

## #14_WCDMA V_RMC12.2K_Left Cheek_Ch4182

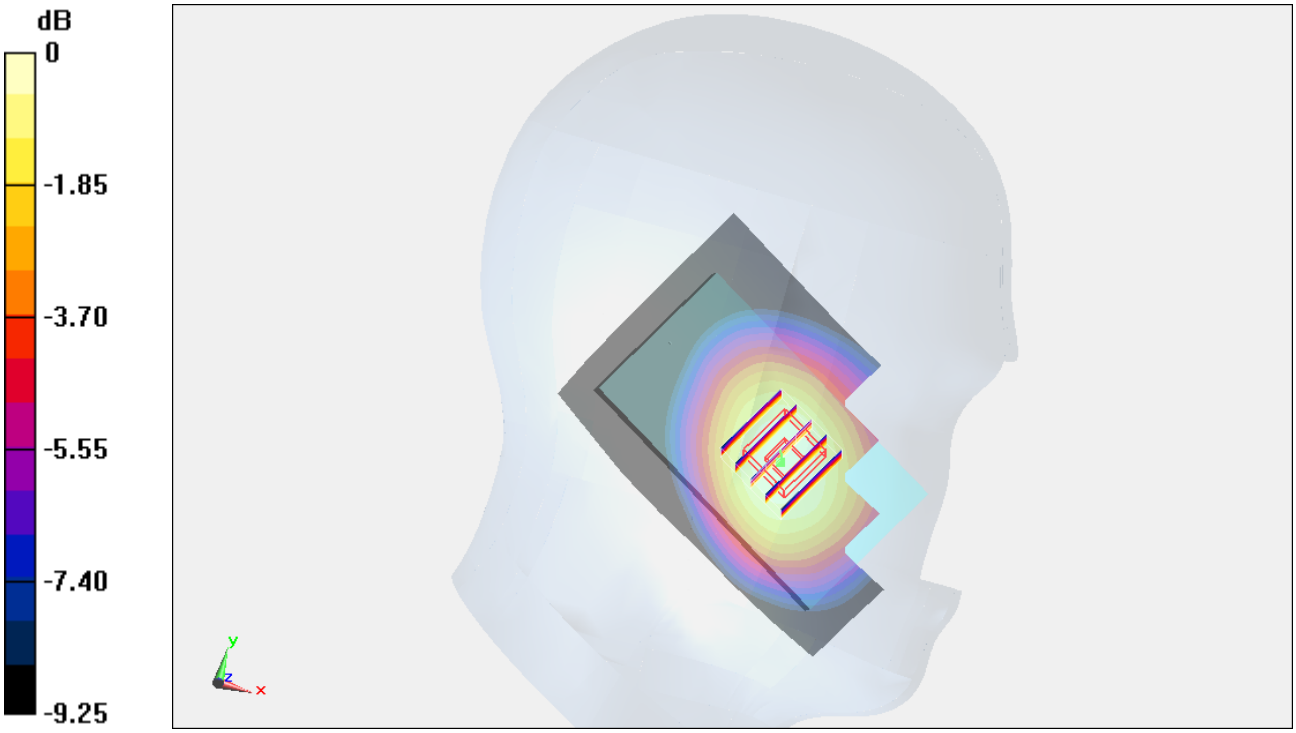
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_850_121029 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.909 mho/m; $\varepsilon_r$ = 43.247; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.4 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.71, 8.71, 8.71); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.825 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.557 V/m; Power Drift = 0.123 dB
Peak SAR (extrapolated) = 0.959 mW/g
**SAR(1 g) = 0.755 mW/g; SAR(10 g) = 0.565 mW/g**
Maximum value of SAR (measured) = 0.797 W/kg




0 dB = 0.797 W/kg = -1.97 dB W/kg

## #19_WCDMA II_RMC12.2K_Right Cheek_Ch9400

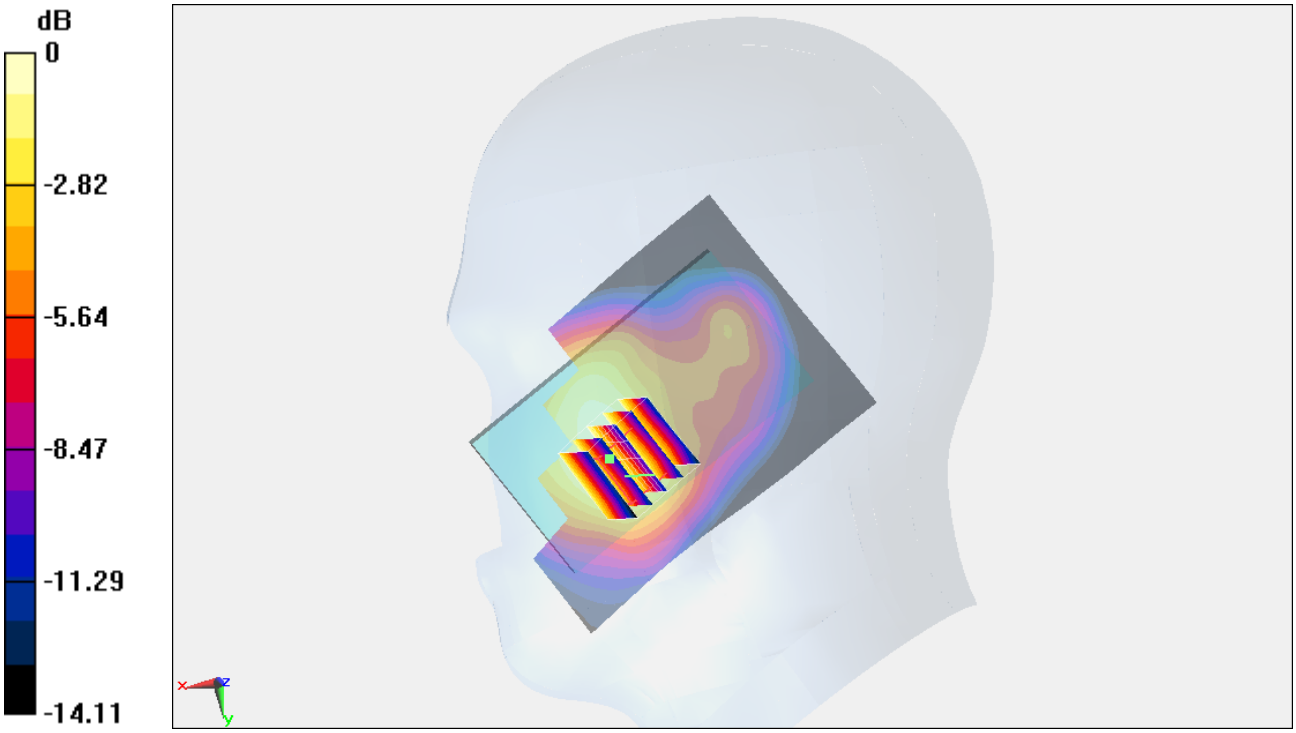
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.407 mho/m; $\varepsilon_r$ = 40.072; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.804 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.834 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.026 mW/g
**SAR(1 g) = 0.722 mW/g; SAR(10 g) = 0.470 mW/g**
Maximum value of SAR (measured) = 0.776 W/kg




0 dB = 0.776 W/kg = -2.20 dB W/kg

## #20_WCDMA II_RMC12.2K_Right Tilted_Ch9400

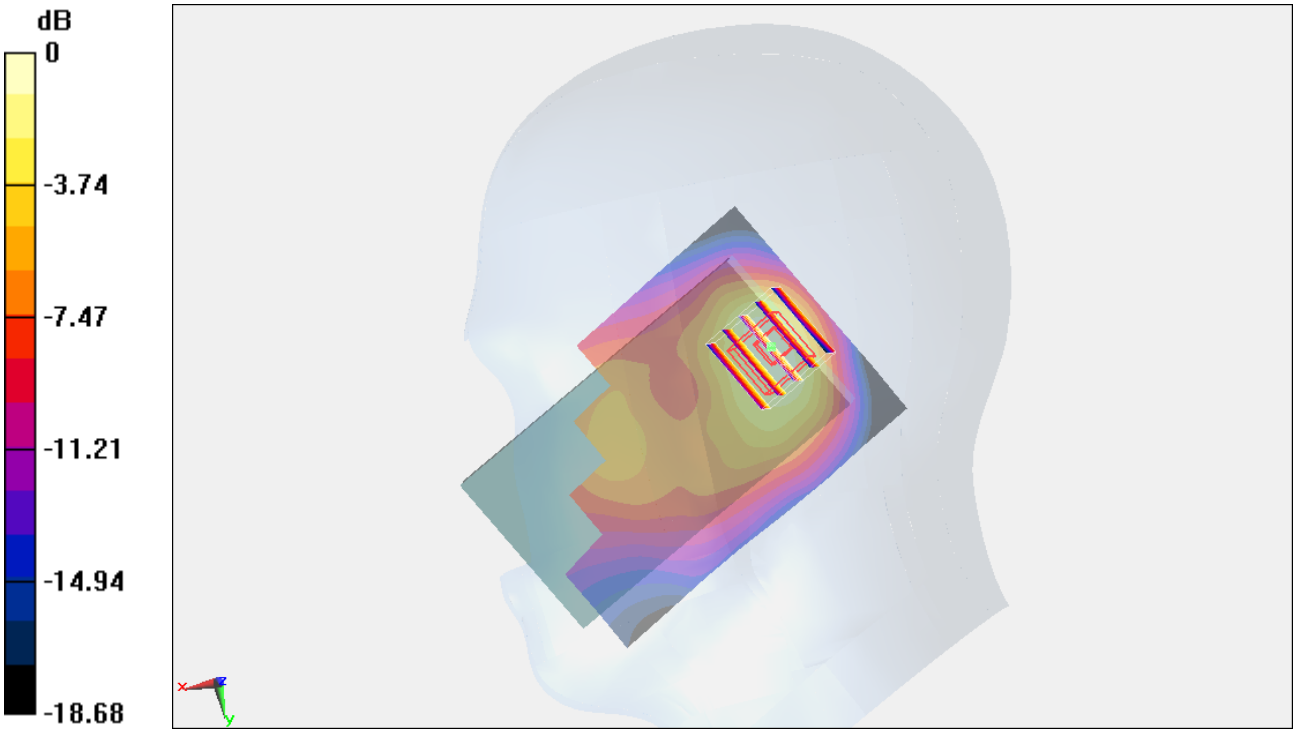
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.407 mho/m; $\varepsilon_r$ = 40.072; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.569 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.008 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.762 mW/g
**SAR(1 g) = 0.478 mW/g; SAR(10 g) = 0.278 mW/g**
Maximum value of SAR (measured) = 0.532 W/kg




0 dB = 0.532 W/kg = -5.48 dB W/kg

## #21_WCDMA II_RMC12.2K_Left Cheek_Ch9400

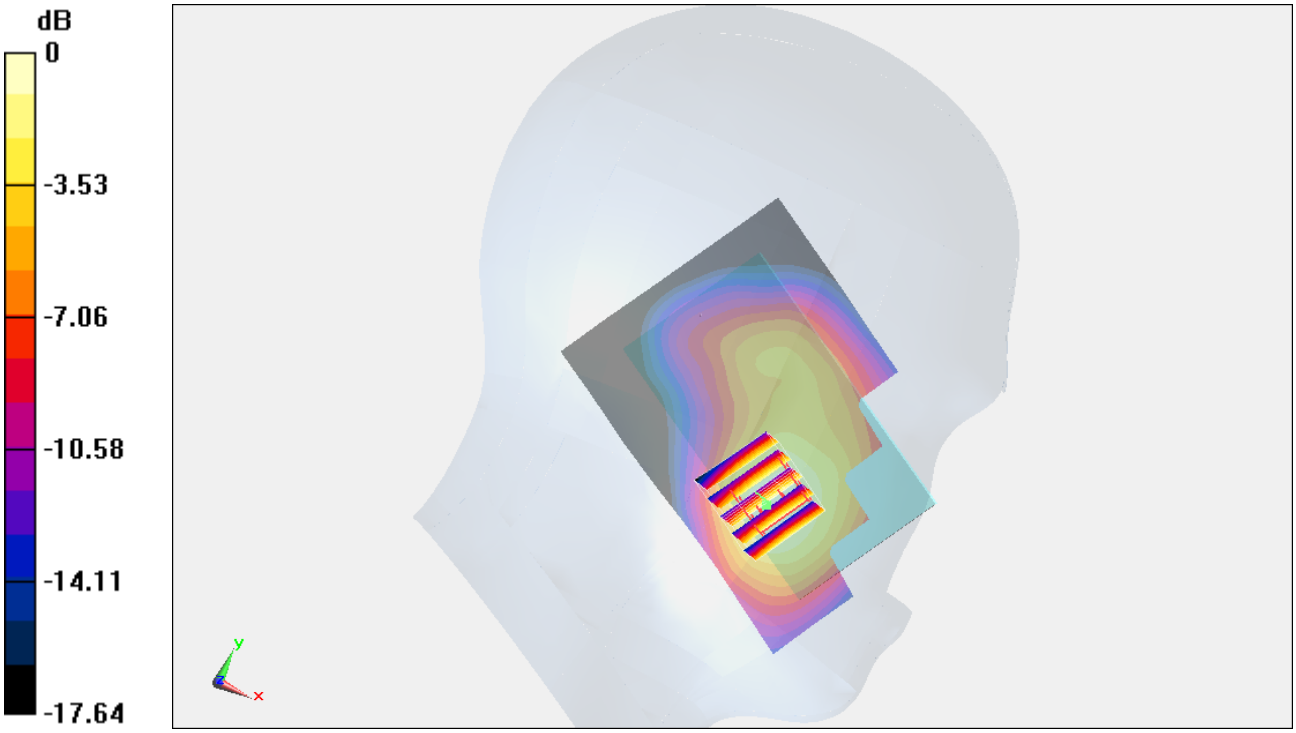
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.407 mho/m; $\varepsilon_r$ = 40.072; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.12 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.962 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.785 mW/g
**SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.656 mW/g**
Maximum value of SAR (measured) = 1.21 W/kg




0 dB = 1.21 W/kg = 1.66 dB W/kg

## #21_WCDMA II_RMC12.2K_Left Cheek_Ch9400_2D

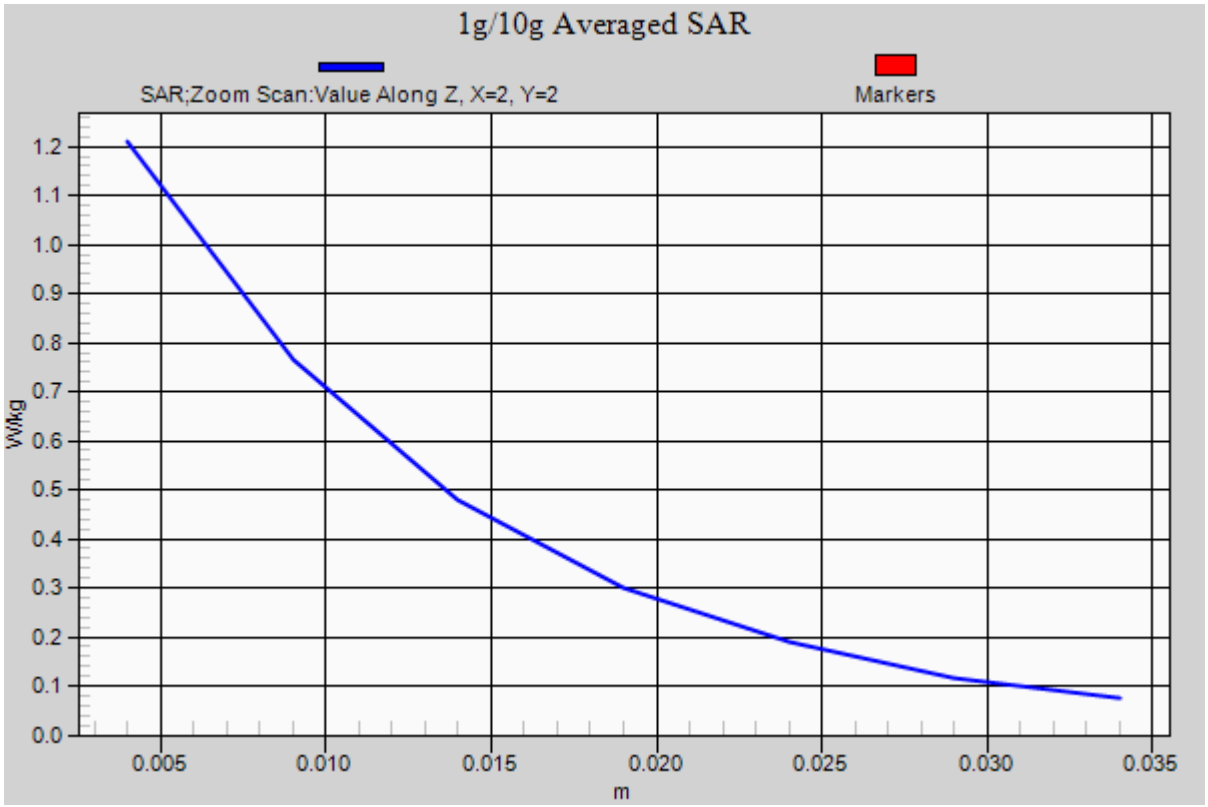
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.407 mho/m; $\varepsilon_r$ = 40.072; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.12 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.962 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.785 mW/g
**SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.656 mW/g**
Maximum value of SAR (measured) = 1.21 W/kg



## #22_WCDMA II_RMC12.2K_Left Tilted_Ch9400

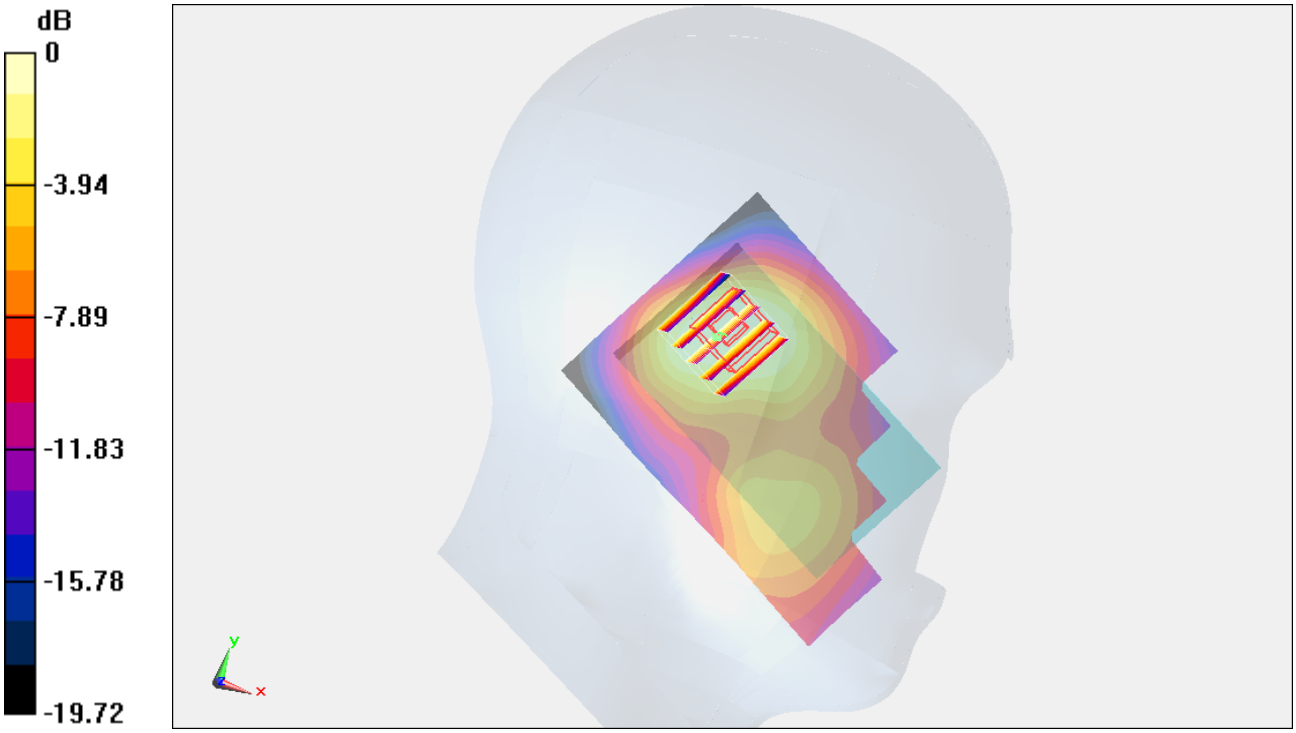
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.407 mho/m; $\varepsilon_r$ = 40.072; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.577 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.240 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.675 mW/g
**SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.275 mW/g**
Maximum value of SAR (measured) = 0.469 W/kg




0 dB = 0.469 W/kg = -6.58 dB W/kg

## #23_WCDMA II_RMC12.2K_Left Cheek_Ch9262

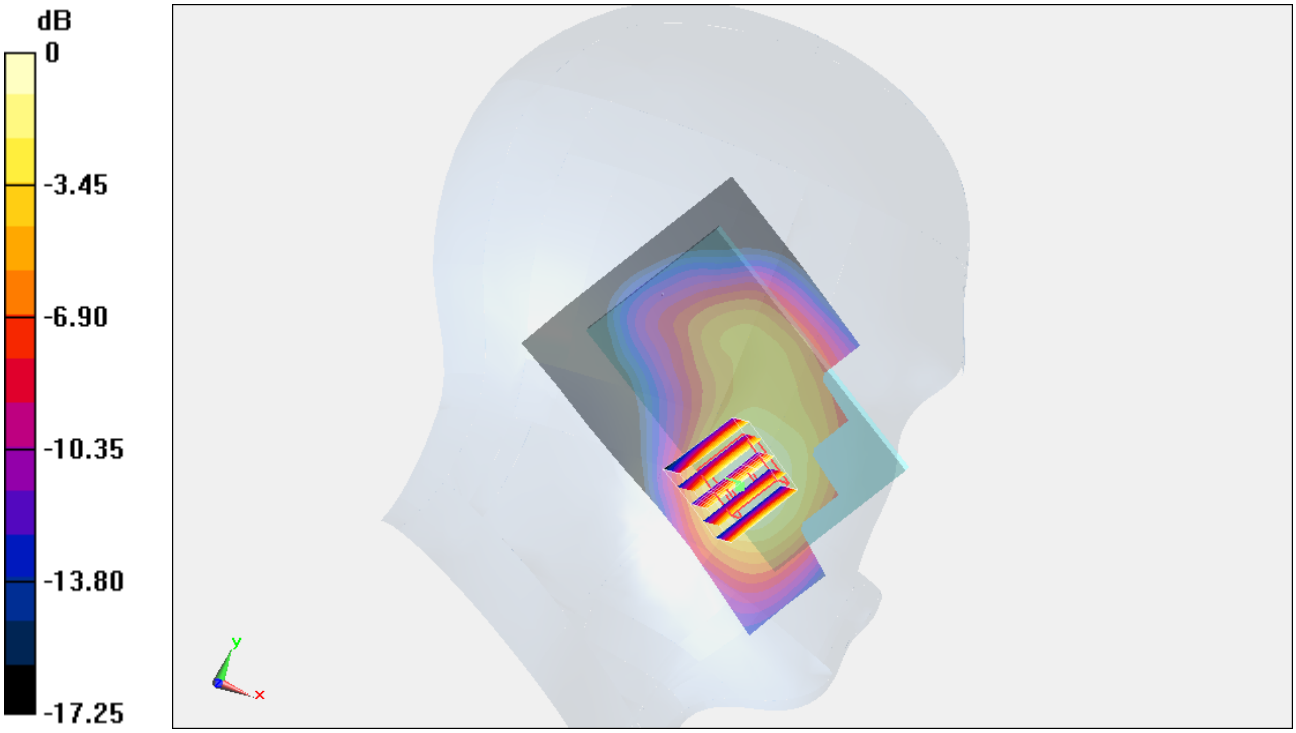
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.383 mho/m; $\varepsilon_r$ = 40.204; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃； Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.979 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.885 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.543 mW/g
**SAR(1 g) = 0.955 mW/g; SAR(10 g) = 0.565 mW/g**
Maximum value of SAR (measured) = 1.06 W/kg




0 dB = 1.06 W/kg = 0.51 dB W/kg

## #24_WCDMA II_RMC12.2K_Left Cheek_Ch9538

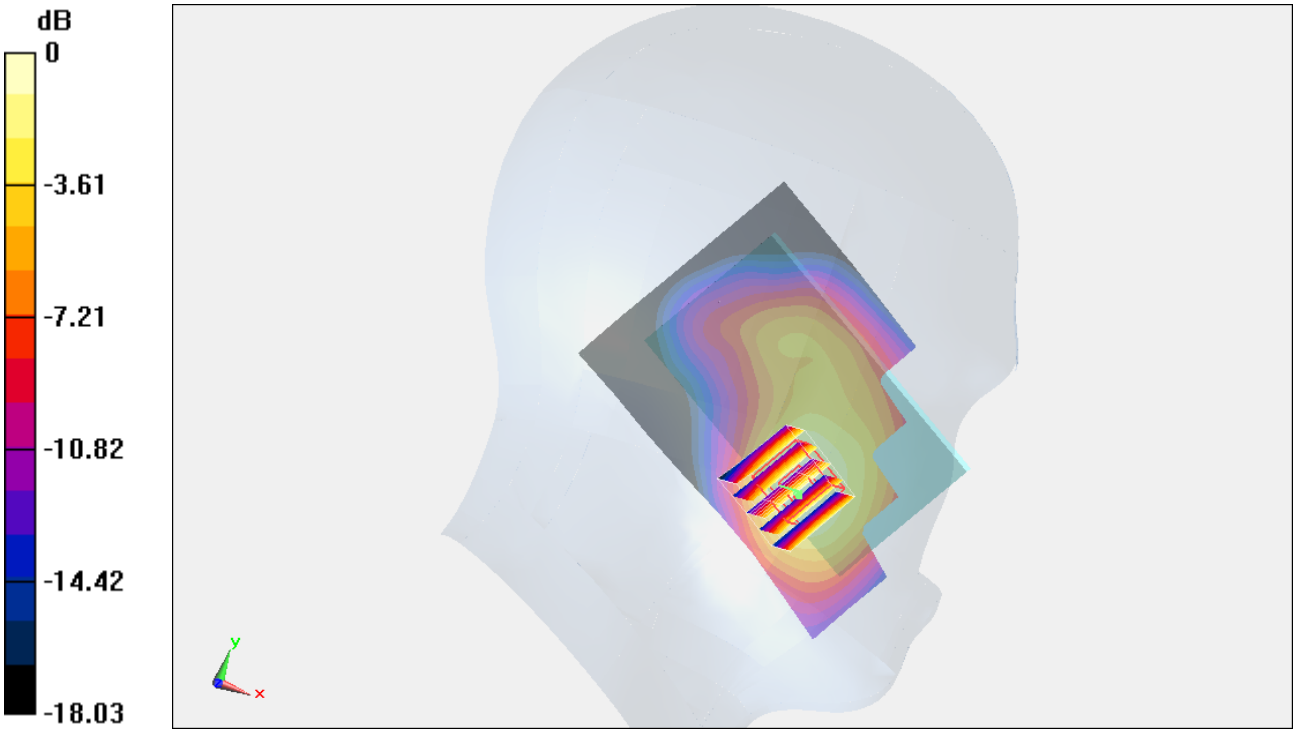
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_121029 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.429 mho/m; $\varepsilon_r$ = 40.001; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.42, 7.42, 7.42); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.11 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.876 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.775 mW/g
**SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.638 mW/g**
Maximum value of SAR (measured) = 1.20 W/kg




0 dB = 1.20 W/kg = 1.58 dB W/kg

## #89_WLAN2.4G_802.11b_Right Cheek_Ch6

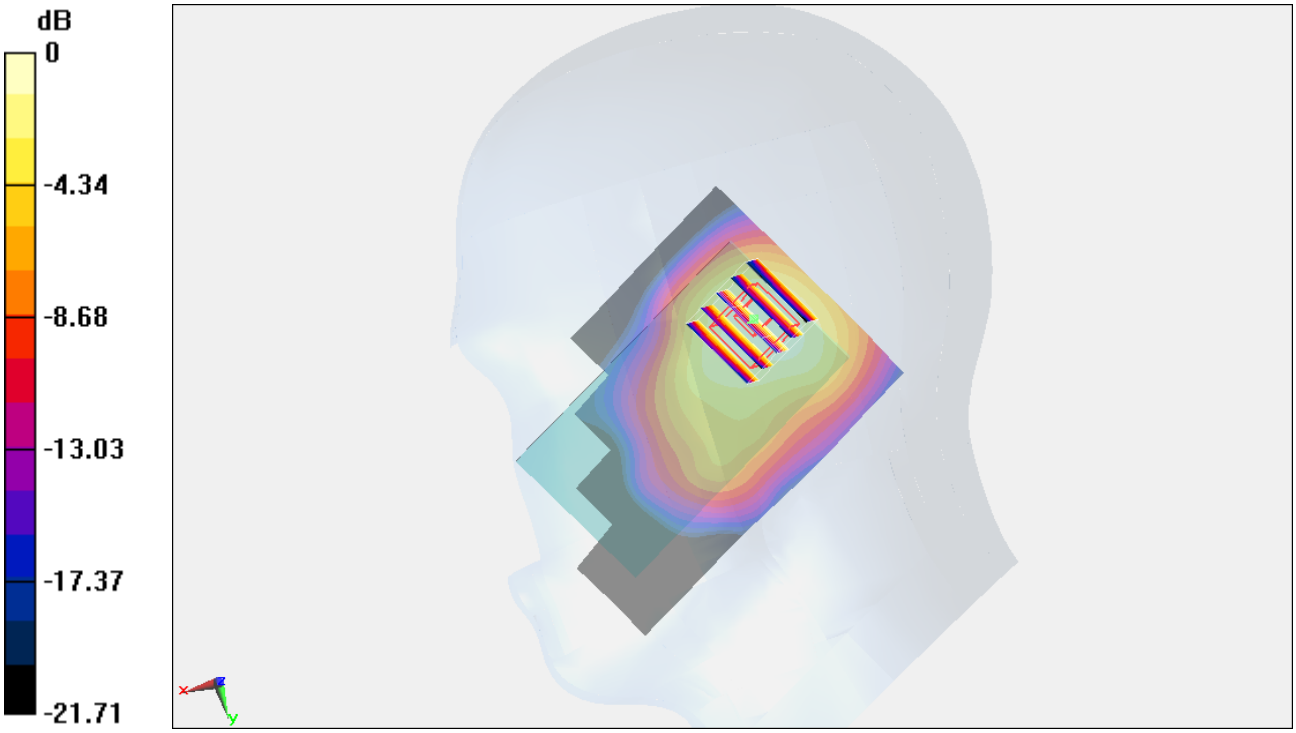
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.812 mho/m; $\varepsilon_r$ = 39.457; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.133 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.501 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.188 mW/g
**SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.058 mW/g**
Maximum value of SAR (measured) = 0.118 W/kg




0 dB = 0.118 W/kg = -18.56 dB W/kg

## #90_WLAN2.4G_802.11b_Right Tilted_Ch6

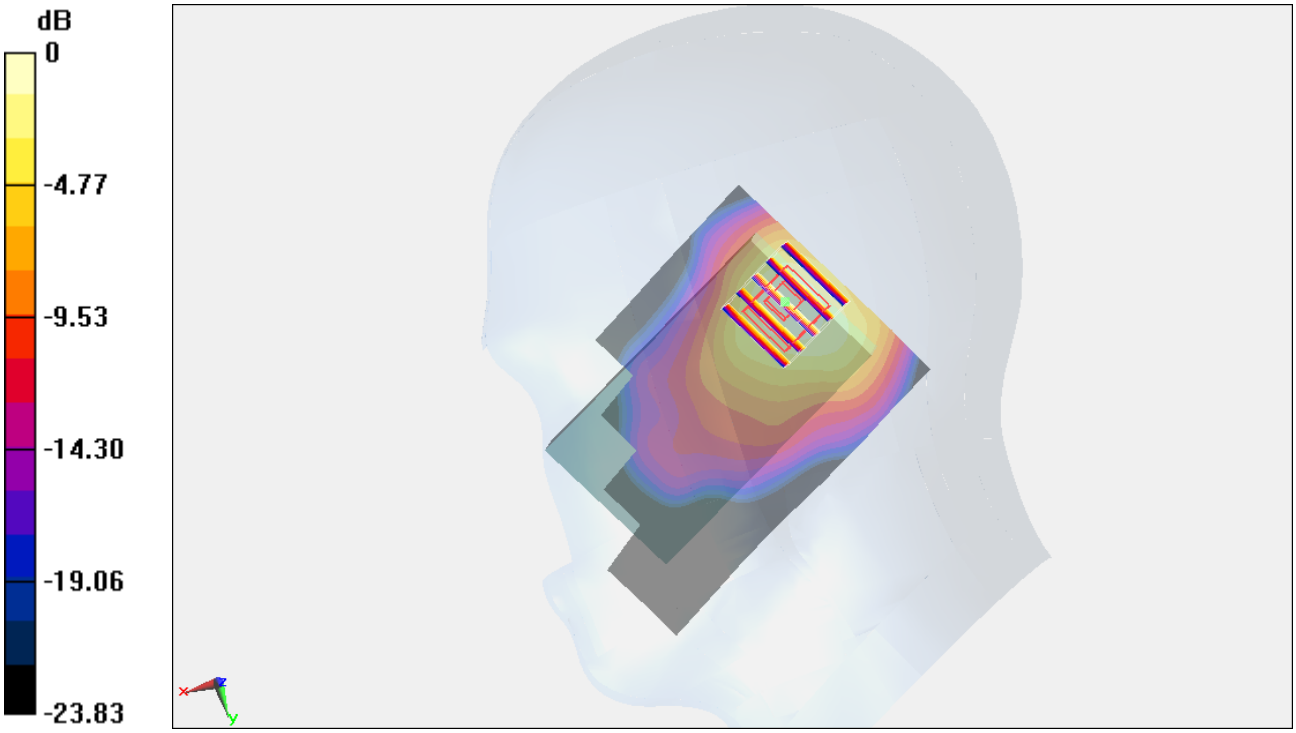
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.812 mho/m; $\varepsilon_r$ = 39.457; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.145 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.215 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.212 mW/g
**SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.059 mW/g**
Maximum value of SAR (measured) = 0.127 W/kg




0 dB = 0.127 W/kg = -17.92 dB W/kg

## #91_WLAN2.4G_802.11b_Left Cheek_Ch6

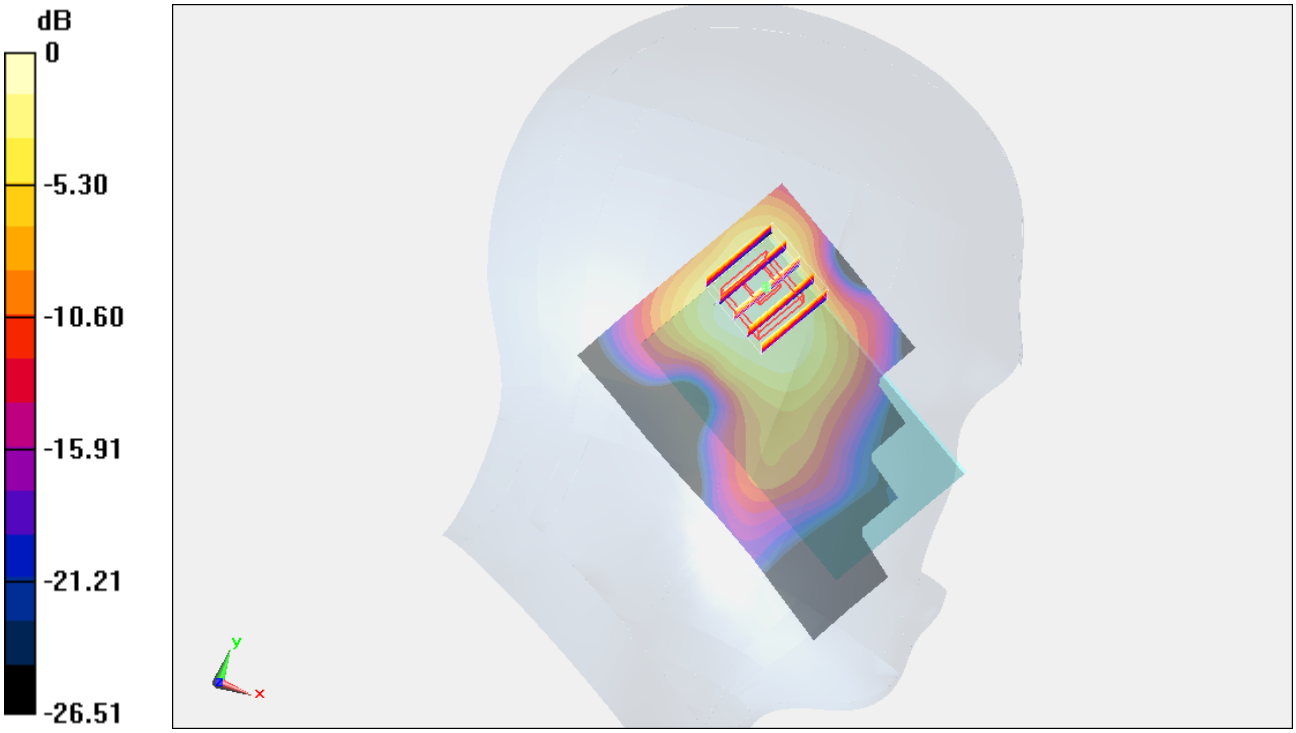
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.812 mho/m; $\varepsilon_r$ = 39.457; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.206 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.908 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.330 mW/g
**SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.082 mW/g**
Maximum value of SAR (measured) = 0.170 W/kg




0 dB = 0.170 W/kg = -15.39 dB W/kg

## #91_WLAN2.4G_802.11b_Left Cheek_Ch6_2D

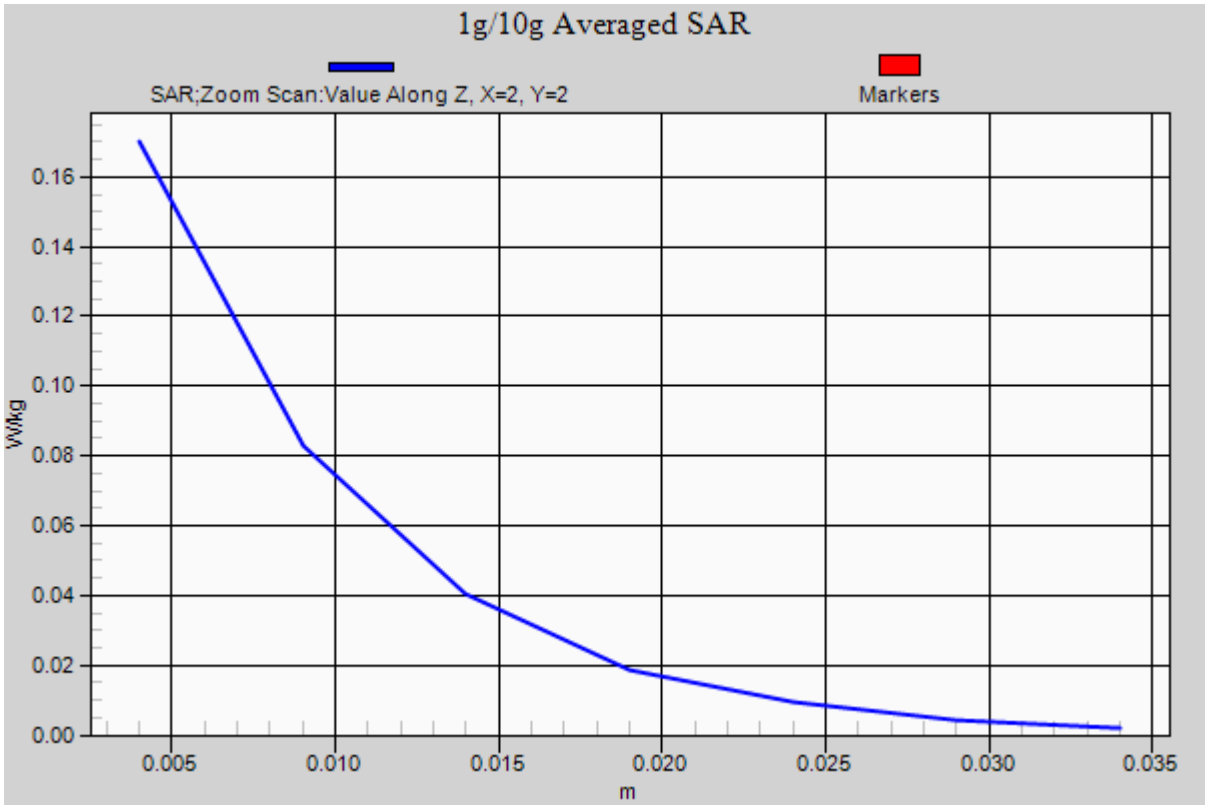
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.812 mho/m; $\varepsilon_r$ = 39.457; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.206 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.908 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.330 mW/g
**SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.082 mW/g**
Maximum value of SAR (measured) = 0.170 W/kg



## #92_WLAN2.4G_802.11b_Left Tilted_Ch6

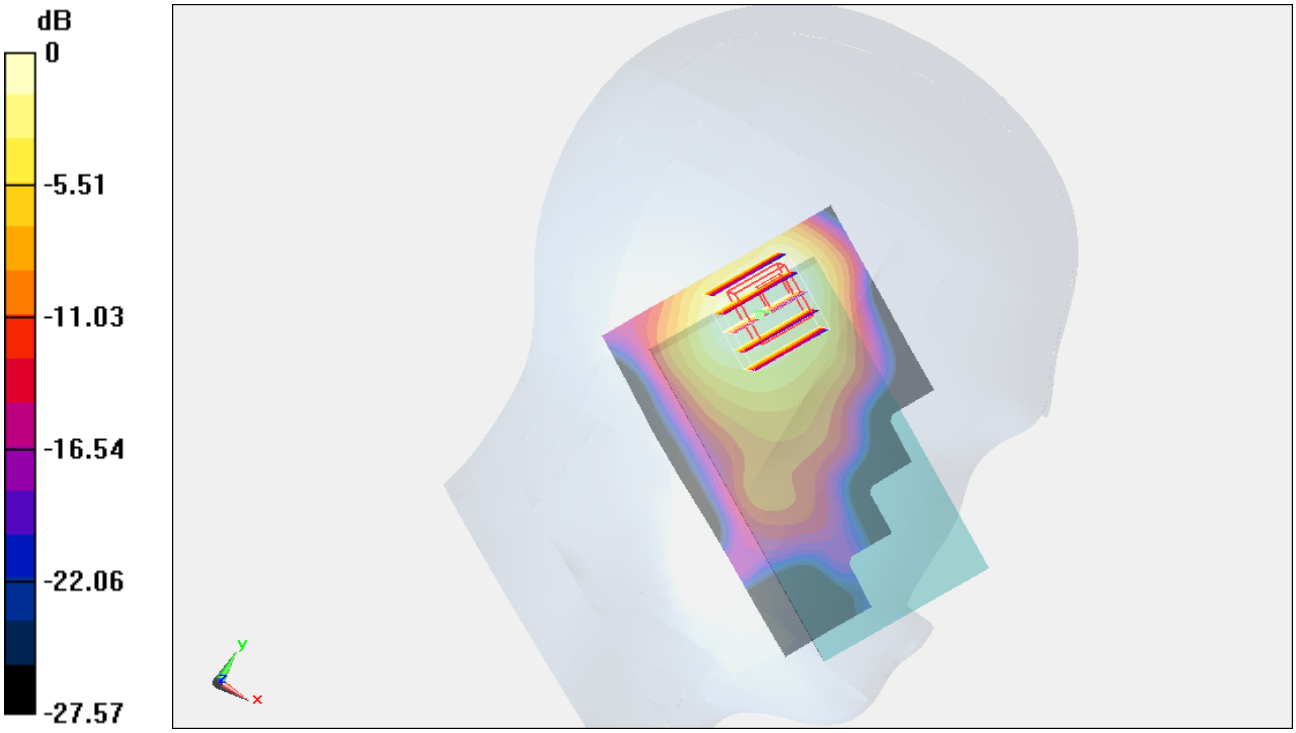
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.812 mho/m; $\varepsilon_r$ = 39.457; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.7, 6.7, 6.7); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.136 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.574 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.240 mW/g
**SAR(1 g) = 0.110 mW/g; SAR(10 g) = 0.056 mW/g**
Maximum value of SAR (measured) = 0.119 W/kg




0 dB = 0.119 W/kg = -18.49 dB W/kg

## #53_GSM850_GPRS (1 Tx slots)_Front_1cm_Ch189

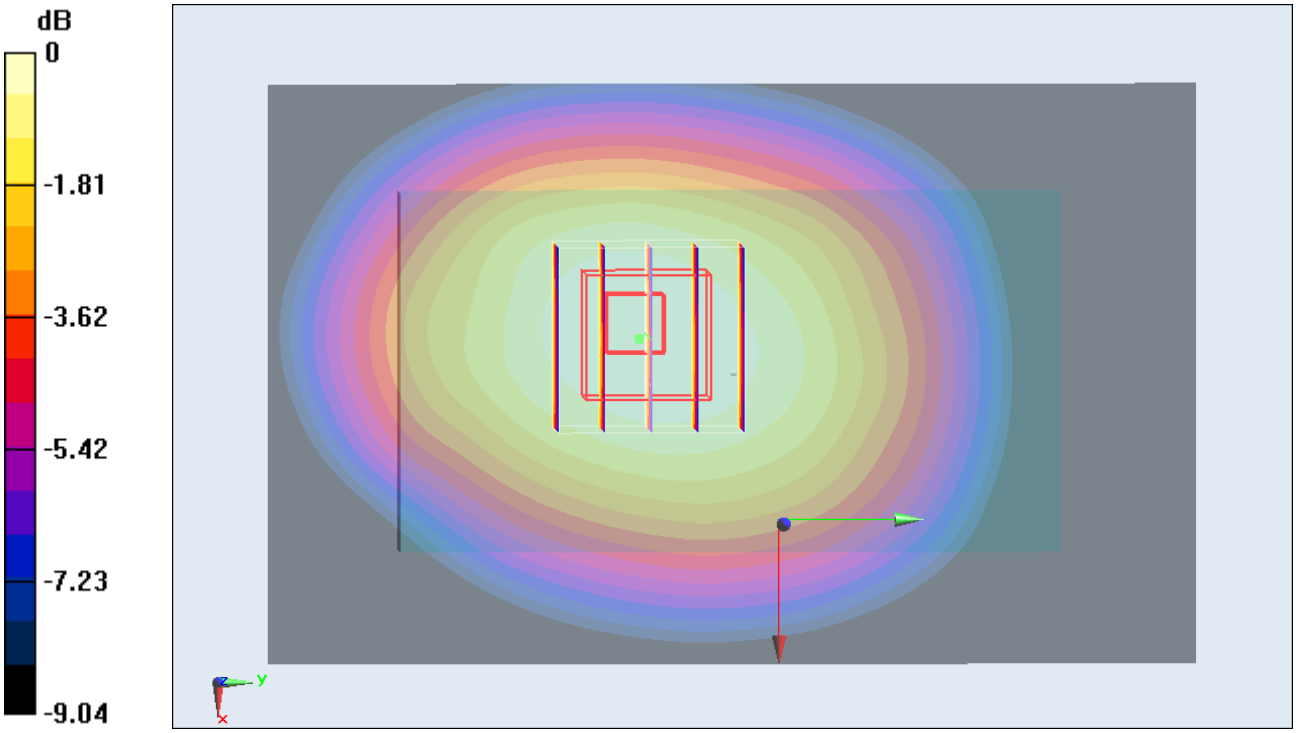
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.928 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.949 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.104 mW/g
**SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.650 mW/g**
Maximum value of SAR (measured) = 0.905 W/kg




0 dB = 0.905 W/kg = -0.87 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #58_GSM850_GPRS (1 Tx slots)_Front_1cm_Ch128

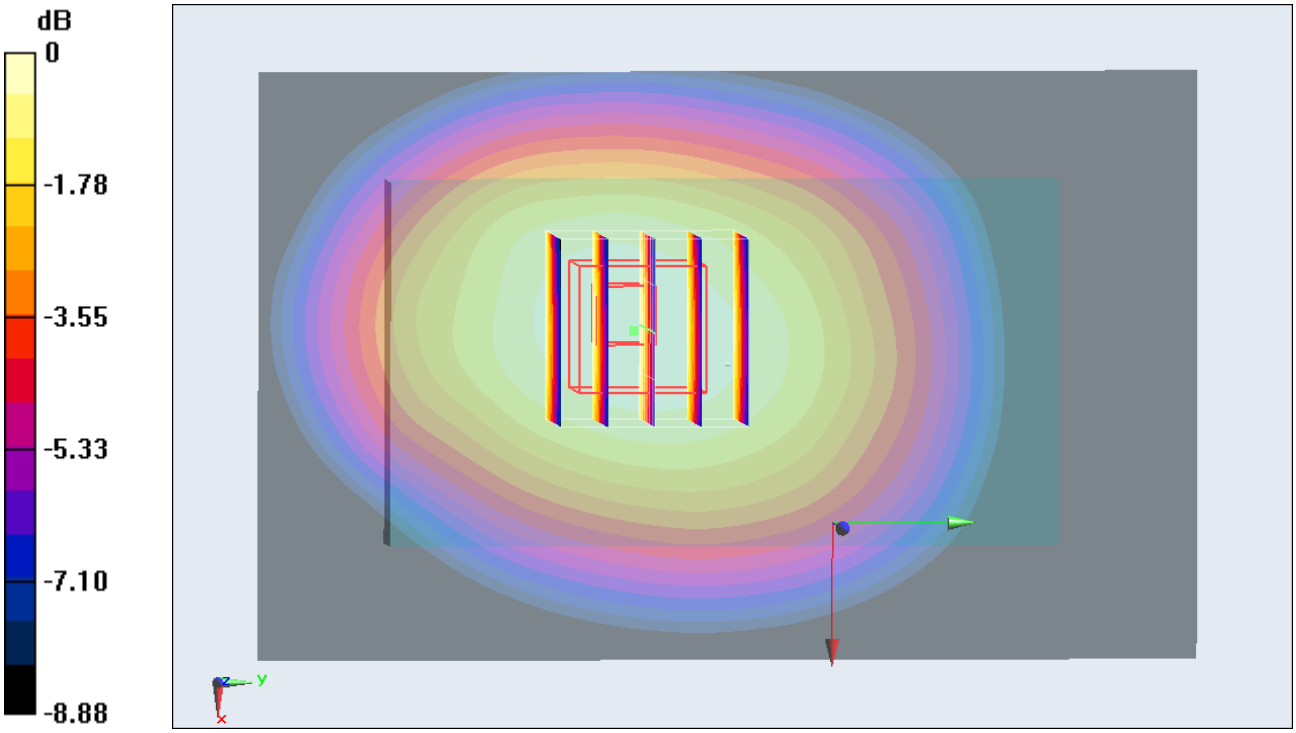
**DUT: 290405**

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 824.2 MHz; $\sigma$ = 0.952 mho/m; $\varepsilon_r$ = 54.662; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch128/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.765 W/kg

**Ch128/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.184 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.941 mW/g
**SAR(1 g) = 0.728 mW/g; SAR(10 g) = 0.548 mW/g**
Maximum value of SAR (measured) = 0.757 W/kg




0 dB = 0.757 W/kg = -2.42 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #59_GSM850_GPRS (1 Tx slots)_Front_1cm_Ch251

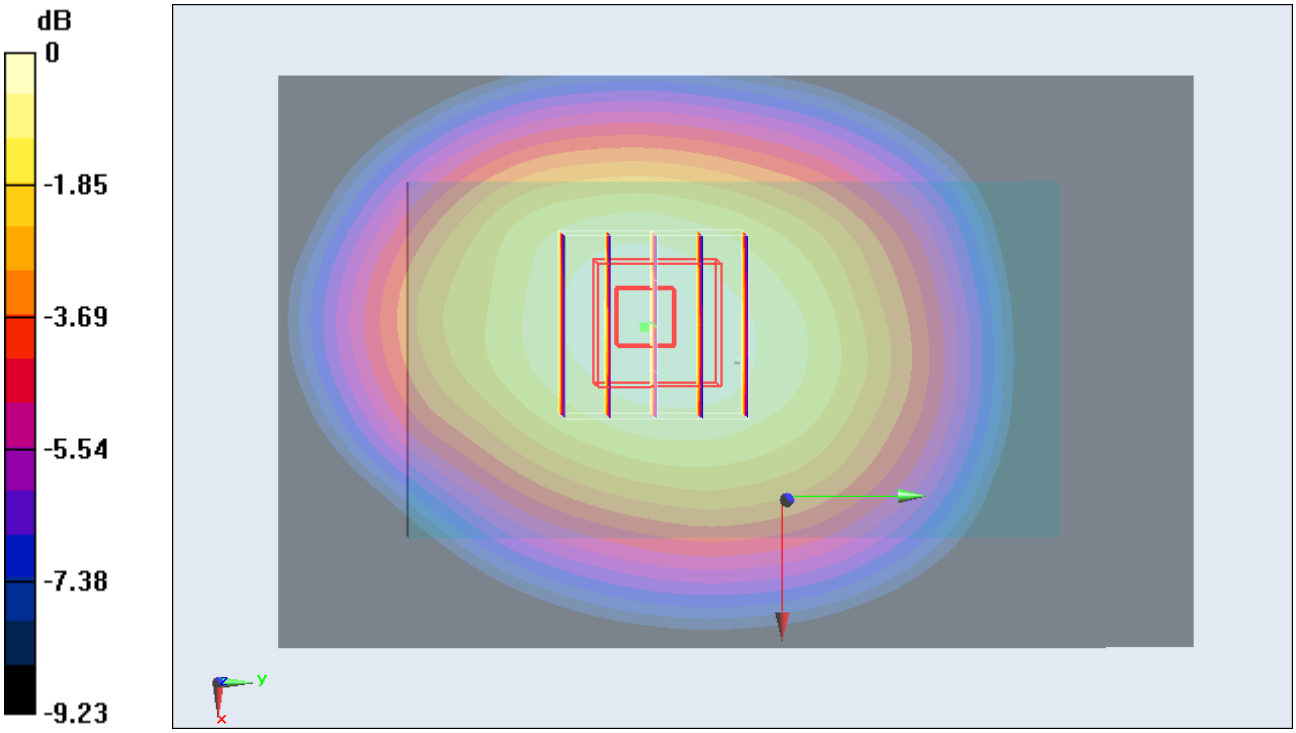
**DUT: 290405**

Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 849 MHz; $\sigma$ = 0.976 mho/m; $\varepsilon_r$ = 54.414; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch251/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.929 W/kg

**Ch251/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.904 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.141 mW/g
**SAR(1 g) = 0.884 mW/g; SAR(10 g) = 0.663 mW/g**
Maximum value of SAR (measured) = 0.926 W/kg




0 dB = 0.926 W/kg = -0.67 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #54_GSM850_GPRS (1 Tx slots)_Back_1cm_Ch189

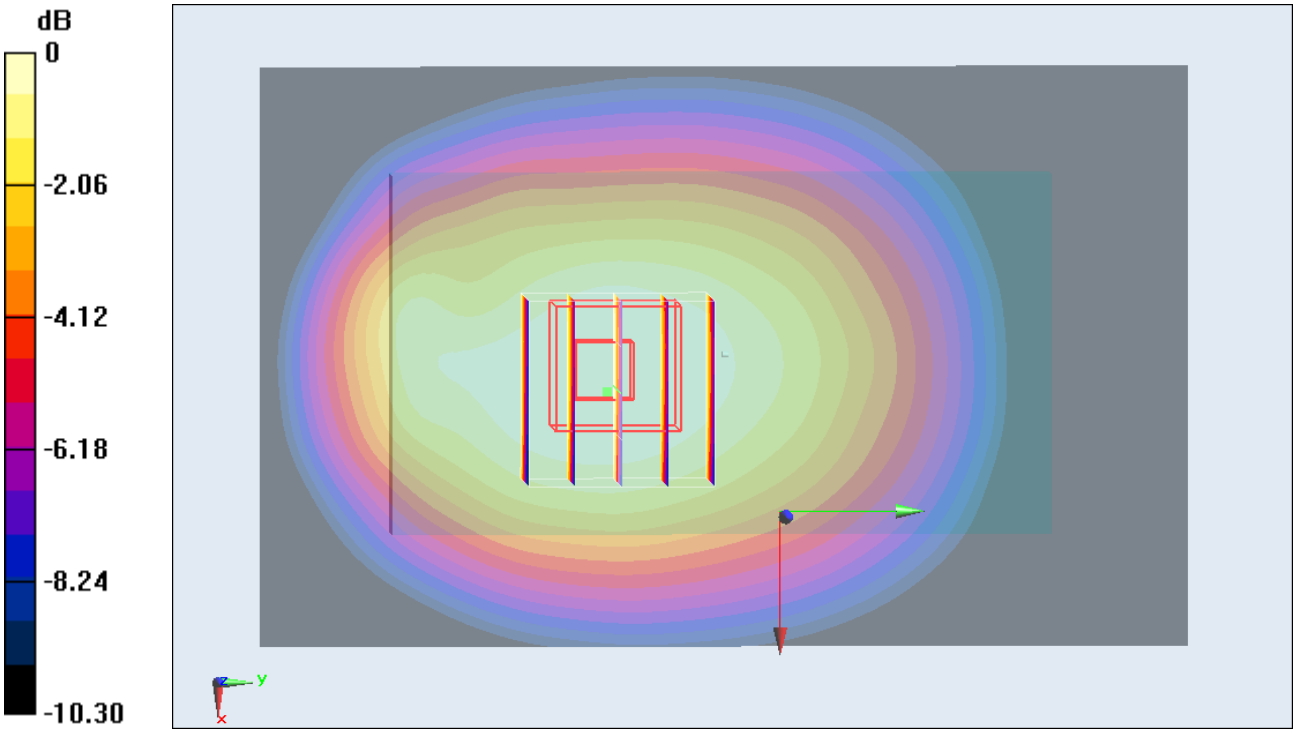
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.39 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.985 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.663 mW/g
**SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.898 mW/g**
Maximum value of SAR (measured) = 1.29 W/kg




0 dB = 1.29 W/kg = 2.21 dB W/kg

## #54_GSM850_GPRS (1 Tx slots)_Back_1cm_Ch189_2D

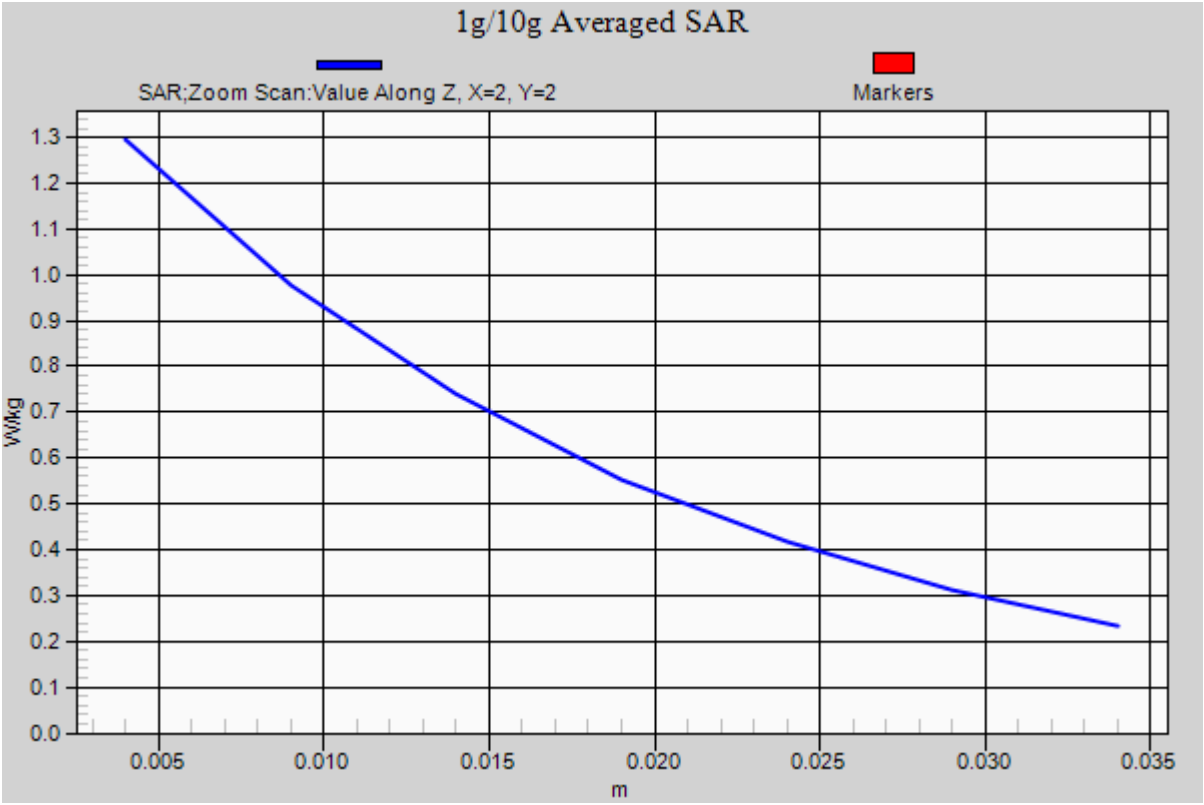
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.39 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.985 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.663 mW/g
**SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.898 mW/g**
Maximum value of SAR (measured) = 1.29 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #60_GSM850_GPRS (1 Tx slots)_Back_1cm_Ch128

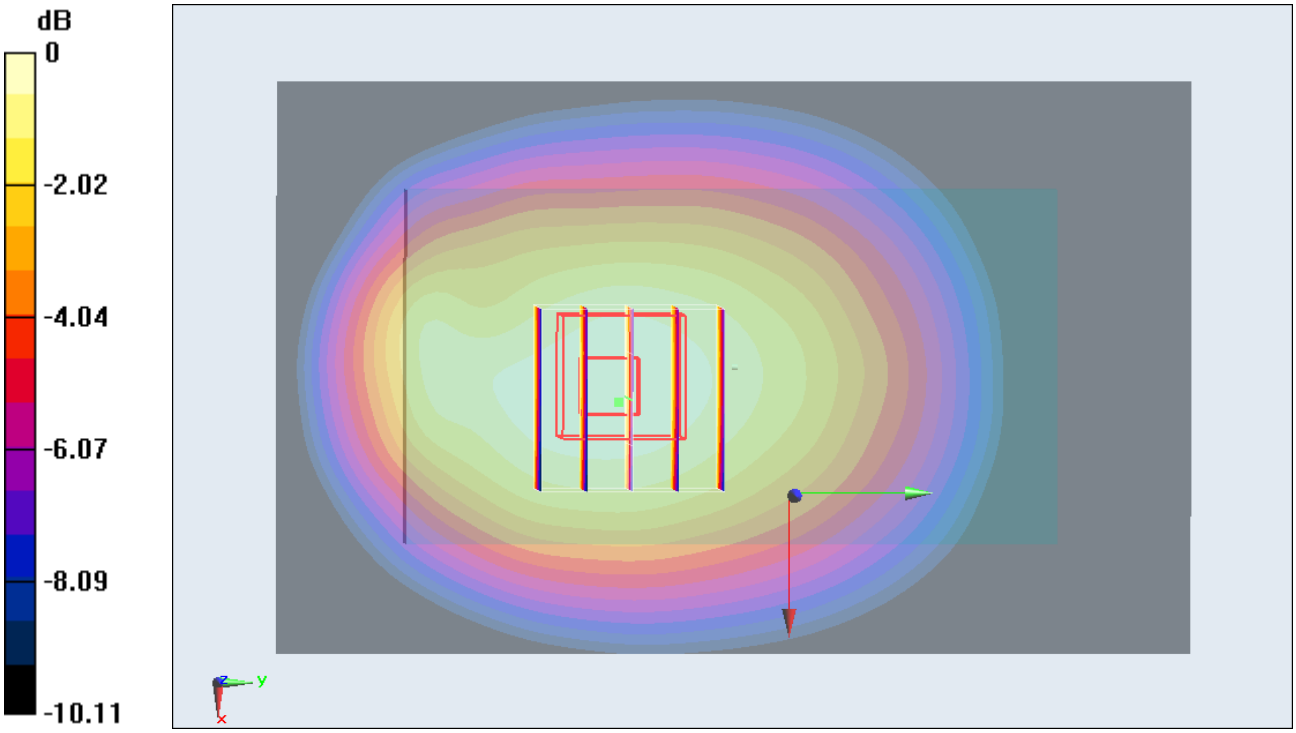
**DUT: 290405**

Communication System: GSM850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 824.2 MHz; $\sigma$ = 0.952 mho/m; $\varepsilon_r$ = 54.662; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch128/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.26 W/kg

**Ch128/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.298 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.613 mW/g
**SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.866 mW/g**
Maximum value of SAR (measured) = 1.25 W/kg




0 dB = 1.25 W/kg = 1.94 dB W/kg

## #61_GSM850_GPRS (1 Tx slots)_Back_1cm_Ch251

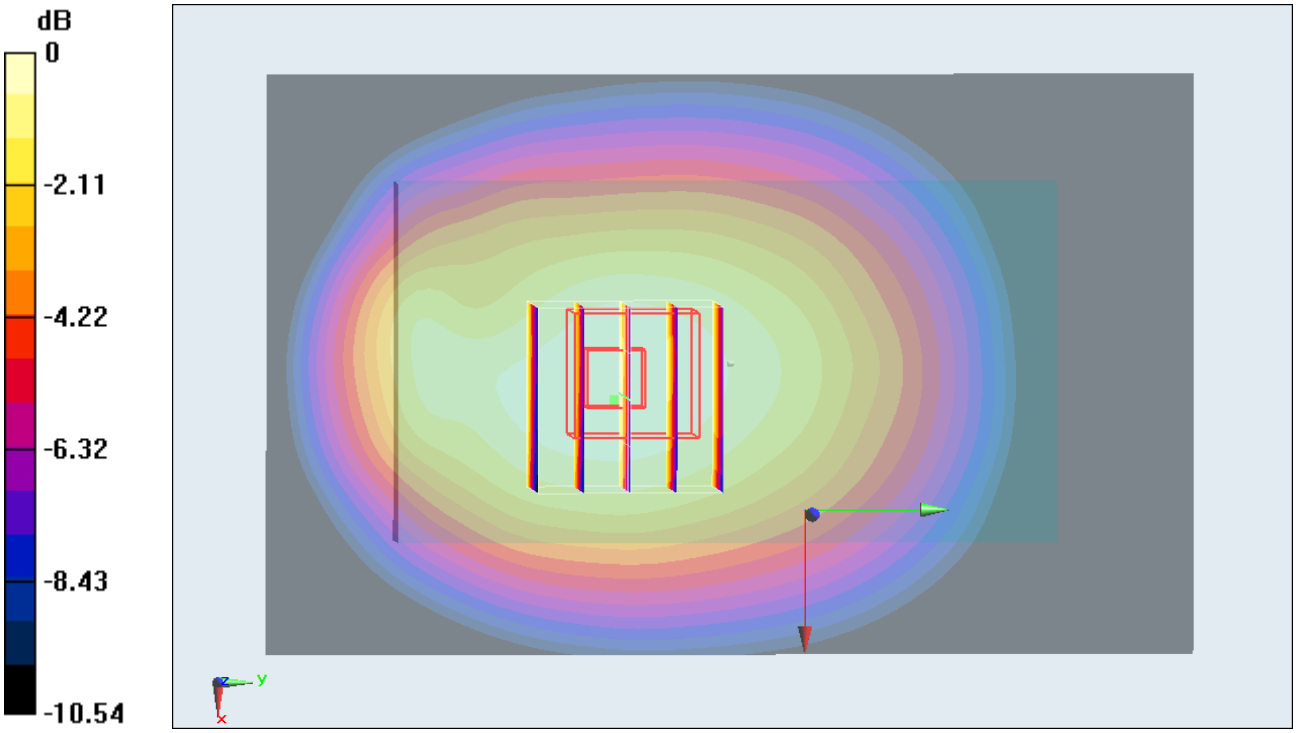
**DUT: 290405**

Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 849 MHz; $\sigma$ = 0.976 mho/m; $\varepsilon_r$ = 54.414; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch251/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

**Ch251/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.366 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.449 mW/g
**SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.802 mW/g**
Maximum value of SAR (measured) = 1.15 W/kg




0 dB = 1.15 W/kg = 1.21 dB W/kg

## #55_GSM850_GPRS (1 Tx slots)_Left Side_1cm_Ch189

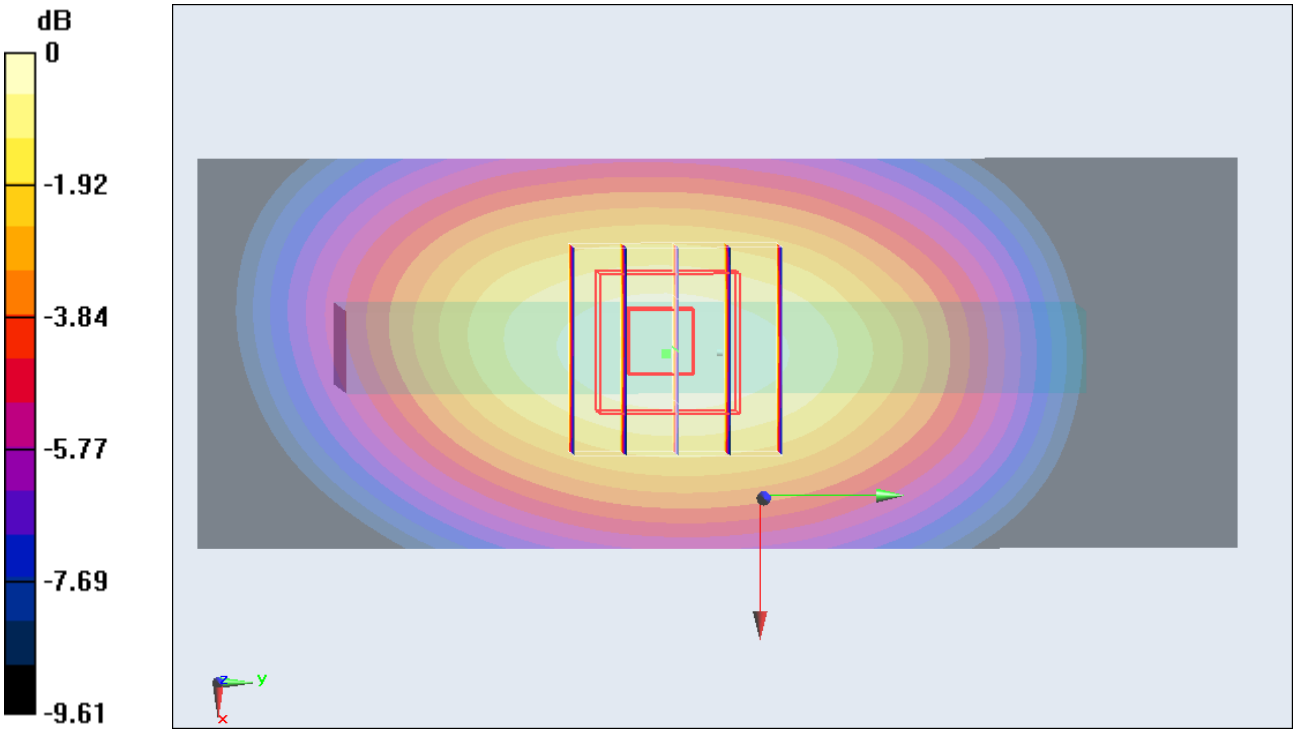
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.705 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.867 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.947 mW/g
**SAR(1 g) = 0.668 mW/g; SAR(10 g) = 0.461 mW/g**
Maximum value of SAR (measured) = 0.716 W/kg




0 dB = 0.716 W/kg = -2.90 dB W/kg

## #56_GSM850_GPRS (1 Tx slots)_Right Side_1cm_Ch189

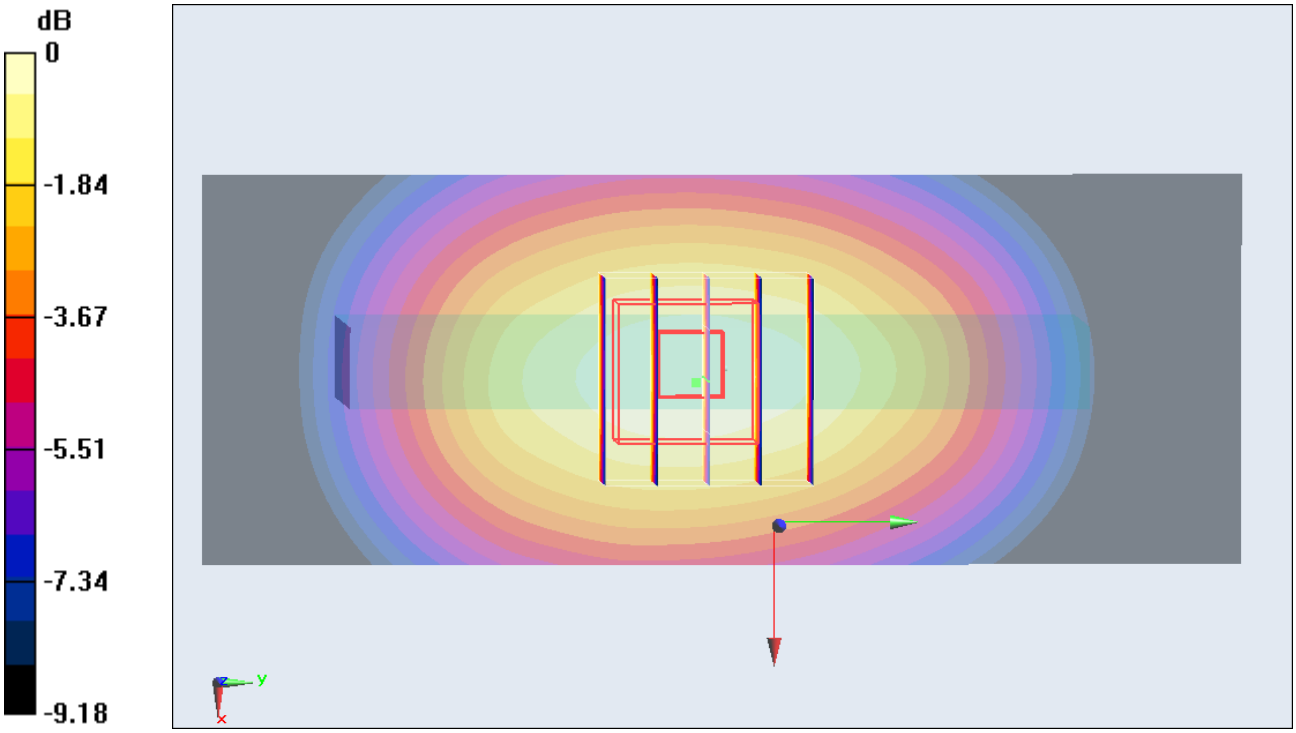
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.767 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.385 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.031 mW/g
**SAR(1 g) = 0.737 mW/g; SAR(10 g) = 0.517 mW/g**
Maximum value of SAR (measured) = 0.782 W/kg




0 dB = 0.782 W/kg = -2.14 dB W/kg

## #57_GSM850_GPRS (1 Tx slots)_Bottom Side_1cm_Ch189

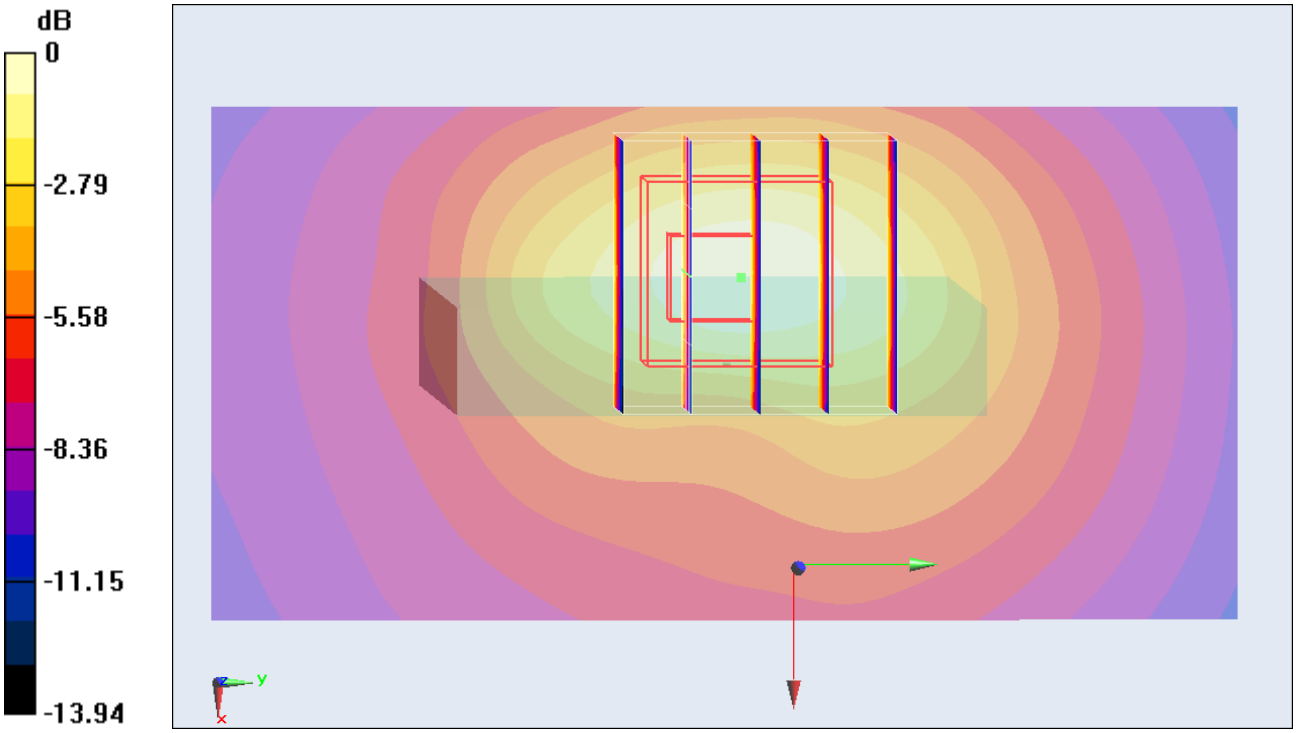
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.184 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.505 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.292 mW/g
**SAR(1 g) = 0.174 mW/g; SAR(10 g) = 0.104 mW/g**
Maximum value of SAR (measured) = 0.188 W/kg




0 dB = 0.188 W/kg = -14.52 dB W/kg

## #62_GSM850_GSM Voice_Front_1.5cm_Ch189;Headset

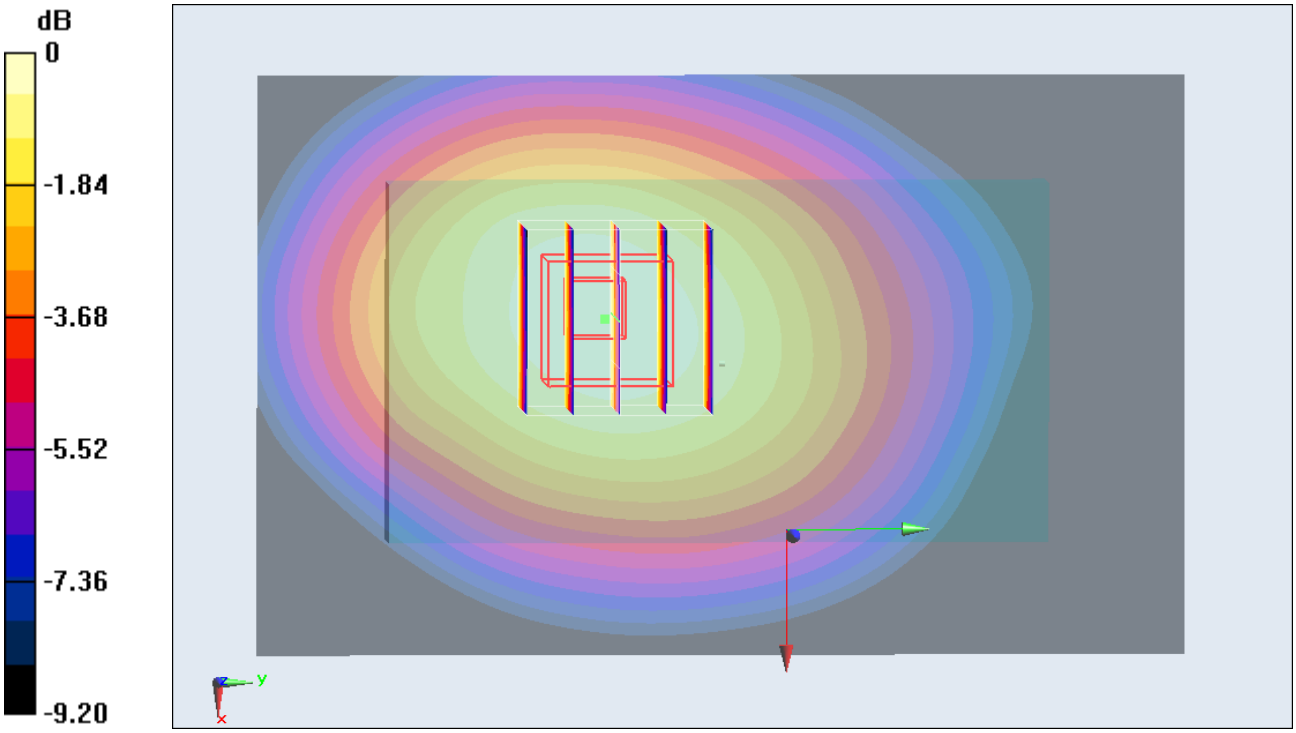
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.434 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.736 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.543 mW/g
**SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.305 mW/g**
Maximum value of SAR (measured) = 0.434 W/kg




0 dB = 0.434 W/kg = -7.25 dB W/kg

## #63_GSM850_GSM Voice_Back_1.5cm_Ch189;Headset

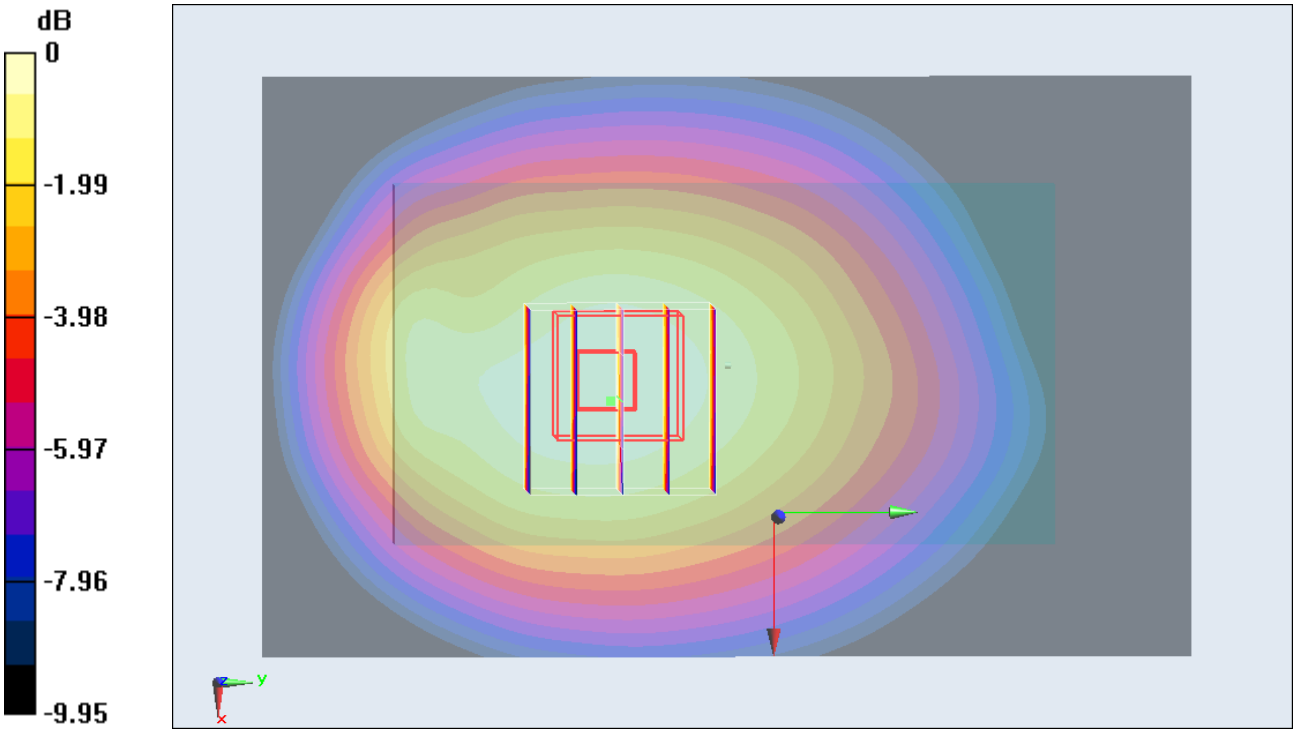
**DUT: 290405**

Communication System: GSM850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: MSL_850_121030 Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch189/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.701 W/kg

**Ch189/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.017 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.882 mW/g
**SAR(1 g) = 0.662 mW/g; SAR(10 g) = 0.479 mW/g**
Maximum value of SAR (measured) = 0.695 W/kg




0 dB = 0.695 W/kg = -3.16 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #44_GSM1900_GPRS (4 Tx slots)_Front_1cm_Ch810

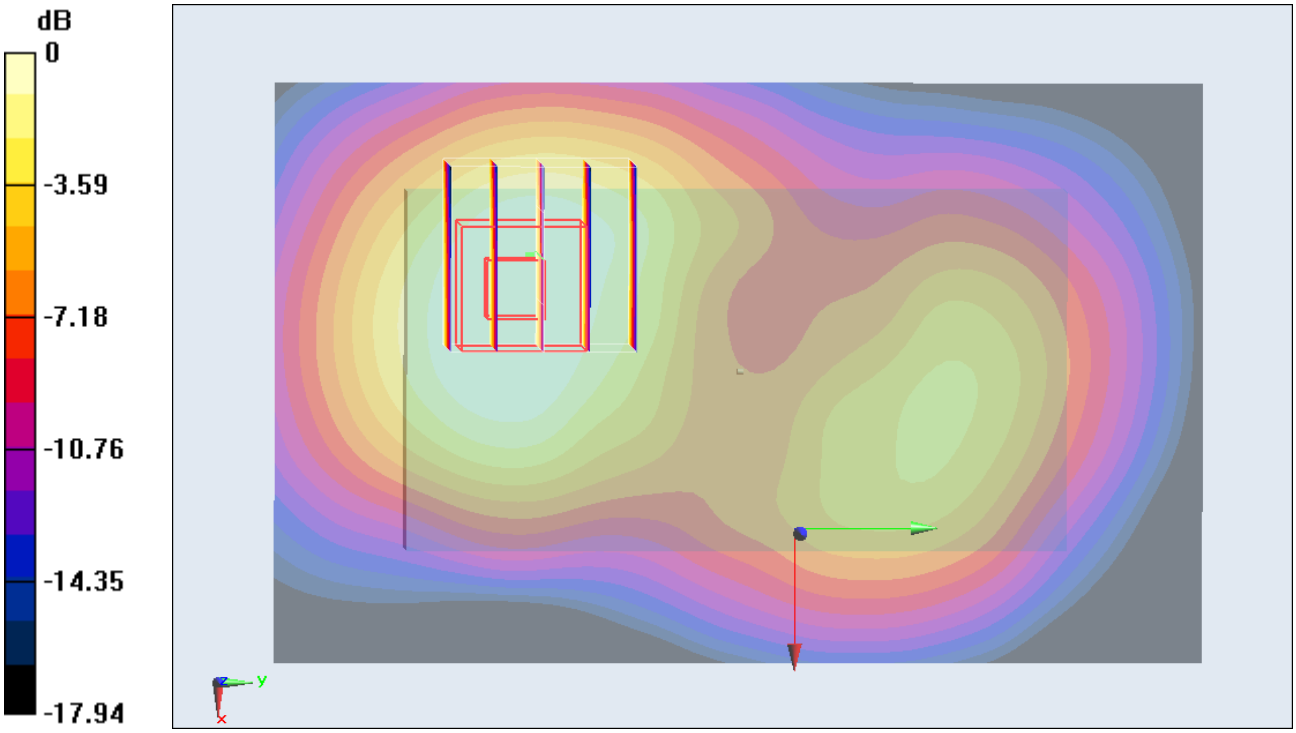
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃； Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.685 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.583 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.984 mW/g
**SAR(1 g) = 0.598 mW/g; SAR(10 g) = 0.365 mW/g**
Maximum value of SAR (measured) = 0.628 W/kg




0 dB = 0.628 W/kg = -4.04 dB W/kg

## #45_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch810

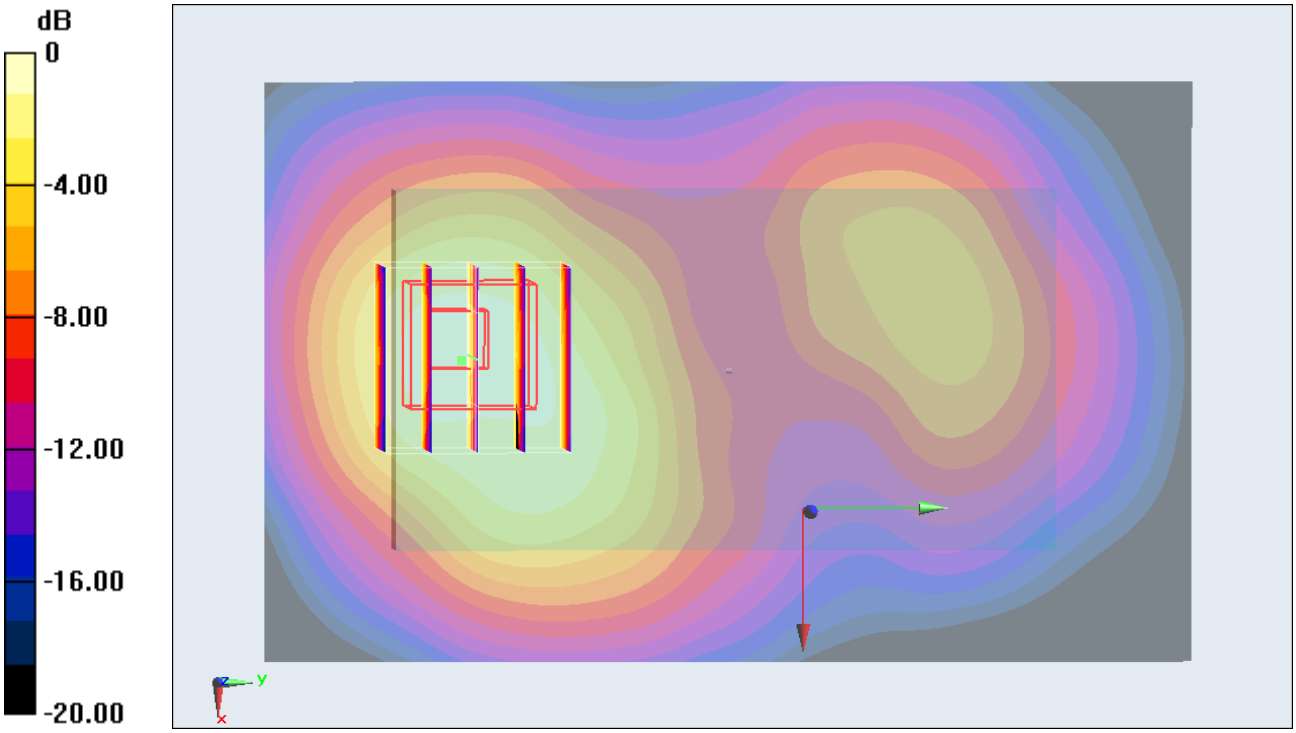
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.965 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.785 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.492 mW/g
**SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.510 mW/g**
Maximum value of SAR (measured) = 0.972 W/kg




0 dB = 0.972 W/kg = -0.25 dB W/kg

## #45_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch810_2D

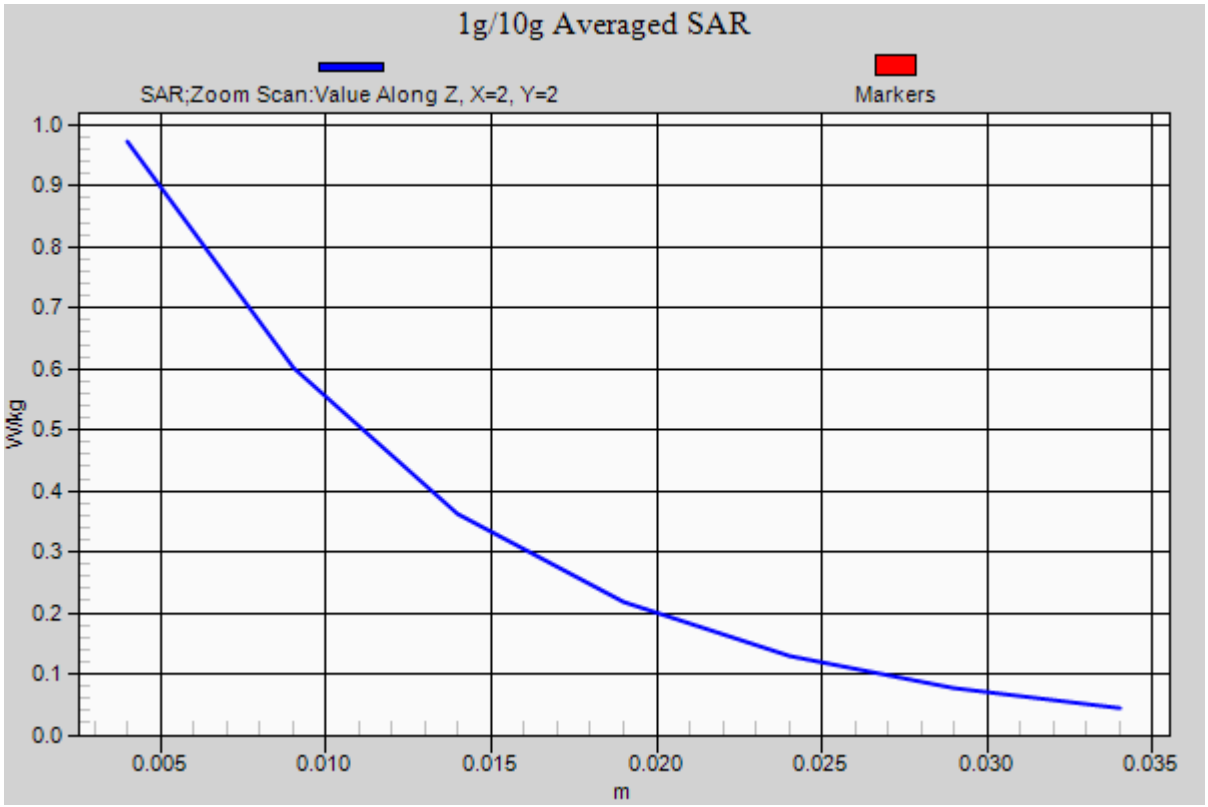
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.965 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.785 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.492 mW/g
**SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.510 mW/g**
Maximum value of SAR (measured) = 0.972 W/kg



## #49_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch512

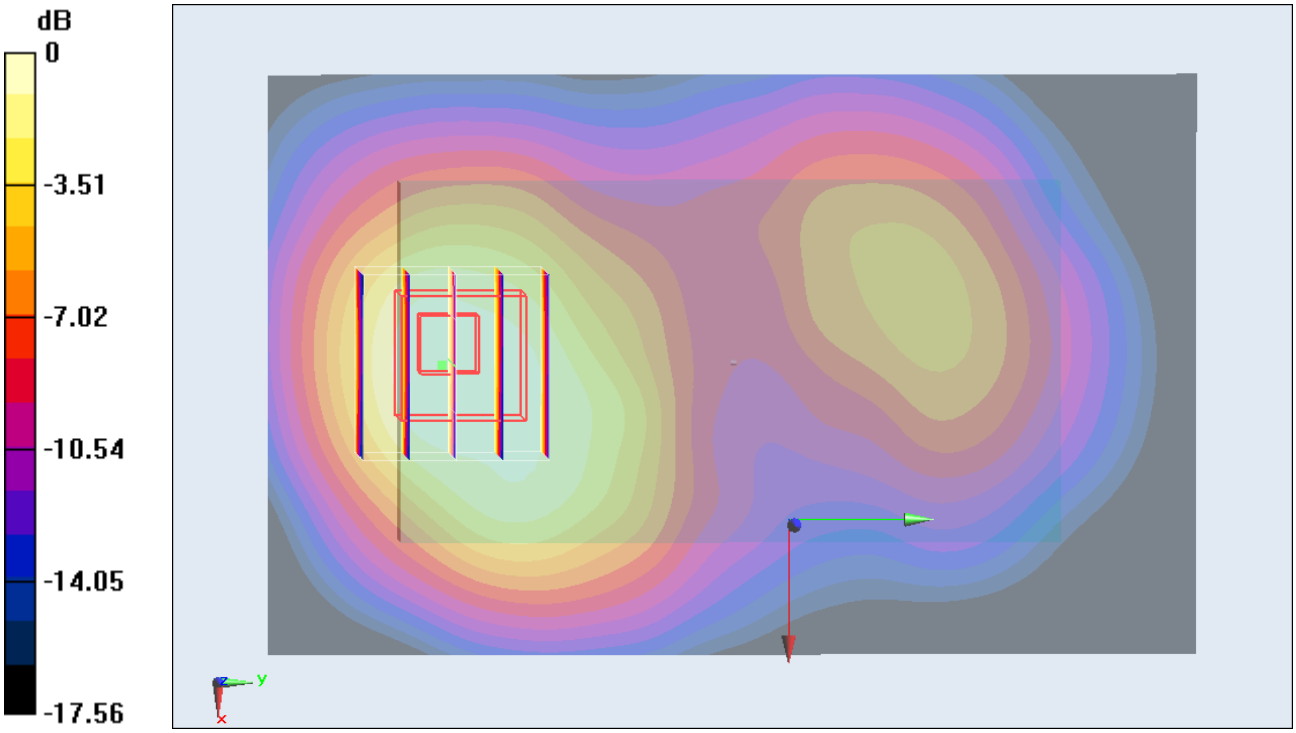
**DUT: 290405**

Communication System: PCS; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1850.2 MHz; $\sigma$ = 1.488 mho/m; $\varepsilon_r$ = 53.41; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch512/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.924 W/kg

**Ch512/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.727 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.319 mW/g
**SAR(1 g) = 0.805 mW/g; SAR(10 g) = 0.469 mW/g**
Maximum value of SAR (measured) = 0.874 W/kg




0 dB = 0.874 W/kg = -1.17 dB W/kg

## #50_GSM1900_GPRS (4 Tx slots)_Back_1cm_Ch661

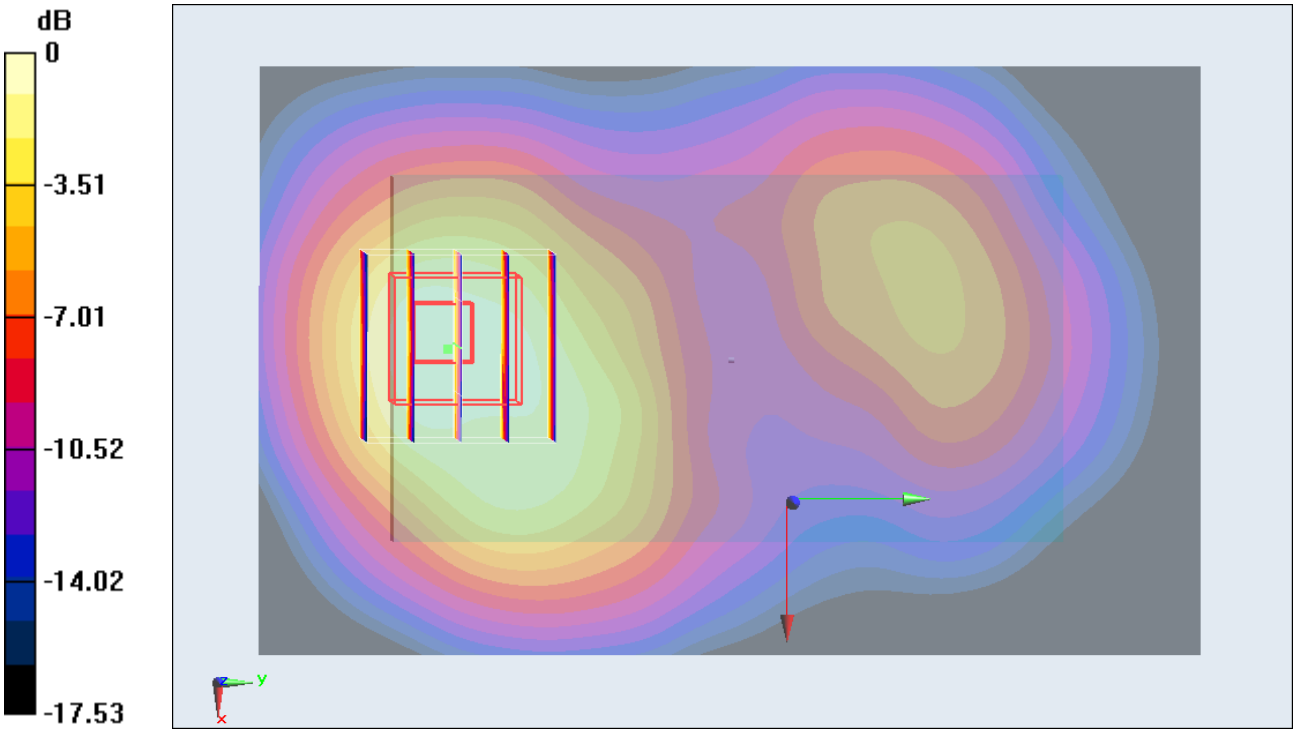
**DUT: 290405**

Communication System: PCS; Frequency: 1880 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch661/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.00 W/kg

**Ch661/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.490 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.439 mW/g
**SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.496 mW/g**
Maximum value of SAR (measured) = 0.958 W/kg




0 dB = 0.958 W/kg = -0.37 dB W/kg

## #46_GSM1900_GPRS (4 Tx slots)_Left Side_1cm_Ch810

**DUT: 290405**

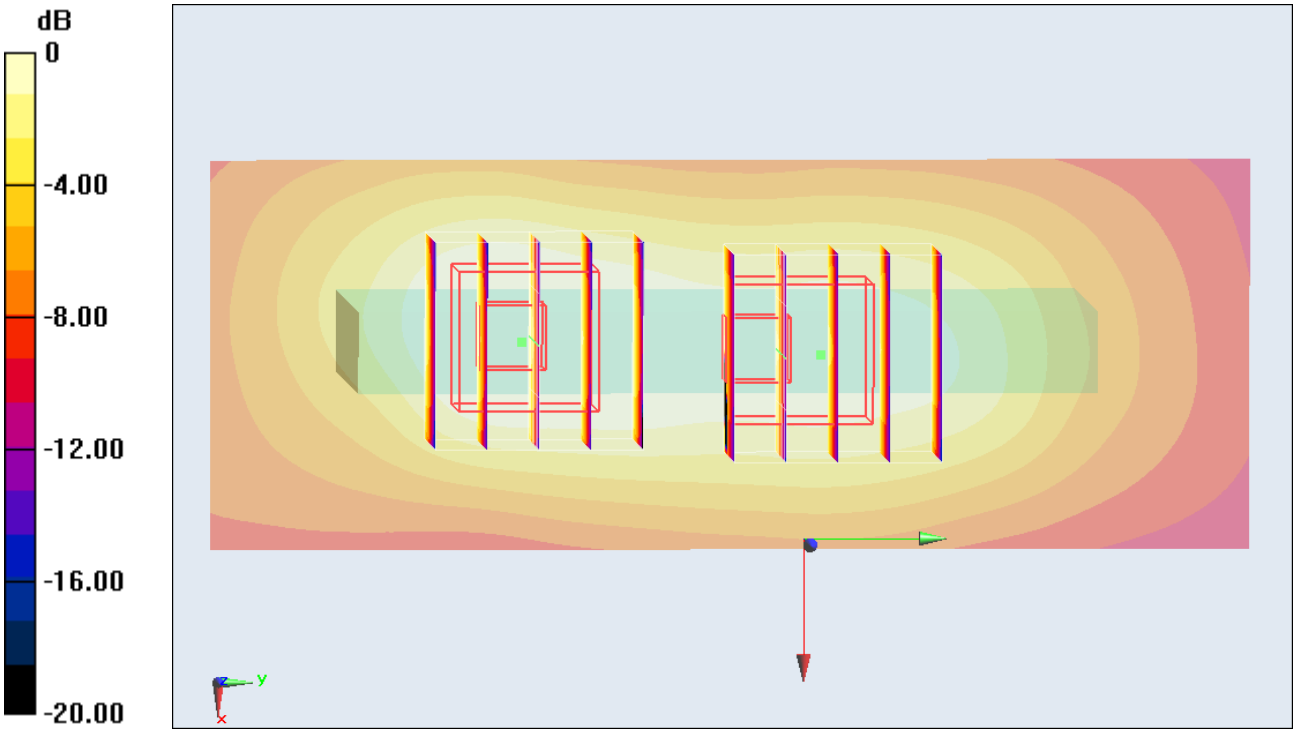
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.275 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.144 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.419 mW/g
**SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.135 mW/g**
Maximum value of SAR (measured) = 0.265 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.144 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.468 mW/g
**SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.104 mW/g**
Maximum value of SAR (measured) = 0.189 W/kg




0 dB = 0.189 W/kg = -14.47 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

## #47_GSM1900_GPRS (4 Tx slots)_Right Side_1cm_Ch810

**DUT: 290405**

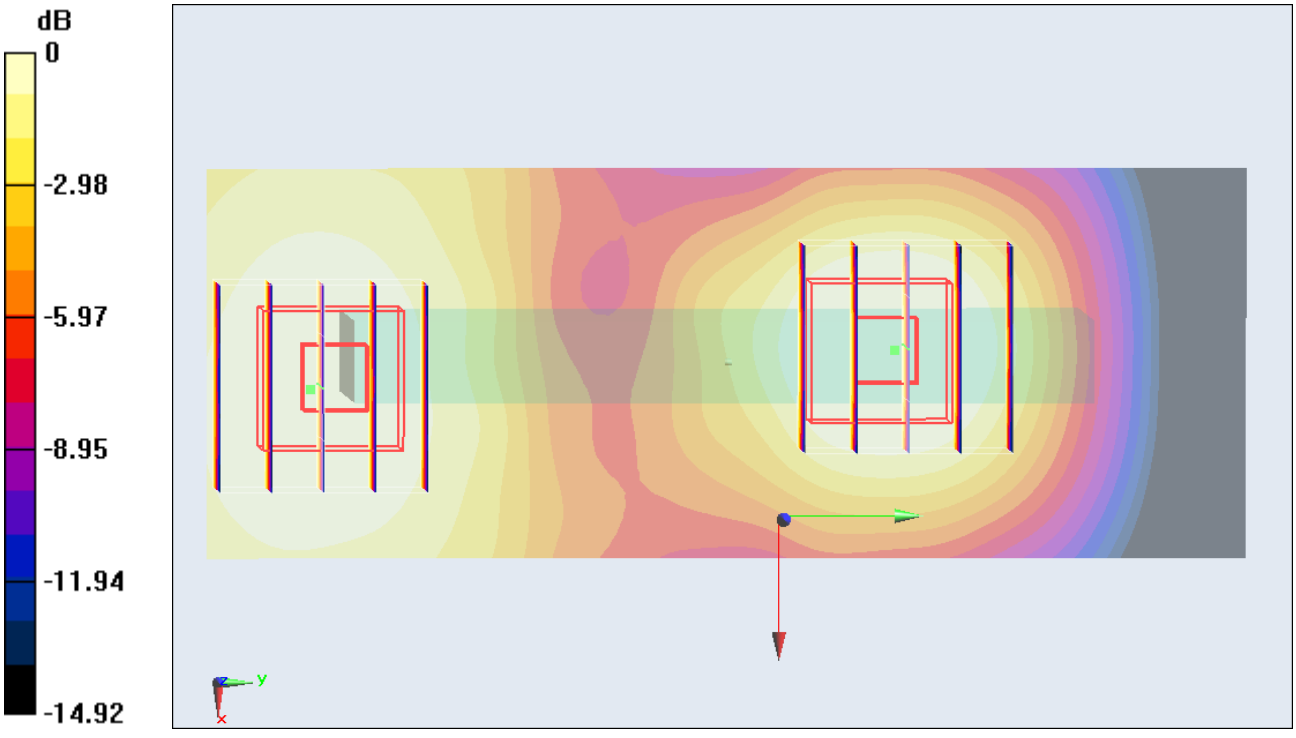
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃； Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.175 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.914 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.273 mW/g
**SAR(1 g) = 0.161 mW/g; SAR(10 g) = 0.091 mW/g**
Maximum value of SAR (measured) = 0.176 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.914 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.243 mW/g
**SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.072 mW/g**
Maximum value of SAR (measured) = 0.122 W/kg




0 dB = 0.122 W/kg = -18.27 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

## #48_GSM1900_GPRS (4 Tx slots)_Bottom Side_1cm_Ch810

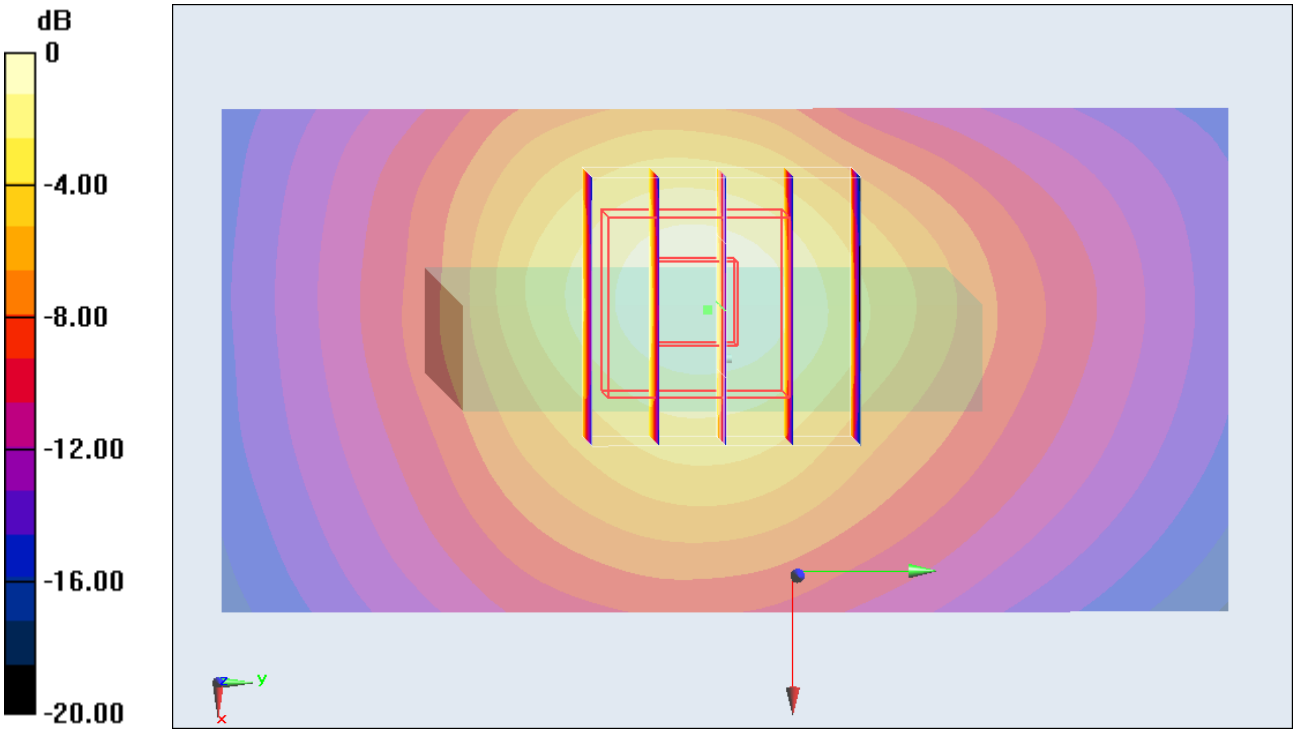
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.759 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.282 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.233 mW/g
**SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.374 mW/g**
Maximum value of SAR (measured) = 0.763 W/kg




0 dB = 0.763 W/kg = -2.35 dB W/kg

## #51_GSM1900_DTM Multi-slot class 5_Front_1.5cm_Ch810;Headset

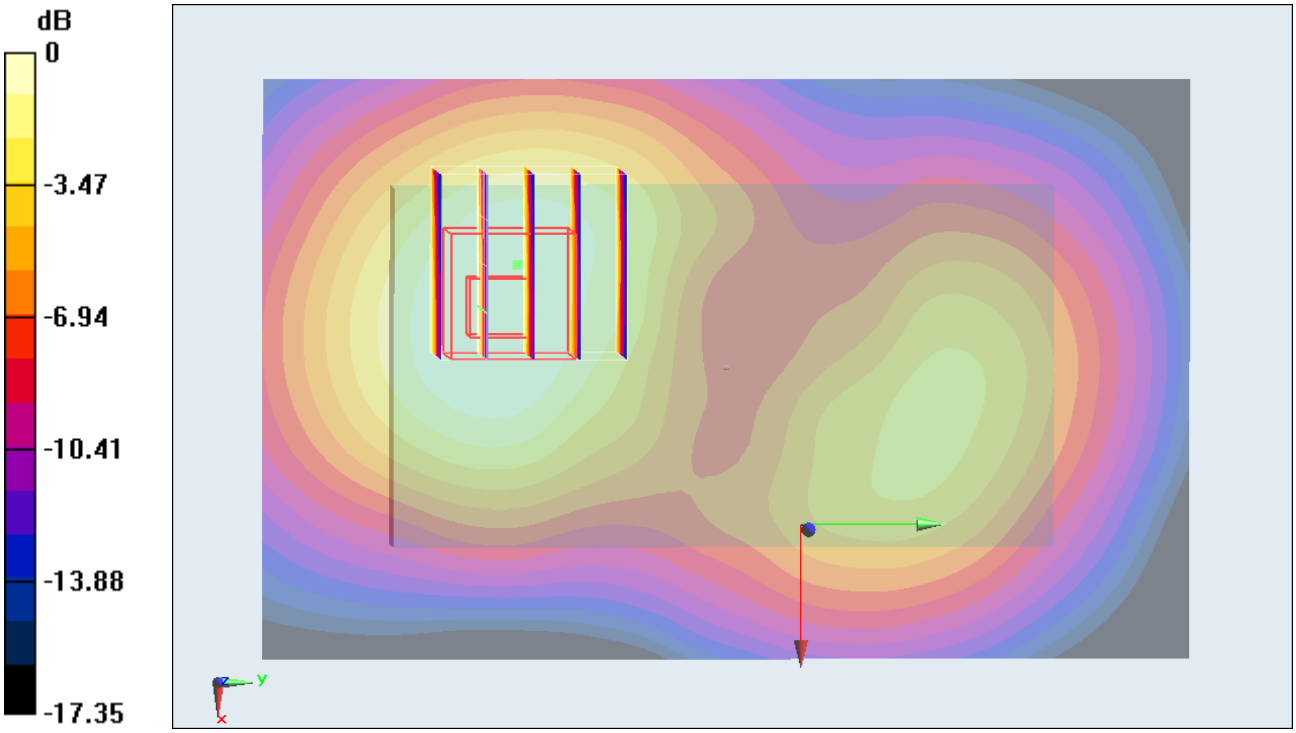
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.432 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.819 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.647 mW/g
**SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.240 mW/g**
Maximum value of SAR (measured) = 0.416 W/kg




0 dB = 0.416 W/kg = -7.62 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #52_GSM1900_DTM Multi-slot class 5_Back_1.5cm_Ch810;Headset

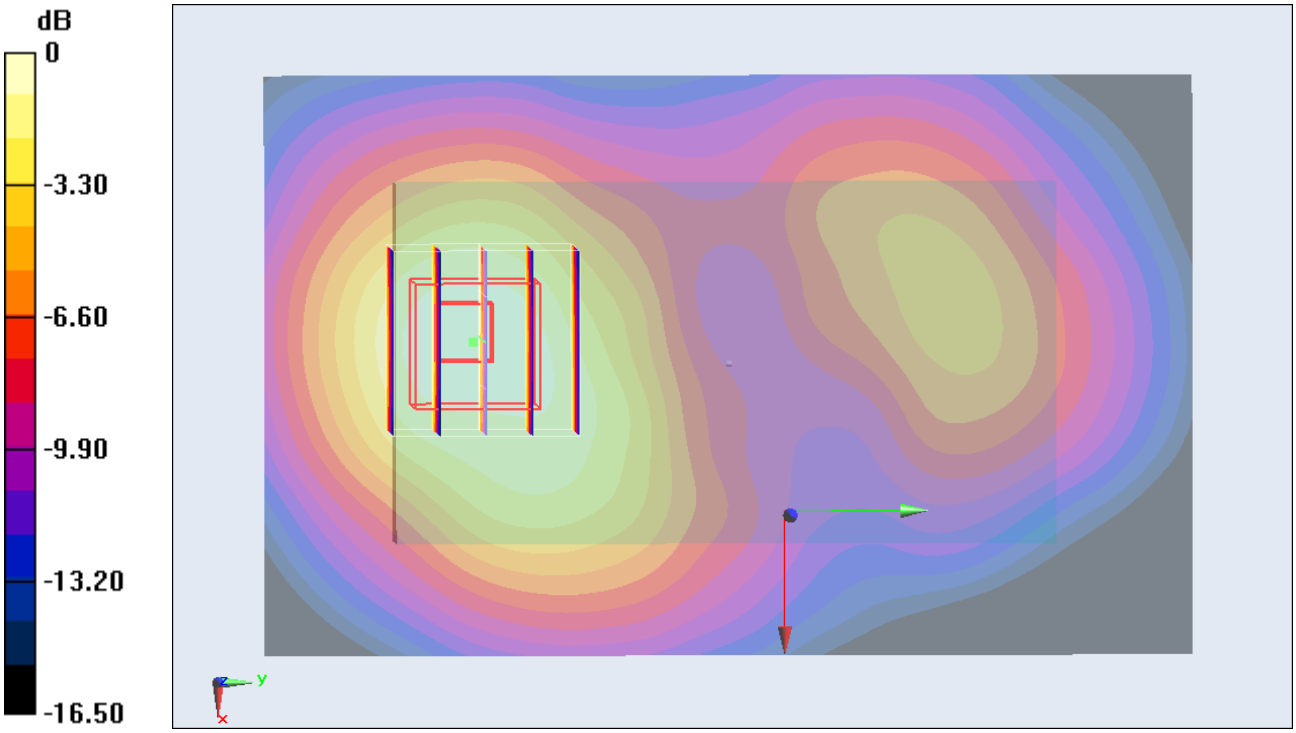
**DUT: 290405**

Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: MSL_1900_121030 Medium parameters used: f = 1910 MHz; $\sigma$ = 1.557 mho/m; $\varepsilon_r$ = 53.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch810/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.592 W/kg

**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.632 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.907 mW/g
**SAR(1 g) = 0.547 mW/g; SAR(10 g) = 0.320 mW/g**
Maximum value of SAR (measured) = 0.589 W/kg




0 dB = 0.589 W/kg = -4.60 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #64_WCDMA V_RMC12.2K_Front_1cm_Ch4233

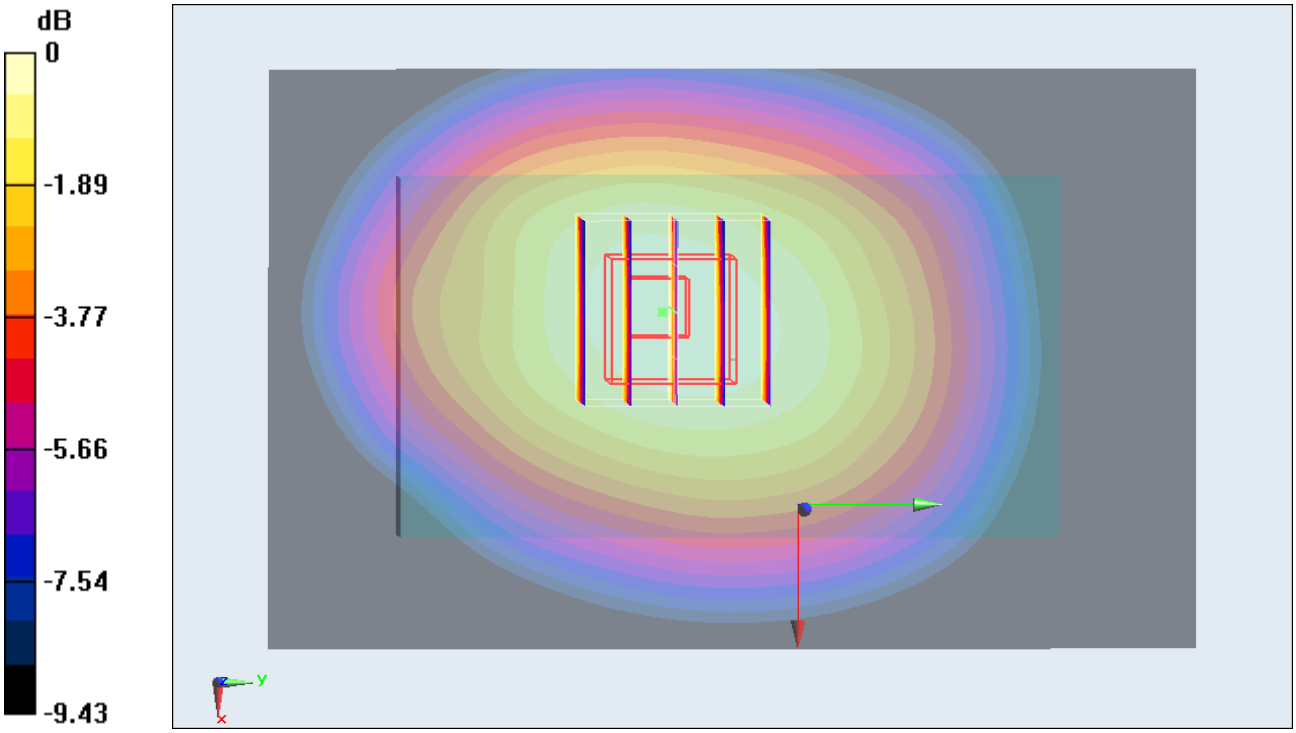
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.00 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.370 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.253 mW/g
**SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.725 mW/g**
Maximum value of SAR (measured) = 1.02 W/kg




0 dB = 1.02 W/kg = 0.17 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #69_WCDMA V_RMC12.2K_Front_1cm_Ch4132

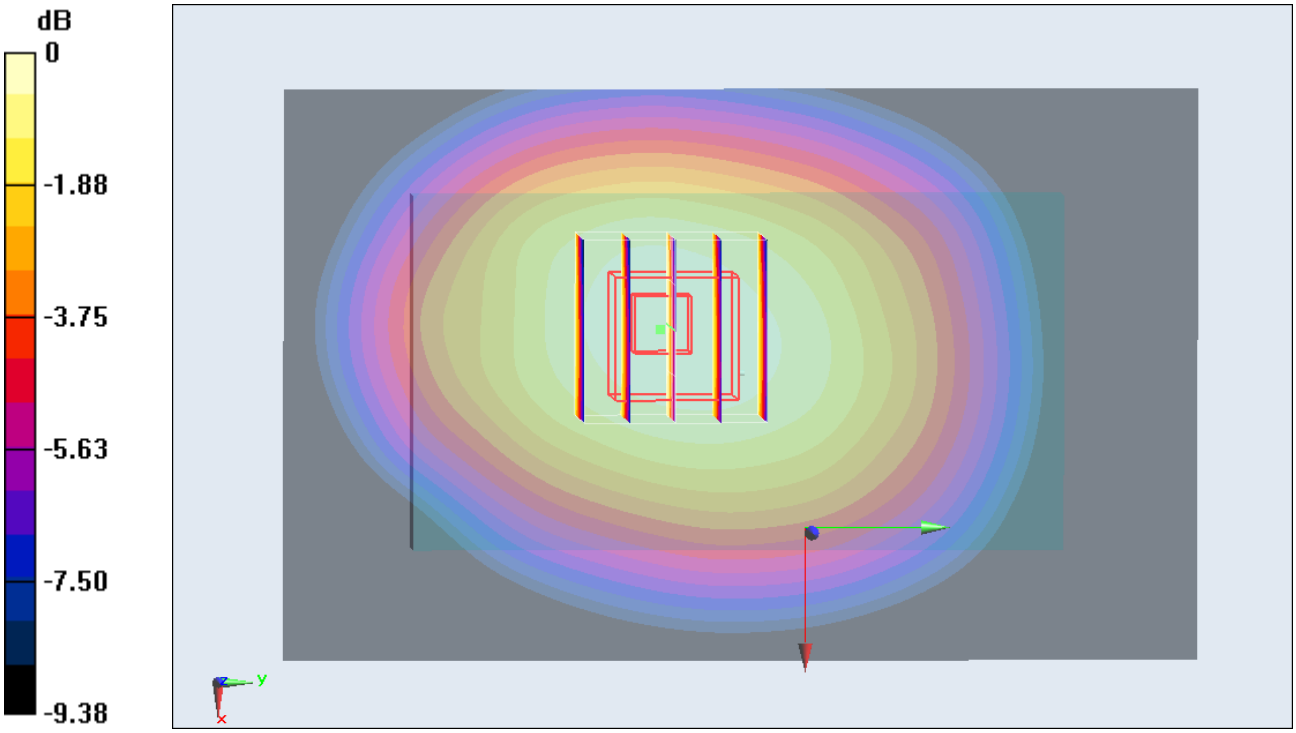
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 826.4 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.63; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.844 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.623 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.054 mW/g
**SAR(1 g) = 0.809 mW/g; SAR(10 g) = 0.608 mW/g**
Maximum value of SAR (measured) = 0.851 W/kg




0 dB = 0.851 W/kg = -1.40 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #70_WCDMA V_RMC12.2K_Front_1cm_Ch4182

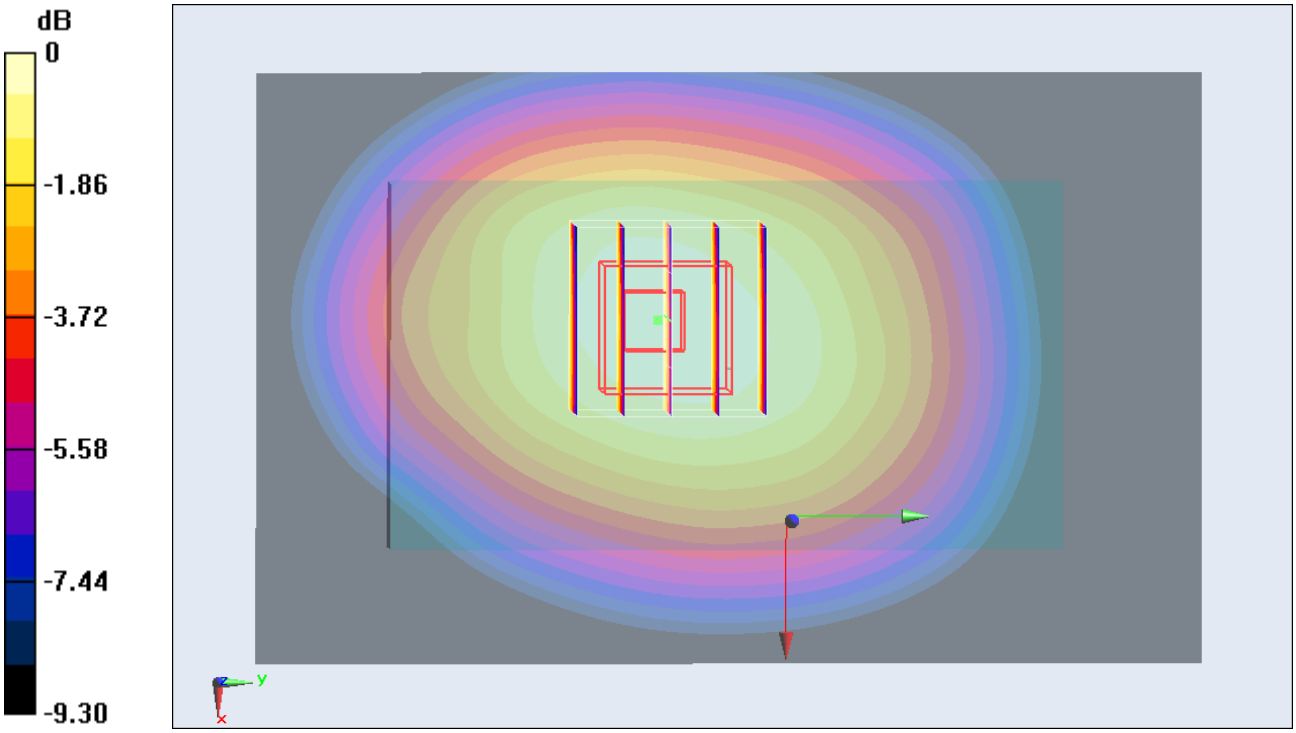
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.897 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.140 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.126 mW/g
**SAR(1 g) = 0.874 mW/g; SAR(10 g) = 0.654 mW/g**
Maximum value of SAR (measured) = 0.916 W/kg




0 dB = 0.916 W/kg = -0.76 dB W/kg

## #65_WCDMA V_RMC12.2K_Back_1cm_Ch4233

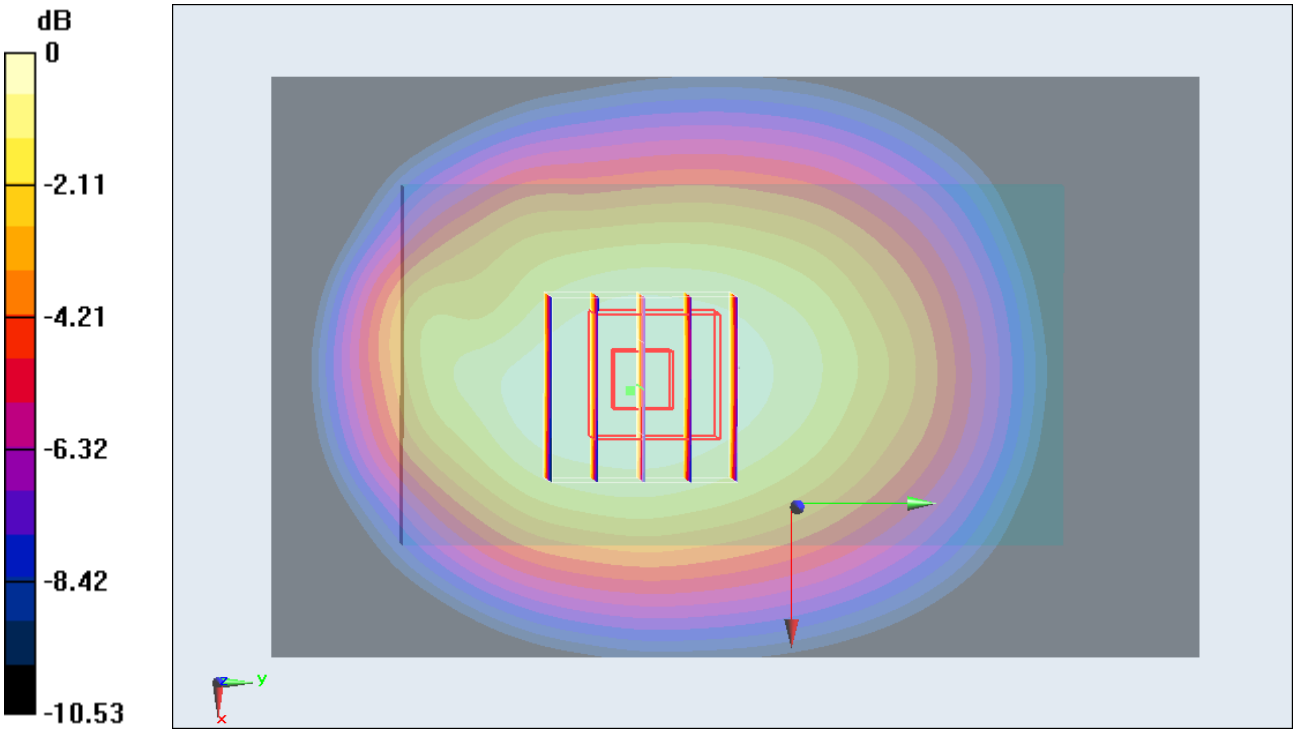
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.50 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.835 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.763 mW/g
**SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.959 mW/g**
Maximum value of SAR (measured) = 1.40 W/kg




0 dB = 1.40 W/kg = 2.92 dB W/kg

## #65_WCDMA V_RMC12.2K_Back_1cm_Ch4233_2D

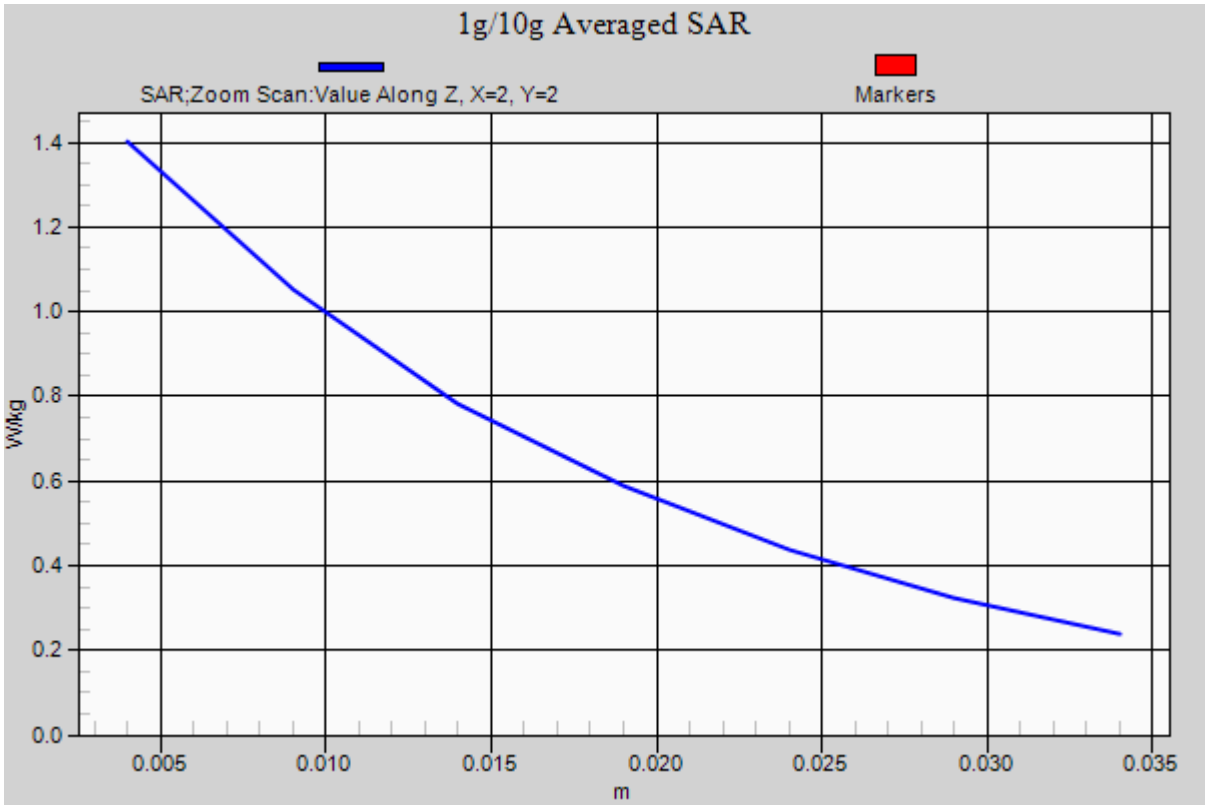
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.50 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.835 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.763 mW/g
**SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.959 mW/g**
Maximum value of SAR (measured) = 1.40 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #71_WCDMA V_RMC12.2K_Back_1cm_Ch4132

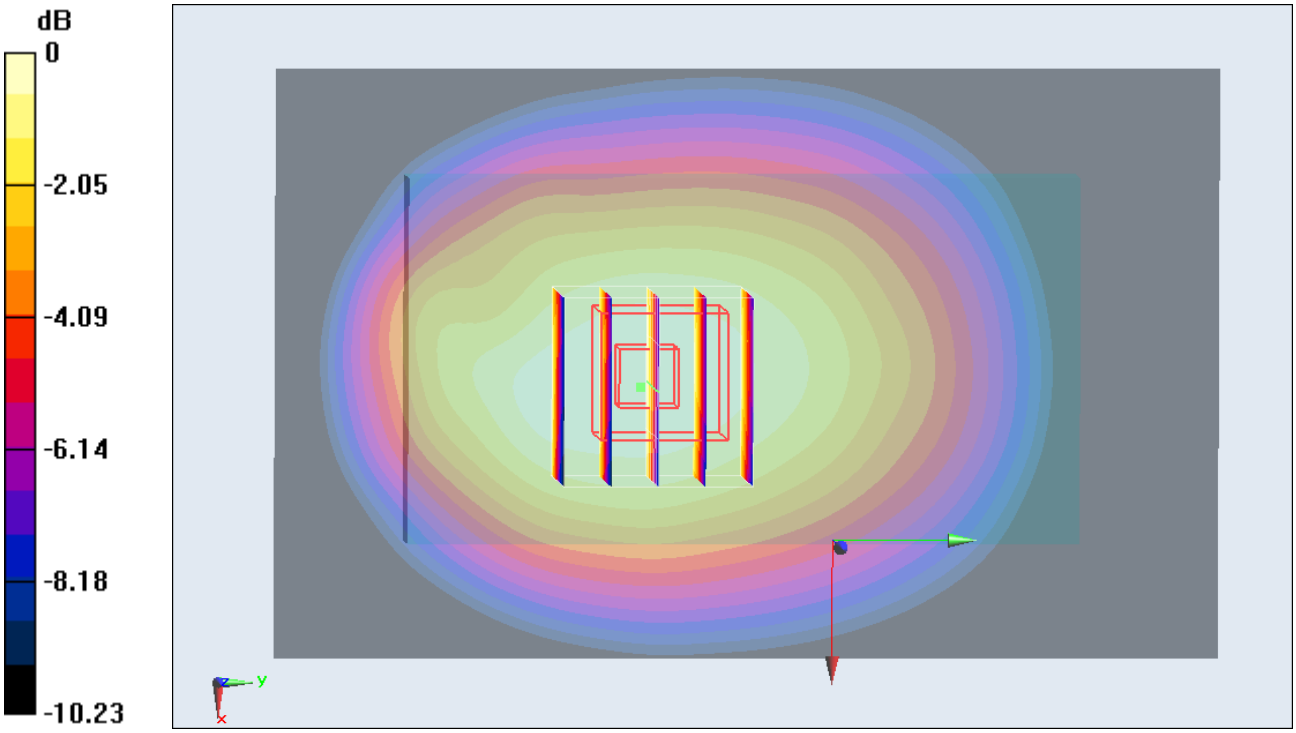
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 826.4 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.63; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃； Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.42 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.929 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.745 mW/g
**SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.948 mW/g**
Maximum value of SAR (measured) = 1.38 W/kg




0 dB = 1.38 W/kg = 2.80 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #72_WCDMA V_RMC12.2K_Back_1cm_Ch4182

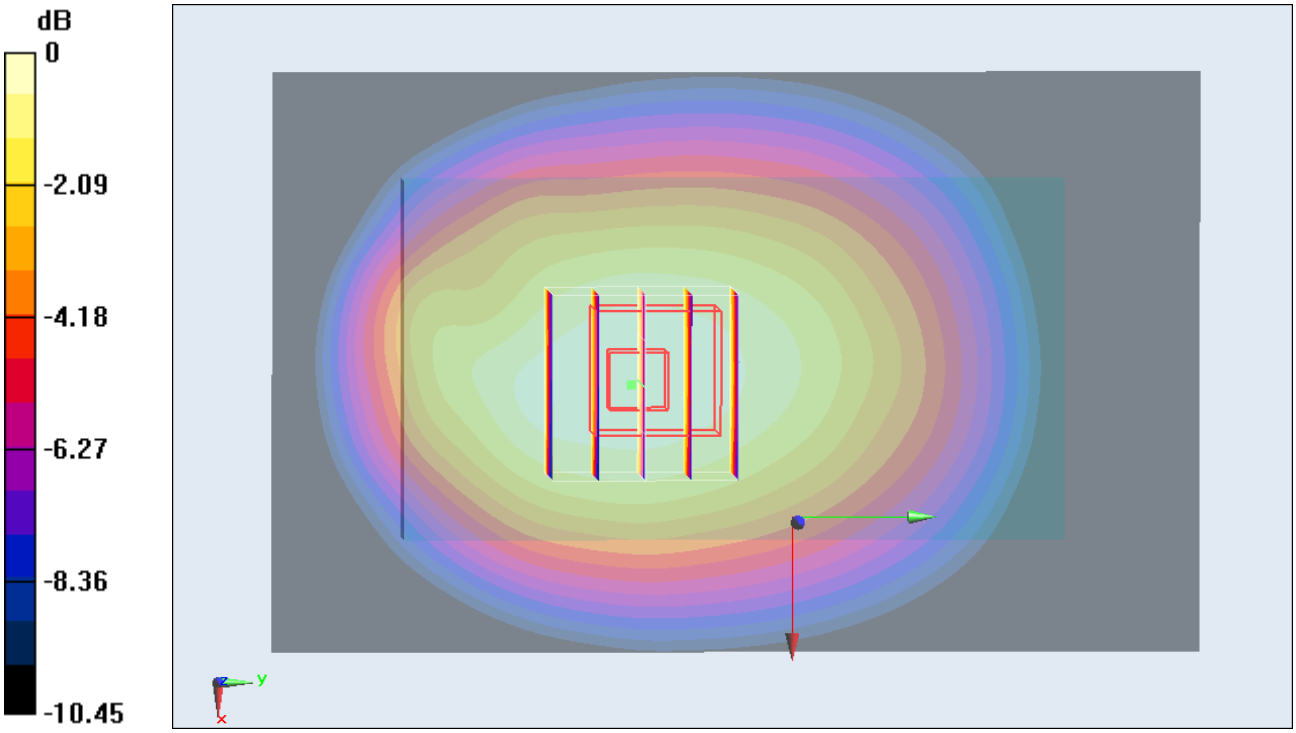
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃； Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.37 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.648 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 1.712 mW/g
**SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.927 mW/g**
Maximum value of SAR (measured) = 1.36 W/kg




0 dB = 1.36 W/kg = 2.67 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #73_WCDMA V_HSDPA_Back_1cm_Ch4132

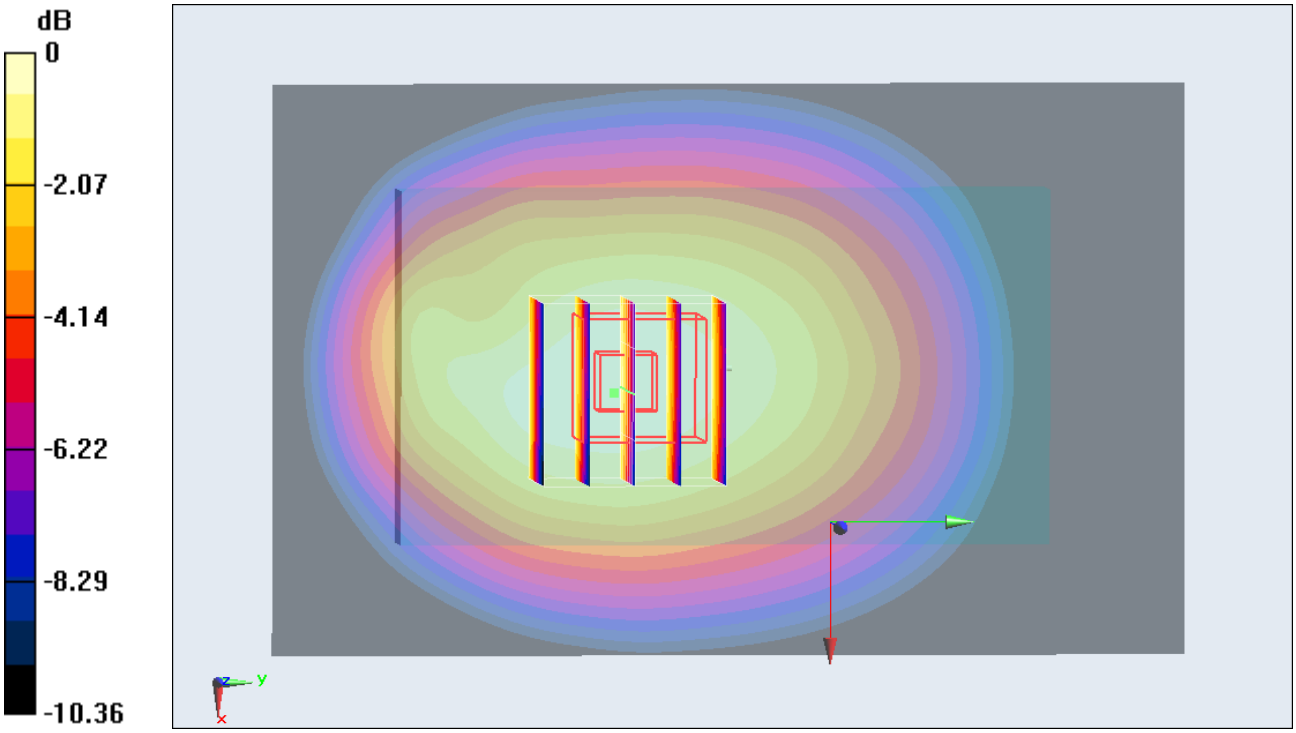
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 826.4 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.63; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.32 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.755 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.664 mW/g
**SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.907 mW/g**
Maximum value of SAR (measured) = 1.32 W/kg




0 dB = 1.32 W/kg = 2.41 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #74_WCDMA V_HSDPA_Back_1cm_Ch4182

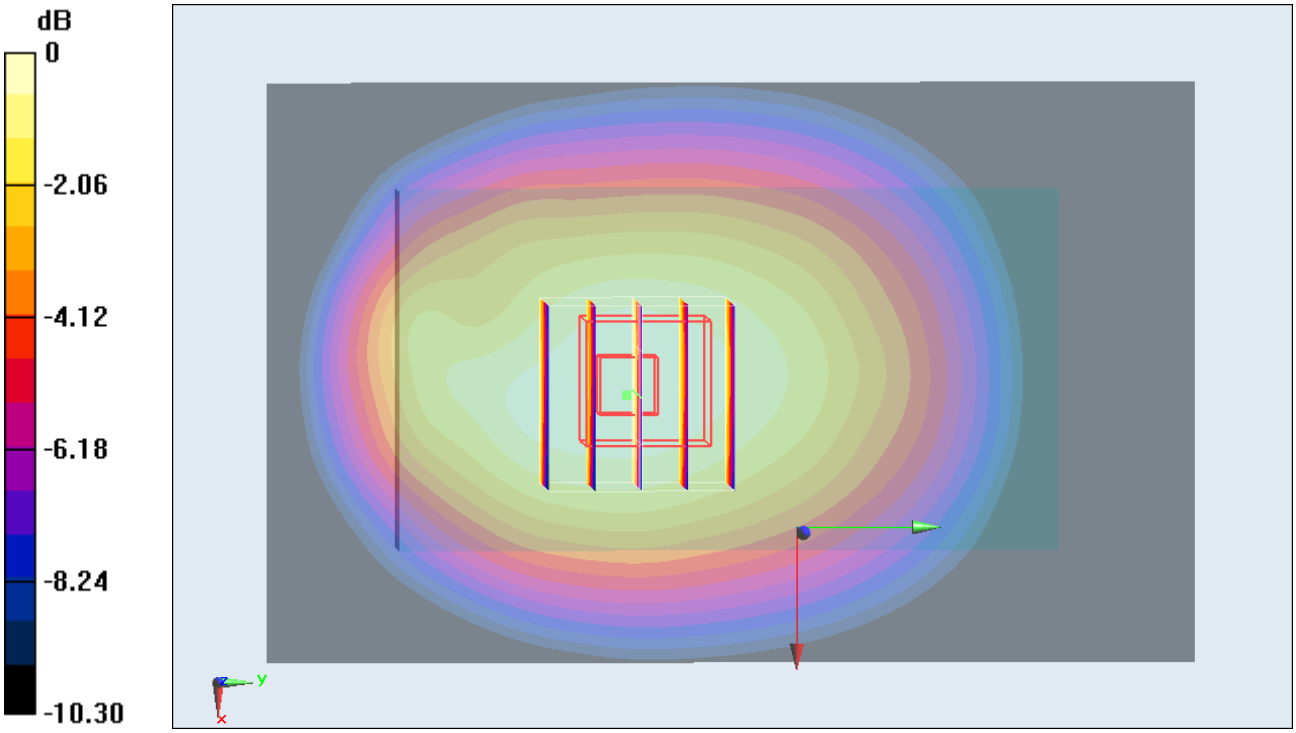
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.503 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.616 mW/g
**SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.874 mW/g**
Maximum value of SAR (measured) = 1.27 W/kg




0 dB = 1.27 W/kg = 2.08 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #75_WCDMA V_HSDPA_Back_1cm_Ch4233

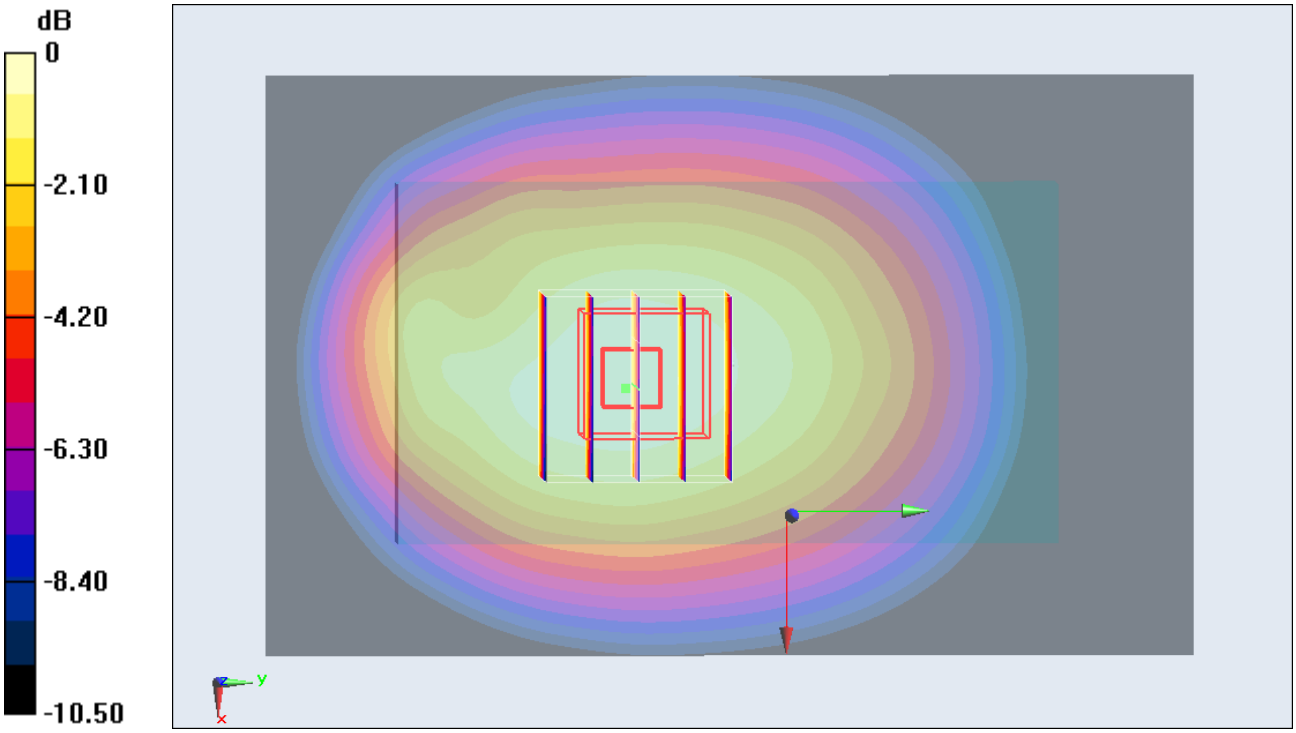
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.37 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.339 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.713 mW/g
**SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.932 mW/g**
Maximum value of SAR (measured) = 1.36 W/kg




0 dB = 1.36 W/kg = 2.67 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #76_WCDMA V_HSUPA_Back_1cm_Ch4132

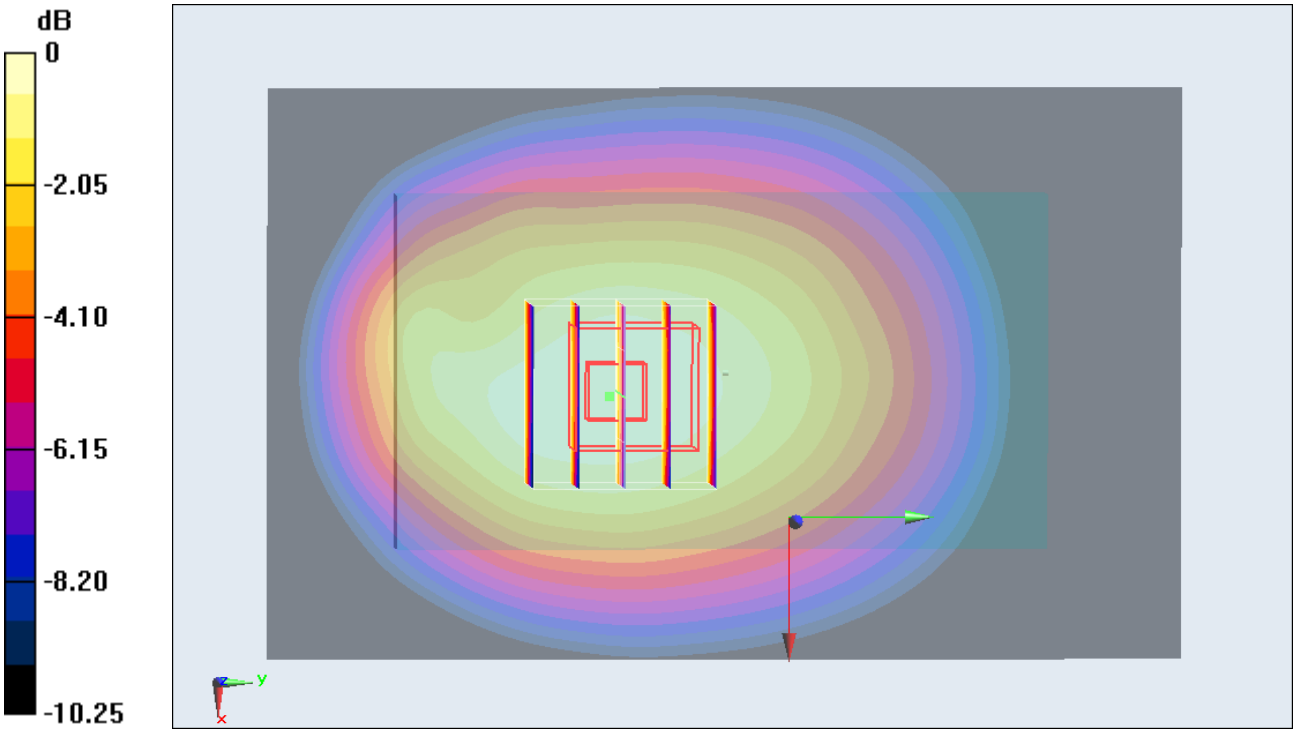
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 826.4 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.63; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃； Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.32 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.552 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.638 mW/g
**SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.889 mW/g**
Maximum value of SAR (measured) = 1.29 W/kg




0 dB = 1.29 W/kg = 2.21 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #77_WCDMA V_HSUPA_Back_1cm_Ch4182

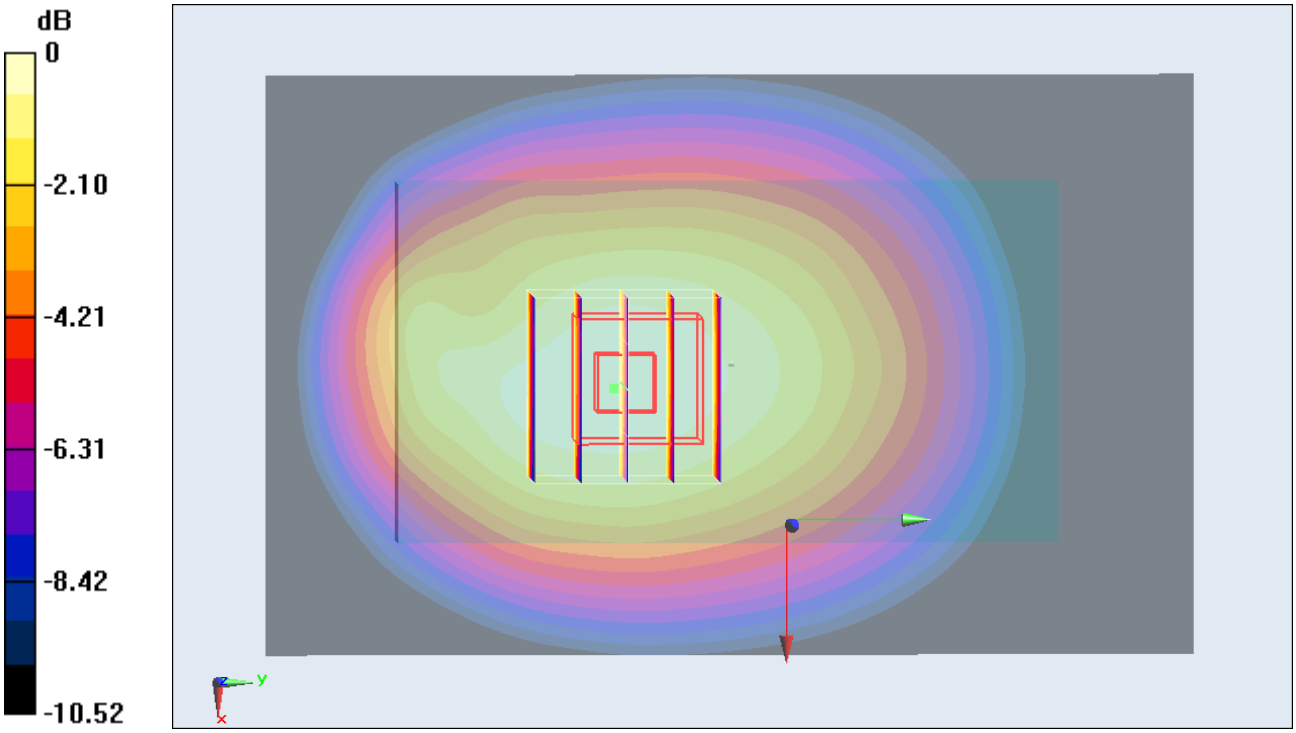
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used : f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.023 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.598 mW/g
**SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.864 mW/g**
Maximum value of SAR (measured) = 1.27 W/kg




0 dB = 1.27 W/kg = 2.08 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #78_WCDMA V_HSUPA_Back_1cm_Ch4233

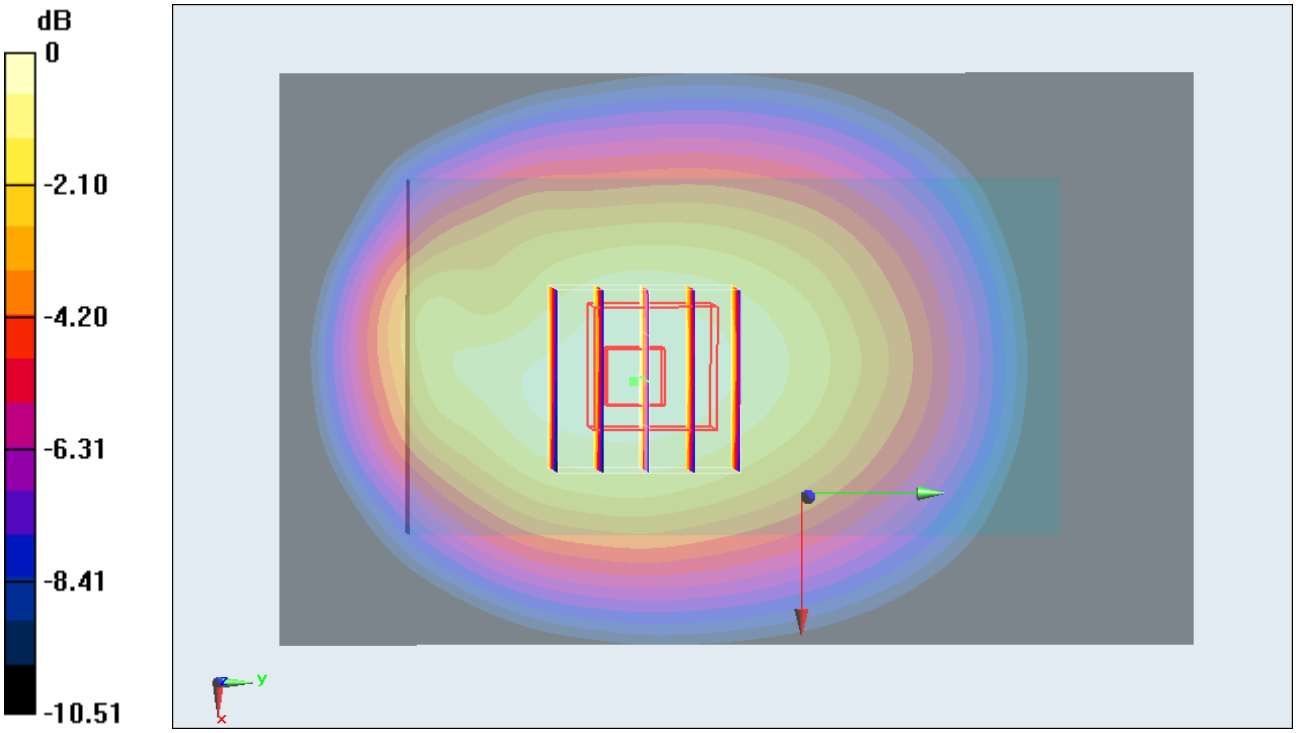
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃； Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.253 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.727 mW/g
**SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.927 mW/g**
Maximum value of SAR (measured) = 1.37 W/kg




0 dB = 1.37 W/kg = 2.73 dB W/kg

## #66_WCDMA V_RMC12.2K_Left Side_1cm_Ch4233

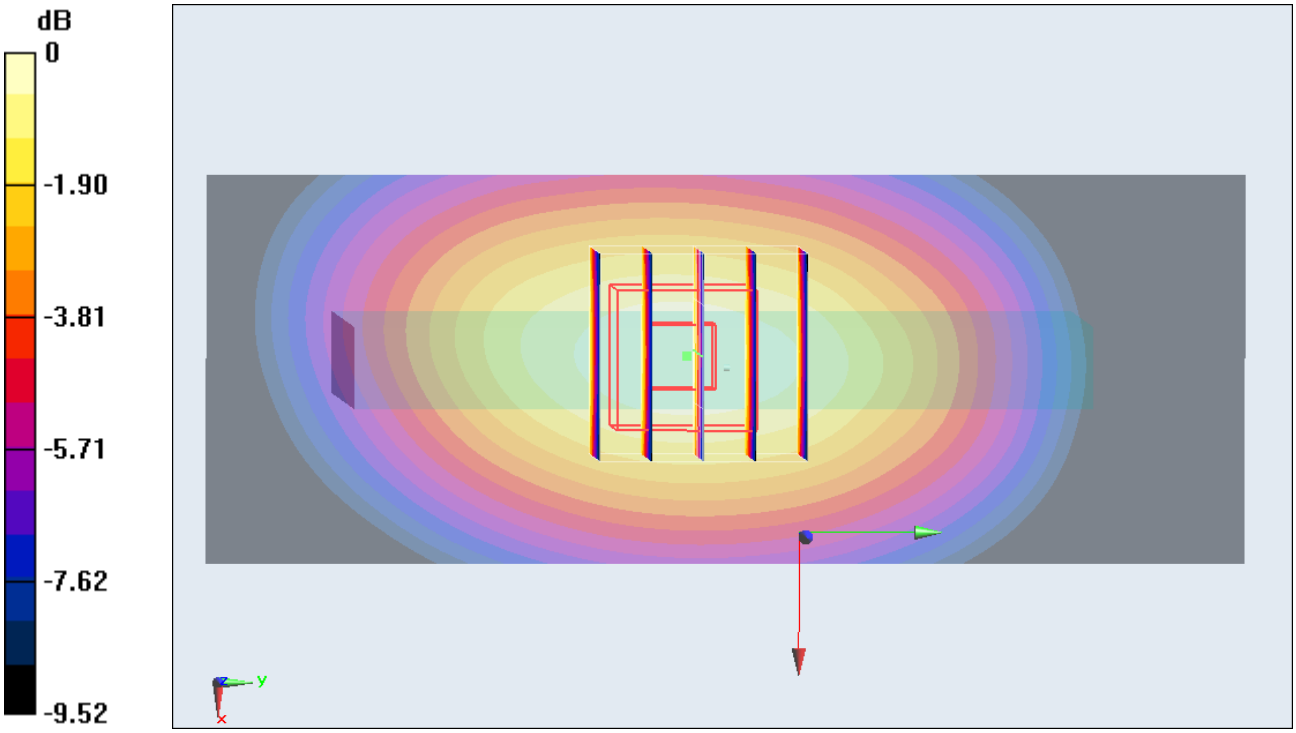
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.731 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.136 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.990 mW/g
**SAR(1 g) = 0.701 mW/g; SAR(10 g) = 0.483 mW/g**
Maximum value of SAR (measured) = 0.745 W/kg




0 dB = 0.745 W/kg = -2.56 dB W/kg

## #81_WCDMA V_RMC12.2K_Right Side_1cm_Ch4132

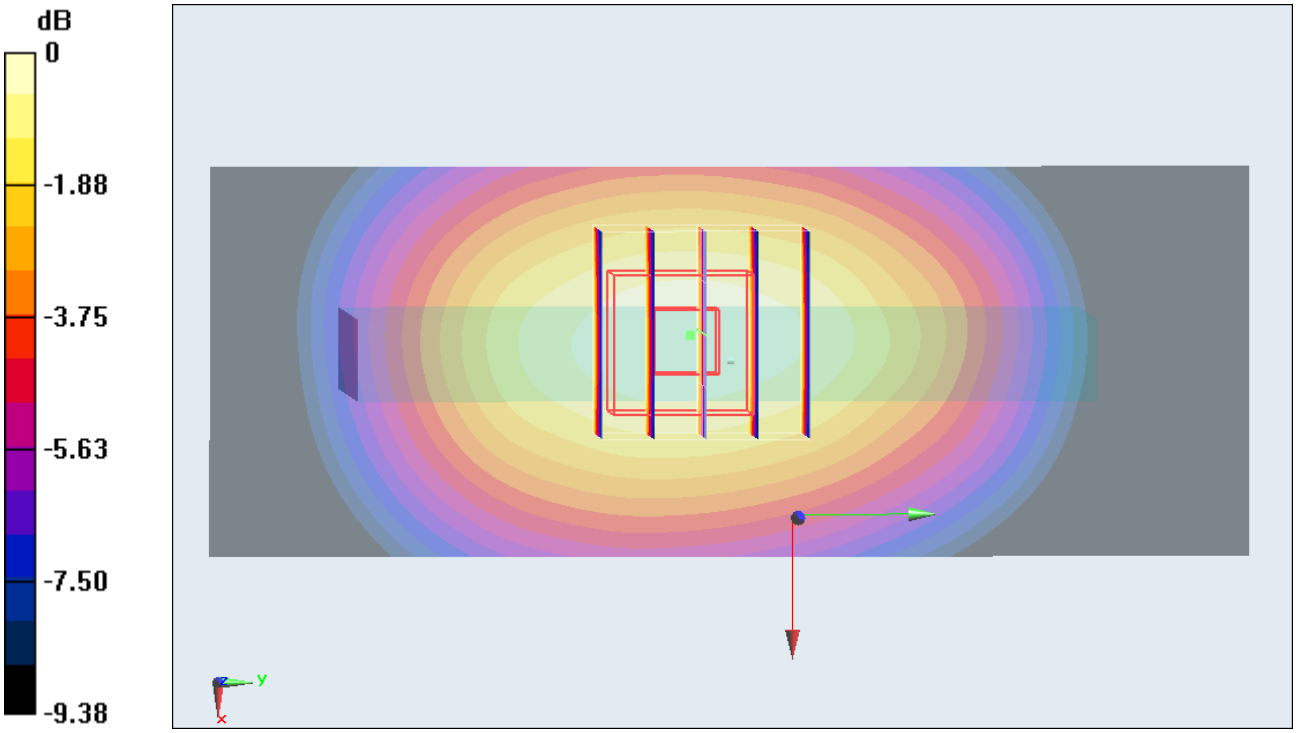
**DUT: 290405**

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 826.4 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.63; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4132/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.737 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.448 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.986 mW/g
**SAR(1 g) = 0.708 mW/g; SAR(10 g) = 0.497 mW/g**
Maximum value of SAR (measured) = 0.750 W/kg




0 dB = 0.750 W/kg = -2.50 dB W/kg

## #82_WCDMA V_RMC12.2K_Right Side_1cm_Ch4182

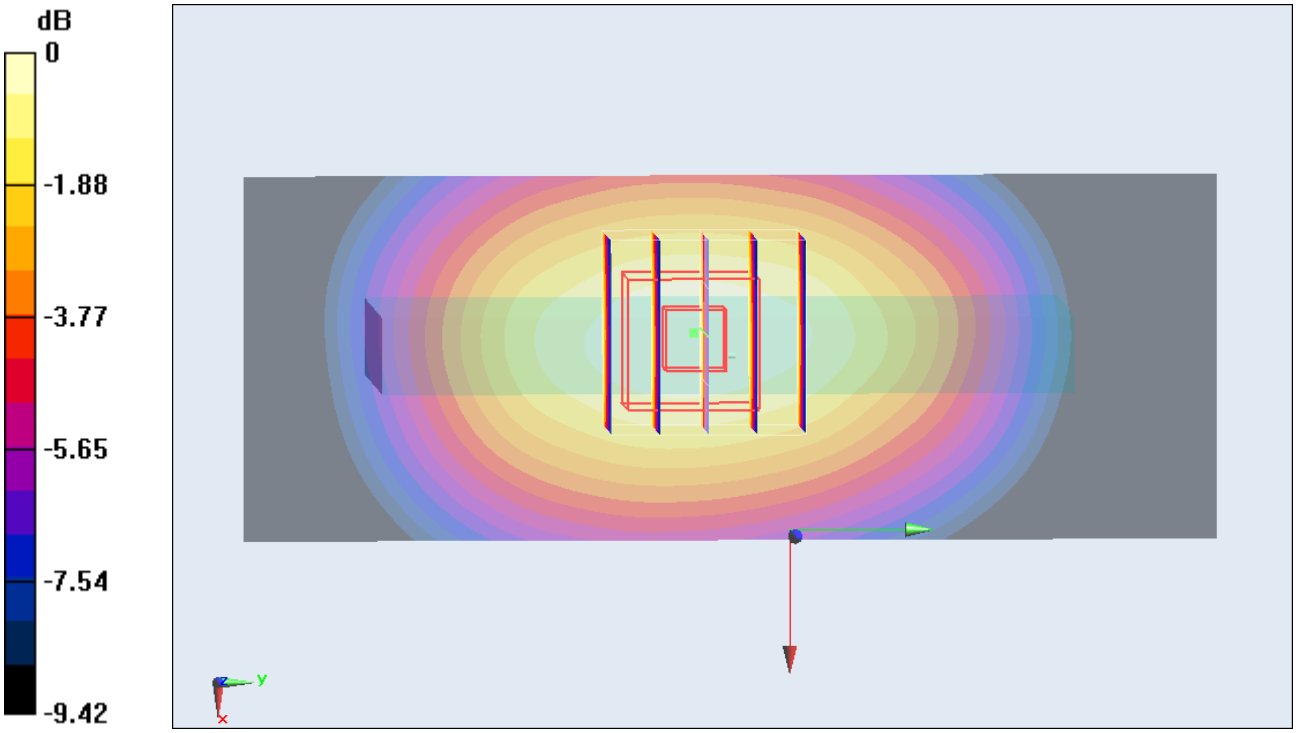
**DUT: 290405**

Communication System: WCDMA; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.964 mho/m; $\varepsilon_r$ = 54.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4182/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.760 W/kg

**Ch4182/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.992 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.010 mW/g
**SAR(1 g) = 0.727 mW/g; SAR(10 g) = 0.510 mW/g**
Maximum value of SAR (measured) = 0.771 W/kg




0 dB = 0.771 W/kg = -2.26 dB W/kg

## #67_WCDMA V_RMC12.2K_Right Side_1cm_Ch4233

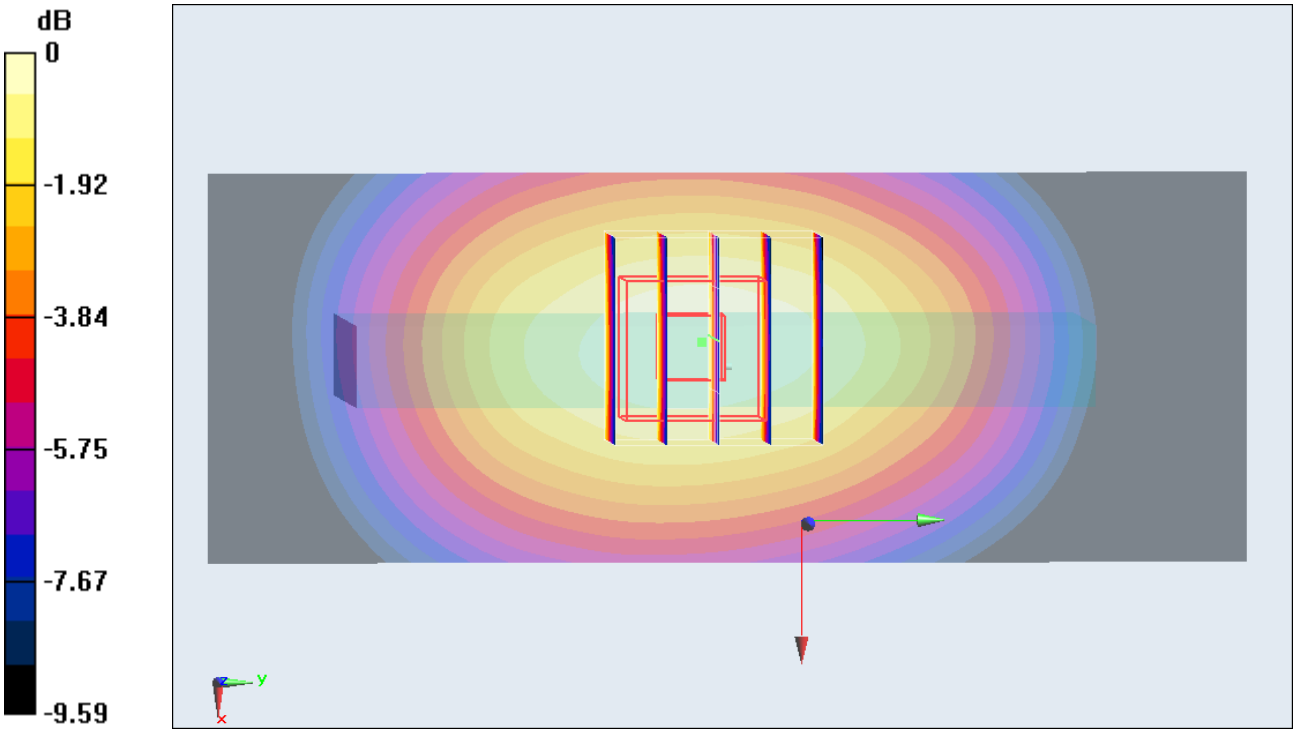
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.840 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.054 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.126 mW/g
**SAR(1 g) = 0.805 mW/g; SAR(10 g) = 0.563 mW/g**
Maximum value of SAR (measured) = 0.851 W/kg




0 dB = 0.851 W/kg = -1.40 dB W/kg

## #68_WCDMA V_RMC12.2K_Bottom Side_1cm_Ch4233

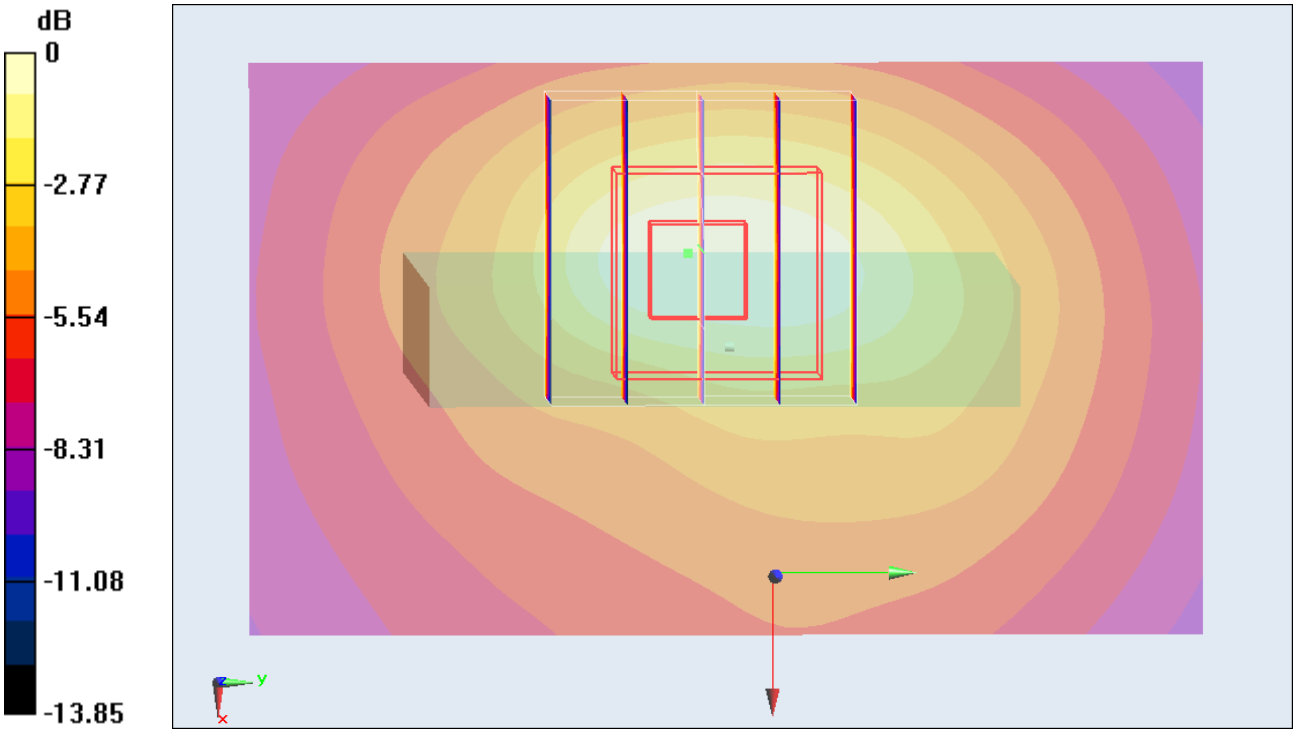
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (31x51x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.209 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.140 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.336 mW/g
**SAR(1 g) = 0.195 mW/g; SAR(10 g) = 0.115 mW/g**
Maximum value of SAR (measured) = 0.207 W/kg




0 dB = 0.207 W/kg = -13.68 dB W/kg

## #79_WCDMA V_RMC12.2K_Front_1.5cm_Ch4233;Headset

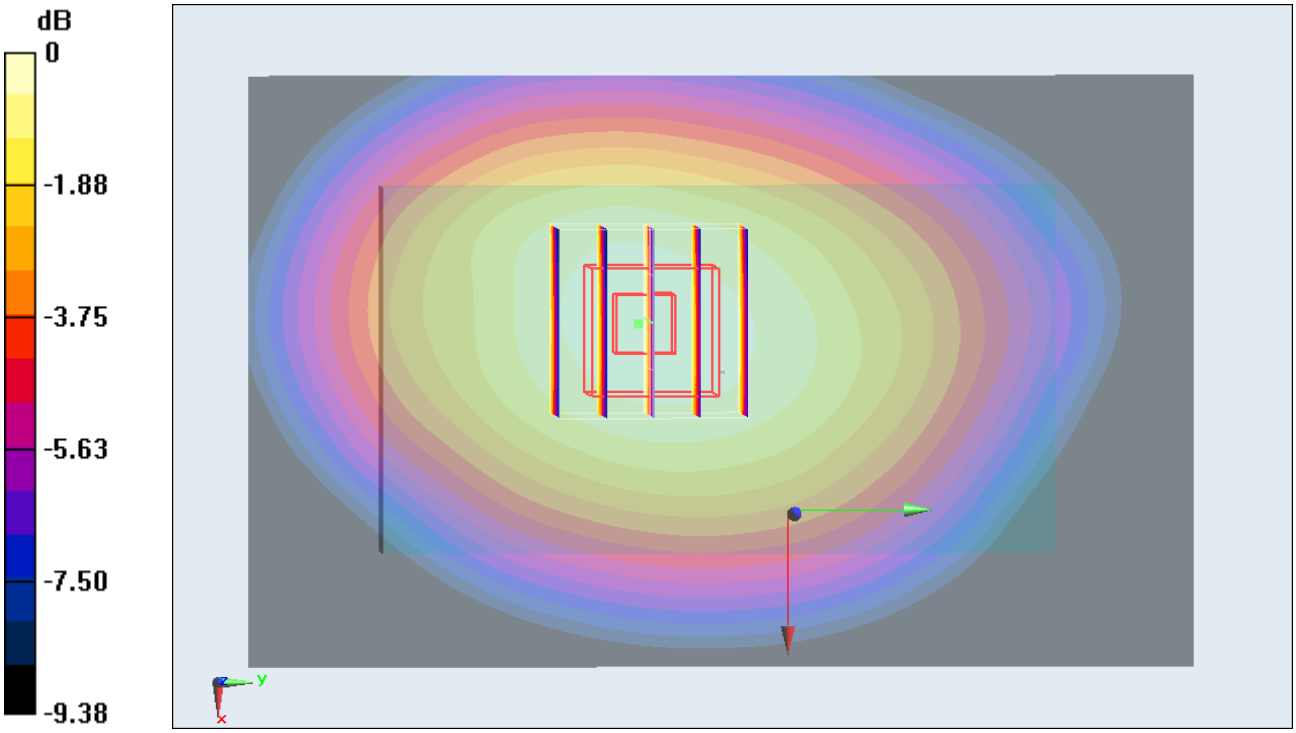
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.478 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.393 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.610 mW/g
**SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.348 mW/g**
Maximum value of SAR (measured) = 0.495 W/kg




0 dB = 0.495 W/kg = -6.11 dB W/kg

## #80_WCDMA V_RMC12.2K_Back_1.5cm_Ch4233;Headset

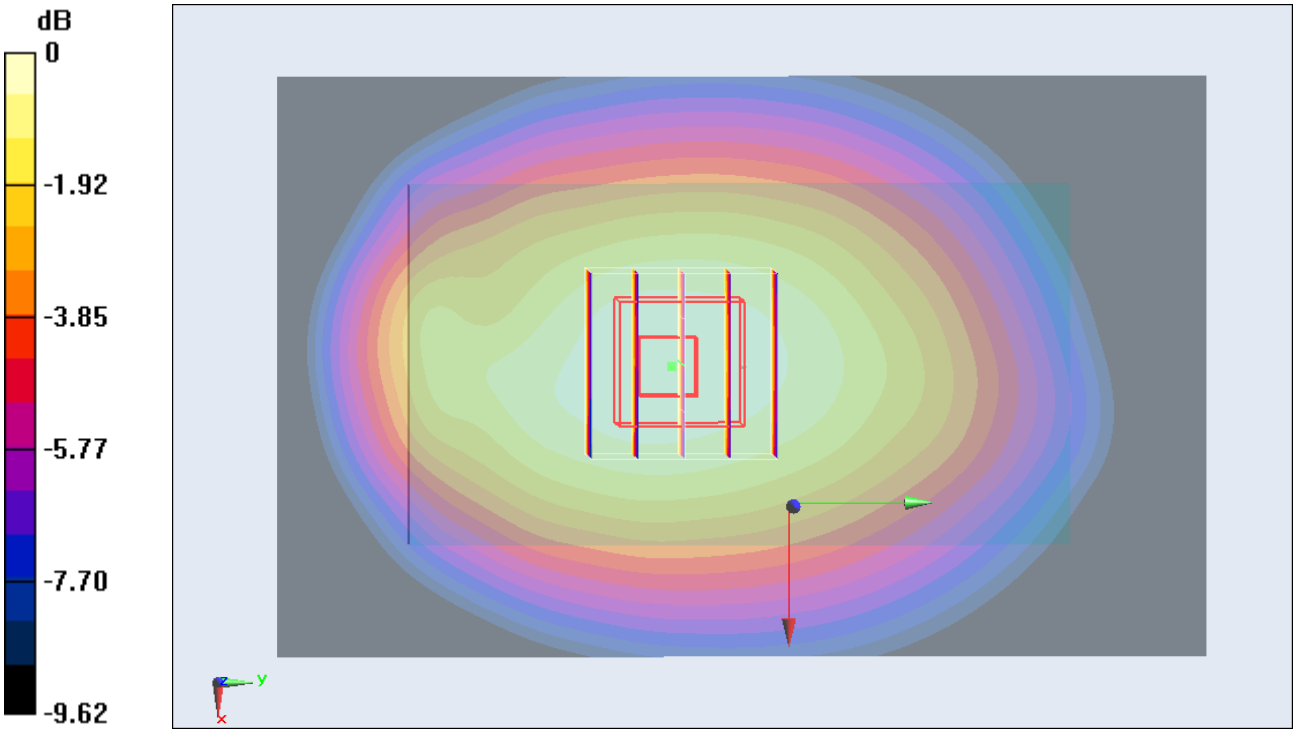
**DUT: 290405**

Communication System: WCDMA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_850_121030 Medium parameters used: f = 847 MHz; $\sigma$ = 0.974 mho/m; $\varepsilon_r$ = 54.432; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.6 ℃; Liquid Temperature：21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(8.82, 8.82, 8.82); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch4233/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.728 W/kg

**Ch4233/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.745 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.925 mW/g
**SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.508 mW/g**
Maximum value of SAR (measured) = 0.729 W/kg




0 dB = 0.729 W/kg = -2.75 dB W/kg

## #25_WCDMA II_RMC12.2K_Front_1cm_Ch9400

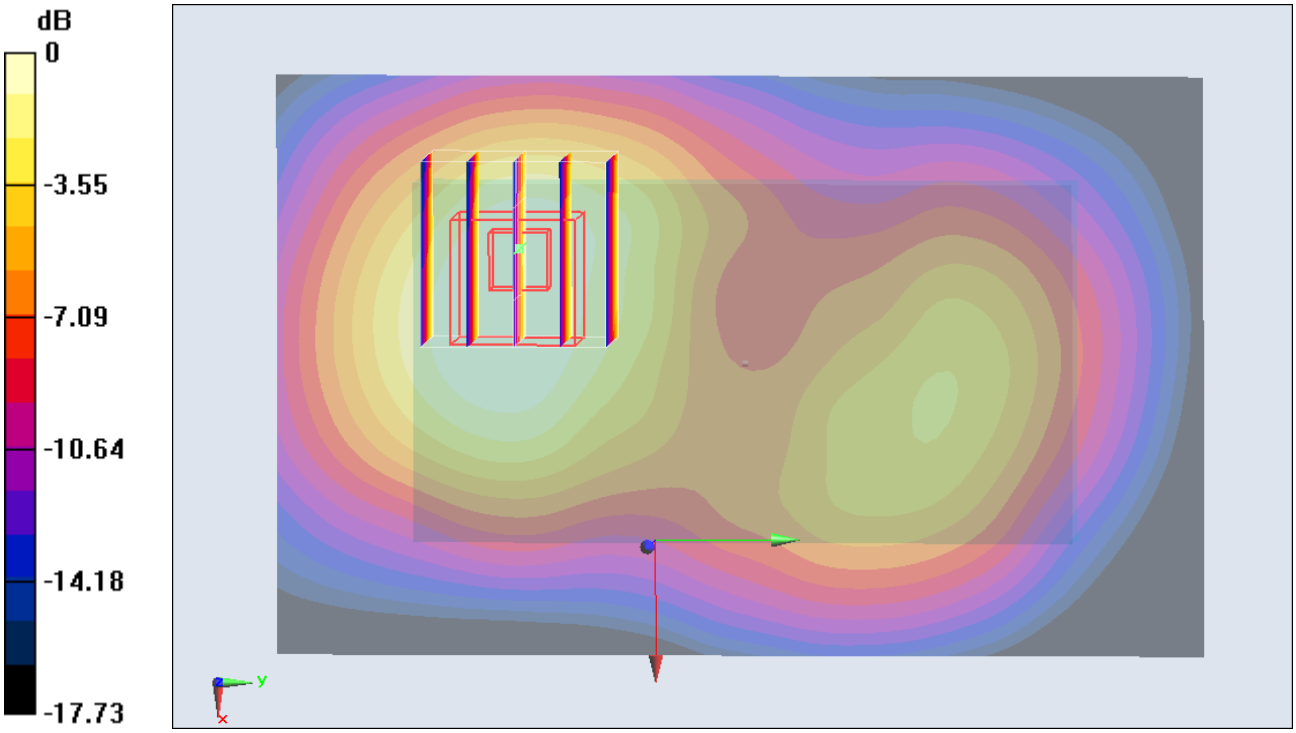
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.971 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.076 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.500 mW/g
**SAR(1 g) = 0.895 mW/g; SAR(10 g) = 0.544 mW/g**
Maximum value of SAR (measured) = 0.962 W/kg




0 dB = 0.962 W/kg = -0.34 dB W/kg

## #30_WCDMA II_RMC12.2K_Front_1cm_Ch9262

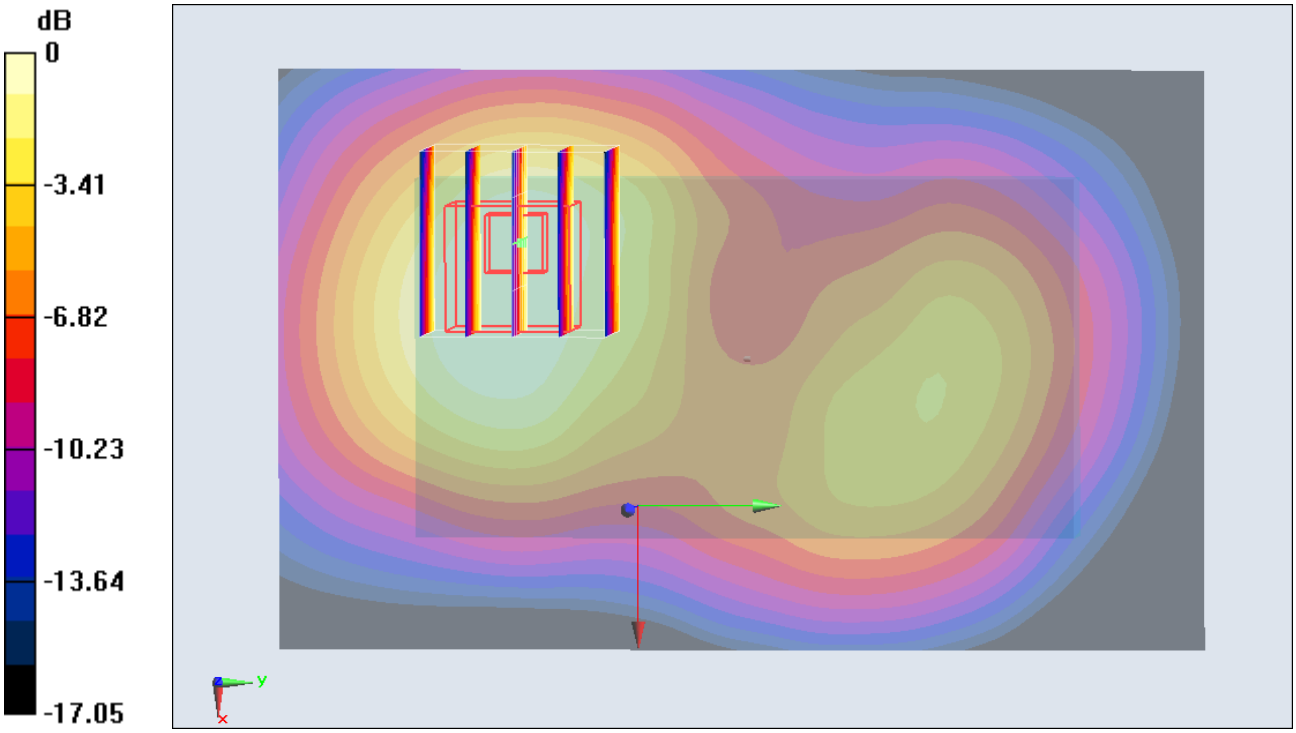
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon_r$ = 53.406; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃； Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.840 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.813 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.301 mW/g
**SAR(1 g) = 0.772 mW/g; SAR(10 g) = 0.465 mW/g**
Maximum value of SAR (measured) = 0.833 W/kg




0 dB = 0.833 W/kg = -1.59 dB W/kg

## #31_WCDMA II_RMC12.2K_Front_1cm_Ch9538

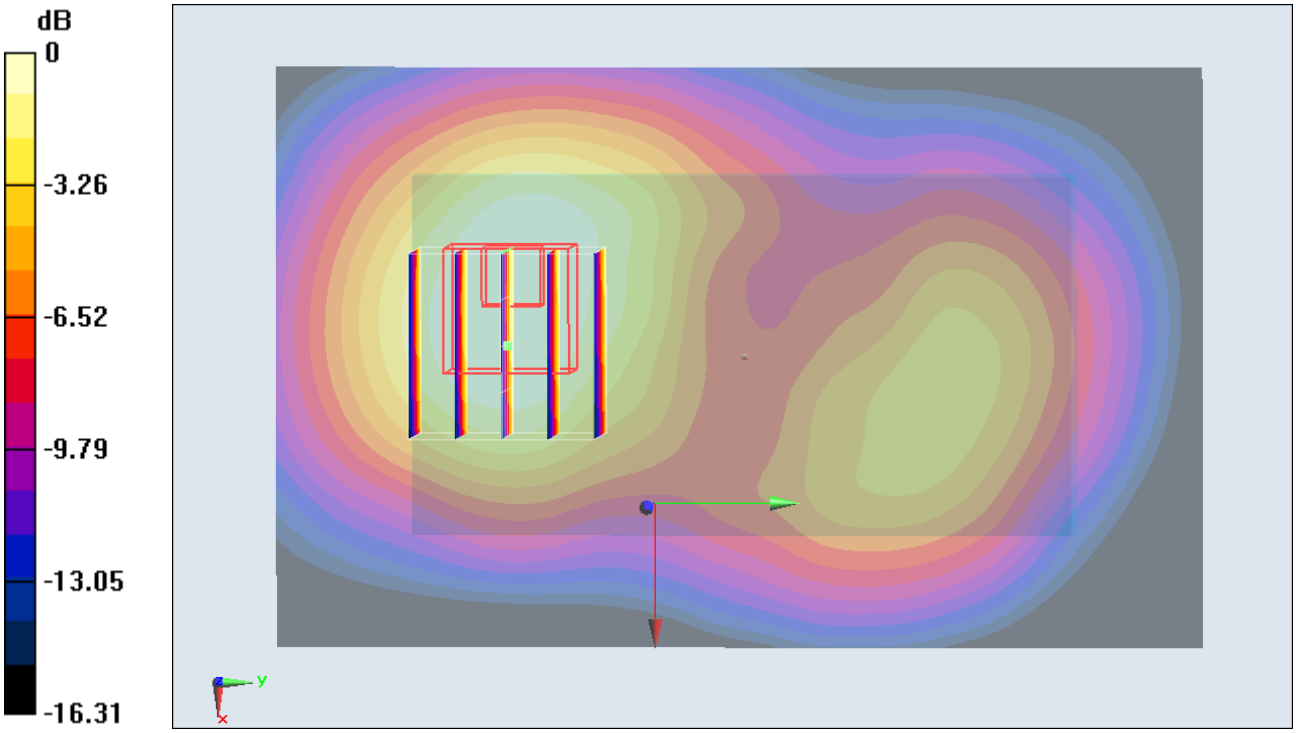
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.962 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.562 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.446 mW/g
**SAR(1 g) = 0.870 mW/g; SAR(10 g) = 0.528 mW/g**
Maximum value of SAR (measured) = 0.930 W/kg




0 dB = 0.930 W/kg = -0.63 dB W/kg

## #26_WCDMA II_RMC12.2K_Back_1cm_Ch9400

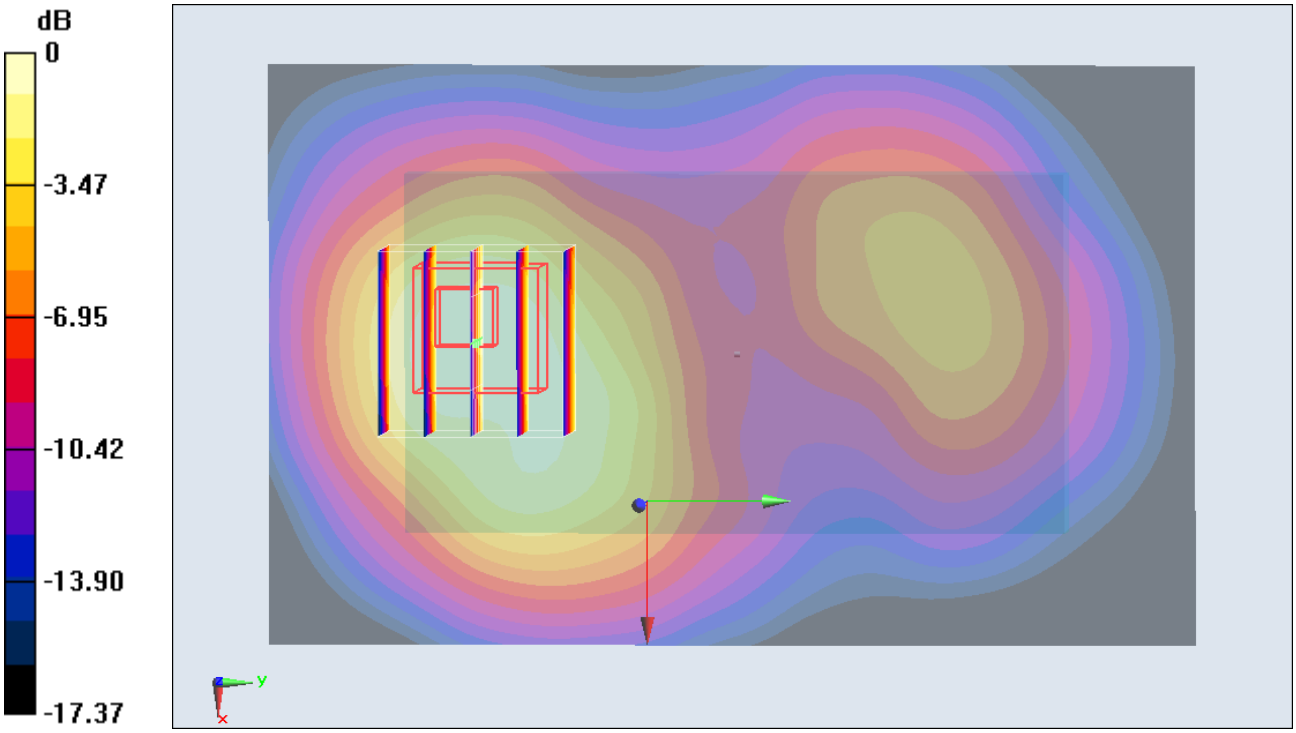
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.304 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 2.169 mW/g
**SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.753 mW/g**
Maximum value of SAR (measured) = 1.37 W/kg




0 dB = 1.37 W/kg = 2.73 dB W/kg

## #32_WCDMA II_RMC12.2K_Back_1cm_Ch9262

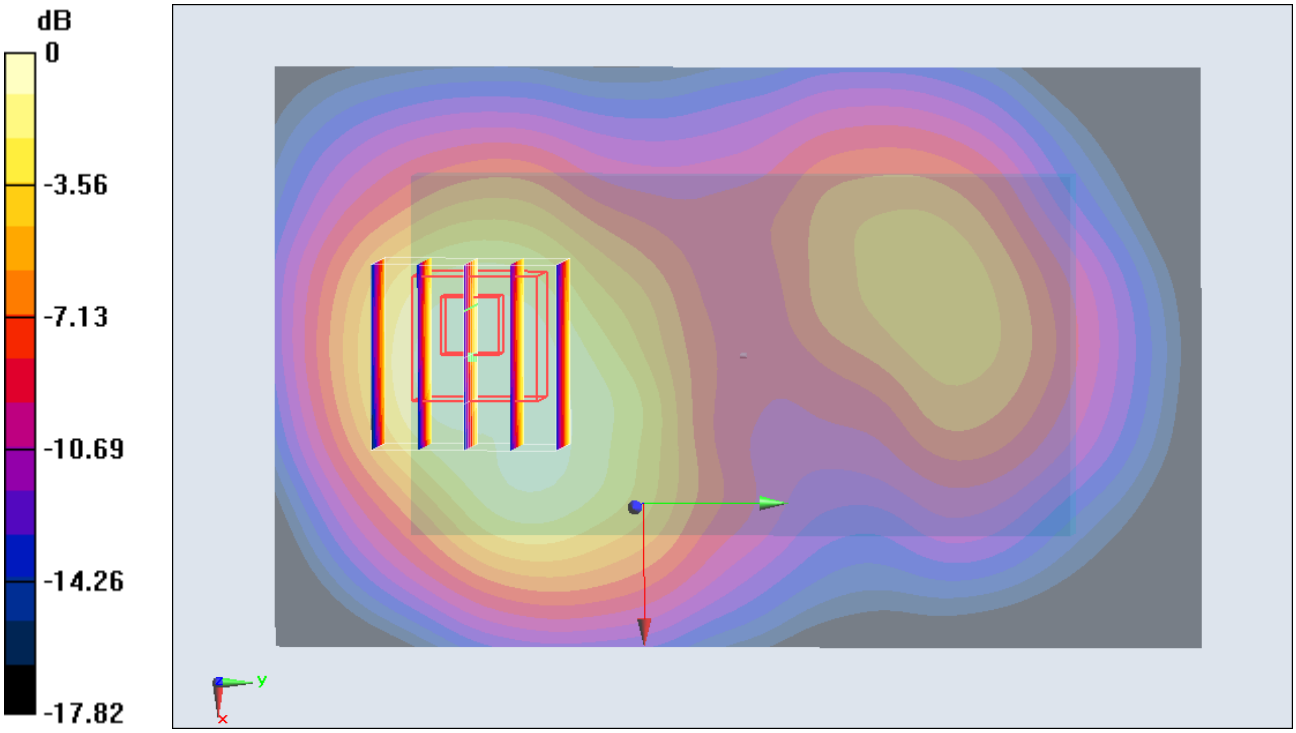
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon_r$ = 53.406; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.21 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.007 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.833 mW/g
**SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.653 mW/g**
Maximum value of SAR (measured) = 1.21 W/kg




0 dB = 1.21 W/kg = 1.66 dB W/kg

## #33_WCDMA II_RMC12.2K_Back_1cm_Ch9538

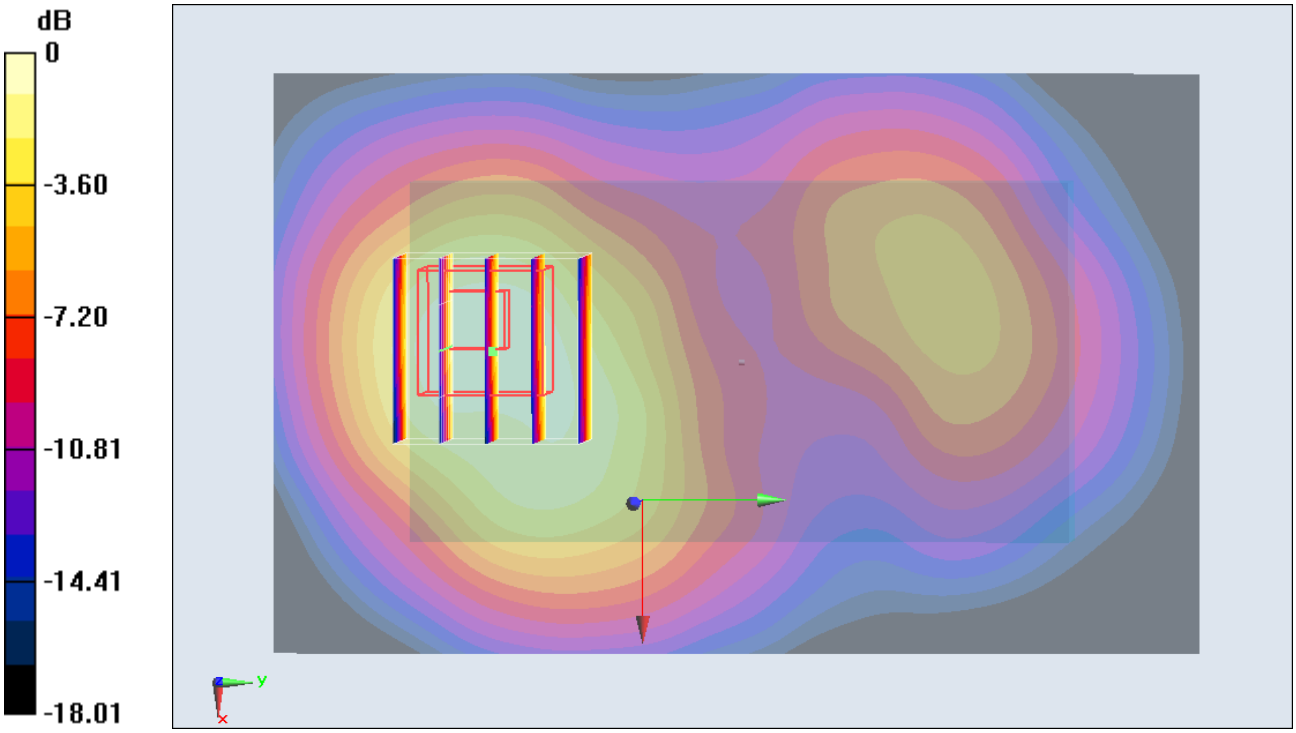
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.400 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.267 mW/g
**SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.757 mW/g**
Maximum value of SAR (measured) = 1.37 W/kg




0 dB = 1.37 W/kg = 2.73 dB W/kg

## #33_WCDMA II_RMC12.2K_Back_1cm_Ch9538_2D

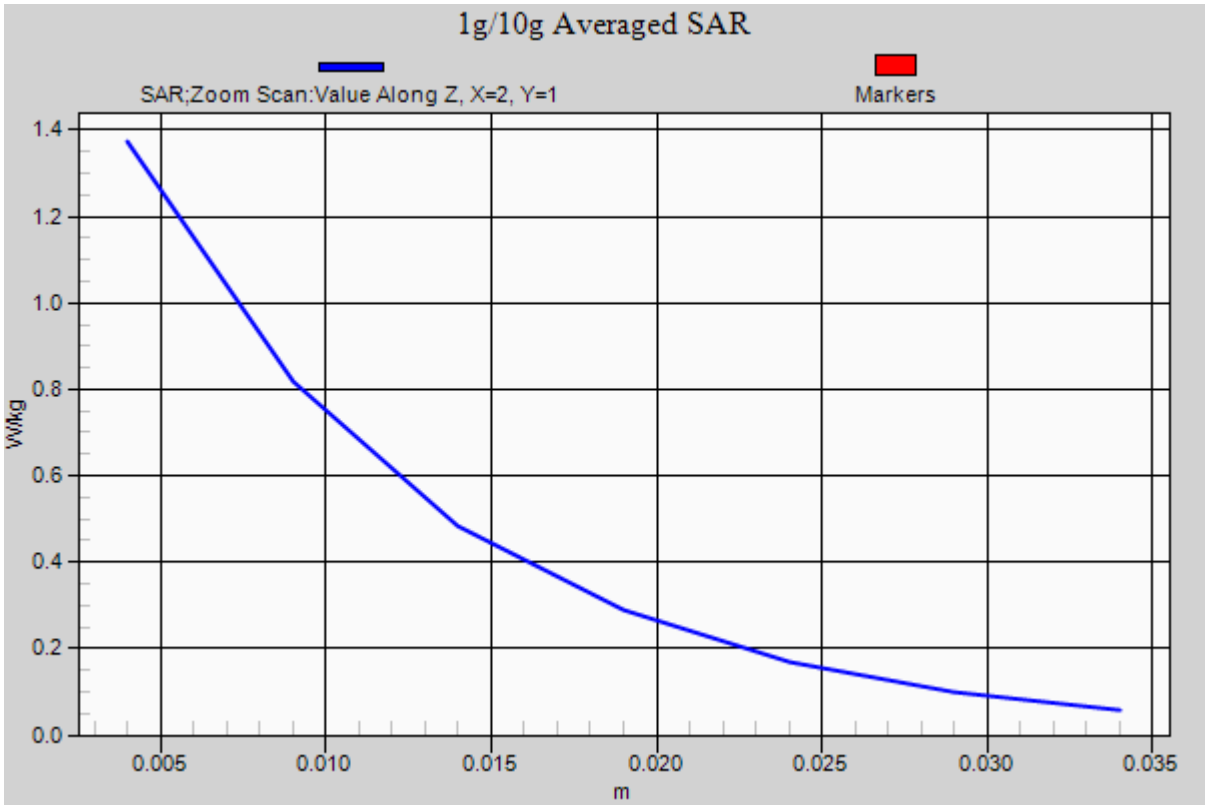
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.400 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.267 mW/g
**SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.757 mW/g**
Maximum value of SAR (measured) = 1.37 W/kg



Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #34_WCDMA II_HSDPA_Back_1cm_Ch9262

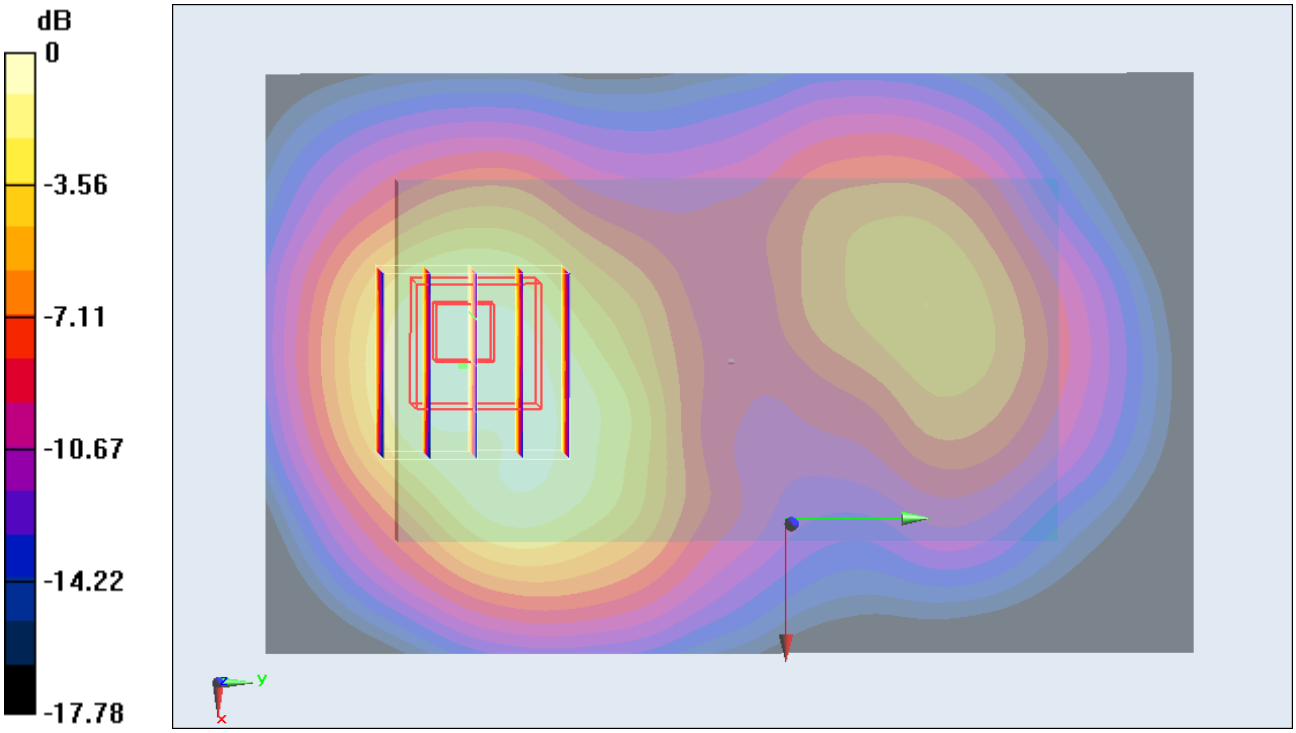
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon_r$ = 53.406; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.739 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.785 mW/g
**SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.639 mW/g**
Maximum value of SAR (measured) = 1.18 W/kg




0 dB = 1.18 W/kg = 1.44 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #35_WCDMA II_HSDPA_Back_1cm_Ch9400

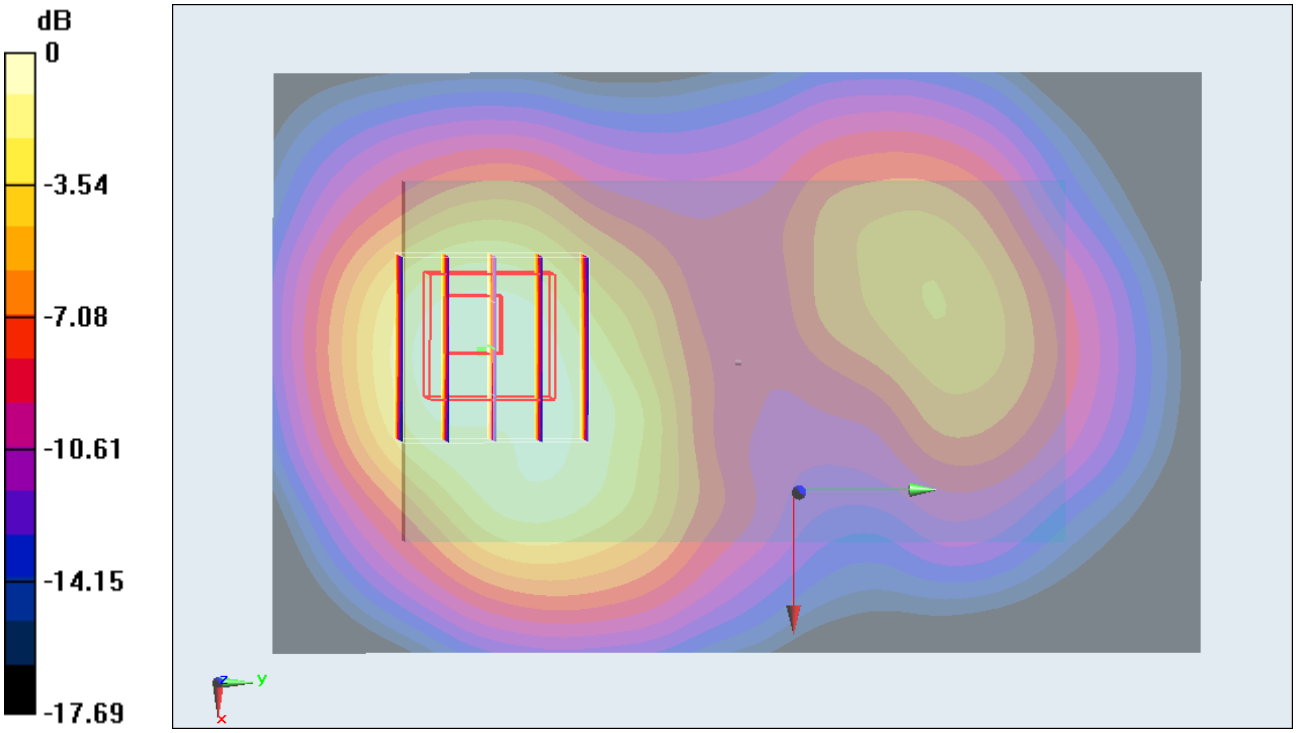
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.42 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.368 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.134 mW/g
**SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.742 mW/g**
Maximum value of SAR (measured) = 1.35 W/kg




0 dB = 1.35 W/kg = 2.61 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #36_WCDMA II_HSDPA_Back_1cm_Ch9538

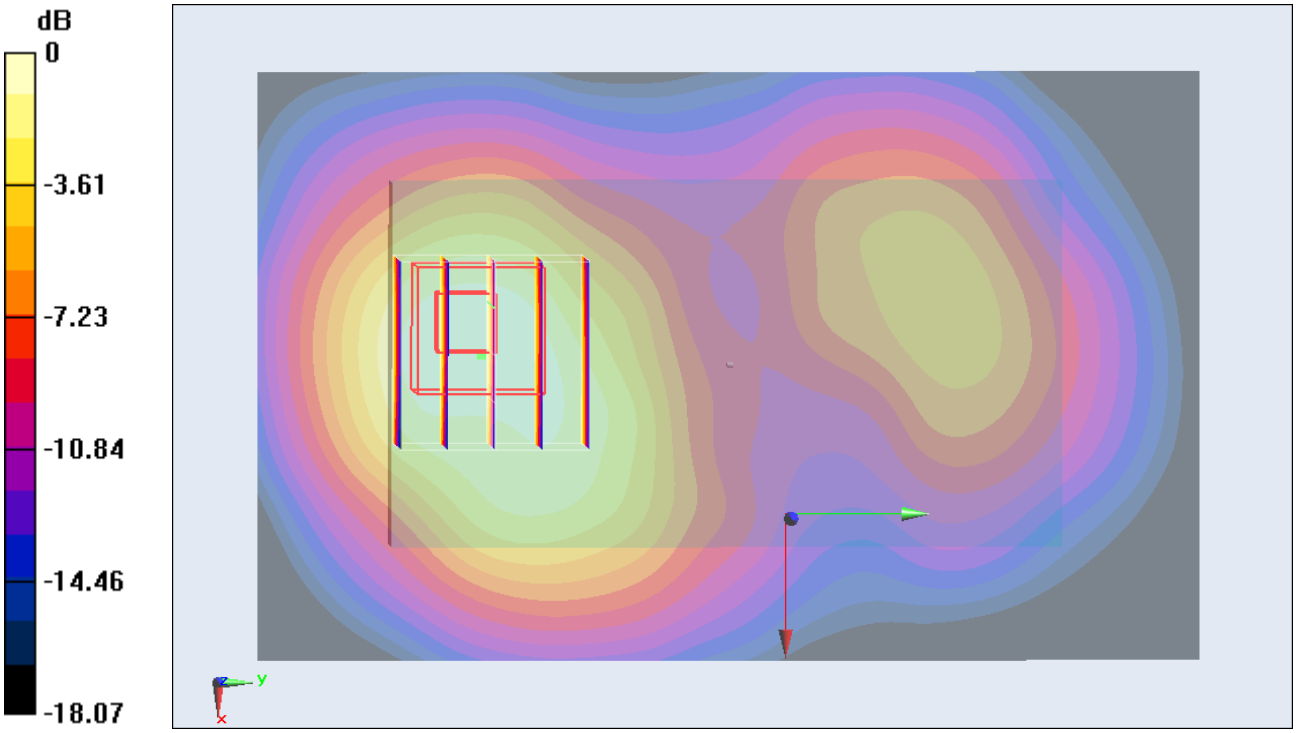
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.238 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.220 mW/g
**SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.746 mW/g**
Maximum value of SAR (measured) = 1.35 W/kg




0 dB = 1.35 W/kg = 2.61 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #37_WCDMA II_HSUPA_Back_1cm_Ch9262

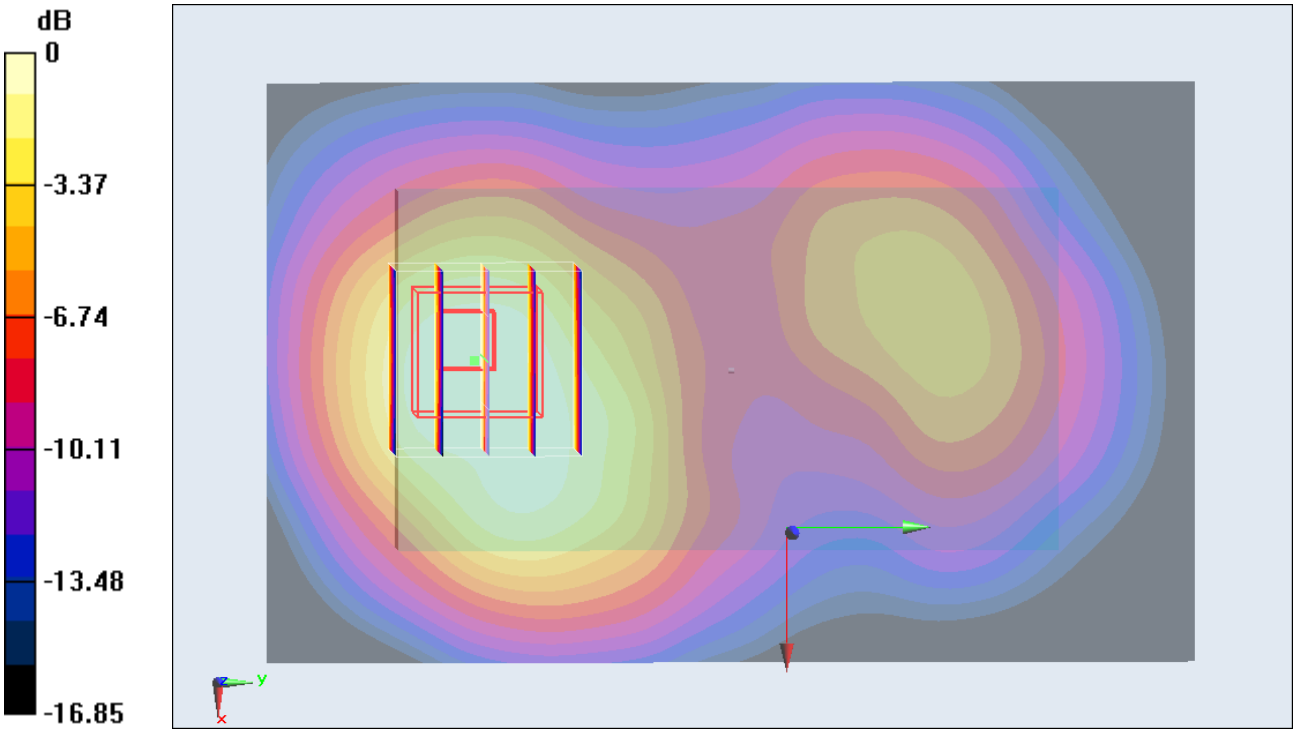
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon_r$ = 53.406; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.21 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.876 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.776 mW/g
**SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.637 mW/g**
Maximum value of SAR (measured) = 1.14 W/kg




0 dB = 1.14 W/kg = 1.14 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #38_WCDMA II_HSUPA_Back_1cm_Ch9400

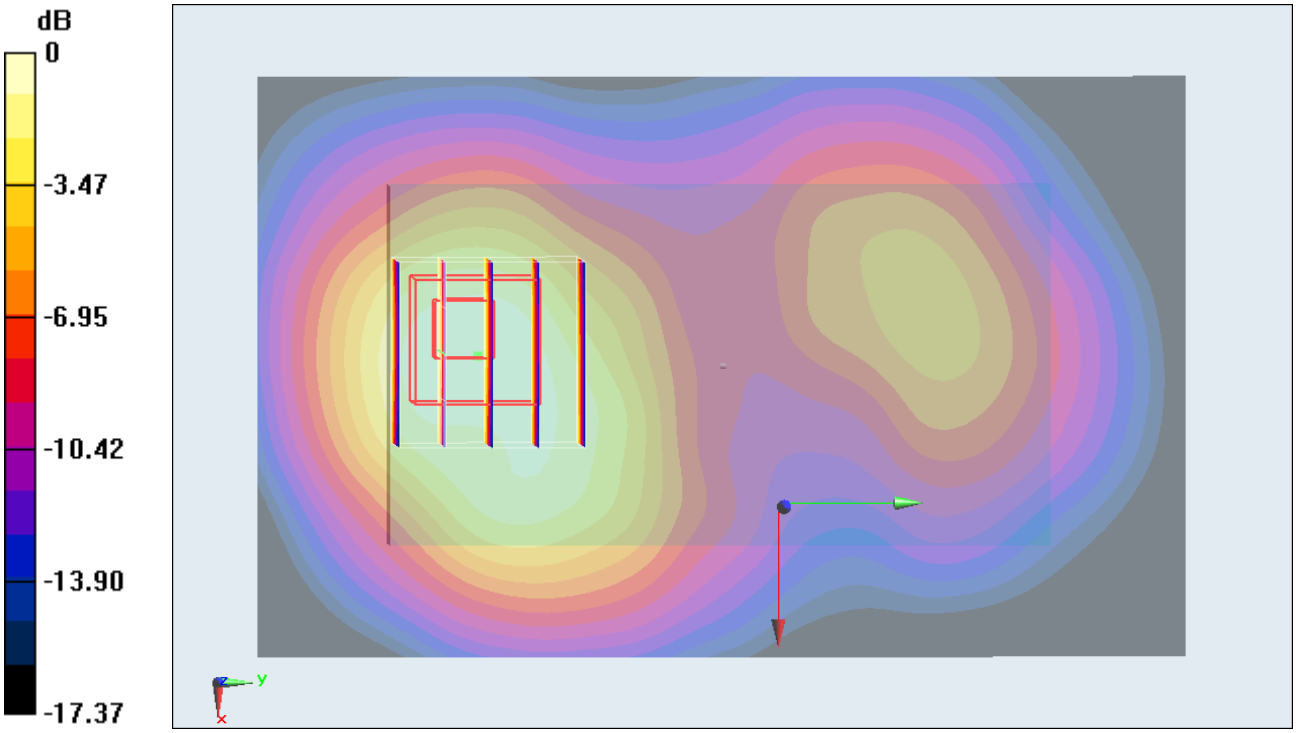
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.632 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.202 mW/g
**SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.760 mW/g**
Maximum value of SAR (measured) = 1.38 W/kg




0 dB = 1.38 W/kg = 2.80 dB W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/30

## #39_WCDMA II_HSUPA_Back_1cm_Ch9538

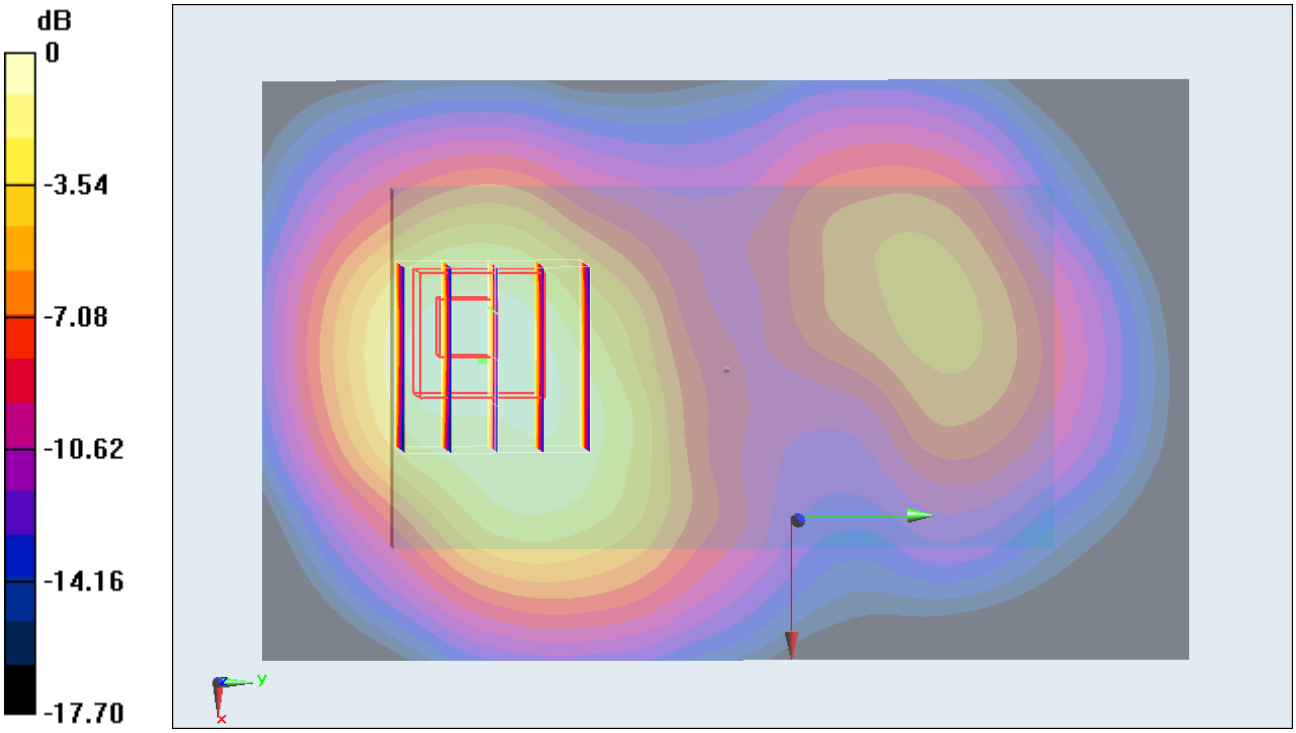
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.500 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.224 mW/g
**SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.746 mW/g**
Maximum value of SAR (measured) = 1.36 W/kg




0 dB = 1.36 W/kg = 2.67 dB W/kg

## #27_WCDMA II_RMC12.2K_Left Side_1cm_Ch9400

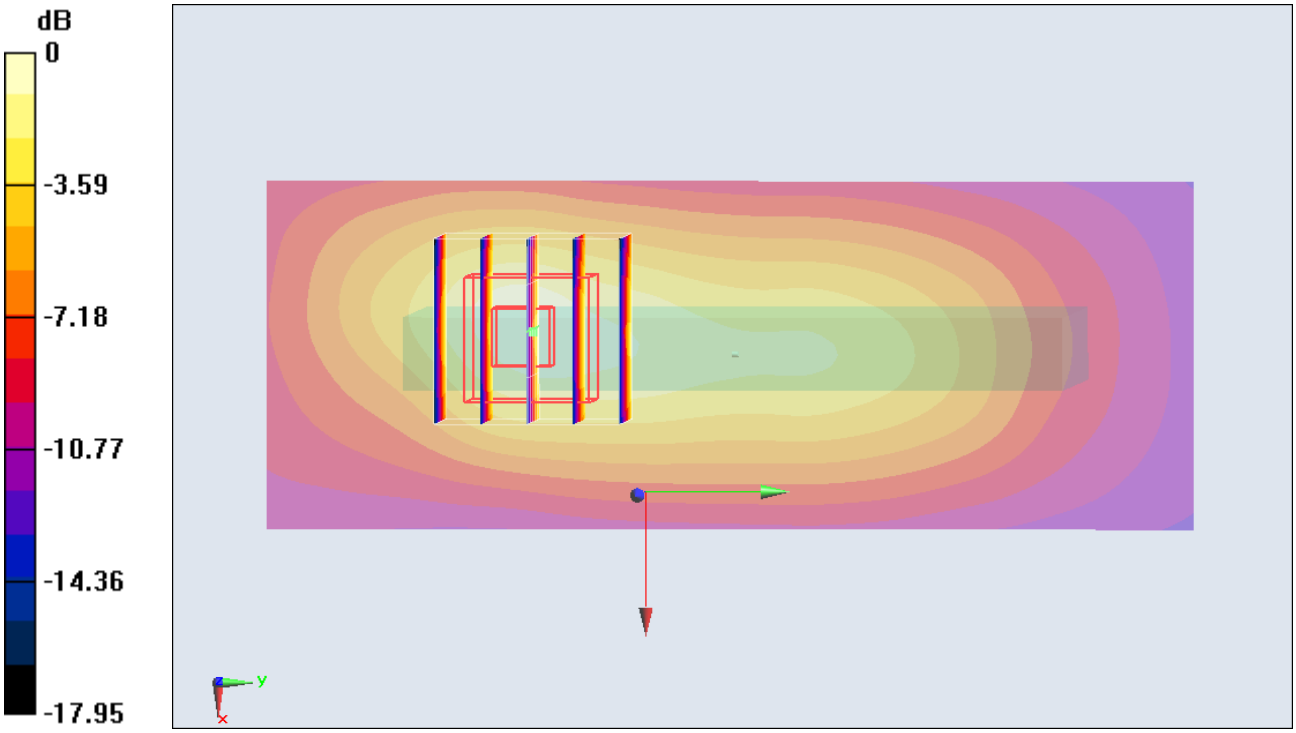
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃； Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.460 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.007 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.761 mW/g
**SAR(1 g) = 0.430 mW/g; SAR(10 g) = 0.237 mW/g**
Maximum value of SAR (measured) = 0.472 W/kg




0 dB = 0.472 W/kg = -6.52 dB W/kg

## #28_WCDMA II_RMC12.2K_Right Side_1cm_Ch9400

**DUT: 290405**

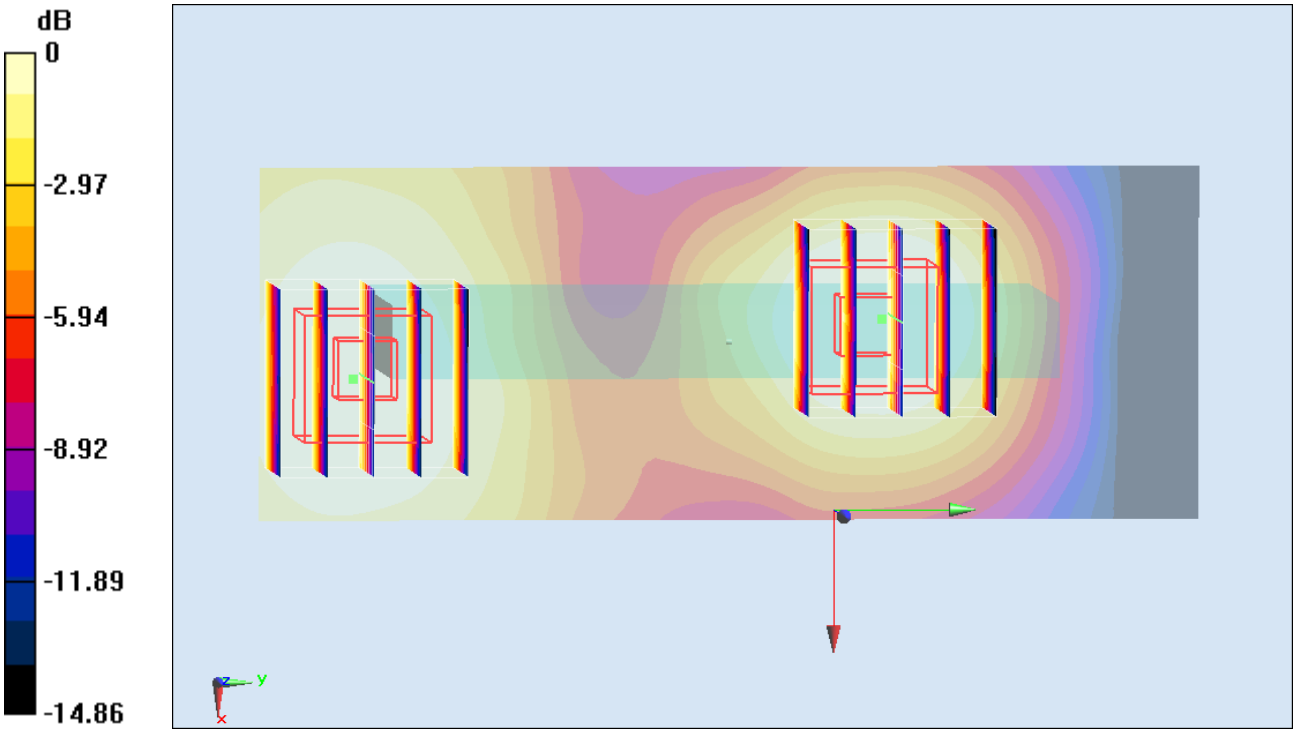
Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.260 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.635 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.390 mW/g
**SAR(1 g) = 0.236 mW/g; SAR(10 g) = 0.136 mW/g**
Maximum value of SAR (measured) = 0.253 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.635 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.272 mW/g
**SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.109 mW/g**
Maximum value of SAR (measured) = 0.184 W/kg




0 dB = 0.184 W/kg = -14.70 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

## #29_WCDMA II_RMC12.2K_Bottom Side_1cm_Ch9400

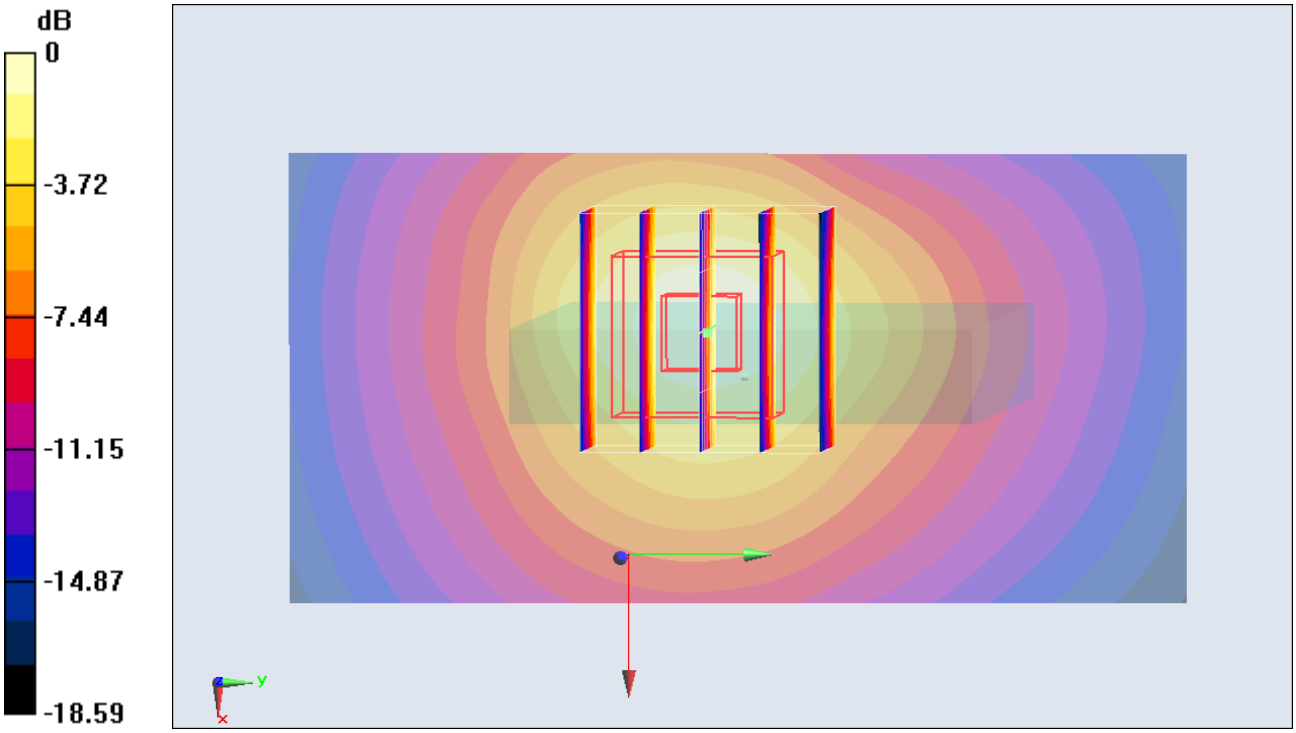
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.08 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.553 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.749 mW/g
**SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.551 mW/g**
Maximum value of SAR (measured) = 1.11 W/kg




0 dB = 1.11 W/kg = 0.91 dB W/kg

## #42_WCDMA II_RMC12.2K_Bottom Side_1cm_Ch9262

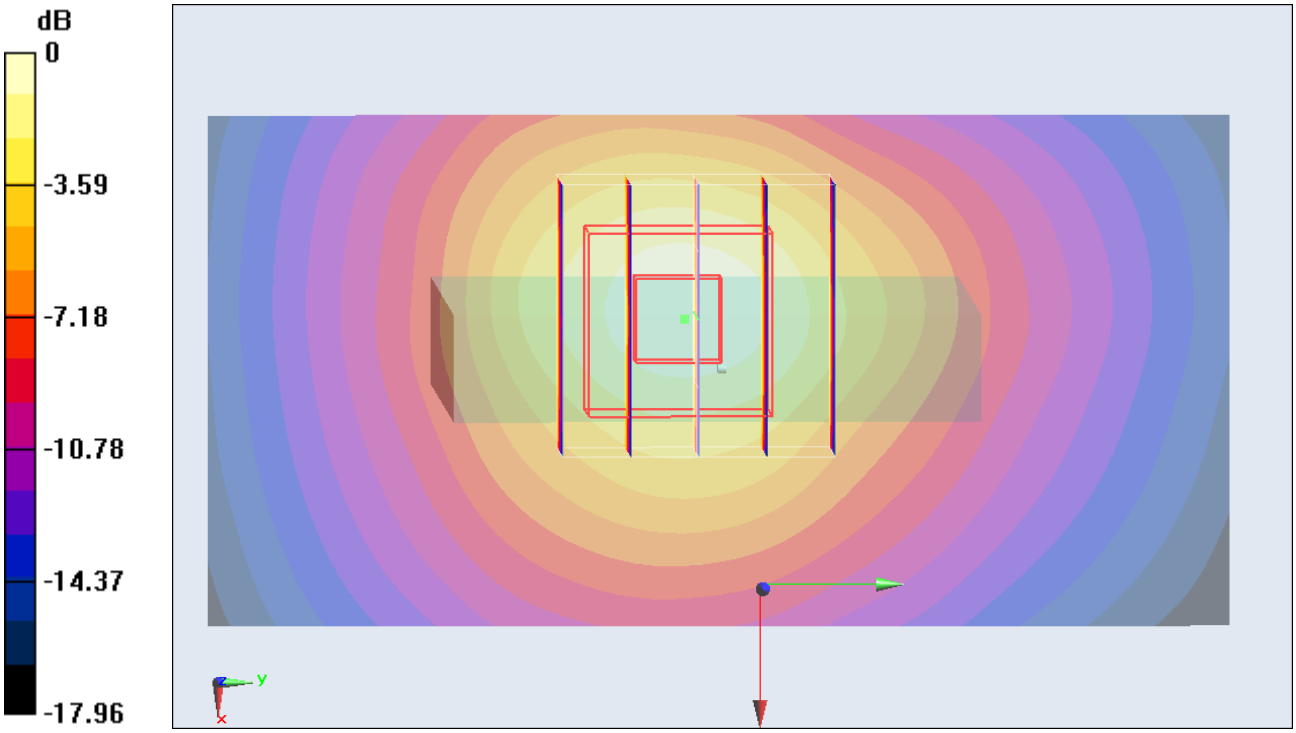
**DUT: 290405**

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1852.4 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon_r$ = 53.406; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9262/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.896 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.660 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.455 mW/g
**SAR(1 g) = 0.846 mW/g; SAR(10 g) = 0.464 mW/g**
Maximum value of SAR (measured) = 0.933 W/kg




0 dB = 0.933 W/kg = -0.60 dB W/kg

## #43_WCDMA II_RMC12.2K_Bottom Side_1cm_Ch9538

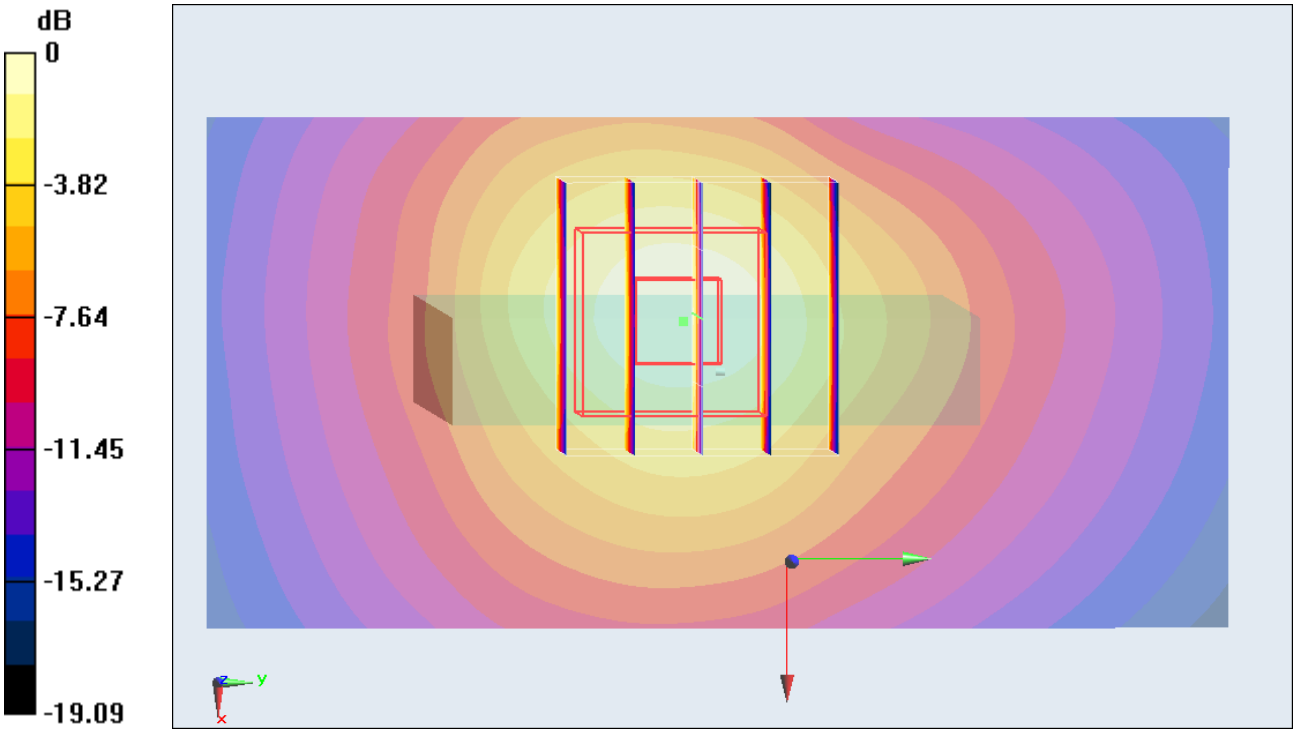
**DUT: 290405**

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1908 MHz; $\sigma$ = 1.554 mho/m; $\varepsilon_r$ = 53.222; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9538/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.460 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.774 mW/g
**SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.547 mW/g**
Maximum value of SAR (measured) = 1.11 W/kg




0 dB = 1.11 W/kg = 0.91 dB W/kg

## #40_WCDMA II_RMC12.2K_Front_1.5cm_Ch9400;Headset

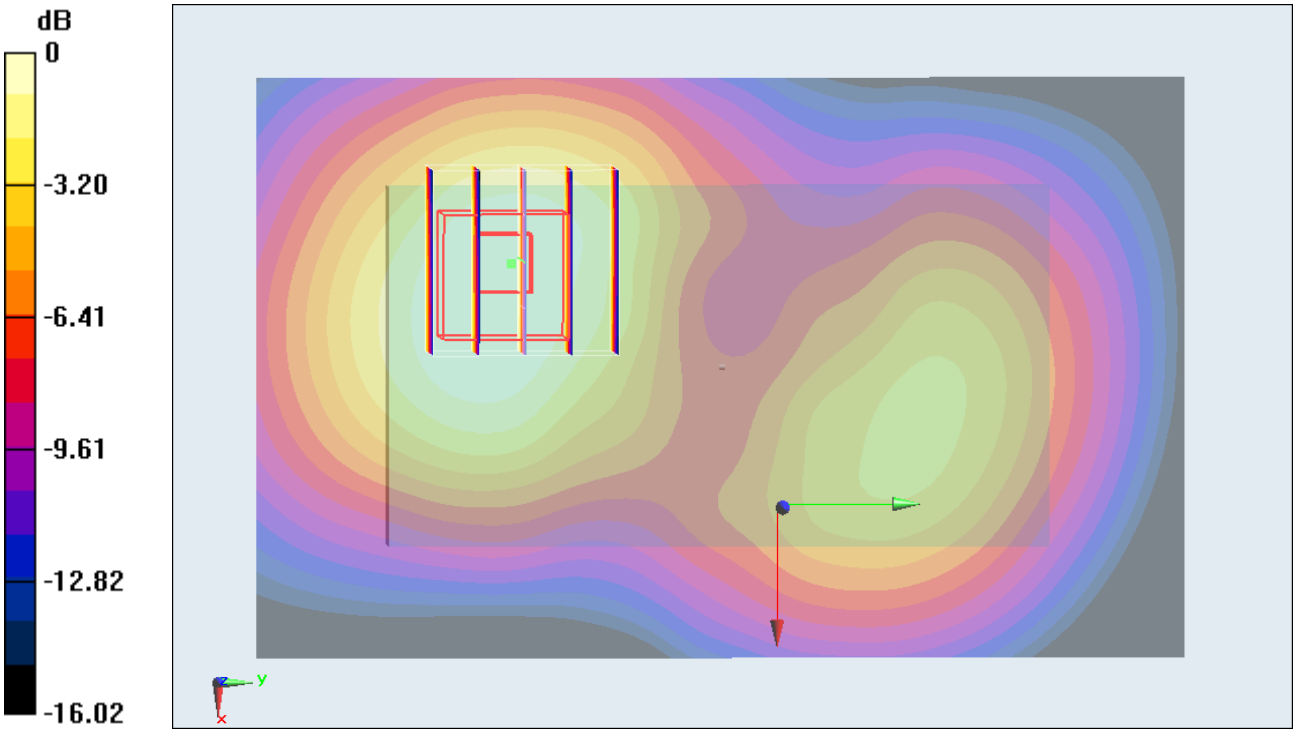
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃； Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.634 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.756 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.929 mW/g
**SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.351 mW/g**
Maximum value of SAR (measured) = 0.612 W/kg




0 dB = 0.612 W/kg = -4.26 dB W/kg

## #41_WCDMA II_RMC12.2K_Back_1.5cm_Ch9400;Headset

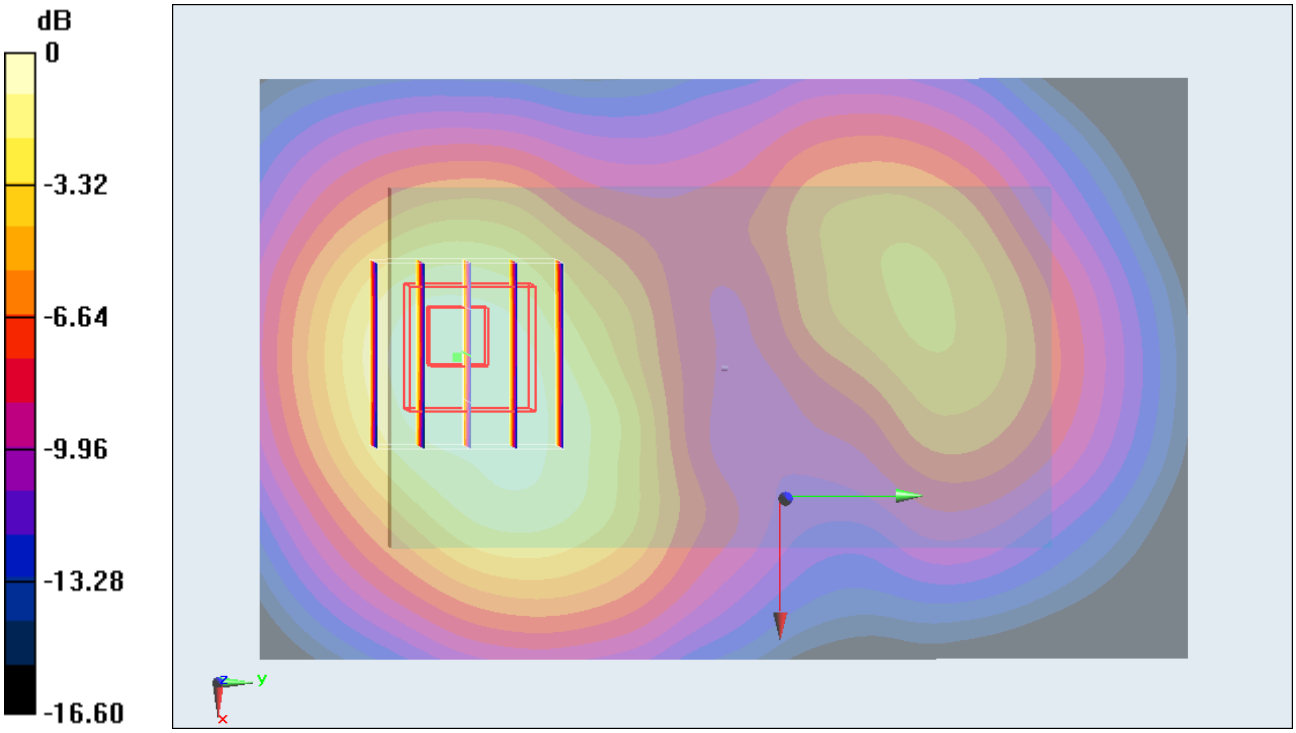
**DUT: 290405**

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_121030 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.523 mho/m; $\varepsilon_r$ = 53.341; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.5 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(7.13, 7.13, 7.13); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Right; Type: QD000P40CD; Serial: TP:1644
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch9400/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.862 W/kg

**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.914 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.270 mW/g
**SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.466 mW/g**
Maximum value of SAR (measured) = 0.842 W/kg




0 dB = 0.842 W/kg = -1.49 dB W/kg

## #83_WLAN2.4G_802.11b_Front_1cm_Ch6

**DUT: 290405**

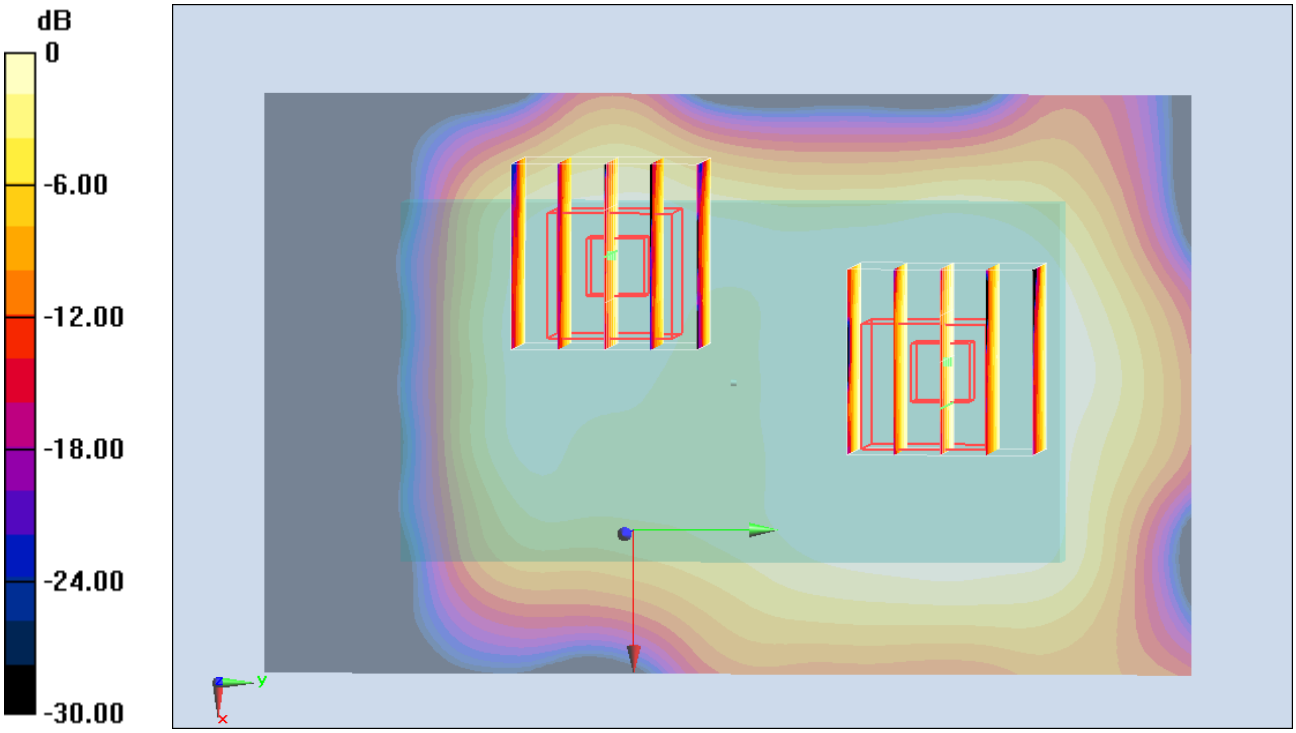
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0464 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.435 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.061 mW/g
**SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.022 mW/g**
Maximum value of SAR (measured) = 0.0404 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.435 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.034 mW/g
**SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.012 mW/g**
Maximum value of SAR (measured) = 0.0244 W/kg




0 dB = 0.0244 W/kg = -32.25 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2012/10/31

## #84_WLAN2.4G_802.11b_Back_1cm_Ch6

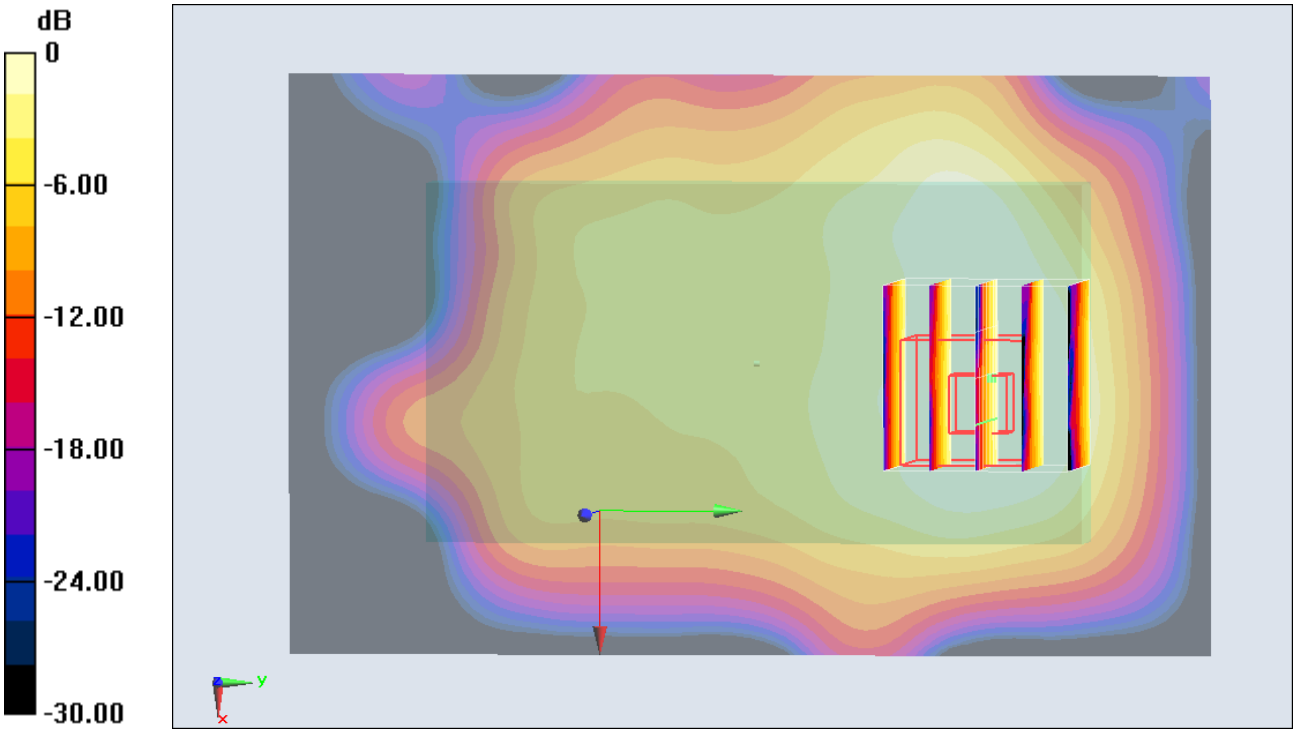
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0723 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.015 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.104 mW/g
**SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.033 mW/g**
Maximum value of SAR (measured) = 0.0634 W/kg




0 dB = 0.0634 W/kg = -23.96 dB W/kg

## #84_WLAN2.4G_802.11b_Back_1cm_Ch6_2D

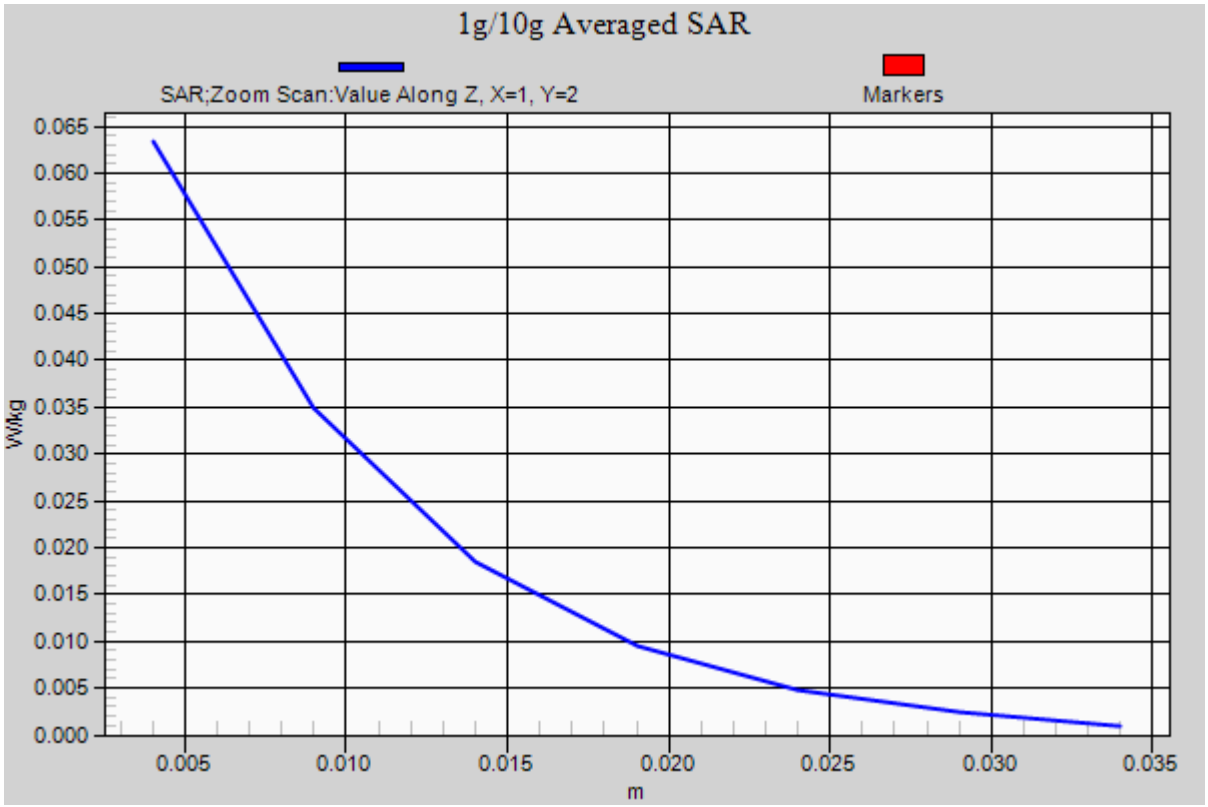
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0723 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.015 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.104 mW/g
**SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.033 mW/g**
Maximum value of SAR (measured) = 0.0634 W/kg



## #85_WLAN2.4G_802.11b_Right Side_1cm_Ch6

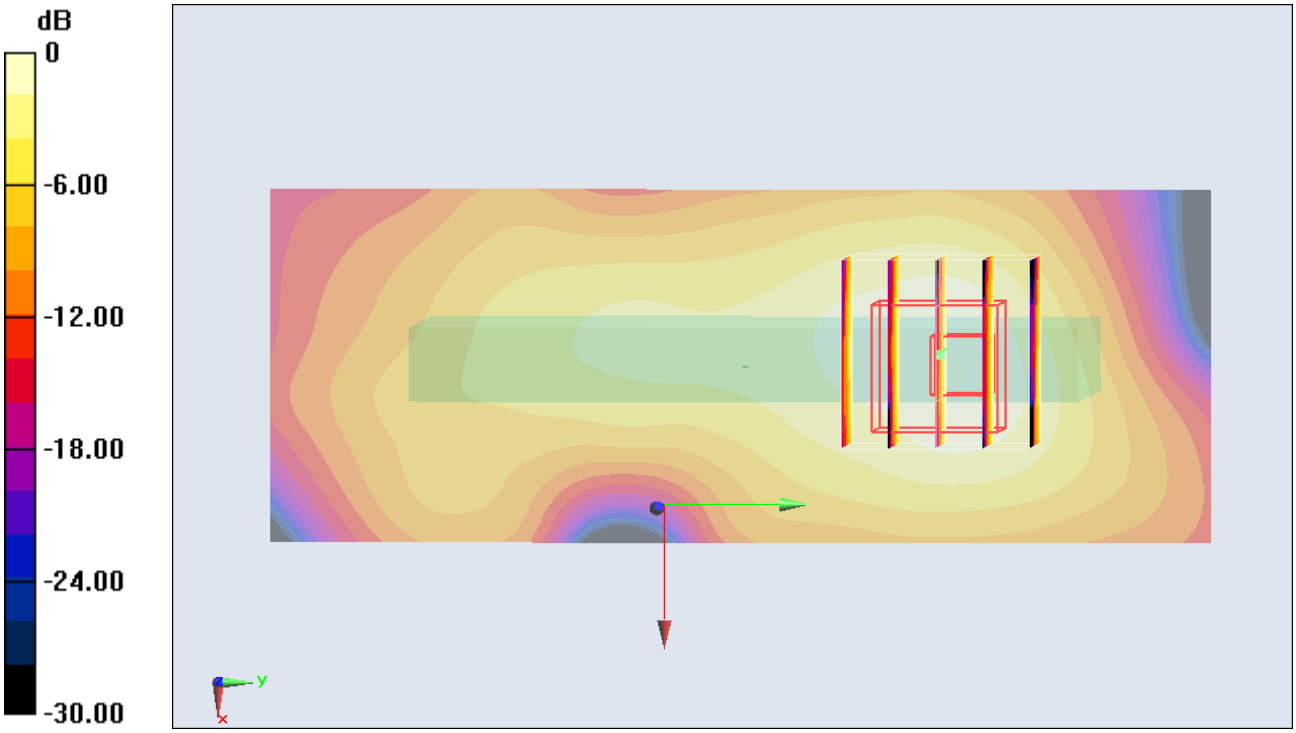
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (31x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0454 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.171 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.077 mW/g
**SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.020 mW/g**
Maximum value of SAR (measured) = 0.0414 W/kg




0 dB = 0.0414 W/kg = -27.66 dB W/kg

## #86_WLAN2.4G_802.11b_Top Side_1cm_Ch6

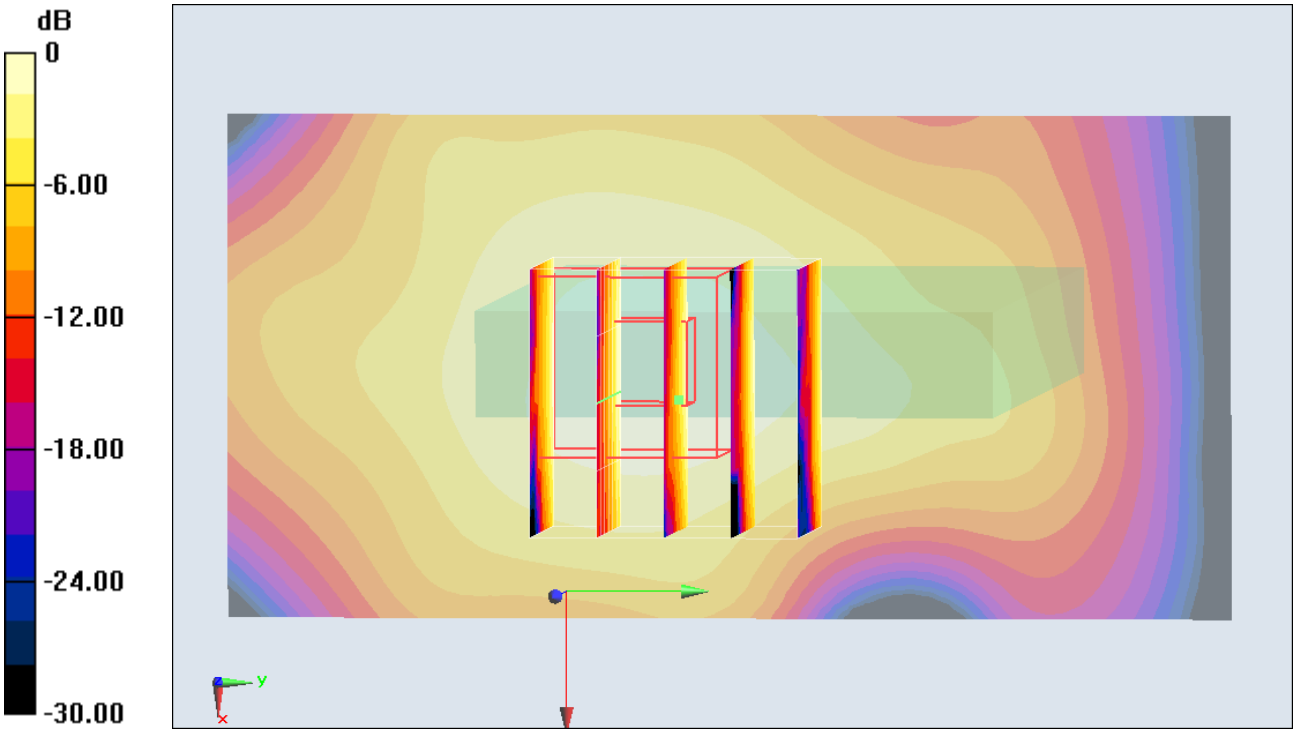
**DUT: 290405**

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (31x61x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0370 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.374 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.080 mW/g
**SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.022 mW/g**
Maximum value of SAR (measured) = 0.0441 W/kg




0 dB = 0.0441 W/kg = -27.11 dB W/kg

## #87_WLAN2.4G_802.11b_Front_1.5cm_Ch6;Headset

**DUT: 290405**

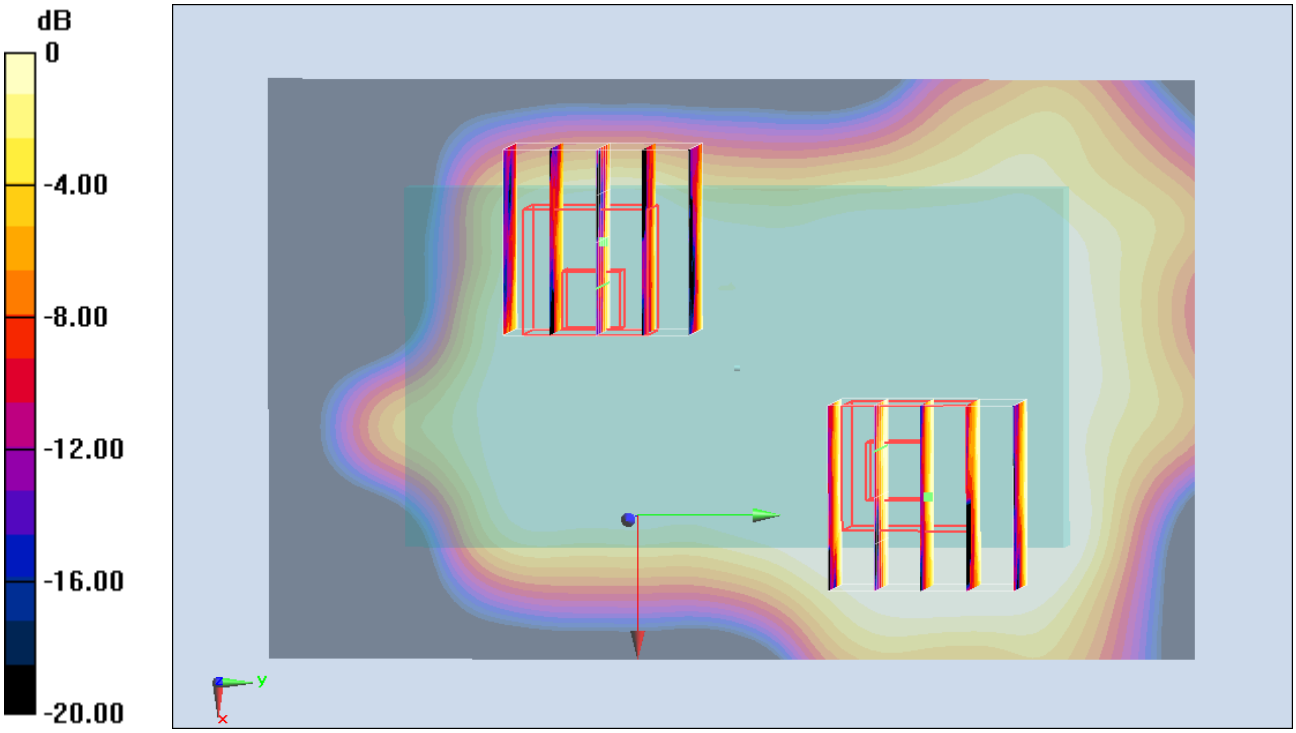
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0216 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.911 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.030 mW/g
**SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.010 mW/g**
Maximum value of SAR (measured) = 0.0198 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.911 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.016 mW/g
**SAR(1 g) = 0.00879 mW/g; SAR(10 g) = 0.00467 mW/g**
Maximum value of SAR (measured) = 0.0100 W/kg




0 dB = 0.0100 W/kg = -40.00 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

## #88_WLAN2.4G_802.11b_Back_1.5cm_Ch6;Headset

**DUT: 290405**

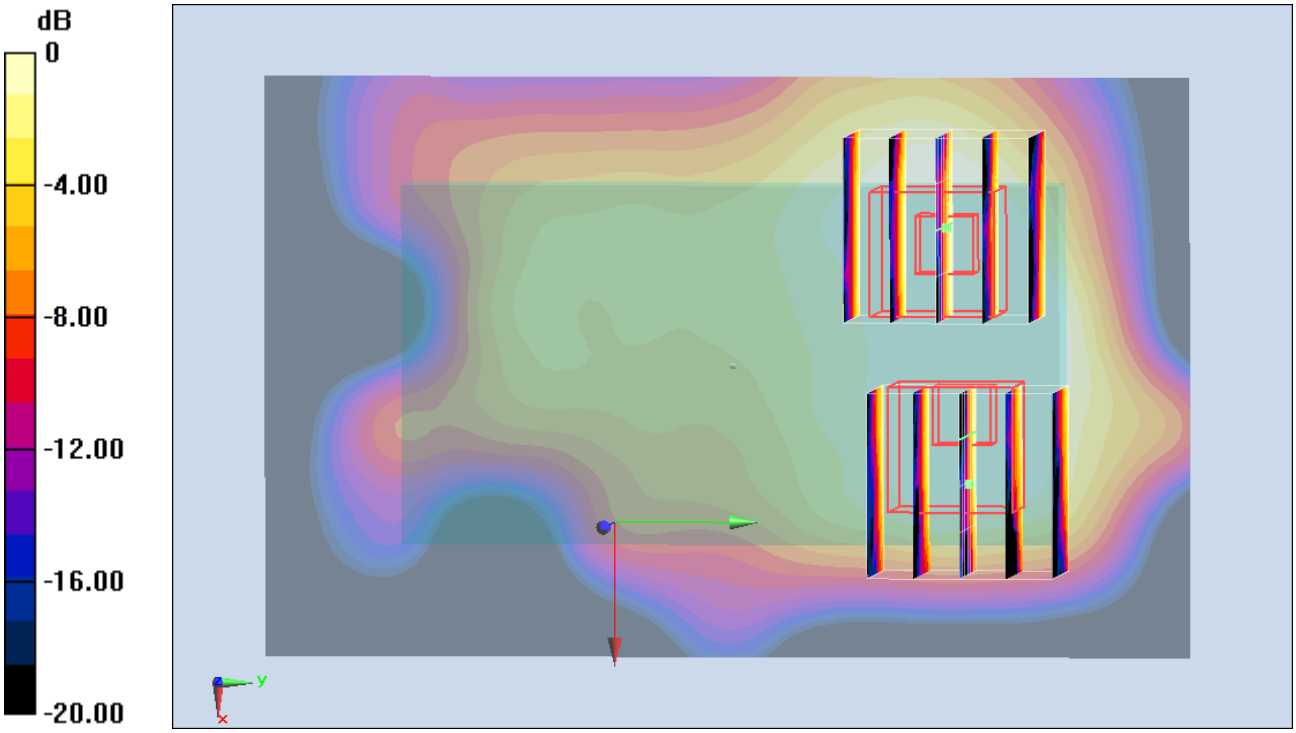
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_121031 Medium parameters used: f = 2437 MHz; $\sigma$ = 1.996 mho/m; $\varepsilon_r$ = 53.979; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：22.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3801; ConvF(6.59, 6.59, 6.59); Calibrated: 2012/6/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn778; Calibrated: 2012/8/27
- Phantom: SAM Left; Type: QD000P40CD; Serial: TP:1542
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Ch6/Area Scan (51x81x1):** Measurement grid: dx=20 mm, dy=20 mm
Maximum value of SAR (interpolated) = 0.0387 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.277 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.059 mW/g
**SAR(1 g) = 0.033 mW/g; SAR(10 g) = 0.018 mW/g**
Maximum value of SAR (measured) = 0.0367 W/kg

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.277 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.124 mW/g
**SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.013 mW/g**
Maximum value of SAR (measured) = 0.0286 W/kg




0 dB = 0.0286 W/kg = -30.87 dB W/kg
For any 2nd peak found in area scan within 2 dB of the maximum peak
and greater than 0.012W/kg, and is not within the zoom scan, zoom scan is repeated.

# Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.