# FCC SAR Test Report

| | | |
|---|---|---|
| **APPLICANT** | : | **ZTE CORPORATION** |
| **EQUIPMENT** | : | **CDMA 1x-EVDO Digital Mobile Phone** |
| **BRAND NAME** | : | **ZTE** |
| **MODEL NAME** | : | **N850CA** |
| **FCC ID** | : | **Q78-ZTEN850C** |
| **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)** |

**The product was completely tested on Jan. 30, 2013. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.**

**Reviewed by:**

**Jones Tsai / Manager**

Testing Laboratory
1190

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# Revision History

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FA311101 | Rev. 01 | Initial issue of report | Feb. 01, 2013 |
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# 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **ZTE CORPORATION DUT: CDMA 1x-EVDO Digital Mobile Phone, Brand Name: ZTE, Model Name: N850CA** are as follows.

**<Highest Reported Standalone SAR Summary>**

| Exposure Position | Frequency Band | Highest Reported 1g-SAR (W/kg) | Equipment Class | Highest Reported 1g-SAR (W/kg) |
|---|---|---|---|---|
| Head | CDMA2000 BC0 | 0.60 | PCE | 1.46 |
| | CDMA2000 BC1 | 1.46 | | |
| | CDMA2000 BC14 | 1.46 | | |
| | WLAN, 2412 - 2462 MHz | 0.05 | DTS | 0.05 |
| Hotspot (1cm Gap) | CDMA2000 BC0 | 0.95 | PCE | 1.52 |
| | CDMA2000 BC1 | 1.52 | | |
| | CDMA2000 BC14 | 1.41 | | |
| | WLAN, 2412 - 2462 MHz | 0.06 | DTS | 0.06 |
| Body-worn (1cm Gap) | CDMA2000 BC0 | 0.83 | PCE | 1.46 |
| | CDMA2000 BC1 | 1.46 | | |
| | CDMA2000 BC14 | 1.18 | | |
| | WLAN, 2412 - 2462 MHz | 0.06 | DTS | 0.06 |

**<Highest Simultaneous Transmission SAR>**

| Exposure Position | Frequency Band | Equipment Class | Highest Reported Simultaneous Transmission 1g-SAR (W/kg) |
|---|---|---|---|
| Hotspot (1cm Gap) | CDMA2000 BC1 | PCE | 1.58 |
| | WLAN, 2412 - 2462 MHz | DTS | |

| Exposure Position | Frequency Band | Equipment Class | Highest Reported Simultaneous Transmission 1g-SAR (W/kg) |
|---|---|---|---|
| Hotspot (1cm Gap) | CDMA2000 BC1 | PCE | 1.54 |
| | Bluetooth, 2402 - 2480 MHz | DSS | |

**Remark:**

The highest simultaneous transmission is scalar summation of reported standalone SAR per FCC KDB 690783 D01 v01r02, and scalar SAR summation of all possible simultaneous transmission scenarios are < 1.6W/kg.

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

# 2. Administration Data

## 2.1 Testing Laboratory

| | |
|---|---|
| **Test Site** | SPORTON INTERNATIONAL (KUNSHAN) INC. |
| **Test Site Location** | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 |

## 2.2 Applicant

| | |
|---|---|
| **Company Name** | ZTE CORPORATION |
| **Address** | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park,<br>Nanshan District, Shenzhen, Guangdong, 518057, P.R.China |

## 2.3 Manufacturer

| | |
|---|---|
| **Company Name** | ZTE CORPORATION |
| **Address** | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park,<br>Nanshan District, Shenzhen, Guangdong, 518057, P.R.China |

## 2.4 Application Details

| | |
|---|---|
| **Date of Start during the Test** | Jan. 23, 2013 |
| **Date of End during the Test** | Jan. 30, 2013 |

# 3. General Information

## 3.1 Description of Equipment Under Test (EUT)

| Product Feature & Specification | |
|---|---|
| **EUT** | CDMA 1x-EVDO Digital Mobile Phone |
| **Brand Name** | ZTE |
| **Model Name** | N850CA |
| **FCC ID** | Q78-ZTEN850C |
| **Tx Frequency** | CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz<br>CDMA2000 BC1: 1851.25 MHz ~ 1908.75 MHz<br>CDMA2000 BC14: 1851.25 MHz ~ 1913.75 MHz<br>WLAN 2.4GHz: 2412 MHz ~ 2462 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz |

| Product Feature & Specification | |
|---|---|
| **Antenna Type** | WWAN: PIFA Antenna<br>WLAN: PIFA Antenna<br>Bluetooth: PIFA Antenna |
| **HW Version** | c5kC |
| **SW Version** | N850V1.0.0B04 |
| **Uplink Modulations** | CDMA2000 1xRTT: QPSK<br>CDMA2000 1xEV-DO: 8PSK<br>802.11b: DSSS (DBPSK / DQPSK / CCK)<br>802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>Bluetooth BDR (1Mbps): GFSK<br>Bluetooth EDR (2Mbps):π/4-DQPSK<br>Bluetooth EDR (3Mbps): 8-DPSK |
| **Remark:**<br>1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.<br>2. This device supports WLAN 2.4GHz hotspot operation | |

## 3.2 Maximum RF output power among production units

| Maximum Target power for Production Unit | | | |
|---|---|---|---|
| Band | CDMA2000 BC0 | CDMA2000 BC1 | CDMA2000 BC14 |
| 1xRTT RC1 SO55 | 24.3 | 24.3 | 24.3 |
| 1xRTT RC3 SO55 | 24.3 | 24.3 | 24.3 |
| 1xRTT RC3 SO32(+ F-SCH) | 24.3 | 24.3 | 24.3 |
| 1xRTT RC3 SO32(+SCH) | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev 0 | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev A | 24.3 | 24.3 | 24.3 |

| Maximum Target Average Power for Production Unit | | | | |
|---|---|---|---|---|
| Mode / Band | IEEE 802.11 | | | |
| | a | b | g | n-HT20 |
| 2.4 GHz WLAN | | 13.5 | 13 | 12.5 |

| Maximum Target Average Power for Production Unit | | | |
|---|---|---|---|
| Mode / Band | Bluetooth (dBm) | | |
| | 1Mbps (GFSK) | 2Mbps (π/4-DQPSK) | 3Mbps (8-DPSK) |
| 2.4 GHz Bluetooth | 0 | -2 | -2 |

## 3.3 Product Photos

Please refer to Appendix D.

## 3.4 Applied Standard

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
- FCC KDB 447498 D01 v05
- FCC KDB 648474 D04v01
- FCC KDB 248227 D01 v01r02
- FCC KDB 941225 D01 v02
- FCC KDB 941225 D06 v01
- FCC KDB 865664 D01 v01

## 3.5 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.

## 3.6 Test Conditions

### 3.6.1 Ambient Condition

| | |
|---|---|
| **Ambient Temperature** | 20 to 24 ℃ |
| **Humidity** | < 60 % |

### 3.6.2 Test Configuration

For WWAN SAR testing, 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.

During WLAN SAR testing EUT is configured with the WLAN continuous TX tool, and the transmission duty factor was monitored on the spectrum analyzer with zero-span setting

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

# 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

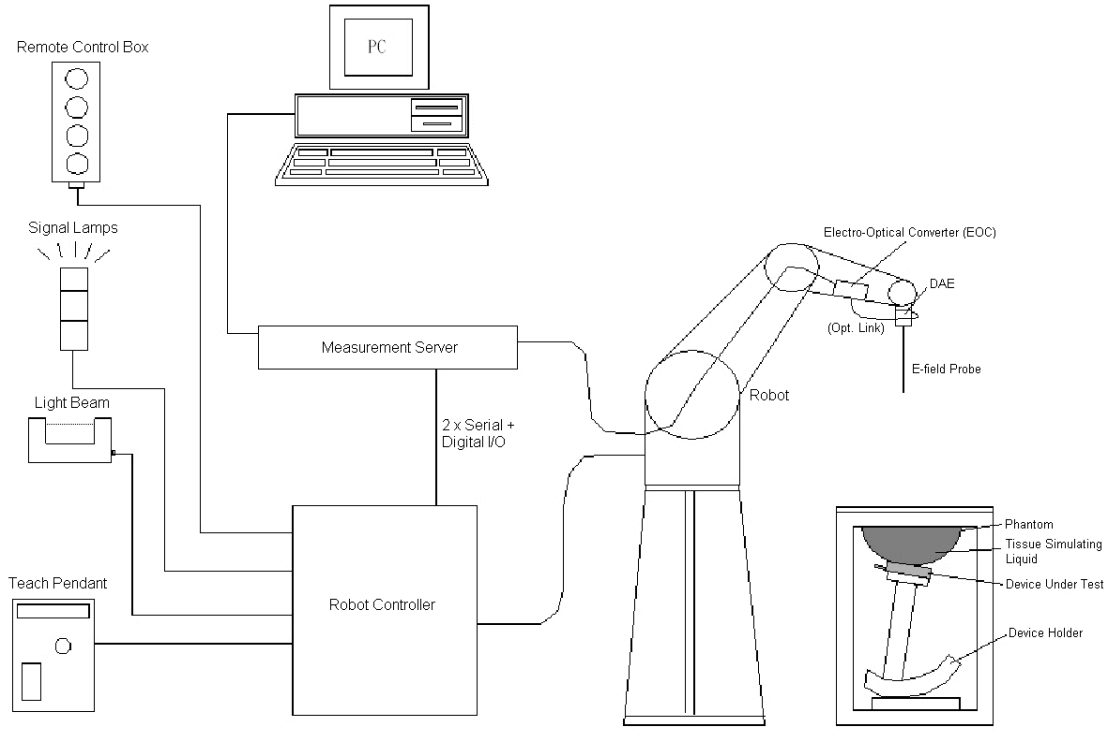



**Fig 5.1 SPEAG DASY System Configurations**

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>**

| | | |
|---|---|---|
| **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: 330 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm | **Fig 5.2 Photo of EX3DV4** |

### 5.1.2 E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. 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 (DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

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

**Fig 5.4 Photo of DASY5**

## 5.4 Measurement Server

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

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

**Fig 5.5 Photo of Server for DASY5**

## 5.5 Phantom

**<SAM Twin Phantom>**

| | | |
|---|---|---|
| **Shell Thickness** | 2 ± 0.2 mm;<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 5.6 Photo of SAM Phantom** |

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

## 5.6 Device Holder

**<Device Holder for SAM Twin Phantom>**

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

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (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 5.7 Device Holder**

## 5.7 Data Storage and Evaluation

### 5.7.1 Data Storage

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

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

### 5.7.2 Data Evaluation

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

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

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

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

The formula for each channel can be given as：

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

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

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

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

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

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

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

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

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

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

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

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

## 5.8 Test Equipment List

| Manufacturer | Name of Equipment | Type/Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Last Cal. | Due Date |
| SPEAG | 835MHz System Validation Kit | D835V2 | 4d091 | Nov. 18, 2011 | Nov. 16, 2013 |
| SPEAG | 1900MHz System Validation Kit | D1900V2 | 5d118 | Nov. 21, 2011 | Nov. 16, 2013 |
| SPEAG | 2450MHz System Validation Kit | D2450V2 | 736 | Jul. 25, 2011 | Jul. 24, 2013 |
| SPEAG | Data Acquisition Electronics | DAE4 | 1210 | Dec. 05, 2012 | Dec. 04, 2013 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3857 | Jun. 20, 2012 | Jun. 19, 2013 |
| SPEAG | SAM Twin Phantom | QD 000 P40 CB | TP-1477 | NCR | NCR |
| SPEAG | SAM Twin Phantom | QD 000 P40 CB | TP-1479 | NCR | NCR |
| SPEAG | Phone Positioner | N/A | N/A | NCR | NCR |
| Agilent | Wireless Communication Test Set | E5515C | MY48367160 | Oct. 25, 2012 | Oct. 24, 2013 |
| R&S | Universal Radio Communication Tester | CMU200 | 116456 | Sep. 19, 2012 | Sep. 18, 2013 |
| Agilent | ENA Series Network Analyzer | E5071C | MY46111157 | Apr. 13, 2012 | Apr. 12, 2013 |
| Agilent | Power Meter | E4416A | MY45101555 | Aug. 22, 2012 | Aug. 21, 2013 |
| Agilent | Power Sensor | E9327A | MY44421198 | Aug. 22, 2012 | Aug. 21, 2013 |
| 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 | FSP30 | 101399 | Jun. 01, 2012 | May 31, 2013 |

**Table 5.1 Test Equipment List**

**Note:**

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. Referring to KDB 865664 D01v01, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D835V2, SN: 4d091, D1900V2, SN: 5d118, D2450V2, SN: 736 can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.
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 precise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of 1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically 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.

| Frequency (MHz) | Liquid Type | Liquid Temp. (℃) | Conductivity (σ) | Permittivity ($\varepsilon_r$) | Conductivity Target (σ) | Permittivity Target ($\varepsilon_r$) | Delta (σ) (%) | Delta ($\varepsilon_r$) (%) | Limit (%) | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 835 | Head | 21.3 | 0.904 | 42.225 | 0.90 | 41.5 | 0.44 | 1.75 | ±5 | Jan. 23, 2013 |
| 1900 | Head | 21.5 | 1.424 | 38.916 | 1.40 | 40.0 | 1.71 | -2.71 | ±5 | Jan. 23, 2013 |
| 2450 | Head | 21.4 | 1.823 | 37.953 | 1.80 | 39.2 | 1.28 | -3.18 | ±5 | Jan. 30, 2013 |
| 835 | Body | 21.2 | 0.98 | 54.477 | 0.97 | 55.2 | 1.03 | -1.31 | ±5 | Jan. 27, 2013 |
| 1900 | Body | 21.1 | 1.551 | 53.24 | 1.52 | 53.3 | 2.04 | -0.11 | ±5 | Jan. 27, 2013 |
| 2450 | Body | 21.3 | 2.002 | 53.464 | 1.95 | 52.7 | 2.67 | 1.45 | ±5 | Jan. 30, 2013 |

**Table 6.2 Measuring Results for Simulating Liquid**

# 7. SAR System Validation

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

## 7.1 Purpose of System Performance check

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

## 7.2 System Setup

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

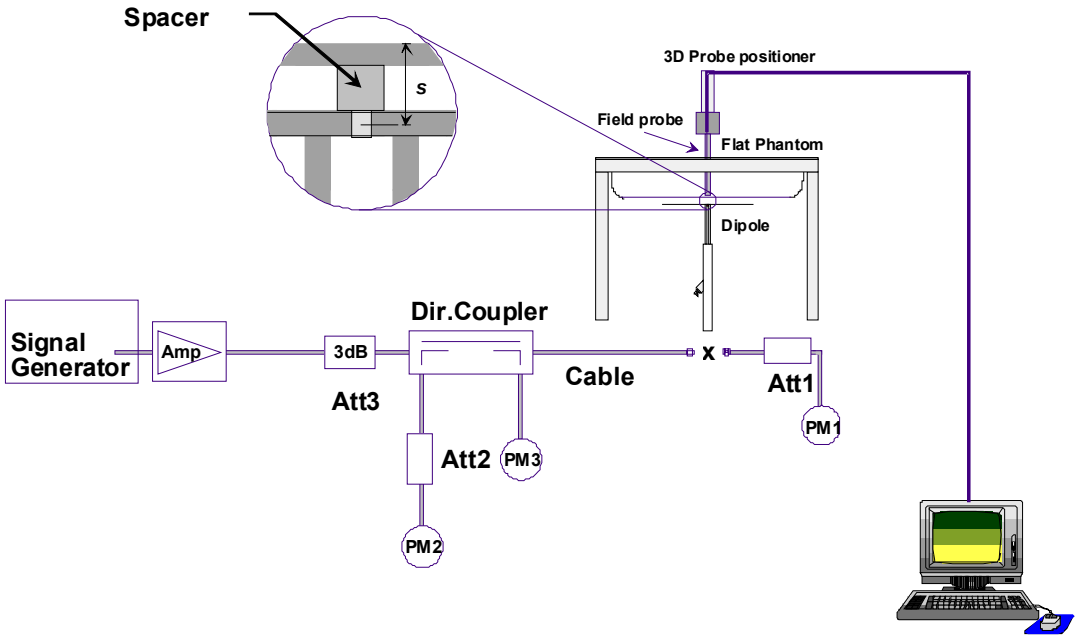



**Fig 7.1 System Setup for System Evaluation**

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

**Fig 7.2 Photo of Dipole Setup**

## *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 variation criterion and the plots can be referred to Appendix A of this report.

| Frequency (MHz) | Liquid Type | Power fed onto reference dipole (mW) | Target SAR (W/kg) | Measured SAR (W/kg) | Normalized SAR (W/kg) | Deviation (%) |
|---|---|---|---|---|---|---|
| 835 | Head | 250 | 9.4 | 2.34 | 9.36 | -0.43 |
| 1900 | Head | 250 | 40.3 | 10 | 40 | -0.74 |
| 2450 | Head | 250 | 54.8 | 13.3 | 53.2 | -2.92 |
| 835 | Body | 250 | 9.42 | 2.25 | 9 | -4.46 |
| 1900 | Body | 250 | 41.8 | 10.1 | 40.4 | -3.35 |
| 2450 | Body | 250 | 52.3 | 13.4 | 53.6 | 2.49 |

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

# 8. EUT Testing Position

This EUT was tested in nine different positions. They are right cheek, right tilted, left cheek, left tilted, Front of the EUT with phantom 1 cm gap, Back of the EUT with phantom 1 cm gap, Bottom Side of the EUT with phantom 1 cm gap, Right Side of the EUT with phantom 1 cm gap, and Left Side of the EUT with phantom 1 cm gap, as illustrated below.

## 8.1 Define two imaginary lines on the handset

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

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

(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

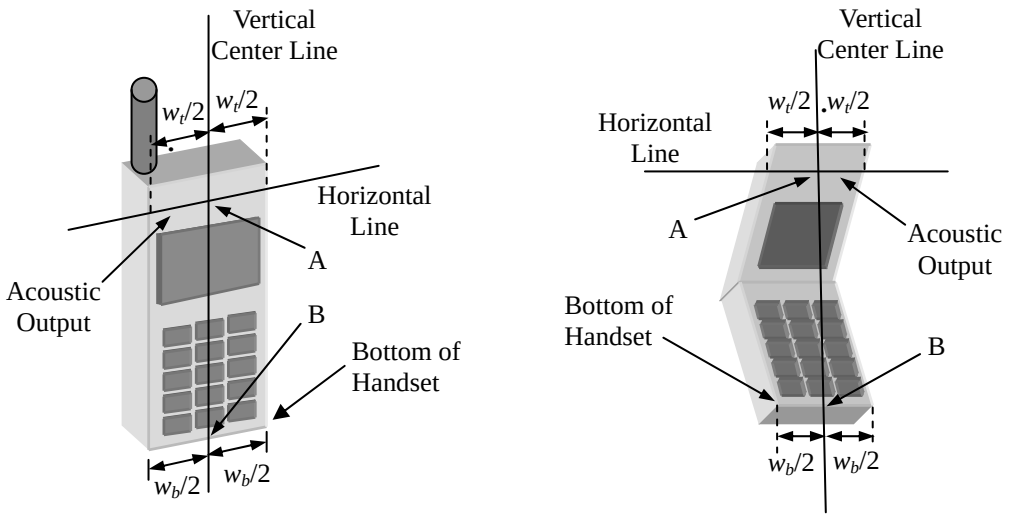



**Fig 8.1 Illustration for Handset Vertical and Horizontal Reference Lines**

## 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).

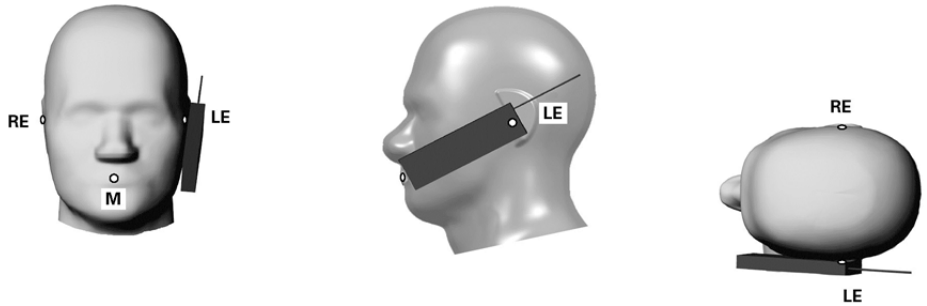



**Fig 8.2 Illustration for Cheek Position**

## 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).

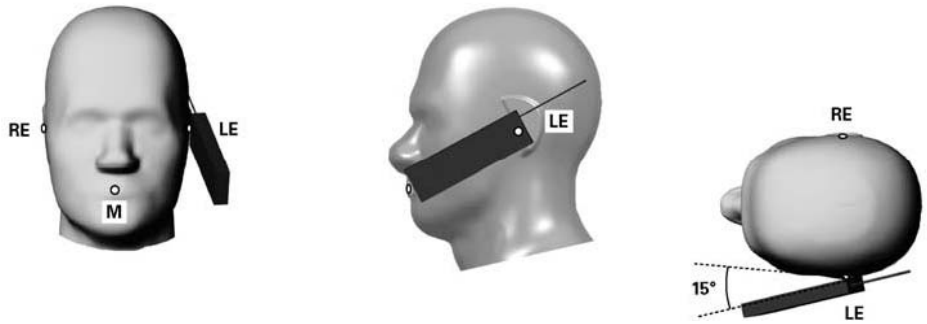



**Fig 8.3 Illustration for Tilted Position**

## 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 cm.

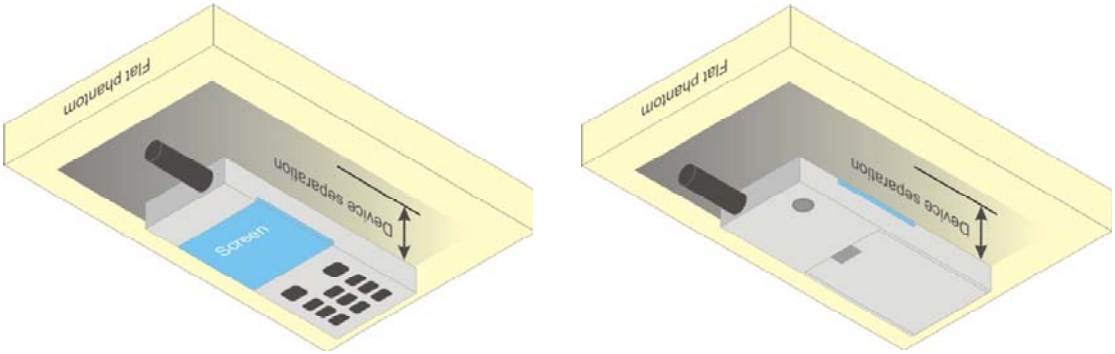



**Fig 8.4 Illustration for Body Worn Position**

## 8.5 Hotspot Position

(a) To position the device parallel to the phantom surface with all sides.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device and the flat phantom to 1 cm.

**<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 reported SAR of highest power channel is larger than 0.8 W/kg

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

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

## 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 Power Reference Measurement

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

## 9.3 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 is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01 quoted below.

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

| | | | ≤ 3 GHz | > 3 GHz |
|---|---|---|---|---|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | | | 5 ± 1 mm | ½·δ·ln(2) ± 0.5 mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | | | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: $\Delta x_{Area}$, $\Delta y_{Area}$ | | | ≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 10 mm |
| | | | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$, $\Delta y_{Zoom}$ | | | ≤ 2 GHz: ≤ 8 mm<br>2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{Zoom}(n)$ | | ≤ 5 mm | 3 – 4 GHz: ≤ 4 mm<br>4 – 5 GHz: ≤ 3 mm<br>5 – 6 GHz: ≤ 2 mm |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm<br>4 – 5 GHz: ≤ 2.5 mm<br>5 – 6 GHz: ≤ 2 mm |
| | | $\Delta z_{Zoom}(n>1)$: between subsequent points | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ | |
| Minimum zoom scan volume | x, y, z | | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm<br>4 – 5 GHz: ≥ 25 mm<br>5 – 6 GHz: ≥ 22 mm |

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

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

## 9.4 Volume Scan Procedures

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

## 9.5 SAR Averaged Methods

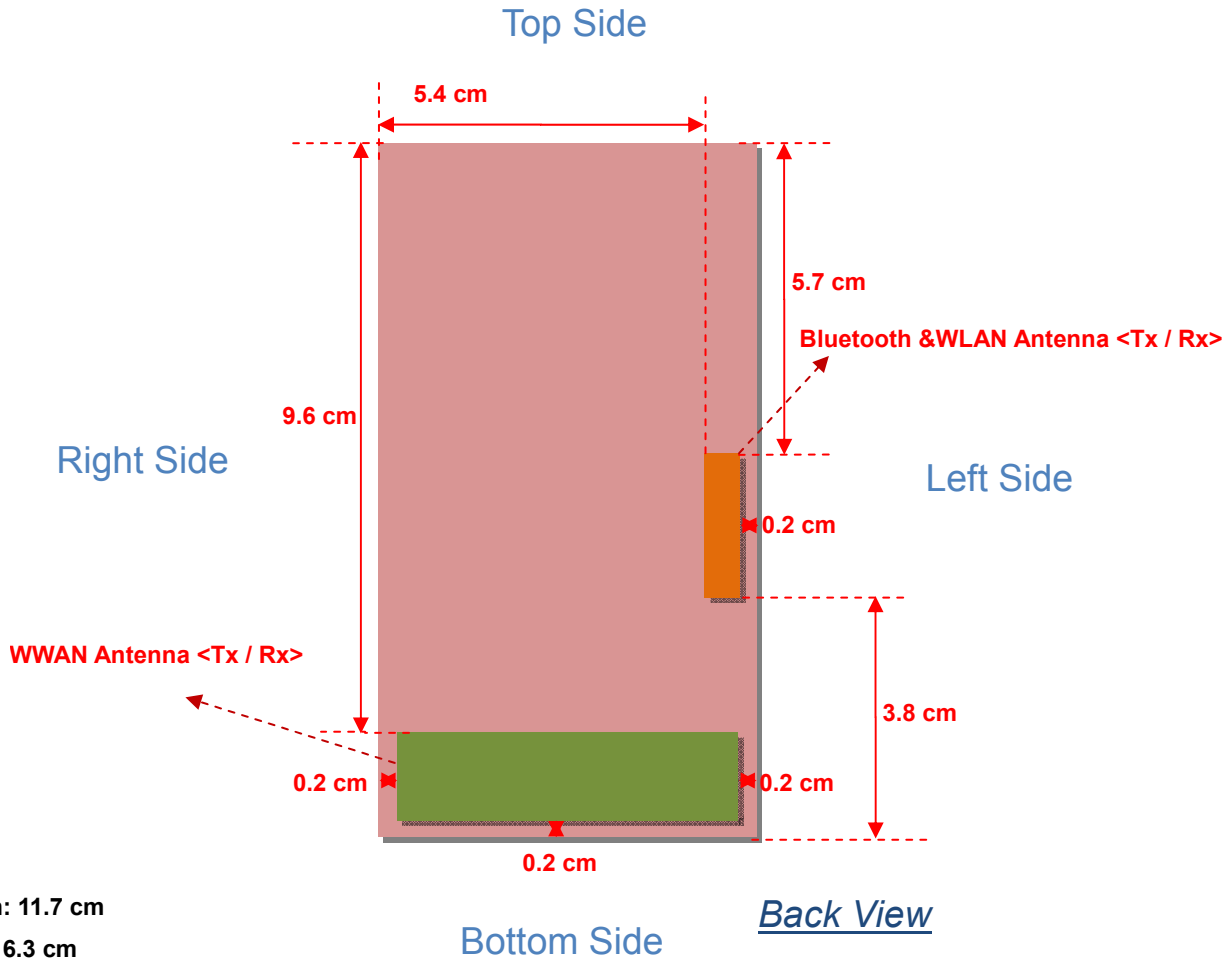
In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

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

## 9.6 Power Drift Monitoring

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

## 10. Exposure Positions Consideration




**Length: 11.7 cm**

**Width: 6.3 cm**

| Antennas | Wireless Interface |
|---|---|
| **WWAN Antenna <Tx / Rx>** | CDMA2000 BC0<br>CDMA 2000 BC1<br>CDMA 2000 BC14 |
| **Bluetooth & WLAN Antenna <Tx / Rx>** | WLAN 2.4GHz<br>Bluetooth |

| Distance of the Antenna to the EUT surface/edge<br>Test distance: 10 mm | | | | | | |
|---|---|---|---|---|---|---|
| **Antennas** | **Back** | **Front** | **Top Side** | **Bottom Side** | **Right Side** | **Left Side** |
| **WWAN** | ≤ 25mm | ≤ 25mm | 96mm | ≤ 25mm | ≤ 25mm | ≤ 25mm |
| **Bluetooth & WLAN** | ≤ 25mm | ≤ 25mm | 57mm | 38mm | 54mm | ≤ 25mm |

| Positions 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 |
| **Bluetooth & WLAN** | Yes | Yes | NO | NO | NO | Yes |

**Note:**

1. Head/Body-worn/Hotspot mode SAR assessments are required.
2. Referring to KDB 941225 D06 v01, 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. Per KDB 447498 D01v05, for handsets the *test separation distance* is determined by the smallest distance between the outer surface of the device and the user; which is 0mm for head SAR, 10mm for hotspot SAR, and 15mm for body-worn SAR.
4. If the test separation distance (antenna-user) is < 5mm, 5mm is used for excluded SAR calculation
5. For minimum test separation distance ≤50mm, Bluetooth standalone SAR test exclusion power threshold is determined by:[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR. The formula sets the maximum RF power threshold and the transmitter with RF power equal or less than the power threshold, SAR testing is not required.

| | Wireless Interface | Bluetooth |
|---|---|---|
| Tune-up Maximum power (dBm) | | 0 |
| Tune-up Maximum rated power (mW) | | 1 |
| Head | Antenna to user (mm) | 5 |
| | SAR exclusion threshold (mW) | 10 |
| | SAR testing required? | **NO** |
| Body | Antenna to user (mm) | 10 |
| | SAR exclusion threshold (mW) | 19 |
| | SAR testing required? | **NO** |

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

**<CDMA2000 Conducted Power>**

**General Note:**

1. According to KDB 941225 D01, Head SAR for RC1 SO55 is not required because the maximum average output power of RC1 is less than 1/4 dB higher than RC3 SO55.
2. Referring to KDB 941225 D01, the CDMA Handset Body-worn SAR tests based on RC3 SO32. RC1, Ev-Do Rev 0 (RTAP 153.6kbps) Ev-Do Rev A(RETAP 4096 bits) power are all less than 1/4 dB higher than RC3, thus SAR testing in these modes are not required.
3. Referring to KDB 941225 D01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps). If 1xRTT and Ev-Do Rev A(RETAP 4096 bits) power is less than 1/4dB higher than Re v0, SAR tests with those settings are not necessary.

| Band | CDMA2000 BC0 | | | CDMA2000 BC1 + BC14 | | | |
|---|---|---|---|---|---|---|---|
| Channel | 1013 | 384 | 777 | 25 | 600 | 1175 | 1275 |
| Frequency (MHz) | 824.70 | 836.52 | 848.31 | 1851.25 | 1880.00 | 1908.75 | 1913.75 |
| 1xRTT RC1 SO55 | 24.03 | 24.08 | 23.92 | 23.98 | 23.85 | 23.78 | 23.90 |
| 1xRTT RC3 SO55 | 24.01 | 24.06 | 23.90 | 23.99 | 23.86 | 23.80 | 23.92 |
| 1xRTT RC3 SO32(+ F-SCH) | 24.05 | 24.09 | 23.94 | 24.03 | 23.89 | 23.86 | 23.96 |
| 1xRTT RC3 SO32(+SCH) | 24.00 | 24.04 | 23.91 | 23.94 | 23.83 | 23.78 | 23.87 |
| 1xEVDO RTAP 153.6 | 24.04 | 24.08 | 23.98 | 24.02 | 24.01 | 23.99 | 23.94 |
| 1xEVDO RETAP 4096 | 24.02 | 24.03 | 23.92 | 24.02 | 23.96 | 23.90 | 23.89 |

## <WLAN 2.4GHz Conducted Power>

**General Note:**

1. Per KDB 248227 D01 v01r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate.
3. Per KDB 248227 D01 v01r02, 11g and 11n-HT20 output power is less than 1/4dB higher than 11b mode, thus the SAR can be excluded.

| WLAN 2.4GHz 802.11b Average Power (dBm) | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Data Rate (bps) | | | |
| | | 1M | 2M | 5.5M | 11M |
| CH 01 | 2412 | 11.74 | 11.71 | 11.67 | 11.69 |
| CH 06 | 2437 | 12.94 | 12.88 | 12.89 | 13.11 |
| CH 11 | 2462 | 13.07 | 13.15 | 13.06 | **13.18** |

| WLAN 2.4GHz 802.11g Average Power (dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Data Rate (bps) | | | | | | | |
| | | 6M | 9M | 12M | 18M | 24M | 36M | 48M | 54M |
| CH 01 | 2412 | 10.94 | 10.98 | 10.80 | 10.87 | 10.89 | 10.79 | 10.79 | 11.20 |
| CH 06 | 2437 | 11.81 | 11.93 | 11.88 | 11.93 | 12.08 | 11.82 | 11.86 | 12.29 |
| CH 11 | 2462 | 12.20 | 12.21 | 12.20 | 12.24 | 12.32 | 12.13 | 12.22 | **12.55** |

| WLAN 2.4GHz 802.11n-HT20 Average Power (dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | MCS Index | | | | | | | |
| | | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
| CH 01 | 2412 | 10.67 | 10.70 | 10.66 | 10.71 | 10.70 | 10.75 | 10.73 | 10.68 |
| CH 06 | 2437 | 11.90 | 11.78 | 11.82 | 11.65 | 11.78 | 11.68 | 11.28 | 11.62 |
| CH 11 | 2462 | **12.13** | 11.95 | 12.11 | 11.90 | 12.05 | 12.04 | 11.68 | 12.04 |

## <Bluetooth Conducted Power>

| Bluetooth Average Power (dBm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Data Rate | | | | | | | | |
| | | DH1 | DH3 | DH5 | 2DH1 | 2DH3 | 2DH5 | 3DH1 | 3DH3 | 3DH5 |
| CH 00 | 2402 | -2.01 | -1.77 | -1.90 | -3.83 | -3.86 | -3.77 | -2.17 | -2.16 | -2.03 |
| CH 39 | 2441 | -0.41 | -0.52 | -0.50 | -2.63 | -2.17 | -2.53 | -2.57 | -2.49 | -2.53 |
| CH 78 | 2480 | -1.67 | -0.41 | **-0.04** | -2.07 | -2.76 | -2.37 | -2.13 | -2.10 | -2.16 |

# 12. SAR Test Results

**General Note:**

1. Per KDB 447498 D01v05, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   *Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.*
   *Reported SAR (W/kg) = Measured SAR(W/kg)* Scaling Factor*
2. Per KDB 447498 D01v05, for each exposure position, if the highest output channel reported SAR ≤ 0.8W/kg, other channels SAR testing are not necessary
3. For Hotspot SAR testing, 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.

## 12.1 Test Records for Head SAR Test

**<CDMA2000 SAR>**

| Plot No. | Band | Mode | Test Position | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **#01** | **CDMA2000 BC0** | **RC3 SO55** | **Right Cheek** | **384** | **836.52** | **24.06** | **24.3** | **1.057** | **0.07** | **0.571** | **0.603** |
| #02 | CDMA2000 BC0 | RC3 SO55 | Right Tilted | 384 | 836.52 | 24.06 | 24.3 | 1.057 | 0.11 | 0.342 | 0.361 |
| #03 | CDMA2000 BC0 | RC3 SO55 | Left Cheek | 384 | 836.52 | 24.06 | 24.3 | 1.057 | -0.11 | 0.503 | 0.532 |
| #04 | CDMA2000 BC0 | RC3 SO55 | Left Tilted | 384 | 836.52 | 24.06 | 24.3 | 1.057 | 0.06 | 0.352 | 0.372 |
| #05 | CDMA2000 BC1 | RC3 SO55 | Right Cheek | 25 | 1851.25 | 23.99 | 24.3 | 1.074 | -0.14 | 1.260 | 1.353 |
| #06 | CDMA2000 BC1 | RC3 SO55 | Right Tilted | 25 | 1851.25 | 23.99 | 24.3 | 1.074 | 0.045 | 0.552 | 0.593 |
| **#07** | **CDMA2000 BC1** | **RC3 SO55** | **Left Cheek** | **25** | **1851.25** | **23.99** | **24.3** | **1.074** | **0.06** | **1.360** | **1.461** |
| #08 | CDMA2000 BC1 | RC3 SO55 | Left Tilted | 25 | 1851.25 | 23.99 | 24.3 | 1.074 | 0.01 | 0.573 | 0.615 |
| #09 | CDMA2000 BC1 | RC3 SO55 | Right Cheek | 600 | 1880 | 23.86 | 24.3 | 1.107 | -0.07 | 1.240 | 1.372 |
| #10 | CDMA2000 BC1 | RC3 SO55 | Right Cheek | 1175 | 1908.75 | 23.80 | 24.3 | 1.122 | -0.03 | 1.130 | 1.268 |
| #11 | CDMA2000 BC1 | RC3 SO55 | Left Cheek | 600 | 1880 | 23.86 | 24.3 | 1.107 | 0.01 | 1.180 | 1.306 |
| #12 | CDMA2000 BC1 | RC3 SO55 | Left Cheek | 1175 | 1908.75 | 23.80 | 24.3 | 1.122 | 0.08 | 0.915 | 1.027 |
| #13 | CDMA2000 BC14 | RC3 SO55 | Right Cheek | 1275 | 1913.75 | 23.92 | 24.3 | 1.099 | -0.09 | 1.080 | 1.179 |
| #14 | CDMA2000 BC14 | RC3 SO55 | Right Tilted | 1275 | 1913.75 | 23.92 | 24.3 | 1.099 | -0.10 | 0.470 | 0.513 |
| **#15** | **CDMA2000 BC14** | **RC3 SO55** | **Left Cheek** | **1275** | **1913.75** | **23.92** | **24.3** | **1.099** | **0.091** | **1.340** | **1.463** |
| #17 | CDMA2000 BC14 | RC3 SO55 | Left Tilted | 1275 | 1913.75 | 23.92 | 24.3 | 1.091 | 0.05 | 0.524 | 0.572 |

**<WLAN 2.4GHz SAR>**

| Plot No. | Band | Mode | Test Position | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| #18 | WLAN2.4GHz | 802.11b | Right Cheek | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.06 | 0.028 | 0.031 |
| #19 | WLAN2.4GHz | 802.11b | Right Tilted | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.02 | 0.00885 | 0.010 |
| **#20** | **WLAN2.4GHz** | **802.11b** | **Left Cheek** | **11** | **2462** | **13.07** | **13.5** | **1.076** | **0.08** | **0.047** | **0.052** |
| #21 | WLAN2.4GHz | 802.11b | Left Tilted | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.09 | 0.00326 | 0.004 |

## 12.2 Test Records for Hotspot SAR Test

### <CDMA2000 SAR>

| Plot No. | Band | Mode | Test Position | Gap (cm) | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #22 | CDMA2000 BC0 | RTAP 153.6 | Front | 1 | 384 | 836.52 | 24.08 | 24.3 | 1.052 | 0.12 | 0.558 | 0.587 |
| **#23** | **CDMA2000 BC0** | **RTAP 153.6** | **Back** | **1** | **384** | **836.52** | **24.08** | **24.3** | **1.052** | **-0.10** | **0.902** | **0.949** |
| #25 | CDMA2000 BC0 | RTAP 153.6 | Left Side | 1 | 384 | 836.52 | 24.08 | 24.3 | 1.052 | 0.05 | 0.558 | 0.587 |
| #26 | CDMA2000 BC0 | RTAP 153.6 | Right Side | 1 | 384 | 836.52 | 24.08 | 24.3 | 1.052 | 0.12 | 0.561 | 0.590 |
| #27 | CDMA2000 BC0 | RTAP 153.6 | Bottom Side | 1 | 384 | 836.52 | 24.08 | 24.3 | 1.052 | 0.09 | 0.082 | 0.086 |
| #28 | CDMA2000 BC0 | RTAP 153.6 | Back | 1 | 1013 | 824.7 | 24.04 | 24.3 | 1.062 | -0.05 | 0.798 | 0.847 |
| #29 | CDMA2000 BC0 | RTAP 153.6 | Back | 1 | 777 | 848.31 | 23.98 | 24.3 | 1.076 | -0.04 | 0.829 | 0.892 |
| #34 | CDMA2000 BC1 | RTAP 153.6 | Front | 1 | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | -0.08 | 1.120 | 1.195 |
| **#35** | **CDMA2000 BC1** | **RTAP 153.6** | **Back** | **1** | **25** | **1851.25** | **24.02** | **24.3** | **1.067** | **-0.03** | **1.420** | **1.515** |
| #37 | CDMA2000 BC1 | RTAP 153.6 | Left Side | 1 | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | -0.07 | 0.473 | 0.504 |
| #38 | CDMA2000 BC1 | RTAP 153.6 | Right Side | 1 | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | 0.05 | 0.372 | 0.397 |
| #39 | CDMA2000 BC1 | RTAP 153.6 | Bottom Side | 1 | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | 0.03 | 0.715 | 0.763 |
| #40 | CDMA2000 BC1 | RTAP 153.6 | Front | 1 | 600 | 1880 | 24.01 | 24.3 | 1.069 | 0.04 | 1.020 | 1.090 |
| #41 | CDMA2000 BC1 | RTAP 153.6 | Front | 1 | 1175 | 1908.75 | 23.99 | 24.3 | 1.074 | 0.04 | 0.937 | 1.006 |
| #42 | CDMA2000 BC1 | RTAP 153.6 | Back | 1 | 600 | 1880 | 24.01 | 24.3 | 1.069 | -0.07 | 1.400 | 1.497 |
| #43 | CDMA2000 BC1 | RTAP 153.6 | Back | 1 | 1175 | 1908.75 | 23.99 | 24.3 | 1.074 | 0.05 | 1.360 | 1.461 |
| #53 | CDMA2000 BC14 | RTAP 153.6 | Front | 1 | 1275 | 1913.75 | 23.94 | 24.3 | 1.086 | 0.05 | 0.970 | 1.054 |
| **#54** | **CDMA2000 BC14** | **RTAP 153.6** | **Back** | **1** | **1275** | **1913.75** | **23.94** | **24.3** | **1.086** | **-0.10** | **1.300** | **1.412** |
| #55 | CDMA2000 BC14 | RTAP 153.6 | Left Side | 1 | 1275 | 1913.75 | 23.94 | 24.3 | 1.086 | -0.06 | 0.443 | 0.481 |
| #56 | CDMA2000 BC14 | RTAP 153.6 | Right Side | 1 | 1275 | 1913.75 | 23.94 | 24.3 | 1.086 | -0.05 | 0.323 | 0.351 |
| #57 | CDMA2000 BC14 | RTAP 153.6 | Bottom Side | 1 | 1275 | 1913.75 | 23.94 | 24.3 | 1.086 | 0.10 | 0.697 | 0.757 |

### <WLAN 2.4GHz SAR>

| Plot No. | Band | Mode | Test Position | Gap (cm) | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #61 | WLAN 2.4GHz | 802.11b | Front | 1 | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.09 | 0.013 | 0.014 |
| **#62** | **WLAN 2.4GHz** | **802.11b** | **Back** | **1** | **11** | **2462** | **13.07** | **13.5** | **1.076** | **0.07** | **0.054** | **0.060** |
| #63 | WLAN 2.4GHz | 802.11b | Left Side | 1 | 11 | 2462 | 13.07 | 13.5 | 1.076 | -0.03 | 0.049 | 0.054 |

## 12.3 Test Records for Body-worn SAR Test

**Note:**

1. For Body-worn SAR testing: "V" in the Headset column means the Headset is plugged during SAR testing
2. Body-worn SAR testing was performed at 10mm separation, and this distance is determined by the handset manufacturer that there will be body-worn accessories that users may acquire at the time of equipment certification, to enable users to purchase aftermarket body-worn accessories with the required minimum separation.
3. Per KDB 941225 D06, when the same wireless modes and device transmission configurations are required for testing body-worn accessories and hotspot mode, it is not necessary to test body-worn accessory SAR for the same device orientation if the test separation distance for hotspot mode is more conservative than that used for body-worn accessories. In this report, the worst exposure position is the back exposure position of the device.
4. Per KDB 648474 D04v01, when the *reported* SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. Though per KDB 648474 D04v01, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, the SAR testing with a headset connected to the handset is not required, but considered the simultaneous SAR for body-worn, we still perform the WLAN SAR with headset mode.

**<CDMA2000 SAR>**

| Plot No. | Band | Mode | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #30 | CDMA2000 BC0 | RC3 SO32 | Front | 1 | - | 384 | 836.52 | 24.09 | 24.3 | 1.050 | -0.03 | 0.553 | 0.580 |
| **#31** | **CDMA2000 BC0** | **RC3 SO32** | **Back** | **1** | **-** | **384** | **836.52** | **24.09** | **24.3** | **1.050** | **-0.10** | **0.793** | **0.832** |
| #32 | CDMA2000 BC0 | RC3 SO32 | Back | 1 | - | 1013 | 824.7 | 24.05 | 24.3 | 1.059 | -0.04 | 0.704 | 0.746 |
| #33 | CDMA2000 BC0 | RC3 SO32 | Back | 1 | - | 777 | 848.31 | 23.94 | 24.3 | 1.086 | 0.08 | 0.762 | 0.828 |
| #44 | CDMA2000 BC1 | RC3 SO32 | Front | 1 | - | 25 | 1851.25 | 24.03 | 24.3 | 1.064 | -0.02 | 1.030 | 1.096 |
| #45 | CDMA2000 BC1 | RC3 SO32 | Back | 1 | - | 25 | 1880 | 24.03 | 24.3 | 1.064 | -0.06 | 1.200 | 1.277 |
| #46 | CDMA2000 BC1 | RC3 SO32 | Front | 1 | - | 600 | 1880 | 23.89 | 24.3 | 1.099 | 0.12 | 1.030 | 1.132 |
| #47 | CDMA2000 BC1 | RC3 SO32 | Front | 1 | - | 1175 | 1908.75 | 23.86 | 24.3 | 1.107 | 0.04 | 0.958 | 1.060 |
| #48 | CDMA2000 BC1 | RC3 SO32 | Back | 1 | - | 600 | 1880 | 23.89 | 24.3 | 1.099 | -0.06 | 1.170 | 1.286 |
| #49 | CDMA2000 BC1 | RC3 SO32 | Back | 1 | - | 1175 | 1908.75 | 23.86 | 24.3 | 1.107 | -0.06 | 1.130 | 1.250 |
| **#50** | **CDMA2000 BC1** | **RC3 SO32** | **Back** | **1** | **V** | **25** | **1851.25** | **24.03** | **24.3** | **1.064** | **0.04** | **1.370** | **1.458** |
| #51 | CDMA2000 BC1 | RC3 SO32 | Back | 1 | V | 600 | 1880 | 23.89 | 24.3 | 1.099 | -0.09 | 1.290 | 1.418 |
| #52 | CDMA2000 BC1 | RC3 SO32 | Back | 1 | V | 1175 | 1908.75 | 23.86 | 24.3 | 1.107 | -0.15 | 1.280 | 1.416 |
| #58 | CDMA2000 BC14 | RC3 SO32 | Front | 1 | - | 1275 | 1913.75 | 23.96 | 24.3 | 1.081 | 0.03 | 0.940 | 1.017 |
| **#59** | **CDMA2000 BC14** | **RC3 SO32** | **Back** | **1** | **-** | **1275** | **1913.75** | **23.96** | **24.3** | **1.081** | **-0.08** | **1.090** | **1.179** |

**<WLAN 2.4GHz>**

| Plot No. | Band | Mode | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #61 | WLAN 2.4GHz | 802.11b | Front | 1 | - | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.09 | 0.013 | 0.014 |
| **#62** | **WLAN 2.4GHz** | **802.11b** | **Back** | **1** | **-** | **11** | **2462** | **13.07** | **13.5** | **1.076** | **0.07** | **0.054** | **0.060** |
| #64 | WLAN 2.4GHz | 802.11b | Back | 1 | V | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.04 | 0.047 | 0.052 |

## 12.4 Repeated SAR Measurement

| Plot No. | Band | Mode | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Ratio | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #23 | CDMA2000 BC0 | RTAP 153.6 | Back | 1 | - | 384 | 836.52 | 24.08 | 24.3 | 1.052 | -0.1 | 0.902 | 1 | 0.949 |
| #24 | CDMA2000 BC0 | RTAP 153.6 | Back | 1 | - | 384 | 836.52 | 24.08 | 24.3 | 1.052 | -0.07 | 0.864 | 1.044 | 0.909 |
| #35 | CDMA2000 BC1 | RTAP 153.6 | Back | 1 | - | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | -0.03 | 1.420 | 1 | 1.515 |
| #36 | CDMA2000 BC1 | RTAP 153.6 | Back | 1 | - | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | 0.10 | 1.410 | 1.007 | 1.504 |
| #15 | CDMA2000 BC14 | RC3 SO55 | Left Cheek | - | - | 1275 | 1913.75 | 23.92 | 24.3 | 1.099 | 0.091 | 1.340 | 1 | 1.463 |
| #16 | CDMA2000 BC14 | RC3 SO55 | Left Cheek | - | - | 1275 | 1913.75 | 23.92 | 24.3 | 1.099 | -0.04 | 1.300 | 1.031 | 1.419 |

**Note:**

1. Per KDB 865664 D01v01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg
2. Per KDB 865664 D01v01, if the deviation among the repeated measurement is ≤20% and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The deviation is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

## 12.5 Highest SAR Plot

| Plot No. | Band | Mode | Test Position | Gap (cm) | Headset | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | $SAR_{1g}$ (W/kg) | Reported $SAR_{1g}$ (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #23 | CDMA2000 BC0 | RTAP 153.6 | Back | 1 | - | 384 | 836.52 | 24.08 | 24.3 | 1.052 | -0.1 | 0.902 | 0.949 |
| #35 | CDMA2000 BC1 | RTAP 153.6 | Back | 1 | - | 25 | 1851.25 | 24.02 | 24.3 | 1.067 | -0.03 | 1.420 | 1.515 |
| #15 | CDMA2000 BC14 | RC3 SO55 | Left Cheek | - | - | 1275 | 1913.75 | 23.92 | 24.3 | 1.099 | 0.091 | 1.340 | 1.463 |
| #62 | WLAN 2.4GHz | 802.11b | Back | 1 | - | 11 | 2462 | 13.07 | 13.5 | 1.076 | 0.07 | 0.054 | 0.060 |

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2013-1-27

**#23 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch384**

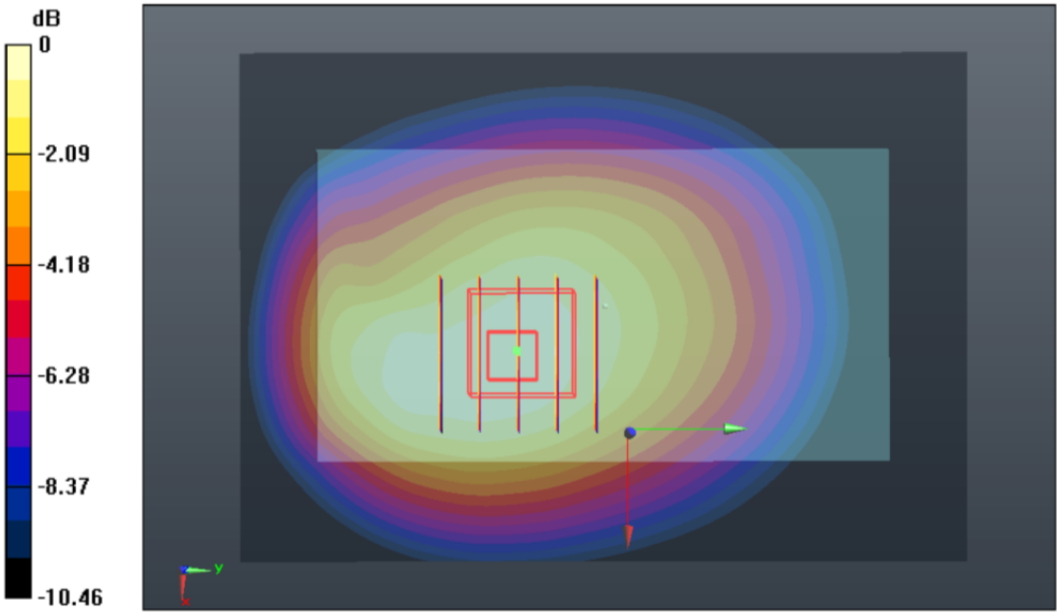
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.038 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.664 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.197 W/kg
**SAR(1 g) = 0.902 mW/g; SAR(10 g) = 0.651 mW/g**
Maximum value of SAR (measured) = 1.064 mW/g




0 dB = 1.060mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2013-1-27

**#35 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch25**

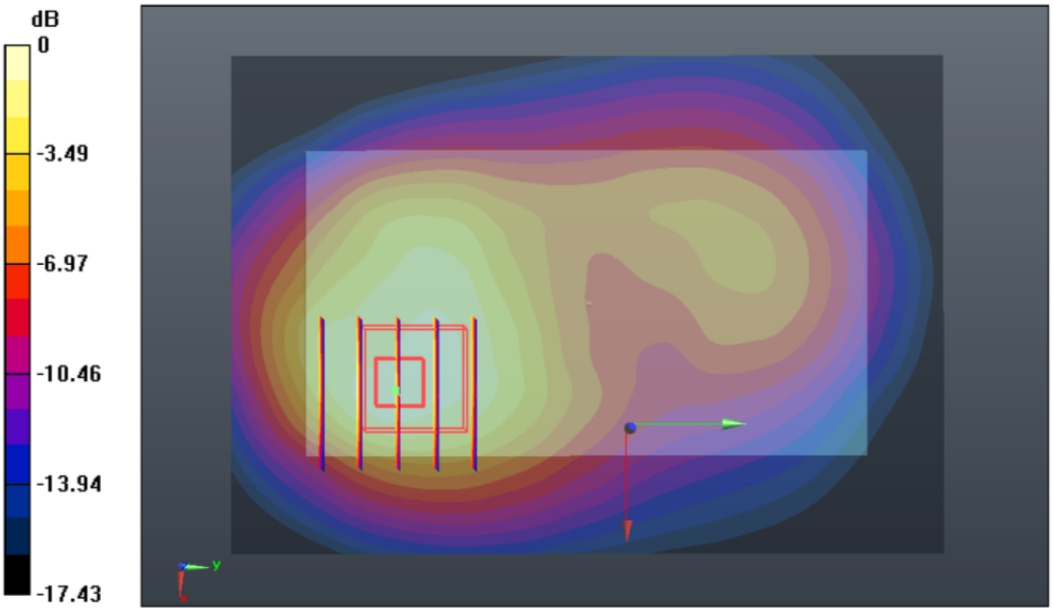
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.854 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.374 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.315 W/kg
**SAR(1 g) = 1.420 mW/g; SAR(10 g) = 0.812 mW/g**
Maximum value of SAR (measured) = 1.886 mW/g




0 dB = 1.890mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2013-1-23

**#15 CDMA2000 BC14_RC3 SO55_Left Cheek_Ch1275**

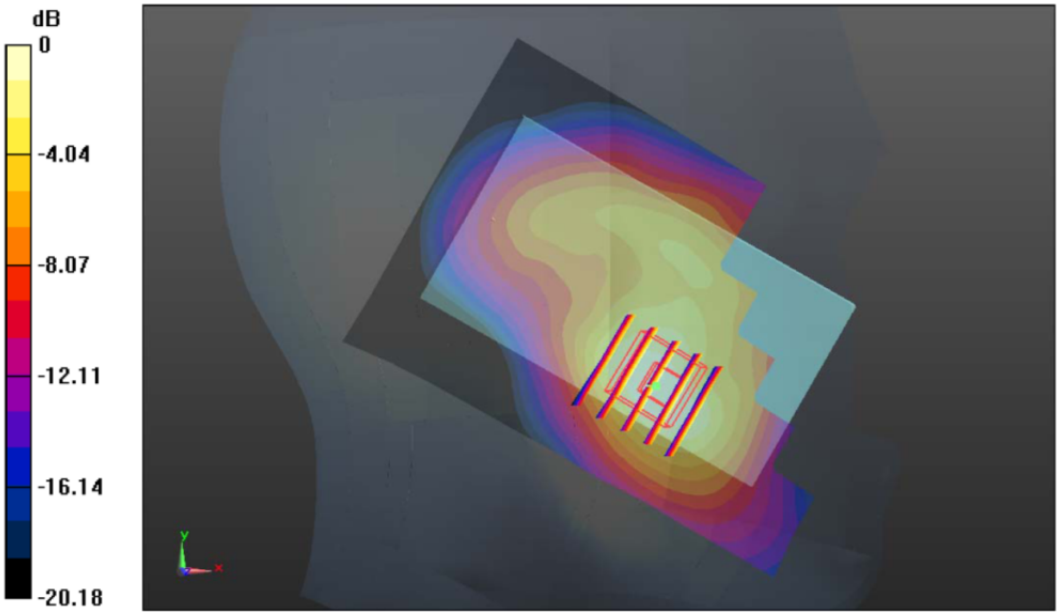
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.821 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.925 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 2.275 W/kg
**SAR(1 g) = 1.340 mW/g; SAR(10 g) = 0.738 mW/g**
Maximum value of SAR (measured) = 1.786 mW/g




0 dB = 1.790mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2013-1-30

**#62 802.11b_1M_Back 1cm_Ch11**

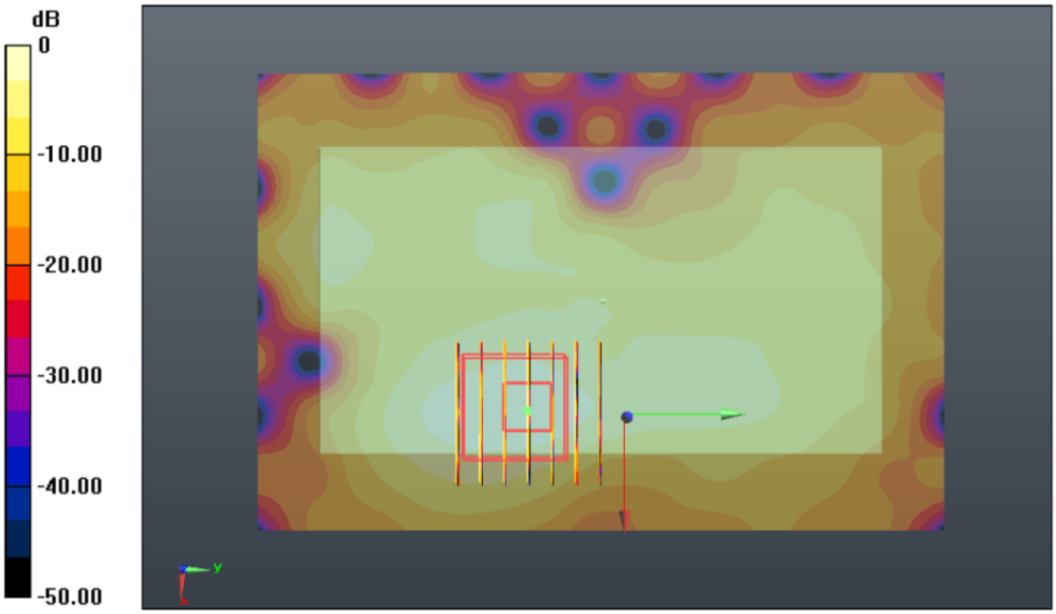
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; σ = 2.027 mho/m; $\varepsilon_r$ = 53.408; ρ = 1000 kg/m$^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.090 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.565 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.121 W/kg
**SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.023 mW/g**
Maximum value of SAR (measured) = 0.086 mW/g




0 dB = 0.090mW/g

## 12.6 Simultaneous Multi-band Transmission Analysis

| | Position | Applicable Combination |
|---|---|---|
| Simultaneous Transmission | Head | CDMA2000 (voice) + WLAN 2.4GHz |
| | | CDMA2000 (voice) + Bluetooth |
| | Hotspot | EVDO (data) + WLAN 2.4GHz |
| | | EVDO (data) + Bluetooth |
| | Body-worn | CDMA2000 (voice) + WLAN 2.4GHz |
| | | CDMA2000 (voice) + Bluetooth |

**Note:**

1. WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. 1xRTT and EVDO share the same antenna, and no SVDO feature in this device.
3. Simultaneous transmission analysis for hotspot mode 1cm separation to the body represents the compliance for hand-held and near-body use conditions. Simultaneous transmission of Hotspot mode for head and body-worn conditions was covered under simultaneous transmission analysis of head and body-worn positions, due to the possible WWAN voice call and data transmission SAR was considered in standalone SAR measurement for those exposure positions
4. The Reported SAR summation is calculated based on the same configuration and test position.
5. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[$\sqrt{f(GHz)/x}$] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

| Bluetooth | Tune-up Maximum power (dBm) | Head 0mm gap | Body 10mm gap |
|---|---|---|---|
| **Estimated SAR (W/kg)** | 0 | 0.042 | 0.021 |

6. Per KDB 447498 D01v05, simultaneous transmission SAR is compliant if,

(i) Scalar SAR summation < 1.6W/kg.

(ii) SPLSR = $(SAR1 + SAR2)^{1.5}$ / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan

If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

(iii) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg

## <Head SAR>

| Position | WWAN (PCE) | | | WLAN 2.4GHz (DTS) | | WWAN + WLAN 2.4GHz (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN 2.4GHz SAR (W/kg) | | | |
| Right Cheek | CDMA2000 BC0 | #01 | 0.603 | #18 | 0.031 | **0.63** | - | - |
| | CDMA2000 BC1 | #09 | 1.372 | #18 | 0.031 | **1.40** | - | - |
| | CDMA2000 BC14 | #13 | 1.179 | #18 | 0.031 | **1.21** | - | - |
| Right Tilted | CDMA2000 BC0 | #02 | 0.361 | #19 | 0.010 | **0.37** | - | - |
| | CDMA2000 BC1 | #06 | 0.593 | #19 | 0.010 | **0.60** | - | - |
| | CDMA2000 BC14 | #14 | 0.513 | #19 | 0.010 | **0.52** | - | - |
| Left Cheek | CDMA2000 BC0 | #03 | 0.532 | #20 | 0.052 | **0.58** | - | - |
| | CDMA2000 BC1 | #07 | 1.461 | #20 | 0.052 | **1.51** | - | - |
| | CDMA2000 BC14 | #15 | 1.463 | #20 | 0.052 | **1.52** | - | - |
| Left Tilted | CDMA2000 BC0 | #04 | 0.372 | #21 | 0.004 | **0.38** | - | - |
| | CDMA2000 BC1 | #08 | 0.615 | #21 | 0.004 | **0.62** | - | - |
| | CDMA2000 BC14 | #17 | 0.572 | #21 | 0.004 | **0.58** | - | - |

| Position | WWAN | | | Bluetooth | WWAN + Bluetooth (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Estimated Bluetooth SAR (W/kg) | | | |
| Right Cheek | CDMA2000 BC0 | #01 | 0.603 | 0.042 | **0.65** | - | - |
| | CDMA2000 BC1 | #09 | 1.372 | 0.042 | **1.41** | - | - |
| | CDMA2000 BC14 | #13 | 1.179 | 0.042 | **1.22** | - | - |
| Right Tilted | CDMA2000 BC0 | #02 | 0.361 | 0.042 | **0.40** | - | - |
| | CDMA2000 BC1 | #06 | 0.593 | 0.042 | **0.64** | - | - |
| | CDMA2000 BC14 | #14 | 0.513 | 0.042 | **0.56** | - | - |
| Left Cheek | CDMA2000 BC0 | #03 | 0.532 | 0.042 | **0.57** | - | - |
| | CDMA2000 BC1 | #07 | 1.461 | 0.042 | **1.50** | - | - |
| | CDMA2000 BC14 | #15 | 1.463 | 0.042 | **1.51** | - | - |
| Left Tilted | CDMA2000 BC0 | #04 | 0.372 | 0.042 | **0.41** | - | - |
| | CDMA2000 BC1 | #08 | 0.615 | 0.042 | **0.66** | - | - |
| | CDMA2000 BC14 | #17 | 0.572 | 0.042 | **0.61** | - | - |

**<Hotspot>**

| Position | WWAN | | | WLAN 2.4GHz | | WWAN + WLAN 2.4GHz (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN 2.4GHz SAR (W/kg) | | | |
| Front | CDMA2000 BC0 | #22 | 0.587 | #61 | 0.014 | **0.60** | - | - |
| | CDMA2000 BC1 | #34 | 1.195 | #61 | 0.014 | **1.21** | - | - |
| | CDMA2000 BC14 | #53 | 1.054 | #61 | 0.014 | **1.07** | - | - |
| Back | CDMA2000 BC0 | #23 | 0.949 | #62 | 0.060 | **1.01** | - | - |
| | CDMA2000 BC1 | #35 | 1.515 | #62 | 0.060 | **1.58** | - | - |
| | CDMA2000 BC14 | #54 | 1.412 | #62 | 0.060 | **1.47** | - | - |
| Left Side | CDMA2000 BC0 | #25 | 0.587 | #63 | 0.054 | **0.64** | - | - |
| | CDMA2000 BC1 | #37 | 0.504 | #63 | 0.054 | **0.56** | - | - |
| | CDMA2000 BC14 | #55 | 0.481 | #63 | 0.054 | **0.54** | - | - |
| Right Side | CDMA2000 BC0 | #26 | 0.590 | - | - | **0.59** | - | - |
| | CDMA2000 BC1 | #38 | 0.397 | - | - | **0.40** | - | - |
| | CDMA2000 BC14 | #56 | 0.351 | - | - | **0.35** | - | - |
| Bottom Side | CDMA2000 BC0 | #27 | 0.086 | - | - | **0.09** | - | - |
| | CDMA2000 BC1 | #39 | 0.763 | - | - | **0.76** | - | - |
| | CDMA2000 BC14 | #57 | 0.757 | - | - | **0.76** | - | - |

| Position | WWAN | | | Bluetooth | WWAN + Bluetooth (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Estimated Bluetooth SAR (W/kg) | | | |
| Front | CDMA2000 BC0 | #22 | 0.587 | 0.021 | **0.61** | - | - |
| | CDMA2000 BC1 | #34 | 1.195 | 0.021 | **1.22** | - | - |
| | CDMA2000 BC14 | #53 | 1.054 | 0.021 | **1.08** | - | - |
| Back | CDMA2000 BC0 | #23 | 0.949 | 0.021 | **0.97** | - | - |
| | CDMA2000 BC1 | #35 | 1.515 | 0.021 | **1.54** | - | - |
| | CDMA2000 BC14 | #54 | 1.412 | 0.021 | **1.43** | - | - |
| Left Side | CDMA2000 BC0 | #25 | 0.587 | 0.021 | **0.61** | - | - |
| | CDMA2000 BC1 | #37 | 0.504 | 0.021 | **0.53** | - | - |
| | CDMA2000 BC14 | #55 | 0.481 | 0.021 | **0.50** | - | - |
| Right Side | CDMA2000 BC0 | #26 | 0.590 | 0.021 | **0.61** | - | - |
| | CDMA2000 BC1 | #38 | 0.397 | 0.021 | **0.42** | - | - |
| | CDMA2000 BC14 | #56 | 0.351 | 0.021 | **0.37** | - | - |
| Bottom Side | CDMA2000 BC0 | #27 | 0.086 | 0.021 | **0.11** | - | - |
| | CDMA2000 BC1 | #39 | 0.763 | 0.021 | **0.78** | - | - |
| | CDMA2000 BC14 | #57 | 0.757 | 0.021 | **0.78** | - | - |

**<Body-worn>**

| Position | WWAN | | | WLAN 2.4GHz | | WWAN + WLAN 2.4GHz (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Plot No | Max. WLAN 2.4GHz SAR (W/kg) | | | |
| Front | CDMA2000 BC0 | #30 | 0.580 | #61 | 0.014 | **0.59** | - | - |
| | CDMA2000 BC1 | #46 | 1.132 | #61 | 0.014 | **1.15** | - | - |
| | CDMA2000 BC14 | #58 | 1.017 | #61 | 0.014 | **1.03** | - | - |
| Back | CDMA2000 BC0 | #31 | 0.832 | #62 | 0.060 | **0.89** | - | - |
| | CDMA2000 BC1 | #48 | 1.286 | #62 | 0.060 | **1.35** | - | - |
| | CDMA2000 BC14 | #59 | 1.179 | #62 | 0.060 | **1.24** | - | - |
| Back (w/ Headset) | CDMA2000 BC0 | - | - | #64 | 0.052 | **0.05** | - | - |
| | CDMA2000 BC1 | #50 | 1.458 | #64 | 0.052 | **1.51** | - | - |
| | CDMA2000 BC14 | - | - | #64 | 0.052 | **0.05** | - | - |

| Position | WWAN | | | Bluetooth | WWAN + Bluetooth (W/kg) | SPLSR ≤ 0.04 | Case No |
|---|---|---|---|---|---|---|---|
| | WWAN Band | Plot No | Max. WWAN SAR (W/kg) | Estimated Bluetooth SAR (W/kg) | | | |
| Front | CDMA2000 BC0 | #30 | 0.580 | 0.021 | **0.60** | - | - |
| | CDMA2000 BC1 | #46 | 1.132 | 0.021 | **1.15** | - | - |
| | CDMA2000 BC14 | #58 | 1.017 | 0.021 | **1.04** | - | - |
| Back | CDMA2000 BC0 | #31 | 0.832 | 0.021 | **0.85** | - | - |
| | CDMA2000 BC1 | #48 | 1.286 | 0.021 | **1.31** | - | - |
| | CDMA2000 BC14 | #59 | 1.179 | 0.021 | **1.20** | - | - |
| Back (w/ Headset) | CDMA2000 BC0 | - | - | 0.021 | **0.02** | - | - |
| | CDMA2000 BC1 | #50 | 1.458 | 0.021 | **1.46** | - | - |
| | CDMA2000 BC14 | - | - | 0.021 | **0.02** | - | - |

**Test Engineer：** Fulu Hu

# 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/√3 | 1/√6 | 1/√2 |

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

(b) $\kappa$ 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 IEEE 1528-2003**

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

[7] FCC KDB 447498 D01 v05, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, October 2012

[8] FCC KDB 648474 D04 v01, “SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas”, October 2012

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

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

[11] FCC KDB 865664 D01 v01, “SAR Measurement Requirements for 100MHz to 6 GHz”, October 2012

# Appendix A. Plots of System Performance Check

The plots are shown as follows.

**System Check_Head_835MHz_130123**

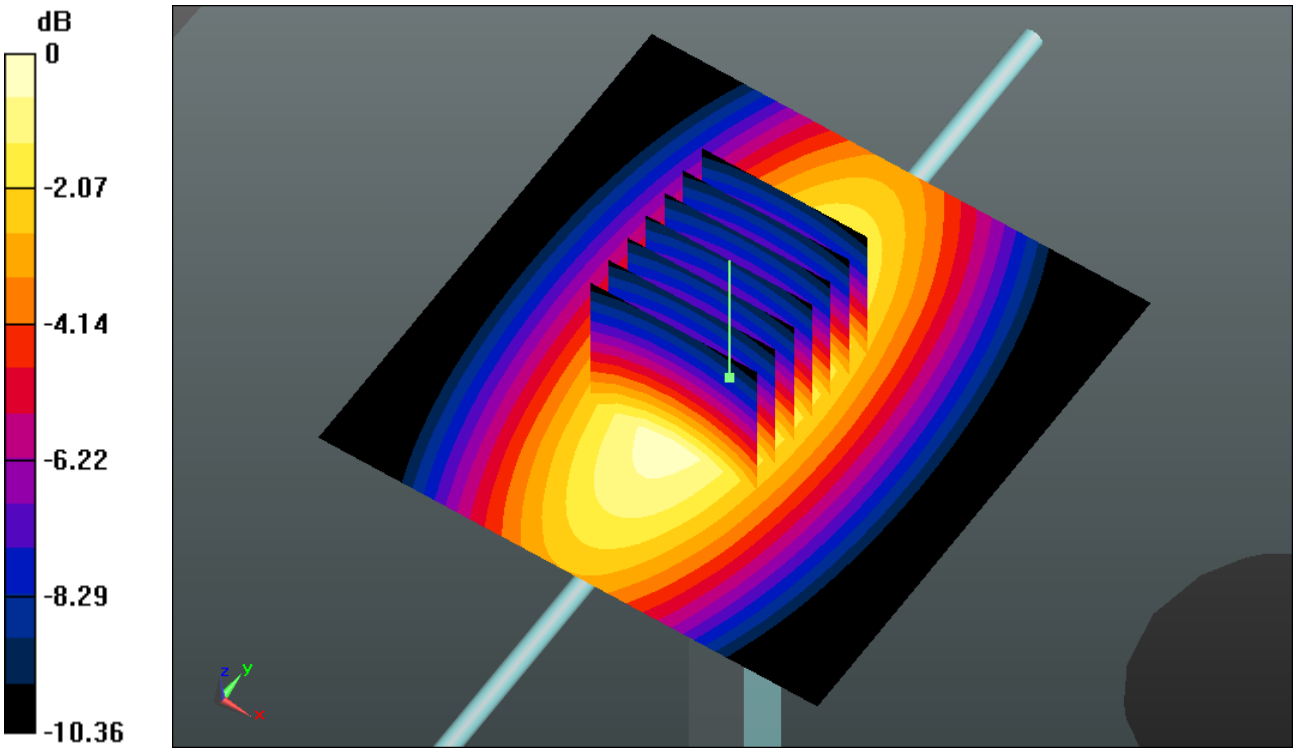
**DUT: D835V2 - SN:4d091**

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 835 MHz; $\sigma$ = 0.904 mho/m; $\varepsilon_r$ = 42.225; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.526 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.386 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.391 W/kg
**SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.54 mW/g**
Maximum value of SAR (measured) = 2.529 mW/g




0 dB = 2.530mW/g

**System Check_Head_1900MHz_130123**

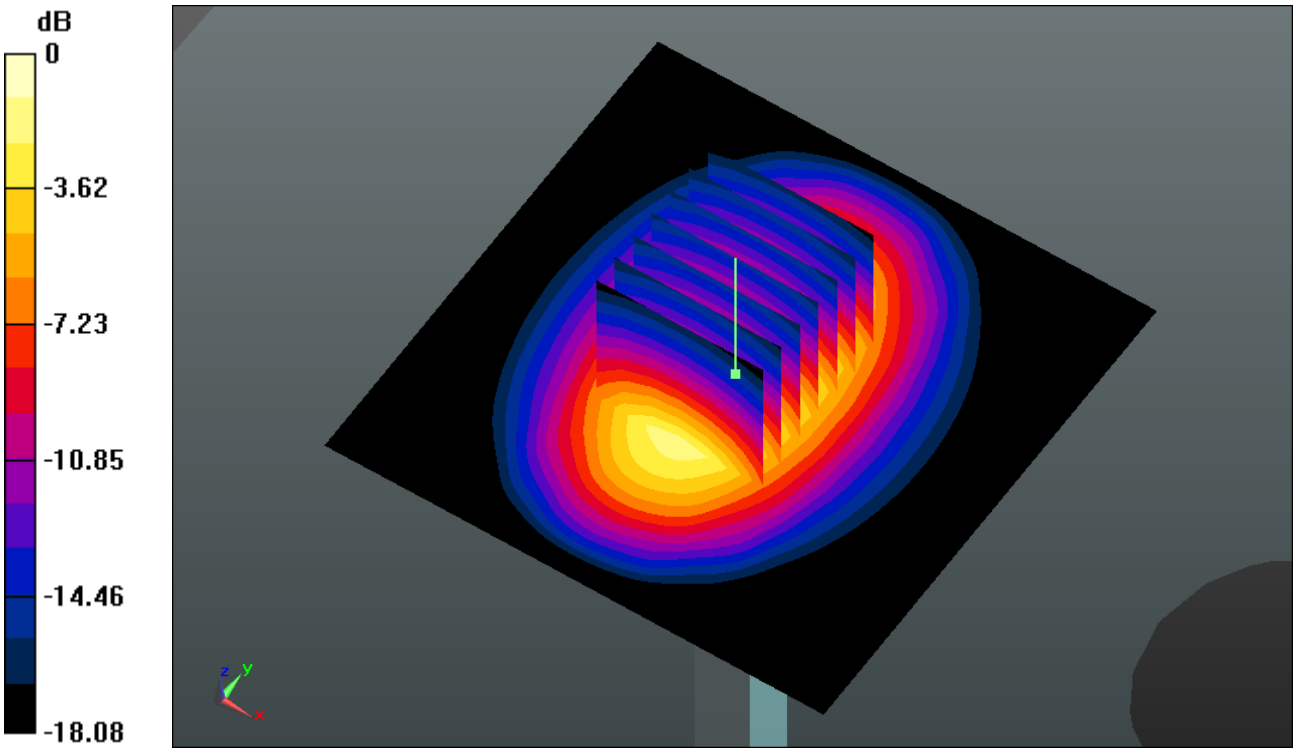
**DUT: D1900V2 - SN:5d118**

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1900 MHz; $\sigma$ = 1.424 mho/m; $\varepsilon_r$ = 38.916; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (91x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.400 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.505 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 18.990 W/kg
**SAR(1 g) = 10 mW/g; SAR(10 g) = 5.14 mW/g**
Maximum value of SAR (measured) = 11.286 mW/g




0 dB = 11.290mW/g

**System Check_Head_2450MHz_130130**

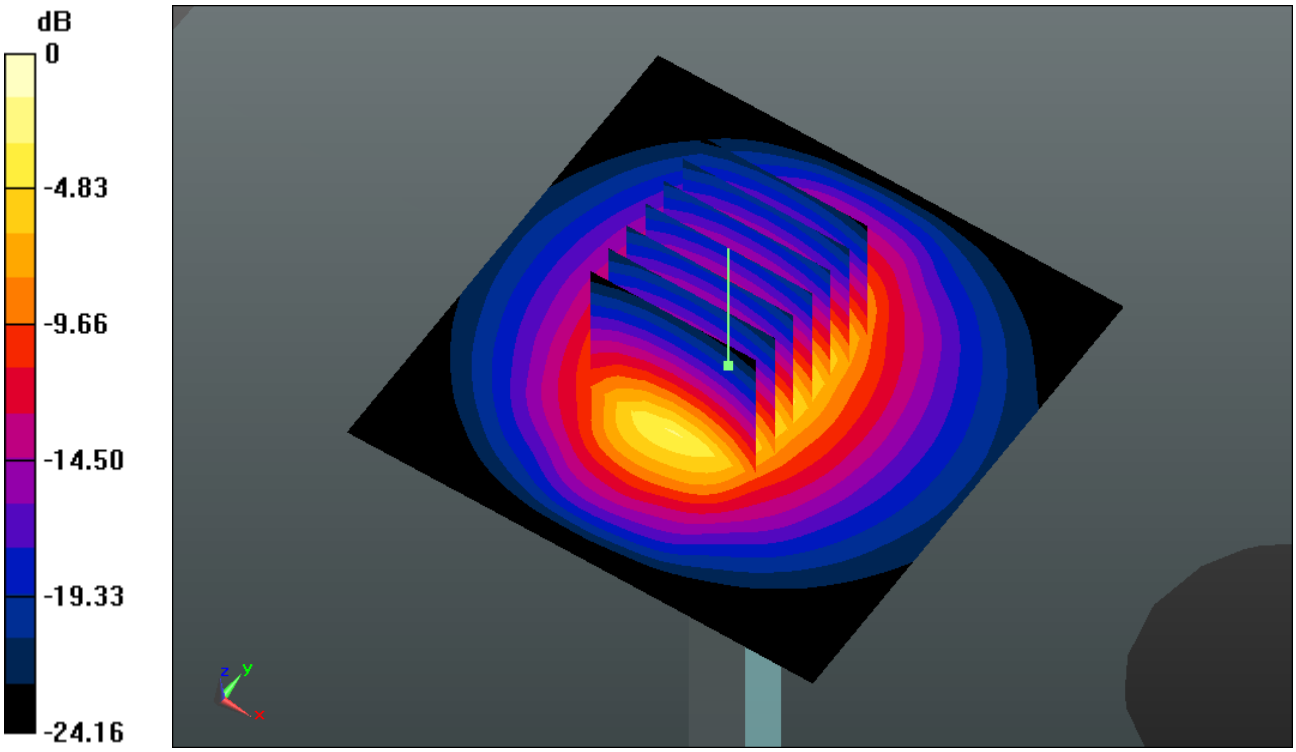
**DUT: D2450V2 - SN:736**

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2450 MHz; $\sigma$ = 1.823 mho/m; $\varepsilon_r$ = 37.953; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (71x71x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 21.342 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.910 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 28.442 W/kg
**SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.02 mW/g**
Maximum value of SAR (measured) = 20.836 mW/g




0 dB = 20.840mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2013-1-27

**System Check_Body_835MHz_130127**

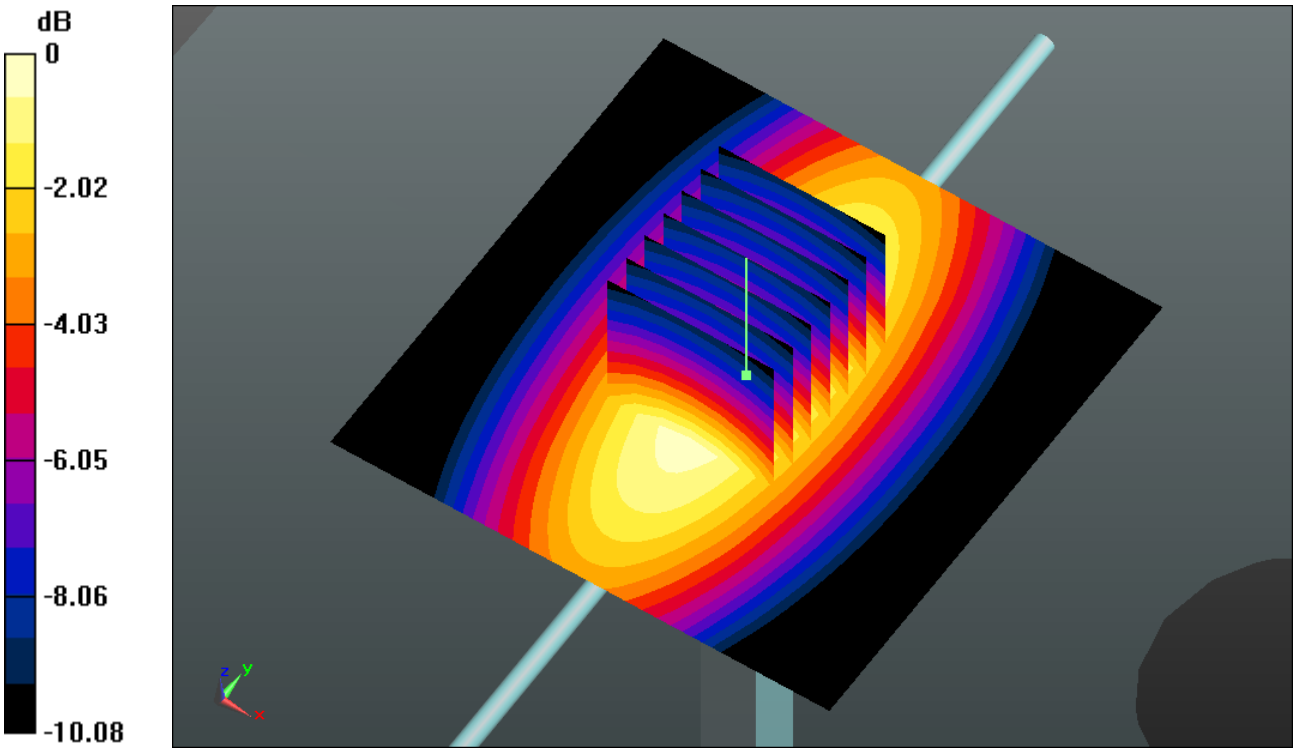
**DUT: D835V2 - SN:4d091**

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 835 MHz; $\sigma$ = 0.98 mho/m; $\varepsilon_r$ = 54.477; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.431 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.214 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 3.257 W/kg
**SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.49 mW/g**
Maximum value of SAR (measured) = 2.434 mW/g




0 dB = 2.430mW/g

**System Check_Body_1900MHz_130127**

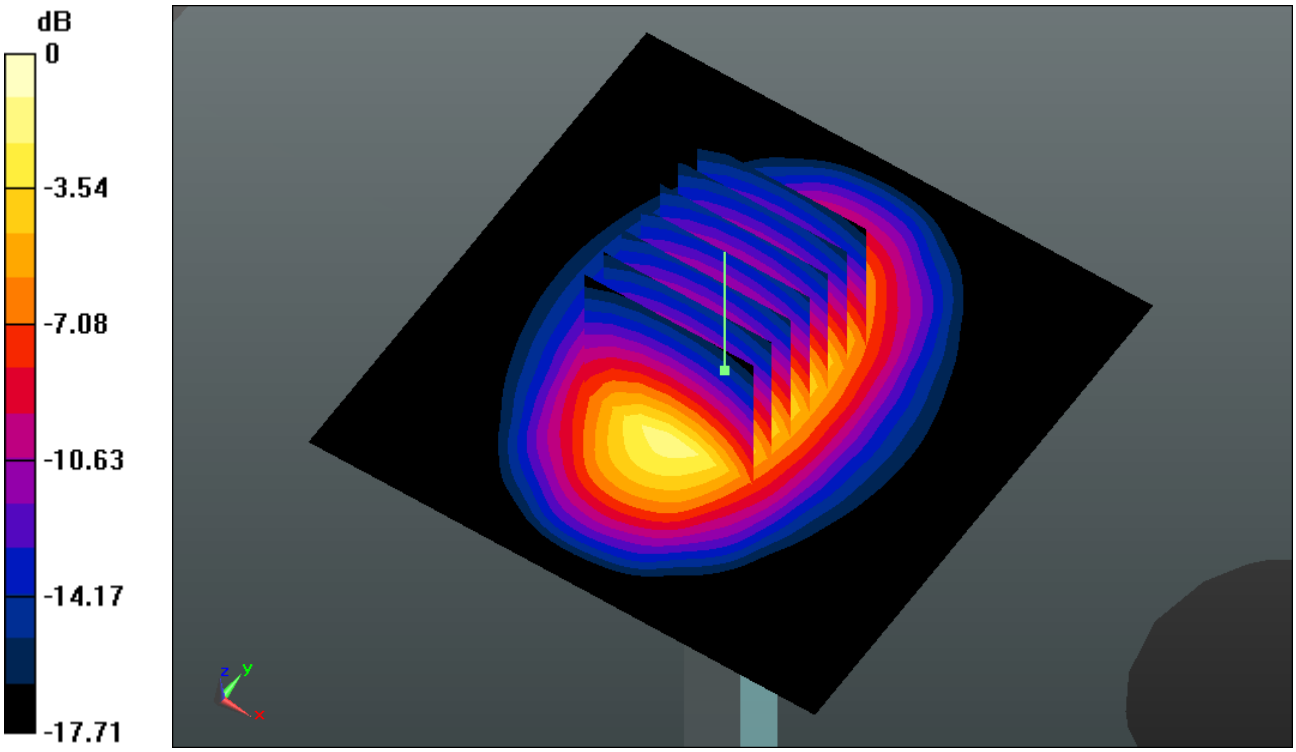
**DUT: D1900V2 - SN:5d118**

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1900 MHz; $\sigma$ = 1.551 mho/m; $\varepsilon_r$ = 53.24; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (91x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.667 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.043 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 18.319 W/kg
**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.19 mW/g**
Maximum value of SAR (measured) = 11.481 mW/g




0 dB = 11.480mW/g

**System Check_Body_2450MHz_130130**

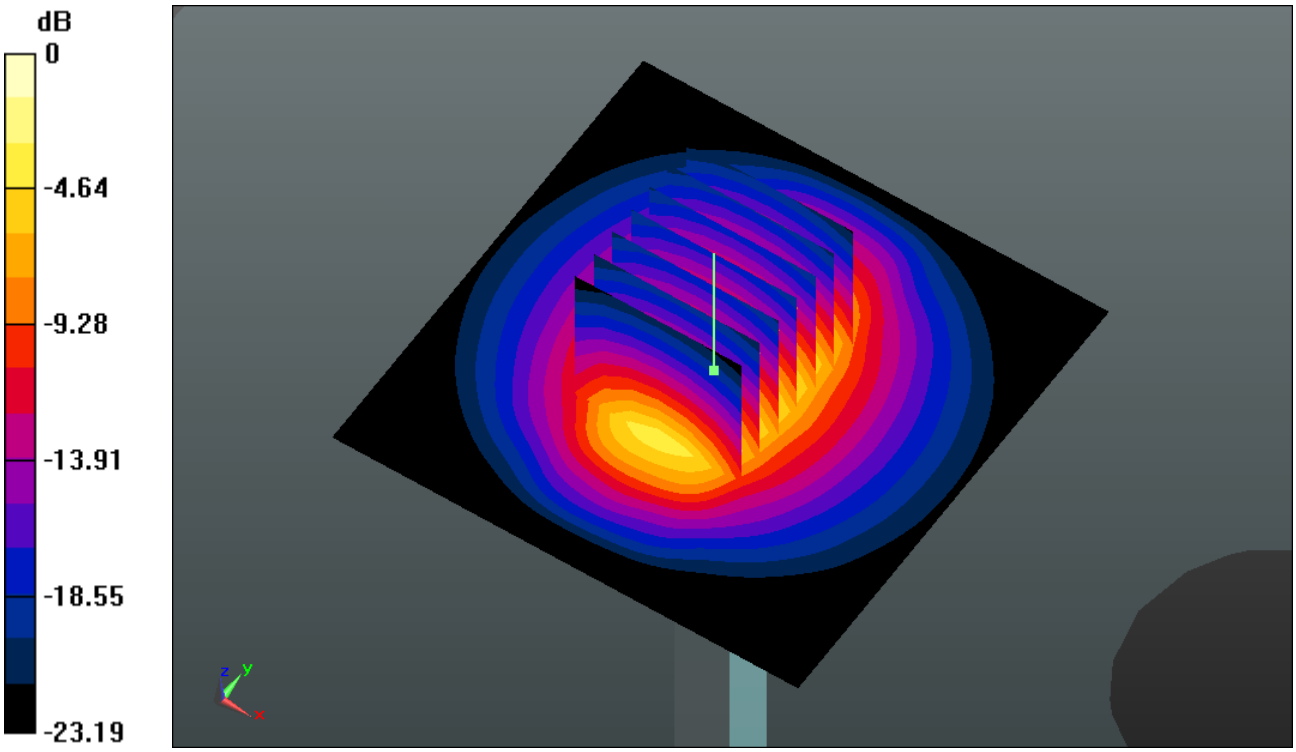
**DUT: D2450V2 - SN:736**

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2450 MHz; $\sigma$ = 2.002 mho/m; $\varepsilon_r$ = 53.464; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Pin=250mW/Area Scan (71x71x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 21.247 mW/g

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.397 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 28.916 W/kg
**SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.08 mW/g**
Maximum value of SAR (measured) = 20.788 mW/g




0 dB = 20.790mW/g

# Appendix B. Plots of SAR Measurement

The plots are shown as follows.

**#01 CDMA2000 BC0_RC3 SO55_Right Cheek_Ch384**

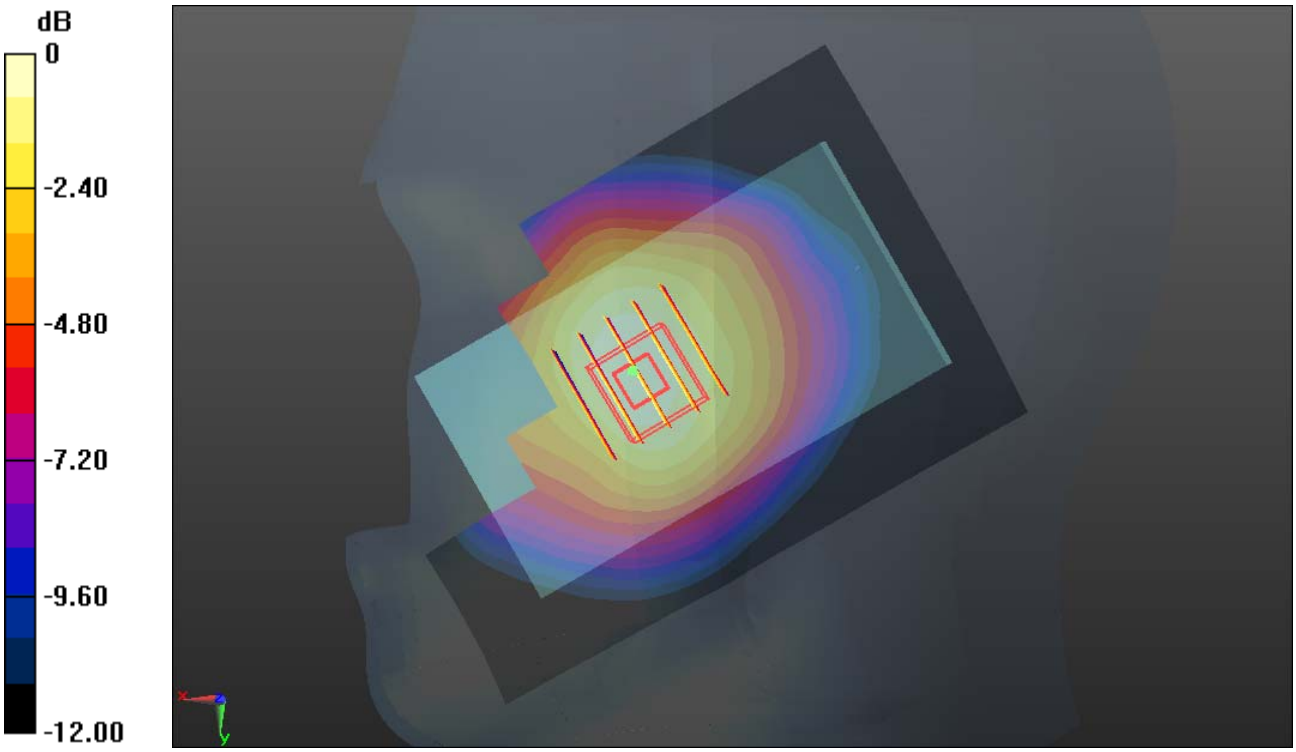
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 837 MHz; $\sigma$ = 0.906 mho/m; $\varepsilon_r$ = 42.197; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.626 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.667 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.690 W/kg
**SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.430 mW/g**
Maximum value of SAR (measured) = 0.642 mW/g




0 dB = 0.640mW/g

**#01 CDMA2000 BC0_RC3 SO55_Right Cheek_Ch384_2D**

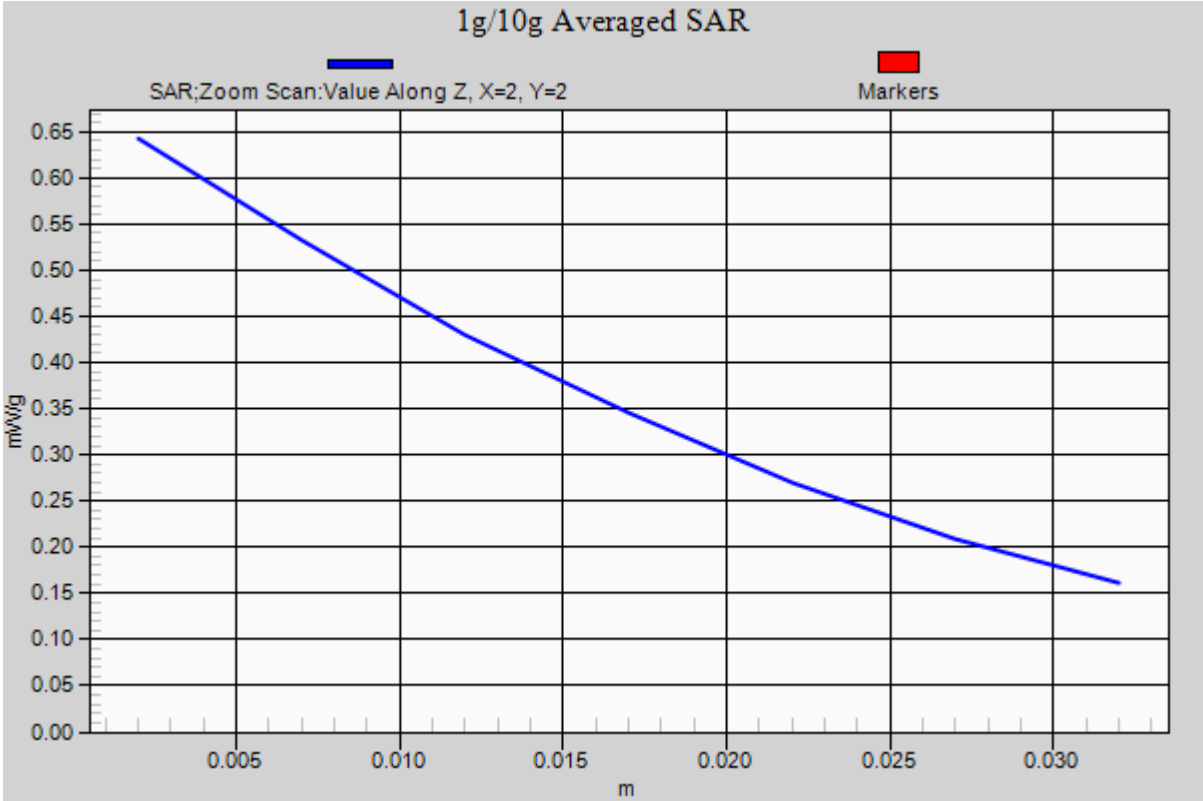
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 837 MHz; $\sigma$ = 0.906 mho/m; $\varepsilon_r$ = 42.197; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.626 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.667 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.690 W/kg
**SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.430 mW/g**
Maximum value of SAR (measured) = 0.642 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
mW/g
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.005
0.010
0.015
0.020
0.025
0.030
m

**#02 CDMA2000 BC0_RC3 SO55_Right Tilted_Ch384**

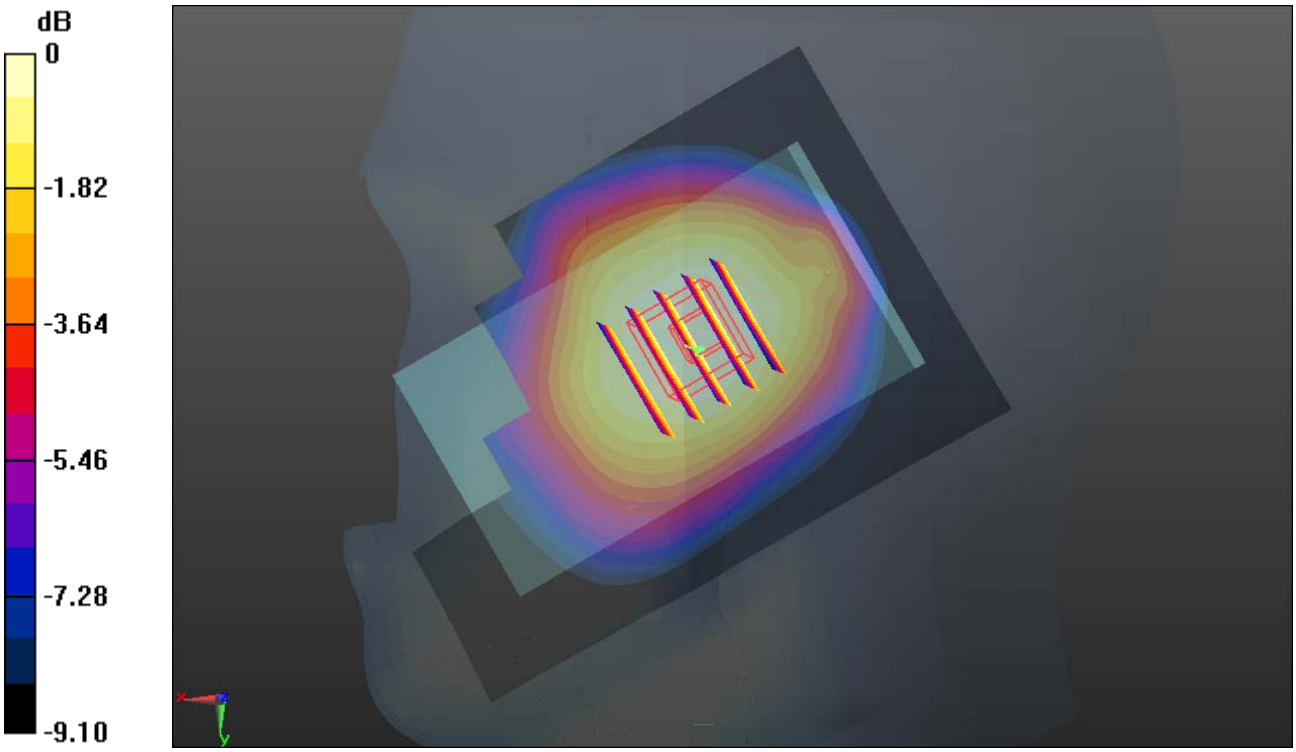
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 837 MHz; $\sigma$ = 0.906 mho/m; $\varepsilon_r$ = 42.197; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.415 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.039 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.423 W/kg
**SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.260 mW/g**
Maximum value of SAR (measured) = 0.389 mW/g




0 dB = 0.390mW/g

**#03 CDMA2000 BC0_RC3 SO55_Left Cheek_Ch384**

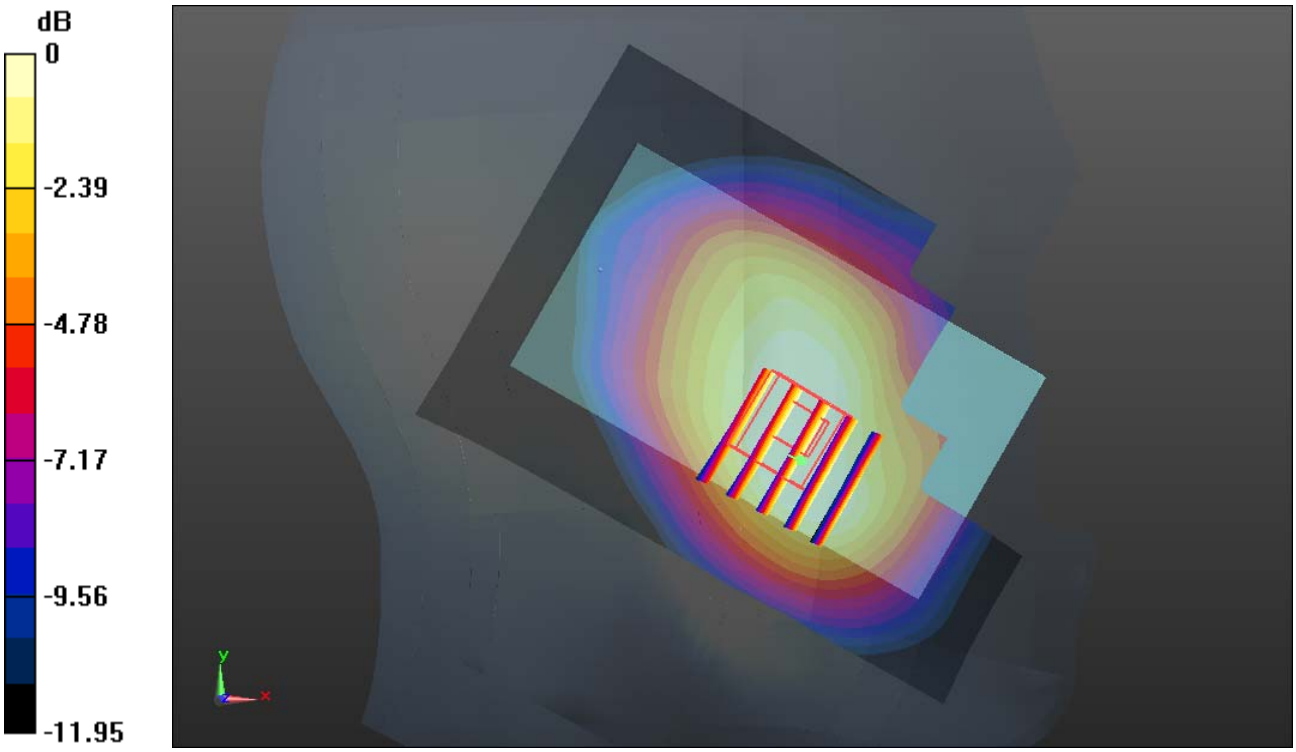
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 837 MHz; $\sigma$ = 0.906 mho/m; $\varepsilon_r$ = 42.197; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.693 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.357 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.681 W/kg
**SAR(1 g) = 0.503 mW/g; SAR(10 g) = 0.356 mW/g**
Maximum value of SAR (measured) = 0.591 mW/g




0 dB = 0.590mW/g

**#04 CDMA2000 BC0_RC3 SO55_Left Tilted_Ch384**

**DUT: 311101**

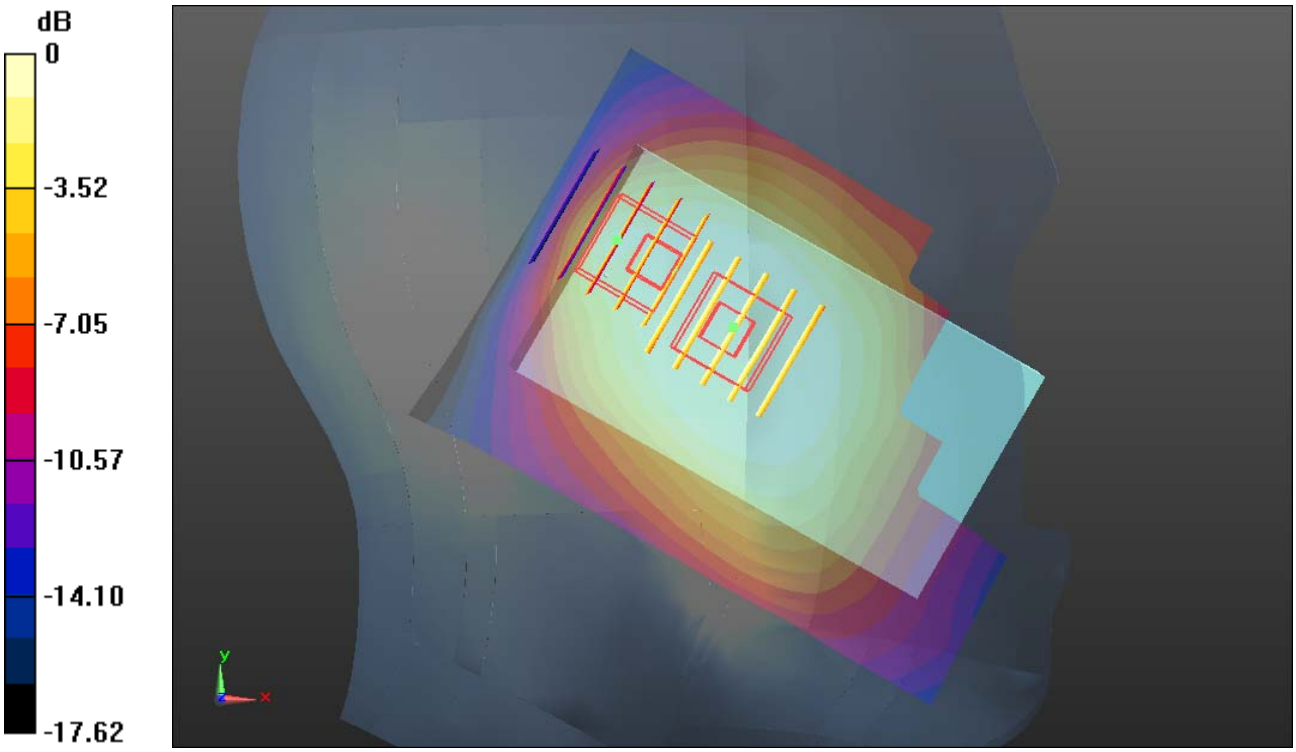
Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: HSL_835_130123 Medium parameters used: f = 837 MHz; $\sigma$ = 0.906 mho/m; $\varepsilon_r$ = 42.197; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.74, 8.74, 8.74); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.396 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.127 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.440 W/kg
**SAR(1 g) = 0.352 mW/g; SAR(10 g) = 0.264 mW/g**
Maximum value of SAR (measured) = 0.405 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.127 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.328 W/kg
**SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.145 mW/g**
Maximum value of SAR (measured) = 0.305 mW/g




0 dB = 0.310mW/g

**#05 CDMA2000 BC1_RC3 SO55_Right Cheek_Ch25**

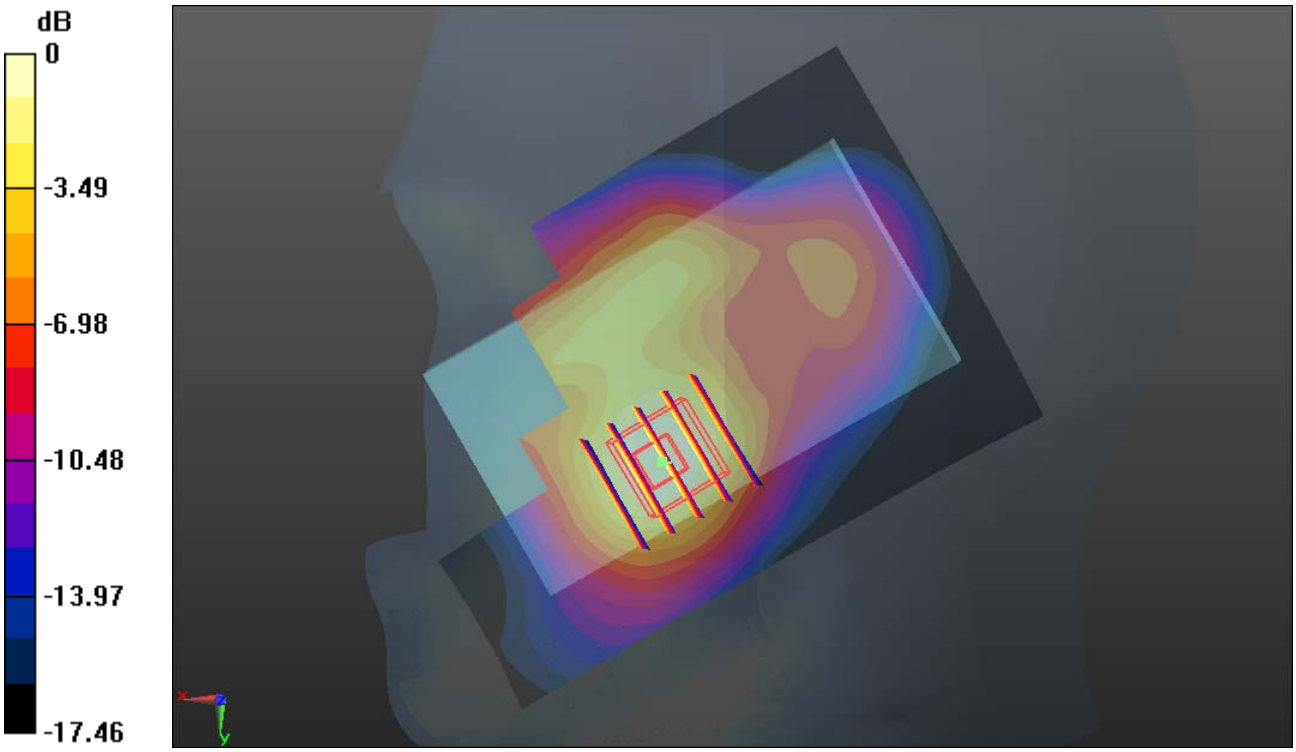
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.374 mho/m; $\varepsilon_r$ = 39.094; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.659 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.300 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.858 W/kg
**SAR(1 g) = 1.260 mW/g; SAR(10 g) = 0.744 mW/g**
Maximum value of SAR (measured) = 1.595 mW/g




0 dB = 1.590mW/g

**#06 CDMA2000 BC1_RC3 SO55_Right Tilted_Ch25**

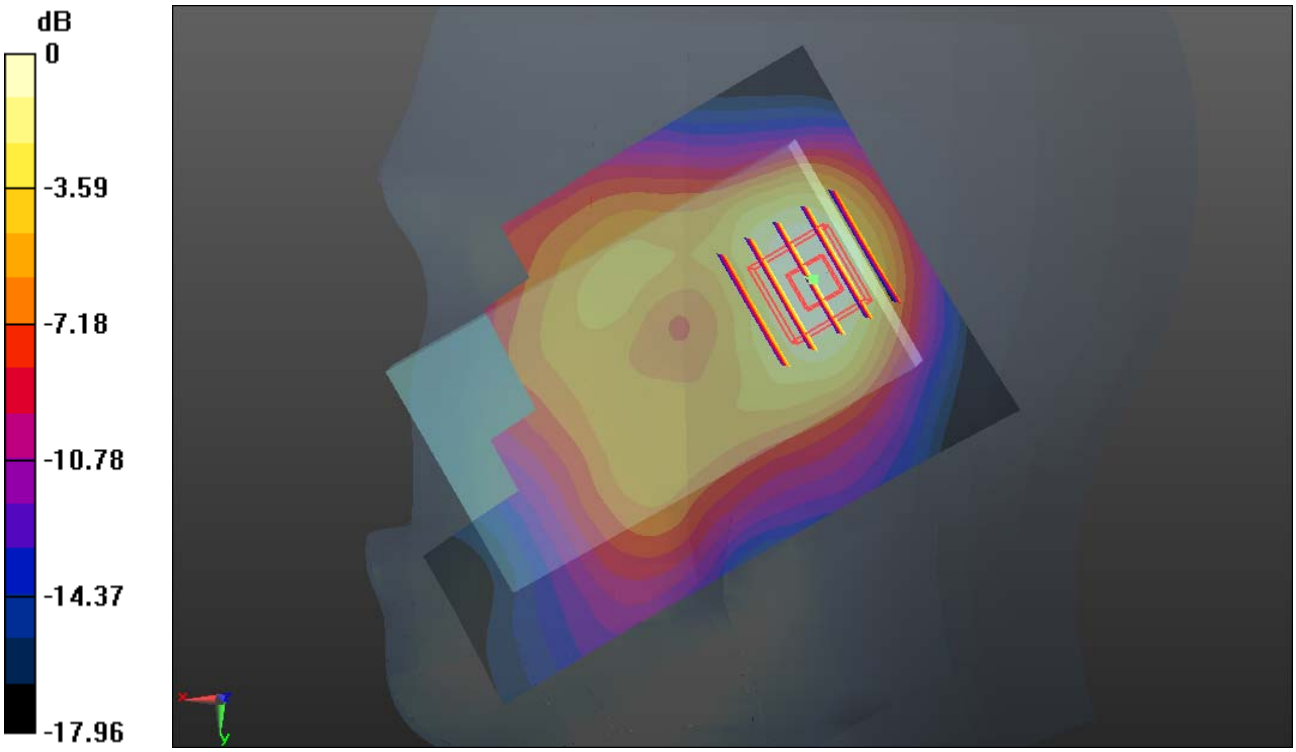
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.374 mho/m; $\varepsilon_r$ = 39.094; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.749 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.774 V/m; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 0.864 W/kg
**SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.322 mW/g**
Maximum value of SAR (measured) = 0.721 mW/g




0 dB = 0.720mW/g

**#07 CDMA2000 BC1_RC3 SO55_Left Cheek_Ch25**

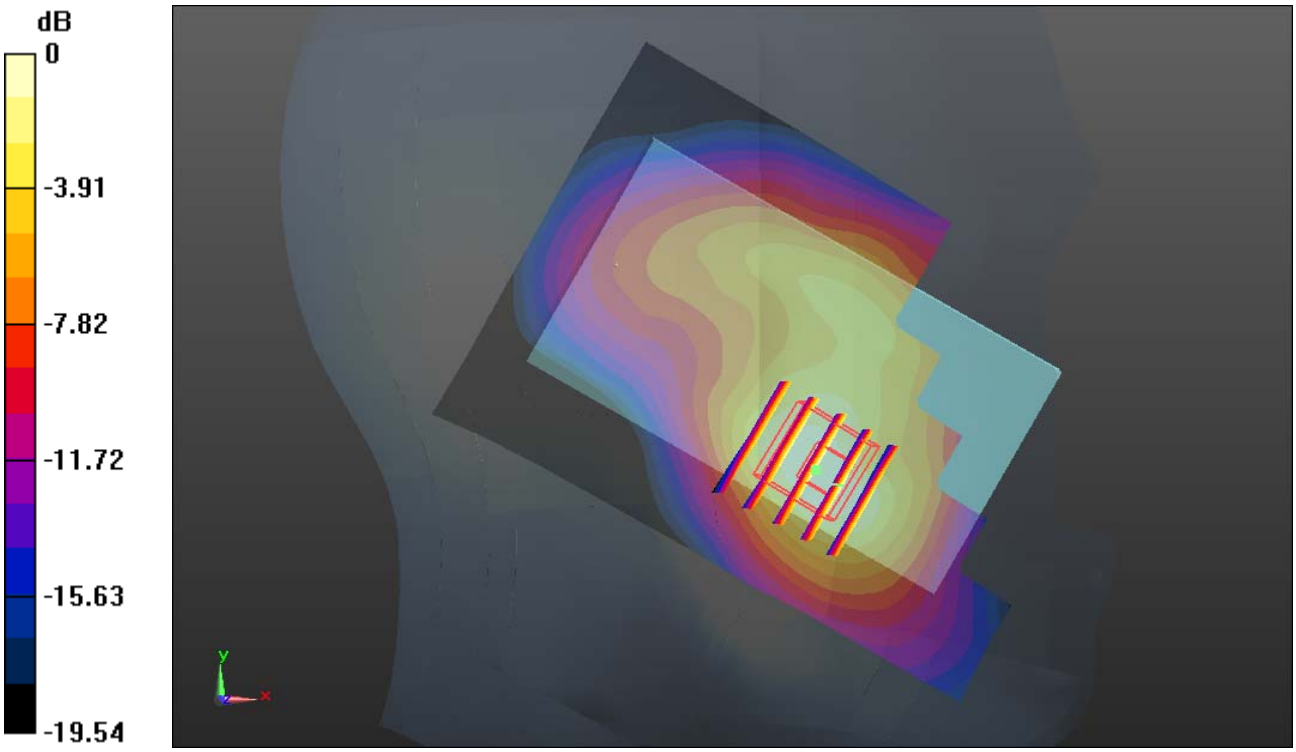
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.374 mho/m; $\varepsilon_r$ = 39.094; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.823 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.450 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.277 W/kg
**SAR(1 g) = 1.360 mW/g; SAR(10 g) = 0.760 mW/g**
Maximum value of SAR (measured) = 1.810 mW/g




0 dB = 1.810mW/g

**#07 CDMA2000 BC1_RC3 SO55_Left Cheek_Ch25_2D**

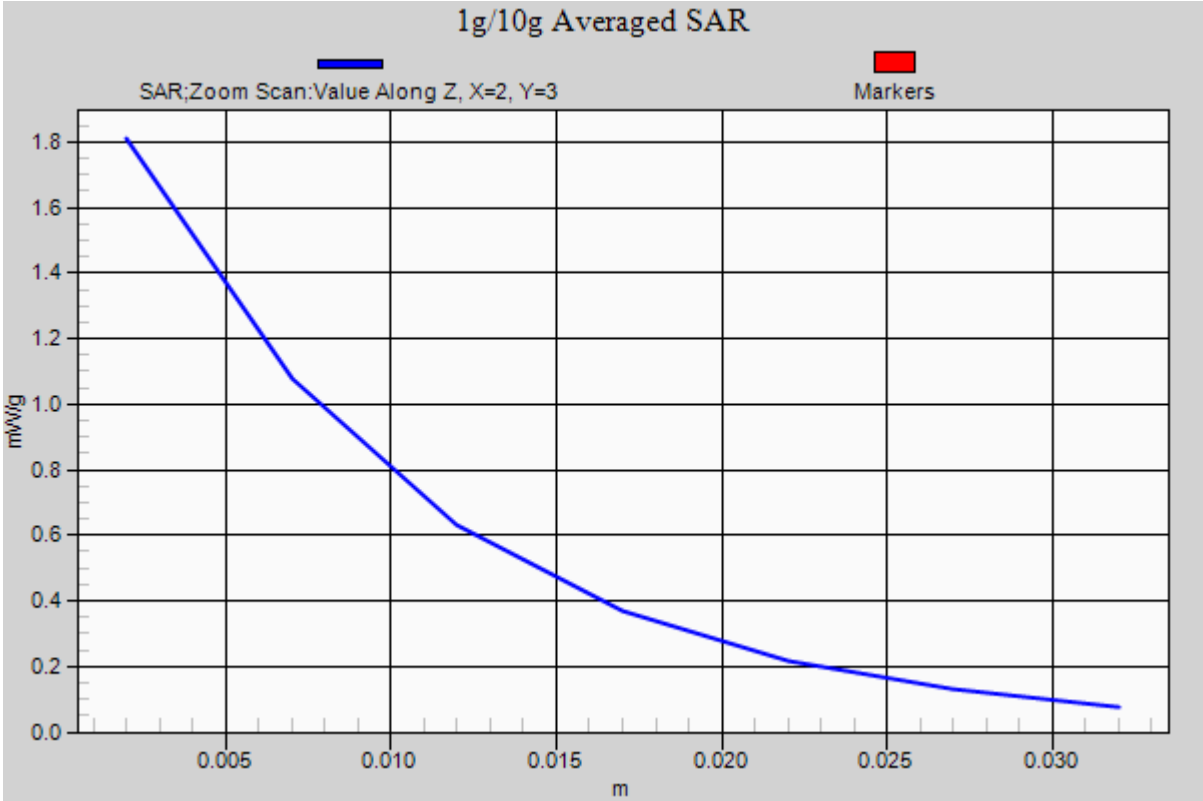
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.374 mho/m; $\varepsilon_r$ = 39.094; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.823 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.450 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.277 W/kg
**SAR(1 g) = 1.360 mW/g; SAR(10 g) = 0.760 mW/g**
Maximum value of SAR (measured) = 1.810 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=3
Markers
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.005
0.010
0.015
0.020
0.025
0.030
m

**#08 CDMA2000 BC1_RC3 SO55_Left Tilted_Ch25**

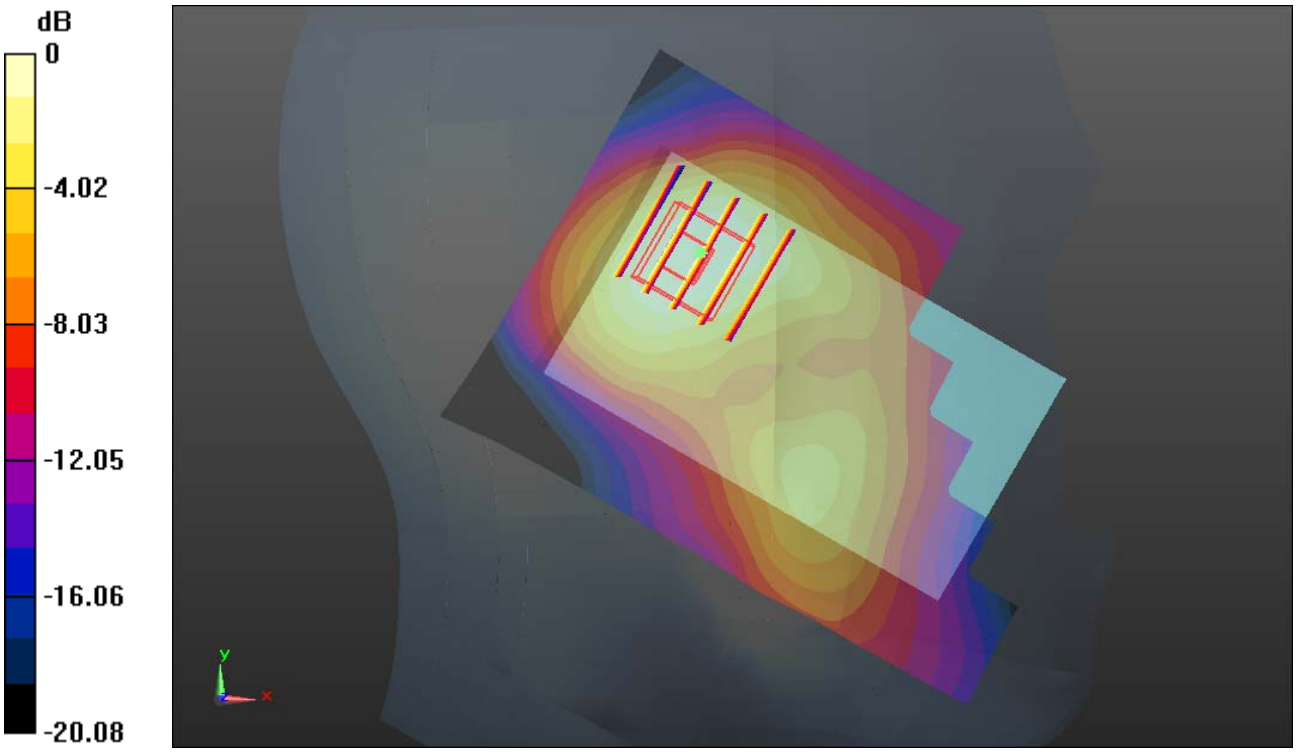
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.374 mho/m; $\varepsilon_r$ = 39.094; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.781 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.760 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.891 W/kg
**SAR(1 g) = 0.573 mW/g; SAR(10 g) = 0.342 mW/g**
Maximum value of SAR (measured) = 0.720 mW/g




0 dB = 0.720mW/g

**#09 CDMA2000 BC1_RC3 SO55_Right Cheek_Ch600**

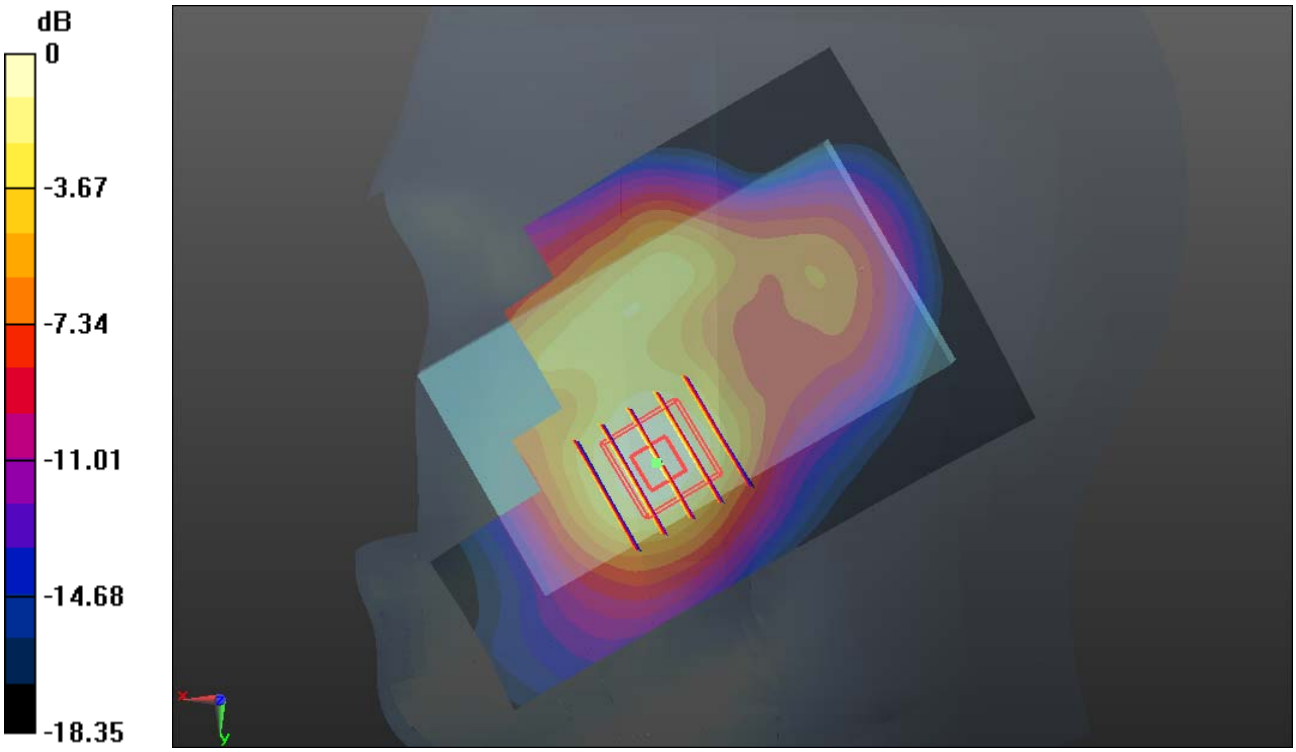
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.403 mho/m; $\varepsilon_r$ = 39.001; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.667 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.080 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.865 W/kg
**SAR(1 g) = 1.240 mW/g; SAR(10 g) = 0.730 mW/g**
Maximum value of SAR (measured) = 1.587 mW/g




0 dB = 1.590mW/g

**#10 CDMA2000 BC1_RC3 SO55_Right Cheek_Ch1175**

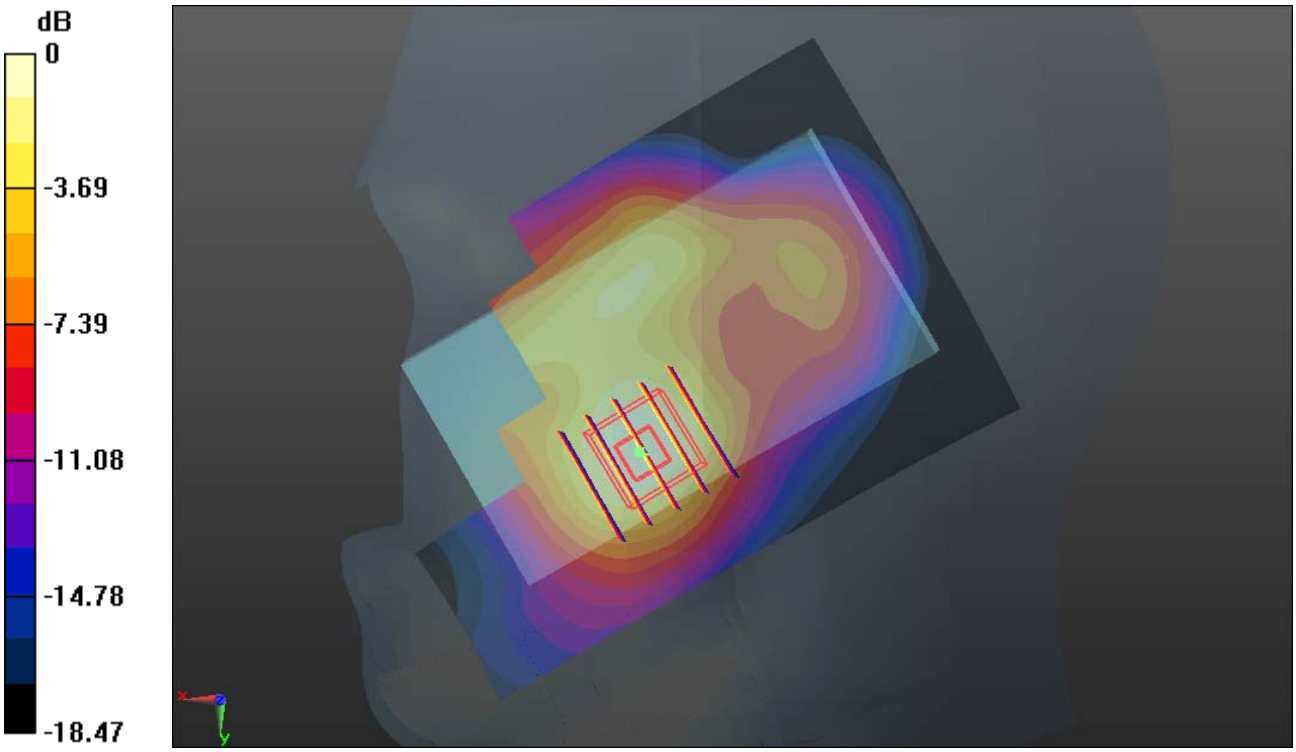
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.433 mho/m; $\varepsilon_r$ = 38.874; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.523 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.607 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.721 W/kg
**SAR(1 g) = 1.130 mW/g; SAR(10 g) = 0.653 mW/g**
Maximum value of SAR (measured) = 1.455 mW/g




0 dB = 1.450mW/g

**#11 CDMA2000 BC1_RC3 SO55_Left Cheek_Ch600**

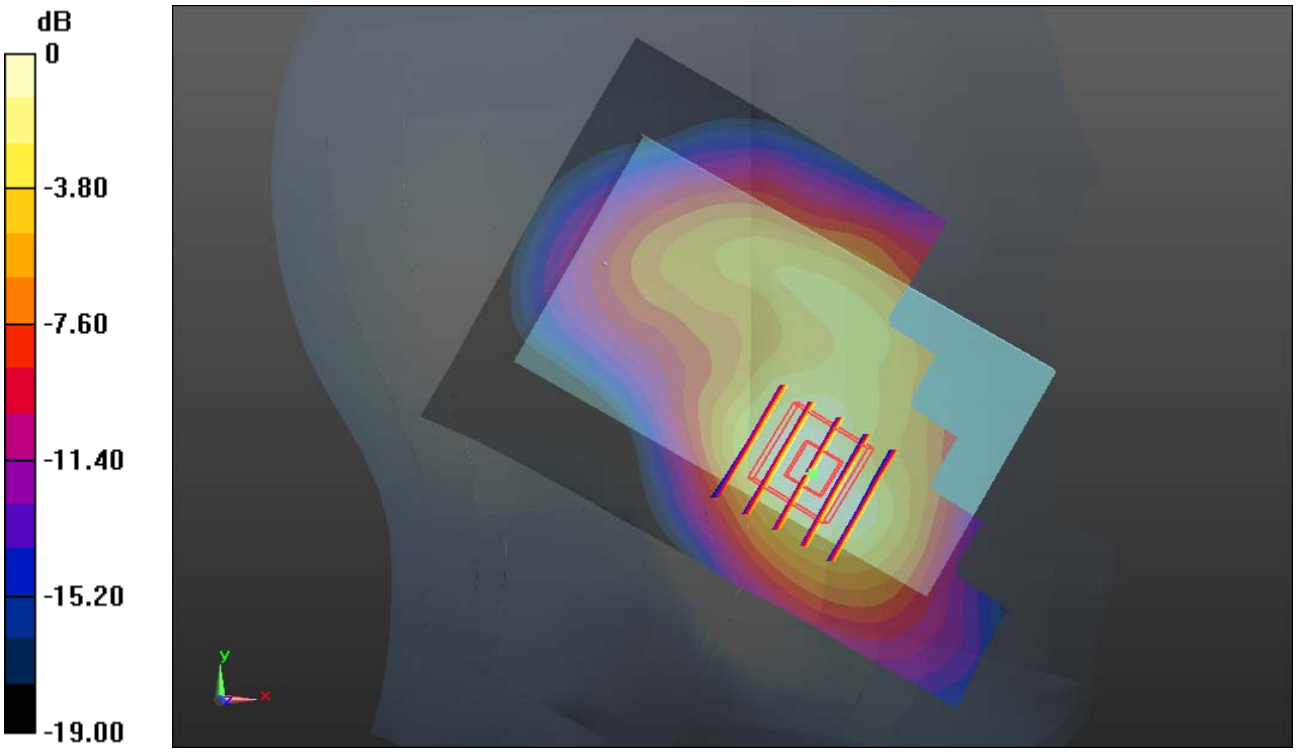
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.403 mho/m; $\varepsilon_r$ = 39.001; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.666 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.474 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.915 W/kg
**SAR(1 g) = 1.180 mW/g; SAR(10 g) = 0.672 mW/g**
Maximum value of SAR (measured) = 1.574 mW/g




0 dB = 1.570mW/g

**#12 CDMA2000 BC1_RC3 SO55_Left Cheek_Ch1175**

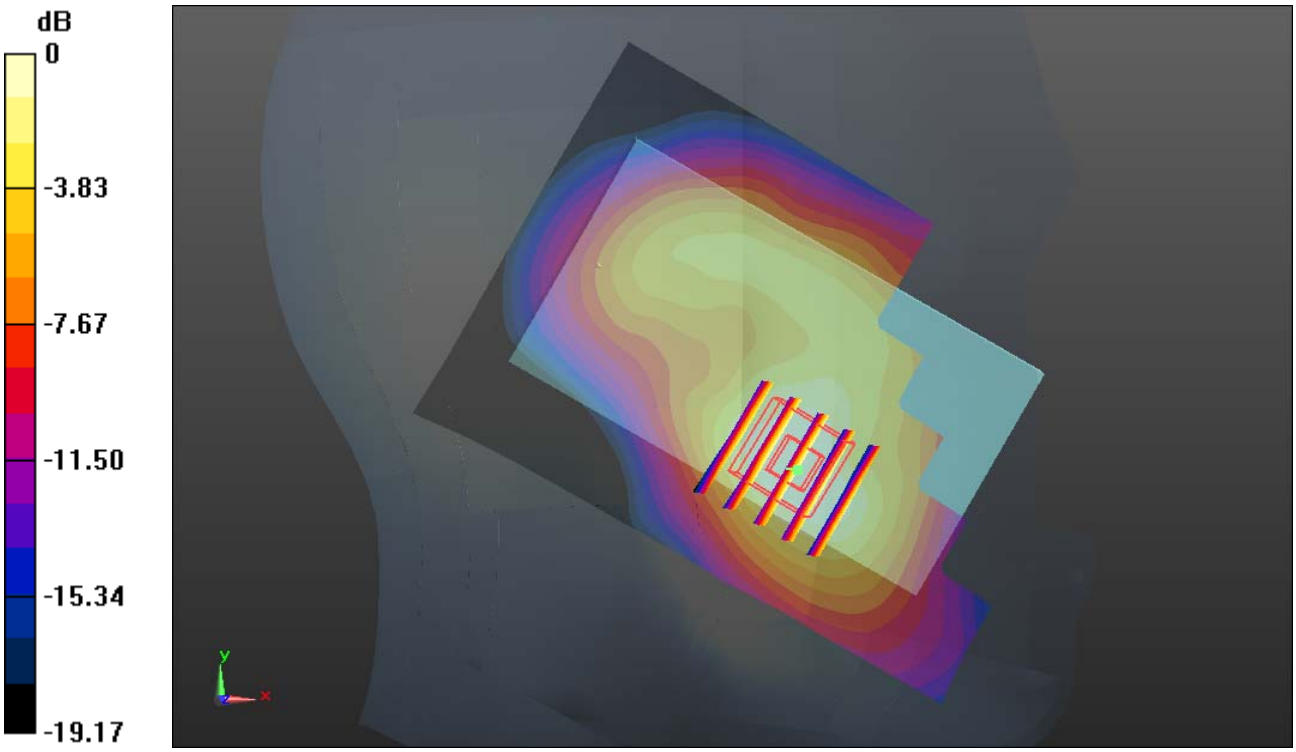
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.433 mho/m; $\varepsilon_r$ = 38.874; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.395 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.946 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.482 W/kg
**SAR(1 g) = 0.915 mW/g; SAR(10 g) = 0.528 mW/g**
Maximum value of SAR (measured) = 1.218 mW/g




0 dB = 1.220mW/g

**#13 CDMA2000 BC14_RC3 SO55_Right Cheek_Ch1275**

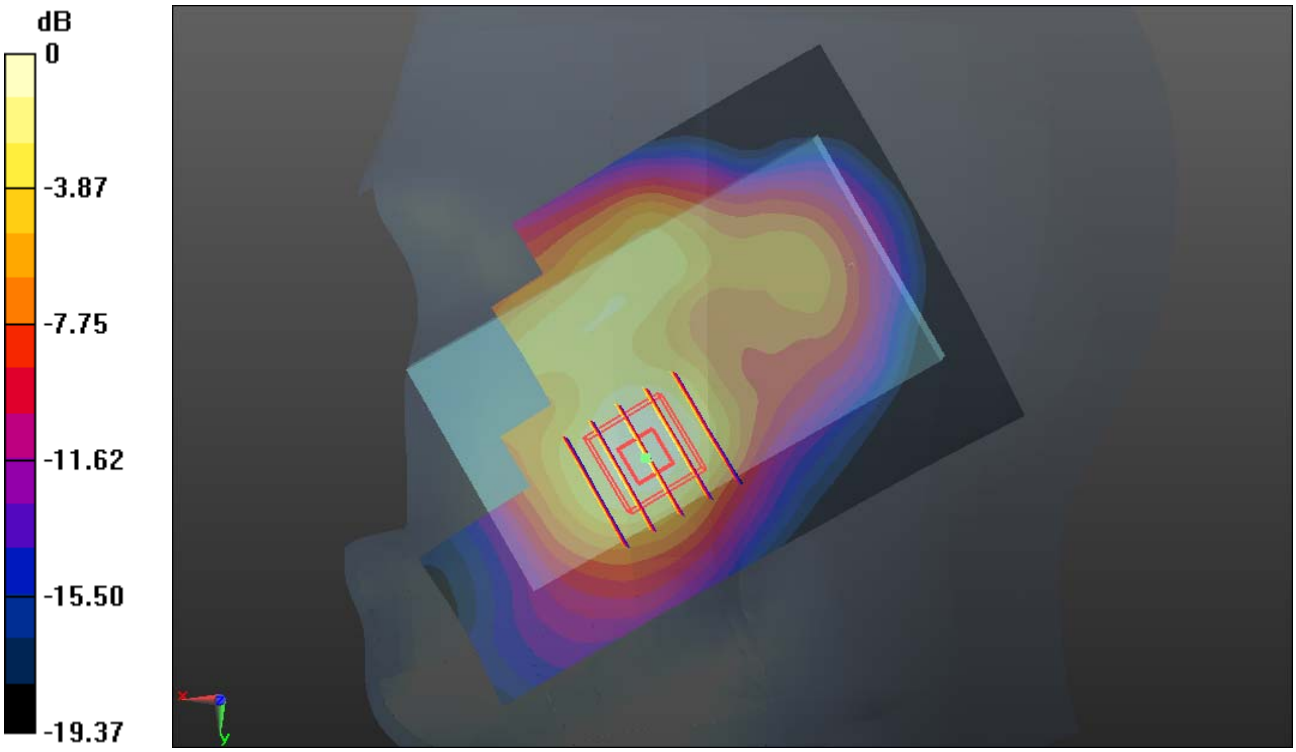
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.408 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.800 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.655 W/kg
**SAR(1 g) = 1.080 mW/g; SAR(10 g) = 0.625 mW/g**
Maximum value of SAR (measured) = 1.399 mW/g




0 dB = 1.400mW/g

**#14 CDMA2000 BC14_RC3 SO55_Right Tilted_Ch1275**

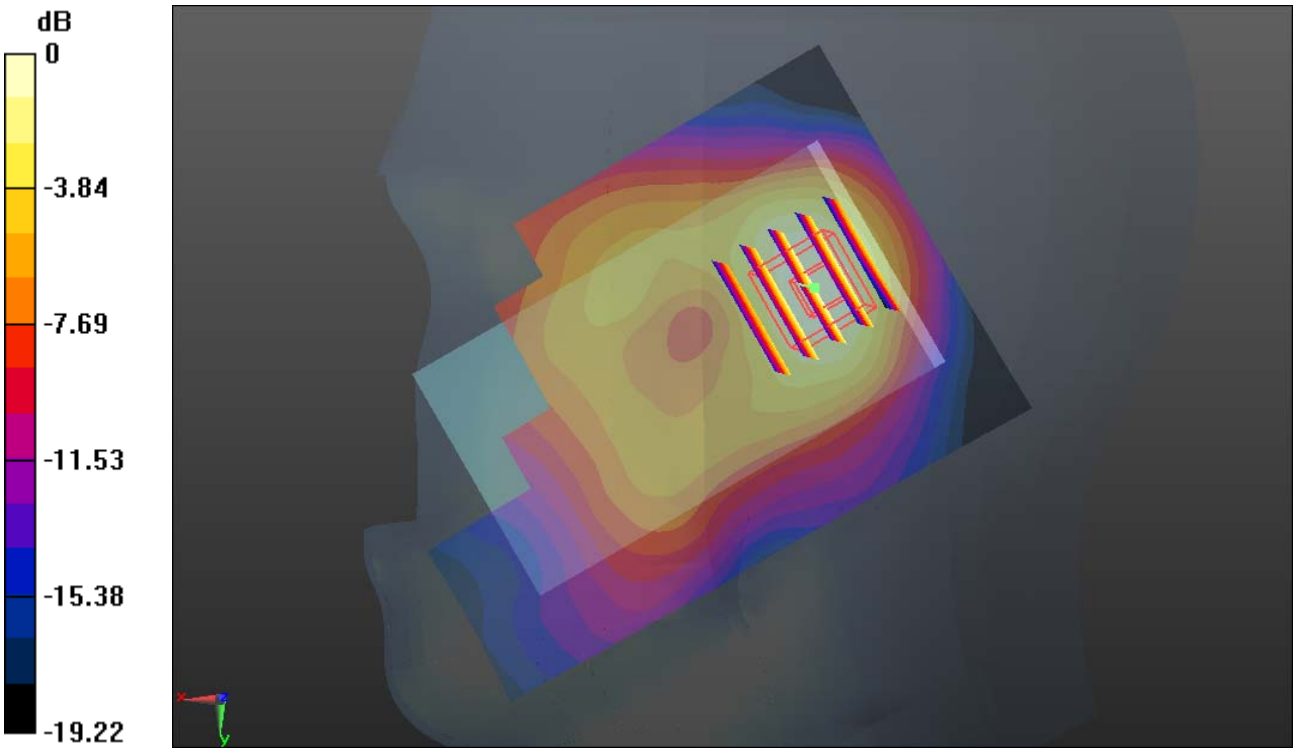
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.650 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.802 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.751 W/kg
**SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.267 mW/g**
Maximum value of SAR (measured) = 0.619 mW/g




0 dB = 0.620mW/g

**#15 CDMA2000 BC14_RC3 SO55_Left Cheek_Ch1275**

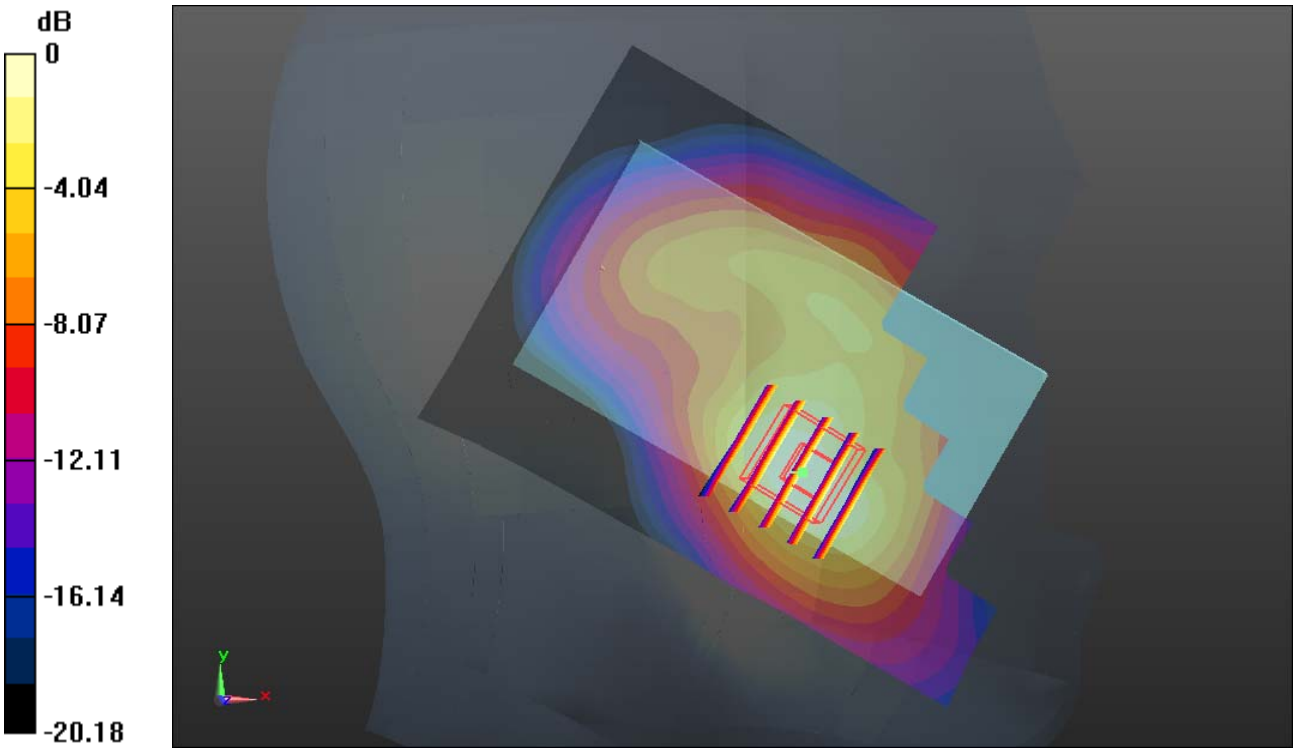
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.821 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.925 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 2.275 W/kg
**SAR(1 g) = 1.340 mW/g; SAR(10 g) = 0.738 mW/g**
Maximum value of SAR (measured) = 1.786 mW/g




0 dB = 1.790mW/g

**#15 CDMA2000 BC14_RC3 SO55_Left Cheek_Ch1275_2D**

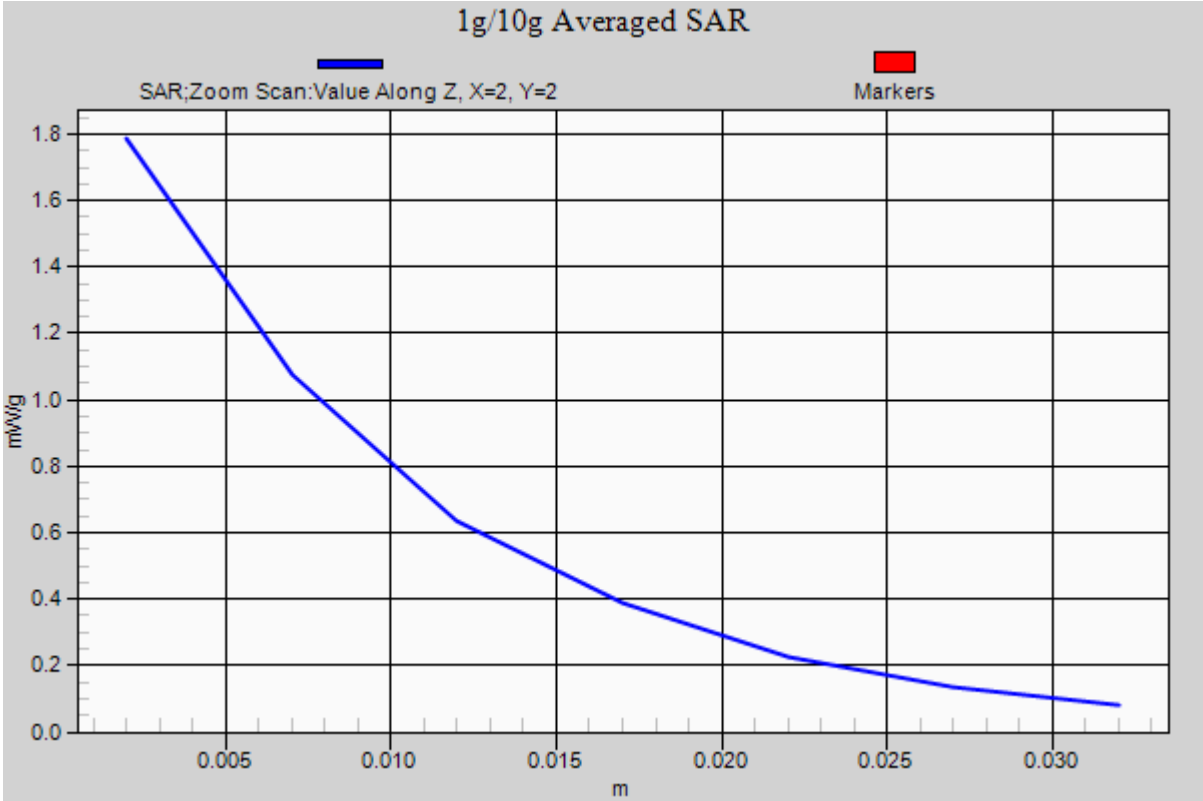
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.821 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.925 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 2.275 W/kg
**SAR(1 g) = 1.340 mW/g; SAR(10 g) = 0.738 mW/g**
Maximum value of SAR (measured) = 1.786 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.005
0.010
0.015
0.020
0.025
0.030
m

**#16 CDMA2000 BC14_RC3 SO55_Left Cheek_Ch1275_Repeat SAR**

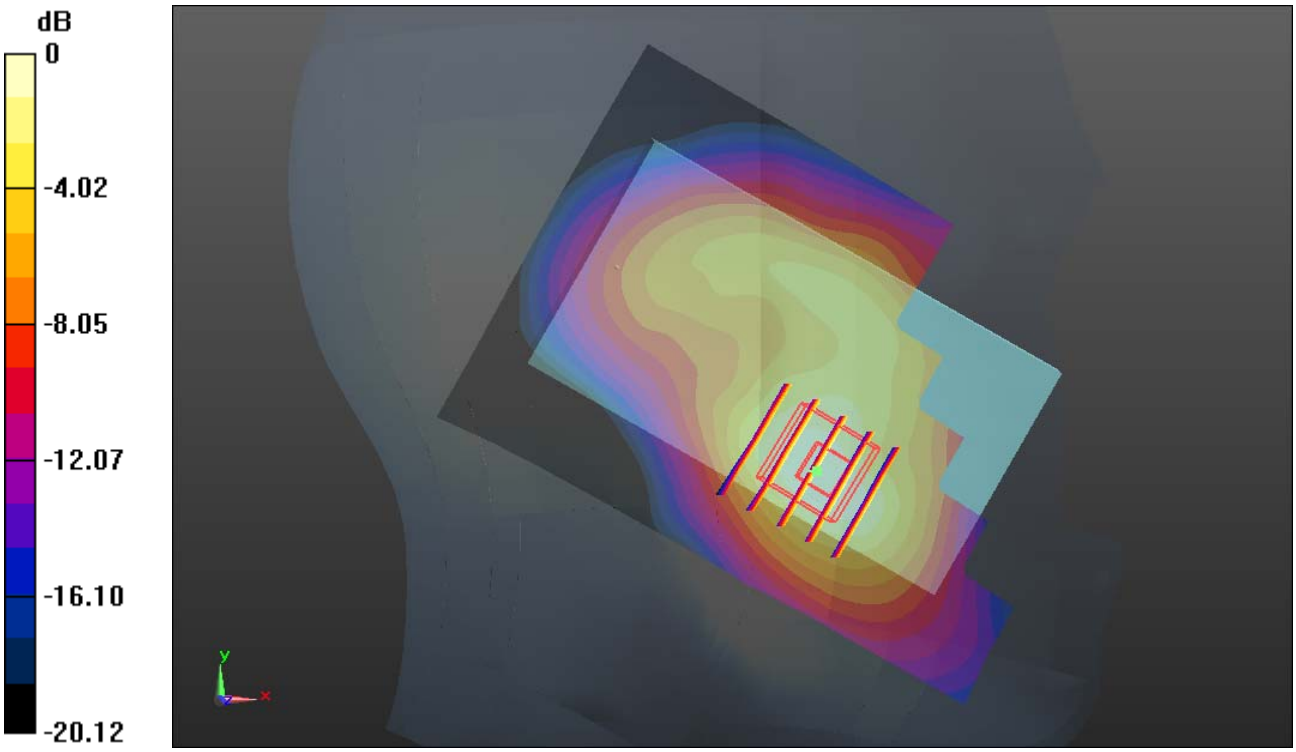
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.766 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.922 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.176 W/kg
**SAR(1 g) = 1.300 mW/g; SAR(10 g) = 0.730 mW/g**
Maximum value of SAR (measured) = 1.726 mW/g




0 dB = 1.730mW/g

**#17 CDMA2000 BC14_RC3 SO55_Left Tilted_Ch1275**

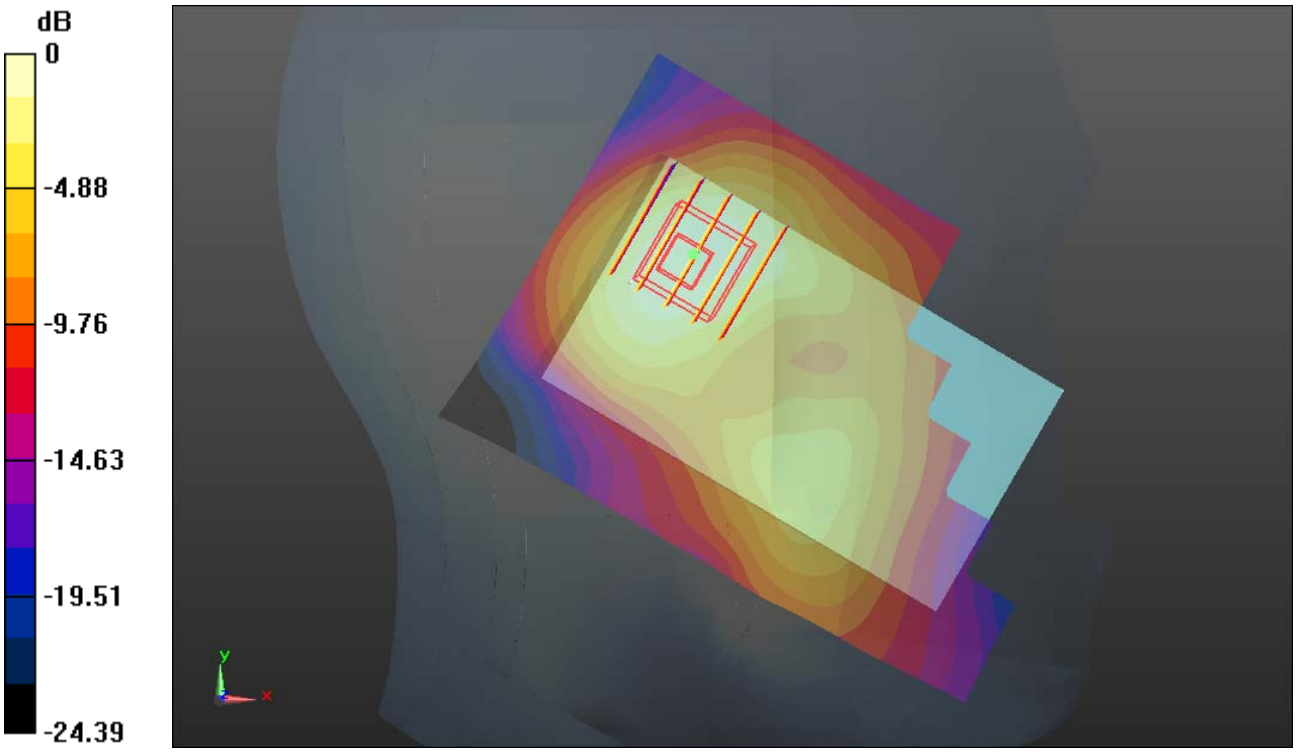
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900_130123 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.438 mho/m; $\varepsilon_r$ = 38.855; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4 ℃; Liquid Temperature：21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.84, 7.84, 7.84); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.724 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.051 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.842 W/kg
**SAR(1 g) = 0.524 mW/g; SAR(10 g) = 0.302 mW/g**
Maximum value of SAR (measured) = 0.680 mW/g




0 dB = 0.680mW/g

**#18 802.11b_1M_Right Cheek_Ch11**

**DUT: 311101**

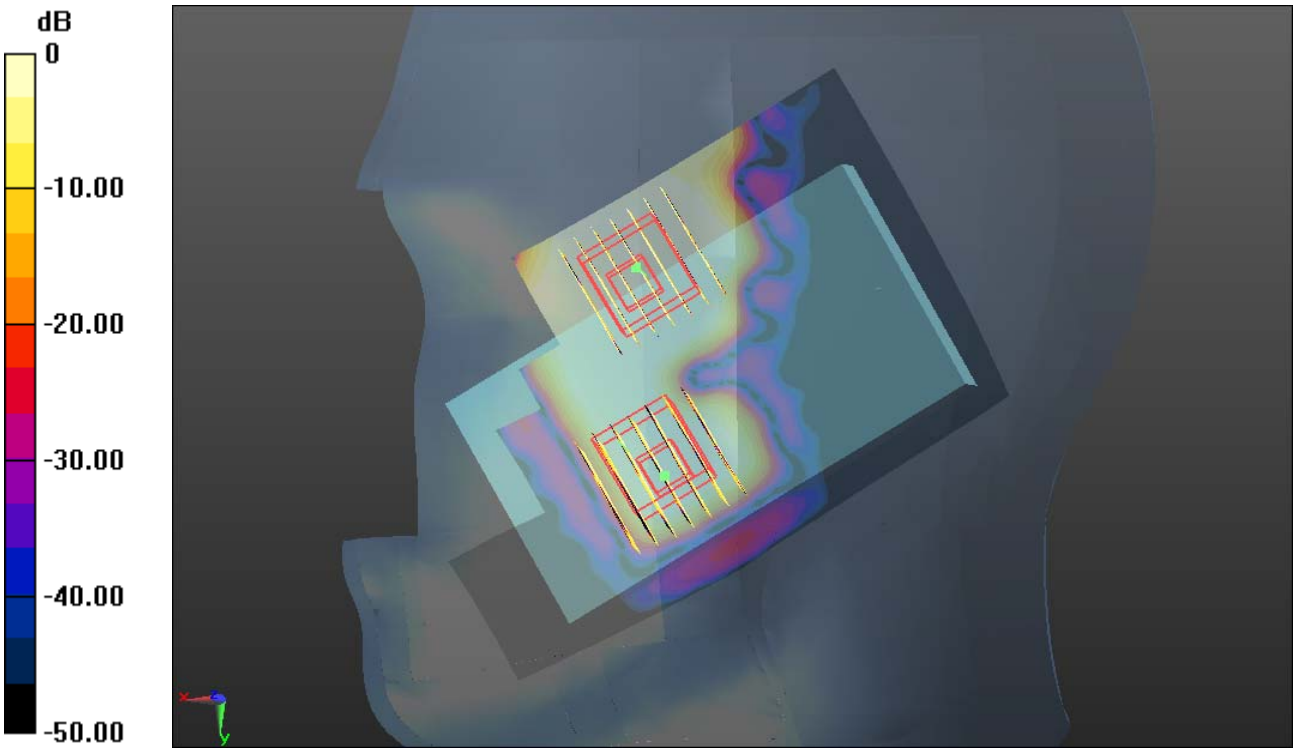
Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 1.838 mho/m; $\varepsilon_r$ = 37.887; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.038 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.049 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.056 W/kg
**SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.012 mW/g**
Maximum value of SAR (measured) = 0.043 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.049 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.020 W/kg
**SAR(1 g) = 0.00953 mW/g; SAR(10 g) = 0.00406 mW/g**
Maximum value of SAR (measured) = 0.014 mW/g




0 dB = 0.010mW/g

**#19 802.11b_1M_Right Tilted_Ch11**

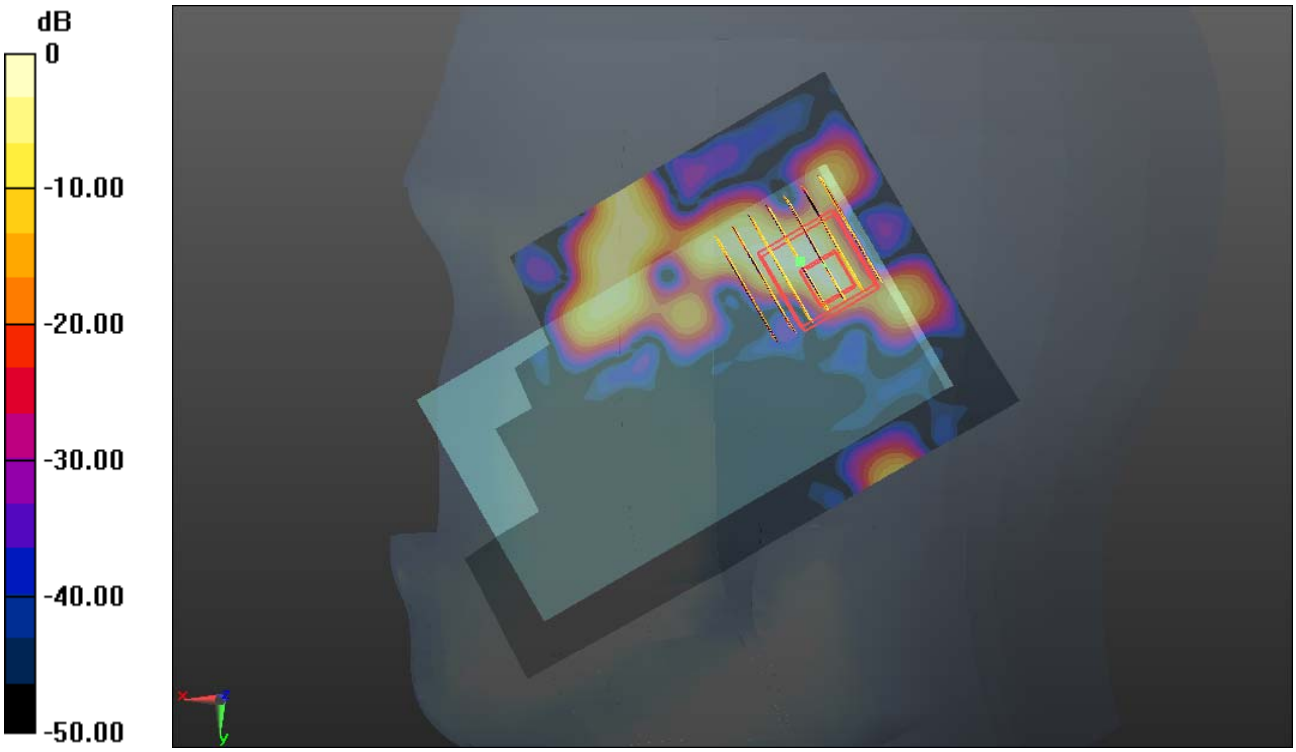
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 1.838 mho/m; $\varepsilon_r$ = 37.887; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.018 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.952 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.027 W/kg
**SAR(1 g) = 0.00885 mW/g; SAR(10 g) = 0.00295 mW/g**
Maximum value of SAR (measured) = 0.015 mW/g




0 dB = 0.020mW/g

**#20 802.11b_1M_Left Cheek_Ch11**

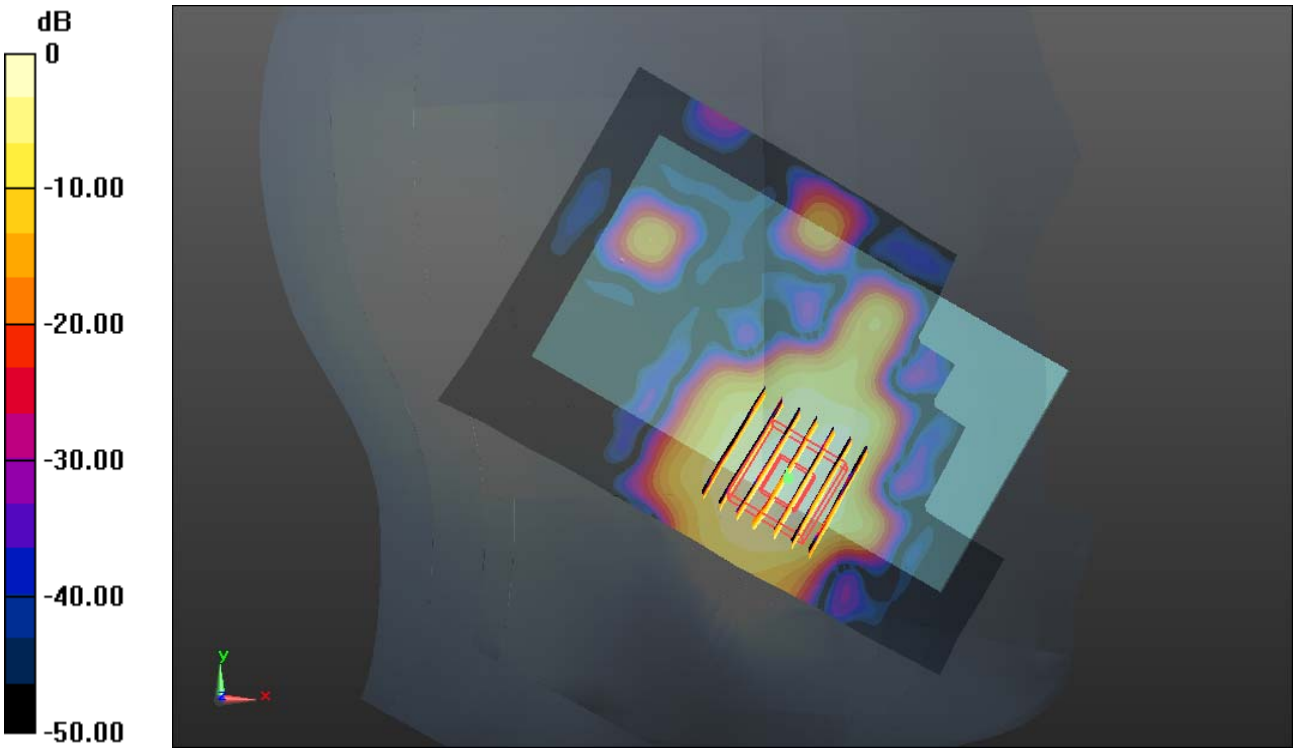
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 1.838 mho/m; $\varepsilon_r$ = 37.887; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.077 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.224 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.109 W/kg
**SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.020 mW/g**
Maximum value of SAR (measured) = 0.077 mW/g




0 dB = 0.080mW/g

**#20 802.11b_1M_Left Cheek_Ch11_2D**

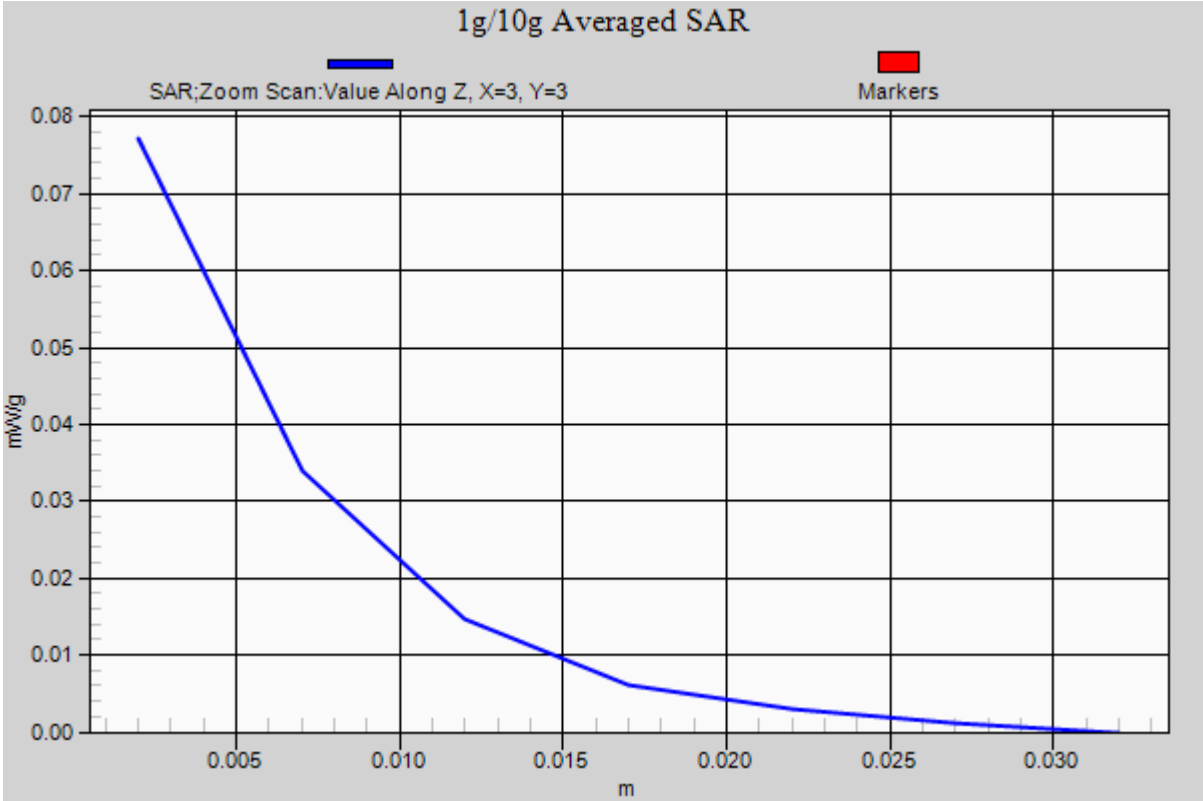
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 1.838 mho/m; $\varepsilon_r$ = 37.887; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.077 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.224 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.109 W/kg
**SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.020 mW/g**
Maximum value of SAR (measured) = 0.077 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
mW/g
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.005
0.010
0.015
0.020
0.025
0.030
m

**#21 802.11b_1M_Left Tilted_Ch11**

**DUT: 311101**

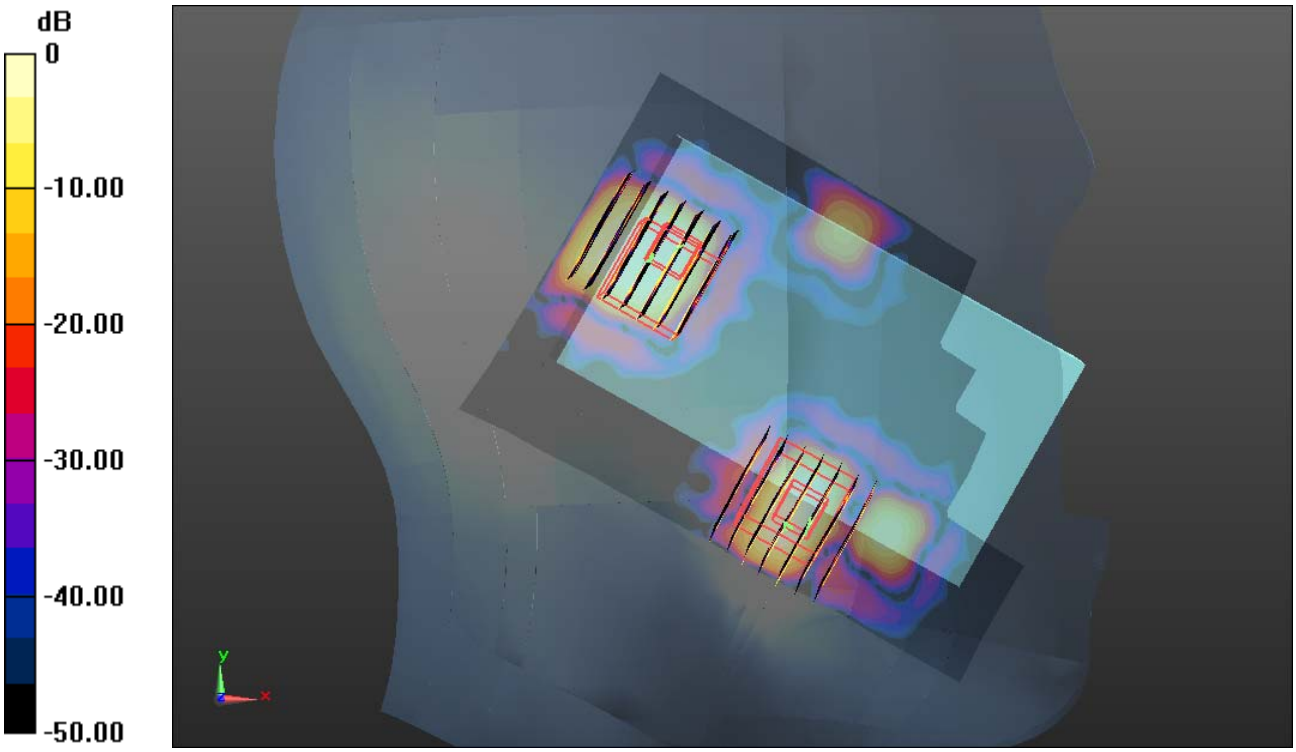
Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 1.838 mho/m; $\varepsilon_r$ = 37.887; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：21.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.87, 6.87, 6.87); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.00839 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.896 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.017 W/kg
**SAR(1 g) = 0.00326 mW/g; SAR(10 g) = 0.00115 mW/g**
Maximum value of SAR (measured) = 0.0067 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.896 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.018 W/kg
**SAR(1 g) = 0.00213 mW/g; SAR(10 g) = 0.000582 mW/g**
Maximum value of SAR (measured) = 0.00822 mW/g




0 dB = 0.0082mW/g

**#22 CDMA2000 BC0_RTAP 153.6_Front_1cm_Ch384**

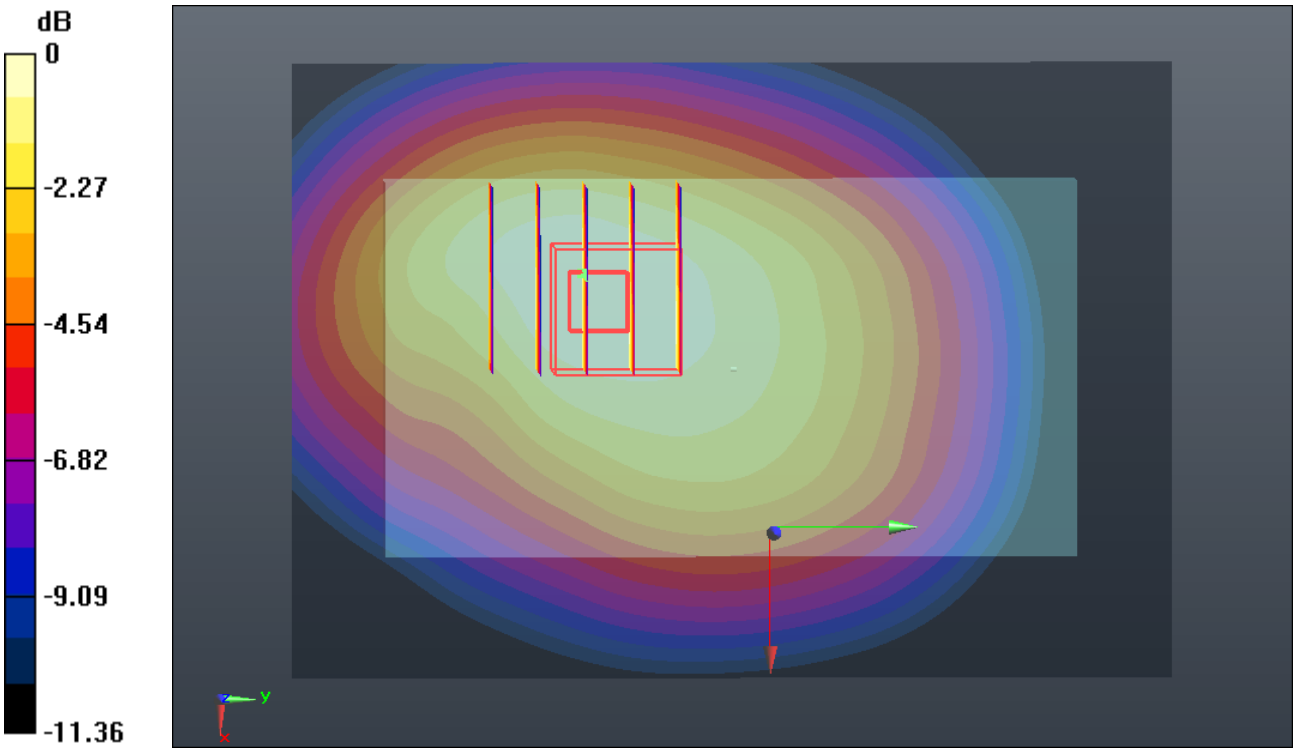
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.672 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.197 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.740 W/kg
**SAR(1 g) = 0.558 mW/g; SAR(10 g) = 0.407 mW/g**
Maximum value of SAR (measured) = 0.657 mW/g




0 dB = 0.660mW/g

**#23 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch384**

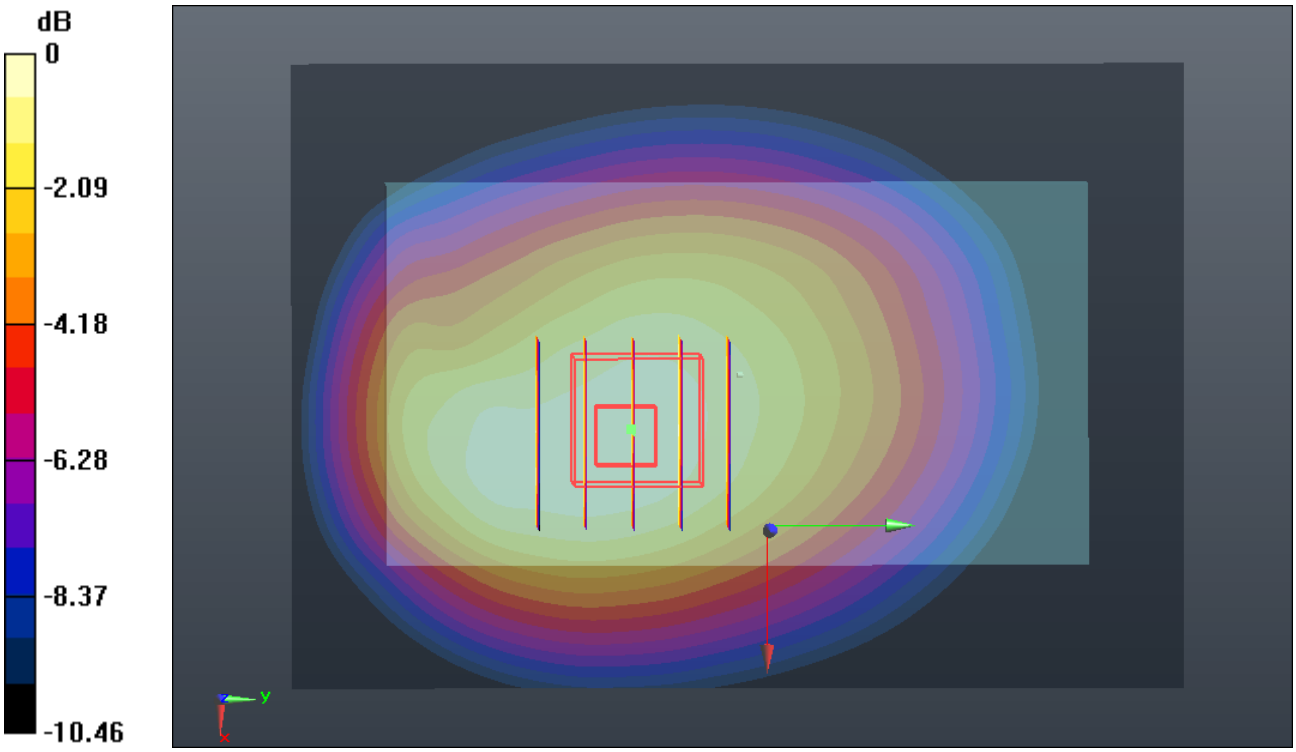
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.038 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.664 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.197 W/kg
**SAR(1 g) = 0.902 mW/g; SAR(10 g) = 0.651 mW/g**
Maximum value of SAR (measured) = 1.064 mW/g




0 dB = 1.060mW/g

**#23 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch384_2D**

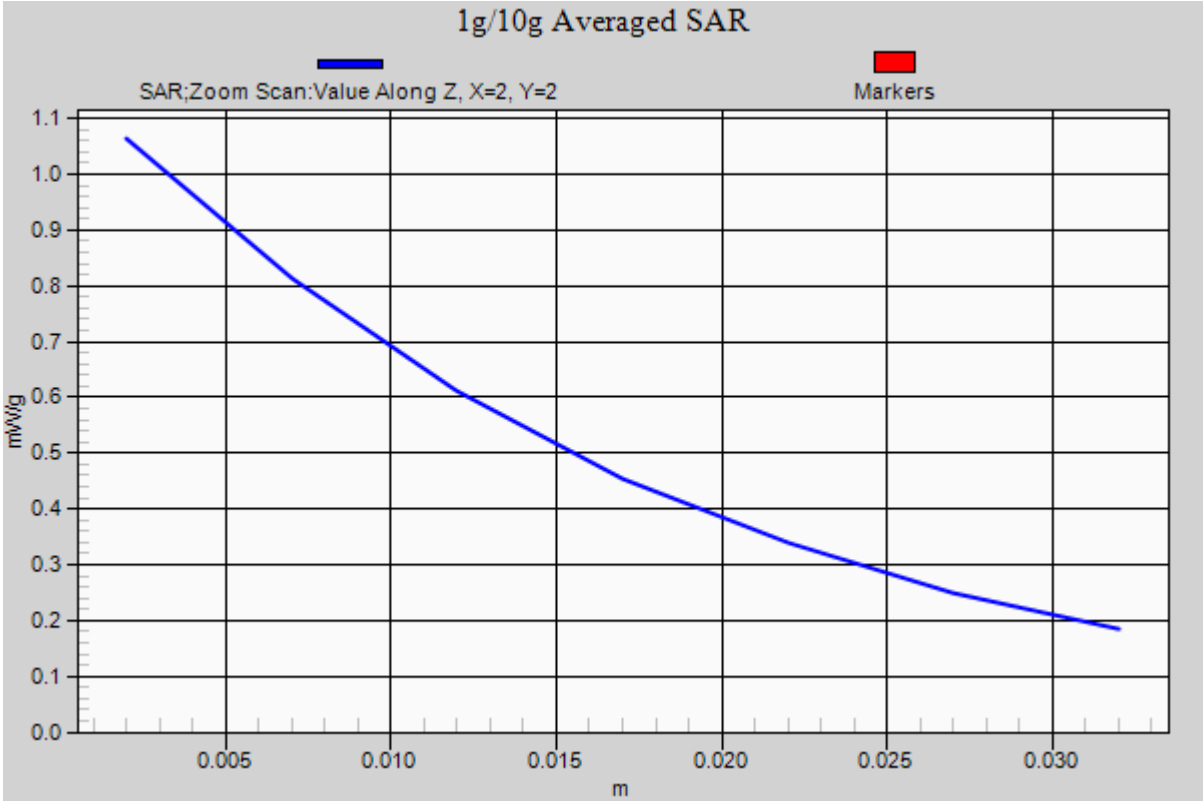
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.038 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.664 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.197 W/kg
**SAR(1 g) = 0.902 mW/g; SAR(10 g) = 0.651 mW/g**
Maximum value of SAR (measured) = 1.064 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
mW/g
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.005
0.010
0.015
0.020
0.025
0.030
m

**#24 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch384_Repeat SAR**

**DUT: 311101**

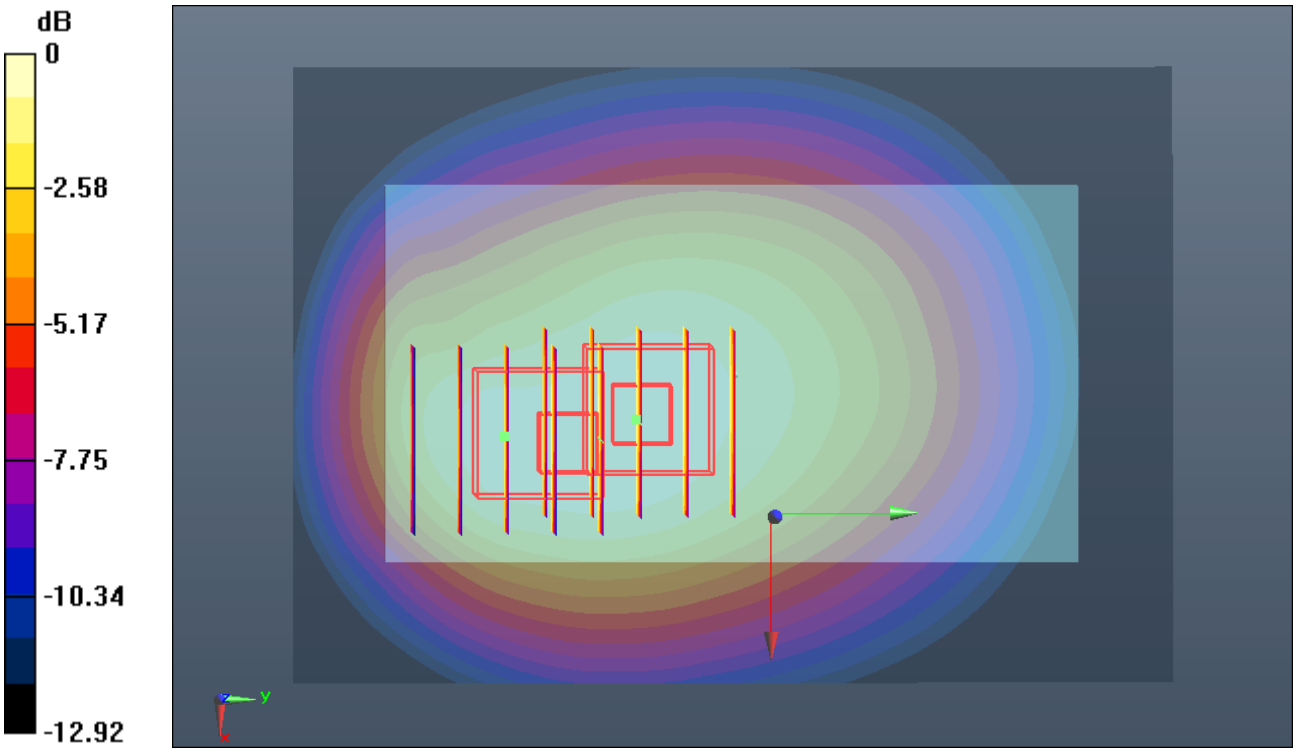
Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.001 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.584 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.136 W/kg
**SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.630 mW/g**
Maximum value of SAR (measured) = 1.008 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.584 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.130 W/kg
**SAR(1 g) = 0.795 mW/g; SAR(10 g) = 0.530 mW/g**
Maximum value of SAR (measured) = 1.000 mW/g




0 dB = 1.000mW/g

**#25 CDMA2000 BC0_RTAP 153.6_Left Side_1cm_Ch384**

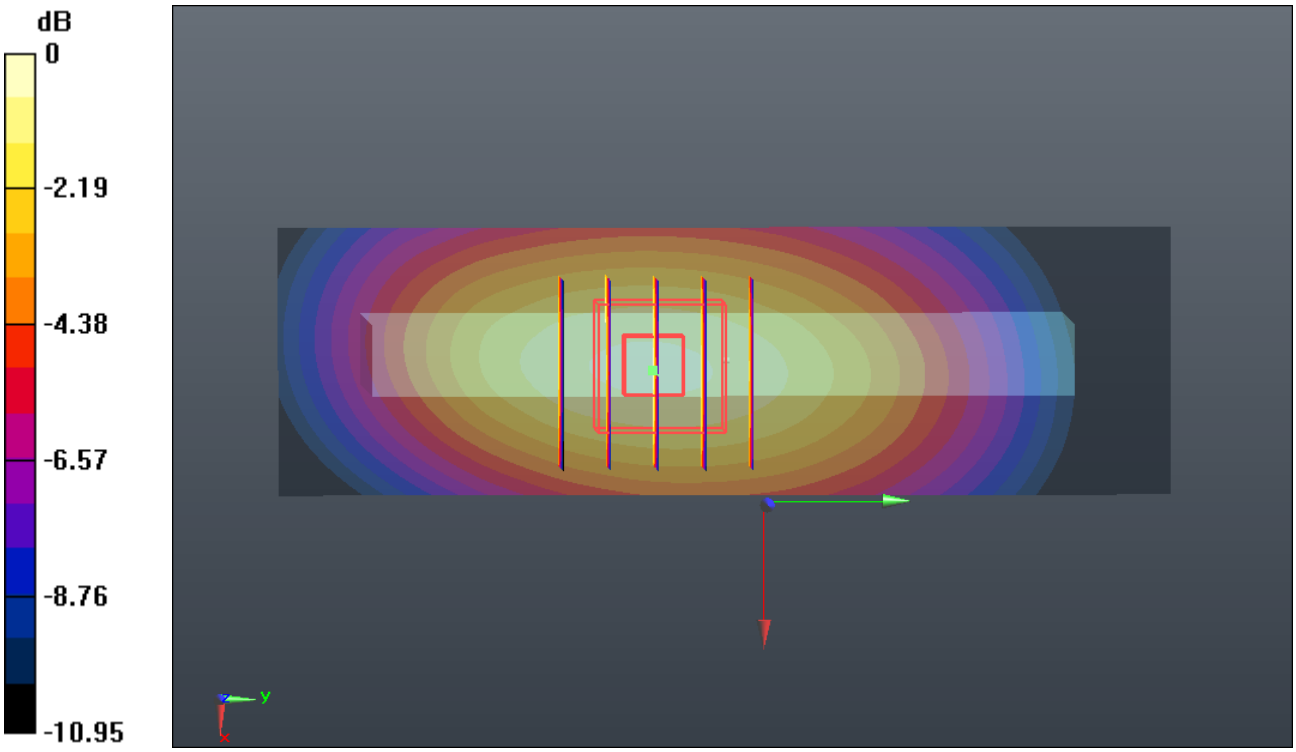
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.611 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.986 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.788 W/kg
**SAR(1 g) = 0.558 mW/g; SAR(10 g) = 0.379 mW/g**
Maximum value of SAR (measured) = 0.686 mW/g




0 dB = 0.690mW/g

**#26 CDMA2000 BC0_RTAP 153.6_Right Side_1cm_Ch384**

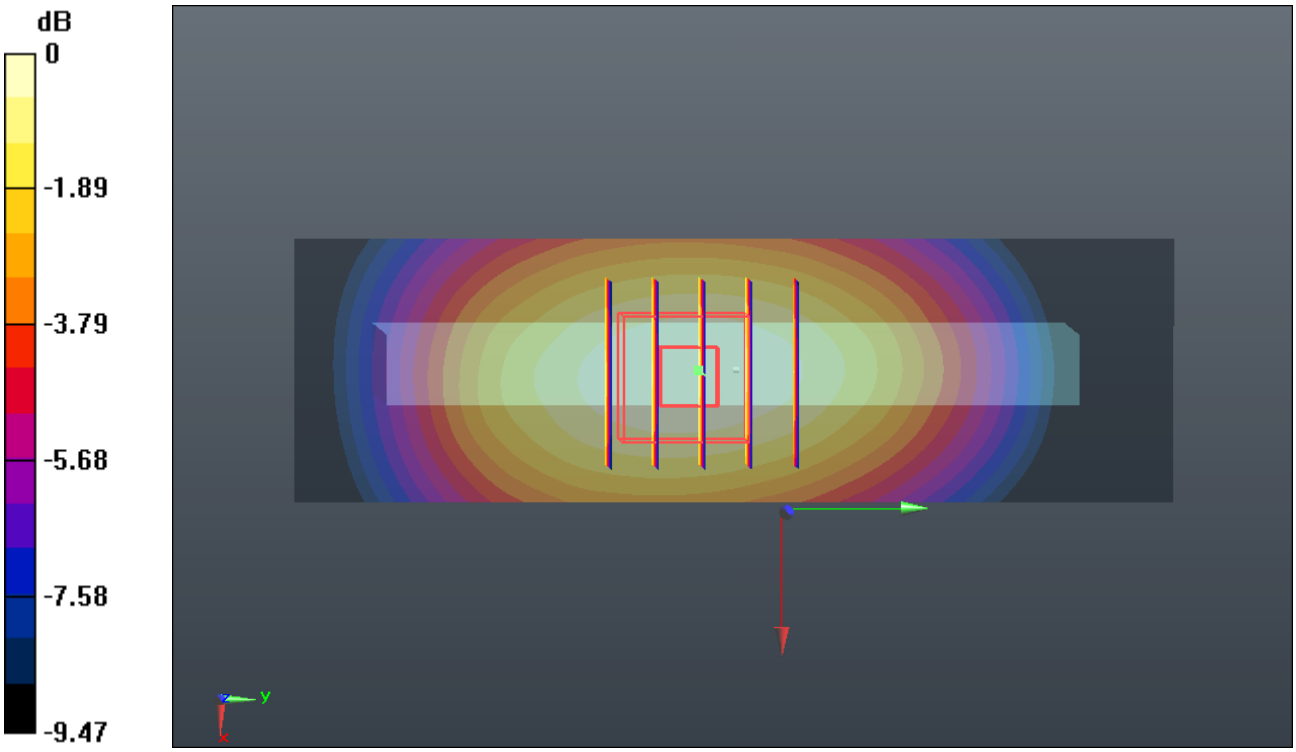
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.680 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.415 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.774 W/kg
**SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.391 mW/g**
Maximum value of SAR (measured) = 0.684 mW/g




0 dB = 0.680mW/g

**#27 CDMA2000 BC0_RTAP 153.6_Bottom Side_1cm_Ch384**

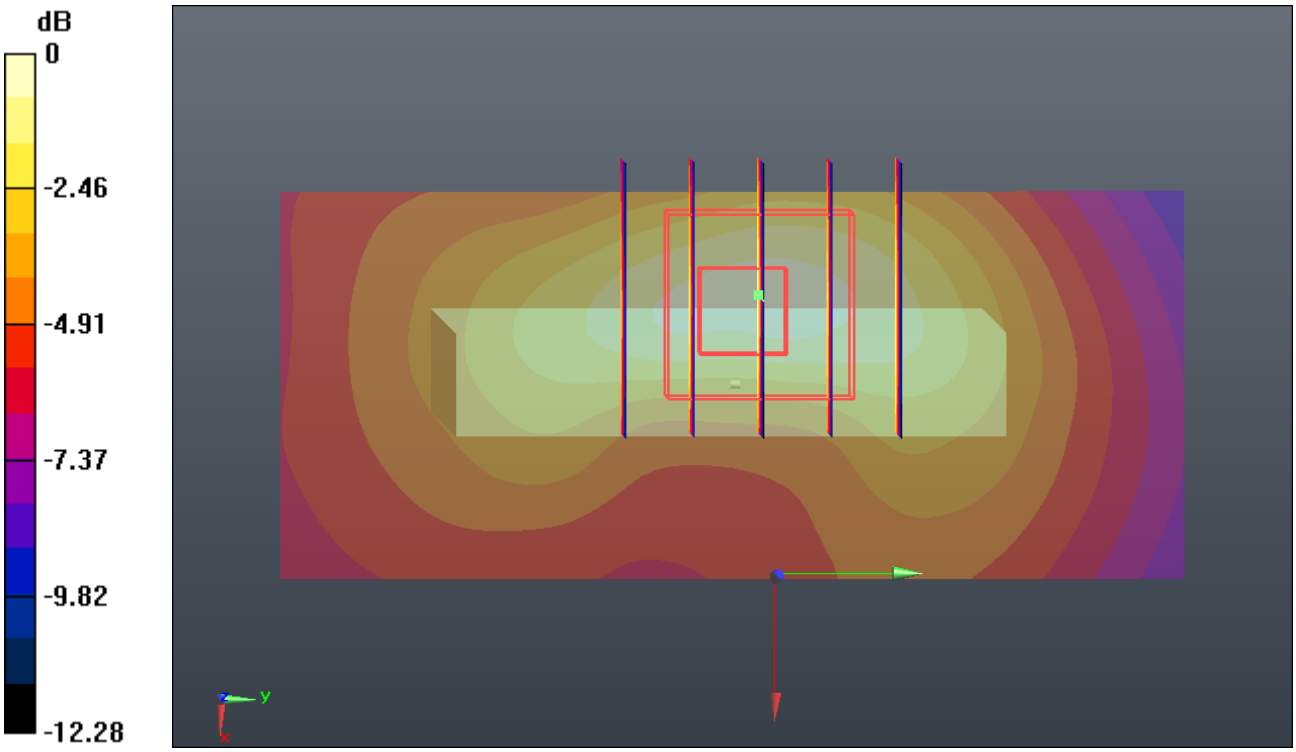
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (31x71x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.099 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.016 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.133 W/kg
**SAR(1 g) = 0.082 mW/g; SAR(10 g) = 0.050 mW/g**
Maximum value of SAR (measured) = 0.108 mW/g




0 dB = 0.110mW/g

**#28 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch1013**

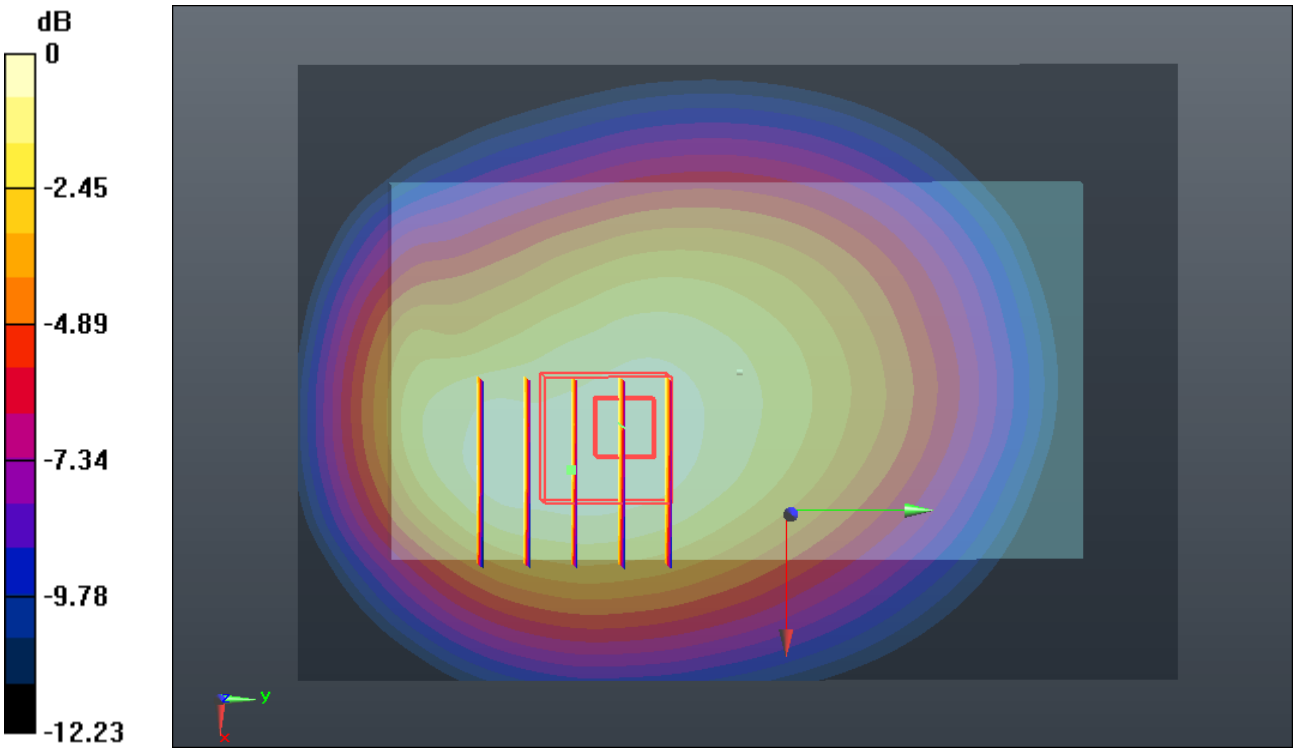
**DUT: 311101**

Communication System: CDMA2000; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 825 MHz; $\sigma$ = 0.97 mho/m; $\varepsilon_r$ = 54.569; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1013/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.902 mW/g

**Ch1013/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.874 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.055 W/kg
**SAR(1 g) = 0.798 mW/g; SAR(10 g) = 0.564 mW/g**
Maximum value of SAR (measured) = 0.936 mW/g




0 dB = 0.940mW/g

**#29 CDMA2000 BC0_RTAP 153.6_Back_1cm_Ch777**

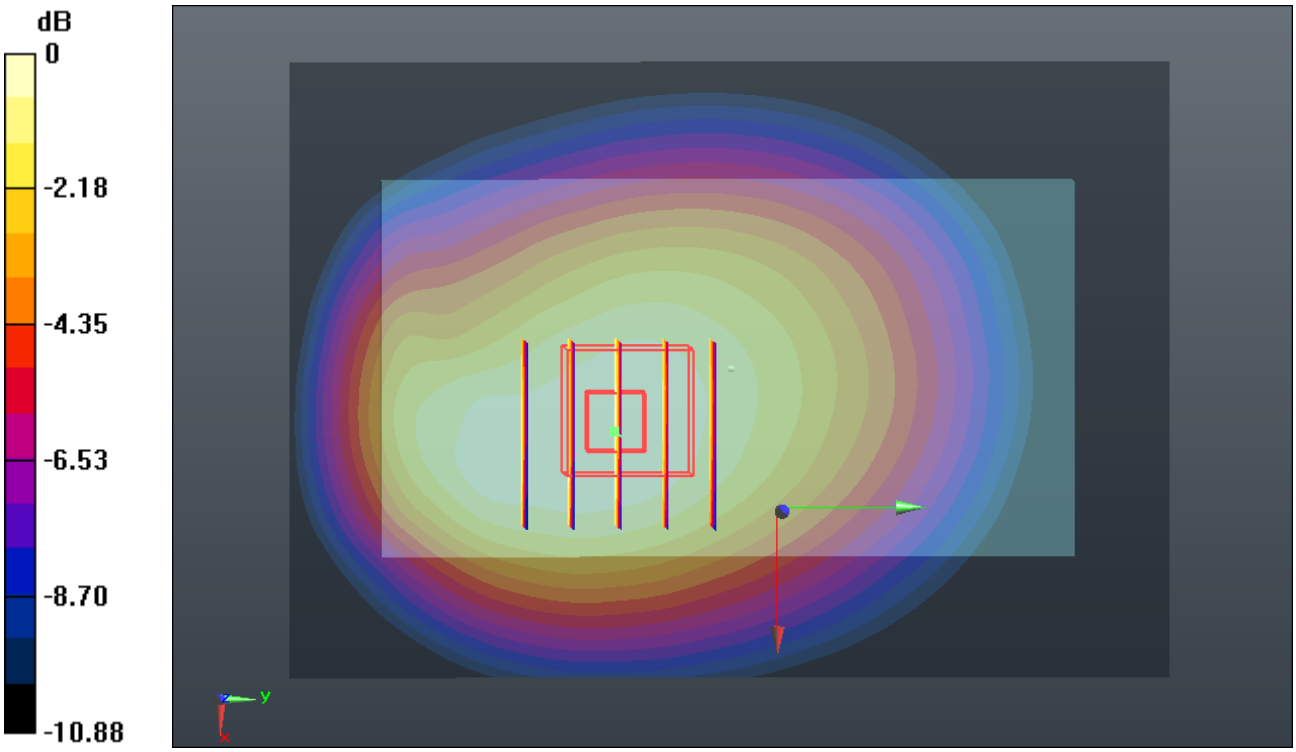
**DUT: 311101**

Communication System: CDMA2000; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 848.31 MHz; $\sigma$ = 0.994 mho/m; $\varepsilon_r$ = 54.336; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch777/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.979 mW/g

**Ch777/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.448 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.098 W/kg
**SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.600 mW/g**
Maximum value of SAR (measured) = 0.979 mW/g




0 dB = 0.980mW/g

**#30 CDMA2000 BC0_RC3 SO32_Front_1cm_Ch384**

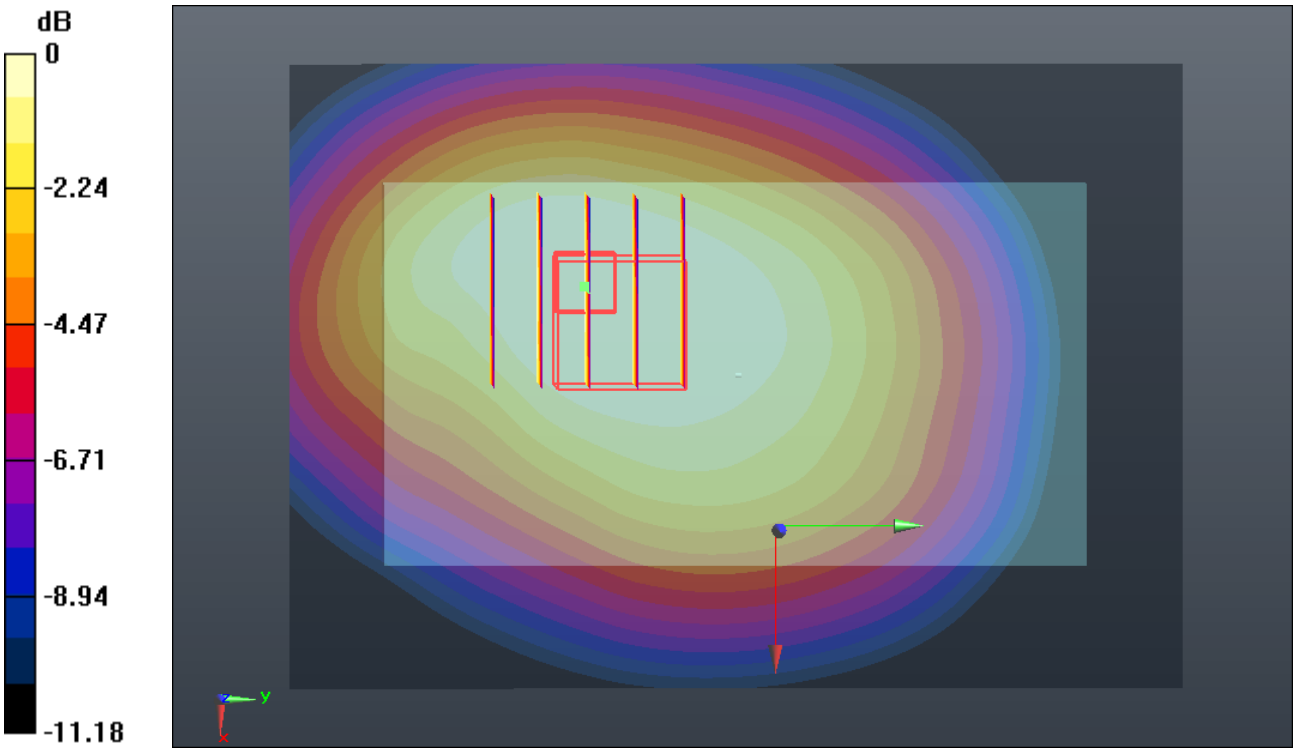
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.798 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.600 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.778 W/kg
**SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.410 mW/g**
Maximum value of SAR (measured) = 0.660 mW/g




0 dB = 0.660mW/g

**#31 CDMA2000 BC0_RC3 SO32_Back_1cm_Ch384**

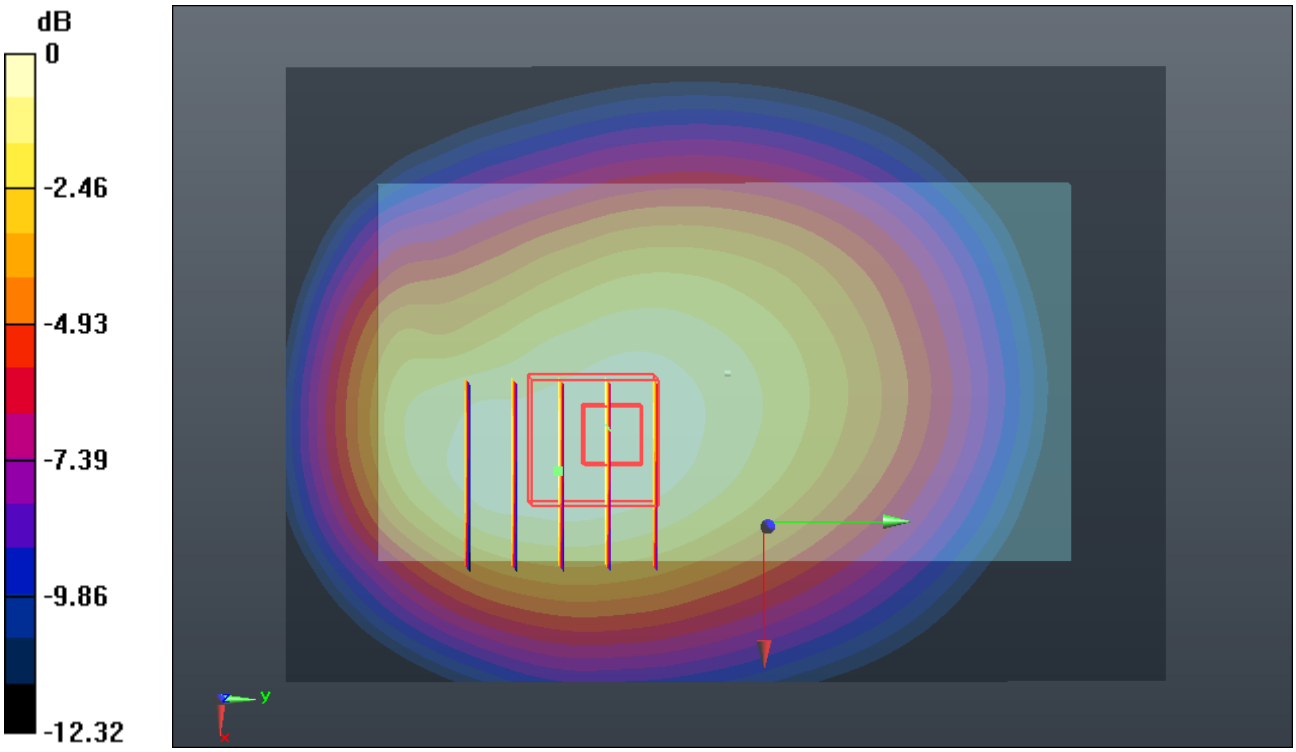
**DUT: 311101**

Communication System: CDMA2000; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 837 MHz; $\sigma$ = 0.982 mho/m; $\varepsilon_r$ = 54.455; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch384/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.919 mW/g

**Ch384/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.831 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.048 W/kg
**SAR(1 g) = 0.793 mW/g; SAR(10 g) = 0.560 mW/g**
Maximum value of SAR (measured) = 0.930 mW/g




0 dB = 0.930mW/g

**#32 CDMA2000 BC0_RC3 SO32_Back_1cm_Ch1013**

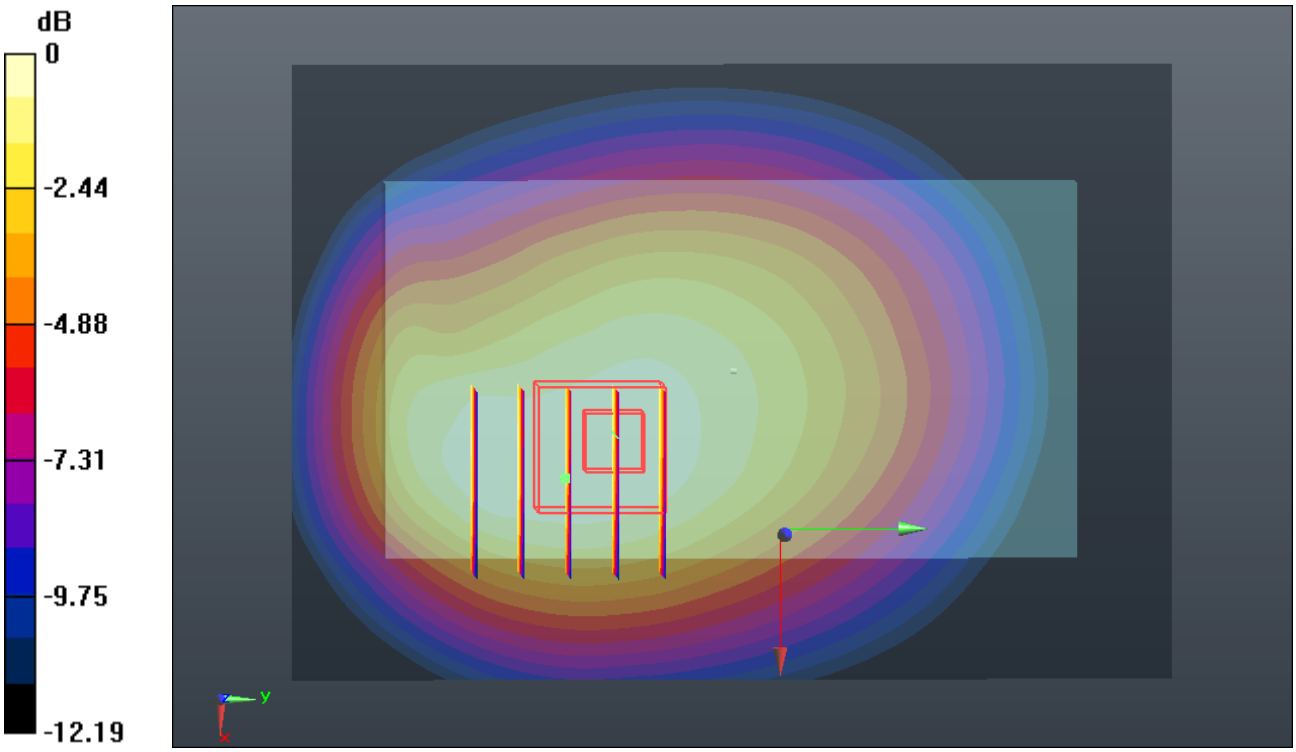
**DUT: 311101**

Communication System: CDMA2000; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 825 MHz; $\sigma$ = 0.97 mho/m; $\varepsilon_r$ = 54.569; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1013/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.836 mW/g

**Ch1013/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.015 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.938 W/kg
**SAR(1 g) = 0.704 mW/g; SAR(10 g) = 0.499 mW/g**
Maximum value of SAR (measured) = 0.826 mW/g




0 dB = 0.830mW/g

**#33 CDMA2000 BC0_RC3 SO32_Back_1cm_Ch777**

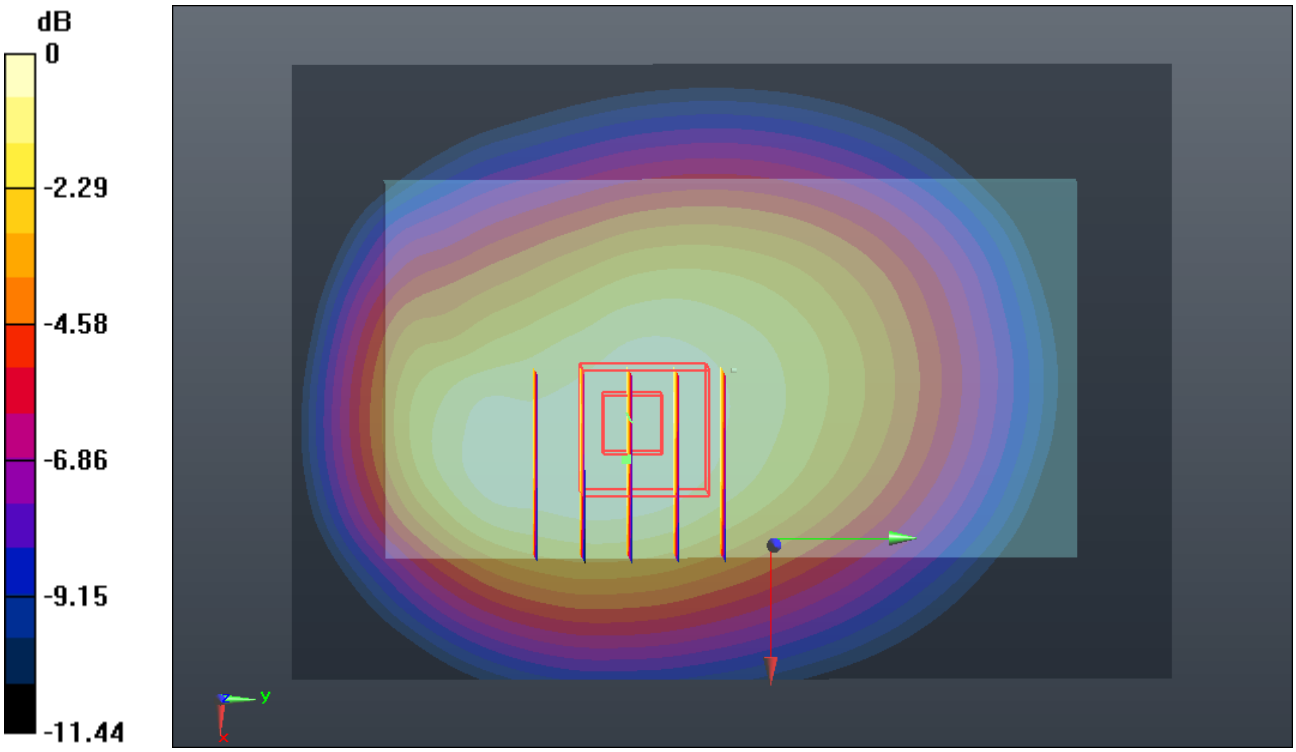
**DUT: 311101**

Communication System: CDMA2000; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: MSL_835_130127 Medium parameters used: f = 848.31 MHz; $\sigma$ = 0.994 mho/m; $\varepsilon_r$ = 54.336; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3 ℃; Liquid Temperature：21.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.98, 8.98, 8.98); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch777/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.907 mW/g

**Ch777/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.875 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.997 W/kg
**SAR(1 g) = 0.762 mW/g; SAR(10 g) = 0.552 mW/g**
Maximum value of SAR (measured) = 0.890 mW/g




0 dB = 0.890mW/g

**#34 CDMA2000 BC1_RTAP 153.6_Front_1cm_Ch25**

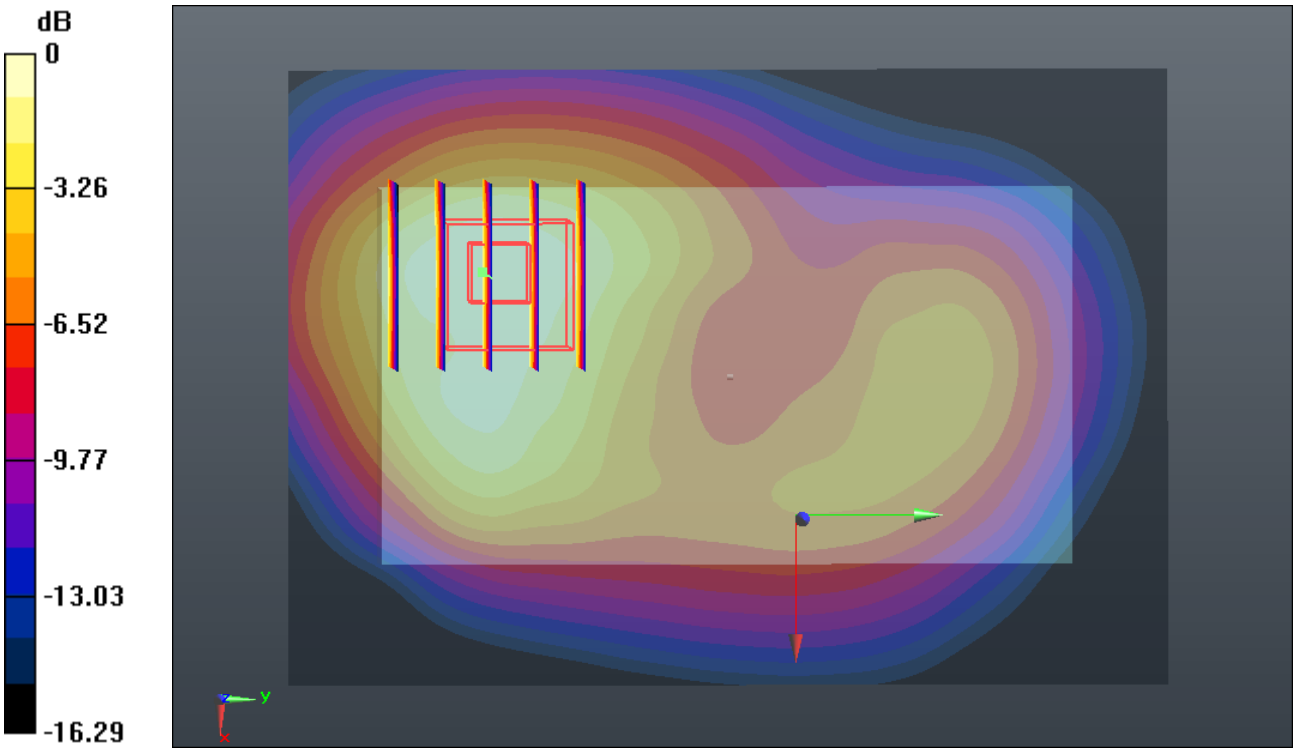
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.525 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.736 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.790 W/kg
**SAR(1 g) = 1.120 mW/g; SAR(10 g) = 0.673 mW/g**
Maximum value of SAR (measured) = 1.474 mW/g




0 dB = 1.470mW/g

**#35 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch25**

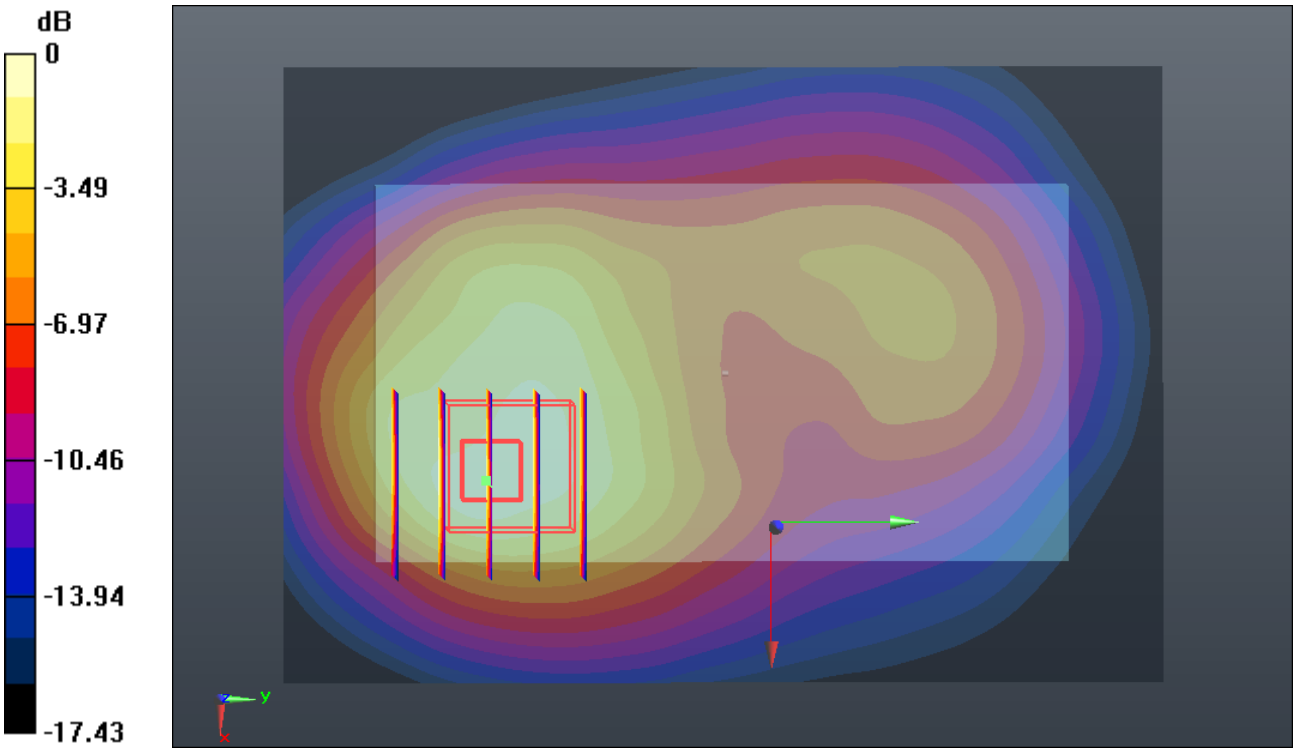
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.854 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.374 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.315 W/kg
**SAR(1 g) = 1.420 mW/g; SAR(10 g) = 0.812 mW/g**
Maximum value of SAR (measured) = 1.886 mW/g




0 dB = 1.890mW/g

**#35 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch25_2D**

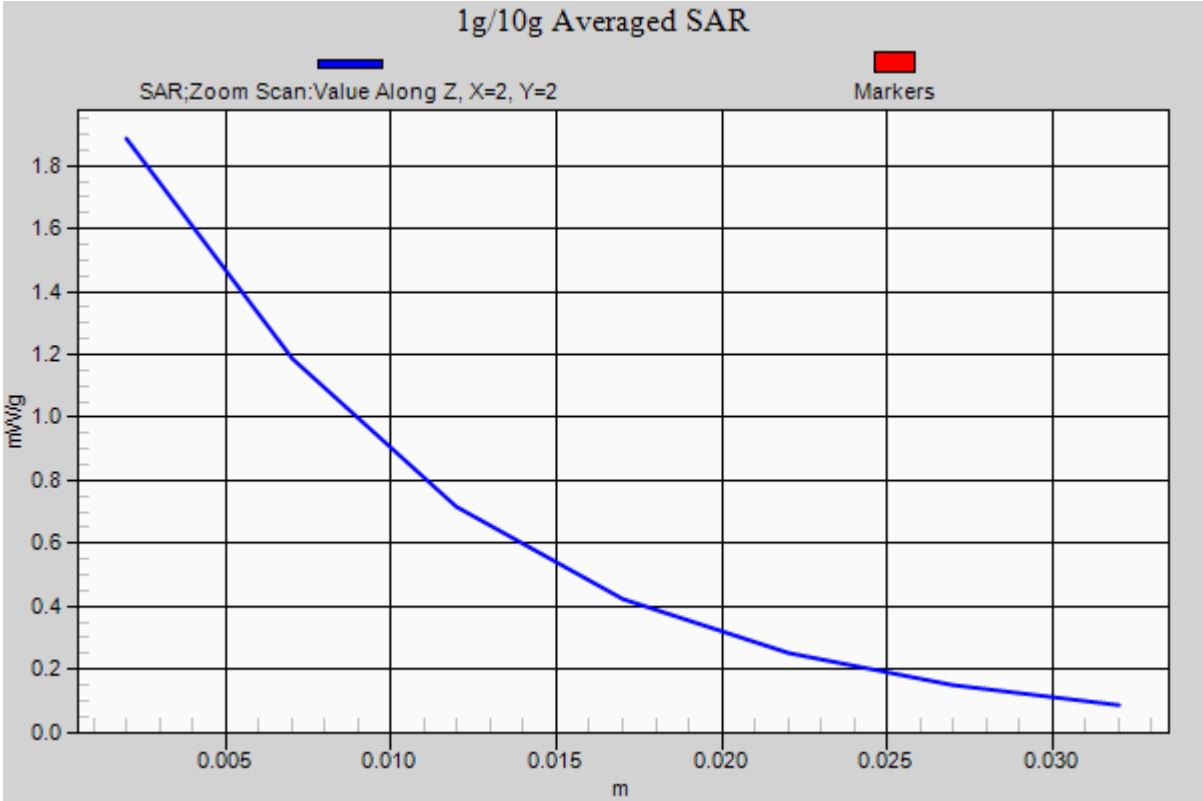
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.854 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.374 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.315 W/kg
**SAR(1 g) = 1.420 mW/g; SAR(10 g) = 0.812 mW/g**
Maximum value of SAR (measured) = 1.886 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.005
0.010
0.015
0.020
0.025
0.030
m

**#36 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch25_Repeat SAR**

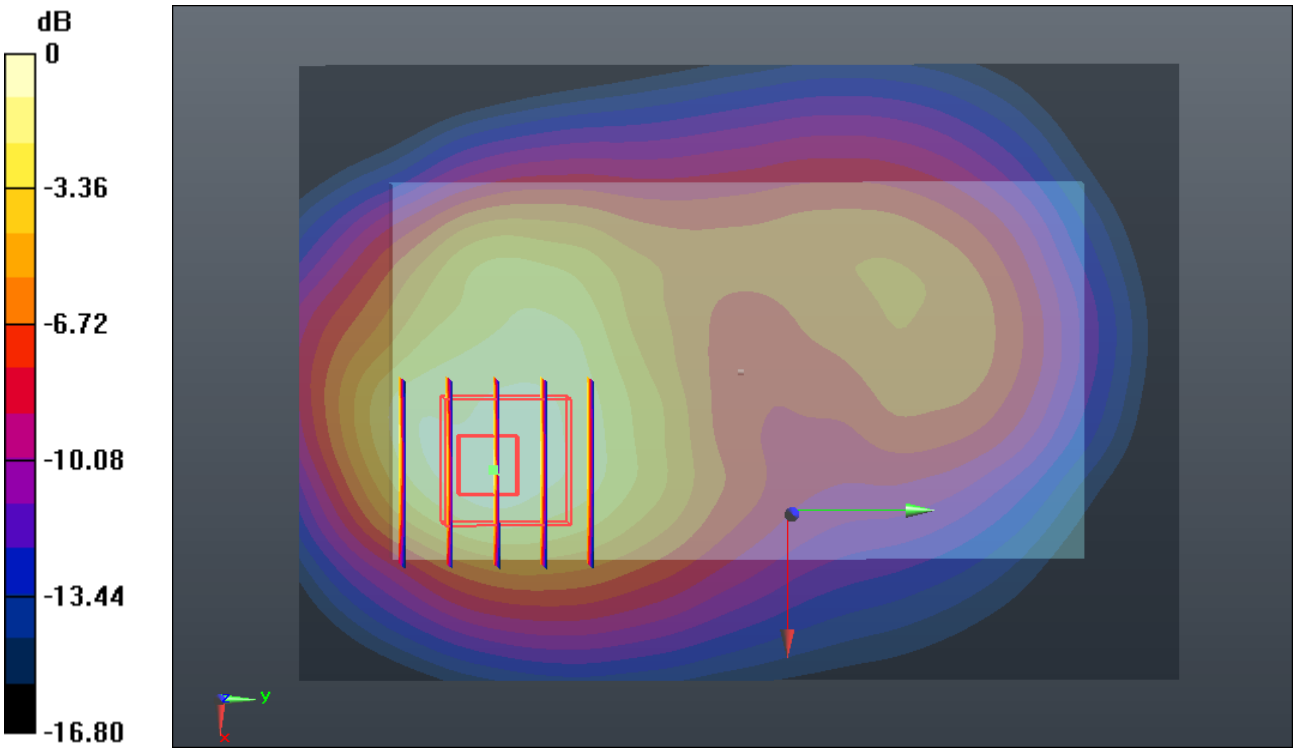
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.810 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.601 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.326 W/kg
**SAR(1 g) = 1.410 mW/g; SAR(10 g) = 0.802 mW/g**
Maximum value of SAR (measured) = 1.881 mW/g




0 dB = 1.880mW/g

**#37 CDMA2000 BC1_RTAP 153.6_Left Side_1cm_Ch25**

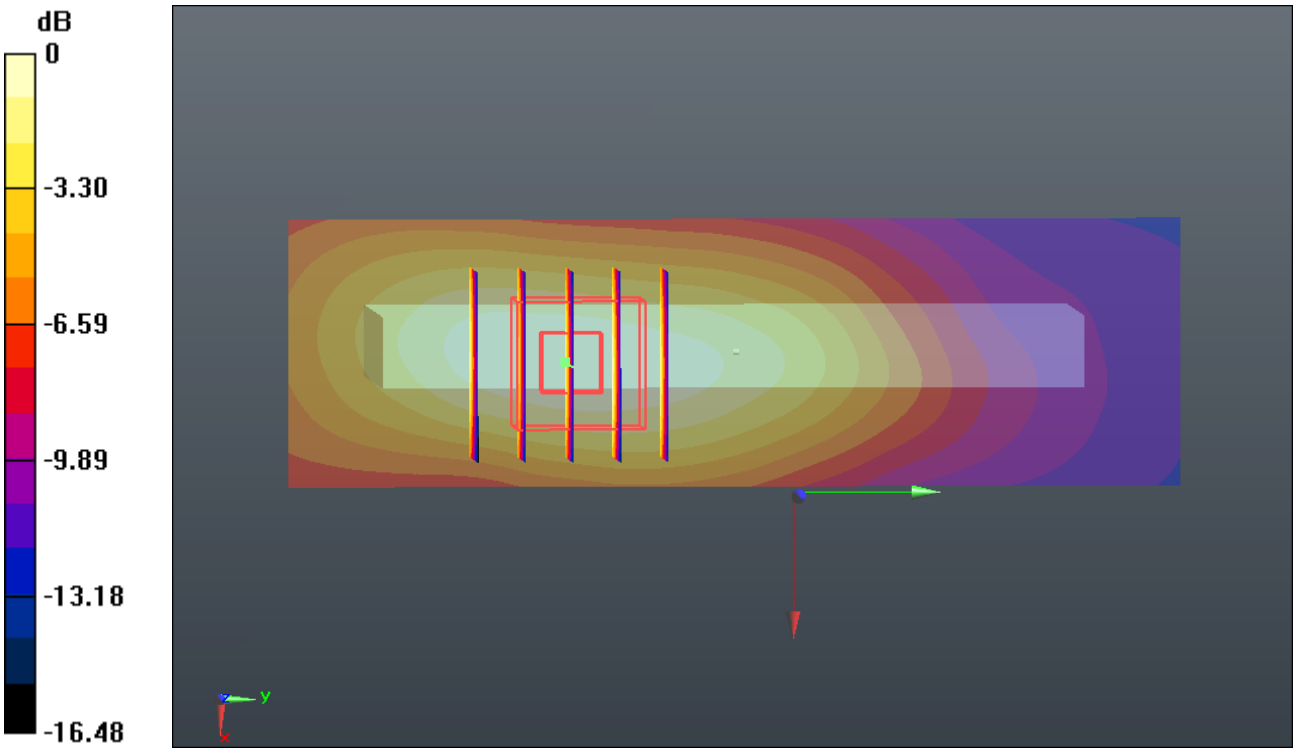
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.643 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.224 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.757 W/kg
**SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.278 mW/g**
Maximum value of SAR (measured) = 0.629 mW/g




0 dB = 0.630mW/g

**#38 CDMA2000 BC1_RTAP 153.6_Right Side_1cm_Ch25**

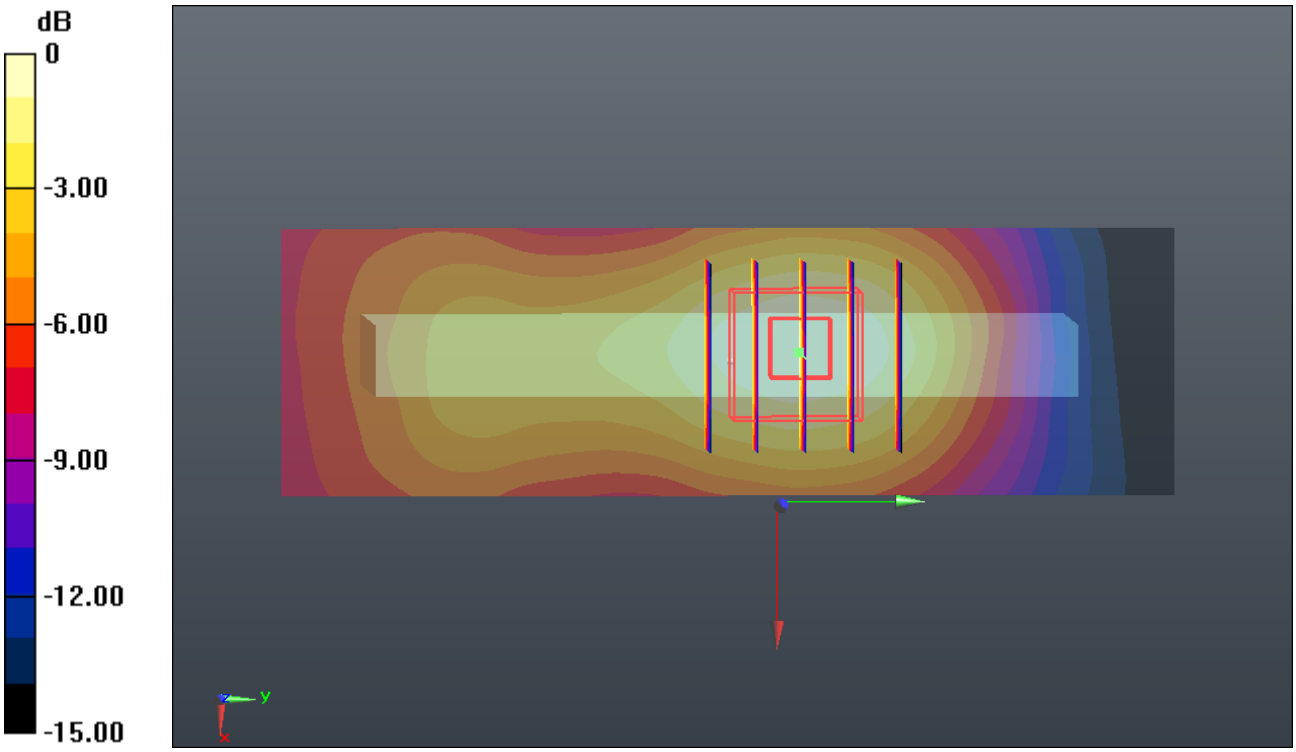
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.500 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.490 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.588 W/kg
**SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.223 mW/g**
Maximum value of SAR (measured) = 0.492 mW/g




0 dB = 0.490mW/g

**#39 CDMA2000 BC1_RTAP 153.6_Bottom Side 1cm_Ch25**

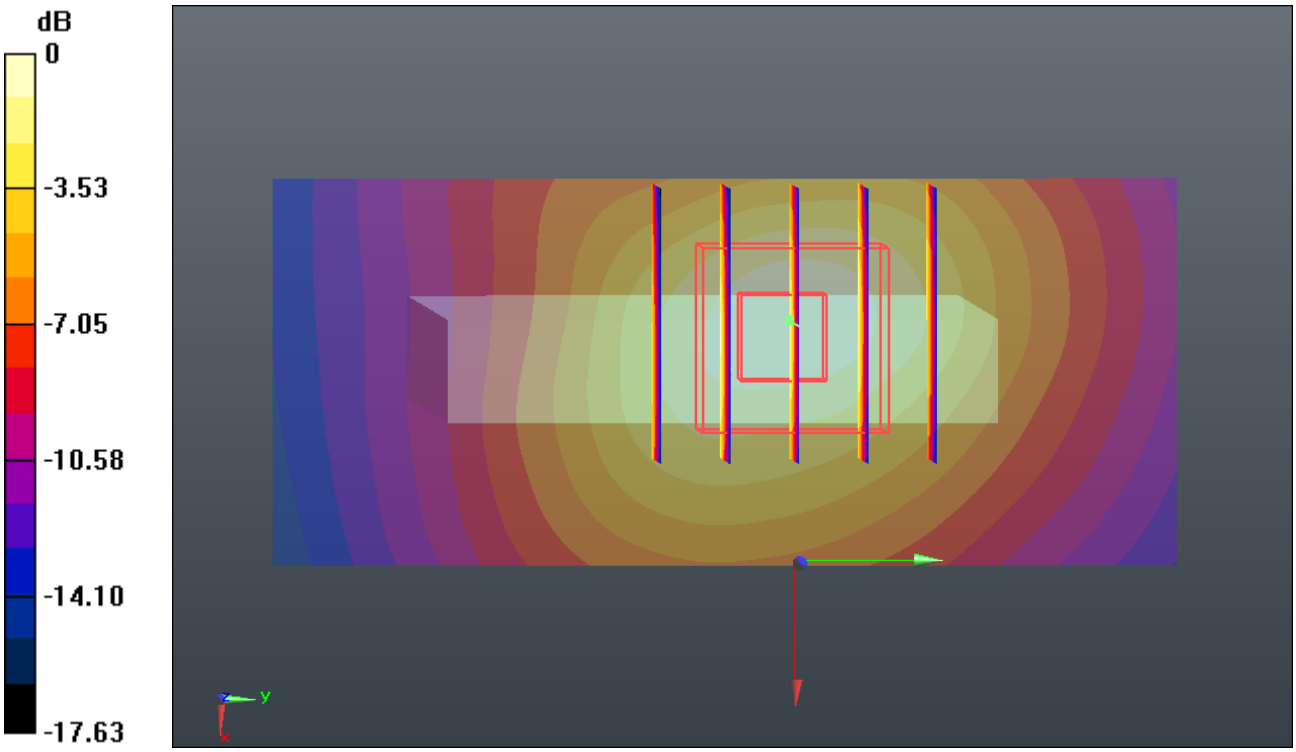
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (31x71x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.966 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.671 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.164 W/kg
**SAR(1 g) = 0.715 mW/g; SAR(10 g) = 0.398 mW/g**
Maximum value of SAR (measured) = 0.969 mW/g




0 dB = 0.970mW/g

**#40 CDMA2000 BC1_RTAP 153.6_Front_1cm_Ch600**

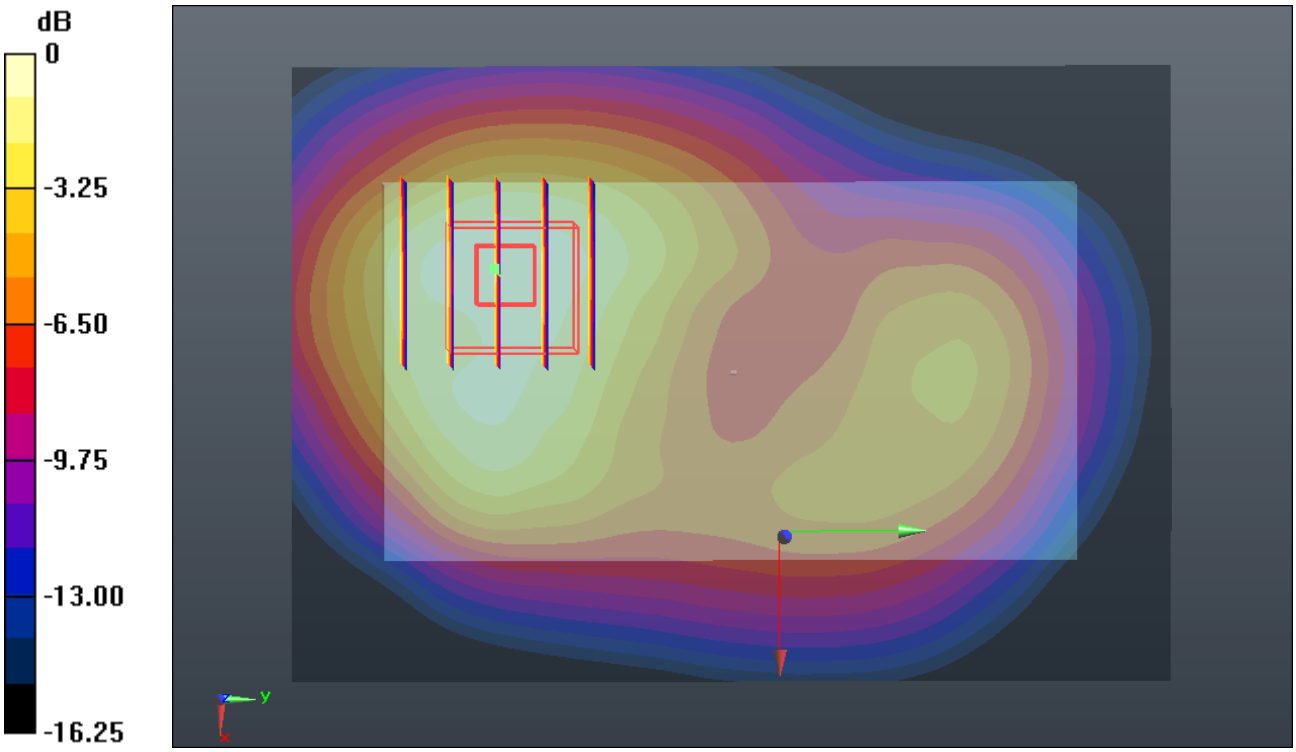
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.527 mho/m; $\varepsilon_r$ = 53.293; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.340 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.281 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.641 W/kg
**SAR(1 g) = 1.020 mW/g; SAR(10 g) = 0.610 mW/g**
Maximum value of SAR (measured) = 1.350 mW/g




0 dB = 1.350mW/g

**#41 CDMA2000 BC1_RTAP 153.6_Front_1cm_Ch1175**

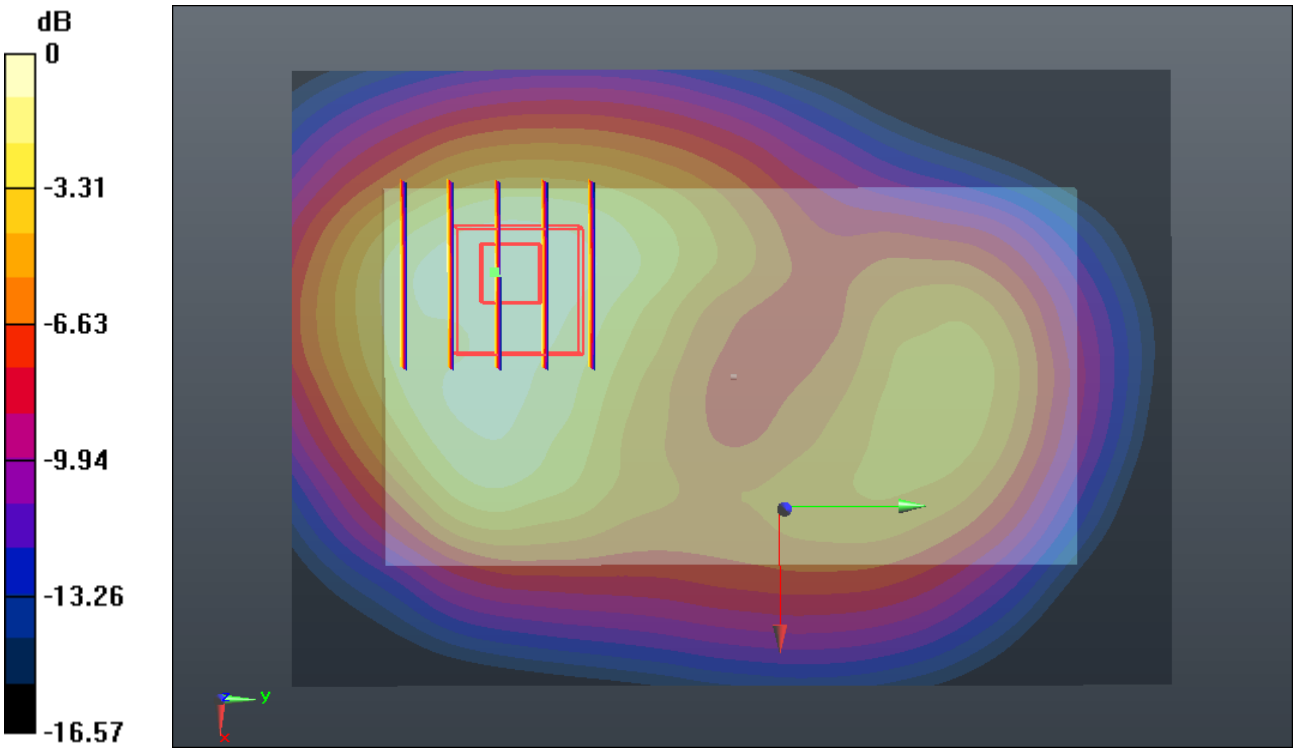
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.212; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.241 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.824 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.514 W/kg
**SAR(1 g) = 0.937 mW/g; SAR(10 g) = 0.559 mW/g**
Maximum value of SAR (measured) = 1.237 mW/g




0 dB = 1.240mW/g

**#42 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch600**

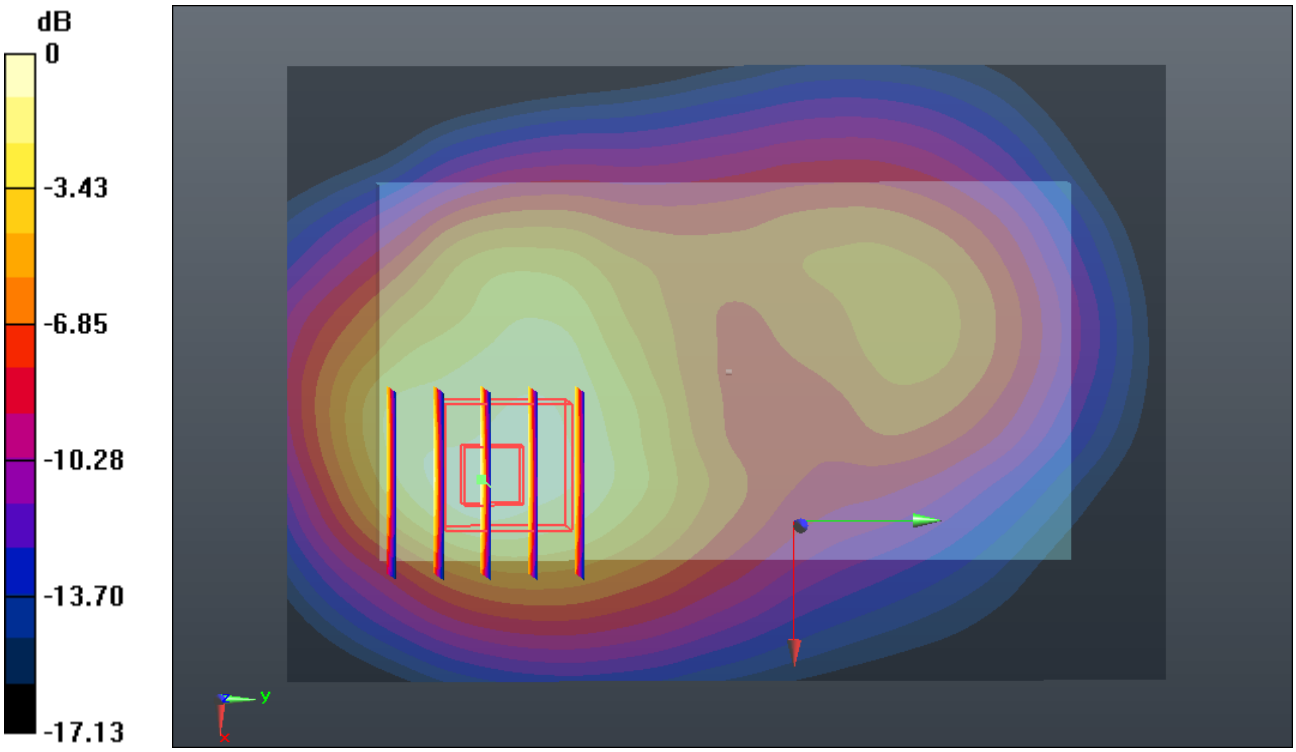
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.527 mho/m; $\varepsilon_r$ = 53.293; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.847 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.179 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 2.286 W/kg
**SAR(1 g) = 1.400 mW/g; SAR(10 g) = 0.808 mW/g**
Maximum value of SAR (measured) = 1.874 mW/g




0 dB = 1.870mW/g

**#43 CDMA2000 BC1_RTAP 153.6_Back_1cm_Ch1175**

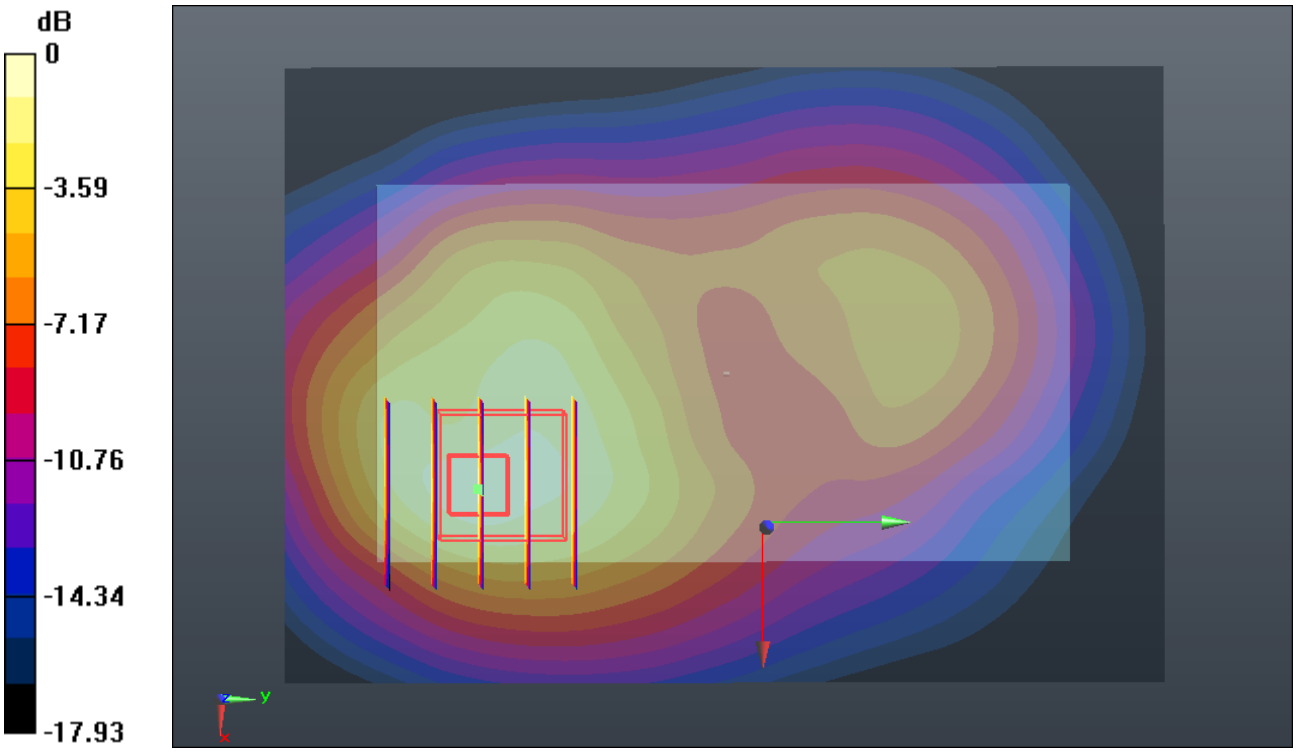
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.212; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.765 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.990 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.247 W/kg
**SAR(1 g) = 1.360 mW/g; SAR(10 g) = 0.783 mW/g**
Maximum value of SAR (measured) = 1.836 mW/g




0 dB = 1.840mW/g

**#44 CDMA2000 BC1_RC3 SO32_Front_1cm_Ch25**

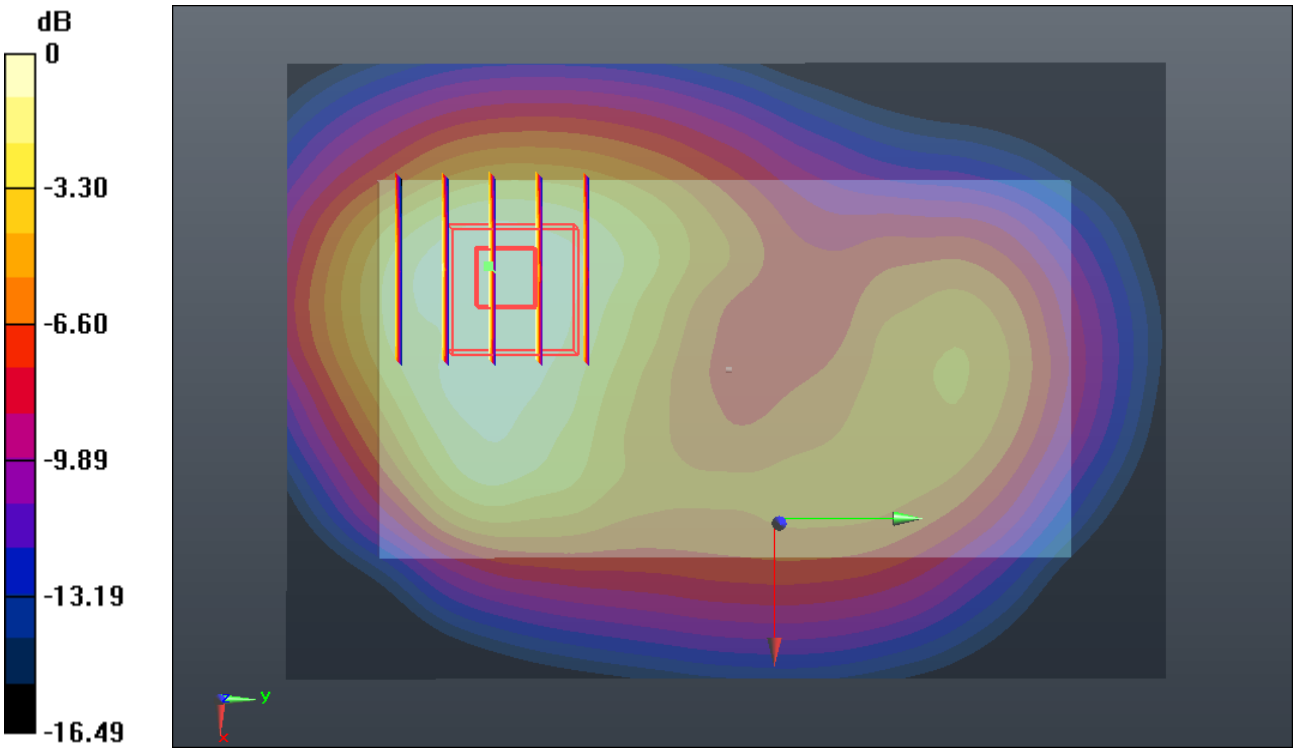
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.378 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.594 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.660 W/kg
**SAR(1 g) = 1.030 mW/g; SAR(10 g) = 0.618 mW/g**
Maximum value of SAR (measured) = 1.348 mW/g




0 dB = 1.350mW/g

**#45 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch25**

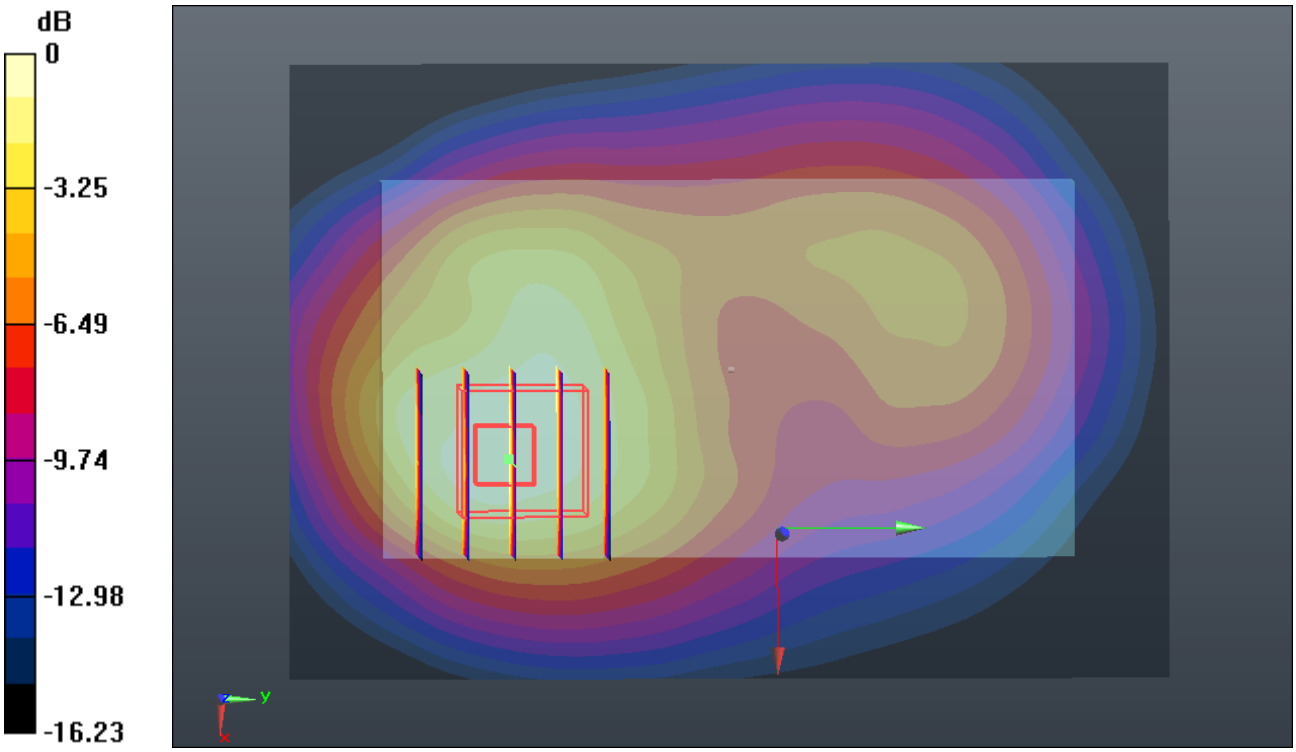
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.570 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.836 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.953 W/kg
**SAR(1 g) = 1.200 mW/g; SAR(10 g) = 0.689 mW/g**
Maximum value of SAR (measured) = 1.592 mW/g




0 dB = 1.590mW/g

**#46 CDMA2000 BC1_RC3 SO32_Front_1cm_Ch600**

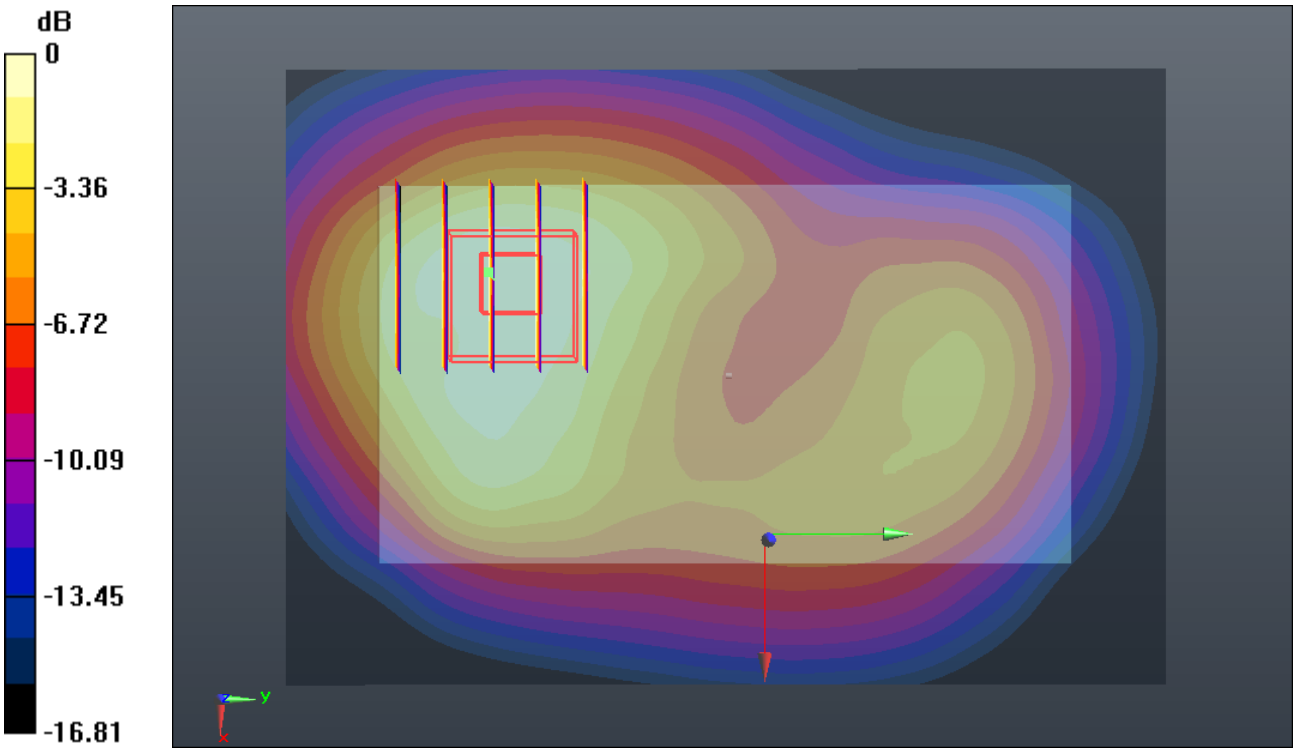
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.527 mho/m; $\varepsilon_r$ = 53.293; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.358 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.493 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.687 W/kg
**SAR(1 g) = 1.030 mW/g; SAR(10 g) = 0.616 mW/g**
Maximum value of SAR (measured) = 1.360 mW/g




0 dB = 1.360mW/g

**#47 CDMA2000 BC1_RC3 SO32_Front_1cm_Ch1175**

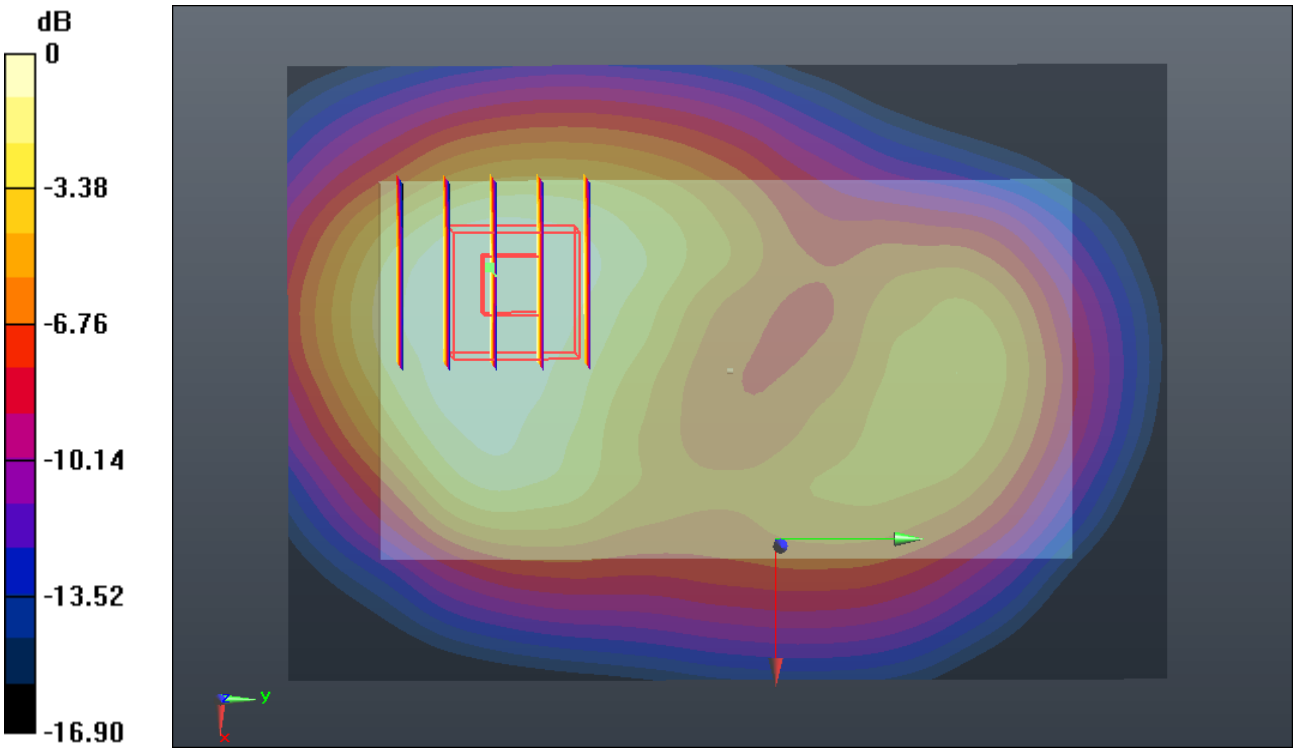
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.212; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.300 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.226 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.586 W/kg
**SAR(1 g) = 0.958 mW/g; SAR(10 g) = 0.568 mW/g**
Maximum value of SAR (measured) = 1.251 mW/g




0 dB = 1.250mW/g

**#48 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch600**

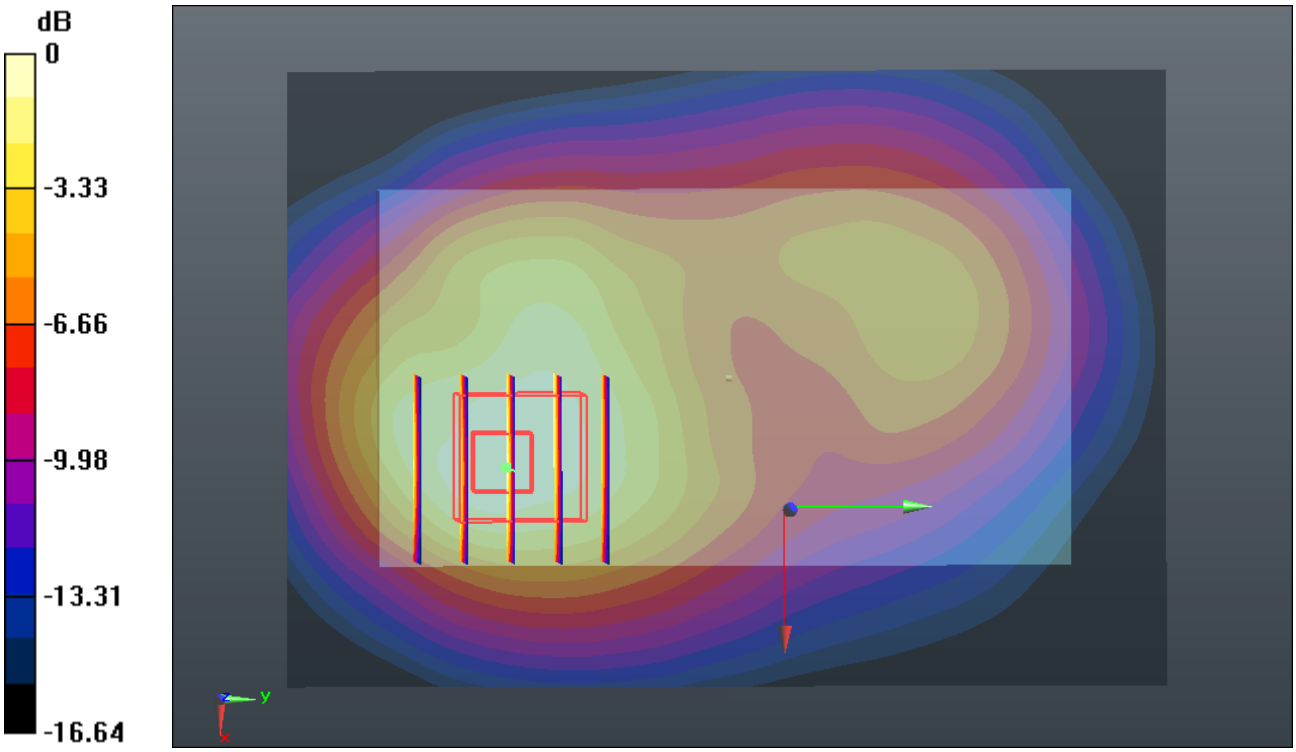
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.527 mho/m; $\varepsilon_r$ = 53.293; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.533 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.882 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.911 W/kg
**SAR(1 g) = 1.170 mW/g; SAR(10 g) = 0.675 mW/g**
Maximum value of SAR (measured) = 1.559 mW/g




0 dB = 1.560mW/g

**#49 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch1175**

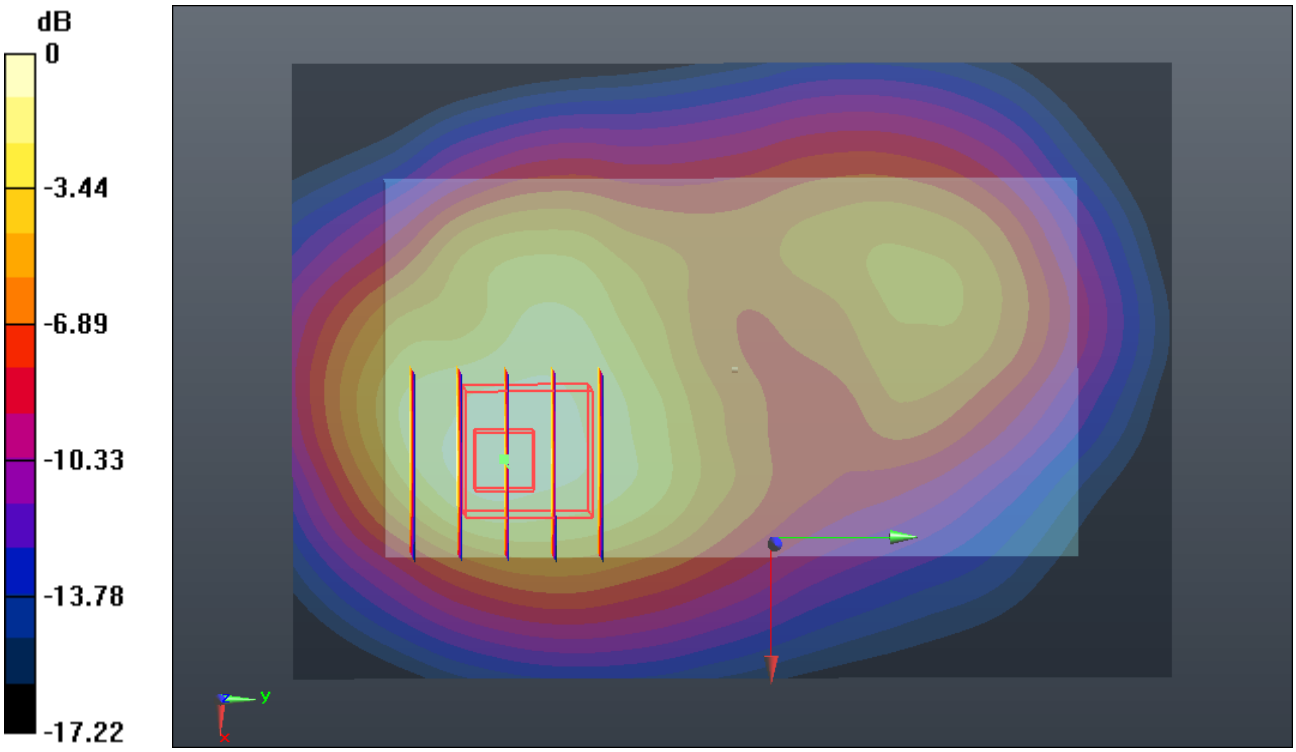
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.212; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.454 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.782 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.842 W/kg
**SAR(1 g) = 1.130 mW/g; SAR(10 g) = 0.653 mW/g**
Maximum value of SAR (measured) = 1.537 mW/g




0 dB = 1.540mW/g

**#50 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch25_Headset**

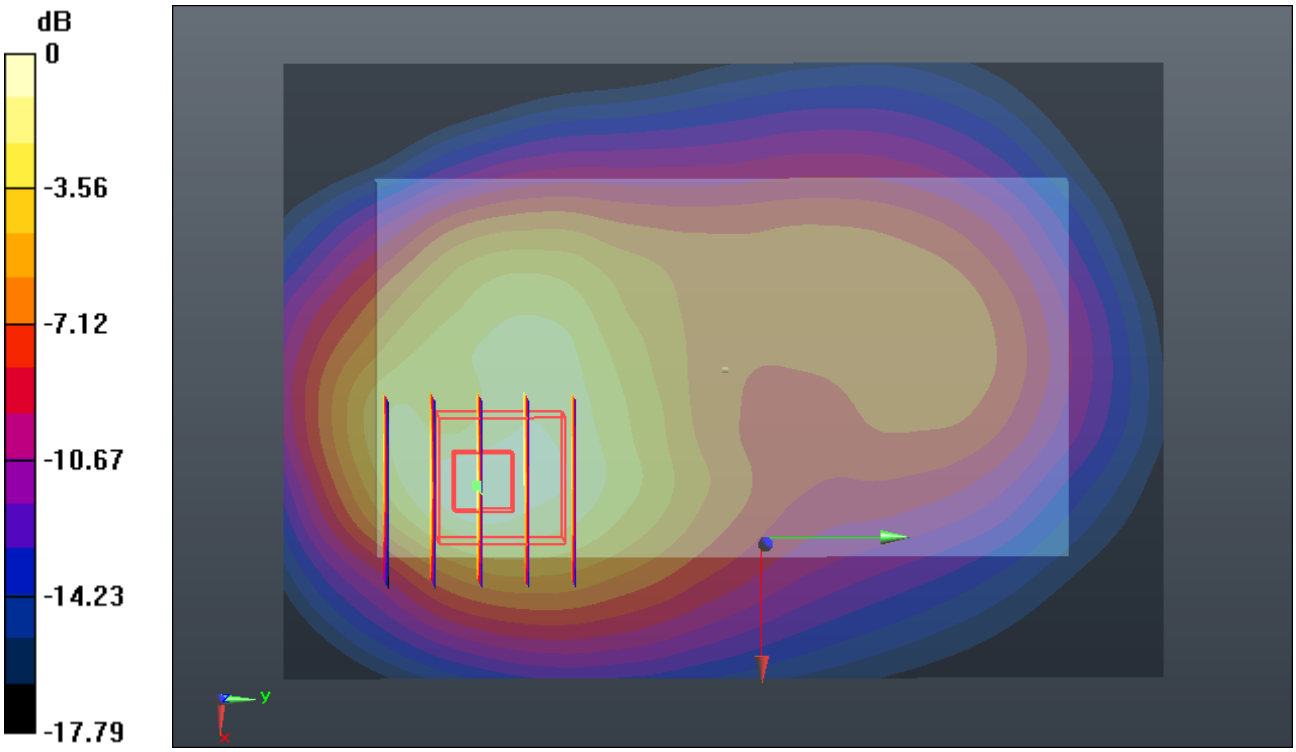
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1851.25 MHz; $\sigma$ = 1.493 mho/m; $\varepsilon_r$ = 53.355; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch25/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.848 mW/g

**Ch25/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.638 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.274 W/kg
**SAR(1 g) = 1.370 mW/g; SAR(10 g) = 0.766 mW/g**
Maximum value of SAR (measured) = 1.854 mW/g




0 dB = 1.850mW/g

**#51 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch600_Headset**

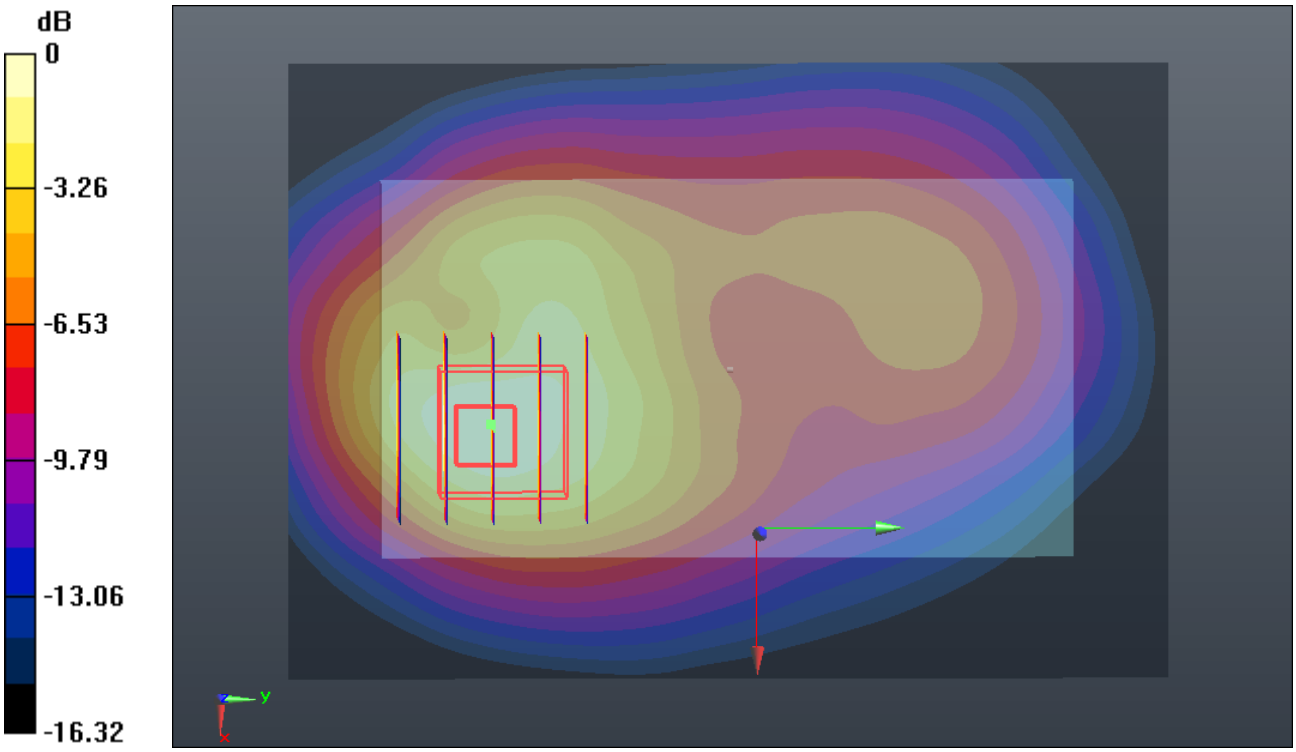
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1880 MHz; $\sigma$ = 1.527 mho/m; $\varepsilon_r$ = 53.293; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch600/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.776 mW/g

**Ch600/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.678 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 2.153 W/kg
**SAR(1 g) = 1.290 mW/g; SAR(10 g) = 0.723 mW/g**
Maximum value of SAR (measured) = 1.759 mW/g




0 dB = 1.760mW/g

**#52 CDMA2000 BC1_RC3 SO32_Back_1cm_Ch1175_Headset**

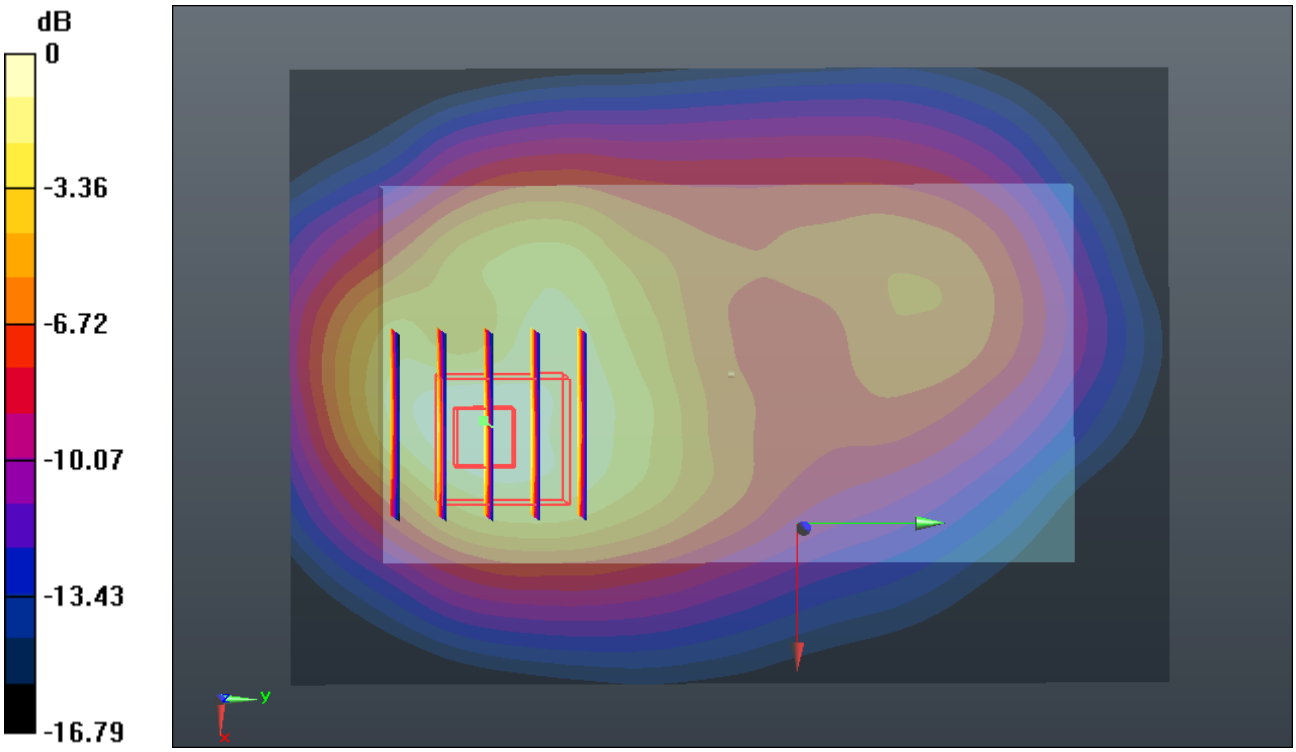
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1909 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.212; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1175/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.845 mW/g

**Ch1175/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.458 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 2.282 W/kg
**SAR(1 g) = 1.280 mW/g; SAR(10 g) = 0.706 mW/g**
Maximum value of SAR (measured) = 1.767 mW/g




0 dB = 1.770mW/g

**#53 CDMA2000 BC14_RTAP 153.6_Front_1cm_Ch1275**

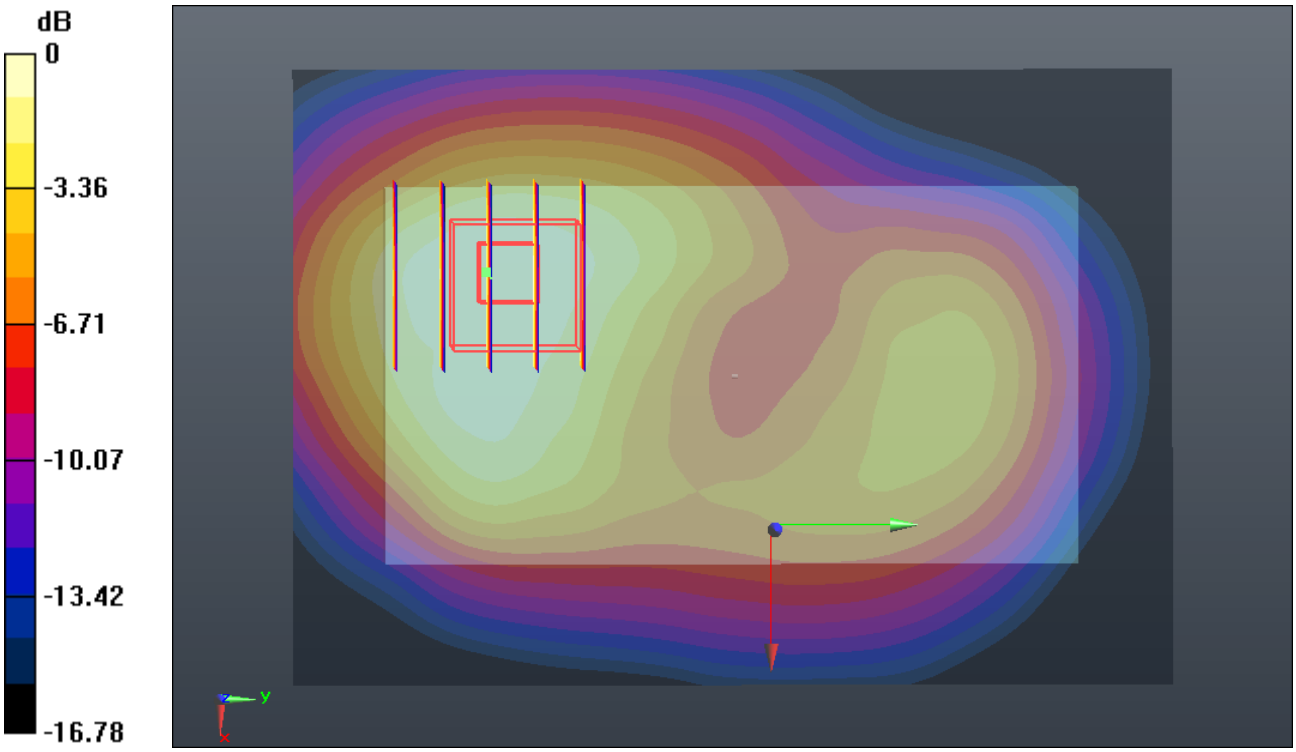
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.305 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.536 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.576 W/kg
**SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.579 mW/g**
Maximum value of SAR (measured) = 1.280 mW/g




0 dB = 1.280mW/g

**#54 CDMA2000 BC14_RTAP 153.6_Back_1cm_Ch1275**

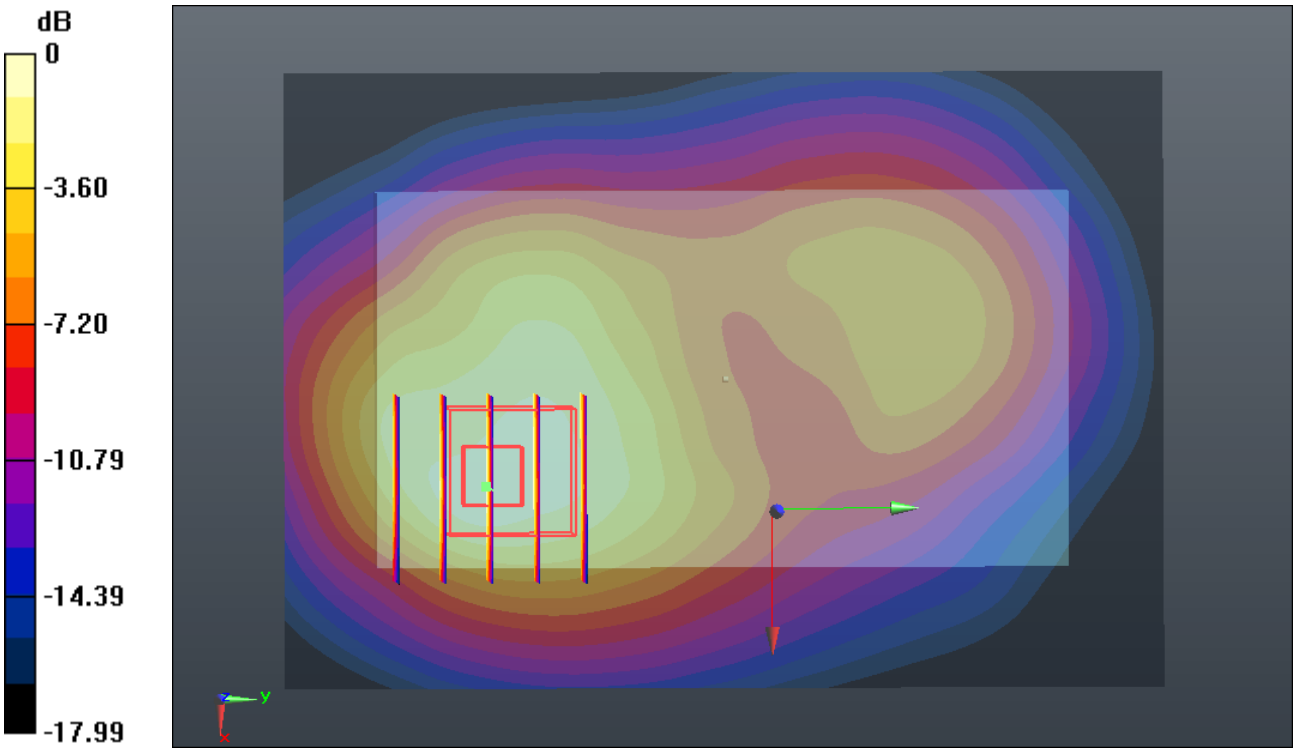
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.710 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.795 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.157 W/kg
**SAR(1 g) = 1.300 mW/g; SAR(10 g) = 0.744 mW/g**
Maximum value of SAR (measured) = 1.748 mW/g




0 dB = 1.750mW/g

**#54 CDMA2000 BC14_RTAP 153.6_Back_1cm_Ch1275_2D**

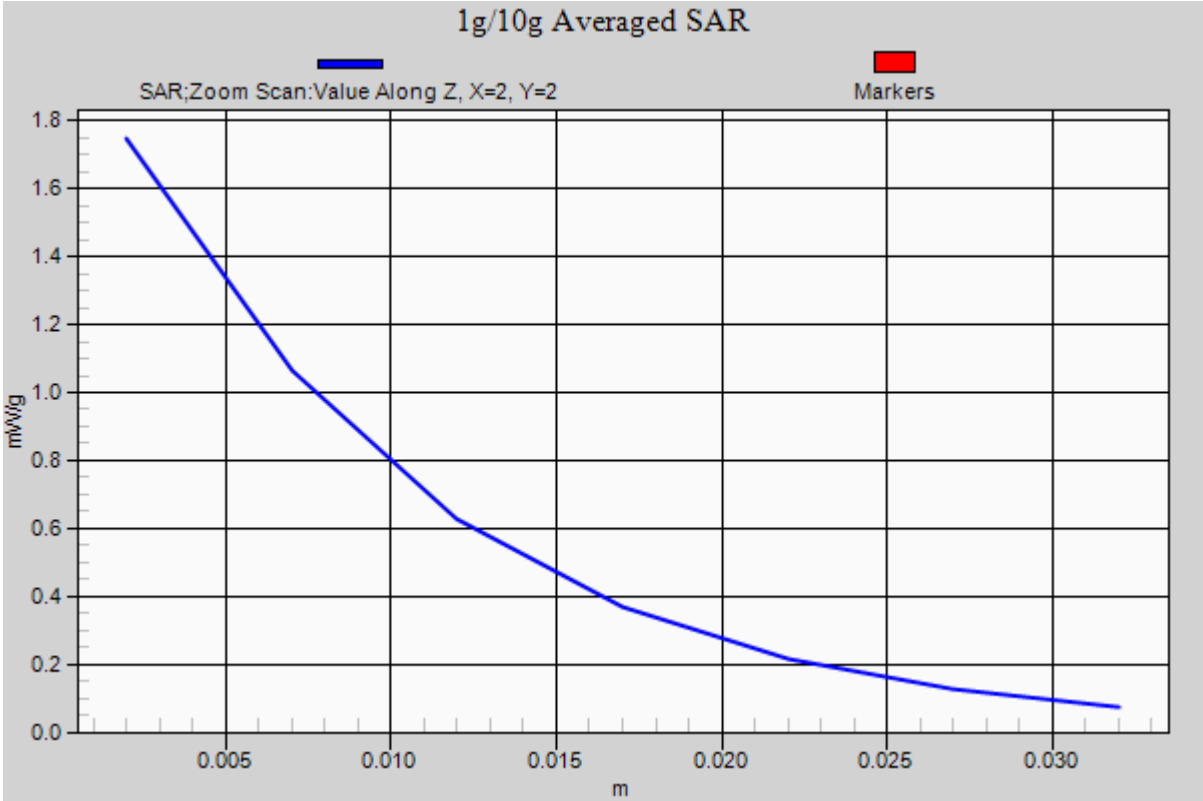
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.710 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.795 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.157 W/kg
**SAR(1 g) = 1.300 mW/g; SAR(10 g) = 0.744 mW/g**
Maximum value of SAR (measured) = 1.748 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.005
0.010
0.015
0.020
0.025
0.030
m

**#55 CDMA2000 BC14_RTAP 153.6_Left Side_1cm_Ch1275**

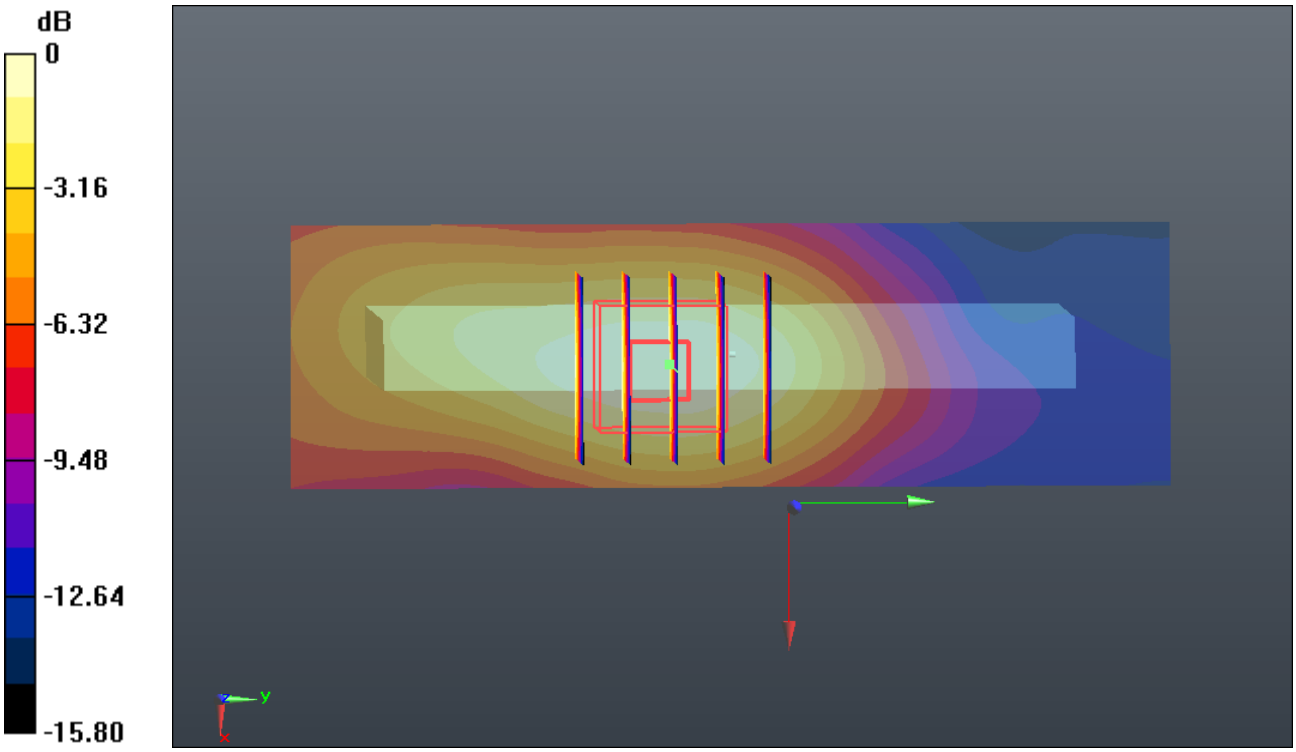
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.583 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.984 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.716 W/kg
**SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.259 mW/g**
Maximum value of SAR (measured) = 0.592 mW/g




0 dB = 0.590mW/g

**#56 CDMA2000 BC14_RTAP 153.6_Right Side_1cm_Ch1275**

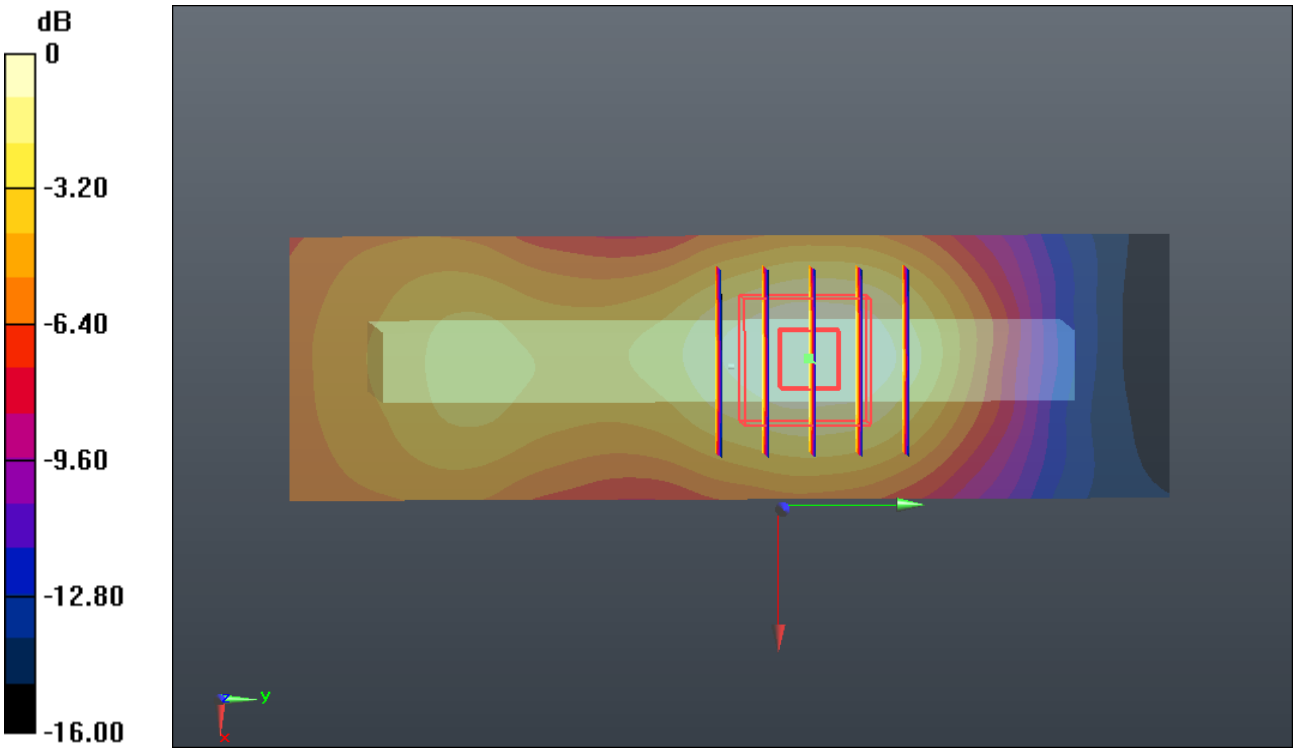
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.446 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.812 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.519 W/kg
**SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.189 mW/g**
Maximum value of SAR (measured) = 0.430 mW/g




0 dB = 0.430mW/g

**#57 CDMA2000 BC14_RTAP 153.6_Bottom Side 1cm_Ch1275**

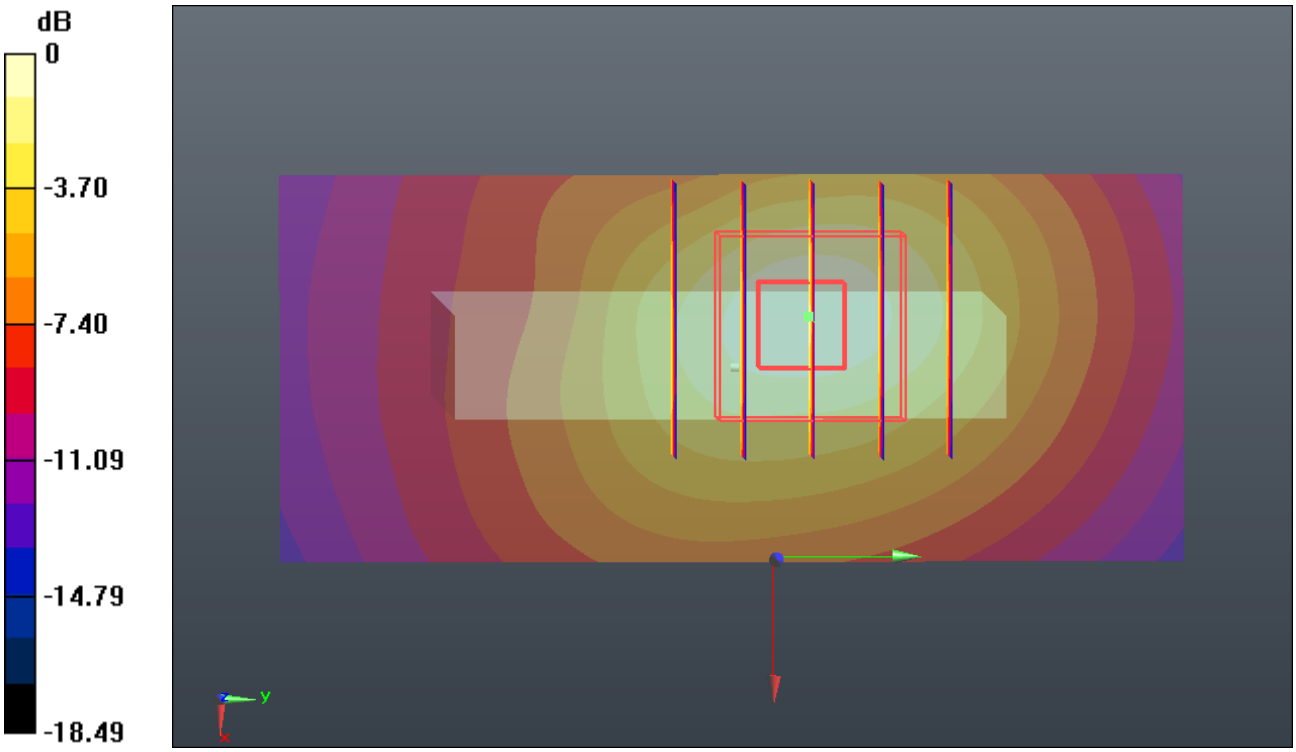
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (31x71x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.969 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.121 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.168 W/kg
**SAR(1 g) = 0.697 mW/g; SAR(10 g) = 0.379 mW/g**
Maximum value of SAR (measured) = 0.962 mW/g




0 dB = 0.960mW/g

**#58 CDMA2000 BC14_RC3 SO32_Front_1cm_Ch1275**

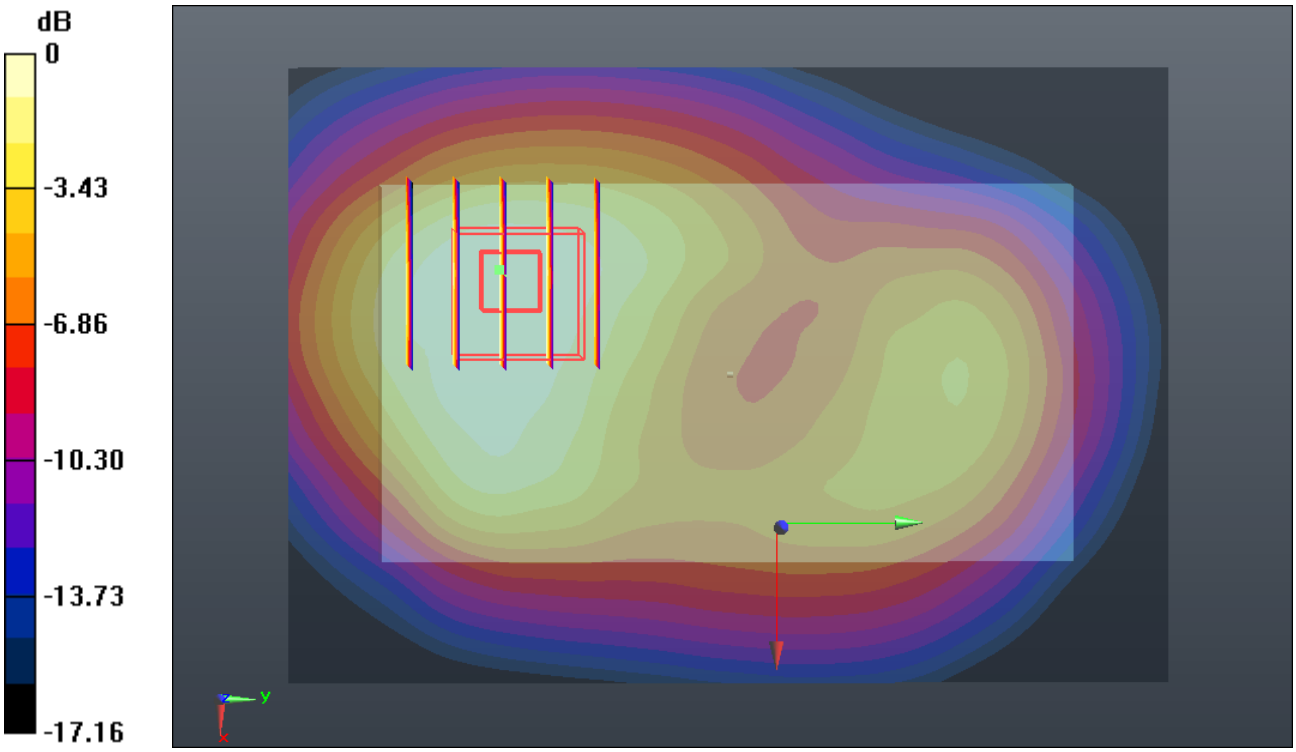
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.258 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.864 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.545 W/kg
**SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.560 mW/g**
Maximum value of SAR (measured) = 1.255 mW/g




0 dB = 1.250mW/g

**#59 CDMA2000 BC14_RC3 SO32_Back_1cm_Ch1275**

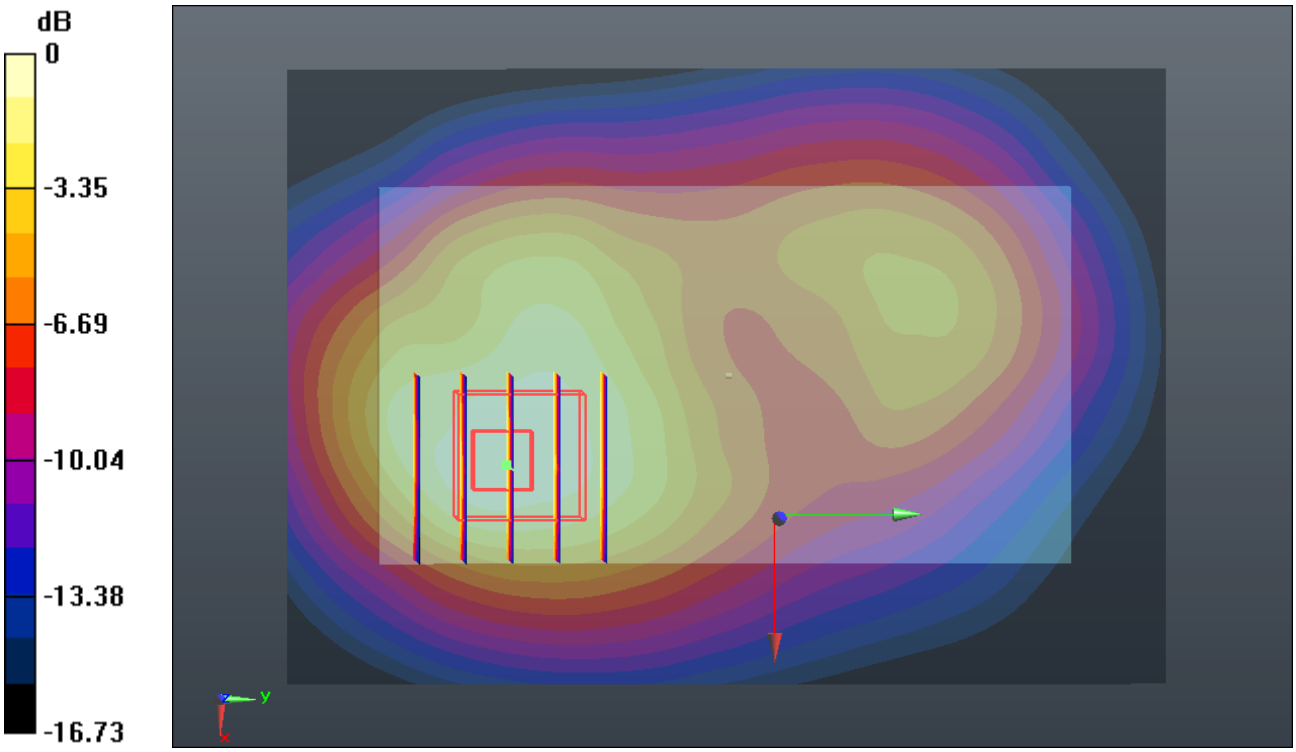
**DUT: 311101**

Communication System: CDMA2000; Frequency: 1913.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130127 Medium parameters used: f = 1913.75 MHz; $\sigma$ = 1.566 mho/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch1275/Area Scan (71x101x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.430 mW/g

**Ch1275/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.338 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.792 W/kg
**SAR(1 g) = 1.090 mW/g; SAR(10 g) = 0.629 mW/g**
Maximum value of SAR (measured) = 1.465 mW/g




0 dB = 1.470mW/g

**#61 802.11b_1M_Front 1cm_Ch11**

**DUT: 311101**

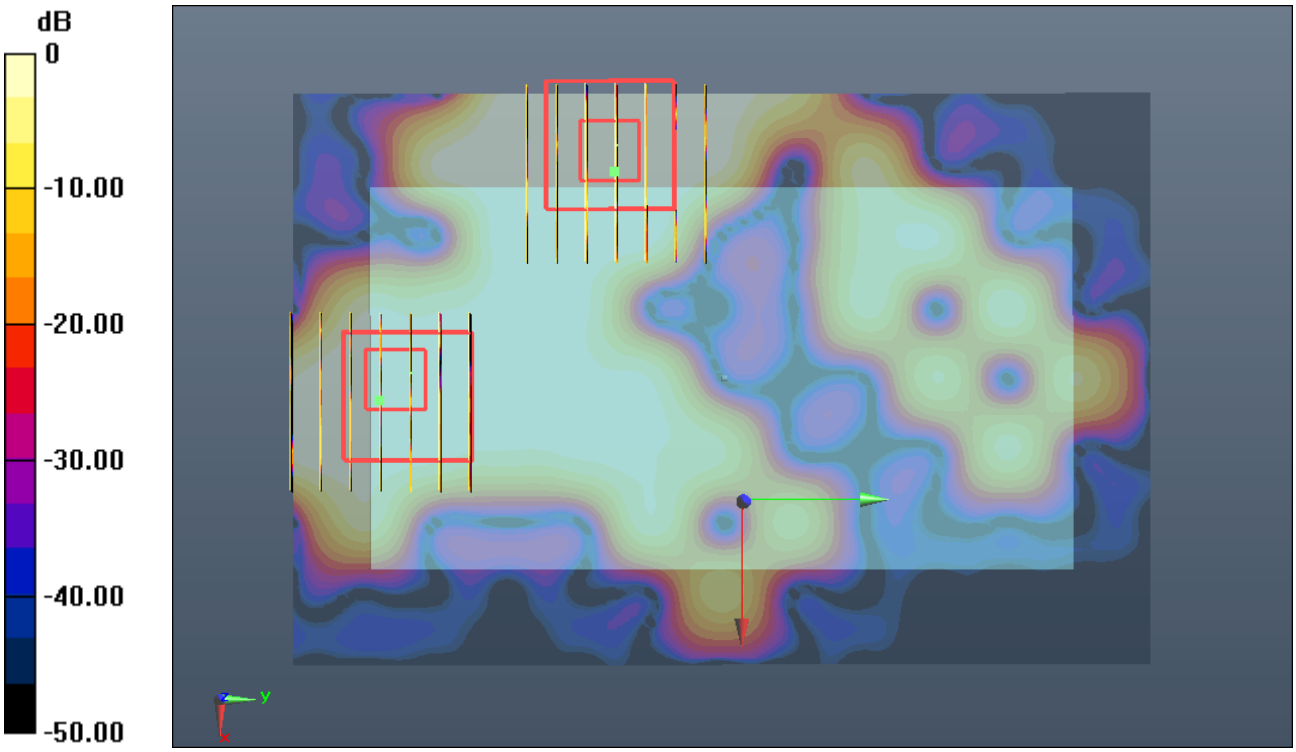
Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 2.027 mho/m; $\varepsilon_r$ = 53.408; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.024 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.048 W/kg
**SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.005 mW/g**
Maximum value of SAR (measured) = 0.022 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.015 W/kg
**SAR(1 g) = 0.00658 mW/g; SAR(10 g) = 0.00273 mW/g**
Maximum value of SAR (measured) = 0.011 mW/g




0 dB = 0.010mW/g

**#62 802.11b_1M_Back 1cm_Ch11**

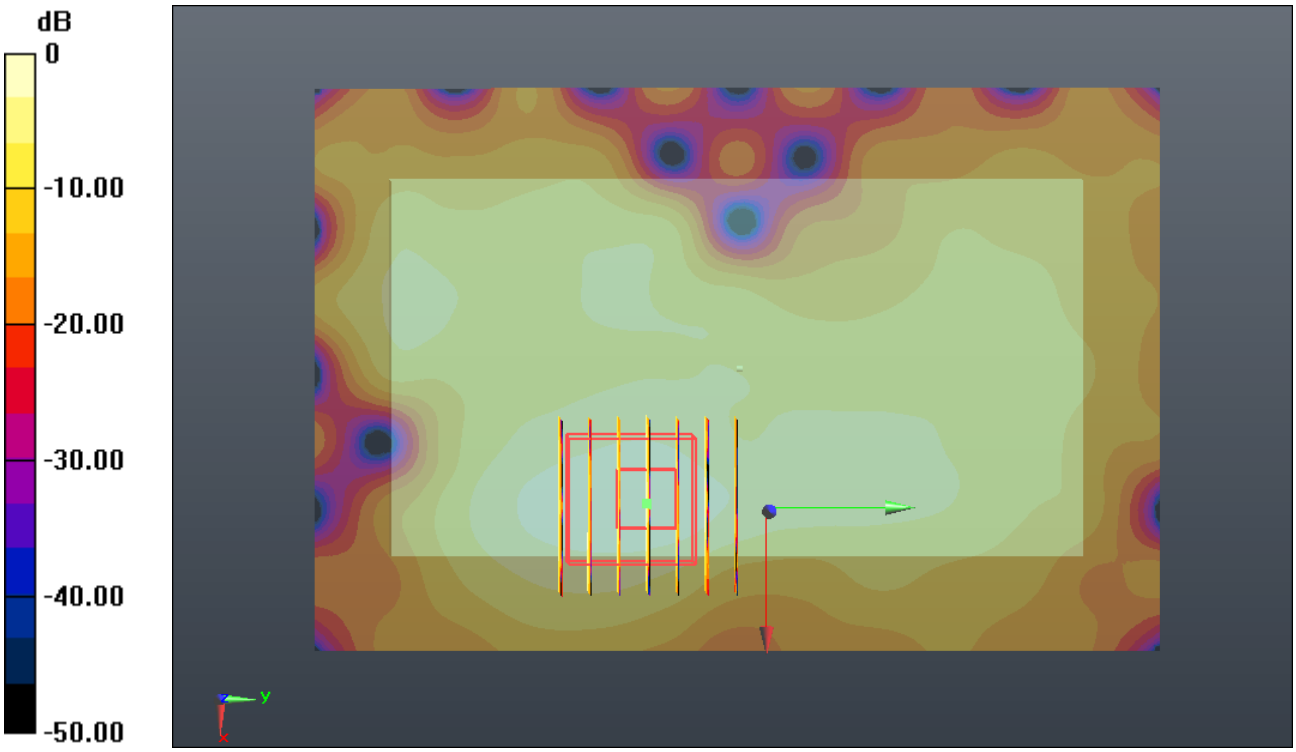
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 2.027 mho/m; $\varepsilon_r$ = 53.408; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.090 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.565 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.121 W/kg
**SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.023 mW/g**
Maximum value of SAR (measured) = 0.086 mW/g




0 dB = 0.090mW/g

**#62 802.11b_1M_Back 1cm_Ch11_2D**

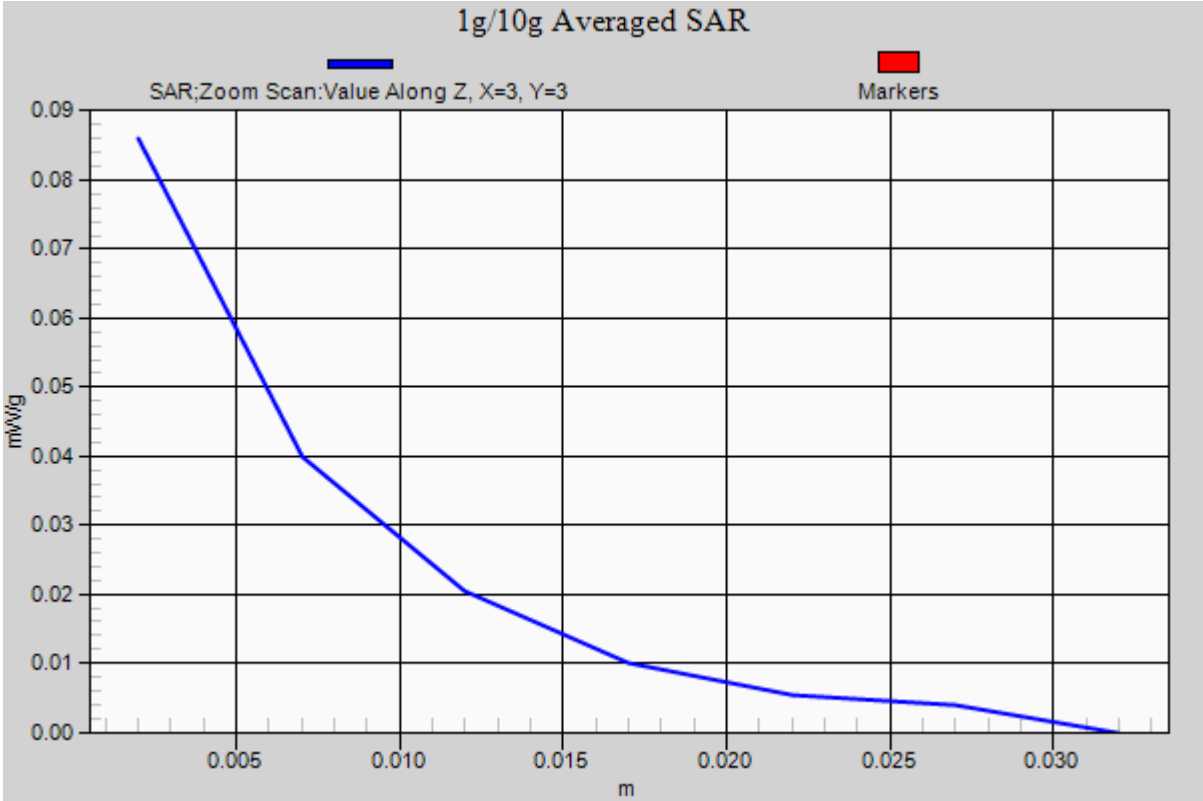
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 2.027 mho/m; $\varepsilon_r$ = 53.408; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.090 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.565 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.121 W/kg
**SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.023 mW/g**
Maximum value of SAR (measured) = 0.086 mW/g


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
mW/g
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.005
0.010
0.015
0.020
0.025
0.030
m

**#63 802.11b_1M_Left Side 1cm_Ch11**

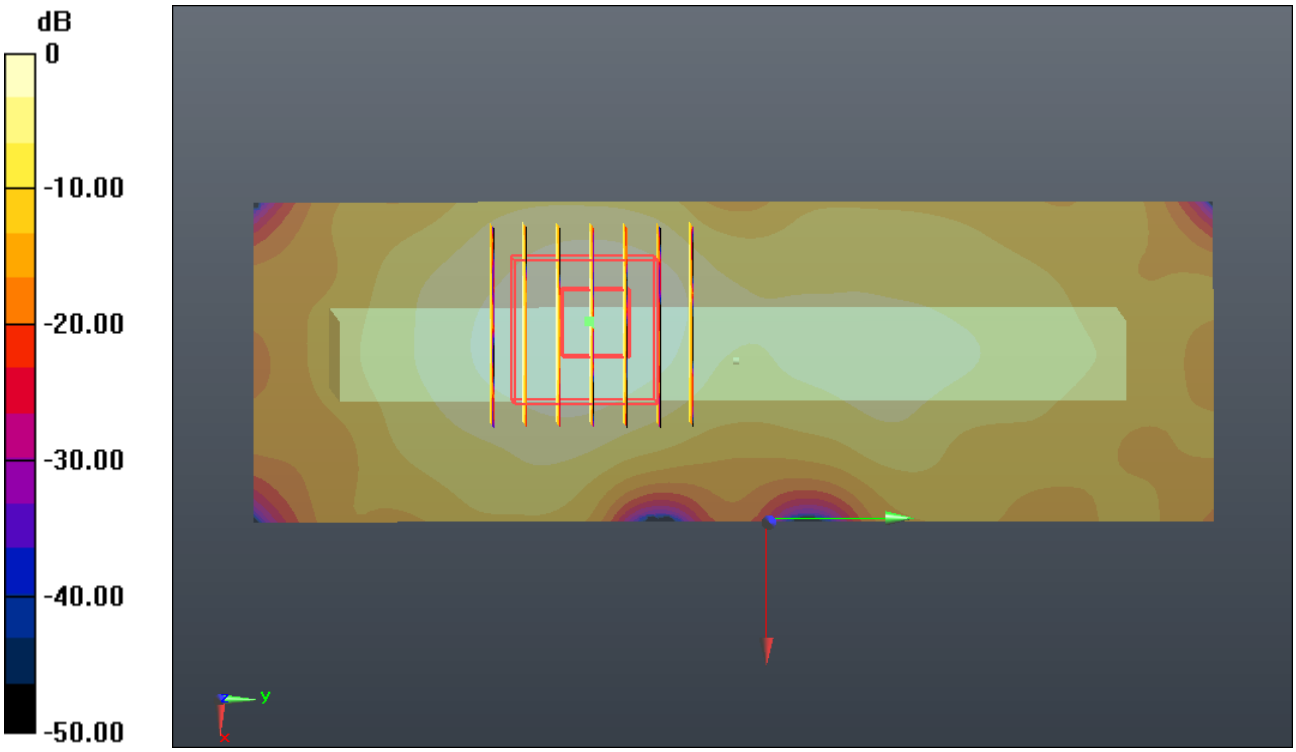
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 2.027 mho/m; $\varepsilon_r$ = 53.408; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.1 ℃; Liquid Temperature：21.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (41x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.076 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.538 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.102 W/kg
**SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.022 mW/g**
Maximum value of SAR (measured) = 0.074 mW/g




0 dB = 0.070mW/g

**#64 802.11b_1M_Back 1cm_Ch11_Headset**

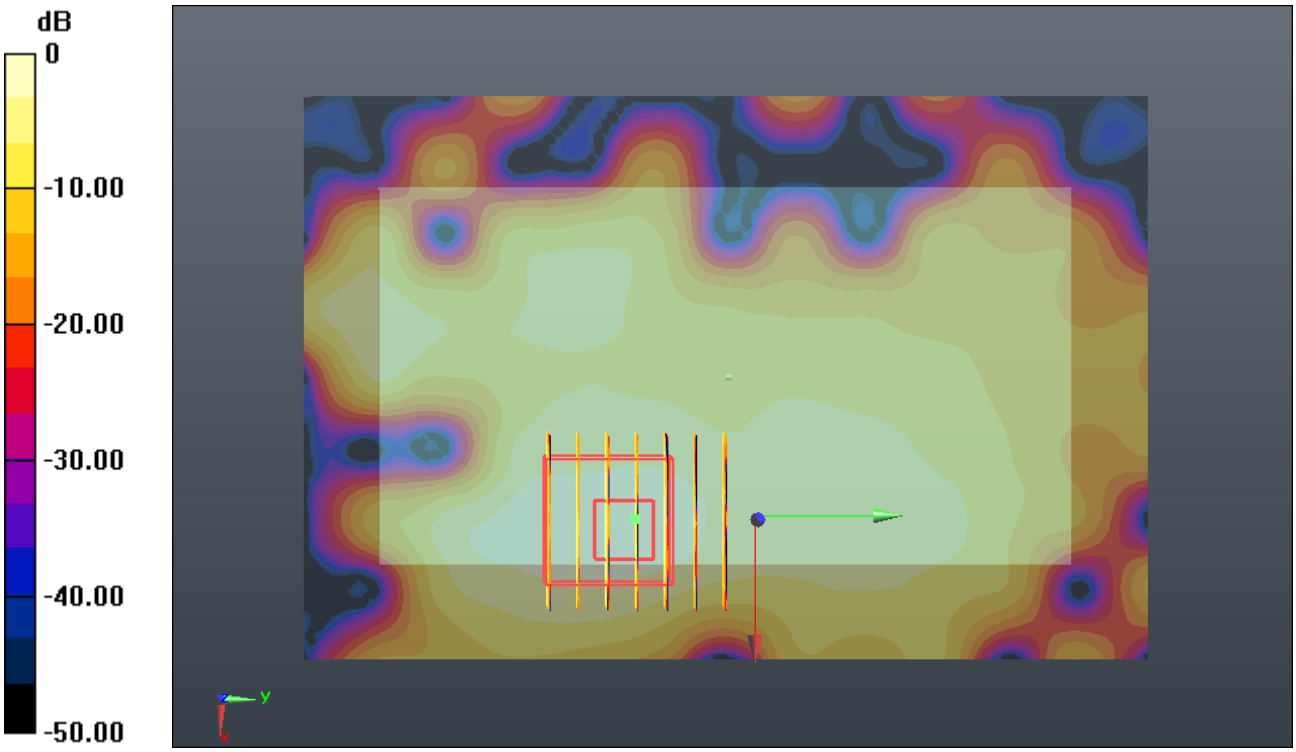
**DUT: 311101**

Communication System: WIFI; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_130130 Medium parameters used: f = 2462 MHz; $\sigma$ = 2.027 mho/m; $\varepsilon_r$ = 53.408; $\rho$ = 1000 kg/$m^3$
Ambient Temperature：23.2 ℃; Liquid Temperature：21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.94, 6.94, 6.94); Calibrated: 2012-6-20
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2012-12-5
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.4.5 (3634)

**Ch11/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.073 mW/g

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.860 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.109 W/kg
**SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.019 mW/g**
Maximum value of SAR (measured) = 0.073 mW/g




0 dB = 0.070mW/g