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# SAR Test Report

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**Report No.: AGC19I120201-02S1**

FCC ID : CFOMOON

Product Designation : GSM CELL PHONE

Brand Name : TECH

Test model : MOON

Client : TECH MIAMI LLC

Date of Issue : MAR 19,2012

STANDARD(S) : FCC Oet65 Supplement C June 2001  
: IEEE Std. 1528-2003,47CFR § 2.1093

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# Test Report Certification

|                      |   |                                                                                                                                                                          |
|----------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant Name       | : | TECH MIAMI LLC                                                                                                                                                           |
| Applicant Address    | : | 3164 nw 72nd AV Miami, FI 33122, USA                                                                                                                                     |
| Manufacturer Name    | : | Capeak Digitech Co.,Ltd.                                                                                                                                                 |
| Manufacturer Address | : | Bld 206, Terra Industry Park, Che Gong Miao, Futian, Shenzhen, China                                                                                                     |
| Product Designation  | : | GSM CELL PHONE                                                                                                                                                           |
| Brand Name           | : | TECH                                                                                                                                                                     |
| Test Model           | : | MOON, Dance, Music, C3, Q1, Q2, Q3, Q4, Q5, Q6                                                                                                                           |
| EUT Voltage          | : | DC3.7V                                                                                                                                                                   |
| Applicable Standard  | : | FCC Oet65 Supplement C June 2001<br>IEEE Std. 1528-2003,47CFR § 2.1093                                                                                                   |
| Test Date            | : | MAR 15,2012                                                                                                                                                              |
| Test Results         | : | MAX SAR MEASUREMENT(1g)<br>Head:0.416 W/Kg (Scaling SAR = 0.441 W/Kg)<br>Body:0.320 W/Kg                                                                                 |
| Performed Location   | : | Attestation of Global Compliance (Shenzhen) Co., Ltd.<br>2F, No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei,<br>Xixiang, Bao'an District, Shenzhen, China |

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## 1. General Information

### 1.1. EUT Description

| General Information                  |                                                                                                                                                                                                                    |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Designation                  | GSM CELL PHONE                                                                                                                                                                                                     |
| Test Model                           | MOON                                                                                                                                                                                                               |
| Hardware Version                     | H110_MB_V1                                                                                                                                                                                                         |
| Software Version                     | L279_JYX_SPANISH_20110926                                                                                                                                                                                          |
| Device Category                      | Portable                                                                                                                                                                                                           |
| RF Exposure Environment              | Uncontrolled                                                                                                                                                                                                       |
| Antenna Type                         | Internal                                                                                                                                                                                                           |
| GSM and GPRS                         |                                                                                                                                                                                                                    |
| Support Band                         | <input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS 1900 (U.S. Bands)<br><input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (Non-U.S. Bands) |
| GPRS Type                            | Class B                                                                                                                                                                                                            |
| GPRS Class                           | Class 8,10,12 (1Tx+4Rx, 2Tx+3Rx,3Tx+2Rx,4Tx+1Rx)                                                                                                                                                                   |
| TX Frequency Range                   | GSM 850: 824.2~848.8MHz<br>PCS 1900: 1850.2~1909.8MHz                                                                                                                                                              |
| RX Frequency Range                   | GSM 850: 869~894MHz<br>PCS 1900: 1930~1990MHz                                                                                                                                                                      |
| Release Version                      | R99                                                                                                                                                                                                                |
| Type of modulation                   | GMSK for GSM/GPRS                                                                                                                                                                                                  |
| Antenna Gain                         | 1.0dBi                                                                                                                                                                                                             |
| Max. Output Power (Avg. Burst Power) | GSM850: 32.01 dBm ( 32.73 dBm Peak Power)<br>PCS1900:29.65 dBm (29.75 dBm Peak Power)                                                                                                                              |
| Max. Output Power (Radiated)         | GSM850: 30.79 dBm- ERP<br>PCS1900: 28.17 dBm- EIRP                                                                                                                                                                 |
| Bluetooth                            |                                                                                                                                                                                                                    |
| Bluetooth Frequency                  | 2402~2480MHz                                                                                                                                                                                                       |
| Type of modulation                   | <input checked="" type="checkbox"/> GFSK <input checked="" type="checkbox"/> π/4-DQPSK <input checked="" type="checkbox"/> 8-DPSK                                                                                  |
| Data Rate                            | <input checked="" type="checkbox"/> 1Mbps <input checked="" type="checkbox"/> 2Mbps <input checked="" type="checkbox"/> 3Mbps                                                                                      |
| Antenna Gain                         | 0.8dBi                                                                                                                                                                                                             |

| <b>Accessories</b> |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Battery            | Brand name: TECH<br>Model No. : BL-4S<br>Voltage and Capacitance: DC 3.7V/1100mAh           |
| Adapter            | Brand name: TECH<br>Model No. : BC-M9<br>Input: 100-240V, 50/60HZ / Output: 0.2A 5.0V 500mA |
| Earphone           | Brand name: TECH<br>Model No. : MOON                                                        |

Note: The sample used for testing is end product.

## 1.2. Test Procedure

|   |                                                                                     |
|---|-------------------------------------------------------------------------------------|
| 1 | Setup the EUT and simulators as shown on above.                                     |
| 2 | Turn on the power of all equipment.                                                 |
| 3 | EUT communicate with CMU 200, and test them respectively at GSM 850 & PCS1900 bands |

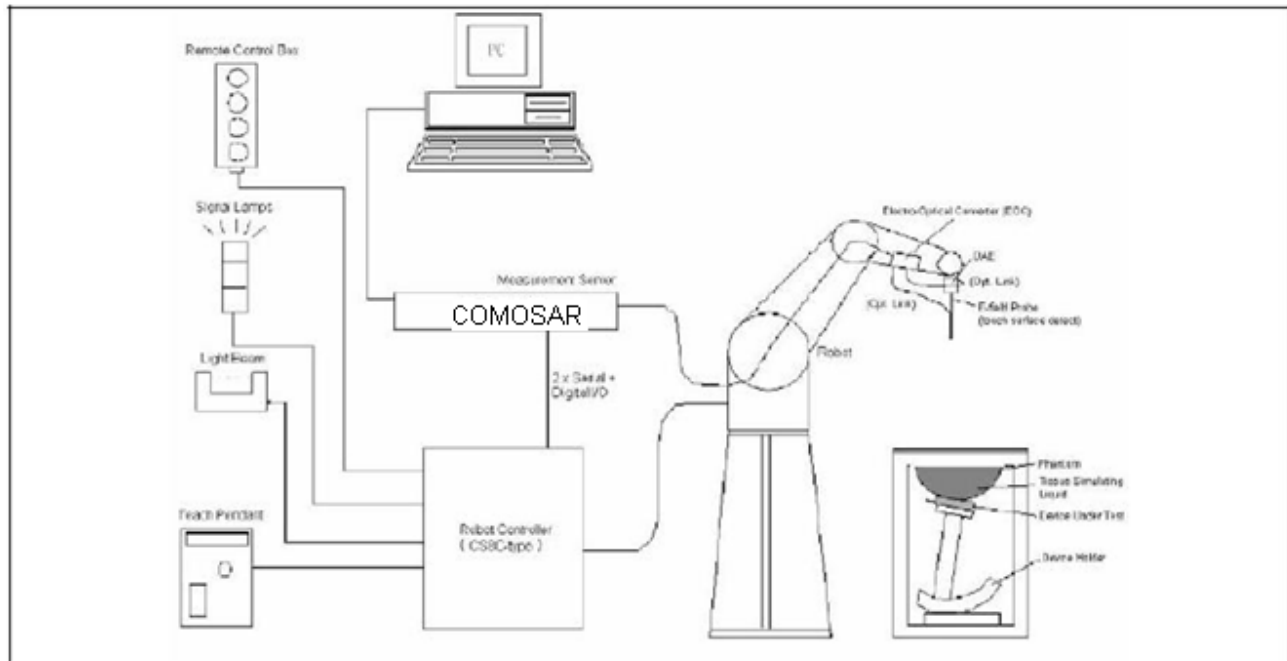
## 1.3. Test Environment

Ambient conditions in the laboratory:

| Items            | Required | Actual |
|------------------|----------|--------|
| Temperature (°C) | 18-25    | 21± 2  |
| Humidity (%RH)   | 30-70    | 55±2   |

## 2. SAR Measurement System

### 2.1. COMOSAR System Description



The COMOSAR system for performing compliance tests consists of the following items:

A standard high precision 6-axis robot with controller, teach pendant and software.

An arm extension for accommodating the data acquisition electronics (DAE).

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.

The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.

A computer running WinXP and the Pensar software.

Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.

The phantom, the device holder and other accessories according to the targeted measurement.

#### 2.1.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

### 2.1.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm<sup>2</sup> step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

### 2.1.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m<sup>3</sup> is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

### 2.1.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Post processor, COMOSAR allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528. The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x, y, z) = A e^{-\frac{z}{2a}} \cos^2 \left( \frac{\pi}{2} \frac{\sqrt{x'^2 + y'^2}}{5a} \right)$$

$$f_2(x, y, z) = A e^{-\frac{z}{a}} \frac{a^2}{a^2 + x'^2} \left( 3 - e^{-\frac{2z}{a}} \right) \cos^2 \left( \frac{\pi}{2} \frac{y'}{3a} \right)$$

$$f_3(x, y, z) = A \frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2} \left( e^{-\frac{2z}{a}} + \frac{a^2}{2(a + 2z)^2} \right)$$

## 2.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dissymmetric probe manufactured by SPEAG.

The probe is specially designed and calibrated for use in liquid with high permittivity. The dissymmetric probe has special calibration in liquid at different frequency.

SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN62209-1, IEC 62209, etc.) Under ISO17025. The calibration data are in Appendix D.

### 2.2.1. Isotropic E-Field Probe Specification

|               |                                                                                                                                                                                                            |                                                                                     |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model         | SSE5                                                                                                                                                                                                       |                                                                                     |
| Manufacture   | Satimo                                                                                                                                                                                                     |                                                                                     |
| frequency     | 0.3 GHz-3 GHz<br>Linearity:±0.2dB(300 MHz-3 GHz)                                                                                                                                                           |  |
| Dynamic Range | 0.01W/Kg-100W/Kg<br>Linearity:±0.2dB                                                                                                                                                                       |                                                                                     |
| Dimensions    | Overall length:330mm<br>Length of individual dipoles:4.5mm<br>Maximum external diameter:8mm<br>Probe Tip external diameter:5mm<br>Distance between dipoles/ probe extremity:2.7mm                          |                                                                                     |
| Application   | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precision of better 30%. |                                                                                     |

## 2.3 Robot

The COMOSAR system uses the high precision robots TX90 XL type out of the newer series from Satimo SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from Satimo is used.

The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller



## 2.4. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link.

During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

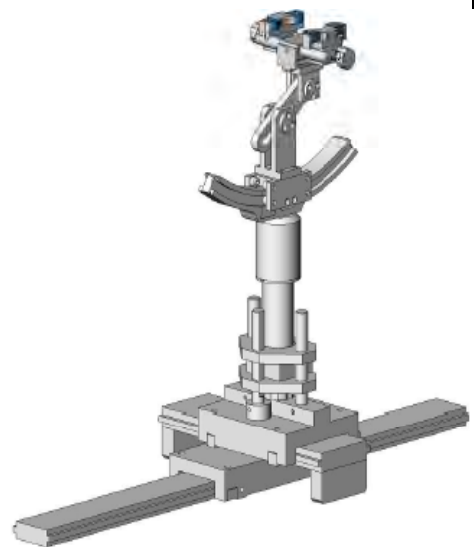


## 2.5. Device Holder

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

Thus the device needs no repositioning when changing the angles.

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



## 2.6. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left head
- Right head
- Flat 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.

### 3. Tissue Simulating Liquid

#### 3.1. The composition of the tissue simulating liquid

| Ingredient       | 835MHz | 835MHz | 1900MHz | 1900MHz |
|------------------|--------|--------|---------|---------|
| (% Weight)       | Head   | Body   | Head    | Body    |
| <b>Water</b>     | 40.45  | 52.4   | 54.90   | 40.5    |
| <b>Salt</b>      | 1.45   | 1.40   | 0.18    | 0.50    |
| <b>Sugar</b>     | 57.6   | 45.0   | 0.00    | 58.0    |
| <b>HEC</b>       | 0.40   | 1.00   | 0.00    | 0.50    |
| <b>Preventol</b> | 0.10   | 0.20   | 0.00    | 0.50    |
| <b>DGBE</b>      | 0.00   | 0.00   | 44.92   | 0.00    |

#### 3.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and R&S Network Analyzer ZVL6 .

| Head Tissue Stimulant Measurement |                                |                                      |                                     |                  |
|-----------------------------------|--------------------------------|--------------------------------------|-------------------------------------|------------------|
| Frequency (MHz)                   | Description                    | Dielectric Parameters                |                                     | Tissue Temp [°C] |
| 835MHz                            | Reference result<br>±5% window | $\epsilon_r$<br>41.50<br>39.43-43.58 | $\delta$ [s/m]<br>0.90<br>0.86-0.95 | N/A              |
|                                   | MAR 15,2012                    | 40.66                                | 0.91                                | 21               |

| Body Tissue Stimulant Measurement |                                |                                      |                                     |                  |
|-----------------------------------|--------------------------------|--------------------------------------|-------------------------------------|------------------|
| Frequency (MHz)                   | Description                    | Dielectric Parameters                |                                     | Tissue Temp [°C] |
| 835MHz                            | Reference result<br>±5% window | $\epsilon_r$<br>55.20<br>52.44-57.96 | $\delta$ [s/m]<br>0.97<br>0.92-1.02 | N/A              |
|                                   | MAR 15,2012                    | 53.49                                | 0.99                                | 21               |

| Head Tissue Stimulant Measurement |                                |                                      |                                     |                  |
|-----------------------------------|--------------------------------|--------------------------------------|-------------------------------------|------------------|
| Frequency (MHz)                   | Description                    | Dielectric Parameters                |                                     | Tissue Temp [°C] |
| 1900MHz                           | Reference result<br>±5% window | $\epsilon_r$<br>40.00<br>38.00-42.00 | $\delta$ [s/m]<br>1.40<br>1.33-1.47 | N/A              |
|                                   | MAR 15,2012                    | 41.25                                | 1.41                                | 21               |

| Body Tissue Stimulant Measurement |                                |                                      |                                     |                  |
|-----------------------------------|--------------------------------|--------------------------------------|-------------------------------------|------------------|
| Frequency (MHz)                   | Description                    | Dielectric Parameters                |                                     | Tissue Temp [°C] |
| 1900MHz                           | Reference result<br>±5% window | $\epsilon_r$<br>53.30<br>50.64-55.97 | $\delta$ [s/m]<br>1.52<br>1.44-1.60 | N/A              |
|                                   | MAR 15,2012                    | 54.18                                | 1.50                                | 21               |

### 3.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

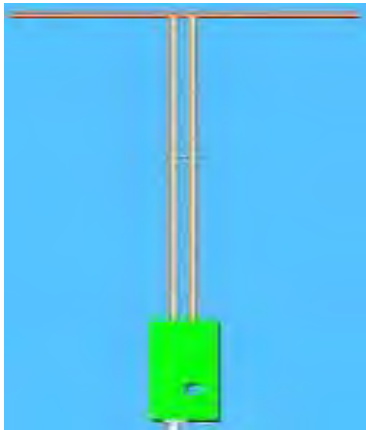
| Target Frequency (MHz) | head         |                | body         |                |
|------------------------|--------------|----------------|--------------|----------------|
|                        | $\epsilon_r$ | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) |
| 300                    | 45.3         | 0.87           | 58.2         | 0.92           |
| 450                    | 43.5         | 0.87           | 56.7         | 0.94           |
| <b>835</b>             | <b>41.5</b>  | <b>0.90</b>    | <b>55.2</b>  | <b>0.97</b>    |
| 900                    | 41.5         | 0.97           | 55.0         | 1.05           |
| 915                    | 41.5         | 0.98           | 55.0         | 1.06           |
| 1450                   | 40.5         | 1.20           | 54.0         | 1.30           |
| 1610                   | 40.3         | 1.29           | 53.8         | 1.40           |
| <b>1800 – 2000</b>     | <b>40.0</b>  | <b>1.40</b>    | <b>53.3</b>  | <b>1.52</b>    |
| 2450                   | 39.2         | 1.80           | 52.7         | 1.95           |
| 3000                   | 38.5         | 2.40           | 52.0         | 2.73           |
| 5800                   | 35.3         | 5.27           | 48.2         | 6.00           |

( $\epsilon_r$  = relative permittivity,  $\sigma$  = conductivity and  $\rho = 1000 \text{ kg/m}^3$ )

4. SAR Measurement Procedure

4.1. SAR System Validation

4.1.1. Validation Dipoles

|                                                                                   |                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical Specifications for the dipoles.</p> |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Frequency | L (mm) | h (mm) | d (mm) |
|-----------|--------|--------|--------|
| 900 MHz   | 149.0  | 83.3   | 3.6    |
| 1900MHz   | 68     | 39.5   | 3.6    |

**4.1.2. Validation Result**

| <b>System Performance Check at 835 MHz &amp;1900MHz for Head</b> |                               |                        |                        |                  |
|------------------------------------------------------------------|-------------------------------|------------------------|------------------------|------------------|
| <b>Validation Kit: SN 46/11DIP 0G900-185</b>                     |                               |                        |                        |                  |
| Frequency [MHz]                                                  | Description                   | SAR [w/kg] 1g          | SAR [w/kg] 10g         | Tissue Temp.[°C] |
| 900 MHz                                                          | Reference result ± 10% window | 10.9<br>9.81 to 11.99  | 6.99<br>6.29 to 7.69   | N/A              |
|                                                                  | MAR 15,2012                   | 10.48                  | 6.79                   | 21.0             |
| <b>Validation Kit: SN 46/11DIP 1G900-187</b>                     |                               |                        |                        |                  |
| Frequency [MHz]                                                  | Description                   | SAR [w/kg] 1g          | SAR [w/kg] 10g         | Tissue Temp.[°C] |
| 1900 MHz                                                         | Reference result ± 10% window | 39.7<br>35.73 to 43.67 | 20.5<br>18.45 to 22.55 | N/A              |
|                                                                  | MAR 15,2012                   | 41.81                  | 19.80                  | 21.0             |
| Note: All SAR values are normalized to 1W forward power.         |                               |                        |                        |                  |

## 4.2. SAR Measurement Procedure

The COMOSAR calculates SAR using the following equation,

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

$\sigma$ : represents the simulated tissue conductivity

$\rho$ : represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at 1mm<sup>2</sup> ) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at 1mm<sup>3</sup> ).

When multiple peak SAR locations were found during the same configuration or test mode, Zoom scan shall performed on each peak SAR location, only the peak point with maximum SAR value will be reported for the configuration or test mode.

## 5. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

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

| Type Exposure                                            | Uncontrolled Environment Limit |
|----------------------------------------------------------|--------------------------------|
| Spatial Peak SAR (1g cube tissue for brain or body)      | 1.60 W/kg                      |
| Spatial Average SAR (whole body)                         | 0.08 W/kg                      |
| Spatial Peak SAR (10g for hands, feet, ankles and wrist) | 4.00 W/kg                      |

## 6. Test Equipment List

| Equipment description | Manufacturer/Model     | Identification No.       | Current calibration date    | Next calibration date       |
|-----------------------|------------------------|--------------------------|-----------------------------|-----------------------------|
| SAR Probe             | Satimo                 | SN_3511_EP132            | 12/09/2011                  | 12/08/2012                  |
| Phantom               | Satimo                 | SN_4511_SAM90            | Validated. No cal required. | Validated. No cal required. |
| Liquid                | Satimo                 | -                        | Validated. No cal required. | Validated. No cal required. |
| Comm Tester           | R&S - CMU200           | 069Y7-158-13-712         | 12/09/2011                  | 12/08/2012                  |
| Multimeter            | Keithley 2000          | 1188656                  | 12/09/2011                  | 12/08/2012                  |
| Dipole                | Satimo SID900          | SN46/11 DIP<br>0G900-185 | 12/09/2011                  | 12/08/2014                  |
| Dipole                | Satimo SID1900         | SN46/11 DIP<br>1G900-187 | 12/09/2011                  | 12/08/2014                  |
| Amplifier             | Aethercomm             | SN 046                   | 12/09/2011                  | 12/08/2012                  |
| Power Meter           | HP E4418A              | US38261498               | 12/09/2011                  | 12/08/2012                  |
| Network Analyzer      | Rhode & Schwarz<br>ZVA | SN100132                 | 12/09/2011                  | 12/08/2012                  |

Note: Per KDB 50824 Dipole SAR Validation Verification, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

## 7. Measurement Uncertainty

| Satimo Uncertainty                                                              |         |             |                |            |                 |                 |                           |                           |              |
|---------------------------------------------------------------------------------|---------|-------------|----------------|------------|-----------------|-----------------|---------------------------|---------------------------|--------------|
| Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram.    |         |             |                |            |                 |                 |                           |                           |              |
| Error Description                                                               | Sec     | Tol<br>(±%) | Prob.<br>Dist. | Div.       | (Ci)<br>1g      | (Ci)<br>10g     | Std.<br>Unc.<br>(1g) (±%) | Std.<br>Unc.<br>(10g)(±%) | (Vi)<br>Veff |
| <b>Measurement System</b>                                                       |         |             |                |            |                 |                 |                           |                           |              |
| Probe Calibration                                                               | E.2.1   | 6           | N              | 1          | 1               | 1               | 6                         | 6                         | ∞            |
| Axial Isotropy                                                                  | E.2.2   | 3           | R              | $\sqrt{3}$ | $(1-c_p)^{1/2}$ | $(1-c_p)^{1/2}$ | 1.22474                   | 1.22474                   | ∞            |
| Hemispherical Isotropy                                                          | E.2.2   | 5           | R              | $\sqrt{3}$ | $\sqrt{C_p}$    | $\sqrt{C_p}$    | 2.04124                   | 2.04124                   | ∞            |
| Boundary Effects                                                                | E.2.3   | 1           | R              | $\sqrt{3}$ | 1               | 1               | 0.57735                   | 0.57735                   | ∞            |
| Linearity                                                                       | E.2.4   | 5           | R              | $\sqrt{3}$ | 1               | 1               | 2.88675                   | 2.88675                   | ∞            |
| System Detection Limits                                                         | E.2.5   | 1           | R              | $\sqrt{3}$ | 1               | 1               | 0.57735                   | 0.57735                   | ∞            |
| Readout Electronics                                                             | E.2.6   | 0.5         | N              | 1          | 1               | 1               | 0.5                       | 0.5                       | ∞            |
| Response Time                                                                   | E.2.7   | 0.2         | R              | $\sqrt{3}$ | 1               | 1               | 0.11547                   | 0.11547                   | ∞            |
| Integration Time                                                                | E.2.8   | 2           | R              | $\sqrt{3}$ | 1               | 1               | 1.1547                    | 1.1547                    | ∞            |
| RF Ambient Noise                                                                | E.6.1   | 3           | R              | $\sqrt{3}$ | 1               | 1               | 1.73205                   | 1.73205                   | ∞            |
| Probe Positioner Mechanical Tolerance                                           | E.6.2   | 2           | R              | $\sqrt{3}$ | 1               | 1               | 1.1547                    | 1.1547                    | ∞            |
| Probe Positioning with Respect to Phantom Shell                                 | E.6.3   | 1           | R              | $\sqrt{3}$ | 1               | 1               | 0.57735                   | 0.57735                   | ∞            |
| Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation | E.5.2   | 1.5         | R              | $\sqrt{3}$ | 1               | 1               | 0.86603                   | 0.86603                   | ∞            |
| <b>Dipole</b>                                                                   |         |             |                |            |                 |                 |                           |                           |              |
| Device Positioning                                                              | 8,E.4.2 | 1           | N              | $\sqrt{3}$ | 1               | 1               | 0.57735                   | 0.57735                   | N-1          |
| Power Drift                                                                     | 8.6.6.2 | 2           | R              | $\sqrt{3}$ | 1               | 1               | 1.1547                    | 1.1547                    | ∞            |
| <b>Phantom and Tissue Parameters</b>                                            |         |             |                |            |                 |                 |                           |                           |              |
| Phantom Uncertainty                                                             | E.3.1   | 4           | R              | $\sqrt{3}$ | 1               | 1               | 2.3094                    | 2.3094                    | ∞            |
| Liquid Conductivity (target)                                                    | E.3.2   | 5           | R              | $\sqrt{3}$ | 0.64            | 0.43            | 1.84752                   | 1.2413                    | ∞            |
| Liquid Conductivity (meas.)                                                     | E.3.3   | 2.5         | N              | 1          | 0.64            | 0.43            | 1.6                       | 1.075                     | ∞            |
| Liquid Permittivity (target)                                                    | E.3.2   | 3           | R              | $\sqrt{3}$ | 0.6             | 0.49            | 1.03923                   | 0.8487                    | ∞            |
| Liquid Permittivity (meas.)                                                     | E.3.3   | 2.5         | N              | 1          | 0.6             | 0.49            | 1.5                       | 1.225                     | M            |
| Combined Standard Uncertainty                                                   |         |             | RSS            |            |                 |                 | 8.09272                   | 7.9296                    |              |
| Expanded Uncertainty (95%CONFIDENCE INTERVAL)                                   |         |             | k              |            |                 |                 | 15.8617                   | 15.542                    |              |

## 8. Conducted Power Measurement

| Mode                 | Frequency(MHz) | Peak Power   | Avg. Burst Power | Duty cycle Factor(dB) | Frame Power(dBm) |
|----------------------|----------------|--------------|------------------|-----------------------|------------------|
| Maximum Power        |                |              |                  |                       |                  |
| GSM 850              | 824.2          | 32.69        | 31.68            | -9                    | 22.68            |
|                      | 836.6          | <b>32.73</b> | <b>32.01</b>     | -9                    | <b>23.01</b>     |
|                      | 848.8          | 32.65        | 31.87            | -9                    | 22.87            |
| GPRS850<br>(1 Slot)  | 824.2          | 32.61        | 31.77            | -9                    | 22.77            |
|                      | 836.6          | 32.57        | 31.75            | -9                    | 22.75            |
|                      | 848.8          | 32.55        | 31.66            | -9                    | 22.66            |
| GPRS850<br>(2 Slot)  | 824.2          | 29.56        | 28.86            | -6                    | 22.86            |
|                      | 836.6          | 29.84        | 28.74            | -6                    | 22.74            |
|                      | 848.8          | 29.71        | 28.61            | -6                    | 22.61            |
| GPRS850<br>(3 Slot)  | 824.2          | 27.81        | 26.44            | -4.26                 | 22.19            |
|                      | 836.6          | 28.04        | 27               | -4.26                 | 22.75            |
|                      | 848.8          | 27.76        | 26.84            | -4.26                 | 22.59            |
| GPRS850<br>(4 Slot)  | 824.2          | 26.77        | 25.68            | -3                    | 22.68            |
|                      | 836.6          | 26.61        | 25.91            | -3                    | 22.91            |
|                      | 848.8          | 26.58        | 25.69            | -3                    | 22.69            |
|                      |                |              |                  |                       |                  |
| PCS1900              | 1850.2         | 29.71        | 29.11            | -9                    | 20.11            |
|                      | 1880           | <b>29.75</b> | <b>29.65</b>     | -9                    | <b>20.65</b>     |
|                      | 1909.8         | 29.7         | 29.04            | -9                    | 20.04            |
| GPRS1900<br>(1 Slot) | 1850.2         | 29.69        | 28.96            | -9                    | 19.96            |
|                      | 1880           | 29.7         | 29.01            | -9                    | 20.01            |
|                      | 1909.8         | 29.68        | 28.94            | -9                    | 19.94            |
| GPRS1900<br>(2 Slot) | 1850.2         | 26.68        | 25.71            | -6                    | 19.71            |
|                      | 1880           | 26.71        | 25.97            | -6                    | 19.97            |
|                      | 1909.8         | 26.67        | 25.9             | -6                    | 19.90            |
| GPRS1900<br>(3 Slot) | 1850.2         | 25.11        | 24.44            | -4.26                 | 20.19            |
|                      | 1880           | 25.06        | 24.51            | -4.26                 | 20.16            |
|                      | 1909.8         | 24.98        | 23.95            | -4.26                 | 19.70            |
| GPRS1900<br>(4 Slot) | 1850.2         | 23.81        | 22.87            | -3                    | 19.87            |
|                      | 1880           | 23.77        | 22.91            | -3                    | 19.91            |
|                      | 1909.8         | 23.58        | 22.79            | -3                    | 19.79            |
|                      |                |              |                  |                       |                  |
| GSM 850<br><SIM 2>   | 824.2          | --           | --               | -9                    | --               |
|                      | 836.6          | 32.68        | 31.96            | -9                    | 22.96            |
|                      | 848.8          | --           | --               | -9                    | --               |
| PCS1900<br><SIM 2>   | 1850.2         | --           | --               | -9                    | --               |
|                      | 1880           | 29.69        | 29.65            | -9                    | 20.65            |
|                      | 1909.8         | --           | --               | -9                    | --               |

## Note 1:

The Frame Power (Source-based time-averaged Power) is scaled the maximum burst average power based on time slots. The calculated methods are show as following:

Frame Power = Max burst power (1 Up Slot) – 9 dB

Frame Power = Max burst power (2 Up Slot) – 6 dB

Frame Power = Max burst power (3 Up Slot) – 4.26 dB

Frame Power = Max burst power (4 Up Slot) – 3 dB

## **9. Test Results**

### **9.1. SAR Test Results Summary**

#### **9.1.1. Test position and configuration**

Head SAR was performed with the device configured in the positions according to IEEE1528, and Body SAR was performed with the device 15mm from the phantom. Body SAR was also performed with the headset attached and without.

#### **9.1.2. Body SAR with Headset**

Testing with the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2/3/4 uplink timeslots. This operation mode represents the maximum SAR situation, when downloading data via GPRS and listening to music by headset. SAR without the headset attached was significantly higher than with the headset, and also was verified several times and confirmed, so the final test data shown were the worst case without headset. In the Body SAR test result table, body-worn means display of device down, body-front means display of device up.

#### **9.1.3. Operation Mode**

This is a multi-slot class 12 device capable of 4 uplink timeslots. During the head SAR test, the device was transmitting with maximum 1 uplink timeslot; during the body SAR test, it was transmitting with maximum 4 uplink timeslots. Additionally, this device doesn't support dual transfer mode (DTM), and SIM <1> can't transmit with SIM <2> simultaneously.

#### **9.1.4. Co-located SAR**

According to KDB 447498 and KDB 648474, due to the Max peak power for Bluetooth is less than Pref. and the Maximum SAR for GSM part <1.2W/Kg, thus, regardless the closest separation distance between the GSM antenna and Bluetooth Antenna, stand-alone SAR and simultaneous transmission SAR is not required.

Other reference document: KDB 941225.

### 9.1.5. Test Result

| SAR MEASUREMENT                                                                                          |            |        |                  |           |       |                           |                        |                 |              |
|----------------------------------------------------------------------------------------------------------|------------|--------|------------------|-----------|-------|---------------------------|------------------------|-----------------|--------------|
| Ambient Temperature (°C) : 21 ± 2                                                                        |            |        |                  |           |       | Relative Humidity (%): 55 |                        |                 |              |
| Liquid Temperature (°C) : 21 ± 2                                                                         |            |        |                  |           |       | Depth of Liquid (cm):>15  |                        |                 |              |
| Product: GSM CELL PHONE                                                                                  |            |        |                  |           |       |                           |                        |                 |              |
| Test Mode: GSM850 with GMSK modulation                                                                   |            |        |                  |           |       |                           |                        |                 |              |
| Configuration                                                                                            |            |        | Antenna Position | Frequency |       | Frame Power (dBm)         | Power Drift (<±0.2 dB) | SAR (1g) (W/kg) | Limit (W/kg) |
| SIM                                                                                                      | Position   | Status |                  | channel   | MHz   |                           |                        |                 |              |
| <1>                                                                                                      | Left Head  | Cheek  | Fixed            | 128       | 824.2 | 22.68                     | --                     | --              | 1.6          |
|                                                                                                          |            |        |                  | 190       | 836.6 | 23.01                     | -0.05                  | 0.362           | 1.6          |
|                                                                                                          |            |        |                  | 251       | 848.8 | 22.87                     | --                     | --              | 1.6          |
|                                                                                                          |            | Tilted | Fixed            | 128       | 824.2 | 22.68                     | --                     | --              | 1.6          |
|                                                                                                          |            |        |                  | 190       | 836.6 | 23.01                     | -0.03                  | 0.310           | 1.6          |
|                                                                                                          |            |        |                  | 251       | 848.8 | 22.87                     | --                     | --              | 1.6          |
|                                                                                                          | Right Head | Cheek  | Fixed            | 128       | 824.2 | 22.68                     | --                     | --              | 1.6          |
|                                                                                                          |            |        |                  | 190       | 836.6 | 23.01                     | -0.06                  | <b>0.400</b>    | 1.6          |
|                                                                                                          |            |        |                  | 251       | 848.8 | 22.87                     | --                     | --              | 1.6          |
|                                                                                                          |            | Tilted | Fixed            | 128       | 824.2 | 22.68                     | --                     | --              | 1.6          |
|                                                                                                          |            |        |                  | 190       | 836.6 | 23.01                     | -0.04                  | 0.356           | 1.6          |
|                                                                                                          |            |        |                  | 251       | 848.8 | 22.87                     | --                     | --              | 1.6          |
| <2>                                                                                                      | Right      | Cheek  | Fixed            | 190       | 836.6 | 22.96                     | -0.02                  | 0.160           | 1.6          |
| Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. refer to KDB 941225. |            |        |                  |           |       |                           |                        |                 |              |

Ambient Temperature (°C) : 21 ± 2

Relative Humidity (%): 55

Liquid Temperature (°C) : 21 ± 2

Depth of Liquid (cm):>15

Test Mode: GSM850 with GMSK modulation

| SIM | Position   | Status      | Position | channel | MHz   | (dBm) | ( $\pm 0.2$ dB) | (W/kg)       | (W/kg) |
|-----|------------|-------------|----------|---------|-------|-------|-----------------|--------------|--------|
| <1> | Body Front | MS          | Fixed    | 128     | 824.2 | 22.68 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 23.01 | 0.06            | <b>0.311</b> | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.87 | --              | --           | 1.6    |
|     |            | GPRS 2 TS   | Fixed    | 128     | 824.2 | 22.86 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 22.74 | -0.03           | 0.244        | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.61 | --              | --           | 1.6    |
|     |            | GPRS 3 TS   | Fixed    | 128     | 824.2 | 22.19 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 22.75 | -0.01           | 0.131        | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.59 | --              | --           | 1.6    |
|     |            | GPRS 4 TS   | Fixed    | 128     | 824.2 | 22.68 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 22.91 | -0.05           | 0.284        | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.69 | --              | --           | 1.6    |
|     | Body Back  | MS          | Fixed    | 128     | 824.2 | 22.68 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 23.01 | -0.04           | 0.281        | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.87 | --              | --           | 1.6    |
|     |            | MS Earphone | Fixed    | 128     | 824.2 | 22.68 | --              | --           | 1.6    |
|     |            |             |          | 190     | 836.6 | 23.01 | -0.02           | 0.220        | 1.6    |
|     |            |             |          | 251     | 848.8 | 22.87 | --              | --           | 1.6    |

Note: when the 1-g SAR is  $\leq 0.8$  W/kg, testing for low and high channel is optional. refer to KDB 941225.

Ambient Temperature (°C) : 21 ± 2

Relative Humidity (%): 55

Liquid Temperature (°C) : 21 ± 2

Depth of Liquid (cm):>15

Test Mode: PCS1900 with GMSK modulation

Note: when the 1-g SAR is  $\leq 0.8$  W/kg, testing for low and high channel is optional. refer to KDB 941225.

Note: when the 1-g SAR is  $\leq 0.8$  W/kg, testing for low and high channel is optional. refer to KDB 941225.

Ambient Temperature (°C) : 21 ± 2

Relative Humidity (%): 55

Liquid Temperature (°C) : 21 ± 2

Depth of Liquid (cm):>15

Test Mode: GSM1900 with GMSK modulation

| Configuration |               |                          | Antenna<br>Position | Frequency |        | Frame<br>Power<br>(dBm) | Power<br>Drift<br>( $\leq \pm 0.2$ dB) | SAR<br>(1g)<br>(W/kg) | Limit<br>(W/kg) |
|---------------|---------------|--------------------------|---------------------|-----------|--------|-------------------------|----------------------------------------|-----------------------|-----------------|
| SIM           | Position      | Status                   |                     | channel   | MHz    |                         |                                        |                       |                 |
| <1>           | Body<br>Front | MS                       | Fixed               | 512       | 1850.2 | 20.11                   | --                                     | --                    | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 20.65                   | 0.04                                   | 0.275                 | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 20.04                   | --                                     | --                    | 1.6             |
|               |               | GPRS<br>2 TS             | Fixed               | 512       | 1850.2 | 19.71                   | --                                     | --                    | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 19.97                   | -0.01                                  | 0.175                 | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 19.90                   | --                                     | --                    | 1.6             |
|               |               | GPRS<br>3 TS             | Fixed               | 512       | 1850.2 | 20.19                   | --                                     |                       | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 20.16                   | 0.06                                   | <b>0.320</b>          | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 19.70                   | --                                     |                       | 1.6             |
|               |               | GPRS<br>4 TS             | Fixed               | 512       | 1850.2 | 19.87                   | --                                     |                       | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 19.91                   | 0.03                                   | 0.234                 | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 19.79                   | --                                     |                       | 1.6             |
|               | Body<br>Back  | GPRS<br>3 TS             | Fixed               | 512       | 1850.2 | 20.19                   | --                                     | --                    | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 20.16                   | 0.05                                   | 0.301                 | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 19.70                   | --                                     | --                    | 1.6             |
|               |               | GPRS<br>3 TS<br>Earphone | Fixed               | 512       | 1850.2 | 20.19                   | --                                     | --                    | 1.6             |
|               |               |                          |                     | 661       | 1880.0 | 20.16                   | 0.02                                   | 0.144                 | 1.6             |
|               |               |                          |                     | 810       | 1909.8 | 19.70                   | --                                     | --                    | 1.6             |

Note: when the 1-g SAR is  $\leq 0.8$  W/kg, testing for low and high channel is optional. refer to KDB 941225.

**Appendix A. SAR System Validation Data**

Test Laboratory: AGC Lab

Date:MAR 15,2012

**System Check Head 900 MHz****DUT: Dipole 900 MHz Type: SID 900**

Communication System: CW; Communication System Band: D850(850.0 MHz); Duty Cycle: 1:1; ConvF=6.79

Frequency: 850 MHz; Medium parameters used:  $f = 850$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Flat Section ; Input Power=20dBm

Ambient temperature (°C): 21, Liquid temperature (°C): 21

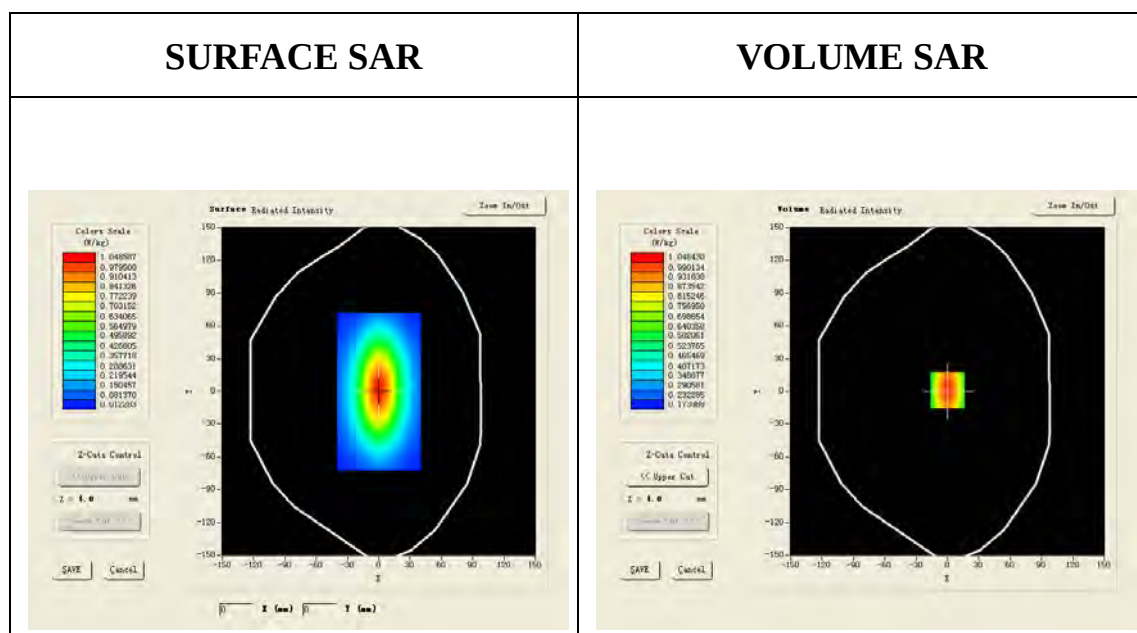
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

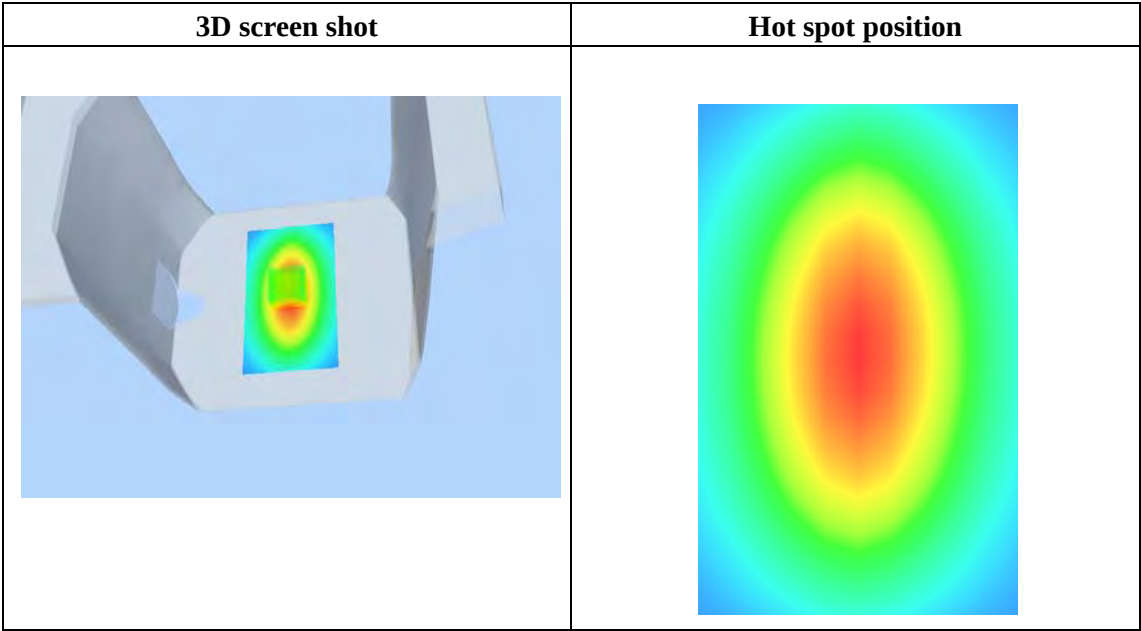
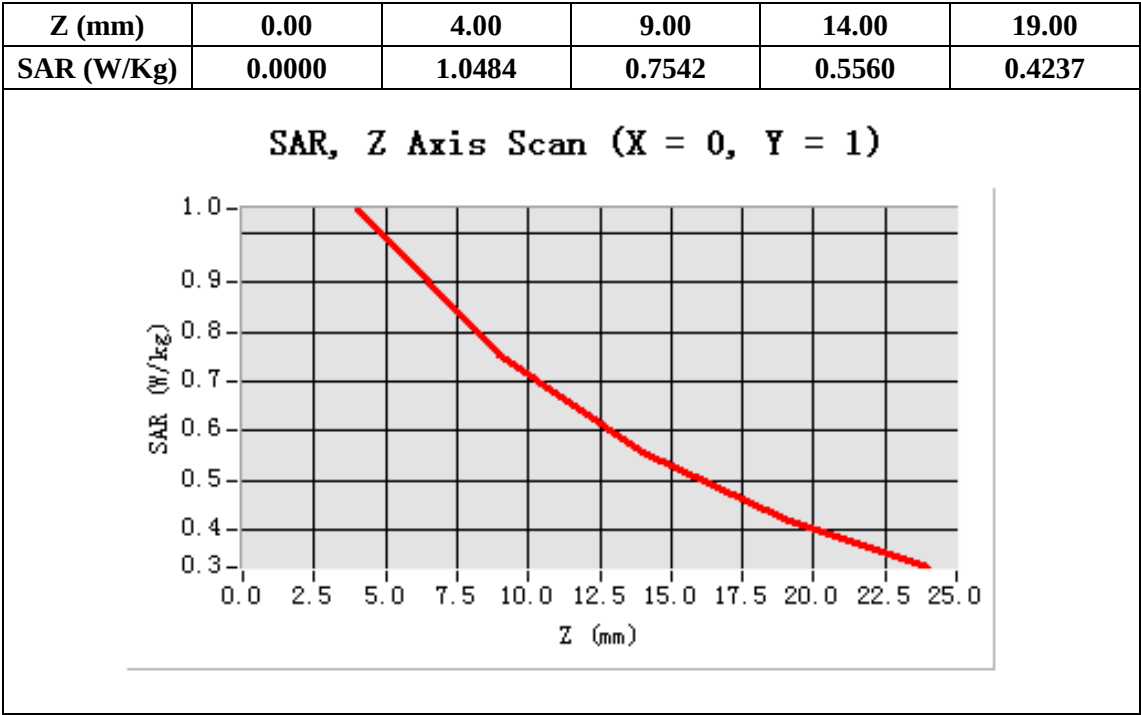
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/System Check GSM850 Head/Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/System Check GSM850 Head/Zoom Scan :** Measurement grid: dx=8mm, dy=8mm, dz=5mm

**Maximum location: X=0.00, Y=1.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.678894 |
| <b>SAR 1g (W/Kg)</b>  | 0.997904 |



Test Laboratory: AGC Lab

Date: MAR 15,2012

System Check Head 1900MHz

DUT: Dipole 1900 MHz ; Type: SID 1900

Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1;ConvF=6.42

Frequency: 1900 MHz; Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.41 \text{ mho/m}$ ;  $\epsilon_r = 41.25$ ;  $\rho = 1000 \text{ kg/m}^3$  ;

Phantom section: Flat Section ; Input Power=20dBm

Ambient temperature ( $^{\circ}\text{C}$ ): 21, Liquid temperature ( $^{\circ}\text{C}$ ): 21

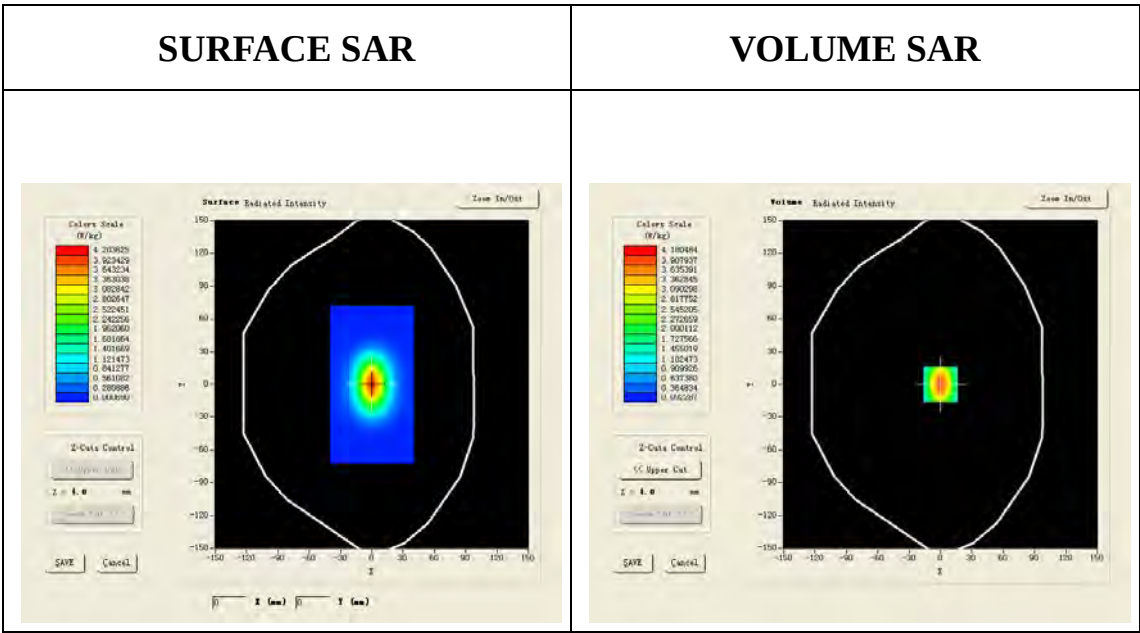
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

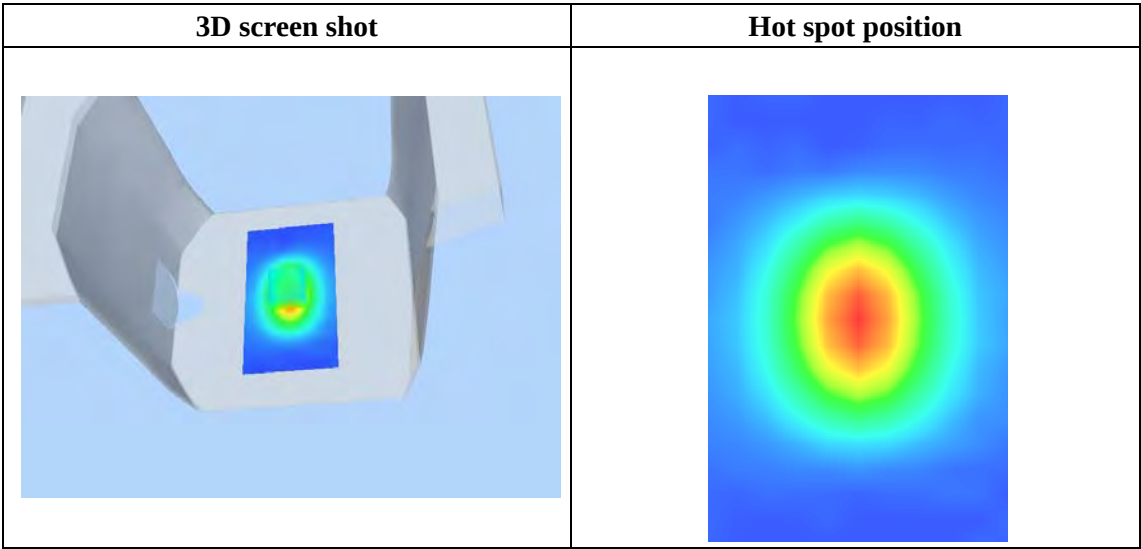
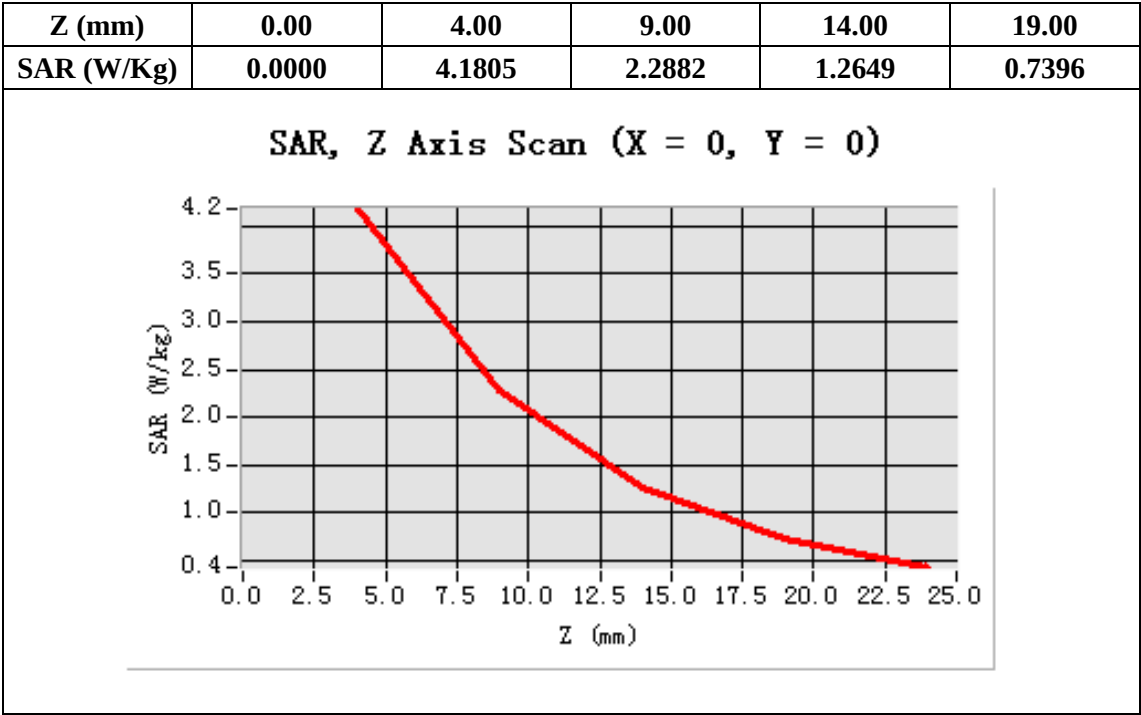
Configuration/System Check PCS1900 Head/Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$

Configuration/System Check PCS1900 Head/Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$



Maximum location: X=0.00, Y=0.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 1.979623 |
| SAR 1g (W/Kg)  | 3.860418 |



## Appendix B. SAR measurement Data

Test Laboratory: AGC Lab

Date:MAR 15,2012

GSM 850 Middle-touch-Left <SIM 1>

**DUT:GSM CELL PHONE; Type: MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; DutyCycle:1: 8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ;

$\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Left Section

Ambient temperature (°C): 21, Liquid temperature (°C): 21

Satimo Configuration:

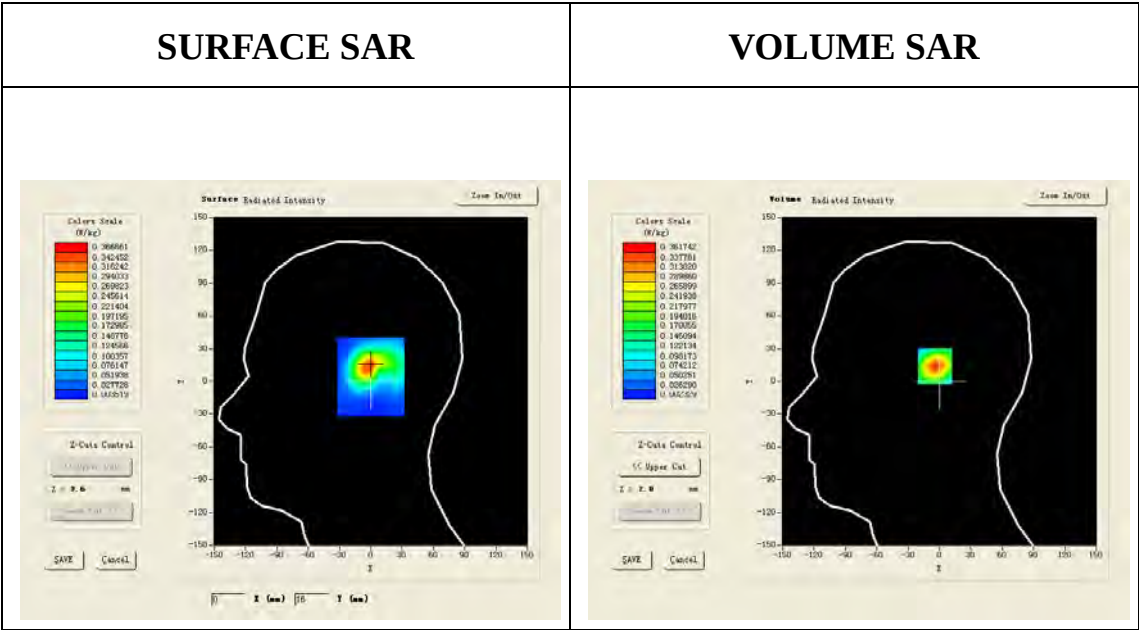
Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GSM850 Mid Touch-Left/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm

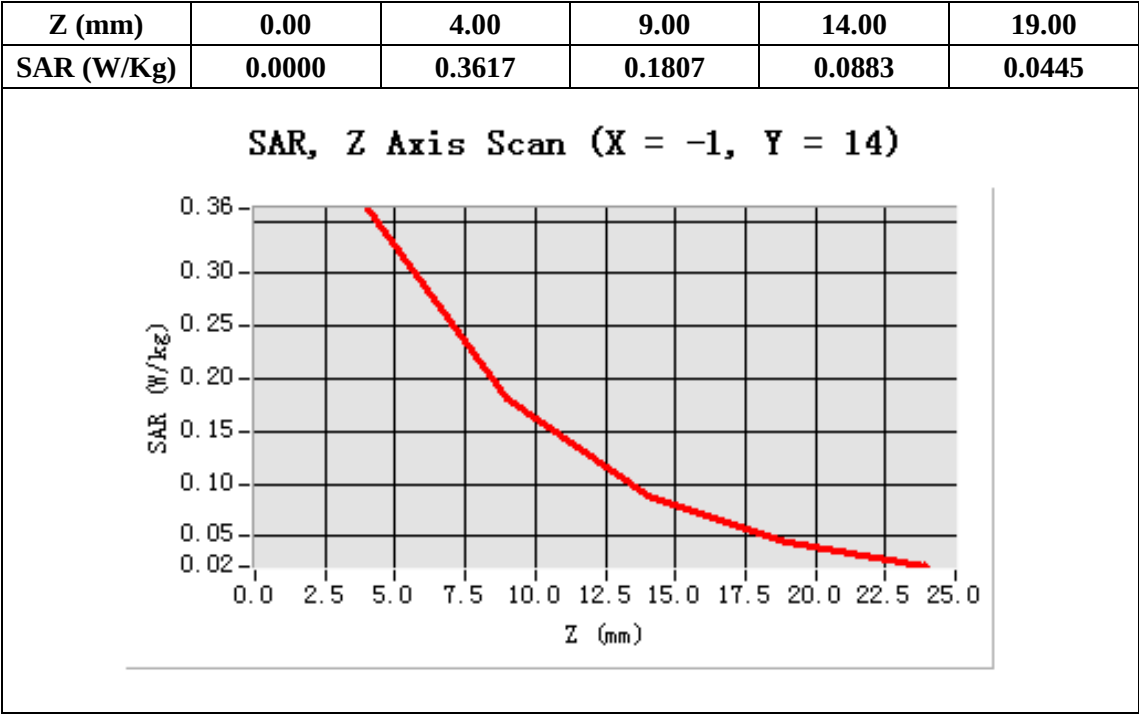
**Configuration/GSM850 Mid Touch-Left/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

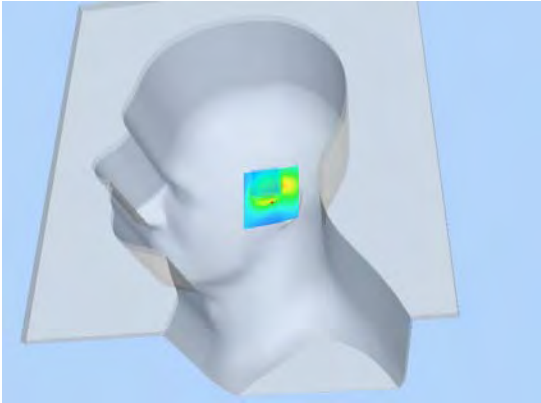
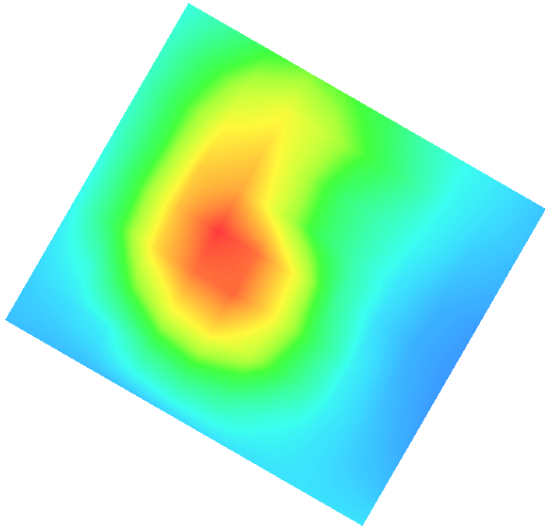
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Left head                            |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-1.00, Y=14.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.160612 |
| SAR 1g (W/Kg)  | 0.333112 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                | Hot spot position                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D rendering of a human head model in profile, facing left. A small, rectangular, multi-colored hot spot is visible on the side of the head, near the ear. The hot spot shows a gradient from blue to yellow to red, indicating varying intensity levels. |  A 2D diagram showing the hot spot position. It is a tilted rectangular area with a color gradient from blue to yellow to red, indicating the intensity of the hot spot. The red area is concentrated in the center, with yellow and green areas surrounding it, and blue areas at the edges. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GSM 850 Mid Tilt-left &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type: MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; DutyCycle:1: 8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ; $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Left Section

Ambient temperature (°C): 21, Liquid temperature (°C): 21

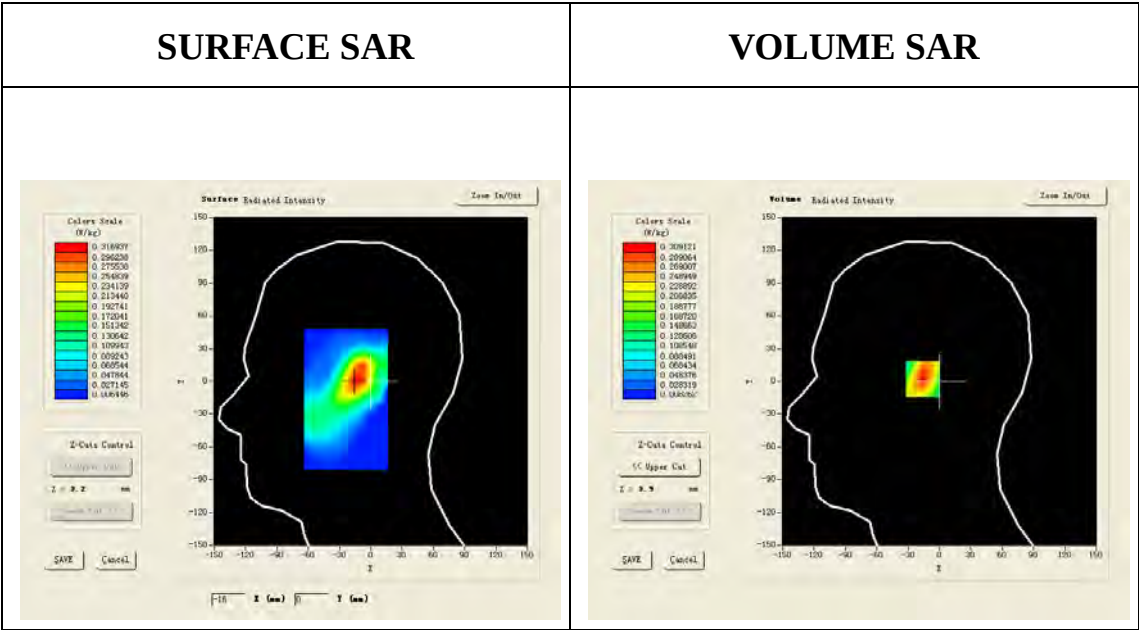
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

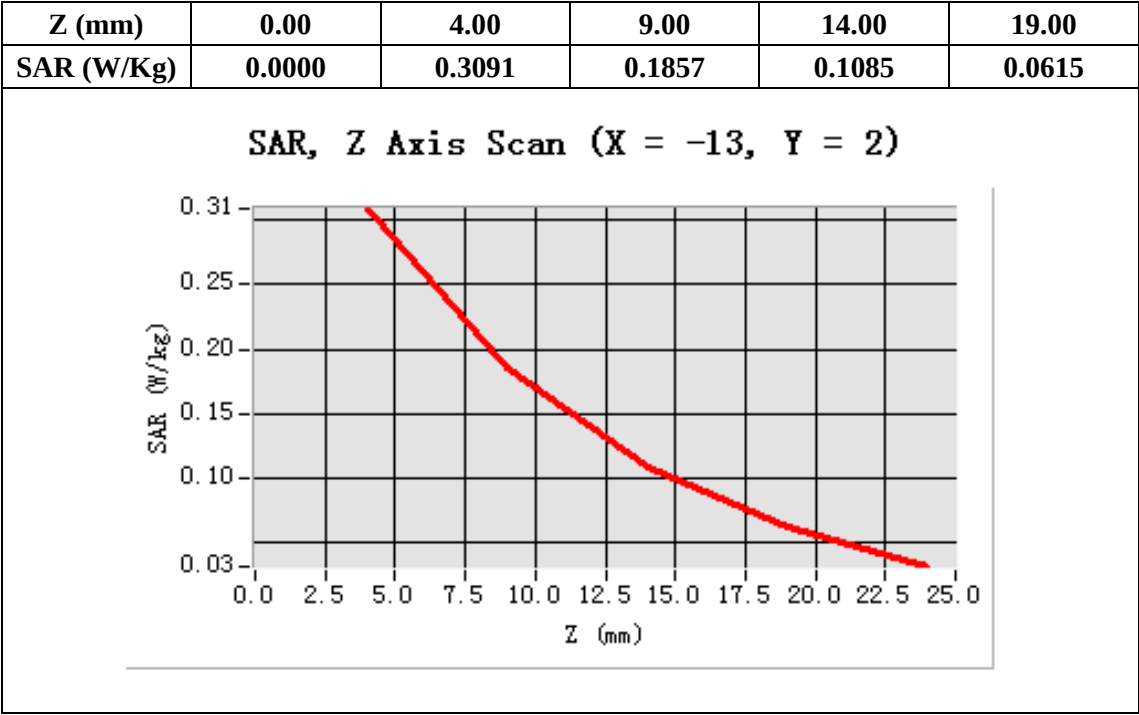
**Configuration/GSM850 Mid Tilt-Left/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm**Configuration/GSM850 Mid Tilt-Left/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

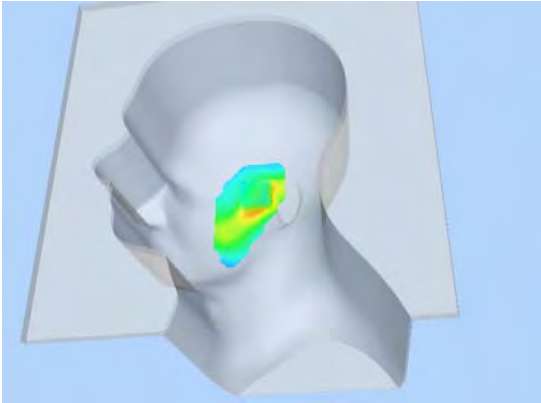
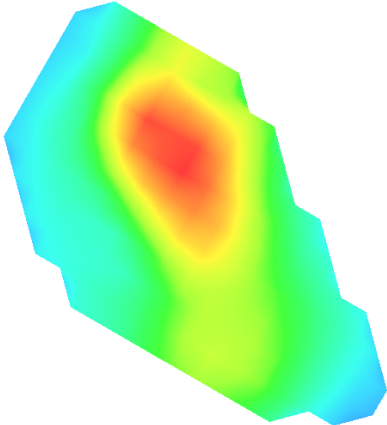
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Left head                            |
| <b>Device Position</b> | Tilt                                 |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-13.00, Y=2.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.163146 |
| SAR 1g (W/Kg)  | 0.290887 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                        | Hot spot position                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D model of a human head in profile, facing left. A small, irregularly shaped area on the side of the head, near the ear, is highlighted with a color gradient from blue to red, indicating a hot spot. The rest of the head model is light gray. |  A close-up view of the hot spot area. It shows a color gradient from blue (low intensity) to red (high intensity), with a bright red center. The shape is irregular and somewhat elongated. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GSM 850 Middle touch-Right &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type: MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; DutyCycle:1: 8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ; $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Right Section

Ambient temperature (°C): 21, Liquid temperature (°C): 21

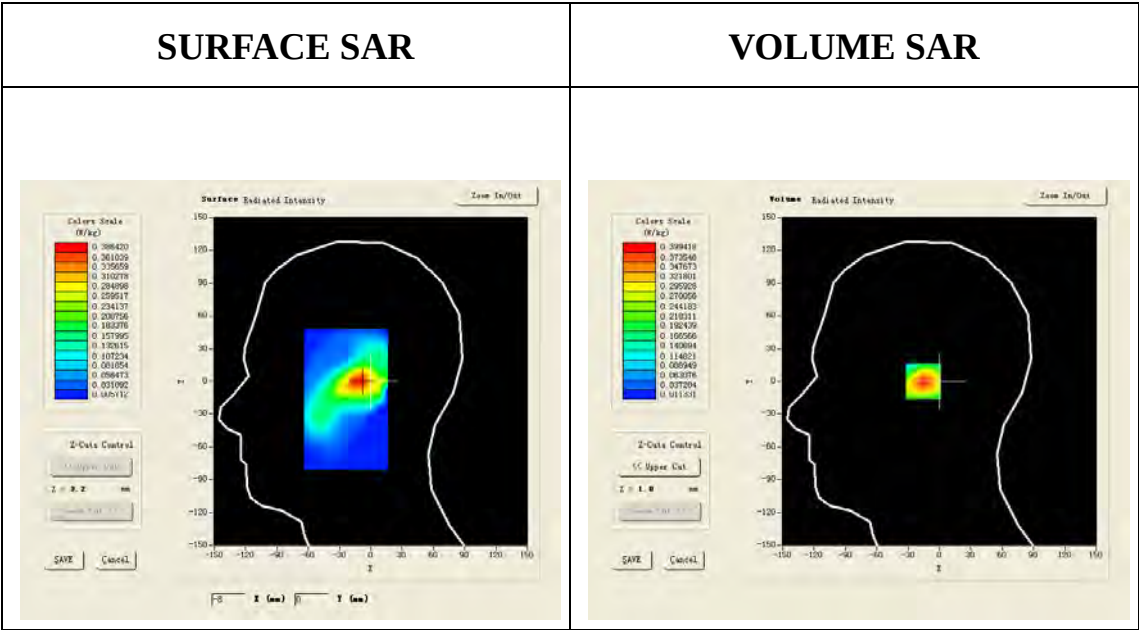
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

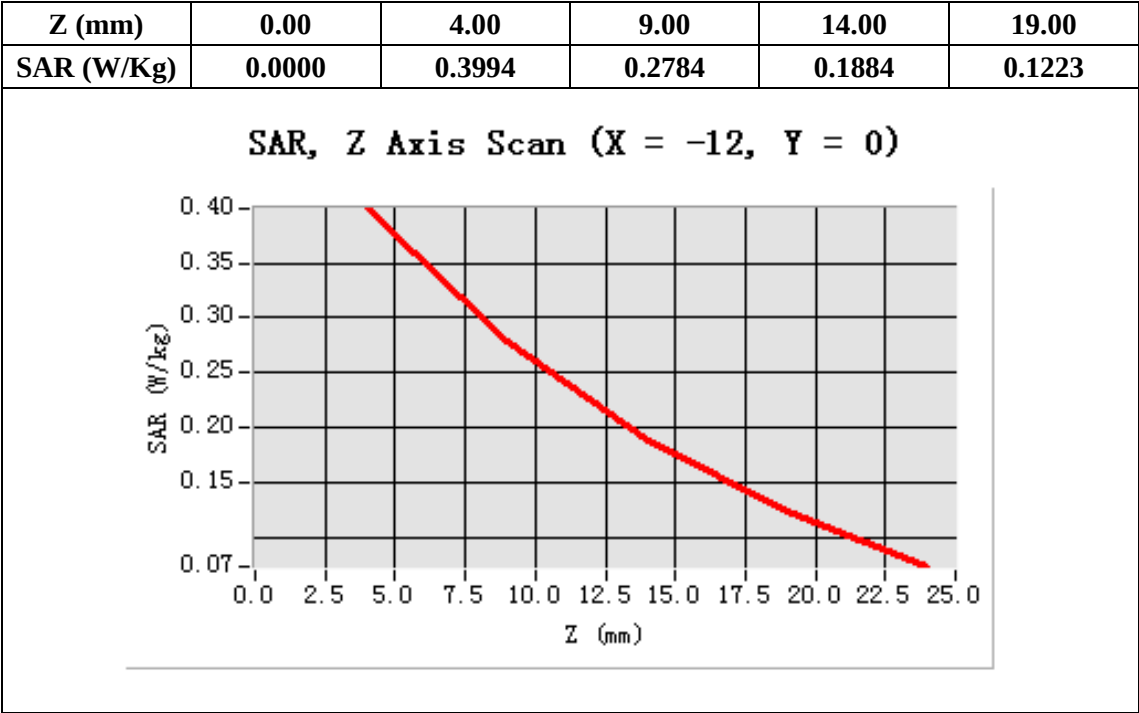
**Configuration/GSM850 Mid Touch-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GSM850 Mid Touch-Right/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

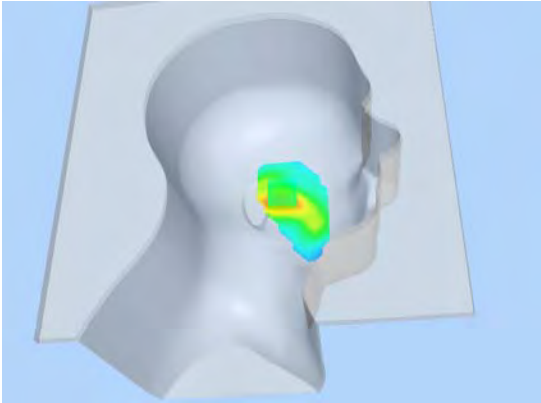
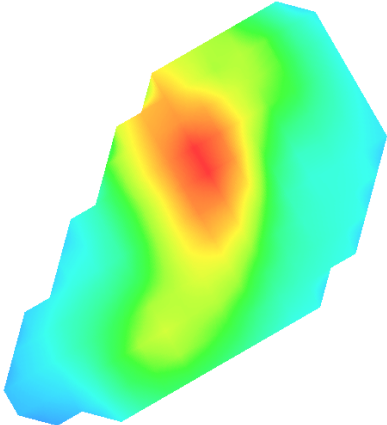
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Right head                           |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-12.00, Y=0.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.222865 |
| SAR 1g (W/Kg)  | 0.372129 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GSM 850 Mid-tilt-Right &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type: MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; DutyCycle:1: 8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ; $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section:Right Section

Ambient temperature (°C): 21, Liquid temperature (°C): 21

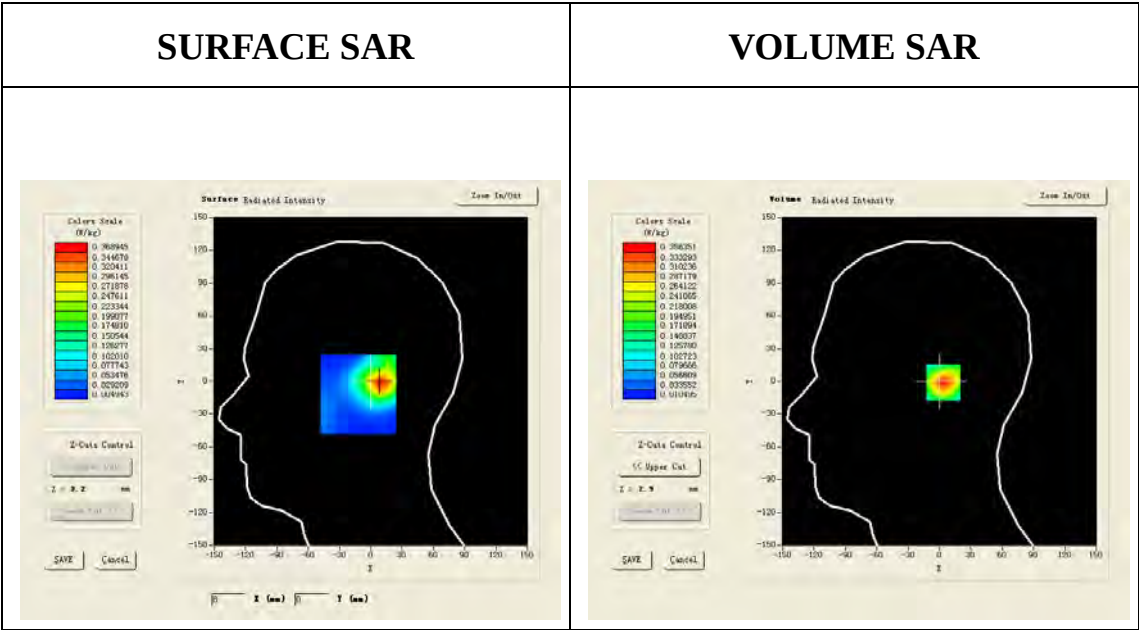
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

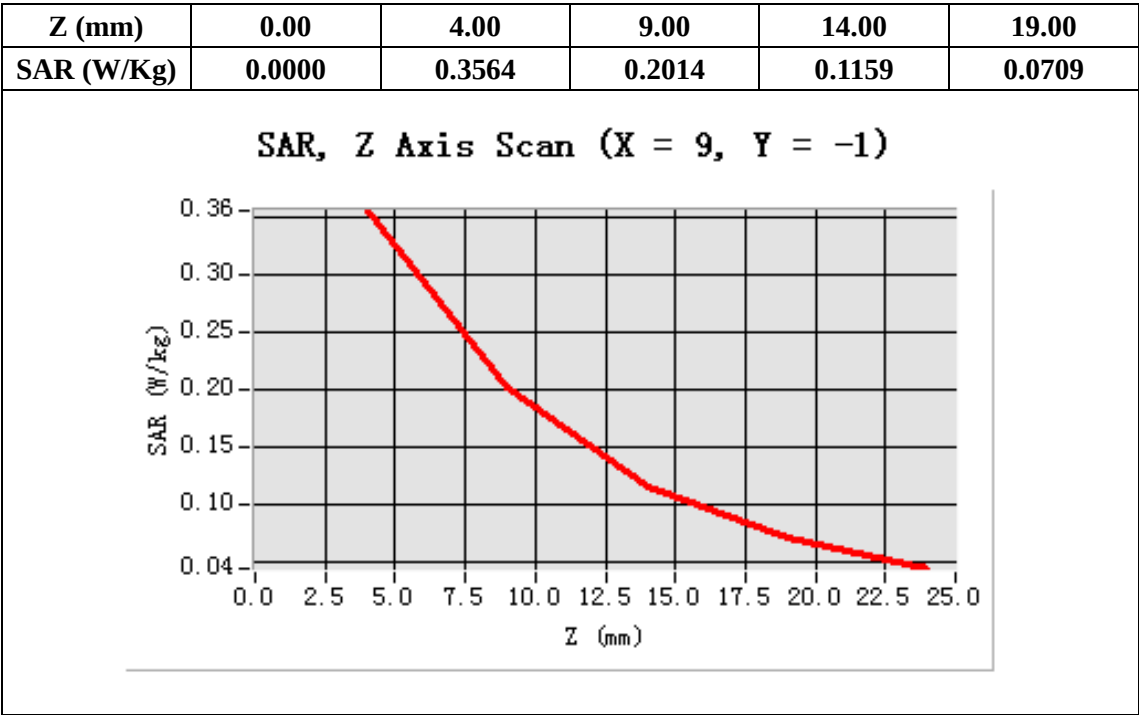
**Configuration/GSM850 Mid Tilt-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GSM850 Mid Tilt-Right/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5mm;

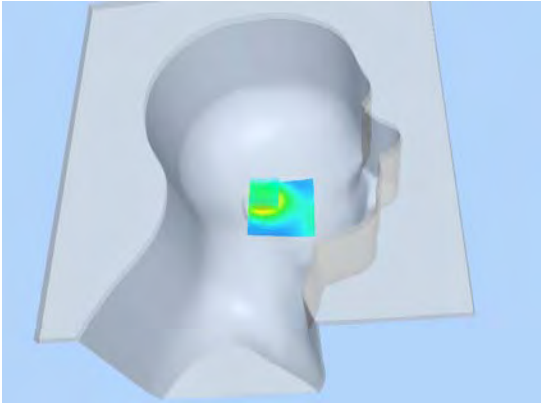
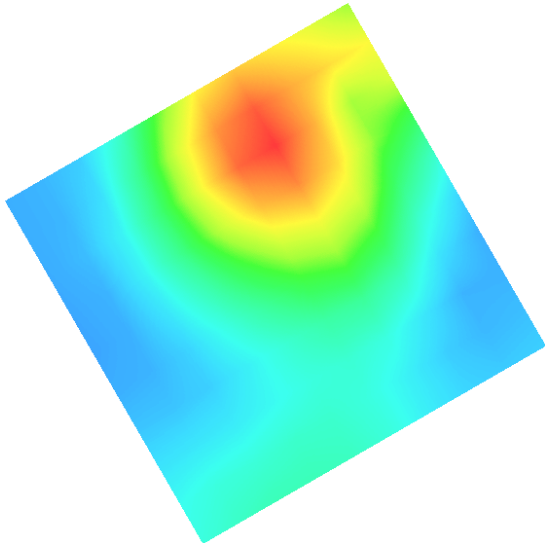
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>Zoom Scan</b>       | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Right head                           |
| <b>Device Position</b> | Tilt                                 |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=9.00, Y=-1.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.177489 |
| SAR 1g (W/Kg)  | 0.331009 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

Date:MAR 15,2012

GSM 850 Middle touch-Right &lt;SIM 2&gt;

**DUT:GSM CELL PHONE; Type: MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; DutyCycle:1: 8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 40.66$ ; $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Left Section

Ambient temperature (°C): 21, Liquid temperature (°C): 21

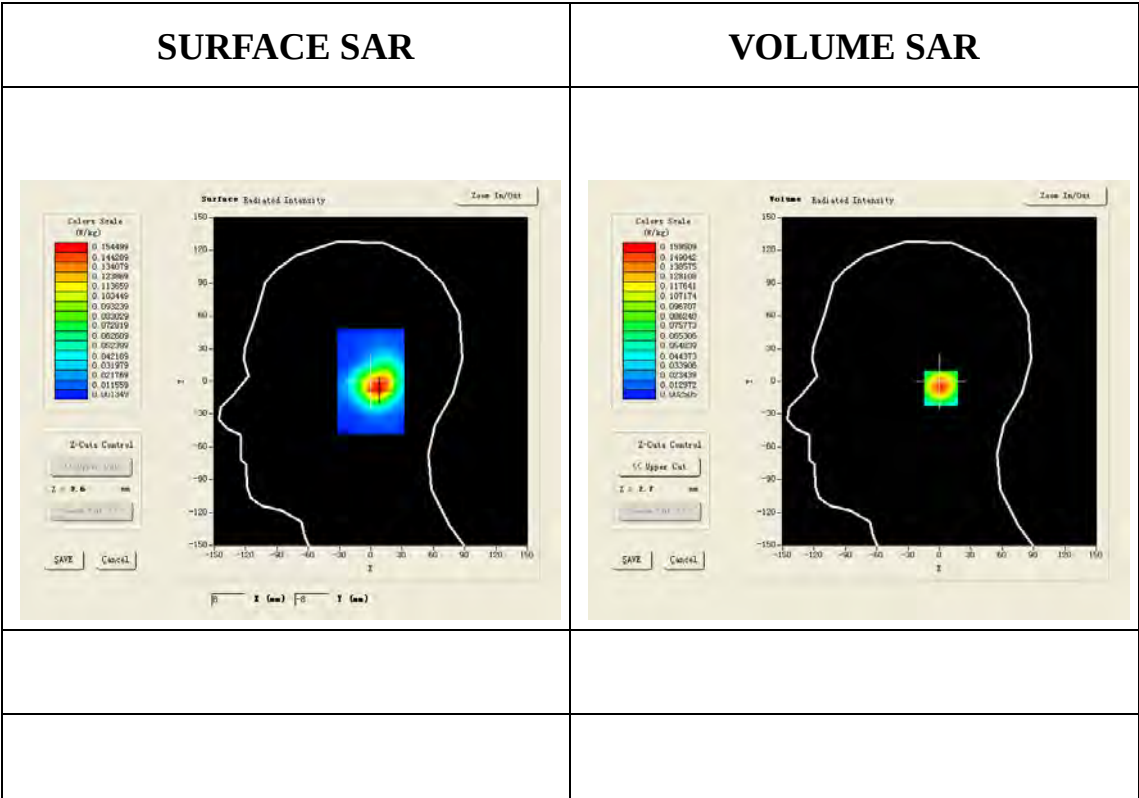
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GSM850 Mid Touch-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GSM850 Mid Touch-Right/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

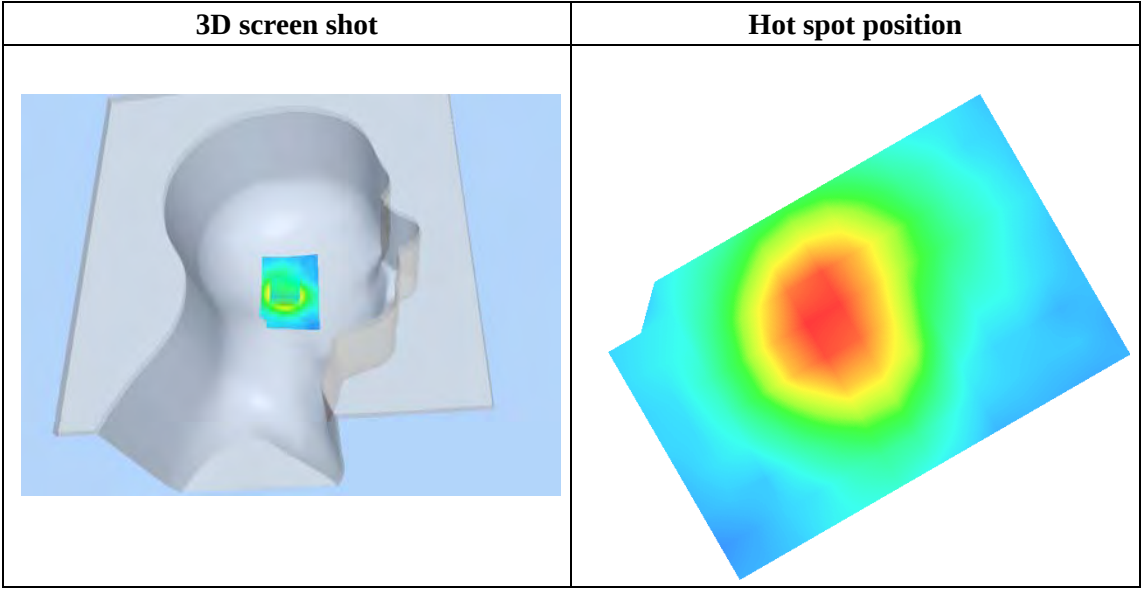
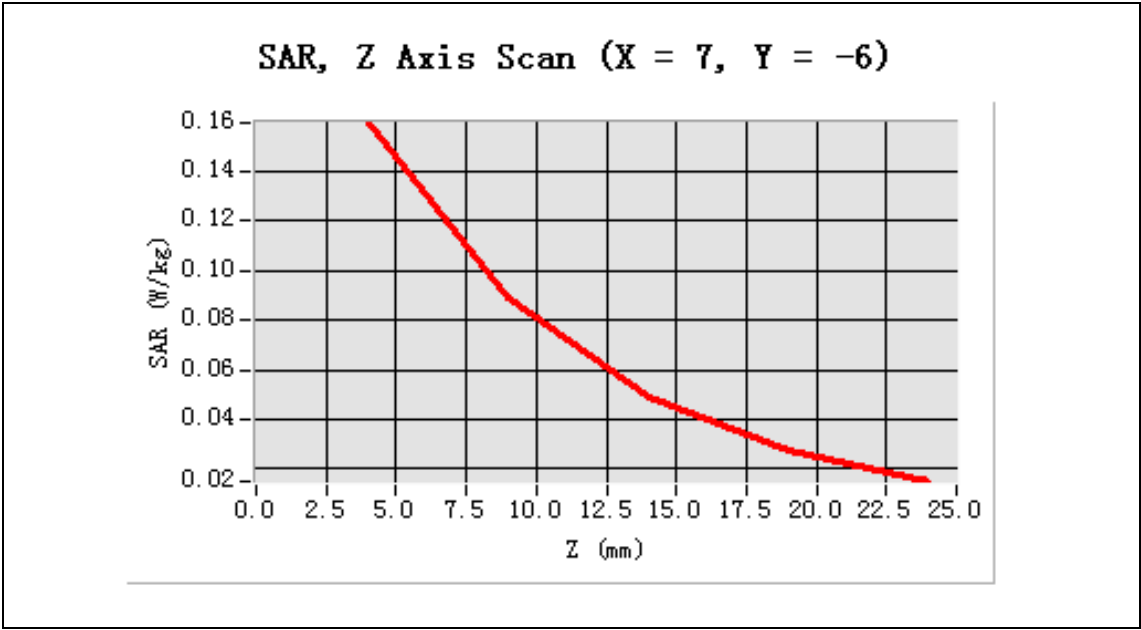
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Right head                           |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=7.00, Y=-6.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.076773 |
| SAR 1g (W/Kg)  | 0.147936 |

|            |        |        |        |        |        |
|------------|--------|--------|--------|--------|--------|
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  |
| SAR (W/Kg) | 0.0000 | 0.1595 | 0.0887 | 0.0490 | 0.0277 |



Test Laboratory: AGC Lab

Date:MAR 15,2012

GSM 850 Mid-Body-Worn Front <SIM 1>

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

Satimo Configuration:

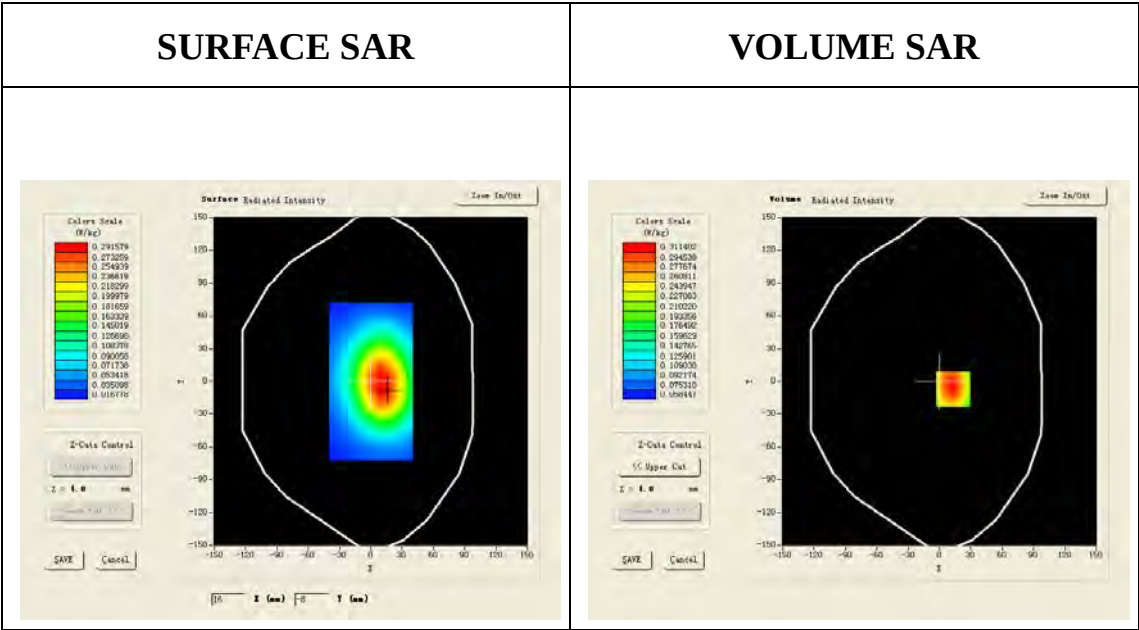
Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GSM850 Mid Body-Front/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm

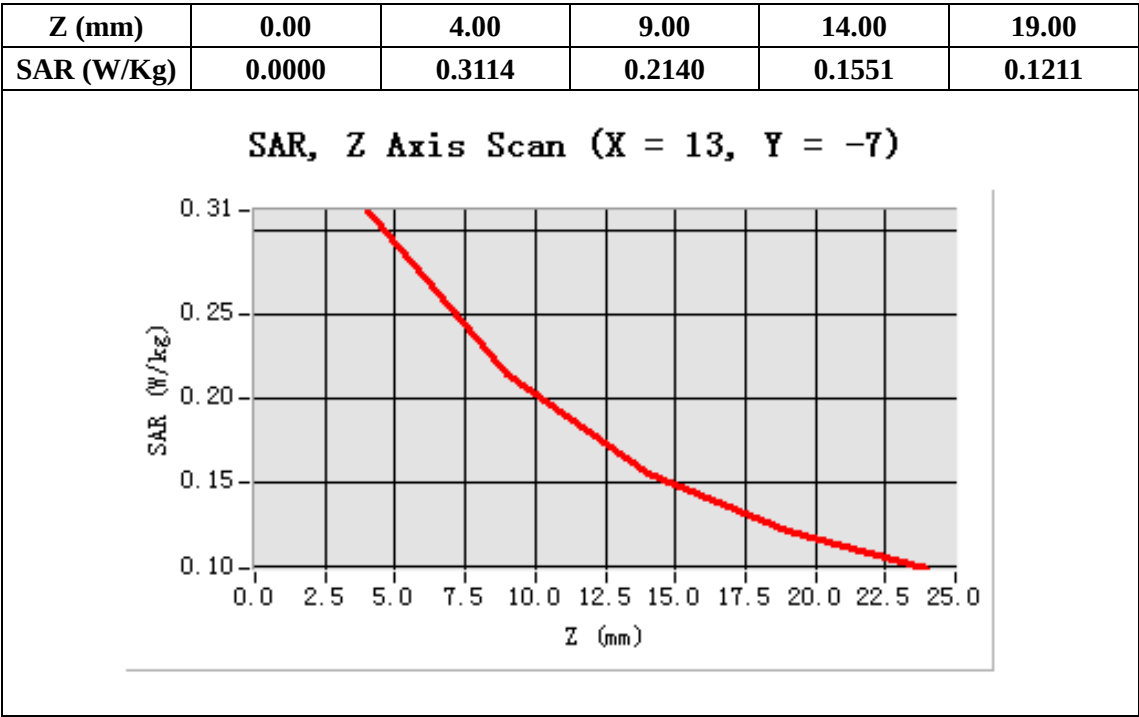
**Configuration/GSM850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

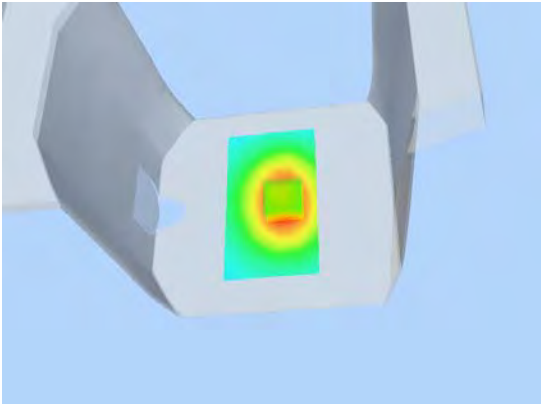
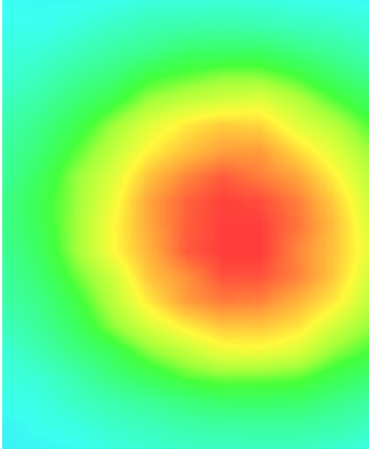
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=13.00, Y=-7.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.206206 |
| SAR 1g (W/Kg)  | 0.300022 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hot spot position                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a mechanical part, possibly a bracket or housing, shown in a light blue color. A rectangular area on the front face of the part is highlighted with a color gradient overlay, indicating a hot spot. The gradient transitions from green at the edges to yellow and then to a small red center, signifying increasing temperature or stress. |  A 2D cross-sectional view of a hot spot. It shows a circular region with a color gradient from green on the outside to yellow and then to a solid red center, representing a radial temperature or stress distribution. The red center is the hottest or most stressed point. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GPRS 850 Mid-body- Worn-Front (2up) &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-2 Slot; Communication System Band: GSM850;Duty Cycle:1:4.2 ; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz; $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$ kg/m<sup>3</sup> ; Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

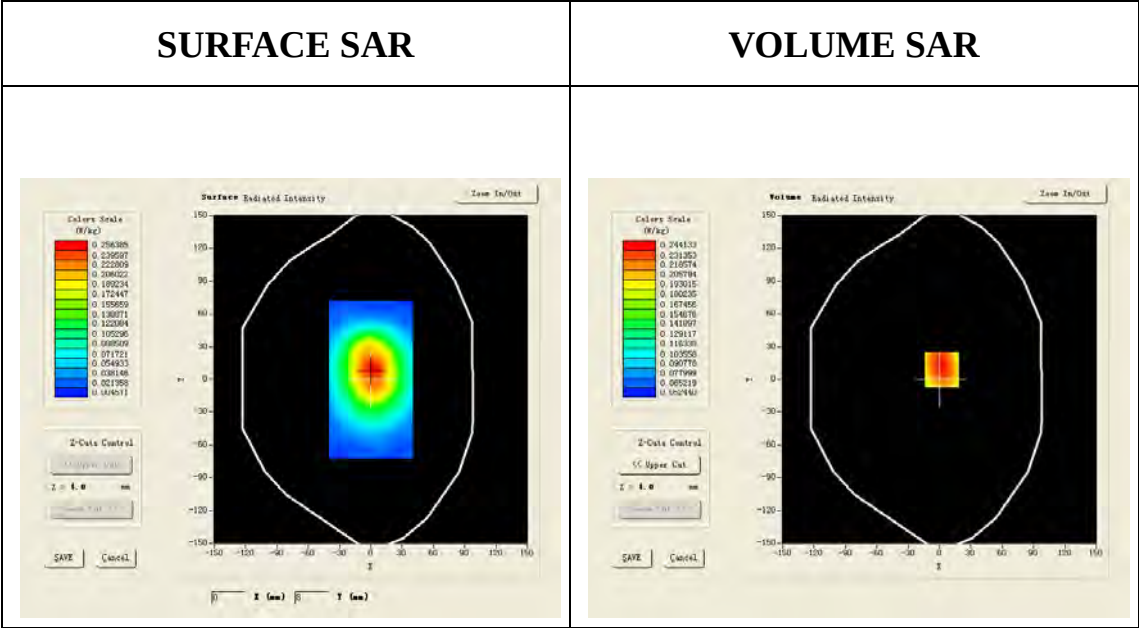
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

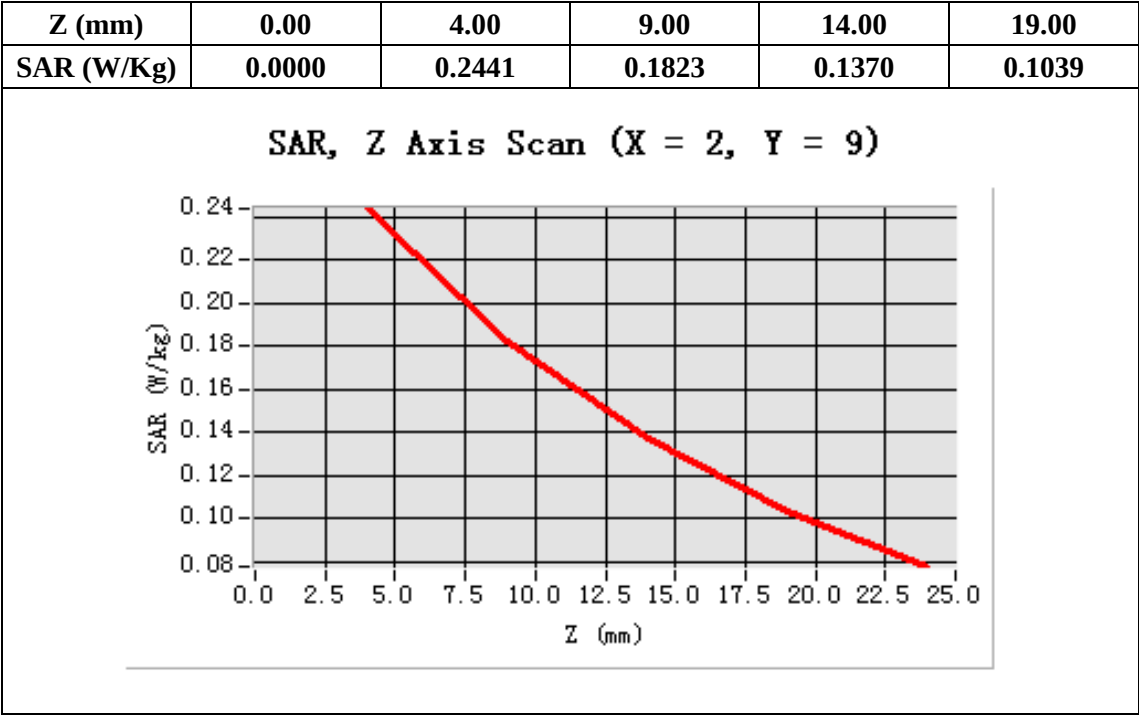
**Configuration/GPRS850 Mid Body-Front/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm**Configuration/GPRS850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

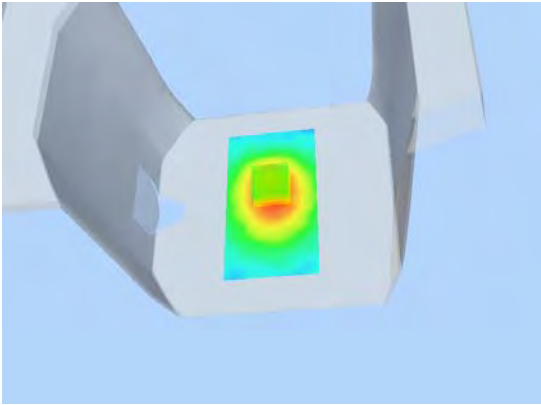
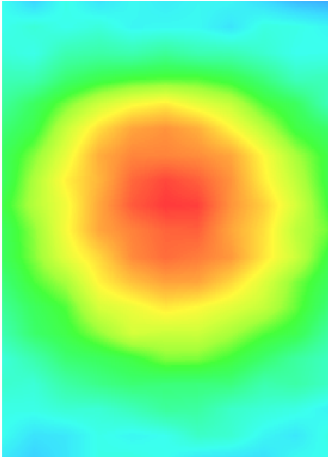
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 4.0)             |



Maximum location: X=2.00, Y=9.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.168801 |
| SAR 1g (W/Kg)  | 0.235805 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

Date:MAR 15,2012

GPRS 850 Mid-body- Worn-Front (3up) <SIM 1>

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-3 Slot; Communication System Band: GSM850;Duty Cycle:1:2.7 ; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz; $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$

kg/m<sup>3</sup> ; Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

Satimo Configuration:

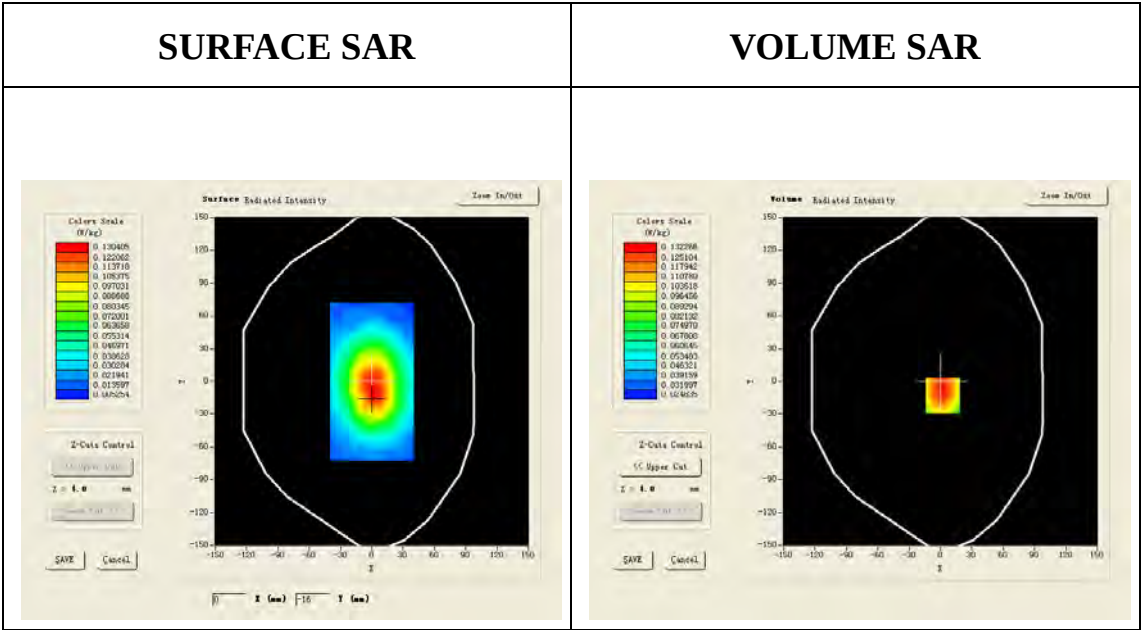
Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GPRS850 Mid Body-Front/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm

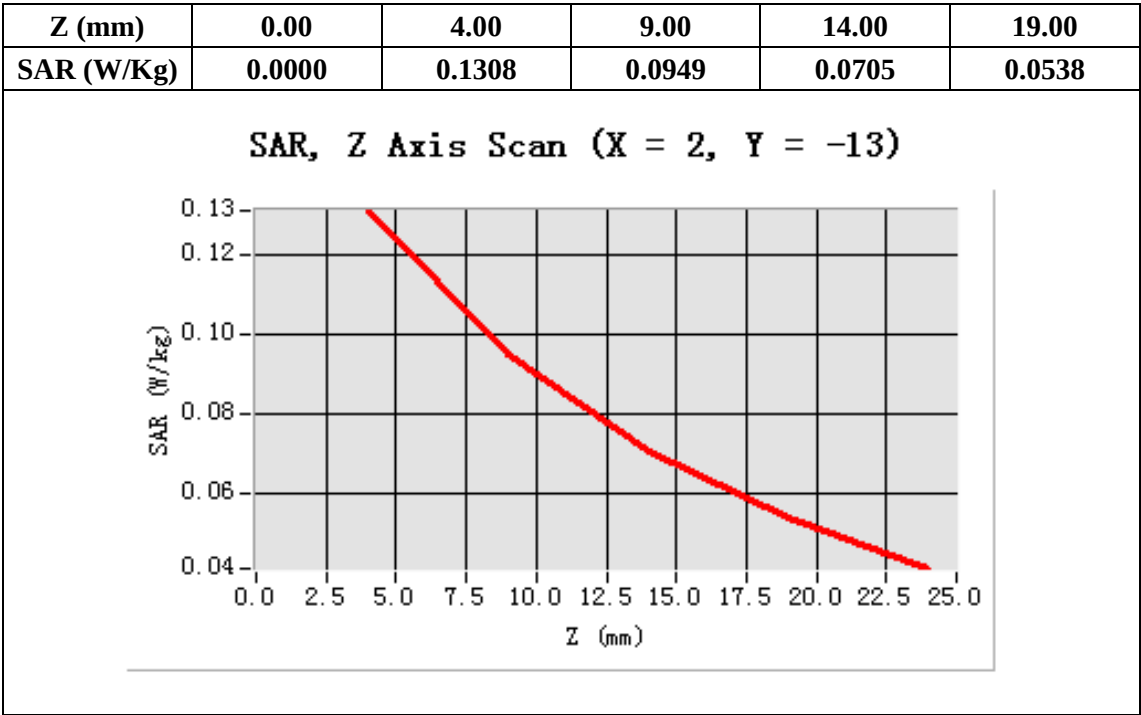
**Configuration/GPRS850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

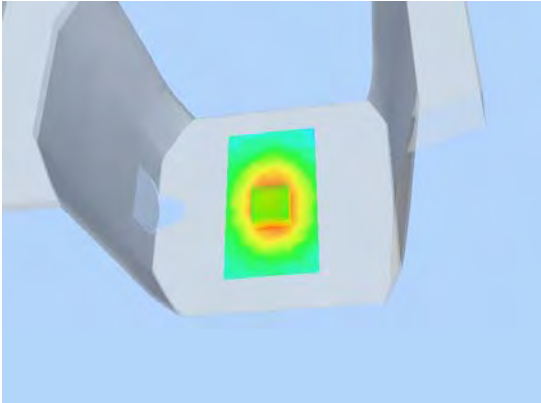
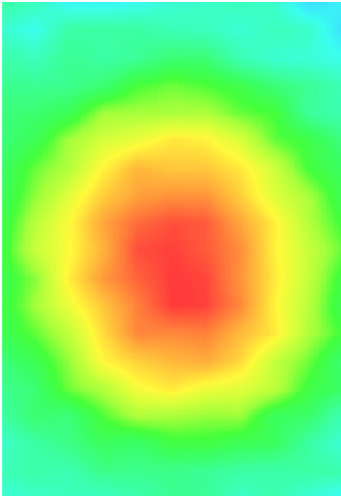
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 2.7)             |



Maximum location: X=2.00, Y=-13.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.089714 |
| SAR 1g (W/Kg)  | 0.127308 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                            | Hot spot position                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a robotic gripper, shown from a perspective view. The gripper is light gray. A rectangular area on the front face of the gripper is highlighted with a color-coded overlay, indicating a hot spot. The overlay shows a central red area, transitioning through yellow and green to a blue background. |  A 2D heatmap visualization of a hot spot. The image shows a circular, concentric pattern of colors. The center is a bright red, indicating the highest temperature or intensity. This is surrounded by a yellow ring, then a green ring, and finally a blue outer edge, representing a gradient of decreasing intensity. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GPRS 850 Mid-body- Worn-Front (4up) &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-4 Slot; Communication System Band: GSM850;Duty Cycle:1:2 ; Conv.F=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.99 \text{ mho/m}$ ;  $\epsilon_r = 53.49$ ;  $\rho = 1000$  $\text{kg/m}^3$  ; Phantom section: Flat SectionAmbient temperature ( $^{\circ}\text{C}$ ):21, Liquid temperature ( $^{\circ}\text{C}$ ):21

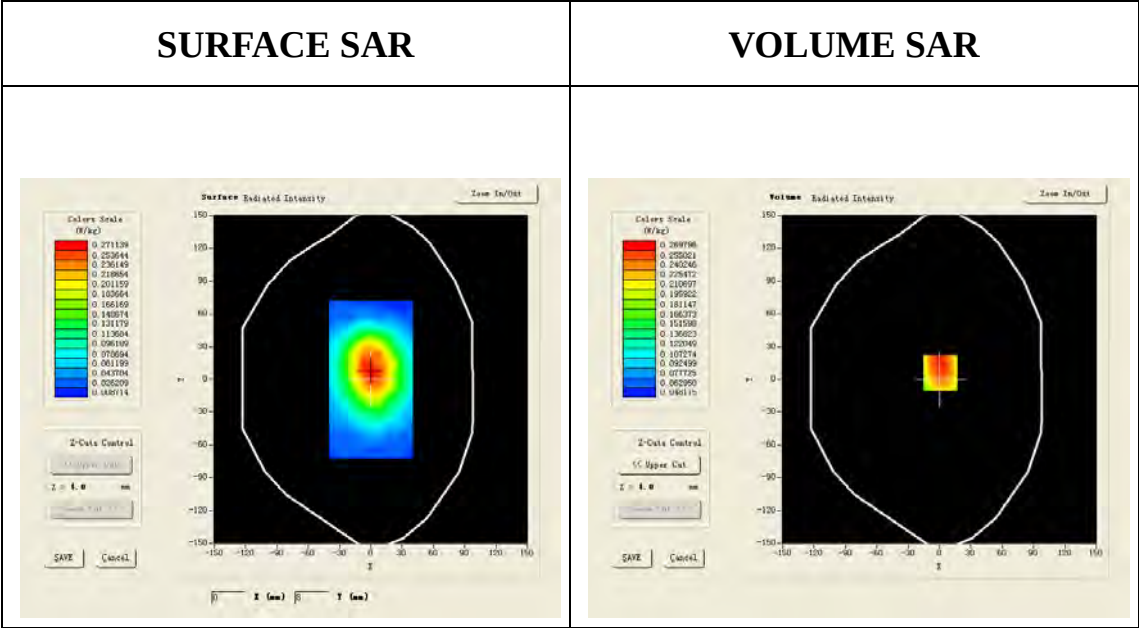
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

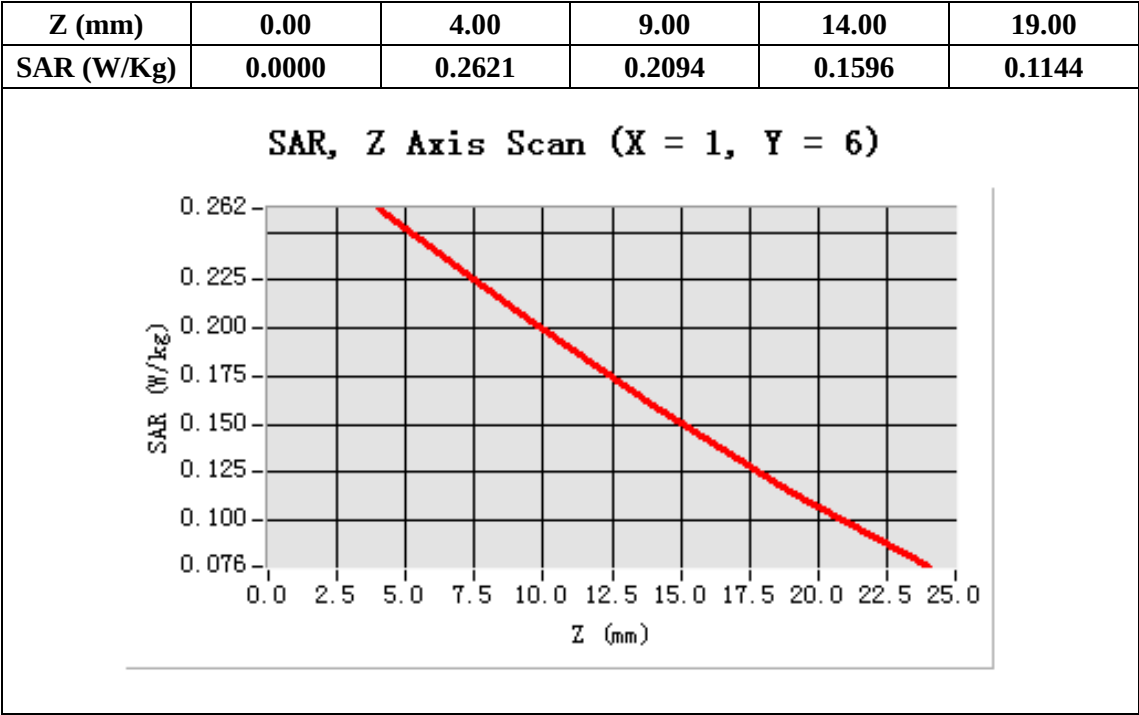
**Configuration/GPRS850 Mid Body-Front/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm**Configuration/GPRS850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

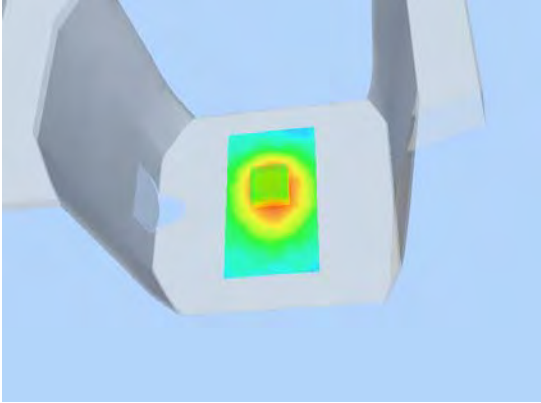
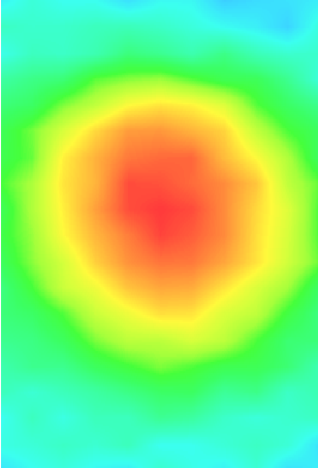
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 2.0)             |



Maximum location: X=1.00, Y=6.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.201229 |
| SAR 1g (W/Kg)  | 0.283569 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hot spot position                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a mechanical component, possibly a bracket or housing, is shown against a light blue background. A rectangular area on the front face of the component is highlighted with a color-coded heat map. The heat map shows a central red/orange region, indicating the highest temperature, surrounded by yellow and green areas, indicating decreasing temperature levels. |  A 2D rectangular visualization showing a circular hot spot. The center of the circle is a bright red color, transitioning through orange and yellow to a green outer ring. This represents a radial temperature distribution with the highest intensity at the center. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GPRS 850 Mid-body- Worn-Back <SIM 1>

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: General GSM; Communication System Band: GSM 850;Duty Cycle:1:8 ; ConvF=6.79  
Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Flat Section  
Ambient temperature (°C):21, Liquid temperature (°C):21

Satimo Configuration:

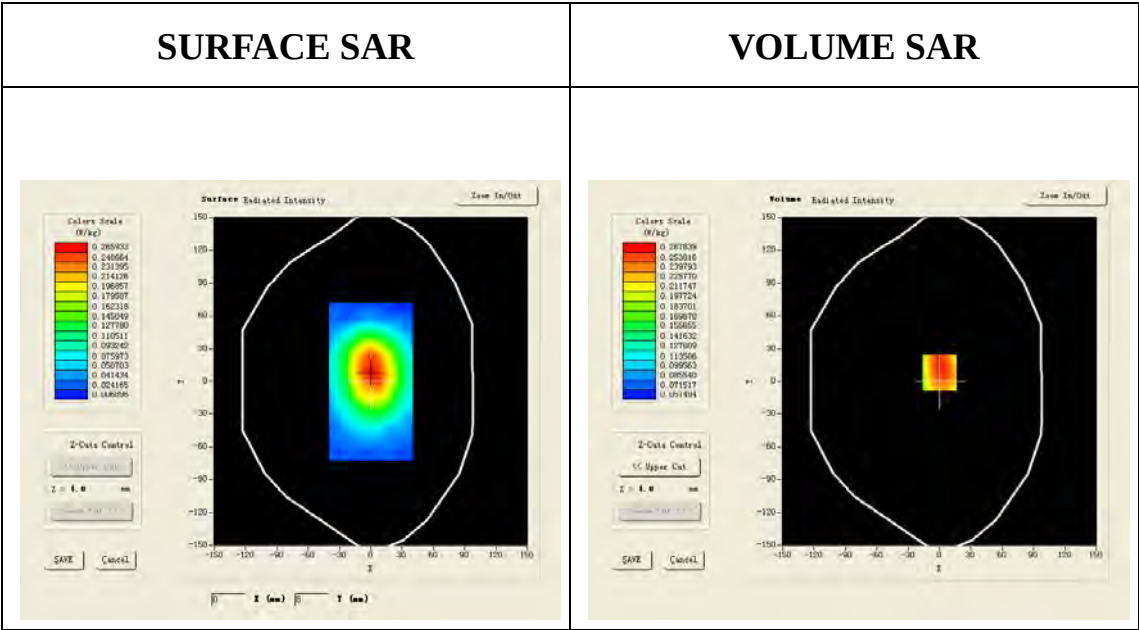
Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GSM 850 Mid Body-Back/Area Scan (6x8x1):** Measurement grid: dx=20mm, dy=20mm

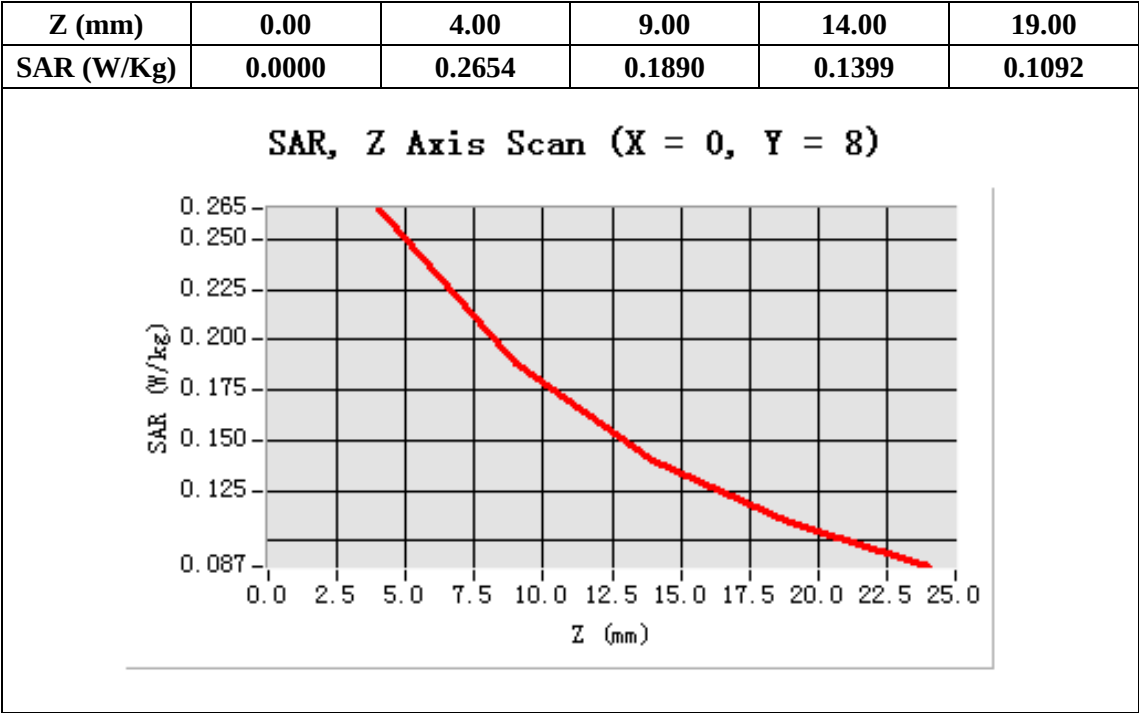
**Configuration/GSM 850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

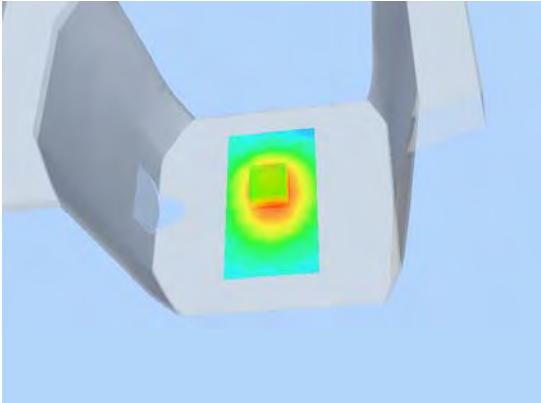
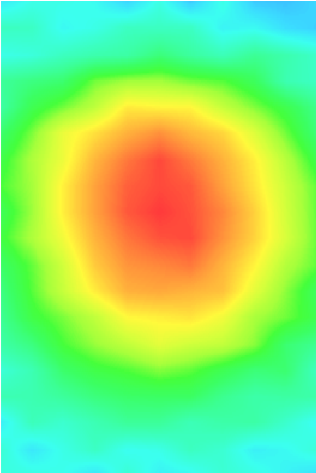
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Back                            |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8)               |



Maximum location: X=0.00, Y=8.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.198578 |
| SAR 1g (W/Kg)  | 0.281286 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                            | Hot spot position                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a mechanical part, possibly a bracket or housing, shown in a light blue color. A rectangular area on the front face of the part is highlighted with a color-coded overlay, indicating a hot spot. The overlay shows a gradient from green to yellow to red, with the red area being the most intense. |  A 2D cross-sectional view of the hot spot area. It shows a circular core of red color, surrounded by concentric rings of yellow and green, indicating a radial temperature distribution. The background is a light blue color. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

GPRS 850 Mid-body- Worn-Back (With earphone) &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: General GSM; Communication System Band: GSM 850;Duty Cycle:1:8 ; ConvF=6.79

Frequency: 836.6 MHz; Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$ kg/m<sup>3</sup> ; Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

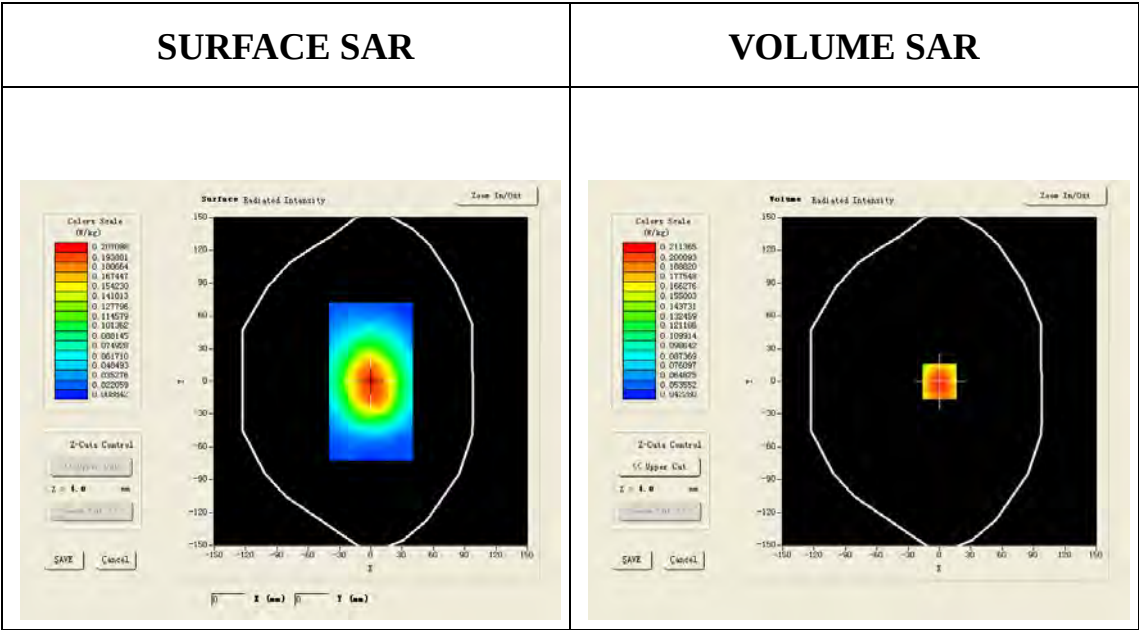
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

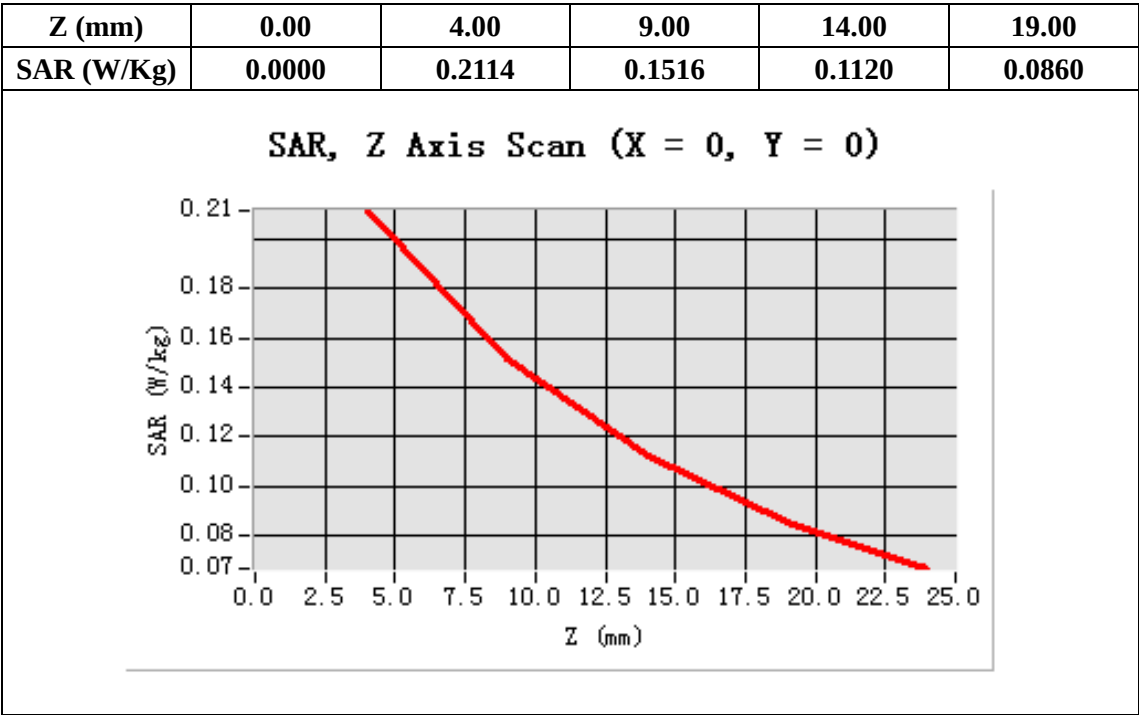
**Configuration/GSM 850 Mid Body-Back/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GSM 850 Mid Body-Back/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

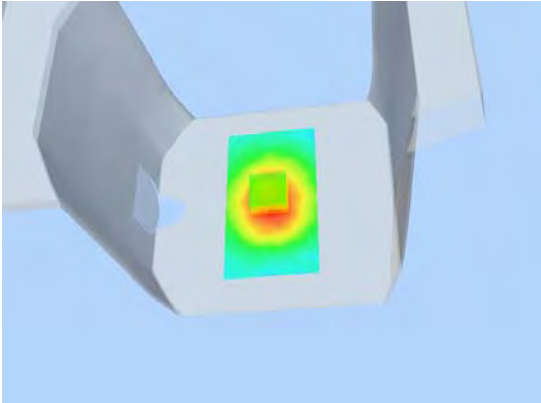
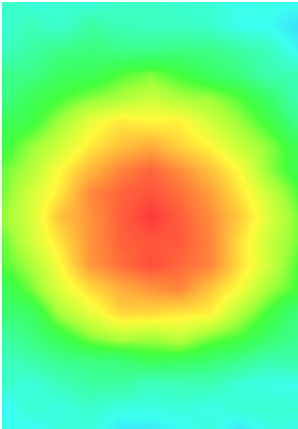
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Back                            |
| <b>Band</b>            | GSM850                               |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor:8.0)              |



Maximum location: X=0.00, Y=0.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.154431 |
| SAR 1g (W/Kg)  | 0.220173 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                            | Hot spot position                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a robotic gripper, shown from a perspective view. The gripper is light gray. A rectangular area on the front face of the gripper is highlighted with a color-coded overlay, indicating a hot spot. The overlay shows a central red area, transitioning through yellow and green to a cyan outer edge. |  A 2D heatmap visualization of a hot spot. It features a circular, concentric pattern of colors. The center is a bright red, surrounded by a yellow ring, then a green ring, and finally a cyan outer edge. The background is a uniform light blue. |

Test Laboratory: AGC Lab

Date:MAR 15,2012

PCS 1900 Mid-Touch Left &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM;Communication System Band: PCS 1900;Duty Cycle:1:8;ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 41.25$ ; $\rho = 1000$  kg/m<sup>3</sup> ; Phantom section: Left Section

Ambient temperature (°C):21, Liquid temperature (°C):21

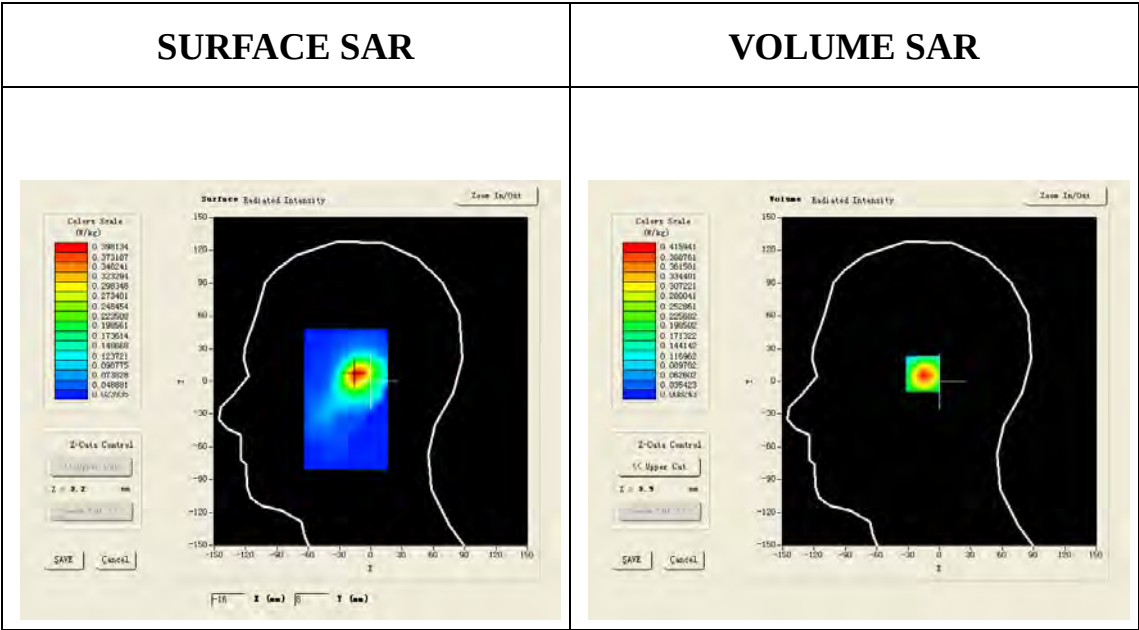
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

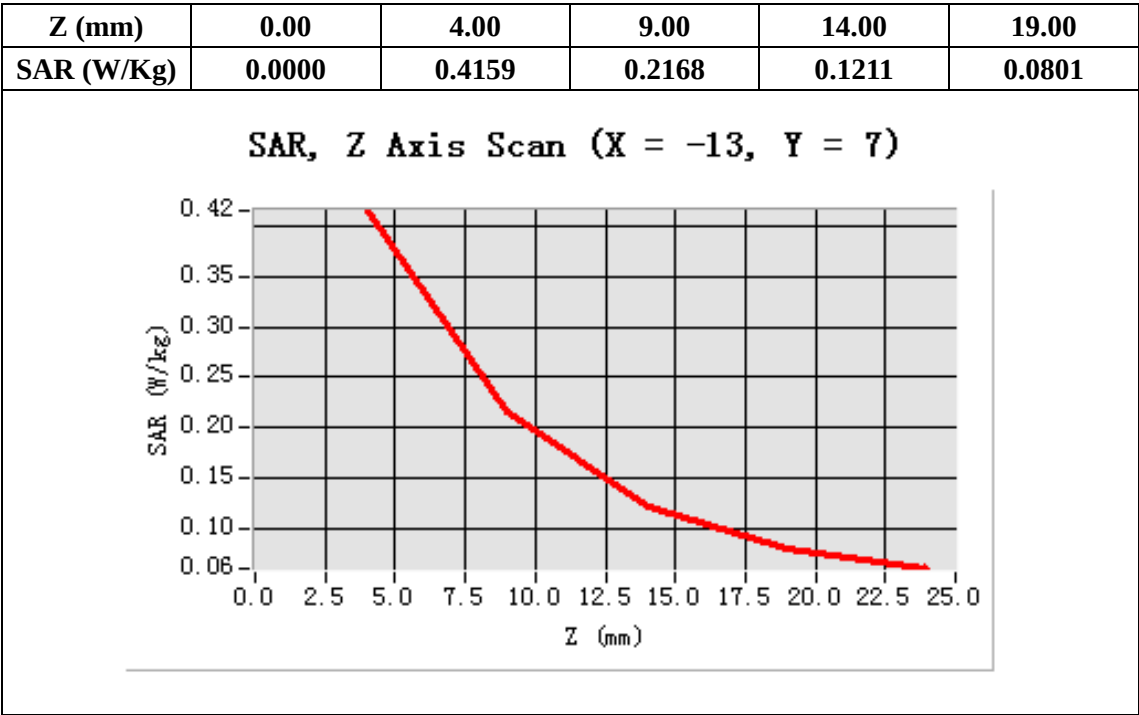
**Configuration/PCS1900 Mid Touch-Left/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Touch-Left/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5mm;

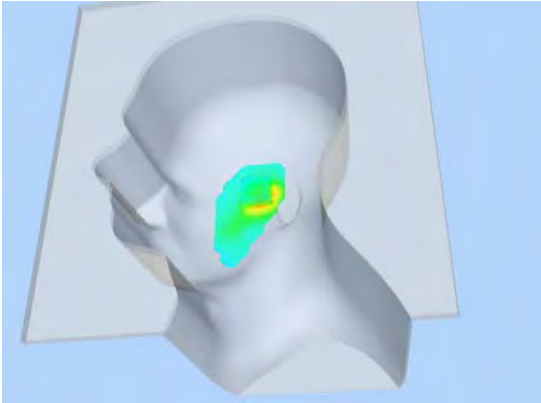
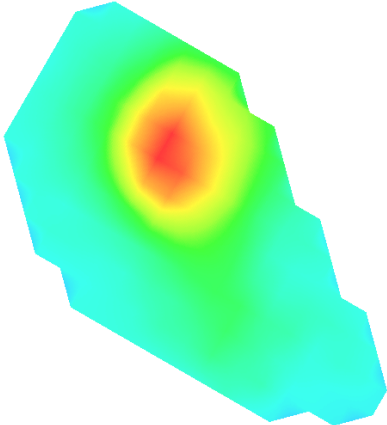
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Left head                            |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-13.00, Y=7.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.200843 |
| SAR 1g (W/Kg)  | 0.389794 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

Date:MAR 15,2012

PCS 1900 Mid-Tilt-Left &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8; ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 41.25$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Left Section

Ambient temperature (°C):21, Liquid temperature (°C):21

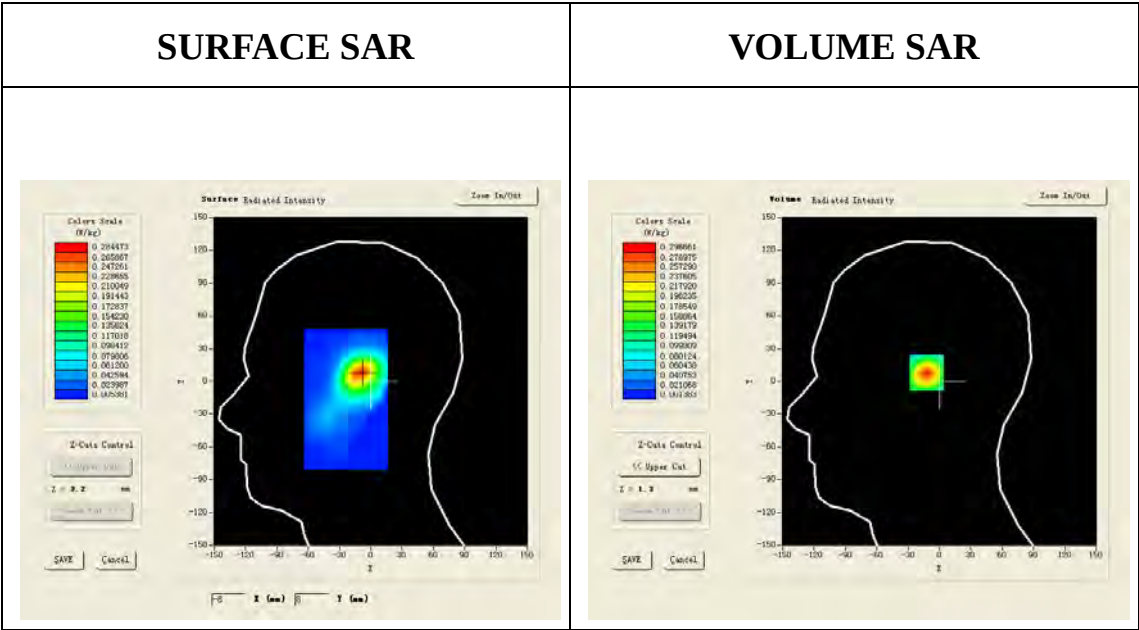
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

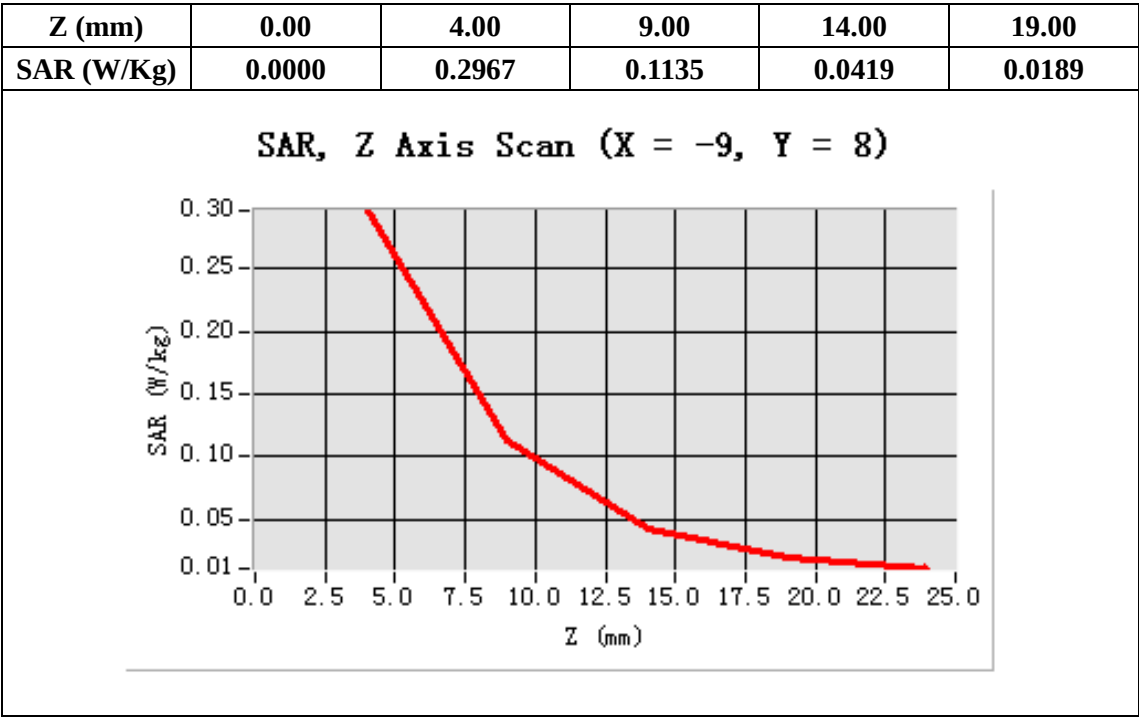
**Configuration/PCS1900 Mid Tilt-Left/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Tilt-Left/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

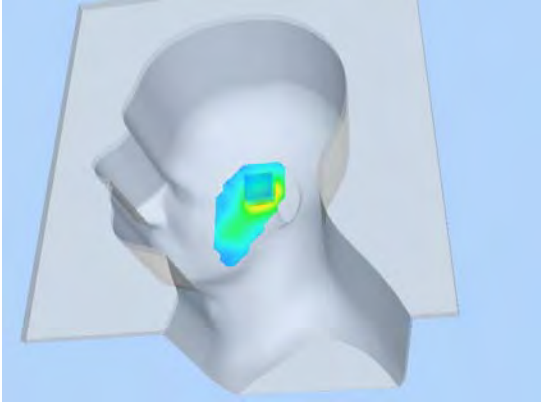
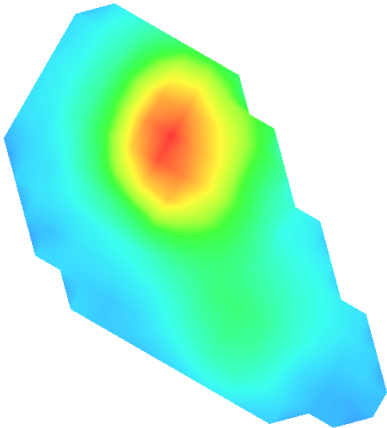
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Left head                            |
| <b>Device Position</b> | Tilt                                 |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-9.00, Y=8.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.123293 |
| SAR 1g (W/Kg)  | 0.278947 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

Date:MAR 15,2012

PCS 1900 Mid-Touch Right &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8; ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 41.25$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Right Section

Ambient temperature (°C):21, Liquid temperature (°C):21

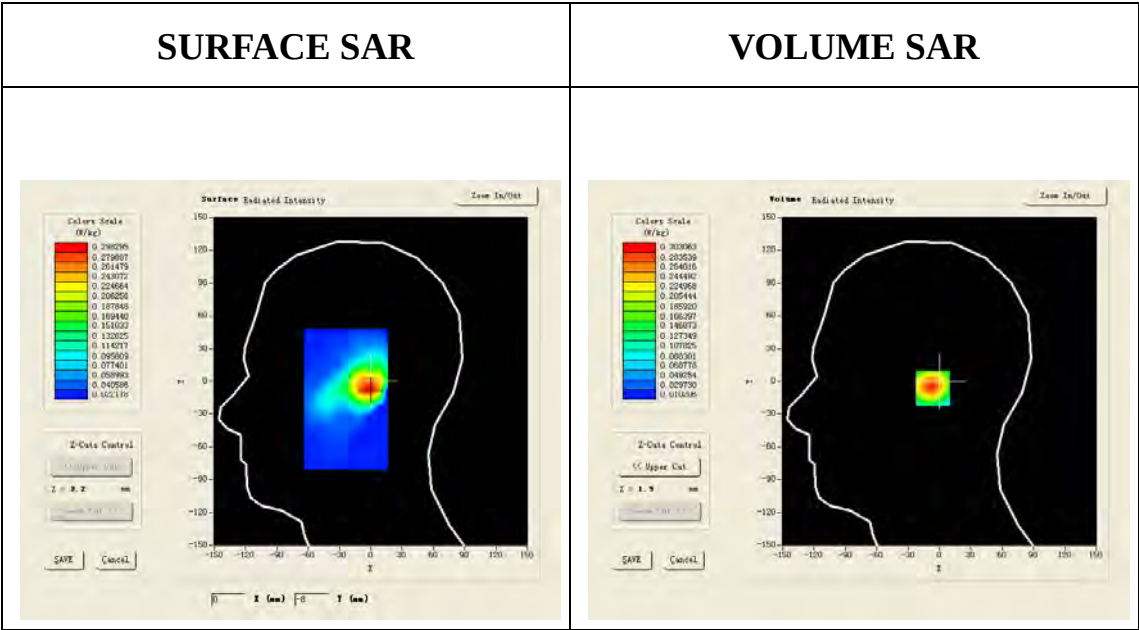
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

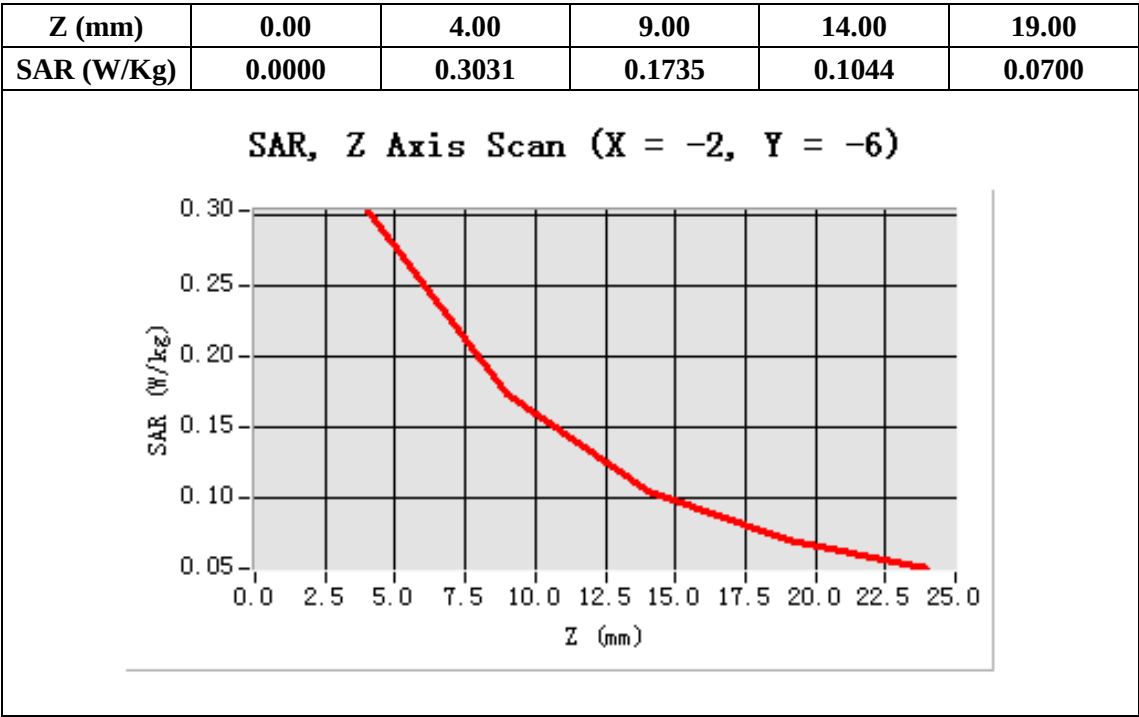
**Configuration/PCS1900 Mid Touch-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Touch-Right/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5mm;

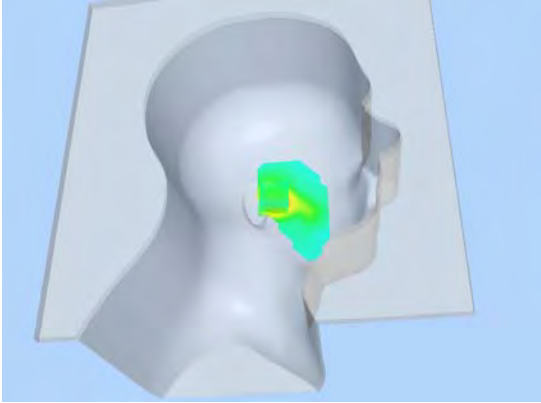
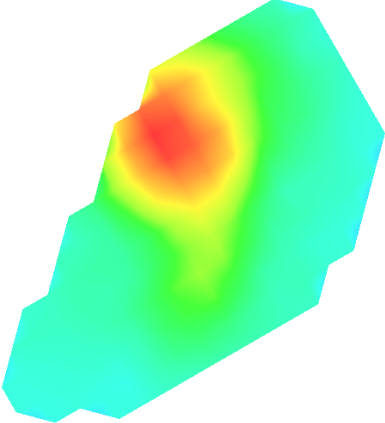
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Right head                           |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-2.00, Y=-6.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.159614 |
| SAR 1g (W/Kg)  | 0.285451 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                     | Hot spot position                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D rendering of a human head model in profile, facing right. The head is light gray. A small, irregularly shaped area on the side of the head, near the ear, is highlighted with a color gradient from green to yellow to red, indicating a hot spot. The background is a light blue gradient. |  A 2D map showing the hot spot position. The map is an irregular shape with a color gradient from green to yellow to red, indicating the intensity of the hot spot. The red area is concentrated in the upper right portion of the shape, while the green area is more extensive on the left and bottom. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

PCS 1900 Mid-Tilt Right &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8; ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 41.25$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Right Section

Ambient temperature (°C):21, Liquid temperature (°C):21

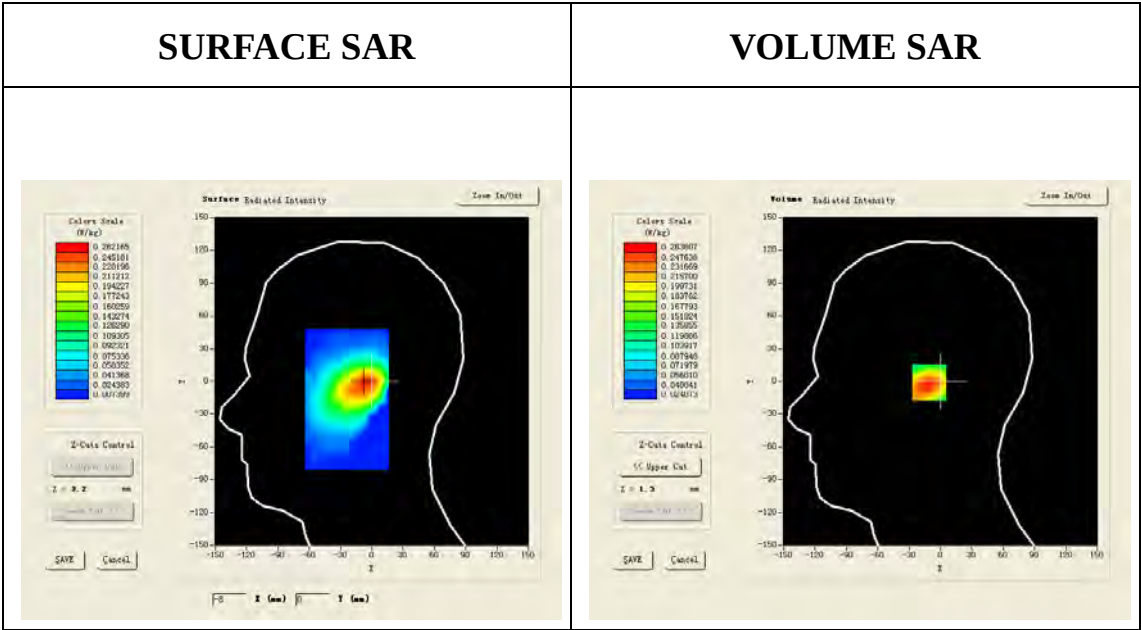
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

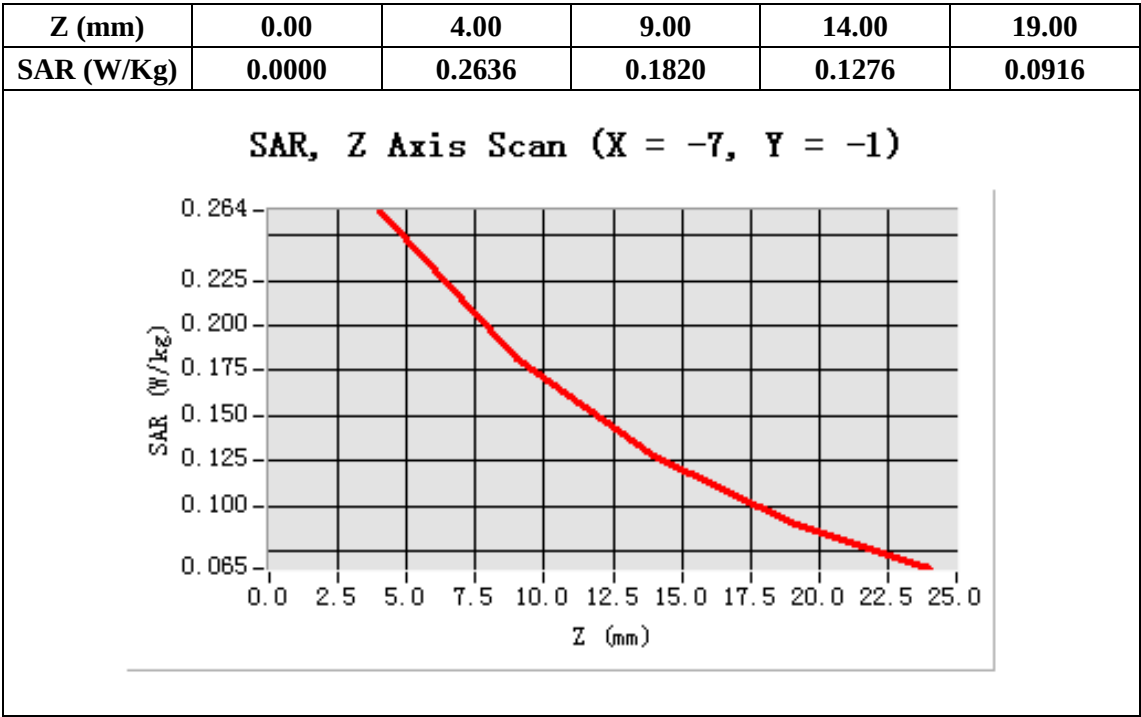
**Configuration/PCS1900 Mid Tilt-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Tilt-Right/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

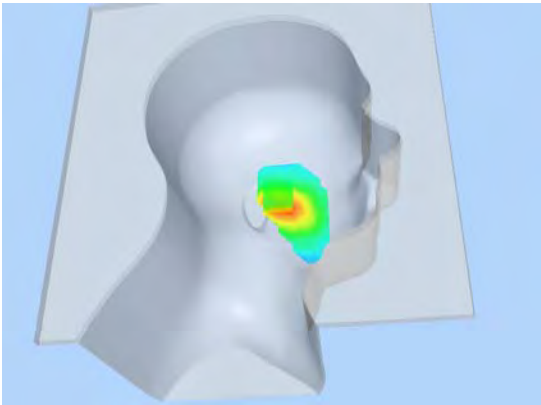
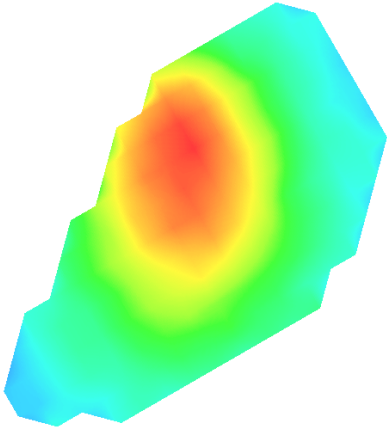
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Right head                           |
| <b>Device Position</b> | Tilt                                 |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-7.00, Y=-1.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.162958 |
| SAR 1g (W/Kg)  | 0.251639 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

Date:MAR 15,2012

PCS 1900 Mid-Touch Left &lt;SIM 2&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8; ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 41.25$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Right Section

Ambient temperature (°C):21, Liquid temperature (°C):21

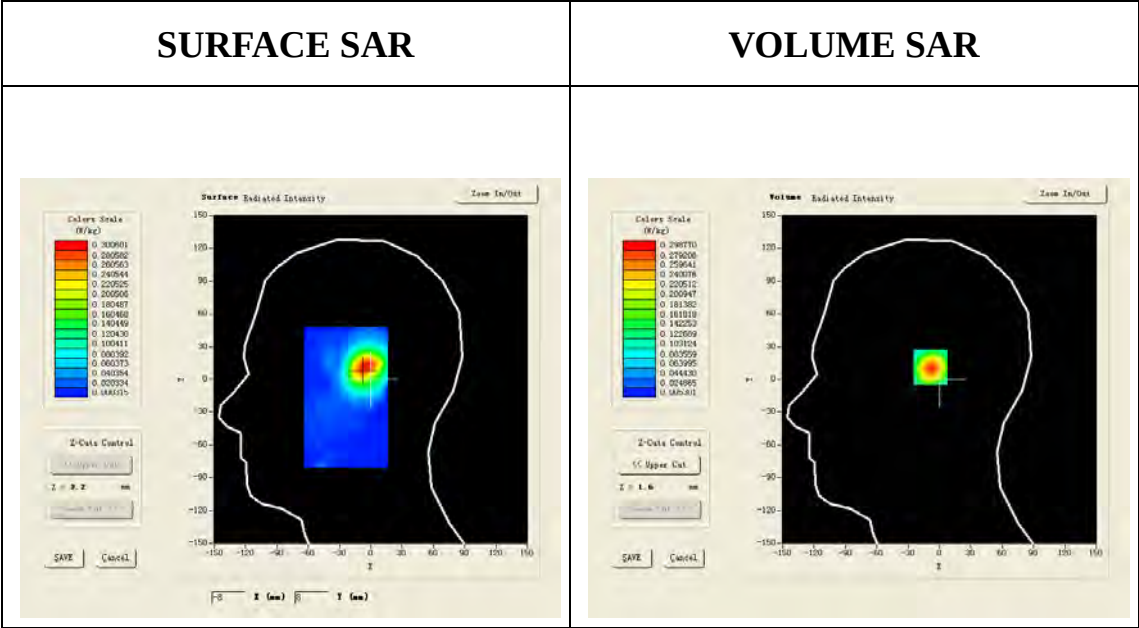
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

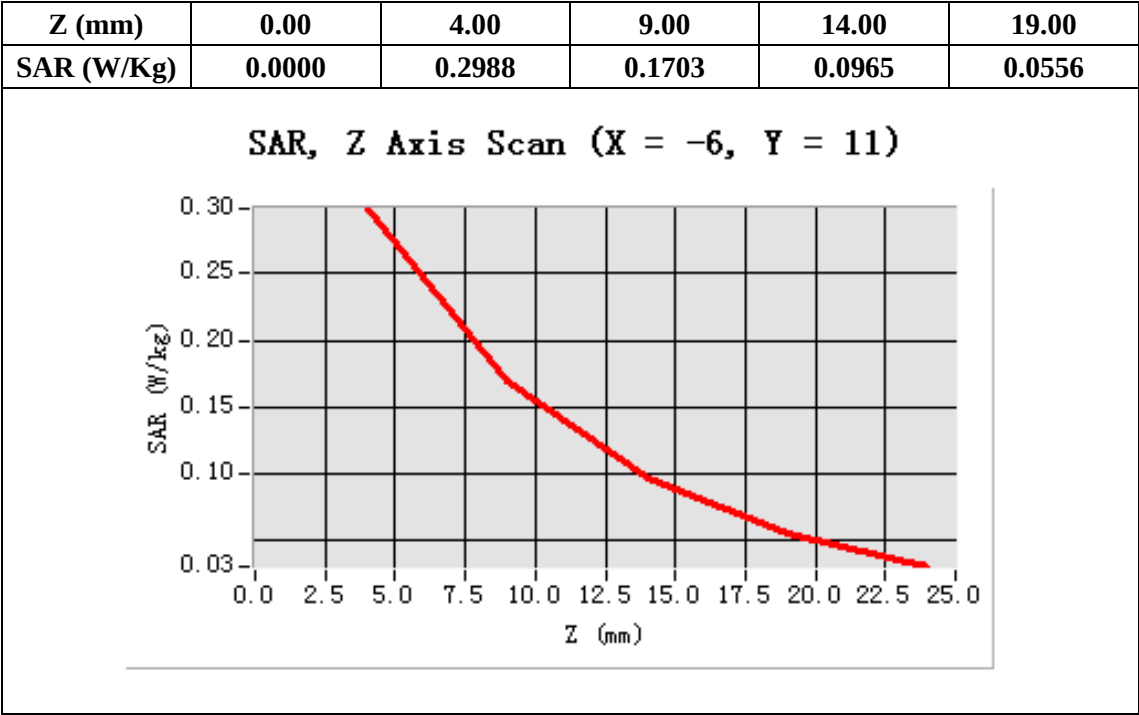
**Configuration/PCS1900 Mid Touch-Right/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Touch-Right/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5mm;

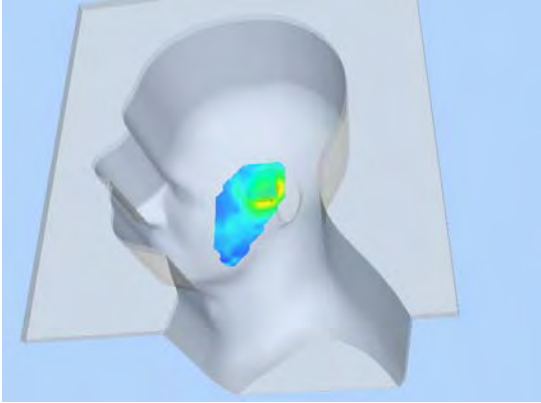
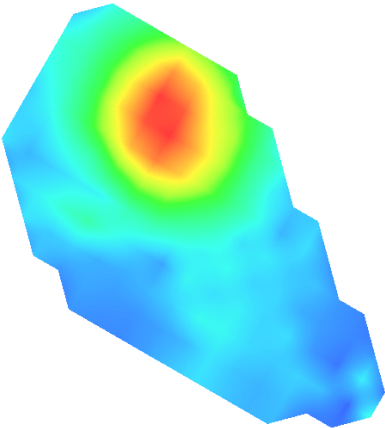
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | sam_direct_droit2_surf8mm.txt        |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Left head                            |
| <b>Device Position</b> | Cheek                                |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=-6.00, Y=11.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.144412 |
| SAR 1g (W/Kg)  | 0.277087 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

PCS 1900 Mid-Body-worn-Front &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8; ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

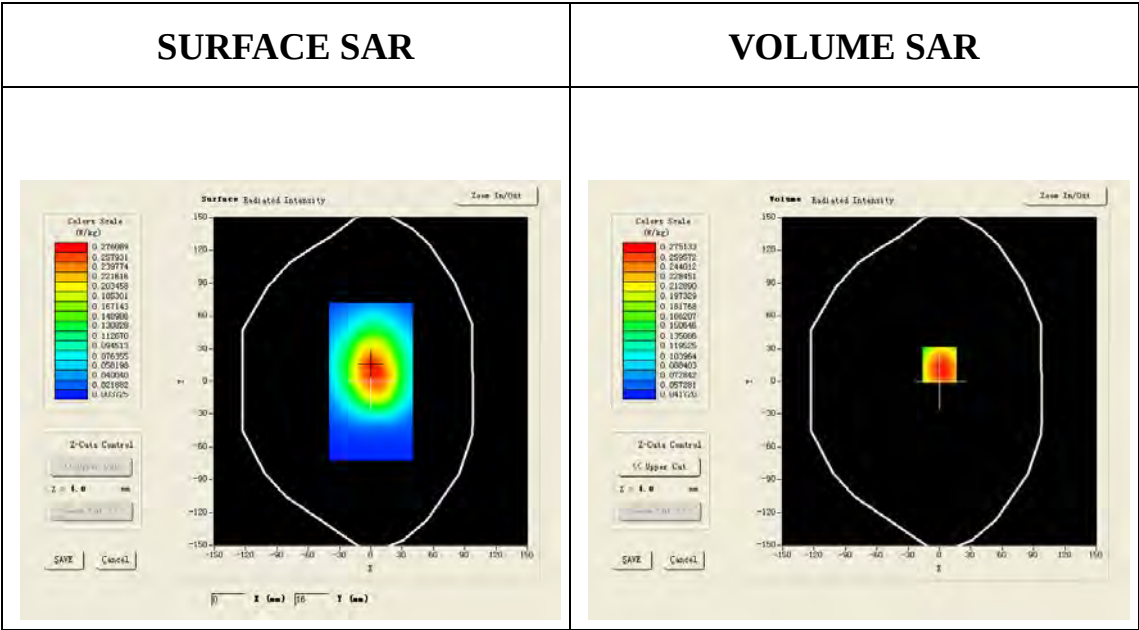
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

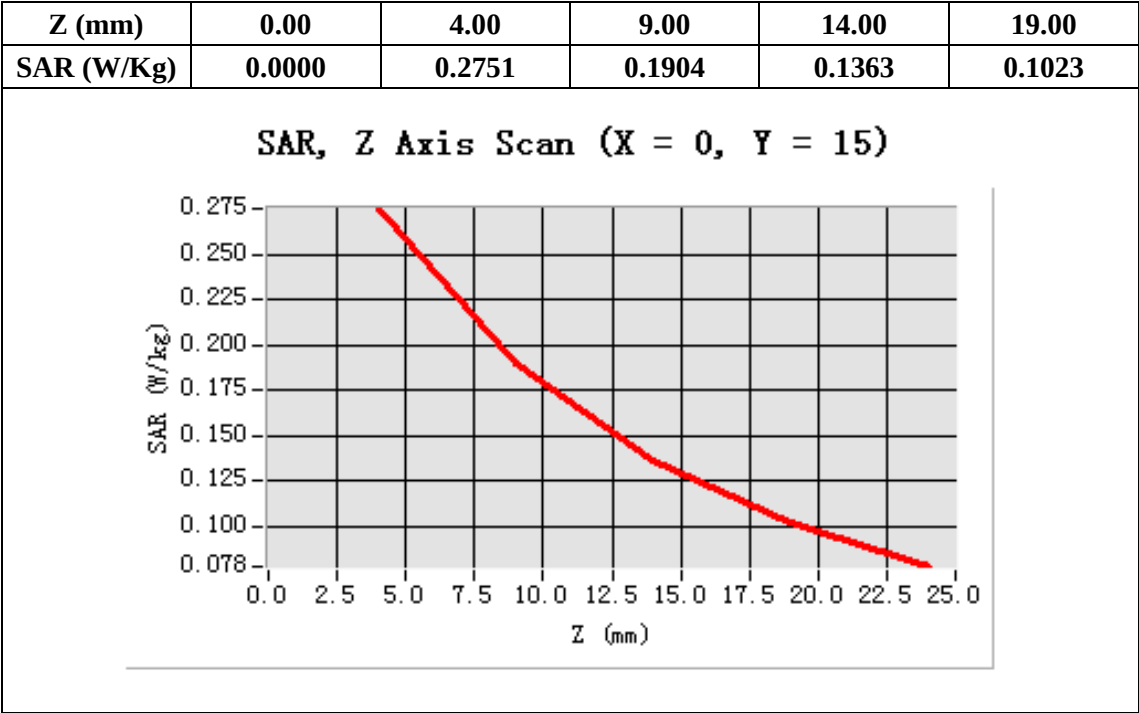
**Configuration/PCS1900 Mid Body-Front/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS1900 Mid Body-Front/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

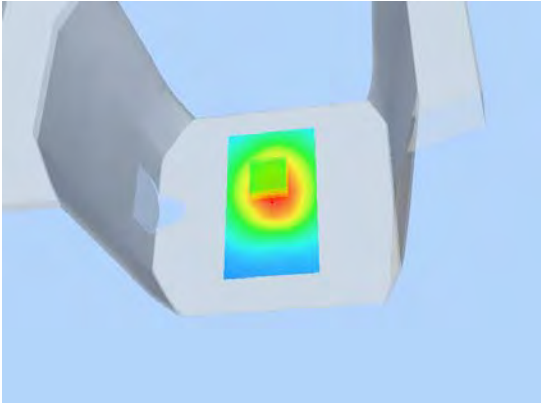
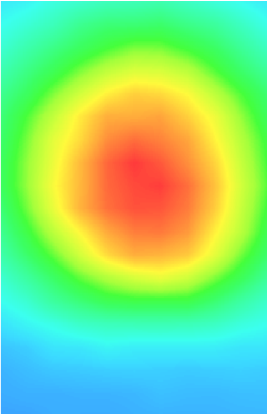
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 8.0)             |



Maximum location: X=0.00, Y=15.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.181746 |
| SAR 1g (W/Kg)  | 0.265967 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                                                                           | Hot spot position                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a robotic gripper, shown from a perspective view. The gripper is light gray. On the palm of the gripper, there is a square area with a color gradient representing a hot spot. The center of the square is red, transitioning through yellow and green to blue at the edges. A small red 'L' shaped marker is visible in the center of the hot spot. |  A 2D rectangular heatmap visualization. It features a circular hot spot in the center, with a color gradient from red (hottest) in the center, through yellow and green, to blue (coolest) at the edges. The background of the rectangle is a uniform light blue. |

Test Laboratory: AGC Lab

Date:MAR 15,2012

GPRS 1900 Mid-Body- worn-Front (2up) &lt;SIM1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-2 Slot; Communication System Band: PCS1900;Duty Cycle: 1:4.2; convF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

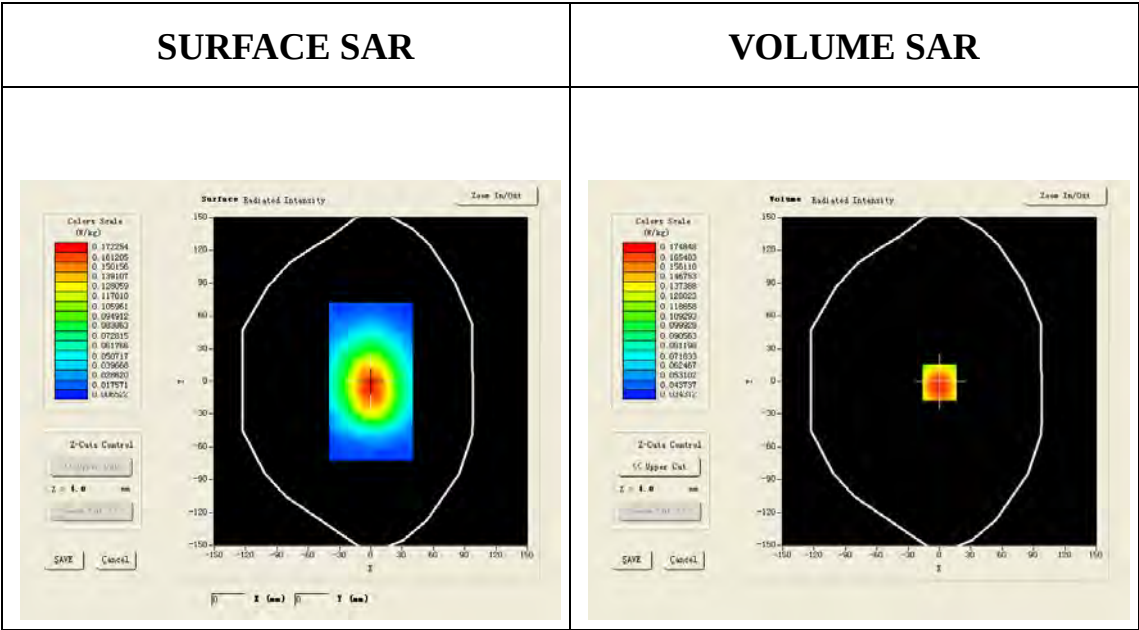
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

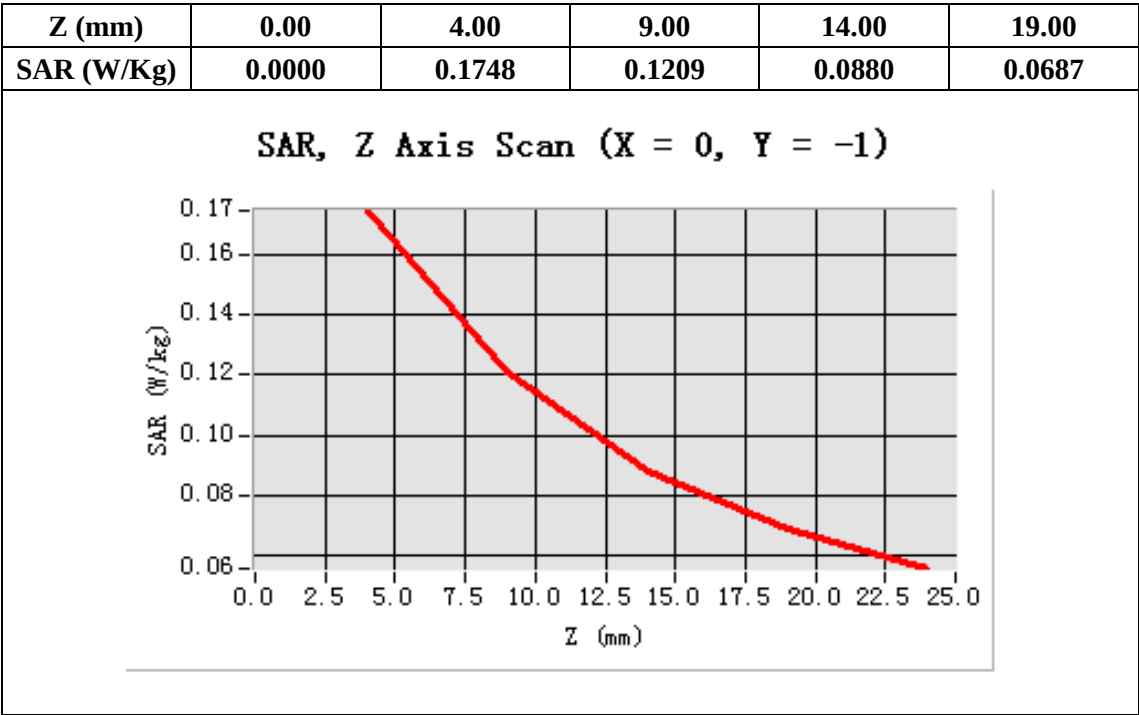
**Configuration/GPRS1900 Mid Body-Front/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GPRS1900 Mid Body-Front/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

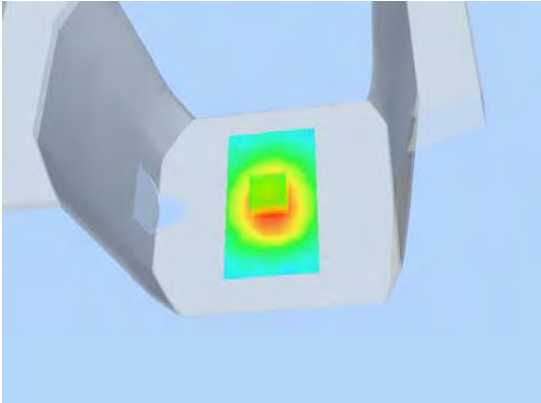
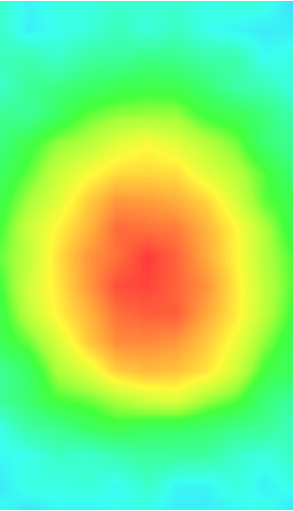
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 4.0)             |



Maximum location: X=0.00, Y=-1.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.116214 |
| SAR 1g (W/Kg)  | 0.168313 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                       | Hot spot position                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a robotic gripper, shown from a perspective view. The gripper is light gray. A rectangular area on the front face of the gripper is highlighted with a color-coded heat map overlay, showing a central red/orange area transitioning to yellow and then green towards the edges. |  A 2D rectangular image showing a heat map of a hot spot. The color scale ranges from red (hottest) in the center, through orange and yellow, to green and cyan (cooler) towards the edges. The shape is roughly circular but contained within a rectangular frame. |

Test Laboratory: AGC Lab

Date:MAR 15,2012

GPRS 1900 Mid-Body- worn-Front (3up) <SIM1>

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-3 Slot; Communication System Band: PCS1900;Duty Cycle: 1:2.7; convF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;

Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

Satimo Configuration:

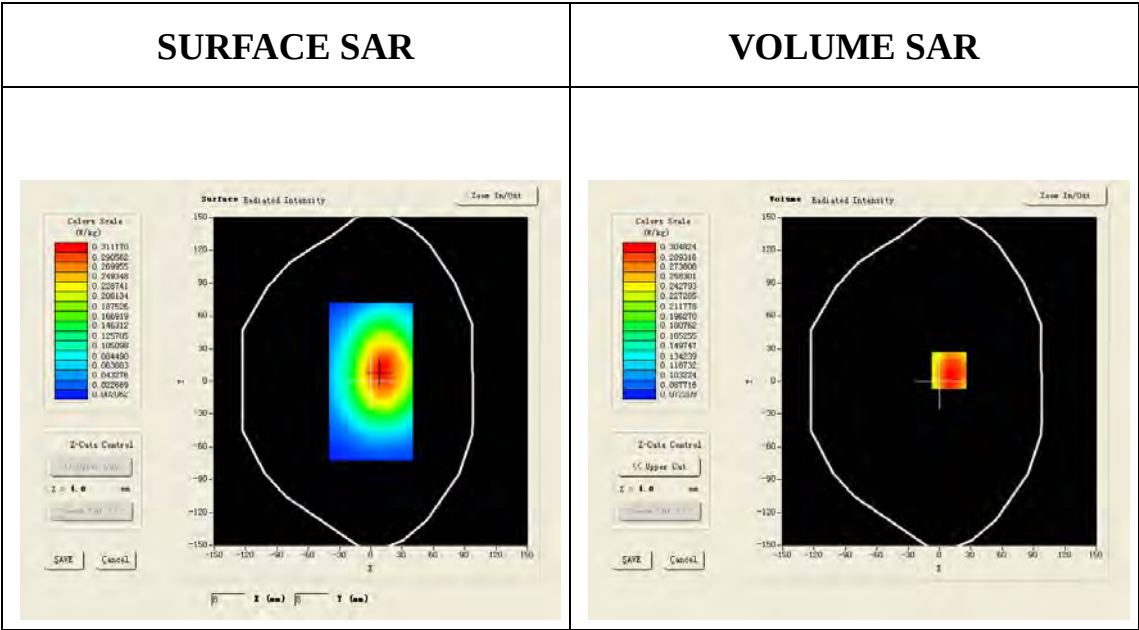
Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

**Configuration/GPRS1900 Mid Body-Front/Area Scan:** Measurement grid: dx=20mm, dy=20mm

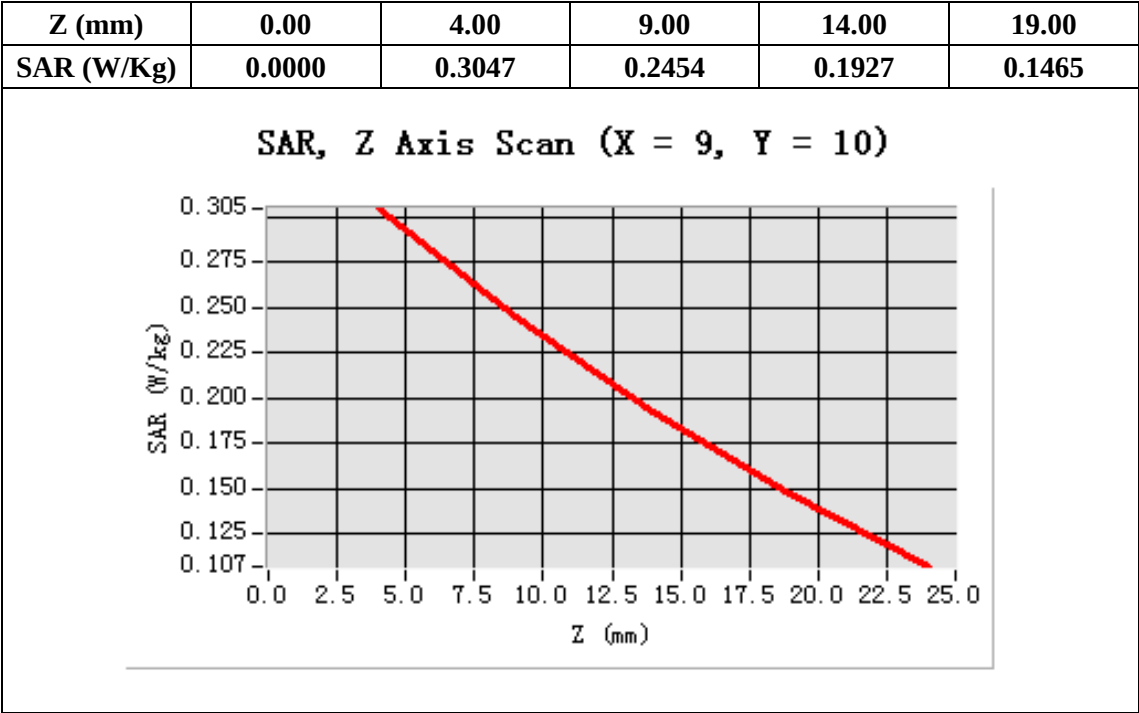
**Configuration/GPRS1900 Mid Body-Front/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5m;

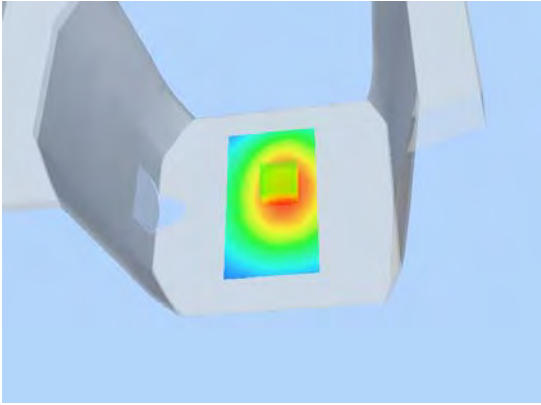
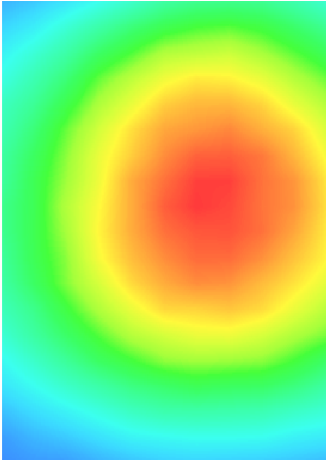
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 2.7)             |



Maximum location: X=9.00, Y=10.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.239327 |
| SAR 1g (W/Kg)  | 0.320471 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                            | Hot spot position                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a mechanical part, possibly a bracket or housing, rendered in a light gray color. A rectangular area on the front face of the part is highlighted with a color-coded overlay, showing a gradient from blue (cooler) to red (hottest), indicating a localized heat source or hot spot. |  A 2D cross-sectional view of a hot spot. It displays a circular temperature distribution with a color gradient from blue at the outer edges to red in the center, representing the intensity of the heat. The shape is roughly circular, suggesting a point source of heat in a cross-section. |

Test Laboratory: AGC Lab

Date:MAR 15,2012

GPRS 1900 Mid-Body- worn-Front (4up) &lt;SIM1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-4 Slot; Communication System Band: PCS1900;Duty Cycle: 1:2; convF=6.42  
Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21, Liquid temperature (°C):21

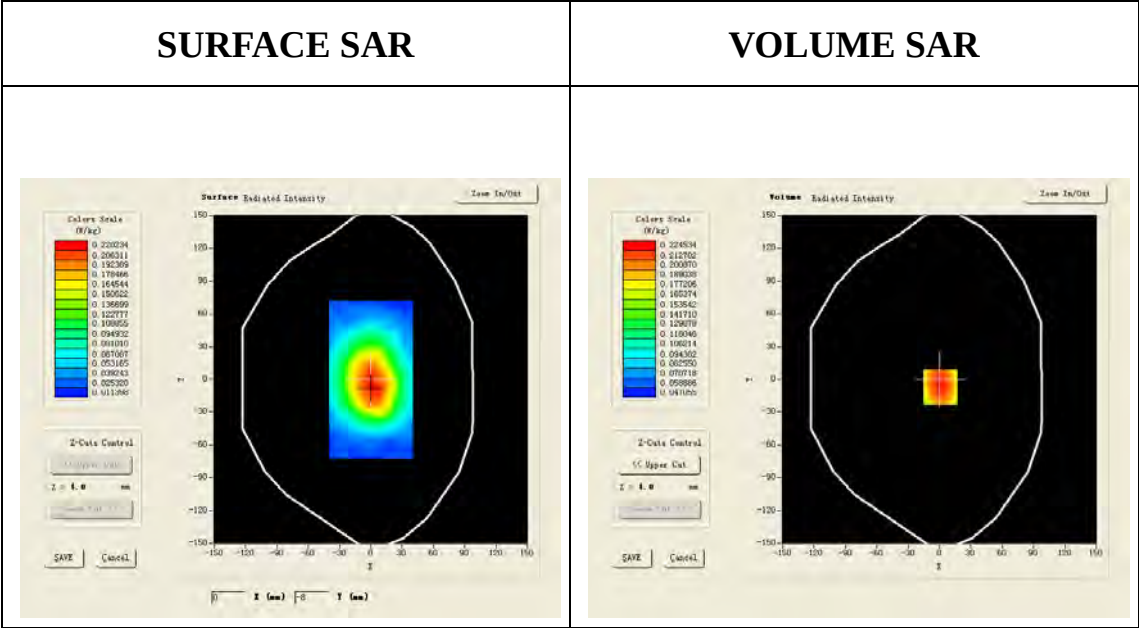
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

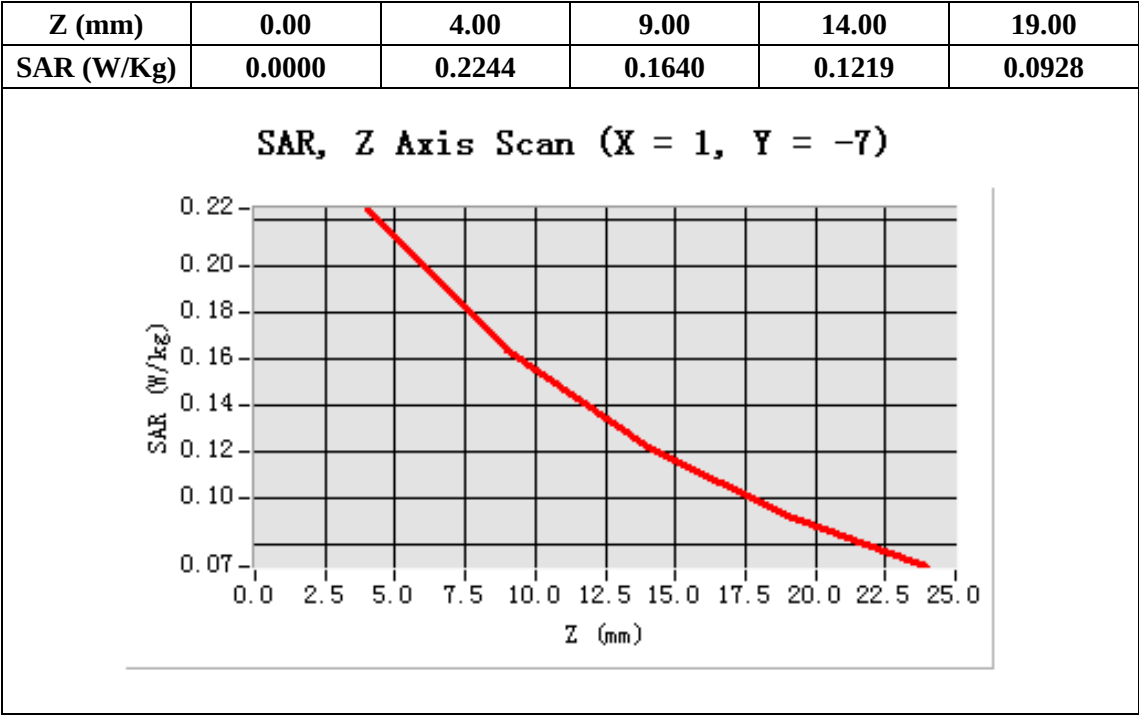
**Configuration/GPRS1900 Mid Body-Front/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/GPRS1900 Mid Body-Front/Zoom Scan:** Measurement grid: dx=8mm,  
dy=8mm, dz=5mm;

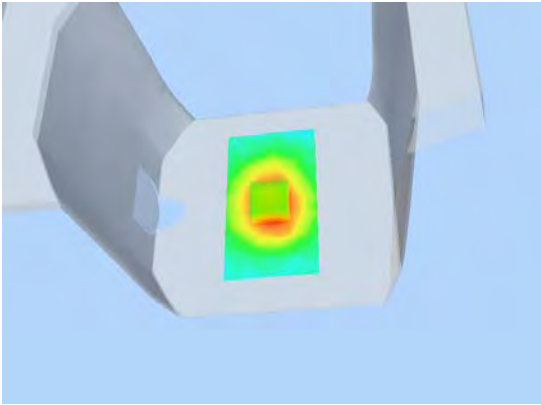
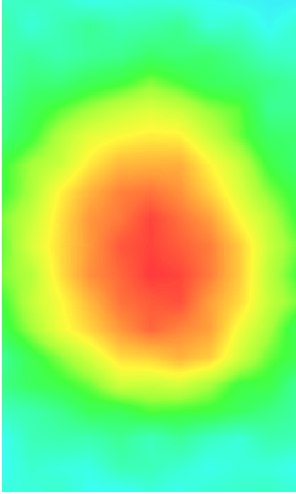
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Front                           |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 2.0)             |



Maximum location: X=1.00, Y=-7.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.165358 |
| SAR 1g (W/Kg)  | 0.234386 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

PCS 1900 Mid-Body-worn-Back (3 up) &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System:GPRS-3 slot; Communication System Band: PCS 1900;Duty Cycle:1:2.7 ; convF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ; $\rho = 1000$ kg/m<sup>3</sup> ; Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

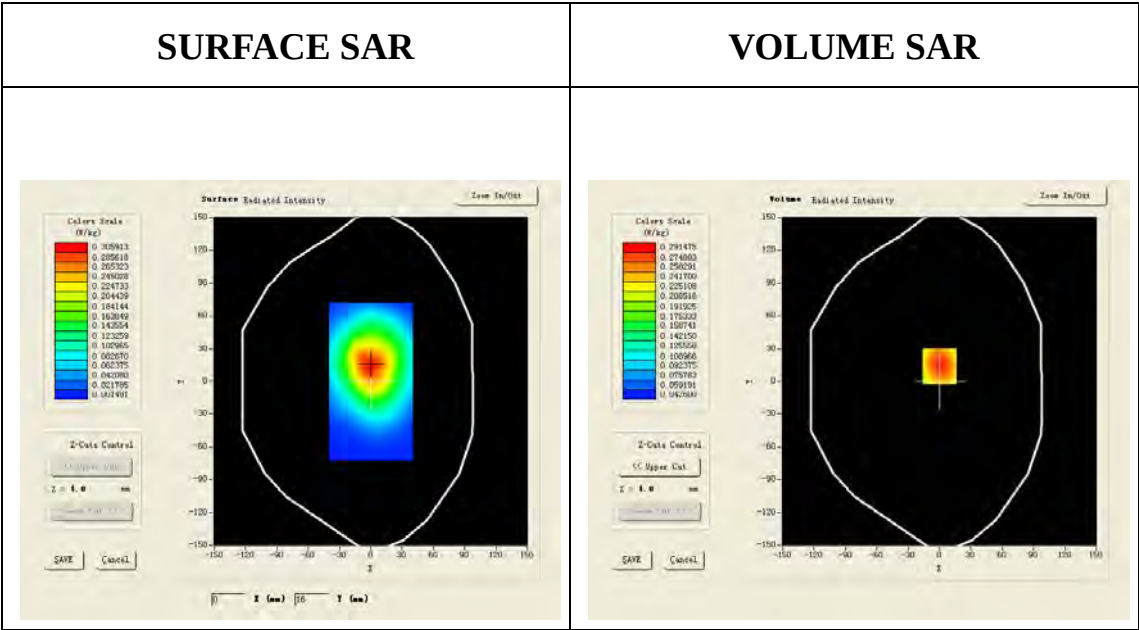
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

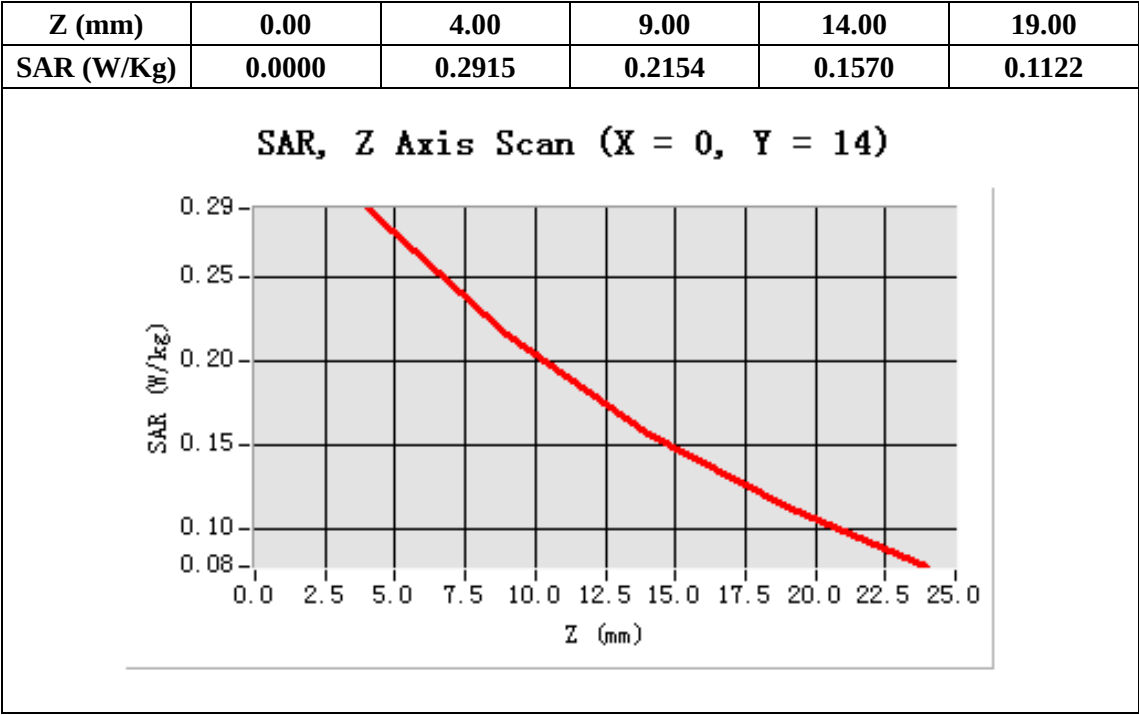
**Configuration/PCS 1900 Mid Body-Back/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS 1900 Mid Body-Back/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

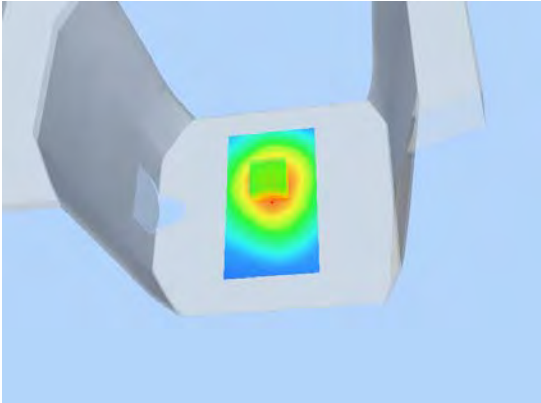
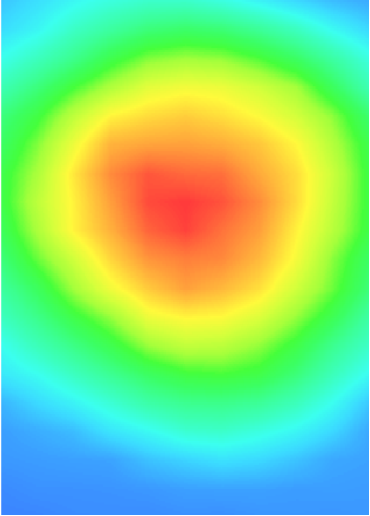
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Back                            |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor:2.7)              |



Maximum location: X=0.00, Y=14.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.208683 |
| SAR 1g (W/Kg)  | 0.301222 |



| 3D screen shot                                                                                                                                                                                                                                                                                                                                                                                 | Hot spot position                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  A 3D CAD model of a mechanical component, possibly a bracket or housing, rendered in a light gray color. A rectangular area on the front face of the part is highlighted with a color-coded overlay, showing a gradient from blue (cooler) to red (hottest), indicating a localized heat source or hot spot. |  A 2D cross-sectional view of a hot spot. It displays a radial temperature distribution with a central core of red, transitioning through orange and yellow to a green outer ring, all set against a blue background. This represents the spatial extent and intensity of the heat source. |

Test Laboratory: AGC Lab

**Date:MAR 15,2012**

PCS 1900 Mid-Body-worn-Back (3 up) with earphone &lt;SIM 1&gt;

**DUT:GSM CELL PHONE; Type:MOON**

Communication System: GPRS-3 Slot; Communication System Band:PCS 1900; Duty Cycle:1:2.7 ;ConvF=6.42

Frequency: 1880 MHz; Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 54.18$ ; $\rho = 1000$ kg/m<sup>3</sup> ; Phantom section: Flat Section

Ambient temperature (°C):21, Liquid temperature (°C):21

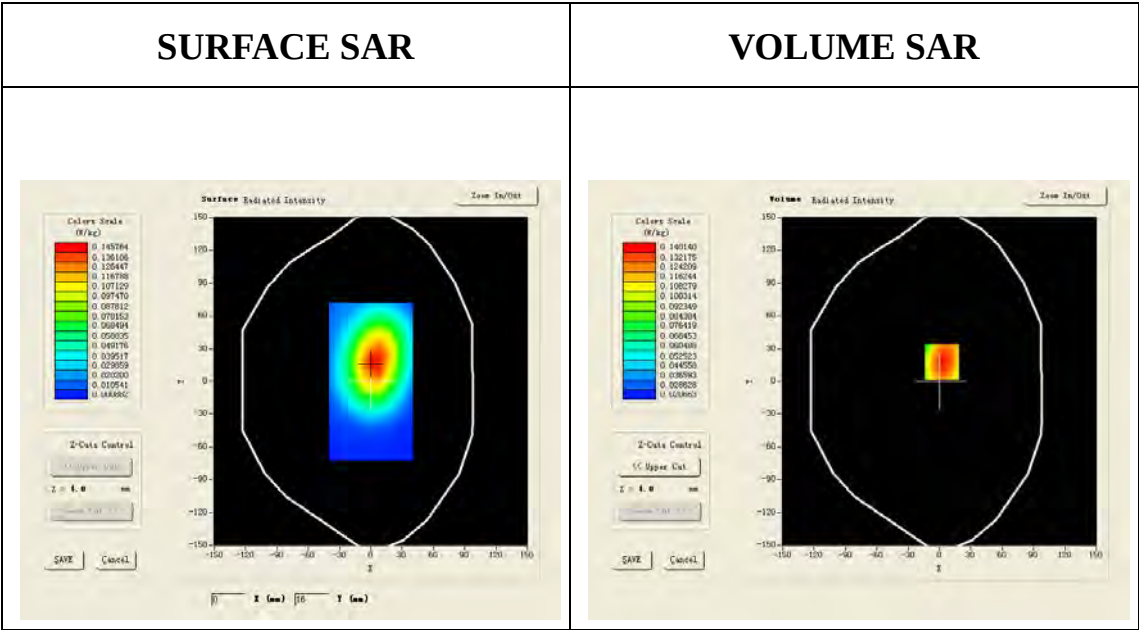
Satimo Configuration:

Probe:SSE5; Calibrated: 09/12/2011

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM1; Type: SAM
- Measurement SW: OpenSAR V4\_02\_01

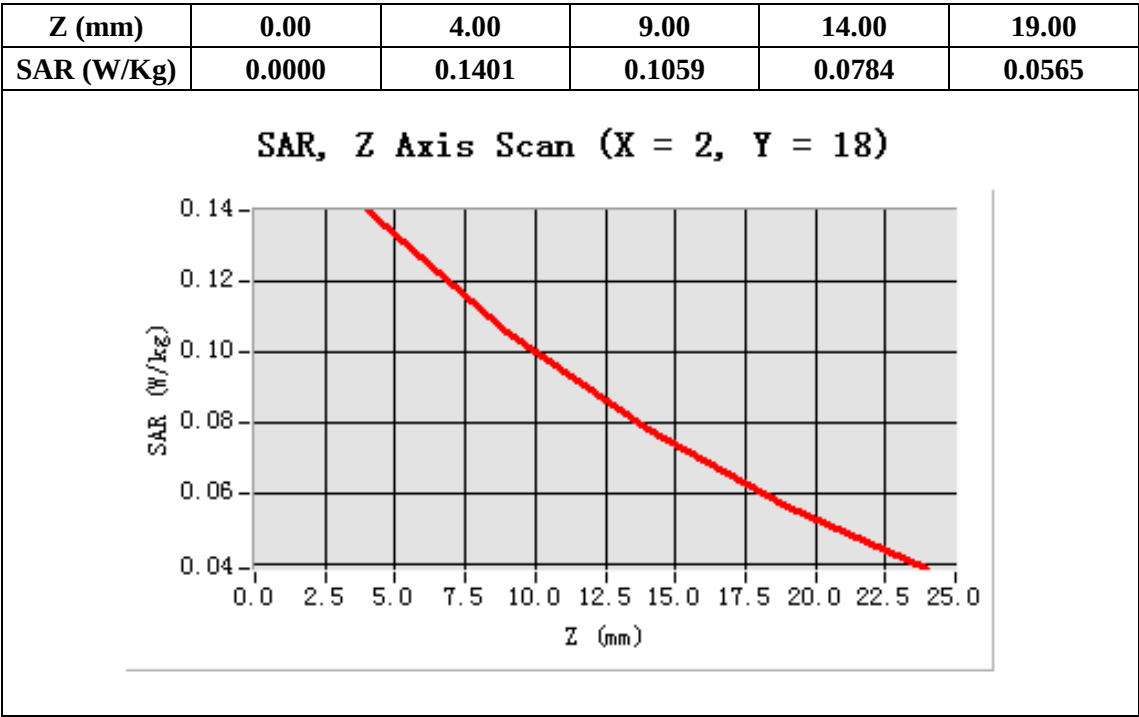
**Configuration/PCS 1900 Mid Body-Back/Area Scan:** Measurement grid: dx=20mm, dy=20mm**Configuration/PCS 1900 Mid Body-Back/Zoom Scan:** Measurement grid: dx=8mm, dy=8mm, dz=5mm;

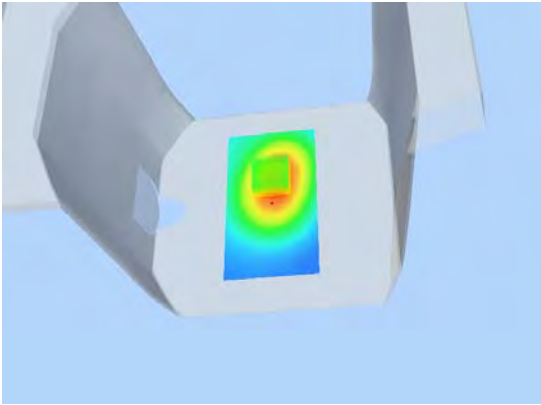
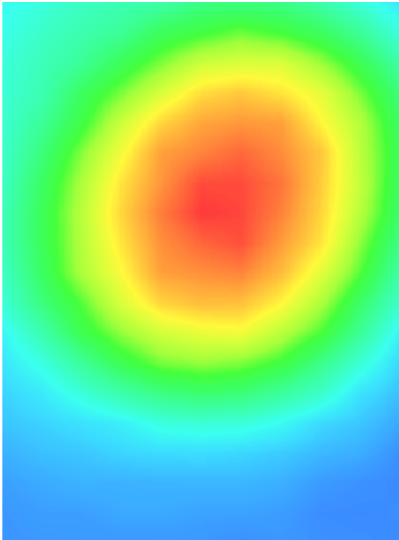
|                        |                                      |
|------------------------|--------------------------------------|
| <b>Area Scan</b>       | surf_sam_plan.txt                    |
| <b>ZoomScan</b>        | 5x5x7,dx=8mm dy=8mm dz=5mm,Very fast |
| <b>Phantom</b>         | Validation plane                     |
| <b>Device Position</b> | Body Back                            |
| <b>Band</b>            | GSM1900                              |
| <b>Channels</b>        | Middle                               |
| <b>Signal</b>          | TDMA (Crest factor: 2.7)             |



Maximum location: X=2.00, Y=18.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 0.100686 |
| SAR 1g (W/Kg)  | 0.144585 |



| 3D screen shot                                                                    | Hot spot position                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |