

FCC SAR

# TEST REPORT

of

## GSM Phone

Model Name: T510G  
Trade Name: TINNO  
Report No.: SZ10080009S01  
FCC ID.: XD6T510G

*prepared for*

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Nan Shan District, Shenzhen, P.R.China.

*prepared by*

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## General Information

### 1.1. Notes

The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the identification. The test report may only be reproduced or published in full. Reproduction or publications of extracts from the test report requires the prior written approval of Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory. The test report shall be invalid without all the signatures of testing the Project Manager, the Deputy Project Manager and the Test Lab Manager. Any objections must be raised to Morlab within 30 days since the date when the report is received. It will not be taken into consideration beyond this limit.

### 1.2. Organization item

|                                |                           |
|--------------------------------|---------------------------|
| Report No.:                    | SZ10080009S01             |
| Date of Issue:                 | Sep 10, 2010              |
| Date of Tests:                 | Sep 1, 2010 – Sep 1, 2010 |
| Responsible for Accreditation: | Shu Luan                  |
| Project Manager:               | Li Lei                    |
| Deputy Project Manager:        | Samuel Peng               |

### 1.3. Conclusion

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory has verified that all tests as listed in the section 4.11 of this report have been performed successfully with the tested equipment.

|   |  |  |
|---|--|--|
| <br>Samuel Peng<br><b>Tested by</b><br>(Responsible for the Test Report) |  | <br>Li Lei<br><b>Reviewed by</b><br>(Verification of the Test Report) |
| <br>Shu Luan<br><b>Approved by</b><br>(Responsible Test Lab Manager)     |  |  |

## 2. Testing Laboratory

### 2.1. Identification of the Responsible Testing Laboratory

Company Name: Shenzhen Morlab Communications Technology Co., Ltd.  
Department: Morlab Laboratory  
Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China  
Responsible Test Lab Manager: Mr. Shu Luan  
Telephone: +86 755 86130268  
Facsimile: +86 755 86130218

### 2.2. Identification of the Responsible Testing Location

Name: Shenzhen Morlab Communications Technology Co., Ltd.  
Morlab Laboratory  
Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China

### 2.3. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572 (see 0)

### 2.4. List of Test Equipments

| No. | Instrument       | Type                                   | Cal. Date | Cal. Due |
|-----|------------------|--|-----------|----------|
| 1   | PC               | Dell (Pentium IV 2.4GHz, SN:X10-23533) |           |          |
| 2   | Network Emulator | Rohde&Schwarz (CMU200, SN:105894)      | 2009-9-26 | 1year    |
| 3   | Voltmeter        | Keithley (2000, SN:1000572)            | 2009-9-24 | 1year    |
| 4   | Synthesizer      | Rohde&Schwarz (SML_03, SN:101868)      | 2009-9-24 | 1year    |
| 5   | Amplifier        | Nucl udes (ALB216, SN:10800)           | 2009-9-24 | 1year    |
| 6   | Power Meter      | Rohde&Schwarz (NRVD, SN:101066)        | 2009-9-24 | 1year    |
| 7   | Probe            | Antennessa (SN:SN_3708_EP80)           | 2009-9-24 | 1year    |
| 8   | Phantom          | Antennessa (SN:SN_36_08_SAM62)         | 2009-9-24 | 1year    |
| 9   | Liquid           | Antennessa (Last Calibration:21 08 08) | 2010-8-21 | 1year    |

### 3. Technical Information

Note: the following data is based on the information by the applicant.

#### 3.1. Identification of Applicant

Company Name: SHENZHEN TINNO MOBILE TECHNOLOGY CO.,LTD.  
Address: 4/F., H-3 Building, OCT Eastern Industrial Park, NO.1 XiangShan East Road., Nan Shan District, Shenzhen, P.R.China.

#### 3.2. Identification of Manufacturer

Company Name: SHENZHEN TINNO MOBILE TECHNOLOGY CO.,LTD.  
Address: 4/F., H-3 Building, OCT Eastern Industrial Park, NO.1 XiangShan East Road., Nan Shan District, Shenzhen, P.R.China.

#### 3.3. Equipment Under Test (EUT)

Brand Name: TINNO  
Type Name: TINNO  
Marking Name: T510G  
Hardware Version: V1.0  
Software Version: V0.21  
Frequency Bands: GSM 850MHz (channel 128:824.20MHz,channel 190:836.59MHz, channel 251:848.29MHz)  
PCS 1900MHz (channel 512:1850.19MHz,channel 661:1880.00MHz, channel 810:1909.80MHz)  
Modulation Mode: GMSK  
Antenna type: Build inside  
Development Stage: Identical prototype  
Battery Model: E500  
Battery specification: 1000mAh 3.7V  
Development Stage: Identical prototype  
Multislot Class: GPRS: Multislot Class 12: EDGE:(n.a)  
GPRS Operation Mode: Class B

### 3.3.1. Photographs of the EUT

Please see for photographs of the EUT.

### 3.3.2. Identification of all used EUTs

The EUT Identity consists of numerical and letter characters (see the table below), the first five numerical characters indicates the Type of the EUT defined by Morlab, the next letter character indicates the test sample, and the following two numerical characters indicates the software version of the test sample.

| EUT Identity | Hardware Version | Software Version |
|--------------|------------------|------------------|
| 1#           | V1.0             | V0.21            |

## 4. Test Results

### 4.1. Applied Reference Documents

Leading reference documents for testing:

| No. | Identity  | Document Title   |
|-----|---|--|
| 1   | 47 CFR § 2.1093   | Radiofrequency Radiation Exposure Evaluation: Portable Devices   |
| 2   | FCC OET<br>Bulletin 65<br>(Edition 97-01),<br>Supplement C<br>(Edition 01-01) | Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields  |
| 3   | ANSI C95.1-1999   | IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz  |
| 4   | IEEE 1528-2003  | Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques. |

## 4.2. Test Environment/Conditions

|                             |  |
|-----------------------------|--|
| Normal Temperature (NT):    | 20 ... 25 °C                               |
| Relative Humidity:          | 30 ... 75 %                                |
| Air Pressure:               | 980 ... 1020 hPa                           |
| Details of Power Supply:    | 220V/50Hz AC                               |
| Extreme Temperature:        | Low Temperature (LT) = -10°C               |
|                             | High Temperature (HT) = 55°C               |
| Extreme Voltage of the EUT: | Normal Voltage (NV) = 3.70V                |
|                             | Low Voltage (LV) = 3.60V                   |
|                             | High Voltage (HV) = 4.20V                  |
| Test frequency:             | GSM 850MHz                                 |
|                             | PCS 1900MHz                                |
| Operation mode:             | Call established                           |
| Power Level:                | GSM 850 MHz Maximum output power(level 5)  |
|                             | PCS 1900 MHz Maximum output power(level 0) |

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz, The EUT, The EUT is commanded to operate at maximum transmitting power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.

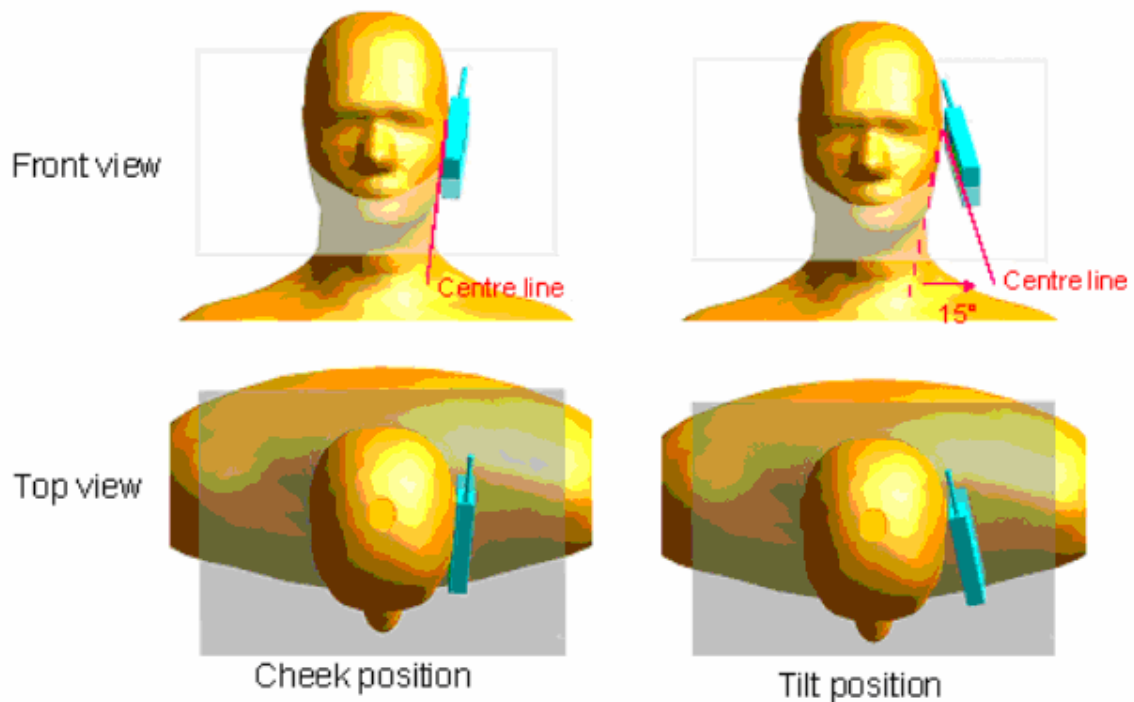


### 4.3.Operational Conditions During Test

#### 4.3.1. Informations On The Testing

The mobile phone antenna and battery are those specified by the manufacturer. The battery is fully charged before each measurement. The output power and frequency are controlled using a base station simulator. The mobile phone is set to transmit at its highest output peak power level.

The mobile phone is test in the “cheek” and “tilted” positions on the left and right sides of the phantom. The mobile phone is placed with the vertical centre line of the body of the mobile phone and the horizontal line crossing the centre of the earpiece in a plane parallel to the sagittal plane of the phantom.



Description of the “cheek” position:

The mobile phone is well placed in the reference plane and the earpiece is in contact with the ear. Then the mobile phone is moved until any point on the front side get in contact with the cheek of the phantom or until contact with the ear is lost.

Description of the “tilted” position:

The mobile phone is well placed in the “cheek” position as described above. Then the mobile phone is moved outward away from the mouth by an angle of 15 degrees or until contact with the ear lost.



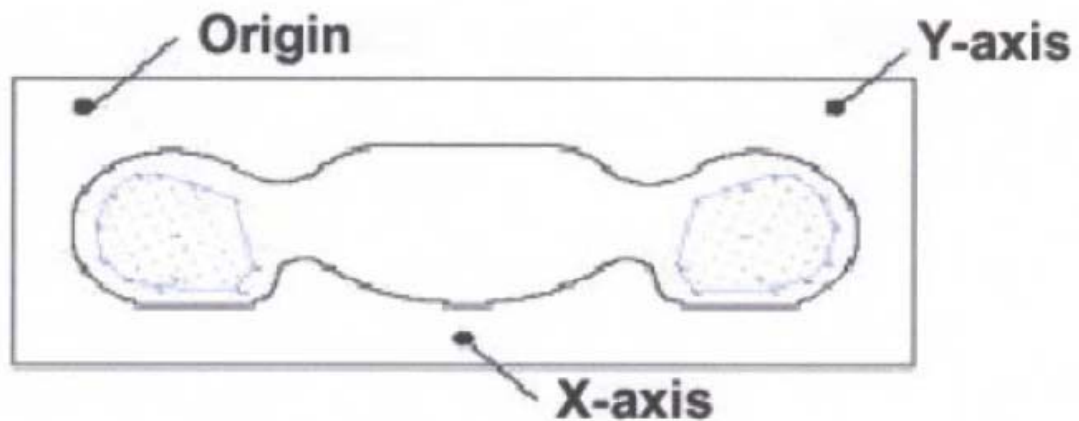
Remark: Please refer to Appendix B for the test setup photos.

#### 4.4. Body-worn Configurations

The body-worn configurations shall be tested with the supplied accessories (belt-clips, holsters, etc.) attached to the device in normal use configuration.

The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 1.5cm(taking into account of the IEEE 1528 and the place of the antenna)

For body-worn and other configurations a flat phantom shall be used which is comprised of material with electrical properties similar to the corresponding tissues.



SAR Measurement Points in Area Scan

#### 4.5. Measurement procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm \* 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors can not directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 \* 30 \* 30 mm or 32 \* 32 \* 32 mm is assessed by measuring 5 or 8 \* 5 or 8\*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

#### **4.6. Description of interpolation/extrapolation scheme**

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

#### 4.7. SAR Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

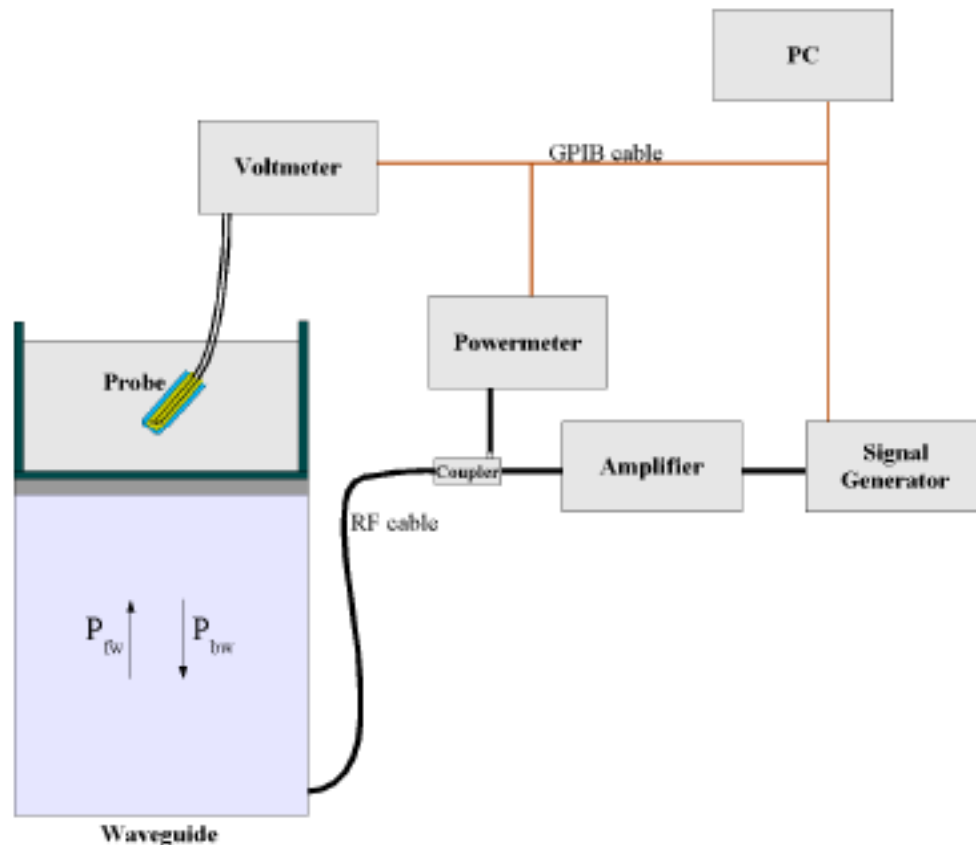
## 4.8. Probe

For the measurements the Specific Dosimetric E-Field Probe SSE5 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 5 mm
- Distance between probe tip and sensor center: 2.5mm
- Distance between sensor center and the inner phantom surface: 4 mm  
(repeatability better than +/- 1mm)
- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.25 dB
- Calibration range: 835to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line: less than 30°

Probe calibration is realized, in compliance with CENELEC EN 50361 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 50361 annexe technique using reference guide at the five frequencies.



$$SAR = \frac{4(P_{fw} - P_{bw})}{ab\delta} \cos^2\left(\pi \frac{y}{a}\right) e^{-(2z/\delta)}$$

Where :

P<sub>fw</sub> = Forward Power

P<sub>bw</sub> = Backward Power

a and b = Waveguide dimensions

$\delta$  = Skin depth

Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO

After each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

$$CF(N) = SAR(N)/V_{lin}(N) \quad (N=1,2,3)$$

The linearised output voltage V<sub>lin</sub>(N) is obtained from the displayed output voltage V(N) using

$$V_{lin}(N) = V(N) * (1 + V(N)/DCP(N)) \quad (N=1,2,3)$$

where DCP is the diode compression point in mV.

### 4.8.1. Uncertainty Assessment

The following table includes the uncertainty table of the IEEE 1528.

The values are determined by Antennessa.

#### UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

| a   | b       | c            | d              | e= f(d,k) | f       | g           | h=<br>c*f/e    | i=<br>c*g/e     | k           |
|---|---------|--------------|----------------|-----------|---------|-------------|----------------|-----------------|-------------|
| Uncertainty Component   | Sec.    | Tol<br>(+-%) | Prob.<br>Dist. | Div.      | Ci (1g) | Ci<br>(10g) | 1g Ui<br>(+-%) | 10g Ui<br>(+-%) | V<br>i      |
| <b>Measurement System</b>   |         |              |                |           |         |             |                |                 |             |
| Probe calibration   | E.2.1   | 7.0          | N              | 1         | 1       | 1           | 7.00           | 7.00            |             |
| Axial Isotropy  | E.2.2   | 2.5          | R              |           |         |             | 1.02           | 1.02            |             |
| Hemispherical Isotropy  | E.2.2   | 4.0          | R              |           |         |             | 1.63           | 1.63            |             |
| Boundary effect   | E.2.3   | 1.0          | R              |           | 1       | 1           | 0.58           | 0.58            |             |
| Linearity   | E.2.4   | 5.0          | R              |           | 1       | 1           | 2.89           | 2.89            |             |
| System detection limits   | E.2.5   | 1.0          | R              |           | 1       | 1           | 0.58           | 0.58            |             |
| Readout Electronics   | E.2.6   | 0.02         | N              | 1         | 1       | 1           | 0.02           | 0.02            |             |
| Reponse Time  | E.2.7   | 3.0          | R              |           | 1       | 1           | 1.73           | 1.73            |             |
| Integration Time  | E.2.8   | 2.0          | R              |           | 1       | 1           | 1.15           | 1.15            |             |
| RF ambient Conditions   | E.6.1   | 3.0          | R              |           | 1       | 1           | 1.73           | 1.73            |             |
| Probe positioner Mechanical Tolerance   | E.6.2   | 2.0          | R              |           | 1       | 1           | 1.15           | 1.15            |             |
| Probe positioning with respect to Phantom Shell                                 | E.6.3   | 0.05         | R              |           | 1       | 1           | 0.03           | 0.03            |             |
| Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation | E.5.2   | 5.0          | R              |           | 1       | 1           | 2.89           | 2.89            |             |
| <b>Test sample Related</b>  |         |              |                |           |         |             |                |                 |             |
| Test sample positioning   | E.4.2.1 | 0.03         | N              | 1         | 1       | 1           | 0.03           | 0.03            | N<br>-<br>1 |
| Device Holder Uncertainty   | E.4.1.1 | 5.00         | N              | 1         | 1       | 1           | 5.00           | 5.00            |             |
| Output power Variation - SAR drift measurement                                  | 6.6.2   | 3.45         | R              |           | 1       | 1           | 1.99           | 1.99            |             |
| <b>Phantom and Tissue Parameters</b>  |         |              |                |           |         |             |                |                 |             |

|   |       |           |             |           |         |          |             |              |     |
|---|-------|-----------|-------------|-----------|---------|----------|-------------|--------------|-----|
| Phantom Uncertainty (Shape and thickness tolerances)                            | E.3.1 | 0.05      | R           |           | 1       | 1        | 0.03        | 0.03         |     |
| Liquid conductivity - deviation from target value                               | E.3.2 | 2.12      | R           |           | 0.64    | 0.43     | 0.78        | 0.53         |     |
| Liquid conductivity - measurement uncertainty                                   | E.3.3 | 5.00      | N           | 1         | 0.64    | 0.43     | 3.20        | 2.15         | M   |
| Liquid permittivity - deviation from target value                               | E.3.2 | 3.76      | R           |           | 0.6     | 0.49     | 1.30        | 1.06         |     |
| Liquid permittivity - measurement uncertainty                                   | E.3.3 | 10.00     | N           | 1         | 0.6     | 0.49     | 6.00        | 4.90         | M   |
| Combined Standard Uncertainty   |       |           | RSS         |           |         |          | 11.13       | 10.62        |     |
| Expanded Uncertainty (95% Confidence interval)                                  |       |           | k           |           |         |          | 21.70       | 20.71        |     |
| <b>UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK</b>                                 |       |           |             |           |         |          |             |              |     |
| a   | b     | c         | d           | e= f(d,k) | f       | g        | h= c*f/e    | i= c*g/e     | k   |
| Uncertainty Component   | Sec.  | Tol (+-%) | Prob. Dist. | Div.      | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | V i |
| <b>Measurement System</b>   |       |           |             |           |         |          |             |              |     |
| Probe calibration   | E.2.1 | 7.0       | N           | 1         | 1       | 1        | 7.00        | 7.00         |     |
| Axial Isotropy  | E.2.2 | 2.5       | R           |           |         |          | 1.02        | 1.02         |     |
| Hemispherical Isotropy  | E.2.2 | 4.0       | R           |           |         |          | 1.63        | 1.63         |     |
| Boundary effect   | E.2.3 | 1.0       | R           |           | 1       | 1        | 0.58        | 0.58         |     |
| Linearity   | E.2.4 | 5.0       | R           |           | 1       | 1        | 2.89        | 2.89         |     |
| System detection limits   | E.2.5 | 1.0       | R           |           | 1       | 1        | 0.58        | 0.58         |     |
| Readout Electronics   | E.2.6 | 0.02      | N           | 1         | 1       | 1        | 0.02        | 0.02         |     |
| Reponse Time  | E.2.7 | 3.0       | R           |           | 1       | 1        | 1.73        | 1.73         |     |
| Integration Time  | E.2.8 | 2.0       | R           |           | 1       | 1        | 1.15        | 1.15         |     |
| RF ambient Conditions   | E.6.1 | 3.0       | R           |           | 1       | 1        | 1.73        | 1.73         |     |
| Probe positioner Mechanical Tolerance   | E.6.2 | 2.0       | R           |           | 1       | 1        | 1.15        | 1.15         |     |
| Probe positioning with respect to Phantom Shell                                 | E.6.3 | 0.05      | R           |           | 1       | 1        | 0.03        | 0.03         |     |
| Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation | E.5.2 | 5.0       | R           |           | 1       | 1        | 2.89        | 2.89         |     |
| <b>Dipole</b>   |       |           |             |           |         |          |             |              |     |



|  |         |       |     |   |      |      |       |       |             |
|--|---------|-------|-----|---|------|------|-------|-------|-------------|
| Dipole axis to liquid Distance                       | 8,E.4.2 | 1.00  | N   |   | 1    | 1    | 0.58  | 0.58  | N<br>-<br>1 |
| Input power and SAR drift measurement                | 8,6.6.2 | 3.45  | R   |   | 1    | 1    | 1.99  | 1.99  |             |
| <b>Phantom and Tissue Parameters</b>                 |         |       |     |   |      |      |       |       |             |
| Phantom Uncertainty (Shape and thickness tolerances) | E.3.1   | 0.05  | R   |   | 1    | 1    | 0.03  | 0.03  |             |
| Liquid conductivity - deviation from target value    | E.3.2   | 2.12  | R   |   | 0.64 | 0.43 | 0.78  | 0.53  |             |
| Liquid conductivity - measurement uncertainty        | E.3.3   | 5.00  | N   | 1 | 0.64 | 0.43 | 3.20  | 2.15  | M           |
| Liquid permittivity - deviation from target value    | E.3.2   | 3.76  | R   |   | 0.6  | 0.49 | 1.30  | 1.06  |             |
| Liquid permittivity - measurement uncertainty        | E.3.3   | 10.00 | N   | 1 | 0.6  | 0.49 | 6.00  | 4.90  | M           |
| Combined Standard Uncertainty                        |         |       | RSS |   |      |      | 9.96  | 9.39  |             |
| Expanded Uncertainty (95% Confidence interval)       |         |       | k   |   |      |      | 19.42 | 18.30 |             |

#### 4.8.2. Equipments and results of validation testing

Equipments :

| name                | Type and specification |
|---------------------|------------------------|
| Signal generator    | E4433B                 |
| Directional coupler | 450MHz-3GHz            |
| Amplifier           | 3W 502(10-2500MHz)     |
| Reference dipole    | SN 36/08 DIPF 101      |

Results:

| Frequency          | 835MHz                                   | 1900MHz                                   |
|--------------------|--|---|
| Target value (1g)  | 10.8 W/Kg(body)                          | 39.7 W/Kg                                 |
| 250 mW input power | 2.753 W/Kg (head)<br>2.774 W/Kg (body)   | 9.888 W/Kg (head)<br>9.922 W/Kg (body)    |
| Test value (1g)    | 11.012 W/Kg (head)<br>11.096 W/Kg (body) | 39.552 W/Kg (head)<br>39.6880 W/Kg (body) |

**Note:**Please refer to check the system performance data, the first 132-143 page. 250 mW input power

### 4.8.3. Dielectric Performance

The measured 1-gram averaged SAR values of the device against the head and the body are provided in Tables 1 and 2 respectively. The humidity and ambient temperature of test facility were 54% ~60% and 23.0 °C ~23.8°C respectively. The SAM head phantom (SN 0381 SH) were full of the head tissue simulating liquid. The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 1.5cm (taking into account of the IEEE 1528 and the place of the antenna). A base station simulator was used to control the device during the SAR measurement. The phone was supplied with full-charged battery for each measurement.

For head measurement, the device was tested at the lowest, middle and highest frequencies in the transmit band.

**Table 1: Dielectric Performance of Head Tissue Simulating Liquid**

| Temperature: 23.0~23.8°C, humidity: 54~60%. |           |                         |                             |
|---|-----------|-------------------------|-----------------------------|
| /   | Frequency | Permittivity $\epsilon$ | Conductivity $\sigma$ (S/m) |
| <b>Target value</b>                         | 835 MHZ   | 41.5                    | 0.90                        |
| <b>Validation value<br/>(Sep 1)</b>         | 835 MHZ   | 40.669998               | 0.866612                    |
| <b>Target value</b>                         | 1900 MHZ  | 40                      | 1.40                        |
| <b>Validation value<br/>(Sep 1)</b>         | 1900 MHZ  | 39.993999               | 1.335397                    |

For body-worn measurements, the device was tested against flat phantom representing the user body. Under measurement phone was put on in the belt holder.

**Table 2: Dielectric Performance of Body Tissue Simulating Liquid**

| Temperature: 23.0~23.8°C, humidity: 54~60%. |           |                         |                             |
|---|-----------|-------------------------|-----------------------------|
| /   | Frequency | Permittivity $\epsilon$ | Conductivity $\sigma$ (S/m) |
| <b>Target value</b>                         | 835 MHz   | 55.0                    | 0.95                        |
| <b>Validation value<br/>(Sep 1)</b>         | 835 MHz   | 54.116001               | 0.974596                    |
| <b>Target value</b>                         | 1900 MHz  | 53.3                    | 1.52                        |

|                                     |          |           |          |
|-------------------------------------|----------|-----------|----------|
| <b>Validation value<br/>(Sep 1)</b> | 1900 MHz | 51.540001 | 1.573978 |
|-------------------------------------|----------|-----------|----------|

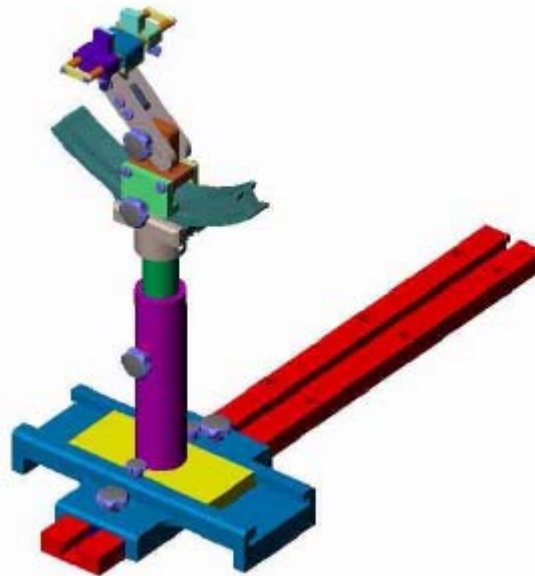
#### 4.8.4. Simulant liquids

Simulant liquids that are used for testing at frequencies of GSM 850MHz and GSM 1900MHz, which are made mainly of sugar, salt and water solutions may be left in the phantoms. Approximately 20litres are needed for an upright head compared to about 20litres for a horizontal bath phantom.

| Ingredients<br>(% by weight ) | Frequency Band |      | Frequency Band |      |
|-------------------------------|----------------|------|----------------|------|
|                               | 835MHz         |      | 1900MHz        |      |
| Tissue Type                   | Head           | Body | Head           | Body |
| Water                         | 41.45          | 52.4 | 55.36          | 40.4 |
| Salt(NaCl)                    | 1.45           | 1.4  | 0.35           | 0.5  |
| Sugar                         | 56.0           | 45.0 | 30.45          | 58.0 |
| HEC                           | 1.0            | 1.0  | 0.0            | 1.0  |
| Bactericide                   | 0.1            | 0.1  | 0.0            | 0.1  |
| Triton                        | 0.0            | 0.0  | 0.0            | 0.0  |
| DGBE                          | 0.0            | 0.0  | 13.84          | 0.0  |
| Acticide SPX                  | 0.0            | 0.0  | 0.0            | 0.0  |
| Dielectric Constant           | 42.45          | 56.1 | 41.00          | 54.0 |
| Conductivity (S/m)            | 0.91           | 0.95 | 1.38           | 1.45 |

#### 4.9. Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



Device holder

| System Material | Permittivity | Loss Tangent |
|-----------------|--------------|--------------|
| Delrin          | 3.7          | 0.005        |

#### 4.10.Items used in the Test Results List

Terms in the column “Verdict” for the test results list of the section 4.11:

| Verdict | Description  |
|---------|--|
| PASS    | EUT passed this test case  |
| FAIL    | EUT failed this test case  |
| INC.    | EUT did not pass and did not fail this test case, therefore the verdict is inconclusive  |
| Decl.   | “Declaration”: Morlab has received documents from the applicant and/or manufacturer which show conformity to the applied standards for this test case. |
| N/A     | Test case not applicable for the EUT, see the column “Note” for detailed   |

#### 4.11. Test Results List

##### Conducted RF Output Power Test Result

| Band         | Channel | Frequency (MHz) | Measured Output Power |
|--------------|---------|-----------------|-----------------------|
|              |         |                 | dBm                   |
| GSM 850MHz   | 128     | 824.2           | 31.08                 |
|              | 190     | 836.6           | 32.09                 |
|              | 251     | 848.8           | 32.54                 |
| GSM 1900MHz  | 512     | 1850.2          | 29.17                 |
|              | 661     | 1880.0          | 29.81                 |
|              | 810     | 1909.8          | 30.25                 |
| GPRS 850MHz  | 128     | 824.2           | 31.11                 |
|              | 190     | 836.6           | 32.11                 |
|              | 251     | 848.8           | 32.51                 |
| GPRS 1900MHz | 512     | 1850.2          | 29.16                 |
|              | 661     | 1880.0          | 29.8                  |
|              | 810     | 1909.8          | 30.05                 |

##### Summary of Measurement Results (GSM 850MHz Band)

SAR Values (GSM 850MHz Band), Measured against the head.

|   |                           |                   |
|---|---------------------------|-------------------|
| Temperature: 23.0~23.8°C, humidity: 54~60%. |                           |                   |
| Limit of SAR (W/kg)                         | 1 g Average               |                   |
|   | 1.6                       |                   |
| Test Case                                   | Measurement Result (W/kg) |                   |
|   | 1 g Average (W/kg)        | Power level (dBm) |
| Left head, Touch cheek, Channel Low         | 0.914                     | 31.08             |
| Left head, Touch cheek, Channel Middle      | 0.926                     | 32.09             |
| Left head, Touch cheek, Channel High        | 0.911                     | 32.54             |
| Left head, Tilt 15 Degree, Channel Low      | 0.674                     | 31.08             |
| Left head, Tilt 15 Degree, Channel Middle   | 0.676                     | 32.09             |
| Left head, Tilt 15 Degree, Channel High     | 0.662                     | 32.54             |
| Right head, Touch cheek, Channel Low        | 1.118                     | 31.08             |
| Right head, Touch cheek, Channel Middle     | 1.039                     | 32.09             |
| Right head, Touch cheek, Channel High       | 1.004                     | 32.54             |
| Right head, Tilt 15 Degree, Channel Low     | 0.863                     | 31.08             |
| Right head, Tilt 15 Degree, Channel Middle  | 0.842                     | 32.09             |

|  |       |       |
|--|-------|-------|
| Right head, Tilt 15 Degree, Channel High | 0.781 | 32.54 |
|--|-------|-------|

#### Summary of Measurement Results (GSM 1900MHz Band)

SAR Values (GSM 1900MHz Band), Measured against the head.

|   |                           |                   |
|---|---------------------------|-------------------|
| Temperature: 23.0~23.8°C, humidity: 54~60%. |                           |                   |
| Limit of SAR (W/kg)                         | 1 g Average               |                   |
|   | 1.6                       |                   |
| Test Case                                   | Measurement Result (W/kg) |                   |
|   | 1 g Average (W/kg)        | Power level (dBm) |
| Left head, Touch cheek, Channel Low         | 0.737                     | 29.17             |
| Left head, Touch cheek, Channel Middle      | 0.793                     | 29.81             |
| Left head, Touch cheek, Channel High        | 0.711                     | 30.25             |
| Left head, Tilt 15 Degree, Channel Low      | 0.395                     | 29.17             |
| Left head, Tilt 15 Degree, Channel Middle   | 0.463                     | 29.81             |
| Left head, Tilt 15 Degree, Channel High     | 0.411                     | 30.25             |
| Right head, Touch cheek, Channel Low        | 0.763                     | 29.17             |
| Right head, Touch cheek, Channel Middle     | 0.834                     | 29.81             |
| Right head, Touch cheek, Channel High       | 0.766                     | 30.25             |
| Right head, Tilt 15 Degree, Channel Low     | 0.473                     | 29.17             |
| Right head, Tilt 15 Degree, Channel Middle  | 0.553                     | 29.81             |
| Right head, Tilt 15 Degree, Channel High    | 0.483                     | 30.25             |

SAR Values (GSM 850MHz Band), Measured against the body.

|  |                           |                   |
|--|---------------------------|-------------------|
| Temperature: 23.0~23.8°C, humidity: 54~60%.                |                           |                   |
| Limit of SAR (W/kg)  | 1 g Average               |                   |
|  | 1.6                       |                   |
| Test Case  | Measurement Result (W/kg) |                   |
|  | 1 g Average (W/kg)        | Power level (dBm) |
| Side, Low frequency GPRS mode Back towards the phantom     | 1.205                     | 31.11             |
| Side, Middle frequency GPRS mode Back towards the phantom  | 1.181                     | 32.11             |
| Side, High frequency GPRS mode Back towards the phantom    | 0.836                     | 32.51             |
| Side, Low frequency GPRS mode Keyboard towards the phantom | 1.027                     | 31.11             |
| Side, Low frequency GSM mode Back towards the              | 0.985                     | 31.08             |

|   |       |       |
|---|-------|-------|
| Phantom   |       |       |
| Side, Middle frequency GSM mode Back towards the phantom              | 1.052 | 31.08 |
| Side, High frequency GSM mode Back towards the phantom                | 0.956 | 32.09 |
| Side, Low frequency GSM mode Back towards the Phantom (with earphone) | 0.979 | 31.08 |

SAR Values (GSM 1900MHz Band), Measured against the body.

|  |                           |                   |
|--|---------------------------|-------------------|
| Temperature: 23.0~23.8°C, humidity: 54~60%.                              |                           |                   |
| Limit of SAR (W/kg)  | 1 g Average               |                   |
|  | 1.6                       |                   |
| Test Case  | Measurement Result (W/kg) |                   |
|  | 1 g Average (W/kg)        | Power level (dBm) |
| Side, Low frequency GPRS mode Back towards the phantom                   | 0.942                     | 29.16             |
| Side, Middle frequency GPRS mode Back towards the phantom                | 1.047                     | 29.8              |
| Side, High frequency GPRS mode Back towards the phantom                  | 0.946                     | 30.05             |
| Side, Middle frequency GPRS mode Keyboard towards the phantom            | 0.894                     | 29.8              |
| Side, Low frequency GSM mode Back towards the Phantom                    | 0.634                     | 29.17             |
| Side, Middle frequency GSM mode Back towards the phantom                 | 0.732                     | 29.81             |
| Side, High frequency GSM mode Back towards the phantom                   | 0.641                     | 30.25             |
| Side, Middle frequency GSM mode Back towards the Phantom (with earphone) | 0.730                     | 29.81             |

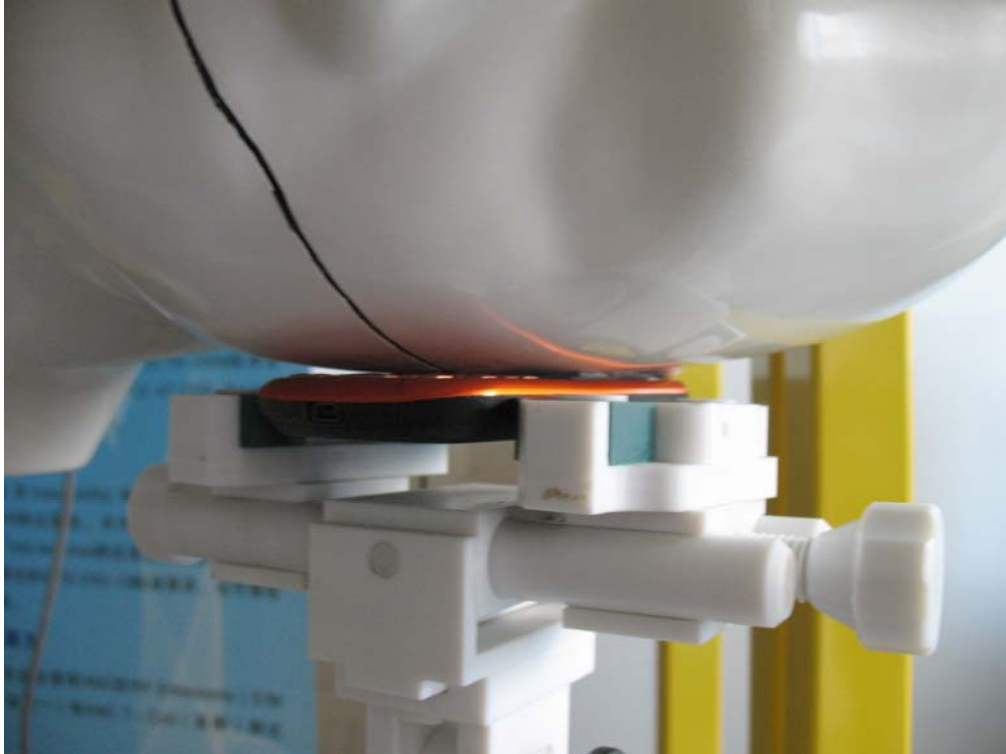
- Note:**
1. The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 1.5cm(taking into account of the IEEE 1528 and the place of the antenna)
  2. Bluetooth maximum power is very low, the test is not considered.
  3. Simultaneous transmitter testing to comply with FCC KDB 648474 File Description.
  4. Power Output test data, please refer to EMC test report.



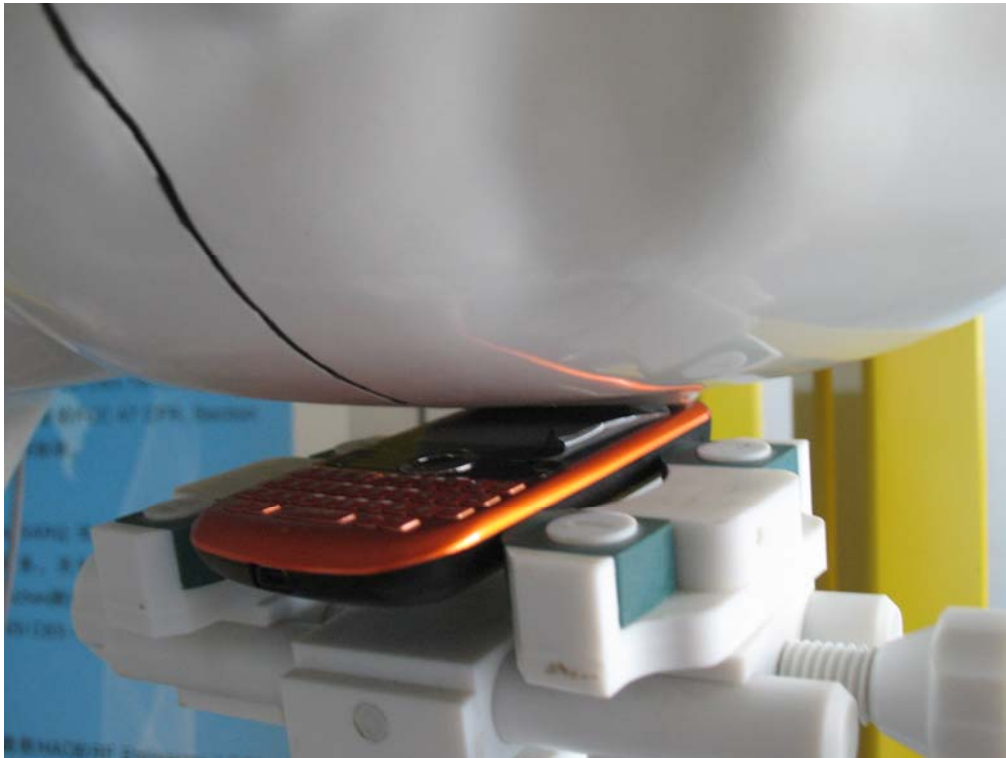
**Annex A    Accreditation Certificate**

## Annex B Photographs of the EUT

### 1 EUT Left Head Touch Cheek Position



### 2 EUT Left Head Tilt15 Position



3 EUT Right Head Touch Cheek Position



4 EUT Right Head Tilt15 Position



## 5 Side Position



## 6 With Headphone





## Annex C Graph Test Results

| <u><b>TYPE</b></u> | <b>BAND</b>          | <u><b>PARAMETERS</b></u>  |
|--------------------|----------------------|---|
|                    | <u><b>GSM850</b></u> | <p><u>Measurement 1:</u> Right Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 2:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 3:</u> Right Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 4:</u> Right Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 5:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 6:</u> Right Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 7:</u> Left Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 8:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 9:</u> Left Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 10:</u> Left Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 11:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 12:</u> Left Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 13:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 14:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 15:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 16:</u> Validation Plane with Body device position on Low Channel in GPRS mode (back)</p> <p><u>Measurement 17:</u> Validation Plane with Body device position on Low Channel in GSM mode</p> <p><u>Measurement 18:</u> Validation Plane with Body device position on Low Channel in GSM mode (with earphone)</p> |

|  |  |   |
|--|--|---|
|  |  | <p><u>Measurement 19:</u> Right Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 20:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 21:</u> Right Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 22:</u> Right Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 23:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 24:</u> Right Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 25:</u> Left Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 26:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 27:</u> Left Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 28:</u> Left Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 29:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 30:</u> Left Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 31:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 32:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 33:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 34:</u> Validation Plane with Body device position on Middle Channel in GPRS mode (back)</p> <p><u>Measurement 35:</u> Validation Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 36:</u> Validation Plane with Body device position on Middle Channel in GSM mode (with earphone)</p> |
|--|--|---|

**GSM**

**1900**

## MEASUREMENT 1

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 32 seconds

### A. Experimental conditions.

|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

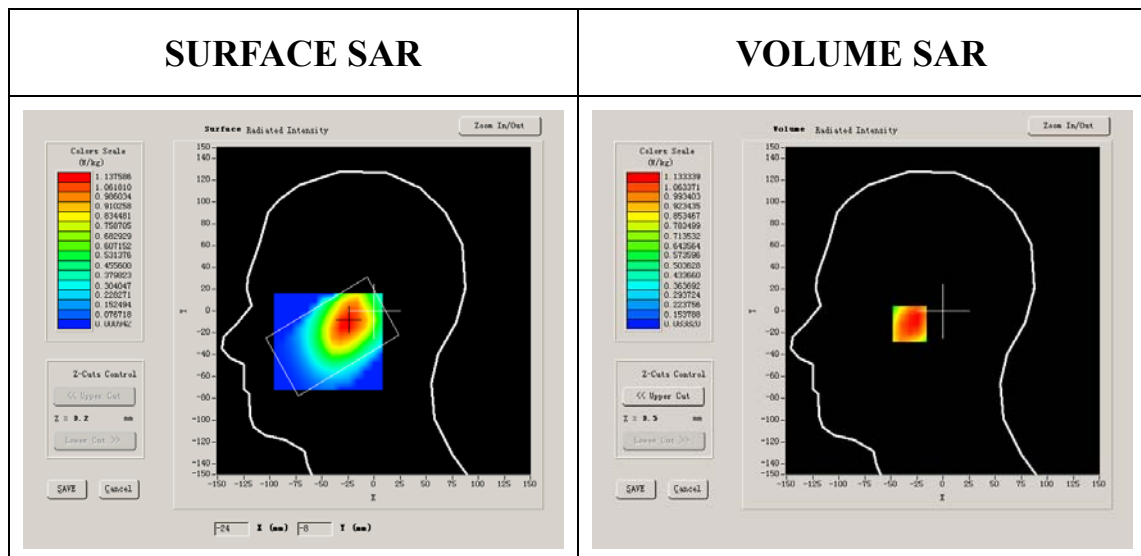
### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 41.790001  |
| <b>Relative permittivity</b>             | 18.926250  |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.866612             |
| <b>SAR drift (%)</b>        | 1.690000             |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



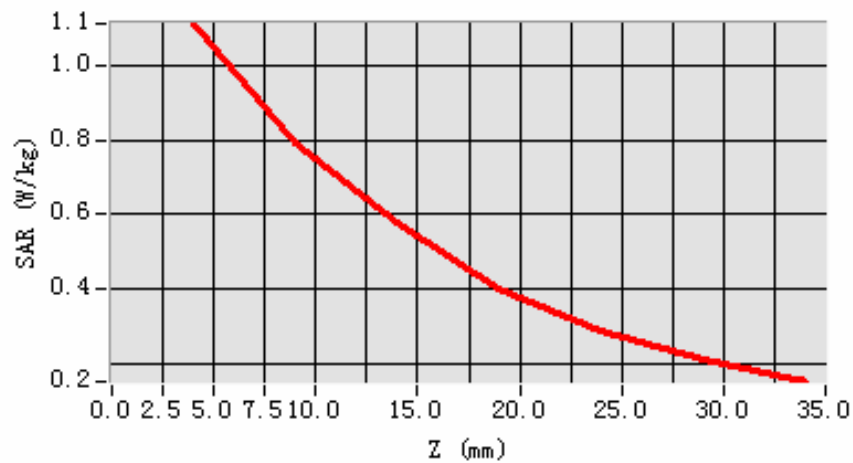
**Maximum location: X=-27.00, Y=-12.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.754830 |
| <b>SAR 1g (W/Kg)</b>  | 1.118456 |

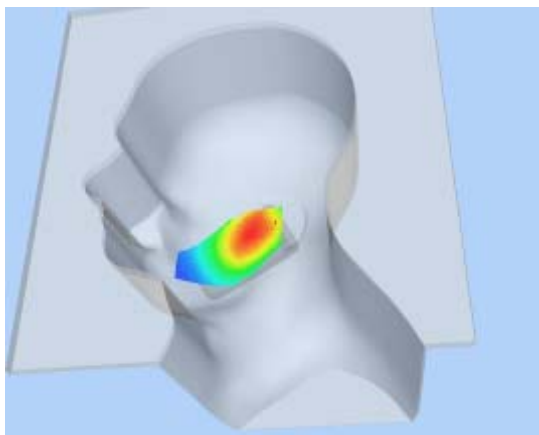
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.1115 | 0.7936 | 0.5777 | 0.4000 | 0.2894 | 0.2092 |

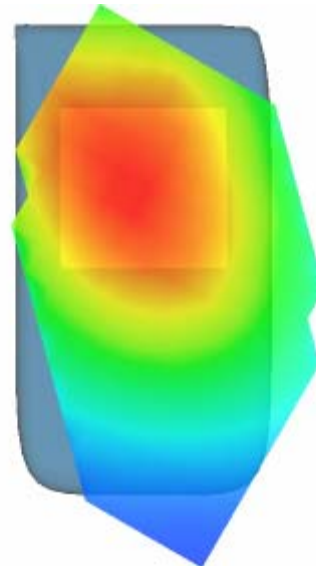
**SAR, Z Axis Scan (X = -27, Y = -12)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 2

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 31 seconds

### A. Experimental conditions.

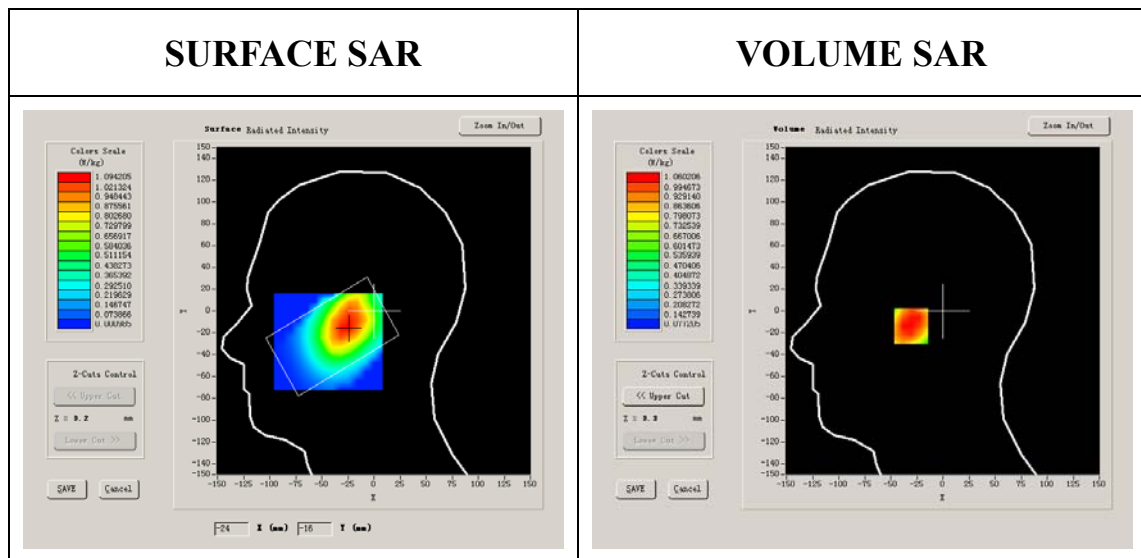
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 40.669998  |
| <b>Relative permittivity</b>             | 19.120001  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.888655             |
| <b>SAR drift (%)</b>        | -1.140000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |

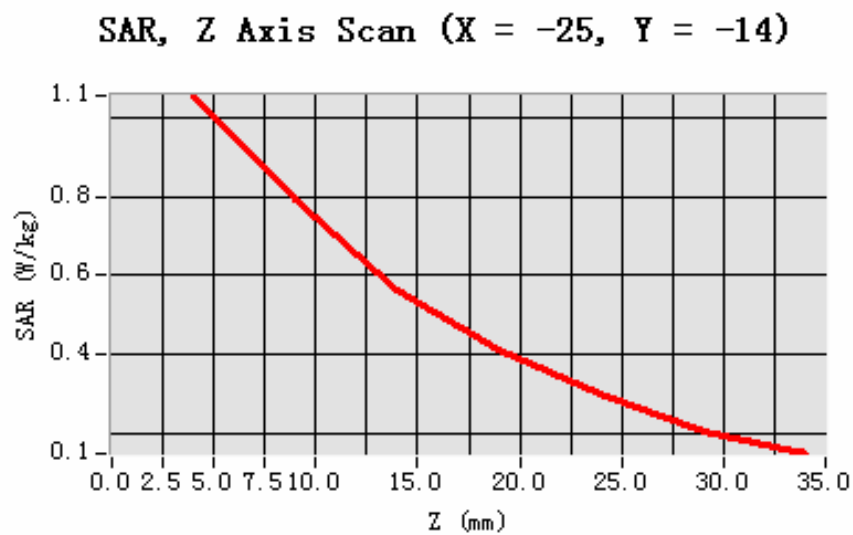


**Maximum location: X=-25.00, Y=-14.00**

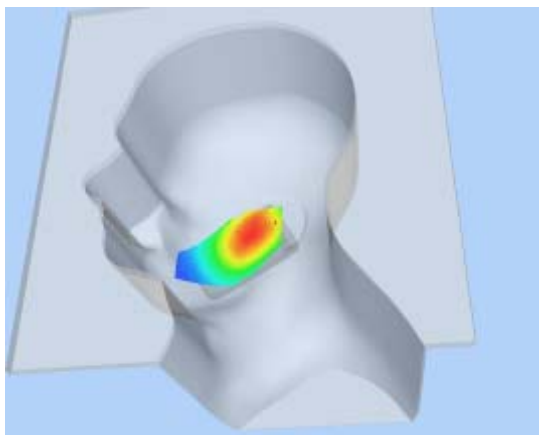
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.716218 |
| <b>SAR 1g (W/Kg)</b>  | 1.039002 |

### Z Axis Scan

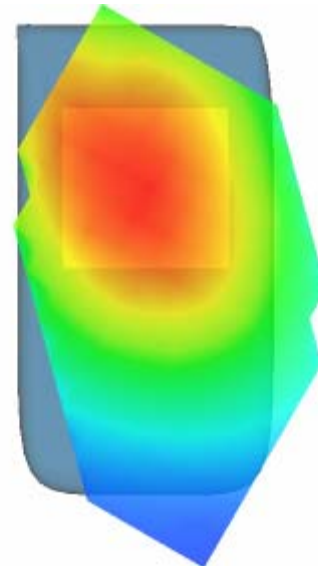
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.0563 | 0.7902 | 0.5652 | 0.4127 | 0.2984 | 0.2054 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 3

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 28 seconds

### A. Experimental conditions.

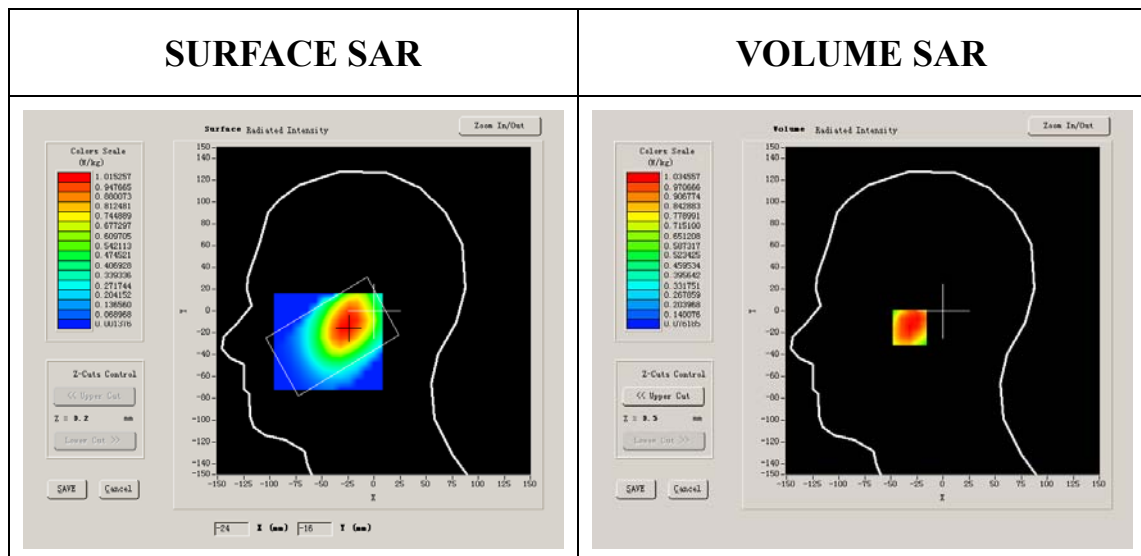
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 41.675999  |
| <b>Relative permittivity</b>             | 18.967199  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.894409             |
| <b>SAR drift (%)</b>        | 0.480000             |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



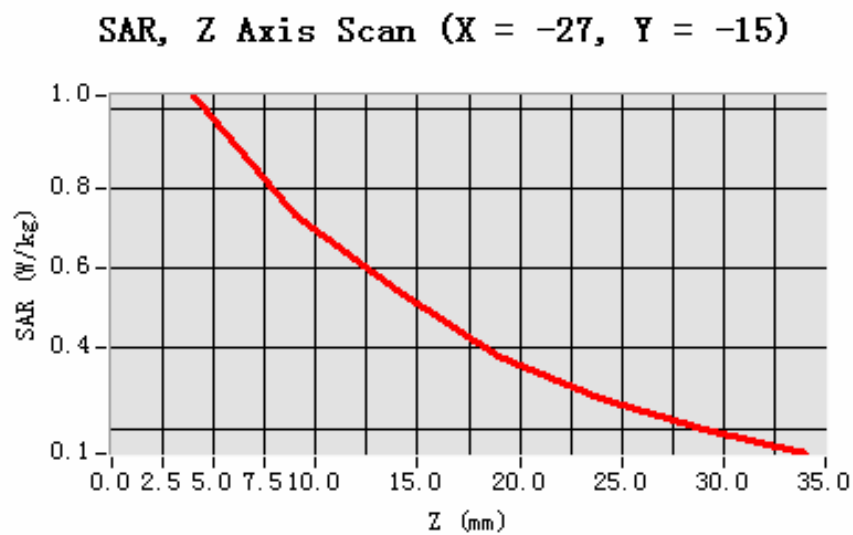
**Maximum location: X=-27.00, Y=-15.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.693554 |
| <b>SAR 1g (W/Kg)</b>  | 1.003844 |

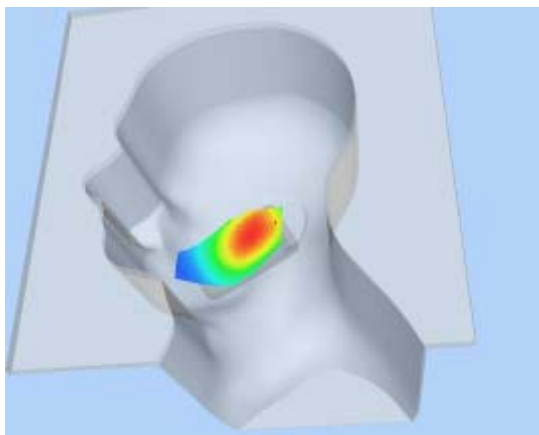


### Z Axis Scan

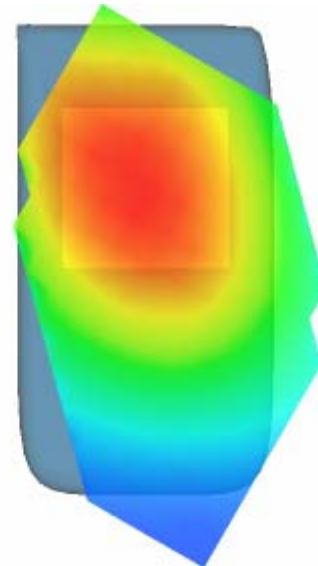
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.0346 | 0.7341 | 0.5488 | 0.3789 | 0.2728 | 0.1959 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 4

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 27 seconds

### A. Experimental conditions.

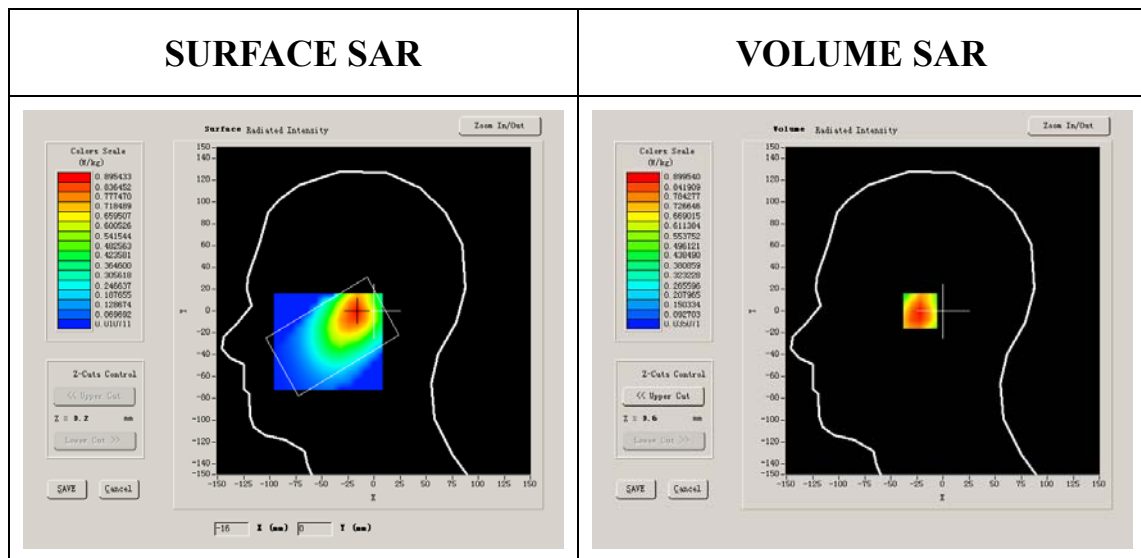
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 41.790001  |
| <b>Relative permittivity</b>             | 18.926250  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.866612             |
| <b>SAR drift (%)</b>        | -1.650000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



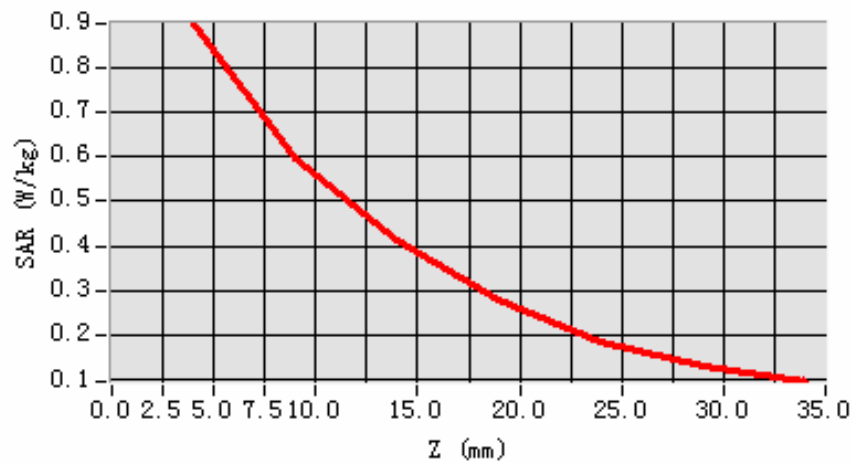
**Maximum location: X=-17.00, Y=0.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.567876 |
| <b>SAR 1g (W/Kg)</b>  | 0.863226 |

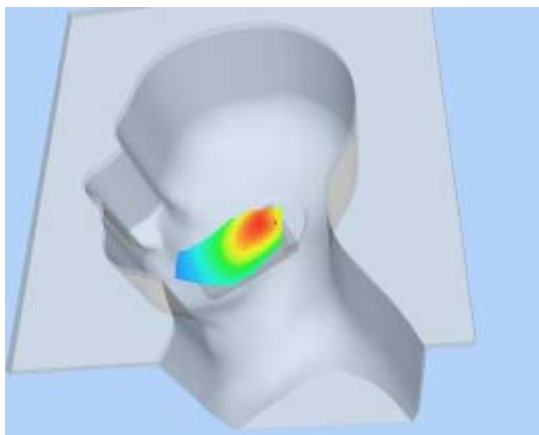
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.8995 | 0.5968 | 0.4109 | 0.2774 | 0.1866 | 0.1327 |

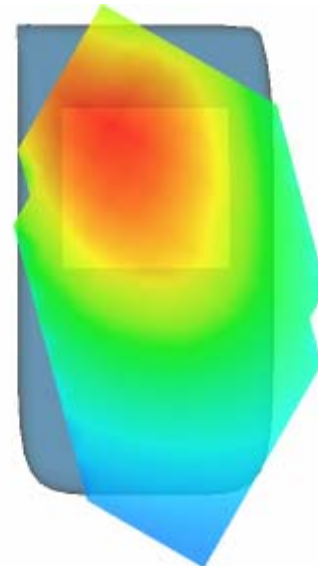
SAR, Z Axis Scan (X = -17, Y = 0)



3D scene shot



Hot spot position



## MEASUREMENT 5

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 27 seconds

### A. Experimental conditions.

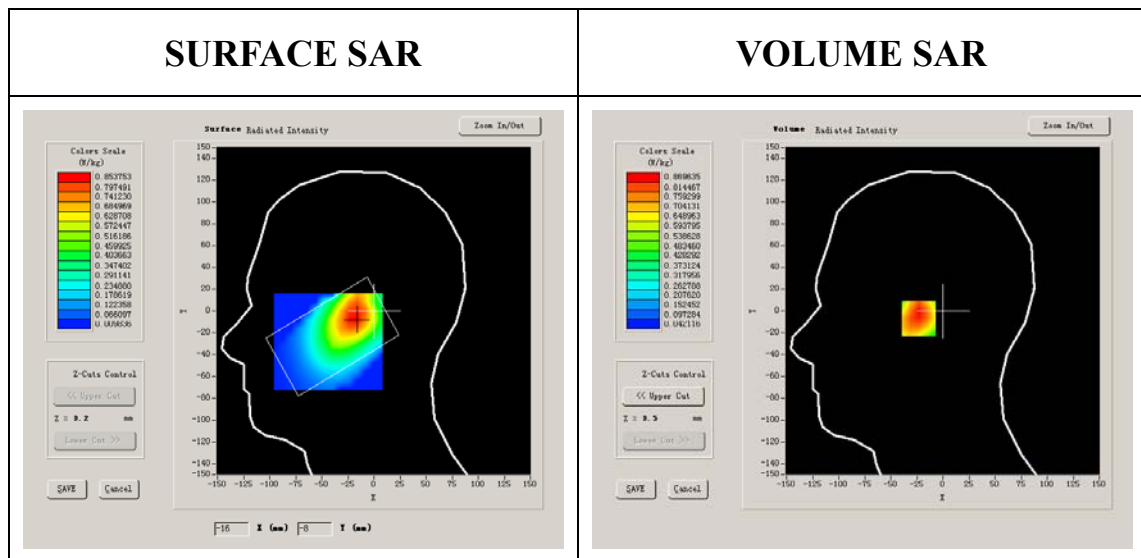
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 40.669998  |
| <b>Relative permittivity</b>             | 19.120001  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.888655             |
| <b>SAR drift (%)</b>        | -1.340000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



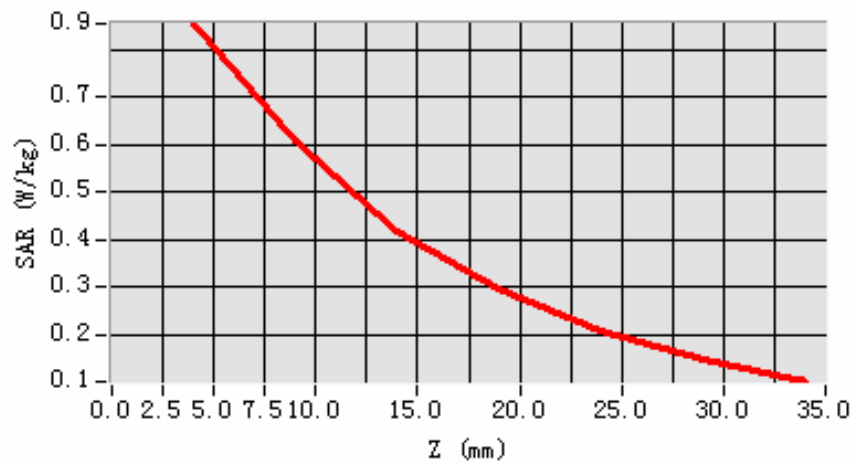
**Maximum location: X=-18.00, Y=-7.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.556139 |
| <b>SAR 1g (W/Kg)</b>  | 0.842124 |

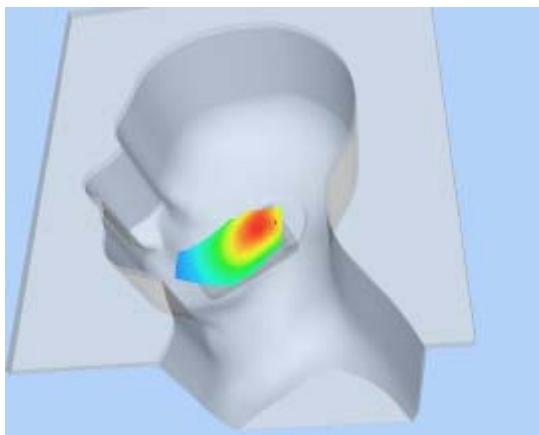
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.8547 | 0.6070 | 0.4204 | 0.2976 | 0.2096 | 0.1487 |

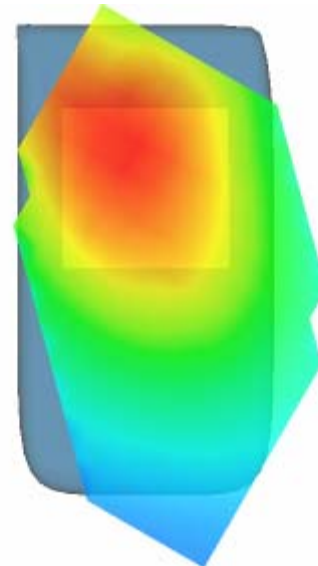
**SAR, Z Axis Scan (X = -18, Y = -7)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 6

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 20 seconds

### A. Experimental conditions.

|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

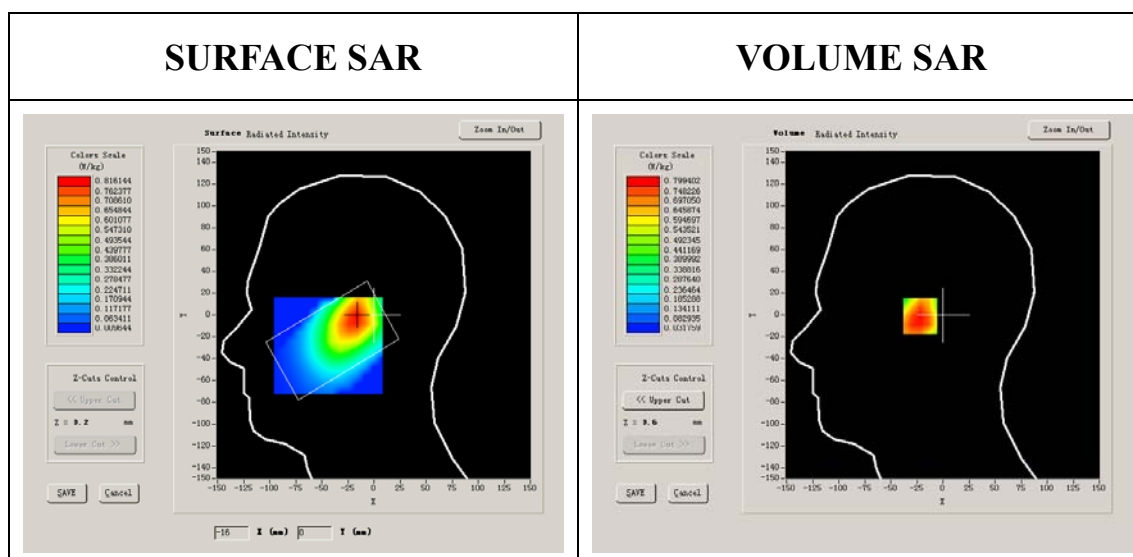
### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 41.675999  |
| <b>Relative permittivity</b>             | 18.967199  |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.894409             |
| <b>SAR drift (%)</b>        | -0.370000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



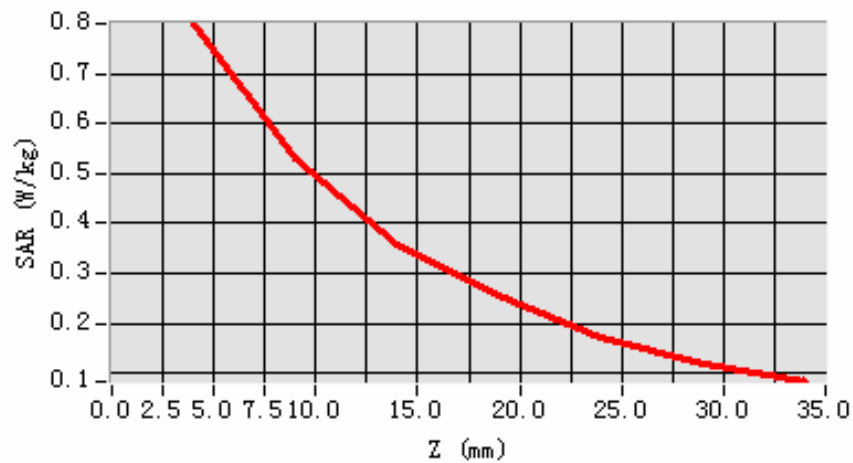
**Maximum location: X=-17.00, Y=-1.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.518415 |
| <b>SAR 1g (W/Kg)</b>  | 0.780992 |

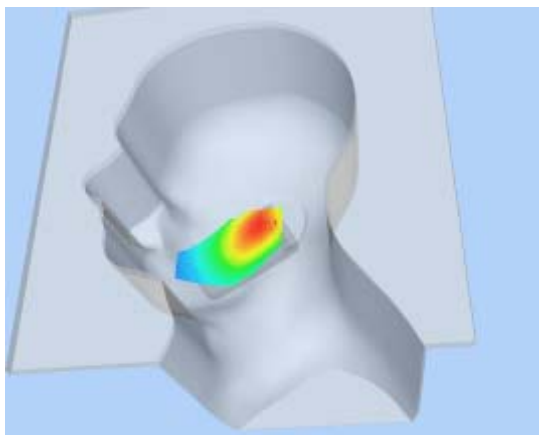
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.7994 | 0.5300 | 0.3561 | 0.2548 | 0.1713 | 0.1204 |

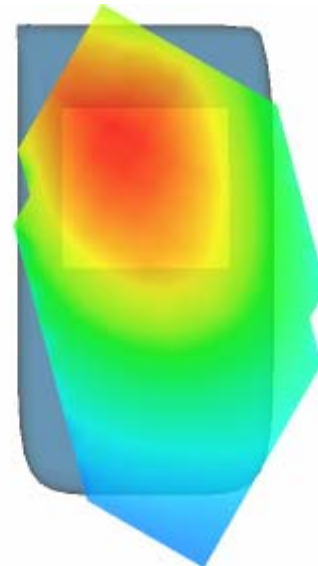
**SAR, Z Axis Scan (X = -17, Y = -1)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 7

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 26 seconds

### A. Experimental conditions.

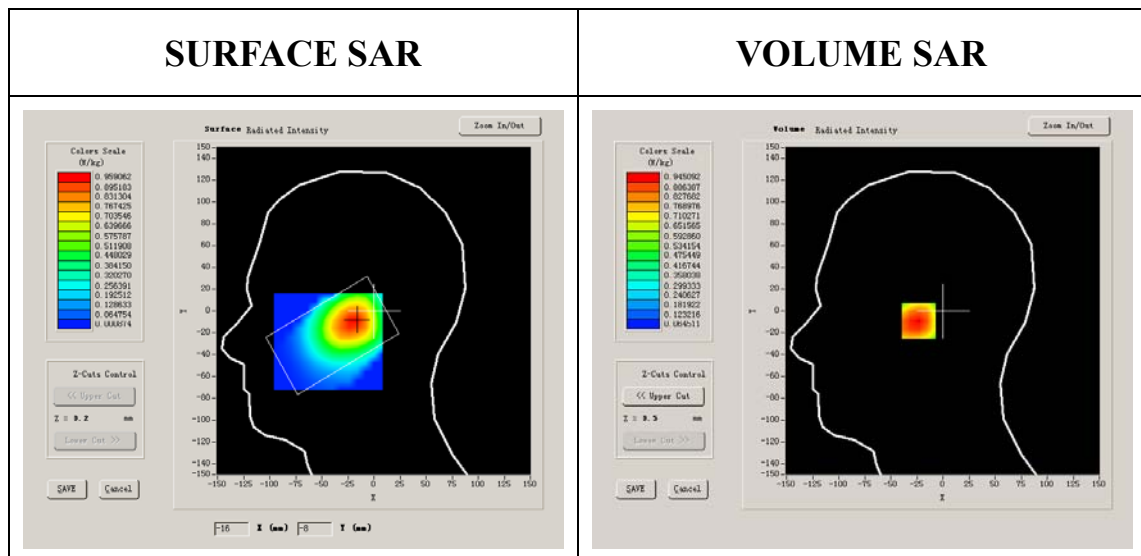
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 41.790001  |
| <b>Relative permittivity</b>             | 18.926250  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.866612             |
| <b>SAR drift (%)</b>        | -1.760000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



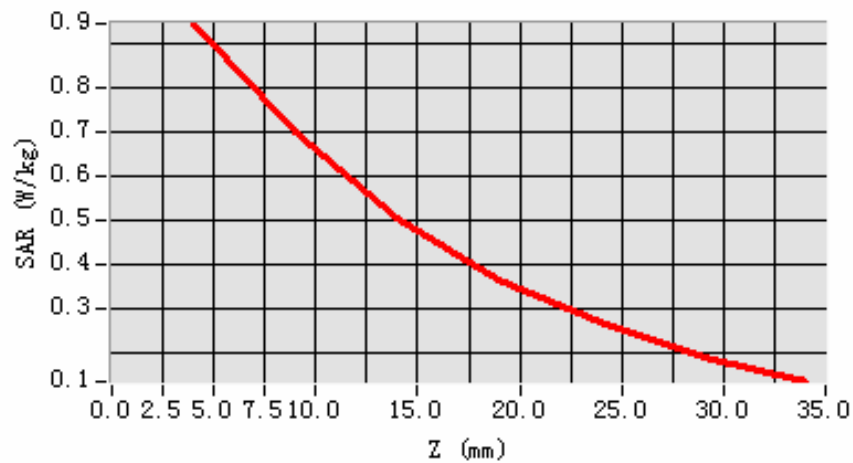
**Maximum location: X=-18.00, Y=-9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.634618 |
| <b>SAR 1g (W/Kg)</b>  | 0.914341 |

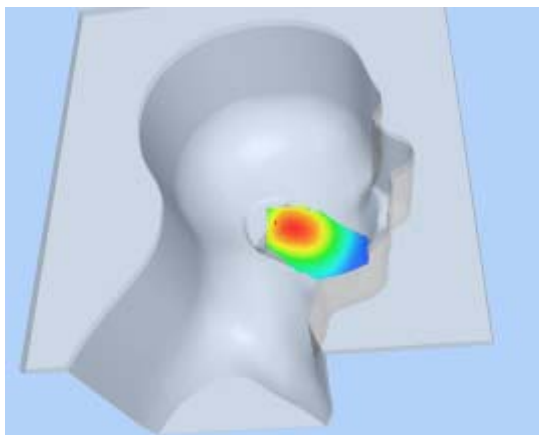
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.9451 | 0.6984 | 0.5057 | 0.3637 | 0.2672 | 0.1879 |

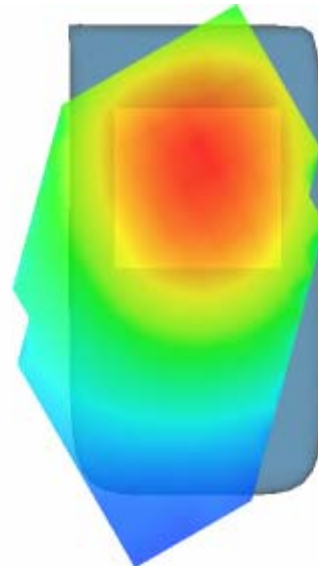
**SAR, Z Axis Scan (X = -18, Y = -9)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 8

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 28 seconds

### A. Experimental conditions.

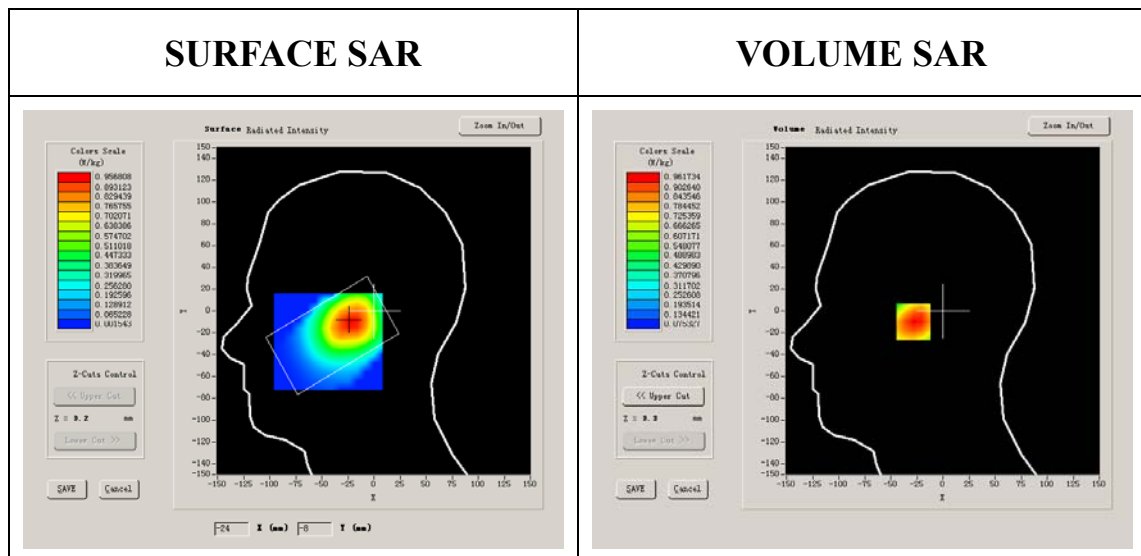
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 40.669998  |
| <b>Relative permittivity</b>             | 19.120001  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.888655             |
| <b>SAR drift (%)</b>        | -1.260000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |

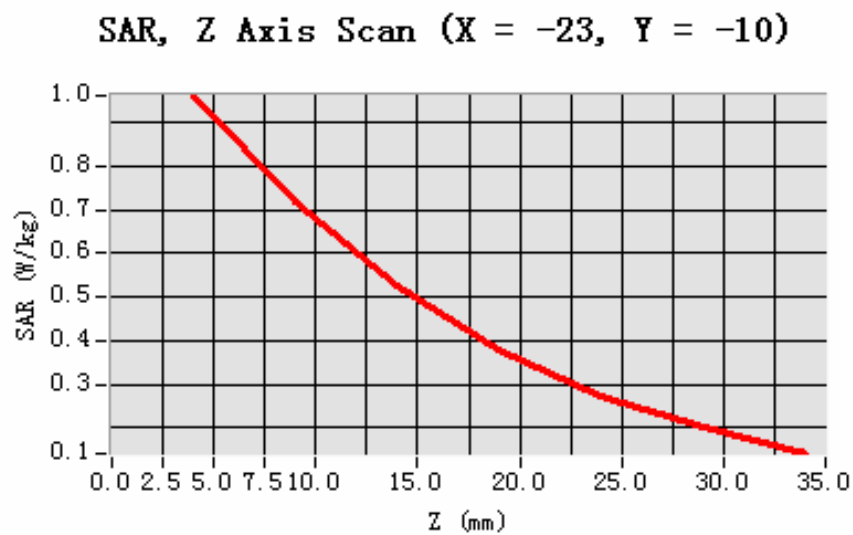


**Maximum location: X=-23.00, Y=-10.00**

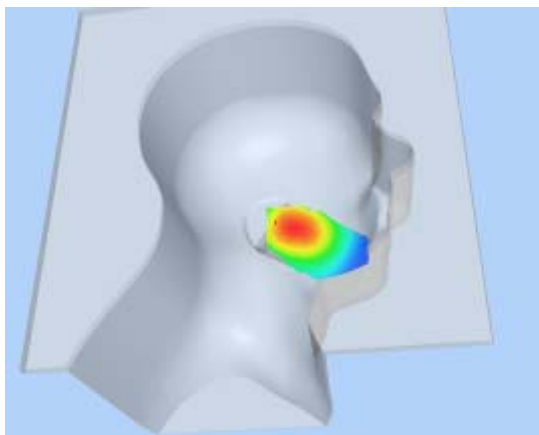
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.641196 |
| <b>SAR 1g (W/Kg)</b>  | 0.925927 |

### Z Axis Scan

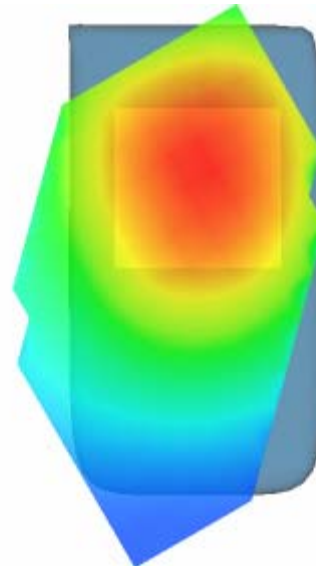
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.9617 | 0.7180 | 0.5274 | 0.3803 | 0.2740 | 0.1994 |



**3D scene shot**



**Hot spot position**





## MEASUREMENT 9

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 25 seconds

### A. Experimental conditions.

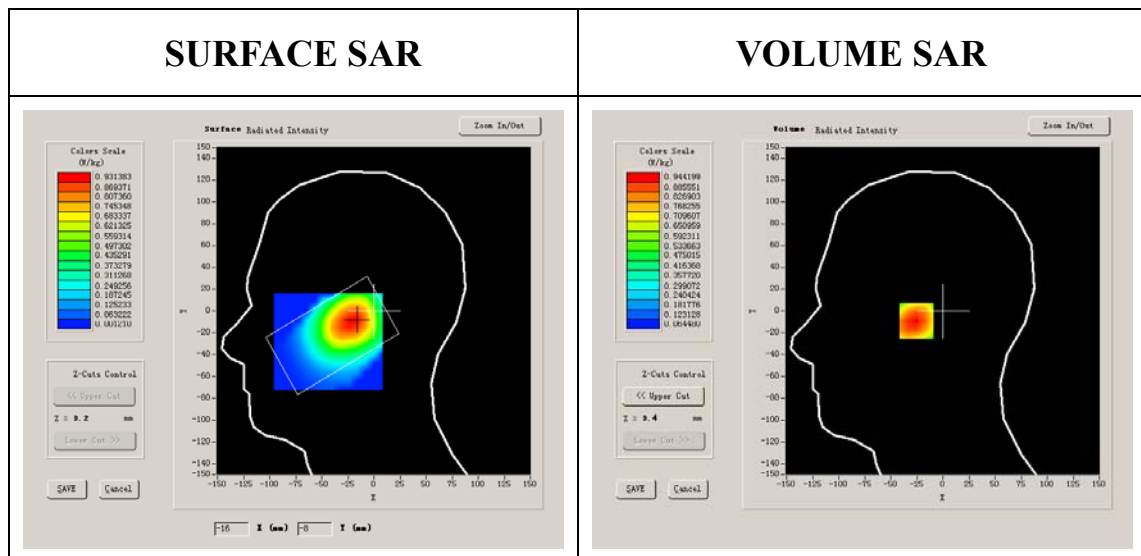
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 41.675999  |
| <b>Relative permittivity</b>             | 18.967199  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.894409             |
| <b>SAR drift (%)</b>        | -0.860000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



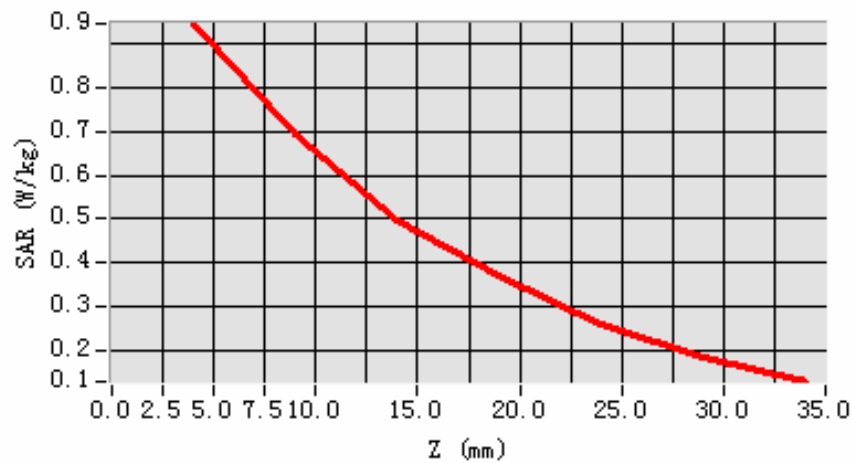
**Maximum location: X=-20.00, Y=-9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.628395 |
| <b>SAR 1g (W/Kg)</b>  | 0.910676 |

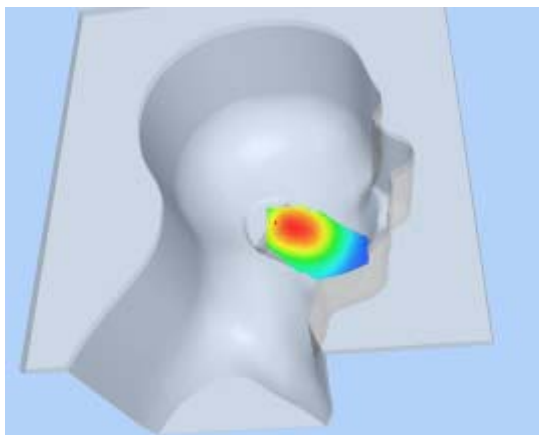
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.9442 | 0.6952 | 0.4985 | 0.3699 | 0.2613 | 0.1857 |

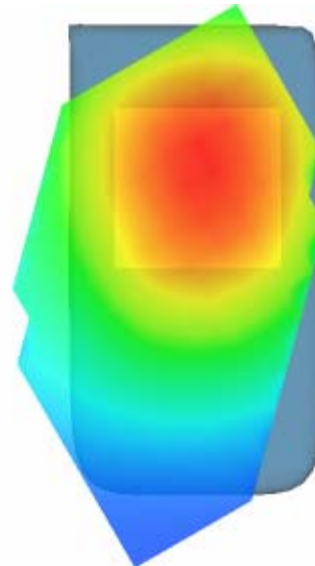
**SAR, Z Axis Scan (X = -20, Y = -9)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 10

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 26 seconds

### A. Experimental conditions.

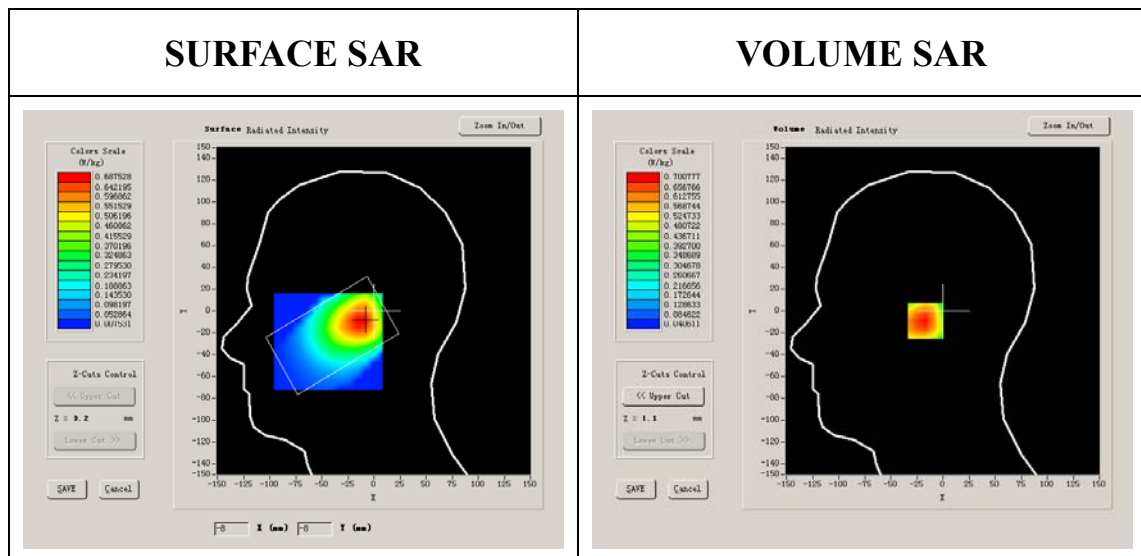
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 41.790001  |
| <b>Relative permittivity</b>             | 18.926250  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.866612             |
| <b>SAR drift (%)</b>        | -1.140000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



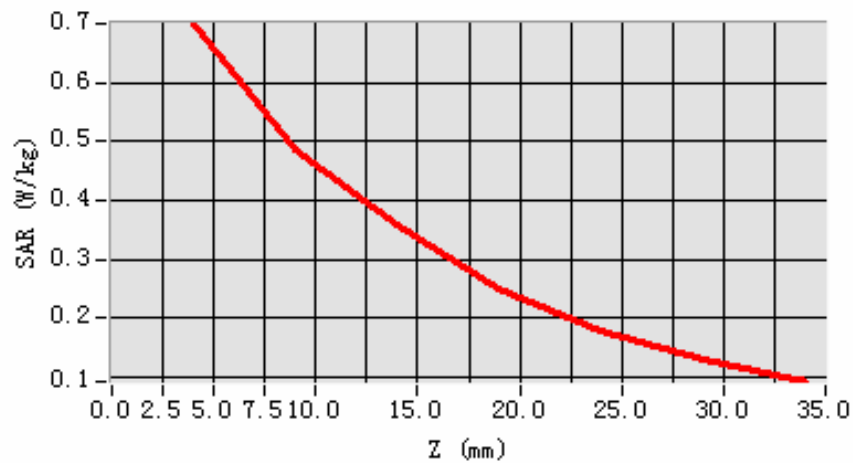
**Maximum location: X=-11.00, Y=-9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.457132 |
| <b>SAR 1g (W/Kg)</b>  | 0.673666 |

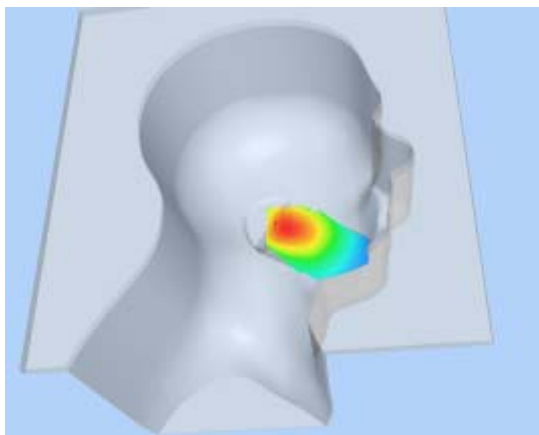
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.7008 | 0.4855 | 0.3576 | 0.2502 | 0.1775 | 0.1282 |

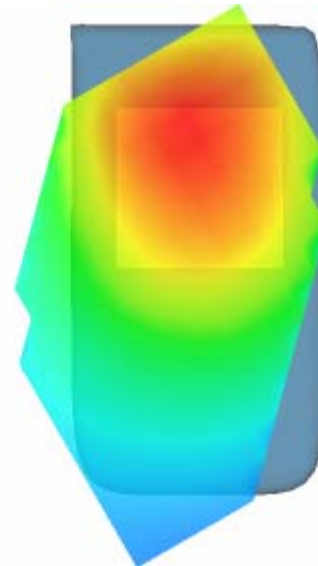
**SAR, Z Axis Scan (X = -11, Y = -9)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 11

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 25 seconds

### A. Experimental conditions.

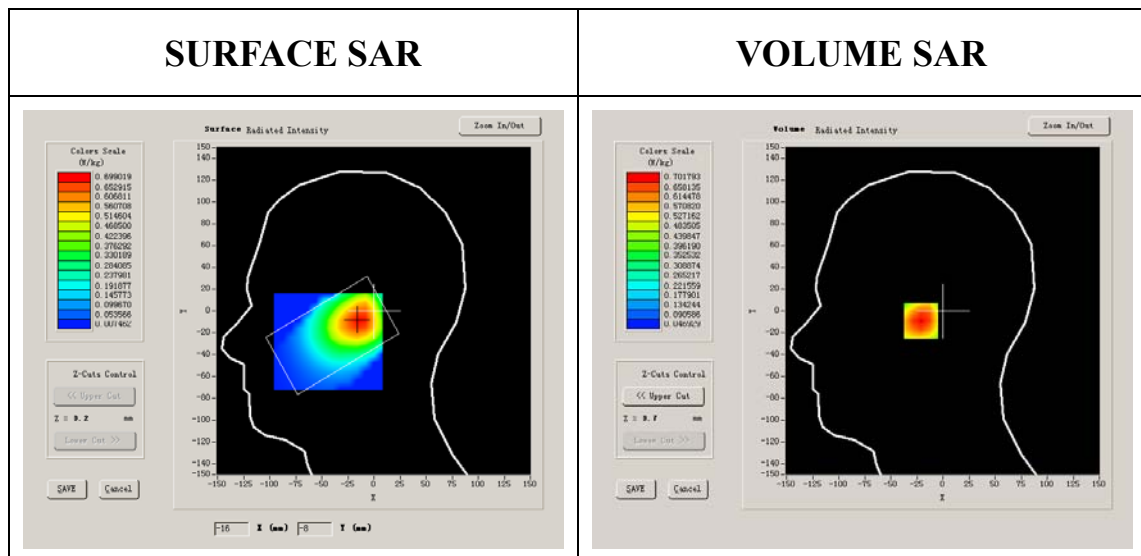
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 40.669998  |
| <b>Relative permittivity</b>             | 19.120001  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.888655             |
| <b>SAR drift (%)</b>        | 0.410000             |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



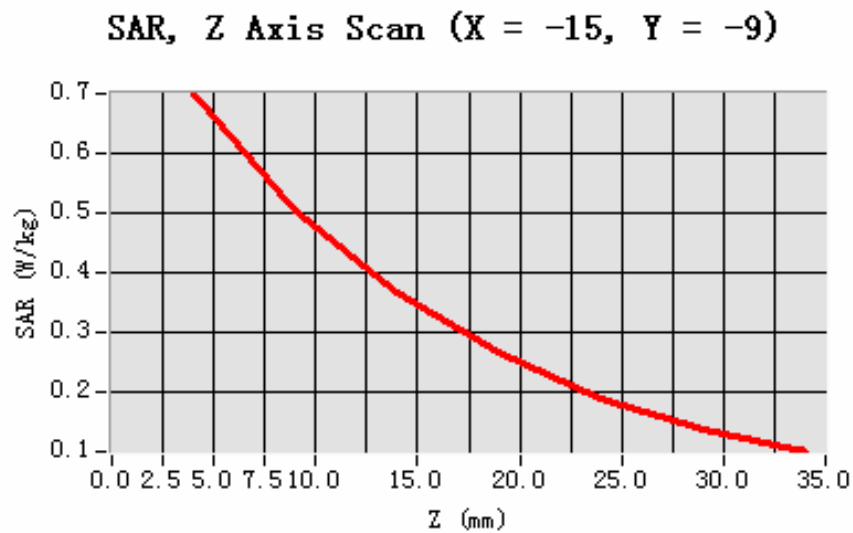
**Maximum location: X=-15.00, Y=-9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.462005 |
| <b>SAR 1g (W/Kg)</b>  | 0.675567 |

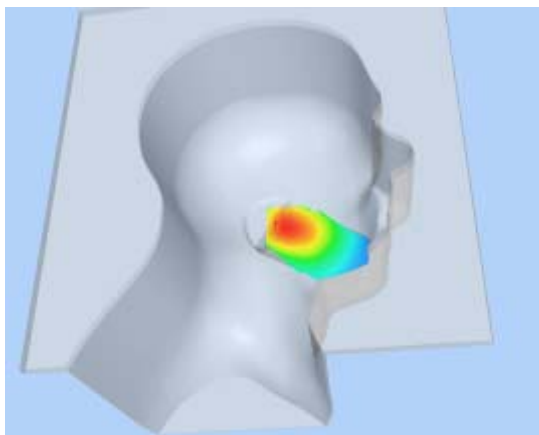


### Z Axis Scan

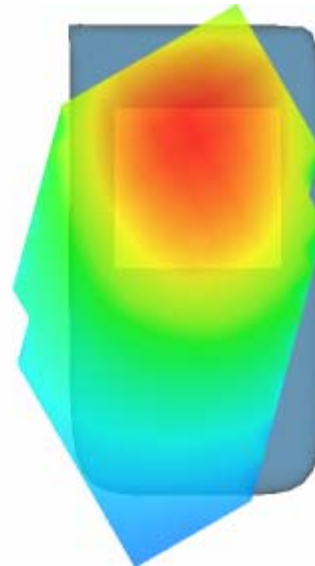
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.7018 | 0.5029 | 0.3679 | 0.2671 | 0.1881 | 0.1357 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 12

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 24 seconds

### A. Experimental conditions.

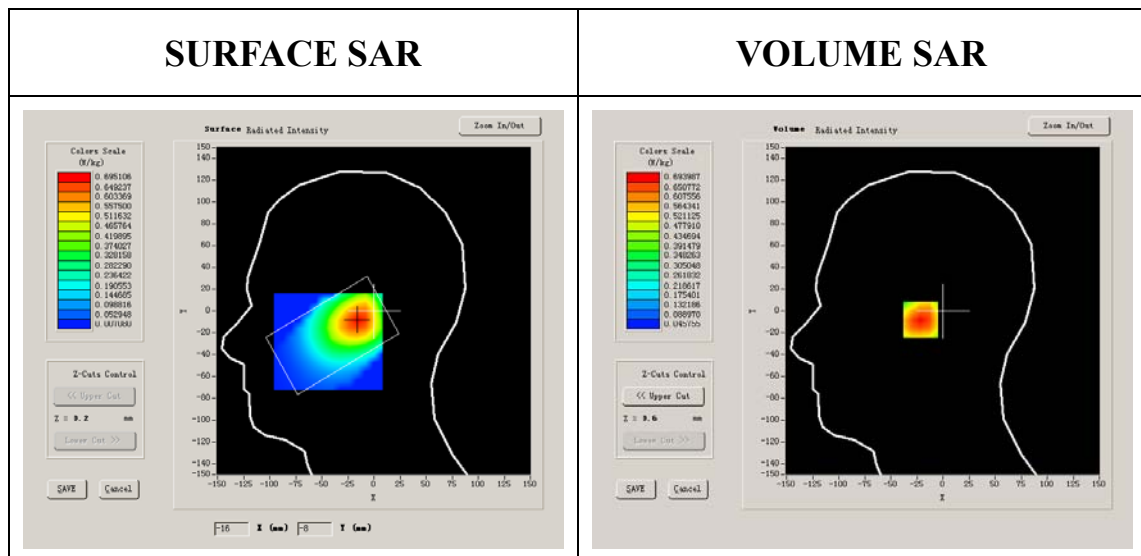
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Left head                     |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM850                        |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 41.675999  |
| <b>Relative permittivity</b>             | 18.967199  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.894409             |
| <b>SAR drift (%)</b>        | -0.390000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



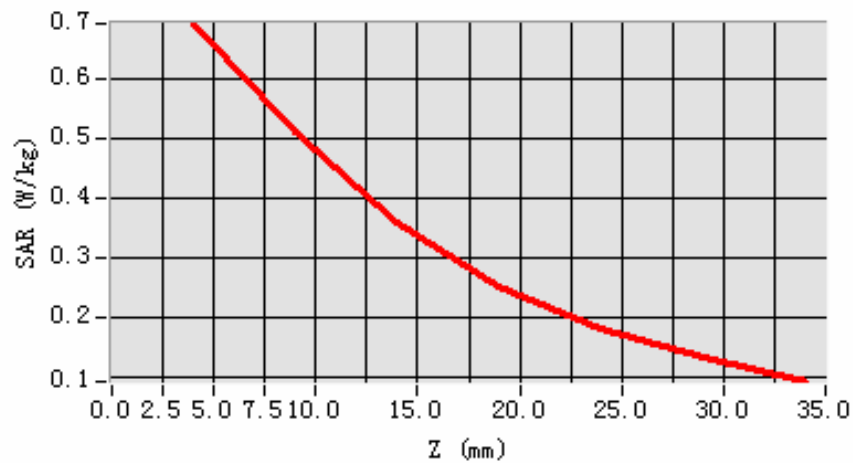
**Maximum location: X=-16.00, Y=-8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.453625 |
| <b>SAR 1g (W/Kg)</b>  | 0.662144 |

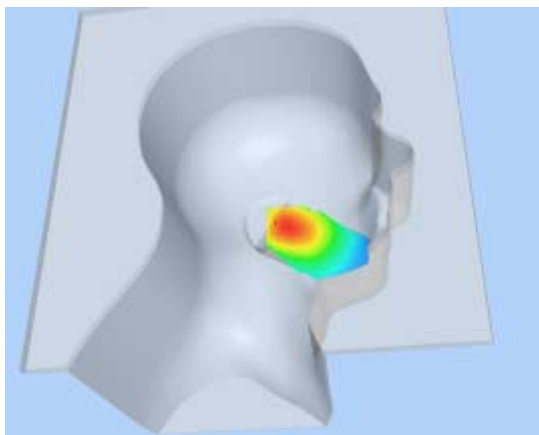
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.6940 | 0.5107 | 0.3591 | 0.2543 | 0.1836 | 0.1334 |

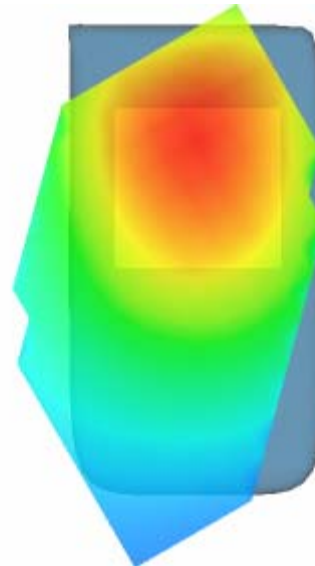
**SAR, Z Axis Scan (X = -16, Y = -8)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 13

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 24 seconds

### A. Experimental conditions.

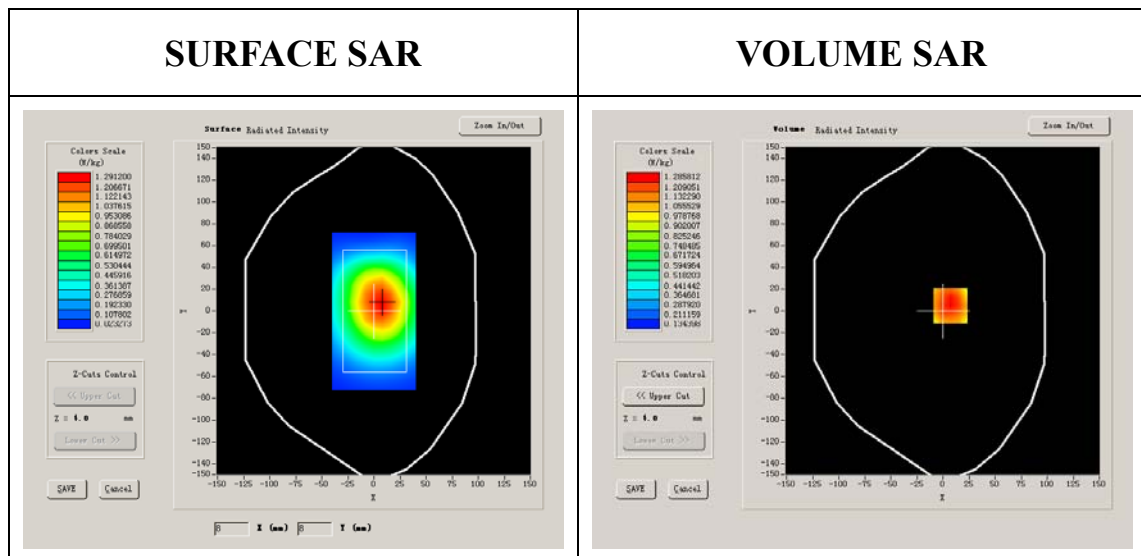
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 54.116001  |
| <b>Relative permittivity</b>             | 21.284550  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.974596             |
| <b>SAR drift (%)</b>        | -0.250000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:2                  |



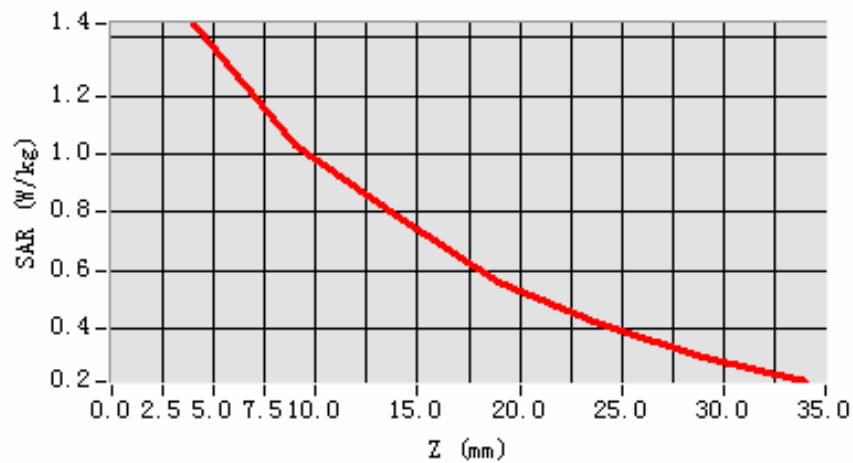
**Maximum location: X=7.00, Y=5.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.880679 |
| <b>SAR 1g (W/Kg)</b>  | 1.204635 |

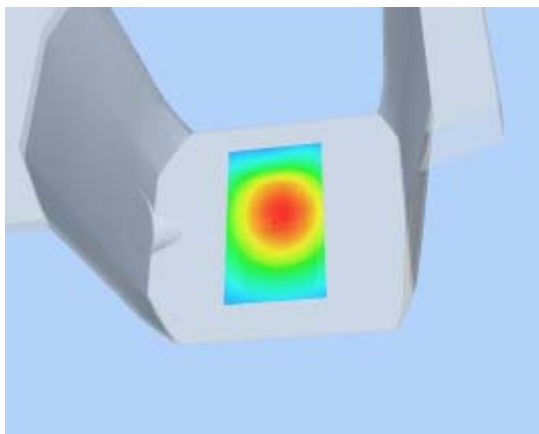
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.4460 | 1.0333 | 0.7858 | 0.5619 | 0.4141 | 0.3062 |

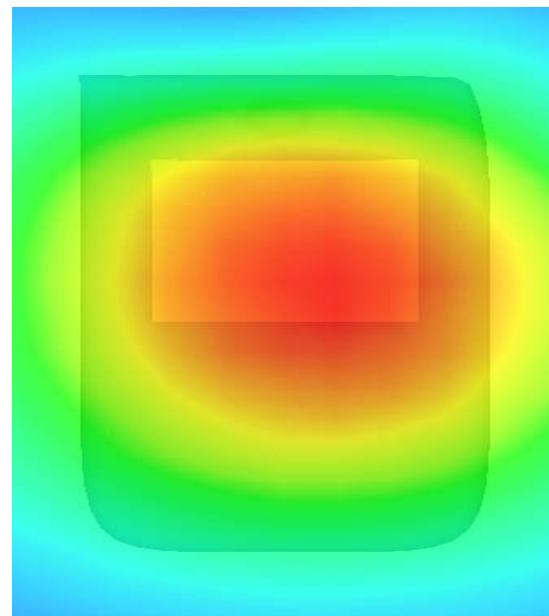
**SAR, Z Axis Scan (X = 7, Y = 5)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 14

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 22 seconds

### A. Experimental conditions.

|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Middle            |
| <b>Signal</b>          | GPRS              |

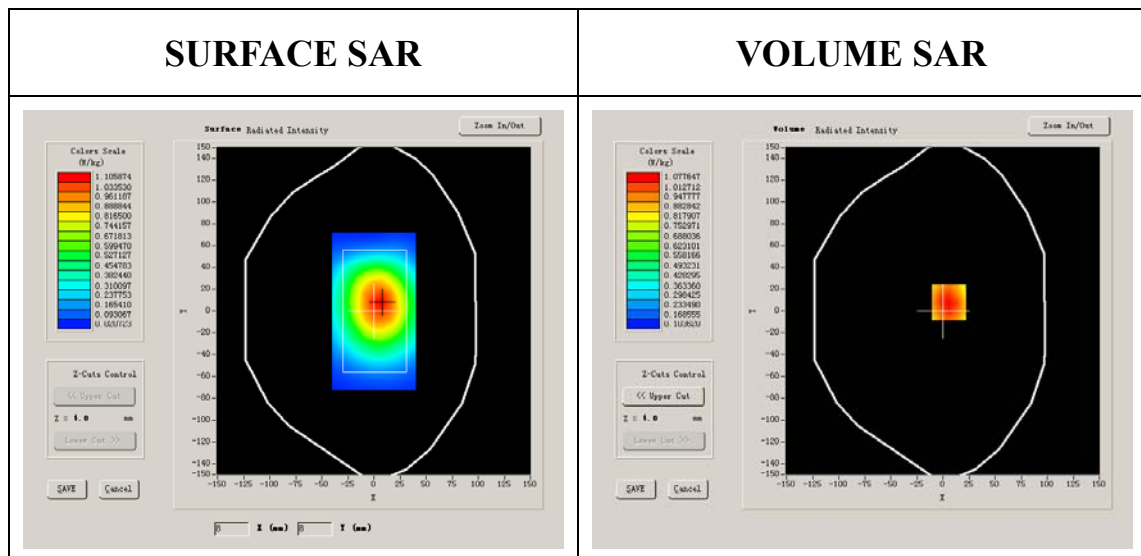
### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 55.709999  |
| <b>Relative permittivity</b>             | 21.709999  |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.009033             |
| <b>SAR drift (%)</b>        | -1.260000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:2                  |



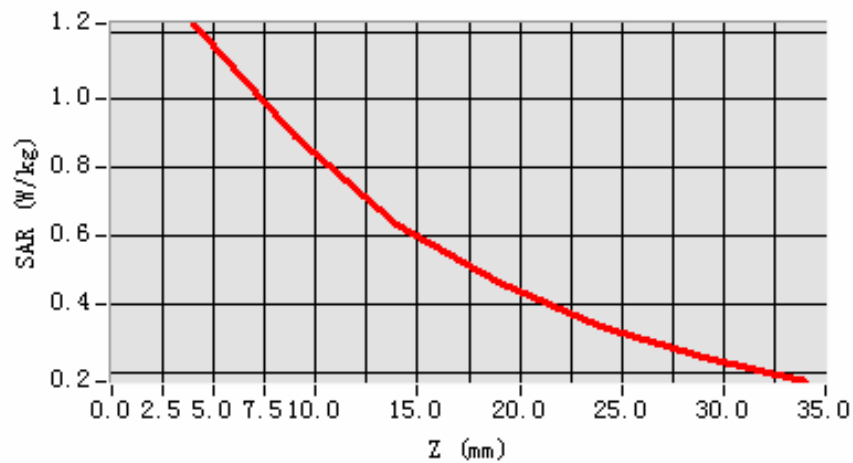
**Maximum location: X=6.00, Y=8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.821351 |
| <b>SAR 1g (W/Kg)</b>  | 1.181319 |

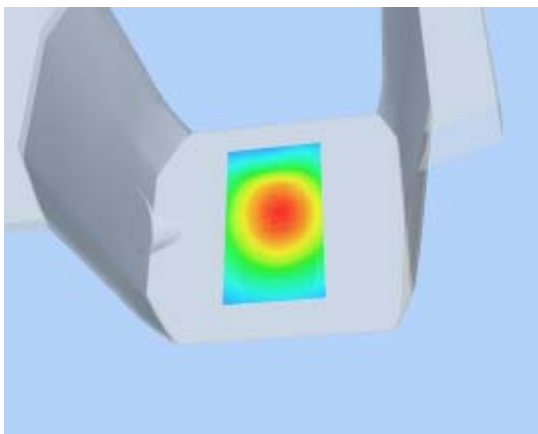
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.2236 | 0.8933 | 0.6366 | 0.4638 | 0.3334 | 0.2441 |

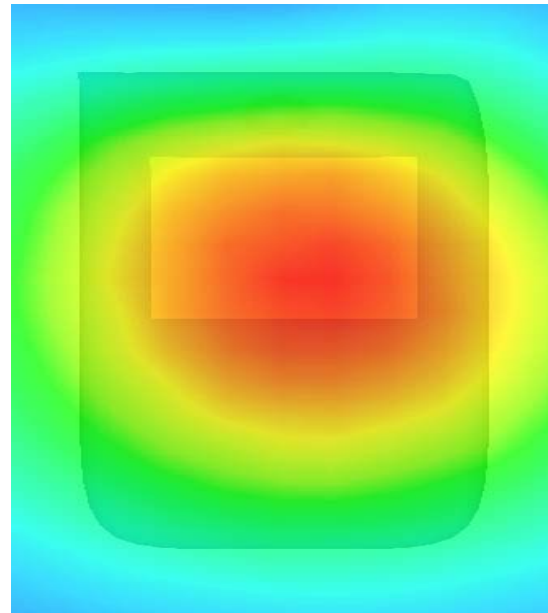
**SAR, Z Axis Scan (X = 6, Y = 8)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 15

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 25 seconds

### A. Experimental conditions.

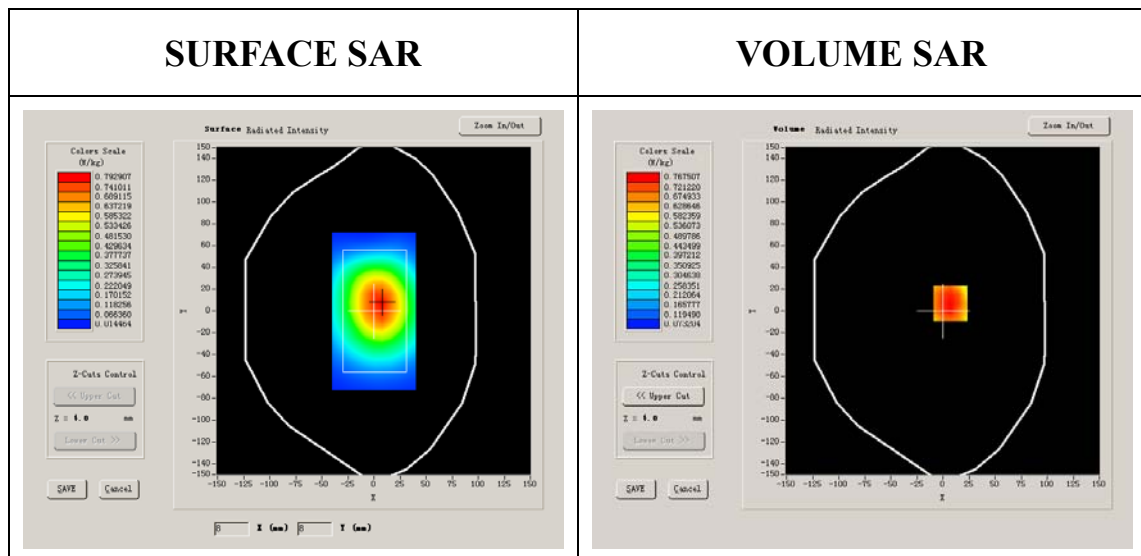
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | High              |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 54.014999  |
| <b>Relative permittivity</b>             | 21.332850  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.005962             |
| <b>SAR drift (%)</b>        | -0.310000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:2                  |



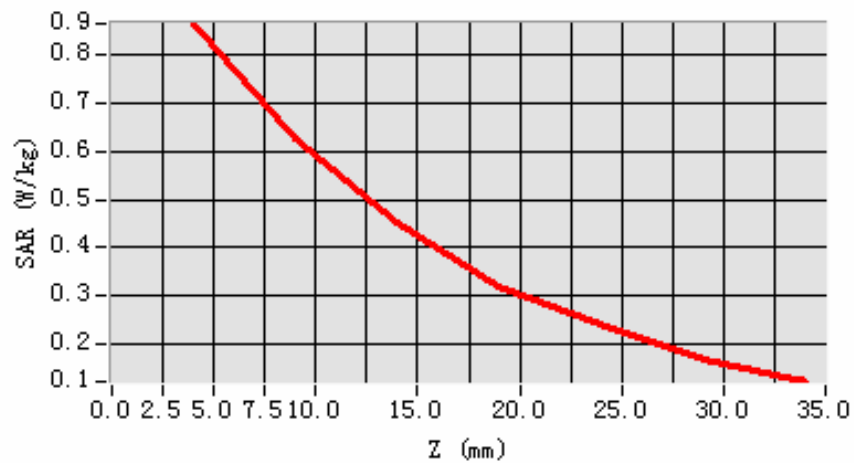
**Maximum location: X=7.00, Y=7.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.582276 |
| <b>SAR 1g (W/Kg)</b>  | 0.836483 |

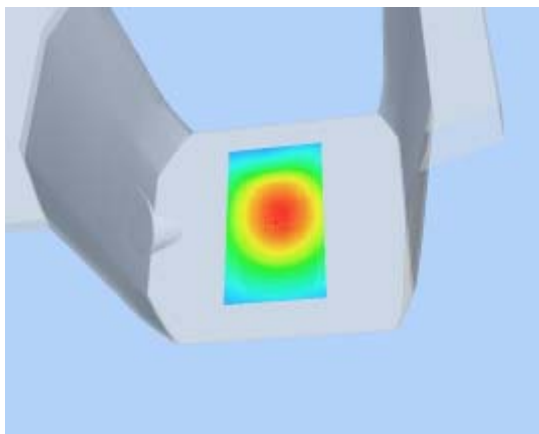
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.8632 | 0.6247 | 0.4544 | 0.3197 | 0.2418 | 0.1684 |

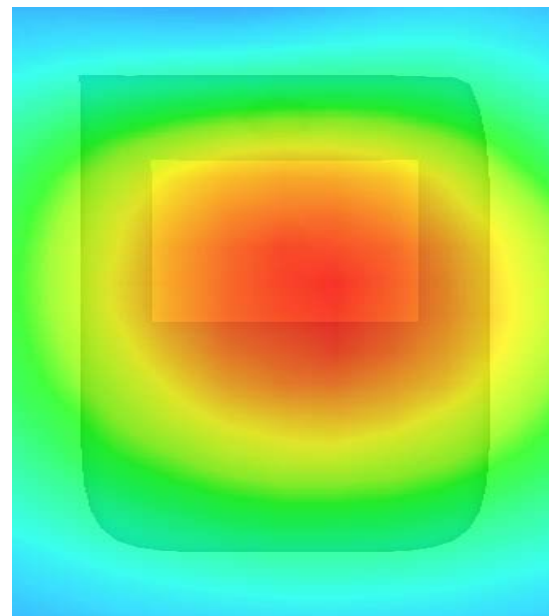
**SAR, Z Axis Scan (X = 7, Y = 7)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 16

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 27 seconds

### A. Experimental conditions.

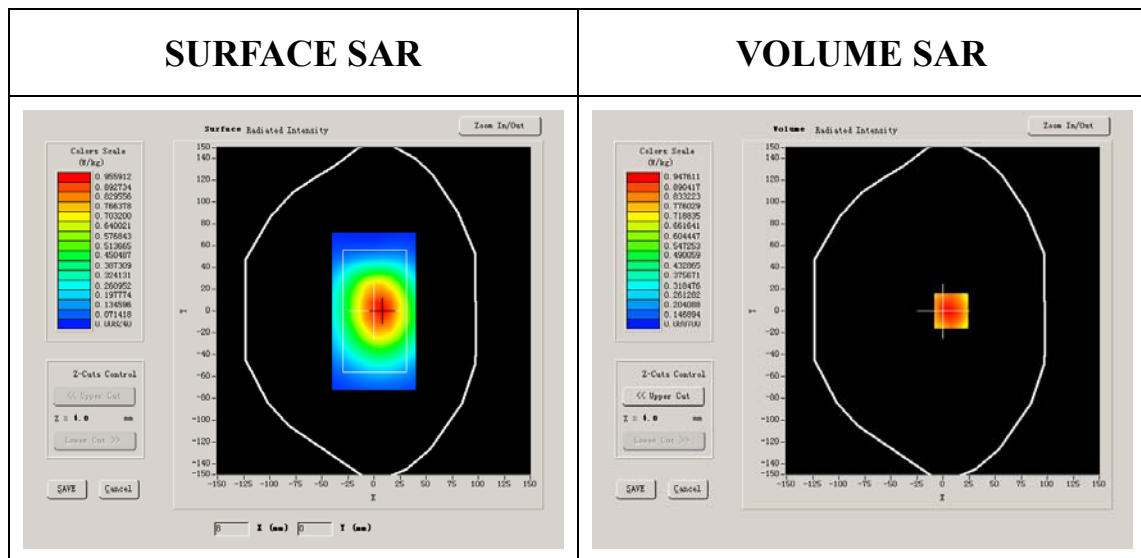
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 54.116001  |
| <b>Relative permittivity</b>             | 21.284550  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.974596             |
| <b>SAR drift (%)</b>        | -3.450000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:2                  |



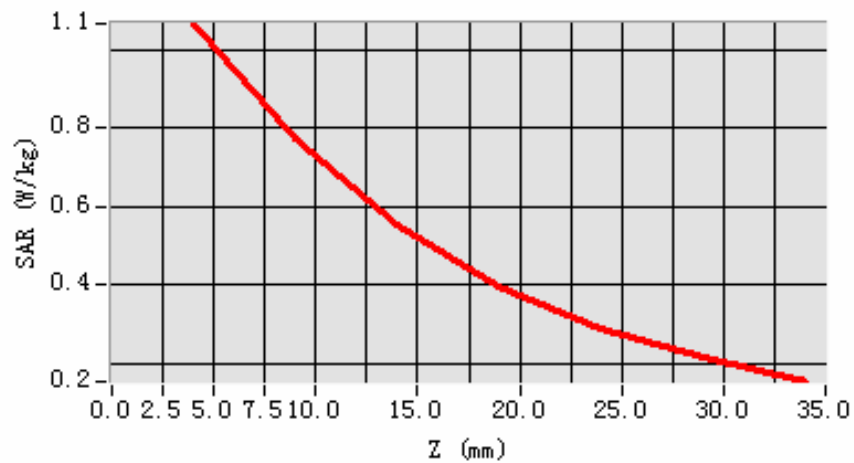
**Maximum location: X=8.00, Y=0.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.710080 |
| <b>SAR 1g (W/Kg)</b>  | 1.027398 |

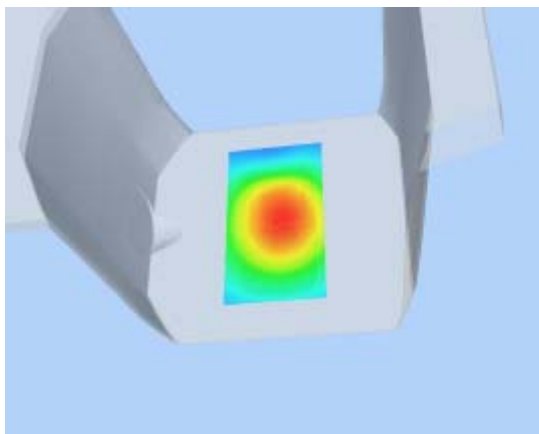
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.0657 | 0.7725 | 0.5528 | 0.3930 | 0.2876 | 0.2133 |

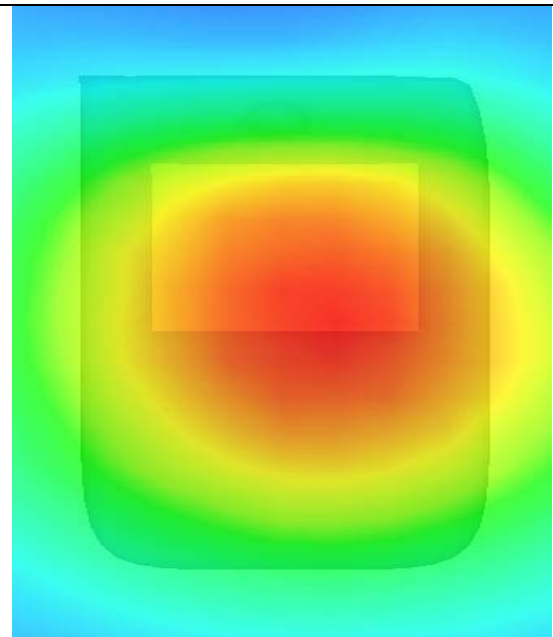
**SAR, Z Axis Scan (X = 8, Y = 0)**



**3D scene shot**



**Hot spot position**





## MEASUREMENT 17

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

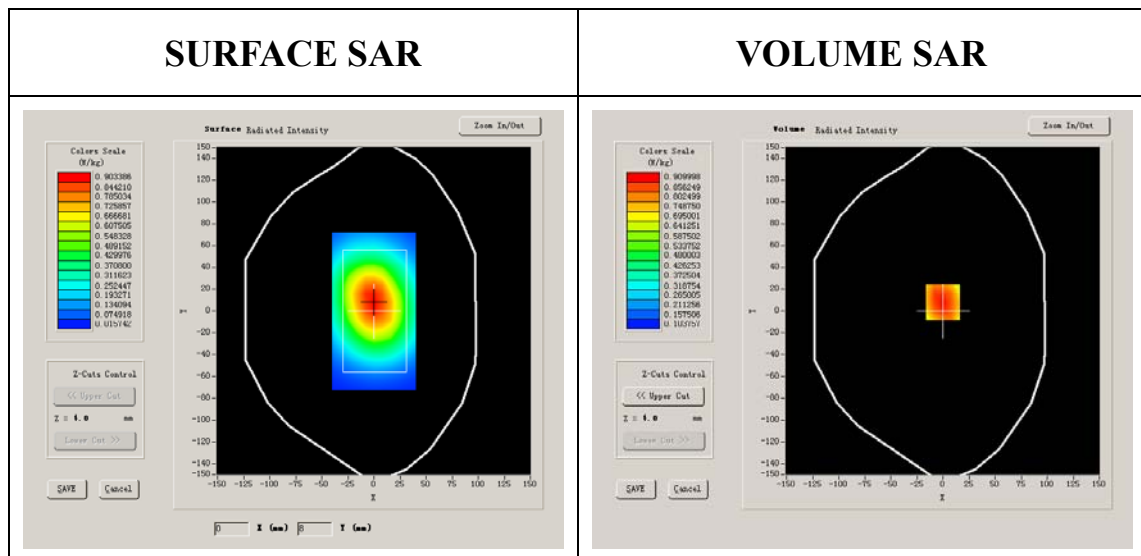
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 54.116001  |
| <b>Relative permittivity</b>             | 21.284550  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.974596             |
| <b>SAR drift (%)</b>        | -1.280000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



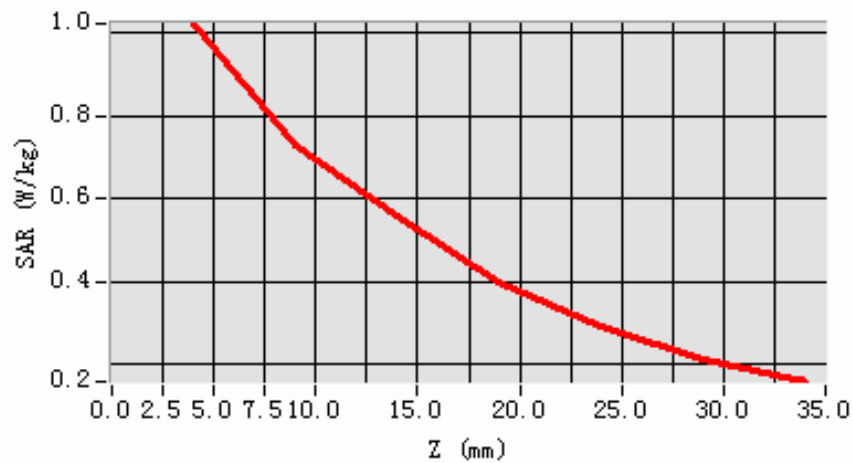
**Maximum location: X=0.00, Y=8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.693930 |
| <b>SAR 1g (W/Kg)</b>  | 0.985055 |

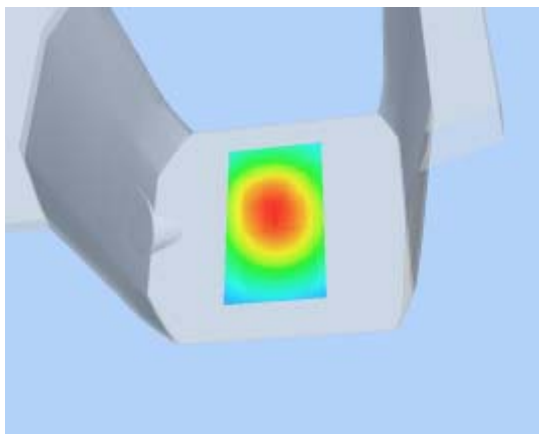
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.0234 | 0.7285 | 0.5593 | 0.3972 | 0.2915 | 0.2127 |

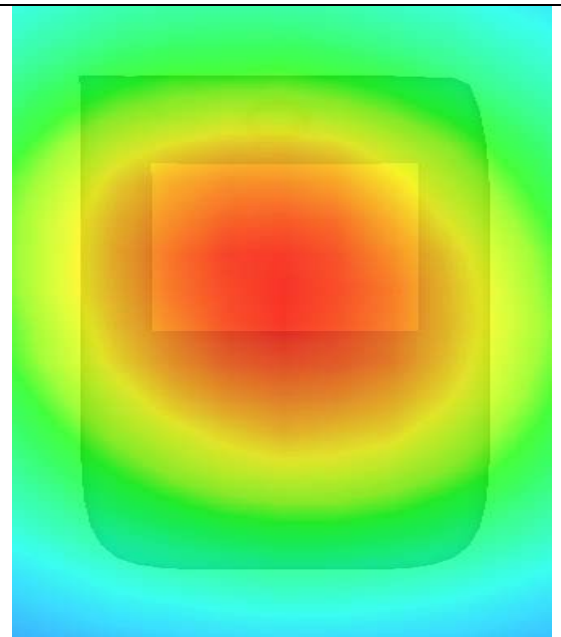
**SAR, Z Axis Scan (X = 0, Y = 8)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 18

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 22 seconds

### A. Experimental conditions.

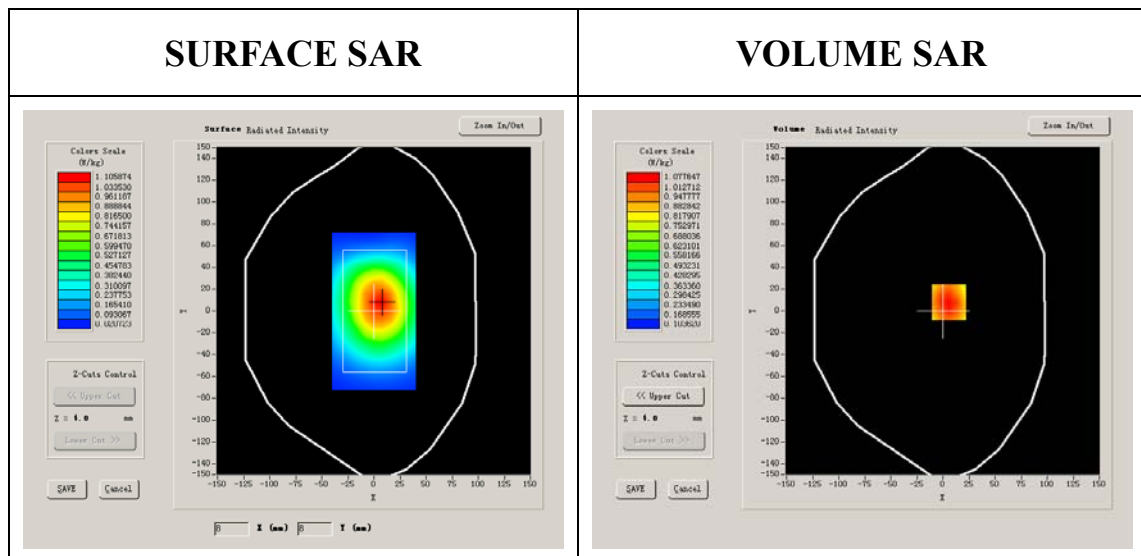
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Middle            |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 836.599976 |
| <b>Relative permittivity (real part)</b> | 55.709999  |
| <b>Relative permittivity</b>             | 21.709999  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.009033             |
| <b>SAR drift (%)</b>        | -1.260000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



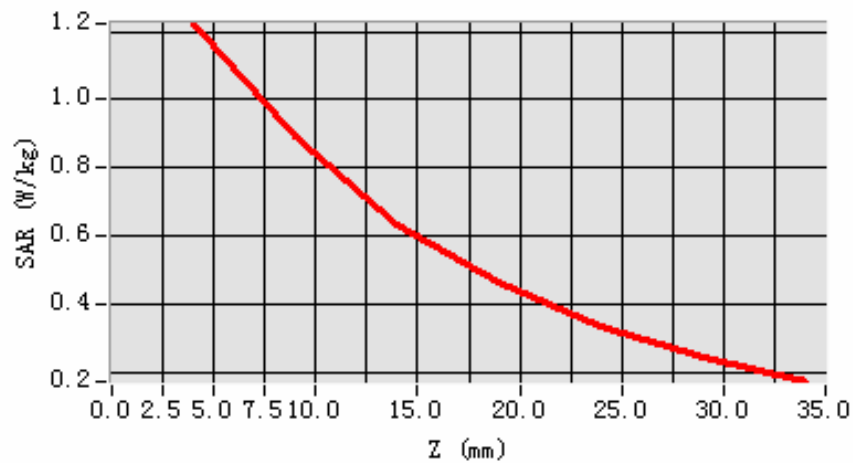
**Maximum location: X=6.00, Y=8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.675541 |
| <b>SAR 1g (W/Kg)</b>  | 1.052244 |

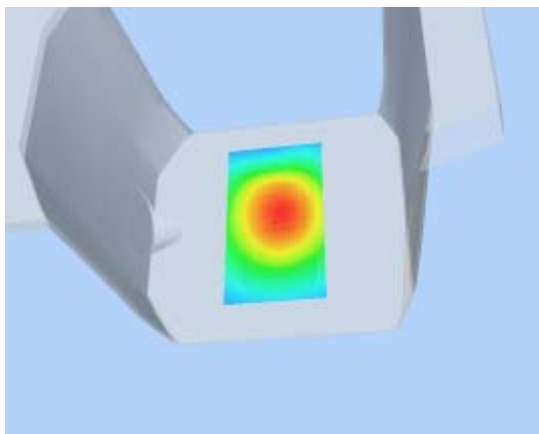
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.2236 | 0.8933 | 0.6366 | 0.4638 | 0.3334 | 0.2441 |

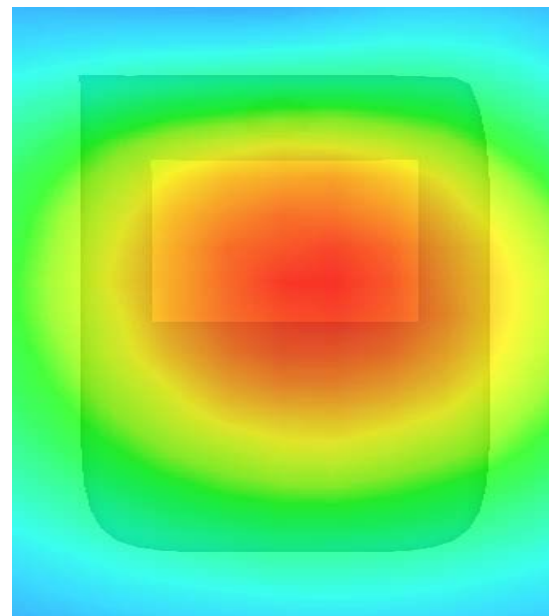
**SAR, Z Axis Scan (X = 6, Y = 8)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 19

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 25 seconds

### A. Experimental conditions.

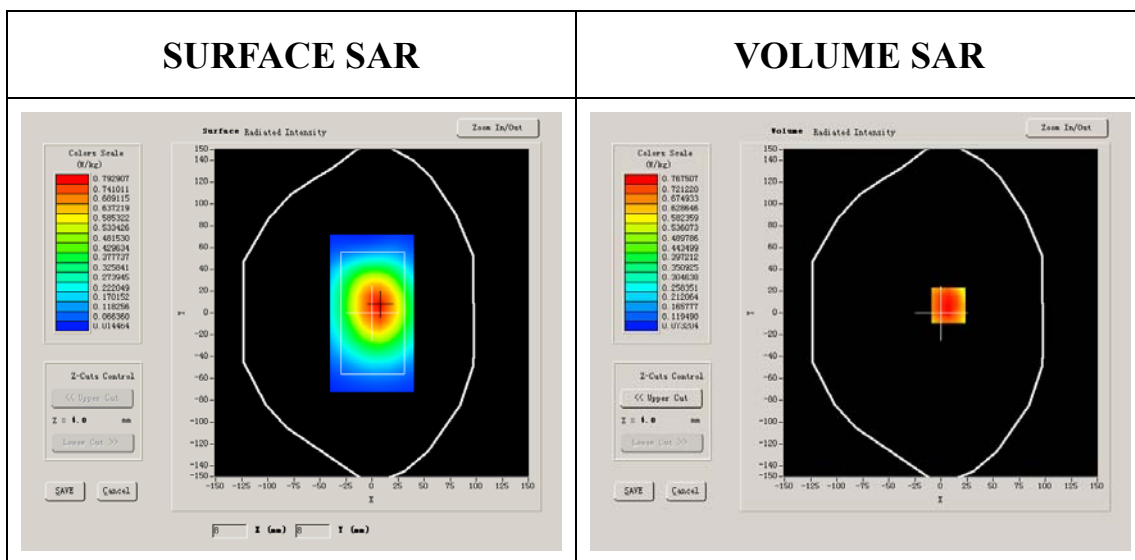
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | High              |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 848.799988 |
| <b>Relative permittivity (real part)</b> | 54.014999  |
| <b>Relative permittivity</b>             | 21.332850  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.005962             |
| <b>SAR drift (%)</b>        | -0.310000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



**Maximum location: X=7.00, Y=7.00**

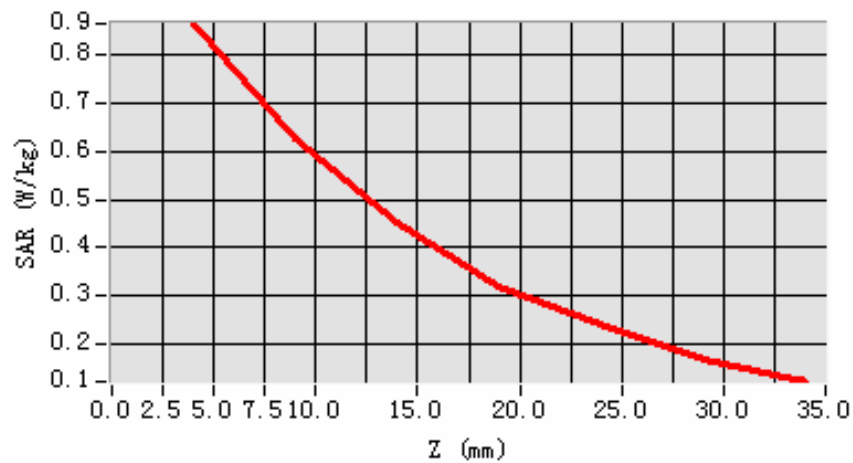
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.541555 |
| <b>SAR 1g (W/Kg)</b>  | 0.956511 |



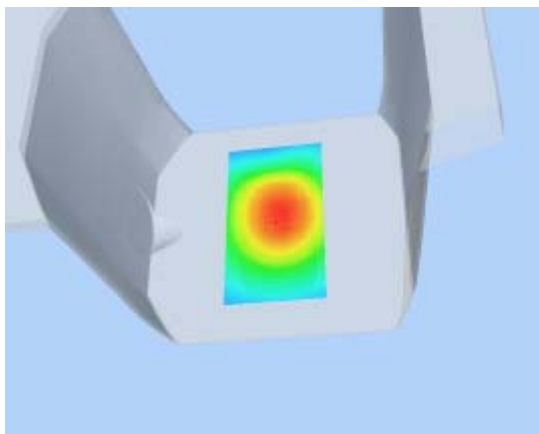
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.8632 | 0.6247 | 0.4544 | 0.3197 | 0.2418 | 0.1684 |

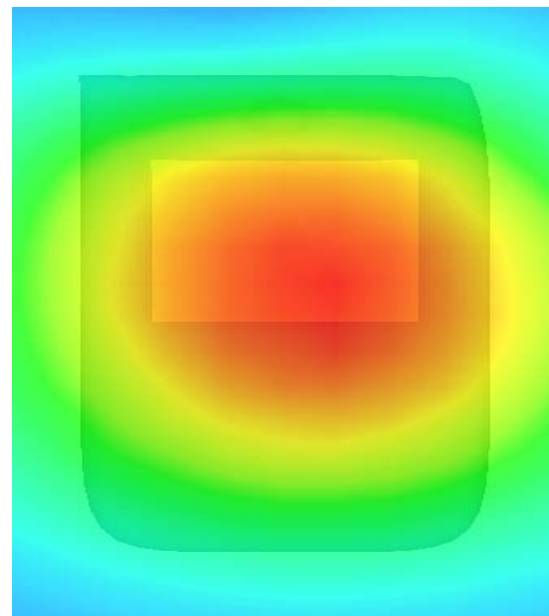
**SAR, Z Axis Scan (X = 7, Y = 7)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 20

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

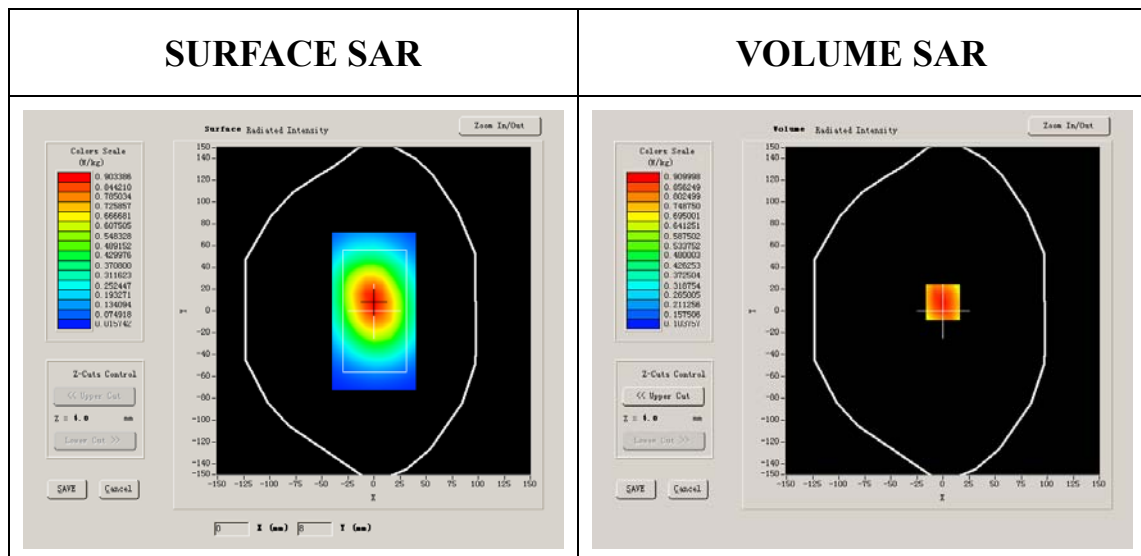
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM850            |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 824.200012 |
| <b>Relative permittivity (real part)</b> | 54.116001  |
| <b>Relative permittivity</b>             | 21.284550  |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 0.974596             |
| <b>SAR drift (%)</b>        | -1.280000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:8                  |



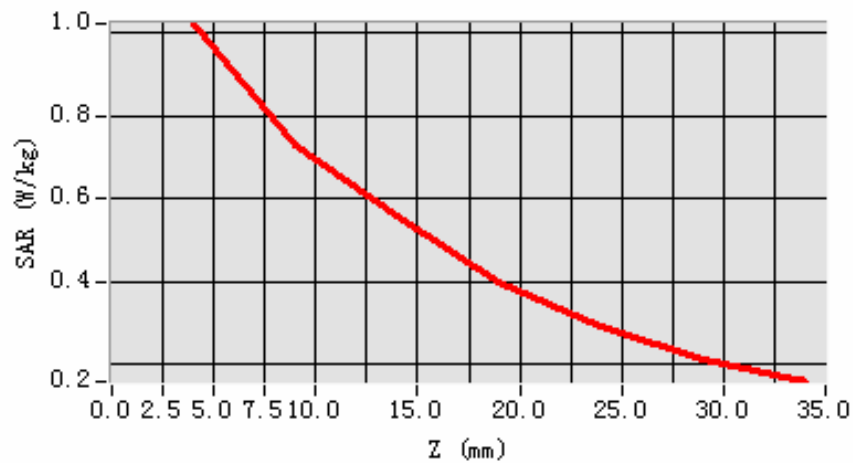
**Maximum location: X=0.00, Y=8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.691163 |
| <b>SAR 1g (W/Kg)</b>  | 0.979342 |

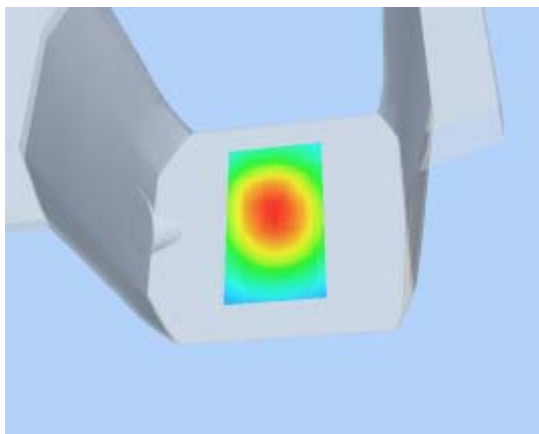
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 1.0234 | 0.7285 | 0.5593 | 0.3972 | 0.2915 | 0.2127 |

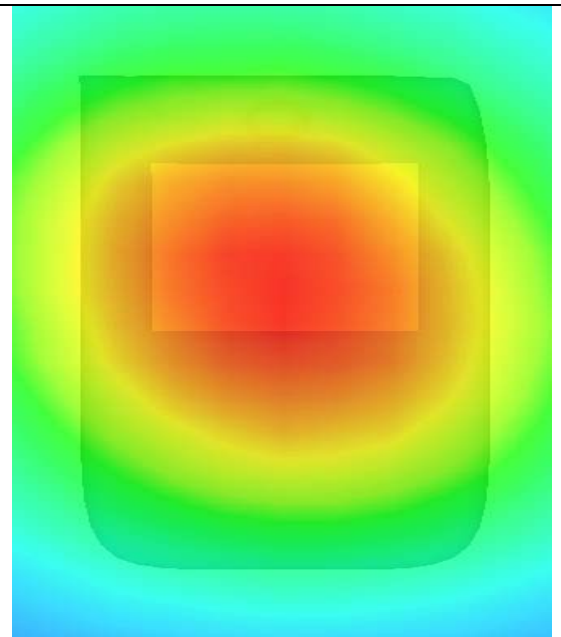
**SAR, Z Axis Scan (X = 0, Y = 8)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 21

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 24 seconds

### A. Experimental conditions.

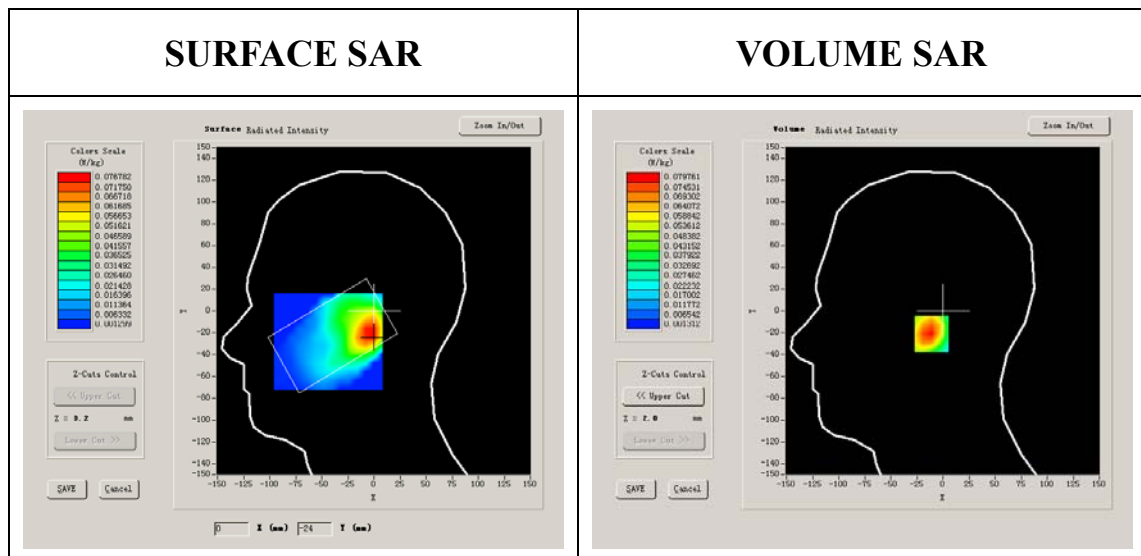
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1850.199951 |
| <b>Relative permittivity (real part)</b> | 39.993999   |
| <b>Relative permittivity</b>             | 12.991650   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.335397             |
| <b>SAR drift (%)</b>        | -1.000000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



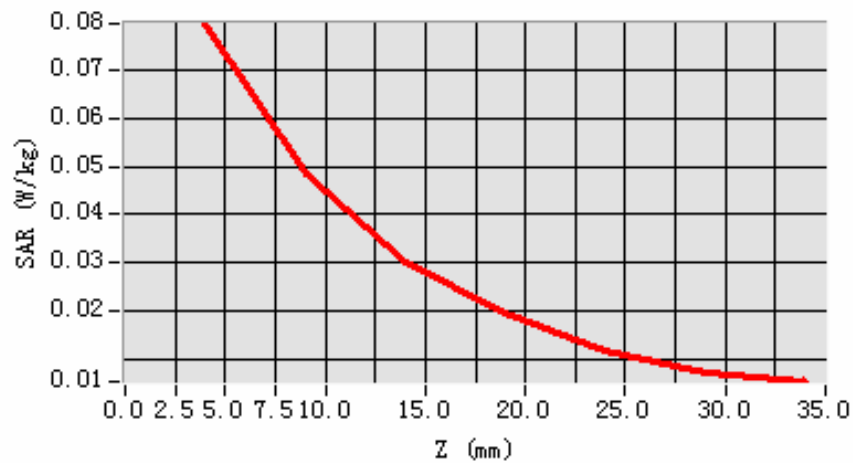
**Maximum location: X=-2.00, Y=-21.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.344500 |
| <b>SAR 1g (W/Kg)</b>  | 0.763241 |

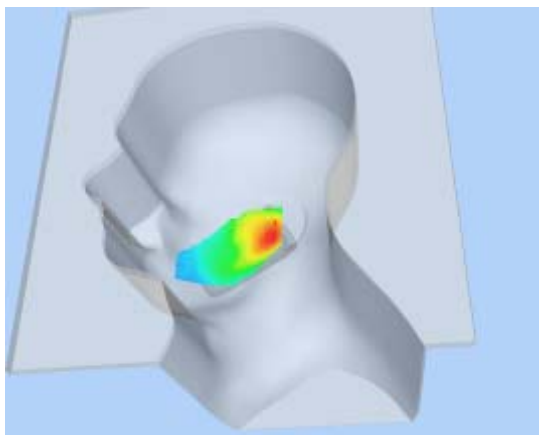
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.0798 | 0.0484 | 0.0301 | 0.0193 | 0.0117 | 0.0068 |

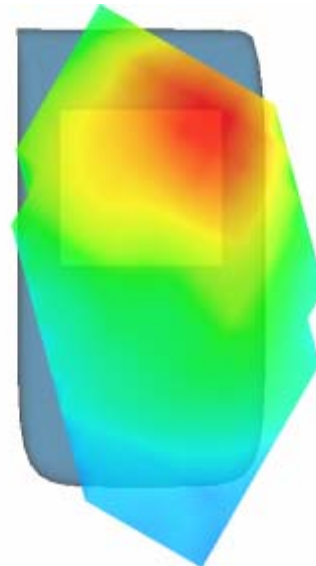
**SAR, Z Axis Scan (X = -2, Y = -21)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 22

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 25 seconds

### A. Experimental conditions.

|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

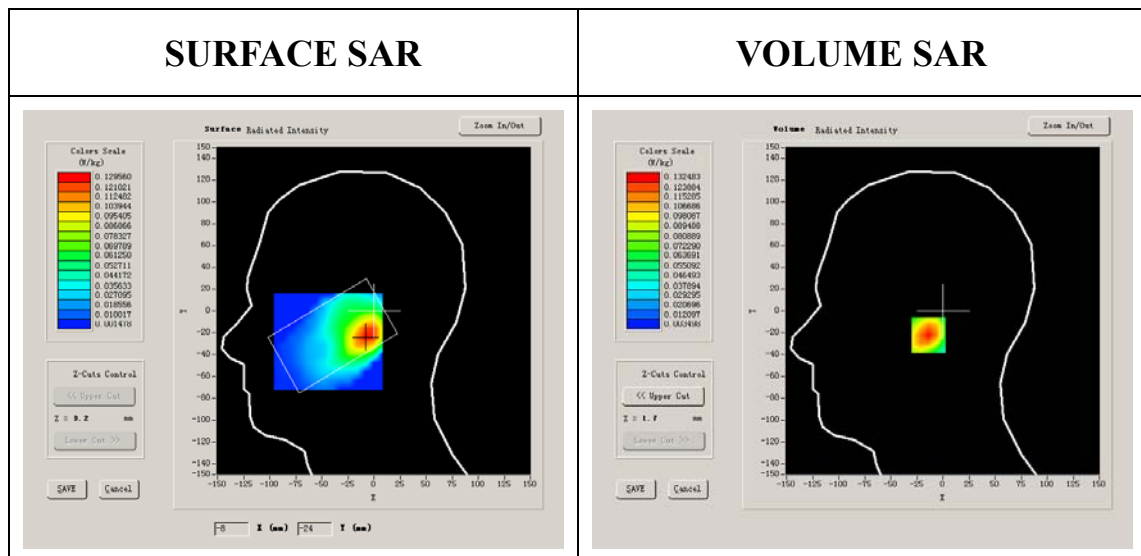
### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 38.509998   |
| <b>Relative permittivity</b>             | 13.750000   |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.436111             |
| <b>SAR drift (%)</b>        | 0.400000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



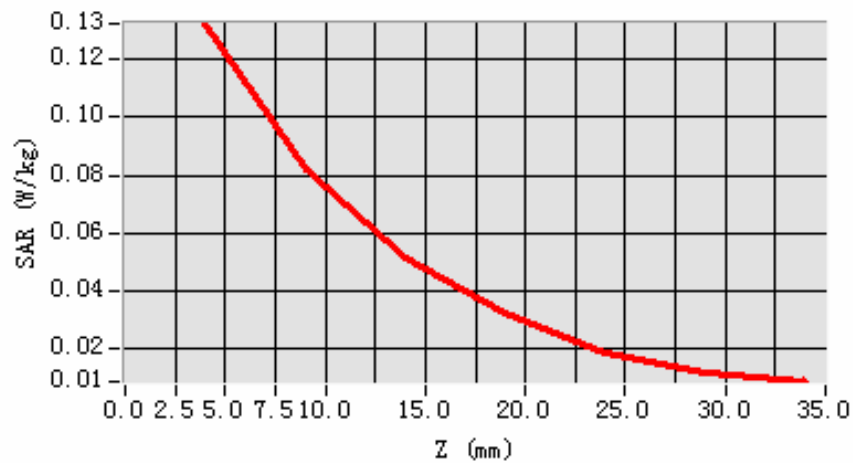
**Maximum location: X=-5.00, Y=-22.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.472988 |
| <b>SAR 1g (W/Kg)</b>  | 0.834851 |

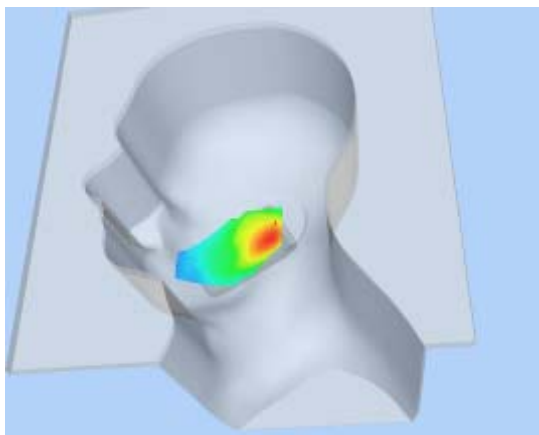
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1325 | 0.0823 | 0.0511 | 0.0320 | 0.0181 | 0.0115 |

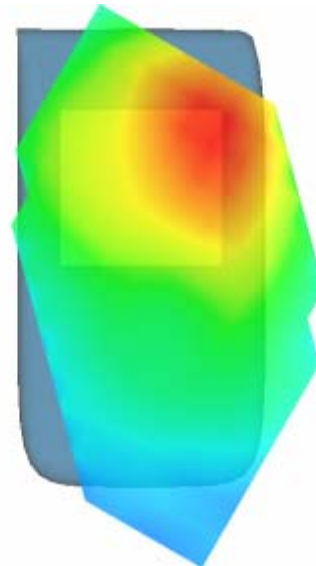
**SAR, Z Axis Scan (X = -5, Y = -22)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 23

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 28 seconds

### A. Experimental conditions.

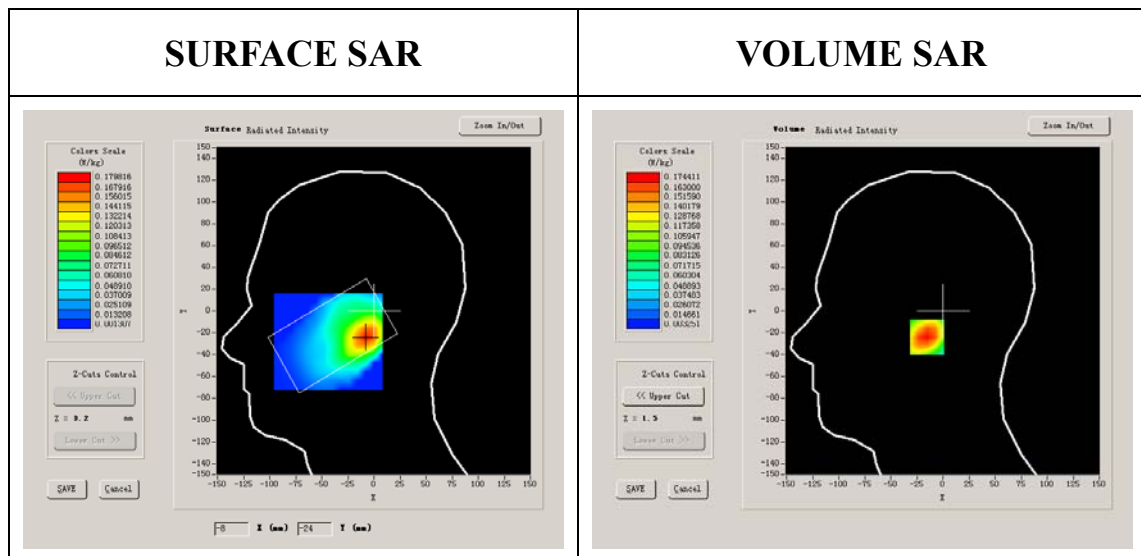
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Cheek                         |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 39.929001   |
| <b>Relative permittivity</b>             | 13.156500   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.395905             |
| <b>SAR drift (%)</b>        | -1.690000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



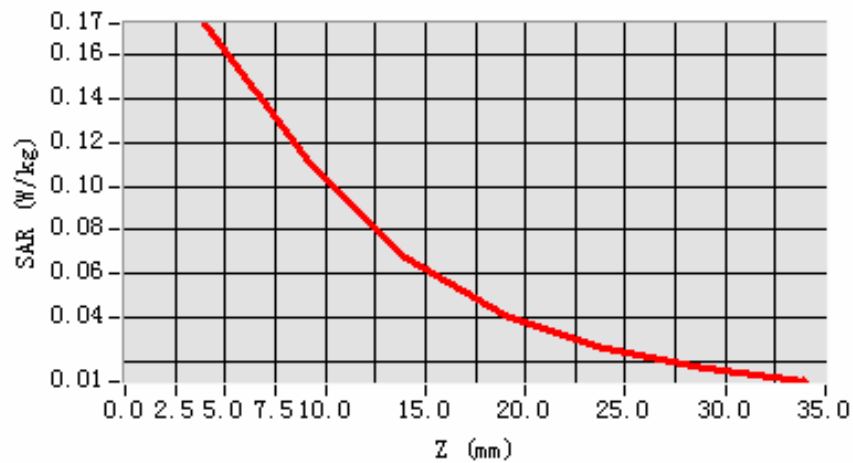
**Maximum location: X=-7.00, Y=-24.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.397554 |
| <b>SAR 1g (W/Kg)</b>  | 0.765681 |

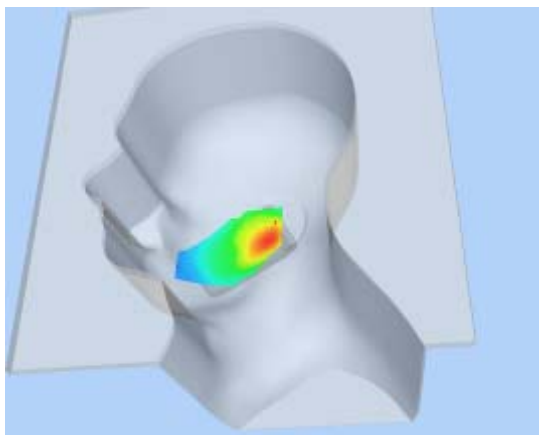
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1744 | 0.1125 | 0.0671 | 0.0409 | 0.0256 | 0.0162 |

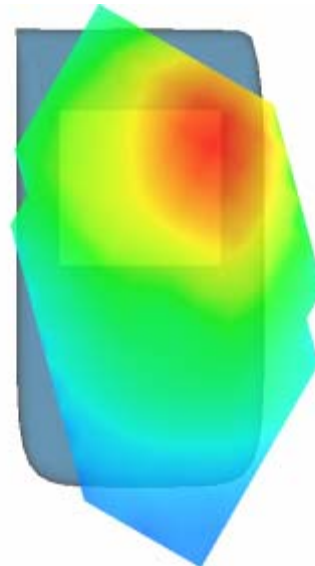
**SAR, Z Axis Scan (X = -7, Y = -24)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 24

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 24 seconds

### A. Experimental conditions.

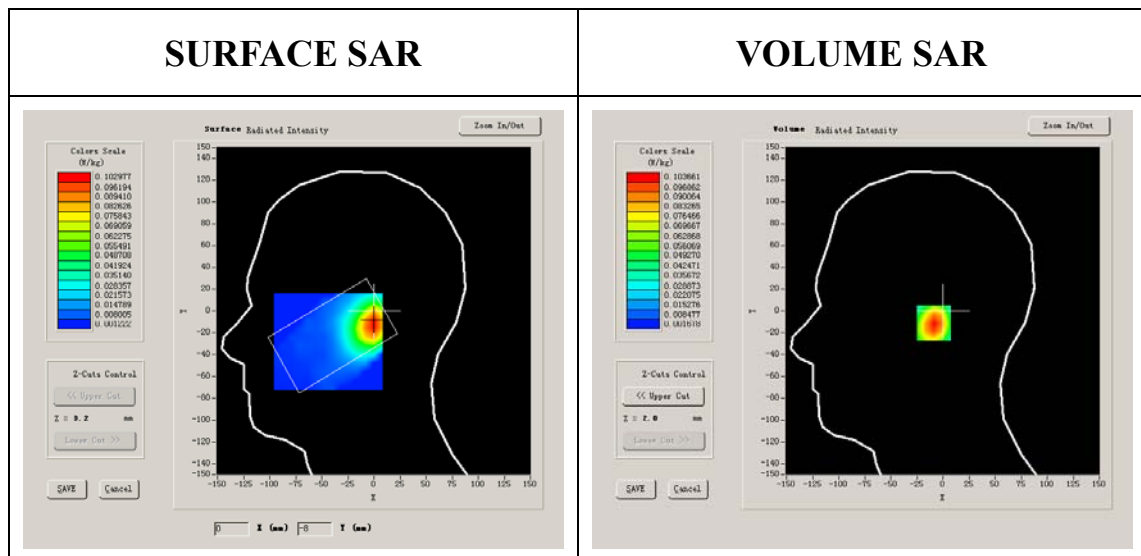
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | Low                           |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1850.199951 |
| <b>Relative permittivity (real part)</b> | 39.993999   |
| <b>Relative permittivity</b>             | 12.991650   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.335397             |
| <b>SAR drift (%)</b>        | -0.470000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



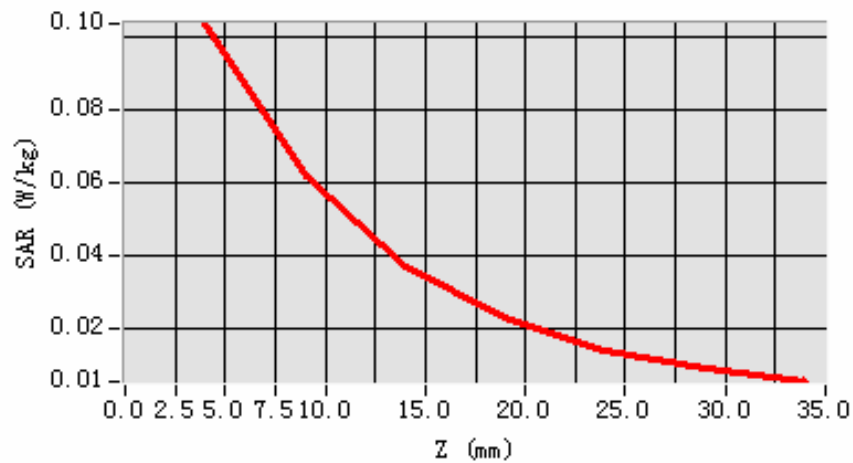
**Maximum location: X=-1.00, Y=-11.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.256841 |
| <b>SAR 1g (W/Kg)</b>  | 0.473209 |

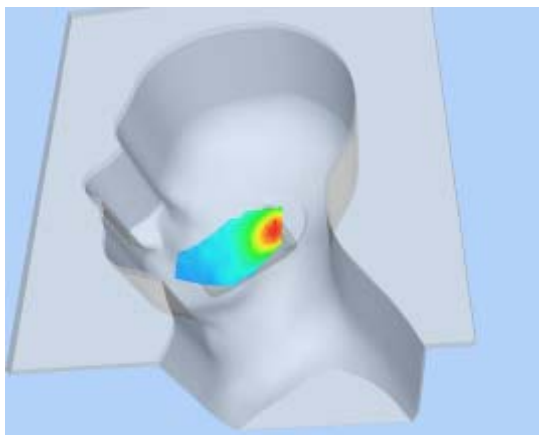
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1037 | 0.0616 | 0.0374 | 0.0233 | 0.0143 | 0.0090 |

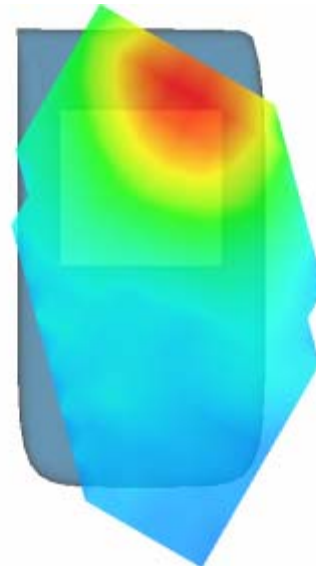
**SAR, Z Axis Scan (X = -1, Y = -11)**



**3D scene shot**



**Hot spot position**





## MEASUREMENT 25

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 24 seconds

### A. Experimental conditions.

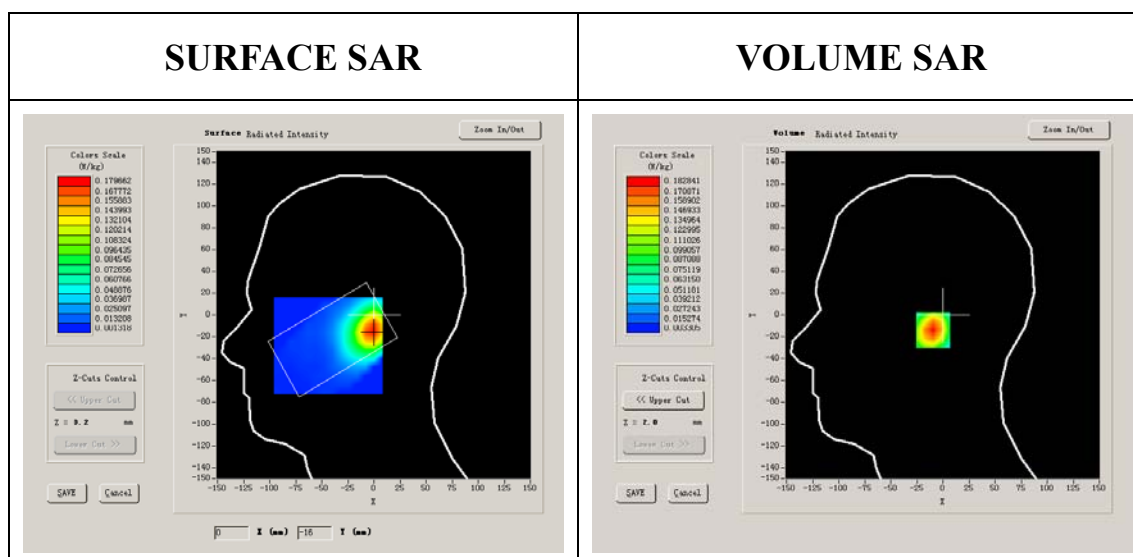
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | Middle                        |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 38.509998   |
| <b>Relative permittivity</b>             | 13.750000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.436111             |
| <b>SAR drift (%)</b>        | 0.120000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



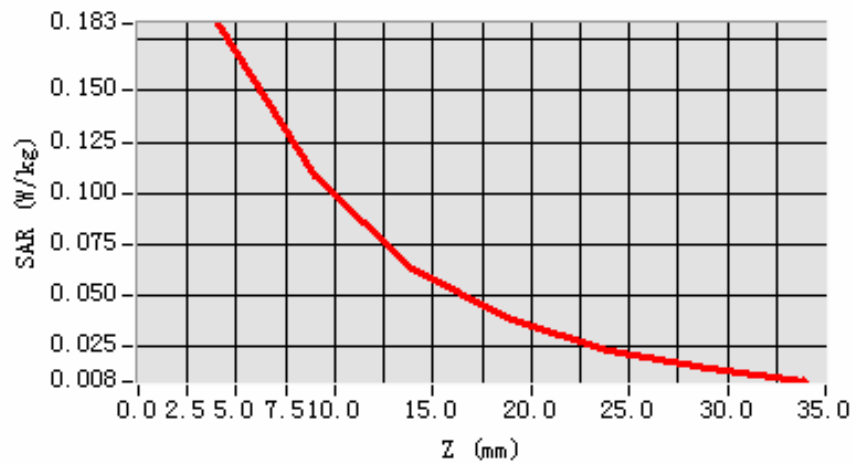
**Maximum location: X=-1.00, Y=-14.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.296623 |
| <b>SAR 1g (W/Kg)</b>  | 0.553163 |

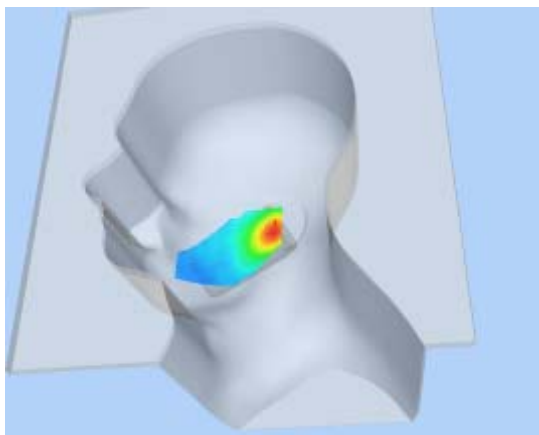
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1828 | 0.1084 | 0.0629 | 0.0388 | 0.0229 | 0.0150 |

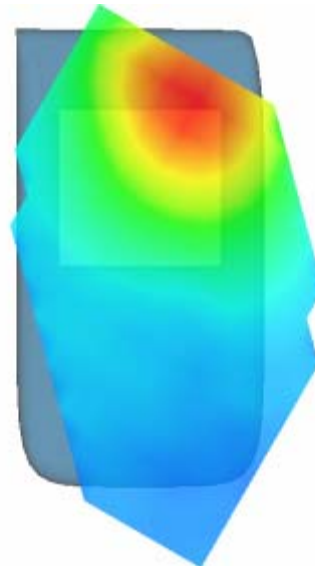
**SAR, Z Axis Scan (X = -1, Y = -14)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 26

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 22 seconds

### A. Experimental conditions.

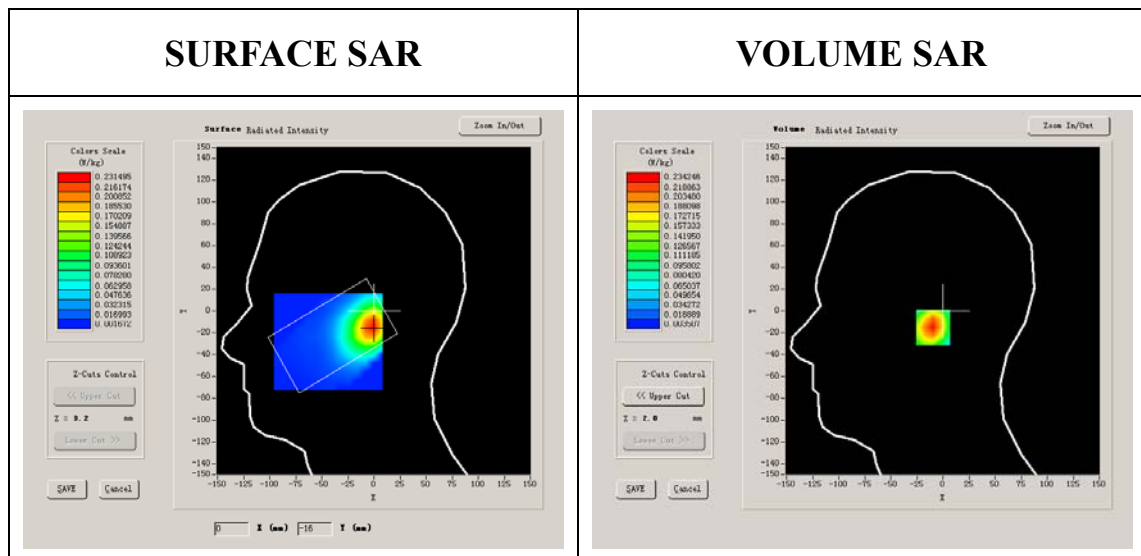
|                        |                               |
|------------------------|-------------------------------|
| <b>Phantom File</b>    | sam_direct_droit2_surf8mm.txt |
| <b>Phantom</b>         | Right head                    |
| <b>Device Position</b> | Tilt                          |
| <b>Band</b>            | GSM1900                       |
| <b>Channels</b>        | High                          |
| <b>Signal</b>          | GSM                           |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 39.929001   |
| <b>Relative permittivity</b>             | 13.156500   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.395905             |
| <b>SAR drift (%)</b>        | 1.400000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



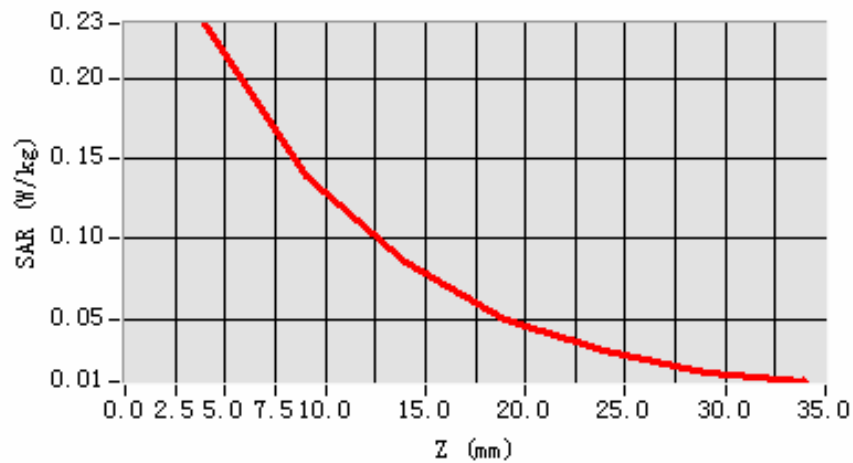
**Maximum location: X=-1.00, Y=-15.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.244489 |
| <b>SAR 1g (W/Kg)</b>  | 0.483492 |

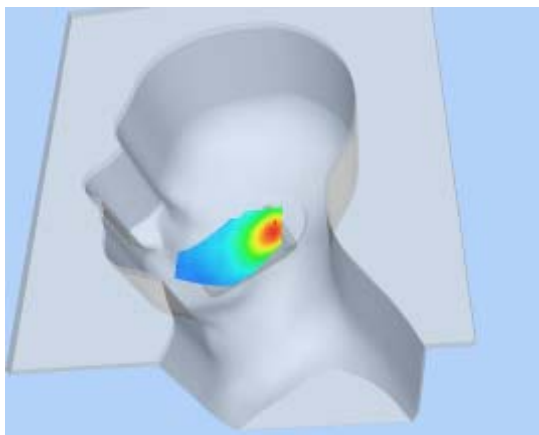
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.2342 | 0.1394 | 0.0849 | 0.0500 | 0.0307 | 0.0169 |

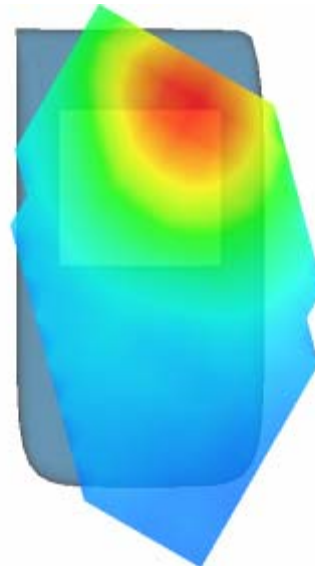
**SAR, Z Axis Scan (X = -1, Y = -15)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 27

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 25 seconds

### A. Experimental conditions.

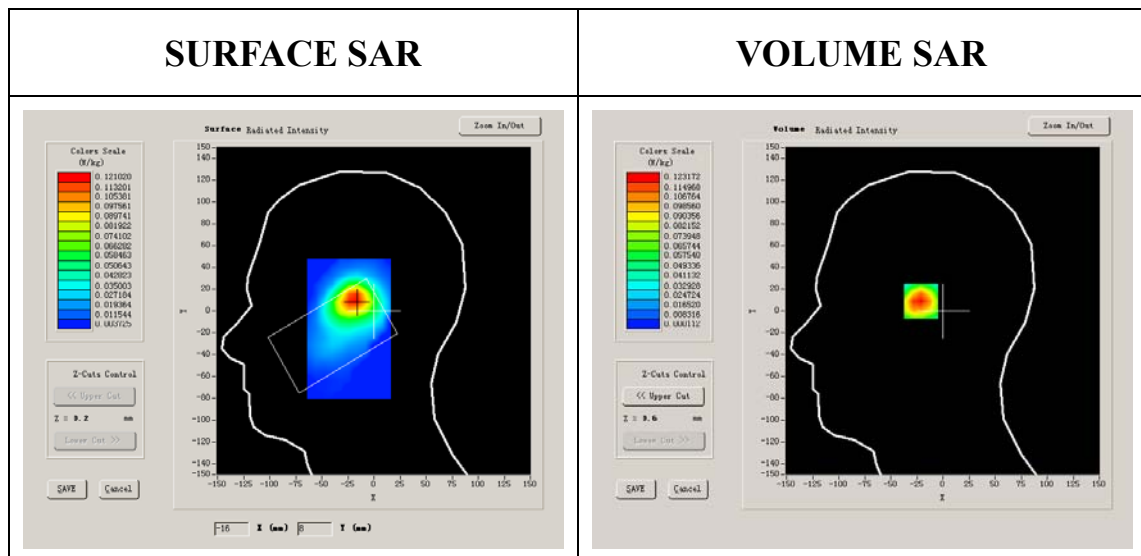
|                 |           |
|-----------------|-----------|
| Phantom File    | zinf3.txt |
| Phantom         | Left head |
| Device Position | Cheek     |
| Band            | GSM1900   |
| Channels        | Low       |
| Signal          | GSM       |

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|                                   |             |
|-----------------------------------|-------------|
| Frequency (MHz)                   | 1850.199951 |
| Relative permittivity (real part) | 39.993999   |
| Relative permittivity             | 12.991650   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.335397             |
| <b>SAR drift (%)</b>        | -0.050000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



**Maximum location: X=-18.00, Y=10.00**

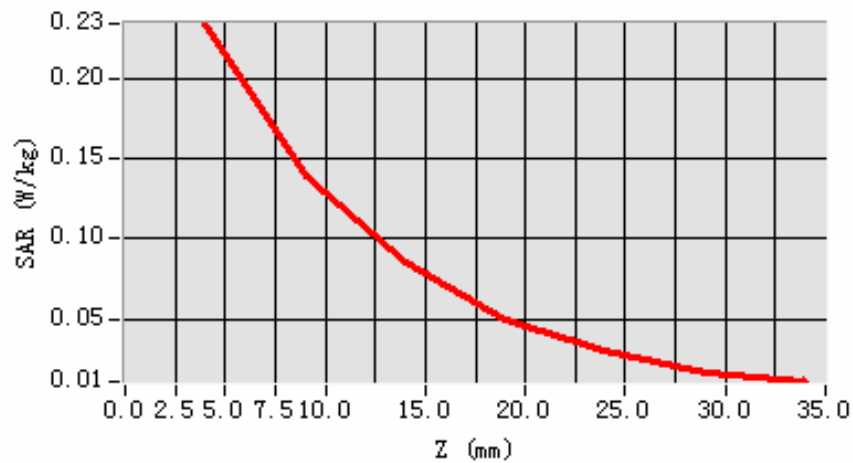
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.368017 |
| <b>SAR 1g (W/Kg)</b>  | 0.737634 |



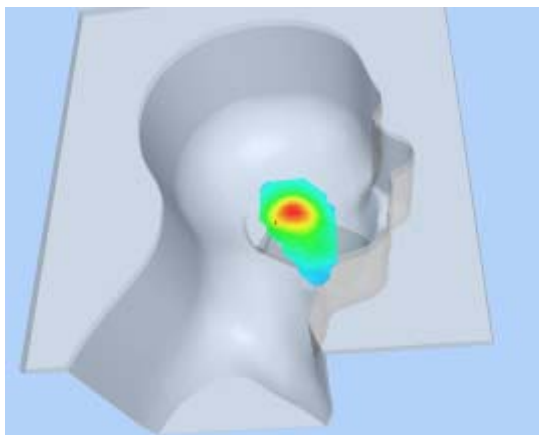
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1232 | 0.0794 | 0.0494 | 0.0297 | 0.0375 | 0.0111 |

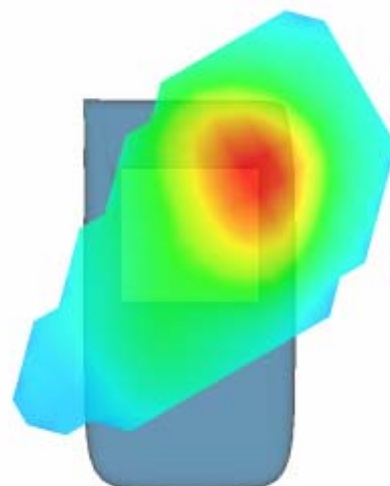
**SAR, Z Axis Scan (X = -1, Y = -15)**



**Hot spot position**



**3D scene shot**



## MEASUREMENT 28

Type: Phone measurement (Complete)

Area scan resolution:  $dx=8\text{mm}, dy=8\text{mm}$

Zoom scan resolution:  $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 27 seconds

### A. Experimental conditions.

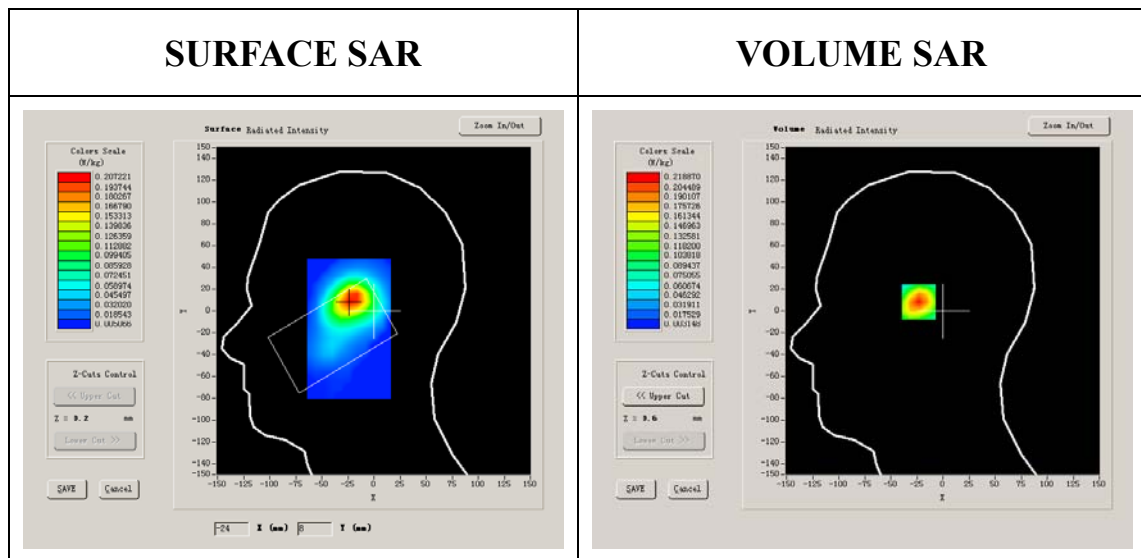
|                 |           |
|-----------------|-----------|
| Phantom File    | zinf3.txt |
| Phantom         | Left head |
| Device Position | Cheek     |
| Band            | GSM1900   |
| Channels        | Middle    |
| Signal          | GSM       |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|                                   |             |
|-----------------------------------|-------------|
| Frequency (MHz)                   | 1880.000000 |
| Relative permittivity (real part) | 38.509998   |
| Relative permittivity             | 13.750000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.436111             |
| <b>SAR drift (%)</b>        | -0.960000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



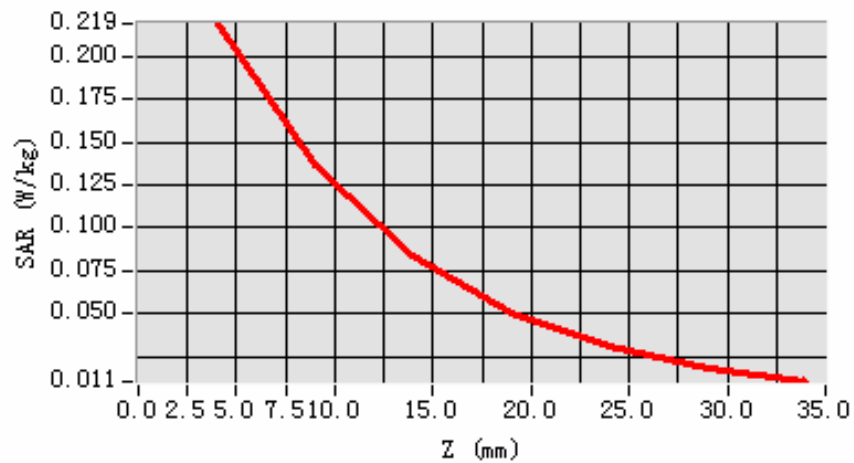
**Maximum location: X=-21.00, Y=10.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.414378 |
| <b>SAR 1g (W/Kg)</b>  | 0.793133 |

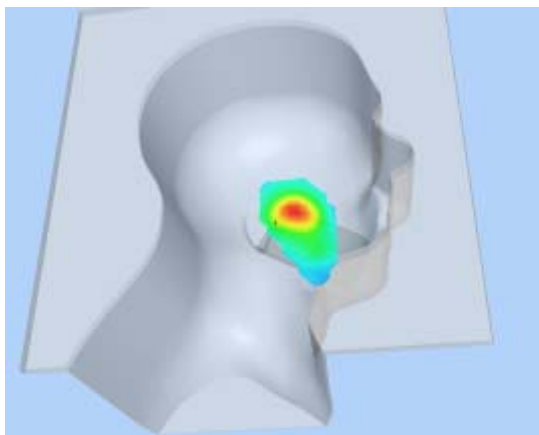
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.2189 | 0.1369 | 0.0833 | 0.0498 | 0.0307 | 0.0188 |

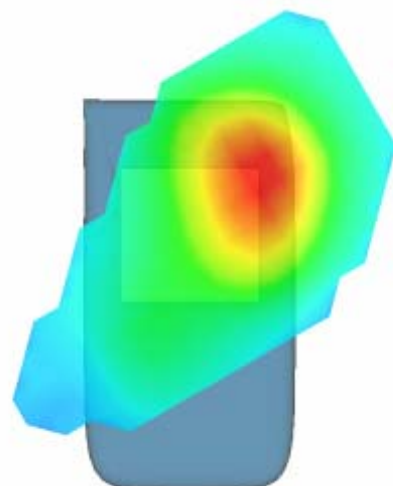
**SAR, Z Axis Scan (X = -21, Y = 10)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 29

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 23 seconds

### A. Experimental conditions.

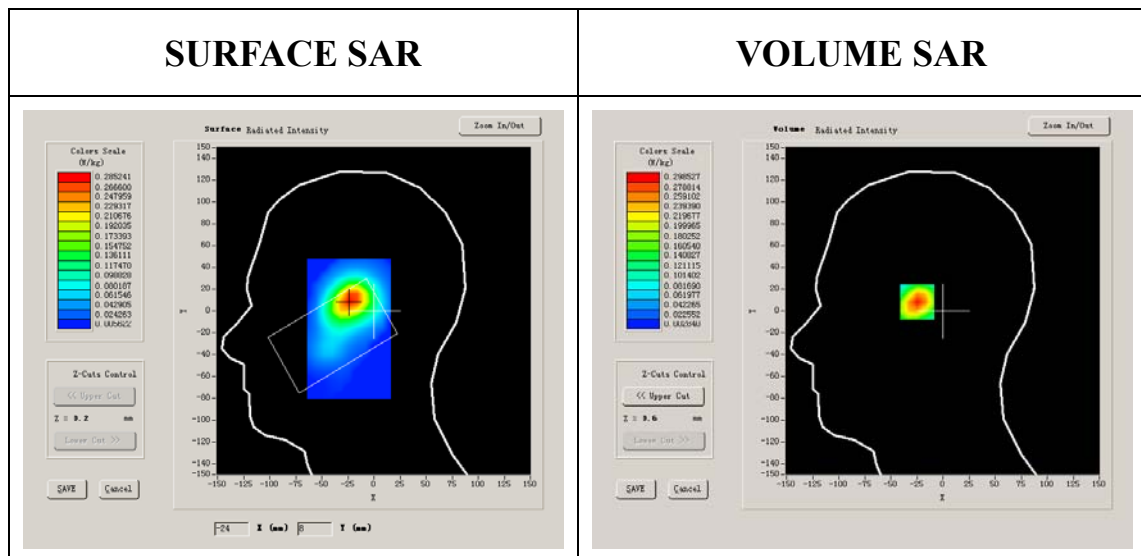
|                        |           |
|------------------------|-----------|
| <b>Phantom File</b>    | zinf3.txt |
| <b>Phantom</b>         | Left head |
| <b>Device Position</b> | Cheek     |
| <b>Band</b>            | GSM1900   |
| <b>Channels</b>        | High      |
| <b>Signal</b>          | GSM       |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 39.929001   |
| <b>Relative permittivity</b>             | 13.156500   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.395905             |
| <b>SAR drift (%)</b>        | 0.900000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



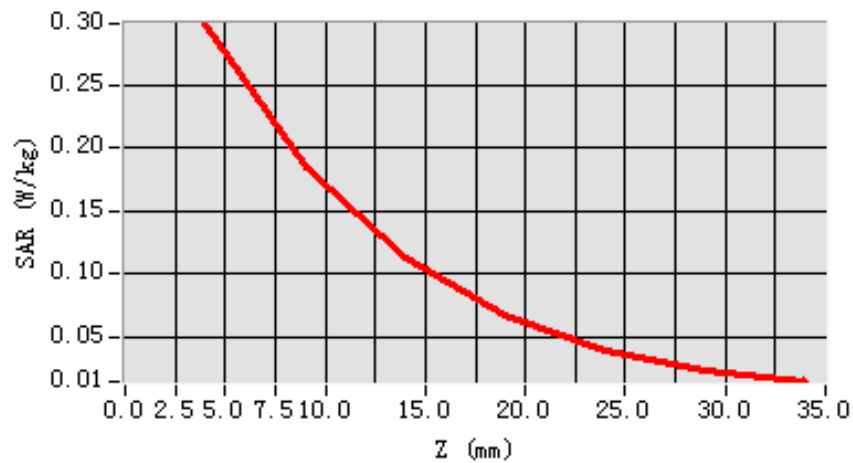
**Maximum location: X=-22.00, Y=10.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.356202 |
| <b>SAR 1g (W/Kg)</b>  | 0.711545 |

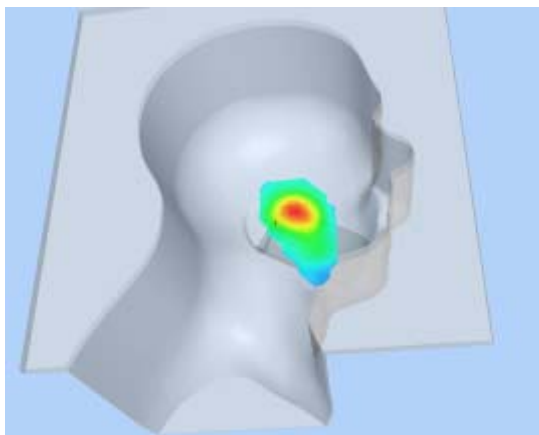
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.2985 | 0.1844 | 0.1134 | 0.0670 | 0.0400 | 0.0239 |

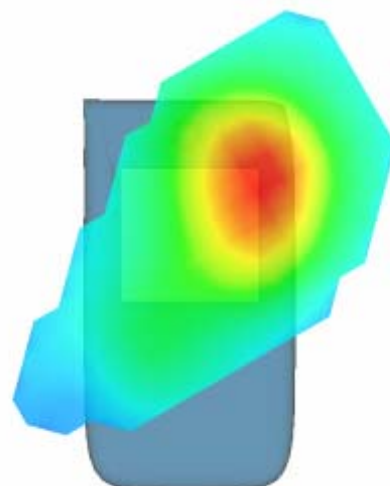
**SAR, Z Axis Scan (X = -22, Y = 10)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 30

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 22 seconds

### A. Experimental conditions.

|                        |           |
|------------------------|-----------|
| <b>Phantom File</b>    | zinf3.txt |
| <b>Phantom</b>         | Left head |
| <b>Device Position</b> | Tilt      |
| <b>Band</b>            | GSM1900   |
| <b>Channels</b>        | Low       |
| <b>Signal</b>          | GSM       |

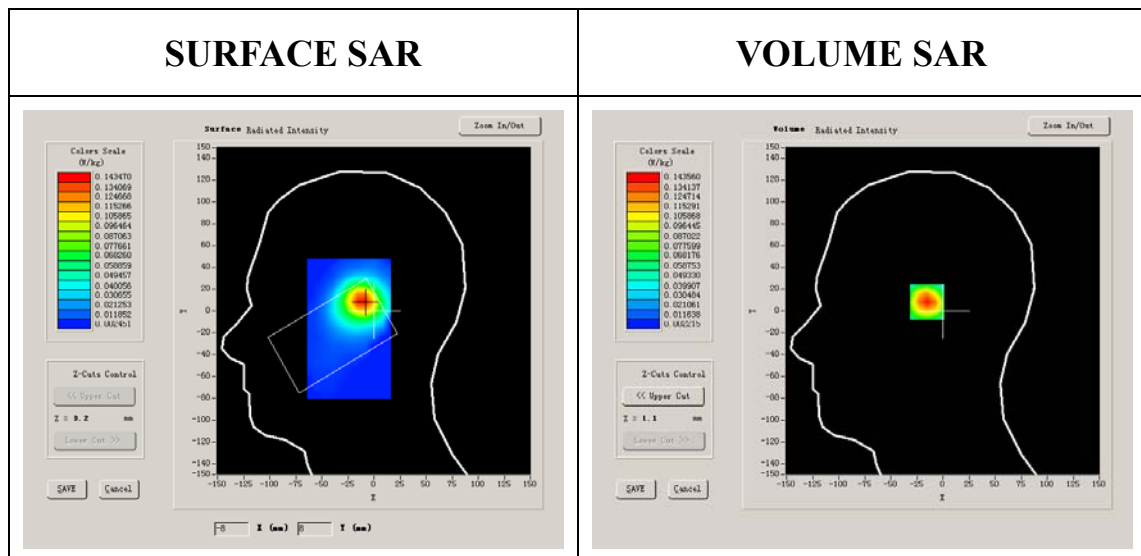
### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1850.199951 |
| <b>Relative permittivity (real part)</b> | 39.993999   |
| <b>Relative permittivity</b>             | 12.991650   |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.335397             |
| <b>SAR drift (%)</b>        | -1.580000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



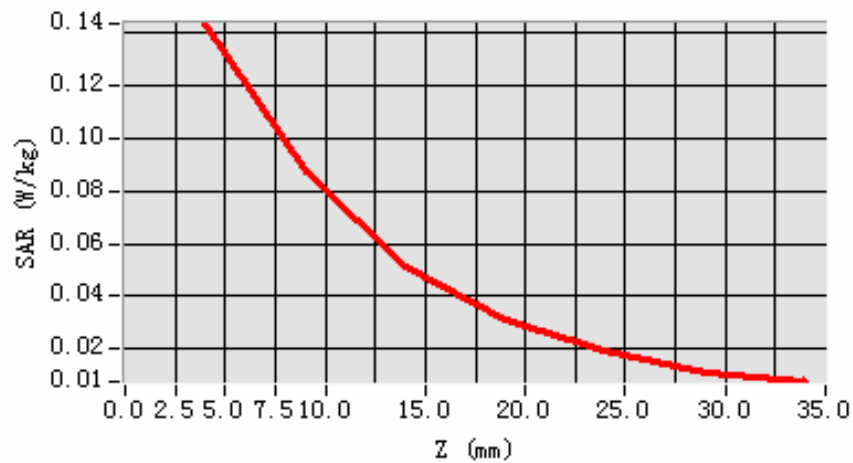
**Maximum location: X=-11.00, Y=9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.215484 |
| <b>SAR 1g (W/Kg)</b>  | 0.395337 |

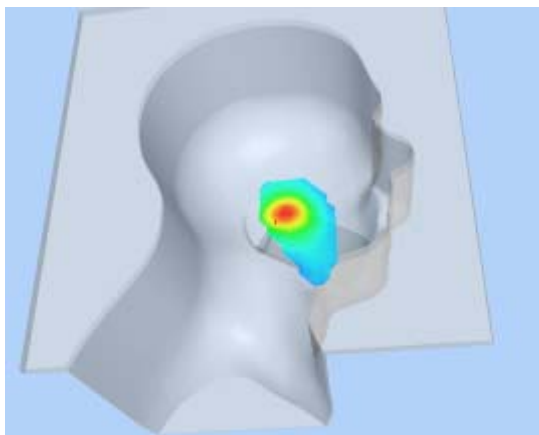
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1436 | 0.0872 | 0.0510 | 0.0314 | 0.0190 | 0.0109 |

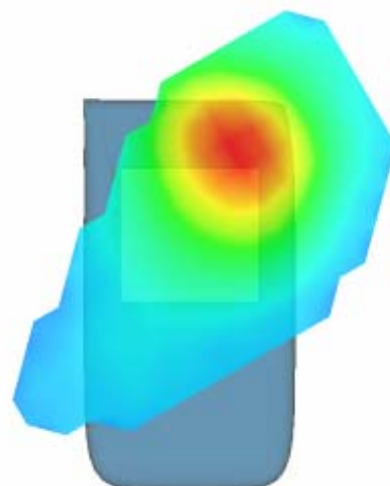
**SAR, Z Axis Scan (X = -11, Y = 9)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 31

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 22 seconds

### A. Experimental conditions.

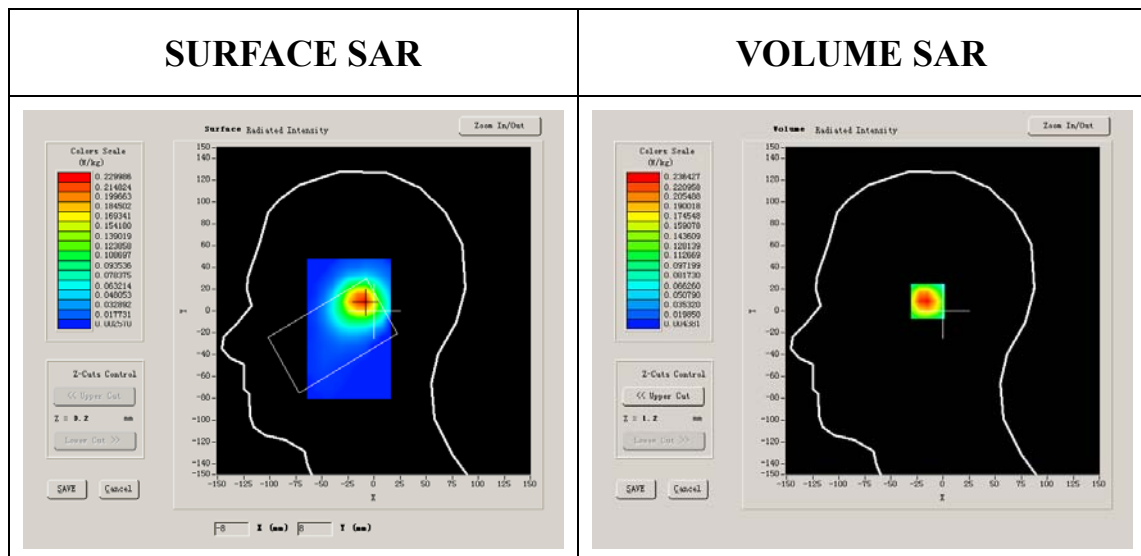
|                        |           |
|------------------------|-----------|
| <b>Phantom File</b>    | zinf3.txt |
| <b>Phantom</b>         | Left head |
| <b>Device Position</b> | Tilt      |
| <b>Band</b>            | GSM1900   |
| <b>Channels</b>        | Middle    |
| <b>Signal</b>          | GSM       |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 38.509998   |
| <b>Relative permittivity</b>             | 13.750000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.436111             |
| <b>SAR drift (%)</b>        | 0.740000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |

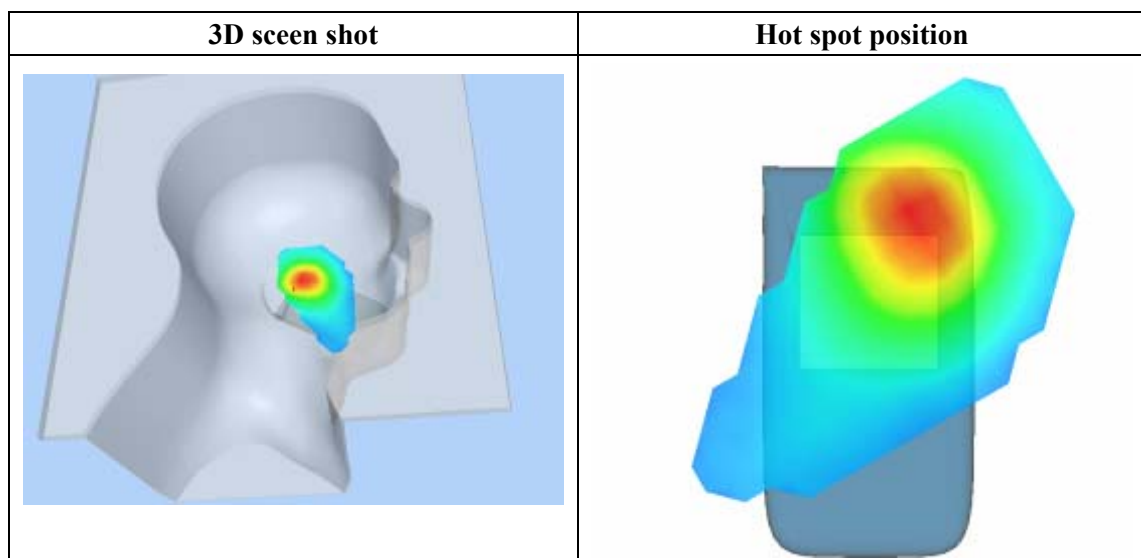
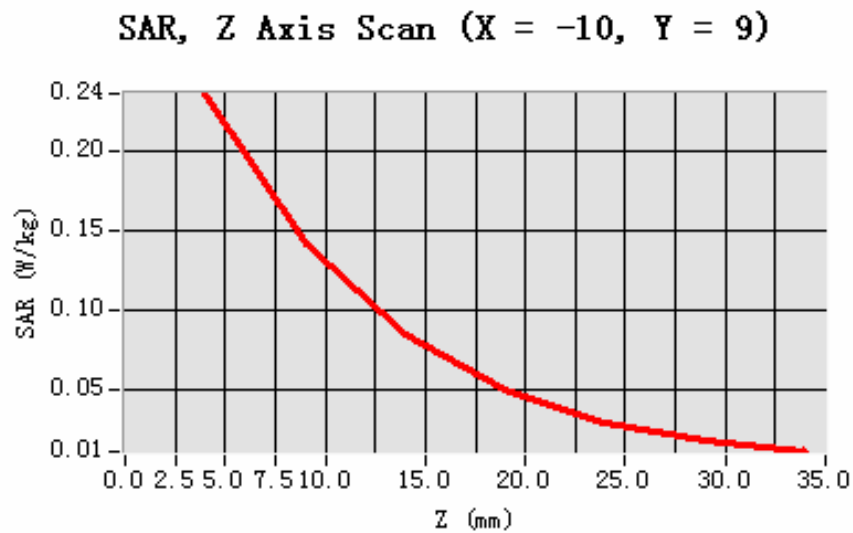


**Maximum location: X=-10.00, Y=9.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.225356 |
| <b>SAR 1g (W/Kg)</b>  | 0.463404 |

### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.2364 | 0.1424 | 0.0845 | 0.0507 | 0.0298 | 0.0177 |



## MEASUREMENT 32

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 7 minutes 22 seconds

### A. Experimental conditions.

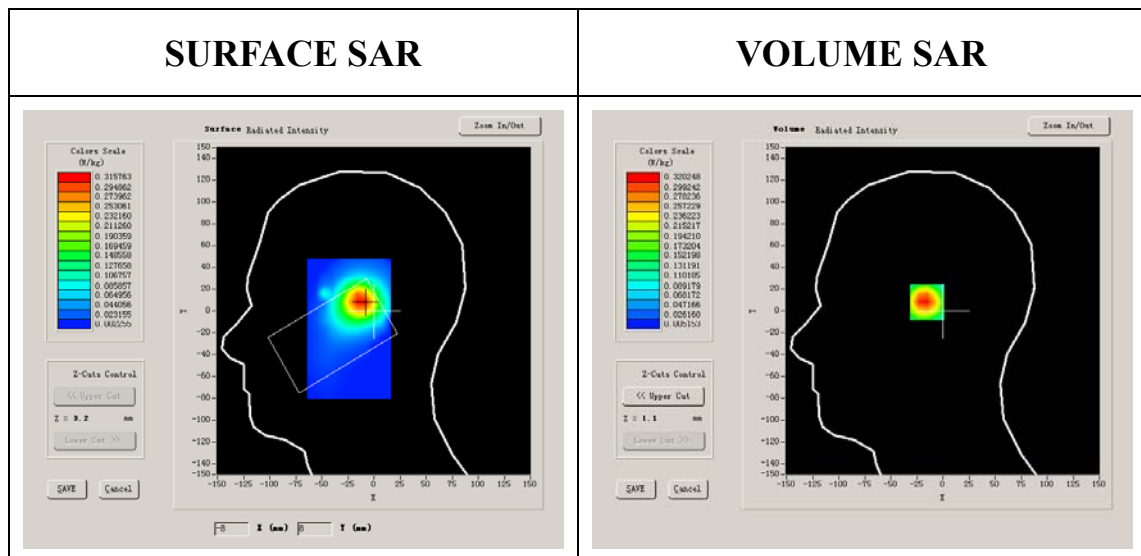
|                        |           |
|------------------------|-----------|
| <b>Phantom File</b>    | zinf3.txt |
| <b>Phantom</b>         | Left head |
| <b>Device Position</b> | Tilt      |
| <b>Band</b>            | GSM1900   |
| <b>Channels</b>        | High      |
| <b>Signal</b>          | GSM       |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 39.929001   |
| <b>Relative permittivity</b>             | 13.156500   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.395905             |
| <b>SAR drift (%)</b>        | -1.350000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



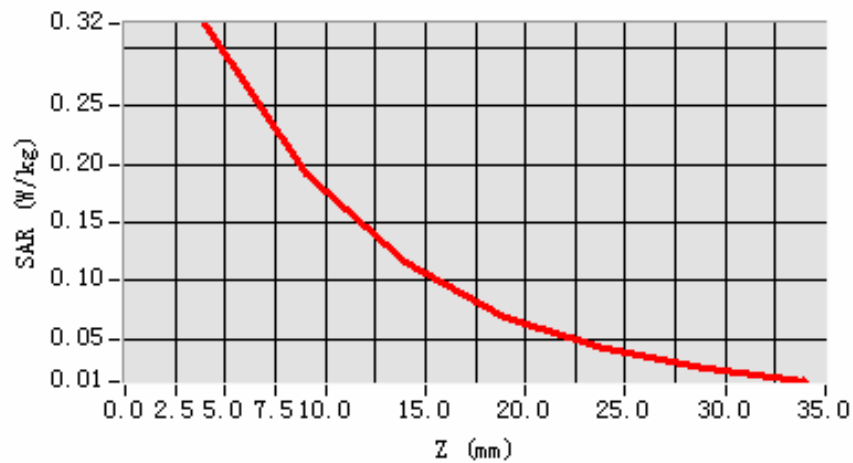
**Maximum location: X=-11.00, Y=8.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.211237 |
| <b>SAR 1g (W/Kg)</b>  | 0.411235 |

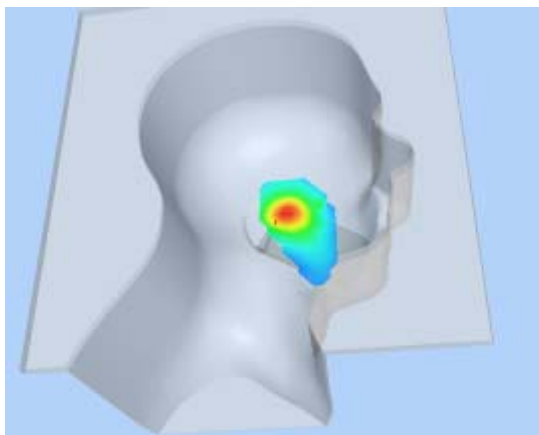
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.3202 | 0.1911 | 0.1151 | 0.0684 | 0.0417 | 0.0243 |

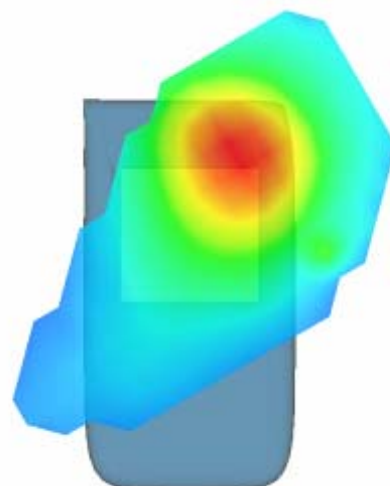
**SAR, Z Axis Scan (X = -11, Y = 8)**



**3D scene shot**



**Hot spot position**





## MEASUREMENT 33

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

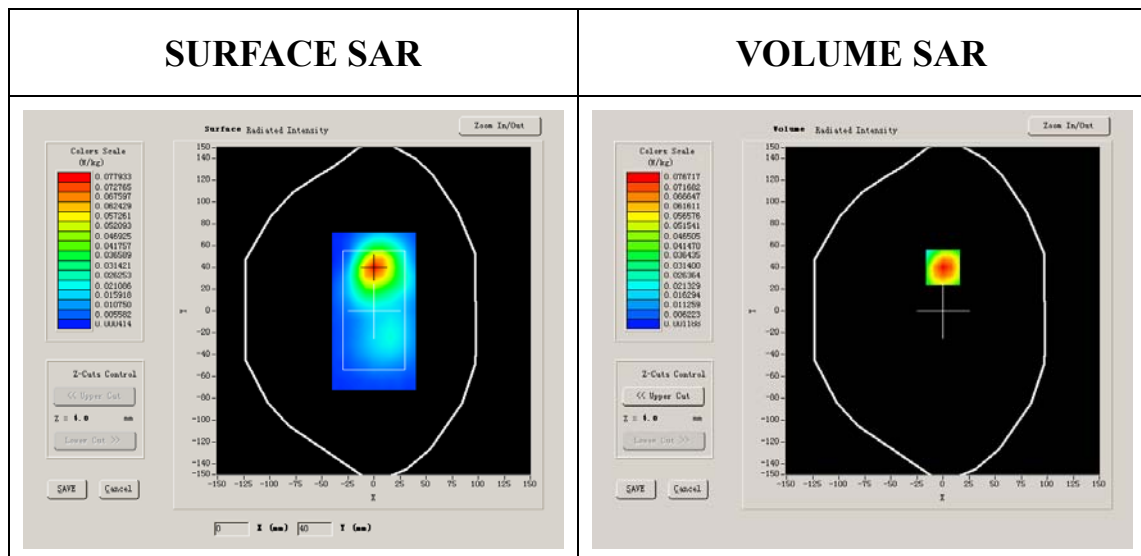
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1850.199951 |
| <b>Relative permittivity (real part)</b> | 10.000000   |
| <b>Relative permittivity</b>             | 12.000000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.233467             |
| <b>SAR drift (%)</b>        | -0.070000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:2                  |

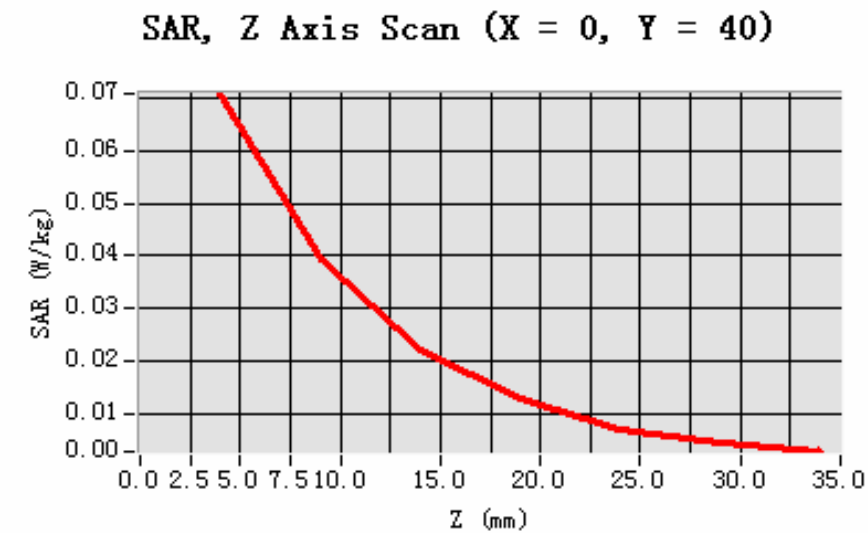


**Maximum location: X=0.00, Y=40.00**

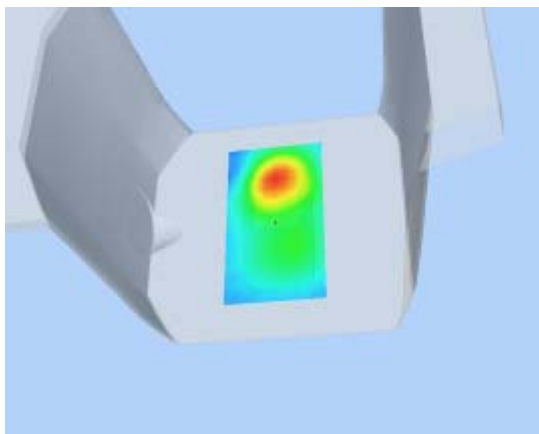
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.587291 |
| <b>SAR 1g (W/Kg)</b>  | 0.942151 |

### Z Axis Scan

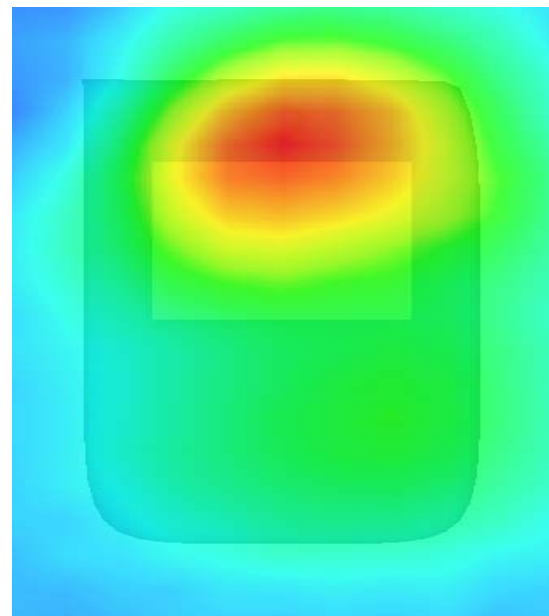
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.0709 | 0.0393 | 0.0220 | 0.0127 | 0.0070 | 0.0046 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 34

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

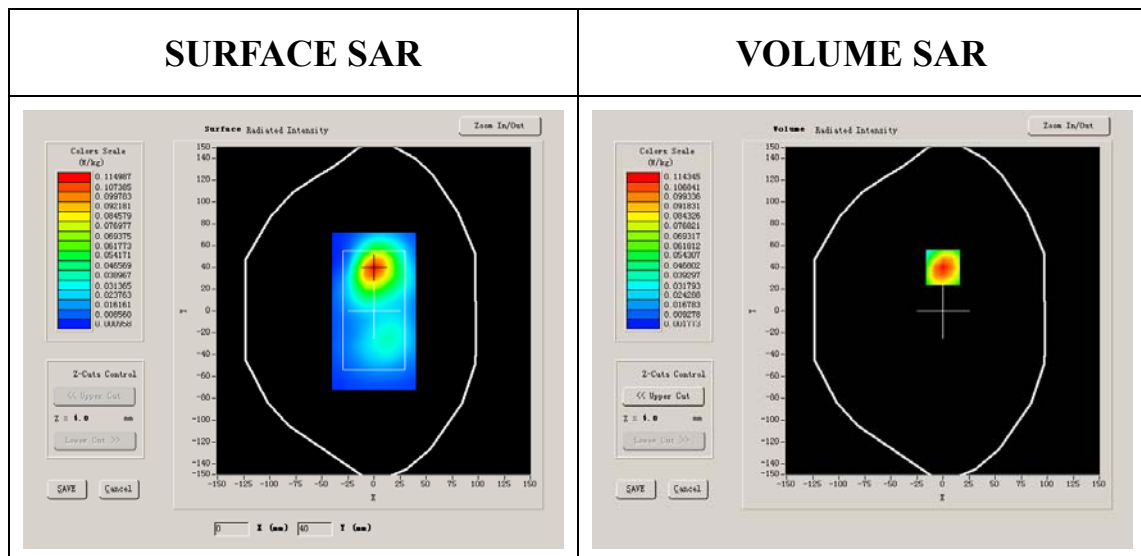
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | Middle            |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 51.540001   |
| <b>Relative permittivity</b>             | 15.070000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.573978             |
| <b>SAR drift (%)</b>        | 0.090000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:2                  |



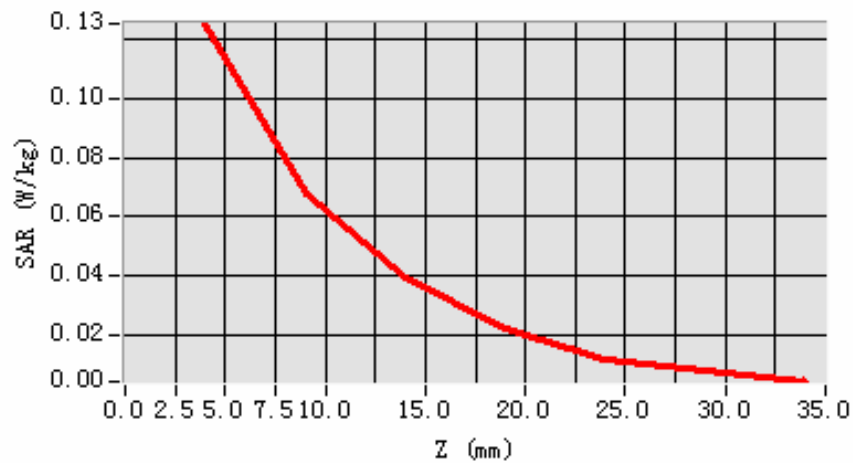
**Maximum location: X=0.00, Y=40.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.525491 |
| <b>SAR 1g (W/Kg)</b>  | 1.047062 |

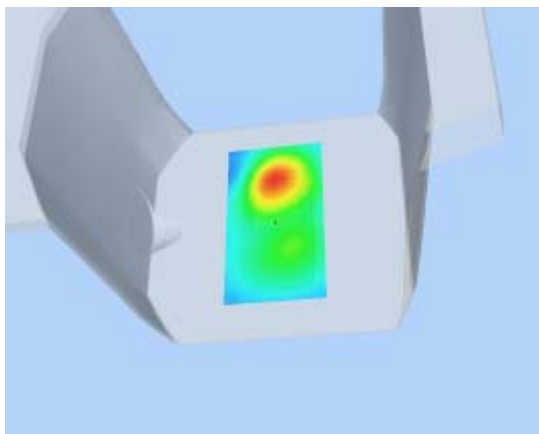
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1253 | 0.0682 | 0.0391 | 0.0223 | 0.0121 | 0.0079 |

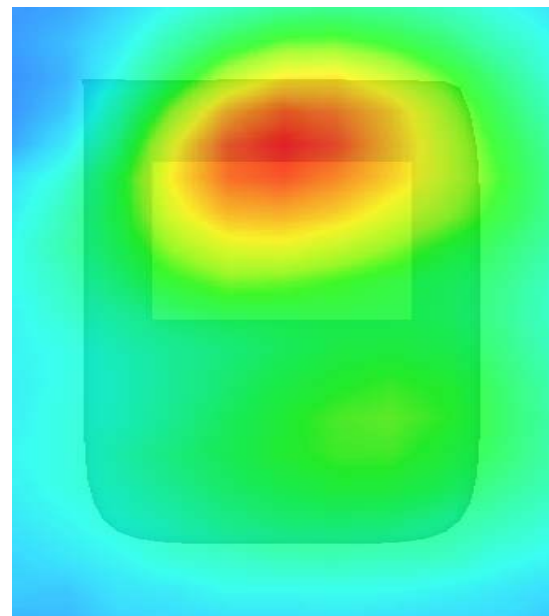
**SAR, Z Axis Scan (X = 0, Y = 40)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 35

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

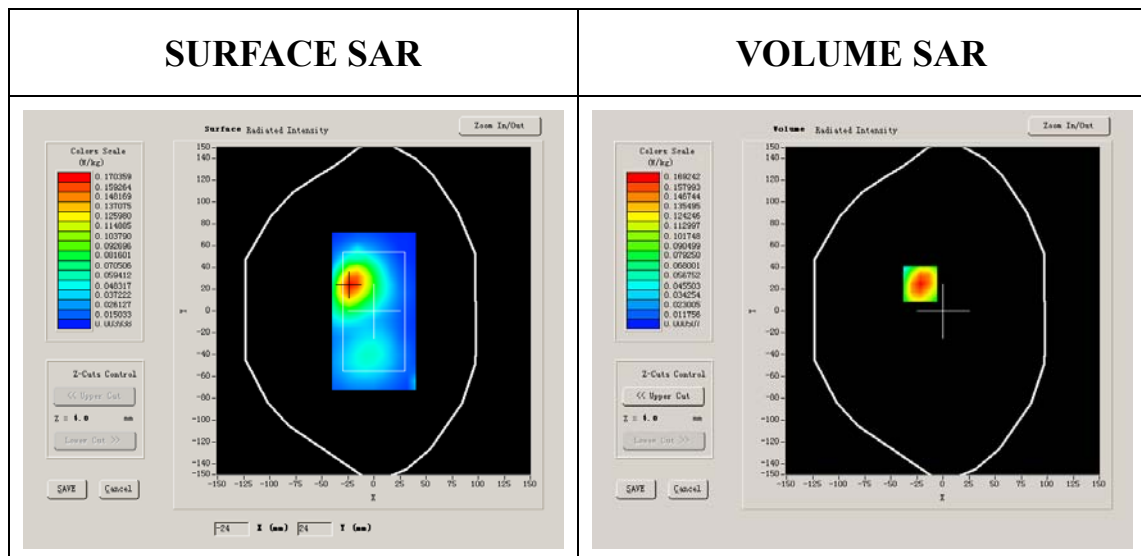
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | High              |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 10.000000   |
| <b>Relative permittivity</b>             | 12.000000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.273200             |
| <b>SAR drift (%)</b>        | -0.430000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:2                  |



**Maximum location: X=-22.00, Y=25.00**

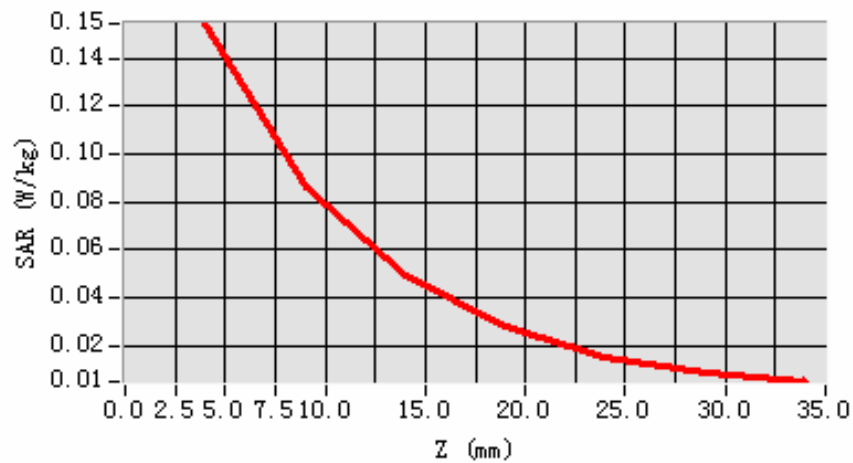
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.541442 |
| <b>SAR 1g (W/Kg)</b>  | 0.946608 |



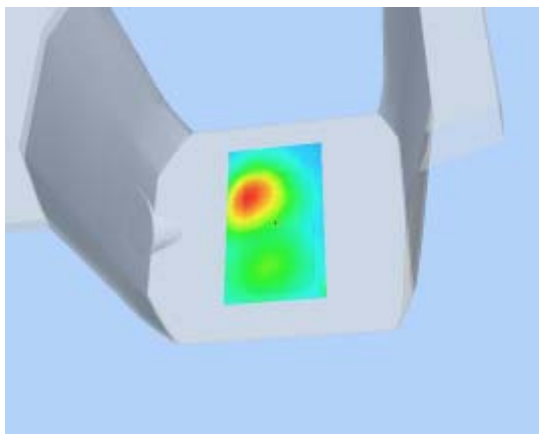
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1544 | 0.0865 | 0.0495 | 0.0286 | 0.0156 | 0.0092 |

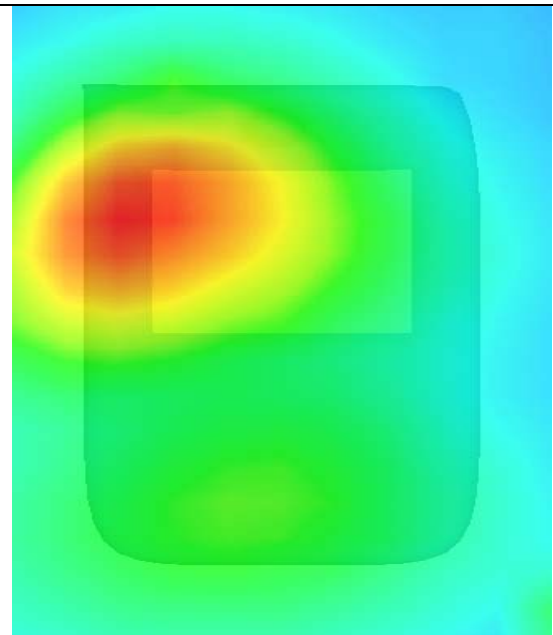
**SAR, Z Axis Scan (X = -22, Y = 25)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 36

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

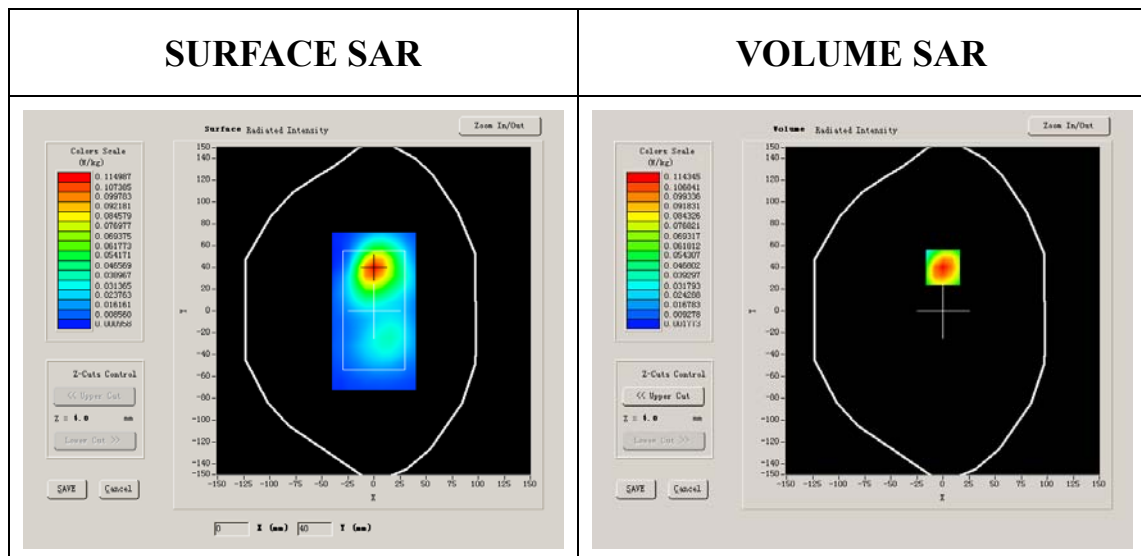
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | Middle            |
| <b>Signal</b>          | GPRS              |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 51.540001   |
| <b>Relative permittivity</b>             | 15.070000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.573978             |
| <b>SAR drift (%)</b>        | 0.090000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:2                  |

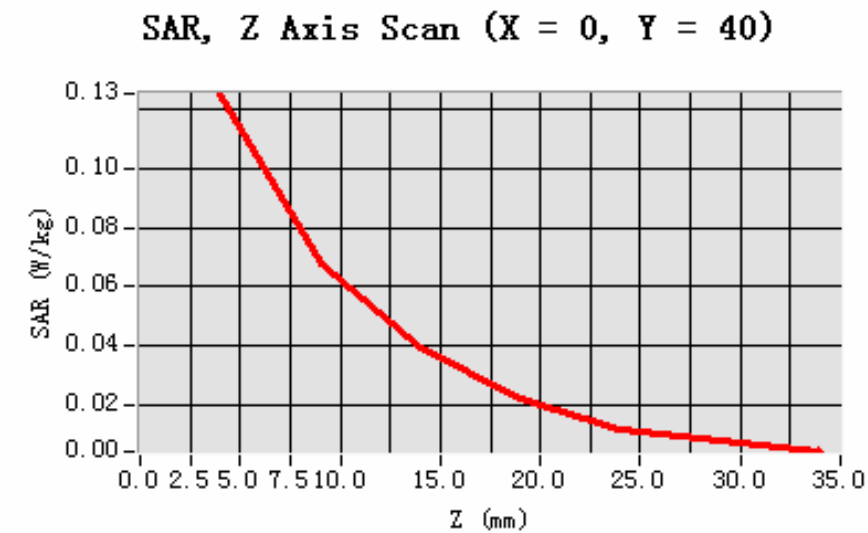


**Maximum location: X=0.00, Y=40.00**

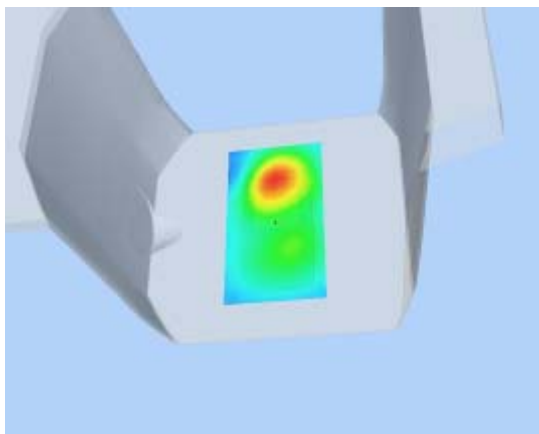
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.416643 |
| <b>SAR 1g (W/Kg)</b>  | 0.894174 |

### Z Axis Scan

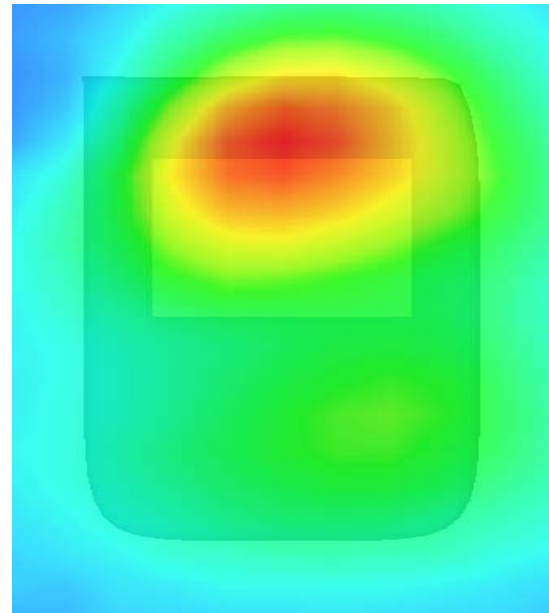
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1253 | 0.0682 | 0.0391 | 0.0223 | 0.0121 | 0.0079 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 37

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

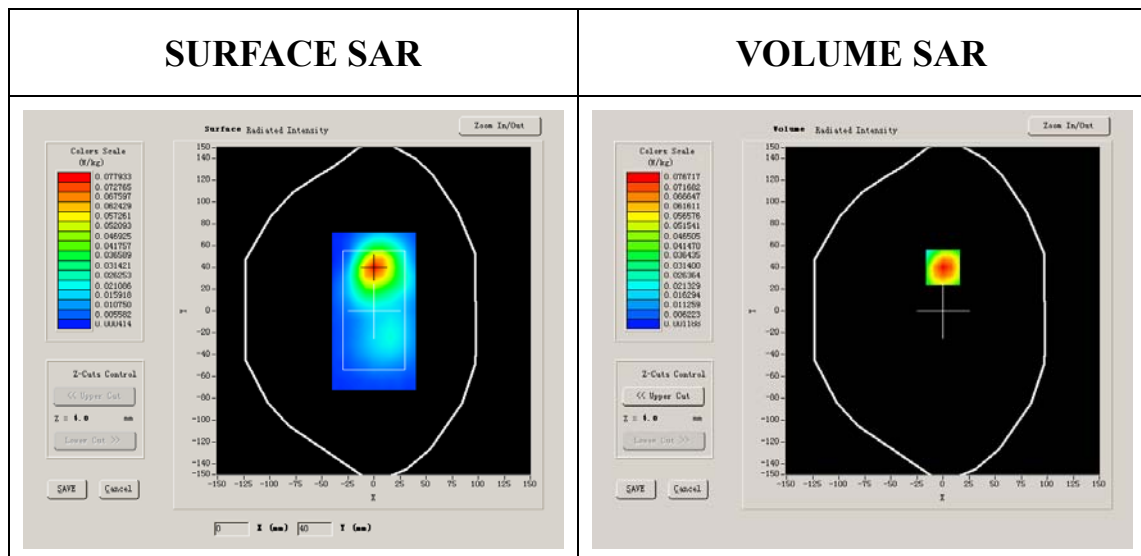
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | Low               |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1850.199951 |
| <b>Relative permittivity (real part)</b> | 10.000000   |
| <b>Relative permittivity</b>             | 12.000000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.233467             |
| <b>SAR drift (%)</b>        | -0.070000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:2                  |

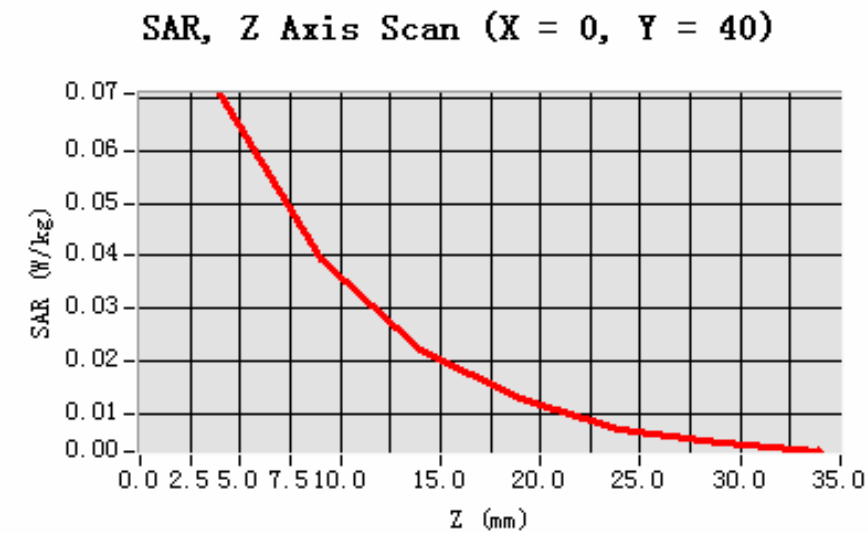


**Maximum location: X=0.00, Y=40.00**

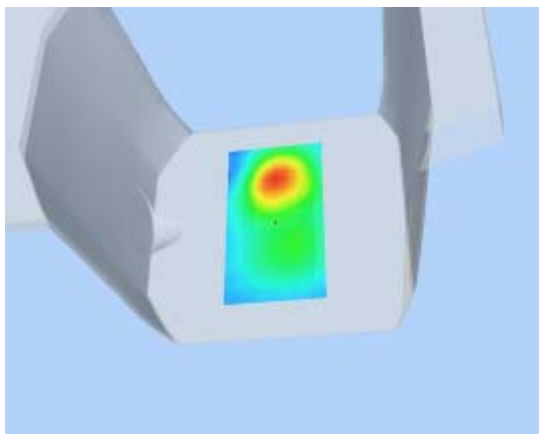
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.327462 |
| <b>SAR 1g (W/Kg)</b>  | 0.634735 |

### Z Axis Scan

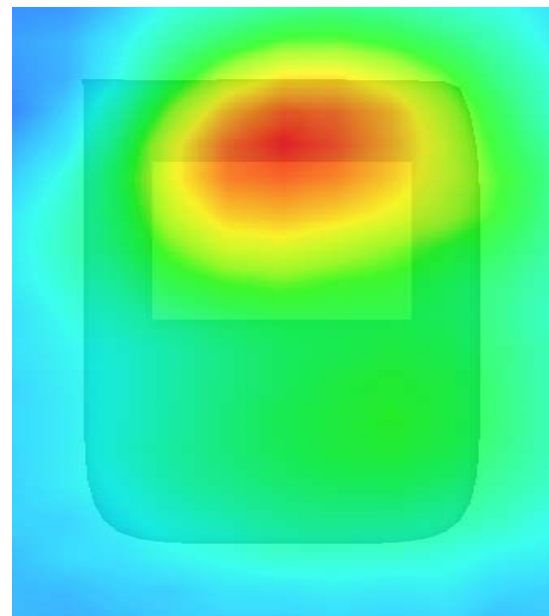
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.0709 | 0.0393 | 0.0220 | 0.0127 | 0.0070 | 0.0046 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 38

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | Middle            |
| <b>Signal</b>          | GSM               |

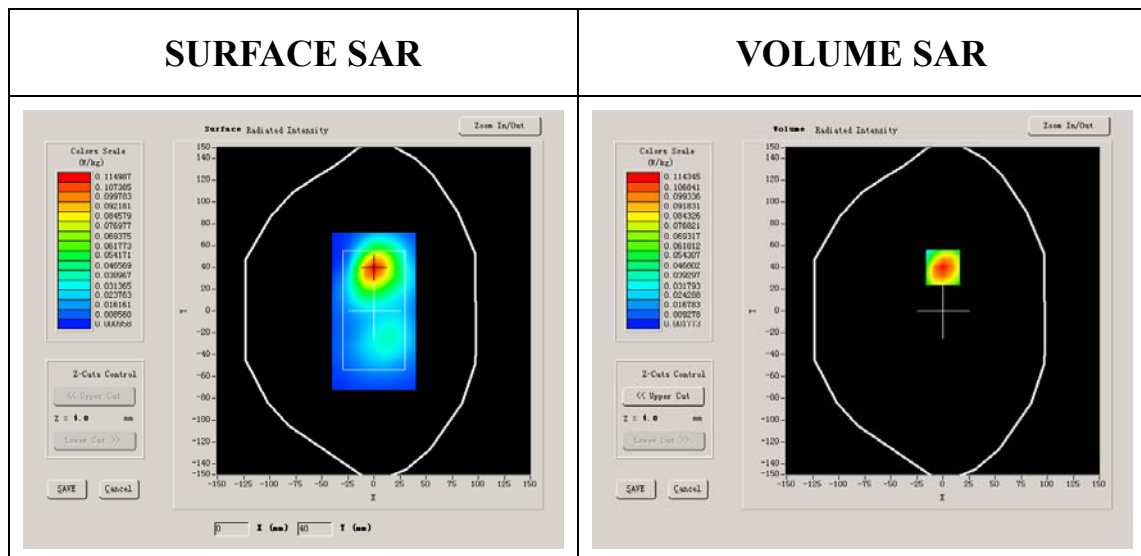
### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1880.000000 |
| <b>Relative permittivity (real part)</b> | 51.540001   |
| <b>Relative permittivity</b>             | 15.070000   |



|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.573978             |
| <b>SAR drift (%)</b>        | 0.090000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |

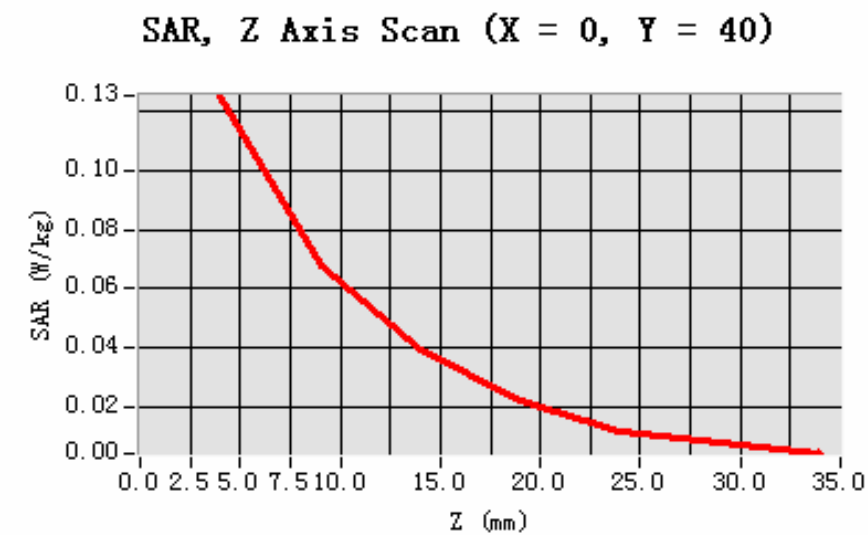


**Maximum location: X=0.00, Y=40.00**

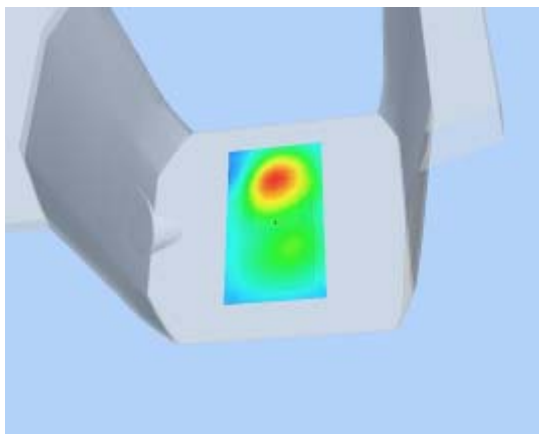
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.364883 |
| <b>SAR 1g (W/Kg)</b>  | 0.732062 |

### Z Axis Scan

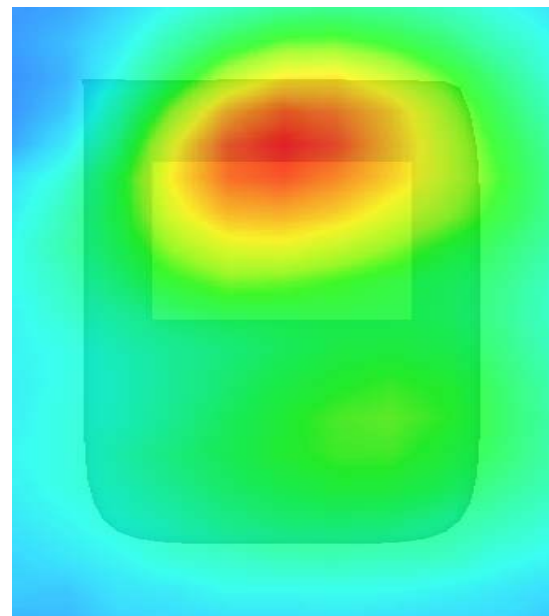
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1253 | 0.0682 | 0.0391 | 0.0223 | 0.0121 | 0.0079 |



**3D scene shot**



**Hot spot position**



## MEASUREMENT 39

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

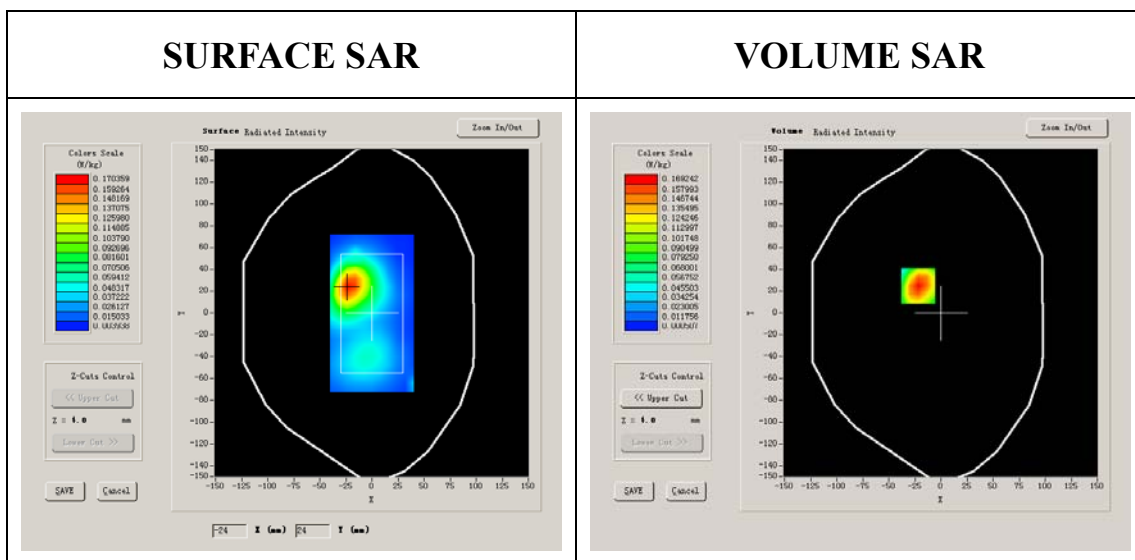
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        | High              |
| <b>Signal</b>          | GSM               |

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1909.800049 |
| <b>Relative permittivity (real part)</b> | 10.000000   |
| <b>Relative permittivity</b>             | 12.000000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.273200             |
| <b>SAR drift (%)</b>        | -0.430000            |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



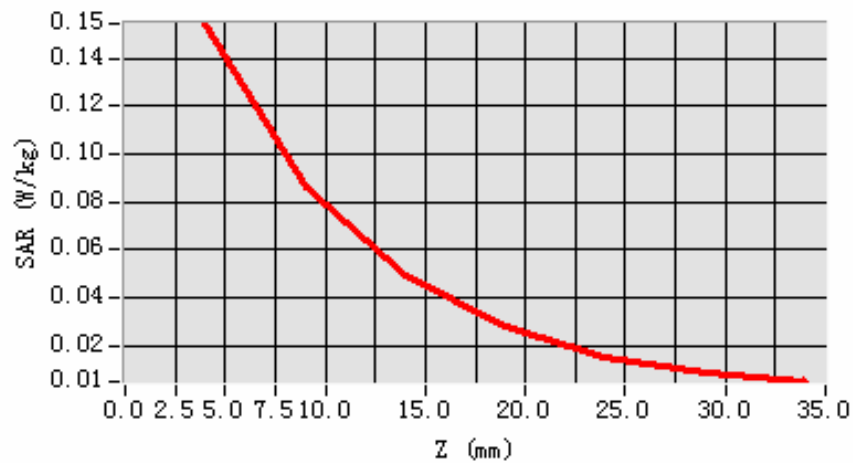
**Maximum location: X=-22.00, Y=25.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.325224 |
| <b>SAR 1g (W/Kg)</b>  | 0.641247 |

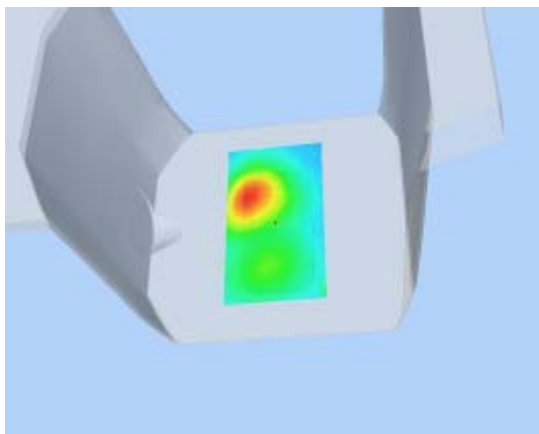
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1544 | 0.0865 | 0.0495 | 0.0286 | 0.0156 | 0.0092 |

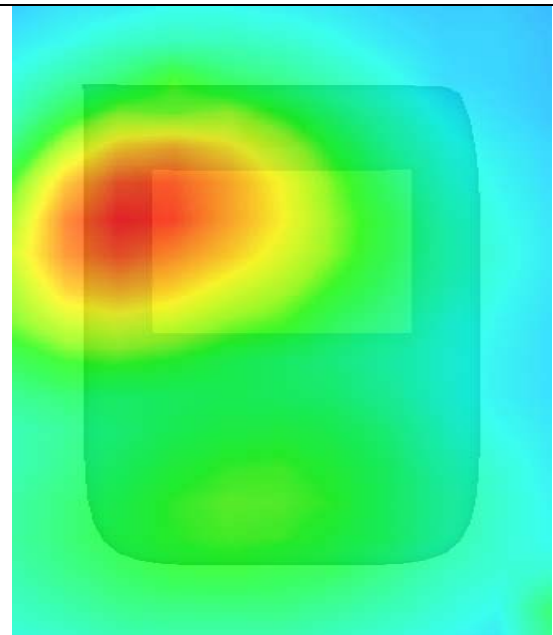
**SAR, Z Axis Scan (X = -22, Y = 25)**



**3D scene shot**



**Hot spot position**



## MEASUREMENT 40

Type: Phone measurement (Complete)

Area scan resolution:  $dx=8\text{mm}, dy=8\text{mm}$

Zoom scan resolution:  $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

Date of measurement: 1/9/2010

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

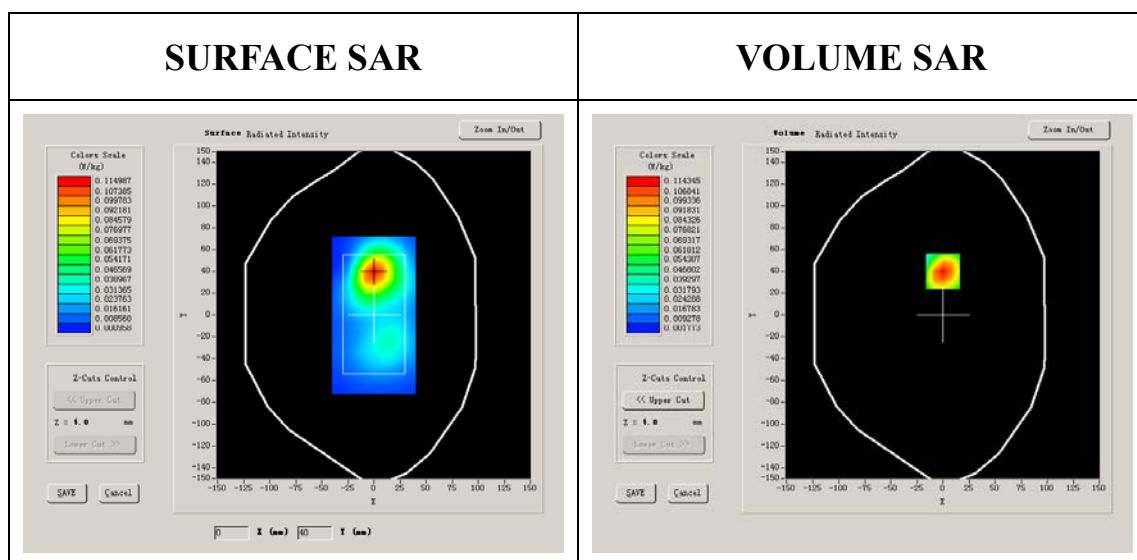
|                 |                   |
|-----------------|-------------------|
| Phantom File    | surf_sam_plan.txt |
| Phantom         | Validation plane  |
| Device Position | Body              |
| Band            | GSM1900           |
| Channels        | Middle            |
| Signal          | GSM               |

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

|                                   |             |
|-----------------------------------|-------------|
| Frequency (MHz)                   | 1880.000000 |
| Relative permittivity (real part) | 51.540001   |
| Relative permittivity             | 15.070000   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.573978             |
| <b>SAR drift (%)</b>        | 0.090000             |
| <b>Ambient Temperature:</b> | 22.5°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:8                  |



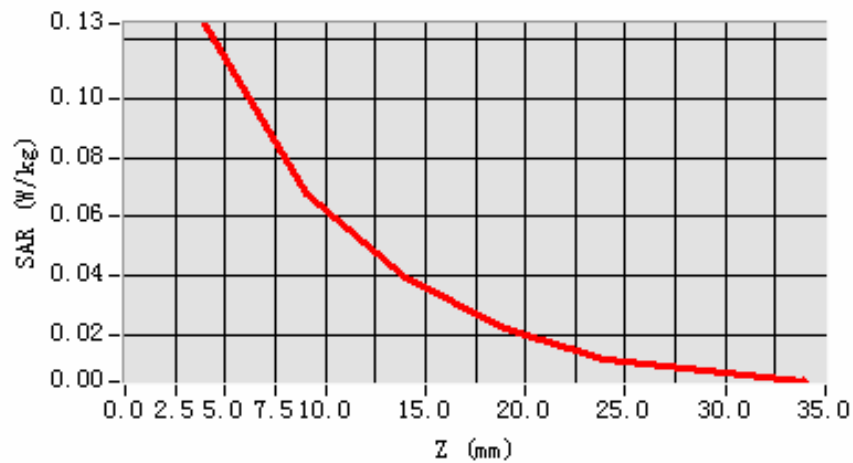
**Maximum location: X=0.00, Y=40.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.364144 |
| <b>SAR 1g (W/Kg)</b>  | 0.730522 |

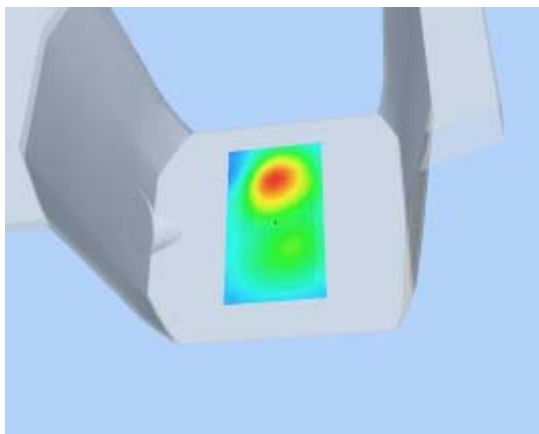
### Z Axis Scan

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0000 | 0.1253 | 0.0682 | 0.0391 | 0.0223 | 0.0121 | 0.0079 |

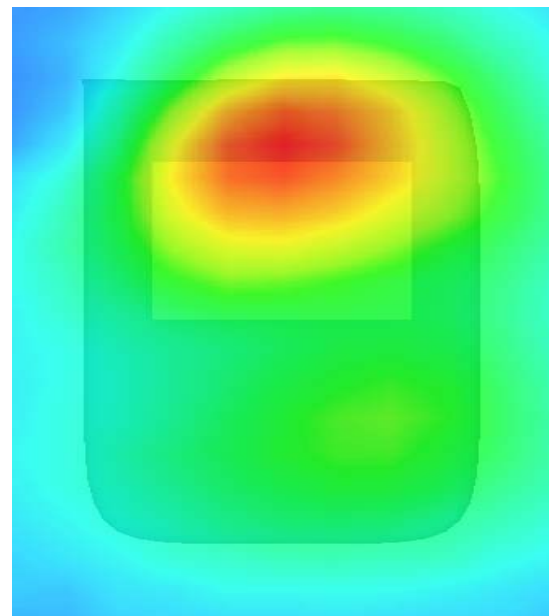
**SAR, Z Axis Scan (X = 0, Y = 40)**



**3D scene shot**



**Hot spot position**





## System Performance Check Data(835MHz Head)

Type: Phone measurement (Complete)

Date of measurement: 1/9/2010

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

### A. Experimental conditions.

|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM 835MHz        |
| <b>Channels</b>        |                   |
| <b>Signal</b>          | CW                |

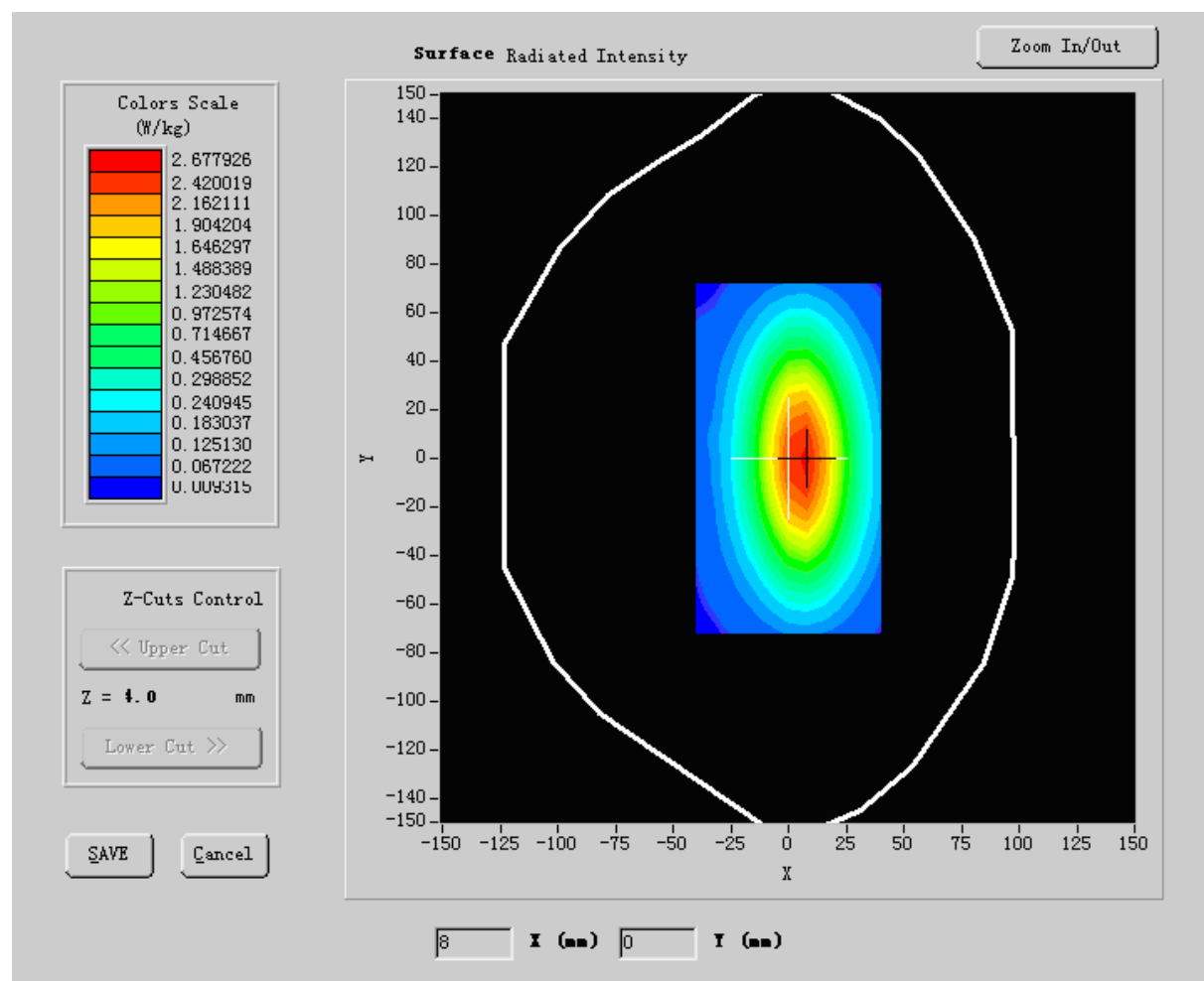
### B. SAR Measurement Results

Middle Band SAR:

|  |           |
|--|-----------|
| <b>Frequency (MHz)</b>                   | 835.00000 |
| <b>Relative permittivity (real part)</b> | 40.669998 |
| <b>Relative permittivity</b>             | 18.926250 |
| <b>Conductivity (S/m)</b>                | 0.866612  |

|                             |                      |
|-----------------------------|----------------------|
| <b>SAR drift (%)</b>        | -0.050000            |
| <b>Ambient Temperature:</b> | 22.6°C               |
| <b>Liquid Temperature:</b>  | 22.3°C               |
| <b>ConvF:</b>               | 28.479,25.214,27.196 |
| <b>Crest factor:</b>        | 1:1                  |

## SURFACE SAR



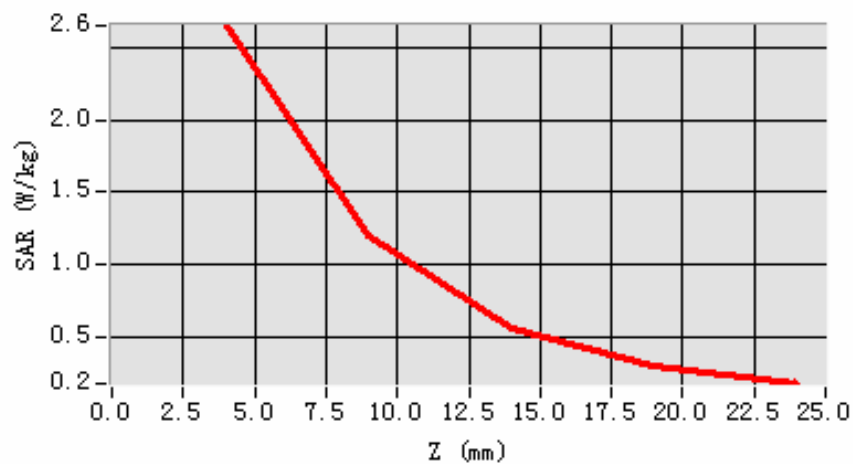
**Maximum location: X=5.00, Y=1.00**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 1.946643 |
| <b>SAR 1g (W/Kg)</b>  | 2.753735 |

### Z Axis Scan

|                   |               |               |               |               |               |
|-------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Z (mm)</b>     | <b>0.00</b>   | <b>4.00</b>   | <b>9.00</b>   | <b>14.00</b>  | <b>19.00</b>  |
| <b>SAR (W/Kg)</b> | <b>0.0000</b> | <b>2.6486</b> | <b>1.2069</b> | <b>0.5583</b> | <b>0.3002</b> |

**SAR, Z Axis Scan (X = 5, Y = 1)**



## System Performance Check Data(835MHz Body)

Type: Phone measurement (Complete)

Date of measurement: 1/9/2010

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

### A. Experimental conditions.

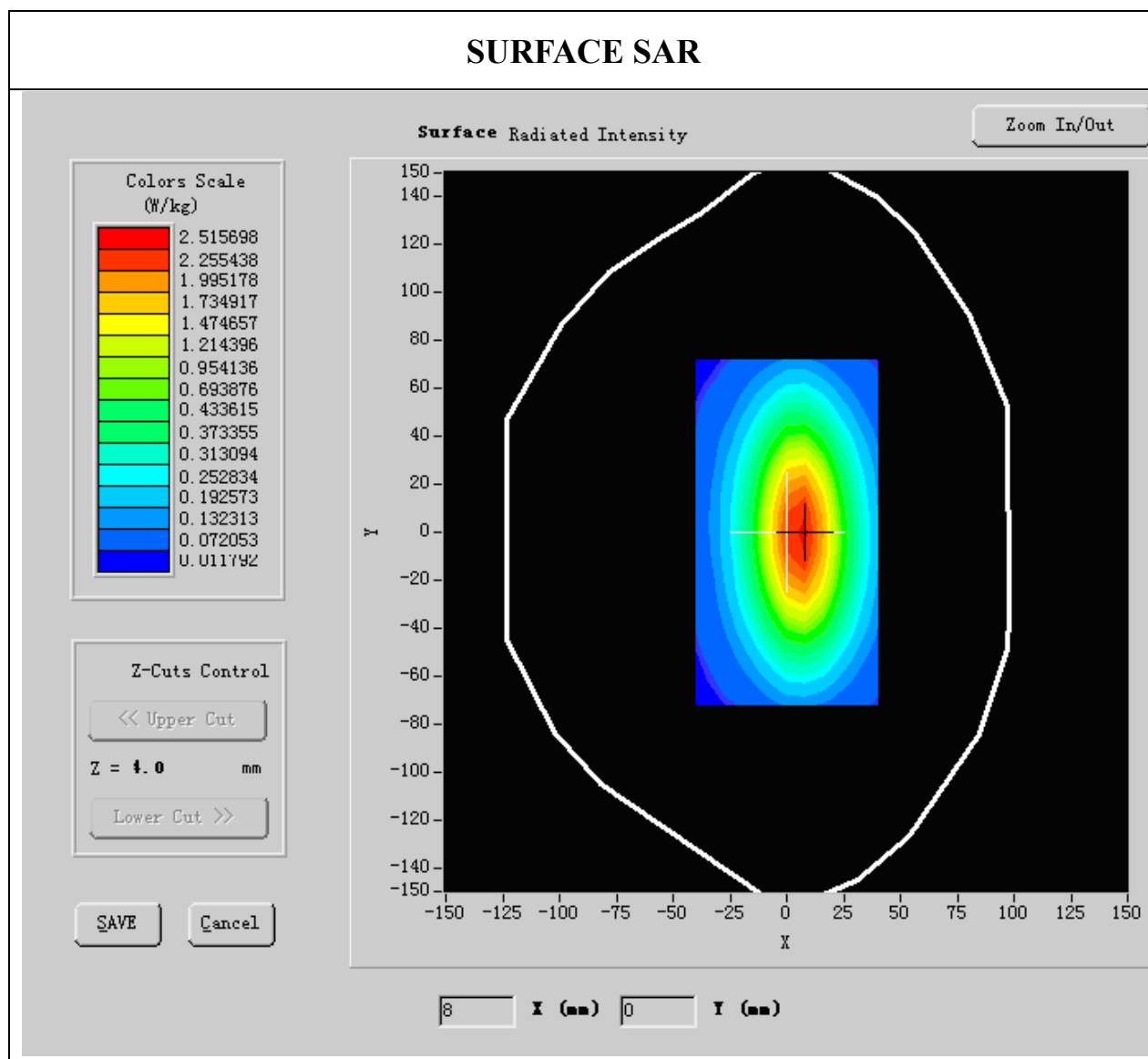
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM 835MHz        |
| <b>Channels</b>        |                   |
| <b>Signal</b>          | CW                |

### B. SAR Measurement Results

Middle Band SAR:

|  |            |
|--|------------|
| <b>Frequency (MHz)</b>                   | 835.000000 |
| <b>Relative permittivity (real part)</b> | 54.116001  |
| <b>Relative permittivity</b>             | 15.070000  |
| <b>Conductivity (S/m)</b>                | 0.974596   |

|                             |                      |
|-----------------------------|----------------------|
| <b>SAR drift (%)</b>        | -0.140000            |
| <b>Ambient Temperature:</b> | 23.5°C               |
| <b>Liquid Temperature:</b>  | 22.8°C               |
| <b>ConvF:</b>               | 28.559,25.681,27.588 |
| <b>Crest factor:</b>        | 1:1                  |

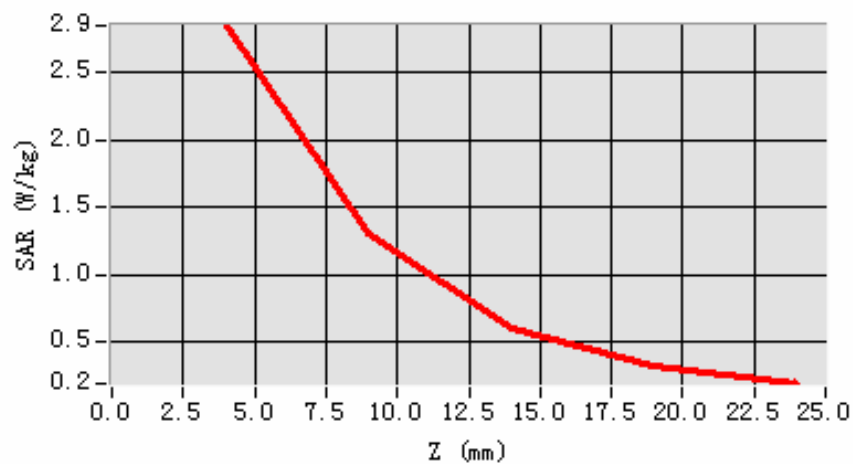


|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 1.71663  |
| SAR 1g (W/Kg)  | 2.774634 |

### Z Axis Scan

|            |        |        |        |        |        |
|------------|--------|--------|--------|--------|--------|
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  |
| SAR (W/Kg) | 0.0000 | 2.8536 | 1.3061 | 0.6041 | 0.3211 |

**SAR, Z Axis Scan (X = 5, Y = 1)**



## System Performance Check Data(1900MHz Head)

Type: Phone measurement (Complete)

Date of measurement: 1/9/2010

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

### A. Experimental conditions.

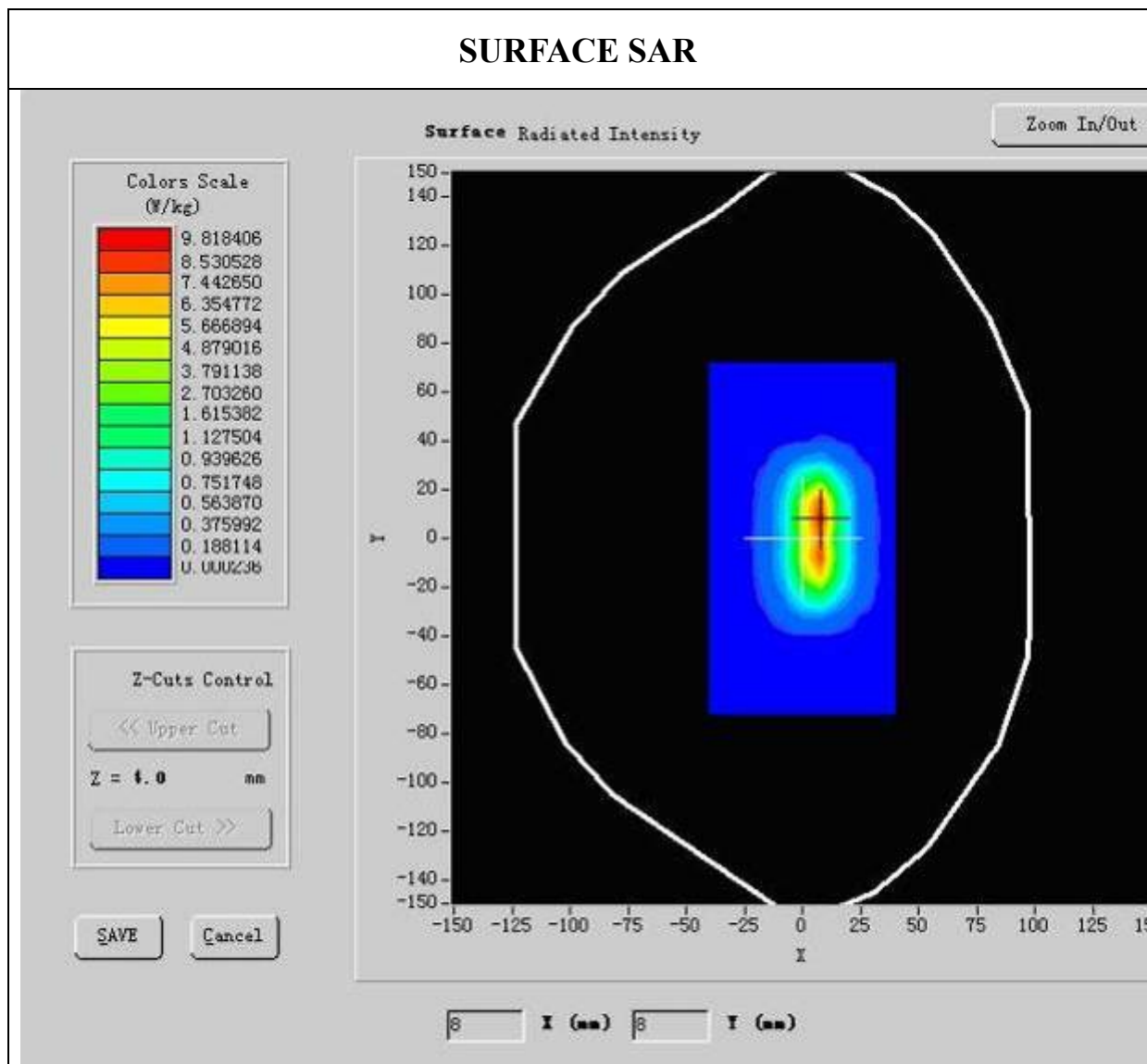
|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        |                   |
| <b>Signal</b>          | CW                |

### B. SAR Measurement Results

Lower Band SAR:

|  |             |
|--|-------------|
| <b>Frequency (MHz)</b>                   | 1900.000000 |
| <b>Relative permittivity (real part)</b> | 39.481223   |
| <b>Relative permittivity</b>             | 12.991650   |
| <b>Conductivity (S/m)</b>                | 1.395758    |

|                             |                      |
|-----------------------------|----------------------|
| <b>SAR drift (%)</b>        | 0.570000             |
| <b>Ambient Temperature:</b> | 23.5°C               |
| <b>Liquid Temperature:</b>  | 22.8°C               |
| <b>ConvF:</b>               | 40.136,34.843,38.721 |
| <b>Crest factor:</b>        | 1:1                  |



**Maximum location: X=7.00, Y=8.00**

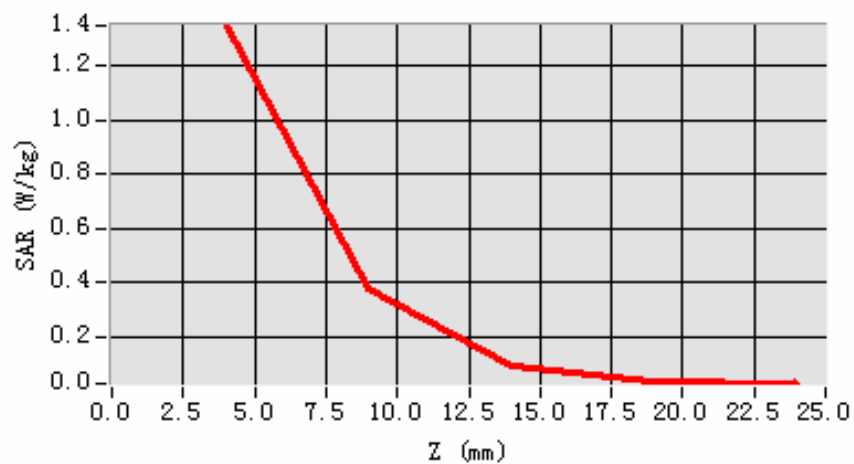


|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 5.978466 |
| SAR 1g (W/Kg)  | 9.888446 |

### Z Axis Scan

|            |        |        |        |        |        |
|------------|--------|--------|--------|--------|--------|
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  |
| SAR (W/Kg) | 0.0000 | 1.3503 | 0.3791 | 0.0904 | 0.0338 |

**SAR, Z Axis Scan (X = 7, Y = 8)**



## System Performance Check Data(1900MHz Body)

Type: Phone measurement (Complete)

Date of measurement: 1/9/2010

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

### A. Experimental conditions.

|                        |                   |
|------------------------|-------------------|
| <b>Phantom File</b>    | surf_sam_plan.txt |
| <b>Phantom</b>         | Validation plane  |
| <b>Device Position</b> | Body              |
| <b>Band</b>            | GSM1900           |
| <b>Channels</b>        |                   |
| <b>Signal</b>          | CW                |

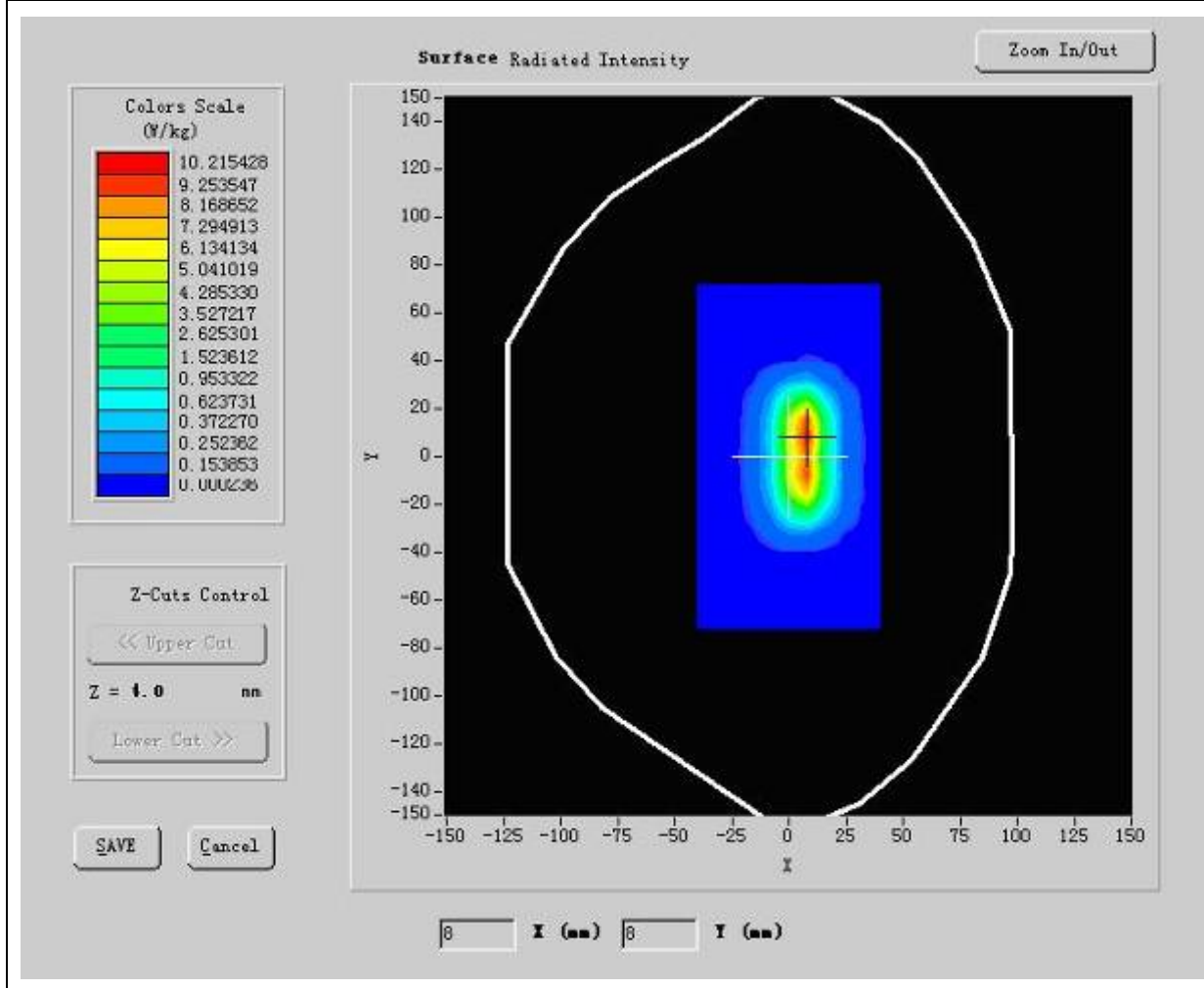
### B. SAR Measurement Results

Lower Band SAR:

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 1900.000000 |
| <b>Relative permittivity (real part)</b>      | 51.540001   |
| <b>Relative permittivity (imaginary part)</b> | 12.991650   |

|                             |                      |
|-----------------------------|----------------------|
| <b>Conductivity (S/m)</b>   | 1.573978             |
| <b>SAR drift (%)</b>        | 0.570000             |
| <b>Ambient Temperature:</b> | 23.5°C               |
| <b>Liquid Temperature:</b>  | 22.8°C               |
| <b>ConvF:</b>               | 40.625,34.773,38.535 |
| <b>Crest factor:</b>        | 1:1                  |

### SURFACE SAR



Maximum location: X=7.00, Y=8.00

|                |          |
|----------------|----------|
| SAR 10g (W/Kg) | 5.746644 |
| SAR 1g (W/Kg)  | 9.922524 |

### Z Axis Scan

|            |        |        |        |        |        |
|------------|--------|--------|--------|--------|--------|
| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  |
| SAR (W/Kg) | 0.0000 | 1.3503 | 0.3791 | 0.0904 | 0.0338 |

**SAR, Z Axis Scan (X = 7, Y = 8)**

