FCC SAR

# TEST REPORT

of

**Wireless network application card**

| | |
|---|---|
| Model Name: | 210-SA-00001 |
| Trade Name: | ConstantConnect and Protect |
| Report No.: | SZ09080138S01 |
| FCC ID: | XGE210SA1 |

prepared for

**Yoggie Security Systems Ltd.**
Block 310, P.O.Box 156, Beth Halevy 42870, Israel

*pdtrepared by*

**Shenzhen Electronic Product Quality Testing Center**
**Morlab Laboratory**
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# Contents

# 1. General Information

## 1.1. Notes

The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Electronic Product Quality Testing Center 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 Electronic Product Quality Testing Center 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.: | SZ09080138S01 |
| Date of Issue: | Sep 7, 2009 |
| Date of Tests: | Sep 4, 2009 –Sep 4, 2009 |
| Responsible for Accreditation: | Shu Luan |
| Project Manager: | Li Lei |
| Deputy Project Manager: | Chenchao |

## 1.3. Conclusion

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory has verified that all tests as listed in the section 4.5 of this report haven been performed successfully with the tested equipment.

Chenchao
***Tested by***
(Responsible for the Test Report)

LiLei
***Reviewed by***
(Verification of the Test Report)

Shu Luan
***Approved by***
(Responsible Test Lab Manager)

# 2. Testing Laboratory

## 2.1. Identification of the Responsible Testing Laboratory

| | |
|---|---|
| Company Name: | Shenzhen Electronic Product Quality Testing Center |
| 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 Electronic Product Quality Testing Center 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 L1659 (see Annex A) |

## 2.4. List of Test Equipments

| No. | Instrument | Type |
|---|---|---|
| 1 | PC | Dell (Pentium IV 2.4GHz, SN:X10-23533) |
| 2 | Network Emulator | Rohde&Schwarz (CMU200, SN:105894) |
| 3 | Voltmeter | Keithley (2000, SN:1000572) |
| 4 | Synthetizer | Rohde&Schwarz (SML_03, SN:101868) |
| 5 | Amplifier | Nucl 閏 udes (ALB216, SN:10800) |
| 6 | Power Meter | Rohde&Schwarz (NRVD, SN:101066) |
| 7 | Probe | Antennessa (SN:SN_3708_EP80) |
| 8 | Phantom | Antennessa (SN:SN_36_08_SAM62) |
| 9 | Liquid | Antennessa (Last Calibration:21 08 04) |

# 3. Technical Information

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

## 3.1. Identification of Applicant

| | |
|---|---|
| Company Name: | Yoggie Security Systems Ltd. |
| Address: | Block 310, P.O.Box 156, Beth Halevy 42870, Israel |

## 3.2. Identification of Manufacturer

| | |
|---|---|
| Company Name: | Yoggie Security Systems Ltd. |
| Address: | Block 310, P.O.Box 156, Beth Halevy 42870, Israel |

## 3.3. Equipment Under Test (EUT)

| | |
|---|---|
| Brand Name: | ConstantConnect and Protect |
| Type Name: | ConstantConnect and Protect |
| Marking Name: | 210-SA-00001 |
| Hardware Version: | 01 |
| Software Version: | v14_10_20 |
| Frequency Bands: | WIFI 802.11b/g |
| Modulation Mode: | WIFI 802.11 b DSSS<br>WIFI 802,11 g OFDM |
| Antenna type: | Build inside |
| Accessories: | N.A |

### 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# | 01 | v14_10_20 |

# 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 Bulletin 65 (Edition 97-01), Supplement C (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 Techuiques. |

## 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) | = | 3.30V |
| | Low Voltage (LV) | = | 3.00V |
| | High Voltage (HV) | = | 3.60V |
| Test frequency: | 802.11 b/g | | |
| Operation mode: | Call established | | |
| Power Level: | Maximum output power | | |

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 802.11 b/g, 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

### I. INFORMATIONS ON THE TESTING

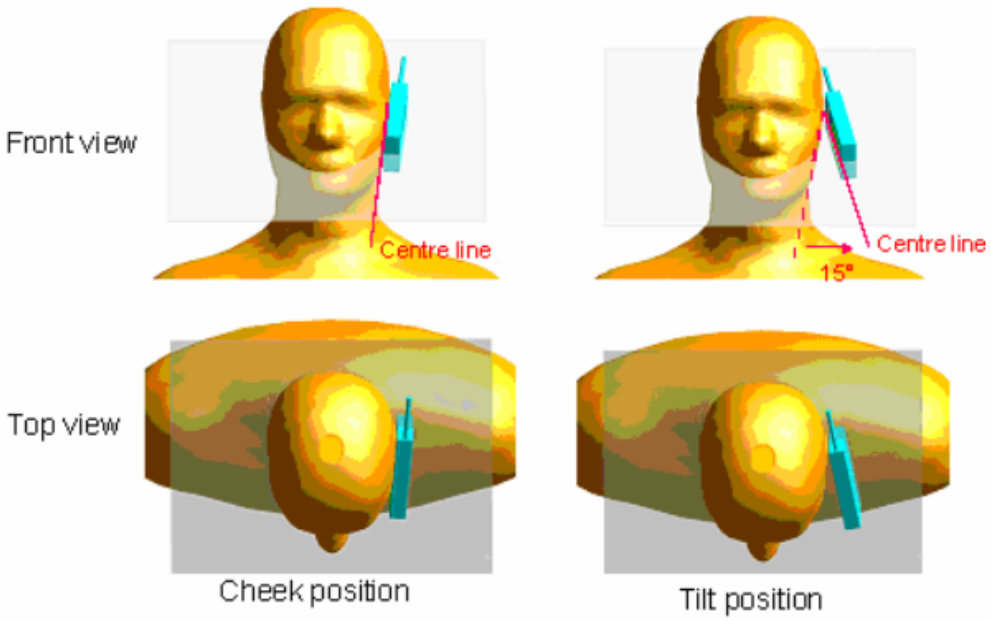
#### I.1. Normative reference

IEEE 1528: Recommended Practice for determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. Institute of Electrical and Electronics Engineers, INC., 2003.

#### I.3. Positions and test conditions of the mobile phone under test

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:

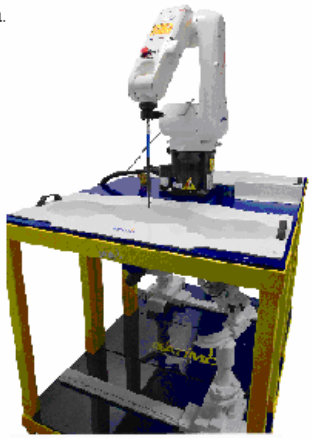
The mobile phone is well place in the "cheek" position as described above. Then the mobile phone is moved outward away from the mouth by an angle of 15 degrees or until contact with the ear lost.

## 4.3.2. The 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.



COMOSAR bench

The mobile phone 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 10 g mass.

**II.1. Phantom**

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2 mm +/- 0,2 mm. It enables the dosimetric evaluation of left and right hand phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

**II.2. 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 : 2.5 mm
- 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 : <0.50 dB
- Calibration range : 835 to 2500 MHz for head & body simulating liquid
- Angle between probe axis (evaluation axis) and suface normal line : less than 30°

**II.3. 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 16 mm * 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.

**II.4 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 minimise 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 1 mm 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.

## 4.3.3. Uncertainty Assessment

The following table includes the uncertainty table of the IEEE 1528.
The values are determined by Antennessa.

| 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 (+-%) | Vi |
| **Measurement System** | | | | | | | | | |
| Probe calibration | E.2.1 | 7.0 | N | 1 | 1 | 1 | 7.00 | 7.00 | ∞ |
| Axial Isotropy | E.2.2 | 2.5 | R | $\sqrt{3}$ | $(1-Cp)^{1/2}$ | $(1-Cp)^{1/2}$ | 1.02 | 1.02 | ∞ |
| Hemispherical Isotropy | E.2.2 | 4.0 | R | $\sqrt{3}$ | $\sqrt{Cp}$ | $\sqrt{Cp}$ | 1.63 | 1.63 | ∞ |
| Boundary effect | E.2.3 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.58 | ∞ |
| Linearity | E.2.4 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| System detection limits | E.2.5 | 1.0 | R | $\sqrt{3}$ | 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 | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| Integration Time | E.2.8 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| RF ambient Conditions | E.6.1 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| Probe positioner Mechanical Tolerance | E.6.2 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| Probe positioning with respect to Phantom Shell | E.6.3 | 0.05 | R | $\sqrt{3}$ | 1 | 1 | 0.03 | 0.03 | ∞ |
| Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation | E.5.2 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| Test sample Related | | | | | | | | | |
| Test sample positioning | E.4.2.1 | 0.03 | N | 1 | 1 | 1 | 0.03 | 0.03 | N-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 | 4.76 | R | $\sqrt{3}$ | 1 | 1 | 2.75 | 2.75 | ∞ |
| Phantom and Tissue Parameters | | | | | | | | | |
| Phantom Uncertainty (Shape and thickness tolerances) | E.3.1 | 0.05 | R | $\sqrt{3}$ | 1 | 1 | 0.03 | 0.03 | ∞ |
| Liquid conductivity - deviation from target value | E.3.2 | 0.57 | R | $\sqrt{3}$ | 0.64 | 0.43 | 0.21 | 0.14 | ∞ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 | 3.66 | R | $\sqrt{3}$ | 0.6 | 0.49 | 1.27 | 1.04 | $\infty$ |
| Liquid permittivity - measurement uncertainty | E.3.3 | 10.00 | N | 1 | 0.6 | 0.49 | 6.00 | 4.90 | M |
| Combined Standard Uncertainty | | | RSS | | | | 11.28 | 10.78 | |
| Expanded Uncertainty (95% Confidence interval) | | | k | | | | 21.99 | 21.03 | |

## 4.3.4. 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 | 2450 MHz |
|---|---|
| Target value（1g） | 52.4 W/Kg(body) |
| 250 mW input power | 12.9 W/Kg (body) |
| Test value（1g） | 51.6 W/Kg (body) |

**Note**:Please refer to check the system performance data, the first 83-85 page.

### 4.3.5. 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.

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 1: Dielectric Performance of Body Tissue Simulating Liquid**

| **Temperature: 22.0~23.8°C, humidity: 54~60%.** | | | |
|---|---|---|---|
| / | **Frequency** | **Permittivity ε** | **Conductivity σ (S/m)** |
| **Target value** | 2450 MHz | 52.70 | 54.59 |
| **Validation value (Aug 28)** | 2450 MHz | 1.950 | 1.93 |

## 4.3.6. Simulant liquids

Simulant liquids that are used for testing at frequencies of 2450MHz, 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 (% by weight ) | Frequency Band |
|---|---|
| | 2450MHz |
| Tissue Type | Body |
| Water | 52.4 |
| Salt(NaCl) | 1.4 |
| Sugar | 45.0 |
| HEC | 1.0 |
| Bactericide | 0.1 |
| Triton | 0.0 |
| DGBE | 0.0 |
| Acticide SPX | 0.0 |
| Dielectric Constant | 52.7 |
| Conductivity (S/m) | 1.95 |

## 4.4. Items used in the Test Results List

Terms in the column “Verdict” for the test results list of the section 4.5:

| 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 |

## 4.5. Test Results List

Summary of Measurement Results (WIFI 802.11b)
SAR Values (WIFI 802.11b), 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) |
| Validation Plane with Body device position on (Data Rate 1) | 0.113 | 10.92 |
| Validation Plane with Body device position on (Data Rate 2) | 0.125 | 12.36 |
| Validation Plane with Body device position on (Data Rate 5.5) | 0.135 | 13.11 |
| Validation Plane with Body device position on (Data Rate 11) | 0.163 | 15.68 |
| Validation Plane with Body device position on (Data Rate 1) | 0.120 | 10.92 |
| Validation Plane with Body device position on (Data Rate 2) | 0.128 | 12.36 |
| Validation Plane with Body device position on (Data Rate 5.5) | 0.147 | 13.11 |
| Validation Plane with Body device position on (Data Rate 11) | 0.170 | 15.68 |
| Validation Plane with Body device position on (Data Rate 11) | 0.168 | 15.68 |

ummary of Measurement Results (WIFI 802.11g)
SAR Values (WIFI 802.11g), Measured against the body0.

| Temperature: 23.0~23.8°C, humidity: 54~60%. | | |
|---|---|---|
| Limit of SAR (W/kg) | 1 g Average | |
| | 1.2 | |
| Test Case | Measurement Result (W/kg) | |
| | 1 g Average (W/kg) | Power level (dBm) |
| Validation Plane with Body device position on (Data Rate 6) | 0.229 | 13.91 |
| Validation Plane with Body device position on (Data Rate 9) | 0.238 | 13.99 |
| Validation Plane with Body device position on (Data Rate 12) | 0.248 | 14.10 |
| Validation Plane with Body device position on (Data Rate 18) | 0.255 | 14.24 |
| Validation Plane with Body device position on (Data Rate 24) | 0.273 | 14.75 |
| Validation Plane with Body device position on (Data Rate 36) | 0.276 | 14.90 |
| Validation Plane with Body device position on (Data Rate 48) | 0.285 | 15.23 |
| Validation Plane with Body device position on (Data Rate 54) | 0.297 | 15.65 |
| Validation Plane with Body device position on (Data Rate 54) | 0.289 | 15.65 |
| Validation Plane with Body device position on (Data Rate 54) | 0.286 | 15.65 |

**Note**：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)

# Annex A Accreditation Certificate

China National Accreditation Service for Conformity Assessment

## LABORATORY ACCREDITATION CERTIFICATE

(No. CNAS L1659 )

*China National Accreditation Service for Conformity Assessment has accredited*

**Shenzhen Electronic Product Quality Testing Center**

**(CQCS Testing Co. Ltd.)**

Electronic Testing Building Wenguang Road, Shahe West, Xili Town, Nanshan District, Shenzhen, Guangdong, China

*to ISO/IEC 17025:1999 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing and calibration.*

*The scope of accreditation is detailed in the attached schedule bearing the same accreditation number as above. The schedule forms an integral part of this certificate.*

Date of Issue: 2007-01-17

Date of Expiry: 2009-10-08

Date of Initial Accreditation: 1999-08-03

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation systems for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA), and the signatory to Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).

# Annex B Photographs of the EUT

1 EUT obverse


2 EUT back

3 Laptop

Laptop A

Laptop B

Laptop C

4 EUT Horizontal

5 EUT Vertical

## Annex C Graph Test Results

| TYPE | BAND | PARAMETERS |
|---|---|---|
| Noise | 802.11 b | Measurement 1: Validation Plane with Body device position on (Data Rate 1)<br>Measurement 2: Validation Plane with Body device position on (Data Rate 2)<br>Measurement 3: Validation Plane with Body device position on (Data Rate 5.5)<br>Measurement 4: Validation Plane with Body device position on (Data Rate 11)<br>Measurement 5: Validation Plane with Body device position on (Data Rate 1)<br>Measurement 6: Validation Plane with Body device position on (Data Rate 2)<br>Measurement 7: Validation Plane with Body device position on (Data Rate 5.5)<br>Measurement 8: Validation Plane with Body device position on (Data Rate 11)<br>Measurement 9: Validation Plane with Body device position on back (Data Rate 11) |
| | 802.11 g | Measurement 10::Validation Plane with Body device position on (Data Rate 6)<br>Measurement 11: Validation Plane with Body device position on (Data Rate 9)<br>Measurement 12: Validation Plane with Body device position on (Data Rate 12)<br>Measurement 13: Validation Plane with Body device position on (Data Rate 18)<br>Measurement 14: Validation Plane with Body device position on (Data Rate 24)<br>Measurement 15: Validation Plane with Body device position on (Data Rate 36)<br>Measurement 16: Validation Plane with Body device position on (Data Rate 48)<br>Measurement 17: Validation Plane with Body device position on (Data Rate 54)<br>Measurement 18: Validation Plane with Body device position on back (Data Rate 54)<br>Measurement 18: Validation Plane with Body device |

| | | |
|---|---|---|
| | | position on back (Data Rate 54) |

**Note：** 1.The depth of the body tissue was 15.1cm. with a device to phantom separation distance of 0 mm (taking into account of the IEEE 1528 and the place of the antenna)。

# MEASUREMENT 1

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 7 seconds

## A. Experimental conditions.

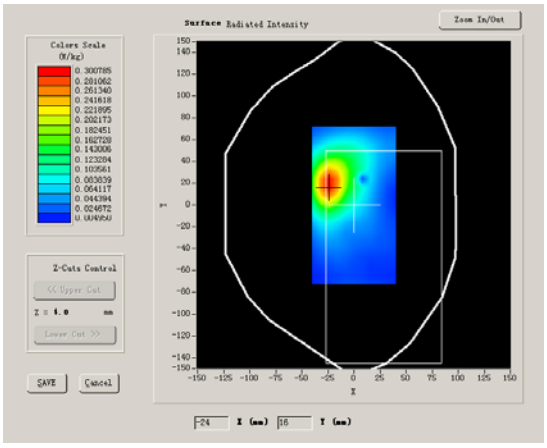
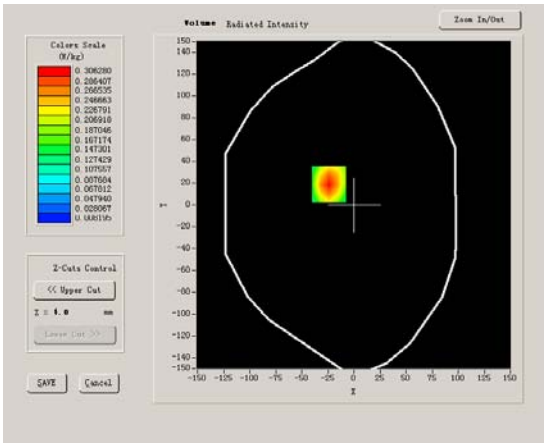
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Lower Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 12.000000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.933467 |
| **Variation (%)** | -0.940000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

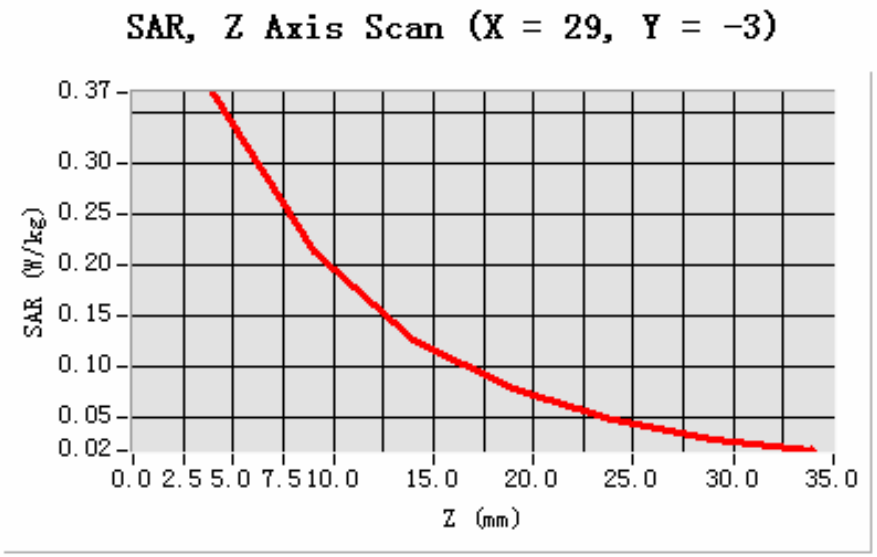
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

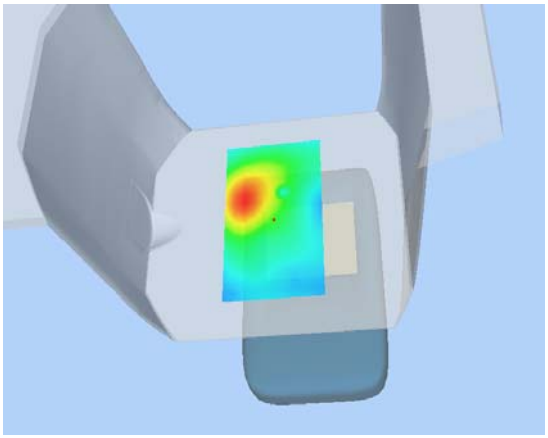
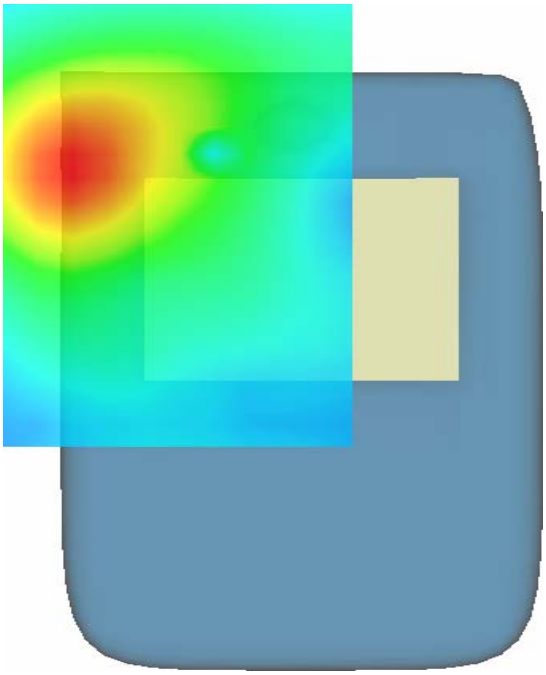
**Maximum location: X=29.00, Y=-3.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.084545 |
| **SAR 1g (W/Kg)** | 0.113533 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3689 | 0.2125 | 0.1243 | 0.0766 | 0.0464 | 0.0270 |




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

# MEASUREMENT 2

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

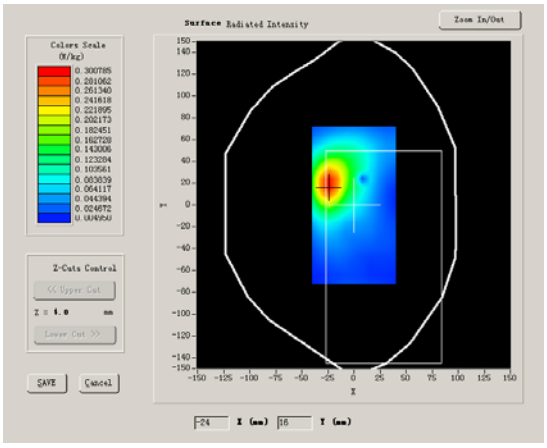
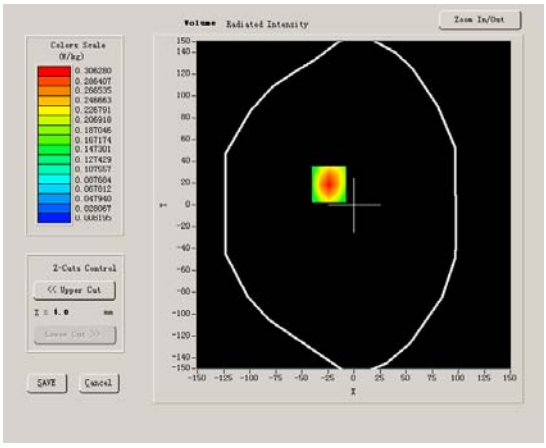
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

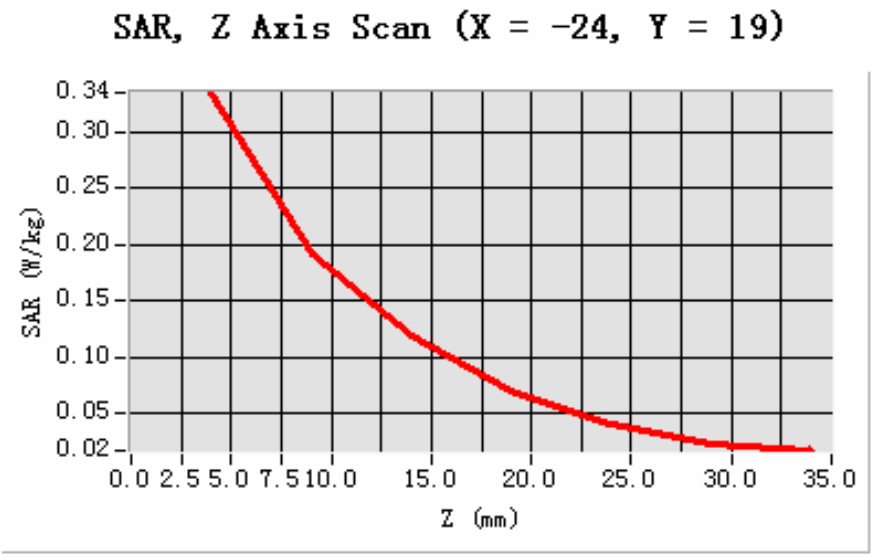
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

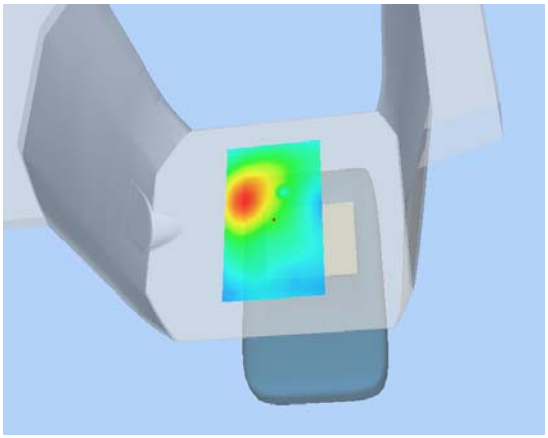
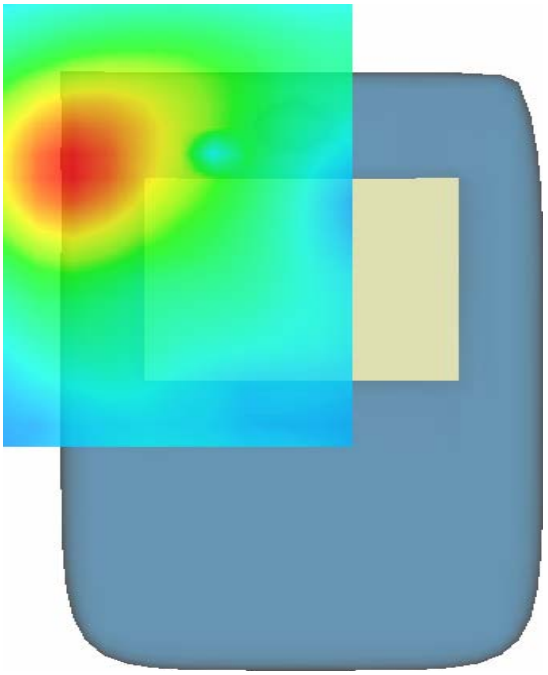
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.090463 |
| **SAR 1g (W/Kg)** | 0.125576 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 3

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 9 seconds

## A. Experimental conditions.

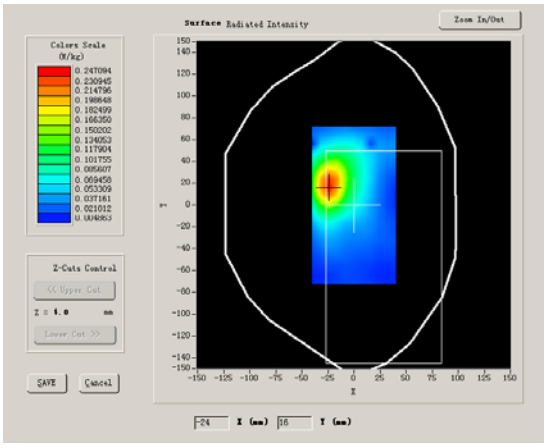
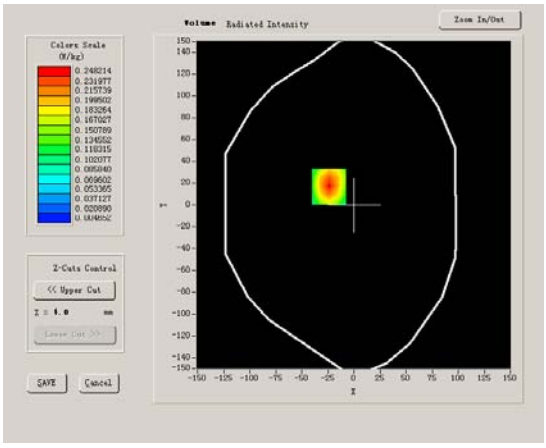
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | High |
| **Signal** | CW |

## B. SAR Measurement Results

Higher Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2480.000000 |
| **Relative permittivity (real part)** | 10.000000 |
| **Relative permittivity** | 12.000000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.273200 |
| **Variation (%)** | -1.100000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

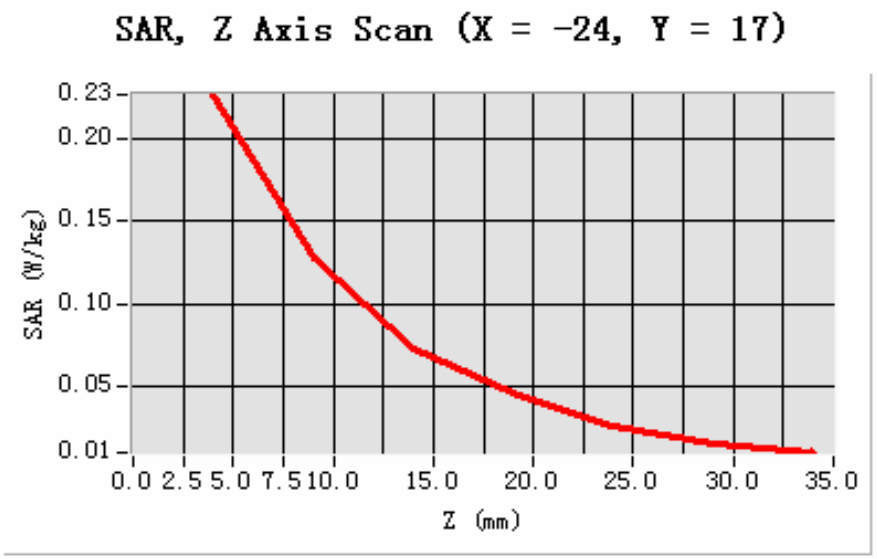
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

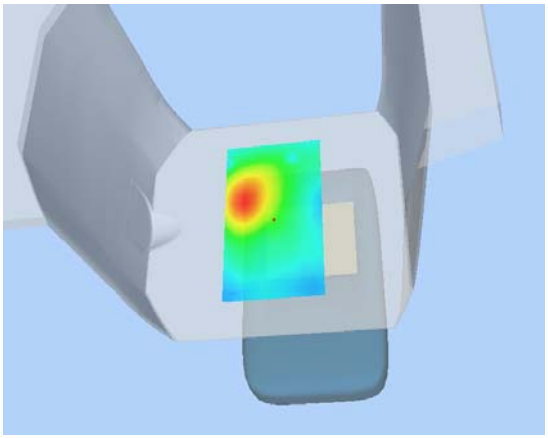
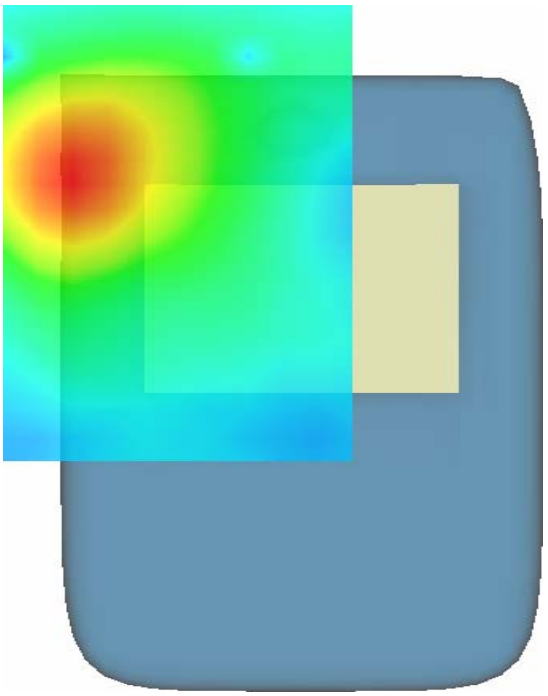
**Maximum location: X=-24.00, Y=17.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.094266 |
| **SAR 1g (W/Kg)** | 0.135155 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.2264 | 0.1285 | 0.0736 | 0.0464 | 0.0262 | 0.0155 |




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

# MEASUREMENT 4

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

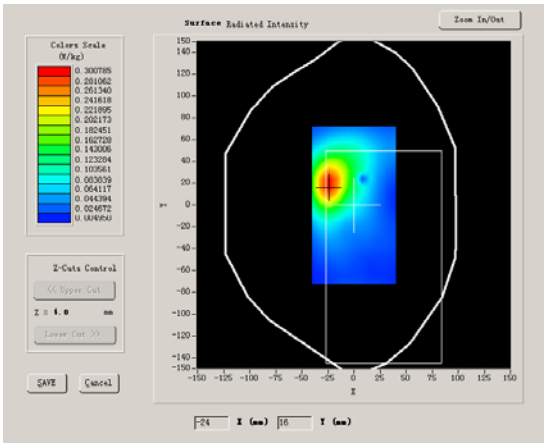
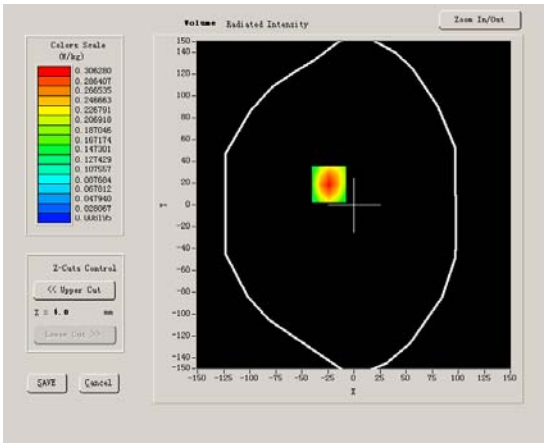
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

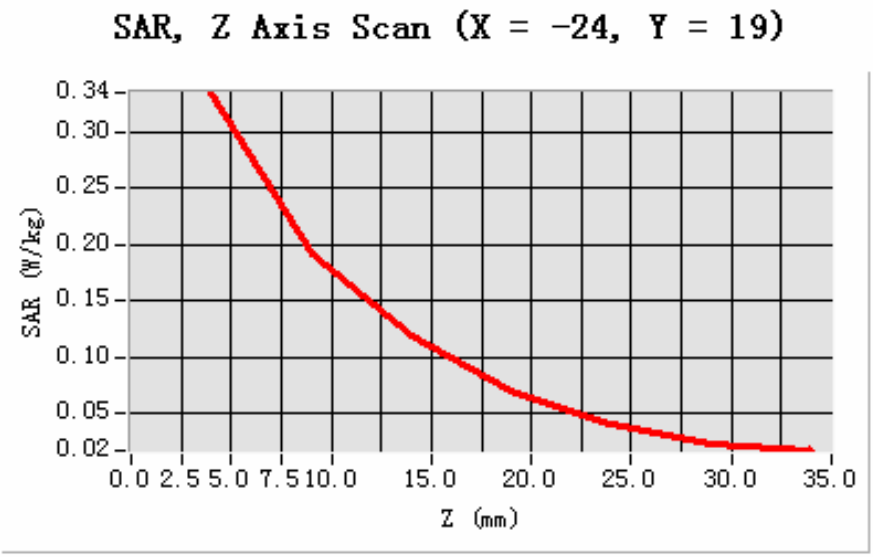
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

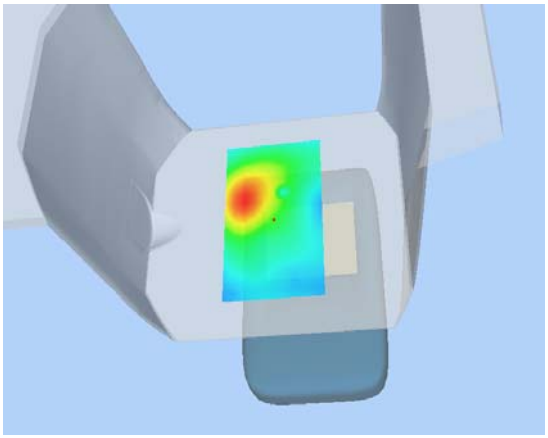
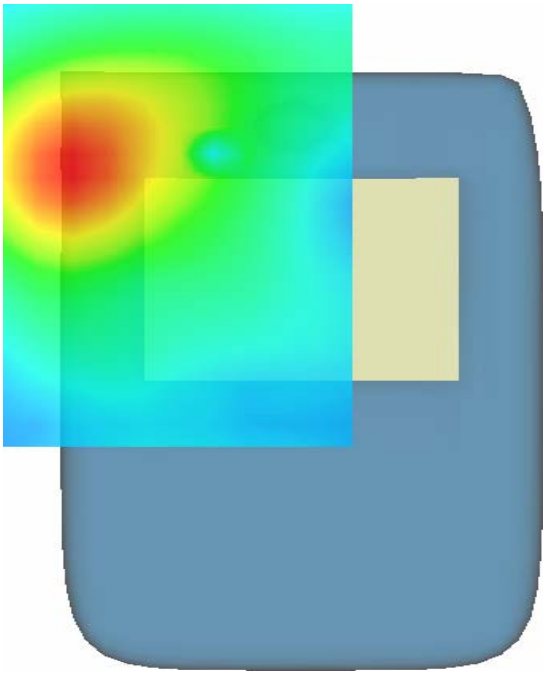
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.104664 |
| **SAR 1g (W/Kg)** | 0.163882 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 5

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

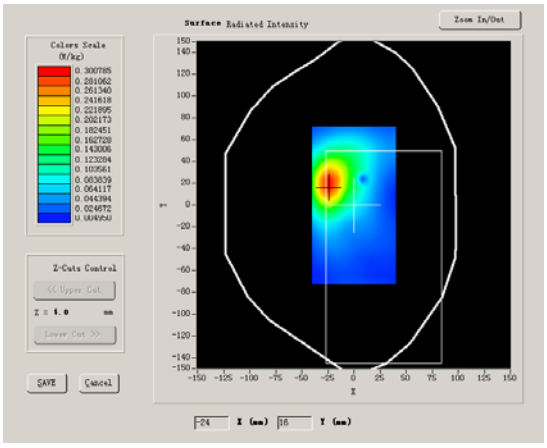
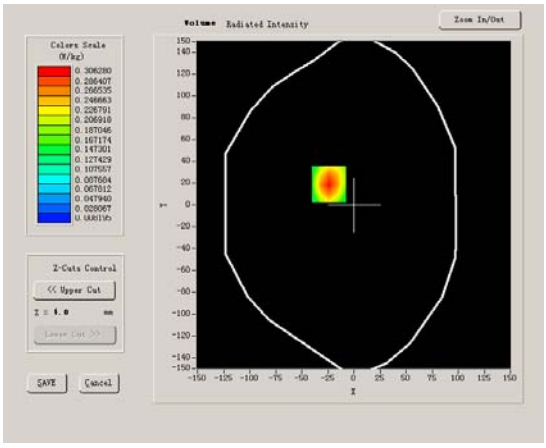
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

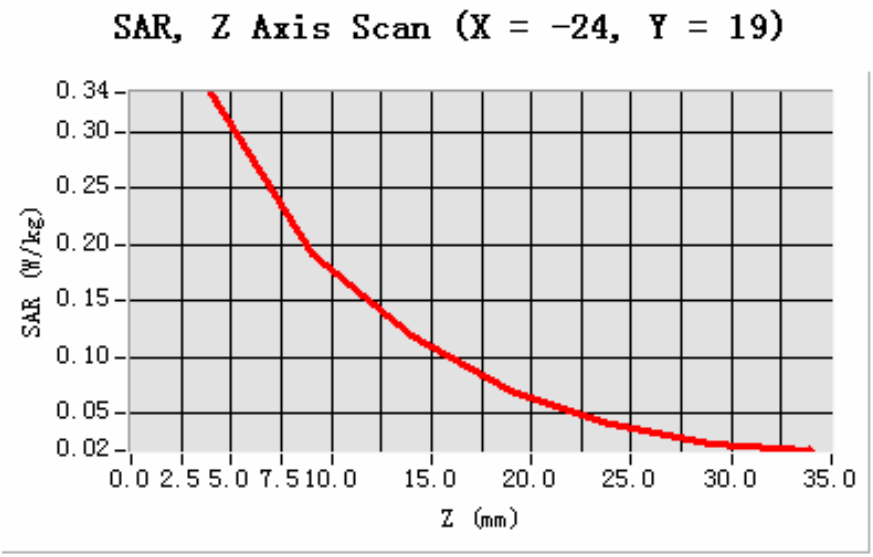
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

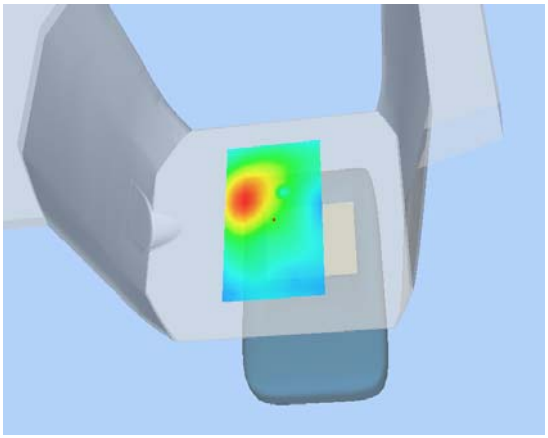
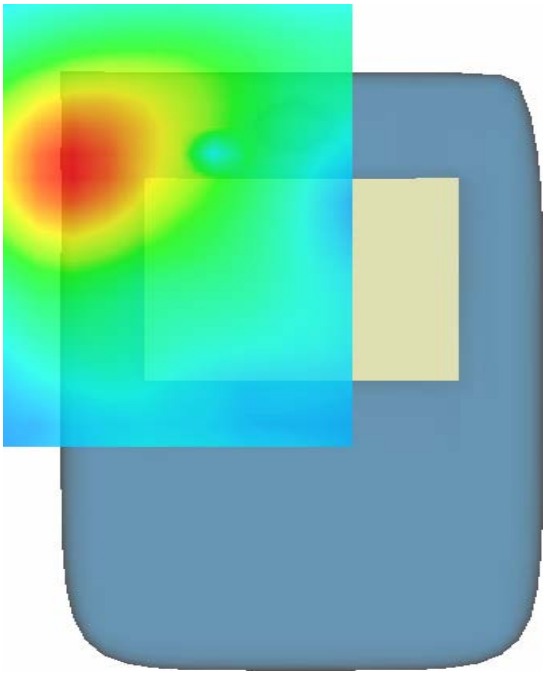
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.082177 |
| **SAR 1g (W/Kg)** | 0.120446 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 6

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

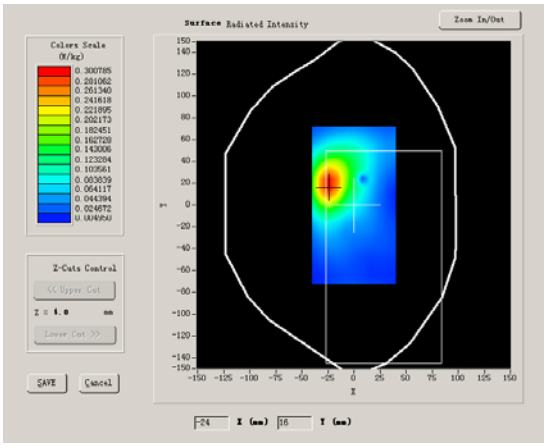
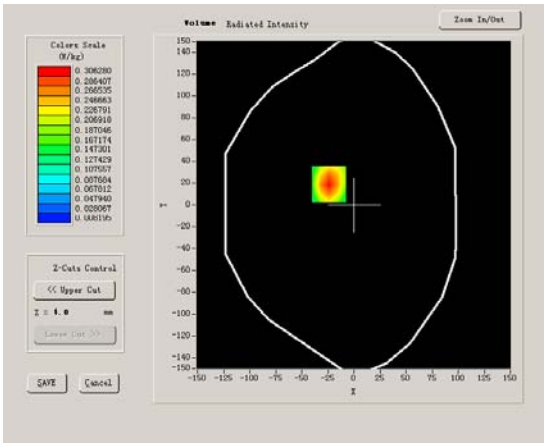
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

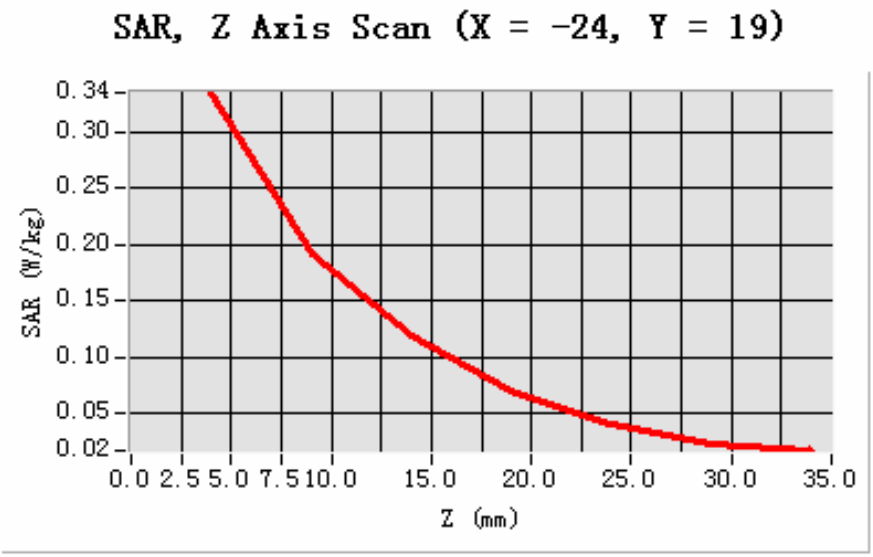
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

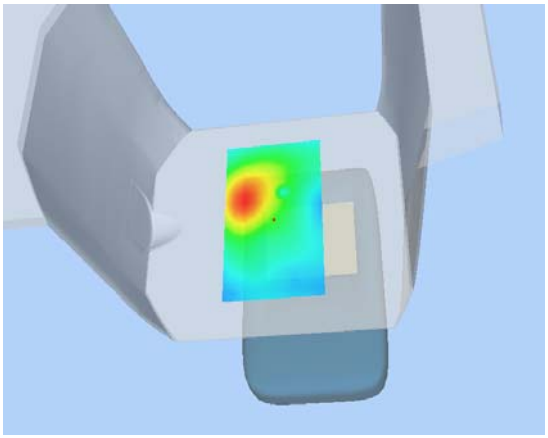
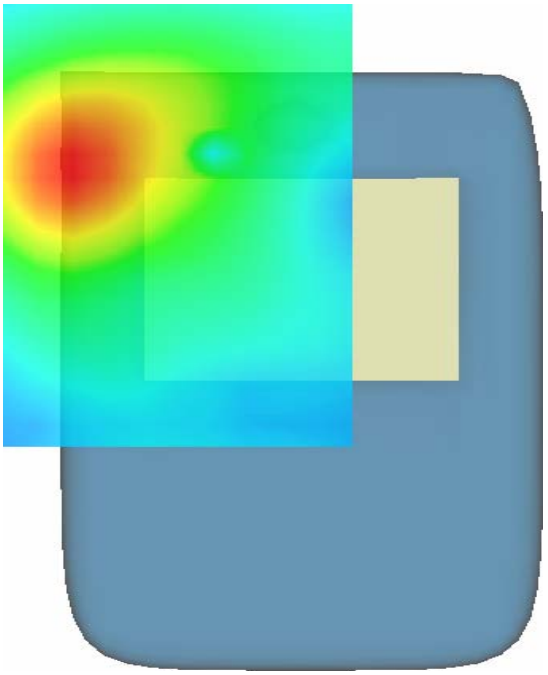
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.089577 |
| **SAR 1g (W/Kg)** | 0.128466 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 7

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

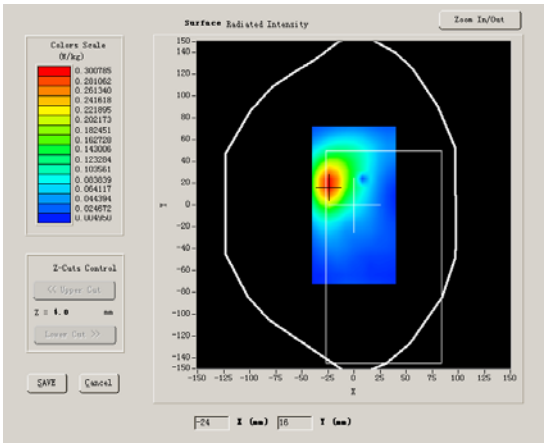
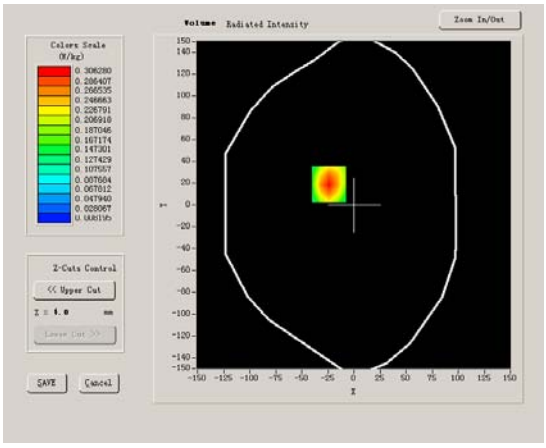
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

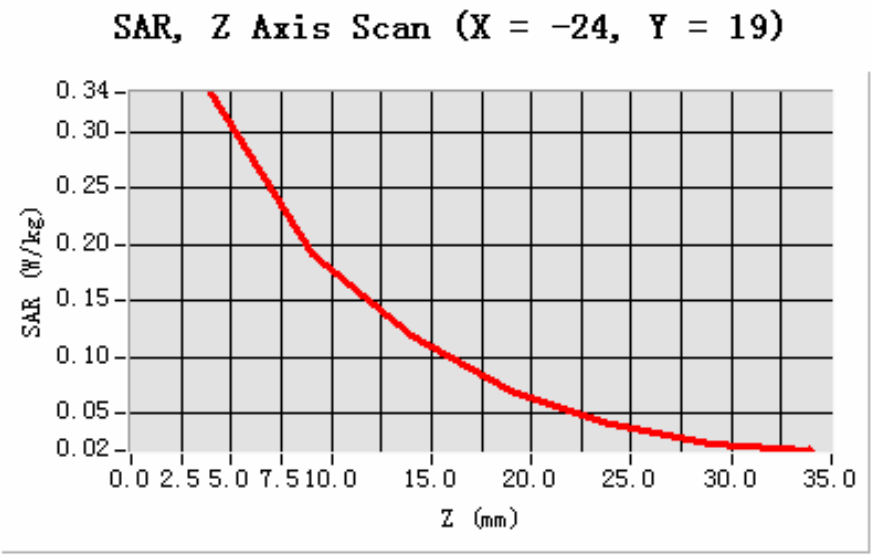
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

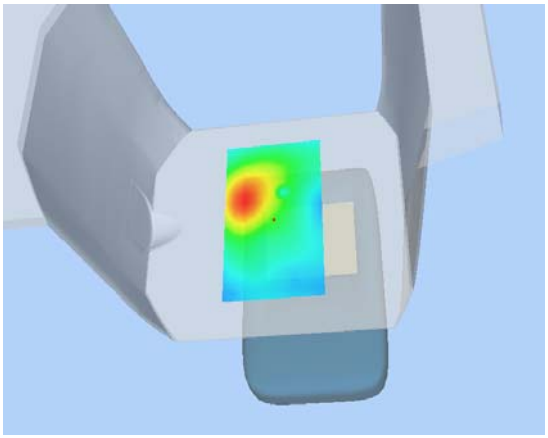
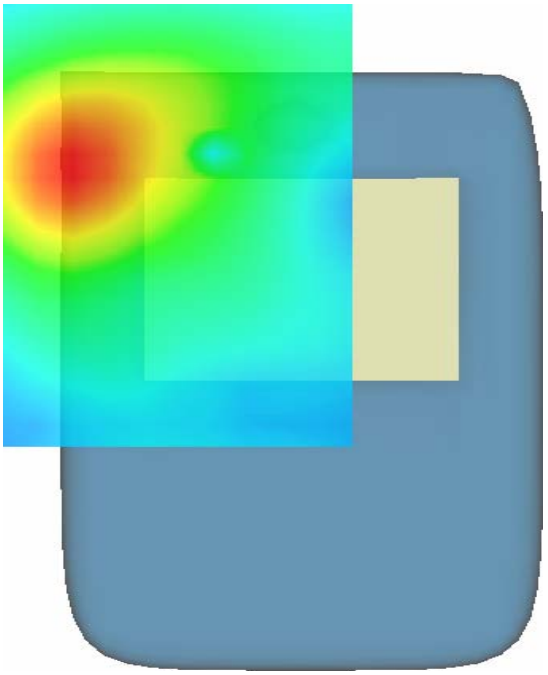
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.090767 |
| **SAR 1g (W/Kg)** | 0.1473551 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 8

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 5 seconds

## A. Experimental conditions.

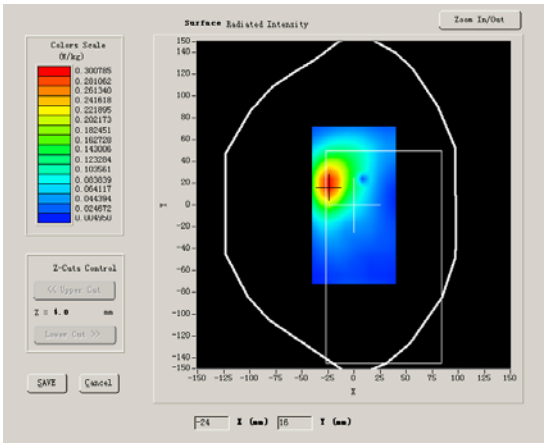
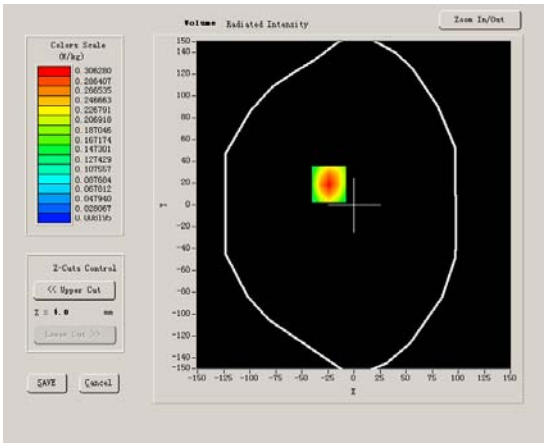
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.140000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

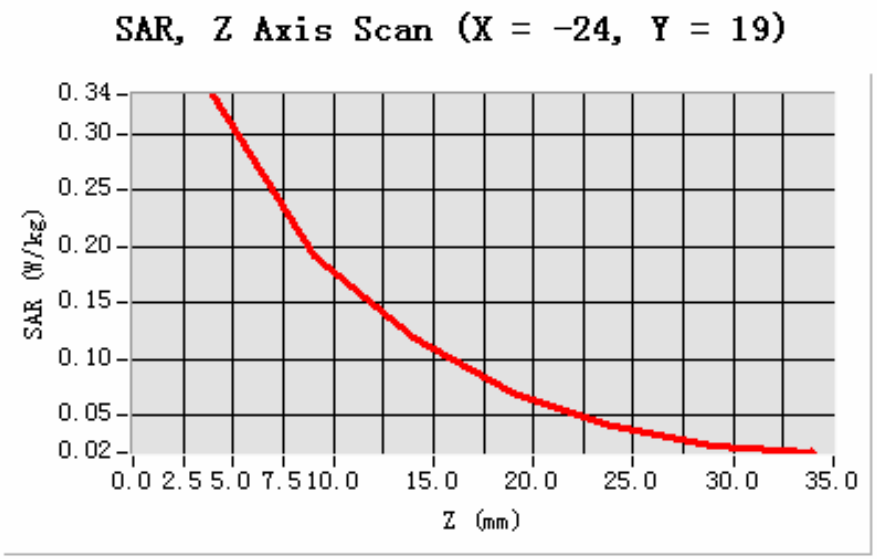
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

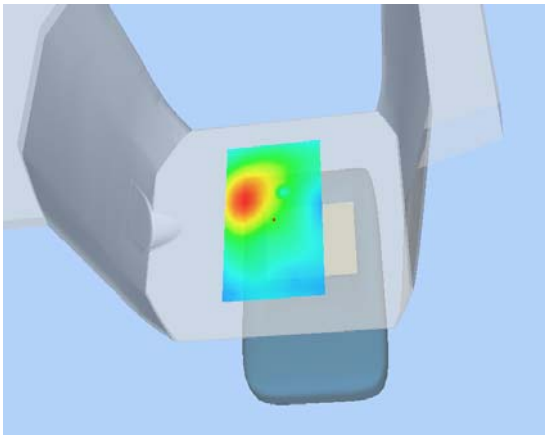
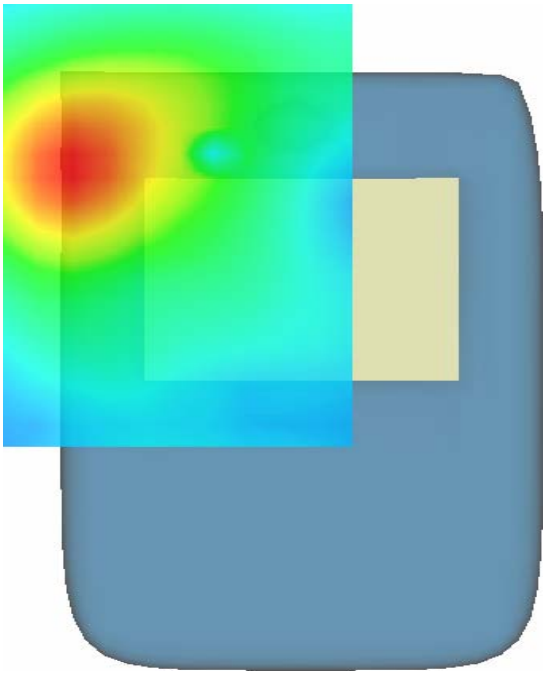
**Maximum location: X=-24.00, Y=19.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.114891 |
| **SAR 1g (W/Kg)** | 0.170461 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3357 | 0.1920 | 0.1181 | 0.0689 | 0.0398 | 0.0232 |




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

# MEASUREMENT 9

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 8 seconds

## A. Experimental conditions.

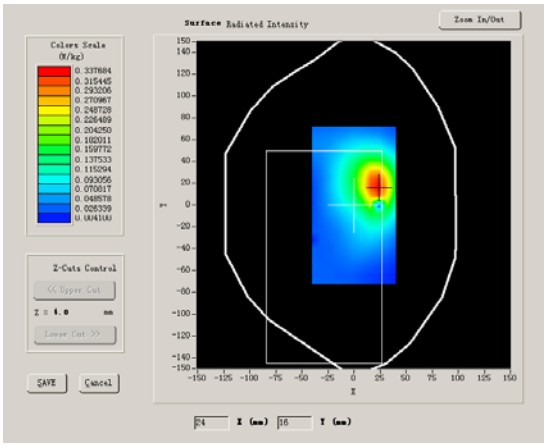
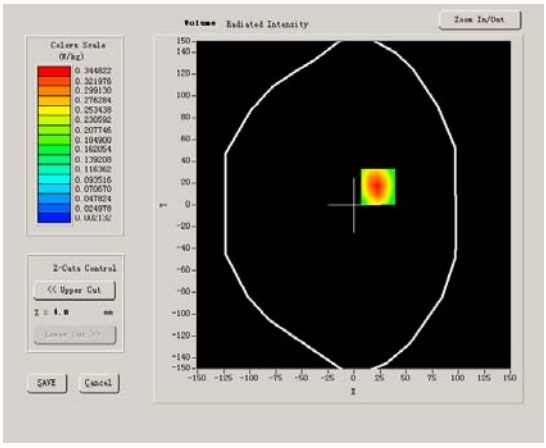
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 b |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.540001 |
| **Relative permittivity** | 15.070000 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | -0.370000 |
| **Ambient Temperature:** | 22.5°C |
| **Liquid Temperature:** | 22.3°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

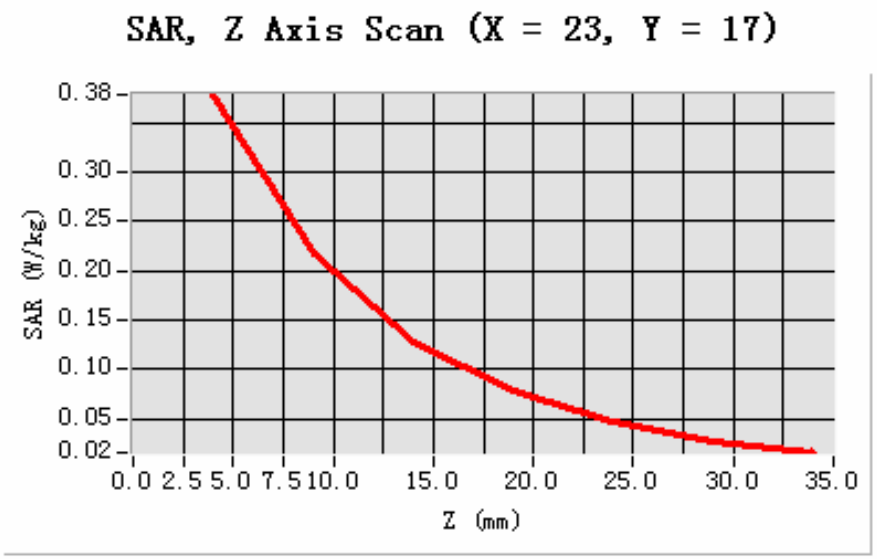
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

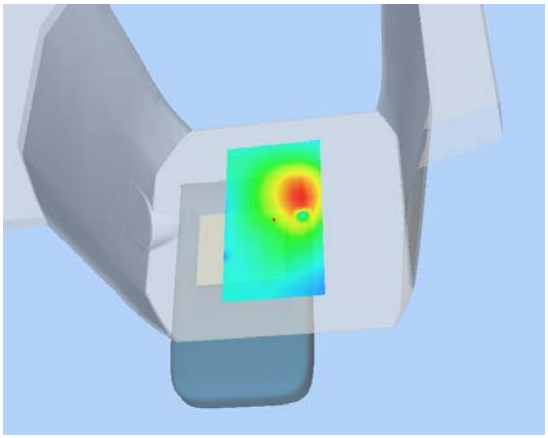
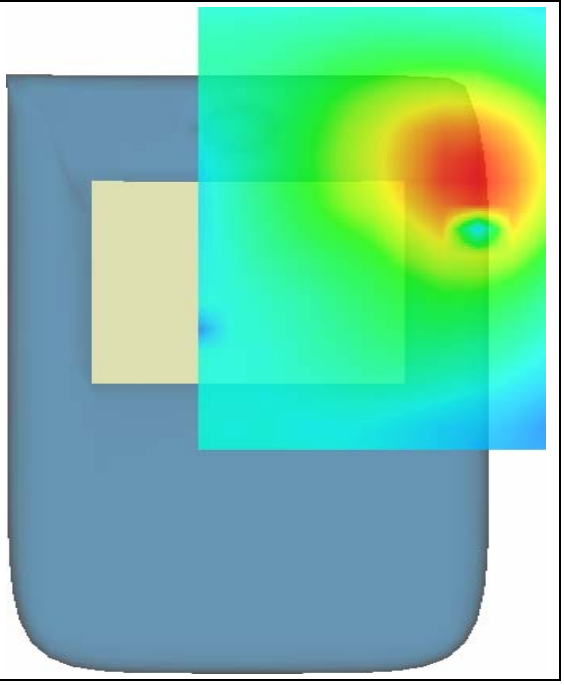
**Maximum location: X=23.00, Y=17.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.099465 |
| **SAR 1g (W/Kg)** | 0.168464 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.3779 | 0.2168 | 0.1272 | 0.0791 | 0.0467 | 0.0275 |




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

# MEASUREMENT 10

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 7 seconds

## A. Experimental conditions.

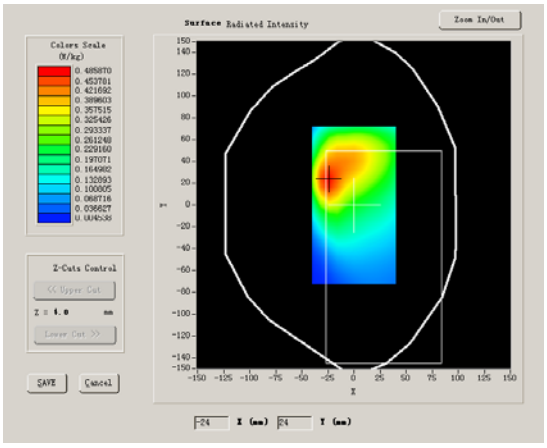
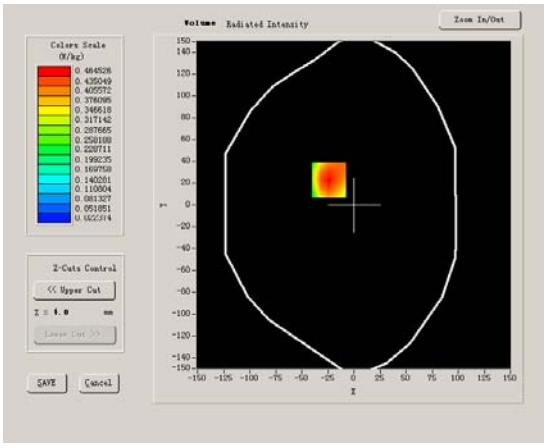
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Lower Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivity** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.928580 |
| **Variation (%)** | -1.240000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

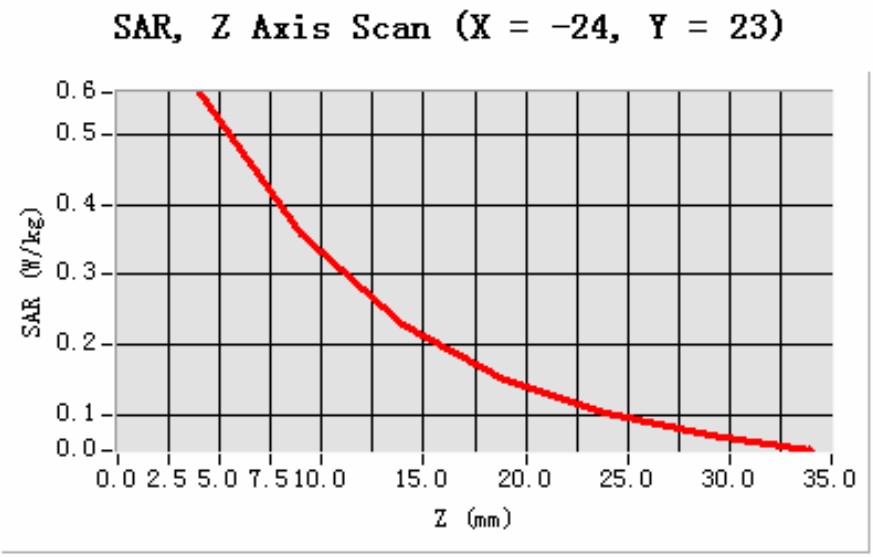
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

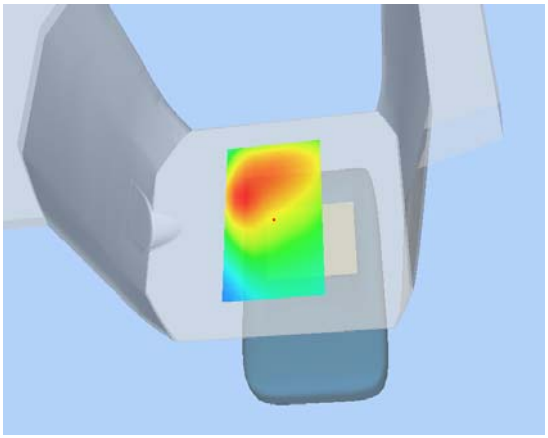
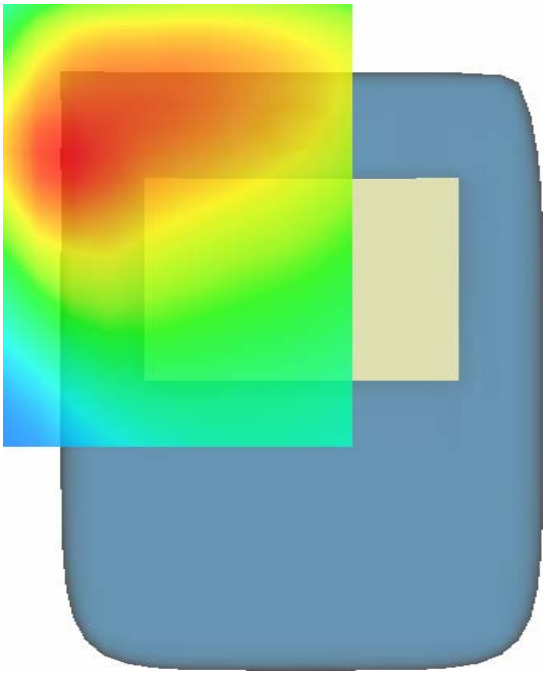
**Maximum location: X=-24.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.083564 |
| **SAR 1g (W/Kg)** | 0.229545 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.5600 | 0.3574 | 0.2299 | 0.1497 | 0.1031 | 0.0694 |




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

# MEASUREMENT 11

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

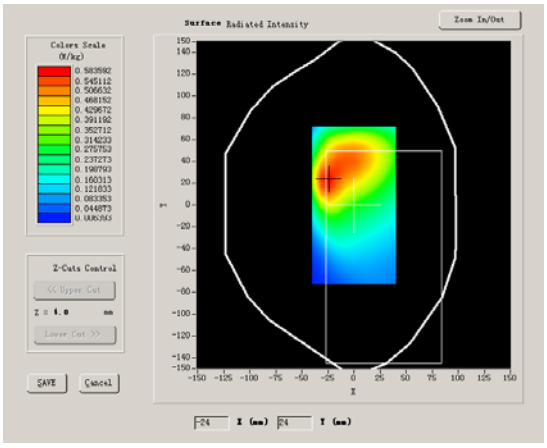
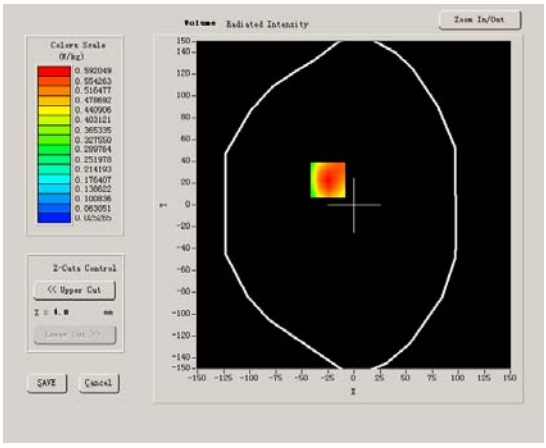
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

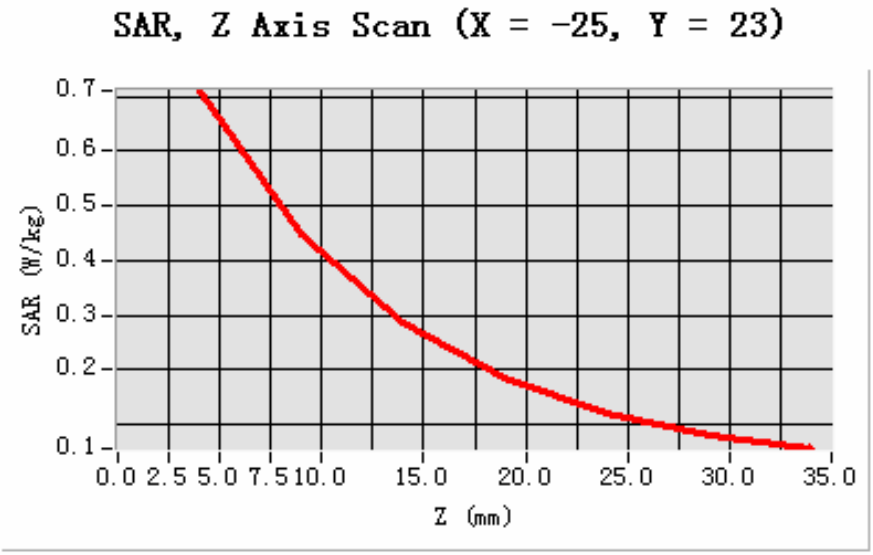
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

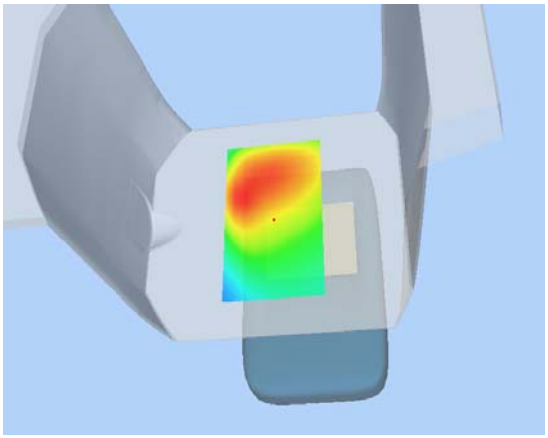
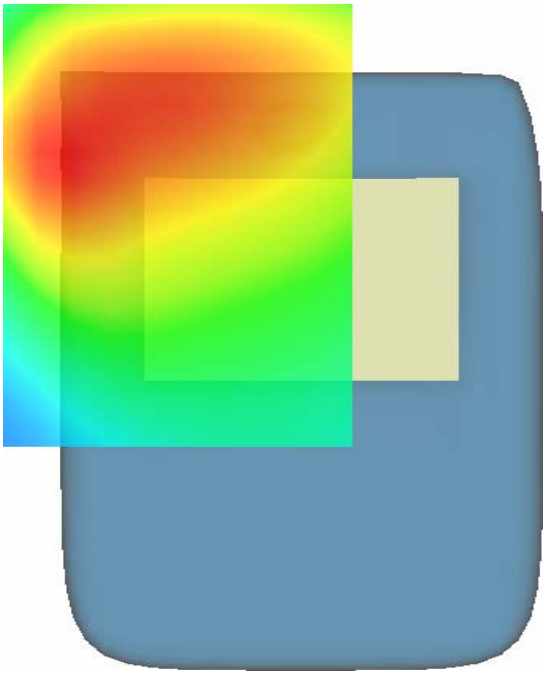
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.096635 |
| **SAR 1g (W/Kg)** | 0.238466 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 12

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

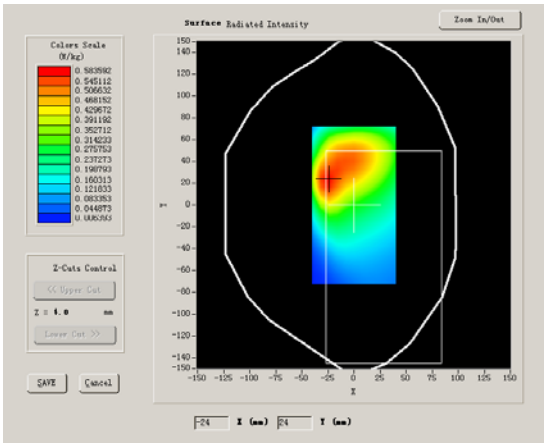
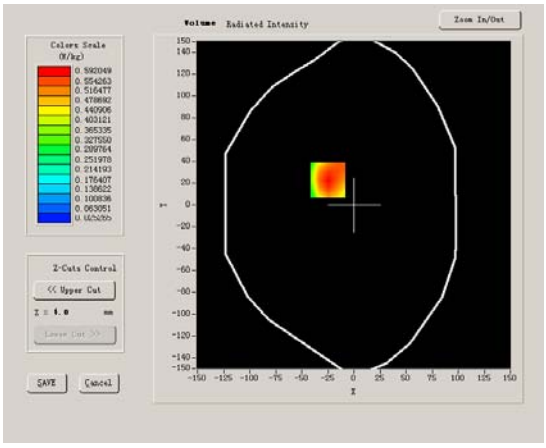
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

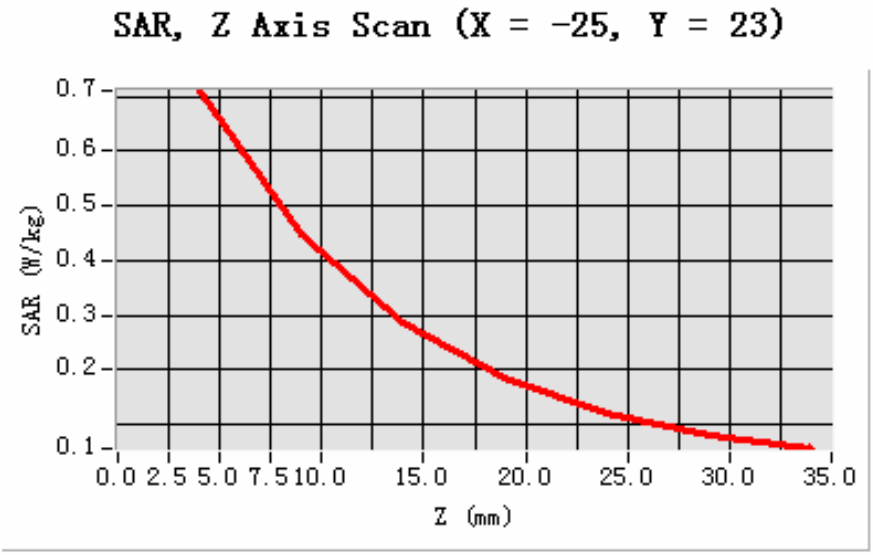
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

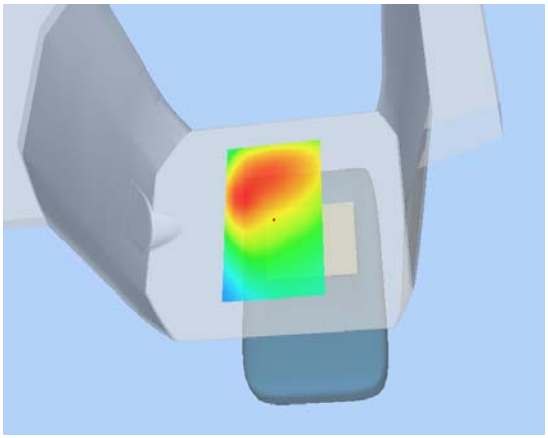
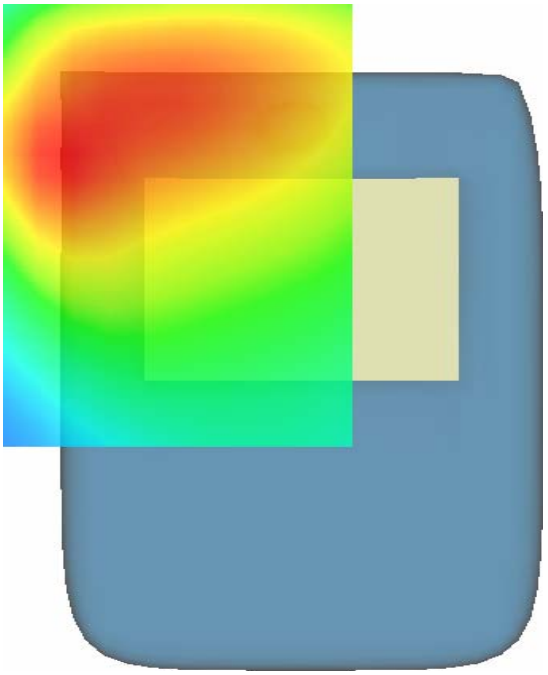
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.132844 |
| **SAR 1g (W/Kg)** | 0.248346 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 13

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

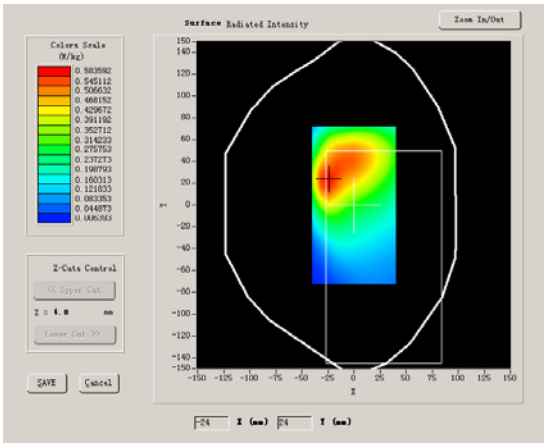
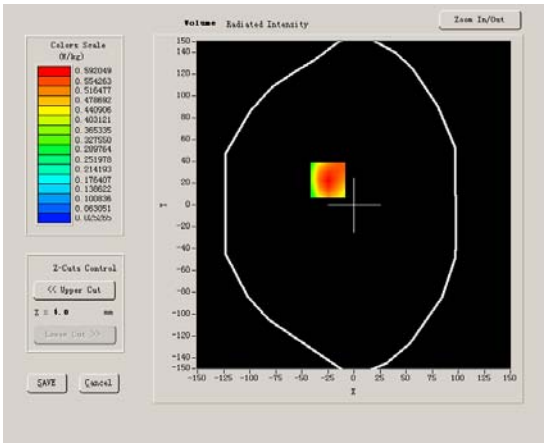
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

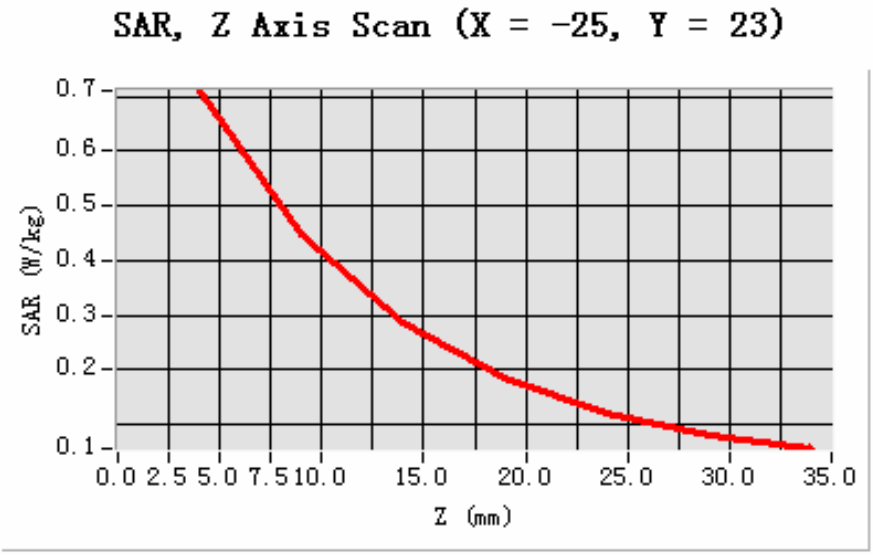
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

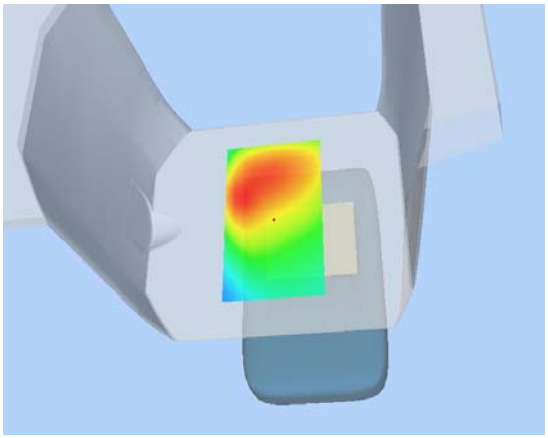
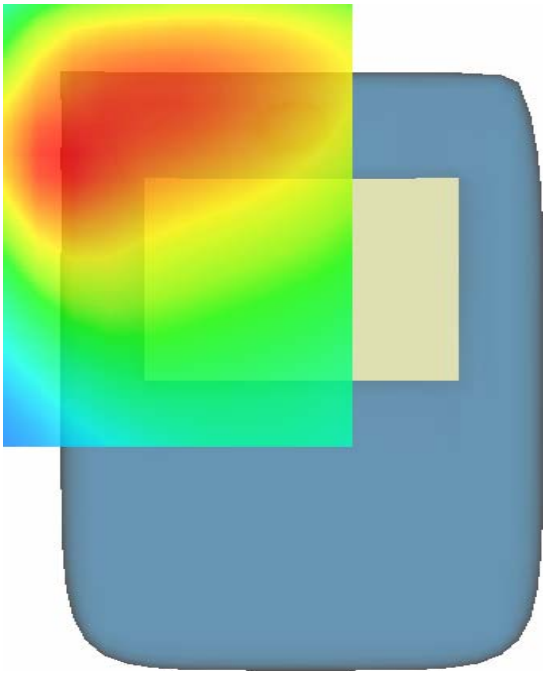
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.173744 |
| **SAR 1g (W/Kg)** | 0.255273 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 14

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

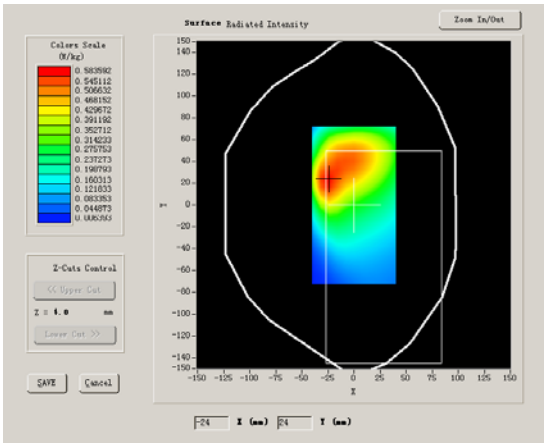
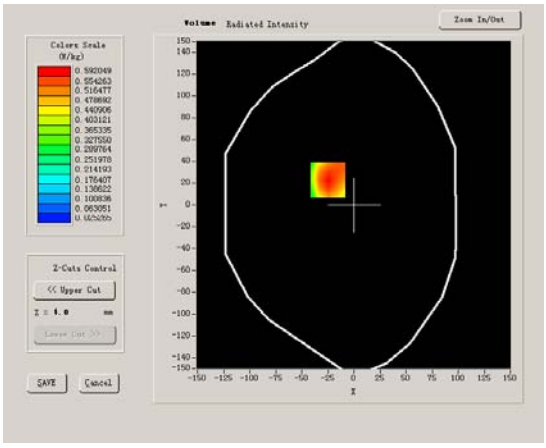
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

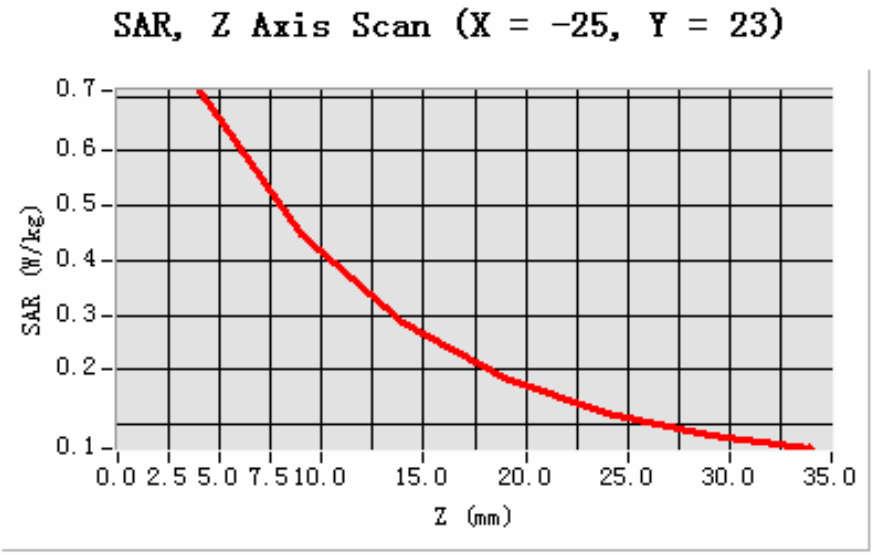
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

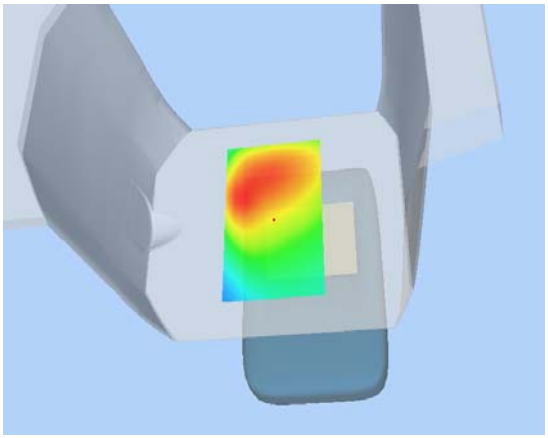
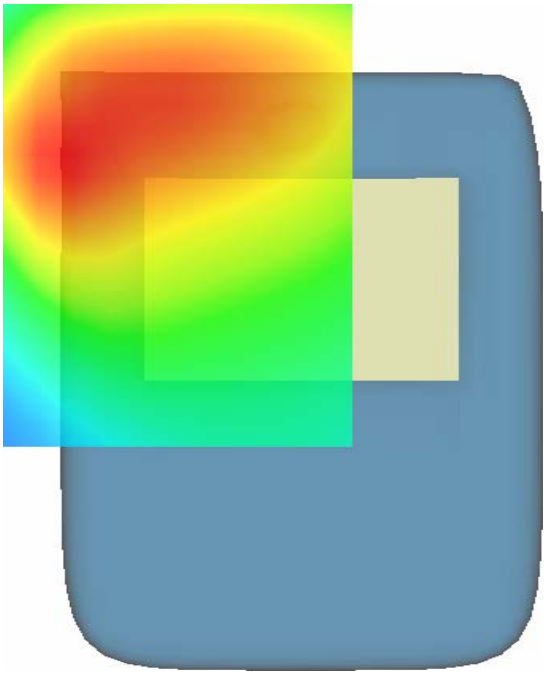
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.151023 |
| **SAR 1g (W/Kg)** | 0.273511 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 15

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

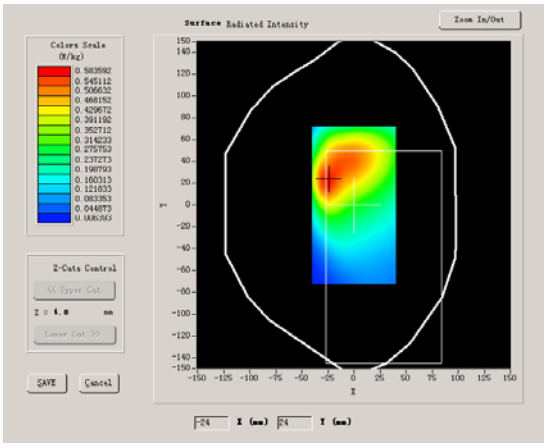
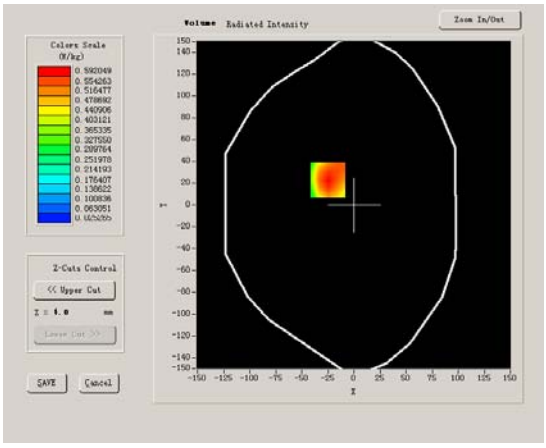
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

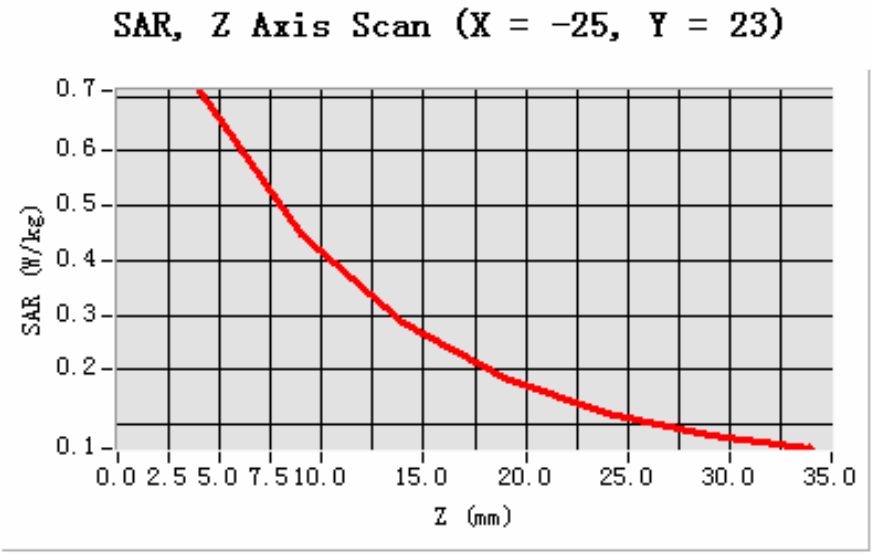
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

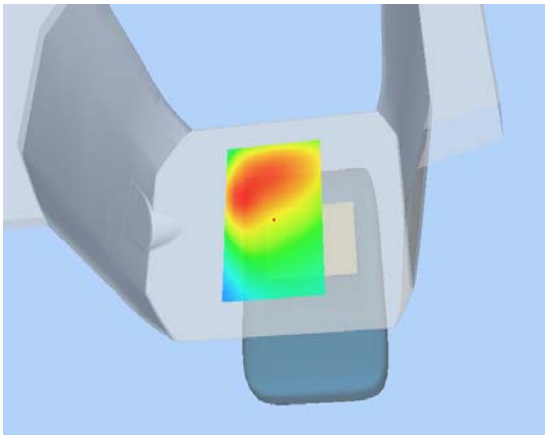
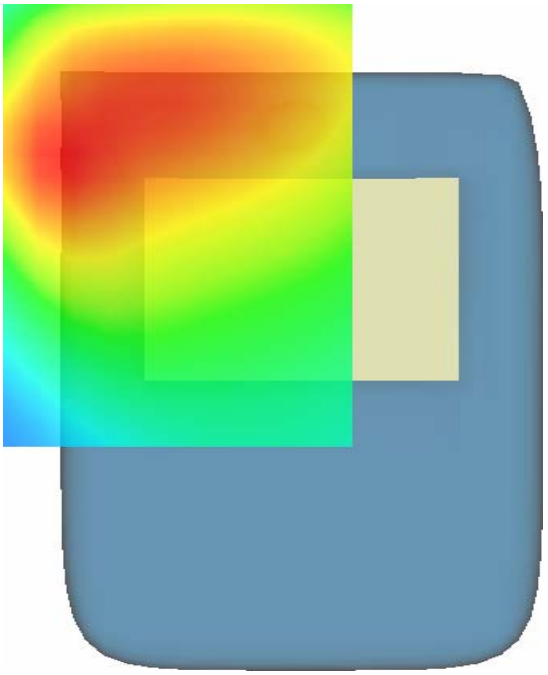
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.187374 |
| **SAR 1g (W/Kg)** | 0.276300 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 16

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

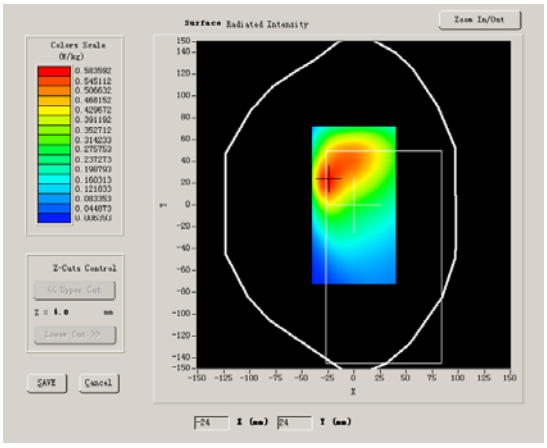
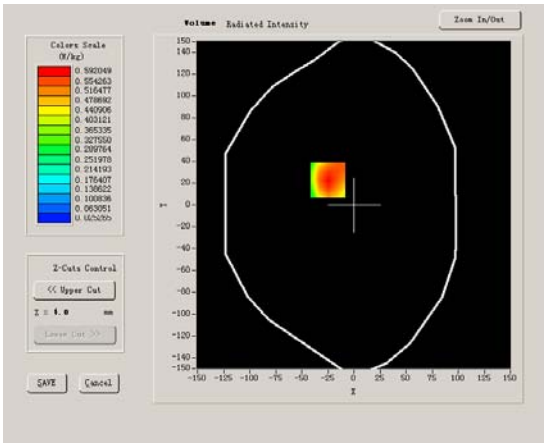
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

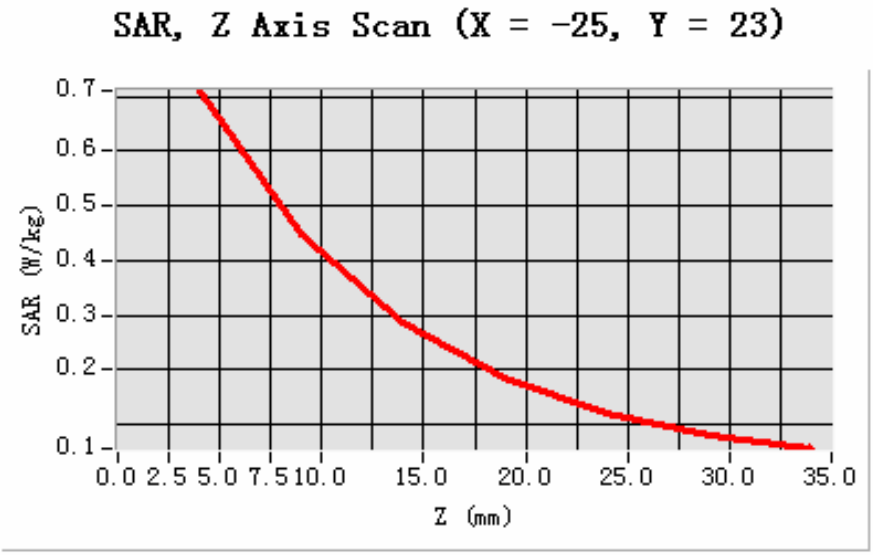
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

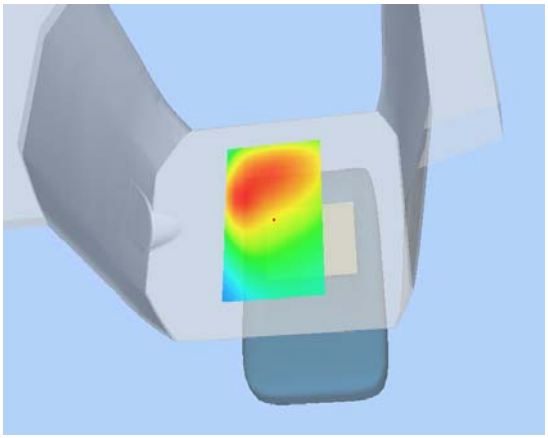
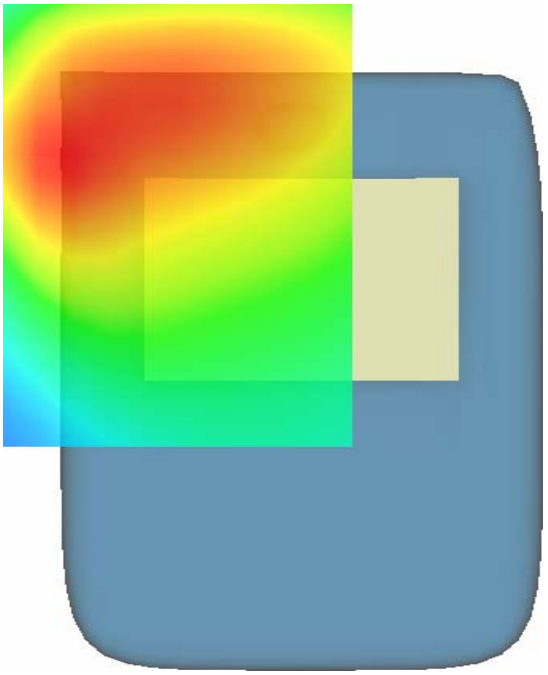
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.181183 |
| **SAR 1g (W/Kg)** | 0.285833 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 17

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration:13 minutes 7 seconds

## A. Experimental conditions.

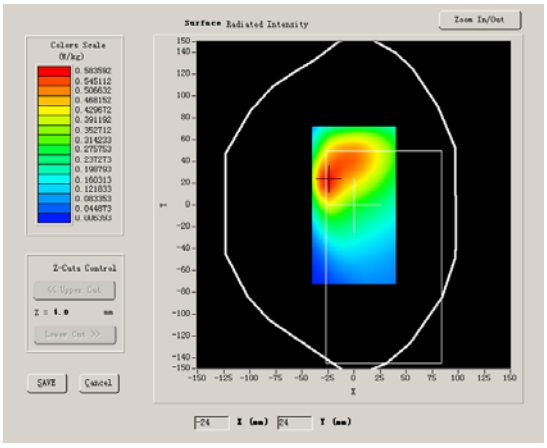
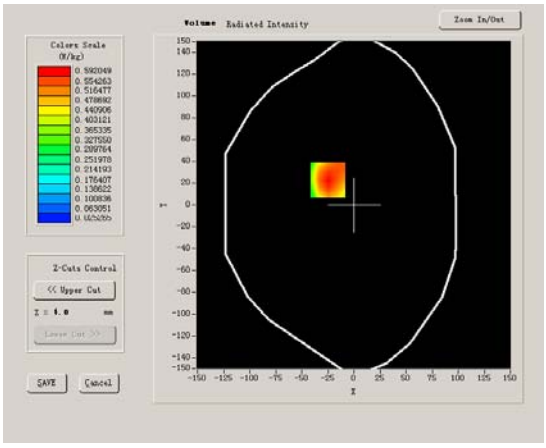
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivit** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.280000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

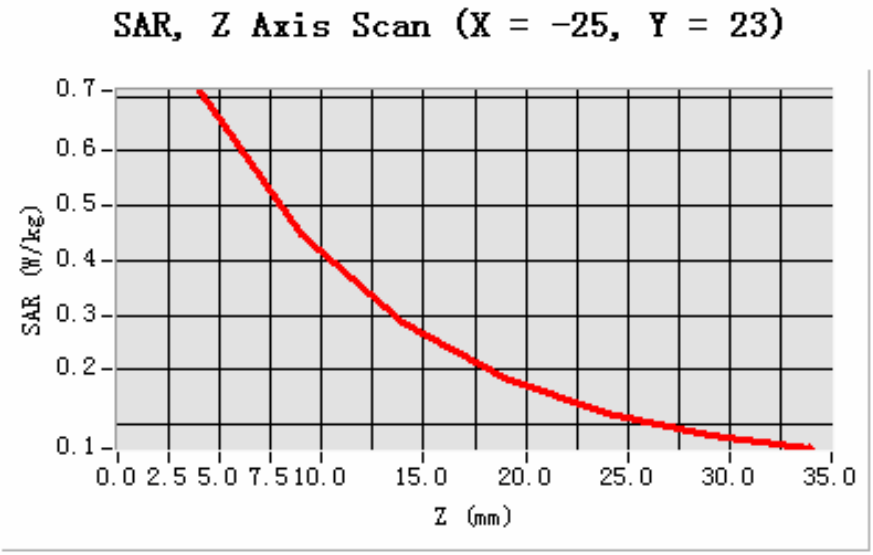
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

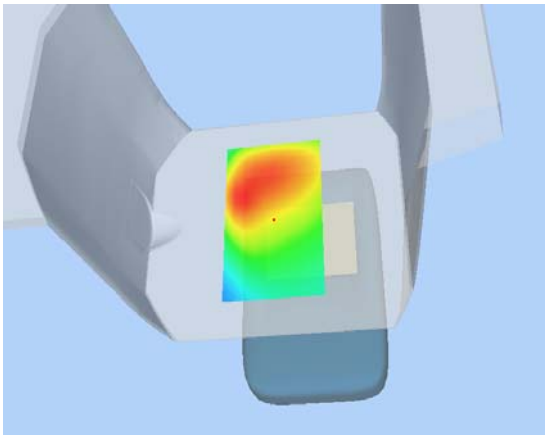
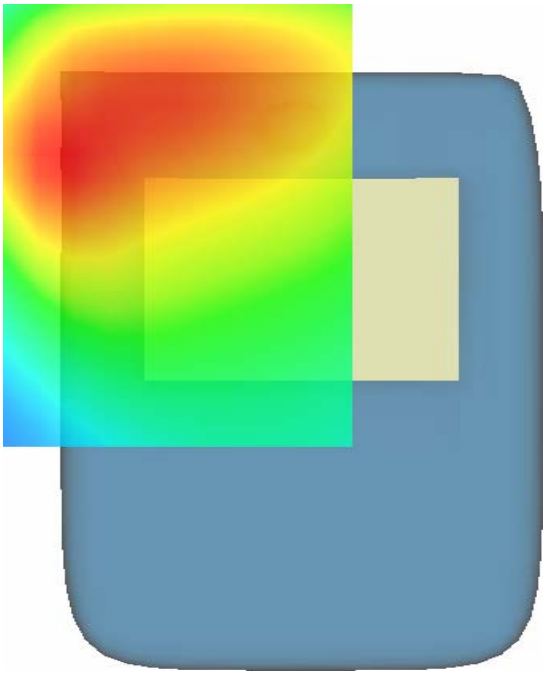
**Maximum location: X=-25.00, Y=23.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.199164 |
| **SAR 1g (W/Kg)** | 0.297641 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.7105 | 0.4479 | 0.2856 | 0.1847 | 0.1222 | 0.0820 |




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

# MEASUREMENT 18

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 8 seconds

## A. Experimental conditions.

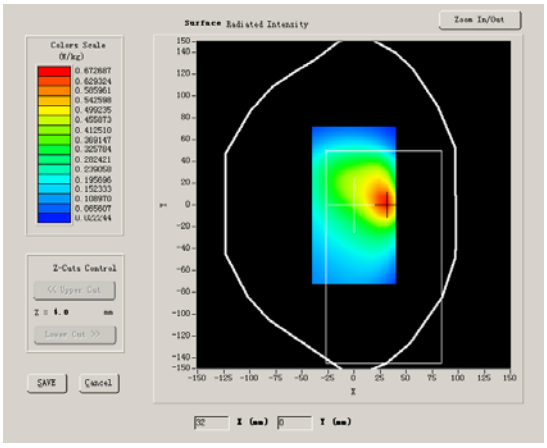
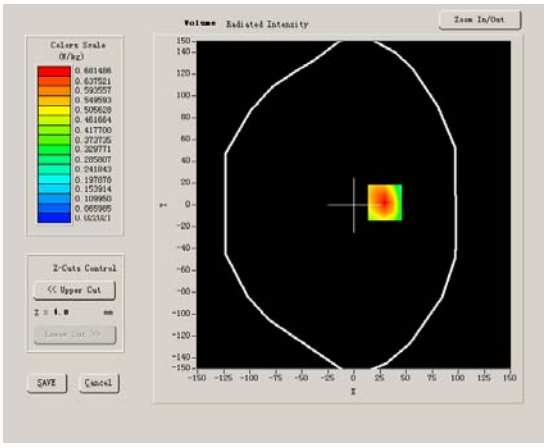
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivity** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.660000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

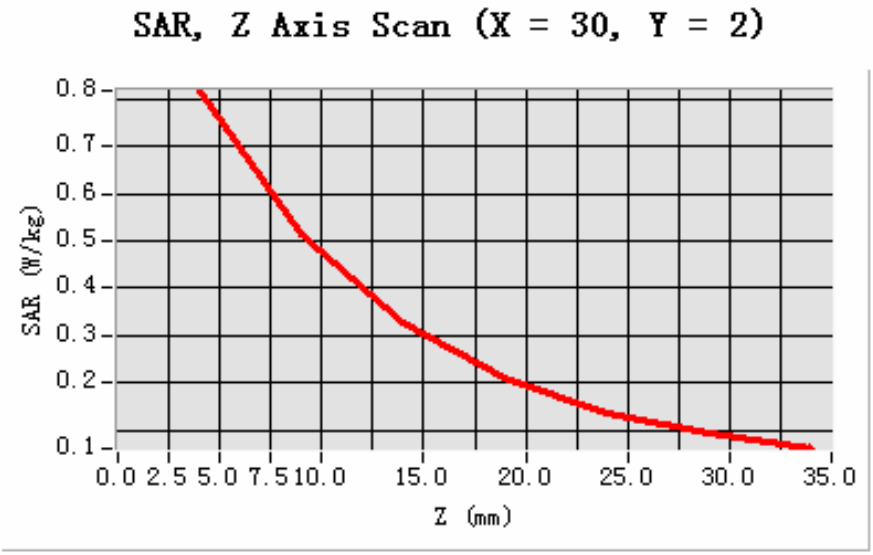
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

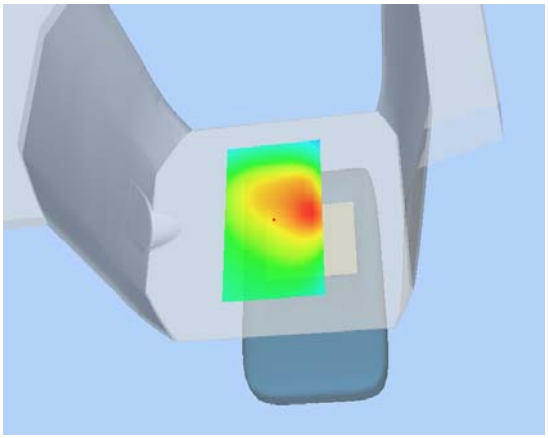
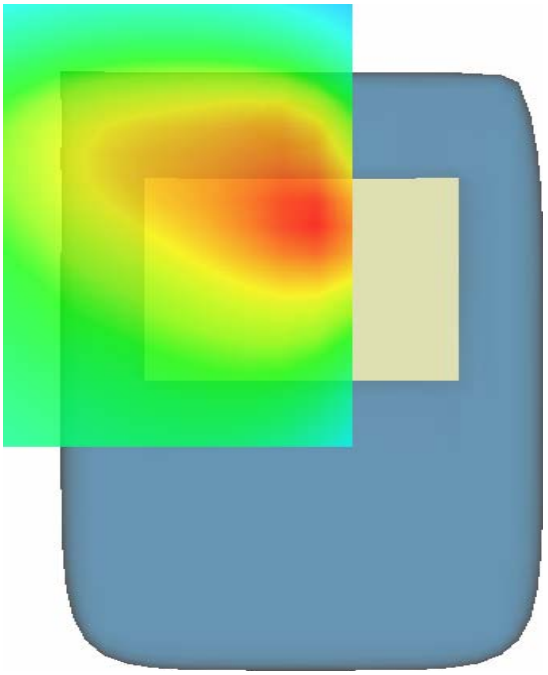
**Maximum location: X=30.00, Y=2.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.189384 |
| **SAR 1g (W/Kg)** | 0.289402 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.8178 | 0.5125 | 0.3286 | 0.2118 | 0.1384 | 0.0923 |




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

# MEASUREMENT 19

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 13 minutes 8 seconds

## A. Experimental conditions.

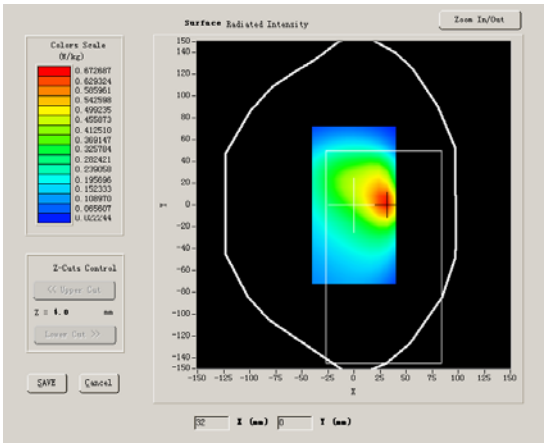
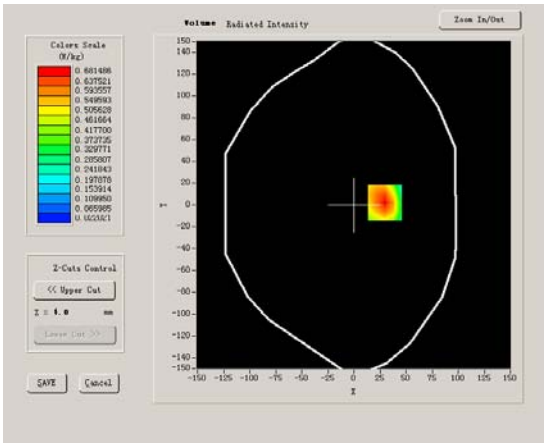
| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | Body |
| **Band** | 802.11 g |
| **Channels** | Middle |
| **Signal** | CW |

## B. SAR Measurement Results

Middle Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2437.000000 |
| **Relative permittivity (real part)** | 54.341000 |
| **Relative permittivity** | 15.877050 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.937401 |
| **Variation (%)** | 0.660000 |
| **Ambient Temperature:** | 22.3°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

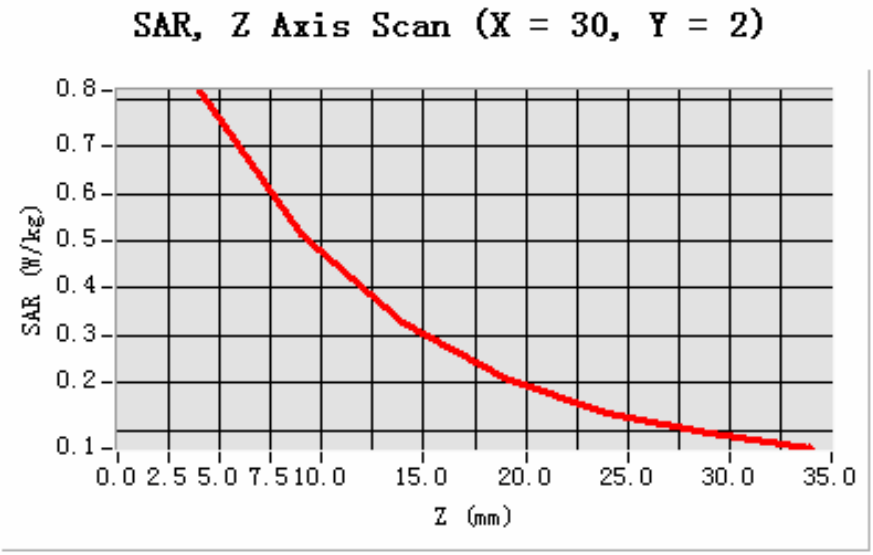
| **SURFACE SAR** | **VOLUME SAR** |
|---|---|
|  |  |

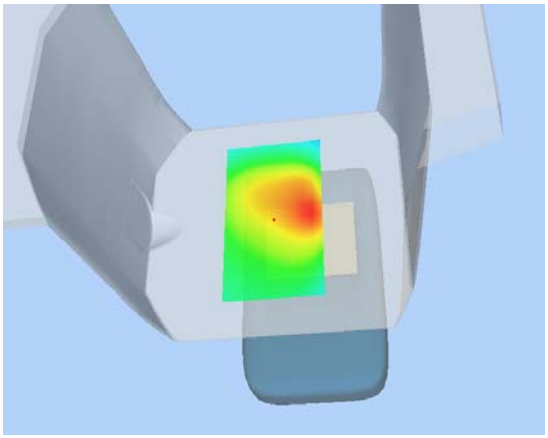
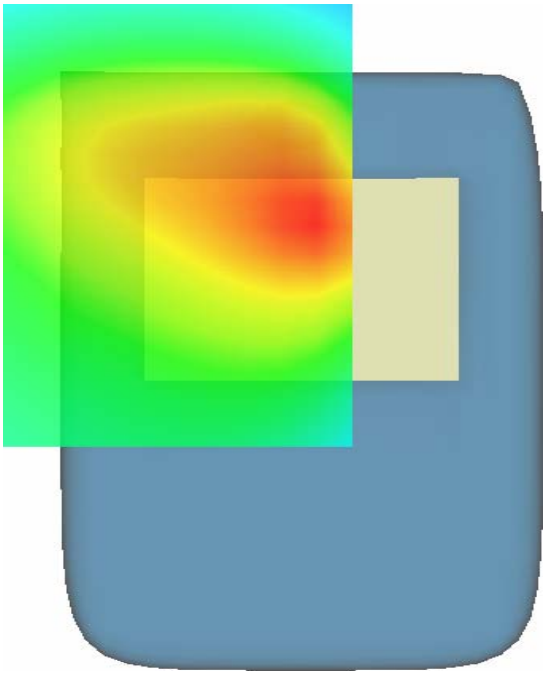
**Maximum location: X=30.00, Y=2.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.1906384 |
| **SAR 1g (W/Kg)** | 0.286844 |

## Z Axis Scan

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.0000 | 0.8178 | 0.5125 | 0.3286 | 0.2118 | 0.1384 | 0.0923 |




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

# System Performance Check Data(2450MHz Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 4/9/2009

Measurement duration: 9 minutes 27 seconds

## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | |
| **Band** | 2450MHz |
| **Channels** | |
| **Signal** | CW |

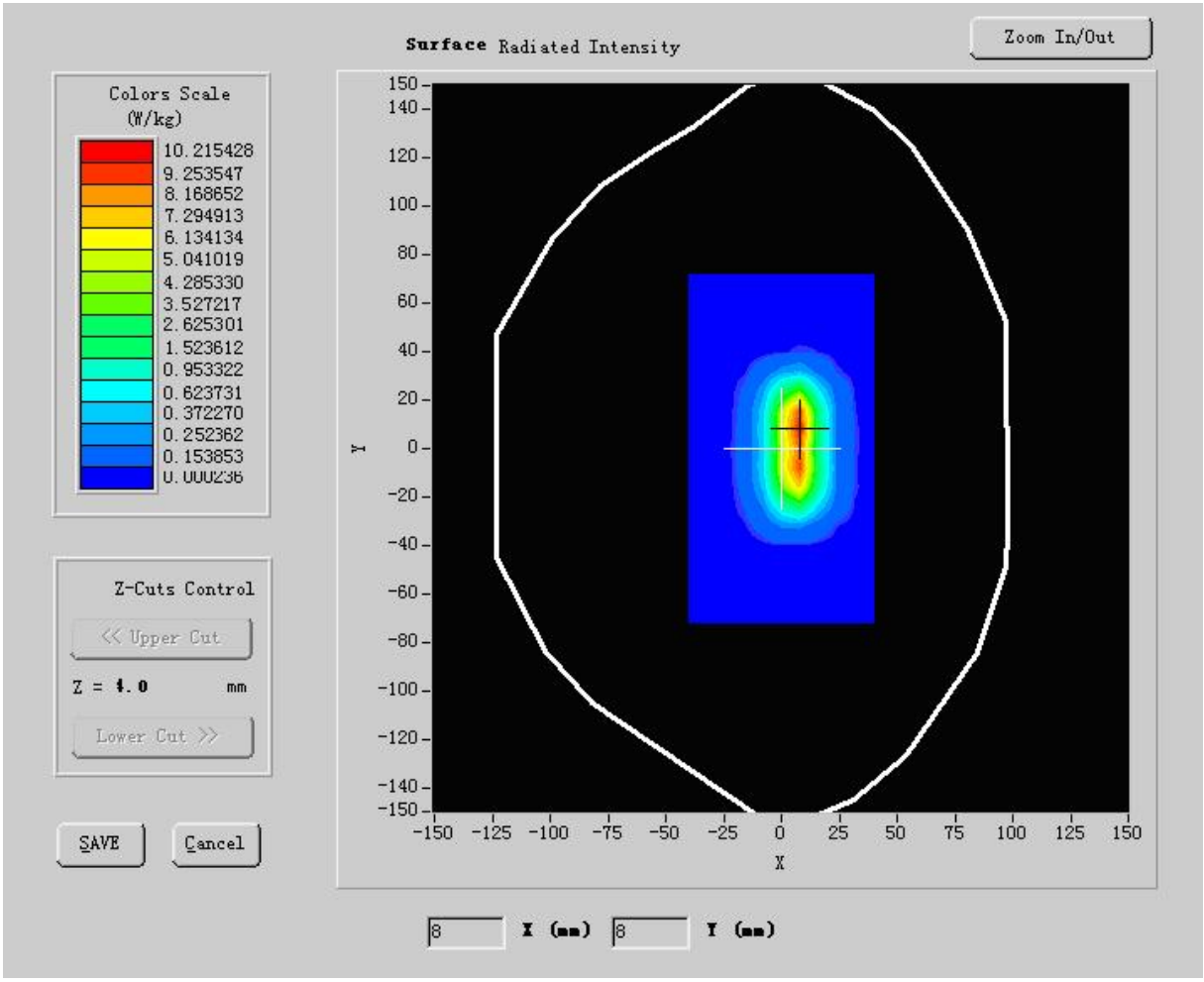
## B. SAR Measurement Results

Lower Band SAR:

| | |
|---|---|
| **Frequency (MHz)** | 2450.000000 |
| **Relative permittivity (real part)** | 54.548876 |
| **Relative permittivity** | 12.991650 |

| | |
|---|---|
| **Conductivity (S/m)** | 1.973978 |
| **Variation (%)** | 0.570000 |
| **Ambient Temperature:** | 23.5°C |
| **Liquid Temperature:** | 22.8°C |
| **ConvF:** | 39.563,33.614,37.677 |
| **Crest factor：** | 1:1 |

**SURFACE SAR**




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

| | |
|---|---|
| **SAR 10g (W/Kg)** | 7.077634 |
| **SAR 1g (W/Kg)** | 12.988772 |

## 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 |