REPORT No. : SZ17040271S01A

# FCC SAR TEST REPORT

| | | |
|---|---|---|
| **APPLICANT** | : | GREAT TALENT TECHNOLOGY LIMITED |
| **PRODUCT NAME** | : | Android device |
| **MODEL NAME** | : | TEL-TE-VR-U2 |
| **TRADE NAME** | : | UMX |
| **BRAND NAME** | : | UMX |
| **FCC ID** | : | 2ALZM-TEL-TE-VR-U2 |
| **STANDARD(S)** | : | 47 CFR 2.1093<br>IEEE 1528-2013 |
| **ISSUE DATE** | : | 2017-06-10 |

**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.**



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# DIRECTORY

| Change History | | |
|---|---|---|
| Issue | Date | Reason for change |
| 1.0 | 2017-06-10 | First edition |

# TEST REPORT DECLARATION

| | | | | |
|---|---|---|---|---|
| Applicant | GREAT TALENT TECHNOLOGY LIMITED | | | |
| Applicant Address | RM602,T3 Software Park,Nanshan,Shenzhen,China | | | |
| DUT Description | Android device with Bluetooth and WLAN | | | |
| FCC ID | 2ALZM-TEL-TE-VR-U2 | | | |
| Exposure Category | General Population/Uncontrolled Exposure (1g SAR limit: 1.6 W/kg) | | | |
| The highest reported SAR | RF Exposure Conditions | Equipment Class | | |
| | | DTS | DSS | NII |
| | Head | 0.157 | | 0.191 |
| | Body | 0.233 | | |
| | Simultaneous | 0.370 | | 0.464 |
| | Extremity(10g SAR) | 0.381 | | 0.216 |
| Applicable Standards | 47 CFR 2.1093; IEEE 1528-2013;<br>Published RF exposure KDB procedures | | | |
| Test Date | 2017-05-12 and 2017-05-25 and 2017-06-07 | | | |

Tested by : Peng Fuwei

Peng Fuwei (Test engineer)

Approved by : Peng Huarui

Peng Huarui (Supervisor)

# 1.TECHNICAL INFORMATION

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

## 1.1 Identification of Applicant

| | |
|---|---|
| Company Name: | GREAT TALENT TECHNOLOGY LIMITED |
| Address: | RM602,T3 Software Park,Nanshan,Shenzhen,China |

## 1.2 Identification of Manufacturer

| | |
|---|---|
| Company Name: | SIM Technology Group Limited |
| Address: | NO.888 Shengli Road QingPu District Shanghai |

## 1.3 Equipment Under Test (EUT)

| | |
|---|---|
| Model Name: | TEL-TE-VR-U2 |
| Trade Name: | UMX |
| Brand Name: | UMX |
| Hardware Version: | V1.0 |
| Software Version: | Andiod V7.1.1 |
| Tx Frequency Bands: | 802.11 b/g/n: 2412-2462 MHz;<br>802.11a/ac/n: 5150-5250MHz,5725-5850MHz;<br>Bluetooth;2.1+EDR,Bluetooth4.0; 2402-2480MHz; |
| Uplink Modulations: | Wi-Fi 802.11b: DSSS; Wi-Fi 802.11g: OFDM;<br>Wi-Fi 802.11a/ac/n:OFDM;<br>Bluetooth2.1+EDR: GFSK/π/4-DQPSK/8-DPSK; Bluetooth4.0: GFSK |
| Antenna type: | Fixed Internal Antenna |
| Development Stage: | Identical prototype |
| Hotspot mode | No support |

### 1.3.1 Photographs of the EUT

Please refer to the External Photos for the Photos of the EUT

### 1.3.2 Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the Following two numerical characters indicate the software version of the test sample.

| EUT Identity | Hardware Version | Software Version |
|---|---|---|
| 1# | V1.0 | Andiod V7.1.1 |

## 1.4 Applied Reference Documents

Leading reference documents for testing:

| No. | Identity | Document Title |
|---|---|---|
| 1 | **IEEE 1528-2013** | IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques |
| 2 | **KDB 447498 D01v06** | General RF Exposure Guidance |
| 3 | **KDB 248227 D01v02r02** | SAR Measurement Guidance for IEEE 802.11 Transmitters |
| 4 | **KDB 865664 D01v01r04** | SAR Measurement 100 MHz to 6 GHz |
| 5 | **KDB 865664 D02v01r02** | SAR Reporting |
| 6 | **KDB 648474 D04v01r03** | Handset SAR |

## 1.5 Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

# 2. SPECIFIC ABSORPTION RATE (SAR)

## 2.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are Low than the limits for general population/uncontrolled.

## 2.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy ($dW$) absorbed by (dissipated in) an incremental mass ($dm$) contained in a volume element ($dv$) of a given density. ($\rho$). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by,

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where $C$ is the specific head capacity, $\delta T$ is the temperature rise and $\delta t$ the exposure duration, or related to the electrical field in the tissue by

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

Where $\sigma$ is the conductivity of the tissue, $\rho$ is the mass density of the tissue and $|E|$ is the rms electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

# 3. SAR MEASUREMENT SETUP

## 3.1 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.

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.

## 3.2 Probe

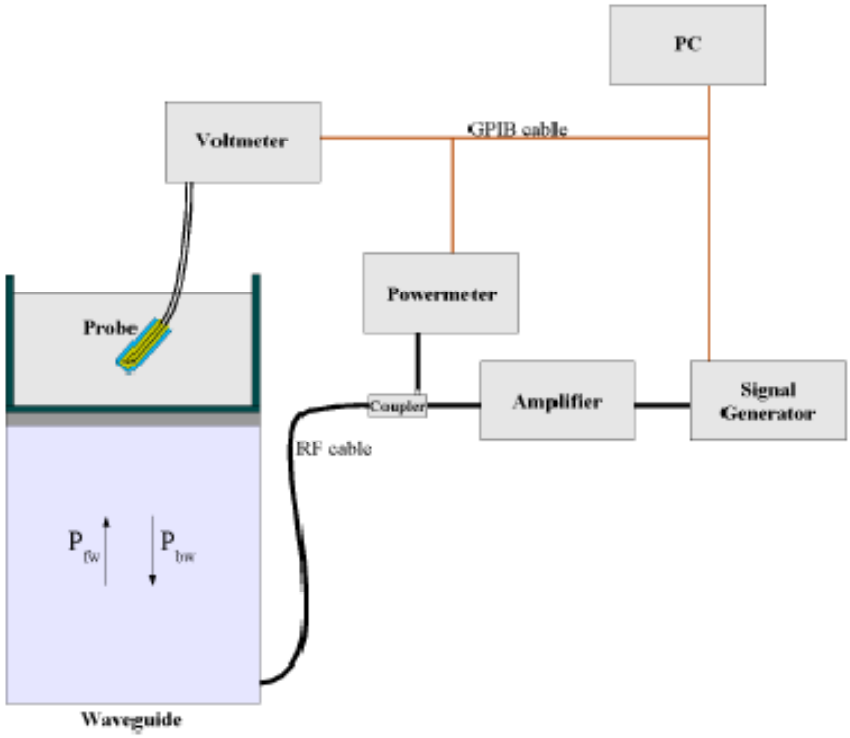
For the measurements the Specific Dosimetric E-Field Probe SN 37/08 EP80 with Following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter: 6.5 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 62209 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 622091 annex technique using reference guide at the five frequencies.




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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b = Waveguide dimensions

ı = 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:

$$CF(N)=SAR(N)/Vlin(N) \qquad (N=1,2,3)$$

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

$$Vlin(N)=V(N)*(1+V(N)/DCP(N)) \qquad (N=1,2,3)$$

Where DCP is the diode compression point in mV.

## 3.3 Probe Calibration Process

### 3.3.1 Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm$^2$) using an with CALISAR, Antenna proprietary calibration system.

### 3.3.2 Free Space Assessment Procedure

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm$^2$.

### 3.3.3 Temperature Assessment Procedure

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulating head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

Where:

$\delta t$ = exposure time (30 seconds),

$$SAR = C\left(\frac{\delta T}{\delta t}\right)$$

C = heat capacity of tissue (brain or muscle),

δT = temperature increase due to RF exposure.

SAR is proportional to ΔT/Δt, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

Where:

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

σ = simulated tissue conductivity,

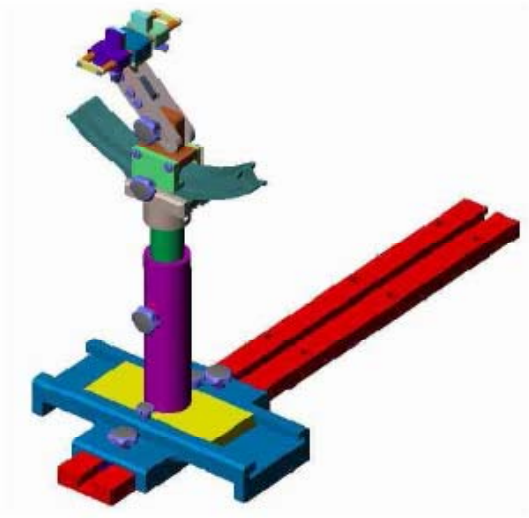
ρ = Tissue density (1.25 g/cm³ for brain tissue)

### 3.4 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 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right 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.

### 3.5 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 Low than 1°.



Device holder

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

## 4. TISSUE SIMULATING LIQUIDS

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in below table.

The following table gives the recipes for tissue simulating liquids

| Frequency Band (MHz) | 2450 | 2450 | 5200-5800 | 5200-5800 |
|---|---|---|---|---|
| Tissue Type | Head | Body | Head | Body |
| Ingredients (% by weight ) | | | | |
| Deionised Water | 62.70 | 73.20 | 65.53 | 78.60 |
| Salt(NaCl) | 0.50 | 0.10 | 0.00 | 0.00 |
| Sugar | 0.00 | 0.00 | 0.00 | 0.00 |
| Tween 20 | 0.00 | 0.00 | 0.00 | 0.00 |
| HEC | 0.00 | 0.00 | 0.00 | 0.00 |
| Bactericide | 0.00 | 0.00 | 0.00 | 0.00 |
| Triton X-100 | 36.80 | 0.00 | 17.24 | 10.70 |
| DGBE | 0.00 | 26.70 | 0.00 | 0.00 |
| Diethylenglycol monohexylether | 0.00 | 0.00 | 17.24 | 10.70 |
| Measured dielectric parameters | | | | |
| Dielectric Constant | 39.20 | 52.70 | 35.3 | 48.7 |
| Conductivity (S/m) | 1.80 | 1.95 | 5.07 | 5.53 |

Note: Please refer to the validation results for dielectric parameters of each frequency band.

The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using an Agilent 85033E Dielectric Probe Kit and an Agilent Network Analyzer.

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

| Temperature: 22.0~23.8°C, humidity: 54~60%. | | | | | | |
|---|---|---|---|---|---|---|
| **Date** | **Freq.(MHz)** | **Liquid Parameters** | **Meas.** | **Target** | **Delta(%)** | **Limit±(%)** |
| 2017/05/12 | Body 2450 | Relative Permittivity(εr): | 52.48 | 52.70 | -0.42 | 5 |
| | | Conductivity(σ): | 1.96 | 1.95 | 0.51 | 5 |
| 2017/05/25 | Head 2450 | Relative Permittivity(εr): | 39.23 | 39.20 | 0.08 | 5 |
| | | Conductivity(σ): | 1.82 | 1.80 | 1.11 | 5 |
| 2017/05/25 | Head 5200 | Relative Permittivity(εr): | 36.15 | 36.0 | 0.42 | 5 |
| | | Conductivity(σ): | 4.68 | 4.66 | 0.43 | 5 |
| 2017/05/25 | Head 5800 | Relative Permittivity(εr): | 35.35 | 35.3 | 0.14 | 5 |
| | | Conductivity(σ): | 5.33 | 5.27 | 1.14 | 5 |
| 2017/06/07 | Body 5200 | Relative Permittivity(εr): | 48.29 | 48.5 | -0.43 | 5 |
| | | Conductivity(σ): | 5.74 | 5.77 | -0.52 | 5 |
| 2017/06/07 | Body 5800 | Relative Permittivity(εr): | 48.09 | 48.2 | -0.23 | 5 |
| | | Conductivity(σ): | 5.93 | 6.00 | -1.17 | 5 |

# 5. UNCERTAINTY ASSESSMENT

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

## 5.1 UNCERTAINTY EVALUATION FOR EUT SAR TEST

| 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 | 4.76 | N | 1 | 1 | 1 | 4.76 | 4.7 | ∞ |
| Axial Isotropy | E.2.2 | 2.5 | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.01 | 1.0 | ∞ |
| Hemispherical Isotropy | E.2.2 | 4.0 | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.62 | 1.6 | ∞ |
| Boundary effect | E.2.3 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.5 | ∞ |
| Linearity | E.2.4 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.8 | ∞ |
| System detection limits | E.2.5 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.5 | ∞ |
| Readout Electronics | E.2.6 | 0.02 | N | 1 | 1 | 1 | 0.02 | 0.0 | ∞ |
| Reponse Time | E.2.7 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.7 | ∞ |
| Integration Time | E.2.8 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.1 | ∞ |
| RF ambient Conditions | E.6.1 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.7 | ∞ |
| Probe positioner Mechanical Tolerance | E.6.2 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.1 5 | ∞ |
| Probe positioning with respect to Phantom Shell | E.6.3 | 0.05 | R | $\sqrt{3}$ | 1 | 1 | 0.03 | 0.0 3 | ∞ |
| Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation | E.5.2 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.8 9 | ∞ |
| **Test sample Related** | | | | | | | | | |
| Test sample positioning | E.4.2. 1 | 0.03 | N | 1 | 1 | 1 | 0.03 | 0.0 3 | N- 1 |
| Device Holder Uncertainty | E.4.1. | 5.00 | N | 1 | 1 | 1 | 5.00 | 5.0 | N- |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | 0 | 1 |
| Output power Power drift - SAR drift measurement | 6.6.2 | 4.04 | R | $\sqrt{3}$ | 1 | 1 | 2.33 | 2.33 | ∞ |
| **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 | 4.57 | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.69 | 1.13 | ∞ |
| 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 | 3.69 | R | $\sqrt{3}$ | 0.6 | 0.49 | 1.28 | 1.04 | ∞ |
| Liquid permittivity - measurement uncertainty | E.3.3 | 10.00 | N | 1 | 0.6 | 0.49 | 6.00 | 4.90 | M |
| Combined Standard Uncertainty | | | RSS | | | | 11.55 | 10.67 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 23.11 | 21.33 | |

## 5.2 UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK

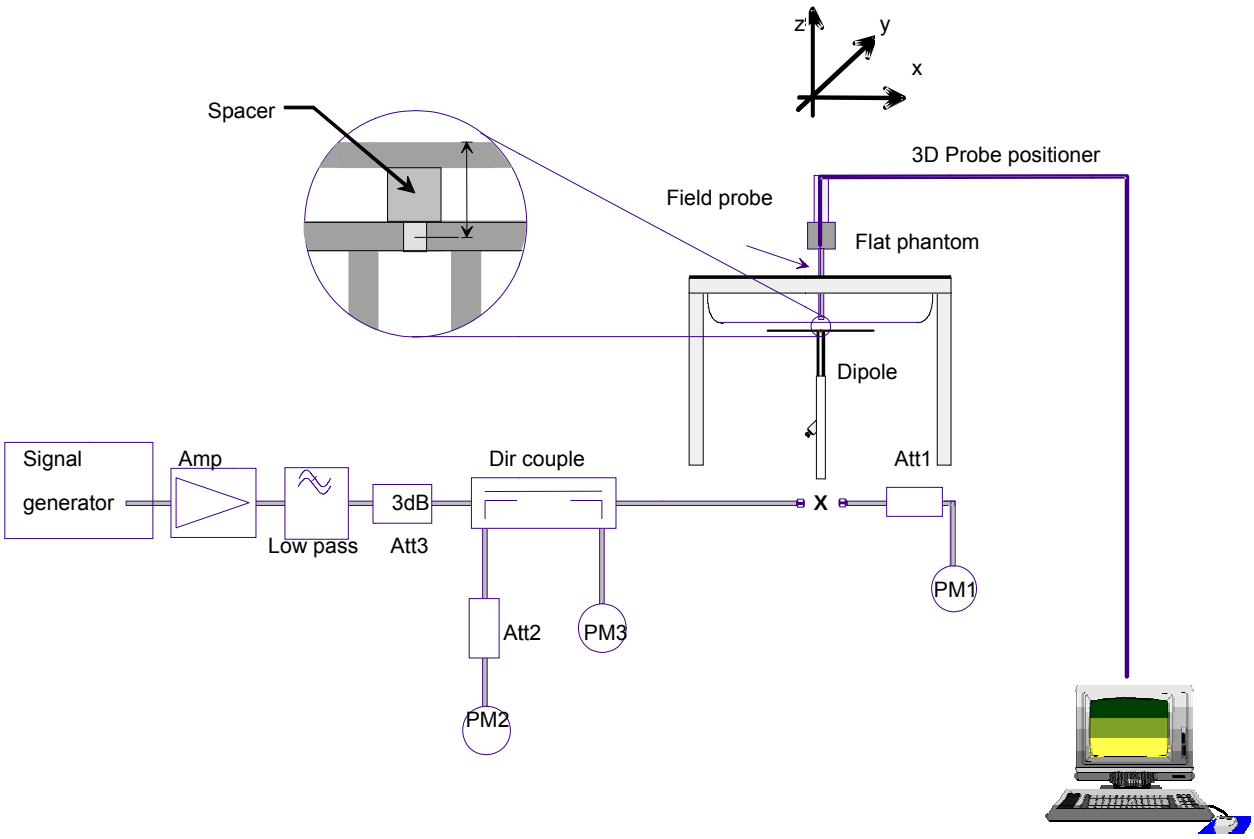
| a | b | c | d | e= f(d,k) | f | g | h= c*f/e | i= c*g/e | k |
|---|---|---|---|---|---|---|---|---|---|
| Uncertainty Component | Sec. | Tol (+-%) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | Vi |
| **Measurement System** | | | | | | | | | |
| Probe calibration | E.2.1 | 4.76 | N | 1 | 1 | 1 | 4.76 | 4.7 | ∞ |
| Axial Isotropy | E.2.2 | 2.5 | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.01 | 1.0 | ∞ |
| Hemispherical Isotropy | E.2.2 | 4.0 | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.62 | 1.6 | ∞ |
| Boundary effect | E.2.3 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.5 | ∞ |
| Linearity | E.2.4 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.8 | ∞ |
| System detection limits | E.2.5 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.5 | ∞ |
| Readout Electronics | E.2.6 | 0.02 | N | 1 | 1 | 1 | 0.02 | 0.0 | ∞ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Reponse Time | E.2.7 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.7 | ∞ |
| Integration Time | E.2.8 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.1 | ∞ |
| RF ambient Conditions | E.6.1 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.7 | ∞ |
| 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 | ∞ |
| **Dipole** | | | | | | | | | |
| Dipole axis to liquid Distance | 8,E.4.2 | 1.00 | N | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.58 | ∞ |
| Input power and SAR drift measurement | 8,6.6.2 | 4.04 | R | $\sqrt{3}$ | 1 | 1 | 2.33 | 2.33 | ∞ |
| **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 | 4.57 | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.69 | 1.13 | ∞ |
| Liquid conductivity - measurement uncertainty | E.3.3 | 5.00 | N | $\sqrt{3}$ | 0.64 | 0.43 | 1.85 | 1.24 | M |
| Liquid permittivity - deviation from target value | E.3.2 | 3.69 | R | $\sqrt{3}$ | 0.6 | 0.49 | 1.28 | 1.04 | ∞ |
| Liquid permittivity - measurement uncertainty | E.3.3 | 10.00 | N | $\sqrt{3}$ | 0.6 | 0.49 | 3.46 | 2.83 | M |
| Combined Standard Uncertainty | | | RSS | | | | 8.83 | 8.37 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 17.66 | 16.73 | |

# 6. SAR MEASUREMENT EVALUATION

## 6.1 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below




The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The power meter PM1 measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power at the dipole connector and the power meter PM2 is read at that level.

After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2.

### 6.2 Validation Results

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

| Frequency | 2450MHz (Head) | 2450MHz (Body) | 5200MHz (Head) | 5200MHz (Body) | 5800MHz (Head) | 5800MHz (Body) |
|---|---|---|---|---|---|---|
| Target value 1W (1g) | 53.34 W/Kg | 50.93 W/Kg | 164.05 W/Kg | 169.14 W/Kg | 185.02 W/Kg | 201.62 W/Kg |
| Test value (100 mW input power) | 5.334 W/Kg | 5.039 W/Kg | 16.421 W/Kg | 16.284 W/Kg | 18.512 W/Kg | 21.537 W/Kg |
| Normalized to 1W value(1g) | 53.34 W/Kg | 50.39 W/Kg | 164.21 W/Kg | 162.84 W/Kg | 185.12 W/Kg | 215.37 W/Kg |

**Note**: System checks the specific test data please see Annex C.

# 7. OPERATIONAL CONDITIONS DURING TEST

## 7.1 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.

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.

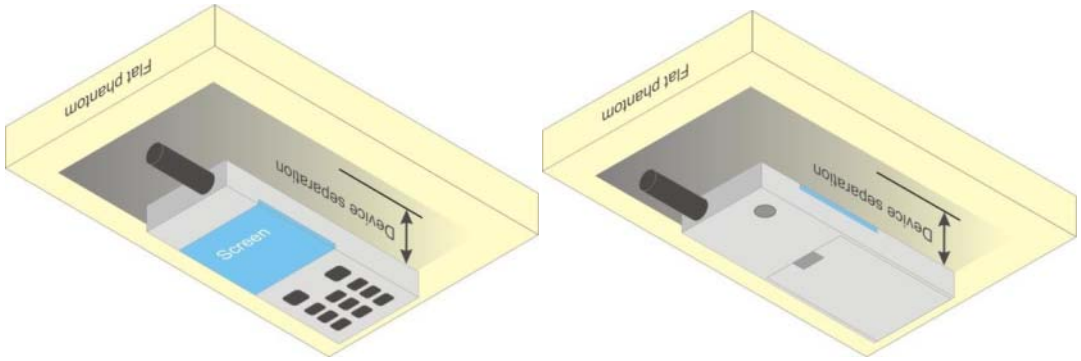



**Illustration for Body Worn Position**

## 7.2 Measurement procedure

The Following steps are used for each test position

1. 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.
2. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
3. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot 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.
4. 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.

### 7.3 Description of interpolation/extrapolation scheme

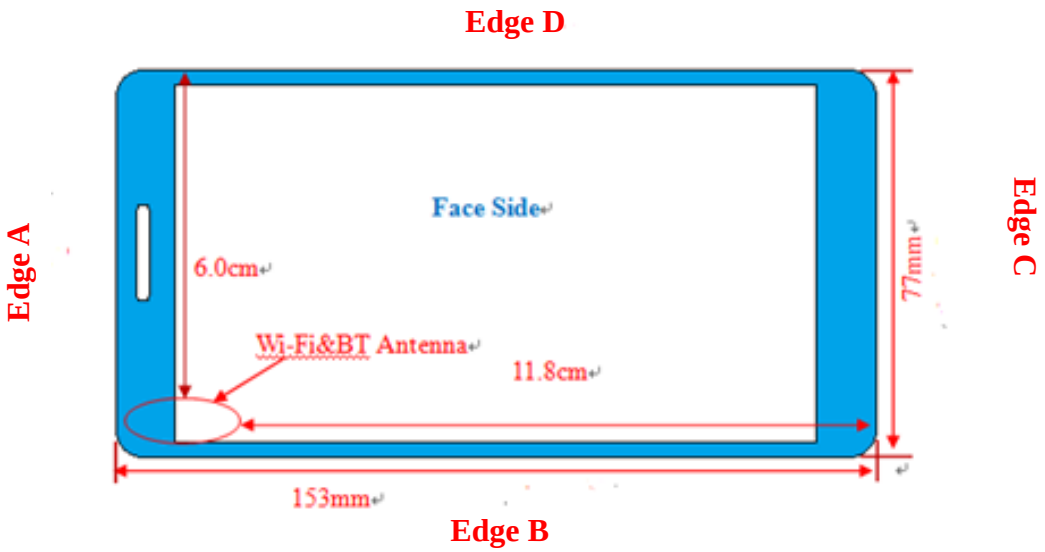
The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

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.

## 8. ANTENNA LOCATION AND TEST POSITION

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ⩽ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions.




| 2.4GHz- 10-g extremity SAR | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 10g Peak | Scaling Factor | Scaled SAR (W/Kg), 10g |
| Body (0mm Separation) | Back upward | 1 | 0.364 | 1.047 | 0.381 |
| | Face upward | | 0.256 | | 0.268 |
| | Edge A | | 0.106 | | 0.111 |
| | Edge B | | 0.103 | | 0.108 |

| 5.2GHz-10-g extremity SAR | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 10g Peak | Scaling Factor | Scaled SAR (W/Kg), 10g |
| Body (0mm Separation) | Back upward | 5180 | 0.212 | 1.002 | 0.212 |
| | Face upward | | 0.184 | | 0.184 |
| | Edge A | | 0.101 | | 0.101 |
| | Edge B | | 0.094 | | 0.094 |

| 5.8GHz-10-g extremity SAR | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 10g Peak | Scaling Factor | Scaled SAR (W/Kg), 10g |
| Body (0mm Separation) | Back upward | 5825 | 0.201 | 1.076 | 0.216 |
| | Face upward | | 0.167 | | 0.180 |
| | Edge A | | 0.097 | | 0.104 |
| | Edge B | | 0.086 | | 0.093 |

Note：

1. This device is 145-mm x 75-mm, 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 648474 D04, Section 2.5(b). for the 0-mm spacing extremity test

# 9. MEASUREMENT OF CONDUCTED OUTPUT POWER

1. Wi-Fi 2.4GHz Average output power

| Band | Channel | Frequency (MHz) | Output Power(dBm) | | |
|---|---|---|---|---|---|
| | | | 802.11b (DSSS) | 802.11g (OFDM) | 802.11n20 (OFDM) |
| Wi-Fi 2.4GHz | 1 | 2412 | 12.82 | 10.18 | 10.08 |
| | 6 | 2437 | 11.81 | 9.43 | 9.19 |
| | 11 | 2462 | 11.76 | 9.34 | 9.18 |

| Band | Channel | Frequency (MHz) | Output Power(dBm) |
|---|---|---|---|
| | | | 802.11n40 (OFDM) |
| Wi-Fi 2.4GHz | 3 | 2422 | 7.88 |
| | 6 | 2437 | 7.28 |
| | 9 | 2452 | 7.17 |

2. Wi-Fi 5GHz Average output power

| Band | Channel | Frequency (MHz) | Output Power(dBm) | |
|---|---|---|---|---|
| | | | 802.11a20 | 802.11n20 |
| Wi-Fi 5.2GHz | 36 | 5180 | 9.49 | 9.33 |
| | 40 | 5200 | 9.21 | 9.15 |
| | 44 | 5220 | 9.17 | 9.11 |
| | 48 | 5240 | 9.22 | 9.07 |

| Band | Channel | Frequency (MHz) | Output Power(dBm) |
|---|---|---|---|
| | | | 802.11n40 |
| Wi-Fi 5.2GHz | 38 | 5190 | 9.03 |
| | 46 | 5230 | 8.71 |

| Band | Channel | Frequency (MHz) | Output Power(dBm) | |
|---|---|---|---|---|
| | | | 802.11a20 | 802.11n20 |
| Wi-Fi 5.8GHz (UNII) | 149 | 5745 | 8.18 | 7.98 |
| | 153 | 5765 | 7.32 | 7.20 |
| | 157 | 5785 | 7.98 | 8.02 |
| | 161 | 5805 | 7.53 | 7.23 |
| | 165 | 5825 | 8.05 | 7.86 |

| Band | Channel | Frequency (MHz) | Output Power(dBm) |
|---|---|---|---|
| | | | 802.11n40 |
| Wi-Fi 5.8GHz (UNII) | 151 | 5755 | 7.65 |
| | 159 | 5795 | 7.43 |

2. BT peak output power

| Band | Channel | Frequency (MHz) | Output Power(dBm) | | |
|---|---|---|---|---|---|
| | | | GFSK | π/4-DQPSK | 8-DPSK |
| BT | 0 | 2402 | 8.21 | 7.77 | 7.87 |
| | 39 | 2441 | 8.12 | 7.65 | 7.78 |
| | 78 | 2480 | 7.83 | 7.30 | 7.53 |

| Band | Channel | Frequency (MHz) | Output Power(dBm) |
|---|---|---|---|
| | | | GFSK |
| BT4.1 | 0 | 2402 | -0.36 |
| | 19 | 2441 | -0.62 |
| | 39 | 2480 | -0.73 |

## 10. TEST RESULTS LIST

Summary of Measurement Results (WLAN 2.4GHz 802.11b Band)

| Temperature: 21.0~23.8°C, humidity: 54~60%. | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 1g Peak | Scaling Factor | Scaled SAR (W/Kg), 1g |
| Right Side Of Head | Cheek/Touch | 1 | 0.150 | 1.047 | 0.157 |
| | Ear/Tilt | | 0.096 | | 0.101 |
| Left Side Of Head | Cheek/Touch | | 0.146 | | 0.153 |
| | Ear/Tilt | | 0.084 | | 0.088 |
| Body (10mm Separation) | Back upward | | 0.223 | | 0.233 |
| | Face upward | | 0.162 | | 0.170 |

Summary of Measurement Results (WLAN 5.2GHz 802.11a Band)

| Temperature: 21.0~23.8°C, humidity: 54~60%. | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 1g Peak | Scaling Factor | Scaled SAR (W/Kg), 1g |
| Right Side Of Head | Cheek/Touch | 48 | 0.191 | 1.002 | 0.191 |
| | Ear/Tilt | | 0.106 | | 0.106 |
| Left Side Of Head | Cheek/Touch | | 0.184 | | 0.184 |
| | Ear/Tilt | | 0.093 | | 0.093 |

Summary of Measurement Results (WLAN 5.8GHz 802.11a Band)

| Temperature: 21.0~23.8°C, humidity: 54~60%. | | | | | |
|---|---|---|---|---|---|
| Phantom Configurations | Device Test Positions | Device Test channel | SAR(W/Kg) , 1g Peak | Scaling Factor | Scaled SAR (W/Kg), 1g |
| Right Side Of Head | Cheek/Touch | 165 | 0.106 | 1.076 | 0.113 |
| | Ear/Tilt | | 0.051 | | 0.055 |
| Left Side Of Head | Cheek/Touch | | 0.102 | | 0.110 |
| | Ear/Tilt | | 0.046 | | 0.049 |

Notes:

1. Adjust SAR for OFDM is 0.233 *10.18/12.82=0.184W/Kg<1.2, so SAR is not required for OFDM modes.
2. SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:
   1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
   2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

3. 2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed.

4. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
5. Justification for test configurations for WLAN per KDB Publication 248227 D01DR02-41929 for

2.4 GHz Wi-Fi single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.

6. During test, the duty cycle of the EUT was setting to 100%
7. Scaling Factor calculation

| Band | Tune-up power tolerance(dBm) | SAR test channel Power (dBm) | Scaling Factor |
|---|---|---|---|
| WiFi 2.4GHz | Max output power =12.5(+0.5 -2) | 12.80 | 1.047 |
| WiFi 5.2GHz | Max output power =9.0(+-0.5) | 9.49 | 1.002 |
| WiFi 5.8GHz | Max output power =8.0(+-0.5) | 8.18 | 1.076 |

## 11. REPEATED SAR MEASUREMENT

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

# 12. MULTIPLE TRANSMITTERS EVALUATION

**Stand-alone SAR**

| Test distance: 5mm | | | |
|---|---|---|---|
| **Band** | **Highest power(mW) per tune up** | **1-g SAR test threshold** | **Test required?** |
| **Wi-Fi(2.4G)** | 19.05 | [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for 1-g SAR | Yes |
| **Wi-Fi(5.2G)** | 8.89 | | Yes |
| **Wi-Fi(5.8G)** | 6.58 | | Yes |
| **BT** | 6.62 | | No |

| Test distance: 10mm | | | |
|---|---|---|---|
| **Band** | **Highest power(mW) per tune up** | **1-g SAR test threshold** | **Test required?** |
| **Wi-Fi(2.4G)** | 19.05 | [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for 1-g SAR | Yes |
| **Wi-Fi(5.2G)** | 8.89 | | No |
| **Wi-Fi(5.8G)** | 6.58 | | No |
| **BT** | 6.62 | | No |

The Stand-alone SAR test for BT is not required.
The Body SAR test for 5.2G&5.8G WiFi are not required.
The SAR test for 802.11b(2.4GHz) is required, 802.11g/HT20 is not required, for the maximum average output power is less than 1/4 dB Higher than measured on the corresponding 802.11b channels. As per KDB 248227

The BT stand-alone SAR is not required, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm;
where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
(Max power=6.62 mW; *min. test separation distance*= 5mm for Head; *f*=2.4GHz)
BT estimated Head SAR =0.273 W/Kg (1g)
(Max power=6.62 mW; *min. test separation distance*= 10mm for Body; *f*=2.4GHz)
BT estimated Body SAR =0.137 W/Kg (1g)
(Max power=8.89 mW; *min. test separation distance*= 10mm for Body; *f*=5.2GHz)
Wi-Fi(5.2G) estimated Body SAR = 0.270W/Kg (1g)
(Max power=7.06 mW; *min. test separation distance*= 10mm for Body; *f*=5.5GHz)
Wi-Fi(5.8G) estimated Body SAR = 0.211W/Kg (1g)

**Simultaneous SAR**

Simultaneous Transmission SAR evaluation is not required for BT and WiFi, because the software mechanism have been incorporated to guarantee that the WLAN and Bluetooth transmitters would not simultaneously operate.

# 13 ANNEX A PLOTS OF SAR TEST RESULTS

# 14 ANNEX B GENERAL INFORMATION

# 15 ANNEX C SYSTEM CHECK DATA

# 15 ANNEX D SETUP PHOTOS

## ANNEX A PLOTS OF SAR TEST RESULTS

| 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: 2017.05.12

Measurement duration: 13 minutes 32 seconds

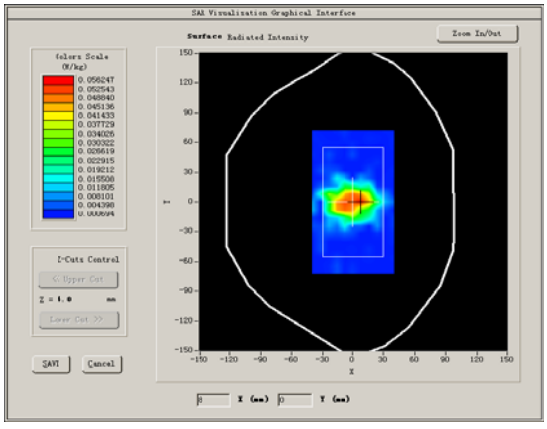
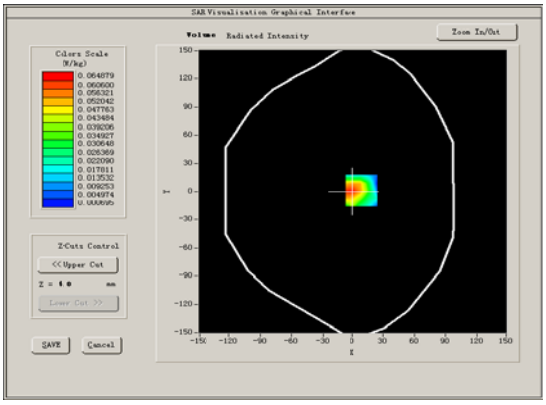
**A. Experimental conditions.**

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

**B. SAR Measurement Results**

Low Band SAR (Channel 1)

| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | -1.240000 |
| **Ambient Temperature:** | 22.0°C |
| **Liquid Temperature:** | 21.8°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

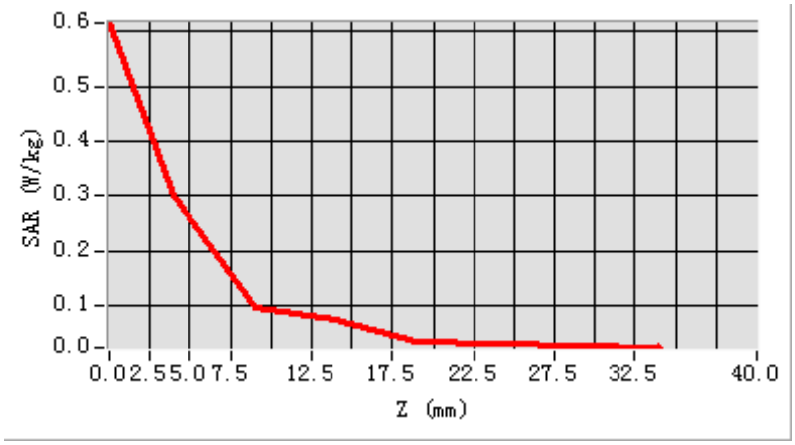
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

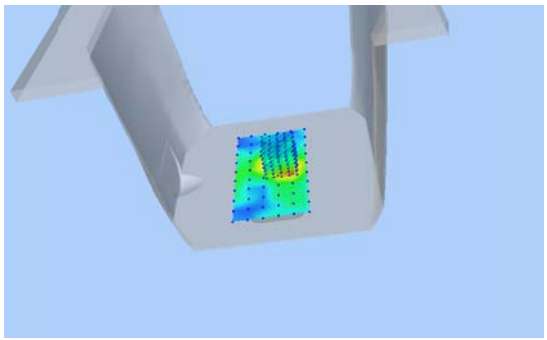
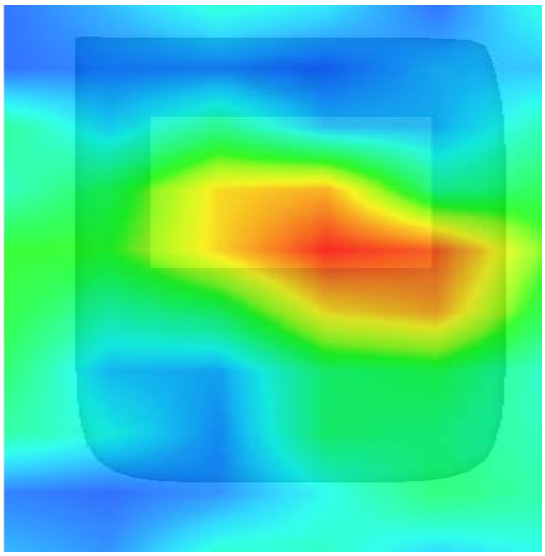
**Maximum location: X=9.00, Y=2.00**

**SAR Peak: 0.59 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.097181 |
| **SAR 1g (W/Kg)** | 0.223110 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** | **24.00** | **29.00** |
|---|---|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.6165** | **0.2999** | **0.0961** | **0.0751** | **0.0319** | **0.0281** | **0.0264** |




| **3D screen 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: 2017.05.12

Measurement duration: 13 minutes 32 seconds

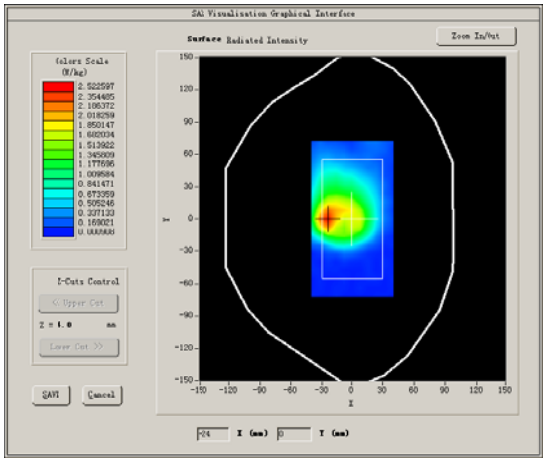
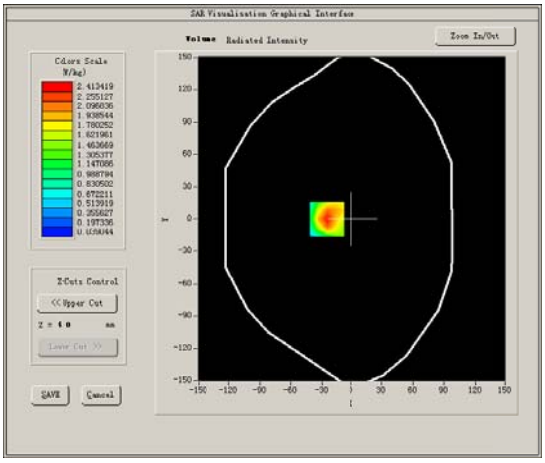
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1)

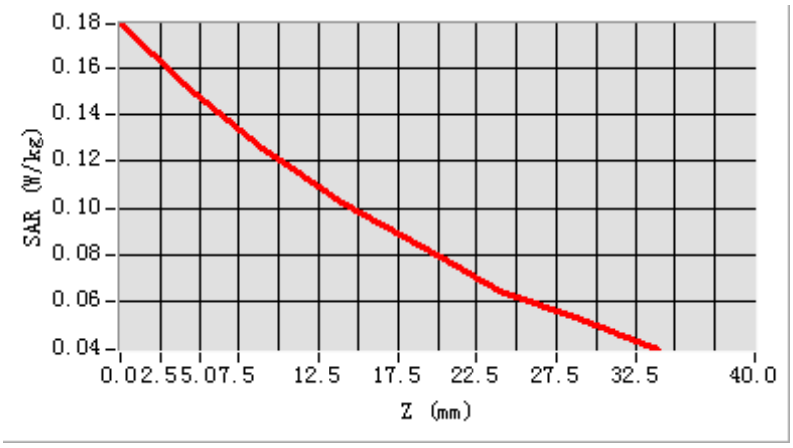
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | -1.240000 |
| **Ambient Temperature:** | 22.0°C |
| **Liquid Temperature:** | 21.8°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

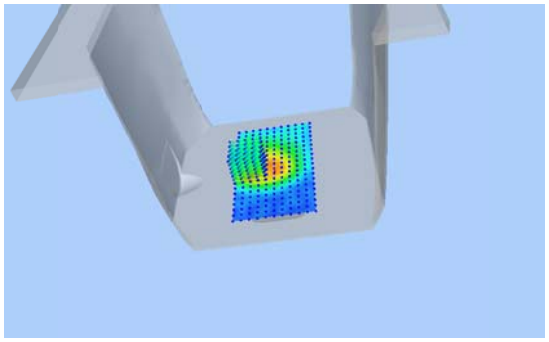
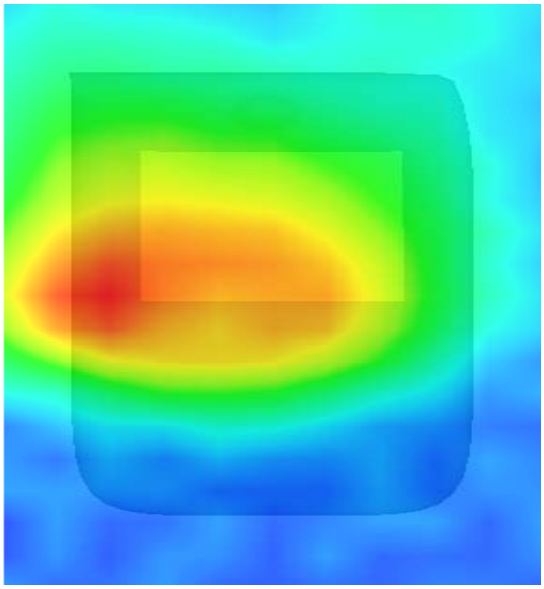
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=11.00, Y=35.00**
**SAR Peak: 0.30 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.080498 |
| **SAR 1g (W/Kg)** | 0.161768 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** | **24.00** | **29.00** |
|---|---|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.1847** | **0.16006** | **0.1231** | **0.1065** | **0.0724** | **0.0622** | **0.0433** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 58 seconds

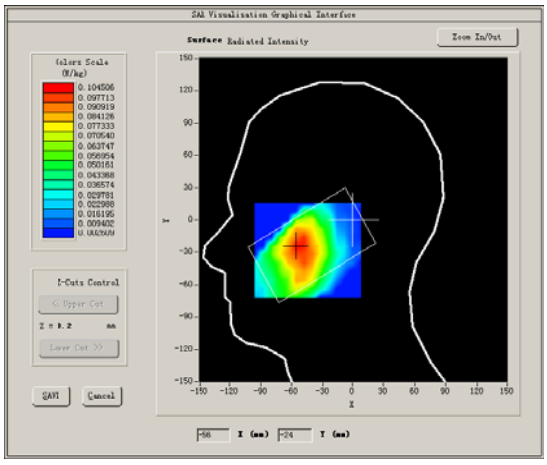
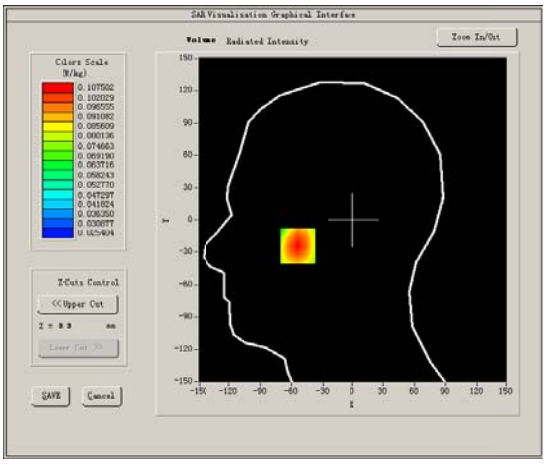
**A. Experimental conditions.**

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Cheek |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

**B. SAR Measurement Results**

Low Band SAR (Channel 1):

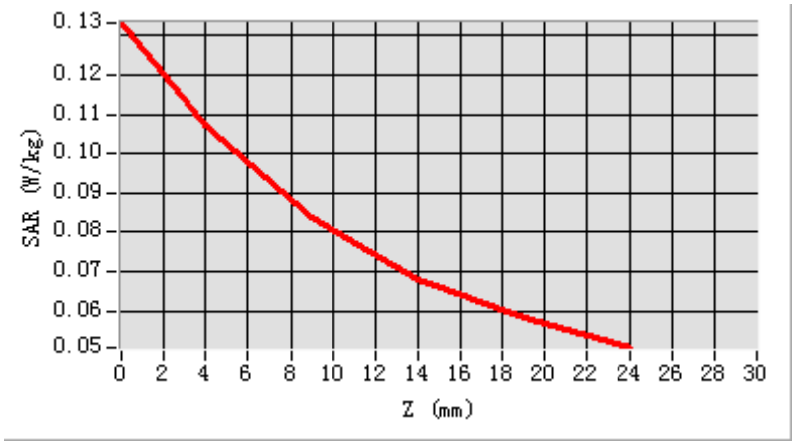
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 39.230236 |
| **Conductivity (S/m)** | 1.823651 |
| **Power drift (%)** | 3.970000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

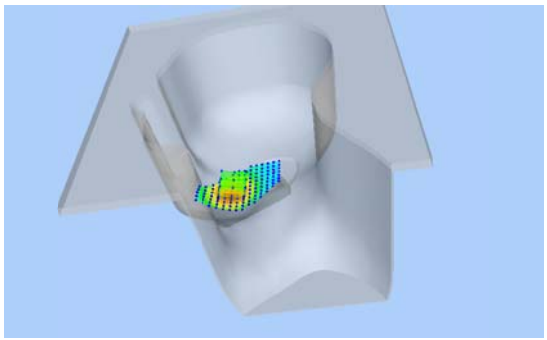
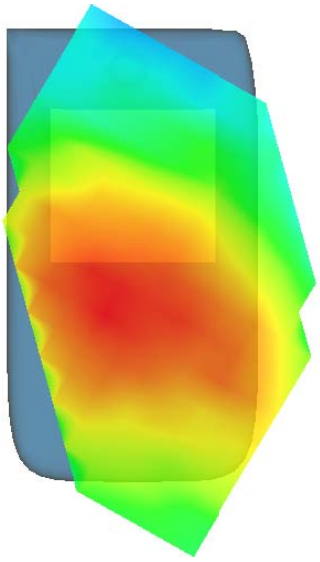
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-54.00, Y=-24.00**
**SAR Peak: 0.14 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.078702 |
| **SAR 1g (W/Kg)** | 0.150021 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.1326** | **0.1073** | **0.0825** | **0.0645** | **0.0563** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 32 seconds

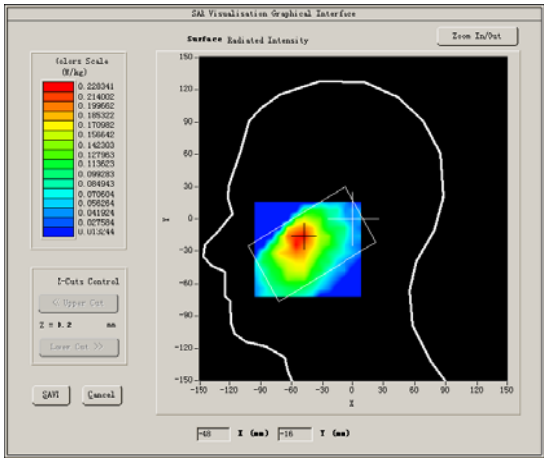
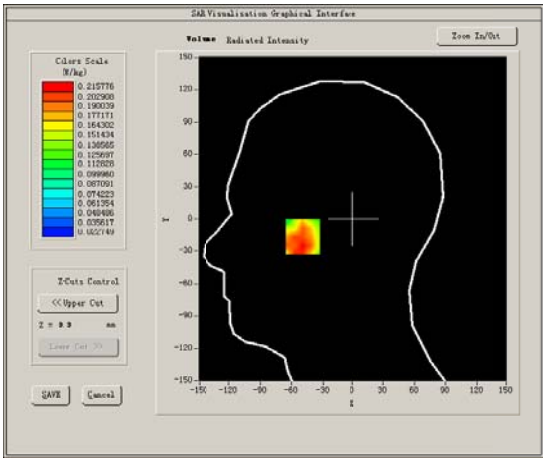
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Tilt |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 39.230236 |
| **Conductivity (S/m)** | 1.823651 |
| **Power drift (%)** | -2.300000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

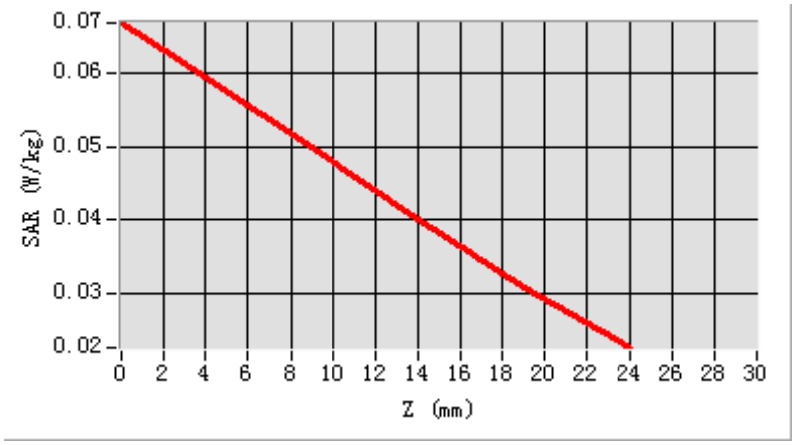
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

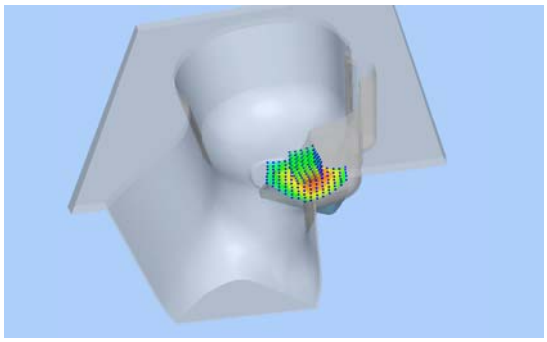
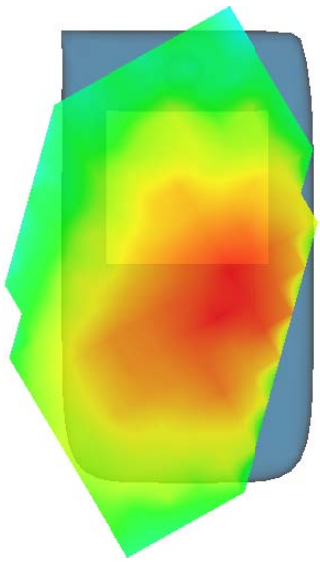
**Maximum location: X=-32.00, Y=-8.00**

**SAR Peak: 0.07 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.044045 |
| **SAR 1g (W/Kg)** | 0.096279 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.0669** | **0.0594** | **0.0498** | **0.0402** | **0.0310** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 31 seconds

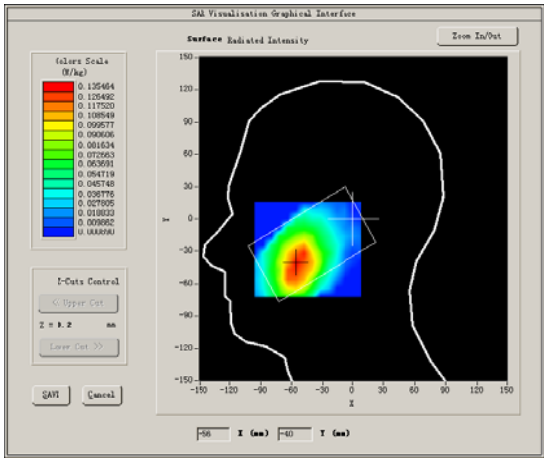
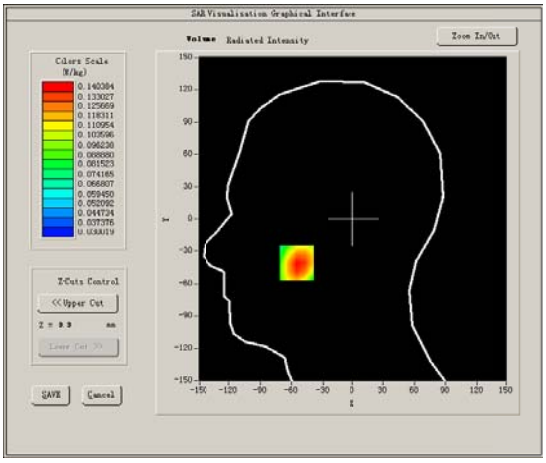
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Cheek |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 39.230236 |
| **Conductivity (S/m)** | 1.823651 |
| **Power drift (%)** | 1.140000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

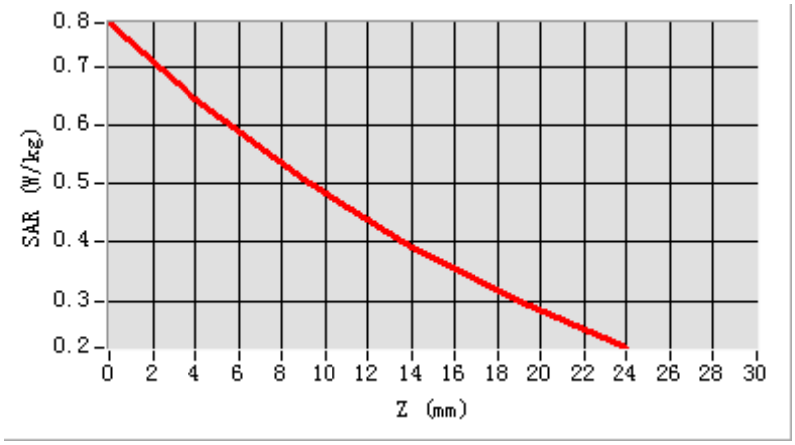
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

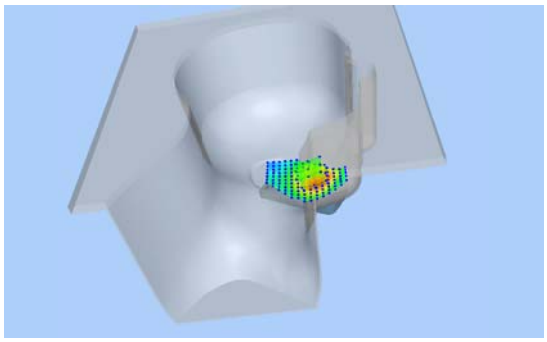
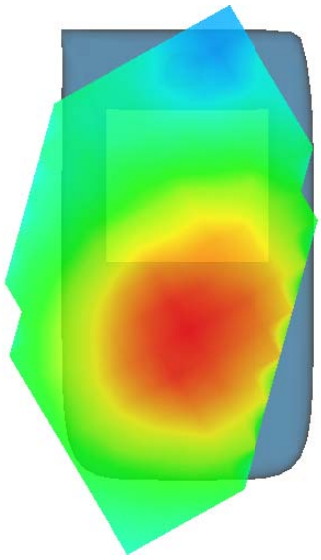
**Maximum location: X=-55.00, Y=-41.00**

**SAR Peak: 0.19 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.096353 |
| **SAR 1g (W/Kg)** | 0.146463 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.7735** | **0.6438** | **0.5060** | **0.3922** | **0.2985** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 13 seconds

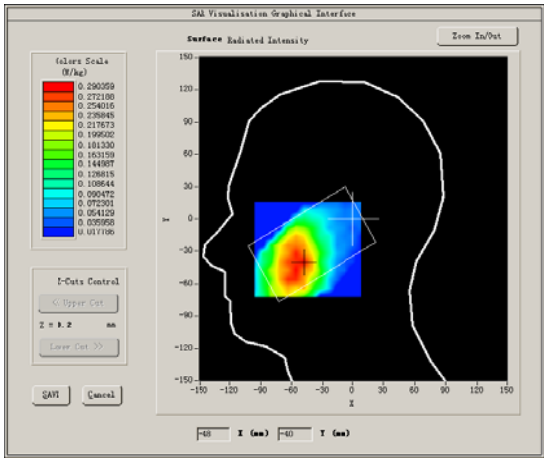
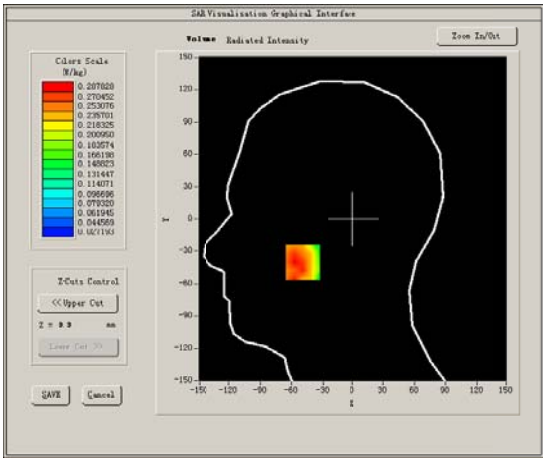
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Tilt |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

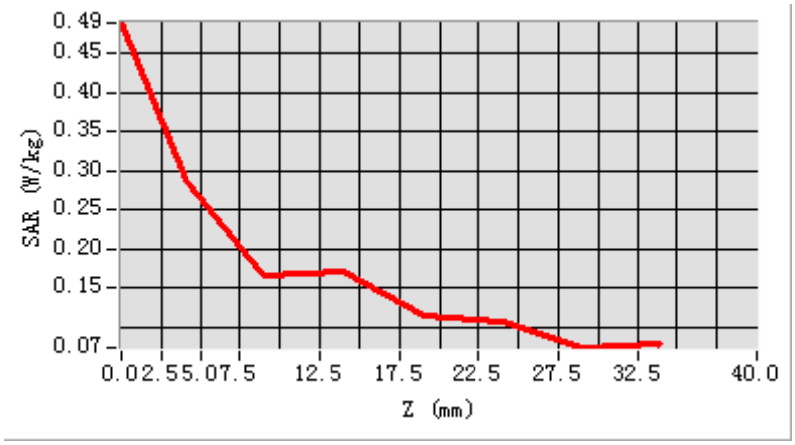
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 39.230236 |
| **Conductivity (S/m)** | 1.823651 |
| **Power drift (%)** | 1.650000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

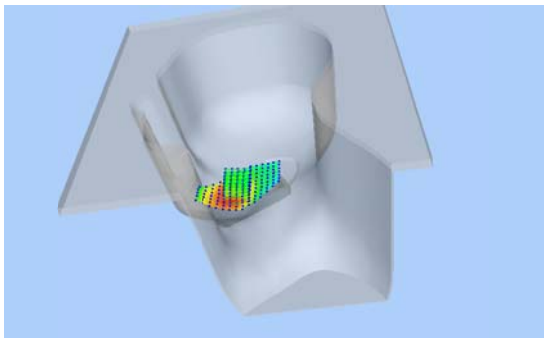
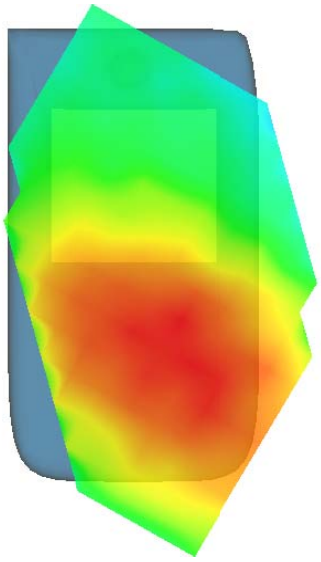
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-49.00, Y=-40.00**
**SAR Peak: 0.08W/kg**

| SAR 10g (W/Kg) | 0.039030 |
|---|---|
| SAR 1g (W/Kg) | 0.084212 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.4889 | 0.2878 | 0.1658 | 0.1713 | 0.1145 | 0.1073 | 0.0738 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 58 seconds

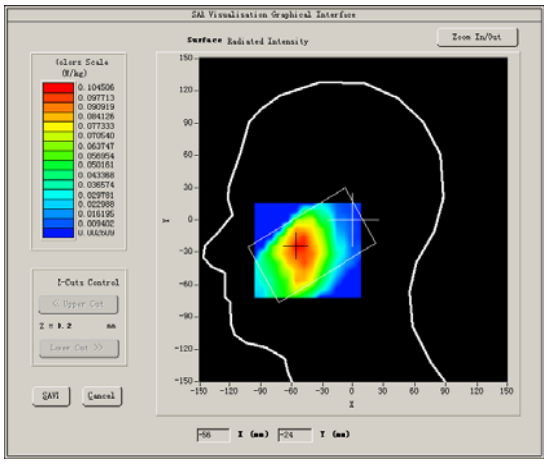
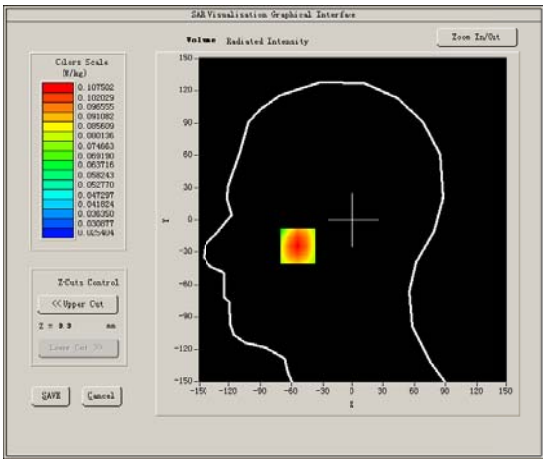
**B. Experimental conditions.**

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Cheek |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

**B. SAR Measurement Results**

High Band SAR (Channel 48):

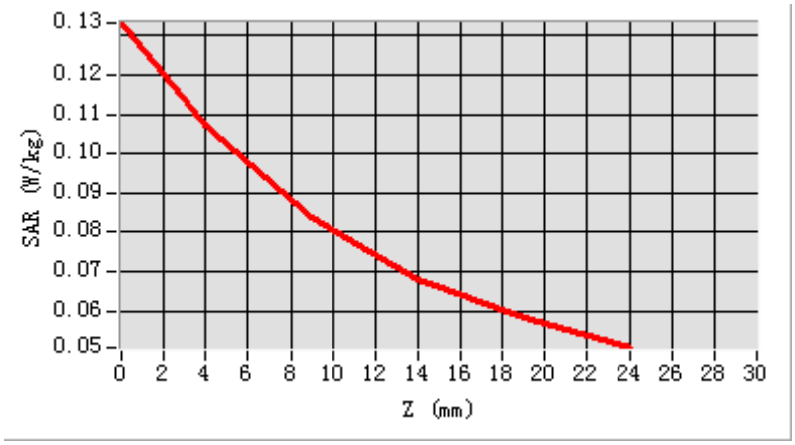
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 36.153014 |
| **Conductivity (S/m)** | 4.683260 |
| **Power drift (%)** | 3.970000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.71 |
| **Crest factor:** | 1:1 |

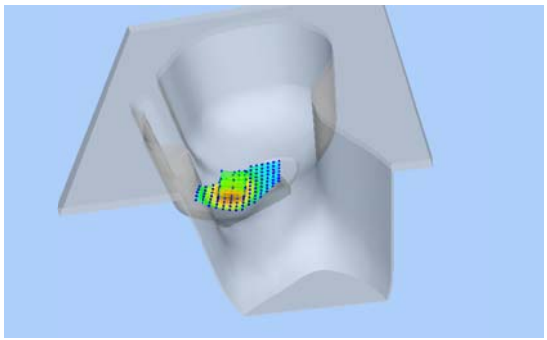
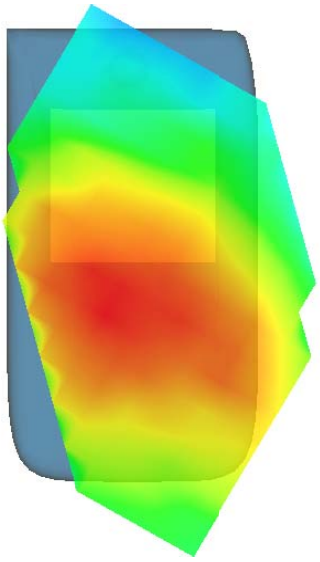
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-54.00, Y=-24.00**
**SAR Peak: 0.14 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.078702 |
| **SAR 1g (W/Kg)** | 0.191021 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.1332** | **0.1075** | **0.0839** | **0.0682** | **0.0581** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 32 seconds

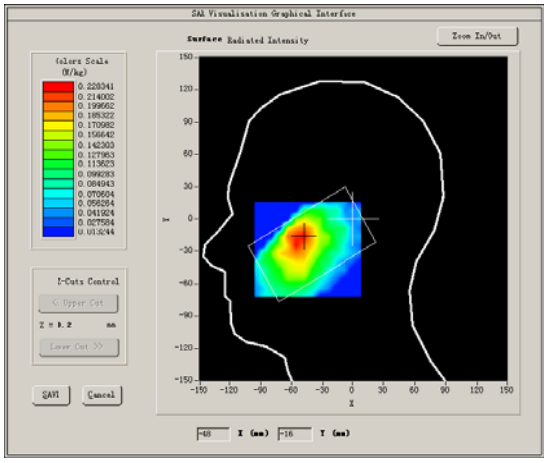
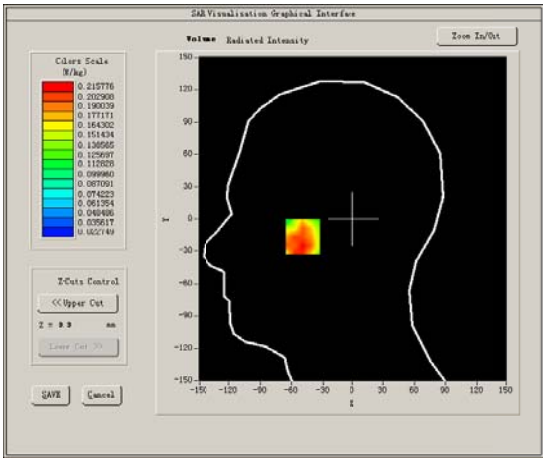
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Tilt |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 48):

| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 36.153014 |
| **Conductivity (S/m)** | 4.683260 |
| **Power drift (%)** | -2.300000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.71 |
| **Crest factor:** | 1:1 |

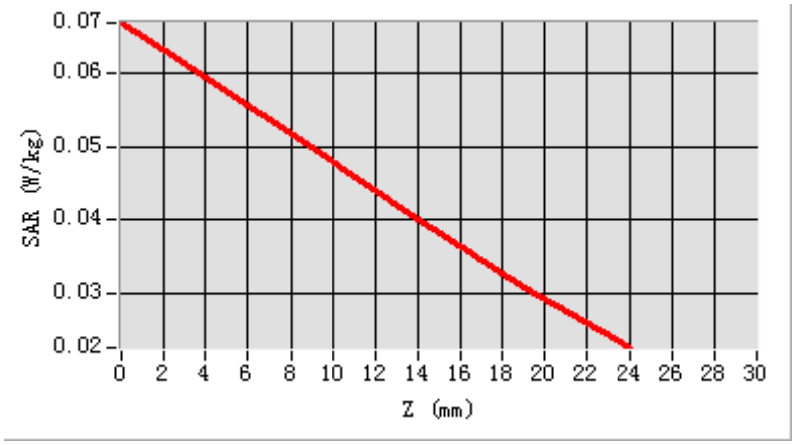
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

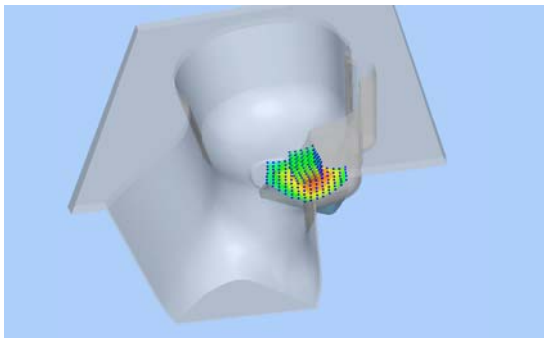
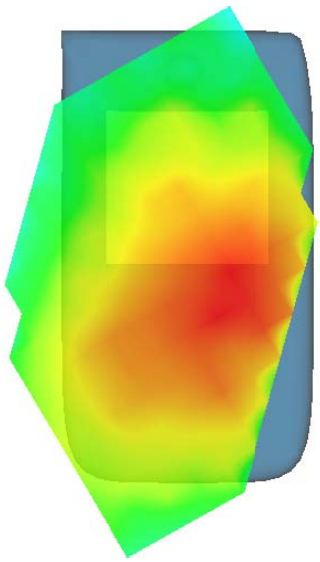
**Maximum location: X=-32.00, Y=-8.00**

**SAR Peak: 0.07 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.044045 |
| **SAR 1g (W/Kg)** | 0.106279 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.0669** | **0.0594** | **0.0498** | **0.0402** | **0.0310** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 31 seconds

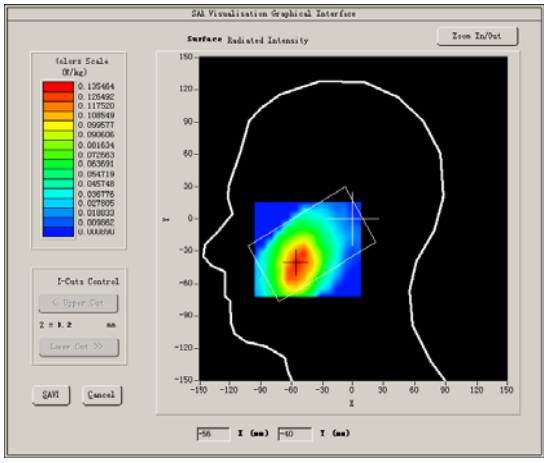
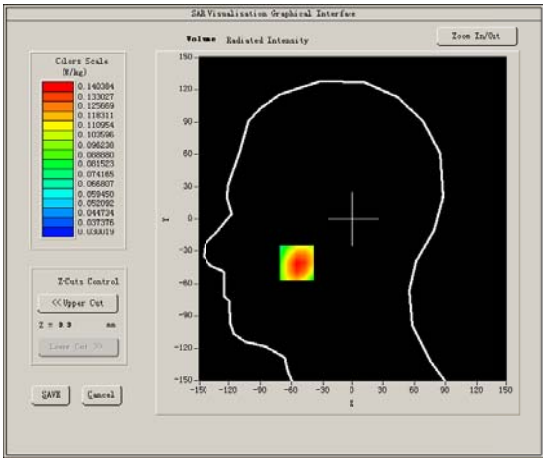
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Cheek |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 48):

| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 36.153014 |
| **Conductivity (S/m)** | 4.683260 |
| **Power drift (%)** | 1.140000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.71 |
| **Crest factor:** | 1:1 |

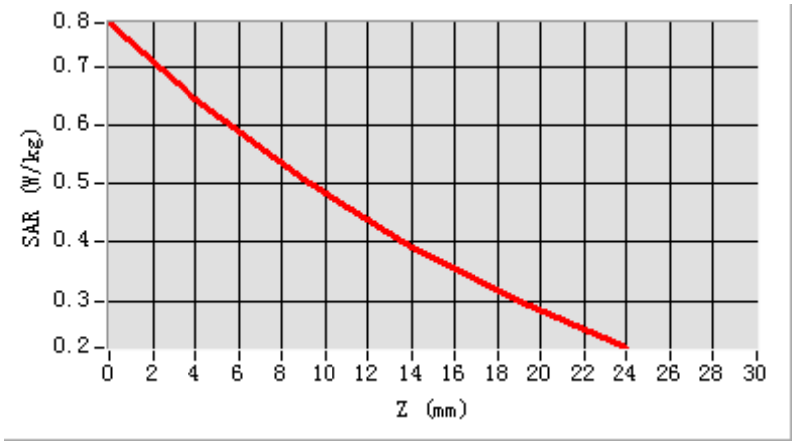
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

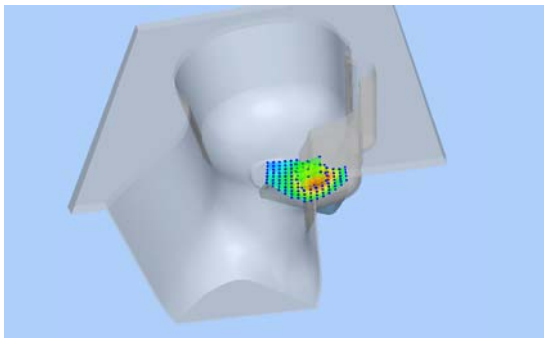
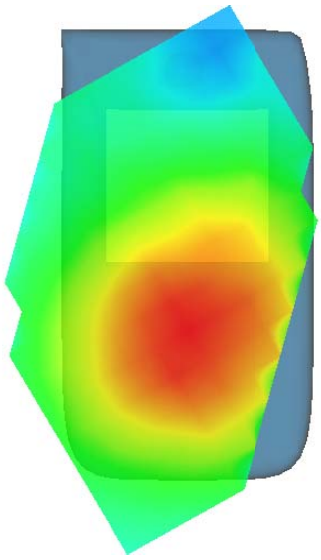
**Maximum location: X=-55.00, Y=-41.00**

**SAR Peak: 0.19 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.096353 |
| **SAR 1g (W/Kg)** | 0.184463 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.7735** | **0.6438** | **0.5060** | **0.3922** | **0.2985** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 13 seconds

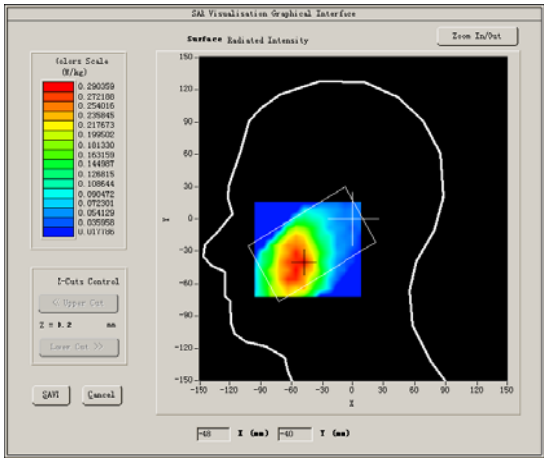
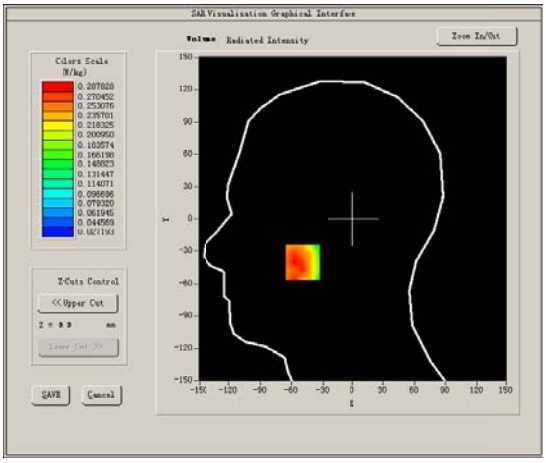
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Tilt |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 48):

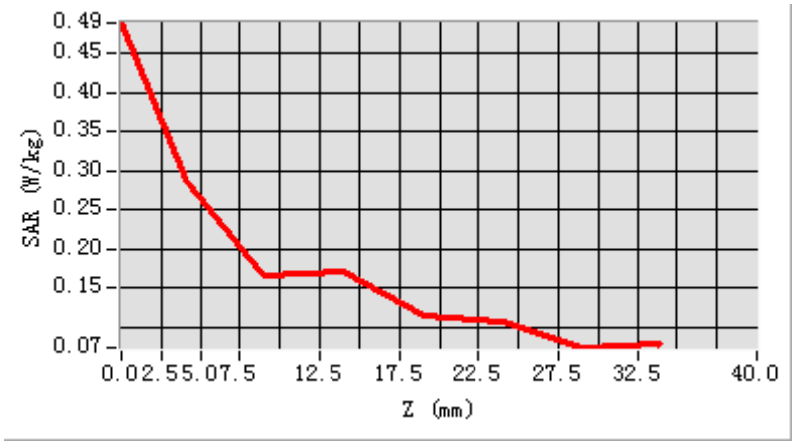
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 36.153014 |
| **Conductivity (S/m)** | 4.683260 |
| **Power drift (%)** | 1.650000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.71 |
| **Crest factor:** | 1:1 |

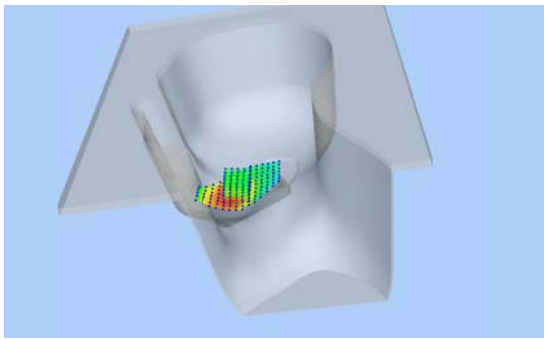
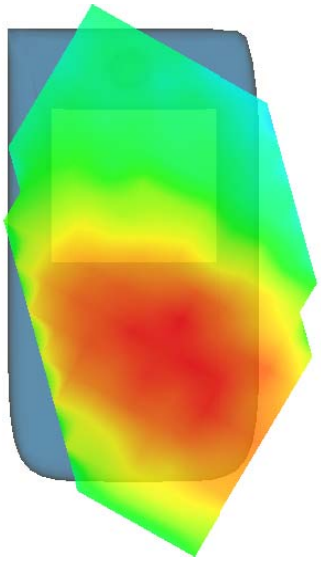
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-49.00, Y=-40.00**
**SAR Peak: 0.08W/kg**

| SAR 10g (W/Kg) | 0.039030 |
|---|---|
| SAR 1g (W/Kg) | 0.093212 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.4889 | 0.2878 | 0.1658 | 0.1713 | 0.1145 | 0.1073 | 0.0738 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 58 seconds

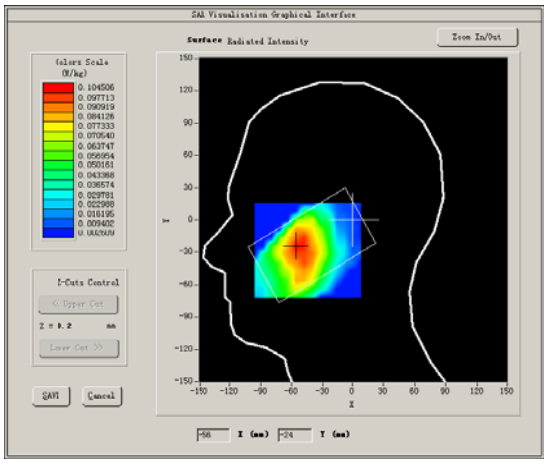
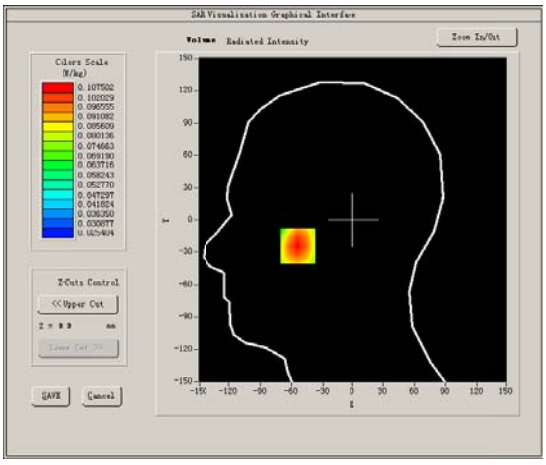
**C. Experimental conditions.**

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Cheek |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

**B. SAR Measurement Results**

High Band SAR (Channel 165):

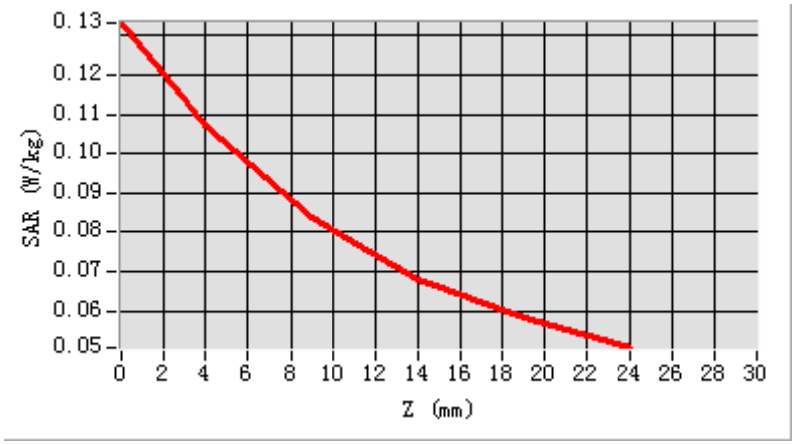
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 35.353428 |
| **Conductivity (S/m)** | 5.332716 |
| **Power drift (%)** | 3.970000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

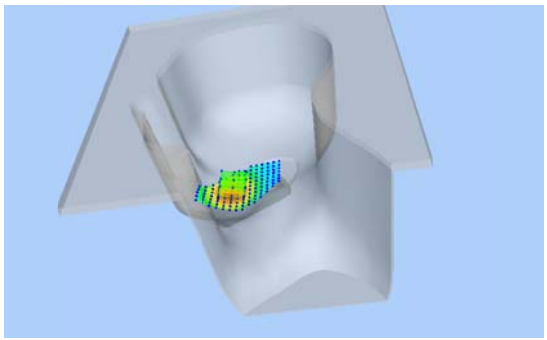
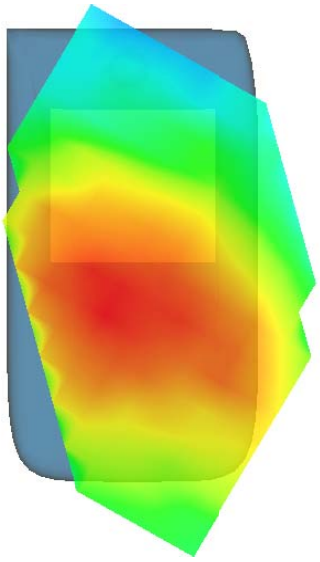
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-54.00, Y=-24.00**
**SAR Peak: 0.14 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.057702 |
| **SAR 1g (W/Kg)** | 0.106021 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.1332** | **0.1075** | **0.0839** | **0.0682** | **0.0581** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 32 seconds

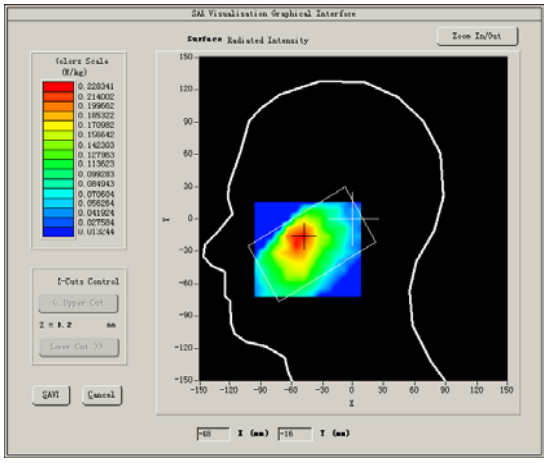
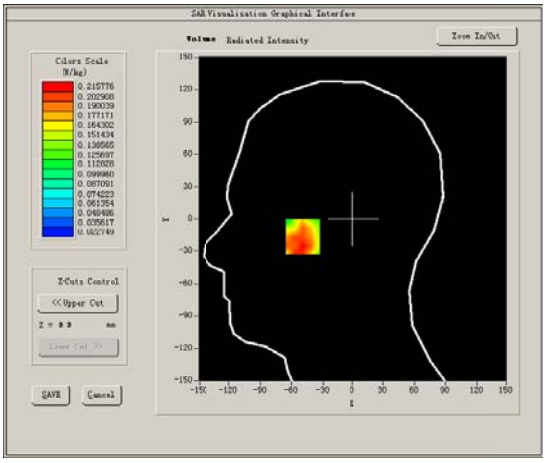
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Right head |
| **Device Position** | Tilt |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 35.353428 |
| **Conductivity (S/m)** | 5.332716 |
| **Power drift (%)** | -2.300000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

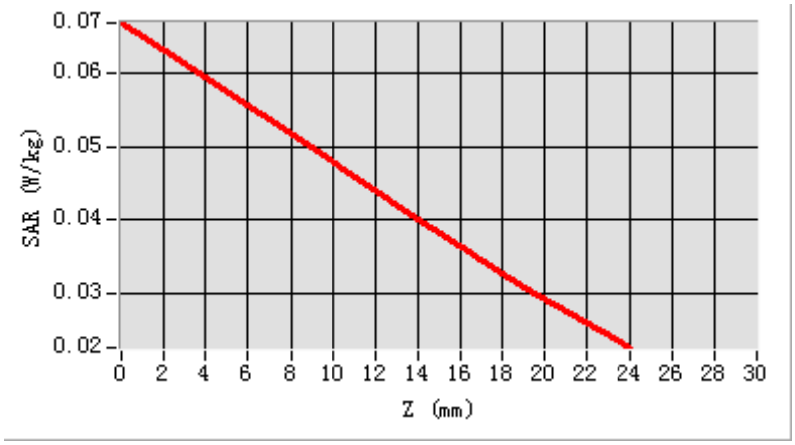
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

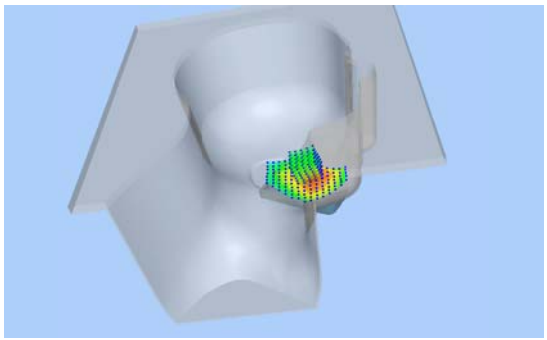
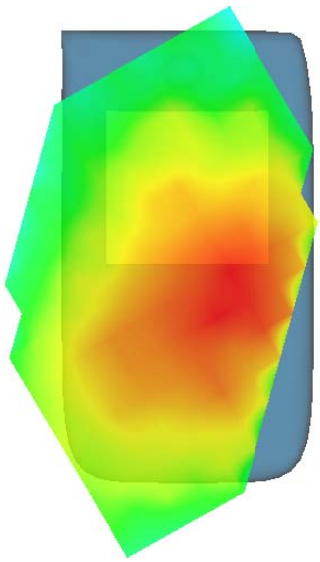
**Maximum location: X=-32.00, Y=-8.00**

**SAR Peak: 0.07 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.023545 |
| **SAR 1g (W/Kg)** | 0.051279 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.0669** | **0.0594** | **0.0498** | **0.0402** | **0.0310** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 31 seconds

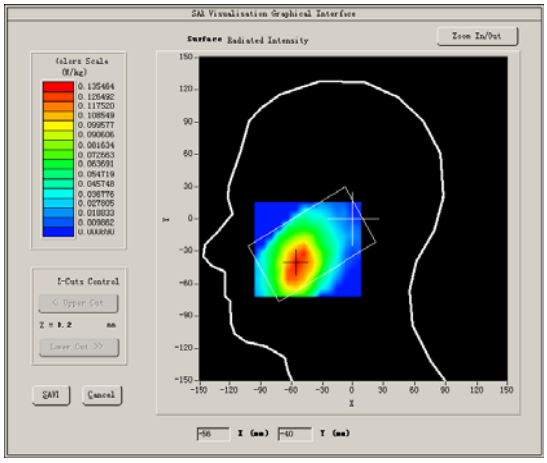
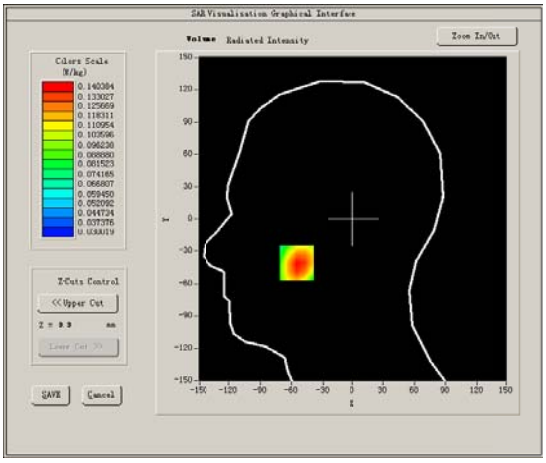
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Cheek |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 35.353428 |
| **Conductivity (S/m)** | 5.332716 |
| **Power drift (%)** | 1.140000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

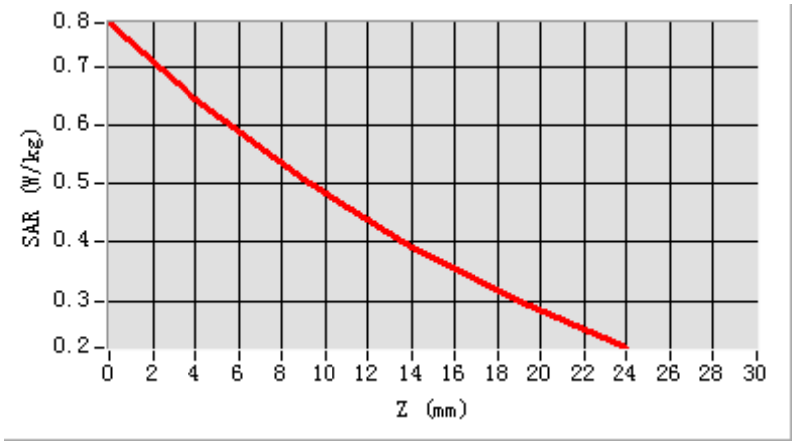
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

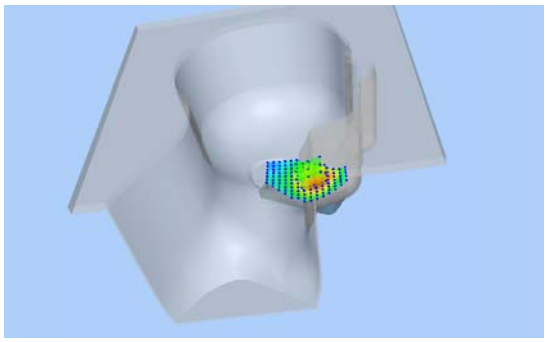
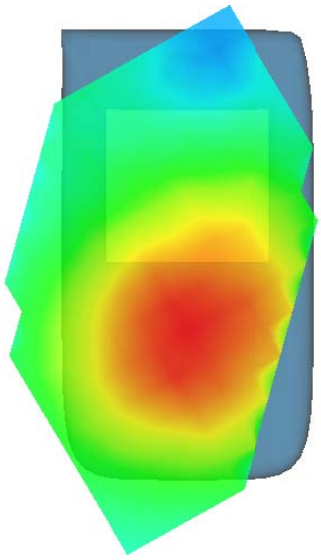
**Maximum location: X=-55.00, Y=-41.00**

**SAR Peak: 0.19 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.058353 |
| **SAR 1g (W/Kg)** | 0.102463 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** |
|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.7735** | **0.6438** | **0.5060** | **0.3922** | **0.2985** |




| **3D screen 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: 2017.05.25

Measurement duration: 13 minutes 13 seconds

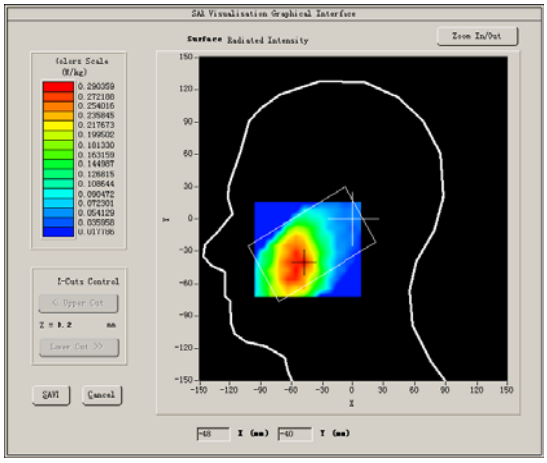
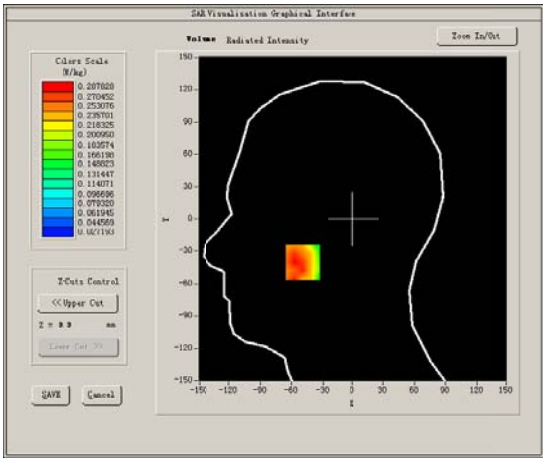
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | sam_direct_droit2_surf8mm.txt |
| **Phantom** | Left head |
| **Device Position** | Tilt |
| **Band** | 802.11a |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

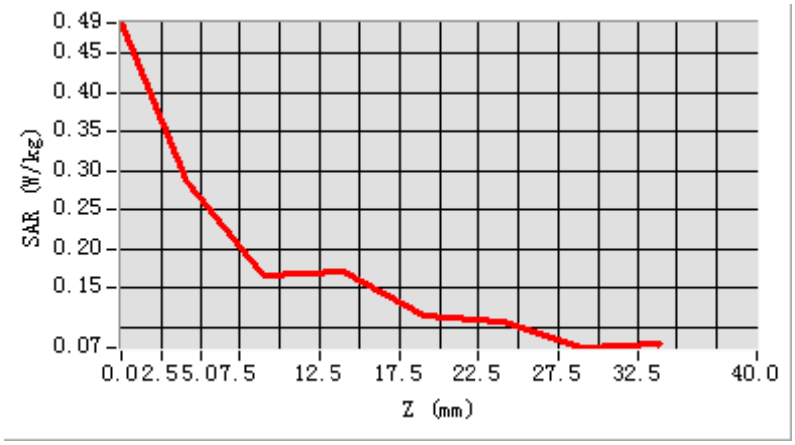
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 35.353428 |
| **Conductivity (S/m)** | 5.332716 |
| **Power drift (%)** | 1.650000 |
| **Ambient Temperature:** | 22.8°C |
| **Liquid Temperature:** | 22.7°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

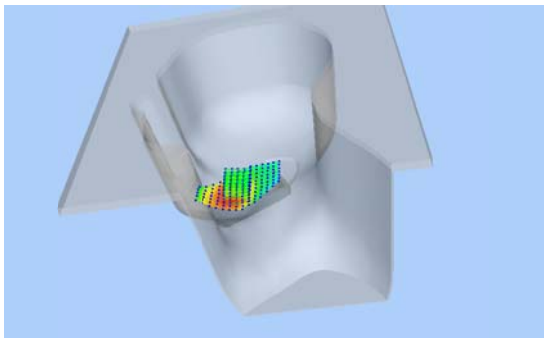
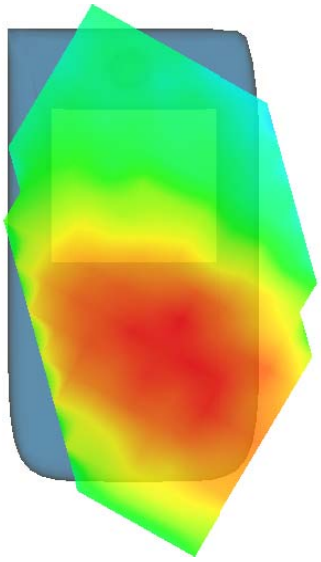
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-49.00, Y=-40.00**
**SAR Peak: 0.08W/kg**

| SAR 10g (W/Kg) | 0.023130 |
|---|---|
| SAR 1g (W/Kg) | 0.046212 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.4889 | 0.2878 | 0.1658 | 0.1713 | 0.1145 | 0.1073 | 0.0738 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 36 seconds

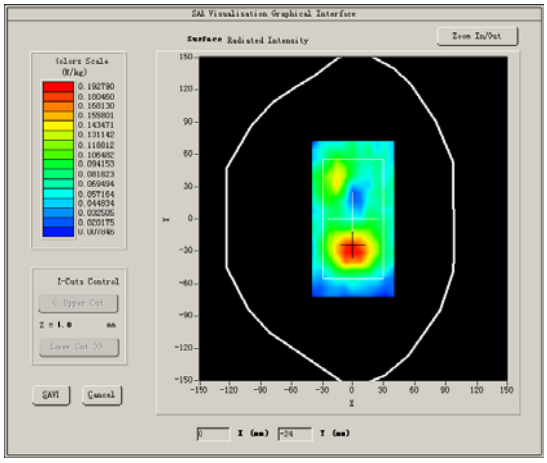
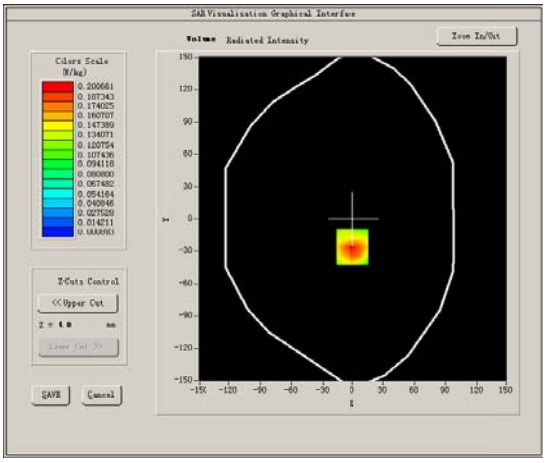
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

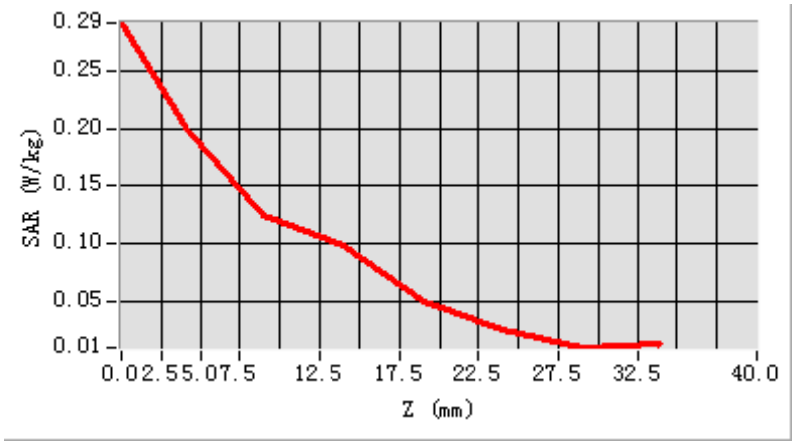
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

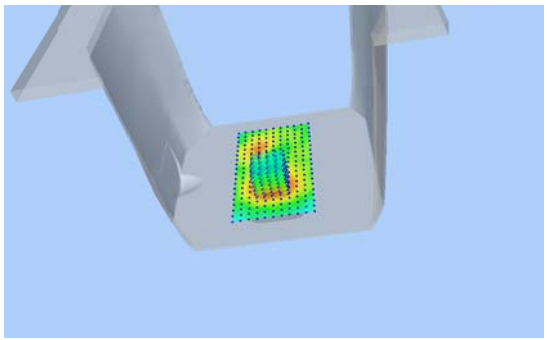
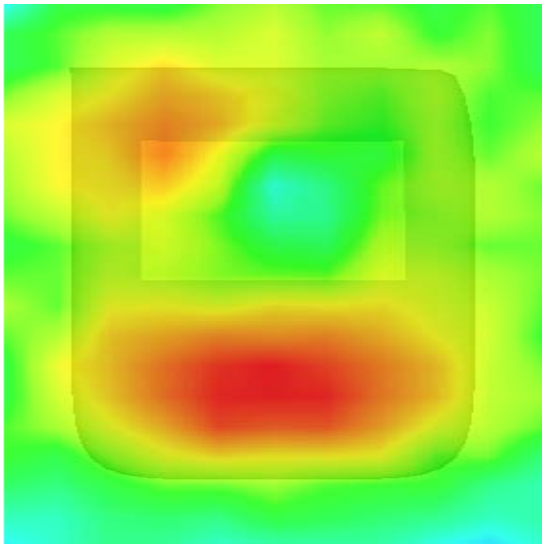
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-1.00, Y=-26.00**
**SAR Peak: 0.29 W/kg**

| SAR 10g (W/Kg) | 0.364013 |
|---|---|
| SAR 1g (W/Kg) | 0.679286 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.2906 | 0.2007 | 0.1250 | 0.0986 | 0.0502 | 0.0272 | 0.0111 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 36 seconds

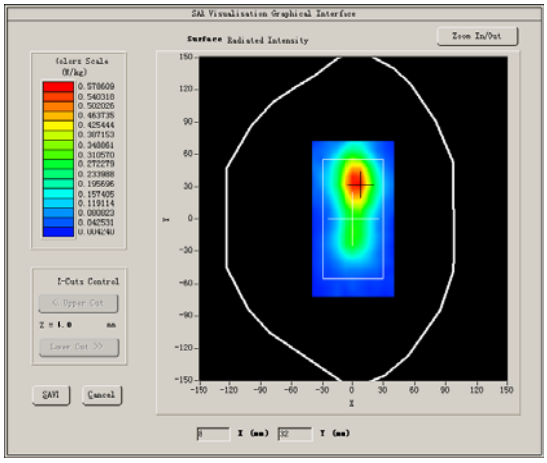
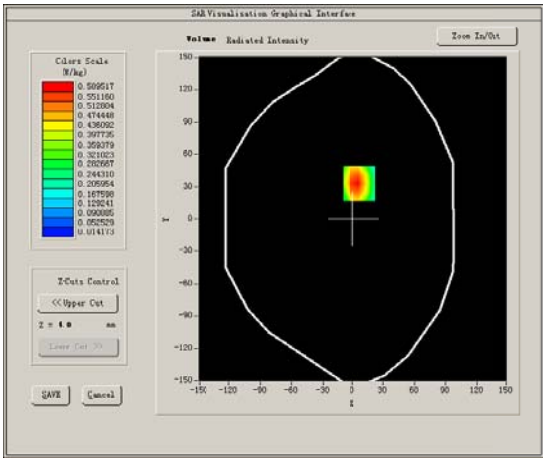
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

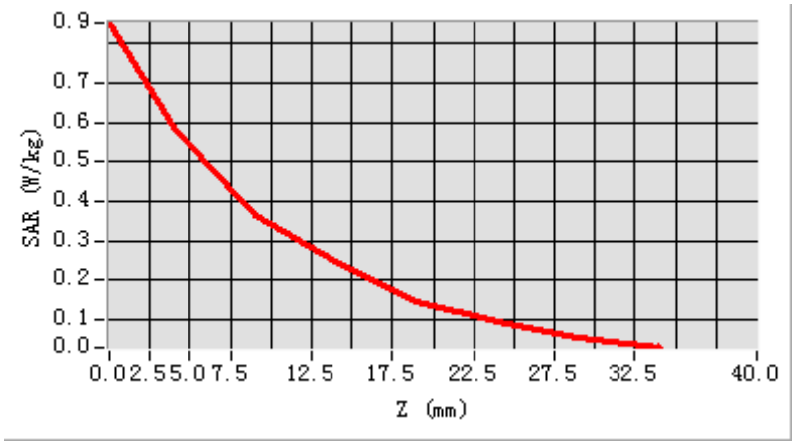
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

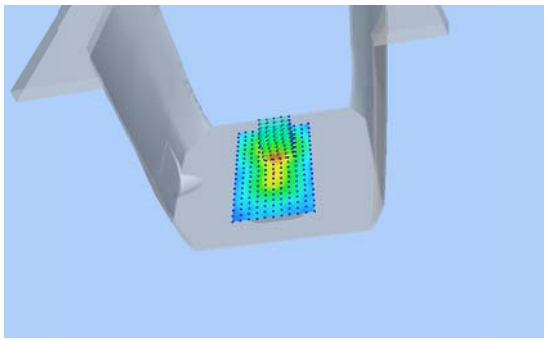
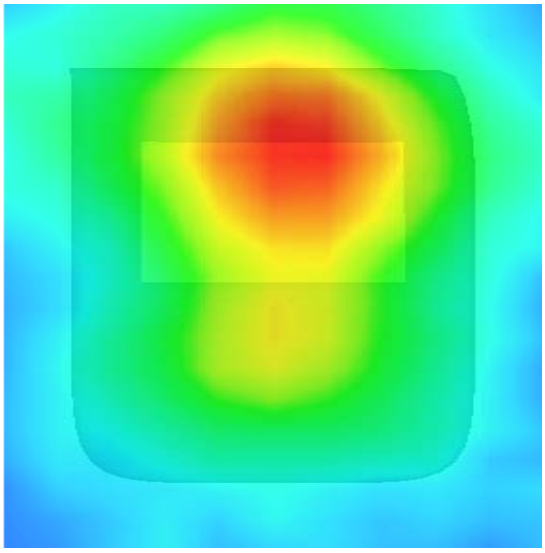
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.256231 |
|---|---|
| SAR 1g (W/Kg) | 0.578214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 36 seconds

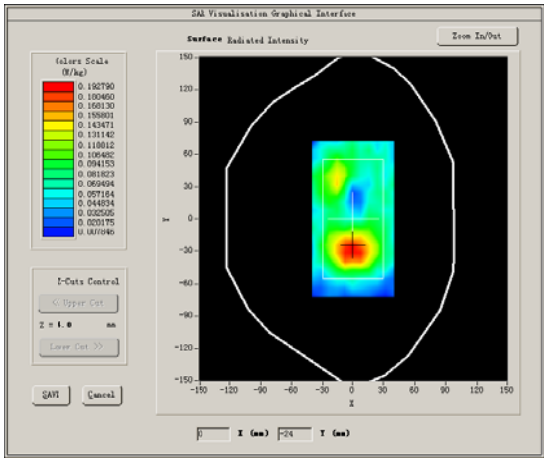
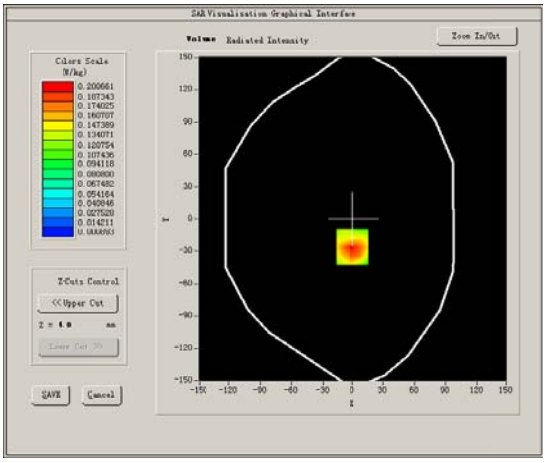
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

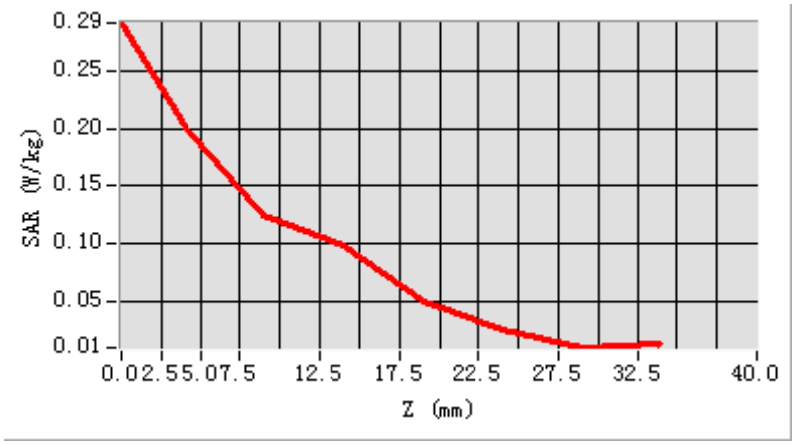
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

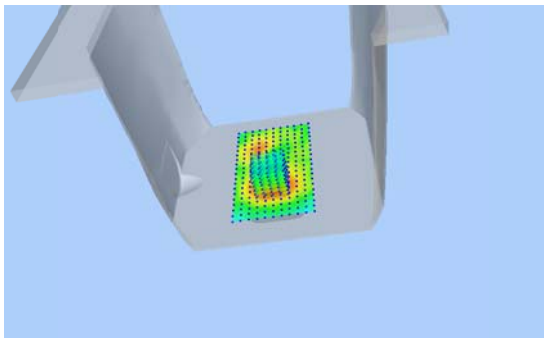
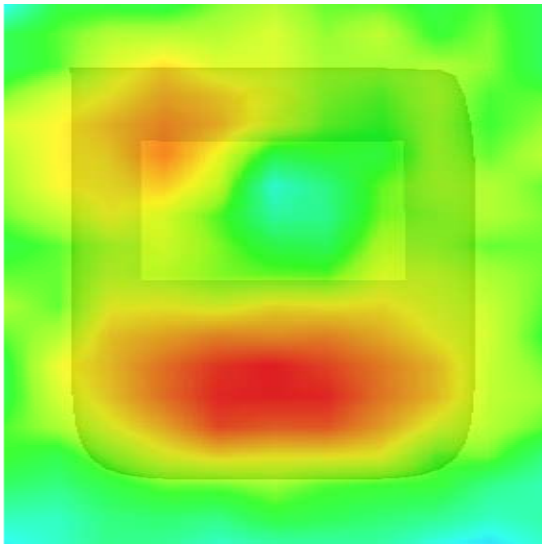
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=-1.00, Y=-26.00**
**SAR Peak: 0.29 W/kg**

| SAR 10g (W/Kg) | 0.106045 |
|---|---|
| SAR 1g (W/Kg) | 0.283686 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.2906 | 0.2007 | 0.1250 | 0.0986 | 0.0502 | 0.0272 | 0.0111 |




| 3D screen 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: 2017.05.25

Measurement duration: 13 minutes 36 seconds

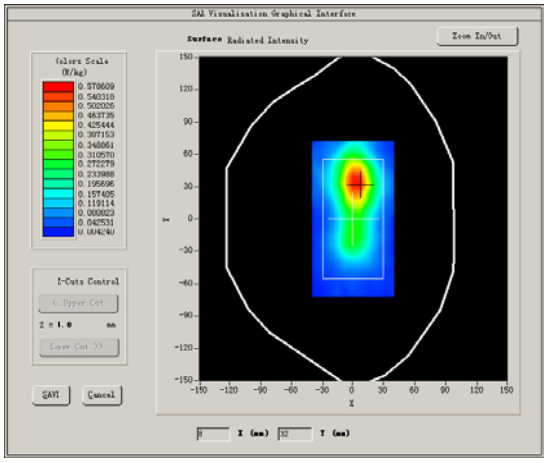
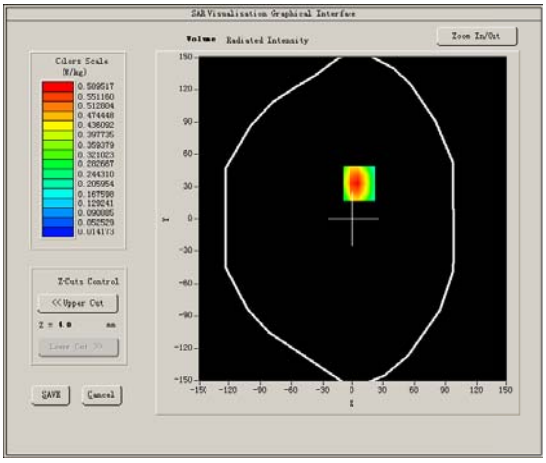
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11b |
| **Channels** | Low |
| **Signal** | DSSS |

## B. SAR Measurement Results

Low Band SAR (Channel 1):

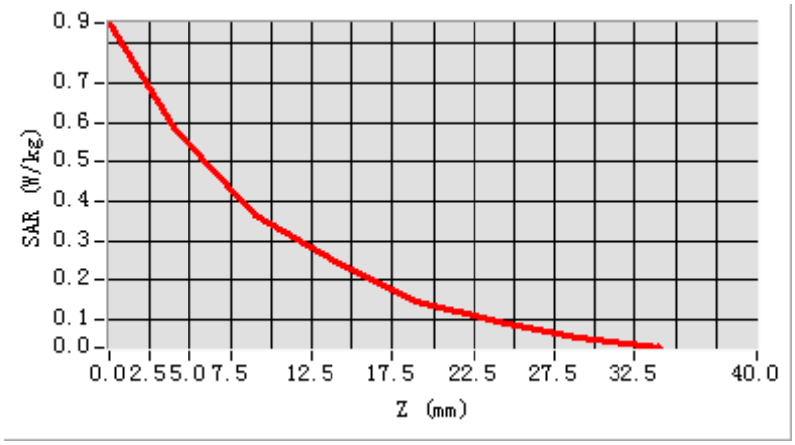
| | |
|---|---|
| **Frequency (MHz)** | 2412.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

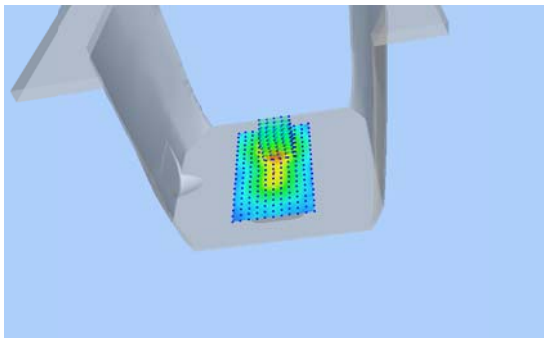
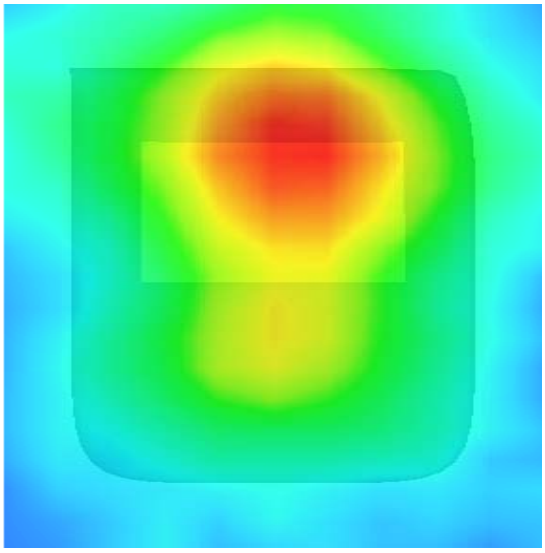
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.103115 |
|---|---|
| SAR 1g (W/Kg) | 0.306335 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

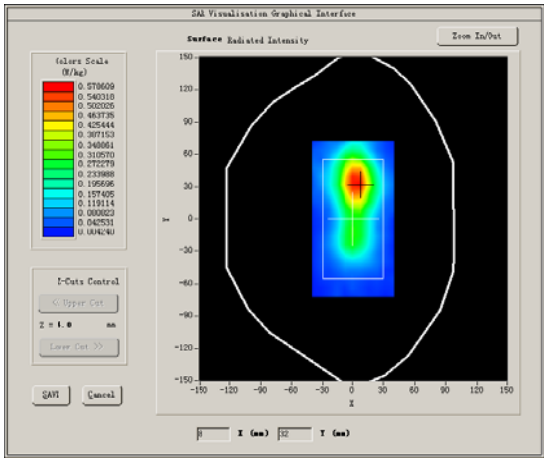
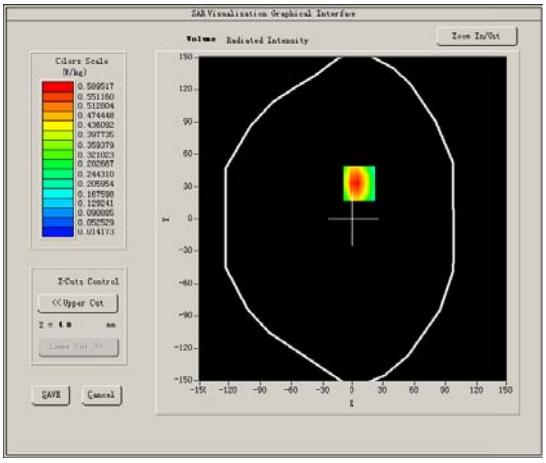
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11a |
| **Channels** | Middle |
| **Signal** | OFDM |

## B. SAR Measurement Results

Middle Band SAR (Channel 48):

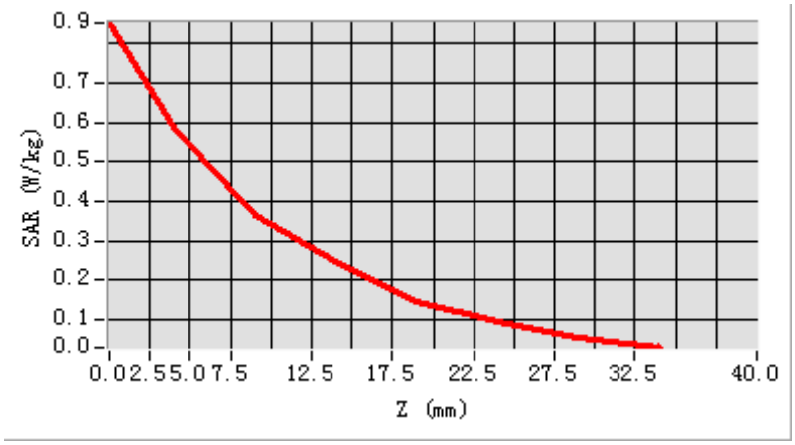
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 48.293014 |
| **Conductivity (S/m)** | 5.743260 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 22.11 |
| **Crest factor:** | 1:1 |

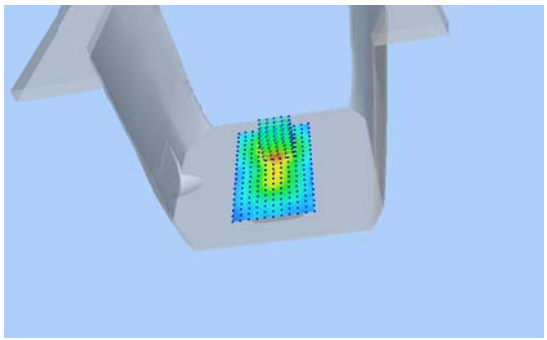
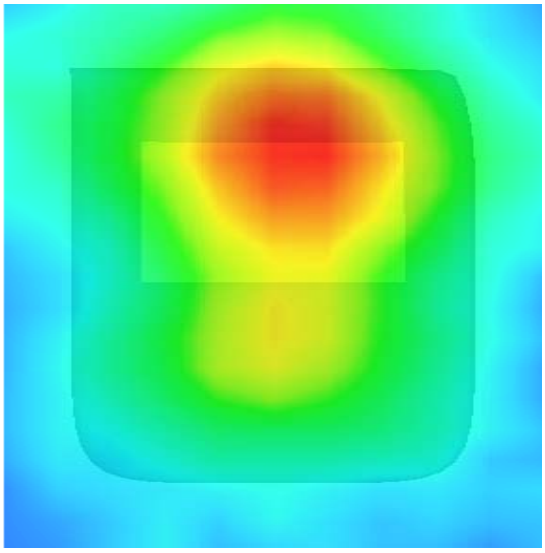
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.212231 |
|---|---|
| SAR 1g (W/Kg) | 0.578214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

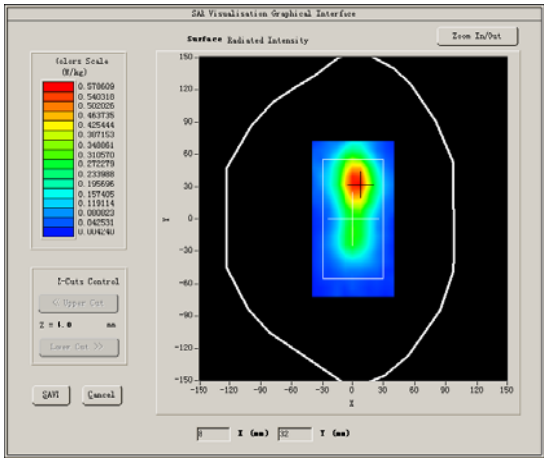
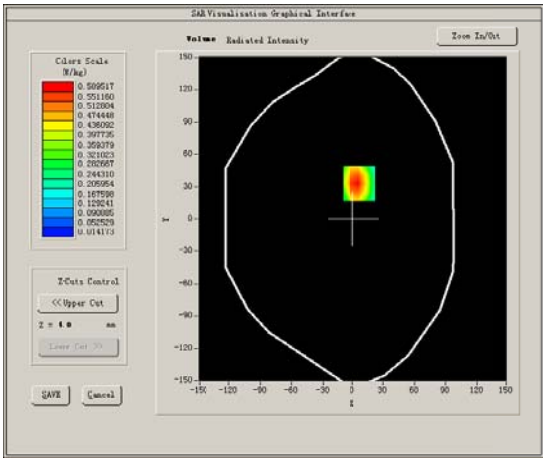
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11a |
| **Channels** | Middle |
| **Signal** | OFDM |

## B. SAR Measurement Results

Middle Band SAR (Channel 48):

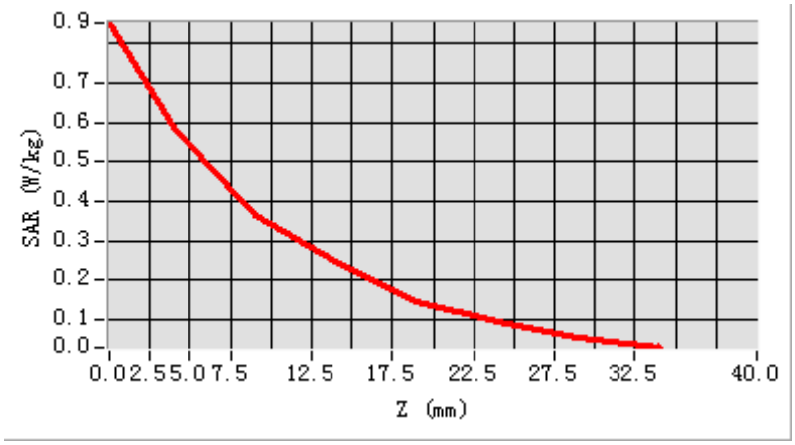
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 48.293014 |
| **Conductivity (S/m)** | 5.743260 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 22.11 |
| **Crest factor:** | 1:1 |

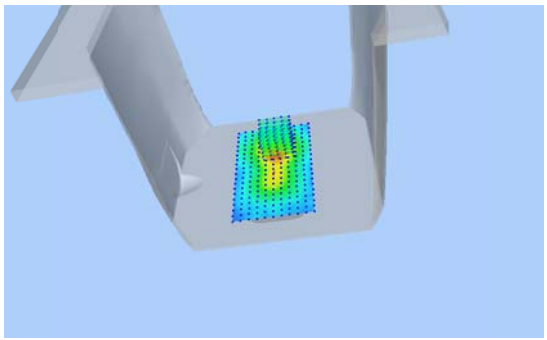
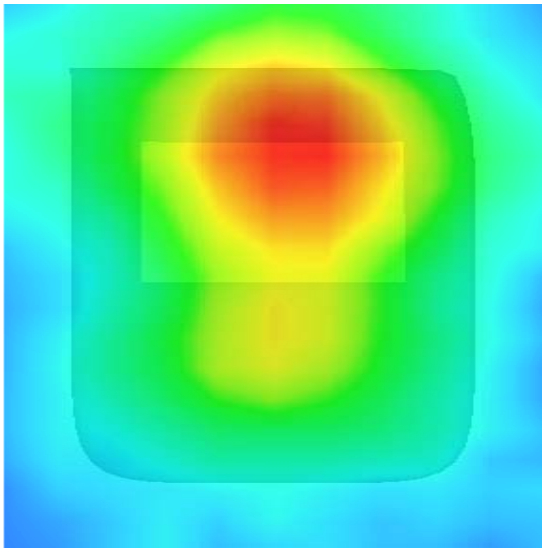
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.184231 |
|---|---|
| SAR 1g (W/Kg) | 0.365214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

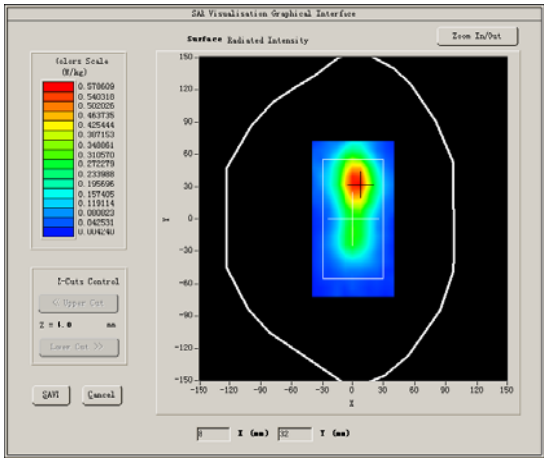
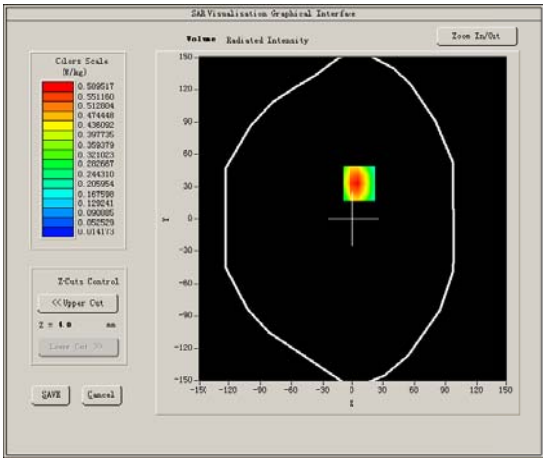
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11a |
| **Channels** | Middle |
| **Signal** | OFDM |

## B. SAR Measurement Results

Middle Band SAR (Channel 48):

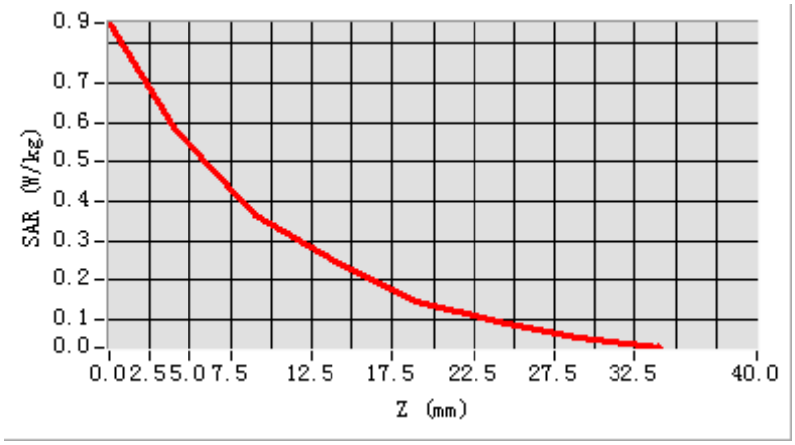
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 48.293014 |
| **Conductivity (S/m)** | 5.743260 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 22.11 |
| **Crest factor:** | 1:1 |

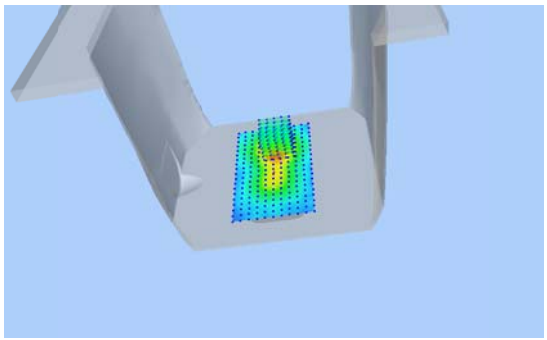
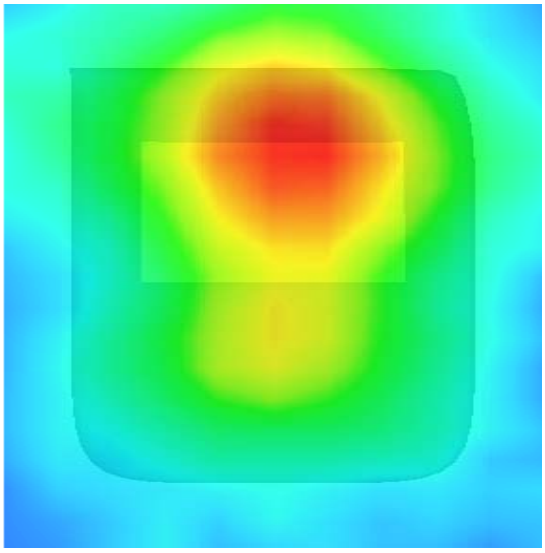
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.101231 |
|---|---|
| SAR 1g (W/Kg) | 0.378214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

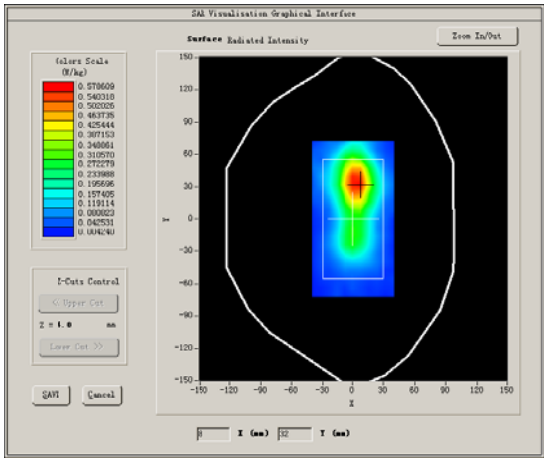
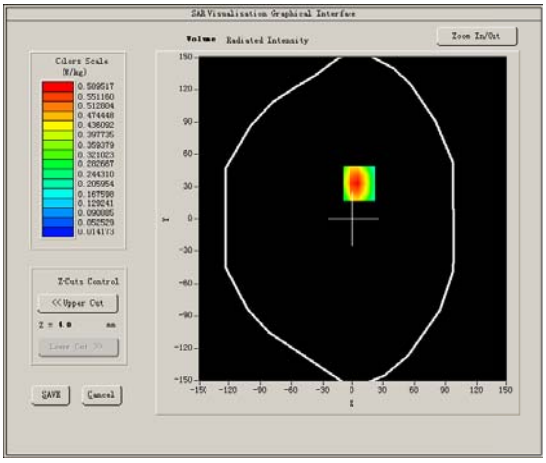
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11a |
| **Channels** | Middle |
| **Signal** | OFDM |

## B. SAR Measurement Results

Middle Band SAR (Channel 48):

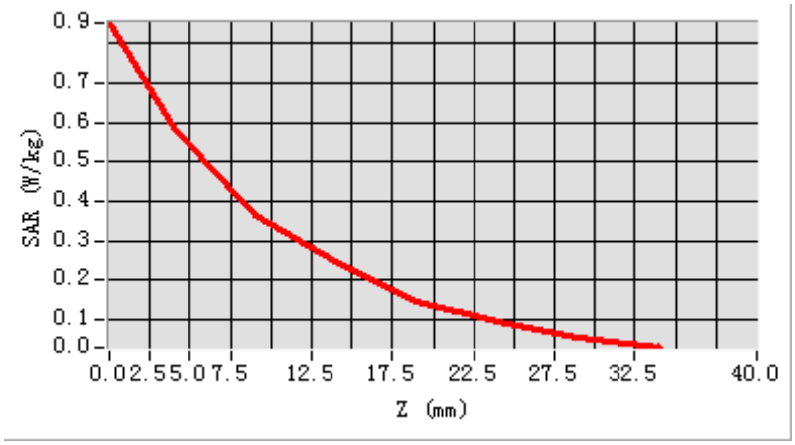
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 48.293014 |
| **Conductivity (S/m)** | 5.743260 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 22.11 |
| **Crest factor:** | 1:1 |

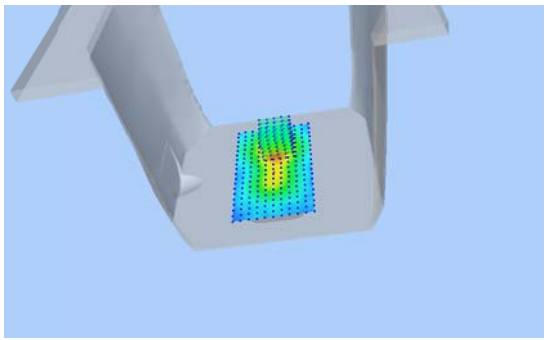
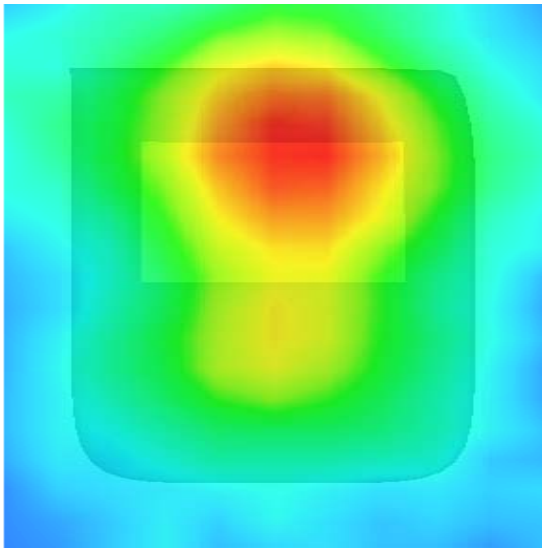
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 0.094231 |
| **SAR 1g (W/Kg)** | 0.158214 |

| **Z (mm)** | **0.00** | **4.00** | **9.00** | **14.00** | **19.00** | **24.00** | **29.00** |
|---|---|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.8527** | **0.5895** | **0.3648** | **0.2453** | **0.1462** | **0.0939** | **0.0561** |




| **3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

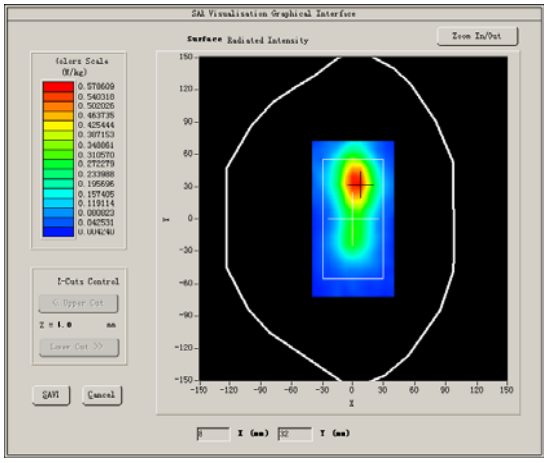
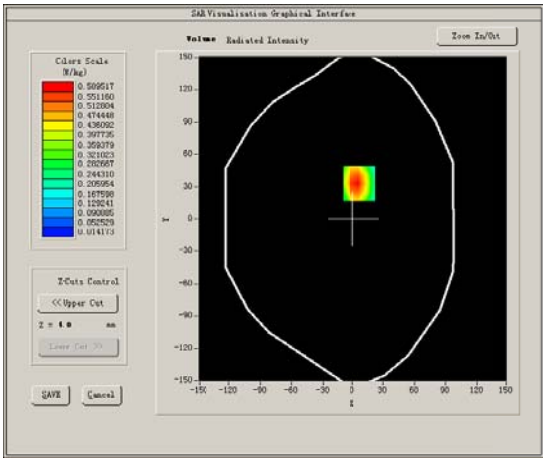
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11ac |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

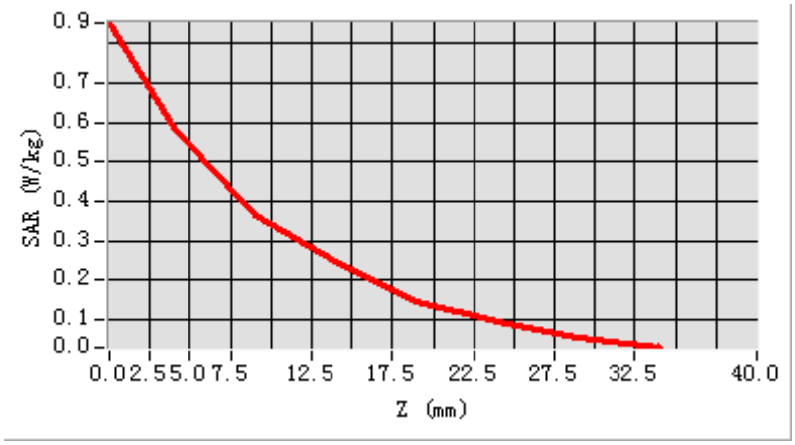
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 48.093428 |
| **Conductivity (S/m)** | 5.932716 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

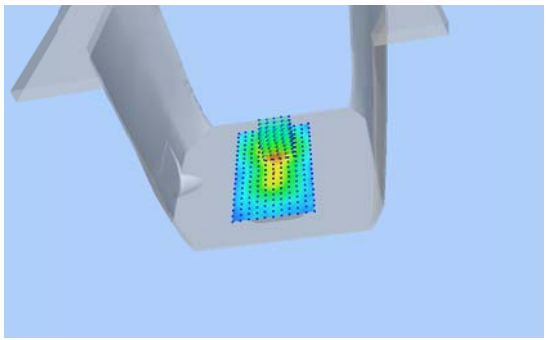
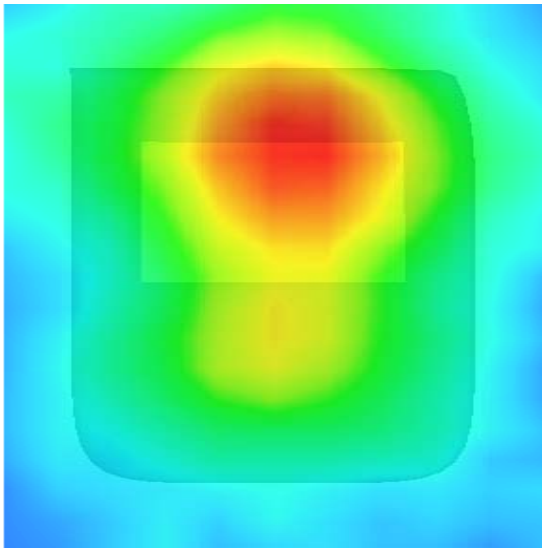
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.201231 |
|---|---|
| SAR 1g (W/Kg) | 0.558214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

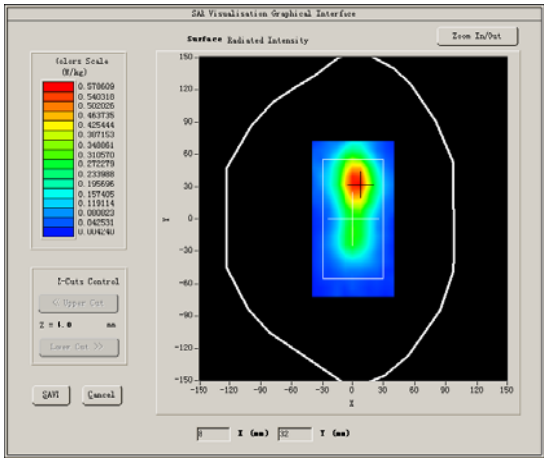
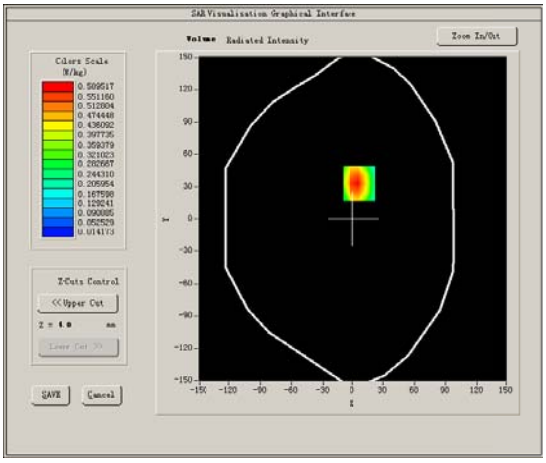
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11ac |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

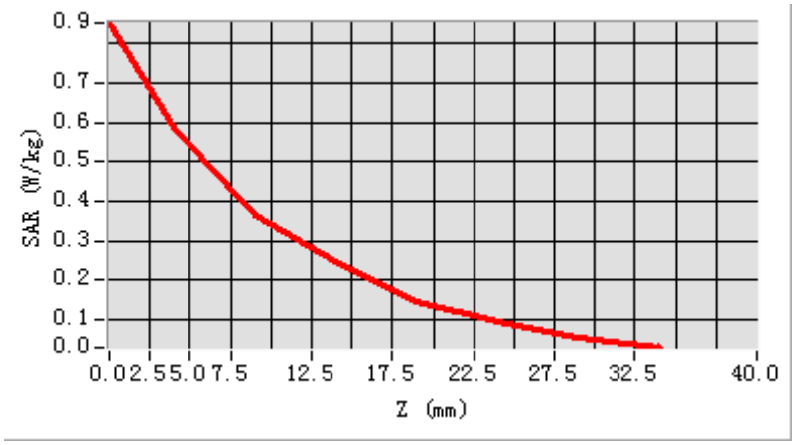
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 48.093428 |
| **Conductivity (S/m)** | 5.932716 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

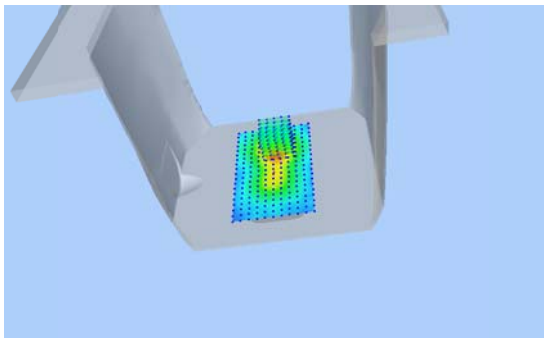
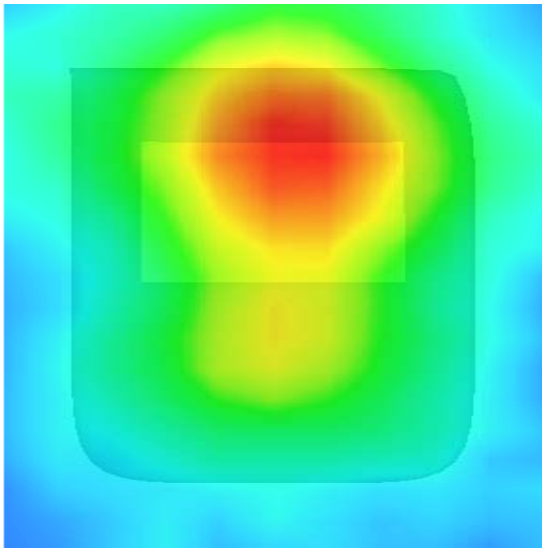
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.167231 |
|---|---|
| SAR 1g (W/Kg) | 0.358214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

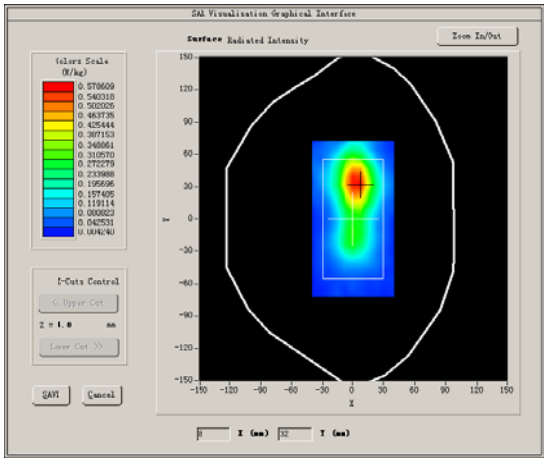
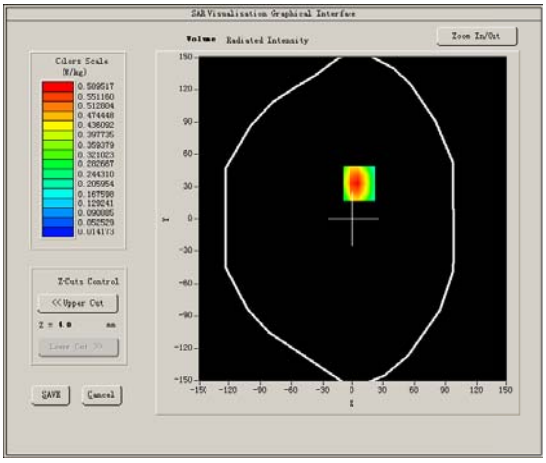
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11ac |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

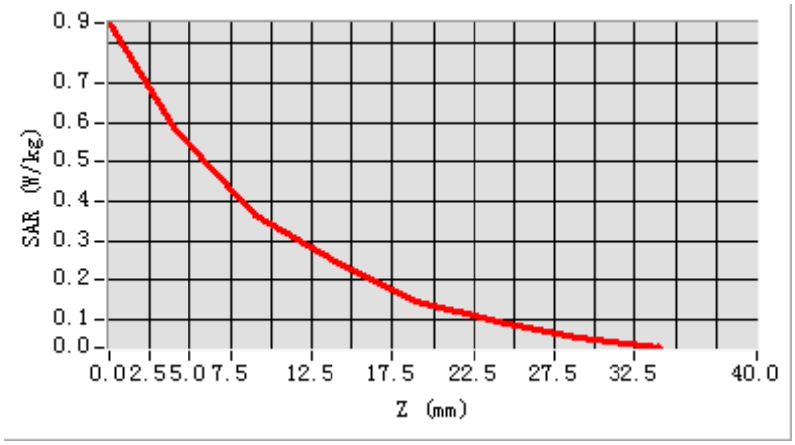
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 48.093428 |
| **Conductivity (S/m)** | 5.932716 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

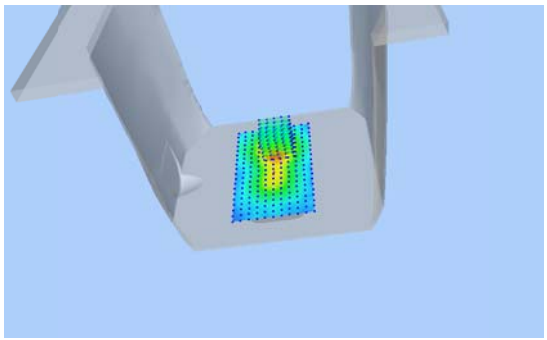
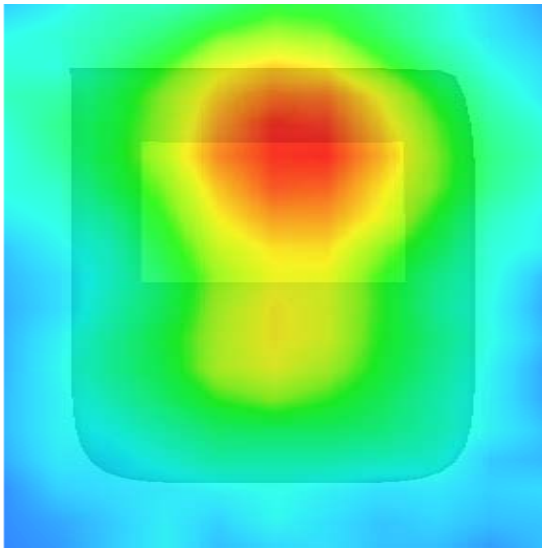
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.097131 |
|---|---|
| SAR 1g (W/Kg) | 0.158214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




| 3D screen 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: 2017.06.07

Measurement duration: 13 minutes 36 seconds

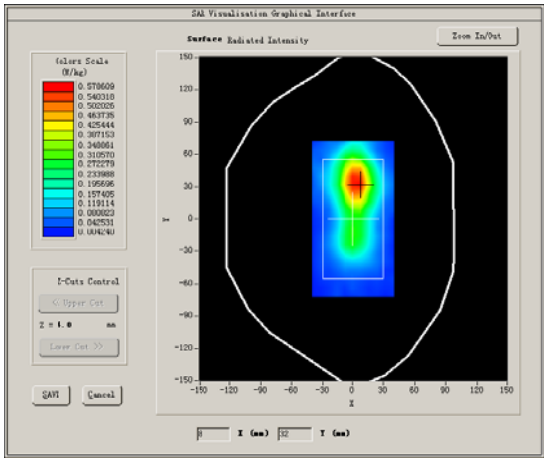
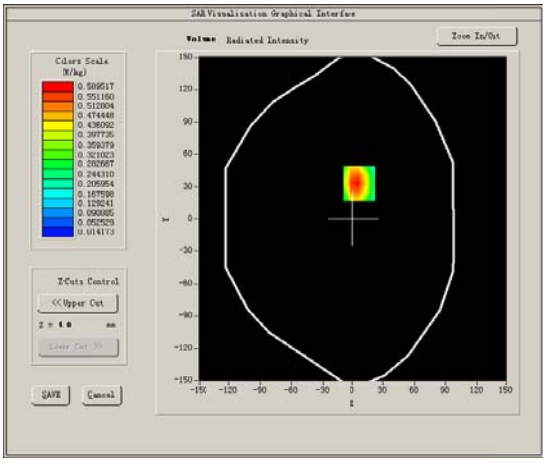
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Flat |
| **Device Position** | Body |
| **Band** | 802.11ac |
| **Channels** | High |
| **Signal** | OFDM |

## B. SAR Measurement Results

High Band SAR (Channel 165):

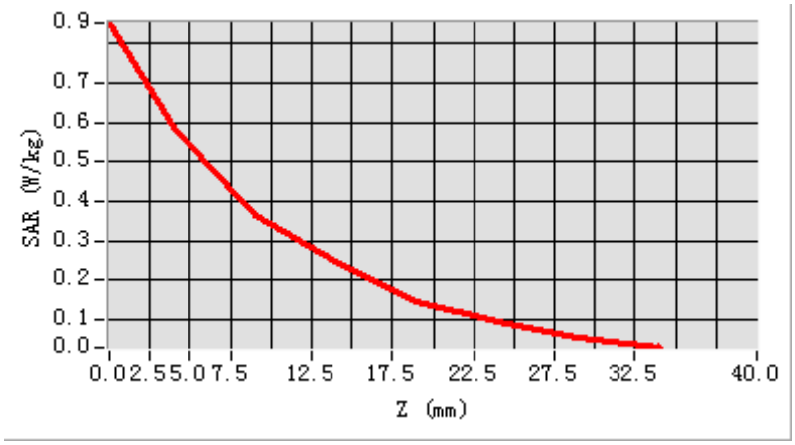
| | |
|---|---|
| **Frequency (MHz)** | 5825.000000 |
| **Relative permittivity (real part)** | 48.093428 |
| **Conductivity (S/m)** | 5.932716 |
| **Power drift (%)** | 2.130000 |
| **Ambient Temperature:** | 22.2°C |
| **Liquid Temperature:** | 22.6°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

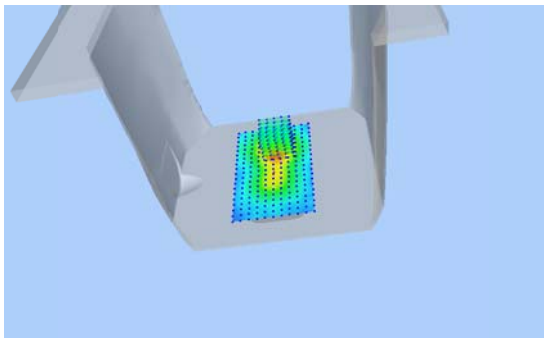
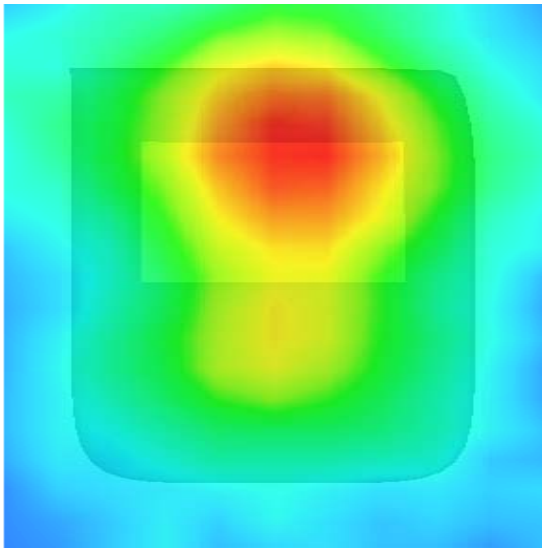
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

**Maximum location: X=6.00, Y=33.00**
**SAR Peak: 0.89 W/kg**

| SAR 10g (W/Kg) | 0.086231 |
|---|---|
| SAR 1g (W/Kg) | 0.185214 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|---|---|---|---|---|---|---|---|
| SAR (W/Kg) | 0.8527 | 0.5895 | 0.3648 | 0.2453 | 0.1462 | 0.0939 | 0.0561 |




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

# ANNEX B GENERAL INFORMATION

## 1. Identification of the Responsible Testing Laboratory

| | |
|---|---|
| Company Name: | Shenzhen Morlab Communications Technology Co., Ltd. |
| Department: | Morlab Laboratory |
| Address: | FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |
| Responsible Test Lab Manager: | Mr. Su Feng |
| Telephone: | +86 755 36698555 |
| Facsimile: | +86 755 36698525 |

## 2. Identification of the Responsible Testing Location

| | |
|---|---|
| Name: | Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory |
| Address: | FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |

### 3. List of Test Equipments

| No. | Instrument | Type | Cal. Date | Cal. Due |
|---|---|---|---|---|
| 1 | PC | Dell (Pentium IV 2.4GHz, SN:X10-23533) | (n.a) | (n.a) |
| 2 | Network Emulator | Aglient (8960, SN:10752) | 2016-6-7 | 1year |
| 3 | Network Analyzer | Agilent(E5071B ,SN:MY42404762 ) | 2016-7-8 | 1year |
| 4 | Voltmeter | Keithley (2000, SN:1000572) | 2016-7-8 | 1year |
| 5 | Signal Generator | Rohde&Schwarz (SMP_02 ) | 2016-7-8 | 1year |
| 6 | Power Amplifier | PRANA (Ap32 SV125AZ) | 2016-7-8 | 1year |
| 7 | Power Meter | Agilent (E4416A, SN:MY45102093) | 2016-7-8 | 1year |
| 8 | Power Sensor | Agilent (N8482A, SN:MY41091706) | 2016-7-8 | 1year |
| 9 | Directional coupler | Giga-tronics(SN:1829112) | 2016-7-24 | 1year |
| 10 | Probe | Satimo (SN:SN 37/08 EP80) | 2016-7-5 | 1year |
| 11 | Dielectric Probe Kit | Agilent (85033E ) | 2016-7-5 | 1year |
| 12 | Phantom | Satimo (SN:SN_36_08_SAM62) | N/A | N/A |
| 13 | Liquid | Satimo(Last Calibration: 2017-05-12) | N/A | N/A |
| 14 | Dipole 2450MHz | Satimo (SN 30/13 DIP2G450-263) | 2016-7-5 | 1year |
| 15 | Waveguide 5-6GHz | Satimo (SN 41/12 WGA21) | 2016-7-5 | 1year |
| 16 | Thermo meter | KTJ(mode-01) | 2016-7-5 | 1year |

## ANNEX C SYSTEM PERFORMANCE CHECK DATA

| System Performance Check Data(Body) |
|---|

Type: Phone measurement (Complete)

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

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

Date of measurement: 2017.05.12

Measurement duration: 13 minutes 27 seconds

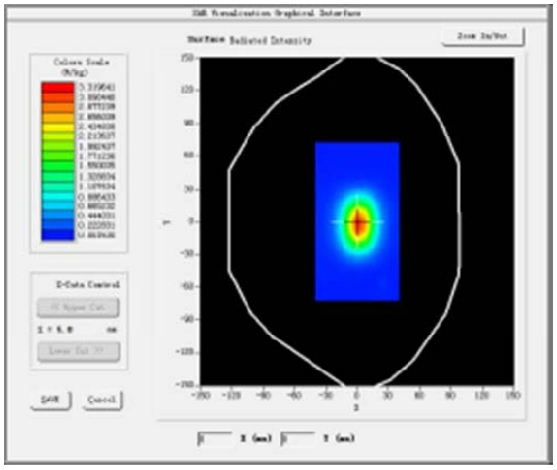
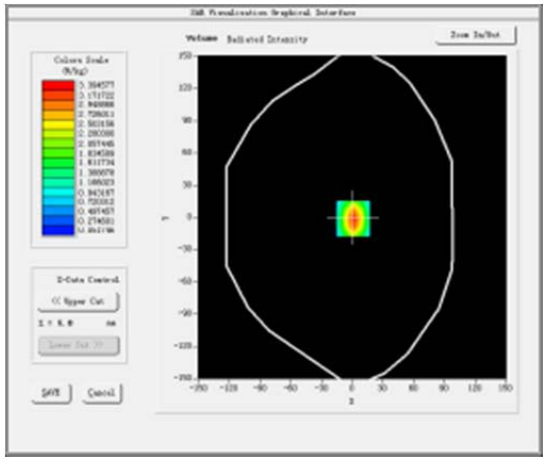
**A. Experimental conditions.**

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

**B. SAR Measurement Results**

Band SAR

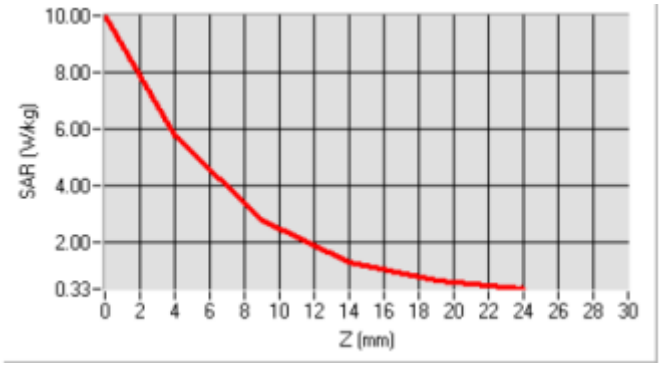
| | |
|---|---|
| **Frequency (MHz)** | 2450.000000 |
| **Relative permittivity (real part)** | 52.480397 |
| **Conductivity (S/m)** | 1.958859 |
| **Power Drift (%)** | 0.630000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

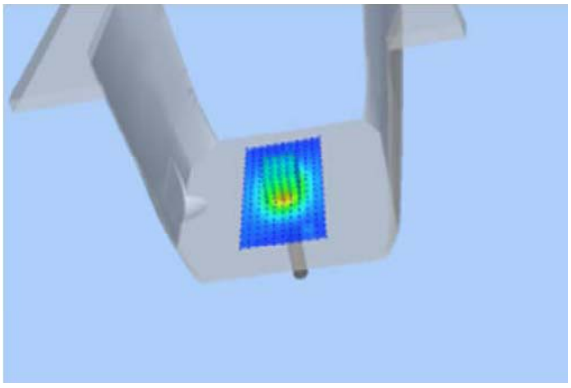
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

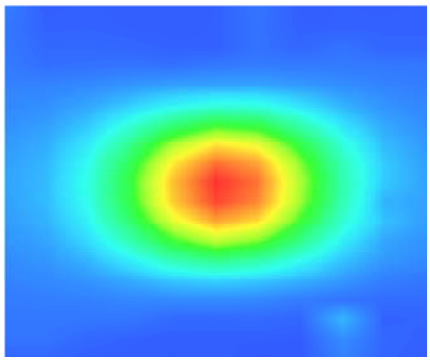
**Maximum location: X=7.00, Y=6.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 2.642158 |
| **SAR 1g (W/Kg)** | 5.039275 |

**Z Axis Scan**





| System Performance Check Data(Head) |
|---|

Type: Phone measurement (Complete)

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

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

Date of measurement: 2017.05.25

Measurement duration: 13 minutes 27 seconds

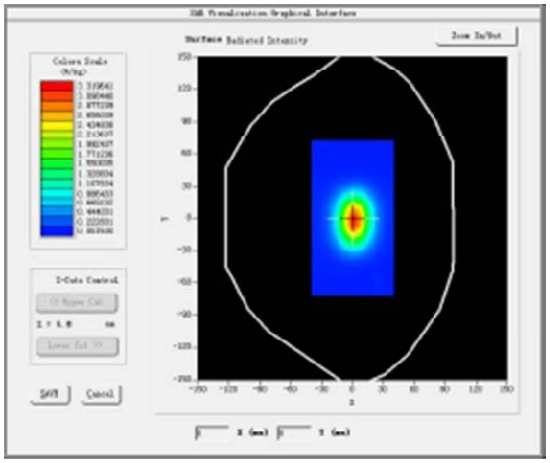
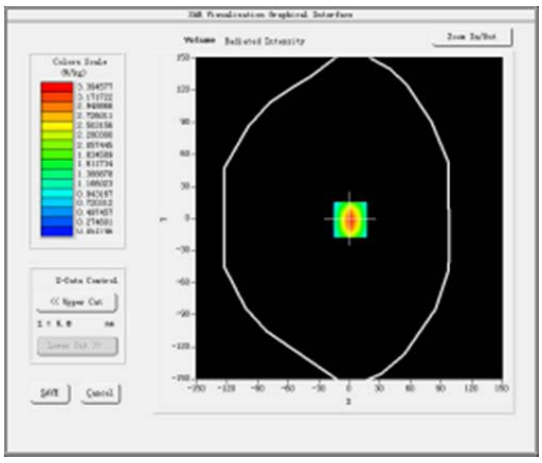
## A. Experimental conditions.

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

## B. SAR Measurement Results

Band SAR

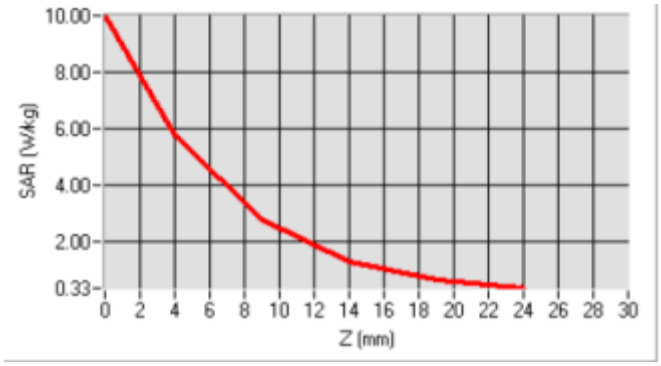
| | |
|---|---|
| **Frequency (MHz)** | 2450.000000 |
| **Relative permittivity (real part)** | 39.230236 |
| **Conductivity (S/m)** | 1.823651 |
| **Power Drift (%)** | 0.630000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 4.96 |
| **Crest factor:** | 1:1 |

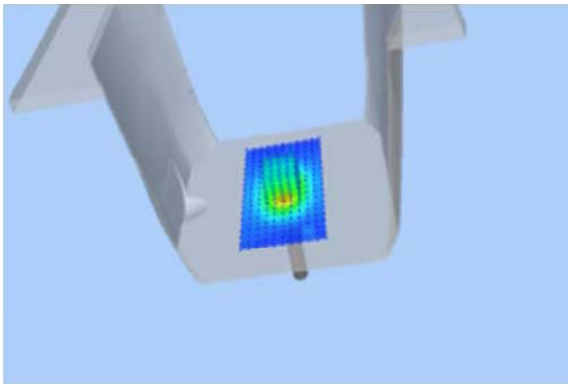
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

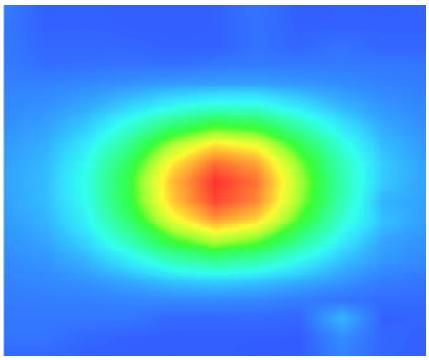
**Maximum location: X=7.00, Y=6.00**

| | |
|---|---|
| SAR 10g (W/Kg) | 1.264621 |
| SAR 1g (W/Kg) | 5.334274 |

**Z Axis Scan**





| System Performance Check Data(Head) |
|---|

Type: Phone measurement (Complete)

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 2017.05.25

Measurement duration: 13 minutes 27 seconds

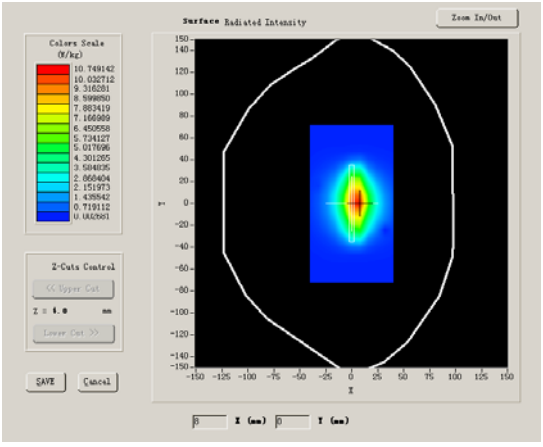
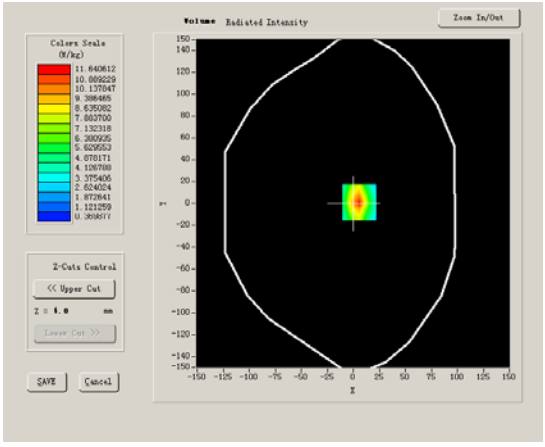
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | |
| **Band** | 5200MHz |
| **Channels** | |
| **Signal** | CW |

## B. SAR Measurement Results

Band SAR

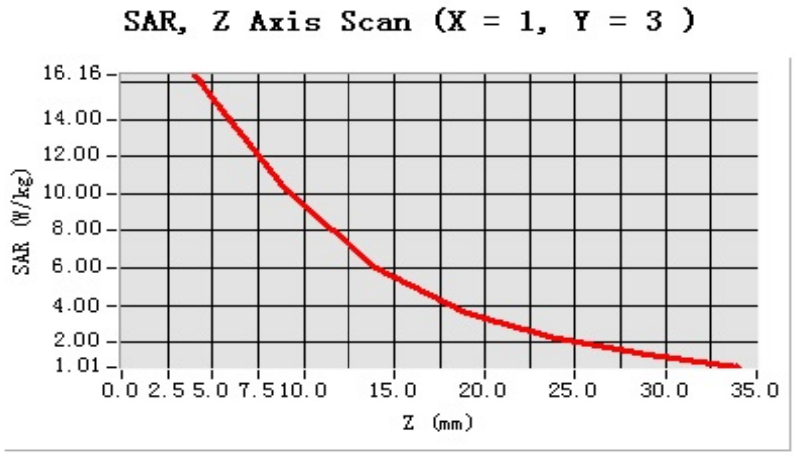
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 36.153014 |
| **Conductivity (S/m)** | 4.683260 |
| **Power Drift (%)** | 2.310000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 21.61 |
| **Crest factor:** | 1:1 |

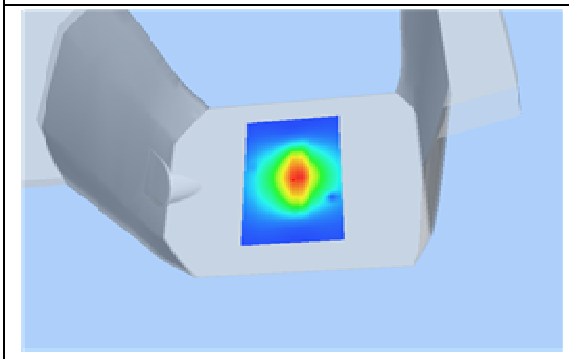
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

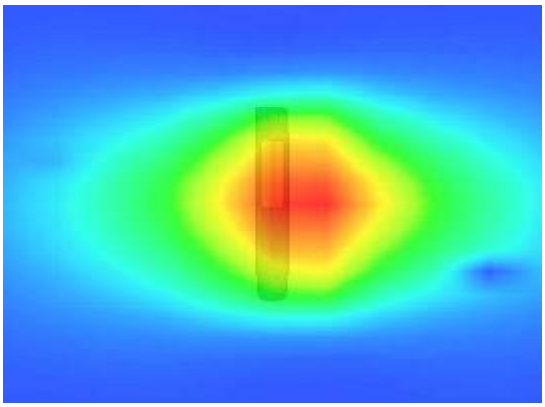
**Maximum location: X=1.00, Y=3.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 8.025642 |
| **SAR 1g (W/Kg)** | 16.421232 |

**Z Axis Scan**





| System Performance Check Data(Body) |
|---|

Type: Phone measurement (Complete)

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 2017.06.07

Measurement duration: 13 minutes 27 seconds

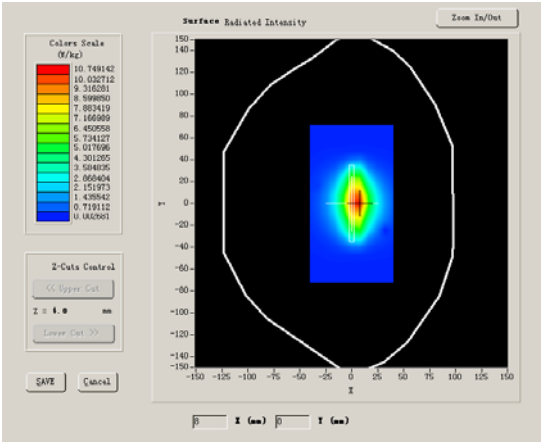
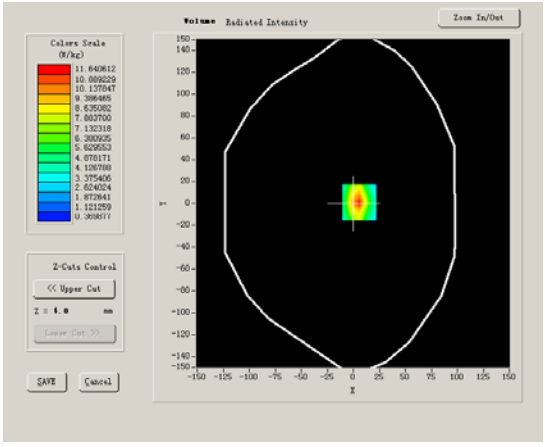
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | |
| **Band** | 5200MHz |
| **Channels** | |
| **Signal** | CW |

## B. SAR Measurement Results

Band SAR

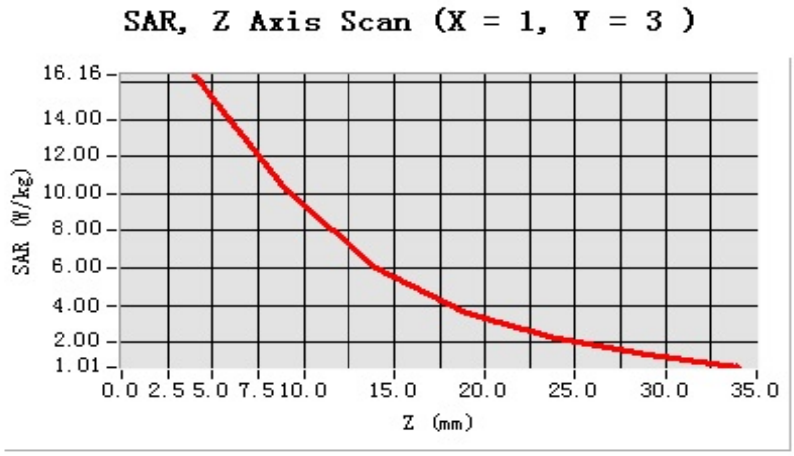
| | |
|---|---|
| **Frequency (MHz)** | 5200.000000 |
| **Relative permittivity (real part)** | 48.293014 |
| **Conductivity (S/m)** | 5.743260 |
| **Power Drift (%)** | 3.526000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 22.11 |
| **Crest factor:** | 1:1 |

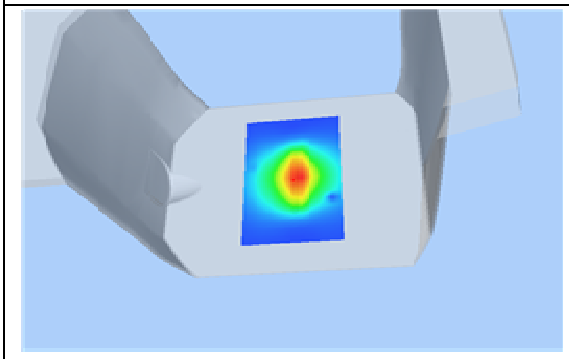
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

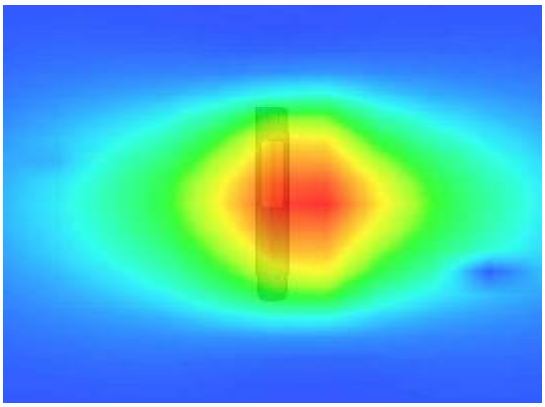
**Maximum location: X=1.00, Y=3.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 8.125642 |
| **SAR 1g (W/Kg)** | 16.284132 |

**Z Axis Scan**





| System Performance Check Data(Head) |
|---|

Type: Phone measurement (Complete)

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 2017.05.25

Measurement duration: 13 minutes 27 seconds

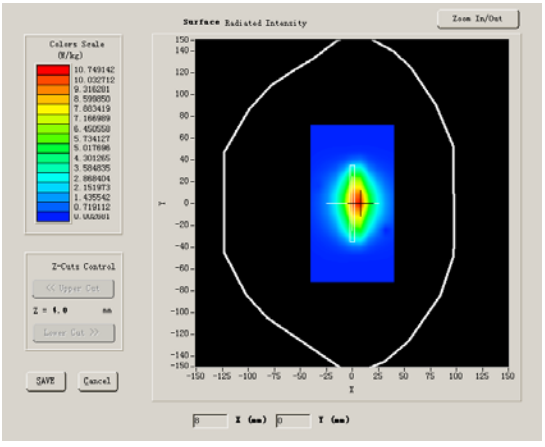
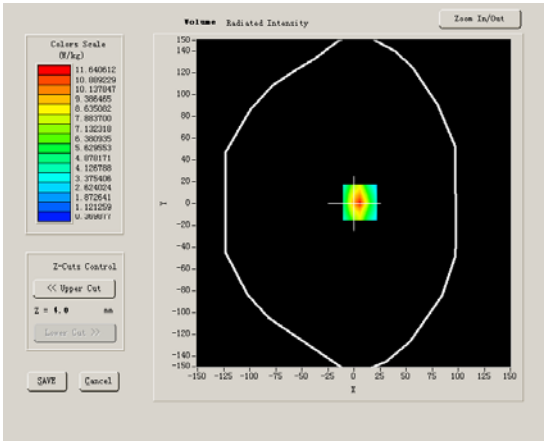
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | |
| **Band** | 5800MHz |
| **Channels** | |
| **Signal** | CW |

## B. SAR Measurement Results

Band SAR

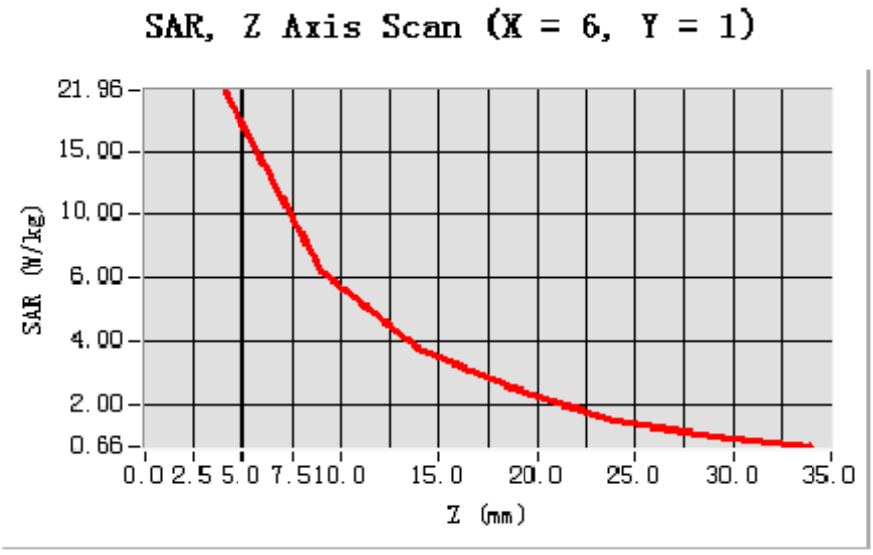
| | |
|---|---|
| **Frequency (MHz)** | 5800.000000 |
| **Relative permittivity (real part)** | 35.353428 |
| **Conductivity (S/m)** | 5.332716 |
| **Power Drift (%)** | 1.260000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 22.42 |
| **Crest factor:** | 1:1 |

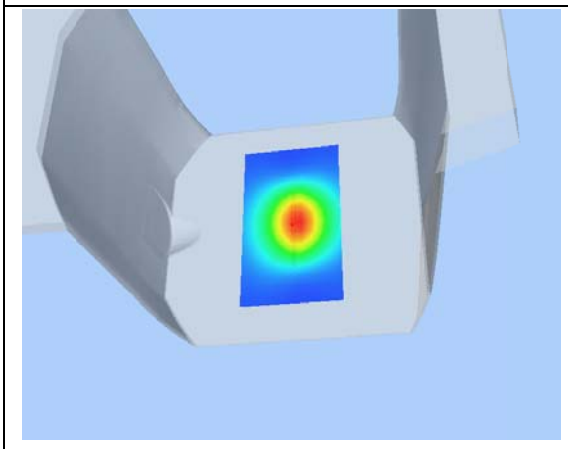
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

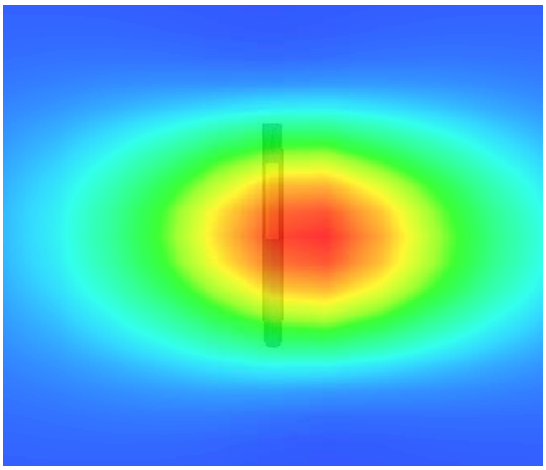
**Maximum location: X=-6.00, Y=-1.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 9.652410 |
| **SAR 1g (W/Kg)** | 18.512290 |

**Z Axis Scan**





| System Performance Check Data(Body) |
|---|

Type: Phone measurement (Complete)

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 2017.06.07

Measurement duration: 13 minutes 27 seconds

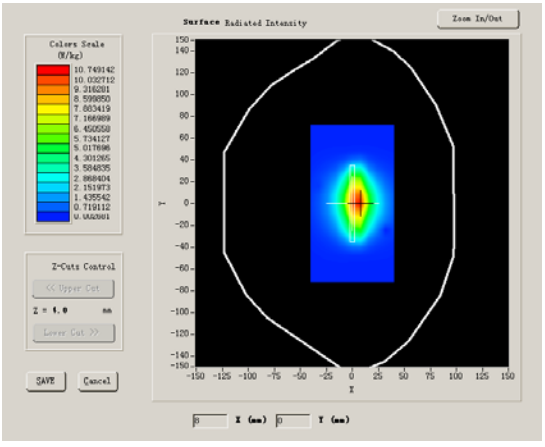
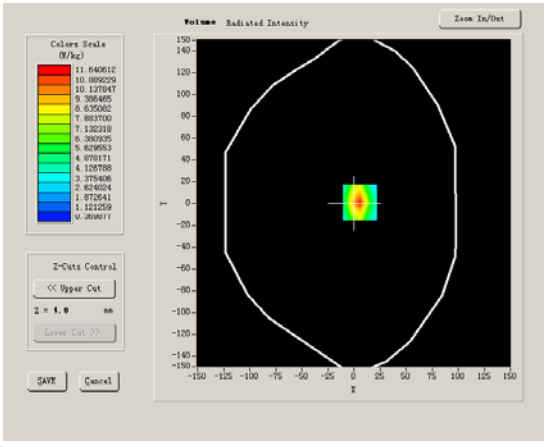
## A. Experimental conditions.

| | |
|---|---|
| **Phantom File** | surf_sam_plan.txt |
| **Phantom** | Validation plane |
| **Device Position** | |
| **Band** | 5800MHz |
| **Channels** | |
| **Signal** | CW |

## B. SAR Measurement Results

Band SAR

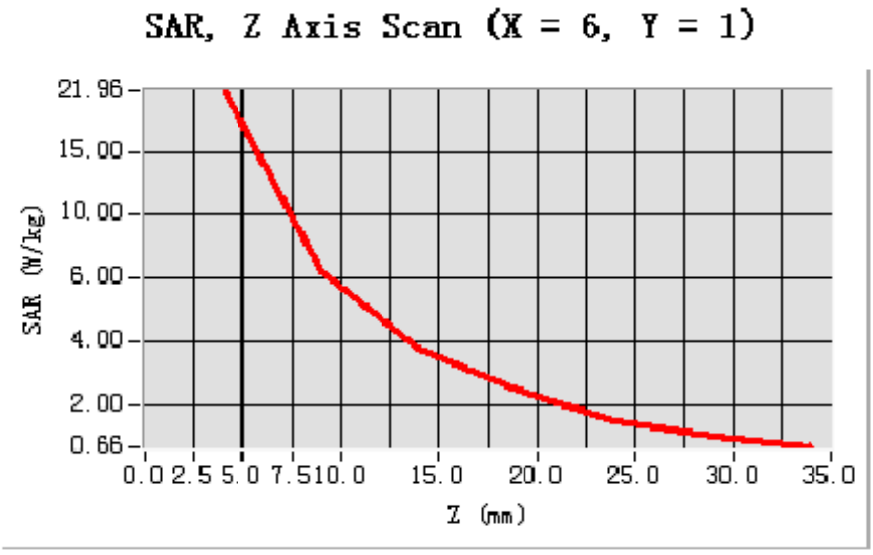
| | |
|---|---|
| **Frequency (MHz)** | 5800.000000 |
| **Relative permittivity (real part)** | 48.093428 |
| **Conductivity (S/m)** | 5.932716 |
| **Power Drift (%)** | 1.260000 |
| **Ambient Temperature:** | 22.9°C |
| **Liquid Temperature:** | 22.1°C |
| **ConvF:** | 23.02 |
| **Crest factor:** | 1:1 |

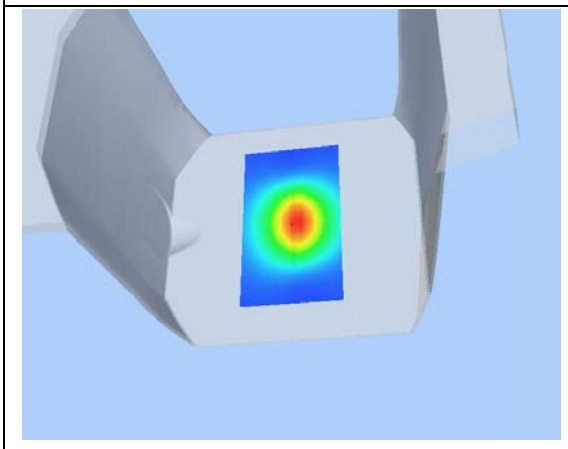
| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |

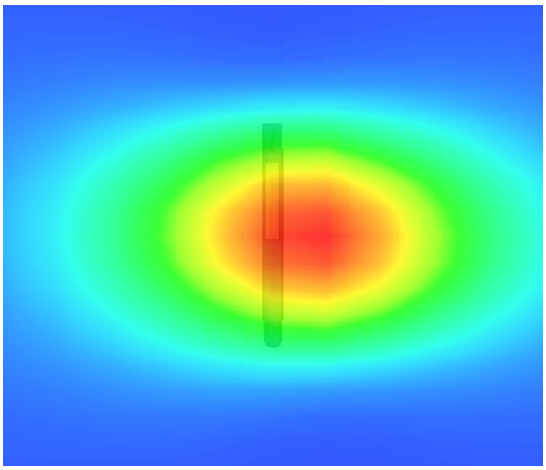
**Maximum location: X=-6.00, Y=-1.00**

| | |
|---|---|
| **SAR 10g (W/Kg)** | 10.652410 |
| **SAR 1g (W/Kg)** | 21.537190 |

**Z Axis Scan**

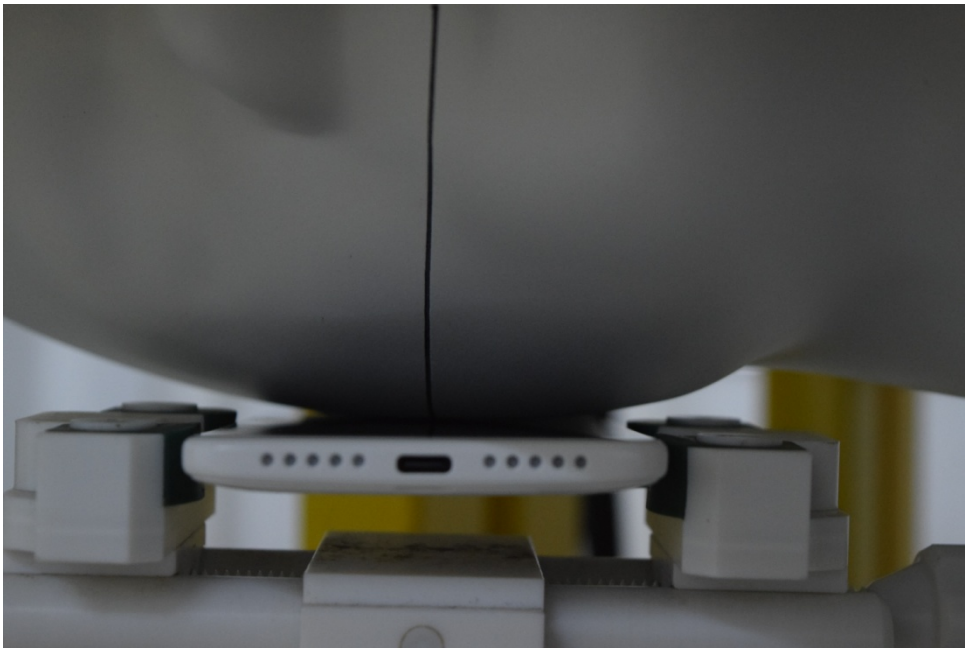


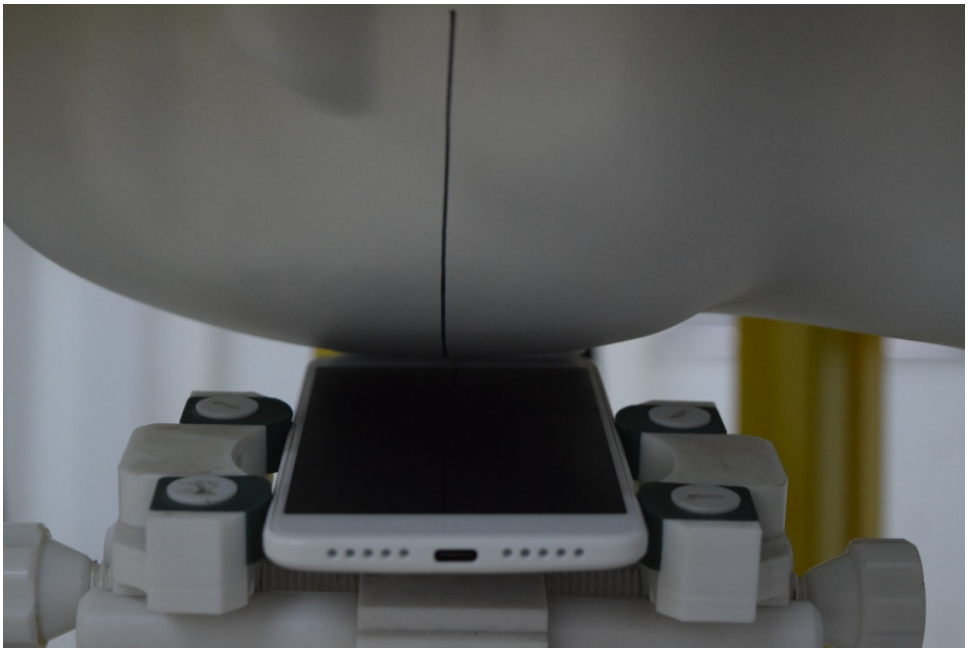


## ANNEX D SETUP PHOTOS

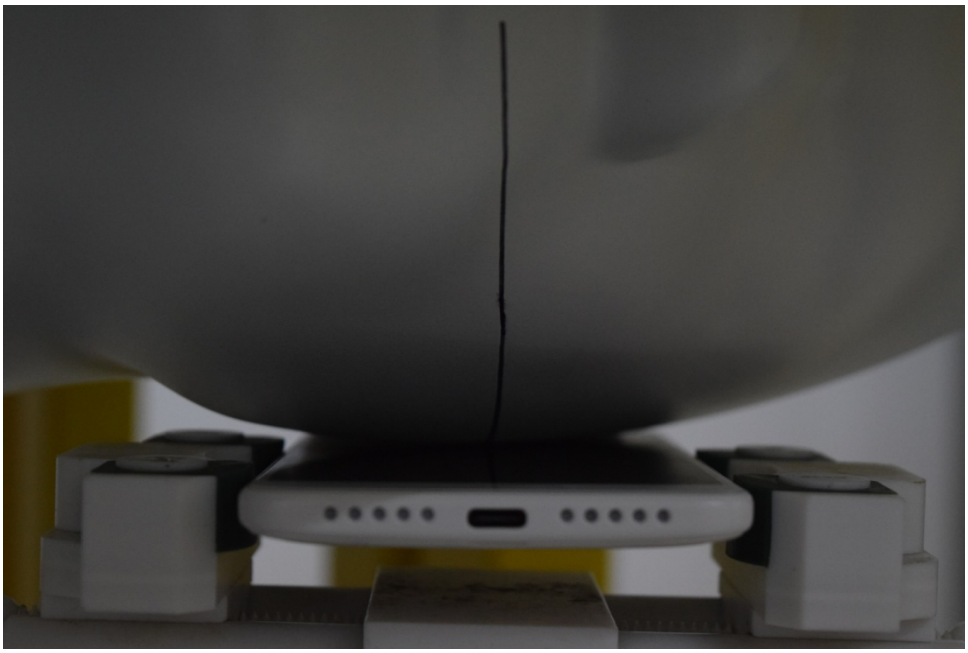
1. EUT Right Head Touch Cheek Position



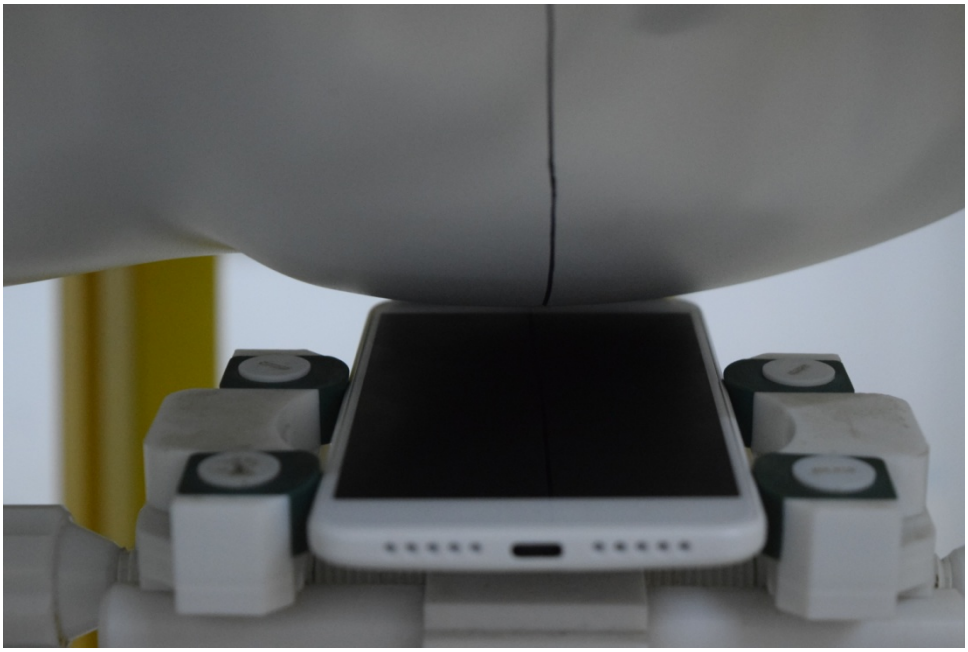
2. EUT Right Head Tilt15 Position



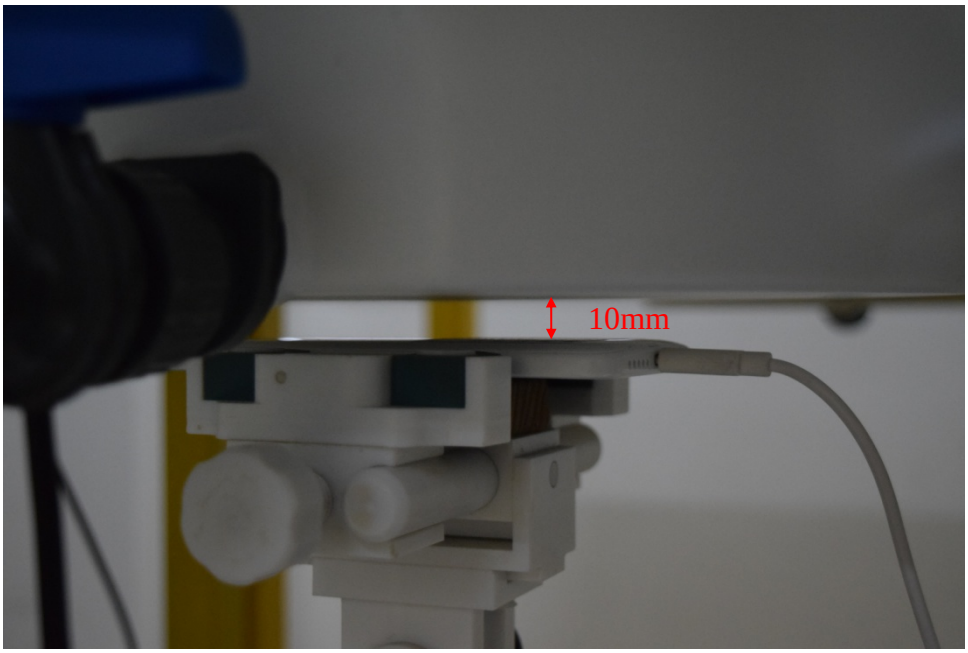
3 EUT Left Head Touch Cheek Position



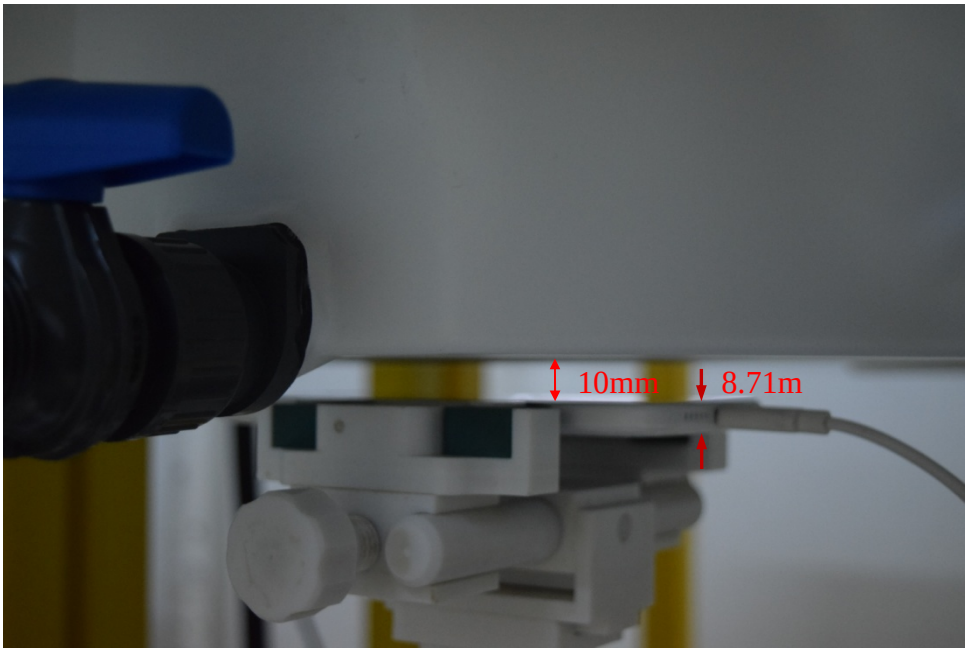
4 EUT Left Head Tilt15 Position



5. Back upward Position

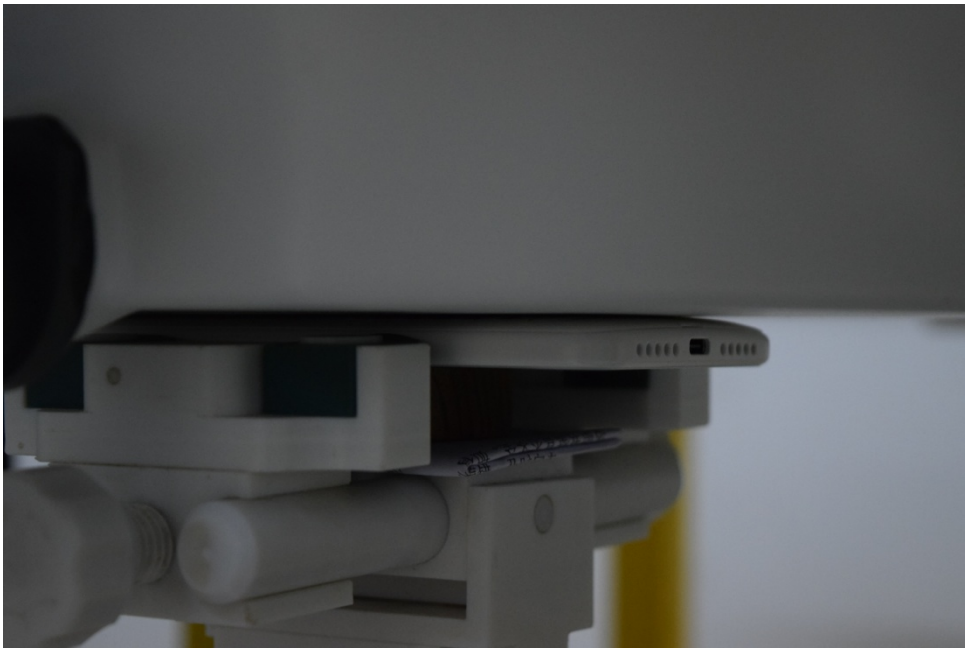



6. Face upward Position



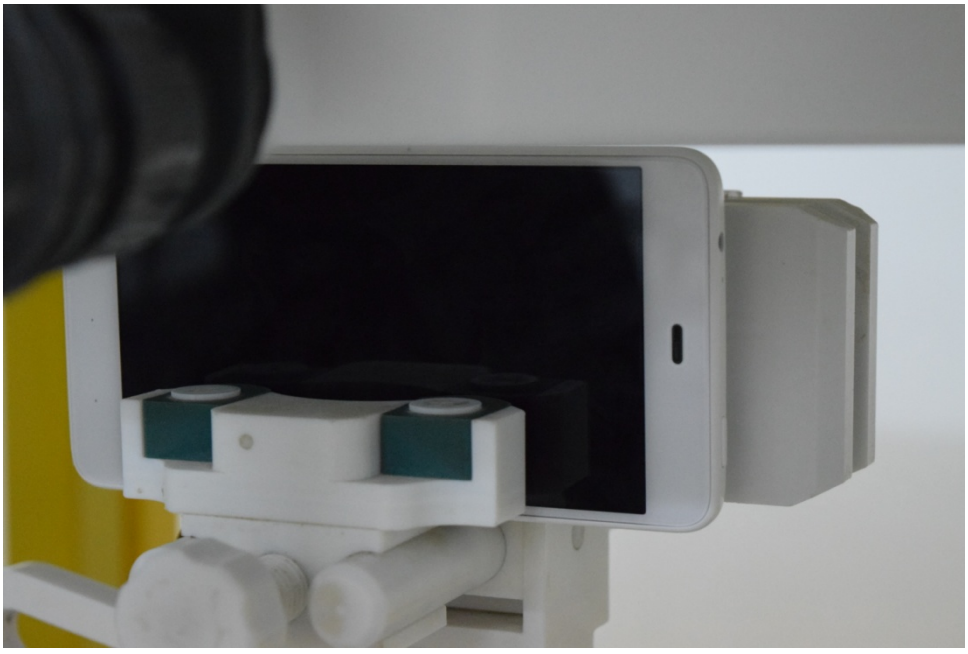
7. Face upward Position (0mm)

8. Back upward Position (0mm)



9. Edge A (0mm)

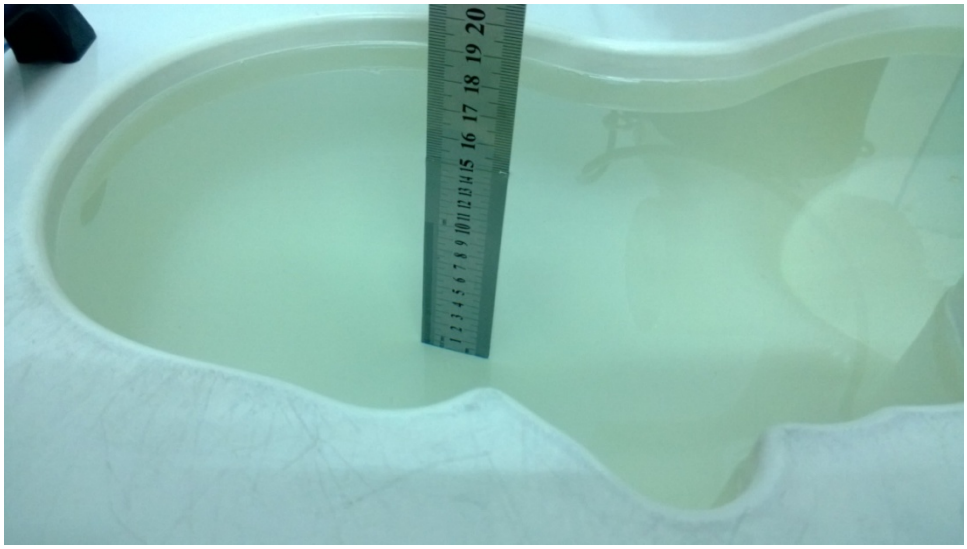
10. Edge B (0mm)



11. Liquid Level Photo Body Liquid

Liquid depth :15.5cm

12. Liquid Level Photo Head Liquid



Liquid depth: 15.1cm

***** END OF REPORT *****