

SAR Test Report

Report No.: AGC00552190803EH01

PRODUCT DESIGNATION : Smart Phone

BRAND NAME : CUBOT

MODEL NAME : P30

APPLICANT : Shenzhen Huafurui Technology Co., Ltd.

DATE OF ISSUE : Sep. 25,2019

STANDARD(S) : EN 50360:2017; EN62209-1:2016;
EN62209-2:2010; EN50566:2017; EN 62479:2010

REPORT VERSION : V1.0

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Test Report

| | |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Product Designation | Smart Phone |
| Brand Name | CUBOT |
| Model Name | P30 |
| Different Description | N/A |
| EUT Voltage | DC3.85V by battery |
| Applicable Standard | EN 50360:2017; EN62209-1:2016; EN62209-2:2010; EN50566:2017; EN 62479:2010 |
| Test Date | Sep.09,2019 to Sep. 23,2019 |
| Performed Location | Attestation of Global Compliance(Shenzhen) Co., Ltd. 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China |
| Report Template | AGCRT-EC-4G/SAR (2018-01-01) |

Note: The results of testing in this report apply to the product/system which was tested only.

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1. SUMMARY OF MAXIMUM SAR VALUE

The maximum results of Specific Absorption Rate (SAR) found during testing for EUT are as follows:

| Frequency Band | Highest Reported 10g-SAR(W/Kg) | | SAR Test Limit (W/Kg) |
|---------------------------|--------------------------------|------------------------------------|-----------------------|
| | Head | Body-worn (with 5mm separation) | |
| GSM 900 | 0.010 | 0.101 | 2.0 |
| DCS 1800 | 0.103 | 1.006 | |
| WCDMA Band I | 0.281 | 0.739 | |
| WCDMA Band VIII | 0.023 | 0.334 | |
| LTE Band 1 | 0.230 | 0.625 | |
| LTE Band 3 | 0.155 | 0.809 | |
| LTE Band 7 | 0.022 | 0.345 | |
| LTE Band 8 | 0.077 | 0.120 | |
| LTE Band 20 | 0.063 | 0.121 | |
| WIFI 2.4G | 0.253 | 0.111 | |
| Simultaneous Reported SAR | 1.098 | | |
| SAR Test Result | PASS | | |

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (2.0W/Kg).

2. GENERAL INFORMATION

2.1. EUT Description

| General Information | |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Designation | Smart Phone |
| Test Model | P30 |
| Hardware Version | Q935_MB_V1.0 |
| Software Version | CUBOT_P30_9091C-V01_20190807 |
| Device Category | Portable |
| RF Exposure Environment | Uncontrolled |
| Antenna Type | Internal |
| GSM and GPRS&EGPRS | |
| Support Band | <input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (EU Frequency) <input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS 1900 (none EU Frequency) |
| GPRS & EGPRS Type | Class B |
| GPRS & EGPRS Class | Class 12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx) |
| TX Frequency Range | GSM900:880-915MHz ; DCS1800:1710-1785MHz |
| RX Frequency Range | GSM900:925-960MHz ; DCS1800:1805-1880MHz |
| Release Version | R99 |
| Type of modulation | GMSK for GSM/GPRS; GMSK & 8-PSK for EGPRS |
| Antenna Gain | GSM900: 1.2dBi, DCS1800: 1.5dBi |
| Max. Avg. Output Power | GSM900:33.26dBm; DCS1800:30.94dBm |
| Bluetooth | |
| Operation Frequency | 2402~2480MHz |
| Antenna Gain | 1.0dBi |
| Bluetooth Version | V4.2 |
| Type of modulation | BR/EDR: GFSK, $\pi/4$ -DQPSK, 8-DPSK; BLE: GFSK |
| EIRP | BR/EDR: 2.96dBm; BLE: 0.85dBm |
| WIFI | |
| WIFI Specification | <input type="checkbox"/> 802.11a <input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n(20) <input checked="" type="checkbox"/> 802.11n(40) |
| Operation Frequency | 2412~2472MHz |
| EIRP | 11b:14.21dBm, 11g:9.37dBm, 11n(20):9.38dBm, 11n(40):9.53dBm |
| Antenna Gain | 1.0dBi |

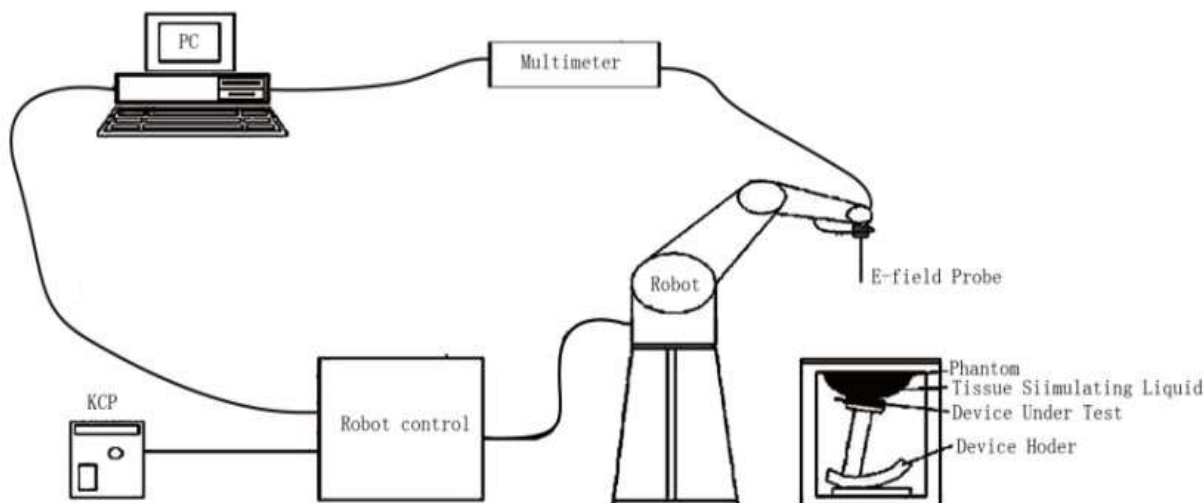
EUT Description (Continue)

| | |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA | |
| Support Band | <input checked="" type="checkbox"/> UMTS FDD Band I <input checked="" type="checkbox"/> UMTS FDD Band VIII <input type="checkbox"/> UMTS FDD Band II <input type="checkbox"/> UMTS FDD Band V |
| HS Type | HSPA(HSUPA/HSDPA) |
| TX Frequency Range | FDD Band I : 1920-1980MHz; FDD Band VIII : 880-915MHz; |
| RX Frequency Range | FDD Band I : 2110-2170MHz; FDD Band VIII : 925-960MHz ; |
| Release Version | Rel-6 |
| Type of modulation | HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK |
| Antenna Gain | Band I:1.17dBi, Band VIII:1.2dBi |
| Max. Avg. Output Power | Band I:24.62dBm; Band VIII:24.12dBm |
| LTE | |
| Support Band | <input checked="" type="checkbox"/> Band 1 <input checked="" type="checkbox"/> Band 3 <input checked="" type="checkbox"/> Band 7 <input checked="" type="checkbox"/> Band 8 <input checked="" type="checkbox"/> Band 20 <input checked="" type="checkbox"/> Band 19 |
| TX Frequency Range | Band 1:1920-1980 MHz; Band 3: 1710-1785 MHz; Band 7:2500-2570MHz Band 8:880-915 MHz; Band 20:832-862 MHz; |
| RX Frequency Range | Band 1:2110-2170 MHz; Band 3: 1805-1880 MHz; Band 7:2620-2690MHz Band 8: 925-960 MHz; Band 20: 791-821 MHz; |
| Release Version | Rel-8 |
| Type of modulation | QPSK,16QAM |
| Antenna Gain | Band 1 :1.17dBi; Band 3 :1.5dBi; Band 7 :0.7dBi; Band 8 :1.2dBi; Band 20 :1.4dBi; |
| Diversity Antenna Gain | Band 1 :1.1dBi; Band 3 :1.4dBi; Band 7 :0.6dBi; Band 8 :1.0dBi; Band 20 :1.25dBi; |
| Max. Avg. Output Power | Band 1: 23.71dBm, Band 3: 23.54dBm , Band 7:22.83dBm Band 8:23.57dBm; Band 20:23.50dBm; |
| Li-ion Battery | |
| Brand Name | CUBOT |
| Model Name | P30 |
| Manufacturer Name | Zhongshan Tianmao Battery Co., Ltd. |
| Manufacturer Address | NO.208, Qian Jin One Road, The Third Industrial Zone, Tanzhou Town, Zhongshan City, China |
| Capacitance | 4000mAh |
| Rated Voltage | DC3.85V |
| Charging Voltage | DC4.42V |

Note: 1.The sample used for testing is end product;
2.Diversity antenna just for receive;

3. SAR MEASUREMENT SYSTEM

3.1. The SATIMO system used for performing compliance tests consists of following items




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

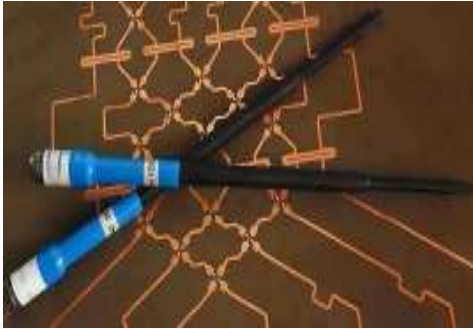
- The PC. It controls most of the bench devices and stores measurement data. A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter measures each probe dipole voltages.
- The SAM phantom simulates a human head. The measurement of the electric field is made inside the phantom.
- The liquids simulate the dielectric properties of the human head tissues.
- The network emulator controls the mobile phone under test.
- The validation dipoles are used to measure a reference SAR. They are used to periodically check the bench to make sure that there is no drift of the system characteristics over time.
- The phantom, the device holder and other accessories according to the targeted measurement.

3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g.EN62209 etc.)Under ISO17025.The calibration data are in Appendix D.

Isotropic E-Field Probe Specification

| | | |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Model | SSE5 | |
| Manufacture | MVG | |
| Identification No. | SN 03/18 EP327 | |
| Frequency | 0.15GHz-3GHz Linearity:±0.09dB(150MHz-3GHz) |  |
| Dynamic Range | 0.01W/Kg-100W/Kg Linearity:±0.09dB | |
| Dimensions | Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm | |
| Application | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precision of better 30%. | |

| | | |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | SSE5 | |
| Manufacture | MVG | |
| Identification No. | SN 14/16 EP308 | |
| Frequency | 0.3GHz-3.7GHz Linearity:±0.08dB(300MHz-3.7GHz) |  |
| Dynamic Range | 0.01W/Kg-100W/Kg Linearity:±0.08dB | |
| Dimensions | Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm | |
| Application | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precision of better 30%. | |

3.3. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France). For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used.

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

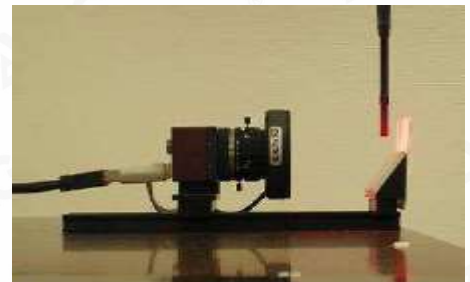
- ☐ High precision (repeatability 0.02 mm)
- ☐ High reliability (industrial design)
- ☐ Jerk-free straight movements
- ☐ Low ELF interference (the closed metallic construction shields against motor control fields)
- ☐ 6-axis controller



3.4. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

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



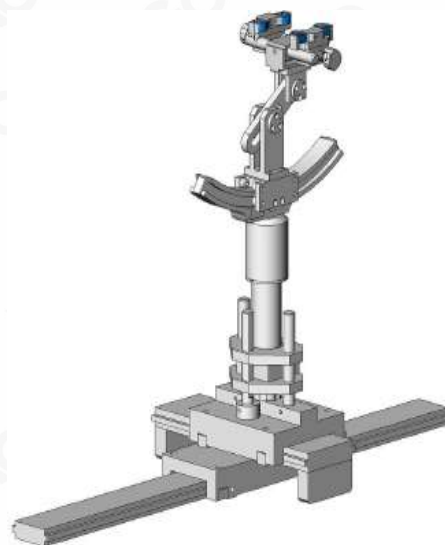
3.5. Device Holder

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

Thus the device needs no repositioning when changing the angles.

The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity

$\epsilon_r = 3$ and loss tangent $\delta = 0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



3.6. SAM Twin Phantom

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

- ☐ Left head
- ☐ Right head
- ☐ Flat phantom



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

3.7. ELLI39 Phantom

The Flat phantom is a fiberglass shell phantom with 2mm+/- 0.2 mm shell thickness. It has only one measurement area for Flat phantom



4. SAR MEASUREMENT PROCEDURE

4.1. Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in 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 occupational/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

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 given mass density (ρ). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/Kg)

SAR can be obtained using either of the following equations:

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

$$SAR = c_h \left. \frac{dT}{dt} \right|_{t=0}$$

Where

| | |
|----------------|--------------------------------------------------------------------------------------|
| SAR | is the specific absorption rate in watts per kilogram; |
| E | is the r.m.s. value of the electric field strength in the tissue in volts per meter; |
| σ | is the conductivity of the tissue in siemens per metre; |
| ρ | is the density of the tissue in kilograms per cubic metre; |
| c _h | is the heat capacity of the tissue in joules per kilogram and Kelvin; |

$\left. \frac{dT}{dt} \right|_{t=0}$ is the initial time derivative of temperature in the tissue in kelvins per second



4.2. SAR Measurement Procedure

a) Measure the local SAR at a test point within 10 mm of the inner surface of the phantom where the measured local SAR exceeds the lower detection limit of the measurement system. Preferably, the test point will be above the expected peak SAR location within said distance from the phantom surface. As explained at Step f) below, a comparative measurement will be made by the system at the same point after completion of the SAR measurement.

b) The area over which the SAR measurement is performed shall cover at least an area larger than the projection of the handset and antenna. For some handsets, the area projected onto the phantom can be large such that the probe may not reach all points. In this case, rotated phantoms may be used and the area may be assessed by multiple overlapping area scans. Measure the two-dimensional SAR distribution within the phantom (area scan procedure). The boundary of the measurement area shall be with respect to the SAM phantom requirements. The measurement resolution and spatial resolution for interpolation shall be chosen to allow identification of the local peak locations to within one-half of the linear dimension of the corresponding side of the zoom-scan volume. The maximum grid spacing shall be 20 mm for frequencies equal to or below 3 GHz and $(60/f \text{ [GHz]})$ mm for frequencies above 3 GHz. The resolution SAR uncertainty of the measurement can be estimated using the functions in 7.2.10. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be ≤ 5 mm for frequencies equal to or below 3 GHz and $\delta \ln(2)/2$ mm for frequencies above 3 GHz, where δ is the plane wave penetration depth and $\ln(x)$ is the natural logarithm [80]. The maximum variation of the sensor-phantom surface distance shall be ± 1 mm for frequencies equal to or below 3 GHz and $\pm 0,5$ mm for frequencies above 3 GHz. At all measurement points, the angle of the probe with respect to the line normal to the surface shall be less than 30° for frequencies equal to or below 3 GHz and 20° for frequencies above 3 GHz (see Figure 6). Table 1 provides the measurement parameters required for the area scan.

c) From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks. Additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g. 1 W/kg for 1,6 W/kg, 1 g limit; or 1,26 W/kg for 2 W/kg, 10 g limit).

d) Measure the three-dimensional SAR distribution at the local maxima locations identified in Step c) (zoom scan procedure). The horizontal grid step shall be $(24/f \text{ [GHz]})$ mm or less but not more than 8 mm. The minimum zoom scan size is 30 mm by 30 mm by 30 mm for frequencies equal to or below 3 GHz. For higher frequencies, the minimum zoom scan size can be reduced to 22 mm by 22 mm by 22 mm. A smaller volume zoom scan with tighter spacing between the measurement points is allowed due to steeper decay of the E-field, which may reduce the measurement time. For frequencies above 3 GHz, the grid step in the vertical direction shall not exceed $(8 - f \text{ [GHz]})$ mm, and for frequencies equal to or below 3 GHz if uniform spacing is used the grid step shall not exceed 5 mm. If variable spacing is used in the vertical direction (non-uniform grids or graded grids), the maximum spacing between the two closest measured points to the phantom shell shall not exceed $(12/f \text{ [GHz]})$ mm for frequencies above 3 GHz, and shall not exceed 4 mm for frequencies at or below 3 GHz. Furthermore the spacing between farther adjacent points shall increase by an incremental factor not exceeding 1,5. When graded grids are used, extrapolation routines shall be tested according to 7.2.10.3.2 with the same spacing as used in measurements. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be 5 mm for frequencies equal to or below 3 GHz and $\delta \ln(2)/2$ mm for frequencies above 3 GHz, where δ is the plane wave penetration depth and $\ln(x)$ is the natural logarithm. Separate grids shall be centred on each of the local SAR maxima found in Step c). At all measurement points, the angle of the probe with respect to the line normal to the surface shall be less than 30° for frequencies equal to or below 3 GHz and 20° for frequencies above 3 GHz.

e) Use the post-processing, i.e. the interpolation and extrapolation procedures defined in 6.5, to determine peak spatial-average SAR values.

f) Measure the local SAR at exactly the same test point location as in Step a). The SAR drift of the DUT may be estimated by the difference between the two measured single-point SAR values in Steps a) and f). The SAR drift shall be kept within $\pm 5\%$; otherwise, see 7.2.8 for more information on addressing SAR measurement drift.

Table 1 – Area scan parameters

| Parameter | DUT transmit frequency being tested | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------|
| | $f \leq 3$ GHz | $3 \text{ GHz} < f \leq 6 \text{ GHz}$ |
| Maximum distance between the measured points (geometric centre of the sensors) and the inner phantom surface (z_{M1} in Figure 6 in mm) | 5 ± 1 | $\delta \ln(2)/2 \pm 0,5^a$ |
| Maximum spacing between adjacent measured points (see 7.2.10.3.1, in mm) ^b | 20 or half of the corresponding zoom scan length, whichever is smaller | $60/f$ or half of the corresponding zoom scan length, whichever is smaller |
| Maximum angle between the probe axis and the phantom surface normal (α in Figure 6) ^c | 30° | 20° |
| Tolerance in the probe angle | 1° | 1° |
| ^a δ is the penetration depth for a plane-wave incident normally on a planar half-space. ^b See 7.2.10 on how Δx and Δy may be selected for individual area scan requirements. ^c The probe angle with respect to the phantom surface normal is restricted due to the degradation in the measurement accuracy in fields with steep spatial gradients. The measurement accuracy decreases with increasing probe angle and increasing frequency. This is the reason for the tighter probe angle restriction at frequencies above 3 GHz. | | |

Table 2 – Zoom scan parameters

| Parameter | DUT transmit frequency being tested | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|
| | $f \leq 3$ GHz | $3 \text{ GHz} < f \leq 6 \text{ GHz}$ |
| Maximum distance between the closest measured points and the phantom surface (z_{M1} in Figure 6 and Table 1, in mm) | 5 | $\delta \ln(2)/2^a$ |
| Maximum angle between the probe axis and the phantom surface normal (α in Figure 6) | 30° | 20° |
| Maximum spacing between measured points in the x- and y-directions (7.2.10.3.2, in mm) | 8 | $24/f^b$ |
| For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell (Δz_1 in Figure 6, in mm) | 5 | $8 - f$ |

| Parameter | DUT transmit frequency being tested | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|
| | $f \leq 3 \text{ GHz}$ | $3 \text{ GHz} < f \leq 6 \text{ GHz}$ |
| <i>For graded grids:</i> Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 6, in mm) | 4 | $12/f$ |
| <i>For graded grids:</i> Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ($R_z = \Delta z_2 / \Delta z_1$ in Figure 6) | 1,5 | 1,5 |
| Minimum edge length of the zoom scan volume in the x- and y-directions (L_z in 7.2.10.3.2, in mm) | 30 | 22 |
| Minimum edge length of the zoom scan volume in the direction normal to the phantom shell (L_h in 7.2.10.3.2, in mm) | 30 | 22 |
| Tolerance in the probe angle | 1° | 1° |
| ^a δ is the penetration depth for a plane-wave incident normally on a planar half-space. ^b This is the maximum spacing allowed, which may not work for all circumstances. | | |

5. TISSUE SIMULATING LIQUID

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 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in 5.2

5.1. The composition of the tissue simulating liquid

| Frequency (MHz) \ Ingredient (% Weight) | Water | NaCl | Polysorbate 20 | DGBE | 1,2-Propanediol | Triton X-100 |
|-----------------------------------------|--------|-------|----------------|--------|-----------------|--------------|
| 835 | 50.36 | 1.25 | 48.39 | 0.0 | 0.0 | 0.0 |
| 900 | 34.40 | 0.79 | 0.0 | 0.0 | 64.81 | 0.0 |
| 1800 | 55.36 | 0.35 | 0.0 | 13.84 | 0.0 | 30.45 |
| 2000 | 50 | 0.0 | 0.0 | 50 | 0.0 | 0.0 |
| 2450 | 71.88 | 0.16 | 0.0 | 7.99 | 0.0 | 19.97 |
| 2600 | 55.242 | 0.306 | 0.0 | 44.452 | 0.0 | 0.0 |

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the EN62209-1 have been incorporated in the following table. The body tissue dielectric parameters recommended by the EN62209-2 have been incorporated in the following table.

| Target Frequency (MHz) | head | | body | |
|------------------------|--------------|----------------|--------------|----------------|
| | ϵ_r | σ (S/m) | ϵ_r | σ (S/m) |
| 300 | 45.3 | 0.87 | 45.3 | 0.87 |
| 450 | 43.5 | 0.87 | 43.5 | 0.87 |
| 835 | 41.5 | 0.90 | 41.5 | 0.90 |
| 900 | 41.5 | 0.97 | 41.5 | 0.97 |
| 1450 | 40.5 | 1.20 | 40.5 | 1.20 |
| 1800 – 2000 | 40.0 | 1.40 | 40.0 | 1.40 |
| 2300 | 39.5 | 1.67 | 39.5 | 1.67 |
| 2450 | 39.2 | 1.80 | 39.2 | 1.80 |
| 2600 | 39.00 | 1.96 | 39.00 | 1.96 |
| 3000 | 38.5 | 2.40 | 38.5 | 2.40 |

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

5.3. Tissue Calibration Result

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

| Frequency (MHz) | Target Value | | Measurement Value | | Tissue Temp [°C] | Test Date |
|-----------------|------------------------|-----------------------|-------------------|----------------|------------------|--------------|
| | ϵ_r | δ [s/m] | ϵ_r | δ [s/m] | | |
| 900 | 41.50 39.425-43.575 | 0.97 0.9225-1.0185 | 40.57 | 0.96 | 20.3 | Sep. 20,2019 |
| 1800 | 40.00 38.00-42.00 | 1.40 1.33-1.47 | 39.84 | 1.39 | 20.6 | Sep. 11,2019 |
| 2000 | 40.00 38.00-42.00 | 1.40 1.33-1.47 | 39.63 | 1.39 | 21.3 | Sep. 19,2019 |
| 835 | 41.5 39.425-43.575 | 0.90 0.855-0.945 | 41.26 | 0.87 | 21.0 | Sep. 09,2019 |
| 900 | 41.50 39.425-43.575 | 0.97 0.9225-1.0185 | 41.59 | 0.98 | 21.1 | Sep. 18,2019 |
| 2450 | 39.2 37.24-41.16 | 1.80 1.71-1.89 | 40.16 | 1.73 | 20.3 | Sep. 23,2019 |
| 2600 | 39.0 37.05-40.95 | 1.96 1.86-2.06 | 38.25 | 1.89 | 20.2 | Sep. 10,2019 |



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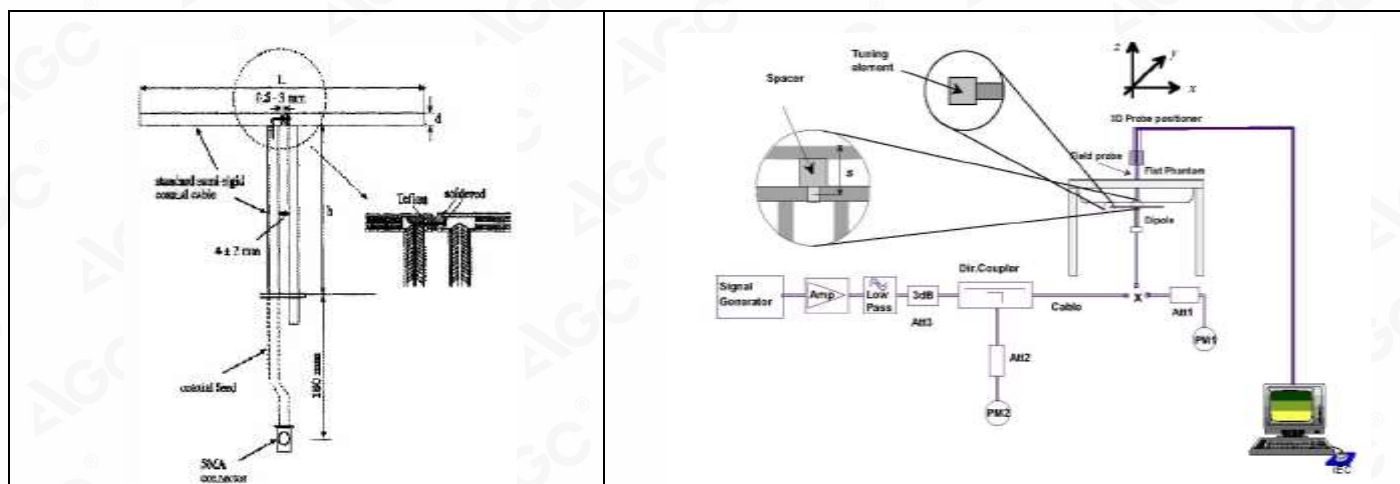
6. SAR SYSTEM CHECK PROCEDURE

6.1. SAR System Check Procedures

SAR system check is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

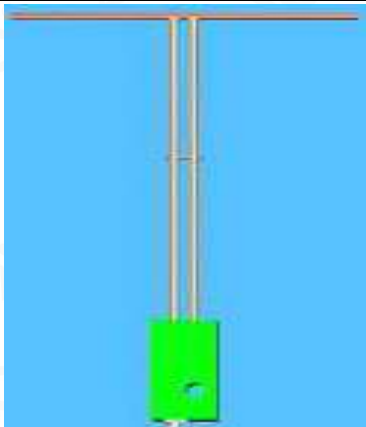
Each SATIMO system is equipped with one or more system check kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system check setup is shown as below.



6.2. SAR System Check

6.2.1. Dipoles

| | |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>The dipoles used are based on the EN62209-1 standard, the table below provides details for the mechanical and electrical specifications for the dipoles.</p> |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Frequency | L (mm) | h (mm) | d (mm) |
|-----------|--------|--------|--------|
| 835MHz | 161.0 | 89.8 | 3.6 |
| 900 MHz | 149.0 | 83.3 | 3.6 |
| 1800MHz | 72 | 41.7 | 3.6 |
| 2000MHz | 64.5 | 37.5 | 3.6 |
| 2450MHz | 51.5 | 30.4 | 3.6 |
| 2600MHz | 48.5 | 28.8 | 3.6 |



6.2.2. System Check Result

| System Performance Check at 835MHz & 900 MHz & 1800MHz & 2000MHz & 2450MHz & 2600MHz | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------|---------------------------------|---------------|------------------------|-------|-------------------|--------------|
| Validation Kit : SN 29/15 DIP 0G850-383& SN 23/19 DIP 0G900-482 & SN 46/11 DIP 1G800-186 & SN 46/11 DIP 2G000-188&SN 46/11 DIP 2G450-189& SN 47/14 DIP 2G600-342 | | | | | | | | |
| Frequency [MHz] | Target Value(W/Kg) | | Reference Result ($\pm 10\%$) | | Normalized to 1W(W/Kg) | | Tissue Temp. [°C] | Test time |
| | 1g | 10g | 1g | 10g | 1g | 10g | | |
| 900 | 11.38 | 7.07 | 10.242-12.518 | 6.363-7.777 | 11.06 | 7.03 | 20.3 | Sep. 20,2019 |
| 1800 | 39.07 | 20.29 | 35.163-42.977 | 18.261-22.319 | 36.24 | 18.67 | 20.6 | Sep. 11,2019 |
| 2000 | 44.10 | 21.49 | 39.69-48.51 | 19.341-23.639 | 40.00 | 21.45 | 21.3 | Sep. 19,2019 |
| 835 | 9.85 | 6.27 | 8.865-10.835 | 5.643-6.897 | 9.31 | 6.06 | 21.0 | Sep. 09,2019 |
| 900 | 11.38 | 7.07 | 10.242-12.518 | 6.363-7.777 | 10.96 | 6.66 | 21.1 | Sep. 18,2019 |
| 2450 | 53.97 | 24.01 | 48.573-59.367 | 21.609-26.411 | 49.95 | 23.20 | 20.3 | Sep. 23,2019 |
| 2600 | 56.86 | 24.84 | 51.174-62.546 | 22.356-27.324 | 53.67 | 23.12 | 20.2 | Sep. 10,2019 |
| 900 | 11.38 | 7.07 | 10.242-12.518 | 6.363-7.777 | 10.73 | 6.75 | 20.3 | Sep. 20,2019 |
| 1800 | 39.07 | 20.29 | 35.163-42.977 | 18.261-22.319 | 36.95 | 19.34 | 20.6 | Sep. 11,2019 |
| 2000 | 44.10 | 21.49 | 39.69-48.51 | 19.341-23.639 | 40.56 | 20.18 | 21.3 | Sep. 19,2019 |
| 835 | 9.85 | 6.27 | 8.865-10.835 | 5.643-6.897 | 9.54 | 6.32 | 21.0 | Sep. 09,2019 |
| 900 | 11.38 | 7.07 | 10.242-12.518 | 6.363-7.777 | 11.00 | 6.54 | 21.1 | Sep. 18,2019 |
| 2450 | 53.97 | 24.01 | 48.573-59.367 | 21.609-26.411 | 49.60 | 22.09 | 20.3 | Sep. 23,2019 |
| 2600 | 56.86 | 24.84 | 51.174-62.546 | 22.356-27.324 | 54.73 | 23.27 | 20.2 | Sep. 10,2019 |

Note:

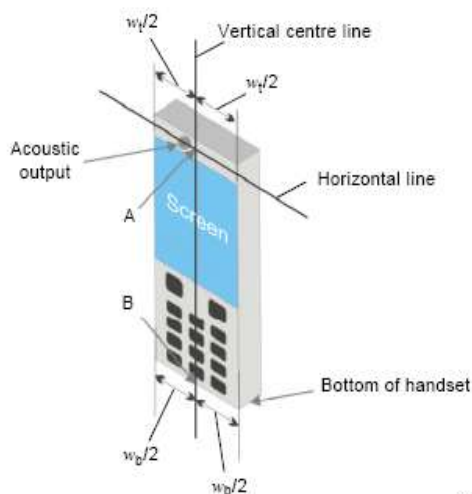
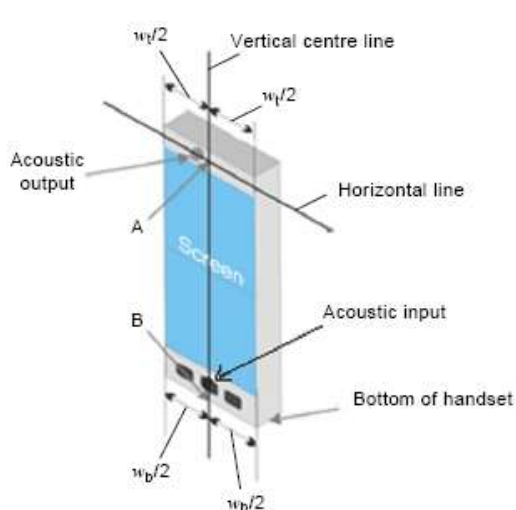
(1) We use a CW signal of 18dBm for system check, and then all SAR values are normalized to 1W forward power. The result must be within $\pm 10\%$ of target value.

7. EUT TEST POSITION

This EUT was tested in **Right Cheek, Right Tilted, Left Cheek, Left Tilted, Body back and Body front.**

7.1. Define Two Imaginary Lines on the Handset

- (1) The vertical centreline passes through two points on the front side of the DUT: the midpoint of the width w_t of the handset at the level of the acoustic output (Point A in Figure 1), and the midpoint of the width w_b at the bottom of the handset (Point B).
- (2) The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output.
- (3) The two lines intersect at Point A. Note that for many handsets, Point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the DUT, especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



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7.2. Cheek Position

- (1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
- (2) To move the device towards the phantom with the ear piece aligned with the the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



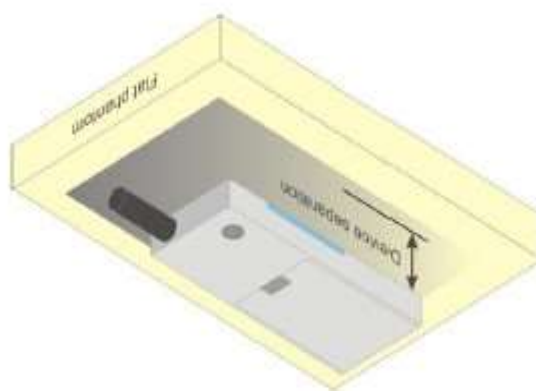
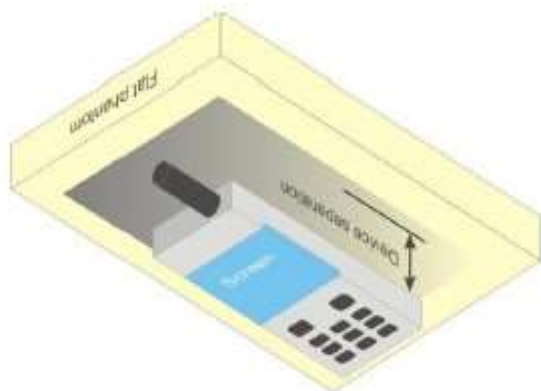
7.3. Tilt Position

- (1) To position the device in the “cheek” position described above.
- (2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.



7.4. Body Worn Position

- (1) To position the EUT parallel to the phantom surface.
- (2) To adjust the EUT parallel to the flat phantom.
- (3) To adjust the distance between the EUT surface and the flat phantom to **5mm**.



8. SAR EXPOSURE LIMITS

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

| Type Exposure | Uncontrolled Environment Limit (W/kg) |
|-------------------------------------------------------|---------------------------------------|
| Spatial Peak SAR (10 g cube tissue for brain or body) | 2.00 |
| Spatial Average SAR (Whole body) | 0.08 |
| Spatial Peak SAR (Limbs) | 4.00 |

Note:

These limits are derived from EN50360 "Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to human exposure to electromagnetic fields" and EN50566 "Product standard to demonstrate compliance of radio frequency fields from handheld and body-mounted wireless communication devices used by the general public"



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9. TEST EQUIPMENT LIST

| Equipment description | Manufacturer/ Model | Identification No. | Current calibration date | Next calibration date |
|-----------------------|-------------------------|------------------------|-----------------------------|-----------------------------|
| SAR Probe | MVG | SN 03/18 EP327 | Dec. 17,2018 | Dec. 16,2019 |
| SAR Probe | MVG | SN 14/16 EP308 | Dec. 10,2018 | Dec. 09,2019 |
| Phantom | SATIMO | SN_4511_SAM90 | Validated. No cal required. | Validated. No cal required. |
| Phantom | SATIMO | ELLI39 | Validated. No cal required. | Validated. No cal required. |
| Liquid | SATIMO | - | Validated. No cal required. | Validated. No cal required. |
| Comm Tester | Agilent-8960 | GB46310822 | Feb. 27,2019 | Feb. 26,2020 |
| Comm Tester | R&S- CMW500 | S/N120909 | Jul. 02,2019 | Jul. 01,2020 |
| Multimeter | Keithley 2000 | 4114939 | Sep. 09,2019 | Sep. 08,2020 |
| Dipole | SATIMO SID835 | SN 29/15 DIP 0G835-383 | Apr. 26,2019 | Apr. 25,2022 |
| Dipole | SATIMO SID900 | SN 23/19 DIP 0G900-482 | May 31,2019 | May 30,2022 |
| Dipole | SATIMO SID1800 | SN 46/11 DIP 1G800-186 | Apr. 26,2019 | Apr. 25,2022 |
| Dipole | SATIMO SID2000 | SN 46/11 DIP 2G000-188 | Apr. 26,2019 | Apr. 25,2022 |
| Dipole | SATIMO SID2450 | SN 46/11 DIP 2G450-189 | Apr. 26,2019 | Apr. 25,2022 |
| Dipole | SATIMO SID2600 | SN 47/14 DIP 2G600-342 | Apr. 26,2019 | Apr. 25,2022 |
| Signal Generator | Agilent-E4438C | US41461365 | Nov. 01,2018 | Oct. 31,2019 |
| Vector Analyzer | Agilent / E4440A | US41421290 | Feb. 27,2019 | Feb. 26,2020 |
| Network Analyzer | Rhode & Schwarz ZVL6 | SN 101443 | Nov. 01,2018 | Oct. 31,2019 |
| Attenuator | Warison /WATT-6SR1211 | S/N:WRJ34AYM2F 1 | June 11,2019 | June 10, 2020 |
| Attenuator | Mini-circuits / VAT-10+ | 31405 | June 11,2019 | June 10, 2020 |
| Amplifier | EM30180 | SN060552 | Feb. 27,2019 | Feb. 26,2020 |
| Directional Couple | Werlatone/ C5571-10 | SN99463 | Jun. 12,2019 | Jun. 11,2020 |
| Directional Couple | Werlatone/ C6026-10 | SN99482 | Jun. 12,2019 | Jun. 11,2020 |
| Power Sensor | NRP-Z21 | 1137.6000.02 | Sep. 09,2019 | Sep. 08,2020 |
| Power Sensor | NRP-Z23 | US38261498 | Feb. 19,2019 | Feb. 18,2020 |
| Power Viewer | R&S | V2.3.1.0 | N/A | N/A |

Note: Per EN62209-1/2 Dipole SAR Validation, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

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

10. MEASUREMENT UNCERTAINTY

| SATIMO Uncertainty- SN 03/18 EP327 Measurement uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|------------|--------------|--------------|----------------|-----------------|----|
| Uncertainty Component | Sec. | Tol (+- %) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration | Annex B | 5.831 | N | 1 | 1 | 1 | 5.831 | 5.831 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.460 | R | $\sqrt{3}$ | $\sqrt{0.5}$ | $\sqrt{0.5}$ | 0.188 | 0.188 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | $\sqrt{0.5}$ | $\sqrt{0.5}$ | 0.374 | 0.374 | ∞ |
| Boundary effect | 7.2.2.5 | 1.000 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Linearity | 7.2.2.3 | 0.975 | R | $\sqrt{3}$ | 1 | 1 | 0.563 | 0.563 | ∞ |
| System detection limits | 7.2.2.3 | 1.000 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Modulation response | 7.2.2.4 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 1 | 1 | 0.021 | 0.021 | ∞ |
| Response Time | 7.2.2.7 | 0.000 | R | $\sqrt{3}$ | 1 | 1 | 0.000 | 0.000 | ∞ |
| Integration Time | 7.2.2.8 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| Post-processing | 7.2.10 | 2.300 | R | $\sqrt{3}$ | 1 | 1 | 1.328 | 1.328 | ∞ |
| Test sample Related | | | | | | | | | |
| Test sample positioning | 7.2.5.3 | 2.6 | N | 1 | 1 | 1 | 2.600 | 2.600 | ∞ |
| Device holder uncertainty | 7.2.5.2 | 3 | N | 1 | 1 | 1 | 3.000 | 3.000 | ∞ |
| SAR drift measurement | 7.2.8 | 5 | R | $\sqrt{3}$ | 1 | 1 | 2.887 | 2.887 | ∞ |
| SAR scaling | 7.2.11 | 5 | R | $\sqrt{3}$ | 1 | 1 | 2.887 | 2.887 | ∞ |
| Phantom and tissue parameters | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4 | R | $\sqrt{3}$ | 1 | 1 | 2.309 | 2.309 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.900 | 1.596 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.126 | 1.025 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.120 | 2.840 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.332 | 0.375 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.150 | 1.300 | M |
| Combined Standard Uncertainty | | | RSS | | | | 9.795 | 9.595 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 19.589 | 19.191 | |

| SATIMO Uncertainty- SN 03/18 EP327 | | | | | | | | | |
|-------------------------------------------------------------------------------|--------------------|--------------|----------------|------------|---------|----------|----------------|-----------------|----|
| System Validation uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
| Uncertainty Component | Sec. | Tol (+-%) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration | Annex B | 5.831 | N | 1 | 1 | 1 | 5.831 | 5.831 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.460 | R | $\sqrt{3}$ | 1 | 1 | 0.266 | 0.266 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | 0 | 0 | 0.000 | 0.000 | ∞ |
| Boundary effect | 7.2.2.5 | 1 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Linearity | 7.2.2.3 | 0.975 | R | $\sqrt{3}$ | 1 | 1 | 0.563 | 0.563 | ∞ |
| System detection limits | 7.2.2.3 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.58 | ∞ |
| Modulation response | 7.2.2.4 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 1 | 1 | 0.021 | 0.021 | ∞ |
| Response Time | 7.2.2.7 | 0.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Integration Time | 7.2.2.8 | 1.4 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Post-Processing | 7.2.10 | 2.3 | R | $\sqrt{3}$ | 1 | 1 | 1.33 | 1.33 | ∞ |
| System validation source | | | | | | | | | |
| Deviation of experimental dipole from numerical dipole | 7.2.12 | 5.0 | N | 1 | 1 | 1 | 5.00 | 5.00 | ∞ |
| Input power and SAR drift measurement | 7.2.8 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| Other source contribution Uncertainty | 7.2.13 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| Phantom and set-up | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4.0 | R | $\sqrt{3}$ | 1 | 1 | 2.31 | 2.31 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.90 | 1.60 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.13 | 1.02 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.12 | 2.84 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.33 | 0.38 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.15 | 1.30 | M |
| Combined Standard Uncertainty | | | RSS | | | | 9.721 | 9.521 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 19.443 | 19.041 | |

| SATIMO Uncertainty- SN 03/18 EP327 | | | | | | | | | |
|-------------------------------------------------------------------------------------|--------------------|---------------|----------------|------------|---------|----------|----------------|-----------------|----|
| System Check uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
| Uncertainty Component | Sec. | Tol (+- %) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration drift | Table 13 note a | 0.5 | N | 1 | 1 | 1 | 0.50 | 0.50 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.460 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Boundary effect | 7.2.2.5 | 1 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Linearity | 7.2.2.3 | 0.975 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| System detection limits | 7.2.2.3 | 1.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Modulation response | 7.2.2.4 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 0 | 0 | 0.00 | 0.00 | ∞ |
| Response Time | 7.2.2.7 | 0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Integration Time | 7.2.2.8 | 1.4 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Post-processing | 7.2.10 | 2.3 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| System check source | | | | | | | | | |
| Deviation between experimental dipoles | 7.2.12 | 2.0 | N | 1 | 1 | 1 | 2.00 | 2.00 | ∞ |
| Input power and SAR drift measurement | 7.2.8 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| Other source contribution Uncertainty | 7.2.13 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| Phantom and set-up | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4 | R | $\sqrt{3}$ | 1 | 1 | 2.31 | 2.31 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.90 | 1.60 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.13 | 1.02 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.12 | 2.84 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.33 | 0.38 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.15 | 1.30 | M |
| Combined Standard Uncertainty | | | RSS | | | | 5.564 | 5.205 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 11.128 | 10.410 | |

| SATIMO Uncertainty- SN 14/16 EP308 Measurement uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------|--------------------|--------------|----------------|------------|--------------|--------------|----------------|-----------------|----|
| Uncertainty Component | Sec. | Tol (+-%) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration | Annex B | 5.831 | N | 1 | 1 | 1 | 5.831 | 5.831 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.570 | R | $\sqrt{3}$ | $\sqrt{0.5}$ | $\sqrt{0.5}$ | 0.233 | 0.233 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | $\sqrt{0.5}$ | $\sqrt{0.5}$ | 0.374 | 0.374 | ∞ |
| Boundary effect | 7.2.2.5 | 1.000 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Linearity | 7.2.2.3 | 0.955 | R | $\sqrt{3}$ | 1 | 1 | 0.551 | 0.551 | ∞ |
| System detection limits | 7.2.2.3 | 1.000 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Modulation response | 7.2.2.4 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 1 | 1 | 0.021 | 0.021 | ∞ |
| Response Time | 7.2.2.7 | 0.000 | R | $\sqrt{3}$ | 1 | 1 | 0.000 | 0.000 | ∞ |
| Integration Time | 7.2.2.8 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.000 | R | $\sqrt{3}$ | 1 | 1 | 1.732 | 1.732 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.400 | R | $\sqrt{3}$ | 1 | 1 | 0.808 | 0.808 | ∞ |
| Post-processing | 7.2.10 | 2.300 | R | $\sqrt{3}$ | 1 | 1 | 1.328 | 1.328 | ∞ |
| Test sample Related | | | | | | | | | |
| Test sample positioning | 7.2.5.3 | 2.6 | N | 1 | 1 | 1 | 2.600 | 2.600 | ∞ |
| Device holder uncertainty | 7.2.5.2 | 3 | N | 1 | 1 | 1 | 3.000 | 3.000 | ∞ |
| SAR drift measurement | 7.2.8 | 5 | R | $\sqrt{3}$ | 1 | 1 | 2.887 | 2.887 | ∞ |
| SAR scaling | 7.2.11 | 5 | R | $\sqrt{3}$ | 1 | 1 | 2.887 | 2.887 | ∞ |
| Phantom and tissue parameters | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4 | R | $\sqrt{3}$ | 1 | 1 | 2.309 | 2.309 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.900 | 1.596 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.126 | 1.025 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.120 | 2.840 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.332 | 0.375 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.150 | 1.300 | M |
| Combined Standard Uncertainty | | | RSS | | | | 9.794 | 9.596 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 19.589 | 19.191 | |

| SATIMO Uncertainty-SN 14/16 EP308 | | | | | | | | | |
|-------------------------------------------------------------------------------|--------------------|--------------|----------------|------------|---------|----------|----------------|-----------------|----|
| System Validation uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
| Uncertainty Component | Sec. | Tol (+-%) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration | Annex B | 5.831 | N | 1 | 1 | 1 | 5.831 | 5.831 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.570 | R | $\sqrt{3}$ | 1 | 1 | 0.329 | 0.329 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | 0 | 0 | 0.000 | 0.000 | ∞ |
| Boundary effect | 7.2.2.5 | 1.000 | R | $\sqrt{3}$ | 1 | 1 | 0.577 | 0.577 | ∞ |
| Linearity | 7.2.2.3 | 0.955 | R | $\sqrt{3}$ | 1 | 1 | 0.551 | 0.551 | ∞ |
| System detection limits | 7.2.2.3 | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.58 | 0.58 | ∞ |
| Modulation response | 7.2.2.4 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 1 | 1 | 0.021 | 0.021 | ∞ |
| Response Time | 7.2.2.7 | 0.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Integration Time | 7.2.2.8 | 1.4 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.73 | 1.73 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Post-Processing | 7.2.10 | 2.3 | R | $\sqrt{3}$ | 1 | 1 | 1.33 | 1.33 | ∞ |
| System validation source | | | | | | | | | |
| Deviation of experimental dipole from numerical dipole | 7.2.12 | 5.0 | N | 1 | 1 | 1 | 5.00 | 5.00 | ∞ |
| Input power and SAR drift measurement | 7.2.8 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| Other source contribution Uncertainty | 7.2.13 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| Phantom and set-up | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4.0 | R | $\sqrt{3}$ | 1 | 1 | 2.31 | 2.31 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.90 | 1.60 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.13 | 1.02 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.12 | 2.84 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.33 | 0.38 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.15 | 1.30 | M |
| Combined Standard Uncertainty | | | RSS | | | | 9.723 | 9.522 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 19.445 | 19.044 | |

| SATIMO Uncertainty-SN 14/16 EP308 System Check uncertainty for DUT averaged over 1 gram / 10 gram. | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|------------|---------|----------|----------------|-----------------|----|
| Uncertainty Component | Sec. | Tol (+- %) | Prob. Dist. | Div. | Ci (1g) | Ci (10g) | 1g Ui (+-%) | 10g Ui (+-%) | vi |
| Measurement System | | | | | | | | | |
| Probe calibration drift | Table 13 note a | 0.5 | N | 1 | 1 | 1 | 0.50 | 0.50 | ∞ |
| Axial Isotropy | 7.2.2.2 | 0.570 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Hemispherical Isotropy | 7.2.2.2 | 0.915 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Boundary effect | 7.2.2.5 | 1 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Linearity | 7.2.2.3 | 0.955 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| System detection limits | 7.2.2.3 | 1.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Modulation response | 7.2.2.4 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Readout Electronics | 7.2.2.6 | 0.021 | N | 1 | 0 | 0 | 0.00 | 0.00 | ∞ |
| Response Time | 7.2.2.7 | 0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Integration Time | 7.2.2.8 | 1.4 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-Noise | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| RF ambient conditions-reflections | 7.2.9 | 3.0 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| Probe positioner mechanical tolerance | 7.2.3.1 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Probe positioning with respect to phantom shell | 7.2.3.2 | 1.4 | R | $\sqrt{3}$ | 1 | 1 | 0.81 | 0.81 | ∞ |
| Post-processing | 7.2.10 | 2.3 | R | $\sqrt{3}$ | 0 | 0 | 0.00 | 0.00 | ∞ |
| System check source | | | | | | | | | |
| Deviation between experimental dipoles | 7.2.12 | 2.0 | N | 1 | 1 | 1 | 2.00 | 2.00 | ∞ |
| Input power and SAR drift measurement | 7.2.8 | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.89 | 2.89 | ∞ |
| Other source contribution Uncertainty | 7.2.13 | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.15 | 1.15 | ∞ |
| Phantom and set-up | | | | | | | | | |
| Phantom uncertainty (shape and thickness uncertainty) | 7.2.4 | 4 | R | $\sqrt{3}$ | 1 | 1 | 2.31 | 2.31 | ∞ |
| Uncertainty in SAR correction for deviations in permittivity and conductivity | 7.2.7.2 | 1.9 | N | 1 | 1 | 0.84 | 1.90 | 1.60 | ∞ |
| Liquid conductivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.78 | 0.71 | 1.13 | 1.02 | ∞ |
| Liquid conductivity (measured) | 7.2.6.3 7.2.6.5 | 4 | N | 1 | 0.78 | 0.71 | 3.12 | 2.84 | M |
| Liquid permittivity (temperature uncertainty) | 7.2.6.6 7.2.6.5 | 2.5 | R | $\sqrt{3}$ | 0.23 | 0.26 | 0.33 | 0.38 | ∞ |
| Liquid permittivity (measured) | 7.2.6.4 7.2.6.5 | 5 | N | 1 | 0.23 | 0.26 | 1.15 | 1.30 | M |
| Combined Standard Uncertainty | | | RSS | | | | 5.562 | 5.203 | |
| Expanded Uncertainty (95% Confidence interval) | | | K=2 | | | | 11.124 | 10.406 | |

11. CONDUCTED POWER MEASUREMENT

| Mode | Frequency(MHz) | Avg. Output Power(dBm) | Duty cycle Factor(dBm) | Frame Power(dBm) |
|--------------------|----------------|------------------------|------------------------|------------------|
| Maximum Power <1> | | | | |
| GSM 900 | 880.2 | 33.26 | -9 | 24.26 |
| | 897.4 | 33.18 | -9 | 24.18 |
| | 914.8 | 33.19 | -9 | 24.19 |
| GPRS 900 (1 Slot) | 880.2 | 32.95 | -9 | 23.95 |
| | 897.4 | 32.86 | -9 | 23.86 |
| | 914.8 | 32.84 | -9 | 23.84 |
| GPRS 900 (2 Slot) | 880.2 | 29.23 | -6 | 23.23 |
| | 897.4 | 29.51 | -6 | 23.51 |
| | 914.8 | 29.36 | -6 | 23.36 |
| GPRS 900 (3 Slot) | 880.2 | 29.67 | -4.26 | 25.41 |
| | 897.4 | 29.75 | -4.26 | 25.49 |
| | 914.8 | 29.61 | -4.26 | 25.35 |
| GPRS 900 (4 Slot) | 880.2 | 30.14 | -3 | 27.14 |
| | 897.4 | 30.01 | -3 | 27.01 |
| | 914.8 | 29.99 | -3 | 26.99 |
| EGPRS 900 (1 Slot) | 880.2 | 28.48 | -9 | 19.48 |
| | 897.4 | 28.56 | -9 | 19.56 |
| | 914.8 | 28.53 | -9 | 19.53 |
| EGPRS 900 (2 Slot) | 880.2 | 27.24 | -6 | 21.24 |
| | 897.4 | 27.32 | -6 | 21.32 |
| | 914.8 | 27.36 | -6 | 21.36 |
| EGPRS 900 (3 Slot) | 880.2 | 26.32 | -4.26 | 22.06 |
| | 897.4 | 26.41 | -4.26 | 22.15 |
| | 914.8 | 26.23 | -4.26 | 21.97 |
| EGPRS 900 (4 Slot) | 880.2 | 26.47 | -3 | 23.47 |
| | 897.4 | 26.28 | -3 | 23.28 |
| | 914.8 | 26.34 | -3 | 23.34 |



| Mode | Frequency(MHz) | Avg. Output Power(dBm) | Duty cycle Factor(dBm) | Frame Power(dBm) |
|-------------------|----------------|------------------------|------------------------|------------------|
| Maximum Power <2> | | | | |
| GSM 900 | 880.2 | 33.13 | -9 | 24.13 |
| | 897.4 | 33.06 | -9 | 24.06 |
| | 914.8 | 33.07 | -9 | 24.07 |
| GPRS 900 (1 Slot) | 880.2 | 32.81 | -9 | 23.81 |
| | 897.4 | 32.74 | -9 | 23.74 |
| | 914.8 | 32.72 | -9 | 23.72 |
| GPRS 900 (2 Slot) | 880.2 | 29.12 | -6 | 23.12 |
| | 897.4 | 29.39 | -6 | 23.39 |
| | 914.8 | 29.24 | -6 | 23.24 |
| GPRS 900 (3 Slot) | 880.2 | 29.55 | -4.26 | 25.29 |
| | 897.4 | 29.62 | -4.26 | 25.36 |
| | 914.8 | 29.48 | -4.26 | 25.22 |
| GPRS 900 (4 Slot) | 880.2 | 30.02 | -3 | 27.02 |
| | 897.4 | 29.86 | -3 | 26.86 |
| | 914.8 | 29.85 | -3 | 26.85 |



| Mode | Frequency(MHz) | Avg. Output Power(dBm) | Duty cycle Factor(dBm) | Frame Power(dBm) |
|--------------------|----------------|------------------------|------------------------|------------------|
| Maximum Power <1> | | | | |
| DCS1800 | 1710.2 | 30.00 | -9 | 21.00 |
| | 1747.4 | 30.74 | -9 | 21.74 |
| | 1784.8 | 30.94 | -9 | 21.94 |
| GPRS1800 (1 Slot) | 1710.2 | 30.07 | -9 | 21.07 |
| | 1747.4 | 30.15 | -9 | 21.15 |
| | 1784.8 | 30.23 | -9 | 21.23 |
| GPRS1800 (2 Slot) | 1710.2 | 27.44 | -6 | 21.44 |
| | 1747.4 | 27.51 | -6 | 21.51 |
| | 1784.8 | 27.39 | -6 | 21.39 |
| GPRS1800 (3 Slot) | 1710.2 | 26.22 | -4.26 | 21.96 |
| | 1747.4 | 26.35 | -4.26 | 22.09 |
| | 1784.8 | 26.38 | -4.26 | 22.12 |
| GPRS1800 (4 Slot) | 1710.2 | 26.05 | -3 | 23.05 |
| | 1747.4 | 26.48 | -3 | 23.48 |
| | 1784.8 | 26.70 | -3 | 23.70 |
| EGPRS1800 (1 Slot) | 1710.2 | 27.41 | -9 | 18.41 |
| | 1747.4 | 27.36 | -9 | 18.36 |
| | 1784.8 | 27.32 | -9 | 18.32 |
| EGPRS1800 (2 Slot) | 1710.2 | 26.94 | -6 | 20.94 |
| | 1747.4 | 26.88 | -6 | 20.88 |
| | 1784.8 | 26.82 | -6 | 20.82 |
| EGPRS1800 (3 Slot) | 1710.2 | 25.47 | -4.26 | 21.21 |
| | 1747.4 | 25.62 | -4.26 | 21.36 |
| | 1784.8 | 25.68 | -4.26 | 21.42 |
| EGPRS1800 (4 Slot) | 1710.2 | 25.80 | -3 | 22.80 |
| | 1747.4 | 25.58 | -3 | 22.58 |
| | 1784.8 | 25.32 | -3 | 22.32 |



| Mode | Frequency(MHz) | Avg. Output Power(dBm) | Duty cycle Factor(dBm) | Frame Power(dBm) |
|-------------------|----------------|------------------------|------------------------|------------------|
| Maximum Power <2> | | | | |
| DCS1800 | 1710.2 | 29.87 | -9 | 20.87 |
| | 1747.4 | 30.62 | -9 | 21.62 |
| | 1784.8 | 30.83 | -9 | 21.83 |
| GPRS1800 (1 Slot) | 1710.2 | 29.95 | -9 | 20.95 |
| | 1747.4 | 30.06 | -9 | 21.06 |
| | 1784.8 | 30.11 | -9 | 21.11 |
| GPRS1800 (2 Slot) | 1710.2 | 27.34 | -6 | 21.34 |
| | 1747.4 | 27.39 | -6 | 21.39 |
| | 1784.8 | 27.27 | -6 | 21.27 |
| GPRS1800 (3 Slot) | 1710.2 | 26.15 | -4.26 | 21.89 |
| | 1747.4 | 26.23 | -4.26 | 21.97 |
| | 1784.8 | 26.26 | -4.26 | 22.00 |
| GPRS1800 (4 Slot) | 1710.2 | 25.94 | -3 | 22.94 |
| | 1747.4 | 26.35 | -3 | 23.35 |
| | 1784.8 | 26.58 | -3 | 23.58 |

Note 1:

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

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

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

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

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

UMTS BAND I

| Mode | Frequency(MHz) | Avg. Output Power (dBm) |
|----------------------------|----------------|-------------------------|
| WCDMA 2100 RMC(12.2bps) | 1922.4 | 24.62 |
| | 1950 | 24.60 |
| | 1977.6 | 24.54 |
| HSDPA Subtest 1 | 1922.4 | 23.55 |
| | 1950 | 23.59 |
| | 1977.6 | 23.44 |
| HSDPA Subtest 2 | 1922.4 | 22.70 |
| | 1950 | 22.70 |
| | 1977.6 | 22.58 |
| HSDPA Subtest 3 | 1922.4 | 22.53 |
| | 1950 | 22.68 |
| | 1977.6 | 22.50 |
| HSDPA Subtest 4 | 1922.4 | 22.52 |
| | 1950 | 22.53 |
| | 1977.6 | 22.48 |
| HSUPA Subtest 1 | 1922.4 | 21.29 |
| | 1950 | 21.37 |
| | 1977.6 | 21.25 |
| HSUPA Subtest 2 | 1922.4 | 21.49 |
| | 1950 | 21.48 |
| | 1977.6 | 21.49 |
| HSUPA Subtest 3 | 1922.4 | 22.38 |
| | 1950 | 22.41 |
| | 1977.6 | 22.26 |
| HSUPA Subtest 4 | 1922.4 | 20.91 |
| | 1950 | 20.90 |
| | 1977.6 | 20.79 |
| HSUPA Subtest 5 | 1922.4 | 20.52 |
| | 1950 | 20.62 |
| | 1977.6 | 20.48 |



UMTS BAND VIII

| Mode | Frequency (MHz) | Avg. Output Power (dBm) |
|---------------------------|-----------------|-------------------------|
| WCDMA 900 RMC(12.2bps) | 882.4 | 23.90 |
| | 897.6 | 23.85 |
| | 912.6 | 24.12 |
| HSDPA Subtest 1 | 882.4 | 22.87 |
| | 897.6 | 22.86 |
| | 912.6 | 23.12 |
| HSDPA Subtest 2 | 882.4 | 22.03 |
| | 897.6 | 22.12 |
| | 912.6 | 22.31 |
| HSDPA Subtest 3 | 882.4 | 22.17 |
| | 897.6 | 22.07 |
| | 912.6 | 22.32 |
| HSDPA Subtest 4 | 882.4 | 22.10 |
| | 897.6 | 22.08 |
| | 912.6 | 22.27 |
| HSUPA Subtest 1 | 882.4 | 21.96 |
| | 897.6 | 21.83 |
| | 912.6 | 21.84 |
| HSUPA Subtest 2 | 882.4 | 21.99 |
| | 897.6 | 21.98 |
| | 912.6 | 21.99 |
| HSUPA Subtest 3 | 882.4 | 23.02 |
| | 897.6 | 22.89 |
| | 912.6 | 22.96 |
| HSUPA Subtest 4 | 882.4 | 21.46 |
| | 897.6 | 21.42 |
| | 912.6 | 21.37 |
| HSUPA Subtest 5 | 882.4 | 21.00 |
| | 897.6 | 20.99 |
| | 912.6 | 20.84 |


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According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.

Table 6.1Aa: UE maximum output power with HS-DPCCH and E-DCH

| UE Transmit Channel Configuration | CM(db) | MPR(db) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------|
| For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH | $0 \leq CM \leq 3.5$ | $MAX(CM-1,0)$ |
| Note: CM=1 for $\beta_d/\beta_c=12/15$, $\beta_{hs}/\beta_c=24/15$.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference. | | |

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.



LTE BAND

| Avg. Output Power of LTE Band 1(dBm) | | | | | | | |
|--------------------------------------|------------|---------|-----------|------------|--------------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 18025 | 18300 | 18575 |
| 5MHz | QPSK | 1 | 0 | 0 | 23.66 | 23.45 | 23.10 |
| | | | 12 | 0 | 23.65 | 23.40 | 23.08 |
| | | | 24 | 0 | 23.65 | 23.42 | 22.97 |
| | | 12 | 0 | 1 | 23.71 | 23.54 | 22.70 |
| | | | 6 | 1 | 23.67 | 23.51 | 22.69 |
| | | | 13 | 1 | 23.71 | 23.48 | 22.67 |
| | | 25 | 0 | 1 | 23.60 | 23.46 | 22.65 |
| | 16QAM | 1 | 0 | 1 | 23.57 | 23.34 | 23.05 |
| | | | 12 | 1 | 23.54 | 23.30 | 23.01 |
| | | | 24 | 1 | 23.52 | 23.36 | 22.87 |
| | | 12 | 0 | 2 | 23.65 | 23.45 | 22.65 |
| | | | 6 | 2 | 23.53 | 23.43 | 22.53 |
| | | | 13 | 2 | 23.66 | 23.39 | 22.52 |
| | | 25 | 0 | 2 | 23.59 | 23.38 | 22.60 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 18050 | 18300 | 18550 |
| 10MHz | QPSK | 1 | 0 | 0 | 23.68 | 23.30 | 23.07 |
| | | | 24 | 0 | 23.52 | 23.32 | 23.04 |
| | | | 49 | 0 | 23.53 | 23.43 | 22.90 |
| | | 25 | 0 | 1 | 23.60 | 23.36 | 22.66 |
| | | | 12 | 1 | 23.56 | 23.45 | 22.55 |
| | | | 25 | 1 | 23.65 | 23.49 | 22.54 |
| | | 50 | 0 | 1 | 23.62 | 23.35 | 22.63 |
| | 16QAM | 1 | 0 | 1 | 23.63 | 23.38 | 23.08 |
| | | | 24 | 1 | 23.64 | 23.34 | 23.05 |
| | | | 49 | 1 | 23.59 | 23.41 | 22.93 |
| | | 25 | 0 | 2 | 23.55 | 23.30 | 22.70 |
| | | | 12 | 2 | 23.56 | 23.46 | 22.59 |
| | | | 25 | 2 | 23.67 | 23.45 | 22.59 |
| | | 50 | 0 | 2 | 23.65 | 23.43 | 22.66 |



Attestation of Global Compliance

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| Avg. Output Power of LTE Band 1(dBm) | | | | | | | |
|--------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 18075 | 18300 | 18525 |
| 15MHz | QPSK | 1 | 0 | 0 | 22.98 | 22.84 | 22.54 |
| | | | 37 | 0 | 22.95 | 22.89 | 22.56 |
| | | | 74 | 0 | 22.91 | 22.67 | 22.49 |
| | | 37 | 0 | 1 | 23.02 | 22.85 | 22.72 |
| | | | 19 | 1 | 23.01 | 22.89 | 22.68 |
| | | | 38 | 1 | 22.83 | 22.62 | 22.45 |
| | | 75 | 0 | 1 | 22.85 | 22.65 | 22.48 |
| | 16QAM | 1 | 0 | 1 | 23.02 | 22.91 | 22.46 |
| | | | 37 | 1 | 23.00 | 22.89 | 22.42 |
| | | | 74 | 1 | 22.75 | 22.72 | 22.41 |
| | | 37 | 0 | 2 | 22.93 | 22.94 | 22.58 |
| | | | 19 | 2 | 22.98 | 22.86 | 22.59 |
| | | | 38 | 2 | 22.84 | 22.68 | 22.43 |
| | | 75 | 0 | 2 | 22.78 | 22.69 | 22.46 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 18100 | 18300 | 18500 |
| 20MHz | QPSK | 1 | 0 | 0 | 23.11 | 22.96 | 22.64 |
| | | | 49 | 0 | 23.09 | 22.91 | 22.60 |
| | | | 99 | 0 | 22.99 | 22.77 | 22.53 |
| | | 50 | 0 | 1 | 23.08 | 22.97 | 22.76 |
| | | | 25 | 1 | 23.06 | 22.95 | 22.74 |
| | | | 50 | 1 | 22.90 | 22.74 | 22.57 |
| | | 100 | 0 | 1 | 22.88 | 22.72 | 22.53 |
| | 16QAM | 1 | 0 | 1 | 23.07 | 22.85 | 22.61 |
| | | | 49 | 1 | 23.02 | 22.89 | 22.59 |
| | | | 99 | 1 | 22.81 | 22.64 | 22.50 |
| | | 50 | 0 | 2 | 23.03 | 22.85 | 22.73 |
| | | | 25 | 2 | 23.01 | 22.89 | 22.69 |
| | | | 50 | 2 | 22.86 | 22.67 | 22.52 |
| | | 100 | 0 | 2 | 22.74 | 22.62 | 22.49 |



| Avg. Output Power of LTE Band 3 (dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19207 | 19575 | 19943 |
| 1.4MHz | QPSK | 1 | 0 | 0 | 23.54 | 23.48 | 23.39 |
| | | | 2 | 0 | 23.51 | 23.44 | 23.36 |
| | | | 5 | 0 | 23.52 | 23.45 | 23.23 |
| | | 3 | 0 | 0 | 23.43 | 23.45 | 23.15 |
| | | | 1 | 0 | 23.42 | 23.38 | 23.12 |
| | | | 3 | 0 | 23.35 | 23.42 | 23.17 |
| | | 6 | 0 | 1 | 23.32 | 23.40 | 23.15 |
| | 16QAM | 1 | 0 | 1 | 23.49 | 23.45 | 23.35 |
| | | | 2 | 1 | 23.45 | 23.38 | 23.32 |
| | | | 5 | 1 | 23.46 | 23.32 | 23.16 |
| | | 3 | 0 | 1 | 23.37 | 23.39 | 23.10 |
| | | | 1 | 1 | 23.32 | 23.32 | 23.08 |
| | | | 3 | 1 | 23.28 | 23.38 | 23.13 |
| | | 6 | 0 | 2 | 23.26 | 23.36 | 23.11 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19215 | 19575 | 19935 |
| 3MHz | QPSK | 1 | 0 | 0 | 23.38 | 23.30 | 23.24 |
| | | | 7 | 0 | 23.31 | 23.22 | 23.25 |
| | | | 14 | 0 | 23.32 | 23.39 | 23.16 |
| | | 8 | 0 | 1 | 23.20 | 23.26 | 23.03 |
| | | | 4 | 1 | 23.26 | 23.25 | 23.02 |
| | | | 8 | 1 | 23.13 | 23.38 | 23.09 |
| | | 15 | 0 | 1 | 23.12 | 23.32 | 23.08 |
| | 16QAM | 1 | 0 | 1 | 23.35 | 23.33 | 23.36 |
| | | | 7 | 1 | 23.39 | 23.24 | 23.25 |
| | | | 14 | 1 | 23.38 | 23.32 | 23.13 |
| | | 8 | 0 | 2 | 23.24 | 23.35 | 23.06 |
| | | | 4 | 2 | 23.25 | 23.36 | 23.05 |
| | | | 8 | 2 | 23.16 | 23.38 | 23.07 |
| | | 15 | 0 | 2 | 23.13 | 23.32 | 23.04 |



| Avg. Output Power of LTE Band 3(dBm) | | | | | | | |
|--------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19225 | 19575 | 19925 |
| 5MHz | QPSK | 1 | 0 | 0 | 23.12 | 23.29 | 23.53 |
| | | | 12 | 0 | 23.09 | 23.25 | 23.44 |
| | | | 24 | 0 | 23.09 | 23.26 | 23.39 |
| | | 12 | 0 | 1 | 23.21 | 23.42 | 23.07 |
| | | | 6 | 1 | 23.18 | 23.37 | 23.02 |
| | | | 13 | 1 | 23.16 | 23.36 | 23.14 |
| | | 25 | 0 | 1 | 23.12 | 23.32 | 23.13 |
| | 16QAM | 1 | 0 | 1 | 23.06 | 23.18 | 23.45 |
| | | | 12 | 1 | 23.11 | 23.16 | 23.37 |
| | | | 24 | 1 | 23.01 | 23.21 | 23.32 |
| | | 12 | 0 | 2 | 23.15 | 23.27 | 22.99 |
| | | | 6 | 2 | 23.06 | 23.11 | 22.97 |
| | | | 13 | 2 | 23.03 | 23.07 | 23.04 |
| | | 25 | 0 | 2 | 23.05 | 23.23 | 23.04 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19250 | 19575 | 19900 |
| 10MHz | QPSK | 1 | 0 | 0 | 23.08 | 23.12 | 23.47 |
| | | | 24 | 0 | 23.05 | 23.13 | 23.35 |
| | | | 49 | 0 | 22.92 | 23.19 | 23.22 |
| | | 25 | 0 | 1 | 23.10 | 23.15 | 22.96 |
| | | | 12 | 1 | 23.03 | 23.26 | 22.93 |
| | | | 25 | 1 | 23.06 | 23.18 | 23.00 |
| | | 50 | 0 | 1 | 23.05 | 23.20 | 23.05 |
| | 16QAM | 1 | 0 | 1 | 23.02 | 23.15 | 23.39 |
| | | | 24 | 1 | 23.16 | 23.16 | 23.28 |
| | | | 49 | 1 | 23.09 | 23.24 | 23.35 |
| | | 25 | 0 | 2 | 23.07 | 23.12 | 23.02 |
| | | | 12 | 2 | 23.04 | 23.17 | 23.03 |
| | | | 25 | 2 | 23.06 | 23.03 | 23.04 |
| | | 50 | 0 | 2 | 23.03 | 23.24 | 23.00 |



| Avg. Output Power of LTE Band 3 (dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19275 | 19575 | 19875 |
| 15MHz | QPSK | 1 | 0 | 0 | 23.19 | 23.26 | 23.24 |
| | | | 37 | 0 | 23.04 | 23.27 | 23.15 |
| | | | 74 | 0 | 23.15 | 23.44 | 23.30 |
| | | 37 | 0 | 1 | 23.39 | 23.30 | 23.22 |
| | | | 19 | 1 | 23.26 | 23.26 | 23.12 |
| | | | 38 | 1 | 23.10 | 23.37 | 22.85 |
| | | 75 | 0 | 1 | 23.05 | 23.39 | 22.79 |
| | 16QAM | 1 | 0 | 1 | 23.22 | 23.27 | 23.23 |
| | | | 37 | 1 | 23.09 | 23.28 | 23.16 |
| | | | 74 | 1 | 23.20 | 23.37 | 23.33 |
| | | 37 | 0 | 2 | 23.35 | 23.34 | 23.26 |
| | | | 19 | 2 | 23.29 | 23.28 | 23.16 |
| | | | 38 | 2 | 23.11 | 23.40 | 22.90 |
| | | 75 | 0 | 2 | 23.07 | 23.22 | 22.81 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 19300 | 19575 | 19850 |
| 20MHz | QPSK | 1 | 0 | 0 | 23.23 | 23.38 | 23.30 |
| | | | 49 | 0 | 23.17 | 23.30 | 23.27 |
| | | | 99 | 0 | 23.25 | 23.46 | 23.36 |
| | | 50 | 0 | 1 | 23.44 | 23.33 | 23.30 |
| | | | 25 | 1 | 23.38 | 23.31 | 23.28 |
| | | | 50 | 1 | 23.15 | 23.45 | 22.96 |
| | | 100 | 0 | 1 | 23.12 | 23.43 | 22.89 |
| | 16QAM | 1 | 0 | 1 | 23.14 | 23.23 | 23.24 |
| | | | 49 | 1 | 23.02 | 23.26 | 23.12 |
| | | | 99 | 1 | 23.13 | 23.39 | 23.27 |
| | | 50 | 0 | 2 | 23.36 | 23.25 | 23.21 |
| | | | 25 | 2 | 23.25 | 23.22 | 23.10 |
| | | | 50 | 2 | 23.09 | 23.36 | 22.83 |
| | | 100 | 0 | 2 | 23.03 | 23.38 | 22.76 |



| Avg. Output Power of LTE Band 7 (dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|--------------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 20775 | 21100 | 21425 |
| 5MHz | QPSK | 1 | 0 | 0 | 22.65 | 22.72 | 22.82 |
| | | | 12 | 0 | 22.61 | 22.68 | 22.79 |
| | | | 24 | 0 | 22.62 | 22.72 | 22.78 |
| | | 12 | 0 | 1 | 22.61 | 22.67 | 22.83 |
| | | | 6 | 1 | 22.58 | 22.65 | 22.76 |
| | | | 13 | 1 | 22.61 | 22.72 | 22.83 |
| | | 25 | 0 | 1 | 22.59 | 22.64 | 22.75 |
| | 16QAM | 1 | 0 | 1 | 22.50 | 22.60 | 22.79 |
| | | | 12 | 1 | 22.52 | 22.52 | 22.65 |
| | | | 24 | 1 | 22.45 | 22.64 | 22.61 |
| | | 12 | 0 | 2 | 22.53 | 22.53 | 22.72 |
| | | | 6 | 2 | 22.46 | 22.57 | 22.66 |
| | | | 13 | 2 | 22.59 | 22.65 | 22.73 |
| | | 25 | 0 | 2 | 22.48 | 22.56 | 22.64 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 20800 | 21100 | 21400 |
| 10MHz | QPSK | 1 | 0 | 0 | 22.50 | 22.55 | 22.63 |
| | | | 24 | 0 | 22.56 | 22.53 | 22.66 |
| | | | 49 | 0 | 22.43 | 22.66 | 22.58 |
| | | 25 | 0 | 1 | 22.55 | 22.59 | 22.55 |
| | | | 12 | 1 | 22.42 | 22.68 | 22.64 |
| | | | 25 | 1 | 22.48 | 22.62 | 22.56 |
| | | 50 | 0 | 1 | 22.54 | 22.56 | 22.62 |
| | 16QAM | 1 | 0 | 1 | 22.49 | 22.63 | 22.67 |
| | | | 24 | 1 | 22.36 | 22.54 | 22.68 |
| | | | 49 | 1 | 22.55 | 22.57 | 22.52 |
| | | 25 | 0 | 2 | 22.33 | 22.62 | 22.55 |
| | | | 12 | 2 | 22.38 | 22.41 | 22.57 |
| | | | 25 | 2 | 22.32 | 22.65 | 22.44 |
| | | 50 | 0 | 2 | 22.56 | 22.44 | 22.41 |



| Avg. Output Power of LTE Band 7 (dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 20825 | 21100 | 21375 |
| 15MHz | QPSK | 1 | 0 | 0 | 22.55 | 22.59 | 22.49 |
| | | | 37 | 0 | 22.57 | 22.50 | 22.48 |
| | | | 74 | 0 | 22.51 | 22.63 | 22.65 |
| | | 37 | 0 | 1 | 22.59 | 22.50 | 22.57 |
| | | | 19 | 1 | 22.34 | 22.46 | 22.60 |
| | | | 38 | 1 | 22.43 | 22.54 | 22.66 |
| | | 75 | 0 | 1 | 22.49 | 22.45 | 22.56 |
| | 16QAM | 1 | 0 | 1 | 22.50 | 22.56 | 22.47 |
| | | | 37 | 1 | 22.55 | 22.49 | 22.45 |
| | | | 74 | 1 | 22.68 | 22.58 | 22.62 |
| | | 37 | 0 | 2 | 22.56 | 22.45 | 22.56 |
| | | | 19 | 2 | 22.33 | 22.42 | 22.58 |
| | | | 38 | 2 | 22.42 | 22.53 | 22.64 |
| | | 75 | 0 | 2 | 22.47 | 22.44 | 22.53 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 20850 | 21100 | 21350 |
| 20MHz | QPSK | 1 | 0 | 0 | 22.65 | 22.61 | 22.57 |
| | | | 49 | 0 | 22.61 | 22.56 | 22.51 |
| | | | 99 | 0 | 22.70 | 22.68 | 22.70 |
| | | 50 | 0 | 1 | 22.51 | 22.58 | 22.67 |
| | | | 25 | 1 | 22.48 | 22.52 | 22.62 |
| | | | 50 | 1 | 22.56 | 22.62 | 22.75 |
| | | 100 | 0 | 1 | 22.52 | 22.57 | 22.68 |
| | 16QAM | 1 | 0 | 1 | 22.60 | 22.56 | 22.53 |
| | | | 49 | 1 | 22.56 | 22.52 | 22.45 |
| | | | 99 | 1 | 22.67 | 22.65 | 22.66 |
| | | 50 | 0 | 2 | 22.48 | 22.54 | 22.62 |
| | | | 25 | 2 | 22.42 | 22.47 | 22.57 |
| | | | 50 | 2 | 22.51 | 22.59 | 22.68 |
| | | 100 | 0 | 2 | 22.46 | 22.52 | 22.61 |



| Avg. Output Power of LTE Band 8 (dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|--------------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 21457 | 21625 | 21793 |
| 1.4MHz | QPSK | 1 | 0 | 0 | 23.26 | 23.30 | 23.43 |
| | | | 2 | 0 | 23.21 | 23.28 | 23.37 |
| | | | 5 | 0 | 23.25 | 23.31 | 23.42 |
| | | 3 | 0 | 0 | 23.33 | 23.36 | 23.56 |
| | | | 1 | 0 | 23.30 | 23.32 | 23.54 |
| | | | 3 | 0 | 23.39 | 23.39 | 23.57 |
| | | 6 | 0 | 1 | 23.36 | 23.35 | 23.53 |
| | 16QAM | 1 | 0 | 1 | 23.21 | 23.23 | 23.35 |
| | | | 2 | 1 | 23.03 | 23.19 | 23.30 |
| | | | 5 | 1 | 23.17 | 23.26 | 23.35 |
| | | 3 | 0 | 1 | 23.26 | 23.31 | 23.47 |
| | | | 1 | 1 | 23.11 | 23.16 | 23.46 |
| | | | 3 | 1 | 23.30 | 23.30 | 23.39 |
| | | 6 | 0 | 2 | 23.08 | 23.26 | 23.46 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 21465 | 21625 | 21785 |
| 3MHz | QPSK | 1 | 0 | 0 | 23.12 | 23.21 | 23.35 |
| | | | 7 | 0 | 23.06 | 23.14 | 23.24 |
| | | | 14 | 0 | 23.13 | 23.22 | 23.32 |
| | | 8 | 0 | 1 | 23.25 | 23.20 | 23.48 |
| | | | 4 | 1 | 23.14 | 23.15 | 23.46 |
| | | | 8 | 1 | 23.22 | 23.26 | 23.32 |
| | | 15 | 0 | 1 | 23.08 | 23.28 | 23.45 |
| | 16QAM | 1 | 0 | 1 | 23.26 | 23.27 | 23.39 |
| | | | 7 | 1 | 23.05 | 23.25 | 23.36 |
| | | | 14 | 1 | 23.14 | 23.23 | 23.35 |
| | | 8 | 0 | 2 | 23.22 | 23.22 | 23.43 |
| | | | 4 | 2 | 23.10 | 23.26 | 23.42 |
| | | | 8 | 2 | 23.35 | 23.15 | 23.44 |
| | | 15 | 0 | 2 | 23.16 | 23.24 | 23.41 |

| Avg. Output Power of LTE Band 8(dBm) | | | | | | | |
|--------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 21475 | 21625 | 21775 |
| 5MHz | QPSK | 1 | 0 | 0 | 23.18 | 23.22 | 23.46 |
| | | | 12 | 0 | 23.15 | 23.17 | 23.42 |
| | | | 24 | 0 | 23.24 | 23.28 | 23.38 |
| | | 12 | 0 | 1 | 23.22 | 23.26 | 23.49 |
| | | | 6 | 1 | 23.20 | 23.25 | 23.45 |
| | | | 13 | 1 | 23.21 | 23.36 | 23.42 |
| | | 25 | 0 | 1 | 23.19 | 23.34 | 23.40 |
| | 16QAM | 1 | 0 | 1 | 23.12 | 23.17 | 23.45 |
| | | | 12 | 1 | 23.10 | 23.15 | 23.37 |
| | | | 24 | 1 | 23.21 | 23.22 | 23.32 |
| | | 12 | 0 | 2 | 23.18 | 23.19 | 23.44 |
| | | | 6 | 2 | 23.15 | 23.23 | 23.39 |
| | | | 13 | 2 | 23.16 | 23.31 | 23.36 |
| | | 25 | 0 | 2 | 23.14 | 23.28 | 23.33 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 21500 | 21625 | 21750 |
| 10MHz | QPSK | 1 | 0 | 0 | 23.18 | 23.22 | 23.38 |
| | | | 24 | 0 | 23.14 | 23.17 | 23.36 |
| | | | 49 | 0 | 23.25 | 23.22 | 23.38 |
| | | 25 | 0 | 1 | 23.15 | 23.23 | 23.50 |
| | | | 12 | 1 | 23.12 | 23.20 | 23.48 |
| | | | 25 | 1 | 23.29 | 23.27 | 23.41 |
| | | 50 | 0 | 1 | 23.26 | 23.23 | 23.37 |
| | 16QAM | 1 | 0 | 1 | 23.15 | 23.18 | 23.34 |
| | | | 24 | 1 | 23.10 | 23.15 | 23.30 |
| | | | 49 | 1 | 23.21 | 23.17 | 23.33 |
| | | 25 | 0 | 2 | 23.12 | 23.16 | 23.47 |
| | | | 12 | 2 | 23.09 | 23.13 | 23.44 |
| | | | 25 | 2 | 23.23 | 23.25 | 23.36 |
| | | 50 | 0 | 2 | 23.21 | 23.20 | 23.33 |



| Avg. Output Power of LTE Band 20(dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|--------------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 24175 | 24300 | 24425 |
| 5MHz | QPSK | 1 | 0 | 0 | 23.41 | 23.40 | 23.37 |
| | | | 12 | 0 | 23.36 | 23.39 | 23.30 |
| | | | 24 | 0 | 23.38 | 23.40 | 23.41 |
| | | 12 | 0 | 1 | 23.50 | 23.40 | 23.30 |
| | | | 6 | 1 | 23.47 | 23.35 | 23.25 |
| | | | 13 | 1 | 23.45 | 23.40 | 23.36 |
| | | 25 | 0 | 1 | 23.41 | 23.37 | 23.31 |
| | 16QAM | 1 | 0 | 1 | 23.36 | 23.33 | 23.29 |
| | | | 12 | 1 | 23.28 | 23.30 | 23.23 |
| | | | 24 | 1 | 23.30 | 23.35 | 23.34 |
| | | 12 | 0 | 2 | 23.43 | 23.35 | 23.21 |
| | | | 6 | 2 | 23.38 | 23.29 | 23.17 |
| | | | 13 | 2 | 23.36 | 23.31 | 23.28 |
| | | 25 | 0 | 2 | 23.33 | 23.28 | 23.24 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 24200 | 24300 | 24400 |
| 10MHz | QPSK | 0 | 0 | 0 | 23.40 | 23.32 | 23.36 |
| | | | 24 | 0 | 23.35 | 23.34 | 23.21 |
| | | | 49 | 0 | 23.32 | 23.23 | 23.32 |
| | | 25 | 0 | 1 | 23.46 | 23.25 | 23.28 |
| | | | 12 | 1 | 23.33 | 23.38 | 23.13 |
| | | | 25 | 1 | 23.32 | 23.36 | 23.35 |
| | | 50 | 0 | 1 | 23.35 | 23.22 | 23.25 |
| | 16QAM | 0 | 0 | 1 | 23.38 | 23.39 | 23.21 |
| | | | 24 | 1 | 23.24 | 23.25 | 23.22 |
| | | | 49 | 1 | 23.20 | 23.37 | 23.38 |
| | | 25 | 0 | 2 | 23.45 | 23.34 | 23.25 |
| | | | 12 | 2 | 23.37 | 23.22 | 23.16 |
| | | | 25 | 2 | 23.32 | 23.35 | 23.27 |
| | | 50 | 0 | 2 | 23.36 | 23.24 | 23.22 |



| Avg. Output Power of LTE Band 20(dBm) | | | | | | | |
|---------------------------------------|------------|---------|-----------|------------|---------|---------|---------|
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 24225 | 24300 | 24375 |
| 15MHz | QPSK | 1 | 0 | 0 | 23.20 | 23.33 | 23.16 |
| | | | 37 | 0 | 23.32 | 23.28 | 23.15 |
| | | | 74 | 0 | 23.35 | 23.36 | 23.28 |
| | | 37 | 0 | 1 | 23.38 | 23.25 | 23.29 |
| | | | 19 | 1 | 23.26 | 23.22 | 23.22 |
| | | | 38 | 1 | 23.23 | 23.39 | 23.23 |
| | | 75 | 0 | 1 | 23.22 | 23.26 | 23.25 |
| | 16QAM | 1 | 0 | 1 | 23.35 | 23.34 | 23.14 |
| | | | 37 | 1 | 23.34 | 23.22 | 23.16 |
| | | | 74 | 1 | 23.31 | 23.25 | 23.17 |
| | | 37 | 0 | 2 | 23.30 | 23.27 | 23.22 |
| | | | 19 | 2 | 23.25 | 23.12 | 23.15 |
| | | | 38 | 2 | 23.26 | 23.31 | 23.24 |
| | | 75 | 0 | 2 | 23.27 | 23.25 | 23.13 |
| Bandwidth | Modulation | RB size | RB offset | Target MPR | Channel | Channel | Channel |
| | | | | | 24250 | 24300 | 24350 |
| 20MHz | QPSK | 1 | 0 | 0 | 23.45 | 23.43 | 23.23 |
| | | | 49 | 0 | 23.43 | 23.38 | 23.20 |
| | | | 99 | 0 | 23.40 | 23.35 | 23.29 |
| | | 50 | 0 | 1 | 23.40 | 23.30 | 23.30 |
| | | | 25 | 1 | 23.36 | 23.27 | 23.28 |
| | | | 50 | 1 | 23.33 | 23.41 | 23.31 |
| | | 100 | 0 | 1 | 23.31 | 23.36 | 23.29 |
| | 16QAM | 1 | 0 | 1 | 23.41 | 23.34 | 23.20 |
| | | | 49 | 1 | 23.35 | 23.32 | 23.18 |
| | | | 99 | 1 | 23.32 | 23.28 | 23.25 |
| | | 50 | 0 | 2 | 23.36 | 23.26 | 23.26 |
| | | | 25 | 2 | 23.29 | 23.25 | 23.23 |
| | | | 50 | 2 | 23.25 | 23.37 | 23.27 |
| | | 100 | 0 | 2 | 23.21 | 23.32 | 23.24 |



The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3.3-1 of the 3GPP TS36.101.

Table 6.2.3.3-1 Maximum Power Reduction (MPR) for Power class3

| Modulation | Maximum Power Reduction (MPR) for Power[RB] | | | | | | MPR(dB) |
|------------|---------------------------------------------|--------|------|-------|-------|-------|---------|
| | 1.4MHz | 3.0MHz | 5MHz | 10MHz | 15MHz | 20MHz | |
| QPSK | >5 | >4 | >8 | >12 | >16 | >18 | ≤1 |
| 16QAM | ≤5 | ≤4 | ≤8 | ≤12 | ≤16 | ≤18 | ≤1 |
| 16QAM | >5 | >4 | >8 | >12 | >16 | >18 | ≤2 |

The allowed A-MPR values specified below in Table 6.2.4.3-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".3



Table 6.2.4.3-1: Additional Maximum Power Reduction (A-MPR) / Spectrum Emission requirements

| Network Signaling value | Requirements (sub-clause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks (N_{RB}) | A-MPR (dB) |
|-------------------------|----------------------------|----------------------|-------------------------|---------------------------------------------------------|--------------------------------------|
| NS_01 | 6.6.2.1.1 | Table 5.2-1 | 1.4,3,5,10,15,20 | Table 5.4.2-1 | N/A |
| NS_03 | 6.6.2.2.3.1 | 2,4,10, 23, 25,35,36 | 3 | >5 | ≤ 1 |
| | | | 5 | >6 | ≤ 1 |
| | | | 10 | >6 | ≤ 1 |
| | | | 15 | >8 | ≤ 1 |
| | | | 20 | >10 | ≤ 1 |
| NS_04 | 6.6.2.2.3.2 | 41 | 5 | >6 | ≤ 1 |
| | | | 10, 15, 20 | Table 6.2.4.3-4 | |
| NS_05 | 6.6.3.3.3.1 | 1 | 10,15,20 | ≥ 50 | ≤ 1 |
| NS_06 | 6.6.2.2.3.3 | 12, 13, 14, 17 | 1.4, 3, 5, 10 | Table 5.4.2-1 | N/A |
| NS_07 | 6.6.2.2.3.3 6.6.3.3.3.2 | 13 | 10 | Table 6.2.4.3-2 | Table 6.2.4.3-2 |
| NS_08 | 6.6.3.3.3.3 | 19 | 10, 15 | > 44 | ≤ 3 |
| NS_09 | 6.6.3.3.3.4 | 21 | 10, 15 | > 40 | ≤ 1 |
| | | | | > 55 | ≤ 2 |
| NS_10 | | 20 | 15, 20 | Table 6.2.4.3-3 | Table 6.2.4.3-3 |
| NS_11 | 6.6.2.2.1 6.6.3.3.13 | 231 | 1.4, 3, 5, 10,15,20 | Table 6.2.4.3-5 | Table 6.2.4.3-5 |
| NS_12 | 6.6.3.3.5 | 26 | 1.4, 3, 5 | Table 6.2.4.3-6 | Table 6.2.4.3-6 |
| NS_13 | 6.6.3.3.6 | 26 | 5 | Table 6.2.4.3-7 | Table 6.2.4.3-7 |
| NS_14 | 6.6.3.3.7 | 26 | 10, 15 | Table 6.2.4.3-8 | Table 6.2.4.3-8 |
| NS_15 | 6.6.3.3.8 | 26 | 1.4, 3, 5, 10, 15 | Table 6.2.4.3-9 Table 6.2.4.3-10 | Table 6.2.4.3-9, Table 6.2.4.3-10 |
| NS_16 | 6.6.3.3.9 | 27 | 3, 5, 10 | Table 6.2.4.3-11, Table 6.2.4.3-12, Table 6.2.4.3-13 | |
| NS_17 | 6.6.3.3.10 | 28 | 5, 10 | Table 5.4.2-1 | N/A |
| | 6.6.3.3.11 | 28 | 5 | ≥ 2 | ≤ 1 |
| NS_18 | | | 10, 15, 20 | ≥ 1 | ≤ 4 |
| NS_19 | | | 10, 15, 20 | Table 6.2.4.3-15 | Table 6.2.4.3-15 |
| NS_20 | | | 5, 10, 15, 20 | Table 6.2.4.3-14 | Table 6.2.4.3-14 |
| ... | | | | | |
| NS_20 | - | - | - | - | - |



WIFI

| Mode | Data Rate (Mbps) | Channel | Frequency(MHz) | EIRP (dBm) |
|-------------|------------------|---------|----------------|--------------|
| 802.11b | 1 | 1 | 2412 | 14.21 |
| | | 2 | 2417 | 12.45 |
| | | 7 | 2442 | 12.60 |
| | | 12 | 2467 | 12.96 |
| | | 13 | 2472 | 13.37 |
| 802.11g | 6 | 1 | 2412 | 9.37 |
| | | 7 | 2442 | 8.83 |
| | | 13 | 2472 | 8.49 |
| 802.11n(20) | 6.5 | 1 | 2412 | 9.38 |
| | | 7 | 2442 | 8.81 |
| | | 13 | 2472 | 8.12 |
| 802.11n(40) | 13.5 | 3 | 2422 | 9.53 |
| | | 7 | 2442 | 8.73 |
| | | 11 | 2462 | 9.14 |

Note: For wifi RF test, there is no required about band edge; we test the power for channel 2&12 which is lower than channel 1&13; SAR need to test at low &high channel 1&13.



12. TEST RESULTS

12.1. SAR Test Results Summary

12.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to EN62209-1, and Body SAR was performed with the device 5mm from the phantom according to EN62209-2.

12.1.2. Operation Mode

1 For GSM900, the power control is set to Maximum Power Class. For GPRS 900(GMSK, CS1), the power control level is set to Maximum Power Class. For E-GPRS 900(GMSK: MCS1, 8PSK:MCS5), the power control is set to Maximum Power Class. For DCS 1800, the power control is set to Maximum Power Class. For GPRS 1800(GMSK, CS1), the power control level is set to Maximum Power Class. For E-GPRS 1800 (GMSK: MCS1, 8PSK:MCS5), the power control level is set to Maximum Power Class.

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

Testing with the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2/3/4 uplink timeslots. In the Body SAR test result table, body-worn means display of device down, body-front means display of device up.

2 For WCDMA, head and body SAR is tested under RMC 12.2k mode with power control set all up bits SAR for AMR is not required since its power is less than RMC. For HSDPA/HSUPA, SAR is test with its maximum power mode.

3 The following test measurement is LTE procedure:

a) Largest channel bandwidth standalone SAR test requirements

(a1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

When the measured SAR is ≤ 1.0 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.

When the measured SAR of a required test channel is > 1.80 W/kg, SAR is required for all three RB offset configurations for that required test channel.

(a2) QPSK with 50% RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation at the worst position for 1 RB allocation in a1)

When the measured SAR is ≤ 1.0 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 50% RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.

When the measured SAR of a required test channel is > 1.80 W/kg, SAR is required for all three RB offset configurations for that required test channel.

(a3) QPSK with 100% RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 100% RB allocation at the worst position for 1 RB&50%RB allocation in a1&a2)

When the measured SAR is ≤ 1.0 W/kg, testing of the remaining channels is not required for 100% RB

allocation; otherwise, SAR is required for the remaining channels and only for the highest output power for that channel.

When the measured SAR of a required test channel is > 1.80 W/kg, SAR is required for low,mid,high channel.

(a4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the highest maximum output power in QPSK or when the measured SAR for the QPSK configuration is > 1.8 W/kg.

b) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 4.1) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the highest maximum output power of the largest channel bandwidth configuration or the measured SAR of a configuration for the largest channel bandwidth is > 1.8 W/kg.

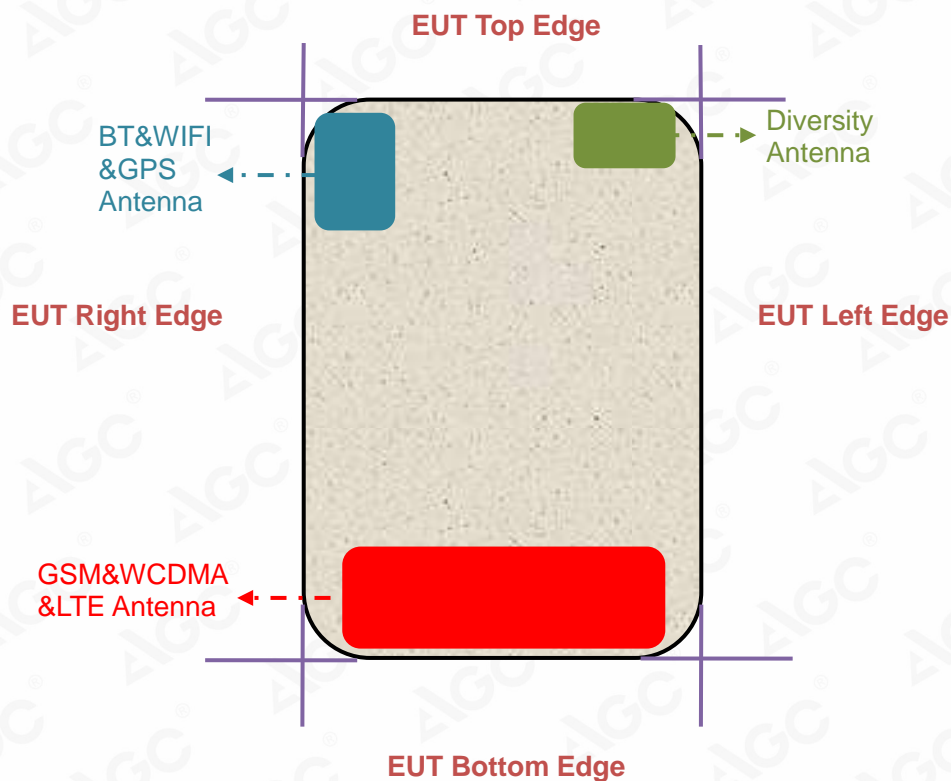
4. For WIFI SAR testing, the EUT has installed WIFI engineering testing software which can provide continuous transmitting RF signal.

5. Sensors have no any influence on power level or SAR result.

6. The portion of the EUT which area scan did not scan has been off the phantom.



12.1.3. Antenna Location: (back view)



12.1.4. SAR Test Results Summary

| SAR MEASUREMENT | | | | | | | | | |
|----------------------------------------|--------------|-----|-----------|--------------------|-----------------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | Relative Humidity (%): 49.2 | | | | |
| Product: Smart Phone | | | | | | | | | |
| Test Mode: GSM900 with GMSK modulation | | | | | | | | | |
| Position | Mode | Ch. | Fr. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune-up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/Kg) |
| SIM 1 Card | | | | | | | | | |
| Left Cheek | voice | 975 | 880.2 | -1.13 | 0.010 | 33.30 | 33.26 | 0.010 | 2.0 |
| Left Cheek | voice | 37 | 897.4 | 1.06 | 0.010 | 33.30 | 33.18 | 0.010 | 2.0 |
| Left Cheek | voice | 124 | 914.8 | -1.12 | 0.010 | 33.30 | 33.19 | 0.010 | 2.0 |
| Left Tilt | voice | 37 | 897.4 | 1.09 | 0.006 | 33.30 | 33.18 | 0.006 | 2.0 |
| Right Cheek | voice | 37 | 897.4 | -1.14 | 0.010 | 33.30 | 33.18 | 0.010 | 2.0 |
| Right Tilt | voice | 37 | 897.4 | -1.08 | 0.007 | 33.30 | 33.18 | 0.007 | 2.0 |
| Body back | GPRS-4 slots | 975 | 880.2 | 1.05 | 0.052 | 30.20 | 30.14 | 0.053 | 2.0 |
| Body back | GPRS-4 slots | 37 | 897.4 | -1.07 | 0.070 | 30.20 | 30.01 | 0.073 | 2.0 |
| Body back | GPRS-4 slots | 124 | 914.8 | 1.11 | 0.096 | 30.20 | 29.99 | 0.101 | 2.0 |
| Body Front | GPRS-4 slots | 37 | 897.4 | -1.06 | 0.033 | 30.20 | 30.01 | 0.034 | 2.0 |
| Body back + Ear. | voice | 124 | 914.8 | -1.04 | 0.048 | 33.30 | 33.19 | 0.049 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn configuration
- Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | |
|-----------------------------------------|--------------|-----|-----------|--------------------|-----------------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | Relative Humidity (%): 51.4 | | | | |
| Product: Smart Phone | | | | | | | | | |
| Test Mode: DCS1800 with GMSK modulation | | | | | | | | | |
| Position | Mode | Ch. | Fr. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune-up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/Kg) |
| SIM 1 Card | | | | | | | | | |
| Left Cheek | voice | 512 | 1710.2 | 0.81 | 0.082 | 31.00 | 30.00 | 0.103 | 2.0 |
| Left Cheek | voice | 698 | 1747.4 | 0.93 | 0.093 | 31.00 | 30.74 | 0.099 | 2.0 |
| Left Cheek | voice | 885 | 1784.8 | -0.85 | 0.085 | 31.00 | 30.94 | 0.086 | 2.0 |
| Left Tilt | voice | 698 | 1747.4 | 0.98 | 0.054 | 31.00 | 30.74 | 0.057 | 2.0 |
| Right Cheek | voice | 698 | 1747.4 | -0.86 | 0.075 | 31.00 | 30.74 | 0.080 | 2.0 |
| Right Tilt | voice | 698 | 1747.4 | -0.92 | 0.063 | 31.00 | 30.74 | 0.067 | 2.0 |
| Body back | GPRS-4 slots | 512 | 1710.2 | 0.88 | 0.866 | 26.70 | 26.05 | 1.006 | 2.0 |
| Body back | GPRS-4 slots | 698 | 1747.4 | -0.94 | 0.915 | 26.70 | 26.48 | 0.963 | 2.0 |
| Body back | GPRS-4 slots | 885 | 1784.8 | -0.87 | 0.654 | 26.70 | 26.70 | 0.654 | 2.0 |
| Body Front | GPRS-4 slots | 698 | 1747.4 | 0.99 | 0.777 | 26.70 | 26.48 | 0.817 | 2.0 |
| Body back + Ear. | voice | 698 | 1747.4 | 0.96 | 0.516 | 31.00 | 30.74 | 0.548 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn configuration
- Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | |
|----------------------------------------------|-----------------|------|-----------|--------------------|-----------------------------|--------------------------|--------------------------|-------------------|------------|
| Depth of Liquid (cm):>15 | | | | | Relative Humidity (%): 48.1 | | | | |
| Product: Smart Phone | | | | | | | | | |
| Test Mode: WCDMA Band I with QPSK modulation | | | | | | | | | |
| Position | Mode | Ch. | Fr. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune-up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit W/kg |
| SIM 1 Card | | | | | | | | | |
| Left Cheek | RMC12.2kbps | 9612 | 1922.4 | 1.23 | 0.271 | 24.70 | 24.62 | 0.276 | 2.0 |
| Left Cheek | RMC12.2kbps | 9750 | 1950 | -1.25 | 0.267 | 24.70 | 24.60 | 0.273 | 2.0 |
| Left Cheek | RMC12.2kbps | 9888 | 1977.6 | 1.20 | 0.271 | 24.70 | 24.54 | 0.281 | 2.0 |
| Left Tilt | RMC12.2kbps | 9750 | 1950 | -1.27 | 0.150 | 24.70 | 24.60 | 0.153 | 2.0 |
| Right Cheek | RMC12.2kbps | 9750 | 1950 | -1.26 | 0.168 | 24.70 | 24.60 | 0.172 | 2.0 |
| Right Tilt | RMC12.2kbps | 9750 | 1950 | -1.29 | 0.143 | 24.70 | 24.60 | 0.146 | 2.0 |
| Body back | RMC12.2kbps | 9612 | 1922.4 | 1.24 | 0.692 | 24.70 | 24.62 | 0.705 | 2.0 |
| Body back | RMC12.2kbps | 9750 | 1950 | 1.21 | 0.722 | 24.70 | 24.60 | 0.739 | 2.0 |
| Body back | RMC12.2kbps | 9888 | 1977.6 | -1.23 | 0.463 | 24.70 | 24.54 | 0.480 | 2.0 |
| Body front | RMC12.2kbps | 9750 | 1950 | -1.28 | 0.650 | 24.70 | 24.60 | 0.665 | 2.0 |
| Body back | HSDPA Subtest 1 | 9750 | 1950 | 1.25 | 0.695 | 23.60 | 23.59 | 0.697 | 2.0 |
| Body back | HSUPA Subtest 1 | 9750 | 1950 | -1.20 | 0.696 | 21.40 | 21.37 | 0.701 | 2.0 |
| Body back + Ear. | RMC12.2kbps | 9750 | 1950 | -1.24 | 0.697 | 24.70 | 24.60 | 0.713 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0W/kg$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | |
|-------------------------------------------------|-----------------|------|-----------|--------------------|-----------------------------|--------------------------|--------------------------|-------------------|------------|
| Depth of Liquid (cm):>15 | | | | | Relative Humidity (%): 49.2 | | | | |
| Product: Smart Phone | | | | | | | | | |
| Test Mode: WCDMA Band VIII with QPSK modulation | | | | | | | | | |
| Position | Mode | Ch. | Fr. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune-up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit W/kg |
| SIM 1 Card | | | | | | | | | |
| Left Cheek | RMC12.2kbps | 2712 | 882.4 | -1.17 | 0.021 | 24.20 | 23.90 | 0.023 | 2.0 |
| Left Cheek | RMC12.2kbps | 2788 | 897.6 | 1.10 | 0.016 | 24.20 | 23.85 | 0.017 | 2.0 |
| Left Cheek | RMC12.2kbps | 2863 | 912.6 | -1.13 | 0.021 | 24.20 | 24.12 | 0.021 | 2.0 |
| Left Tilt | RMC12.2kbps | 2788 | 897.6 | 1.15 | 0.008 | 24.20 | 23.85 | 0.009 | 2.0 |
| Right Cheek | RMC12.2kbps | 2788 | 897.6 | -1.19 | 0.012 | 24.20 | 23.85 | 0.013 | 2.0 |
| Right Tilt | RMC12.2kbps | 2788 | 897.6 | -1.12 | 0.009 | 24.20 | 23.85 | 0.010 | 2.0 |
| Body back | RMC12.2kbps | 2712 | 882.4 | 1.16 | 0.259 | 24.20 | 23.90 | 0.278 | 2.0 |
| Body back | RMC12.2kbps | 2788 | 897.6 | -1.18 | 0.308 | 24.20 | 23.85 | 0.334 | 2.0 |
| Body back | RMC12.2kbps | 2863 | 912.6 | 1.17 | 0.259 | 24.20 | 24.12 | 0.264 | 2.0 |
| Body front | RMC12.2kbps | 2788 | 897.6 | -1.10 | 0.195 | 24.20 | 23.85 | 0.211 | 2.0 |
| Body back | HSDPA Subtest 1 | 2788 | 897.6 | 1.12 | 0.285 | 23.20 | 22.86 | 0.308 | 2.0 |
| Body back | HSUPA Subtest 1 | 2788 | 897.6 | -1.15 | 0.285 | 22.00 | 21.83 | 0.296 | 2.0 |
| Body back + Ear. | RMC12.2kbps | 2788 | 897.6 | 1.13 | 0.277 | 24.20 | 23.85 | 0.300 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0W/kg$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | | | | |
|--------------------------|------|-----------------|------------------|-------------|-------|-----------------------------|--------------------|------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | | Relative Humidity (%): 48.1 | | | | | | |
| Product: Smart Phone | | | | | | | | | | | | |
| Test Mode: LTE Band 1 | | | | | | | | | | | | |
| BW MHz | MOD | Position | Test Mode | | Ch. | Freq. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| | | | UL RB Allocation | UL RB START | | | | | | | | |
| 20 | QPSK | Left Cheek | 1 | 0 | 18100 | 1930 | 1.20 | 0.176 | 23.80 | 23.11 | 0.206 | 2.0 |
| | | Left Cheek | 1 | 0 | 18300 | 1950 | 1.23 | 0.186 | 23.80 | 22.96 | 0.226 | 2.0 |
| | | Left Cheek | 1 | 0 | 18500 | 1970 | -1.26 | 0.176 | 23.80 | 22.64 | 0.230 | 2.0 |
| | | Left Tilt | 1 | 0 | 18300 | 1950 | 1.29 | 0.113 | 23.80 | 22.96 | 0.137 | 2.0 |
| | | Right Cheek | 1 | 0 | 18300 | 1950 | 1.25 | 0.120 | 23.80 | 22.96 | 0.146 | 2.0 |
| | | Right Tilt | 1 | 0 | 18300 | 1950 | -1.28 | 0.082 | 23.80 | 22.96 | 0.099 | 2.0 |
| | | Body back | 1 | 0 | 18300 | 1950 | -1.24 | 0.478 | 23.80 | 22.96 | 0.580 | 2.0 |
| | | Body front | 1 | 0 | 18100 | 1930 | 1.27 | 0.466 | 23.80 | 23.11 | 0.546 | 2.0 |
| | | Body front | 1 | 0 | 18300 | 1950 | -1.21 | 0.515 | 23.80 | 22.96 | 0.625 | 2.0 |
| | | Body front | 1 | 0 | 18500 | 1970 | 1.25 | 0.467 | 23.80 | 22.64 | 0.610 | 2.0 |
| | | Body front+Ear. | 1 | 0 | 18300 | 1950 | -1.22 | 0.445 | 23.80 | 22.96 | 0.540 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | | | | |
|--------------------------|------|------------------|---------------------|----------------|-------|-----------------------------|--------------------------|------------------------|--------------------------------------|-----------------------------------|-------------------------|-----------------|
| Depth of Liquid (cm):>15 | | | | | | Relative Humidity (%): 51.4 | | | | | | |
| Product: Smart Phone | | | | | | | | | | | | |
| Test Mode: LTE Band 3 | | | | | | | | | | | | |
| BW MHz | MOD | Position | Test Mode | | Ch. | Freq. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| | | | UL RB Allocation | UL RB START | | | | | | | | |
| 20 | QPSK | Left Cheek | 1 | 0 | 19575 | 1747.5 | 1.07 | 0.108 | 23.60 | 23.38 | 0.114 | 2.0 |
| | | Left Tilt | 1 | 0 | 19575 | 1747.5 | 0.97 | 0.107 | 23.60 | 23.38 | 0.113 | 2.0 |
| | | Right Cheek | 1 | 0 | 19300 | 1720 | -1.02 | 0.142 | 23.60 | 23.23 | 0.155 | 2.0 |
| | | Right Cheek | 1 | 0 | 19575 | 1747.5 | 1.05 | 0.137 | 23.60 | 23.38 | 0.144 | 2.0 |
| | | Right Cheek | 1 | 0 | 19850 | 1775 | -0.99 | 0.145 | 23.60 | 23.30 | 0.155 | 2.0 |
| | | Right Tilt | 1 | 0 | 19575 | 1747.5 | 1.09 | 0.116 | 23.60 | 23.38 | 0.122 | 2.0 |
| | | Body back | 1 | 0 | 19300 | 1720 | -0.94 | 0.735 | 23.60 | 23.23 | 0.800 | 2.0 |
| | | Body back | 1 | 0 | 19575 | 1747.5 | -0.96 | 0.746 | 23.60 | 23.38 | 0.785 | 2.0 |
| | | Body back | 1 | 0 | 19850 | 1775 | 1.04 | 0.755 | 23.60 | 23.30 | 0.809 | 2.0 |
| | | Body front | 1 | 0 | 19575 | 1747.5 | -1.08 | 0.653 | 23.60 | 23.38 | 0.687 | 2.0 |
| | | Body back+Ear | 1 | 0 | 19850 | 1775 | 1.03 | 0.744 | 23.60 | 23.30 | 0.797 | 2.0 |

Note:

- When the 10-g SAR is ≤ 1.0W/kg, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | | | | |
|--------------------------|------|----------------|---------------------|----------------|-------|-----------------------------|--------------------------|------------------------|---------------------------------------|-----------------------------------|-------------------------|-----------------|
| Depth of Liquid (cm):>15 | | | | | | Relative Humidity (%): 45.6 | | | | | | |
| Product: Smart Phone | | | | | | | | | | | | |
| Test Mode: LTE Band 7 | | | | | | | | | | | | |
| BW MHz | MOD | Position | Test Mode | | Ch. | Freq. (MHz) | Power Drift (≤±5%) | SAR (10g) (W/kg) | Max. Tune- up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| | | | UL RB Allocation | UL RB START | | | | | | | | |
| 20 | QPSK | Left Cheek | 1 | 0 | 21100 | 2535 | 1.38 | 0.018 | 22.90 | 22.61 | 0.019 | 2.0 |
| | | Left Tilt | 1 | 0 | 20850 | 2510 | -1.30 | 0.019 | 22.90 | 22.65 | 0.020 | 2.0 |
| | | Left Tilt | 1 | 0 | 21100 | 2535 | 1.39 | 0.020 | 22.90 | 22.61 | 0.021 | 2.0 |
| | | Left Tilt | 1 | 0 | 21350 | 2560 | -1.35 | 0.020 | 22.90 | 22.57 | 0.022 | 2.0 |
| | | Right Cheek | 1 | 0 | 21100 | 2535 | 1.34 | 0.017 | 22.90 | 22.61 | 0.018 | 2.0 |
| | | Right Tilt | 1 | 0 | 21100 | 2535 | -1.33 | 0.007 | 22.90 | 22.61 | 0.007 | 2.0 |
| | | Body back | 1 | 0 | 20850 | 2510 | -1.37 | 0.310 | 22.90 | 22.65 | 0.328 | 2.0 |
| | | Body back | 1 | 0 | 21100 | 2535 | 1.35 | 0.311 | 22.90 | 22.61 | 0.332 | 2.0 |
| | | Body back | 1 | 0 | 21350 | 2560 | -1.32 | 0.320 | 22.90 | 22.57 | 0.345 | 2.0 |
| | | Body front | 1 | 0 | 21100 | 2535 | -1.36 | 0.251 | 22.90 | 22.61 | 0.268 | 2.0 |
| | | Body back+Ear. | 1 | 0 | 21350 | 2560 | -1.34 | 0.281 | 22.90 | 22.57 | 0.303 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | | | | |
|--------------------------|------|----------------|------------------|-------------|-------|-----------------------------|--------------------|------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | | Relative Humidity (%): 43.7 | | | | | | |
| Product: Smart Phone | | | | | | | | | | | | |
| Test Mode: LTE Band 8 | | | | | | | | | | | | |
| BW MHz | MOD | Position | Test Mode | | Ch. | Freq. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| | | | UL RB Allocation | UL RB START | | | | | | | | |
| 10 | QPSK | Left Cheek | 1 | 0 | 21625 | 897.5 | -0.75 | 0.022 | 23.60 | 23.22 | 0.024 | 2.0 |
| | | Left Tilt | 1 | 0 | 21625 | 897.5 | 0.84 | 0.015 | 23.60 | 23.22 | 0.016 | 2.0 |
| | | Right Cheek | 1 | 0 | 21500 | 885 | -0.77 | 0.023 | 23.60 | 23.18 | 0.025 | 2.0 |
| | | Right Cheek | 1 | 0 | 21625 | 897.5 | 0.82 | 0.071 | 23.60 | 23.22 | 0.077 | 2.0 |
| | | Right Cheek | 1 | 0 | 21750 | 910 | -0.89 | 0.024 | 23.60 | 23.38 | 0.025 | 2.0 |
| | | Right Tilt | 1 | 0 | 21625 | 897.5 | 0.87 | 0.055 | 23.60 | 23.22 | 0.060 | 2.0 |
| | | Body back | 1 | 0 | 21500 | 885 | -0.91 | 0.104 | 23.60 | 23.18 | 0.115 | 2.0 |
| | | Body back | 1 | 0 | 21625 | 897.5 | 0.83 | 0.110 | 23.60 | 23.22 | 0.120 | 2.0 |
| | | Body back | 1 | 0 | 21750 | 910 | -0.85 | 0.092 | 23.60 | 23.38 | 0.097 | 2.0 |
| | | Body front | 1 | 0 | 21625 | 897.5 | 0.79 | 0.089 | 23.60 | 23.22 | 0.097 | 2.0 |
| | | Body back+Ear. | 1 | 0 | 21625 | 897.5 | -0.86 | 0.107 | 23.60 | 23.22 | 0.117 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

| SAR MEASUREMENT | | | | | | | | | | | | |
|--------------------------|------|----------------|------------------|-------------|-------|-----------------------------|--------------------|------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | | Relative Humidity (%): 57.7 | | | | | | |
| Product: Smart Phone | | | | | | | | | | | | |
| Test Mode: LTE Band 20 | | | | | | | | | | | | |
| BW MHz | MOD | Position | Test Mode | | Ch. | Freq. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| | | | UL RB Allocation | UL RB START | | | | | | | | |
| 20 | QPSK | Left Cheek | 1 | 0 | 24250 | 842 | 1.26 | 0.058 | 23.50 | 23.45 | 0.059 | 2.0 |
| | | Left Cheek | 1 | 0 | 24300 | 847 | -1.23 | 0.058 | 23.50 | 23.43 | 0.059 | 2.0 |
| | | Left Cheek | 1 | 0 | 24350 | 852 | 1.20 | 0.059 | 23.50 | 23.23 | 0.063 | 2.0 |
| | | Left Tilt | 1 | 0 | 24300 | 847 | -1.24 | 0.034 | 23.50 | 23.43 | 0.035 | 2.0 |
| | | Right Cheek | 1 | 0 | 24300 | 847 | -1.28 | 0.055 | 23.50 | 23.43 | 0.056 | 2.0 |
| | | Right Tilt | 1 | 0 | 24300 | 847 | 1.29 | 0.038 | 23.50 | 23.43 | 0.039 | 2.0 |
| | | Body back | 1 | 0 | 24250 | 842 | -1.25 | 0.112 | 23.50 | 23.45 | 0.113 | 2.0 |
| | | Body back | 1 | 0 | 24300 | 847 | 1.21 | 0.112 | 23.50 | 23.43 | 0.114 | 2.0 |
| | | Body back | 1 | 0 | 24350 | 852 | -1.27 | 0.114 | 23.50 | 23.23 | 0.121 | 2.0 |
| | | Body front | 1 | 0 | 24300 | 847 | -1.22 | 0.064 | 23.50 | 23.43 | 0.065 | 2.0 |
| | | Body back+Ear. | 1 | 0 | 24350 | 852 | 1.25 | 0.091 | 23.50 | 23.23 | 0.097 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

WIFI Health Evaluation:

Per EN 62209-2:2010 Annex K, Test reduction based on simultaneous multi-band transmission considerations. For secondary transmitter (i.e. lower power transmitters), we use the following formula to evaluate the threshold power for the secondary transmitter that allows it to be excluded from SAR testing:

$$P_{\text{available}} = P_{\text{max},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}}$$

Where

$P_{\text{max},m}$ is the maximum threshold exclusion power level, which is calculated by $SAR_{\text{lim}} \times m$, where m is an averaging mass.

$P_{\text{available}}$ is the threshold value there need to be tested;

SAR_{lim} is the SAR limit;

SAR_1 is the maximum SAR value of first transmitter mode result;

Restrictive power threshold;

$$\begin{aligned} P_{\text{available}} &= P_{\text{th},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 1.006\text{ W/Kg}) / 2\text{W/Kg} \\ &= 9.94\text{mW} < 26.36\text{mW} \text{ (14.21dBm) for WIFI} \end{aligned}$$

There is need to test WIFI SAR and need to evaluate simultaneous transmission



| SAR MEASUREMENT | | | | | | | | | |
|--------------------------|------|-----|-----------|--------------------|-----------------------------|--------------------------|--------------------------|-------------------|--------------|
| Depth of Liquid (cm):>15 | | | | | Relative Humidity (%): 46.0 | | | | |
| Product: Smart Phone | | | | | | | | | |
| Test Mode: 802.11b | | | | | | | | | |
| Position | Mode | Ch. | Fr. (MHz) | Power Drift (<±5%) | SAR (10g) (W/kg) | Max. Tune-up Power (dBm) | Meas. output Power (dBm) | Scaled SAR (W/Kg) | Limit (W/kg) |
| Left Cheek | DTS | 1 | 2412 | -1.03 | 0.164 | 14.30 | 14.21 | 0.167 | 2.0 |
| Left Cheek | DTS | 7 | 2442 | 1.06 | 0.171 | 14.30 | 12.60 | 0.253 | 2.0 |
| Left Cheek | DTS | 13 | 2472 | -1.04 | 0.168 | 14.30 | 13.37 | 0.208 | 2.0 |
| Left Tilt | DTS | 7 | 2442 | 1.09 | 0.152 | 14.30 | 12.60 | 0.225 | 2.0 |
| Right Cheek | DTS | 7 | 2442 | -1.02 | 0.079 | 14.30 | 12.60 | 0.117 | 2.0 |
| Right Tilt | DTS | 7 | 2442 | -1.05 | 0.081 | 14.30 | 12.60 | 0.120 | 2.0 |
| Body back | DTS | 7 | 2442 | 1.08 | 0.062 | 14.30 | 12.60 | 0.092 | 2.0 |
| Body front | DTS | 1 | 2412 | -1.07 | 0.077 | 14.30 | 14.21 | 0.079 | 2.0 |
| Body front | DTS | 7 | 2442 | 1.01 | 0.075 | 14.30 | 12.60 | 0.111 | 2.0 |
| Body front | DTS | 13 | 2472 | -1.04 | 0.061 | 14.30 | 13.37 | 0.076 | 2.0 |
| Body front+ Ear. | DTS | 1 | 2412 | -1.06 | 0.063 | 14.30 | 14.21 | 0.064 | 2.0 |

Note:

- When the 10-g SAR is $\leq 1.0\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table(body part) is 5mm.
- Plots are only shown for the bold marked worst case SAR results

BT Health Evaluation:

Per EN 62209-2:2010 Annex K, Test reduction based on simultaneous multi-band transmission considerations.
For secondary transmitter (i.e. lower power transmitters), we use the following Formula to evaluate the threshold power for the secondary transmitter that allows it to be excluded from SAR testing:

$$P_{\text{available}} = P_{\text{max},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}}$$

Where

$P_{\text{max},m}$ is the maximum threshold exclusion power level, which is calculated by $SAR_{\text{lim}} \times m$, where m is an averaging mass.

$P_{\text{available}}$ is the threshold value there need to be tested;

SAR_{lim} is the SAR limit;

SAR_1 is the maximum SAR value of first transmitter mode result;

Restrictive power threshold;

$$\begin{aligned} P_{\text{available}} &= P_{\text{th},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 1.006\text{ W/Kg}) / 2\text{W/Kg} \\ &= 9.94\text{mW} > 1.98\text{mW} \text{ (2.96dBm) for BT(BR/EDR)} \\ &= 9.94\text{mW} > 1.22\text{mW} \text{ (0.85dBm) for BT(BLE)} \end{aligned}$$

According to EN62479:2010, the maximum output power of BT(BR/EDR) is 2.96dBm (1.98mW less than 20mW) refer to ETSI EN 300328 (V2.1.1) Test report (AGC00552190803EE04) for the result of Maximum Transmit Power, which deemed to comply with the basic restrictions without testing.

According to EN62479:2010, the maximum output power of BT(BLE) is 0.85dBm (1.22mW less than 20mW) refer to ETSI EN 300328 (V2.1.1) Test report (AGC00552190803EE11) for the result of Maximum Transmit Power, which deemed to comply with the basic restrictions without testing.



Simultaneous Multi-band Transmission Evaluation:

According to EN62209-1:2016 section 6.4.3, when the handsets with multiple antennas or multiple transmitters (with single or multiple antennas), transmitting simultaneously require special test considerations;

- (1) The EUT has GSM/WCDMA/LTE antenna, BT/WIFI antenna;
- (2) BT and WIFI share one antenna, and cannot transmit simultaneously;
- (3) GSM and GPRS/WCDMA/LTE can't work at the same time;
- (4) EN 62209-1:2016 section 6.4.3.2 ,SAR measurements for non-correlated signals, Alternative 1: Summation of peak spatial-average SAR values – simplest but most conservative method to find upper bound is always applicable:
 - a) For a test combination where simultaneous operation is intended, add the peak spatial-average SAR values for each antenna and frequency band where simultaneous operation is intended
 - b) Check if the maximum summed SAR value is within 3 dB of the applicable SAR limit. If so, ensure that all of the required test frequency channels have been measured in all frequency bands and for all antennas at which simultaneous operation is intended and repeat Step a).

The maximum summed SAR value in Steps a) and b) is the combined SAR



Simultaneous Multi-band Transmission SAR:

| NO | Simultaneous state | Portable Handset | |
|----|----------------------------------------|------------------|-----------|
| | | Head | Body-worn |
| 1 | GSM(voice)+ WIFI 2.4GHz (data) | Yes | Yes |
| 2 | GSM(Data)+ WIFI 2.4GHz (data) | Yes | Yes |
| 3 | WCDMA(RMC12.2kbps)+ WIFI 2.4GHz (data) | Yes | Yes |
| 4 | LTE+WIFI 2.4GHz (data) | Yes | Yes |

| Frequency | RF Exposure Conditions | Test Position | Simultaneous Transmission Scenario | | Σ 10-g SAR (W/Kg) | Limit (W/Kg) |
|-----------------|------------------------|---------------|------------------------------------|-------|--------------------------|--------------|
| | | | GSM/WCDMA | WIFI | | |
| GSM 900 | Head (voice) | Left Touch | 0.010 | 0.253 | 0.263 | 2.0 |
| | | Left Tilt | 0.006 | 0.225 | 0.231 | 2.0 |
| | | Right Touch | 0.010 | 0.117 | 0.127 | 2.0 |
| | | Right Tilt | 0.007 | 0.120 | 0.127 | 2.0 |
| | Body-worn | GPRS-4slots | 0.101 | 0.092 | 0.193 | 2.0 |
| | | Body Front | 0.034 | 0.111 | 0.145 | 2.0 |
| | | Earphone | 0.049 | 0.064 | 0.113 | 2.0 |
| DCS 1800 | Head (voice) | Left Touch | 0.103 | 0.253 | 0.356 | 2.0 |
| | | Left Tilt | 0.057 | 0.225 | 0.282 | 2.0 |
| | | Right Touch | 0.080 | 0.117 | 0.197 | 2.0 |
| | | Right Tilt | 0.067 | 0.120 | 0.187 | 2.0 |
| | Body-worn | GPRS-4slots | 1.006 | 0.092 | 1.098 | 2.0 |
| | | Body Front | 0.817 | 0.111 | 0.928 | 2.0 |
| | | Earphone | 0.548 | 0.064 | 0.612 | 2.0 |
| WCDMA Band I | Head | Left Touch | 0.281 | 0.253 | 0.534 | 2.0 |
| | | Left Tilt | 0.153 | 0.225 | 0.378 | 2.0 |
| | | Right Touch | 0.172 | 0.117 | 0.289 | 2.0 |
| | | Right Tilt | 0.146 | 0.120 | 0.266 | 2.0 |
| | Body-worn | Body back | 0.739 | 0.092 | 0.831 | 2.0 |
| | | Body Front | 0.665 | 0.111 | 0.776 | 2.0 |
| | | HSDPA | 0.697 | 0.092 | 0.789 | 2.0 |
| | | HSUPA | 0.701 | 0.092 | 0.793 | 2.0 |
| | | Earphone | 0.713 | 0.064 | 0.777 | 2.0 |
| WCDMA Band VIII | Head | Left Touch | 0.023 | 0.253 | 0.276 | 2.0 |
| | | Left Tilt | 0.009 | 0.225 | 0.234 | 2.0 |
| | | Right Touch | 0.013 | 0.117 | 0.130 | 2.0 |
| | | Right Tilt | 0.010 | 0.120 | 0.130 | 2.0 |
| | Body-worn | Body back | 0.334 | 0.092 | 0.426 | 2.0 |
| | | Body Front | 0.211 | 0.111 | 0.322 | 2.0 |
| | | HSDPA | 0.308 | 0.092 | 0.400 | 2.0 |
| | | HSUPA | 0.296 | 0.092 | 0.388 | 2.0 |
| | | Earphone | 0.300 | 0.064 | 0.364 | 2.0 |



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E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

| Frequency | RF Exposure Conditions | Test Position | Simultaneous Transmission Scenario | | Σ 10-g SAR (W/Kg) | Limit (W/Kg) |
|-------------|------------------------|---------------|------------------------------------|-------|--------------------------|--------------|
| | | | LTE | WIFI | | |
| LTE Band 1 | Head | Left Touch | 0.230 | 0.253 | 0.483 | 2.0 |
| | | Left Tilt | 0.137 | 0.225 | 0.362 | 2.0 |
| | | Right Touch | 0.146 | 0.117 | 0.263 | 2.0 |
| | | Right Tilt | 0.099 | 0.120 | 0.219 | 2.0 |
| | Body-worn | Body back | 0.580 | 0.092 | 0.672 | 2.0 |
| | | Body Front | 0.625 | 0.111 | 0.736 | 2.0 |
| | | Earphone | 0.540 | 0.064 | 0.604 | 2.0 |
| LTE Band 3 | Head | Left Touch | 0.114 | 0.253 | 0.367 | 2.0 |
| | | Left Tilt | 0.113 | 0.225 | 0.338 | 2.0 |
| | | Right Touch | 0.155 | 0.117 | 0.272 | 2.0 |
| | | Right Tilt | 0.122 | 0.120 | 0.242 | 2.0 |
| | Body-worn | Body back | 0.809 | 0.092 | 0.901 | 2.0 |
| | | Body Front | 0.687 | 0.111 | 0.798 | 2.0 |
| | | Earphone | 0.797 | 0.064 | 0.861 | 2.0 |
| LTE Band 7 | Head | Left Touch | 0.019 | 0.253 | 0.272 | 2.0 |
| | | Left Tilt | 0.022 | 0.225 | 0.247 | 2.0 |
| | | Right Touch | 0.018 | 0.117 | 0.135 | 2.0 |
| | | Right Tilt | 0.007 | 0.120 | 0.127 | 2.0 |
| | Body-worn | Body back | 0.345 | 0.092 | 0.437 | 2.0 |
| | | Body Front | 0.268 | 0.111 | 0.379 | 2.0 |
| | | Earphone | 0.303 | 0.064 | 0.367 | 2.0 |
| LTE Band 8 | Head | Left Touch | 0.024 | 0.253 | 0.277 | 2.0 |
| | | Left Tilt | 0.016 | 0.225 | 0.241 | 2.0 |
| | | Right Touch | 0.077 | 0.117 | 0.194 | 2.0 |
| | | Right Tilt | 0.060 | 0.120 | 0.180 | 2.0 |
| | Body-worn | Body back | 0.120 | 0.092 | 0.212 | 2.0 |
| | | Body Front | 0.097 | 0.111 | 0.208 | 2.0 |
| | | Earphone | 0.117 | 0.064 | 0.181 | 2.0 |
| LTE Band 20 | Head | Left Touch | 0.063 | 0.253 | 0.316 | 2.0 |
| | | Left Tilt | 0.035 | 0.225 | 0.260 | 2.0 |
| | | Right Touch | 0.056 | 0.117 | 0.173 | 2.0 |
| | | Right Tilt | 0.039 | 0.120 | 0.159 | 2.0 |
| | Body-worn | Body back | 0.121 | 0.092 | 0.213 | 2.0 |
| | | Body Front | 0.065 | 0.111 | 0.176 | 2.0 |
| | | Earphone | 0.097 | 0.064 | 0.161 | 2.0 |



APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab

Date: Sep. 20,2019

System Check Head 900 MHz

DUT: Dipole 900 MHz Type: SID 900

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.36

Frequency: 900 MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.96$ mho/m; $\epsilon_r=40.57$; $\rho=1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=18dBm

Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

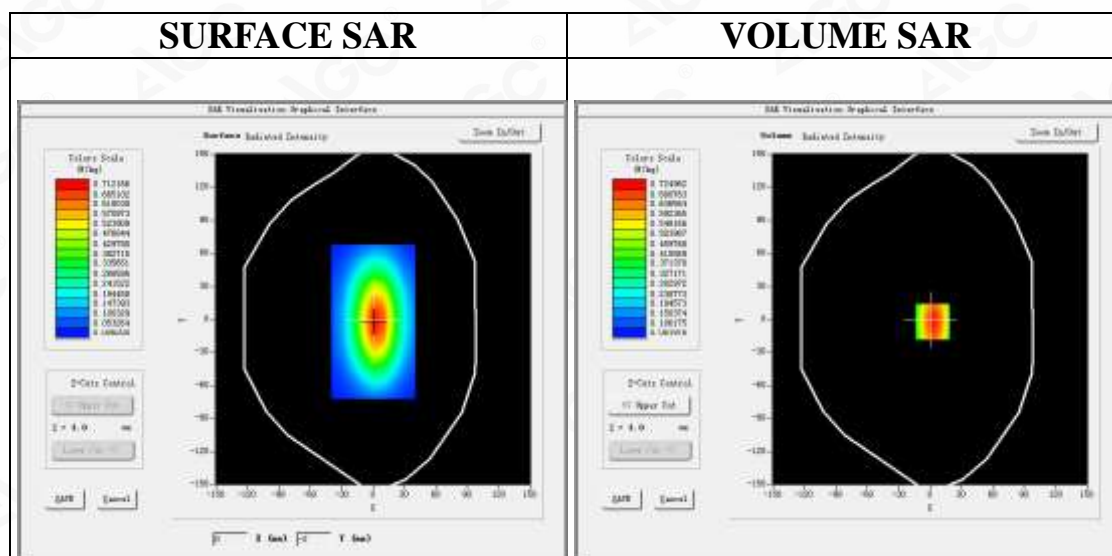
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 900 Head/Area Scan: Measurement grid: dx=10mm,dy=10mm

Configuration/System Check 900 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

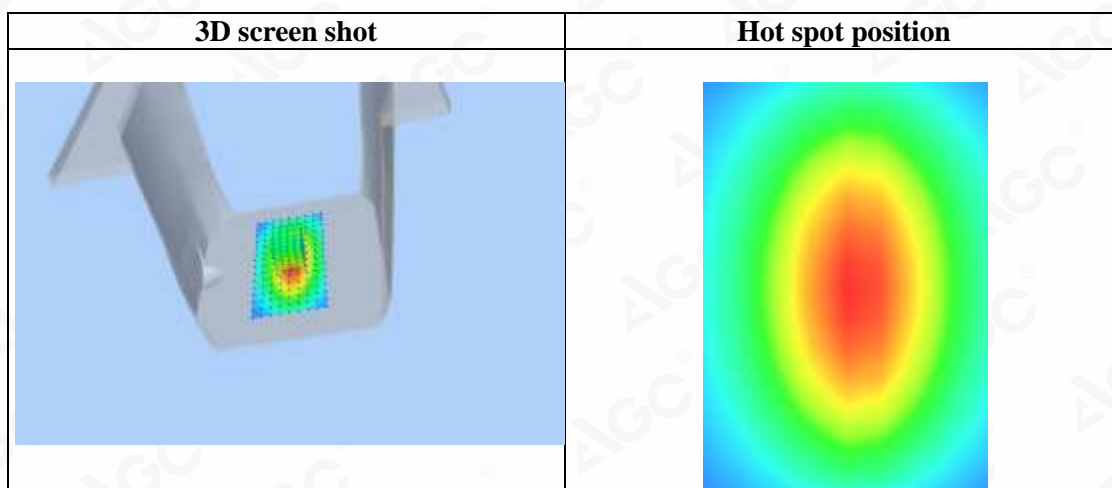
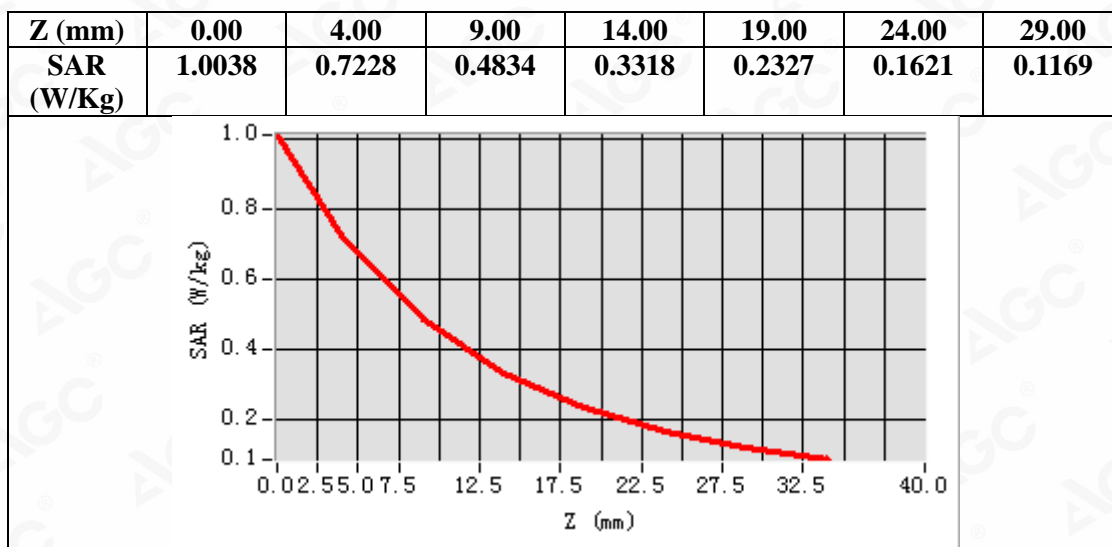
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 900 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=2.00, Y=-2.00

SAR Peak: 1.01 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.443874 |
| SAR 1g (W/Kg) | 0.697546 |



Test Laboratory: AGC Lab
System Check Head 1800MHz
DUT: Dipole 1800 MHz; Type: SID 1800

Date: Sep. 11,2019

Communication System: CW; Communication System Band: D1800 (1800.0 MHz); Duty Cycle: 1:1; Conv.F=4.68
Frequency: 1800 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

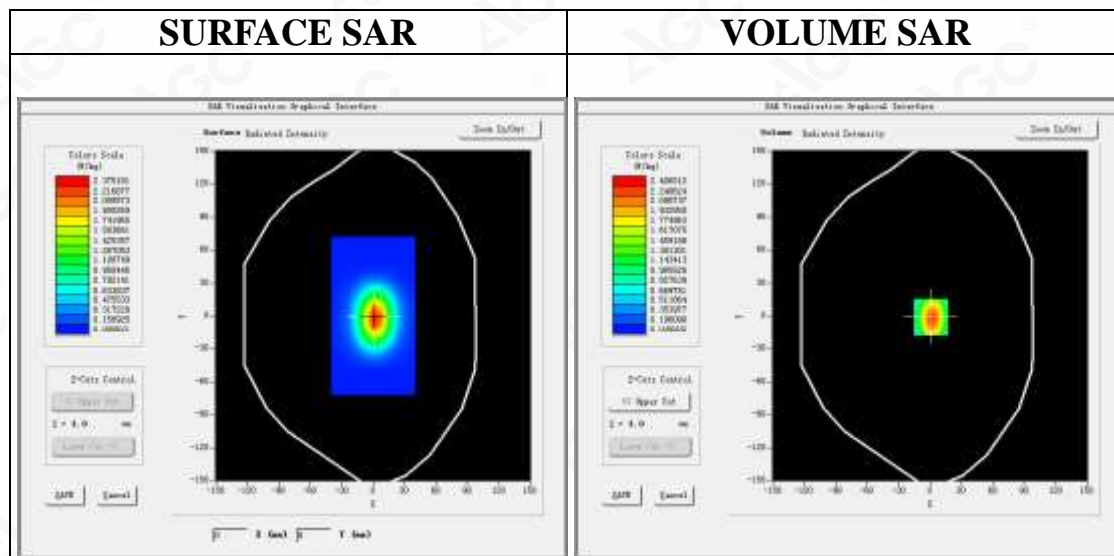
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 1800 Head/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 1800 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

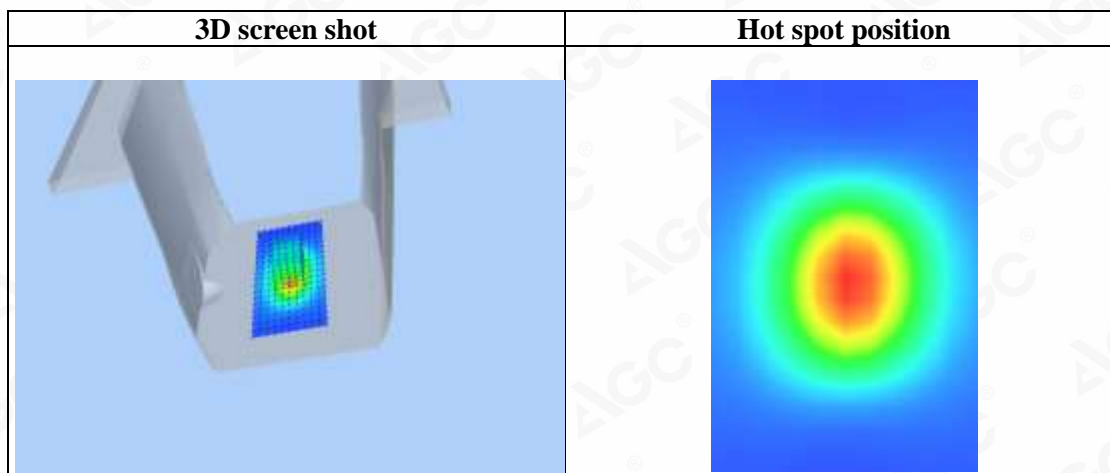
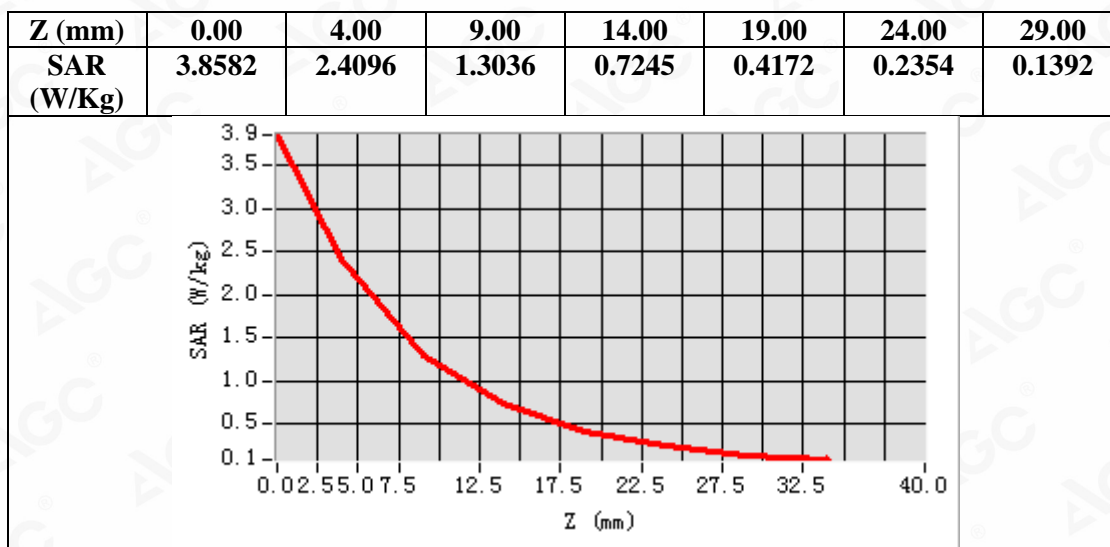
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 1800 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=1.00, Y=-1.00

SAR Peak: 3.85 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.178245 |
| SAR 1g (W/Kg) | 2.286284 |



Test Laboratory: AGC Lab
System Check Head 2000MHz
DUT: Dipole 2000 MHz; Type: SID 2000

Date: Sep. 19,2019

Communication System: CW; Communication System Band: D2000 (2000.0 MHz); Duty Cycle: 1:1; Conv.F=4.79
Frequency: 2000MHz; Medium parameters used: $f = 1950$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.63$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 21.5, Liquid temperature (°C): 21.3

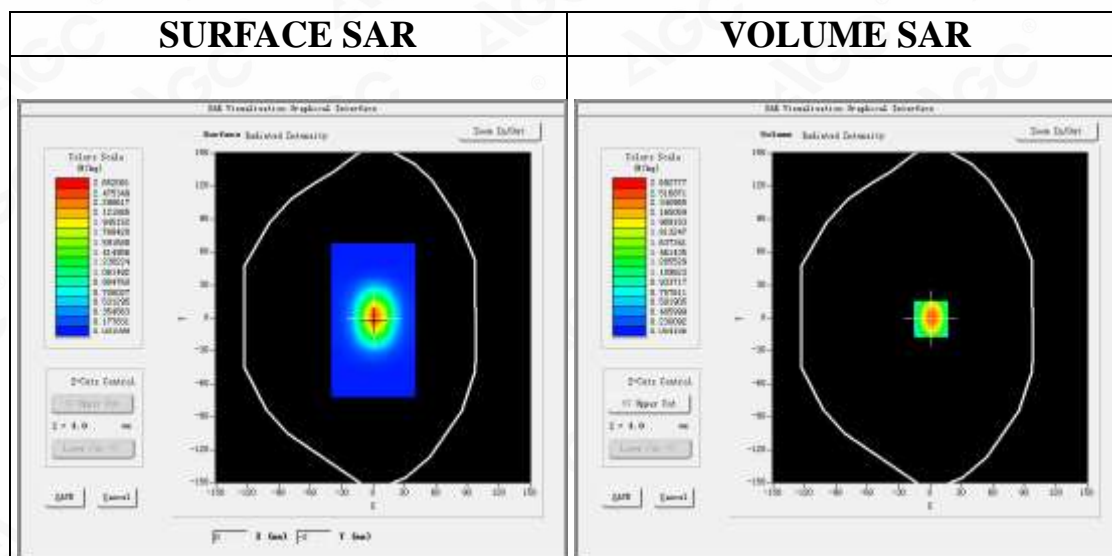
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2000 Head/Area Scan: Measurement grid: dx=10mm,dy=10mm

Configuration/System Check 2000 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

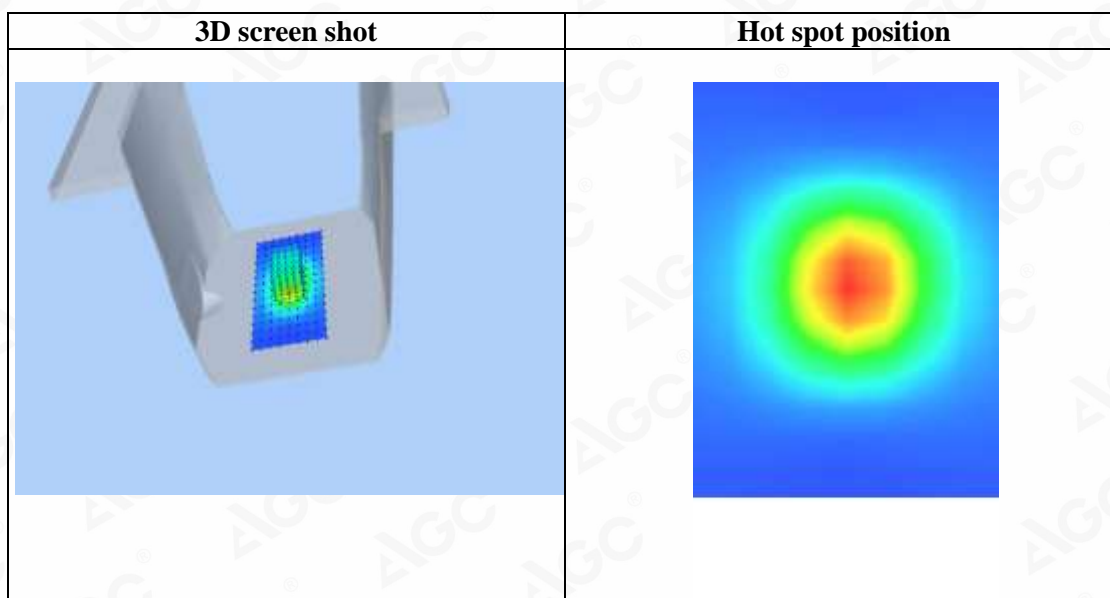
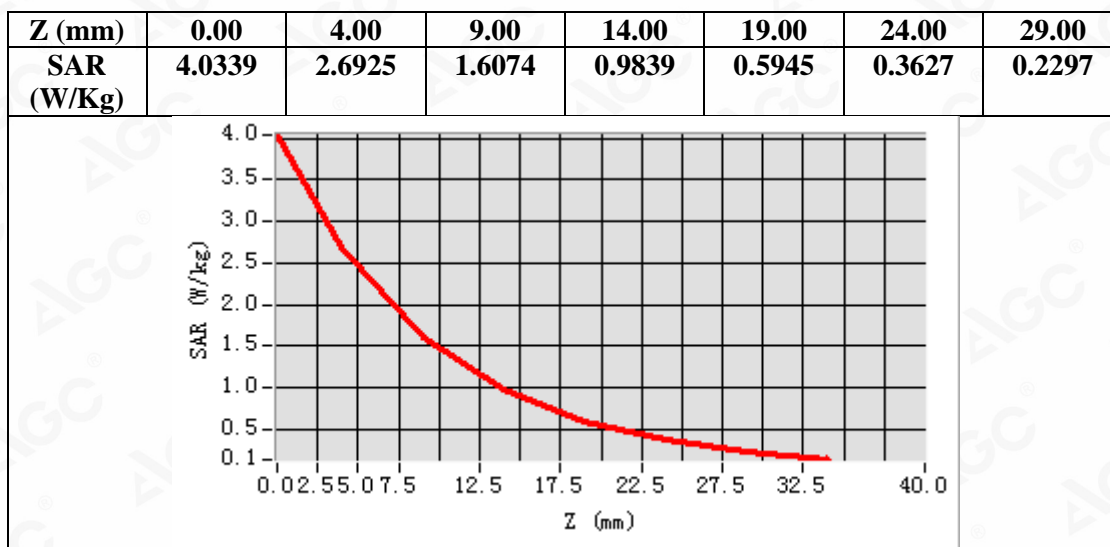
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 2000 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=1.00, Y=-1.00

SAR Peak: 4.05 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.353427 |
| SAR 1g (W/Kg) | 2.523688 |



Test Laboratory: AGC Lab
System Check Head 835MHz
DUT: Dipole 835 MHz Type: SID 835

Date: Sep. 09,2019

Communication System: CW; Communication System Band: D835(835.0 MHz); Duty Cycle: 1:1; Conv.F=5.82
Frequency: 835MHz; Medium parameters used: $f = 835\text{MHz}$; $\sigma=0.87\text{mho/m}$; $\epsilon_r=41.26$; $\rho=1000\text{ kg/m}^3$;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature ($^{\circ}\text{C}$): 21.3, Liquid temperature ($^{\circ}\text{C}$): 21.0

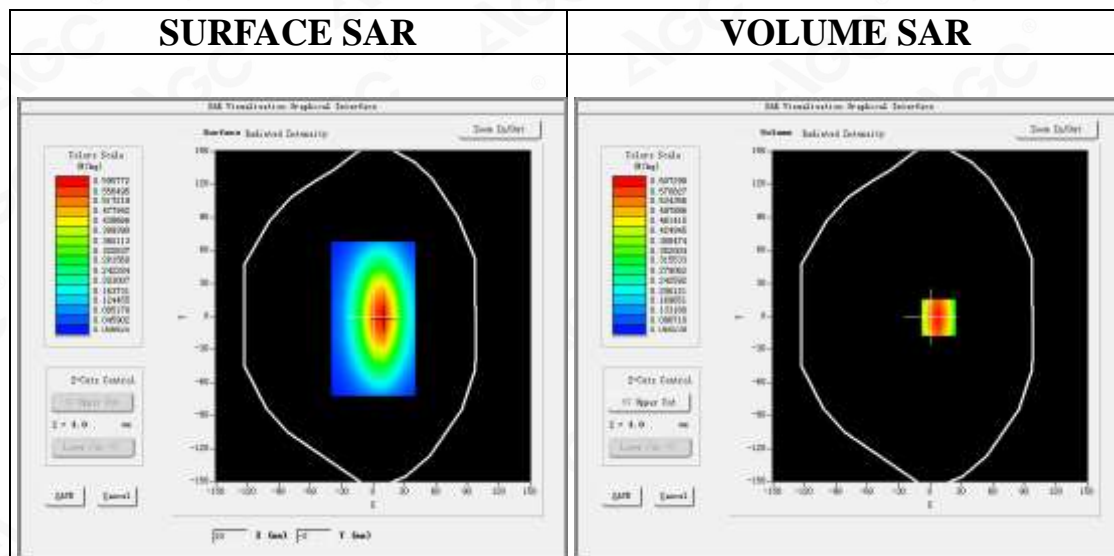
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 10,2018; Serial No.: SN 14/16 EP308
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 835 Head/Area Scan: Measurement grid: $dx=10\text{mm}, dy=10\text{mm}$

Configuration/System Check 835 Head/Zoom Scan: Measurement grid: $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

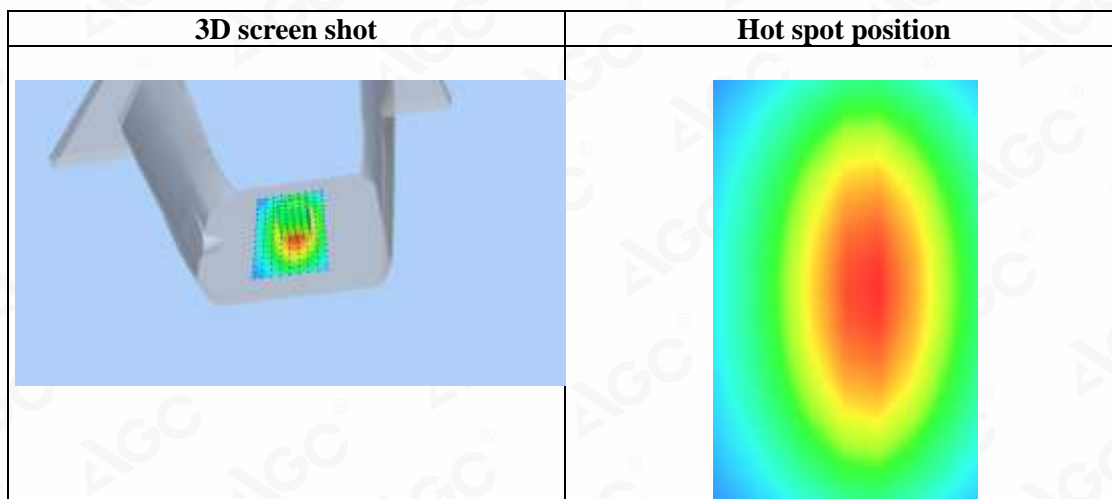
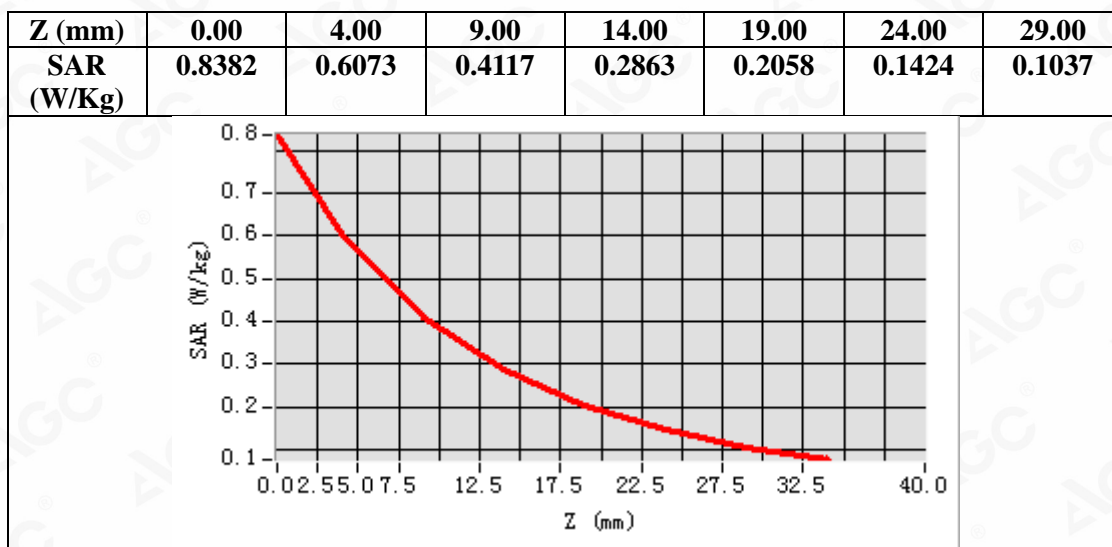
| | |
|------------------------|--------------------------------------------------------------------|
| Area Scan | $dx=8\text{mm } dy=8\text{mm}, h= 5.00\text{ mm}$ |
| ZoomScan | $5 \times 5 \times 7, dx=8\text{mm } dy=8\text{mm } dz=5\text{mm}$ |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 835 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=8.00, Y=-1.00

SAR Peak: 0.84 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.382453 |
| SAR 1g (W/Kg) | 0.587247 |



Test Laboratory: AGC Lab
System Check Head 900 MHz
DUT: Dipole 900 MHz Type: SID 900

Date: Sep. 18,2019

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.36
Frequency: 900 MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.98$ mho/m; $\epsilon_r=41.59$; $\rho= 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.1

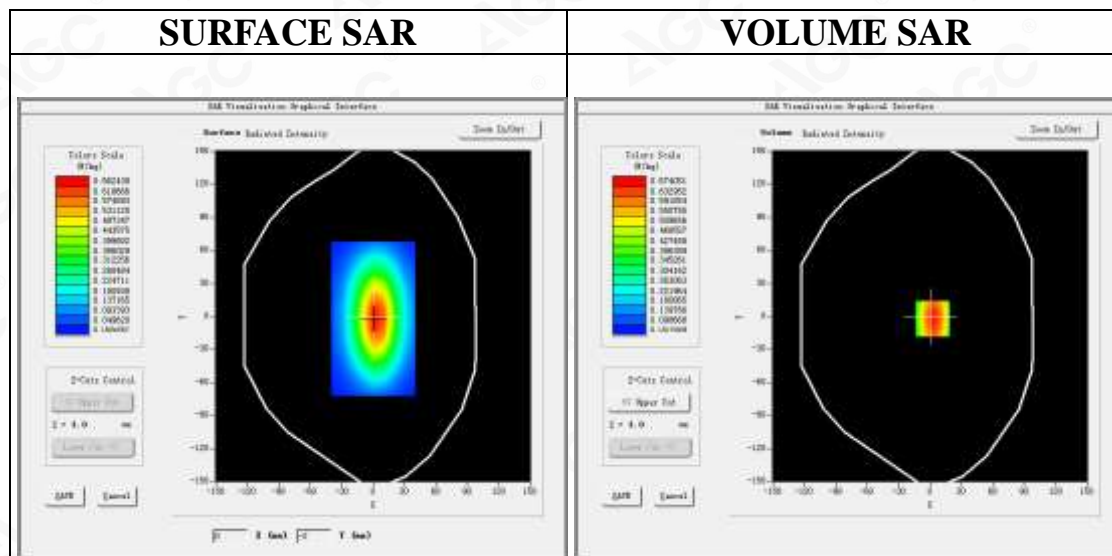
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 900 Head/Area Scan: Measurement grid: dx=10mm,dy=10mm

Configuration/System Check 900 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

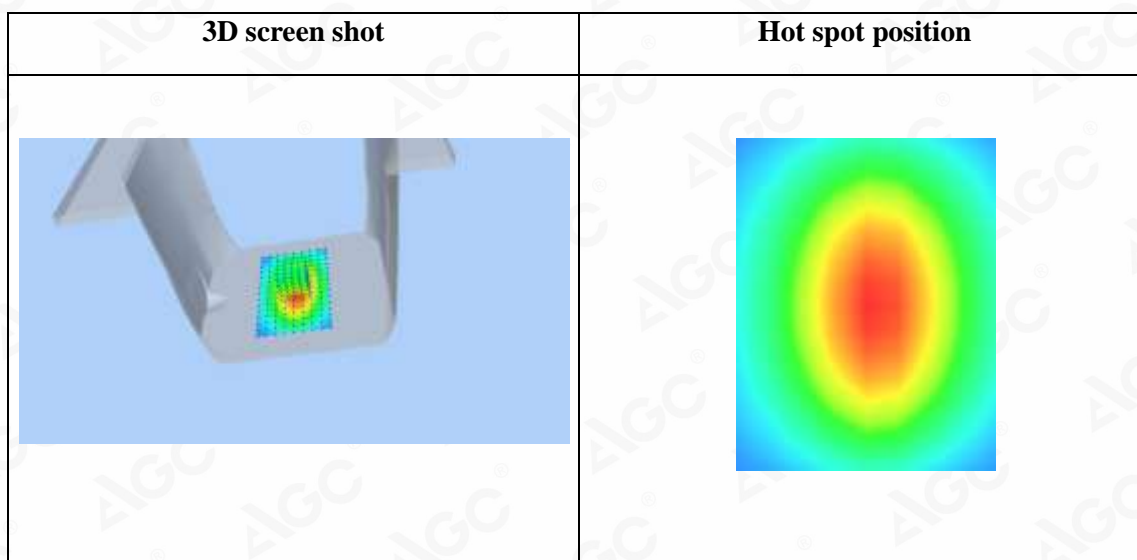
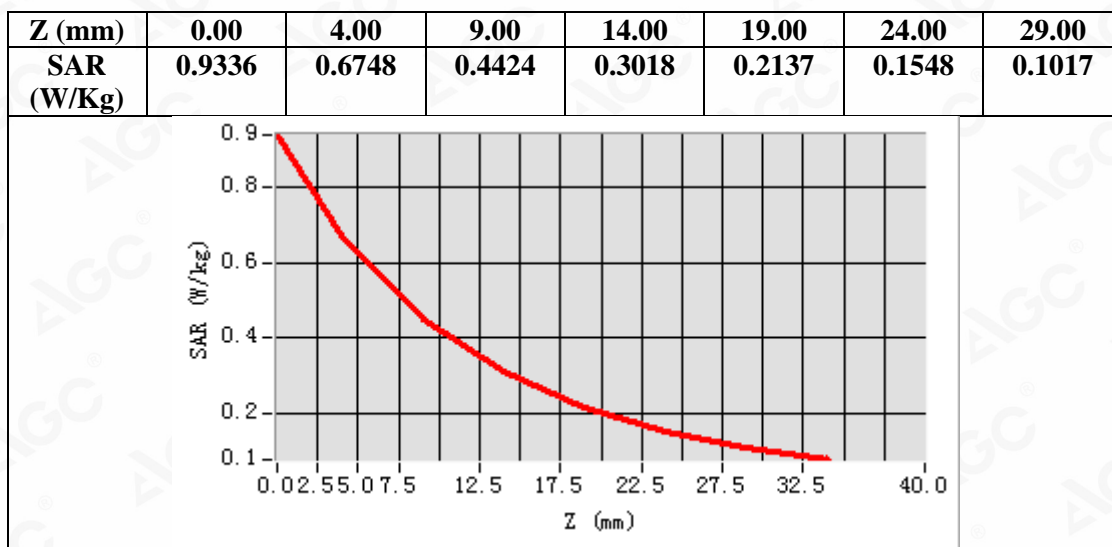
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 900 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=2.00, Y=-2.00

SAR Peak: 0.94 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.419946 |
| SAR 1g (W/Kg) | 0.691754 |



Test Laboratory: AGC Lab
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450

Date: Sep. 23,2019

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.68
Frequency: 2450 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.73$ mho/m; $\epsilon_r = 40.16$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

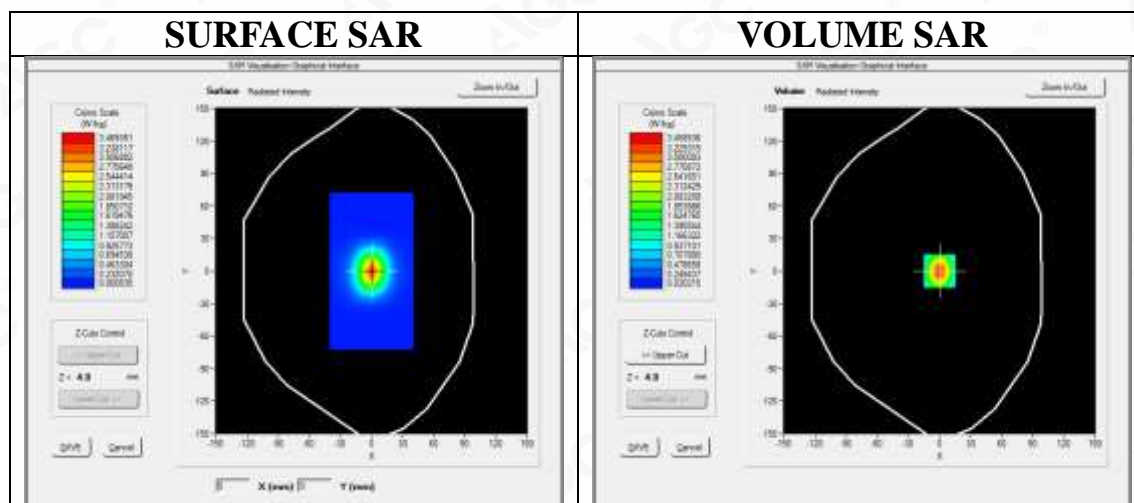
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2450 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 2450 MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

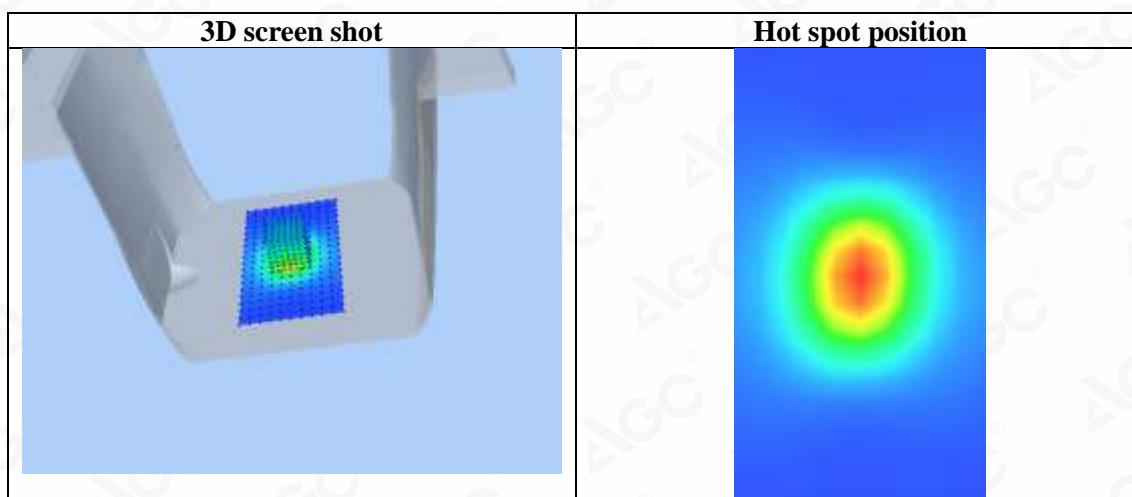
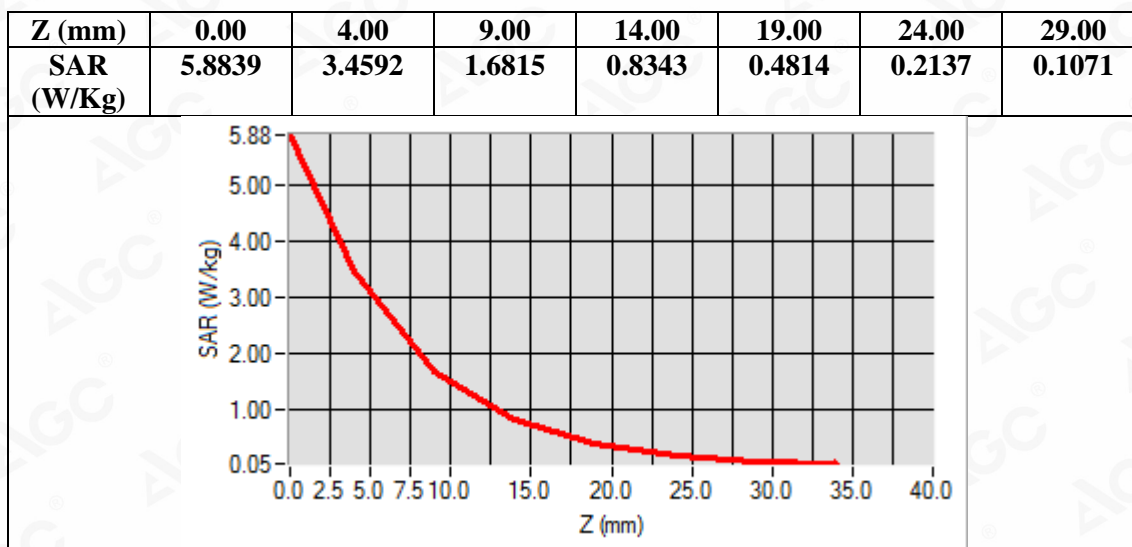
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 2450 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=0.00, Y=0.00

SAR Peak: 5.81 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.463874 |
| SAR 1g (W/Kg) | 3.151763 |



Test Laboratory: AGC Lab
System Check Head 2600MHz
DUT: Dipole 2600 MHz; Type: SID 2600

Date: Sep. 10,2019

Communication System: CW; Communication System Band: D2600 (2600.0 MHz); Duty Cycle: 1:1; Conv.F=4.45
Frequency:2600 MHz; Medium parameters used: $f = 2600$ MHz; $\sigma=1.89$ mho/m; $\epsilon_r=38.25$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.5, Liquid temperature (°C): 20.2

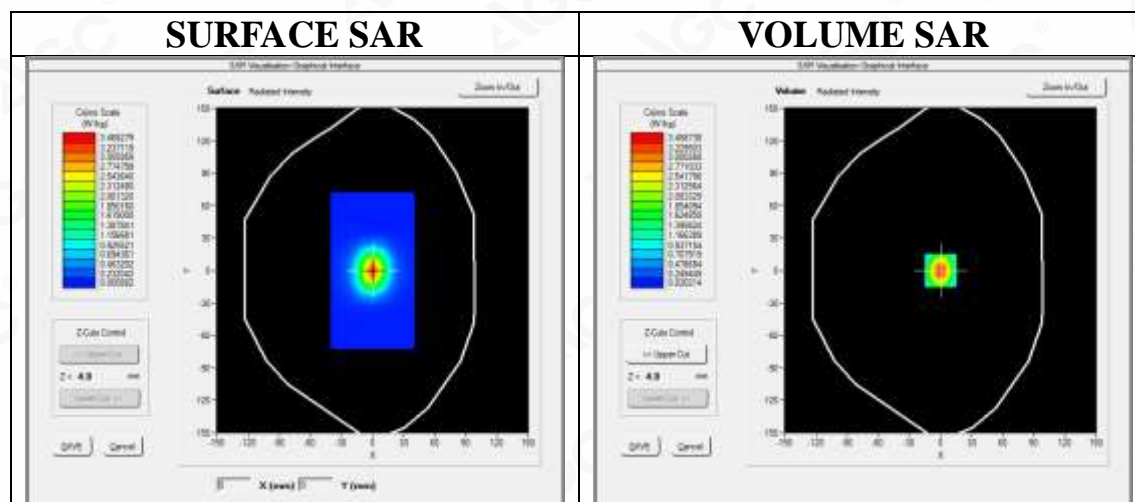
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2600 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 2600 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

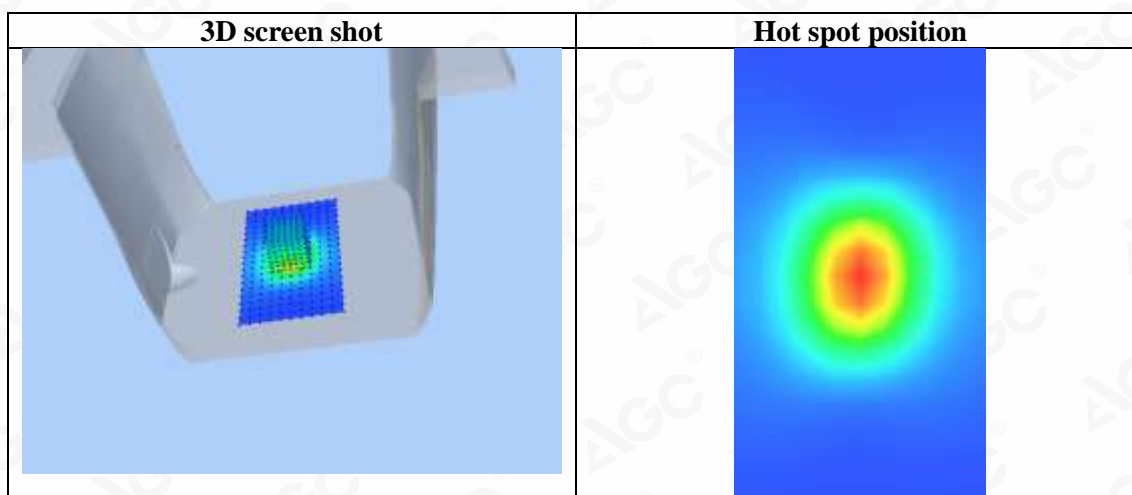
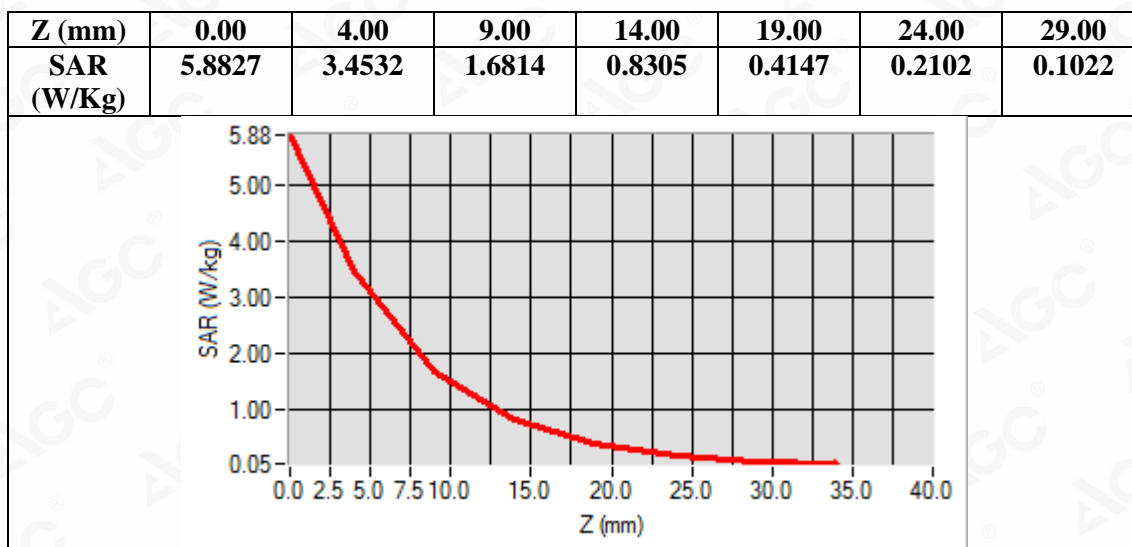
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | SAM twin phantom |
| Device Position | Flat |
| Band | CW 2600 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=0.00, Y=0.00

SAR Peak: 5.81 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.459025 |
| SAR 1g (W/Kg) | 3.386215 |



Test Laboratory: AGC Lab
System Check Head 900 MHz
DUT: Dipole 900 MHz Type: SID 900

Date: Sep. 20,2019

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.36
Frequency: 900 MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.96$ mho/m; $\epsilon_r=40.57$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

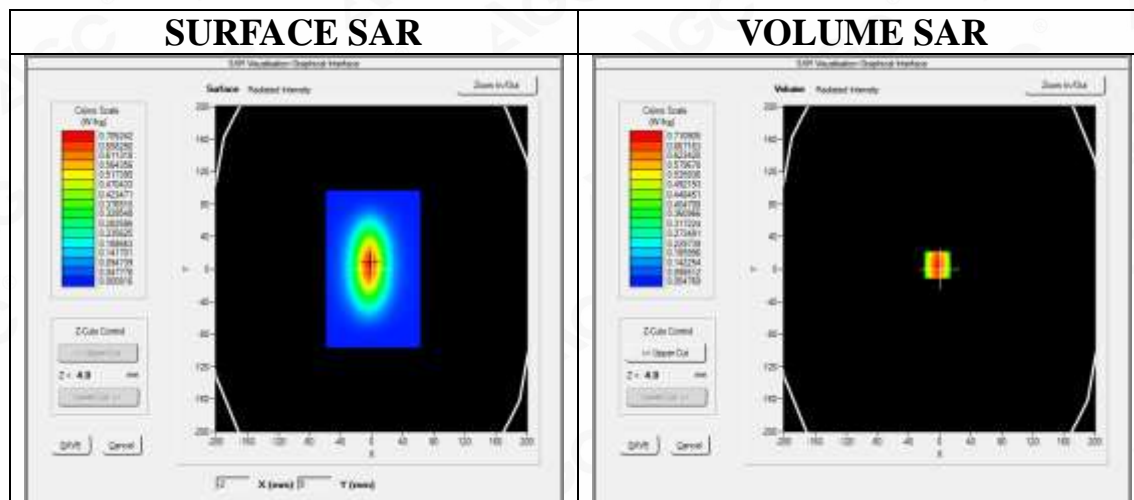
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 900 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 900 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

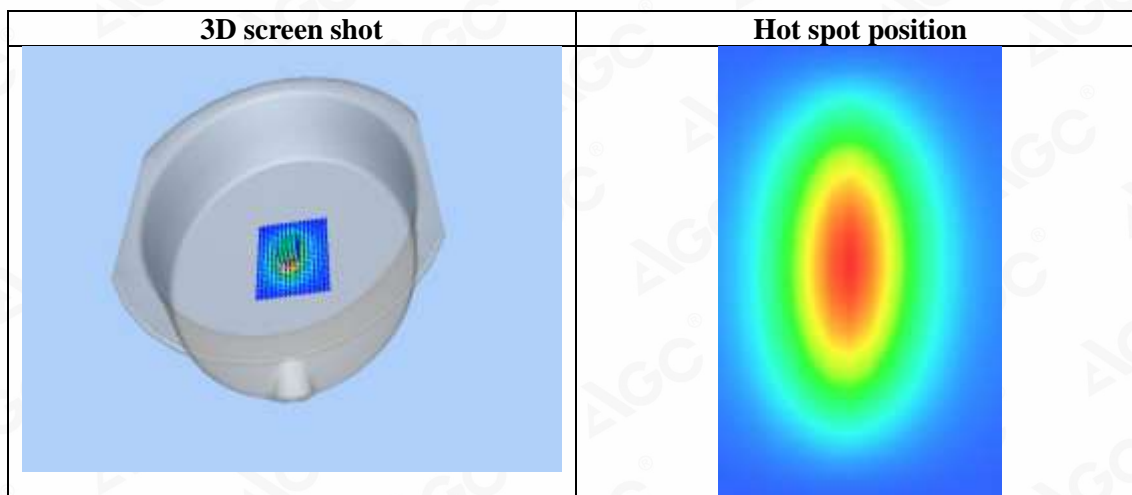
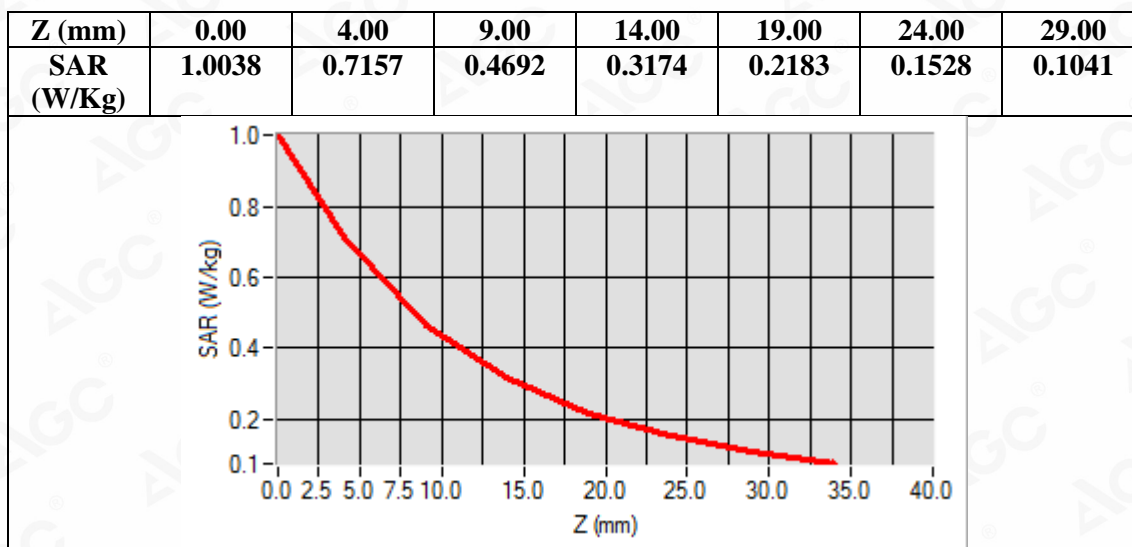
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 900 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=-3.00, Y=5.00

SAR Peak: 1.00 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.425784 |
| SAR 1g (W/Kg) | 0.677168 |



Test Laboratory: AGC Lab
System Check Head 1800MHz

Date: Sep. 11,2019

DUT: Dipole 1800 MHz; Type: SID 1800

Communication System: CW; Communication System Band: D1800 (1800.0 MHz); Duty Cycle: 1:1; Conv.F=4.68
Frequency: 1800 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

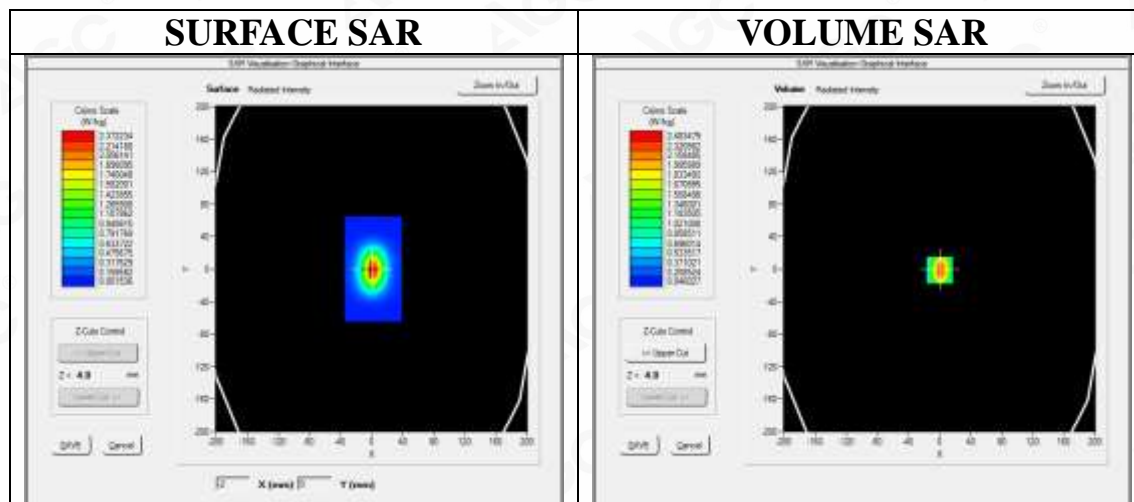
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 1800 Head/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 1800 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

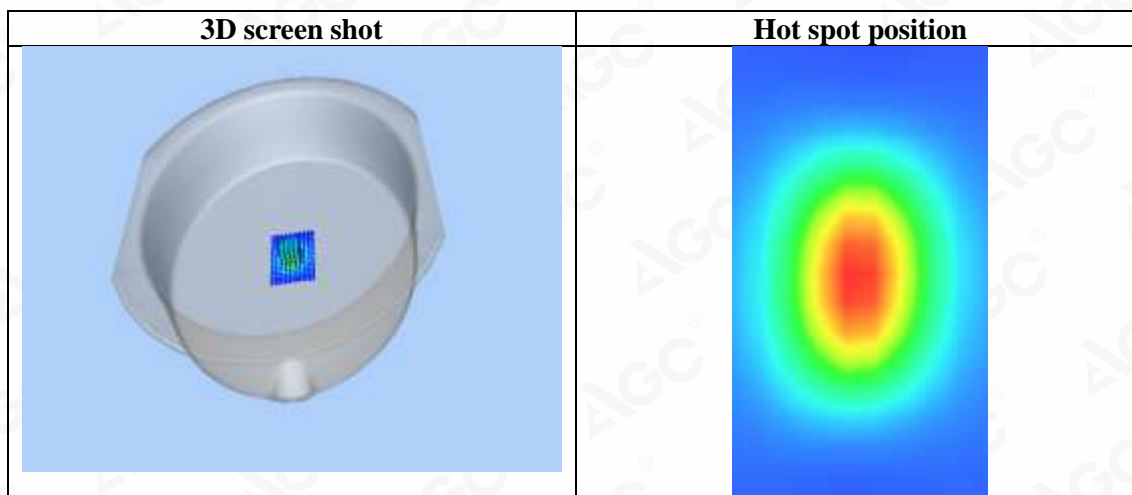
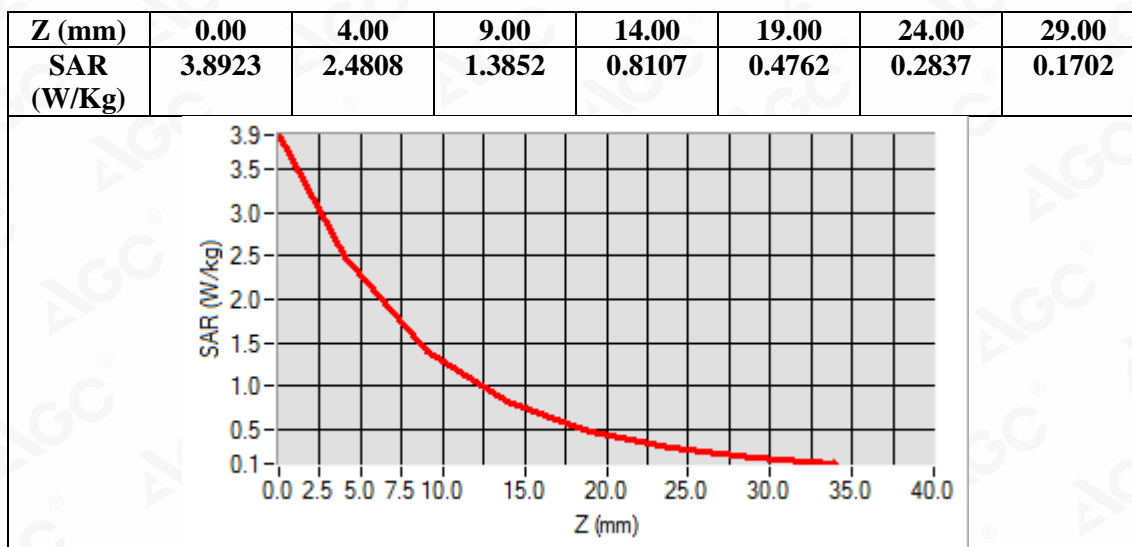
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 1800 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=0.00, Y=-1.00

SAR Peak: 3.90 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.220574 |
| SAR 1g (W/Kg) | 2.331568 |



Test Laboratory: AGC Lab
System Check Head 2000MHz

Date: Sep. 19,2019

DUT: Dipole 2000 MHz; Type: SID 2000

Communication System: CW; Communication System Band: D2000 (2000.0 MHz); Duty Cycle: 1:1; Conv.F=4.79

Frequency: 2000MHz; Medium parameters used: $f = 1950$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.63$; $\rho = 1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=18dBm

Ambient temperature (°C): 21.5, Liquid temperature (°C): 21.3

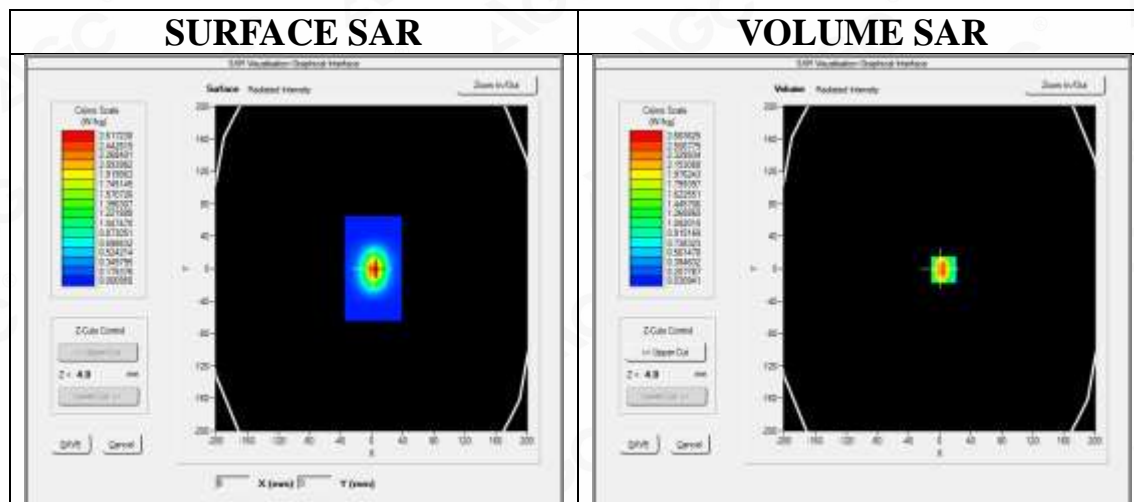
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2000 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 2000 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

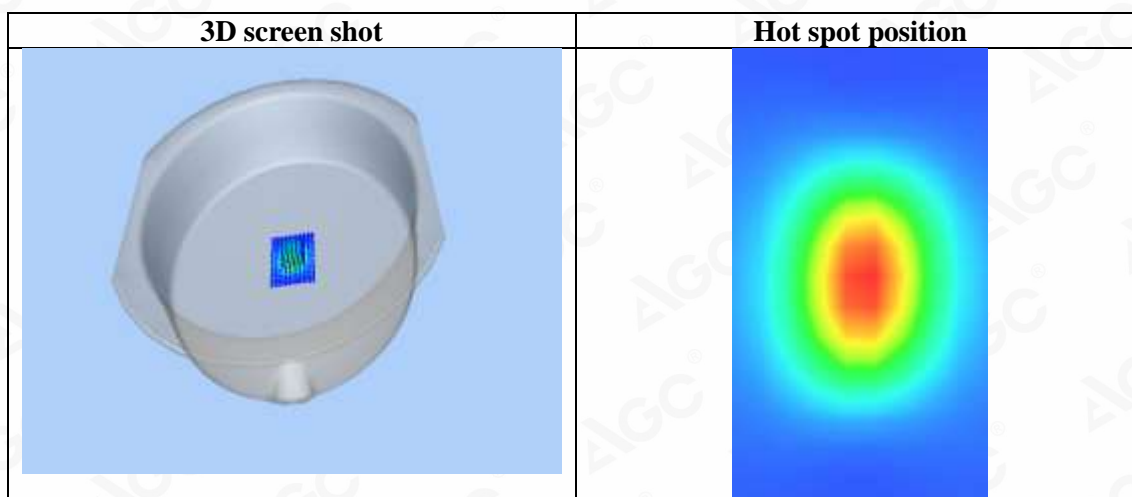
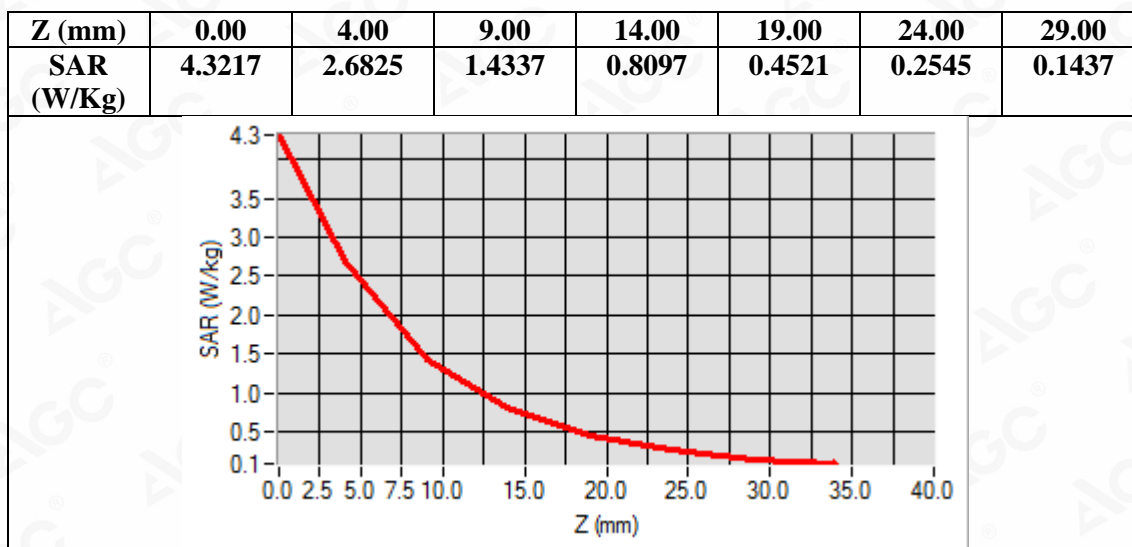
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 2000 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=5.00, Y=-1.00

SAR Peak: 4.37 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.273468 |
| SAR 1g (W/Kg) | 2.559342 |



Test Laboratory: AGC Lab
System Check Head 835MHz
DUT: Dipole 835 MHz Type: SID 835

Date: Sep. 09,2019

Communication System: CW; Communication System Band: D835(835.0 MHz); Duty Cycle: 1:1; Conv.F=5.82
Frequency: 835MHz; Medium parameters used: $f = 835\text{MHz}$; $\sigma = 0.87\text{mho/m}$; $\epsilon_r = 41.26$; $\rho = 1000\text{ kg/m}^3$;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature ($^{\circ}\text{C}$): 21.3, Liquid temperature ($^{\circ}\text{C}$): 21.0

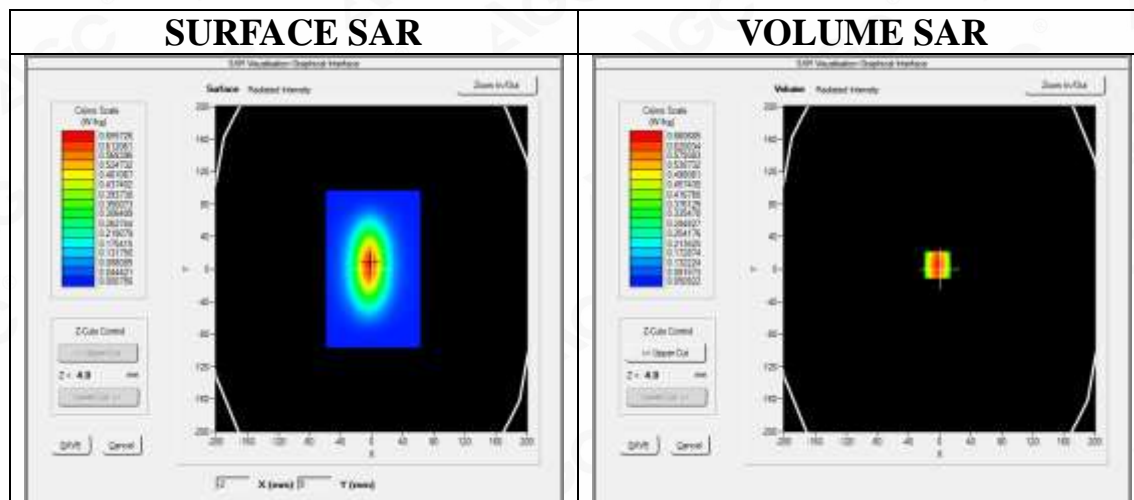
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 10,2018; Serial No.: SN 14/16 EP308
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 835 Head/Area Scan: Measurement grid: $dx=8\text{mm}, dy=8\text{mm}$

Configuration/System Check 835 Head/Zoom Scan: Measurement grid: $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

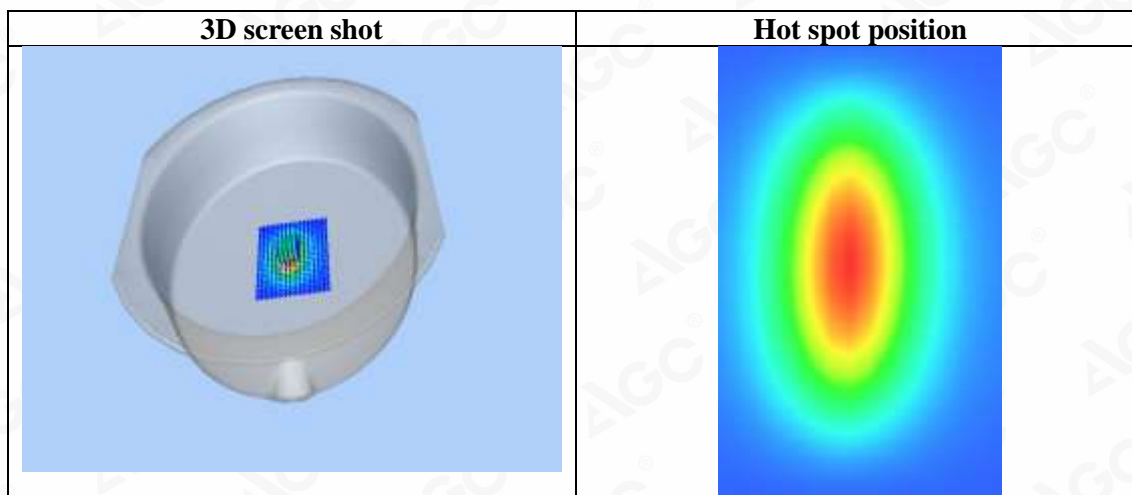
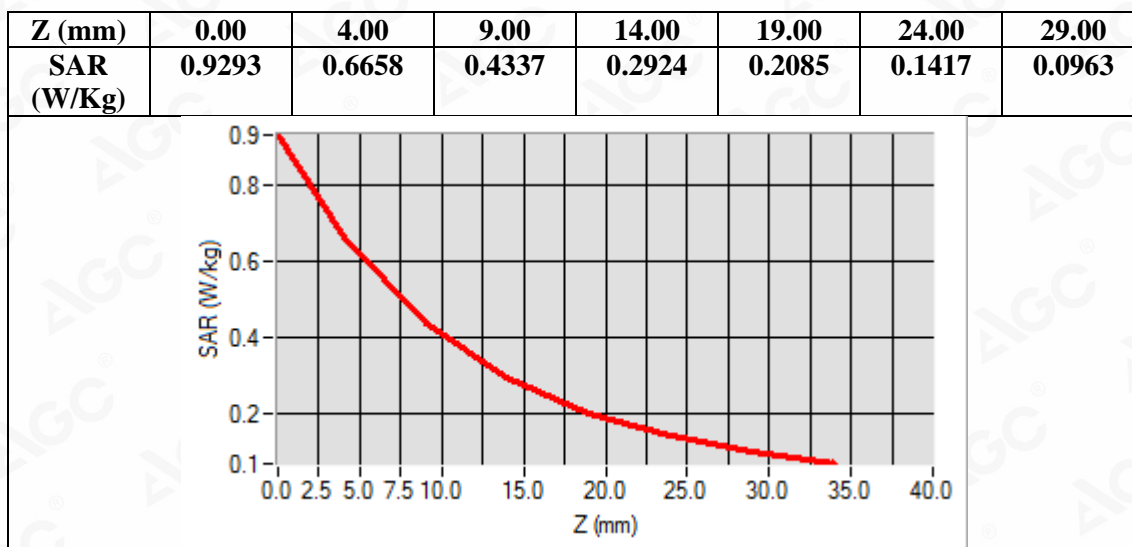
| | |
|------------------------|--------------------------------------------------------------------|
| Area Scan | $dx=8\text{mm } dy=8\text{mm}, h= 5.00\text{ mm}$ |
| ZoomScan | $5 \times 5 \times 7, dx=8\text{mm } dy=8\text{mm } dz=5\text{mm}$ |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 835 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=-3.00, Y=5.00

SAR Peak: 0.93 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.398476 |
| SAR 1g (W/Kg) | 0.602135 |



Test Laboratory: AGC Lab
System Check Head 900 MHz
DUT: Dipole 900 MHz Type: SID 900

Date: Sep. 18,2019

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.36
Frequency: 900 MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.98$ mho/m; $\epsilon_r=41.59$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.1

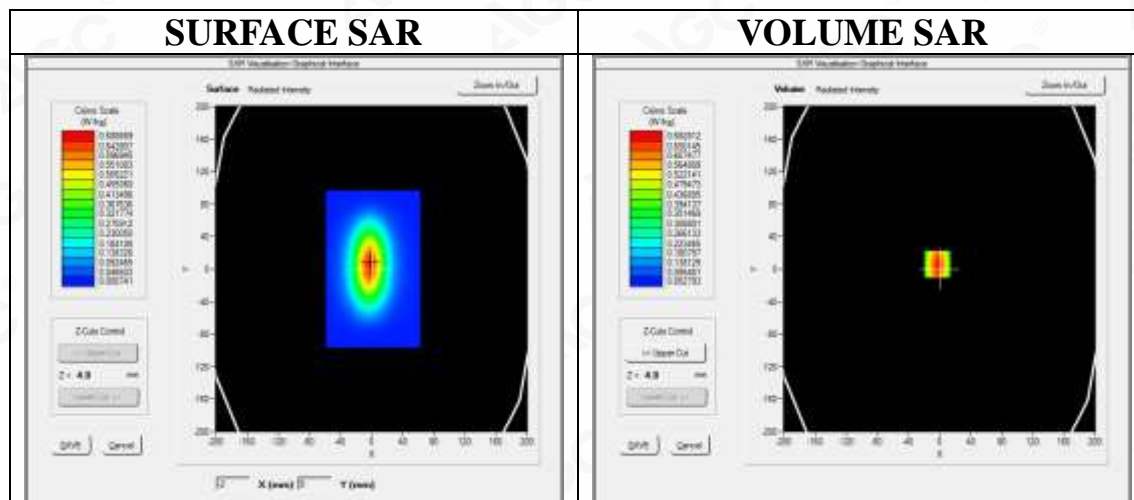
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 900 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 900 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

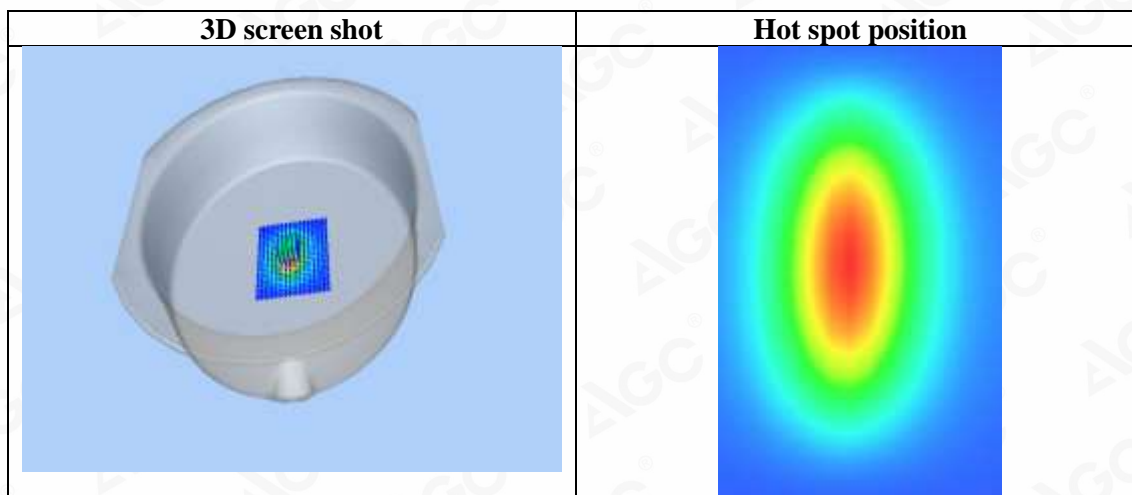
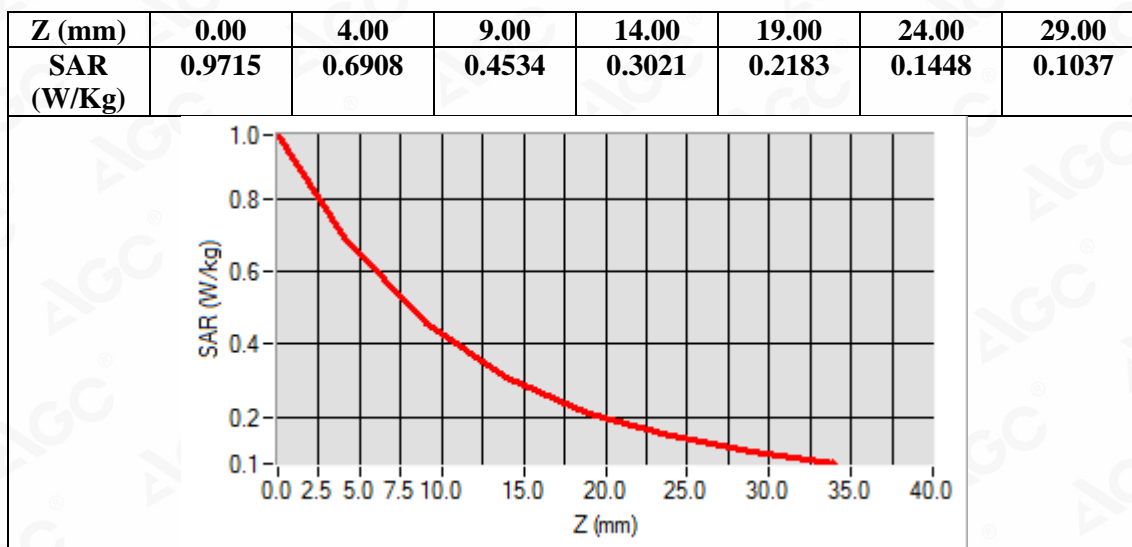
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 900 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=-3.00, Y=6.00

SAR Peak: 0.97 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.412461 |
| SAR 1g (W/Kg) | 0.693894 |



Test Laboratory: AGC Lab
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450

Date: Sep. 23,2019

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.68
Frequency: 2450 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.73$ mho/m; $\epsilon_r = 40.16$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

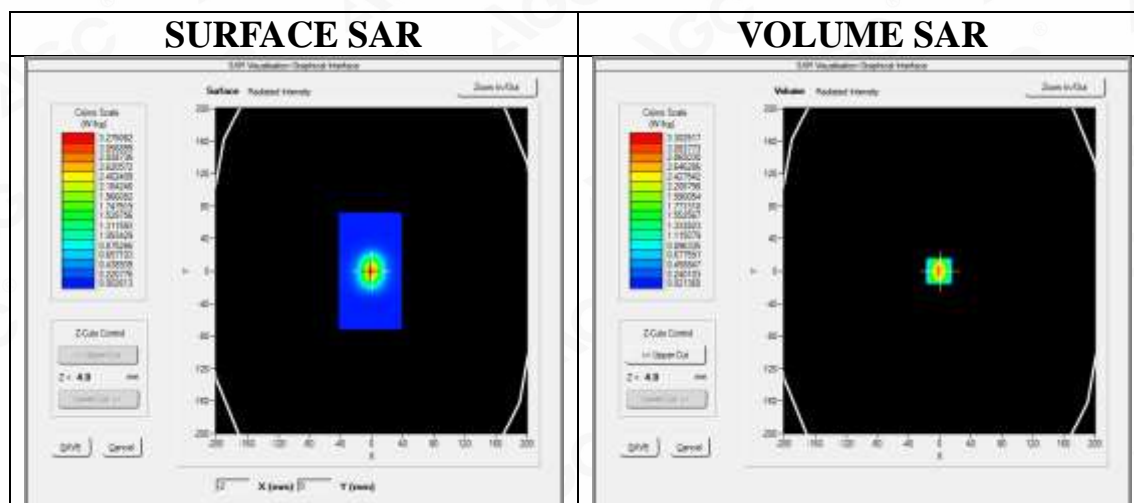
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2450 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 2450 MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

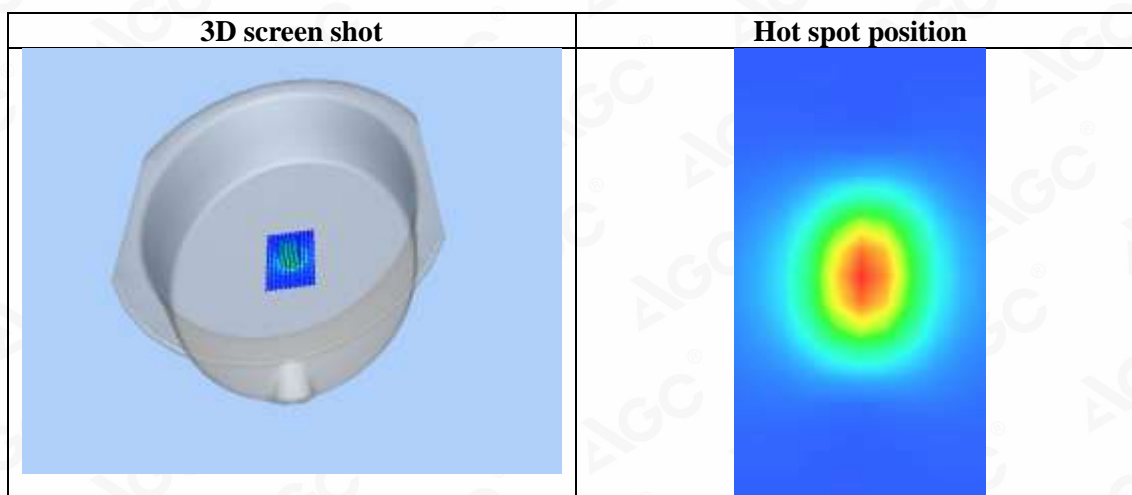
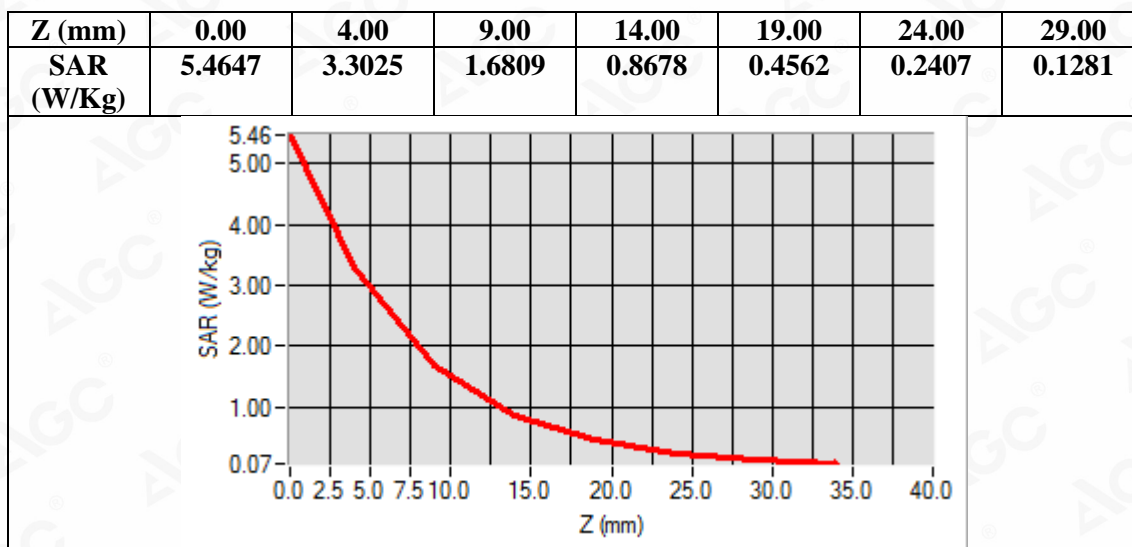
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 2450 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=-1.00, Y=0.00

SAR Peak: 5.41 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.393778 |
| SAR 1g (W/Kg) | 3.129476 |



Test Laboratory: AGC Lab
System Check Head 2600MHz

Date: Sep. 10,2019

DUT: Dipole 2600 MHz; Type: SID 2600

Communication System: CW; Communication System Band: D2600 (2600.0 MHz); Duty Cycle: 1:1; Conv.F=4.45
Frequency:2600 MHz; Medium parameters used: $f = 2600$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 38.25$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (°C): 20.5, Liquid temperature (°C): 20.2

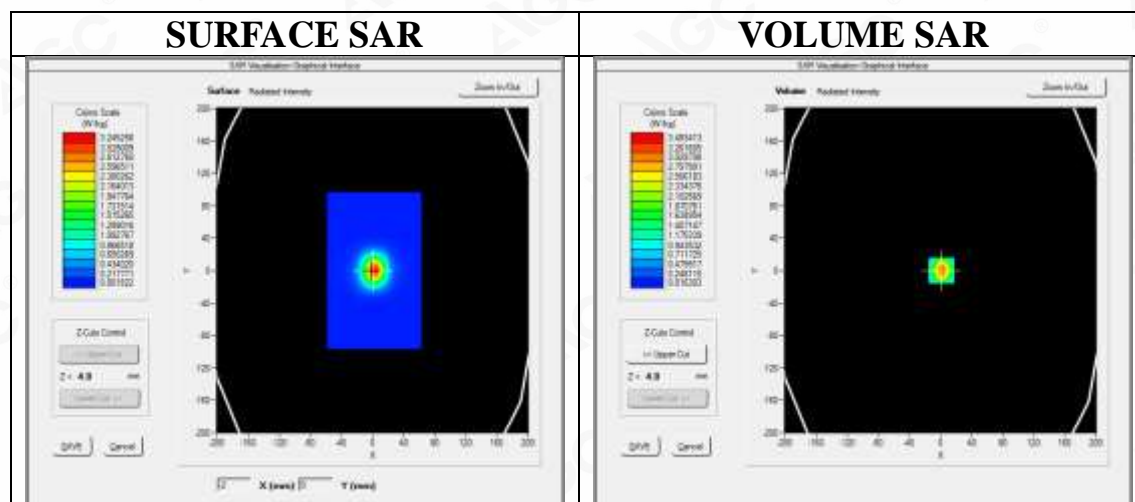
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2600 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 2600 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

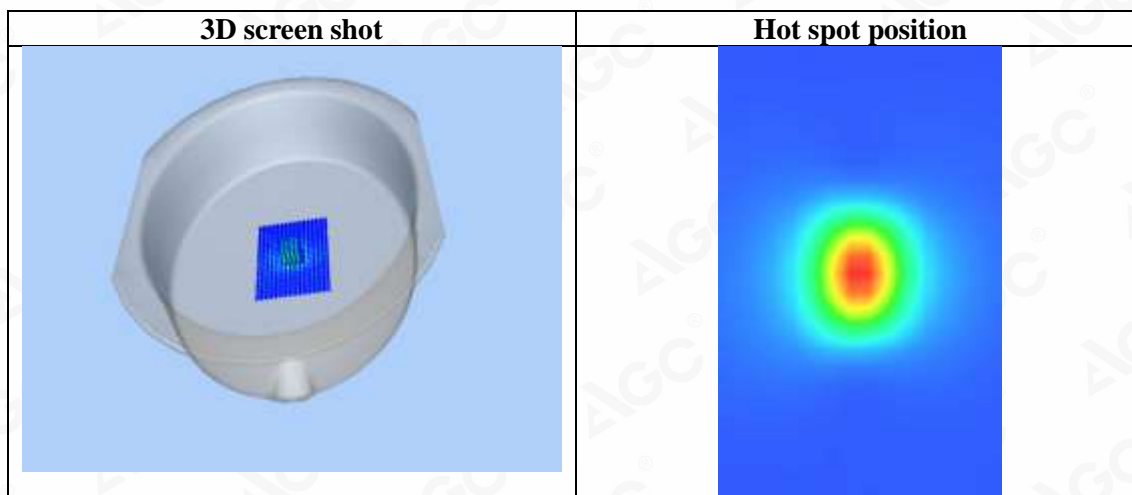
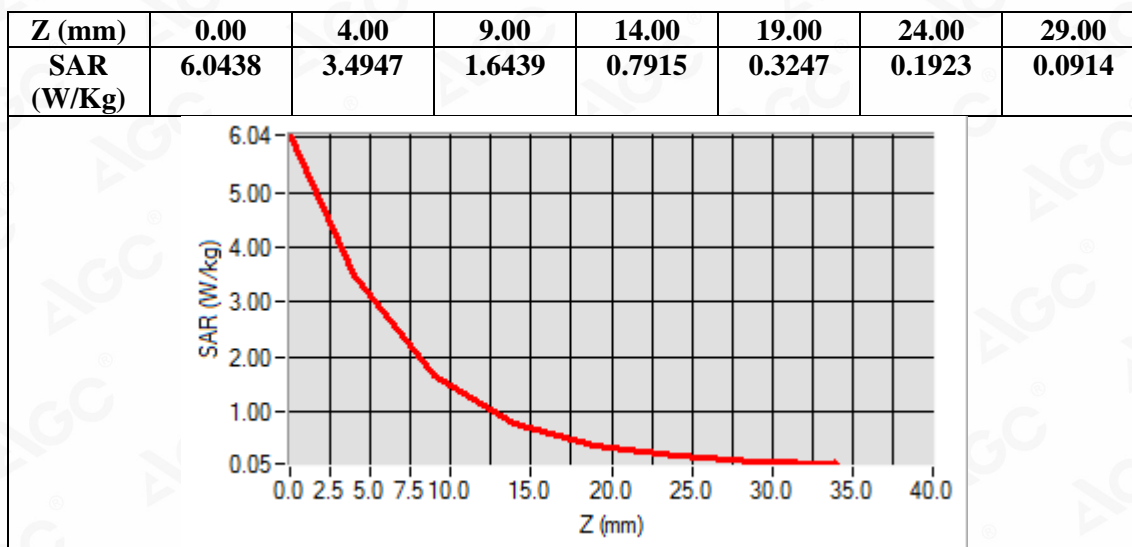
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Flat |
| Band | CW 2600 |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=1.00, Y=0.00

SAR Peak: 6.00 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 1.468136 |
| SAR 1g (W/Kg) | 3.453481 |



APPENDIX B. SAR MEASUREMENT DATA

Test Laboratory: AGC Lab
GSM 900 High-Touch-Left <SIM 1>
DUT: Smart Phone; Type: P30

Date: Sep. 20,2019

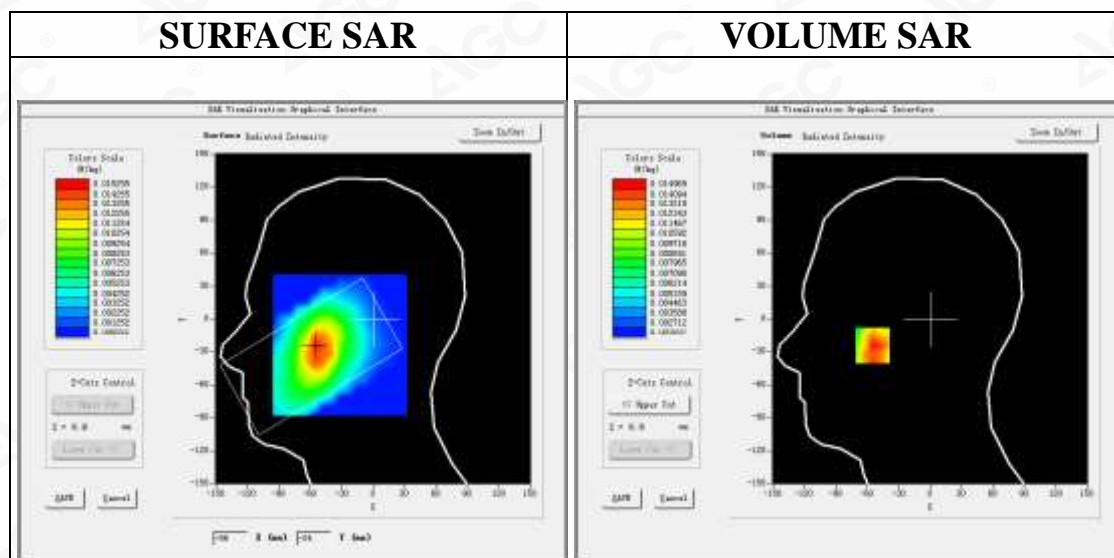
Communication System: Generic GSM; Communication System Band: GSM 900; Duty Cycle: 1: 8; Conv.F=5.36
Frequency: 914.8 MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.96$ mho/m; $\epsilon_r=40.57$; $\rho= 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/GSM 900 High- Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 900 High- Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

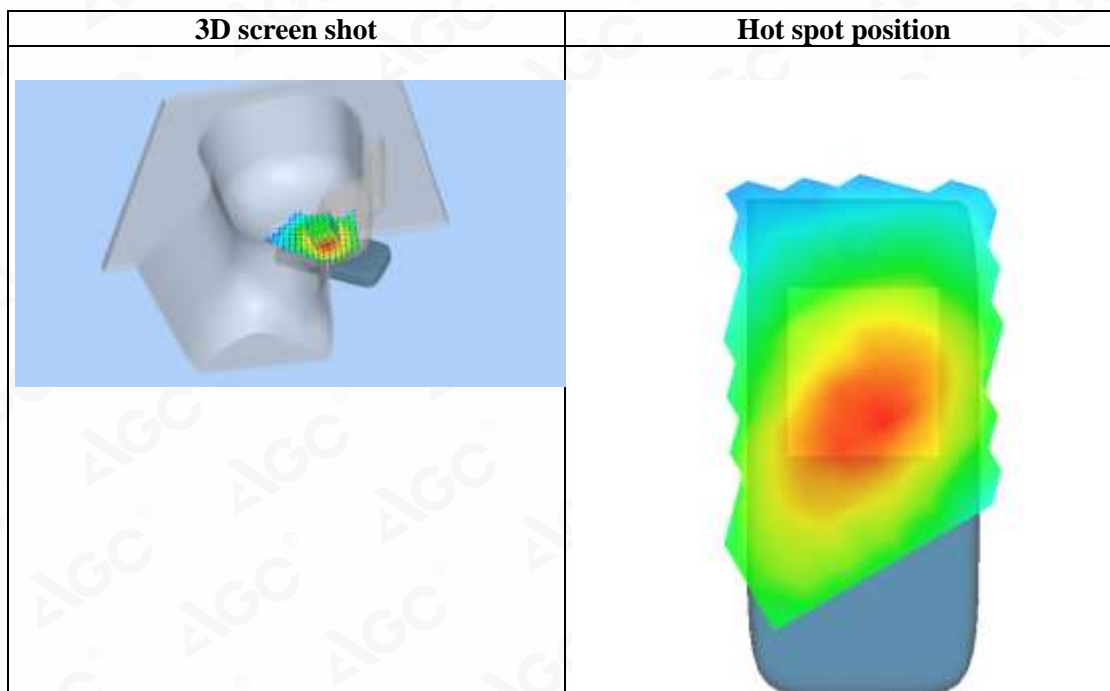
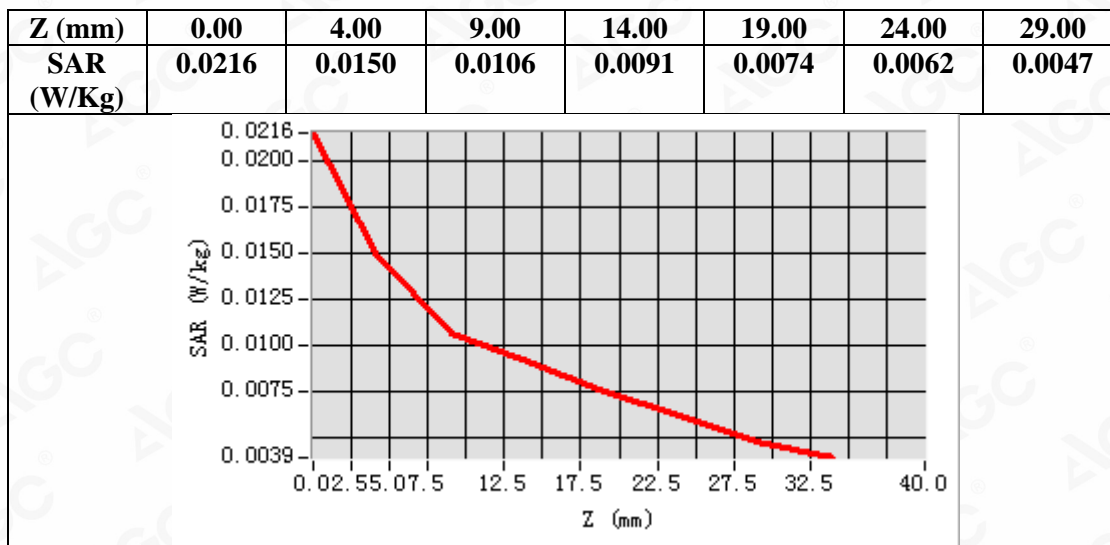
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | GSM 900 |
| Channels | High |
| Signal | TDMA (Crest factor: 8.0) |



Maximum location: X=-55.00, Y=-24.00

SAR Peak: 0.02 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.010373 |
| SAR 1g (W/Kg) | 0.014723 |



Test Laboratory: AGC Lab
GPRS 900 High-Body- Worn- Back (4up) <SIM 1>
DUT: Smart Phone; Type: P30

Date: Sep. 20,2019

Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.36
Frequency: 914.8 MHz; Medium parameters used: $f = 900$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 40.57$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

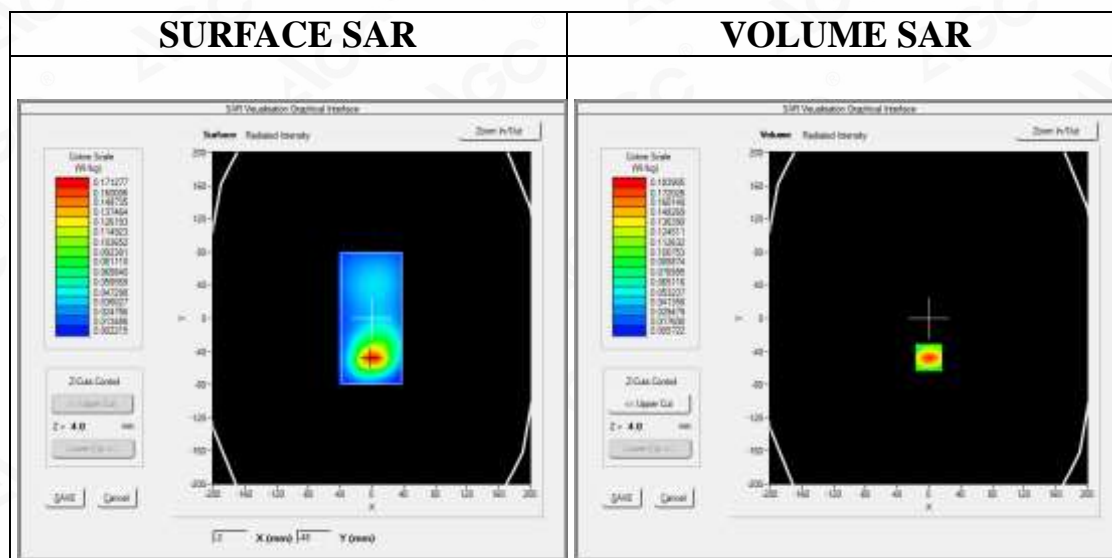
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/GPRS 900 High- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/GPRS 900 High- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

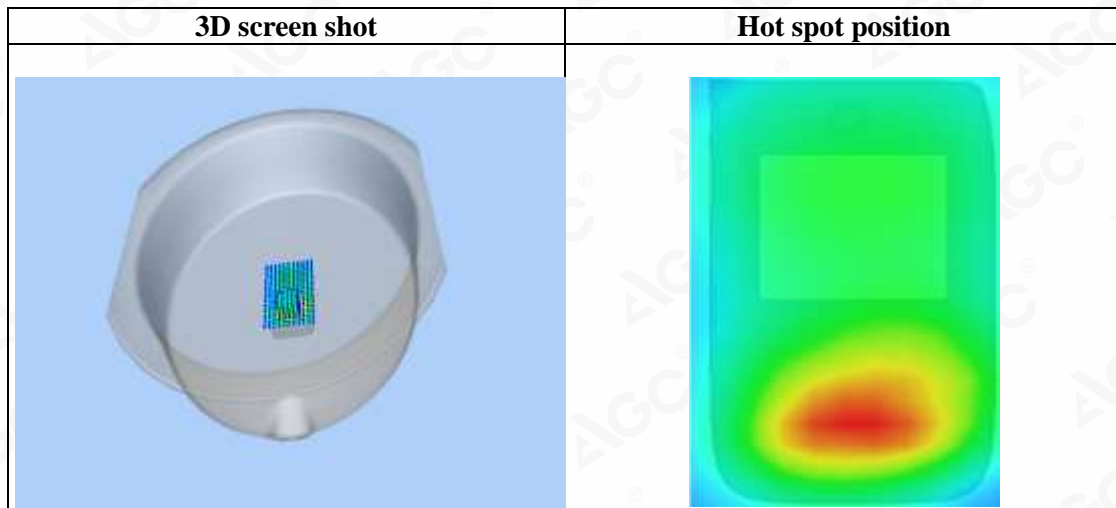
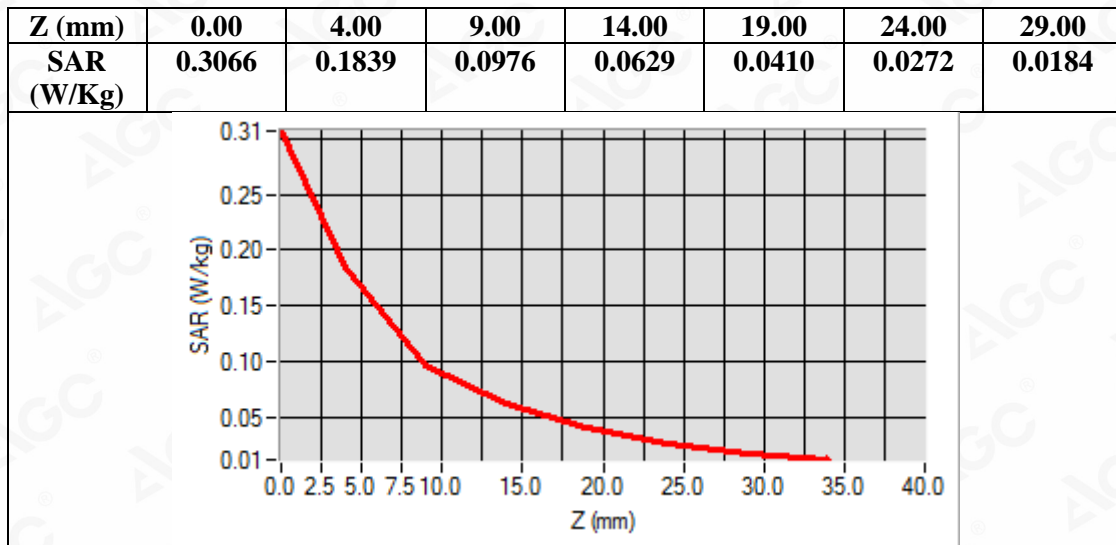
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | GSM 900 |
| Channels | High |
| Signal | TDMA (Crest factor: 2.0) |



Maximum location: X=0.00, Y=-47.00

SAR Peak: 0.30 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.096183 |
| SAR 1g (W/Kg) | 0.175901 |



Test Laboratory: AGC Lab
DCS 1800 Low-Touch-Left <SIM1>
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

Communication System: Generic GSM; Communication System Band: DCS 1800; Duty Cycle: 1:8; Conv.F=4.68
Frequency: 1710.2 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

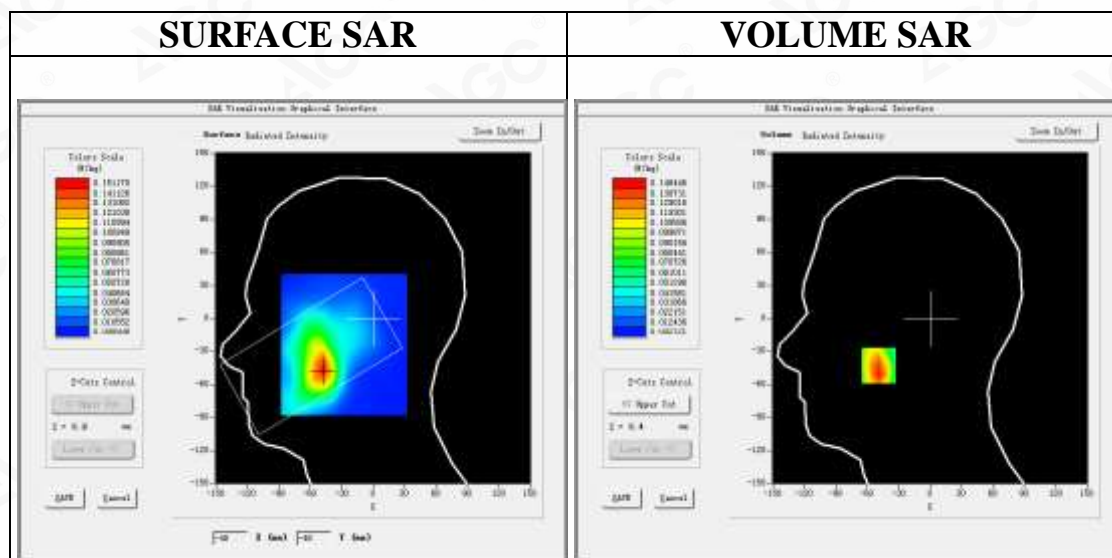
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/DCS1800 Low- Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/DCS1800 Low- Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

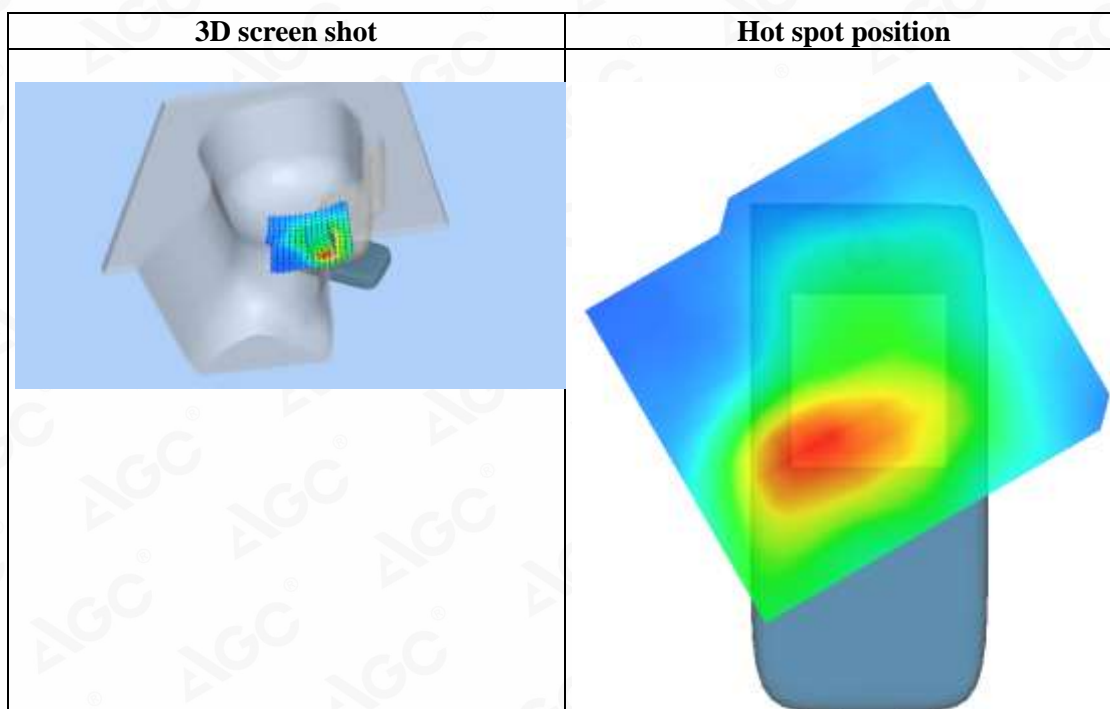
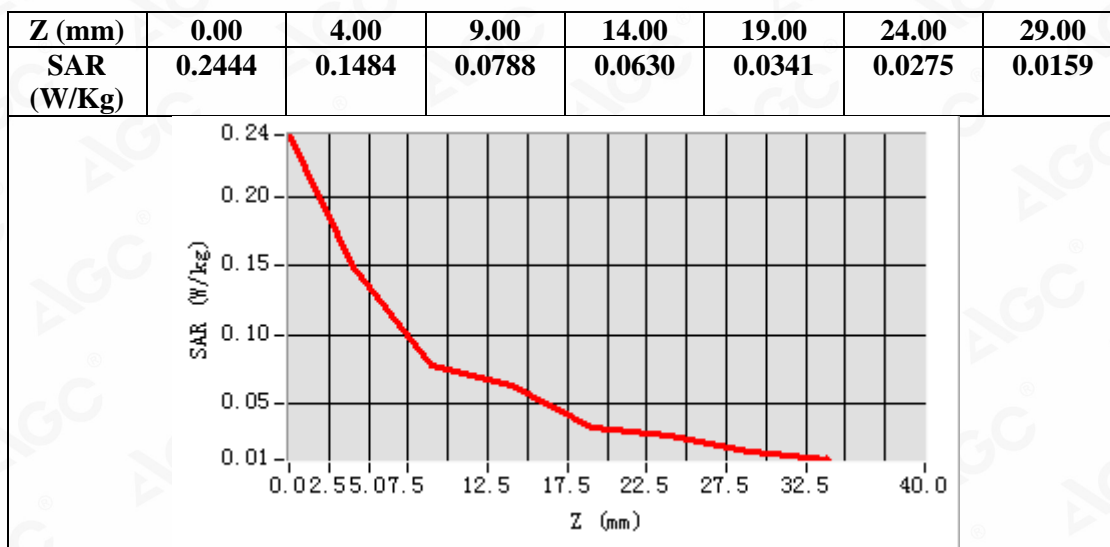
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | DCS 1800 |
| Channels | Low |
| Signal | TDMA (Crest factor: 8.0) |



Maximum location: X=-49.00, Y=-43.00

SAR Peak: 0.20 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.082205 |
| SAR 1g (W/Kg) | 0.137725 |



Test Laboratory: AGC Lab
DCS 1800 Mid-Touch-Left <SIM1>
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

Communication System: Generic GSM; Communication System Band: DCS 1800; Duty Cycle: 1:8; Conv.F=4.68
Frequency: 1747.4 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

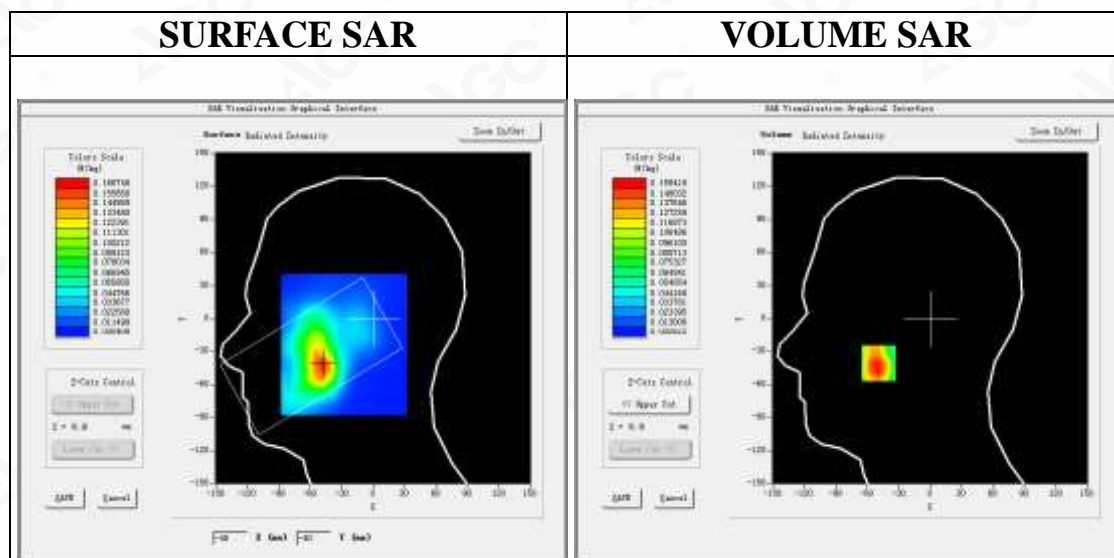
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/DCS1800 Mid- Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/DCS1800 Mid- Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

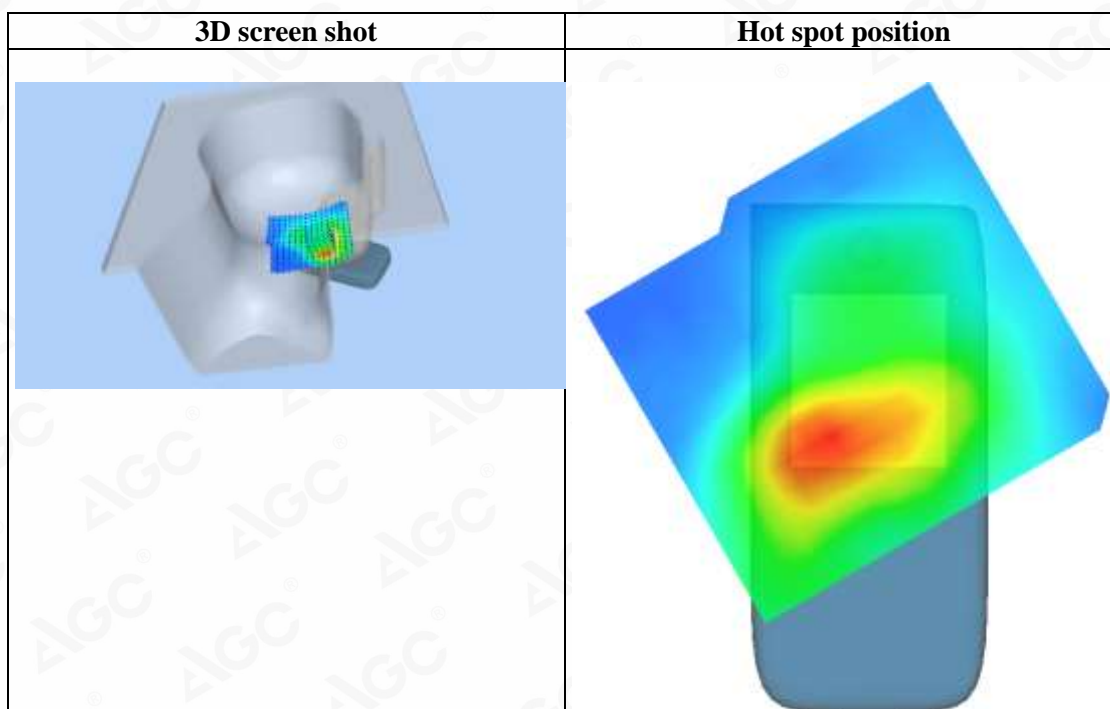
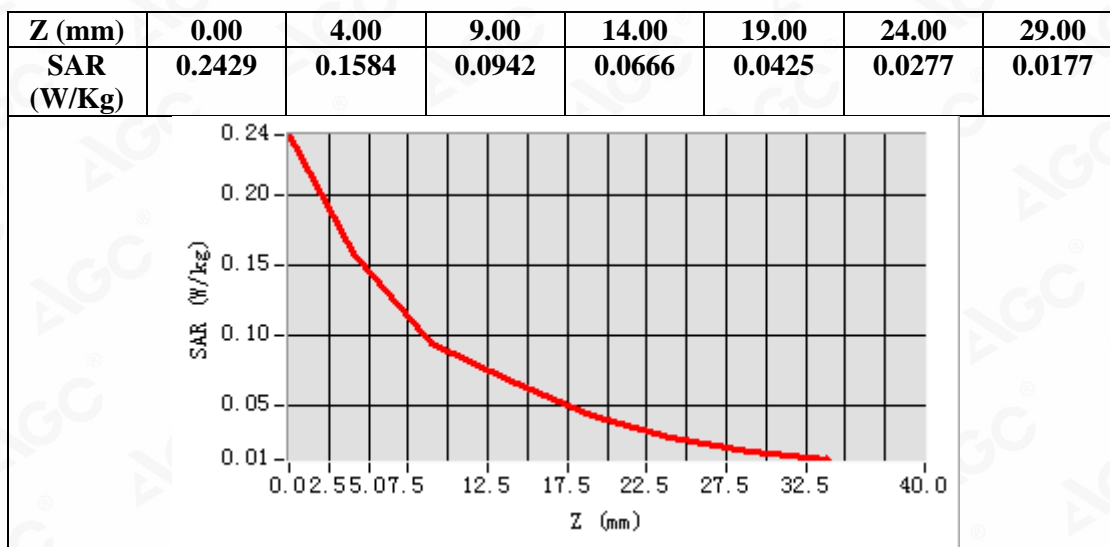
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | DCS 1800 |
| Channels | Middle |
| Signal | TDMA (Crest factor: 8.0) |



Maximum location: X=-49.00, Y=-41.00

SAR Peak: 0.24 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.092509 |
| SAR 1g (W/Kg) | 0.155369 |



Test Laboratory: AGC Lab
GPRS 1800 Low-Body- Worn- Back (4up) <SIM1>
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

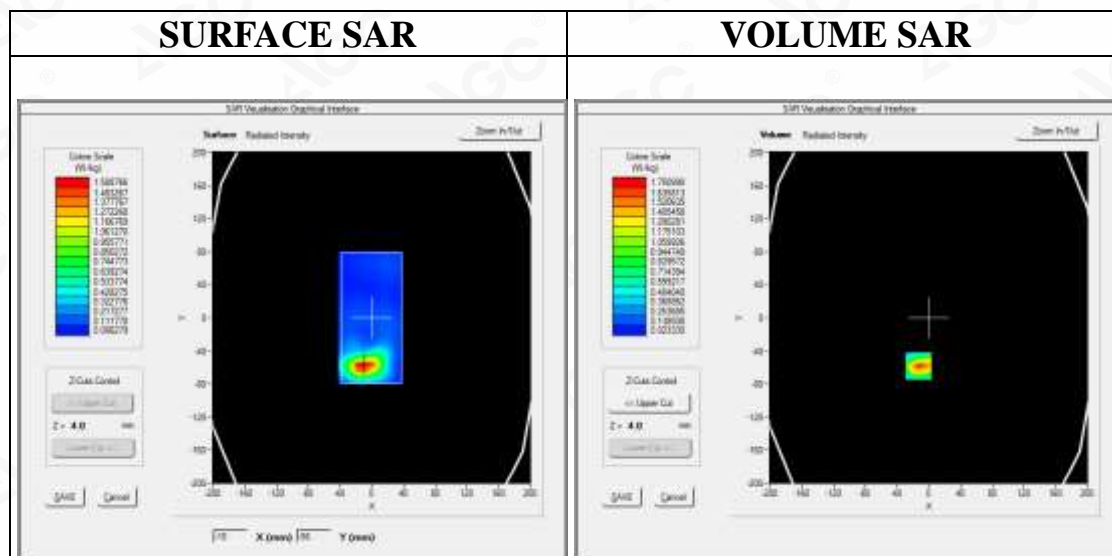
Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.68
Frequency: 1710.2 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/GPRS 1800 Low- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 1800 Low- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

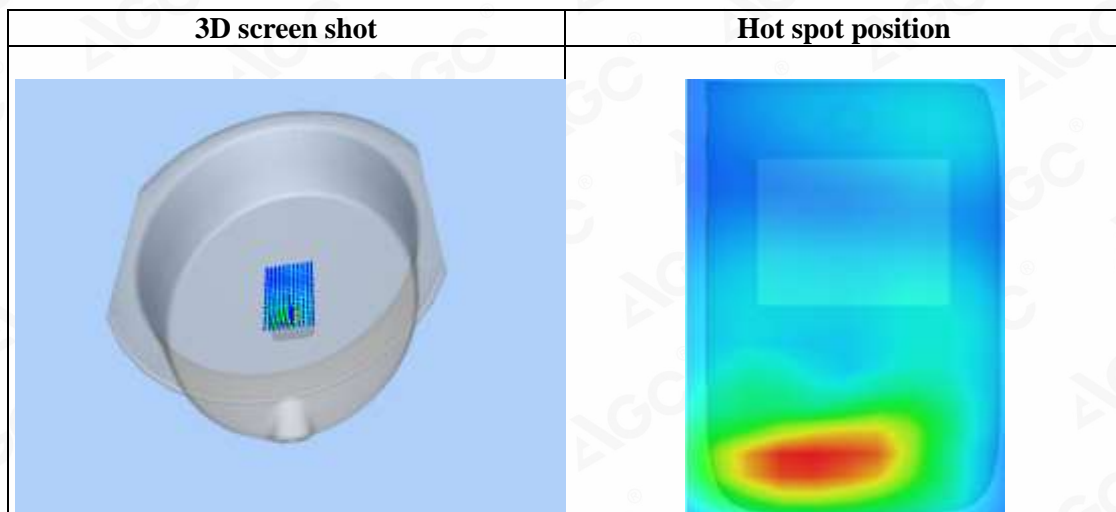
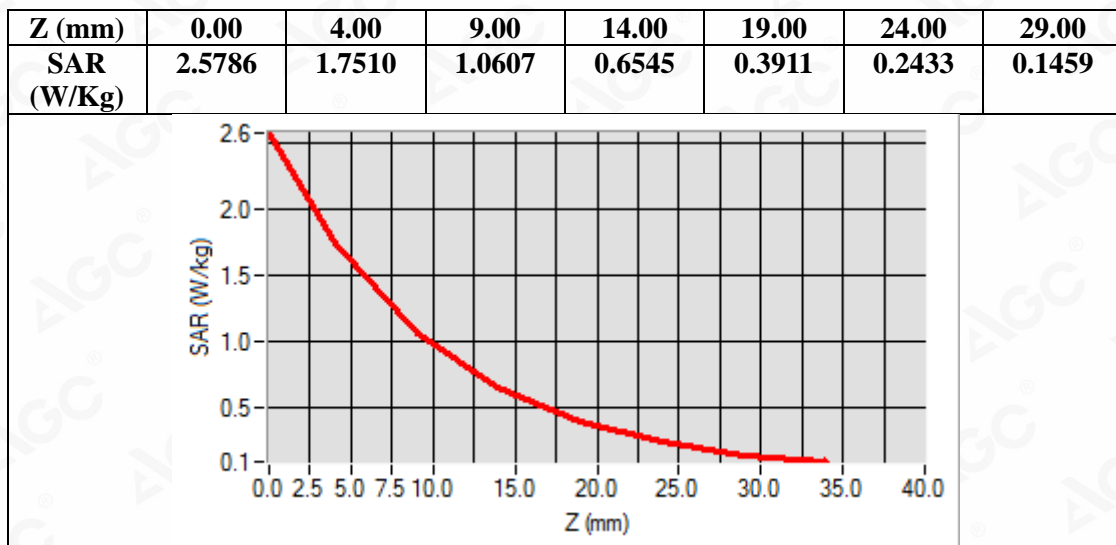
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | DCS 1800 |
| Channels | Low |
| Signal | TDMA (Crest factor: 2.0) |



Maximum location: X=-13.00, Y=-58.00

SAR Peak: 2.56 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.866150 |
| SAR 1g (W/Kg) | 1.602522 |



Test Laboratory: AGC Lab
GPRS 1800 Mid-Body- Worn- Back (4up) <SIM1>
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

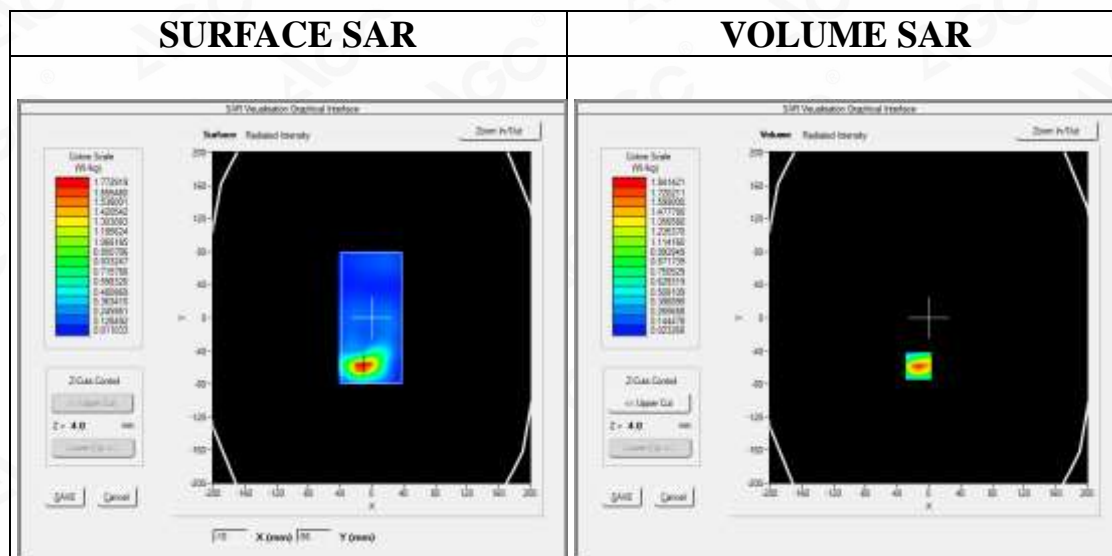
Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.68
Frequency: 1747.4 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 20.9, Liquid temperature (°C): 20.6

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/GPRS 1800 Mid- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 1800 Mid- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

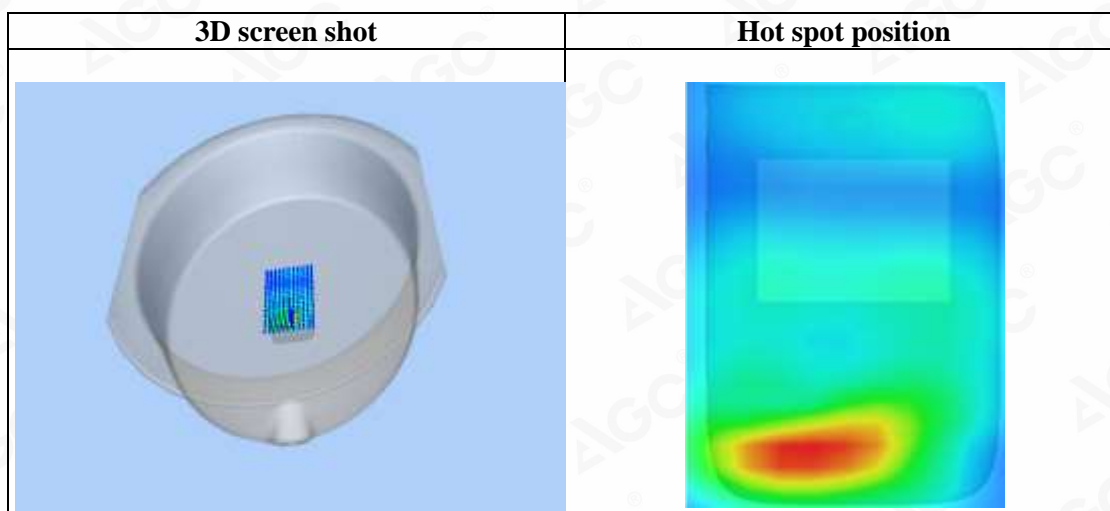
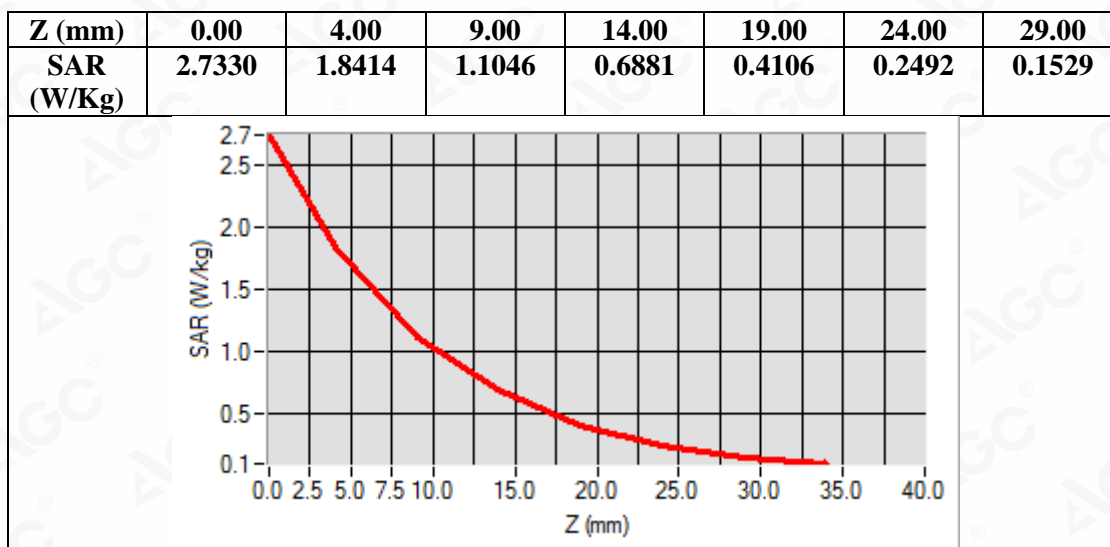
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | DCS 1800 |
| Channels | Middle |
| Signal | TDMA (Crest factor: 2.0) |



Maximum location: X=-13.00, Y=-58.00

SAR Peak: 2.78 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.914630 |
| SAR 1g (W/Kg) | 1.717568 |



Test Laboratory: AGC Lab
WCDMA Band I High-Touch-Left (RMC)
DUT: Smart Phone; Type: P30

Date: Sep. 19,2019

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ; Duty Cycle: 1:1; Conv.F=4.79;
Frequency: 1977.6 MHz; Medium parameters used: $f = 1950$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.63$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 21.5, Liquid temperature (°C): 21.3

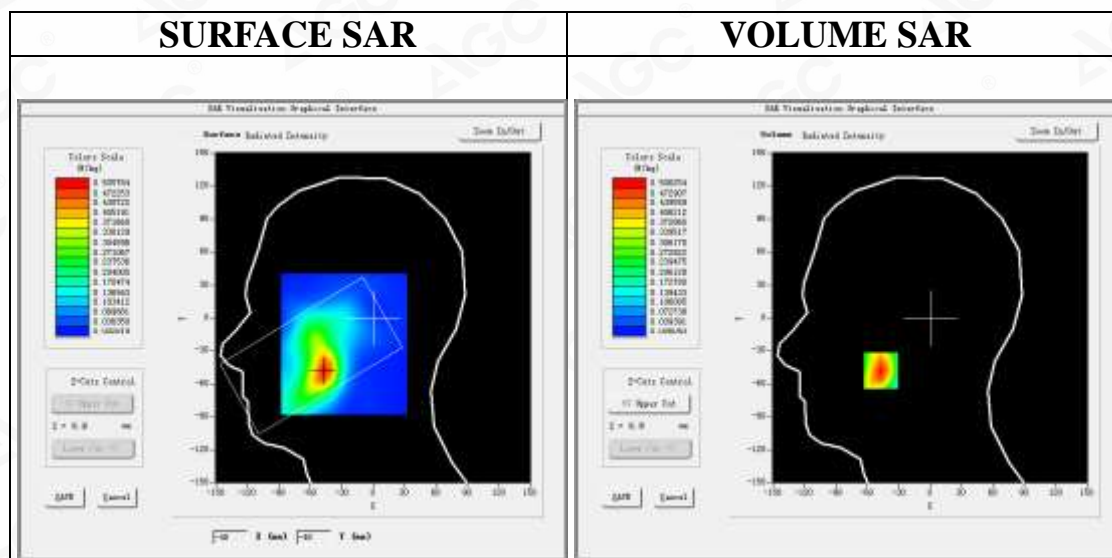
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA Band I High-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ WCDMA Band I High-Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | WCDMA Band I |
| Channels | High |
| Signal | CDMA (Crest factor: 1.0) |

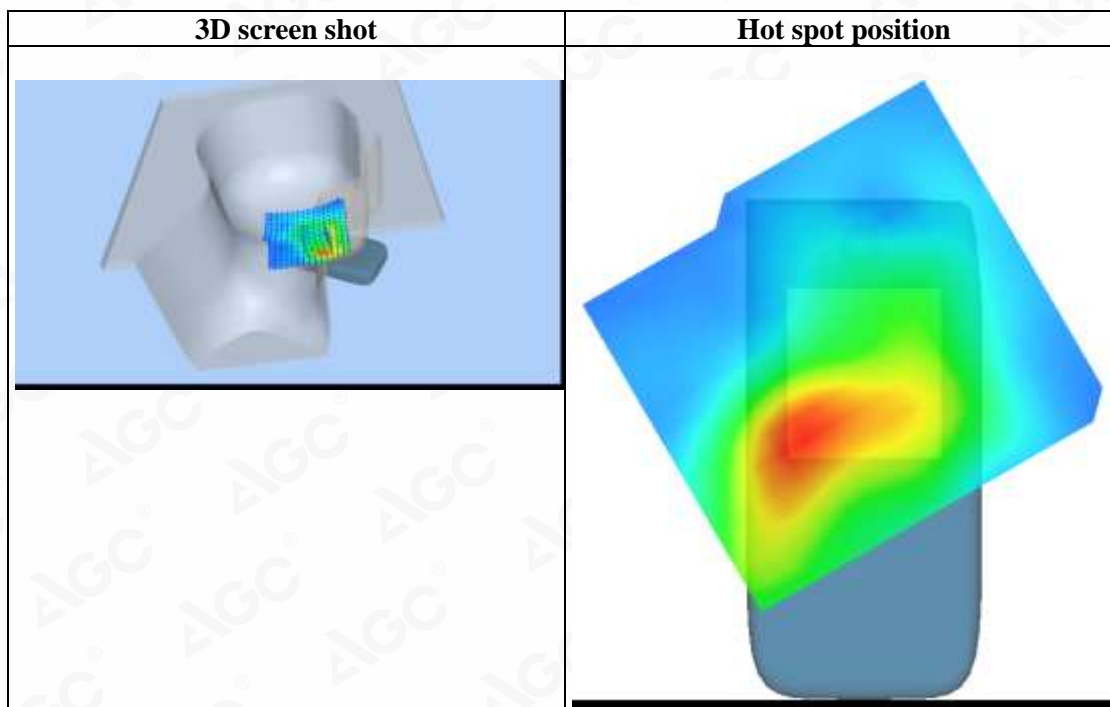
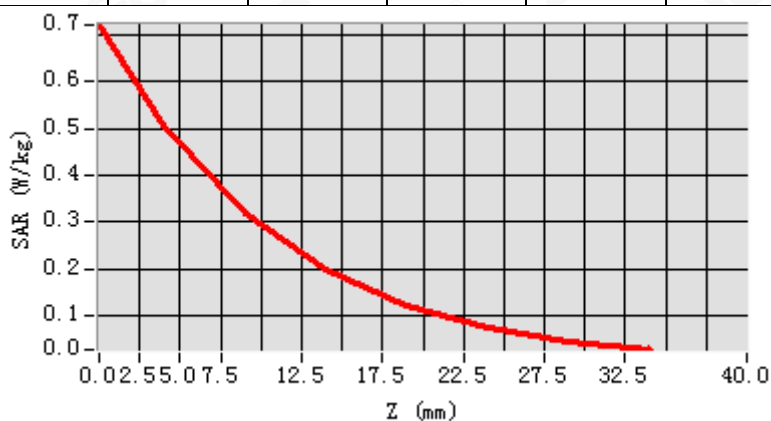


Maximum location: X=-47.00, Y=-48.00

SAR Peak: 0.74 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.271155 |
| SAR 1g (W/Kg) | 0.477620 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.7205 | 0.5063 | 0.3189 | 0.2010 | 0.1230 | 0.0758 | 0.0466 |



Test Laboratory: AGC Lab
WCDMA Band I Mid-Body-Towards Grounds (RMC)
DUT: Smart Phone; Type: P30

Date: Sep. 19,2019

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.79;
Frequency: 1950MHz; Medium parameters used: $f = 1950 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.63$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Flat Section
Ambient temperature ($^{\circ}\text{C}$): 21.5, Liquid temperature ($^{\circ}\text{C}$): 21.3

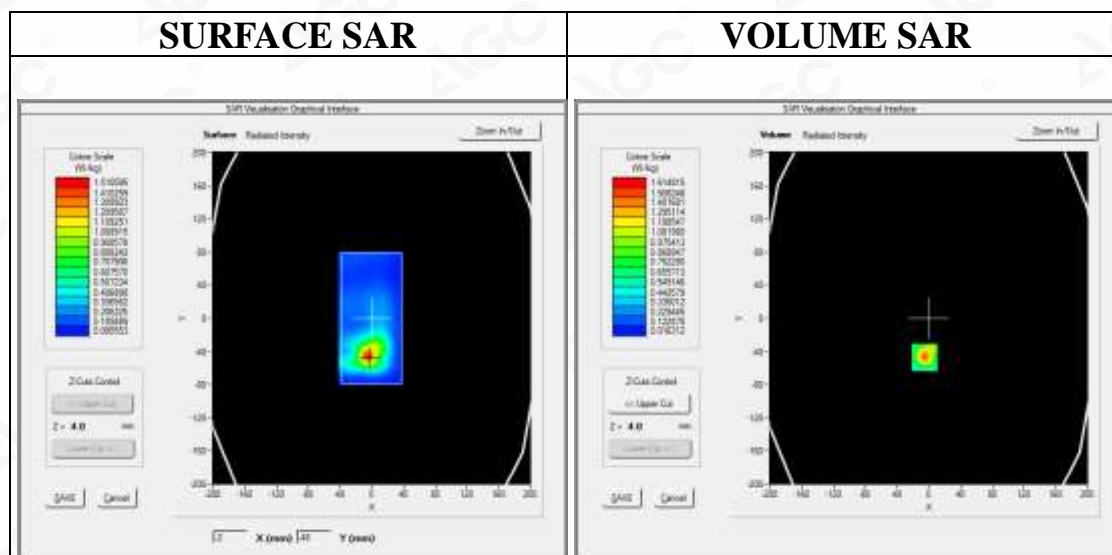
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/WCDMA BAND I Mid-Body-Back/Area Scan: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$

Configuration/WCDMA BAND I Mid-Body-Back//Zoom Scan: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$;

| | |
|-----------------|-------------------------------------------------------------------------|
| Area Scan | $dx=8\text{mm}$ $dy=8\text{mm}$, $h= 5.00 \text{ mm}$ |
| ZoomScan | $5 \times 5 \times 7$, $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$ |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | WCDMA Band I |
| Channels | Middle |
| Signal | CDMA (Crest factor: 1.0) |

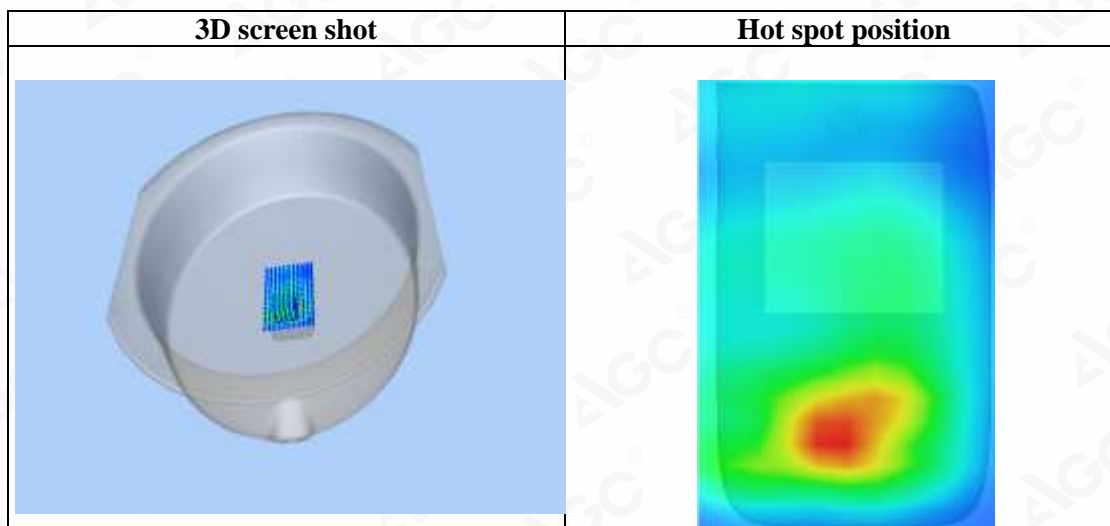
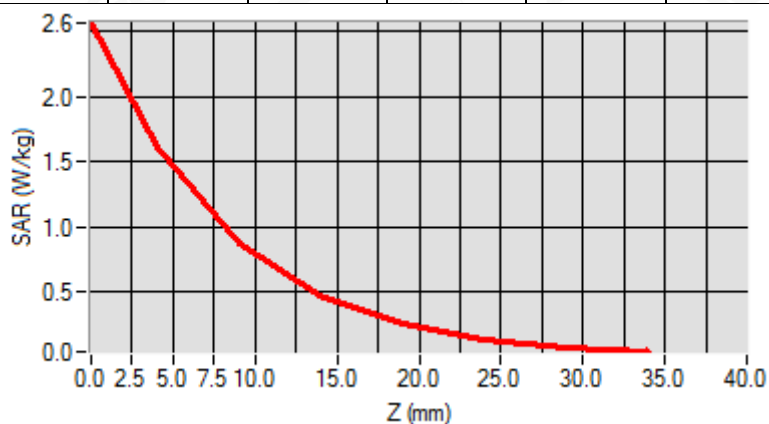


Maximum location: X=-5.00, Y=-47.00

SAR Peak: 2.54 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.721928 |
| SAR 1g (W/Kg) | 1.469264 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 2.5598 | 1.6148 | 0.8755 | 0.4812 | 0.2611 | 0.1446 | 0.0807 |



Test Laboratory: AGC Lab
WCDMA Band VIII Low-Touch-Left (RMC)
DUT: Smart Phone; Type: P30

Date: Sep. 20,2019

Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.36
Frequency: 882.4 MHz; Medium parameters used: $f = 900$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 40.57$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

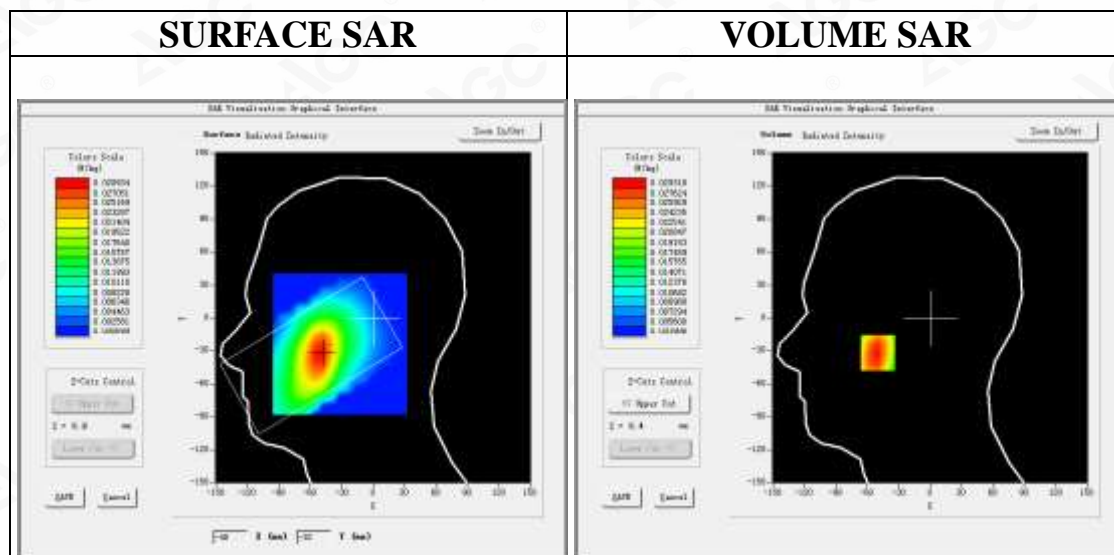
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA BAND VIII Low-Touch-Left/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ WCDMA BAND VIII Low-Touch-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

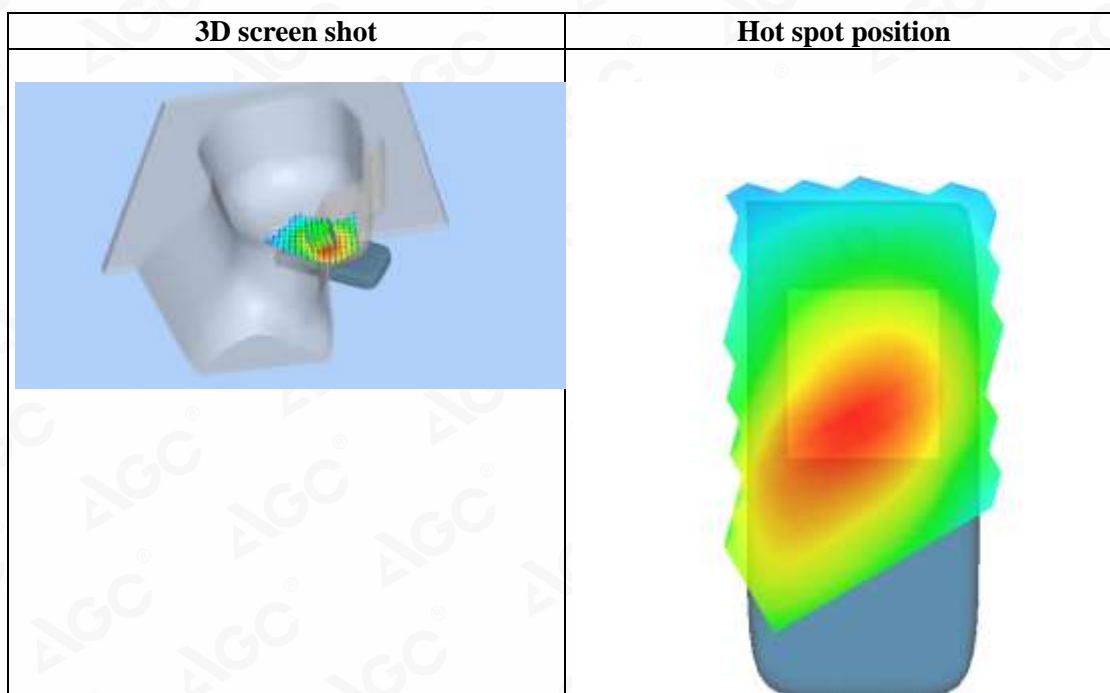
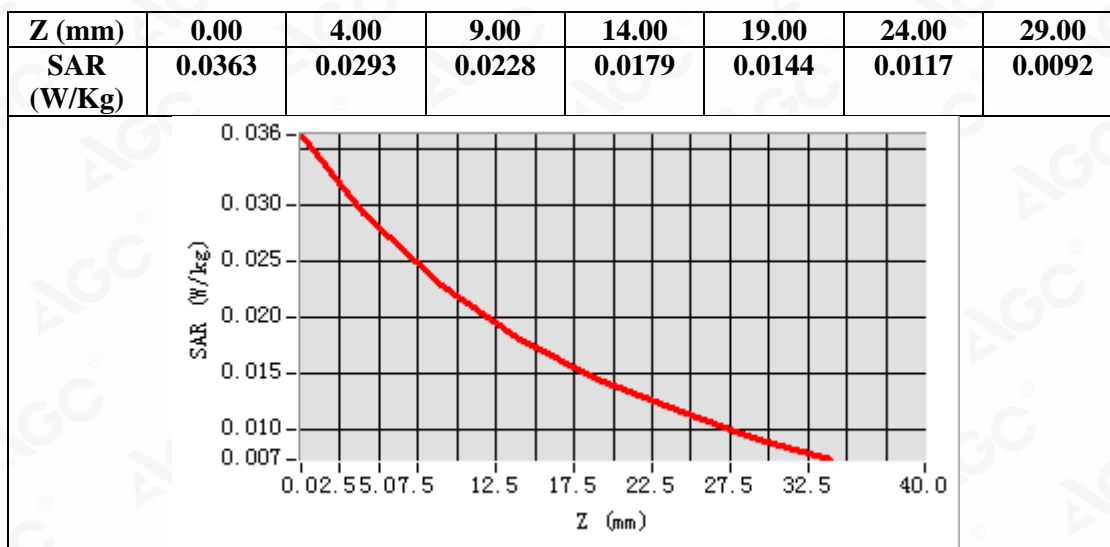
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | WCDMA BAND VIII |
| Channels | Low |
| Signal | CDMA (Crest factor: 1.0) |



Maximum location: X=-50.00, Y=-32.00

SAR Peak: 0.04 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.020700 |
| SAR 1g (W/Kg) | 0.028290 |



Test Laboratory: AGC Lab
WCDMA Band VIII High-Touch-Left (RMC)
DUT: Smart Phone; Type: P30

Date: Sep. 20,2019

Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.36
Frequency: 912.6MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.96$ mho/m; $\epsilon_r=40.57$; $\rho=1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

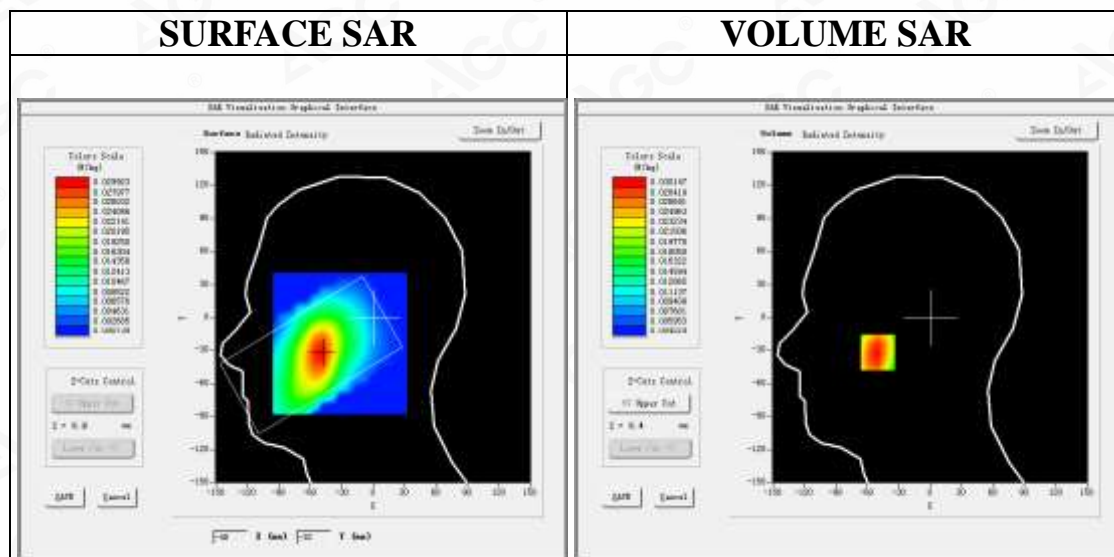
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA BAND VIII High-Touch-Left/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ WCDMA BAND VIII High-Touch-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

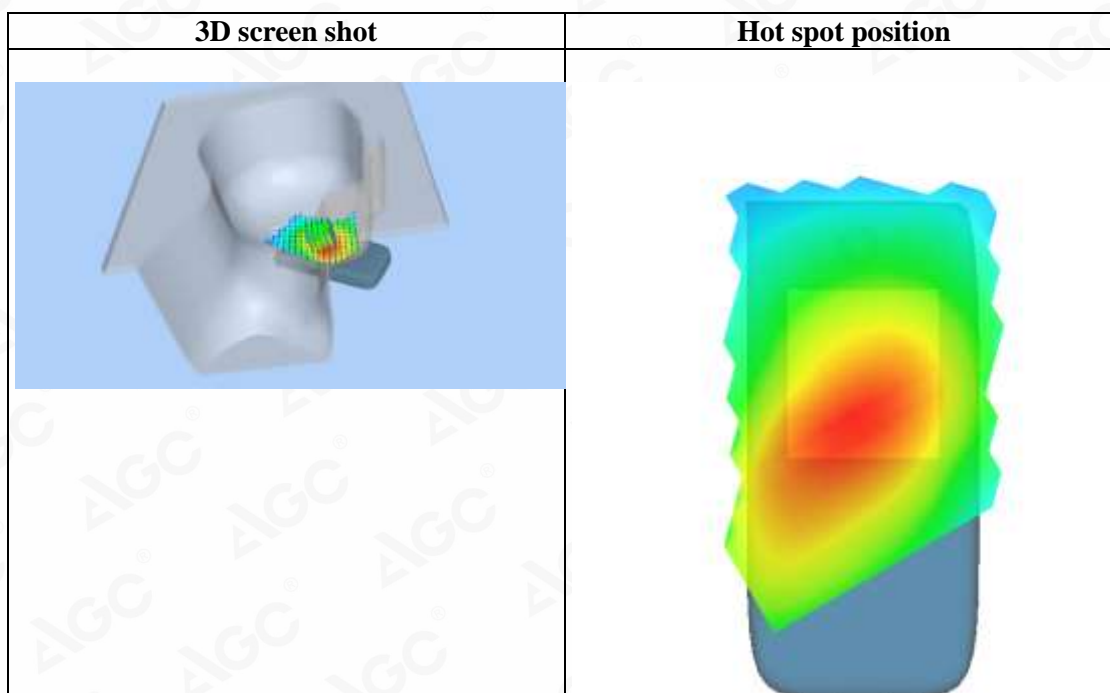
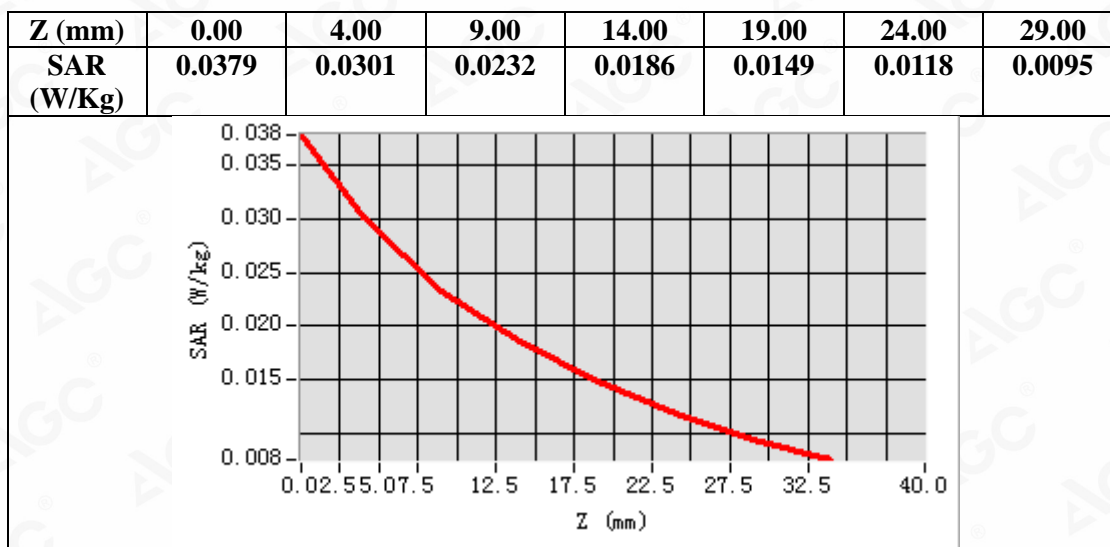
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | WCDMA BAND VIII |
| Channels | High |
| Signal | CDMA (Crest factor: 1.0) |



Maximum location: X=-50.00, Y=-32.00

SAR Peak: 0.04 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.021402 |
| SAR 1g (W/Kg) | 0.029345 |



Test Laboratory: AGC Lab
WCDMA Band VIII Mid-Body-Towards Grounds (RMC)
DUT: Smart Phone; Type: P30

Date: Sep. 20,2019

Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.36
Frequency: 897.6 MHz; Medium parameters used: $f = 900$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 40.57$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 20.6, Liquid temperature (°C): 20.3

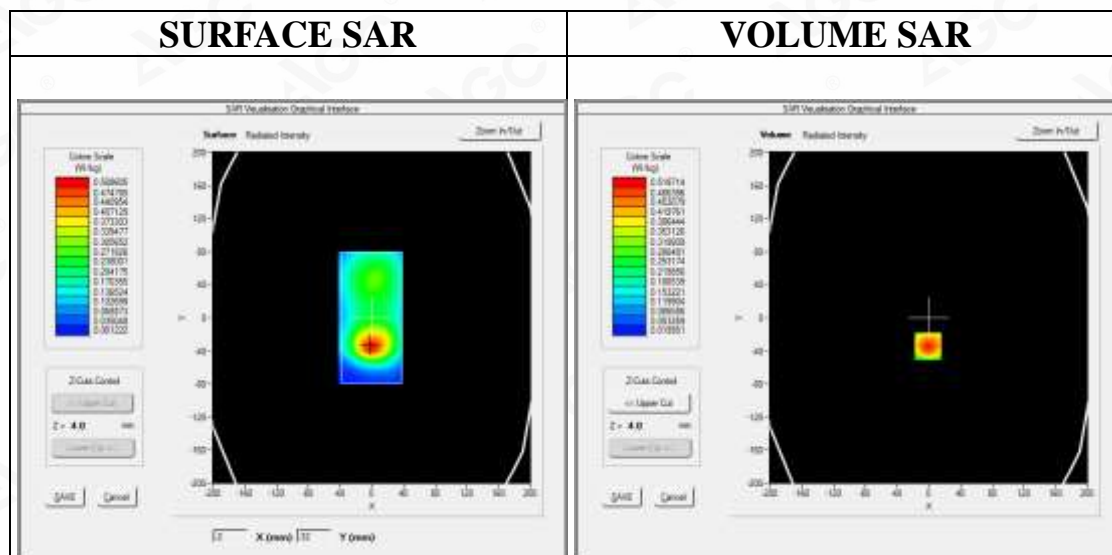
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA BAND VIII Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ WCDMA BAND VIII Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

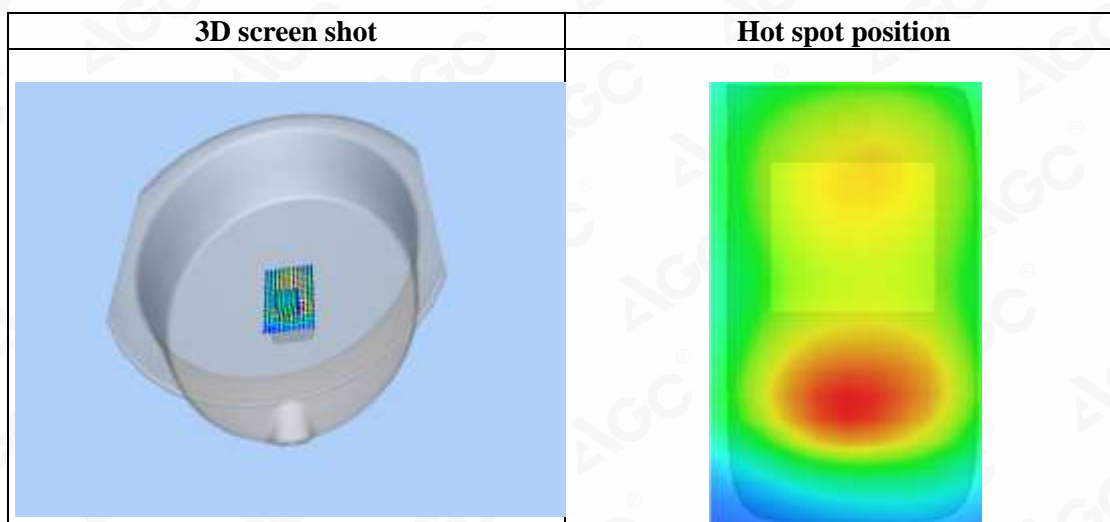
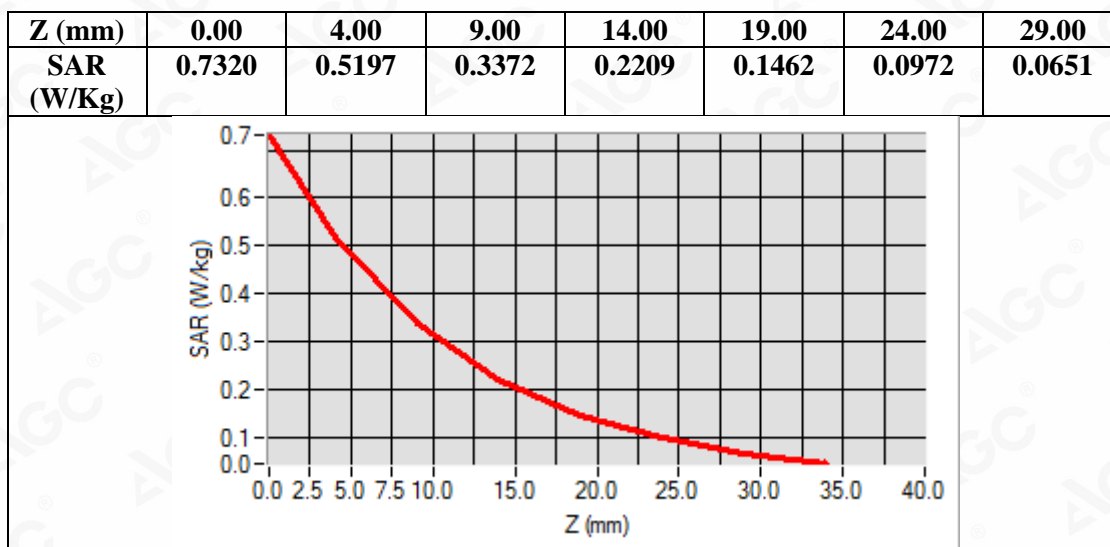
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| Zoom Scan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | WCDMA BAND VIII |
| Channels | Middle |
| Signal | CDMA (Crest factor: 1.0) |



Maximum location: X=-1.00, Y=-34.00

SAR Peak: 0.76 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.307946 |
| SAR 1g (W/Kg) | 0.500688 |



Test Laboratory: AGC Lab
LTE Band 1 Mid-Touch-Left(1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 19,2019

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=4.79;
Frequency: 1950MHz; Medium parameters used: $f = 1950 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.63$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Left Section
Ambient temperature ($^{\circ}\text{C}$):21.5, Liquid temperature ($^{\circ}\text{C}$):21.3

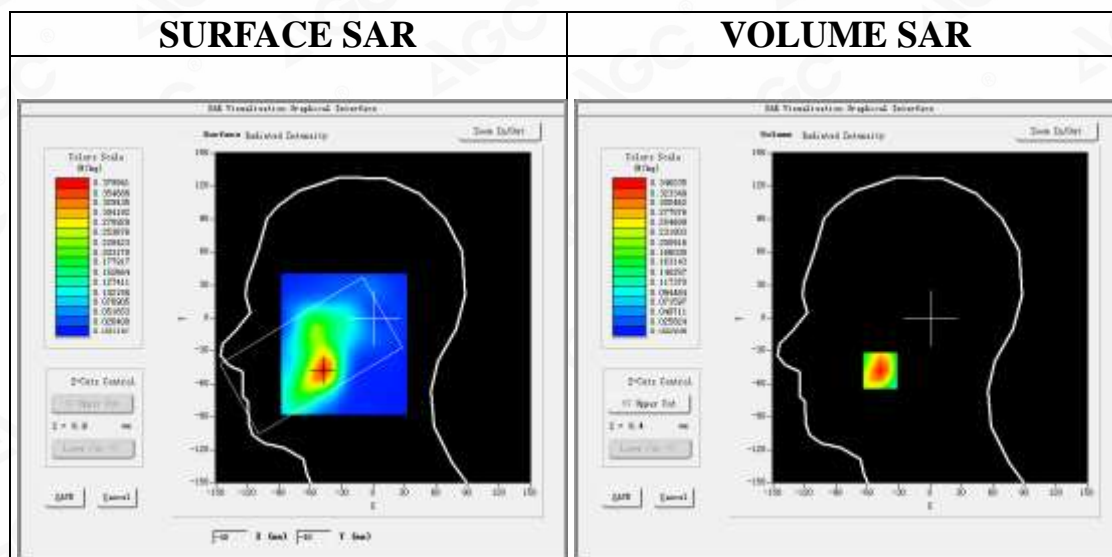
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/LTE BAND 1 Mid- Touch-Left /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 Mid- Touch-Left /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | LTE Band 1 |
| Channels | Middle |
| Signal | OFDM (Crest factor: 1.0) |

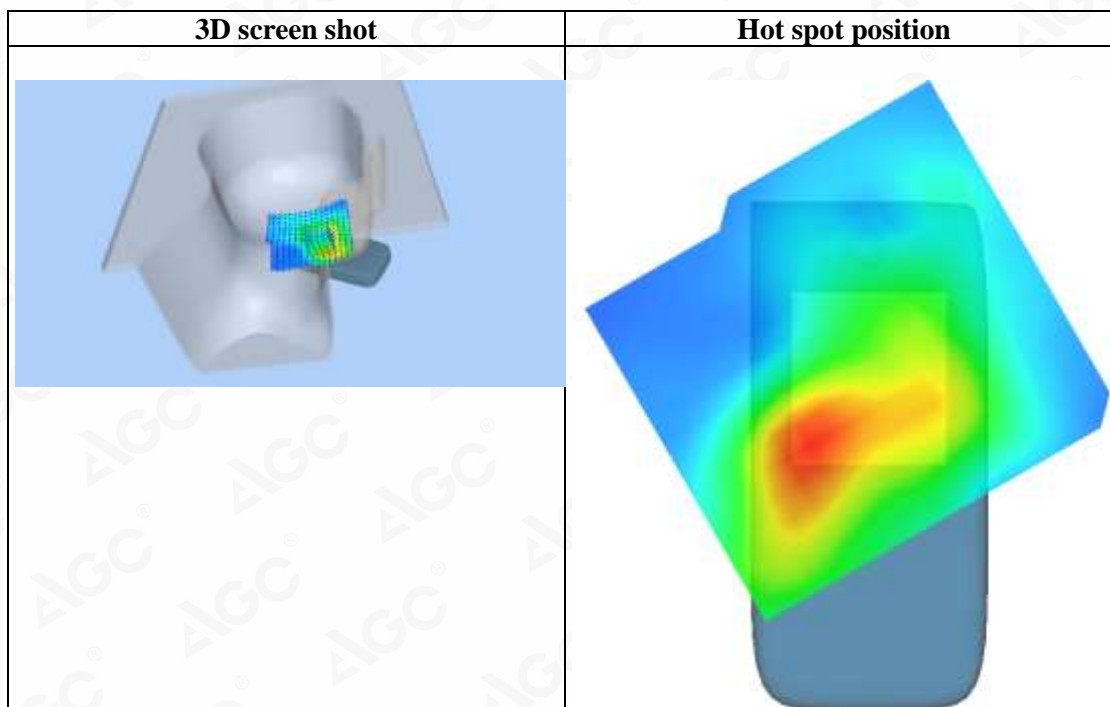
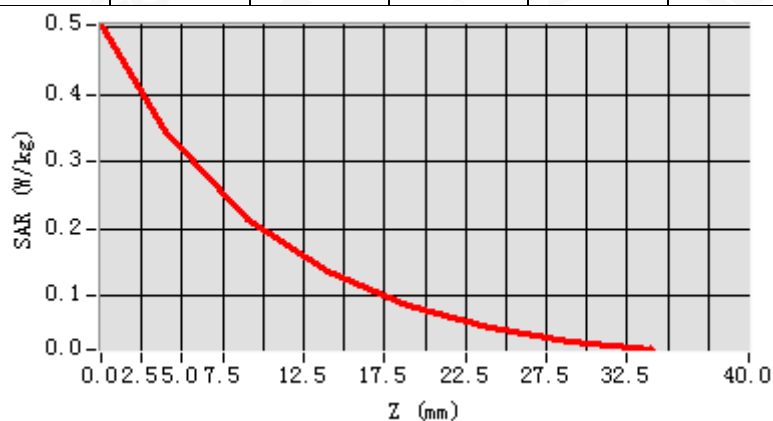


Maximum location: X=-48.00, Y=-48.00

SAR Peak: 0.51 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.185798 |
| SAR 1g (W/Kg) | 0.328723 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.5029 | 0.3462 | 0.2149 | 0.1368 | 0.0851 | 0.0533 | 0.0329 |



Test Laboratory: AGC Lab
LTE Band 1 High-Touch-Left(1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 19,2019

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=4.79;
Frequency: 1970 MHz; Medium parameters used: $f = 1950$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.63$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C):21.5, Liquid temperature (°C):21.3

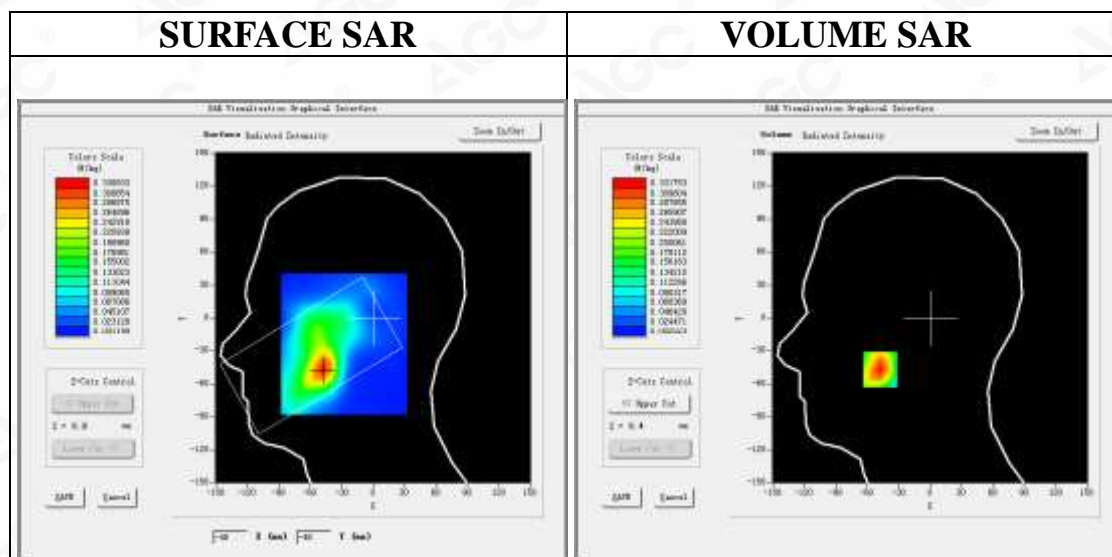
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/LTE BAND 1 High- Touch-Left /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 High- Touch-Left /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | LTE Band 1 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |

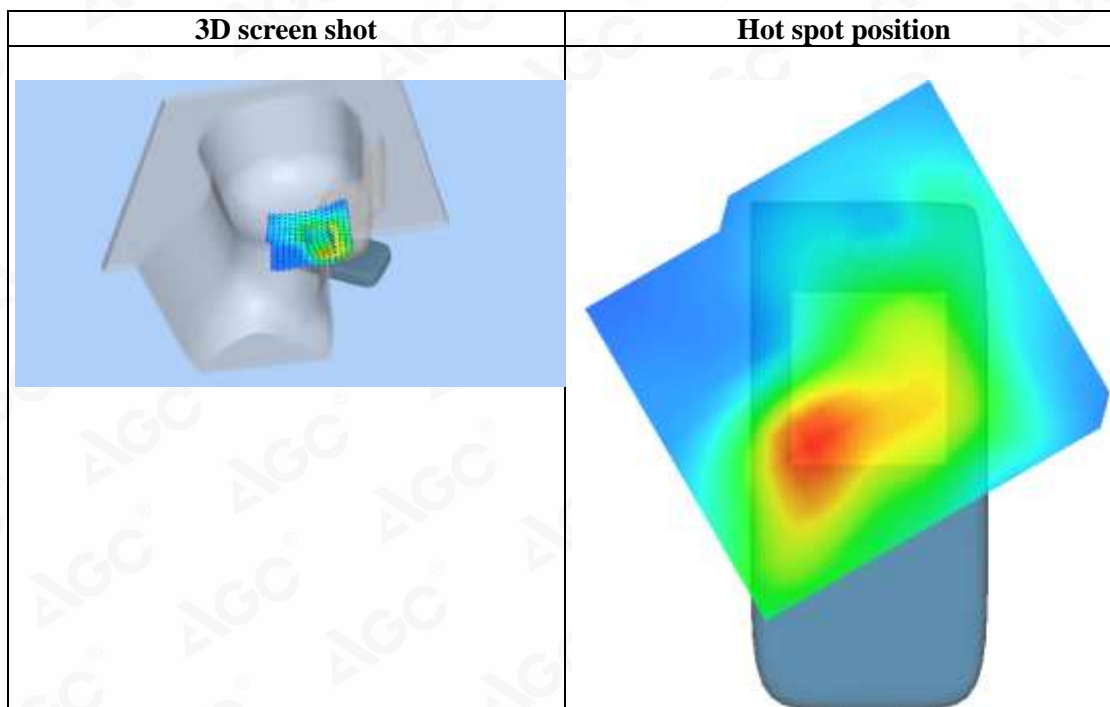
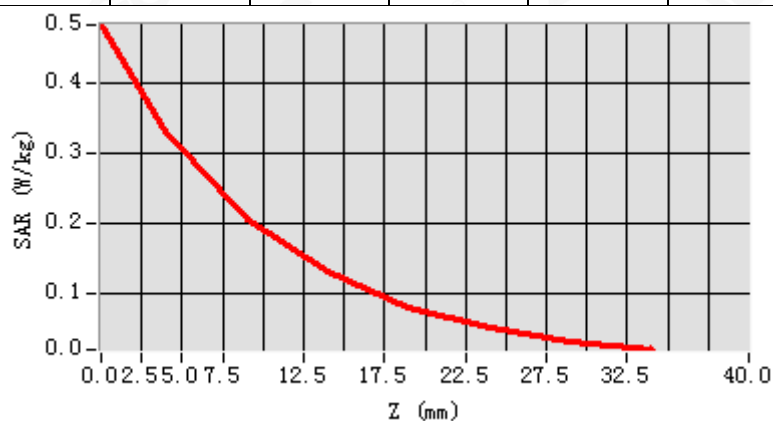


Maximum location: X=-48.00, Y=-47.00

SAR Peak: 0.49 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.176408 |
| SAR 1g (W/Kg) | 0.313130 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.4832 | 0.3318 | 0.2045 | 0.1293 | 0.0792 | 0.0488 | 0.0298 |



Test Laboratory: AGC Lab
LTE Band 1 Mid-Body-Front (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 19,2019

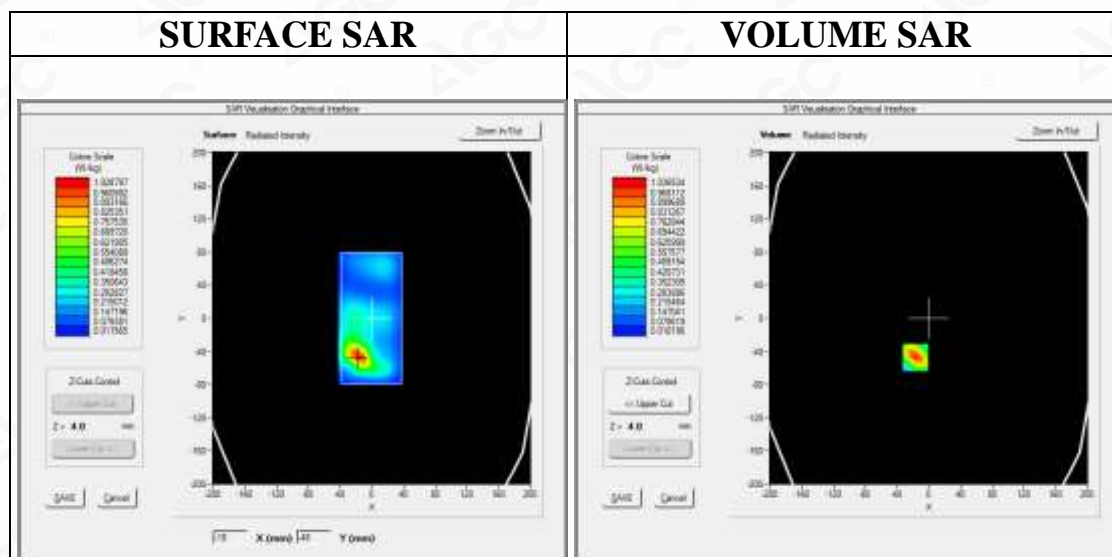
Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=4.79;
Frequency: 1950MHz; Medium parameters used: $f = 1950 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.63$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Flat Section
Ambient temperature ($^{\circ}\text{C}$):21.5, Liquid temperature ($^{\circ}\text{C}$):21.3

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/LTE BAND 1 Mid-Body-Front /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/LTE BAND 1 Mid-Body-Front /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Front |
| Band | LTE Band 1 |
| Channels | Middle |
| Signal | OFDM (Crest factor: 1.0) |

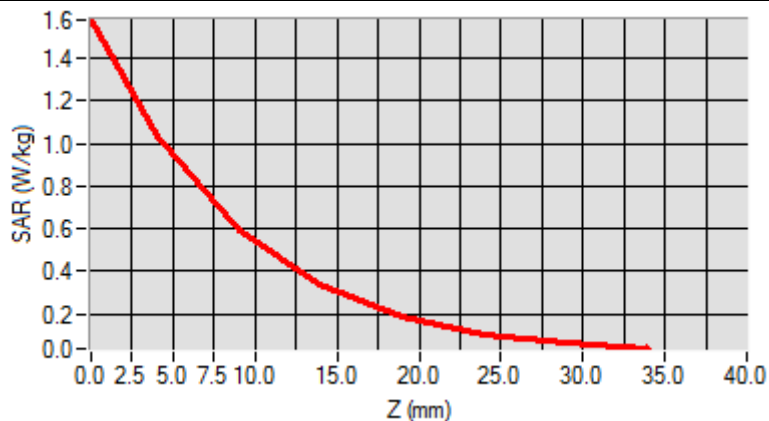


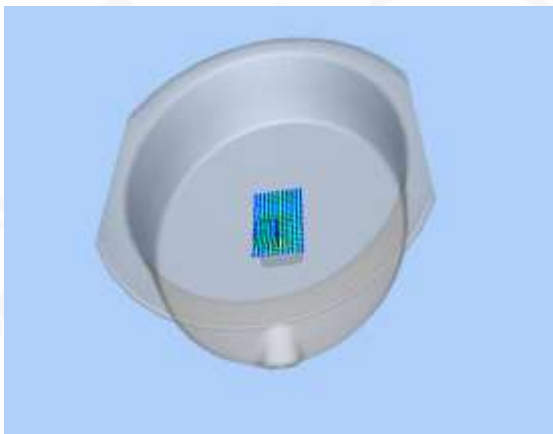
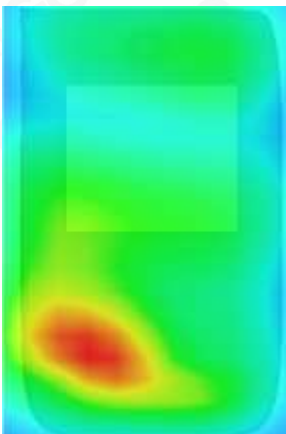
Maximum location: X=-17.00, Y=-47.00

SAR Peak: 1.60 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.514943 |
| SAR 1g (W/Kg) | 0.970889 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 1.5812 | 1.0365 | 0.5925 | 0.3342 | 0.1888 | 0.1074 | 0.0631 |



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

Test Laboratory: AGC Lab
LTE Band 3 High-Touch-Right (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

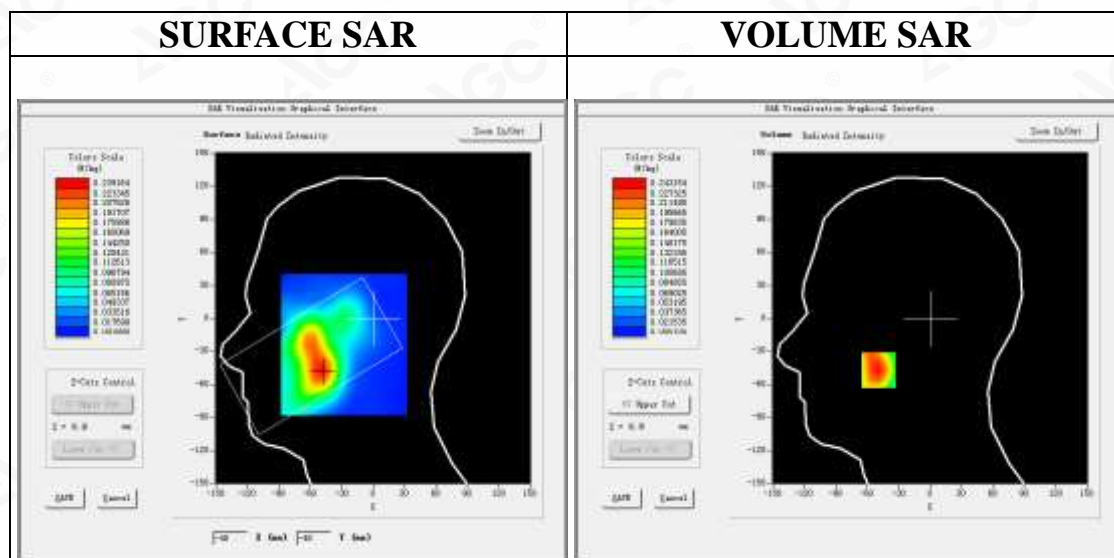
Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68
Frequency: 1775 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Right Section
Ambient temperature (°C):20.9, Liquid temperature (°C):20.6

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/LTE Band 3 High- Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/LTE Band 3 High- Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Right head |
| Device Position | Cheek |
| Band | LTE Band 3 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |

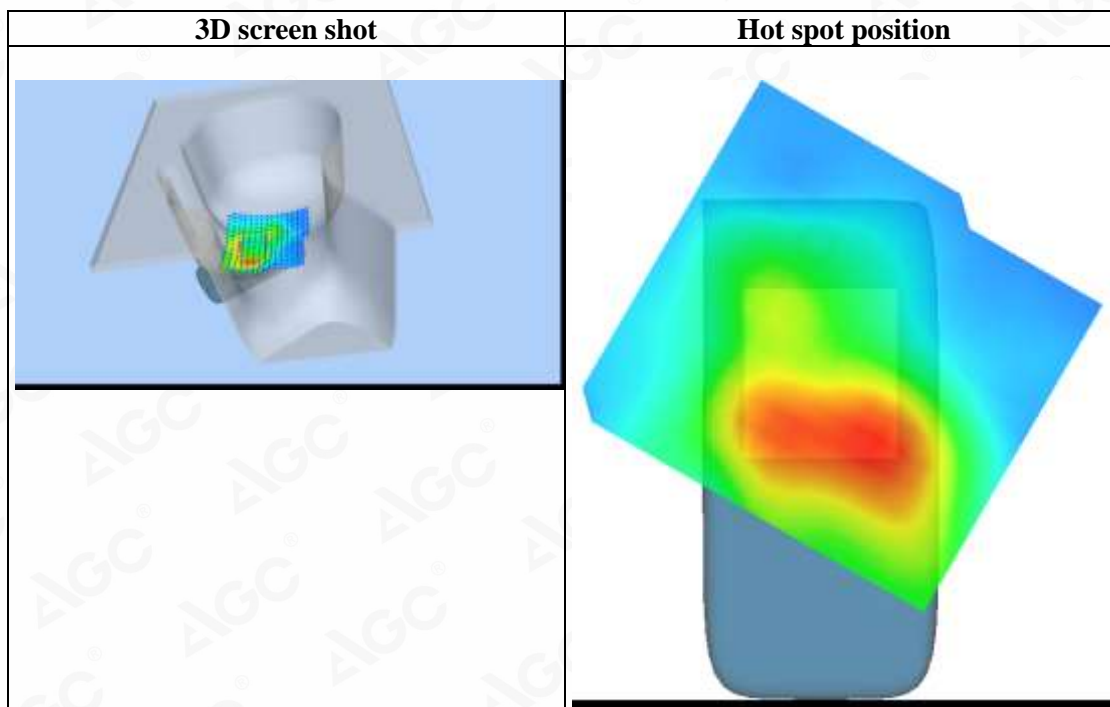
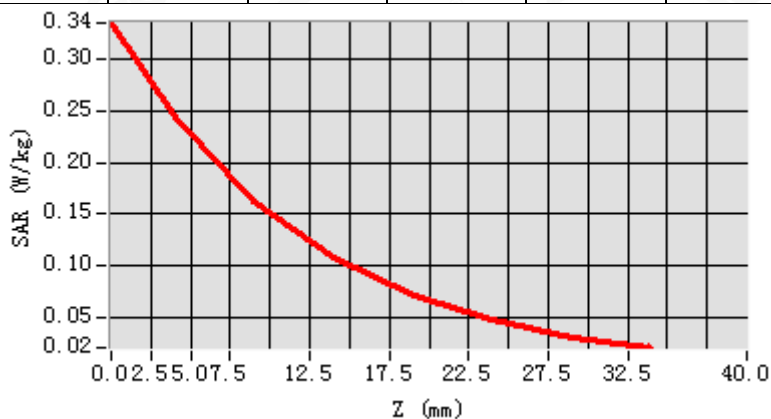


Maximum location: X=-49.00, Y=-47.00

SAR Peak: 0.34 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.145353 |
| SAR 1g (W/Kg) | 0.232440 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.3351 | 0.2432 | 0.1614 | 0.1081 | 0.0709 | 0.0469 | 0.0305 |



Test Laboratory: AGC Lab
LTE Band 3 High-Body-Back(1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 11,2019

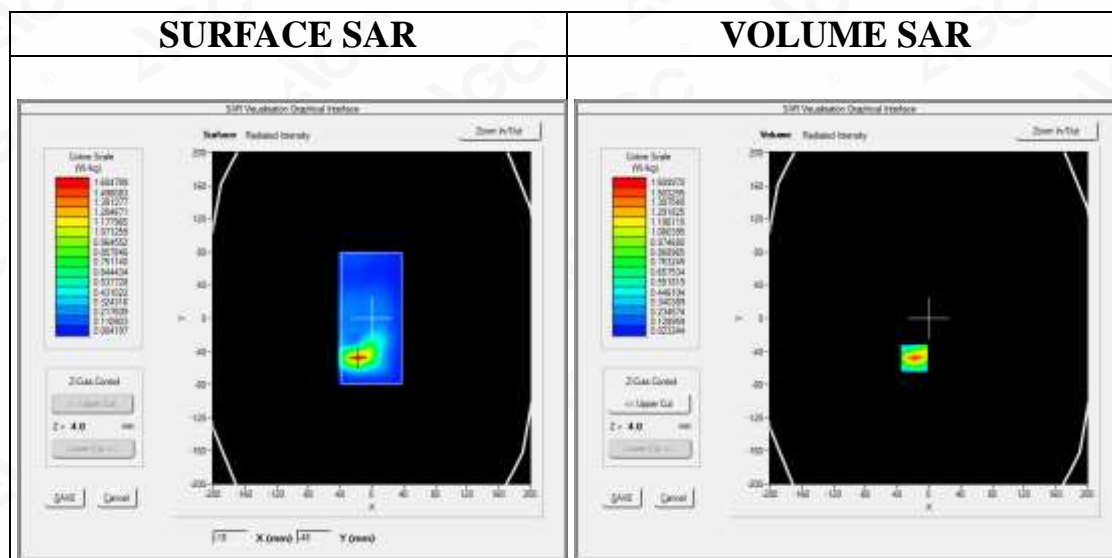
Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68
Frequency: 1775 MHz; Medium parameters used: $f = 1750$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.84$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):20.9, Liquid temperature (°C):20.6

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/LTE Band 3 High-Body-back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/LTE Band 3 High-Body-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | LTE Band 3 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |

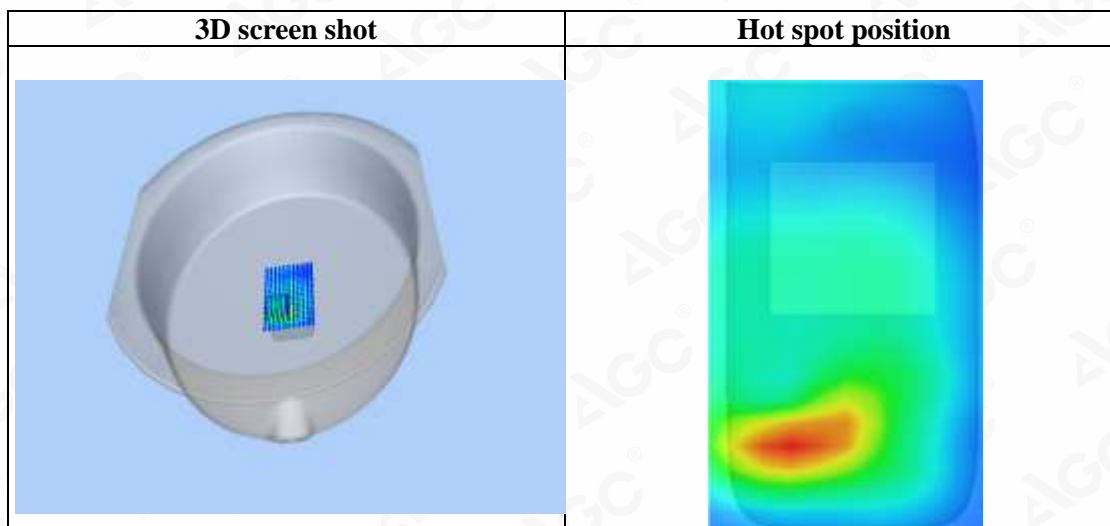
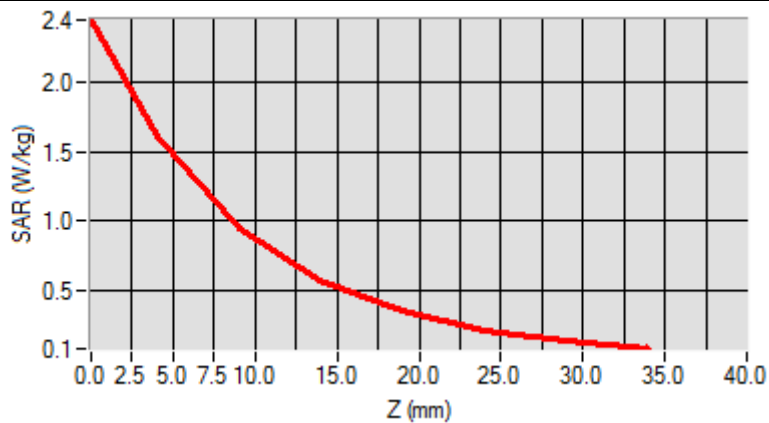


Maximum location: X=-18.00, Y=-48.00

SAR Peak: 2.44 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.755350 |
| SAR 1g (W/Kg) | 1.464654 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 2.4454 | 1.6090 | 0.9405 | 0.5759 | 0.3479 | 0.2130 | 0.1316 |



Test Laboratory: AGC Lab
LTE Band 7 Mid-Tilt-Left (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 10,2019

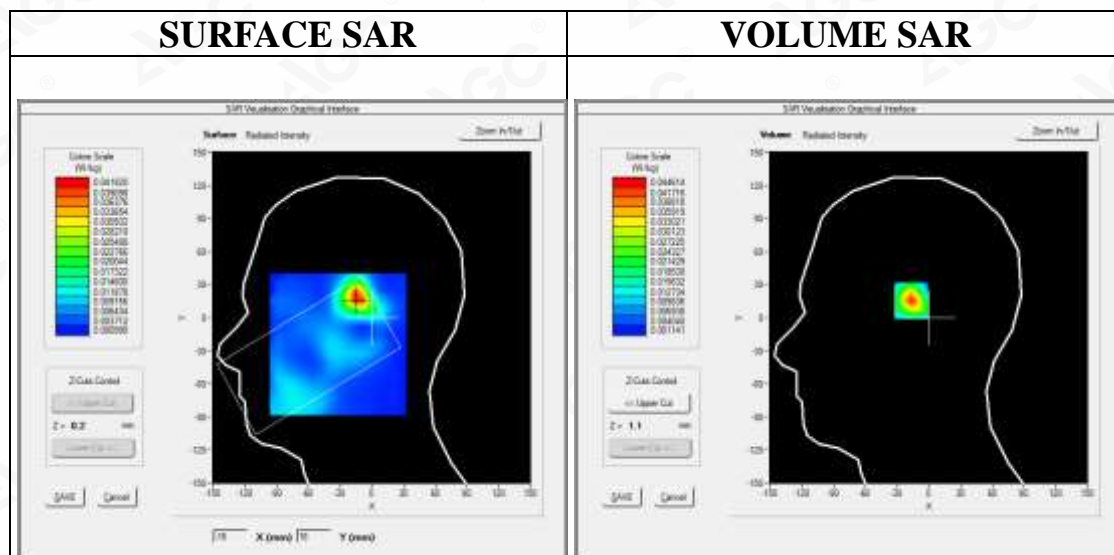
Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.45
Frequency: 2535MHz; Medium parameters used: $f = 2600$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 38.25$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.5, Liquid temperature (°C): 20.2

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 7 Mid-Tilt-Left/Area Scan: Measurement grid: dx=8mm, y=8mm
Configuration/ LTE BAND 7 Mid-Tilt-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Tilt |
| Band | LTE BAND 7 |
| Channels | Middle |
| Signal | OFDM (Crest factor: 1.0) |

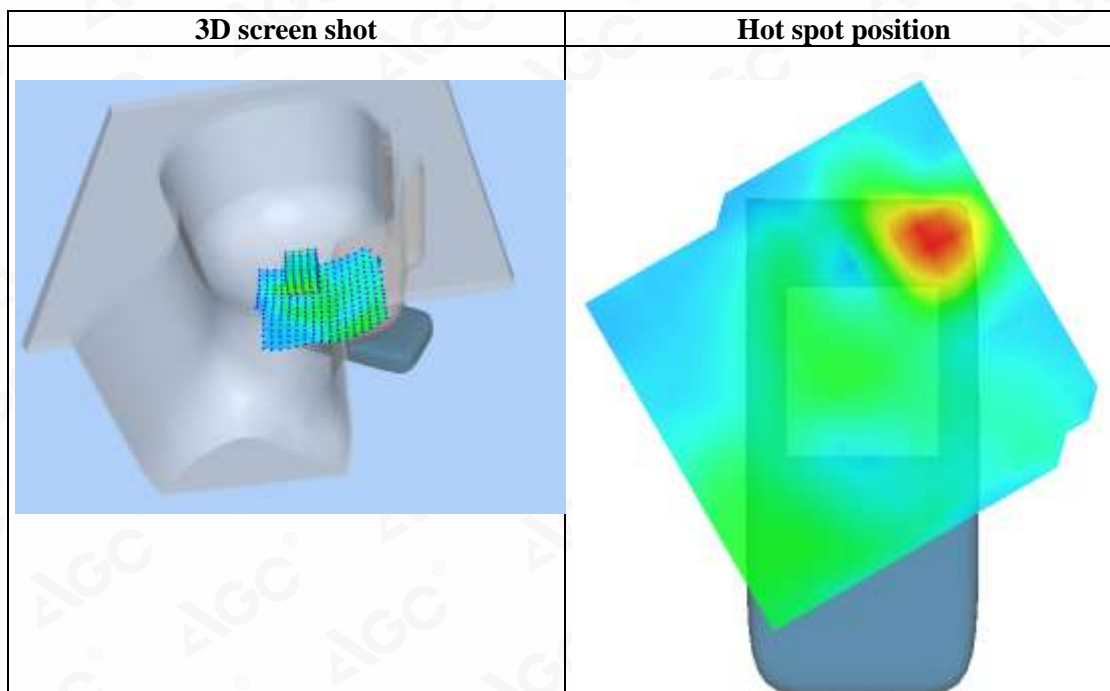
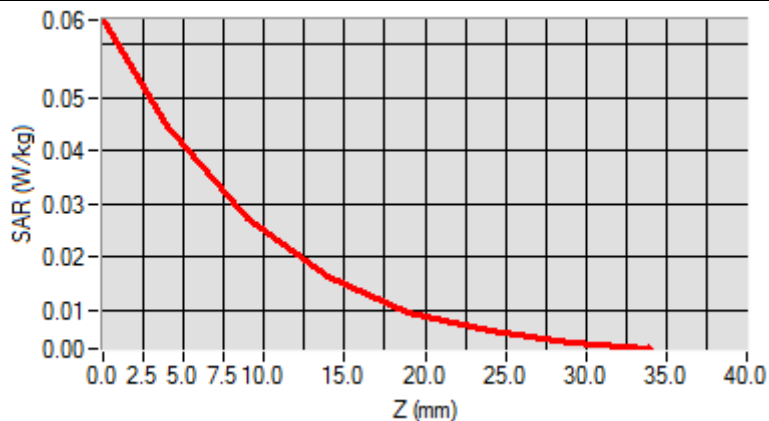


Maximum location: X=-14.00, Y=18.00

SAR Peak: 0.06 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.020478 |
| SAR 1g (W/Kg) | 0.040400 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0645 | 0.0446 | 0.0273 | 0.0161 | 0.0095 | 0.0061 | 0.0039 |



Test Laboratory: AGC Lab
LTE Band 7 High-Tilt-Left (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 10,2019

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.45
Frequency: 2560 MHz; Medium parameters used: $f=2600$ MHz; $\sigma=1.89$ mho/m; $\epsilon_r=38.25$; $\rho=1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C): 20.5, Liquid temperature (°C): 20.2

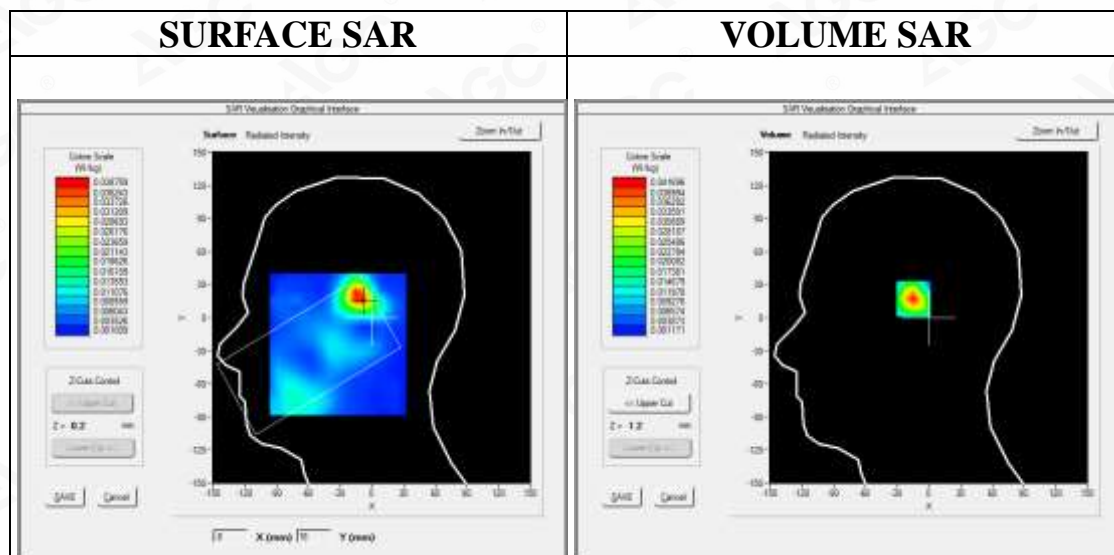
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 7 High-Tilt-Left/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Tilt-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Tilt |
| Band | LTE BAND 7 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |

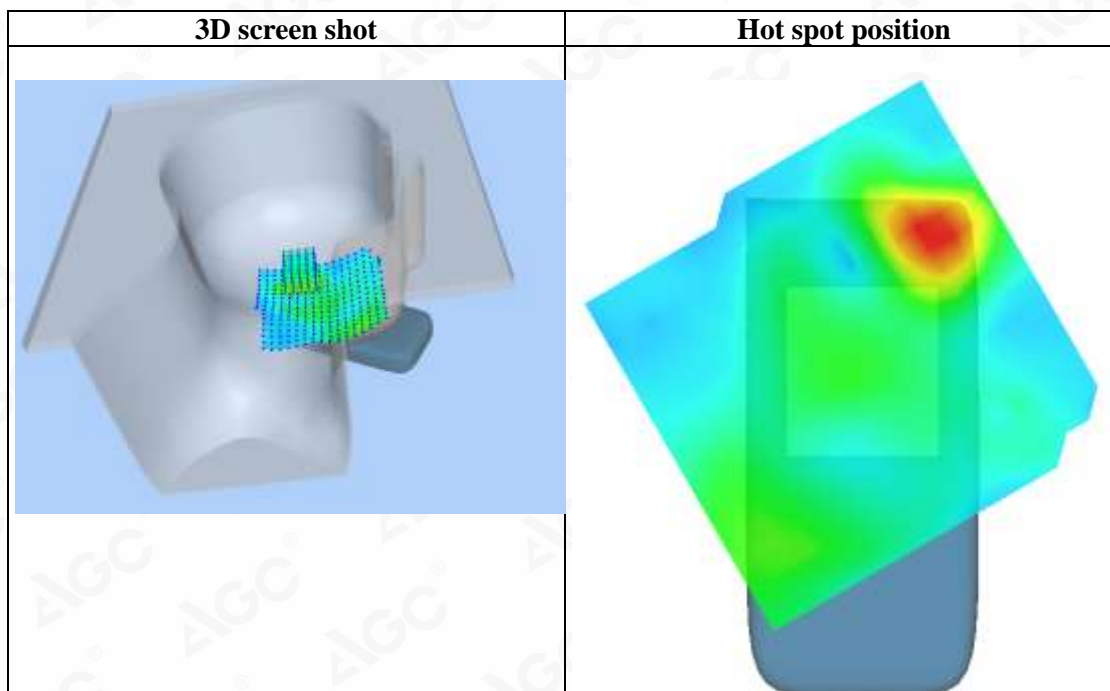
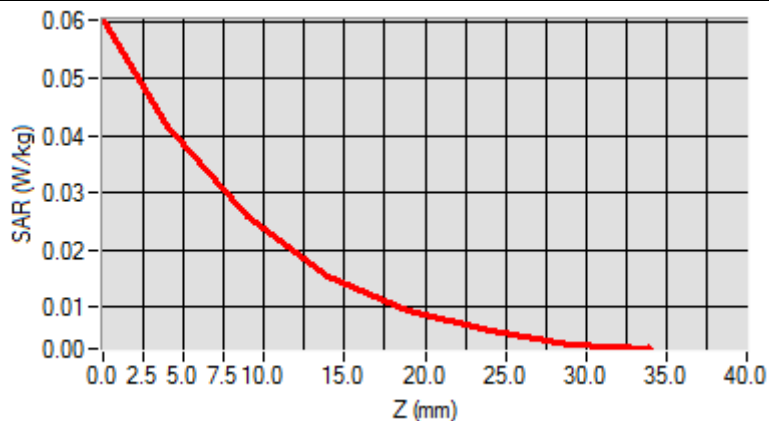


Maximum location: X=-12.00, Y=19.00

SAR Peak: 0.06 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.019582 |
| SAR 1g (W/Kg) | 0.038004 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.0603 | 0.0417 | 0.0258 | 0.0154 | 0.0092 | 0.0057 | 0.0035 |



Test Laboratory: AGC Lab
LTE Band 7 High-Body-Back (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 10,2019

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.45
Frequency: 2560 MHz; Medium parameters used: $f=2600$ MHz; $\sigma=1.89$ mho/m; $\epsilon_r=38.25$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 20.5, Liquid temperature (°C): 20.2

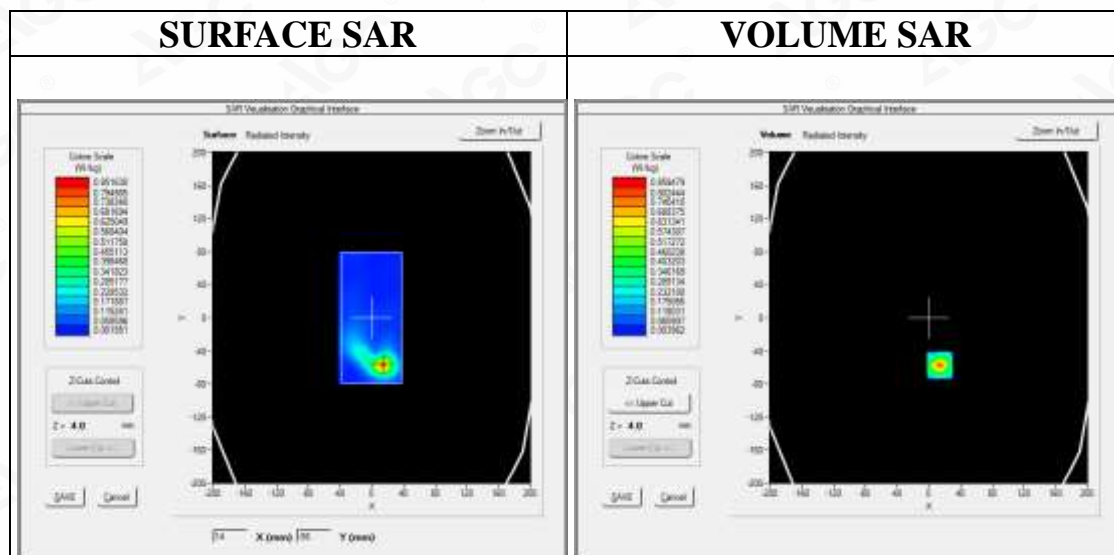
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 7 High-Body-Back /Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | LTE BAND 7 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |

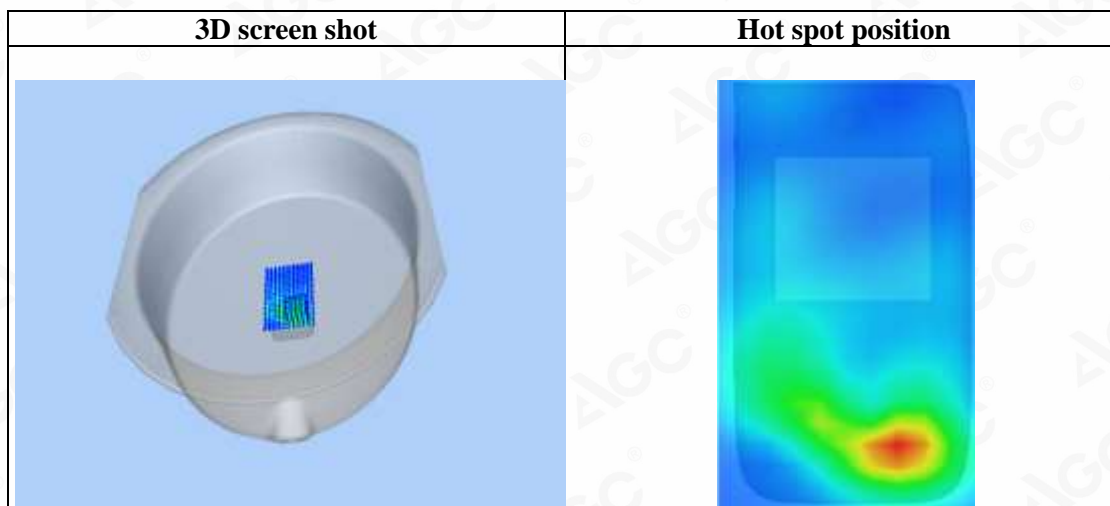
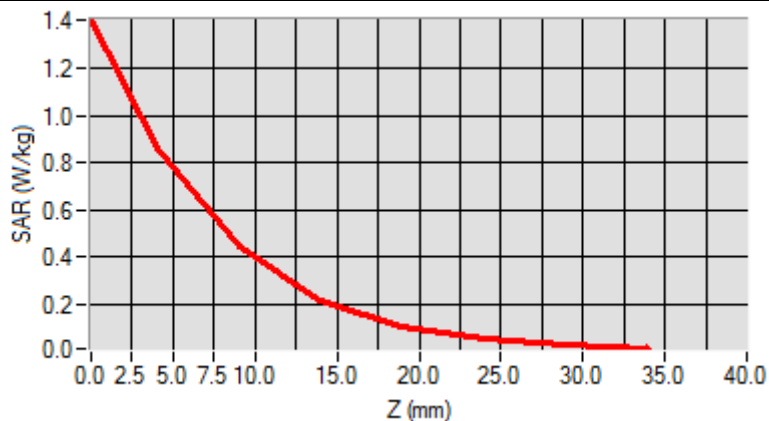


Maximum location: X=14.00, Y=-57.00

SAR Peak: 1.39 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.320398 |
| SAR 1g (W/Kg) | 0.751227 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 1.4022 | 0.8595 | 0.4420 | 0.2200 | 0.1103 | 0.0543 | 0.0278 |



Test Laboratory: AGC Lab
LTE Band 8 Mid-Touch-Right (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 18,2019

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.36
Frequency: 897.5MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.98$ mho/m; $\epsilon_r=41.59$; $\rho=1000$ kg/m³ ;
Phantom section: Right Section
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.1

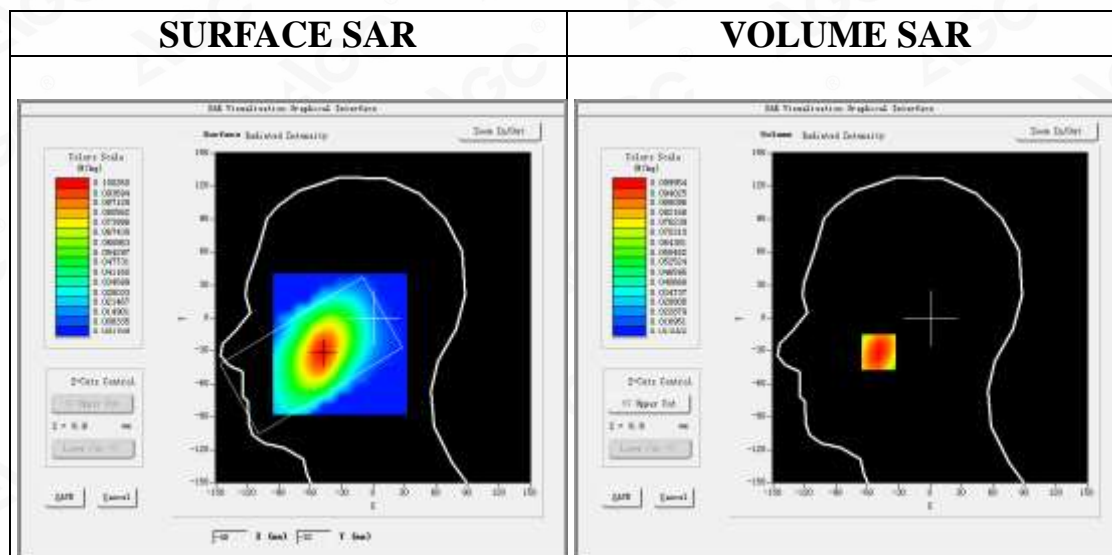
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 8 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Right head |
| Device Position | Cheek |
| Band | LTE BAND 8 |
| Channels | Middle |
| Signal | OFDM (Crest factor: 1.0) |

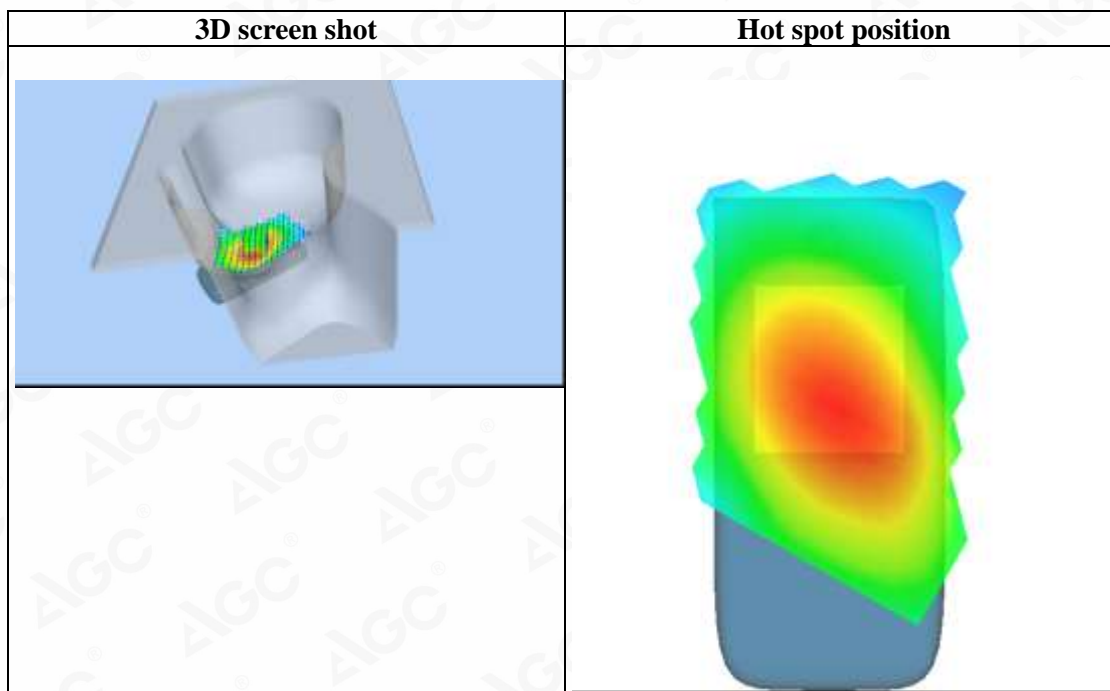
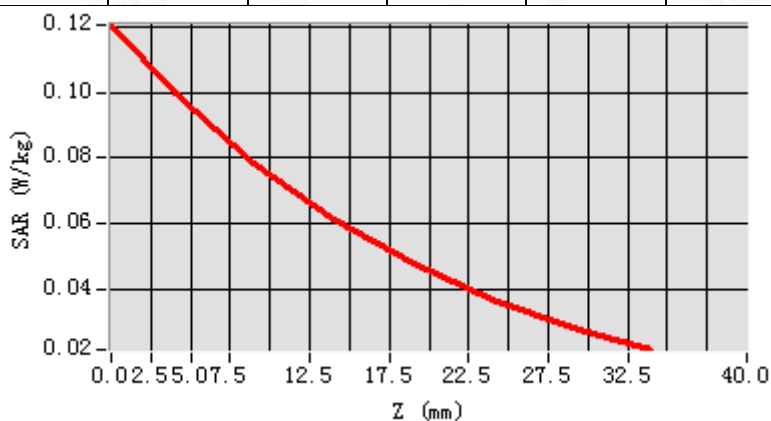


Maximum location: X=-49.00, Y=-31.00

SAR Peak: 0.12 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.070795 |
| SAR 1g (W/Kg) | 0.096605 |

| Z (mm) | 0.00 | 4.00 | 9.00 | 14.00 | 19.00 | 24.00 | 29.00 |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 0.1204 | 0.1000 | 0.0787 | 0.0617 | 0.0480 | 0.0370 | 0.0286 |



Test Laboratory: AGC Lab
LTE Band 8 Mid-Body-Back (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 18,2019

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.36
Frequency: 897.5MHz; Medium parameters used: $f = 900$ MHz; $\sigma=0.98$ mho/m; $\epsilon_r=41.59$; $\rho=1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.1

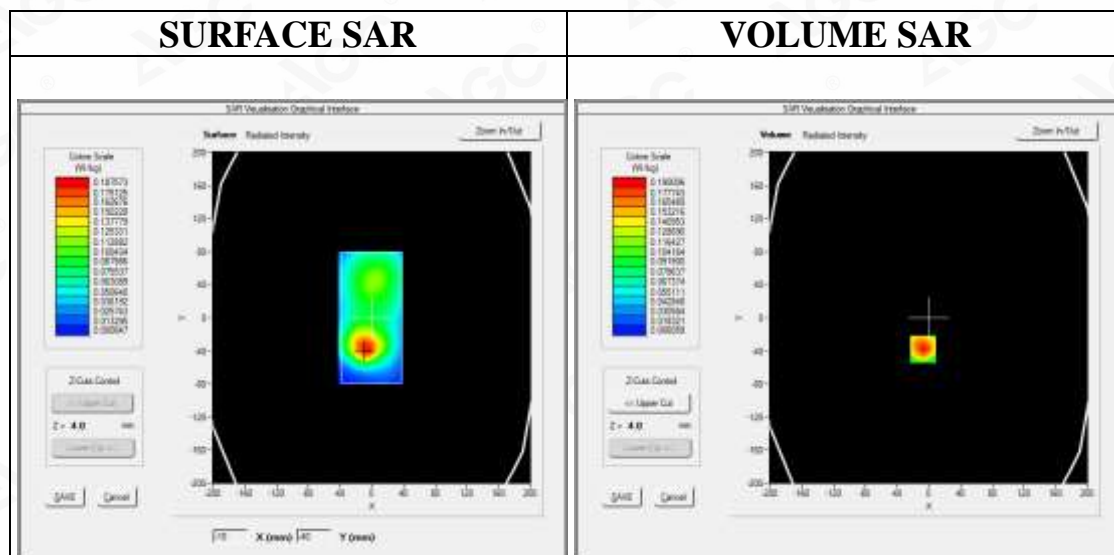
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 8 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Mid-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

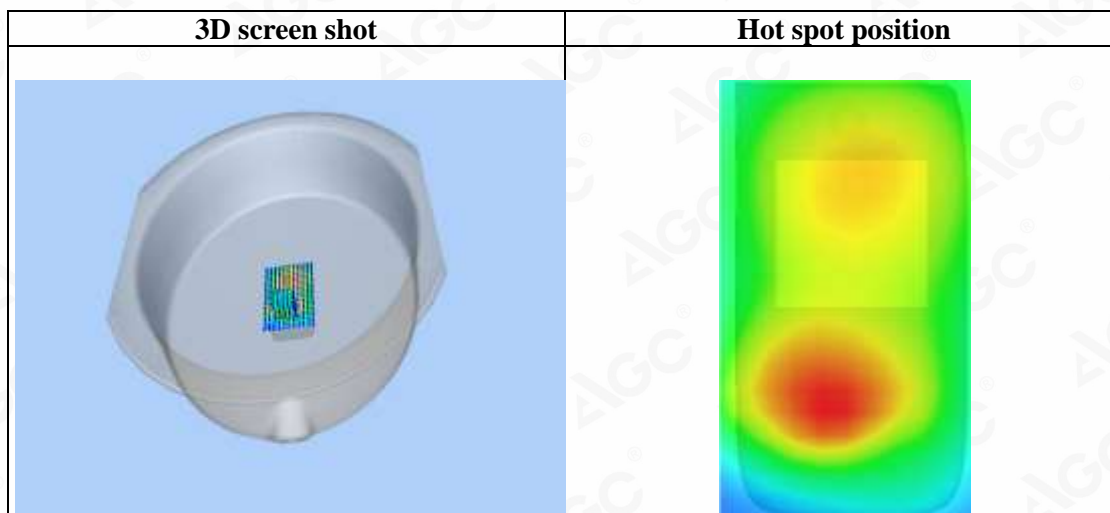
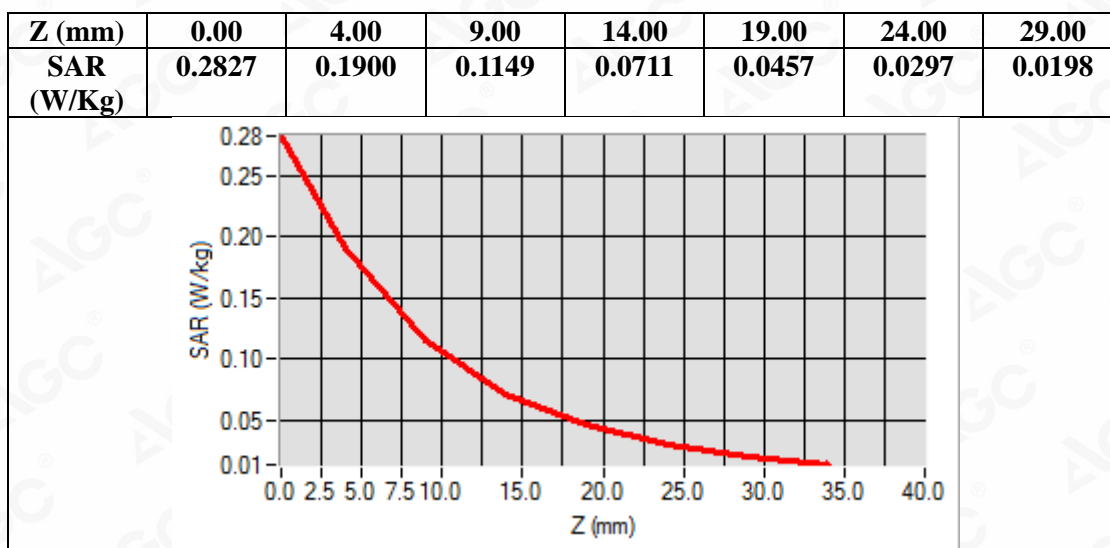
| | |
|-----------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | LTE BAND 8 |
| Channels | Middle |
| Signal | OFDM (Crest factor: 1.0) |



Maximum location: X=-7.00, Y=-38.00

SAR Peak: 0.29 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.110252 |
| SAR 1g (W/Kg) | 0.182936 |



Test Laboratory: AGC Lab
LTE Band 20 High-Touch-Left (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 09,2019

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.82
Frequency: 852 MHz; Medium parameters used: $f = 835\text{MHz}$; $\sigma=0.87\text{ mho/m}$; $\epsilon_r=41.26$; $\rho= 1000\text{ kg/m}^3$;
Phantom section: Left Section
Ambient temperature ($^{\circ}\text{C}$): 21.3, Liquid temperature ($^{\circ}\text{C}$): 21.0

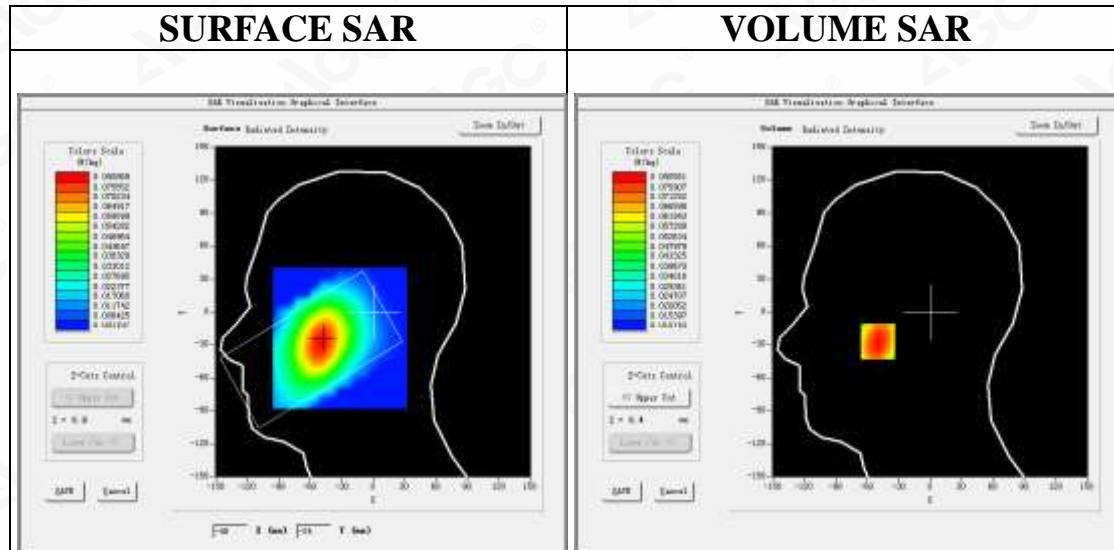
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 10,2018; Serial No.: SN 14/16 EP308
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 20 High-Touch-Left /Area Scan: Measurement grid: $dx=8\text{mm}$, $y=8\text{mm}$

Configuration/ LTE BAND 20 High-Touch-Left /Zoom Scan: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

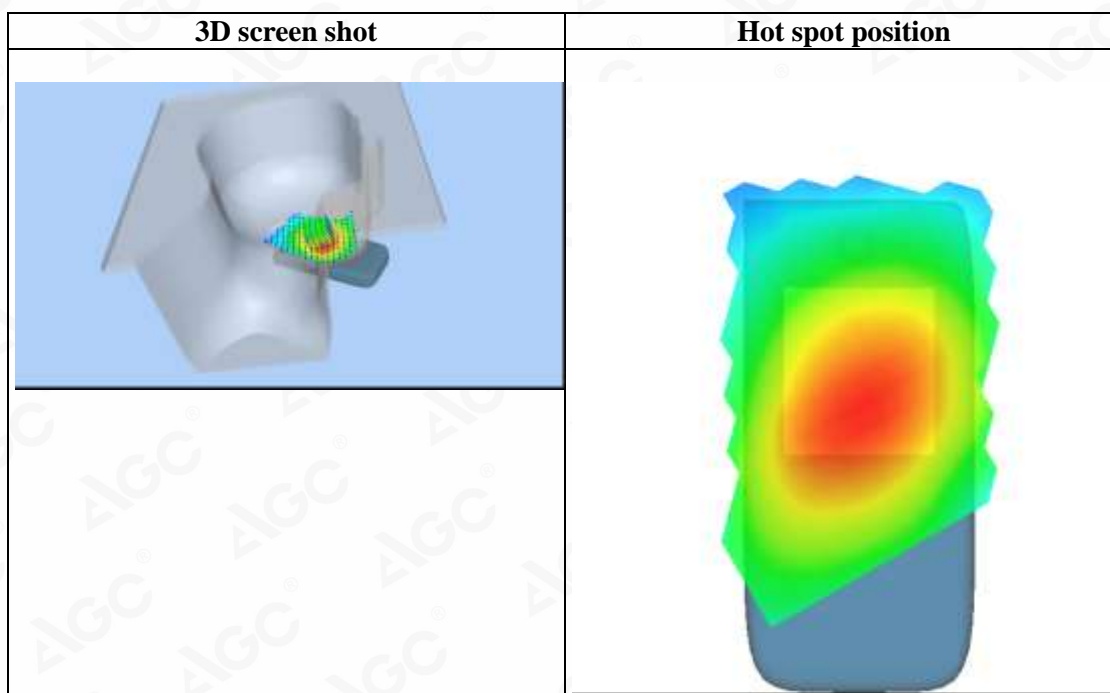
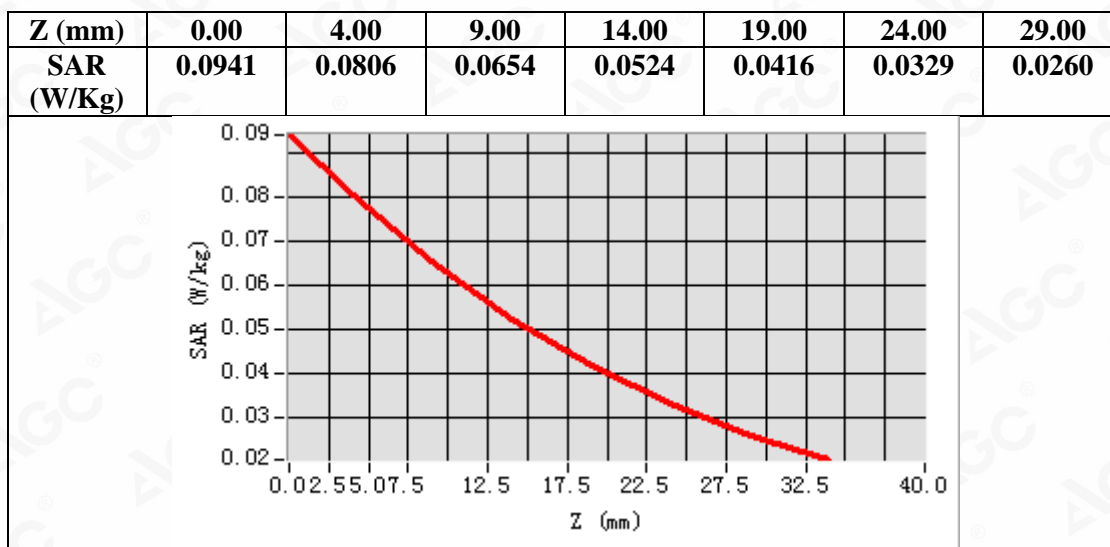
| | |
|-----------------|-----------------------------------------------------------------------|
| Area Scan | $dx=8\text{mm}$ $dy=8\text{mm}$, $h= 5.00\text{ mm}$ |
| ZoomScan | $5\times 5\times 7$, $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$ |
| Phantom | Left head |
| Device Position | Cheek |
| Band | LTE BAND 20 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |



Maximum location: X=-50.00, Y=-27.00

SAR Peak: 0.10 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.058530 |
| SAR 1g (W/Kg) | 0.077906 |



Test Laboratory: AGC Lab
LTE Band 20 High-Body-Back (1RB#0)
DUT: Smart Phone; Type: P30

Date: Sep. 09,2019

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.82
Frequency: 852MHz; Medium parameters used: $f = 835\text{MHz}$; $\sigma = 0.87 \text{ mho/m}$; $\epsilon_r = 41.26$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Flat Section
Ambient temperature ($^{\circ}\text{C}$): 21.3, Liquid temperature ($^{\circ}\text{C}$): 21.0

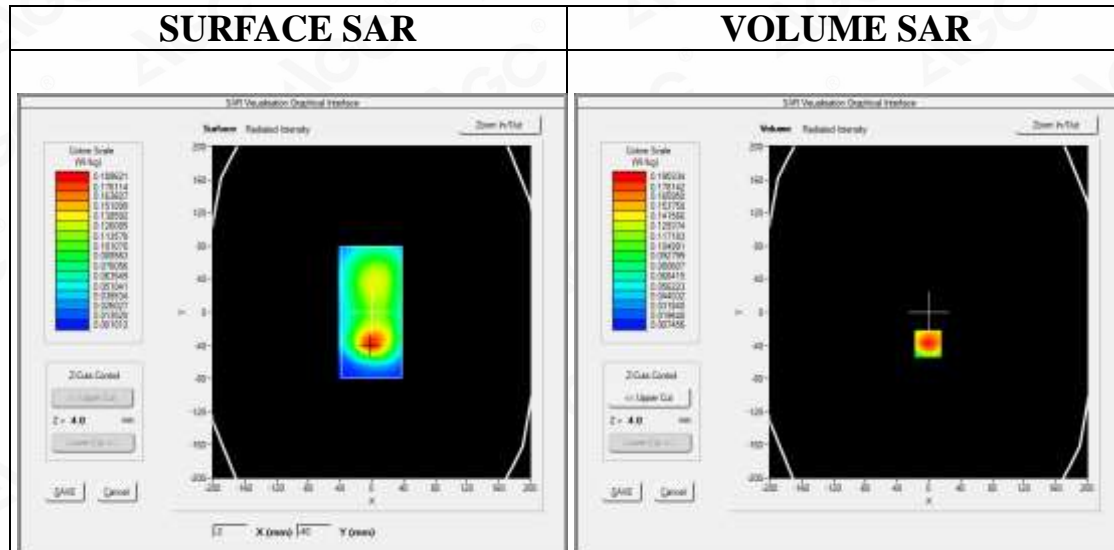
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 10,2018; Serial No.: SN 14/16 EP308
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE BAND 20 High-Body-Back /Area Scan: Measurement grid: $dx=8\text{mm}$, $y=8\text{mm}$

Configuration/ LTE BAND 20 High-Body-Back /Zoom Scan: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

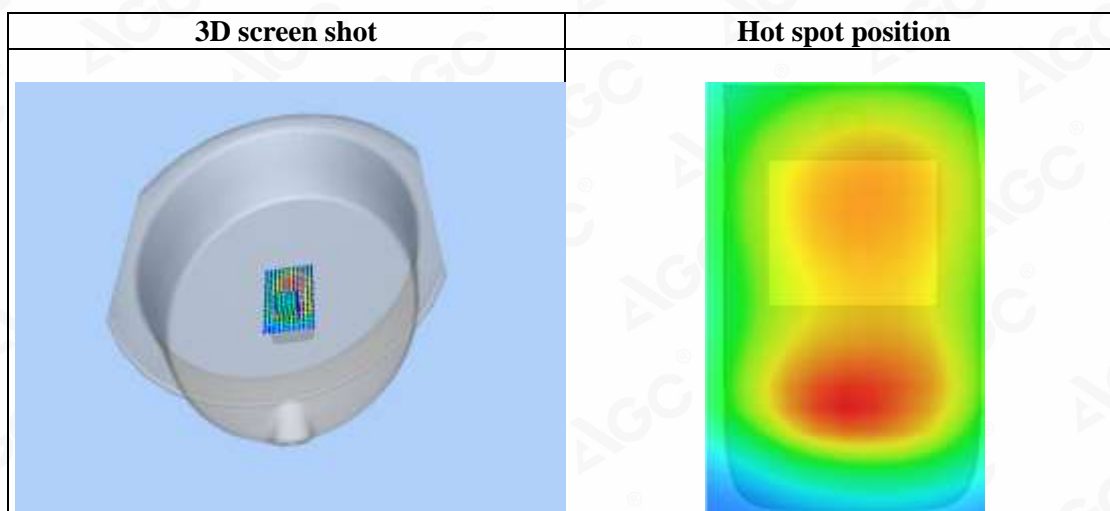
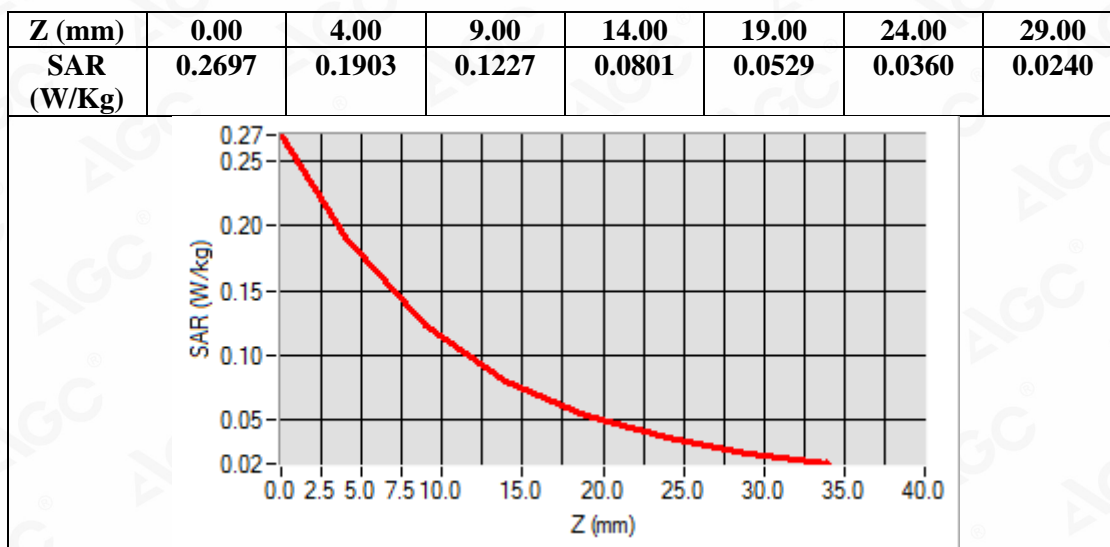
| | |
|-----------------|-------------------------------------------------------------------------|
| Area Scan | $dx=8\text{mm}$ $dy=8\text{mm}$, $h= 5.00 \text{ mm}$ |
| ZoomScan | $5 \times 5 \times 7$, $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$ |
| Phantom | ELLI |
| Device Position | Body Back |
| Band | LTE BAND 20 |
| Channels | High |
| Signal | OFDM (Crest factor: 1.0) |



Maximum location: $X=-1.00$, $Y=-38.00$

SAR Peak: 0.27 W/kg

| | |
|----------------|----------|
| SAR 10g (W/Kg) | 0.114419 |
| SAR 1g (W/Kg) | 0.182771 |



WIFI MODE

Test Laboratory: AGC Lab

Date: Sep. 23,2019

802.11b Mid-Touch-Left

DUT: Smart Phone; Type: P30

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.68;
Frequency: 2442 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.73$ mho/m; $\epsilon_r = 40.16$; $\rho = 1000$ kg/m³ ;
Phantom section: Left Section
Ambient temperature (°C):20.6, Liquid temperature (°C): 20.3

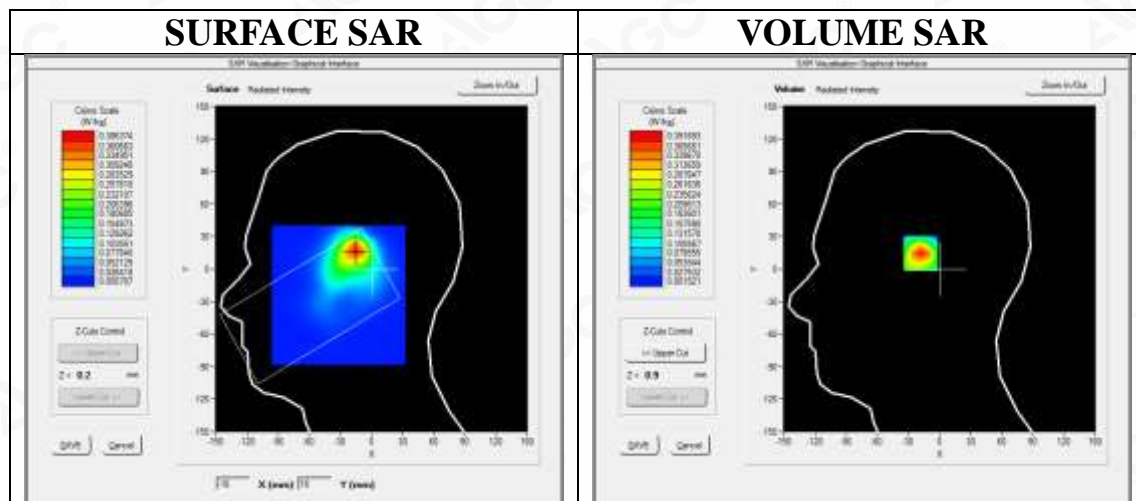
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b Mid- Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Mid- Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

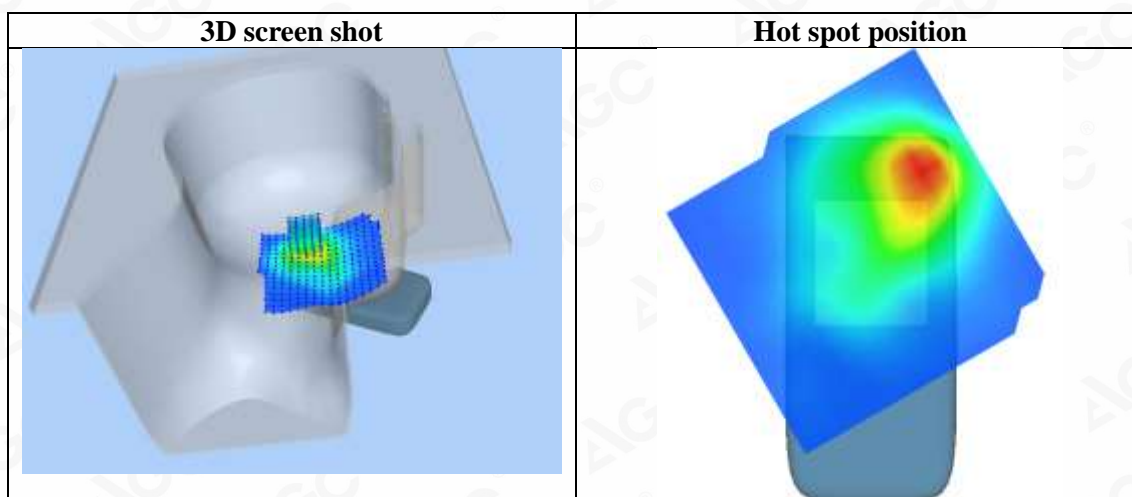
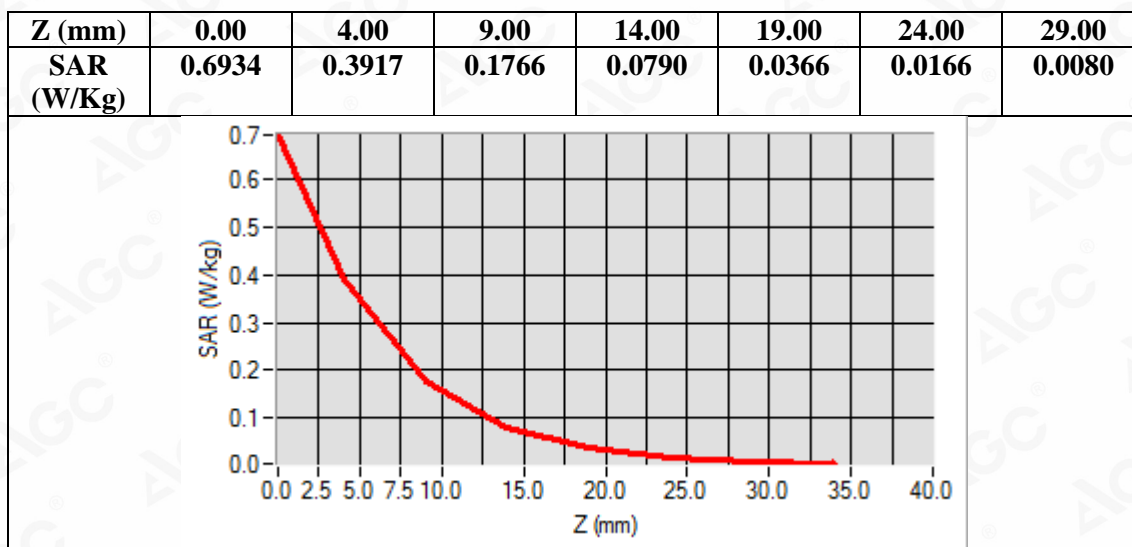
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | Left head |
| Device Position | Cheek |
| Band | 2450MHz |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=-16.00, Y=17.00

SAR Peak: 0.71 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.170712 |
| SAR 1g (W/Kg) | 0.370831 |



Test Laboratory: AGC Lab
802.11b Low-Body-Worn- Front
DUT: Smart Phone; Type: P30

Date: Sep. 23,2019

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.68;
Frequency: 2412 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.73$ mho/m; $\epsilon_r = 40.16$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):20.6, Liquid temperature (°C): 20.3

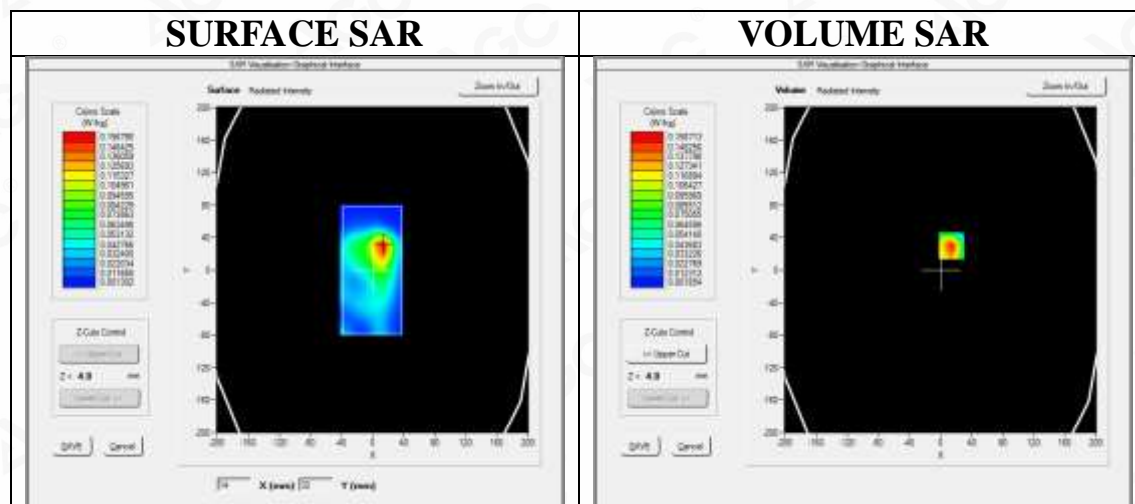
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b Low- Body- Front /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Low- Body- Front /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

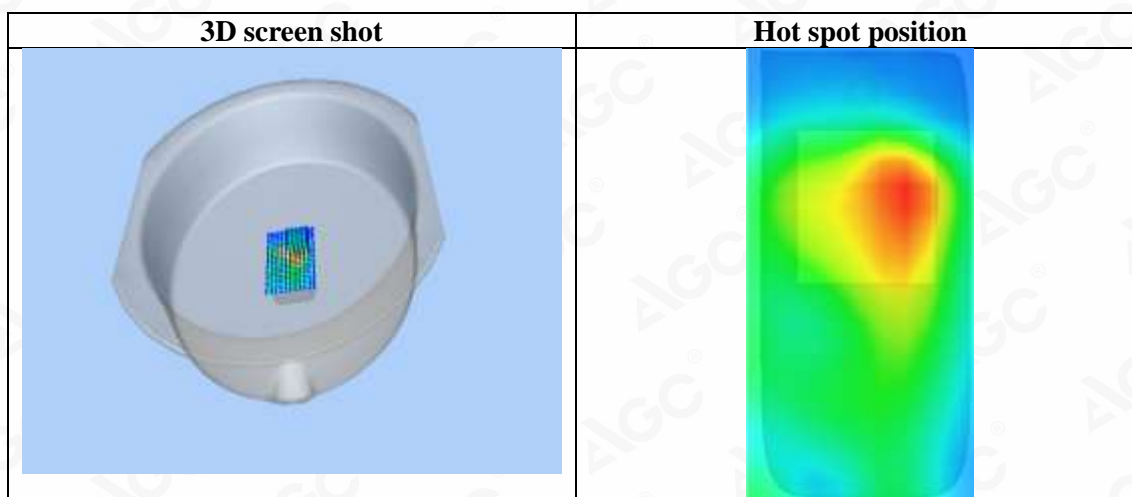
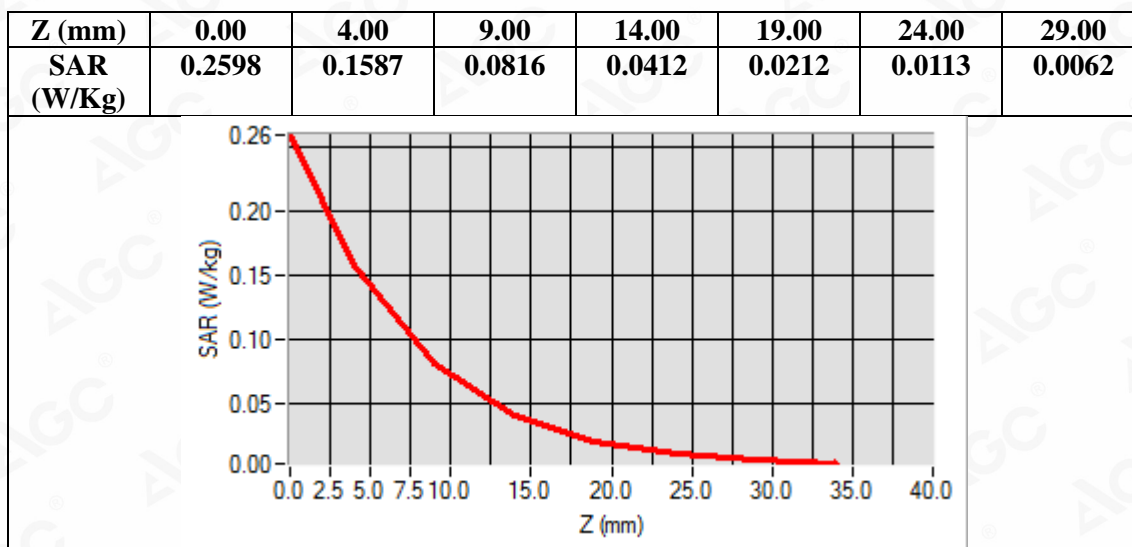
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Front |
| Band | 2450MHz |
| Channels | Low |
| Signal | Crest factor: 1.0 |



Maximum location: X=14.00, Y=30.00

SAR Peak: 0.26 W/kg

| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.076636 |
| SAR 1g (W/Kg) | 0.149007 |



Test Laboratory: AGC Lab
802.11b Mid-Body-Worn- Front
DUT: Smart Phone; Type: P30

Date: Sep. 23,2019

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.68;
Frequency: 2442 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.73$ mho/m; $\epsilon_r = 40.16$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):20.6, Liquid temperature (°C): 20.3

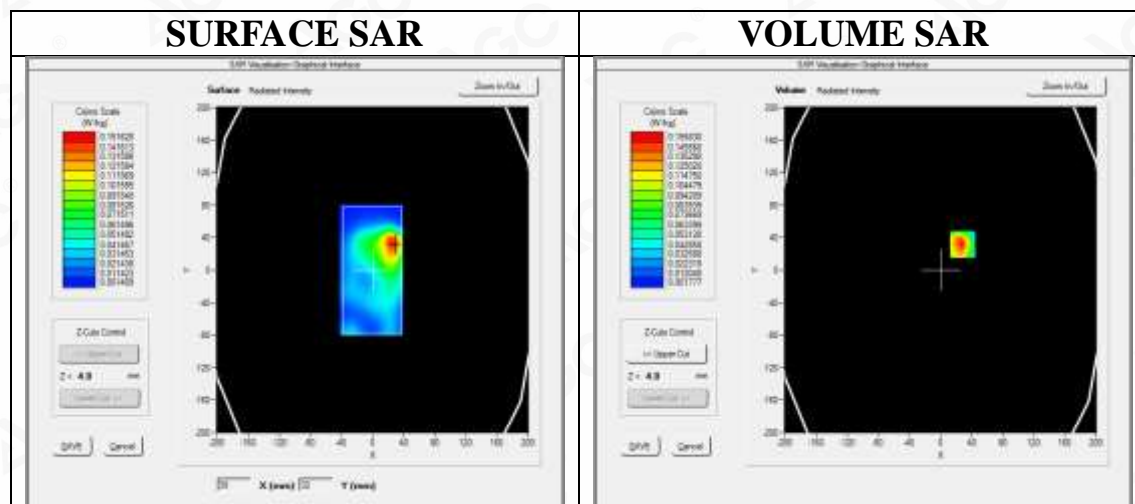
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec. 17,2018; Serial No.: SN 03/18 EP327
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b Mid- Body- Front /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Mid- Body- Front /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

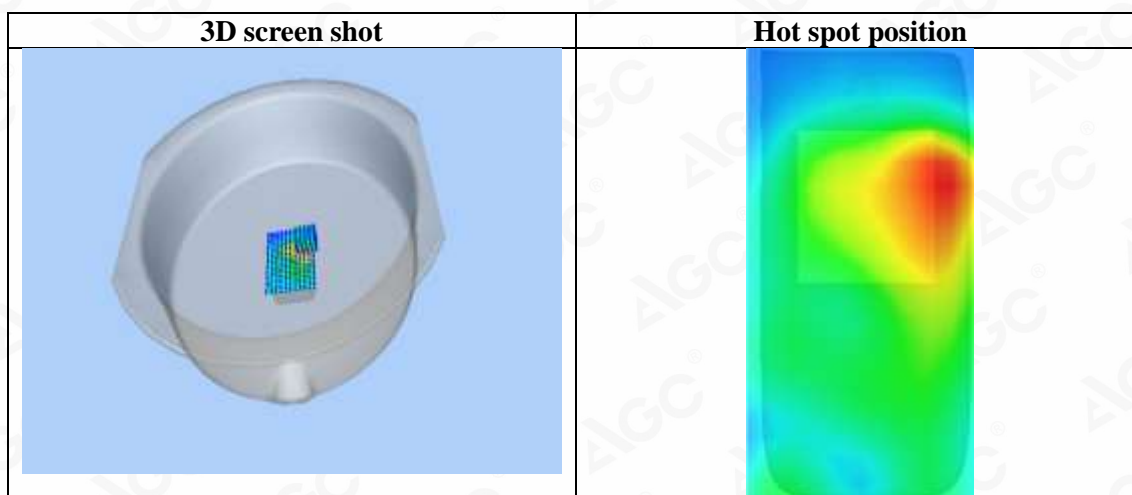
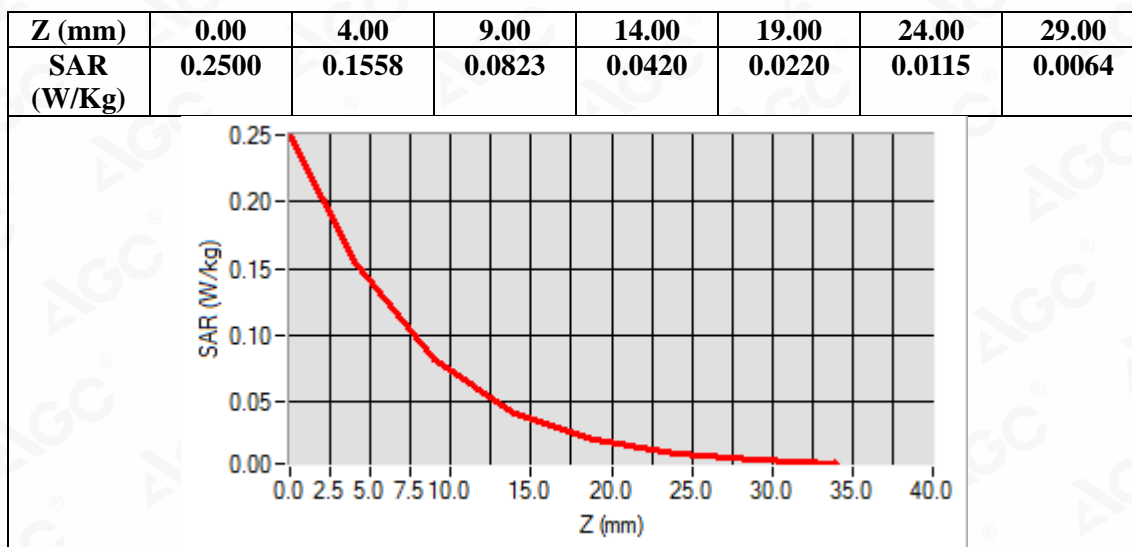
| | |
|------------------------|----------------------------|
| Area Scan | dx=8mm dy=8mm, h= 5.00 mm |
| ZoomScan | 5x5x7,dx=8mm dy=8mm dz=5mm |
| Phantom | ELLI |
| Device Position | Body Front |
| Band | 2450MHz |
| Channels | Middle |
| Signal | Crest factor: 1.0 |



Maximum location: X=28.00, Y=32.00

SAR Peak: 0.26 W/kg

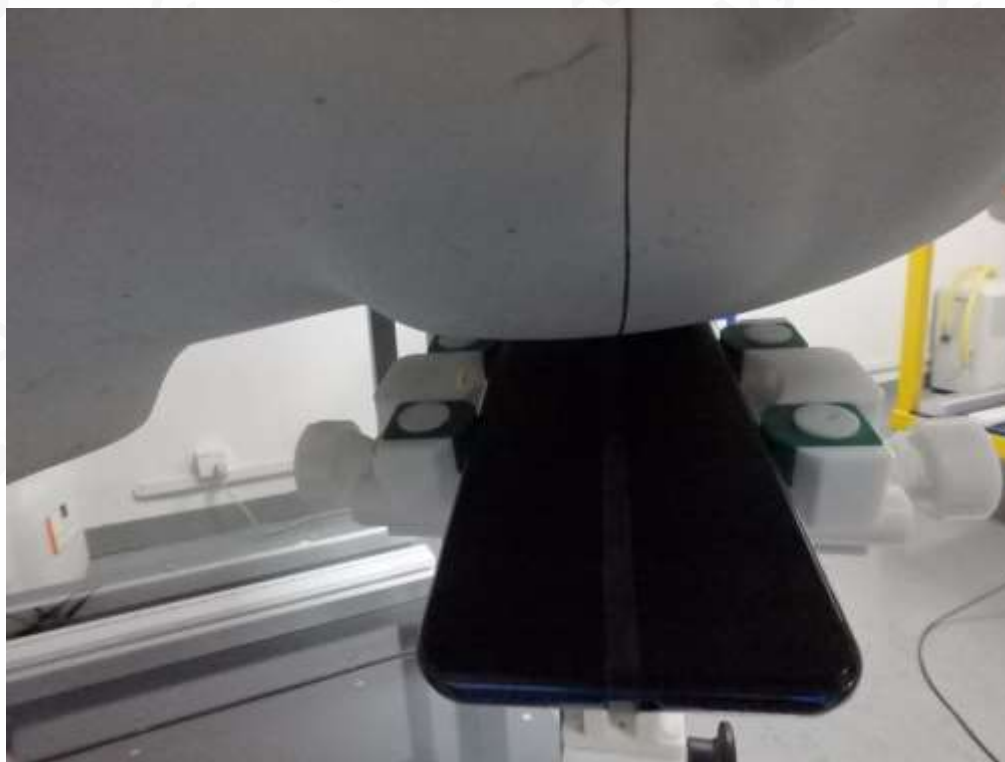
| | |
|-----------------------|----------|
| SAR 10g (W/Kg) | 0.075332 |
| SAR 1g (W/Kg) | 0.147560 |



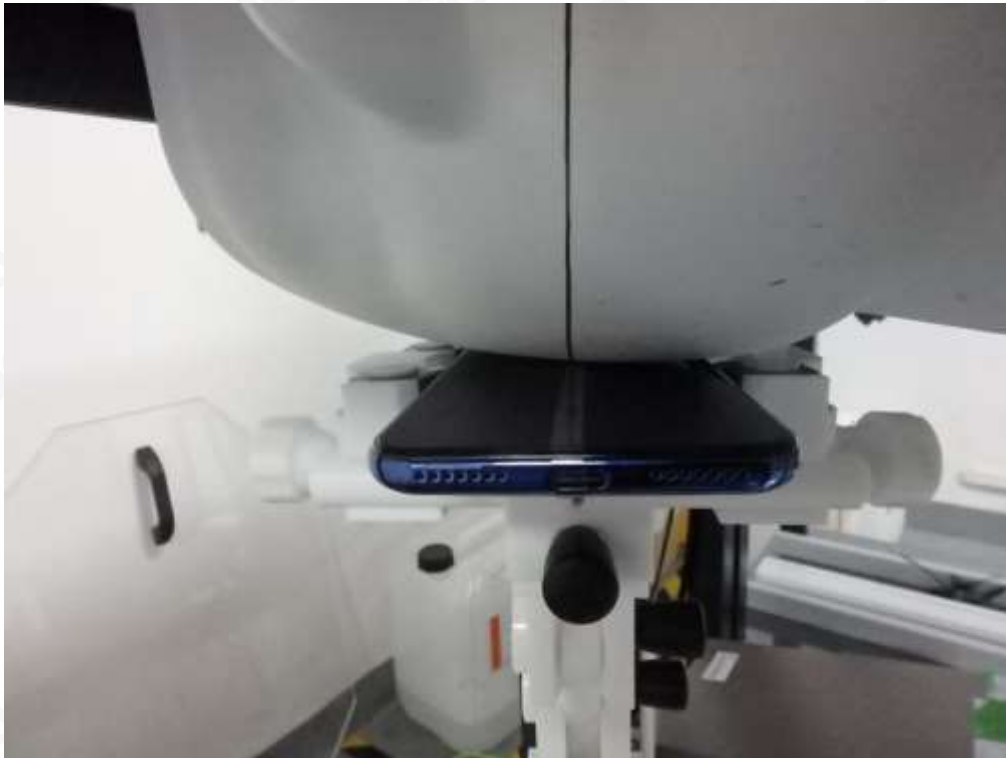
APPENDIX C. TEST SETUP PHOTOGRAPHS
LEFT-CHEEK TOUCH



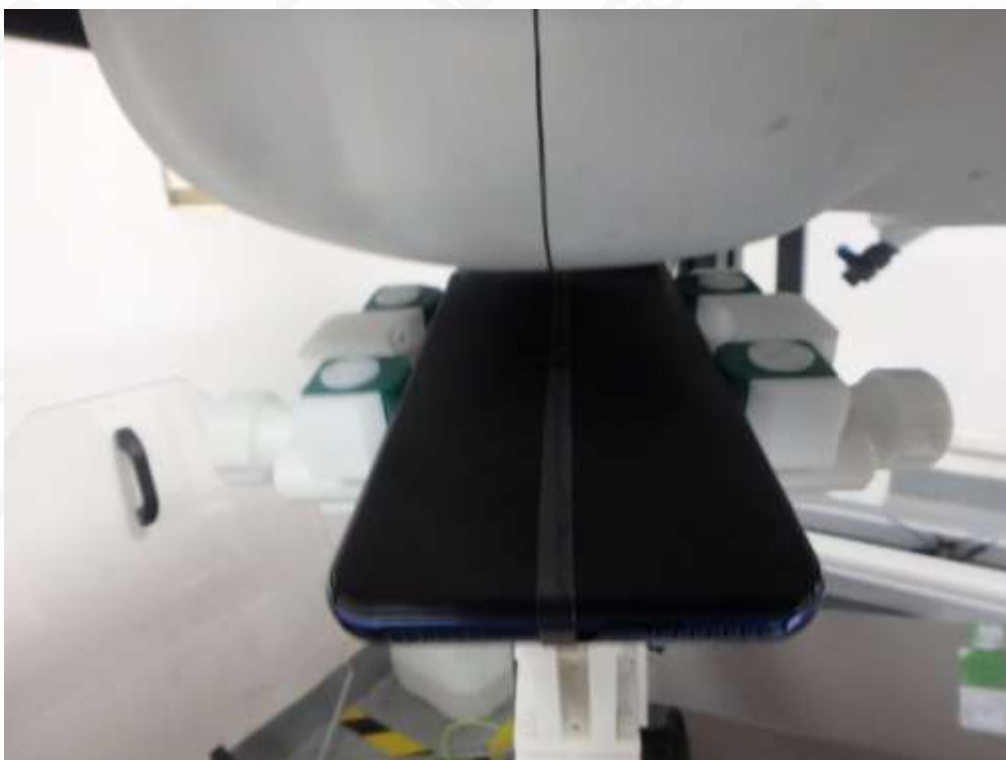
LEFT-TILT 15°



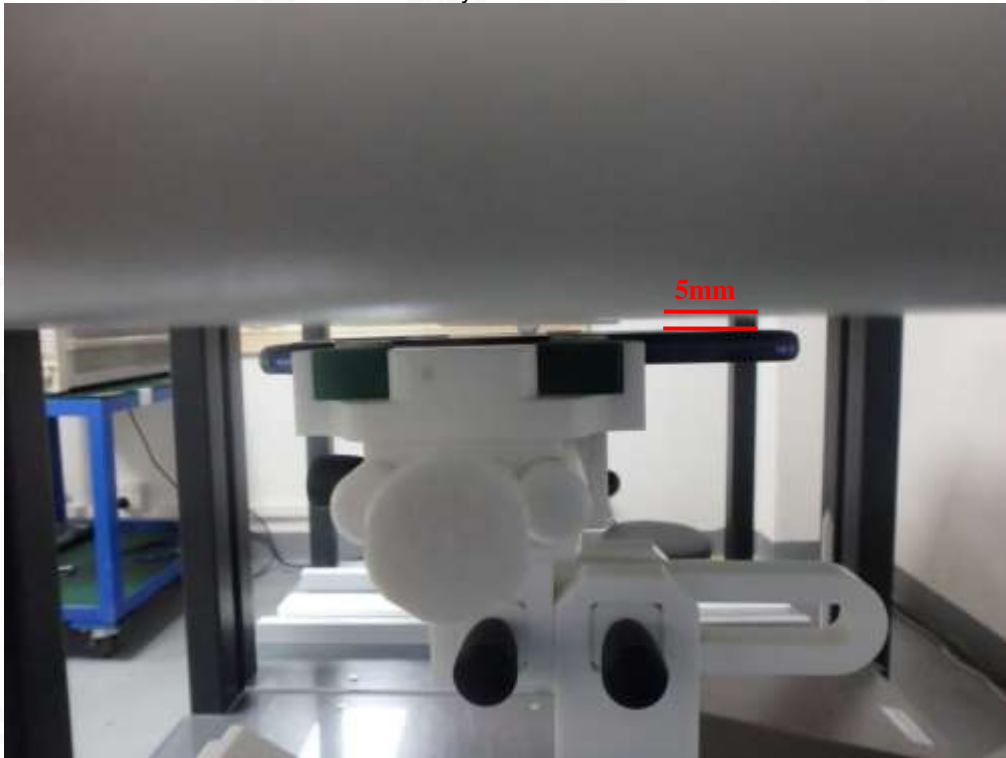
RIGHT-CHEEK TOUCH



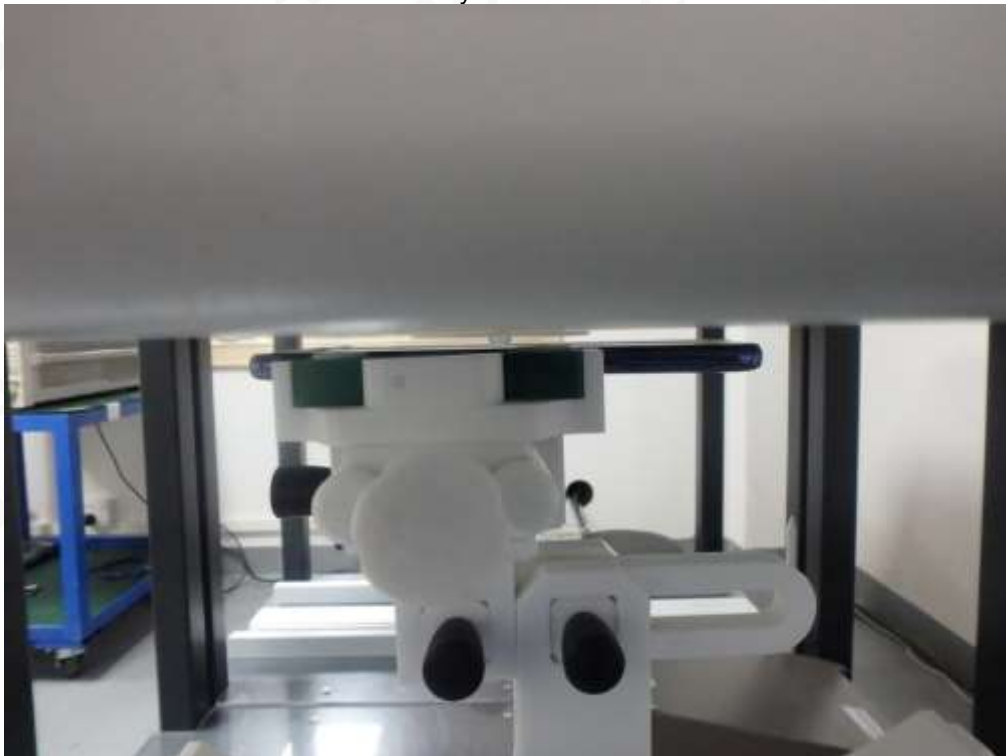
RIGHT-TILT 15°



Body Back 5mm



Body Front 5mm



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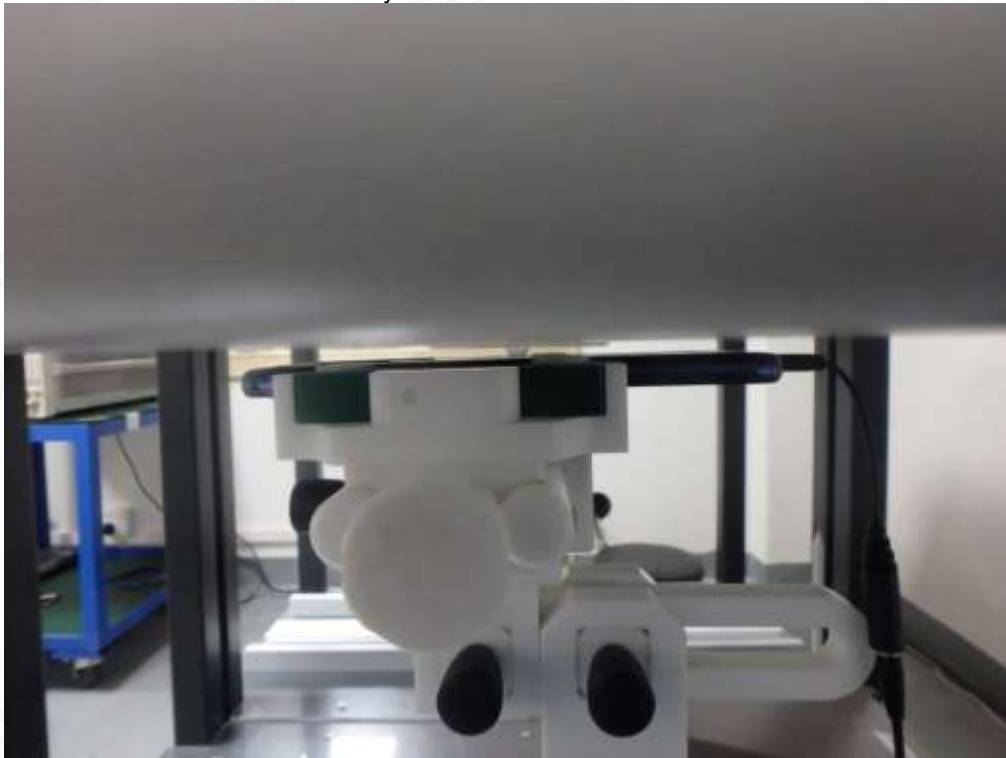
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088

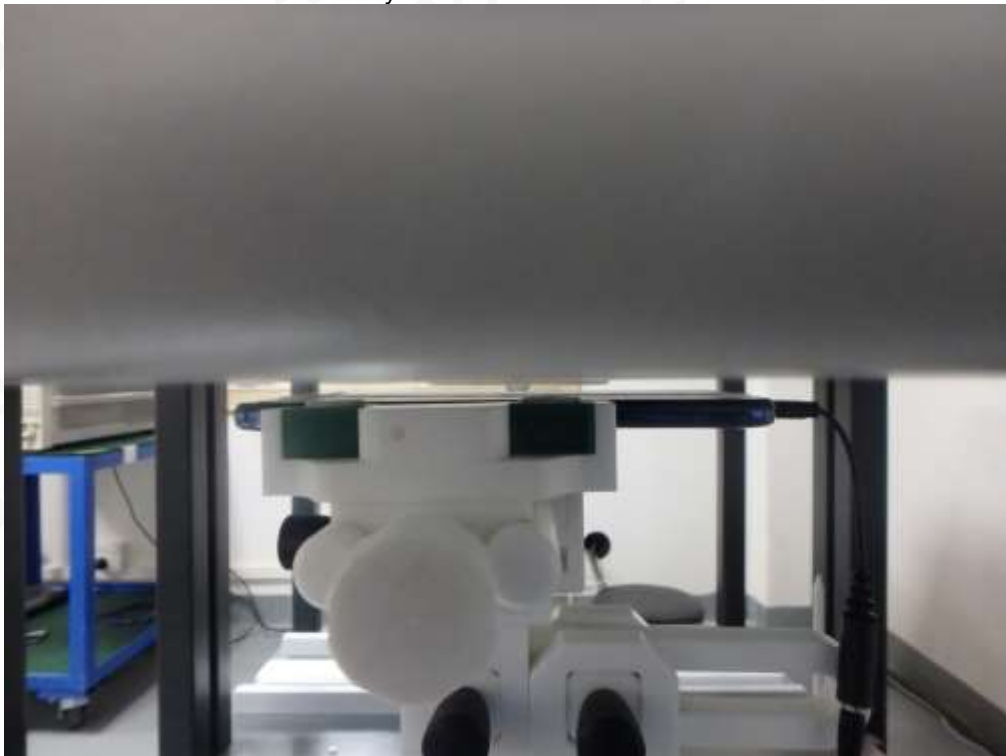
E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

Body back with Headset 5mm



Body front with Headset 5mm

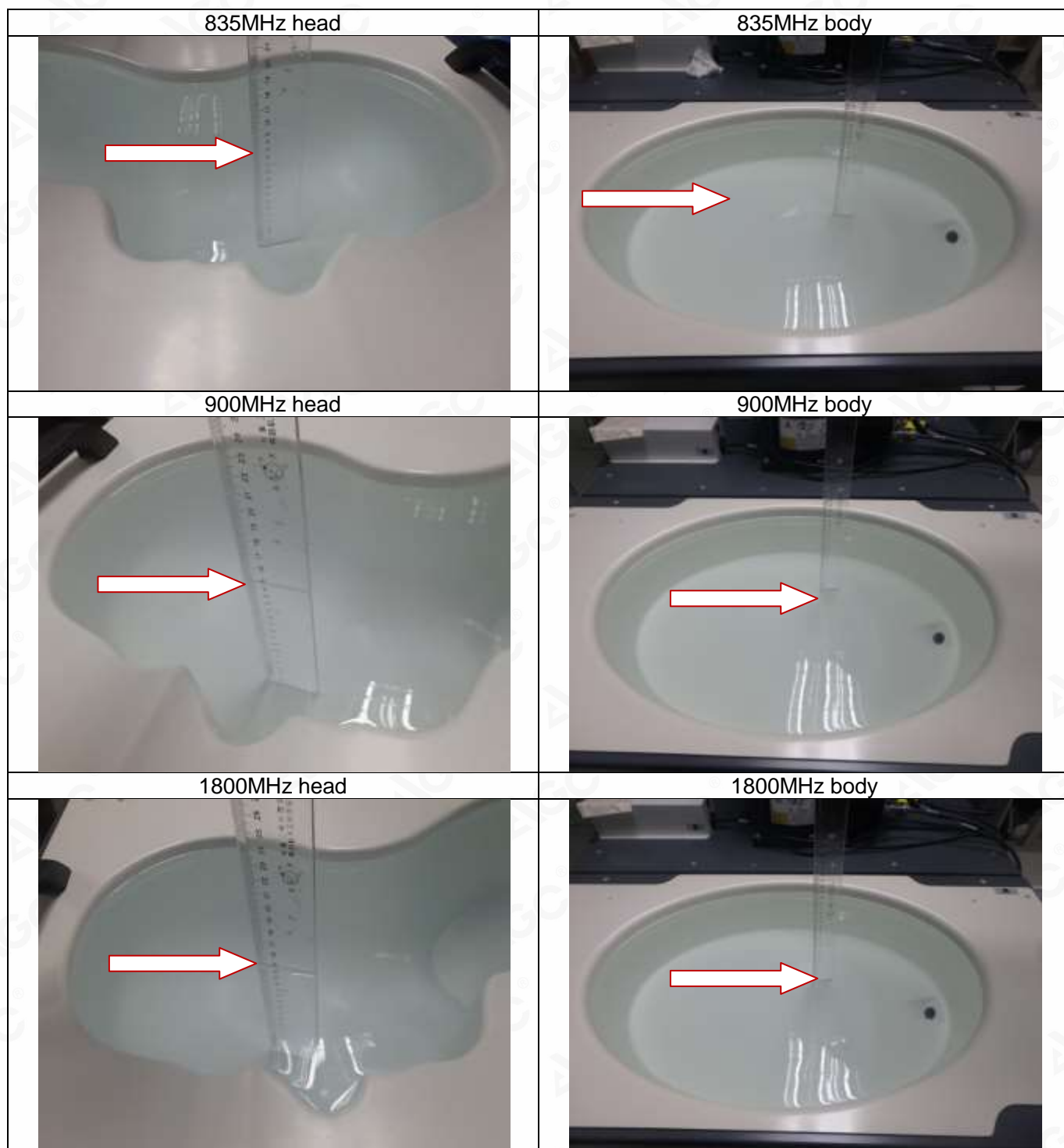


Position of the device under test in relation to the phantom



DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

Note : The position used in the measurement were according to EN62209-1/2



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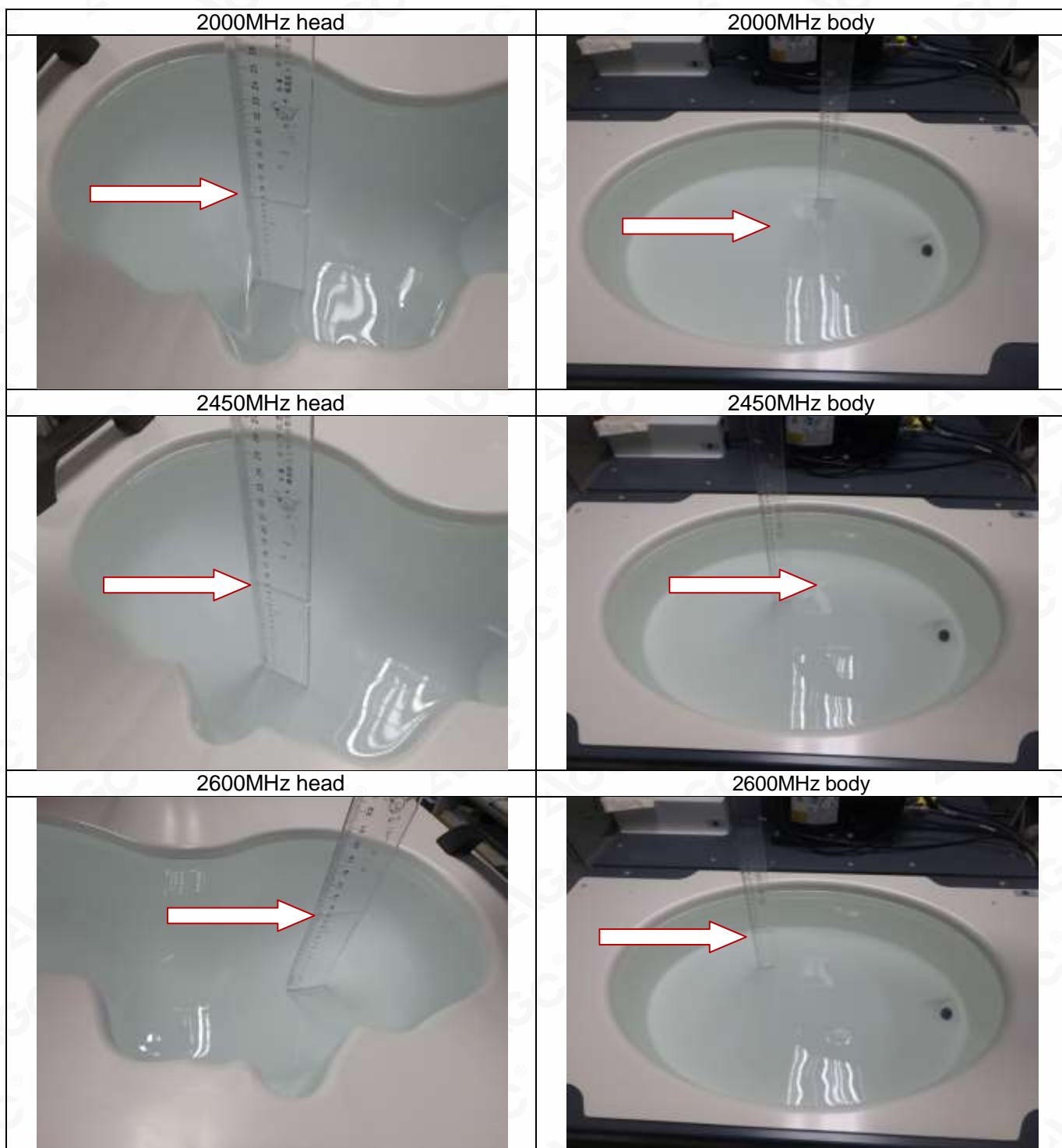
Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118



APPENDIX D. CALIBRATION DATA

Refer to Attached files.



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