FCC SAR TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Rugged Mobile Computer

ISSUED TO
iWaylink INC

6F., No. 288, Sec. 6, Civic Blvd., Xinyi Dist., Taipei city 110, Taiwan

Report No.:	BL-SZ19C0149-701
EUT Name:	Rugged Mobile Computer
Model Name:	TC601
Brand Name:	iMotion
FCC ID:	SPYTC601
Test Standard:	FCC 47 CFR Part 2.1093
	ANSI C95.1: 1999, IEEE 1528: 2013
Maximum SAR:	Head (1 g): 0.469 W/kg
	Body-worn (1 g): 0.788 W/kg
	Hotspot (1 g): 0.793 W/kg
Test Conclusion:	Pass
Test Date:	Dec. 13, 2019 ~ Jan. 03, 2020
Date of Issue:	Mar. 26, 2020

Tested by: Zong Liyao
Date: Mar. 26, 2020

Approved by: Wei Yanquan (Chief Engineer)
Date: Mar. 26, 2020

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Mar. 26, 2020	Initial Issue

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1 ADMINSTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation (A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	21℃ to 23℃
Ambient Relative Humidity	37% to 48%
Ambient Pressure	100 to 102KPa

1.4 Announce

(1) The test report reference to the report template version v2.3.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	iWaylink INC
Address	6F., No. 288, Sec. 6, Civic Blvd., Xinyi Dist., Taipei city 110, Taiwan

2.2 Manufacturer Information

Manufacturer	iWaylink INC
Address	6F., No. 288, Sec. 6, Civic Blvd., Xinyi Dist., Taipei city 110, Taiwan

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Rugged Mobile Computer
Model Name Under Test	TC601
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Hardware Version	V3
Software Version	1.0.1.681.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery 1	
	Battery Name	N/A
	Brand Name	N/A
	Model No.	TC601A
	Capacitance	4000mAh
	Rated Voltage	3.85V
	Limit Charge Voltage	4.4V
Ancillary Equipment 2	Battery 2	
	Battery Name	N/A
	Brand Name	N/A
	Model No.	U0086
	Capacitance	60mAh
	Rated Voltage	3.7V
	Limit Charge Voltage	4.2V

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/5 4G Network FDD LTE Band 2/4/5/7/12/17 TDD LTE Band 41 Bluetooth 5.0 (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n and 802.11ac Band 1/2/3/4 SRD, NFC, GPS, GLONASS

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, WCDMA, LTE, 2.4G WLAN, 5G WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 41	TX: 2555 ~ 2655 MHz	RX: 2555 ~ 2655 MHz
	802.11b/g /n(HT20/HT40)	2400 ~ 2483.5 MHz	
	802.11a/ /n(HT20/HT40)	5150 ~ 5250 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2400 ~ 2483.5 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
DTM	Not Support		
Hotspot Function	Support		
Power Reduction	Not Support		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		
	☒ Production unit	☐ Identical prototype	

Note:

1. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz WLAN/5.5GHz WLAN supports WiFi Direct (GC only).
2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1999	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 941225 D01 v03r01	3G SAR MEAUREMENT PROCEDURES
6	FCC KDB 941225 D05 v02r05	SAR Evaluation Considerations for LTE Devices
7	FCC KDB 941225 D06 v02r01	SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
8	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
9	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters

3.2 Device Category and SAR Limit

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

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ Controlled Exposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 10 grams of tissue)	4.0	20.0

NOTE:

General Population/Uncontrolled: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

3.3 Test Result Summary

3.3.1 Highest SAR (1 g Value)

Band	Maximum Scaled SAR (W/kg)			Maximum Report SAR (W/kg)	
	Head	Body		Head	Body
		Body-worn (10mm)	Hotspot (10mm)		
GSM 850	**0.469**	0.520	0.520	0.469	0.793
GSM 1900	0.094	0.394	0.441		
WCDMA Band 2	0.109	0.724	**0.793**		
WCDMA Band 5	0.202	0.204	0.217		
LTE Band 2	0.065	0.531	0.537		
LTE Band 4	0.080	**0.788**	0.788		
LTE Band 5	0.117	0.174	0.174		
LTE Band 7	0.067	0.379	0.420		
LTE Band 12	0.048	0.118	0.118		
LTE Band 17	0.056	0.125	0.125		
LTE Band 41	0.032	0.213	0.213		
2.4G WLAN	0.128	0.088	0.088		
5.2G WLAN	/	/	0.064		
5.3G WLAN	0.242	0.072	/		
5.6G WLAN	0.206	0.078	/		
5.8G WLAN	0.285	0.185	0.185		
Bluetooth	0.026	0.021	0.021		
Limit (W/kg)	1.60				
Verdict	Pass				

3.3.2 Highest Simultaneous SAR

Position	Simultaneous Configuration	Simultaneous SAR (W/kg)	Limit (W/kg)	Verdict
Head	GSM + 5G WLAN	0.754	1.6	Pass
Body-worn	LTE + 5G WLAN	0.973	1.6	Pass
Hotspot Mode	WCDMA + 5G WLAN	0.978	1.6	Pass

3.4 Test Uncertainty

According to KDB 865664 D01, When the highest measured 1 g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis is not required in SAR reports submitted for equipment approval.

The maximum 1 g SAR for the EUT in this report is 0.793 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

4 SAR MEASUREMENT SYSTEM

4.1 Definition of Specific Absorption Rate (SAR)

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

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

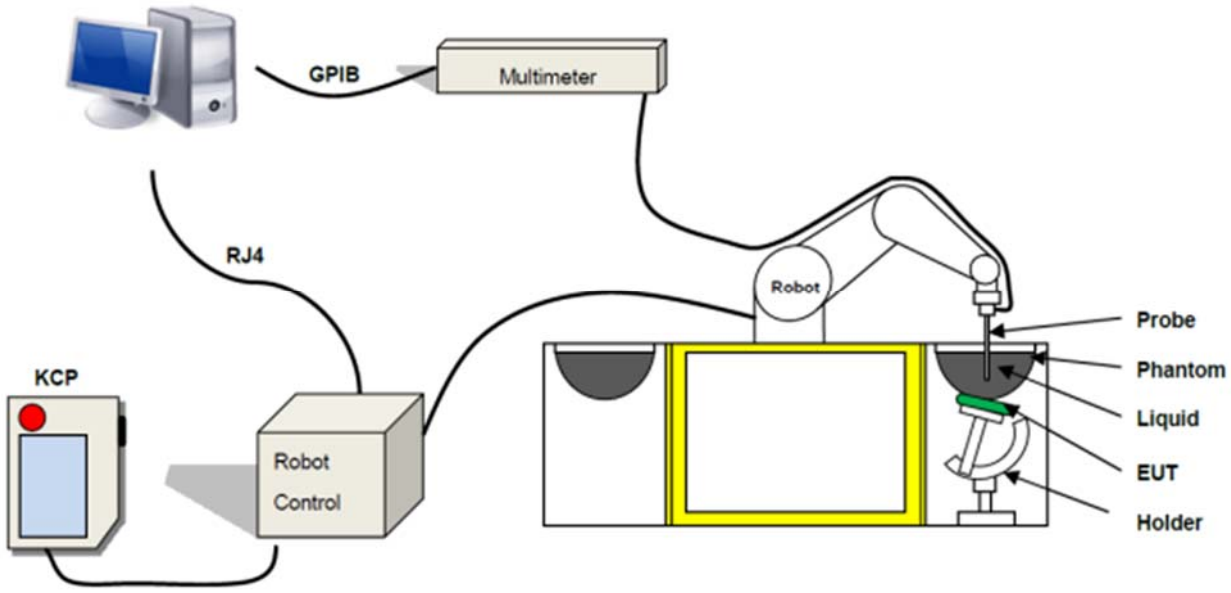
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue,
ρ is the mass density of the tissue and E is the RMS electrical field strength.

4.2 SATIMO SAR System

4.2.1 SATIMO SAR System Diagram



These measurements were performed with the automated near-field scanning system OPENSAR from SATIMO. The system is based on a high precision robot (working range: 850 mm), which positions the probes with a positional repeatability of better than ± 0.02 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit.

The SAR measurements were conducted with dosimetric probe (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in SAR standard with accuracy of better than ±10%. The spherical isotropy was evaluated with the procedure described in SAR standard and found to be better than ±0.25 dB. The phantom used was the SAM Phantom as described in FCC supplement C, IEEE P1528.

4.2.2 Robot

The SATIMO SAR system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA) from KUKA is used. The KUKA robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

4.2.3 E-Field Probe

For the measurements the Specific Dosimetric E-Field Probe SN 34 /15 EPGO 265 with following specifications is used

-- Dynamic range: 0.01-100 W/kg

- Tip Diameter : 2.5 mm
- Lower detection limit : 10 mW/kg

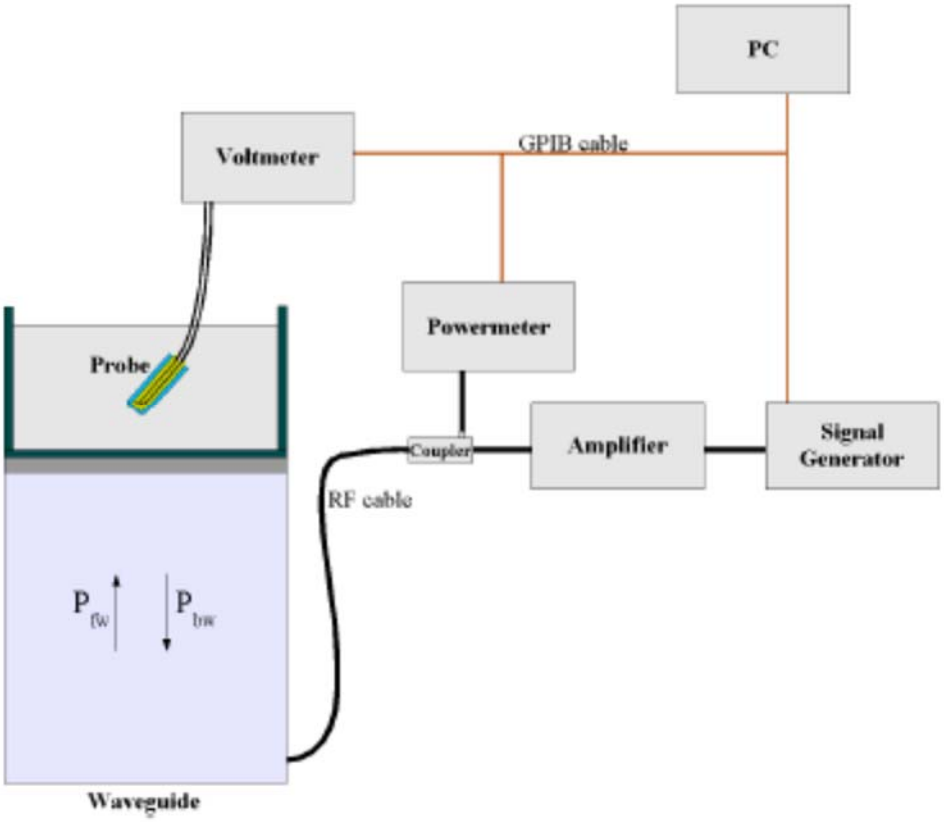
(repeatability better than +/- 1mm)

- Probe linearity: +/- 0.07 dB
- Calibration range: 300 MHz to 6000 MHz for head & body simulating liquid.

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

E-Field Probe Calibration Process

Probe calibration is realized, in compliance with CENELEC EN 62209-1/-2 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the IEC62209-1/2 annexe technique using reference guide at the five frequencies.



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

Where :

Pfw = Forward Power

Pbw = Backward Power
a and b = Waveguide Dimensions
ı = Skin Depth

Keithley configuration

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO After each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

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

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

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

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

Where the DCP is the diode compression point in mV.

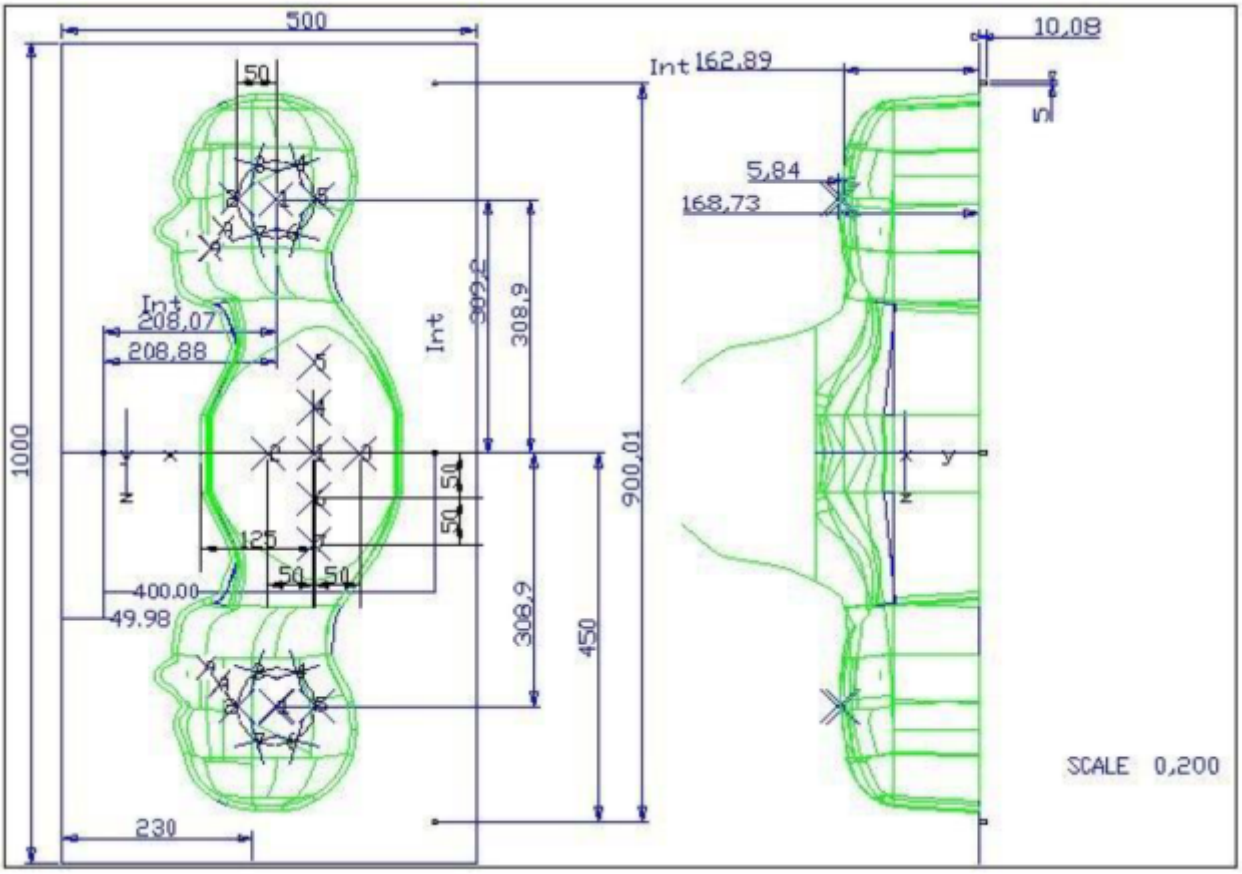
4.2.4 Phantoms

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

Photo of Phantom SN 30/13 SAM103

Photo of Phantom SN 30/13 SAM104

Serial Number	Positionner Material	Permittivity	Loss Tangent
SN 30/13 SAM103	Gelcoat with fiberglass	3.4	0.02
SN 30/13 SAM104	Gelcoat with fiberglass	3.4	0.02



Serial Number	Left Head		Right Head		Flat Part	
SN 30/13 SAM103	2	2.00	2	2.03	1	2.09
	3	2.02	3	2.05	2	2.10
	4	2.04	4	2.04	3	2.09
	5	2.04	5	2.07	4	2.11
	6	2.02	6	2.07	5	2.11
	7	2.01	7	2.09	6	2.09
	8	2.04	8	2.10	7	2.11
	9	2.02	9	2.09	-	-
SN 30/13 SAM104	2	2.05	2	2.06	1	2.03
	3	2.08	3	2.03	2	2.03
	4	2.05	4	2.03	3	2.01
	5	2.06	5	2.02	4	2.03
	6	2.08	6	2.02	5	2.03
	7	2.06	7	2.04	6	2.00
	8	2.07	8	2.04	7	1.98
	9	2.07	9	2.05	-	-

4.2.5 Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

Serial Number	Holder Material	Permittivity	Loss Tangent
SN 25/13 MSH87	Deirin	3.7	0.005
SN 25/13 MSH88	Deirin	3.7	0.005

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

4.2.6 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 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

Head Liquid Depth	Body Liquid Depth
	

The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency(MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ε
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5

Frequency(MHz)	Water	DGBE (%)	Salt (%)	Conductivity σ (S/m)	Permittivity ε
5200	78.60	21.40	/	5.54	47.86
5800	78.50	21.40	0.1	6.0	48.20

5 SYSTEM VERIFICATION

5.1 Antenna Port Test Requirement

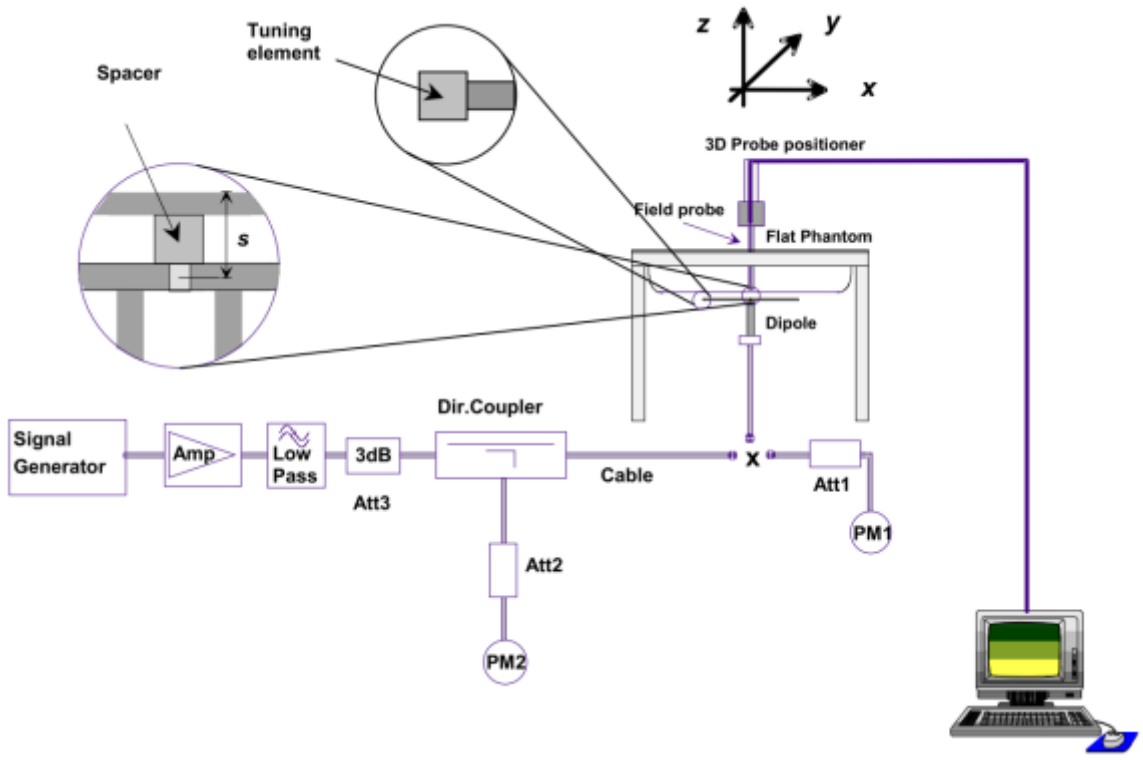
The SATIMO SAR system is equipped with one or more system validation kits. These units together with the predefined measurement procedures within the SATIMO software enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

5.2 Purpose of System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

5.3 System Check Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



6 EUT TEST POSITION CONFIGURATUONS

According to KDB 648474 D04 Handset , handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

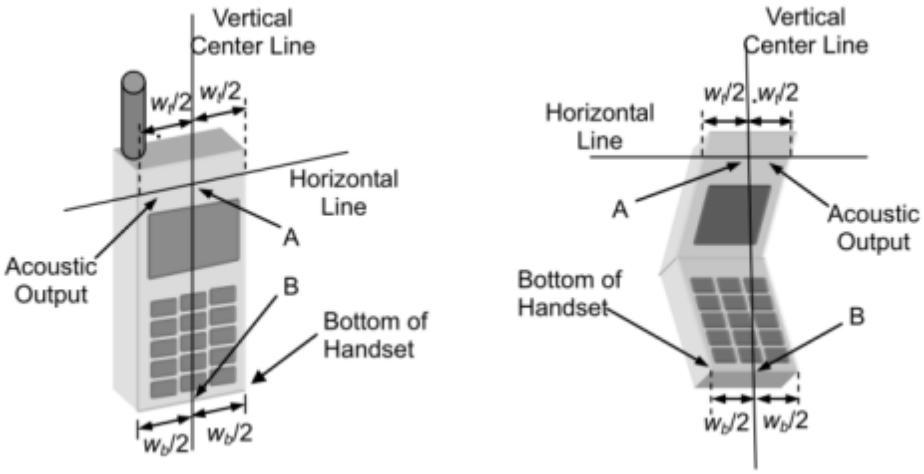
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Define two imaginary lines on the handset

(a) The vertical center line passes through two points on the front side of the handset - the midpoint of the width w t of the handset at the level of the acoustic output, and the midpoint of the width w b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

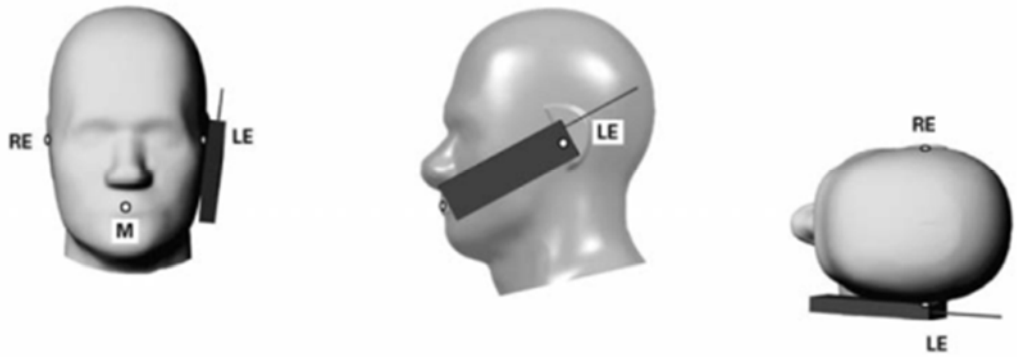
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



6.1.2 Cheek Position

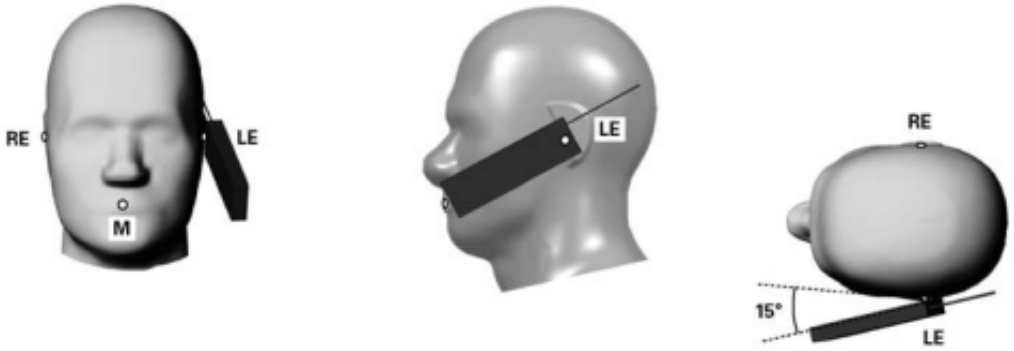
(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three 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.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the 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.



6.1.3 Tilted Position

(a) To position the device in the “cheek” position described above.
(b) While maintaining the device 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 contact with the ear is lost.



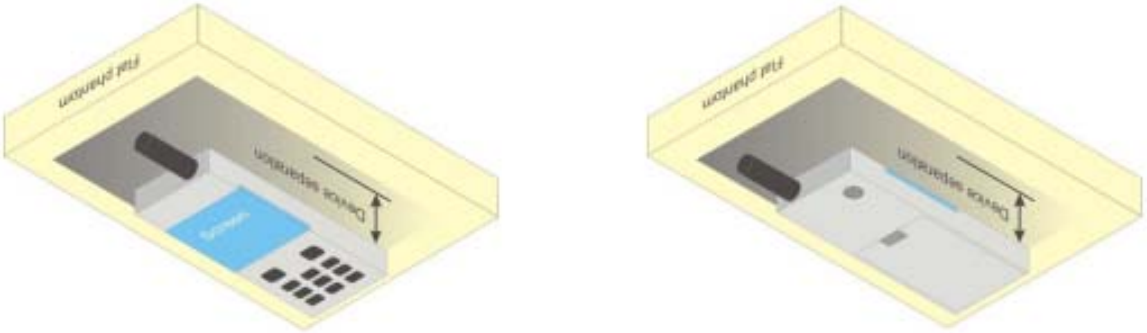
6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

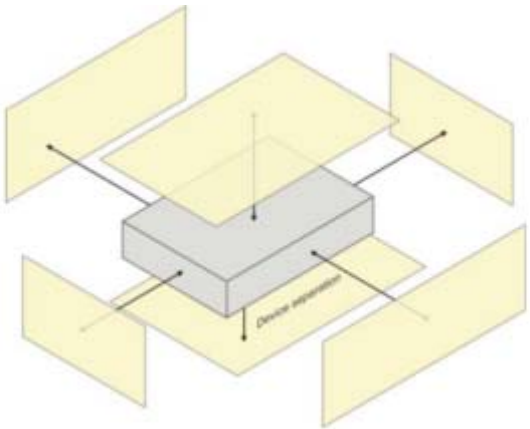
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be

acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.



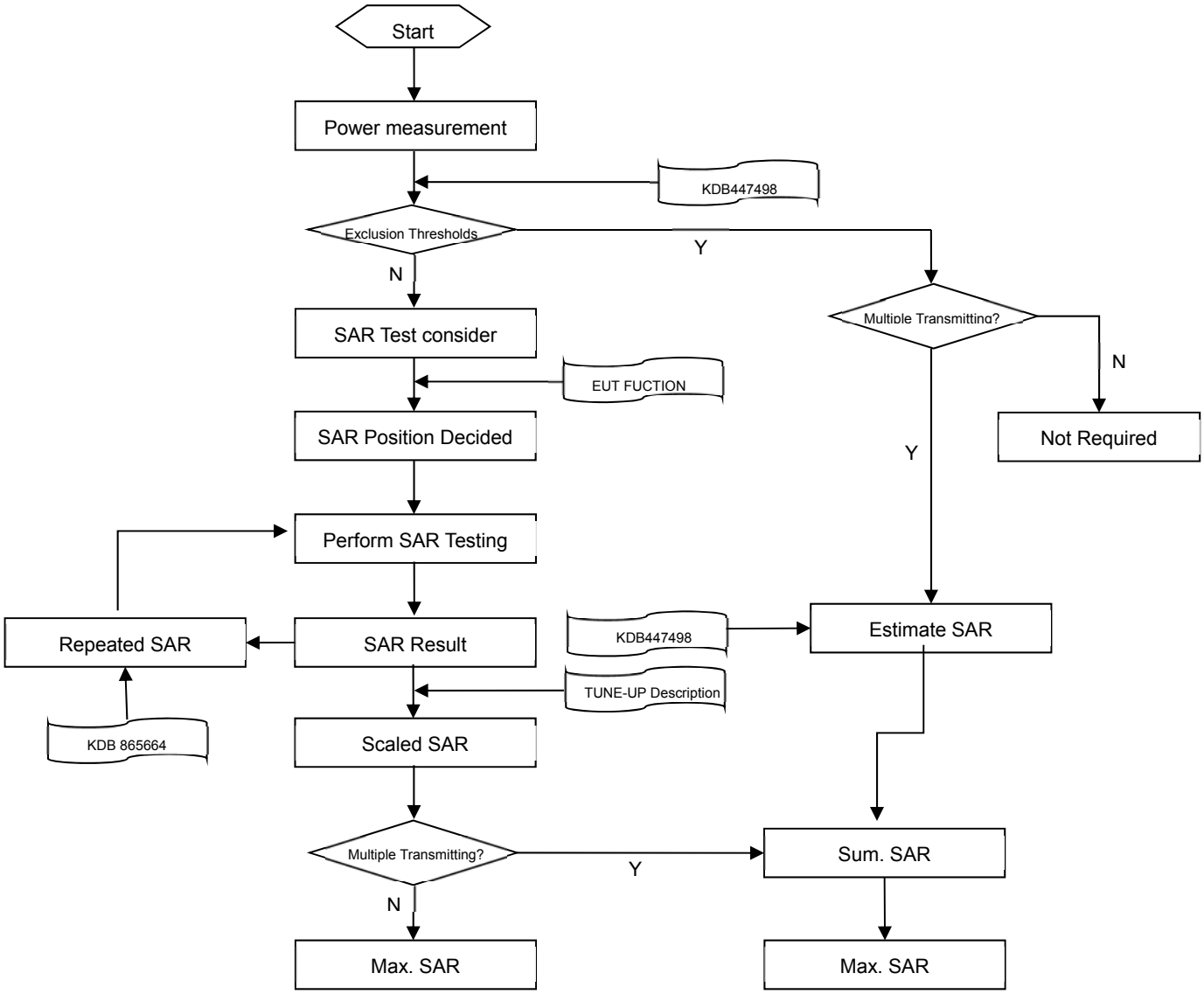
6.3 Hotspot Mode Exposure Position Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



7 SAR MEASUREMENT PROCEDURES

7.1 SAR Measurement Process Diagram



7.2 SAR Scan General Requirements

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013.

<table>
<tr><th colspan="3"></th><th>≤3GHz</th><th>>3GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>½·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx Area , Δy Area</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="5">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="3">uniform grid: Δz Zoom (n)</td><td rowspan="3">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>Δ z Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="2">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm
4–5 GHz: ≤ 2.5 mm
5–6 GHz: ≤ 2 mm</td></tr>
<tr><td>Δ z Zoom (n>1): between subsequent points</td><td>≤ 1.5·Δz Zoom (n-1)</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note:
1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
2. * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

7.3 SAR Measurement Procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

7.4 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below.

When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

8 CONDUCTED RF OUPUT POWER

8.1 GSM

GSM 850								
GSM850 Band	Burst Average Power(dBm)			Tune-up Limit (dBm)	Frame-Averaged power (dBm)			Tune-up Limit (dBm)
Channel	128	190	251		128	190	251	
GSM (GMSK, 1-Slot)	32.94	33.10	33.25	33.50	23.75	23.91	24.06	24.31
GPRS (GMSK, 1-Slot)	32.92	33.05	33.17	33.50	23.73	23.86	23.98	24.31
GPRS (GMSK, 2-Slots)	32.64	32.76	32.88	33.00	26.51	26.63	26.75	26.87
GPRS (GMSK, 3-Slots)	31.04	31.08	31.18	31.50	26.62	26.66	**26.76**	27.08
GPRS (GMSK, 4-Slots)	29.61	29.55	29.54	30.00	26.43	26.37	26.36	26.82
EGPRS (8PSK, 1-Slot)	30.34	30.41	30.38	30.50	21.15	21.22	21.19	21.31
EGPRS (8PSK, 2-Slots)	29.78	29.71	29.68	30.00	23.65	23.58	23.55	23.87
EGPRS (8PSK, 3-Slots)	28.26	28.28	28.14	28.50	23.84	23.86	23.72	24.08
EGPRS (8PSK, 4-Slots)	26.76	26.71	26.60	27.00	23.58	23.53	23.42	23.82
GSM 1900								
GSM1900 Band	Burst Average Power(dBm)			Tune-up Limit (dBm)	Frame-Averaged power(dBm)			Tune-up Limit (dBm)
Channel	512	661	810		512	661	810	
GSM (GMSK, 1-Slot)	31.53	31.38	31.08	32.00	22.34	22.19	21.89	22.81
GPRS (GMSK, 1-Slot)	31.51	31.32	31.02	32.00	22.32	22.13	21.83	22.81
GPRS (GMSK, 2-Slots)	30.74	30.55	30.23	31.00	24.61	24.42	24.10	24.87
GPRS (GMSK, 3-Slots)	29.38	29.21	28.82	29.50	24.96	24.79	24.40	25.08
GPRS (GMSK, 4-Slots)	28.16	27.95	27.50	28.50	**24.98**	24.77	24.32	25.32
EGPRS (8PSK, 1-Slot)	30.38	30.45	30.22	31.00	21.19	21.26	21.03	21.81
EGPRS (8PSK, 2-Slots)	29.50	29.53	29.29	30.00	23.37	23.40	23.16	23.87
EGPRS (8PSK, 3-Slots)	28.09	28.16	27.96	28.50	23.67	23.74	23.54	24.08
EGPRS (8PSK, 4-Slots)	26.66	26.76	26.53	27.50	23.48	23.58	23.35	24.32

Note [1]: SAR testing was performed on the maximum frame-averaged power mode.

Note [2]: The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = Burst averaged power (1 Tx Slot) – 9.19 dB

Frame-averaged power = Burst averaged power (2 Tx Slots) – 6.13 dB

Frame-averaged power = Burst averaged power (3 Tx Slots) - 4.42dB

Frame-averaged power = Burst averaged power (4 Tx Slots) – 3.18 dB

8.2 WCDMA

WCDMA	Band 2				Band 5			
Channel	9262	9400	9538	Tune-up Limit (dBm)	4132	4182	4233	Tune-up Limit (dBm)
RMC 12.2Kbps	**24.89**	24.87	24.87	25.00	**24.46**	24.43	24.43	24.50
HSDPA Subtest-1	23.89	23.91	23.89	24.00	23.47	23.40	23.43	24.00
HSDPA Subtest-2	23.93	23.89	23.94	24.00	23.49	23.45	23.45	24.00
HSDPA Subtest-3	23.43	23.46	23.47	23.50	23.04	22.92	23.02	23.50
HSDPA Subtest-4	23.44	23.43	23.44	23.50	23.03	22.96	22.97	23.50
HSUPA Subtest-1	23.64	23.68	23.91	24.00	23.39	23.33	23.37	24.00
HSUPA Subtest-2	21.76	21.75	21.74	22.00	21.49	21.23	21.35	22.00
HSUPA Subtest-3	22.71	22.84	22.88	23.00	22.42	22.32	22.33	23.00
HSUPA Subtest-4	21.70	21.79	21.81	22.00	21.46	21.25	21.42	22.00
HSUPA Subtest-5	23.74	23.78	23.77	24.00	23.42	23.28	23.31	24.00

8.3 LTE

FDD LTE Band 2									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18700	18900	19100		18700	18900	19100	
20 MHz	1 (RB_Pos:0)	23.37	23.35	23.16	23.50	22.95	22.81	22.67	23.50
	1 (RB_Pos:50)	23.39	**23.41**	23.31	23.50	23.01	22.82	22.72	23.50
	1 (RB_Pos:99)	23.31	23.37	23.25	23.50	22.86	22.79	22.60	23.50
	50 (RB_Pos:0)	22.44	22.33	22.24	22.50	21.51	21.48	21.36	22.00
	50 (RB_Pos:25)	22.47	22.42	22.39	22.50	21.59	21.50	21.48	22.00
	50 (RB_Pos:50)	22.31	22.38	22.31	22.50	21.43	21.46	21.41	22.00
	100 (RB_Pos:0)	22.30	22.34	22.23	22.50	21.43	21.48	21.35	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18675	18900	19125		18675	18900	19125	
15 MHz	1 (RB_Pos:0)	23.29	23.32	23.36	23.50	22.32	22.75	22.74	23.00
	1 (RB_Pos:38)	23.36	23.37	23.34	23.50	22.38	22.78	22.68	23.00
	1 (RB_Pos:74)	23.32	23.25	23.29	23.50	22.32	22.72	22.56	23.00
	36 (RB_Pos:0)	22.38	22.31	22.39	22.50	21.47	21.51	21.45	22.00
	36 (RB_Pos:20)	22.44	22.41	22.37	22.50	21.54	21.54	21.44	22.00
	36 (RB_Pos:39)	22.41	22.30	22.35	22.50	21.51	21.52	21.41	22.00
	75 (RB_Pos:0)	22.35	22.32	22.37	22.50	21.46	21.43	21.46	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18650	18900	19150		18650	18900	19150	
10 MHz	1 (RB_Pos:0)	23.45	23.45	23.39	23.50	22.43	22.85	22.41	23.50
	1 (RB_Pos:25)	23.38	23.36	23.35	23.50	22.40	22.83	22.40	23.50
	1 (RB_Pos:49)	23.42	23.38	23.37	23.50	22.41	22.81	22.25	23.50
	25 (RB_Pos:0)	22.39	22.36	22.42	22.50	21.52	21.54	21.56	22.00
	25 (RB_Pos:12)	22.47	22.39	22.36	22.50	21.54	21.52	21.58	22.00
	25 (RB_Pos:25)	22.40	22.36	22.39	22.50	21.47	21.46	21.53	22.00
	50 (RB_Pos:0)	22.43	22.39	22.37	22.50	21.49	21.48	21.49	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18625	18900	19175		18625	18900	19175	
5 MHz	1 (RB_Pos:0)	23.34	23.34	23.30	23.50	22.60	22.93	22.47	23.50
	1 (RB_Pos:13)	23.46	23.43	23.43	23.50	22.69	23.03	22.51	23.50
	1 (RB_Pos:24)	23.33	23.30	23.34	23.50	22.55	22.92	22.41	23.50
	12 (RB_Pos:0)	22.39	22.33	22.35	22.50	21.56	21.62	21.52	22.00
	12 (RB_Pos:6)	22.38	22.36	22.39	22.50	21.60	21.59	21.53	22.00

	12 (RB_Pos:13)	22.39	22.35	22.34	22.50	21.55	21.60	21.45	22.00
	25 (RB_Pos:0)	22.40	22.35	22.36	22.50	21.48	21.52	21.39	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18615	18900	19185		18615	18900	19185	
3.0 MHz	1 (RB_Pos:0)	23.28	23.31	23.37	23.50	22.28	22.75	22.37	23.50
	1 (RB_Pos:8)	23.32	23.34	23.38	23.50	22.34	22.77	22.34	23.50
	1 (RB_Pos:14)	23.26	23.31	23.36	23.50	22.28	22.74	22.29	23.50
	8 (RB_Pos:0)	22.38	22.36	22.34	22.50	21.59	21.49	21.48	22.00
	8 (RB_Pos:3)	22.40	22.35	22.42	22.50	21.60	21.53	21.53	22.00
	8 (RB_Pos:7)	22.34	22.33	22.33	22.50	21.58	21.48	21.43	22.00
	15 (RB_Pos:0)	22.38	22.34	22.36	22.50	21.48	21.44	21.37	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18607	18900	19193		18607	18900	19193	
1.4 MHz	1 (RB_Pos:0)	23.28	23.27	23.27	23.50	22.50	22.75	22.25	23.50
	1 (RB_Pos:3)	23.39	23.34	23.38	23.50	22.58	22.79	22.32	23.50
	1 (RB_Pos:5)	23.28	23.26	23.31	23.50	22.51	22.71	22.27	23.50
	3 (RB_Pos:0)	23.35	23.31	23.31	23.50	22.49	22.60	22.44	23.50
	3 (RB_Pos:1)	23.45	23.36	23.31	23.50	22.56	22.69	22.51	23.50
	3 (RB_Pos:3)	23.31	23.30	23.25	23.50	22.49	22.59	22.44	23.50
	6 (RB_Pos:0)	22.21	22.19	22.22	22.50	21.47	21.26	21.47	22.00

FDD LTE Band 4									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20050	20175	20300		20050	20175	20300	
20 MHz	1 (RB_Pos:0)	23.26	23.25	23.24	23.50	22.81	22.77	22.72	23.00
	1 (RB_Pos:50)	23.23	**23.32**	23.16	23.50	22.84	22.76	22.62	23.00
	1 (RB_Pos:99)	23.17	23.18	23.09	23.50	22.78	22.60	22.52	23.00
	50 (RB_Pos:0)	22.28	22.27	22.32	22.50	21.43	21.42	21.40	22.00
	50 (RB_Pos:25)	22.30	22.32	22.37	22.50	21.47	21.47	21.40	22.00
	50 (RB_Pos:50)	22.22	22.33	22.19	22.50	21.36	21.42	21.23	22.00
	100 (RB_Pos:0)	22.24	22.28	22.33	22.50	21.37	21.41	21.40	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19275	19575	19875		19275	19575	19875	
15 MHz	1 (RB_Pos:0)	23.15	23.21	23.30	23.50	22.17	22.70	22.73	23.00
	1 (RB_Pos:38)	23.13	23.23	23.23	23.50	22.19	22.70	22.63	23.00
	1 (RB_Pos:74)	23.08	23.22	23.13	23.50	22.10	22.64	22.50	23.00
	36 (RB_Pos:0)	22.23	22.27	22.28	22.50	21.36	21.41	21.38	22.00
	36 (RB_Pos:20)	22.18	22.33	22.24	22.50	21.34	21.47	21.30	22.00
	36 (RB_Pos:39)	22.20	22.29	22.22	22.50	21.30	21.41	21.28	22.00
	75 (RB_Pos:0)	22.21	22.28	22.32	22.50	21.29	21.39	21.41	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19250	19575	19900		19250	19575	19900	
10 MHz	1 (RB_Pos:0)	23.10	23.23	23.16	23.50	22.16	22.63	22.27	23.00
	1 (RB_Pos:25)	23.10	23.22	23.18	23.50	22.12	22.68	22.22	23.00
	1 (RB_Pos:49)	23.05	23.19	23.16	23.50	22.07	22.63	22.12	23.00
	25 (RB_Pos:0)	22.16	22.28	22.15	22.50	21.30	21.36	21.37	22.00
	25 (RB_Pos:12)	22.20	22.27	22.18	22.50	21.30	21.45	21.36	22.00
	25 (RB_Pos:25)	22.10	22.23	22.17	22.50	21.25	21.42	21.32	22.00
	50 (RB_Pos:0)	22.19	22.30	22.16	22.50	21.26	21.38	21.25	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19225	19575	19925		19225	19575	19925	
5 MHz	1 (RB_Pos:0)	23.05	23.22	23.10	23.50	22.35	22.78	22.23	23.00
	1 (RB_Pos:13)	23.18	23.30	23.18	23.50	22.42	22.87	22.31	23.00
	1 (RB_Pos:24)	23.03	23.20	23.08	23.50	22.36	22.75	22.19	23.00
	12 (RB_Pos:0)	22.17	22.21	22.13	22.50	21.38	21.48	21.26	22.00
	12 (RB_Pos:6)	22.18	22.23	22.13	22.50	21.39	21.48	21.25	22.00
	12 (RB_Pos:13)	22.12	22.22	22.07	22.50	21.30	21.44	21.22	22.00
	25 (RB_Pos:0)	22.14	22.20	22.09	22.50	21.31	21.37	21.15	22.00

Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19215	19575	19935		19215	19575	19935	
3.0 MHz	1 (RB_Pos:0)	22.94	23.18	23.10	23.50	22.00	22.63	22.21	23.00
	1 (RB_Pos:8)	22.99	23.21	23.15	23.50	22.05	22.64	22.13	23.00
	1 (RB_Pos:14)	22.94	23.19	23.14	23.50	21.99	22.62	22.11	23.00
	8 (RB_Pos:0)	22.01	22.26	22.11	22.50	21.33	21.37	21.23	22.00
	8 (RB_Pos:3)	22.06	22.26	22.16	22.50	21.34	21.43	21.27	22.00
	8 (RB_Pos:7)	22.02	22.24	22.12	22.50	21.29	21.37	21.21	22.00
	15 (RB_Pos:0)	22.05	22.25	22.15	22.50	21.29	21.38	21.17	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19207	19575	19943		19207	19575	19943	
1.4 MHz	1 (RB_Pos:0)	22.91	23.00	22.97	23.50	22.13	22.47	22.02	23.00
	1 (RB_Pos:3)	23.00	23.09	23.07	23.50	22.19	22.55	22.07	23.00
	1 (RB_Pos:5)	22.90	23.05	22.98	23.50	22.17	22.48	22.05	23.00
	3 (RB_Pos:0)	22.97	23.06	22.99	23.50	22.19	22.38	22.18	23.00
	3 (RB_Pos:1)	23.07	23.13	23.06	23.50	22.16	22.45	22.26	23.00
	3 (RB_Pos:3)	22.99	23.07	23.03	23.50	22.17	22.39	22.19	23.00
	6 (RB_Pos:0)	21.92	22.00	21.96	22.50	21.18	21.06	21.18	22.00

FDD LTE Band 5									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20450	20525	20600		20450	20525	20600	
10 MHz	1 (RB_Pos:0)	22.90	22.87	22.81	23.50	21.90	22.24	22.06	23.00
	1 (RB_Pos:25)	22.90	22.80	22.89	23.50	21.76	22.27	22.01	23.00
	1 (RB_Pos:49)	22.79	22.87	**23.02**	23.50	21.75	22.35	22.07	23.00
	25 (RB_Pos:0)	21.94	21.91	21.91	22.50	21.00	20.99	21.12	22.00
	25 (RB_Pos:12)	21.90	21.96	22.05	22.50	21.02	21.05	21.18	22.00
	25 (RB_Pos:25)	21.87	21.85	21.99	22.50	20.99	21.03	21.15	22.00
	50 (RB_Pos:0)	21.88	21.88	22.02	22.50	20.94	20.97	21.11	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20425	20525	20625		20425	20525	20625	
5MHz	1 (RB_Pos:0)	22.86	22.85	22.87	23.50	22.17	22.42	22.04	23.00
	1 (RB_Pos:13)	22.94	22.88	23.03	23.50	22.15	22.54	22.25	23.00
	1 (RB_Pos:24)	22.83	22.79	22.90	23.50	22.02	22.43	22.21	23.00
	12 (RB_Pos:0)	21.91	21.91	22.04	22.50	21.13	21.11	21.15	22.00
	12 (RB_Pos:6)	21.92	21.89	22.03	22.50	21.08	21.14	21.19	22.00
	12 (RB_Pos:13)	21.88	21.86	22.09	22.50	21.03	21.08	21.28	22.00
	25 (RB_Pos:0)	21.90	21.87	21.92	22.50	21.02	21.02	21.03	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20415	20525	20635		20415	20525	20635	
3.0 MHz	1 (RB_Pos:0)	22.89	22.84	22.96	23.50	21.86	22.26	22.12	23.00
	1 (RB_Pos:8)	22.86	22.76	22.93	23.50	21.81	22.28	22.12	23.00
	1 (RB_Pos:14)	22.82	22.78	22.92	23.50	21.77	22.28	22.08	23.00
	8 (RB_Pos:0)	21.94	21.85	22.12	22.50	21.12	21.02	21.22	22.00
	8 (RB_Pos:3)	21.95	21.91	22.05	22.50	21.12	21.07	21.27	22.00
	8 (RB_Pos:7)	21.93	21.87	22.07	22.50	21.10	21.02	21.21	22.00
	15 (RB_Pos:0)	21.90	21.87	22.08	22.50	21.00	21.01	21.14	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20407	20525	20643		20407	20525	20643	
1.4MHz	1 (RB_Pos:0)	22.82	22.73	22.84	23.50	22.02	22.22	22.03	23.00
	1 (RB_Pos:3)	22.86	22.79	22.94	23.50	22.10	22.30	22.11	23.00
	1 (RB_Pos:5)	22.79	22.74	22.87	23.50	22.04	22.25	22.05	23.00
	3 (RB_Pos:0)	22.85	22.82	23.04	23.50	22.00	22.12	22.21	23.00
	3 (RB_Pos:1)	22.86	22.85	23.09	23.50	22.02	22.15	22.33	23.00
	3 (RB_Pos:3)	22.82	22.85	23.01	23.50	21.96	22.11	22.23	23.00

	6 (RB_Pos:0)	21.78	21.75	21.97	22.50	21.04	20.80	21.26	22.00

FDD LTE Band 7									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20850	21100	21350		20850	21100	21350	
20MHz	1 (RB_Pos:0)	23.63	**23.67**	23.56	24.00	23.21	23.21	23.02	23.50
	1 (RB_Pos:50)	23.56	23.60	23.58	24.00	23.09	23.13	23.06	23.50
	1 (RB_Pos:99)	23.54	23.65	23.61	24.00	23.13	23.07	23.08	23.50
	50 (RB_Pos:0)	22.62	22.71	22.67	23.00	21.72	21.87	21.75	22.50
	50 (RB_Pos:25)	22.70	22.69	22.70	23.00	21.78	21.89	21.81	22.50
	50 (RB_Pos:50)	22.61	22.70	22.70	23.00	21.75	21.81	21.81	22.50
	100 (RB_Pos:0)	22.65	22.65	22.66	23.00	21.75	21.78	21.77	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20825	21100	21375		20825	21100	21375	
15MHz	1 (RB_Pos:0)	23.59	23.67	23.67	24.00	22.58	23.12	23.09	23.50
	1 (RB_Pos:38)	23.55	23.58	23.64	24.00	22.46	23.13	23.15	23.50
	1 (RB_Pos:74)	23.62	23.60	23.71	24.00	22.56	23.11	23.14	23.50
	36 (RB_Pos:0)	22.57	22.66	22.67	23.00	21.68	21.81	21.74	22.50
	36 (RB_Pos:20)	22.59	22.64	22.71	23.00	21.66	21.81	21.74	22.50
	36 (RB_Pos:39)	22.66	22.65	22.66	23.00	21.73	21.79	21.75	22.50
	75 (RB_Pos:0)	22.63	22.68	22.65	23.00	21.72	21.80	21.77	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20800	21100	21400		20800	21100	21400	
10MHz	1 (RB_Pos:0)	23.58	23.60	23.62	24.00	22.53	23.13	22.75	23.50
	1 (RB_Pos:25)	23.52	23.60	23.63	24.00	22.49	23.08	22.73	23.50
	1 (RB_Pos:49)	23.53	23.61	23.66	24.00	22.45	23.11	22.73	23.50
	25 (RB_Pos:0)	22.59	22.68	22.65	23.00	21.73	21.82	21.90	22.50
	25 (RB_Pos:12)	22.58	22.66	22.68	23.00	21.72	21.87	21.90	22.50
	25 (RB_Pos:25)	22.59	22.66	22.66	23.00	21.65	21.82	21.88	22.50
	50 (RB_Pos:0)	22.58	22.65	22.67	23.00	21.67	21.86	21.85	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20775	21100	21425		20775	21100	21425	
5MHz	1 (RB_Pos:0)	23.56	23.60	23.60	24.00	22.76	23.24	22.79	23.50
	1 (RB_Pos:13)	23.60	23.70	23.66	24.00	22.84	23.35	22.88	23.50
	1 (RB_Pos:24)	23.51	23.63	23.63	24.00	22.74	23.23	22.82	23.50
	12 (RB_Pos:0)	22.58	22.64	22.65	24.00	21.76	21.92	21.80	22.50
	12 (RB_Pos:6)	22.57	22.66	22.66	24.00	21.78	21.96	21.86	22.50

	12 (RB_Pos:13)	22.59	22.62	22.68	24.00	21.71	21.93	21.83	22.50
	25 (RB_Pos:0)	22.57	22.63	22.68	23.00	21.69	21.85	21.73	22.50

FDD LTE Band 12									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23060	23095	23130		23060	23095	23130	
10 MHz	1 (RB_Pos:0)	**22.98**	22.89	22.86	23.50	21.82	22.31	21.98	22.50
	1 (RB_Pos:25)	22.83	22.81	22.83	23.50	21.82	22.26	21.82	22.50
	1 (RB_Pos:49)	22.74	22.72	22.73	23.50	21.76	22.12	21.71	22.50
	25 (RB_Pos:0)	21.94	21.90	21.87	22.50	21.03	21.05	21.01	21.50
	25 (RB_Pos:12)	21.95	21.82	21.88	22.50	21.00	20.99	21.04	21.50
	25 (RB_Pos:25)	21.88	21.83	21.82	22.50	20.96	20.92	20.96	21.50
	50 (RB_Pos:0)	21.88	21.89	21.81	22.50	21.02	20.99	20.97	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23035	23095	23155		23035	23095	23155	
5MHz	1 (RB_Pos:0)	22.94	22.84	22.78	23.50	22.07	22.45	21.93	22.50
	1 (RB_Pos:13)	22.95	22.87	22.86	23.50	22.12	22.49	21.92	22.50
	1 (RB_Pos:24)	22.79	22.82	22.75	23.50	22.07	22.36	21.88	22.50
	12 (RB_Pos:0)	21.97	21.85	21.86	22.50	21.08	21.12	21.00	21.50
	12 (RB_Pos:6)	21.97	21.84	21.90	22.50	21.11	21.13	21.00	21.50
	12 (RB_Pos:13)	21.93	21.81	21.83	22.50	21.08	21.06	20.92	21.50
	25 (RB_Pos:0)	21.94	21.85	21.80	22.50	21.00	21.02	20.89	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23025	23095	23165		23025	23095	23165	
3.0 MHz	1 (RB_Pos:0)	23.00	22.83	22.84	23.50	21.79	22.28	21.79	22.50
	1 (RB_Pos:8)	22.91	22.78	22.75	23.50	21.77	22.27	21.78	22.50
	1 (RB_Pos:14)	22.86	22.81	22.79	23.50	21.74	22.25	21.79	22.50
	8 (RB_Pos:0)	21.94	21.86	21.80	22.50	21.12	21.03	20.94	21.50
	8 (RB_Pos:3)	21.99	21.89	21.84	22.50	21.16	21.06	20.97	21.50
	8 (RB_Pos:7)	21.95	21.84	21.79	22.50	21.12	20.99	20.90	21.50
	15 (RB_Pos:0)	21.96	21.83	21.81	22.50	21.04	20.94	20.84	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23017	23095	23173		23017	23095	23173	
1.4MHz	1 (RB_Pos:0)	22.89	22.76	22.70	23.50	21.93	22.21	21.72	22.50
	1 (RB_Pos:3)	22.91	22.79	22.77	23.50	21.97	22.29	21.77	22.50
	1 (RB_Pos:5)	22.88	22.77	22.73	23.50	21.93	22.22	21.77	22.50

	3 (RB_Pos:0)	22.82	22.79	22.74	23.50	21.93	22.08	21.93	22.50
	3 (RB_Pos:1)	22.85	22.83	22.77	23.50	21.96	22.10	21.96	22.50
	3 (RB_Pos:3)	22.79	22.77	22.75	23.50	21.91	22.01	21.91	22.50
	6 (RB_Pos:0)	21.84	21.77	21.66	22.50	21.04	20.74	20.92	21.50

FDD LTE Band 17									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23780	23790	23800		23780	23790	23800	
10 MHz	1 (RB_Pos:0)	22.87	22.85	22.84	23.50	21.85	22.30	21.95	23.00
	1 (RB_Pos:25)	22.81	**22.89**	22.81	23.50	21.76	22.31	21.84	23.00
	1 (RB_Pos:49)	22.74	22.73	22.75	23.50	21.62	22.08	21.73	23.00
	25 (RB_Pos:0)	21.88	21.96	21.95	22.50	21.03	21.06	21.11	22.00
	25 (RB_Pos:12)	21.96	21.95	21.93	22.50	21.09	21.06	21.13	22.00
	25 (RB_Pos:25)	21.89	21.93	21.82	22.50	21.04	21.02	20.94	22.00
	50 (RB_Pos:0)	21.96	21.93	21.94	22.50	21.05	21.08	21.04	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	23755	23790	23825		23755	23790	23825	
5MHz	1 (RB_Pos:0)	22.83	22.83	22.78	23.50	22.07	22.43	21.89	23.00
	1 (RB_Pos:13)	22.88	23.00	22.84	23.50	22.14	22.51	21.88	23.00
	1 (RB_Pos:24)	22.73	22.77	22.73	23.50	22.04	22.32	21.86	23.00
	12 (RB_Pos:0)	21.92	21.94	21.84	22.50	21.09	21.19	20.96	22.00
	12 (RB_Pos:6)	21.87	21.89	21.87	22.50	21.07	21.16	21.00	22.00
	12 (RB_Pos:13)	21.81	21.91	21.80	22.50	21.02	21.12	20.93	22.00
	25 (RB_Pos:0)	21.87	21.92	21.80	22.50	21.00	21.05	20.85	22.00

FDD LTE Band 41									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40340	40740	41140		40340	40740	41140	
20MHz	1 (RB_Pos:0)	23.17	23.23	**23.38**	24.00	22.62	22.49	22.83	23.00
	1 (RB_Pos:50)	23.12	23.14	23.35	24.00	22.48	22.41	22.79	23.00
	1 (RB_Pos:99)	23.14	23.08	23.34	24.00	22.56	22.45	22.78	23.00
	50 (RB_Pos:0)	22.12	22.24	22.33	23.00	21.25	21.35	21.49	22.00
	50 (RB_Pos:25)	22.17	22.21	22.31	23.00	21.33	21.33	21.45	22.00
	50 (RB_Pos:50)	22.17	22.16	22.28	23.00	21.33	21.26	21.44	22.00
	100 (RB_Pos:0)	22.12	22.17	22.35	23.00	21.34	21.32	21.39	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40315	40740	41165		40315	40740	41165	
15MHz	1 (RB_Pos:0)	23.28	23.14	23.21	24.00	22.61	22.67	22.61	23.00
	1 (RB_Pos:38)	23.32	23.03	23.17	24.00	22.56	22.58	22.58	23.00
	1 (RB_Pos:74)	23.25	23.01	23.22	24.00	22.53	22.63	22.60	23.00
	36 (RB_Pos:0)	22.30	22.04	22.19	23.00	21.35	21.19	21.31	22.00
	36 (RB_Pos:20)	22.13	22.01	22.16	23.00	21.23	21.13	21.31	22.00
	36 (RB_Pos:39)	22.14	22.01	22.19	23.00	21.31	21.17	21.23	22.00
	75 (RB_Pos:0)	22.18	22.07	22.17	23.00	21.32	21.18	21.26	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40290	40740	41190		40290	40740	41190	
10MHz	1 (RB_Pos:0)	23.32	23.12	23.23	24.00	22.48	22.57	22.68	23.00
	1 (RB_Pos:25)	23.27	23.06	23.22	24.00	22.50	22.56	22.67	23.00
	1 (RB_Pos:49)	23.18	23.04	23.21	24.00	22.53	22.59	22.73	23.00
	25 (RB_Pos:0)	22.34	22.02	22.23	23.00	21.37	21.16	21.40	22.00
	25 (RB_Pos:12)	22.32	22.04	22.19	23.00	21.41	21.13	21.38	22.00
	25 (RB_Pos:25)	22.16	22.04	22.13	23.00	21.24	21.16	21.33	22.00
	50 (RB_Pos:0)	22.04	22.00	22.15	23.00	21.28	21.10	21.37	22.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40265	40740	41215		40265	40740	41215	
5MHz	1 (RB_Pos:0)	23.43	23.23	23.34	24.00	22.74	22.58	22.76	23.00
	1 (RB_Pos:13)	23.51	23.30	23.41	24.00	22.84	22.59	22.85	23.00
	1 (RB_Pos:24)	23.46	23.21	23.37	24.00	22.77	22.53	22.80	23.00
	12 (RB_Pos:0)	22.42	22.19	22.31	23.00	21.59	21.34	21.43	22.00
	12 (RB_Pos:6)	22.42	22.16	22.40	23.00	21.59	21.43	21.57	22.00
	12 (RB_Pos:13)	22.46	22.23	22.37	23.00	21.65	21.36	21.50	22.00
	25 (RB_Pos:0)	22.47	22.24	22.32	23.00	21.57	21.31	21.34	22.00

8.4 WIFI

8.4.1 2.4GWIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	**16.13**	16.50	Yes
		6	2437	15.72	16.50	No
		11	2462	15.23	16.50	No
	802.11g	1	2412	11.97	13.50	No
		6	2437	11.68	13.50	No
		11	2462	11.44	13.50	No
	802.11n(HT20)	1	2412	11.20	13.00	No
		6	2437	11.04	13.00	No
		11	2462	10.36	13.00	No
	802.11n(HT40)	3	2422	10.66	12.50	No
		6	2437	10.81	12.50	No
		9	2452	10.19	12.50	No

8.4.2 5GWIFI

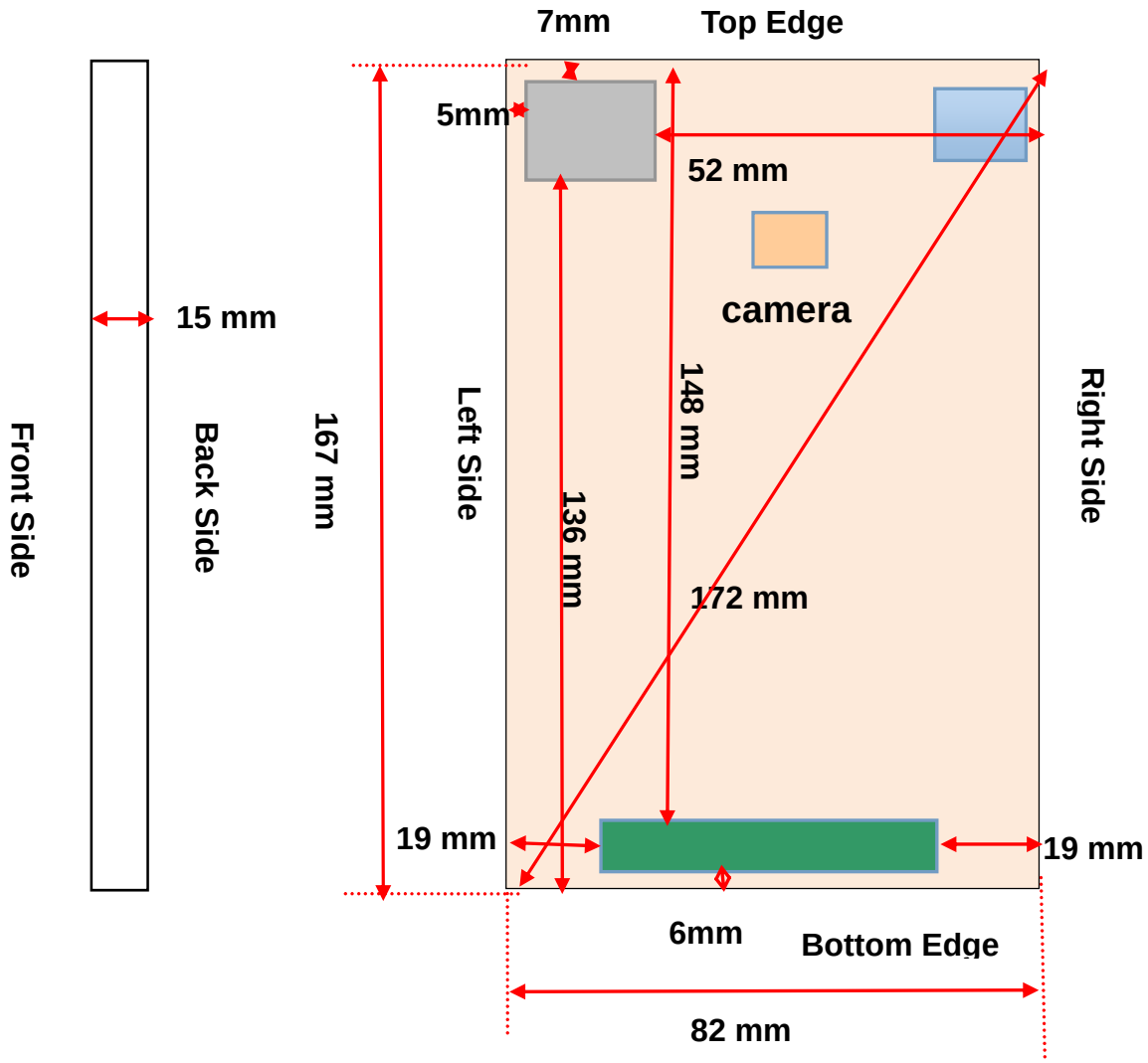
Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	13.79	14.00	No
		40	5200	**13.93**	14.00	Yes
		48	5240	13.93	14.00	No
	802.11n(HT20)	36	5180	12.66	13.00	No
		44	5220	12.75	13.00	No
		48	5240	12.70	13.00	No
	802.11n(HT40)	38	5190	10.98	11.50	No
		46	5230	11.08	11.50	No
	802.11ac(VHT20)	36	5180	12.56	13.00	No
		40	5200	12.73	13.00	No
		48	5240	12.69	13.00	No
	802.11ac(VHT40)	38	5190	10.95	11.50	No
		46	5230	11.10	11.50	No
	802.11ac(VHT80)	42	5210	8.61	9.00	No
5.3 (5.25~5.35)	802.11a	52	5260	**13.90**	14.00	Yes
		60	5300	13.73	14.00	No
		64	5320	13.63	14.00	No
	802.11n(HT20)	52	5260	12.71	13.00	No
		60	5300	12.61	13.00	No
		64	5320	12.50	13.00	No
	802.11n(HT40)	54	5270	11.12	11.50	No
		62	5310	10.90	11.50	No
	802.11ac(VHT20)	52	5260	12.77	13.00	No
		60	5300	12.62	13.00	No
		64	5320	12.59	13.00	No
	802.11ac(VHT40)	54	5270	11.11	11.50	No
		62	5310	10.93	11.50	No
	802.11ac(VHT80)	58	5290	8.44	9.00	No
5.6 (5.47~5.725)	802.11a	100	5500	**12.63**	13.00	Yes
		116	5580	12.39	13.00	No
		140	5700	11.96	13.00	No
	802.11n(HT20)	100	5500	11.39	11.50	No
		116	5580	11.17	11.50	No
		140	5700	10.75	11.50	No
	802.11n(HT40)	102	5510	9.80	10.50	No
		118	5590	9.54	10.50	No
		134	5670	9.28	10.50	No
	802.11ac(VHT20)	100	5500	11.44	11.50	No
		116	5580	11.24	11.50	No
		140	5700	10.78	11.50	No
	802.11ac(VHT40)	102	5510	9.82	10.50	No
		118	5590	9.51	10.50	No

		134	5670	9.30	10.50	No
	802.11ac(VHT80)	106	5530	7.15	7.50	No
		122	5610	7.00	7.50	No
		138	5690	6.71	7.50	No
5.8 (5.725~5.850)	802.11a	149	5745	11.61	12.00	No
		157	5785	11.69	12.00	No
		165	5825	**11.97**	12.00	Yes
	802.11n(HT20)	149	5745	10.52	11.00	No
		157	5785	10.62	11.00	No
		165	5825	10.90	11.00	No
	802.11n(HT40)	151	5755	8.85	9.50	No
		159	5795	8.93	9.50	No
	802.11ac(VHT20)	149	5745	10.62	11.00	No
		157	5785	10.68	11.00	No
		165	5825	10.99	11.00	No
	802.11ac(VHT40)	151	5755	8.89	9.50	No
		159	5795	8.95	9.50	No
	802.11ac(VHT80)	155	5775	6.29	6.50	No

8.5 Bluetooth

Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Conducted Power (dBm)	11.21	10.73	10.31	10.72	10.03	9.82
Tune-Up Limit (dBm)	11.50			11.00		
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
Conducted Power (dBm)	10.92	10.30	10.05	/	/	/
Tune-Up Limit (dBm)	11.00					
Mode	BLE-1Mbps			BLE-2Mbps		
Channel	0	19	39	0	19	39
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Conducted Power (dBm)	1.29	0.82	1.18	1.31	0.85	1.20
Tune-Up Limit (dBm)	2.00			2.00		

9 EUT ANTENNA LOCATION SKETCH



WWAN DIV Antenna (Receive Only)

WWAN TX Antenna

GPS/WLAN/BT Antenna

EUT Back View

9.1 SAR Test Exclusion Consider Table

According with FCC KDB 447498 D01, Appendix A, <SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm> Table, this Device SAR test configurations consider as following :

Band	Mode	Max. Peak Power		Test Position Configurations					
		dBm	mW	Head	Front/ Back	Left Edge	Right Edge	Top Edge	Bottom Edge
GSM 850	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	Voice	33.50	2238.72	No	Yes	No	No	No	No
	Data	31.50	1412.54	Yes	Yes	Yes	Yes	Yes	Yes
GSM 1900	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	Voice	32.00	1584.89	No	Yes	No	No	No	No
	Data	28.50	707.95	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 2	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	RMC	25.00	316.23	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 5	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	RMC	24.50	281.84	Yes	Yes	Yes	Yes	No	Yes
LTE Band 2	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	23.50	223.87	Yes	Yes	Yes	Yes	No	Yes
LTE Band 4	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	23.50	223.87	Yes	Yes	Yes	Yes	No	Yes
LTE Band 5	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	23.50	223.87	Yes	Yes	Yes	Yes	No	Yes
LTE Band 7	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	24.00	251.19	Yes	Yes	Yes	Yes	No	Yes
LTE Band 12	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	23.50	223.87	Yes	Yes	Yes	Yes	No	Yes
LTE Band 17	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	23.50	223.87	Yes	Yes	Yes	Yes	No	Yes
LTE Band 41	Distance to User			<5mm	<5 mm	19mm	19mm	148mm	6mm
	QPSK	24.00	251.19	Yes	Yes	Yes	Yes	No	Yes
WLAN 2.4 G	Distance to User			<5mm	<5 mm	5mm	52mm	7mm	136mm
	802.11b	16.50	44.67	Yes	Yes	Yes	No	Yes	No
	802.11g	13.50	22.39	No	No	No	No	No	No
	802.11n(HT20)	13.00	19.95	No	No	No	No	No	No
	802.11n(HT40)	12.50	17.78	No	No	No	No	No	No
WLAN 5 G	Distance to User			<5mm	<5 mm	5mm	52mm	7mm	136mm
	802.11a	14.00	25.12	Yes	Yes	Yes	No	Yes	No
	802.11n(HT20)	13.00	19.95	No	No	No	No	No	No
	802.11n(HT40)	11.50	14.13	No	No	No	No	No	No
	802.11ac(VHT20)	13.00	19.95	No	No	No	No	No	No
	802.11ac(VHT40)	11.50	14.13	No	No	No	No	No	No
	802.11ac(VHT80)	9.00	7.94	No	No	No	No	No	No

Bluetooth	Distance to User			<5mm	<5 mm	5mm	52mm	7mm	136mm
	Bluetooth BR/EDR	11.50	14.13	Yes	Yes	Yes	No	Yes	No
	Bluetooth BLE	2.00	1.58	No	No	No	No	No	No

Note:

1. Maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. Per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D01, standalone SAR test exclusion threshold is applied; If the distance of the antenna to the user is < 5mm, 5mm is used to determine SAR exclusion threshold
4. Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   a. f(GHz) is the RF channel transmit frequency in GHz
   b. Power and distance are rounded to the nearest mW and mm before calculation
   c. The result is rounded to one decimal place for comparison
   d. For < 50 mm distance, we just calculate mW of the exclusion threshold value (3.0) to do compare.
   This formula is [3.0] / [√f(GHz)] ·[(min. test separation distance, mm)] = exclusion threshold of mW.
5. Per KDB 447498 D01, at 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
   a. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz
6. Per KDB 941225 D01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.
7. Per KDB 941225 D05, SAR test reduction is applied using the following criteria:
   a. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
   b. When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   c. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   d. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   e. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
8. Per KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions.
   a. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
   b. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel.

9. Per KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions.
   a. When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
   b. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
10. Per KDB 248227 D01 SAR is not required for the following U-NII-1 and U-NII-2A bands conditions.
   a. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.
   b. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.
11. Per KDB 248227 D01 5G WLAN Subsequent Test Configuration Procedures
   SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units.
   a. When SAR test exclusion provisions of KDB Publication 447498 D01 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
   b. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

10 TEST RESULTS

10.1 GSM 850

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
GPRS 3 slots	Left Cheek	0	251	848.8	1.00	0.436	31.18	31.50	1.076	**0.469**	1#
	Left Tilt	0	251	848.8	-1.96	0.195	31.18	31.50	1.076	0.210	/
	Right Cheek	0	251	848.8	-0.37	0.298	31.18	31.50	1.076	0.321	/
	Right Tilt	0	251	848.8	-1.76	0.163	31.18	31.50	1.076	0.175	/
Body-worn Accessory & Hotspot											
Voice	Front Side	10	251	848.8	-3.96	0.106	33.25	33.50	1.059	0.112	/
	Back Side	10	251	848.8	-4.20	0.156	33.25	33.50	1.059	0.165	/
GPRS 3 slots	Front Side	10	251	848.8	-0.65	0.318	31.18	31.50	1.076	0.342	/
	Back Side	10	251	848.8	-1.83	0.483	31.18	31.50	1.076	**0.520**	2#
	Left Edge	10	251	848.8	-1.45	0.182	31.18	31.50	1.076	0.196	/
	Right Edge	10	251	848.8	-1.97	0.204	31.18	31.50	1.076	0.220	/
	Bottom Edge	10	251	848.8	0.76	0.117	31.18	31.50	1.076	0.126	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

10.2 GSM 1900

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
GPRS 4 slots	Left Cheek	0	512	1850.2	-0.01	0.087	28.16	28.50	1.081	**0.094**	3#
	Left Tilt	0	512	1850.2	-1.88	0.045	28.16	28.50	1.081	0.049	/
	Right Cheek	0	512	1850.2	-1.14	0.050	28.16	28.50	1.081	0.054	/
	Right Tilt	0	512	1850.2	-2.37	0.046	28.16	28.50	1.081	0.050	/
Body-worn Accessory & Hotspot											
Voice	Front Side	10	512	1850.2	1.58	0.092	31.53	32.00	1.114	0.103	/
	Back Side	10	512	1850.2	-3.69	0.161	31.53	32.00	1.114	0.179	/
GPRS 4 slots	Front Side	10	512	1850.2	-0.68	0.238	28.16	28.50	1.081	0.257	/
	Back Side	10	512	1850.2	4.71	0.364	28.16	28.50	1.081	0.394	/
	Left Edge	10	512	1850.2	3.23	0.045	28.16	28.50	1.081	0.049	/
	Right Edge	10	512	1850.2	-1.35	0.034	28.16	28.50	1.081	0.037	/
	Bottom Edge	10	512	1850.2	0.72	0.408	28.16	28.50	1.081	**0.441**	4#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

10.3WCDMA Band 2

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
RMC	Left Cheek	0	9262	1852.4	-0.82	0.106	24.89	25.00	1.026	**0.109**	5#
	Left Tilt	0	9262	1852.4	-0.49	0.056	24.89	25.00	1.026	0.057	/
	Right Cheek	0	9262	1852.4	-1.99	0.088	24.89	25.00	1.026	0.090	/
	Right Tilt	0	9262	1852.4	-0.64	0.064	24.89	25.00	1.026	0.066	/
Body-worn Accessory & Hotspot											
RMC	Front Side	10	9262	1852.4	-0.52	0.397	24.89	25.00	1.026	0.407	/
	Back Side	10	9262	1852.4	-1.22	0.706	24.89	25.00	1.026	0.724	/
	Left Edge	10	9262	1852.4	-1.08	0.154	24.89	25.00	1.026	0.158	/
	Right Edge	10	9262	1852.4	-3.40	0.103	24.89	25.00	1.026	0.106	/
	Bottom Edge	10	9262	1852.4	-2.43	0.773	24.89	25.00	1.026	**0.793**	6#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

10.4WCDMA Band 5

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
RMC	Left Cheek	0	4132	826.4	-1.67	0.200	24.46	24.50	1.009	**0.202**	7#
	Left Tilt	0	4132	826.4	2.74	0.085	24.46	24.50	1.009	0.086	/
	Right Cheek	0	4132	826.4	-4.54	0.121	24.46	24.50	1.009	0.122	/
	Right Tilt	0	4132	826.4	-0.79	0.071	24.46	24.50	1.009	0.072	/
Body-worn Accessory & Hotspot											
RMC	Front Side	10	4132	826.4	-0.21	0.138	24.46	24.50	1.009	0.139	/
	Back Side	10	4132	826.4	-0.31	0.202	24.46	24.50	1.009	0.204	/
	Left Edge	10	4132	826.4	-0.87	0.151	24.46	24.50	1.009	0.152	/
	Right Edge	10	4132	826.4	-0.86	0.215	24.46	24.50	1.009	**0.217**	8#
	Bottom Edge	10	4132	826.4	-0.63	0.046	24.46	24.50	1.009	0.046	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

10.5LTE Band 2 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	18900	1880.0	1	Mid.	3.70	0.064	23.41	23.50	1.021	**0.065**	9#
		0	18700	1860.0	50	Mid.	-0.03	0.050	22.47	22.50	1.007	0.050	/
	Left Tilt	0	18900	1880.0	1	Mid.	1.16	0.041	23.41	23.50	1.021	0.042	/
		0	18700	1860.0	50	Mid.	-0.76	0.035	22.47	22.50	1.007	0.035	/
	Right Cheek	0	18900	1880.0	1	Mid.	-2.22	0.045	23.41	23.50	1.021	0.046	/
		0	18700	1860.0	50	Mid.	-2.94	0.050	22.47	22.50	1.007	0.050	/
	Right Tilt	0	18900	1880.0	1	Mid.	-1.38	0.041	23.41	23.50	1.021	0.042	/
		0	18700	1860.0	50	Mid.	-1.17	0.031	22.47	22.50	1.007	0.031	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	18900	1880.0	1	Mid.	-0.21	0.244	23.41	23.50	1.021	0.249	/
		10	18700	1860.0	50	Mid.	-1.73	0.247	22.47	22.50	1.007	0.249	/
	Back Side	10	18900	1880.0	1	Mid.	-2.43	0.473	23.41	23.50	1.021	0.483	/
		10	18700	1860.0	50	Mid.	-2.50	0.527	22.47	22.50	1.007	0.531	/
	Left Edge	10	18900	1880.0	1	Mid.	0.35	0.187	23.41	23.50	1.021	0.191	/
		10	18700	1860.0	50	Mid.	-2.14	0.163	22.47	22.50	1.007	0.164	/
	Right Edge	10	18900	1880.0	1	Mid.	0.96	0.112	23.41	23.50	1.021	0.114	/
		10	18700	1860.0	50	Mid.	1.53	0.096	22.47	22.50	1.007	0.097	/
	Bottom Edge	10	18900	1880.0	1	Mid.	-0.77	0.526	23.41	23.50	1.021	**0.537**	10#
		10	18700	1860.0	50	Mid.	0.04	0.511	22.47	22.50	1.007	0.515	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.6 LTE Band 4 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	20175	1732.5	1	Mid.	-1.59	0.065	23.32	23.50	1.042	0.068	/
		0	20300	1745.0	50	Mid.	-1.99	0.033	22.37	22.50	1.030	0.034	/
	Left Tilt	0	20175	1732.5	1	Mid.	-1.21	0.044	23.32	23.50	1.042	0.046	/
		0	20300	1745.0	50	Mid.	-1.39	0.039	22.37	22.50	1.030	0.040	/
	Right Cheek	0	20175	1732.5	1	Mid.	-2.01	0.077	23.32	23.50	1.042	**0.080**	11#
		0	20300	1745.0	50	Mid.	-1.52	0.071	22.37	22.50	1.030	0.073	/
	Right Tilt	0	20175	1732.5	1	Mid.	-0.15	0.037	23.32	23.50	1.042	0.039	/
		0	20300	1745.0	50	Mid.	-2.08	0.036	22.37	22.50	1.030	0.037	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	20175	1732.5	1	Mid.	1.07	0.371	23.32	23.50	1.042	0.387	/
		10	20300	1745.0	50	Mid.	-3.34	0.310	22.37	22.50	1.030	0.319	/
	Back Side	10	20175	1732.5	1	Mid.	-0.04	0.756	23.32	23.50	1.042	**0.788**	12#
		10	20300	1745.0	50	Mid.	-3.47	0.591	22.37	22.50	1.030	0.609	/
	Left Edge	10	20175	1732.5	1	Mid.	2.35	0.055	23.32	23.50	1.042	0.057	/
		10	20300	1745.0	50	Mid.	2.30	0.041	22.37	22.50	1.030	0.042	/
	Right Edge	10	20175	1732.5	1	Mid.	3.88	0.048	23.32	23.50	1.042	0.050	/
		10	20300	1745.0	50	Mid.	-2.35	0.036	22.37	22.50	1.030	0.037	/
	Bottom Edge	10	20175	1732.5	1	Mid.	-1.51	0.737	23.32	23.50	1.042	0.768	/
		10	20300	1745.0	50	Mid.	-1.03	0.613	22.37	22.50	1.030	0.632	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.7 LTE Band 5 (10MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	20600	844.0	1	High	-1.36	0.079	23.02	23.50	1.117	0.088	/
		0	20600	844.0	25	Mid.	-0.69	0.066	22.05	22.50	1.109	0.073	/
	Left Tilt	0	20600	844.0	1	High	-3.23	0.038	23.02	23.50	1.117	0.042	/
		0	20600	844.0	25	Mid.	1.58	0.031	22.05	22.50	1.109	0.034	/
	Right Cheek	0	20600	844.0	1	High	-1.79	0.105	23.02	23.50	1.117	**0.117**	13#
		0	20600	844.0	25	Mid.	-0.26	0.090	22.05	22.50	1.109	0.100	/
	Right Tilt	0	20600	844.0	1	High	1.07	0.053	23.02	23.50	1.117	0.059	/
		0	20600	844.0	25	Mid.	-2.65	0.047	22.05	22.50	1.109	0.052	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	20600	844.0	1	High	3.86	0.089	23.02	23.50	1.117	0.099	/
		10	20600	844.0	25	Mid.	-2.64	0.075	22.05	22.50	1.109	0.083	/
	Back Side	10	20600	844.0	1	High	-0.11	0.156	23.02	23.50	1.117	**0.174**	14#
		10	20600	844.0	25	Mid.	-1.07	0.128	22.05	22.50	1.109	0.142	/
	Left Edge	10	20600	844.0	1	High	-0.32	0.123	23.02	23.50	1.117	0.137	/
		10	20600	844.0	25	Mid.	0.86	0.102	22.05	22.50	1.109	0.113	/
	Right Edge	10	20600	844.0	1	High	-0.64	0.142	23.02	23.50	1.117	0.159	/
		10	20600	844.0	25	Mid.	-2.69	0.113	22.05	22.50	1.109	0.125	/
	Bottom Edge	10	20600	844.0	1	High	0.63	0.026	23.02	23.50	1.117	0.029	/
		10	20600	844.0	25	Mid.	-0.71	0.022	22.05	22.50	1.109	0.024	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.8 LTE Band 7 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	21100	2535.0	1	Low	1.23	0.010	23.67	24.00	1.079	0.011	/
		0	21100	2535.0	50	Low	3.69	0.005	22.71	23.00	1.069	0.005	/
	Left Tilt	0	21100	2535.0	1	Low	-4.17	0.006	23.67	24.00	1.079	0.006	/
		0	21100	2535.0	50	Low	-2.65	0.004	22.71	23.00	1.069	0.004	/
	Right Cheek	0	21100	2535.0	1	Low	-0.29	0.062	23.67	24.00	1.079	**0.067**	15#
		0	21100	2535.0	50	Low	0.25	0.032	22.71	23.00	1.069	0.034	/
	Right Tilt	0	21100	2535.0	1	Low	0.05	0.014	23.67	24.00	1.079	0.015	/
		0	21100	2535.0	50	Low	3.99	0.008	22.71	23.00	1.069	0.009	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	21100	2535.0	1	Low	-0.03	0.336	23.67	24.00	1.079	0.363	/
		10	21100	2535.0	50	Low	-0.12	0.271	22.71	23.00	1.069	0.290	/
	Back Side	10	21100	2535.0	1	Low	-0.60	0.351	23.67	24.00	1.079	0.379	/
		10	21100	2535.0	50	Low	0.21	0.278	22.71	23.00	1.069	0.297	/
	Left Edge	10	21100	2535.0	1	Low	-0.48	0.263	23.67	24.00	1.079	0.284	/
		10	21100	2535.0	50	Low	-0.55	0.209	22.71	23.00	1.069	0.223	/
	Right Edge	10	21100	2535.0	1	Low	-0.36	0.115	23.67	24.00	1.079	0.124	/
		10	21100	2535.0	50	Low	0.20	0.092	22.71	23.00	1.069	0.098	/
	Bottom Edge	10	21100	2535.0	1	Low	-0.49	0.389	23.67	24.00	1.079	**0.420**	16#
		10	21100	2535.0	50	Low	-0.22	0.316	22.71	23.00	1.069	0.338	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.9 LTE Band 12 (10MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	23060	704.0	1	Low	-3.16	0.038	22.98	23.50	1.127	0.043	/
		0	23060	704.0	25	Mid.	-2.14	0.030	21.95	22.50	1.135	0.034	/
	Left Tilt	0	23060	704.0	1	Low	-1.23	0.019	22.98	23.50	1.127	0.021	/
		0	23060	704.0	25	Mid.	-3.25	0.016	21.95	22.50	1.135	0.018	/
	Right Cheek	0	23060	704.0	1	Low	-0.66	0.043	22.98	23.50	1.127	**0.048**	17#
		0	23060	704.0	25	Mid.	-0.38	0.034	21.95	22.50	1.135	0.039	/
	Right Tilt	0	23060	704.0	1	Low	0.25	0.025	22.98	23.50	1.127	0.028	/
		0	23060	704.0	25	Mid.	0.95	0.019	21.95	22.50	1.135	0.022	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	23060	704.0	1	Low	-0.18	0.050	22.98	23.50	1.127	0.056	/
		10	23060	704.0	25	Mid.	-0.03	0.043	21.95	22.50	1.135	0.049	/
	Back Side	10	23060	704.0	1	Low	-0.25	0.105	22.98	23.50	1.127	**0.118**	18#
		10	23060	704.0	25	Mid.	-0.29	0.082	21.95	22.50	1.135	0.093	/
	Left Edge	10	23060	704.0	1	Low	-0.48	0.080	22.98	23.50	1.127	0.090	/
		10	23060	704.0	25	Mid.	-0.90	0.066	21.95	22.50	1.135	0.075	/
	Right Edge	10	23060	704.0	1	Low	-0.55	0.099	22.98	23.50	1.127	0.112	/
		10	23060	704.0	25	Mid.	-3.25	0.083	21.95	22.50	1.135	0.094	/
	Bottom Edge	10	23060	704.0	1	Low	-0.32	0.009	22.98	23.50	1.127	0.010	/
		10	23060	704.0	25	Mid.	-1.09	0.007	21.95	22.50	1.135	0.008	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.10 LTE Band 17 (10MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	23790	710.0	1	Mid.	-2.83	0.041	22.89	23.50	1.151	0.047	/
		0	23790	710.0	25	Low	0.63	0.032	21.96	22.50	1.132	0.036	/
	Left Tilt	0	23790	710.0	1	Mid.	0.12	0.022	22.89	23.50	1.151	0.025	/
		0	23790	710.0	25	Low	-2.36	0.016	21.96	22.50	1.132	0.018	/
	Right Cheek	0	23790	710.0	1	Mid.	-0.49	0.049	22.89	23.50	1.151	**0.056**	19#
		0	23790	710.0	25	Low	1.15	0.038	21.96	22.50	1.132	0.043	/
	Right Tilt	0	23790	710.0	1	Mid.	-2.04	0.025	22.89	23.50	1.151	0.029	/
		0	23790	710.0	25	Low	2.85	0.019	21.96	22.50	1.132	0.022	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	23790	710.0	1	Mid.	0.15	0.055	22.89	23.50	1.151	0.063	/
		10	23790	710.0	25	Low	-0.51	0.045	21.96	22.50	1.132	0.051	/
	Back Side	10	23790	710.0	1	Mid.	3.25	0.109	22.89	23.50	1.151	**0.125**	20#
		10	23790	710.0	25	Low	-0.38	0.088	21.96	22.50	1.132	0.100	/
	Left Edge	10	23790	710.0	1	Mid.	-0.38	0.083	22.89	23.50	1.151	0.096	/
		10	23790	710.0	25	Low	-2.54	0.071	21.96	22.50	1.132	0.080	/
	Right Edge	10	23790	710.0	1	Mid.	-1.85	0.092	22.89	23.50	1.151	0.106	/
		10	23790	710.0	25	Low	2.96	0.083	21.96	22.50	1.132	0.094	/
	Bottom Edge	10	23790	710.0	1	Mid.	4.23	0.015	22.89	23.50	1.151	0.017	/
		10	23790	710.0	25	Low	3.77	0.011	21.96	22.50	1.132	0.012	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.11 LTE Band 41 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	41140	2645.0	1	Low	-4.60	0.010	23.38	24.00	1.153	0.012	/
		0	41140	2645.0	50	Low	-2.36	0.006	22.33	23.00	1.167	0.007	/
	Left Tilt	0	41140	2645.0	1	Low	-1.85	0.006	23.38	24.00	1.153	0.007	/
		0	41140	2645.0	50	Low	0.99	0.004	22.33	23.00	1.167	0.005	/
	Right Cheek	0	41140	2645.0	1	Low	1.77	0.028	23.38	24.00	1.153	**0.032**	21#
		0	41140	2645.0	50	Low	3.27	0.015	22.33	23.00	1.167	0.018	/
	Right Tilt	0	41140	2645.0	1	Low	2.87	0.010	23.38	24.00	1.153	0.012	/
		0	41140	2645.0	50	Low	2.12	0.005	22.33	23.00	1.167	0.006	/
Body-worn Accessory & Hotspot													
QPSK	Front Side	10	41140	2645.0	1	Low	-0.39	0.148	23.38	24.00	1.153	0.171	/
		10	41140	2645.0	50	Low	2.65	0.114	22.33	23.00	1.167	0.133	/
	Back Side	10	41140	2645.0	1	Low	0.37	0.185	23.38	24.00	1.153	**0.213**	22#
		10	41140	2645.0	50	Low	-1.88	0.149	22.33	23.00	1.167	0.174	/
	Left Edge	10	41140	2645.0	1	Low	0.50	0.095	23.38	24.00	1.153	0.110	/
		10	41140	2645.0	50	Low	-0.54	0.076	22.33	23.00	1.167	0.089	/
	Right Edge	10	41140	2645.0	1	Low	-1.15	0.050	23.38	24.00	1.153	0.058	/
		10	41140	2645.0	50	Low	-1.80	0.040	22.33	23.00	1.167	0.047	/
	Bottom Edge	10	41140	2645.0	1	Low	-2.17	0.184	23.38	24.00	1.153	0.212	/
		10	41140	2645.0	50	Low	0.32	0.147	22.33	23.00	1.167	0.172	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.12 WIFI 2.4GHz

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1 g Scaled SAR (W/Kg)	Meas No.
Head													
802.11 b	Left Cheek	0	1	2412	-1.09	0.116	16.13	16.50	1.089	98.54	1.015	**0.128**	23#
	Left Tilt	0	1	2412	-0.54	0.079	16.13	16.50	1.089	98.54	1.015	0.087	/
	Right Cheek	0	1	2412	-0.48	0.096	16.13	16.50	1.089	98.54	1.015	0.106	/
	Right Tilt	0	1	2412	0.10	0.094	16.13	16.50	1.089	98.54	1.015	0.104	/
Body-worn Accessory & Hotspot													
802.11 b	Front Side	0	1	2412	0.23	0.062	16.13	16.50	1.089	98.54	1.015	0.069	/
	Back Side	0	1	2412	-1.39	0.080	16.13	16.50	1.089	98.54	1.015	**0.088**	24#
	Left Edge	0	1	2412	3.52	0.042	16.13	16.50	1.089	98.54	1.015	0.046	/
	Top Edge	0	1	2412	-1.79	0.061	16.13	16.50	1.089	98.54	1.015	0.067	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.13 WIFI 5GHz

Fre. Band	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1 g Scaled SAR (W/Kg)	Meas No.
Head														
5.3G	802.11 a	Left Cheek	0	52	5260	-2.05	0.231	13.90	14.00	1.023	97.88	1.022	**0.242**	25#
		Left Tilt	0	52	5260	3.22	0.187	13.90	14.00	1.023	97.88	1.022	0.196	/
		Right Cheek	0	52	5260	-2.50	0.095	13.90	14.00	1.023	97.88	1.022	0.099	/
		Right Tilt	0	52	5260	-2.09	0.075	13.90	14.00	1.023	97.88	1.022	0.078	/
5.6G	802.11 a	Left Cheek	0	100	5500	-4.29	0.185	12.63	13.00	1.089	97.88	1.022	**0.206**	26#
		Left Tilt	0	100	5500	0.55	0.139	12.63	13.00	1.089	97.88	1.022	0.155	/
		Right Cheek	0	100	5500	-0.23	0.083	12.63	13.00	1.089	97.88	1.022	0.092	/
		Right Tilt	0	100	5500	3.67	0.067	12.63	13.00	1.089	97.88	1.022	0.075	/
5.8G	802.11 a	Left Cheek	0	165	5825	-4.36	0.247	11.97	12.50	1.130	97.88	1.022	**0.285**	27#
		Left Tilt	0	165	5825	1.63	0.182	11.97	12.50	1.130	97.88	1.022	0.210	/
		Right Cheek	0	165	5825	0.78	0.094	11.97	12.50	1.130	97.88	1.022	0.109	/
		Right Tilt	0	165	5825	-3.63	0.072	11.97	12.50	1.130	97.88	1.022	0.083	/
Body-worn Accessory														
5.3G	802.11 a	Front Side	10	52	5260	1.42	0.032	13.90	14.00	1.023	97.88	1.022	0.033	/
		Back Side	10	52	5260	0.33	0.069	13.90	14.00	1.023	97.88	1.022	**0.072**	28#
5.6G	802.11 a	Front Side	10	100	5500	-0.15	0.008	12.63	13.00	1.089	97.88	1.022	0.009	/
		Back Side	10	100	5500	-4.01	0.070	12.63	13.00	1.089	97.88	1.022	**0.078**	29#
5.8G	802.11 a	Front Side	10	165	5825	-0.22	0.027	11.97	12.50	1.130	97.88	1.022	0.031	/
		Back Side	10	165	5825	-0.23	0.160	11.97	12.50	1.130	97.88	1.022	**0.185**	30#
Hotspot														
5.2G	802.11 a	Front Side	10	40	5200	1.35	0.029	13.93	14.00	1.016	97.88	1.022	0.030	/
		Back Side	10	40	5200	0.23	0.062	13.93	14.00	1.016	97.88	1.022	**0.064**	28#
		Left Edge	10	40	5200	-2.53	0.042	13.93	14.00	1.016	97.88	1.022	0.044	/
		Top Edge	10	40	5200	-2.91	0.054	13.93	14.00	1.016	97.88	1.022	0.056	/
5.8G	802.11 a	Front Side	10	165	5825	-0.22	0.027	11.97	12.50	1.130	97.88	1.022	0.031	/
		Back Side	10	165	5825	-0.23	0.160	11.97	12.50	1.130	97.88	1.022	**0.185**	30#
		Left Edge	10	165	5825	3.19	0.058	11.97	12.50	1.130	97.88	1.022	0.067	/
		Top Edge	10	165	5825	-4.26	0.013	11.97	12.50	1.130	97.88	1.022	0.015	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

11 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20, or when the original or repeated measurement is >= 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

The highest measured SAR is 0.773 W/kg < 0.80 W/kg, repeated measurement is not required.

12 SIMULTANEOUS TRANSMISSION

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR 1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR 1g 1.6 W/kg), SAR test exclusion is determined by the SAR to Peak Location Ratio (SPLSR).

12.1 Simultaneous Transmission Mode Consider

No.	Simultaneous Tx Combination	Head	Body-worn	Hotspot
1	GSM + WiFi 2.4G	Yes	Yes	Yes
2	GSM + WiFi 5G	Yes	Yes	Yes
3	GSM + Bluetooth	Yes	Yes	Yes
4	UMTS + WiFi 2.4G	Yes	Yes	Yes
5	UMTS + WiFi 5G	Yes	Yes	Yes
6	UMTS + Bluetooth	Yes	Yes	Yes
7	LTE + WiFi 2.4G	Yes	Yes	Yes
8	LTE + WiFi 5G	Yes	Yes	Yes
9	LTE + Bluetooth	Yes	Yes	Yes

Note:

1. 2G&3G&4G share the same antenna and can't transmit simultaneously.
2. The Bluetooth and WLAN share the same antenna, can't transmitting together.
3. The 2.4G WLAN or 5G WLAN can transmit simultaneously with each WWAN.

12.2 Sum SAR of Simultaneous Transmission

12.2.1 Sum Head SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM + Bluetooth	GSM	0.469	0.495	No
	Bluetooth	0.026		
GSM + 2.4G WLAN	GSM	0.469	0.597	No
	2.4G WLAN	0.128		
GSM + 5G WLAN	GSM	0.469	**0.754**	No
	5G WLAN	0.285		
WCDMA RMC +Bluetooth	WCDMA RMC	0.202	0.228	No
	Bluetooth	0.026		
WCDMA RMC +2.4G WLAN	WCDMA RMC	0.202	0.330	No
	2.4G WLAN	0.128		
WCDMA RMC + 5G WLAN	WCDMA RMC	0.202	0.487	No
	5G WLAN	0.285		
LTE QPSK + Bluetooth	LTE QPSK	0.117	0.143	No
	Bluetooth	0.026		
LTE QPSK + 2.4G WLAN	LTE QPSK	0.117	0.245	No
	2.4G WLAN	0.128		
LTE QPSK + 5G WLAN	LTE QPSK	0.117	0.402	No
	5G WLAN	0.285		

12.2.2 Sum Body-worn SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM + Bluetooth	GSM	0.520	0.541	No
	Bluetooth	0.021		
GSM + 2.4G WLAN	GSM	0.520	0.608	No
	2.4G WLAN	0.088		
GSM + 5G WLAN	GSM	0.520	0.705	No
	5G WLAN	0.185		
WCDMA RMC +Bluetooth	WCDMA RMC	0.724	0.745	No
	Bluetooth	0.021		
WCDMA RMC +2.4G WLAN	WCDMA RMC	0.724	0.812	No
	2.4G WLAN	0.088		
WCDMA RMC + 5G WLAN	WCDMA RMC	0.724	0.909	No
	5G WLAN	0.185		
LTE QPSK + Bluetooth	LTE QPSK	0.788	0.809	No
	Bluetooth	0.021		
LTE QPSK + 2.4G WLAN	LTE QPSK	0.788	0.876	No
	2.4G WLAN	0.088		

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
LTE QPSK + 5G WLAN	LTE QPSK	0.788	**0.973**	No
	5G WLAN	0.185		

12.2.3 Sum Hotspot mode SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM + Bluetooth	GSM	0.520	0.541	No
	Bluetooth	0.021		
GSM + 2.4G WLAN	GSM	0.520	0.608	No
	2.4G WLAN	0.088		
GSM + 5G WLAN	GSM	0.520	0.705	No
	5G WLAN	0.185		
WCDMA RMC +Bluetooth	WCDMA RMC	0.793	0.814	No
	Bluetooth	0.021		
WCDMA RMC +2.4G WLAN	WCDMA RMC	0.793	0.881	No
	2.4G WLAN	0.088		
WCDMA RMC + 5G WLAN	WCDMA RMC	0.793	**0.978**	No
	5G WLAN	0.185		
LTE QPSK + Bluetooth	LTE QPSK	0.788	0.809	No
	Bluetooth	0.021		
LTE QPSK + 2.4G WLAN	LTE QPSK	0.788	0.876	No
	2.4G WLAN	0.088		
LTE QPSK + 5G WLAN	LTE QPSK	0.788	0.973	No
	5G WLAN	0.185		

13 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
Test Software	SATIMO	OpenSAR	V4_02_31	N/A	N/A
750MHz Dipole	SATIMO	SID 750	S/N 11/17 DIP 0G750-446	2017/03/22	2020/03/21
835MHz Dipole	SATIMO	SID 835	S/N 11/17 DIP 0G750-447	2017/03/22	2020/03/21
1800MHz Dipole	SATIMO	SID 1800	S/N 11/17 DIP 1G800-449	2017/03/22	2020/03/21
1900MHz Dipole	SATIMO	SID 1900	S/N 11/17 DIP 1G900-450	2017/03/22	2020/03/21
2450MHz Dipole	SATIMO	SID 2450	S/N 11/17 DIP 2G450-452	2017/03/22	2020/03/21
2600MHz Dipole	SATIMO	SID 2600	S/N 11/17 DIP 2G600-453	2017/03/22	2020/03/21
Waveguide	SATIMO	SWG5500	S/N 49/16 DIP WGA42	2017/03/22	2020/03/21
E-Field Probe	MVG	SSE2	S/N 34/15 EPGO 265	2019/03/19	2020/03/18
MultiMeter	Keithley	MultiMeter 2000	4024022	2019/06/17	2020/06/16
Signal Generator	R&S	SMBV100A	260592	2019/06/13	2020/06/12
Power Meter	R&S	NRVD-B2	7250BJ-0112/2011	2019/10/30	2020/10/29
Power Sensor	R&S	NRV-Z4	100381	2019/10/30	2020/10/29
Power Sensor	R&S	NRV-Z2	100211	2019/10/30	2020/10/29
Wireless Communication Test Set	Agilent	8960-E5515C	MY50260493	2019/06/13	2020/06/13
Wireless Communication Test Set	R&S	CMW 500	151885	2019/06/13	2020/06/13
Network Analyzer	R&S	ZVL-6	101380	2019/06/20	2020/06/19
Thermometer	Elitech	RC-4HC	N/A	2019/11/02	2020/11/01
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	SATIMO	SCLMP	SN 25/13 OCPG56	N/A	N/A
Antenna	SATIMO	ANTA3	SN 17/13 ZNTA45	N/A	N/A
Phantom1	SATIMO	SAM	SN 11/17 SAM133	N/A	N/A
Phantom2	SATIMO	ELLI	SN 11/17 ELLI42	N/A	N/A
Attenuator	COM-MW	ZA-S1-31	1305003187	N/A	N/A
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

Note: Per KDB 865664 Dipole SAR Validation Verification, BALUN 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 in within 20% of calibrated measurement.
4. Impedance (real or imaginary parts) in within 5 Ohms of calibrated measurement.

ANNEX A SIMULATING LIQUID VERIFICATION RESULT

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an SCLMP Dielectric Probe Kit.

Date	Liquid Type	Fre. (MHz)	Temp. (℃)	Meas. Conductivity (σ) (S/m)	Meas. Permittivity (ε)	Target Conductivity (σ) (S/m)	Target Permittivity (ε)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2019.12.16	Head	750	21.3	0.91	41.73	0.89	41.90	2.25	-0.41
2019.12.17	Head	835	21.3	0.91	42.25	0.90	41.50	1.11	1.81
2019.12.13	Head	1800	21.2	1.41	39.66	1.40	40.00	0.71	-0.85
2019.12.14	Head	1900	21.5	1.41	40.54	1.40	40.00	0.71	1.35
2019.12.15	Head	1900	21.0	1.41	40.11	1.40	40.00	0.71	0.27
2019.12.25	Head	2450	21.2	1.81	39.13	1.80	39.20	0.56	-0.18
2019.12.26	Head	2600	21.1	1.98	38.25	1.96	39.01	1.02	-1.95
2020.01.01	Head	5200	21.2	4.53	37.33	4.66	35.99	-2.79	3.72
2020.01.02	Head	5600	21.3	5.05	35.15	5.07	35.53	-0.39	-1.07
2020.01.03	Head	5800	21.2	5.25	35.22	5.27	35.30	-0.38	-0.23

Note1: The tolerance limit of Conductivity and Permittivity is± 5%.

Note2: According to 2019 TCB workshop, FCC accept SAR testing with IEC tissue parameters for body, so this product only used IEC tissue parameters to perform SAR testing.

ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10%(for 1 g).

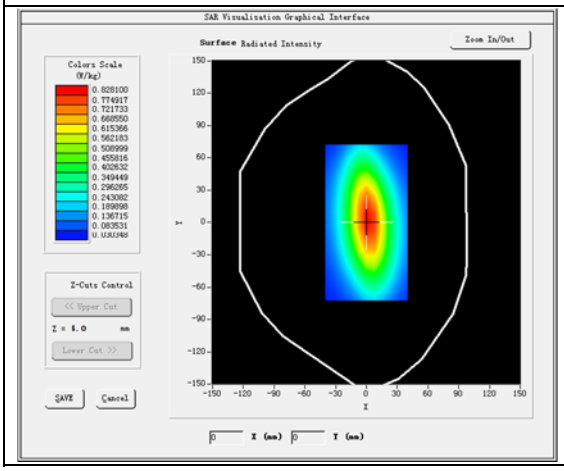
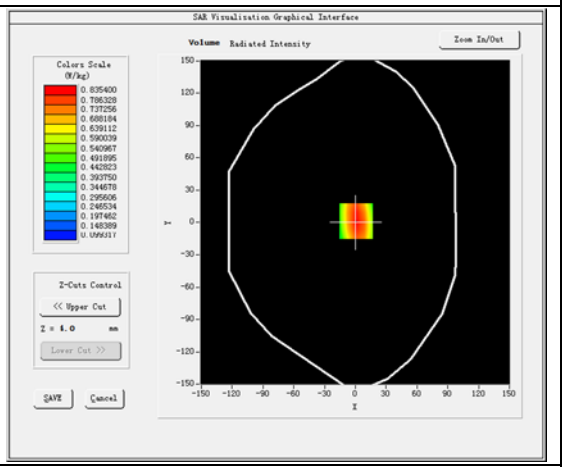
Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)	Targeted SAR(W/kg)	Tolerance (%)
2019.12.16	Head	750	100	0.802	8.02	8.78	-8.66	8.49	-5.54
2019.12.17	Head	835	100	0.932	9.32	9.58	-2.71	9.56	-2.51
2019.12.13	Head	1800	100	3.979	39.79	38.76	2.66	38.40	3.62
2019.12.14	Head	1900	100	3.820	38.20	39.49	-3.27	39.70	-3.78
2019.12.15	Head	1900	100	3.701	37.01	39.49	-6.28	39.70	-6.78
2019.12.25	Head	2450	100	5.368	53.68	54.31	-1.16	52.40	2.44
2019.12.26	Head	2600	100	5.394	53.94	56.32	-4.23	55.30	-2.46
2020.01.01	Head	5200	100	16.372	163.72	161.03	1.67	159.00	2.97
2020.01.02	Head	5600	100	17.752	177.52	175.43	1.19	173.80	2.14
2020.01.03	Head	5800	100	18.377	183.77	182.30	0.81	181.20	1.42
Note: The tolerance limit of System validation ±10%.									

System Performance Check Data(750 MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2019.12.16
Measurement duration: 13 minutes 42 seconds

Experimental conditions.

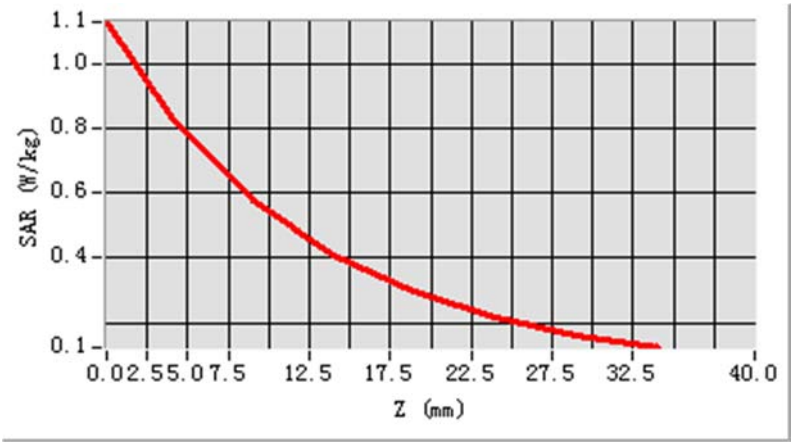
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	750MHz
Signal	CW
Frequency (MHz)	750.000000
Relative permittivity (real part)	41.733526
Conductivity (S/m)	0.913686
Power drift (%)	0.050000
Ambient Temperature:	22.8°C
Liquid Temperature:	21.3°C
ConvF:	1.89
Crest factor:	1:1

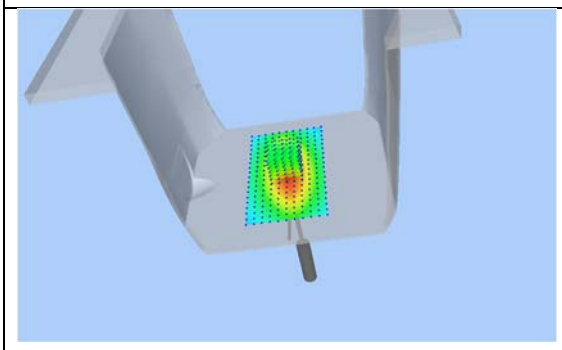
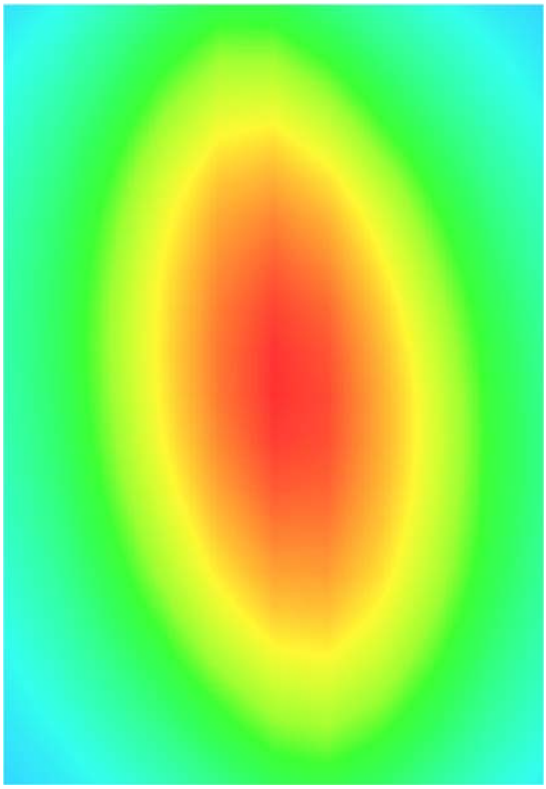
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=1.00
SAR Peak: 1.13 W/kg

SAR 10 g (W/Kg)	0.533965
SAR 1g (W/Kg)	0.802241

Z Axis Scan



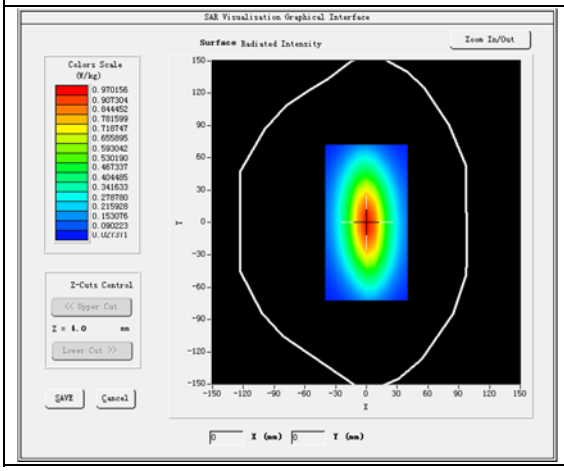
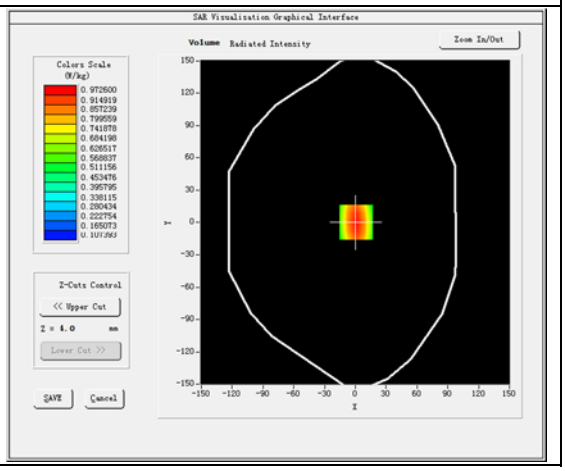
3D screen shot	Hot spot position
	

System Performance Check Data(835 MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2019.12.17
Measurement duration: 13 minutes 34 seconds

Experimental conditions.

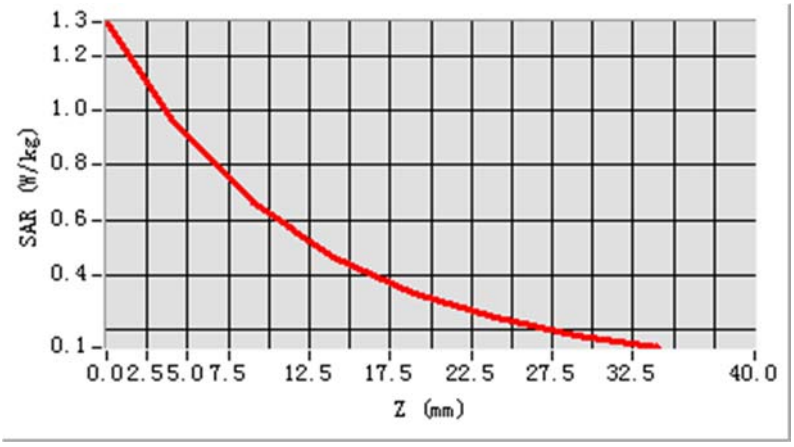
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	835MHz
Signal	CW
Frequency (MHz)	835.000000
Relative permittivity (real part)	42.247350
Conductivity (S/m)	0.910139
Power drift (%)	0.120000
Ambient Temperature:	22.4°C
Liquid Temperature:	21.3°C
ConvF:	1.93
Crest factor:	1:1

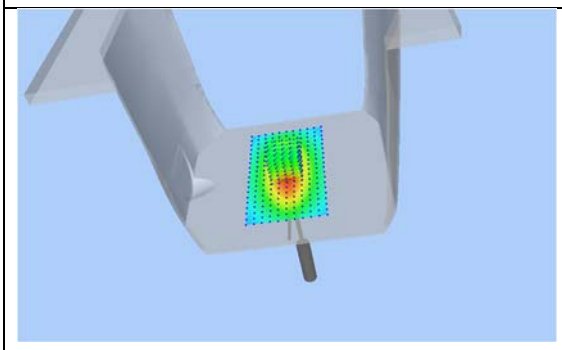
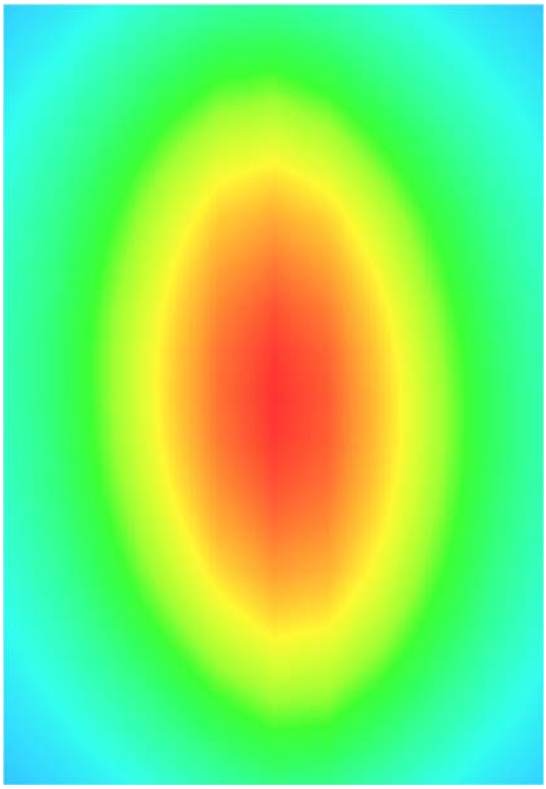
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00
SAR Peak: 1.32 W/kg

SAR 10 g (W/Kg)	0.612952
SAR 1g (W/Kg)	0.931512

Z Axis Scan



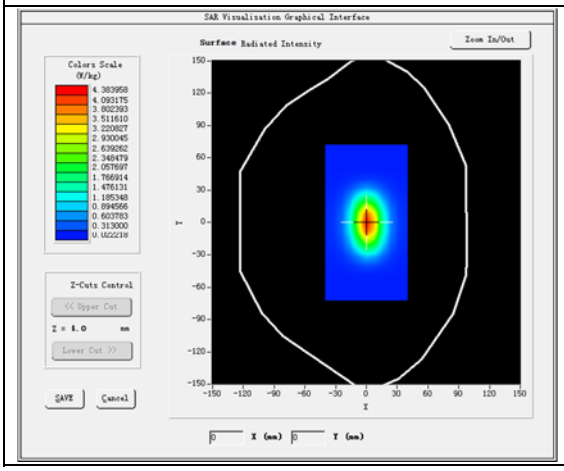
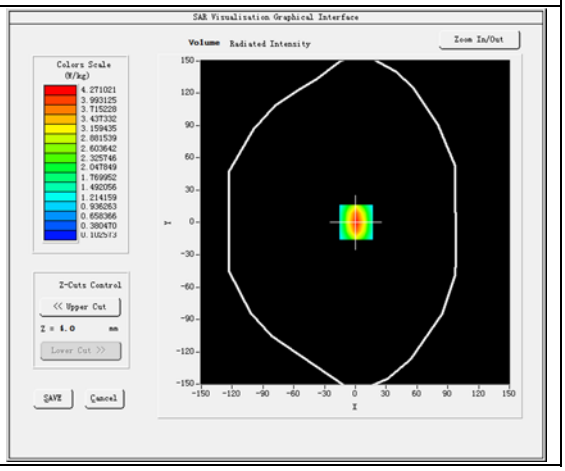
3D screen shot	Hot spot position
	

System Performance Check Data(1800MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2019.12.13
Measurement duration: 13 minutes 57 seconds

Experimental conditions.

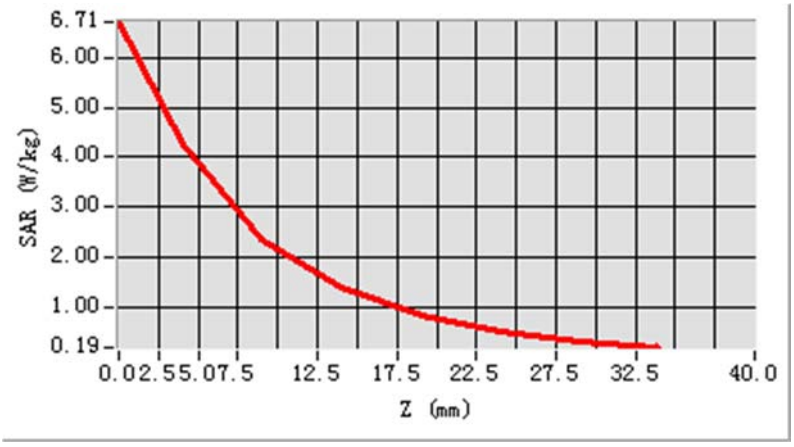
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	1800MHz
Signal	CW
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.661074
Conductivity (S/m)	1.411890
Power drift (%)	-0.970000
Ambient Temperature:	22.6°C
Liquid Temperature:	21.2°C
ConvF:	2.18
Crest factor:	1:1

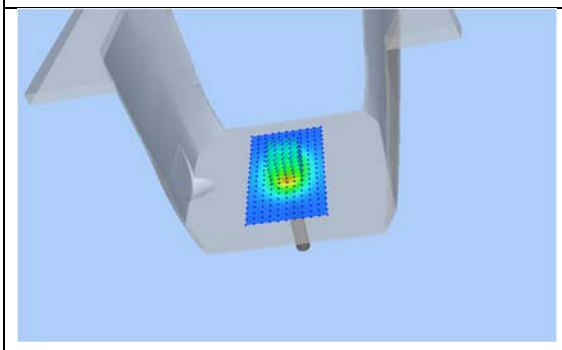
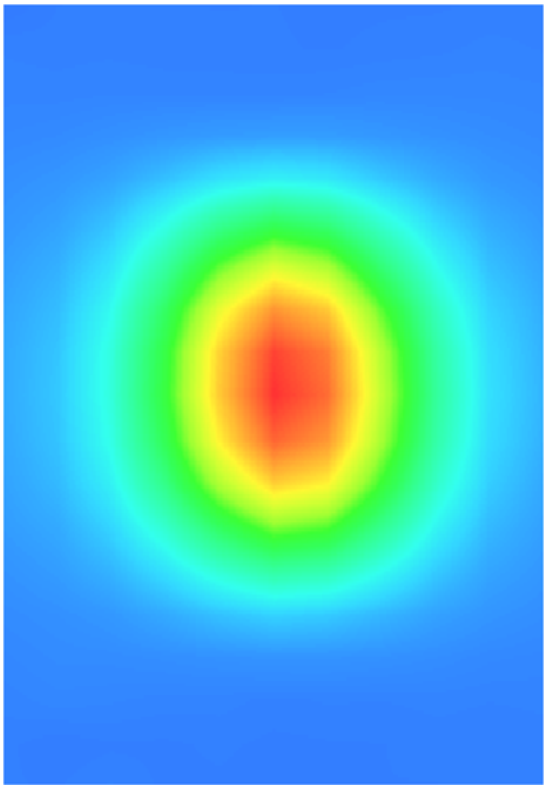
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00
SAR Peak: 6.66 W/kg

SAR 10 g (W/Kg)	2.075252
SAR 1g (W/Kg)	3.978810

Z Axis Scan



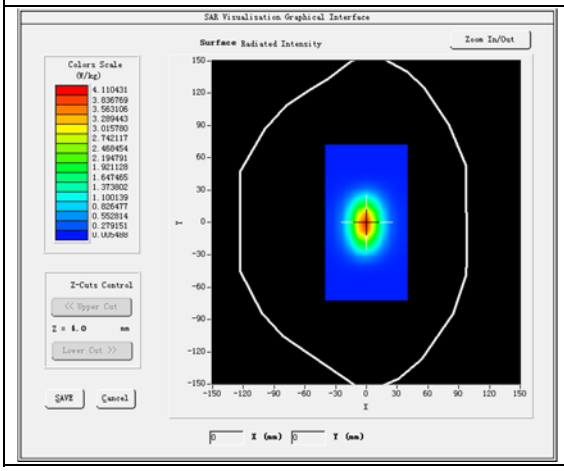
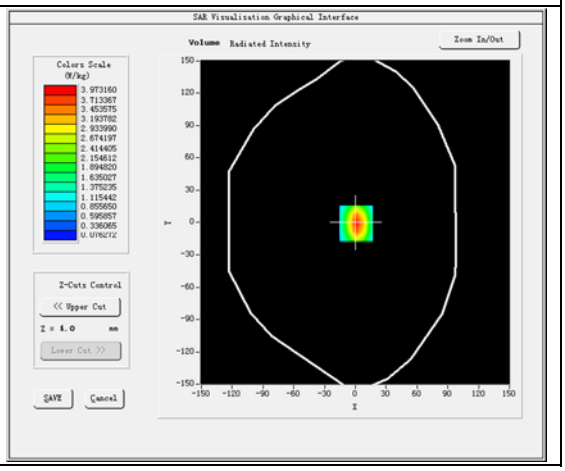
3D screen shot	Hot spot position
	

System Performance Check Data(1900MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2019.12.14
Measurement duration: 13 minutes 54 seconds

Experimental conditions.

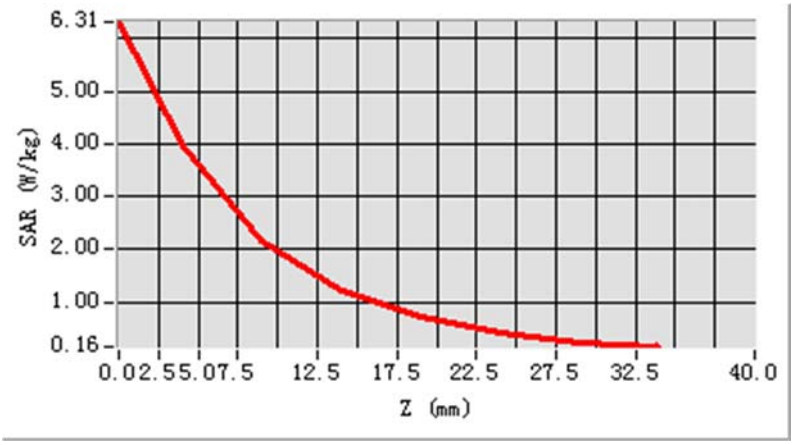
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	1900MHz
Signal	CW
Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.536902
Conductivity (S/m)	1.410722
Power drift (%)	0.110000
Ambient Temperature:	22.7°C
Liquid Temperature:	21.5°C
ConvF:	2.46
Crest factor:	1:1

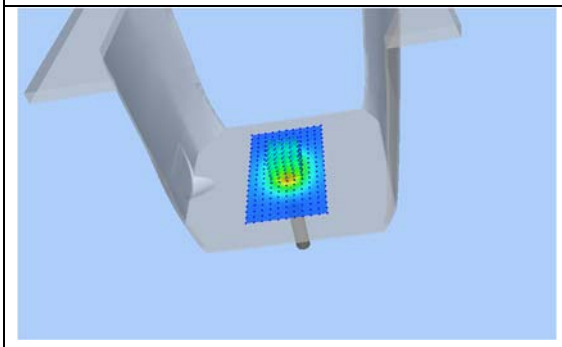
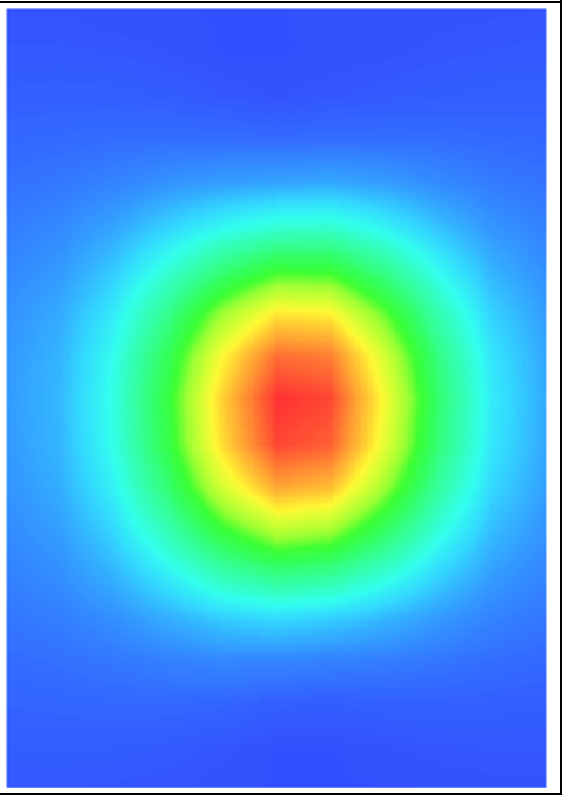
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-1.00
SAR Peak: 6.29W/kg

SAR 10g (W/Kg)	1.913324
SAR 1g (W/Kg)	3.819634

Z Axis Scan



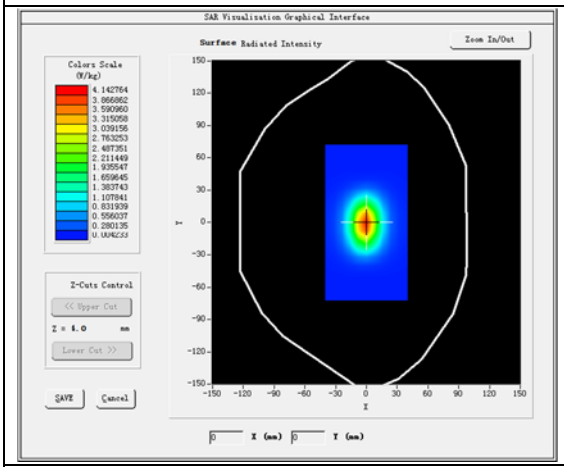
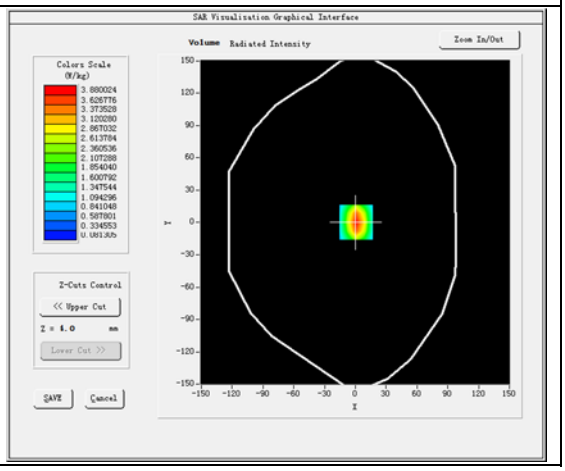
3D screen shot	Hot spot position
	

System Performance Check Data(1900MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2019.12.15
Measurement duration: 14 minutes 5 seconds

Experimental conditions.

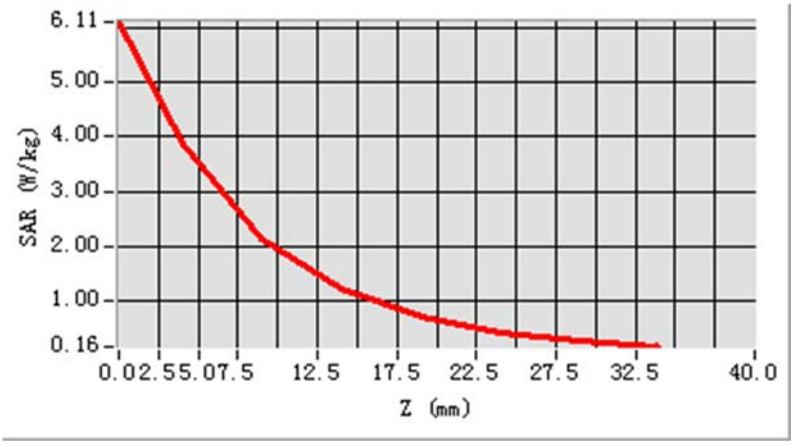
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	1900MHz
Signal	CW
Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.112403
Conductivity (S/m)	1.411015
Power drift (%)	-0.150000
Ambient Temperature:	22.2°C
Liquid Temperature:	21.0°C
ConvF:	2.46
Crest factor:	1:1

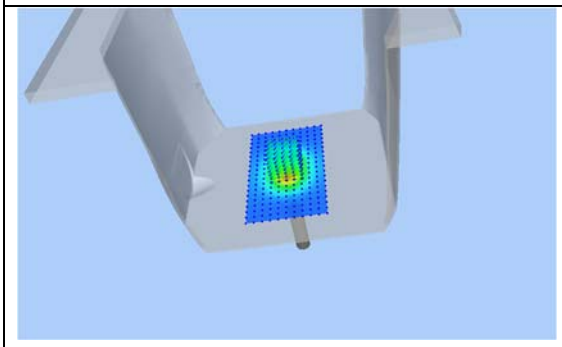
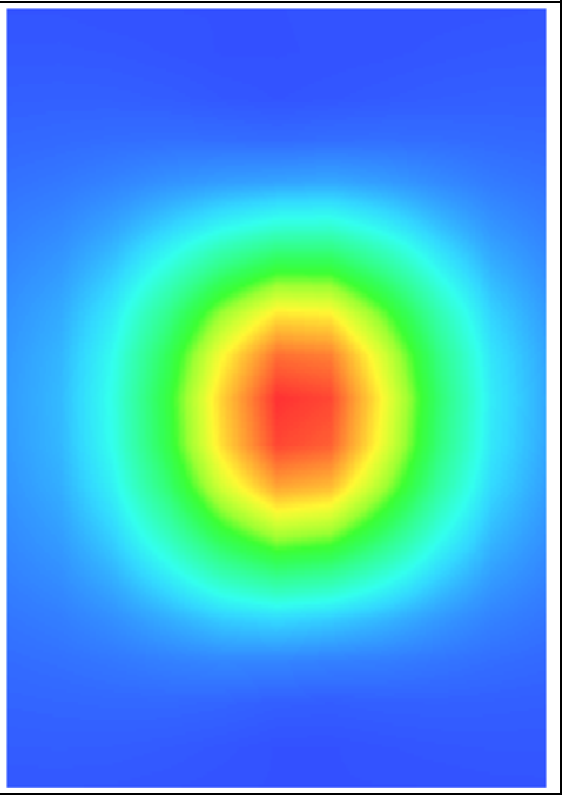
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00
SAR Peak: 6.05W/kg

SAR 10g (W/Kg)	1.922159
SAR 1g (W/Kg)	3.70056

Z Axis Scan



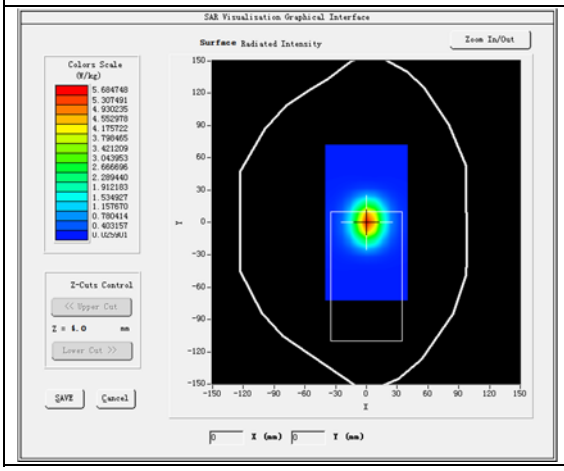
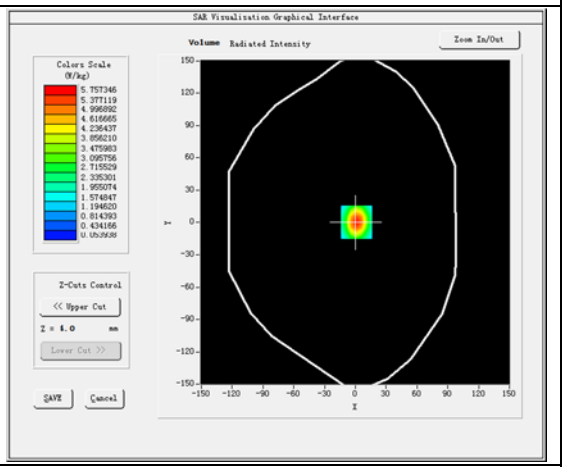
3D screen shot	Hot spot position
	

System Performance Check Data(2450MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=5mm, dy=5mm, dz=5mm
Date of measurement: 2019.12.25
Measurement duration: 18 minutes 41 seconds

Experimental conditions.

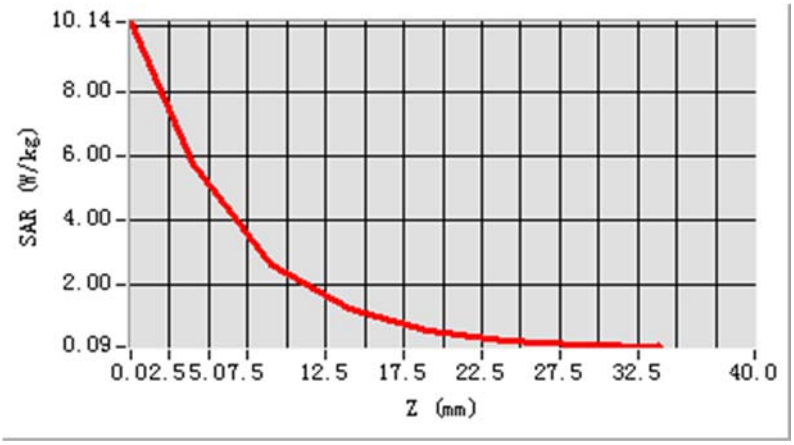
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	2450MHz
Signal	CW
Frequency (MHz)	2450.000000
Relative permittivity (real part)	39.131987
Conductivity (S/m)	1.812790
Power drift (%)	0.010000
Ambient Temperature:	22.5°C
Liquid Temperature:	21.2°C
ConvF:	2.55
Crest factor:	1:1

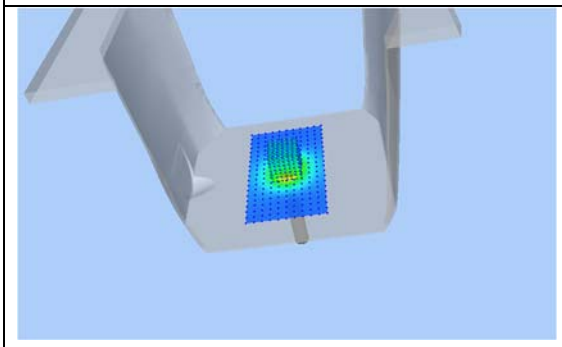
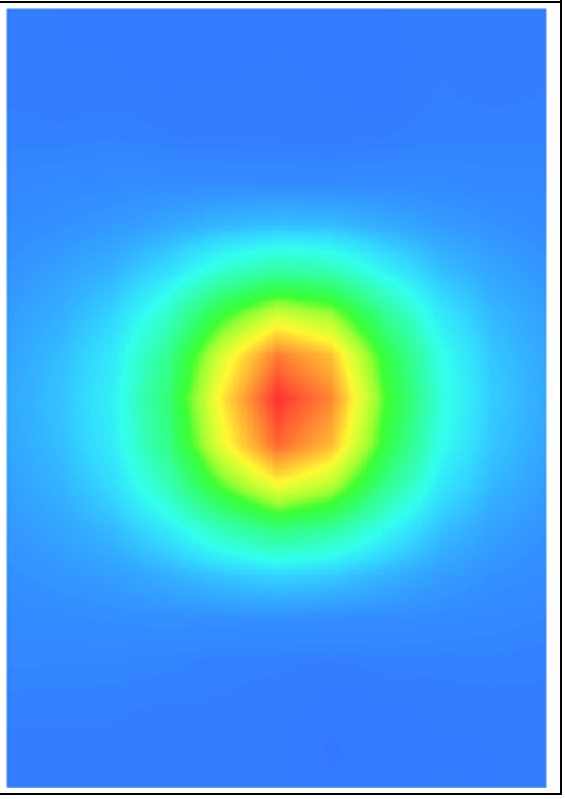
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00
SAR Peak: 10.00 W/kg

SAR 10g (W/Kg)	2.433022
SAR 1g (W/Kg)	5.368184

Z Axis Scan



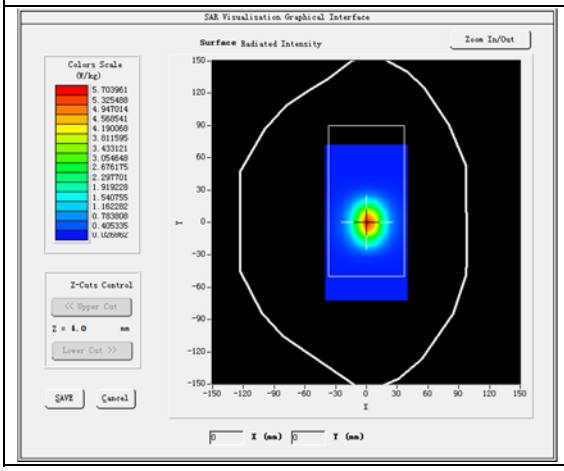
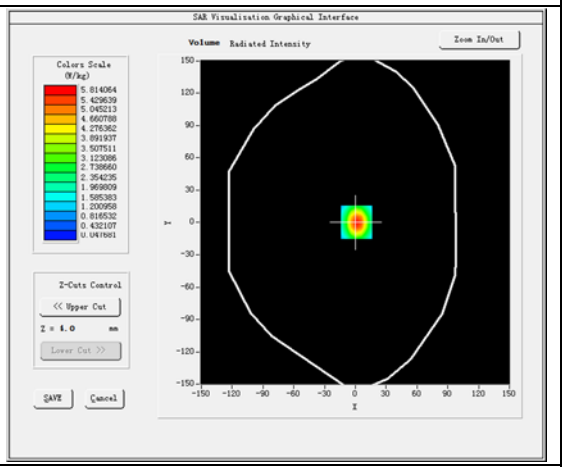
3D screen shot	Hot spot position
	

System Performance Check Data(2600MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=5mm, dy=5mm, dz=5mm
Date of measurement: 2019.12.26
Measurement duration: 18 minutes 39 seconds

Experimental conditions.

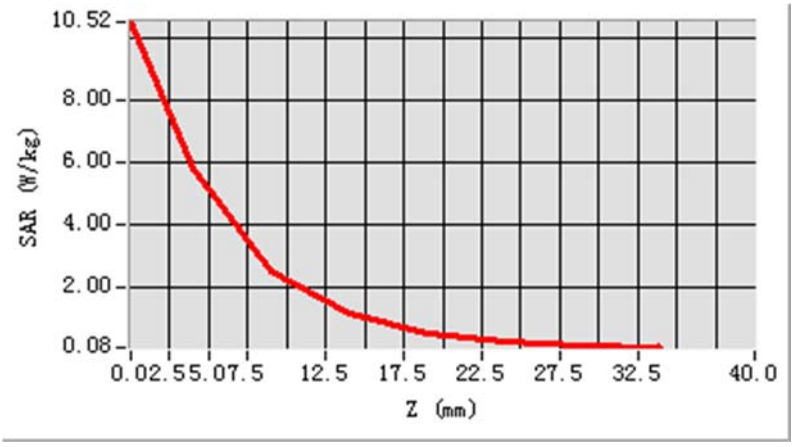
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	2600MHz
Signal	CW
Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.253954
Conductivity (S/m)	1.980714
Power drift (%)	-0.010000
Ambient Temperature:	22.3°C
Liquid Temperature:	21.1°C
ConvF:	2.38
Crest factor:	1:1

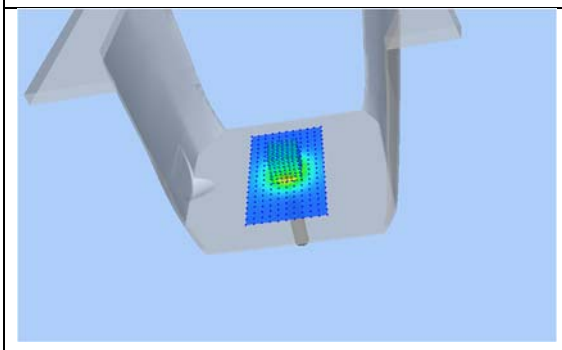
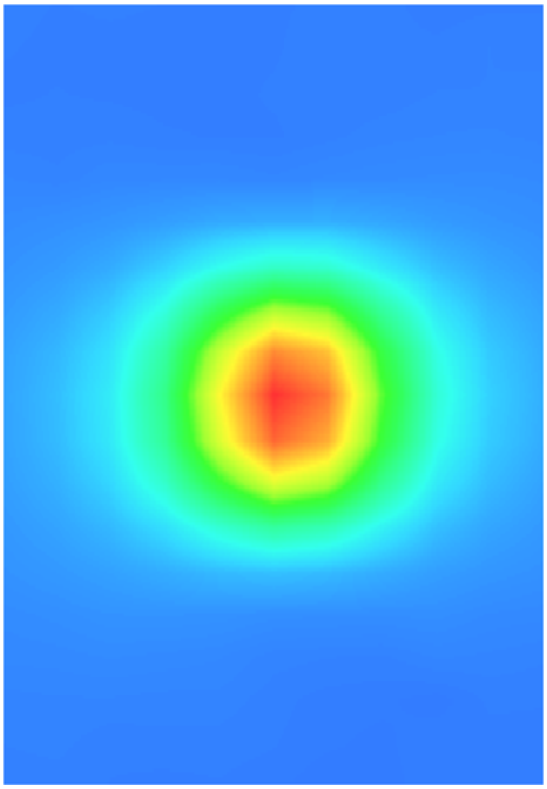
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-1.00
SAR Peak: 10.41 W/kg

SAR 10g (W/Kg)	2.375820
SAR 1g (W/Kg)	5.394311

Z Axis Scan



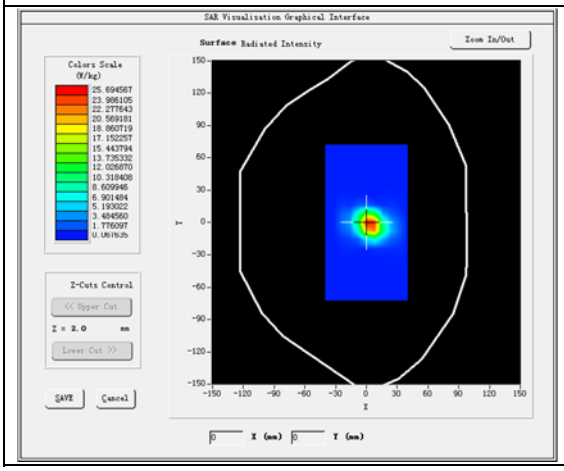
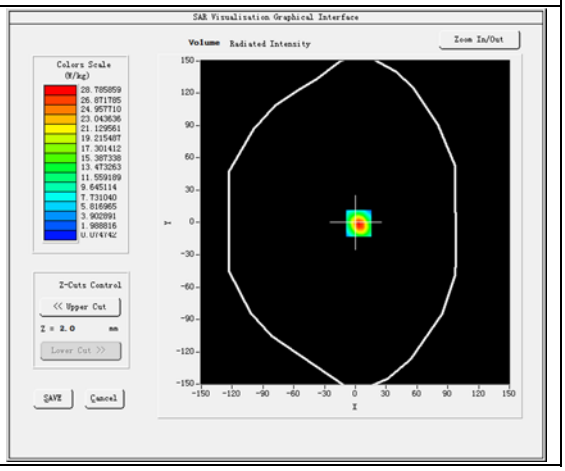
3D screen shot	Hot spot position
	

System Performance Check Data(5200 MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8 mm,dy=8 mm
Zoom scan resolution: dx=4 mm, dy=4 mm, dz=2 mm
Date of measurement: 2020.01.01
Measurement duration: 29 minutes 52 seconds

Experimental conditions.

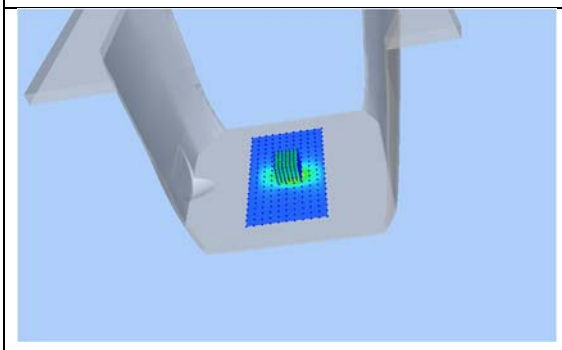
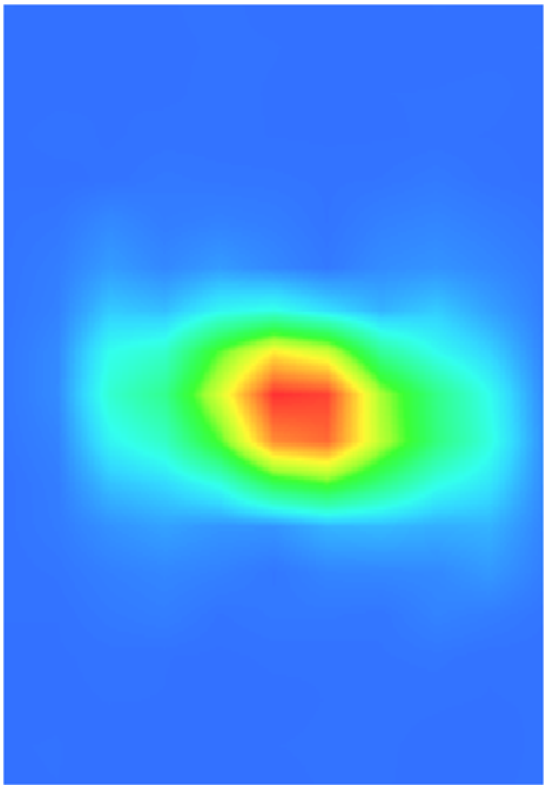
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	5200 MHz
Signal	CW
Frequency (MHz)	5200.000000
Relative permittivity (real part)	37.331843
Conductivity (S/m)	4.528484
Power drift (%)	-0.440000
Ambient Temperature:	22.4°C
Liquid Temperature:	21.2°C
ConvF:	2.09
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00
SAR Peak: 46.79 W/kg

SAR 10 g (W/Kg)	5.592867
SAR 1 g (W/Kg)	16.372122

Z Axis Scan

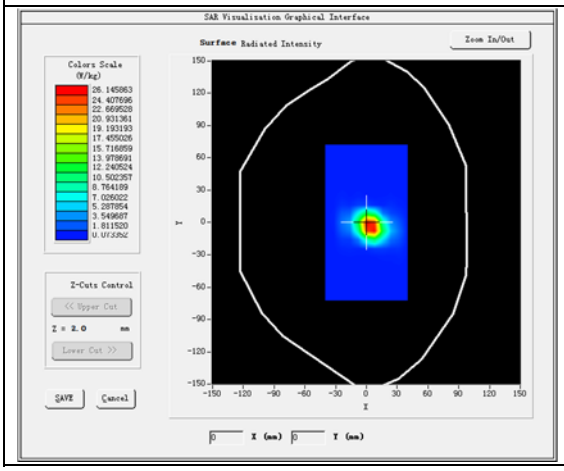
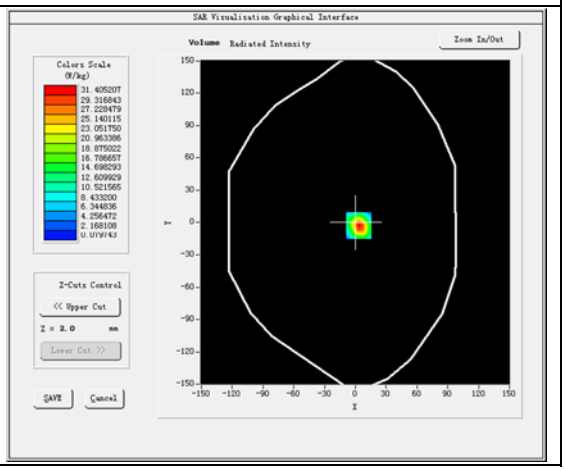
3D screen shot	Hot spot position
	

System Performance Check Data(5600 MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8 mm,dy=8 mm
Zoom scan resolution: dx=4 mm, dy=4 mm, dz=2 mm
Date of measurement: 2020.01.02
Measurement duration: 29 minutes 58 seconds

Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	5600 MHz
Signal	CW
Frequency (MHz)	5600.000000
Relative permittivity (real part)	35.152879
Conductivity (S/m)	5.046093
Power drift (%)	-0.210000
Ambient Temperature:	22.5°C
Liquid Temperature:	21.3°C
ConvF:	2.20
Crest factor:	1:1

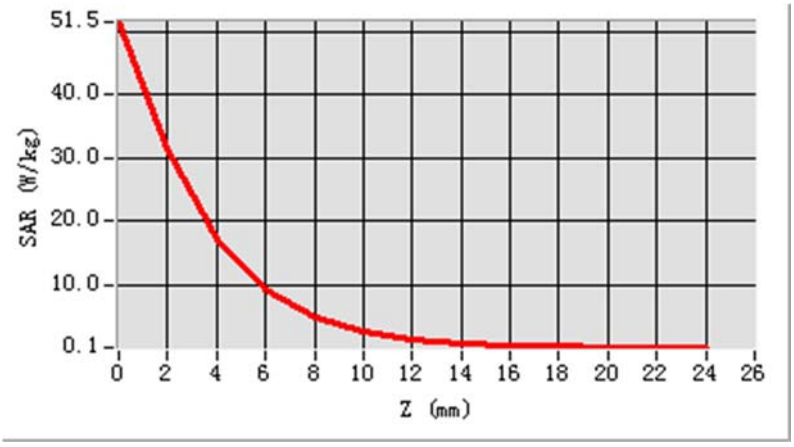
SURFACE SAR	VOLUME SAR
	

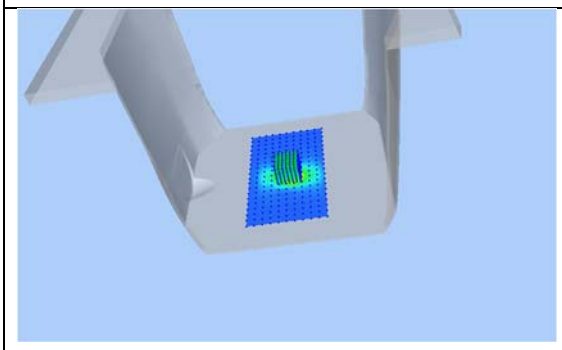
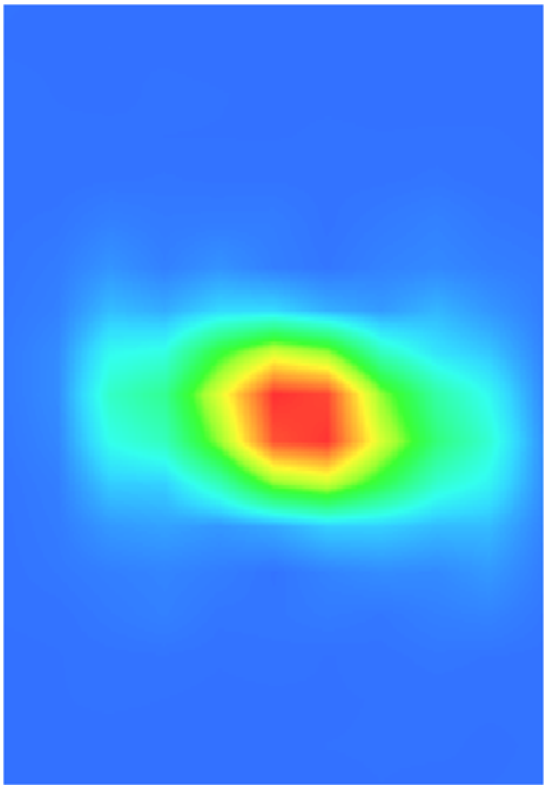
Maximum location: X=3.00, Y=-3.00

SAR Peak: 53.91 W/kg

SAR 10 g (W/Kg)	5.954512
SAR 1 g (W/Kg)	17.752193

Z Axis Scan



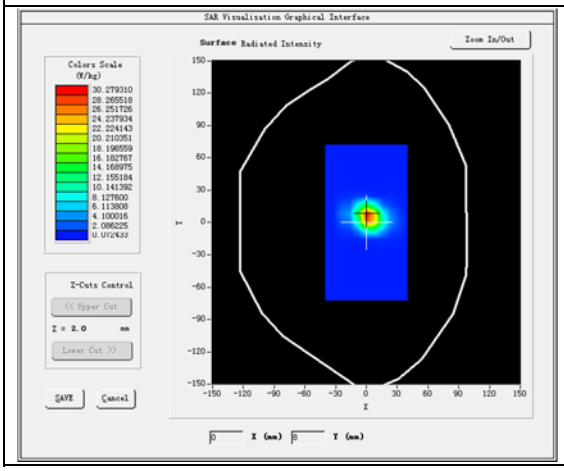
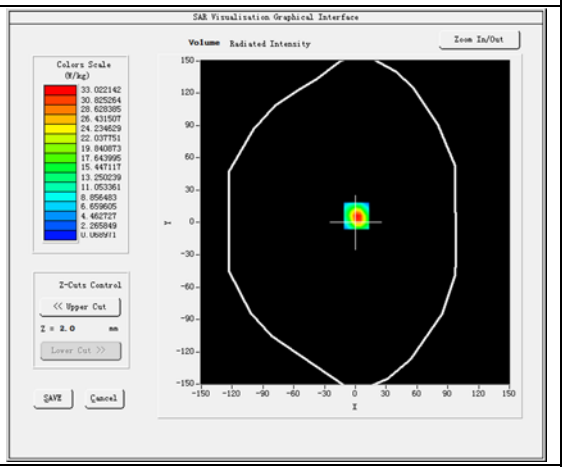
3D screen shot	Hot spot position
	

System Performance Check Data(5800 MHz)

Type: Phone measurement (Complete)
E-Field Probe: SN 34/15 SSE2 EPGO265
Area scan resolution: dx=8 mm,dy=8 mm
Zoom scan resolution: dx=4 mm, dy=4 mm, dz=2 mm
Date of measurement: 2020.01.03
Measurement duration: 29 minutes 14 seconds

Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Band	5800 MHz
Signal	CW
Frequency (MHz)	5800.000000
Relative permittivity (real part)	35.224185
Conductivity (S/m)	5.251752
Power drift (%)	-0.370000
Ambient Temperature:	22.4°C
Liquid Temperature:	21.2°C
ConvF:	2.17
Crest factor:	1:1

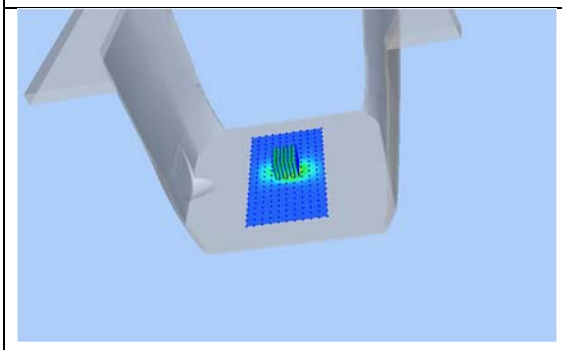
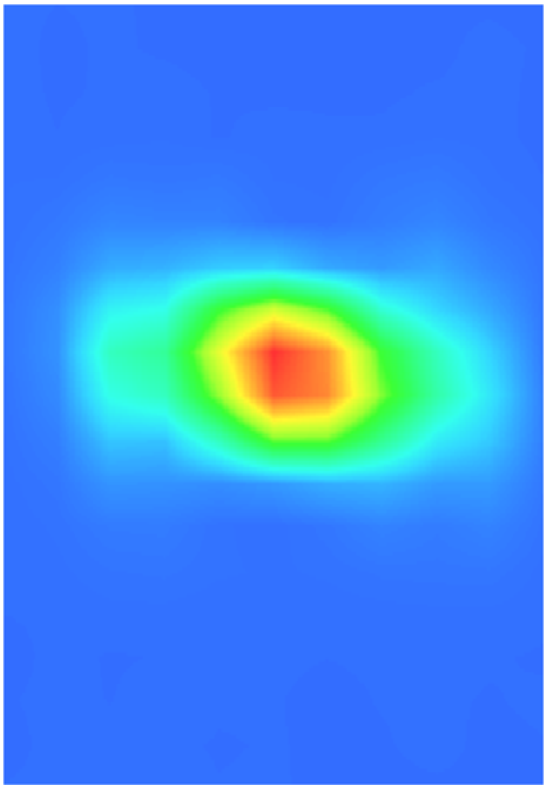
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=8.00

SAR Peak: 56.28 W/kg

SAR 10 g (W/Kg)	5.999621
SAR 1 g (W/Kg)	18.377041

Z Axis Scan

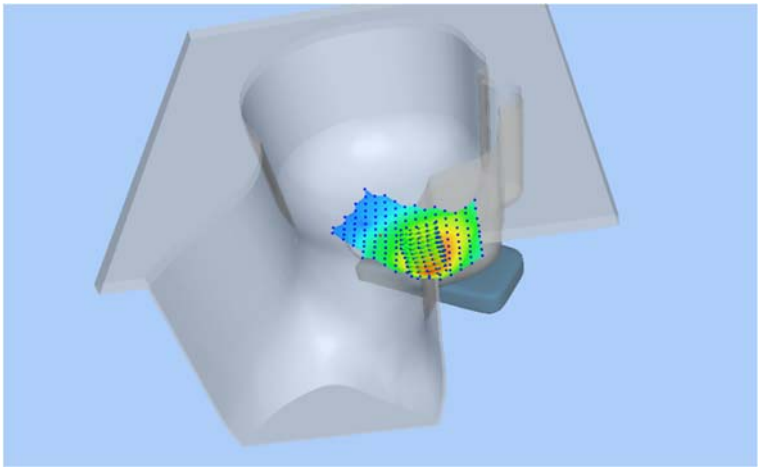
3D screen shot	Hot spot position
	

ANNEX C TEST DATA

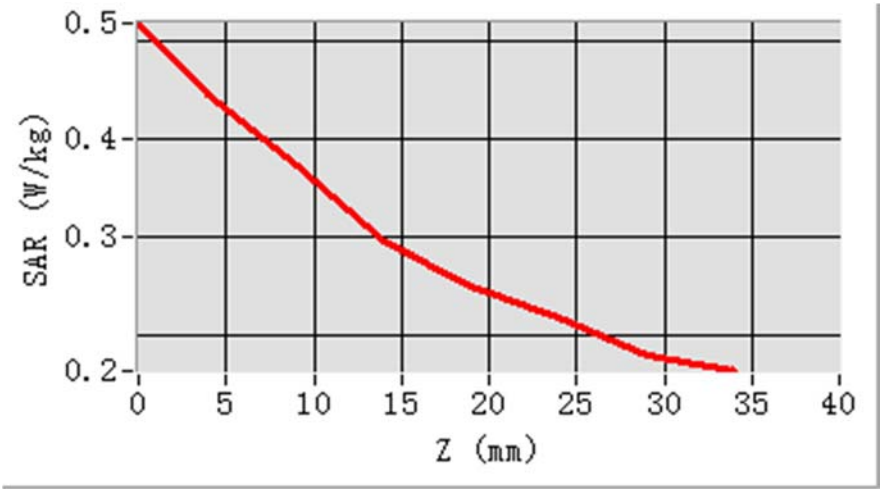
MEAS. 1 Left Head with Cheek on High Channel in GPRS850 3slots mode

Test Date:	17/12/2019
Measurement duration:	11 minutes 35 seconds
Signal:	GPRS, f=848.8 MHz, Duty Cycle: 1:2.7
Liquid Parameters:	Permittivity: 42.10; Conductivity: 0.92 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-56.000000
SAR 10g (W/Kg):	0.329312
SAR 1g (W/Kg):	0.436400
Power drift (%):	1.00

3D screen shot



Z Axis Scan

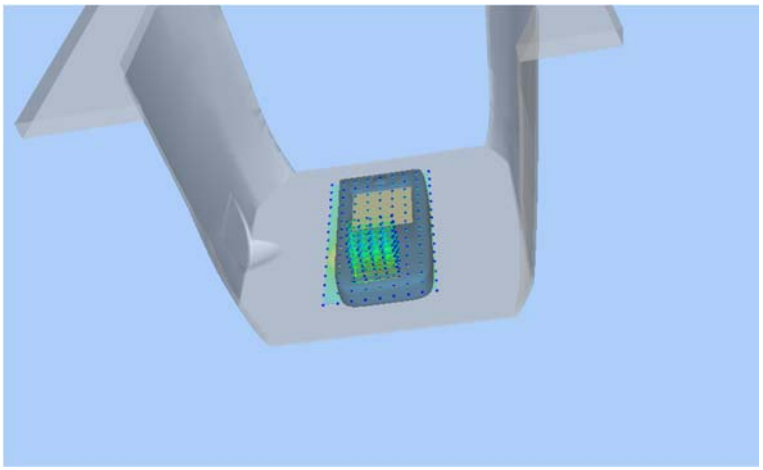


MEAS. 2 Body Plane with Back Side 10mm on High Channel in GPRS850

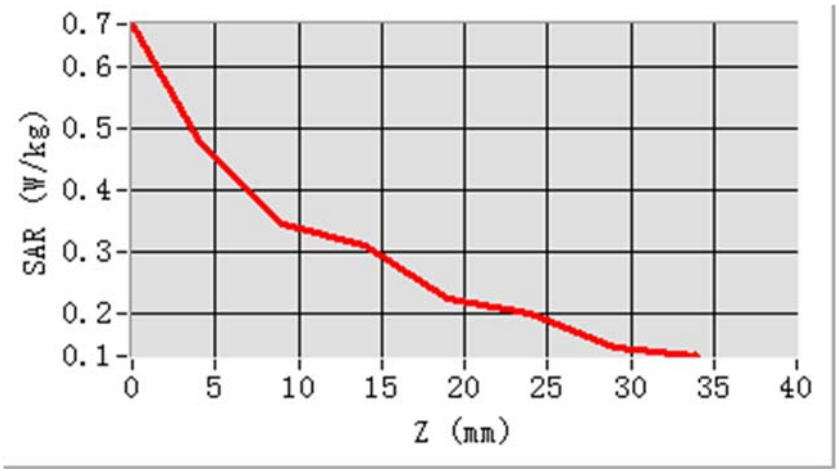
3slots mode

Test Date:	17/12/2019
Measurement duration:	8 minutes 54 seconds
Signal:	GPRS, f=848.8 MHz, Duty Cycle: 1:2.7
Liquid Parameters:	Permittivity: 42.10; Conductivity: 0.92 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-20.000000, Y=38.000000
SAR 10g (W/Kg):	0.344720
SAR 1g (W/Kg):	0.482664
Power drift (%):	-1.83

3D screen shot



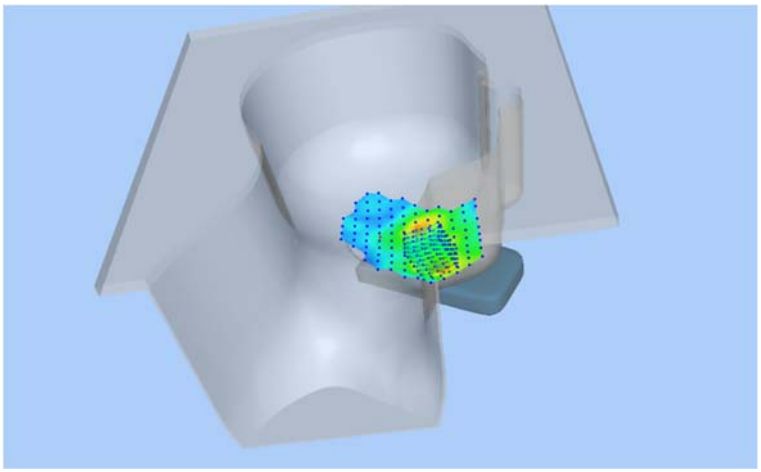
Z Axis Scan



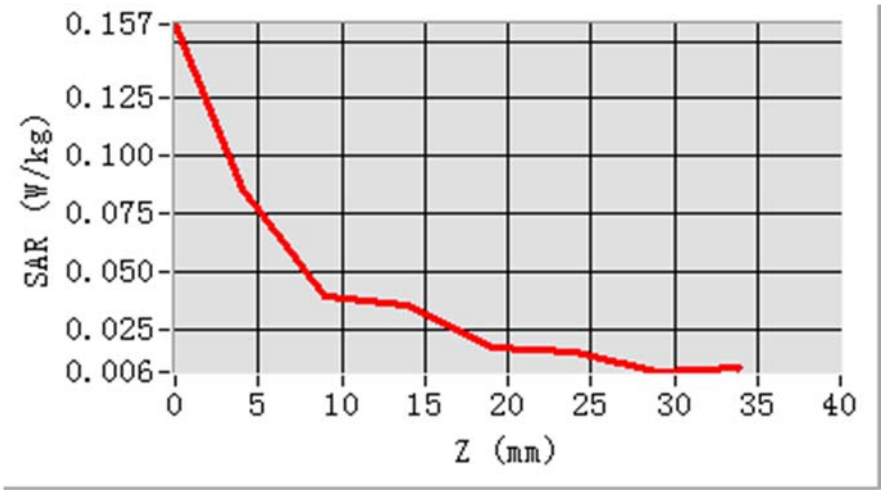
MEAS. 3 Left Head with Cheek on Low Channel in GPRS1900 4slots mode

Test Date:	15/12/2019
Measurement duration:	11 minutes 30 seconds
Signal:	GPRS, f=1850.2 MHz, Duty Cycle: 1:2.0
Liquid Parameters:	Permittivity: 40.58; Conductivity: 1.40 S/m
Test condition:	Ambient Temperature: 22.2°C, Liquid Temperature: 21.0°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf12mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-60.000000, Y=-60.000000
SAR 10g (W/Kg):	0.045259
SAR 1g (W/Kg):	0.087296
Power drift (%):	-0.01

3D screen shot



Z Axis Scan

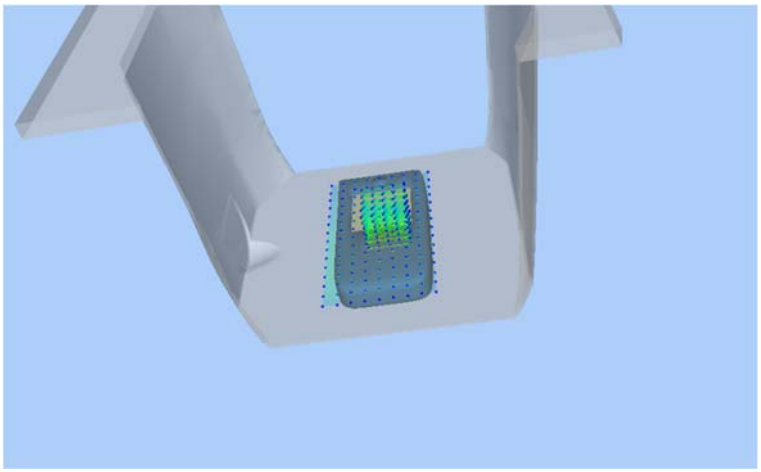


MEAS. 4 Body Plane with Back Side 10mm on Low Channel in GPRS1900

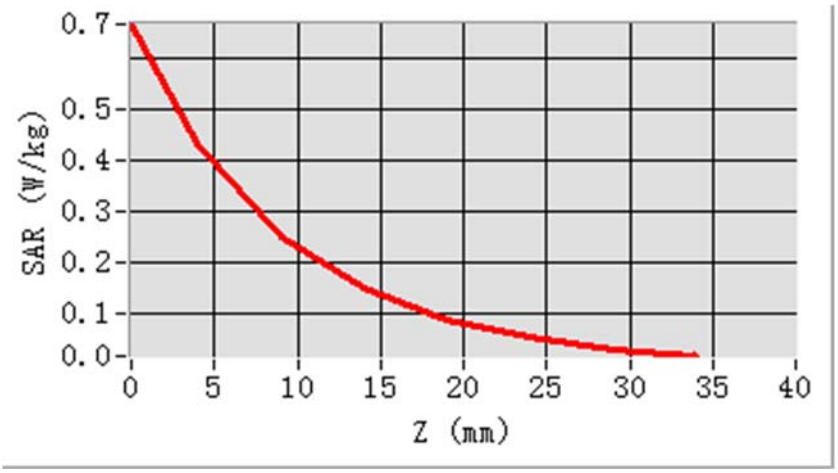
4slots mode

Test Date:	15/12/2019
Measurement duration:	13 minutes 14 seconds
Signal:	GPRS, f=1850.2 MHz, Duty Cycle: 1:2.0
Liquid Parameters:	Permittivity: 40.58; Conductivity: 1.40 S/m
Test condition:	Ambient Temperature: 22.2°C, Liquid Temperature: 21.0°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=-2.000000
SAR 10g (W/Kg):	0.214480
SAR 1g (W/Kg):	0.408126
Power drift (%):	0.72

3D screen shot



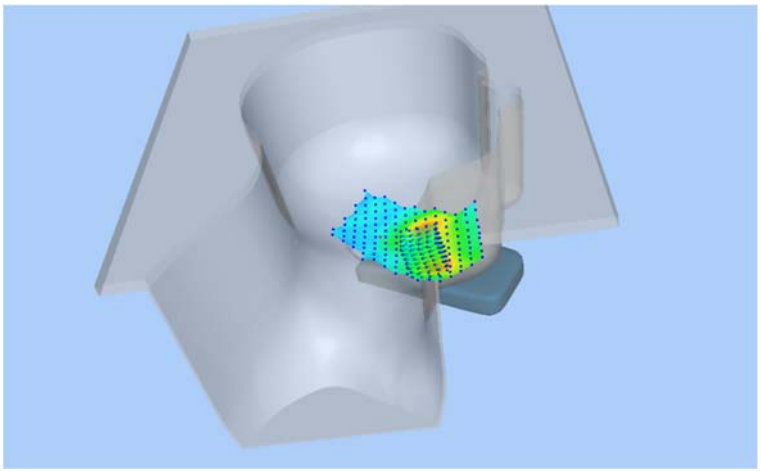
Z Axis Scan



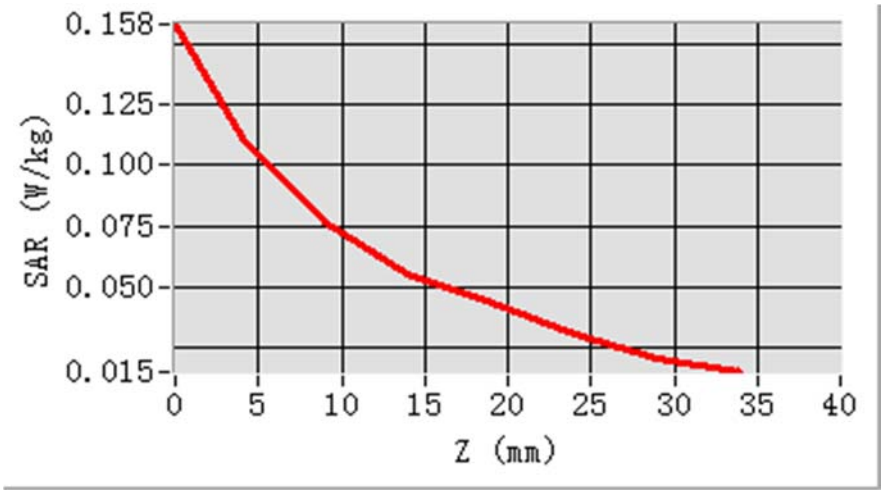
MEAS. 5 Left Head with Cheek on Low Channel in WCDMA Band 2 mode

Test Date:	14/12/2019
Measurement duration:	11 minutes 37 seconds
Signal:	WCDMA, f=1852.4 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 41.06; Conductivity: 1.38 S/m
Test condition:	Ambient Temperature: 22.7°C, Liquid Temperature: 21.5°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-56.000000
SAR 10g (W/Kg):	0.063070
SAR 1g (W/Kg):	0.105592
Power drift (%):	-0.82

3D screen shot



Z Axis Scan

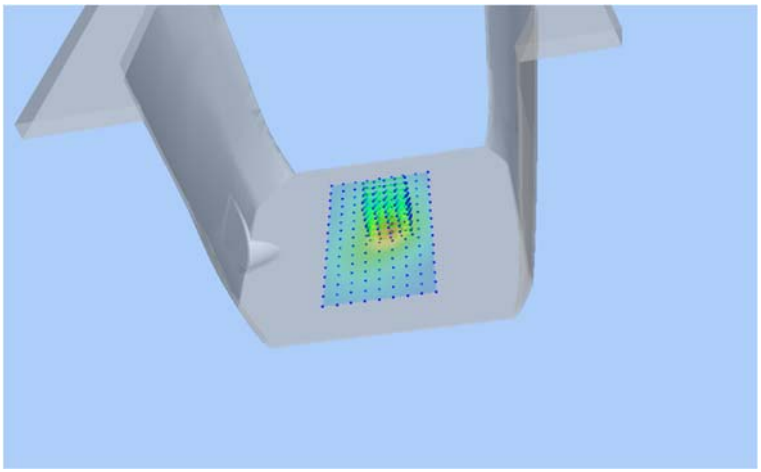


MEAS. 6 Body Plane with Bottom Edge 10mm on Low Channel in WCDMA

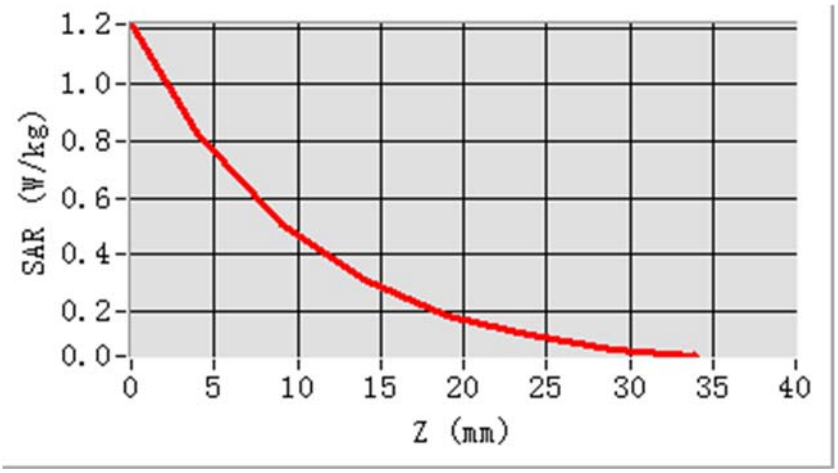
Band 2 mode

Test Date:	14/12/2019
Measurement duration:	12 minutes 57 seconds
Signal:	WCDMA, f=1852.4 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 41.06; Conductivity: 1.38 S/m
Test condition:	Ambient Temperature: 22.7°C, Liquid Temperature: 21.5°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=8.000000
SAR 10g (W/Kg):	0.419735
SAR 1g (W/Kg):	0.772912
Power drift (%):	-2.43

3D screen shot



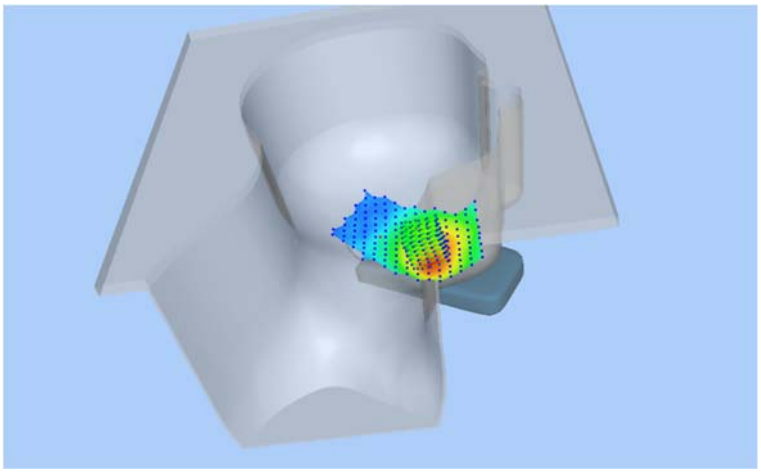
Z Axis Scan



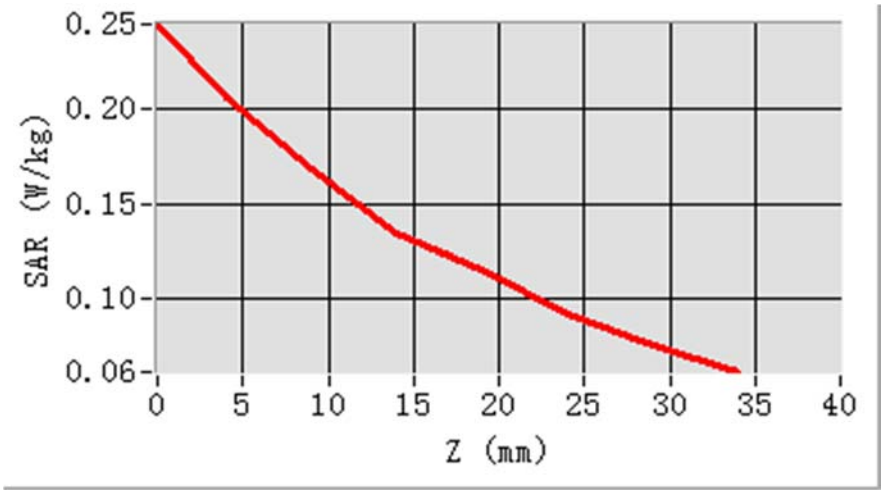
MEAS. 7 Left Head with Cheek on Low Channel in WCDMA Band 5 mode

Test Date:	17/12/2019
Measurement duration:	11 minutes 13 seconds
Signal:	WCDMA, f=826.4 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.35; Conductivity: 0.91 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-36.000000
SAR 10g (W/Kg):	0.153358
SAR 1g (W/Kg):	0.200302
Power drift (%):	-1.67

3D screen shot



Z Axis Scan

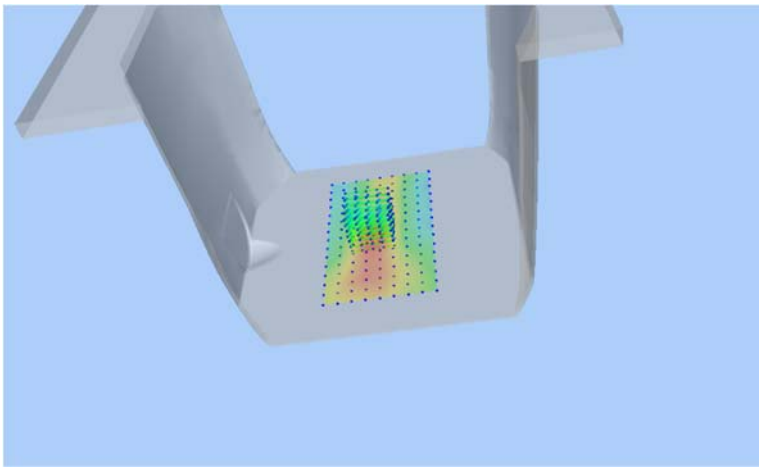


MEAS. 8 Body Plane with Right Edge 10mm on Low Channel in WCDMA Band

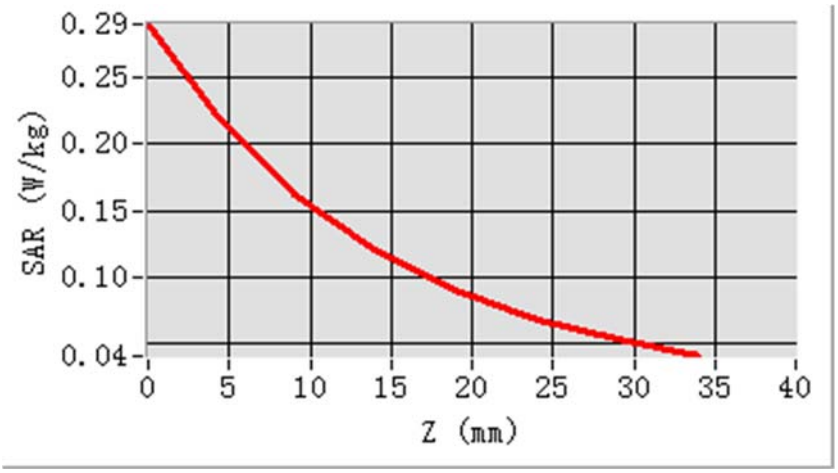
5 mode

Test Date:	17/12/2019
Measurement duration:	13 minutes 9 seconds
Signal:	WCDMA, f=826.4 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.35; Conductivity: 0.91 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=48.000000
SAR 10g (W/Kg):	0.149437
SAR 1g (W/Kg):	0.215113
Power drift (%):	-0.86

3D screen shot



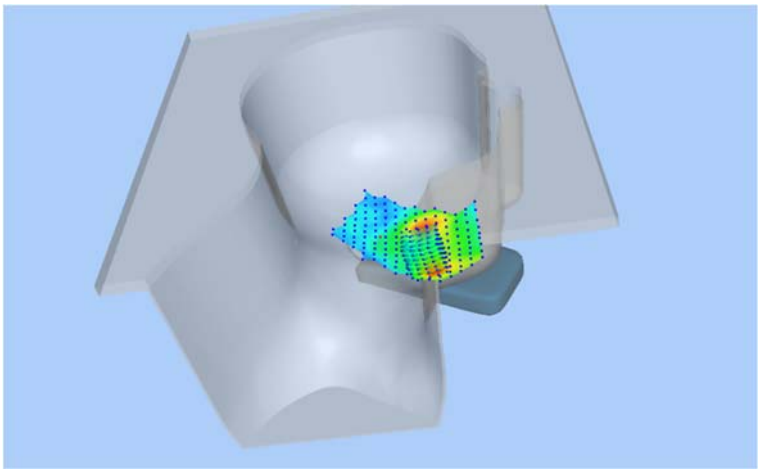
Z Axis Scan



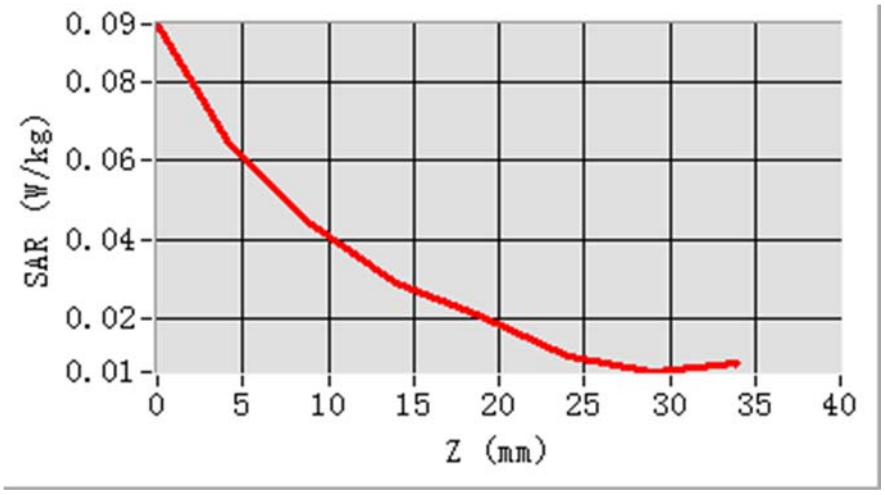
MEAS. 9 Left Head with Cheek on Middle Channel in LTE Band 2 mode with 1RB

Test Date:	14/12/2019
Measurement duration:	11 minutes 40 seconds
Signal:	LTE, fSS=1880.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 40.76; Conductivity: 1.40 S/m
Test condition:	Ambient Temperature: 22.7°C, Liquid Temperature: 21.5°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-56.000000
SAR 10g (W/Kg):	0.035574
SAR 1g (W/Kg):	0.063942
Power drift (%):	3.70

3D screen shot



Z Axis Scan

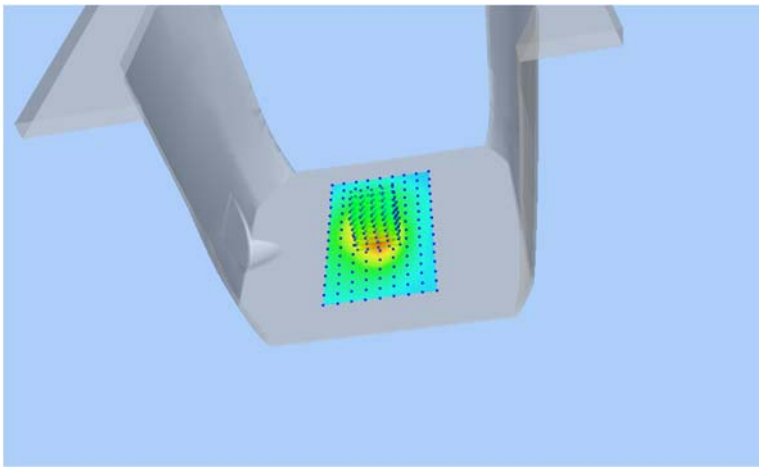


MEAS. 10 Body Plane with Bottom Edge 10mm on Middle Channel in LTE

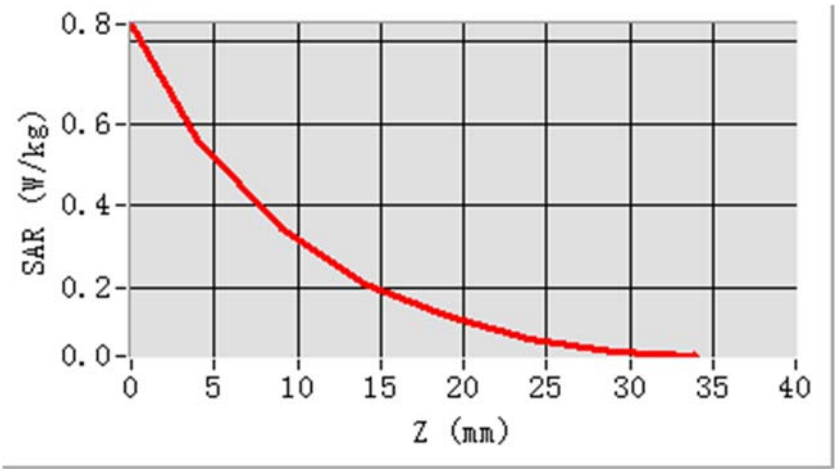
Band 2 mode with 1RB

Test Date:	14/12/2019
Measurement duration:	11 minutes 38 seconds
Signal:	LTE, f=1880.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 40.76; Conductivity: 1.40 S/m
Test condition:	Ambient Temperature: 22.7°C, Liquid Temperature: 21.5°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.46
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=0.000000, Y=-2.000000
SAR 10g (W/Kg):	0.287396
SAR 1g (W/Kg):	0.526016
Power drift (%):	-0.77

3D screen shot



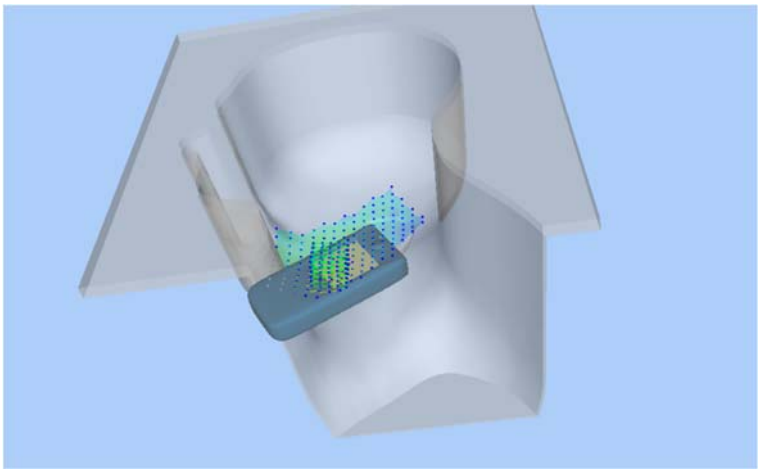
Z Axis Scan



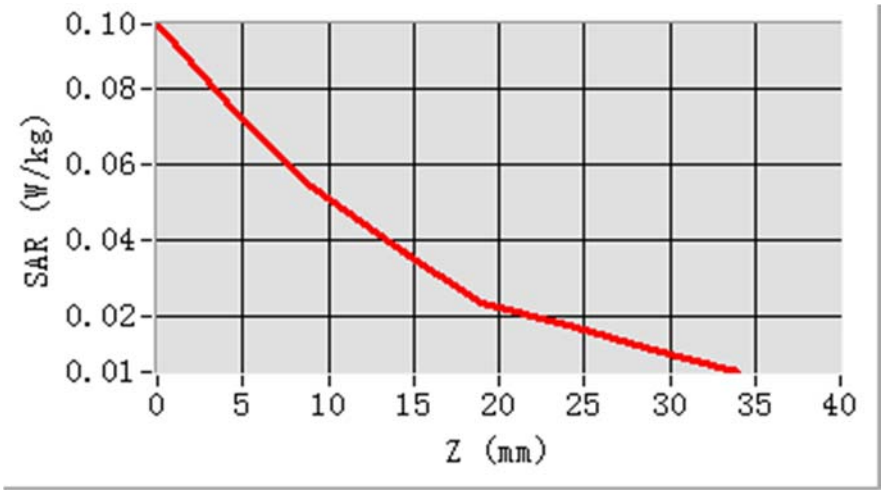
MEAS. 11 Right Head with Cheek on Middle Channel in LTE Band 4 mode with 1RB

Test Date:	13/12/2019
Measurement duration:	11 minutes 37 seconds
Signal:	LTE, f=1732.5 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 40.33; Conductivity: 1.34 S/m
Test condition:	Ambient Temperature: 22.6°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.18
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-56.000000
SAR 10g (W/Kg):	0.044827
SAR 1g (W/Kg):	0.077218
Power drift (%):	-2.01

3D screen shot



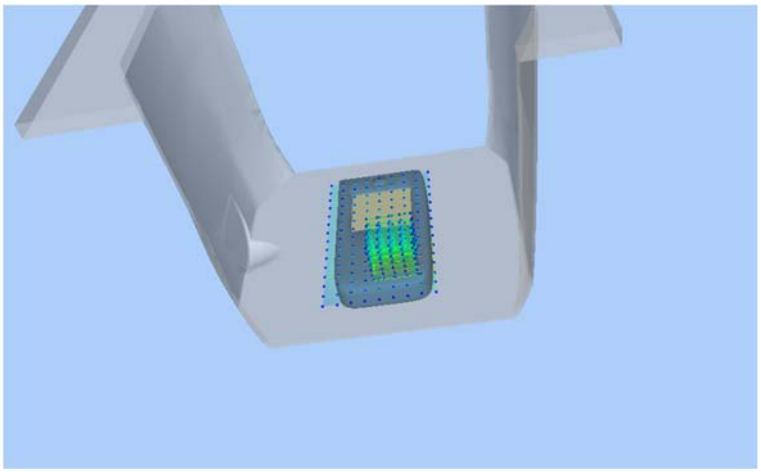
Z Axis Scan



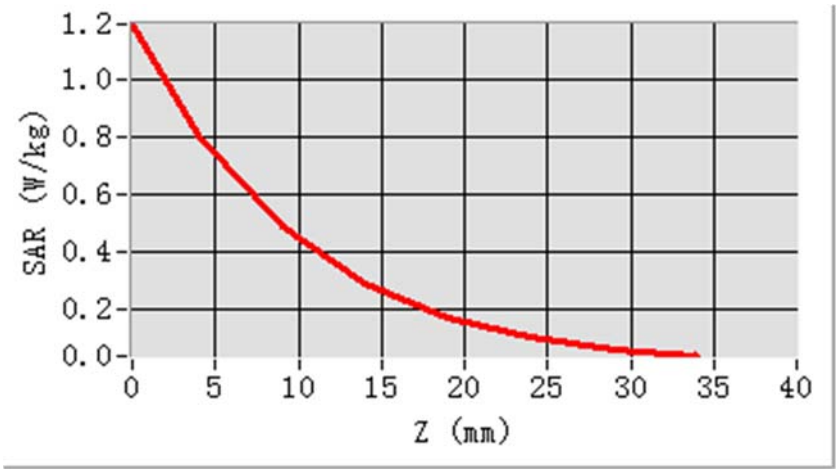
MEAS. 12 Body Plane with Back Side 10mm on Middle Channel in LTE Band 4 mode with 1RB

Test Date:	13/12/2019
Measurement duration:	13 minutes 14 seconds
Signal:	LTE, f=1732.5 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 40.33; Conductivity: 1.34 S/m
Test condition:	Ambient Temperature: 22.6°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.18
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=-32.000000
SAR 10g (W/Kg):	0.400435
SAR 1g (W/Kg):	0.755527
Power drift (%):	-0.04

3D screen shot



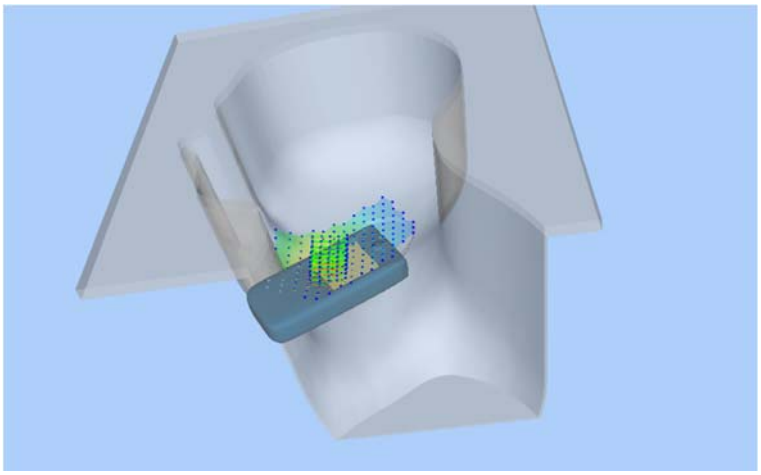
Z Axis Scan



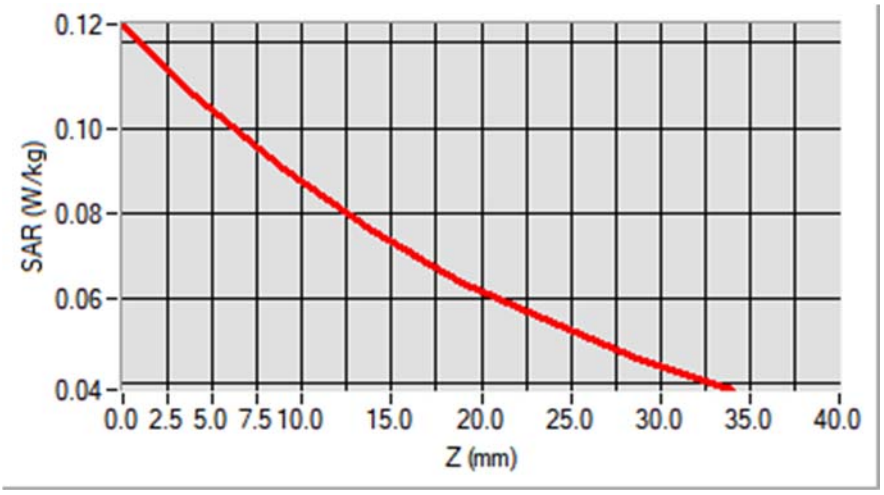
MEAS. 13 Right Head with Cheek on High Channel in LTE Band 5 mode with 1RB

Test Date:	17/12/2019
Measurement duration:	11 minutes 45 seconds
Signal:	LTE, f=844.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.14; Conductivity: 0.92 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-46.000000
SAR 10g (W/Kg):	0.082874
SAR 1g (W/Kg):	0.104843
Power drift (%):	-1.79

3D screen shot



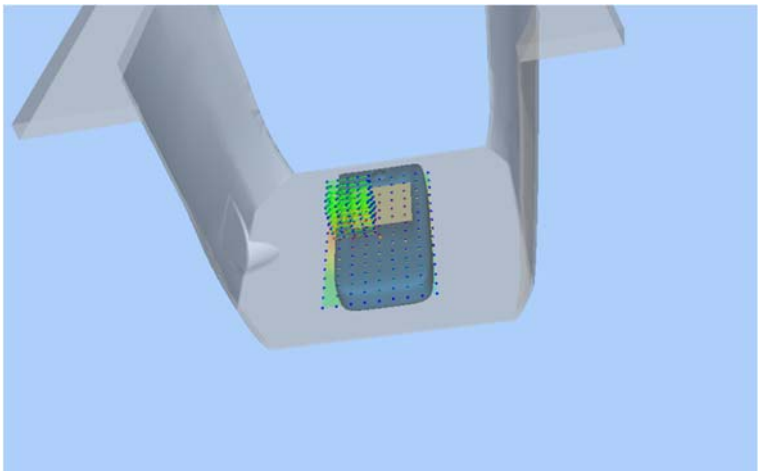
Z Axis Scan



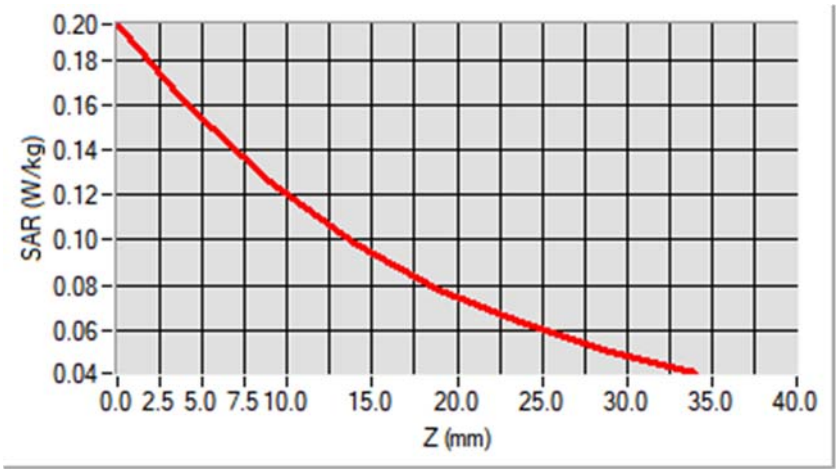
MEAS. 14 Body Plane with Back Side 10mm on High Channel in LTE Band 5 mode with 1RB

Test Date:	17/12/2019
Measurement duration:	11 minutes 31 seconds
Signal:	LTE, f=844.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.14; Conductivity: 0.92 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.93
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-20.000000, Y=18.000000
SAR 10g (W/Kg):	0.117810
SAR 1g (W/Kg):	0.155956
Power drift (%):	-0.11

3D screen shot



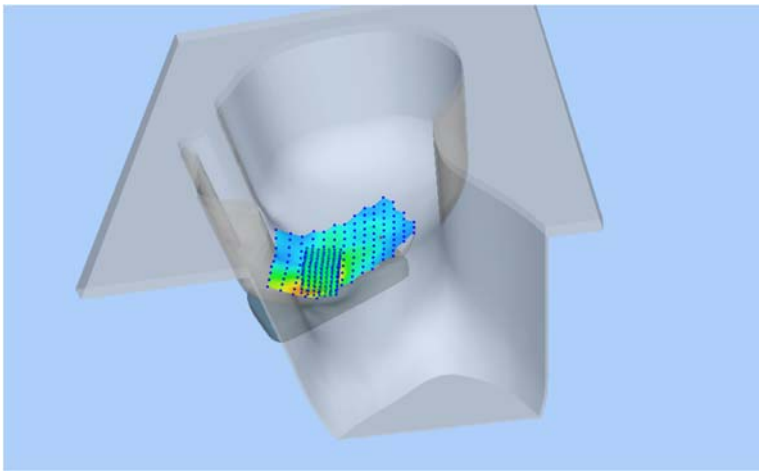
Z Axis Scan



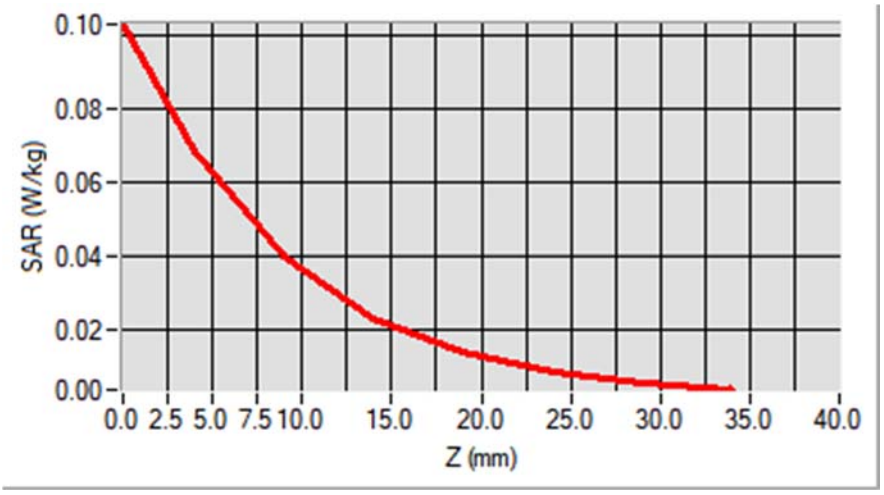
MEAS. 15 Right Head with Cheek on Middle Channel in LTE Band 7 mode with 1RB

Test Date:	26/12/2019
Measurement duration:	17 minutes 4 seconds
Signal:	LTE, f=2535.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 38.92; Conductivity: 1.91 S/m
Test condition:	Ambient Temperature: 22.3°C, Liquid Temperature: 21.1°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.38
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-66.000000
SAR 10g (W/Kg):	0.032293
SAR 1g (W/Kg):	0.061840
Power drift (%):	-0.29

3D screen shot



Z Axis Scan

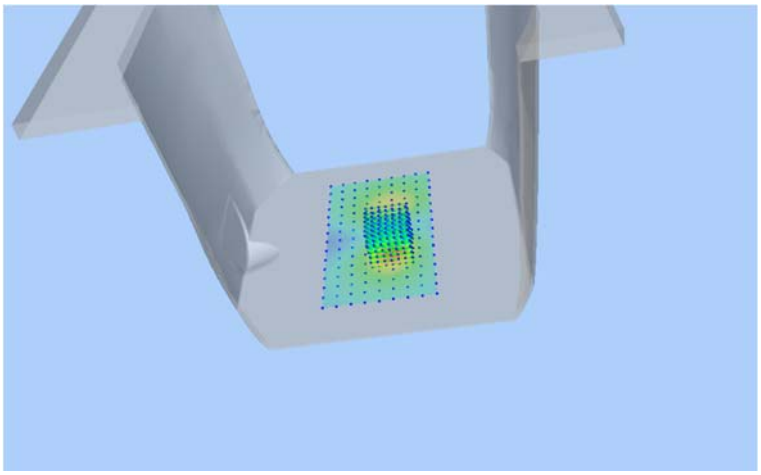


MEAS. 16 Body Plane with Bottom Edge 10mm on Middle Channel in LTE

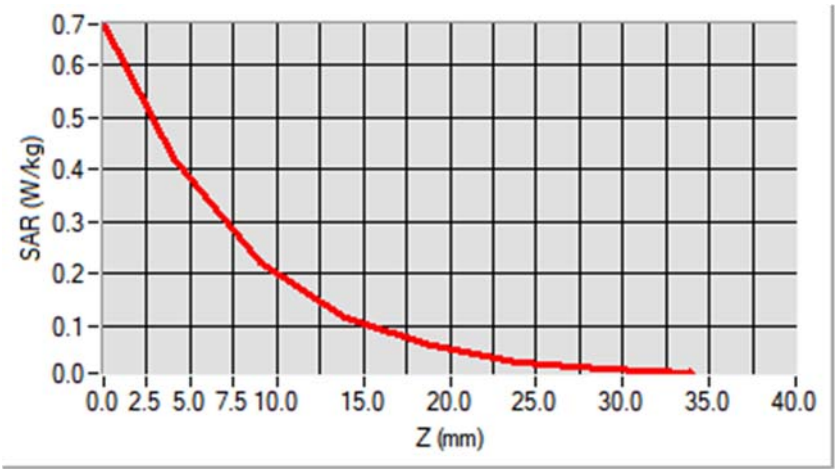
Band 7 mode with 1RB

Test Date:	26/12/2019
Measurement duration:	19 minutes 33 seconds
Signal:	LTE, f=2535.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 38.92; Conductivity: 1.91 S/m
Test condition:	Ambient Temperature: 22.3°C, Liquid Temperature: 21.1°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.38
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=-22.000000
SAR 10g (W/Kg):	0.190730
SAR 1g (W/Kg):	0.389170
Power drift (%):	-0.49

3D screen shot



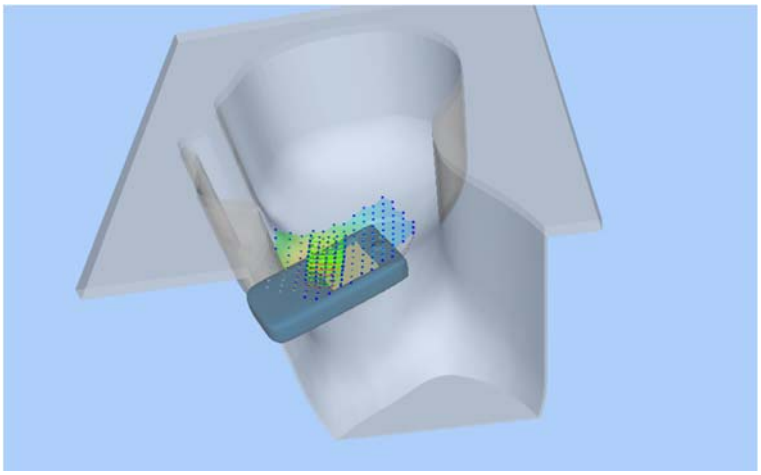
Z Axis Scan



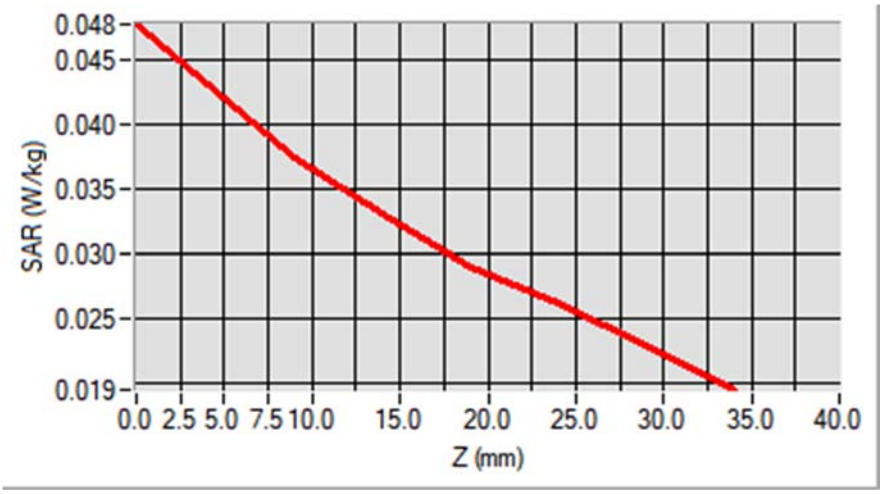
MEAS. 17 Right Head with Cheek on Low Channel in LTE Band 12 mode with 1RB

Test Date:	16/12/2019
Measurement duration:	11 minutes 46 seconds
Signal:	LTE, f=704.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.52; Conductivity: 0.88 S/m
Test condition:	Ambient Temperature: 22.8°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.89
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-56.000000, Y=-46.000000
SAR 10g (W/Kg):	0.035702
SAR 1g (W/Kg):	0.042830
Power drift (%):	-0.66

3D screen shot



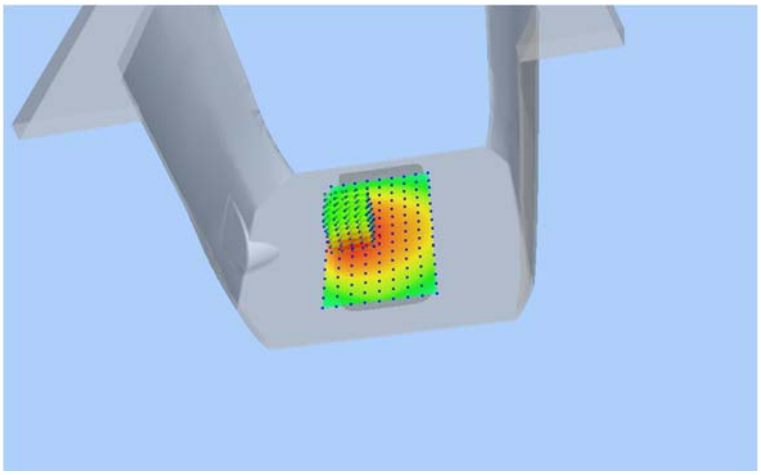
Z Axis Scan



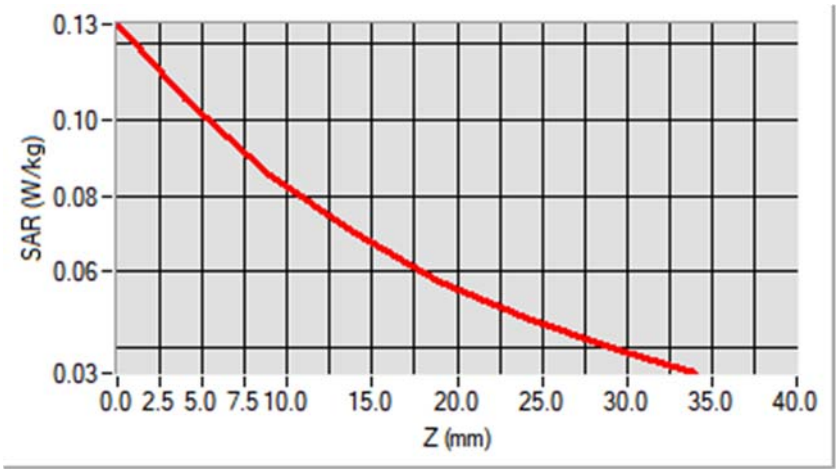
MEAS. 18 Body Plane with Back Side 10mm on Low Channel in LTE Band 12 mode with 1RB

Test Date:	16/12/2019
Measurement duration:	11 minutes 27 seconds
Signal:	LTE, f=704.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.52; Conductivity: 0.88 S/m
Test condition:	Ambient Temperature: 22.8°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.89
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-20.000000, Y=-2.000000
SAR 10g (W/Kg):	0.081992
SAR 1g (W/Kg):	0.104916
Power drift (%):	-0.25

3D screen shot



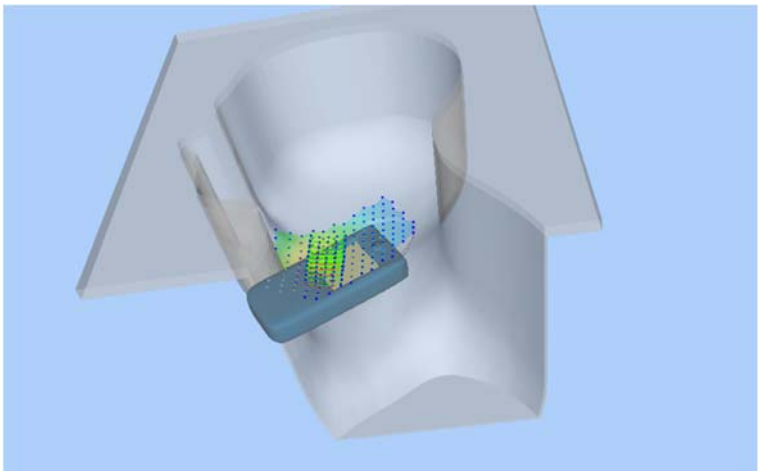
Z Axis Scan



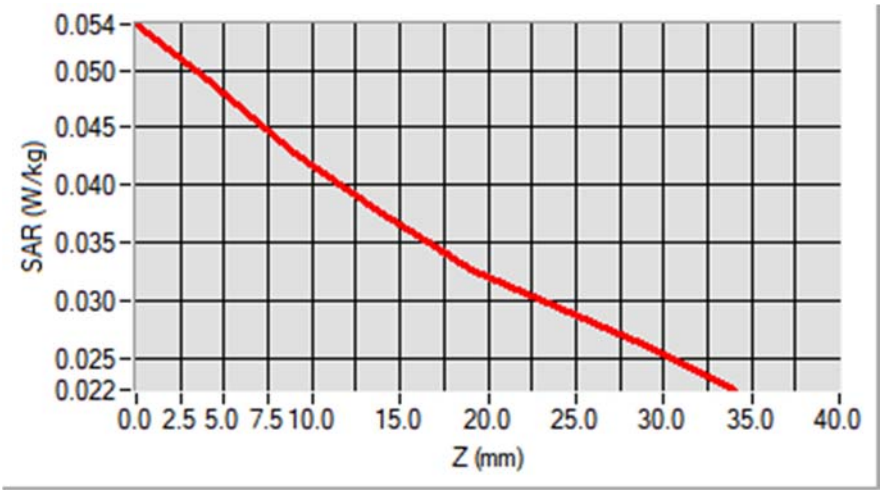
MEAS. 19 Right Head with Cheek on Middle Channel in LTE Band 17 mode with 1RB

Test Date:	16/12/2019
Measurement duration:	11 minutes 42 seconds
Signal:	LTE, f=710.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.13; Conductivity: 0.88 S/m
Test condition:	Ambient Temperature: 22.8°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.89
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-56.000000, Y=-46.000000
SAR 10g (W/Kg):	0.040372
SAR 1g (W/Kg):	0.048707
Power drift (%):	-0.49

3D screen shot



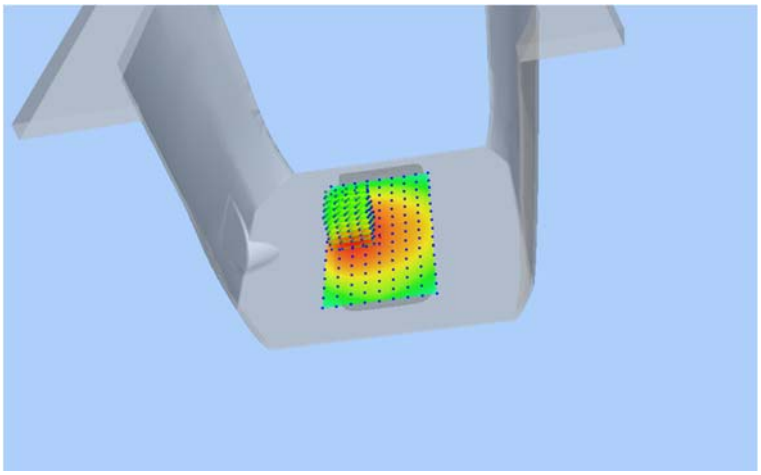
Z Axis Scan



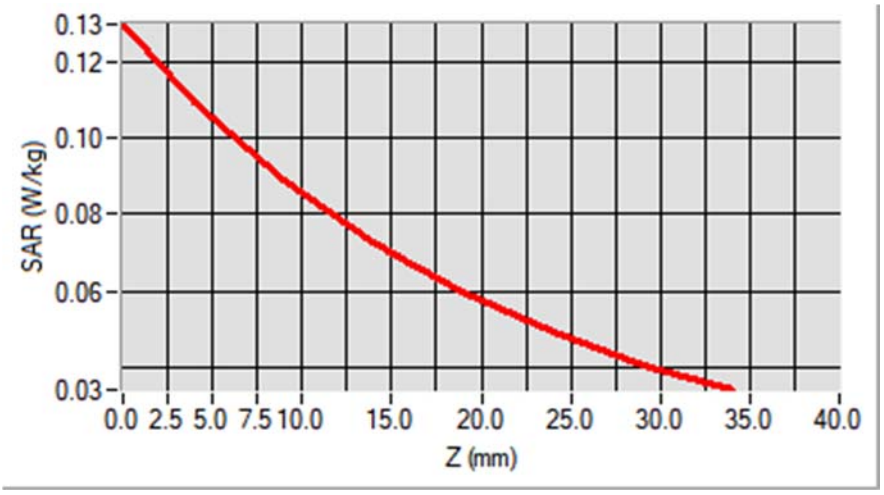
MEAS. 20 Body Plane with Back Side 10mm on Middle Channel in LTE Band 17 mode with 1RB

Test Date:	16/12/2019
Measurement duration:	11 minutes 33 seconds
Signal:	LTE, f=710.0 MHz, Duty Cycle: 1:1.0
Liquid Parameters:	Permittivity: 42.13; Conductivity: 0.88 S/m
Test condition:	Ambient Temperature: 22.8°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 1.89
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	5x5x7,dx=8mm, dy=8mm, dz=5mm,Complete
Maximum location:	X=-20.000000, Y=8.000000
SAR 10g (W/Kg):	0.084871
SAR 1g (W/Kg):	0.108611
Power drift (%):	3.25

3D screen shot



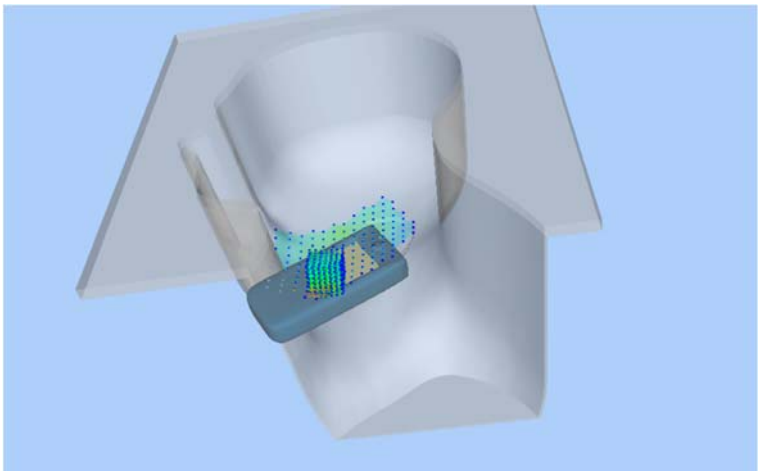
Z Axis Scan



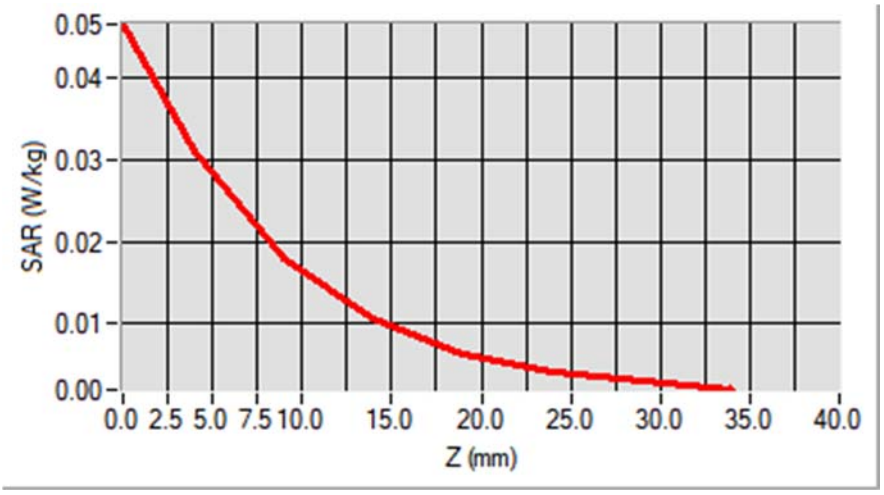
MEAS. 21 Right Head with Cheek on High Channel in LTE Band 41 mode with 1RB

Test Date:	26/12/2019
Measurement duration:	17 minutes 15 seconds
Signal:	LTE, f=2645.0 MHz, Duty Cycle: 1:1.6
Liquid Parameters:	Permittivity: 37.83; Conductivity: 2.04 S/m
Test condition:	Ambient Temperature: 22.3°C, Liquid Temperature: 21.1°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.38
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-46.000000, Y=-66.000000
SAR 10g (W/Kg):	0.014690
SAR 1g (W/Kg):	0.028097
Power drift (%):	1.77

3D screen shot



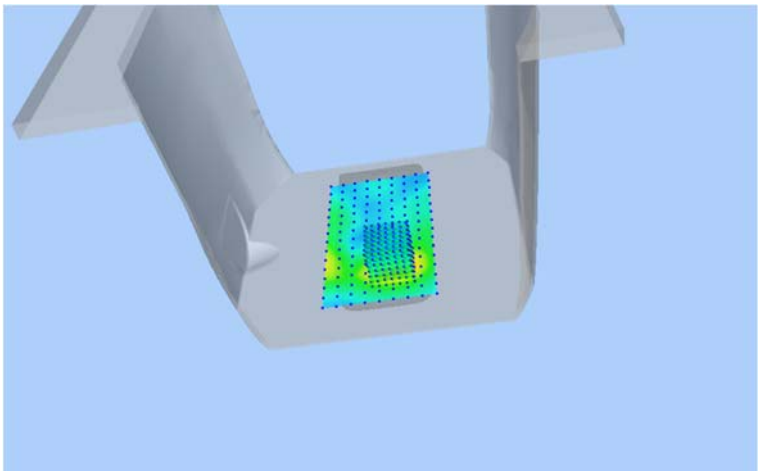
Z Axis Scan



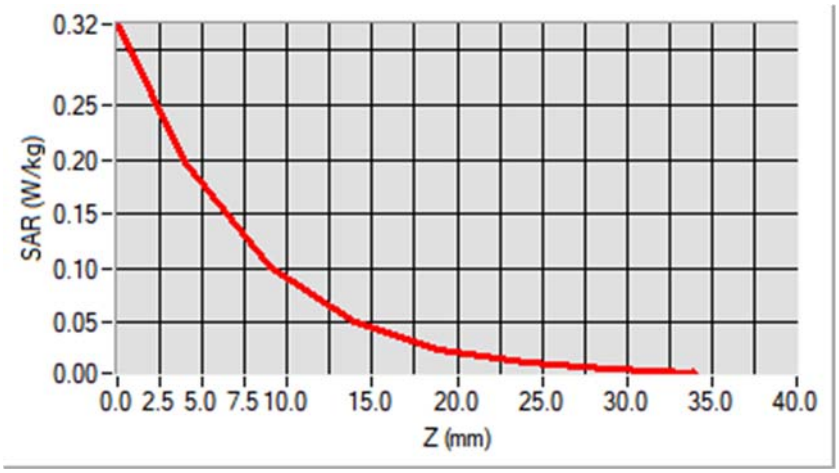
MEAS. 22 Body Plane with Back Side 10mm on High Channel in LTE Band 41 mode with 1RB

Test Date:	26/12/2019
Measurement duration:	19 minutes 27 seconds
Signal:	LTE, f=2645.0 MHz, Duty Cycle: 1:1.6
Liquid Parameters:	Permittivity: 37.83; Conductivity: 2.04 S/m
Test condition:	Ambient Temperature: 22.3°C, Liquid Temperature: 21.1°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.38
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=10.000000, Y=-42.000000
SAR 10g (W/Kg):	0.088096
SAR 1g (W/Kg):	0.185254
Power drift (%):	0.37

3D screen shot



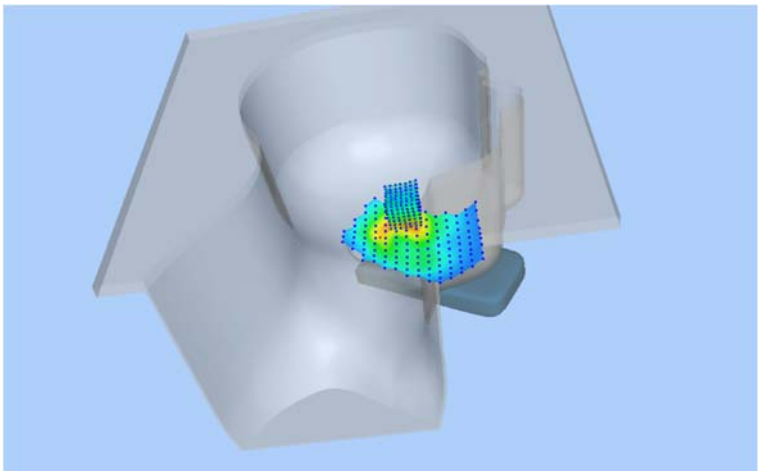
Z Axis Scan



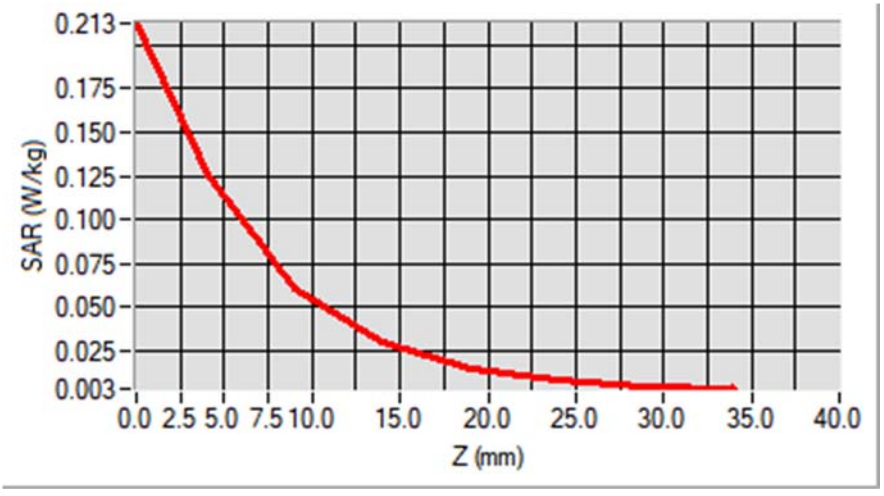
MEAS. 23 Left Head with Cheek on Low Channel in IEEE 802b mode

Test Date:	25/12/2019
Measurement duration:	15 minutes 4 seconds
Signal:	WLAN, f=2412.0 MHz, Duty Cycle: 1:1.015
Liquid Parameters:	Permittivity: 39.53; Conductivity: 1.77 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.55
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-26.000000, Y=24.000000
SAR 10g (W/Kg):	0.058196
SAR 1g (W/Kg):	0.115640
Power drift (%):	-1.09

3D screen shot



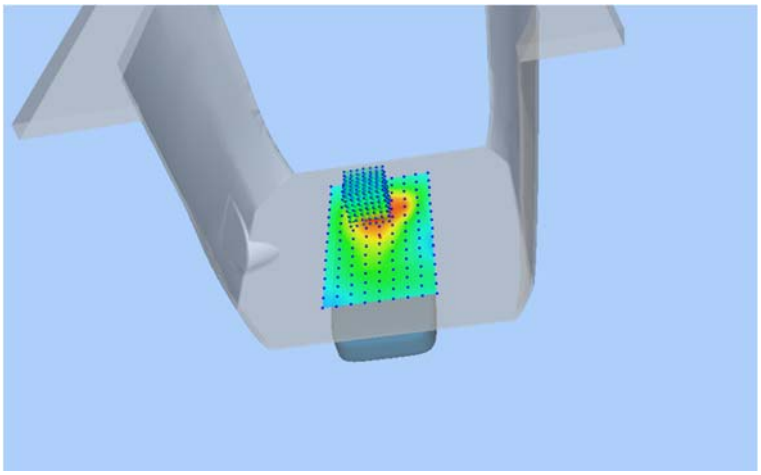
Z Axis Scan



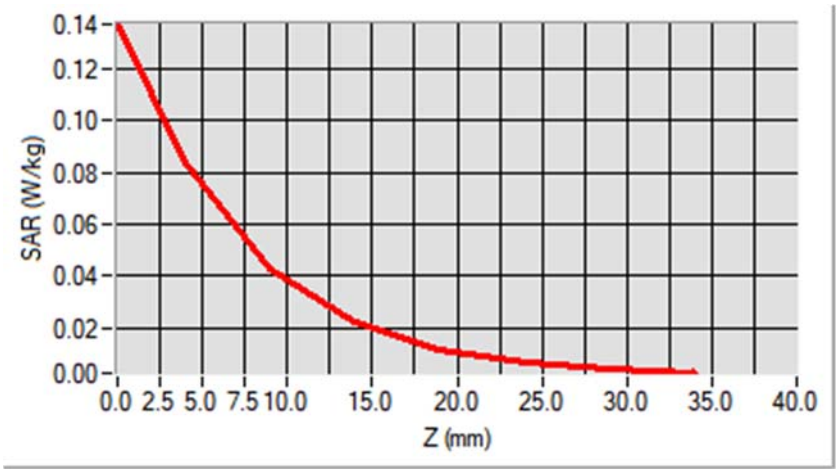
MEAS. 24 Body Plane with Back Side 10mm on Low Channel in IEEE 802b mode

Test Date:	25/12/2019
Measurement duration:	15 minutes 47 seconds
Signal:	WLAN, f=2412.0 MHz, Duty Cycle: 1:1.015
Liquid Parameters:	Permittivity: 39.53; Conductivity: 1.77 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.55
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-10.000000, Y=28.000000
SAR 10g (W/Kg):	0.041397
SAR 1g (W/Kg):	0.079648
Power drift (%):	-1.39

3D screen shot



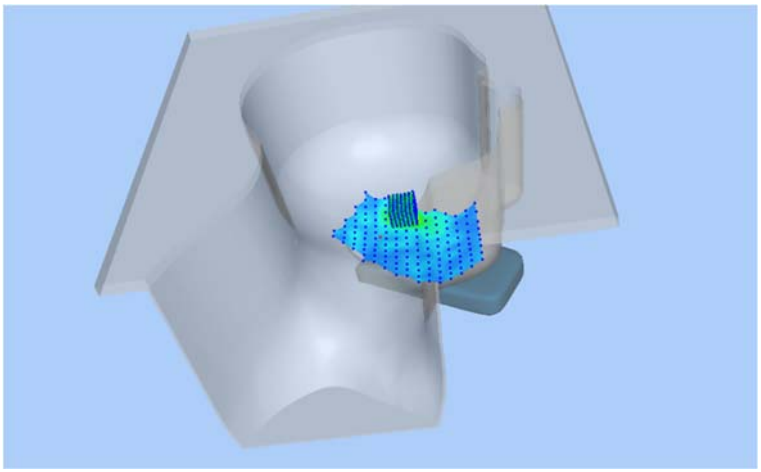
Z Axis Scan



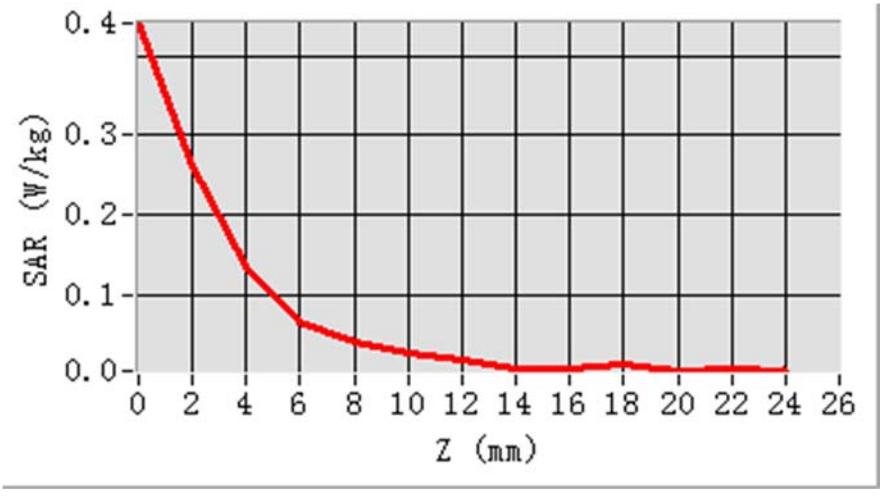
MEAS. 25 Left Head with Cheek on Channel 52 in IEEE 802a mode

Test Date:	1/1/2020
Measurement duration:	20 minutes 11 seconds
Signal:	WLAN, f=5260.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 36.99; Conductivity: 4.62 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.09
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-26.000000, Y=24.000000
SAR 10g (W/Kg):	0.072532
SAR 1g (W/Kg):	0.231344
Power drift (%):	-2.05

3D screen shot



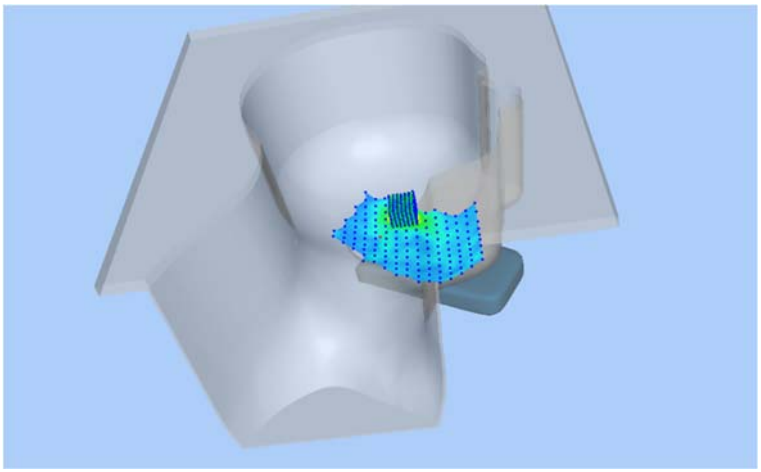
Z Axis Scan



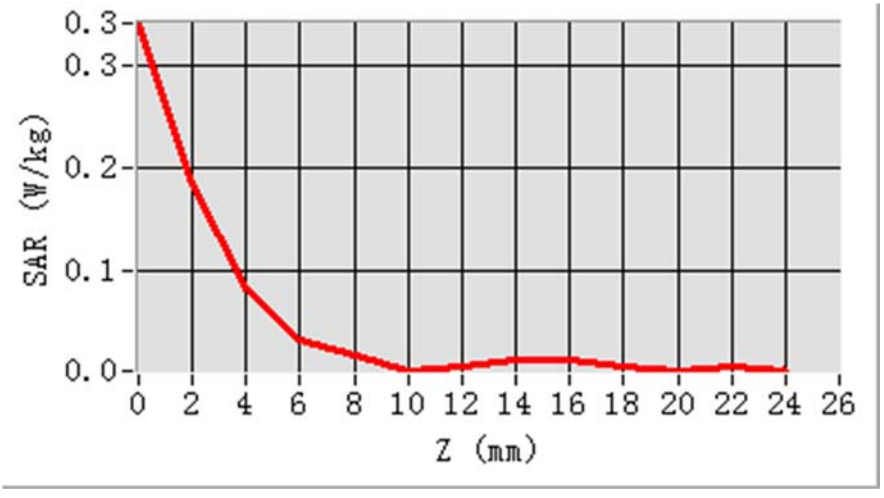
MEAS. 26 Left Head with Cheek on Channel 100 in IEEE 802a mode

Test Date:	2/1/2020
Measurement duration:	20 minutes 10 seconds
Signal:	WLAN, f=5500.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 35.77; Conductivity: 4.93 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.20
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-26.000000, Y=24.000000
SAR 10g (W/Kg):	0.062770
SAR 1g (W/Kg):	0.184675
Power drift (%):	-4.29

3D screen shot



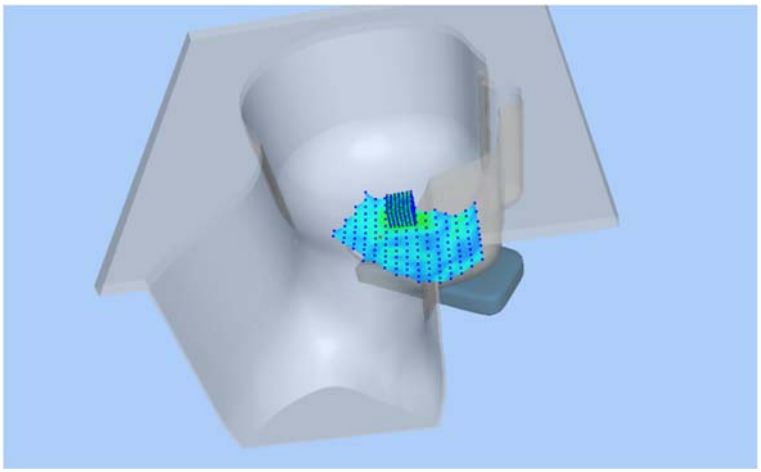
Z Axis Scan



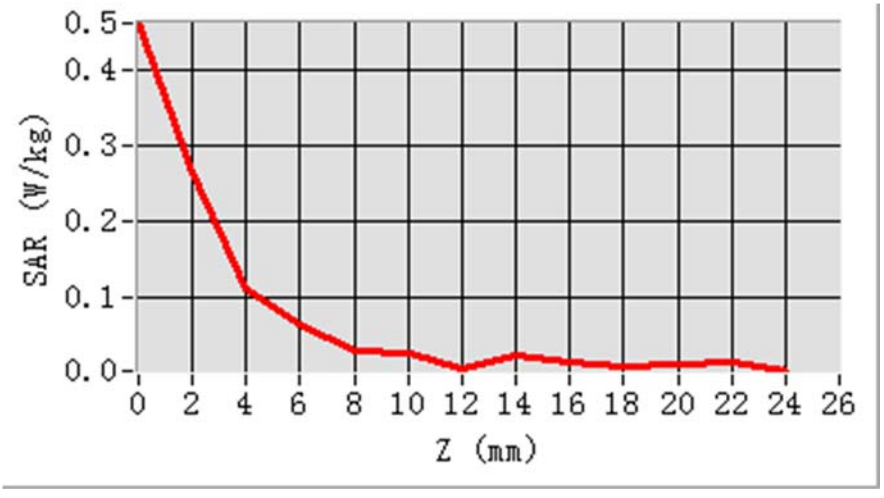
MEAS. 27 Left Head with Cheek on Channel 165 in IEEE 802a mode

Test Date:	3/1/2020
Measurement duration:	19 minutes 53 seconds
Signal:	WLAN, f=5825.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 34.91; Conductivity: 5.31 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.17
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-26.000000, Y=24.000000
SAR 10g (W/Kg):	0.084248
SAR 1g (W/Kg):	0.247302
Power drift (%):	-4.36

3D screen shot



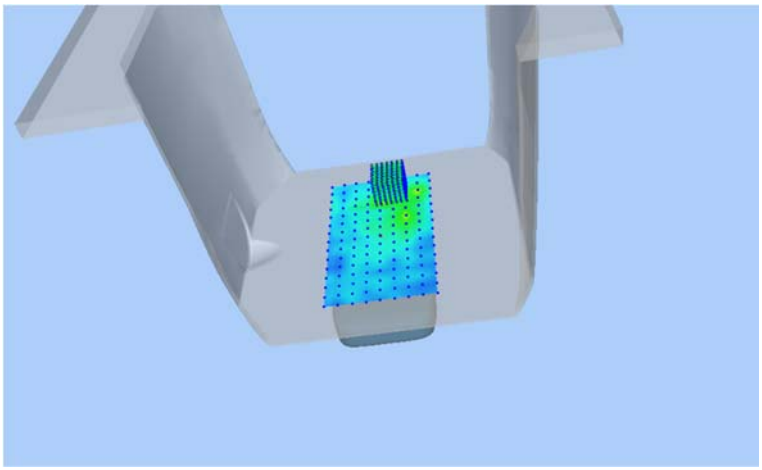
Z Axis Scan



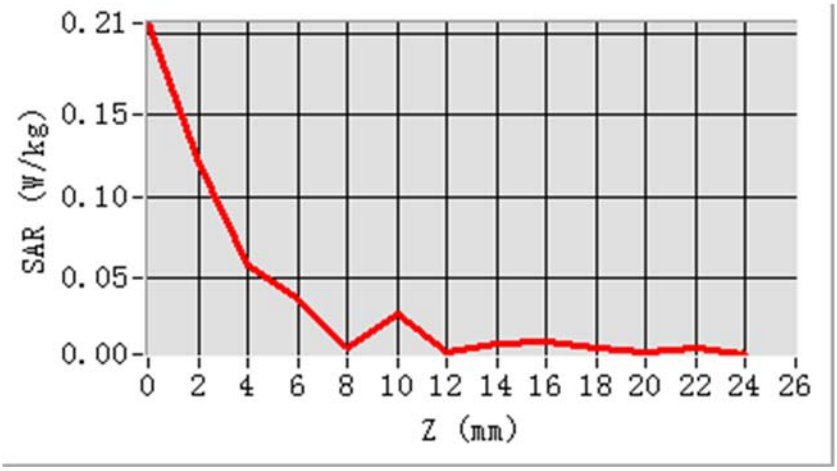
MEAS. 28 Body Plane with Back Side 10mm on Channel 52 in IEEE 802a mode

Test Date:	1/1/2020
Measurement duration:	18 minutes 23 seconds
Signal:	WLAN, f=5260.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 36.99; Conductivity: 4.62 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.09
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-20.000000, Y=18.000000
SAR 10g (W/Kg):	0.029675
SAR 1g (W/Kg):	0.069284
Power drift (%):	0.33

3D screen shot



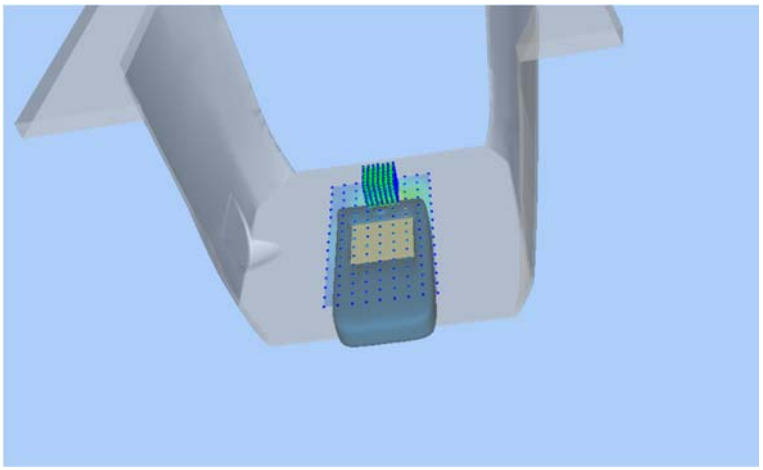
Z Axis Scan



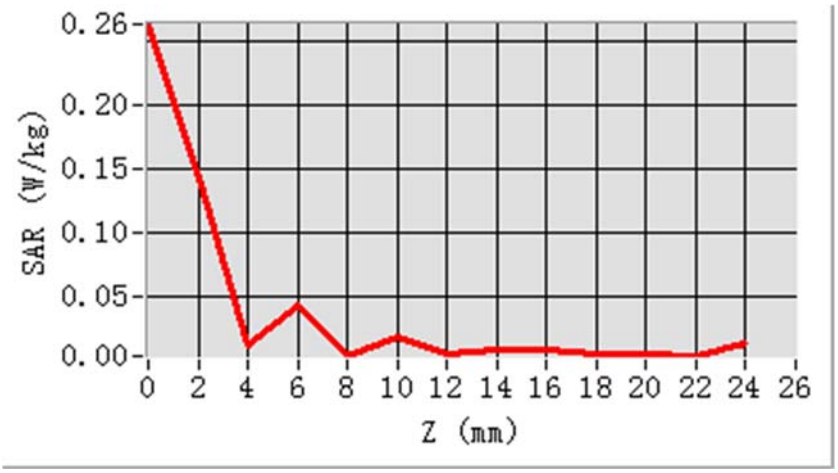
MEAS. 29 Body Plane with Back Side 10mm on Channel 100 in IEEE 802a mode

Test Date:	2/1/2020
Measurement duration:	18 minutes 19 seconds
Signal:	WLAN, f=5500.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 35.77; Conductivity: 4.93 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.20
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-30.000000, Y=68.000000
SAR 10g (W/Kg):	0.024375
SAR 1g (W/Kg):	0.070316
Power drift (%):	-4.01

3D screen shot



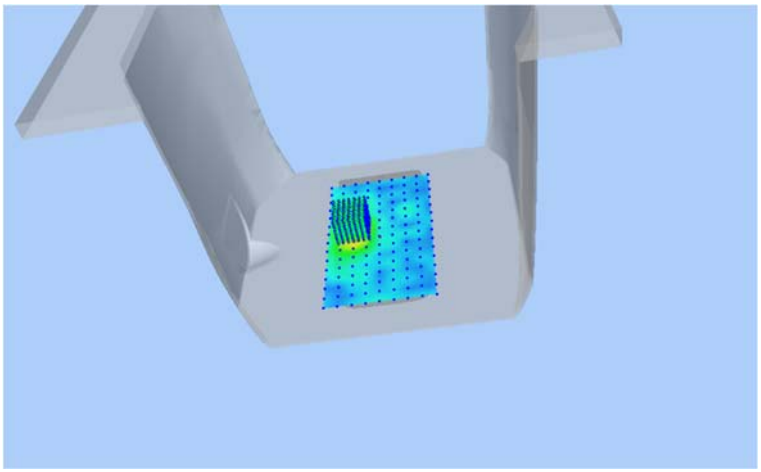
Z Axis Scan



MEAS. 30 Body Plane with Back Side 10mm on Channel 165 in IEEE 802a mode

Test Date:	3/1/2020
Measurement duration:	18 minutes 21 seconds
Signal:	WLAN, f=5825.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 34.91; Conductivity: 5.31 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.17
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-20.000000, Y=8.000000
SAR 10g (W/Kg):	0.064944
SAR 1g (W/Kg):	0.159600
Power drift (%):	-0.23

3D screen shot

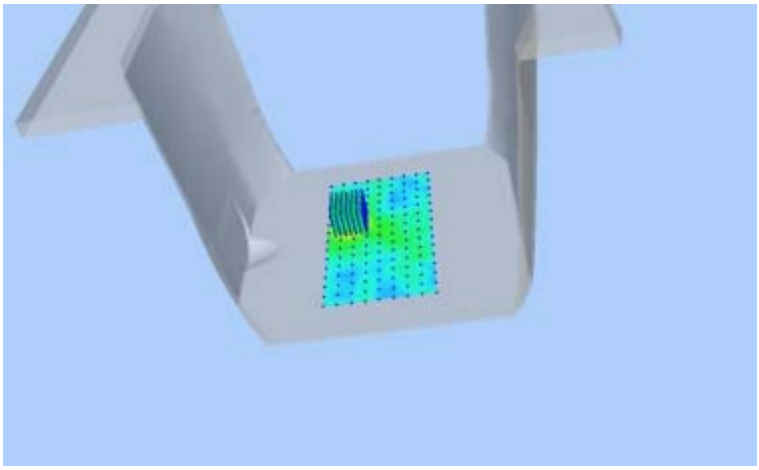


Z Axis Scan

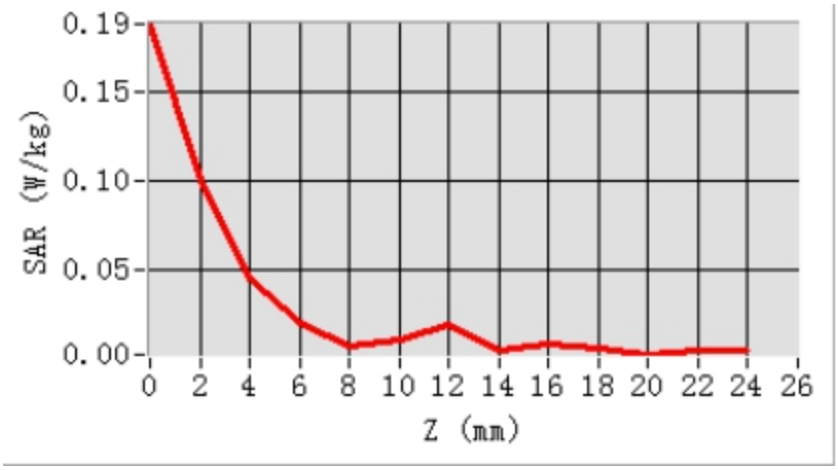
MEAS. 31 Body Plane with Back Side 10mm on Channel 40 in IEEE 802a mode

Test Date:	2/1/2020
Measurement duration:	19 minutes 22 seconds
Signal:	WLAN, f=5200.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 37.33; Conductivity: 4.53 S/m
Test condition:	Ambient Temperature: 22.4°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.09
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-30.000000, Y=68.000000
SAR 10g (W/Kg):	0.021051
SAR 1g (W/Kg):	0.062128
Power drift (%):	0.23

3D screen shot



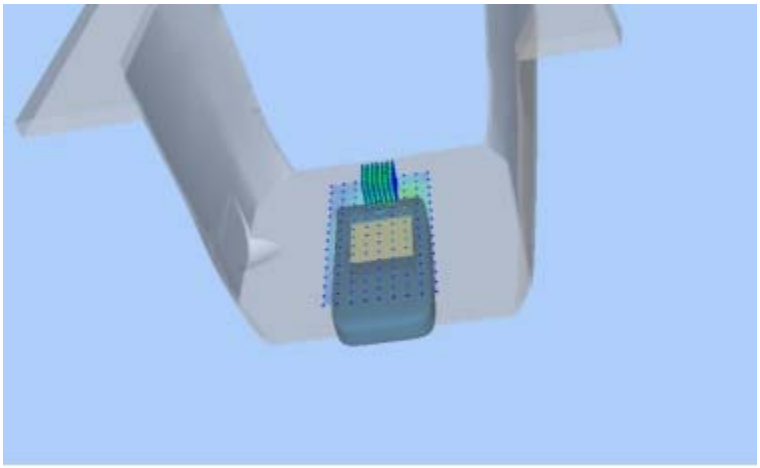
Z Axis Scan



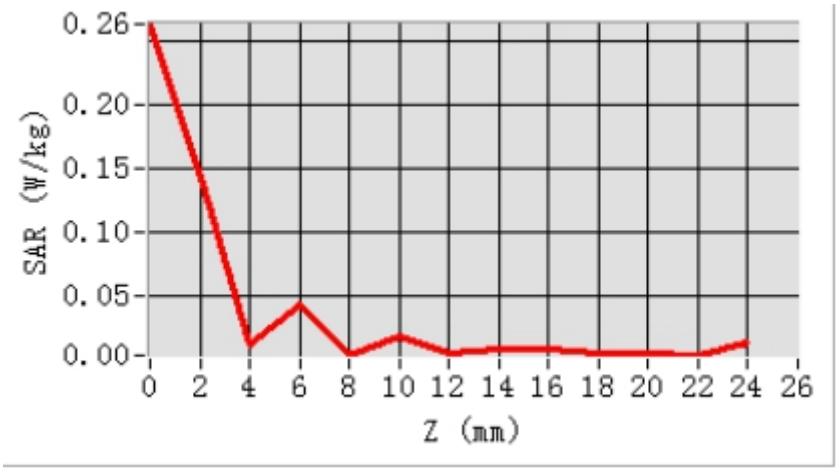
MEAS. 32 Body Plane with Back Side 10mm on Channel 100 in IEEE 802a mode

Test Date:	2/1/2020
Measurement duration:	18 minutes 19 seconds
Signal:	WLAN, f=5500.0 MHz, Duty Cycle: 1:1.022
Liquid Parameters:	Permittivity: 35.77; Conductivity: 4.93 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.3°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.20
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x12,dx=4mm, dy=4mm, dz=2mm,Complete
Maximum location:	X=-30.000000, Y=68.000000
SAR 10g (W/Kg):	0.024375
SAR 1g (W/Kg):	0.070316
Power drift (%):	-4.01

3D screen shot



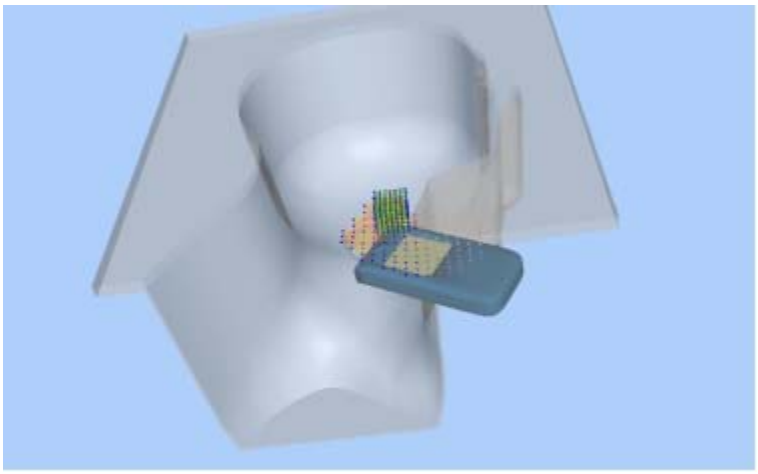
Z Axis Scan



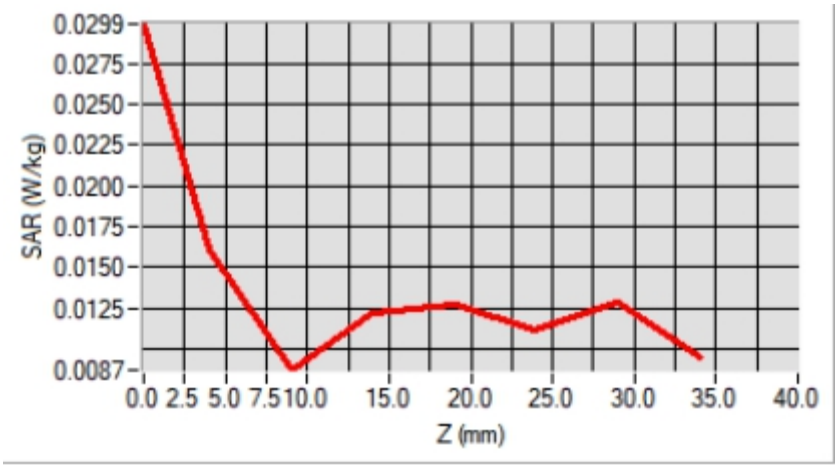
MEAS. 33 Left Head with Cheek on Low Channel in Bluetooth DH5 mode

Test Date:	25/12/2019
Measurement duration:	14 minutes 55 seconds
Signal:	Bluetooth, f=2402.0 MHz, Duty Cycle: 1:1.302
Liquid Parameters:	Permittivity: 39.63; Conductivity: 1.76 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.55
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-16.000000, Y=14.000000
SAR 10g (W/Kg):	0.015568
SAR 1g (W/Kg):	0.018713
Power drift (%):	-1.42

3D screen shot



Z Axis Scan

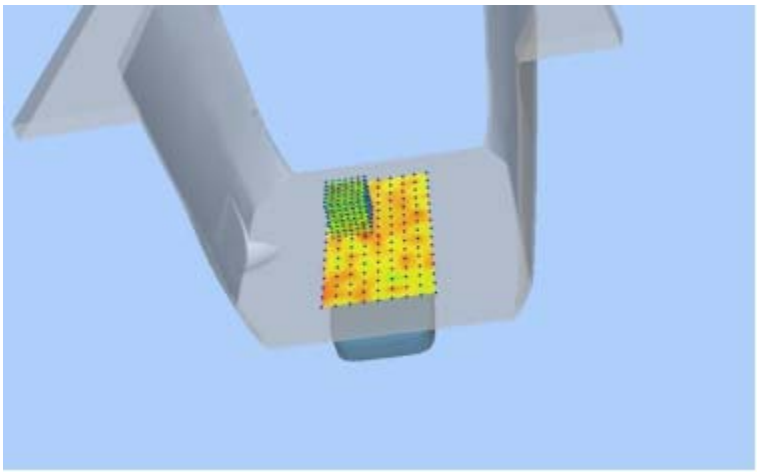


MEAS. 34 Body Plane with Back Side 10mm on Low Channel in Bluetooth

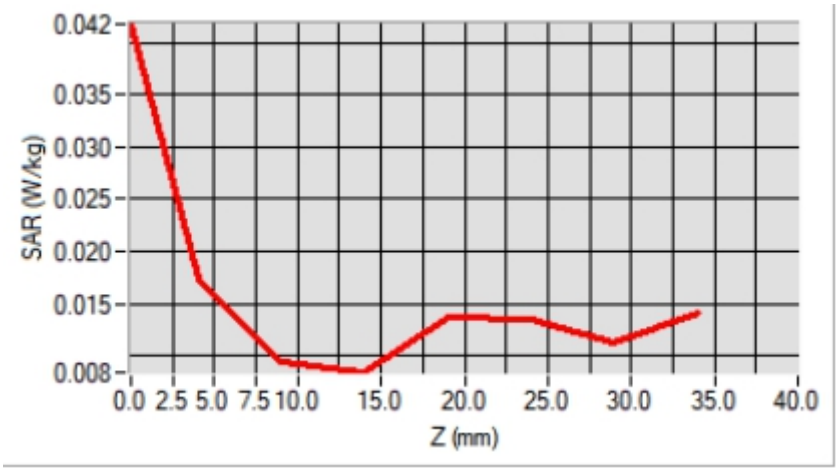
DH5 mode

Test Date:	25/12/2019
Measurement duration:	13 minutes 44 seconds
Signal:	Bluetooth, f=2402.0 MHz, Duty Cycle: 1:1.302
Liquid Parameters:	Permittivity: 39.63; Conductivity: 1.76 S/m
Test condition:	Ambient Temperature: 22.5°C, Liquid Temperature: 21.2°C
Probe:	SN 34/15 SSE2 EPGO265, ConvF: 2.55
Area Scan:	sam_direct_droit2_surf10mm.txt, h= 5.00 mm
Zoom Scan:	7x7x7,dx=5mm, dy=5mm, dz=5mm,Complete
Maximum location:	X=-20.000000, Y=18.000000
SAR 10g (W/Kg):	0.012022
SAR 1g (W/Kg):	0.014907
Power drift (%):	-1.95

3D screen shot



Z Axis Scan



ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ19C0149-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL- SZ19C0149-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “CALIBRATION REPORT.pdf”.

--END OF REPORT--