FCC SAR EVALUATION REPORT

In accordance with the requirements of
FCC 47 CFR Part 2(2.1093), ANSI/IEEE C95.1-1992 and
IEEE Std 1528-2013

Product Name : Smartphone

Trademark : Polaroid

Model Name : PSPCL20A0

Serial Model : N/A

Report No. : SER171108603001E

FCC ID : 2ADWUPSPCL20A0

Prepared for

One Diamond Electronics Inc.

1450 Frazee Road, Suite 414, San Diego, CA 92108

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street,
Bao'an District, Shenzhen 518126 P.R.China.
Tel.: +86-755-6115 6588 Fax.: +86-755-6115 6599
Website: http://www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name	: One Diamond Electronics Inc.
Address	: 1450 Frazee Road, Suite 414, San Diego, CA 92108
Manufacturer's Name	: HUIZHOU MIKI COMMUNICATION EQUIPMENT CO.,LTD
Address	: No, 39, guangtai rd, huinan hi-tech industrial park,zhongkai hi-tech district, huizhou city

Product description

Product name	: Smartphone
Trademark	: Polaroid
Model and/or type reference	: PSPCL20A0
Serial Model	: N/A
Standards	: FCC 47 CFR Part 2(2.1093) ANSI/IEEE C95.1-1992 IEEE Std 1528-2013 Published RF exposure KDB procedures

This device described above has been tested by Shenzhen NTEK. In accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 and KDB 865664 D01. Testing has shown that this device is capable of compliance with localized specific absorption rate (SAR) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992. The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test

Date (s) of performance of tests	: Nov. 15, 2017 ~ Nov. 28, 2017
Date of Issue	: Dec. 12, 2017
Test Result	: **Pass**

Prepared By (Test Engineer) : Cheng Jiawen

(Cheng Jiawen)

Approved By (Lab Manager) : Sam. Chen

(Sam Chen)

※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Dec. 12, 2017	Cheng Jiawen

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1. General Information

1.1. RF exposure limits

(A).Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: ***Whole-Body SAR*** is averaged over the entire body, ***partial-body SAR*** is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. ***SAR for hands, wrists, feet and ankles*** is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

Occupational/Controlled Environments:

Are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

General Population/Uncontrolled Environments:

Are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

NOTE
HEAD AND TRUNK LIMIT
1.6 W/kg
APPLIED TO THIS EUT

1.2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for PSPCL20A0 are as follows.

Band	Max Reported SAR Value(W/kg)			
	1-g Head	1-g Body-Worn (Separation distance of 10mm)	1-g Hotspot (Separation distance of 10mm)	Max. SAR Summation
GSM 850	0.598	0.945	0.945	1.356
GSM 1900	0.429	0.835	0.835	
WCDMA Band V	0.347	0.483	0.483	
WCDMA Band II	0.793	0.780	0.780	
LTE Band V	0.294	0.464	0.464	
LTE Band IV	0.461	1.029	1.029	
LTE Band II	0.401	0.786	0.797	
LTE Band VII	0.232	1.290	1.290	
WLAN 2.4G	0.328	0.102	0.102	

NOTE: The Max. SAR Summation is calculated based on the same configuration and test position.
This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 & KDB 865664 D01.

1.3. EUT Description

Device Information			
Product Name	Smartphone		
Trade Name	Polaroid		
Model Name	PSPCL20A0		
Serial Model	N/A		
FCC ID	2ADWUPSPCL20A0		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna	PIFI Antenna		
Battery Information	DC 3.8V, 2000mAh		
Device Operating Configurations			
Supporting Mode(s)	GSM 850/1900, WCDMA Band V/II, LTE Band V/IV/II/VII, WLAN 2.4G, Bluetooth		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, π/4-DQPSK, 8DPSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band V	824-849	869-894
	WCDMA Band II	1850-1910	1930-1990
	LTE Band V	824-849	869-894
	LTE Band IV	1710-1755	2110-2155
	LTE Band II	1850-1910	1930-1990
	LTE Band VII	2500-2570	2620-2690
	WLAN 2.4G	2412-2462	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
EDGE Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
HSDPA UE Category	14		
HSUPA UE Category	6		
Power Class	4, tested with power level 5(GSM 850)		
	1, tested with power level 0(GSM 1900)		
	3, tested with power control “all 1”(WCDMA Band V)		

	3, tested with power control “all 1”(WCDMA Band II)
	3, tested with power control all Max.(LTE Band V)
	3, tested with power control all Max.(LTE Band IV)
	3, tested with power control all Max.(LTE Band II)
	3, tested with power control all Max.(LTE Band VII)
Test Channels (low-mid-high)	128-189-251(GSM 850)
	512-661-810(GSM 1900)
	4132-4182-4233(WCDMA Band V)
	9262-9400-9538(WCDMA Band II)
	20407-20525-20643(LTE Band V BW=1.4MHz)
	20415-20525-20635(LTE Band V BW=3MHz)
	20425-20525-20625(LTE Band V BW=5MHz)
	20450-20525-20600(LTE Band V BW=10MHz)
	19957-20175-20393(LTE Band IV BW=1.4MHz)
	19965-20175-20385(LTE Band IV BW=3MHz)
	19975-20175-20375(LTE Band IV BW=5MHz)
	20000-20175-20350(LTE Band IV BW=10MHz)
	20025-20175-20325(LTE Band IV BW=15MHz)
	20050-20175-20300(LTE Band IV BW=20MHz)
	18607-18900-19193(LTE Band II BW=1.4MHz)
	18615-18900-19185(LTE Band II BW=3MHz)
	18625-18900-19175(LTE Band II BW=5MHz)
	18650-18900-19150(LTE Band II BW=10MHz)
	18675-18900-19125(LTE Band II BW=15MHz)
	18700-18900-19100(LTE Band II BW=20MHz)
	20775-21100-21425(LTE Band VII BW=5MHz)
	20800-21100-21400(LTE Band VII BW=10MHz)
	20825-21100-21375(LTE Band VII BW=15MHz)
	20850-21100-21350(LTE Band VII BW=20MHz)
	802.11 b/g/n:1-6-11(WLAN 2.4G)

1.4. Test specification(s)

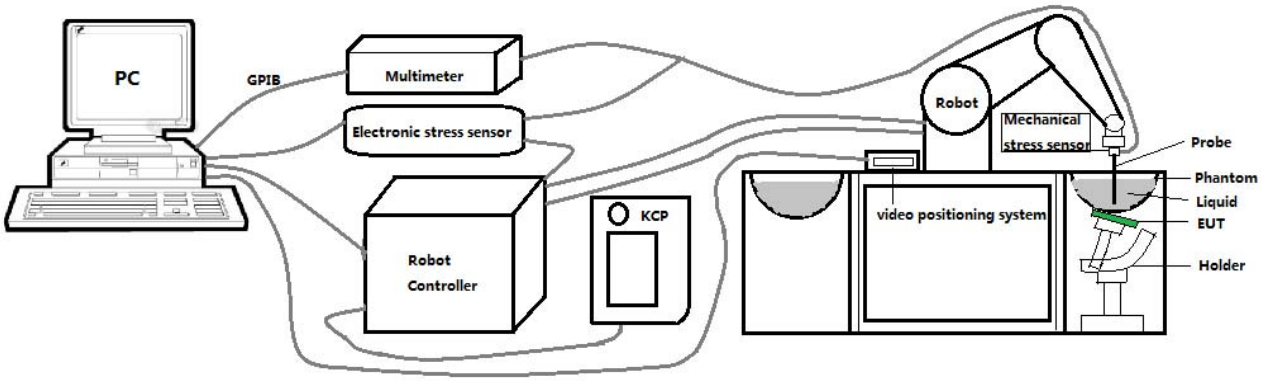
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 WLAN SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 D06 Hotspot SAR
KDB 648474 D04 Handset SAR

1.5. Ambient Condition

Ambient temperature	20°C – 24°C
Relative Humidity	30% – 70%

2. SAR Measurement System

2.1. SATIMO SAR Measurement Set-up 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: 901 mm), which positions the probes with a positional repeatability of better than ±0.03 mm. The SAR measurements were conducted with dosimetric probe (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation.

The first step of the field measurement is the evaluation of the voltages induced on the probe by the device under test. Probe diode detectors are nonlinear. Below the diode compression point, the output voltage is proportional to the square of the applied E-field; above the diode compression point, it is linear to the applied E-field. The compression point depends on the diode, and a calibration procedure is necessary for each sensor of the probe.

The Keithley multimeter reads the voltage of each sensor and send these three values to the PC. The corresponding E field value is calculated using the probe calibration factors, which are stored in the working directory. This evaluation includes linearization of the diode characteristics. The field calculation is done separately for each sensor. Each component of the E field is displayed on the "Dipole Area Scan Interface" and the total E field is displayed on the "3D Interface"

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 ±0.03 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

2.3. E-Field Probe

This E-field detection probe is composed of three orthogonal dipoles linked to special Schottky diodes with low detection thresholds. The probe allows the measurement of electric fields in liquids such as the one defined in the IEEE and CENELEC standards.

For the measurements the Specific Dosimetric E-Field Probe SN 08/16 EPGO287 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 2.5 mm
- Distance between probe tip and sensor center: 1 mm
- Distance between sensor center and the inner phantom surface: 2 mm (repeatability better than ±1 mm).
- Probe linearity: ±0.08 dB
- Axial isotropy: <0.25 dB
- Hemispherical Isotropy: <0.50 dB
- Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
- Lower detection limit: 7mW/kg

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

2.3.1. E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ±10%. The spherical isotropy shall be evaluated and within ±0.25dB. The sensitivity parameters (Norm X, Norm Y, and Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe are tested. The calibration data can be referred to appendix D of this report.

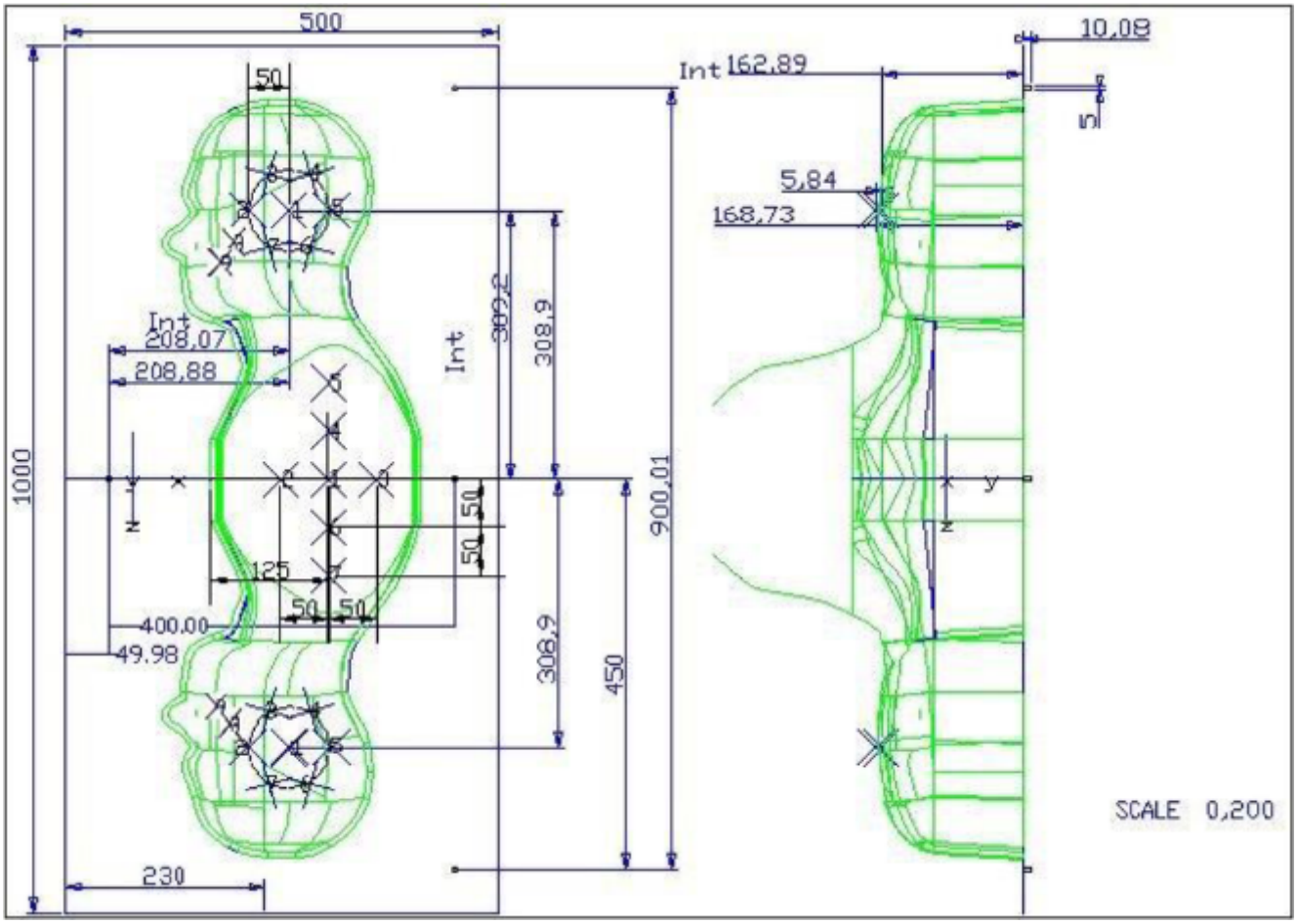
2.4. SAM phantoms

Photo of SAM phantom SN 16/15 SAM119

The SAM phantom is used to measure the SAR relative to people exposed to electro-magnetic field radiated by mobile phones.

2.4.1. Technical Data

Serial Number	Shell thickness	Filling volume	Dimensions	Positionner Material	Permittivity	Loss Tangent
SN 16/15 SAM119	2 mm ±0.2 mm	27 liters	Length:1000 mm Width:500 mm Height:200 mm	Gelcoat with fiberglass	3.4	0.02

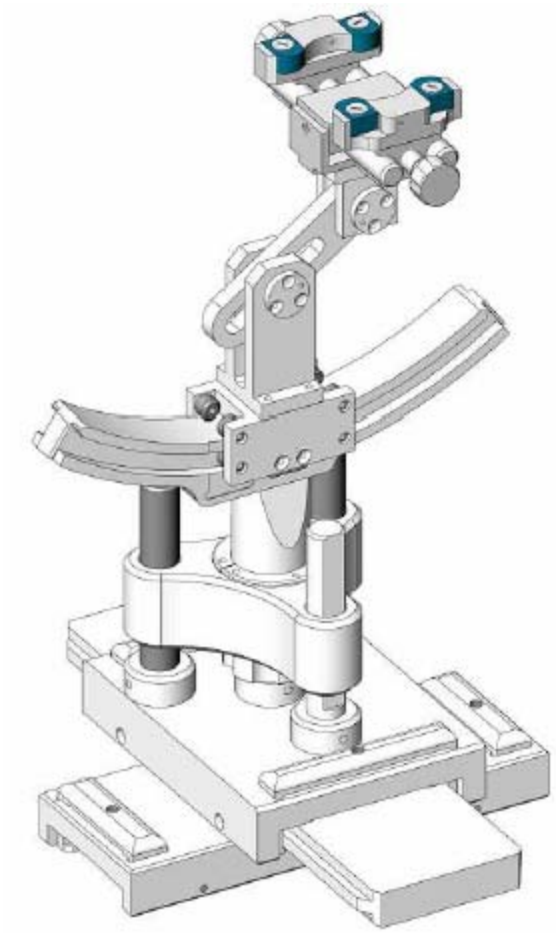


Serial Number	Left Head		Right Head		Flat Part	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

The test, based on ultrasonic system, allows measuring the thickness with an accuracy of 10 µm.

2.5. Device Holder

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



Serial Number	Holder Material	Permittivity	Loss Tangent
SN 16/15 MSH100	Delrin	3.7	0.005

2.6. Test Equipment List

This table gives a complete overview of the SAR measurement equipment.
Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Sep. 18, 2017	Sep. 17, 2018
☐	MVG	450 MHz Dipole	SID450	SN 03/15 DIP 0G450-345	Apr. 06, 2015	Apr. 05, 2018
☐	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Apr. 06, 2015	Apr. 05, 2018
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Apr. 06, 2015	Apr. 05, 2018
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Apr. 06, 2015	Apr. 05, 2018
☐	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Apr. 06, 2015	Apr. 05, 2018
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
☒	R&S	Universal radio communication tester	CMU200	117858	Aug. 07, 2017	Aug. 06, 2018
☒	R&S	Wideband radio communication tester	CMW500	103917	Oct. 26, 2017	Oct. 25, 2018
☒	HP	Network Analyzer	8753D	3410J01136	Aug. 07, 2017	Aug. 06, 2018

☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Aug. 07, 2017	Aug. 06, 2018
☒	Agilent	Power meter	E4419B	MY45102538	Aug. 07, 2017	Aug. 06, 2018
☒	Agilent	Power sensor	E9301A	MY41495644	Aug. 07, 2017	Aug. 06, 2018
☒	Agilent	Power sensor	E9301A	US39212148	Aug. 07, 2017	Aug. 06, 2018
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Aug. 07, 2017	Aug. 06, 2018

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>
(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/Bluetooth power measurement, use engineering software to configure EUT WLAN/Bluetooth continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/Bluetooth output power.

<SAR measurement>
(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/Bluetooth continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix A demonstrates.
(c) Set scan area, grid size and other setting on the OPENSAR software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band.
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

3.1. Power Reference

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

3.2. Area scan & Zoom scan

The area scan is a 2D scan to find the hot spot location on the DUT. The zoom scan is a 3D scan above the hot spot to calculate the 1g and 10g SAR value.

Measurement of the SAR distribution with a grid of 8 to 16 mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors 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.

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

Area scan & Zoom scan scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></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="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* 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 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

3.3. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.
An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.
The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

3.4. Volumetric Scan

The volumetric scan consists to a full 3D scan over a specific area. This 3D scan is useful form multi Tx SAR measurement. Indeed, it is possible with OpenSAR to add, point by point, several volumetric scan to calculate the SAR value of the combined measurement as it is define in the standard IEEE1528 and IEC62209.

3.5. Power Drift

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In OpenSAR measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in V/m. If the power drifts more than ±5%, the SAR will be retested.

4. System Verification Procedure

4.1. Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% of weight)	Head Tissue							
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00
Ingredients (% of weight)	Body Tissue							
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600
Water	50.30	50.30	50.30	69.91	69.91	71.88	71.88	71.88
NaCl	0.60	0.60	0.60	0.13	0.13	0.16	0.16	0.16
1,2-Propanediol	49.10	49.10	49.10	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	9.99	9.99	19.97	19.97	19.97
DGBE	0.00	0.00	0.00	19.97	19.97	7.99	7.99	7.99

4.1.1. Tissue Dielectric Parameter Check Results

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ±5% of the target values.

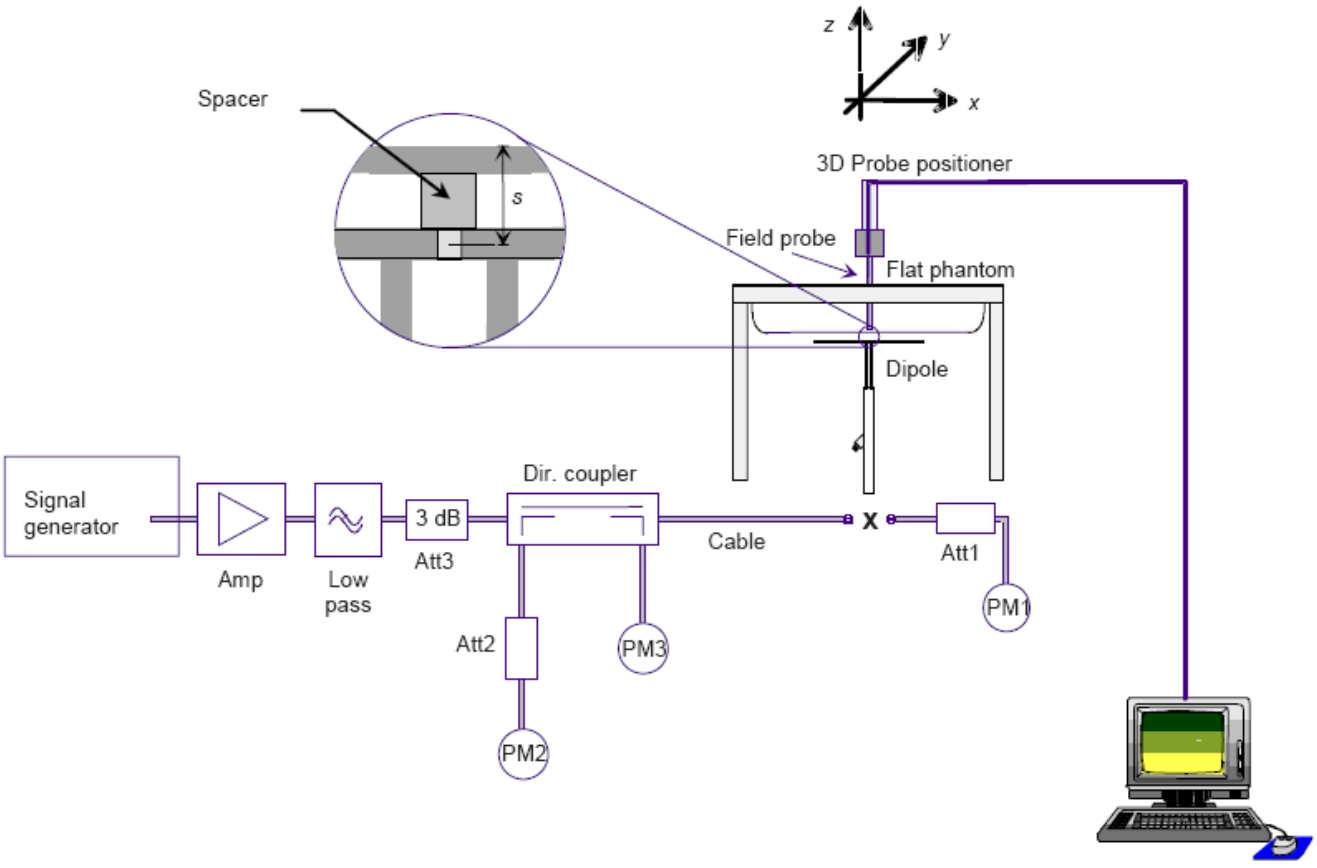
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		εr (±5%)	σ (S/m) (±5%)	εr	σ (S/m)		
Head 850	835	41.50 (39.43~43.57)	0.90 (0.86~0.94)	42.85	0.89	21.6 °C	Nov. 17, 2017
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.01)	55.23	0.99	21.4 °C	Nov. 16, 2017
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.57	1.40	21.3 °C	Nov. 18, 2017
Body 1800	1800	53.30 (50.64~55.96)	1.52 (1.44~1.59)	53.98	1.51	21.4 °C	Nov. 18, 2017
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.49	1.43	21.2 °C	Nov. 20, 2017
Body 1900	1900	53.30 (50.64~55.96)	1.52 (1.44~1.59)	53.34	1.55	21.3 °C	Nov. 21, 2017
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	39.86	1.81	21.4 °C	Nov. 27, 2017
Body 2450	2450	52.70 (50.07~55.33)	1.95 (1.85~2.04)	52.57	1.95	21.2 °C	Nov. 28, 2017
Head 2600	2600	39.00 (37.05~40.95)	1.96 (1.86~2.05)	39.11	1.98	21.3 °C	Nov. 15, 2017
Body 2600	2600	52.50 (49.88~55.13)	2.16 (2.05~2.27)	53.46	2.16	21.5 °C	Nov. 15, 2017

NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.

4.2. System Verification Procedure

The system verification is performed for verifying the accuracy of the complete measurement system and performance of the software. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100mW (below 5GHz) or 100mW (above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system verification to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system verification to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

The system verification is shown as below picture:



4.2.1. System Verification Results

Comparing to the original SAR value provided by SATIMO, the verification data should be within its specification of ±10%. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance verification can meet the variation criterion and the plots can be referred to Appendix B of this report.

System Verification	Target SAR (1W) (±10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		
835MHz Head	9.56 (8.60~10.51)	6.22 (5.60~6.84)	10.10	6.56	21.6 °C	Nov. 17, 2017
835MHz Body	9.48 (8.53~10.42)	6.29 (5.66~6.91)	9.73	6.38	21.4 °C	Nov. 16, 2017
1800MHz Head	38.40 (34.56~42.24)	20.10 (18.09~22.11)	37.89	19.75	21.3 °C	Nov. 18, 2017
1800MHz Body	37.04 (33.34~40.74)	20.26 (18.23~22.29)	36.63	19.09	21.4 °C	Nov. 18, 2017
1900MHz Head	39.70 (35.73~43.67)	20.50 (18.45~22.55)	39.28	20.31	21.2 °C	Nov. 20, 2017
1900MHz Body	38.43 (34.59~42.27)	20.34 (18.31~22.37)	37.47	19.32	21.3 °C	Nov. 21, 2017
2450MHz Head	52.40 (47.16~57.64)	24.00 (21.60~26.40)	52.37	24.53	21.4 °C	Nov. 27, 2017
2450MHz Body	49.32 (44.39~54.25)	22.89 (20.60~25.17)	48.42	21.85	21.2 °C	Nov. 28, 2017
2600MHz Head	55.30 (49.77~60.83)	24.60 (22.14~27.06)	54.72	25.61	21.3 °C	Nov. 15, 2017
2600MHz Body	52.95 (47.66~58.25)	23.64 (21.28~26.00)	52.23	24.48	21.5 °C	Nov. 15, 2017

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

5.2. SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

6. RF Exposure Positions

6.1. Ear and handset reference point

Figure 6.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M”, the left ear reference point (ERP) is marked “LE”, and the right ERP is marked “RE”.

Fig 6.1.1 Front, back, and side views of SAM phantom

6.2. Definition of the cheek position

1. Define two imaginary lines on the handset, the vertical centerline and the horizontal line. The vertical centerline 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 (point A in Figure 6.2.1 and Figure 6.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 6.2.1). 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 (see Figure 6.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
2. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
3. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP
4. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
5. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.

6. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 6.2.3. The actual rotation angles should be documented in the test report.

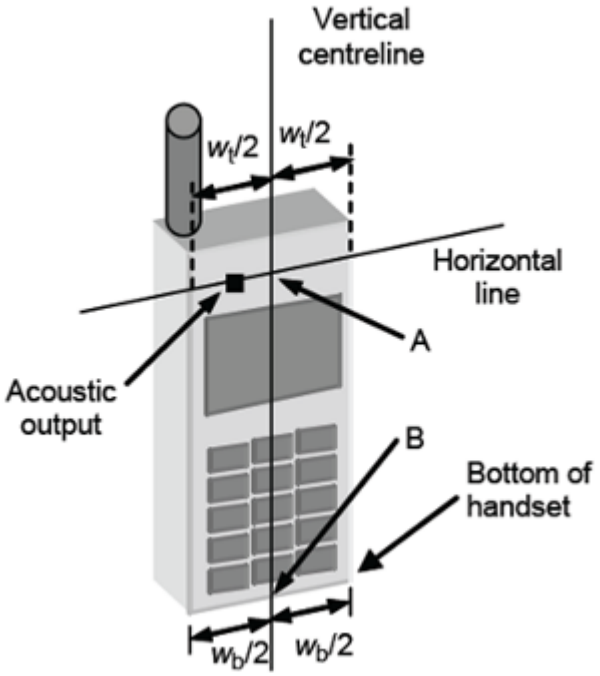


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case

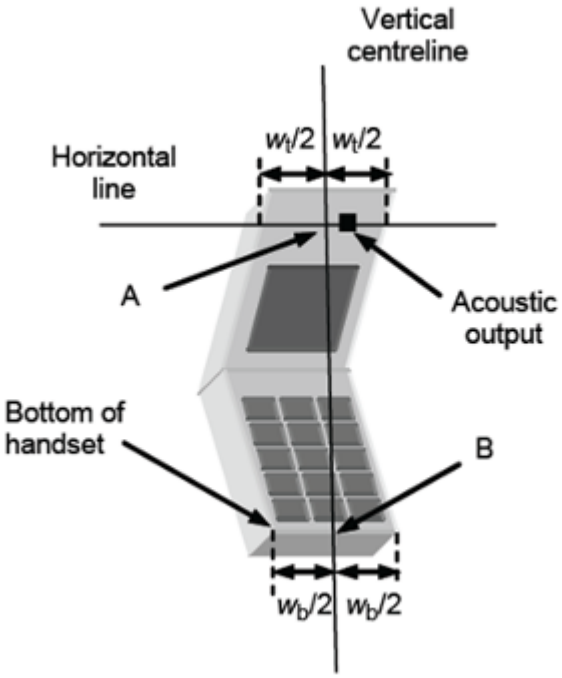


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

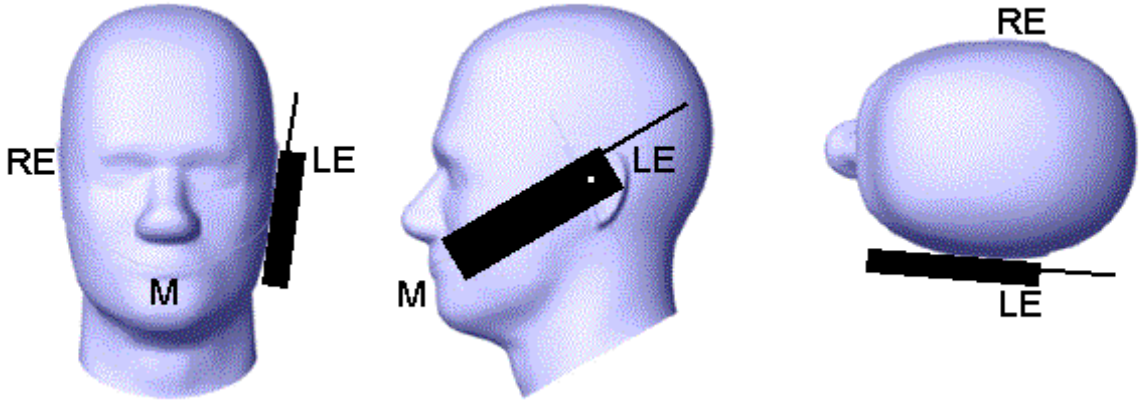


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

1. While maintaining the orientation of the handset, retract the handset parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15 degree.
2. Rotate the Handset around the horizontal line by 15 degree (see Figure 6.3.1).
3. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g., the antenna with the back of the phantom head, the angle of the handset shall be reduced. In this case, the tilt position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is in contact with the phantom, e.g., the antenna with the back of the head.

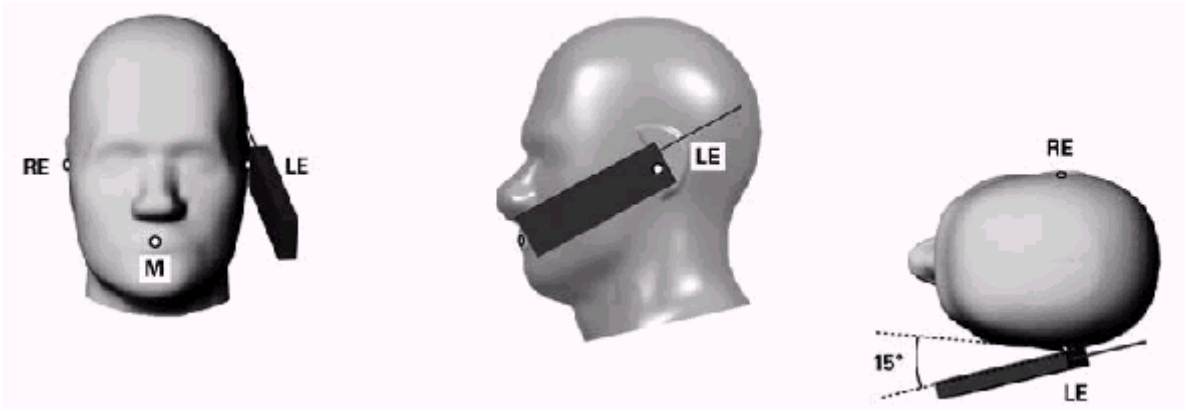


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

1. Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6.4.1). Per KDB 648474 D04, 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 FCC KDB 447498 D01 should be 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 applicable. When the reported SAR for 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 handset attached to the handset.
2. Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest

spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

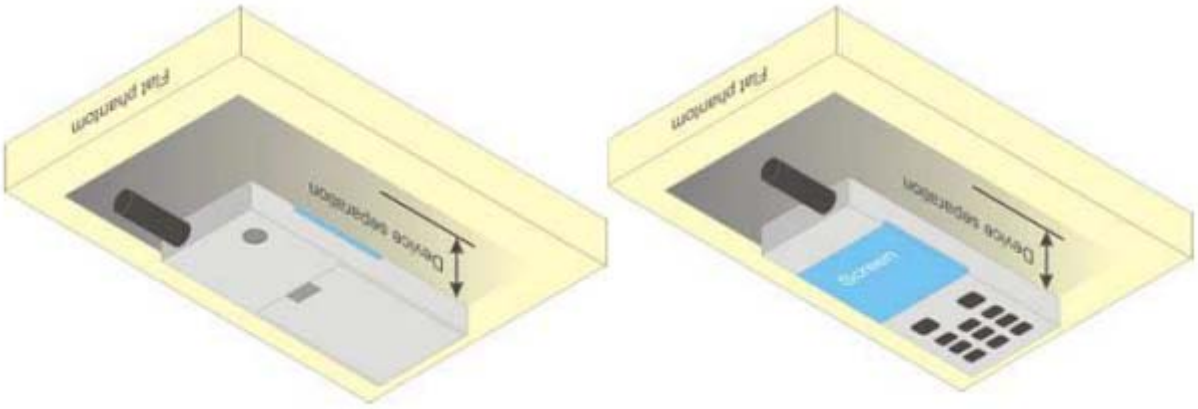


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WLAN simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC HDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WLAN transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WLAN transmitter according to FCC KDB Publication 447498 D01 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

7. RF Output Power

7.1. Maximum Tune-up Limit

Band	Mode	The Tune-up Maximum Power (Customer Declared)(dBm)	Range	Measured Maximum Output Power(dBm)
GSM 850	GSM (GMSK)	31.5±1	30.5~32.5	32.36
	GPRS(GMSK, 1 Tx slot)	31.5±1	30.5~32.5	32.38
	GPRS(GMSK, 2 Tx slot)	31.5±1	30.5~32.5	31.83
	GPRS(GMSK, 3 Tx slot)	29.5±1	28.5~30.5	30.34
	GPRS(GMSK, 4 Tx slot)	28.5±1	27.5~29.5	29.25
	EDGE(8PSK, 1 Tx slot)	26.5±1	25.5~27.5	26.62
	EDGE(8PSK, 2 Tx slot)	24.5±1	23.5~25.5	24.89
	EDGE(8PSK, 3 Tx slot)	21.5±1	20.5~22.5	22.49
	EDGE(8PSK, 4 Tx slot)	20.5±1	19.5~21.5	21.28
GSM 1900	GSM (GMSK)	29.5±1	28.5~30.5	29.82
	GPRS(GMSK, 1 Tx slot)	29.5±1	28.5~30.5	29.82
	GPRS(GMSK, 2 Tx slot)	28.5±1	27.5~29.5	29.21
	GPRS(GMSK, 3 Tx slot)	26.5±1	25.5~27.5	27.48
	GPRS(GMSK, 4 Tx slot)	25.5±1	24.5~26.5	26.48
	EDGE(8PSK, 1 Tx slot)	25.5±1	24.5~26.5	26.05
	EDGE(8PSK, 2 Tx slot)	24.5±1	23.5~25.5	24.93
	EDGE(8PSK, 3 Tx slot)	22.5±1	21.5~23.5	22.96
	EDGE(8PSK, 4 Tx slot)	20.5±1	19.5~21.5	21.49
WCDMA Band V	RMC 12.2Kbps	22±1	21~23	22.99
	HSDPA Subtest-1	21±1	20~22	21.99
	HSDPA Subtest-2	21±1	20~22	21.54
	HSDPA Subtest-3	21±1	20~22	21.56
	HSDPA Subtest-4	21±1	20~22	21.55
	HSUPA Subtest-1	21±1	20~22	21.55
	HSUPA Subtest-2	21±1	20~22	21.49
	HSUPA Subtest-3	21±1	20~22	21.51
	HSUPA Subtest-4	21±1	20~22	21.51
	HSUPA Subtest-5	21±1	20~22	21.95
WCDMA Band II	RMC 12.2Kbps	22±1	21~23	22.64
	HSDPA Subtest-1	21±1	20~22	21.53
	HSDPA Subtest-2	21±1	20~22	21.08
	HSDPA Subtest-3	21±1	20~22	21.08
	HSDPA Subtest-4	21±1	20~22	21.06

	HSUPA Subtest-1	21±1	20~22	21.09
	HSUPA Subtest-2	21±1	20~22	21.05
	HSUPA Subtest-3	21±1	20~22	21.12
	HSUPA Subtest-4	21±1	20~22	21.13
	HSUPA Subtest-5	21±1	20~22	21.58
LTE Band V	1.4M QPSK 1RB	22±1	21~23	22.94
	1.4M QPSK 3RB	22±1	21~23	22.99
	1.4M QPSK 6RB	21±1	20~22	21.84
	1.4M 16QAM 1RB	21±1	20~22	21.99
	1.4M 16QAM 3RB	22±1	21~23	22.92
	1.4M 16QAM 6RB	20±1	19~21	20.91
	3M QPSK 1RB	22±1	21~23	22.89
	3M QPSK 8RB	22±1	21~23	22.86
	3M QPSK 15RB	21±1	20~22	21.90
	3M 16QAM 1RB	22±1	21~23	22.42
	3M 16QAM 8RB	22±1	21~23	22.37
	3M 16QAM 15RB	21±1	20~22	21.00
	5M QPSK 1RB	22±1	21~23	22.99
	5M QPSK 12RB	21±1	20~22	21.98
	5M QPSK 25RB	21±1	20~22	21.91
	5M 16QAM 1RB	22±1	21~23	22.26
	5M 16QAM 12RB	21±1	20~22	21.95
	5M 16QAM 25RB	21±1	20~22	21.00
	10M QPSK 1RB	22±1	21~23	22.97
	10M QPSK 25RB	22±1	21~23	21.96
	10M QPSK 50RB	21±1	20~22	21.96
	10M 16QAM 1RB	22±1	21~23	22.57
	10M 16QAM 25RB	21±1	20~22	21.93
	10M 16QAM 50RB	20±1	19~21	20.99
LTE Band IV	1.4M QPSK 1RB	22±1	21~23	22.93
	1.4M QPSK 3RB	22±1	21~23	22.95
	1.4M QPSK 6RB	21±1	20~22	21.86
	1.4M 16QAM 1RB	21±1	20~22	21.97
	1.4M 16QAM 3RB	22±1	21~23	22.97
	1.4M 16QAM 6RB	20±1	19~21	20.92
	3M QPSK 1RB	22±1	21~23	22.87
	3M QPSK 8RB	22±1	21~23	22.84
	3M QPSK 15RB	21±1	20~22	21.95
	3M 16QAM 1RB	22±1	21~23	22.50
	3M 16QAM 8RB	22±1	21~23	22.42

	3M 16QAM 15RB	21±1	20~22	21.07
	5M QPSK 1RB	22±1	21~23	22.99
	5M QPSK 12RB	21±1	20~22	21.98
	5M QPSK 25RB	21±1	20~22	21.96
	5M 16QAM 1RB	22±1	21~23	22.18
	5M 16QAM 12RB	21±1	20~22	21.99
	5M 16QAM 25RB	20±1	19~21	20.97
	10M QPSK 1RB	22±1	21~23	22.99
	10M QPSK 25RB	21±1	20~22	21.96
	10M QPSK 50RB	21±1	20~22	21.88
	10M 16QAM 1RB	22±1	21~23	22.36
	10M 16QAM 25RB	21±1	20~22	21.89
	10M 16QAM 50RB	20±1	19~21	20.98
	15M QPSK 1RB	22±1	21~23	22.96
	15M QPSK 36RB	21±1	20~22	21.98
	15M QPSK 75RB	21±1	20~22	21.97
	15M 16QAM 1RB	22±1	21~23	22.58
	15M 16QAM 36RB	21±1	20~22	21.95
	15M 16QAM 75RB	20±1	19~21	20.97
	20M QPSK 1RB	22±1	21~23	22.99
	20M QPSK 50RB	22±1	21~23	21.96
	20M QPSK 100RB	21±1	20~22	21.90
	20M 16QAM 1RB	22±1	21~23	22.43
	20M 16QAM 50RB	21±1	20~22	21.92
	20M 16QAM 100RB	20±1	19~21	20.94
LTE Band II	1.4M QPSK 1RB	22±1	21~23	22.99
	1.4M QPSK 3RB	22±1	21~23	22.97
	1.4M QPSK 6RB	21±1	20~22	21.92
	1.4M 16QAM 1RB	21±1	20~22	21.99
	1.4M 16QAM 3RB	22±1	21~23	22.97
	1.4M 16QAM 6RB	20±1	19~21	20.99
	3M QPSK 1RB	22±1	21~23	22.90
	3M QPSK 8RB	22±1	21~23	22.82
	3M QPSK 15RB	21±1	20~22	21.94
	3M 16QAM 1RB	22±1	21~23	22.47
	3M 16QAM 8RB	22±1	21~23	22.37
	3M 16QAM 15RB	21±1	20~22	21.03
	5M QPSK 1RB	22±1	21~23	22.92
	5M QPSK 12RB	21±1	20~22	21.95
	5M QPSK 25RB	21±1	20~22	21.85

	5M 16QAM 1RB	21±1	20~22	21.96
	5M 16QAM 12RB	21±1	20~22	21.82
	5M 16QAM 25RB	20±1	19~21	20.91
	10M QPSK 1RB	22±1	21~23	22.83
	10M QPSK 25RB	21±1	20~22	21.82
	10M QPSK 50RB	21±1	20~22	21.81
	10M 16QAM 1RB	22±1	21~23	22.44
	10M 16QAM 25RB	21±1	20~22	21.74
	10M 16QAM 50RB	20±1	19~21	20.85
	15M QPSK 1RB	22±1	21~23	22.88
	15M QPSK 36RB	21±1	20~22	21.89
	15M QPSK 75RB	21±1	20~22	21.86
	15M 16QAM 1RB	22±1	21~23	22.43
	15M 16QAM 36RB	21±1	20~22	21.81
	15M 16QAM 75RB	20±1	19~21	20.84
	20M QPSK 1RB	22±1	21~23	22.96
	20M QPSK 50RB	22±1	21~23	22.02
	20M QPSK 100RB	21±1	20~22	21.80
	20M 16QAM 1RB	22±1	21~23	22.36
	20M 16QAM 50RB	21±1	20~22	21.78
	20M 16QAM 100RB	20±1	19~21	20.82
LTE Band VII	5M QPSK 1RB	22.5±1	21.5~23.5	23.27
	5M QPSK 12RB	21.5±1	20.5~22.5	22.11
	5M QPSK 25RB	21.5±1	20.5~22.5	22.01
	5M 16QAM 1RB	21.5±1	20.5~22.5	22.49
	5M 16QAM 12RB	21.5±1	20.5~22.5	21.95
	5M 16QAM 25RB	20.5±1	19.5~21.5	21.16
	10M QPSK 1RB	22.5±1	21.5~23.5	23.44
	10M QPSK 25RB	21.5±1	20.5~22.5	22.23
	10M QPSK 50RB	21.5±1	20.5~22.5	22.05
	10M 16QAM 1RB	21.5±1	20.5~22.5	22.49
	10M 16QAM 25RB	21.5±1	20.5~22.5	21.95
	10M 16QAM 50RB	20.5±1	19.5~21.5	21.23
	15M QPSK 1RB	22.5±1	21.5~23.5	23.47
	15M QPSK 36RB	21.5±1	20.5~22.5	22.34
	15M QPSK 75RB	21.5±1	20.5~22.5	21.91
	15M 16QAM 1RB	21.5±1	20.5~22.5	22.49
	15M 16QAM 36RB	21.5±1	20.5~22.5	22.21
	15M 16QAM 75RB	20.5±1	19.5~21.5	21.06
	20M QPSK 1RB	22.5±1	21.5~23.5	23.37

	20M QPSK 50RB		21.5±1	20.5~22.5	22.43
	20M QPSK 100RB		21.5±1	20.5~22.5	22.24
	20M 16QAM 1RB		21.5±1	20.5~22.5	22.46
	20M 16QAM 50RB		21.5±1	20.5~22.5	22.07
	20M 16QAM 100RB		20.5±1	19.5~21.5	21.44
WLAN 2.4G	802.11b		12±1	11~13	12.8
	802.11g		11±1	10~12	11.1
	802.11n-HT20		11±1	10~12	11.0
	802.11n-HT40		11±1	10~12	10.8
Bluetooth	3.0	1M	3±1	2~4	3.42
		2M	2±1	1~3	2.13
		3M	2±1	1~3	2.45
	4.0		1.5±1	0.5~2.5	2.04

7.2. GSM Conducted Power

Refer to KDB 447498 D01, the maximum output power (including tune-up tolerance) channel is used for SAR testing and for further SAR test reduction. Therefore, the EUT was set in GSM850 GPRS (4TS) and GSM1900 GPRS (4TS).

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	189	251	Tune-up	128	189	251
Frequency (MHz)	(dBm)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8
GSM (GMSK)	32.50	32.35	32.36	32.35	23.47	23.32	23.33	23.32
GPRS(GMSK, 1 TS)	32.50	32.36	32.38	32.35	23.47	23.33	23.35	23.32
GPRS(GMSK, 2 TS)	32.50	31.79	31.83	31.82	26.48	25.77	25.81	25.80
GPRS(GMSK, 3 TS)	30.50	30.31	30.34	30.31	26.24	26.05	26.08	26.05
GPRS(GMSK, 4 TS)	29.50	29.19	29.21	29.25	26.49	26.18	26.20	26.24
EDGE(8PSK, 1 TS)	27.50	26.62	26.59	26.49	18.47	17.59	17.56	17.46
EDGE(8PSK, 2 TS)	25.50	24.89	24.85	24.78	19.48	18.87	18.83	18.76
EDGE(8PSK, 3 TS)	22.50	22.49	22.47	22.39	18.24	18.23	18.21	18.13
EDGE(8PSK, 4 TS)	21.50	21.28	21.26	21.10	18.49	18.27	18.25	18.09
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880.0	1909.8	(dBm)	1850.2	1880.0	1909.8
GSM (GMSK)	30.50	29.82	29.56	29.49	21.47	20.79	20.53	20.46
GPRS(GMSK, 1 TS)	30.50	29.82	29.56	29.48	21.47	20.79	20.53	20.45
GPRS(GMSK, 2 TS)	29.50	29.21	28.96	28.89	23.48	23.19	22.94	22.87
GPRS(GMSK, 3 TS)	27.50	27.48	27.38	27.29	23.24	23.22	23.12	23.03
GPRS(GMSK, 4 TS)	26.50	26.48	26.31	26.26	23.49	23.47	23.30	23.25
EDGE(8PSK, 1 TS)	26.50	26.05	25.69	25.43	17.47	17.02	16.66	16.40
EDGE(8PSK, 2 TS)	25.50	24.93	24.62	24.42	19.48	18.91	18.60	18.40
EDGE(8PSK, 3 TS)	23.50	22.96	22.53	22.26	19.24	18.70	18.27	18.00
EDGE(8PSK, 4 TS)	21.50	21.49	21.32	21.01	18.49	18.48	18.31	18.00

Note: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots. The calculated method are shown as below:

Frame-averaged power = Maximum burst averaged power (1 TS) - 9.03 dB

Frame-averaged power = Maximum burst averaged power (2 TS) - 6.02 dB

Frame-averaged power = Maximum burst averaged power (3 TS) - 4.26 dB

Frame-averaged power = Maximum burst averaged power (4 TS) - 3.01 dB

7.3. WCDMA Conducted Power

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification. A summary of these settings are illustrated below:

1. Release99 Setup Configuration

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

2. HSDPA Setup Configuration

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

3. HSUPA Setup Configuration

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
HSDPA Specific Settings	D_{ACK}	8				
	D_{NAK}	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				

	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9

4. WCDMA Conducted Power Results

1) Refer to KDB 941225 D01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

2) Refer to KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA.

Band	WCDMA Band V			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	23.00	22.98	22.86	22.99
HSDPA Subtest-1	22.00	21.92	21.81	21.99
HSDPA Subtest-2	22.00	21.54	21.32	21.52
HSDPA Subtest-3	22.00	21.49	21.31	21.56
HSDPA Subtest-4	22.00	21.55	21.27	21.55
HSUPA Subtest-1	22.00	21.55	21.29	21.52
HSUPA Subtest-2	22.00	21.49	21.24	21.49
HSUPA Subtest-3	22.00	21.51	21.31	21.46
HSUPA Subtest-4	22.00	21.48	21.28	21.51
HSUPA Subtest-5	22.00	21.95	21.81	21.89
Band	WCDMA Band II			
Tx Channel	Tune-up	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC 12.2Kbps	23.00	22.64	22.63	22.49
HSDPA Subtest-1	22.00	21.51	21.53	21.44
HSDPA Subtest-2	22.00	21.08	21.06	20.97
HSDPA Subtest-3	22.00	21.05	21.08	21.01
HSDPA Subtest-4	22.00	21.06	21.05	20.99
HSUPA Subtest-1	22.00	21.08	21.09	20.97

HSUPA Subtest-2	22.00	21.01	21.05	20.95
HSUPA Subtest-3	22.00	21.12	21.04	20.94
HSUPA Subtest-4	22.00	21.05	21.13	20.85
HSUPA Subtest-5	22.00	21.46	21.58	21.43

7.4. LTE Conducted Power

R&S CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.

<LTE Band V>

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band V	1.4MHz	QPSK	1	0	23.00	21.81	22.87	22.89
			1	2	23.00	22.90	22.91	22.94
			1	5	23.00	22.87	22.85	22.88
			3	0	23.00	22.94	22.99	22.91
			3	1	23.00	22.95	22.95	22.92
			3	2	23.00	22.96	22.91	22.90
			6	0	22.00	21.84	21.79	21.83
		16QAM	1	0	22.00	21.87	21.90	21.92
			1	2	22.00	21.91	21.96	21.97
			1	5	22.00	21.89	21.90	21.99
			3	0	23.00	22.91	22.91	22.91
			3	1	23.00	22.89	22.91	22.92
			3	2	23.00	22.90	22.90	22.90
			6	0	21.00	20.88	20.80	20.91
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band V	3MHz	QPSK	1	0	23.00	22.86	22.88	22.89
			1	7	23.00	22.83	22.86	22.88
			1	14	23.00	22.79	22.80	22.84
			8	0	23.00	22.79	22.80	22.84
			8	4	23.00	22.79	22.81	22.85
			8	7	23.00	22.78	22.82	22.86

			15	0	22.00	21.90	21.89	21.90
		16QAM	1	0	23.00	22.42	21.92	22.02
			1	7	23.00	22.41	21.87	22.02
			1	14	23.00	22.37	21.85	21.99
			8	0	23.00	22.36	21.85	21.99
			8	4	23.00	21.37	21.85	21.98
			8	7	23.00	22.37	21.85	21.98
			15	0	22.00	21.00	21.00	20.91

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band V	5MHz	QPSK	1	0	23.00	22.96	22.99	22.99
			1	12	23.00	22.92	22.91	22.97
			1	24	23.00	22.92	22.83	22.89
			12	0	22.00	21.96	21.98	21.95
			12	6	22.00	21.95	21.95	21.94
			12	11	22.00	21.95	21.91	21.93
			25	0	22.00	21.90	21.88	21.91
		16QAM	1	0	23.00	21.85	22.06	22.26
			1	12	23.00	21.81	21.95	22.25
			1	24	23.00	21.83	21.89	22.17
			12	0	22.00	21.95	21.91	21.94
			12	6	22.00	21.94	21.91	21.93
			12	11	22.00	21.95	21.91	21.94
			25	0	22.00	21.00	20.96	20.96

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band V	10MHz	QPSK	1	0	23.00	22.97	22.96	22.89
			1	24	23.00	22.96	22.94	22.90
			1	49	23.00	22.91	22.86	22.86
			25	0	23.00	21.96	21.94	21.87
			25	12	23.00	21.95	21.94	21.85
			25	24	23.00	21.94	21.88	21.88
			50	0	22.00	21.96	21.92	21.89
		16QAM	1	0	23.00	22.55	21.97	22.04
			1	24	23.00	22.57	21.95	22.04
			1	49	23.00	22.50	21.86	21.99

			25	0	22.00	21.93	21.88	21.86
			25	12	22.00	21.92	21.88	21.84
			25	24	22.00	21.93	21.88	21.85
			50	0	21.00	20.96	20.99	20.94

<LTE Band IV>

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band IV	1.4MHz	QPSK	1	0	23.00	22.88	22.78	22.79
			1	2	23.00	22.93	22.88	22.82
			1	5	23.00	22.90	22.81	22.79
			3	0	23.00	22.95	22.89	22.92
			3	1	23.00	22.94	22.89	22.91
			3	2	23.00	22.93	22.94	22.93
			6	0	22.00	21.86	21.72	21.73
		16QAM	1	0	22.00	21.91	21.77	21.91
			1	2	22.00	21.95	21.89	21.97
			1	5	22.00	21.92	21.81	21.91
			3	0	23.00	22.97	22.94	22.92
			3	1	23.00	22.96	22.94	22.91
			3	2	23.00	22.97	22.94	22.92
			6	0	21.00	20.92	20.70	20.81
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band IV	3MHz	QPSK	1	0	23.00	22.85	22.80	22.77
			1	7	23.00	22.87	22.81	22.81
			1	14	23.00	22.84	22.78	22.78
			8	0	23.00	22.84	22.79	22.78
			8	4	23.00	22.84	22.78	22.76
			8	7	23.00	22.84	22.78	22.77
			15	0	22.00	21.95	21.82	21.83
		16QAM	1	0	23.00	22.49	21.79	21.91
			1	7	23.00	22.50	21.78	21.93
			1	14	23.00	22.42	21.77	21.90
			8	0	23.00	22.41	21.76	21.90
			8	4	23.00	22.41	21.75	21.91

			8	7	23.00	22.42	21.77	21.90
			15	0	22.00	21.07	20.91	20.84
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band IV	5MHz	QPSK	1	0	23.00	22.99	22.87	22.86
			1	12	23.00	22.99	22.85	22.87
			1	24	23.00	22.91	22.81	22.83
			12	0	22.00	21.98	21.87	21.86
			12	6	22.00	21.97	21.86	21.86
			12	11	22.00	21.90	21.85	21.89
			25	0	22.00	21.96	21.82	21.85
		16QAM	1	0	23.00	21.89	21.90	22.18
			1	12	23.00	21.88	21.89	22.18
			1	24	23.00	21.82	21.87	22.13
			12	0	22.00	21.99	21.83	21.89
			12	6	22.00	21.95	21.82	21.89
			12	11	22.00	21.99	21.82	21.90
			25	0	21.00	20.97	20.88	20.89
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band IV	10MHz	QPSK	1	0	23.00	22.99	22.85	22.72
			1	24	23.00	22.97	22.83	22.74
			1	49	23.00	22.91	22.82	22.73
			25	0	22.00	21.96	21.81	21.74
			25	12	22.00	21.95	21.81	21.75
			25	24	22.00	21.95	21.81	21.76
			50	0	22.00	21.88	21.79	21.75
		16QAM	1	0	23.00	21.95	21.99	22.33
			1	24	23.00	21.92	21.96	22.36
			1	49	23.00	21.86	21.94	22.35
			25	0	22.00	21.89	21.79	21.77
			25	12	22.00	21.88	21.78	21.75
			25	24	22.00	21.88	21.79	21.77
			50	0	21.00	20.98	20.85	20.83
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		

			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band IV	15MHz	QPSK	1	0	23.00	22.96	22.93	22.81
			1	37	23.00	22.88	22.85	22.77
			1	74	23.00	22.88	22.87	22.82
			36	0	22.00	21.98	21.90	21.80
			36	18	22.00	21.98	21.97	21.81
			36	37	22.00	21.95	21.87	21.82
			75	0	22.00	21.97	21.90	21.81
		16QAM	1	0	23.00	22.58	22.24	21.94
			1	37	23.00	22.49	22.20	21.91
			1	74	23.00	22.42	22.24	21.93
			36	0	22.00	21.95	21.88	21.81
			36	18	22.00	21.95	21.87	21.79
			36	37	22.00	21.94	21.87	21.81
			75	0	21.00	20.97	20.86	20.86

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band IV	20MHz	QPSK	1	0	23.00	22.99	22.92	22.88
			1	49	23.00	22.95	22.83	22.87
			1	99	23.00	22.98	22.87	22.89
			50	0	23.00	21.96	21.86	21.81
			50	24	23.00	21.95	21.86	21.81
			50	49	23.00	21.91	21.86	21.81
			100	0	22.00	21.90	21.84	21.80
		16QAM	1	0	23.00	22.33	22.42	22.04
			1	49	23.00	22.23	22.37	22.07
			1	99	23.00	22.20	22.43	22.07
			50	0	22.00	21.92	21.84	21.81
			50	24	22.00	21.91	21.84	21.81
			50	49	22.00	21.92	21.85	21.81
			100	0	21.00	20.94	20.88	20.84

<LTE Band II>

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3

LTE Band II	1.4MHz	QPSK	1	0	23.00	22.96	22.87	22.74
			1	2	23.00	22.99	22.92	22.76
			1	5	23.00	22.97	22.84	22.71
			3	0	23.00	22.92	22.97	22.85
			3	1	23.00	22.92	22.95	22.84
			3	2	23.00	22.90	22.96	22.83
			6	0	22.00	21.92	21.84	21.67
		16QAM	1	0	22.00	21.97	21.86	21.85
			1	2	22.00	21.99	21.95	21.90
			1	5	22.00	21.97	21.87	21.83
			3	0	23.00	22.97	22.96	22.82
			3	1	23.00	22.95	22.95	22.81
			3	2	23.00	22.97	22.96	22.83
			6	0	21.00	20.99	20.76	20.74
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band II	3MHz	QPSK	1	0	23.00	22.90	22.82	22.69
			1	7	23.00	22.88	22.77	22.67
			1	14	23.00	22.82	22.71	22.60
			8	0	23.00	22.82	22.72	22.60
			8	4	23.00	22.81	22.72	22.60
			8	7	23.00	22.82	22.72	22.59
			15	0	22.00	21.94	21.80	21.69
		16QAM	1	0	23.00	22.45	21.79	21.78
			1	7	23.00	22.47	21.76	21.78
			1	14	23.00	22.38	21.76	21.70
			8	0	23.00	22.35	21.75	21.71
			8	4	23.00	22.16	21.71	21.72
			8	7	23.00	22.37	21.74	21.70
			15	0	22.00	21.03	20.85	20.69
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band II	5MHz	QPSK	1	0	23.00	22.92	22.79	22.77
			1	12	23.00	22.87	22.73	22.67
			1	24	23.00	22.79	22.69	22.60
			12	0	22.00	21.92	21.80	21.73

			12	6	22.00	21.95	21.85	21.72
			12	11	22.00	21.85	21.79	21.66
			25	0	22.00	21.85	21.74	21.64
		16QAM	1	0	22.00	21.80	21.81	21.96
			1	12	22.00	21.75	21.78	21.95
			1	24	22.00	21.69	21.78	21.88
			12	0	22.00	21.82	21.78	21.65
			12	6	22.00	21.81	21.75	21.65
			12	11	22.00	21.82	21.78	21.66
			25	0	21.00	20.91	20.75	20.70
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band II	10MHz	QPSK	1	0	23.00	22.83	22.81	22.74
			1	24	23.00	22.77	22.76	22.74
			1	49	23.00	22.70	22.71	22.61
			25	0	22.00	21.82	21.74	21.65
			25	12	22.00	21.81	21.74	21.64
			25	24	22.00	21.73	21.74	21.66
			50	0	22.00	21.81	21.75	21.65
		16QAM	1	0	23.00	22.44	21.77	21.80
			1	24	23.00	22.38	21.75	21.79
			1	49	23.00	22.28	21.74	21.69
			25	0	22.00	21.73	21.74	21.66
			25	12	22.00	21.72	21.73	21.66
			25	24	22.00	21.72	21.74	21.66
			50	0	21.00	20.85	20.76	20.69
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band II	15MHz	QPSK	1	0	23.00	22.88	22.83	22.78
			1	37	23.00	22.74	22.73	22.74
			1	74	23.00	22.74	22.70	22.63
			36	0	22.00	21.86	21.89	21.82
			36	18	22.00	21.75	21.82	21.81
			36	37	22.00	21.81	21.79	21.75
			75	0	22.00	21.84	21.86	21.80
		16QAM	1	0	23.00	22.43	22.07	21.87

			1	37	23.00	22.35	22.09	21.80
			1	74	23.00	22.25	22.14	21.73
			36	0	22.00	21.80	21.80	21.75
			36	18	22.00	21.81	21.79	21.75
			36	37	22.00	21.81	21.81	21.75
			75	0	21.00	20.84	20.79	20.78
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band II	20MHz	QPSK	1	0	23.00	22.96	22.81	22.85
			1	49	23.00	22.77	22.73	22.79
			1	99	23.00	22.81	22.75	22.73
			50	0	23.00	22.02	21.80	21.75
			50	24	23.00	21.81	21.75	21.77
			50	49	23.00	21.78	21.78	21.64
			100	0	22.00	21.77	21.80	21.69
		16QAM	1	0	23.00	22.22	22.30	22.10
			1	49	23.00	22.04	22.27	21.89
			1	99	23.00	22.06	22.36	21.86
			50	0	22.00	21.77	21.78	21.64
			50	24	22.00	21.76	21.78	21.65
			50	49	22.00	21.78	21.78	21.65
			100	0	21.00	20.82	20.78	20.74

<LTE Band VII>

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band VII	5MHz	QPSK	1	0	23.50	21.91	22.85	23.27
			1	12	23.50	22.70	22.64	22.93
			1	24	23.50	23.25	23.14	23.10
			12	0	22.50	21.33	21.62	22.11
			12	6	22.50	21.56	21.76	21.98
			12	11	22.50	21.81	21.93	21.95
			25	0	22.50	21.49	21.71	22.01
		16QAM	1	0	22.50	21.27	21.90	22.49
			1	12	22.50	21.27	21.75	22.33
			1	24	22.50	22.04	22.21	22.39

			12	0	22.50	21.69	21.87	21.93
			12	6	22.50	21.65	21.86	21.95
			12	11	22.50	21.69	21.86	21.93
			25	0	21.50	20.40	20.73	21.16
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band VII	10MHz	QPSK	1	0	23.50	21.53	21.70	23.44
			1	24	23.50	22.47	22.43	22.99
			1	49	23.50	22.75	22.72	22.50
			25	0	22.50	21.10	21.13	22.23
			25	12	22.50	21.56	21.14	21.35
			25	24	22.50	21.91	21.77	21.81
			50	0	22.50	21.55	21.48	22.05
		16QAM	1	0	22.50	21.06	20.73	22.49
			1	24	22.50	22.03	21.56	22.13
			1	49	22.50	22.39	21.91	21.66
			25	0	22.50	21.95	21.76	21.82
			25	12	22.50	21.94	21.75	21.81
			25	24	22.50	21.95	21.74	21.82
			50	0	21.50	20.53	20.52	21.23
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band VII	15MHz	QPSK	1	0	23.50	21.98	21.72	23.47
			1	37	23.50	23.04	22.35	22.69
			1	74	23.50	22.80	23.19	22.24
			36	0	22.50	21.57	20.94	22.34
			36	18	22.50	21.53	21.15	21.75
			36	37	22.50	22.16	22.02	21.62
			75	0	22.50	21.91	21.51	21.88
		16QAM	1	0	22.50	21.54	21.10	22.49
			1	37	22.50	22.45	21.94	21.99
			1	74	22.50	22.47	22.41	21.55
			36	0	22.50	22.21	21.99	21.61
			36	18	22.50	22.21	21.95	21.61
			36	37	22.50	22.20	21.97	21.61
			75	0	21.50	20.92	20.51	21.06

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band VII	20MHz	QPSK	1	0	23.50	23.03	22.86	23.37
			1	49	23.50	23.05	22.76	23.07
			1	99	23.50	22.29	23.27	22.28
			50	0	22.50	22.29	22.11	22.43
			50	24	22.50	21.81	21.95	21.76
			50	49	22.50	21.92	22.08	21.57
			100	0	22.50	21.88	21.46	22.24
		16QAM	1	0	22.50	21.36	21.06	22.46
			1	49	22.50	22.42	22.05	22.28
			1	99	22.50	21.80	22.45	21.49
			50	0	22.50	21.96	22.07	21.57
			50	24	22.50	21.95	22.05	21.57
			50	49	22.50	21.97	22.04	21.57
			100	0	21.50	20.91	20.50	21.44

7.5. WLAN & Bluetooth Output Power

7.5.1. Output Power Results Of WLAN

The output power of WLAN is as following:

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11b	1	2412	13.0	12.6
	6	2437	13.0	12.6
	11	2462	13.0	12.8
802.11g	1	2412	12.0	10.6
	6	2437	12.0	10.8
	11	2462	12.0	11.1
802.11n (HT20)	1	2412	12.0	10.6
	6	2437	12.0	10.8
	11	2462	12.0	11.0
802.11n (HT40)	3	2422	12.0	10.6
	6	2437	12.0	10.7
	9	2452	12.0	10.8

7.5.2. Output Power Results Of Bluetooth

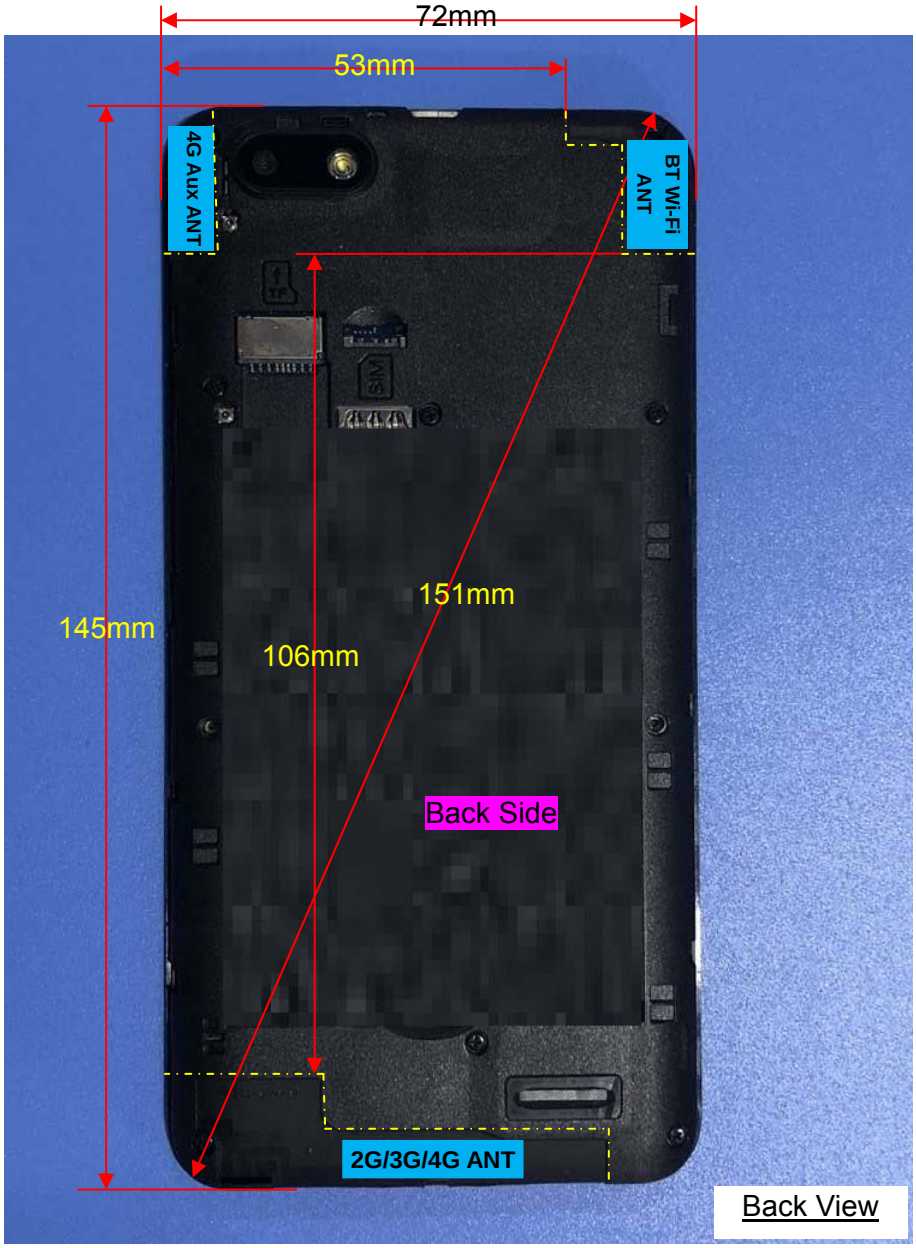
The output power of Bluetooth is as following:

	Output Power (dBm)				
	Data Rates	Tune-up	Channel		
			0CH	39CH	78CH
Bluetooth(3.0)	1M	4.00	3.42	3.02	3.19
	2M	3.00	2.11	2.13	1.76
	3M	3.00	2.45	2.44	2.30

	Channel	Tune-up	Output Power (dBm)
Bluetooth(4.0)	0CH	2.50	1.86
	19CH	2.50	2.04
	39CH	2.50	0.58

8. Antenna Location

Top Side



Right Side

Left Side

Bottom Side

Distance of the Antenna to the EUT surface/edge						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	≤ 25mm	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm
WLAN & Bluetooth	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	Yes	Yes	Yes	Yes	NO	Yes
WLAN & Bluetooth	Yes	Yes	Yes	NO	Yes	NO

9. Stand-alone SAR test exclusion

Refer to FCC KDB 447498D01, the 1-g SAR 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)]·[$\sqrt{f_{(GHZ)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

- $f_{(GHZ)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
Bluetooth	4	2.51	5	2.480	0.79	3.0	Yes

NOTE: Standalone SAR test exclusion for Bluetooth

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] * [$\sqrt{f_{(GHZ)}}$/x] W/kg for test separation distances ≤ 50mm, where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Position	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/Kg)
Bluetooth	Head	4	2.51	5	2.480	7.5	0.105
Bluetooth	Body	4	2.51	10	2.480	7.5	0.053
Bluetooth	Hotspot	4	2.51	10	2.480	7.5	0.053

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Measurement Results

10.1. SAR measurement results

General Notes:

1) Refer to KDB447498 D01, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.

2) Refer to KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is: ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

3) Refer to KDB865664 D01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%,and the measured SAR <1.45W/Kg, only one repeated measurement is required.

4) Refer to KDB648474 D04, SAR is evaluated without a headset connected to the device. When the standalone reported Body-Worn SAR is ≤1.2 W/kg, no additional SAR evaluations using a headset are required.

5) Refer to KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing(Refer to appendix C for details).

6) Refer to KDB 941225 D05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

7) Refer to KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

8) Refer to KDB 941225 D05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

9) Refer to KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.

10) Refer to KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

10.1.1. SAR measurement Result of GSM850

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	251/848.8	GPRS(GMSK 4TS)	0.565	0.421	0.79	29.25	29.50	0.598
Left Tilt 15 Degree	251/848.8	GPRS(GMSK 4TS)	0.284	0.185	-1.16	29.25	29.50	0.301
Right Cheek	251/848.8	GPRS(GMSK 4TS)	0.499	0.403	-1.27	29.25	29.50	0.529
Right Tilt 15 Degree	251/848.8	GPRS(GMSK 4TS)	0.205	0.142	-2.11	29.25	29.50	0.217

NOTE: Head SAR test results of GSM850.

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	251/848.8	GPRS(GMSK 4TS)	0.731	0.558	1.54	29.25	29.50	0.774
Back Side	251/848.8	GPRS(GMSK 4TS)	0.821	0.624	-0.01	29.25	29.50	0.870
Back Side	128/824.2	GPRS(GMSK 4TS)	0.790	0.598	4.00	29.19	29.50	0.848
Back Side	189/836.4	GPRS(GMSK 4TS)	0.884	0.655	1.60	29.21	29.50	0.945
Back Side - Repeated	189/836.4	GPRS(GMSK 4TS)	0.859	0.654	-1.17	29.21	29.50	0.918

NOTE: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	251/848.8	GPRS(GMSK 4TS)	0.731	0.558	1.54	29.25	29.50	0.774
Back Side	251/848.8	GPRS(GMSK 4TS)	0.821	0.624	-0.01	29.25	29.50	0.870
Left Side	251/848.8	GPRS(GMSK 4TS)	0.213	0.137	-1.15	29.25	29.50	0.226
Right Side	251/848.8	GPRS(GMSK 4TS)	0.361	0.252	1.31	29.25	29.50	0.382
Bottom Side	251/848.8	GPRS(GMSK 4TS)	0.438	0.289	-1.15	29.25	29.50	0.464
Back Side	128/824.2	GPRS(GMSK 4TS)	0.790	0.598	4.00	29.19	29.50	0.848
Back Side	189/836.4	GPRS(GMSK 4TS)	0.884	0.655	1.60	29.21	29.50	0.945
Back Side - Repeated	189/836.4	GPRS(GMSK 4TS)	0.859	0.654	-1.17	29.21	29.50	0.918

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	512/1850.2	GPRS(GMSK 4TS)	0.427	0.260	2.91	26.48	26.50	0.429
Left Tilt 15 Degree	512/1850.2	GPRS(GMSK 4TS)	0.244	0.153	-1.17	26.48	26.50	0.245
Right Cheek	512/1850.2	GPRS(GMSK 4TS)	0.388	0.230	-0.20	26.48	26.50	0.390
Right Tilt 15 Degree	512/1850.2	GPRS(GMSK 4TS)	0.195	0.094	1.67	26.48	26.50	0.196

NOTE: Head SAR test results of GSM1900

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.749	0.458	2.97	26.48	26.50	0.752
Back Side	512/1850.2	GPRS(GMSK 4TS)	0.831	0.450	0.55	26.48	26.50	0.835
Back Side - Repeated	512/1850.2	GPRS(GMSK 4TS)	0.829	0.461	-1.57	26.48	26.50	0.833
Back Side	661/1880	GPRS(GMSK 4TS)	0.785	0.436	-0.31	26.31	26.50	0.820
Back Side	810/1909.8	GPRS(GMSK 4TS)	0.756	0.433	-2.30	26.26	26.50	0.799

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.749	0.458	2.97	26.48	26.50	0.752
Back Side	512/1850.2	GPRS(GMSK 4TS)	0.831	0.450	0.55	26.48	26.50	0.835
Back Side - Repeated	512/1850.2	GPRS(GMSK 4TS)	0.829	0.461	-1.57	26.48	26.50	0.833
Left Side	512/1850.2	GPRS(GMSK 4TS)	0.384	0.221	-1.15	26.48	26.50	0.386
Right Side	512/1850.2	GPRS(GMSK 4TS)	0.208	0.109	2.07	26.48	26.50	0.209
Bottom Side	512/1850.2	GPRS(GMSK 4TS)	0.782	0.429	4.90	26.48	26.50	0.786
Back Side	661/1880	GPRS(GMSK 4TS)	0.785	0.436	-0.31	26.31	26.50	0.820
Back Side	810/1909.8	GPRS(GMSK 4TS)	0.756	0.433	-2.30	26.26	26.50	0.799

NOTE: Hotspot SAR test results of GSM1900

10.1.3. SAR measurement Result of WCDMA Band V

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	4233/846.6	RMC12.2K	0.346	0.239	2.58	22.99	23.00	0.347
Left Tilt 15 Degree	4233/846.6	RMC12.2K	0.169	0.095	-1.51	22.99	23.00	0.169
Right Cheek	4233/846.6	RMC12.2K	0.308	0.220	3.58	22.99	23.00	0.309
Right Tilt 15 Degree	4233/846.6	RMC12.2K	0.133	0.075	2.05	22.99	23.00	0.133

NOTE: Head SAR test results of WCDMA Band V

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	4233/846.6	RMC12.2K	0.374	0.283	3.99	22.99	23.00	0.375
Back Side	4233/846.6	RMC12.2K	0.482	0.358	0.73	22.99	23.00	0.483

NOTE: Body-Worn SAR test results of WCDMA Band V

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	4233/846.6	RMC12.2K	0.374	0.283	3.99	22.99	23.00	0.375
Back Side	4233/846.6	RMC12.2K	0.482	0.358	0.73	22.99	23.00	0.483
Left Side	4233/846.6	RMC12.2K	0.289	0.197	-0.76	22.99	23.00	0.290
Right Side	4233/846.6	RMC12.2K	0.183	0.125	0.70	22.99	23.00	0.183
Bottom Side	4233/846.6	RMC12.2K	0.054	0.034	-1.27	22.99	23.00	0.054

NOTE: Hotspot SAR test results of WCDMA Band V

10.1.4. SAR measurement Result of WCDMA Band II

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	9262/1852.4	RMC12.2K	0.730	0.575	-0.50	22.64	23.00	0.793
Left Tilt 15 Degree	9262/1852.4	RMC12.2K	0.521	0.395	-1.17	22.64	23.00	0.566
Right Cheek	9262/1852.4	RMC12.2K	0.644	0.525	2.33	22.64	23.00	0.700
Right Tilt 15 Degree	9262/1852.4	RMC12.2K	0.469	0.390	1.33	22.64	23.00	0.510

NOTE: Head SAR test results of WCDMA Band II

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9262/1852.4	RMC12.2K	0.718	0.415	0.44	22.64	23.00	0.780
Back Side	9262/1852.4	RMC12.2K	0.701	0.424	-1.38	22.64	23.00	0.762

NOTE: Body-Worn SAR test results of WCDMA Band II

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9262/1852.4	RMC12.2K	0.718	0.415	0.44	22.64	23.00	0.780
Back Side	9262/1852.4	RMC12.2K	0.701	0.424	-1.38	22.64	23.00	0.762
Left Side	9262/1852.4	RMC12.2K	0.431	0.295	-1.11	22.64	23.00	0.468
Right Side	9262/1852.4	RMC12.2K	0.532	0.331	-1.57	22.64	23.00	0.578
Bottom Side	9262/1852.4	RMC12.2K	0.712	0.387	2.21	22.64	23.00	0.774

NOTE: Hotspot SAR test results of WCDMA Band II

10.1.5. SAR measurement Result of LTE Band V

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	20450/829	10M QPSK(1,0)	0.283	0.204	1.17	22.97	23.00	0.285
Left Tilt 15 Degree	20450/829	10M QPSK(1,0)	0.147	0.082	-1.58	22.97	23.00	0.148
Right Cheek	20450/829	10M QPSK(1,0)	0.262	0.195	3.10	22.97	23.00	0.264
Right Tilt 15 Degree	20450/829	10M QPSK(1,0)	0.119	0.065	3.16	22.97	23.00	0.120
50%RB								
Left Cheek	20450/829	10M QPSK(25,0)	0.231	0.163	-3.43	21.96	23.00	0.294
Left Tilt 15 Degree	20450/829	10M QPSK(25,0)	0.126	0.069	-1.11	21.96	23.00	0.160
Right Cheek	20450/829	10M QPSK(25,0)	0.209	0.149	1.47	21.96	23.00	0.266
Right Tilt 15 Degree	20450/829	10M QPSK(25,0)	0.105	0.058	3.35	21.96	23.00	0.133

NOTE: Head SAR test results of LTE Band V

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20450/829	10M QPSK(1,0)	0.368	0.278	-0.50	22.97	23.00	0.371
Back Side	20450/829	10M QPSK(1,0)	0.461	0.349	4.90	22.97	23.00	0.464
50%RB								
Front Side	20450/829	10M QPSK(25,0)	0.287	0.195	2.11	21.96	23.00	0.365
Back Side	20450/829	10M	0.364	0.266	0.65	21.96	23.00	0.462

		QPSK(25,0)						

NOTE: Body-Worn SAR test results of LTE Band V

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20450/829	10M QPSK(1,0)	0.368	0.278	-0.50	22.97	23.00	0.371
Back Side	20450/829	10M QPSK(1,0)	0.461	0.349	4.90	22.97	23.00	0.464
Left Side	20450/829	10M QPSK(1,0)	0.098	0.059	2.13	22.97	23.00	0.099
Right Side	20450/829	10M QPSK(1,0)	0.184	0.098	2.29	22.97	23.00	0.185
Bottom Side	20450/829	10M QPSK(1,0)	0.058	0.034	1.99	22.97	23.00	0.058
50%RB								
Front Side	20450/829	10M QPSK(25,0)	0.287	0.195	2.11	21.96	23.00	0.365
Back Side	20450/829	10M QPSK(25,0)	0.364	0.266	0.65	21.96	23.00	0.462
Left Side	20450/829	10M QPSK(25,0)	0.086	0.053	-1.59	21.96	23.00	0.109
Right Side	20450/829	10M QPSK(25,0)	0.133	0.076	-3.35	21.96	23.00	0.169
Bottom Side	20450/829	10M QPSK(25,0)	0.043	0.028	-2.35	21.96	23.00	0.055

NOTE: Hotspot SAR test results of LTE Band V

10.1.6. SAR measurement Result of LTE Band IV

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	20050/1720	20M QPSK(1,0)	0.453	0.273	-2.26	22.99	23.00	0.454
Left Tilt	20050/1720	20M QPSK(1,0)	0.267	0.156	-3.14	22.99	23.00	0.268

15 Degree								
Right Cheek	20050/1720	20M QPSK(1,0)	0.418	0.268	-2.71	22.99	23.00	0.419
Right Tilt 15 Degree	20050/1720	20M QPSK(1,0)	0.225	0.137	1.53	22.99	23.00	0.226
50%RB								
Left Cheek	20050/1720	20M QPSK(50,0)	0.363	0.220	-1.47	21.96	23.00	0.461
Left Tilt 15 Degree	20050/1720	20M QPSK(50,0)	0.195	0.112	2.25	21.96	23.00	0.248
Right Cheek	20050/1720	20M QPSK(50,0)	0.323	0.181	-0.71	21.96	23.00	0.410
Right Tilt 15 Degree	20050/1720	20M QPSK(50,0)	0.146	0.094	1.16	21.96	23.00	0.186

NOTE: Head SAR test results of LTE Band IV

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20050/1720	20M QPSK(1,0)	0.862	0.536	-0.03	22.99	23.00	0.864
Back Side	20050/1720	20M QPSK(1,0)	1.008	0.638	-0.13	22.99	23.00	1.010
Back Side - Repeated	20050/1720	20M QPSK(1,0)	0.997	0.618	-1.57	22.99	23.00	0.999
Front Side	20175/1732.5	20M QPSK(1,0)	0.846	0.519	-2.19	22.92	23.00	0.862
Front Side	20300/1745	20M QPSK(1,0)	0.850	0.527	-1.65	22.88	23.00	0.874
Back Side	20175/1732.5	20M QPSK(1,0)	0.989	0.621	-1.74	22.92	23.00	1.007
Back Side	20300/1745	20M QPSK(1,0)	1.001	0.613	-3.87	22.88	23.00	1.029
50%RB								
Front Side	20050/1720	20M QPSK(50,0)	0.695	0.387	2.24	21.96	23.00	0.883
Back Side	20050/1720	20M QPSK(50,0)	0.764	0.471	1.49	21.96	23.00	0.971
Front Side	20175/1732.5	20M QPSK(50,0)	0.546	0.219	-0.19	21.86	23.00	0.710
Front Side	20300/1745	20M QPSK(50,0)	0.550	0.227	0.65	21.81	23.00	0.723

Back Side	20175/1732.5	20M QPSK(50,0)	0.689	0.321	0.74	21.86	23.00	0.896
Back Side	20300/1745	20M QPSK(50,0)	0.601	0.313	0.87	21.81	23.00	0.790
100%RB								
Front Side	20050/1720	20M QPSK(100,0)	0.569	0.278	0.42	21.90	22.00	0.582
Back Side	20050/1720	20M QPSK(100,0)	0.647	0.374	0.94	21.90	22.00	0.662

NOTE: Body-Worn SAR test results of LTE Band IV

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20050/1720	20M QPSK(1,0)	0.862	0.536	-0.03	22.99	23.00	0.864
Back Side	20050/1720	20M QPSK(1,0)	1.008	0.638	-0.13	22.99	23.00	1.010
Back Side - Repeated	20050/1720	20M QPSK(1,0)	0.997	0.618	-1.57	22.99	23.00	0.999
Left Side	20050/1720	20M QPSK(1,0)	0.432	0.251	-1.16	22.99	23.00	0.433
Right Side	20050/1720	20M QPSK(1,0)	0.157	0.086	-1.95	22.99	23.00	0.157
Bottom Side	20050/1720	20M QPSK(1,0)	0.686	0.391	-3.22	22.99	23.00	0.688
Front Side	20175/1732.5	20M QPSK(1,0)	0.846	0.519	-2.19	22.92	23.00	0.862
Front Side	20300/1745	20M QPSK(1,0)	0.850	0.527	-1.65	22.88	23.00	0.874
Back Side	20175/1732.5	20M QPSK(1,0)	0.989	0.621	-1.74	22.92	23.00	1.007
Back Side	20300/1745	20M QPSK(1,0)	1.001	0.613	-3.87	22.88	23.00	1.029
50%RB								
Front Side	20050/1720	20M QPSK(50,0)	0.695	0.387	2.24	21.96	23.00	0.883
Back Side	20050/1720	20M QPSK(50,0)	0.764	0.471	1.49	21.96	23.00	0.971
Left Side	20050/1720	20M QPSK(50,0)	0.365	0.208	-1.16	21.96	23.00	0.464
Right Side	20050/1720	20M QPSK(50,0)	0.121	0.074	-1.65	21.96	23.00	0.154
Bottom Side	20050/1720	20M QPSK(50,0)	0.487	0.269	-1.16	21.96	23.00	0.619
Front Side	20175/1732.	20M	0.546	0.219	-0.19	21.86	23.00	0.710

	5	QPSK(50,0)						
Front Side	20300/1745	20M QPSK(50,0)	0.550	0.227	0.65	21.81	23.00	0.723
Back Side	20175/1732.5	20M QPSK(50,0)	0.689	0.321	0.74	21.86	23.00	0.896
Back Side	20300/1745	20M QPSK(50,0)	0.601	0.313	0.87	21.81	23.00	0.790
100%RB								
Front Side	20050/1720	20M QPSK(100,0)	0.569	0.278	0.42	21.90	22.00	0.582
Back Side	20050/1720	20M QPSK(100,0)	0.647	0.374	0.94	21.90	22.00	0.662

NOTE: Hotspot SAR test results of LTE Band IV

10.1.7. SAR measurement Result of LTE Band II

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	18700/1860	20M QPSK(1,0)	0.314	0.172	-2.51	22.96	23.00	0.317
Left Tilt 15 Degree	18700/1860	20M QPSK(1,0)	0.187	0.101	-1.13	22.96	23.00	0.189
Right Cheek	18700/1860	20M QPSK(1,0)	0.365	0.222	-3.29	22.96	23.00	0.368
Right Tilt 15 Degree	18700/1860	20M QPSK(1,0)	0.235	0.138	-2.16	22.96	23.00	0.237
50%RB								
Left Cheek	18700/1860	20M QPSK(50,0)	0.295	0.173	-3.25	22.02	23.00	0.370
Left Tilt 15 Degree	18700/1860	20M QPSK(50,0)	0.158	0.087	2.13	22.02	23.00	0.198
Right Cheek	18700/1860	20M QPSK(50,0)	0.320	0.190	-0.74	22.02	23.00	0.401
Right Tilt 15	18700/1860	20M QPSK(50,0)	0.176	0.094	-1.13	22.02	23.00	0.221

Degree								

NOTE: Head SAR test results of LTE Band II

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18700/1860	20M QPSK(1,0)	0.563	0.340	1.25	22.96	23.00	0.568
Back Side	18700/1860	20M QPSK(1,0)	0.706	0.430	2.98	22.96	23.00	0.713
50%RB								
Front Side	18700/1860	20M QPSK(50,0)	0.411	0.237	-1.16	22.02	23.00	0.515
Back Side	18700/1860	20M QPSK(50,0)	0.627	0.386	2.13	22.02	23.00	0.786

NOTE: Body-Worn SAR test results of LTE Band II

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18700/1860	20M QPSK(1,0)	0.563	0.340	1.25	22.96	23.00	0.568
Back Side	18700/1860	20M QPSK(1,0)	0.706	0.430	2.98	22.96	23.00	0.713
Left Side	18700/1860	20M QPSK(1,0)	0.229	0.134	-2.13	22.96	23.00	0.231
Right Side	18700/1860	20M QPSK(1,0)	0.384	0.205	4.15	22.96	23.00	0.388
Bottom Side	18700/1860	20M QPSK(1,0)	0.790	0.447	3.30	22.96	23.00	0.797
50%RB								
Front Side	18700/1860	20M QPSK (50,0)	0.411	0.237	-1.16	22.02	23.00	0.515
Back Side	18700/1860	20M QPSK (50,0)	0.627	0.386	2.13	22.02	23.00	0.786
Left Side	18700/1860	20M QPSK (50,0)	0.176	0.099	2.29	22.02	23.00	0.221
Right Side	18700/1860	20M QPSK (50,0)	0.287	0.164	-3.25	22.02	23.00	0.360
Bottom Side	18700/1860	20M QPSK (50,0)	0.621	0.349	-1.69	22.02	23.00	0.778

NOTE: Hotspot SAR test results of LTE Band II

10.1.8. SAR measurement Result of LTE Band VII

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	21350/2560	20M QPSK(1,0)	0.129	0.055	-0.26	23.37	23.50	0.133
Left Tilt 15 Degree	21350/2560	20M QPSK(1,0)	0.076	0.039	2.19	23.37	23.50	0.078
Right Cheek	21350/2560	20M QPSK(1,0)	0.225	0.105	-2.80	23.37	23.50	0.232
Right Tilt 15 Degree	21350/2560	20M QPSK(1,0)	0.108	0.046	-3.18	23.37	23.50	0.111
50%RB								
Left Cheek	21350/2560	20M QPSK(50,0)	0.103	0.047	-1.35	22.43	22.50	0.105
Left Tilt 15 Degree	21350/2560	20M QPSK(50,0)	0.056	0.024	-4.32	22.43	22.50	0.057
Right Cheek	21350/2560	20M QPSK(50,0)	0.155	0.075	1.10	22.43	22.50	0.158
Right Tilt 15 Degree	21350/2560	20M QPSK(50,0)	0.068	0.032	2.19	22.43	22.50	0.069

NOTE: Head SAR test results of LTE Band VII

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21350/2560	20M QPSK(1,0)	0.760	0.384	2.16	23.37	23.50	0.783
Back Side	21350/2560	20M QPSK(1,0)	1.227	0.667	1.31	23.37	23.50	1.264
Back Side - Repeated	21350/2560	20M QPSK(1,0)	1.164	0.659	2.11	23.37	23.50	1.199
Back Side With	21350/2560	20M QPSK(1,0)	1.189	0.655	-2.15	23.37	23.50	1.225

Earphone								
Back Side	20850/2510	20M QPSK(1,0)	1.051	0.577	4.72	23.03	23.50	1.171
Back Side	21100/2535	20M QPSK(1,0)	1.113	0.599	4.06	22.86	23.50	1.290
Back Side With Earphone	20850/2510	20M QPSK(1,0)	0.986	0.524	-1.57	23.03	23.50	1.099
Back Side With Earphone	21100/2535	20M QPSK(1,0)	1.059	0.562	2.26	22.86	23.50	1.227
50%RB								
Front Side	21350/2560	20M QPSK(50,0)	0.654	0.307	4.59	22.43	22.50	0.665
Back Side	21350/2560	20M QPSK(50,0)	1.095	0.546	3.38	22.43	22.50	1.113
Back Side	20850/2510	20M QPSK(50,0)	1.053	0.534	2.91	22.29	22.50	1.105
Back Side	21100/2535	20M QPSK(50,0)	0.967	0.495	-1.47	22.11	22.50	1.058
100%RB								
Back Side	21350/2560	20M QPSK(100,0)	0.627	0.319	0.19	22.24	22.50	0.666

NOTE: Body-Worn SAR test results of LTE Band VII

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21350/2560	20M QPSK(1,0)	0.760	0.384	2.16	23.37	23.50	0.783
Back Side	21350/2560	20M QPSK(1,0)	1.227	0.667	1.31	23.37	23.50	1.264
Back Side - Repeated	21350/2560	20M QPSK(1,0)	1.164	0.659	2.11	23.37	23.50	1.199
Left Side	21350/2560	20M QPSK(1,0)	0.287	0.119	-3.21	23.37	23.50	0.296
Right Side	21350/2560	20M QPSK(1,0)	0.561	0.258	-1.08	23.37	23.50	0.578
Bottom Side	21350/2560	20M QPSK(1,0)	0.705	0.338	2.21	23.37	23.50	0.726
Back Side	20850/2510	20M QPSK(1,0)	1.051	0.577	4.72	23.03	23.50	1.171
Back Side	21100/2535	20M QPSK(1,0)	1.113	0.599	4.06	22.86	23.50	1.290
50%RB								
Front Side	21350/2560	20M QPSK(50,0)	0.654	0.307	4.59	22.43	22.50	0.665
Back Side	21350/2560	20M QPSK(50,0)	1.095	0.546	3.38	22.43	22.50	1.113
Left Side	21350/2560	20M QPSK(50,0)	0.209	0.087	-1.68	22.43	22.50	0.212

Right Side	21350/2560	20M QPSK(50,0)	0.465	0.254	-2.62	22.43	22.50	0.473
Bottom Side	21350/2560	20M QPSK(50,0)	0.623	0.315	-2.27	22.43	22.50	0.633
Back Side	20850/2510	20M QPSK(50,0)	1.053	0.534	2.91	22.29	22.50	1.105
Back Side	21100/2535	20M QPSK(50,0)	0.967	0.495	-1.47	22.11	22.50	1.058
100%RB								
Back Side	21350/2560	20M QPSK(100,0)	0.627	0.319	0.19	22.24	22.50	0.666

NOTE: Hotspot SAR test results of LTE Band VII

10.1.9. SAR measurement Result of WLAN 2.4G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	11/2462	802.11 b	0.203	0.109	1.21	12.80	13.00	0.213
Left Tilt 15 Degree	11/2462	802.11 b	0.186	0.102	2.97	12.80	13.00	0.195
Right Cheek	11/2462	802.11 b	0.313	0.143	-0.13	12.80	13.00	0.328
Right Tilt 15 Degree	11/2462	802.11 b	0.286	0.139	2.16	12.80	13.00	0.299

NOTE: Head SAR test results of WLAN 2.4G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	11/2462	802.11 b	0.097	0.055	1.67	12.80	13.00	0.102
Back Side	11/2462	802.11 b	0.063	0.034	-2.61	12.80	13.00	0.066
Back Side With Earphone	11/2462	802.11 b	0.059	0.033	0.11	12.80	13.00	0.062

NOTE: Body-Worn SAR test results of WLAN 2.4G

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	11/2462	802.11 b	0.097	0.055	1.67	12.80	13.00	0.102
Back Side	11/2462	802.11 b	0.063	0.034	-2.61	12.80	13.00	0.066
Left Side	11/2462	802.11 b	0.033	0.017	-1.54	12.80	13.00	0.035
Top Side	11/2462	802.11 b	0.046	0.028	-1.56	12.80	13.00	0.048

NOTE: Hotspot SAR test results of WLAN 2.4G

10.2. Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

No.	Configuration	Head	Body	Hotspot	Note
1	GSM(Voice) + WLAN 2.4GHz(data)	Yes	Yes	N/A	
2	WCDMA(Voice) + WLAN 2.4GHz(data)	Yes	Yes	N/A	
3	GSM(Voice) + Bluetooth(data)	Yes	Yes	N/A	
4	WCDMA(Voice) + Bluetooth(data)	Yes	Yes	N/A	
5	GPRS/EDGE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
6	WCDMA(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
7	LTE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
8	GPRS/EDGE(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
9	WCDMA(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
10	LTE(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering

NOTE:

1) This device supported VoIP in GPRS/EDGE, WCDMA and LTE(e.g. 3rd party VoIP).

2) This device WLAN 2.4GHz supports Hotspot operation.

3) WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.

4) EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.

5) The Scaled SAR summation is calculated based on the same configuration and test position.

10.3. SAR Summation Scenario

Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

1) Scalar SAR summation < 1.6W/kg.

2) SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (min. separation distance, mm), and the peak separation distance is determined from the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan. If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 2.4G			
Head	Left Cheek	0.598	0.213	0.811	N/A	N/A
	Left Tilt 15 Degree	0.301	0.195	0.496	N/A	N/A
	Right Cheek	0.529	0.328	0.856	N/A	N/A
	Right Tilt 15 Degree	0.217	0.299	0.517	N/A	N/A
Body-Worn	Front Side	0.774	0.102	0.876	N/A	N/A
	Back Side	0.945	0.066	1.011	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A
Hotspot	Front Side	0.774	0.102	0.876	N/A	N/A
	Back Side	0.945	0.066	1.011	N/A	N/A
	Left Side	0.226	0.035	0.260	N/A	N/A
	Right Side	0.382	N/A	0.382	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.464	N/A	0.464	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	WLAN 2.4G			
Head	Left Cheek	0.429	0.213	0.642	N/A	N/A
	Left Tilt 15 Degree	0.245	0.195	0.440	N/A	N/A
	Right Cheek	0.390	0.328	0.718	N/A	N/A
	Right Tilt 15 Degree	0.196	0.299	0.495	N/A	N/A
Body-Worn	Front Side	0.752	0.102	0.854	N/A	N/A
	Back Side	0.835	0.066	0.901	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A

Hotspot	Front Side	0.752	0.102	0.854	N/A	N/A
	Back Side	0.835	0.066	0.901	N/A	N/A
	Left Side	0.386	0.035	0.420	N/A	N/A
	Right Side	0.209	N/A	0.209	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.786	N/A	0.786	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band V	WLAN 2.4G			
Head	Left Cheek	0.347	0.213	0.559	N/A	N/A
	Left Tilt 15 Degree	0.169	0.195	0.364	N/A	N/A
	Right Cheek	0.309	0.328	0.636	N/A	N/A
	Right Tilt 15 Degree	0.133	0.299	0.433	N/A	N/A
Body-Worn	Front Side	0.375	0.102	0.476	N/A	N/A
	Back Side	0.483	0.066	0.549	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A
Hotspot	Front Side	0.375	0.102	0.476	N/A	N/A
	Back Side	0.483	0.066	0.549	N/A	N/A
	Left Side	0.290	0.035	0.324	N/A	N/A
	Right Side	0.183	N/A	0.183	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.054	N/A	0.054	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band V and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band II	WLAN 2.4G			
Head	Left Cheek	0.793	0.213	1.006	N/A	N/A
	Left Tilt 15 Degree	0.566	0.195	0.761	N/A	N/A
	Right Cheek	0.700	0.328	1.027	N/A	N/A
	Right Tilt 15 Degree	0.510	0.299	0.809	N/A	N/A
Body-Worn	Front Side	0.780	0.102	0.882	N/A	N/A
	Back Side	0.762	0.066	0.828	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A

Hotspot	Front Side	0.780	0.102	0.882	N/A	N/A
	Back Side	0.762	0.066	0.828	N/A	N/A
	Left Side	0.468	0.035	0.503	N/A	N/A
	Right Side	0.578	N/A	0.578	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.774	N/A	0.774	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band II and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band V	WLAN 2.4G			
Head	Left Cheek	0.294	0.213	0.506	N/A	N/A
	Left Tilt 15 Degree	0.160	0.195	0.355	N/A	N/A
	Right Cheek	0.266	0.328	0.593	N/A	N/A
	Right Tilt 15 Degree	0.133	0.299	0.433	N/A	N/A
Body-Worn	Front Side	0.371	0.102	0.472	N/A	N/A
	Back Side	0.464	0.066	0.530	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A
Hotspot	Front Side	0.371	0.102	0.472	N/A	N/A
	Back Side	0.464	0.066	0.530	N/A	N/A
	Left Side	0.109	0.035	0.144	N/A	N/A
	Right Side	0.185	N/A	0.185	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.058	N/A	0.058	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band V and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band IV	WLAN 2.4G			
Head	Left Cheek	0.461	0.213	0.674	N/A	N/A
	Left Tilt 15 Degree	0.268	0.195	0.462	N/A	N/A
	Right Cheek	0.419	0.328	0.747	N/A	N/A
	Right Tilt 15 Degree	0.226	0.299	0.525	N/A	N/A
Body-Worn	Front Side	0.883	0.102	0.985	N/A	N/A
	Back Side	1.029	0.066	1.095	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A
Hotspot	Front Side	0.883	0.102	0.985	N/A	N/A

	Back Side	1.029	0.066	1.095	N/A	N/A
	Left Side	0.464	0.035	0.498	N/A	N/A
	Right Side	0.157	N/A	0.157	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.688	N/A	0.688	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band IV and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band II	WLAN 2.4G			
Head	Left Cheek	0.370	0.213	0.582	N/A	N/A
	Left Tilt 15 Degree	0.198	0.195	0.393	N/A	N/A
	Right Cheek	0.401	0.328	0.729	N/A	N/A
	Right Tilt 15 Degree	0.237	0.299	0.537	N/A	N/A
Body-Worn	Front Side	0.568	0.102	0.670	N/A	N/A
	Back Side	0.713	0.066	0.779	N/A	N/A
	Back Side With Earphone	N/A	0.062	0.062	N/A	N/A
Hotspot	Front Side	0.568	0.102	0.670	N/A	N/A
	Back Side	0.713	0.066	0.779	N/A	N/A
	Left Side	0.231	0.035	0.266	N/A	N/A
	Right Side	0.388	N/A	0.388	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.797	N/A	0.797	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band II and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band VII	WLAN 2.4G			
Head	Left Cheek	0.133	0.213	0.345	N/A	N/A
	Left Tilt 15 Degree	0.078	0.195	0.273	N/A	N/A
	Right Cheek	0.232	0.328	0.560	N/A	N/A
	Right Tilt 15 Degree	0.111	0.299	0.411	N/A	N/A
Body-Worn	Front Side	0.783	0.102	0.885	N/A	N/A
	Back Side	1.290	0.066	1.356	N/A	N/A
	Back Side With Earphone	1.227	0.062	1.289	N/A	N/A
Hotspot	Front Side	0.783	0.102	0.885	N/A	N/A

	Back Side	1.290	0.066	1.356	N/A	N/A
	Left Side	0.296	0.035	0.330	N/A	N/A
	Right Side	0.578	N/A	0.578	N/A	N/A
	Top Side	N/A	0.048	0.048	N/A	N/A
	Bottom Side	0.726	N/A	0.726	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band VII and WLAN 2.4G.

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	Bluetooth			
Head	Left Cheek	0.598	0.105	0.704	N/A	N/A
	Left Tilt 15 Degree	0.301	0.105	0.406	N/A	N/A
	Right Cheek	0.529	0.105	0.634	N/A	N/A
	Right Tilt 15 Degree	0.217	0.105	0.323	N/A	N/A
Body-Worn	Front Side	0.774	0.053	0.827	N/A	N/A
	Back Side	0.945	0.053	0.998	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.774	0.053	0.827	N/A	N/A
	Back Side	0.945	0.053	0.998	N/A	N/A
	Left Side	0.226	0.053	0.278	N/A	N/A
	Right Side	0.382	N/A	0.382	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.464	N/A	0.464	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	Bluetooth			
Head	Left Cheek	0.429	0.105	0.534	N/A	N/A
	Left Tilt 15 Degree	0.245	0.105	0.351	N/A	N/A
	Right Cheek	0.390	0.105	0.495	N/A	N/A
	Right Tilt 15 Degree	0.196	0.105	0.301	N/A	N/A
Body-Worn	Front Side	0.752	0.053	0.805	N/A	N/A
	Back Side	0.835	0.053	0.888	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.752	0.053	0.805	N/A	N/A
	Back Side	0.835	0.053	0.888	N/A	N/A

	Left Side	0.386	0.053	0.439	N/A	N/A
	Right Side	0.209	N/A	0.209	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.786	N/A	0.786	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band V	Bluetooth			
Head	Left Cheek	0.347	0.105	0.452	N/A	N/A
	Left Tilt 15 Degree	0.169	0.105	0.275	N/A	N/A
	Right Cheek	0.309	0.105	0.414	N/A	N/A
	Right Tilt 15 Degree	0.133	0.105	0.239	N/A	N/A
Body-Worn	Front Side	0.375	0.053	0.428	N/A	N/A
	Back Side	0.483	0.053	0.536	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.375	0.053	0.428	N/A	N/A
	Back Side	0.483	0.053	0.536	N/A	N/A
	Left Side	0.290	0.053	0.342	N/A	N/A
	Right Side	0.183	N/A	0.183	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.054	N/A	0.054	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band V and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band II	Bluetooth			
Head	Left Cheek	0.793	0.105	0.899	N/A	N/A
	Left Tilt 15 Degree	0.566	0.105	0.672	N/A	N/A
	Right Cheek	0.700	0.105	0.805	N/A	N/A
	Right Tilt 15 Degree	0.510	0.105	0.615	N/A	N/A
Body-Worn	Front Side	0.780	0.053	0.833	N/A	N/A
	Back Side	0.762	0.053	0.814	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.780	0.053	0.833	N/A	N/A
	Back Side	0.762	0.053	0.814	N/A	N/A

	Left Side	0.468	0.053	0.521	N/A	N/A
	Right Side	0.578	N/A	0.578	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.774	N/A	0.774	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band II and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band V	Bluetooth			
Head	Left Cheek	0.294	0.105	0.399	N/A	N/A
	Left Tilt 15 Degree	0.160	0.105	0.266	N/A	N/A
	Right Cheek	0.266	0.105	0.371	N/A	N/A
	Right Tilt 15 Degree	0.133	0.105	0.239	N/A	N/A
Body-Worn	Front Side	0.371	0.053	0.423	N/A	N/A
	Back Side	0.464	0.053	0.517	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.371	0.053	0.423	N/A	N/A
	Back Side	0.464	0.053	0.517	N/A	N/A
	Left Side	0.109	0.053	0.162	N/A	N/A
	Right Side	0.185	N/A	0.185	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.058	N/A	0.058	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band V and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band IV	Bluetooth			
Head	Left Cheek	0.461	0.105	0.567	N/A	N/A
	Left Tilt 15 Degree	0.268	0.105	0.373	N/A	N/A
	Right Cheek	0.419	0.105	0.524	N/A	N/A
	Right Tilt 15 Degree	0.226	0.105	0.331	N/A	N/A
Body-Worn	Front Side	0.883	0.053	0.936	N/A	N/A
	Back Side	1.029	0.053	1.082	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.883	0.053	0.936	N/A	N/A
	Back Side	1.029	0.053	1.082	N/A	N/A
	Left Side	0.464	0.053	0.517	N/A	N/A

	Right Side	0.157	N/A	0.157	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.688	N/A	0.688	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band IV and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band II	Bluetooth			
Head	Left Cheek	0.370	0.105	0.475	N/A	N/A
	Left Tilt 15 Degree	0.198	0.105	0.303	N/A	N/A
	Right Cheek	0.401	0.105	0.506	N/A	N/A
	Right Tilt 15 Degree	0.237	0.105	0.343	N/A	N/A
Body-Worn	Front Side	0.568	0.053	0.621	N/A	N/A
	Back Side	0.713	0.053	0.765	N/A	N/A
	Back Side With Earphone	N/A	0.053	0.053	N/A	N/A
Hotspot	Front Side	0.568	0.053	0.621	N/A	N/A
	Back Side	0.713	0.053	0.765	N/A	N/A
	Left Side	0.231	0.053	0.284	N/A	N/A
	Right Side	0.388	N/A	0.388	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.797	N/A	0.797	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band II and Bluetooth

Test Position		Scaled SAR_{MAX}		∑1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band VII	Bluetooth			
Head	Left Cheek	0.133	0.105	0.238	N/A	N/A
	Left Tilt 15 Degree	0.078	0.105	0.184	N/A	N/A
	Right Cheek	0.232	0.105	0.337	N/A	N/A
	Right Tilt 15 Degree	0.111	0.105	0.217	N/A	N/A
Body-Worn	Front Side	0.783	0.053	0.836	N/A	N/A
	Back Side	1.290	0.053	1.342	N/A	N/A
	Back Side With Earphone	1.227	0.053	1.280	N/A	N/A
Hotspot	Front Side	0.783	0.053	0.836	N/A	N/A
	Back Side	1.290	0.053	1.342	N/A	N/A
	Left Side	0.296	0.053	0.348	N/A	N/A
	Right Side	0.578	N/A	0.578	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.726	N/A	0.726	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band VII and Bluetooth

11. Appendix A. Photo documentation

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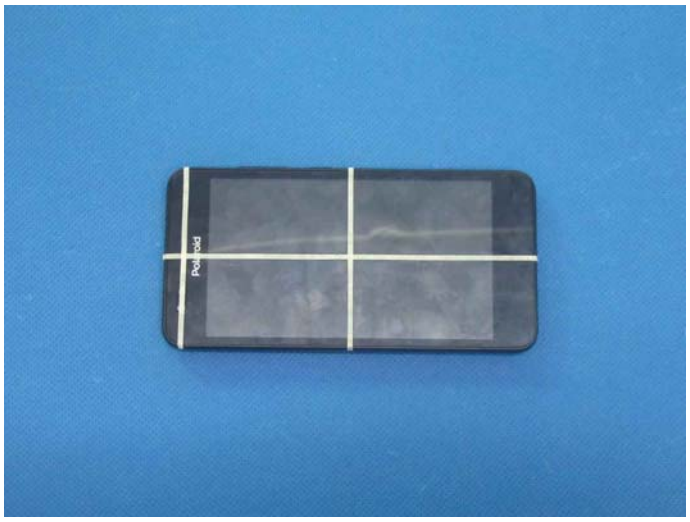
Product Photo
Test Positions
Liquid depth

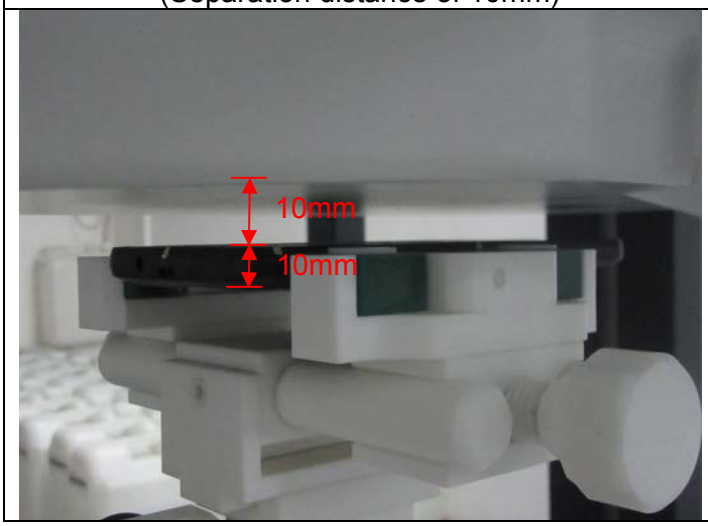
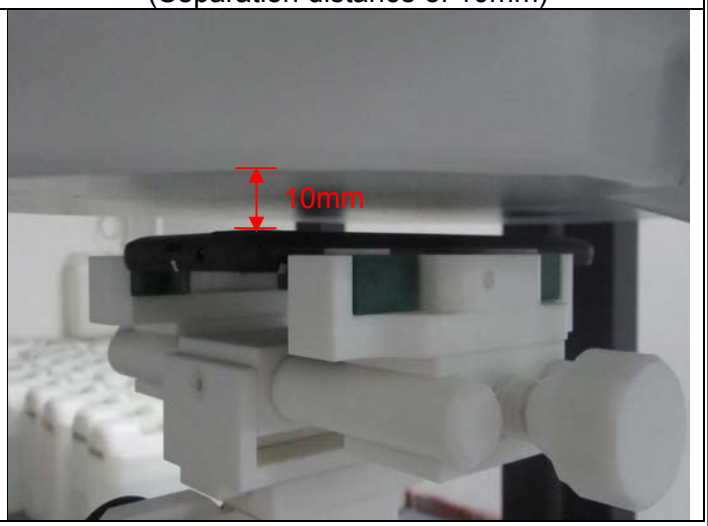
Test Facility

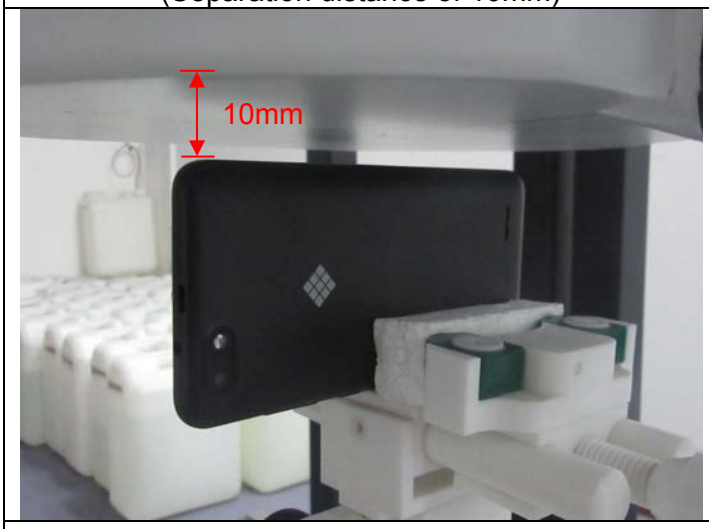
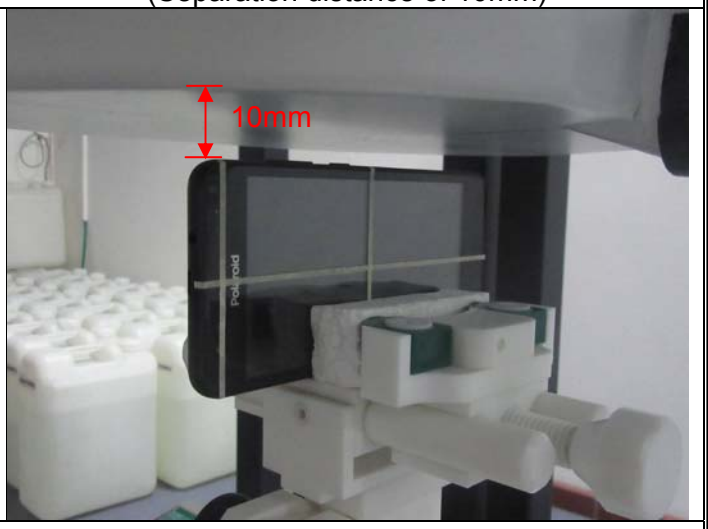
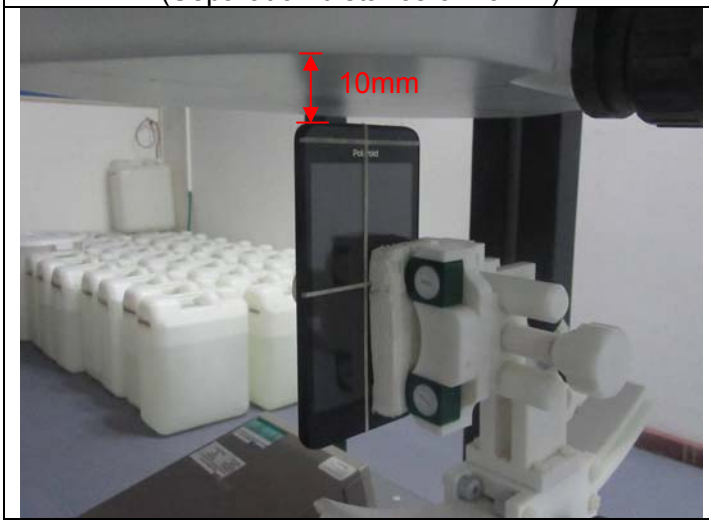
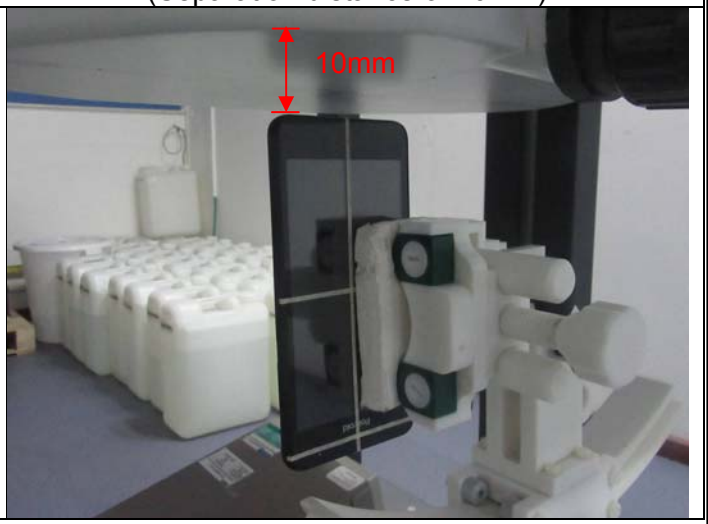
Measurement System SATIMO

Product Photo

Front View	Back View
	
Reference Line	N/A
	N/A

Test Positions

Left Cheek	Left Tilt 15 Degree
	
Right Cheek	Right Tilt 15 Degree
	
Front Side (Separation distance of 10mm)	Back Side (Separation distance of 10mm)
	

Left Side (Separation distance of 10mm)	Right Side (Separation distance of 10mm)
	
Top Side (Separation distance of 10mm)	Bottom Side (Separation distance of 10mm)
	

Liquid depth

Head 850MHz depth (15.3cm)	Body 850MHz depth (15.2cm)
	
Head 1800MHz depth (15.3cm)	Body 1800MHz depth (15.2cm)
	
Head 1900MHz depth (15.2cm)	Body 1900MHz depth (15.3cm)
	

Head 2450MHz depth (15.2cm)	Body 2450MHz depth (15.4cm)
	
Head 2600MHz depth (15.0cm)	Body 2600MHz depth (15.3cm)
	

12. Appendix B. System Check Plots

Table of contents
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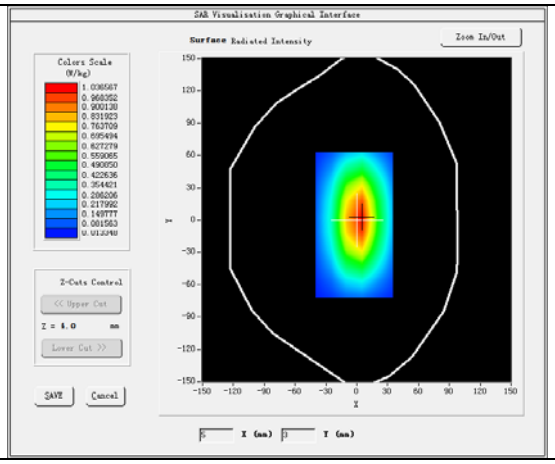
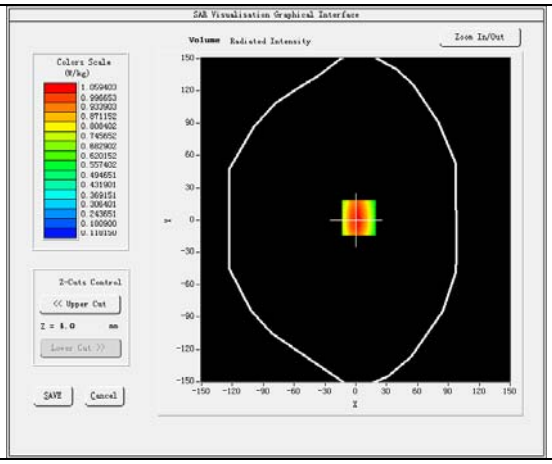
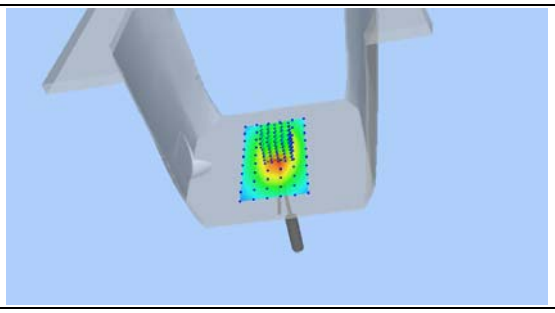
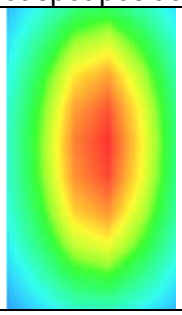
System Performance Check - SID2450 - Head
System Performance Check - SID2450 - Body
System Performance Check - SID2600 - Head
System Performance Check - SID2600 - Body

System Performance Check - SID835-Head

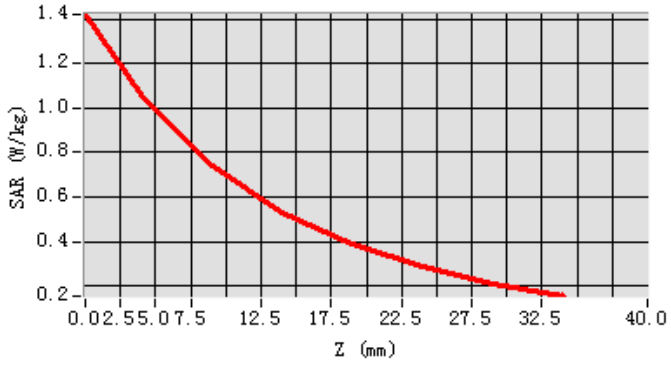
Date of measurement:	Nov. 17, 2017
Signal:	Communication System: CW; Frequency: 835.00MHz; Duty Cycle: 1:1.00
ConvF:	1.48
Liquid Parameters:	Relative permittivity (real part): 42.85; Conductivity (S/m): 0.89;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=3.00, Y=2.00
SAR Peak: 1.42 W/kg

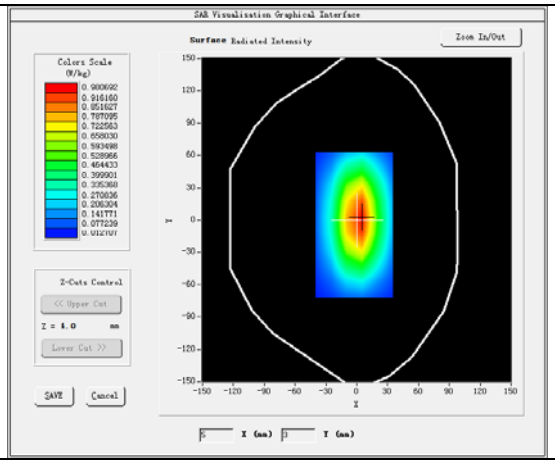
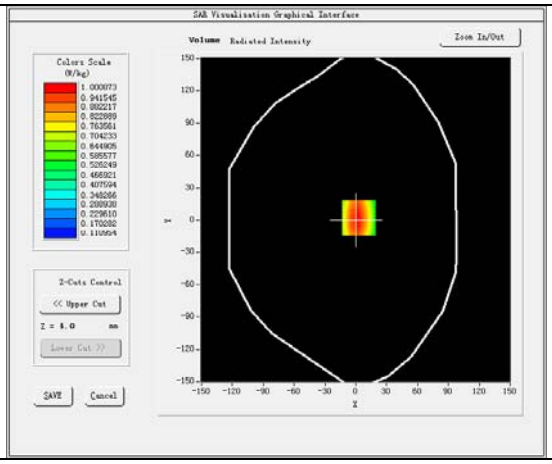
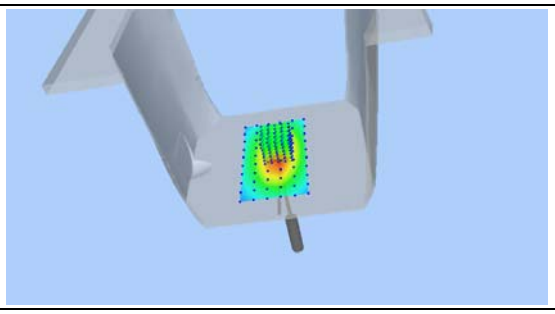
SAR 1g (W/Kg)	1.010
SAR 10g (W/Kg)	0.656
Power Drift (±5%):	-0.01

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.4216	1.0594	0.7411	0.5329	0.3860	0.2840	0.2082



System Performance Check - SID835-Body

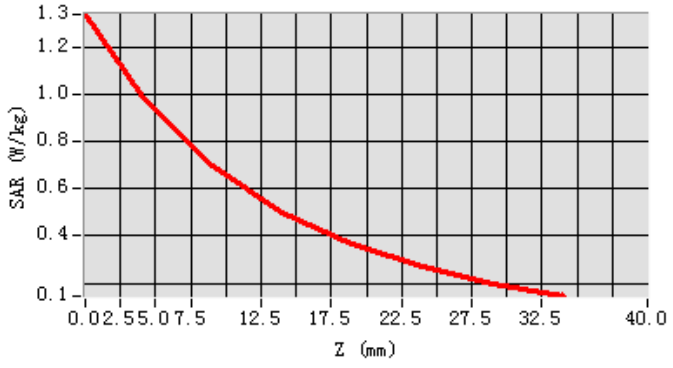
Date of measurement:	Nov. 16, 2017
Signal:	Communication System: CW; Frequency: 835.00MHz; Duty Cycle: 1:1.00
ConvF:	1.53
Liquid Parameters:	Relative permittivity (real part): 55.23; Conductivity (S/m): 0.99;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=3.00, Y=2.00
SAR Peak: 1.35 W/kg

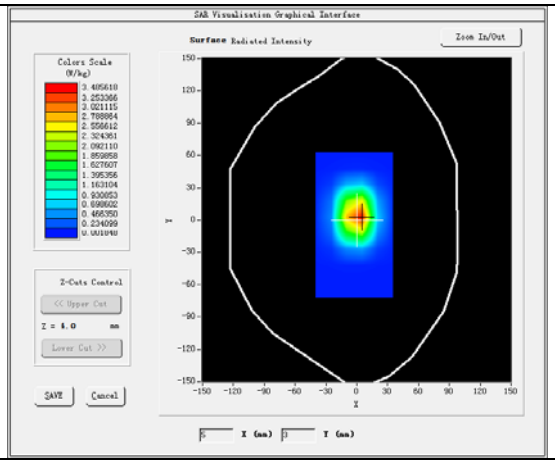
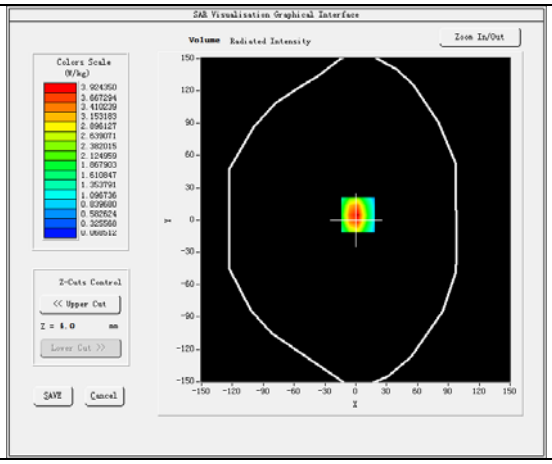
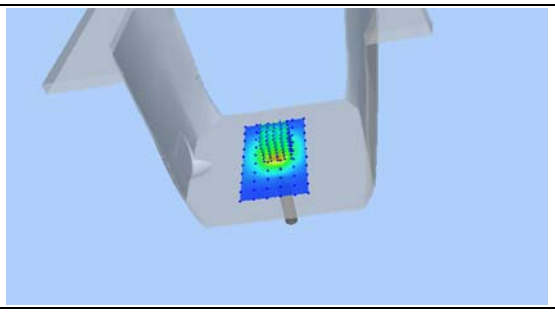
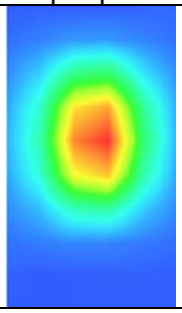
SAR 1g (W/Kg)	0.973
SAR 10g (W/Kg)	0.638
Power Drift (±5%):	-0.09

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.3419	1.0009	0.7010	0.5026	0.3648	0.2672	0.1958



System Performance Check - SID1800-Head

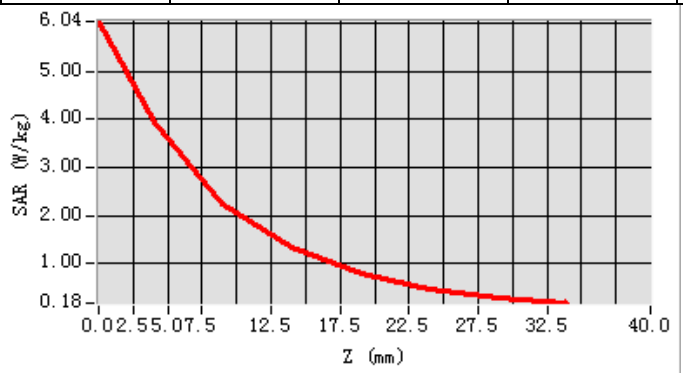
Date of measurement:	Nov. 18, 2017
Signal:	Communication System: CW; Frequency: 1800.00MHz; Duty Cycle: 1:1.00
ConvF:	1.75
Liquid Parameters:	Relative permittivity (real part): 39.57; Conductivity (S/m): 1.40;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=2.00, Y=5.00
SAR Peak: 6.22 W/kg

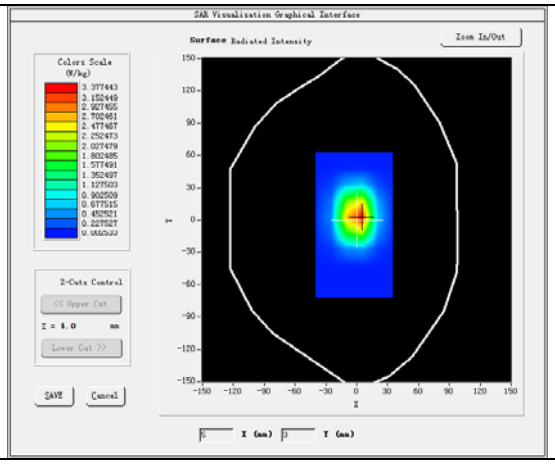
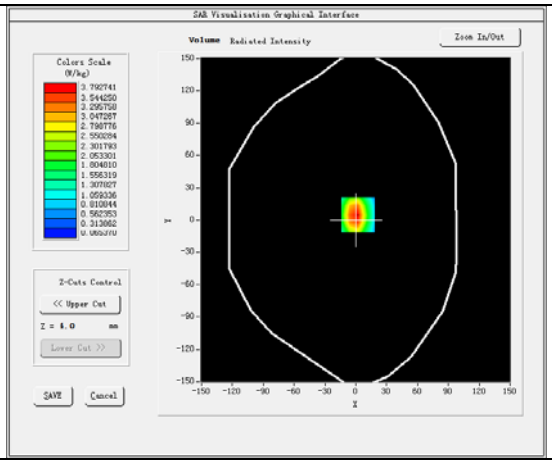
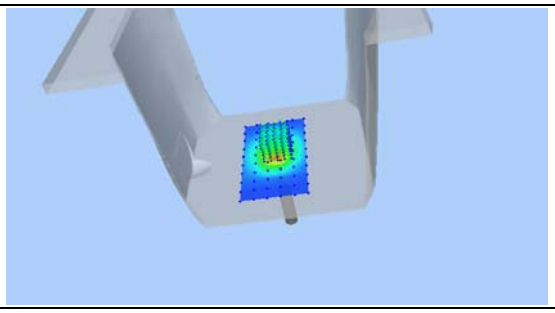
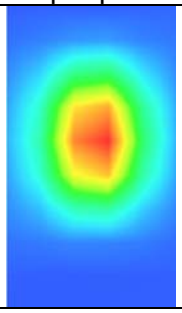
SAR 1g (W/Kg)	3.789
SAR 10g (W/Kg)	1.975
Power Drift (±5%):	0.05

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.0360	3.9244	2.2520	1.3275	0.7911	0.4783	0.2897



System Performance Check - SID1800-Body

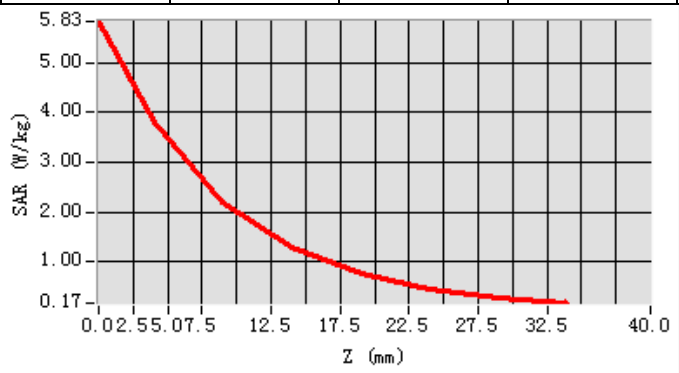
Date of measurement:	Nov. 18, 2017
Signal:	Communication System: CW; Frequency: 1800.00MHz; Duty Cycle: 1:1.00
ConvF:	1.79
Liquid Parameters:	Relative permittivity (real part): 53.98; Conductivity (S/m): 1.51;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=2.00, Y=5.00
SAR Peak: 6.02 W/kg

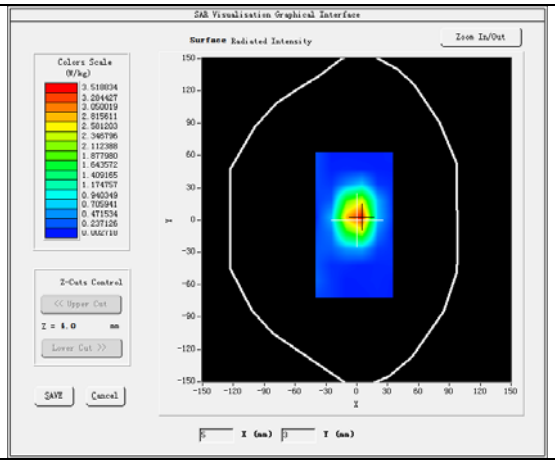
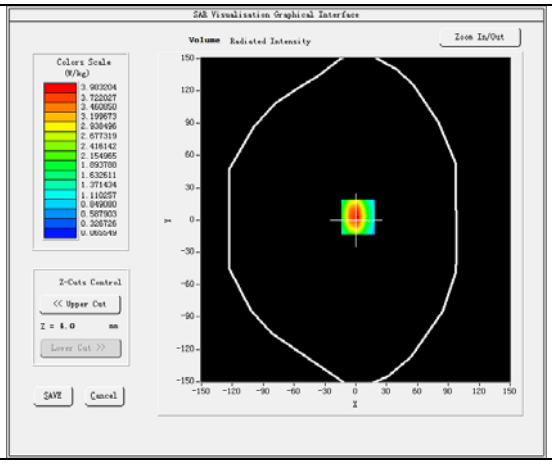
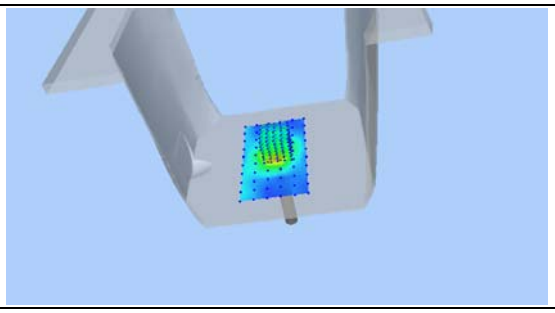
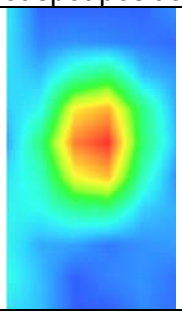
SAR 1g (W/Kg)	3.663
SAR 10g (W/Kg)	1.909
Power Drift (±5%):	-0.14

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.8288	3.7927	2.1764	1.2827	0.7637	0.4605	0.2800



System Performance Check - SID1900-Head

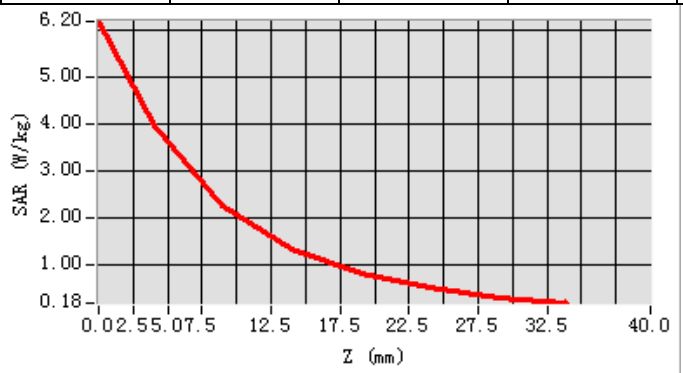
Date of measurement:	Nov. 20, 2017
Signal:	Communication System: CW; Frequency: 1900.00MHz; Duty Cycle: 1:1.00
ConvF:	2.00
Liquid Parameters:	Relative permittivity (real part):39.49; Conductivity (S/m): 1.43;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=2.00, Y=3.00
SAR Peak: 6.38 W/kg

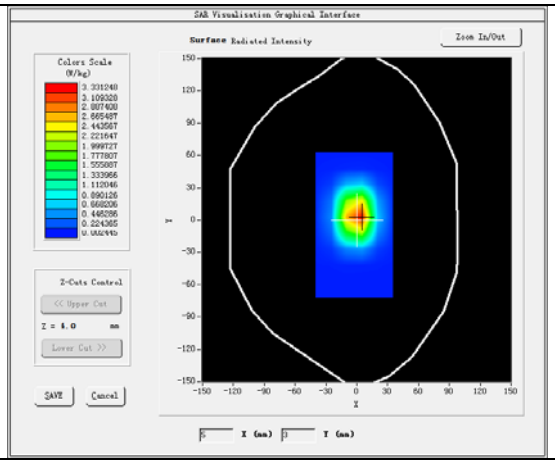
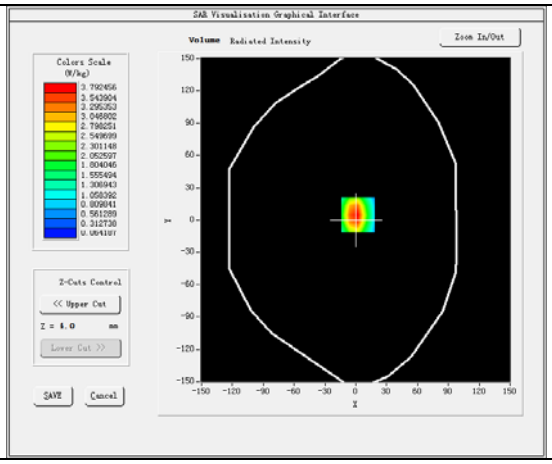
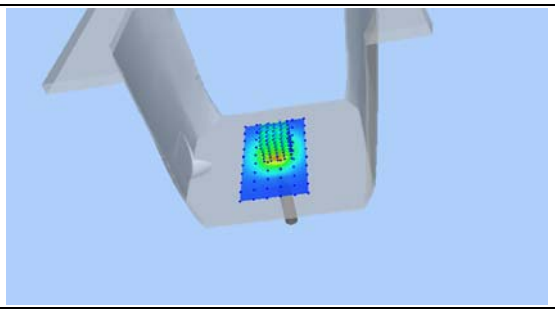
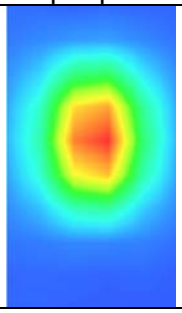
SAR 1g (W/Kg)	3.928
SAR 10g (W/Kg)	2.031
Power Drift (±5%):	-0.51

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.2022	3.9832	2.2768	1.3354	0.8103	0.5254	0.2888



System Performance Check - SID1900-Body

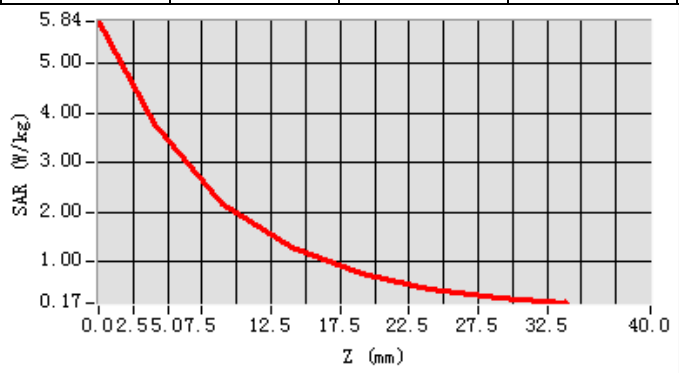
Date of measurement:	Nov. 21, 2017
Signal:	Communication System: CW; Frequency: 1900.00MHz; Duty Cycle: 1:1.00
ConvF:	2.07
Liquid Parameters:	Relative permittivity (real part): 53.34; Conductivity (S/m): 1.55;
Device Position:	Dipole
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=2.00, Y=5.00
SAR Peak: 6.05 W/kg

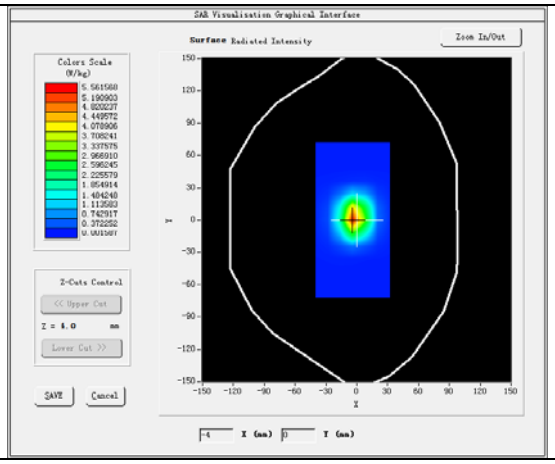
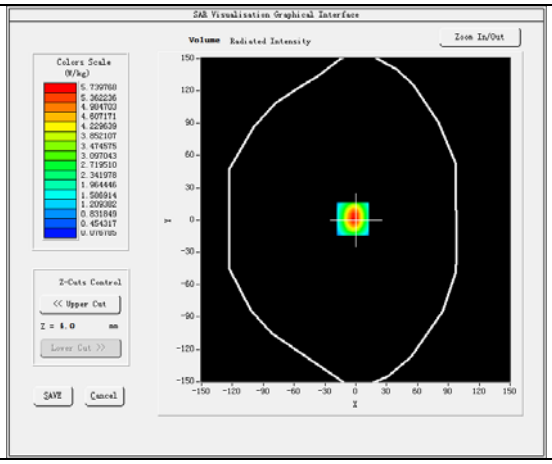
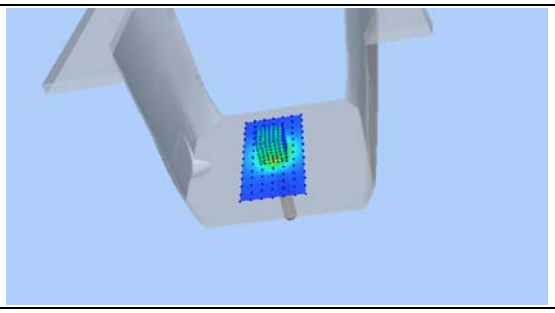
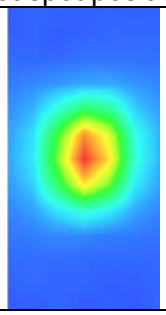
SAR 1g (W/Kg)	3.747
SAR 10g (W/Kg)	1.932
Power Drift (±5%):	-0.25

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.8444	3.7925	2.1706	1.2945	0.7668	0.4569	0.2767



System Performance Check - SID2450-Head

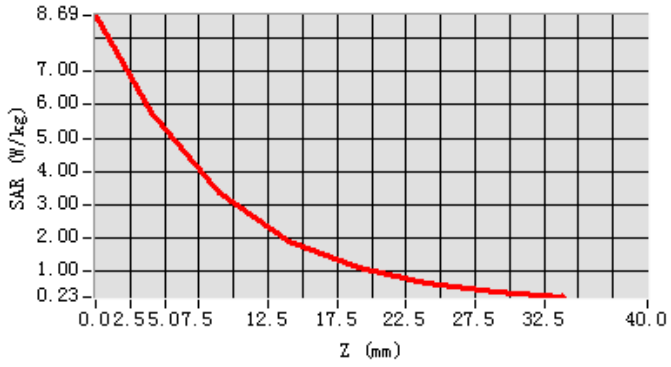
Date of measurement:	Nov. 27, 2017
Signal:	Communication System: CW; Frequency: 2450.00MHz; Duty Cycle: 1:1.00
ConvF:	2.18
Liquid Parameters:	Relative permittivity (real part): 39.86; Conductivity (S/m): 1.81;
Device Position:	Dipole
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-3.00, Y=1.00
SAR Peak: 8.75 W/kg

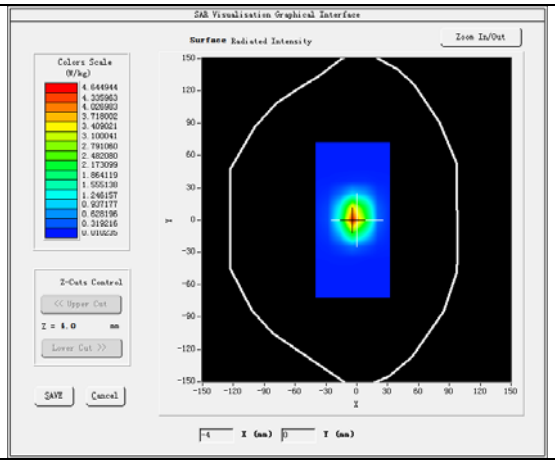
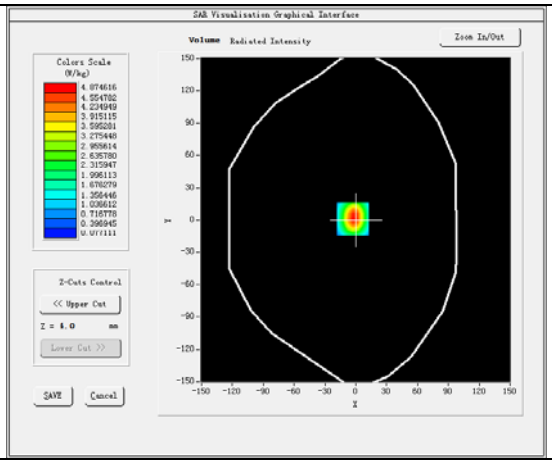
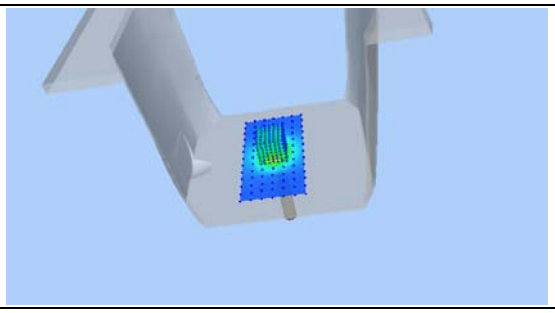
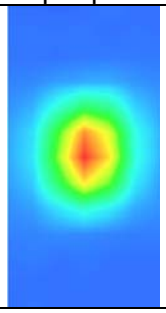
SAR 1g (W/Kg)	5.237
SAR 10g (W/Kg)	2.453
Power Drift (±5%):	-0.30

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.6851	5.7398	3.3369	1.8994	1.1047	0.6455	0.3743



System Performance Check - SID2450-Body

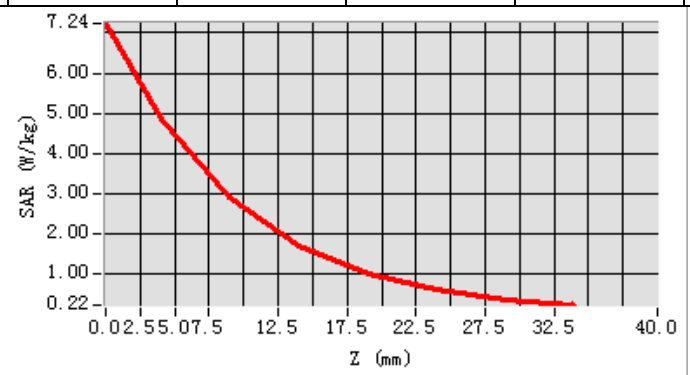
Date of measurement:	Nov. 28, 2017
Signal:	Communication System: CW; Frequency: 2450.00MHz; Duty Cycle: 1:1.00
ConvF:	2.27
Liquid Parameters:	Relative permittivity (real part): 52.57; Conductivity (S/m): 1.95;
Device Position:	Dipole
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-3.00, Y=1.00
SAR Peak: 7.32 W/kg

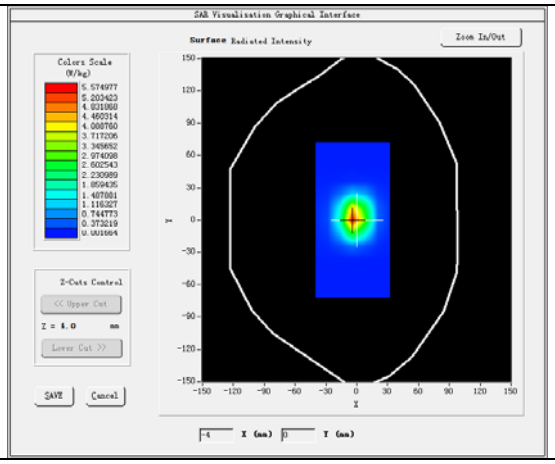
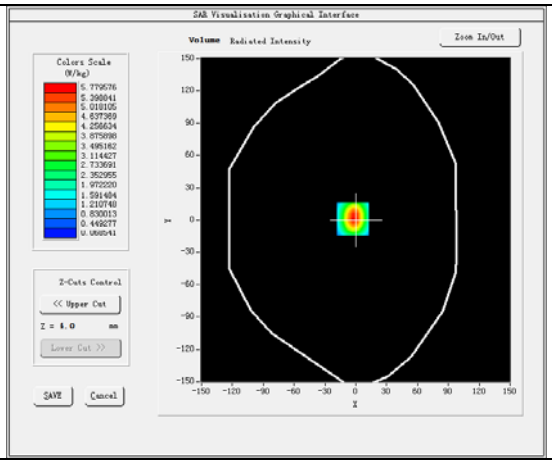
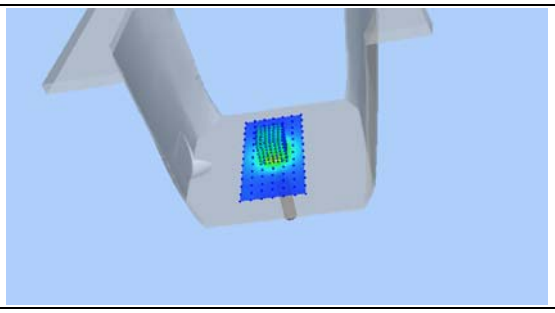
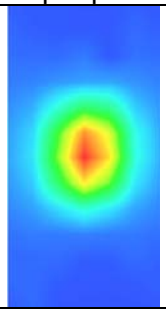
SAR 1g (W/Kg)	4.842
SAR 10g (W/Kg)	2.185
Power Drift (±5%):	0.42

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	7.2362	4.8746	2.9128	1.6786	1.0154	0.6025	0.3652



System Performance Check - SID2600-Head

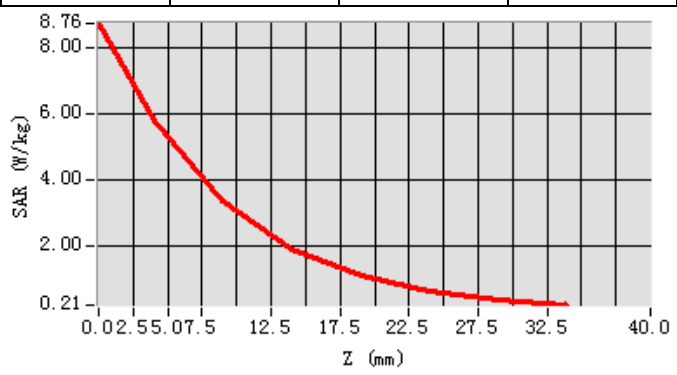
Date of measurement:	Nov. 15, 2017
Signal:	Communication System: CW; Frequency: 2600.00MHz; Duty Cycle: 1:1.00
ConvF:	2.15
Liquid Parameters:	Relative permittivity (real part): 39.11; Conductivity (S/m): 1.98;
Device Position:	Dipole
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-3.00, Y=1.00
SAR Peak: 8.83 W/kg

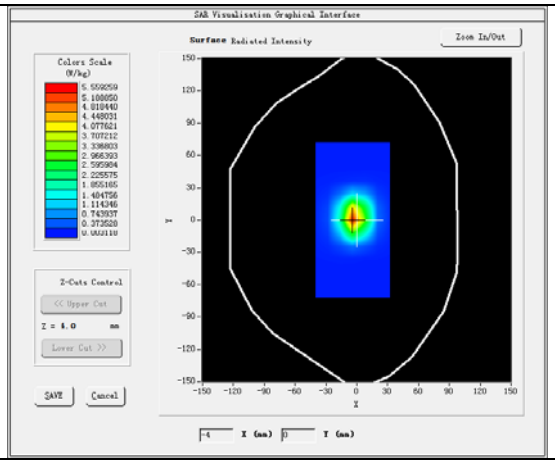
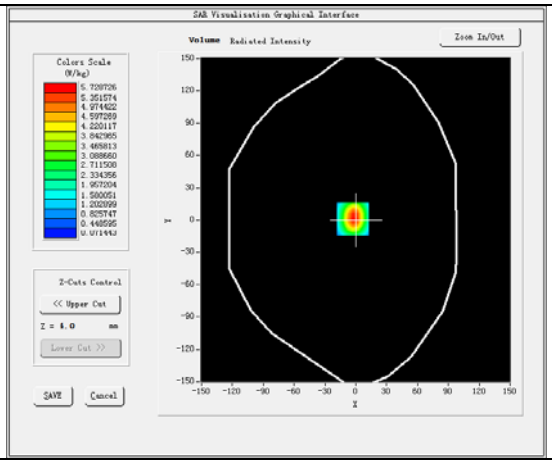
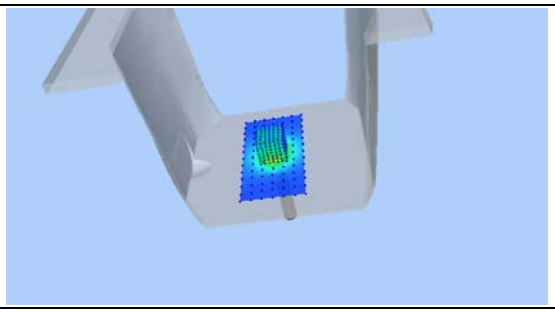
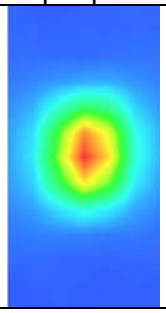
SAR 1g (W/Kg)	5.472
SAR 10g (W/Kg)	2.561
Power Drift (±5%):	0.07

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.7552	5.7796	3.3506	1.8926	1.1056	0.6346	0.3728



System Performance Check - SID2600-Body

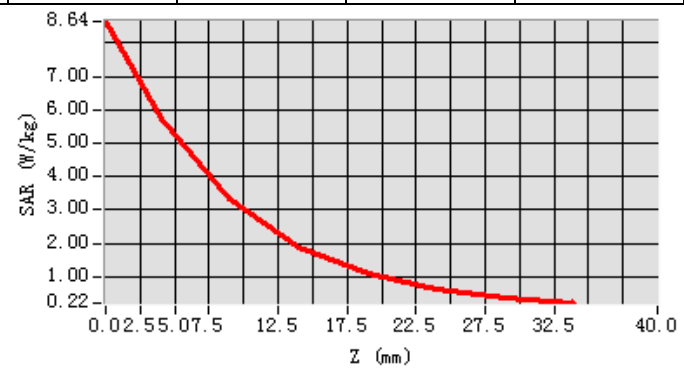
Date of measurement:	Nov. 15, 2017
Signal:	Communication System: CW; Frequency: 2600.00MHz; Duty Cycle: 1:1.00
ConvF:	2.19
Liquid Parameters:	Relative permittivity (real part): 53.46; Conductivity (S/m): 2.16;
Device Position:	Dipole
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-3.00, Y=1.00
SAR Peak: 8.71 W/kg

SAR 1g (W/Kg)	5.223
SAR 10g (W/Kg)	2.448
Power Drift (±5%):	0.09

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.6413	5.7287	3.3346	1.8875	1.0936	0.6351	0.3710



13. Appendix C. Plots of High SAR Measurement

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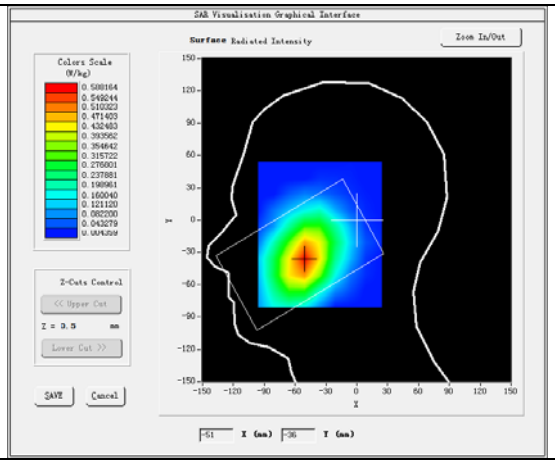
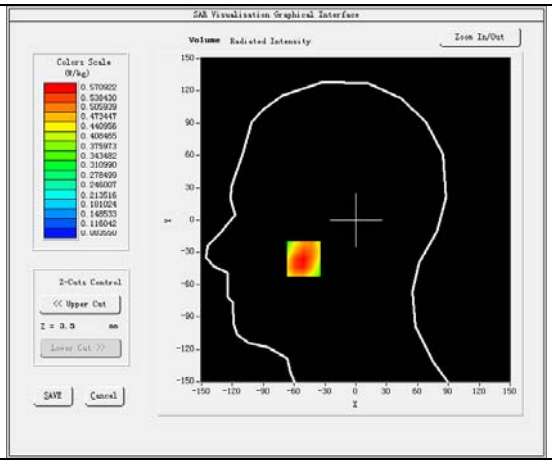
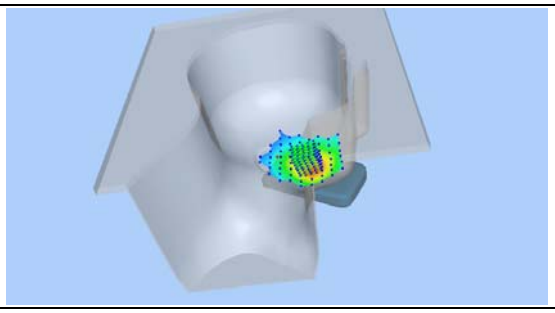
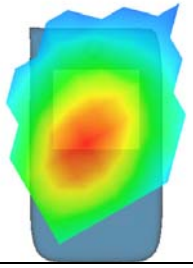
WLAN 2.4G Head
WLAN 2.4G Body

GSM850_GPRS(GMSK 4TS)_Ch251_Left Cheek

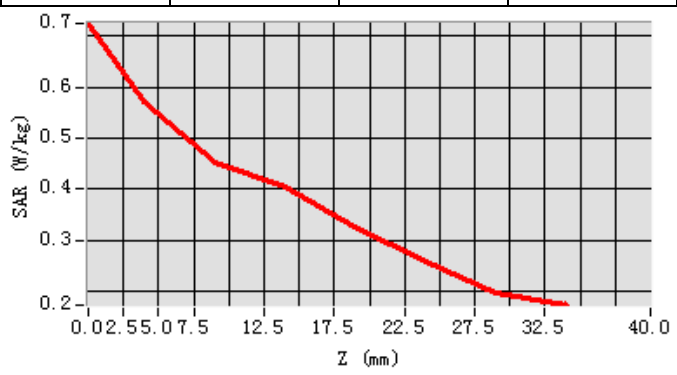
Date of measurement:	Nov. 17, 2017
Signal:	Communication System: GPRS(GMSK 4TS); Frequency: 848.80MHz; Duty Cycle: 1:2.08
ConvF:	1.48
Liquid Parameters:	Relative permittivity (real part): 42.61; Conductivity (S/m): 0.91;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-51.00, Y=-36.00
SAR Peak: 0.72 W/kg

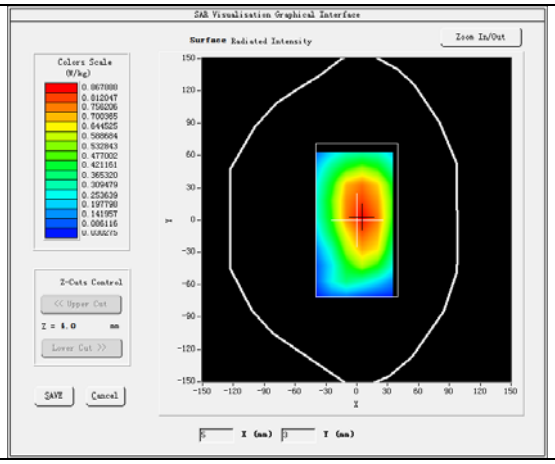
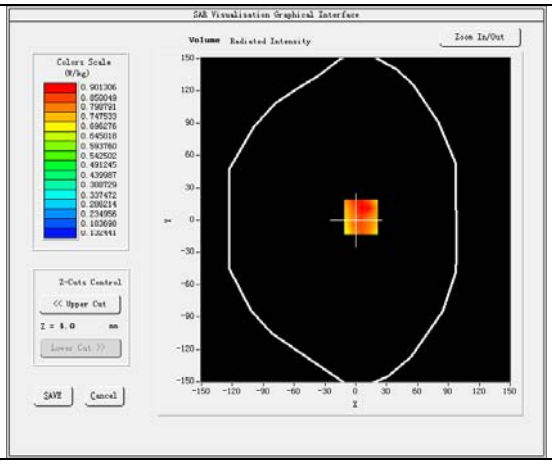
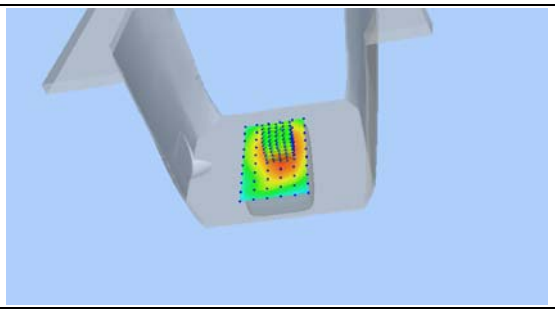
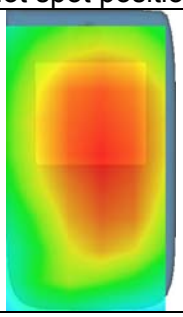
SAR 1g (W/Kg)	0.565
SAR 10g (W/Kg)	0.421
Power Drift (±5%):	0.79

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.7254	0.5709	0.4541	0.4063	0.3250	0.2574	0.1983



GSM850_GPRS(GMSK 4TS)_Ch189_Back Side_10mm

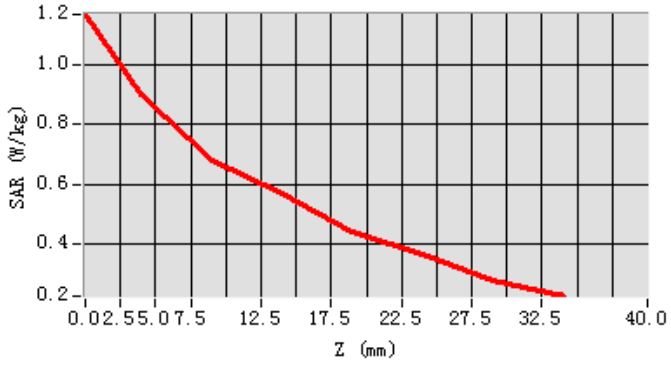
Date of measurement:	Nov. 16, 2017
Signal:	Communication System: GPRS(GMSK 4TS); Frequency: 836.40MHz; Duty Cycle: 1:2.08
ConvF:	1.53
Liquid Parameters:	Relative permittivity (real part): 55.19; Conductivity (S/m): 0.99;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=5.00, Y=3.00
SAR Peak: 1.19 W/kg

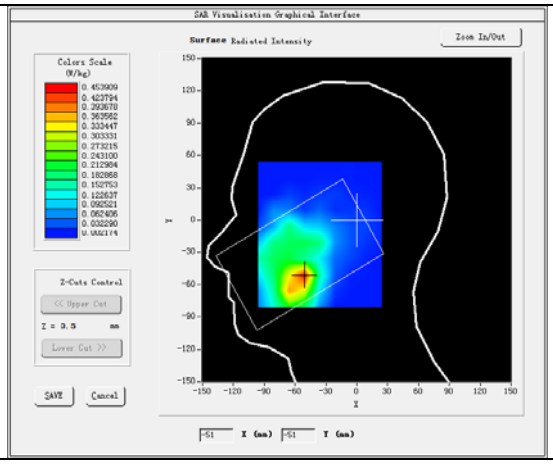
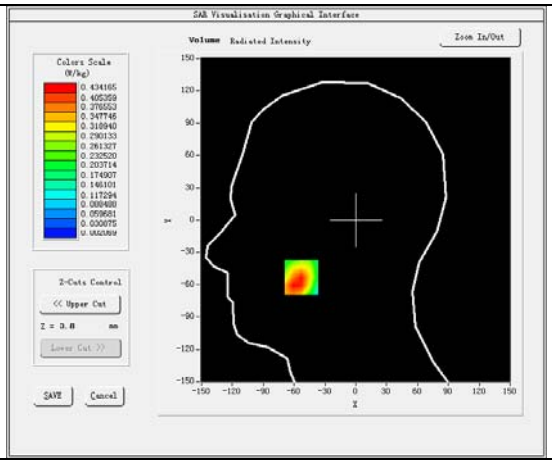
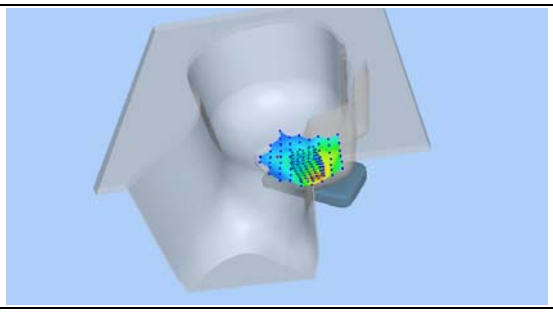
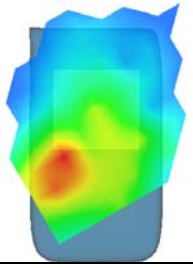
SAR 1g (W/Kg)	0.884
SAR 10g (W/Kg)	0.655
Power Drift (±5%):	1.60

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1714	0.9013	0.6821	0.5658	0.4424	0.3610	0.2744



GSM1900_GPRS(GMSK 4TS)_Ch512_Left Cheek

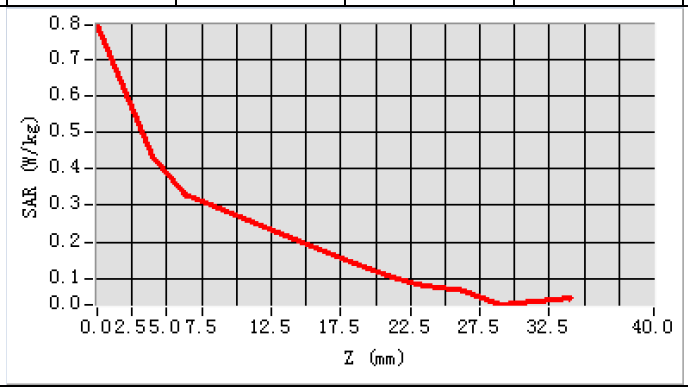
Date of measurement:	Nov. 20, 2017
Signal:	Communication System: GPRS(GMSK 4TS); Frequency: 1850.20MHz; Duty Cycle: 1:2.08
ConvF:	2.00
Liquid Parameters:	Relative permittivity (real part): 39.73; Conductivity (S/m): 1.41;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-53.00, Y=-53.00
SAR Peak: 0.63 W/kg

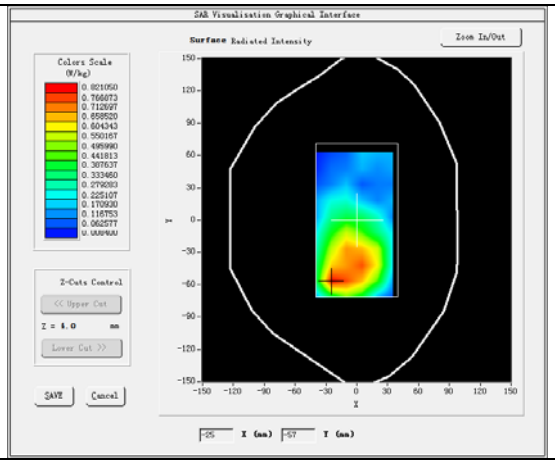
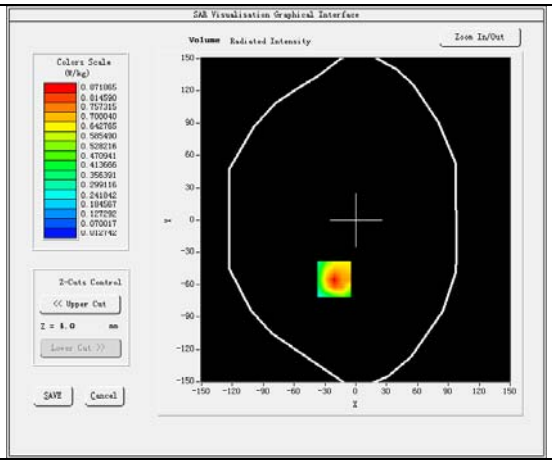
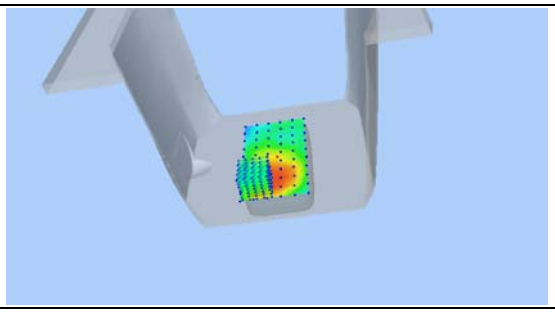
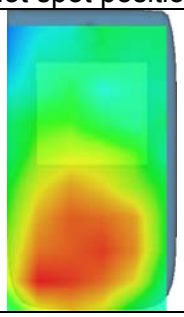
SAR 1g (W/Kg)	0.427
SAR 10g (W/Kg)	0.260
Power Drift (±5%):	2.91

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.7943	0.4342	0.2760	0.2128	0.1191	0.0896	0.0278



GSM1900_GPRS(GMSK 4TS)_Ch512_Back Side_10mm

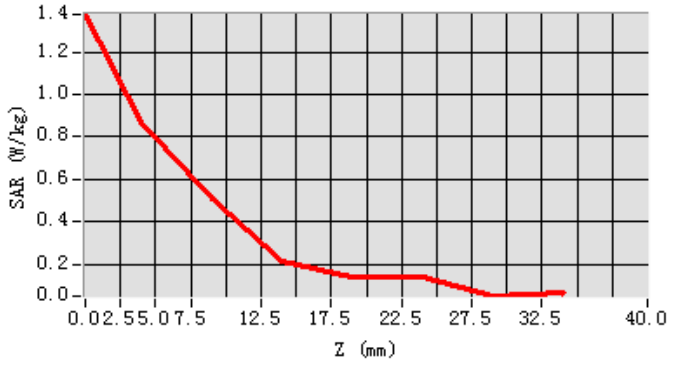
Date of measurement:	Nov. 21, 2017
Signal:	Communication System: GPRS(GMSK 4TS); Frequency: 1850.20MHz; Duty Cycle: 1:2.08
ConvF:	2.07
Liquid Parameters:	Relative permittivity (real part): 53.52; Conductivity (S/m): 1.53;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-21.00, Y=-55.00
SAR Peak: 1.47 W/kg

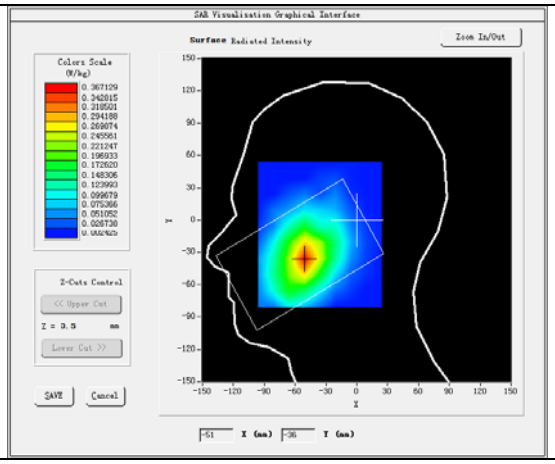
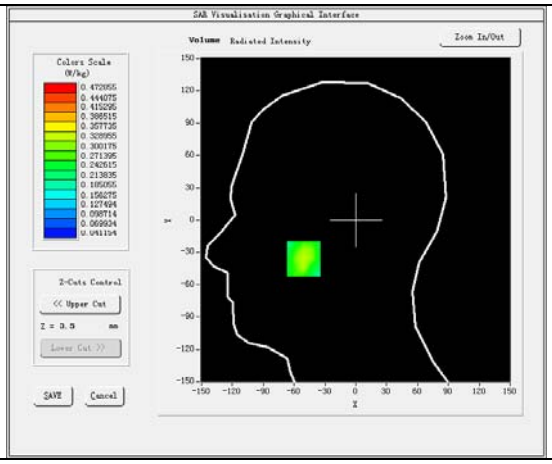
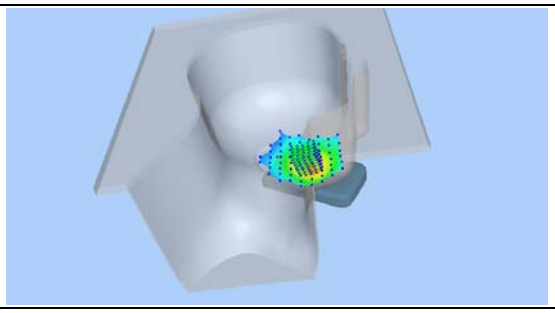
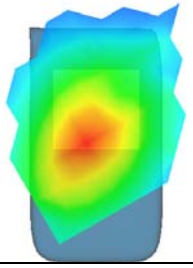
SAR 1g (W/Kg)	0.831
SAR 10g (W/Kg)	0.450
Power Drift (±5%):	0.55

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.3783	0.8719	0.5087	0.2155	0.1422	0.1410	0.0491



WCDMA Band V_RMC 12.2Kbps_Ch4233_Left Cheek

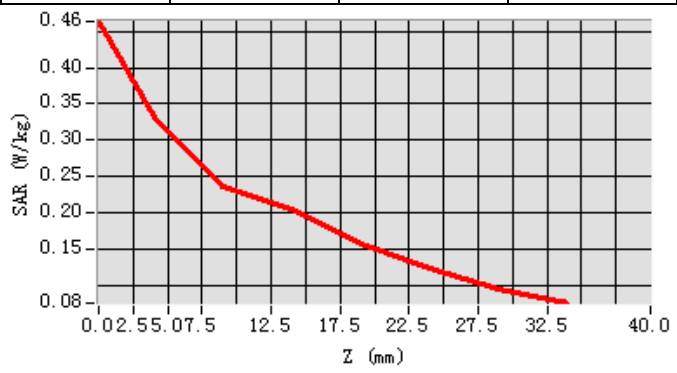
Date of measurement:	Nov. 17, 2017
Signal:	Communication System: WCDMA-FDD(WCDMA); Frequency: 846.6MHz; Duty Cycle: 1:1.00
ConvF:	1.48
Liquid Parameters:	Relative permittivity (real part): 42.71; Conductivity (S/m): 0.91;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-51.00, Y=-36.00
SAR Peak: 0.47 W/kg

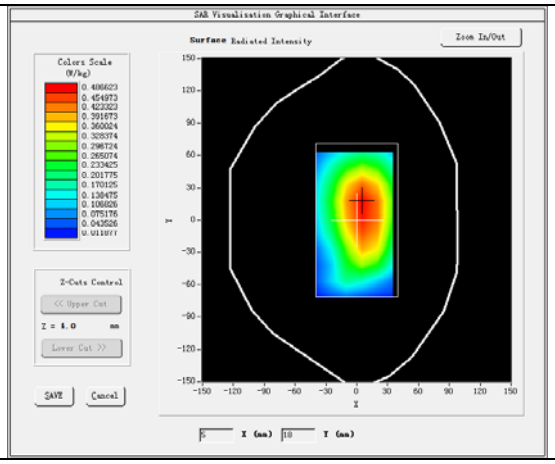
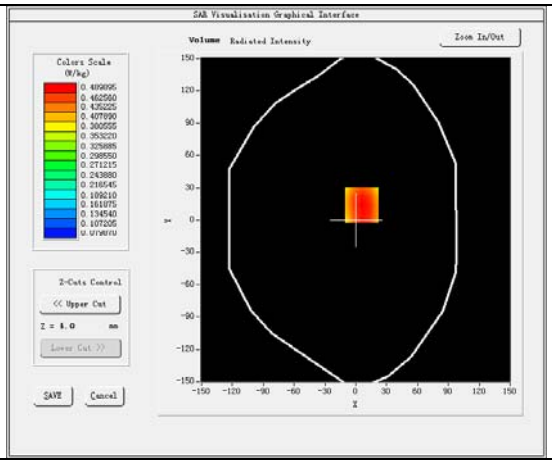
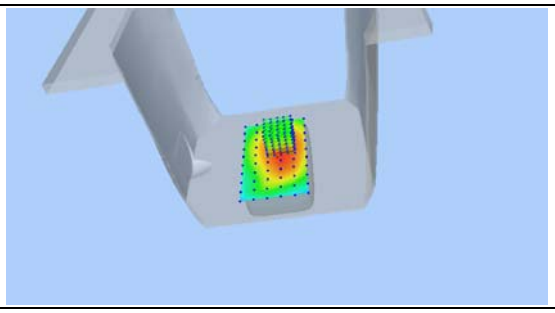
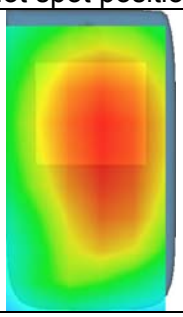
SAR 1g (W/Kg)	0.346
SAR 10g (W/Kg)	0.239
Power Drift (±5%):	2.58

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4633	0.3326	0.2371	0.2051	0.1583	0.1252	0.0958



WCDMA Band V_RMC 12.2Kbps_Ch4233_Back Side_10mm

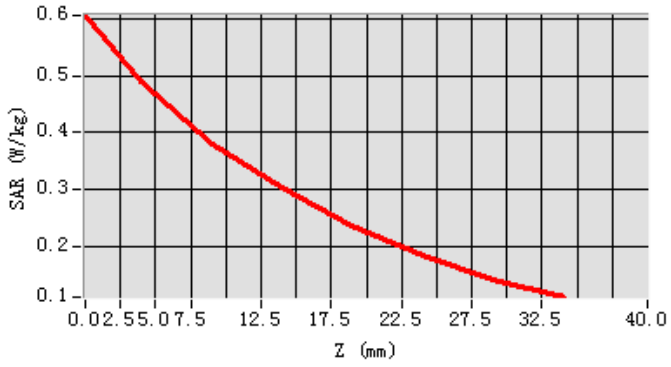
Date of measurement:	Nov. 16, 2017
Signal:	Communication System: WCDMA-FDD(WCDMA); Frequency: 846.60MHz; Duty Cycle: 1:1.00
ConvF:	1.53
Liquid Parameters:	Relative permittivity (real part): 55.11; Conductivity (S/m): 1.00;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=6.00, Y=14.00
SAR Peak: 0.61 W/kg

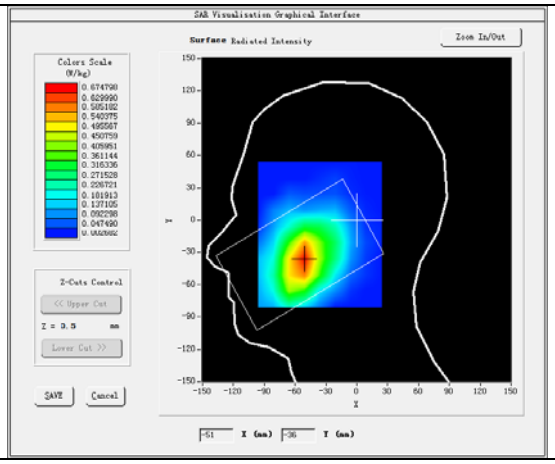
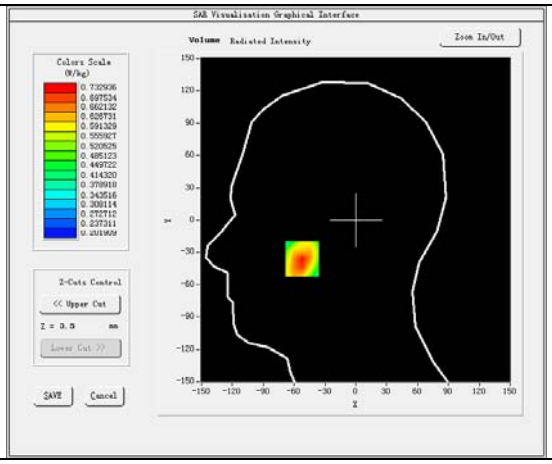
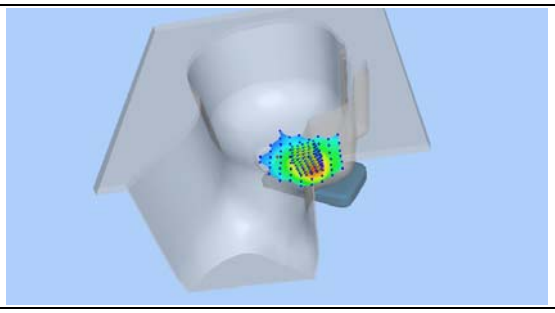
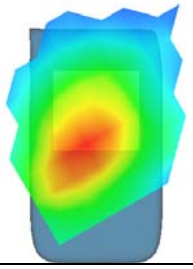
SAR 1g (W/Kg)	0.482
SAR 10g (W/Kg)	0.358
Power Drift (±5%):	0.73

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.6061	0.4899	0.3803	0.3023	0.2367	0.1838	0.1423



WCDMA Band II_RMC 12.2Kbps_Ch9262_Left Cheek

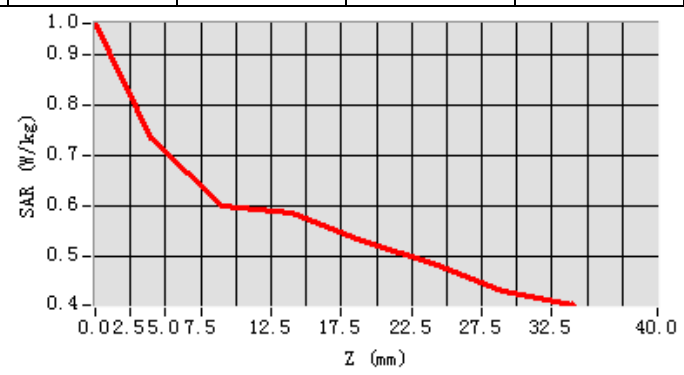
Date of measurement:	Nov. 20, 2017
Signal:	Communication System: WCDMA-FDD(WCDMA); Frequency: 1852.40MHz; Duty Cycle: 1:1.00
ConvF:	2.00
Liquid Parameters:	Relative permittivity (real part): 39.70; Conductivity (S/m): 1.41;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-52.00, Y=-36.00
SAR Peak: 0.96 W/kg

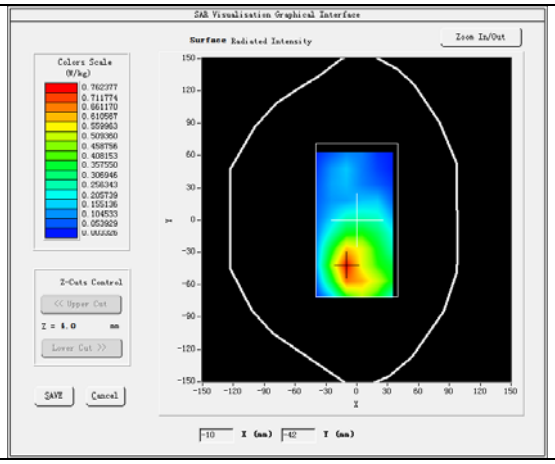
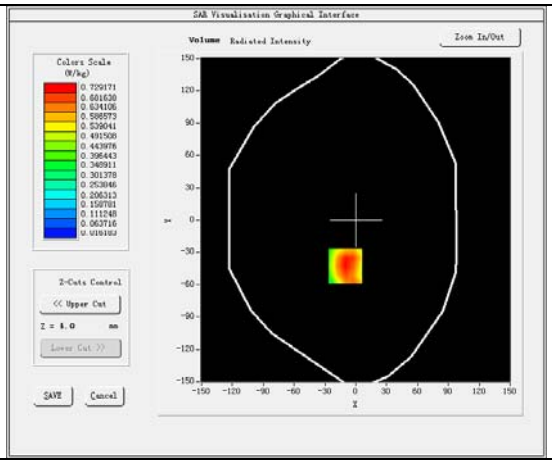
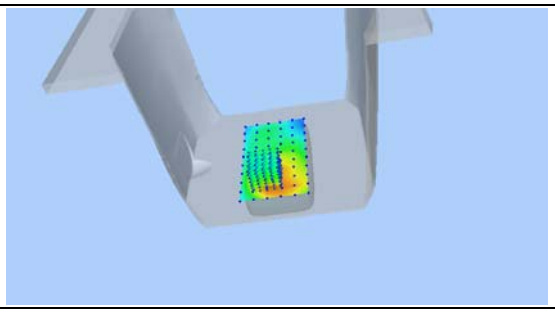
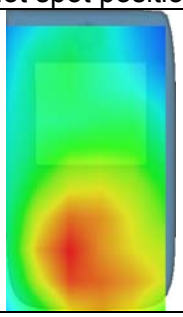
SAR 1g (W/Kg)	0.730
SAR 10g (W/Kg)	0.575
Power Drift (±5%):	-0.50

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.9612	0.7329	0.5984	0.5861	0.5311	0.4836	0.4309



WCDMA Band II_RMC 12.2Kbps_Ch9262_Front Side_10mm

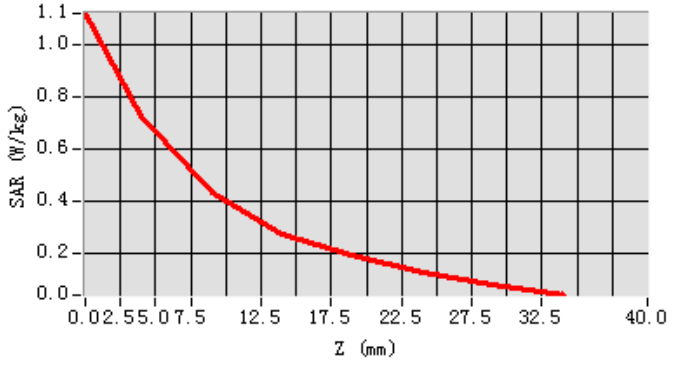
Date of measurement:	Nov. 21, 2017
Signal:	Communication System: WCDMA-FDD(WCDMA); Frequency: 1852.40MHz; Duty Cycle: 1:1.00
ConvF:	2.07
Liquid Parameters:	Relative permittivity (real part): 53.53; Conductivity (S/m): 1.53;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-10.00, Y=-43.00
SAR Peak: 1.16 W/kg

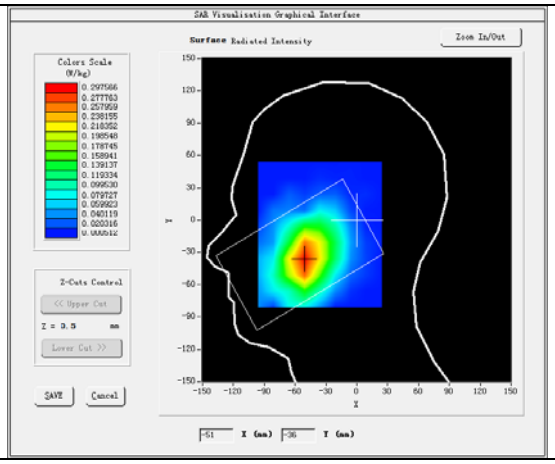
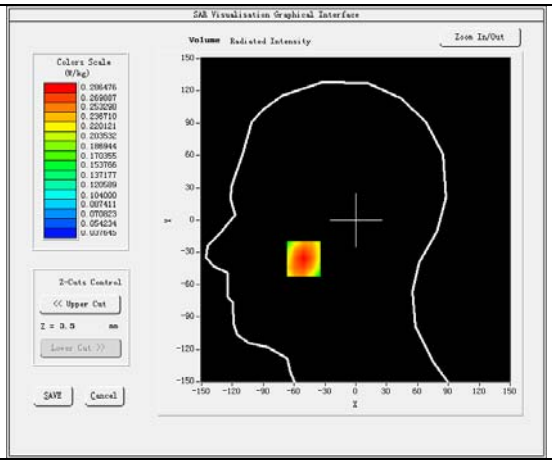
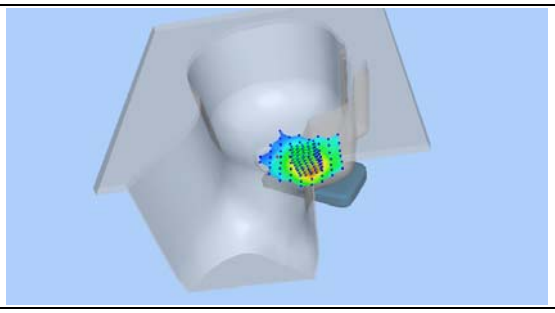
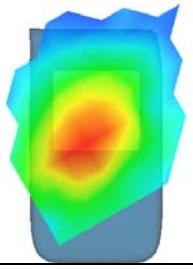
SAR 1g (W/Kg)	0.718
SAR 10g (W/Kg)	0.415
Power Drift (±5%):	0.44

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1211	0.7292	0.4358	0.2737	0.1939	0.1280	0.0820



LTE Band V_ 10M_QPSK(1,0)_Ch20450_Left Cheek

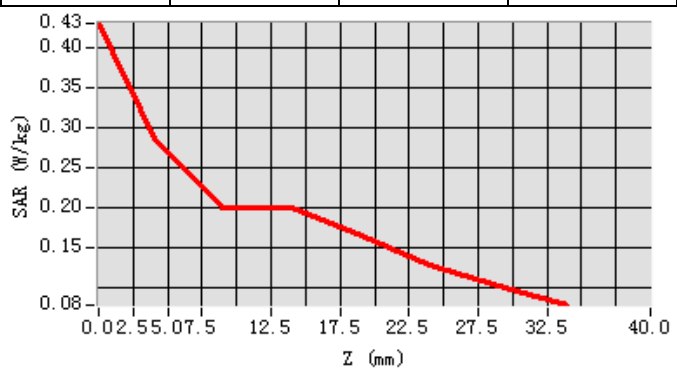
Date of measurement:	Nov. 17, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 829.00MHz; Duty Cycle: 1:1.00
ConvF:	1.48
Liquid Parameters:	Relative permittivity (real part): 42.86; Conductivity (S/m): 0.88;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-51.00, Y=-36.00
SAR Peak: 0.42 W/kg

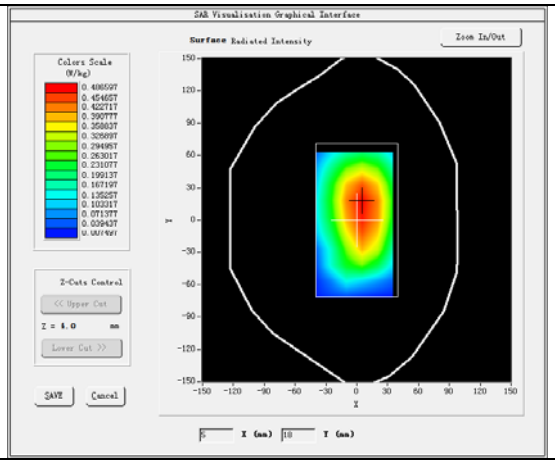
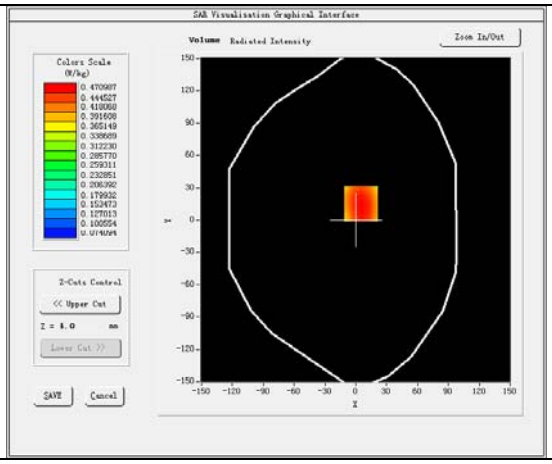
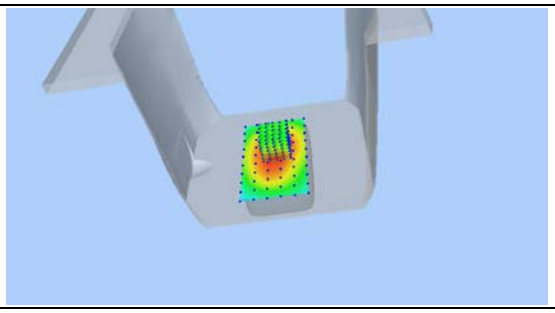
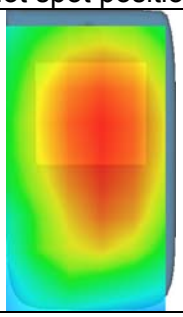
SAR 1g (W/Kg)	0.283
SAR 10g (W/Kg)	0.204
Power Drift (±5%):	1.17

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4305	0.2865	0.1998	0.1993	0.1654	0.1277	0.1024



LTE Band V_10M_QPSK(1,0)_Ch20450_Back Side_10mm

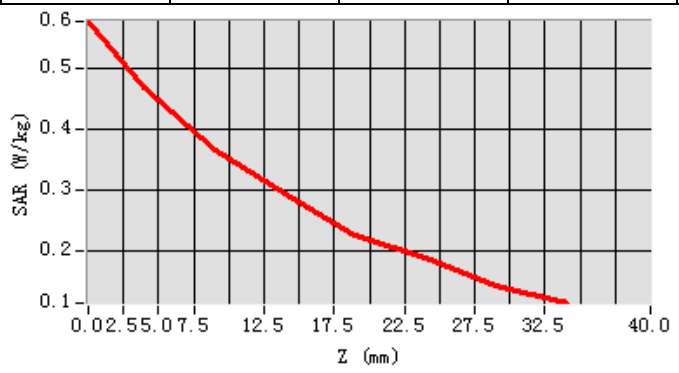
Date of measurement:	Nov. 16, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 829.00MHz; Duty Cycle: 1:1.00
ConvF:	1.53
Liquid Parameters:	Relative permittivity (real part): 55.24; Conductivity (S/m):0.98;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=5.00, Y=15.00
SAR Peak: 0.57 W/kg

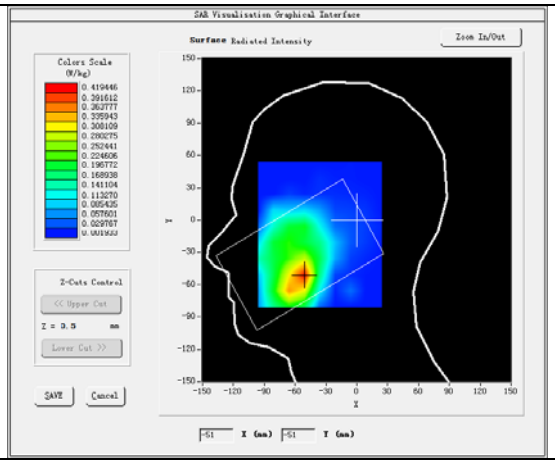
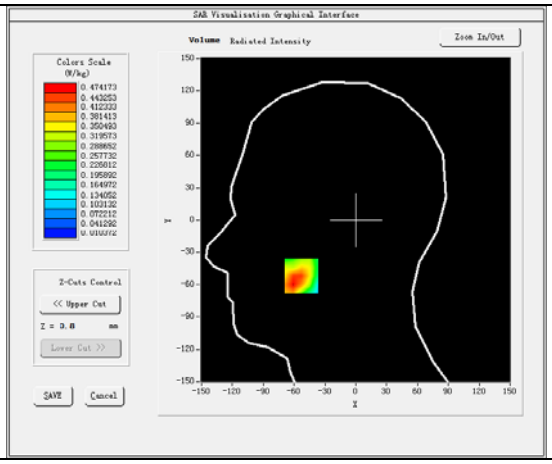
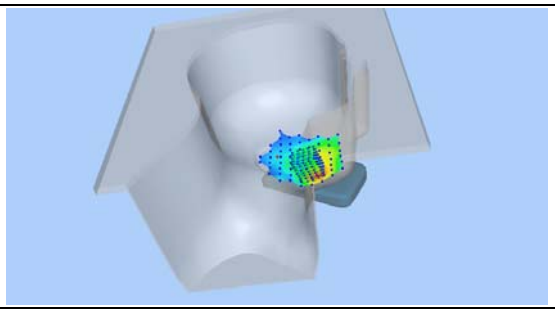
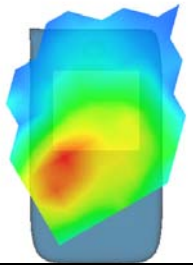
SAR 1g (W/Kg)	0.461
SAR 10g (W/Kg)	0.349
Power Drift (±5%):	4.90

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.5791	0.4710	0.3663	0.2945	0.2247	0.1869	0.1406



LTE Band IV_ 20M_QPSK(1,0)_Ch20050_Left Cheek

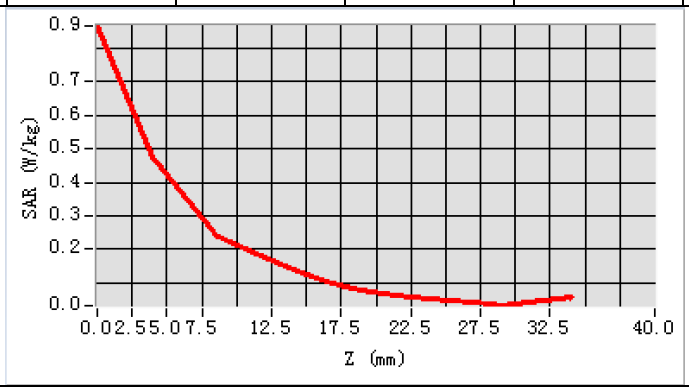
Date of measurement:	Nov. 18, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 1720.00MHz; Duty Cycle: 1:1.00
ConvF:	1.75
Liquid Parameters:	Relative permittivity (real part): 40.16; Conductivity (S/m): 1.33;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-53.00, Y=-52.00
SAR Peak: 0.71 W/kg

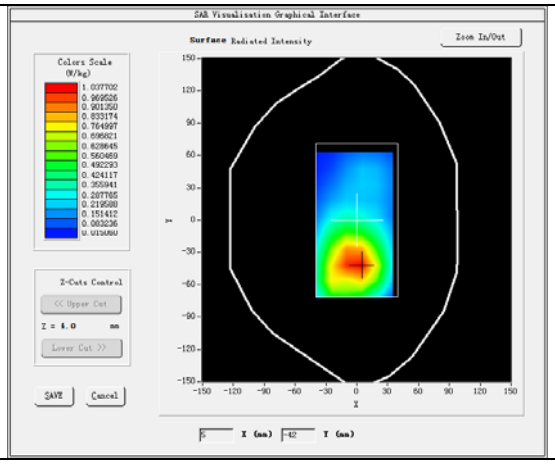
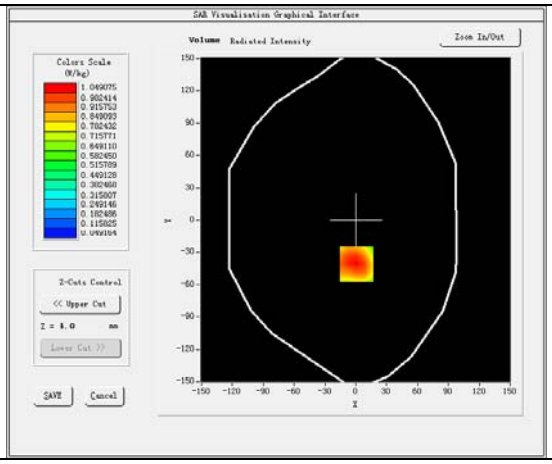
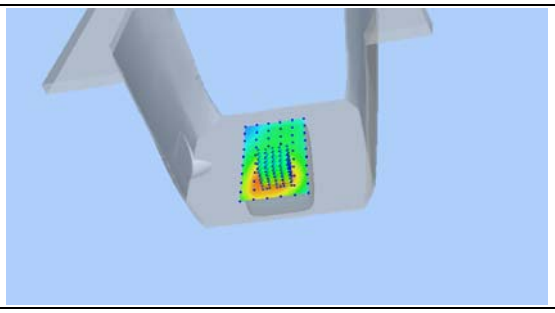
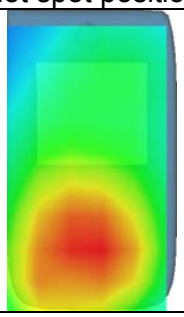
SAR 1g (W/Kg)	0.453
SAR 10g (W/Kg)	0.273
Power Drift (±5%):	-2.26

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.8671	0.4742	0.2177	0.1387	0.0811	0.0525	0.0312



LTE Band IV_20M_QPSK(1,0)_Ch20050_Back Side_10mm

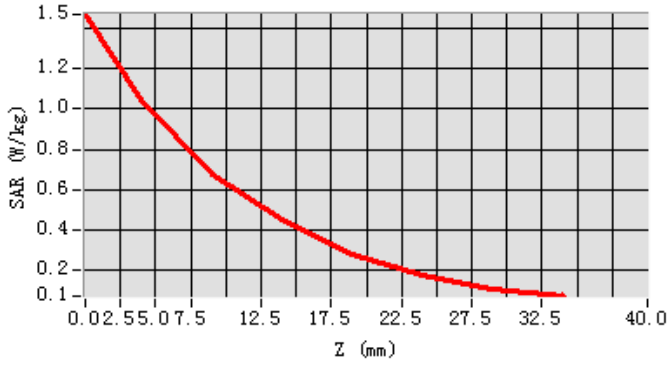
Date of measurement:	Nov. 18, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 1720.00MHz; Duty Cycle: 1:1.00
ConvF:	1.79
Liquid Parameters:	Relative permittivity (real part): 54.48; Conductivity (S/m): 1.45;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=1.00, Y=-41.00
SAR Peak: 1.47 W/kg

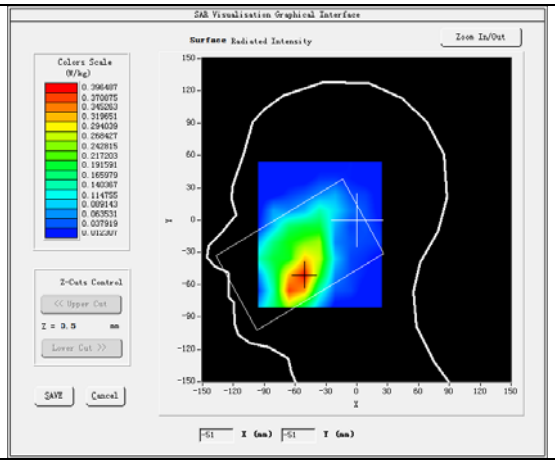
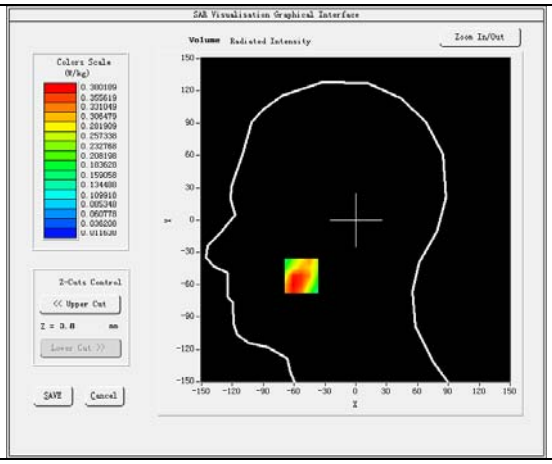
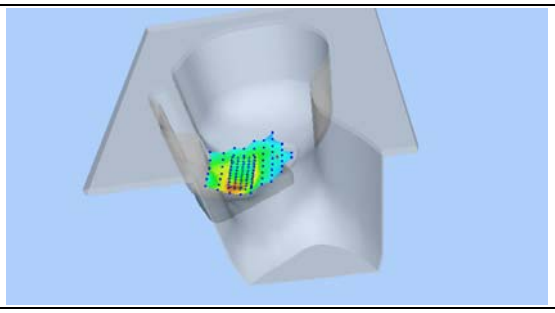
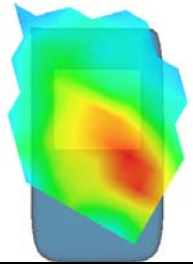
SAR 1g (W/Kg)	1.008
SAR 10g (W/Kg)	0.638
Power Drift (±5%):	-0.13

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.4662	1.0491	0.6797	0.4506	0.2815	0.1809	0.1133



LTE Band II_20M_QPSK(1,0)_Ch18700_Right Cheek

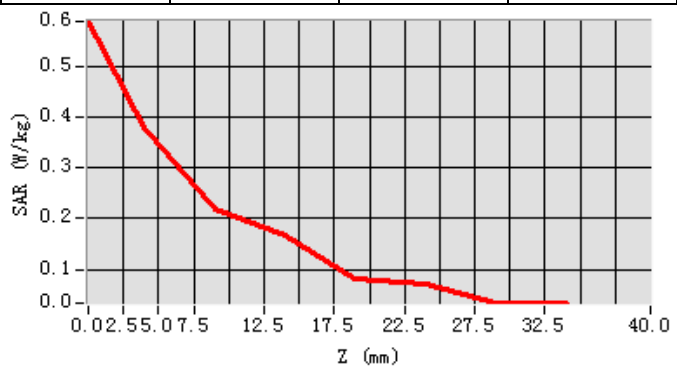
Date of measurement:	Nov. 20, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 1860.00MHz; Duty Cycle: 1:1.00
ConvF:	2.00
Liquid Parameters:	Relative permittivity (real part): 39.67; Conductivity (S/m): 1.41;
Device Position:	Cheek
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-53.00, Y=-52.00
SAR Peak: 0.55 W/kg

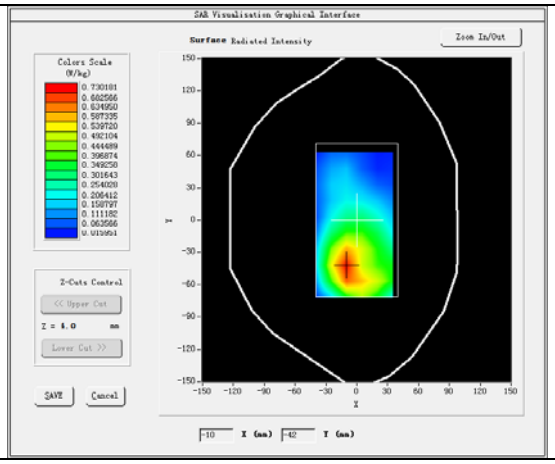
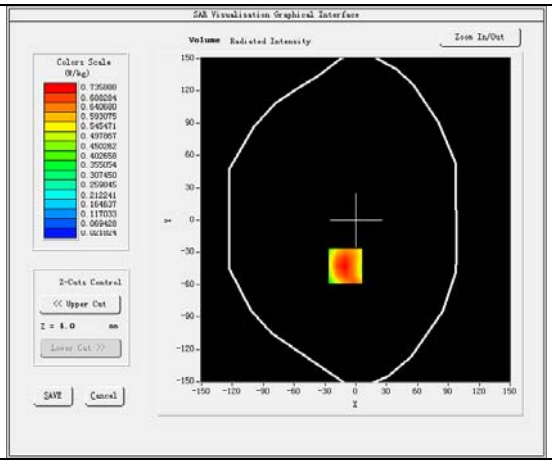
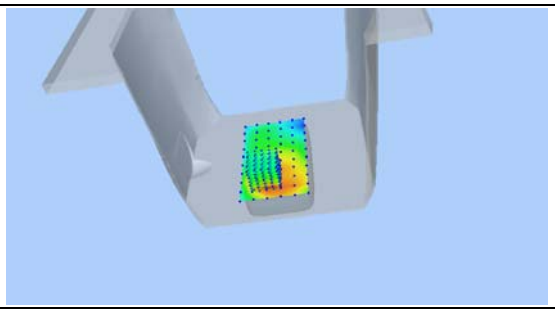
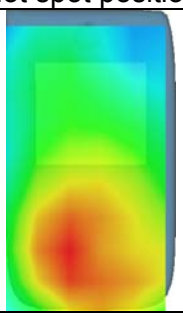
SAR 1g (W/Kg)	0.365
SAR 10g (W/Kg)	0.222
Power Drift (±5%):	-3.29

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.5876	0.3802	0.2168	0.1679	0.0806	0.0722	0.0352



LTE Band II_ 20M_QPSK(1,0)_Ch18700_Back Side_10mm

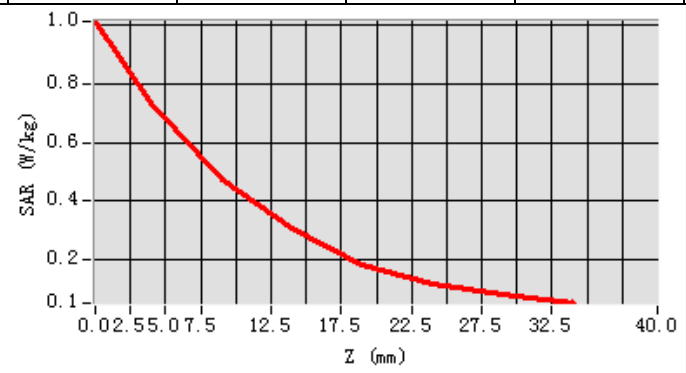
Date of measurement:	Nov. 21, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency:1860.00MHz; Duty Cycle: 1:1.00
ConvF:	2.07
Liquid Parameters:	Relative permittivity (real part): 53.48; Conductivity (S/m): 1.54;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-10.00, Y=-43.00
SAR Peak: 1.03 W/kg

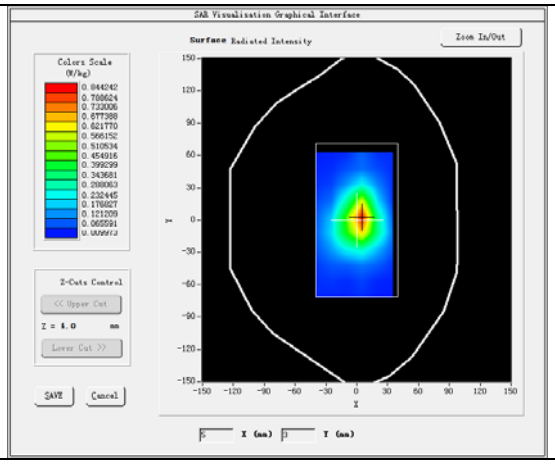
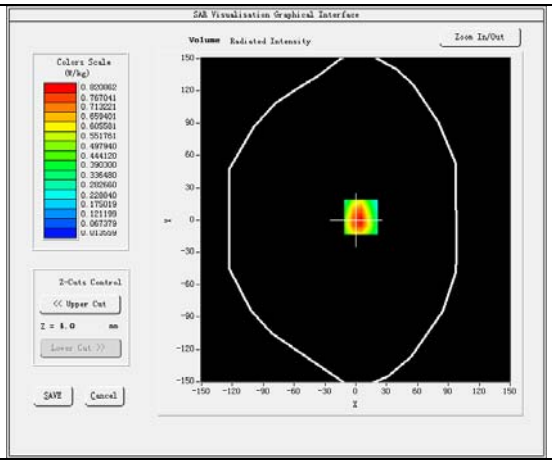
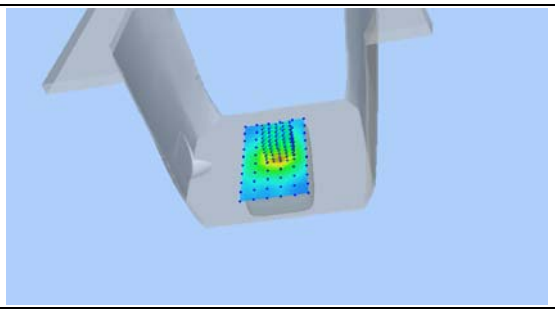
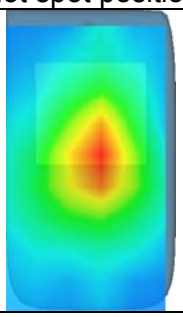
SAR 1g (W/Kg)	0.706
SAR 10g (W/Kg)	0.430
Power Drift (±5%):	2.98

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.0130	0.7359	0.4728	0.3047	0.1844	0.1171	0.0827



LTE Band II_ 20M_QPSK(1,0)_Ch18700_Bottom Side_10mm

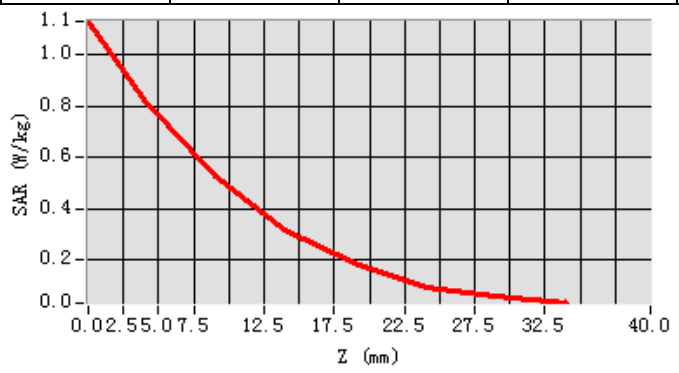
Date of measurement:	Nov. 21, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency:1860.00MHz; Duty Cycle: 1:1.00
ConvF:	2.07
Liquid Parameters:	Relative permittivity (real part): 53.48; Conductivity (S/m): 1.54;
Device Position:	Body
Area Scan:	dx=15mm dy=15mm, h=5.00mm
Zoom Scan:	5x5x7, dx=8mm dy=8mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=5.00, Y=3.00
SAR Peak: 1.19 W/kg

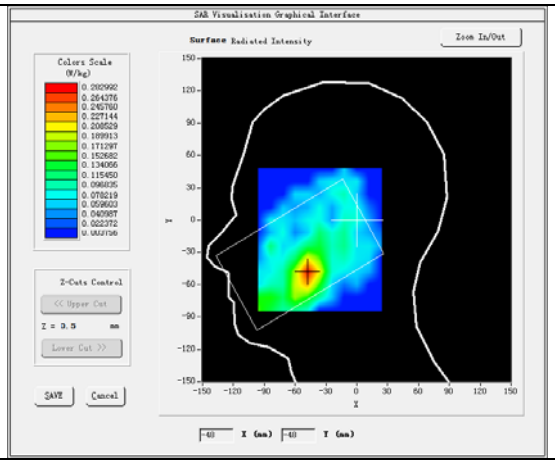
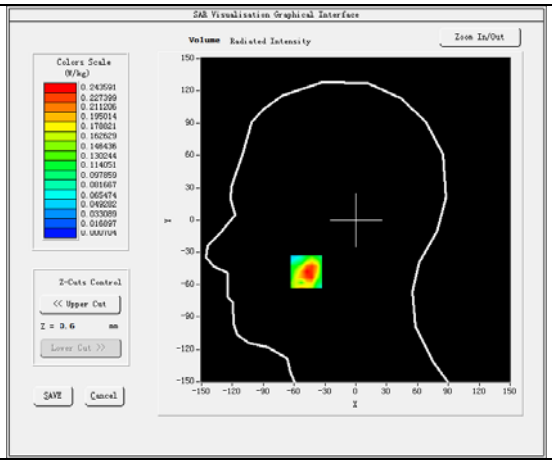
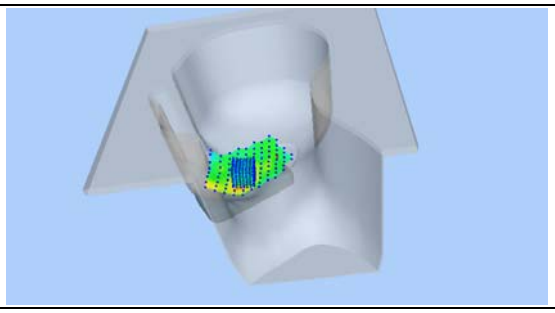
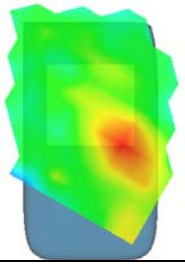
SAR 1g (W/Kg)	0.790
SAR 10g (W/Kg)	0.447
Power Drift (±5%):	3.30

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1271	0.8209	0.5299	0.3191	0.1900	0.0971	0.0586



LTE Band VII_20M_QPSK(1,0)_Ch21350_Right Cheek

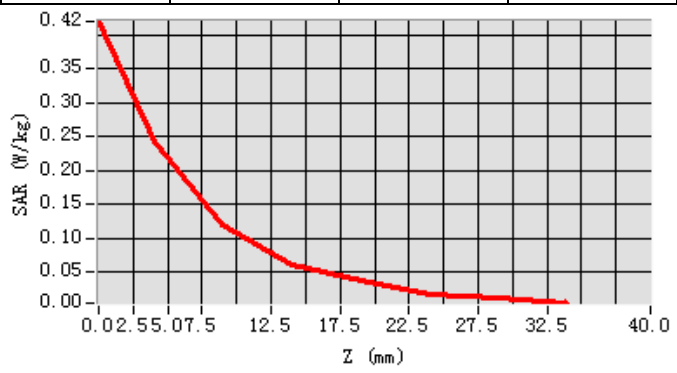
Date of measurement:	Nov. 15, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 2560.00MHz; Duty Cycle: 1:1.00
ConvF:	2.15
Liquid Parameters:	Relative permittivity (real part): 39.29; Conductivity (S/m): 1.94;
Device Position:	Cheek
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-48.00, Y=-48.00
SAR Peak: 0.44 W/kg

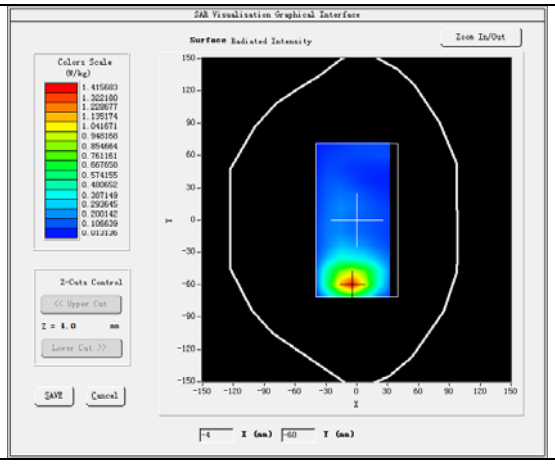
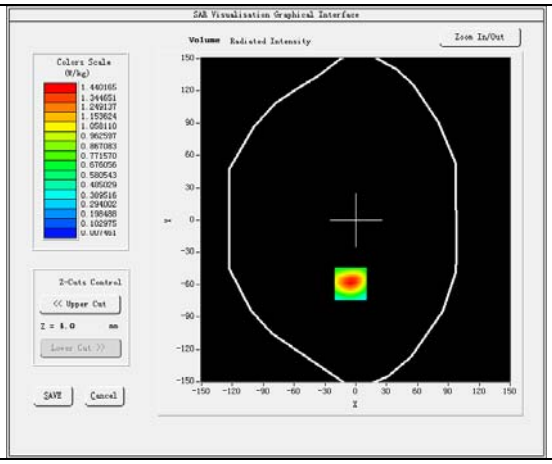
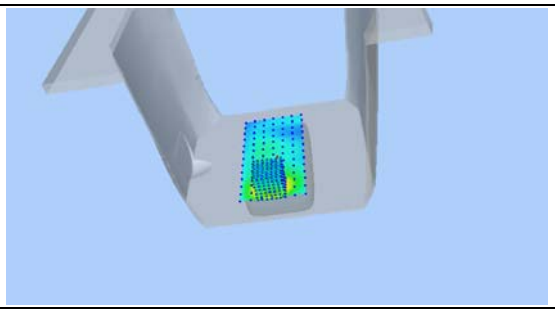
SAR 1g (W/Kg)	0.225
SAR 10g (W/Kg)	0.105
Power Drift (±5%):	-2.80

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4200	0.2436	0.1190	0.0601	0.0380	0.0177	0.0119



LTE Band VII_ 20M_QPSK(1,0)_Ch21350_Back Side_10mm

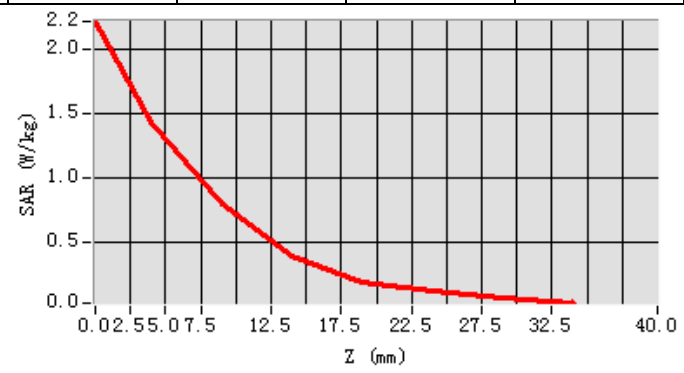
Date of measurement:	Nov. 15, 2017
Signal:	Communication System: LTE-FDD(SC-FDMA QPSK/16-QAM); Frequency: 2560.00MHz; Duty Cycle: 1:1.00
ConvF:	2.19
Liquid Parameters:	Relative permittivity (real part): 53.65; Conductivity (S/m):2.12;
Device Position:	Body
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-5.00, Y=-59.00
SAR Peak: 2.28 W/kg

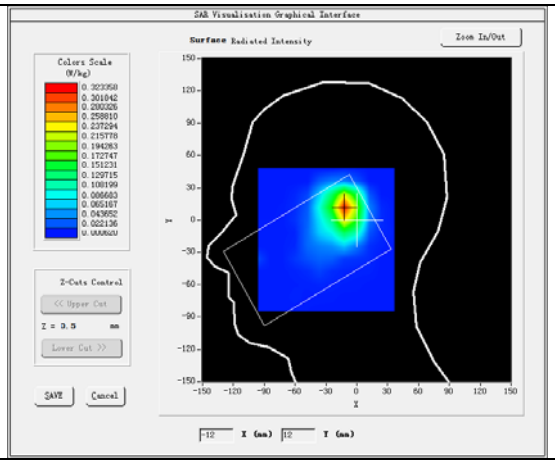
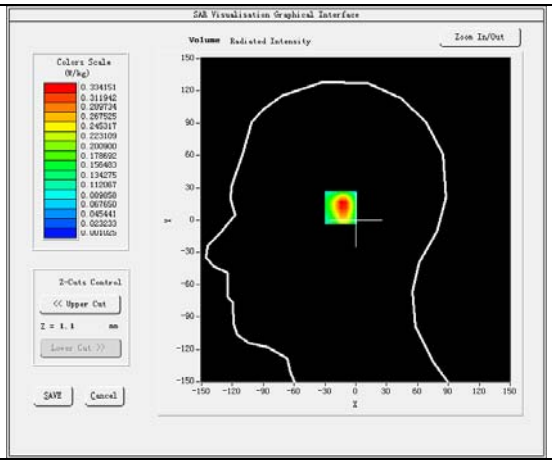
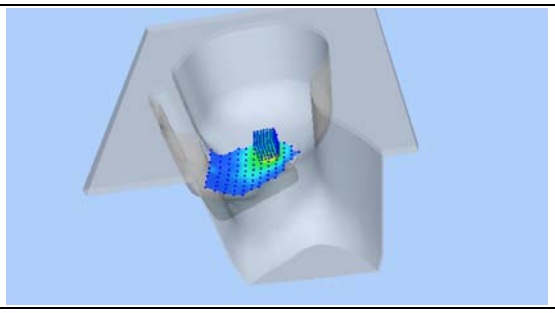
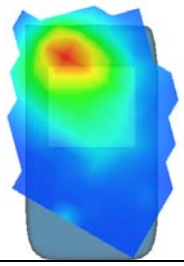
SAR 1g (W/Kg)	1.227
SAR 10g (W/Kg)	0.667
Power Drift (±5%):	1.31

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.2211	1.4402	0.7954	0.3915	0.1963	0.1273	0.0623



WLAN 2.4G_802.11b_Ch11_ Right Cheek

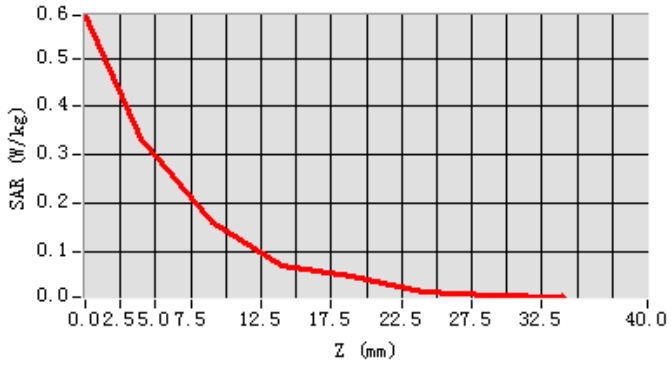
Date of measurement:	Nov. 27, 2017
Signal:	Communication System: WLAN 802.11a/b/g/n/ac; Frequency: 2462.00MHz; Duty Cycle: 1:1.00
ConvF:	2.18
Liquid Parameters:	Relative permittivity (real part): 39.77; Conductivity (S/m): 1.83;
Device Position:	Cheek
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-12.00, Y=12.00
SAR Peak: 0.58 W/kg

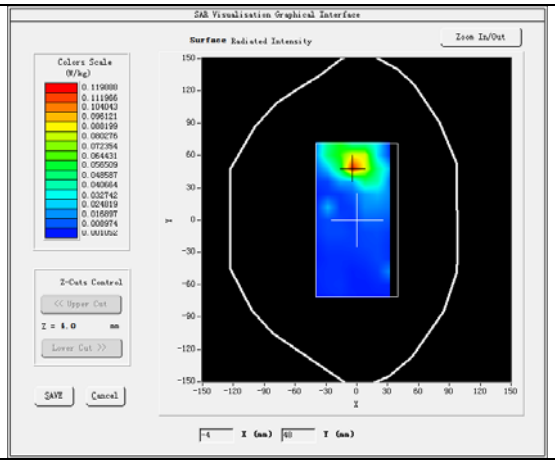
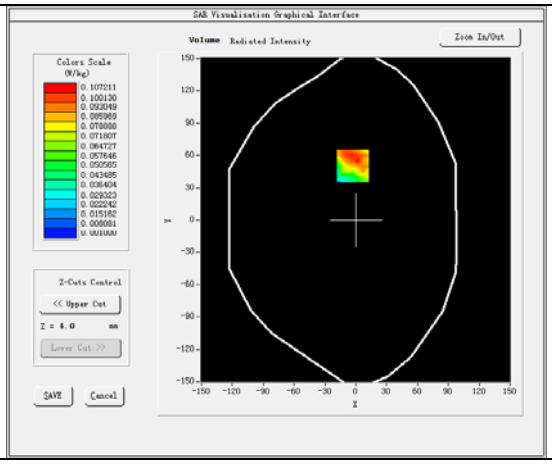
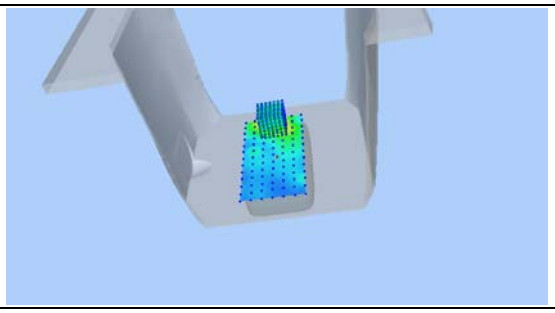
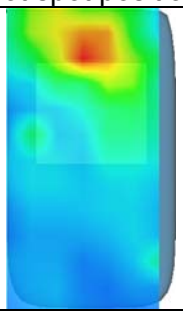
SAR 1g (W/Kg)	0.313
SAR 10g (W/Kg)	0.143
Power Drift (±5%):	-0.13

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.5884	0.3342	0.1604	0.0718	0.0485	0.0157	0.0094



WLAN 2.4G_802.11b_Ch11_Front Side _10mm

Date of measurement:	Nov. 28, 2017
Signal:	Communication System: WLAN 802.11a/b/g/n/ac; Frequency: 2462.00MHz; Duty Cycle: 1:1.00
ConvF:	2.27
Liquid Parameters:	Relative permittivity (real part): 52.49; Conductivity (S/m): 1.97;
Device Position:	Body
Area Scan:	dx=12mm dy=12mm, h=5.00mm
Zoom Scan:	7x7x7, dx=5mm dy=5mm dz=5mm, h=5.00mm

Surface SAR	Volume SAR
	
3D screen shot	Hot spot position
	

Maximum location: X=-3.00, Y=50.00
SAR Peak: 0.17 W/kg

SAR 1g (W/Kg)	0.097
SAR 10g (W/Kg)	0.055
Power Drift (±5%):	1.67

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.2124	0.1072	0.0393	0.0353	0.0131	0.0114	0.0042