FCC SAR TEST REPORT

Report No.:	SET2016-01884
Product:	LTE/WCDMA/GSM（GPRS） Mutil-Mode Digital Mobile Phone
Brand Name:	ZTE
Model No.:	Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510
FCC ID:	SRQ-BLADEA510
Applicant:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Shenzhen, China
Issued by:	CCIC-SET
Lab Location:	Electronic Testing Building, Shahe Road，Xili, Nanshan District, Shenzhen, 518055, P. R. China
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Test Report

Product. …….:	LTE/WCDMA/GSM（GPRS） Mutil-Mode Digital Mobile Phone
Model No. ……..:	Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510
Brand Name……..:	ZTE
FCC ID…….:	SRQ-BLADEA510
Applicant……..:	ZTE Corporation
Applicant Address…….:	ZTE Plaza, Keji Road South, Shenzhen, China
Manufacturer……:	ZTE Corporation
Manufacturer Address:	ZTE Plaza, Keji Road South, Shenzhen, China
Test Standards…….:	**47CFR § 2.1093-** Radiofrequency Radiation Exposure Evaluation: Portable Devices; **ANSI C95.1–1992:** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991) **IEEE 1528–2013:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
Test Result……:	Pass
Tested by ……..:	Mei Chun 2016-02-20 Chun Mei, Test Engineer
Reviewed by……:	Shuangwen Zhang 2016-02-20 Shuangwen Zhang,Senior Egineer
Approved by……:	Wu Lian 2016-02-20 Wu Li'an , Manager

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1. GENERAL CONDITIONS

1.1 This report only refers to the item that has undergone the test.

1.2 This report standalone does not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities.

1.3 This document is only valid if complete; no partial reproduction can be made without written approval of CCIC-SET

1.4 This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of CCIC-SET and the Accreditation Bodies, if it applies.

2. Administrative Date

2.1. Identification of the Responsible Testing Laboratory

Company Name:	CCIC-SET
Department:	EMC & RF Department
Address:	Electronic Testing Building, Shahe Road, Nanshan District, ShenZhen, P. R. China
Telephone:	+86-755-26629676
Fax:	+86-755-26627238
Responsible Test Lab Managers:	Mr. Wu Li'an

2.2. Identification of the Responsible Testing Location(s)

Company Name:	CCIC-SET
Address:	Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, P. R. China

2.3. Organization Item

CCIC-SET Report No.:	SET2016-01884
CCIC-SET Project Leader:	Mr. Li Sixiong
CCIC-SET Responsible for accreditation scope:	Mr. Wu Li'an
Start of Testing:	2016-01-18
End of Testing:	2016-01-29

2.4. Identification of Applicant

Company Name:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Shenzhen, China

2.5. Identification of Manufacture

Company Name:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Shenzhen, China

Notes: This data is based on the information by the applicant.

3. Equipment Under Test (EUT)

3.1. Identification of the Equipment under Test

Sample Name:	TD-LTE Digital Mobile Phone	
Model Name:	Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510	
Brand Name:	ZTE	
General description:	Support Band	GSM850MHz/1900MHz WCDMA 850MHz/1900MHz, LTE Band2/4/5/7/12/17,WIFI, BT
	Test Band	GSM 850MHz/ GSM 1900MHz, GPRS 850MHz/ GPRS 1900MHz, WCDMA 850MHz/1900MHz, LTE Band 2/4/5/7/12/17,WIFI 802.11b
	Multislot Class	GPRS: Class 12; EGPRS: Class 12
	GPRS Class	Class B
	Development Stage	Identical Prototype
	Accessories	Power Supply
	Battery type	3.80V 2750mAh
	WCDMA/CDMA Version	WCDMA: Rel.6/CDMA Rel.0/Rel.A
	Antenna type	Inner Antenna
	Operation mode	GSM / GPRS /WCDMA/CDMA/ LTE /WIFI
	Modulation mode	GSM(GMSK),UMTS(QPSK),LTE(QPSK,16QAM), WIFI(OFDM/DSSS)
	Max. RF Power	32.70dBm
	Max. SAR Value	Head: 1.036 W/kg; Body-Worn: 0.922 W/kg; Hotspot: 0.922 W/kg

NOTE:

a. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

b. This device supports GPRS operation up to class12 (max.uplin:4, max.downlink:4, total timeslots:5). This device supports EDGE operation up to class12(max.uplin:4, max.downlink:4, total timeslots:5)

4 SAR SUMMARY

Highest Standalone SAR Summary

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Head	GSM850	0.336	1.036
	GSM1900	0.235	
	WCDMA Band Ⅴ	0.331	
	WCDMA Band II	0.414	
	LTE Band 2	0.285	
	LTE Band 4	0.527	
	LTE Band 5	0.266	
	LTE Band 7	0.110	
	LTE Band 12	0.229	
	LTE Band 17	0.233	
	WIFI	1.036	
Body-worn Accessory (10mm Gap)	GSM850	0.676	0.922
	GSM1900	0.455	
	WCDMA Band Ⅴ	0.582	
	WCDMA Band II	0.567	
	LTE Band 2	0.734	
	LTE Band 4	0.922	
	LTE Band 5	0.476	
	LTE Band 7	0.739	
	LTE Band 12	0.429	
	LTE Band 17	0.450	
	WIFI	0.159	
Hotspot (10mm Gap)	GSM850	0.419	0.922
	GSM1900	0.921	
	WCDMA Band Ⅴ	0.582	
	WCDMA Band II	0.567	
	LTE Band 2	0.734	
	LTE Band 4	0.922	
	LTE Band 5	0.476	
	LTE Band 7	0.739	
	LTE Band 12	0.429	
	LTE Band 17	0.450	
	WIFI	0.162	

Highest Simultaneous SAR Summary

Exposure Position	Frequency Band	Highest Scaled 1g-SAR(W/kg)
Head	WWAN(LTE Band 4)&WIFI	1.563
Body-worn (10mmGap)	WWAN(LTE Band 4)&WIFI	1.046
Hotspot (10mmGap)	WWAN(LTE Band 4)&WIFI	1.046

5 Specific Absorption Rate (SAR)

5.1 Introduction

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

5.2 SAR Definition

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

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

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

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathrm{SAR} = C\frac{\delta T}{\delta t}$$

where C is the specific head capacity, δT is the temperature rise and δt the exposure duration, or related to the electrical field in the tissue by

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

where σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the rms electrical field strength.

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

5.3 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SATIMO. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

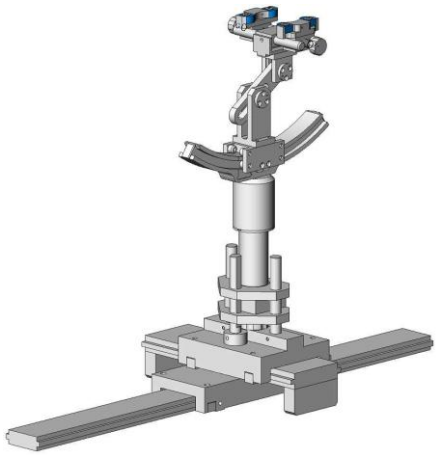
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

SAM Twin Phantom

5.4 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SATIMO as an integral part of the COMOSAR test system.

The device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder

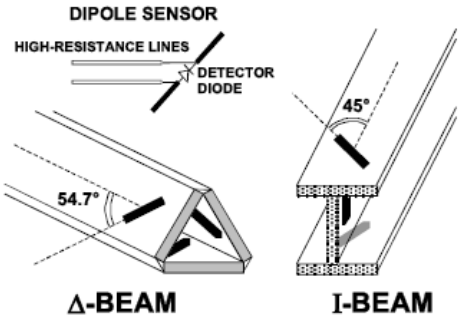
5.5 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	700 MHz to 3 GHz; Linearity: ± 0.5 dB (700 MHz to 3 GHz)
Directivity	± 0.25 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	1.5 µW/g to 100 mW/g; Linearity: ± 0.5 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 5 mm Distance from probe tip to dipole centers: <2.7 mm
Application	General dosimetry up to 3 GHz Dosimetry in strong gradient fields Compliance tests of TD-LTE Digital Mobile Phones
Compatibility	COMOSAR

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



6 OPERATIONAL CONDITIONS DURING TEST

6.1 Schematic Test Configuration

During SAR test, EUT was operating in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.The EUT was commanded to operate at maximum transmitting power.

The EUT should use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link was used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point should be lower than the output power level of the handset by at least 35 dB

6.2 SAR Measurement System

The SAR measurement system being used is the SATIMO system, the system is controlled remotely from a PC, which contains the software to control the robot and data acquisition equipment. The software also displays the data obtained from test scans.

In operation, the system first does an area (2D) scan at a fixed depth within the liquid from the inside wall of the phantom. When the maximum SAR point has been found, the system will then carry out a 3D scan centred at that point to determine volume averaged SAR level.

6.2.1 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness Power drifts in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Table 1: Recommended Dielectric Performance of Tissue

Ingredients (% by weight)	Frequency (MHz)											
	450		835		915		1900		2450		2600	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.46	52.4	41.05	56.0	54.9	40.4	62.7	73.2	55.24	64.49
Salt (Nacl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04	0.5	0.024
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0	0.0	0.0

Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0	44.45	32.25
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5	39.0	52.5
Conductivity (s/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78	1.96	2.16

MSL/HSL750 (Body and Head liquid for 650 – 850 MHz)

Item	Head Tissue Simulation Liquid HSL750 Muscle(body)Tissue Simulation Liquid MSL750			
H2O	Water, 35 – 58%			
Sucrese	Sugar, white, refined, 40-60%			
NaCl	Sodium Chloride, 0-6%			
Hydroxyethel-cellulsoe	Medium Viscosity (CAS# 9004-62-0), <0.3%			
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1-0.7%			
Frequency (MHz)	Head εr	Head σ(S/m)	Body εr	Bodyσ(S/m)
750	41.9	0.89	55.2	0.97

Note: The liquid of 700MHz&2600MHz typical liquid composition is provided by SATIMO.

Table 2 Recommended Tissue Dielectric Parameters

Frequency (MHz)	Head Tissue		Body Tissue	
	ε_r	σ(S/m)	ε_r	σ(S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

6.2.2 Simulate liquid

For measurements against the phantom head, the “cheek” and “tilt” position on both the left hand and the right hand sides of the phantom. For body-worn measurements, the EUT was tested against flat phantom representing the user body. The EUT was put on in the belt holder. Stimulate liquid that are used for testing at frequencies of GSM 850MHz/1900MHz, WCDMA850MHz/1700MHz/1900MHz, LTE Band2/4/5/7/12/17 and Wi-Fi 2.4GHz, which are made mainly of sugar, salt and water solutions may be left in the phantoms.

Table 3: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	750MHz	41.9±5%	0.89±5%
Validation value (Jan. 18th, 2016)	750MHz	41.71	0.88
Target value	850MHz	41.5±5%	0.90±5%
Validation value (Jan. 18th, 2016)	850MHz	41.36	0.88
Target value	1800 MHz	40.0±5%	1.40±5%
Validation value (Jan. 19th, 2016)	1800 MHz	39.75	1.39
Target value	1900MHz	40.0±5%	1.40±5%
Validation value (Jan. 19th, 2016)	1900MHz	39.85	1.39
Target value	2450MHz	39.2±5%	1.80±5%
Validation value (Jan. 20th, 2016)	2450MHz	38.94	1.79
Target value	2600MHz	39.0±5%	1.96±5%
Validation value (Jan. 20th, 2016)	2600MHz	38.89	1.93

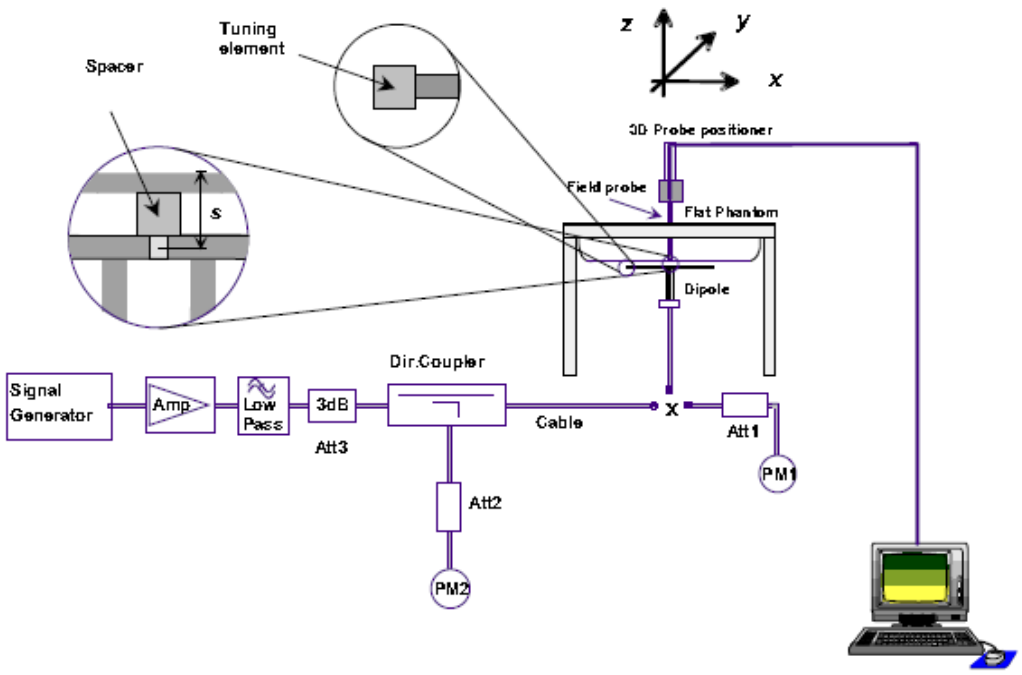
Table 4: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	750MHz	55.2±5%	0.97±5%
Validation value (Jan. 27th, 2016)	750MHz	55.01	0.95
Target value	850MHz	55.2±5%	0.97±5%
Validation value (Jan. 27th, 2016)	850MHz	55.32	0.95
Target value	1800 MHz	53.3±5%	1.52±5%
Validation value (Jan. 28th, 2016)	1800 MHz	53.37	1.50
Target value	1900MHz	53.3±5%	1.52±5%
Validation value (Jan. 28th, 2016)	1900MHz	53.14	1.52
Target value	2450MHz	52.7±5%	1.95±5%
Validation value (Jan. 29th, 2016)	2450MHz	52.53	1.94
Target value	2600MHz	52.5±5%	2.16±5%
Validation value (Jan. 29th, 2016)	2600MHz	52.56	2.15

6.3 Results of validation testing

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

The following procedure, recommended for performing validation tests using box phantoms is based on the procedures described in the IEEE standard P1528. Setup according to the setup diagram below :



With the SG and Amp and with directional coupler in place, set up the source signal at the relevant frequency and use a power meter to measure the power at the end of the SMA cable that you intend to connect to the balanced dipole. Adjust the SG to make this, say, 0.25W (24 dBm). If this level is too high to read directly with the power meter sensor, insert a calibrated attenuator (e.g. 10 or 20 dB) and make a suitable correction to the power meter reading.

Note 1: In this method, the directional coupler is used for monitoring rather than setting the exact feed power level. If, however, the directional coupler is used for power measurement, you should check the frequency range and power rating of the coupler and measure the coupling factor (referred to output) at the test frequency using a VNA.

Note 2: Remember that the use of a 3dB attenuator (as shown in Figure 8.1 of P1528) means that you need an RF amplifier of 2 times greater power for the same feed power. The other issue is the cable length. You might get up to 1dB of loss per meter of cable, so the cable length after the coupler needs to be quite short.

Note 3: For the validation testing done using CW signals, most power meters are suitable. However, if you are measuring the output of a modulated signal from either a signal generator or a handset, you must ensure that the power meter correctly reads the modulated signals.

The measured 1-gram averaged SAR values of the device against the phantom are provided in Tables 5 and Table 6. The humidity and ambient temperature of test facility were 64% and 23.2°C respectively. The body phantom were full of the body tissue simulating liquid. The EUT was supplied with full-charged battery for each measurement.

The distance between the back of the EUT and the bottom of the flat phantom is 10 mm (taking into account of the IEEE 1528 and the place of the antenna).

Table 5: Head SAR system validation (1g)

Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)	
			250 mW	1W
750MHz(Jan. 18th, 2016)	1:1	8.67±10%	2.10	8.40
835MHz(Jan. 18th, 2016)	1:1	9.77±10%	2.40	9.60
1800MHz(Jan. 19th, 2016)	1:1	38.67±10%	9.47	37.88
1900MHz(Jan. 19th, 2016)	1:1	40.37±10%	9.85	39.40
2450MHz(Jan. 20th, 2016)	1:1	53.60±10%	13.16	52.64
2600MHz((Jan. 20th, 2016)	1:1	56.19±10%	13.94	55.76

Table 6: Body SAR system validation (1g)

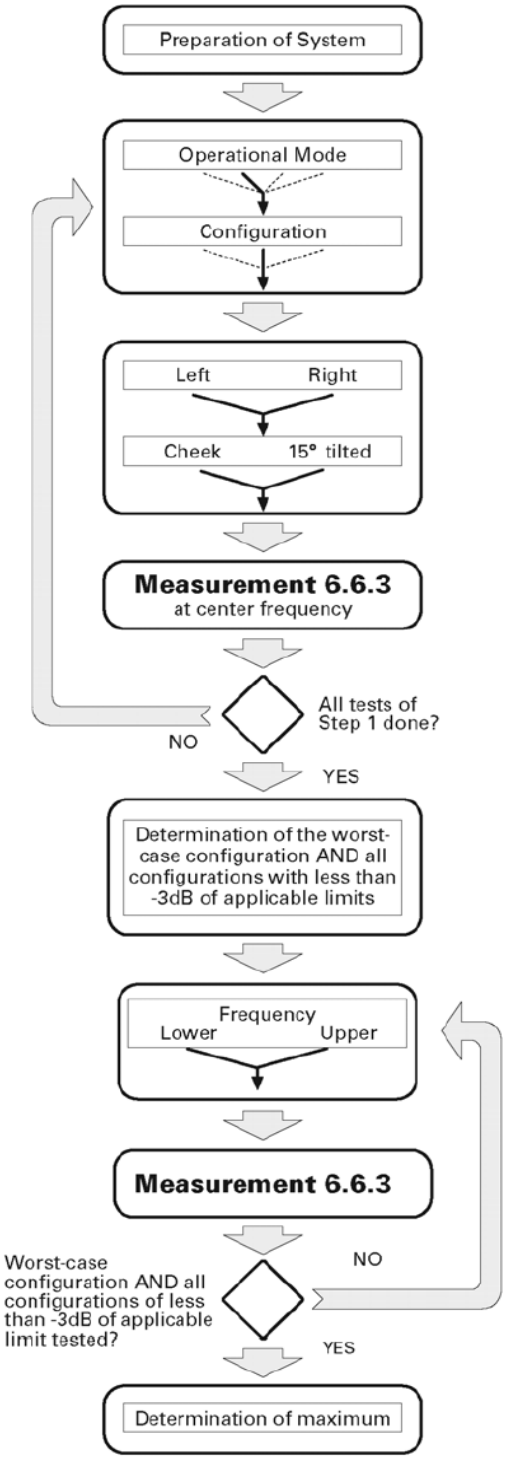
Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)	
			250 mW	1W
750MHz(Jan. 27th, 2016)	1:1	8.43±10%	2.05	8.20
835MHz(Jan. 27th, 2016)	1:1	10.31±10%	2.54	10.16
1800MHz(Jan. 28th, 2016)	1:1	40.07±10%	9.85	39.40
1900MHz(Jan. 28th, 2016)	1:1	40.81±10%	10.13	40.52
2450MHz(Jan. 29th, 2016)	1:1	52.66±10%	13.07	52.28
2600MHz((Jan. 29th, 2016)	1:1	57.55±10%	14.08	56.32

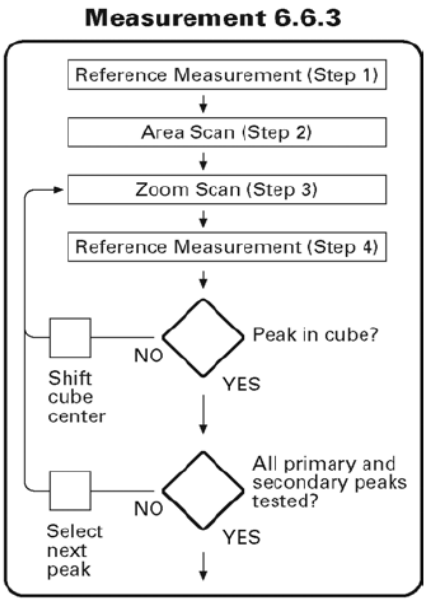
* Note: Target value was referring to the measured value in the calibration certificate of reference dipole.

Note: All SAR values are normalized to 1W forward power.

6.4 SAR measurement procedure

The SAR test against the head phantom was carried out as follow:





Establish a call with the maximum output power with a base station simulator, the connection between the EUT and the base station simulator is established via air interface.

After an area scan has been done at a fixed distance of 2mm from the surface of the phantom on the source side, a 3D scan is set up around the location of the maximum spot SAR. First, a point within the scan area is visited by the probe and a SAR reading taken at the start of testing. At the end of testing, the probe is returned to the same point and a

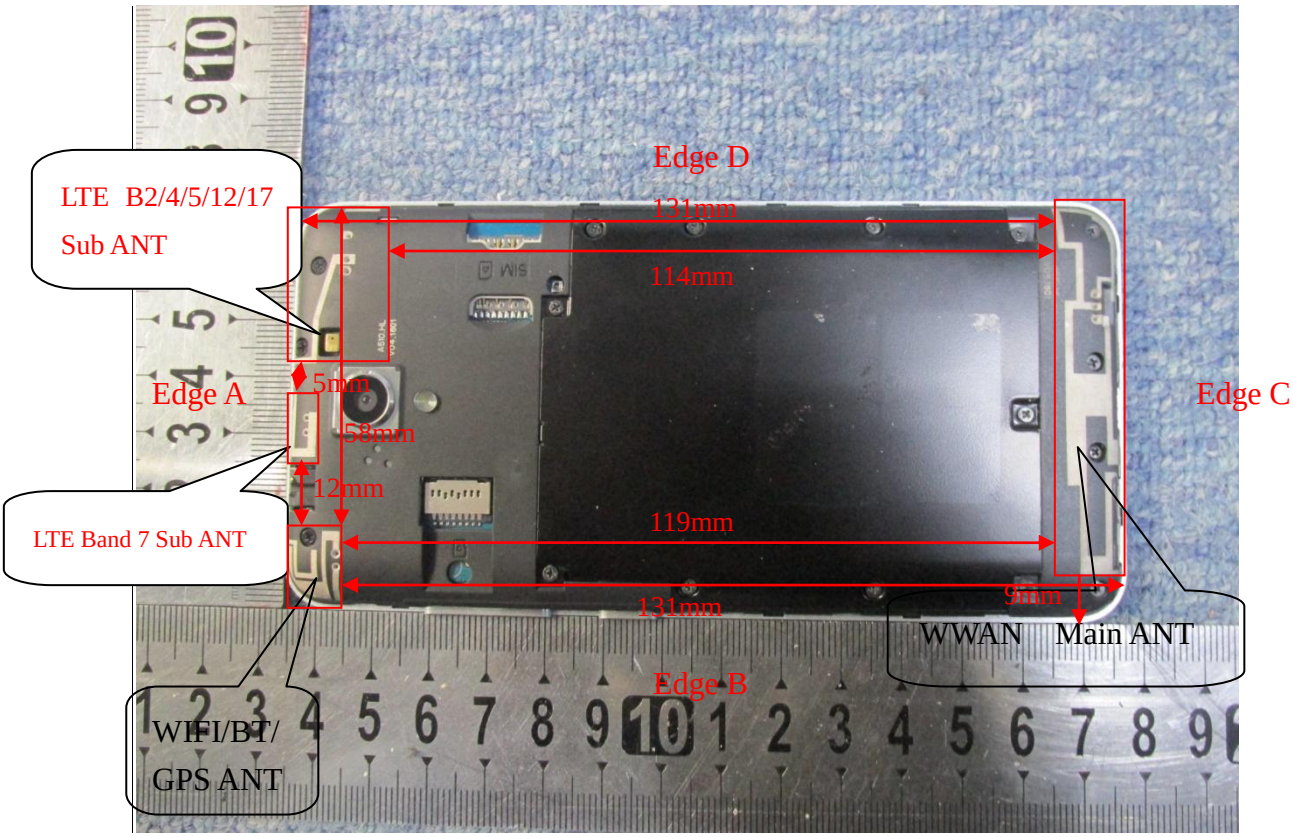
second reading is taken. Comparison between these start and end readings enables the power drift during measurement to be assessed.

Above is the scanning procedure flow chart and table from the IEEEp1528 standard. This is the procedure for which all compliant testing should be carried out to ensure that all variations of the device position and transmission behavior are tested.

For body-worn measurement, the EUT was tested under two position: face upward and back upward.

6.5 Transmitting antenna information

The GSM&WCDMA&LTE&CDMA&WIFI&BT antennas inside the EUT.



Antenna-to-User (Edge Side) distance (mm):

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Main Antenna	3	3	131	9	2	3
WIFI Antenna	3	3	2	2	131	58

The Body SAR measurement positions of each band are as below:

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Antenna Body-worn	Yes	Yes	No	No	No	No
WWAN Antenna hotspot	Yes	Yes	No	Yes	Yes	Yes
WIFI Antenna Body-worn	Yes	Yes	No	No	No	No
WIFI Antenna hotspot	Yes	Yes	Yes	Yes	No	No

Note: According to KDB 941225 D06 v02r01, when antenna-to-edge>2.5cm, SAR is not required.

7 CHARACTERISTICS OF THE TEST

7.1 Applicable Limit Regulations

47CFR § 2.1093- Radiofrequency Radiation Exposure Evaluation: Portable Devices;

ANSI C95.1–1992: Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)

IEEE 1528–2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

7.2 Applicable Measurement Standards

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this is in accordance with the following standards:

FCC 47 CFR Part2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2013
FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
FCC KDB 447498 D01 v06 General RF Exposure Guidance
FCC KDB 648474 D04 v01r03 Handset SAR
FCC KDB 865664 D01 v01r04 SAR Measurement 100MHz to 6GHz
FCC KDB 865664 D02 v01r02 SAR Exposure Reporting
FCC KDB 941225 D01 v03r01 3G SAR Procedures
FCC KDB 941225 D05 v02r05 SAR for LTE Devices
FCC KDB 941225 D06 v02r01 Hotspot Mode

8 LABORATORY ENVIRONMENT

The Ambient Conditions during SAR Test

Temperature	Min. = 22 ℃, Max. = 25 ℃
Atmospheric pressure	Min.=86 kPa, Max.=106 kPa
Relative humidity	Min. = 45%, Max. = 75%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

9.Conducted RF Output Power

9.1 GSM Conducted Power

GSM Conducted Power

Band		Burst Average Power (dBm)			Frame-Average Power (dBm)		
GSM850	TX Channel	128	190	251	128	190	251
	Frequency(MHz)	824.2	836.4	848.8	824.2	836.4	848.8
	GSM	32.59	32.64	32.70	23.56	23.61	23.67
	GPRS (Slot 1)	32.36	32.42	32.46	23.33	23.39	23.43
	GPRS (Slot 2)	29.54	29.46	29.51	23.52	23.44	23.49
	GPRS (Slot 3)	27.84	27.79	27.82	23.58	23.53	23.56
	GPRS (Slot 4)	26.12	26.07	26.10	23.11	23.06	23.09
	EDGE (Slot 1)	32.33	32.29	32.35	23.3	23.26	23.32
	EDGE (Slot 2)	29.42	29.37	29.39	23.4	23.35	23.37
	EDGE (Slot 3)	27.66	27.63	27.40	23.4	23.37	23.14
	EDGE (Slot 4)	25.88	25.92	25.91	22.87	22.91	22.9

Band		Burst Average Power (dBm)			Frame-Average Power (dBm)		
GSM1900	TX Channel	512	661	810	512	661	810
	Frequency(MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
	GSM	28.92	28.87	28.80	19.89	19.84	19.77
	GPRS (Slot 1)	28.78	28.69	28.73	19.75	19.66	19.7
	GPRS (Slot 2)	26.34	26.27	26.32	20.32	20.25	20.30
	GPRS (Slot 3)	24.56	24.59	24.58	20.30	20.35	20.32
	GPRS (Slot 4)	23.33	23.41	23.38	20.32	20.40	20.37
	EDGE (Slot 1)	28.75	28.71	28.86	19.72	19.68	19.83
	EDGE (Slot 2)	26.20	26.23	26.21	20.18	20.21	20.19
	EDGE (Slot 3)	24.41	24.32	24.38	20.15	20.06	20.12
	EDGE (Slot 4)	23.15	23.21	23.18	20.14	20.20	20.17

Note: Per KDB 447498 D01 v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.

For Head SAR testing, GSM should be evaluated, therefore the EUT was set in GSM Voice for GSM850 and GSM1900 due to its highest frame-average power.

For Body worn SAR testing, GSM should be evaluated, therefore the EUT was set in GSM Voice for GSM850 and GSM 1900 due to its highest frame-average power.

For hotspot mode SAR testing, GPRS and EDGE should be evaluated, therefore the EUT was set in GPRS850（**3**Tx slots）and GPRS1900 (4Tx slots) due to its highest frame-average power.

Timeslot consignations

No. Of Slots	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation	1Up4Down	2UpDown	3UpDown	4Up1Down
Duty Cycle	1:8	1:4	1:2.67	1:2
Crest Factor	-9.03dB	-6.02dB	-4.26dB	-3.01dB

9.2 WCDMA Conducted output Power

WCDMA conducted output power

Item	Band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	Subtest	dBm			dBm		
RMC 12.2kbps	Non	22.46	22.67	22.74	22.24	22.15	22.44
HSDPA	1	22.15	22.11	22.08	21.98	21.93	21.96
	2	21.95	21.87	21.91	21.79	21.83	21.77
	3	21.62	21.67	21.71	21.48	21.51	21.55
	4	21.71	21.82	21.75	21.47	21.51	21.48
HSUPA	1	22.19	22.13	22.07	21.84	21.89	21.91
	2	21.89	21.91	21.84	21.74	21.69	21.68
	3	21.71	21.65	21.68	21.75	21.77	21.81
	4	21.56	21.53	21.50	21.55	21.45	21.51
	5	21.67	21.71	21.62	21.62	21.57	21.63

Note:

1. WCDMA SAR was tested under PMC 12.2kbps with HSPA Inactive per KDB Publication 941225 D01.HSPA SAR was not requires since the average output power of the HSPA subtests was not more than 0.25dB higher than the RMC level and SAR was less than 1.2W/kg.
2. It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2dB more than specified by 3GPP, but also as low as 0dB according to the chipset implementation in this model.

9.3 LTE Conducted peak output Power

LTE Test Configurations

The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all frames.

1)Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2)MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

The allowed Maximum Power Reduction(MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3)A-MPR LTE procedures for SAR testing

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signaling Value of “NS_01” on the base station simulator.

4)LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test

requirements i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

1. LTE Band 2 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				18700	18900	19100
Frequency(MHz)				1860	1880	1900
20	QPSK	1	0	22.42	22.45	22.49
20		1	49	22.41	22.37	22.42
20		1	99	22.35	22.38	22.35
20		50	0	21.64	21.60	21.62
20		50	24	21.56	21.58	21.60
20		50	49	21.51	21.53	21.47
20		100	0	21.45	21.44	21.50
20	16QAM	1	0	21.12	21.15	21.14
20		1	49	21.07	21.12	21.13
20		1	99	21.12	21.14	21.09
20		50	0	20.65	20.78	20.74
20		50	24	20.51	20.59	20.65
20		50	49	20.55	20.52	20.54
20		100	0	20.51	20.52	20.52
Channel				18675	18900	19125
Frequency(MHz)				1857.5	1880	1902.5
15	QPSK	1	0	22.45	22.41	22.39
15		1	37	22.41	22.40	22.37
15		1	74	22.40	22.35	22.36
15		36	0	21.62	21.65	21.63
15		36	18	21.58	21.63	21.59
15		36	37	21.53	21.57	21.61
15		75	0	21.56	21.59	21.63
15	16QAM	1	0	21.19	21.15	21.14
15		1	37	21.13	21.10	21.12
15		1	74	21.05	21.12	21.11
15		36	0	20.63	20.71	20.62
15		36	18	20.65	20.62	20.59
15		36	37	20.61	20.64	20.71
15		75	0	20.57	20.52	20.58

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				18650	18900	19150
Frequency(MHz)				1855	1880	1905
10	QPSK	1	0	22.41	22.44	22.40
10		1	24	22.35	22.39	22.41
10		1	49	22.40	22.37	22.38
10		25	0	21.71	21.61	21.63
10		25	12	21.62	21.68	21.65
10		25	24	21.69	21.60	21.64
10		50	0	21.51	21.55	21.56
10	16QAM	1	0	21.20	21.21	21.20
10		1	24	21.16	21.19	21.11
10		1	49	21.15	21.12	21.08
10		25	0	20.72	20.75	20.74
10		25	12	20.65	20.68	20.72
10		25	24	20.59	20.56	20.62
10		50	0	20.51	20.52	20.52
Channel				18625	18900	19175
Frequency(MHz)				1852.5	1880	1907.5
5	QPSK	1	0	22.38	22.41	22.43
5		1	12	22.35	22.37	22.35
5		1	24	22.31	22.35	22.31
5		12	0	21.71	21.69	21.62
5		12	6	21.62	21.64	21.59
5		12	11	21.61	21.58	21.57
5		25	0	21.54	21.51	21.52
5	16QAM	1	0	21.20	21.12	21.21
5		1	12	21.12	21.11	21.08
5		1	24	21.15	21.10	21.09
5		12	0	20.66	20.64	20.61
5		12	6	20.57	20.55	20.53
5		12	11	20.54	20.51	20.55
5		25	0	20.50	20.55	20.47

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				18615	18900	19185
Frequency(MHz)				1851.5	1880	1908.5
3	QPSK	1	0	22.43	22.39	22.37
3		1	7	22.37	22.35	22.35
3		1	14	22.34	22.37	22.42
3		8	0	21.75	21.72	21.70
3		8	4	21.68	21.71	21.73
3		8	7	21.64	21.68	21.65
3		15	0	21.71	21.69	21.63
3	16QAM	1	0	21.21	21.19	21.12
3		1	7	21.12	21.07	21.10
3		1	14	21.04	21.08	21.11
3		8	0	20.52	20.51	20.55
3		8	4	20.55	20.57	20.52
3		8	7	20.44	20.39	20.44
3		15	0	20.47	20.42	20.40
Channel				18607	18900	19193
Frequency(MHz)				1850.7	1732.5	1909.3
1.4	QPSK	1	0	22.40	22.42	22.37
1.4		1	2	22.33	22.32	22.36
1.4		1	5	22.41	22.36	22.39
1.4		3	0	21.70	21.69	21.72
1.4		3	1	21.74	21.68	21.73
1.4		3	2	21.64	21.57	21.61
1.4		6	0	21.58	21.56	21.53
1.4	16QAM	1	0	21.20	21.17	21.15
1.4		1	2	21.15	21.10	21.14
1.4		1	5	21.07	21.12	21.04
1.4		3	0	20.55	20.51	20.47
1.4		3	1	20.54	20.48	20.55
1.4		3	2	20.50	20.47	20.43
1.4		6	0	20.48	20.41	20.44

2. LTE Band 4 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20050	20175	20300
Frequency(MHz)				1720	1732.5	1745
20	QPSK	1	0	22.41	22.48	22.45
20		1	49	22.39	22.35	22.39
20		1	99	22.28	22.27	22.25
20		50	0	21.52	21.54	21.57
20		50	24	21.61	21.55	21.61
20		50	49	21.58	21.62	21.55
20		100	0	21.61	21.56	21.57
20	16QAM	1	0	21.12	21.21	21.14
20		1	49	21.10	21.15	21.13
20		1	99	21.14	21.10	21.07
20		50	0	20.57	20.49	20.52
20		50	24	20.49	20.47	20.50
20		50	49	20.51	20.55	20.46
20		100	0	20.54	20.55	20.41
Channel				20025	20175	20325
Frequency(MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.40	22.36	22.38
15		1	37	22.36	22.31	22.32
15		1	74	22.30	22.27	22.23
15		36	0	21.65	21.57	21.59
15		36	18	21.58	21.56	21.57
15		36	37	21.56	21.50	21.54
15		75	0	21.58	21.56	21.62
15	16QAM	1	0	21.22	21.17	21.23
15		1	37	21.20	21.15	21.19
15		1	74	21.09	21.12	21.18
15		36	0	20.56	20.53	20.58
15		36	18	20.59	20.63	20.60
15		36	37	20.41	20.51	20.43
15		75	0	20.52	20.54	20.51

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20000	20175	20350
Frequency(MHz)				1715	1732.5	1750
10	QPSK	1	0	22.32	22.39	22.35
10		1	24	22.25	22.29	22.33
10		1	49	22.24	22.19	22.25
10		25	0	21.64	21.66	21.68
10		25	12	21.72	21.65	21.70
10		25	24	21.57	21.60	21.55
10		50	0	21.55	21.62	21.58
10	16QAM	1	0	21.13	21.15	21.24
10		1	24	21.11	21. 22	21.15
10		1	49	21.18	21.09	21.16
10		25	0	20.65	20.63	20.70
10		25	12	20.58	20.60	20.62
10		25	24	20.62	20.68	20.64
10		50	0	20.59	20.64	20.53
Channel				19975	20175	20375
Frequency(MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.44	22.41	22.37
5		1	12	22.35	22.32	22.33
5		1	24	22.31	22.23	22.25
5		12	0	21.62	21.57	21.62
5		12	6	21.57	21.60	21.58
5		12	11	21.55	21.53	21.67
5		25	0	21.63	21.58	21.59
5	16QAM	1	0	21.17	21.26	21.10
5		1	12	21.21	21.17	21.12
5		1	24	21.19	21.21	21.15
5		12	0	20.65	20.71	20.68
5		12	6	20.56	20.62	20.65
5		12	11	20.65	20.64	20.62
5		25	0	20.53	20.58	20.50

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				19965	20175	20385
Frequency(MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.36	22.34	22.38
3		1	7	22.31	22.30	22.33
3		1	14	22.29	22.25	22.27
3		8	0	21.67	21.61	21.56
3		8	4	21.60	21.55	21.58
3		8	7	21.58	21.62	21.65
3		15	0	21.55	21.59	21.61
3	16QAM	1	0	21.21	21.12	21.15
3		1	7	21.17	21.15	21.13
3		1	14	21.12	21.10	21.06
3		8	0	20.63	20.65	20.72
3		8	4	20.54	20.58	20.55
3		8	7	20.63	20.68	20.65
3		15	0	20.62	20.66	20.58
Channel				19957	20175	20393
Frequency(MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.35	22.31	22.30
1.4		1	2	22.31	22.30	22.29
1.4		1	5	22.25	22.29	22.23
1.4		3	0	21.61	21.58	21.55
1.4		3	1	21.57	21.63	21.58
1.4		3	2	21.56	21.57	21.61
1.4		6	0	21.55	21.56	21.59
1.4	16QAM	1	0	21.22	21.17	21.19
1.4		1	2	21.13	21.14	21.21
1.4		1	5	21.21	21.12	21.14
1.4		3	0	20.65	20.71	20.67
1.4		3	1	20.59	20.63	20.67
1.4		3	2	20.60	20.58	20.57
1.4		6	0	20.69	20.62	20.63

3. LTE Band 5 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20450	20525	20600
Frequency(MHz)				829	836.5	844
10	QPSK	1	0	23.12	23.19	23.15
10		1	24	23.05	23.12	23.13
10		1	49	23.12	23.09	23.10
10		25	0	22.61	22.59	22.64
10		25	12	22.52	22.56	22.60
10		25	24	22.57	22.60	22.55
10		50	0	22.55	22.62	22.58
10	16QAM	1	0	21.93	21.95	21.94
10		1	24	21.91	21.92	21.95
10		1	49	21.88	21.89	21.86
10		25	0	21.35	21.43	21.40
10		25	12	21.38	21.30	21.32
10		25	24	21.32	21.28	21.34
10		50	0	21.30	21.34	21.23
Channel				20425	20525	20625
Frequency(MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.08	23.14	23.10
5		1	12	23.05	23.12	23.06
5		1	24	23.06	23.09	23.10
5		12	0	22.54	22.56	22.52
5		12	6	22.55	22.53	22.51
5		12	11	22.54	22.58	22.55
5		25	0	22.51	22.58	22.52
5	16QAM	1	0	21.89	21.91	21.92
5		1	12	21.92	21.89	21.90
5		1	24	21.86	21.87	21.88
5		12	0	21.35	21.33	21.34
5		12	6	21.28	21.30	21.32
5		12	11	21.25	21.28	21.31
5		25	0	21.27	21.24	21.23

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20415	20525	20635
Frequency(MHz)				825.5	836.5	847.5
3	QPSK	1	0	23.05	23.08	23.03
3		1	7	23.04	23.02	23.01
3		1	14	23.03	23.04	23.07
3		8	0	22.47	22.51	22.46
3		8	4	22.40	22.45	22.48
3		8	7	22.38	22.42	22.45
3		15	0	22.37	22.34	22.41
3	16QAM	1	0	21.81	21.82	21.85
3		1	7	21.87	21.78	21.83
3		1	14	21.72	21.80	21.76
3		8	0	21.43	21.35	21.40
3		8	4	21.34	21.38	21.35
3		8	7	21.33	21.28	21.35
3		15	0	21.32	21.36	21.28
Channel				20407	20525	20643
Frequency(MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	23.11	23.13	23.08
1.4		1	2	23.06	23.07	23.11
1.4		1	5	23.09	23.06	23.13
1.4		3	0	22.51	22.48	22.52
1.4		3	1	22.47	22.53	22.48
1.4		3	2	22.56	22.47	22.51
1.4		6	0	22.47	22.50	22.53
1.4	16QAM	1	0	21.82	21.87	21.89
1.4		1	2	21.83	21.74	21.81
1.4		1	5	21.74	21.82	21.76
1.4		3	0	21.35	21.34	21.35
1.4		3	1	21.29	21.33	21.25
1.4		3	2	21.30	21.28	21.27
1.4		6	0	21.28	21.22	21.23

4. LTE Band 7 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20850	21100	21350
Frequency(MHz)				2510	2535	2560
20	QPSK	1	0	22.52	22.56	22.54
20		1	49	22.48	22.47	22.43
20		1	99	22.51	22.42	22.45
20		50	0	21.72	21.74	21.77
20		50	24	21.77	21.75	21.71
20		50	49	21.68	21.69	21.65
20		100	0	21.65	21.60	21.63
20	16QAM	1	0	21.20	21.21	21.15
20		1	49	21.24	21.22	21.23
20		1	99	21.18	21.17	21.18
20		50	0	20.77	20.75	20.72
20		50	24	20.69	20.67	20.70
20		50	49	20.64	20.61	20.66
20		100	0	20.70	20.65	20.71
Channel				20825	21100	21375
Frequency(MHz)				2507.5	2535	2562.5
15	QPSK	1	0	22.50	22.52	22.51
15		1	37	22.47	22.45	22.48
15		1	74	22.46	22.48	22.47
15		36	0	21.75	21.73	21.76
15		36	18	21.72	21.71	21.72
15		36	37	21.65	21.67	21.66
15		75	0	21.64	21.63	21.65
15	16QAM	1	0	21.22	21.25	21.19
15		1	37	21.24	21.22	21.15
15		1	74	21.17	21.15	21.14
15		36	0	20.75	20.74	20.79
15		36	18	20.69	20.68	20.72
15		36	37	20.65	20.66	20.64
15		75	0	20.71	20.65	20.67

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				20800	21100	21400
Frequency(MHz)				2505	2535	2565
10	QPSK	1	0	22.47	22.51	22.48
10		1	24	22.41	22.40	22.43
10		1	49	22.40	22.43	22.41
10		25	0	21.74	21.70	21.75
10		25	12	21.72	21.74	21.72
10		25	24	21.65	21.67	21.68
10		50	0	21.63	21.62	21.65
10	16QAM	1	0	21.13	21.20	21.15
10		1	24	21.20	21.12	21.21
10		1	49	21.15	21.10	21.15
10		25	0	20.70	20.64	20.63
10		25	12	20.61	20.65	20.64
10		25	24	20.55	20.50	20.55
10		50	0	20.50	20.55	20.53
Channel				20775	21100	21425
Frequency(MHz)				2502.5	2535	2567.5
5	QPSK	1	0	22.48	22.49	22.45
5		1	12	22.46	22.48	22.46
5		1	24	22.44	22.46	22.45
5		12	0	21.75	21.75	21.72
5		12	6	21.74	21.75	21.70
5		12	11	21.63	21.65	21.60
5		25	0	21.62	21.60	21.62
5	16QAM	1	0	21.20	21.24	21.23
5		1	12	21.25	21.22	21.20
5		1	24	21.19	21.14	21.18
5		12	0	20.74	20.70	20.72
5		12	6	20.65	20.61	20.70
5		12	11	20.65	20.66	20.60
5		25	0	20.59	20.60	20.67

5. LTE Band 12 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				23060	23095	23130
Frequency(MHz)				704	707.5	711
10	QPSK	1	0	23.22	23.29	23.25
10		1	24	23.24	23.22	23.23
10		1	49	23.22	23.19	23.20
10		25	0	22.61	22.56	22.58
10		25	12	22.52	22.58	22.60
10		25	24	22.47	22.50	22.55
10		50	0	22.45	22.52	22.48
10	16QAM	1	0	21.83	21.85	21.84
10		1	24	21.81	21.82	21.85
10		1	49	21.78	21.79	21.76
10		25	0	21.35	21.33	21.30
10		25	12	21.28	21.20	21.22
10		25	24	21.22	21.28	21.24
10		50	0	21.20	21.24	21.20
Channel				23035	23095	23155
Frequency(MHz)				701.5	707.5	713.5
5	QPSK	1	0	23.20	23.25	23.20
5		1	12	23.21	23.23	23.18
5		1	24	23.22	23.21	23.19
5		12	0	22.59	22.55	22.60
5		12	6	22.55	22.59	22.57
5		12	11	22.52	22.53	22.51
5		25	0	22.47	22.51	22.46
5	16QAM	1	0	21.83	21.88	21.85
5		1	12	21.84	21.86	21.81
5		1	24	21.79	21.75	21.79
5		12	0	21.32	21.35	21.30
5		12	6	21.28	21.23	21.26
5		12	11	21.25	21.21	21.27
5		25	0	21.21	21.25	21.22

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				23025	23095	23165
Frequency(MHz)				700.5	707.5	714.5
3	QPSK	1	0	23.18	23.23	23.22
3		1	7	23.16	23.20	23.15
3		1	14	23.21	23.18	23.17
3		8	0	22.53	22.54	22.59
3		8	4	22.51	22.55	22.56
3		8	7	22.57	22.54	22.53
3		15	0	22.48	22.50	22.45
3	16QAM	1	0	21.80	21.83	21.81
3		1	7	21.82	21.85	21.79
3		1	14	21.78	21.77	21.75
3		8	0	21.30	21.34	21.35
3		8	4	21.27	21.26	21.28
3		8	7	21.24	21.23	21.26
3		15	0	21.23	21.24	21.20
Channel				23017	23095	23173
Frequency(MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	23.16	23.20	23.18
1.4		1	2	23.15	23.18	23.16
1.4		1	5	23.19	23.16	23.14
1.4		3	0	22.50	22.53	22.54
1.4		3	1	22.48	22.51	22.46
1.4		3	2	22.52	22.44	22.49
1.4		6	0	22.46	22.49	22.48
1.4	16QAM	1	0	21.82	21.80	21.84
1.4		1	2	21.80	21.75	21.77
1.4		1	5	21.76	21.74	21.73
1.4		3	0	21.29	21.33	21.35
1.4		3	1	21.25	21.21	21.23
1.4		3	2	21.26	21.23	21.28
1.4		6	0	21.21	21.24	21.25

6. LTE Band 17 Conducted Power Test Verdict:

BW(MHz)	Modulation	RB Size	RB Offset	Power(dBm) Low Ch./Freq.	Power(dBm) Middle Ch./Freq.	Power(dBm) High Ch./Freq.
Channel				23780	23790	23800
Frequency(MHz)				709	710	711
10	QPSK	1	0	23.18	23.24	23.23
10		1	24	23.19	23.16	23.09
10		1	49	23.12	23.10	23.14
10		25	0	22.72	22.71	22.76
10		25	12	22.67	22.36	22.64
10		25	24	22.61	22.65	22.71
10		50	0	22.69	22.66	22.67
10	16QAM	1	0	22.24	22.19	22.17
10		1	24	22.16	22.18	22.13
10		1	49	22.20	22.25	22.22
10		25	0	21.71	21.66	21.65
10		25	12	21.67	21.65	21.71
10		25	24	21.61	21.64	21.66
10		50	0	21.63	21.56	21.59
Channel				23755	23790	23825
Frequency(MHz)				706.5	710	713.5
5	QPSK	1	0	23.22	23.14	23.20
5		1	12	23.09	23.13	23.16
5		1	24	23.14	23.10	23.15
5		12	0	22.60	22.63	22.67
5		12	6	22.56	22.52	22.57
5		12	11	22.50	22.54	22.59
5		25	0	22.54	22.49	22.52
5	16QAM	1	0	22.21	22.23	22.18
5		1	12	22.23	22.17	22.22
5		1	24	22.19	22.15	22.15
5		12	0	21.60	21.65	21.67
5		12	6	21.62	21.55	21.59
5		12	11	21.61	21.54	21.58
5		25	0	21.57	21.51	21.52

WLAN 2.4GHz Band Conducted Power

Band	Channel/Freq.(MHz)	Data Rates (Mbps)	Out Power (dBm)
802.11b	1(2412)	1	19.27
	6(2437)	1	19.85
	11(2462)	1	19.49
802.11g	1(2412)	6	18.55
	6(2437)	6	18.92
	11(2462)	6	18.36
802.11n(HT20)	1(2412)	MCS0	18.90
	6(2437)	MCS0	19.08
	11(2462)	MCS0	18.53

Bluetooth Output Power

Channel	Frequency (MHz)	BT3.0 Output Power(dBm)		
		GFSK	π /4-DQPSK	8-DPSK
CH 0	2402	4.71	3.50	3.67
CH 39	2441	5.38	4.64	4.63
CH 78	2480	4.58	3.82	3.99

Channel	Frequency (MHz)	BT4.0 Output Power(dBm)
		GFSK
CH 0	2402	-2.81
CH 20	2442	-1.70
CH 39	2480	-2.61

SAR test Exclusion and estimate SAR calculation:

Note:

1. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50mm 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
   (1) f(GHz) is the RF channel transmit frequency in GHz
   (2) Power and distance are round to the nearest mW and mm before calculation
   (3) The result is rounded to one decimal place for comparison
   (4) If the test separation distance(antenna-user) is < 5mm, 5mm is used for excluded SAR calculation
   (5)

BT3.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
5.5	3.548	5	2.45	1.111

Per KDB 447498 D01v06 exclusion thresholds is 1.111<3, RF exposure evaluation is not required.

BT estimated SAR value=Exclusion Thresholds/7.5=1.111/7.5=**0.148W/Kg**

BT3.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
5.5	3.548	10	2.45	0.555

Per KDB 447498 D01v06 exclusion thresholds is 0.555<3, RF exposure evaluation is not required.
BT estimated SAR value=Exclusion Thresholds/7.5=0.555/7.5=**0.074W/Kg**

BT4.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
-1.0	0.794	5	2.45	0.249

Per KDB 447498 D01v06 exclusion thresholds is 0.249<3, RF exposure evaluation is not required.

BT estimated SAR value=Exclusion Thresholds/7.5=0.249/7.5=0.033W/Kg

BT4.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
-1.0	0.794	10	2.45	0.124

Per KDB 447498 D01v06 exclusion thresholds is 0.124<3, RF exposure evaluation is not required.
BT estimated SAR value=Exclusion Thresholds/7.5=0.124/7.5=0.124W/Kg
The estimated SAR value is used for simultaneous transmission analysis.

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
2. Per KDB447498 D01v06, 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. Per KDB941225 D06 v02r01, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. As the manufacture required, the separation distance use 5mm for Hotspot mode.
4. Per KDB 865664 D01v01r04,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.
5. Per KDB865664 D02 v01r02, 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 D for details).
6. Per KDB941225 D01 v03r01, when multiple slots can be used, the GPRS/EDGE slot configuration with the highest frame–averaged output power was selected for SAR testing.
7. Per KDB941225 D01 v03r01, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.
8. Per KDB248227 D01 v02r02, 802.11g /11n-HT20/11n-HT40 is not required. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤1.2W/Kg. Thus the SAR can be excluded.

9.3. Scaling Factor calculation

Operation Mode	Channel	Output Power(dBm)	Tune up Power in tolerance(dBm)	Scaling Factor
GSM 850	128	32.59	32.0 ± 1.0	1.099
	190	32.64	32.0 ± 1.0	1.086
	251	32.70	32.0 ± 1.0	1.072
GPRS 850(3Tx)	128	27.84	27.0 ± 1.0	1.038
	190	27.79	27.0 ± 1.0	1.050
	251	27.82	27.0 ± 1.0	1.042
GSM1900	512	28.92	28.0 ± 1.0	1.019
	661	28.87	28.0 ± 1.0	1.030
	810	28.80	28.0 ± 1.0	1.047
GPRS1900(4Tx)	512	23.33	23.0 ± 0.5	1.040
	661	23.41	23.0 ± 0.5	1.021
	810	23.38	23.0 ± 0.5	1.028
WCDMA1900	9262	22.24	21.5 ± 1.0	1.062
	9400	22.15	21.5 ± 1.0	1.084
	9538	22.44	21.5 ± 1.0	1.014
WCDMA850	4132	22.46	22.0 ± 1.0	1.132
	4175	22.67	22.0 ± 1.0	1.079
	4233	22.74	22.0 ± 1.0	1.062
LTE B2 20MHz 1RB#0	18700	22.42	21.5 ± 1.0	1.019
	18900	22.45	21.5 ± 1.0	1.012
	19100	22.49	21.5 ± 1.0	1.002
LTE B2 20MHz 50RB#0	18700	21.64	21.0 ± 1.0	1.086
	18900	21.60	21.0 ± 1.0	1.096
	19100	21.62	21.0 ± 1.0	1.091
LTE B4 20MHz 1RB#0	20050	22.41	21.5 ± 1.0	1.021
	20175	22.48	21.5 ± 1.0	1.005
	20300	22.45	21.5 ± 1.0	1.012
LTE B4 20MHz 50RB#49	20050	21.58	21.0 ± 1.0	1.102
	20175	21.62	21.0 ± 1.0	1.091
	20300	21.55	21.0 ± 1.0	1.109
LTE B5 10MHz 1RB#0	20450	23.12	22.5 ± 1.0	1.091
	20525	23.19	22.5 ± 1.0	1.074
	20600	23.15	22.5 ± 1.0	1.084
LTE B5 10MHz	20450	22.61	22.0 ± 1.0	1.094

25RB#0	20525	22.59	22.0 ± 1.0	1.099
	20600	22.64	22.0 ± 1.0	1.086
LTE B7 20MHz 1RB#0	20850	22.52	22.0 ± 1.0	1.117
	21100	22.56	22.0 ± 1.0	1.107
	21350	22.54	22.0 ± 1.0	1.112
LTE B7 20MHz 50RB#24	20850	21.77	21.0 ± 1.0	1.054
	21100	21.75	21.0 ± 1.0	1.059
	21350	21.71	21.0 ± 1.0	1.069
LTE B12 10MHz 1RB#0	23060	23.22	22.5 ± 1.0	1.067
	23095	23.29	22.5 ± 1.0	1.050
	23130	23.25	22.5 ± 1.0	1.059
LTE B12 10MHz 25RB#0	23060	22.61	22.0 ± 1.0	1.094
	23095	22.56	22.0 ± 1.0	1.107
	23130	22.58	22.0 ± 1.0	1.102
LTE B17 10MHz 1RB#0	23780	23.18	22.5 ± 1.0	1.076
	23790	23.24	22.5 ± 1.0	1.062
	23800	23.23	22.5 ± 1.0	1.064
LTE B17 10MHz 25RB#0	23780	22.72	22.0 ± 1.0	1.067
	23790	22.71	22.0 ± 1.0	1.069
	23800	22.76	22.0 ± 1.0	1.057
WIFI 802.11b	1	19.27	19.0 ± 1.0	1.183
	6	19.85	19.0 ± 1.0	1.035
	11	19.49	19.0 ± 1.0	1.125
BT	39	5.38	4.5 ± 1.0	1.028

Note: for LTE power tolerance, only QPSK modulation mode was provide here.

Simultaneous SAR

No.	Transmitter Combinations	Scenario Supported or not	Supported for Mobile Hotspot or not
1	GSM(Voice)+GSM(Data)	No	No
2	WCDMA(Voice)+WCDMA(Data)	No	No
3	GSM(Voice)+ WCDMA(Data)	No	No
4	WCDMA(Voice)+GSM(Data)	No	No
5	GSM(Voice)+ WCDMA(Voice)	No	No
6	GSM(Voice)+Wifi	Yes	No
7	WCDMA(Voice) +Wifi	Yes	No
8	GSM(Voice)+ BT	Yes	No
9	WCDMA(Voice) + BT	Yes	No
10	GSM(Data)+wifi	Yes	Yes
11	WCDMA(Data) +wifi	Yes	Yes
12	LTE(Data)+GSM(Voice/Data)	No	No
13	LTE(Data)+WCDMA(Voice/Data)	No	No
14	LTE(Data)+WIFI	Yes	Yes

10 TEST RESULTS

10.1 Summary of SAR Measurement Results

Table 7: SAR Values of GSM 850MHz Band

Temperature: 23.0~23.5°C, humidity: 62~64%.							
Test Positions			Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
				SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek		251/848.8	**0.313**	1.072	**0.336**	**1**
	Tilt 15 degrees		251/848.8	0.282	1.072	0.302	--
Left Side of Head	Cheek		251/848.8	0.232	1.072	0.249	**--**
	Tilt 15 degrees		251/848.8	0.226	1.072	0.242	--
Body-worn (10mm Separation)	GSM	Face Upward	251/848.8	0.284	1.072	0.304	--
		Back Upward	251/848.8	**0.631**	1.072	**0.676**	**2**
Hotspot (10mm Separation)	GPRS (3Tx)	Face Upward	128/824.2	0.257	1.038	0.267	--
		Back Upward	128/824.2	**0.404**	1.038	**0.419**	**3**
		Edge B	128/824.2	0.257	1.038	0.267	--
		Edge C	128/824.2	0.071	1.038	0.074	--
		Edge D	128/824.2	0.178	1.038	0.185	--

Table 8: SAR Values of GSM1900 MHz Band

Temperature: 23.0~23.5°C, humidity: 62~64%.							
Test Positions			Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
				SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek		512/1850.2	**0.231**	1.019	**0.235**	**4**
	Tilt 15 degrees		512/1850.2	0.099	1.019	0.101	--
Left Side of Head	Cheek		512/1850.2	0.181	1.019	0.184	--
	Tilt 15 degrees		512/1850.2	0.165	1.019	0.168	--
Body-worn (10mm Separation)	GSM	Face Upward	512/1850.2	0.383	1.019	0.390	--
		Back Upward	512/1850.2	**0.447**	1.019	**0.455**	**5**
Hotspot (10mm Separation)	GPRS (4Tx)	Face Upward	661/1880	0.733	1.021	0.748	--
		Back Upward	512/1850.2	0.859	1.021	0.877	--
		Back Upward Repeat	512/1850.2	0.857	1.021	0.875	--
		Back Upward	661/1880	**0.902**	1.021	**0.921**	**6**
		Back Upward Repeat	661/1880	0.901	1.021	0.920	--
		Back Upward	810/1909.8	0.887	1.021	0.906	--
		Back Upward Repeat	810/1909.8	0.884	1.021	0.903	--
		Edge B	661/1880	0.216	1.021	0.221	--
		Edge C	661/1880	0.161	1.021	0.164	--
		Edge D	661/1880	0.257	1.021	0.262	--

Table 9: SAR Values of WCDMA850

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg), 1g	Scaled Factor	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek	4233/846.6	**0.312**	1.062	**0.331**	**7**
	Tilt 15 degrees	4233/846.6	0.248	1.062	0.263	--
Left Side of Head	Cheek	4233/846.6	0.224	1.062	0.238	--
	Tilt 15 degrees	4233/846.6	0.188	1.062	0.200	--
Body-worn (10mm Separation)	Face Upward	4233/846.6	0.277	1.062	0.294	--
	Back Upward	4233/846.6	**0.548**	1.062	**0.582**	**8**
Hotspot (10mm Separation)	Face Upward	4233/846.6	0.277	1.062	0.294	--
	Back Upward	4233/846.6	**0.548**	1.062	**0.582**	**8**
	Edge B	4233/846.6	0.306	1.062	0.325	--
	Edge C	4233/846.6	0.081	1.062	0.086	--
	Edge D	4233/846.6	0.193	1.062	0.205	--

Table 10: SAR Values of WCDMA1900

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek	9538/1907.6	0.225	1.014	0.228	--
	Tilt 15 degrees	9538/1907.6	0.124	1.014	0.126	--
Left Side of Head	Cheek	9538/1907.6	**0.408**	1.014	**0.414**	**9**
	Tilt 15 degrees	9538/1907.6	0.222	1.014	0.225	--
Body-worn (10mm Separation)	Face Upward	9538/1907.6	**0.559**	1.014	**0.567**	**10**
	Back Upward	9538/1907.6	0.488	1.014	0.495	--
Hotspot (10mm Separation)	Face Upward	9538/1907.6	**0.559**	1.014	**0.567**	**10**
	Back Upward	9538/1907.6	0.488	1.014	0.495	--
	Edge B	9538/1907.6	0.193	1.014	0.196	--
	Edge C	9538/1907.6	0.291	1.014	0.295	--
	Edge D	9538/1907.6	0.306	1.014	0.310	--

Table 11: SAR Values of LTE Band 2, 20MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	19100/1900	**0.284**	1.002	**0.285**	**11**
	Tilt 15 degrees	19100/1900	0.164	1.002	0.164	--
Left Side of Head	Cheek	19100/1900	0.240	1.002	0.240	--
	Tilt 15 degrees	19100/1900	0.175	1.002	0.175	--
Body (10mm Separation) Body-worn	Face Upward	19100/1900	0.341	1.002	0.342	--
	Back Upward	19100/1900	**0.733**	1.002	**0.734**	**12**
Body (10mm Separation) Hotspot	Face Upward	19100/1900	0.341	1.002	0.342	--
	Back Upward	19100/1900	**0.733**	1.002	**0.734**	**12**
	Edge B	19100/1900	0.188	1.002	0.188	**--**
	Edge C	19100/1900	0.343	1.002	0.344	**--**
	Edge D	19100/1900	0.198	1.002	0.198	--
50%RB #0						
Right Side of Head	Cheek	18700/1860	0.262	1.086	0.285	--
	Tilt 15 degrees	18700/1860	0.145	1.086	0.157	--
Left Side of Head	Cheek	18700/1860	0.222	1.086	0.241	--
	Tilt 15 degrees	18700/1860	0.162	1.086	0.176	--
Body (10mm Separation) Body-worn	Face Upward	18700/1860	0.333	1.086	0.362	--
	Back Upward	18700/1860	0.673	1.086	0.731	--
Body (10mm Separation) Hotspot	Face Upward	18700/1860	0.333	1.086	0.362	--
	Back Upward	18700/1860	0.673	1.086	0.731	--
	Edge B	18700/1860	0.176	1.086	0.191	
	Edge C	18700/1860	0.331	1.086	0.359	--
	Edge D	18700/1860	0.179	1.086	0.194	--

Table 12: SAR Values of LTE Band 4 , 20MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	20175/1732.5	0.311	1.005	0.313	--
	Tilt 15 degrees	20175/1732.5	0.277	1.005	0.278	--
Left Side of Head	Cheek	20175/1732.5	**0.524**	1.005	**0.527**	**13**
	Tilt 15 degrees	20175/1732.5	0.318	1.005	0.320	--
Body (10mm Separation) Body-worn	Face Upward	20175/1732.5	0.546	1.005	0.549	--
	Back Upward	20050/1720	0.807	1.021	0.824	--
	Back Upward Repeat	20050/1720	0.806	1.021	0.823	--
	Back Upward	20175/1732.5	**0.917**	1.005	**0.922**	**14**
	Back Upward Repeat	20175/1732.5	0.812	1.005	0.816	--
	Back Upward	20300/1745	0.846	1.012	0.856	--
	Back Upward Repeat	20300/1745	0.842	1.012	0.852	--
Body (10mm Separation) Hotspot	Face Upward	20175/1732.5	0.546	1.005	0.549	--
	Back Upward	20050/1720	0.807	1.021	0.824	--
	Back Upward Repeat	20050/1720	0.806	1.021	0.823	--
	Back Upward	20175/1732.5	**0.917**	1.005	**0.922**	**14**
	Back Upward Repeat	20175/1732.5	0.812	1.005	0.816	--
	Back Upward	20300/1745	0.846	1.012	0.856	--
	Back Upward Repeat	20300/1745	0.842	1.012	0.852	--
	Edge B	20175/1732.5	0.182	1.005	0.183	--
	Edge C	20175/1732.5	0.397	1.005	0.399	--
	Edge D	20175/1732.5	0.285	1.005	0.286	--
50%RB #0						
Right Side of Head	Cheek	20175/1732.5	0.286	1.091	0.312	--
	Tilt 15 degrees	20175/1732.5	0.234	1.091	0.255	--
Left Side of Head	Cheek	20175/1732.5	0.486	1.091	0.530	--
	Tilt 15 degrees	20175/1732.5	0.268	1.091	0.292	--
Body (10mm Separation) Body-worn	Face Upward	20175/1732.5	0.502	1.091	0.548	--
	Back Upward	20175/1732.5	0.732	1.091	0.799	--
Body (10mm Separation) Hotspot	Face Upward	20175/1732.5	0.502	1.091	0.548	--
	Back Upward	20175/1732.5	0.732	1.091	0.799	--
	Edge B	20175/1732.5	0.163	1.091	0.178	
	Edge C	20175/1732.5	0.364	1.091	0.397	--
	Edge D	20175/1732.5	0.234	1.091	0.255	--

Table 13: SAR Values of LTE Band 5,10MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	20525/836.5	**0.248**	1.074	**0.266**	**15**
	Tilt 15 degrees	20525/836.5	0.184	1.074	0.198	--
Left Side of Head	Cheek	20525/836.5	0.180	1.074	0.193	--
	Tilt 15 degrees	20525/836.5	0.168	1.074	0.180	--
Body (10mm Separation) Body-worn	Face Upward	20525/836.5	0.220	1.074	0.236	--
	Back Upward	20525/836.5	**0.443**	1.074	**0.476**	**16**
Body (10mm Separation) Hotspot	Face Upward	20525/836.5	0.220	1.074	0.236	--
	Back Upward	20525/836.5	**0.443**	1.074	**0.476**	**16**
	Edge B	20525/836.5	0.238	1.074	0.256	--
	Edge C	20525/836.5	0.044	1.074	0.047	--
	Edge D	20525/836.5	0.136	1.074	0.146	--
50%RB #0						
Right Side of Head	Cheek	20600/844	0.241	1.086	0.262	--
	Tilt 15 degrees	20600/844	0.167	1.086	0.181	--
Left Side of Head	Cheek	20600/844	0.166	1.086	0.180	--
	Tilt 15 degrees	20600/844	0.151	1.086	0.164	--
Body (10mm Separation) Body-worn	Face Upward	20600/844	0.204	1.086	0.222	--
	Back Upward	20600/844	0.413	1.086	0.449	--
Body (10mm Separation) Hotspot	Face Upward	20600/844	0.204	1.086	0.222	--
	Back Upward	20600/844	0.413	1.086	0.449	--
	Edge B	20600/844	0.226	1.086	0.245	
	Edge C	20600/844	0.031	1.086	0.034	--
	Edge D	20600/844	0.125	1.086	0.136	--

Table 14: SAR Values of LTE Band 7,20MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	21100/2535	0.072	1.107	0.080	--
	Tilt 15 degrees	21100/2535	0.042	1.107	0.046	--
Left Side of Head	Cheek	21100/2535	**0.099**	1.107	**0.110**	**17**
	Tilt 15 degrees	21100/2535	0.037	1.107	0.041	--
Body (10mm Separation) Body-worn	Face Upward	21100/2535	0.318	1.107	0.352	--
	Back Upward	21100/2535	**0.668**	1.107	**0.739**	**18**
Body (10mm Separation) Hotspot	Face Upward	21100/2535	0.318	1.107	0.352	--
	Back Upward	21100/2535	**0.668**	1.107	**0.739**	**18**
	Edge B	21100/2535	0.047	1.107	0.052	--
	Edge C	21100/2535	0.484	1.107	0.536	--
	Edge D	21100/2535	0.165	1.107	0.183	--
50%RB #0						
Right Side of Head	Cheek	20850/2510	0.066	1.054	0.070	--
	Tilt 15 degrees	20850/2510	0.028	1.054	0.030	--
Left Side of Head	Cheek	20850/2510	0.073	1.054	0.077	--
	Tilt 15 degrees	20850/2510	0.031	1.054	0.033	--
Body (10mm Separation) Body-worn	Face Upward	20850/2510	0.279	1.054	0.294	--
	Back Upward	20850/2510	0.634	1.054	0.668	--
Body (10mm Separation) Hotspot	Face Upward	20850/2510	0.279	1.054	0.294	--
	Back Upward	20850/2510	0.634	1.054	0.668	--
	Edge B	20850/2510	0.038	1.054	0.040	
	Edge C	20850/2510	0.426	1.054	0.449	--
	Edge D	20850/2510	0.138	1.054	0.145	--

Table 15: SAR Values of LTE Band 12,20MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	23095/707.5	**0.218**	1.050	**0.229**	**19**
	Tilt 15 degrees	23095/707.5	0.202	1.050	0.212	--
Left Side of Head	Cheek	23095/707.5	0.206	1.050	0.216	--
	Tilt 15 degrees	23095/707.5	0.185	1.050	0.194	--
Body (10mm Separation) Body-worn	Face Upward	23095/707.5	0.214	1.050	0.225	**--**
	Back Upward	23095/707.5	**0.409**	1.050	**0.429**	**20**
Body (10mm Separation) Hotspot	Face Upward	23095/707.5	0.214	1.050	0.225	--
	Back Upward	23095/707.5	**0.409**	1.050	**0.429**	**20**
	Edge B	23095/707.5	0.223	1.050	0.234	**--**
	Edge C	23095/707.5	0.036	1.050	0.038	**--**
	Edge D	23095/707.5	0.146	1.050	0.153	--
50%RB #0						
Right Side of Head	Cheek	23060/704	0.209	1.094	0.229	--
	Tilt 15 degrees	23060/704	0.195	1.094	0.213	--
Left Side of Head	Cheek	23060/704	0.194	1.094	0.212	--
	Tilt 15 degrees	23060/704	0.168	1.094	0.184	--
Body (10mm Separation) Body-worn	Face Upward	23060/704	0.204	1.094	0.223	--
	Back Upward	23060/704	0.388	1.094	0.424	--
Body (10mm Separation) Hotspot	Face Upward	23060/704	0.204	1.094	0.223	--
	Back Upward	23060/704	0.388	1.094	0.424	--
	Edge B	23060/704	0.215	1.094	0.235	
	Edge C	23060/704	0.026	1.094	0.028	--
	Edge D	23060/704	0.131	1.094	0.143	--

Table 16: SAR Values of LTE Band 17,10MHz, QPSK

Temperature: 23.0~23.5°C, humidity: 62~64%.						
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR (W/Kg),1g	Scaled Factor	Scaled SAR(W/Kg),1g	
1RB #0						
Right Side of Head	Cheek	23790/710	**0.219**	1.062	**0.233**	**21**
	Tilt 15 degrees	23790/710	0.171	1.062	0.182	--
Left Side of Head	Cheek	23790/710	0.181	1.062	0.192	--
	Tilt 15 degrees	23790/710	0.192	1.062	0.204	--
Body (10mm Separation) Body-worn	Face Upward	23790/710	0.236	1.062	0.251	**--**
	Back Upward	23790/710	**0.424**	1.062	**0.450**	**22**
Body (10mm Separation) Hotspot	Face Upward	23790/710	0.236	1.062	0.251	--
	Back Upward	23790/710	**0.424**	1.062	**0.450**	**22**
	Edge B	23790/710	0.210	1.062	0.223	**--**
	Edge C	23790/710	0.041	1.062	0.044	**--**
	Edge D	23790/710	0.134	1.062	0.142	--
50%RB #0						
Right Side of Head	Cheek	23800/711	0.205	1.057	0.217	--
	Tilt 15 degrees	23800/711	0.159	1.057	0.168	--
Left Side of Head	Cheek	23800/711	0.168	1.057	0.178	--
	Tilt 15 degrees	23800/711	0.173	1.057	0.183	--
Body (10mm Separation) Body-worn	Face Upward	23800/711	0.221	1.057	0.234	--
	Back Upward	23800/711	0.403	1.057	0.426	--
Body (10mm Separation) Hotspot	Face Upward	23800/711	0.221	1.057	0.234	--
	Back Upward	23800/711	0.403	1.057	0.426	--
	Edge B	23800/711	0.201	1.057	0.212	
	Edge C	23800/711	0.031	1.057	0.033	--
	Edge D	23800/711	0.128	1.057	0.135	--

Table 17: SAR Values of Wi-Fi 802.11b

Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)			Plot No.
			SAR(W/Kg) 1g	Scaled Factor	Scaled SAR(W/Kg) ,1g	
Right Side of Head	Cheek	6/2437	0.314	1.035	0.325	--
	Tilt 15 degrees	6/2437	0.424	1.035	0.439	--
Left Side of Head	Cheek	1/2412	0.813	1.183	0.962	--
	Cheek Repeat	1/2412	0.802	1.183	0.949	--
	Cheek	6/2437	0.928	1.035	0.960	--
	Cheek Repeat	6/2437	0.922	1.035	0.954	--
	Cheek	11/2462	0.908	1.125	1.022	--
	Cheek Repeat	11/2462	0.897	1.125	1.009	--
	Tilt 15 degrees	1/2412	0.872	1.183	1.032	--
	Tilt 15 degrees Repeat	1/2412	0.870	1.183	1.029	--
	Tilt 15 degrees	6/2437	**1.001**	1.035	**1.036**	**23**
	Tilt 15 degrees Repeat	6/2437	1.000	1.035	1.035	--
	Tilt 15 degrees	11/2462	0.852	1.125	0.959	--
	Tilt 15 degrees Repeat	11/2462	0.851	1.125	0.957	--
Body-worn (10mm Separation)	Face Upward	6/2437	**0.154**	1.035	**0.159**	**24**
	Back Upward	6/2437	0.120	1.035	0.124	--
Hotspot (10mm Separation)	Face Upward	6/2437	0.154	1.035	0.159	--
	Back Upward	6/2437	0.120	1.035	0.124	--
	Edge A	6/2437	**0.157**	1.035	**0.162**	**25**
	Edge B	6/2437	0.021	1.035	0.022	--

Note: When the 1-g SAR for the mid-band channel or the channel with the Highest output power satisfy the following conditions, testing of the other channels in the band is not required.(Per KDB 447498 D01 General RF Exposure Guidance v06)

- ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg, when the transmission band is ≥ 200 MHz

10.2 Simultaneous Transmissions Analysis

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 6 of this report. Maximum localized SAR is **below** exposure limits specified in the relevant standards.

Test Position		Right Cheek	Right Title	Left Cheek	Left Tilt
Head MAX 1-g SAR(W/Kg)	GSM850	0.336	0.302	0.249	0.242
	GSM1900	0.235	0.101	0.184	0.168
	WCDMA850	0.331	0.263	0.238	0.200
	WCDMA1900	0.228	0.126	0.414	0.225
	LTE Band2	0.285	0.164	0.240	0.175
	LTE Band4	0.313	0.278	0.527	0.320
	LTE Band5	0.266	0.198	0.193	0.180
	LTE Band7	0.080	0.046	0.110	0.041
	LTE Band12	0.229	0.212	0.216	0.194
	LTE Band17	0.233	0.182	0.192	0.204
	WIFI 802.11b	0.325	0.439	1.022	1.036
	BT	*0.148	*0.148	*0.148	*0.148
BT Simultaneous ∑1-g SAR(W/Kg)		0.484	0.450	0.675	0.468
WiFi Simultaneous ∑1-g SAR(W/Kg)		0.661	0.741	1.549	1.356

Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Head).

Test Position		Face	Back	Edge A	Edge B	Edge C	Edge D
Body-worn 10mm separation MAX 1-g SAR(W/Kg)	GSMS850	0.304	0.676	--	--	--	--
	GSM1900	0.390	0.455	--	--	--	--
	WCDMA850	0.294	0.582	--	--	--	--
	WCDMA1900	0.567	0.495	--	--	--	--
	LTE Band2	0.342	0.734	--	--	--	--
	LTE Band4	0.549	0.922	--	--	--	--
	LTE Band5	0.236	0.476	--	--	--	--
	LTE Band7	0.352	0.739	--	--	--	--
	LTE Band12	0.225	0.429	--	--	--	--
	LTE Band17	0.251	0.450	--	--	--	--
	WIFI 802.11b	0.159	0.124	--	--	--	--
	BT	*0.074	*0.074	--	--	--	--
BT Simultaneous ∑1-g SAR(W/Kg)		0.641	0.996	--	--	--	--
WiFi Simultaneous ∑1-g SAR(W/Kg)		0.726	1.046	--	--	--	--

Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Body).

Test Position		Face	Back	Edge A	Edge B	Edge C	Edge D
Hotspot 10mm separation MAX 1-g SAR(W/Kg)	GPRS850	0.267	0.419	--	0.267	0.074	0.185
	GPRS1900	0.748	0.921	--	0.221	0.164	0.262
	WCDMA 850	0.294	0.582	--	0.325	0.086	0.205
	WCDMA 1900	0.567	0.495	--	0.196	0.295	0.310
	LTE Band2	0.342	0.734	--	0.188	0.343	0.198
	LTE Band4	0.549	0.922	--	0.183	0.399	0.286
	LTE Band5	0.236	0.476	--	0.256	0.047	0.146
	LTE Band7	0.352	0.739	--	0.052	0.536	0.183
	LTE Band12	0.225	0.429	--	0.234	0.038	0.153
	LTE Band17	0.251	0.450	--	0.223	0.044	0.142
	WIFI 802.11b	0.159	0.124	0.162	0.022	--	--
	BT	*0.074	*0.074	*0.074	*0.074	*0.074	*0.074
BT Simultaneous ∑1-g SAR(W/Kg)		0.822	0.996	--	0.399	0.610	0.384
WiFi Simultaneous ∑1-g SAR(W/Kg)		0.907	1.046	--	0.347	--	--

Simultaneous Tx Combination of GSM/WCDMA/CDMA/LTE and WIFI (Body).

The estimated SAR value with * Signal

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required

11 Measurement Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	– Probe Calibration	B	5.8	N	1	1	5.8	∞
2	– Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞
3	–Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	– Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	– Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	– System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	3	N	1	1	3.00	
8	– Readout Electronics	B	0.5	N	1	1	0.50	∞
9	– Response Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
10	– Integration Time	B	3.0	R	$\sqrt{3}$	1	1.73	∞
11	– RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	– Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	– Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	– Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞
	Uncertainties of the DUT							
15	– Position of the DUT	A	2.6	N	$\sqrt{3}$	1	2.6	5
16	– Holder of the DUT	A	3	N	$\sqrt{3}$	1	3.0	5

17	– Output Power Variation –SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.89	∞
Phantom and Tissue Parameters								
18	– Phantom Uncertainty(shape and thickness tolerances)	B	4	R	$\sqrt{3}$	1	2.31	∞
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	– Liquid Conductivity Target –tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	– Liquid Conductivity –measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	– Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	– Liquid Permittivity –measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.63	
Expanded uncertainty (Confidence interval of 95 %)				K=2			21.26	

System Check Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	– Probe Calibration	B	5.8	N	1	1	5.8	∞
2	– Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞
3	–Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	– Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	– Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	– System Detection Limits	B	1	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	0	N	1	1	0.00	

8	– Readout Electronics	B	0.5	N	1	1	0.50	∞
9	– Response Time	B	0.00	R	$\sqrt{3}$	1	0.00	∞
10	– Integration Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
11	– RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	– Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	– Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	– Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞
	Uncertainties of the DUT							
15	Deviation of experimental source from numberical source	A	4	N	1	1	4.00	5
16	Input Power and SAR drift measurement	A	5	R	$\sqrt{3}$	1	2.89	5
17	Dipole Axis to Liquid Distance	B	2	R	$\sqrt{3}$	1	1.2	∞
Phantom and Tissue Parameters								
18	– Phantom Uncertainty(shape and thickness tolerances)	B	4	R	$\sqrt{3}$	1	2.31	∞
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	– Liquid Conductivity Target –tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	– Liquid Conductivity –measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	– Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	– Liquid Permittivity –measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.15	
Expanded uncertainty (Confidence interval of 95 %)				K=2			20.29	

12 MAIN TEST INSTRUMENTS

EQUIPMENT	TYPE	Series No.	Calibration Date	calibration period
System Simulator	E5515C	GB 47200710	2015/06/10	1 Year
System Simulator	CMW500	130805	2015/08/10	1 Year
SAR Probe	SATIMO	SN_0413_EP166	2015/08/10	1 Year
SAR Probe	SATIMO	SN09/13 EP169	2015/05/04	1 Year
Dipole	SID750	SN 23/15 DIP 0G750-378	2015/06/01	1Year
Dipole	SID835	SN09/13 DIP0G835-217	2014/08/28	2 Year
Dipole	SID1800	SN09/13 DIP1G800-216	2014/08/28	2 Year
Dipole	SID1900	SN09/13 DIP1G900-218	2014/08/28	2 Year
Dipole	SID2450	SN09/13 DIP2G450-220	2014/08/28	2 Year
Dipole	SID2600	SN32/14 DIP2G600-338	2014/08/12	2 Year
Vector Network Analyzer	ZVB8	A0802530	2015/06/08	1 Year
Signal Generator	SMR27	A0304219	2015/06/08	1 Year
Power Meter	NRP2	A140401673	2015/03/27	1 Year
Power Sensor	NPR-Z11	1138.3004.02-114072-nq	2015/03/27	1 Year
Amplifier	Nucletudes	143060	2015/03/27	1 Year
Directional Coupler	DC6180A	305827	2015/03/27	1 Year
Power Meter	NRVS	A0802531	2015/03/27	1 Year
Power Sensor	NRV-Z4	100069	2015/03/27	1 Year
Multimeter	Keithley-2000	4014020	2015/03/27	1 Year

ANNEX A

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2016-01884

TD-LTE Digital Mobile Phone

Type Name: Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510

Hardware Version: u66A

Software Version: MX_TEL_BLADE_A510V1.0.0B01

TEST SETUP

This Annex consists of 7 pages

Date of Report: 2016-02-20

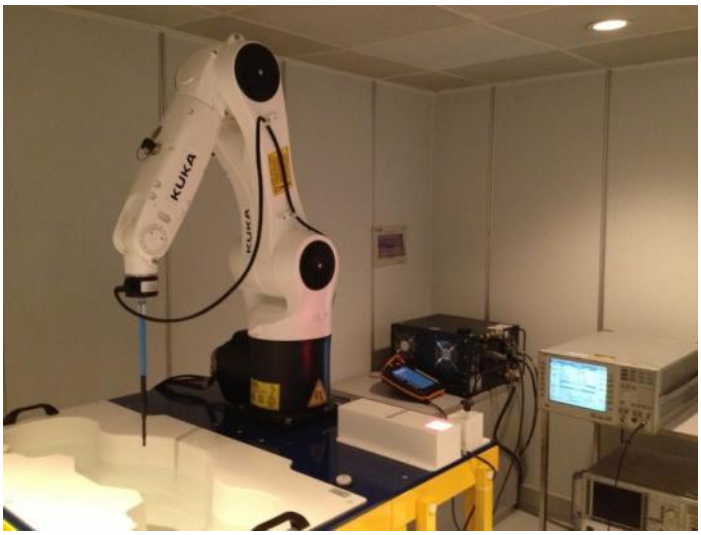


Fig.1 COMO SAR Test System

Fig.2 body liquid deep(⩾15mm)

Fig.3 Head liquid deep(⩾15mm)

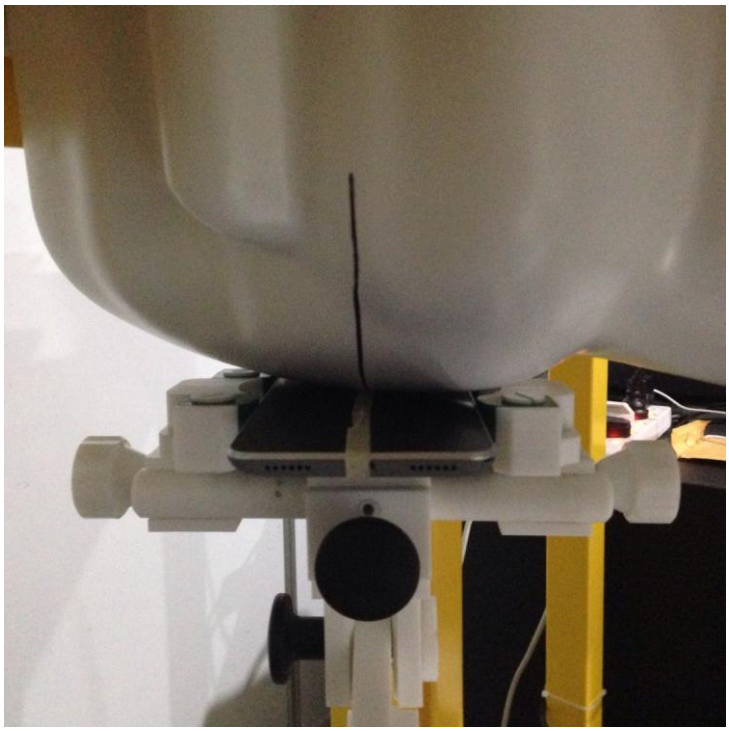


Fig.4 Right_Cheek

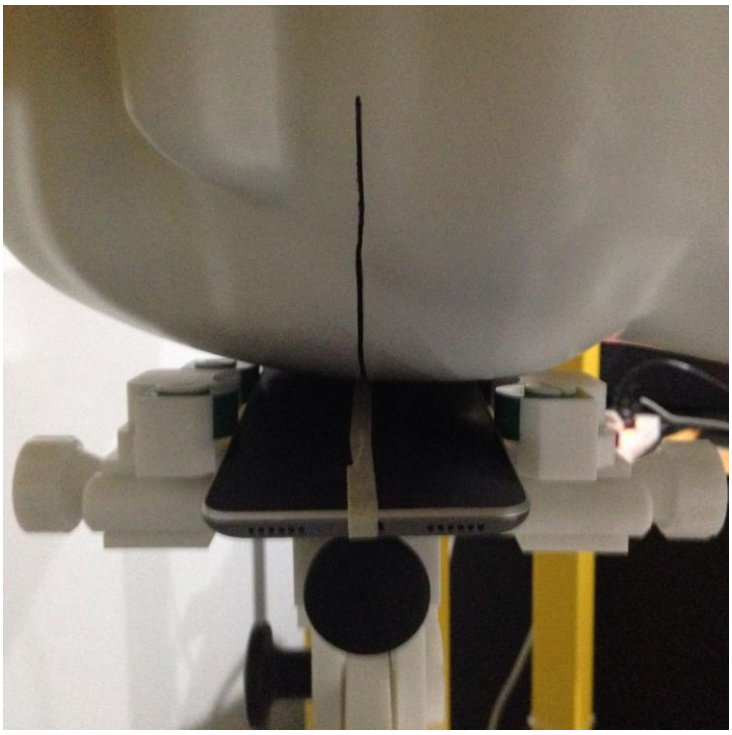


Fig.5 Right_Tilt

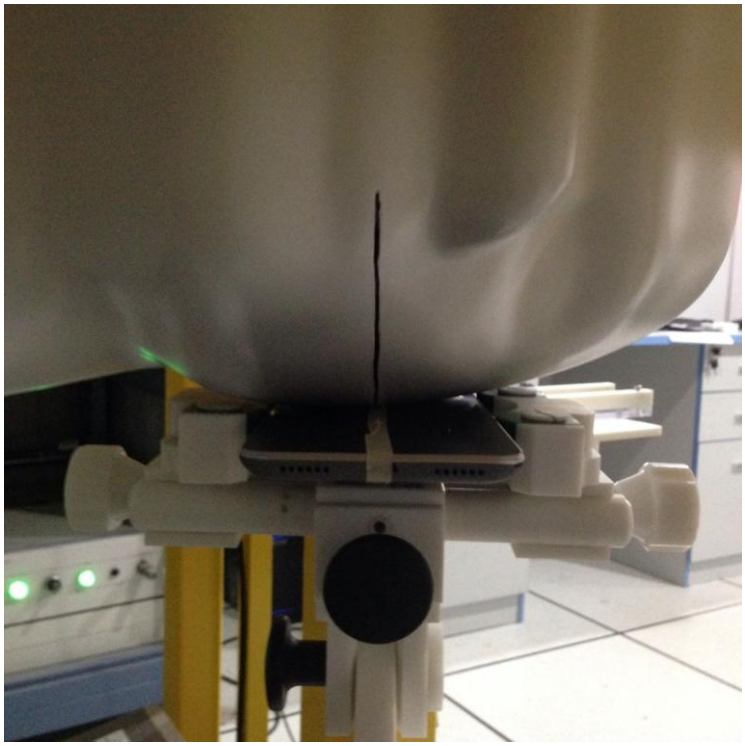


Fig.6 Left Cheek

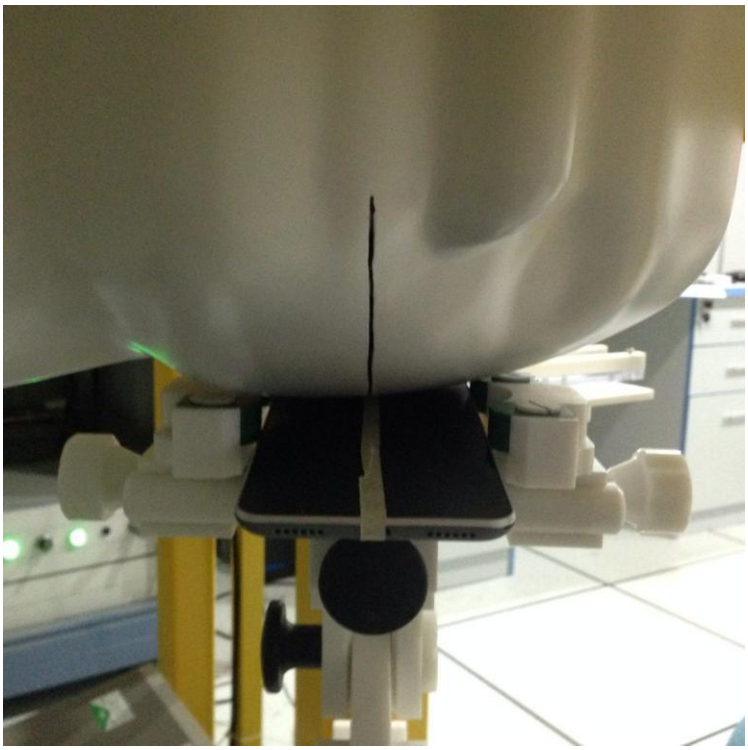


Fig.7 Left_Tilt

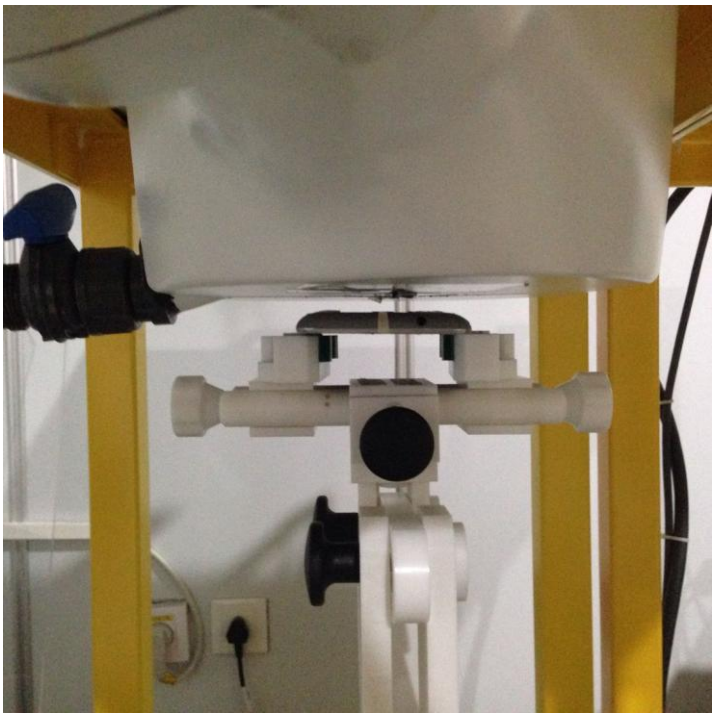


Fig.8 Body (Back upside,10mm separation)

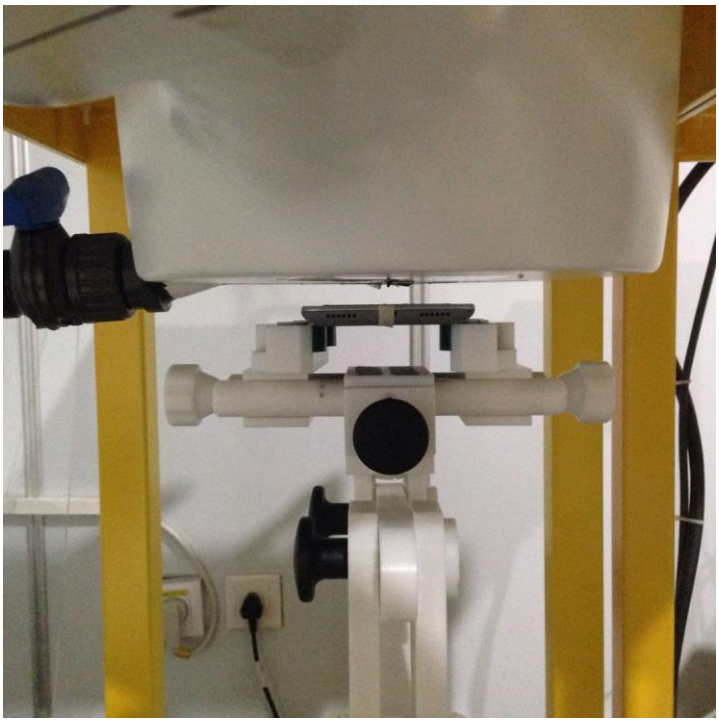


Fig.9 Body (Face upside,10mm separation)

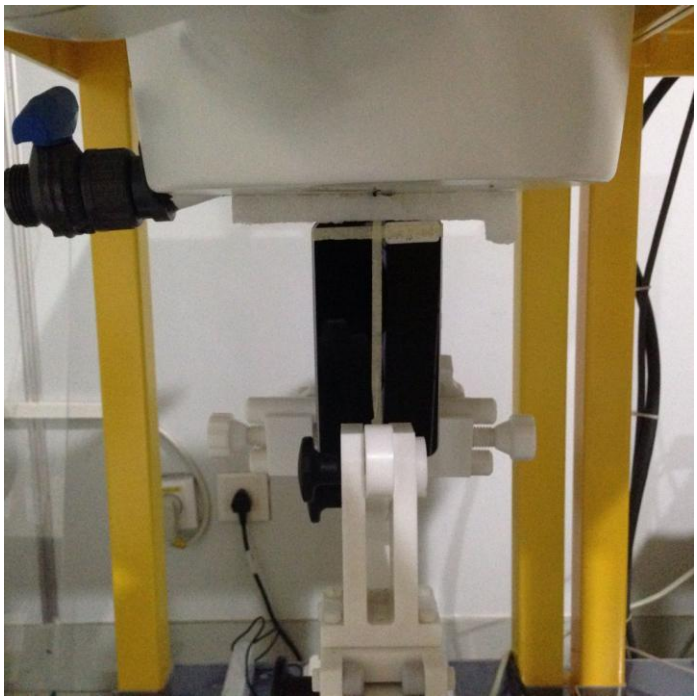


Fig.10 Body Edge A(UP,10mm separation)

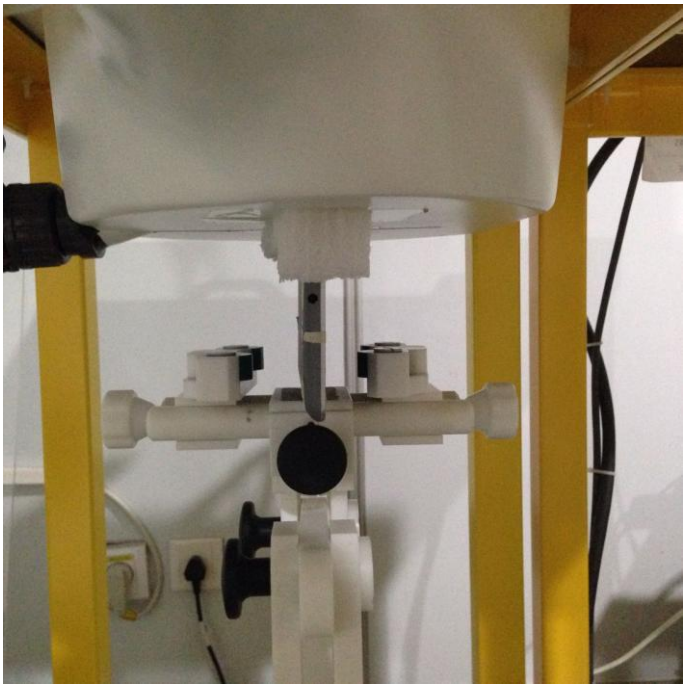


Fig.11 Body Edge B(UP,10mm separation)

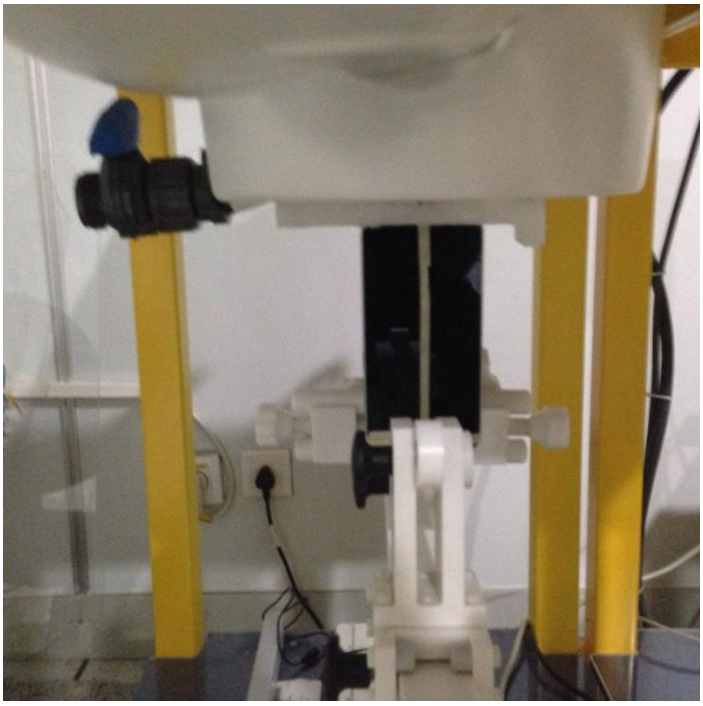


Fig.12 Body Edge C(UP,10mm separation)

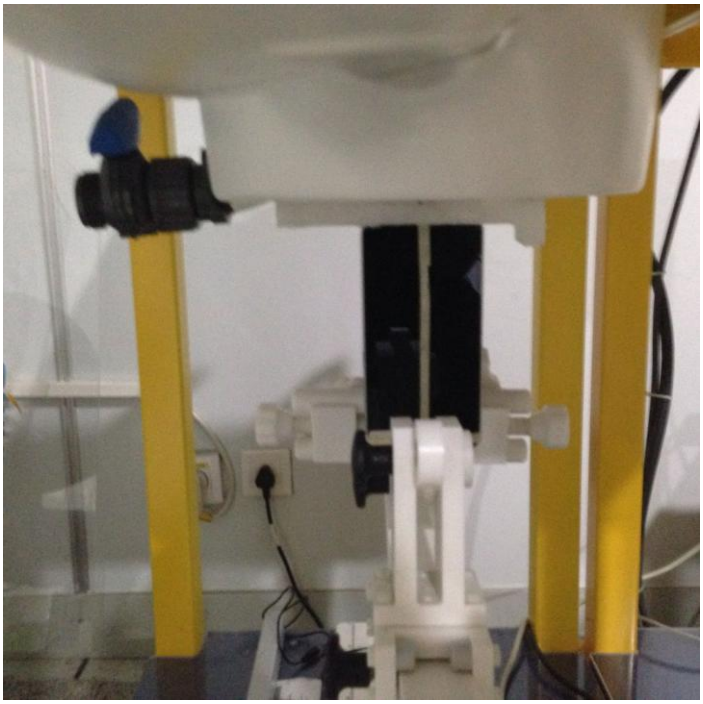


Fig.13 Body Edge D(Right upside,10mm separation)

ANNEX B

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2016-01884

TD-LTE Digital Mobile Phone

Type Name: Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510

Hardware Version: u66A

Software Version: MX_TEL_BLADE_A510V1.0.0B01

Sample Photographs

This Annex consists of 2 pages

Date of Report: 2016-02-20

1. Appearance

Appearance and size (obverse)

Appearance and size (reverse)

ANNEX C

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2016-01884

TD-LTE Digital Mobile Phone

Type Name: Blade A510/BLADE A510/ZTE Blade A510/ZTE BLADE A510

Hardware Version: u66A

Software Version: MX_TEL_BLADE_A510V1.0.0B01

System Performance Check Data and Highest SAR Plots

This Annex consists of 37 pages

Date of Report: 2016-02-20

System Performance Check (Head, 750MHz)

Type: Validation measurement

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

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

Date of measurement:18/01/2016

Measurement duration: 21 minutes 24 seconds

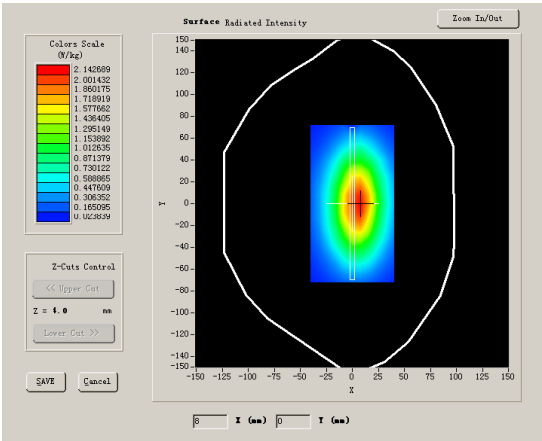
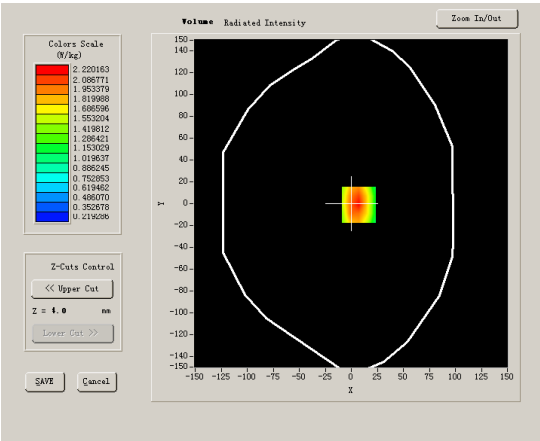
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	
Band	750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_09/13_EP169
Frequency (MHz)	750
Relative permittivity (real part)	41.71
Relative permittivity	21.12
Conductivity (S/m)	0.88
Power drift (%)	1.23
Ambient Temperature:	23.2 ℃
Liquid Temperature:	23.5 ℃
ConvF:	5.26
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.135436
SAR 1g (W/Kg)	2.103572

System Performance Check (Head, 835MHz)

Type: Validation measurement

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

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

Date of measurement: 18/01/2016

Measurement duration: 21 minutes 14 seconds

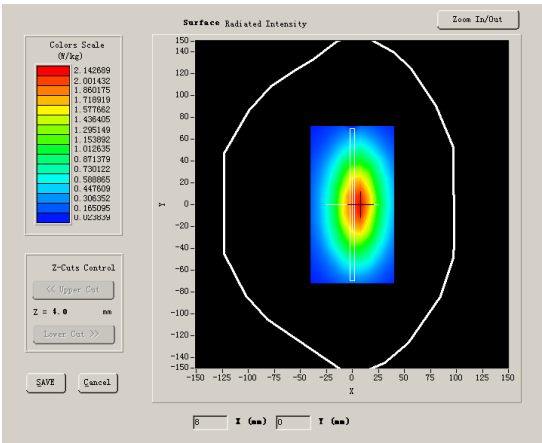
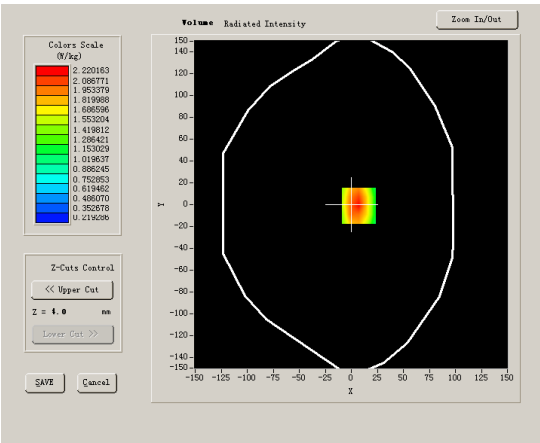
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	
Band	850MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	850
Relative permittivity (real part)	41.36
Relative permittivity	18.97
Conductivity (S/m)	0.88
Power drift (%)	-1.13
Ambient Temperature:	23.2 ℃
Liquid Temperature:	23.5 ℃
ConvF:	5.69
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.813603
SAR 1g (W/Kg)	2.403872

System Performance Check (Head, 1800MHz)

Type: Validation measurement

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

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

Date of measurement: 19/01/2016

Measurement duration: 20 minutes 34seconds

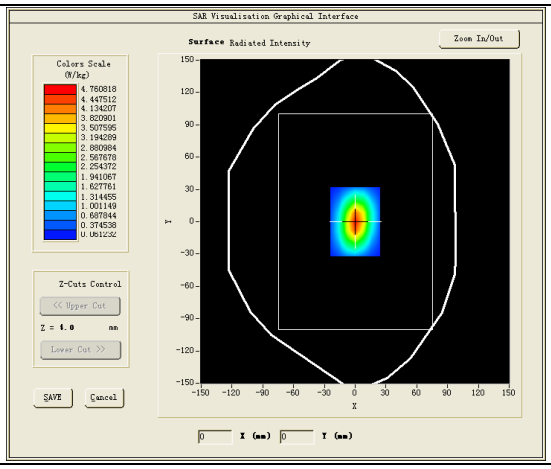
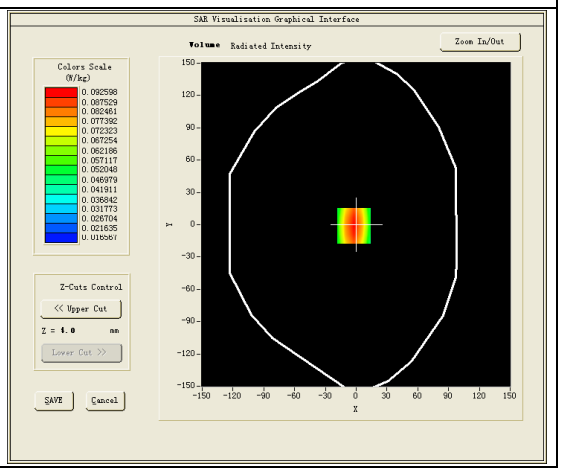
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1800
Relative permittivity (real part)	39.75
Relative permittivity	13.90
Conductivity (S/m)	1.39
Power drift (%)	-2.33
Ambient Temperature:	22.2 ℃
Liquid Temperature:	22.5 ℃
ConvF:	4.75
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=6.00, Y=0.00

SAR 10g (W/Kg)	4.993571
SAR 1g (W/Kg)	9.473650

System Performance Check (Head, 1900MHz)

Type: Validation measurement

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

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

Date of measurement: 19/01/2016

Measurement duration: 22 minutes 18 seconds

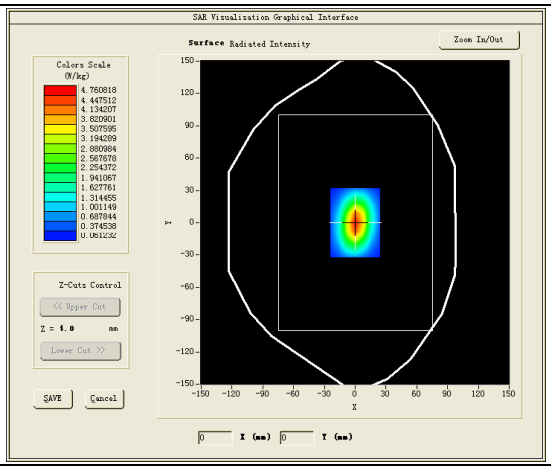
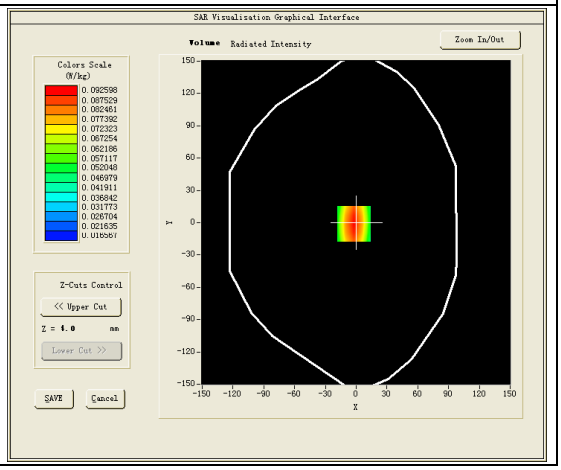
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	
Band	1900MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.85
Relative permittivity	13.17
Conductivity (S/m)	1.39
Power drift (%)	0.76
Ambient Temperature:	22.2 ℃
Liquid Temperature:	22.5 ℃
ConvF:	5.25
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=6.00, Y=0.00

SAR 10g (W/Kg)	5.156357
SAR 1g (W/Kg)	9.848365

System Performance Check (Head, 2450MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=5mm dy=5mm dz=4mm

Date of measurement:20/01/2016

Measurement duration: 21 minutes 18 seconds

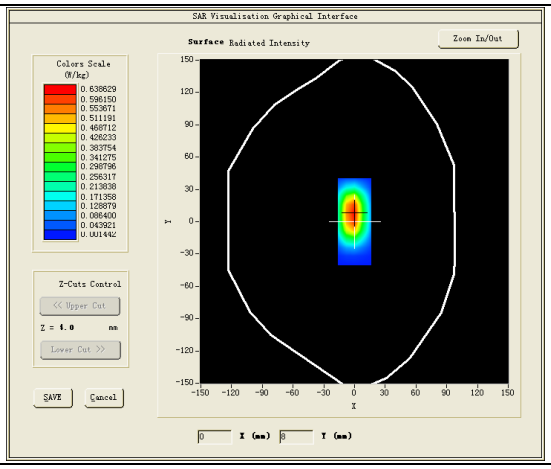
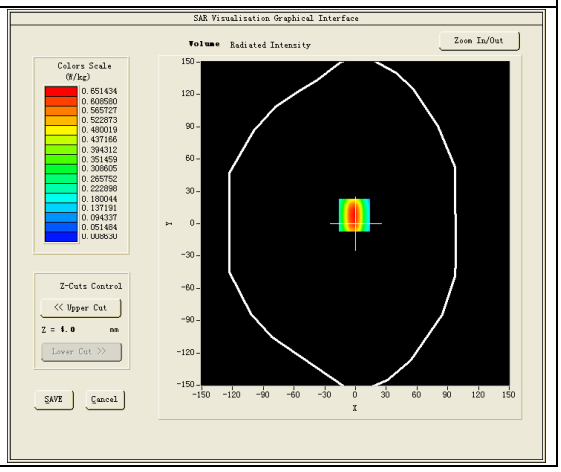
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=5mm dy=5mm dz=4mm
Device Position	Dipole
Band	2450MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	2450
Relative permittivity (real part)	38.94
Relative permittivity	13.15
Conductivity (S/m)	1.79
Power Drift (%)	0.88
ConvF:	4.93
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.913520
SAR 1g (W/Kg)	13.163574

System Performance Check (Head, 2600MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 20/01/2016

Measurement duration: 22 minutes 39 seconds

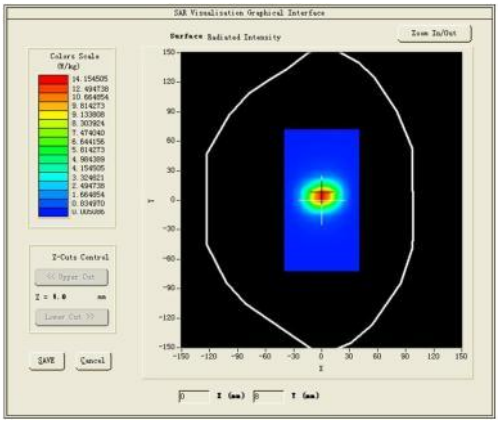
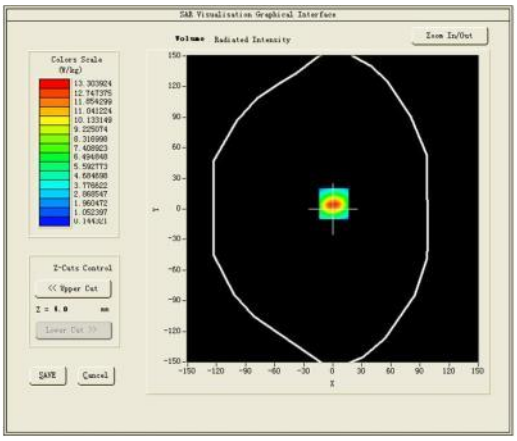
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=5mm dy=5mm dz=4mm
Device Position	Dipole
Band	2600MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	2600
Relative permittivity (real part)	38.89
Relative permittivity	13.36
Conductivity (S/m)	1.93
Power drift (%)	-0.53
Ambient Temperature:	22.2°C
Liquid Temperature:	22.5°C
Crest factor:	1:1
ConvF:	5.08

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=5.00

SAR 10g (W/Kg)	5.953674
SAR 1g (W/Kg)	13.942837

System Performance Check (Body, 750MHz)

Type: Validation measurement

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

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

Date of measurement: 27/01/2016

Measurement duration: 20 minutes 12 seconds

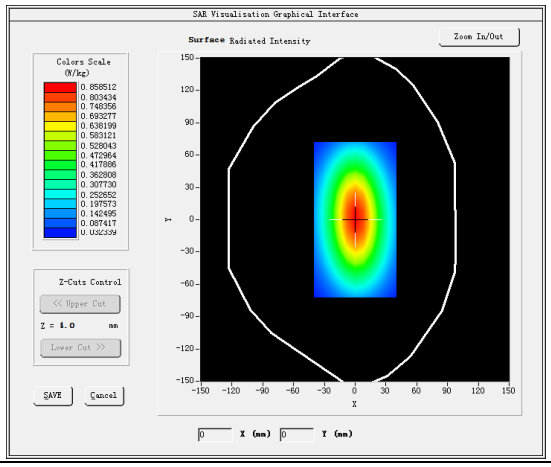
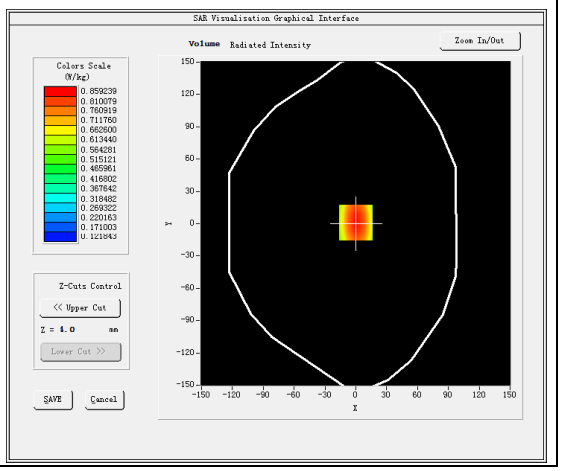
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_09/13_EP169
Frequency (MHz)	750
Relative permittivity (real part)	55.01
Relative permittivity	23.04
Conductivity (S/m)	0.95
Power drift (%)	-0.14
Ambient Temperature:	22.2 ℃
Liquid Temperature:	22.5 ℃
ConvF:	5.41
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=1.00

SAR 10g (W/Kg)	0.996743
SAR 1g (W/Kg)	2.052054

System Performance Check (Body, 835MHz)

Type: Validation measurement

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

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

Date of measurement: 27/01/2016

Measurement duration: 20 minutes 22 seconds

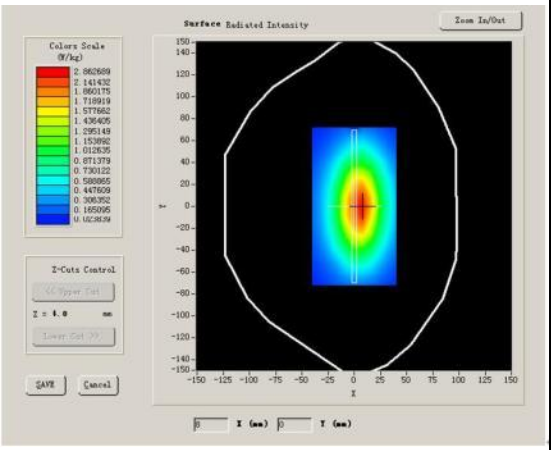
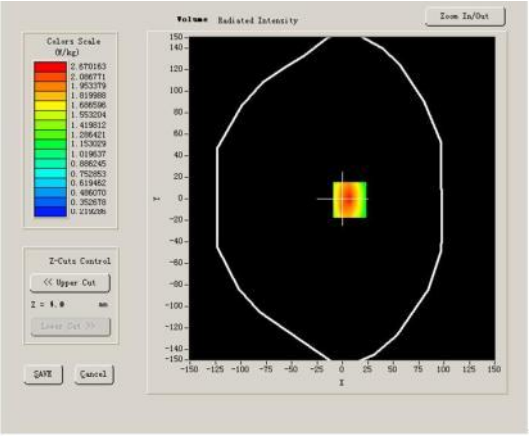
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	850
Relative permittivity (real part)	55.32
Relative permittivity	20.12
Conductivity (S/m)	0.95
Power drift (%)	0.32
Ambient Temperature:	22.2 ℃
Liquid Temperature:	22.5 ℃
ConvF:	5.82
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.646303
SAR 1g (W/Kg)	2.543046

System Performance Check (Body, 1800MHz)

Type: Phone measurement

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

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

Date of measurement: 28/01/2016

Measurement duration: 20 minutes 14 seconds

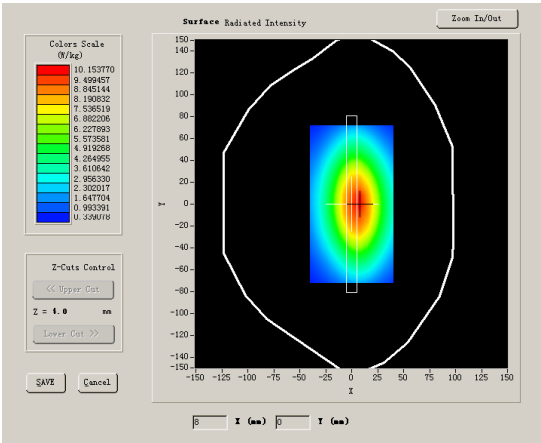
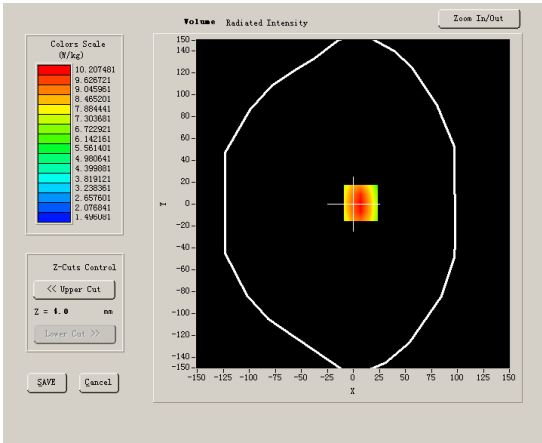
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1800
Relative permittivity (real part)	53.37
Relative permittivity	15.00
Conductivity (S/m)	1.50
Power drift (%)	0.03
Ambient Temperature:	22.2 ℃
Liquid Temperature:	22.6 ℃
ConvF:	4.96
Crest factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=7.00, Y=1.00

SAR 10g (W/Kg)	5.030542
SAR 1g (W/Kg)	9.847453

System Performance Check (Body, 1900MHz)

Type: Validation measurement

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

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

Date of measurement: 28/01/2016

Measurement duration: 21 minutes 47 seconds

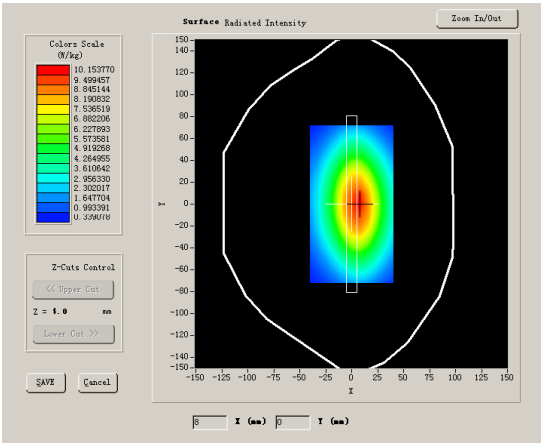
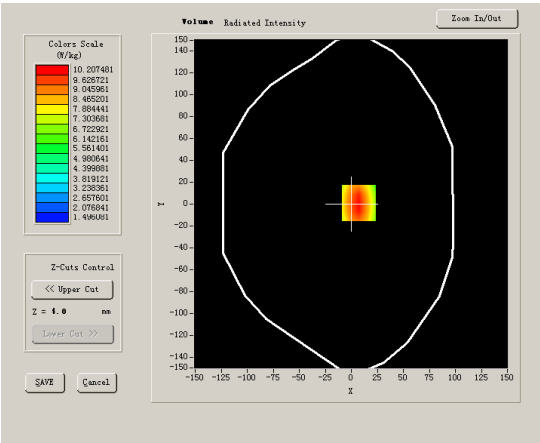
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	1900MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1900
Relative permittivity (real part)	53.14
Relative permittivity	14.40
Conductivity (S/m)	1.52
Power Drift (%)	-0.22
Ambient Temperature:	22.1 ℃
Liquid Temperature:	22.6 ℃
ConvF:	5.43
Duty factor:	1:1

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=1.00, Y=6.00

SAR 10g (W/Kg)	5.273540
SAR 1g (W/Kg)	10.125645

System Performance Check (Body, 2450MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 29/01/2016

Measurement duration: 22 minutes 13 seconds

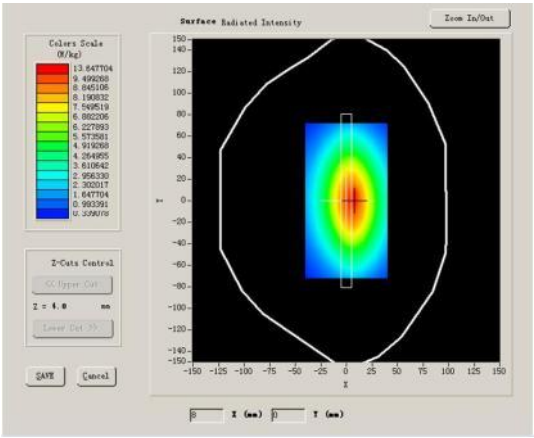
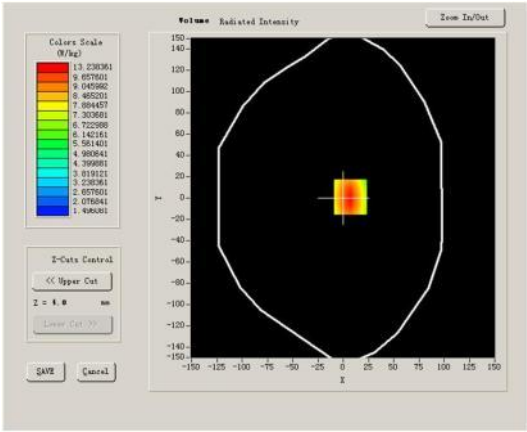
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=5mm dy=5mm dz=4mm
Device Position	Dipole
Band	2450MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	2450
Relative permittivity (real part)	52.53
Relative permittivity	14.25
Conductivity (S/m)	1.94
Power Drift (%)	1.02
Duty factor:	1:1
ConvF:	5.09

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	6.057332
SAR 1g (W/Kg)	13.071024

System Performance Check (Body, 2600MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 29/01/2016

Measurement duration: 22 minutes 15 seconds

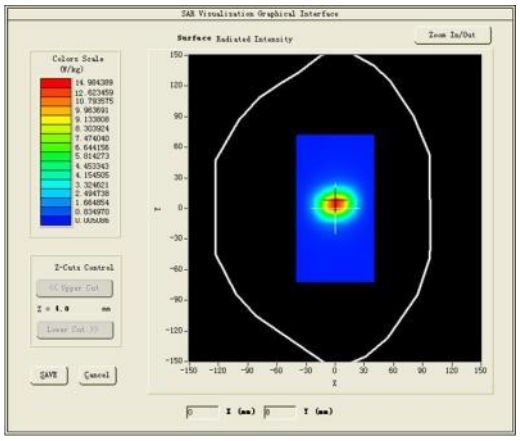
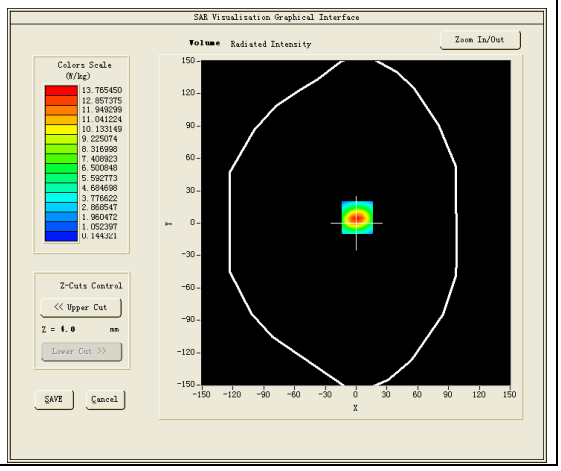
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=5mm dy=5mm dz=4mm
Device Position	Dipole
Band	2600MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	2600
Relative permittivity (real part)	52.56
Relative permittivity	14.88
Conductivity (S/m)	2.15
Power drift (%)	1.05
Ambient Temperature:	22.2°C
Liquid Temperature:	22.5°C
Crest factor:	1:1
ConvF:	5.22

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=4.00

SAR 10g (W/Kg)	5.990345
SAR 1g (W/Kg)	14.077943

Plot 1: GSM850, Right Cheek, High

Type: Phone measurement

Date of measurement: 18/01/2016

Measurement duration: 6 minutes 15 seconds

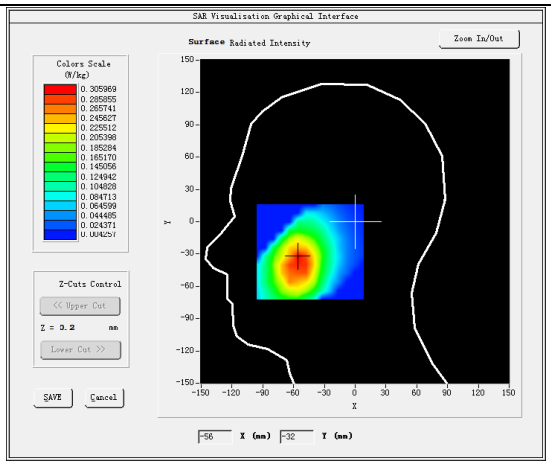
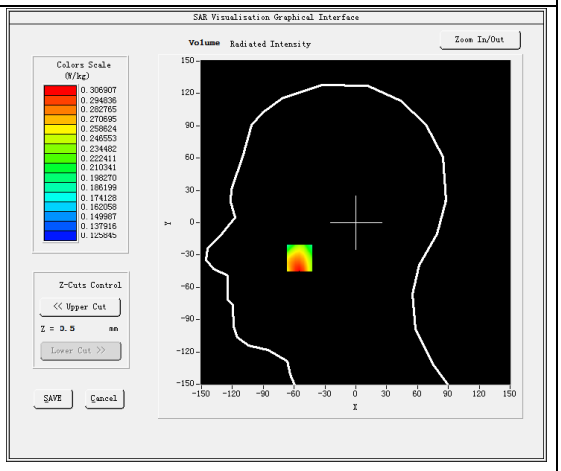
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	251
Signal	GSM (Duty cycle: 1:8)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	848.8
Relative permittivity (real part)	41.36
Relative permittivity (imaginary part)	18.97
Conductivity (S/m)	0.88
Variation (%)	-4.91
ConvF:	5.69

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-55.00, Y=-33.00

SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)	0.241384
SAR 1g (W/Kg)	0.312964

Plot 2: GSM850, Back-Worn, High

Type: Phone measurement

Date of measurement: 27/01/2016

Measurement duration: 7 minutes 01 seconds

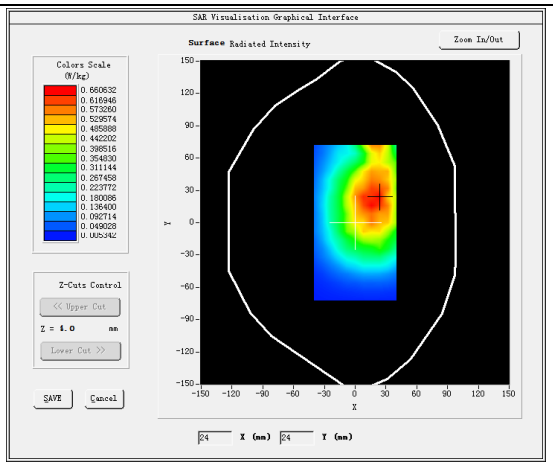
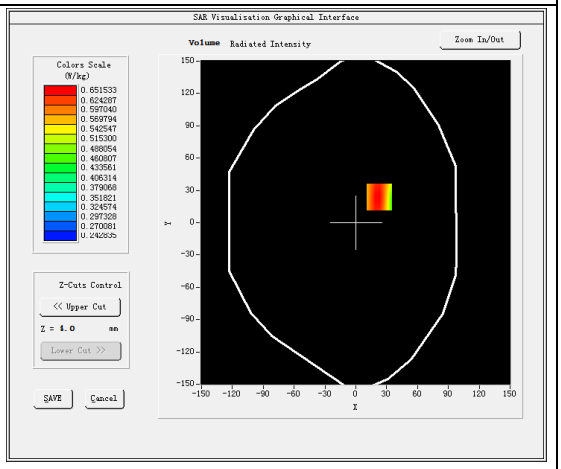
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	GSM850
Channels	251
Signal	GSM(Duty cycle: 1:8)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	848.8
Relative permittivity (real part)	55.32
Relative permittivity (imaginary part)	20.12
Conductivity (S/m)	0.95
Variation (%)	0.85
ConvF:	5.82

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=23.00, Y=24.00
SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	0.478873
SAR 1g (W/Kg)	0.631034

Plot 3: GPRS850, Back, Low, Hotspot

Type: Phone measurement

Date of measurement: 27/01/2016

Measurement duration: 7 minutes 03 seconds

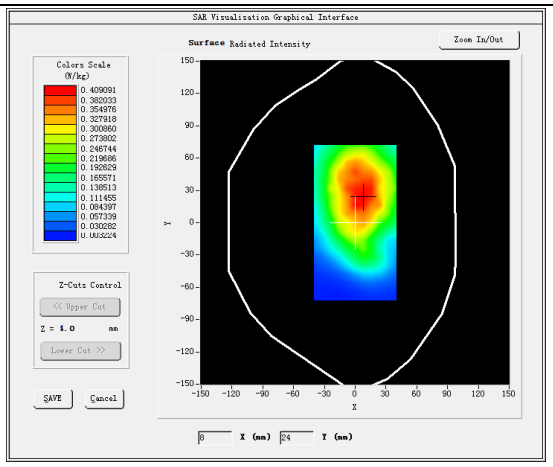
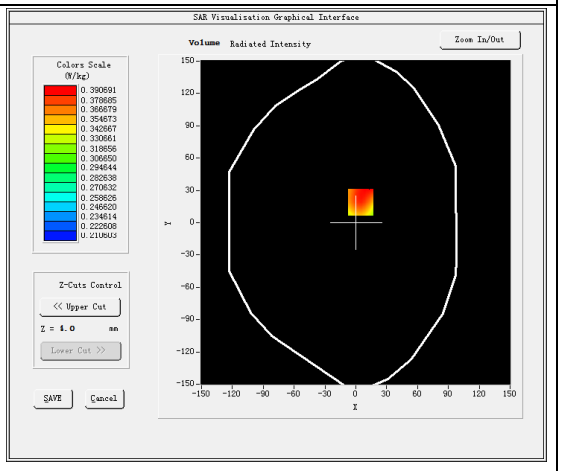
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	GSPRS850_3Tx
Channels	128
Signal	GPRS(Duty cycle: 1:2.67)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	824.2
Relative permittivity (real part)	55.32
Relative permittivity (imaginary part)	20.12
Conductivity (S/m)	0.95
Variation (%)	2.46
ConvF:	5.82

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=5.00, Y=19.00

SAR Peak: 0.59 W/kg

SAR 10g (W/Kg)	0.324997
SAR 1g (W/Kg)	0.404163

Plot 4: GSM1900, Right Cheek, Low

Type: Phone measurement

Date of measurement: 19/01/2016

Measurement duration: 6 minutes 13 seconds

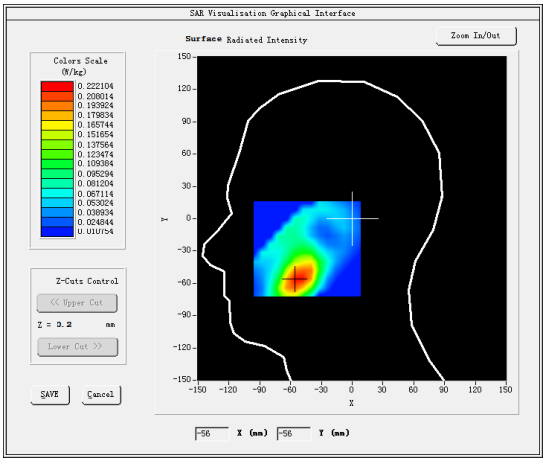
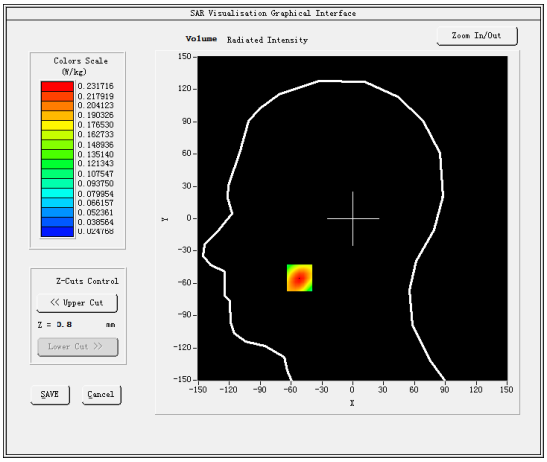
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	512
Signal	GSM (Duty cycle: 1:8)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1850.2
Relative permittivity (real part)	39.85
Relative permittivity (imaginary part)	13.17
Conductivity (S/m)	1.39
Variation (%)	-0.05
ConvF:	5.25

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-52.00, Y=-55.00

SAR Peak: 0.49 W/kg

SAR 10g (W/Kg)	0.131434
SAR 1g (W/Kg)	0.230613

Plot 5: GSM1900, Back, Low

Type: Phone measurement

Date of measurement: 28/01/2016

Measurement duration: 6 minutes 13 seconds

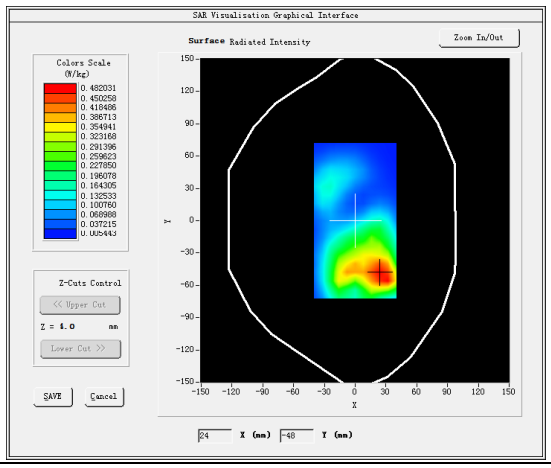
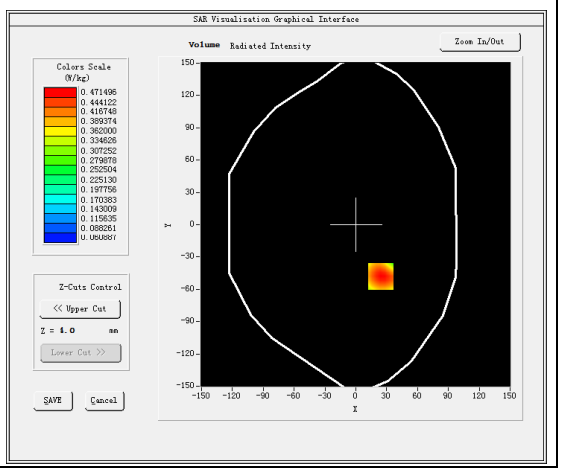
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	GSM1900
Channels	512
Signal	GSM (Duty cycle: 1:8)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1850.2
Relative permittivity (real part)	53.14
Relative permittivity (imaginary part)	14.40
Conductivity (S/m)	1.52
Variation (%)	-0.59
ConvF:	5.43

SURFACE SAR	VOLUME SAR
	

Maximum location: X=24.00, Y=-48.00
SAR Peak: 0.66 W/kg

SAR 10g (W/Kg)	0.271042
SAR 1g (W/Kg)	0.447386

Plot 6: GPRS1900, Back, Mid

Type: Phone measurement

Date of measurement: 28/01/2016

Measurement duration: 6 minutes 12 seconds

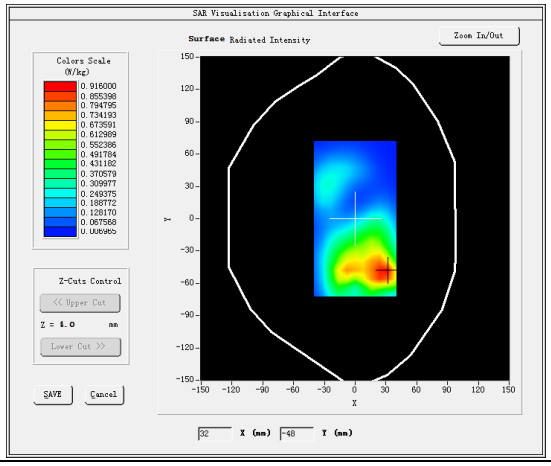
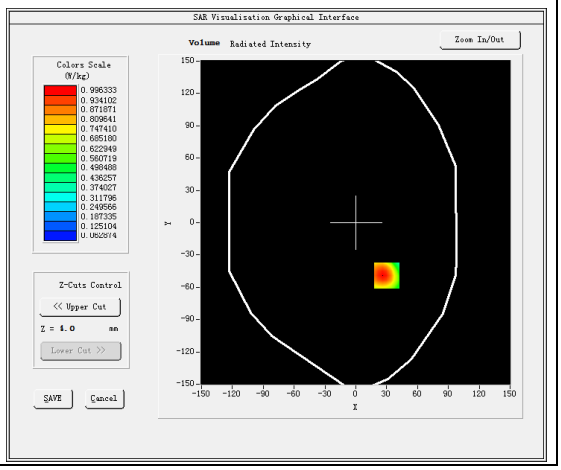
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	GPRS1900_4Tx
Channels	661
Signal	GPRS (Duty cycle: 1:2)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1880
Relative permittivity (real part)	53.14
Relative permittivity (imaginary part)	14.40
Conductivity (S/m)	1.52
Variation (%)	-0.87
ConvF:	5.43

SURFACE SAR	VOLUME SAR
	

Maximum location: X=30.00, Y=-49.00

SAR Peak: 1.84 W/kg

SAR 10g (W/Kg)	0.503307
SAR 1g (W/Kg)	0.902405

Plot 7: WCDMA850, Right, Cheek, High

Type: Phone measurement

Date of measurement: 18/01/2016

Measurement duration: 6 minutes 15seconds

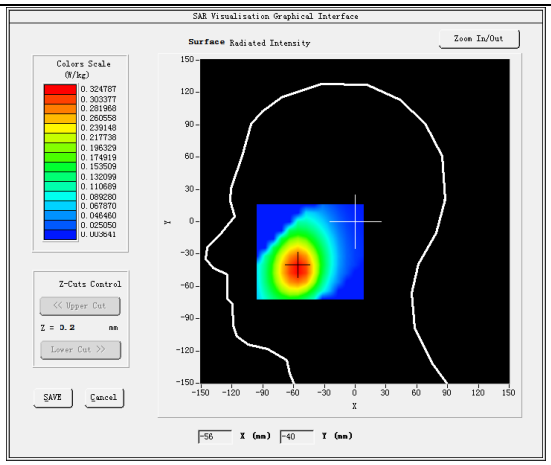
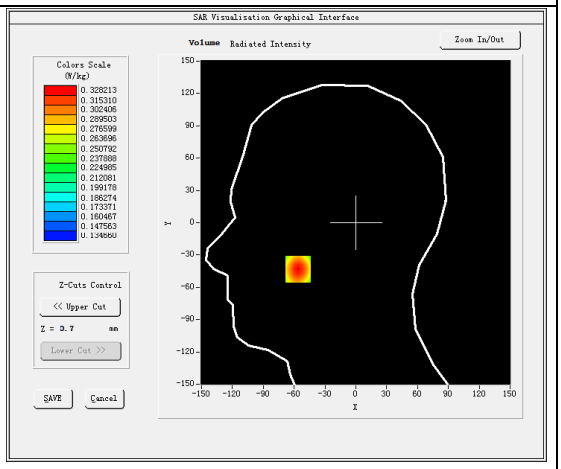
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	Band5_WCDMA850
Channels	4233
Signal	WCDMA (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	846.6
Relative permittivity (real part)	41.36
Relative permittivity (imaginary part)	18.97
Conductivity (S/m)	0.88
Variation (%)	-1.88
ConvF:	-4.54

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-56.00, Y=-43.00

SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	0.245329
SAR 1g (W/Kg)	0.311987

Plot 8: WCDMA850, Back Upward(Body-worn, hotspot), High

Type: Phone measurement

Date of measurement:27/01/2016

Measurement duration: 7 minutes 25 seconds

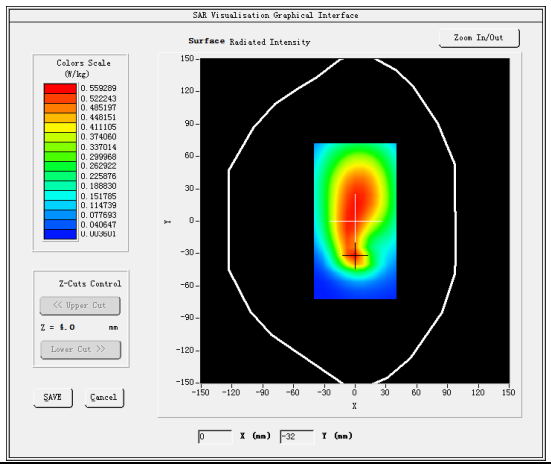
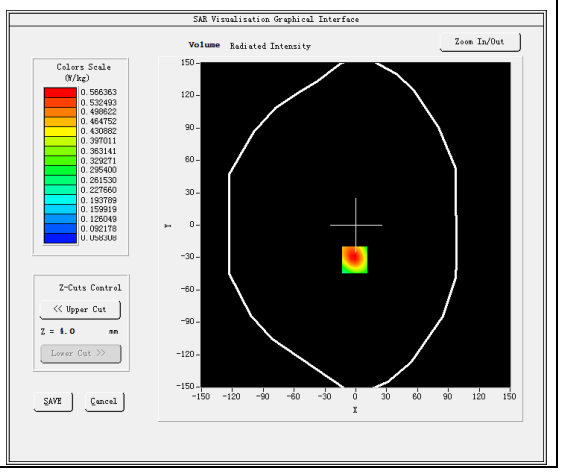
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	Band5_WCDMA850
Channels	4233
Signal	WCDMA (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	846.6
Relative permittivity (real part)	55.32
Relative permittivity (imaginary part)	20.12
Conductivity (S/m)	0.95
Variation (%)	-1.52
ConvF:	5.82

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-32.00
SAR Peak: 0.92 W/kg

SAR 10g (W/Kg)	0.315621
SAR 1g (W/Kg)	0.548045

Plot 9: WCDMA1900, Left Cheek, High

Type: Phone measurement

Date of measurement: 19/01/2016

Measurement duration: 7 minutes 04seconds

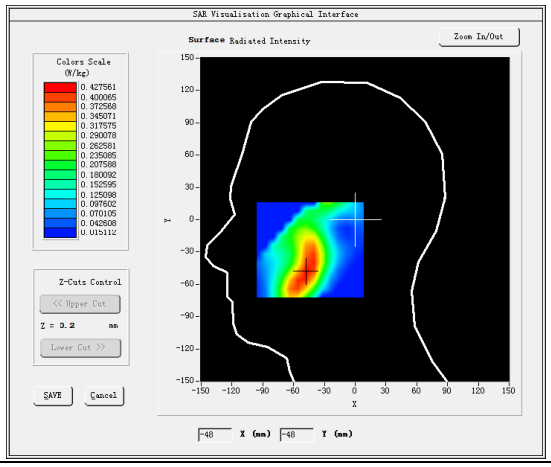
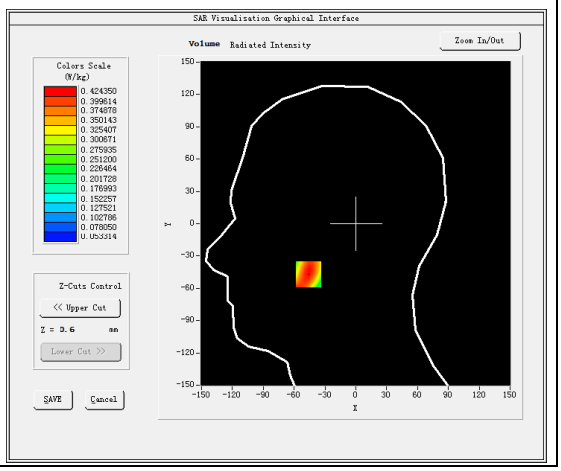
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Left head
Band	Cheek
Channels	9538
Signal	WCDMA (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1907.6
Relative permittivity (real part)	39.85
Relative permittivity (imaginary	13.17
Conductivity (S/m)	1.39
Variation (%)	-2.59
ConvF:	5.25

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-46.00, Y=-47.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.255986
SAR 1g (W/Kg)	0.408200

Plot 10: WCDMA1900, Face Upward(Body-worn, hotspot), High

Type: Phone measurement

Date of measurement: 28/01/2016

Measurement duration: 7 minutes 12 seconds

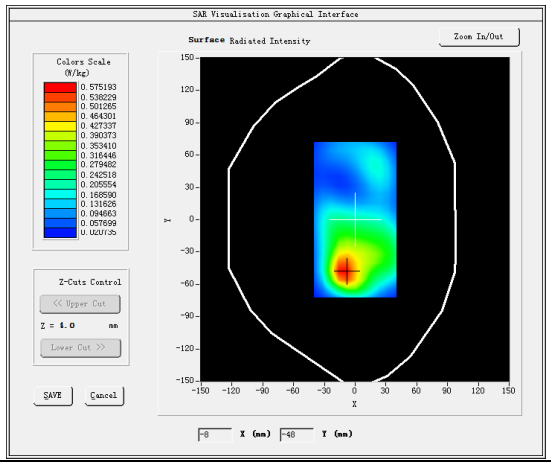
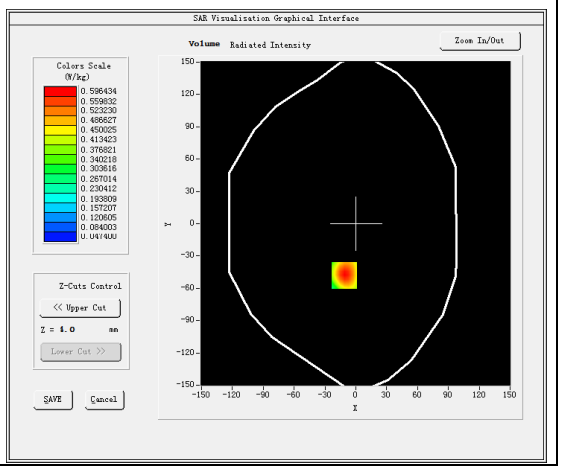
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Face
Band	Band2_WCDMA1900
Channels	9538
Signal	WCDMA (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1907.6
Relative permittivity (real part)	53.14
Relative permittivity (imaginary	14.40
Conductivity (S/m)	1.52
Variation (%)	0.36
ConvF:	5.43

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-11.00, Y=-48.00

SAR Peak: 0.94 W/kg

SAR 10g (W/Kg)	0.312050
SAR 1g (W/Kg)	0.558846

Plot 11: LTE Band2, 20MHz, Right Cheek, High

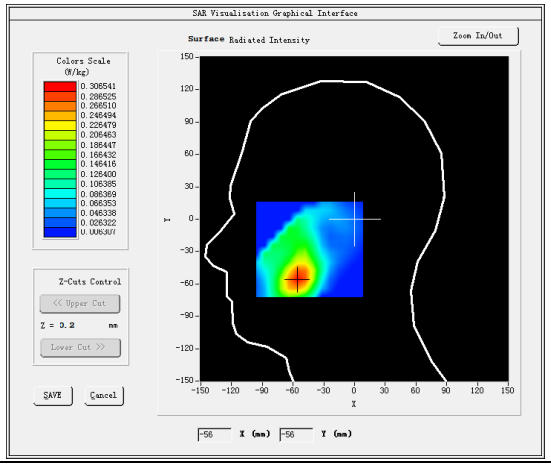
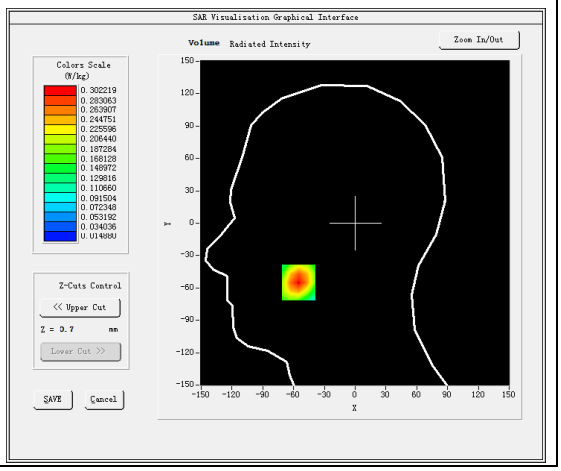
Type: Phone measurement
Date of measurement: 19/01/2016
Measurement duration: 7 minutes 02 seconds
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right head
Band	Cheek
Channels	19100
Signal	LTE (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1900
Relative permittivity (real part)	39.85
Relative permittivity (imaginary	13.17
Conductivity (S/m)	1.39
Variation (%)	-0.73
ConvF:	5.25

SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.168717
SAR 1g (W/Kg)	0.284039

Plot 12: LTE Band2, 20MHz, Back Upward(Body-worn, hotspot), high

Type: Phone measurement

Date of measurement: 28/01/2016

Measurement duration: 7 minutes 02 seconds

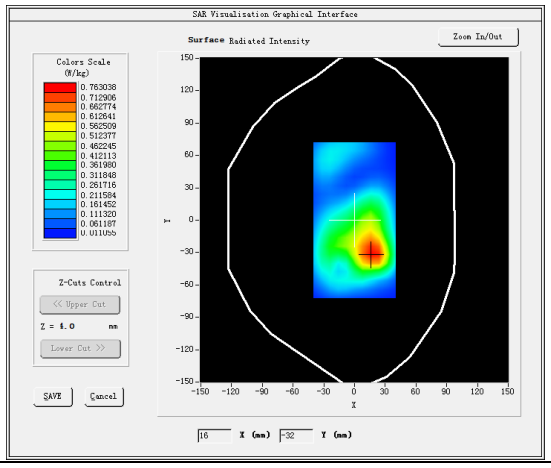
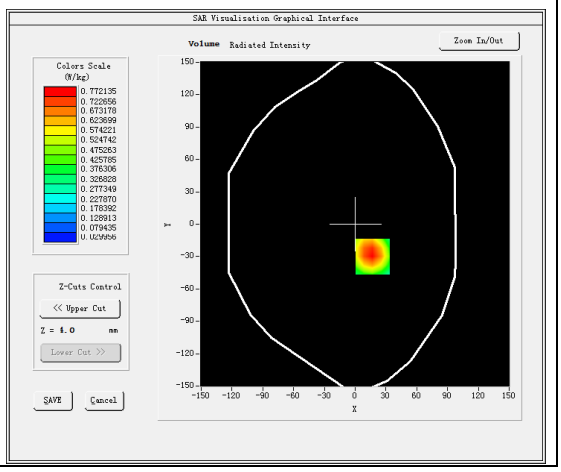
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	LTE Band 2
Channels	19100
Signal	LTE (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1900
Relative permittivity (real part)	53.14
Relative permittivity (imaginary	14.40
Conductivity (S/m)	1.52
Variation (%)	-0.22
ConvF:	5.43

SURFACE SAR	VOLUME SAR
	

Maximum location: X=17.00, Y=-30.00

SAR 10g (W/Kg)	0.409756
SAR 1g (W/Kg)	0.733070

Plot 13: LTE Band4, 20MHz, Left Cheek, Mid

Type: Phone measurement

Date of measurement: 19/01/2016

Measurement duration: 7 minutes 13 seconds

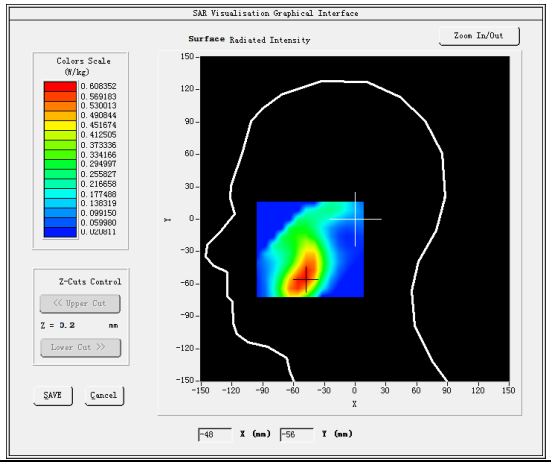
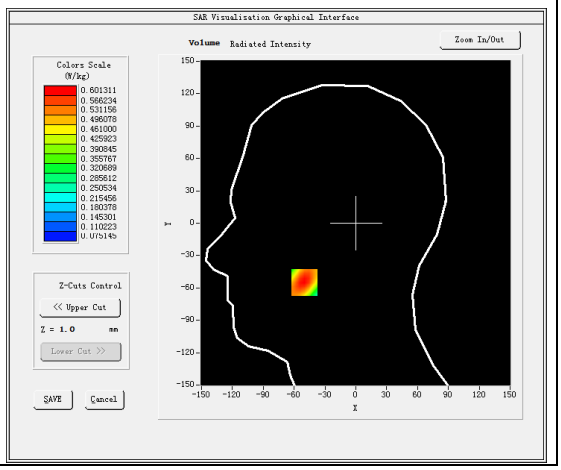
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Left head
Band	Cheek
Channels	20175
Signal	LTE (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1732.5
Relative permittivity (real part)	39.75
Relative permittivity (imaginary	13.90
Conductivity (S/m)	1.39
Variation (%)	-2.88
ConvF:	4.75

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-50.00, Y=-55.00

SAR 10g (W/Kg)	0.369617
SAR 1g (W/Kg)	0.523818

Plot 14: LTE Band4, 20MHz, Back Upward(Body-worn, hotspot), Mid

Type: Phone measurement

Date of measurement: 28/01/2016

Measurement duration: 7 minutes 01 seconds

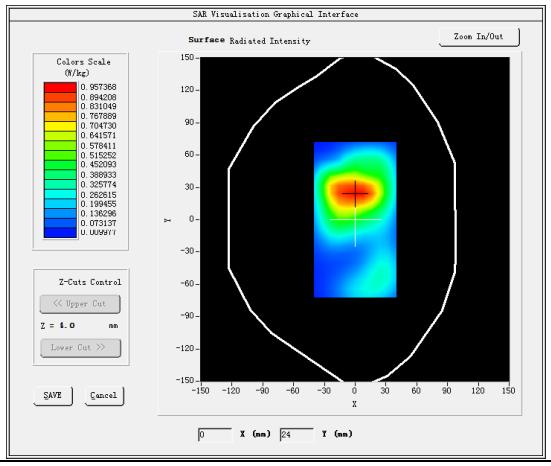
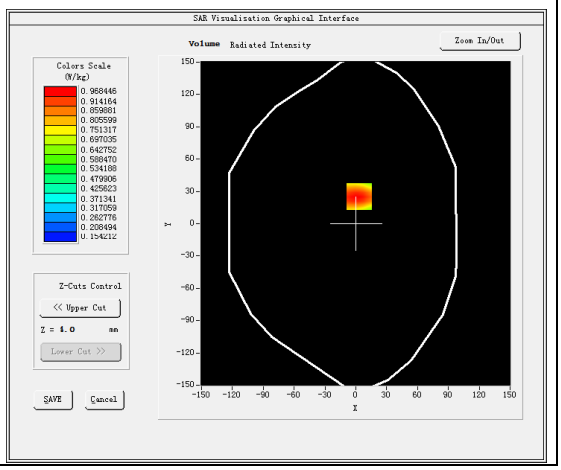
TD-LTE Digital Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back
Band	LTE Band 4
Channels	20175
Signal	LTE (Duty cycle: 1:1)

B. SAR Measurement Results

E-Field Probe	SATIMO SN_04/13_EP166
Frequency (MHz)	1732.5
Relative permittivity (real part)	53.37
Relative permittivity (imaginary	15.00
Conductivity (S/m)	1.50
Variation (%)	-0.05
ConvF:	4.96

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=-25.00
SAR Peak: 1.40 W/kg

SAR 10g (W/Kg)	0.568311
SAR 1g (W/Kg)	0.917189