FCC SAR TEST REPORT

Report No: STS1606043H01

Issued for

COMMERCIAL LINK INTERNATIONAL S.A.S

AV.suba No. 115-58 Centro llarco torre A oficina 703
BOGOTA Colombia

Product Name:	Smart phone
Brand Name:	MULTITECH, GLOBE
Model Name:	MT-SMP454G
Series Model:	MT-MOB454G, GB-SP454G ,K43FM
FCC ID:	2AGT8-MT454G
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Head:1.072 W/kg
	Body:0.442 W/kg

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Test Report Certification

Applicant's name	:	COMMERCIAL LINK INTERNATIONAL S.A.S
Address	:	AV.suba No. 115-58 Centro llarco torre A oficina 703 BOGOTA Colombia
Manufacture's Name	:	Shenzhen Vastking Electronic Co.,Ltd
Address	:	2/F, Building 6,Zhengzhong Industrial Park, Qiaotou community, Fuyong, Baoan, Shenzhen, China

Product description

Product name	:	Smart phone
Trademark	:	MULTITECH, GLOBE
Model and/or type reference	:	MT-SMP454G
Series Model：		MT-MOB454G, GB-SP454G ,K43FM
Standards	:	ANSI/IEEE Std. C95.1-1992 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test	:	
Date (s) of performance of tests	:	13 Jun. 2016
Date of Issue	:	15 Jun. 2016
Test Result	:	**Pass**

Testing Engineer **:** Allen Chen

(Allen Chen)

Technical Manager **:**

(John Zou)

Authorized Signatory **:** Bovey Yang

(Bovey Yang)

Table of Contents

1.General Information

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

1.1 EUT Description

Equipment	Smart phone			
Brand Name	MULTITECH, GLOBE			
Model No.	MT-SMP454G			
Series Model	MT-MOB454G, GB-SP454G ,K43FM			
FCC ID	2AGT8-MT454G			
Model Difference	Only different in model name			
Adapter	Input: AC100-240V,300mA, 50/60 Hz Output: DC 5V,1000mA			
Battery	Rated Voltage: 3.8V; Charge Limit: 4.35V; Capacity: 1800mAh			
Device Category	Portable			
Product stage	Production unit			
RF Exposure Environment	General Population / Uncontrolled			
IMEI	356979054792291			
Hardware Version	V01			
Software Version	K43FM_V1.0			
Frequency Range	GSM 850:824.2~848.8MHz PCS1900:1850.2~1909.8MHz WCDMA Band II:1852.4~1907.6MHz WCDMA Band V:826.4~846.6MHz LTE Band 2:1850.7~1909.3MHz LTE Band 4:1710.7~1754.3MHz LTE Band 5: 824.7~848.3MHz		LTE Band 7: 2502. ~2567.5MHz LTE Band 17:706.5 ~713.5MHz WLAN 802.11b/g/n(HT20):2412~2462MHz WLAN 802.11n(HT40):2422~2452MHz Bluetooth:2402~ 2480MHz	
Max. Reported SAR(1g):	Band	Mode	Head (W/kg)	Body Worn and Hotspot(W/kg)
	PCE	GSM 850	0.145	0.279
	PCE	GSM 1900	0.193	0.313
	PCE	WCDMA Band II	0.296	0.442
	PCE	WCDMA Band V	0.049	0.309
	PCE	LTE Band 2	0.277	0.320
	PCE	LTE Band 4	0.283	0.352
	PCE	LTE Band 5	0.040	0.085
	PCE	LTE Band 7	0.042	0.208
	PCE	LTE Band 17	0.047	0.277
	DTS	WIFI	1.072	0.389
	DSS	Bluetooth[Note]	0.053	0.026
1-g Sum SAR			1.368	0.811
FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter (DSS) Digital Transmission System (DTS)			

Operating Mode:	GSM: GSM Voice; GPRS; EGPRS Class 12; WCDMA:RMC,HSDPA,HSUPA Release 6; LTE:QPSK,16QAM; WLAN: 802.11 b/g/n(HT20) /n(HT40); Bluetooth: 3.0+EDR (GFSK +π/4DQPSK+8DPSK) ; Bluetooth: V4.0
Antenna Specification:	GSM,WCDMA,LTE: PIFA Antenna BT,WIFI: PIFA Antenna
SIM Card	Support dual-SIM, dual standby, the multiple SIM card with two lines cannot transmitting at the same time
Hotspot Mode:	Support
DTM Mode:	Not Support
Note: 1. Bluetooth SAR was estimated 2. The dual SIM card mobile has 2 SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active) 3. After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 card to perform all tests. 4. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power	

1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required	Actual
Temperature (℃)	18-25	22~23
Humidity (%RH)	30-70	55~65

1.3 Test Factory

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F, Building B, Zhuoke Science Park,No.190, Chongqing Road, Fuyong, Baoan District, Shenzhen, Guangdong, China
CNAS Registration No.: L7649;
FCC Registration No.: 842334;
IC Registration No.: 12108A-1

2.Test Standards And Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 941225 D01 v03r01	SAR Measurement Procedures for 3G Devices
8	FCC KDB 941225 D05 v02r05	SAR for LTE Devices
9	FCC KDB 941225 D06 v02r01	Hotspot Mode SAR
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

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

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

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

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

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

Population/Uncontrolled Environments:
are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

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

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg

3. SAR Measurement System

3.1 Definition Of Specific Absorption Rate (SAR)

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

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

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

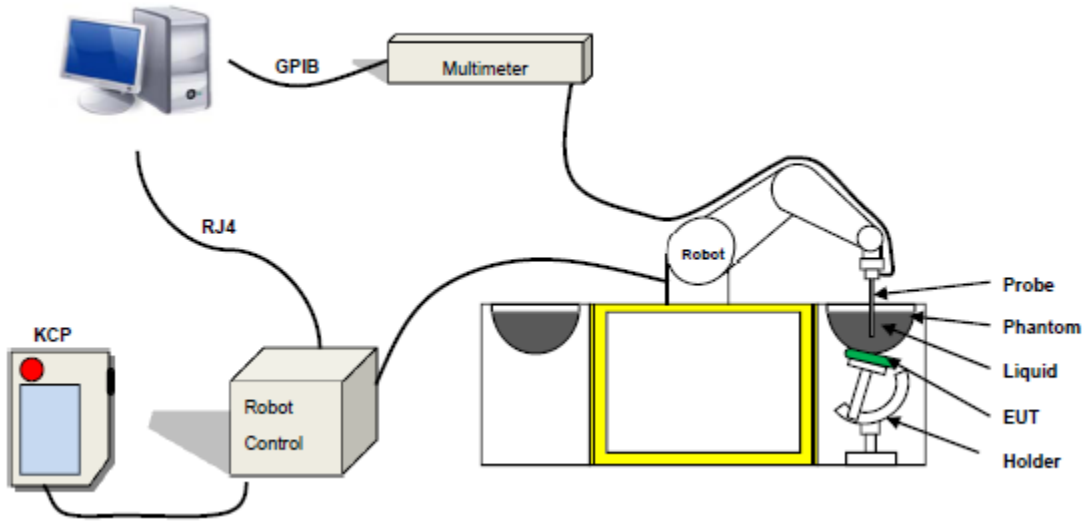
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

3.2 SAR System

SATIMO SAR System Diagram:



Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 45/15 EPGO281 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter: 2.5 mm
- Length of Individual Dipoles: 2 mm
- Maximum external diameter: 8 mm
- Distance between dipoles / probe extremity: 2.7 mm (repeatability better than +/- 1mm)
- Probe linearity: 0±2.60%(±0.11 dB)
- Axial Isotropy: ＜0.25 dB
- Spherical Isotropy: ＜0.25 dB
- Calibration range: 450MHz to 6GHz for head & body simulating liquid.

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

Figure 1 – *MVG COMOSAR Dosimetric E field Dipole*

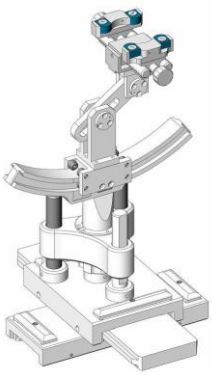
3.2.2 Phantom

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

SN 32/14 SAM115

SN 32/14 SAM116

3.2.3 Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.4. Tissue Simulating Liquids

4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

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 variations 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.

Frequency (MHz)	Bactericide	DGBE	HEC	NaCl	Sucrose	1,2-Propanediol	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
835	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
900	/	/	/	0.79	/	64.81	/	34.40	0.97	41.8
1800	/	13.84	/	0.35	/	/	30.45	55.36	1.38	41.0
1900	/	13.84	/	0.35	/	/	30.45	55.36	1.38	41.0
2000	/	7.99	/	0.16	/	/	19.97	71.88	1.55	41.1
2450	/	7.99	/	0.16	/	/	19.97	71.88	1.88	40.3
2600	/	7.99	/	0.16	/	/	19.97	71.88	1.88	40.3

Tissue dielectric parameters for head and body phantoms				
Frequency	ε_r		σ S/m	
	Head	Body	Head	Body
300	45.3	58.2	0.87	0.92
450	43.5	58.7	0.87	0.94
900	41.5	55.0	0.97	1.05
1450	40.5	54.0	1.20	1.30
1800	40.0	53.3	1.40	1.52
2450	39.2	52.7	1.80	1.95
3000	38.5	52.0	2.40	2.73
5800	35.3	48.2	5.27	6.00

LIQUID MEASUREMENT RESULTS

Date: 13 Jun. 2016 **Ambient condition:** Temperature 22.30°C **Relative humidity:** 50%

Head Simulating Liquid		Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]					
750 MHz	22.30	Permitivity:	41.9	42.2	0.72	±5
		Conductivity:	0.89	0.91	2.25	±5
835 MHz	22.30	Permitivity:	41.5	41.1	-0.96	±5
		Conductivity:	0.9	0.91	1.11	±5
1800 MHz	22.30	Permitivity:	40.1	39.7	-1.00	±5
		Conductivity:	1.37	1.34	-2.19	±5
1900 MHz	22.30	Permitivity:	40	40.2	0.50	±5
		Conductivity:	1.4	1.38	-1.43	±5
2450 MHz	22.30	Permitivity:	39.2	39.6	1.02	±5
		Conductivity:	1.8	1.77	-1.67	±5
2600 MHz	22.30	Permitivity:	39.0	40.1	2.82	±5
		Conductivity:	1.96	1.98	1.02	±5

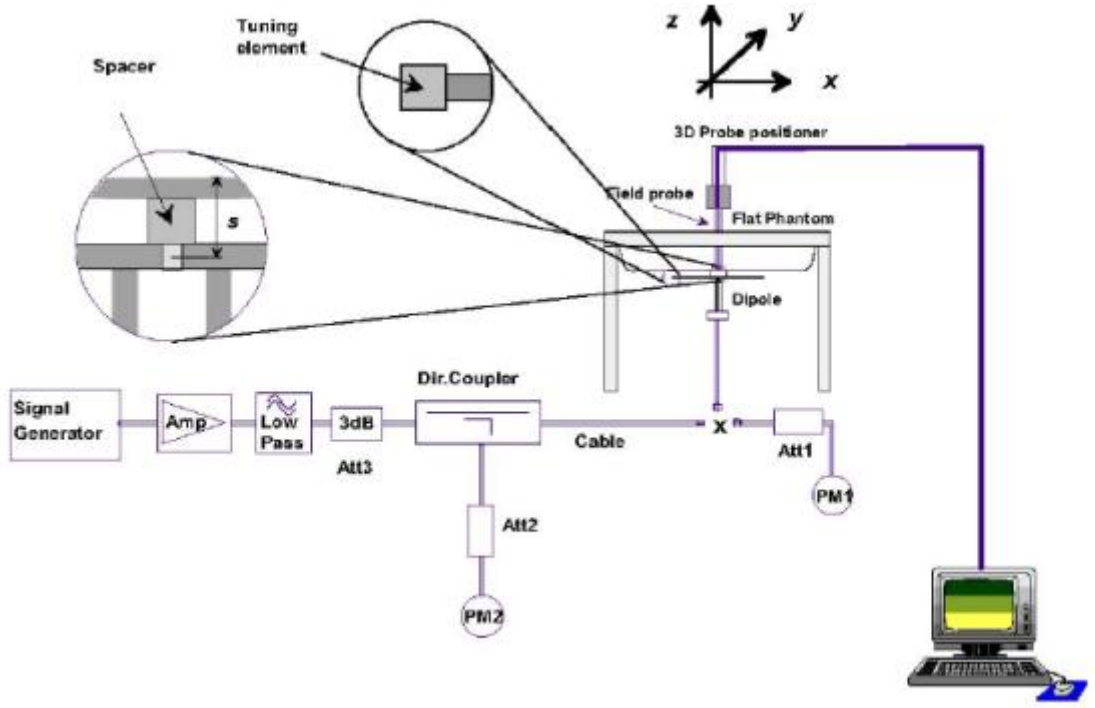
Body Simulating Liquid		Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]					
750 MHz	22.30	Permitivity:	55.5	55.4	-0.18	±5
		Conductivity:	0.96	0.94	-2.08	±5
835 MHz	22.30	Permitivity:	55.2	54.5	-1.27	±5
		Conductivity:	0.97	0.98	1.03	±5
1800 MHz	22.30	Permitivity:	53.4	52.3	-2.06	±5
		Conductivity:	1.49	1.52	2.01	±5
1900 MHz	22.30	Permitivity:	53.3	52.38	-1.73	±5
		Conductivity:	1.52	1.53	0.66	±5
2450 MHz	22.30	Permitivity:	52.7	52.31	-0.74	±5
		Conductivity:	1.95	1.94	-0.51	±5
2600 MHz	22.30	Permitivity:	52.5	52.66	0.30	±5
		Conductivity:	2.16	2.19	1.39	±5

5. SAR System Validation

5.1 Validation System

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

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



5.2 Validation Result

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

Ambient condition: Temperature 23.2°C **Relative humidity:** 50%

Freq.(MHz)	Power(mW)	Tested Value (W/Kg)	Normalized SAR (W/kg)	Target(W/Kg)	Tolerance(%)	Date
750 Head	100	0.838	8.38	8.49	-1.30	2016-06-13
750 Body	100	0.851	8.51	8.49	0.24	2016-06-13
835 Head	100	0.959	9.59	9.56	0.31	2016-06-13
835 Body	100	0.95	9.5	9.56	-0.63	2016-06-13
1800 Head	100	3.83	38.3	38.4	-0.26	2016-06-13
1800 Body	100	3.86	38.6	38.4	0.52	2016-06-13
1900 Head	100	3.99	39.9	39.7	0.50	2016-06-13
1900 Body	100	4.08	40.8	39.7	2.77	2016-06-13
2450 Head	100	5.22	52.2	52.4	-0.38	2016-06-13
2450 Body	100	5.21	52.1	52.4	-0.57	2016-06-13
2600 Head	100	5.52	55.2	55.30	-0.18	2016-06-13
2600 Body	100	5.49	54.9	55.30	-0.72	2016-06-13

Note: The tolerance limit of System validation ±10%.

6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:
The following steps are used for each test position

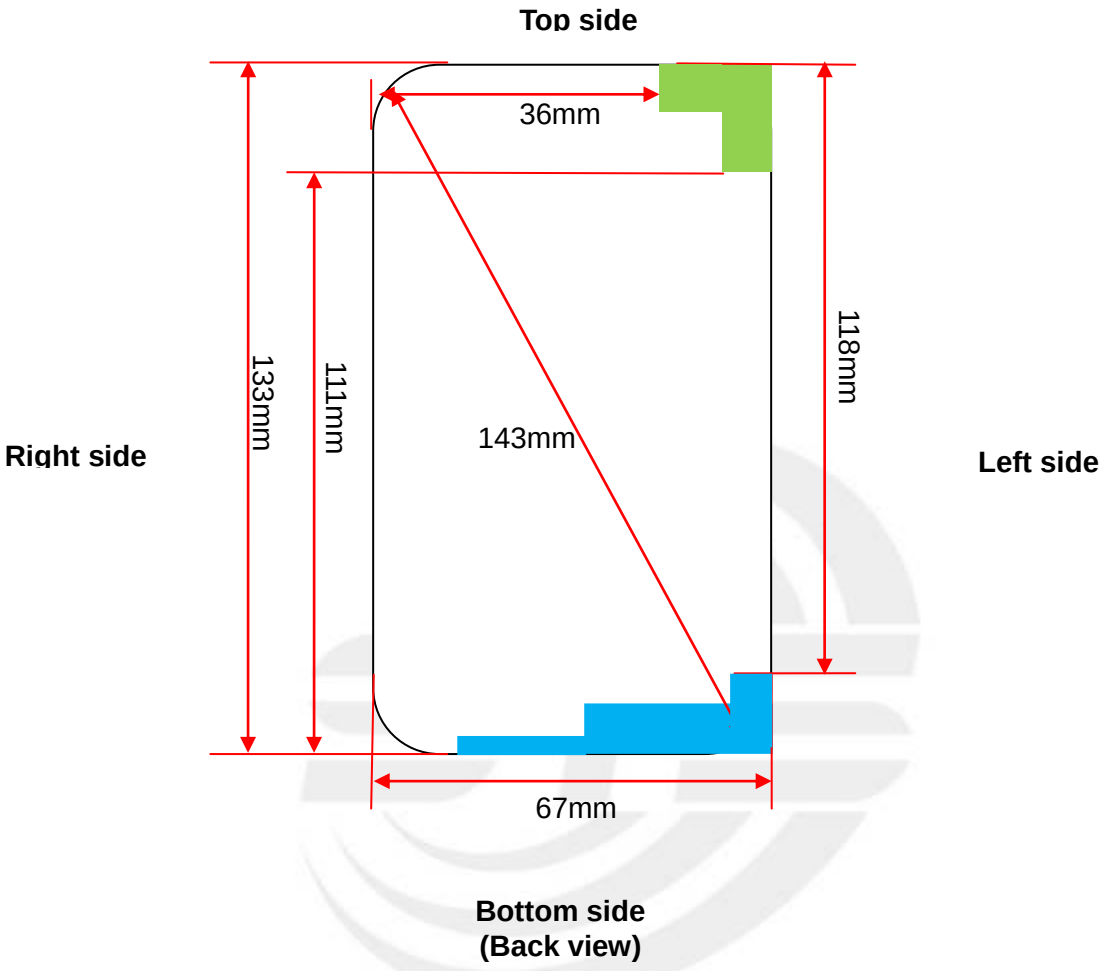
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible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

➢ Area Scan& Zoom Scan

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below.
When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7. EUT Antenna Location Sketch

It is a Smart phone, support GSM/WCDMA/LTE mode.



WWAN Antenna

WIFI/BT Antenna

7.1 SAR test exclusion consider table

According with FCC KDB 447498 D01, appendix A, <SAR test exclusion thresholds for 100MHz ~6GHz and≤50mm＞table, this device SAR test configurations consider as following:

Band	Test position configurations					
	Front	Back	Right edge	Left edge	Top edge	Bottom edge
WWAN	＜5mm	＜5mm	＜5mm	＜5mm	118mm	＜5mm
	Yes	Yes	Yes	Yes	No	Yes
WIFI/BT	＜5mm	＜5mm	16mm	＜5mm	＜5mm	111mm
	Yes	Yes	No	Yes	Yes	No

Note：

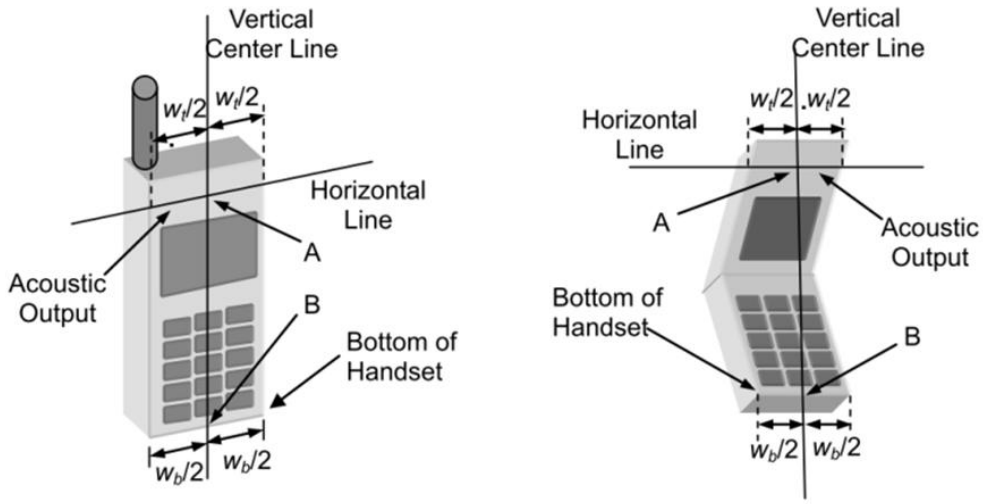
1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. per KDB 447498 D01, standalone SAR test exclusion threshold is applied; if the distance of the antenna to the user is <5mm, 5mm is user to determine SAR exclusion threshold
4. per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distance ≤50mm are determined by:
   [(max.power of channel, including tune-up tolerance, Mw)/(min. test separation distance, mm)]*[√f(GHZ）)≤3.0 for 1-g SAR and≤7.5 for10-g extremity SAR ,f(GHz) is the RF channel transmit frequency in GHz.Power and distance are rounded to the nearest mW and mm before calculation.The result is rounded to one decimal place for comparison
   For <50mm distance, we just calculate mW of the exclusion threshold value(3.0)to do compare
5. per KDB 447498 D01, at 100 MHz to 6GHz and for test separation distances >50mm, the SAR test exclusion threshold is determined according to the following
   a)[threshold at 50mm in step 1]+(test separation distance -50mm)*(f (MHz)/150)]Mw, at 100 MHz to 1500 MHz
   b) [threshold at 50mm in step1]+(test separation distance -50mm) *10]mW at＞ 1500MHz and≤6GHz
6. Per KDB 447498 D02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/ HSUPA/DC-HSDPA output power is<0.25db higher than RMC 12.2Kbps,or reported SAR with RMC 12.2kbps setting is ≤1.2W/Kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
7. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine futher SAR exclusion 8.for each frequency band ,testing at higher data rates and higher order modulations is not required when the maximum average output power for each of each of these configurations is less than 1/4db higher than those measured at the lower data rate than 11b mode ,thus the SAR can be excluded.

8. EUT Test Position

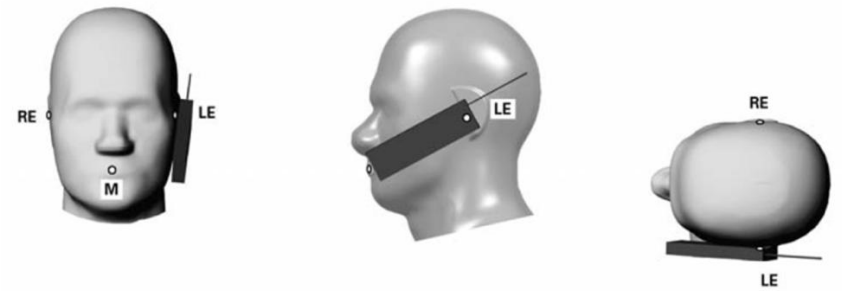
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

8.1 Define Two Imaginary Lines On The Handset

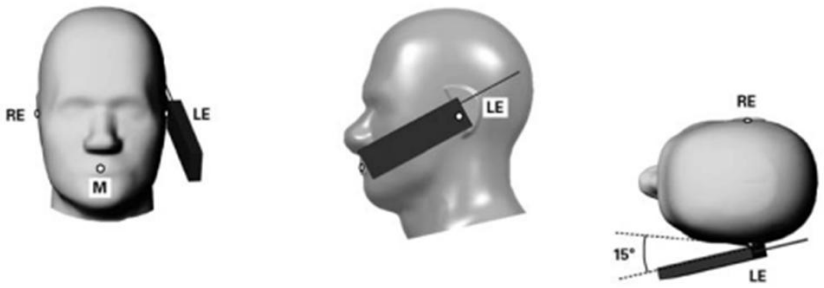
(1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.
(2)The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
(3)The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



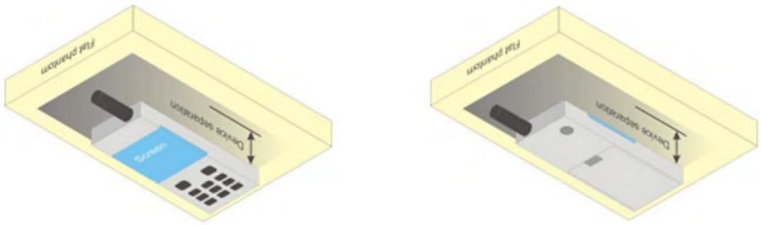
Cheek Position
1)To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane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



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

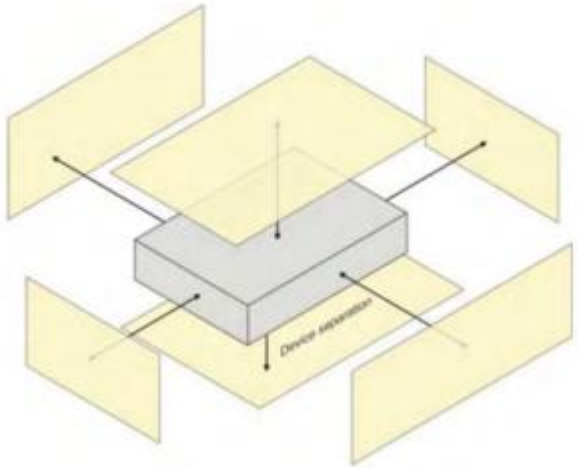


Body-worn Position Conditions:
Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative *test separation distance* configuration may be used to support both SAR conditions. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.



8.2 Hotspot mode exposure position condition

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



9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

NO	Source	Tol(%)	Prob. Dist.	Div. k	ci (1g)	ci (10g)	1gUi	10gUi	Veff
Measurement System									
1	Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
2	Axial isotropy	3.5	R	√3	$(1\text{-cp})^{1/2}$	$(1\text{-cp})^{1/2}$	1.43	1.43	∞
3	Hemispherical isotropy	5.9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
4	Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
5	Linearity	4.7	R	√3	1	1	2.71	2.71	∞
6	System Detection limits	1.0	R	√3	1	1	0.58	0.58	∞
7	Readout electronics	0.5	N	1	1	1	0.50	0.50	∞
8	Response time	0	R	√3	1	1	0	0	∞
9	Integration time	1.4	R	√3	1	1	0.81	0.81	∞
10	Ambient noise	3.0	R	√3	1	1	1.73	1.73	∞
11	Ambient reflections	3.0	R	√3	1	1	1.73	1.73	∞
12	Probe positioner mech. restrictions	1.4	R	√3	1	1	0.81	0.81	∞
13	Probe positioning with respect to phantom shell	1.4	R	√3	1	1	0.81	0.81	∞
14	Max.SAR evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Test sample related									

15	Device positioning	2.6	N	1	1	1	2.6	2.6	11
16	Device holder	3	N	1	1	1	3.0	3.0	7
17	Drift of output power	5.0	R	√3	1	1	2.89	2.89	∞
Phantom and set-up									
18	Phantom uncertainty	4.0	R	√3	1	1	2.31	2.31	∞
19	Liquid conductivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	5
20	Liquid conductivity (meas)	4	N	1	0.23	0.26	0.92	1.04	5
21	Liquid Permittivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	∞
22	Liquid Permittivity (meas)	5.0	N	1	0.23	0.26	1.15	1.30	∞
Combined standard			RSS	$U_C = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			10.63%	10.54%	
Expanded uncertainty (P=95%)		$U = k\, U_C$,k=2					21.26%	21.08%	

9.2 System validation Uncertainty

NO	Source	Tol(%)	Prob. Dist.	Div. k	ci (1g)	ci (10g)	1gUi	10gUi	Veff
Measurement System									
1	Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
2	Axial isotropy	3.5	R	√3	$(1\text{-cp})^{1/2}$	$(1\text{-cp})^{1/2}$	1.43	1.43	∞
3	Hemispherical isotropy	5.9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
4	Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
5	Linearity	4.7	R	√3	1	1	2.71	2.71	∞
6	System Detection limits	1.0	R	√3	1	1	0.58	0.58	∞
7	Modulation response	0	N	1	1	1	0	0	∞
8	Readout electronics	0.5	N	1	1	1	0.50	0.50	∞
9	Response time	0	R	√3	1	1	0	0	∞
10	Integration time	1.4	R	√3	1	1	0.81	0.81	∞
11	Ambient noise	3.0	R	√3	1	1	1.73	1.73	∞
12	Ambient reflections	3.0	R	√3	1	1	1.73	1.73	∞
13	Probe positioner mech. restrictions	1.4	R	√3	1	1	0.81	0.81	∞
14	Probe positioning with respect to phantom shell	1.4	R	√3	1	1	0.81	0.81	∞
15	Max.SAR evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Dipole									
16	Deviation of experimental source from	4	N	1	1	1	4.00	4.00	∞

17	Input power and SAR drit measurement	5	R	√3	1	1	2.89	2.89	∞
18	Dipole Axis to liquid Distance	2	R	√3	1	1			∞
Phantom and set-up									
19	Phantom uncertainty	4.0	R	√3	1	1	2.31	2.31	∞
20	Uncertainty in SAR correction for deviation(in	2.0	N	1	1	0.84	2	1.68	∞
21	Liquid conductivity (target)	2	N	1	1	0.84	2.00	1.68	∞
22	Liquid conductivity (temperature uncertainty)	2.5	N	1	0.78	0.71	1.95	1.78	5
23	Liquid conductivity (meas)	4	N	1	0.23	0.26	0.92	1.04	5
24	Liquid Permittivity (target)	2.5	N	1	0.78	0.71	1.95	1.78	∞
25	Liquid Permittivity (temperature uncertainty)	2.5	N	1	0.78	0.71	1.95	1.78	5
26	Liquid Permittivity (meas)	5.0	N	1	0.23	0.26	1.15	1.30	∞
Combined standard			RSS	$U_C = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			10.15%	10.05%	
Expanded uncertainty (P=95%)		$U = k\, U_C$,k=2					20.29%	20.10%	

10. Conducted Power Measurement

10.1 Test Result

Burst Average Power (dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	32.68	32.61	32.56	28.39	28.39	28.58
GPRS (GMSK, 1-Slot)	32.57	32.50	32.45	28.30	28.28	28.44
GPRS (GMSK, 2-Slot)	32.10	32.04	31.99	27.89	27.85	27.99
GPRS (GMSK, 3-Slot)	30.75	30.71	30.68	26.52	26.51	26.63
GPRS (GMSK, 4-Slot)	30.31	30.28	30.21	26.06	26.11	26.15
EGPRS(8PSK, 1-Slot)	32.41	32.36	32.32	28.20	28.18	28.31
EGPRS(8PSK, 2-Slot)	31.97	31.95	31.83	27.73	27.69	27.84
EGPRS(8PSK, 3-Slot)	30.67	30.56	30.48	26.42	26.31	26.50
EGPRS(8PSK, 4-Slot)	29.88	29.79	29.72	25.66	25.59	25.72

Remark: GPRS, CS4 coding scheme. EGPRS, MCS9 coding scheme.
Multi-Slot Class 8 , Support Max 4 downlink, 1 uplink , 5 working link
Multi-Slot Class 10 , Support Max 4 downlink, 2 uplink , 5 working link
Multi-Slot Class 12 , Support Max 4 downlink, 4 uplink , 5 working link

Fram- Average Power(dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	23.65	23.58	23.53	19.36	19.36	19.55
GPRS (GMSK, 1-Slot)	23.54	23.47	23.42	19.27	19.25	19.41
GPRS (GMSK, 2-Slot)	26.08	26.02	25.97	21.87	21.83	21.97
GPRS (GMSK, 3-Slot)	26.49	26.45	26.42	22.26	22.25	22.37
GPRS (GMSK, 4-Slot)	27.30	27.27	27.20	23.05	23.10	23.14
EGPRS(8PSK, 1-Slot)	23.38	23.33	23.29	19.17	19.15	19.28
EGPRS(8PSK, 2-Slot)	25.95	25.93	25.81	21.71	21.67	21.82
EGPRS(8PSK, 3-Slot)	26.41	26.30	26.22	22.16	22.05	22.24
EGPRS(8PSK, 4-Slot)	26.87	26.78	26.71	22.65	22.58	22.71

Remark :
1. SAR testing was performed on the maximum frame-averaged power mode.
2. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum
burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power = Burst averaged power (1 Tx Slot) – 9.03 dB
Frame-averaged power = Burst averaged power (2 Tx Slots) – 6.02 dB
Frame-averaged power = Burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Burst averaged power (4 Tx Slots) – 3.01 dB

WCDMA

Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4183	4233	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1852.4	1880.0	1907.6
AMR 12.2Kbps	20.12	20.58	20.15	20.17	20.29	20.20
RMC 12.2Kbps	20.32	20.64	20.19	20.23	20.33	20.26
HSDPA Subtest-1	19.35	19.67	19.22	19.28	19.39	19.27
HSDPA Subtest-2	18.44	18.74	18.36	18.45	18.47	18.45
HSDPA Subtest-3	17.94	18.32	17.88	17.97	17.99	17.95
HSDPA Subtest-4	17.33	17.65	17.26	17.36	17.47	17.31
HSUPA Subtest-1	18.86	19.26	18.81	18.84	18.97	18.80
HSUPA Subtest-2	17.99	18.33	18.01	17.89	18.16	17.94
HSUPA Subtest-3	17.52	17.87	17.58	17.41	17.73	17.45
HSUPA Subtest-4	16.97	17.35	16.98	16.83	17.15	16.81
HSUPA Subtest-5	16.31	16.72	16.31	16.16	16.64	16.26

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

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

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for βc/βd=12/15, βhs/ βc=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

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

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

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

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

WIFI

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
802.11b	1	2412	11.35
	6	2437	11.25
	11	2462	11.28
802.11g	1	2412	9.68
	6	2437	10.65
	11	2462	10.59
802.11n(HT 20)	1	2412	9.34
	6	2437	10.38
	11	2462	10.56
802.11n(HT 40)	3	2422	8.32
	6	2437	8.24
	9	2452	8.45

Bluetooth

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	-0.740
	39	2441	-0.328
	78	2480	-0.184
π/4-DQPSK(2Mbps)	0	2402	-1.688
	39	2441	-1.264
	78	2480	-1.186
8-DPSK(3Mbps)	0	2402	-1.596
	39	2441	-1.149
	78	2480	-1.058

BT 4.0

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	-3.612
	19	2440	-3.324
	39	2480	-3.679

LTE Conducted Power

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are $\leqslant$ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leqslant$ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is $\leqslant$ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

LTE Band 2

BW(MHz)	Modulation	RB Size	RB Offset	Power Low CH./Freq.	Power Middle CH./Freq.	Power High CH./Freq.
Channel				18700	18900	19100
Frequency(MHz)				1860	1880	1900
20	QPSK	1	0	23.17	23.57	23.54
20	QPSK	1	49	23.15	23.43	23.42
20	QPSK	1	99	23.31	23.45	23.26
20	QPSK	50	0	22.23	22.53	22.57
20	QPSK	50	24	22.20	22.54	22.66
20	QPSK	50	49	22.25	22.56	22.74
20	QPSK	100	0	22.28	22.60	22.71
20	16QAM	1	0	22.15	22.88	22.99
20	16QAM	1	49	22.22	22.80	22.96
20	16QAM	1	99	22.39	22.84	22.90
20	16QAM	50	0	21.23	21.55	21.53
20	16QAM	50	24	21.26	21.57	21.65
20	16QAM	50	49	21.33	21.61	21.76
20	16QAM	100	0	21.30	21.60	21.79
Channel				18675	18900	19125
Frequency(MHz)				1857.5	1880	1902.5
15	QPSK	1	0	23.36	23.64	23.70
15	QPSK	1	37	23.32	23.54	23.57
15	QPSK	1	74	23.42	23.62	23.51
15	QPSK	36	0	22.48	22.64	22.77
15	QPSK	36	18	22.46	22.62	22.82
15	QPSK	36	39	22.49	22.71	22.84
15	QPSK	75	0	22.44	22.66	22.82
15	16QAM	1	0	22.39	22.79	22.50
15	16QAM	1	38	22.43	22.69	22.51
15	16QAM	1	75	22.57	22.84	22.47
15	16QAM	36	0	21.45	21.61	21.77
15	16QAM	36	18	21.50	21.60	21.83
15	16QAM	36	39	21.56	21.69	21.91
15	16QAM	75	0	21.48	21.64	21.82
Channel				18650	18900	19150
Frequency(MHz)				1855	1880	1905
10	QPSK	1	0	23.24	23.55	23.67
10	QPSK	1	24	23.37	23.58	23.64
10	QPSK	1	49	23.27	23.43	23.37
10	QPSK	25	0	22.52	22.55	22.82
10	QPSK	25	12	22.51	22.55	22.83
10	QPSK	25	24	22.50	22.58	22.82
10	QPSK	50	0	22.49	22.57	22.63
10	16QAM	1	0	22.29	22.73	22.69
10	16QAM	1	24	22.50	22.71	22.49
10	16QAM	1	49	22.41	22.66	21.90
10	16QAM	25	0	21.51	21.57	21.91
10	16QAM	25	12	21.51	21.58	21.92
10	16QAM	25	24	21.52	21.64	21.80
10	16QAM	50	0	21.44	21.55	21.74

Channel				18625	18900	19175
Frequency(MHz)				1852.5	1880	1907.5
5	QPSK	1	0	23.64	23.64	23.92
5	QPSK	1	12	23.61	23.62	23.85
5	QPSK	1	24	23.61	23.64	23.83
5	QPSK	12	0	22.65	22.58	22.85
5	QPSK	12	6	22.63	22.59	22.84
5	QPSK	12	11	22.65	22.58	22.82
5	QPSK	25	0	22.58	22.54	22.76
5	16QAM	1	0	22.70	22.69	23.14
5	16QAM	1	12	22.67	22.67	23.09
5	16QAM	1	24	22.68	22.68	23.05
5	16QAM	12	0	21.71	21.63	21.81
5	16QAM	12	6	21.73	21.62	21.80
5	16QAM	12	11	21.74	21.63	21.82
5	16QAM	25	0	21.69	21.51	21.75
Channel				18615	18900	19185
Frequency(MHz)				1851.5	1880	1908.5
3	QPSK	1	0	23.56	23.51	23.87
3	QPSK	1	7	23.53	23.51	23.85
3	QPSK	1	14	23.53	23.53	23.82
3	QPSK	8	0	22.63	22.57	22.82
3	QPSK	8	4	22.63	22.57	22.83
3	QPSK	8	7	22.66	22.59	22.80
3	QPSK	15	0	22.60	22.53	22.80
3	16QAM	1	0	22.67	22.68	22.81
3	16QAM	1	7	22.66	22.64	22.75
3	16QAM	1	14	22.67	22.68	21.88
3	16QAM	8	0	21.78	21.70	21.87
3	16QAM	8	4	21.75	21.69	21.89
3	16QAM	8	7	21.80	21.69	21.81
3	16QAM	15	0	21.65	21.56	21.80
Channel				18607	18900	19193
Frequency(MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	23.56	23.50	23.80
1.4	QPSK	1	2	23.51	23.48	23.79
1.4	QPSK	1	5	23.55	23.50	23.80
1.4	QPSK	3	0	23.60	23.55	23.80
1.4	QPSK	3	1	23.51	23.49	23.72
1.4	QPSK	3	2	23.55	23.54	23.76
1.4	QPSK	6	0	22.55	22.48	22.70
1.4	16QAM	1	0	22.45	22.67	22.82
1.4	16QAM	1	2	22.42	22.66	22.73
1.4	16QAM	1	5	22.43	22.70	22.79
1.4	16QAM	3	0	22.54	22.55	22.71
1.4	16QAM	3	1	22.47	22.45	22.62
1.4	16QAM	3	2	22.51	22.48	22.66
1.4	16QAM	6	0	21.65	21.52	21.79

LTE Band 4

BW(MHz)	Modulation	RB Size	RB Offset	Power Low CH./Freq.	Power Middle CH./Freq.	Power High CH./Freq.
Channel				20050	20175	20300
Frequency(MHz)				1720	1732.5	1745
20	QPSK	1	0	23.49	23.78	23.75
20	QPSK	1	49	23.39	23.63	23.16
20	QPSK	1	99	23.71	23.27	23.25
20	QPSK	50	0	22.58	22.69	22.69
20	QPSK	50	24	22.55	22.67	22.53
20	QPSK	50	49	22.69	22.67	22.42
20	QPSK	100	0	22.64	22.68	22.69
20	16QAM	1	0	22.53	23.12	23.18
20	16QAM	1	49	22.44	23.04	22.80
20	16QAM	1	99	22.73	22.66	22.88
20	16QAM	50	0	21.65	21.69	21.63
20	16QAM	50	24	21.66	21.64	21.63
20	16QAM	50	49	21.72	21.68	21.56
20	16QAM	100	0	21.66	21.69	21.74
Channel				20025	20175	20325
Frequency(MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	23.53	23.68	23.71
15	QPSK	1	37	23.37	23.65	23.25
15	QPSK	1	74	23.63	23.50	23.46
15	QPSK	36	0	22.65	22.67	22.72
15	QPSK	36	18	22.60	22.69	22.58
15	QPSK	36	39	22.70	22.74	22.53
15	QPSK	75	0	22.64	22.71	22.68
15	16QAM	1	0	22.71	22.90	22.59
15	16QAM	1	38	22.62	22.81	22.31
15	16QAM	1	75	22.83	22.81	22.45
15	16QAM	36	0	21.70	21.69	21.74
15	16QAM	36	18	21.70	21.70	21.73
15	16QAM	36	39	21.75	21.72	21.69
15	16QAM	75	0	21.68	21.70	21.69
Channel				20000	20175	20350
Frequency(MHz)				1715	1732.5	1750
10	QPSK	1	0	23.35	23.66	23.42
10	QPSK	1	24	23.33	23.68	23.40
10	QPSK	1	49	23.34	23.40	23.32
10	QPSK	25	0	22.60	22.66	22.66
10	QPSK	25	12	22.57	22.65	22.57
10	QPSK	25	24	22.60	22.67	22.56
10	QPSK	50	0	22.60	22.69	22.61
10	16QAM	1	0	22.55	22.89	22.57
10	16QAM	1	24	22.59	22.85	22.56
10	16QAM	1	49	22.57	22.67	22.50
10	16QAM	25	0	21.63	21.71	21.73
10	16QAM	25	12	21.65	21.71	21.78
10	16QAM	25	24	21.72	21.71	21.78
10	16QAM	50	0	21.59	21.67	21.70

Channel				19975	20175	20375
Frequency(MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	23.68	23.73	23.82
5	QPSK	1	12	23.56	23.70	23.60
5	QPSK	1	24	23.69	23.72	23.79
5	QPSK	12	0	22.61	22.69	22.79
5	QPSK	12	6	22.62	22.71	22.76
5	QPSK	12	11	22.61	22.69	22.78
5	QPSK	25	0	22.58	22.65	22.72
5	16QAM	1	0	22.67	22.82	23.12
5	16QAM	1	12	22.66	22.78	23.00
5	16QAM	1	24	22.71	22.78	23.11
5	16QAM	12	0	21.65	21.76	21.74
5	16QAM	12	6	21.62	21.77	21.74
5	16QAM	12	11	21.67	21.73	21.72
5	16QAM	25	0	21.63	21.62	21.70
Channel				19965	20175	20385
Frequency(MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	23.57	23.61	23.74
3	QPSK	1	7	23.52	23.60	23.77
3	QPSK	1	14	23.56	23.62	23.72
3	QPSK	8	0	22.63	22.67	22.78
3	QPSK	8	4	22.67	22.67	22.77
3	QPSK	8	7	22.65	22.69	22.78
3	QPSK	15	0	22.59	22.67	22.74
3	16QAM	1	0	22.62	22.84	22.77
3	16QAM	1	7	22.63	22.79	22.82
3	16QAM	1	14	22.64	22.79	22.80
3	16QAM	8	0	21.74	21.82	21.81
3	16QAM	8	4	21.73	21.81	21.80
3	16QAM	8	7	21.75	21.82	21.85
3	16QAM	15	0	21.57	21.70	21.74
Channel				19957	20175	20393
Frequency(MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	23.60	23.63	23.76
1.4	QPSK	1	2	23.56	23.61	23.77
1.4	QPSK	1	5	23.60	23.64	23.74
1.4	QPSK	3	0	23.53	23.70	23.78
1.4	QPSK	3	1	23.58	23.62	23.73
1.4	QPSK	3	2	22.60	23.68	23.76
1.4	QPSK	6	0	22.45	22.62	22.70
1.4	16QAM	1	0	22.43	22.83	22.84
1.4	16QAM	1	2	22.45	22.81	22.78
1.4	16QAM	1	5	22.50	22.85	22.82
1.4	16QAM	3	0	22.43	22.69	22.68
1.4	16QAM	3	1	22.48	22.59	22.62
1.4	16QAM	3	2	22.62	22.63	22.67
1.4	16QAM	6	0	21.62	21.70	21.76

LTE Band 5

BW(MHz)	Modulation	RB Size	RB Offset	Power Low CH./Freq.	Power Middle CH./Freq.	Power High CH./Freq.
Channel				20450	20525	20600
Frequency(MHz)				829	836.5	844
10	QPSK	1	0	23.74	24.16	24.26
10	QPSK	1	24	23.97	24.23	24.15
10	QPSK	1	49	24.18	24.19	23.98
10	QPSK	25	0	22.98	23.28	23.23
10	QPSK	25	12	23.07	23.32	23.15
10	QPSK	25	24	23.21	23.32	23.12
10	QPSK	50	0	23.10	23.30	23.14
10	16QAM	1	0	23.04	23.48	23.40
10	16QAM	1	24	23.24	23.55	23.26
10	16QAM	1	49	23.44	23.43	23.13
10	16QAM	25	0	22.07	22.38	22.34
10	16QAM	25	12	22.19	22.42	22.26
10	16QAM	25	24	22.30	22.43	22.23
10	16QAM	50	0	22.10	22.33	22.17
Channel				20425	20525	20625
Frequency(MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.80	24.30	24.14
5	QPSK	1	12	23.87	24.27	24.01
5	QPSK	1	24	23.98	24.29	23.98
5	QPSK	12	0	22.99	23.33	23.15
5	QPSK	12	6	23.01	23.36	23.11
5	QPSK	12	11	23.06	23.37	23.08
5	QPSK	25	0	22.97	23.32	23.07
5	16QAM	1	0	23.08	23.48	23.51
5	16QAM	1	12	23.14	23.47	23.40
5	16QAM	1	24	23.20	23.45	23.36
5	16QAM	12	0	22.07	22.45	22.14
5	16QAM	12	6	22.10	22.48	22.10
5	16QAM	12	11	22.15	22.48	22.08
5	16QAM	25	0	22.10	22.34	22.07
Channel				20415	20525	20635
Frequency(MHz)				825.5	836.5	847.5
3	QPSK	1	0	23.69	24.16	24.00
3	QPSK	1	7	23.74	24.16	23.95
3	QPSK	1	14	23.82	24.20	23.95
3	QPSK	8	0	22.88	23.29	23.08
3	QPSK	8	4	22.94	23.27	23.05
3	QPSK	8	7	22.96	23.29	23.03
3	QPSK	15	0	22.92	23.30	23.02
3	16QAM	1	0	22.98	23.48	23.16
3	16QAM	1	7	23.06	23.47	23.13
3	16QAM	1	14	23.08	23.49	23.12
3	16QAM	8	0	22.07	22.51	22.18
3	16QAM	8	4	22.12	22.51	22.16
3	16QAM	8	7	22.17	22.50	22.17
3	16QAM	15	0	21.97	22.39	22.07

Channel				20407	20525	20643
Frequency(MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	23.77	24.12	23.99
1.4	QPSK	1	2	23.78	24.21	24.04
1.4	QPSK	1	5	23.80	24.23	23.98
1.4	QPSK	3	0	23.89	24.38	24.12
1.4	QPSK	3	1	23.83	24.31	24.04
1.4	QPSK	3	2	23.87	24.36	24.07
1.4	QPSK	6	0	22.87	23.24	22.97
1.4	16QAM	1	0	22.77	23.48	23.16
1.4	16QAM	1	2	22.78	23.51	23.10
1.4	16QAM	1	5	22.80	23.52	23.12
1.4	16QAM	3	0	22.89	23.38	23.03
1.4	16QAM	3	1	22.84	23.28	22.93
1.4	16QAM	3	2	22.89	23.32	22.98
1.4	16QAM	6	0	21.99	22.36	22.12

LTE Band 7

BW(MHz)	Modulation	RB Size	RB Offset	Power Low CH./Freq.	Power Middle CH./Freq.	Power High CH./Freq.
Channel				20850	21100	21350
Frequency(MHz)				2510	2535	2560
20	QPSK	1	0	23.54	23.44	23.33
20	QPSK	1	49	23.63	23.14	22.96
20	QPSK	1	99	23.71	23.43	22.72
20	QPSK	50	0	22.48	22.43	22.62
20	QPSK	50	24	22.50	22.42	22.28
20	QPSK	50	49	22.56	22.47	22.18
20	QPSK	100	0	22.52	22.45	22.34
20	16QAM	1	0	22.51	22.65	22.82
20	16QAM	1	49	22.51	22.55	22.46
20	16QAM	1	99	22.60	22.91	22.28
20	16QAM	50	0	21.39	21.49	21.52
20	16QAM	50	24	21.42	21.35	21.23
20	16QAM	50	49	21.50	21.33	21.10
20	16QAM	100	0	21.44	21.39	21.42
Channel				20825	21100	21375
Frequency(MHz)				2507.5	2535	2532.5
15	QPSK	1	0	23.57	23.24	23.47
15	QPSK	1	37	23.66	23.17	22.91
15	QPSK	1	74	23.72	23.47	22.77
15	QPSK	36	0	22.69	22.50	22.37
15	QPSK	36	18	22.72	22.56	22.18
15	QPSK	36	39	22.75	22.69	22.13
15	QPSK	75	0	22.68	22.62	22.20
15	16QAM	1	0	22.52	22.36	22.22
15	16QAM	1	38	22.52	22.38	21.68
15	16QAM	1	75	22.62	22.64	21.68
15	16QAM	36	0	21.54	21.45	21.35
15	16QAM	36	18	21.58	21.43	21.11
15	16QAM	36	39	21.63	21.48	21.18
15	16QAM	75	0	21.54	21.48	21.13

Channel				20800	21100	21400
Frequency(MHz)				2505	2535	2565
10	QPSK	1	0	23.59	23.36	23.23
10	QPSK	1	24	23.69	23.42	23.18
10	QPSK	1	49	23.71	23.49	22.76
10	QPSK	25	0	22.43	22.39	22.35
10	QPSK	25	12	22.48	22.39	22.40
10	QPSK	25	24	22.53	22.44	22.33
10	QPSK	50	0	22.44	22.40	22.34
10	16QAM	1	0	22.49	22.48	22.07
10	16QAM	1	24	22.51	22.54	22.05
10	16QAM	1	49	22.54	22.56	21.74
10	16QAM	25	0	21.33	21.40	21.33
10	16QAM	25	12	21.35	21.34	21.39
10	16QAM	25	24	21.40	21.35	21.42
10	16QAM	50	0	21.29	21.31	21.27
Channel				20775	21100	21425
Frequency(MHz)				2502.5	2535	2567.5
5	QPSK	1	0	23.73	23.65	23.57
5	QPSK	1	12	23.70	23.50	23.01
5	QPSK	1	24	23.73	23.70	23.06
5	QPSK	12	0	22.49	22.45	22.61
5	QPSK	12	6	22.47	22.42	22.42
5	QPSK	12	11	22.50	22.41	22.41
5	QPSK	25	0	22.45	22.38	22.48
5	16QAM	1	0	22.47	22.49	22.80
5	16QAM	1	12	22.42	22.43	22.29
5	16QAM	1	24	22.43	22.45	22.49
5	16QAM	12	0	21.42	21.44	21.47
5	16QAM	12	6	21.42	21.39	21.38
5	16QAM	12	11	21.40	21.37	21.40
5	16QAM	25	0	21.39	21.30	21.42

LTE Band 17

BW(MHz)	Modulation	RB Size	RB Offset	Power Low CH./Freq.	Power Middle CH./Freq.	Power High CH./Freq.
Channel				23780	23790	23800
Frequency(MHz)				709	710	711
10	QPSK	1	0	24.05	24.08	24.10
10	QPSK	1	24	24.09	24.07	24.16
10	QPSK	1	49	24.29	24.34	24.45
10	QPSK	25	0	23.13	23.15	23.13
10	QPSK	25	12	23.16	23.17	23.19
10	QPSK	25	24	23.26	23.29	23.32
10	QPSK	50	0	23.21	23.21	23.27
10	16QAM	1	0	23.25	23.31	23.25
10	16QAM	1	24	23.25	23.32	23.30
10	16QAM	1	49	23.45	23.55	23.46
10	16QAM	25	0	22.24	22.21	22.26
10	16QAM	25	12	22.24	22.26	22.37
10	16QAM	25	24	22.38	22.39	22.48
10	16QAM	50	0	22.24	22.22	22.29

Channel				23755	23790	23825
Frequency(MHz)				706.5	710	713.5
5	QPSK	1	0	24.12	24.18	24.24
5	QPSK	1	12	24.10	24.15	24.30
5	QPSK	1	24	24.16	24.29	24.44
5	QPSK	12	0	23.20	23.20	23.36
5	QPSK	12	6	23.20	23.20	23.39
5	QPSK	12	11	23.18	23.22	23.41
5	QPSK	25	0	23.15	23.17	23.34
5	16QAM	1	0	23.29	23.30	23.63
5	16QAM	1	12	23.24	23.28	23.67
5	16QAM	1	24	23.28	23.39	23.70
5	16QAM	12	0	22.32	22.30	22.39
5	16QAM	12	6	22.31	22.27	22.42
5	16QAM	12	11	22.31	22.31	22.43
5	16QAM	25	0	22.30	22.19	22.37

10.2 Tune-up Power

Mode	GSM850(AVG)	GSM1900(AVG)
GSM/PCS	32±1dBm	28±1dBm
GPRS (1 Slot)	32±1dBm	28±1dBm
GPRS (2 Slot)	32±1dBm	27±1dBm
GPRS (3 Slot)	30±1dBm	26±1dBm
GPRS (4 Slot)	30±1dBm	26±1dBm
EDGE (1 Slot)	32±1dBm	28±1dBm
EDGE (2 Slot)	31±1dBm	27±1dBm
EDGE (3 Slot)	30±1dBm	26±1dBm
EDGE (4 Slot)	29±1dBm	25±1dBm

Mode	WCDMA Band V(AVG)	WCDMA Band II(AVG)
AMR	20±1dBm	20±1dBm
RMC	20±1dBm	20±1dBm
HSDPA Subtest-1	19±1dBm	19±1dBm
HSDPA Subtest-2	18±1dBm	18±1dBm
HSDPA Subtest-3	18±1dBm	17±1dBm
HSDPA Subtest-4	17±1dBm	17±1dBm
HSUPA Subtest-1	19±1dBm	18±1dBm
HSUPA Subtest-2	18±1dBm	18±1dBm
HSUPA Subtest-3	17±1dBm	17±1dBm
HSUPA Subtest-4	17±1dBm	17±1dBm
HSUPA Subtest-5	16±1dBm	16±1dBm

Mode	WIFI(AVG)
IEEE 802.11b	11±1dBm
IEEE 802.11g	10±1dBm
IEEE 802.11n(HT 20)	10±1dBm
IEEE 802.11n(HT 40)	8±1dBm

Mode	BT(AVG)
GFSK	0±1dBm
π/4-DQPSK	-1±1dBm
8DPSK	-1±1dBm

Mode	BT 4.0(AVG)
GFSK	-3±1dBm

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BW[MHz]	RB Size	Mode	Band 2	Band 4	Band 5	Band 7	Band 17
1.4	1	QPSK	23±1dBm	23±1dBm	24±1dBm	N/A	N/A
1.4	3		23±1dBm	23±1dBm	24±1dBm	N/A	N/A
1.4	6		22±1dBm	22±1dBm	23±1dBm	N/A	N/A
1.4	1	16- QAM	22±1dBm	22±1dBm	23±1dBm	N/A	N/A
1.4	3		22±1dBm	22±1dBm	23±1dBm	N/A	N/A
1.4	6		21±1dBm	21±1dBm	22±1dBm	N/A	N/A
3	1	QPSK	23±1dBm	23±1dBm	24±1dBm	N/A	N/A
3	8		22±1dBm	22±1dBm	23±1dBm	N/A	N/A
3	15		22±1dBm	22±1dBm	23±1dBm	N/A	N/A
3	1	16- QAM	22±1dBm	22±1dBm	23±1dBm	N/A	N/A
3	8		21±1dBm	21±1dBm	22±1dBm	N/A	N/A
3	15		21±1dBm	21±1dBm	22±1dBm	N/A	N/A
5	1	QPSK	23±1dBm	23±1dBm	24±1dBm	23±1dBm	24±1dBm
5	12		22±1dBm	22±1dBm	23±1dBm	22±1dBm	23±1dBm
5	25		22±1dBm	22±1dBm	23±1dBm	22±1dBm	23±1dBm
5	1	16- QAM	23±1dBm	23±1dBm	23±1dBm	22±1dBm	23±1dBm
5	12		21±1dBm	21±1dBm	22±1dBm	21±1dBm	22±1dBm
5	25		21±1dBm	21±1dBm	22±1dBm	21±1dBm	22±1dBm
10	1	QPSK	23±1dBm	23±1dBm	24±1dBm	23±1dBm	24±1dBm
10	25		22±1dBm	22±1dBm	23±1dBm	22±1dBm	23±1dBm
10	50		22±1dBm	22±1dBm	23±1dBm	22±1dBm	23±1dBm
10	1	16- QAM	22±1dBm	22±1dBm	23±1dBm	22±1dBm	23±1dBm
10	25		21±1dBm	21±1dBm	22±1dBm	21±1dBm	22±1dBm
10	50		21±1dBm	21±1dBm	22±1dBm	21±1dBm	22±1dBm
15	1	QPSK	23±1dBm	23±1dBm	N/A	23±1dBm	N/A
15	36		22±1dBm	22±1dBm	N/A	22±1dBm	N/A
15	75		22±1dBm	22±1dBm	N/A	22±1dBm	N/A
15	1	16- QAM	22±1dBm	22±1dBm	N/A	22±1dBm	N/A
15	36		21±1dBm	21±1dBm	N/A	22±1dBm	N/A
15	75		21±1dBm	21±1dBm	N/A	21±1dBm	N/A
20	1	QPSK	23±1dBm	23±1dBm	N/A	23±1dBm	N/A
20	50		22±1dBm	22±1dBm	N/A	22±1dBm	N/A
20	100		22±1dBm	22±1dBm	N/A	22±1dBm	N/A
20	1	16- QAM	22±1dBm	23±1dBm	N/A	22±1dBm	N/A
20	50		21±1dBm	21±1dBm	N/A	21±1dBm	N/A
20	100		21±1dBm	21±1dBm	N/A	21±1dBm	N/A

10.3 SAR Test Exclusions Applied

Per FCC KDB 447498D01, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHZ)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

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

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

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of **Bluetooth Head** (rounded to the nearest mW) and the antenna to user separation distance,
Bluetooth Head SAR was not required; [(0.959/5)* √2.480 = **0.30** < 3.0.

Based on the maximum conducted power of **Bluetooth Body** (rounded to the nearest mW) and the antenna to user separation distance,
Bluetooth Body SAR was not required; [(0.959/10)* √2.480] = **0.15** < 3.0.

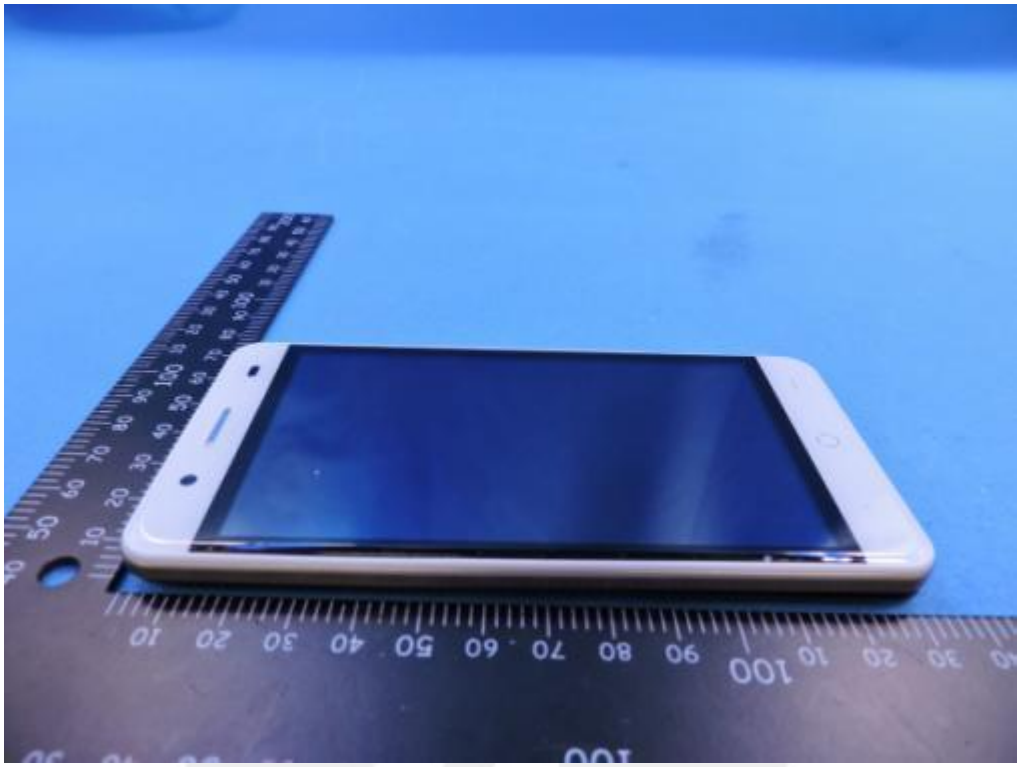
Based on the maximum conducted power of **2.4 GHz WIFI Head** (rounded to the nearest mW) and the antenna to user separation distance,
2.4 GHz WIFI SAR was required; [(13.646/5)* √2.412] = **4.24** > 3.0.

Based on the maximum conducted power of **2.4 GHz WIFI Body** (rounded to the nearest mW) and the antenna to user separation distance,
2.4 GHz WIFI SAR was not required; [(13.646/10)* √2.412] = **2.12** < 3.0.

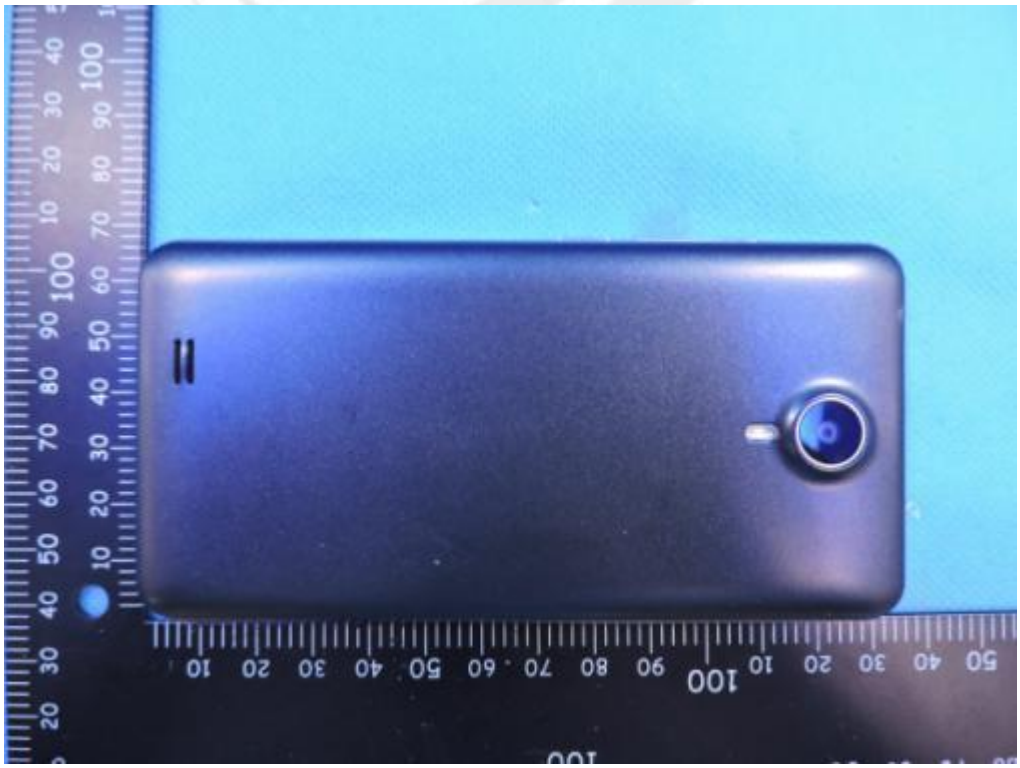
11. EUT And Test Setup Photo

11.1 EUT Photo

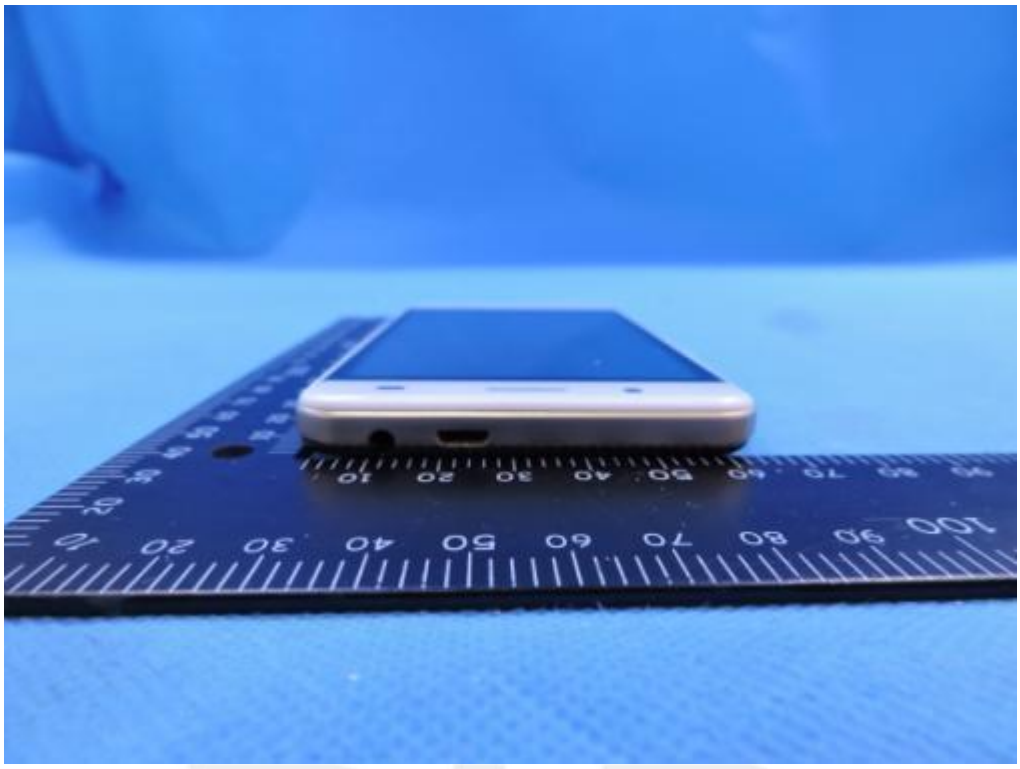
Front side



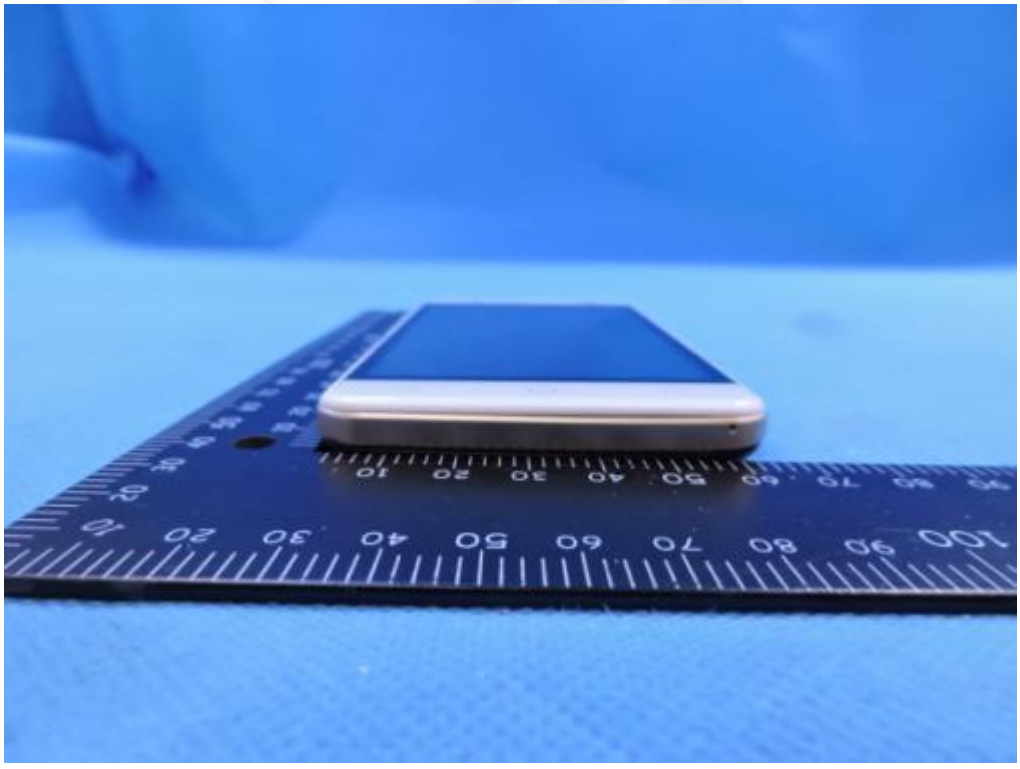
Back side



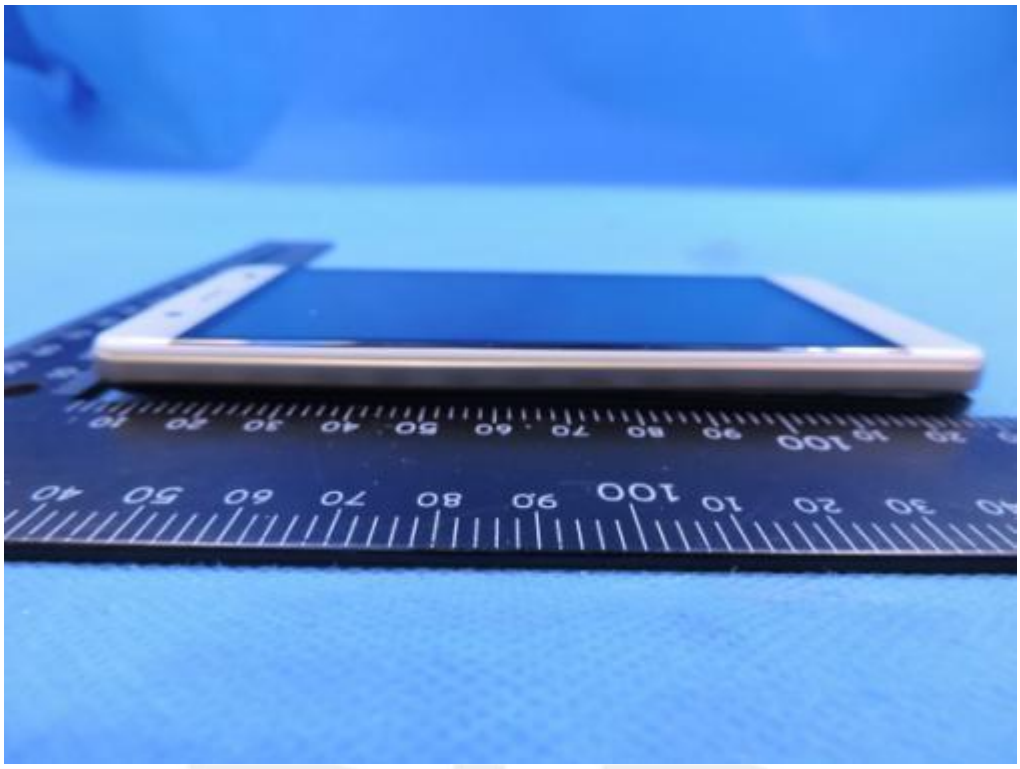
Top side



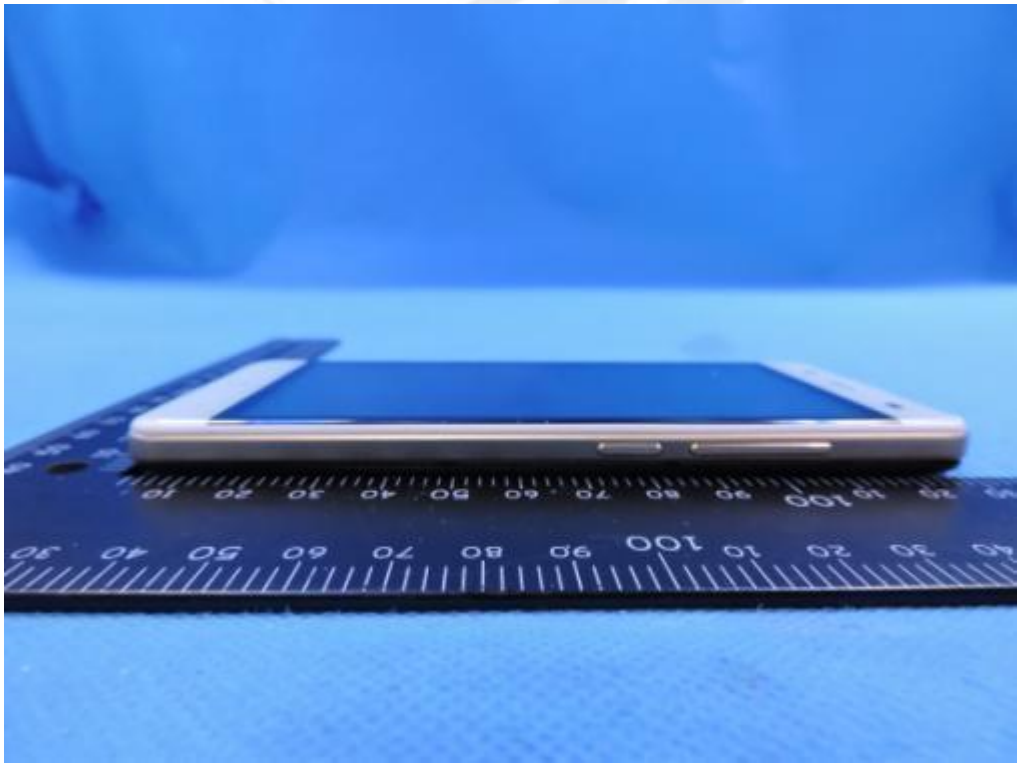
Bottom side



Left side

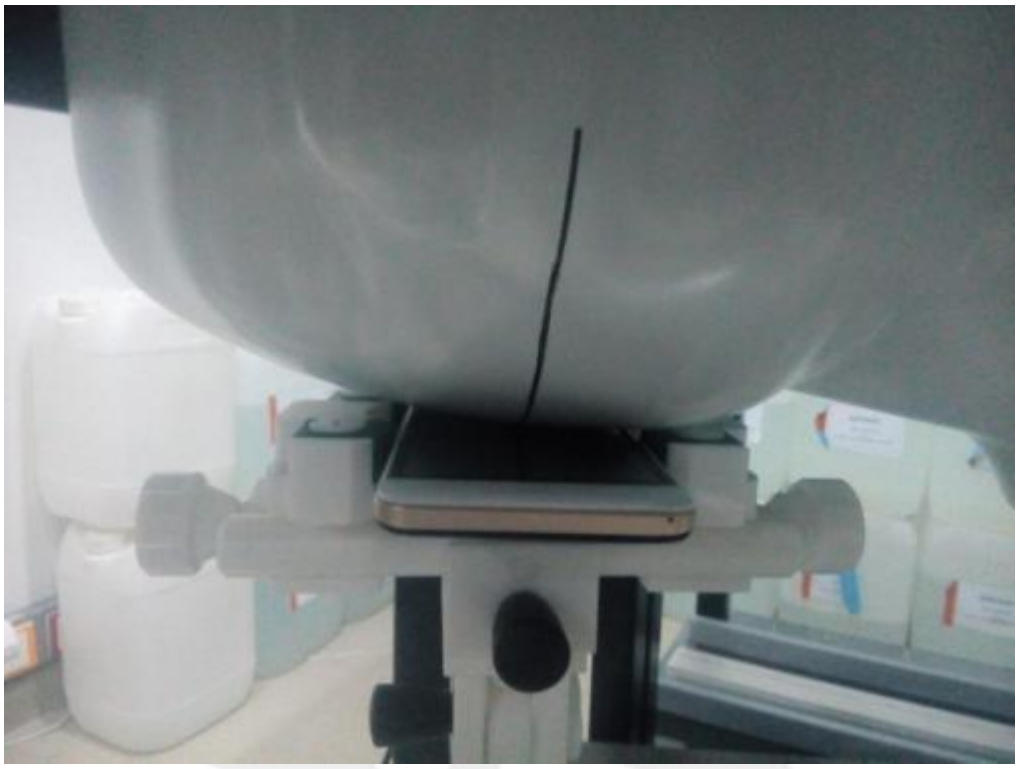


Right side

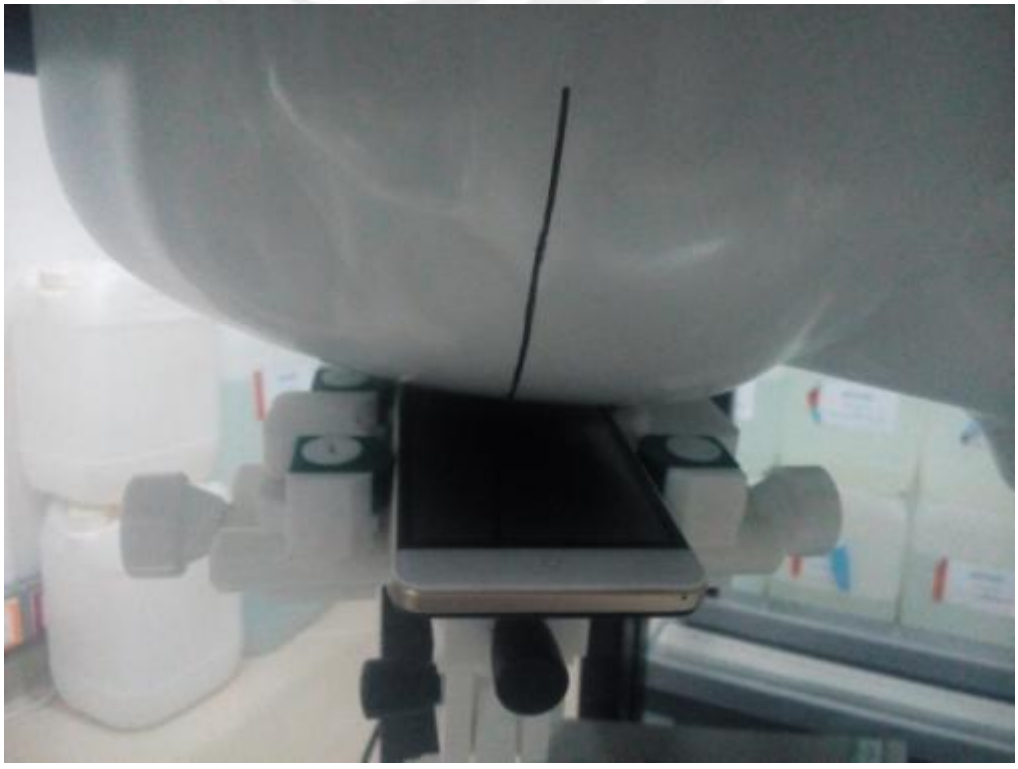


11.2 Setup Photo

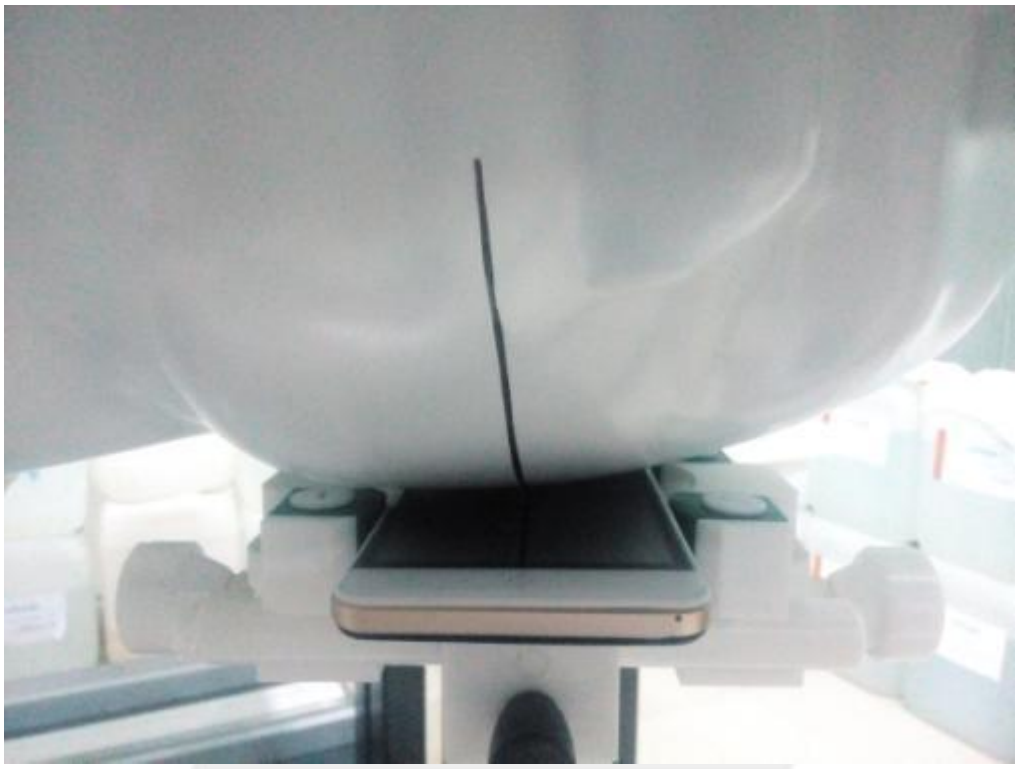
Right Touch



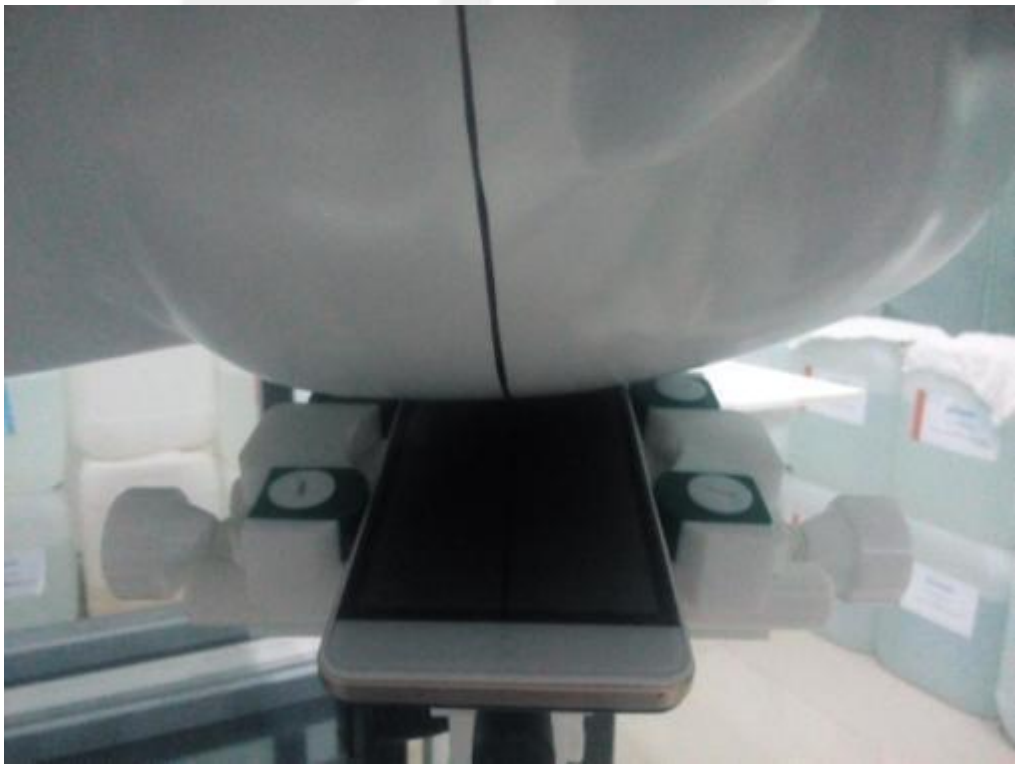
Right Tilt



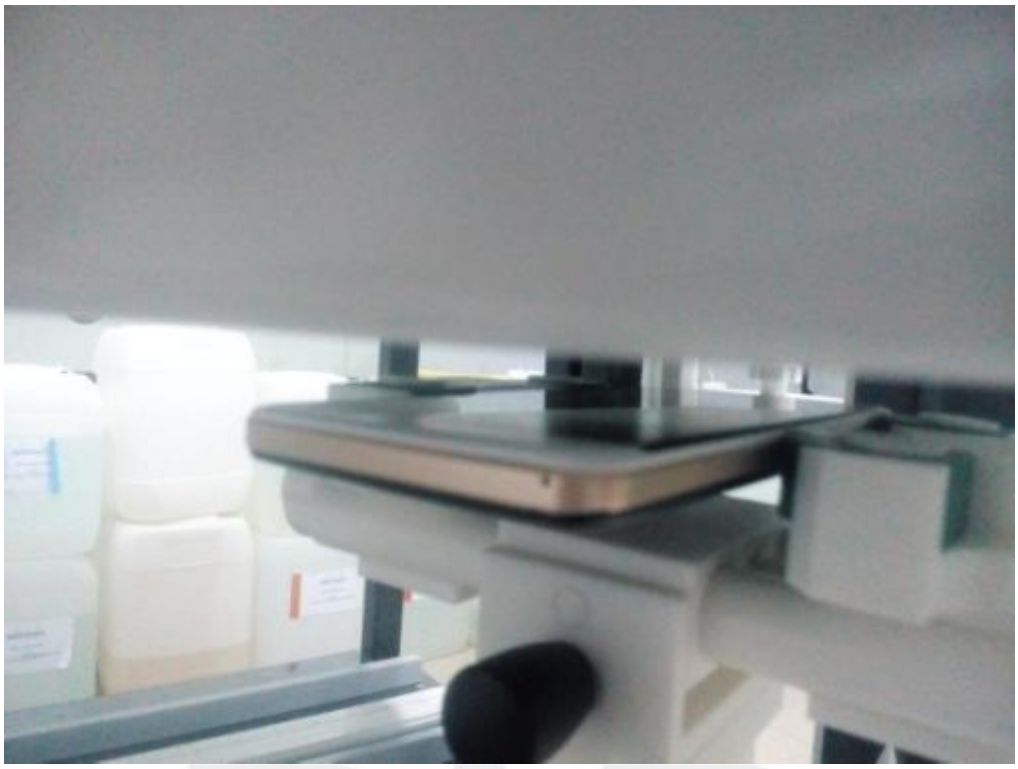
Left Touch



Left Tilt



Body Front side(separation distance is 10mm)



Body Back side(separation distance is 10mm)

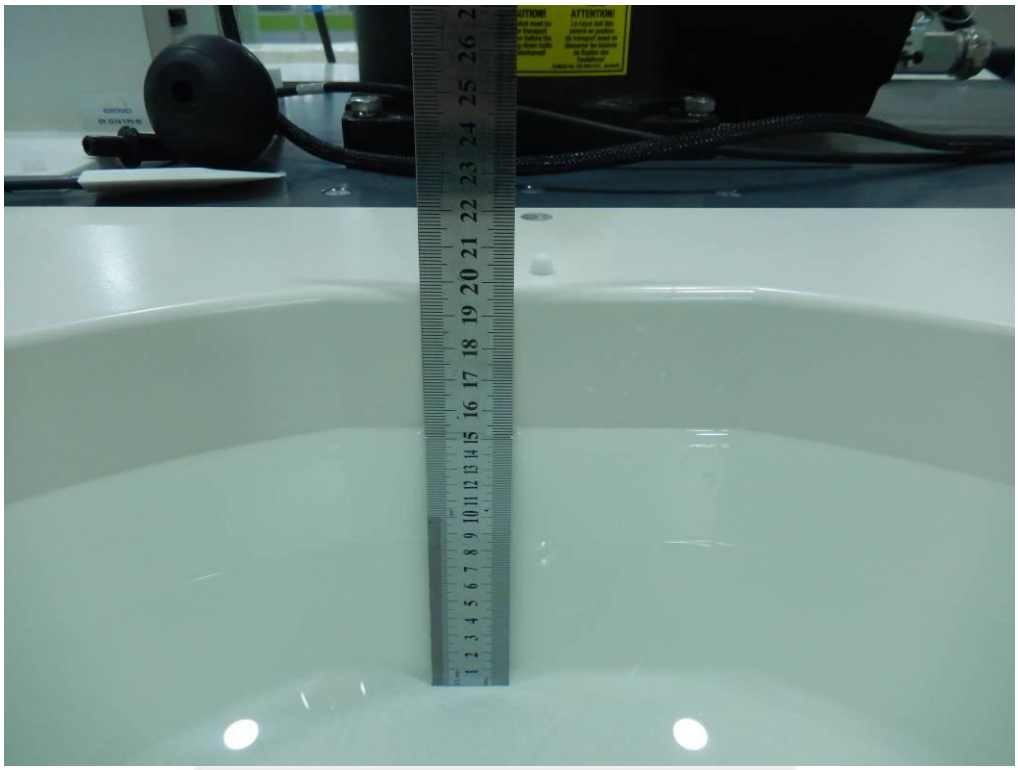
Body left side(separation distance is 10mm)

Body right side(separation distance is 10mm)

Body top side(separation distance is 10mm)

Body Bottom side(separation distance is 10mm)

Liquid depth (15 cm)



12. SAR Result Summary

12.1 Head SAR

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
GSM 850	Voice	Right Cheek	128	0.135	-2.68	33	32.68	**0.145**	1
		Right Tilt	128	0.078	-0.15	33	32.68	0.084	/
		Left Cheek	128	0.114	1.88	33	32.68	0.123	/
		Left Tilt	128	0.053	0.70	33	32.68	0.057	/
GSM1900	Voice	Right Cheek	810	0.157	-2.91	29	28.58	0.173	/
		Right Tilt	810	0.036	-1.69	29	28.58	0.040	/
		Left Cheek	810	0.175	-0.71	29	28.58	**0.193**	3
		Left Tilt	810	0.031	2.21	29	28.58	0.034	/
WCDMA II	RMC	Right Cheek	9400	0.165	0.21	21	20.33	0.193	/
		Right Tilt	9400	0.030	-3.53	21	20.33	0.035	/
		Left Cheek	9400	0.254	-2.01	21	20.33	**0.296**	5
		Left Tilt	9400	0.027	0.28	21	20.33	0.032	/
WCDMA V	RMC	Right Cheek	4183	0.045	2.85	21	20.64	**0.049**	7
		Right Tilt	4183	0.021	0.23	21	20.64	0.023	/
		Left Cheek	4183	0.040	2.95	21	20.64	0.043	/
		Left Tilt	4183	0.017	-0.04	21	20.64	0.018	/

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle(%)	Scaled SAR (W/Kg)	Meas. No.
WIFI	802.11b	Right Cheek	1	0.923	-1.20	12	11.35	100%	**1.072**	9
		Right Cheek	6	0.891	2.43	12	11.25	100%	1.059	
		Right Cheek	11	0.802	1.78	12	11.28	100%	0.947	
		Right Tilt	1	0.566	0.39	12	11.35	100%	0.657	/
		Left Cheek	1	0.390	-1.08	12	11.35	100%	0.453	/
		Left Tilt	1	0.613	2.29	12	11.35	100%	0.712	/

Note:

1.Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was **0.912** W/Kg for Head)

2. Per KDB865664 D01, Repeated measurement is not required when the original highest measured SAR is <0.80 W/kg

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Right Cheek	18900	0.144	-2.16	24	23.57	0.159	/
			50	49	Right Cheek	19100	0.112	-1.32	23	22.74	0.119	/
			1	0	Right Tilt	18900	0.075	1.90	24	23.57	0.083	/
			50	49	Right Tilt	19100	0.061	-0.49	23	22.74	0.065	/
			1	0	Left Cheek	18900	0.251	-2.20	24	23.57	**0.277**	11
			50	49	Left Cheek	19100	0.231	3.56	23	22.74	0.245	/
			1	0	Left Tilt	18900	0.138	2.06	24	23.57	0.152	/
			50	49	Left Tilt	19100	0.128	-3.15	23	22.74	0.136	/
LTE Band 4	20M	QPSK	1	0	Right Cheek	20175	0.141	-2.92	24	23.78	0.148	/
			50	0	Right Cheek	20175	0.112	1.09	23	22.69	0.120	/
			1	0	Right Tilt	20175	0.071	2.94	24	23.78	0.075	/
			50	0	Right Tilt	20175	0.054	2.15	23	22.69	0.058	/
			1	0	Left Cheek	20175	0.269	3.28	24	23.78	**0.283**	13
			50	0	Left Cheek	20175	0.233	-3.70	23	22.69	0.250	/
			1	0	Left Tilt	20175	0.137	-2.66	24	23.78	0.144	/
			50	0	Left Tilt	20175	0.130	-3.50	23	22.69	0.140	/
LTE Band 5	10M	QPSK	1	0	Right Cheek	20600	0.034	-2.28	25	24.26	**0.040**	15
			25	24	Right Cheek	20525	0.031	-2.10	24	23.32	0.036	/
			1	0	Right Tilt	20600	0.018	3.55	25	24.26	0.021	/
			25	24	Right Tilt	20525	0.010	3.49	24	23.32	0.012	/
			1	0	Left Cheek	20600	0.030	-2.78	25	24.26	0.036	/
			25	24	Left Cheek	20525	0.025	1.61	24	23.32	0.029	/
			1	0	Left Tilt	20600	0.014	-0.94	25	24.26	0.017	/
			25	24	Left Tilt	20525	0.010	3.43	24	23.32	0.012	/
LTE Band 7	20M	QPSK	1	99	Right Cheek	20850	0.031	3.09	24	23.71	0.033	/
			50	0	Right Cheek	21350	0.018	3.55	23	22.62	0.020	/
			1	99	Right Tilt	20850	0.014	-3.12	24	23.71	0.015	/
			50	0	Right Tilt	21350	0.009	-0.80	23	22.62	0.010	/
			1	99	Left Cheek	20850	0.039	-2.68	24	23.71	**0.042**	17
			50	0	Left Cheek	21350	0.024	-3.48	23	22.62	0.026	/
			1	99	Left Tilt	20850	0.017	-2.92	24	23.71	0.018	/
			50	0	Left Tilt	21350	0.012	-1.19	23	22.62	0.013	/
LTE Band 17	10M	QPSK	1	49	Right Cheek	23800	0.038	3.15	25	24.45	0.043	/
			25	24	Right Cheek	23800	0.036	-0.42	24	23.32	0.042	/
			1	49	Right Tilt	23800	0.016	-2.02	25	24.45	0.018	/
			25	24	Right Tilt	23800	0.014	0.15	24	23.32	0.016	/
			1	49	Left Cheek	23800	0.041	0.91	25	24.45	**0.047**	19
			25	24	Left Cheek	23800	0.035	-1.18	24	23.32	0.041	/
			1	49	Left Tilt	23800	0.020	-2.48	25	24.45	0.023	/
			25	24	Left Tilt	23800	0.014	3.04	24	23.32	0.016	/

12.2 Body-worn and Hotspot SAR

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
GSM 850	GPRS Data-4 Slot	Front side	128	0.154	-3.47	31	30.31	0.181	/
		Back side	128	0.238	-2.64	31	30.31	**0.279**	2
		Left side	128	0.079	-3.91	31	30.31	0.093	/
		Right side	128	0.043	-2.38	31	30.31	0.050	/
		Bottom side	128	0.114	-1.39	31	30.31	0.134	/
GSM1900	GPRS Data-4 Slot	Front side	810	0.130	-0.81	27	26.15	0.158	/
		Back side	810	0.257	-2.69	27	26.15	**0.313**	4
		Left side	810	0.088	3.05	27	26.15	0.107	/
		Right side	810	0.064	0.87	27	26.15	0.078	/
		Bottom side	810	0.121	-3.56	27	26.15	0.147	/
WCDMA II	RMC	Front side	9400	0.136	2.14	21	20.33	0.159	/
		Back side	9400	0.379	-0.47	21	20.33	**0.442**	6
		Left side	9400	0.091	2.73	21	20.33	0.106	/
		Right side	9400	0.088	0.93	21	20.33	0.103	/
		Bottom side	9400	0.135	-0.26	21	20.33	0.158	/
WCDMA V	RMC	Front side	4183	0.125	-0.69	21	20.64	0.136	/
		Back side	4183	0.284	-1.36	21	20.64	**0.309**	8
		Left side	4183	0.082	0.13	21	20.64	0.089	/
		Right side	4183	0.063	1.53	21	20.64	0.068	/
		Bottom side	4183	0.109	-1.64	21	20.64	0.118	/

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle(%)	Scaled SAR (W/Kg)	Meas. No.
WIFI	802.11b	Front side	1	0.216	1.09	12	11.35	100	0.251	/
		Back side	1	0.335	-1.56	12	11.35	100	**0.389**	10
		Left side	1	0.172	2.86	12	11.35	100	0.200	/
		Top side	1	0.172	-2.38	12	11.35	100	0.200	/

Note:

1. The test separation of all above table is 10mm.
2. Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was **0.331** W/Kg for Body)
3. When the user enables the personal Wireless router functions for the handsets, actual operations include simultaneous transmission of both the Wi-Fi transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. The “Portable Hotspot” feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Front side	18900	0.160	0.41	24	23.57	0.177	/
			50	49	Front side	19100	0.102	-3.70	23	22.74	0.108	/
			1	0	Back Side	18900	0.290	-2.18	24	23.57	**0.320**	12
			50	49	Back Side	19100	0.241	-0.21	23	22.74	0.256	/
			1	0	Left Side	18900	0.102	-3.40	24	23.57	0.113	/
			50	49	Left Side	19100	0.098	-1.97	23	22.74	0.104	/
			1	0	Right Side	18900	0.098	-1.42	24	23.57	0.108	/
			50	49	Right Side	19100	0.064	3.06	23	22.74	0.068	/
			1	0	Bottom Side	18900	0.183	3.85	24	23.57	0.202	/
			50	49	Bottom Side	19100	0.128	0.19	23	22.74	0.136	/
LTE Band 4	20M	QPSK	1	0	Front side	20175	0.254	-3.56	24	23.78	0.267	/
			50	0	Front side	20175	0.227	-0.74	23	22.69	0.244	/
			1	0	Back Side	20175	0.335	-2.78	24	23.78	**0.352**	14
			50	0	Back Side	20175	0.311	-2.66	23	22.69	0.334	/
			1	0	Left Side	20175	0.133	-1.09	24	23.78	0.140	/
			50	0	Left Side	20175	0.121	1.99	23	22.69	0.130	/
			1	0	Right Side	20175	0.101	3.63	24	23.78	0.106	/
			50	0	Right Side	20175	0.092	-1.41	23	22.69	0.099	/
			1	0	Bottom Side	20175	0.214	3.75	24	23.78	0.225	/
			50	0	Bottom Side	20175	0.197	-0.36	23	22.69	0.212	/
LTE Band 5	10M	QPSK	1	0	Front side	20600	0.035	-3.26	25	24.26	0.042	/
			25	24	Front side	20525	0.029	0.10	24	23.32	0.034	/
			1	0	Back Side	20600	0.072	-1.79	25	24.26	**0.085**	16
			25	24	Back Side	20525	0.044	-2.19	24	23.32	0.051	/
			1	0	Left Side	20600	0.021	1.85	25	24.26	0.025	/
			25	24	Left Side	20525	0.015	0.59	24	23.32	0.018	/
			1	0	Right Side	20600	0.017	-3.75	25	24.26	0.020	/
			25	24	Right Side	20525	0.009	-1.19	24	23.32	0.011	/
			1	0	Bottom Side	20600	0.064	-3.41	25	24.26	0.076	/
			25	24	Bottom Side	20525	0.043	3.01	24	23.32	0.050	/
LTE Band 7	20M	QPSK	1	99	Front side	20850	0.102	-0.37	24	23.71	0.109	/
			50	0	Front side	21350	0.085	3.28	23	22.62	0.093	/
			1	99	Back Side	20850	0.195	-3.39	24	23.71	**0.208**	18
			50	0	Back Side	21350	0.157	3.22	23	22.62	0.171	/
			1	99	Left Side	20850	0.064	1.38	24	23.71	0.068	/
			50	0	Left Side	21350	0.043	-0.18	23	22.62	0.047	/
			1	99	Right Side	20850	0.042	-3.94	24	23.71	0.045	/
			50	0	Right Side	21350	0.031	-3.57	23	22.62	0.034	/
			1	99	Bottom Side	20850	0.113	3.69	24	23.71	0.121	/
			50	0	Bottom Side	21350	0.099	-3.44	23	22.62	0.108	/

LTE Band 17	10M	QPSK	1	49	Front side	23800	0.135	1.90	25	24.45	0.153	/
			25	24	Front side	23800	0.115	0.50	24	23.32	0.134	/
			1	49	Back Side	23800	0.244	-2.39	25	24.45	**0.277**	20
			25	24	Back Side	23800	0.204	-2.46	24	23.32	0.239	/
			1	49	Left Side	23800	0.108	2.04	25	24.45	0.123	/
			25	24	Left Side	23800	0.092	3.15	24	23.32	0.108	/
			1	49	Right Side	23800	0.094	-3.13	25	24.45	0.107	/
			25	24	Right Side	23800	0.076	-0.34	24	23.32	0.089	/
			1	49	Bottom Side	23800	0.146	3.61	25	24.45	0.166	/
			25	24	Bottom Side	23800	0.103	1.30	24	23.32	0.120	/

Repeated SAR

Band	BW (MHz)	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
WIFI	802.11b	Right cheek	1	0.902	-2.48	12	11.35	1.048	/

12.3 repeated SAR measurement

Band	BW (MHz)	Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
WIFI	802.11b	Right cheek	1	0.923	0.902	0.98	-	-	-

Note:

1. Per KDB 865664 D01V01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01V01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is＞1.20 or when the original or repeated measurement is ≥ 1.45W/Kg
4. The ratio is the difference in percentage between original and repeated measured SAR.

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

Position	Simultaneous state
Head	1. GSM + WIFI
	2. GSM + Bluetooth
	3. WCDMA + WIFI
	4. WCDMA + Bluetooth
	5. LTE + WIFI
	6. LTE + Bluetooth
Body	1. GSM + WIFI
	2. GSM + Bluetooth
	3. WCDMA + WIFI
	4. WCDMA + Bluetooth
	5. LTE + WIFI
	6. LTE + Bluetooth

NOTE:

1. Bluetooth and WIFI can't simultaneous transmission at the same time.
2. For simultaneous transmission at head and body exposure position, 2 transmitters simultaneous transmission was the worst state.
3. Based upon KDB 447498 D01 v05, BT SAR is excluded as below table.
4. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
5. For minimum test separation distance≦50mm,Bluetooth standalone SAR is excluded according to [(max. power of channel, including tune-up tolerance, mW)/ (min. test separation distance, mm) ·[√f (GHz) /x] ≦3.0 for 1-g SAR and ≦7.5 for 10-g extremity SAR
6. The reported SAR summation is calculated based on the same configuration and test position.
7. KDB 447498 / 4.3.2 (2) when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
   a) (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f (GHz) /x] W/kg for test separation distances≤ 50 mm;
   Where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
   b) 0.4W/Kg for 1-g SAR and 1.0W/Kg for 10-g SAR, when the separation distance is >50mm.

Estimated SAR		Maximum Power		Antenna to user(mm)	Frequency(GHz)	Stand alone SAR(1g) [W/kg]
		dBm	mW			
BT	Head	1	1.259	5	2.480	0.053
	Body			10	2.480	0.026

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
GSM + WIFI	Head	GSM Voice	0.193	1.265
		WIFI	1.072	
	Body	GSM Data	0.313	0.702
		WIFI	0.389	
GSM + Bluetooth	Head	GSM Voice	0.193	0.246
		Bluetooth	0.053	
	Body	GSM Data	0.313	0.339
		Bluetooth	0.026	
WCDMA + WIFI	Head	WCDMA RMC	0.296	**1.368**
		WIFI	1.072	
	Body	WCDMA RMC	0.422	**0.811**
		WIFI	0.389	
WCDMA + Bluetooth	Head	WCDMA RMC	0.296	0.349
		Bluetooth	0.053	
	Body	WCDMA RMC	0.422	0.448
		Bluetooth	0.026	
LTE + WIFI	Head	LTE RMC	0.283	1.355
		WIFI	1.072	
	Body	LTE RMC	0.352	0.741
		WIFI	0.389	
LTE + Bluetooth	Head	LTE RMC	0.283	0.336
		Bluetooth	0.053	
	Body	LTE RMC	0.352	0.378
		Bluetooth	0.026	

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.

When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR-1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR-1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
750MHz Dipole	SATIMO	SID750	SN 30/14 DIP0G750-331	2014.09.01	2017.08.31
835MHz Dipole	SATIMO	SID835	SN 30/14 DIP0G835-332	2014.09.01	2017.08.31
1800MHz Dipole	SATIMO	SID1800	SN 30/14 DIP1G800-329	2014.09.01	2017.08.31
1900MHz Dipole	SATIMO	SID1900	SN 30/14 DIP1G900-333	2014.09.01	2017.08.31
2450MHzDipole	SATIMO	SID2450	SN 30/14 DIP2G450-335	2014.09.01	2017.08.31
E-Field Probe	MVG	SSE2	SN 45/15 EPGO281	2015.10.12	2016.10.11
Antenna	SATIMO	ANTA3	SN 07/13 ZNTA52	2014.09.01	2017.08.31
Waveguide	SATIMO	SWG5500	SN 13/14 WGA32	2014.09.01	2017.08.31
Phantom1	SATIMO	SAM	SN 32/14 SAM115	N/A	N/A
Phantom2	SATIMO	SAM	SN 32/14 SAM116	N/A	N/A
SAR TEST BENCH	SATIMO	GSM and WCDMA mobile phone POSITIONNING SYSTEM	SN 32/14 MSH97	N/A	N/A
SAR TEST BENCH	SATIMO	LAPTOP POSITIONNING SYSTEM	SN 32/14 LSH29	N/A	N/A
Dielectric Probe Kit	SATIMO	SCLMP	SN 32/14 OCPG52	2015.09.01	2016.08.31
Multi Meter	Keithley	Multi Meter 2000	4050073	2015.11.20	2016.11.19
Signal Generator	Agilent	N5182A	MY50140530	2015.11.18	2016.11.17
Power Meter	R&S	NRP	100510	2015.10.25	2016.10.24
Power Meter	HP	EPM-442A	GB37170267	2015.10.24	2016.10.23
Power Sensor	R&S	NRP-Z11	101919	2015.10.24	2016.10.23
Power Sensor	HP	8481A	2702A65976	2015.10.24	2016.10.23
Network Analyzer	Agilent	5071C	EMY46103472	2015.12.12	2016.12.11
Attenuator 1	PE	PE7005-10	N/A	2015.10.25	2016.10.24
Attenuator 2	PE	PE7005-3	N/A	2015.10.24	2016.10.23
Attenuator 3	Woken	WK0602-XX	N/A	2015.12.12	2016.12.11
Dual Directional Coupler	Agilent	778D	50422	2015.11.18	2016.11.17

Appendix A. System Validation Plots

System Performance Check Data (750MHz Head)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 13 minutes 25 seconds

Experimental conditions

Phantom	Validation plane
Device Position	-
Band	750MHz
Channels	-
Signal	CW
Frequency (MHz)	750MHz
Relative permittivity (real part)	41.2
Relative permittivity	20.8
Conductivity (S/m)	0.91
Power drift (%)	-1.30
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
ConvF:	1.53
Crest factor:	1:1

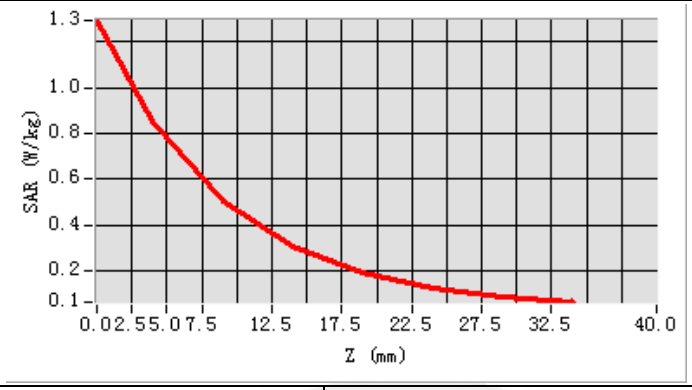
Maximum location: X=1.00, Y=0.00

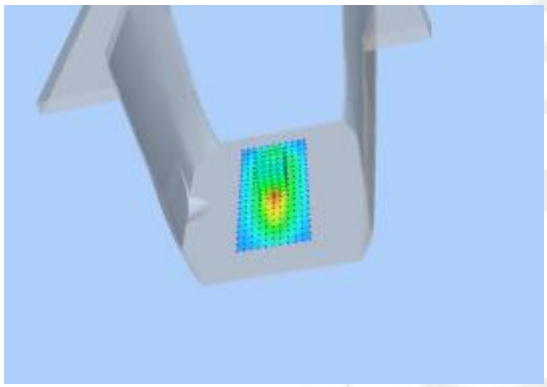
SAR Peak: 1.30 W/kg

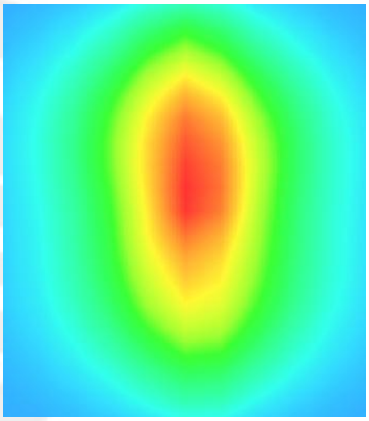
SAR 10g (W/Kg)	0.544249
SAR 1g (W/Kg)	0.838341

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	1.30322	0.86595	0.56114	0.49582	0.31352	0.24266	0.10359







System Performance Check Data (750MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 14 minutes 12 seconds

Experimental conditions.

Probe	
Phantom	Validation plane
Device Position	-
Band	750MHz
Channels	-
Signal	CW
Frequency (MHz)	750MHz
Relative permittivity (real part)	55.26
Relative permittivity	23.251187
Conductivity (S/m)	0.91
Power drift (%)	1.26
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
ConvF:	1.59
Crest factor:	1:1

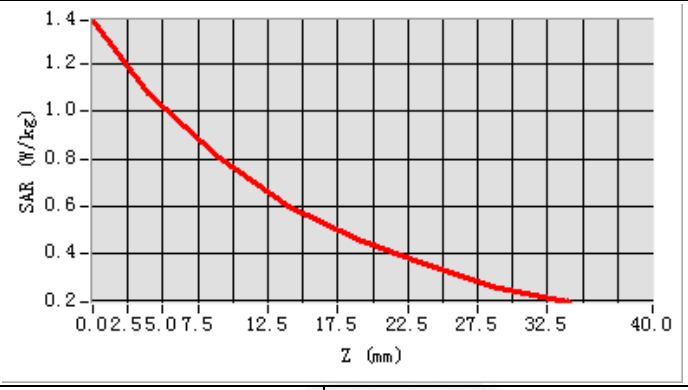
Maximum location: X=1.00, Y=0.00

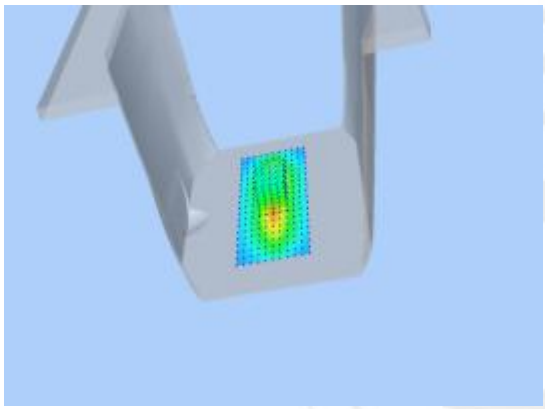
SAR Peak: 1.30 W/kg

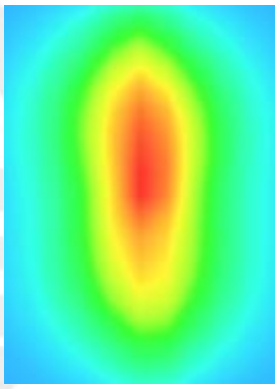
SAR 10g (W/Kg)	0.572176
SAR 1g (W/Kg)	0.851248

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	1.30254	0.85658	0.56325	0.49362	0.31412	0.24366	0.10355







System Performance Check Data (835MHz Head)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 13 minutes 27 seconds

Experimental conditions

Phantom	Validation plane
Device Position	-
Band	835MHz
Channels	-
Signal	CW
Frequency (MHz)	835MHz
Relative permittivity (real part)	41.00
Relative permittivity	18.72
Conductivity (S/m)	0.86
Power drift (%)	2.11
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
ConvF:	1.78
Crest factor:	1:1

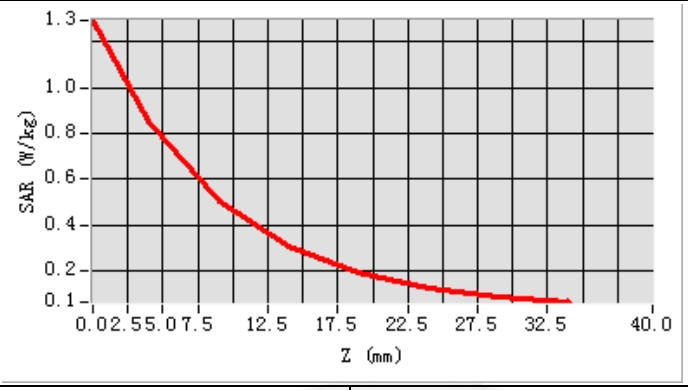
Maximum location: X=1.00, Y=0.00

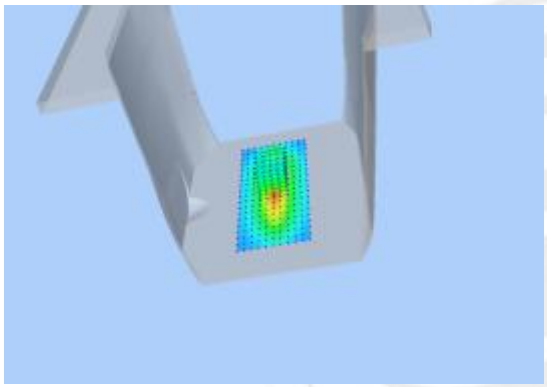
SAR Peak: 1.39 W/kg

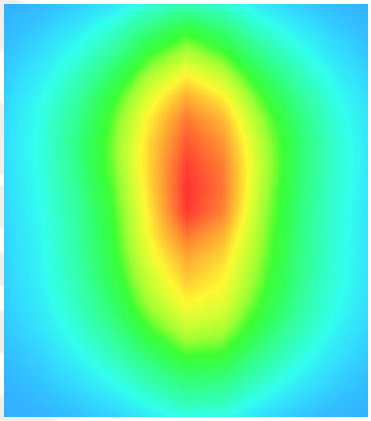
SAR 10g (W/Kg)	0.635128
SAR 1g (W/Kg)	0.959243

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	1.3472	0.97891	0.66265	0.5042	0.3512	0.2505	0.11794







System Performance Check Data (835MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 14 minutes 13 seconds

Experimental conditions.

Probe	
Phantom	Validation plane
Device Position	-
Band	835MHz
Channels	-
Signal	CW
Frequency (MHz)	835MHz
Relative permittivity (real part)	54.70
Relative permittivity	21.408187
Conductivity (S/m)	0.98
Power drift (%)	0.85
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
ConvF:	1.85
Crest factor:	1:1

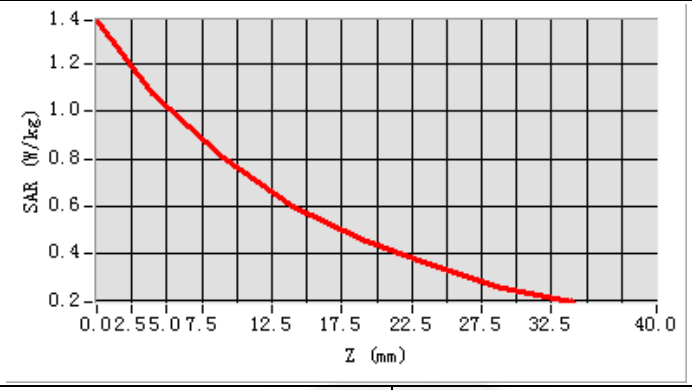
Maximum location: X=1.00, Y=0.00

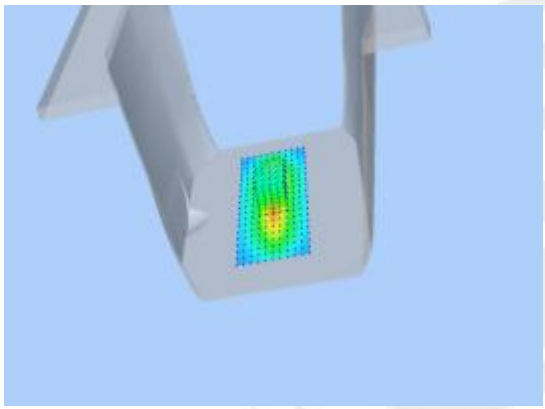
SAR Peak: 1.50 W/kg

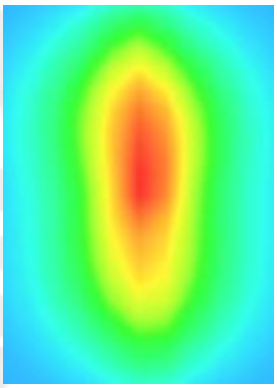
SAR 10g (W/Kg)	0.601548
SAR 1g (W/Kg)	0.950186

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	1.3725	1.0058	0.6838	0.4755	0.3314	0.2365	0.1688







System Performance Check Data(1800MHz Head)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13

Experimental conditions.

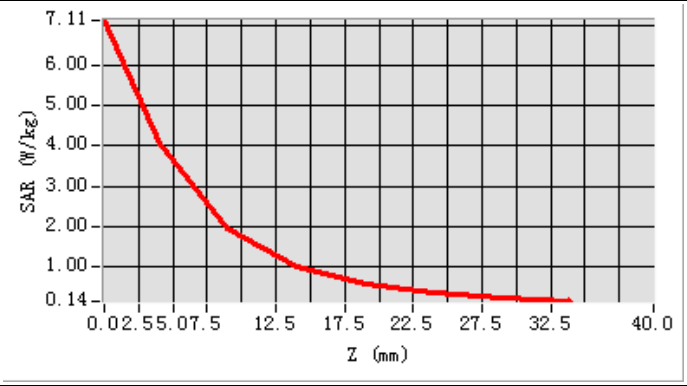
Phantom	Validation plane
Device Position	-
Band	1800MHz
Channels	-
Signal	CW
Frequency (MHz)	1800MHz
Relative permittivity (real part)	40.20
Relative permittivity	14.096855
Conductivity (S/m)	1.308491
Power drift (%)	-2.79
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 45/15 EPGO281
ConvF	1.83
Crest factor:	1:1

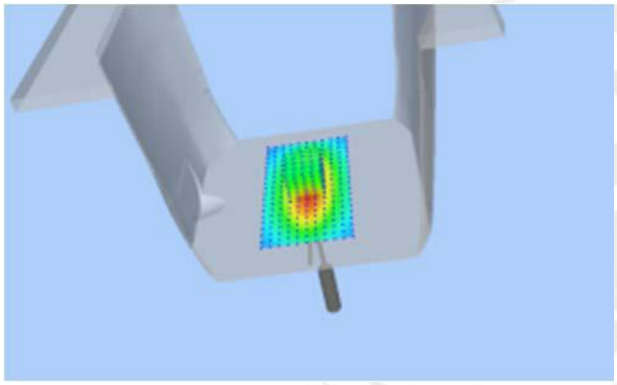
Maximum location: X=7.00, Y=-1.00

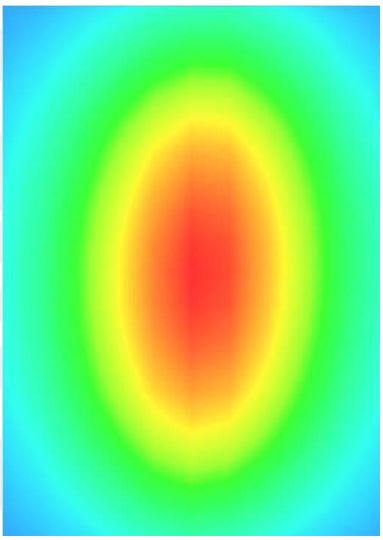
SAR 10g (W/Kg)	1.956452
SAR 1g (W/Kg)	3.833524

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	7.1146	4.0782	1.9352	1.0130	0.5642	0.3334	0.2079





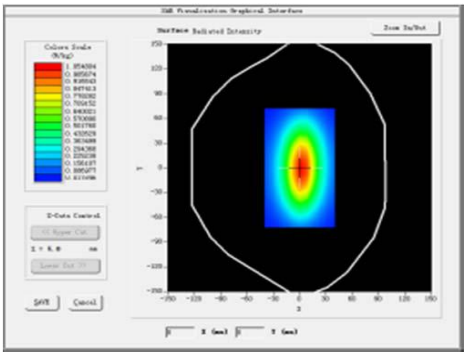
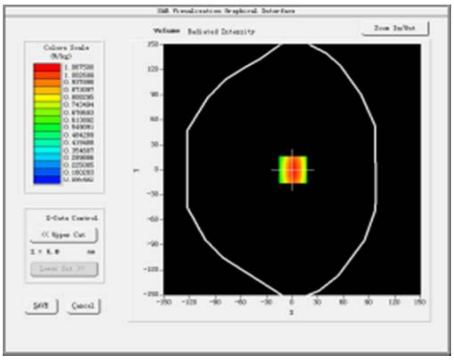


System Performance Check Data(1800MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13

Experimental conditions.

Phantom	Validation plane
Device Position	-
Band	1800MHz
Channels	-
Signal	CW
Frequency (MHz)	1800MHz
Relative permittivity (real part)	52.6
Relative permittivity	15.08356
Conductivity (S/m)	1.376582
Power drift (%)	2.01
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 45/15 EPGO281
ConvF	1.87
Crest factor:	1:1

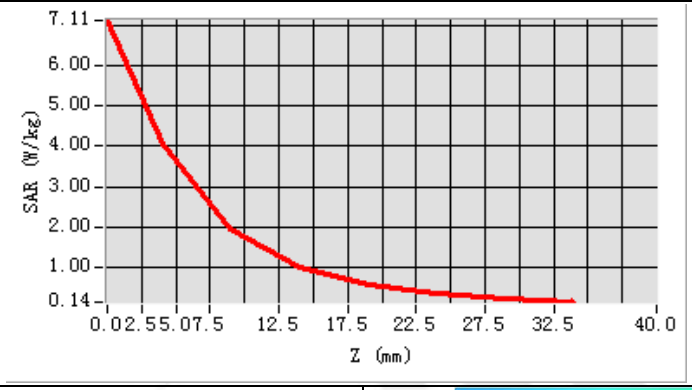
SURFACE SAR	VOLUME SAR
	

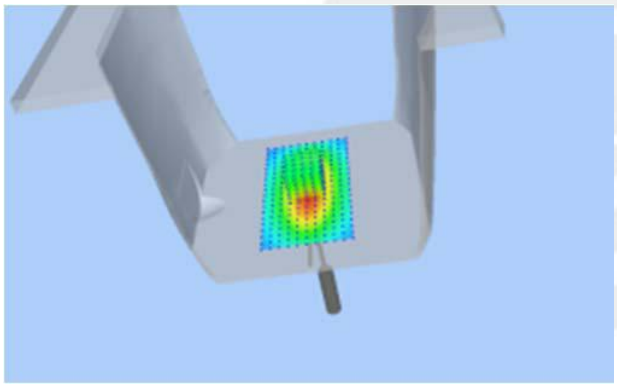
Maximum location: X=6.00, Y=2.00

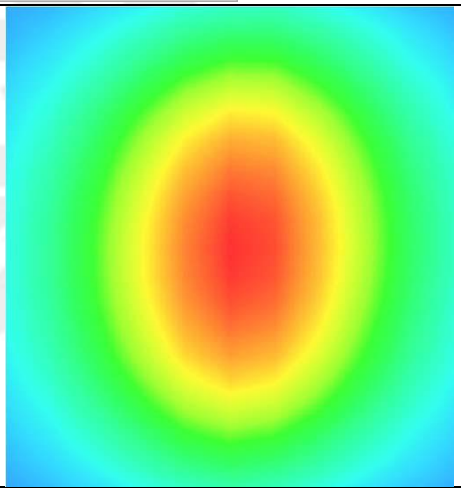
SAR 10g (W/Kg)	1.924865
SAR 1g (W/Kg)	3.862153

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	7.2356	4.1258	1.9683	1.1253	0.6535	0.3652	0.2658





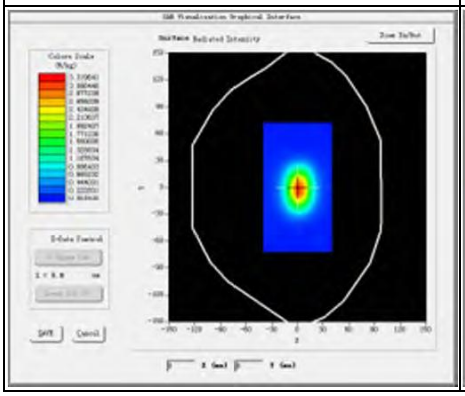
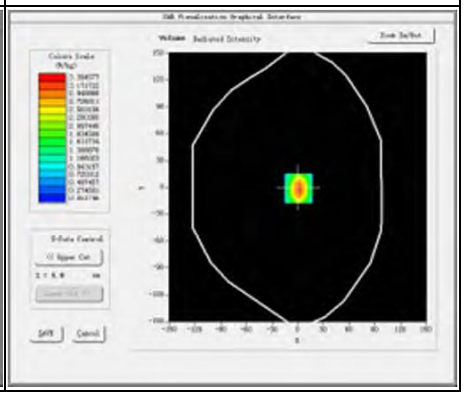


System Performance Check Data (1900MHz Head)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 14 minutes 12 seconds

Experimental conditions.

Phantom	Validation plane
Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900MHz
Relative permittivity (real part)	39.50
Relative permittivity	13.26
Conductivity (S/m)	1.43
Power drift (%)	2.47
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
Probe	SN 45/15 EPGO281
ConvF:	2.10
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

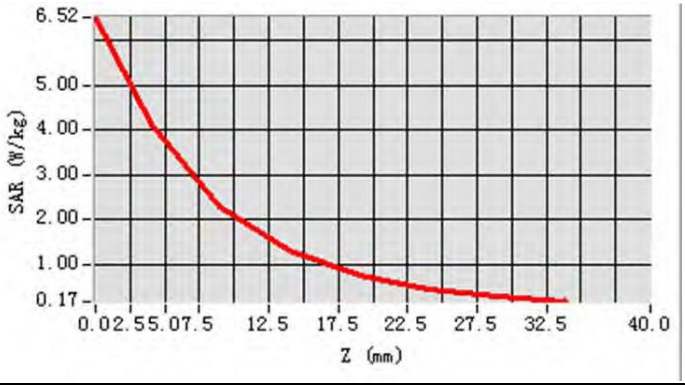
Maximum location: X=1.00, Y=0.00

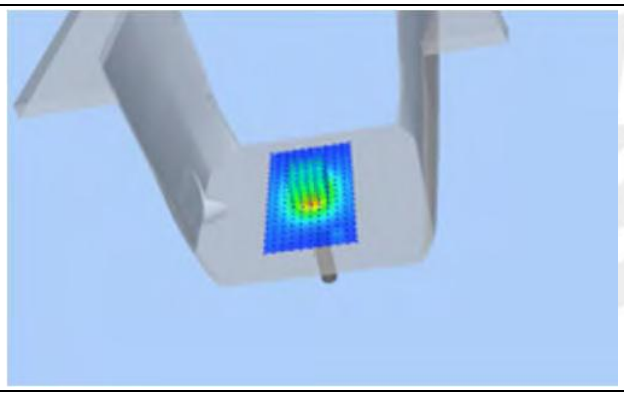
SAR Peak: 5.41 W/kg

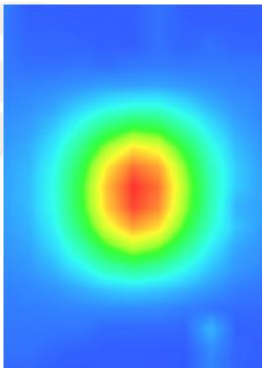
SAR 10g (W/Kg)	1.959662
SAR 1g (W/Kg)	3.991256

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	6.5296	4.1946	2.3311	1.3187	0.5733	0.3288	0.1617





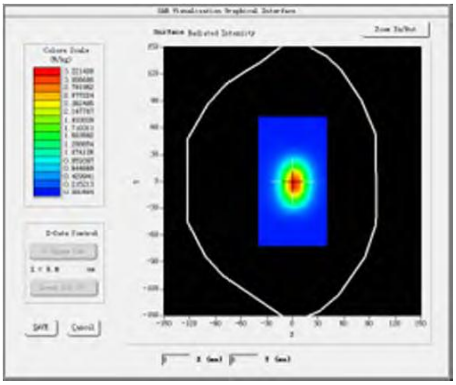
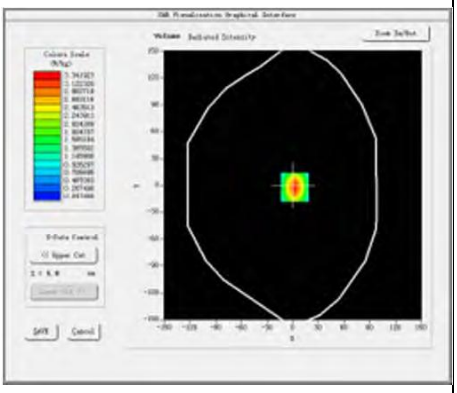


System Performance Check Data (1900MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 14 minutes 46 seconds

Experimental conditions.

Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900
Relative permittivity (real part)	52.31
Relative permittivity	12.87531
Conductivity (S/m)	1.5
Power drift (%)	0.37
Ambient Temperature:	23.2°C
Liquid Temperature:	22.3°C
Probe	SN 45/15 EPGO281
ConvF:	2.16
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

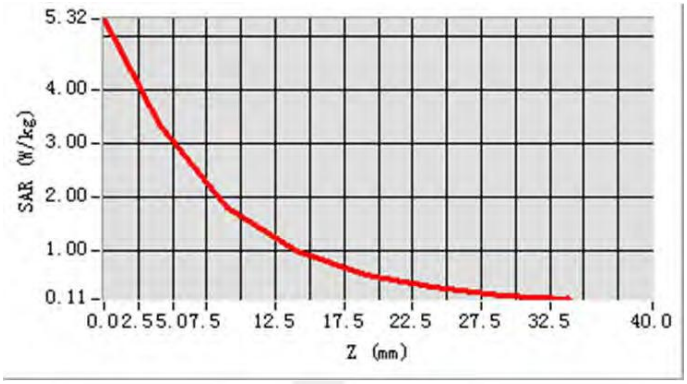
Maximum location: X=2.00, Y=2.00

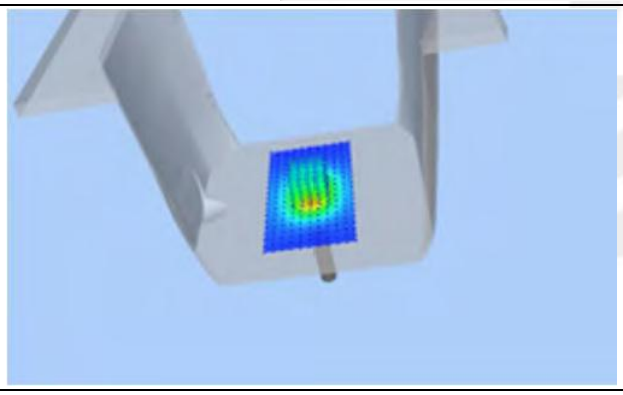
SAR Peak: 5.27 W/kg

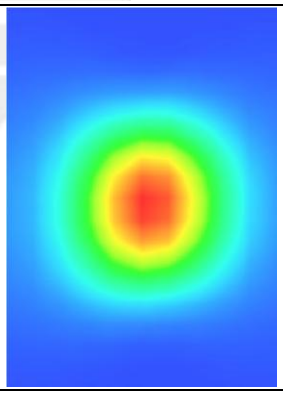
SAR 10g (W/Kg)	2.258194
SAR 1g (W/Kg)	4.082147

Z Axis Scan

Z (mm)	0	4	9	14	19	24	29
SAR(W/Kg)	5.3196	3.3419	1.8167	1.0186	0.5752	0.3285	0.1898





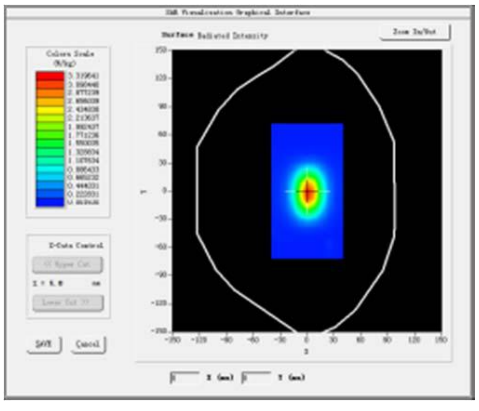
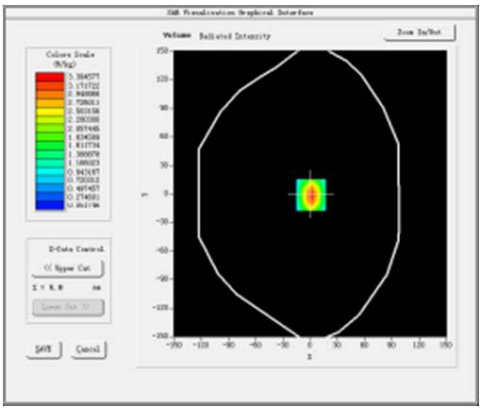


System Performance Check Data (2450MHz Head)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 13 minutes 51seconds

Experimental conditions.

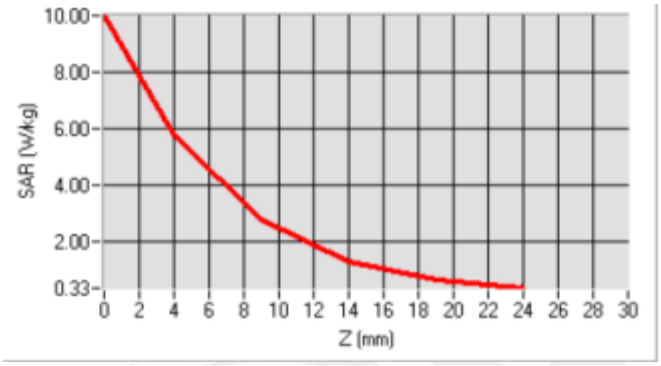
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity (real part)	39.176002
Relative permittivity	12.930000
Conductivity (S/m)	1.88
Power drift (%)	-1.200000
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 45/15 EPGO281
ConvF	2.21
Crest factor:	1:1

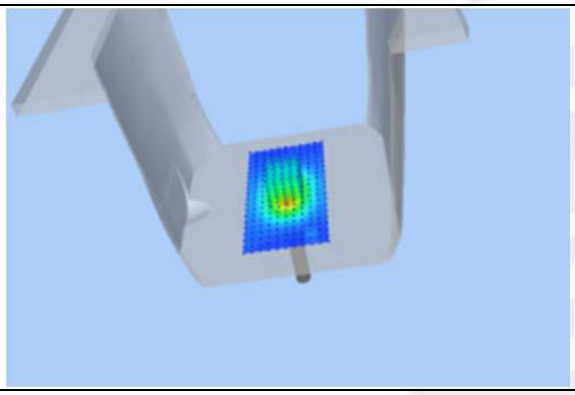
SURFACE SAR	VOLUME SAR
	

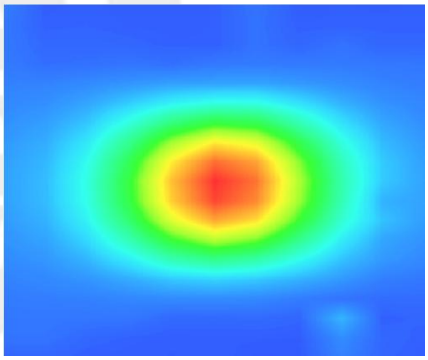
Maximum location: X=7.00, Y=6.00

SAR 10g (W/Kg)	2.502652
SAR 1g (W/Kg)	5.222423

Z Axis Scan





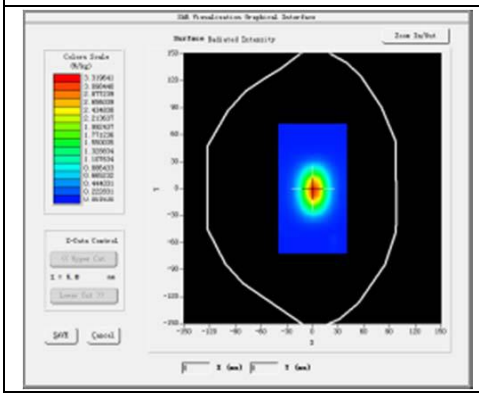
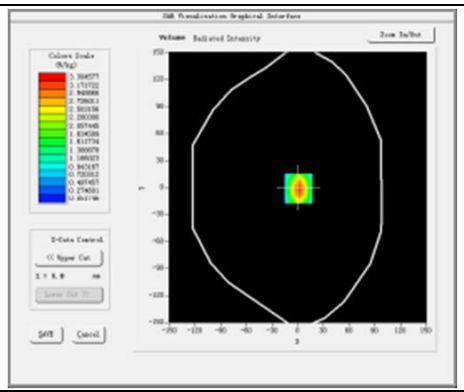


System Performance Check Data (2450MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13
Measurement duration: 14 minutes 23 seconds

Experimental conditions.

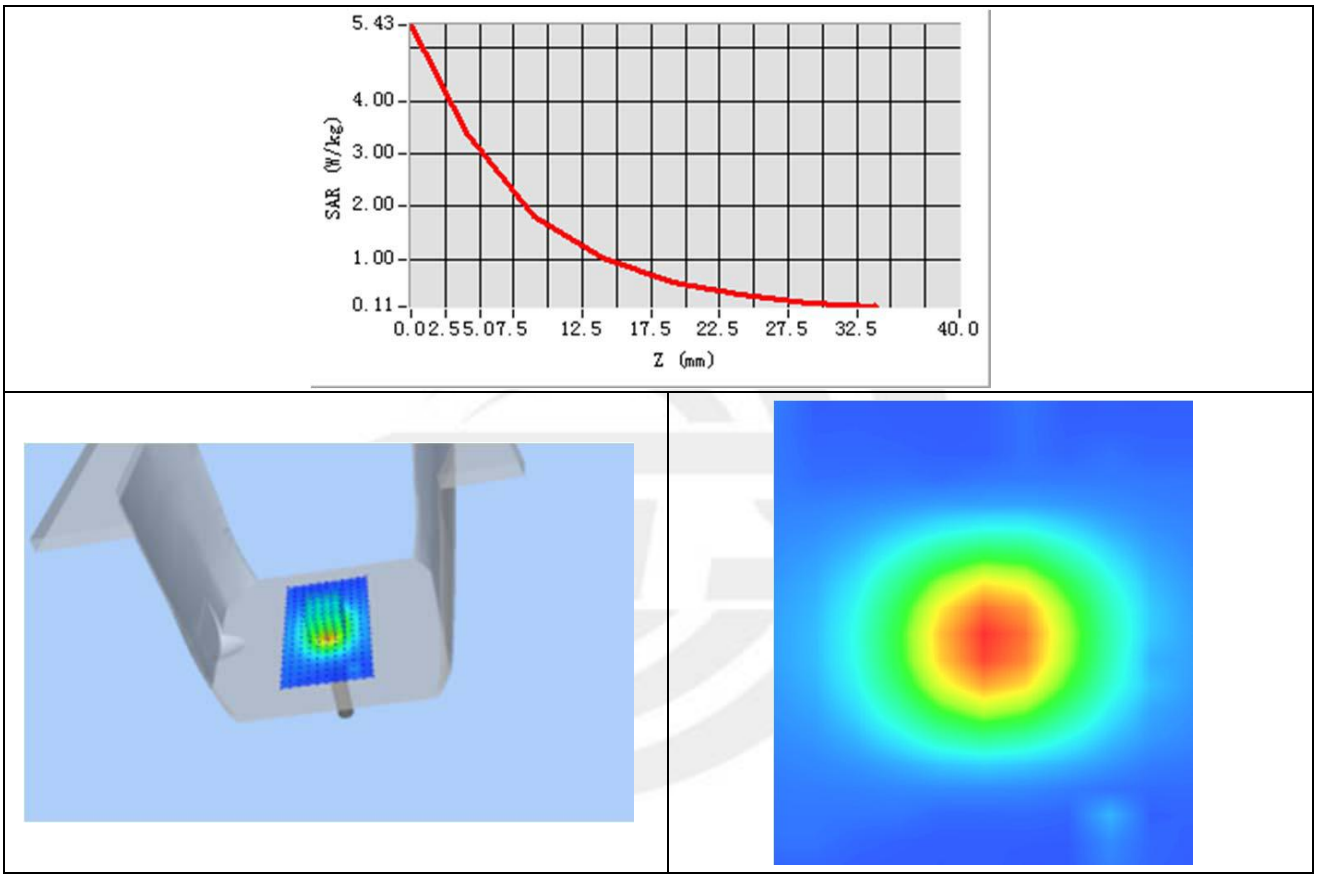
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity (real part)	52.316002
Relative permittivity	12.930000
Conductivity (S/m)	1.92
Power drift (%)	-1.200000
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 45/15 EPGO281
ConvF	2.28
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	2.356362
SAR 1g (W/Kg)	5.213472

Z Axis Scan

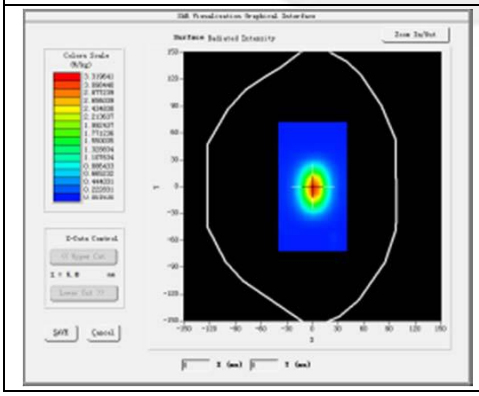
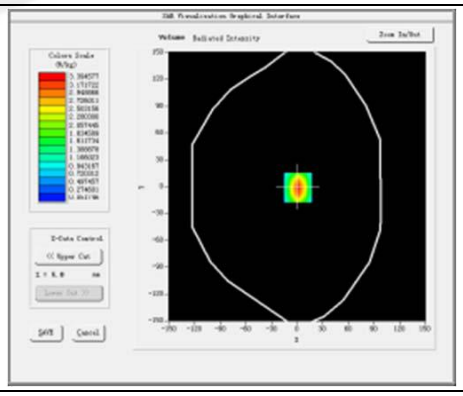


System Performance Check Data(2600MHz Head)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13

Experimental conditions.

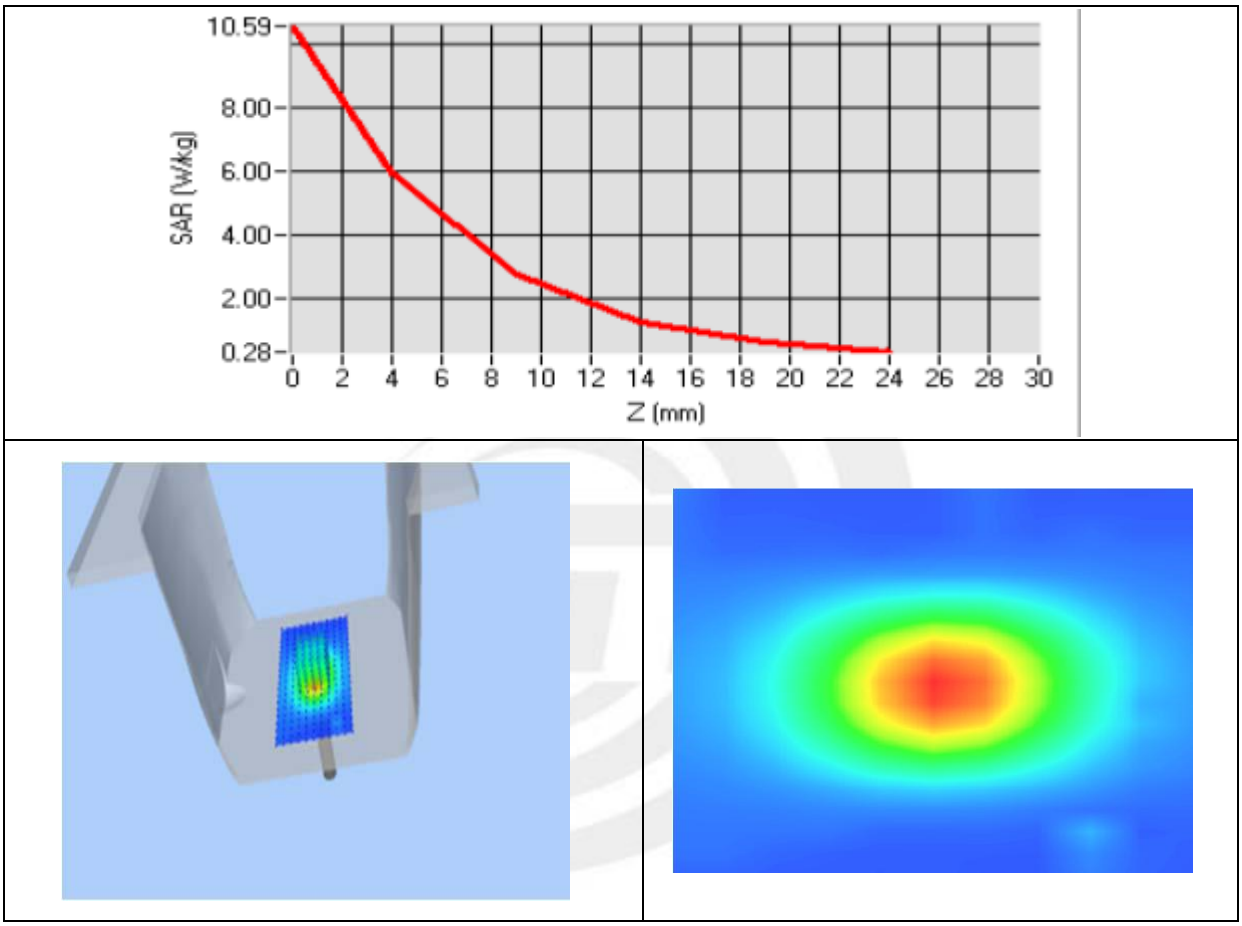
Device Position	Validation plane
Band	2600 MHz
Channels	-
Signal	CW
Frequency (MHz)	2600
Relative permittivity (real part)	38.52544
Relative permittivity	12.862300
Conductivity (S/m)	1.92000
Power drift (%)	-0.2600000
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 17/14 EP221
ConvF	4.20
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	2.462485
SAR 1g (W/Kg)	5.523684

Z Axis Scan

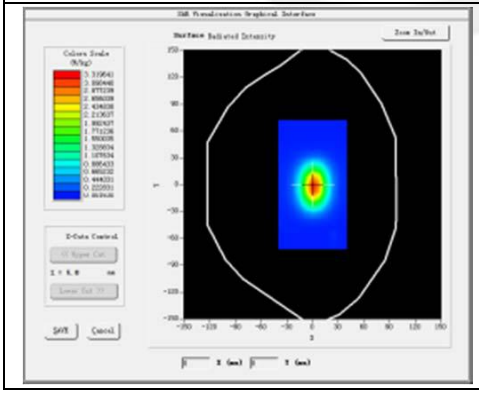
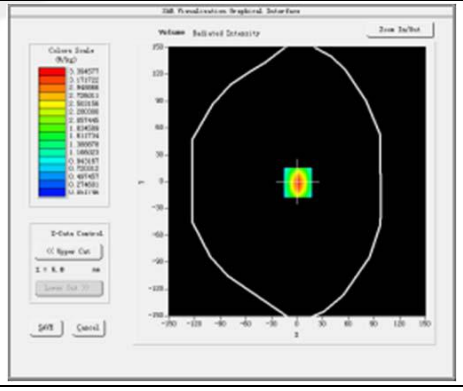


System Performance Check Data(2600MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2016-06-13

Experimental conditions.

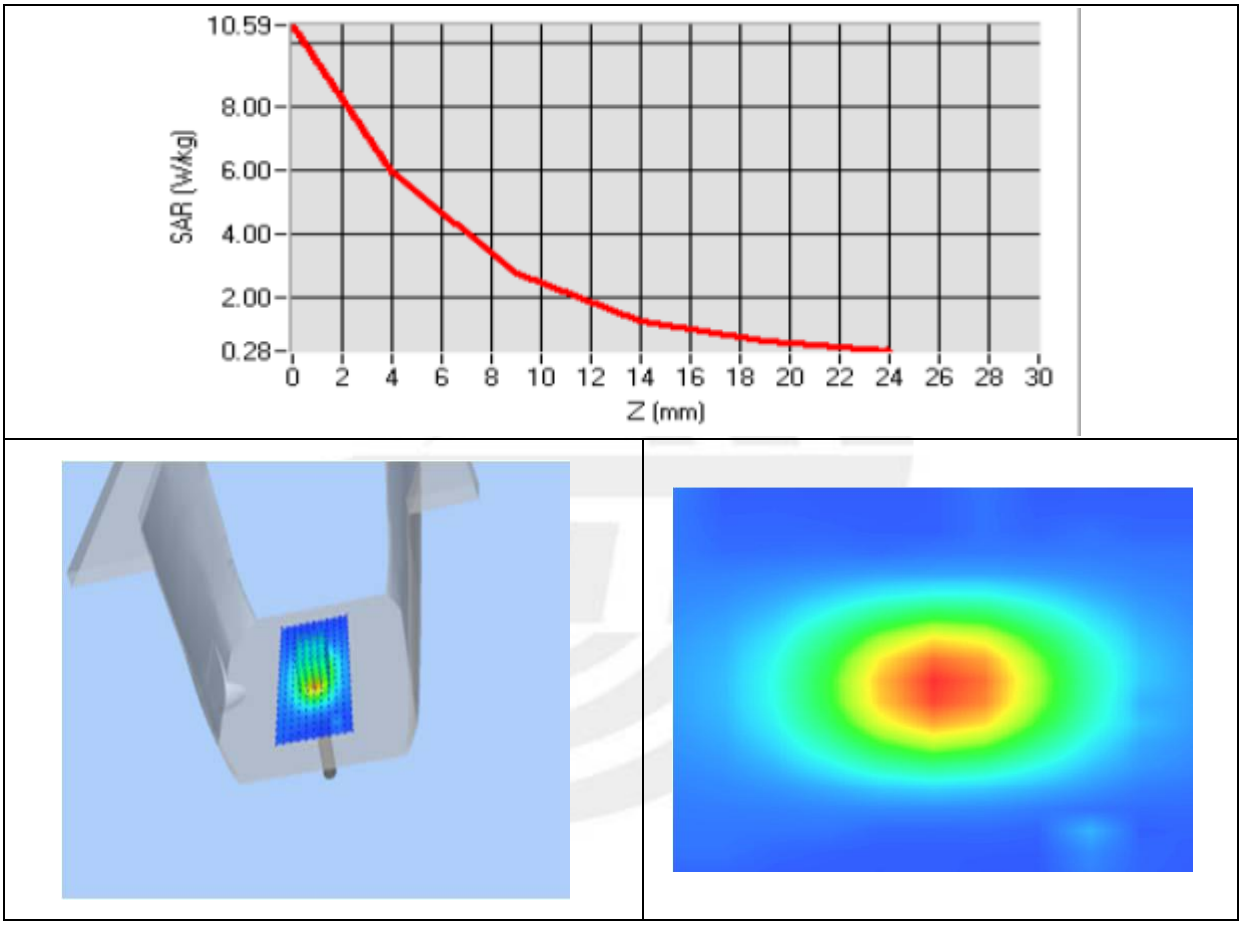
Device Position	Validation plane
Band	2600 MHz
Channels	-
Signal	CW
Frequency (MHz)	2600
Relative permittivity (real part)	52.36814
Relative permittivity	12.62485
Conductivity (S/m)	2.12000
Power drift (%)	2.31
Ambient Temperature	23.2°C
Liquid Temperature	22.3°C
Probe	SN 17/14 EP221
ConvF	4.32
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	2.543592
SAR 1g (W/Kg)	5.492562

Z Axis Scan



Appendix B. SAR Test Plots

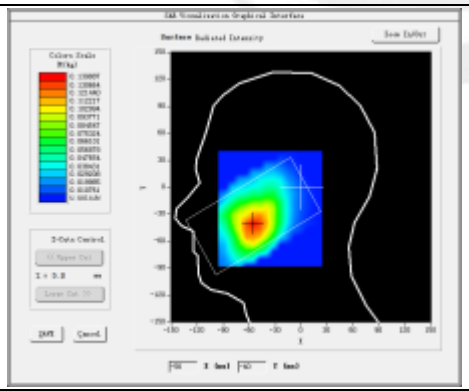
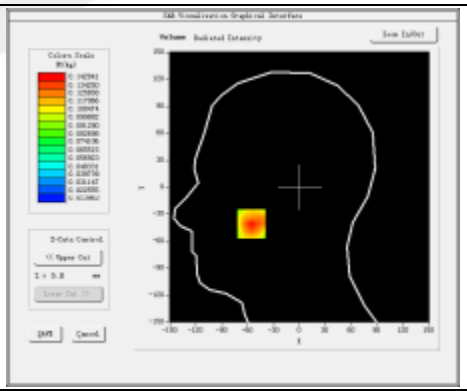
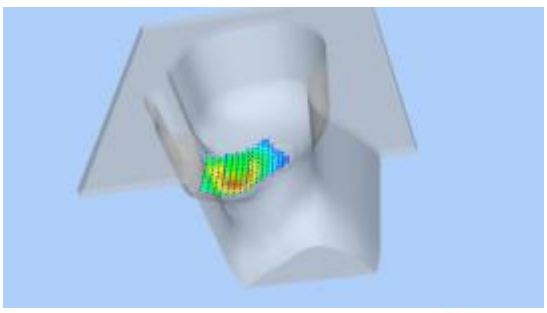
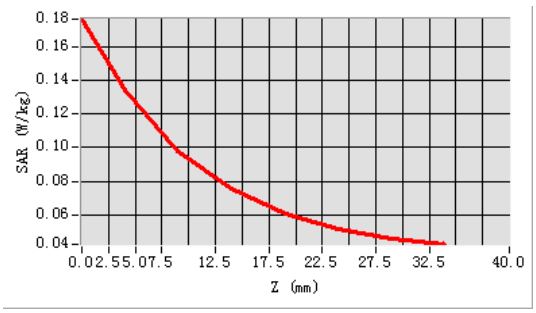
Plot 1: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.78
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.32)
Frequency (MHz)	824.2
Relative permittivity (real part)	41.5
Conductivity (S/m)	0.90
Variation (%)	-2.68

Maximum location: X=-56.00, Y=-41.00

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.096329
SAR 1g (W/Kg)	0.135336

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

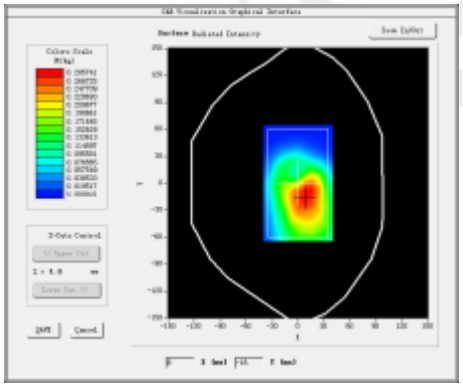
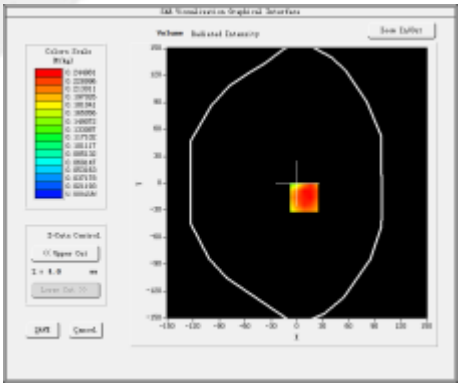
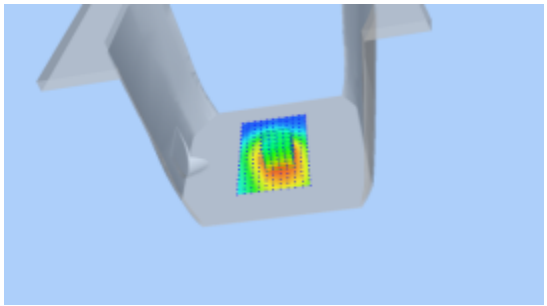
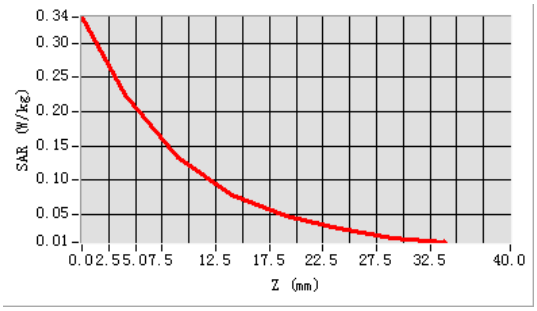
Plot 2: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.85
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body Back
Band	GPRS 850
Channels	Low
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	824.2
Relative permittivity (real part)	55.20
Conductivity (S/m)	0.97
Variation (%)	-2.04

Maximum location: X=8.00, Y=-16.00

SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.163813
SAR 1g (W/Kg)	0.238474

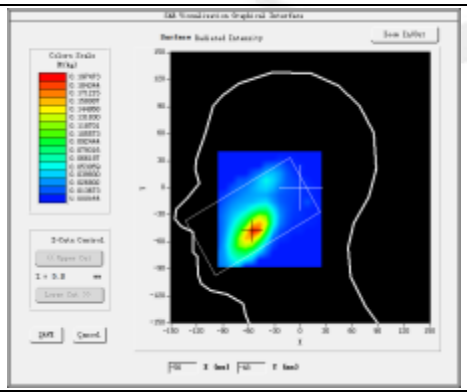
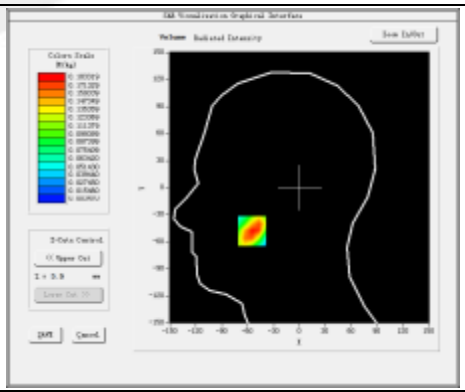
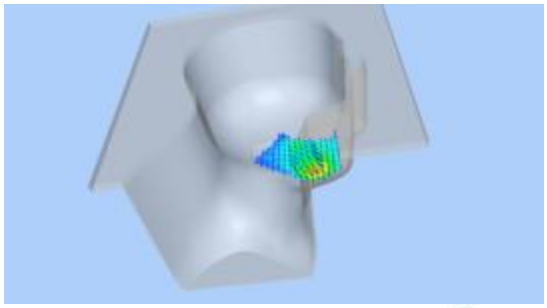
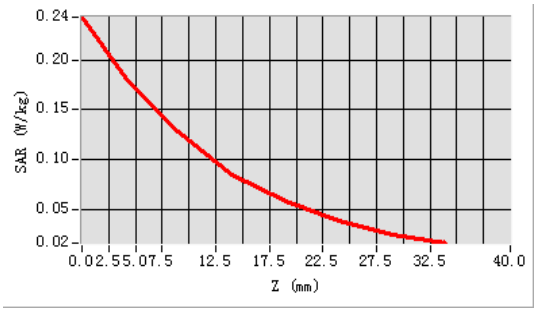
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 3: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.10
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 4.0)
Frequency (MHz)	1909.8
Relative permittivity (real part)	40.00
Conductivity (S/m)	1.40
Variation (%)	-0.71

Maximum location: X=-55.00, Y=-48.00
SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.101860
SAR 1g (W/Kg)	0.175490

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

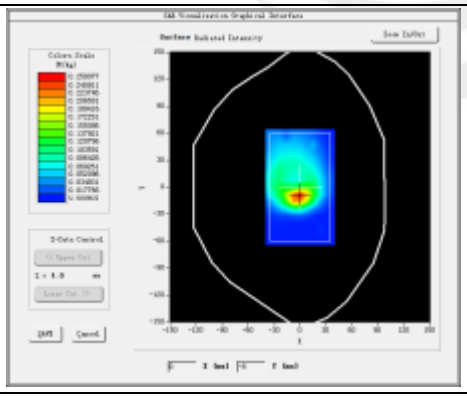
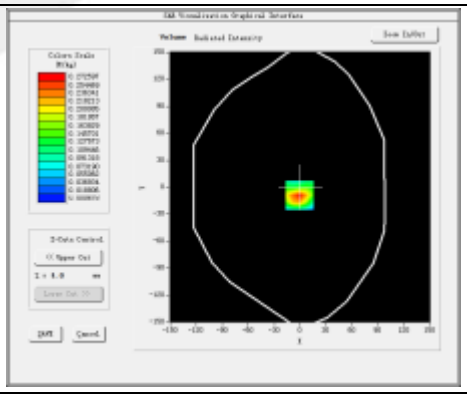
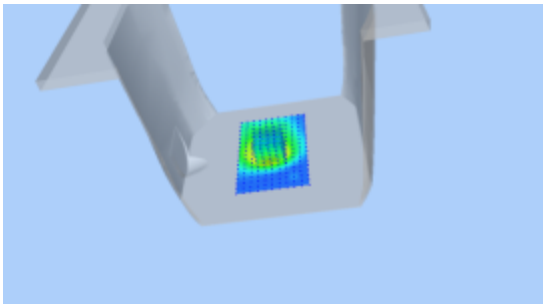
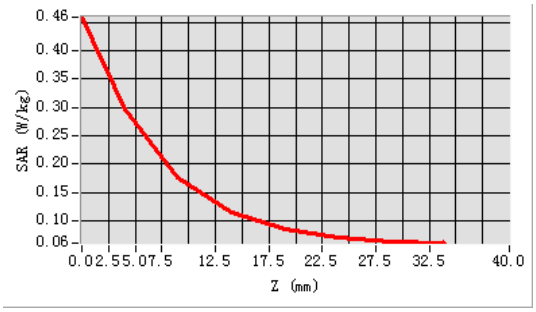
Plot 4: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back side
Band	GPRS 1900
Channels	High
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	1909.8
Relative permittivity (real part)	53.30
Conductivity (S/m)	1.52
Variation (%)	-2.69

Maximum location: X=-1.00, Y=-9.00

SAR Peak: 0.46 W/kg

SAR 10g (W/Kg)	0.121537
SAR 1g (W/Kg)	0.257360

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

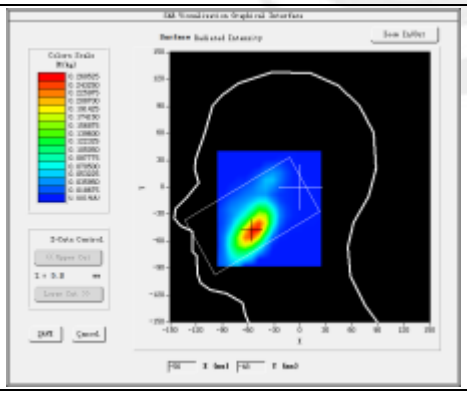
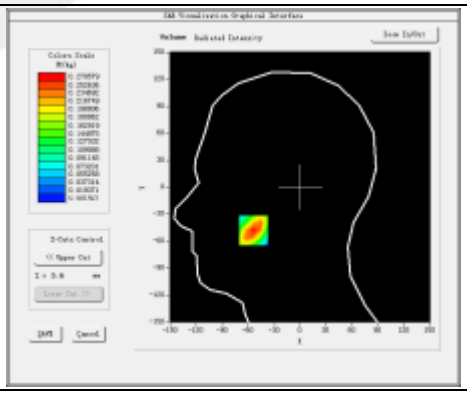
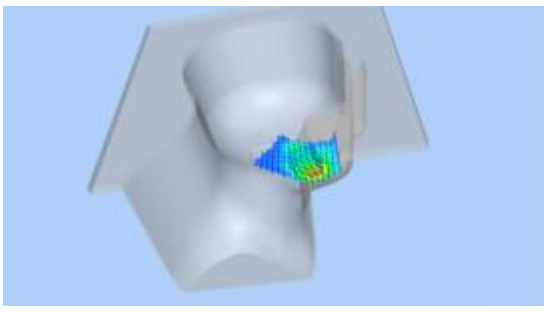
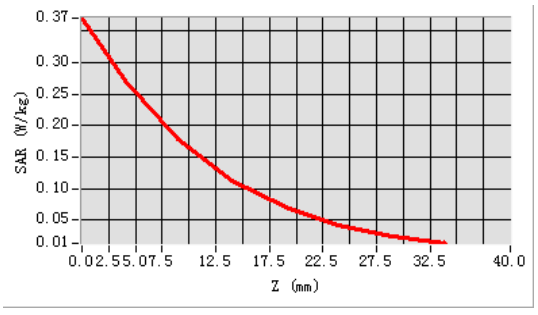
Plot 5: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.10
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA II
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1880.0
Relative permittivity (real part)	40.00
Conductivity (S/m)	1.40
Variation (%)	-2.01

Maximum location: X=-54.00, Y=-48.00

SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.142658
SAR 1g (W/Kg)	0.253548

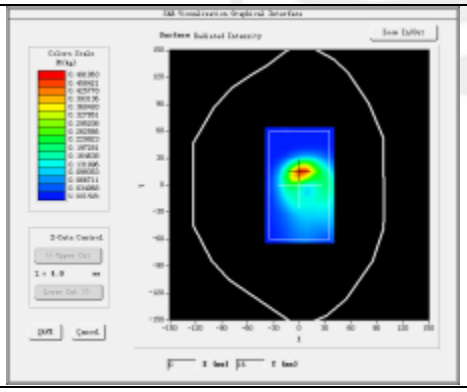
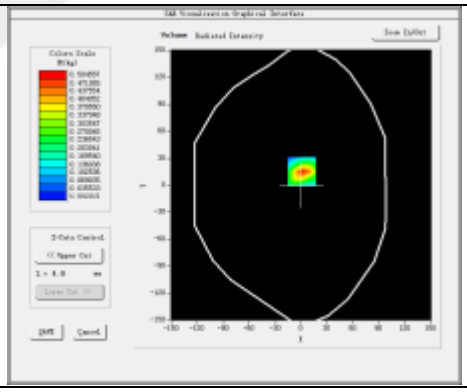
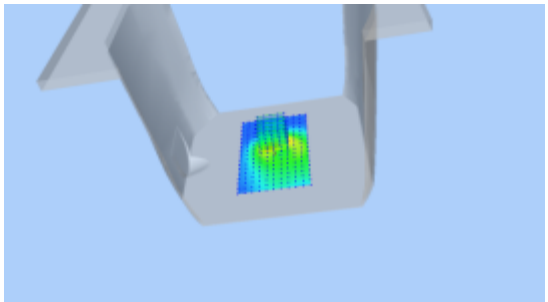
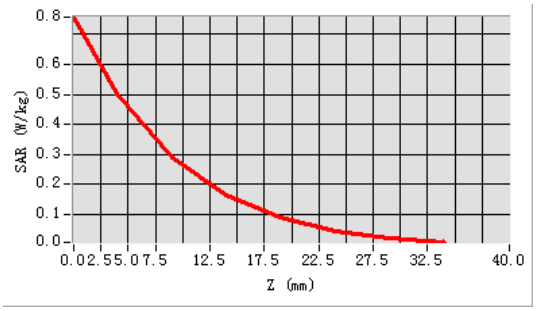
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 6: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back side
Band	WCDMA II
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1880.0
Relative permittivity (real part)	53.21
Conductivity (S/m)	1.50
Variation (%)	-0.47

Maximum location: X=1.00, Y=15.00
SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	0.194140
SAR 1g (W/Kg)	0.379348

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

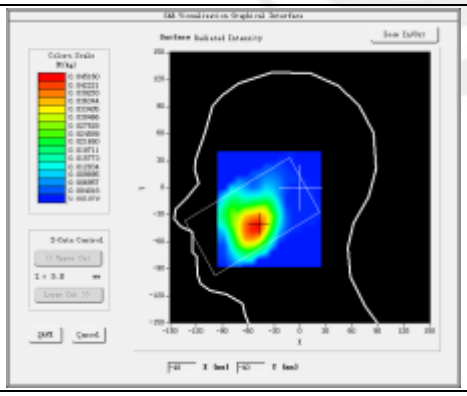
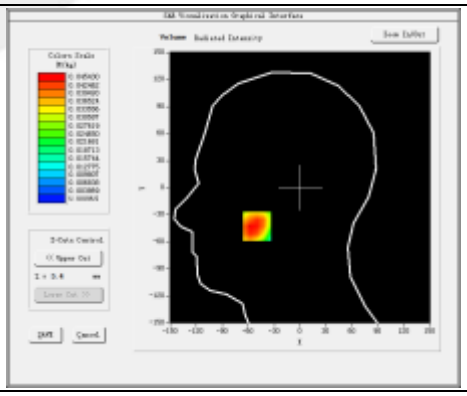
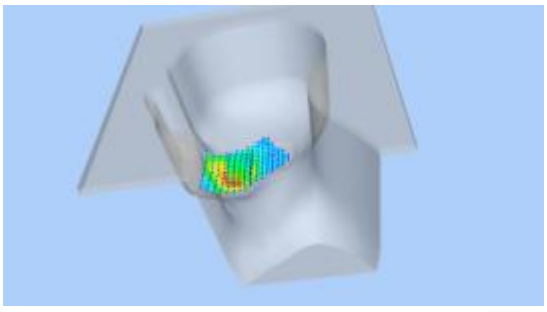
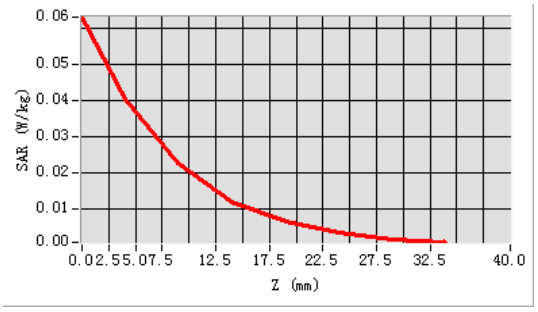
Plot 7: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.78
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA V
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	836.6
Relative permittivity (real part)	42.27
Conductivity (S/m)	0.91
Variation (%)	2.85

Maximum location: X=-50.00, Y=-43.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.029474
SAR 1g (W/Kg)	0.044577

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

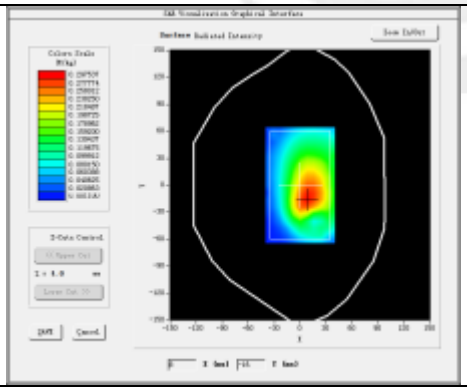
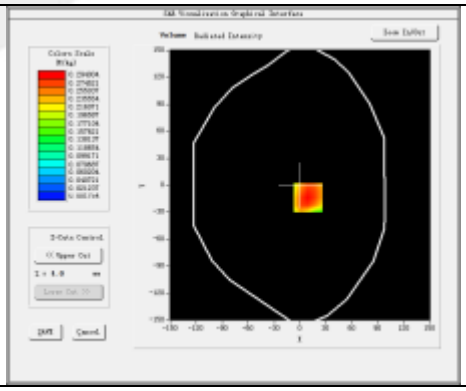
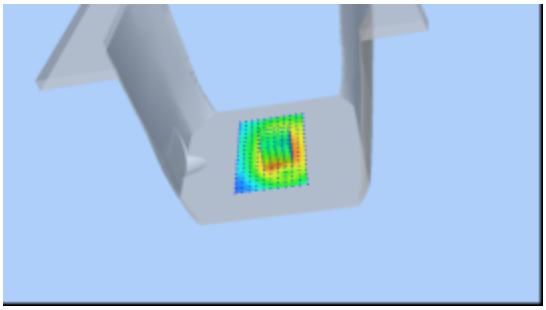
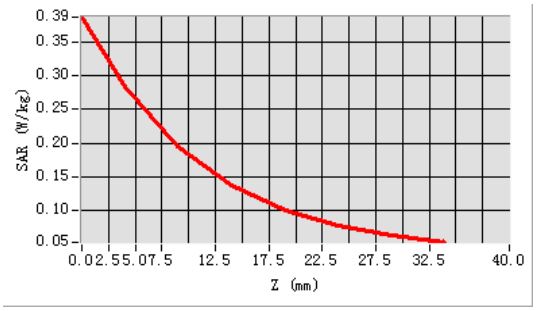
Plot 8: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.85
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	WCDMA V
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	836.6
Relative permittivity (real part)	55.5
Conductivity (S/m)	0.96
Variation (%)	-1.36

Maximum location: X=9.00, Y=-14.00

SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.192101
SAR 1g (W/Kg)	0.284101

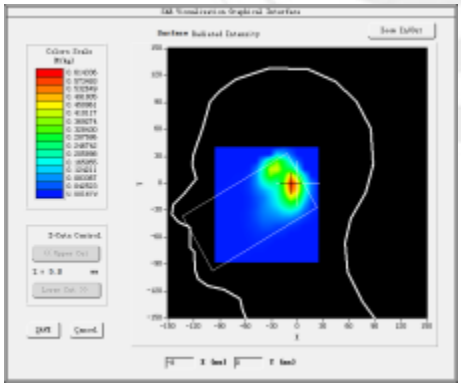
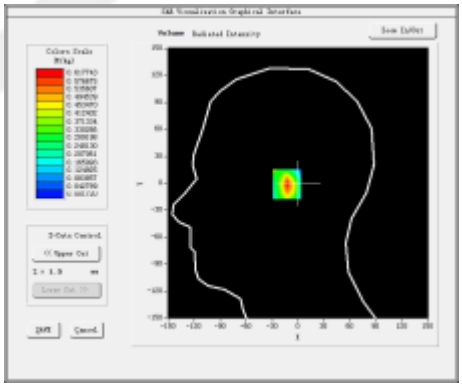
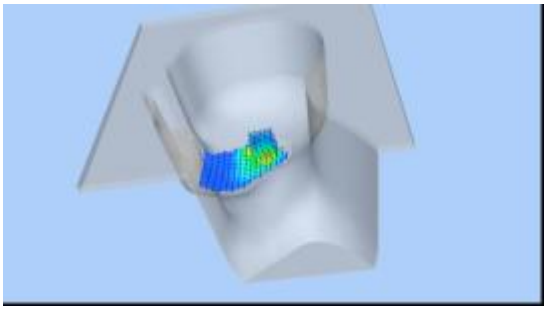
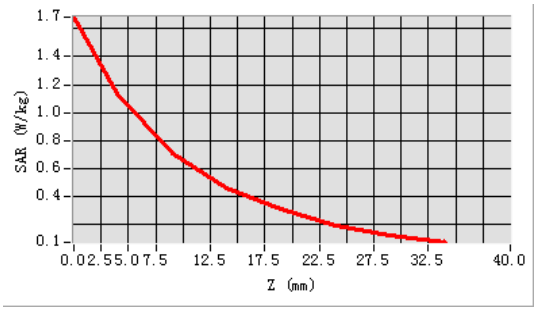
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 9: DUT:Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Probe	SN 45/15 EPGO281
ConvF	2.21
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	Low
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2412
Relative permittivity (real part)	39.23
Conductivity (S/m)	1.79
Variation (%)	-1.20

Maximum location: X=7.00, Y=-1.00
SAR Peak: 1.77 W/kg

SAR 10g (W/Kg)	0.416502
SAR 1g (W/Kg)	0.922517

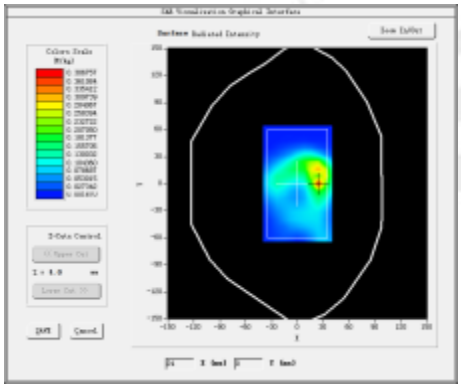
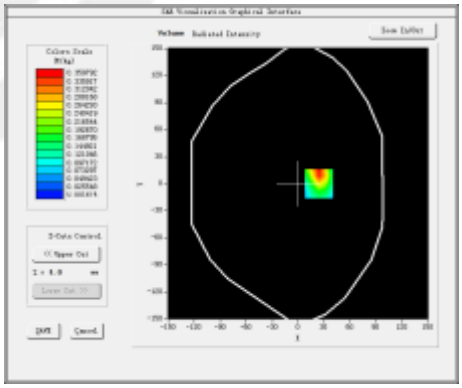
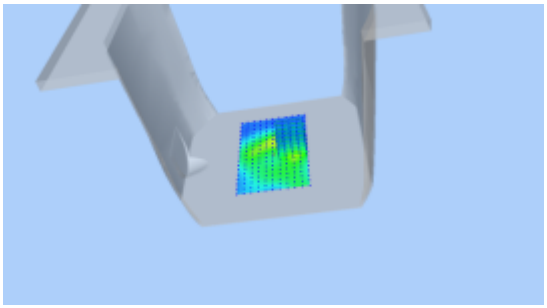
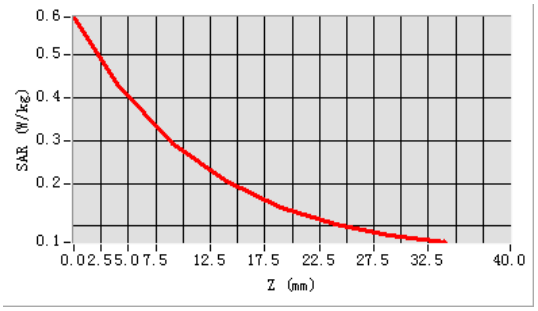
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 10: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Probe	SN 45/15 EPGO281
ConvF	2.28
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	IEEE 802.11b ISM
Channels	Low
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2412
Relative permittivity (real part)	52.40
Conductivity (S/m)	1.94
Variation (%)	-1.56

Maximum location: X=24.00, Y=0.00
SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.145730
SAR 1g (W/Kg)	0.335462

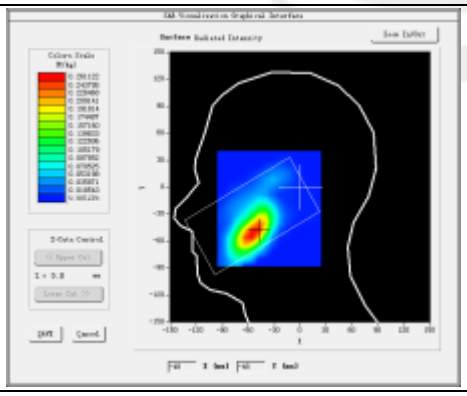
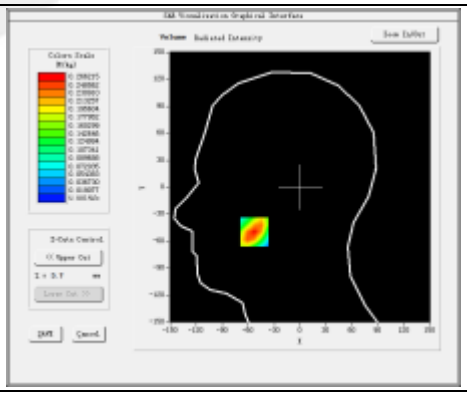
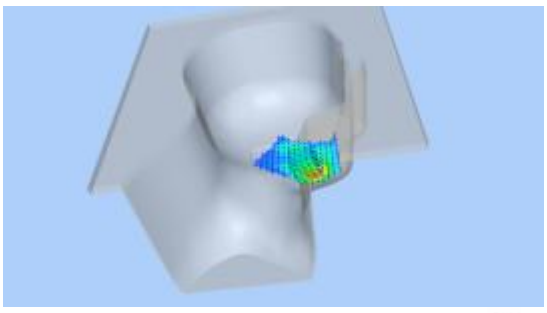
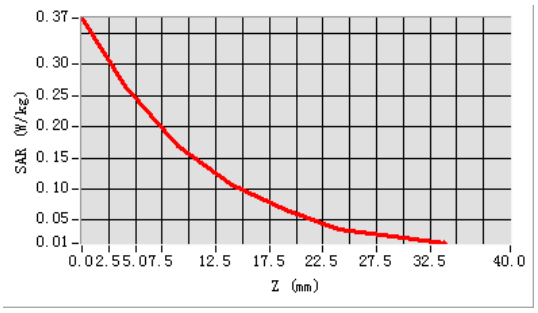
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 11: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.10
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 2 (RB 1)
Channels	Middle
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1880
Relative permittivity (real part)	40.0
Conductivity (S/m)	0.91
Variation (%)	-2.20

Maximum location: X=-53.00, Y=-50.00
SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.141132
SAR 1g (W/Kg)	0.250995

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

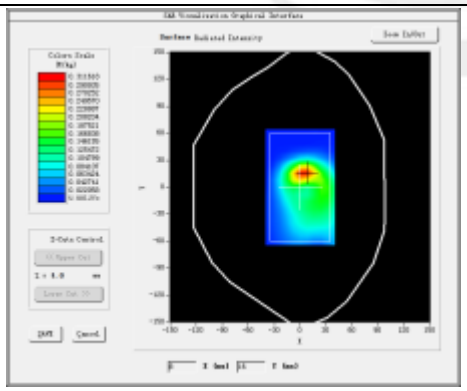
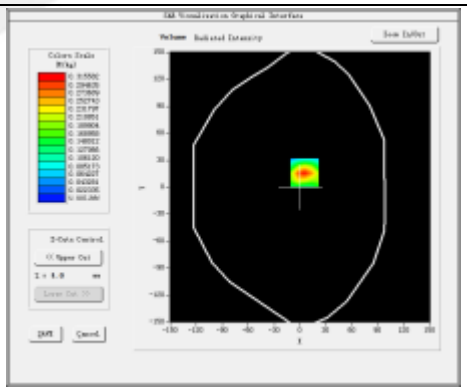
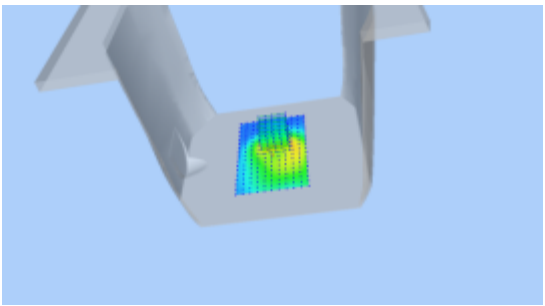
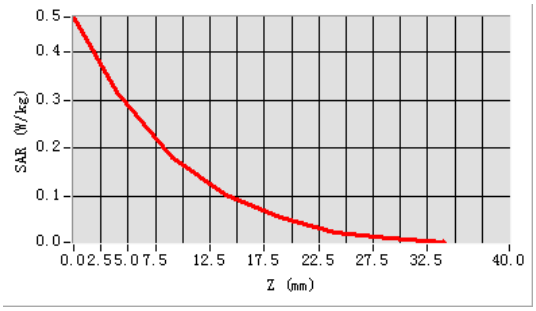
Plot 12: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	LTE Band 2(RB 1)
Channels	Middle
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1880
Relative permittivity (real part)	53.30
Conductivity (S/m)	1.52
Variation (%)	-2.18

Maximum location: X=5.00, Y=16.00

SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.146932
SAR 1g (W/Kg)	0.289559

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

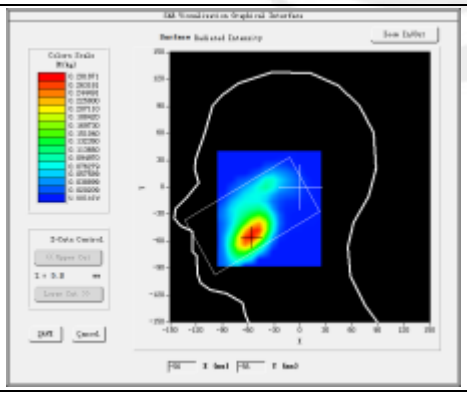
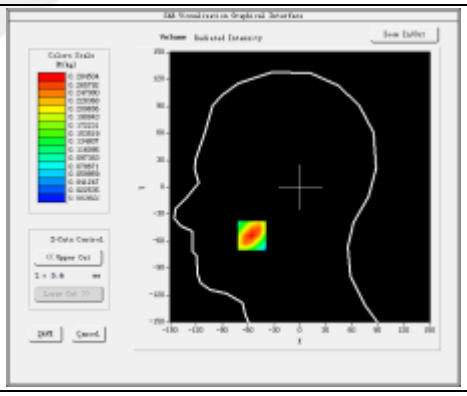
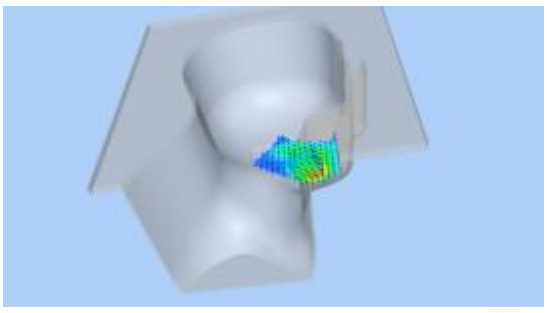
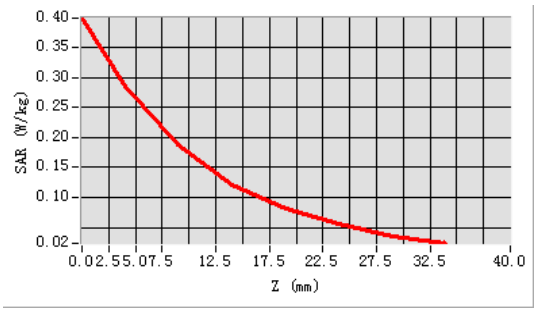
Plot 13: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.83
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 4 (RB 1)
Channels	Middle
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1732.5
Relative permittivity (real part)	40.2
Conductivity (S/m)	1.31
Variation (%)	3.28

Maximum location: X=-56.00, Y=-54.00

SAR Peak: 0.40 W/kg

SAR 10g (W/Kg)	0.159400
SAR 1g (W/Kg)	0.269217

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

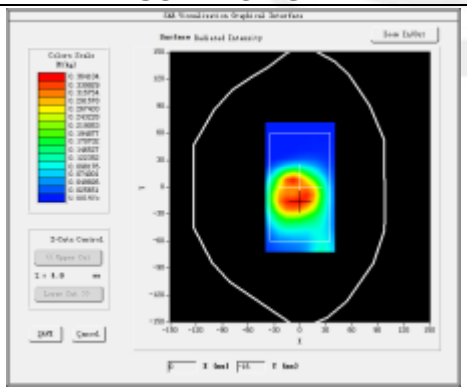
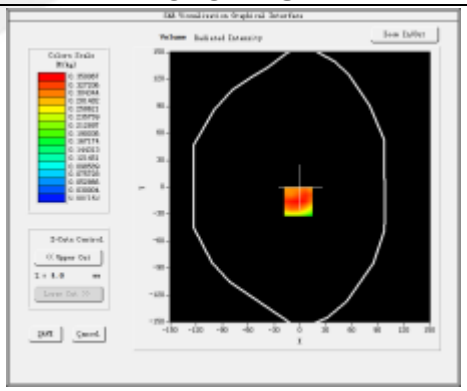
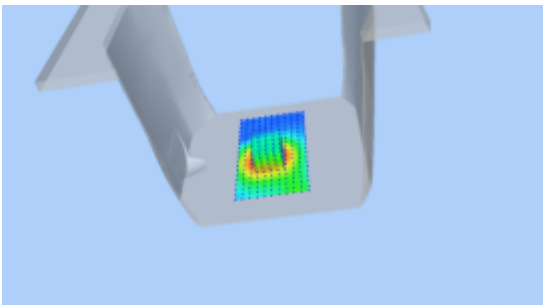
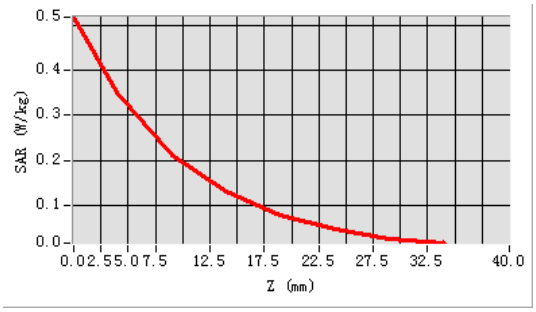
Plot 14: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.87
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	LTE Band 4 (RB 1)
Channels	Middle
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1732.5
Relative permittivity (real part)	52.6
Conductivity (S/m)	1.38
Variation (%)	-2.78

Maximum location: X=2.00, Y=16.00

SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.200702
SAR 1g (W/Kg)	0.335378

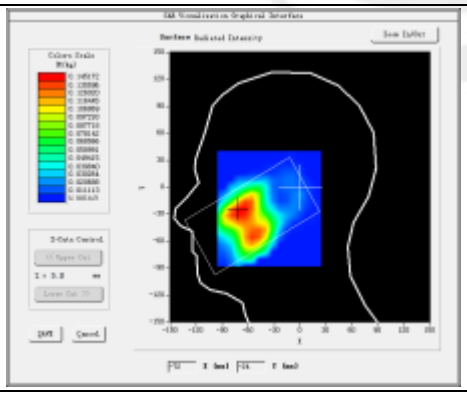
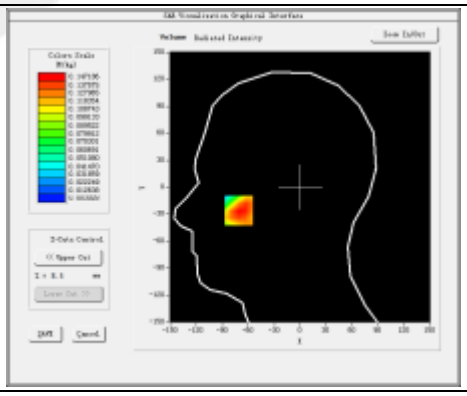
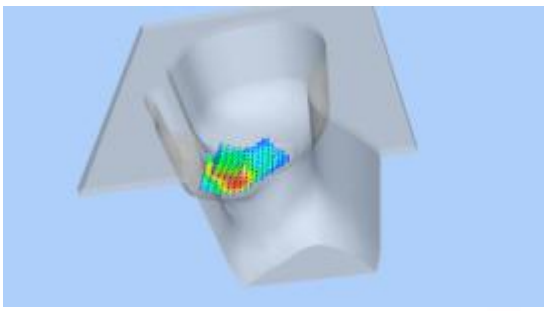
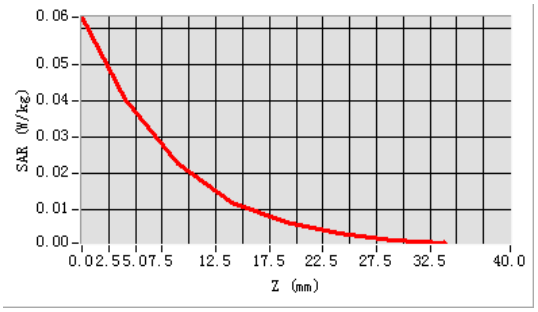
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 15: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.83
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Right head
Device Position	Cheek
Band	LTE Band 5 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	40.2
Conductivity (S/m)	1.31
Variation (%)	-2.28

Maximum location: X=-71.00, Y=-26.00
SAR Peak: 0.06W/kg

SAR 10g (W/Kg)	0.018822
SAR 1g (W/Kg)	0.034218

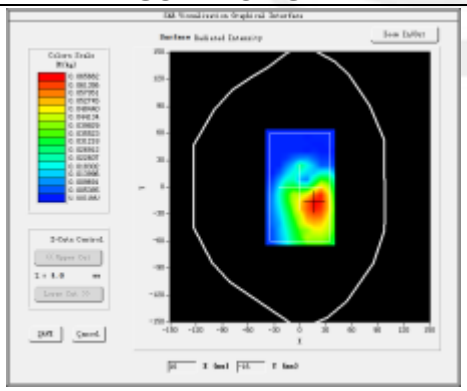
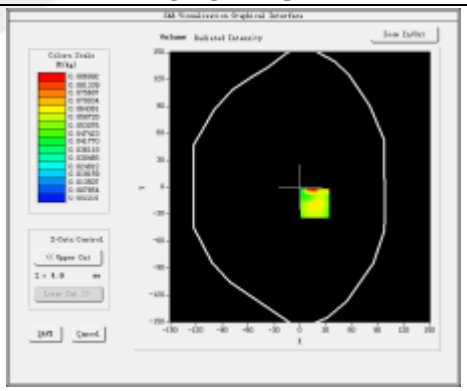
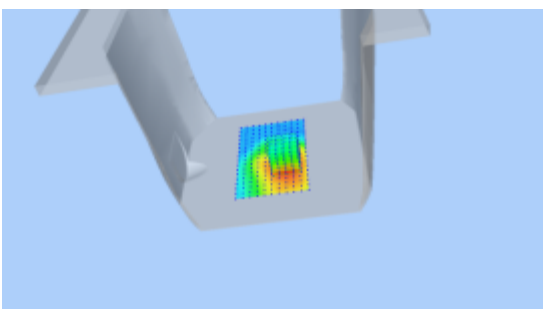
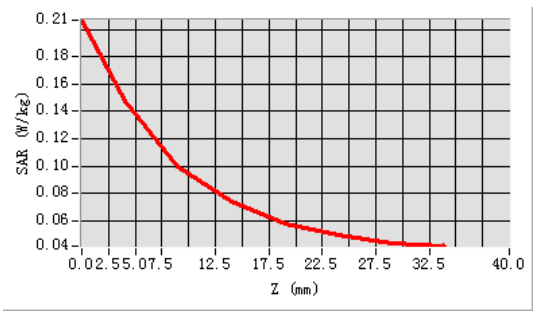
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 16: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.87
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	LTE Band 5 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	52.6
Conductivity (S/m)	1.38
Variation (%)	-1.79

Maximum location: X=17.00, Y=-18.00
SAR Peak: 0.21 W/kg

SAR 10g (W/Kg)	0.041069
SAR 1g (W/Kg)	0.072145

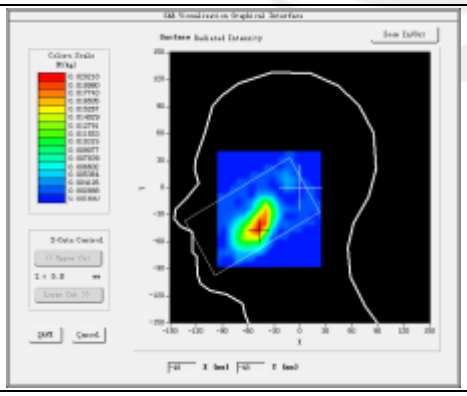
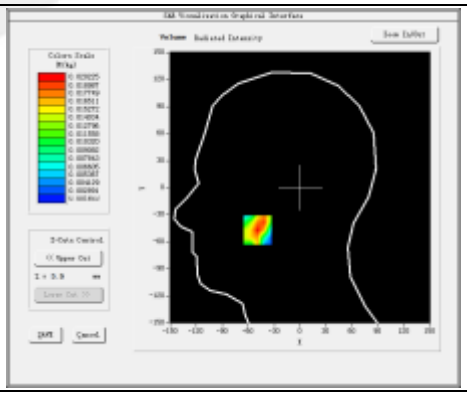
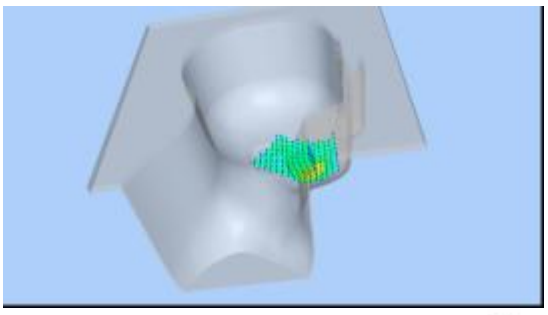
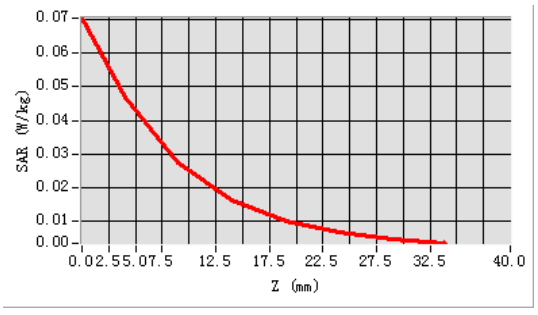
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 17: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.32
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 7 (RB 1)
Channels	Low
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	2510
Relative permittivity (real part)	38.5
Conductivity (S/m)	1.92
Variation (%)	-2.68

Maximum location: X=-49.00, Y=-47.00
SAR Peak: 0.07 W/kg

SAR 10g (W/Kg)	0.019723
SAR 1g (W/Kg)	0.039168

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

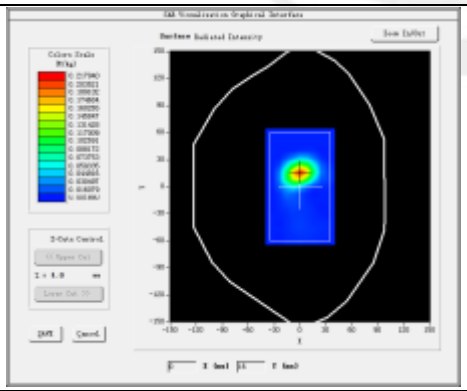
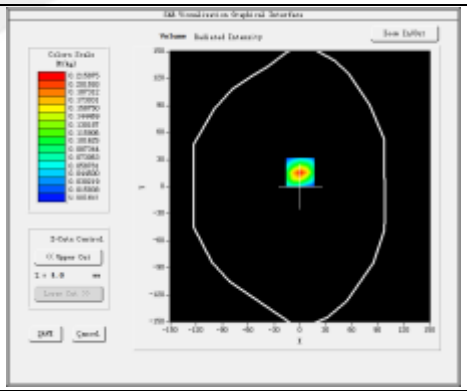
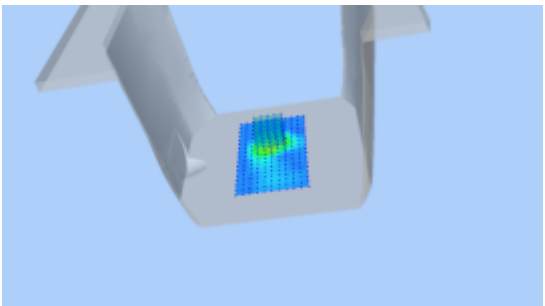
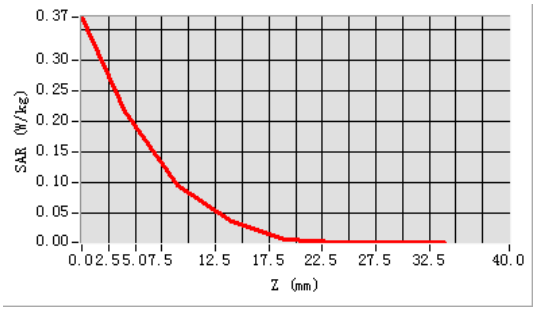
Plot 18: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	2.38
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	LTE Band 7 (RB 1)
Channels	Low
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	2510
Relative permittivity (real part)	52.3
Conductivity (S/m)	2.12
Variation (%)	-3.39

Maximum location: X=0.00, Y=16.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.078646
SAR 1g (W/Kg)	0.194609

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

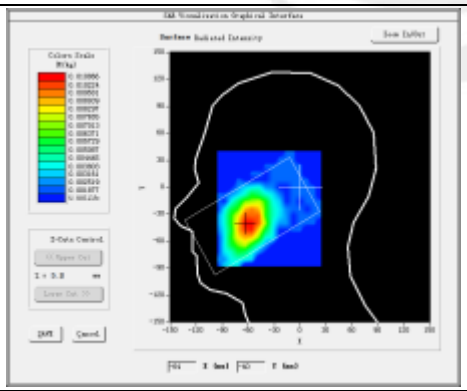
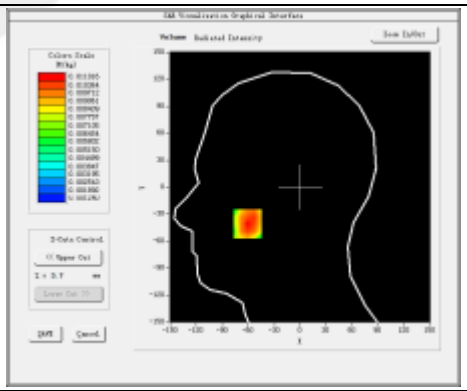
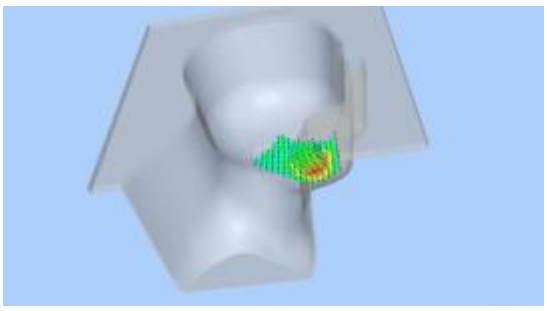
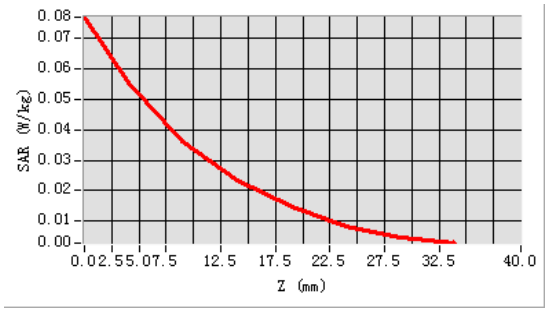
Plot 19: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.53
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 17 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	711
Relative permittivity (real part)	41.2
Conductivity (S/m)	0.91
Variation (%)	0.91

Maximum location: X=-61.00, Y=-41.00

SAR Peak: 0.08 W/kg

SAR 10g (W/Kg)	0.017901
SAR 1g (W/Kg)	0.040712

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

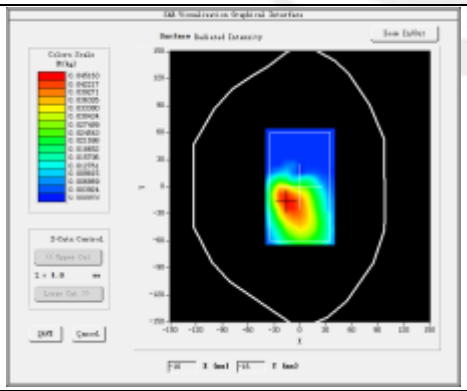
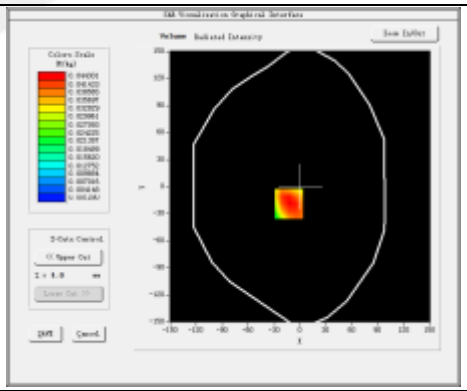
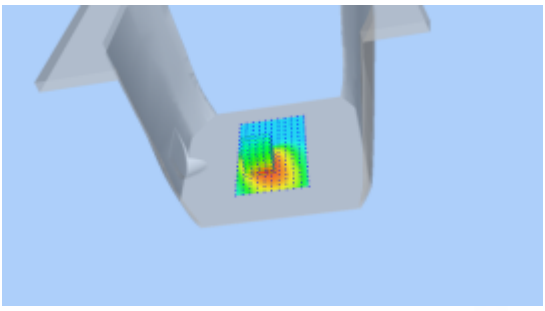
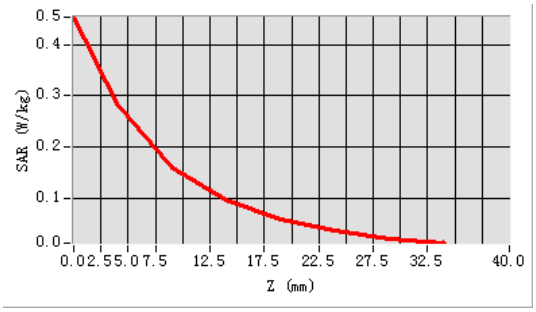
Plot 20: DUT: Smart phone; EUT Model: MT-SMP454G

Test Data	2016-06-13
Ambient Temperature(°C)	22.70
Liquid Temperature(°C)	22.30
Probe	SN 45/15 EPGO281
ConvF	1.59
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	LTE Band 17 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	711
Relative permittivity (real part)	55.26
Conductivity (S/m)	0.91
Variation (%)	-2.39

Maximum location: X=-13.00, Y=-19.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.129437
SAR 1g (W/Kg)	0.244174

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Appendix C. Probe Calibration And Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※