FCC SAR TEST REPORT

Report No.: STS2111120H01

Issued for

PCD, LLC

1500 Tradeport Drive, Suite A, Orlando, United States 32824

Product Name:	mobile phone
Brand Name:	PCD
Model Name:	U40
Series Model:	N/A
FCC ID:	2ALJJU40
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Head: 1.459 W/kg
	Body: 0.872 W/kg

ShenZhen STS Test Services Co.,Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

Test Report Certification

Applicant's name ..... : PCD, LLC

Address ..... : 1500 Tradeport Drive, Suite A, Orlando, United States 32824

Manufacturer's Name ..... : PCD, LLC

Address ..... : 1500 Tradeport Drive, Suite A, Orlando, United States 32824

Product description

Product name ..... : mobile phone

Brand name ..... : PCD

Model name ..... : U40

Series Model..... : N/A

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 .....: 20 Nov. 2021 ~ 28 Mar. 2022

Date of Issue.....: 30 Mar. 2022

Test Result.....: **Pass**

Testing Engineer : Shi fan. long
(Shifan. Lon)

Technical Manager : Sean She
(Sean she)

Authorized Signatory : Bovey Yang
(Bovey Yang)

Table of Contents

Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	30 Mar. 2022	STS2111120H01	ALL	Initial Issue

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

Product Name	mobile phone			
Brand Name	PCD			
Model Name	U40			
Series Model	N/A			
Model Difference	N/A			
Battery	Rated Voltage: 3.7V Charge Limit Voltage: 4.2V Capacity: 1300mAh			
Device Category	Portable			
Product stage	Production unit			
RF Exposure Environment	General Population / Uncontrolled			
IMEI	355613056775621			
Hardware Version	L500_MB_V1.0			
Software Version	PCD_U40_CLARO_PR_V1.0			
Frequency Range	GSM 850: 824 MHz ~ 849 MHz PCS1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 820 MHz ~ 850 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 66: 1710 MHz ~ 1780 MHz Bluetooth: 2402 MHz to 2480 MHz			
Max. Reported SAR(1g): (Limit:1.6W/kg)	Band	Mode	Head (W/kg)	Body Worn (W/kg)
	PCE	GSM 850	0.464	0.648
	PCE	GSM 1900	0.901	0.385
	PCE	WCDMA Band II	1.459	0.416
	PCE	WCDMA Band V	0.911	0.723
	PCE	LTE Band 4	1.409	0.691
	PCE	LTE Band 5	0.704	0.872
	PCE	LTE Band 12	0.231	0.170
	PCE	LTE Band 66	0.397	0.844
	PCE	LTE Band 2	0.809	0.758
	DSS	Bluetooth Note	0.117	0.117
1-g Sum SAR			1.576	0.989
FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter(DSS)			

Operating Mode:	GSM: GSM Voice; GPRS WCDMA: RMC, HSDPA, LTE: QPSK, 16QAM Bluetooth:(GFSK +π/4DQPSK+8DPSK)
Antenna Specification:	GSM/WCDMA/LTE: PIFA Antenna Bluetooth: Monopole Antenna
SIM Card	Only support single SIM Card.
Hotspot Mode	Not Support
DTM Mode	Not Support
Note: 1. Bluetooth SAR was estimated 2. 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
Temperature (℃)	18-25
Humidity (%RH)	30-70

1.3 Test Factory

ShenZhen STS Test Services Co.,Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01

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 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets

(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:

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

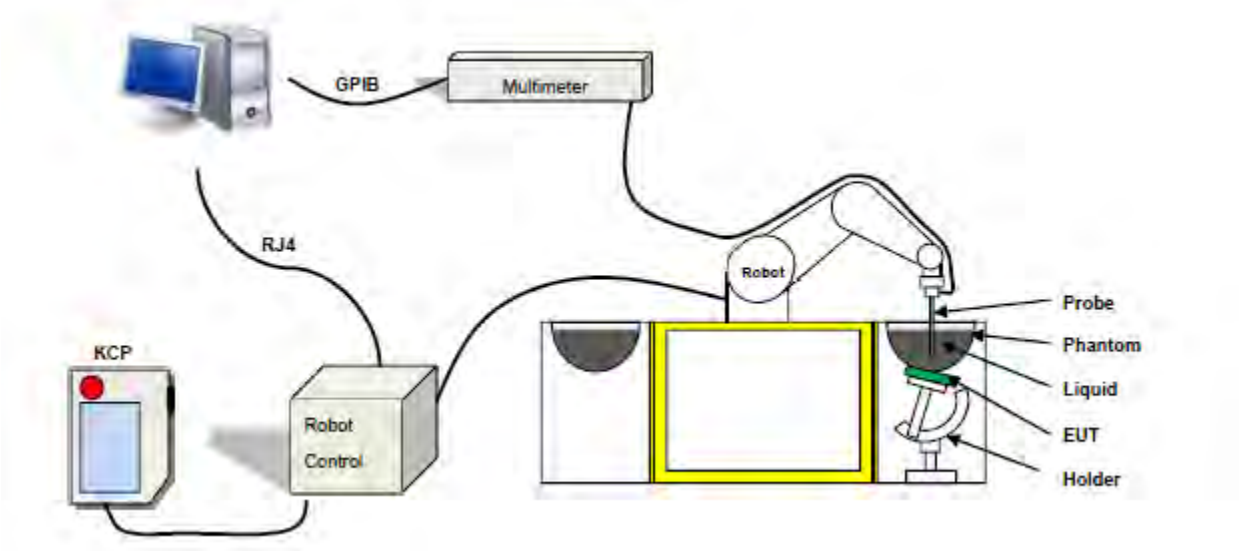
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

MVG 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 Open SAR 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 07/21 EPGO352 with following specifications is used

- Probe Length: 330 mm
- Length of Individual Dipoles: 2 mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 150 MHz to 6 GHz for head & body simulating liquid.
- Angle between probe axis (evaluation axis) and surface normal line: less than 30°

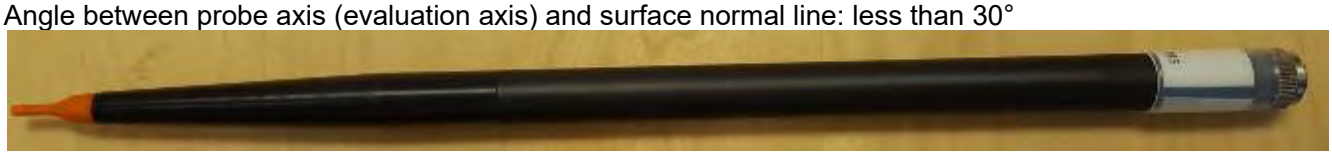


Figure 1-MVG COMOSAR Dosimetric E field Dipole

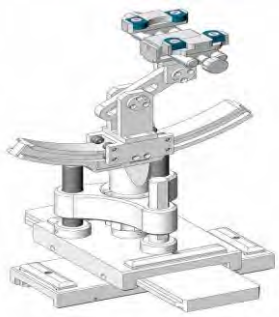
3.2.2 Phantom

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.

Head Tissue

Frequency (MHz)	cellulose	DGBE	HEC	NaCl	Preventol	Sugar	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	0.2	/	/	1.4	0.2	57.0	/	41.1	0.89	41.9
835	0.2	/	/	1.4	0.2	57.9	/	40.3	0.90	41.5
900	0.2	/	/	1.4	0.2	57.9	/	40.3	0.97	41.5
1800	/	44.5	/	0.3	/	/	30.45	55.2	1.4	40.0
1900	/	44.5	/	0.3	/	/	30.45	55.2	1.4	40.0
2000	/	44.5	/	0.3	/	/	/	55.2	1.4	40.0
2450	/	44.9	/	0.1	/	/	/	55.0	1.80	39.2
2600	/	45.0	/	0.1	/	/	/	54.9	1.96	39.0

Body Tissue

Frequency (MHz)	cellulose	DGBE	HEC	NaCl	Preventol	Sugar	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	0.2	/	/	0.9	0.1	47.2	/	51.7	0.96	55.5
835	0.2	/	/	0.9	0.1	48.2	/	50.8	0.97	55.2
900	0.2	/	/	0.9	0.1	48.2	/	50.8	1.05	55.0
1800	/	29.4	/	0.4	/	/	30.45	70.2	1.52	53.3
1900	/	29.4	/	0.4	/	/	30.45	70.2	1.52	53.3
2000	/	29.4	/	0.4	/	/	/	70.2	1.52	53.3
2450	/	31.3	/	0.1	/	/	/	68.6	1.95	52.7
2600	/	31.7	/	0.1	/	/	/	68.2	2.16	52.3

Tissue dielectric parameters for head and body phantoms				
Frequency	εr		σ S/m	
	Head	Body	Head	Body
300	45.3	58.2	0.87	0.92
450	43.5	56.7	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

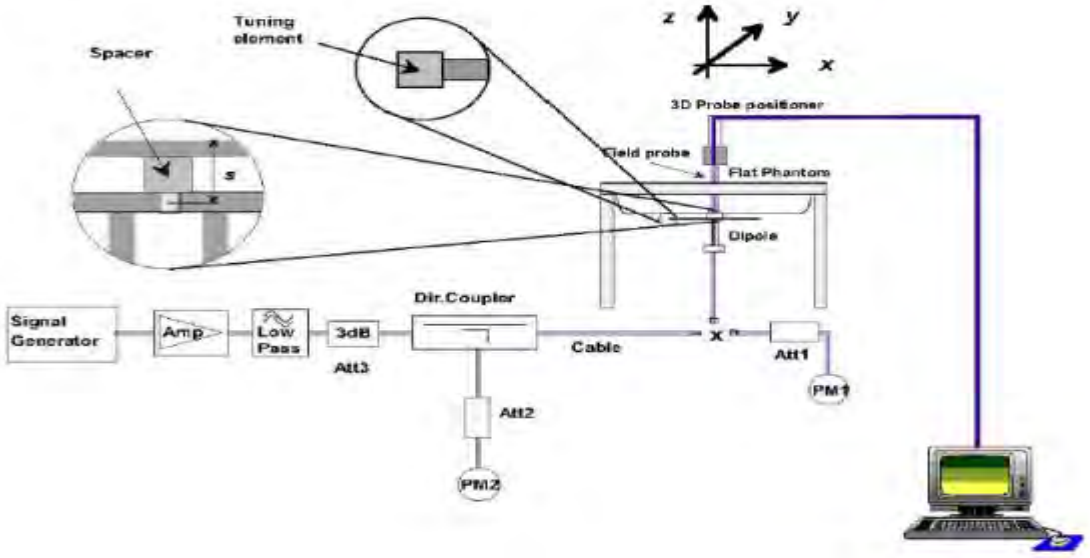
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency	Temp. [°C]					
2021-11-20	23.0	43	707.5 MHz	22.7	Permittivity	42.12	42.81	1.64	±5
					Conductivity	0.89	0.89	0.00	±5
2021-11-20	20.9	54	711 MHz	20.5	Permittivity	42.11	42.23	0.28	±5
					Conductivity	0.89	0.89	0.00	±5
2021-11-20	20.1	41	750 MHz	19.8	Permittivity	41.90	43.11	2.89	±5
					Conductivity	0.89	0.89	0.00	±5
2021-11-23	20.9	49	826.4MHz	20.6	Permittivity	41.50	40.73	-1.86	±5
					Conductivity	0.89	0.89	0.00	±5
2021-11-23	20.4	41	835 MHz	20.2	Permittivity	41.50	41.76	0.63	±5
					Conductivity	0.90	0.89	-1.11	±5
2021-11-23	21.7	59	836.4 MHz	21.5	Permittivity	41.50	41.05	-1.08	±5
					Conductivity	0.90	0.88	-2.22	±5
2021-11-23	21.6	44	836.5 MHz	21.3	Permittivity	41.50	41.37	-0.31	±5
					Conductivity	0.90	0.91	1.11	±5
2021-11-23	21.8	52	844 MHz	21.6	Permittivity	41.50	41.58	0.19	±5
					Conductivity	0.91	0.93	2.20	±5
2021-11-23	22.2	51	846.4 MHz	21.8	Permittivity	41.50	42.57	2.58	±5
					Conductivity	0.91	0.93	2.20	±5
2021-11-23	21.9	55	846.6 MHz	21.5	Permittivity	41.50	41.32	-0.43	±5
					Conductivity	0.91	0.93	2.20	±5
2021-11-23	21.3	51	848.8 MHz	21.0	Permittivity	41.50	40.75	-1.81	±5
					Conductivity	0.91	0.94	3.30	±5
2021-11-25	21.0	41	1720 MHz	20.7	Permittivity	40.11	41.08	2.42	±5
					Conductivity	1.35	1.41	4.44	±5
2021-11-25	20.1	42	1732.5 MHz	19.8	Permittivity	40.11	39.43	-1.70	±5
					Conductivity	1.35	1.32	-2.22	±5
2021-11-25	24.0	53	1745 MHz	23.6	Permittivity	40.11	41.06	2.37	±5
					Conductivity	1.35	1.39	2.96	±5
2021-11-25	23.3	47	1755 MHz	23.0	Permittivity	40.11	40.19	0.20	±5
					Conductivity	1.35	1.37	1.48	±5
2021-11-25	21.9	59	1770 MHz	21.6	Permittivity	40.11	39.90	-0.52	±5
					Conductivity	1.35	1.36	0.74	±5
2021-11-25	23.9	44	1800 MHz	23.6	Permittivity	40.00	40.07	0.18	±5
					Conductivity	1.40	1.35	-3.57	±5
2021-11-25	23.4	54	1850.2 MHz	23.1	Permittivity	40.00	41.24	3.10	±5
					Conductivity	1.40	1.42	1.43	±5
2021-11-25	21.7	50	1852.4 MHz	21.4	Permittivity	40.00	41.12	2.80	±5
					Conductivity	1.40	1.43	2.14	±5

2021-11-25	20.7	50	1880 MHz	20.4	Permittivity	40.00	41.03	2.58	±5
					Conductivity	1.40	1.39	-0.71	±5
2021-12-11	21.1	40	1900 MHz	20.8	Permittivity	40.00	40.62	1.55	±5
					Conductivity	1.40	1.42	1.43	±5
2021-12-11	21.7	49	1907.6 MHz	21.4	Permittivity	40.00	39.23	-1.93	±5
					Conductivity	1.40	1.38	-1.43	±5
2021-12-11	22.1	50	1909.8 MHz	21.8	Permittivity	40.00	39.63	-0.92	±5
					Conductivity	1.40	1.43	2.14	±5
2022-03-28	20.7	52	1860 MHz	20.4	Permittivity	40.00	39.67	-0.82	±5
					Conductivity	1.40	1.35	-3.57	±5
2022-03-28	22.0	46	1880 MHz	21.7	Permittivity	40.00	40.27	0.68	±5
					Conductivity	1.40	1.43	2.14	±5
2022-03-28	23.6	60	1900 MHz	23.4	Permittivity	40.00	41.21	3.03	±5
					Conductivity	1.40	1.37	-2.14	±5

5. SAR System Validation

5.1 Validation System

Each MVG system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the MVG 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 MVG, the validation data should be within its specification of 10 %.

Date	Freq.	Power	Tested Value	Normalized SAR	Target SAR	Tolerance	Limit
	(MHz)	(mW)	(W/Kg)	(W/kg)	1g(W/kg)	(%)	(%)
2021-11-20	750	100	0.851	8.51	8.49	0.23	10
2021-11-23	835	100	0.963	9.63	9.56	0.72	10
2021-11-25	1800	100	3.983	39.83	38.40	3.71	10
2021-12-11	1900	100	4.020	40.20	39.70	1.25	10
2022-03-28	1900	100	4.019	40.19	39.70	1.22	10

Note:

1. The tolerance limit of System validation ±10%.
2. The dipole input power (forward power) was 100 mW.
3. The results are normalized to 1 W input power.

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

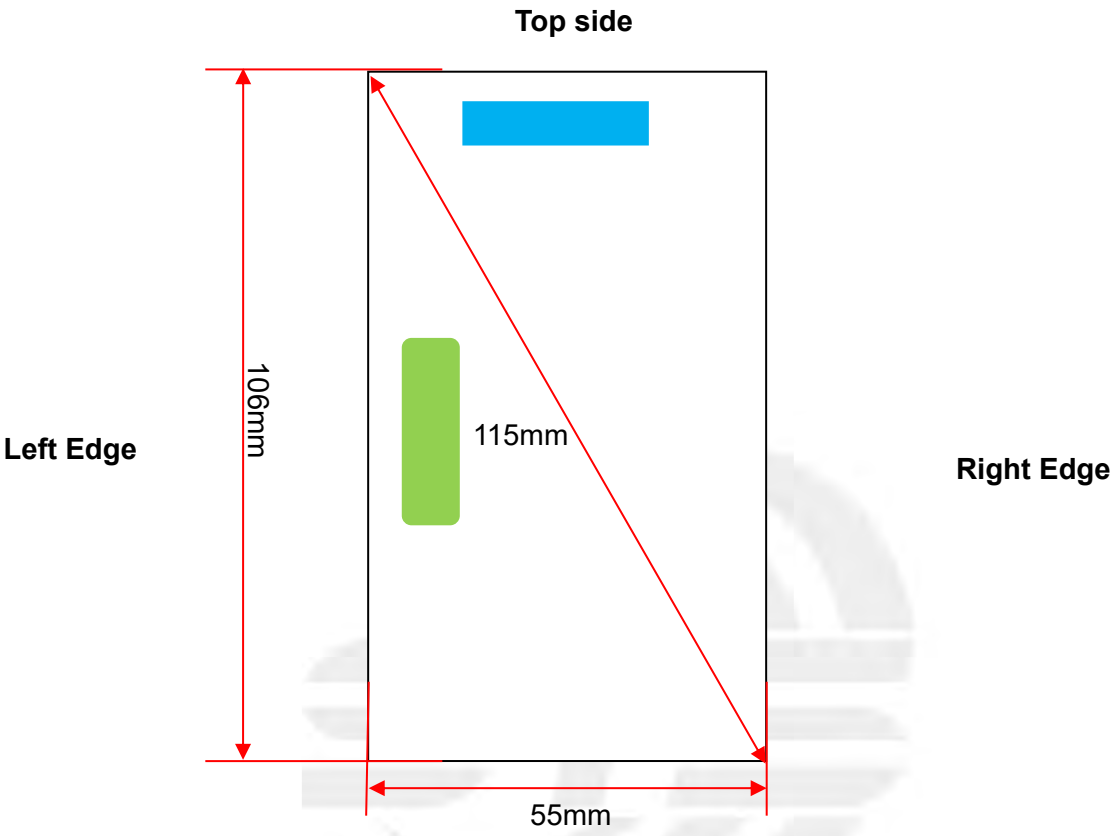
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible 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 mobile phone, support GSM/WCDMA/LTE/BT mode.



	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	≤5	≤5	13	75
BT	≤5	45	40	35

WWAN Antenna

BT Antenna

Note 1: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

7.1 SAR test exclusion consider table

The WWAN/BT SAR evaluation of Maximum power (dBm) summing tolerance.

Exposure Position	Wireless Interface	GSM850	PCS1900	WCDMA II	WCDMA V	LTE Band 4
	Calculated Frequency	848.8	1909.8	1907.6	846.6	1745
	Maximum Turn-up power (dBm)	30.5	27	23	23	24
	Maximum rated power(mW)	1122.02	501.19	199.53	199.53	251.19
Back Side	Separation distance (mm)	≤5	≤5	≤5	≤5	≤5
	exclusion threshold(mW)	16.28	10.85	10.86	16.30	11.36
	Testing required?	YES	YES	YES	YES	YES
Front Side	Separation distance (mm)	≤5	≤5	≤5	≤5	≤5
	exclusion threshold(mW)	16.28	10.85	10.86	16.30	11.36
	Testing required?	YES	YES	YES	YES	YES
Left Edge	Separation distance (mm)	≤5	≤5	≤5	≤5	≤5
	exclusion threshold(mW)	16.28	10.85	10.86	16.30	11.36
	Testing required?	YES	YES	YES	YES	YES
Right Edge	Separation distance (mm)	≤5	≤5	≤5	≤5	≤5
	exclusion threshold(mW)	16.28	10.85	10.86	16.30	11.36
	Testing required?	YES	YES	YES	YES	YES
Top Edge	Separation distance (mm)	13	13	13	13	13
	exclusion threshold(mW)	42.33	28.22	28.24	42.39	29.52
	Testing required?	YES	YES	YES	YES	YES
Bottom Edge	Separation distance (mm)	75	75	75	75	75
	exclusion threshold(mW)	304.28	426.84	426.54	304.12	404.39
	Testing required?	YES	YES	NO	NO	NO

Exposure Position	Wireless Interface	LTE Band 5	LTE Band 12	LTE Band 66	BT	LTE Band 2
	Calculated Frequency	844	711	1770	2402	1900
	Maximum Turn-up power (dBm)	24	24	24	4.5	23.6
	Maximum rated power(mW)	251.19	251.19	251.19	2.82	229.09
Back Side	Separation distance (mm)	≤5	≤5	≤5	≤5	5
	exclusion threshold(mW)	16.33	17.79	11.27	9.68	10.88
	Testing required?	YES	YES	YES	NO	YES
Front Side	Separation distance (mm)	≤5	≤5	≤5	≤5	5
	exclusion threshold(mW)	16.33	17.79	11.27	9.68	10.88
	Testing required?	YES	YES	YES	NO	YES
Left Edge	Separation distance (mm)	≤5	≤5	≤5	≤5	5
	exclusion threshold(mW)	16.33	17.79	11.27	9.68	10.88
	Testing required?	YES	YES	YES	NO	YES
Right Edge	Separation distance (mm)	≤5	≤5	≤5	45	5
	exclusion threshold(mW)	16.33	17.79	11.27	87.11	10.88
	Testing required?	YES	YES	YES	NO	YES
Top Edge	Separation distance (mm)	13	13	13	40	13
	exclusion threshold(mW)	42.45	46.25	29.31	77.43	28.29
	Testing required?	YES	YES	YES	NO	YES
Bottom Edge	Separation distance (mm)	75	75	75	35	75
	exclusion threshold(mW)	303.94	296.39	407.75	67.75	425.49
	Testing required?	NO	NO	NO	NO	NO

Note：

1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. per KDB 447498 D01, standalone SAR test exclusion threshold is applied; if the distance of the antenna to the user is <25mm,25mm 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

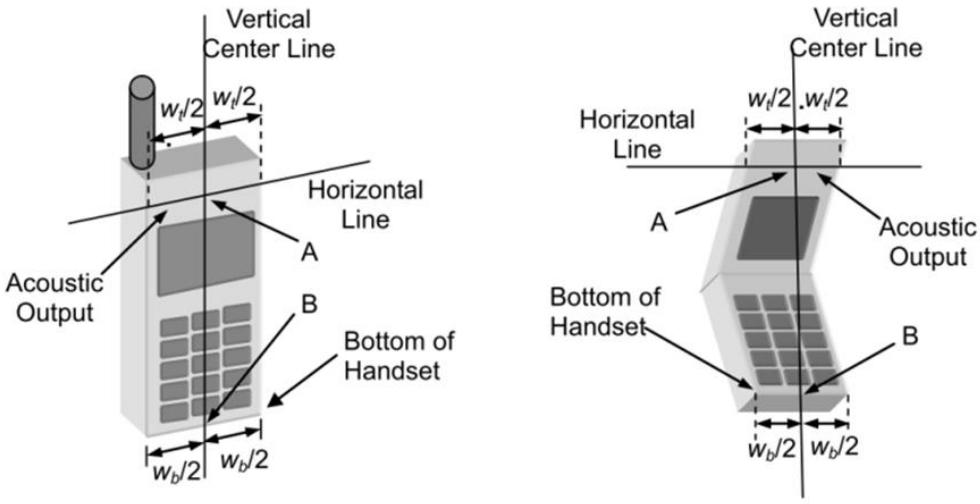
   b) [threshold at 50mm in step1]+(test separation distance -50mm) *10]mW at＞1500MHz and≤ 6GHz
6. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion 8.for each frequency band ,testing at higher data rates and higher order modulations is not required 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.
7. Per KDB 616217 D04, SAR evaluation for the front surface of tablet display screens are generally not necessary.

8. EUT Test Position

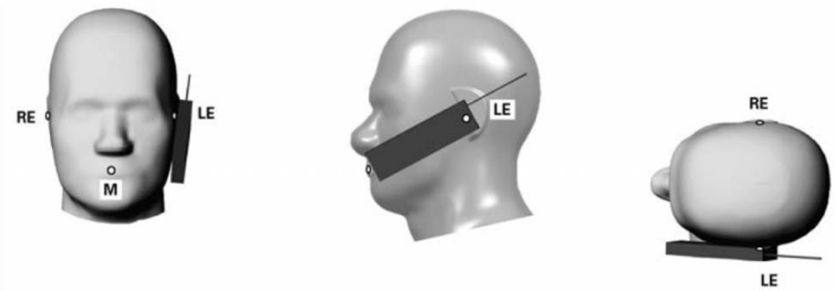
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

8.1 Define Two Imaginary Lines on the Handset

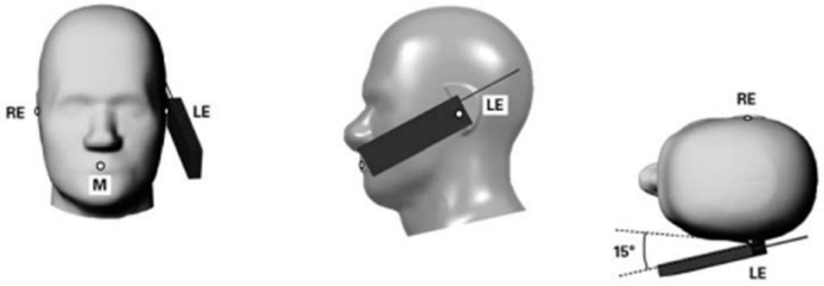
(1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.
(2)The horizontal line is perpendicular to the vertical centerline and passes through 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.



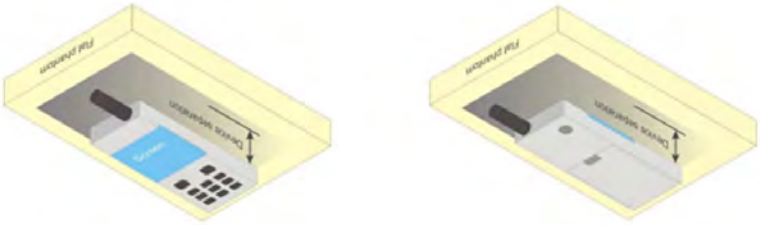
Cheek Position
1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane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

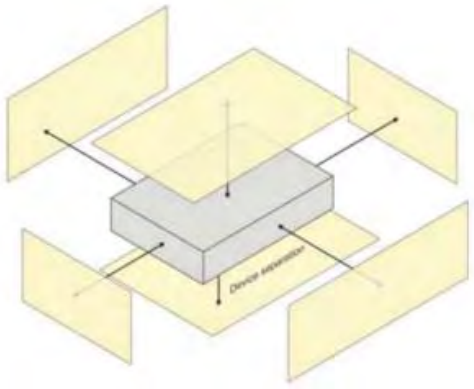


Body-worn Position Conditions:
Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset 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

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.

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.86	N	1	1	1	5.86	5.86	∞
Axial Isotropy	0.16	R	$\sqrt{3}$	√0.5	√0.5	0.07	0.07	∞
Hemispherical Isotropy	1.06	R	$\sqrt{3}$	√0.5	√0.5	0.43	0.43	∞
Boundary effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	1.27	R	$\sqrt{3}$	1	1	0.73	0.73	∞
System detection limits	1.23	R	$\sqrt{3}$	1	1	0.71	0.71	∞
Modulation response	3.6	R	$\sqrt{3}$	1	1	3.60	3.60	∞
Readout Electronics	0.28	N	1	1	1	0.28	0.28	∞
Response Time	0.19	R	$\sqrt{3}$	1	1	0.11	0.11	∞
Integration Time	1.47	R	$\sqrt{3}$	1	1	0.85	0.85	∞
RF ambient conditions-Noise	3.5	R	$\sqrt{3}$	1	1	2.02	2.02	∞
RF ambient conditions-reflections	3.2	R	$\sqrt{3}$	1	1	1.85	1.85	∞
Probe positioner mechanical tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Post-processing	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related								
Test sample positioning	3.1	N	1	1	1	3.10	3.10	∞
Device holder uncertainty	3.8	N	1	1	1	3.80	3.80	∞
SAR drift measurement	4.8	R	$\sqrt{3}$	1	1	2.77	2.77	∞
SAR scaling	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters								
Phantom uncertainty (shape and thickness uncertainty)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.95	1.78	∞
Liquid conductivity (measured)	4	N	1	0.78	0.71	0.92	1.04	M
Liquid permittivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	1.95	1.78	∞
Liquid permittivity (measured)	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				10.60	10.51	
Expanded Uncertainty (95% Confidence interval)		K=2				21.21	21.03	

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	1909.8
GSM(GMSK, 1-Slot)	31.86	31.78	31.95	28.35	28.42	28.51
GPRS (GMSK, 1-Slot)	31.62	31.59	31.78	28.12	28.19	28.23
GPRS (GMSK, 2-Slot)	31.21	31.16	31.35	27.63	27.73	27.81
GPRS (GMSK, 3-Slot)	30.74	30.71	30.94	27.16	27.29	27.37
GPRS (GMSK, 4-Slot)	30.31	30.23	30.49	26.75	26.81	26.96
Remark: GPRS, CS4 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						

Frame- 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	1909.8
GSM(GMSK, 1-Slot)	22.83	22.75	22.92	19.32	19.39	19.48
GPRS (GMSK, 1-Slot)	22.59	22.56	22.75	19.09	19.16	19.20
GPRS (GMSK, 2-Slot)	25.19	25.14	25.33	21.61	21.71	21.79
GPRS (GMSK, 3-Slot)	26.48	26.45	26.68	22.90	23.03	23.11
GPRS (GMSK, 4-Slot)	27.30	27.22	27.48	23.74	23.80	23.95
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 II			WCDMA Band V		
Channel	9262	9400	9538	4132	4183	4233
Frequency (MHz)	1852.4	1880	1907.6	826.4	836.6	846.6
RMC 12.2Kbps	22.59	22.62	22.73	22.65	22.78	22.79
HSDPA Subtest-1	22.55	22.59	22.69	22.59	22.66	22.72
HSDPA Subtest-2	22.07	22.09	22.2	22.17	22.18	22.23
HSDPA Subtest-3	21.68	21.6	21.83	21.82	21.76	21.77
HSDPA Subtest-4	21.29	21.21	21.38	21.4	21.36	21.38

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.

Bluetooth

BT				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	4.33	2.71
	39	2441	3.55	2.26
	78	2480	3.09	2.04
π/4-QPSK(2Mbps)	0	2402	3.66	2.32
	39	2441	2.86	1.93
	78	2480	2.41	1.74
8DPSK(3Mbps)	0	2402	3.62	2.30
	39	2441	2.89	1.95
	78	2480	2.36	1.72

LTE Conducted Power

General Note:

1. Anritsu CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
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 ≤ 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 ≤ 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 ≤ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
1.4	1	0	QPSK	23.06	23.12	23.15
1.4	1	2		22.87	23.07	23.10
1.4	1	5		22.87	22.99	23.08
1.4	3	0		22.73	22.86	22.91
1.4	3	1		22.59	22.68	22.81
1.4	3	2		22.42	22.56	22.63
1.4	6	0		22.36	22.55	22.44
1.4	1	0	16-QAM	23.02	23.03	23.05
1.4	1	2		22.74	22.99	23.02
1.4	1	5		22.81	22.97	22.92
1.4	3	0		22.71	22.76	22.75
1.4	3	1		22.49	22.54	22.69
1.4	3	2		22.26	22.36	22.44
1.4	6	0		22.22	22.36	22.43
3	1	0	QPSK	23.13	23.16	23.22
3	1	7		23.08	23.02	23.15
3	1	14		23.03	23.01	22.96
3	8	0		22.96	22.90	22.90
3	8	4		22.91	22.72	22.82
3	8	7		22.78	22.60	22.67
3	15	0		22.62	22.54	22.49
3	1	0	16-QAM	22.98	22.99	23.22
3	1	7		23.06	22.86	22.97
3	1	14		22.84	22.88	22.87
3	8	0		22.81	22.84	22.76
3	8	4		22.82	22.68	22.65
3	8	7		22.71	22.56	22.49
3	15	0		22.55	22.53	22.36

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
5	1	0	QPSK	23.21	23.26	23.29
5	1	12		23.14	23.19	23.22
5	1	24		23.02	23.04	23.12
5	12	0		22.88	22.88	22.95
5	12	6		22.69	22.68	22.89
5	12	11		22.49	22.54	22.74
5	25	0		22.32	22.47	22.64
5	1	0	16-QAM	23.07	23.11	23.23
5	1	12		23.02	23.14	23.13
5	1	24		22.87	22.94	23.01
5	12	0		22.82	22.71	22.91
5	12	6		22.68	22.68	22.81
5	12	11		22.38	22.51	22.62
5	25	0		22.26	22.36	22.53
10	1	0	QPSK	23.31	23.35	23.36
10	1	24		23.19	23.16	23.26
10	1	49		23.19	23.02	23.10
10	25	0		23.16	22.91	23.09
10	25	12		23.09	22.73	23.05
10	25	24		22.91	22.65	22.87
10	50	0		22.76	22.47	22.82
10	1	0	16-QAM	23.31	23.21	23.34
10	1	24		23.15	22.99	23.22
10	1	49		23.15	22.90	23.10
10	25	0		22.97	22.87	22.95
10	25	12		22.92	22.56	22.96
10	25	24		22.73	22.63	22.73
10	50	0		22.72	22.30	22.70

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
15	1	0	QPSK	23.48	23.59	23.62
15	1	37		23.44	23.54	23.52
15	1	74		23.28	23.53	23.47
15	36	0		23.15	23.35	23.45
15	36	18		23.04	23.25	23.44
15	36	39		23.03	23.12	23.32
15	75	0		22.89	23.06	23.23
15	1	0	16-QAM	23.29	23.56	23.48
15	1	38		23.27	23.52	23.39
15	1	75		23.25	23.41	23.35
15	36	0		23.13	23.23	23.29
15	36	18		22.84	23.23	23.29
15	36	39		22.90	23.07	23.28
15	75	0		22.72	23.04	23.23
20	1	0	QPSK	23.79	23.85	23.89
20	1	49		23.71	23.70	23.83
20	1	99		23.58	23.66	23.66
20	50	0		23.46	23.46	23.47
20	50	24		23.34	23.42	23.28
20	50	49		23.25	23.35	23.19
20	100	0		23.16	23.16	23.08
20	1	0	16-QAM	23.71	23.80	23.75
20	1	49		23.68	23.70	23.75
20	1	99		23.39	23.58	23.61
20	50	0		23.38	23.39	23.42
20	50	24		23.32	23.34	23.19
20	50	49		23.08	23.25	23.03
20	100	0		22.99	23.10	22.94

LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.86	22.95	22.96
1.4	1	2		22.85	22.84	22.82
1.4	1	5		22.72	22.66	22.70
1.4	3	0		22.68	22.58	22.70
1.4	3	1		22.55	22.47	22.55
1.4	3	2		22.50	22.39	22.41
1.4	6	0		22.38	22.36	22.38
1.4	1	0	16-QAM	22.86	22.89	22.93
1.4	1	2		22.66	22.65	22.62
1.4	1	5		22.57	22.48	22.62
1.4	3	0		22.49	22.52	22.63
1.4	3	1		22.39	22.34	22.41
1.4	3	2		22.32	22.39	22.40
1.4	6	0		22.34	22.21	22.30
3	1	0	QPSK	22.98	23.02	23.05
3	1	7		22.84	22.86	22.97
3	1	14		22.84	22.67	22.90
3	8	0		22.69	22.52	22.73
3	8	4		22.61	22.40	22.56
3	8	7		22.49	22.33	22.50
3	15	0		22.41	22.31	22.31
3	1	0	16-QAM	22.95	22.88	23.00
3	1	7		22.75	22.73	22.82
3	1	14		22.84	22.49	22.79
3	8	0		22.60	22.42	22.71
3	8	4		22.54	22.23	22.51
3	8	7		22.38	22.28	22.42
3	15	0		22.40	22.24	22.30

LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.12	23.23	23.35
5	1	12		22.99	23.12	23.27
5	1	24		22.90	23.08	23.26
5	12	0		22.84	23.05	23.12
5	12	6		22.68	22.93	22.97
5	12	11		22.52	22.81	22.81
5	25	0		22.51	22.75	22.75
5	1	0	16-QAM	23.07	23.22	23.22
5	1	12		22.89	23.00	23.08
5	1	24		22.74	22.98	23.22
5	12	0		22.71	22.98	23.05
5	12	6		22.62	22.85	22.91
5	12	11		22.44	22.74	22.64
5	25	0		22.43	22.72	22.68
10	1	0	QPSK	23.62	23.68	23.75
10	1	24		23.43	23.66	23.68
10	1	49		23.26	23.50	23.63
10	25	0		23.12	23.35	23.60
10	25	12		23.02	23.21	23.45
10	25	24		22.90	23.20	23.44
10	50	0		22.84	23.17	23.30
10	1	0	16-QAM	23.58	23.50	23.64
10	1	24		23.34	23.53	23.53
10	1	49		23.19	23.45	23.50
10	25	0		23.01	23.20	23.47
10	25	12		22.90	23.07	23.42
10	25	24		22.71	23.02	23.34
10	50	0		22.65	23.06	23.27

LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
1.4	1	0	QPSK	23.32	23.35	23.41
1.4	1	2		23.19	23.26	23.25
1.4	1	5		23.06	23.17	23.12
1.4	3	0		23.02	23.05	23.02
1.4	3	1		22.85	22.96	22.88
1.4	3	2		22.85	22.87	22.78
1.4	6	0		22.67	22.76	22.71
1.4	1	0	16-QAM	23.27	23.25	23.37
1.4	1	2		23.10	23.21	23.10
1.4	1	5		23.01	23.02	22.97
1.4	3	0		22.83	23.03	22.82
1.4	3	1		22.74	22.85	22.75
1.4	3	2		22.82	22.78	22.65
1.4	6	0		22.52	22.60	22.66
3	1	0	QPSK	23.39	23.42	23.56
3	1	7		23.25	23.29	23.39
3	1	14		23.23	23.16	23.24
3	8	0		23.18	23.10	23.19
3	8	4		23.10	23.08	22.99
3	8	7		22.99	23.02	22.98
3	15	0		22.88	22.93	22.92
3	1	0	16-QAM	23.30	23.35	23.40
3	1	7		23.15	23.18	23.39
3	1	14		23.06	23.03	23.10
3	8	0		23.01	23.01	23.10
3	8	4		23.06	23.02	22.86
3	8	7		22.92	22.96	22.79
3	15	0		22.69	22.82	22.84

LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
5	1	0	QPSK	23.52	23.59	23.62
5	1	12		23.49	23.43	23.58
5	1	24		23.35	23.38	23.40
5	12	0		23.26	23.33	23.36
5	12	6		23.09	23.21	23.24
5	12	11		23.07	23.17	23.06
5	25	0		22.95	23.15	23.05
5	1	0	16-QAM	23.36	23.50	23.53
5	1	12		23.44	23.32	23.39
5	1	24		23.16	23.23	23.37
5	12	0		23.21	23.23	23.23
5	12	6		23.03	23.18	23.16
5	12	11		22.90	23.17	22.94
5	25	0		22.83	23.00	22.90
10	1	0	QPSK	23.75	23.86	23.88
10	1	24		23.58	23.83	23.75
10	1	49		23.48	23.70	23.57
10	25	0		23.47	23.60	23.49
10	25	12		23.35	23.56	23.47
10	25	24		23.22	23.36	23.37
10	50	0		23.18	23.25	23.19
10	1	0	16-QAM	23.66	23.79	23.81
10	1	24		23.49	23.72	23.63
10	1	49		23.35	23.51	23.45
10	25	0		23.29	23.51	23.34
10	25	12		23.32	23.46	23.27
10	25	24		23.21	23.27	23.19
10	50	0		23.05	23.10	23.07

LTE BAND 66

LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
1.4	1	0	QPSK	23.12	23.19	23.23
1.4	1	2		23.02	23.14	23.21
1.4	1	5		22.89	23.14	23.03
1.4	3	0		22.86	22.95	22.97
1.4	3	1		22.73	22.88	22.79
1.4	3	2		22.69	22.88	22.77
1.4	6	0		22.58	22.74	22.59
1.4	1	0	16-QAM	23.11	23.13	23.20
1.4	1	2		22.95	22.99	23.02
1.4	1	5		22.72	23.11	22.92
1.4	3	0		22.86	22.79	22.78
1.4	3	1		22.57	22.87	22.79
1.4	3	2		22.61	22.70	22.67
1.4	6	0		22.56	22.70	22.44
3	1	0	QPSK	23.32	23.35	23.39
3	1	7		23.24	23.23	23.28
3	1	14		23.10	23.13	23.20
3	8	0		23.03	23.02	23.08
3	8	4		22.87	22.89	23.01
3	8	7		22.81	22.76	22.89
3	15	0		22.72	22.60	22.80
3	1	0	16-QAM	23.25	23.16	23.38
3	1	7		23.08	23.20	23.20
3	1	14		22.91	23.02	23.11
3	8	0		22.92	22.94	23.05
3	8	4		22.67	22.77	22.96
3	8	7		22.80	22.67	22.82
3	15	0		22.56	22.41	22.76

LTE BAND 66

LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
5	1	0	QPSK	23.38	23.45	23.49
5	1	12		23.37	23.40	23.36
5	1	24		23.21	23.27	23.23
5	12	0		23.20	23.10	23.10
5	12	6		23.14	23.00	23.02
5	12	11		23.14	22.95	22.87
5	25	0		22.97	22.94	22.74
5	1	0	16-QAM	23.33	23.41	23.46
5	1	12		23.21	23.36	23.31
5	1	24		23.03	23.22	23.22
5	12	0		23.13	23.02	22.98
5	12	6		22.97	22.99	22.97
5	12	11		22.95	22.76	22.74
5	25	0		22.93	22.81	22.68
10	1	0	QPSK	23.51	23.59	23.62
10	1	24		23.40	23.49	23.51
10	1	49		23.30	23.35	23.33
10	25	0		23.17	23.30	23.28
10	25	12		23.16	23.15	23.12
10	25	24		23.11	22.98	23.03
10	50	0		23.05	22.82	22.87
10	1	0	16-QAM	23.43	23.56	23.43
10	1	24		23.29	23.38	23.35
10	1	49		23.19	23.25	23.32
10	25	0		23.13	23.30	23.28
10	25	12		22.97	23.02	22.94
10	25	24		23.08	22.88	22.86
10	50	0		22.89	22.76	22.68

LTE BAND 66

LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	**RB Size**	**RB Offset**	**Mod**	**Lowest**	**Middle**	**Highest**
15	1	0	QPSK	23.65	23.72	23.78
15	1	37		23.45	23.60	23.68
15	1	74		23.26	23.50	23.61
15	36	0		23.12	23.40	23.57
15	36	18		22.99	23.23	23.41
15	36	39		22.84	23.23	23.40
15	75	0		22.72	23.04	23.38
15	1	0	16-QAM	23.65	23.66	23.77
15	1	38		23.45	23.55	23.55
15	1	75		23.10	23.40	23.45
15	36	0		23.04	23.39	23.43
15	36	18		22.95	23.06	23.28
15	36	39		22.66	23.20	23.33
15	75	0		22.55	22.98	23.30
20	1	0	QPSK	23.89	23.95	23.99
20	1	49		23.87	23.83	23.95
20	1	99		23.75	23.82	23.76
20	50	0		23.58	23.74	23.58
20	50	24		23.48	23.67	23.56
20	50	49		23.40	23.66	23.41
20	100	0		23.24	23.49	23.24
20	1	0	16-QAM	23.83	23.83	23.89
20	1	49		23.68	23.78	23.83
20	1	99		23.56	23.76	23.73
20	50	0		23.42	23.66	23.49
20	50	24		23.40	23.67	23.56
20	50	49		23.25	23.66	23.32
20	100	0		23.21	23.47	23.09

LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	21.61	21.46	21.65
1.4	1	2		21.48	21.35	21.63
1.4	1	5		21.41	21.21	21.49
1.4	3	0		21.27	21.09	21.30
1.4	3	1		21.24	20.96	21.16
1.4	3	2		21.13	20.92	21.06
1.4	6	0		21.09	20.88	20.97
1.4	1	0	16-QAM	21.54	21.38	21.58
1.4	1	2		21.40	21.32	21.45
1.4	1	5		21.23	21.09	21.43
1.4	3	0		21.12	20.92	21.14
1.4	3	1		21.11	20.94	21.11
1.4	3	2		21.09	20.76	21.04
1.4	6	0		21.03	20.69	20.82
3	1	0	QPSK	21.87	21.72	21.93
3	1	7		21.85	21.63	21.82
3	1	14		21.81	21.62	21.81
3	8	0		21.63	21.59	21.81
3	8	4		21.57	21.44	21.68
3	8	7		21.41	21.29	21.59
3	15	0		21.38	21.16	21.52
3	1	0	16-QAM	21.76	21.72	21.92
3	1	7		21.66	21.44	21.69
3	1	14		21.75	21.44	21.79
3	8	0		21.50	21.47	21.75
3	8	4		21.51	21.33	21.56
3	8	7		21.38	21.21	21.45
3	15	0		21.26	21.06	21.51

LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.17	22.38	22.41
5	1	12		22.05	22.29	22.30
5	1	24		22.02	22.26	22.23
5	12	0		21.92	22.15	22.06
5	12	6		21.88	22.06	21.92
5	12	11		21.87	21.88	21.84
5	25	0		21.81	21.69	21.65
5	1	0	16-QAM	22.04	22.30	22.22
5	1	12		21.98	22.12	22.27
5	1	24		21.87	22.09	22.16
5	12	0		21.80	21.98	21.95
5	12	6		21.70	21.87	21.92
5	12	11		21.80	21.78	21.80
5	25	0		21.66	21.59	21.53
10	1	0	QPSK	22.66	22.84	22.91
10	1	24		22.50	22.69	22.78
10	1	49		22.44	22.54	22.71
10	25	0		22.27	22.37	22.51
10	25	12		22.21	22.35	22.46
10	25	24		22.04	22.20	22.30
10	50	0		21.85	22.17	22.16
10	1	0	16-QAM	22.55	22.73	22.85
10	1	24		22.45	22.52	22.64
10	1	49		22.39	22.34	22.56
10	25	0		22.11	22.22	22.43
10	25	12		22.21	22.26	22.42
10	25	24		22.02	22.05	22.22
10	50	0		21.81	22.17	21.96

LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.01	23.12	23.24
15	1	37		22.93	23.01	23.17
15	1	74		22.92	22.85	23.00
15	36	0		22.73	22.81	22.87
15	36	18		22.72	22.69	22.81
15	36	39		22.57	22.50	22.72
15	75	0		22.49	22.37	22.52
15	1	0	16-QAM	22.95	23.07	23.17
15	1	38		22.76	23.00	23.03
15	1	75		22.77	22.80	22.83
15	36	0		22.72	22.72	22.73
15	36	18		22.72	22.59	22.76
15	36	39		22.56	22.42	22.56
15	75	0		22.47	22.18	22.43
20	1	0	QPSK	23.33	23.47	23.56
20	1	49		23.30	23.43	23.43
20	1	99		23.23	23.41	23.37
20	50	0		23.11	23.35	23.21
20	50	24		23.11	23.31	23.08
20	50	49		22.96	23.20	22.98
20	100	0		22.88	23.11	22.98
20	1	0	16-QAM	23.29	23.40	23.40
20	1	49		23.17	23.26	23.40
20	1	99		23.21	23.40	23.20
20	50	0		23.00	23.19	23.02
20	50	24		23.04	23.29	22.92
20	50	49		22.90	23.19	22.78
20	100	0		22.78	23.01	22.82

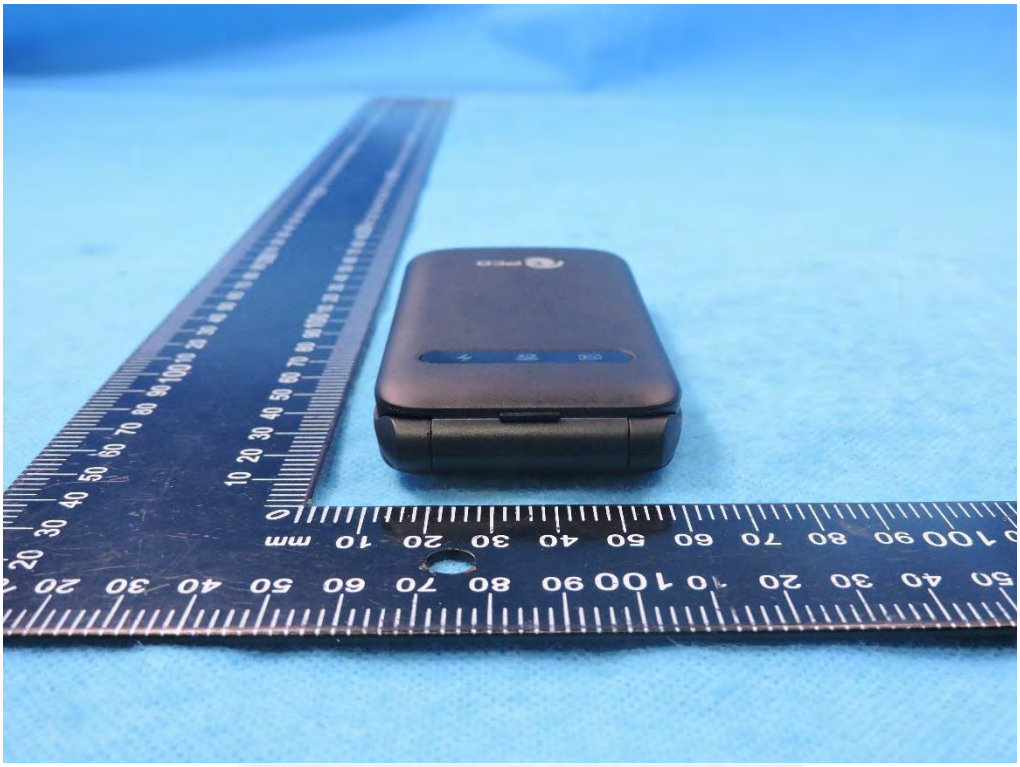
11. EUT and Test Setup Photo

11.1 EUT Photo

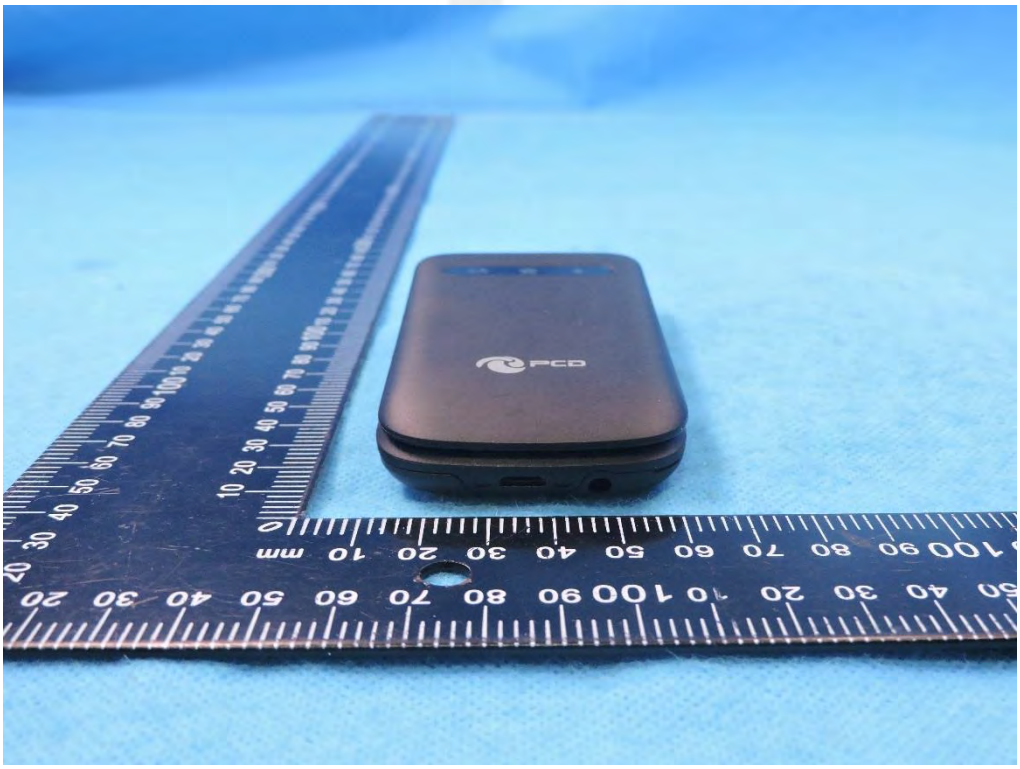
Front side

Back side

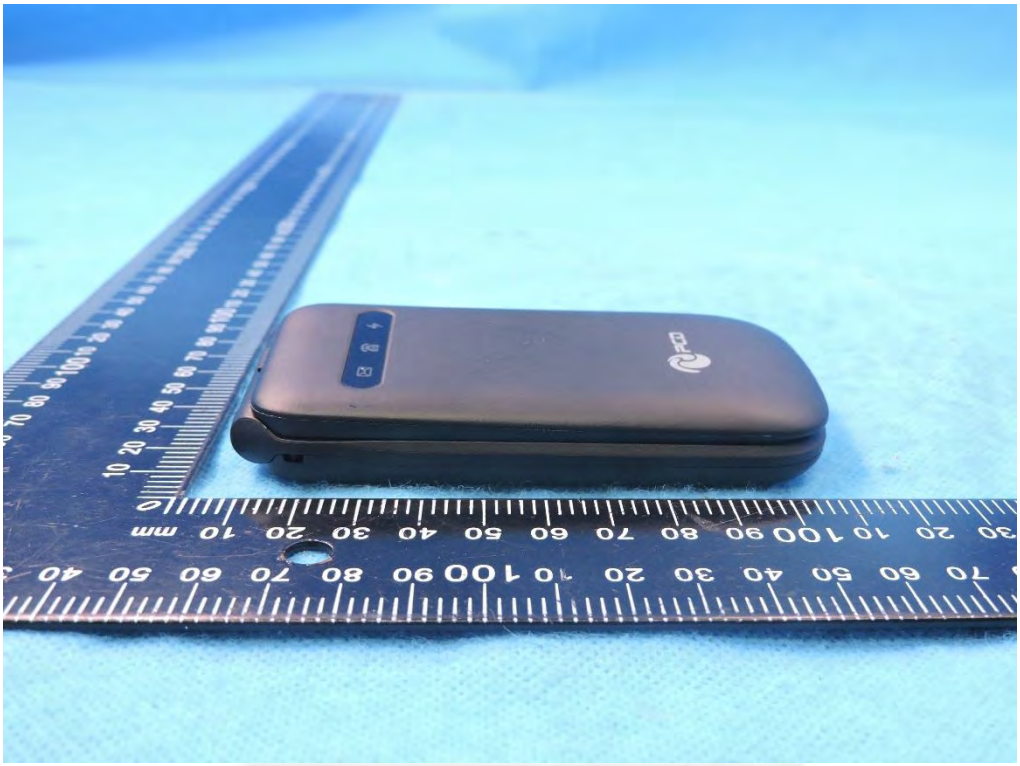
Top side



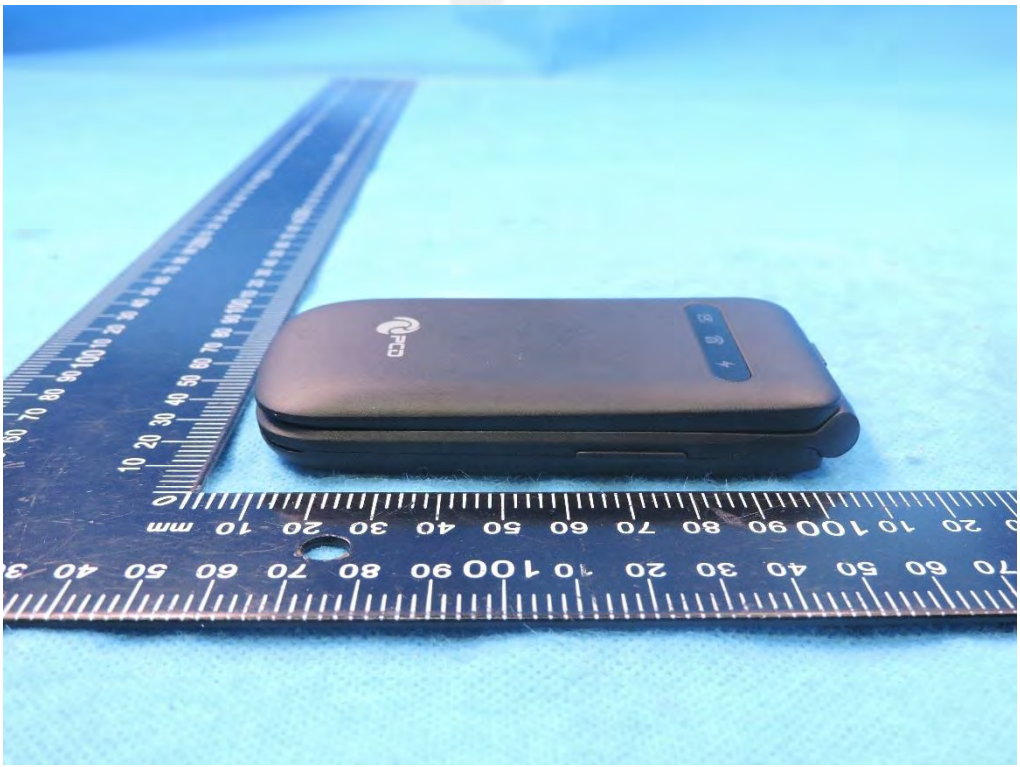
Bottom side



Left side



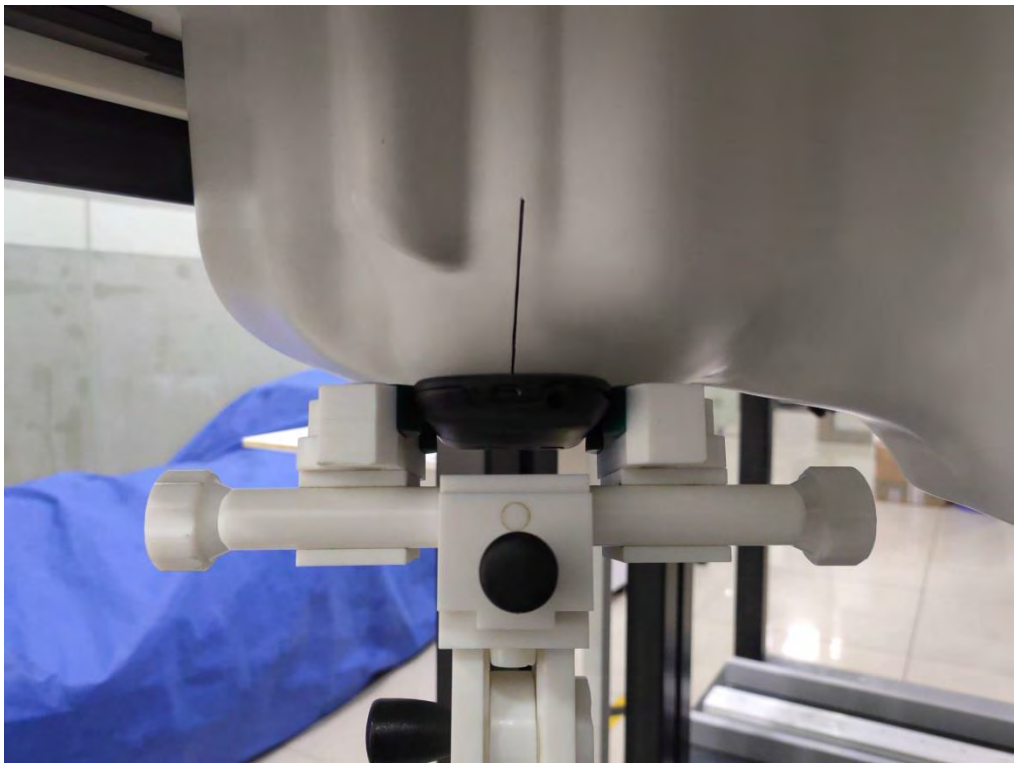
Right side



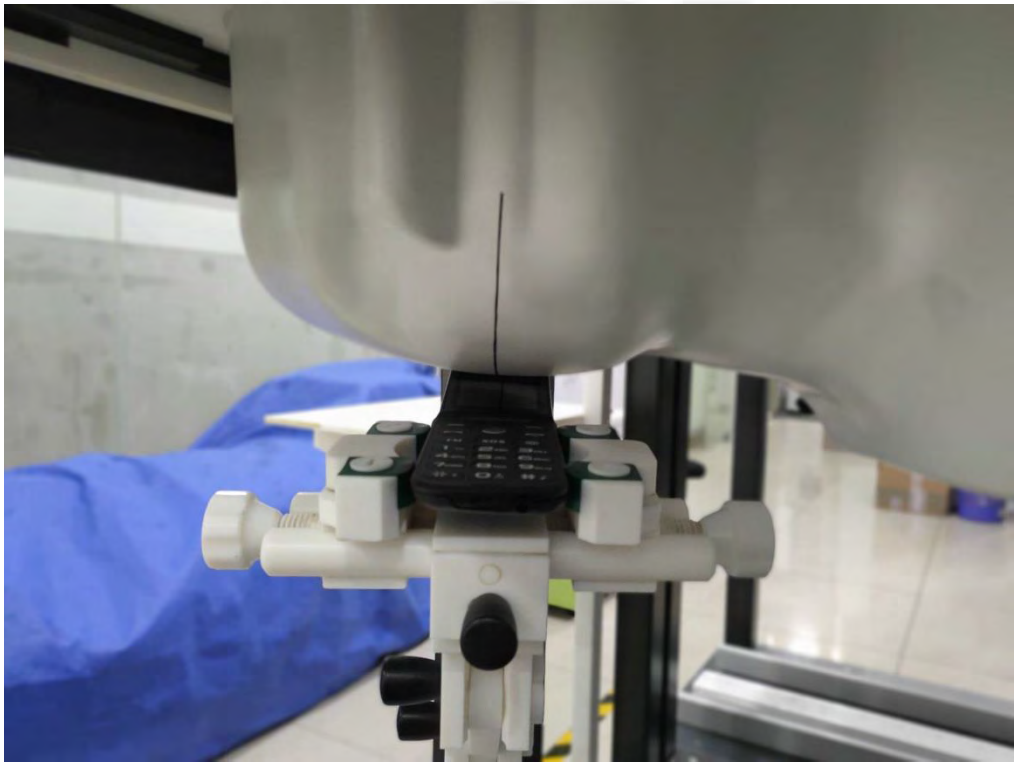
Open mode

11.2 Setup Photo

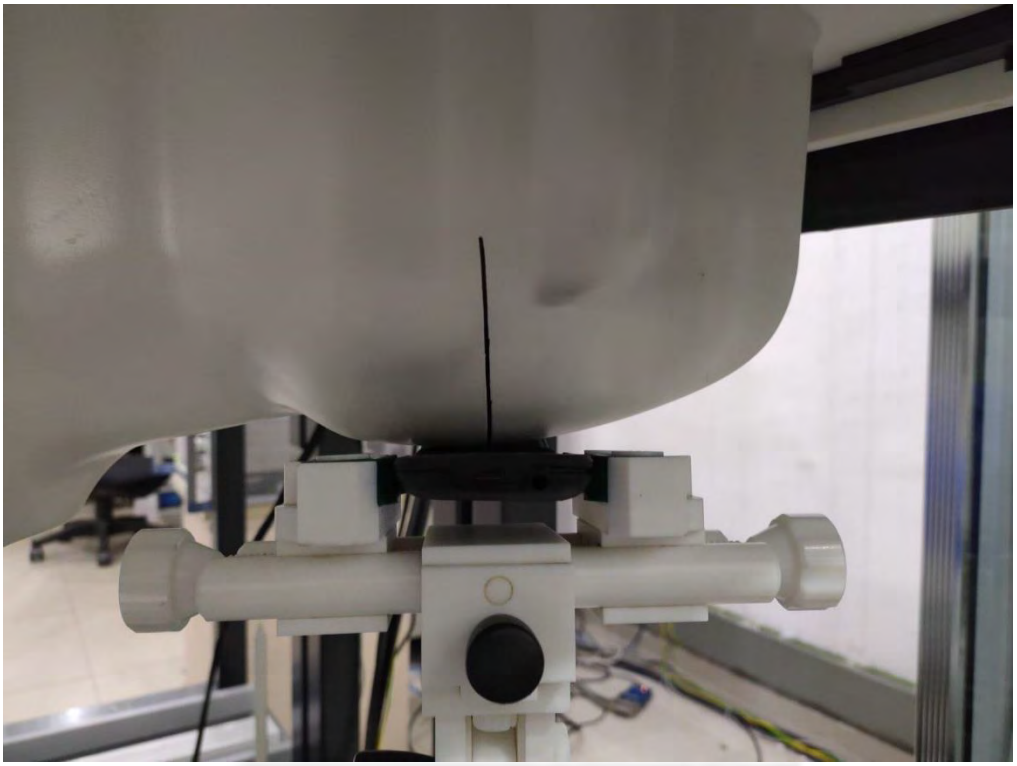
Right Touch



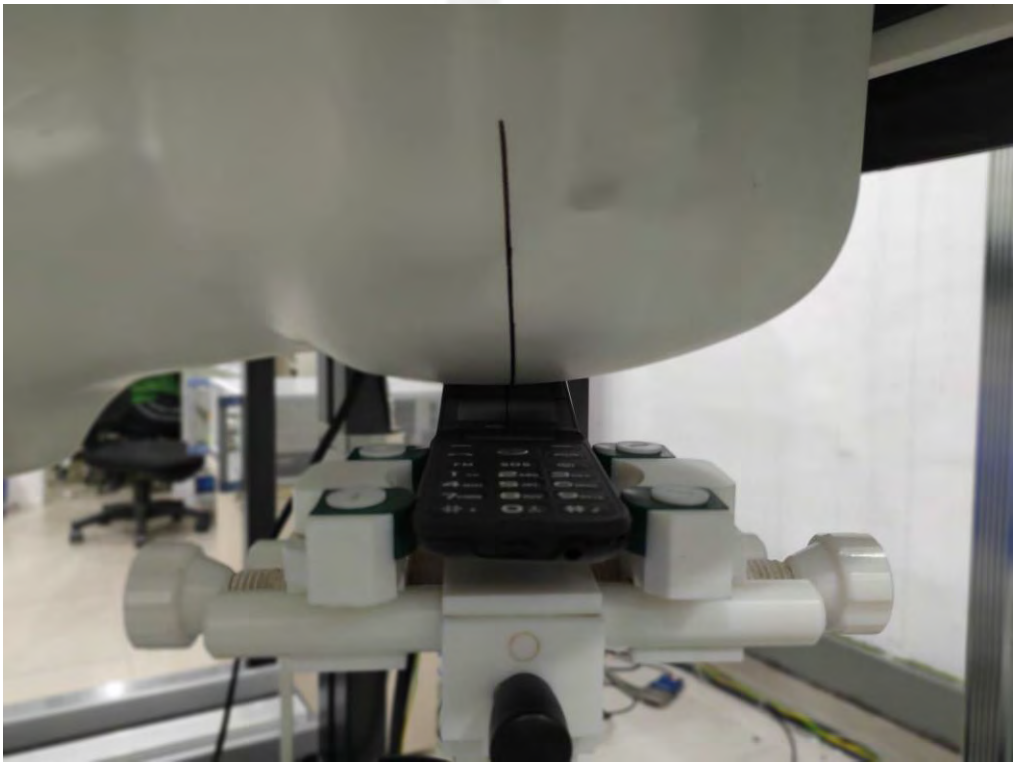
Right Tilt



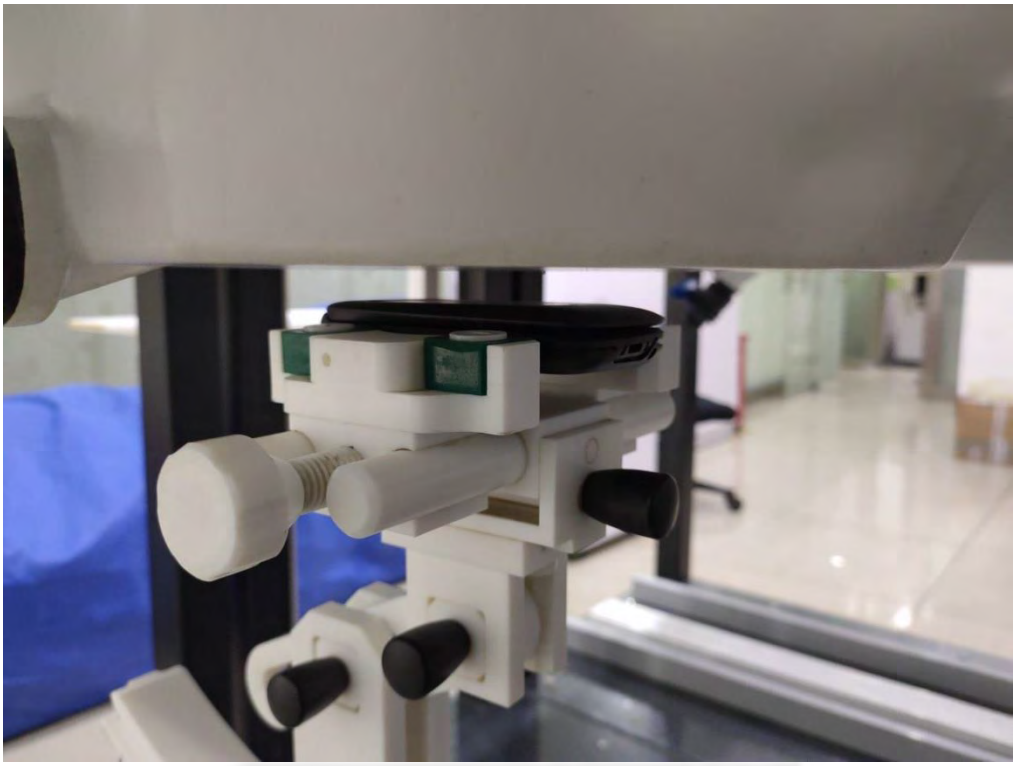
Left Touch



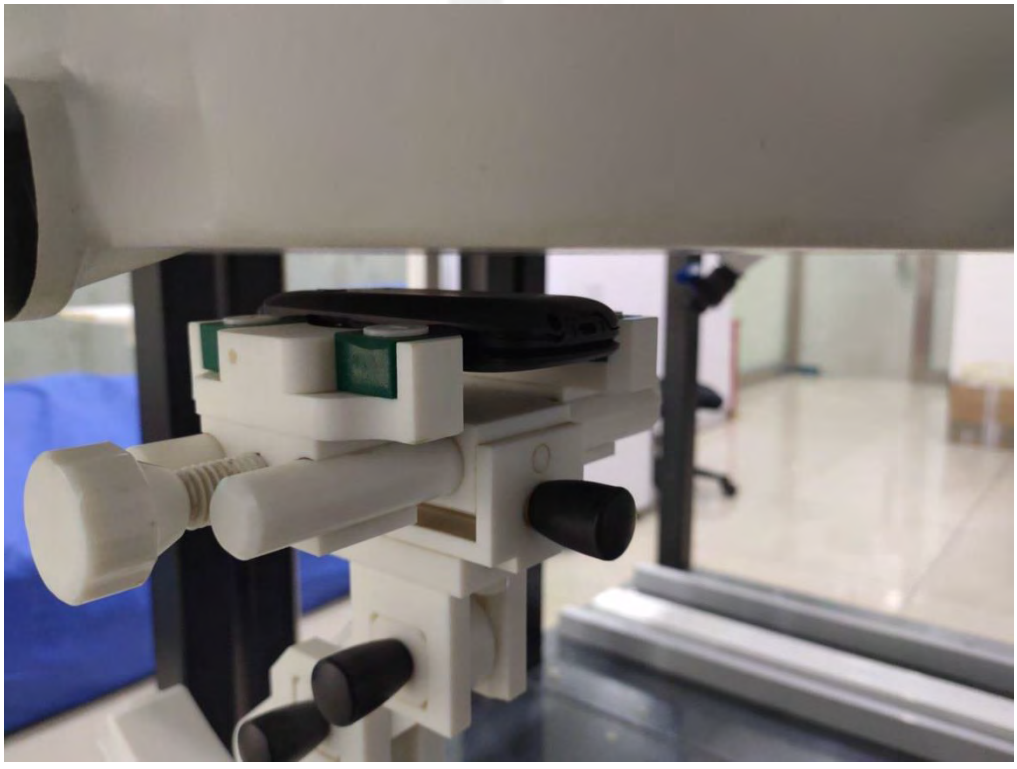
Left Tilt



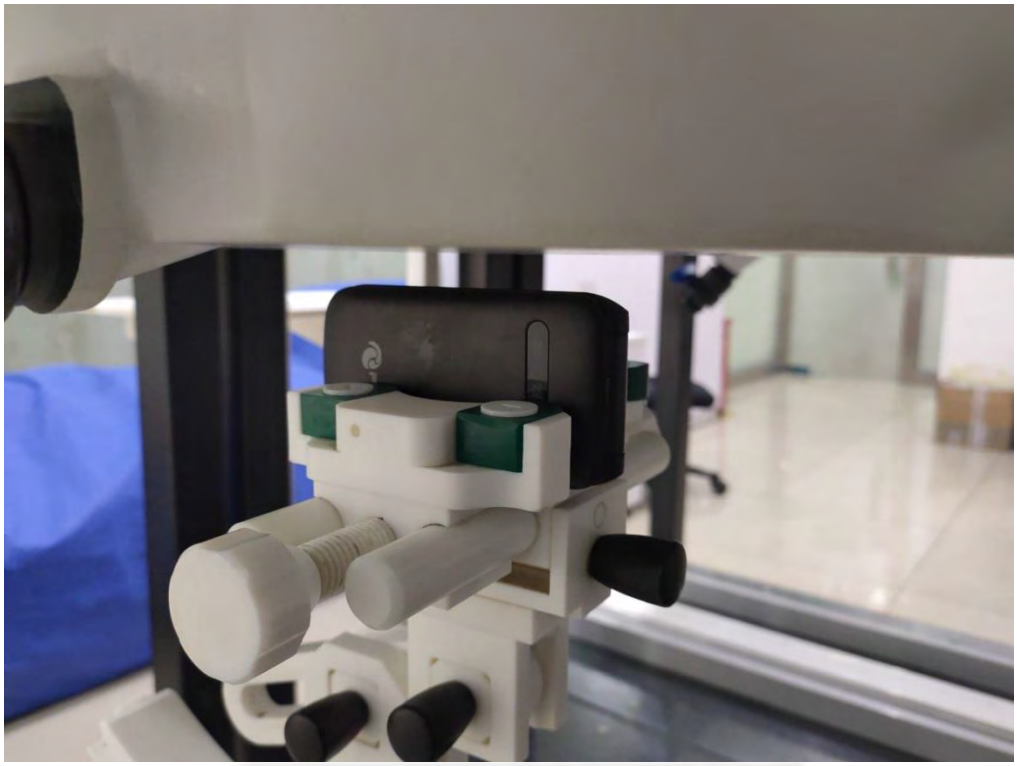
Body Front side(separation distance is 10mm)



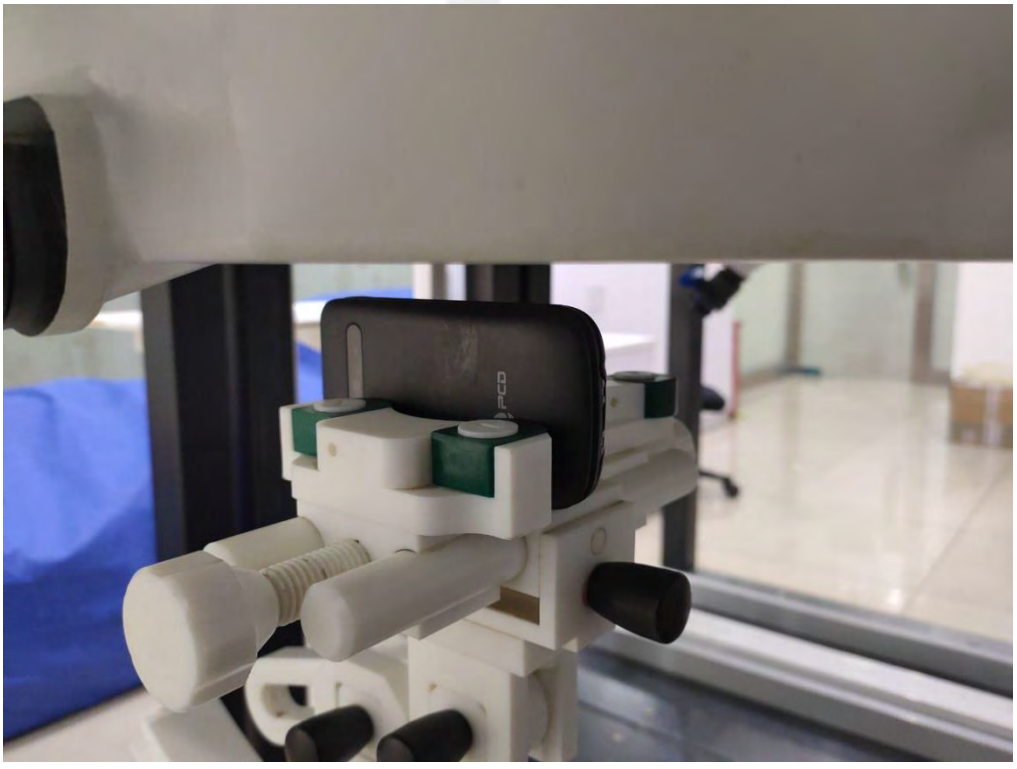
Body Back side(separation distance is 10mm)



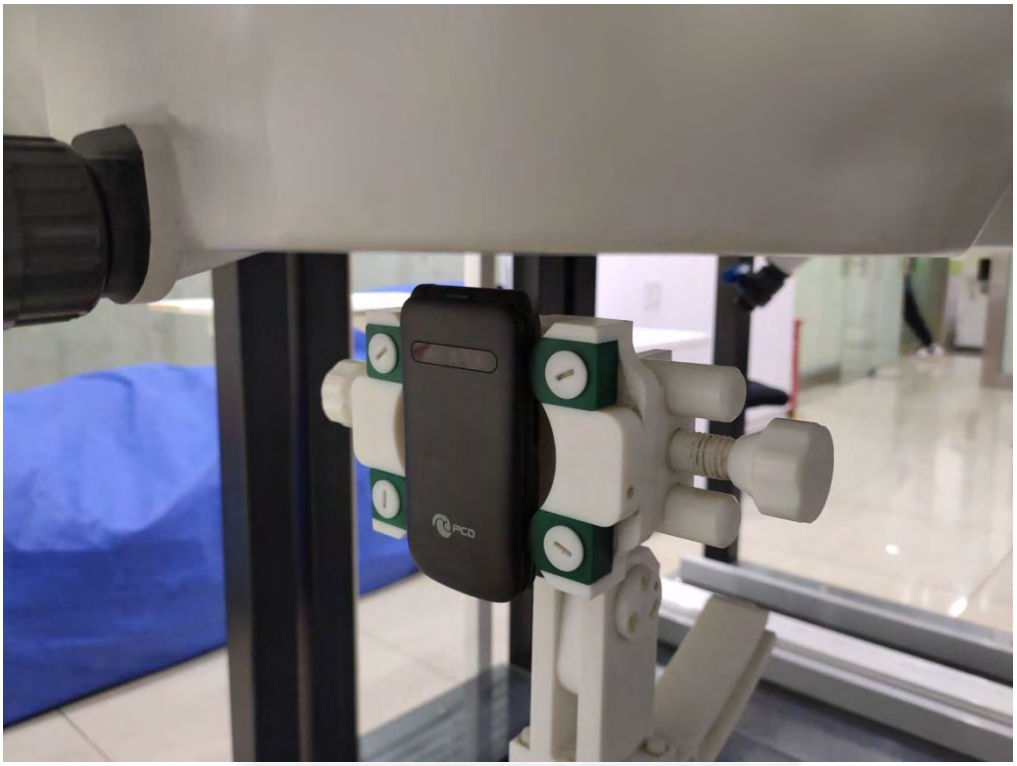
Body Left side(separation distance is 10mm)



Body Right side(separation distance is 10mm)

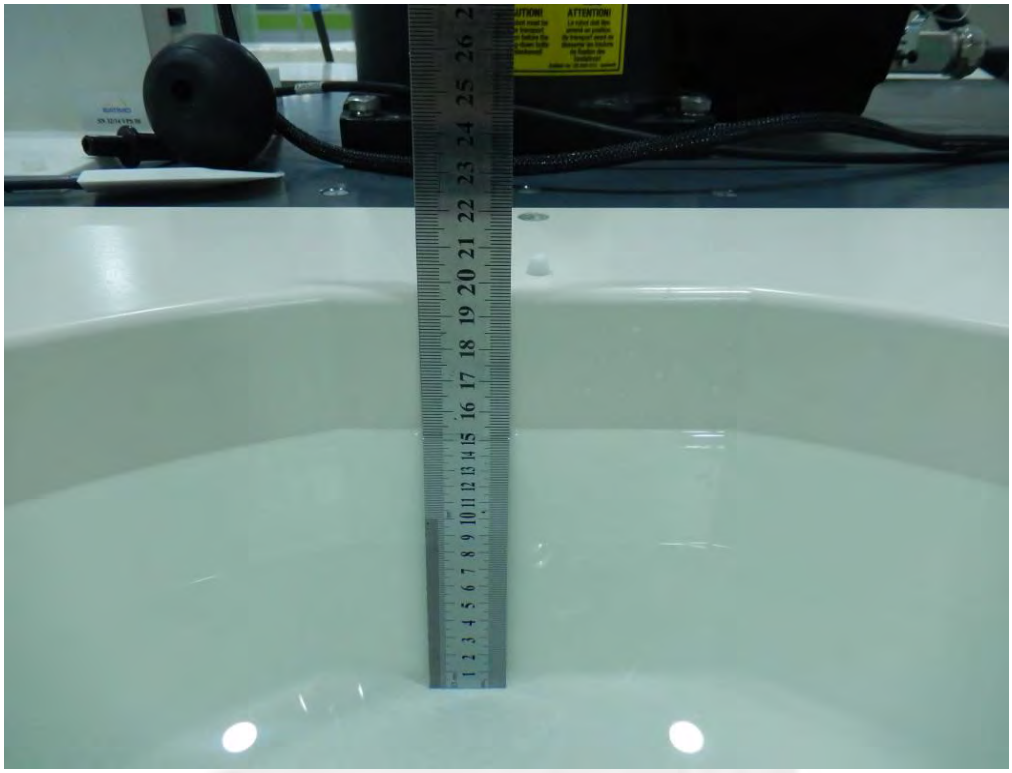


Body Bottom side(separation distance is 10mm)



Body Top side(separation distance is 10mm)

Liquid depth (15 cm)



12. SAR Result Summary

12.1 Head SAR

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
GSM850	GPRS Data-4 Slot	Right Cheek	848.8	0.463	-3.21	30.50	30.49	**0.464**	**1**
		Right Tilt	848.8	0.215	-3.99	30.50	30.49	0.215	/
		Left Cheek	848.8	0.426	-2.65	30.50	30.49	0.427	/
		Left Tilt	848.8	0.223	-0.03	30.50	30.49	0.224	/
GSM1900	GPRS Data-4 Slot	Right Cheek	1850.2	0.846	-0.22	27.00	26.75	0.896	/
		Right Cheek	1880	0.822	1.13	27.00	26.81	0.859	/
		Right Cheek	1909.8	0.893	3.48	27.00	26.96	**0.901**	**3**
		Right Tilt	1909.8	0.458	2.09	27.00	26.96	0.462	/
		Left Cheek	1909.8	0.785	3.16	27.00	26.96	0.792	/
		Left Tilt	1909.8	0.354	-2.33	27.00	26.96	0.357	/
WCDMA Band II	RMC	Right Cheek	1852.4	1.210	-2.96	23.00	22.59	1.330	/
		Right Cheek	1880	1.132	0.18	23.00	22.62	1.236	/
		Right Cheek	1907.6	1.371	-1.58	23.00	22.73	**1.459**	**5**
		Right Tilt	1907.6	0.724	1.20	23.00	22.73	0.770	/
		Left Cheek	1852.4	1.113	1.10	23.00	22.59	1.223	/
		Left Cheek	1880	1.218	0.20	23.00	22.62	1.329	/
		Left Cheek	1907.6	1.134	0.65	23.00	22.73	1.207	/
		Left Tilt	1907.6	0.723	0.48	23.00	22.73	0.769	/
WCDMA Band V	RMC	Right Cheek	826.4	0.789	1.63	23.00	22.65	0.855	/
		Right Cheek	836.6	0.769	2.68	23.00	22.78	0.809	/
		Right Cheek	846.6	0.868	-3.81	23.00	22.79	**0.911**	**7**
		Right Tilt	846.6	0.456	0.01	23.00	22.79	0.479	/
		Left Cheek	846.6	0.752	0.88	23.00	22.79	0.789	/
		Left Tilt	846.6	0.325	1.41	23.00	22.79	0.341	/

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Result 1g (W/Kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	1.123	2.68	24.00	23.78	1.181	/
			1	0	Right Cheek	1732.5	1.132	-0.01	24.00	23.85	1.172	/
			1	0	Right Cheek	1745	1.374	1.30	24.00	23.89	**1.409**	**9**
			50	0	Right Cheek	1720	1.113	-3.45	23.50	23.46	1.123	/
			50	0	Right Cheek	1732.5	1.112	3.95	23.50	23.46	1.122	/
			50	0	Right Cheek	1745	1.221	2.74	23.50	23.47	1.229	/
			100	0	Right Cheek	1720	1.123	-3.38	23.50	23.16	1.214	/
			100	0	Right Cheek	1732.5	1.126	-0.65	23.50	23.16	1.218	/
			100	0	Right Cheek	1745	1.054	-1.12	23.50	23.08	1.161	/
			1	0	Right Tilt	1745	0.745	-2.55	24.00	23.89	0.764	/
			50	0	Right Tilt	1745	0.736	-0.89	24.00	23.47	0.832	/
			1	0	Left Cheek	1720	1.000	1.26	24.00	23.78	1.052	/
			1	0	Left Cheek	1732.5	1.030	-0.73	24.00	23.85	1.066	/
			1	0	Left Cheek	1745	1.058	-2.18	24.00	23.89	1.085	/
			50	0	Left Cheek	1720	0.970	-2.67	23.50	23.46	0.979	/
			50	0	Left Cheek	1732.5	0.978	1.35	23.50	23.46	0.987	/
			50	0	Left Cheek	1745	0.987	3.08	23.50	23.47	0.994	/
			100	0	Left Cheek	1720	0.950	-2.27	23.50	23.16	1.027	/
			100	0	Left Cheek	1732.5	0.965	3.68	23.50	23.16	1.044	/
			100	0	Left Cheek	1745	0.889	-0.36	23.50	23.08	0.979	/
			1	0	Left Tilt	1745	0.665	2.73	24.00	23.89	0.682	/
			50	0	Left Tilt	1745	0.489	2.70	24.00	23.47	0.552	/
LTE Band 5	10M	QPSK	1	0	Right Cheek	844	0.665	-2.89	24.00	23.75	**0.704**	**11**
			25	0	Right Cheek	844	0.521	2.44	24.00	23.60	0.571	/
			1	0	Right Tilt	844	0.321	1.04	24.00	23.75	0.340	/
			25	0	Right Tilt	844	0.365	-3.17	24.00	23.60	0.400	/
			1	0	Left Cheek	844	0.565	-2.21	24.00	23.75	0.598	/
			25	0	Left Cheek	844	0.524	0.40	24.00	23.60	0.575	/
			1	0	Left Tilt	844	0.321	0.75	24.00	23.75	0.340	/
			25	0	Left Tilt	844	0.336	2.91	24.00	23.60	0.368	/
LTE Band 12	10M	QPSK	1	0	Right Cheek	711	0.225	3.98	24.00	23.88	**0.231**	**13**
			25	0	Right Cheek	707.5	0.205	-3.77	24.00	23.60	0.225	/
			1	0	Right Tilt	711	0.132	-3.00	24.00	23.88	0.136	/
			25	0	Right Tilt	707.5	0.125	-3.35	24.00	23.60	0.137	/
			1	0	Left Cheek	711	0.198	-3.93	24.00	23.88	0.204	/
			25	0	Left Cheek	707.5	0.186	-3.88	24.00	23.60	0.204	/
			1	0	Left Tilt	711	0.098	-3.58	24.00	23.88	0.101	/
			25	0	Left Tilt	707.5	0.105	0.97	24.00	23.60	0.115	/

LTE Band 66	20M	QPSK	1	0	Right Cheek	1770	0.396	1.07	24.00	23.99	**0.397**	**15**
			50	0	Right Cheek	1755	0.354	-2.56	24.00	23.74	0.376	/
			1	0	Right Tilt	1770	0.210	-2.26	24.00	23.99	0.210	/
			50	0	Right Tilt	1755	0.198	1.58	24.00	23.99	0.198	/
			1	0	Left Cheek	1770	0.320	-0.30	24.00	23.99	0.321	/
			50	0	Left Cheek	1755	0.312	-3.16	24.00	23.99	0.313	/
			1	0	Left Tilt	1770	0.154	3.90	24.00	23.99	0.154	/
			50	0	Left Tilt	1755	0.135	-1.17	24.00	23.99	0.135	/
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	0.732	-2.45	23.60	23.33	0.779	/
			1	0	Right Cheek	1880	0.765	-0.89	23.60	23.47	0.788	/
			1	0	Right Cheek	1900	0.802	-2.46	23.60	23.56	**0.809**	**17**
			50	0	Right Cheek	1880	0.714	1.63	23.50	23.35	0.739	/
			100	0	Right Cheek	1880	0.682	-2.84	23.50	23.11	0.746	/
			1	0	Right Tilt	1900	0.401	-0.55	23.60	23.56	0.405	/
			50	0	Right Tilt	1880	0.302	-1.52	23.50	23.35	0.313	/
			1	0	Left Cheek	1900	0.777	-1.72	23.60	23.56	0.784	/
			50	0	Left Cheek	1880	0.681	-2.00	23.50	23.35	0.705	/
			1	0	Left Tilt	1900	0.333	-2.96	23.60	23.56	0.336	/
			50	0	Left Tilt	1880	0.240	-2.12	23.50	23.35	0.248	/

Note:

1. Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.

a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

b. For WWAN: Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor

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

12.2 Body-worn and Hotspot SAR

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
GSM850	GPRS Data-4 Slot	Front Side	848.8	0.621	1.93	30.50	30.49	0.622	/
		Back Side	848.8	0.647	-1.95	30.50	30.49	**0.648**	**2**
		Left Edge	848.8	0.356	-1.36	30.50	30.49	0.357	/
		Right Edge	848.8	0.334	-0.46	30.50	30.49	0.335	/
		Top Edge	848.8	0.369	-2.40	30.50	30.49	0.370	/
		Bottom Edge	848.8	0.123	-2.79	30.50	30.49	0.123	/
GSM1900	GPRS Data-4 Slot	Front Side	1909.8	0.186	-1.74	27.00	26.96	0.188	/
		Back Side	1909.8	0.381	-0.55	27.00	26.96	**0.385**	**4**
		Left Edge	1909.8	0.226	1.93	27.00	26.96	0.228	/
		Right Edge	1909.8	0.235	0.31	27.00	26.96	0.237	/
		Top Edge	1909.8	0.320	-0.94	27.00	26.96	0.323	/
		Bottom Edge	1909.8	0.130	-0.53	27.00	26.96	0.131	/
WCDMA Band I	RMC	Front Side	1907.6	0.320	-3.59	23.00	22.73	0.341	/
		Back Side	1907.6	0.391	2.11	23.00	22.73	**0.416**	**6**
		Left Edge	1907.6	0.254	-1.17	23.00	22.73	0.270	/
		Right Edge	1907.6	0.236	2.08	23.00	22.73	0.251	/
		Top Edge	1907.6	0.302	3.59	23.00	22.73	0.321	/
WCDMA Band VIII	RMC	Front Side	846.6	0.604	3.15	23.00	22.79	0.634	/
		Back Side	846.6	0.689	2.39	23.00	22.79	**0.723**	**8**
		Left Edge	846.6	0.465	-2.44	23.00	22.79	0.488	/
		Right Edge	846.6	0.432	3.37	23.00	22.79	0.453	/
		Top Edge	846.6	0.541	-1.16	23.00	22.79	0.568	/

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Result 1g (W/Kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
LTE Band 4	20M	QPSK	1	0	Front side	1745	0.329	-2.93	24.00	23.89	0.337	/
			50	0	Front side	1745	0.321	3.00	24.00	23.47	0.363	/
			1	0	Back Side	1745	0.674	-2.35	24.00	23.89	**0.691**	**10**
			50	0	Back Side	1745	0.592	-1.94	24.00	23.47	0.669	/
			1	0	Left Side	1745	0.325	0.84	24.00	23.89	0.333	/
			50	0	Left Side	1745	0.314	2.05	24.00	23.47	0.355	/
			1	0	Right Side	1745	0.336	-0.31	24.00	23.89	0.345	/
			50	0	Right Side	1745	0.32	2.01	24.00	23.47	0.362	/
			1	0	Top Edge	1745	0.105	-2.79	24.00	23.89	0.108	/
			50	0	Top Edge	1745	0.098	-3.96	24.00	23.47	0.111	/
LTE Band 5	10M	QPSK	1	0	Front side	844	0.658	-0.25	24.00	23.75	0.697	/
			25	0	Front side	844	0.662	3.55	24.00	23.60	0.726	/
			1	0	Back Side	829	0.784	2.59	24.00	23.62	0.856	/
			1	0	Back Side	836.5	0.769	-2.73	24.00	23.68	0.828	/
			1	0	Back Side	844	0.823	-0.81	24.00	23.75	**0.872**	**12**
			25	0	Back Side	829	0.700	3.47	23.70	23.12	0.800	/
			25	0	Back Side	836.5	0.754	-1.61	23.70	23.35	0.817	/
			25	0	Back Side	844	0.811	-2.35	23.70	23.60	0.830	/
			50	0	Back Side	829	0.622	-1.58	23.50	22.84	0.724	/
			50	0	Back Side	836.5	0.687	-2.50	23.50	23.17	0.741	/
			50	0	Back Side	844	0.721	3.73	23.50	23.30	0.755	/
			1	0	Left Side	844	0.456	3.63	24.00	23.75	0.483	/
			25	0	Left Side	844	0.432	-2.60	24.00	23.60	0.474	/
			1	0	Right Side	844	0.421	-0.98	24.00	23.75	0.446	/
			25	0	Right Side	844	0.413	1.47	24.00	23.60	0.453	/
			1	0	Top Edge	844	0.336	-0.20	24.00	23.75	0.356	/
			25	0	Top Edge	844	0.345	0.31	24.00	23.60	0.378	/
LTE Band 12	10M	QPSK	1	0	Front side	711	0.051	-0.09	24.00	23.88	0.052	/
			25	0	Front side	707.5	0.062	1.89	24.00	23.60	0.068	/
			1	0	Back Side	711	0.165	-2.84	24.00	23.88	**0.170**	**14**
			25	0	Back Side	707.5	0.145	3.51	24.00	23.60	0.159	/
			1	0	Left Side	711	0.121	-1.94	24.00	23.88	0.124	/
			25	0	Left Side	707.5	0.132	-1.52	24.00	23.60	0.145	/
			1	0	Right Side	711	0.121	1.32	24.00	23.88	0.124	/
			25	0	Right Side	707.5	0.135	0.37	24.00	23.60	0.148	/
			1	0	Top Edge	711	0.085	1.40	24.00	23.88	0.087	/
			25	0	Top Edge	707.5	0.078	-0.91	24.00	23.60	0.086	/
LTE Band 66	20M	QPSK	1	0	Front side	1770	0.34	1.41	24.00	23.99	0.341	/
			50	0	Front side	1755	0.321	1.15	24.00	23.74	0.341	/
			1	0	Back Side	1720	0.754	0.32	24.00	23.89	0.773	/
			1	0	Back Side	1755	0.798	2.79	24.00	23.95	0.807	/
			1	0	Back Side	1770	0.842	-3.09	24.00	23.99	**0.844**	**16**
			50	0	Back Side	1720	0.714	3.77	24.00	23.58	0.786	/
			50	0	Back Side	1755	0.756	3.84	24.00	23.74	0.803	/
			50	0	Back Side	1770	0.713	3.79	24.00	23.58	0.785	/

			100	0	Back Side	1720	0.704	3.90	24.00	23.24	0.839	/
			100	0	Back Side	1755	0.749	1.72	24.00	23.49	0.842	/
			100	0	Back Side	1770	0.703	-1.96	24.00	23.24	0.837	/
			1	0	Left Side	1770	0.356	0.90	24.00	23.99	0.357	/
			50	0	Left Side	1755	0.347	1.93	24.00	23.74	0.368	/
			1	0	Right Side	1770	0.365	-2.23	24.00	23.99	0.366	/
			50	0	Right Side	1755	0.321	-2.55	24.00	23.74	0.341	/
			1	0	Top Edge	1770	0.123	-2.78	24.00	23.99	0.123	/
			50	0	Top Edge	1755	0.135	-2.96	24.00	23.74	0.143	/
LTE Band 2	20M	QPSK	1	0	Front side	1900	0.685	-1.90	23.60	23.56	0.691	/
			50	0	Front side	1880	0.623	0.86	23.50	23.35	0.645	/
			1	0	Back Side	1900	0.751	1.39	23.60	23.56	**0.758**	**18**
			50	0	Back Side	1880	0.700	3.00	23.50	23.35	0.725	/
			1	0	Left Side	1900	0.514	-3.41	23.60	23.56	0.519	/
			50	0	Left Side	1880	0.469	0.67	23.50	23.35	0.485	/
			1	0	Right Side	1900	0.478	3.48	23.60	23.56	0.482	/
			50	0	Right Side	1880	0.412	-2.29	23.50	23.35	0.426	/

Note:

1. The test separation of all above table is 10mm.
2. Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For WWAN: Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
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.

Repeated SAR

Band	Mode	Test Position	Freq.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR(W/Kg)	Meas. No.
GSM 1900	GPRS Data-4 Slot	Right Cheek	1850.2	0.832	-2.70	27.00	26.75	0.881	-
		Right Cheek	1880	0.801	1.96	27.00	26.81	0.837	-
		Right Cheek	1909.8	0.880	3.98	27.00	26.96	0.888	-
WCDMA Band II	RMC	Right Cheek	1852.4	1.160	-2.34	23.00	22.59	1.275	-
		Right Cheek	1880	1.078	-2.76	23.00	22.62	1.177	-
		Right Cheek	1907.6	1.348	3.05	23.00	22.73	1.434	-
		Right Cheek	1907.6	1.351	2.14	23.00	22.73	1.438	-
		Left Cheek	1907.6	1.163	-2.04	23.00	22.59	1.278	-
		Left Cheek	1907.6	1.189	-2.92	23.00	22.62	1.298	-
		Left Cheek	1907.6	1.179	3.30	23.00	22.73	1.255	-
WCDMA Band V	RMC	Right Cheek	826.4	0.765	0.53	23.00	22.65	0.829	-
		Right Cheek	836.6	0.733	-2.25	23.00	22.78	0.771	-
		Right Cheek	846.6	0.861	-0.99	23.00	22.79	0.904	-

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR(W/Kg)	Meas. No.
LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	1.105	-2.47	24.00	23.78	1.162	-
			1	0	Right Cheek	1732.5	1.089	-3.13	24.00	23.85	1.127	-
			1	0	Right Cheek	1745	1.337	1.17	24.00	23.89	1.371	-
			50	0	Right Cheek	1720	1.112	-3.49	23.50	23.46	1.122	-
			50	0	Right Cheek	1732.5	1.079	3.41	23.50	23.46	1.089	-
			50	0	Right Cheek	1745	1.217	3.93	23.50	23.47	1.225	-
			100	0	Right Cheek	1720	1.069	-3.30	23.50	23.16	1.156	-
			100	0	Right Cheek	1732.5	1.082	-0.54	23.50	23.16	1.170	-
			100	0	Right Cheek	1745	1.012	2.79	23.50	23.08	1.115	-
			1	0	Left Cheek	1720	0.963	3.85	24.00	23.78	1.013	-
			1	0	Left Cheek	1732.5	1.001	-2.53	24.00	23.85	1.036	-
			1	0	Left Cheek	1745	1.043	1.39	24.00	23.89	1.070	-
			50	0	Left Cheek	1720	0.931	2.80	23.50	23.46	0.940	-
			50	0	Left Cheek	1732.5	0.951	-3.25	23.50	23.46	0.960	-
			50	0	Left Cheek	1745	0.975	-3.10	23.50	23.47	0.982	-
			100	0	Left Cheek	1720	0.942	3.19	23.50	23.16	1.019	-
			100	0	Left Cheek	1732.5	0.933	-2.24	23.50	23.16	1.009	-
			100	0	Left Cheek	1745	0.880	2.33	23.50	23.08	0.969	-

LTE Band 5	20M	QPSK	1	0	Back Side	829	0.782	-1.66	24.00	23.62	0.854	-
			1	0	Back Side	836.5	0.764	-2.48	24.00	23.68	0.822	-
			1	0	Back Side	844	0.784	-2.03	24.00	23.75	0.830	-
			25	0	Back Side	829	0.698	-1.42	23.70	23.12	0.798	-
			25	0	Back Side	836.5	0.754	1.56	23.70	23.35	0.817	-
			25	0	Back Side	844	0.787	0.25	23.70	23.60	0.805	-
			50	0	Back Side	829	0.618	-2.11	23.50	22.84	0.719	-
			50	0	Back Side	836.5	0.664	3.57	23.50	23.17	0.716	-
			50	0	Back Side	844	0.708	-0.45	23.50	23.30	0.741	-
LTE Band 66	20M	QPSK	1	0	Back Side	1720	0.746	-2.41	24.00	23.89	0.765	-
			1	0	Back Side	1755	0.790	3.01	24.00	23.95	0.799	-
			1	0	Back Side	1770	0.819	-0.27	24.00	23.99	0.821	-
			50	0	Back Side	1720	0.697	0.40	24.00	23.58	0.768	-
			50	0	Back Side	1755	0.745	-2.55	24.00	23.74	0.791	-
			50	0	Back Side	1770	0.694	3.84	24.00	23.58	0.764	-
			100	0	Back Side	1720	0.670	-1.79	24.00	23.24	0.798	-
			100	0	Back Side	1755	0.720	-1.32	24.00	23.49	0.810	-
			100	0	Back Side	1770	0.679	1.23	24.00	23.24	0.809	-
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	0.707	3.83	24.50	24.26	0.747	-
			1	0	Right Cheek	1880	0.739	3.50	24.50	24.29	0.776	-
			1	0	Right Cheek	1900	0.795	3.29	24.50	24.38	0.817	-

12.3 repeated SAR measurement

Band	Mode	Test Position	Freq.	Original Measured SAR 1g(W/kg)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(W/kg)	2nd Repeated SAR 1g	Ratio
GSM 1900	GPRS Data-4 Slot	Right Cheek	1850.2	0.846	0.832	1.017	-	-	-
		Right Cheek	1880	0.822	0.801	1.026	-	-	-
		Right Cheek	1909.8	0.893	0.880	1.015	-	-	-
WCDMA Band II	RMC	Right Cheek	1852.4	1.210	1.160	1.043	-	-	-
		Right Cheek	1880	1.132	1.078	1.050	-	-	-
		Right Cheek	1907.6	1.371	1.348	1.017	1.371	1.351	1.015
		Left Cheek	1907.6	1.218	1.163	1.047	-	-	-
		Left Cheek	1907.6	1.218	1.189	1.024	-	-	-
		Left Cheek	1907.6	1.218	1.179	1.033	-	-	-
WCDMA Band V	RMC	Right Cheek	826.4	0.789	0.765	1.031	-	-	-
		Right Cheek	836.6	0.769	0.733	1.049	-	-	-
		Right Cheek	846.6	0.868	0.861	1.008	-	-	-

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Original Measured SAR 1g(W/kg) 1g (W/Kg)	1 st Repeated SAR 1g	Ratio	Original Measured	2nd Repeated SAR 1g	Ratio
LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	1.123	1.105	1.016	-	-	-
			1	0	Right Cheek	1732.5	1.132	1.089	1.039	-	-	-
			1	0	Right Cheek	1745	1.374	1.337	1.028	-	-	-
			50	0	Right Cheek	1720	1.113	1.112	1.001	-	-	-
			50	0	Right Cheek	1732.5	1.112	1.079	1.031	-	-	-
			50	0	Right Cheek	1745	1.221	1.217	1.003	-	-	-
			100	0	Right Cheek	1720	1.123	1.069	1.051	-	-	-
			100	0	Right Cheek	1732.5	1.126	1.082	1.041	-	-	-
			100	0	Right Cheek	1745	1.054	1.012	1.042	-	-	-
			1	0	Left Cheek	1720	1.000	0.963	1.038	-	-	-
			1	0	Left Cheek	1732.5	1.030	1.001	1.029	-	-	-
			1	0	Left Cheek	1745	1.058	1.043	1.014	-	-	-
			50	0	Left Cheek	1720	0.970	0.931	1.042	-	-	-
			50	0	Left Cheek	1732.5	0.978	0.951	1.028	-	-	-
			50	0	Left Cheek	1745	0.987	0.975	1.012	-	-	-
			100	0	Left Cheek	1720	0.950	0.942	1.008	-	-	-
			100	0	Left Cheek	1732.5	0.965	0.933	1.034	-	-	-
			100	0	Left Cheek	1745	0.889	0.880	1.010	-	-	-

LTE Band 5	10M	QPSK	1	0	Back Side	829	0.784	0.782	1.003	-	-	-
			1	0	Back Side	836.5	0.769	0.764	1.007	-	-	-
			1	0	Back Side	844	0.823	0.784	1.050	-	-	-
			25	0	Back Side	829	0.700	0.698	1.003	-	-	-
			25	0	Back Side	836.5	0.754	0.754	1.000	-	-	-
			25	0	Back Side	844	0.811	0.787	1.030	-	-	-
			50	0	Back Side	829	0.622	0.618	1.006	-	-	-
			50	0	Back Side	836.5	0.687	0.664	1.035	-	-	-
			50	0	Back Side	844	0.721	0.708	1.018	-	-	-
LTE Band 66	20M	QPSK	1	0	Back Side	1720	0.754	0.746	1.011	-	-	-
			1	0	Back Side	1755	0.798	0.790	1.010	-	-	-
			1	0	Back Side	1770	0.842	0.819	1.028	-	-	-
			50	0	Back Side	1720	0.714	0.697	1.024	-	-	-
			50	0	Back Side	1755	0.756	0.745	1.015	-	-	-
			50	0	Back Side	1770	0.713	0.694	1.027	-	-	-
			100	0	Back Side	1720	0.704	0.670	1.051	-	-	-
			100	0	Back Side	1755	0.749	0.720	1.040	-	-	-
			100	0	Back Side	1770	0.703	0.679	1.035	-	-	-
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	0.732	0.707	1.035	-	-	-
			1	0	Right Cheek	1880	0.765	0.739	1.035	-	-	-
			1	0	Right Cheek	1900	0.802	0.795	1.009	-	-	-

Note:

1. Per KDB 865664 D01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2 and 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 + Bluetooth
	2. WCDMA + Bluetooth
	3. LTE + Bluetooth
Body	1. GSM + Bluetooth
	2. WCDMA + Bluetooth
	3. LTE + Bluetooth

NOTE:

1. Bluetooth and WLAN 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, 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 Turn-up Power		Antenna to user(mm)	Frequency(GHz)	Stand Alone SAR(1g) [W/kg]
		dBm	mW			
BT	Head	4.5	2.818	≤5	2.44	0.117
	Body			≤5	2.44	0.117

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
GSM + Bluetooth	Head	GSM	0.901	1.019
		Bluetooth	0.117	
	Body	GSM	0.648	0.766
		Bluetooth	0.117	
WCDMA + Bluetooth	Head	WCDMA	1.459	1.576
		Bluetooth	0.117	
	Body	WCDMA	0.723	0.841
		Bluetooth	0.117	
LTE + Bluetooth	Head	LTE	1.409	1.527
		Bluetooth	0.117	
	Body	LTE	0.872	0.989
		Bluetooth	0.117	

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	MVG	SID750	SN 30/14 DIP0G750-331	2020.07.14	2023.07.13
835MHz Dipole	MVG	SID835	SN 30/14 DIP0G835-332	2020.07.14	2023.07.13
1800MHz Dipole	MVG	SID1800	SN 30/14 DIP1G800-329	2020.07.14	2023.07.13
1900MHz Dipole	MVG	SID1900	SN 30/14 DIP1G900-333	2020.07.14	2023.07.13
E-Field Probe	MVG	SSE2	SN 07/21 EPGO352	2022.02.28	2023.02.27
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2021.11.23	2022.11.22
Antenna	MVG	ANTA3	SN 07/13 ZNTA52	N/A	N/A
Phantom1	MVG	SAM	SN 32/14 SAM115	N/A	N/A
Phantom2	MVG	SAM	SN 32/14 SAM116	N/A	N/A
Phone holder	MVG	N/A	SN 32/14 MSH97	N/A	N/A
Laptop holder	MVG	N/A	SN 32/14 LSH29	N/A	N/A
Attenuator	Agilent	99899	DC-18GHz	N/A	N/A
Directional coupler	Narda	4226-20	3305	N/A	N/A
Network Analyzer	Agilent	8753ES	US38432810	2021.09.29	2022.09.28
Multi Meter	Keithley	Multi Meter 2000	4050073	2021.10.08	2022.10.07
Signal Generator	Agilent	N5182A	MY50140530	2021.09.30	2022.09.29
Wireless Communication Test Set	Agilent	8960-E5515C	MY48360751	2021.09.30	2022.09.29
Wireless Communication Test Set	R&S	CMW500	117239	2021.09.30	2022.09.29
Power Amplifier	DESAY	ZHL-42W	9638	2021.10.09	2022.10.08
Power Meter	R&S	NRP	100510	2021.09.29	2022.09.28
Power Sensor	R&S	NRP-Z11	101919	2021.09.29	2022.09.28
Temperature hygrometer	SuWei	SW-108	N/A	2021.10.09	2022.10.08
Thermograph	Elitech	RC-4	S/N EF7176501537	2021.10.09	2022.10.08

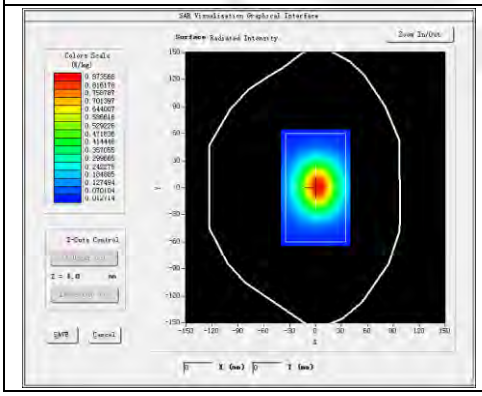
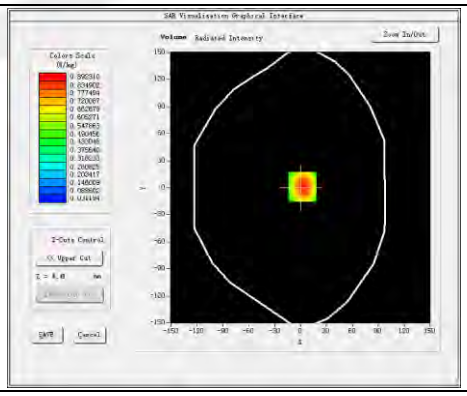
Appendix A. System Validation Plots

System Performance Check Data (750MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2021-11-20

Experimental conditions

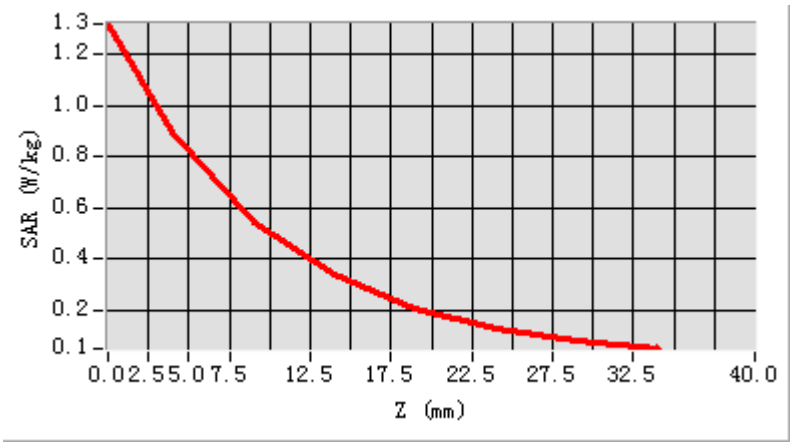
Phantom	Validation plane
Device Position	-
Band	750MHz
Channels	-
Signal	CW
Frequency (MHz)	750MHz
Relative permittivity	43.11
Conductivity (S/m)	0.89
Probe	SN 07/21 EPGO352
ConvF	1.58
Crest factor	1:1

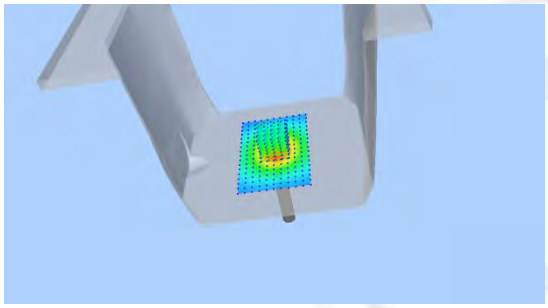
SURFACE SAR	VOLUME SAR
	

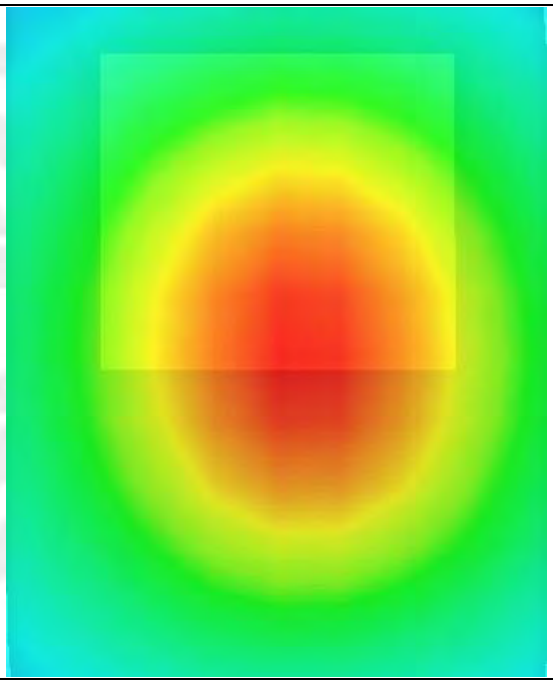
Maximum location: X=2.00, Y=1.00

SAR 10g (W/Kg)	0.557421
SAR 1g (W/Kg)	0.850983

Z Axis Scan


1.3
1.2
1.0
0.8
0.6
0.4
0.2
0.1
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)





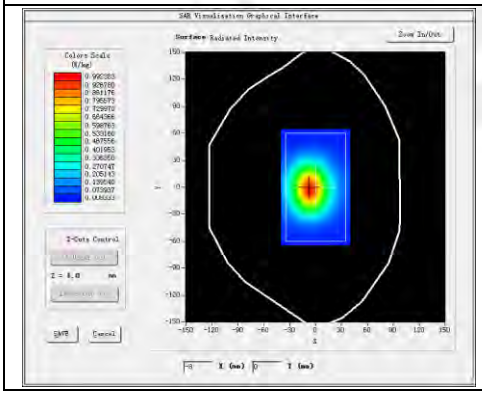
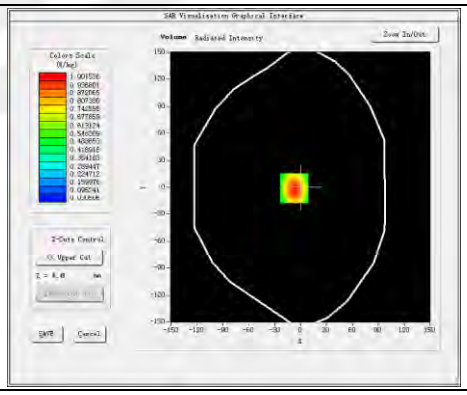
System Performance Check Data (835MHz)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2021-11-23

Experimental conditions

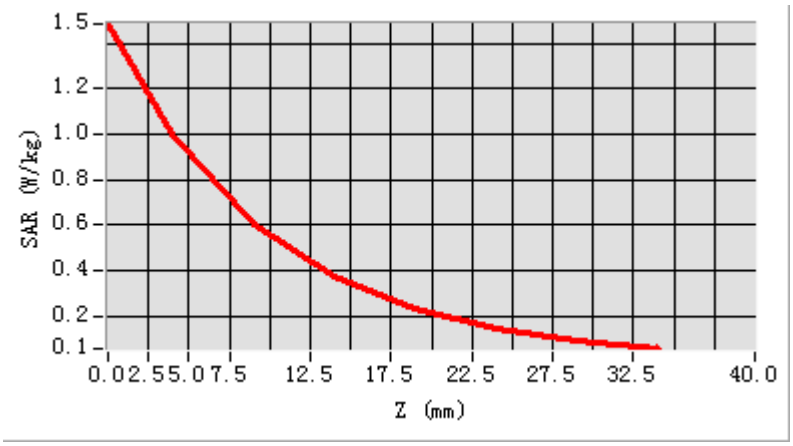
Phantom	Validation plane
Device Position	-
Band	835MHz
Channels	-
Signal	CW
Frequency (MHz)	835MHz
Relative permittivity	41.76
Conductivity (S/m)	0.89
Probe	SN 07/21 EPGO352
ConvF:	1.57
Crest factor:	1:1

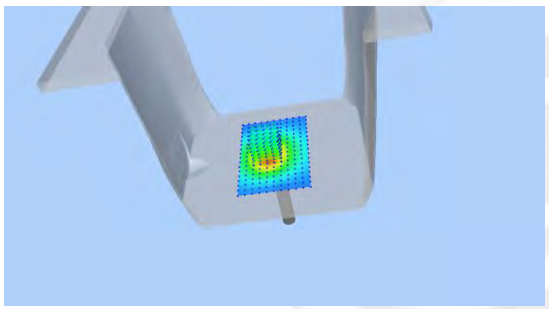
SURFACE SAR	VOLUME SAR
	

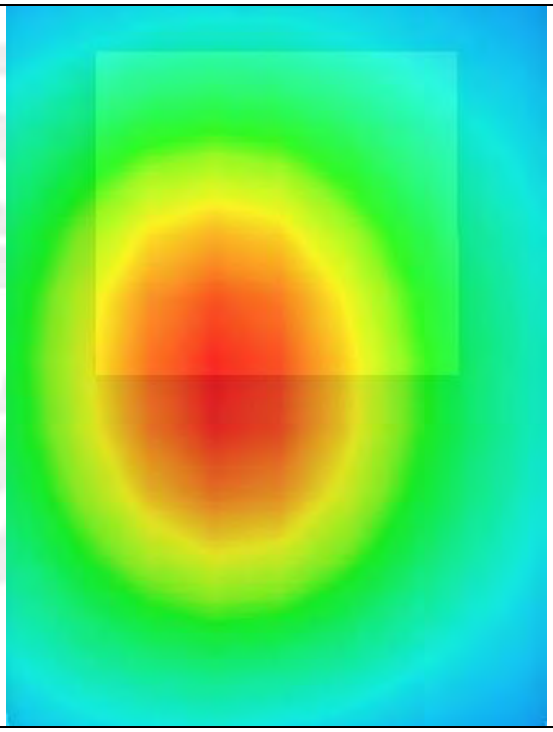
Maximum location: X=-7.00, Y=-1.00

SAR 10g (W/Kg)	0.626941
SAR 1g (W/Kg)	0.962906

Z Axis Scan


1.5
1.2
1.0
0.8
0.6
0.4
0.2
0.1
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



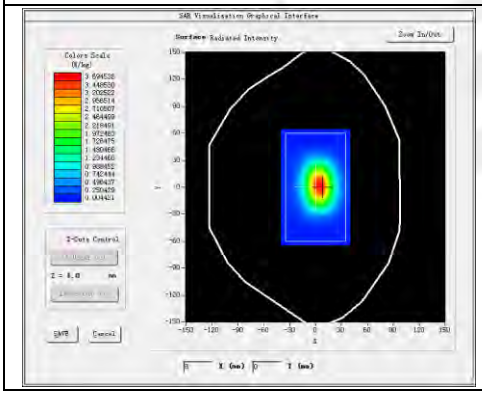
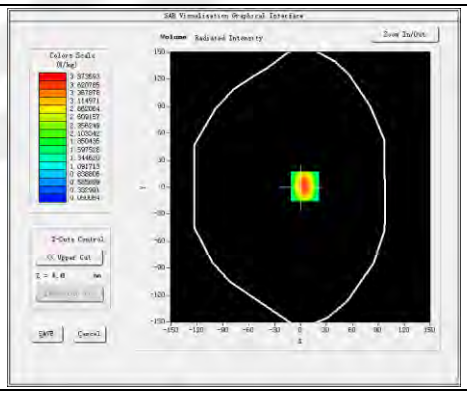


System Performance Check Data(1800MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2021-11-25

Experimental conditions.

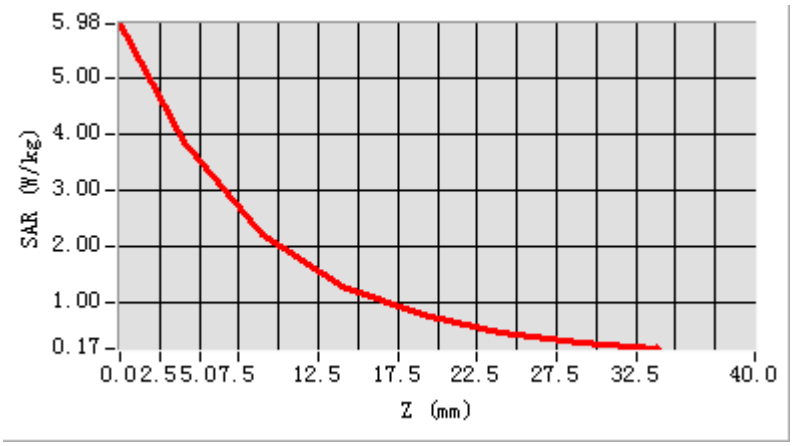
Phantom	Validation plane
Device Position	-
Band	1800MHz
Channels	-
Signal	CW
Frequency (MHz)	1800MHz
Relative permittivity	40.07
Conductivity (S/m)	1.35
Probe	SN 07/21 EPGO352
ConvF	1.60
Crest factor:	1:1

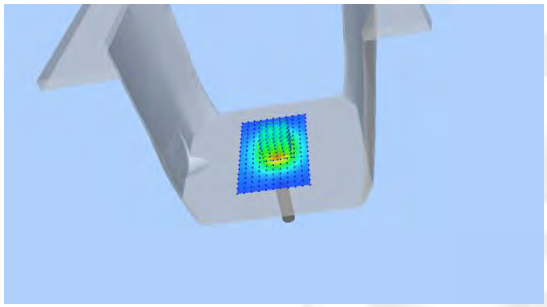
SURFACE SAR	VOLUME SAR
	

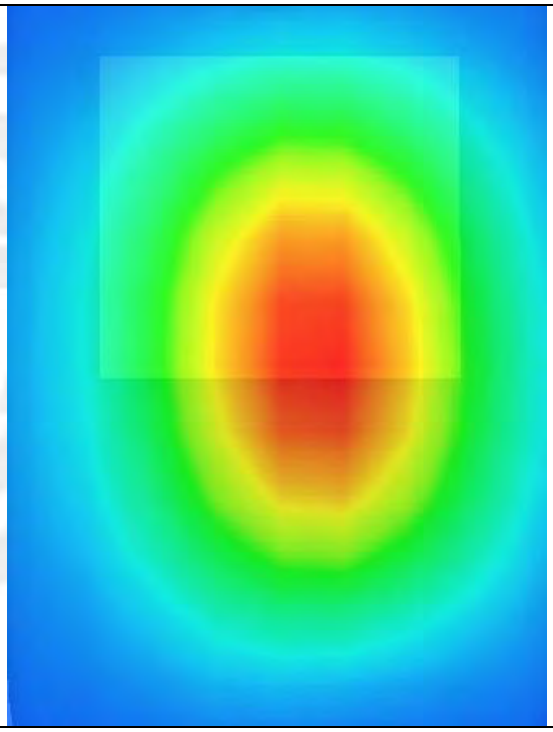
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	2.075363
SAR 1g (W/Kg)	3.982604

Z Axis Scan


5.98
5.00
4.00
3.00
2.00
1.00
0.17
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



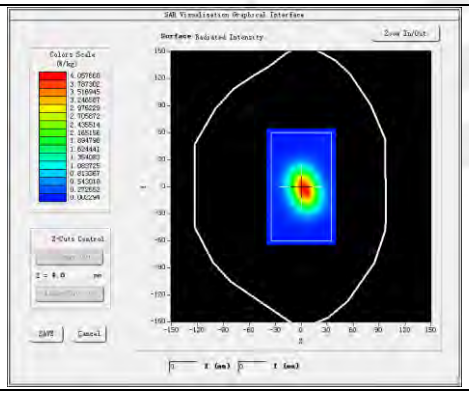
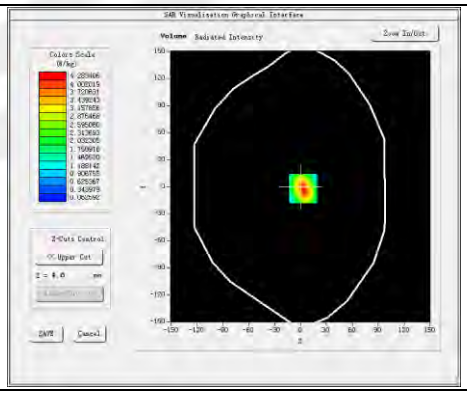


System Performance Check Data (1900MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2021-12-11

Experimental conditions.

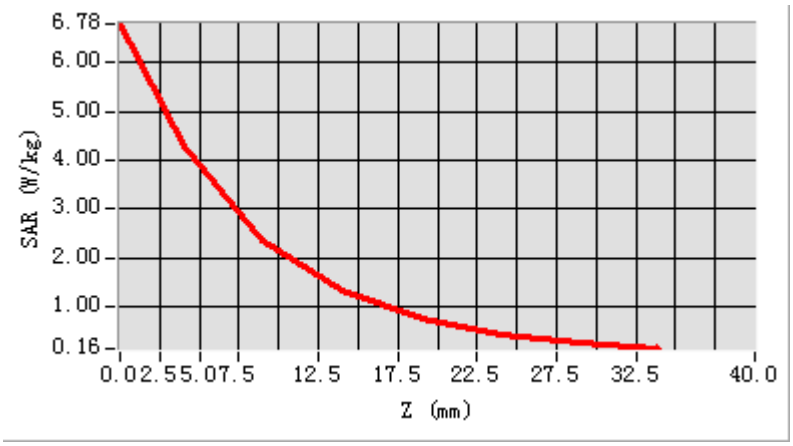
Phantom	Validation plane
Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900MHz
Relative permittivity	40.62
Conductivity (S/m)	1.42
Probe	SN 07/21 EPGO352
ConvF:	1.78
Crest factor:	1:1

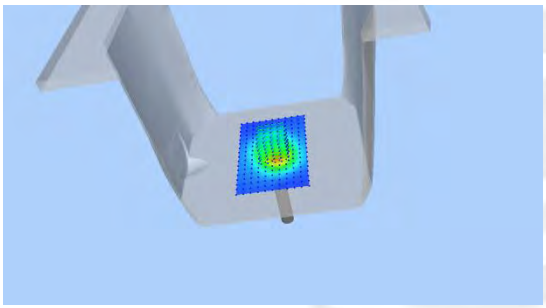
SURFACE SAR	VOLUME SAR
	

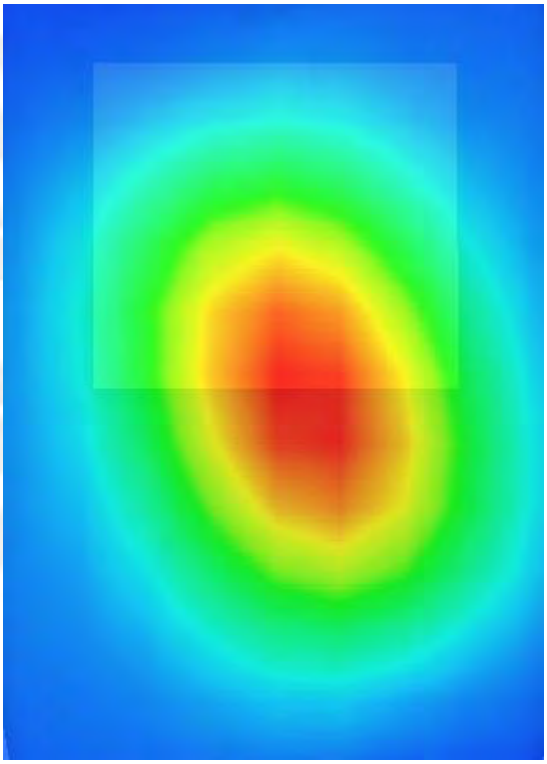
Maximum location: X=3.00, Y=-2.00

SAR 10g (W/Kg)	2.034721
SAR 1g (W/Kg)	4.019693

Z Axis Scan


6.78
6.00
5.00
4.00
3.00
2.00
1.00
0.16
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



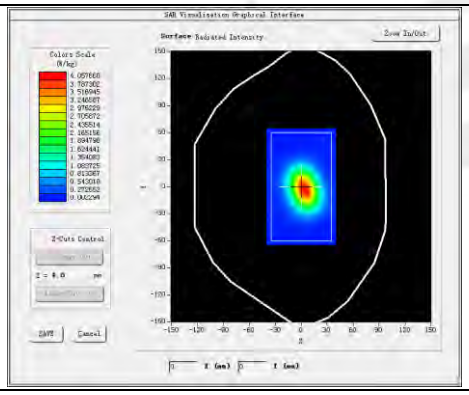
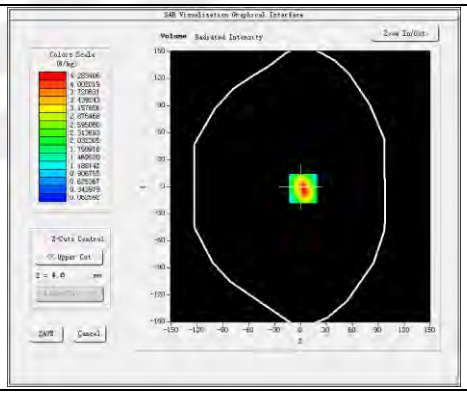


System Performance Check Data (1900MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2022-03-28

Experimental conditions.

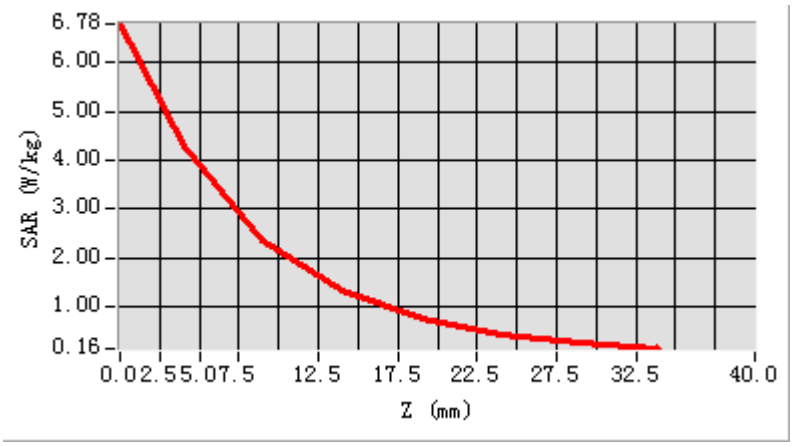
Phantom	Validation plane
Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900MHz
Relative permittivity	41.21
Conductivity (S/m)	1.37
Probe	SN 07/21 EPGO352
ConvF:	1.78
Crest factor:	1:1

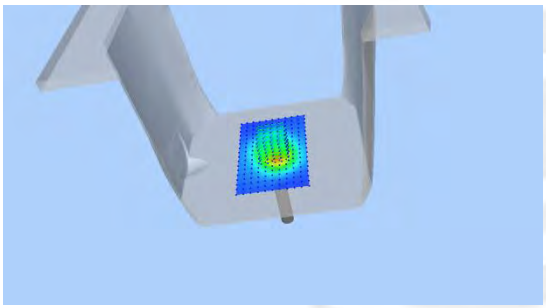
SURFACE SAR	VOLUME SAR
	

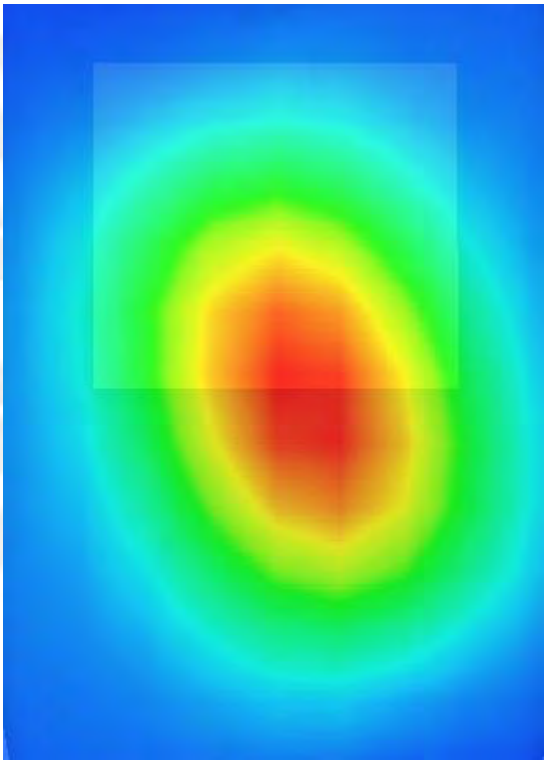
Maximum location: X=3.00, Y=-2.00

SAR 10g (W/Kg)	2.033360
SAR 1g (W/Kg)	4.018554

Z Axis Scan


6.78
6.00
5.00
4.00
3.00
2.00
1.00
0.16
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)





Appendix B. SAR Test Plots

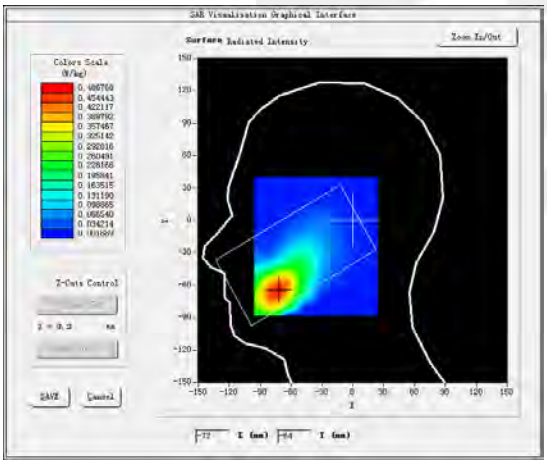
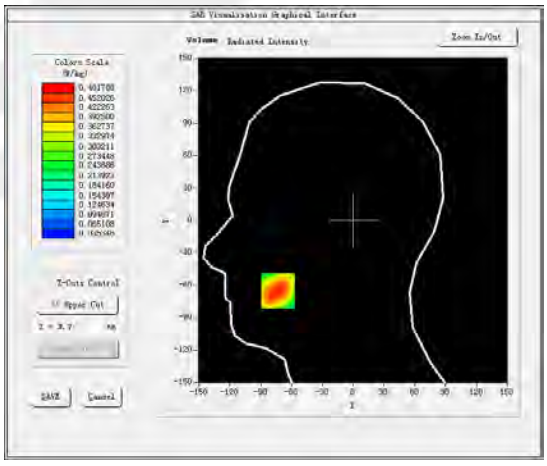
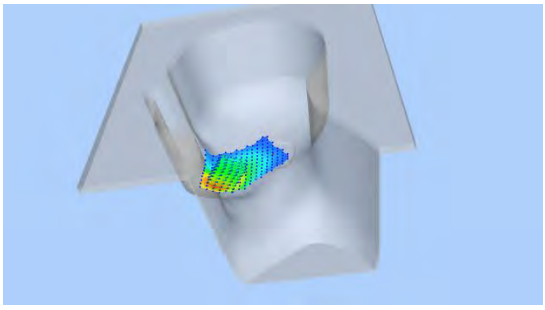
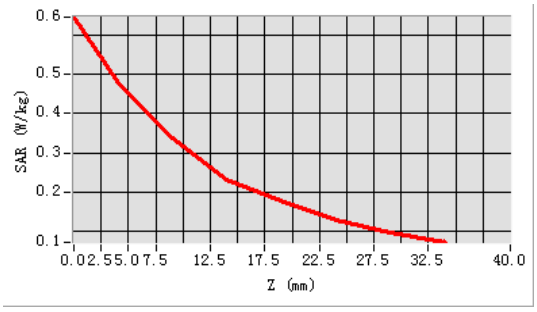
Plot 1: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	GPRS 850
Channels	High
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	848.8
Relative permittivity (real part)	40.75
Conductivity (S/m)	0.94

Maximum location: X=-73.00, Y=-65.00

SAR Peak: 0.67 W/kg

SAR 10g (W/Kg)	0.303080
SAR 1g (W/Kg)	0.462797

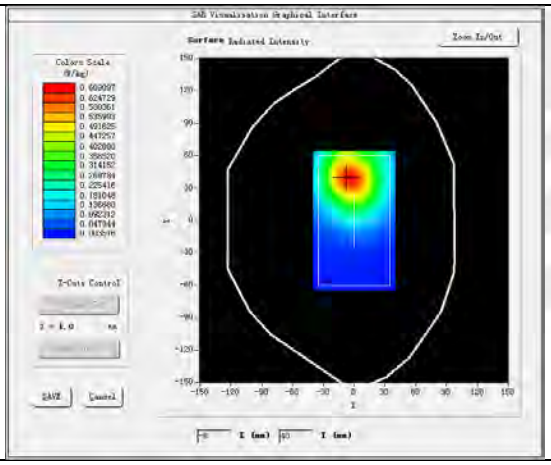
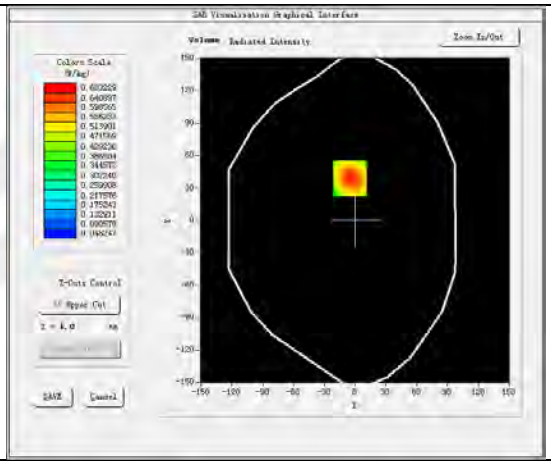
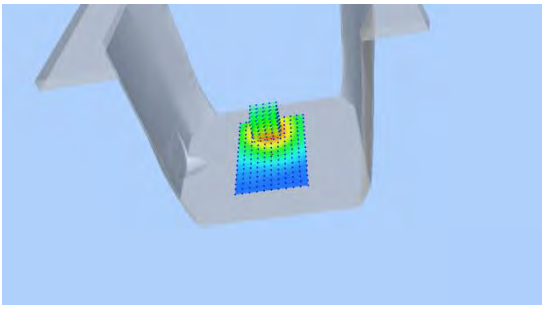
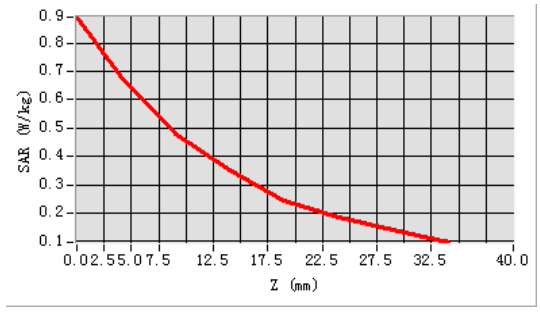
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Z Axis Scan**
	

Plot 2: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	GPRS 850
Channels	High
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	848.8
Relative permittivity (real part)	40.75
Conductivity (S/m)	0.94

Maximum location: X=-5.00, Y=39.00
SAR Peak: 0.91 W/kg

SAR 10g (W/Kg)	0.434236
SAR 1g (W/Kg)	0.647253

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

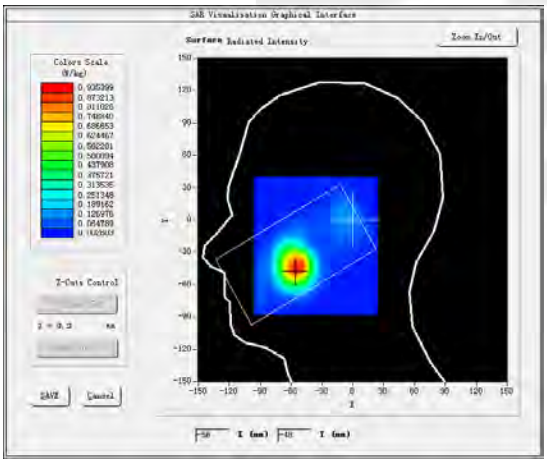
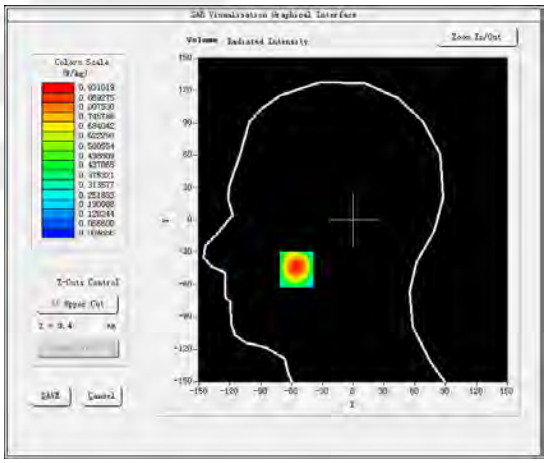
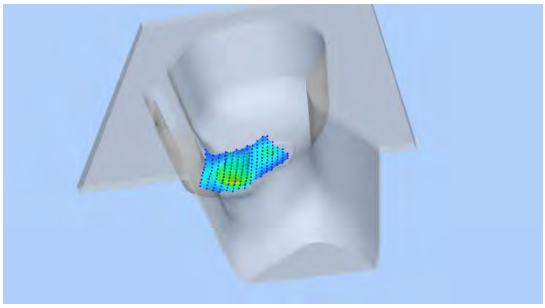
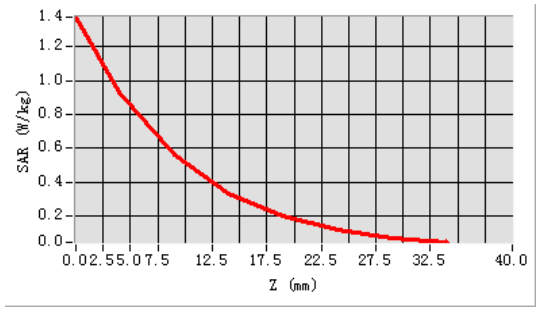
Plot 3: DUT: mobile phone; EUT Model: U40

Test Date	2021-12-11
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	GPRS 1900
Channels	High
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	1909.8
Relative permittivity (real part)	39.63
Conductivity (S/m)	1.43

Maximum location: X=-55.00, Y=-46.00

SAR Peak: 1.46 W/kg

SAR 10g (W/Kg)	0.476886
SAR 1g (W/Kg)	0.892898

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

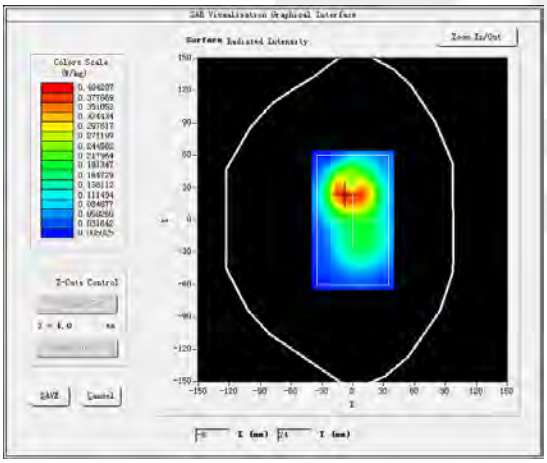
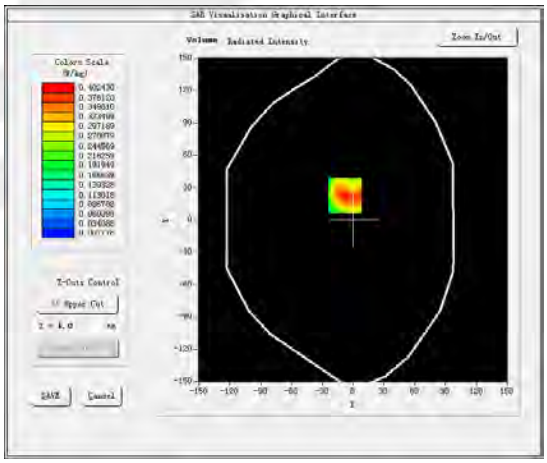
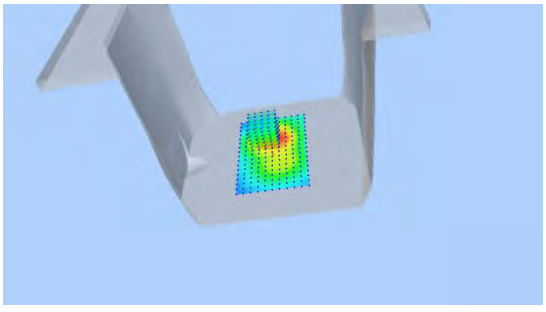
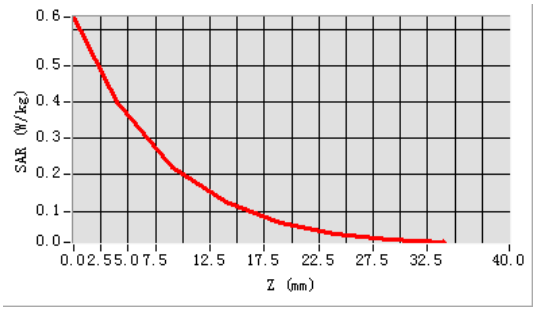
Plot 4: DUT: mobile phone; EUT Model: U40

Test Date	2021-12-11
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	GPRS 1900
Channels	High
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	1909.8
Relative permittivity (real part)	39.63
Conductivity (S/m)	1.43

Maximum location: X=-8.00, Y=23.00

SAR Peak: 0.64 W/kg

SAR 10g (W/Kg)	0.205132
SAR 1g (W/Kg)	0.380961

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

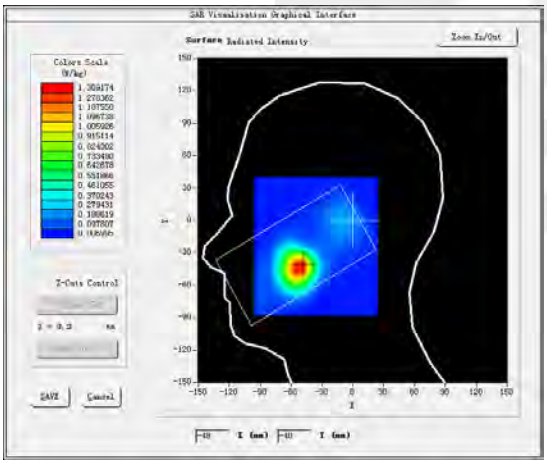
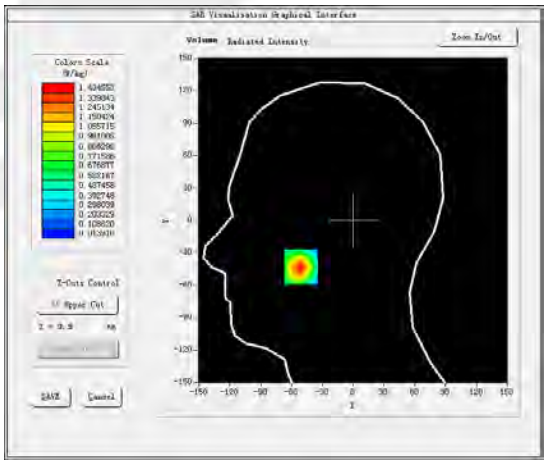
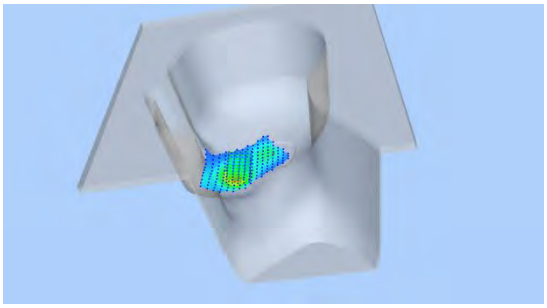
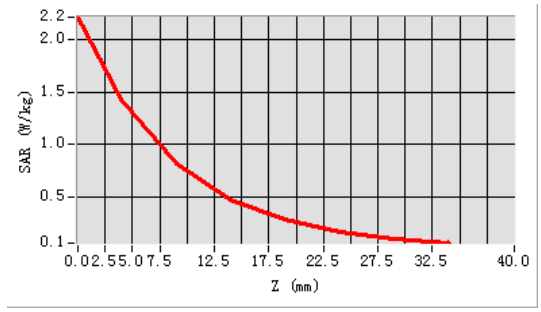
Plot 5: DUT: mobile phone; EUT Model: U40

Test Date	2021-12-11
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	WCDMA II
Channels	High
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1907.6
Relative permittivity (real part)	39.23
Conductivity (S/m)	1.38

Maximum location: X=-51.00, Y=-43.00

SAR Peak: 2.23 W/kg

SAR 10g (W/Kg)	0.700457
SAR 1g (W/Kg)	1.370973

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

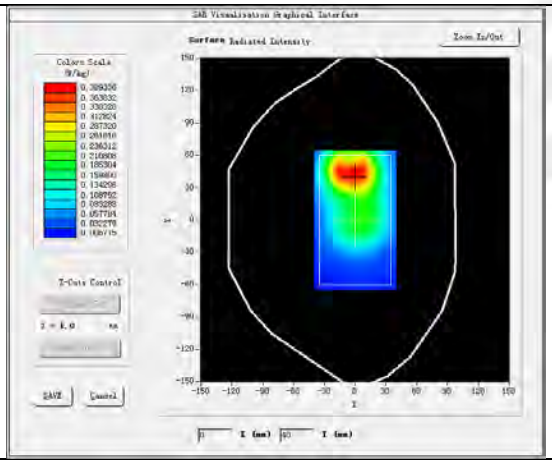
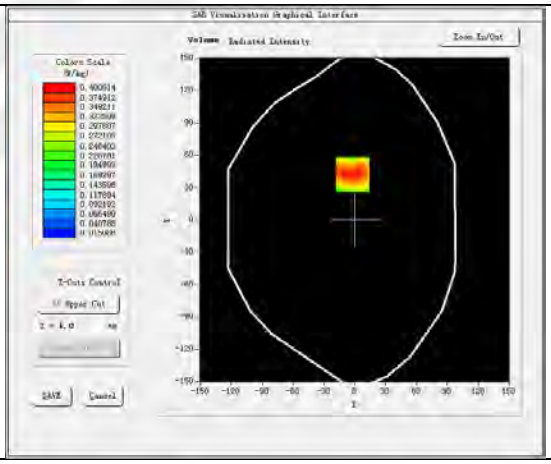
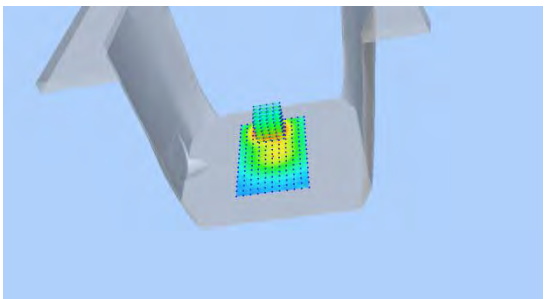
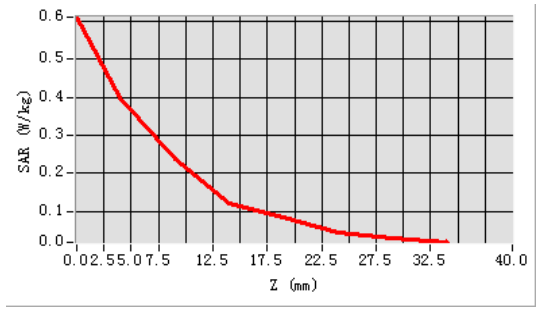
Plot 6: DUT: mobile phone; EUT Model: U40

Test Date	2021-12-11
Probe	SN 07/21 EPGO352
ConvF	1.84
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Bottom Side
Band	WCDMA II
Channels	High
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1907.6
Relative permittivity (real part)	39.23
Conductivity (S/m)	1.38

Maximum location: X=-2.00, Y=42.00

SAR Peak: 0.65 W/kg

SAR 10g (W/Kg)	0.222393
SAR 1g (W/Kg)	0.391290

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

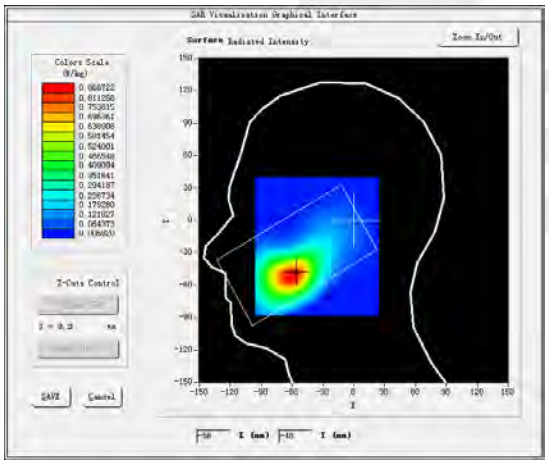
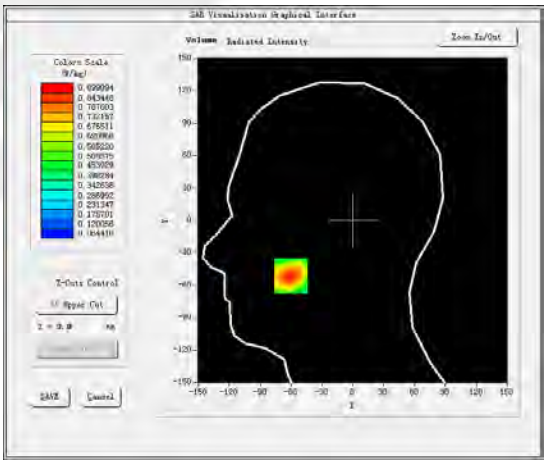
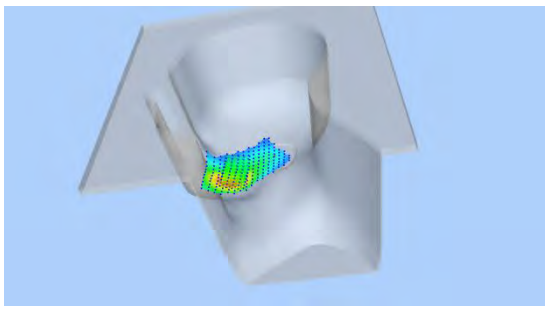
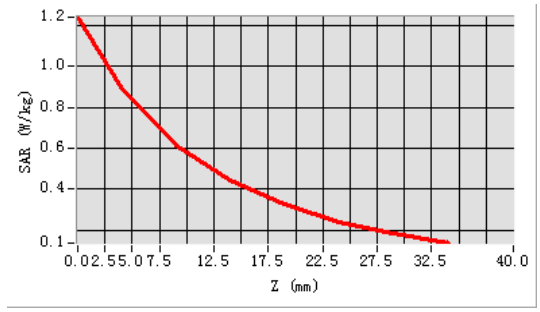
Plot 7: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	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	High
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	846.6
Relative permittivity (real part)	41.32
Conductivity (S/m)	0.93

Maximum location: X=-60.00, Y=-51.00

SAR Peak: 1.24 W/kg

SAR 10g (W/Kg)	0.558879
SAR 1g (W/Kg)	0.867669

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

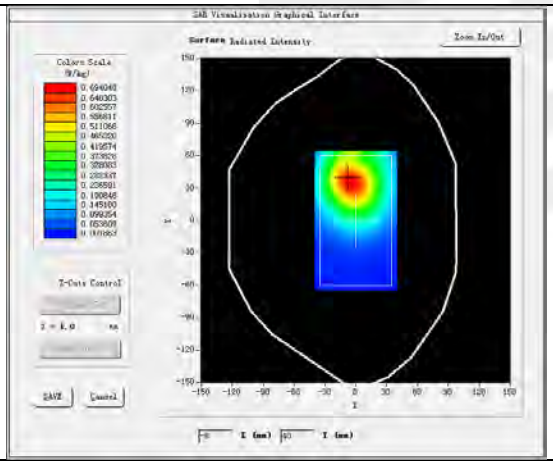
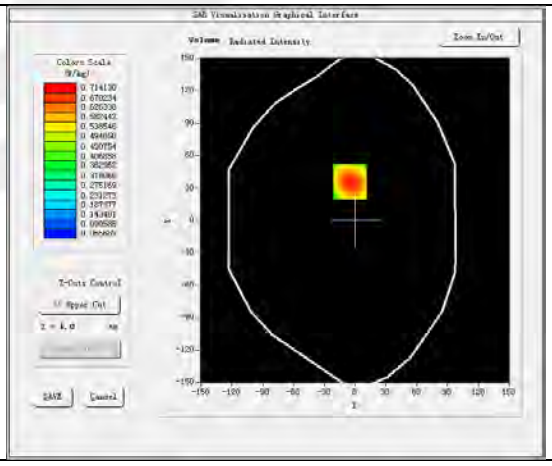
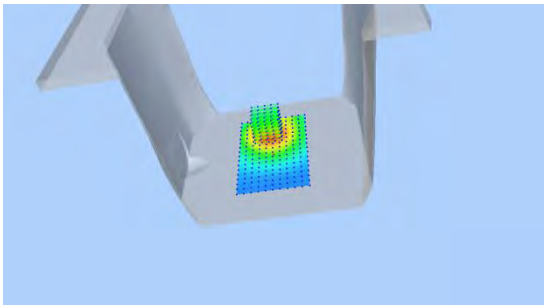
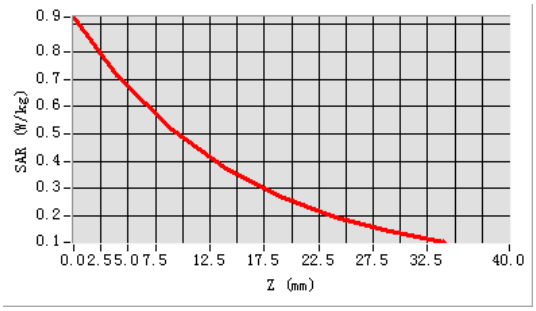
Plot 8: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	WCDMA V
Channels	High
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	846.6
Relative permittivity (real part)	41.32
Conductivity (S/m)	0.93

Maximum location: X=-5.00, Y=36.00

SAR Peak: 0.93 W/kg

SAR 10g (W/Kg)	0.468244
SAR 1g (W/Kg)	0.688992

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

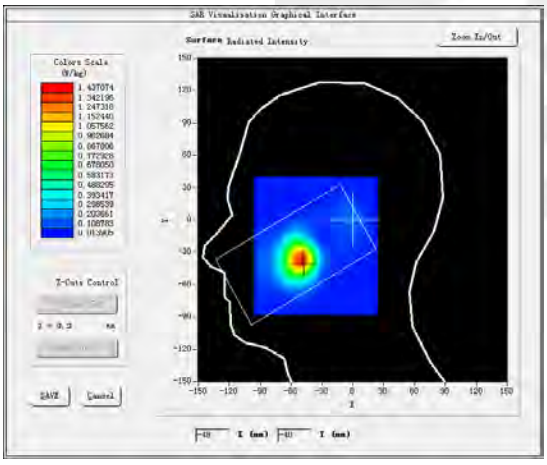
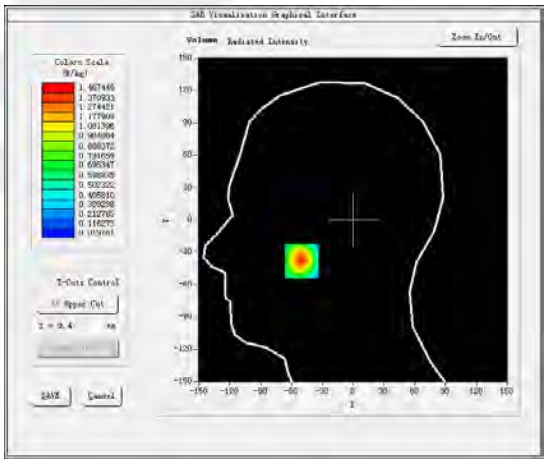
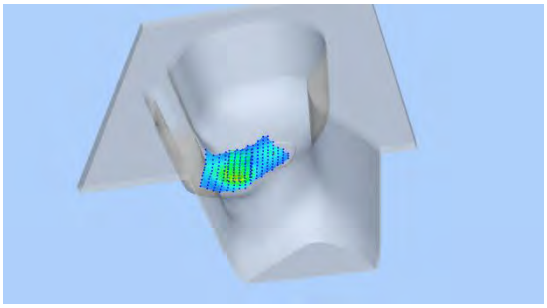
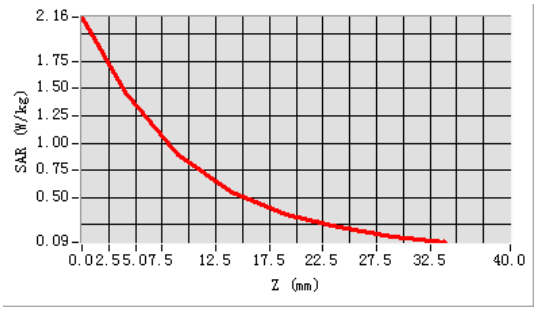
Plot 9: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-25
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	LTE Band 4 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1745
Relative permittivity (real part)	41.06
Conductivity (S/m)	1.39

Maximum location: X=-50.00, Y=-38.00

SAR Peak: 2.17 W/kg

SAR 10g (W/Kg)	0.746395
SAR 1g (W/Kg)	1.374219

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

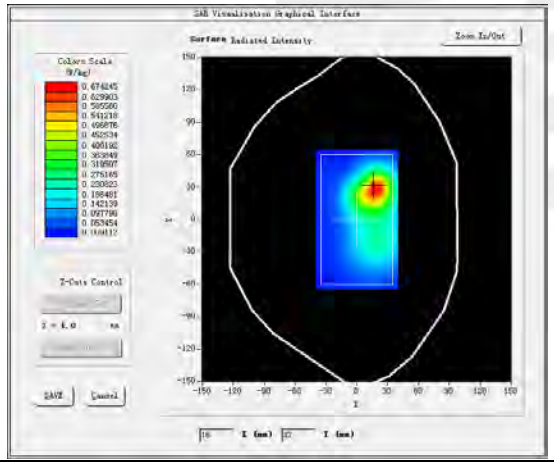
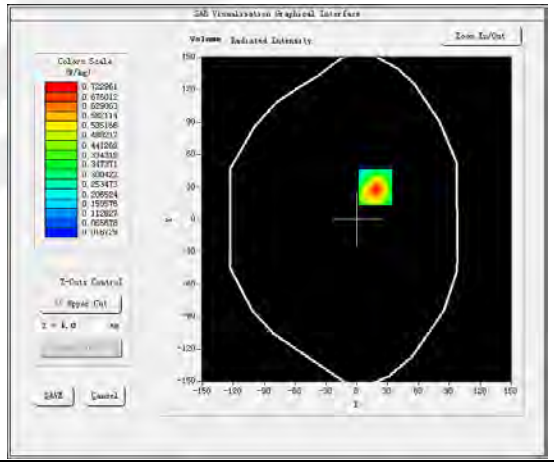
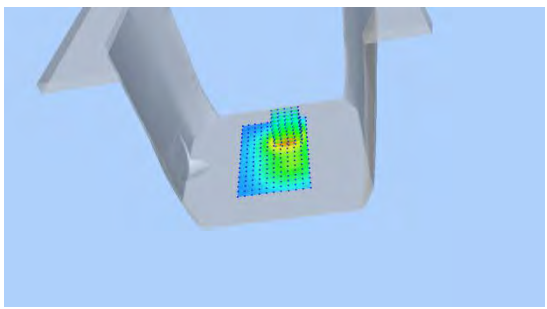
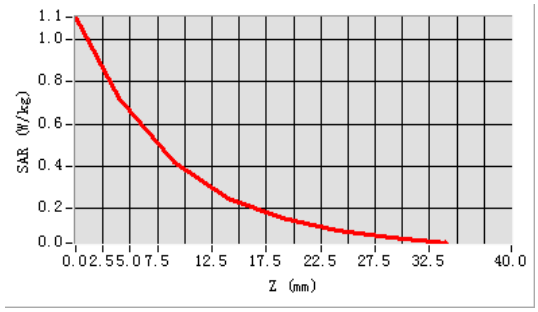
Plot 10: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-25
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 4(RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1745
Relative permittivity (real part)	41.06
Conductivity (S/m)	1.39

Maximum location: X=18.00, Y=30.00

SAR Peak: 1.10 W/kg

SAR 10g (W/Kg)	0.364669
SAR 1g (W/Kg)	0.673694

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

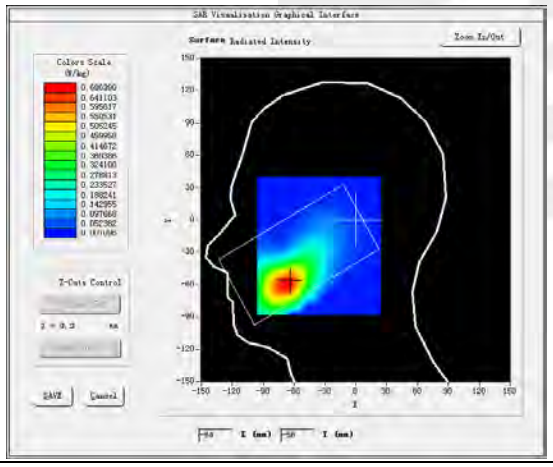
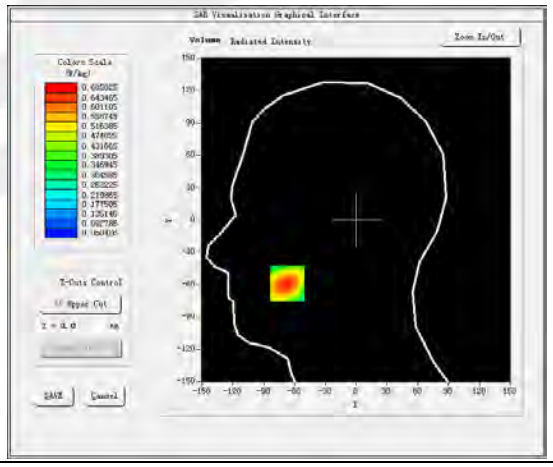
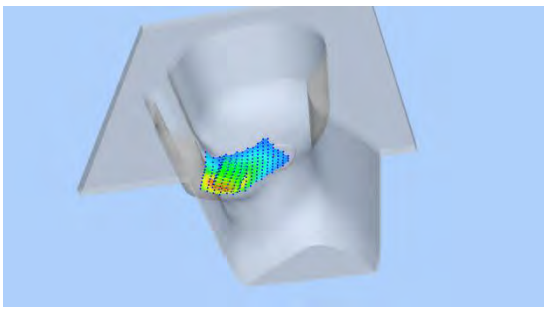
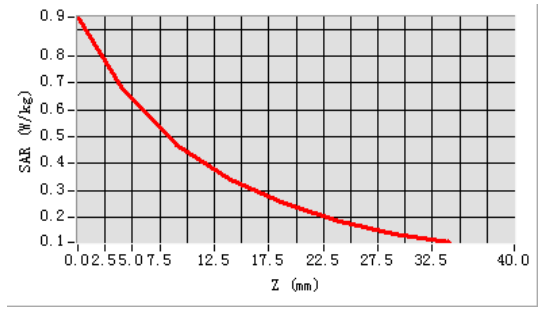
Plot 11: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	LTE Band 5 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.93

Maximum location: X=-67.00, Y=-59.00

SAR Peak: 0.95 W/kg

SAR 10g (W/Kg)	0.435666
SAR 1g (W/Kg)	0.664927

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

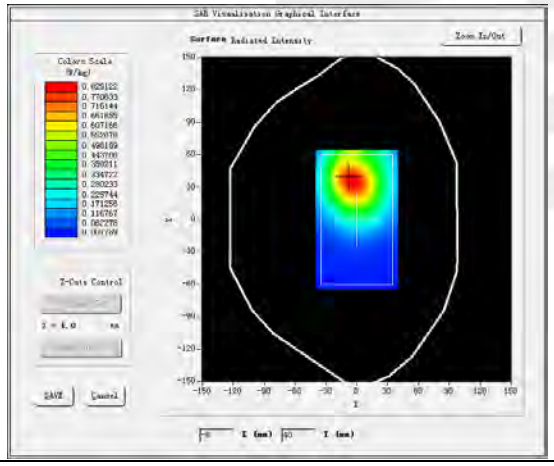
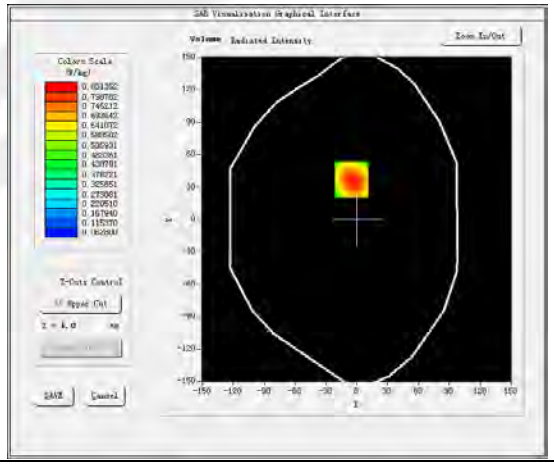
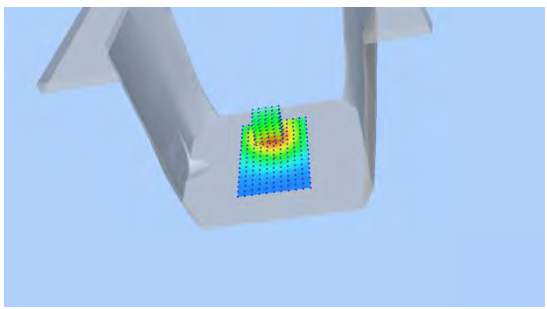
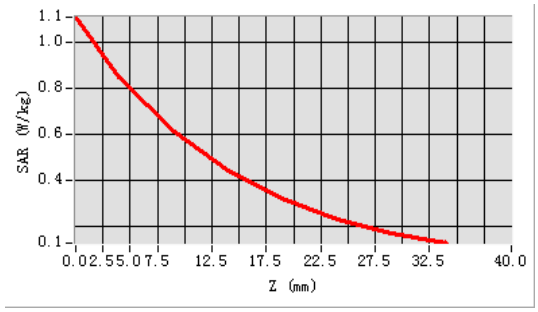
Plot 12: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-23
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 5 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.93

Maximum location: X=-5.00, Y=37.00

SAR Peak: 1.11 W/kg

SAR 10g (W/Kg)	0.559188
SAR 1g (W/Kg)	0.822589

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

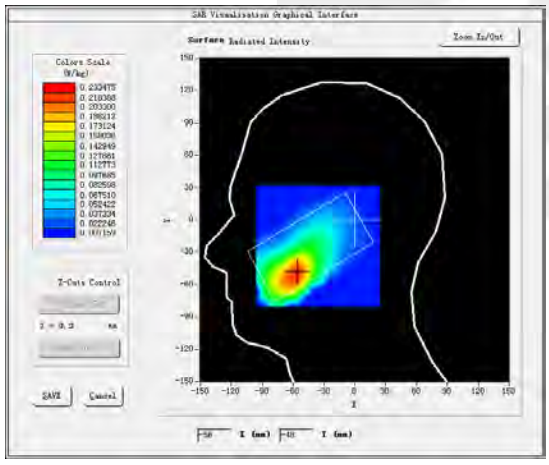
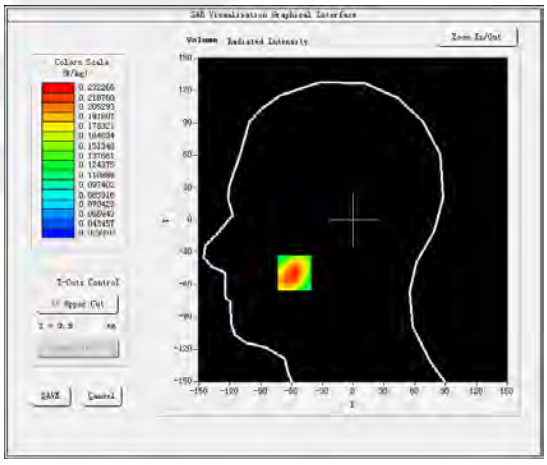
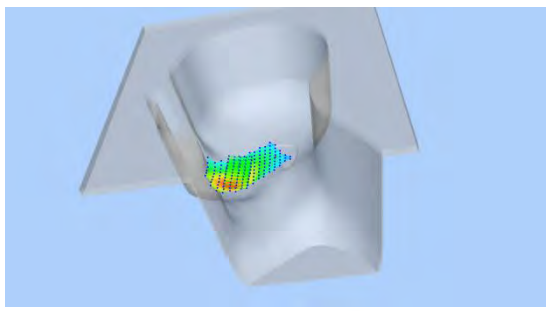
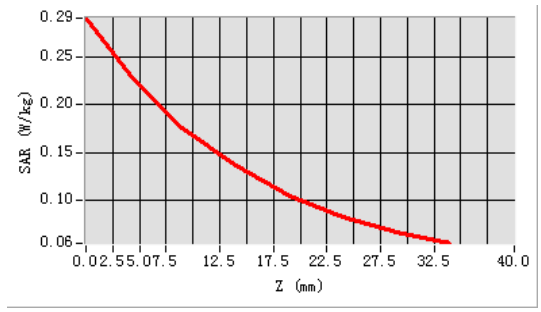
Plot 13: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-20
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	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 12 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	711
Relative permittivity (real part)	42.23
Conductivity (S/m)	0.89

Maximum location: X=-57.00, Y=-49.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.157775
SAR 1g (W/Kg)	0.225479

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

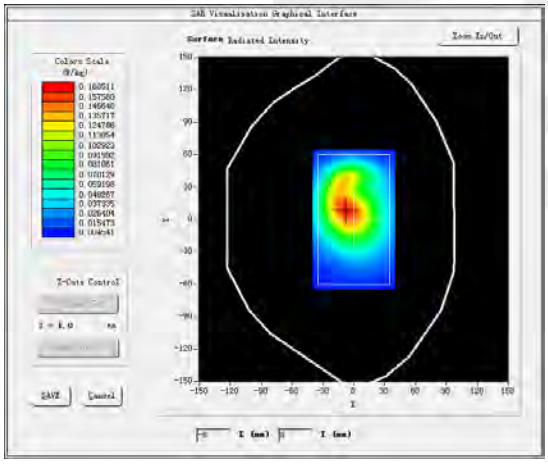
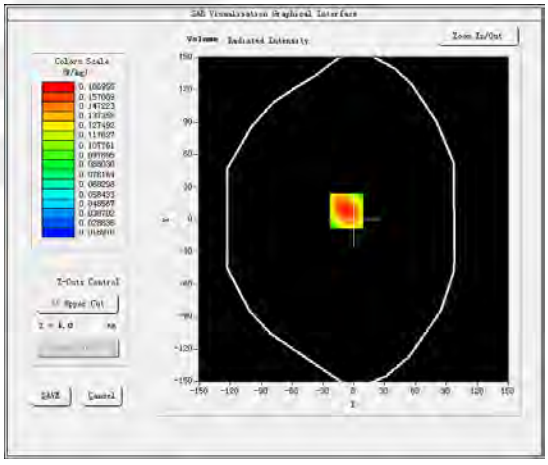
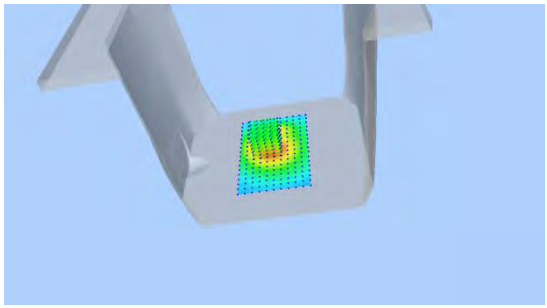
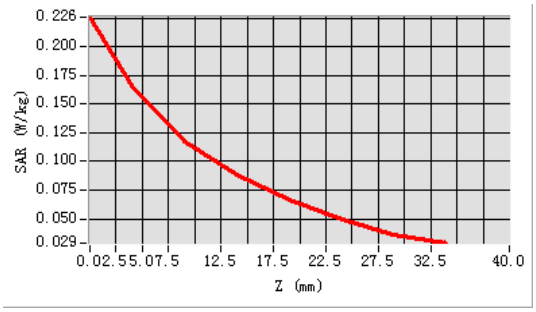
Plot 14: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-20
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 12 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	711
Relative permittivity (real part)	42.23
Conductivity (S/m)	0.89

Maximum location: X=-7.00, Y=8.00

SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.111363
SAR 1g (W/Kg)	0.165068

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

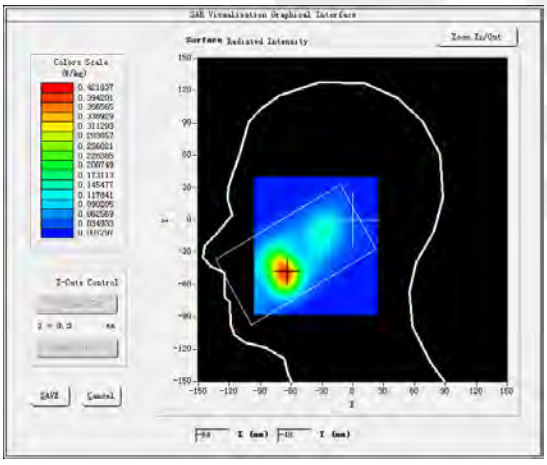
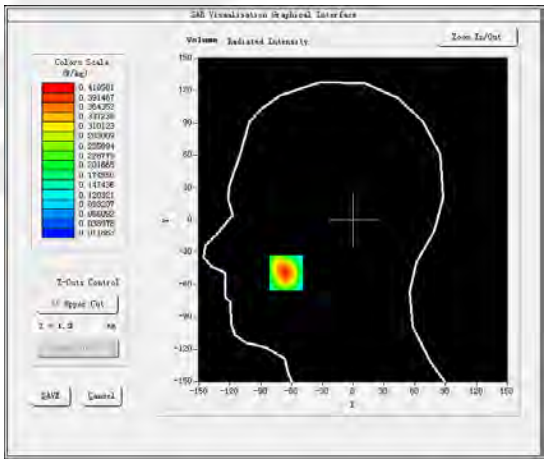
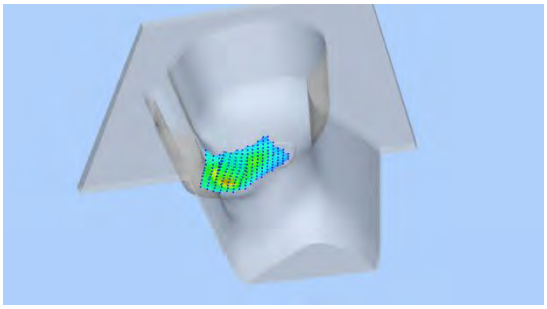
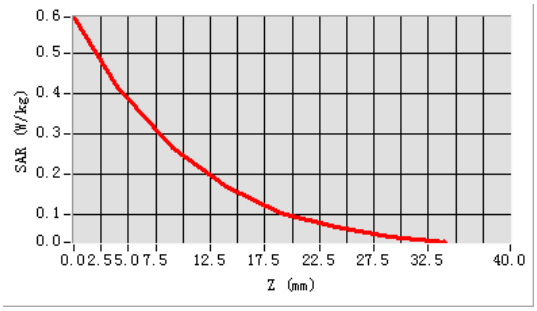
Plot 15: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-25
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	LTE Band 66 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1770
Relative permittivity (real part)	39.9
Conductivity (S/m)	1.36

Maximum location: X=-65.00, Y=-49.00

SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.221057
SAR 1g (W/Kg)	0.396054

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

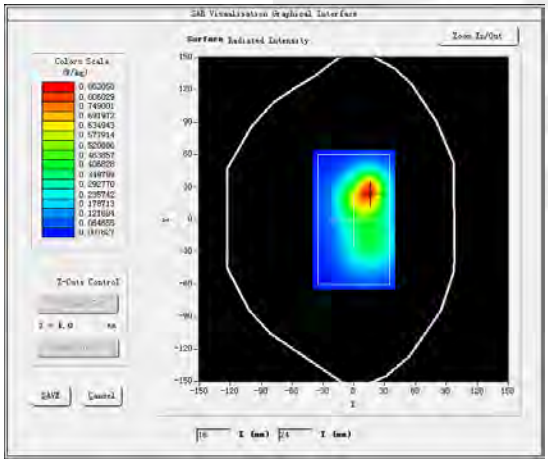
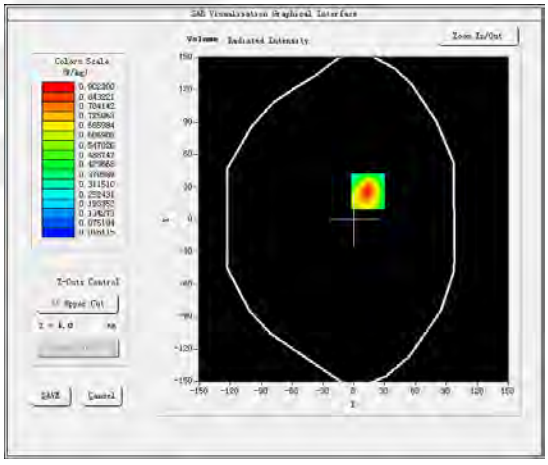
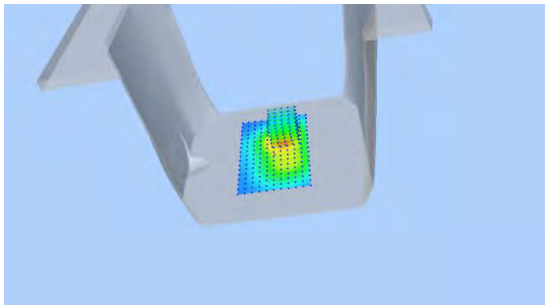
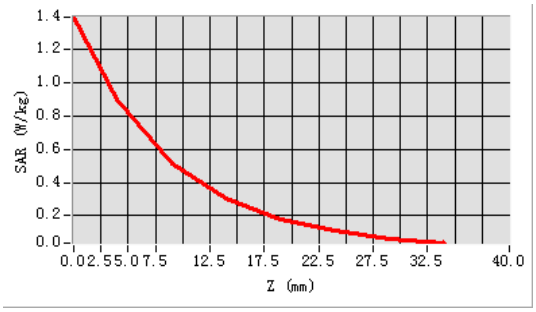
Plot 16: DUT: mobile phone; EUT Model: U40

Test Date	2021-11-25
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 66 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1770
Relative permittivity (real part)	39.9
Conductivity (S/m)	1.36

Maximum location: X=14.00, Y=26.00

SAR Peak: 1.40 W/kg

SAR 10g (W/Kg)	0.457692
SAR 1g (W/Kg)	0.842339

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

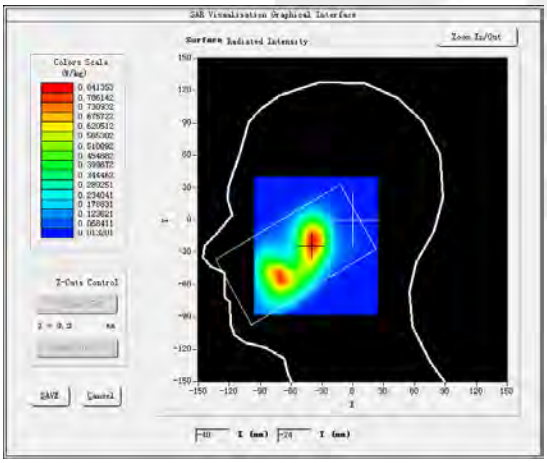
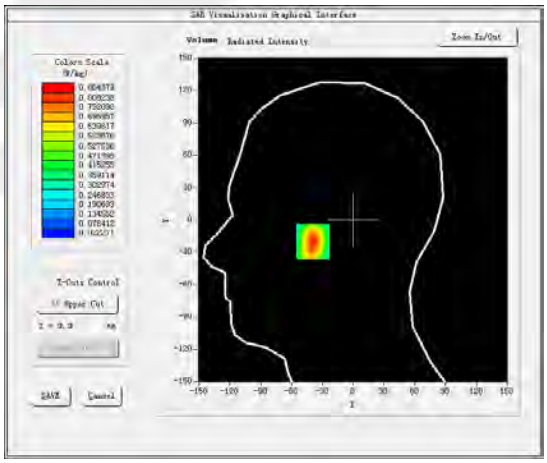
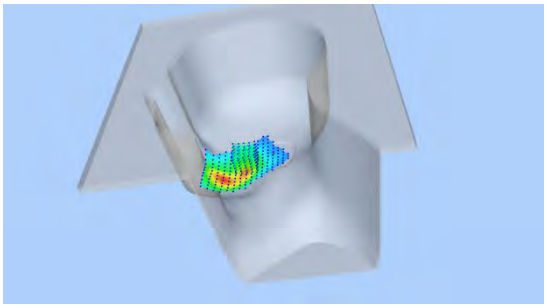
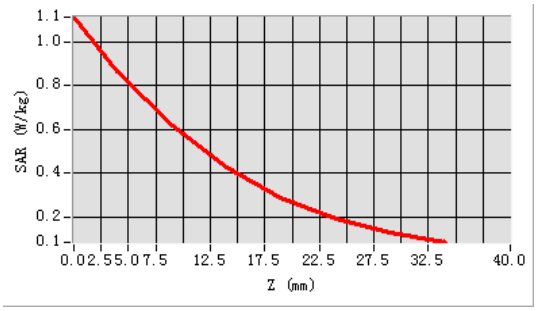
Plot 17: DUT: mobile phone; EUT Model: U40

Test Date	2022-03-28
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Right Cheek
Device Position	Cheek
Band	LTE Band 2 (RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1900
Relative permittivity (real part)	41.21
Conductivity (S/m)	1.37

Maximum location: X=-39.00, Y=-20.00

SAR Peak: 1.12 W/kg

SAR 10g (W/Kg)	0.478428
SAR 1g (W/Kg)	0.802201

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

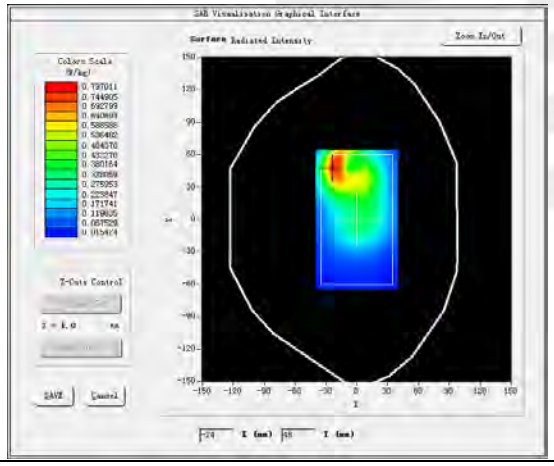
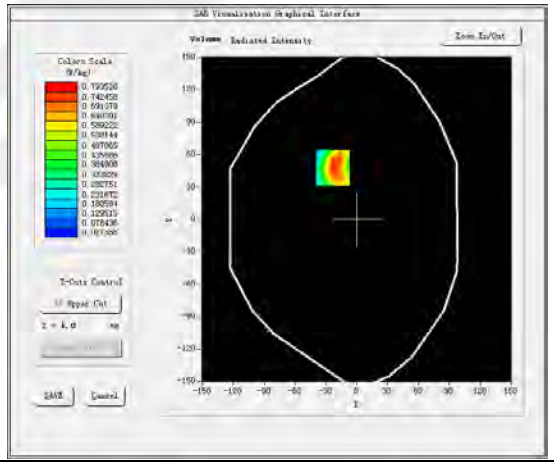
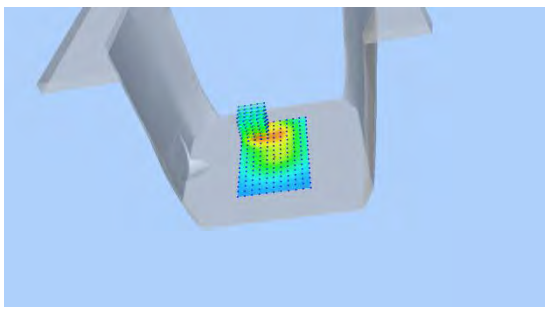
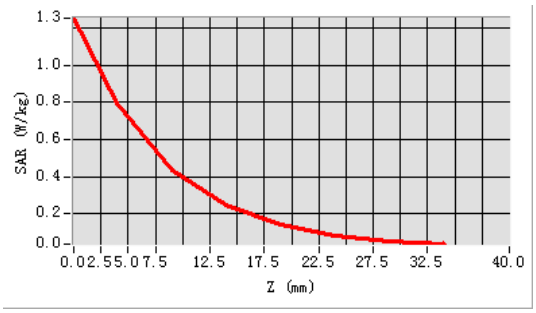
Plot 18: DUT: mobile phone; EUT Model: U40

Test Date	2022-03-28
Probe	SN 07/21 EPGO352
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 2(RB 1)
Channels	High
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1900
Relative permittivity (real part)	41.21
Conductivity (S/m)	1.37

Maximum location: X=-23.00, Y=48.00

SAR Peak: 1.28 W/kg

SAR 10g (W/Kg)	0.391307
SAR 1g (W/Kg)	0.751154

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※※※※※