



FCC SAR TEST REPORT

Report No.: STS2102009H02

Issued for

Shenzhen UniStrong Science & Technology Co.,Ltd.
B,4-4Factory, Zhengcheng Road, FuyongBaoan District,
Shenzhen, China

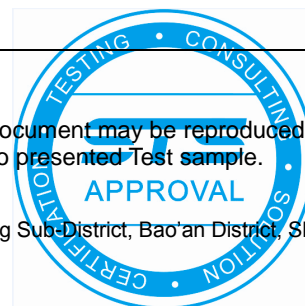
Product Name:	Rugged Smart Phone
Brand Name:	N/A
Model Name:	UT12P
Series Model:	N/A
FCC ID:	2AOPD-UT12P
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Head: 0.403 W/kg
	Body: 1.097 W/kg

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Test Report Certification

Applicant's name : Shenzhen UniStrong Science & Technology Co.,Ltd.
Address : B,4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China
Manufacture's Name..... : Shenzhen UniStrong Science & Technology Co.,Ltd.
Address : B,4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China

Product description

Product name : Rugged Smart Phone
Brand name : N/A
Model name : UT12P
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..... : 03 Feb. 2021~24 Feb. 2021
Date of Issue..... : 05 Mar. 2021
Test Result..... : **Pass**

Testing Engineer :

Lemon Li

(Lemon Li)

Technical Manager :

Sean She

(Sean she)

Authorized Signatory :

Vita Li

(Vita Li)





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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	05 Mar. 2021	STS2102009H02	ALL	Initial Issue

Note: **Format version** of the report -V01





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	Rugged Smart Phone			
Brand Name	N/A			
Model Name	UT12P			
Series Model	N/A			
Model Difference	N/A			
Battery	Rated Voltage: 3.8V Charge Limit: 4.35V Capacity: 8000mAh			
Device Category	Portable			
Product stage	Production unit			
RF Exposure Environment	General Population / Uncontrolled			
IMEI	861263030015011			
Hardware Version	V1.0			
Software Version	RP00.53.84.08			
Frequency Range	GSM 850: 824 MHz ~ 849 MHz PCS1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV:1710 MHz ~ 1755 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: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~787 MHz LTE Band 17: 704 MHz ~ 715 MHz LTE Band 41: 2496 MHz ~ 2690 MHz WLAN802.11b/g/n20: 2412 MHz ~ 2462 MHz WLAN 802.11n40: 2422 MHz ~ 2452 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80: 5150 ~ 5250 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80: 5725 ~ 5850 MHz Bluetooth: 2402 MHz to 2480 MHz GPS: 1575.42 MHz NFC: 13.56 MHz			
Max. Reported SAR(1g): (Limit:1.6W/kg)	Band	Mode	Head (W/kg)	Body Worn and Hotspot(W/kg)
	PCE	GSM 850	0.403	1.097
	PCE	GSM 1900	0.152	1.042
	PCE	WCDMA Band II	0.236	0.778
	PCE	WCDMA Band IV	0.211	0.706
	PCE	WCDMA Band V	0.387	1.074
	PCE	LTE Band 2	0.187	0.739
	PCE	LTE Band 4	0.137	0.563



	PCE	LTE Band 5	0.129	0.374
	PCE	LTE Band 7	0.120	0.518
	PCE	LTE Band 12	0.145	0.505
	PCE	LTE Band 13	0.146	0.469
	PCE	LTE Band 17	0.111	0.553
	PCE	LTE Band 26	0.075	0.346
	PCE	LTE Band 41	0.069	0.196
	DTS	2.4G WLAN	0.228	0.100
	DTS	5.2G WLAN	0.378	0.146
	DTS	5.8G WLAN	0.189	0.109
	DSS	Bluetooth ^{Note}	0.132	0.066
1-g Sum SAR			0.781	1.243
FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter (DSS) Digital Transmission System (DTS)			
Operating Mode:	GSM: GSM Voice; GPRS Class 12 WCDMA: RMC, HSDPA, HSUPA Release 6 LTE: QPSK, 16QAM WLAN: 802.11 a/b/g/n20/n40/ac20/ac40/ac80 Bluetooth: 4.2(GFSK +π/4DQPSK+8DPSK) GPS: BPSK NFC: ASK			
Antenna Specification:	GSM/WCDMA/LTE: PIFA Antenna Bluetooth: PIFA Antenna WLAN: PIFA Antenna GPS: PIFA Antenna NFC: Coil Antenna			
SIM Card	Support dual-SIM, dual standby, the multiple SIM card with two lines cannot transmitting at the same time			
Hotspot Mode	Support			
DTM Mode	Not Support			
<p>Note:</p> <ol style="list-style-type: none"> 1. Bluetooth SAR was estimated 2. The dual SIM card mobile has 2 SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active) 3. After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 card to perform all tests. 4. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power 				



1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (°C)	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 941225 D06 v02r01	Hotspot Mode SAR
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

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

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

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

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

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

Population/Uncontrolled Environments:

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

Occupational/Controlled Environments:

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

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

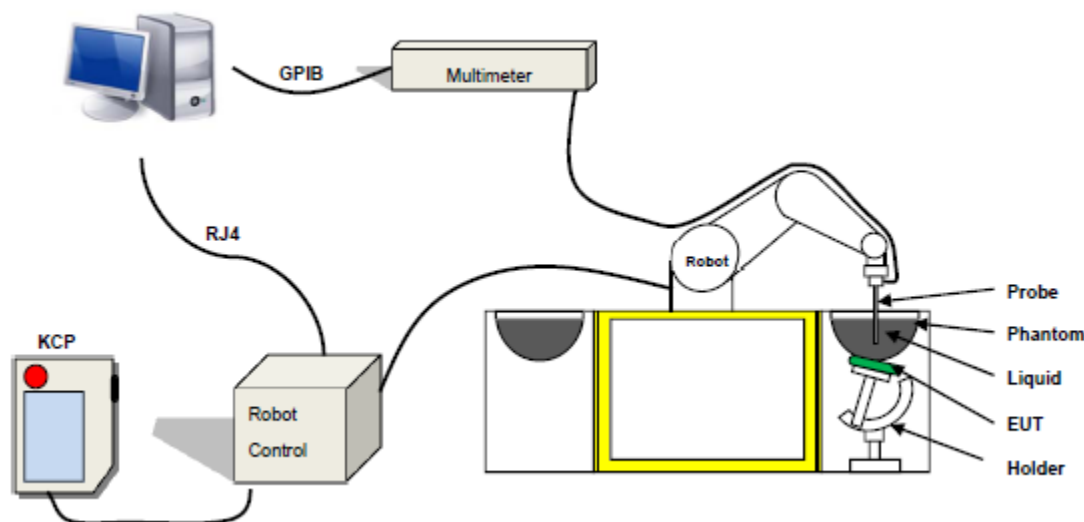
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

3.2 SAR System

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 41/18 EPG0334 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: 450 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.

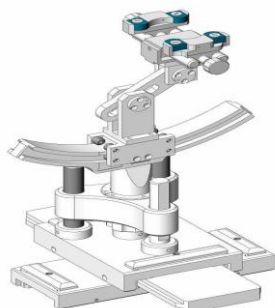
SN 32/14 SAM115



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

4.1 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	ϵ_r
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	ϵ_r
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	ϵ_r		σ S/m	
	Head	Body	Head	Body
	300	45.3	58.2	0.87
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**

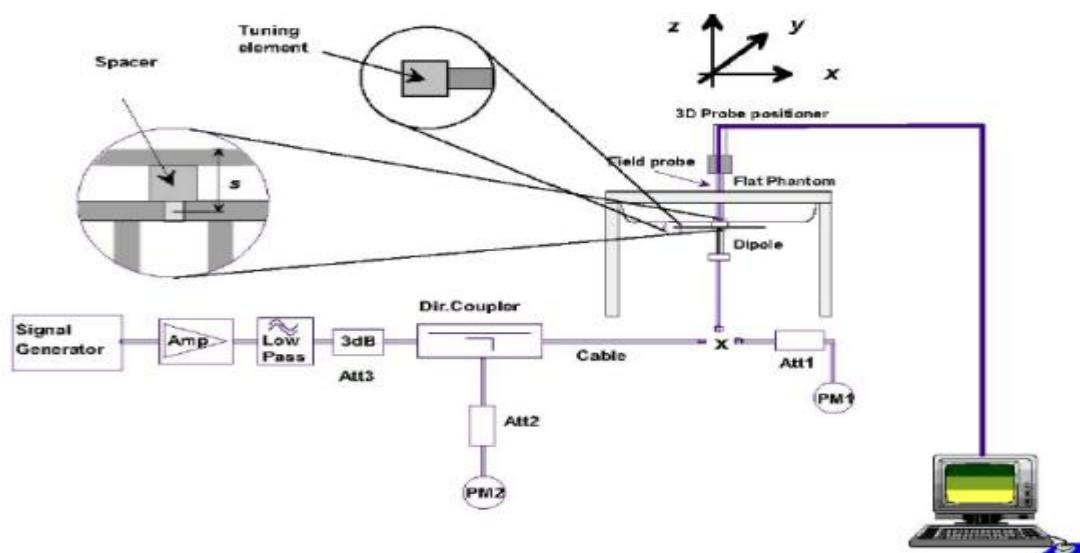
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency	Temp. [°C]					
2021-02-03	22.5	50	750 MHz	22.3	Permittivity	41.9	41.99	0.21	±5
					Conductivity	0.89	0.88	-1.41	±5
2021-02-04	22.4	55	835 MHz	22.2	Permittivity	41.5	42.40	2.17	±5
					Conductivity	0.9	0.89	-1.13	±5
2021-02-07	22.2	50	1800 MHz	22.0	Permittivity	40	39.86	-0.34	±5
					Conductivity	1.4	1.33	-4.69	±5
2021-02-08	23.1	54	1900 MHz	22.8	Permittivity	40	40.05	0.11	±5
					Conductivity	1.4	1.37	-1.93	±5
2021-02-09	22.4	50	2450 MHz	22.2	Permittivity	39.2	37.87	-3.38	±5
					Conductivity	1.8	1.75	-2.87	±5
2021-02-22	22.0	48	2600 MHz	21.8	Permittivity	39	38.00	-2.57	±5
					Conductivity	1.96	2.01	2.58	±5
2021-02-23	22.5	52	5200 MHz	22.3	Permittivity	36	35.82	-0.50	±5
					Conductivity	4.66	4.61	-1.06	±5
2021-02-24	22.5	52	5800MHz	22.3	Permittivity	35.3	36.06	2.14	±5
					Conductivity	5.27	5.30	0.55	±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 %.

Freq.(MHz)	Power(mW)	Tested Value (W/Kg)	Normalized SAR (W/kg/W)	Target (W/Kg/W)	Tolerance(%)	Date
750	100	0.895	8.95	8.49	5.42	2021-02-03
835	100	0.920	9.20	9.56	-3.77	2021-02-04
1800	100	3.780	37.80	38.40	-1.56	2021-02-07
1900	100	3.732	37.32	39.70	-5.99	2021-02-08
2450	100	4.768	47.68	52.40	-9.01	2021-02-09
2600	100	5.470	54.70	55.30	-1.08	2021-02-22
5200	100	16.563	165.63	159.00	4.17	2021-02-23
5800	100	17.485	174.82	181.20	-3.52	2021-02-24

Note:

1. The tolerance limit of System validation $\pm 10\%$.
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 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

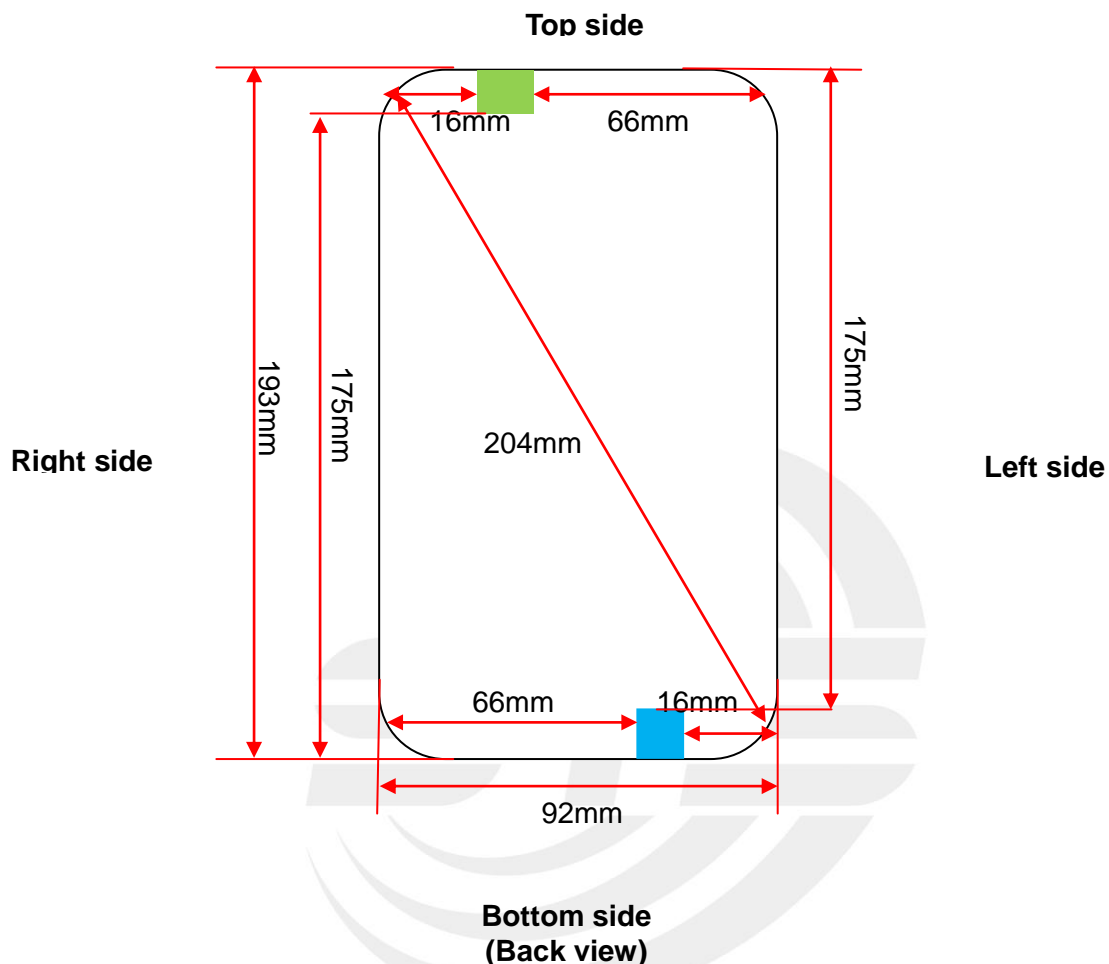
➤ Area Scan& Zoom Scan

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 Rugged Smart Phone, support GSM/WCDMA/LTE/WLAN/BT mode.



 WWAN Antenna

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

Exposure Position	Wireless Interface	GSM850	PCS1900	WCDMA II	WCDMA IV
Exposure Position	Calculated Frequency	836.6	1850.2	1880	1740
	Maximum power (dBm)	32.79	29.35	22.97	23.54
	Maximum rated power(mW)	1901.078	860.994	198.153	225.944
	Separation distance (mm)	10	10	10	10
Back Side	exclusion threshold(mW)	33	22	22	22
	Testing required?	YES	YES	YES	YES
	Separation distance (mm)	10	10	10	10
Front Side	exclusion threshold(mW)	33	22	22	22
	Testing required?	YES	YES	YES	YES
	Separation distance (mm)	26	26	26	26
Left Edge	exclusion threshold(mW)	82	54	54	54
	Testing required?	YES	YES	YES	YES
	Separation distance (mm)	76	76	76	76
Right Edge	exclusion threshold(mW)	424	369	369	369
	Testing required?	YES	YES	NO	NO
	Separation distance (mm)	185	185	185	185
Top Edge	exclusion threshold(mW)	1514	1459	1459	1459
	Testing required?	YES	NO	NO	NO
	Separation distance (mm)	10	10	10	10
Bottom Edge	exclusion threshold(mW)	33	22	22	22
	Testing required?	YES	YES	YES	YES



Exposure Position	Wireless Interface	WCDMA V	LTE Band 2	LTE Band 4	LTE Band 5
	Calculated Frequency	846.6	1900	1720	836.5
	Maximum power (dBm)	22.99	22.82	22.41	23.09
	Maximum rated power(mW)	199.067	191.426	174.181	203.704
Back Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	33	22	22	33
	Testing required?	YES	YES	YES	YES
Front Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	33	22	22	33
	Testing required?	YES	YES	YES	YES
Left Edge	Separation distance (mm)	26	26	26	26
	exclusion threshold(mW)	82	54	54	82
	Testing required?	YES	YES	YES	YES
Right Edge	Separation distance (mm)	76	76	76	76
	exclusion threshold(mW)	424	369	369	424
	Testing required?	NO	NO	NO	NO
Top Edge	Separation distance (mm)	185	185	185	185
	exclusion threshold(mW)	1514	1459	1459	1514
	Testing required?	NO	NO	NO	NO
Bottom Edge	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	33	22	22	33
	Testing required?	YES	YES	YES	YES



Exposure Position	Wireless Interface	LTE Band 7	LTE Band 12	LTE Band 13	LTE Band 17
	Calculated Frequency(MHz)	2535	711	782	709
	Maximum power (dBm)	22.36	23.13	22.79	22.04
	Maximum rated power(mW)	172.187	205.589	190.108	159.956
Back Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	19	33	33	33
	Testing required?	YES	YES	YES	YES
Front Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	19	33	33	33
	Testing required?	YES	YES	YES	YES
Left Edge	Separation distance (mm)	26	26	26	26
	exclusion threshold(mW)	48	82	82	82
	Testing required?	YES	YES	YES	YES
Right Edge	Separation distance (mm)	76	76	76	76
	exclusion threshold(mW)	356	424	424	424
	Testing required?	NO	NO	NO	NO
Top Edge	Separation distance (mm)	185	185	185	185
	exclusion threshold(mW)	1446	1514	1514	1514
	Testing required?	NO	NO	NO	NO
Bottom Edge	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	19	33	33	33
	Testing required?	YES	YES	YES	YES



Wireless Interface	LTE Band 26	LTE Band 41	2.4G WLAN	BT	
Exposure Position	Calculated Frequency(MHz)	831.5	2680	2412	2441
	Maximum power (dBm)	23.12	23.60	13.29	4.55
	Maximum rated power(mW)	205.116	229.087	21.330	2.851
Back Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	33	19	19	19
	Testing required?	YES	YES	YES	NO
Front Side	Separation distance (mm)	10	10	10	10
	exclusion threshold(mW)	33	19	19	19
	Testing required?	YES	YES	YES	NO
Left Edge	Separation distance (mm)	26	26	76	76
	exclusion threshold(mW)	82	48	356	356
	Testing required?	YES	YES	NO	NO
Right Edge	Separation distance (mm)	76	76	26	26
	exclusion threshold(mW)	424	356	48	48
	Testing required?	NO	NO	NO	NO
Top Edge	Separation distance (mm)	185	185	10	10
	exclusion threshold(mW)	1514	1446	19	19
	Testing required?	NO	NO	YES	NO
Bottom Edge	Separation distance (mm)	10	10	185	185
	exclusion threshold(mW)	33	19	1446	1446
	Testing required?	YES	YES	NO	NO



Exposure Position	Wireless Interface	5.2G WLAN	5.8G WLAN
		Calculated Frequency(MHz)	5180
	Maximum power (dBm)	8.47	9.22
	Maximum rated power(mW)	7.031	8.356
Back Side	Separation distance (mm)	10	10
	exclusion threshold(mW)	13	13
	Testing required?	NO	NO
Front Side	Separation distance (mm)	10	10
	exclusion threshold(mW)	13	13
	Testing required?	NO	NO
Left Edge	Separation distance (mm)	76	76
	exclusion threshold(mW)	326	324
	Testing required?	NO	NO
Right Edge	Separation distance (mm)	26	26
	exclusion threshold(mW)	33	31
	Testing required?	NO	NO
Top Edge	Separation distance (mm)	10	10
	exclusion threshold(mW)	13	12
	Testing required?	NO	NO
Bottom Edge	Separation distance (mm)	185	185
	exclusion threshold(mW)	1416	1414
	Testing required?	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 $\leq 50\text{mm}$ are determined by:

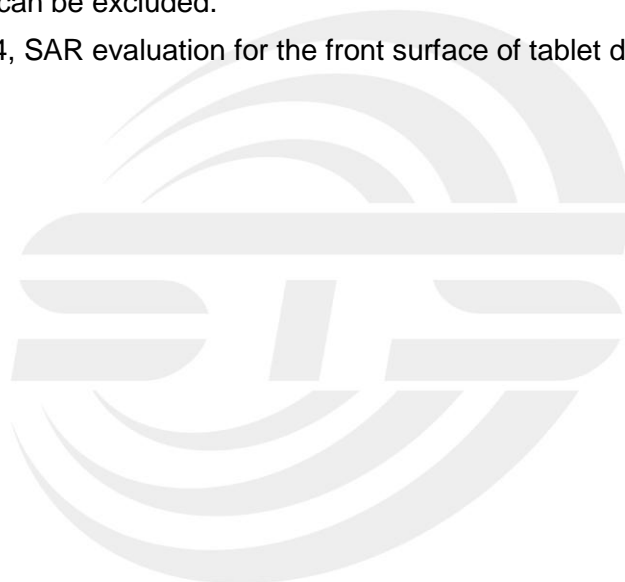
$$[(\text{max.power of channel, including tune-up tolerance, Mw})/(\text{min. test separation distance, mm})]^{1/2} \cdot f(\text{GHz}) \leq 3.0$$
for 1-g SAR and ≤ 7.5 for 10-g extremity SAR ,f(GHz) is the RF channel transmit frequency in GHz. Power and distance are rounded to the nearest mW and mm 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

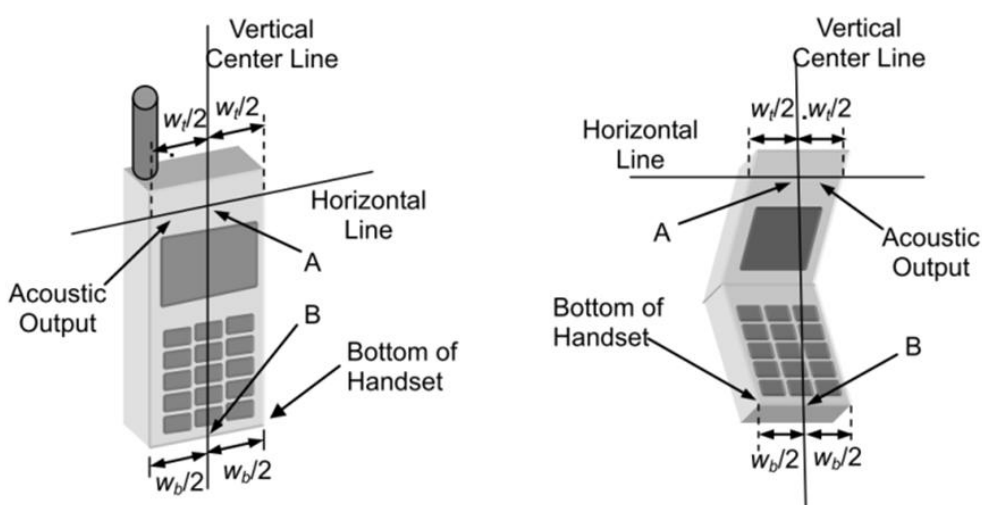
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

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 w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b 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.

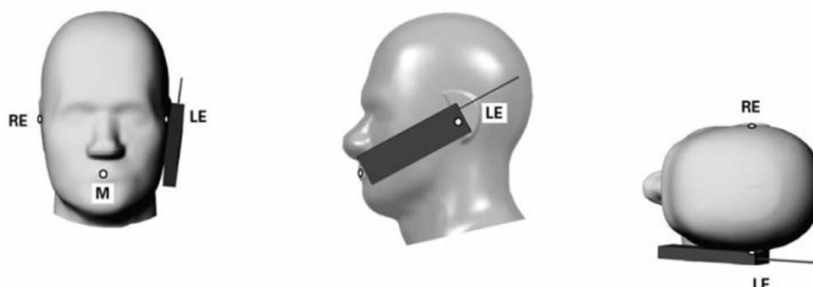
(3) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially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



Cheek Position

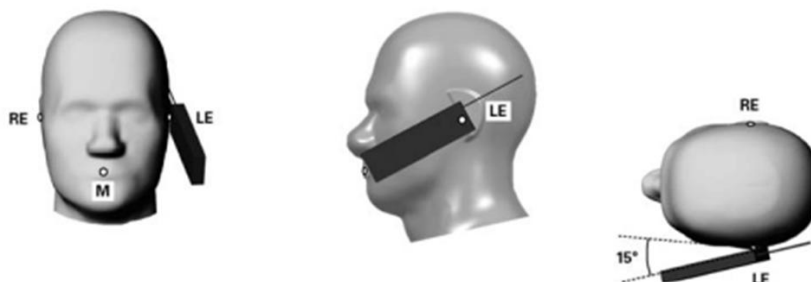
1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing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



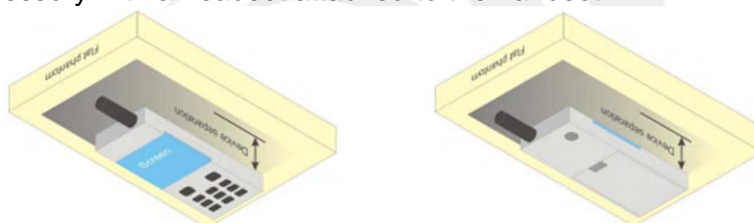
Title Position

- (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.



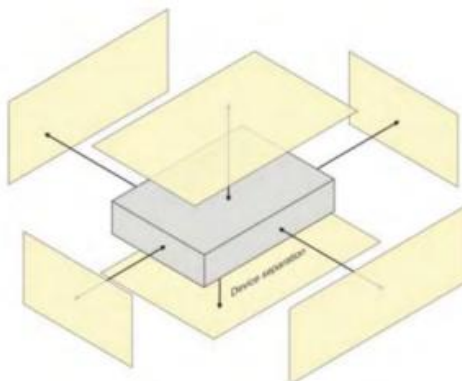
Body-worn Position Conditions:

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 from that surface or edge. When form factor of a handset is smaller than 9cm x 5cm, a test separation distance of 5mm (instead of 10mm) is required for testing hotspot mode. When the separate distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).





9. Uncertainty

9.1 Measurement Uncertainty

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

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	0.695	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.28	0.28	∞
Hemispherical Isotropy	1.045	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.43	0.43	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	0.685	R	$\sqrt{3}$	1	1	0.40	0.40	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	0.021	N	1	1	1	0.021	0.021	∞
Response Time	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient conditions-Noise	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
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	2.6	N	1	1	1	2.6	2.6	∞
Device holder uncertainty	3	N	1	1	1	3	3	∞
SAR drift measurement	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
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	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity (measured)	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity (measured)	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				9.79	9.59	
Expanded Uncertainty (95% Confidence interval)		K=2				19.58	19.18	



9.2 System validation Uncertainty

Uncertainty Component	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	0.695	R	$\sqrt{3}$	1	1	0.40	0.40	∞
Hemispherical Isotropy	1.045	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	0.685	R	$\sqrt{3}$	1	1	0.40	0.40	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	0.021	N	1	1	1	0.021	0.021	∞
Response Time	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
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	∞
System validation source								
Deviation of experimental dipole from numerical dipole	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Other source contribution Uncertainty	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and set-up								
Phantom uncertainty (shape and thickness uncertainty)	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity (measured)	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity (measured)	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				9.718	9.517	
Expanded Uncertainty (95% Confidence interval)		K=2				19.44	19.04	



10. Conducted Power Measurement

10.1 Test Result

Burst Average Power (dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	32.59	32.65	32.51	29.33	29.10	28.77
GPRS (GMSK, 1-Slot)	32.78	32.79	32.64	29.35	29.14	28.81
GPRS (GMSK, 2-Slot)	32.38	32.36	32.15	28.92	28.72	28.31
GPRS (GMSK, 3-Slot)	31.89	31.90	31.73	28.50	28.29	27.83
GPRS (GMSK, 4-Slot)	31.40	31.50	31.23	28.09	27.84	27.35
EGPRS(8PSK, 1-Slot)	32.82	32.88	32.70	29.51	29.00	28.97
EGPRS(8PSK, 2-Slot)	32.02	32.15	31.98	28.80	28.23	28.25
EGPRS(8PSK, 3-Slot)	31.30	31.36	31.22	28.05	27.51	27.47
EGPRS(8PSK, 4-Slot)	30.54	30.57	30.46	27.28	26.79	26.69

Remark: GPRS, CS4 coding scheme. EGPRS, MCS5 coding scheme.
 Multi-Slot Class 8, Support Max 4 downlink, 1 uplink, 5 working link
 Multi-Slot Class 10, Support Max 4 downlink, 2 uplink, 5 working link
 Multi-Slot Class 12, Support Max 4 downlink, 4 uplink, 5 working link

Fram- Average Power(dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	23.56	23.62	23.48	20.30	20.07	19.74
GPRS (GMSK, 1-Slot)	23.75	23.76	23.61	20.32	20.11	19.78
GPRS (GMSK, 2-Slot)	26.36	26.34	26.13	22.90	22.70	22.29
GPRS (GMSK, 3-Slot)	27.63	27.64	27.47	24.24	24.03	23.57
GPRS (GMSK, 4-Slot)	28.39	28.49	28.22	25.08	24.83	24.34
EGPRS(8PSK, 1-Slot)	23.79	23.85	23.67	20.48	19.97	19.94
EGPRS(8PSK, 2-Slot)	26.00	26.13	25.96	22.78	22.21	22.23
EGPRS(8PSK, 3-Slot)	27.04	27.10	26.96	23.79	23.25	23.21
EGPRS(8PSK, 4-Slot)	27.53	27.56	27.45	24.27	23.78	23.68

Remark :

- SAR testing was performed on the maximum frame-averaged power mode.
- 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 IV			WCDMA Band V		
Channel	9262	9400	9538	1312	1413	1513	4132	4183	4233
Frequency (MHz)	1852.4	1880.0	1907.6	1712.6	1740	1752.4	826.4	836.6	846.6
RMC 12.2Kbps	22.96	22.97	22.82	23.05	23.54	23.53	22.64	22.85	22.99
HSDPA Subtest-1	20.76	20.61	20.50	22.78	23.08	23.14	21.59	21.75	21.86
HSDPA Subtest-2	20.35	20.19	20.01	22.31	22.61	22.71	21.12	21.34	21.44
HSDPA Subtest-3	19.92	19.76	19.70	21.86	22.15	22.40	20.67	20.91	21.14
HSDPA Subtest-4	19.60	19.45	19.35	21.37	21.81	21.95	20.21	20.42	20.77
HSUPA Subtest-1	20.29	20.16	20.06	22.42	22.45	22.78	21.16	21.12	21.37
HSUPA Subtest-2	19.34	19.16	19.07	21.45	21.51	21.80	20.35	20.20	20.44
HSUPA Subtest-3	19.28	18.69	18.70	21.37	21.06	21.34	20.28	19.77	20.13
HSUPA Subtest-4	18.81	18.30	18.38	20.90	20.63	21.00	19.95	19.41	19.69
HSUPA Subtest-5	17.35	16.86	16.97	19.47	19.14	19.53	18.48	17.95	18.22

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	$0 \leq CM \leq 3.5$	MAX(CM-1,0)
Note: CM=1 for $\beta_c/\beta_d=12/15$, $\beta_{hs}/\beta_c=24/15$.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.



2.4G WLAN

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
802.11b	1	2412	13.29
	6	2437	12.08
	11	2462	11.94
802.11g	1	2412	12.46
	6	2437	11.16
	11	2462	11.43
802.11n(HT 20)	1	2412	12.39
	6	2437	11.11
	11	2462	11.41
802.11n(HT 40)	3	2422	11.41
	6	2437	11.54
	9	2452	10.56

Bluetooth

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	4.17
	39	2441	4.55
	78	2480	4.22
$\pi/4$ -DQPSK(2Mbps)	0	2402	2.13
	39	2441	2.97
	78	2480	2.77
8DPSK(3Mbps)	0	2402	2.31
	39	2441	2.89
	78	2480	2.31

**WLAN (5.2Gband)**

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
802.11a	36	5180	8.47
	40	5200	8.19
	48	5240	7.98
802.11 n-HT20	36	5180	8.43
	40	5200	8.17
	48	5240	7.93
802.11 n-HT40	38	5190	6.30
	46	5230	4.99
802.11 ac-VHT20	36	5180	8.23
	40	5200	7.97
	48	5240	7.74
802.11 ac-VHT40	38	5190	4.72
	46	5230	4.06
802.11 ac-VHT80	42	5210	6.01

WLAN (5.8Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
802.11a	149	5745	9.14
	157	5785	9.22
	165	5825	9.15
802.11 n-HT20	149	5745	9.12
	157	5785	9.20
	165	5825	9.15
802.11 n-HT40	151	5755	6.16
	159	5795	5.39
802.11 ac-VHT20	149	5745	8.95
	157	5785	8.99
	165	5825	9.00
802.11 ac-VHT40	151	5755	5.56
	159	5795	6.16
802.11 ac-VHT80	155	5775	7.04



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 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.51	22.29	22.38
1.4	1	2		22.30	22.06	22.13
1.4	1	5		22.06	21.77	21.85
1.4	3	0		21.85	21.52	21.63
1.4	3	1		21.59	21.24	21.40
1.4	3	3		21.38	20.95	21.10
1.4	6	0		21.17	20.74	20.88
1.4	1	0	16-QAM	22.26	22.01	22.12
1.4	1	2		21.97	21.72	21.90
1.4	1	5		21.70	21.42	21.64
1.4	3	0		21.44	21.19	21.38
1.4	3	1		21.21	20.99	21.09
1.4	3	3		20.97	20.73	20.86
1.4	6	0		20.68	20.52	20.62
3	1	0	QPSK	22.47	22.43	22.57
3	1	7		22.22	22.14	22.32
3	1	14		22.00	21.84	22.11
3	8	0		21.74	21.63	21.90
3	8	3		21.54	21.34	21.61
3	8	7		21.30	21.06	21.41
3	15	0		21.10	20.79	21.13
3	1	0	16-QAM	22.27	22.18	22.29
3	1	7		21.97	21.90	22.02
3	1	14		21.72	21.69	21.78
3	8	0		21.52	21.42	21.50
3	8	3		21.25	21.18	21.28
3	8	7		20.99	20.94	21.02
3	15	0		20.72	20.67	20.79



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.33	22.45	22.18
5	1	12		22.04	22.23	21.90
5	1	24		21.81	21.95	21.65
5	12	0		21.57	21.69	21.41
5	12	6		21.30	21.45	21.12
5	12	13		21.05	21.25	20.82
5	25	0		20.77	21.03	20.57
5	1	0	16-QAM	22.06	22.17	21.94
5	1	12		21.82	21.91	21.72
5	1	24		21.59	21.63	21.49
5	12	0		21.36	21.36	21.20
5	12	6		21.09	21.15	20.92
5	12	13		20.84	20.94	20.67
5	25	0		20.61	20.72	20.45
10	1	0	QPSK	21.99	22.06	22.54
10	1	24		21.69	21.80	22.30
10	1	49		21.47	21.55	22.06
10	25	0		21.27	21.32	21.77
10	25	12		21.01	21.10	21.55
10	25	25		20.72	20.89	21.32
10	50	0		20.50	20.63	21.09
10	1	0	16-QAM	21.77	21.80	22.33
10	1	24		21.51	21.59	22.13
10	1	49		21.21	21.33	21.85
10	25	0		20.99	21.08	21.61
10	25	12		20.74	20.78	21.38
10	25	25		20.44	20.49	21.11
10	50	0		20.24	20.20	20.84



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.53	22.61	22.45
15	1	37		22.31	22.38	22.15
15	1	74		22.03	22.10	21.87
15	36	0		21.75	21.87	21.62
15	36	18		21.48	21.65	21.41
15	36	39		21.25	21.38	21.15
15	75	0		21.00	21.08	20.94
15	1	0	16-QAM	22.29	22.40	22.19
15	1	38		22.02	22.19	21.96
15	1	74		21.75	21.92	21.71
15	36	0		21.49	21.66	21.49
15	36	18		21.23	21.36	21.27
15	36	39		21.02	21.09	21.02
15	75	0		20.81	20.87	20.81
20	1	0	QPSK	22.59	22.67	22.82
20	1	50		22.36	22.41	22.59
20	1	99		22.13	22.12	22.36
20	50	0		21.89	21.88	22.07
20	50	25		21.66	21.60	21.87
20	50	50		21.40	21.40	21.58
20	100	0		21.17	21.20	21.32
20	1	0	16-QAM	22.29	22.45	22.56
20	1	50		22.01	22.20	22.28
20	1	99		21.78	21.96	22.05
20	50	0		21.53	21.71	21.85
20	50	25		21.31	21.48	21.57
20	50	50		21.07	21.18	21.35
20	100	0		20.78	20.92	21.08



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	22.08	22.32	22.18
1.4	1	2		21.79	22.11	21.94
1.4	1	5		21.54	21.82	21.72
1.4	3	0		21.26	21.52	21.46
1.4	3	1		21.04	21.28	21.23
1.4	3	3		20.82	21.00	21.01
1.4	6	0		20.55	20.75	20.76
1.4	1	0	16-QAM	21.87	22.12	21.94
1.4	1	2		21.64	21.90	21.72
1.4	1	5		21.36	21.68	21.47
1.4	3	0		21.12	21.43	21.17
1.4	3	1		20.85	21.18	20.96
1.4	3	3		20.64	20.93	20.75
1.4	6	0		20.38	20.64	20.53
3	1	0	QPSK	21.96	21.85	21.76
3	1	7		21.68	21.62	21.52
3	1	14		21.46	21.33	21.23
3	8	0		21.18	21.10	20.95
3	8	3		20.95	20.83	20.73
3	8	7		20.72	20.53	20.47
3	15	0		20.49	20.27	20.20
3	1	0	16-QAM	21.67	21.56	21.49
3	1	7		21.45	21.31	21.24
3	1	14		21.19	21.03	20.97
3	8	0		20.89	20.81	20.75
3	8	4		20.63	20.52	20.51
3	8	7		20.39	20.30	20.28
3	15	0		20.12	20.02	20.03



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.06	22.09	22.23
5	1	12		21.80	21.86	21.97
5	1	24		21.58	21.66	21.73
5	12	0		21.34	21.38	21.51
5	12	6		21.11	21.10	21.24
5	12	13		20.89	20.86	20.99
5	25	0		20.60	20.57	20.78
5	1	0		16-QAM	21.77	21.85
5	1	12	21.49		21.60	21.76
5	1	24	21.21		21.34	21.53
5	12	0	20.99		21.10	21.25
5	12	6	20.71		20.81	20.96
5	12	13	20.41		20.58	20.69
5	25	0	20.21		20.37	20.44
10	1	0	QPSK		21.92	21.68
10	1	24		21.66	21.47	21.67
10	1	49		21.39	21.19	21.46
10	25	0		21.12	20.93	21.24
10	25	12		20.86	20.70	21.00
10	25	25		20.60	20.44	20.77
10	50	0		20.39	20.20	20.49
10	1	0		16-QAM	21.68	21.40
10	1	24	21.41		21.17	21.51
10	1	49	21.13		20.92	21.25
10	25	0	20.90		20.65	20.98
10	25	12	20.61		20.42	20.72
10	25	25	20.35		20.13	20.52
10	50	0	20.05		19.88	20.27



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.89	21.67	21.58
15	1	37		21.66	21.43	21.32
15	1	74		21.39	21.21	21.04
15	36	0		21.11	20.99	20.77
15	36	19		20.86	20.77	20.55
15	36	39		20.64	20.56	20.29
15	75	0		20.35	20.29	20.07
15	1	0	16-QAM	21.59	21.38	21.28
15	1	38		21.39	21.14	21.04
15	1	75		21.16	20.91	20.78
15	36	0		20.87	20.70	20.54
15	36	19		20.61	20.40	20.32
15	36	39		20.39	20.14	20.02
15	75	0		20.18	19.87	19.77
20	1	0	QPSK	22.41	22.06	22.31
20	1	50		22.19	21.85	22.10
20	1	99		21.95	21.59	21.87
20	50	0		21.72	21.35	21.64
20	50	25		21.50	21.14	21.42
20	50	50		21.24	20.92	21.14
20	100	0		20.96	20.64	20.89
20	1	0	16-QAM	22.13	21.84	22.02
20	1	50		21.90	21.54	21.75
20	1	99		21.65	21.30	21.54
20	50	0		21.40	21.06	21.32
20	50	25		21.19	20.77	21.07
20	50	50		20.94	20.53	20.77
20	100	0		20.66	20.24	20.52



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	22.99	22.67	22.58
1.4	1	2		22.70	22.47	22.32
1.4	1	5		22.40	22.25	22.06
1.4	3	0		22.11	21.96	21.83
1.4	3	1		21.87	21.73	21.54
1.4	3	2		21.63	21.43	21.26
1.4	6	0		21.42	21.15	20.96
1.4	1	0	16-QAM	22.71	22.38	22.30
1.4	1	2		22.48	22.12	22.04
1.4	1	5		22.20	21.89	21.76
1.4	3	0		21.98	21.59	21.50
1.4	3	1		21.73	21.33	21.29
1.4	3	2		21.44	21.12	21.05
1.4	6	0		21.18	20.91	20.76
3	1	0	QPSK	22.95	22.76	22.85
3	1	7		22.75	22.53	22.60
3	1	14		22.54	22.32	22.35
3	8	0		22.28	22.07	22.10
3	8	4		22.04	21.84	21.84
3	8	7		21.76	21.60	21.61
3	15	0		21.50	21.37	21.38
3	1	0	16-QAM	22.72	22.47	22.62
3	1	7		22.48	22.24	22.40
3	1	14		22.24	21.98	22.17
3	8	0		21.98	21.76	21.96
3	8	4		21.75	21.48	21.70
3	8	7		21.46	21.21	21.41
3	15	0		21.25	20.95	21.14



LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.78	22.89	22.57
5	1	12		22.52	22.65	22.31
5	1	24		22.24	22.43	22.02
5	12	0		22.03	22.19	21.78
5	12	6		21.82	21.92	21.50
5	12	11		21.54	21.66	21.24
5	25	0		21.29	21.45	21.02
5	1	0	16-QAM	22.58	22.64	22.29
5	1	12		22.36	22.43	22.01
5	1	24		22.07	22.14	21.78
5	12	0		21.81	21.94	21.53
5	12	6		21.52	21.68	21.24
5	12	11		21.25	21.45	20.95
5	25	0		21.03	21.21	20.70
10	1	0	QPSK	22.87	23.09	22.69
10	1	24		22.58	22.83	22.49
10	1	49		22.35	22.58	22.19
10	25	0		22.13	22.34	21.94
10	25	12		21.85	22.12	21.67
10	25	24		21.61	21.85	21.42
10	50	0		21.31	21.58	21.19
10	1	0	16-QAM	22.59	22.86	22.45
10	1	24		22.38	22.63	22.21
10	1	49		22.17	22.43	22.00
10	25	0		21.93	22.14	21.77
10	25	12		21.63	21.86	21.49
10	25	24		21.35	21.63	21.25
10	50	0		21.07	21.42	21.03



LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.86	21.82	21.74
5	1	12		21.57	21.60	21.50
5	1	24		21.36	21.38	21.30
5	12	0		21.12	21.14	21.10
5	12	6		20.85	20.84	20.89
5	12	13		20.59	20.59	20.67
5	25	0		20.36	20.33	20.44
5	1	0	16-QAM	21.63	21.58	21.44
5	1	12		21.41	21.36	21.14
5	1	24		21.19	21.08	20.86
5	12	0		20.91	20.83	20.59
5	12	6		20.70	20.60	20.31
5	12	13		20.46	20.36	20.04
5	25	0		20.24	20.13	19.81
10	1	0	QPSK	21.96	21.95	21.87
10	1	24		21.75	21.70	21.63
10	1	49		21.55	21.49	21.33
10	25	0		21.33	21.19	21.04
10	25	12		21.04	20.93	20.80
10	25	25		20.79	20.69	20.50
10	50	0		20.52	20.46	20.27
10	1	0	16-QAM	21.71	21.73	21.64
10	1	24		21.44	21.46	21.38
10	1	49		21.20	21.24	21.17
10	25	0		20.90	20.99	20.94
10	25	12		20.64	20.74	20.72
10	25	25		20.44	20.48	20.50
10	50	0		20.19	20.22	20.25



LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.87	21.89	21.58
15	1	37		21.65	21.66	21.34
15	1	74		21.45	21.44	21.07
15	36	0		21.22	21.21	20.85
15	36	19		20.95	20.95	20.57
15	36	39		20.71	20.70	20.32
15	75	0		20.41	20.47	20.09
15	1	0	16-QAM	21.62	21.65	21.33
15	1	38		21.33	21.37	21.11
15	1	75		21.09	21.13	20.85
15	36	0		20.82	20.84	20.56
15	36	19		20.60	20.55	20.30
15	36	39		20.35	20.33	20.09
15	75	0		20.11	20.09	19.80
20	1	0	QPSK	22.09	22.36	22.16
20	1	50		21.82	22.08	21.95
20	1	99		21.56	21.83	21.70
20	50	0		21.27	21.58	21.46
20	50	25		21.04	21.28	21.21
20	50	50		20.77	21.07	20.92
20	100	0		20.56	20.87	20.64
20	1	0	16-QAM	21.84	22.11	21.89
20	1	50		21.59	21.91	21.63
20	1	99		21.36	21.65	21.40
20	50	0		21.06	21.38	21.18
20	50	25		20.85	21.09	20.96
20	50	50		20.59	20.83	20.76
20	100	0		20.39	20.61	20.49



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	22.92	22.86	22.79
1.4	1	2		22.63	22.58	22.52
1.4	1	5		22.43	22.33	22.29
1.4	3	0		22.19	22.09	22.03
1.4	3	1		21.91	21.82	21.80
1.4	3	2		21.63	21.59	21.56
1.4	6	0		21.41	21.32	21.27
1.4	1	0	16-QAM	22.71	22.58	22.51
1.4	1	2		22.43	22.33	22.30
1.4	1	5		22.17	22.11	22.08
1.4	3	0		21.97	21.89	21.85
1.4	3	1		21.68	21.63	21.61
1.4	3	2		21.40	21.36	21.39
1.4	6	0		21.17	21.10	21.18
3	1	0	QPSK	22.91	22.85	22.78
3	1	7		22.70	22.64	22.50
3	1	14		22.44	22.35	22.28
3	8	0		22.19	22.10	22.05
3	8	4		21.93	21.86	21.82
3	8	7		21.69	21.62	21.52
3	15	0		21.45	21.41	21.27
3	1	0	16-QAM	22.63	22.58	22.54
3	1	7		22.36	22.36	22.34
3	1	14		22.14	22.12	22.09
3	8	0		21.93	21.91	21.81
3	8	4		21.68	21.61	21.58
3	8	7		21.39	21.37	21.31
3	15	0		21.17	21.11	21.09



LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.89	22.68	22.79
5	1	12		22.65	22.45	22.55
5	1	24		22.38	22.17	22.31
5	12	0		22.14	21.94	22.08
5	12	6		21.87	21.73	21.83
5	12	11		21.62	21.50	21.57
5	25	0		21.34	21.24	21.34
5	1	0		16-QAM	22.67	22.41
5	1	12	22.39		22.11	22.32
5	1	24	22.15		21.88	22.10
5	12	0	21.86		21.61	21.85
5	12	6	21.64		21.37	21.60
5	12	11	21.36		21.07	21.40
5	25	0	21.14		20.83	21.14
10	1	0	QPSK		23.03	23.12
10	1	24		22.74	22.88	22.88
10	1	49		22.52	22.63	22.58
10	25	0		22.27	22.42	22.35
10	25	12		22.04	22.12	22.07
10	25	24		21.77	21.90	21.86
10	50	0		21.48	21.62	21.63
10	1	0		16-QAM	22.75	22.83
10	1	24	22.46		22.61	22.63
10	1	49	22.22		22.35	22.40
10	25	0	22.02		22.14	22.15
10	25	12	21.75		21.87	21.94
10	25	24	21.46		21.66	21.72
10	50	0	21.23		21.43	21.51



LTE BAND 13

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.65	22.58	22.56
5	1	12		22.43	22.34	22.28
5	1	24		22.14	22.13	22.04
5	12	0		21.85	21.90	21.82
5	12	6		21.59	21.66	21.59
5	12	11		21.32	21.44	21.31
5	25	0		21.11	21.24	21.06
5	1	0	16-QAM	22.41	22.33	22.31
5	1	12		22.14	22.09	22.07
5	1	24		21.94	21.80	21.83
5	12	0		21.67	21.58	21.56
5	12	6		21.44	21.31	21.29
5	12	11		21.19	21.04	21.03
5	25	0		20.97	20.77	20.82
10	1	0	QPSK	N/A	22.79	N/A
10	1	24		N/A	22.52	N/A
10	1	49		N/A	22.25	N/A
10	25	0		N/A	22.03	N/A
10	25	12		N/A	21.76	N/A
10	25	24		N/A	21.49	N/A
10	50	0		N/A	21.22	N/A
10	1	0	16-QAM	N/A	22.53	N/A
10	1	24		N/A	22.24	N/A
10	1	49		N/A	21.96	N/A
10	25	0		N/A	21.74	N/A
10	25	12		N/A	21.46	N/A
10	25	24		N/A	21.17	N/A
10	50	0		N/A	20.88	N/A



LTE BAND 17

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.95	21.67	21.86
5	1	12		21.71	21.45	21.56
5	1	24		21.48	21.17	21.31
5	12	0		21.26	20.87	21.10
5	12	6		20.98	20.64	20.83
5	12	11		20.77	20.40	20.58
5	25	0		20.51	20.11	20.31
5	1	0	16-QAM	21.74	21.44	21.61
5	1	12		21.44	21.16	21.37
5	1	24		21.21	20.91	21.14
5	12	0		20.94	20.69	20.87
5	12	6		20.65	20.44	20.62
5	12	11		20.40	20.16	20.38
5	25	0		20.18	19.90	20.12
10	1	0	QPSK	22.04	21.89	21.78
10	1	24		21.79	21.65	21.54
10	1	49		21.56	21.35	21.25
10	25	0		21.29	21.14	21.04
10	25	12		21.06	20.87	20.75
10	25	24		20.83	20.65	20.45
10	50	0		20.59	20.42	20.20
10	1	0	16-QAM	21.74	21.60	21.55
10	1	24		21.50	21.37	21.30
10	1	49		21.28	21.13	21.08
10	25	0		20.99	20.86	20.82
10	25	12		20.71	20.58	20.60
10	25	24		20.46	20.34	20.38
10	50	0		20.24	20.09	20.13



LTE BAND 26 Part22

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.90	22.86	22.81
1.4	1	2		22.70	22.63	22.58
1.4	1	5		22.42	22.37	22.30
1.4	3	0		22.17	22.15	22.03
1.4	3	1		21.90	21.95	21.73
1.4	3	2		21.69	21.74	21.47
1.4	6	0		21.40	21.53	21.27
1.4	1	0		16-QAM	22.68	22.59
1.4	1	2	22.41		22.33	22.38
1.4	1	5	22.13		22.03	22.18
1.4	3	0	21.90		21.79	21.92
1.4	3	1	21.70		21.52	21.67
1.4	3	2	21.43		21.22	21.37
1.4	6	0	21.17		20.95	21.10
3	1	0	QPSK		22.76	22.81
3	1	7		22.55	22.54	22.62
3	1	14		22.27	22.34	22.40
3	8	0		22.05	22.12	22.15
3	8	4		21.79	21.87	21.91
3	8	7		21.54	21.64	21.71
3	15	0		21.26	21.38	21.42
3	1	0		16-QAM	22.56	22.58
3	1	7	22.33		22.38	22.36
3	1	14	22.07		22.15	22.14
3	8	0	21.84		21.92	21.89
3	8	4	21.61		21.65	21.68
3	8	7	21.40		21.37	21.45
3	15	0	21.16		21.14	21.22



LTE BAND 26 Part22

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.59	22.53	22.68
5	1	12		22.36	22.30	22.44
5	1	24		22.14	22.04	22.24
5	12	0		21.89	21.84	21.98
5	12	6		21.64	21.56	21.74
5	12	11		21.35	21.33	21.53
5	25	0		21.06	21.13	21.30
5	1	0		16-QAM	22.38	22.28
5	1	12	22.12		22.00	22.13
5	1	24	21.87		21.70	21.89
5	12	0	21.60		21.41	21.63
5	12	6	21.31		21.18	21.39
5	12	11	21.06		20.96	21.18
5	25	0	20.77		20.71	20.98
10	1	0	QPSK		22.78	22.69
10	1	24		22.57	22.45	22.50
10	1	49		22.29	22.19	22.28
10	25	0		22.07	21.95	22.00
10	25	12		21.85	21.71	21.79
10	25	24		21.55	21.45	21.58
10	50	0		21.34	21.15	21.37
10	1	0		16-QAM	22.52	22.42
10	1	24	22.24		22.21	22.20
10	1	49	21.99		21.94	21.96
10	25	0	21.74		21.67	21.75
10	25	12	21.51		21.44	21.51
10	25	24	21.29		21.17	21.29
10	50	0	21.08		20.90	21.02



LTE BAND 26 Part22

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.98	23.02	22.97
15	1	37		22.70	22.78	22.73
15	1	74		22.48	22.48	22.49
15	36	0		22.26	22.18	22.26
15	36	18		22.04	21.93	22.04
15	36	39		21.79	21.66	21.81
15	75	0		21.54	21.39	21.53
15	1	0		22.77	22.79	22.67
15	1	38	16-QAM	22.55	22.52	22.38
15	1	75		22.34	22.25	22.09
15	36	0		22.05	21.97	21.87
15	36	18		21.84	21.73	21.66
15	36	39		21.62	21.51	21.39
15	75	0		21.38	21.30	21.11



LTE BAND 26 Part90

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.84	22.75	22.90
1.4	1	2		22.64	22.51	22.64
1.4	1	5		22.35	22.26	22.42
1.4	3	0		22.13	22.04	22.18
1.4	3	1		21.93	21.81	21.93
1.4	3	2		21.64	21.51	21.69
1.4	6	0		21.42	21.23	21.48
1.4	1	0		16-QAM	22.62	22.51
1.4	1	2	22.32		22.21	22.38
1.4	1	5	22.11		22.01	22.14
1.4	3	0	21.82		21.76	21.92
1.4	3	1	21.54		21.55	21.68
1.4	3	2	21.29		21.35	21.47
1.4	6	0	21.06		21.05	21.26
3	1	0	QPSK		22.69	22.78
3	1	7		22.40	22.54	22.50
3	1	14		22.17	22.30	22.22
3	8	0		21.94	22.09	21.95
3	8	4		21.72	21.84	21.67
3	8	7		21.44	21.63	21.46
3	15	0		21.17	21.34	21.23
3	1	0		16-QAM	22.46	22.50
3	1	7	22.17		22.28	22.16
3	1	14	21.94		22.01	21.94
3	8	0	21.67		21.78	21.72
3	8	4	21.41		21.49	21.50
3	8	7	21.15		21.24	21.26
3	15	0	20.89		20.97	21.04



LTE BAND 26 Part90

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.96	22.86	22.87
5	1	12		22.70	22.59	22.66
5	1	24		22.49	22.30	22.45
5	12	0		22.22	22.08	22.22
5	12	6		21.96	21.86	22.02
5	12	11		21.68	21.57	21.73
5	25	0		21.41	21.35	21.44
5	1	0		16-QAM	22.72	22.64
5	1	12	22.50		22.44	22.43
5	1	24	22.27		22.18	22.16
5	12	0	21.97		21.93	21.87
5	12	6	21.75		21.72	21.60
5	12	11	21.51		21.48	21.40
5	25	0	21.26		21.19	21.13
10	1	0	QPSK		N/A	23.12
10	1	24		N/A	22.89	N/A
10	1	49		N/A	22.66	N/A
10	25	0		N/A	22.43	N/A
10	25	12		N/A	22.19	N/A
10	25	24		N/A	21.98	N/A
10	50	0		N/A	21.76	N/A
10	1	0		16-QAM	N/A	22.87
10	1	24	N/A		22.59	N/A
10	1	49	N/A		22.30	N/A
10	25	0	N/A		22.09	N/A
10	25	12	N/A		21.86	N/A
10	25	24	N/A		21.61	N/A
10	50	0	N/A		21.34	N/A



LTE BAND 41

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.09	23.28	23.17
5	1	12		22.84	23.00	22.90
5	1	24		22.56	22.80	22.66
5	12	0		22.33	22.52	22.42
5	12	6		22.08	22.28	22.17
5	12	13		21.82	22.05	21.96
5	25	0		21.59	21.84	21.73
5	1	0		16-QAM	22.87	22.98
5	1	12	22.59		22.73	22.65
5	1	24	22.35		22.47	22.39
5	12	0	22.14		22.26	22.18
5	12	6	21.85		22.06	21.89
5	12	13	21.57		21.84	21.65
5	25	0	21.37		21.59	21.40
10	1	0	QPSK		23.21	23.02
10	1	24		22.95	22.73	22.98
10	1	49		22.74	22.50	22.72
10	25	0		22.51	22.26	22.48
10	25	12		22.26	22.01	22.25
10	25	25		22.06	21.74	21.96
10	50	0		21.82	21.47	21.70
10	1	0		16-QAM	22.98	22.73
10	1	24	22.74		22.52	22.86
10	1	49	22.49		22.22	22.58
10	25	0	22.19		21.92	22.33
10	25	12	21.96		21.71	22.11
10	25	25	21.67		21.41	21.86
10	50	0	21.39		21.17	21.62



LTE BAND 41

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.38	23.39	23.41
15	1	37		23.13	23.11	23.19
15	1	74		22.86	22.90	22.93
15	36	0		22.65	22.67	22.66
15	36	19		22.41	22.42	22.44
15	36	39		22.14	22.14	22.23
15	75	0		21.90	21.88	21.97
15	1	0	16-QAM	23.13	23.10	23.20
15	1	38		22.89	22.81	22.96
15	1	75		22.60	22.56	22.68
15	36	0		22.35	22.36	22.46
15	36	19		22.10	22.06	22.18
15	36	39		21.86	21.83	21.93
15	75	0		21.63	21.63	21.65
20	1	0	QPSK	23.54	23.47	23.60
20	1	50		23.26	23.25	23.31
20	1	99		23.03	22.98	23.03
20	50	0		22.79	22.70	22.83
20	50	25		22.52	22.49	22.63
20	50	50		22.31	22.22	22.41
20	100	0		22.03	21.99	22.15
20	1	0	16-QAM	23.27	23.22	23.30
20	1	50		23.07	23.01	23.10
20	1	99		22.79	22.79	22.83
20	50	0		22.53	22.53	22.60
20	50	25		22.25	22.30	22.36
20	50	50		22.00	22.08	22.08
20	100	0		21.78	21.86	21.80

11. EUT and Test Setup Photo

11.1 EUT Photo

Front side



Back side



Top side

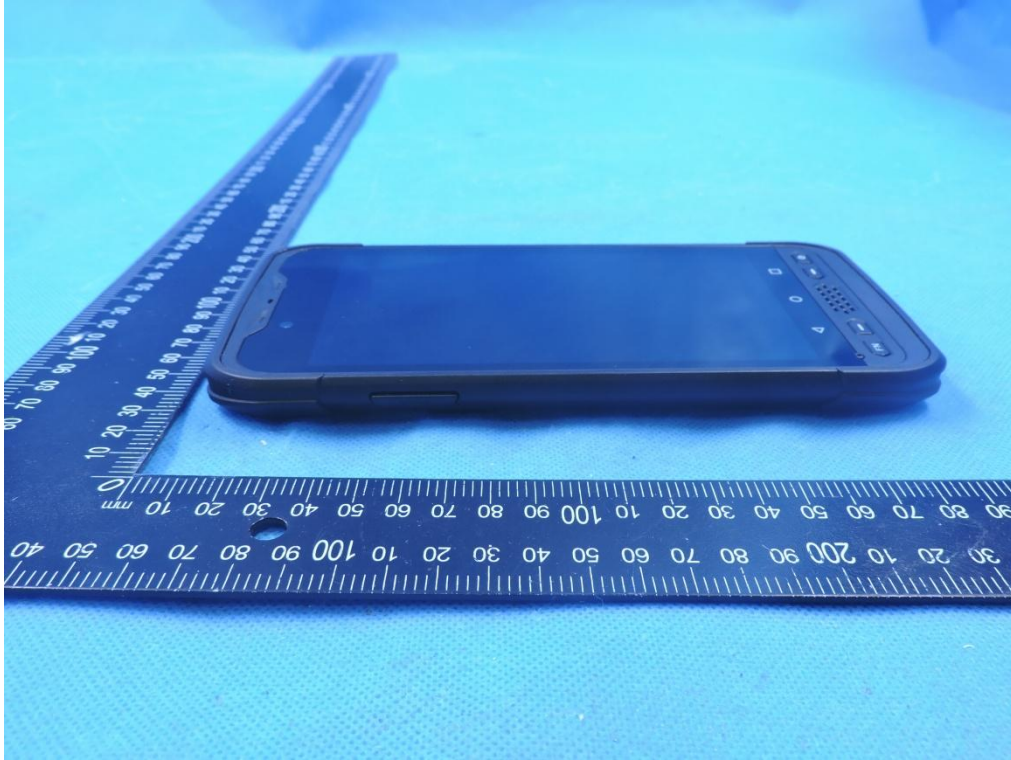


Bottom side

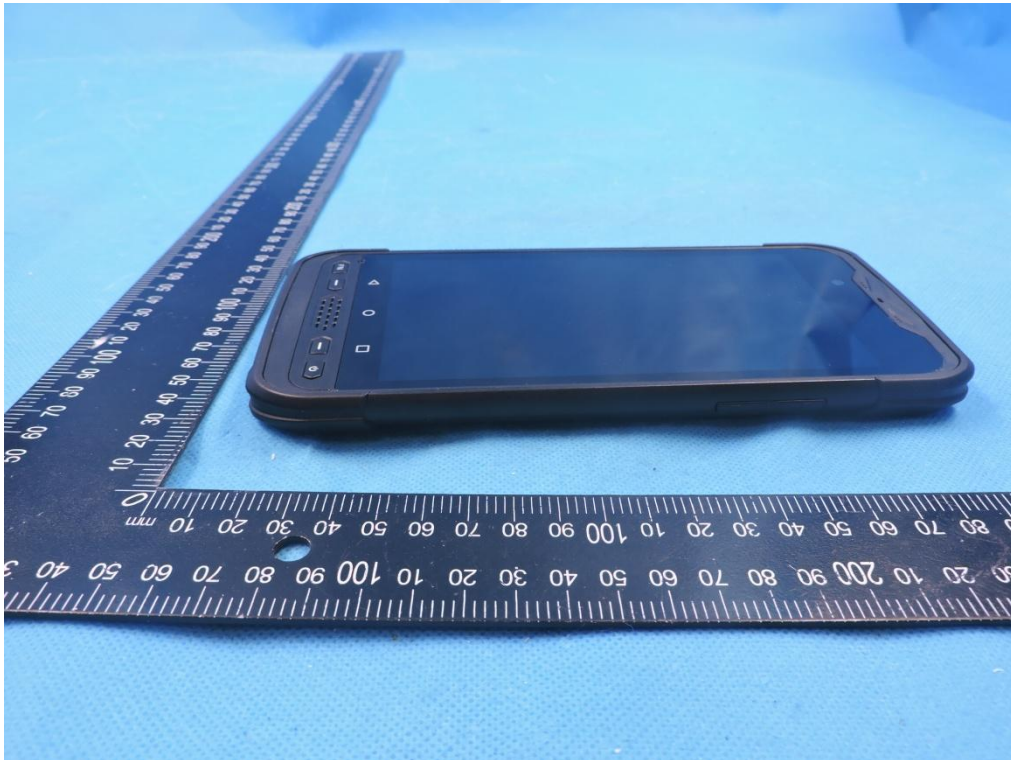




Left side

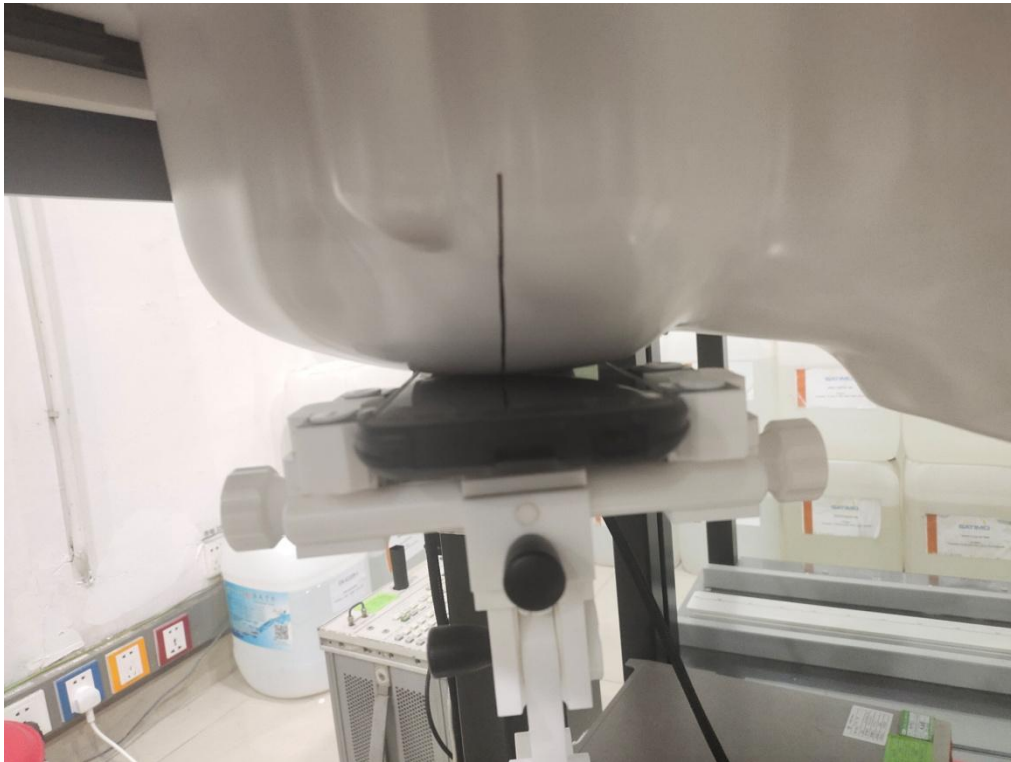


Right side



11.2 Setup Photo

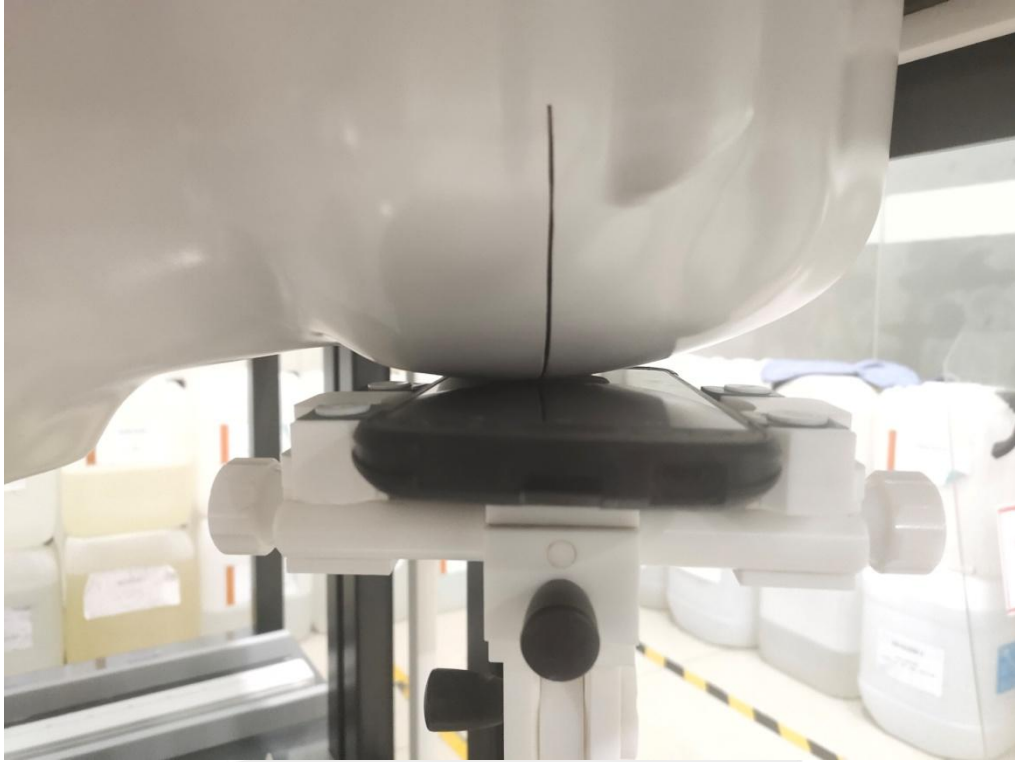
Right Touch



Right Tilt



Left Touch



Left Tilt



Body Front side(separation distance is 10mm)



Body Back side(separation distance is 10mm)



Body Left side(separation distance is 10mm)



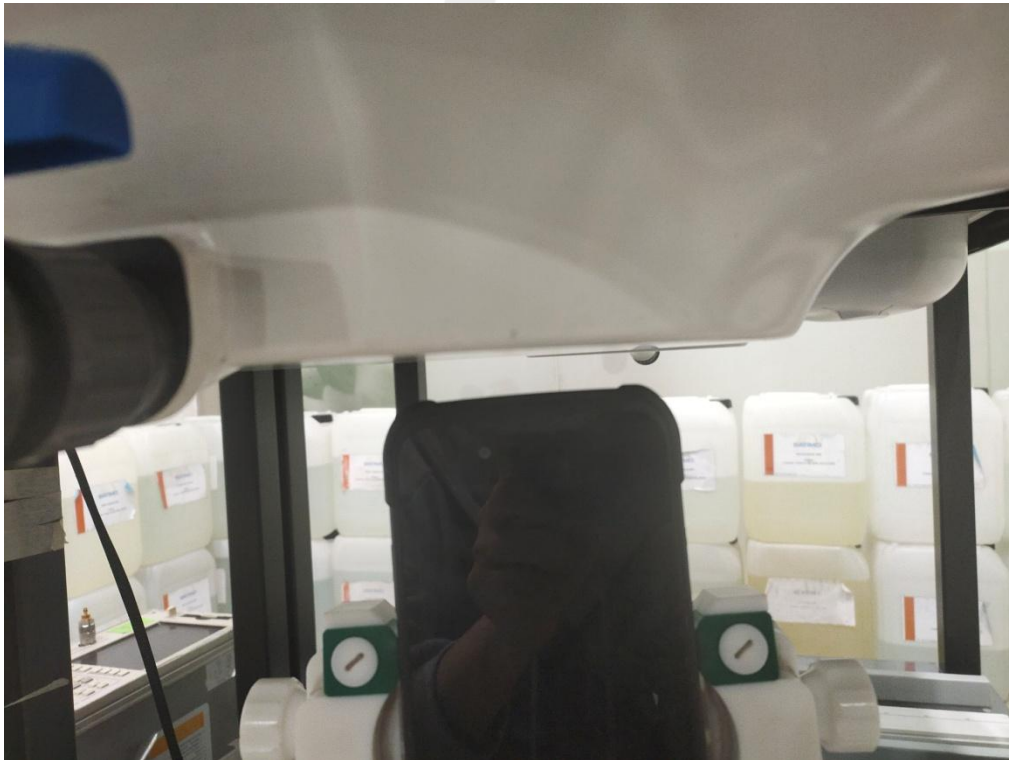
Body Right side(separation distance is 10mm)



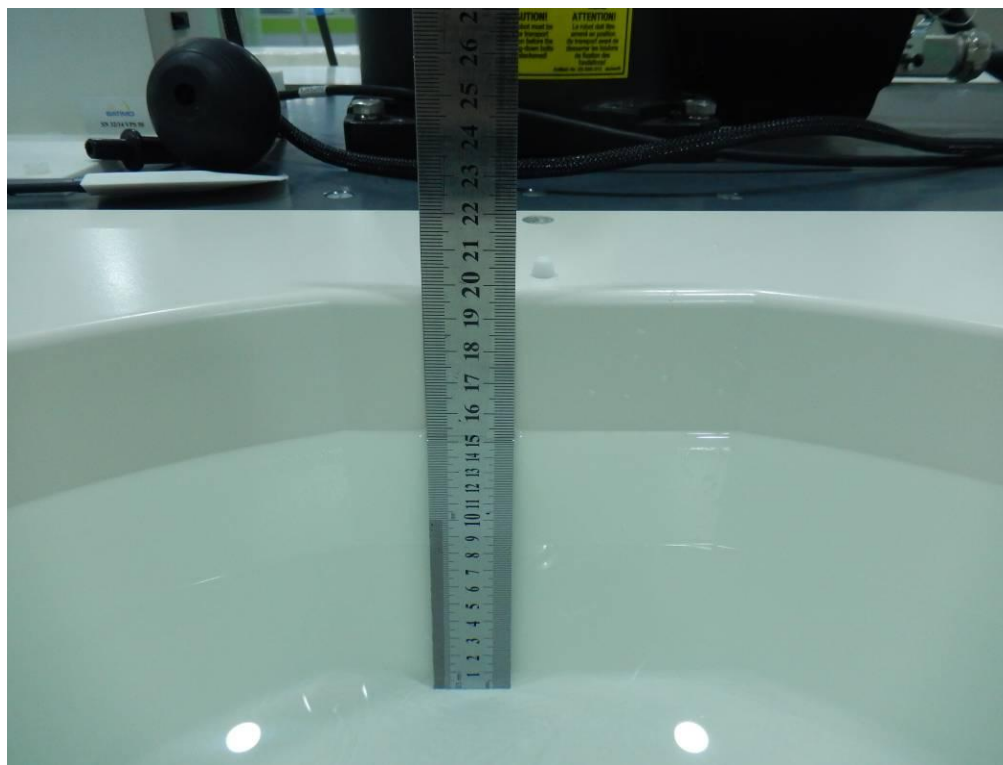
Body Bottom side(separation distance is 10mm)



Body Top side(separation distance is 10mm)



Liquid depth (15 cm)





12. SAR Result Summary

12.1 Head SAR

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
GSM 850	GPRS Data-4 Slot	Right Cheek	190	0.376	-2.94	31.80	31.50	0.403	1
		Right Tilt	190	0.252	-0.81	31.80	31.50	0.270	/
		Left Cheek	190	0.351	-0.03	31.80	31.50	0.376	/
		Left Tilt	190	0.224	0.62	31.80	31.50	0.240	/
GSM1900	GPRS Data-4 Slot	Right Cheek	512	0.138	3.34	28.50	28.09	0.152	3
		Right Tilt	512	0.054	3.30	28.50	28.09	0.059	/
		Left Cheek	512	0.126	-1.32	28.50	28.09	0.138	/
		Left Tilt	512	0.052	-0.42	28.50	28.09	0.057	/
WCDMA II	RMC	Right Cheek	9400	0.234	2.15	23.00	22.97	0.236	5
		Right Tilt	9400	0.138	-0.26	23.00	22.97	0.139	/
		Left Cheek	9400	0.231	0.03	23.00	22.97	0.233	/
		Left Tilt	9400	0.130	3.12	23.00	22.97	0.131	/
WCDMA IV	RMC	Right Cheek	1413	0.190	-1.51	24.00	23.54	0.211	7
		Right Tilt	1413	0.084	-0.55	24.00	23.54	0.093	/
		Left Cheek	1413	0.184	1.92	24.00	23.54	0.205	/
		Left Tilt	1413	0.082	-0.21	24.00	23.54	0.091	/
WCDMA V	RMC	Right Cheek	4233	0.386	-2.24	23.00	22.99	0.387	9
		Right Tilt	4233	0.225	1.60	23.00	22.99	0.226	/
		Left Cheek	4233	0.374	3.83	23.00	22.99	0.375	/
		Left Tilt	4233	0.210	-1.11	23.00	22.99	0.210	/



Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Right Cheek	19100	0.179	-2.20	23.00	22.82	0.187	11
			50	0	Right Cheek	19100	0.174	-2.77	22.20	22.07	0.179	/
			1	0	Right Tilt	19100	0.092	1.03	23.00	22.82	0.096	/
			50	0	Right Tilt	19100	0.090	-1.32	22.20	22.07	0.093	/
			1	0	Left Cheek	19100	0.165	-2.41	23.00	22.82	0.172	/
			50	0	Left Cheek	19100	0.162	-1.57	22.20	22.07	0.167	/
			1	0	Left Tilt	19100	0.081	-3.72	23.00	22.82	0.084	/
			50	0	Left Tilt	19100	0.075	2.36	22.20	22.07	0.077	/
LTE Band 4	20M	QPSK	1	0	Right Cheek	20050	0.134	1.24	22.50	22.41	0.137	13
			50	0	Right Cheek	20050	0.114	-2.84	22.00	21.72	0.122	/
			1	0	Right Tilt	20050	0.074	-1.41	22.50	22.41	0.076	/
			50	0	Right Tilt	20050	0.058	-3.57	22.50	21.72	0.069	/
			1	0	Left Cheek	20050	0.122	2.39	22.50	22.41	0.125	/
			50	0	Left Cheek	20050	0.097	3.84	22.50	21.72	0.116	/
			1	0	Left Tilt	20050	0.064	1.67	22.50	22.41	0.065	/
			50	0	Left Tilt	20050	0.048	3.76	22.50	21.72	0.057	/
LTE Band 5	10M	QPSK	1	0	Right Cheek	20525	0.117	2.69	23.50	23.09	0.129	15
			25	0	Right Cheek	20525	0.092	-2.63	23.00	22.34	0.107	/
			1	0	Right Tilt	20525	0.054	1.45	23.50	23.09	0.059	/
			25	0	Right Tilt	20525	0.040	3.50	23.00	22.34	0.047	/
			1	0	Left Cheek	20525	0.114	-3.52	23.50	23.09	0.125	/
			25	0	Left Cheek	20525	0.088	-0.72	23.00	22.34	0.102	/
			1	0	Left Tilt	20525	0.064	-2.89	23.50	23.09	0.070	/
			25	0	Left Tilt	20525	0.042	-0.74	23.00	22.34	0.049	/
LTE Band 7	20M	QPSK	1	0	Right Cheek	21100	0.116	2.59	22.50	22.35	0.120	17
			50	0	Right Cheek	21100	0.105	-0.77	21.80	21.58	0.110	/
			1	0	Right Tilt	21100	0.053	3.54	22.50	22.35	0.055	/
			50	0	Right Tilt	21100	0.042	0.07	21.80	21.58	0.044	/
			1	0	Left Cheek	21100	0.112	1.39	22.50	22.35	0.116	/
			50	0	Left Cheek	21100	0.097	-1.18	21.80	21.58	0.102	/
			1	0	Left Tilt	21100	0.050	-2.20	22.50	22.35	0.052	/
			50	0	Left Tilt	21100	0.041	0.57	21.80	21.58	0.043	/
LTE Band 12	10M	QPSK	1	0	Right Cheek	23130	0.133	-2.20	23.50	23.13	0.145	19
			25	0	Right Cheek	23095	0.124	-2.77	22.50	22.42	0.126	/
			1	0	Right Tilt	23130	0.077	1.03	23.50	23.13	0.084	/
			25	0	Right Tilt	23095	0.075	-1.32	22.50	22.42	0.076	/
			1	0	Left Cheek	23130	0.125	-2.41	23.50	23.13	0.136	/
			25	0	Left Cheek	23095	0.120	-1.57	22.50	22.42	0.122	/
			1	0	Left Tilt	23130	0.071	-3.72	23.50	23.13	0.077	/
			25	0	Left Tilt	23095	0.066	2.36	22.50	22.42	0.067	/



LTE Band 13	10M	QPSK	1	0	Right Cheek	23230	0.139	2.59	23.00	22.79	0.146	21
			25	0	Right Cheek	23230	0.131	1.29	22.20	22.03	0.136	/
			1	0	Right Tilt	23230	0.082	3.42	23.00	22.79	0.086	/
			25	0	Right Tilt	23230	0.075	2.71	22.20	22.03	0.078	/
			1	0	Left Cheek	23230	0.124	2.02	23.00	22.79	0.130	/
			25	0	Left Cheek	23230	0.120	1.30	22.20	22.03	0.125	/
			1	0	Left Tilt	23230	0.070	-3.69	23.00	22.79	0.073	/
			25	0	Left Tilt	23230	0.059	3.33	22.20	22.03	0.061	/
LTE Band 17	10M	QPSK	1	0	Right Cheek	23780	0.107	-0.57	22.20	22.04	0.111	23
			25	0	Right Cheek	23780	0.095	0.90	21.50	21.29	0.100	/
			1	0	Right Tilt	23780	0.046	0.67	22.20	22.04	0.048	/
			25	0	Right Tilt	23780	0.042	1.86	21.50	21.29	0.044	/
			1	0	Left Cheek	23780	0.102	2.37	22.20	22.04	0.106	/
			25	0	Left Cheek	23780	0.094	2.08	21.50	21.29	0.099	/
			1	0	Left Tilt	23780	0.044	-2.50	22.20	22.04	0.046	/
			25	0	Left Tilt	23780	0.038	-1.81	21.50	21.29	0.040	/
LTE Band 26	20M	QPSK	1	0	Right Cheek	26865	0.069	2.48	23.50	23.12	0.075	25
			50	0	Right Cheek	26865	0.068	-3.44	22.50	22.43	0.069	/
			1	0	Right Tilt	26865	0.037	-1.67	23.50	23.12	0.040	/
			50	0	Right Tilt	26865	0.035	-2.63	22.50	22.43	0.036	/
			1	0	Left Cheek	26865	0.062	0.86	23.50	23.12	0.068	/
			50	0	Left Cheek	26865	0.055	-2.71	22.50	22.43	0.056	/
			1	0	Left Tilt	26865	0.030	-0.84	23.50	23.12	0.033	/
			50	0	Left Tilt	26865	0.024	0.14	22.50	22.43	0.024	/
LTE Band 41	20M	QPSK	1	0	Right Cheek	41490	0.063	-0.60	24.00	23.60	0.069	27
			50	0	Right Cheek	41490	0.061	-0.86	23.00	22.83	0.063	/
			1	0	Right Tilt	41490	0.037	0.25	24.00	23.60	0.041	/
			50	0	Right Tilt	41490	0.035	1.06	23.00	22.83	0.036	/
			1	0	Left Cheek	41490	0.058	0.62	24.00	23.60	0.064	/
			50	0	Left Cheek	41490	0.055	-2.19	23.00	22.83	0.057	/
			1	0	Left Tilt	41490	0.040	-3.17	24.00	23.60	0.044	/
			50	0	Left Tilt	41490	0.031	1.59	23.00	22.83	0.032	/



Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
2.4G WLAN	802.11b	Right Cheek	1	0.217	1.59	13.50	13.29	0.228	29
		Right Tilt	1	0.164	1.57	13.50	13.29	0.172	/
		Left Cheek	1	0.205	-2.93	13.50	13.29	0.215	/
		Left Tilt	1	0.154	-3.86	13.50	13.29	0.162	/
5.2G WLAN	802.11a	Right Cheek	36	0.375	3.44	8.50	8.47	0.378	31
		Right Tilt	36	0.246	1.38	8.50	8.47	0.248	/
		Left Cheek	36	0.345	2.40	8.50	8.47	0.347	/
		Left Tilt	36	0.211	-3.58	8.50	8.47	0.212	/
5.8G WLAN	802.11a	Right Cheek	157	0.177	3.00	9.50	9.22	0.189	33
		Right Tilt	157	0.127	2.19	9.50	9.22	0.135	/
		Left Cheek	157	0.166	-2.20	9.50	9.22	0.177	/
		Left Tilt	157	0.105	-2.05	9.50	9.22	0.112	/

Note:

- Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - 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.
 - For WWAN: Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
- Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was **0.181** W/Kg for Head)
- Per KDB865664 D01, Repeated measurement is not required when the original highest measured SAR is <0.80 W/kg