S T S L A B

FCC SAR TEST REPORT

Report No.: STS2001236H02

Issued for

Winmate Inc.

9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C

Product Name:	Rugged Tablet PC
Brand Name:	Winmate
Model Name:	M101P-LA
Series Model:	RT10W-L10,M101PXXXXXXXXXX (Where X can be A-Z,a-z ,0-9,"-", Blank or Slash)
FCC ID:	PX9M101PH002
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Body: 1.345 W/kg

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Test Report Certification

Applicant's name ..... : Winmate Inc.

Address ..... : 9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C

Manufacture's Name ..... : Winmate Inc.

Address ..... : 9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C

Product description

Product name ..... : Rugged Tablet PC

Brand name ..... : Winmate

Model name ..... : M101P-LA

Series Model..... : RT10W-L10,M101PXXXXXXXXXX
(Where X can be A-Z,a-z ,0-9,"-", Blank or Slash)

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..... : 10 Mar. 2020~09 Apr. 2020

Date of Issue..... : 12 Apr. 2020

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

Testing Engineer **:** Aaron Bu

(Aaron Bu)

Technical Manager **:** Jason Lu

(Jason Lu)

Authorized Signatory **:** Vita Li

(Vita Li)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 Apr. 2020	STS2001236H02	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 Tablet PC
Brand Name	Winmate
Model Name	M101P-LA
Series Model	RT10W-L10,M101PXXXXXXXXXX (Where X can be A-Z,a-z ,0-9,”-“, Blank or Slash)
Model Difference	Only for marketing purpose
Battery	Battery 1: Model: BM101 Rated Voltage: 7.7V Charge Limit: 8.8V Capacity: 5900mAh Battery 2: Model: BL101 Rated Voltage: 7.4V Charge Limit: 8.4V Capacity: 10280mAh
Device Category	Portable
Product stage	Production unit
RF Exposure Environment	General Population / Uncontrolled
Hardware Version	M101PH-100
Software Version	8.8.4773.0004
Frequency Range	WCDMA Band II: 1852.4~1907.6 MHz WCDMA Band IV: 1712.4~1752.6 MHz WCDMA Band V: 826.4~846.6 MHz LTE Band 2: 1850.7~1909.3 MHz LTE Band 4: 1710.7~1754.3 MHz LTE Band 5: 824.7~848.3 MHz LTE Band 7: 2502.5~2567.5 MHz LTE Band 12: 699.7~715.3 MHz LTE Band 13: 779.5~784.5 MHz LTE Band 25: 1850.7~1914.3 MHz LTE Band 26: 814.7~848.3 MHz LTE Band 30: 2305~2315 MHz LTE Band 41: 2496~2690 MHz WLAN802.11b/g/n(HT20): 2412~2462 MHz WLAN 802.11n(HT40): 2422~2452 MHz 5GHz WLAN IEEE 802.11a/n/ac (20MHz): 5180~5825 MHz 5GHz WLAN IEEE 802.11n/ac (40MHz): 5190~5795 MHz 5GHz WLAN IEEE 802.11ac (80MHz): 5120 MHz, 5290 MHz, 5530~5610 MHz, 5775 MHz Bluetooth: 2402~2480 MHz

Max. Reported SAR(1g): (Limit:1.6W/kg)	Full Power		
	Band	Mode	Body Worn and Hotspot(W/kg)
	PCB	WCDMA Band II	1.150
	PCB	WCDMA Band IV	0.928
	PCB	WCDMA Band V	1.148
	PCB	LTE Band 4	1.345
	PCB	LTE Band 7	1.061
	PCB	LTE Band 12	1.170
	PCB	LTE Band 13	0.845
	PCB	LTE Band 25	1.040
	PCB	LTE Band 26	1.029
	PCB	LTE Band 30	0.517
	PCB	LTE Band 41	0.390
	DTS	2.4G WLAN ANT A	0.778
	DTS	2.4G WLAN ANT B	0.727
	DTS	2.4G WLAN ANT A+B	0.188
	NII	5.2G WLAN ANT A	0.672
	NII	5.2G WLAN ANT B	0.712
	NII	5.2G WLAN ANT A+B	0.590
	NII	5.3G WLAN ANT A	0.782
	NII	5.3G WLAN ANT B	0.633
	NII	5.3G WLAN ANT A+B	0.550
	NII	5.6G WLAN ANT A	0.805
	NII	5.6G WLAN ANT B	0.723
	NII	5.6G WLAN ANT A+B	0.650
	NII	5.8G WLAN ANT A	0.734
	NII	5.8G WLAN ANT B	0.587
	NII	5.8G WLAN ANT A+B	0.778
	DTS	Bluetooth	0.024
	Reduced Power level for WWAN+WLAN		
	PCB	WCDMA Band II	0.651
	PCB	WCDMA Band IV	0.702
	PCB	WCDMA Band V	0.641
	PCB	LTE Band 4	0.650
	PCB	LTE Band 7	0.549
	PCB	LTE Band 12	0.569
	PCB	LTE Band 13	0.634
	PCB	LTE Band 25	0.668
	PCB	LTE Band 26	0.646
1-g Sum SAR			1.531
FCC Equipment Class	PCS Licensed Transmitter(PCB) Digital Transmission System (DTS) Unlicensed National Information Infrastructure TX (NII)		
Operating Mode:	WCDMA: RMC, HSDPA, HSUPA Release 6 LTE: QPSK, 16QAM 802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11ac(OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM Bluetooth: 5.0+EDR (GFSK+π/4DQPSK+8DPSK) BLE		
Antenna Specification:	WCDMA, LTE: PIFA Antenna BT, WLAN: PIFA Antenna		
SIM Card	Only single card		
Hotspot Mode:	Support		
DTM Mode:	Not Support		

Note:
1. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power
2. After pre-scan two Battery, we found test result of the Battery 1 was the worse, so we chose Battery 1 to perform all tests.

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

3. 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
12	FCC KDB 616217 D04 v01r02	SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers

In addition to the above, the following information was used:
TCB workshop October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)

TCB workshop October, 2014; Page 37, LTE Considerations (LTE Band 41 Test Channels)

(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:

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

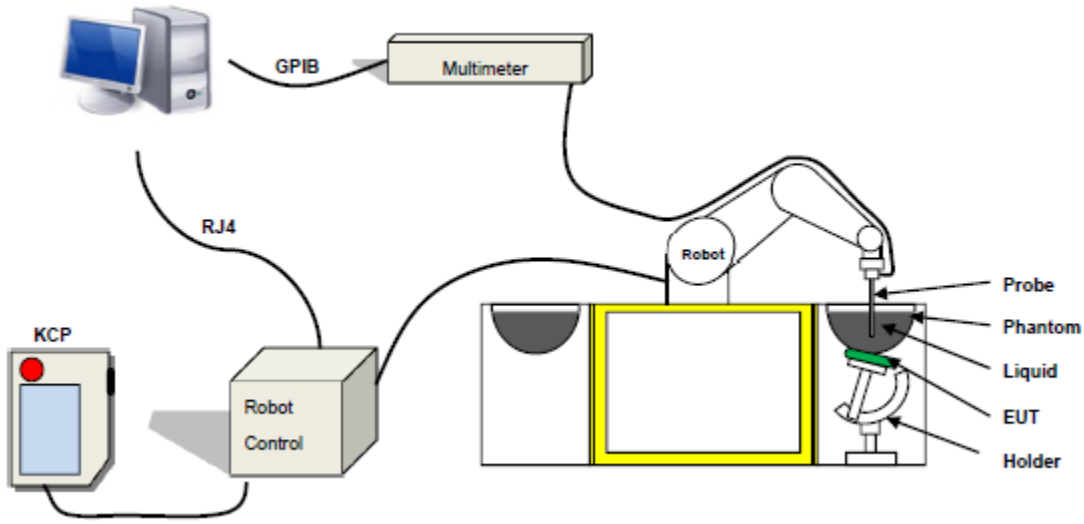
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

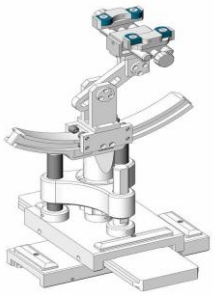
3.2.2 Phantom

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. 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

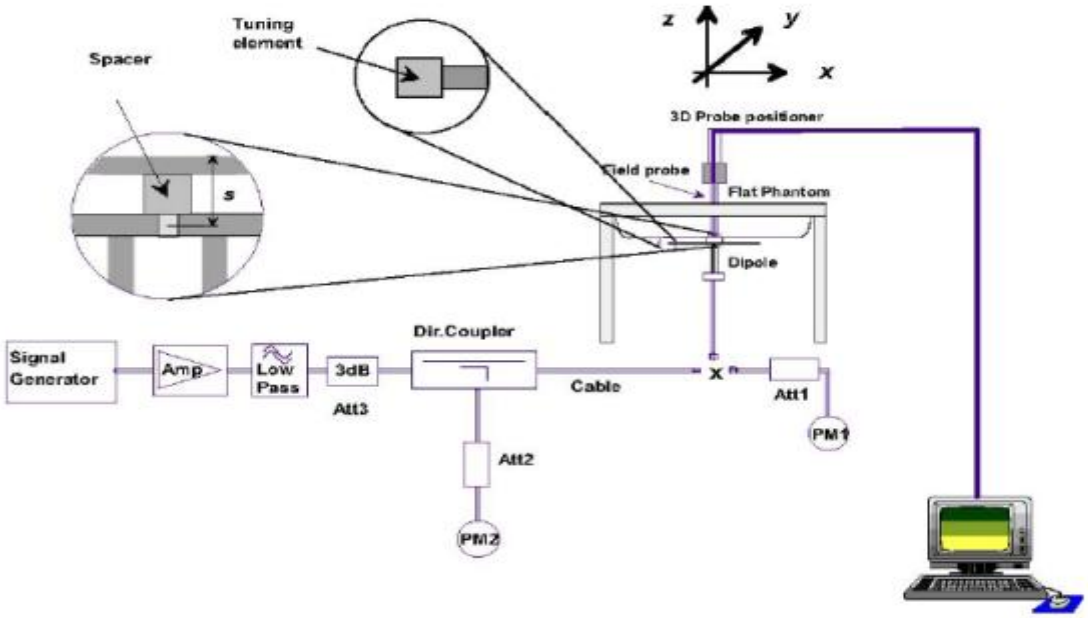
LIQUID MEASUREMENT RESULTS

Date	Ambient condition		Body Simulating Liquid		Parameters	Target	Measured	Deviation [%]	Limited [%]
	Temp. [°C]	Humidity [%]	Frequency	Temp. [°C]					
2020-04-01	21.9	54	750 MHz	21.6	Permittivity:	55.5	56.32	1.48	±5
					Conductivity:	0.96	0.98	2.08	±5
2020-04-03	22.7	59	835 MHz	22.4	Permittivity:	55.2	54.76	-0.80	±5
					Conductivity:	0.97	0.95	-2.06	±5
2020-04-07	21.9	54	1800 MHz	21.7	Permittivity:	53.3	53.69	0.73	±5
					Conductivity:	1.52	1.54	1.32	±5
2020-04-02	21.7	52	1900 MHz	21.4	Permittivity:	53.3	54.11	1.52	±5
					Conductivity:	1.52	1.55	1.97	±5
2020-03-10	23.1	52	2450 MHz	22.7	Permittivity:	52.7	52.53	-0.32	±5
					Conductivity:	1.95	1.98	1.54	±5
2020-04-09	21.9	50	2600 MHz	21.6	Permittivity:	52.5	53.08	1.10	±5
					Conductivity:	2.16	2.07	-4.17	±5
2020-03-30	23.0	51	5200 MH	22.7	Permittivity:	49.0	49.73	1.49	±5
					Conductivity	5.30	5.37	1.32	±5
2020-03-26	23.5	52	5400 MHz	23.2	Permittivity:	48.70	48.15	-1.13	±5
					Conductivity:	5.53	5.62	1.63	±5
2020-03-27	23.6	56	5600 MHz	23.3	Permittivity:	48.5	49.16	1.36	±5
					Conductivity:	5.77	5.64	-2.25	±5
2020-03-16	22.8	50	5800 MHz	22.5	Permittivity:	48.2	48.95	1.56	±5
					Conductivity:	6.00	6.14	2.33	±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 Body	100	0.812	8.12	8.49	-4.36	2020-04-01
835 Body	100	0.963	9.63	9.56	0.73	2020-04-03
1800 Body	100	3.766	37.66	38.4	-1.93	2020-04-07
1900 Body	100	4.052	40.52	39.7	2.07	2020-04-02
2450 Body	100	5.395	53.95	52.4	2.96	2020-03-10
2600 Body	100	5.594	55.94	55.3	1.16	2020-04-09
5200 Body	100	15.814	158.14	159	-0.54	2020-03-30
5400 Body	100	16.718	167.18	166.4	0.47	2020-03-26
5600 Body	100	17.726	177.26	173.8	1.99	2020-03-27
5800 Body	100	18.214	182.14	181.2	0.52	2020-03-16

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

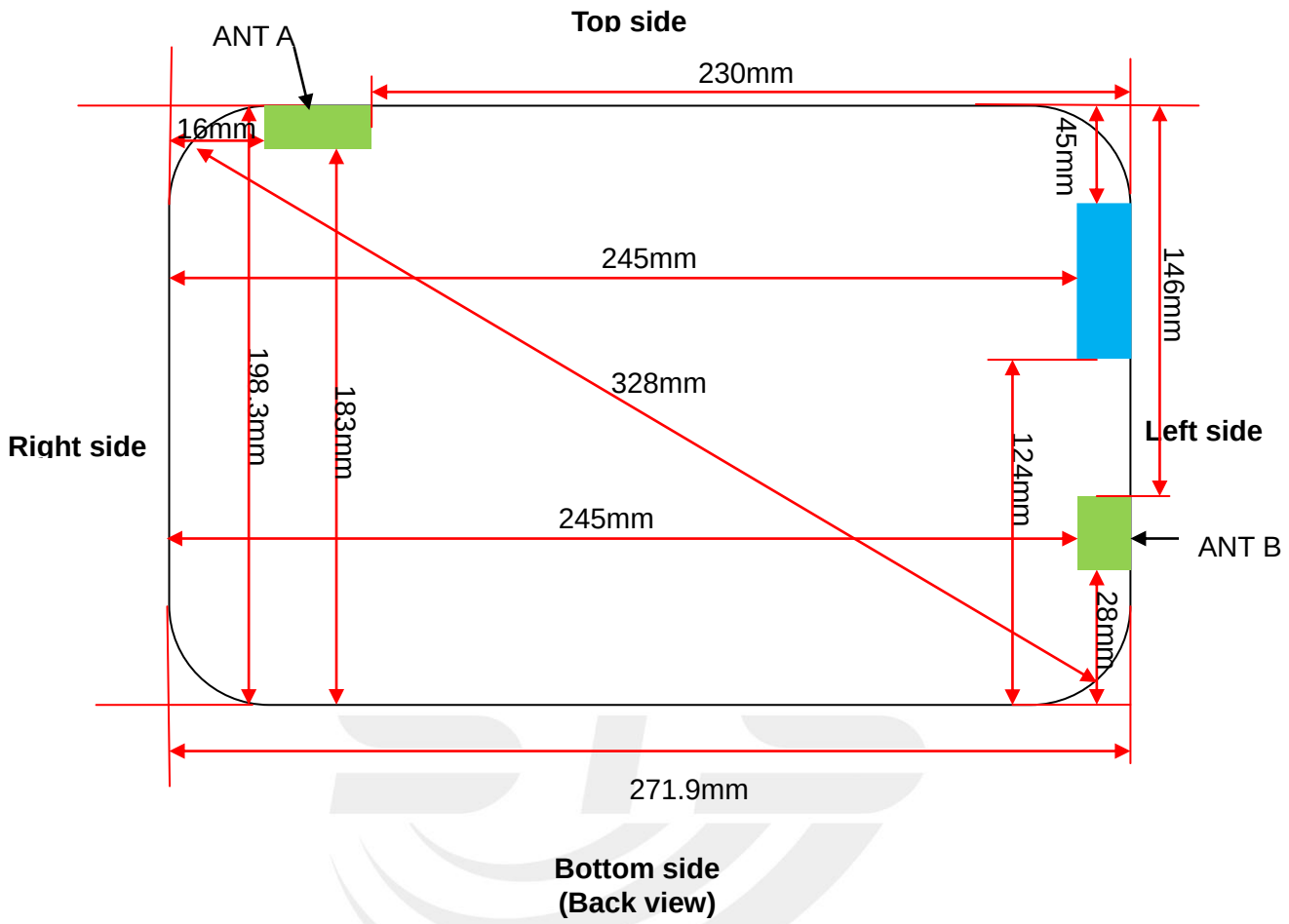
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible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

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

Band	Mode	Maxim um power		Test Position Configurations				
		dBm	mW	Back Side	Left Edge	Right Edge	Top Edge	Bottom Edge
WCDMA Band II	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			11	11	2059	98	849
	QPSK	22	158.489	Yes	Yes	No	Yes	No
WCDMA Band IV	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			11	11	2059	98	849
	QPSK	20.6	114.815	Yes	Yes	No	Yes	No
WCDMA Band V	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			16	16	1250	148	575
	QPSK	23	199.526	Yes	Yes	No	Yes	No
LTE Band 4	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			11	11	2059	98	849
	QPSK	23	199.526	Yes	Yes	No	Yes	No
LTE Band 7	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			10	10	2046	86	836
	QPSK	21	125.893	Yes	Yes	No	Yes	No
LTE Band 12	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			16	16	1083	148	513
	QPSK	23	199.526	Yes	Yes	No	Yes	No
LTE Band 13	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			16	16	1181	148	548
	QPSK	22	158.489	Yes	Yes	No	Yes	No
LTE Band 25	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			11	11	2059	98	849
	QPSK	22	158.489	Yes	Yes	No	Yes	No
LTE Band 26	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			16	16	1250	148	575
	QPSK	23	199.526	Yes	Yes	No	Yes	No
LTE Band 41	Distance to User			<5mm	<5mm	245mm	45mm	124mm
	exclusion threshold			10	10	2046	86	836
	QPSK	21	125.893	Yes	Yes	No	Yes	No

Band	Mode	Maxim um power		Test Position Configurations				
		dBm	mW	Back Side	Left Edge	Right Edge	Top Edge	Bottom Edge
WLAN 2.4 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	802.11b	18	63.096	Yes	No	Yes	Yes	No
WLAN 2.4 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			10	10	2046	1056	57
	802.11b	18	63.096	Yes	Yes	No	No	Yes
WLAN 2.4 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	802.11n	19	79.433	Yes	No	Yes	Yes	No
WLAN 2.4 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			10	10	2046	1056	57
	802.11n	19	79.433	Yes	Yes	No	No	Yes
WLAN 5.2 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			7	1866	20	7	1396
	802.11a	15	31.623	Yes	No	Yes	Yes	No
WLAN 5.2 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			7	7	2016	1026	39
	802.11a	14	25.119	Yes	Yes	No	No	No
WLAN 5.2 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			7	1866	20	7	1396
	802.11ac	15	31.623	Yes	No	Yes	Yes	No
WLAN 5.2 G ANT B	Distance to User			<5mm	<5mm	245mm	146m	28mm
	exclusion threshold			7	7	2016	1026	39
	802.11ac	15	31.623	Yes	Yes	No	No	Yes
WLAN 5.3 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1865	19	6	1395
	802.11a	13.5	22.387	Yes	No	Yes	Yes	No
WLAN 5.3 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2015	1025	39
	802.11a	13	19.953	Yes	Yes	No	No	No

WLAN 5.3 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183m
	exclusion threshold			6	1865	19	6	1395
	802.11n	16	39.811	Yes	No	Yes	Yes	No
WLAN 5.3 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2015	1025	39
	802.11n	16	39.811	Yes	Yes	No	No	Yes
WLAN 5.6 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11a	14	25.119	Yes	No	Yes	Yes	No
WLAN 5.6 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11a	14	25.119	Yes	Yes	No	No	No
WLAN 5.6 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11ac	16	39.811	Yes	No	Yes	Yes	No
WLAN 5.6 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11ac	16	39.811	Yes	Yes	No	No	Yes
WLAN 5.8 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11a	13.1	20.417	Yes	No	Yes	Yes	No
WLAN 5.8 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11a	13	19.953	Yes	Yes	No	No	No
WLAN 5.8 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11n	15	31.623	Yes	No	Yes	Yes	No
WLAN 5.8 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11n	15	31.623	Yes	Yes	No	No	No
Bluetooth	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	GFSK	5	3.162	No	No	No	No	No

Note:

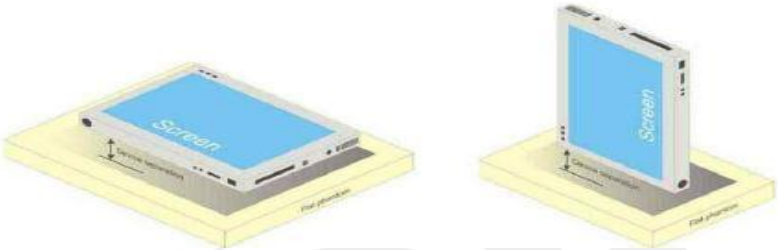
1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. per KDB 447498 D01, standalone SAR test exclusion threshold is applied; if the distance of the antenna to the user is <5mm, 5mm is user to determine SAR exclusion threshold
4. per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distance ≤50mm are determined by:
   [(max.power of channel, including tune-up tolerance, Mw)/(min. test separation distance, mm)]*[√f(GHZ）)≤3.0 for 1-g SAR and≤7.5 for10-g extremity SAR ,f(GHz) is the RF channel transmit frequency in GHz.Power and distance are rounded to the nearest mW and mm before calculation.The result is rounded to one decimal place for comparison
   For <50mm distance, we just calculate mW of the exclusion threshold value(3.0)to do compare
5. per KDB 447498 D01, at 100 MHz to 6GHz and for test separation distances >50mm, the SAR test exclusion threshold is determined according to the following
   a)[threshold at 50mm in step 1]+(test separation distance -50mm)*(f (MHz)/150)]Mw, at 100 MHz to 1500 MHz
   b) [threshold at 50mm in step1]+(test separation distance -50mm) *10]mW at＞1500MHz and≤6GHz
6. Per KDB 447498 D02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/ HSUPA/DC-HSDPA output power is<0.25db higher than RMC 12.2Kbps,or reported SAR with RMC 12.2kbps setting is ≤1.2W/Kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
7. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine futher SAR exclusion 8.for each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of each of these configurations is less than 1/4db higher than those measured at the lower data rate than 11b mode, thus the SAR can be excluded.
8. Per KDB 616217 D04 Exposures from antennas through the front (top) surface of the display section of a full-size tablet, away from the edges, are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary.

8. EUT Test Position

This EUT was tested in Front Face and Rear Face.

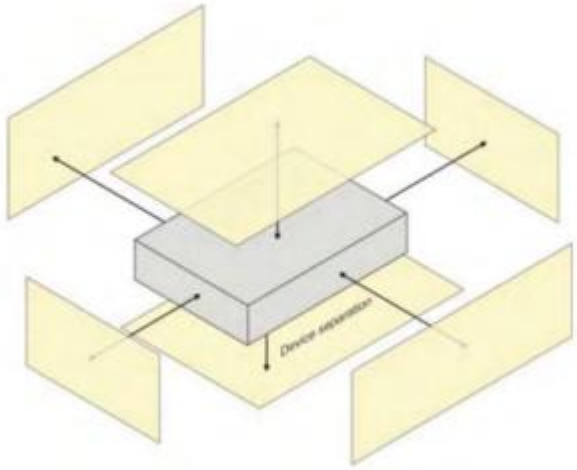
8.1 Define Two Imaginary Lines on the Handset

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



8.2 Hotspot mode exposure position condition

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



9. Uncertainty

9.1 Measurement Uncertainty

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

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	$\sqrt{3}$	√0.5	√0.5	0.28	0.28	∞
Hemispherical Isotropy	1.045	R	$\sqrt{3}$	√0.5	√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

WCDMA Average Power (dBm)

<Full Power>

Band	WCDMA Band V			WCDMA Band IV			WCDMA Band II		
Channel	4132	4183	4233	1312	1413	1513	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1712.6	1740	1752.4	1852.4	1880.0	1907.6
AMR 12.2Kbps	22.04	21.83	22.32	20.43	20.38	20.44	21.31	21.14	21.55
RMC 12.2Kbps	22.07	21.84	22.34	20.47	20.39	20.51	21.34	21.22	21.57
HSDPA Subtest-1	21.25	21.19	21.30	19.63	19.68	19.92	20.04	19.96	20.17
HSDPA Subtest-2	20.76	20.71	20.82	19.22	19.22	19.45	19.61	19.50	19.73
HSDPA Subtest-3	20.44	20.28	20.40	18.72	18.79	19.11	19.14	19.07	19.43
HSDPA Subtest-4	20.00	19.78	19.97	18.27	18.37	18.70	18.76	18.64	19.11
HSUPA Subtest-1	20.82	20.85	20.76	18.97	18.73	18.75	20.05	19.92	19.76
HSUPA Subtest-2	19.83	19.95	19.81	18.02	17.80	17.76	19.12	18.98	18.77
HSUPA Subtest-3	19.77	19.54	19.41	17.83	17.34	17.42	19.07	18.58	18.41
HSUPA Subtest-4	19.29	19.17	19.09	17.37	16.88	17.04	18.65	18.23	17.92
HSUPA Subtest-5	17.80	17.68	17.69	15.91	15.39	15.59	17.16	16.77	16.43

<Reduced Power level for WWAN+WLAN>

Band	WCDMA Band V			WCDMA Band IV			WCDMA Band II		
Channel	4132	4183	4233	1312	1413	1513	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1712.6	1740	1752.4	1852.4	1880.0	1907.6
AMR 12.2Kbps	18.87	19.05	18.84	18.88	18.75	18.81	19.70	19.65	19.57
RMC 12.2Kbps	18.91	19.08	18.89	18.90	18.80	18.83	19.74	19.69	19.59
HSDPA Subtest-1	18.97	18.96	19.03	18.97	18.88	19.69	19.69	19.79	19.59
HSDPA Subtest-2	18.49	18.51	18.62	18.50	18.40	19.21	19.21	19.34	19.12
HSDPA Subtest-3	18.05	18.02	18.31	18.17	18.00	18.86	18.71	18.85	18.74
HSDPA Subtest-4	17.69	17.57	17.92	17.85	17.50	18.55	18.35	18.54	18.29
HSUPA Subtest-1	19.00	19.18	19.09	18.67	18.92	18.87	19.63	19.82	19.75
HSUPA Subtest-2	18.20	18.25	18.13	17.72	18.01	17.93	18.75	18.91	18.81
HSUPA Subtest-3	18.12	17.79	17.71	17.66	17.58	17.47	18.57	18.44	18.44
HSUPA Subtest-4	17.74	17.45	17.23	17.27	17.15	17.16	18.15	18.11	17.98
HSUPA Subtest-5	16.31	16.05	15.80	15.78	15.68	15.76	16.68	16.69	16.51

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 $\beta c/\beta d$=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.

WLAN (2.4Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			Antenna A	Antenna B	Antenna A+B
802.11b	1	2412	17.32	17.12	N/A
	6	2437	17.51	17.20	N/A
	11	2462	17.21	17.04	N/A
802.11g	1	2412	15.58	15.37	N/A
	6	2437	15.78	15.47	N/A
	11	2462	15.49	15.33	N/A
802.11n20(HT0)	1	2412	15.49	15.34	18.43
	6	2437	15.79	15.54	18.68
	11	2462	15.46	15.39	18.44
802.11n40(HT0)	3	2422	15.69	15.52	18.62
	6	2437	15.53	15.39	18.47
	9	2452	15.53	15.27	18.41

WLAN (5.2Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	36	5180	14.43	13.89	N/A
	40	5200	14.10	13.57	N/A
	48	5240	14.16	13.38	N/A
802.11 n20-HT0	36	5180	10.84	10.73	13.80
	40	5200	10.58	10.48	13.54
	48	5240	10.51	10.37	13.45
802.11 n40-HT0	38	5190	12.16	11.18	14.71
	46	5230	11.75	10.79	14.31
802.11 ac20-VHT0	36	5180	10.97	10.76	13.88
	40	5200	10.70	10.60	13.66
	48	5240	10.58	10.30	13.45
802.11 ac40-VHT0	38	5190	12.19	11.17	14.72
	46	5230	11.78	10.76	14.31
802.11 ac80-VHT0	42	5210	8.78	8.87	11.84

WLAN (5.3Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	52	5260	12.92	12.87	N/A
	60	5300	13.44	12.66	N/A
	64	5320	13.35	12.50	N/A
802.11 n20-HT0	52	5260	11.55	11.37	14.47
	60	5300	11.30	11.07	14.20
	64	5320	11.17	10.91	14.05
802.11 n40-HT0	54	5270	12.44	11.79	15.14
	62	5310	12.13	11.72	14.94
802.11 ac20-VHT0	52	5260	10.58	10.43	13.52
	60	5300	10.40	10.15	13.29
	64	5320	10.27	10.05	13.17
802.11 ac40-VHT0	54	5270	12.41	11.77	15.11
	62	5310	12.00	11.59	14.81
802.11 ac80-VHT0	58	5290	9.00	9.01	12.02

WLAN (5.6Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	100	5500	13.81	13.12	N/A
	116	5580	13.64	13.61	N/A
	140	5700	13.90	13.08	N/A
802.11 n20-HT0	100	5500	10.63	9.90	13.29
	116	5580	10.44	10.53	13.50
	140	5700	10.71	10.06	13.41
802.11 n40-HT0	102	5510	11.72	11.21	14.48
	110	5550	11.40	11.46	14.44
	134	5670	11.63	11.40	14.53
802.11 ac20-VHT0	100	5500	10.70	9.98	13.37
	116	5580	10.49	10.55	13.53
	140	5700	10.72	10.09	13.43
802.11 ac40-VHT0	102	5510	12.79	12.29	15.56
	110	5550	12.40	12.54	15.48
	134	5670	12.63	12.36	15.51
802.11 ac80-VHT0	106	5530	9.41	9.40	12.42
	122	5610	8.65	8.68	11.68

WLAN (5.8Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	149	5745	12.74	12.30	N/A
	157	5785	12.65	12.16	N/A
	165	5825	13.08	12.35	N/A
802.11 n20-HT0	149	5745	12.18	10.60	14.47
	157	5785	12.02	11.03	14.56
	165	5825	11.70	10.96	14.36
802.11 n40-HT0	151	5755	12.02	10.70	14.42
	159	5795	11.79	10.97	14.41
802.11 ac20-VHT0	149	5745	12.15	10.59	14.45
	157	5785	12.04	10.80	14.47
	165	5825	11.81	10.95	14.41
802.11 ac40-VHT0	151	5755	12.01	10.68	14.41
	159	5795	11.94	11.05	14.53
802.11 ac80-VHT0	155	5775	8.77	8.76	11.78

Bluetooth

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	4.38
	39	2441	4.75
	78	2480	4.42
π/4-DQPSK(2Mbps)	0	2402	1.98
	39	2441	2.22
	78	2480	2.05
8DPSK(3Mbps)	0	2402	1.95
	39	2441	2.22
	78	2480	2.04

BLE

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	3.17
	19	2440	3.45
	39	2480	3.21

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.

<Full Power>
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	21.16	21.08	21.59
1.4	1	2		20.93	20.82	21.35
1.4	1	5		20.68	20.54	21.09
1.4	3	0		20.39	20.34	20.84
1.4	3	1		20.11	20.13	20.55
1.4	3	2		19.87	19.88	20.26
1.4	6	0		19.58	19.66	20.05
1.4	1	0	16-QAM	20.88	20.80	21.32
1.4	1	2		20.61	20.52	21.09
1.4	1	5		20.40	20.25	20.81
1.4	3	0		20.19	20.03	20.53
1.4	3	1		19.91	19.77	20.29
1.4	3	2		19.64	19.56	20.08
1.4	6	0		19.37	19.31	19.88
3	1	0	QPSK	21.42	21.55	21.37
3	1	7		21.14	21.30	21.09
3	1	14		20.85	21.01	20.82
3	8	0		20.63	20.74	20.53
3	8	4		20.34	20.51	20.24
3	8	7		20.07	20.30	20.01
3	15	0		19.78	20.08	19.77
3	1	0	16-QAM	21.22	21.30	21.09
3	1	7		20.95	21.06	20.89
3	1	14		20.68	20.86	20.64
3	8	0		20.42	20.59	20.43
3	8	4		20.20	20.32	20.14
3	8	7		19.91	20.03	19.91
3	15	0		19.70	19.81	19.68

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.28	21.37	21.33
5	1	12		20.99	21.14	21.12
5	1	24		20.77	20.92	20.84
5	12	0		20.55	20.69	20.55
5	12	6		20.32	20.44	20.34
5	12	11		20.04	20.16	20.13
5	25	0		19.82	19.87	19.93
5	1	0	16-QAM	20.98	21.11	21.10
5	1	12		20.70	20.81	20.85
5	1	24		20.47	20.59	20.57
5	12	0		20.23	20.30	20.34
5	12	6		19.99	20.09	20.07
5	12	11		19.74	19.87	19.83
5	25	0		19.49	19.57	19.54
10	1	0	QPSK	21.52	21.45	21.50
10	1	24		21.31	21.20	21.23
10	1	49		21.05	20.97	20.98
10	25	0		20.81	20.74	20.74
10	25	12		20.53	20.52	20.50
10	25	24		20.28	20.25	20.23
10	50	0		20.00	20.04	20.00
10	1	0	16-QAM	21.30	21.18	21.21
10	1	24		21.09	20.96	20.98
10	1	49		20.80	20.73	20.74
10	25	0		20.52	20.47	20.50
10	25	12		20.25	20.23	20.30
10	25	24		20.03	19.99	20.02
10	50	0		19.83	19.73	19.73

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.81	21.90	21.88
15	1	37		21.58	21.67	21.61
15	1	74		21.38	21.45	21.37
15	36	0		21.09	21.17	21.13
15	36	18		20.88	20.93	20.90
15	36	39		20.66	20.69	20.69
15	75	0		20.44	20.44	20.43
15	1	0	16-QAM	21.52	21.68	21.64
15	1	38		21.30	21.44	21.37
15	1	75		21.05	21.18	21.11
15	36	0		20.81	20.95	20.89
15	36	18		20.52	20.70	20.60
15	36	39		20.28	20.47	20.37
15	75	0		20.01	20.22	20.11
20	1	0	QPSK	21.97	22.03	22.15
20	1	49		21.71	21.77	21.91
20	1	99		21.50	21.48	21.64
20	50	0		21.23	21.21	21.42
20	50	24		20.98	20.96	21.17
20	50	49		20.71	20.67	20.88
20	100	0		20.48	20.46	20.60
20	1	0	16-QAM	21.73	21.78	21.94
20	1	49		21.48	21.55	21.71
20	1	99		21.26	21.28	21.47
20	50	0		20.97	21.02	21.23
20	50	24		20.76	20.78	21.01
20	50	49		20.51	20.54	20.74
20	100	0		20.30	20.26	20.45

LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	19.83	19.75	19.92
5	1	12		19.58	19.52	19.65
5	1	24		19.32	19.30	19.43
5	12	0		19.05	19.04	19.18
5	12	6		18.79	18.81	18.95
5	12	11		18.57	18.58	18.71
5	25	0		18.32	18.32	18.46
5	1	0	16-QAM	19.53	19.45	19.63
5	1	12		19.26	19.19	19.33
5	1	24		18.96	18.99	19.05
5	12	0		18.74	18.73	18.85
5	12	6		18.49	18.50	18.58
5	12	11		18.26	18.22	18.32
5	25	0		18.02	17.97	18.03
10	1	0	QPSK	19.97	20.08	20.12
10	1	24		19.76	19.79	19.89
10	1	49		19.54	19.49	19.67
10	25	0		19.32	19.24	19.41
10	25	12		19.04	19.00	19.14
10	25	24		18.82	18.80	18.86
10	50	0		18.57	18.54	18.59
10	1	0	16-QAM	19.68	19.82	19.87
10	1	24		19.46	19.57	19.60
10	1	49		19.26	19.33	19.32
10	25	0		19.05	19.07	19.09
10	25	12		18.85	18.85	18.82
10	25	24		18.55	18.56	18.62
10	50	0		18.26	18.31	18.37

LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	20.33	20.28	20.22
15	1	37		20.08	20.07	19.98
15	1	74		19.79	19.83	19.71
15	36	0		19.58	19.54	19.45
15	36	18		19.31	19.29	19.23
15	36	39		19.02	19.08	19.01
15	75	0		18.81	18.87	18.74
15	1	0	16-QAM	20.03	19.99	20.01
15	1	38		19.79	19.71	19.71
15	1	75		19.51	19.49	19.42
15	36	0		19.28	19.21	19.16
15	36	18		19.01	18.94	18.92
15	36	39		18.79	18.67	18.66
15	75	0		18.50	18.45	18.43
20	1	0	QPSK	20.64	20.59	20.61
20	1	49		20.42	20.30	20.38
20	1	99		20.20	20.03	20.11
20	50	0		19.97	19.74	19.87
20	50	24		19.73	19.51	19.60
20	50	49		19.48	19.25	19.36
20	100	0		19.23	19.04	19.15
20	1	0	16-QAM	20.43	20.29	20.33
20	1	49		20.14	20.05	20.11
20	1	99		19.92	19.80	19.85
20	50	0		19.67	19.57	19.55
20	50	24		19.43	19.36	19.31
20	50	49		19.14	19.14	19.04
20	100	0		18.92	18.92	18.79

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	21.97	21.81	22.11
1.4	1	2		21.70	21.53	21.83
1.4	1	5		21.44	21.26	21.57
1.4	3	0		21.18	21.02	21.32
1.4	3	1		20.88	20.79	21.06
1.4	3	2		20.62	20.59	20.80
1.4	6	0		20.37	20.37	20.57
1.4	1	0	16-QAM	21.75	21.54	21.86
1.4	1	2		21.53	21.29	21.56
1.4	1	5		21.25	21.07	21.33
1.4	3	0		21.01	20.79	21.04
1.4	3	1		20.71	20.58	20.79
1.4	3	2		20.44	20.31	20.56
1.4	6	0		20.20	20.01	20.26
3	1	0	QPSK	22.16	22.00	21.88
3	1	7		21.95	21.71	21.61
3	1	14		21.65	21.44	21.39
3	8	0		21.38	21.24	21.14
3	8	4		21.10	21.03	20.92
3	8	7		20.83	20.81	20.65
3	15	0		20.59	20.56	20.39
3	1	0	16-QAM	21.95	21.76	21.60
3	1	7		21.72	21.50	21.35
3	1	14		21.43	21.21	21.08
3	8	0		21.14	20.95	20.78
3	8	4		20.89	20.68	20.56
3	8	7		20.65	20.43	20.28
3	15	0		20.39	20.19	20.04

LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.34	22.20	22.15
5	1	12		22.12	21.92	21.88
5	1	24		21.92	21.62	21.65
5	12	0		21.68	21.37	21.37
5	12	6		21.44	21.09	21.13
5	12	11		21.17	20.84	20.83
5	25	0		20.92	20.62	20.55
5	1	0	16-QAM	22.12	21.93	21.88
5	1	12		21.83	21.71	21.64
5	1	24		21.55	21.45	21.42
5	12	0		21.33	21.16	21.14
5	12	6		21.04	20.95	20.93
5	12	11		20.83	20.67	20.72
5	25	0		20.60	20.43	20.45
10	1	0	QPSK	22.57	22.50	22.39
10	1	24		22.32	22.21	22.15
10	1	49		22.08	21.94	21.93
10	25	0		21.85	21.67	21.67
10	25	12		21.56	21.44	21.42
10	25	24		21.28	21.23	21.16
10	50	0		21.04	20.97	20.93
10	1	0	16-QAM	22.27	22.25	22.17
10	1	24		21.99	21.97	21.92
10	1	49		21.79	21.68	21.65
10	25	0		21.51	21.44	21.40
10	25	12		21.27	21.16	21.14
10	25	24		20.98	20.94	20.94
10	50	0		20.68	20.72	20.73

LTE BAND 13

LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.33	21.29	21.40
5	1	12		21.05	21.04	21.12
5	1	24		20.84	20.82	20.83
5	12	0		20.56	20.59	20.54
5	12	6		20.31	20.30	20.25
5	12	11		20.08	20.10	20.00
5	25	0		19.86	19.86	19.71
5	1	0	16-QAM	21.05	21.05	21.13
5	1	12		20.79	20.81	20.92
5	1	24		20.56	20.57	20.68
5	12	0		20.35	20.34	20.46
5	12	6		20.14	20.12	20.16
5	12	11		19.91	19.84	19.88
5	25	0		19.67	19.54	19.58
10	1	0	QPSK	-	21.58	-
10	1	24		-	21.33	-
10	1	49		-	21.11	-
10	25	0		-	20.85	-
10	25	12		-	20.65	-
10	25	24		-	20.42	-
10	50	0		-	20.15	-
10	1	0	16-QAM	-	21.35	-
10	1	24		-	21.13	-
10	1	49		-	20.89	-
10	25	0		-	20.66	-
10	25	12		-	20.44	-
10	25	24		-	20.23	-
10	50	0		-	19.99	-

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	21.39	21.54	21.69
1.4	1	2		21.15	21.25	21.39
1.4	1	5		20.86	20.99	21.19
1.4	3	0		20.57	20.71	20.98
1.4	3	1		20.29	20.42	20.77
1.4	3	2		20.01	20.18	20.50
1.4	6	0		19.73	19.92	20.25
1.4	1	0	16-QAM	21.17	21.31	21.39
1.4	1	2		20.88	21.06	21.13
1.4	1	5		20.61	20.84	20.86
1.4	3	0		20.34	20.58	20.57
1.4	3	1		20.13	20.35	20.33
1.4	3	2		19.91	20.07	20.05
1.4	6	0		19.70	19.81	19.79
3	1	0	QPSK	21.62	21.57	21.40
3	1	7		21.36	21.31	21.17
3	1	14		21.06	21.10	20.94
3	8	0		20.86	20.87	20.73
3	8	4		20.60	20.58	20.44
3	8	7		20.39	20.33	20.23
3	15	0		20.19	20.08	19.98
3	1	0	16-QAM	21.41	21.36	21.14
3	1	7		21.20	21.12	20.89
3	1	14		20.99	20.88	20.63
3	8	0		20.77	20.59	20.41
3	8	4		20.55	20.34	20.13
3	8	7		20.31	20.06	19.84
3	15	0		20.07	19.79	19.54

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.60	21.67	21.73
5	1	12		21.31	21.39	21.44
5	1	24		21.06	21.19	21.18
5	12	0		20.77	20.97	20.91
5	12	6		20.55	20.73	20.63
5	12	11		20.31	20.52	20.36
5	25	0		20.11	20.29	20.13
5	1	0	16-QAM	21.37	21.45	21.49
5	1	12		21.14	21.23	21.23
5	1	24		20.86	21.02	21.02
5	12	0		20.60	20.73	20.80
5	12	6		20.34	20.46	20.55
5	12	11		20.08	20.20	20.27
5	25	0		19.79	19.98	20.07
10	1	0	QPSK	21.52	21.58	21.76
10	1	24		21.27	21.32	21.46
10	1	49		21.02	21.09	21.23
10	25	0		20.73	20.85	20.98
10	25	12		20.52	20.61	20.68
10	25	24		20.27	20.31	20.45
10	50	0		20.00	20.02	20.23
10	1	0	16-QAM	21.30	21.35	21.49
10	1	24		21.07	21.07	21.21
10	1	49		20.84	20.78	20.92
10	25	0		20.61	20.54	20.69
10	25	12		20.37	20.25	20.40
10	25	24		20.09	20.02	20.19
10	50	0		19.86	19.80	19.94

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.66	21.81	21.63
15	1	37		21.38	21.51	21.33
15	1	74		21.09	21.24	21.07
15	36	0		20.84	21.01	20.78
15	36	18		20.57	20.76	20.52
15	36	39		20.30	20.52	20.27
15	75	0		20.05	20.23	20.06
15	1	0	16-QAM	21.41	21.58	21.40
15	1	38		21.21	21.35	21.19
15	1	75		20.97	21.12	20.98
15	36	0		20.68	20.91	20.78
15	36	18		20.43	20.63	20.51
15	36	39		20.16	20.38	20.22
15	75	0		19.93	20.17	20.01
20	1	0	QPSK	21.86	21.87	21.70
20	1	49		21.59	21.62	21.48
20	1	99		21.39	21.38	21.18
20	50	0		21.10	21.12	20.97
20	50	24		20.83	20.87	20.75
20	50	49		20.57	20.66	20.53
20	100	0		20.30	20.37	20.26
20	1	0	16-QAM	21.62	21.60	21.47
20	1	49		21.34	21.32	21.22
20	1	99		21.09	21.10	20.96
20	50	0		20.84	20.80	20.74
20	50	24		20.59	20.55	20.50
20	50	49		20.36	20.26	20.20
20	100	0		20.07	19.99	19.98

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	21.97	21.74	22.13
1.4	1	2		21.69	21.50	21.88
1.4	1	5		21.48	21.29	21.67
1.4	3	0		21.21	21.08	21.38
1.4	3	1		20.93	20.79	21.10
1.4	3	2		20.65	20.52	20.83
1.4	6	0		20.36	20.30	20.57
1.4	1	0	16-QAM	21.70	21.52	21.91
1.4	1	2		21.50	21.29	21.62
1.4	1	5		21.29	20.99	21.40
1.4	3	0		21.08	20.74	21.14
1.4	3	1		20.83	20.50	20.91
1.4	3	2		20.60	20.26	20.66
1.4	6	0		20.33	20.06	20.37
3	1	0	QPSK	22.26	22.36	22.38
3	1	7		22.02	22.10	22.18
3	1	14		21.79	21.85	21.95
3	8	0		21.54	21.60	21.69
3	8	4		21.30	21.35	21.49
3	8	7		21.02	21.10	21.28
3	15	0		20.78	20.81	21.05
3	1	0	16-QAM	22.06	22.15	22.12
3	1	7		21.79	21.92	21.84
3	1	14		21.59	21.69	21.59
3	8	0		21.36	21.42	21.31
3	8	4		21.12	21.15	21.10
3	8	7		20.83	20.95	20.84
3	15	0		20.53	20.69	20.58

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.06	21.93	22.01
5	1	12		21.84	21.65	21.73
5	1	24		21.60	21.39	21.46
5	12	0		21.36	21.17	21.25
5	12	6		21.07	20.94	20.98
5	12	11		20.80	20.71	20.69
5	25	0		20.59	20.50	20.48
5	1	0	16-QAM	21.83	21.69	21.75
5	1	12		21.63	21.39	21.47
5	1	24		21.41	21.19	21.17
5	12	0		21.17	20.91	20.91
5	12	6		20.95	20.62	20.63
5	12	11		20.66	20.33	20.37
5	25	0		20.39	20.07	20.09
10	1	0	QPSK	22.30	22.30	22.24
10	1	24		22.04	22.02	21.94
10	1	49		21.78	21.75	21.68
10	25	0		21.50	21.54	21.46
10	25	12		21.27	21.28	21.24
10	25	24		21.00	21.03	20.96
10	50	0		20.76	20.80	20.72
10	1	0	16-QAM	22.05	22.08	22.01
10	1	24		21.79	21.81	21.77
10	1	49		21.55	21.61	21.55
10	25	0		21.32	21.32	21.33
10	25	12		21.08	21.10	21.12
10	25	24		20.78	20.81	20.83
10	50	0		20.52	20.57	20.57

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.46	22.24	22.57
15	1	37		22.16	22.00	22.32
15	1	74		21.88	21.74	22.11
15	36	0		21.61	21.53	21.83
15	36	18		21.31	21.24	21.54
15	36	39		21.02	20.99	21.24
15	75	0		20.79	20.70	20.96
15	1	0	16-QAM	22.17	21.99	22.30
15	1	38		21.90	21.71	22.01
15	1	75		21.62	21.41	21.77
15	36	0		21.33	21.14	21.51
15	36	18		21.05	20.85	21.22
15	36	39		20.78	20.60	20.95
15	75	0		20.54	20.37	20.73

LTE BAND 26(Part 90)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.26	22.15	22.16
1.4	1	2		21.98	21.87	21.95
1.4	1	5		21.72	21.61	21.70
1.4	3	0		21.43	21.31	21.41
1.4	3	1		21.15	21.08	21.15
1.4	3	2		20.90	20.85	20.92
1.4	6	0		20.65	20.63	20.62
1.4	1	0	16-QAM	22.06	21.89	21.96
1.4	1	2		21.82	21.67	21.75
1.4	1	5		21.60	21.39	21.48
1.4	3	0		21.37	21.15	21.22
1.4	3	1		21.16	20.93	20.99
1.4	3	2		20.94	20.72	20.71
1.4	6	0		20.65	20.45	20.46
3	1	0	QPSK	22.38	22.41	22.49
3	1	7		22.15	22.15	22.25
3	1	14		21.86	21.85	21.96
3	8	0		21.56	21.65	21.75
3	8	4		21.31	21.45	21.48
3	8	7		21.08	21.17	21.18
3	15	0		20.88	20.97	20.96
3	1	0	16-QAM	22.16	22.21	22.26
3	1	7		21.95	21.97	22.02
3	1	14		21.71	21.77	21.77
3	8	0		21.48	21.50	21.52
3	8	4		21.19	21.30	21.27
3	8	7		20.90	21.05	20.99
3	15	0		20.67	20.77	20.76

LTE BAND 26(Part 90)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.33	22.12	22.03
5	1	12		22.10	21.82	21.81
5	1	24		21.88	21.53	21.54
5	12	0		21.60	21.28	21.34
5	12	6		21.34	21.07	21.04
5	12	11		21.04	20.82	20.81
5	25	0		20.74	20.58	20.52
5	1	0	16-QAM	22.08	21.85	21.74
5	1	12		21.81	21.61	21.45
5	1	24		21.55	21.38	21.20
5	12	0		21.30	21.12	20.92
5	12	6		21.09	20.86	20.62
5	12	11		20.80	20.58	20.42
5	25	0		20.59	20.36	20.20
10	1	0	QPSK	N/A	22.69	N/A
10	1	24		N/A	22.42	N/A
10	1	49		N/A	22.18	N/A
10	25	0		N/A	21.97	N/A
10	25	12		N/A	21.67	N/A
10	25	24		N/A	21.47	N/A
10	50	0		N/A	21.23	N/A
10	1	0	16-QAM	N/A	22.47	N/A
10	1	24		N/A	22.25	N/A
10	1	49		N/A	22.01	N/A
10	25	0		N/A	21.74	N/A
10	25	12		N/A	21.47	N/A
10	25	24		N/A	21.24	N/A
10	50	0		N/A	20.95	N/A

LTE BAND 30

LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	20.94	21.02	20.95
5	1	12		20.70	20.80	20.69
5	1	24		20.42	20.59	20.48
5	12	0		20.18	20.32	20.20
5	12	6		19.91	20.10	19.90
5	12	11		19.61	19.83	19.69
5	25	0		19.32	19.62	19.39
5	1	0	16-QAM	20.69	20.77	20.72
5	1	12		20.42	20.51	20.44
5	1	24		20.19	20.31	20.23
5	12	0		19.90	20.01	20.01
5	12	6		19.66	19.74	19.77
5	12	11		19.36	19.51	19.49
5	25	0		19.13	19.23	19.22
10	1	0	QPSK	N/A	21.18	N/A
10	1	24		N/A	20.94	N/A
10	1	49		N/A	20.65	N/A
10	25	0		N/A	20.43	N/A
10	25	12		N/A	20.17	N/A
10	25	24		N/A	19.96	N/A
10	50	0		N/A	19.75	N/A
10	1	0	16-QAM	N/A	20.90	N/A
10	1	24		N/A	20.64	N/A
10	1	49		N/A	20.36	N/A
10	25	0		N/A	20.10	N/A
10	25	12		N/A	19.82	N/A
10	25	24		N/A	19.54	N/A
10	50	0		N/A	19.24	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	19.86	19.92	19.80
5	1	12		19.62	19.70	19.53
5	1	24		19.33	19.41	19.32
5	12	0		19.04	19.17	19.07
5	12	6		18.77	18.91	18.84
5	12	11		18.53	18.67	18.54
5	25	0		18.25	18.38	18.30
5	1	0	16-QAM	19.64	19.66	19.57
5	1	12		19.42	19.44	19.34
5	1	24		19.16	19.22	19.05
5	12	0		18.94	18.96	18.84
5	12	6		18.65	18.73	18.63
5	12	11		18.44	18.47	18.34
5	25	0		18.17	18.25	18.05
10	1	0	QPSK	20.07	20.21	20.13
10	1	24		19.84	19.98	19.86
10	1	49		19.55	19.69	19.63
10	25	0		19.29	19.46	19.41
10	25	12		19.07	19.25	19.20
10	25	24		18.82	19.03	18.91
10	50	0		18.58	18.81	18.67
10	1	0	16-QAM	19.86	19.95	19.87
10	1	24		19.61	19.72	19.66
10	1	49		19.37	19.42	19.40
10	25	0		19.08	19.17	19.18
10	25	12		18.87	18.90	18.91
10	25	24		18.61	18.63	18.70
10	50	0		18.36	18.37	18.45

LTE BAND 41

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	20.39	20.40	20.34
15	1	37		20.11	20.17	20.06
15	1	74		19.85	19.89	19.85
15	36	0		19.56	19.61	19.57
15	36	18		19.30	19.33	19.31
15	36	39		19.07	19.08	19.03
15	75	0		18.84	18.85	18.77
15	1	0	16-QAM	20.16	20.20	20.08
15	1	38		19.93	20.00	19.83
15	1	75		19.63	19.75	19.61
15	36	0		19.33	19.52	19.34
15	36	18		19.12	19.22	19.07
15	36	39		18.89	18.96	18.78
15	75	0		18.59	18.68	18.56
20	1	0	QPSK	20.75	20.78	20.65
20	1	49		20.47	20.56	20.41
20	1	99		20.25	20.28	20.13
20	50	0		20.03	20.03	19.89
20	50	24		19.80	19.74	19.64
20	50	49		19.54	19.50	19.35
20	100	0		19.28	19.24	19.05
20	1	0	16-QAM	20.45	20.52	20.41
20	1	49		20.18	20.24	20.13
20	1	99		19.93	19.94	19.84
20	50	0		19.72	19.68	19.62
20	50	24		19.47	19.44	19.33
20	50	49		19.20	19.20	19.09
20	100	0		18.93	18.96	18.80

<Reduced Power level for WWAN+WLAN>

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	19.20	19.10	19.07
1.4	1	2		18.98	18.82	18.80
1.4	1	5		18.69	18.52	18.59
1.4	3	0		18.41	18.26	18.37
1.4	3	1		18.15	18.05	18.12
1.4	3	2		17.89	17.79	17.92
1.4	6	0		17.61	17.57	17.66
1.4	1	0	16-QAM	18.94	18.87	18.85
1.4	1	2		18.71	18.58	18.57
1.4	1	5		18.49	18.32	18.29
1.4	3	0		18.27	18.07	18.02
1.4	3	1		18.01	17.78	17.80
1.4	3	2		17.80	17.54	17.59
1.4	6	0		17.54	17.27	17.32
3	1	0	QPSK	19.24	19.21	19.13
3	1	7		18.94	18.93	18.91
3	1	14		18.66	18.64	18.62
3	8	0		18.37	18.36	18.36
3	8	4		18.12	18.16	18.10
3	8	7		17.85	17.91	17.87
3	15	0		17.58	17.71	17.66
3	1	0	16-QAM	19.01	18.95	18.84
3	1	7		18.79	18.71	18.64
3	1	14		18.58	18.48	18.35
3	8	0		18.31	18.19	18.14
3	8	4		18.08	17.91	17.86
3	8	7		17.86	17.68	17.64
3	15	0		17.60	17.43	17.38

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	19.32	19.24	19.15
5	1	12		19.11	18.96	18.87
5	1	24		18.90	18.76	18.65
5	12	0		18.66	18.48	18.39
5	12	6		18.39	18.27	18.13
5	12	11		18.15	17.98	17.83
5	25	0		17.92	17.75	17.59
5	1	0	16-QAM	19.02	19.03	18.90
5	1	12		18.82	18.75	18.64
5	1	24		18.59	18.47	18.36
5	12	0		18.29	18.23	18.10
5	12	6		18.04	17.96	17.88
5	12	11		17.83	17.68	17.63
5	25	0		17.59	17.46	17.38
10	1	0	QPSK	19.18	19.19	19.25
10	1	24		18.96	18.89	19.04
10	1	49		18.74	18.62	18.80
10	25	0		18.49	18.41	18.54
10	25	12		18.23	18.14	18.31
10	25	24		17.94	17.92	18.06
10	50	0		17.66	17.72	17.79
10	1	0	16-QAM	18.97	18.92	19.01
10	1	24		18.73	18.63	18.76
10	1	49		18.50	18.39	18.55
10	25	0		18.27	18.15	18.32
10	25	12		17.99	17.88	18.07
10	25	24		17.70	17.64	17.82
10	50	0		17.43	17.34	17.60

LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	19.13	19.15	19.10
15	1	37		18.86	18.88	18.87
15	1	74		18.66	18.63	18.61
15	36	0		18.37	18.36	18.35
15	36	18		18.11	18.12	18.08
15	36	39		17.88	17.91	17.88
15	75	0		17.65	17.67	17.59
15	1	0	16-QAM	18.89	18.92	18.87
15	1	38		18.66	18.65	18.59
15	1	75		18.46	18.42	18.29
15	36	0		18.18	18.21	18.08
15	36	18		17.89	17.94	17.82
15	36	39		17.68	17.72	17.55
15	75	0		17.46	17.48	17.26
20	1	0	QPSK	19.21	19.36	19.24
20	1	49		18.98	19.07	18.98
20	1	99		18.73	18.78	18.74
20	50	0		18.45	18.49	18.50
20	50	24		18.19	18.29	18.26
20	50	49		17.92	18.07	17.99
20	100	0		17.69	17.80	17.74
20	1	0	16-QAM	19.00	19.09	18.97
20	1	49		18.72	18.82	18.69
20	1	99		18.48	18.61	18.48
20	50	0		18.22	18.40	18.26
20	50	24		17.95	18.19	17.99
20	50	49		17.67	17.97	17.78
20	100	0		17.38	17.75	17.54

LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	18.27	18.34	18.77
5	1	12		18.04	18.05	18.49
5	1	24		17.76	17.75	18.28
5	12	0		17.50	17.55	18.01
5	12	6		17.27	17.30	17.79
5	12	11		17.07	17.01	17.54
5	25	0		16.81	16.75	17.30
5	1	0	16-QAM	18.03	18.13	18.49
5	1	12		17.81	17.86	18.19
5	1	24		17.60	17.62	17.91
5	12	0		17.33	17.39	17.70
5	12	6		17.11	17.16	17.41
5	12	11		16.87	16.86	17.15
5	25	0		16.63	16.63	16.92
10	1	0	QPSK	18.50	18.74	18.55
10	1	24		18.29	18.50	18.35
10	1	49		18.00	18.23	18.06
10	25	0		17.78	18.00	17.83
10	25	12		17.58	17.79	17.60
10	25	24		17.37	17.58	17.32
10	50	0		17.10	17.37	17.10
10	1	0	16-QAM	18.25	18.51	18.31
10	1	24		17.98	18.29	18.10
10	1	49		17.70	18.03	17.84
10	25	0		17.46	17.76	17.59
10	25	12		17.24	17.47	17.38
10	25	24		16.99	17.18	17.12
10	50	0		16.71	16.92	16.84

LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	18.53	18.62	19.61
15	1	37		18.27	18.39	19.34
15	1	74		18.02	18.13	19.08
15	36	0		17.75	17.91	18.83
15	36	18		17.53	17.65	18.53
15	36	39		17.24	17.44	18.27
15	75	0		16.97	17.22	18.07
15	1	0	16-QAM	18.28	18.38	19.40
15	1	38		18.07	18.14	19.15
15	1	75		17.77	17.94	18.86
15	36	0		17.48	17.70	18.57
15	36	18		17.25	17.43	18.37
15	36	39		16.95	17.18	18.10
15	75	0		16.67	16.88	17.86
20	1	0	QPSK	18.74	18.81	19.51
20	1	49		18.49	18.56	19.25
20	1	99		18.23	18.33	19.00
20	50	0		17.93	18.08	18.79
20	50	24		17.67	17.86	18.54
20	50	49		17.37	17.60	18.28
20	100	0		17.08	17.33	18.00
20	1	0	16-QAM	18.47	18.59	19.26
20	1	49		18.27	18.34	19.01
20	1	99		17.98	18.13	18.79
20	50	0		17.69	17.86	18.51
20	50	24		17.40	17.56	18.22
20	50	49		17.10	17.35	17.95
20	100	0		16.86	17.13	17.74

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	20.47	20.56	20.39
1.4	1	2		20.22	20.33	20.15
1.4	1	5		19.95	20.10	19.86
1.4	3	0		19.74	19.88	19.57
1.4	3	1		19.48	19.68	19.27
1.4	3	2		19.28	19.42	19.03
1.4	6	0		19.01	19.20	18.75
1.4	1	0	16-QAM	20.21	20.33	20.18
1.4	1	2		19.93	20.05	19.96
1.4	1	5		19.69	19.84	19.74
1.4	3	0		19.43	19.57	19.49
1.4	3	1		19.14	19.27	19.28
1.4	3	2		18.92	19.01	19.00
1.4	6	0		18.66	18.74	18.80
3	1	0	QPSK	20.59	20.45	20.38
3	1	7		20.31	20.22	20.12
3	1	14		20.05	20.01	19.90
3	8	0		19.76	19.76	19.63
3	8	4		19.51	19.53	19.35
3	8	7		19.23	19.23	19.11
3	15	0		18.93	19.00	18.87
3	1	0	16-QAM	20.35	20.18	20.14
3	1	7		20.14	19.96	19.88
3	1	14		19.94	19.70	19.60
3	8	0		19.72	19.50	19.30
3	8	4		19.49	19.26	19.07
3	8	7		19.20	18.98	18.86
3	15	0		18.98	18.75	18.57

LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	20.44	20.35	20.43
5	1	12		20.17	20.08	20.20
5	1	24		19.87	19.84	19.96
5	12	0		19.61	19.63	19.70
5	12	6		19.40	19.37	19.50
5	12	11		19.12	19.15	19.28
5	25	0		18.87	18.86	19.02
5	1	0	16-QAM	20.19	20.10	20.14
5	1	12		19.92	19.81	19.91
5	1	24		19.70	19.61	19.61
5	12	0		19.46	19.36	19.32
5	12	6		19.20	19.07	19.08
5	12	11		18.98	18.83	18.81
5	25	0		18.70	18.63	18.58
10	1	0	QPSK	20.58	20.69	20.41
10	1	24		20.33	20.43	20.13
10	1	49		20.06	20.18	19.86
10	25	0		19.85	19.89	19.57
10	25	12		19.59	19.65	19.32
10	25	24		19.35	19.40	19.10
10	50	0		19.08	19.18	18.82
10	1	0	16-QAM	20.28	20.42	20.15
10	1	24		20.05	20.18	19.87
10	1	49		19.80	19.94	19.67
10	25	0		19.60	19.69	19.38
10	25	12		19.36	19.39	19.10
10	25	24		19.13	19.10	18.85
10	50	0		18.89	18.82	18.60

LTE BAND 13

LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.53	21.48	21.52
5	1	12		21.32	21.24	21.24
5	1	24		21.07	21.02	21.02
5	12	0		20.83	20.76	20.73
5	12	6		20.60	20.48	20.44
5	12	11		20.30	20.26	20.18
5	25	0		20.03	20.03	19.97
5	1	0	16-QAM	21.29	21.20	21.30
5	1	12		21.02	20.91	21.09
5	1	24		20.81	20.66	20.88
5	12	0		20.59	20.45	20.60
5	12	6		20.34	20.18	20.34
5	12	11		20.07	19.89	20.05
5	25	0		19.83	19.60	19.81
10	1	0	QPSK	-	21.63	-
10	1	24		-	21.35	-
10	1	49		-	21.13	-
10	25	0		-	20.90	-
10	25	12		-	20.64	-
10	25	24		-	20.43	-
10	50	0		-	20.19	-
10	1	0	16-QAM	-	21.36	-
10	1	24		-	21.14	-
10	1	49		-	20.93	-
10	25	0		-	20.67	-
10	25	12		-	20.39	-
10	25	24		-	20.16	-
10	50	0		-	19.86	-

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	19.83	19.67	19.97
1.4	1	2		19.60	19.43	19.70
1.4	1	5		19.33	19.22	19.44
1.4	3	0		19.10	18.92	19.15
1.4	3	1		18.85	18.70	18.89
1.4	3	2		18.64	18.41	18.68
1.4	6	0		18.36	18.21	18.43
1.4	1	0	16-QAM	19.63	19.41	19.70
1.4	1	2		19.38	19.14	19.47
1.4	1	5		19.11	18.93	19.20
1.4	3	0		18.83	18.65	19.00
1.4	3	1		18.53	18.45	18.73
1.4	3	2		18.32	18.22	18.53
1.4	6	0		18.03	18.02	18.33
3	1	0	QPSK	20.01	20.03	19.97
3	1	7		19.77	19.75	19.76
3	1	14		19.56	19.50	19.50
3	8	0		19.34	19.21	19.25
3	8	4		19.13	18.94	19.02
3	8	7		18.86	18.66	18.77
3	15	0		18.56	18.42	18.51
3	1	0	16-QAM	19.71	19.77	19.75
3	1	7		19.48	19.53	19.46
3	1	14		19.22	19.30	19.18
3	8	0		18.97	19.09	18.93
3	8	4		18.71	18.84	18.69
3	8	7		18.42	18.59	18.46
3	15	0		18.21	18.37	18.25

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	20.08	20.05	20.00
5	1	12		19.86	19.82	19.73
5	1	24		19.57	19.61	19.52
5	12	0		19.33	19.37	19.28
5	12	6		19.13	19.07	19.08
5	12	11		18.85	18.82	18.87
5	25	0		18.64	18.58	18.65
5	1	0	16-QAM	19.82	19.83	19.73
5	1	12		19.55	19.61	19.45
5	1	24		19.31	19.33	19.20
5	12	0		19.03	19.08	18.91
5	12	6		18.76	18.85	18.65
5	12	11		18.51	18.56	18.37
5	25	0		18.29	18.30	18.10
10	1	0	QPSK	19.91	19.99	19.89
10	1	24		19.63	19.73	19.69
10	1	49		19.43	19.44	19.47
10	25	0		19.23	19.22	19.20
10	25	12		18.94	18.94	18.92
10	25	24		18.73	18.72	18.67
10	50	0		18.43	18.52	18.41
10	1	0	16-QAM	19.61	19.74	19.65
10	1	24		19.32	19.44	19.44
10	1	49		19.08	19.17	19.22
10	25	0		18.88	18.87	18.93
10	25	12		18.59	18.59	18.71
10	25	24		18.30	18.35	18.41
10	50	0		18.01	18.11	18.16

LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	20.02	20.05	20.07
15	1	37		19.80	19.80	19.80
15	1	74		19.50	19.55	19.53
15	36	0		19.20	19.26	19.25
15	36	18		18.97	19.02	19.00
15	36	39		18.76	18.74	18.77
15	75	0		18.48	18.51	18.51
15	1	0	16-QAM	19.79	19.79	19.79
15	1	38		19.51	19.51	19.58
15	1	75		19.26	19.29	19.35
15	36	0		19.01	19.02	19.09
15	36	18		18.79	18.77	18.84
15	36	39		18.53	18.50	18.61
15	75	0		18.23	18.26	18.39
20	1	0	QPSK	20.06	20.12	20.10
20	1	49		19.78	19.91	19.88
20	1	99		19.52	19.63	19.59
20	50	0		19.29	19.43	19.38
20	50	24		19.02	19.23	19.15
20	50	49		18.80	18.97	18.86
20	100	0		18.58	18.73	18.57
20	1	0	16-QAM	19.79	19.88	19.87
20	1	49		19.55	19.63	19.64
20	1	99		19.26	19.41	19.42
20	50	0		18.97	19.16	19.14
20	50	24		18.72	18.94	18.90
20	50	49		18.46	18.72	18.63
20	100	0		18.19	18.50	18.40

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	20.93	20.76	21.01
1.4	1	2		20.68	20.47	20.77
1.4	1	5		20.41	20.19	20.54
1.4	3	0		20.18	19.93	20.32
1.4	3	1		19.94	19.67	20.10
1.4	3	2		19.70	19.42	19.88
1.4	6	0		19.40	19.18	19.64
1.4	1	0	16-QAM	20.64	20.48	20.76
1.4	1	2		20.44	20.27	20.56
1.4	1	5		20.16	20.04	20.31
1.4	3	0		19.86	19.83	20.02
1.4	3	1		19.61	19.59	19.81
1.4	3	2		19.37	19.36	19.54
1.4	6	0		19.11	19.14	19.28
3	1	0	QPSK	20.81	20.83	20.86
3	1	7		20.56	20.59	20.62
3	1	14		20.31	20.34	20.33
3	8	0		20.09	20.07	20.06
3	8	4		19.87	19.83	19.77
3	8	7		19.63	19.60	19.56
3	15	0		19.38	19.31	19.31
3	1	0	16-QAM	20.53	20.60	20.57
3	1	7		20.26	20.34	20.36
3	1	14		20.02	20.09	20.11
3	8	0		19.77	19.88	19.91
3	8	4		19.57	19.58	19.70
3	8	7		19.33	19.35	19.44
3	15	0		19.09	19.06	19.16

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	20.96	20.85	20.76
5	1	12		20.69	20.63	20.54
5	1	24		20.46	20.41	20.31
5	12	0		20.23	20.17	20.08
5	12	6		19.98	19.92	19.86
5	12	11		19.75	19.63	19.60
5	25	0		19.54	19.38	19.39
5	1	0	16-QAM	20.69	20.57	20.55
5	1	12		20.40	20.33	20.33
5	1	24		20.16	20.11	20.06
5	12	0		19.91	19.83	19.79
5	12	6		19.66	19.60	19.50
5	12	11		19.42	19.33	19.26
5	25	0		19.21	19.12	18.96
10	1	0	QPSK	20.91	20.95	20.83
10	1	24		20.70	20.73	20.58
10	1	49		20.47	20.50	20.38
10	25	0		20.23	20.24	20.13
10	25	12		19.95	19.96	19.90
10	25	24		19.65	19.69	19.62
10	50	0		19.37	19.43	19.42
10	1	0	16-QAM	20.68	20.66	20.57
10	1	24		20.46	20.41	20.28
10	1	49		20.17	20.19	20.07
10	25	0		19.90	19.98	19.83
10	25	12		19.61	19.69	19.58
10	25	24		19.37	19.46	19.38
10	50	0		19.11	19.21	19.15

LTE BAND 26(Part 22)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.13	21.00	21.09
15	1	37		20.90	20.78	20.86
15	1	74		20.60	20.51	20.61
15	36	0		20.30	20.30	20.33
15	36	18		20.04	20.08	20.09
15	36	39		19.77	19.80	19.81
15	75	0		19.48	19.55	19.57
15	1	0	16-QAM	20.86	20.79	20.88
15	1	38		20.60	20.59	20.64
15	1	75		20.30	20.34	20.36
15	36	0		20.09	20.09	20.14
15	36	18		19.83	19.82	19.90
15	36	39		19.62	19.53	19.68
15	75	0		19.39	19.24	19.48

LTE BAND 26(Part 90)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	19.73	19.67	19.83
1.4	1	2		19.43	19.40	19.56
1.4	1	5		19.21	19.16	19.29
1.4	3	0		19.00	18.92	19.06
1.4	3	1		18.75	18.66	18.78
1.4	3	2		18.49	18.43	18.49
1.4	6	0		18.28	18.23	18.29
1.4	1	0	16-QAM	19.50	19.39	19.54
1.4	1	2		19.27	19.14	19.32
1.4	1	5		19.05	18.88	19.06
1.4	3	0		18.79	18.60	18.77
1.4	3	1		18.50	18.34	18.56
1.4	3	2		18.25	18.12	18.30
1.4	6	0		18.03	17.85	18.04
3	1	0	QPSK	19.64	19.58	19.87
3	1	7		19.42	19.32	19.65
3	1	14		19.20	19.02	19.39
3	8	0		18.97	18.76	19.10
3	8	4		18.76	18.52	18.88
3	8	7		18.54	18.30	18.64
3	15	0		18.34	18.06	18.35
3	1	0	16-QAM	19.40	19.33	19.64
3	1	7		19.13	19.06	19.40
3	1	14		18.83	18.79	19.14
3	8	0		18.59	18.57	18.88
3	8	4		18.34	18.30	18.68
3	8	7		18.13	18.01	18.45
3	15	0		17.90	17.77	18.22

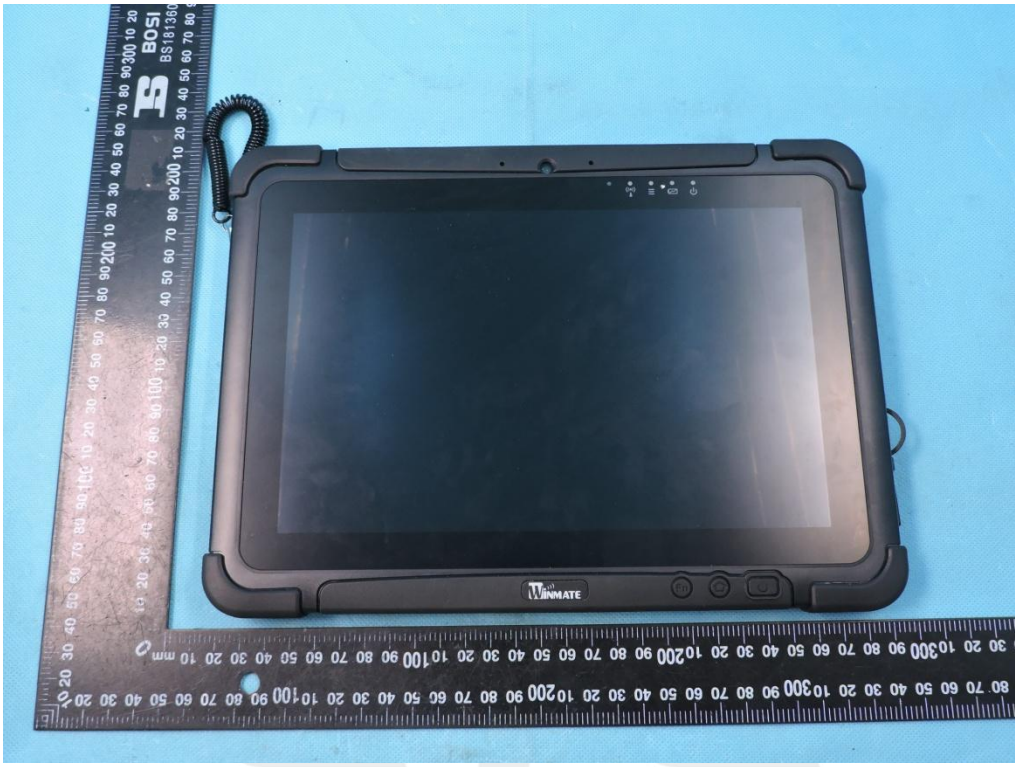
LTE BAND 26(Part 90)

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	19.86	19.81	19.73
5	1	12		19.61	19.58	19.50
5	1	24		19.36	19.38	19.23
5	12	0		19.12	19.11	18.97
5	12	6		18.89	18.90	18.69
5	12	11		18.66	18.66	18.42
5	25	0		18.40	18.44	18.20
5	1	0	16-QAM	19.62	19.57	19.47
5	1	12		19.36	19.32	19.24
5	1	24		19.14	19.10	19.02
5	12	0		18.88	18.88	18.79
5	12	6		18.68	18.68	18.53
5	12	11		18.44	18.46	18.24
5	25	0		18.22	18.17	17.96
10	1	0	QPSK	N/A	19.89	N/A
10	1	24		N/A	19.59	N/A
10	1	49		N/A	19.31	N/A
10	25	0		N/A	19.05	N/A
10	25	12		N/A	18.85	N/A
10	25	24		N/A	18.62	N/A
10	50	0		N/A	18.33	N/A
10	1	0	16-QAM	N/A	19.68	N/A
10	1	24		N/A	19.42	N/A
10	1	49		N/A	19.17	N/A
10	25	0		N/A	18.89	N/A
10	25	12		N/A	18.60	N/A
10	25	24		N/A	18.33	N/A
10	50	0		N/A	18.04	N/A

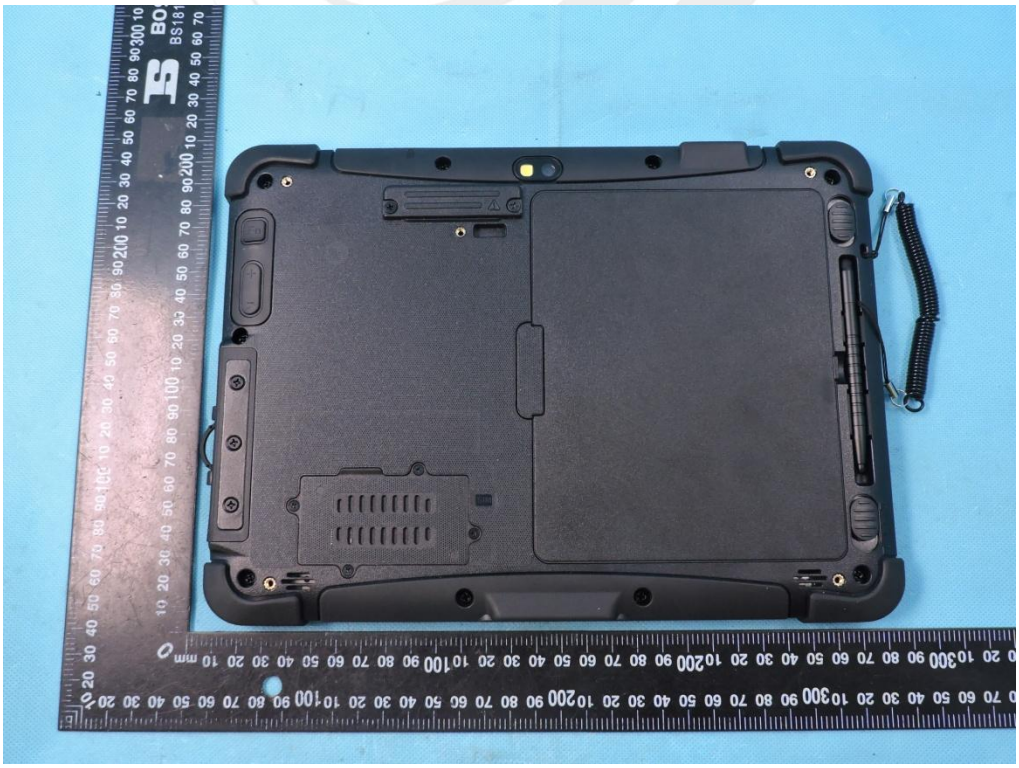
11. EUT and Test Setup Photo

11.1 EUT Photo

Front side



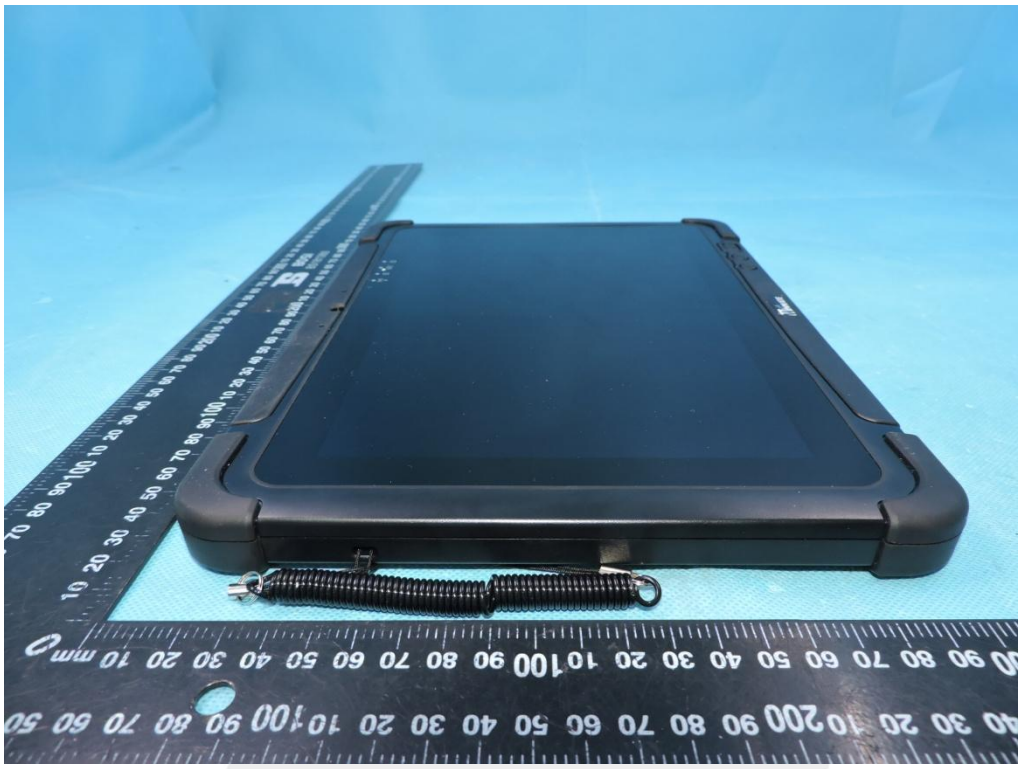
Back side



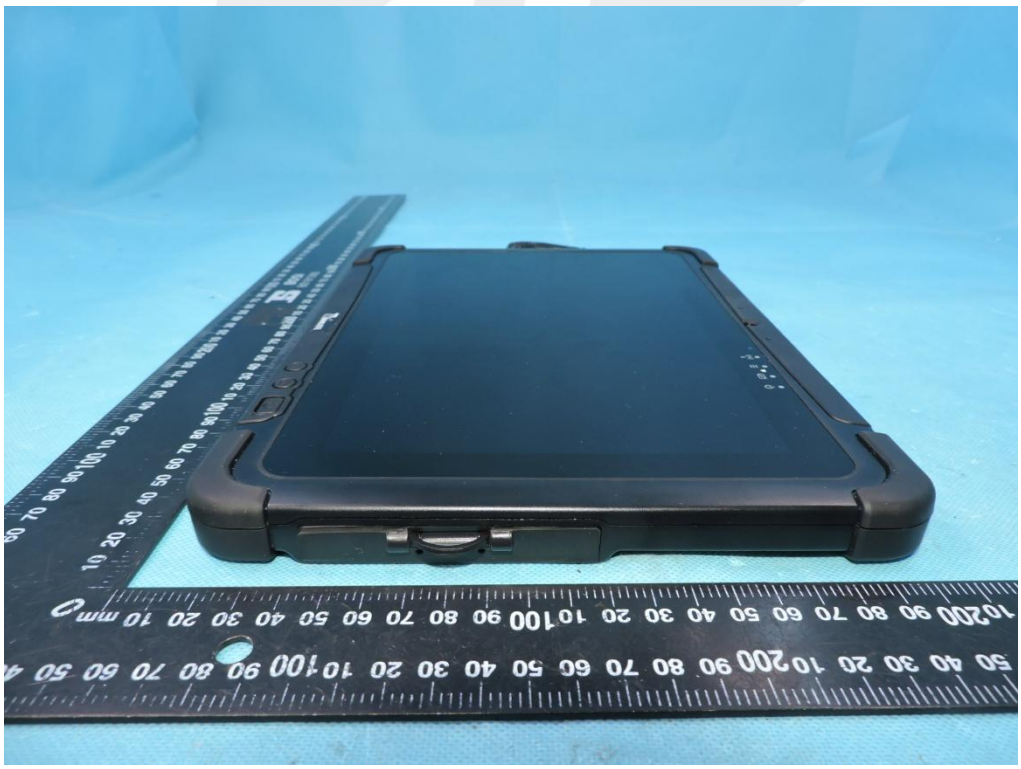
Top Edge

Bottom Edge

Left Edge



Right Edge



11.2 Setup Photo

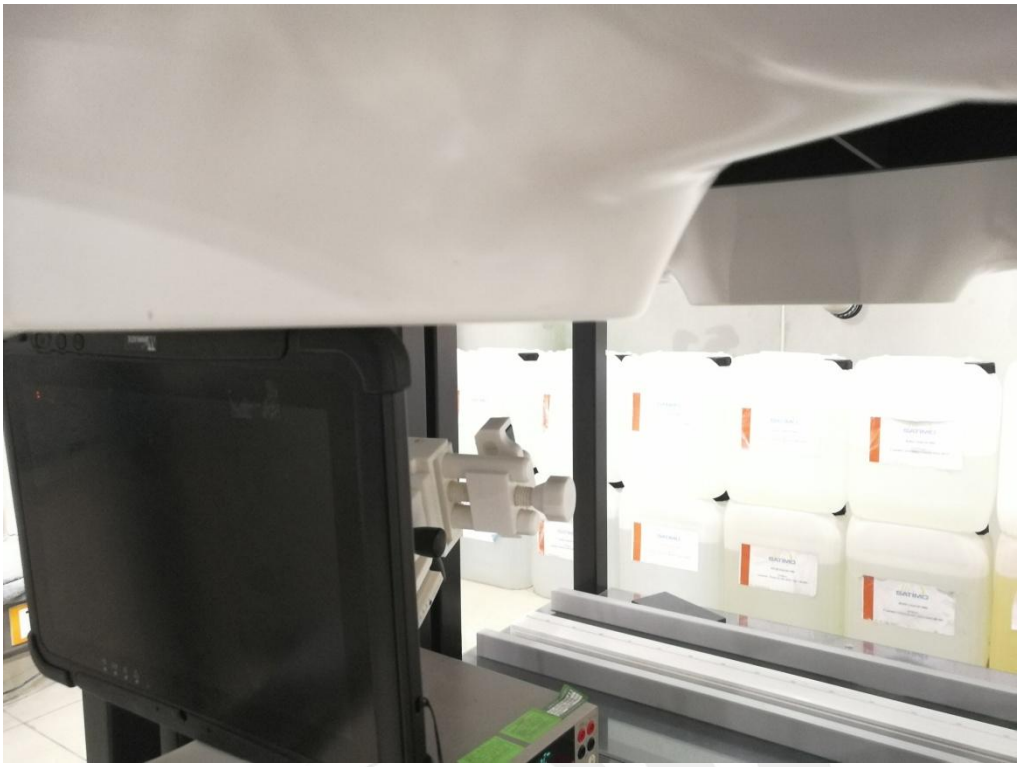
Body Back side(separation distance is 0mm)

Left Edge(separation distance is 0mm)

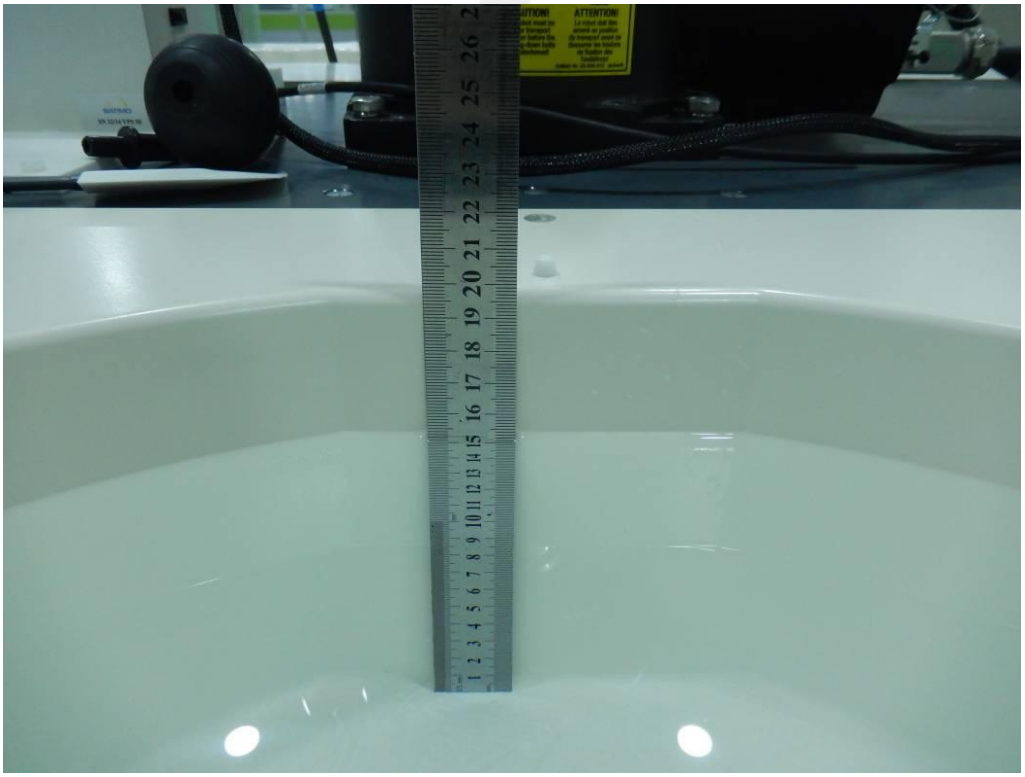
Right Edge(separation distance is 0mm)

Top Edge(separation distance is 0mm)

Bottom Edge(separation distance is 0mm)



Liquid depth (15 cm)



12. SAR Result Summary

12.1 Body-worn and Hotspot SAR

<Full Power>

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.
WCDMA II	RMC	Back side	9262	0.938	1.31	22	21.34	1.092	/
		Back side	9400	0.876	-3.63	22	21.22	1.048	/
		Back side	9538	1.042	-0.08	22	21.57	**1.150**	1
		Left Edge	9538	0.687	0.34	22	21.57	0.759	/
		Top Edge	9538	0.375	-1.44	22	21.57	0.414	/
WCDMA IV	RMC	Back side	1312	0.832	0.57	20.6	20.47	0.857	/
		Back side	1413	0.805	3.04	20.6	20.39	0.845	/
		Back side	1513	0.909	1.75	20.6	20.51	**0.928**	2
		Left Edge	1513	0.425	-1.73	20.6	20.51	0.434	/
		Top Edge	1513	0.332	-1.35	20.6	20.51	0.339	/
WCDMA V	RMC	Back side	4132	0.886	3.81	23	22.07	1.098	/
		Back side	4183	0.751	-1.65	23	21.84	0.981	/
		Back side	4233	0.986	2.34	23	22.34	**1.148**	3
		Left Edge	4233	0.673	-1.28	23	22.34	0.783	/
		Top Edge	4233	0.348	3.45	23	22.34	0.405	/

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle(%)	Scaled SAR (W/Kg)	Meas. No.
2.4G WLAN	802.11b	A	Back side	6	0.695	-3.39	18	17.51	100	**0.778**	4
			Right Edge	6	0.140	0.34	18	17.51	100	0.157	/
			Top Edge	6	0.256	-3.03	18	17.51	100	0.287	/
		B	Back side	6	0.605	-1.99	18	17.20	100	**0.727**	5
			Left Edge	6	0.202	-3.63	18	17.20	100	0.243	/
			Bottom Edge	6	0.041	2.07	18	17.20	100	0.049	/
	802.11n	A	Back side	6	0.091	3.93	19	18.68	100	**0.098**	6
			Right Edge	6	0.046	3.79	19	18.68	100	0.050	/
			Top Edge	6	0.029	-1.93	19	18.68	100	0.031	/
		B	Back side	6	0.084	-1.13	19	18.68	100	**0.090**	7
			Left Edge	6	0.067	2.84	19	18.68	100	0.072	/
			Bottom Edge	6	0.022	1.60	19	18.68	100	0.024	/

Note:

1. The test separation of all above table is 0mm.
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. 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 0.522 W/Kg for Body)

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 4	20M	QPSK	1	0	Back Side	20050	0.971	2.89	23	21.97	1.231	/
			1	0	Back Side	20175	1.025	3.09	23	22.03	1.282	/
			1	0	Back Side	20300	1.106	-0.88	23	22.15	**1.345**	8
			50	0	Back Side	20050	0.750	2.59	22	21.23	0.895	/
			50	0	Back Side	20175	0.738	3.03	22	21.21	0.885	/
			50	0	Back Side	20300	0.825	2.76	22	21.42	0.943	/
			100	0	Back Side	20300	0.607	3.28	21	20.60	0.666	/
			1	0	Left Edge	20050	0.613	0.73	23	21.97	0.777	/
			1	0	Left Edge	20175	0.654	2.36	23	22.03	0.818	/
			1	0	Left Edge	20300	0.715	-1.69	23	22.15	0.870	/
			50	0	Left Edge	20300	0.584	-1.02	22	21.42	0.667	/
			1	0	Top Edge	20300	0.359	-0.11	23	22.15	0.437	/
			50	0	Top Edge	20300	0.284	0.23	22	21.42	0.325	/
LTE Band 7	20M	QPSK	1	0	Back Side	20850	0.977	-3.90	21	20.64	**1.061**	9
			1	0	Back Side	21100	0.924	3.91	21	20.59	1.015	/
			1	0	Back Side	21350	0.930	0.17	21	20.61	1.017	/
			50	0	Back Side	20850	0.737	3.73	20	19.97	0.742	/
			1	0	Left Edge	20850	0.611	1.97	21	20.64	0.664	/
			50	0	Left Edge	20850	0.542	1.20	20	19.97	0.546	/
			1	0	Top Edge	20850	0.585	2.05	21	20.64	0.636	/
			50	0	Top Edge	20850	0.347	-3.38	20	19.97	0.349	/
LTE Band 12	10M	QPSK	1	0	Back Side	23060	1.060	-0.10	23	22.57	**1.170**	10
			1	0	Back Side	23095	0.973	3.06	23	22.50	1.092	/
			1	0	Back Side	23130	0.925	-1.56	23	22.39	1.064	/
			25	0	Back Side	23060	0.728	0.83	22	21.85	0.754	/
			1	0	Left Edge	23060	0.833	1.52	23	22.57	0.920	/
			1	0	Left Edge	23095	0.769	-2.56	23	22.50	0.863	/
			1	0	Left Edge	23130	0.743	-3.38	23	22.39	0.855	/
			25	0	Left Edge	23060	0.681	2.79	22	21.85	0.705	/
			1	0	Top Edge	23060	0.313	1.18	23	22.57	0.346	/
			25	0	Top Edge	23060	0.246	2.34	22	21.85	0.255	/

LTE Band 13	10M	QPSK	1	0	Back Side	23230	0.767	2.51	22	21.58	**0.845**	11
			25	0	Back Side	23230	0.582	-2.77	21	20.85	0.602	/
			1	0	Left Edge	23230	0.561	-3.51	22	21.58	0.618	/
			25	0	Left Edge	23230	0.473	1.92	21	20.85	0.490	/
			1	0	Top Edge	23230	0.268	-2.27	22	21.58	0.295	/
			25	0	Top Edge	23230	0.195	-0.13	21	20.85	0.202	/
LTE Band 25	20M	QPSK	1	0	Back Side	26140	0.955	-2.66	22	21.86	0.986	/
			1	0	Back Side	26365	1.009	3.62	22	21.87	**1.040**	12
			1	0	Back Side	26590	0.936	-1.27	22	21.70	1.003	/
			50	0	Back Side	26140	0.687	-0.83	22	21.10	0.845	/
			50	0	Back Side	26365	0.722	1.64	22	21.12	0.884	/
			50	0	Back Side	26590	0.674	3.28	22	20.97	0.854	/
			1	0	Left Edge	26365	0.690	-0.83	22	21.87	0.711	/
			50	0	Left Edge	26365	0.583	-3.64	22	21.12	0.714	/
			1	0	Top Edge	26365	0.336	3.77	22	21.87	0.346	/
			50	0	Top Edge	26365	0.211	3.09	22	21.12	0.258	/
LTE Band 26	15M	QPSK	1	0	Back Side	26775	0.882	1.33	23	22.46	0.999	/
			1	0	Back Side	26865	0.817	3.24	23	22.24	0.973	/
			1	0	Back Side	26965	0.932	-3.70	23	22.57	**1.029**	13
			36	0	Back Side	26965	0.764	-3.82	22	21.83	0.794	/
			1	0	Left Edge	26965	0.758	-3.02	23	22.57	0.837	/
			36	0	Left Edge	26965	0.623	1.02	22	21.83	0.648	/
			1	0	Top Edge	26965	0.367	3.05	23	22.57	0.405	/
			36	0	Top Edge	26965	0.214	0.96	22	21.83	0.223	/
	10M (Part90)	QPSK	1	0	Back Side	26865	0.917	2.64	23	22.69	0.985	/
			25	0	Back Side	26865	0.685	-0.96	22	21.97	0.690	/
			1	0	Left Edge	26865	0.715	-3.85	23	22.69	0.768	/
			25	0	Left Edge	26865	0.548	0.65	22	21.97	0.552	/
			1	0	Top Edge	26865	0.425	-3.33	23	22.69	0.456	/
			25	0	Top Edge	26865	0.287	-1.23	22	21.97	0.289	/
LTE Band 30	10M	QPSK	1	0	Back Side	27710	0.428	0.68	22	21.18	**0.517**	14
			25	0	Back Side	27710	0.279	3.84	21	20.43	0.318	/
			1	0	Left Edge	27710	0.311	1.55	22	21.18	0.376	/
			25	0	Left Edge	27710	0.232	-1.71	21	20.43	0.265	/
			1	0	Top Edge	27710	0.117	1.89	22	21.18	0.141	/
			25	0	Top Edge	27710	0.074	-1.21	21	20.43	0.084	/

LTE Band 41	20M	QPSK	1	0	Back Side	40620	0.371	-3.22	21	20.78	**0.390**	15
			50	0	Back Side	40620	0.218	0.61	21	20.03	0.273	/
			1	0	Left Edge	40620	0.325	-1.56	21	20.78	0.342	/
			50	0	Left Edge	40620	0.192	-0.53	21	20.03	0.240	/
			1	0	Top Edge	40620	0.097	0.59	21	20.78	0.102	/
			50	0	Top Edge	40620	0.060	2.16	21	20.03	0.075	/

LTE BAND 2

SAR for LTE Band 2 (Frequency range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

LTE BAND 5

SAR for LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR (W/Kg)	Meas. No.
5.2G WLAN	802.11a	A	Back side	36	0.589	-1.05	15	14.43	100	**0.672**	16
			Right Edge	36	0.425	3.56	15	14.43	100	0.485	/
			Top Edge	36	0.273	0.47	15	14.43	100	0.311	/
		B	Back side	36	0.694	2.34	14	13.89	100	**0.712**	17
			Left Edge	36	0.618	1.09	14	13.89	100	0.634	/
	802.11 ac40	A	Back side	38	0.382	-0.65	15	14.72	100	**0.407**	18
			Right Edge	38	0.315	1.26	15	14.72	100	0.336	/
			Top Edge	38	0.150	-3.83	15	14.72	100	0.160	/
		B	Back side	38	0.172	3.50	15	14.72	100	**0.183**	19
			Left Edge	38	0.156	-1.96	15	14.72	100	0.166	/
			Bottom Edge	38	0.083	-2.29	15	14.72	100	0.089	/

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR (W/Kg)	Meas. No.
5.3G WLAN	802.11a	A	Back side	60	0.771	2.14	13.5	13.44	100	**0.782**	20
			Right Edge	60	0.537	-2.55	13.5	13.44	100	0.544	/
			Top Edge	60	0.255	0.45	13.5	13.44	100	0.259	/
		B	Back side	52	0.614	-1.06	13	12.87	100	**0.633**	21
			Left Edge	52	0.546	3.84	13	12.87	100	0.563	/
	802.11 n40	A	Back side	54	0.301	1.16	16	15.14	100	**0.367**	22
			Right Edge	54	0.253	-0.31	16	15.14	100	0.308	/
			Top Edge	54	0.176	-1.26	16	15.14	100	0.215	/
		B	Back side	54	0.150	2.92	16	15.14	100	**0.183**	23
			Left Edge	54	0.132	-1.37	16	15.14	100	0.161	/
			Bottom Edge	54	0.097	3.51	16	15.14	100	0.118	/

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR (W/Kg)	Meas. No.
5.6G WLAN	802.11a	A	Back side	100	0.746	0.74	14	13.81	100	0.779	/
			Back side	116	0.673	-2.31	14	13.64	100	0.731	/
			Back side	140	0.787	-1.63	14	13.90	100	**0.805**	24
			Right Edge	140	0.623	-0.01	14	13.90	100	0.638	/
			Top Edge	140	0.458	-2.81	14	13.90	100	0.469	/
		B	Back side	116	0.661	2.98	14	13.61	100	**0.723**	25
			Left Edge	116	0.584	-0.79	14	13.61	100	0.639	/
	802.11 ac40	A	Back side	102	0.257	-3.76	16	15.56	100	**0.284**	26
			Right Edge	102	0.172	-2.86	16	15.56	100	0.190	/
			Top Edge	102	0.114	0.20	16	15.56	100	0.126	/
		B	Back side	102	0.331	-0.66	16	15.56	100	**0.366**	27
			Left Edge	102	0.289	3.39	16	15.56	100	0.320	/
			Bottom Edge	102	0.183	-3.39	16	15.56	100	0.203	/

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle (%)	Scaled SAR (W/Kg)	Meas. No.
5.8G WLAN	802.11a	A	Back side	165	0.731	-1.86	13.1	13.08	100	**0.734**	28
			Right Edge	165	0.584	0.89	13.1	13.08	100	0.587	/
			Top Edge	165	0.416	-1.38	13.1	13.08	100	0.418	/
		B	Back side	165	0.505	2.15	13	12.35	100	**0.587**	29
			Left Edge	165	0.435	-0.24	13	12.35	100	0.505	/
	802.11 n20	A	Back side	157	0.391	-1.19	15	14.56	100	**0.433**	30
			Right Edge	157	0.248	2.15	15	14.56	100	0.274	/
			Top Edge	157	0.216	-0.18	15	14.56	100	0.239	/
		B	Back side	157	0.312	2.73	15	14.56	100	**0.345**	31
			Left Edge	157	0.289	-1.52	15	14.56	100	0.320	/

Band	Mode	Test Position	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
Bluetooth	GFSK	Back side	0.023	2.14	5	4.75	**0.024**	32
		Top Edge	0.010	0.75	5	4.75	0.011	/

Body-worn and Hotspot SAR<Reduced Power level for WWAN+WLAN>

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.
WCDMA II	HSUPA Subtest-1	Back side	9400	0.625	1.07	20	19.82	**0.651**	33
		Left Edge	9400	0.366	-3.87	20	19.82	0.381	/
		Top Edge	9400	0.234	-3.89	20	19.82	0.244	/
WCDMA IV	HSDPA Subtest-1	Back side	1513	0.654	3.78	20	19.69	**0.702**	34
		Left Edge	1513	0.254	2.30	20	19.69	0.273	/
		Top Edge	1513	0.189	3.53	20	19.69	0.203	/
WCDMA V	HSUPA Subtest-1	Back side	4183	0.531	1.22	20	19.18	**0.641**	35
		Left Edge	4183	0.274	0.97	20	19.18	0.331	/
		Top Edge	4183	0.158	3.93	20	19.18	0.191	/

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 4	20M	QPSK	1	0	Back Side	20175	0.561	1.10	20	19.36	**0.650**	36
			50	0	Back Side	20300	0.327	3.99	19	18.50	0.367	/
			1	0	Left Edge	20175	0.375	-3.77	20	19.36	0.435	/
			50	0	Left Edge	20300	0.238	0.61	19	18.50	0.267	/
			1	0	Top Edge	20175	0.154	1.72	20	19.36	0.178	/
			50	0	Top Edge	20300	0.103	3.11	19	18.50	0.116	/
LTE Band 7	20M	QPSK	1	0	Back Side	21350	0.490	-1.42	20	19.51	**0.549**	37
			50	0	Back Side	21350	0.327	1.25	19	18.79	0.444	/
			1	0	Left Edge	21350	0.338	2.83	20	19.51	0.378	/
			50	0	Left Edge	21350	0.246	-3.11	19	18.79	0.310	/
			1	0	Top Edge	21350	0.127	-1.09	20	19.51	0.142	/
			50	0	Top Edge	21350	0.055	2.27	19	18.79	0.099	/
LTE Band 12	10M	QPSK	1	0	Back Side	23095	0.530	3.81	21	20.69	**0.569**	38
			25	0	Back Side	23095	0.357	0.48	20	19.89	0.366	/
			1	0	Left Edge	23095	0.446	-1.25	21	20.69	0.479	
			25	0	Left Edge	23095	0.289	0.74	20	19.89	0.296	
			1	0	Top Edge	23095	0.125	1.27	21	20.69	0.134	/
			25	0	Top Edge	23095	0.084	-2.78	20	19.89	0.086	/
LTE Band 13	10M	QPSK	1	0	Back Side	23230	0.582	2.66	22	21.63	**0.634**	39
			25	0	Back Side	23230	0.405	-0.26	21	20.90	0.414	/
			1	0	Left Edge	23230	0.441	-2.59	22	21.63	0.480	/
			25	0	Left Edge	23230	0.325	-0.26	21	20.90	0.333	/
			1	0	Top Edge	23230	0.167	-3.33	22	21.63	0.182	/
			25	0	Top Edge	23230	0.084	1.66	21	20.90	0.086	/

LTE Band 25	20M	QPSK	1	0	Back Side	26365	0.656	0.09	20.2	20.12	**0.668**	40
			50	0	Back Side	26365	0.433	2.44	20	19.43	0.494	/
			1	0	Left Edge	26365	0.537	-2.80	20.2	20.12	0.547	/
			50	0	Left Edge	26365	0.381	-3.79	20	19.43	0.434	/
			1	0	Top Edge	26365	0.186	-0.55	20.2	20.12	0.189	/
			50	0	Top Edge	26365	0.094	3.83	20	19.43	0.107	/
LTE Band 26	15M	QPSK	1	0	Back Side	26775	0.529	-2.61	22	21.13	**0.646**	41
			36	0	Back Side	26965	0.384	-0.33	21	20.33	0.448	/
			1	0	Left Edge	26775	0.486	0.09	22	21.13	0.594	/
			36	0	Left Edge	26965	0.311	0.58	21	20.33	0.363	/
			1	0	Top Edge	26775	0.117	-3.33	22	21.13	0.143	/
			36	0	Top Edge	26965	0.073	-1.99	21	20.33	0.085	/
	10M （Part90）	QPSK	1	0	Back Side	26865	0.516	-0.84	20	19.89	0.529	/
			25	0	Back Side	26865	0.343	2.05	20	19.05	0.427	/
			1	0	Left Edge	26865	0.457	-3.98	20	19.89	0.469	/
			25	0	Left Edge	26865	0.274	2.99	20	19.05	0.341	/
			1	0	Top Edge	26865	0.108	-2.49	20	19.89	0.111	/
			25	0	Top Edge	26865	0.066	2.47	20	19.05	0.082	/

Band	Mode	Scaled SAR (W/Kg)		A+B
WLAN 2.4G	802.11n	Antenna A	0.098	0.188
	802.11n	Antenna B	0.090	
WLAN 5.2G	802.11ac	Antenna A	0.407	0.590
	802.11ac	Antenna B	0.183	
WLAN 5.3G	802.11n	Antenna A	0.367	0.550
	802.11n	Antenna B	0.183	
WLAN 5.6G	802.11ac	Antenna A	0.284	0.650
	802.11ac	Antenna B	0.366	
WLAN 5.8G	802.11n	Antenna A	0.433	0.778
	802.11n	Antenna B	0.345	

Note:

1. The test separation of all above table is 0mm.
2. Per KDB 447498 D01v05r01, 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.

12.2 repeated SAR measurement

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.
WCDMA II	RMC	Back side	9538	1.017	-2.48	22	21.57	1.123	/
WCDMA IV	RMC	Back side	1513	0.886	0.38	20.6	20.51	0.905	/
WCDMA V	RMC	Back side	4233	0.991	1.30	23	22.34	1.154	/
LTE Band 4	QPSK	Back side	20300	1.052	2.03	23	22.15	1.279	/
LTE Band 7	QPSK	Back side	20850	0.943	-0.04	21	20.64	1.024	/
LTE Band 12	QPSK	Back side	23060	1.097	2.59	23	22.57	1.211	/
LTE Band 13	QPSK	Back side	23230	0.714	-0.39	22	21.58	0.786	/
LTE Band 25	QPSK	Back side	26365	0.983	-3.65	22	21.87	1.013	/
LTE Band 26（Part22）	QPSK	Back side	26965	0.976	-3.26	23	22.57	1.078	/
LTE Band 26（Part90）	QPSK	Back side	26865	0.928	1.34	23	22.69	0.997	/

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle(%)	Scaled SAR (W/Kg)	Meas. No.
5.6G WLAN	802.11a	A	Back Side	140	0.754	0.61	14	13.90	100	0.772	/

Band	Mode	Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
WCDMA II	RMC	Back side	9538	1.042	1.017	1.02	-	-	-
WCDMA IV	RMC	Back side	1513	0.909	0.886	1.03	-	-	-
WCDMA V	RMC	Back side	4233	0.986	0.991	1.01	-	-	-
LTE Band 4	QPSK	Back side	20300	1.106	1.052	1.05	-	-	-
LTE Band 7	QPSK	Back side	20850	0.977	0.943	1.04	-	-	-
LTE Band 12	QPSK	Back side	23060	1.060	1.097	1.03	-	-	-
LTE Band 13	QPSK	Back side	23230	0.767	0.714	1.07	-	-	-
LTE Band 25	QPSK	Back side	26365	1.009	0.983	1.03	-	-	-
LTE Band 26 （Part22）	QPSK	Back side	26965	0.932	0.976	1.05	-	-	-
LTE Band 26 （Part90）	QPSK	Back side	26865	0.917	0.928	1.01	-	-	-

Band	Mode	Antenna	Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
5.6G WLAN	802.11a	A	Back Side	140	0.787	0.754	1.04	-	-	-

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⩽1.2and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is＞1.20 or when the original or repeated measurement is ⩾ 1.45W/Kg
4. The ratio is the difference in percentage between original and repeated measured SAR.

Simultaneous Multi-band Transmission Evaluation:

1. For simultaneous transmission at head and body exposure position, 2 transmitters simultaneous transmission was the worst state.
2. Based upon KDB 447498 D01, BT SAR is excluded as below table.
3. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
4. 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
5. The reported SAR summation is calculated based on the same configuration and test position.
6. 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.

Sum of the SAR for WCDMA, LTE, Wi-Fi and BT

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
2.4GHz WLAN ANT A + BT	Body	2.4GHz WLAN	0.778	0.802
		BT	0.024	
2.4GHz WLAN ANT B + BT	Body	2.4GHz WLAN	0.727	0.751
		BT	0.024	
2.4GHz WLAN ANT A+B + BT	Body	2.4GHz WLAN	0.188	0.212
		BT	0.024	
5.2GHz WLAN ANT A + BT	Body	5.2GHz WLAN	0.672	0.696
		BT	0.024	
5.2GHz WLAN ANT B + BT	Body	5.2GHz WLAN	0.712	0.736
		BT	0.024	
5.2GHz WLAN ANT A+B + BT	Body	5.2GHz WLAN	0.590	0.614
		BT	0.024	
5.3GHz WLAN ANT A + BT	Body	5.3GHz WLAN	0.782	0.806
		BT	0.024	
5.3GHz WLAN ANT B + BT	Body	5.3GHz WLAN	0.633	0.657
		BT	0.024	
5.3GHz WLAN ANT A+B + BT	Body	5.3GHz WLAN	0.550	0.574
		BT	0.024	
5.6GHz WLAN ANT A + BT	Body	5.6GHz WLAN	0.805	0.829
		BT	0.024	
5.6GHz WLAN ANT B + BT	Body	5.6GHz WLAN	0.723	0.747
		BT	0.024	
5.6GHz WLAN ANT A+B + BT	Body	5.6GHz WLAN	0.650	0.674
		BT	0.024	
5.8GHz WLAN ANT A + BT	Body	5.8GHz WLAN	0.734	0.758
		BT	0.024	
5.8GHz WLAN ANT B + BT	Body	5.8GHz WLAN	0.587	0.611
		BT	0.024	
5.8GHz WLAN ANT A+B + BT	Body	5.8GHz WLAN	0.778	0.802
		BT	0.024	
WCDMA + Max:2.4GHz WLAN ANT A	Body	WCDMA	0.702	1.480
		2.4GHz WLAN	0.778	
LTE + Max:2.4GHz WLAN ANT A	Body	LTE	0.668	1.446
		2.4GHz WLAN	0.778	
WCDMA + Max:5.2GHz WLAN ANT B	Body	WCDMA	0.702	1.414
		5.2GHz WLAN	0.712	
LTE + Max:5.2GHz WLAN ANT B	Body	LTE	0.668	1.380
		5.2GHz WLAN	0.712	
WCDMA + Max:5.3GHz WLAN ANT A	Body	WCDMA	0.702	1.484
		5.3GHz WLAN	0.782	
LTE + Max:5.3GHz WLAN AANT B	Body	LTE	0.668	1.450
		5.3GHz WLAN	0.782	
WCDMA + Max:5.6GHz WLAN ANT A	Body	WCDMA	0.702	1.507
		5.6GHz WLAN	0.805	
LTE + MAX:5.6GHz WLAN ANT A	Body	LTE	0.668	1.473
		5.6GHz WLAN	0.805	

WCDMA + Max:5.8GHz WLAN ANT A+B	Body	WCDMA	0.702	1.480
		5.8GHz WLAN	0.778	
LTE + Max:5.8GHz WLAN ANT A+B	Body	LTE	0.668	1.446
		5.8GHz WLAN	0.778	
WCDMA + Max:2.4GHz WLAN ANT A+BT	Body	WCDMA + 2.4GHz WLAN	1.480	1.504
		BT	0.024	
LTE + Max:2.4GHz WLAN ANT A+BT	Body	LTE + 2.4GHz WLAN	1.446	1.470
		BT	0.024	
WCDMA + Max:5.2GHz WLAN ANT B+BT	Body	WCDMA + 5.2GHz WLAN	1.414	1.438
		BT	0.024	
LTE + Max:5.2GHz WLAN ANT B+BT	Body	LTE + 5.2GHz WLAN	1.380	1.404
		BT	0.024	
WCDMA + Max:5.3GHz WLAN ANT B+BT	Body	WCDMA + 5.3GHz WLAN	1.484	1.508
		BT	0.024	
LTE + Max:5.3GHz WLAN ANT B+BT	Body	LTE + 5.3GHz WLAN	1.450	1.474
		BT	0.024	
WCDMA + Max:5.6GHz WLAN ANT A+BT	Body	WCDMA + 5.6GHz WLAN	1.507	1.531
		BT	0.024	
LTE + Max:5.6GHz WLAN ANT A+BT	Body	LTE + 5.6GHz WLAN	1.473	1.497
		BT	0.024	
WCDMA + Max:5.8GHz WLAN ANT A+B+BT	Body	WCDMA + 5.8GHz WLAN	1.480	1.504
		BT	0.024	
LTE + Max:5.8GHz WLAN ANT A+B+BT	Body	LTE + 5.8GHz WLAN	1.446	1.470
		BT	0.024	

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	2017.08.15	2020.08.14
835MHz Dipole	MVG	SID835	SN 30/14 DIP0G835-332	2017.08.15	2020.08.14
1800MHz Dipole	MVG	SID1800	SN 30/14 DIP1G800-329	2017.08.15	2020.08.14
1900MHz Dipole	MVG	SID1900	SN 30/14 DIP1G900-333	2017.08.15	2020.08.14
2450MHzDipole	MVG	SID2450	SN 30/14 DIP2G450-335	2017.08.15	2020.08.14
2600MHz Dipole	MVG	SID2600	SN 30/14 DIP2G600-336	2017.08.15	2020.08.14
Waveguide	SATIMO	SWG5500	SN 13/14 WGA32	2017.08.15	2020.08.14
E-Field Probe	MVG	SSE2	SN 41/18 EPGO334	2019.06.04	2020.06.03
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2019.11.25	2020.11.24
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	2019.10.11	2020.10.10
Multi Meter	Keithley	Multi Meter 2000	4050073	2019.10.11	2020.10.10
Signal Generator	Agilent	N5182A	MY50140530	2019.10.09	2020.10.08
Wireless Communication Test Set	Agilent	8960-E5515C	MY48360751	2019.10.09	2020.10.08
Wireless Communication Test Set	R&S	CMW500	117239	2019.10.09	2020.10.08
Power Amplifier	DESAY	ZHL-42W	9638	2019.10.09	2020.10.08
Power Meter	R&S	NRP	100510	2019.10.16	2020.10.15
Power Meter	Agilent	E4419B	QB43312265	2019.10.12	2020.10.11
Power Sensor	R&S	NRP-Z11	101919	2019.10.12	2020.10.11
Power Sensor	HP	E9300A	US39210170	2019.10.09	2020.10.08
Temperature hygrometer	SuWei	SW-108	N/A	2019.10.13	2020.10.12
Thermograph	Elitech	RC-4	S/N EF7176501537	2019.10.11	2020.10.10

Note:
Per KDB 865664 D01, Dipole SAR Validation Verification, STS LAB has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:
1. There is no physical damage on the dipole
2. System validation with specific dipole is within 10% of calibrated value
Return-loss in within 20% of calibrated measurement

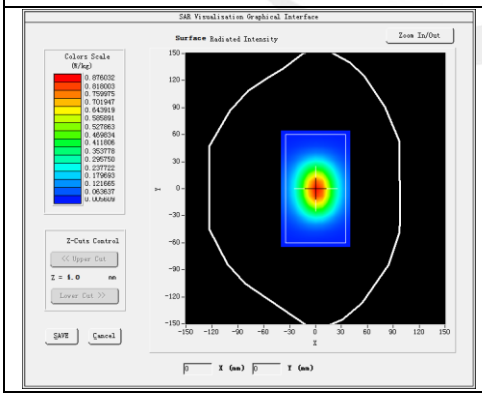
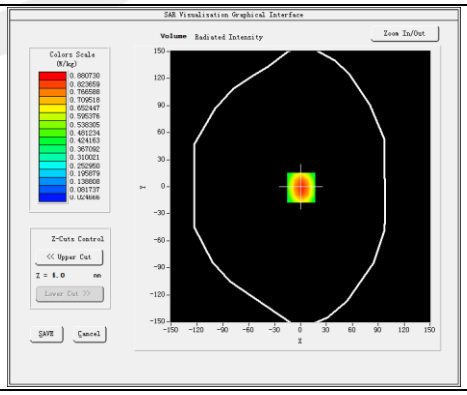
Appendix A. System Validation Plots

System Performance Check Data (750MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-04-01

Experimental conditions.

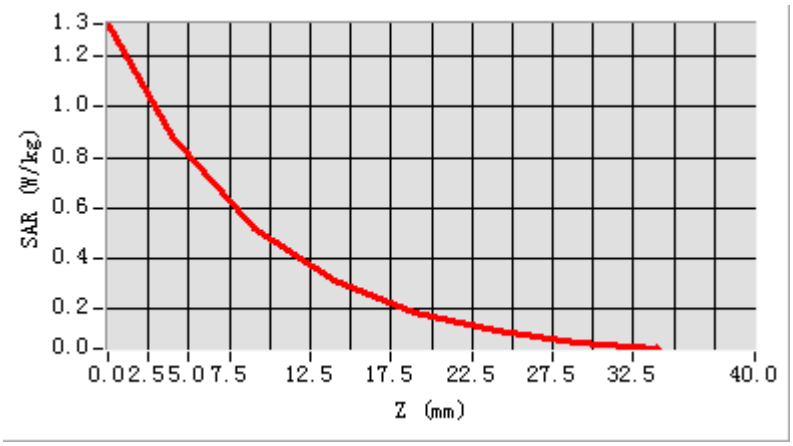
Probe	
Phantom	Validation plane
Device Position	-
Band	750MHz
Channels	-
Signal	CW
Frequency (MHz)	750MHz
Relative permittivity	56.32
Conductivity (S/m)	0.98
Power drift (%)	-0.73
Probe	SN 41/18 EPGO334
ConvF:	1.49
Crest factor:	1:1

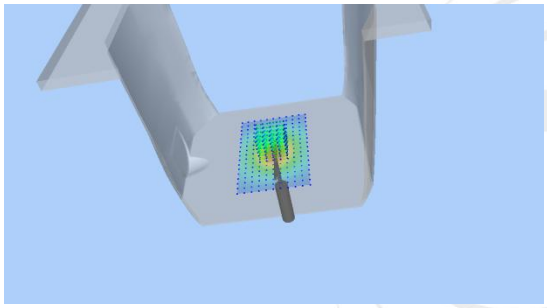
SURFACE SAR	VOLUME SAR
	

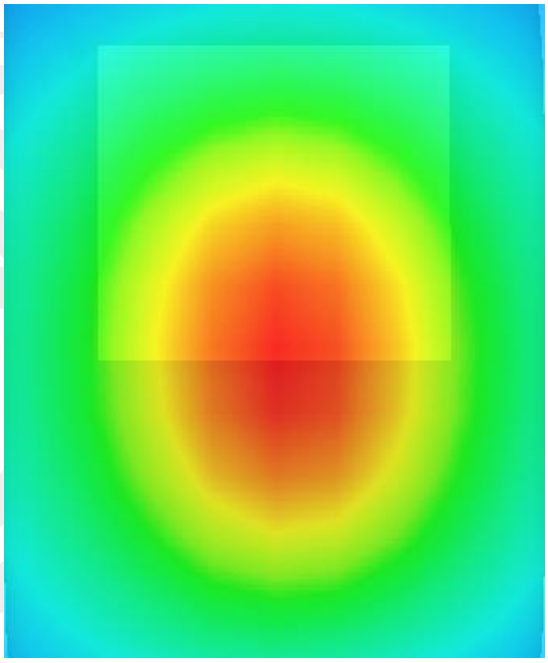
Maximum location: X=1.00, Y=-1.00

SAR 10g (W/Kg)	0.565988
SAR 1g (W/Kg)	0.811767

Z Axis Scan


1.3
1.2
1.0
0.8
0.6
0.4
0.2
0.0
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)



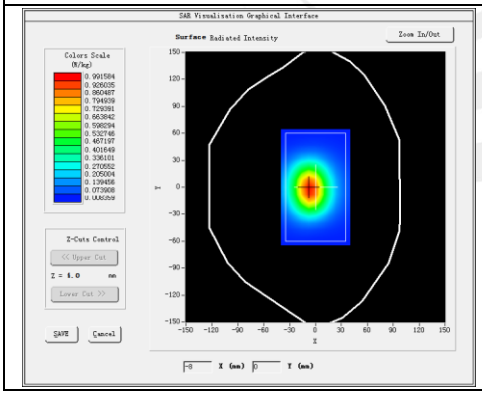
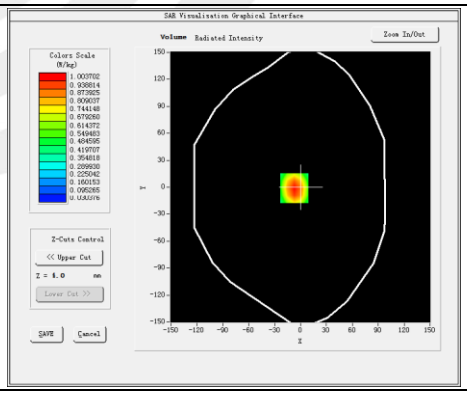


System Performance Check Data (835MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-04-03

Experimental conditions.

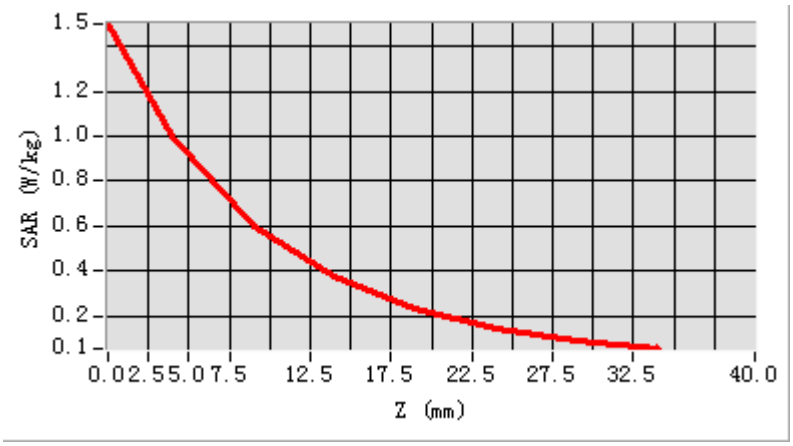
Probe	
Phantom	Validation plane
Device Position	-
Band	835MHz
Channels	-
Signal	CW
Frequency (MHz)	835MHz
Relative permittivity	54.76
Conductivity (S/m)	0.95
Power drift (%)	1.22
Probe	SN 41/18 EPGO334
ConvF:	1.53
Crest factor:	1:1

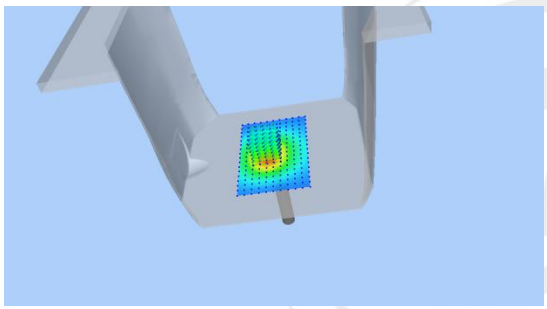
SURFACE SAR	VOLUME SAR
	

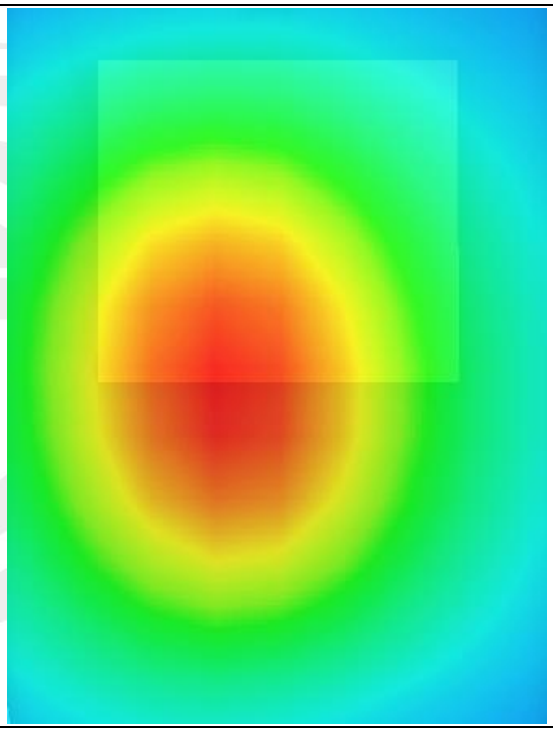
Maximum location: X=-7.00, Y=-1.00

SAR 10g (W/Kg)	0.653231
SAR 1g (W/Kg)	0.962685

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)



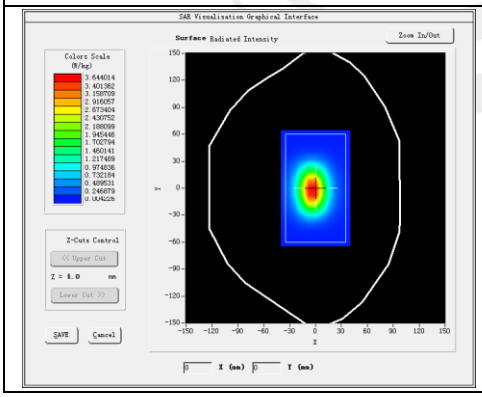
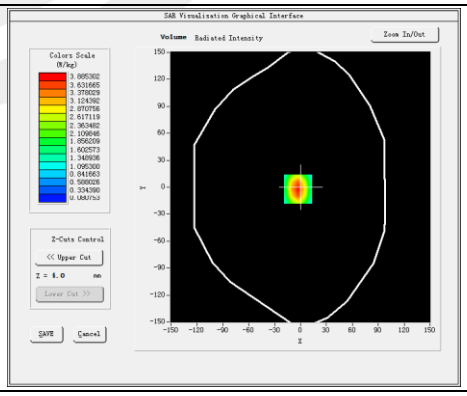


System Performance Check Data(1800MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-04-07

Experimental conditions.

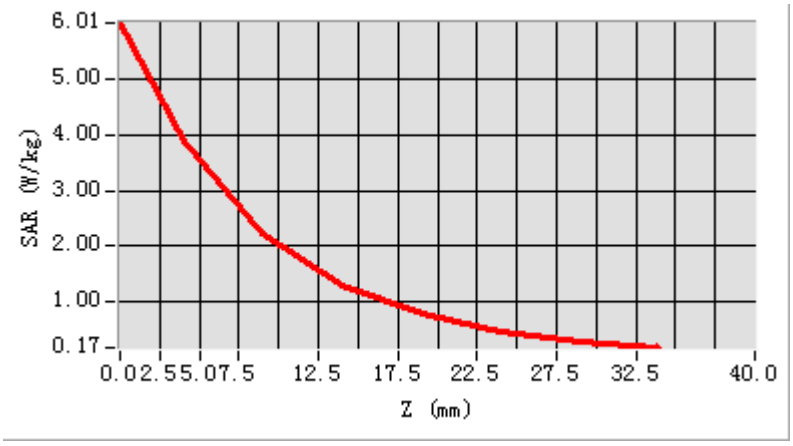
Phantom	Validation plane
Device Position	-
Band	1800MHz
Channels	-
Signal	CW
Frequency (MHz)	1800MHz
Relative permittivity	53.69
Conductivity (S/m)	1.54
Power drift (%)	0.87
Probe	SN 41/18 EPGO334
ConvF	1.66
Crest factor:	1:1

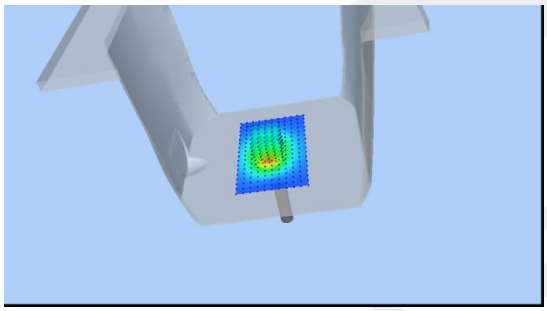
SURFACE SAR	VOLUME SAR
	

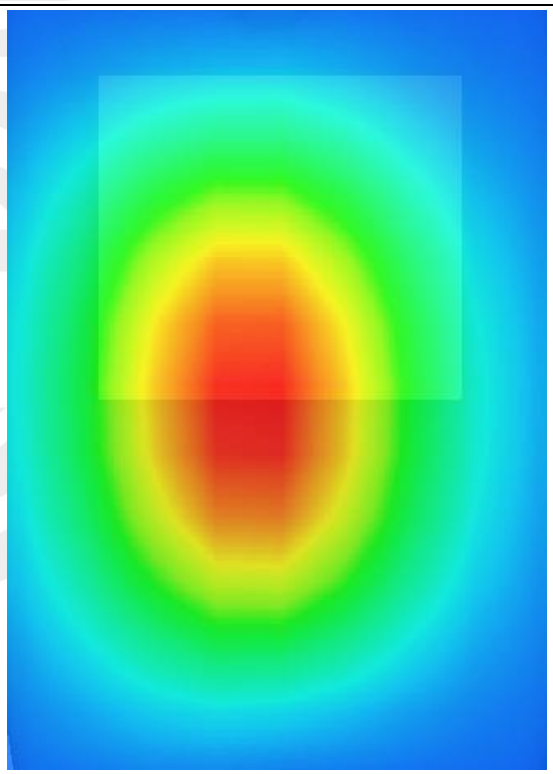
Maximum location: X=-3.00, Y=-2.00

SAR 10g (W/Kg)	1.946284
SAR 1g (W/Kg)	3.765883

Z Axis Scan


6.01
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)



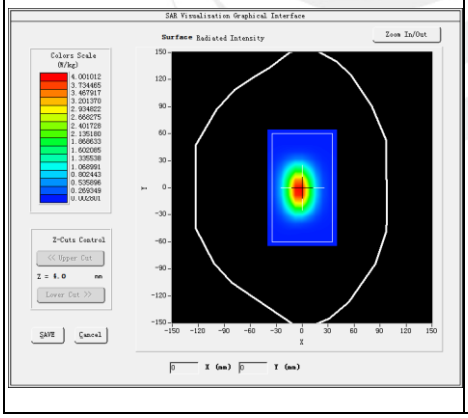
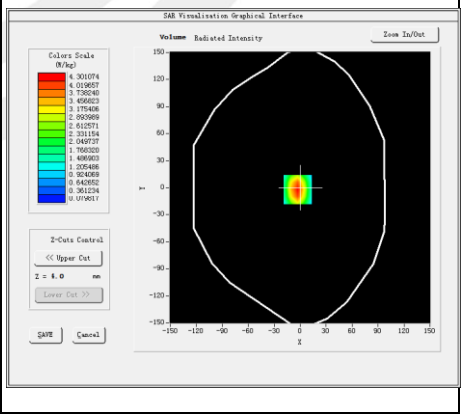


System Performance Check Data (1900MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-04-02

Experimental conditions.

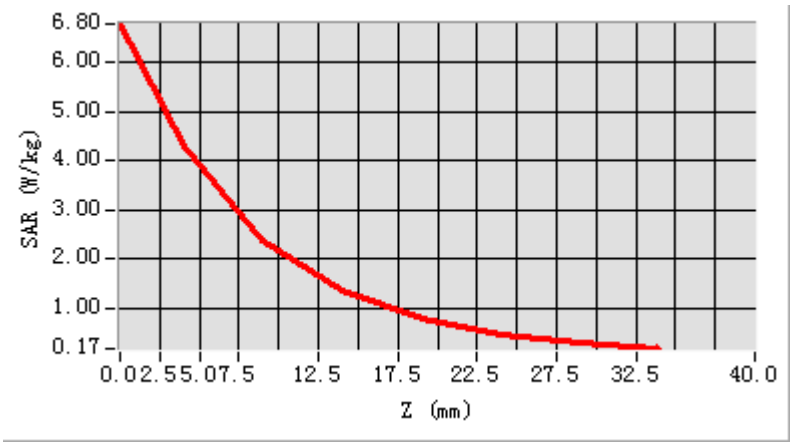
Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900
Relative permittivity	54.11
Conductivity (S/m)	1.55
Power drift (%)	2.18
Probe	SN 41/18 EPGO334
ConvF:	1.88
Crest factor:	1:1

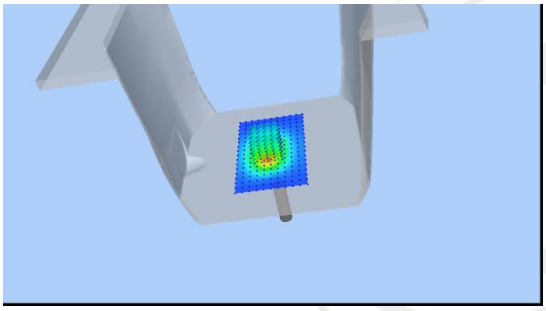
SURFACE SAR	VOLUME SAR
	

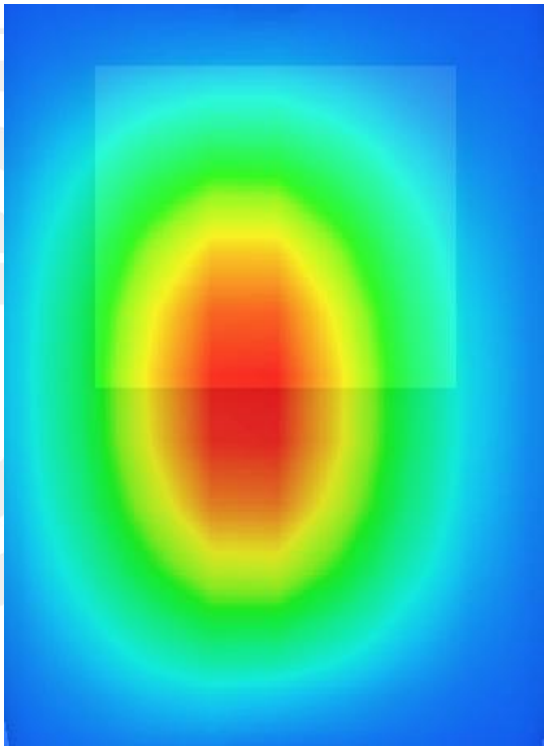
Maximum location: X=-3.00, Y=-2.00

SAR 10g (W/Kg)	2.050068
SAR 1g (W/Kg)	4.051993

Z Axis Scan


6.80
6.00
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)



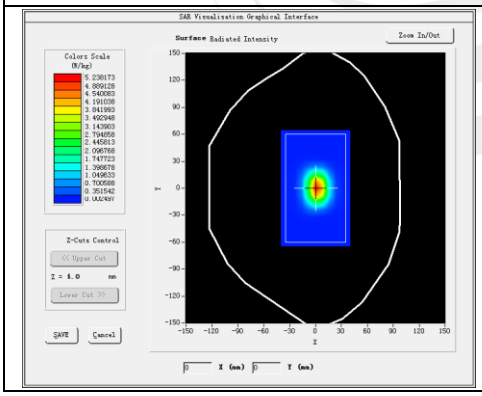
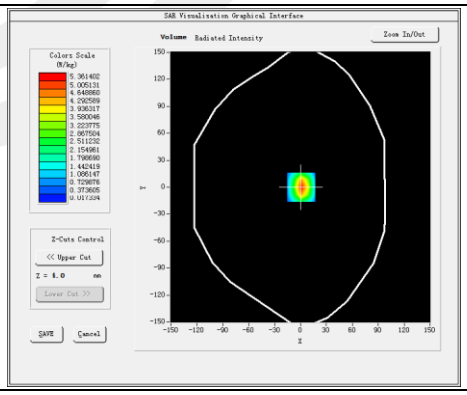


System Performance Check Data (2450MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-03-10

Experimental conditions.

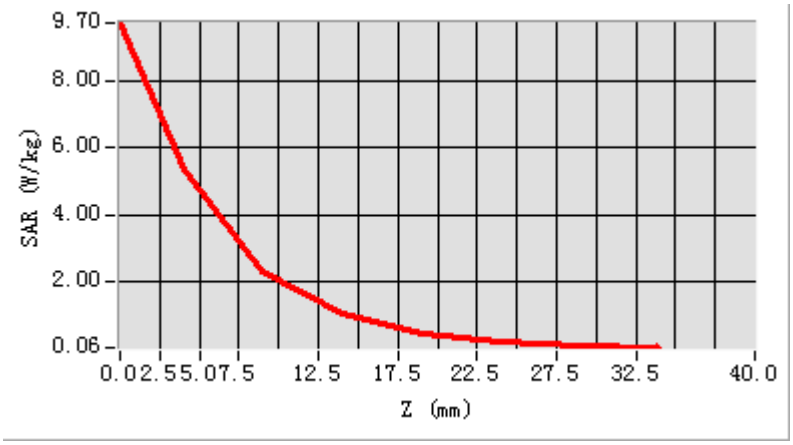
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity	52.53
Conductivity (S/m)	1.98
Power drift (%)	-2.33
Probe	SN 41/18 EPGO334
ConvF	2.02
Crest factor:	1:1

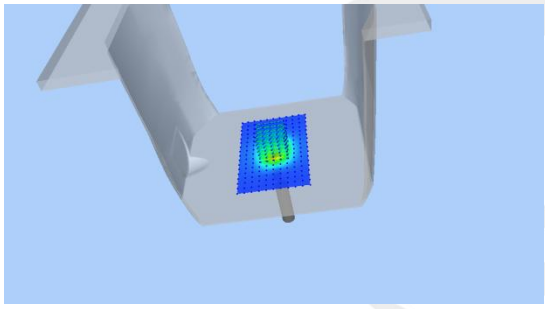
SURFACE SAR	VOLUME SAR
	

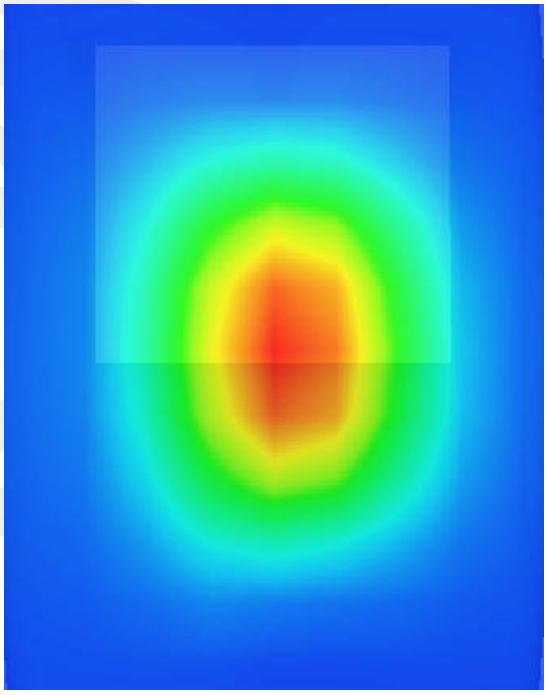
Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	2.431682
SAR 1g (W/Kg)	5.394775

Z Axis Scan


9.70
8.00
6.00
4.00
2.00
0.06
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)



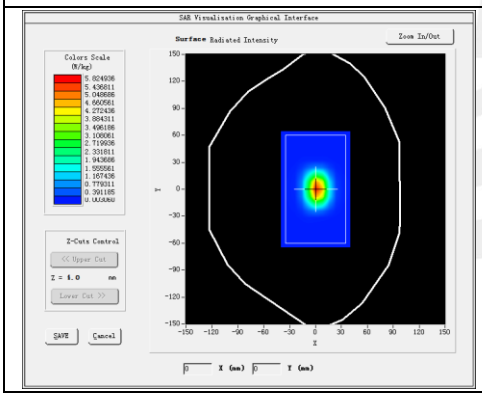
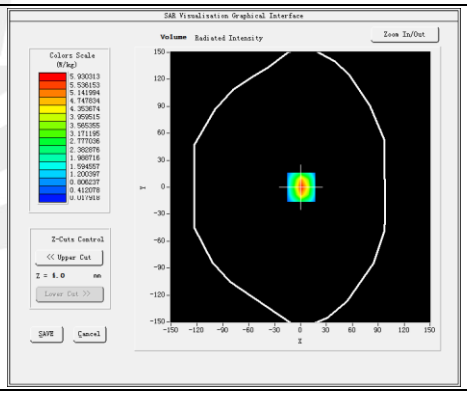


System Performance Check Data(2600MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-04-09

Experimental conditions.

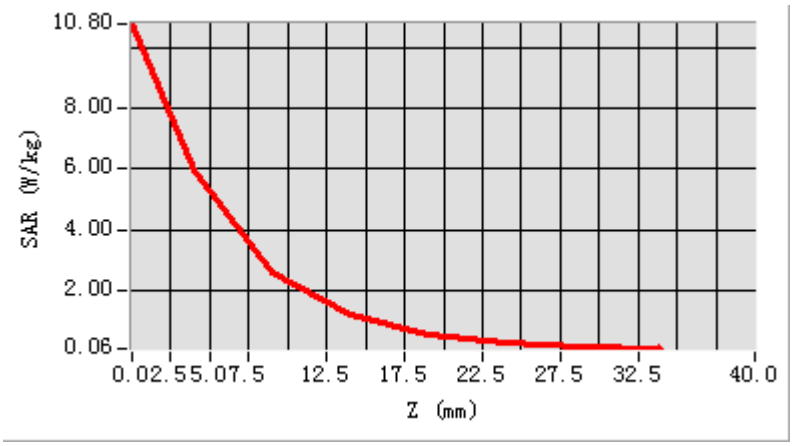
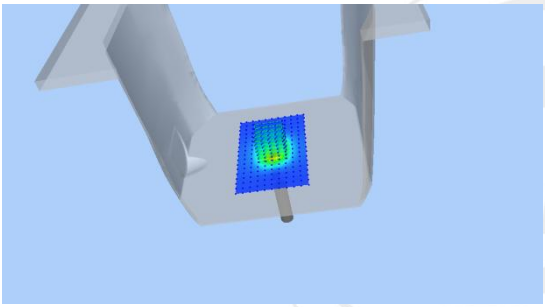
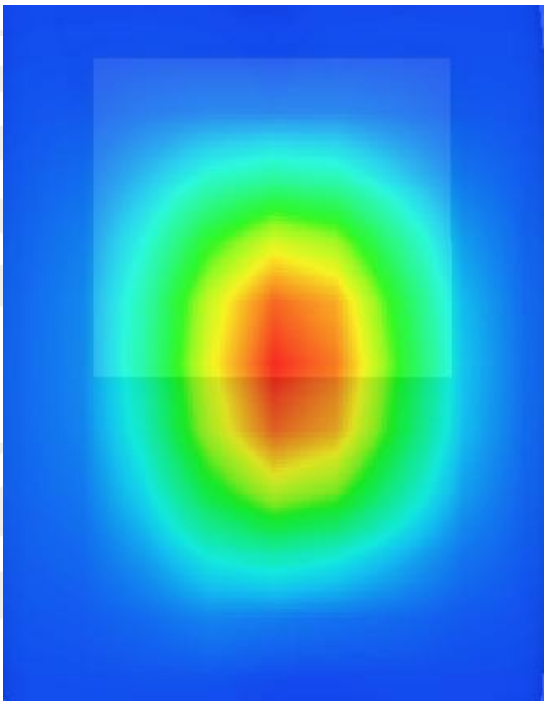
Device Position	Validation plane
Band	2600 MHz
Channels	-
Signal	CW
Frequency (MHz)	2600
Relative permittivity	53.08
Conductivity (S/m)	2.07
Power drift (%)	0.95
Probe	SN 41/18 EPGO334
ConvF	1.92
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	2.373396
SAR 1g (W/Kg)	5.594290

Z Axis Scan


10.80
8.00
6.00
4.00
2.00
0.06
SAR (W/kg)
0.02.55.07.5
12.5
17.5
22.5
27.5
32.5
40.0
Z (mm)