Certificate Number: 5055.02

TEST REPORT FOR SAR TESTING

Report No.: SRTC2020-9004(F)-20122901 (H)

Product Name: LTE Digital Mobile Phone

Product Model: Z6251V

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

Specification: Part 2.1093

IEEE Std 1528

KDB Procedures

FCC ID: SRQ-Z6251V

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District, Beijing, P.R. China

Tel: 86-10-57996183 Fax: 86-10-57996388

Contents

1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.
The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R. China
City:	Beijing
Country or Region:	P.R. China
Contacted person:	Liu Jia
Tel:	+86 10 57996183
Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District,Shenzhen, Guangdong,P.R.China
City:	Shenzhen
Country or Region:	China
Contacted person:	Gong Yu
Tel:	021-68895397
Email:	gongyu@zte.com.cn

1.4 Manufacturer's details

Company:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District,Shenzhen, Guangdong,P.R.China
City:	Shenzhen
Country or Region:	China
Contacted person:	Gong Yu
Tel:	021-68895397
Email:	gongyu@zte.com.cn

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2021.01.04
Testing Start Date:	2021.01.05
Testing End Date:	2021.01.13

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40

Normal Supply Voltage (Vdc.):	3.82

2. DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Wireless Technology and Frequency Bands	☐GSM Band: ☐WCDMA Band: FDD II/IV/V ☒LTE Band: 2/4/5/12/13/66 ☒Wi-Fi Band: 2.4GHz/UNII-1/UNII-3 ☒BT/BLE
Mode	GSM ☐GPRS (GMSK) ☐EGPRS (GMSK/8PSK) WCDMA ☐UMTS Rel. 99 ☐HSDPA (Rel. 5) ☐HSUPA (Rel. 6) ☐HSPA+ (Rel.7) ☐DC-HSDPA (Rel.8) ☐DC-HSUPA (Rel.9) Wi-Fi ☒802.11a ☒802.11b ☒802.11g ☒802.11n HT20 ☒802.11n HT40 ☒802.11ac VHT20 ☒802.11ac VHT40 ☒802.11ac VHT80 LTE ☒QPSK ☒16QAM ☒64QAM

Multi-Slot Class for GPRS/EDGE	☐Class 8 - One Up ☐Class 10 - Two Up ☐Class 12 - Four Up ☐Class 33- Four Up
Mobile Phone Capability	☐Class A - Mobile phones can be connected to both GPRS and GSM services simultaneously. ☐Class B - Mobile phones can be attached to both GPRS and GSM services, using one service at a time. ☐Class C - Mobile phones are attached to either GPRS or GSM voice service. You need to switch manually between services
DTM	Not Supported
Note	For licensed cellular network duty cycle is inherent. For unlicensed network WLAN Duty cycle is depends on the data traffic, and the traffic allocation in operating mode could be the most conservative condition which with 100% duty cycle. SAR measurement also use non signalling mode, so the duty factor shall be taken into consideration.

2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

State of sample	Normal
H/W Version S/W Version	Z6251VHW1.0 Z6251VV1.0.0B01
IMEI	861381050002635
Notes	As the information described above, we use test sample offered by the customer. The relevant tests have been performed in order to verify in which combination case the EUT would have the worst features.

Equipment	Battery 1
Manufacturer	Jiade Energy Technology（Zhuhai）Co., Ltd.
Model Number	Li3839T44P8h866445

Equipment	Charger 1
Manufacturer	SHENZHEN RUIJING INDUSTRIAL CO LTD
Model Number	STC-A520A-Z
Equipment	Charger 2
Manufacturer	Jiangsu Chenyang Electron Co.,Ltd.
Model Number	STC-A520A-Z

Equipment	USB cable 1
Manufacturer	Dongguan Kingpower Electronics Co.,Ltd.
Model Number	USB-TC20-W-100-M-L
Equipment	USB cable 2
Manufacturer	Guangdong Luxshare Ltd. Co
Model Number	USB-TC20-W-100-M-L

3. REFERENCE SPECIFICATION

Specification	Version	Title
Part 2.1093	2020	Radiofrequency radiation exposure evaluation: portable devices.
IEEE Std 1528	2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 248227 D01	v02r02	SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB 447498 D01	v06	General RF Exposure Guidance
KDB 447498 D02	v02r01	SAR MEASUREMENT PROCEDURES FOR USB DONGLE TRANSMITTERS
KDB 643646 D01	v01r03	SAR TEST REDUCTION CONSIDERATIONS FOR OCCUPATIONAL PTT RADIOS
KDB 616217 D04	v01r02	SAR for laptop and tablets
KDB 648474 D04	v01r03	Handset SAR
KDB 865664 D01	v01r04	SAR Measurement from 100 MHz to 6 GHz
KDB 865664 D02	v01r02	RF Exposure Reporting
KDB 941225 D01	v03r01	3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05	v02r05	SAR for LTE Devices
KDB 941225 D06	v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
KDB 941225 D07	v01r02	SAR EVALUATION PROCEDURES FOR UMPC MINI-TABLET DEVICES

4. TEST CONDITIONS

4.1 Picture to demonstrate the required liquid depth

The liquid depth is large than 15cm in the used SAM phantoms in flat section, and the depth of the tissue simulant was 15.0 ± 0.5 cm measured from the ear reference point during system checking and device measurements.

Liquid depth for SAR Measurement

4.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester. Communication between the device and the call tester was established by air link.
The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.
In all operating bands the measurements were performed on middle channel, and few of them were also performed on lowest and highest channels.

4.3 SAR Measurement Set-up

The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit. A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the robot motors.

The PC consists of the Micron Pentium IV computer with Win7 system and SAR Measurement Software DASY5 Professional, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot.
A data acquisition electronic (DAE) circuit performs the signal amplification; signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines.
The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection
The robot uses its own controller with a built in VME-bus computer.

4.4 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin headed "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements of IEEE 1528.
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.
The SPEAG device holder was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

4.5 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528. All tests were carried out using simulants whose dielectric parameters were within ± 10% below 3GHz and ± 5% above 3GHz of the recommended values when use DASY system according to KDB865664D01. All tests were carried out within 24 hours of measuring the dielectric parameters.

Tissue Stimulant Recipes	
Name	Broadband tissue-equivalent liquid
Type	HBBL600-10000V6 Simulating Liquid
Note: The stimulant could be the same for head and body.	

4.6 DESCRIPTION OF THE TEST PROCEDURE

4.6.1 Device Holder

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

Device holder supplied by SPEAG

4.6.2 Test Exposure Conditions

4.6.2.1 Head Configuration

Measurements were made in “cheek” and “tilt” positions on both the left hand and right-hand sides of the phantom.
The positions used in the measurements were according to IEEE 1528 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

4.6.2.2 Body Worn Configuration

The device was placed in the SPEAG holder below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance using a separate flat spacer that was removed before the start of the measurements. And the distance is normally determined according to the actual scene which might be the worst use condition for general exposure. The device’s front and rear were oriented facing the phantom since these orientations give higher results for most regular portable devices.

4.6.2.3 Hotspot Configuration

Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge; for the data modes, wireless technologies and frequency bands supporting hotspot mode.

4.6.3 Scan Procedure

First, area scans were used for determination of the field distribution and the approximate location of the local peak SAR values. The SAR distribution is scanned along the inside surface, at least for an area larger than the projection of the handset and antenna. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30°. The SAR distribution is first measured on a 2-D coarse grid. The scan region should cover all areas that are exposed and encompassed by the projection of the handset. There are 15 mm × 15 mm (equal or less than 2GHz), 12 mm × 12 mm (from 2GHz~4GHz) and 10mm x 10mm (from 4GHz~6GHz) measurement grid used when two staggered one-dimensional cubic splines are used to estimate the maximum SAR location.
When the reported 1g-SAR estimated by area scan is less than 1.40 w/kg.
Zoom scan was performed by using the configuration mentioned below or more conservative scan area and step to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.
Below 3GHz：32mmX32mmX30mm scan area with 8 mm X8 mm X5 mm steps
2GHz-3GHz：32mmX32mmX30mm scan area with 8 mm X8 mm X5 mm steps
3GHz-4GHz：28mmX28mmX28mm scan area with 7 mm X7 mm X4 mm steps
4GHz-5GHz： 25mmX25mmX24mm scan area with 5 mm X5 mm X3 mm steps
5GHz-6GHz： 25mmX25mmX22mm scan area with 5 mm X5 mm X2 mm steps

4.6.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within DASY5 are all based on the modified Quadratic Shepard's method (Robert J. Renka, Multivariate Interpolation of Large Sets of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).

The interpolation scheme combines a least-square fitted function method with a weighted average method. A triradiate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighboring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.

In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

5 RESULT SUMMARY

The maximum reported 1g -SAR values for Body-Worn/Hotspot exposure conditions with separation distance equal to10mm are given as follows. The device conforms to the requirements of the standard(s) when the maximum reported SAR value is less than or equal to the limit.

Standalone

WWAN ant

Exposure Position	Frequency Band	SAR Result(W/kg)	Highest SAR Result(W/kg)		Limit(W/kg)	Result
Head	LTE Band 2	0.27	0.37	1.08	1.6	Pass
	LTE Band 4	0.37				
	LTE Band 5	0.22				
	LTE Band 12	0.19				
	LTE Band 13	0.19				
	LTE Band 66	0.34				
Body-Worn	LTE Band 2	1.08	1.08			
	LTE Band 4	0.96				
	LTE Band 5	0.51				
	LTE Band 12	0.31				
	LTE Band 13	0.32				
	LTE Band 66	0.96				
Hotspot	LTE Band 2	1.08	1.08			
	LTE Band 4	0.96				
	LTE Band 5	0.51				
	LTE Band 12	0.31				
	LTE Band 13	0.32				
	LTE Band 66	0.96				

WLAN ant

Exposure Position	Frequency Band	SAR Result(W/kg)	Highest SAR Result(W/kg)		Limit(W/kg)	Result
Head	WLAN2.4GHz	1.01	1.01	1.01	1.60	Pass
	WLAN5GHz UNII-1	0.69				
	WLAN5GHz UNII-3	0.51				
Body-Worn	WLAN2.4GHz	0.62	1.00			
	WLAN5GHz UNII-1	0.65				
	WLAN5GHz UNII-3	1.00				
Hotspot	WLAN2.4GHz	0.62	1.00			
	WLAN5GHz UNII-1	0.66				
	WLAN5GHz UNII-3	1.00				

Simultaneous Transmission Summary

Exposure Position	SAR Result(W/kg)	Highest SAR Result(W/kg)	Limit(W/kg)	Verdict
Head	1.38	1.38	1.60	Pass
Body-Worn	1.12			
Hotspot	1.15			

This Test Report Is Approved by: Mr. Peng Zhen	Review by: Mr. Li Bin
Tested and issued by: Mr. He Shaowei	Approved date: 2021/01/27

6 TEST RESULT

6.1 Manufacturing Tolerance

LTE

Note: RB allocation mentioned below is for all Bandwidths, and the Frequency Range are divided to 3 ranges (Low, Mid, High)

Band 2

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	24.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	23.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	22.5
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Band 4

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	24.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	23.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	22.5
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Band 5

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	24.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	24.0
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	23.0
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Band 12

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	24.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	24.0
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	22.5
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Band 13

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	23.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	22.5
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Band 66

BW	Modulation	RB allocation with different offset	Frequency range	Tune up Tolerance (dBm)
All Bandwidth	QPSK	1	Low	24.5
			Mid	
			High	
		50%	Low	24.5
			Mid	
			High	
		100%	Low	23.5
			Mid	
			High	
	16QAM	1	Low	24.0
			Mid	
			High	
		50%	Low	23.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	
	64QAM	1	Low	22.5
			Mid	
			High	
		50%	Low	22.5
			Mid	
			High	
		100%	Low	22.5
			Mid	
			High	

Bluetooth

Modulation type	Tune up Tolerance (dBm)		
	2402MHz(Ch0)	2441MHz(Ch39)	2480MHz(Ch78)
GFSK	10.0		
π/4DQPSK	4.0		
8DPSK	4.0		

Bluetooth (BLE)

Modulation type	Tune up Tolerance (dBm)		
	2402MHz (Ch0)	2440MHz (Ch19)	2480MHz (Ch39)
GFSK (LE 1Mbps)	7.0		
GFSK (LE 2Mbps)	5.5		

WLAN 2.4GHz

Modulation type	Tune up Tolerance (dBm)		
	2412MHz	2437MHz	2462MHz
802.11b	21.5		
802.11g	20.0		
802.11n HT20	19.0		

WLAN 5GHz UNII-1

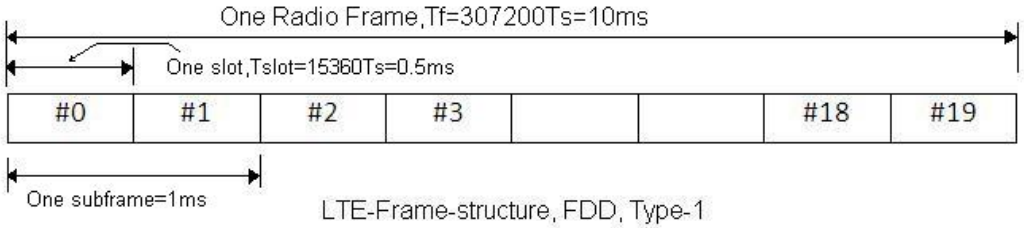
Mode	Freq. (MHz)	Tune up Tolerance (dBm)
802.11a	5180	20.0
	5220	
	5240	
802.11n HT20	5180	20.0
	5220	
	5240	
802.11n HT40	5190	20.0
	5230	
802.11ac VHT20	5180	19.5
	5220	
	5240	
802.11ac VHT40	5190	19.0
	5230	
802.11ac VHT80	5210	19.0

WLAN 5GHz UNII-3

Mode	Freq. (MHz)	Tune up Tolerance (dBm)
802.11a	5745	20.0
	5785	
	5825	
802.11n HT20	5745	20.0
	5785	
	5825	
802.11n HT40	5755	20.0
	5795	
802.11ac VHT20	5745	19.5
	5785	
	5825	
802.11ac VHT40	5755	19.5
	5795	
802.11ac VHT80	5775	19.0

6.2 LTE Measurement result

General description:
FDD-LTE frame structure



LTE-Frame-structure, FDD, Type-1

Type 1 is used as LTE FDD frame structure. As shown in the figure above, an LTE TDD frame is made of total 20 slots, each of 0.5ms. Two consecutive time slots will form one subframe. 10 such subframes form one radio frame. One subframe duration is about 1 ms.and the duty cycle is inherent as100%

LTE B2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1850.7	18607	1.4	1	0	24.14
				1	3	24.13
				1	5	24.17
				3	0	24.27
				3	1	24.25
				3	3	24.33
				6	0	23.17
	1880	18900		1	0	23.73
				1	3	23.72
				1	5	23.76
				3	0	23.81
				3	1	23.90
				3	3	23.78
				6	0	22.83
	1909.3	19193		1	0	24.08
				1	3	24.03
				1	5	24.08
				3	0	24.14
				3	1	24.13
				3	3	24.19
				6	0	23.12
16QAM	1850.7	18607		1	0	23.34
				1	3	23.30
				1	5	23.26
				3	0	23.41
				3	1	23.23
				3	3	23.26
				6	0	22.26
	1880	18900		1	0	22.83
				1	3	22.88
				1	5	22.86
				3	0	23.07
				3	1	23.10
				3	3	23.13
				6	0	21.87
	1909.3	19193		1	0	23.21
				1	3	23.17
				1	5	23.22
				3	0	23.03
				3	1	23.14
				3	3	23.10
				6	0	22.19

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1850.7	18607	1.4	1	0	22.21
				1	3	22.18
				1	5	22.13
				3	0	22.09
				3	1	22.19
				3	3	22.13
				6	0	22.13
	1880	18900		1	0	21.82
				1	3	21.80
				1	5	21.85
				3	0	21.89
				3	1	21.86
				3	3	21.94
				6	0	21.83
	1909.3	19193		1	0	22.16
				1	3	22.12
				1	5	22.13
				3	0	22.23
				3	1	22.18
				3	3	22.11
				6	0	22.20

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1851.5	18615	3	1	0	23.96
				1	8	23.88
				1	14	23.89
				8	0	22.99
				8	4	22.99
				8	7	23.04
				15	0	23.04
	1880	18900		1	0	23.69
				1	8	23.71
				1	14	23.68
				8	0	22.74
				8	4	22.66
				8	7	22.71
				15	0	22.64
	1908.5	19185		1	0	23.94
				1	8	24.00
				1	14	23.92
				8	0	23.03
				8	4	22.95
				8	7	23.03
				15	0	23.04
16QAM	1851.5	18615		1	0	23.57
				1	8	23.53
				1	14	23.45
				8	0	22.15
				8	4	22.20
				8	7	22.21
				15	0	22.08
	1880	18900		1	0	22.81
				1	8	22.84
				1	14	22.91
				8	0	21.65
				8	4	21.69
				8	7	21.72
				15	0	21.61
	1908.5	19185		1	0	23.06
				1	8	23.08
				1	14	23.09
				8	0	22.01
				8	4	21.95
				8	7	22.00
				15	0	22.04

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1851.5	18615	3	1	0	22.06
				1	8	22.09
				1	14	22.08
				8	0	22.06
				8	4	22.04
				8	7	22.07
				15	0	22.08
	1880	18900		1	0	21.64
				1	8	21.56
				1	14	21.57
				8	0	21.66
				8	4	21.71
				8	7	21.66
				15	0	21.63
	1908.5	19185		1	0	22.10
				1	8	22.10
				1	14	22.05
				8	0	22.09
				8	4	22.07
				8	7	22.04
				15	0	22.07

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1852.5	18625	5	1	0	23.83
				1	12	23.67
				1	24	23.76
				12	0	22.88
				12	7	22.91
				12	13	22.93
				25	0	22.94
	1880	18900		1	0	23.51
				1	12	23.49
				1	24	23.54
				12	0	22.68
				12	7	22.65
				12	13	22.68
				25	0	22.69
	1907.5	19175		1	0	23.82
				1	12	23.80
				1	24	23.87
				12	0	23.00
				12	7	22.97
				12	13	23.01
				25	0	22.99
16QAM	1852.5	18625		1	0	22.82
				1	12	22.71
				1	24	22.71
				12	0	21.96
				12	7	21.91
				12	13	21.85
				25	0	22.05
	1880	18900		1	0	22.83
				1	12	22.82
				1	24	22.89
				12	0	21.70
				12	7	21.76
				12	13	21.74
				25	0	21.72
	1907.5	19175		1	0	22.86
				1	12	22.90
				1	24	22.96
				12	0	21.92
				12	7	21.95
				12	13	21.97
				25	0	21.99

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1852.5	18625	5	1	0	22.05
				1	12	21.99
				1	24	22.05
				12	0	21.97
				12	7	21.99
				12	13	22.01
				25	0	22.04
	1880	18900		1	0	21.70
				1	12	21.72
				1	24	21.72
				12	0	21.71
				12	7	21.73
				12	13	21.68
				25	0	21.72
	1907.5	19175		1	0	21.99
				1	12	22.04
				1	24	22.01
				12	0	21.98
				12	7	22.00
				12	13	22.00
				25	0	21.96

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1855	18650	10	1	0	23.92
				1	25	23.68
				1	49	23.69
				25	0	22.92
				25	12	22.92
				25	25	22.96
				50	0	22.91
	1880	18900		1	0	23.68
				1	25	23.63
				1	49	23.69
				25	0	22.77
				25	12	22.74
				25	25	22.74
				50	0	22.71
	1905	19150		1	0	23.82
				1	25	23.90
				1	49	23.94
				25	0	23.04
				25	12	23.01
				25	25	22.95
				50	0	22.94
16QAM	1855	18650		1	0	23.51
				1	25	23.25
				1	49	23.33
				25	0	22.03
				25	12	21.90
				25	25	21.97
				50	0	21.94
	1880	18900		1	0	22.77
				1	25	22.84
				1	49	22.81
				25	0	21.79
				25	12	21.73
				25	25	21.77
				50	0	21.75
	1905	19150		1	0	23.02
				1	25	23.02
				1	49	23.01
				25	0	22.07
				25	12	22.04
				25	25	22.07
				50	0	22.05

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1855	18650	10	1	0	21.95
				1	25	21.94
				1	49	21.93
				25	0	21.92
				25	12	21.86
				25	25	21.88
				50	0	21.88
	1880	18900		1	0	21.76
				1	25	21.77
				1	49	21.77
				25	0	21.78
				25	12	21.78
				25	25	21.79
				50	0	21.78
	1905	19150		1	0	22.00
				1	25	22.01
				1	49	21.97
				25	0	22.07
				25	12	22.02
				25	25	22.03
				50	0	21.96

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1857.5	18675	15	1	0	23.84
				1	37	23.59
				1	74	23.58
				36	0	22.98
				36	29	22.81
				36	30	22.83
				75	0	22.83
	1880	18900		1	0	23.63
				1	37	23.67
				1	74	23.65
				36	0	22.81
				36	29	22.75
				36	30	22.81
				75	0	22.77
	1902.5	19125		1	0	23.75
				1	37	23.83
				1	74	23.84
				36	0	22.99
				36	29	22.97
				36	30	22.96
				75	0	22.97
16QAM	1857.5	18675		1	0	23.52
				1	37	23.17
				1	74	23.16
				36	0	21.86
				36	29	21.72
				36	30	21.69
				75	0	21.83
	1880	18900		1	0	22.78
				1	37	22.85
				1	74	22.84
				36	0	21.71
				36	29	21.79
				36	30	21.76
				75	0	21.79
	1902.5	19125		1	0	23.19
				1	37	23.28
				1	74	23.29
				36	0	21.98
				36	29	21.91
				36	30	21.91
				75	0	21.96

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1857.5	18675	15	1	0	21.80
				1	37	21.89
				1	74	21.80
				36	0	21.82
				36	29	21.81
				36	30	21.82
				75	0	21.83
	1880	18900		1	0	21.73
				1	37	21.73
				1	74	21.68
				36	0	21.72
				36	29	21.74
				36	30	21.68
				75	0	21.74
	1902.5	19125		1	0	21.95
				1	37	21.89
				1	74	21.99
				36	0	21.97
				36	29	22.01
				36	30	21.98
				75	0	21.96

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1860	18700	20	1	0	23.84
				1	49	23.46
				1	99	23.49
				50	0	22.86
				50	24	22.64
				50	50	22.64
				100	0	22.69
	1880	18900		1	0	23.62
				1	49	23.63
				1	99	23.58
				50	0	22.76
				50	24	22.71
				50	50	22.76
				100	0	22.70
	1900	19100		1	0	23.63
				1	49	23.77
				1	99	23.76
				50	0	22.98
				50	24	22.87
				50	50	22.82
				100	0	22.92
16QAM	1860	18700		1	0	23.14
				1	49	22.80
				1	99	22.78
				50	0	21.81
				50	24	21.56
				50	50	21.54
				100	0	21.75
	1880	18900		1	0	22.80
				1	49	22.80
				1	99	22.79
				50	0	21.74
				50	24	21.74
				50	50	21.73
				100	0	21.73
	1900	19100		1	0	23.22
				1	49	23.27
				1	99	23.25
				50	0	21.95
				50	24	21.88
				50	50	21.84
				100	0	21.92

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1860	18700	20	1	0	21.81
				1	49	21.80
				1	99	21.76
				50	0	21.76
				50	24	21.79
				50	50	21.77
				100	0	21.80
	1880	18900		1	0	21.78
				1	49	21.70
				1	99	21.73
				50	0	21.72
				50	24	21.74
				50	50	21.72
				100	0	21.76
	1900	19100		1	0	21.89
				1	49	21.88
				1	99	21.87
				50	0	21.90
				50	24	21.93
				50	50	21.94
				100	0	21.87

LTE B4

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1710.7	19957	1.4	1	0	23.71
				1	3	23.77
				1	5	23.71
				3	0	23.86
				3	1	23.81
				3	3	23.86
				6	0	22.88
	1732.5	20175		1	0	23.66
				1	3	23.69
				1	5	23.66
				3	0	23.64
				3	1	23.65
				3	3	23.69
				6	0	22.66
	1754.3	20393		1	0	23.97
				1	3	23.96
				1	5	24.06
				3	0	24.04
				3	1	24.04
				3	3	24.09
				6	0	23.12
16QAM	1710.7	19957		1	0	22.87
				1	3	22.91
				1	5	22.84
				3	0	23.15
				3	1	23.02
				3	3	23.10
				6	0	21.87
	1732.5	20175		1	0	22.76
				1	3	22.76
				1	5	22.79
				3	0	22.67
				3	1	22.59
				3	3	22.66
				6	0	21.72
	1754.3	20393		1	0	23.09
				1	3	23.16
				1	5	23.17
				3	0	23.20
				3	1	23.28
				3	3	23.18
				6	0	21.94

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1710.7	19957	1.4	1	0	21.92
				1	3	21.83
				1	5	21.86
				3	0	21.82
				3	1	21.87
				3	3	21.80
				6	0	21.87
	1732.5	20175		1	0	21.72
				1	3	21.79
				1	5	21.77
				3	0	21.72
				3	1	21.77
				3	3	21.71
				6	0	21.76
	1754.3	20393		1	0	21.97
				1	3	21.93
				1	5	21.95
				3	0	21.99
				3	1	21.93
				3	3	21.95
				6	0	21.94

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1711.5	19965	3	1	0	23.92
				1	8	23.76
				1	14	23.81
				8	0	22.96
				8	4	22.83
				8	7	22.89
				15	0	22.86
	1732.5	20175		1	0	23.78
				1	8	23.76
				1	14	23.84
				8	0	22.70
				8	4	22.76
				8	7	22.72
				15	0	22.70
	1753.5	20385		1	0	24.17
				1	8	24.09
				1	14	24.14
				8	0	23.15
				8	4	23.07
				8	7	23.06
				15	0	23.10
16QAM	1711.5	19965		1	0	23.42
				1	8	23.47
				1	14	23.40
				8	0	22.09
				8	4	22.06
				8	7	22.08
				15	0	21.98
	1732.5	20175		1	0	22.89
				1	8	22.90
				1	14	22.94
				8	0	21.69
				8	4	21.79
				8	7	21.77
				15	0	21.68
	1753.5	20385		1	0	23.31
				1	8	23.23
				1	14	23.18
				8	0	22.14
				8	4	22.14
				8	7	22.16
				15	0	22.13

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1711.5	19965	3	1	0	21.98
				1	8	21.94
				1	14	21.91
				8	0	21.95
				8	4	21.98
				8	7	21.95
				15	0	21.94
	1732.5	20175		1	0	21.62
				1	8	21.66
				1	14	21.62
				8	0	21.69
				8	4	21.65
				8	7	21.70
				15	0	21.66
	1753.5	20385		1	0	22.23
				1	8	22.19
				1	14	22.18
				8	0	22.22
				8	4	22.18
				8	7	22.17
				15	0	22.15

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1712.5	19975	5	1	0	23.78
				1	12	23.76
				1	24	23.78
				12	0	22.92
				12	7	22.84
				12	13	22.90
				25	0	22.88
	1732.5	20175		1	0	23.69
				1	12	23.70
				1	24	23.74
				12	0	22.80
				12	7	22.69
				12	13	22.69
				25	0	22.75
	1752.5	20375		1	0	23.99
				1	12	23.99
				1	24	24.09
				12	0	23.05
				12	7	23.18
				12	13	23.18
				25	0	23.11
16QAM	1712.5	19975		1	0	22.78
				1	12	22.79
				1	24	22.76
				12	0	21.94
				12	7	21.83
				12	13	21.82
				25	0	21.98
	1732.5	20175		1	0	22.93
				1	12	22.92
				1	24	23.00
				12	0	21.79
				12	7	21.70
				12	13	21.72
				25	0	21.77
	1752.5	20375		1	0	23.16
				1	12	23.09
				1	24	23.09
				12	0	21.98
				12	7	22.08
				12	13	22.17
				25	0	22.18

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1712.5	19975	5	1	0	21.95
				1	12	22.00
				1	24	21.98
				12	0	21.95
				12	7	21.97
				12	13	22.04
				25	0	22.00
	1732.5	20175		1	0	21.79
				1	12	21.75
				1	24	21.71
				12	0	21.79
				12	7	21.72
				12	13	21.72
				25	0	21.74
	1752.5	20375		1	0	22.19
				1	12	22.18
				1	24	22.18
				12	0	22.19
				12	7	22.19
				12	13	22.19
				25	0	22.18

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1715	20000	10	1	0	23.91
				1	25	23.79
				1	49	23.82
				25	0	23.04
				25	12	22.98
				25	25	22.96
				50	0	22.99
	1732.5	20175		1	0	23.82
				1	25	23.87
				1	49	23.86
				25	0	22.89
				25	12	22.79
				25	25	22.75
				50	0	22.85
	1750	20350		1	0	24.07
				1	25	24.10
				1	49	24.13
				25	0	23.19
				25	12	23.19
				25	25	23.24
				50	0	23.20
16QAM	1715	20000		1	0	23.46
				1	25	23.49
				1	49	23.42
				25	0	22.07
				25	12	22.00
				25	25	22.06
				50	0	22.02
	1732.5	20175		1	0	22.89
				1	25	23.03
				1	49	22.95
				25	0	21.89
				25	12	21.74
				25	25	21.78
				50	0	21.85
	1750	20350		1	0	23.18
				1	25	23.17
				1	49	23.16
				25	0	22.24
				25	12	22.35
				25	25	22.34
				50	0	22.23

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1715	20000	10	1	0	22.02
				1	25	22.01
				1	49	22.03
				25	0	22.02
				25	12	22.03
				25	25	22.01
				50	0	22.01
	1732.5	20175		1	0	21.80
				1	25	21.77
				1	49	21.83
				25	0	21.75
				25	12	21.83
				25	25	21.87
				50	0	21.78
	1750	20350		1	0	22.30
				1	25	22.23
				1	49	22.29
				25	0	22.24
				25	12	22.21
				25	25	22.23
				50	0	22.23

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1717.5	20025	15	1	0	23.79
				1	37	23.68
				1	74	23.68
				36	0	23.06
				36	29	22.94
				36	30	22.90
				75	0	23.01
	1732.5	20175		1	0	23.80
				1	37	23.82
				1	74	23.84
				36	0	22.83
				36	29	22.81
				36	30	22.81
				75	0	22.86
	1747.5	20325		1	0	23.91
				1	37	24.01
				1	74	23.98
				36	0	23.17
				36	29	23.18
				36	30	23.26
				75	0	23.15
16QAM	1717.5	20025		1	0	23.37
				1	37	23.25
				1	74	23.20
				36	0	21.99
				36	29	21.96
				36	30	21.89
				75	0	21.93
	1732.5	20175		1	0	22.89
				1	37	23.04
				1	74	23.02
				36	0	21.77
				36	29	21.73
				36	30	21.85
				75	0	21.84
	1747.5	20325		1	0	23.41
				1	37	23.54
				1	74	23.48
				36	0	22.13
				36	29	22.22
				36	30	22.18
				75	0	22.15

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1717.5	20025	15	1	0	21.95
				1	37	22.00
				1	74	21.99
				36	0	21.90
				36	29	21.96
				36	30	21.99
				75	0	21.98
	1732.5	20175		1	0	21.86
				1	37	21.83
				1	74	21.79
				36	0	21.83
				36	29	21.85
				36	30	21.79
				75	0	21.77
	1747.5	20325		1	0	22.16
				1	37	22.13
				1	74	22.06
				36	0	22.05
				36	29	22.06
				36	30	22.11
				75	0	22.14

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1720	20050	20	1	0	23.80
				1	49	23.58
				1	99	23.58
				50	0	22.89
				50	24	22.88
				50	50	22.93
				100	0	22.89
	1732.5	20175		1	0	23.77
				1	49	23.91
				1	99	23.87
				50	0	22.74
				50	24	22.74
				50	50	22.69
				100	0	22.68
	1745	20300		1	0	23.71
				1	49	23.98
				1	99	23.97
				50	0	23.08
				50	24	23.25
				50	50	23.27
				100	0	23.15
16QAM	1720	20050		1	0	23.13
				1	49	22.85
				1	99	22.88
				50	0	21.81
				50	24	21.92
				50	50	21.87
				100	0	21.97
	1732.5	20175		1	0	23.01
				1	49	23.09
				1	99	23.07
				50	0	21.70
				50	24	21.70
				50	50	21.67
				100	0	21.70
	1745	20300		1	0	23.28
				1	49	23.53
				1	99	23.52
				50	0	22.15
				50	24	22.24
				50	50	22.23
				100	0	22.16

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1720	20050	20	1	0	21.97
				1	49	21.92
				1	99	21.98
				50	0	21.87
				50	24	21.89
				50	50	21.88
				100	0	21.91
	1732.5	20175		1	0	21.70
				1	49	21.69
				1	99	21.67
				50	0	21.71
				50	24	21.74
				50	50	21.68
				100	0	21.72
	1745	20300		1	0	22.15
				1	49	22.15
				1	99	22.16
				50	0	22.15
				50	24	22.16
				50	50	22.16
				100	0	22.17

LTE B5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	824.7	20407	1.4	1	0	24.10
				1	3	24.12
				1	5	24.09
				3	0	24.22
				3	1	24.15
				3	3	24.20
				6	0	23.24
	836.5	20525		1	0	24.27
				1	3	24.26
				1	5	24.27
				3	0	24.29
				3	1	24.35
				3	3	24.27
				6	0	23.36
	848.3	20643		1	0	24.31
				1	3	24.31
				1	5	24.29
				3	0	24.39
				3	1	24.47
				3	3	24.43
				6	0	23.37
16QAM	824.7	20407		1	0	23.17
				1	3	23.31
				1	5	23.32
				3	0	23.21
				3	1	23.27
				3	3	23.35
				6	0	22.12
	836.5	20525		1	0	23.29
				1	3	23.30
				1	5	23.35
				3	0	23.57
				3	1	23.42
				3	3	23.61
				6	0	22.28
	848.3	20643		1	0	23.42
				1	3	23.44
				1	5	23.40
				3	0	23.28
				3	1	23.34
				3	3	23.34
				6	0	22.50

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	824.7	20407	1.4	1	0	22.02
				1	3	22.05
				1	5	22.10
				3	0	22.09
				3	1	22.07
				3	3	22.11
				6	0	22.06
	836.5	20525		1	0	22.34
				1	3	22.32
				1	5	22.26
				3	0	22.25
				3	1	22.26
				3	3	22.27
				6	0	22.27
	848.3	20643		1	0	22.38
				1	3	22.35
				1	5	22.52
				3	0	22.42
				3	1	22.47
				3	3	22.45
				6	0	22.50

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	825.5	20415	3	1	0	24.18
				1	8	24.12
				1	14	24.14
				8	0	23.21
				8	4	23.18
				8	7	23.19
				15	0	23.25
	836.5	20525		1	0	24.38
				1	8	24.33
				1	14	24.32
				8	0	23.43
				8	4	23.40
				8	7	23.35
				15	0	23.25
	836.5	20525		1	0	24.35
				1	8	24.33
				1	14	24.33
				8	0	23.35
				8	4	23.30
				8	7	23.30
				15	0	23.31
16QAM	825.5	20415		1	0	23.83
				1	8	23.79
				1	14	23.77
				8	0	22.44
				8	4	22.44
				8	7	22.43
				15	0	22.28
	836.5	20525		1	0	23.68
				1	8	23.62
				1	14	23.59
				8	0	22.39
				8	4	22.36
				8	7	22.33
				15	0	22.28
	836.5	20525		1	0	23.51
				1	8	23.46
				1	14	23.44
				8	0	22.35
				8	4	22.29
				8	7	22.26
				15	0	22.27

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	825.5	20415	3	1	0	22.25
				1	8	22.28
				1	14	22.23
				8	0	22.27
				8	4	22.27
				8	7	22.28
				15	0	22.24
	836.5	20525		1	0	22.35
				1	8	22.33
				1	14	22.28
				8	0	22.29
				8	4	22.31
				8	7	22.26
				15	0	22.25
	836.5	20525		1	0	22.19
				1	8	22.22
				1	14	22.25
				8	0	22.26
				8	4	22.24
				8	7	22.24
				15	0	22.26

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	826.5	20425	5	1	0	24.16
				1	12	24.12
				1	24	24.20
				12	0	23.22
				12	7	23.29
				12	13	23.27
				25	0	23.24
	836.5	20525		1	0	24.19
				1	12	24.25
				1	24	24.16
				12	0	23.36
				12	7	23.33
				12	13	23.33
				25	0	23.34
	846.5	20625		1	0	24.24
				1	12	24.23
				1	24	24.30
				12	0	23.33
				12	7	23.32
				12	13	23.40
				25	0	23.31
16QAM	826.5	20425		1	0	23.13
				1	12	23.12
				1	24	23.14
				12	0	22.23
				12	7	22.24
				12	13	22.22
				25	0	22.34
	836.5	20525		1	0	23.57
				1	12	23.43
				1	24	23.48
				12	0	22.36
				12	7	22.32
				12	13	22.38
				25	0	22.33
	846.5	20625		1	0	23.33
				1	12	23.38
				1	24	23.28
				12	0	22.37
				12	7	22.34
				12	13	22.35
				25	0	22.39

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	826.5	20425	5	1	0	22.35
				1	12	22.31
				1	24	22.31
				12	0	22.35
				12	7	22.28
				12	13	22.31
				25	0	22.36
	836.5	20525		1	0	22.33
				1	12	22.34
				1	24	22.37
				12	0	22.33
				12	7	22.35
				12	13	22.30
				25	0	22.29
	846.5	20625		1	0	22.38
				1	12	22.38
				1	24	22.38
				12	0	22.42
				12	7	22.35
				12	13	22.39
				25	0	22.36

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	829	20450	10	1	0	24.18
				1	25	24.23
				1	49	24.23
				25	0	23.29
				25	12	23.32
				25	25	23.32
				50	0	23.25
	836.5	20525		1	0	24.29
				1	25	24.34
				1	49	24.26
				25	0	23.42
				25	12	23.41
				25	25	23.34
				50	0	23.37
	844	20600		1	0	24.30
				1	25	24.37
				1	49	24.36
				25	0	23.38
				25	12	23.27
				25	25	23.35
				50	0	23.41
16QAM	829	20450		1	0	23.76
				1	25	23.81
				1	49	23.79
				25	0	22.31
				25	12	22.36
				25	25	22.38
				50	0	22.34
	836.5	20525		1	0	23.45
				1	25	23.44
				1	49	23.44
				25	0	22.42
				25	12	22.36
				25	25	22.33
				50	0	22.38
	844	20600		1	0	23.36
				1	25	23.35
				1	49	23.37
				25	0	22.50
				25	12	22.41
				25	25	22.52
				50	0	22.39

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	829	20450	10	1	0	22.25
				1	25	22.27
				1	49	22.34
				25	0	22.32
				25	12	22.28
				25	25	22.35
				50	0	22.35
	836.5	20525		1	0	22.36
				1	25	22.43
				1	49	22.41
				25	0	22.34
				25	12	22.41
				25	25	22.42
				50	0	22.36
	844	20600		1	0	22.40
				1	25	22.45
				1	49	22.40
				25	0	22.38
				25	12	22.38
				25	25	22.34
				50	0	22.44

LTE B12

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	699.7	23017	1.4	1	0	24.26
				1	3	24.27
				1	5	24.21
				3	0	24.26
				3	1	24.29
				3	3	24.40
				6	0	23.25
	707.5	23095		1	0	24.26
				1	3	24.27
				1	5	24.22
				3	0	24.20
				3	1	24.29
				3	3	24.26
				6	0	23.35
	715.3	23173		1	0	24.16
				1	3	24.14
				1	5	24.14
				3	0	24.24
				3	1	24.21
				3	3	24.26
				6	0	23.22
16QAM	699.7	23017		1	0	23.25
				1	3	23.25
				1	5	23.29
				3	0	23.52
				3	1	23.55
				3	3	23.52
				6	0	22.29
	707.5	23095		1	0	23.33
				1	3	23.30
				1	5	23.31
				3	0	23.20
				3	1	23.14
				3	3	23.15
				6	0	22.31
	715.3	23173		1	0	23.22
				1	3	23.16
				1	5	23.17
				3	0	23.28
				3	1	23.14
				3	3	23.13
				6	0	22.02

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	699.7	23017	1.4	1	0	22.23
				1	3	22.27
				1	5	22.23
				3	0	22.37
				3	1	22.30
				3	3	22.28
				6	0	22.33
	707.5	23095		1	0	22.32
				1	3	22.24
				1	5	22.28
				3	0	22.37
				3	1	22.34
				3	3	22.31
				6	0	22.30
	715.3	23173		1	0	22.03
				1	3	22.02
				1	5	22.07
				3	0	22.11
				3	1	22.09
				3	3	22.05
				6	0	22.09

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	700.5	23025	3	1	0	24.38
				1	8	24.35
				1	14	24.31
				8	0	23.32
				8	4	23.35
				8	7	23.33
				15	0	23.35
	707.5	23095		1	0	24.35
				1	8	24.34
				1	14	24.33
				8	0	23.38
				8	4	23.29
				8	7	23.25
				15	0	23.29
	714.5	23165		1	0	24.23
				1	8	24.26
				1	14	24.28
				8	0	23.27
				8	4	23.23
				8	7	23.22
				15	0	23.25
16QAM	700.5	23025		1	0	23.87
				1	8	23.87
				1	14	23.82
				8	0	22.47
				8	4	22.56
				8	7	22.56
				15	0	22.36
	707.5	23095		1	0	23.45
				1	8	23.40
				1	14	23.39
				8	0	22.29
				8	4	22.22
				8	7	22.29
				15	0	22.16
	714.5	23165		1	0	23.33
				1	8	23.21
				1	14	23.21
				8	0	22.18
				8	4	22.16
				8	7	22.17
				15	0	22.26

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	700.5	23025	3	1	0	22.38
				1	8	22.37
				1	14	22.38
				8	0	22.42
				8	4	22.44
				8	7	22.37
				15	0	22.42
	707.5	23095		1	0	22.18
				1	8	22.24
				1	14	22.18
				8	0	22.25
				8	4	22.21
				8	7	22.21
				15	0	22.21
	714.5	23165		1	0	22.22
				1	8	22.29
				1	14	22.24
				8	0	22.25
				8	4	22.29
				8	7	22.28
				15	0	22.27

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	701.5	23035	5	1	0	24.32
				1	12	24.37
				1	24	24.28
				12	0	23.31
				12	7	23.36
				12	13	23.44
				25	0	23.40
	707.5	23095		1	0	24.23
				1	12	24.26
				1	24	24.19
				12	0	23.33
				12	7	23.22
				12	13	23.26
				25	0	23.32
	713.5	23155		1	0	24.21
				1	12	24.11
				1	24	24.10
				12	0	23.23
				12	7	23.19
				12	13	23.19
				25	0	23.29
16QAM	701.5	23035		1	0	23.26
				1	12	23.27
				1	24	23.23
				12	0	22.21
				12	7	22.38
				12	13	22.36
				25	0	22.34
	707.5	23095		1	0	23.58
				1	12	23.42
				1	24	23.46
				12	0	22.38
				12	7	22.21
				12	13	22.29
				25	0	22.32
	713.5	23155		1	0	23.30
				1	12	23.18
				1	24	23.19
				12	0	22.17
				12	7	22.15
				12	13	22.15
				25	0	22.30

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	701.5	23035	5	1	0	22.41
				1	12	22.37
				1	24	22.37
				12	0	22.40
				12	7	22.36
				12	13	22.41
				25	0	22.35
	707.5	23095		1	0	22.34
				1	12	22.32
				1	24	22.29
				12	0	22.34
				12	7	22.31
				12	13	22.32
				25	0	22.32
	713.5	23155		1	0	22.33
				1	12	22.26
				1	24	22.24
				12	0	22.22
				12	7	22.30
				12	13	22.22
				25	0	22.26

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	704	23060	10	1	0	24.34
				1	25	24.23
				1	49	24.24
				25	0	23.21
				25	12	23.22
				25	25	23.20
				50	0	23.27
	707.5	23095		1	0	24.34
				1	25	24.25
				1	49	24.23
				25	0	23.35
				25	12	23.27
				25	25	23.26
				50	0	23.37
	711	23130		1	0	24.26
				1	25	24.17
				1	49	24.21
				25	0	23.40
				25	12	23.29
				25	25	23.22
				50	0	23.29
16QAM	704	23060		1	0	23.79
				1	25	23.81
				1	49	23.72
				25	0	22.34
				25	12	22.29
				25	25	22.30
				50	0	22.28
	707.5	23095		1	0	23.43
				1	25	23.37
				1	49	23.35
				25	0	22.37
				25	12	22.26
				25	25	22.29
				50	0	22.36
	711	23130		1	0	23.33
				1	25	23.17
				1	49	23.21
				25	0	22.48
				25	12	22.31
				25	25	22.39
				50	0	22.36

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	704	23060	10	1	0	22.21
				1	25	22.20
				1	49	22.27
				25	0	22.21
				25	12	22.22
				25	25	22.20
				50	0	22.28
	707.5	23095		1	0	22.32
				1	25	22.30
				1	49	22.29
				25	0	22.30
				25	12	22.30
				25	25	22.30
				50	0	22.31
	711	23130		1	0	22.33
				1	25	22.40
				1	49	22.35
				25	0	22.36
				25	12	22.37
				25	25	22.35
				50	0	22.38

LTE B13

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	779.5	23205	5	1	0	24.04
				1	12	24.07
				1	24	23.97
				12	0	22.98
				12	7	23.12
				12	13	23.12
				25	0	23.10
	782	23230		1	0	24.05
				1	12	24.05
				1	24	24.07
				12	0	23.16
				12	7	23.19
				12	13	23.13
				25	0	23.10
	784.5	23255		1	0	24.10
				1	12	24.13
				1	24	24.13
				12	0	23.15
				12	7	23.14
				12	13	23.13
				25	0	23.11
16QAM	779.5	23205		1	0	23.16
				1	12	23.24
				1	24	23.28
				12	0	21.98
				12	7	22.19
				12	13	22.19
				25	0	22.06
	782	23230		1	0	23.10
				1	12	23.08
				1	24	23.10
				12	0	21.99
				12	7	22.03
				12	13	22.13
				25	0	22.20
	784.5	23255		1	0	23.00
				1	12	22.98
				1	24	23.00
				12	0	22.15
				12	7	22.10
				12	13	22.05
				25	0	22.18

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	779.5	23205	5	1	0	22.07
				1	12	22.08
				1	24	22.10
				12	0	22.10
				12	7	22.08
				12	13	22.09
				25	0	22.10
	782	23230		1	0	22.13
				1	12	22.18
				1	24	22.13
				12	0	22.19
				12	7	22.17
				12	13	22.17
				25	0	22.17
	784.5	23255		1	0	22.20
				1	12	22.12
				1	24	22.14
				12	0	22.16
				12	7	22.12
				12	13	22.14
				25	0	22.14

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	782	23230	10	1	0	24.27
				1	25	24.19
				1	49	24.18
				25	0	23.16
				25	12	23.13
				25	25	23.15
				50	0	23.18
16QAM				1	0	23.52
				1	25	23.61
				1	49	23.57
				25	0	22.10
				25	12	22.22
				25	25	22.20
				50	0	22.11
64QAM				1	0	22.11
				1	25	22.11
				1	49	22.11
				25	0	22.11
				25	12	22.11
				25	25	22.11
				50	0	22.11

LTE B66

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1710.7	131979	1.4	1	0	24.01
				1	3	23.93
				1	5	23.99
				3	0	24.08
				3	1	23.99
				3	3	24.17
				6	0	22.98
	1755	132422		1	0	24.15
				1	3	24.10
				1	5	24.08
				3	0	24.27
				3	1	24.35
				3	3	24.27
				6	0	23.28
	1779.3	132665		1	0	24.07
				1	3	24.10
				1	5	24.08
				3	0	24.20
				3	1	24.22
				3	3	24.34
				6	0	23.22
16QAM	1710.7	131979		1	0	23.07
				1	3	23.05
				1	5	23.08
				3	0	22.95
				3	1	22.96
				3	3	22.95
				6	0	22.04
	1755	132422		1	0	23.20
				1	3	23.29
				1	5	23.26
				3	0	23.31
				3	1	23.28
				3	3	23.24
				6	0	22.14
	1779.3	132665		1	0	23.21
				1	3	23.24
				1	5	23.19
				3	0	23.21
				3	1	23.20
				3	3	23.39
				6	0	22.11

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1710.7	131979	1.4	1	0	22.11
				1	3	22.16
				1	5	22.03
				3	0	22.05
				3	1	22.11
				3	3	22.11
				6	0	22.05
	1755	132422		1	0	22.10
				1	3	22.23
				1	5	22.12
				3	0	22.12
				3	1	22.15
				3	3	22.26
				6	0	22.17
	1779.3	132665		1	0	22.16
				1	3	22.04
				1	5	22.07
				3	0	22.08
				3	1	22.08
				3	3	22.10
				6	0	22.05

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1711.5	131987	3	1	0	23.96
				1	8	23.83
				1	14	23.91
				8	0	22.98
				8	4	22.91
				8	7	22.96
				15	0	22.96
	1755	132422		1	0	24.16
				1	8	24.13
				1	14	24.17
				8	0	23.22
				8	4	23.24
				8	7	23.16
				15	0	23.24
	1778.5	132657		1	0	24.18
				1	8	24.09
				1	14	24.12
				8	0	23.13
				8	4	23.12
				8	7	23.14
				15	0	23.15
16QAM	1711.5	131987		1	0	23.09
				1	8	22.98
				1	14	22.96
				8	0	21.97
				8	4	21.93
				8	7	21.96
				15	0	22.02
	1755	132422		1	0	23.31
				1	8	23.30
				1	14	23.30
				8	0	22.24
				8	4	22.27
				8	7	22.19
				15	0	22.17
	1778.5	132657		1	0	23.30
				1	8	23.18
				1	14	23.19
				8	0	22.21
				8	4	22.18
				8	7	22.18
				15	0	22.18

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1711.5	131987	3	1	0	22.04
				1	8	21.96
				1	14	22.00
				8	0	22.03
				8	4	21.94
				8	7	22.03
				15	0	22.06
	1755	132422		1	0	22.28
				1	8	22.23
				1	14	22.20
				8	0	22.28
				8	4	22.22
				8	7	22.24
				15	0	22.24
	1778.5	132657		1	0	22.25
				1	8	22.21
				1	14	22.26
				8	0	22.17
				8	4	22.24
				8	7	22.25
				15	0	22.25

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1712.5	131997	5	1	0	23.84
				1	12	23.73
				1	24	23.77
				12	0	22.95
				12	7	22.89
				12	13	22.93
				25	0	22.95
	1755	132422		1	0	24.10
				1	12	24.11
				1	24	24.07
				12	0	23.16
				12	7	23.22
				12	13	23.17
				25	0	23.21
	1777.5	132647		1	0	24.02
				1	12	23.98
				1	24	23.97
				12	0	23.10
				12	7	23.19
				12	13	23.18
				25	0	23.14
16QAM	1712.5	131997		1	0	22.90
				1	12	22.90
				1	24	22.84
				12	0	21.97
				12	7	21.88
				12	13	21.88
				25	0	21.98
	1755	132422		1	0	23.16
				1	12	23.16
				1	24	23.17
				12	0	22.09
				12	7	22.20
				12	13	22.12
				25	0	22.22
	1777.5	132647		1	0	23.21
				1	12	23.04
				1	24	23.10
				12	0	22.08
				12	7	22.04
				12	13	22.13
				25	0	22.15

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1712.5	131997	5	1	0	21.99
				1	12	21.96
				1	24	21.90
				12	0	21.98
				12	7	21.97
				12	13	21.95
				25	0	21.95
	1755	132422		1	0	22.29
				1	12	22.23
				1	24	22.19
				12	0	22.25
				12	7	22.18
				12	13	22.23
				25	0	22.26
	1777.5	132647		1	0	22.25
				1	12	22.12
				1	24	22.17
				12	0	22.16
				12	7	22.21
				12	13	22.20
				25	0	22.16

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1715	132022	10	1	0	23.94
				1	25	23.87
				1	49	23.82
				25	0	23.08
				25	12	22.99
				25	25	23.01
				50	0	23.05
	1755	132422		1	0	24.09
				1	25	24.15
				1	49	24.14
				25	0	23.19
				25	12	23.25
				25	25	23.26
				50	0	23.19
	1775	132622		1	0	24.20
				1	25	24.09
				1	49	24.05
				25	0	23.29
				25	12	23.19
				25	25	23.22
				50	0	23.31
16QAM	1715	132022		1	0	23.04
				1	25	22.98
				1	49	22.97
				25	0	22.22
				25	12	22.16
				25	25	22.09
				50	0	22.05
	1755	132422		1	0	23.30
				1	25	23.27
				1	49	23.27
				25	0	22.26
				25	12	22.36
				25	25	22.35
				50	0	22.22
	1775	132622		1	0	23.30
				1	25	23.15
				1	49	23.18
				25	0	22.41
				25	12	22.31
				25	25	22.36
				50	0	22.37

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1715	132022	10	1	0	22.07
				1	25	22.11
				1	49	22.12
				25	0	22.06
				25	12	22.14
				25	25	22.10
				50	0	22.09
	1755	132422		1	0	22.29
				1	25	22.27
				1	49	22.22
				25	0	22.25
				25	12	22.28
				25	25	22.28
				50	0	22.27
	1775	132622		1	0	22.30
				1	25	22.26
				1	49	22.28
				25	0	22.31
				25	12	22.32
				25	25	22.27
				50	0	22.27

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1717.5	132047	15	1	0	23.93
				1	37	23.60
				1	74	23.64
				36	0	22.97
				36	29	22.87
				36	30	22.94
				75	0	23.03
	1755	132422		1	0	24.07
				1	37	24.10
				1	74	24.09
				36	0	23.12
				36	29	23.28
				36	30	23.24
				75	0	23.20
	1772.5	132597		1	0	24.09
				1	37	23.90
				1	74	23.94
				36	0	23.28
				36	29	23.17
				36	30	23.22
				75	0	23.32
16QAM	1717.5	132047		1	0	23.34
				1	37	23.13
				1	74	23.11
				36	0	21.90
				36	29	21.90
				36	30	21.84
				75	0	21.88
	1755	132422		1	0	23.65
				1	37	23.48
				1	74	23.48
				36	0	22.21
				36	29	22.15
				36	30	22.15
				75	0	22.19
	1772.5	132597		1	0	23.59
				1	37	23.46
				1	74	23.46
				36	0	22.26
				36	29	22.11
				36	30	22.19
				75	0	22.19

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1717.5	132047	15	1	0	21.92
				1	37	21.87
				1	74	21.87
				36	0	21.95
				36	29	21.89
				36	30	21.91
				75	0	21.88
	1755	132422		1	0	22.16
				1	37	22.12
				1	74	22.23
				36	0	22.18
				36	29	22.11
				36	30	22.16
				75	0	22.15
	1772.5	132597		1	0	22.17
				1	37	22.23
				1	74	22.23
				36	0	22.24
				36	29	22.15
				36	30	22.26
				75	0	22.23

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1720	132072	20	1	0	23.80
				1	49	23.50
				1	99	23.52
				50	0	22.88
				50	24	22.96
				50	50	22.93
				100	0	22.86
	1755	132422		1	0	23.97
				1	49	23.98
				1	99	23.96
				50	0	23.08
				50	24	23.07
				50	50	23.10
				100	0	23.13
	1770	132572		1	0	23.97
				1	49	23.86
				1	99	23.85
				50	0	23.34
				50	24	23.14
				50	50	23.09
				100	0	23.23
16QAM	1720	132072		1	0	23.36
				1	49	23.11
				1	99	23.17
				50	0	21.91
				50	24	21.92
				50	50	21.84
				100	0	21.89
	1755	132422		1	0	23.62
				1	49	23.54
				1	99	23.53
				50	0	22.03
				50	24	22.09
				50	50	22.16
				100	0	22.11
	1770	132572		1	0	23.59
				1	49	23.45
				1	99	23.44
				50	0	22.33
				50	24	22.15
				50	50	22.16
				100	0	22.28

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	1720	132072	20	1	0	21.89
				1	49	21.86
				1	99	21.87
				50	0	21.85
				50	24	21.83
				50	50	21.86
				100	0	21.94
	1755	132422		1	0	22.09
				1	49	22.15
				1	99	22.10
				50	0	22.19
				50	24	22.11
				50	50	22.15
				100	0	22.21
	1770	132572		1	0	22.21
				1	49	22.28
				1	99	22.21
				50	0	22.24
				50	24	22.26
				50	50	22.22
				100	0	22.20

6.3 Bluetooth Measurement result

BT

Duty cycle

Modulation Type	Duty Cycle (%)
GFSK(DH5)	83.00
π/4DQPSK(DH5)	51.00
8DPSK(DH5)	51.00

Conducted Power

Modulation type	Average power output (dBm)		
	2402MHz	2441MHz	2480MHz
GFSK	9.17	9.08	9.52
8DPSK	3.97	3.32	3.96
π/4DQPSK	3.92	3.30	3.90

BLE

Duty cycle

Modulation Type	Duty Cycle (%)
BLE 1M	86.00
BLE 2M	61.00

Conducted Power

Modulation type	Average power output (dBm)		
	2402MHz	2440MHz	2480MHz
BLE 1M	6.00	6.80	6.14
BLE 2M	4.26	5.12	4.49

6.4 Wi-Fi Measurement result

Duty cycle

WIFI 2.4GHz

Test Mode	Duty Cycle (%)
802.11b	98.41
802.11g	96.73
802.11n HT20	96.59

WIFI 5GHz

Test Mode	Duty Cycle (%)
802.11a	96.87
802.11n HT20	96.62
802.11n HT40	93.61
802.11ac VHT20	96.54
802.11ac VHT40	93.35
802.11ac VHT80	87.92

Output Power

WIFI 2.4GHz

Modulation type	Average power output (dBm)		
	2412MHz	2437MHz	2462MHz
802.11b	20.91	21.11	21.02
802.11g	19.48	19.62	19.43
11n HT20	18.40	18.51	18.48

WIFI 5GHz

UNII-1

Mode	Freq.(MHz)	Average power output(dBm)
802.11a	5180	19.93
	5220	19.97
	5240	19.96
802.11n HT20	5180	19.78
	5220	19.76
	5240	19.79
802.11n HT40	5190	19.68
	5230	19.65
802.11ac VHT20	5180	19.07
	5220	18.81
	5240	18.82
802.11ac VHT40	5190	18.75
	5230	18.71
802.11ac VHT80	5210	18.58

UNII-3

Mode	Freq.(MHz)	Average power output(dBm)
802.11a	5745	19.88
	5785	19.94
	5825	19.98
802.11n HT20	5745	19.73
	5785	19.82
	5825	19.87
802.11n HT40	5755	19.88
	5795	19.93
802.11ac VHT20	5745	19.12
	5785	19.02
	5825	19.05
802.11ac VHT40	5755	19.21
	5795	19.15
802.11ac VHT80	5775	18.86

6.5 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Mothod1:
According to the KDB447498 4.3.1 (1)

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f (GHz)] ≤ 3.0 for 1-g SAR, where

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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

This is equivalent to [(max. power of channel, including tune-up tolerance, mW)/(60/√f(GHz) mW)] ·[20 mm/(min.test separation distance, mm)] ≤ 1.0 for 1-g SAR; also see Appendix A for approximate exclusion threshold values at selected frequencies and distances.

Mothod2:
According to the KDB447498 appendix A

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

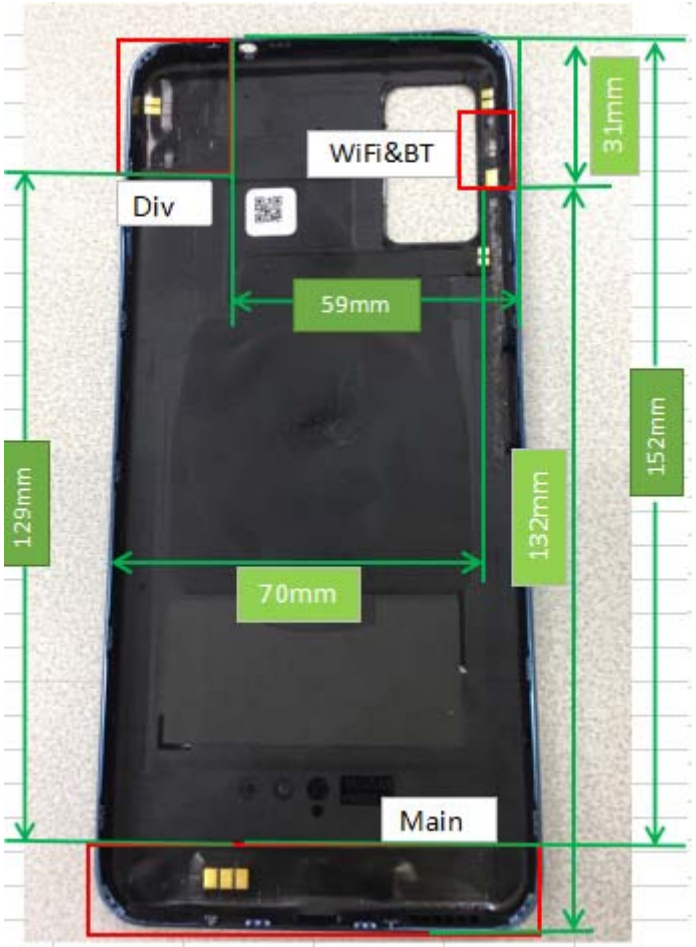
Summary of Transmitters

Band/Mode	Max conducted power adjusted for tune-up tolerance(mW)	Exposure condition	SAR test exclusion threshold (mW)	Standalone SAR Required
BT/BLE	10	Body-worn/Hotspot	19	No
Wi-Fi 2.4GHz	141.25	Body-worn/Hotspot	19	Yes
Wi-Fi 5GHz(UNII-1)	100	Body-worn/Hotspot	13	Yes
Wi-Fi 5GHz(UNII-3)	100	Body-worn/Hotspot	12	Yes
BT/BLE	10	Head	10	No
Wi-Fi 2.4GHz	141.25	Head	10	Yes
Wi-Fi 5GHz(UNII-1)	100	Head	7	Yes
Wi-Fi 5GHz(UNII-3)	100	Head	6	Yes

6.6 RF exposure conditions

6.6.1 Antenna information

Refer to the follow picture “Antenna information” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.



All of Implementation antenna
Main antenna: LTE FDD B2/4/5/12/13/66 TX&RX
Div antenna: LTE FDD B2/4/5/12/13/66 DRX,
Wifi&BT antenna:2412MHz~2472MHz,5150MHz~5250MHz,5750MHz~5850MHz;GPS 1575.42MHz

Note: we defined these position when we face the screen of EUT, the reason why we perform SAR test for these edges is that the structures of antennas is close to our body, and for the other edges do not necessary cause we already consider the worst case.

6.6.2 Body Worn Exposure conditions

For WWAN

Test Configurations	SAR Required	Note
Back	Yes	/
Front	Yes	/

For WLAN/BT

Test Configurations	SAR Required	Note
Back	Yes	/
Front	Yes	/

6.6.3 Hotspot Exposure conditions

For WWAN

Test Configurations	SAR Required	Antenna-to-edge(s) distances
Back	YES	＜25mm
Front	YES	＜25mm
Top	NO	＞25mm
Bottom	YES	＜25mm
Left	YES	＜25mm
Right	YES	＜25mm

For WLAN/BT

Test Configurations	SAR Required	Antenna-to-edge(s) distances
Back	YES	＜25mm
Front	YES	＜25mm
Top	YES	＜25mm
Bottom	NO	＞25mm
Left	NO	＞25mm
Right	YES	＜25mm

Note*: For hotspot mode, it's not necessary test Rear and Front position for the bands which there is no "hotspot power reduction" scheme.

6.7 System Checking

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. For the measurement of the following parameters the SPEAG DAKS-3.5 dielectric parameter probe is used, representing the open-ended coaxial probe measurement procedure.

Freq.(MHz)	Liquid parameters	Measured	Target	Delta (%)	Tolerance (%)	Verdit
750	εr	43.56	41.9	3.96	±10	Pass
	σ[S/m]	0.93	0.89	4.49	±10	Pass
835	εr	40.65	41.5	-2.05	±10	Pass
	σ[S/m]	0.88	0.9	-2.22	±10	Pass
1800	εr	38.87	40	-2.83	±10	Pass
	σ[S/m]	1.33	1.4	-5.00	±10	Pass
2000	εr	38.56	40	-3.60	±10	Pass
	σ[S/m]	1.37	1.4	-2.14	±10	Pass
2450	εr	40.12	39.2	2.35	±10	Pass
	σ[S/m]	1.83	1.8	1.67	±10	Pass
5200	εr	35.46	36	-1.50	±5	Pass
	σ[S/m]	4.77	4.66	2.36	±5	Pass
5800	εr	36.2	35.3	2.55	±5	Pass
	σ[S/m]	5.41	5.27	2.66	±5	Pass

Note: For DASY system, the conservative tolerance 5% could expand to 10% when the frequency under 3GHz

A system check measurement was made following once the determination of the dielectric parameters of the simulant, using the dipole validation kit. The system checking results (dielectric parameters and SAR values) are given in the table below.

Freq.(MHz)	SARmeasured (normalized to 1W)		Target (Ref. Value)	Delta(%)	Tolerance(%)	Verdit
750	1g	8.65	8.4	2.98	±10	Pass
	10g	5.73	5.7	0.53	±10	Pass
835	1g	9.03	9.38	-3.73	±10	Pass
	10g	6.45	6.25	3.20	±10	Pass
1800	1g	40.11	38.9	3.11	±10	Pass
	10g	19.86	20.3	-2.17	±10	Pass
2000	1g	42.37	41	3.34	±10	Pass
	10g	19.84	20.5	-3.22	±10	Pass
2450	1g	54.21	53	2.28	±10	Pass
	10g	25.62	24.5	4.57	±10	Pass
5200	1g	76.85	75.9	1.25	±10	Pass
	10g	21.67	21.4	1.26	±10	Pass
5800	1g	76.12	78.5	-3.03	±10	Pass
	10g	21.53	21.9	-1.69	±10	Pass

6.8 SAR TEST RESULT

In order to determine the largest value of the peak spatial-average SAR of a handset, all device positions, configurations, and operational modes should be tested for each frequency band according to Steps 1 to 3 below.
Step 1: The tests should be performed at the channel that is closest to the center of the transmit frequency band.
a) All device positions (cheek and tilt, for both left and right sides of the SAM phantom),
b) All configurations for each device position in a), e.g., antenna extended and retracted, and
c) All operational modes for each device position in item a) and configuration in item b) in each frequency band, e.g., analog and digital, If more than three frequencies need to be tested (i.e., Nc > 3), then all frequencies, configurations and modes shall be tested for all of the above test conditions.
Step 2: For the condition providing the highest peak spatial-average SAR determined in Step 1 for each frequency, perform all tests at all other test frequency channels, e.g., lowest and highest frequencies. In addition, for all other conditions (device position, configuration, and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies should be tested as well.
Step 3: Examine all data to determine the largest value of the peak.
Note:
1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
Duty Factor = 1 / Duty Cycle(%)
For cellular network:
Reported SAR (W/kg) = Measured SAR (W/kg) * Scaling Factor
For WLAN
Reported SAR (W/kg) = Measured SAR (W/kg) * Scaling Factor*Duty factor
2. Per KDB 447498 D01v06, for each exposure position, if the highest output channel reported SAR ≤0.8W/kg, other channels SAR testing are not necessary.
3. The distance between the EUT and the phantom bottom is 10mm.

Mode		Duty cycle (%)	Duty factor	Note
Licensed Frequency	FDD-LTE Band	100	NA	According to the theory, we configured duty cycle with relevant value on the communication tester, so correction factor do not need such as “duty factor”
Unlicensed Frequency	WIFI 2.4GHz 802.11b	98.41	1.02	SRTC perform SAR test with non-signaling mode, and duty factor shall be considered because of the uncertainty of data traffic.
	WIFI 5GHz 802.11a	96.87	1.03	

Mode: LTE Band 2

fL (MHz)= 1860MHz fM (MHz)= 1880MHz fH (MHz)= 1900MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.252	---	0.275	---
			H	23.77	24.00	1.05	---	---	---	---
		Left tilt	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.127	---	0.138	---
			H	23.77	24.00	1.05	---	---	---	---
		Right Cheek	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.109	---	0.119	---
			H	23.77	24.00	1.05	---	---	---	---
		Right tilt	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.125	---	0.136	---
			H	23.77	24.00	1.05	---	---	---	---
	Body-worn	Back	L	23.84	24.00	1.04	0.951	0.948	0.989	0.986
			M	23.63	24.00	1.09	0.987	0.984	1.076	1.073
			H	23.77	24.00	1.05	0.962	0.956	1.010	1.004
		Front	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.442	---	0.482	---
			H	23.77	24.00	1.05	---	---	---	---
	Hotspot	Back	L	23.84	24.00	1.04	0.951	0.948	0.989	0.986
			M	23.63	24.00	1.09	0.987	0.984	1.076	1.073
			H	23.77	24.00	1.05	0.962	0.956	1.010	1.004
		Front	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.442	---	0.482	---
			H	23.77	24.00	1.05	---	---	---	---
		Top	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	---	---	---	---
			H	23.77	24.00	1.05	---	---	---	---
		Bottom	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.386	---	0.421	---
			H	23.77	24.00	1.05	---	---	---	---
		Left	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.210	---	0.229	---
			H	23.77	24.00	1.05	---	---	---	---
		Right	L	23.84	24.00	1.04	---	---	---	---
			M	23.63	24.00	1.09	0.101	---	0.110	---
			H	23.77	24.00	1.05	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.231	---	0.245	---
			H	22.98	23.00	1.00	---	---	---	---
		Left	L	22.86	23.00	1.03	---	---	---	---

		tilt	M	22.76	23.00	1.06	0.112	---	0.119	---
			H	22.98	23.00	1.00	---	---	---	---
		Right Cheek	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.098	---	0.104	---
			H	22.98	23.00	1.00	---	---	---	---
		Right tilt	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.110	---	0.117	---
			H	22.98	23.00	1.00	---	---	---	---
	Body-worn	Back	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.788	---	0.835	---
			H	22.98	23.00	1.00	---	---	---	---
		Front	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.402	---	0.426	---
			H	22.98	23.00	1.00	---	---	---	---
	Hotspot	Back	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.788	---	0.835	---
			H	22.98	23.00	1.00	---	---	---	---
		Front	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.402	---	0.426	---
			H	22.98	23.00	1.00	---	---	---	---
		Top	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	---	---	---	---
			H	22.98	23.00	1.00	---	---	---	---
		Bottom	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.372	---	0.394	---
			H	22.98	23.00	1.00	---	---	---	---
		Left	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.189	---	0.200	---
			H	22.98	23.00	1.00	---	---	---	---
		Right	L	22.86	23.00	1.03	---	---	---	---
			M	22.76	23.00	1.06	0.086	---	0.091	---
			H	22.98	23.00	1.00	---	---	---	---

Mode: LTE Band 4

fL (MHz)= 1720MHz fM (MHz)= 1732.5MHz fH (MHz)= 1745MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.360	---	0.367	---
			H	23.98	24.00	1.00	---	---	---	---
		Left tilt	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.229	---	0.234	---
			H	23.98	24.00	1.00	---	---	---	---
		Right Cheek	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.153	---	0.156	---
			H	23.98	24.00	1.00	---	---	---	---
		Right tilt	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.199	---	0.203	---
			H	23.98	24.00	1.00	---	---	---	---
	Body-worn	Back	L	23.80	24.00	1.05	0.901	0.905	0.946	0.950
			M	23.91	24.00	1.02	0.938	0.916	0.957	0.934
			H	23.98	24.00	1.00	0.912	0.908	0.912	0.908
		Front	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.629	---	0.642	---
			H	23.98	24.00	1.00	---	---	---	---
	Hotspot	Back	L	23.80	24.00	1.05	0.901	0.905	0.946	0.950
			M	23.91	24.00	1.02	0.938	0.916	0.957	0.934
			H	23.98	24.00	1.00	0.912	0.908	0.912	0.908
		Front	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.629	---	0.642	---
			H	23.98	24.00	1.00	---	---	---	---
		Top	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	---	---	---	---
			H	23.98	24.00	1.00	---	---	---	---
		Bottom	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.223	---	0.227	---
			H	23.98	24.00	1.00	---	---	---	---
		Left	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.285	---	0.291	---
			H	23.98	24.00	1.00	---	---	---	---
		Right	L	23.80	24.00	1.05	---	---	---	---
			M	23.91	24.00	1.02	0.127	---	0.130	---
			H	23.98	24.00	1.00	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.301	---	0.358	---
			H	23.27	23.50	1.05	---	---	---	---

		Left tilt	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.201	---	0.239	---
			H	23.27	23.50	1.05	---	---	---	---
		Right Cheek	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.112	---	0.133	---
			H	23.27	23.50	1.05	---	---	---	---
		Right tilt	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.165	---	0.196	---
			H	23.27	23.50	1.05	---	---	---	---
	Body-worn	Back	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.792	---	0.942	---
			H	23.27	23.50	1.05	---	---	---	---
		Front	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.469	---	0.558	---
			H	23.27	23.50	1.05	---	---	---	---
	Hotspot	Back	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.792	---	0.942	---
			H	23.27	23.50	1.05	---	---	---	---
		Front	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.469	---	0.558	---
			H	23.27	23.50	1.05	---	---	---	---
		Top	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	---	---	---	---
			H	23.27	23.50	1.05	---	---	---	---
		Bottom	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.165	---	0.196	---
			H	23.27	23.50	1.05	---	---	---	---
		Left	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.265	---	0.315	---
			H	23.27	23.50	1.05	---	---	---	---
		Right	L	22.93	23.50	1.14	---	---	---	---
			M	22.74	23.50	1.19	0.110	---	0.131	---
			H	23.27	23.50	1.05	---	---	---	---

Mode: LTE Band 5

fL (MHz)=829 MHz fM (MHz)=836.5MHz fH (MHz)= 844MHz

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.189	---	0.197	---
			H	24.37	24.50	1.03	---	---	---	---
		Left tilt	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.107	---	0.111	---
			H	24.37	24.50	1.03	---	---	---	---
		Right Cheek	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.207	---	0.215	---
			H	24.37	24.50	1.03	---	---	---	---
		Right tilt	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.111	---	0.115	---
			H	24.37	24.50	1.03	---	---	---	---
	Body-worn	Back	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.488	---	0.508	---
			H	24.37	24.50	1.03	---	---	---	---
		Front	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.224	---	0.233	---
			H	24.37	24.50	1.03	---	---	---	---
	Hotspot	Back	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.488	---	0.508	---
			H	24.37	24.50	1.03	---	---	---	---
		Front	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.224	---	0.233	---
			H	24.37	24.50	1.03	---	---	---	---
		Top	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	---	---	---	---
			H	24.37	24.50	1.03	---	---	---	---
		Bottom	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.178	---	0.185	---
			H	24.37	24.50	1.03	---	---	---	---
		Left	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.155	---	0.161	---
			H	24.37	24.50	1.03	---	---	---	---
		Right	L	24.23	24.50	1.06	---	---	---	---
			M	24.34	24.50	1.04	0.227	---	0.236	---
			H	24.37	24.50	1.03	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.168	---	0.171	---
			H	23.38	23.50	1.03	---	---	---	---
		Left	L	23.32	23.50	1.04	---	---	---	---

		tilt	M	23.42	23.50	1.02	0.095	---	0.097	---
			H	23.38	23.50	1.03	---	---	---	---
		Right Cheek	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.183	---	0.187	---
			H	23.38	23.50	1.03	---	---	---	---
		Right tilt	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.098	---	0.100	---
			H	23.38	23.50	1.03	---	---	---	---
	Body-worn	Back	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.456	---	0.465	---
			H	23.38	23.50	1.03	---	---	---	---
		Front	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.201	---	0.205	---
			H	23.38	23.50	1.03	---	---	---	---
	Hotspot	Back	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.456	---	0.465	---
			H	23.38	23.50	1.03	---	---	---	---
		Front	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.201	---	0.205	---
			H	23.38	23.50	1.03	---	---	---	---
		Top	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	---	---	---	---
			H	23.38	23.50	1.03	---	---	---	---
		Bottom	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.156	---	0.159	---
			H	23.38	23.50	1.03	---	---	---	---
		Left	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.126	---	0.129	---
			H	23.38	23.50	1.03	---	---	---	---
		Right	L	23.32	23.50	1.04	---	---	---	---
			M	23.42	23.50	1.02	0.198	---	0.202	---
			H	23.38	23.50	1.03	---	---	---	---

Mode: LTE Band 12

fL (MHz)=704 MHz fM (MHz)=707.5MHz fH (MHz)= 711MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.160	---	0.166	---
			H	24.26	24.50	1.06	---	---	---	---
		Left tilt	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.074	---	0.077	---
			H	24.26	24.50	1.06	---	---	---	---
		Right Cheek	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.178	---	0.185	---
			H	24.26	24.50	1.06	---	---	---	---
		Right tilt	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.085	---	0.088	---
			H	24.26	24.50	1.06	---	---	---	---
	Body-worn	Back	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.295	---	0.307	---
			H	24.26	24.50	1.06	---	---	---	---
		Front	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.190	---	0.198	---
			H	24.26	24.50	1.06	---	---	---	---
	Hotspot	Back	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.295	---	0.307	---
			H	24.26	24.50	1.06	---	---	---	---
		Front	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.190	---	0.198	---
			H	24.26	24.50	1.06	---	---	---	---
		Top	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	---	---	---	---
			H	24.26	24.50	1.06	---	---	---	---
		Bottom	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.063	---	0.066	---
			H	24.26	24.50	1.06	---	---	---	---
		Left	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.182	---	0.189	---
			H	24.26	24.50	1.06	---	---	---	---
		Right	L	24.34	24.50	1.04	---	---	---	---
			M	24.34	24.50	1.04	0.260	---	0.270	---
			H	24.26	24.50	1.06	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.124	---	0.129	---
			H	23.40	23.50	1.02	---	---	---	---
		Left	L	23.22	23.50	1.07	---	---	---	---

		tilt	M	23.35	23.50	1.04	0.065	---	0.068	---
			H	23.40	23.50	1.02	---	---	---	---
		Right Cheek	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.167	---	0.174	---
			H	23.40	23.50	1.02	---	---	---	---
		Right tilt	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.068	---	0.071	---
			H	23.40	23.50	1.02	---	---	---	---
	Body-worn	Back	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.257	---	0.267	---
			H	23.40	23.50	1.02	---	---	---	---
		Front	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.148	---	0.154	---
			H	23.40	23.50	1.02	---	---	---	---
	Hotspot	Back	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.257	---	0.267	---
			H	23.40	23.50	1.02	---	---	---	---
		Front	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.148	---	0.154	---
			H	23.40	23.50	1.02	---	---	---	---
		Top	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	---	---	---	---
			H	23.40	23.50	1.02	---	---	---	---
		Bottom	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.055	---	0.057	---
			H	23.40	23.50	1.02	---	---	---	---
		Left	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.166	---	0.173	---
			H	23.40	23.50	1.02	---	---	---	---
		Right	L	23.22	23.50	1.07	---	---	---	---
			M	23.35	23.50	1.04	0.242	---	0.252	---
			H	23.40	23.50	1.02	---	---	---	---

Mode: LTE Band 13

fL (MHz)=782 MHz fM (MHz)=782 MHz fH (MHz)= 782 MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.146	---	0.153	---
			H	24.27	24.50	1.05	---	---	---	---
		Left tilt	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.100	---	0.105	---
			H	24.27	24.50	1.05	---	---	---	---
		Right Cheek	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.184	---	0.193	---
			H	24.27	24.50	1.05	---	---	---	---
		Right tilt	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.093	---	0.098	---
			H	24.27	24.50	1.05	---	---	---	---
	Body-worn	Back	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.309	---	0.324	---
			H	24.27	24.50	1.05	---	---	---	---
		Front	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.213	---	0.224	---
			H	24.27	24.50	1.05	---	---	---	---
	Hotspot	Back	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.309	---	0.324	---
			H	24.27	24.50	1.05	---	---	---	---
		Front	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.213	---	0.224	---
			H	24.27	24.50	1.05	---	---	---	---
		Top	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	---	---	---	---
			H	24.27	24.50	1.05	---	---	---	---
		Bottom	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.105	---	0.110	---
			H	24.27	24.50	1.05	---	---	---	---
		Left	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.165	---	0.173	---
			H	24.27	24.50	1.05	---	---	---	---
		Right	L	24.27	24.50	1.05	---	---	---	---
			M	24.27	24.50	1.05	0.290	---	0.305	---
			H	24.27	24.50	1.05	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.126	---	0.136	---
			H	23.16	23.50	1.08	---	---	---	---
		Left	L	23.16	23.50	1.08	---	---	---	---

		tilt	M	23.16	23.50	1.08	0.069	---	0.074	---
			H	23.16	23.50	1.08	---	---	---	---
		Right Cheek	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.165	---	0.178	---
			H	23.16	23.50	1.08	---	---	---	---
		Right tilt	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.066	---	0.072	---
			H	23.16	23.50	1.08	---	---	---	---
	Body-worn	Back	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.228	---	0.246	---
			H	23.16	23.50	1.08	---	---	---	---
		Front	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.166	---	0.179	---
			H	23.16	23.50	1.08	---	---	---	---
	Hotspot	Back	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.228	---	0.246	---
			H	23.16	23.50	1.08	---	---	---	---
		Front	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.166	---	0.179	---
			H	23.16	23.50	1.08	---	---	---	---
		Top	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	---	---	---	---
			H	23.16	23.50	1.08	---	---	---	---
		Bottom	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.086	---	0.093	---
			H	23.16	23.50	1.08	---	---	---	---
		Left	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.126	---	0.136	---
			H	23.16	23.50	1.08	---	---	---	---
		Right	L	23.16	23.50	1.08	---	---	---	---
			M	23.16	23.50	1.08	0.218	---	0.235	---
			H	23.16	23.50	1.08	---	---	---	---

Mode: LTE Band 66

fL (MHz)= 1720 MHz fM (MHz)= 1745MHz fH (MHz)= 1770MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.339	---	0.339	---
			H	23.97	24.00	1.01	---	---	---	---
		Left tilt	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.230	---	0.230	---
			H	23.97	24.00	1.01	---	---	---	---
		Right Cheek	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.170	---	0.170	---
			H	23.97	24.00	1.01	---	---	---	---
		Right tilt	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.224	---	0.224	---
			H	23.97	24.00	1.01	---	---	---	---
	Body-worn	Back	L	23.80	24.00	1.05	0.901	0.898	0.958	0.953
			M	23.98	24.00	1.00	0.958	0.950	0.958	0.950
			H	23.97	24.00	1.01	0.915	0.911	0.924	0.920
		Front	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.601	---	0.601	---
			H	23.97	24.00	1.01	---	---	---	---
	Hotspot	Back	L	23.80	24.00	1.05	0.901	0.898	0.958	0.953
			M	23.98	24.00	1.00	0.958	0.950	0.958	0.950
			H	23.97	24.00	1.01	0.915	0.911	0.924	0.920
		Front	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.601	---	0.601	---
			H	23.97	24.00	1.01	---	---	---	---
		Top	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	---	---	---	---
			H	23.97	24.00	1.01	---	---	---	---
		Bottom	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.229	---	0.229	---
			H	23.97	24.00	1.01	---	---	---	---
		Left	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.269	---	0.269	---
			H	23.97	24.00	1.01	---	---	---	---
		Right	L	23.80	24.00	1.05	---	---	---	---
			M	23.98	24.00	1.00	0.112	---	0.112	---
			H	23.97	24.00	1.01	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.302	---	0.332	---
			H	23.34	23.50	1.04	---	---	---	---
		Left	L	22.96	23.50	1.13	---	---	---	---

		tilt	M	23.10	23.50	1.10	0.188	---	0.207	---
			H	23.34	23.50	1.04	---	---	---	---
		Right Cheek	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.143	---	0.157	---
			H	23.34	23.50	1.04	---	---	---	---
		Right tilt	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.202	---	0.222	---
			H	23.34	23.50	1.04	---	---	---	---
	Body-worn	Back	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.788	---	0.867	---
			H	23.34	23.50	1.04	---	---	---	---
		Front	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.468	---	0.515	---
			H	23.34	23.50	1.04	---	---	---	---
	Hotspot	Back	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.788	---	0.867	---
			H	23.34	23.50	1.04	---	---	---	---
		Front	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.468	---	0.515	---
			H	23.34	23.50	1.04	---	---	---	---
		Top	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	---	---	---	---
			H	23.34	23.50	1.04	---	---	---	---
		Bottom	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.186	---	0.205	---
			H	23.34	23.50	1.04	---	---	---	---
		Left	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.201	---	0.221	---
			H	23.34	23.50	1.04	---	---	---	---
		Right	L	22.96	23.50	1.13	---	---	---	---
			M	23.10	23.50	1.10	0.098	---	0.108	---
			H	23.34	23.50	1.04	---	---	---	---

Mode: Wi-Fi 2.4GHz

fL (MHz)=2412MHz fM (MHz)=2437MHz fH (MHz)= 2462MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel					First	Second	First	Second
802.11b	Head	Left Cheek	L	20.91	21.50	1.15	1.02	0.865	0.855	1.011	0.999
			M	21.11	21.50	1.09	1.02	0.916	0.911	1.015	1.009
			H	21.02	21.50	1.12	1.02	0.866	0.862	0.986	0.981
		Left tilt	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.433	---	0.480	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Right Cheek	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.332	---	0.368	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Right tilt	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.299	---	0.331	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
	Body-worn	Back	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.558	---	0.618	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Front	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.253	---	0.280	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
	Hotspot	Back	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.558	---	0.618	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Front	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.253	---	0.280	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Top	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.140	---	0.155	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Bottom	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	---	---	---	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Left	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	---	---	---	---
			H	21.02	21.50	1.12	1.02	---	---	---	---
		Right	L	20.91	21.50	1.15	1.02	---	---	---	---
			M	21.11	21.50	1.09	1.02	0.306	---	0.339	---
			H	21.02	21.50	1.12	1.02	---	---	---	---

Mode: Wi-Fi 5GHz(UNII-1)

fL (MHz)=5180MHz fM (MHz)=5220MHz fH (MHz)= 5240MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel					First	Second	First	Second
802.11a	Head	Left Cheek	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.659	---	0.687	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Left tilt	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.257	---	0.268	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Right Cheek	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.209	---	0.218	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Right tilt	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.186	---	0.194	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
	Body-worn	Back	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.619	---	0.645	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Front	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.127	---	0.132	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
	Hotspot	Back	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.619	---	0.645	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Front	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.127	---	0.132	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Top	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.139	---	0.145	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Bottom	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	---	---	---	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Left	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	---	---	---	---
			H	19.96	20.00	1.01	1.03	---	---	---	---
		Right	L	19.93	20.00	1.02	1.03	---	---	---	---
			M	19.97	20.00	1.01	1.03	0.634	---	0.661	---
			H	19.96	20.00	1.01	1.03	---	---	---	---

Mode: Wi-Fi 5GHz(UNII-3)

fL (MHz)=5745MHz fM (MHz)=5785MHz fH (MHz)= 5825MHz

Limit of SAR (W/kg): <1.6W/kg (1g Average)

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
Mode	Exposure condition	Position	Channel					First	Second	First	Second
802.11a	Head	Left Cheek	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.485	---	0.506	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Left tilt	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.360	---	0.375	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Right Cheek	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.278	---	0.290	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Right tilt	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.276	---	0.288	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
	Body-worn	Back	L	19.88	20.00	1.03	1.03	0.911	0.905	0.969	0.962
			M	19.94	20.00	1.01	1.03	0.962	0.957	1.003	0.998
			H	19.98	20.00	1.00	1.03	0.920	0.915	0.950	0.945
		Front	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.198	---	0.206	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
	Hotspot	Back	L	19.88	20.00	1.03	1.03	0.911	0.905	0.969	0.962
			M	19.94	20.00	1.01	1.03	0.962	0.957	1.003	0.998
			H	19.98	20.00	1.00	1.03	0.920	0.915	0.950	0.945
		Front	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.198	---	0.206	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Top	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	0.319	---	0.333	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Bottom	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	---	---	---	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Left	L	19.88	20.00	1.03	1.03	---	---	---	---
			M	19.94	20.00	1.01	1.03	---	---	---	---
			H	19.98	20.00	1.00	1.03	---	---	---	---
		Right	L	19.88	20.00	1.03	1.03	0.765	---	---	---
			M	19.94	20.00	1.01	1.03	0.808	0.801	0.842	0.835
			H	19.98	20.00	1.00	1.03	0.771	---	---	---

6.9 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.
The following procedures are applied to determine if repeated measurements are required.
1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
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 ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

6.10 Simultaneous Transmission SAR Analysis

Antenna numbers of Simultaneous Transmission	Antennas of Simultaneous Transmission	Simultaneous Transmission Modes
2	MAIN ANT+ WLAN/BT	Celluar2/3/4G+ WIFI 2.4GHz Celluar2/3/4G+ WIFI 5GHz Celluar2/3/4G+ BT

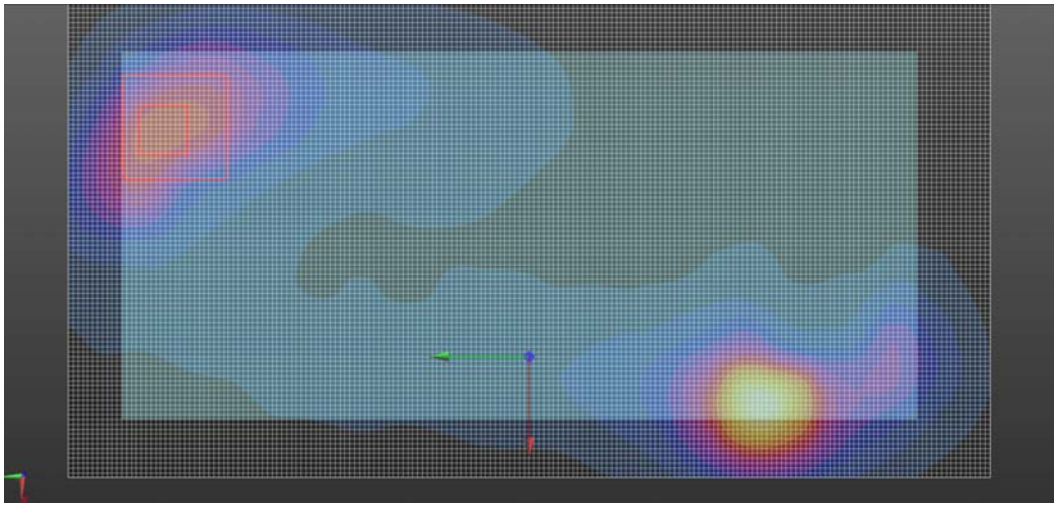
Note: BT and WLAN share the same antenna and work in the same frequency range. So they can't transmit together.

The worst case for 2TX simultaneous transmission happened in Left Cheek
LTE Band4+WIFI2.4GHz

Exposure condition	Position	licenced ANT	unlicenced ANT	Mult-TX
Head	Left cheek	0.367	1.015	1.382
	Left tilt	0.239	0.480	0.719
	Right cheek	0.215	0.368	0.583
	Right tilt	0.224	0.331	0.555
Body worn	Back	1.076	1.003	1.120
	Front	0.642	0.280	0.922
Hotspot	Back	1.076	1.003	1.120
	Front	0.642	0.280	0.922
	Top	0.000	0.333	0.333
	Bottom	0.421	0.000	0.421
	Left	0.315	0.000	0.315
	Right	0.305	0.842	1.147

According to the above tables, SAR values＜1.6W/kg meet the compliance.

Note:
The worst case for 2TX simultaneous transmission in Back position exceed 1.6W/Kg, but this method is the most conservative which is over estimate. So according to KDB447498D01 4.3.2.c)
When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by (SAR1 + SAR2)^1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. SAR1 and SAR2 are the highest reported or estimated SAR values for each antenna in the pair, and Ri is the separation distance in mm between the peak SAR locations for the antenna pair.



Distance ≈132mm

SAR1=1.076(LTE2)/0.957(LTE4)/0.958(LTE66), SAR2=1.003(wifi 5G UNII-3)

Splsr(LTE BAND 2+WIFI 5GHz UNII-3) =(1.076+1.003)^1.5/132=0.02<0.04

Splsr(LTE BAND 4+WIFI 5GHz UNII-3) =(0.957+1.003)^1.5/132=0.02<0.04

Splsr(LTE BAND 66+WIFI 5GHz UNII-3) =(0.958+1.011)^1.5/132=0.02<0.04

The worst combined result is similar to standalone SAR value. So there is no risk for the condition mentioned above. The antenna pairs qualify for simultaneous transmission SAR test exclusion, enlarged zoom scan and volume scan post-processing procedures do not apply. And we adopt the following result which using summation method as final worst case of Back position for Simultaneous Transmission

Back Position of worst case	Licensed band	Unlicensed band	Simultaneous SAR(w/kg)
Back	LTE Band2	WIFI 2.4G	1.120

According to the above tables, SAR values＜1.6W/kg meet the compliance.

7 MEASUREMENT UNCERTAINTY

Head (300MHz-3GHz)

DASY6 Uncertainty Budget
According to IEEE 1528 and IEC 62209-1
(Hand-Held: 0.3 - 3 GHz range)

Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.0 %	N	1	1	1	±6.0 %	±6.0 %	∞
Axial Isotropy	±4.7 %	R	√3	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	√3	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Linearity	±4.7 %	R	√3	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Modulation Response^m	±2.4 %	R	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	√3	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.02 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Probe Positioning	±0.4 %	R	√3	1	1	±0.2 %	±0.2 %	∞
Max. SAR Eval.	±2.0 %	R	√3	1	1	±1.2 %	±1.2 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	√3	1	1	±2.9 %	±2.9 %	∞
Power Scaling^p	±0 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.1 %	R	√3	1	1	±3.5 %	±3.5 %	∞
SAR correction	±1.9 %	N	1	1	0.84	±1.9 %	±1.6 %	∞
Liquid Conductivity (mea.)^{DAK}	±2.5 %	N	1	0.78	0.71	±2.0 %	±1.8 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	N	1	0.23	0.26	±0.6 %	±0.7 %	∞
Temp. unc. - Conductivity ^{HH}	±3.4 %	R	√3	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{HH}	±0.4 %	R	√3	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±11.3 %	±11.2 %	459
Expanded STD Uncertainty						**±22.6 %**	**±22.4 %**	

Head (3GHz -6GHz)

DASY6 Uncertainty Budget
According to IEEE 1528 and IEC 62209-1
(Hand-Held: 3 - 6 GHz range)

Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.55 %	N	1	1	1	±6.55 %	±6.55 %	∞
Axial Isotropy	±4.7 %	R	√3	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	√3	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±2.0 %	R	√3	1	1	±1.2 %	±1.2 %	∞
Linearity	±4.7 %	R	√3	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Modulation Response^m	±2.4 %	R	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	√3	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.04 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Probe Positioning	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Max. SAR Eval.	±4.0 %	R	√3	1	1	±2.3 %	±2.3 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	√3	1	1	±2.9 %	±2.9 %	∞
Power Scaling^p	±0 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.6 %	R	√3	1	1	±3.8 %	±3.8 %	∞
SAR correction	±1.9 %	N	1	1	0.84	±1.9 %	±1.6 %	∞
Liquid Conductivity (mea.)^{DAK}	±2.5 %	N	1	0.78	0.71	±2.0 %	±1.8 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	N	1	0.23	0.26	±0.6 %	±0.7 %	∞
Temp. unc. - Conductivity ^{BB}	±3.4 %	R	√3	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{BB}	±0.4 %	R	√3	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±11.9 %	±11.8 %	569
Expanded STD Uncertainty						**±23.8 %**	**±23.6 %**	

Body (30MHz -6GHz)

DASY6 Uncertainty Budget
According to IEC 62209-2
(Body-Worn: 30 MHz - 6 GHz range)

Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.55 %	N	1	1	1	±6.55 %	±6.55 %	∞
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
Modulation Response^m	±2.4 %	R	$\sqrt{3}$	1	1	±1.4 %	±1.4 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Boundary Effects	±2.0 %	R	$\sqrt{3}$	1	1	±1.2 %	±1.2 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.04 %	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Probe Positioning	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Post-processing	±4.0 %	R	$\sqrt{3}$	1	1	±2.3 %	±2.3 %	∞
Test Sample Related								
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Test sample Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Power Scaling^p	±0 %	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Power Drift	±5.0 %	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Phantom and Setup								
Phantom Uncertainty	±7.6 %	R	$\sqrt{3}$	1	1	±4.4 %	±4.4 %	∞
SAR correction	±1.9 %	N	1	1	0.84	±1.9 %	±1.6 %	∞
Liquid Conductivity (mea.)^{DAK}	±2.5 %	N	1	0.78	0.71	±2.0 %	±1.8 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	N	1	0.23	0.26	±0.6 %	±0.7 %	∞
Temp. unc. - Conductivity ^{BB}	±3.4 %	R	$\sqrt{3}$	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{BB}	±0.4 %	R	$\sqrt{3}$	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±12.1 %	±12.0 %	605
Expanded STD Uncertainty						**±24.1 %**	**±24.0 %**	

8 TEST EQUIPMENTS

The measurements were performed using an automated near-field scanning system, DASY5, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Model	Serial Number	Calibration date	Calibration due data
DAE	DAE4	720	2020.09.30	2021.09.29
DAE	DAE4	546	2020.08.13	2021.08.12
Dosimetric E-field Probe	ES3DV3	3127	2020.09.01	2021.08.31
Dosimetric E-field Probe	EX3DV4	3708	2020.10.30	2021.10.29
Dipole Validation Kit	D450V2	1024	2020.10.26	2023.10.25
Dipole Validation Kit	D750V3	1101	2020.10.16	2023.10.15
Dipole Validation Kit	D835V2	4d023	2020.10.16	2023.10.15
Dipole Validation Kit	D900V2	171	2020.09.17	2023.09.16
Dipole Validation Kit	D1450V2	1065	2020.10.16	2023.10.15
Dipole Validation Kit	D1800V2	2d084	2020.09.18	2023.09.17
Dipole Validation Kit	D2000V2	1009	2020.10.14	2023.10.13
Dipole Validation Kit	D2450V2	738	2020.10.13	2023.10.12
Dipole Validation Kit	D2600V2	1166	2019.11.08	2022.11.07
Dipole Validation Kit	D3300V2	1014	2019.11.11	2022.11.10
Dipole Validation Kit	D3500V2	1090	2019.11.11	2022.11.10
Dipole Validation Kit	D3700V2	1058	2019.11.11	2022.11.10
Dipole Validation Kit	D3900V2	1033	2019.11.11	2022.11.10
Dipole Validation Kit	D4200V2	1013	2019.11.12	2022.11.11
Dipole Validation Kit	D4600V2	1033	2019.11.12	2022.11.11
Dipole Validation Kit	D4900V2	1025	2019.11.12	2022.11.11
Dipole Validation Kit	D5GHzV2	1079	2020.10.10	2023.10.09

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration Due data
Signal Generator	E4428C	MY45280865	2020.08.20	2021.08.19
Signal Generator	SML 03	103514	2020.08.20	2021.08.19
Power meter	E4417A	MY45101182	2020.08.20	2021.08.19
Power Sensor	E4412A	MY41502214	2020.08.20	2021.08.19
Power Sensor	E4412A	MY41502130	2020.08.20	2021.08.19
Power meter	E4417A	MY45101004	2020.08.20	2021.08.19
Power Sensor	E9300B	MY41496001	2020.08.20	2021.08.19
Power Sensor	E9300B	MY41496003	2020.08.20	2021.08.19
Communication Tester	E5515C	MY48367401	2020.08.20	2021.08.19
Communication Tester	CMW500	161702	2020.08.20	2021.08.19
Communication Tester	MT8820C	6201300660	2020.08.20	2021.08.19
Communication Tester	MT8821C	6201547819	2020.08.20	2021.08.19
Vector Network Analyzer	VNA R140	0011213	2020.09.18	2021.09.17
Dielectric Parameter Probe	DAKS-3.5	1042	2020.09.17	2021.09.16

Detailed information of Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix C
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Optical Surface Detection	± 0.3 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Dynamic Range	10 μW/g to > 100 W/kg Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

According to KDB 865664 D01 section 3.2.2, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the **SAR target**, **impedance** and **return loss** of a dipole have remain stable according to the following requirements.

1) The test laboratory must ensure that the required supporting information and documentation are included in the SAR report to qualify for the three-year extended calibration interval; otherwise, the IEEE Std 1528-2013 recommended annual calibration applies.
2) Immediate re-calibration is required for the following conditions.
a) After a dipole is damaged and properly repaired to meet required specifications.
b) When the measured SAR deviates from the calibrated SAR value by more than 10% due to changes in physical, mechanical, electrical or other relevant dipole conditions; i.e., the error is not introduced by incorrect measurement procedures or other issues relating to the SAR measurement system.
c) When the most recent return-loss result, measured at least annually, deviates by more than 20% from the previous measurement (i.e. value in dB×0.2) or not meeting the required 20 dB minimum return-loss requirement.
d) When the most recent measurement of the real or imaginary parts of the impedance, measured at least annually, deviates by more than 5 Ω from the previous measurement

Dipole2600

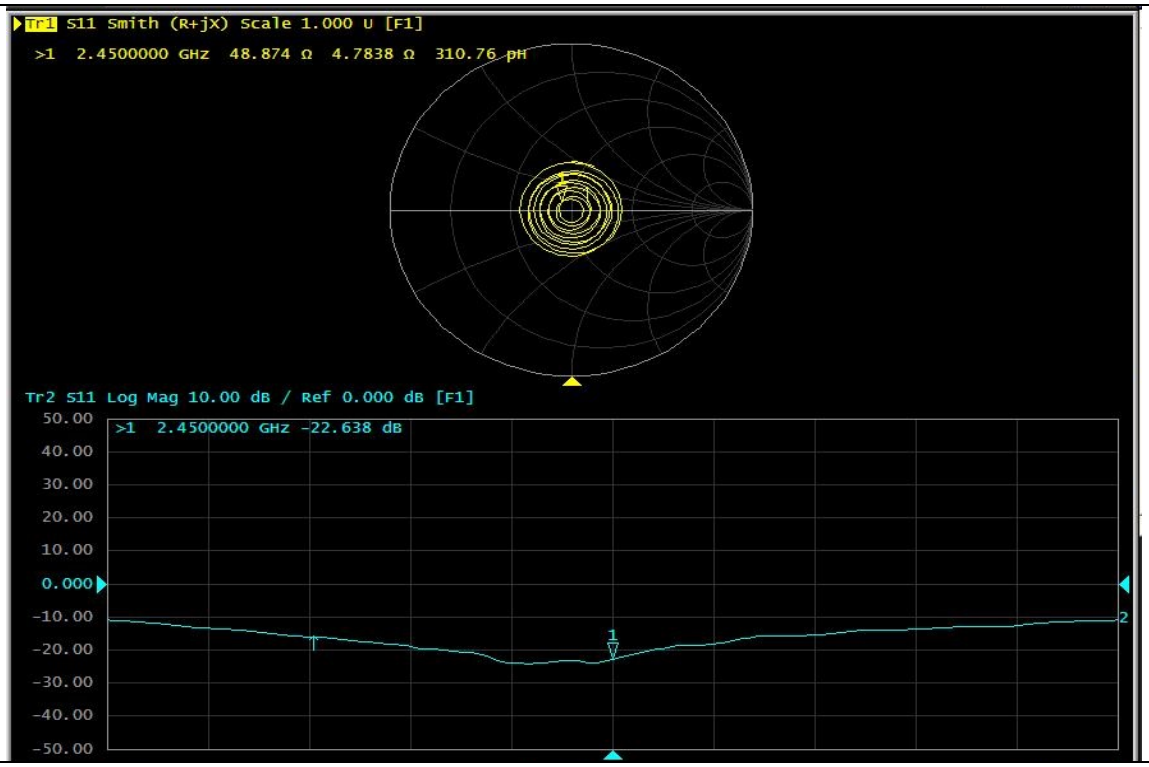
SAR target

Refers to system check, measured SAR (1g and 10g) deviates from the Target SAR value of calibration report within 10%.

Impedance and Return loss measured by Network analyzer

The most recent measurement of the real or imaginary parts of the impedance deviates within 5 Ω from the previous measurement. (Data from the last calibration report)
The most recent return-loss result deviates within 20% from the previous measurement. (Data from the last calibration report)

TSL Parameters			
Parameters	Target (Ref. Value)	Measured data	Deviation
Impedance	51.3Ω+5.92jΩ	48.9Ω+4.78jΩ	<5Ω
Return loss	-24.5 dB	-22.6dB	<20%



TSL Parameters

ANNEX – TEST PLOTS

Please refer to the attachment.