

FCC SAR Test Report

FCC ID: 2AUYFRMX3286

Project No. : 2110C043A
Equipment : Mobile Phone
Brand Name : realme
Test Model : RMX3286
Series Model : N/A
Date of Receipt : Oct. 25, 2021
Date of Test : Oct. 28, 2021 ~ Nov. 11, 2021
Issued Date : Dec. 02, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG20211112510.
Standard(s) : Please refer to page 2.
Applicant : Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address : No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China
Manufacturer : Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address : No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



Prepared by : Seven Lu



Approved by : Herbort Liu



TESTING CERT #5123.02

Add: Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

Tel: +86-769-8318-3000

Web: www.newbtl.com

Standard(s) : **ANSI Std C95.1-1992** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz. (IEEE Std C95.1-1991)

IEEE Std 1528-2013 Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

KDB941225 D01 3G SAR Procedures v03r01
KDB941225 D05 SAR for LTE Devices v02r05
KDB941225 D06 Hotspot Mode V02r01
KDB447498 D01 General RF Exposure Guidance v06
KDB648474 D04 Handset SAR v01r03
KDB248227 D01 802.11 Wi-Fi SAR v02r02
KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
KDB865664 D02 SAR Reporting v01r02
KDB690783 D01 SAR Listings on Grants v01r03

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

Table of Contents	Page
REPORT ISSUED HISTORY	6
1 . GENERAL INFORMATION	7
1.1 STATEMENT OF COMPLIANCE	7
1.2 LABORATORY ENVIRONMENT	7
1.3 GENERAL DESCRIPTION OF EUT	8
1.4 MAIN TEST INSTRUMENTS	11
2 . RF EMISSIONS MEASUREMENT	13
2.1 TEST FACILITY	13
2.2 MEASUREMENT UNCERTAINTY	13
3 . SAR MEASUREMENTS SYSTEM CONFIGURATION	14
3.1 SAR MEASUREMENT SET-UP	14
3.1.1 TEST SETUP LAYOUT	14
3.2 DASY5 E-FIELD PROBE SYSTEM	15
3.2.1 PROBE SPECIFICATION	15
3.2.2 E-FIELD PROBE CALIBRATION	16
3.2.3 OTHER TEST EQUIPMENT	17
3.2.4 SCANNING PROCEDURE	18
3.2.5 SPATIAL PEAK SAR EVALUATION	19
3.2.6 DATA STORAGE AND EVALUATION	20
3.2.7 DATA EVALUATION BY SEMCAD	21
4 . SYSTEM VERIFICATION PROCEDURE	23
4.1 TISSUE VERIFICATION	23
4.2 SYSTEM CHECK	25
4.3 SYSTEM CHECK PROCEDURE	26
5 . SAR MEASUREMENT VARIABILITY AND UNCERTAINTY	27
5.1 SAR MEASUREMENT VARIABILITY	27
6 . OPERATIONAL CONDITIONS DURING TEST	28
6.1 SAR TEST CONFIGURATION	28
6.1.1 GSM TEST CONFIGURATION	28
6.1.2 UMTS TEST CONFIGURATION	29
6.1.3 LTE TEST CONFIGURATION	35
6.1.4 WIFI TEST CONFIGURATION	39
6.2 TEST POSITION	42
6.2.1 HEAD TEST CONFIGURATION	42
6.2.2 BODY-WORN TEST CONFIGURATION	43
6.2.3 HOTSPOT TEST CONFIGURATION	43

Table of Contents	Page
6.2.4 PRODUCT SPECIFIC 10-G SAR TEST CONFIGURATION	43
6.3 GENERAL DESCRIPTION OF TEST PROCEDURES	44
6.4 RECEIVER DETECTION MECHANISM	44
6.4.1 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF 2G&3G&4G	44
6.4.2 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF WIFI	45
6.4.3 MORE DETAILS INFORMATION FOLLOWINGS	46
7 . TEST RESULT	47
7.1 CONDUCTED POWER RESULTS	47
7.2 SAR TEST RESULTS	48
7.2.1 SAR MEASUREMENT RESULT OF HEAD	49
7.2.2 SAR MEASUREMENT RESULT OF BODY-WORN	58
7.2.3 SAR MEASUREMENT RESULT OF HOTSPOT	63
7.2.4 SAR MEASUREMENT RESULT OF PRODUCT SPECIFIC 10-G SAR	71
7.3 MULTIPLE TRANSMITTER EVALUATION	79
7.3.1 SIMULTANEOUS TRANSMISSION CONDITIONS	79
7.3.2 SAR SUMMATION SCENARIO	80
APPENDIX	83
1. TEST LAYOUT	83
Appendix A. SAR Plots of System Verification	
Appendix B. SAR Plots of SAR Measurement	
Appendix C. Calibration Certificate	
Appendix D. Photographs of the Test Set-Up	
Appendix E. Antenna location	
Appendix F. Conducted Power Measurement Result	

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 02, 2021

1. GENERAL INFORMATION

1.1 STATEMENT OF COMPLIANCE

Mode	Highest Reported Head SAR-1g (W/kg)	Highest Reported Body-worn (15mm) SAR-1g (W/kg)	Highest Reported Hotspot (10mm) SAR-1g (W/kg)	Highest Reported Product Specific (0mm) SAR-10g (W/kg)	Highest Simultaneous Transmission SAR-1g (W/kg)
GSM850	0.438	0.279	0.634	/	1.578
GSM1900	0.481	0.141	0.470	/	
UMTS B2	0.884	0.295	0.850	/	
UMTS B4	1.136	0.245	0.539	/	
UMTS B5	0.712	0.229	0.297	/	
LTE B2	0.918	0.289	0.649	/	
LTE B4	0.941	0.322	0.702	/	
LTE B5	0.782	0.266	0.300	/	
LTE B7	0.993	0.797	0.860	/	
LTE B12	0.149	0.254	0.270	/	
LTE B17	0.150	0.272	0.286	/	
LTE B26	0.641	0.272	0.357	/	
LTE B38	1.117	0.360	0.694	/	
LTE B41	1.023	0.537	0.992	/	
LTE B66	0.883	0.266	0.655	/	
2.4G WLAN	0.763	0.218	0.378	/	
5.2G WLAN	/	/	0.270	/	
5.3G WLAN	0.325	0.554	/	0.672	
5.6G WLAN	0.348	0.534	/	0.587	
5.8G WLAN	0.385	0.457	0.307	/	
Bluetooth	0.106	0.015	/	0.088	

Note:

1) The device is in compliance with Specific Absorption Rate (SAR) for general population uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/IEEE C95.1:1991, the NCRP Report Number 86 for uncontrolled environment and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

1.2 LABORATORY ENVIRONMENT

Temperature	Min. = 20°C, Max. = 24°C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5Ω
Ambient noise is checked and found very low and in compliance with requirement of standards.	
Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

1.3 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone		
Brand Name	realme		
Model Name	RMX3286		
IMEI	860074050019730 / 860074050019722		
S/N	5DX4M7LFCEPR9LVW		
Hardware Version	11		
Software Version	realme UI V2.0		
Modulation	GSM(GMSK/8PSK), UMTS(QPSK/16QAM), LTE(QPSK/16QAM/64QAM), WiFi(DSSS/OFDM), BT(GFSK/π/4-DQPSK/8-DPSK)		
Operation Frequency Range(s)	Band	TX (MHz)	RX (MHz)
	GSM850	824~849	869~894
	GSM1900	1850~1910	1930~1990
	UMTS B2	1850~1910	1930~1990
	UMTS B4	1710~1755	2110~2155
	UMTS B5	824~849	869~894
	LTE B2	1850~1910	1930~1990
	LTE B4	1710~1755	2110~2155
	LTE B5	824~849	869~894
	LTE B7	2500~2570	2620~2690
	LTE B12	699~716	729~746
	LTE B17	704~716	734~746
	LTE B26	814~849	859~894
	LTE B66	1710~1780	2110~2180
	LTE B38	2570~2620	
	LTE B41	2496~2690	
	Bluetooth	2400~2483.5	
	2.4G WLAN	2400~2483.5	
	5.2G WLAN	5150~5250	
	5.3G WLAN	5250~5350	
	5.6G WLAN	5470~5725	
	5.8G WLAN	5725~5850	
	NFC	13.56	

GPRS/EDGE Multislot Class(12)	Max Number of Timeslots in Uplink:		4			
	Max Number of Timeslots in Downlink:		4			
	Max Total Timeslot:		5			
GSM Device class	Class B					
HSDPA UE Category	24					
HSUPA UE Category	7					
HSPA+ Category	7					
Power Class	4,tested with power level 5(GSM850)					
	1,tested with power level 0(GSM1900)					
	3, tested with power control “all up bits” (UMTS B2/4/5)					
	3, tested with power control “all Max” (LTE B2/4/5/7/12/17/26/38/41/66)					
Test Channels (low-mid-high)	128-190-251 (GSM850)					
	512-661-810 (GSM1900)					
	9262-9400-9538 (UMTS B2)					
	1312-1413-1513 (UMTS B4)					
	4132-4182-4233 (UMTS B5)					
	18700-18900-19100 (LTE B2 BW=20MHz)					
	20050-20175-20300 (LTE B4 BW=20MHz)					
	20450-20525-20600 (LTE B5 BW=10MHz)					
	20850-21100-21350 (LTE B7 BW=20MHz)					
	23060-23095-23130 (LTE B12 BW=10MHz)					
	23780-23790-23800 (LTE B17 BW=10MHz)					
	26765-26865-26965 (LTE B26 BW=15MHz)					
	37850-38000-38150 (LTE B38 BW=20MHz)					
	40140-40440-40840-41140 (LTE B41 BW=20MHz)					
	132072-132272-132472 (LTE B66 BW=20MHz)					
	0-39-78 (BT)					
	0-19-39 (BLE)					
	1-6-11 (2.4G WiFi 802.11b/g/n HT20/ac VHT20)					
	3-6-9 (2.4G WiFi 802.11n HT40)					
	5G WiFi		5.2G	5.3G	5.6G	5.8G
	802.11a/n HT20/ ac VHT20		36-40-44-48	52-56-60-64	100-104-108- 112-116-132- 136-140	149-153-157- 161-165
	802.11n HT40/ ac VHT40		38-46	54-62	102-110-118- 126-134	151-159
	802.11ac VHT80		42	58	106-122	155

Antenna Gain	Band	Down Antenna(dBi)	Up Antenna(dBi)	WiFi antenna(dBi)
	GSM 850	0.5	0.5	/
	GSM 1900	1.1	1.1	/
	UMTS B2	1.1	1.1	/
	UMTS B4	1.1	1.1	/
	UMTS B5	0.5	0.5	/
	LTE B2	1.1	1.1	/
	LTE B4	1.1	1.1	/
	LTE B5	0.5	0.5	/
	LTE B7	1.1	1.1	/
	LTE B12	0.5	0.5	/
	LTE B17	0.5	0.5	/
	LTE B26	0.5	0.5	/
	LTE B38	1.1	1.1	/
	LTE B41	1.1	1.1	/
	LTE B66	1.1	1.1	/
	Bluetooth	/	/	0.2
	WLAN 2.4G	/	/	0.2
	WLAN 5.2G	/	/	0.1
	WLAN 5.3G	/	/	-0.5
	WLAN 5.6G	/	/	-0.6
	WLAN 5.8G	/	/	-0.7
Other Information				
Battery	Brand Name	realme		
	Model Name	BLP875		
	Limited Charge Voltage	4.45Vdc		
	Rated Capacity	4880mAh/18.88Wh		
	Nominal Voltage	3.87Vdc		
	Typical Capacity	5000mAh/19.35Wh		
With Earphone(Yes/No)		No		

1.4 MAIN TEST INSTRUMENTS

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
1	Data Acquisition Electronics	Speag	DAE4	1390	Nov. 06, 2020	1 Year
2	Data Acquisition Electronics	Speag	DAE4	1423	Dec. 11, 2020	1 Year
3	Data Acquisition Electronics	Speag	DAE4	420	Dec. 09, 2020	1 Year
4	Data Acquisition Electronics	Speag	DAE4	760	Oct. 26, 2021	1 Year
5	E-field Probe	Speag	EX3DV4	3974	Dec. 18, 2020	1 Year
6	E-field Probe	Speag	ES3DV3	3162	Jun. 15, 2021	1 Year
7	E-field Probe	Speag	EX3DV4	3809	Oct. 14, 2021	1 Year
8	System Validation Dipole	Speag	D750V3	1095	Jun. 01, 2021	3 Years
9	System Validation Dipole	Speag	D835V2	4d160	Jun. 01, 2021	3 Years
10	System Validation Dipole	Speag	D1750V2	1101	Jun. 01, 2021	3 Years
11	System Validation Dipole	Speag	D1900V2	5d179	May 31, 2021	3 Years
12	System Validation Dipole	Speag	D2450V2	919	May 28, 2021	3 Years
13	System Validation Dipole	Speag	D2600V2	1067	May 28, 2021	3 Years
14	System Validation Dipole	Speag	D5GHzV2	1160	May 27, 2021	3 Years
15	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1469	N/A	N/A
16	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1811	N/A	N/A
17	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1812	N/A	N/A
18	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1784	N/A	N/A
19	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1896	N/A	N/A
20	Radio Communication Analver	Anritsu	MT8821C	6261915479	Jul. 24, 2021	1 Year
21	Wideband Radio Communication Tester	R&S	CMW500	104462	Jul. 27, 2021	1 Year
22	Power Amplifier	Mini-Circuits	ZHL-42W+	QA1333003	Dec. 29, 2020	1 Year
23	Power Amplifier	Mini-Circuits	ZVE-8G+	520701341	Mar. 02, 2021	1 Year
24	DC Source metter	Iteck	IT6154	006104126768201001	Jul. 24, 2021	1 Year
25	Signal Analyzer	R&S	FSV7	103120	Jul. 10, 2021	1 Year
26	Vector Network Analyzer	Agilent	E5071C	MY46102965	Feb. 28, 2021	1 Year
27	Signal Generator	Agilent	N5172B	MY53050758	Feb. 27, 2021	1 Year
28	Smart Power Sensor	R&S	NRP-Z21	102209	Feb. 28, 2021	1 Year
29	3.5mm Economy Calibration Kit	Agilent	85052D	MY43252246	Dec. 10, 2020	1 Year
30	Dielectric Assessment Kit	Speag	DAK-3.5	1226	N/A	N/A

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
31	Directional Coupler	Woken	TS-PCC0M-05	0107090019	Feb. 27, 2021	1 Year
32	Coupler	Woken	0110A05601O-10	COM5BNW1A2	Feb. 27, 2021	1 Year
33	Digital Themometer	LKM	DTM3000	3519	Jun. 24, 2021	1 Year

Remark:

1. "N/A" denotes no model name, serial No. or calibration specified.

2.

1) Per KDB865664 D01 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole;

b) System check with specific dipole is within 10% of calibrated value;

c) The most recent return-loss result, measured at least annually, deviates by no more than 20% from the previous measurement;

d) The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a short block performed before measuring liquid parameters.

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is SAR room at the location of Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

2.2 MEASUREMENT UNCERTAINTY

Note: Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

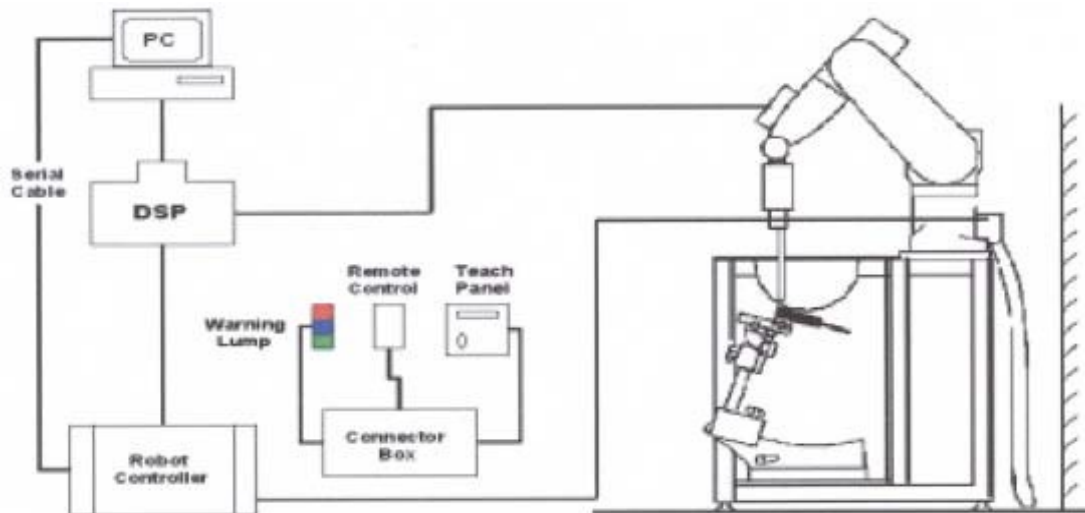
3. SAR MEASUREMENTS SYSTEM CONFIGURATION

3.1 SAR MEASUREMENT SET-UP

The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

3.1.1 TEST SETUP LAYOUT



3.2 DASY5 E-FIELD PROBE SYSTEM

The SAR measurements were conducted with the dosimetric probe EX3DV4 and ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

3.2.1 PROBE SPECIFICATION

EX3DV4

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm

ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 μ W/g to > 100 mW/g Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 4 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm



E-field Probe

3.2.2 E-FIELD PROBE CALIBRATION

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\text{SAR} = C \frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

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

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

3.2.3 OTHER TEST EQUIPMENT

3.2.3.1. Device Holder for Transmitters

Construction: Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices (e.g., laptops, cameras, etc.) It is light weight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI and SAM v6.0 Phantoms.

Material: POM, Acrylic glass, Foam

3.2.3.2 Phantom

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Shell Thickness	2 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length:1000mm; Width: 500mm Height: adjustable feet	
Available	Special	

3.2.4 SCANNING PROCEDURE

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. $\pm 5\%$.

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above $\pm 0.1\text{mm}$). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within $\pm 30^\circ$.)

- Area Scan

The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid spacing for head measurements is 15 mm in x- and y- dimension ($\leq 2\text{GHz}$), 12 mm in x- and y- dimension (2-4 GHz) and 10mm in x- and y- dimension (4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

- Zoom Scan

A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: $\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}} \leq 2\text{GHz} \rightarrow \leq 8\text{mm}$, 2-4GHz $\rightarrow \leq 5\text{mm}$ and 4-6 GHz $\rightarrow \leq 4\text{mm}$; $\Delta z_{\text{zoom}} \leq 3\text{GHz} \rightarrow \leq 5\text{mm}$, 3-4 GHz $\rightarrow \leq 4\text{mm}$ and 4-6GHz $\rightarrow \leq 2\text{mm}$ where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.) are shown in table form in chapter 7.2.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending in the field strength – also show the liquid depth.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

Frequency	Maximun Area Scan resolution ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	Maximun Zoom Scan spatial resolution ($\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$)	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{\text{Zoom}}(n)$	$\Delta z_{\text{Zoom}}(1)^*$	$\Delta z_{\text{Zoom}}(n>1)^*$	
$\leq 2\text{GHz}$	$\leq 15\text{mm}$	$\leq 8\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 30\text{mm}$
2-3GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 30\text{mm}$
3-4GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 28\text{mm}$
4-5GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 2.5\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 25\text{mm}$
5-6GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 2\text{mm}$	$\leq 2\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 22\text{mm}$

3.2.5 SPATIAL PEAK SAR EVALUATION

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of 5 x 5 x 7 points (with 8mm horizontal resolution) or 7 x 7 x 7 points (with 5mm horizontal resolution) or 8 x 8 x 7 points (with 4mm horizontal resolution). The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting "Graph Evaluated".
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computer mathematic, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computer mathematic, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY5 uses the advanced extrapolation option which is able to compensate boundary effects on E-field probes.

3.2.6 DATA STORAGE AND EVALUATION

3.2.6.1 Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension "DAE". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.2.7 DATA EVALUATION BY SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	Sensitivity	Normi, ai0, ai1, ai2
	Conversion factor	ConvFi
	Diode compression point	Dcpj
Device parameters:	Frequency	f
	Crest factor	cf
Media parameters:	Conductivity	
	Density	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multi meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With	V_i = compensated signal of channel i	(i = x, y, z)
	U_i = input signal of channel i	(i = x, y, z)
	cf = crest factor of exciting field	(DASY parameter)
	dcpj = diode compression point	(DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

$$\text{E-field probes: } E_i = (V_i / \text{Norm}_i \cdot \text{ConvF})^{1/2}$$

$$\text{H-field probes: } H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With V_i = compensated signal of channel i ($i = x, y, z$)

Norm_i = sensor sensitivity of channel i ($i = x, y, z$)
[mV/(V/m)²] for E-field Probes

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{\text{tot}} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$\text{SAR} = (E_{\text{tot}})^2 \cdot \sigma / (\rho \cdot 1000)$$

With SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m
= conductivity in [mho/m] or [Siemens/m]
= equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{\text{pwe}} = E_{\text{tot}}^2 / 3770 \text{ or } P_{\text{pwe}} = H_{\text{tot}}^2 \cdot 37.7$$

With P_{pwe} = equivalent power density of a plane wave in mW/cm²

E_{tot} = total field strength in V/m

H_{tot} = total magnetic field strength in A/m

4. SYSTEM VERIFICATION PROCEDURE

4.1 TISSUE VERIFICATION

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

The following materials are used for producing the tissue-equivalent materials.

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Head 750	0.2	-	0.2	1.5	56.0	-	42.1	-
Head 835	0.2	-	0.2	1.5	57.0	-	41.1	-
Head 1750	-	47.0	-	0.4	-	-	52.6	-
Head 1900	-	44.5	-	0.2	-	-	55.3	-
Head 2450	-	45.0	-	0.1	-	-	54.9	-
Head 2600	-	45.1	-	0.1	-	-	54.8	-
Head 5G	-	-	-	-	-	17.2	65.5	17.3

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M + resistivity
 HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
 Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

Tissue Verification									
Tissue Type	Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Targeted Conductivity (σ)	Targeted Permittivity (ϵ_r)	Deviation Conductivity (σ) (%)	Deviation Permittivity (ϵ_r) (%)	Date
Head	750	22.5	0.887	43.315	0.89	41.9	-0.34	3.38	Nov. 08, 2021
Head	750	22.3	0.888	42.602	0.89	41.9	-0.22	1.68	Nov. 09, 2021
Head	835	22.2	0.938	42.583	0.90	41.5	4.22	2.61	Oct. 28, 2021
Head	835	22.4	0.908	42.186	0.90	41.5	0.89	1.65	Oct. 31, 2021
Head	835	22.3	0.943	41.967	0.90	41.5	4.78	1.13	Nov. 01, 2021
Head	1750	23.2	1.381	38.607	1.37	40.1	0.80	-3.72	Oct. 30, 2021
Head	1750	22.3	1.395	39.144	1.37	40.1	1.82	-2.38	Nov. 02, 2021
Head	1750	22.2	1.393	39.728	1.37	40.1	1.68	-0.93	Nov. 03, 2021
Head	1900	22.3	1.336	40.910	1.40	40.0	-4.57	2.27	Oct. 29, 2021
Head	1900	22.1	1.358	40.035	1.40	40.0	-3.00	0.09	Nov. 04, 2021
Head	2450	22.1	1.813	38.426	1.80	39.2	0.72	-1.97	Nov. 10, 2021
Head	2600	22.4	2.012	38.600	1.96	39.0	2.65	-1.03	Nov. 05, 2021
Head	2600	22.4	1.951	39.207	1.96	39.0	-0.46	0.53	Nov. 06, 2021
Head	2600	22.5	1.958	39.260	1.96	39.0	-0.10	0.67	Nov. 07, 2021
Head	5250	22.2	4.662	36.222	4.71	36.0	-1.02	0.76	Nov. 11, 2021
Head	5600	22.2	5.098	35.264	5.07	35.5	0.55	-0.66	Nov. 11, 2021
Head	5750	22.2	5.282	34.941	5.22	35.4	1.19	-1.16	Nov. 11, 2021

Note:

- 1) The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.
- 2) KDB 865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.
- 3) The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

4.2 SYSTEM CHECK

The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE Std 1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests.

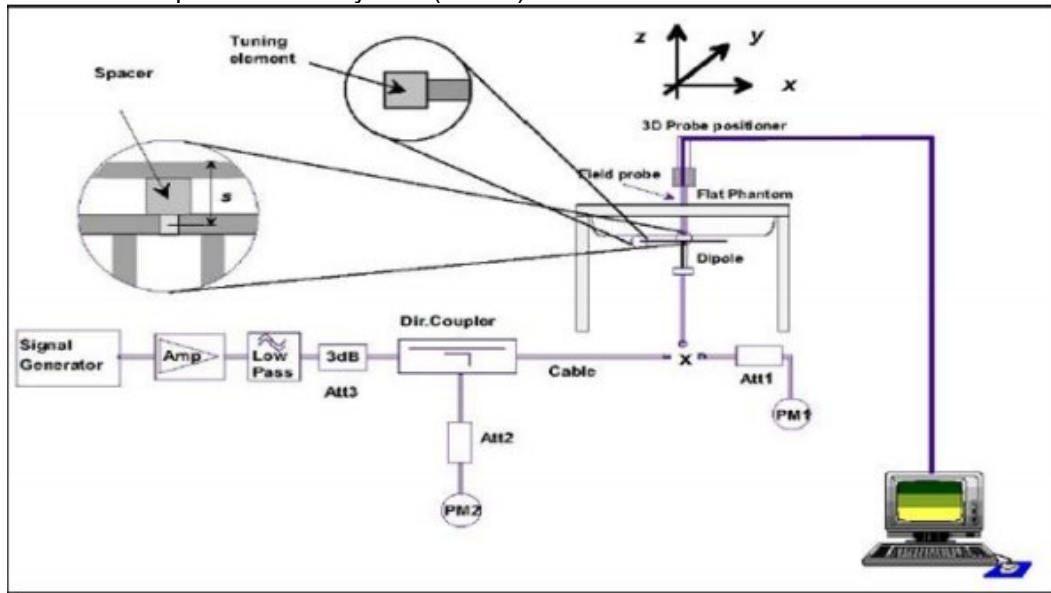
System Check	Date	Frequency (MHz)	Targeted SAR-1g (W/kg)	Measured SAR-1g (W/kg)	normalized SAR-1g (W/kg)	Deviation (%)	Dipole S/N
Head	Nov. 08, 2021	750	8.59	2.11	8.44	-1.75	1095
Head	Nov. 09, 2021	750	8.59	2.14	8.56	-0.35	1095
Head	Oct. 28, 2021	835	9.52	2.42	9.68	1.68	4d160
Head	Oct. 31, 2021	835	9.52	2.35	9.40	-1.26	4d160
Head	Nov. 01, 2021	835	9.52	2.45	9.80	2.94	4d160
Head	Oct. 30, 2021	1750	36.40	9.10	36.40	0.00	1101
Head	Nov. 02, 2021	1750	36.40	9.33	37.32	2.53	1101
Head	Nov. 03, 2021	1750	36.40	8.74	34.96	-3.96	1101
Head	Oct. 29, 2021	1900	39.60	9.52	38.08	-3.84	5d179
Head	Nov. 04, 2021	1900	39.60	9.73	38.92	-1.72	5d179
Head	Nov. 10, 2021	2450	52.10	13.20	52.80	1.34	919
Head	Nov. 05, 2021	2600	56.90	14.10	56.40	-0.88	1067
Head	Nov. 06, 2021	2600	56.90	14.20	56.80	-0.18	1067
Head	Nov. 07, 2021	2600	56.90	14.10	56.40	-0.88	1067
Head	Nov. 11, 2021	5250	78.00	7.61	76.10	-2.44	1160
Head	Nov. 11, 2021	5600	80.60	8.11	81.10	0.62	1160
Head	Nov. 11, 2021	5750	76.50	7.76	77.60	1.44	1160

4.3 SYSTEM CHECK PROCEDURE

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 250mW (below 3GHz) or 100mW (3-6GHz). To adjust this power a power meter is used.

The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test.

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system ($\pm 10\%$).



5. SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

5.1 SAR MEASUREMENT VARIABILITY

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz, 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. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 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 ($\sim 10\%$ 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 .

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

The detailed repeated measurement results are shown in Section 7.2.

6. OPERATIONAL CONDITIONS DURING TEST

6.1 SAR TEST CONFIGURATION

6.1.1 GSM TEST CONFIGURATION

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using MT8821C the power lever is set to “5” and “0” in SAR of GSM850 and GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8PSK.

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot.

The allowed power reduction in the multi-slot configuration is as following:

Number of timeslots in uplink assignment		Reduction of maximum output power (dB)		
Band	Time Slots	GPRS (GMSK)	EGPRS (GMSK)	EGPRS (8PSK)
GSM850	1 TX slot	0.0	0.0	6.4
	2 TX slots	3.0	3.0	9.4
	3 TX slots	4.8	4.8	11.2
	4 TX slots	6.0	6.0	12.4
GSM1900	1 TX slot	0.0	0.0	4.3
	2 TX slots	3.0	3.0	7.3
	3 TX slots	4.8	4.8	9.1
	4 TX slots	6.0	6.0	10.3

6.1.2 UMTS TEST CONFIGURATION

1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the procedures description in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1s" for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Result for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) should be tabulated in the SAR report. All configuration that are not supported by the DUT or cannot be measured due to technical or equipment limitation should be clearly identified.

2. WCDMA

(1) Head SAR Measurements

SAR for next to ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1s". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR with 3.4kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

(2) Body SAR Measurements

SAR for body-worn accessory is measured using the 12.2 kbps RMC with the TPC bits configured to all "1s". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by handset with 12.2 kbps RMC as the primary mode.

3. HSDPA

SAR for body exposure configurations is measured according to the "Body SAR Measurements" procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as "otherwise" in the applicable procedures; SAR measurement is required for the secondary mode.

Per KDB941225 D01, the 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures for the highest reported SAR body exposure configuration in 12.2 kbps RMC.

HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c and β_d gain factors for DPCCH and DPDCH were set according to the values in the below table, β_{hs} for HS-DPCCH is set automatically to the correct value when ΔACK , $\Delta NACK$, $\Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test ^o	β_c ^o	β_d ^o	β_d (SF) ^o	β_c / β_d ^o	β_{hs} (1) ^o	CM(dB)(2) ^o	MPR (dB) ^o
1 ^o	2/15 ^o	15/15 ^o	64 ^o	2/15 ^o	4/15 ^o	0.0 ^o	0 ^o
2 ^o	12/15(3) ^o	15/15(3) ^o	64 ^o	12/15(3) ^o	24/15 ^o	1.0 ^o	0 ^o
3 ^o	15/15 ^o	8/15 ^o	64 ^o	15/8 ^o	30/15 ^o	1.5 ^o	0.5 ^o
4 ^o	15/15 ^o	4/15 ^o	64 ^o	15/4 ^o	30/15 ^o	1.5 ^o	0.5 ^o
Note 1: ΔACK , $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs} / \beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$ ^o							
Note 2 : CM=1 for $\beta_c / \beta_d = 12/15$, $\beta_{hs} / \beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases. ^o							
Note 3 : For subtest 2 the β_c / β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$ ^o							

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

4. HSUPA

SAR for Body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

Per KDB941225 D01, the 3G SAR test reduction procedures is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the “WCDMA Handset” and “Release 5 HSDPA Data Device” sections of 3G device.

Subtests for WCDMA Release 6 HSUPA

Sub-test ¹	β_c ²	β_d ²	β_d (SF) ²	β_c/β_d ²	β_{hs} ⁽¹⁾	β_{ec} ²	β_{ed} ²	β_{ec} (SF) ²	β_{ed} (code) ²	CM ⁽²⁾ (dB) ²	MP R ² (dB) ²	AG ⁽⁴⁾ Index ²	E-TFC I ²
1 ²	11/15 ⁽³⁾	15/15 ⁽³⁾	64 ²	11/15 ⁽³⁾	22/15 ²	209/225 ²	1039/225 ²	4 ²	1 ²	1.0 ²	0.0 ²	20 ²	75 ²
2 ²	6/15 ²	15/15 ²	64 ²	6/15 ²	12/15 ²	12/15 ²	94/75 ²	4 ²	1 ²	3.0 ²	2.0 ²	12 ²	67 ²
3 ²	15/15 ²	9/15 ²	64 ²	15/9 ²	30/15 ²	30/15 ²	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	4 ²	2 ²	2.0 ²	1.0 ²	15 ²	92 ²
4 ²	2/15 ²	15/15 ²	64 ²	2/15 ²	4/15 ²	2/15 ²	56/75 ²	4 ²	1 ²	3.0 ²	2.0 ²	17 ²	71 ²
5 ²	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64 ²	15/15 ⁽⁴⁾	30/15 ²	24/15 ²	134/15 ²	4 ²	1 ²	1.0 ²	0.0 ²	21 ²	81 ²

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference²

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$ ²

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$ ²

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g²

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.²

HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM. (TS25.306-7.3.0).

5. DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel.5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode.

Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH cell are required to perform the power measurement and for the results to be acceptable.

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0
Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Note:

1.The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.

2.Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

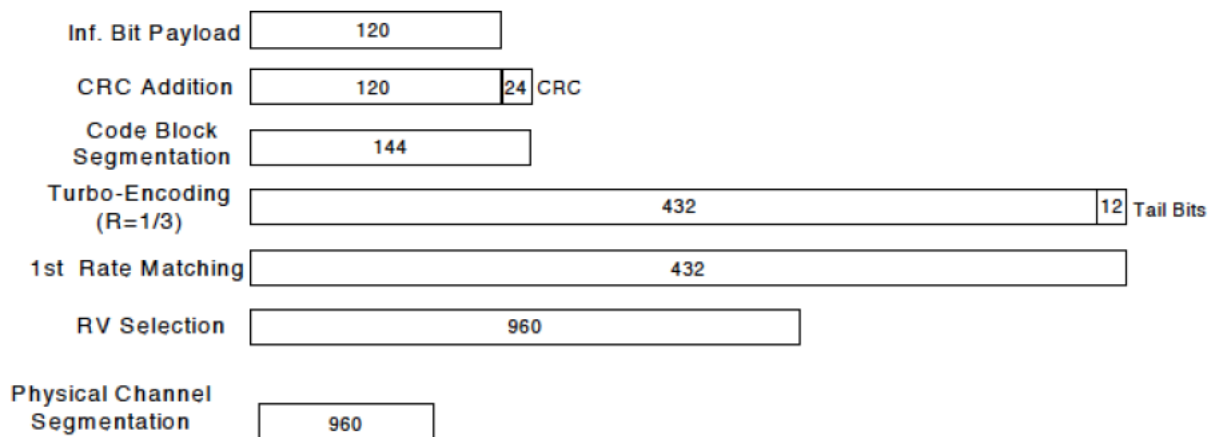


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test ^o	β_c ^o	β_d ^o	β_d (SF) ^o	β_c/β_d ^o	$\beta_{hs}(1)$ ^o	CM(dB)(2) ^o	MPR (dB) ^o
1 ^o	2/15 ^o	15/15 ^o	64 ^o	2/15 ^o	4/15 ^o	0.0 ^o	0 ^o
2 ^o	12/15(3) ^o	15/15(3) ^o	64 ^o	12/15(3) ^o	24/15 ^o	1.0 ^o	0 ^o
3 ^o	15/15 ^o	8/15 ^o	64 ^o	15/8 ^o	30/15 ^o	1.5 ^o	0.5 ^o
4 ^o	15/15 ^o	4/15 ^o	64 ^o	15/4 ^o	30/15 ^o	1.5 ^o	0.5 ^o

Note 1: ΔACK , $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Up commands are set continuously to set the UE to Max power.

6. HSPA+

An E-DCH call is set up according to TS 34.108 [3] 7.3.9 with the following exceptions in the RADIO BEARER SETUP messages. These exceptions allow the beta values to be set according to table C.11.1.4 and each UL physical channel to be at constant power at the start of the measurement. RF parameters are set up according to table E.5.A.1. Settings for the serving cell are defined in table 5.2E.4. Uplink SRB for DCCH mapped on E-DCH and downlink SRB for DCCH on DCH. E-DCH is configured with 2ms TTI.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105
Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0). Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default. Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value. Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.											

Note:

1. The Dual Carriers transmission support HSDPA and HSUPA physical channels.
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation.
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6. The device doesn't support carrier aggregation for it just can operate in Release 8.

6.1.3 LTE TEST CONFIGURATION

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices. The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames (Maximum TTI).

1. Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2. MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation. Combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3. A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of "NS_01" on the base station simulator.

4. LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

ii) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in i) are applied to measure the SAR for QPSK with 50% RB allocation.

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

LTE (TDD) Test Configuration

According to KDB 941225 D05 SAR for LTE Devices V02r05, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE B38/41 supports 3GPP TS 36 for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE B38/41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Figure 4.2-1: Frame structure type 2

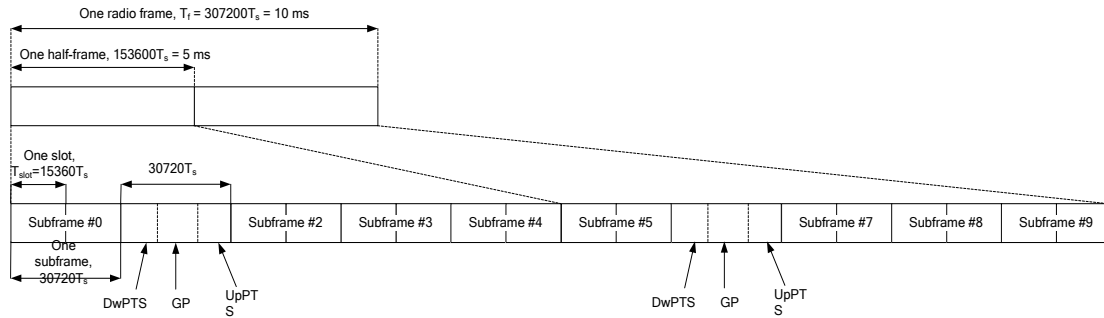


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

According to Figure 4.2-1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table 4.2-2:

$$\text{Duty cycle} = (\text{30720Ts} * \text{Ups} + \text{Uplink Component} * \text{Specials}) / (\text{307200Ts})$$

About the uplink component of Special subframes, we can figure out by Table 4.2-1:

$$\text{Uplink Component} = \text{UpPTS}$$

In conclusion, for the TDD LTE B38/41, Duty Cycle can be calculated with formula as below. All these sets are ok when we test, or we can set as below.

$$\text{Duty cycle} = [(\text{30720Ts} * \text{Ups}) + \text{UpPTS} * \text{Specials}] / (\text{307200Ts})$$

And we can get different Duty cycles under different configurations:

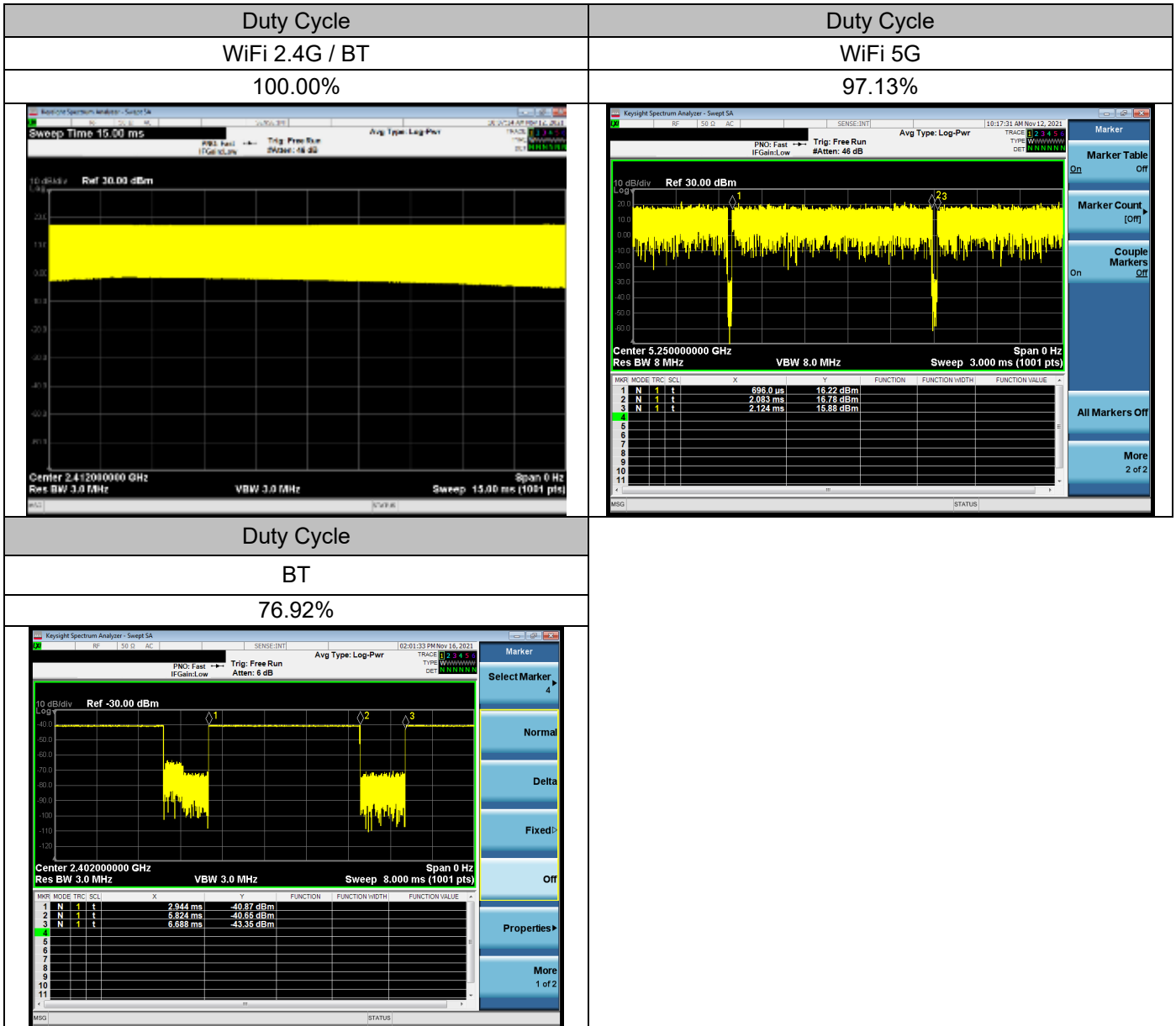
Uplink-downlink configuration	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0-4	configuration 5-9	configuration 0-4	configuration 5-9	configuration 0-3	configuration 4-7	configuration 0-3	configuration 4-7
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type 2.

6.1.4 WIFI TEST CONFIGURATION

For WLAN / BT SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal.

For WiFi SAR testing, a communication link is set up with the test mode software for WiFi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. The test procedures in KDB 248227 D01 are applied.



6.1.4.1 2.4G SAR Test Requirements

802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

SAR Test Requirements for OFDM configurations

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

6.1.4.2 5G SAR Test Requirements

✧ U-NII-1 and U-NII-2A Band

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.

✧ U-NII-2C, U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.

Unless band gap channels are permanently disabled, they must be considered for SAR testing.

To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels.¹¹ When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

6.1.4.3 OFDM transmission mode and SAR test channel selection

For the 2.4GHz and 5GHz bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations (for example 802.11a, 802.11n and 802.11ac, or 802.11g and 802.11n, with the same channel bandwidth, modulation, and data rate, etc.), the lower order 802.11 mode (i.e. 802.11a then 802.11n and 802.11ac, or 802.11g then 802.11n) is used for SAR measurement. When the maximum output power is the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

6.1.4.4 Initial test configuration procedure

For OFDM, in both 2.4GHz and 5GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output powers is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurement.

6.2 TEST POSITION

6.2.1 HEAD TEST CONFIGURATION

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

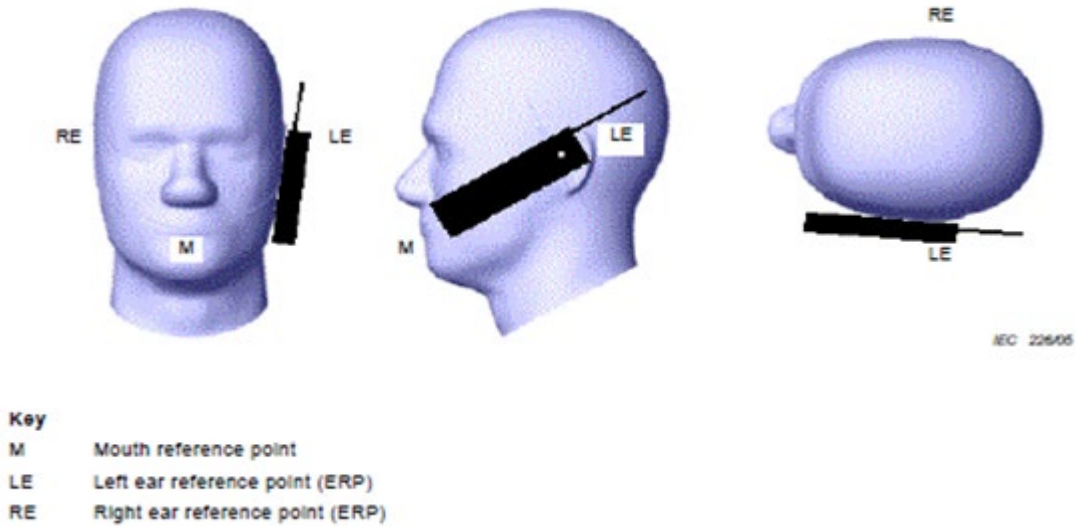


Figure 1 Cheek position of the wireless device on the left side of SAM

Note1: Cheek position of the wireless device on Right side of SAM also is similar to the left side represented above.

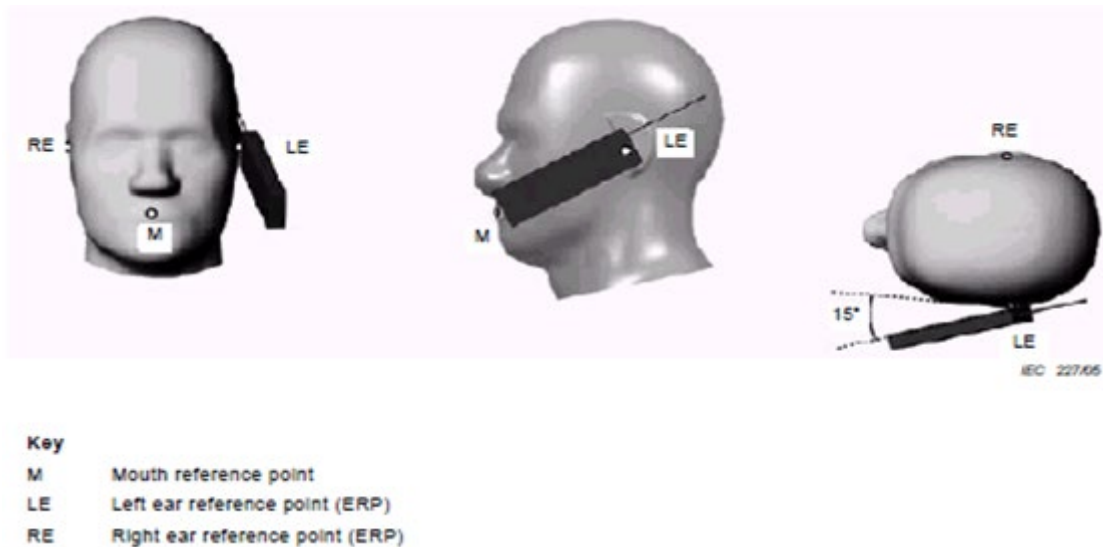


Figure 2 Tilt position of the wireless device on the left side of SAM

Note2: Tilt position of the wireless device on Right side of SAM also is similar to the left side represented above.

6.2.2 BODY-WORN TEST CONFIGURATION

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. The distance between the device and the phantom was kept 15mm.

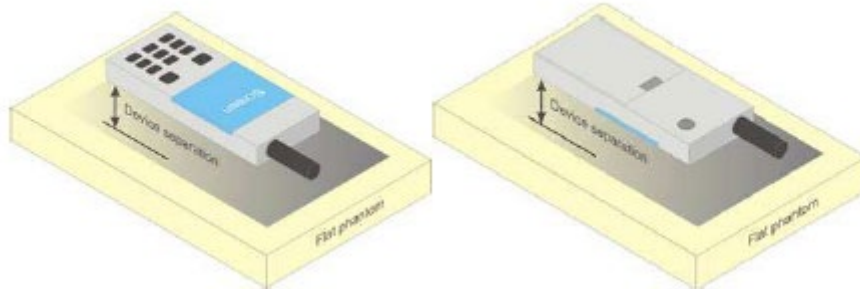


Figure 3 Test positions for body-worn device

6.2.3 HOTSPOT TEST CONFIGURATION

Per FCC KDB 941225D06, the SAR test separation distance for hotspot mode is determined according to device form factor. When the overall length and width of a device is $> 9\text{cm} \times 5\text{cm}$, a test separation distance of 10mm is required for hotspot mode SAR measurements. A test separation distance of 5mm or less is required for smaller devices. Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25mm from that surface or edge; for the data modes, wireless technologies and frequency bands supporting hotspot mode. The SAR results are used to determine simultaneous transmission SAR test exclusion for hotspot mode; otherwise, simultaneous transmission SAR measurement is required.

6.2.4 PRODUCT SPECIFIC 10-G SAR TEST CONFIGURATION

Per KDB 648474 D04, for smart phones with a display diagonal dimension $> 15.0\text{cm}$ or an overall diagonal dimension $> 16.0\text{cm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”. The UMPC mini-tablets procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at $\leq 25\text{mm}$ from that surface or edge, in direct contact with a flat phantom, for product specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR $> 1.2\text{W/kg}$; when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

The location of the antenna inside EUT and the test position judgment of Hotspot/Specific 10g SAR, please refer to Appendix E.

6.3 GENERAL DESCRIPTION OF TEST PROCEDURES

Connection to the EUT is established via air interface with Anritsu MT8820C & Anritsu MT8821C & R&S CMW500, and the EUT is set to maximum output power by Anritsu MT8820C & Anritsu MT8821C & R&S CMW500. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. The antenna connected to the output of the base station simulator shall be placed at least 50cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30dB.

6.4 RECEIVER DETECTION MECHANISM

6.4.1 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF 2G&3G&4G

The device supports the receiver detection mechanism. The main purpose is to minimize triggering associated with power reduction scenarios by receiver detection mechanisms and provide enhanced user experience. This device uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for 2G&3G&4G antenna accordingly.

Table: Summary of Receiver detection mechanism

Antenna	Receiver on (Head)	Receiver off (Body-worn / Hotspot / Specific 10g SAR)
2G&3G&4G Down Antenna	Power Level A1	Power Level B1
2G&3G&4G Up Antenna	Power Level A2	Power Level B2

Down Antenna Max Power (dBm)															
Power scenario	GSM 850	GSM 1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	LTE B26	LTE B38	LTE B41	LTE B66
Receiver on (Head)	33.5	30.5	24.3	24.3	24.3	24	24	24.5	24.4	24.5	24.5	24.5	24	24	24
Receiver off (Body-worn)	33.5	27.5	21.3	21.3	24.3	21	21	24.5	22.4	24.5	24.5	24.5	24	24	21
Receiver off (Hotspot & Specific 10g SAR)	29	22.5	21.3	21.3	24.3	21	21	24.5	22.4	24.5	24.5	24.5	24	24	21

Up Antenna Max Power (dBm)															
Power scenario	GSM 850	GSM 1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	LTE B26	LTE B38	LTE B41	LTE B66
Receiver on (Head)	30.5	25.5	17.3	19.8	22.3	18	19.5	23.5	16.9	24.5	24.5	24.5	20	20	19.5
Receiver off (Body-worn)	33.5	29.5	21.3	22.3	24.3	21	22	24.5	24.4	24.5	24.5	24.5	24	24	22
Receiver off (Hotspot & Specific 10g SAR)	29	26.5	21.3	22.3	24.3	21	22	24.5	24.4	24.5	24.5	24.5	24	24	22

6.4.2 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF WIFI

Users will be in full power when using WiFi alone. When WiFi+2G/3G/4G are used simultaneously, WiFi power reduction will be triggered, i.e. WiFi will be in power level B3 state.

Antenna	WiFi Power Reduction	
	WiFi only	WiFi Antenna Simultaneous with 2G&3G&4G
WiFi Antenna	Power Level A3	Power Level B3

Power scenario	2.4G			5G (5150MHz~5250MHz)			5G(Not Suport Hotspot) (5260MHz~5350MHz)		
	802.11 b	802.11 g/n20	802.11 n40	802.11 a/n20 /ac20	802.11 n40 /ac40	802.11 ac80	802.11 a/n20 /ac20	802.11 n40 /ac40	802.11 ac80
WiFi only (Full Power & Body-worn)	20	19	15	19	19	16	19	19	13.5
Receiver on (Head)	15	14	10	12	12	9	12	12	6.5
Receiver off (Hotspot)	18	17	13	16	16	13	-	-	-
Receiver off (Specific 10g SAR)	-	-	-	-	-	-	16	16	10.5

Power scenario	2.4G		5G (Not Suport Hotspot) (5500MHz~5700MHz)			5G (5750MHz~5850MHz)		
	BT	BLE	802.11 a/n20 /ac20	802.11 n40 /ac40	802.11 ac80	802.11 a/n20 /ac20	802.11 n40 /ac40	802.11 ac80
WiFi only (Full Power & Body-worn)	11	-3	19	19	19	19	19	19
Receiver on (Head)	-	-	14	14	14	15	15	15
Receiver off (Hotspot)	-	-	-	-	-	16	16	16
Receiver off (Specific 10g SAR)	-	-	15.5	15.5	15.5	-	-	-

6.4.3 MORE DETAILS INFORMATION FOLLOWINGS

For head SAR test,

- 1) Standalone Head SAR of 2G&3G&4G Down Antenna is evaluated at power level A1;
- 2) Standalone Head SAR of 2G&3G&4G Up Antenna is evaluated at power level A2;
- 3) Standalone Head SAR of WiFi Antenna receiver on is evaluated at power level A3;
- 4) Simultaneous Head SAR of WiFi Antenna with 2G&3G&4G is evaluated at power level B3;

Note: As the receiver only works in voice mode when the user is making a call in head scenario, In LTE Data/ WCDMA RMC (Data) mode, the mobile phone won't ring and answer, it just can be connected with the test instrument. Therefore, for Head SAR test of UMTS and LTE, we're planning to test LTE Data/ WCDMA RMC (Data) mode through triggering the receiver on by XML test scripts in order to simulate the users' scene (LTE VOIP, WCDMA VOIP).

For body-worn / hotspot / specific 10g SAR test,

- 1) Standalone body-worn / hotspot / specific 10g SAR of 2G&3G&4G Down Antenna is evaluated at power level B1;
- 2) Standalone body-worn / hotspot / specific 10g SAR of 2G&3G&4G Up Antenna is evaluated at power level B2;
- 3) Standalone body-worn / hotspot / specific 10g SAR of WiFi Antenna receiver on is evaluated at power level A3;
- 4) Simultaneous body-worn / hotspot / specific 10g SAR of WiFi Antenna with 2G&3G&4G is evaluated at power level B3;

Note: As the receiver will not work during body-worn voice mode operation with the headset connected. When the receiver is off, the power level with headset connected is the same as those without headset connected. So body-worn & hotspot SAR with headset is tested at the body-worn & hotspot & specific 10g SAR worst case without headset connected at the same power level.

7. TEST RESULT

7.1 CONDUCTED POWER RESULTS

The conducted power measurement result please refer to Appendix F.

7.2 SAR TEST RESULTS

General Notes:

- 1) Per KDB447498 D01, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.
- 2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is: ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz. When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel must be used.
- 3) Per KDB865664 D01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR < 1.45 W/kg, only one repeated measurement is required.
- 4) Per KDB941225 D06, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
- 5) Per KDB648474 D04, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is ≤ 1.2 W/kg, no additional SAR evaluations using a headset are required.
- 6) Per KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing.

GSM Notes:

- 1) Per KDB648474 D04, body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
- 2) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

UMTS Notes:

Per KDB941225 D01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

LTE notes:

- 1) The LTE test configurations are determined according to KDB941225 D05 SAR for LTE Devices. The general test procedures used for SAR testing can be found in Section 7.1.3.
- 2) A-MPR was disabled for all SAR test by setting NS_01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

WLAN Notes:

1. For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 for 2.4GHz WIFI single transmission chain operations, the highest measured maximum output power Channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 7.1.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 for 5GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed power. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2W/kg. See Section 7.1.5 for more information.

7.2.1 SAR MEASUREMENT RESULT OF HEAD

1. Head SAR test results of GSM

Test No.	Band	Mode	Channel	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G01	GSM 850	GSM	190	Right Cheek	Down	1	33.50	32.68	-0.05	0.178	0.135	0.215
G02	GSM 850	GSM	190	Right Tilted	Down	1	33.50	32.68	0.01	0.085	0.078	0.103
G03	GSM 850	GSM	190	Left Cheek	Down	1	33.50	32.68	-0.08	0.179	0.136	0.216
G04	GSM 850	GSM	190	Left Tilted	Down	1	33.50	32.68	-0.16	0.102	0.079	0.123
G05	GSM 850	GSM	190	Left Cheek	Down	2	33.50	32.68	0.01	0.173	0.124	0.209
G07	GSM 850	GSM	190	Right Cheek	Up	1	30.50	29.45	0.02	0.344	0.205	0.438
G08	GSM 850	GSM	190	Right Tilted	Up	1	30.50	29.45	0.12	0.228	0.224	0.290
G09	GSM 850	GSM	190	Left Cheek	Up	1	30.50	29.45	0.03	0.199	0.129	0.253
G10	GSM 850	GSM	190	Left Tilted	Up	1	30.50	29.45	-0.03	0.188	0.112	0.239
G11	GSM 850	GSM	190	Right Cheek	Up	2	30.50	29.45	-0.15	0.322	0.195	0.410
G13	GSM 1900	GSM	661	Right Cheek	Down	1	30.50	28.88	-0.03	0.052	0.032	0.076
G14	GSM 1900	GSM	661	Right Tilted	Down	1	30.50	28.88	-0.02	0.042	0.026	0.061
G15	GSM 1900	GSM	661	Left Cheek	Down	1	30.50	28.88	-0.03	0.069	0.041	0.101
G16	GSM 1900	GSM	661	Left Tilted	Down	1	30.50	28.88	0.14	0.051	0.029	0.073
G17	GSM 1900	GSM	661	Left Cheek	Down	2	30.50	28.88	-0.07	0.062	0.036	0.089
G19	GSM 1900	GSM	661	Right Cheek	Up	1	25.50	24.90	0.08	0.375	0.175	0.431
G20	GSM 1900	GSM	661	Right Tilted	Up	1	25.50	24.90	0.05	0.419	0.187	0.481
G21	GSM 1900	GSM	661	Left Cheek	Up	1	25.50	24.90	0.12	0.300	0.139	0.344
G22	GSM 1900	GSM	661	Left Tilted	Up	1	25.50	24.90	-0.06	0.355	0.168	0.408
G23	GSM 1900	GSM	661	Right Tilted	Up	2	25.50	24.90	0	0.388	0.176	0.445

Note: The value with boldface is the maximum SAR Value of each test band.

2. Head SAR test results of UMTS

Test No.	Band	Mode	Channel	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U01	UMTS B2	RMC12.2K	9400	Right Cheek	Down	1	24.30	22.56	0.02	0.085	0.053	0.127
U02	UMTS B2	RMC12.2K	9400	Right Tilted	Down	1	24.30	22.56	0.01	0.091	0.056	0.135
U03	UMTS B2	RMC12.2K	9400	Left Cheek	Down	1	24.30	22.56	-0.06	0.144	0.087	0.215
U04	UMTS B2	RMC12.2K	9400	Left Tilted	Down	1	24.30	22.56	-0.06	0.056	0.033	0.084
U05	UMTS B2	RMC12.2K	9400	Left Cheek	Down	2	24.30	22.56	-0.07	0.079	0.047	0.118
U07	UMTS B2	RMC12.2K	9400	Right Cheek	Up	1	17.30	15.93	0.04	0.627	0.292	0.860
U08	UMTS B2	RMC12.2K	9400	Right Tilted	Up	1	17.30	15.93	0.05	0.645	0.290	0.884
U09	UMTS B2	RMC12.2K	9400	Left Cheek	Up	1	17.30	15.93	0.11	0.403	0.185	0.552
U10	UMTS B2	RMC12.2K	9400	Left Tilted	Up	1	17.30	15.93	0.1	0.469	0.233	0.643
U102	UMTS B2	RMC12.2K	9262	Right Cheek	Up	1	17.30	15.95	-0.02	0.507	0.268	0.692
U103	UMTS B2	RMC12.2K	9538	Right Cheek	Up	1	17.30	16.05	0.01	0.553	0.301	0.737
U104	UMTS B2	RMC12.2K	9262	Right Tilted	Up	1	17.30	15.95	0.07	0.529	0.288	0.722
U105	UMTS B2	RMC12.2K	9538	Right Tilted	Up	1	17.30	16.05	0.13	0.608	0.334	0.811
U11	UMTS B2	RMC12.2K	9400	Right Tilted	Up	2	17.30	15.93	-0.03	0.631	0.292	0.865
U13	UMTS B4	RMC12.2K	1413	Right Cheek	Down	1	24.30	22.78	0.08	0.054	0.035	0.077
U14	UMTS B4	RMC12.2K	1413	Right Tilted	Down	1	24.30	22.78	0.09	0.034	0.017	0.048
U15	UMTS B4	RMC12.2K	1413	Left Cheek	Down	1	24.30	22.78	-0.05	0.105	0.064	0.149
U16	UMTS B4	RMC12.2K	1413	Left Tilted	Down	1	24.30	22.78	-0.01	0.032	0.020	0.045
U17	UMTS B4	RMC12.2K	1413	Left Cheek	Down	2	24.30	22.78	0.07	0.097	0.061	0.138
U19	UMTS B4	RMC12.2K	1413	Right Cheek	Up	1	19.80	18.54	-0.12	0.791	0.353	1.057
U20	UMTS B4	RMC12.2K	1413	Right Tilted	Up	1	19.80	18.54	0.03	0.837	0.386	1.119
U21	UMTS B4	RMC12.2K	1413	Left Cheek	Up	1	19.80	18.54	0.07	0.475	0.238	0.635
U22	UMTS B4	RMC12.2K	1413	Left Tilted	Up	1	19.80	18.54	-0.01	0.592	0.285	0.791
U110	UMTS B4	RMC12.2K	1312	Right Tilted	Up	1	19.80	18.53	0.12	0.803	0.362	1.076
U106	UMTS B4	RMC12.2K	1312	Right Cheek	Up	1	19.80	18.53	-0.02	0.712	0.285	0.954
U107	UMTS B4	RMC12.2K	1513	Right Cheek	Up	1	19.80	18.65	0.13	0.701	0.274	0.914
U111	UMTS B4	RMC12.2K	1513	Right Tilted	Up	1	19.80	18.65	-0.11	0.811	0.065	1.057
U23	UMTS B4	RMC12.2K	1413	Right Tilted	Up	2	19.80	18.54	0.07	0.850	0.398	1.136
U112	UMTS B4	RMC12.2K	1413	Right Tilted (Repeated)	Up	2	19.80	18.54	0.02	0.833	0.387	1.113
U25	UMTS B5	RMC12.2K	4182	Right Cheek	Down	1	24.30	22.91	-0.06	0.127	0.090	0.175
U26	UMTS B5	RMC12.2K	4182	Right Tilted	Down	1	24.30	22.91	-0.19	0.090	0.069	0.124
U27	UMTS B5	RMC12.2K	4182	Left Cheek	Down	1	24.30	22.91	0.02	0.142	0.103	0.196
U28	UMTS B5	RMC12.2K	4182	Left Tilted	Down	1	24.30	22.91	-0.02	0.088	0.069	0.121
U29	UMTS B5	RMC12.2K	4182	Left Cheek	Down	2	24.30	22.91	0.01	0.137	0.102	0.189
U31	UMTS B5	RMC12.2K	4182	Right Cheek	Up	1	22.30	21.11	-0.04	0.541	0.308	0.712
U32	UMTS B5	RMC12.2K	4182	Right Tilted	Up	1	22.30	21.11	-0.08	0.220	0.104	0.289
U33	UMTS B5	RMC12.2K	4182	Left Cheek	Up	1	22.30	21.11	-0.02	0.323	0.203	0.425
U34	UMTS B5	RMC12.2K	4182	Left Tilted	Up	1	22.30	21.11	0.07	0.345	0.230	0.454
U35	UMTS B5	RMC12.2K	4182	Right Cheek	Up	2	22.30	21.11	-0.12	0.529	0.312	0.696

Note: The value with boldface is the maximum SAR Value of each test band.

3. Head SAR test results of LTE

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L01	LTE B2	QPSK20M	18900	1	50	Right Cheek	Down	1	24.00	22.68	0.07	0.100	0.064	0.136
L02	LTE B2	QPSK20M	18900	1	50	Right Tilted	Down	1	24.00	22.68	-0.11	0.087	0.054	0.118
L03	LTE B2	QPSK20M	18900	1	50	Left Cheek	Down	1	24.00	22.68	0.08	0.154	0.092	0.209
L04	LTE B2	QPSK20M	18900	1	50	Left Tilted	Down	1	24.00	22.68	0.13	0.087	0.049	0.118
L05	LTE B2	QPSK20M	18700	50	25	Right Cheek	Down	1	23.00	21.68	0.01	0.076	0.048	0.102
L06	LTE B2	QPSK20M	18700	50	25	Right Tilted	Down	1	23.00	21.68	-0.06	0.078	0.048	0.106
L07	LTE B2	QPSK20M	18700	50	25	Left Cheek	Down	1	23.00	21.68	0.02	0.121	0.073	0.164
L08	LTE B2	QPSK20M	18700	50	25	Left Tilted	Down	1	23.00	21.68	0.13	0.071	0.041	0.096
L09	LTE B2	QPSK20M	18900	1	50	Left Cheek	Down	2	24.00	22.68	0.09	0.147	0.088	0.199
L11	LTE B2	QPSK20M	18700	1	50	Right Cheek	Up	1	18.00	17.48	0.02	0.643	0.304	0.725
L12	LTE B2	QPSK20M	18700	1	50	Right Tilted	Up	1	18.00	17.48	0.07	0.725	0.330	0.817
L13	LTE B2	QPSK20M	18700	1	50	Left Cheek	Up	1	18.00	17.48	-0.03	0.421	0.209	0.475
L14	LTE B2	QPSK20M	18700	1	50	Left Tilted	Up	1	18.00	17.48	0.11	0.498	0.236	0.561
L15	LTE B2	QPSK20M	18700	50	25	Right Cheek	Up	1	18.00	17.00	0.02	0.664	0.314	0.836
L16	LTE B2	QPSK20M	18700	50	25	Right Tilted	Up	1	18.00	17.00	0.11	0.729	0.330	0.918
L17	LTE B2	QPSK20M	18700	50	25	Left Cheek	Up	1	18.00	17.00	-0.12	0.410	0.203	0.516
L18	LTE B2	QPSK20M	18700	50	25	Left Tilted	Up	1	18.00	17.00	0.1	0.495	0.234	0.623
L625	LTE B2	QPSK20M	18900	1	50	Right Tilted	Up	1	18.00	17.22	-0.12	0.646	0.246	0.773
L626	LTE B2	QPSK20M	19100	1	50	Right Tilted	Up	1	18.00	17.45	0.02	0.703	0.272	0.798
L627	LTE B2	QPSK20M	18900	50	25	Right Cheek	Up	1	18.00	16.98	0.09	0.534	0.202	0.675
L628	LTE B2	QPSK20M	19100	50	25	Right Cheek	Up	1	18.00	16.94	0.12	0.576	0.222	0.736
L629	LTE B2	QPSK20M	18900	50	25	Right Tilted	Up	1	18.00	16.98	-0.08	0.640	0.242	0.809
L630	LTE B2	QPSK20M	19100	50	25	Right Tilted	Up	1	18.00	16.94	0.01	0.694	0.268	0.886
L631	LTE B2	QPSK20M	18900	100	0	Right Tilted	Up	1	18.00	16.95	0.07	0.634	0.240	0.807
L19	LTE B2	QPSK20M	18700	50	25	Right Tilted	Up	2	18.00	17.00	0.03	0.714	0.326	0.899
L21	LTE B4	QPSK20M	20175	1	50	Right Cheek	Down	1	24.00	22.92	0.02	0.103	0.070	0.132
L22	LTE B4	QPSK20M	20175	1	50	Right Tilted	Down	1	24.00	22.92	-0.05	0.071	0.047	0.091
L23	LTE B4	QPSK20M	20175	1	50	Left Cheek	Down	1	24.00	22.92	0.01	0.183	0.121	0.235
L24	LTE B4	QPSK20M	20175	1	50	Left Tilted	Down	1	24.00	22.92	0.08	0.063	0.041	0.081
L25	LTE B4	QPSK20M	20050	50	25	Right Cheek	Down	1	23.00	21.80	0.02	0.081	0.056	0.107
L26	LTE B4	QPSK20M	20050	50	25	Right Tilted	Down	1	23.00	21.80	-0.09	0.049	0.031	0.064
L27	LTE B4	QPSK20M	20050	50	25	Left Cheek	Down	1	23.00	21.80	0.04	0.141	0.089	0.186
L28	LTE B4	QPSK20M	20050	50	25	Left Tilted	Down	1	23.00	21.80	-0.12	0.059	0.038	0.077
L29	LTE B4	QPSK20M	20175	1	50	Left Cheek	Down	2	24.00	22.92	0.07	0.190	0.118	0.244

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L31	LTE B4	QPSK20M	20050	1	50	Right Cheek	Up	1	19.50	18.88	0.06	0.678	0.326	0.782
L32	LTE B4	QPSK20M	20050	1	50	Right Tilted	Up	1	19.50	18.88	0.03	0.775	0.370	0.894
L33	LTE B4	QPSK20M	20050	1	50	Left Cheek	Up	1	19.50	18.88	0.02	0.509	0.254	0.587
L34	LTE B4	QPSK20M	20050	1	50	Left Tilted	Up	1	19.50	18.88	0.01	0.597	0.288	0.689
L35	LTE B4	QPSK20M	20050	50	25	Right Cheek	Up	1	19.50	18.69	0.06	0.676	0.324	0.815
L36	LTE B4	QPSK20M	20050	50	25	Right Tilted	Up	1	19.50	18.69	0.07	0.781	0.385	0.941
L37	LTE B4	QPSK20M	20050	50	25	Left Cheek	Up	1	19.50	18.69	0.13	0.480	0.240	0.578
L38	LTE B4	QPSK20M	20050	50	25	Left Tilted	Up	1	19.50	18.69	0.07	0.597	0.288	0.719
L632	LTE B4	QPSK20M	20175	1	50	Right Tilted	Up	1	19.50	18.79	0.02	0.649	0.313	0.764
L633	LTE B4	QPSK20M	20300	1	50	Right Tilted	Up	1	19.50	18.72	-0.01	0.642	0.309	0.768
L634	LTE B4	QPSK20M	20175	50	25	Right Cheek	Up	1	19.50	18.47	0.03	0.615	0.294	0.779
L635	LTE B4	QPSK20M	20300	50	25	Right Cheek	Up	1	19.50	18.50	0.16	0.604	0.290	0.761
L636	LTE B4	QPSK20M	20175	50	25	Right Tilted	Up	1	19.50	18.47	0.08	0.659	0.323	0.835
L637	LTE B4	QPSK20M	20300	50	25	Right Tilted	Up	1	19.50	18.50	-0.09	0.638	0.306	0.804
L638	LTE B4	QPSK20M	20300	100	0	Right Tilted	Up	1	19.50	18.45	0.01	0.592	0.248	0.753
L39	LTE B4	QPSK20M	20050	50	25	Right Tilted	Up	2	19.50	18.69	-0.04	0.773	0.368	0.931
L41	LTE B5	QPSK10M	20525	1	24	Right Cheek	Down	1	24.50	23.56	0.06	0.182	0.135	0.226
L42	LTE B5	QPSK10M	20525	1	24	Right Tilted	Down	1	24.50	23.56	-0.12	0.093	0.065	0.116
L43	LTE B5	QPSK10M	20525	1	24	Left Cheek	Down	1	24.50	23.56	0.04	0.202	0.151	0.251
L44	LTE B5	QPSK10M	20525	1	24	Left Tilted	Down	1	24.50	23.56	-0.16	0.102	0.077	0.127
L45	LTE B5	QPSK10M	20525	25	25	Right Cheek	Down	1	23.50	22.50	0.04	0.161	0.123	0.203
L46	LTE B5	QPSK10M	20525	25	25	Right Tilted	Down	1	23.50	22.50	0.03	0.076	0.052	0.096
L47	LTE B5	QPSK10M	20525	25	25	Left Cheek	Down	1	23.50	22.50	0	0.178	0.101	0.224
L48	LTE B5	QPSK10M	20525	25	25	Left Tilted	Down	1	23.50	22.50	0.05	0.088	0.066	0.111
L49	LTE B5	QPSK10M	20525	1	24	Left Cheek	Down	2	24.50	23.56	0.01	0.198	0.152	0.246
L51	LTE B5	QPSK10M	20525	1	24	Right Cheek	Up	1	23.50	22.47	0.07	0.617	0.334	0.782
L52	LTE B5	QPSK10M	20525	1	24	Right Tilted	Up	1	23.50	22.47	-0.14	0.322	0.193	0.408
L53	LTE B5	QPSK10M	20525	1	24	Left Cheek	Up	1	23.50	22.47	0.06	0.398	0.266	0.505
L54	LTE B5	QPSK10M	20525	1	24	Left Tilted	Up	1	23.50	22.47	-0.02	0.323	0.196	0.409
L55	LTE B5	QPSK10M	20525	25	25	Right Cheek	Up	1	22.50	22.42	0	0.634	0.355	0.646
L56	LTE B5	QPSK10M	20525	25	25	Right Tilted	Up	1	22.50	22.42	0.16	0.388	0.231	0.395
L57	LTE B5	QPSK10M	20525	25	25	Left Cheek	Up	1	22.50	22.42	-0.01	0.355	0.237	0.362
L58	LTE B5	QPSK10M	20525	25	25	Left Tilted	Up	1	22.50	22.42	0.12	0.372	0.225	0.379
L59	LTE B5	QPSK10M	20525	25	25	Right Cheek	Up	2	22.50	22.42	0.01	0.547	0.307	0.557
L61	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	1	24.40	22.97	-0.07	0.257	0.136	0.357
L62	LTE B7	QPSK20M	21100	1	50	Right Tilted	Down	1	24.40	22.97	-0.08	0.164	0.084	0.228
L63	LTE B7	QPSK20M	21100	1	50	Left Cheek	Down	1	24.40	22.97	0.12	0.119	0.085	0.165
L64	LTE B7	QPSK20M	21100	1	50	Left Tilted	Down	1	24.40	22.97	-0.05	0.090	0.067	0.125
L65	LTE B7	QPSK20M	21100	50	25	Right Cheek	Down	1	22.80	21.90	0.03	0.188	0.099	0.231
L66	LTE B7	QPSK20M	21100	50	25	Right Tilted	Down	1	22.80	21.90	-0.14	0.124	0.086	0.153
L67	LTE B7	QPSK20M	21100	50	25	Left Cheek	Down	1	22.80	21.90	0.09	0.094	0.066	0.116
L68	LTE B7	QPSK20M	21100	50	25	Left Tilted	Down	1	22.80	21.90	0.01	0.071	0.053	0.087
L69	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	2	24.40	22.97	0.08	0.254	0.133	0.353

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L71	LTE B7	QPSK20M	21100	1	50	Right Cheek	Up	1	16.90	16.12	0.12	0.701	0.298	0.839
L72	LTE B7	QPSK20M	21100	1	50	Right Tilted	Up	1	16.90	16.12	0.07	0.771	0.297	0.923
L73	LTE B7	QPSK20M	21100	1	50	Left Cheek	Up	1	16.90	16.12	0.02	0.234	0.103	0.280
L74	LTE B7	QPSK20M	21100	1	50	Left Tilted	Up	1	16.90	16.12	-0.04	0.309	0.137	0.370
L75	LTE B7	QPSK20M	21100	50	25	Right Cheek	Up	1	16.90	15.74	0.19	0.700	0.294	0.914
L76	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	1	16.90	15.74	0.19	0.760	0.294	0.993
L77	LTE B7	QPSK20M	21100	50	25	Left Cheek	Up	1	16.90	15.74	-0.07	0.235	0.102	0.307
L78	LTE B7	QPSK20M	21100	50	25	Left Tilted	Up	1	16.90	15.74	0.06	0.308	0.137	0.402
L639	LTE B7	QPSK20M	20850	1	50	Right Cheek	Up	1	16.90	15.97	0.02	0.628	0.274	0.778
L640	LTE B7	QPSK20M	21350	1	50	Right Cheek	Up	1	16.90	16.03	0.03	0.564	0.281	0.689
L641	LTE B7	QPSK20M	20850	1	50	Right Tilted	Up	1	16.90	15.97	-0.13	0.714	0.318	0.885
L642	LTE B7	QPSK20M	21350	1	50	Right Tilted	Up	1	16.90	16.03	0.09	0.744	0.295	0.909
L643	LTE B7	QPSK20M	20850	50	25	Right Cheek	Up	1	16.90	15.56	-0.15	0.621	0.270	0.845
L644	LTE B7	QPSK20M	21350	50	25	Right Cheek	Up	1	16.90	15.55	0.04	0.564	0.281	0.769
L645	LTE B7	QPSK20M	20850	50	25	Right Tilted	Up	1	16.90	15.56	0.09	0.707	0.304	0.962
L646	LTE B7	QPSK20M	21350	50	25	Right Tilted	Up	1	16.90	15.55	-0.11	0.689	0.226	0.940
L647	LTE B7	QPSK20M	20850	100	0	Right Tilted	Up	1	16.90	15.51	0.05	0.657	0.209	0.905
L79	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	2	16.90	16.12	0.03	0.779	0.300	0.932
L81	LTE B12	QPSK10M	23095	1	24	Right Cheek	Down	1	24.50	23.86	0.09	0.124	0.099	0.144
L82	LTE B12	QPSK10M	23095	1	24	Right Tilted	Down	1	24.50	23.86	0.02	0.054	0.035	0.062
L83	LTE B12	QPSK10M	23095	1	24	Left Cheek	Down	1	24.50	23.86	0.01	0.091	0.073	0.106
L84	LTE B12	QPSK10M	23095	1	24	Left Tilted	Down	1	24.50	23.86	0.03	0.051	0.034	0.059
L85	LTE B12	QPSK10M	23060	25	12	Right Cheek	Down	1	23.50	22.95	0.01	0.099	0.079	0.112
L86	LTE B12	QPSK10M	23060	25	12	Right Tilted	Down	1	23.50	22.95	-0.11	0.037	0.024	0.042
L87	LTE B12	QPSK10M	23060	25	12	Left Cheek	Down	1	23.50	22.95	0.06	0.082	0.054	0.093
L88	LTE B12	QPSK10M	23060	25	12	Left Tilted	Down	1	23.50	22.95	0.18	0.037	0.027	0.042
L89	LTE B12	QPSK10M	23095	1	24	Right Cheek	Down	2	24.50	23.86	0.05	0.129	0.102	0.149
L91	LTE B12	QPSK10M	23095	1	0	Right Cheek	Up	1	24.50	23.94	-0.04	0.114	0.062	0.130
L92	LTE B12	QPSK10M	23095	1	0	Right Tilted	Up	1	24.50	23.94	0.03	0.084	0.041	0.095
L93	LTE B12	QPSK10M	23095	1	0	Left Cheek	Up	1	24.50	23.94	0.01	0.059	0.039	0.067
L94	LTE B12	QPSK10M	23095	1	0	Left Tilted	Up	1	24.50	23.94	-0.04	0.062	0.034	0.070
L95	LTE B12	QPSK10M	23095	25	12	Right Cheek	Up	1	23.50	22.88	-0.06	0.089	0.048	0.103
L96	LTE B12	QPSK10M	23095	25	12	Right Tilted	Up	1	23.50	22.88	0.05	0.096	0.045	0.110
L97	LTE B12	QPSK10M	23095	25	12	Left Cheek	Up	1	23.50	22.88	-0.05	0.052	0.034	0.059
L98	LTE B12	QPSK10M	23095	25	12	Left Tilted	Up	1	23.50	22.88	-0.01	0.053	0.033	0.061
L99	LTE B12	QPSK10M	23095	1	0	Right Cheek	Up	2	24.50	23.94	0.17	0.102	0.059	0.116
L101	LTE B17	QPSK10M	23790	1	24	Right Cheek	Down	1	24.50	23.89	0.03	0.129	0.102	0.148
L102	LTE B17	QPSK10M	23790	1	24	Right Tilted	Down	1	24.50	23.89	0.09	0.055	0.065	0.063
L103	LTE B17	QPSK10M	23790	1	24	Left Cheek	Down	1	24.50	23.89	0.02	0.092	0.072	0.106
L104	LTE B17	QPSK10M	23790	1	24	Left Tilted	Down	1	24.50	23.89	-0.14	0.044	0.058	0.051
L105	LTE B17	QPSK10M	23790	25	12	Right Cheek	Down	1	23.50	22.87	0.09	0.104	0.082	0.120
L106	LTE B17	QPSK10M	23790	25	12	Right Tilted	Down	1	23.50	22.87	0.05	0.040	0.047	0.046
L107	LTE B17	QPSK10M	23790	25	12	Left Cheek	Down	1	23.50	22.87	-0.17	0.080	0.074	0.093
L108	LTE B17	QPSK10M	23790	25	12	Left Tilted	Down	1	24.50	23.89	0.01	0.042	0.053	0.048
L109	LTE B17	QPSK10M	23790	1	24	Right Cheek	Down	2	24.50	23.89	0.06	0.130	0.102	0.150

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L111	LTE B17	QPSK10M	23790	1	24	Right Cheek	Up	1	24.50	23.88	0.02	0.120	0.063	0.138
L112	LTE B17	QPSK10M	23790	1	24	Right Tilted	Up	1	24.50	23.88	-0.1	0.089	0.054	0.102
L113	LTE B17	QPSK10M	23790	1	24	Left Cheek	Up	1	24.50	23.88	0.03	0.069	0.035	0.079
L114	LTE B17	QPSK10M	23790	1	24	Left Tilted	Up	1	24.50	23.88	-0.12	0.073	0.030	0.084
L115	LTE B17	QPSK10M	23790	25	12	Right Cheek	Up	1	23.50	22.85	0.09	0.095	0.049	0.110
L116	LTE B17	QPSK10M	23790	25	12	Right Tilted	Up	1	23.50	22.85	0	0.082	0.043	0.095
L117	LTE B17	QPSK10M	23790	25	12	Left Cheek	Up	1	23.50	22.85	0.06	0.053	0.035	0.062
L118	LTE B17	QPSK10M	23790	25	12	Left Tilted	Up	1	23.50	22.85	0.07	0.055	0.035	0.064
L119	LTE B17	QPSK10M	23790	1	24	Right Cheek	Up	2	24.50	23.88	-0.07	0.094	0.058	0.109
L121	LTE B26	QPSK15M	26765	1	0	Right Cheek	Down	1	24.50	23.59	0.04	0.171	0.148	0.211
L122	LTE B26	QPSK15M	26765	1	0	Right Tilted	Down	1	24.50	23.59	-0.11	0.078	0.097	0.096
L123	LTE B26	QPSK15M	26765	1	0	Left Cheek	Down	1	24.50	23.59	0.02	0.195	0.170	0.240
L124	LTE B26	QPSK15M	26765	1	0	Left Tilted	Down	1	24.50	23.59	0.14	0.082	0.112	0.100
L125	LTE B26	QPSK15M	26765	36	19	Right Cheek	Down	1	23.50	22.48	0.01	0.145	0.126	0.183
L126	LTE B26	QPSK15M	26765	36	19	Right Tilted	Down	1	23.50	22.48	-0.13	0.063	0.077	0.080
L127	LTE B26	QPSK15M	26765	36	19	Left Cheek	Down	1	23.50	22.48	0.07	0.161	0.140	0.204
L128	LTE B26	QPSK15M	26765	36	19	Left Tilted	Down	1	23.50	22.48	-0.02	0.067	0.091	0.085
L129	LTE B26	QPSK15M	26765	1	0	Left Cheek	Down	2	24.50	23.59	0.07	0.202	0.176	0.249
L131	LTE B26	QPSK15M	26765	1	0	Right Cheek	Up	1	24.50	23.70	0.03	0.533	0.313	0.641
L132	LTE B26	QPSK15M	26765	1	0	Right Tilted	Up	1	24.50	23.70	-0.09	0.349	0.337	0.420
L133	LTE B26	QPSK15M	26765	1	0	Left Cheek	Up	1	24.50	23.70	0.11	0.359	0.375	0.432
L134	LTE B26	QPSK15M	26765	1	0	Left Tilted	Up	1	24.50	23.70	0.16	0.306	0.301	0.368
L135	LTE B26	QPSK15M	26765	36	19	Right Cheek	Up	1	23.50	22.62	0.09	0.467	0.273	0.572
L136	LTE B26	QPSK15M	26765	36	19	Right Tilted	Up	1	23.50	22.62	-0.17	0.311	0.297	0.381
L137	LTE B26	QPSK15M	26765	36	19	Left Cheek	Up	1	23.50	22.62	0.02	0.332	0.346	0.407
L138	LTE B26	QPSK15M	26765	36	19	Left Tilted	Up	1	23.50	22.62	0.05	0.268	0.264	0.328
L139	LTE B26	QPSK15M	26765	1	0	Right Cheek	Up	2	24.50	23.70	-0.01	0.160	0.122	0.192
L141	LTE B38	QPSK20M	38150	1	50	Right Cheek	Down	1	24.00	22.74	-0.04	0.129	0.066	0.172
L142	LTE B38	QPSK20M	38150	1	50	Right Tilted	Down	1	24.00	22.74	0	0.066	0.033	0.088
L143	LTE B38	QPSK20M	38150	1	50	Left Cheek	Down	1	24.00	22.74	0.03	0.062	0.031	0.083
L144	LTE B38	QPSK20M	38150	1	50	Left Tilted	Down	1	24.00	22.74	0.1	0.044	0.023	0.059
L145	LTE B38	QPSK20M	38150	50	25	Right Cheek	Down	1	23.00	21.65	0.09	0.101	0.052	0.138
L146	LTE B38	QPSK20M	38150	50	25	Right Tilted	Down	1	23.00	21.65	-0.13	0.052	0.027	0.072
L147	LTE B38	QPSK20M	38150	50	25	Left Cheek	Down	1	23.00	21.65	-0.02	0.049	0.024	0.067
L148	LTE B38	QPSK20M	38150	50	25	Left Tilted	Down	1	23.00	21.65	-0.06	0.035	0.019	0.048
L149	LTE B38	QPSK20M	38150	1	50	Right Cheek	Down	2	24.00	22.74	0.19	0.074	0.037	0.099

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L151	LTE B38	QPSK20M	38150	1	50	Right Cheek	Up	1	20.00	18.95	0.02	0.766	0.359	0.976
L152	LTE B38	QPSK20M	38150	1	50	Right Tilted	Up	1	20.00	18.95	0.02	0.877	0.377	1.117
L153	LTE B38	QPSK20M	38150	1	50	Left Cheek	Up	1	20.00	18.95	-0.13	0.247	0.137	0.315
L154	LTE B38	QPSK20M	38150	1	50	Left Tilted	Up	1	20.00	18.95	-0.09	0.294	0.141	0.374
L155	LTE B38	QPSK20M	38150	50	25	Right Cheek	Up	1	20.00	18.52	0.01	0.778	0.354	1.094
L156	LTE B38	QPSK20M	38150	50	25	Right Tilted	Up	1	20.00	18.52	-0.07	0.784	0.343	1.102
L157	LTE B38	QPSK20M	38150	50	25	Left Cheek	Up	1	20.00	18.52	0.15	0.248	0.140	0.349
L158	LTE B38	QPSK20M	38150	50	25	Left Tilted	Up	1	20.00	18.52	0.02	0.291	0.141	0.409
L648	LTE B38	QPSK20M	37850	1	50	Right Cheek	Up	1	20.00	18.78	-0.02	0.717	0.345	0.950
L649	LTE B38	QPSK20M	38000	1	50	Right Cheek	Up	1	20.00	18.86	0.05	0.668	0.317	0.869
L623	LTE B38	QPSK20M	37850	1	50	Right Tilted	Up	1	20.00	18.78	0.01	0.779	0.325	1.032
L624	LTE B38	QPSK20M	38000	1	50	Right Tilted	Up	1	20.00	18.86	0.17	0.722	0.320	0.939
L625	LTE B38	QPSK20M	37850	50	25	Right Tilted	Up	1	20.00	18.51	0.14	0.775	0.325	1.092
L650	LTE B38	QPSK20M	37850	50	25	Right Cheek	Up	1	20.00	18.51	0.01	0.710	0.359	1.001
L651	LTE B38	QPSK20M	38000	50	25	Right Cheek	Up	1	20.00	18.47	0.07	0.656	0.329	0.933
L626	LTE B38	QPSK20M	38000	50	25	Right Tilted	Up	1	20.00	18.47	0.11	0.715	0.318	1.017
L627	LTE B38	QPSK20M	38150	100	0	Right Tilted	Up	1	20.00	18.46	-0.03	0.812	0.350	1.158
L159	LTE B38	QPSK20M	38150	1	50	Right Tilted	Up	2	20.00	18.95	0.08	0.723	0.316	0.921
L628	LTE B38	QPSK20M	38150	1	50	Right Tilted (Repeated)	Up	1	20.00	18.95	0.12	0.849	0.353	1.081
L181	LTE B41	QPSK20M	39750	1	50	Right Cheek	Down	1	24.00	22.77	-0.03	0.143	0.074	0.190
L182	LTE B41	QPSK20M	39750	1	50	Right Tilted	Down	1	24.00	22.77	-0.12	0.087	0.058	0.116
L183	LTE B41	QPSK20M	39750	1	50	Left Cheek	Down	1	24.00	22.77	0.11	0.091	0.060	0.120
L184	LTE B41	QPSK20M	39750	1	50	Left Tilted	Down	1	24.00	22.77	0.08	0.054	0.040	0.072
L185	LTE B41	QPSK20M	39750	50	25	Right Cheek	Down	1	22.50	20.65	0.07	0.086	0.045	0.132
L186	LTE B41	QPSK20M	39750	50	25	Right Tilted	Down	1	22.50	20.65	-0.13	0.059	0.040	0.090
L187	LTE B41	QPSK20M	39750	50	25	Left Cheek	Down	1	22.50	20.65	0	0.054	0.036	0.083
L188	LTE B41	QPSK20M	39750	50	25	Left Tilted	Down	1	22.50	20.65	0.1	0.033	0.024	0.050
L189	LTE B41	QPSK20M	39750	1	50	Right Cheek	Down	2	24.00	22.77	0.02	0.147	0.077	0.195
L191	LTE B41	QPSK20M	39750	1	50	Right Cheek	Up	1	20.00	18.82	0.15	0.581	0.224	0.762
L192	LTE B41	QPSK20M	39750	1	50	Right Tilted	Up	1	20.00	18.82	-0.16	0.761	0.280	0.999
L193	LTE B41	QPSK20M	39750	1	50	Left Cheek	Up	1	20.00	18.82	0.03	0.214	0.097	0.281
L194	LTE B41	QPSK20M	39750	1	50	Left Tilted	Up	1	20.00	18.82	0.15	0.294	0.136	0.386
L195	LTE B41	QPSK20M	39750	50	25	Right Cheek	Up	1	20.00	18.72	0.07	0.608	0.235	0.816
L196	LTE B41	QPSK20M	39750	50	25	Right Tilted	Up	1	20.00	18.72	0.04	0.762	0.280	1.023
L197	LTE B41	QPSK20M	39750	50	25	Left Cheek	Up	1	20.00	18.72	0.12	0.209	0.093	0.281
L198	LTE B41	QPSK20M	39750	50	25	Left Tilted	Up	1	20.00	18.72	-0.18	0.289	0.134	0.388
L652	LTE B41	QPSK20M	40185	1	50	Right Tilted	Up	1	20.00	18.64	0.02	0.593	0.330	0.812
L653	LTE B41	QPSK20M	40620	1	50	Right Tilted	Up	1	20.00	18.51	-0.1	0.706	0.230	0.995
L654	LTE B41	QPSK20M	41055	1	50	Right Tilted	Up	1	20.00	18.48	0.03	0.570	0.283	0.809
L655	LTE B41	QPSK20M	41490	1	50	Right Tilted	Up	1	20.00	18.39	0.08	0.467	0.242	0.676
L656	LTE B41	QPSK20M	40185	50	25	Right Cheek	Up	1	20.00	18.59	0.07	0.507	0.172	0.701
L657	LTE B41	QPSK20M	40620	50	25	Right Cheek	Up	1	20.00	18.47	0.13	0.497	0.190	0.707
L658	LTE B41	QPSK20M	41055	50	25	Right Cheek	Up	1	20.00	18.46	0.06	0.548	0.244	0.781
L659	LTE B41	QPSK20M	41490	50	25	Right Cheek	Up	1	20.00	18.38	0.04	0.451	0.250	0.655
L660	LTE B41	QPSK20M	40185	50	25	Right Tilted	Up	1	20.00	18.59	-0.12	0.726	0.228	1.004
L199	LTE B41	QPSK20M	39750	50	25	Right Tilted	Up	2	20.00	18.72	0.02	0.738	0.269	0.991

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L201	LTE B66	QPSK20M	132322	1	50	Right Cheek	Down	1	24.00	22.85	0.13	0.155	0.102	0.202
L202	LTE B66	QPSK20M	132322	1	50	Right Tilted	Down	1	24.00	22.85	0.05	0.101	0.065	0.132
L203	LTE B66	QPSK20M	132322	1	50	Left Cheek	Down	1	24.00	22.85	-0.04	0.198	0.119	0.258
L204	LTE B66	QPSK20M	132322	1	50	Left Tilted	Down	1	24.00	22.85	-0.07	0.102	0.065	0.133
L205	LTE B66	QPSK20M	132572	50	25	Right Cheek	Down	1	23.00	21.77	0.05	0.129	0.084	0.171
L206	LTE B66	QPSK20M	132572	50	25	Right Tilted	Down	1	23.00	21.77	0.11	0.085	0.054	0.113
L207	LTE B66	QPSK20M	132572	50	25	Left Cheek	Down	1	23.00	21.77	0.19	0.155	0.094	0.206
L208	LTE B66	QPSK20M	132572	50	25	Left Tilted	Down	1	23.00	21.77	0.03	0.090	0.056	0.120
L209	LTE B66	QPSK20M	132322	1	50	Left Cheek	Down	2	24.00	22.85	0.02	0.200	0.121	0.261
L211	LTE B66	QPSK20M	132322	1	50	Right Cheek	Up	1	19.50	18.77	0.13	0.693	0.328	0.820
L212	LTE B66	QPSK20M	132322	1	50	Right Tilted	Up	1	19.50	18.77	0.08	0.666	0.316	0.788
L213	LTE B66	QPSK20M	132322	1	50	Left Cheek	Up	1	19.50	18.77	0.11	0.452	0.235	0.535
L214	LTE B66	QPSK20M	132322	1	50	Left Tilted	Up	1	19.50	18.77	-0.05	0.544	0.263	0.644
L215	LTE B66	QPSK20M	132322	50	25	Right Cheek	Up	1	19.50	18.43	-0.08	0.672	0.329	0.860
L216	LTE B66	QPSK20M	132322	50	25	Right Tilted	Up	1	19.50	18.43	0.01	0.678	0.318	0.867
L217	LTE B66	QPSK20M	132322	50	25	Left Cheek	Up	1	19.50	18.43	0.02	0.478	0.246	0.612
L218	LTE B66	QPSK20M	132322	50	25	Left Tilted	Up	1	19.50	18.43	0.16	0.541	0.261	0.692
L666	LTE B66	QPSK20M	132072	50	25	Right Cheek	Up	1	19.50	18.36	0.01	0.607	0.277	0.790
L667	LTE B66	QPSK20M	132572	50	25	Right Cheek	Up	1	19.50	18.34	0.05	0.524	0.247	0.685
L668	LTE B66	QPSK20M	132072	50	25	Right Tilted	Up	1	19.50	18.36	-0.02	0.664	0.305	0.864
L669	LTE B66	QPSK20M	132572	50	25	Right Tilted	Up	1	19.50	18.34	0.06	0.652	0.282	0.852
L219	LTE B66	QPSK20M	132322	50	25	Right Tilted	Up	2	19.50	18.77	-0.18	0.746	0.347	0.883

Note: The value with boldface is the maximum SAR Value of each test band.

4. Head SAR test results of 2.4G WiFi

Test No.	Band	Channel	Test Position	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W01	802.11b	6	Right Cheek	1	100.00	15.00	14.90	-0.1	0.427	0.219	0.437
W02	802.11b	6	Right Tilted	1	100.00	15.00	14.90	0.03	0.432	0.236	0.442
W03	802.11b	6	Left Cheek	1	100.00	15.00	14.90	0.16	0.746	0.350	0.763
W04	802.11b	6	Left Tilted	1	100.00	15.00	14.90	0.11	0.592	0.258	0.606

Note: The value with boldface is the maximum SAR Value of each test band.

5. Head SAR test results of BT

Test No.	Band	Channel	Test Position	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
B01	BT DH5	0	Right Cheek	-	76.92%	11	10.33	-0.09	0.040	0.022	0.060
B02	BT DH5	0	Right Tilted	-	76.92%	11	10.33	0.01	0.047	0.023	0.071
B03	BT DH5	0	Left Cheek	-	76.92%	11	10.33	0.19	0.070	0.035	0.106
B04	BT DH5	0	Left Tilted	-	76.92%	11	10.33	0.05	0.064	0.029	0.097

Note: The value with boldface is the maximum SAR Value of each test band.

6. Head SAR test results of 5G WiFi

Test No.	Band	Channel	Test Position	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W14	802.11n HT40	54	Right Cheek	MCS0	97.13	12.00	11.92	0.14	0.056	0.019	0.059
W15	802.11n HT40	54	Right Tilted	MCS0	97.13	12.00	11.92	0.11	0.142	0.041	0.149
W16	802.11n HT40	54	Left Cheek	MCS0	97.13	12.00	11.92	-0.04	0.263	0.074	0.276
W17	802.11n HT40	54	Left Tilted	MCS0	97.13	12.00	11.92	-0.03	0.310	0.082	0.325
W21	802.11ac VHT80	138	Right Cheek	MCS0	97.13	14.00	13.88	-0.14	0.181	0.053	0.192
W22	802.11ac VHT80	138	Right Tilted	MCS0	97.13	14.00	13.88	0.01	0.221	0.064	0.234
W23	802.11ac VHT80	138	Left Cheek	MCS0	97.13	14.00	13.88	0.07	0.216	0.066	0.229
W24	802.11ac VHT80	138	Left Tilted	MCS0	97.13	14.00	13.88	0.06	0.329	0.092	0.348
W29	802.11ac VHT80	155	Right Cheek	MCS0	97.13	15.00	14.87	0.02	0.236	0.072	0.250
W30	802.11ac VHT80	155	Right Tilted	MCS0	97.13	15.00	14.87	0.07	0.271	0.081	0.287
W31	802.11ac VHT80	155	Left Cheek	MCS0	97.13	15.00	14.87	-0.04	0.235	0.072	0.249
W32	802.11ac VHT80	155	Left Tilted	MCS0	97.13	15.00	14.87	-0.05	0.363	0.107	0.385

Note: The value with boldface is the maximum SAR Value of each test band.

7.2.2 SAR MEASUREMENT RESULT OF BODY-WORN

1. Body-worn SAR test results of GSM

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G30	GSM 850	GSM	190	Front Face	1.5	Down	1	33.5	32.54	0.12	0.159	0.123	0.198
G31	GSM 850	GSM	190	Rear Face	1.5	Down	1	33.5	32.54	-0.04	0.221	0.168	0.276
G32	GSM 850	GSM	190	Rear Face	1.5	Down	1	33.5	32.54	0.02	0.224	0.170	0.279
G41	GSM 850	GSM	190	Front Face	1.5	Up	1	33.5	32.92	0.06	0.055	0.042	0.062
G42	GSM 850	GSM	190	Rear Face	1.5	Up	1	33.5	32.92	0.03	0.064	0.048	0.073
G43	GSM 850	GSM	190	Rear Face	1.5	Up	2	33.5	32.92	0.1	0.063	0.048	0.072
G51	GSM 1900	GSM	661	Front Face	1.5	Down	1	27.5	25.57	0.01	0.069	0.045	0.107
G52	GSM 1900	GSM	661	Rear Face	1.5	Down	1	27.5	25.57	-0.04	0.084	0.052	0.132
G53	GSM 1900	GSM	661	Rear Face	1.5	Down	2	27.5	25.57	-0.08	0.090	0.055	0.141
G62	GSM 1900	GSM	661	Front Face	1.5	Up	1	29.5	28.79	0.09	0.076	0.043	0.090
G63	GSM 1900	GSM	661	Rear Face	1.5	Up	1	29.5	28.79	-0.03	0.094	0.054	0.111
G64	GSM 1900	GSM	661	Rear Face	1.5	Up	2	29.5	28.79	-0.05	0.088	0.051	0.104

Note: The value with boldface is the maximum SAR Value of each test band.

2. Body-worn SAR test results of UMTS

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U40	UMTS B2	RMC12.2K	9400	Front Face	1.5	Down	1	21.3	19.62	-0.14	0.131	0.080	0.193
U41	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	1	21.3	19.62	0.13	0.183	0.111	0.269
U42	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	2	21.3	19.62	-0.02	0.184	0.112	0.271
U51	UMTS B2	RMC12.2K	9400	Front Face	1.5	Up	1	21.3	19.93	0.01	0.195	0.111	0.267
U52	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	1	21.3	19.93	-0.06	0.215	0.126	0.295
U53	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	2	21.3	19.93	0.12	0.070	0.043	0.096
U61	UMTS B4	RMC12.2K	1413	Front Face	1.5	Down	1	21.3	19.81	0.07	0.121	0.075	0.171
U62	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	1	21.3	19.81	0.04	0.158	0.094	0.223
U63	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	2	21.3	19.81	0.07	0.147	0.089	0.207
U72	UMTS B4	RMC12.2K	1413	Front Face	1.5	Up	1	22.3	21.05	-0.13	0.182	0.104	0.243
U73	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Up	1	22.3	21.05	-0.04	0.184	0.107	0.245
U74	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Up	2	22.3	21.05	-0.04	0.176	0.103	0.235
U82	UMTS B5	RMC12.2K	4182	Front Face	1.5	Down	1	24.3	22.95	-0.08	0.157	0.118	0.214
U83	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	1	24.3	22.95	0.06	0.168	0.127	0.229
U84	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	2	24.3	22.95	0.1	0.079	0.058	0.107
U93	UMTS B5	RMC12.2K	4182	Front Face	1.5	Up	1	24.3	23.23	0.05	0.043	0.033	0.055
U94	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Up	1	24.3	23.23	0.09	0.046	0.035	0.059
U95	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Up	2	24.3	23.23	0.08	0.041	0.031	0.053

Note: The value with boldface is the maximum SAR Value of each test band.

3. Body-worn SAR test results of LTE

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L250	LTE B2	QPSK20M	18900	1	50	Front Face	1.5	Down	1	21.00	20.16	0.01	0.170	0.100	0.206
L251	LTE B2	QPSK20M	18900	1	50	Rear Face	1.5	Down	1	21.00	20.16	0.05	0.218	0.130	0.265
L252	LTE B2	QPSK20M	18700	50	25	Front Face	1.5	Down	1	21.00	19.69	0.06	0.163	0.096	0.220
L253	LTE B2	QPSK20M	18700	50	25	Rear Face	1.5	Down	1	21.00	19.69	0.09	0.194	0.115	0.262
L254	LTE B2	QPSK20M	18900	1	50	Rear Face	1.5	Down	2	21.00	20.16	0.13	0.171	0.107	0.207
L268	LTE B2	QPSK20M	18700	1	50	Front Face	1.5	Up	1	21.00	20.25	-0.12	0.168	0.097	0.200
L269	LTE B2	QPSK20M	18700	1	50	Rear Face	1.5	Up	1	21.00	20.25	-0.02	0.219	0.131	0.260
L270	LTE B2	QPSK20M	18700	50	25	Front Face	1.5	Up	1	21.00	19.84	0.07	0.173	0.100	0.226
L271	LTE B2	QPSK20M	18700	50	25	Rear Face	1.5	Up	1	21.00	19.84	-0.08	0.220	0.132	0.287
L272	LTE B2	QPSK20M	18700	50	25	Rear Face	1.5	Up	2	21.00	19.84	0.02	0.221	0.131	0.289
L284	LTE B4	QPSK20M	20175	1	50	Front Face	1.5	Down	1	21.00	20.25	0.13	0.164	0.092	0.195
L285	LTE B4	QPSK20M	20175	1	50	Rear Face	1.5	Down	1	21.00	20.25	-0.17	0.264	0.165	0.314
L286	LTE B4	QPSK20M	20175	50	25	Front Face	1.5	Down	1	21.00	19.85	0.06	0.163	0.093	0.212
L287	LTE B4	QPSK20M	20175	50	25	Rear Face	1.5	Down	1	21.00	19.85	-0.07	0.239	0.152	0.311
L288	LTE B4	QPSK20M	20175	1	50	Rear Face	1.5	Down	2	21.00	20.25	0.04	0.271	0.169	0.322
L302	LTE B4	QPSK20M	20175	1	50	Front Face	1.5	Up	1	22.00	21.38	0.18	0.140	0.083	0.161
L303	LTE B4	QPSK20M	20175	1	50	Rear Face	1.5	Up	1	22.00	21.38	0.04	0.159	0.094	0.183
L304	LTE B4	QPSK20M	20175	50	25	Front Face	1.5	Up	1	22.00	21.08	-0.02	0.136	0.079	0.168
L305	LTE B4	QPSK20M	20175	50	25	Rear Face	1.5	Up	1	22.00	21.08	0.01	0.154	0.091	0.190
L306	LTE B4	QPSK20M	20175	1	50	Rear Face	1.5	Up	2	22.00	21.38	0.08	0.223	0.129	0.257
L318	LTE B5	QPSK10M	20525	1	24	Front Face	1.5	Down	1	24.50	23.56	-0.1	0.169	0.130	0.210
L319	LTE B5	QPSK10M	20525	1	24	Rear Face	1.5	Down	1	24.50	23.56	0.06	0.214	0.164	0.266
L320	LTE B5	QPSK10M	20525	25	12	Front Face	1.5	Down	1	23.50	22.47	0.12	0.128	0.100	0.162
L321	LTE B5	QPSK10M	20525	25	12	Rear Face	1.5	Down	1	23.50	22.47	-0.13	0.209	0.159	0.265
L322	LTE B5	QPSK10M	20525	1	24	Rear Face	1.5	Down	2	24.50	23.56	0.06	0.209	0.159	0.260
L336	LTE B5	QPSK10M	20525	1	24	Front Face	1.5	Up	1	24.50	23.56	-0.19	0.071	0.055	0.088
L337	LTE B5	QPSK10M	20525	1	24	Rear Face	1.5	Up	1	24.50	23.56	0.01	0.080	0.061	0.099
L338	LTE B5	QPSK10M	20525	25	25	Front Face	1.5	Up	1	23.50	22.58	0.02	0.066	0.051	0.082
L339	LTE B5	QPSK10M	20525	25	25	Rear Face	1.5	Up	1	23.50	22.58	0.15	0.071	0.054	0.087
L340	LTE B5	QPSK10M	20525	1	24	Rear Face	1.5	Up	2	24.50	23.56	0.04	0.075	0.056	0.093
L352	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Down	1	22.40	21.26	0.02	0.130	0.075	0.169
L353	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	Down	1	22.40	21.26	-0.13	0.219	0.112	0.285
L354	LTE B7	QPKS20M	21100	50	25	Front Face	1.5	Down	1	22.40	20.90	-0.01	0.133	0.078	0.188
L355	LTE B7	QPKS20M	21100	50	25	Rear Face	1.5	Down	1	22.40	20.90	-0.08	0.193	0.110	0.273
L356	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	Down	2	22.40	21.26	-0.06	0.260	0.126	0.338
L370	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Up	1	24.40	23.15	0.19	0.351	0.177	0.468
L371	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	Up	1	24.40	23.15	-0.18	0.596	0.291	0.795
L372	LTE B7	QPKS20M	21100	50	25	Front Face	1.5	Up	1	22.80	21.97	-0.13	0.266	0.137	0.322
L373	LTE B7	QPKS20M	21100	50	25	Rear Face	1.5	Up	1	22.80	21.97	-0.15	0.467	0.227	0.565
L374	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	Up	2	24.40	23.15	-0.02	0.598	0.312	0.797

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L386	LTE B12	QPSK10M	23095	1	24	Front Face	1.5	Down	1	24.50	23.94	0.12	0.156	0.121	0.177
L387	LTE B12	QPSK10M	23095	1	24	Rear Face	1.5	Down	1	24.50	23.94	-0.04	0.223	0.174	0.254
L388	LTE B12	QPSK10M	23095	25	12	Front Face	1.5	Down	1	23.50	22.87	-0.16	0.121	0.094	0.140
L389	LTE B12	QPSK10M	23095	25	12	Rear Face	1.5	Down	1	23.50	22.87	0.05	0.180	0.140	0.208
L390	LTE B12	QPSK10M	23095	1	24	Rear Face	1.5	Down	2	24.50	23.94	0	0.177	0.138	0.201
L404	LTE B12	QPSK10M	23095	1	24	Front Face	1.5	Up	1	24.50	23.89	0.04	0.013	0.009	0.015
L405	LTE B12	QPSK10M	23095	1	24	Rear Face	1.5	Up	1	24.50	23.89	-0.08	0.010	0.007	0.012
L406	LTE B12	QPSK10M	23095	25	12	Front Face	1.5	Up	1	23.50	22.96	0.01	0.010	0.007	0.012
L407	LTE B12	QPSK10M	23095	25	12	Rear Face	1.5	Up	1	23.50	22.96	-0.12	0.009	0.006	0.010
L408	LTE B12	QPSK10M	23095	1	24	Front Face	1.5	Up	2	24.50	23.89	0.02	0.010	0.008	0.012
L420	LTE B17	QPSK10M	23790	1	24	Front Face	1.5	Down	1	24.50	23.86	0.01	0.170	0.132	0.197
L421	LTE B17	QPSK10M	23790	1	24	Rear Face	1.5	Down	1	24.50	23.86	-0.04	0.229	0.179	0.265
L422	LTE B17	QPSK10M	23790	25	12	Front Face	1.5	Down	1	23.50	22.84	0.12	0.130	0.101	0.151
L423	LTE B17	QPSK10M	23790	25	12	Rear Face	1.5	Down	1	23.50	22.84	0.01	0.178	0.139	0.207
L424	LTE B17	QPSK10M	23790	1	24	Rear Face	1.5	Down	2	24.50	23.86	-0.08	0.235	0.182	0.272
L438	LTE B17	QPSK10M	23790	1	24	Front Face	1.5	Up	1	24.50	23.89	0.05	0.013	0.010	0.015
L439	LTE B17	QPSK10M	23790	1	24	Rear Face	1.5	Up	1	24.50	23.89	0.02	0.011	0.008	0.013
L440	LTE B17	QPSK10M	23790	25	12	Front Face	1.5	Up	1	23.50	22.81	0.03	0.012	0.008	0.014
L441	LTE B17	QPSK10M	23790	25	12	Rear Face	1.5	Up	1	23.50	22.81	0.09	0.009	0.007	0.011
L442	LTE B17	QPSK10M	23790	1	24	Front Face	1.5	Up	2	24.50	23.89	0.13	0.012	0.008	0.014
L454	LTE B26	QPSK15M	26765	1	37	Front Face	1.5	Down	1	24.50	23.64	0.12	0.159	0.121	0.194
L455	LTE B26	QPSK15M	26765	1	37	Rear Face	1.5	Down	1	24.50	23.64	0.04	0.223	0.170	0.272
L456	LTE B26	QPSK15M	26765	36	19	Front Face	1.5	Down	1	23.50	22.49	0.01	0.138	0.105	0.174
L457	LTE B26	QPSK15M	26765	36	19	Rear Face	1.5	Down	1	23.50	22.49	0.05	0.173	0.132	0.218
L458	LTE B26	QPSK15M	26765	1	37	Rear Face	1.5	Down	2	24.50	23.64	0.13	0.219	0.166	0.267
L472	LTE B26	QPSK15M	26765	1	37	Front Face	1.5	Up	1	24.50	23.75	0.017	0.048	0.037	0.058
L473	LTE B26	QPSK15M	26765	1	37	Rear Face	1.5	Up	1	24.50	23.75	0.13	0.060	0.046	0.071
L474	LTE B26	QPSK15M	26765	36	19	Front Face	1.5	Up	1	23.50	22.58	0.03	0.038	0.029	0.047
L475	LTE B26	QPSK15M	26765	36	19	Rear Face	1.5	Up	1	23.50	22.58	0.02	0.046	0.033	0.057
L476	LTE B26	QPSK15M	26765	1	37	Rear Face	1.5	Up	2	24.50	23.75	-0.15	0.051	0.038	0.061
L488	LTE B38	QPSK20M	38000	1	50	Front Face	1.5	Down	1	24.00	22.77	0.11	0.119	0.069	0.158
L489	LTE B38	QPSK20M	38000	1	50	Rear Face	1.5	Down	1	24.00	22.77	-0.08	0.188	0.093	0.250
L490	LTE B38	QPSK20M	38150	50	25	Front Face	1.5	Down	1	23.00	21.64	0.03	0.096	0.055	0.131
L491	LTE B38	QPSK20M	38150	50	25	Rear Face	1.5	Down	1	23.00	21.64	-0.09	0.146	0.072	0.200
L492	LTE B38	QPSK20M	38000	1	50	Rear Face	1.5	Down	2	24.00	22.77	-0.05	0.195	0.097	0.259
L506	LTE B38	QPSK20M	38150	1	50	Front Face	1.5	Up	1	24.00	22.88	-0.05	0.201	0.108	0.260
L507	LTE B38	QPSK20M	38150	1	50	Rear Face	1.5	Up	1	24.00	22.88	-0.01	0.278	0.140	0.360
L508	LTE B38	QPSK20M	38150	50	25	Front Face	1.5	Up	1	23.00	21.79	0.14	0.192	0.095	0.254
L509	LTE B38	QPSK20M	38150	50	25	Rear Face	1.5	Up	1	23.00	21.79	-0.09	0.218	0.109	0.288
L510	LTE B38	QPSK20M	38150	1	50	Rear Face	1.5	Up	2	24.00	22.88	-0.05	0.268	0.134	0.347

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L556	LTE B41	QPSK20M	39750	1	50	Front Face	1.5	Down	1	24.00	22.68	0.01	0.121	0.071	0.164
L557	LTE B41	QPSK20M	39750	1	50	Rear Face	1.5	Down	1	24.00	22.68	-0.12	0.207	0.103	0.281
L558	LTE B41	QPSK20M	39750	50	25	Front Face	1.5	Down	1	22.50	20.63	0.02	0.078	0.045	0.120
L559	LTE B41	QPSK20M	39750	50	25	Rear Face	1.5	Down	1	22.50	20.63	-0.06	0.127	0.063	0.195
L560	LTE B41	QPSK20M	39750	1	50	Rear Face	1.5	Down	2	24.00	22.68	-0.18	0.204	0.107	0.276
L574	LTE B41	QPSK20M	39750	1	50	Front Face	1.5	Up	1	24.00	22.96	-0.07	0.203	0.102	0.258
L575	LTE B41	QPSK20M	39750	1	50	Rear Face	1.5	Up	1	24.00	22.96	0.01	0.423	0.202	0.537
L576	LTE B41	QPSK20M	39750	50	25	Front Face	1.5	Up	1	22.50	20.88	0.01	0.176	0.086	0.255
L577	LTE B41	QPSK20M	39750	50	25	Rear Face	1.5	Up	1	22.50	20.88	0.05	0.272	0.126	0.395
L578	LTE B41	QPSK20M	39750	1	50	Rear Face	1.5	Up	2	24.00	22.96	0.17	0.402	0.188	0.511
L590	LTE B66	QPSK20M	132322	1	50	Front Face	1.5	Down	1	21.00	20.18	-0.11	0.157	0.104	0.190
L591	LTE B66	QPSK20M	132322	1	50	Rear Face	1.5	Down	1	21.00	20.18	0.03	0.214	0.136	0.258
L592	LTE B66	QPSK20M	132322	50	25	Front Face	1.5	Down	1	21.00	19.78	0.15	0.161	0.105	0.213
L593	LTE B66	QPSK20M	132322	50	25	Rear Face	1.5	Down	1	21.00	19.78	0.06	0.193	0.126	0.256
L594	LTE B66	QPSK20M	132322	1	50	Rear Face	1.5	Down	2	21.00	20.18	0.05	0.220	0.140	0.266
L608	LTE B66	QPSK20M	132322	1	50	Front Face	1.5	Up	1	22.00	21.35	0.14	0.151	0.088	0.175
L609	LTE B66	QPSK20M	132322	1	50	Rear Face	1.5	Up	1	22.00	21.35	-0.05	0.156	0.094	0.181
L610	LTE B66	QPSK20M	132322	50	25	Front Face	1.5	Up	1	22.00	20.96	0.11	0.145	0.084	0.184
L611	LTE B66	QPSK20M	132322	50	25	Rear Face	1.5	Up	1	22.00	20.96	0.01	0.163	0.097	0.207
L612	LTE B66	QPSK20M	132322	50	25	Rear Face	1.5	Up	2	22.00	20.96	-0.14	0.174	0.103	0.221

Note: The value with boldface is the maximum SAR Value of each test band.

4. Body-worn SAR test results of 2.4G WiFi

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W58	802.11b	6	Front Face	1.5	1	100.00	20	19.82	-0.02	0.209	0.119	0.218
W59	802.11b	6	Rear Face	1.5	1	100.00	20	19.82	0.13	0.207	0.109	0.216

Note: The value with boldface is the maximum SAR Value of each test band.

5. Body-worn SAR test results of BT

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
B06	BT DH5	0	Front Face	1.5	1	76.92	11	10.33	0.01	0.010	0.004	0.015
B07	BT DH5	0	Rear Face	1.5	1	76.92	11	10.33	0.07	0.008	0.005	0.012

Note: The value with boldface is the maximum SAR Value of each test band.

6. Body-worn SAR test results of 5G WiFi

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W84	802.11n HT40	54	Front Face	1.5	MCS0	97.13	19	18.79	-0.12	0.248	0.096	0.268
W85	802.11n HT40	54	Rear Face	1.5	MCS0	97.13	19	18.79	0.01	0.513	0.191	0.554
W94	802.11ac VHT80	138	Front Face	1.5	MCS0	97.13	19	18.71	0.14	0.114	0.039	0.125
W95	802.11ac VHT80	138	Rear Face	1.5	MCS0	97.13	19	18.71	0.09	0.485	0.186	0.534
W104	802.11ac VHT80	155	Front Face	1.5	MCS0	97.13	19	18.76	0.1	0.096	0.034	0.105
W105	802.11ac VHT80	155	Rear Face	1.5	MCS0	97.13	19	18.76	-0.06	0.420	0.161	0.457

Note: The value with boldface is the maximum SAR Value of each test band.

7.2.3 SAR MEASUREMENT RESULT OF HOTSPOT

1. Hotspot SAR test results of GSM

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G34	GSM 850	GPRS4TX	190	Front Face	1	Down	1	29	27.24	0.03	0.264	0.163	0.396
G35	GSM 850	GPRS4TX	190	Rear Face	1	Down	1	29	27.24	-0.04	0.360	0.216	0.540
G36	GSM 850	GPRS4TX	190	Left Side	1	Down	1	29	27.24	-0.01	0.286	0.265	0.429
G37	GSM 850	GPRS4TX	190	Right Side	1	Down	1	29	27.24	0.15	0.194	0.128	0.291
G38	GSM 850	GPRS4TX	190	Bottom Side	1	Down	1	29	27.24	-0.04	0.410	0.220	0.615
G39	GSM 850	GPRS4TX	190	Bottom Side	1	Down	2	29	27.24	-0.08	0.423	0.233	0.634
G45	GSM 850	GPRS4TX	190	Front Face	1	Up	1	29	27.59	-0.04	0.151	0.099	0.209
G46	GSM 850	GPRS4TX	190	Rear Face	1	Up	1	29	27.59	0.08	0.171	0.107	0.237
G47	GSM 850	GPRS4TX	190	Left Side	1	Up	1	29	27.59	0.01	0.112	0.071	0.155
G48	GSM 850	GPRS4TX	190	Top Side	1	Up	1	29	27.59	0.09	0.183	0.108	0.253
G49	GSM 850	GPRS4TX	190	Top Side	1	Up	2	29	27.59	0.15	0.181	0.109	0.250
G55	GSM 1900	GPRS3TX	661	Front Face	1	Down	1	23	21.1	0.14	0.086	0.063	0.133
G56	GSM 1900	GPRS3TX	661	Rear Face	1	Down	1	23	21.1	-0.07	0.125	0.074	0.194
G57	GSM 1900	GPRS3TX	661	Left Side	1	Down	1	23	21.1	0.08	0.018	0.010	0.028
G58	GSM 1900	GPRS3TX	661	Right Side	1	Down	1	23	21.1	0.17	0.026	0.015	0.040
G59	GSM 1900	GPRS3TX	661	Bottom Side	1	Down	1	23	21.1	0.14	0.159	0.091	0.246
G60	GSM 1900	GPRS3TX	661	Bottom Side	1	Down	2	23	21.1	-0.05	0.131	0.078	0.203
G66	GSM 1900	GPRS3TX	661	Front Face	1	Up	1	26.5	25.22	0.05	0.161	0.091	0.216
G67	GSM 1900	GPRS3TX	661	Rear Face	1	Up	1	26.5	25.22	-0.12	0.202	0.122	0.271
G68	GSM 1900	GPRS3TX	661	Left Side	1	Up	1	26.5	25.22	0.08	0.037	0.021	0.049
G69	GSM 1900	GPRS3TX	661	Top Side	1	Up	1	26.5	25.22	0.09	0.330	0.162	0.443
G70	GSM 1900	GPRS3TX	661	Top Side	1	Up	2	26.5	25.22	0.06	0.350	0.171	0.470

Note: The value with boldface is the maximum SAR Value of each test band.

2. Hotspot SAR test results of UMTS

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U44	UMTS B2	RMC12.2K	9400	Front Face	1	Down	1	21.3	19.62	0.01	0.223	0.135	0.328
U45	UMTS B2	RMC12.2K	9400	Rear Face	1	Down	1	21.3	19.62	-0.18	0.319	0.189	0.470
U46	UMTS B2	RMC12.2K	9400	Left Side	1	Down	1	21.3	19.62	0.12	0.058	0.035	0.085
U47	UMTS B2	RMC12.2K	9400	Right Side	1	Down	1	21.3	19.62	0.11	0.085	0.046	0.126
U48	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	1	21.3	19.62	0.02	0.449	0.256	0.661
U49	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	21.3	19.62	0.03	0.455	0.259	0.670
U55	UMTS B2	RMC12.2K	9400	Front Face	1	Up	1	21.3	19.93	0.01	0.344	0.188	0.472
U56	UMTS B2	RMC12.2K	9400	Rear Face	1	Up	1	21.3	19.93	-0.14	0.398	0.223	0.546
U57	UMTS B2	RMC12.2K	9400	Left Side	1	Up	1	21.3	19.93	0.03	0.059	0.034	0.081
U58	UMTS B2	RMC12.2K	9400	Top Side	1	Up	1	21.3	19.93	0.01	0.620	0.314	0.850
U108	UMTS B2	RMC12.2K	9262	Top Side	1	Up	1	21.3	20.03	0.02	0.462	0.241	0.619
U109	UMTS B2	RMC12.2K	9538	Top Side	1	Up	1	21.3	20.02	0.04	0.568	0.300	0.763
U59	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	21.3	19.93	0.02	0.536	0.303	0.735
U65	UMTS B4	RMC12.2K	1413	Front Face	1	Down	1	21.3	19.81	0.16	0.151	0.090	0.213
U66	UMTS B4	RMC12.2K	1413	Rear Face	1	Down	1	21.3	19.81	-0.02	0.240	0.139	0.338
U67	UMTS B4	RMC12.2K	1413	Left Side	1	Down	1	21.3	19.81	0.07	0.018	0.012	0.025
U68	UMTS B4	RMC12.2K	1413	Right Side	1	Down	1	21.3	19.81	-0.01	0.049	0.028	0.069
U69	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	21.3	19.81	-0.09	0.333	0.185	0.469
U70	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	2	21.3	19.81	0.02	0.325	0.174	0.458
U76	UMTS B4	RMC12.2K	1413	Front Face	1	Up	1	22.3	21.05	-0.04	0.249	0.134	0.332
U77	UMTS B4	RMC12.2K	1413	Rear Face	1	Up	1	22.3	21.05	-0.09	0.266	0.150	0.355
U78	UMTS B4	RMC12.2K	1413	Left Side	1	Up	1	22.3	21.05	0.07	0.071	0.042	0.095
U79	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	22.3	21.05	-0.18	0.404	0.205	0.539
U80	UMTS B4	RMC12.2K	1413	Top Side	1	Up	2	22.3	21.05	0.05	0.353	0.184	0.471
U86	UMTS B5	RMC12.2K	4182	Front Face	1	Down	1	24.3	22.95	-0.08	0.157	0.118	0.214
U87	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	1	24.3	22.95	-0.16	0.218	0.126	0.297
U88	UMTS B5	RMC12.2K	4182	Left Side	1	Down	1	24.3	22.95	-0.04	0.191	0.132	0.261
U89	UMTS B5	RMC12.2K	4182	Right Side	1	Down	1	24.3	22.95	-0.05	0.107	0.073	0.146
U90	UMTS B5	RMC12.2K	4182	Bottom Side	1	Down	1	24.3	22.95	0.12	0.073	0.038	0.100
U91	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	24.3	22.95	0	0.204	0.123	0.278
U97	UMTS B5	RMC12.2K	4182	Front Face	1	Up	1	24.3	23.23	0.07	0.103	0.068	0.132
U98	UMTS B5	RMC12.2K	4182	Rear Face	1	Up	1	24.3	23.23	0.02	0.075	0.046	0.096
U99	UMTS B5	RMC12.2K	4182	Left Side	1	Up	1	24.3	23.23	0.04	0.068	0.046	0.087
U100	UMTS B5	RMC12.2K	4182	Top Side	1	Up	1	24.3	23.23	-0.15	0.070	0.036	0.090
U101	UMTS B5	RMC12.2K	4182	Front Face	1	Up	2	24.3	23.23	0.11	0.125	0.077	0.160

Note: The value with boldface is the maximum SAR Value of each test band.

3. Hotspot SAR test results of LTE

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L256	LTE B2	QPSK20M	18900	1	50	Front Face	1	Down	1	21.00	20.16	0.12	0.232	0.140	0.282
L257	LTE B2	QPSK20M	18900	1	50	Rear Face	1	Down	1	21.00	20.16	0.07	0.295	0.179	0.358
L258	LTE B2	QPSK20M	18900	1	50	Left Side	1	Down	1	21.00	20.16	0.06	0.086	0.051	0.104
L259	LTE B2	QPSK20M	18900	1	50	Right Side	1	Down	1	21.00	20.16	-0.01	0.086	0.049	0.104
L260	LTE B2	QPSK20M	18900	1	50	Bottom Side	1	Down	1	21.00	20.16	0.13	0.447	0.259	0.542
L261	LTE B2	QPSK20M	18700	50	25	Front Face	1	Down	1	21.00	19.69	-0.13	0.226	0.137	0.306
L262	LTE B2	QPSK20M	18700	50	25	Rear Face	1	Down	1	21.00	19.69	0.06	0.301	0.178	0.407
L263	LTE B2	QPSK20M	18700	50	25	Left Side	1	Down	1	21.00	19.69	0.09	0.106	0.071	0.143
L264	LTE B2	QPSK20M	18700	50	25	Right Side	1	Down	1	21.00	19.69	0.08	0.102	0.055	0.138
L265	LTE B2	QPSK20M	18700	50	25	Bottom Side	1	Down	1	21.00	19.69	0.07	0.480	0.277	0.649
L266	LTE B2	QPSK20M	18700	50	25	Bottom Side	1	Down	2	21.00	19.69	-0.02	0.451	0.258	0.610
L274	LTE B2	QPSK20M	18700	1	50	Front Face	1	Up	1	21.00	20.25	0.1	0.279	0.149	0.332
L275	LTE B2	QPSK20M	18700	1	50	Rear Face	1	Up	1	21.00	20.25	-0.02	0.288	0.166	0.342
L276	LTE B2	QPSK20M	18700	1	50	Left Side	1	Up	1	21.00	20.25	0.13	0.070	0.041	0.083
L277	LTE B2	QPSK20M	18700	1	50	Top Side	1	Up	1	21.00	20.25	0.04	0.468	0.238	0.556
L278	LTE B2	QPSK20M	18700	50	25	Front Face	1	Up	1	21.00	19.84	-0.15	0.280	0.146	0.366
L279	LTE B2	QPSK20M	18700	50	25	Rear Face	1	Up	1	21.00	19.84	0.01	0.291	0.168	0.380
L280	LTE B2	QPSK20M	18700	50	25	Left Side	1	Up	1	21.00	19.84	0	0.068	0.038	0.088
L281	LTE B2	QPSK20M	18700	50	25	Top Side	1	Up	1	21.00	19.84	-0.02	0.471	0.238	0.615
L282	LTE B2	QPSK20M	18700	50	25	Top Side	1	Up	2	21.00	19.84	0.02	0.434	0.219	0.567
L290	LTE B4	QPSK20M	20175	1	50	Front Face	1	Down	1	21.00	20.25	-0.01	0.284	0.177	0.338
L291	LTE B4	QPSK20M	20175	1	50	Rear Face	1	Down	1	21.00	20.25	0.05	0.405	0.240	0.481
L292	LTE B4	QPSK20M	20175	1	50	Left Side	1	Down	1	21.00	20.25	0.03	0.058	0.036	0.069
L293	LTE B4	QPSK20M	20175	1	50	Right Side	1	Down	1	21.00	20.25	0.08	0.093	0.051	0.111
L294	LTE B4	QPSK20M	20175	1	50	Bottom Side	1	Down	1	21.00	20.25	0.02	0.543	0.305	0.645
L295	LTE B4	QPSK20M	20175	50	25	Front Face	1	Down	1	21.00	19.85	-0.13	0.257	0.165	0.335
L296	LTE B4	QPSK20M	20175	50	25	Rear Face	1	Down	1	21.00	19.85	-0.02	0.396	0.233	0.516
L297	LTE B4	QPSK20M	20175	50	25	Left Side	1	Down	1	21.00	19.85	-0.05	0.052	0.034	0.068
L298	LTE B4	QPSK20M	20175	50	25	Right Side	1	Down	1	21.00	19.85	0.07	0.088	0.050	0.114
L299	LTE B4	QPSK20M	20175	50	25	Bottom Side	1	Down	1	21.00	19.85	0.08	0.539	0.302	0.702
L300	LTE B4	QPSK20M	20175	50	25	Bottom Side	1	Down	2	21.00	19.85	0.19	0.518	0.289	0.675
L308	LTE B4	QPSK20M	20175	1	50	Front Face	1	Up	1	22.00	21.38	0.06	0.211	0.119	0.243
L309	LTE B4	QPSK20M	20175	1	50	Rear Face	1	Up	1	22.00	21.38	0.17	0.244	0.142	0.281
L310	LTE B4	QPSK20M	20175	1	50	Left Side	1	Up	1	22.00	21.38	-0.04	0.052	0.031	0.060
L311	LTE B4	QPSK20M	20175	1	50	Top Side	1	Up	1	22.00	21.38	0.08	0.402	0.207	0.464
L312	LTE B4	QPSK20M	20175	50	25	Front Face	1	Up	1	22.00	21.08	0.05	0.201	0.116	0.248
L313	LTE B4	QPSK20M	20175	50	25	Rear Face	1	Up	1	22.00	21.08	0.11	0.241	0.140	0.298
L314	LTE B4	QPSK20M	20175	50	25	Left Side	1	Up	1	22.00	21.08	0.03	0.049	0.030	0.060
L315	LTE B4	QPSK20M	20175	50	25	Top Side	1	Up	1	22.00	21.08	-0.09	0.417	0.215	0.515
L316	LTE B4	QPSK20M	20175	50	25	Top Side	1	Up	2	22.00	21.08	-0.02	0.404	0.209	0.499

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L324	LTE B5	QPSK10M	20525	1	24	Front Face	1	Down	1	24.50	23.56	0.11	0.168	0.074	0.209
L325	LTE B5	QPSK10M	20525	1	24	Rear Face	1	Down	1	24.50	23.56	-0.03	0.180	0.139	0.223
L326	LTE B5	QPSK10M	20525	1	24	Left Side	1	Down	1	24.50	23.56	0	0.167	0.094	0.207
L327	LTE B5	QPSK10M	20525	1	24	Right Side	1	Down	1	24.50	23.56	0.1	0.108	0.053	0.134
L328	LTE B5	QPSK10M	20525	1	24	Bottom Side	1	Down	1	24.50	23.56	0.06	0.206	0.112	0.256
L329	LTE B5	QPSK10M	20525	25	12	Front Face	1	Down	1	23.50	22.47	-0.04	0.167	0.073	0.212
L330	LTE B5	QPSK10M	20525	25	12	Rear Face	1	Down	1	23.50	22.47	0.03	0.178	0.137	0.226
L331	LTE B5	QPSK10M	20525	25	12	Left Side	1	Down	1	23.50	22.47	0.18	0.198	0.096	0.251
L332	LTE B5	QPSK10M	20525	25	12	Right Side	1	Down	1	23.50	22.47	-0.09	0.111	0.055	0.141
L333	LTE B5	QPSK10M	20525	25	12	Bottom Side	1	Down	1	23.50	22.47	-0.04	0.207	0.112	0.262
L334	LTE B5	QPSK10M	20525	25	12	Bottom Side	1	Down	2	23.50	22.47	0.06	0.237	0.127	0.300
L342	LTE B5	QPSK10M	20525	1	24	Front Face	1	Up	1	24.50	23.56	-0.09	0.114	0.074	0.142
L343	LTE B5	QPSK10M	20525	1	24	Rear Face	1	Up	1	24.50	23.56	0.17	0.103	0.064	0.128
L344	LTE B5	QPSK10M	20525	1	24	Left Side	1	Up	1	24.50	23.56	-0.1	0.070	0.045	0.086
L345	LTE B5	QPSK10M	20525	1	24	Top Side	1	Up	1	24.50	23.56	-0.15	0.115	0.067	0.143
L346	LTE B5	QPSK10M	20525	25	25	Front Face	1	Up	1	23.50	22.58	0.03	0.119	0.074	0.147
L347	LTE B5	QPSK10M	20525	25	25	Rear Face	1	Up	1	23.50	22.58	0.14	0.122	0.076	0.151
L348	LTE B5	QPSK10M	20525	25	25	Left Side	1	Up	1	23.50	22.58	0.07	0.068	0.045	0.084
L349	LTE B5	QPSK10M	20525	25	25	Top Side	1	Up	1	23.50	22.58	0	0.136	0.078	0.168
L350	LTE B5	QPSK10M	20525	25	25	Top Side	1	Up	2	23.50	22.58	-0.12	0.131	0.079	0.162
L358	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	22.40	21.26	0.16	0.224	0.105	0.291
L359	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	1	22.40	21.26	0.01	0.485	0.193	0.631
L360	LTE B7	QPSK20M	21100	1	50	Left Side	1	Down	1	22.40	21.26	-0.03	0.025	0.012	0.033
L361	LTE B7	QPSK20M	21100	1	50	Right Side	1	Down	1	22.40	21.26	-0.01	0.161	0.074	0.209
L362	LTE B7	QPSK20M	21100	1	50	Bottom Side	1	Down	1	22.40	21.26	0.03	0.273	0.109	0.355
L363	LTE B7	QPSK20M	21100	50	25	Front Face	1	Down	1	22.40	20.90	-0.13	0.232	0.107	0.328
L364	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Down	1	22.40	20.90	-0.03	0.436	0.187	0.616
L365	LTE B7	QPSK20M	21100	50	25	Left Side	1	Down	1	22.40	20.90	-0.07	0.026	0.012	0.037
L366	LTE B7	QPSK20M	21100	50	25	Right Side	1	Down	1	22.40	20.90	0.06	0.157	0.073	0.222
L367	LTE B7	QPSK20M	21100	50	25	Bottom Side	1	Down	1	22.40	20.90	0.17	0.268	0.107	0.379
L368	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	2	22.40	21.26	0.01	0.457	0.213	0.594
L376	LTE B7	QPSK20M	21100	1	50	Front Face	1	Up	1	24.40	23.15	0.12	0.250	0.116	0.333
L377	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Up	1	24.40	23.15	-0.01	0.479	0.210	0.639
L378	LTE B7	QPSK20M	21100	1	50	Left Side	1	Up	1	24.40	23.15	0.06	0.203	0.107	0.271
L379	LTE B7	QPSK20M	21100	1	50	Top Side	1	Up	1	24.40	23.15	0.02	0.642	0.262	0.856
L380	LTE B7	QPSK20M	21100	50	25	Front Face	1	Up	1	22.80	21.97	-0.13	0.236	0.111	0.286
L381	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Up	1	22.80	21.97	-0.01	0.423	0.189	0.512
L382	LTE B7	QPSK20M	21100	50	25	Left Side	1	Up	1	22.80	21.97	0.05	0.210	0.108	0.254
L383	LTE B7	QPSK20M	21100	50	25	Top Side	1	Up	1	22.80	21.97	0.05	0.634	0.257	0.768
L670	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	1	24.40	22.96	-0.02	0.593	0.263	0.826
L671	LTE B7	QPSK20M	21350	1	50	Top Side	1	Up	1	24.40	23.00	0.06	0.450	0.214	0.621
L672	LTE B7	QPSK20M	21350	100	0	Top Side	1	Up	1	22.80	21.90	0.12	0.410	0.180	0.505
L384	LTE B7	QPSK20M	21100	1	50	Top Side	1	Up	2	24.40	23.15	0.06	0.645	0.260	0.860

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L392	LTE B12	QPSK10M	23095	1	24	Front Face	1	Down	1	24.50	23.94	0.11	0.132	0.102	0.150
L393	LTE B12	QPSK10M	23095	1	24	Rear Face	1	Down	1	24.50	23.94	0.03	0.220	0.172	0.250
L394	LTE B12	QPSK10M	23095	1	24	Left Side	1	Down	1	24.50	23.94	0.06	0.237	0.168	0.270
L395	LTE B12	QPSK10M	23095	1	24	Right Side	1	Down	1	24.50	23.94	-0.05	0.159	0.113	0.181
L396	LTE B12	QPSK10M	23095	1	24	Bottom Side	1	Down	1	24.50	23.94	0.02	0.079	0.040	0.090
L397	LTE B12	QPSK10M	23095	25	12	Front Face	1	Down	1	23.50	22.87	0.17	0.109	0.085	0.126
L398	LTE B12	QPSK10M	23095	25	12	Rear Face	1	Down	1	23.50	22.87	0.04	0.184	0.144	0.213
L399	LTE B12	QPSK10M	23095	25	12	Left Side	1	Down	1	23.50	22.87	0.06	0.192	0.136	0.222
L400	LTE B12	QPSK10M	23095	25	12	Right Side	1	Down	1	23.50	22.87	-0.09	0.126	0.090	0.146
L401	LTE B12	QPSK10M	23095	25	12	Bottom Side	1	Down	1	23.50	22.87	0.18	0.063	0.032	0.073
L402	LTE B12	QPSK10M	23095	1	24	Left Side	1	Down	2	24.50	23.94	0.01	0.161	0.116	0.183
L410	LTE B12	QPSK10M	23095	1	24	Front Face	1	Up	1	24.50	23.89	0.04	0.013	0.009	0.015
L411	LTE B12	QPSK10M	23095	1	24	Rear Face	1	Up	1	24.50	23.89	-0.02	0.023	0.015	0.027
L412	LTE B12	QPSK10M	23095	1	24	Left Side	1	Up	1	24.50	23.89	-0.08	0.024	0.015	0.028
L413	LTE B12	QPSK10M	23095	1	24	Top Side	1	Up	1	24.50	23.89	0.05	0.025	0.013	0.029
L414	LTE B12	QPSK10M	23095	25	12	Front Face	1	Up	1	23.50	22.96	0.02	0.011	0.008	0.012
L415	LTE B12	QPSK10M	23095	25	12	Rear Face	1	Up	1	23.50	22.96	0.19	0.019	0.012	0.021
L416	LTE B12	QPSK10M	23095	25	12	Left Side	1	Up	1	23.50	22.96	0.07	0.015	0.010	0.017
L417	LTE B12	QPSK10M	23095	25	12	Top Side	1	Up	1	23.50	22.96	0.02	0.021	0.011	0.024
L418	LTE B12	QPSK10M	23095	1	24	Top Side	1	Up	2	24.50	23.89	0.01	0.023	0.012	0.027
L426	LTE B17	QPSK10M	23790	1	24	Front Face	1	Down	1	24.50	23.86	0.02	0.136	0.105	0.158
L427	LTE B17	QPSK10M	23790	1	24	Rear Face	1	Down	1	24.50	23.86	-0.03	0.226	0.177	0.262
L428	LTE B17	QPSK10M	23790	1	24	Left Side	1	Down	1	24.50	23.86	0.04	0.247	0.175	0.286
L429	LTE B17	QPSK10M	23790	1	24	Right Side	1	Down	1	24.50	23.86	0.01	0.165	0.117	0.191
L430	LTE B17	QPSK10M	23790	1	24	Bottom Side	1	Down	1	24.50	23.86	-0.02	0.070	0.041	0.081
L431	LTE B17	QPSK10M	23790	25	12	Front Face	1	Down	1	23.50	22.84	0.11	0.107	0.084	0.125
L432	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Down	1	23.50	22.84	0.01	0.185	0.144	0.215
L433	LTE B17	QPSK10M	23790	25	12	Left Side	1	Down	1	23.50	22.84	0.09	0.202	0.143	0.235
L434	LTE B17	QPSK10M	23790	25	12	Right Side	1	Down	1	23.50	22.84	0.17	0.130	0.092	0.151
L435	LTE B17	QPSK10M	23790	25	12	Bottom Side	1	Down	1	23.50	22.84	-0.03	0.053	0.030	0.062
L436	LTE B17	QPSK10M	23790	1	24	Left Side	1	Down	2	24.50	23.86	0.05	0.167	0.121	0.194
L444	LTE B17	QPSK10M	23790	1	24	Front Face	1	Up	1	24.50	23.89	-0.14	0.014	0.009	0.016
L445	LTE B17	QPSK10M	23790	1	24	Rear Face	1	Up	1	24.50	23.89	0.15	0.023	0.016	0.026
L446	LTE B17	QPSK10M	23790	1	24	Left Side	1	Up	1	24.50	23.89	0.07	0.020	0.014	0.023
L447	LTE B17	QPSK10M	23790	1	24	Top Side	1	Up	1	24.50	23.89	0.05	0.027	0.014	0.031
L448	LTE B17	QPSK10M	23790	25	12	Front Face	1	Up	1	23.50	22.81	0.09	0.012	0.008	0.015
L449	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Up	1	23.50	22.81	0.19	0.017	0.012	0.020
L450	LTE B17	QPSK10M	23790	25	12	Left Side	1	Up	1	23.50	22.81	0.19	0.015	0.010	0.017
L451	LTE B17	QPSK10M	23790	25	12	Top Side	1	Up	1	23.50	22.81	0.19	0.017	0.010	0.020
L452	LTE B17	QPSK10M	23790	1	24	Top Side	1	Up	2	24.50	23.89	0.08	0.021	0.014	0.024

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L460	LTE B26	QPSK15M	26765	1	37	Front Face	1	Down	1	24.50	23.64	0.11	0.197	0.169	0.240
L461	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Down	1	24.50	23.64	-0.06	0.277	0.162	0.338
L462	LTE B26	QPSK15M	26765	1	37	Left Side	1	Down	1	24.50	23.64	-0.05	0.288	0.198	0.351
L463	LTE B26	QPSK15M	26765	1	37	Right Side	1	Down	1	24.50	23.64	0.03	0.147	0.112	0.179
L464	LTE B26	QPSK15M	26765	1	37	Bottom Side	1	Down	1	24.50	23.64	0.05	0.240	0.128	0.293
L465	LTE B26	QPSK15M	26765	36	19	Front Face	1	Down	1	23.50	22.49	-0.07	0.156	0.134	0.197
L466	LTE B26	QPSK15M	26765	36	19	Rear Face	1	Down	1	23.50	22.49	0.01	0.241	0.140	0.304
L467	LTE B26	QPSK15M	26765	36	19	Left Side	1	Down	1	23.50	22.49	0.02	0.203	0.157	0.256
L468	LTE B26	QPSK15M	26765	36	19	Right Side	1	Down	1	23.50	22.49	-0.08	0.122	0.095	0.154
L469	LTE B26	QPSK15M	26765	36	19	Bottom Side	1	Down	1	23.50	22.49	0.01	0.205	0.125	0.259
L470	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Down	2	24.50	23.64	0.03	0.293	0.171	0.357
L478	LTE B26	QPSK15M	26765	1	37	Front Face	1	Up	1	24.50	23.75	0.13	0.080	0.052	0.095
L479	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Up	1	24.50	23.75	0.13	0.094	0.059	0.112
L480	LTE B26	QPSK15M	26765	1	37	Left Side	1	Up	1	24.50	23.75	0.12	0.046	0.030	0.055
L481	LTE B26	QPSK15M	26765	1	37	Top Side	1	Up	1	24.50	23.75	0.1	0.093	0.055	0.111
L482	LTE B26	QPSK15M	26765	36	19	Front Face	1	Up	1	23.50	22.58	-0.013	0.059	0.035	0.073
L483	LTE B26	QPSK15M	26765	36	19	Rear Face	1	Up	1	23.50	22.58	0.02	0.073	0.047	0.090
L484	LTE B26	QPSK15M	26765	36	19	Left Side	1	Up	1	23.50	22.58	0.01	0.048	0.033	0.059
L485	LTE B26	QPSK15M	26765	36	19	Top Side	1	Up	1	23.50	22.58	-0.09	0.059	0.032	0.073
L486	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Up	2	24.50	23.75	0.14	0.093	0.058	0.111
L494	LTE B38	QPSK20M	38000	1	50	Front Face	1	Down	1	24.00	22.77	0.02	0.135	0.007	0.179
L495	LTE B38	QPSK20M	38000	1	50	Rear Face	1	Down	1	24.00	22.77	-0.02	0.306	0.141	0.406
L496	LTE B38	QPSK20M	38000	1	50	Left Side	1	Down	1	24.00	22.77	0.04	0.025	0.011	0.033
L497	LTE B38	QPSK20M	38000	1	50	Right Side	1	Down	1	24.00	22.77	0.13	0.123	0.063	0.163
L498	LTE B38	QPSK20M	38000	1	50	Bottom Side	1	Down	1	24.00	22.77	0.03	0.206	0.092	0.273
L499	LTE B38	QPSK20M	38150	50	25	Front Face	1	Down	1	23.00	21.64	0.05	0.108	0.058	0.148
L500	LTE B38	QPSK20M	38150	50	25	Rear Face	1	Down	1	23.00	21.64	-0.19	0.293	0.138	0.401
L501	LTE B38	QPSK20M	38150	50	25	Left Side	1	Down	1	23.00	21.64	0.01	0.025	0.011	0.034
L502	LTE B38	QPSK20M	38150	50	25	Right Side	1	Down	1	23.00	21.64	-0.04	0.094	0.048	0.129
L503	LTE B38	QPSK20M	38150	50	25	Bottom Side	1	Down	1	23.00	21.64	-0.11	0.141	0.064	0.193
L504	LTE B38	QPSK20M	38000	1	50	Rear Face	1	Down	2	24.00	22.77	-0.01	0.297	0.138	0.394
L512	LTE B38	QPSK20M	38150	1	50	Front Face	1	Up	1	24.00	22.88	0.13	0.334	0.172	0.432
L513	LTE B38	QPSK20M	38150	1	50	Rear Face	1	Up	1	24.00	22.88	-0.03	0.536	0.255	0.694
L514	LTE B38	QPSK20M	38150	1	50	Left Side	1	Up	1	24.00	22.88	0.06	0.379	0.195	0.491
L515	LTE B38	QPSK20M	38150	1	50	Top Side	1	Up	1	24.00	22.88	-0.02	0.428	0.177	0.554
L516	LTE B38	QPSK20M	38150	50	25	Front Face	1	Up	1	23.00	21.79	0.15	0.261	0.137	0.345
L517	LTE B38	QPSK20M	38150	50	25	Rear Face	1	Up	1	23.00	21.79	-0.1	0.512	0.244	0.677
L518	LTE B38	QPSK20M	38150	50	25	Left Side	1	Up	1	23.00	21.79	0.11	0.323	0.161	0.427
L519	LTE B38	QPSK20M	38150	50	25	Top Side	1	Up	1	23.00	21.79	0.05	0.342	0.131	0.452
L520	LTE B38	QPSK20M	38150	1	50	Rear Face	1	Up	2	24.00	22.88	-0.07	0.513	0.243	0.664

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L562	LTE B41	QPSK20M	39750	1	50	Front Face	1	Down	1	24.00	22.68	0.12	0.116	0.064	0.157
L563	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Down	1	24.00	22.68	0.18	0.265	0.122	0.359
L564	LTE B41	QPSK20M	39750	1	50	Left Side	1	Down	1	24.00	22.68	0.01	0.009	0.004	0.012
L565	LTE B41	QPSK20M	39750	1	50	Right Side	1	Down	1	24.00	22.68	-0.03	0.066	0.036	0.090
L566	LTE B41	QPSK20M	39750	1	50	Bottom Side	1	Down	1	24.00	22.68	0.17	0.152	0.066	0.206
L567	LTE B41	QPSK20M	39750	50	25	Front Face	1	Down	1	22.50	20.63	0.05	0.114	0.062	0.175
L568	LTE B41	QPSK20M	39750	50	25	Rear Face	1	Down	1	22.50	20.63	0.11	0.228	0.110	0.351
L569	LTE B41	QPSK20M	39750	50	25	Left Side	1	Down	1	22.50	20.63	0.04	0.009	0.004	0.014
L570	LTE B41	QPSK20M	39750	50	25	Right Side	1	Down	1	22.50	20.63	0.06	0.075	0.040	0.115
L571	LTE B41	QPSK20M	39750	50	25	Bottom Side	1	Down	1	22.50	20.63	0.02	0.163	0.073	0.251
L572	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Down	2	24.00	22.68	-0.08	0.227	0.115	0.308
L580	LTE B41	QPSK20M	39750	1	50	Front Face	1	Up	1	24.00	22.96	0.12	0.255	0.115	0.324
L581	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Up	1	24.00	22.96	-0.06	0.472	0.199	0.600
L582	LTE B41	QPSK20M	39750	1	50	Left Side	1	Up	1	24.00	22.96	0.17	0.209	0.106	0.266
L583	LTE B41	QPSK20M	39750	1	50	Top Side	1	Up	1	24.00	22.96	0	0.781	0.327	0.992
L584	LTE B41	QPSK20M	39750	50	25	Front Face	1	Up	1	22.50	20.88	0.13	0.209	0.092	0.303
L585	LTE B41	QPSK20M	39750	50	25	Rear Face	1	Up	1	22.50	20.88	-0.05	0.387	0.167	0.562
L586	LTE B41	QPSK20M	39750	50	25	Left Side	1	Up	1	22.50	20.88	0.01	0.163	0.082	0.237
L587	LTE B41	QPSK20M	39750	50	25	Top Side	1	Up	1	22.50	20.88	-0.17	0.535	0.206	0.777
L673	LTE B41	QPSK20M	40185	1	50	Top Side	1	Up	1	24.00	22.82	-0.02	0.677	0.234	0.888
L674	LTE B41	QPSK20M	40620	1	50	Top Side	1	Up	1	24.00	22.86	0.09	0.630	0.198	0.818
L675	LTE B41	QPSK20M	41055	1	50	Top Side	1	Up	1	24.00	22.91	0.12	0.615	0.183	0.790
L676	LTE B41	QPSK20M	41490	1	50	Top Side	1	Up	1	24.00	22.92	-0.05	0.569	0.202	0.730
L677	LTE B41	QPSK20M	41055	100	0	Top Side	1	Up	1	22.50	20.79	0.06	0.555	0.187	0.823
L588	LTE B41	QPSK20M	39750	1	50	Top Side	1	Up	2	24.00	22.96	0.1	0.773	0.312	0.982
L596	LTE B66	QPSK20M	132322	1	50	Front Face	1	Down	1	21.00	20.18	0.05	0.257	0.166	0.310
L597	LTE B66	QPSK20M	132322	1	50	Rear Face	1	Down	1	21.00	20.18	-0.12	0.383	0.231	0.463
L598	LTE B66	QPSK20M	132322	1	50	Left Side	1	Down	1	21.00	20.18	0.03	0.053	0.035	0.064
L599	LTE B66	QPSK20M	132322	1	50	Right Side	1	Down	1	21.00	20.18	-0.01	0.091	0.051	0.110
L600	LTE B66	QPSK20M	132322	1	50	Bottom Side	1	Down	1	21.00	20.18	0.02	0.542	0.305	0.655
L601	LTE B66	QPSK20M	132322	50	25	Front Face	1	Down	1	21.00	19.78	0.08	0.259	0.166	0.343
L602	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Down	1	21.00	19.78	-0.06	0.386	0.231	0.511
L603	LTE B66	QPSK20M	132322	50	25	Left Side	1	Down	1	21.00	19.78	-0.11	0.053	0.035	0.070
L604	LTE B66	QPSK20M	132322	50	25	Right Side	1	Down	1	21.00	19.78	0.01	0.091	0.051	0.121
L605	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	1	21.00	19.78	0.07	0.539	0.303	0.714
L606	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	2	21.00	19.78	-0.02	0.518	0.293	0.686
L614	LTE B66	QPSK20M	132322	1	50	Front Face	1	Up	1	22.00	21.35	0.12	0.251	0.167	0.292
L615	LTE B66	QPSK20M	132322	1	50	Rear Face	1	Up	1	22.00	21.35	-0.04	0.299	0.205	0.347
L616	LTE B66	QPSK20M	132322	1	50	Left Side	1	Up	1	22.00	21.35	0.03	0.054	0.040	0.063
L617	LTE B66	QPSK20M	132322	1	50	Top Side	1	Up	1	22.00	21.35	0.18	0.438	0.277	0.509
L618	LTE B66	QPSK20M	132322	50	25	Front Face	1	Up	1	22.00	20.96	0.07	0.234	0.159	0.297
L619	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Up	1	22.00	20.96	-0.11	0.283	0.197	0.360
L620	LTE B66	QPSK20M	132322	50	25	Left Side	1	Up	1	22.00	20.96	0.02	0.058	0.041	0.073
L621	LTE B66	QPSK20M	132322	50	25	Top Side	1	Up	1	22.00	20.96	0.01	0.398	0.225	0.506
L622	LTE B66	QPSK20M	132322	1	50	Top Side	1	Up	2	22.00	21.35	0.05	0.435	0.226	0.505

Note: The value with boldface is the maximum SAR Value of each test band.

4. Hotspot SAR test results of 2.4G WiFi

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W62	802.11b	6	Front Face	1	1	100.00	18	17.81	-0.12	0.270	0.142	0.282
W63	802.11b	6	Rear Face	1	1	100.00	18	17.81	-0.03	0.308	0.149	0.322
W64	802.11b	6	Right Side	1	1	100.00	18	17.81	0.11	0.204	0.107	0.213
W65	802.11b	6	Top Side	1	1	100.00	18	17.81	0.02	0.362	0.188	0.378

Note: The value with boldface is the maximum SAR Value of each test band.

5. Hotspot SAR test results of 5G WiFi

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W78	802.11n HT40	46	Front Face	1	MCS0	97.13	16	15.78	-0.12	0.122	0.040	0.132
W79	802.11n HT40	46	Rear Face	1	MCS0	97.13	16	15.78	-0.09	0.229	0.078	0.248
W80	802.11n HT40	46	Right Side	1	MCS0	97.13	16	15.78	-0.03	0.198	0.074	0.214
W81	802.11n HT40	46	Top Side	1	MCS0	97.13	16	15.78	0.07	0.249	0.084	0.270
W108	802.11ac VHT80	155	Front Face	1	MCS0	97.13	16	15.89	0.14	0.059	0.022	0.062
W109	802.11ac VHT80	155	Rear Face	1	MCS0	97.13	16	15.89	0.01	0.291	0.106	0.307
W110	802.11ac VHT80	155	Right Side	1	MCS0	97.13	16	15.89	0.06	0.208	0.078	0.220
W111	802.11ac VHT80	155	Top Side	1	MCS0	97.13	16	15.89	-0.09	0.280	0.104	0.296

Note: The value with boldface is the maximum SAR Value of each test band.

Note: Per KDB248227 D01, the highest SAR measured for the initial test position or initial test configuration should be used to determine SAR test exclusion according to the sum of 1-g SAR and SAR peak to location ratio provisions in KDB 447498. In addition, a test lab may also choose to perform standalone SAR measurements for test positions and 802.11 configurations that are not required by the initial test position or initial test configuration procedures and apply the results to determine simultaneous transmission SAR test exclusion, according to sum of 1-g and SAR peak to location ratio requirements to reduce the number of simultaneous transmission SAR measurements.

7.2.4 SAR MEASUREMENT RESULT OF PRODUCT SPECIFIC 10-G SAR

Per KDB648474D04, when hotspot mode applies, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
G34	GSM 850	GPRS4TX	190	Front Face	1	Down	1	29	27.78	0.264	0.350	YES
G35	GSM 850	GPRS4TX	190	Rear Face	1	Down	1	29	27.78	0.360	0.477	YES
G36	GSM 850	GPRS4TX	190	Left Side	1	Down	1	29	27.78	0.286	0.379	YES
G37	GSM 850	GPRS4TX	190	Right Side	1	Down	1	29	27.78	0.194	0.257	YES
G38	GSM 850	GPRS4TX	190	Bottom Side	1	Down	1	29	27.78	0.410	0.543	YES
G39	GSM 850	GPRS4TX	190	Bottom Side	1	Down	2	29	27.78	0.423	0.560	YES
G45	GSM 850	GPRS4TX	190	Front Face	1	Up	1	29	27.78	0.151	0.200	YES
G46	GSM 850	GPRS4TX	190	Rear Face	1	Up	1	29	27.78	0.171	0.226	YES
G47	GSM 850	GPRS4TX	190	Left Side	1	Up	1	29	27.78	0.112	0.148	YES
G48	GSM 850	GPRS4TX	190	Top Side	1	Up	1	29	27.78	0.183	0.242	YES
G49	GSM 850	GPRS4TX	190	Top Side	1	Up	2	29	27.78	0.181	0.240	YES
G55	GSM 1900	GPRS3TX	661	Front Face	1	Down	1	27.5	25.75	0.086	0.129	YES
G56	GSM 1900	GPRS3TX	661	Rear Face	1	Down	1	27.5	25.75	0.125	0.187	YES
G57	GSM 1900	GPRS3TX	661	Left Side	1	Down	1	27.5	25.75	0.018	0.027	YES
G58	GSM 1900	GPRS3TX	661	Right Side	1	Down	1	27.5	25.75	0.026	0.039	YES
G59	GSM 1900	GPRS3TX	661	Bottom Side	1	Down	1	27.5	25.75	0.159	0.238	YES
G60	GSM 1900	GPRS3TX	661	Bottom Side	1	Down	2	27.5	25.75	0.131	0.196	YES
G66	GSM 1900	GPRS3TX	661	Front Face	1	Up	1	27.5	25.75	0.161	0.241	YES
G67	GSM 1900	GPRS3TX	661	Rear Face	1	Up	1	27.5	25.75	0.202	0.302	YES
G68	GSM 1900	GPRS3TX	661	Left Side	1	Up	1	27.5	25.75	0.037	0.055	YES
G69	GSM 1900	GPRS3TX	661	Top Side	1	Up	1	27.5	25.75	0.330	0.494	YES
G70	GSM 1900	GPRS3TX	661	Top Side	1	Up	2	27.5	25.75	0.350	0.524	YES

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
U44	UMTS B2	RMC12.2K	9400	Front Face	1	Down	1	24.3	22.56	0.223	0.333	YES
U45	UMTS B2	RMC12.2K	9400	Rear Face	1	Down	1	24.3	22.56	0.319	0.476	YES
U46	UMTS B2	RMC12.2K	9400	Left Side	1	Down	1	24.3	22.56	0.058	0.086	YES
U47	UMTS B2	RMC12.2K	9400	Right Side	1	Down	1	24.3	22.56	0.085	0.127	YES
U48	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	1	24.3	22.56	0.449	0.670	YES
U49	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	24.3	22.56	0.455	0.679	YES
U55	UMTS B2	RMC12.2K	9400	Front Face	1	Up	1	24.3	22.56	0.344	0.514	YES
U56	UMTS B2	RMC12.2K	9400	Rear Face	1	Up	1	24.3	22.56	0.398	0.594	YES
U57	UMTS B2	RMC12.2K	9400	Left Side	1	Up	1	24.3	22.56	0.059	0.088	YES
U58	UMTS B2	RMC12.2K	9400	Top Side	1	Up	1	24.3	22.56	0.620	0.926	YES
U108	UMTS B2	RMC12.2K	9262	Top Side	1	Up	1	24.3	22.54	0.462	0.693	YES
U109	UMTS B2	RMC12.2K	9538	Top Side	1	Up	1	24.3	22.71	0.568	0.819	YES
U59	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	24.3	22.56	0.536	0.800	YES
U65	UMTS B4	RMC12.2K	1413	Front Face	1	Down	1	24.3	22.78	0.151	0.214	YES
U66	UMTS B4	RMC12.2K	1413	Rear Face	1	Down	1	24.3	22.78	0.240	0.341	YES
U67	UMTS B4	RMC12.2K	1413	Left Side	1	Down	1	24.3	22.78	0.018	0.026	YES
U68	UMTS B4	RMC12.2K	1413	Right Side	1	Down	1	24.3	22.78	0.049	0.070	YES
U69	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	24.3	22.78	0.333	0.473	YES
U70	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	2	24.3	22.78	0.325	0.461	YES
U76	UMTS B4	RMC12.2K	1413	Front Face	1	Up	1	24.3	22.78	0.249	0.353	YES
U77	UMTS B4	RMC12.2K	1413	Rear Face	1	Up	1	24.3	22.78	0.266	0.377	YES
U78	UMTS B4	RMC12.2K	1413	Left Side	1	Up	1	24.3	22.78	0.071	0.101	YES
U79	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	24.3	22.78	0.404	0.573	YES
U80	UMTS B4	RMC12.2K	1413	Top Side	1	Up	2	24.3	22.78	0.353	0.501	YES
U86	UMTS B5	RMC12.2K	4182	Front Face	1	Down	1	24.3	22.91	0.157	0.216	YES
U87	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	1	24.3	22.91	0.218	0.300	YES
U88	UMTS B5	RMC12.2K	4182	Left Side	1	Down	1	24.3	22.91	0.191	0.263	YES
U89	UMTS B5	RMC12.2K	4182	Right Side	1	Down	1	24.3	22.91	0.107	0.147	YES
U90	UMTS B5	RMC12.2K	4182	Bottom Side	1	Down	1	24.3	22.91	0.073	0.101	YES
U91	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	24.3	22.91	0.204	0.281	YES
U97	UMTS B5	RMC12.2K	4182	Front Face	1	Up	1	24.3	22.91	0.103	0.142	YES
U98	UMTS B5	RMC12.2K	4182	Rear Face	1	Up	1	24.3	22.91	0.075	0.104	YES
U99	UMTS B5	RMC12.2K	4182	Left Side	1	Up	1	24.3	22.91	0.068	0.094	YES
U100	UMTS B5	RMC12.2K	4182	Top Side	1	Up	1	24.3	22.91	0.070	0.097	YES
U101	UMTS B5	RMC12.2K	4182	Front Face	1	Up	2	24.3	22.91	0.125	0.172	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
L256	LTE B2	QPSK20M	18900	1	50	Front Face	1	Down	1	24.00	22.68	0.232	0.314	YES
L257	LTE B2	QPSK20M	18900	1	50	Rear Face	1	Down	1	24.00	22.68	0.295	0.400	YES
L258	LTE B2	QPSK20M	18900	1	50	Left Side	1	Down	1	24.00	22.68	0.086	0.116	YES
L259	LTE B2	QPSK20M	18900	1	50	Right Side	1	Down	1	24.00	22.68	0.086	0.116	YES
L260	LTE B2	QPSK20M	18900	1	50	Bottom Side	1	Down	1	24.00	22.68	0.447	0.606	YES
L261	LTE B2	QPSK20M	18700	50	25	Front Face	1	Down	1	23.00	21.68	0.226	0.306	YES
L262	LTE B2	QPSK20M	18700	50	25	Rear Face	1	Down	1	23.00	21.68	0.301	0.408	YES
L263	LTE B2	QPSK20M	18700	50	25	Left Side	1	Down	1	23.00	21.68	0.106	0.144	YES
L264	LTE B2	QPSK20M	18700	50	25	Right Side	1	Down	1	23.00	21.68	0.102	0.138	YES
L265	LTE B2	QPSK20M	18700	50	25	Bottom Side	1	Down	1	23.00	21.68	0.480	0.650	YES
L266	LTE B2	QPSK20M	18700	50	25	Bottom Side	1	Down	2	23.00	21.68	0.451	0.611	YES
L274	LTE B2	QPSK20M	18700	1	50	Front Face	1	Up	1	24.00	22.63	0.279	0.382	YES
L275	LTE B2	QPSK20M	18700	1	50	Rear Face	1	Up	1	24.00	22.63	0.288	0.395	YES
L276	LTE B2	QPSK20M	18700	1	50	Left Side	1	Up	1	24.00	22.63	0.070	0.096	YES
L277	LTE B2	QPSK20M	18700	1	50	Top Side	1	Up	1	24.00	22.63	0.468	0.642	YES
L278	LTE B2	QPSK20M	18700	50	25	Front Face	1	Up	1	23.00	21.68	0.280	0.379	YES
L279	LTE B2	QPSK20M	18700	50	25	Rear Face	1	Up	1	23.00	21.68	0.291	0.394	YES
L280	LTE B2	QPSK20M	18700	50	25	Left Side	1	Up	1	23.00	21.68	0.068	0.091	YES
L281	LTE B2	QPSK20M	18700	50	25	Top Side	1	Up	1	23.00	21.68	0.471	0.638	YES
L282	LTE B2	QPSK20M	18700	50	25	Top Side	1	Up	2	23.00	21.68	0.434	0.588	YES
L290	LTE B4	QPSK20M	20175	1	50	Front Face	1	Down	1	24.00	22.92	0.284	0.364	YES
L291	LTE B4	QPSK20M	20175	1	50	Rear Face	1	Down	1	24.00	22.92	0.405	0.519	YES
L292	LTE B4	QPSK20M	20175	1	50	Left Side	1	Down	1	24.00	22.92	0.058	0.074	YES
L293	LTE B4	QPSK20M	20175	1	50	Right Side	1	Down	1	24.00	22.92	0.093	0.119	YES
L294	LTE B4	QPSK20M	20175	1	50	Bottom Side	1	Down	1	24.00	22.92	0.543	0.696	YES
L295	LTE B4	QPSK20M	20175	50	25	Front Face	1	Down	1	23.00	21.76	0.257	0.342	YES
L296	LTE B4	QPSK20M	20175	50	25	Rear Face	1	Down	1	23.00	21.76	0.396	0.527	YES
L297	LTE B4	QPSK20M	20175	50	25	Left Side	1	Down	1	23.00	21.76	0.052	0.070	YES
L298	LTE B4	QPSK20M	20175	50	25	Right Side	1	Down	1	23.00	21.76	0.088	0.117	YES
L299	LTE B4	QPSK20M	20175	50	25	Bottom Side	1	Down	1	23.00	21.76	0.539	0.717	YES
L300	LTE B4	QPSK20M	20175	50	25	Bottom Side	1	Down	2	23.00	21.76	0.518	0.689	YES
L308	LTE B4	QPSK20M	20175	1	50	Front Face	1	Up	1	24.00	22.92	0.211	0.271	YES
L309	LTE B4	QPSK20M	20175	1	50	Rear Face	1	Up	1	24.00	22.92	0.244	0.313	YES
L310	LTE B4	QPSK20M	20175	1	50	Left Side	1	Up	1	24.00	22.92	0.052	0.067	YES
L311	LTE B4	QPSK20M	20175	1	50	Top Side	1	Up	1	24.00	22.92	0.402	0.515	YES
L312	LTE B4	QPSK20M	20175	50	25	Front Face	1	Up	1	23.00	21.76	0.201	0.267	YES
L313	LTE B4	QPSK20M	20175	50	25	Rear Face	1	Up	1	23.00	21.76	0.241	0.321	YES
L314	LTE B4	QPSK20M	20175	50	25	Left Side	1	Up	1	23.00	21.76	0.049	0.065	YES
L315	LTE B4	QPSK20M	20175	50	25	Top Side	1	Up	1	23.00	21.76	0.417	0.555	YES
L316	LTE B4	QPSK20M	20175	50	25	Top Side	1	Up	2	23.00	21.76	0.404	0.538	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
L324	LTE B5	QPSK10M	20525	1	24	Front Face	1	Down	1	24.50	23.56	0.168	0.209	YES
L325	LTE B5	QPSK10M	20525	1	24	Rear Face	1	Down	1	24.50	23.56	0.180	0.223	YES
L326	LTE B5	QPSK10M	20525	1	24	Left Side	1	Down	1	24.50	23.56	0.167	0.207	YES
L327	LTE B5	QPSK10M	20525	1	24	Right Side	1	Down	1	24.50	23.56	0.108	0.134	YES
L328	LTE B5	QPSK10M	20525	1	24	Bottom Side	1	Down	1	24.50	23.56	0.206	0.256	YES
L329	LTE B5	QPSK10M	20525	25	12	Front Face	1	Down	1	23.50	22.44	0.167	0.213	YES
L330	LTE B5	QPSK10M	20525	25	12	Rear Face	1	Down	1	23.50	22.44	0.178	0.227	YES
L331	LTE B5	QPSK10M	20525	25	12	Left Side	1	Down	1	23.50	22.44	0.198	0.253	YES
L332	LTE B5	QPSK10M	20525	25	12	Right Side	1	Down	1	23.50	22.44	0.111	0.142	YES
L333	LTE B5	QPSK10M	20525	25	12	Bottom Side	1	Down	1	23.50	22.44	0.207	0.264	YES
L334	LTE B5	QPSK10M	20525	25	12	Bottom Side	1	Down	2	23.50	22.44	0.237	0.303	YES
L342	LTE B5	QPSK10M	20525	1	24	Front Face	1	Up	1	24.50	23.56	0.114	0.142	YES
L343	LTE B5	QPSK10M	20525	1	24	Rear Face	1	Up	1	24.50	23.56	0.103	0.128	YES
L344	LTE B5	QPSK10M	20525	1	24	Left Side	1	Up	1	24.50	23.56	0.070	0.086	YES
L345	LTE B5	QPSK10M	20525	1	24	Top Side	1	Up	1	24.50	23.56	0.115	0.143	YES
L346	LTE B5	QPSK10M	20525	25	25	Front Face	1	Up	1	23.50	22.50	0.119	0.150	YES
L347	LTE B5	QPSK10M	20525	25	25	Rear Face	1	Up	1	23.50	22.50	0.122	0.154	YES
L348	LTE B5	QPSK10M	20525	25	25	Left Side	1	Up	1	23.50	22.50	0.068	0.086	YES
L349	LTE B5	QPSK10M	20525	25	25	Top Side	1	Up	1	23.50	22.50	0.136	0.171	YES
L350	LTE B5	QPSK10M	20525	25	25	Top Side	1	Up	2	23.50	22.50	0.131	0.165	YES
L358	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	24.40	22.97	0.224	0.311	YES
L359	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	1	24.40	22.97	0.485	0.674	YES
L360	LTE B7	QPSK20M	21100	1	50	Left Side	1	Down	1	24.40	22.97	0.025	0.035	YES
L361	LTE B7	QPSK20M	21100	1	50	Right Side	1	Down	1	24.40	22.97	0.161	0.224	YES
L362	LTE B7	QPSK20M	21100	1	50	Bottom Side	1	Down	1	24.40	22.97	0.273	0.379	YES
L363	LTE B7	QPSK20M	21100	50	25	Front Face	1	Down	1	22.80	21.90	0.232	0.285	YES
L364	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Down	1	22.80	21.90	0.436	0.536	YES
L365	LTE B7	QPSK20M	21100	50	25	Left Side	1	Down	1	22.80	21.90	0.026	0.032	YES
L366	LTE B7	QPSK20M	21100	50	25	Right Side	1	Down	1	22.80	21.90	0.157	0.193	YES
L367	LTE B7	QPSK20M	21100	50	25	Bottom Side	1	Down	1	22.80	21.90	0.268	0.330	YES
L368	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	2	24.40	22.97	0.457	0.635	YES
L376	LTE B7	QPSK20M	21100	1	50	Front Face	1	Up	1	24.40	23.15	0.250	0.333	YES
L377	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Up	1	24.40	23.15	0.479	0.639	YES
L378	LTE B7	QPSK20M	21100	1	50	Left Side	1	Up	1	24.40	23.15	0.203	0.271	YES
L379	LTE B7	QPSK20M	21100	1	50	Top Side	1	Up	1	24.40	23.15	0.642	0.856	YES
L380	LTE B7	QPSK20M	21100	50	25	Front Face	1	Up	1	22.80	21.97	0.236	0.286	YES
L381	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Up	1	22.80	21.97	0.423	0.512	YES
L382	LTE B7	QPSK20M	21100	50	25	Left Side	1	Up	1	22.80	21.97	0.210	0.254	YES
L383	LTE B7	QPSK20M	21100	50	25	Top Side	1	Up	1	22.80	21.97	0.634	0.768	YES
L670	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	1	24.40	22.96	0.593	0.826	YES
L671	LTE B7	QPSK20M	21350	1	50	Top Side	1	Up	1	24.40	23.00	0.450	0.621	YES
L672	LTE B7	QPSK20M	21350	100	0	Top Side	1	Up	1	22.80	21.90	0.410	0.505	YES
L384	LTE B7	QPSK20M	21100	1	50	Top Side	1	Up	2	24.40	23.15	0.645	0.860	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
L392	LTE B12	QPSK10M	23095	1	24	Front Face	1	Down	1	24.50	23.86	0.132	0.153	YES
L393	LTE B12	QPSK10M	23095	1	24	Rear Face	1	Down	1	24.50	23.86	0.220	0.255	YES
L394	LTE B12	QPSK10M	23095	1	24	Left Side	1	Down	1	24.50	23.86	0.237	0.275	YES
L395	LTE B12	QPSK10M	23095	1	24	Right Side	1	Down	1	24.50	23.86	0.159	0.184	YES
L396	LTE B12	QPSK10M	23095	1	24	Bottom Side	1	Down	1	24.50	23.86	0.079	0.092	YES
L397	LTE B12	QPSK10M	23095	25	12	Front Face	1	Down	1	23.50	22.87	0.109	0.126	YES
L398	LTE B12	QPSK10M	23095	25	12	Rear Face	1	Down	1	23.50	22.87	0.184	0.213	YES
L399	LTE B12	QPSK10M	23095	25	12	Left Side	1	Down	1	23.50	22.87	0.192	0.222	YES
L400	LTE B12	QPSK10M	23095	25	12	Right Side	1	Down	1	23.50	22.87	0.126	0.146	YES
L401	LTE B12	QPSK10M	23095	25	12	Bottom Side	1	Down	1	23.50	22.87	0.063	0.073	YES
L402	LTE B12	QPSK10M	23095	1	24	Left Side	1	Down	2	24.50	23.86	0.161	0.187	YES
L410	LTE B12	QPSK10M	23095	1	24	Front Face	1	Up	1	24.50	23.86	0.013	0.015	YES
L411	LTE B12	QPSK10M	23095	1	24	Rear Face	1	Up	1	24.50	23.86	0.023	0.027	YES
L412	LTE B12	QPSK10M	23095	1	24	Left Side	1	Up	1	24.50	23.86	0.024	0.028	YES
L413	LTE B12	QPSK10M	23095	1	24	Top Side	1	Up	1	24.50	23.86	0.025	0.029	YES
L414	LTE B12	QPSK10M	23095	25	12	Front Face	1	Up	1	23.50	22.87	0.011	0.013	YES
L415	LTE B12	QPSK10M	23095	25	12	Rear Face	1	Up	1	23.50	22.87	0.019	0.022	YES
L416	LTE B12	QPSK10M	23095	25	12	Left Side	1	Up	1	23.50	22.87	0.015	0.017	YES
L417	LTE B12	QPSK10M	23095	25	12	Top Side	1	Up	1	23.50	22.87	0.021	0.025	YES
L418	LTE B12	QPSK10M	23095	1	24	Top Side	1	Up	2	24.50	23.86	0.023	0.027	YES
L426	LTE B17	QPSK10M	23790	1	24	Front Face	1	Down	1	24.50	23.89	0.136	0.157	YES
L427	LTE B17	QPSK10M	23790	1	24	Rear Face	1	Down	1	24.50	23.89	0.226	0.260	YES
L428	LTE B17	QPSK10M	23790	1	24	Left Side	1	Down	1	24.50	23.89	0.247	0.284	YES
L429	LTE B17	QPSK10M	23790	1	24	Right Side	1	Down	1	24.50	23.89	0.165	0.190	YES
L430	LTE B17	QPSK10M	23790	1	24	Bottom Side	1	Down	1	24.50	23.89	0.070	0.081	YES
L431	LTE B17	QPSK10M	23790	25	12	Front Face	1	Down	1	23.50	22.87	0.107	0.124	YES
L432	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Down	1	23.50	22.87	0.185	0.214	YES
L433	LTE B17	QPSK10M	23790	25	12	Left Side	1	Down	1	23.50	22.87	0.202	0.234	YES
L434	LTE B17	QPSK10M	23790	25	12	Right Side	1	Down	1	23.50	22.87	0.130	0.150	YES
L435	LTE B17	QPSK10M	23790	25	12	Bottom Side	1	Down	1	23.50	22.87	0.053	0.062	YES
L436	LTE B17	QPSK10M	23790	1	24	Left Side	1	Down	2	24.50	23.89	0.167	0.192	YES
L444	LTE B17	QPSK10M	23790	1	24	Front Face	1	Up	1	24.50	23.89	0.014	0.016	YES
L445	LTE B17	QPSK10M	23790	1	24	Rear Face	1	Up	1	24.50	23.89	0.023	0.026	YES
L446	LTE B17	QPSK10M	23790	1	24	Left Side	1	Up	1	24.50	23.89	0.020	0.023	YES
L447	LTE B17	QPSK10M	23790	1	24	Top Side	1	Up	1	24.50	23.89	0.027	0.031	YES
L448	LTE B17	QPSK10M	23790	25	12	Front Face	1	Up	1	23.50	22.87	0.012	0.014	YES
L449	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Up	1	23.50	22.87	0.017	0.019	YES
L450	LTE B17	QPSK10M	23790	25	12	Left Side	1	Up	1	23.50	22.87	0.015	0.017	YES
L451	LTE B17	QPSK10M	23790	25	12	Top Side	1	Up	1	23.50	22.87	0.017	0.020	YES
L452	LTE B17	QPSK10M	23790	1	24	Top Side	1	Up	2	24.50	23.89	0.021	0.024	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
L460	LTE B26	QPSK15M	26765	1	37	Front Face	1	Down	1	24.50	23.59	0.197	0.243	YES
L461	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Down	1	24.50	23.59	0.277	0.342	YES
L462	LTE B26	QPSK15M	26765	1	37	Left Side	1	Down	1	24.50	23.59	0.288	0.355	YES
L463	LTE B26	QPSK15M	26765	1	37	Right Side	1	Down	1	24.50	23.59	0.147	0.181	YES
L464	LTE B26	QPSK15M	26765	1	37	Bottom Side	1	Down	1	24.50	23.59	0.240	0.296	YES
L465	LTE B26	QPSK15M	26765	36	19	Front Face	1	Down	1	23.50	22.48	0.156	0.197	YES
L466	LTE B26	QPSK15M	26765	36	19	Rear Face	1	Down	1	23.50	22.48	0.241	0.305	YES
L467	LTE B26	QPSK15M	26765	36	19	Left Side	1	Down	1	23.50	22.48	0.203	0.257	YES
L468	LTE B26	QPSK15M	26765	36	19	Right Side	1	Down	1	23.50	22.48	0.122	0.154	YES
L469	LTE B26	QPSK15M	26765	36	19	Bottom Side	1	Down	1	23.50	22.48	0.205	0.259	YES
L470	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Down	2	24.50	23.59	0.293	0.361	YES
L478	LTE B26	QPSK15M	26765	1	37	Front Face	1	Up	1	24.50	23.59	0.080	0.099	YES
L479	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Up	1	24.50	23.59	0.094	0.116	YES
L480	LTE B26	QPSK15M	26765	1	37	Left Side	1	Up	1	24.50	23.59	0.046	0.057	YES
L481	LTE B26	QPSK15M	26765	1	37	Top Side	1	Up	1	24.50	23.59	0.093	0.115	YES
L482	LTE B26	QPSK15M	26765	36	19	Front Face	1	Up	1	23.50	22.48	0.059	0.074	YES
L483	LTE B26	QPSK15M	26765	36	19	Rear Face	1	Up	1	23.50	22.48	0.073	0.092	YES
L484	LTE B26	QPSK15M	26765	36	19	Left Side	1	Up	1	23.50	22.48	0.048	0.060	YES
L485	LTE B26	QPSK15M	26765	36	19	Top Side	1	Up	1	23.50	22.48	0.059	0.074	YES
L486	LTE B26	QPSK15M	26765	1	37	Rear Face	1	Up	2	24.50	23.59	0.093	0.115	YES
L494	LTE B38	QPSK20M	38000	1	50	Front Face	1	Down	1	24.00	22.69	0.135	0.183	YES
L495	LTE B38	QPSK20M	38000	1	50	Rear Face	1	Down	1	24.00	22.69	0.306	0.414	YES
L496	LTE B38	QPSK20M	38000	1	50	Left Side	1	Down	1	24.00	22.69	0.025	0.034	YES
L497	LTE B38	QPSK20M	38000	1	50	Right Side	1	Down	1	24.00	22.69	0.123	0.166	YES
L498	LTE B38	QPSK20M	38000	1	50	Bottom Side	1	Down	1	24.00	22.69	0.206	0.279	YES
L499	LTE B38	QPSK20M	38150	50	25	Front Face	1	Down	1	23.00	21.65	0.108	0.147	YES
L500	LTE B38	QPSK20M	38150	50	25	Rear Face	1	Down	1	23.00	21.65	0.293	0.400	YES
L501	LTE B38	QPSK20M	38150	50	25	Left Side	1	Down	1	23.00	21.65	0.025	0.034	YES
L502	LTE B38	QPSK20M	38150	50	25	Right Side	1	Down	1	23.00	21.65	0.094	0.128	YES
L503	LTE B38	QPSK20M	38150	50	25	Bottom Side	1	Down	1	23.00	21.65	0.141	0.192	YES
L504	LTE B38	QPSK20M	38000	1	50	Rear Face	1	Down	2	24.00	22.69	0.297	0.402	YES
L512	LTE B38	QPSK20M	38150	1	50	Front Face	1	Up	1	24.00	22.74	0.334	0.446	YES
L513	LTE B38	QPSK20M	38150	1	50	Rear Face	1	Up	1	24.00	22.74	0.536	0.716	YES
L514	LTE B38	QPSK20M	38150	1	50	Left Side	1	Up	1	24.00	22.74	0.379	0.507	YES
L515	LTE B38	QPSK20M	38150	1	50	Top Side	1	Up	1	24.00	22.74	0.428	0.572	YES
L516	LTE B38	QPSK20M	38150	50	25	Front Face	1	Up	1	23.00	21.65	0.261	0.356	YES
L517	LTE B38	QPSK20M	38150	50	25	Rear Face	1	Up	1	23.00	21.65	0.512	0.699	YES
L518	LTE B38	QPSK20M	38150	50	25	Left Side	1	Up	1	23.00	21.65	0.323	0.441	YES
L519	LTE B38	QPSK20M	38150	50	25	Top Side	1	Up	1	23.00	21.65	0.342	0.467	YES
L520	LTE B38	QPSK20M	38150	1	50	Rear Face	1	Up	2	24.00	22.74	0.513	0.686	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
L562	LTE B41	QPSK20M	39750	1	50	Front Face	1	Down	1	24.00	22.77	0.116	0.154	YES
L563	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Down	1	24.00	22.77	0.265	0.352	YES
L564	LTE B41	QPSK20M	39750	1	50	Left Side	1	Down	1	24.00	22.77	0.009	0.012	YES
L565	LTE B41	QPSK20M	39750	1	50	Right Side	1	Down	1	24.00	22.77	0.066	0.088	YES
L566	LTE B41	QPSK20M	39750	1	50	Bottom Side	1	Down	1	24.00	22.77	0.152	0.202	YES
L567	LTE B41	QPSK20M	39750	50	25	Front Face	1	Down	1	22.50	20.65	0.114	0.175	YES
L568	LTE B41	QPSK20M	39750	50	25	Rear Face	1	Down	1	22.50	20.65	0.228	0.349	YES
L569	LTE B41	QPSK20M	39750	50	25	Left Side	1	Down	1	22.50	20.65	0.009	0.014	YES
L570	LTE B41	QPSK20M	39750	50	25	Right Side	1	Down	1	22.50	20.65	0.075	0.114	YES
L571	LTE B41	QPSK20M	39750	50	25	Bottom Side	1	Down	1	22.50	20.65	0.163	0.250	YES
L572	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Down	2	24.00	22.77	0.227	0.301	YES
L580	LTE B41	QPSK20M	39750	1	50	Front Face	1	Up	1	24.00	22.96	0.255	0.324	YES
L581	LTE B41	QPSK20M	39750	1	50	Rear Face	1	Up	1	24.00	22.96	0.472	0.600	YES
L582	LTE B41	QPSK20M	39750	1	50	Left Side	1	Up	1	24.00	22.96	0.209	0.266	YES
L583	LTE B41	QPSK20M	39750	1	50	Top Side	1	Up	1	24.00	22.96	0.781	0.992	YES
L584	LTE B41	QPSK20M	39750	50	25	Front Face	1	Up	1	22.50	20.88	0.209	0.303	YES
L585	LTE B41	QPSK20M	39750	50	25	Rear Face	1	Up	1	22.50	20.88	0.387	0.562	YES
L586	LTE B41	QPSK20M	39750	50	25	Left Side	1	Up	1	22.50	20.88	0.163	0.237	YES
L587	LTE B41	QPSK20M	39750	50	25	Top Side	1	Up	1	22.50	20.88	0.535	0.777	YES
L673	LTE B41	QPSK20M	40185	1	50	Top Side	1	Up	1	24.00	22.82	0.677	0.888	YES
L674	LTE B41	QPSK20M	40620	1	50	Top Side	1	Up	1	24.00	22.86	0.630	0.818	YES
L675	LTE B41	QPSK20M	41055	1	50	Top Side	1	Up	1	24.00	22.91	0.615	0.790	YES
L676	LTE B41	QPSK20M	41490	1	50	Top Side	1	Up	1	24.00	22.92	0.569	0.730	YES
L677	LTE B41	QPSK20M	41055	100	0	Top Side	1	Up	1	22.50	20.79	0.555	0.823	YES
L588	LTE B41	QPSK20M	39750	1	50	Top Side	1	Up	2	24.00	22.96	0.773	0.982	YES
L596	LTE B66	QPSK20M	132322	1	50	Front Face	1	Down	1	24.00	22.58	0.257	0.356	YES
L597	LTE B66	QPSK20M	132322	1	50	Rear Face	1	Down	1	24.00	22.58	0.383	0.531	YES
L598	LTE B66	QPSK20M	132322	1	50	Left Side	1	Down	1	24.00	22.58	0.053	0.074	YES
L599	LTE B66	QPSK20M	132322	1	50	Right Side	1	Down	1	24.00	22.58	0.091	0.126	YES
L600	LTE B66	QPSK20M	132322	1	50	Bottom Side	1	Down	1	24.00	22.58	0.542	0.752	YES
L601	LTE B66	QPSK20M	132322	50	25	Front Face	1	Down	1	23.00	21.74	0.259	0.346	YES
L602	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Down	1	23.00	21.74	0.386	0.516	YES
L603	LTE B66	QPSK20M	132322	50	25	Left Side	1	Down	1	23.00	21.74	0.053	0.071	YES
L604	LTE B66	QPSK20M	132322	50	25	Right Side	1	Down	1	23.00	21.74	0.091	0.122	YES
L605	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	1	23.00	21.74	0.539	0.720	YES
L606	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	2	23.00	21.74	0.518	0.692	YES
L614	LTE B66	QPSK20M	132322	1	50	Front Face	1	Up	1	24.00	22.58	0.251	0.348	YES
L615	LTE B66	QPSK20M	132322	1	50	Rear Face	1	Up	1	24.00	22.58	0.299	0.415	YES
L616	LTE B66	QPSK20M	132322	1	50	Left Side	1	Up	1	24.00	22.58	0.054	0.075	YES
L617	LTE B66	QPSK20M	132322	1	50	Top Side	1	Up	1	24.00	22.58	0.438	0.607	YES
L618	LTE B66	QPSK20M	132322	50	25	Front Face	1	Up	1	23.00	21.74	0.234	0.313	YES
L619	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Up	1	23.00	21.74	0.283	0.378	YES
L620	LTE B66	QPSK20M	132322	50	25	Left Side	1	Up	1	23.00	21.74	0.058	0.077	YES
L621	LTE B66	QPSK20M	132322	50	25	Top Side	1	Up	1	23.00	21.74	0.398	0.532	YES
L622	LTE B66	QPSK20M	132322	1	50	Top Side	1	Up	2	24.00	22.58	0.435	0.603	YES

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 1g (W/kg)	Reported 1g SAR	Product Specific 10-g SAR Exclusion
W62	802.11b	6	Front Face	1	20	18.92	0.270	0.346	YES
W63	802.11b	6	Rear Face	1	20	18.92	0.308	0.395	YES
W64	802.11b	6	Right Side	1	20	18.92	0.204	0.262	YES
W65	802.11b	6	Top Side	1	20	18.92	0.362	0.464	YES
W78	802.11n HT40	46	Front Face	1	19	18.81	0.122	0.131	YES
W79	802.11n HT40	46	Rear Face	1	19	18.81	0.229	0.246	YES
W80	802.11n HT40	46	Right Side	1	19	18.81	0.198	0.213	YES
W81	802.11n HT40	46	Top Side	1	19	18.81	0.249	0.268	YES
W108	802.11ac VHT80	155	Front Face	1	19	18.76	0.059	0.064	YES
W109	802.11ac VHT80	155	Rear Face	1	19	18.76	0.291	0.317	YES
W110	802.11ac VHT80	155	Right Side	1	19	18.76	0.208	0.226	YES
W111	802.11ac VHT80	155	Top Side	1	19	18.76	0.280	0.305	YES

Product specific 10-g SAR test results

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Data Rate	Duty Cycle (%)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR
B09	BT DH5	0	Front Face	0	1	76.92	11	10.33	0	0.130	0.053	0.080
B10	BT DH5	0	Rear Face	0	1	76.92	11	10.33	0.01	0.156	0.055	0.083
B11	BT DH5	0	Right Side	0	1	76.92	11	10.33	0.18	0.109	0.044	0.066
B12	BT DH5	0	Top Side	0	1	76.92	11	10.33	0.02	0.164	0.058	0.088
W88	802.11n HT40	54	Front Face	0	MCS0	97.13	16	15.85	0.13	1.180	0.305	0.325
W89	802.11n HT40	54	Rear Face	0	MCS0	97.13	16	15.85	0	1.350	0.322	0.343
W90	802.11n HT40	54	Right Side	0	MCS0	97.13	16	15.85	0.04	1.320	0.307	0.327
W91	802.11n HT40	54	Top Side	0	MCS0	97.13	16	15.85	-0.07	3.180	0.631	0.672
W98	802.11ac VHT80	138	Front Face	0	MCS0	97.13	15.5	15.38	-0.12	0.322	0.121	0.128
W99	802.11ac VHT80	138	Rear Face	0	MCS0	97.13	15.5	15.38	0	1.830	0.507	0.537
W100	802.11ac VHT80	138	Right Side	0	MCS0	97.13	15.5	15.38	-0.04	1.520	0.385	0.407
W101	802.11ac VHT80	138	Top Side	0	MCS0	97.13	15.5	15.38	-0.03	2.350	0.555	0.587

Note: The value with boldface is the maximum SAR Value of each test band.

7.3 MULTIPLE TRANSMITTER EVALUATION

The following tables list information which is relevant for the decision if a simultaneous transmit evaluation is necessary according to FCC KDB 447498D01 General RF Exposure Guidance v06.

The location of the antenna inside EUT, please refer to Appendix E.

7.3.1 SIMULTANEOUS TRANSMISSION CONDITIONS

Per FCC KDB 447498 D01, SAR compliance for simultaneous transmission must be considered when the maximum duration of overlapping transmissions, including network hand-offs, is greater than 30 seconds. This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis.

The Simultaneous Transmission Possibilities of this device are as below:

NO.	Simultaneous Tx Combination	Head	Body-worn (15mm)	Hotspot (10mm)	Product specific 10-g (0mm)
1	GSM/UMTS/LTE(Down Antenna) + 2.4G WIFI	Yes	Yes	Yes	Yes
2	GSM/UMTS/LTE(Down Antenna) + 5G WIFI	Yes	Yes	Yes	Yes
3	GSM/UMTS/LTE(Down Antenna) + BT	Yes	Yes	No	Yes
4	GSM/UMTS/LTE(Up Antenna) + 2.4G WIFI	Yes	Yes	Yes	Yes
5	GSM/UMTS/LTE(Up Antenna) + 5G WIFI	Yes	Yes	Yes	Yes
6	GSM/UMTS/LTE(Up Antenna) + BT	Yes	Yes	No	Yes

Note:

- 1) 2G&3G&4G share the same Tx antenna and can't transmit simultaneously.
- 2) WiFi and Bluetooth share the same Tx antenna and can't transmit simultaneously.
- 3) Down Antenna and Up Antenna can't transmit simultaneously.

7.3.2 SAR SUMMATION SCENARIO

1. About BT/WIFI and GSM/UMTS/LTE Down Antenna

Position	Head				Body-worn		Hotspot					
	Right Cheek	Right Tilted	Left Cheek	Left Tilted	Front Face (1.5cm)	Rear Face (1.5cm)	Front Face (1cm)	Rear Face (1cm)	Left Side (1cm)	Right Side (1cm)	Top Side (1cm)	Bottom Side (1cm)
GSM 850	0.215	0.103	0.216	0.123	0.198	0.279	0.396	0.540	0.429	0.291	/	0.634
GSM 1900	0.076	0.061	0.101	0.073	0.107	0.141	0.133	0.194	0.028	0.040	/	0.246
UMTS B2	0.127	0.135	0.215	0.084	0.193	0.271	0.328	0.470	0.085	0.126	/	0.670
UMTS B4	0.077	0.048	0.149	0.045	0.171	0.223	0.213	0.338	0.025	0.069	/	0.469
UMTS B5	0.175	0.124	0.196	0.121	0.214	0.229	0.214	0.297	0.261	0.146	/	0.100
LTE B2	0.136	0.118	0.209	0.118	0.220	0.265	0.306	0.407	0.143	0.138	/	0.649
LTE B4	0.132	0.091	0.244	0.081	0.212	0.322	0.338	0.516	0.069	0.114	/	0.702
LTE B5	0.226	0.116	0.251	0.127	0.210	0.266	0.212	0.226	0.251	0.141	/	0.300
LTE B7	0.357	0.228	0.165	0.125	0.188	0.338	0.328	0.631	0.037	0.222	/	0.379
LTE B12	0.149	0.062	0.106	0.059	0.177	0.254	0.150	0.250	0.270	0.181	/	0.090
LTE B17	0.150	0.063	0.106	0.051	0.197	0.272	0.158	0.262	0.286	0.191	/	0.081
LTE B26	0.211	0.096	0.249	0.100	0.194	0.272	0.240	0.357	0.351	0.179	/	0.293
LTE B38	0.172	0.088	0.083	0.059	0.158	0.259	0.179	0.406	0.034	0.163	/	0.273
LTE B41	0.195	0.116	0.120	0.072	0.164	0.281	0.175	0.359	0.014	0.115	/	0.251
LTE B66	0.202	0.132	0.261	0.133	0.213	0.266	0.343	0.511	0.070	0.121	/	0.714
WIFI 2.4G	0.437	0.442	0.763	0.606	0.218	0.216	0.282	0.322	/	0.213	0.378	/
WIFI 5.2G	/	/	/	/	/	/	0.132	0.248	/	0.214	0.270	/
WIFI 5.3G	0.059	0.149	0.276	0.325	0.268	0.554	/	/	/	/	/	/
WIFI 5.6G	0.192	0.234	0.229	0.348	0.125	0.534	/	/	/	/	/	/
WIFI 5.8G	0.250	0.287	0.249	0.385	0.105	0.457	0.062	0.307	/	0.220	0.296	/
Bluetooth	0.060	0.071	0.106	0.097	0.015	0.012	0.080	0.083	/	0.066	0.088	0.060
Max. SAR Summation	0.794	0.670	1.024	0.739	0.488	0.892	0.678	0.953	0.429	0.511	0.378	0.714

Note: MAX. $\sum SAR_{1g} = 1.024W/Kg < 1.6W/Kg$, so the SAR to peak location separation ratio should not be considered.

2. About BT/WIFI and GSM/UMTS/LTE Up Antenna

Position	Head				Body-worn		Hotspot					
	Right Cheek	Right Tilted	Left Cheek	Left Tilted	Front Face (1.5cm)	Rear Face (1.5cm)	Front Face (1cm)	Rear Face (1cm)	Left Side (1cm)	Right Side (1cm)	Top Side (1cm)	Bottom Side (1cm)
GSM 850	0.438	0.290	0.253	0.239	0.062	0.073	0.209	0.237	0.155	/	0.253	/
GSM 1900	0.431	0.481	0.344	0.408	0.090	0.111	0.216	0.271	0.049	/	0.470	/
UMTS B2	0.860	0.884	0.552	0.643	0.267	0.295	0.472	0.546	0.081	/	0.850	/
UMTS B4	1.057	1.136	0.635	0.791	0.243	0.245	0.332	0.355	0.095	/	0.539	/
UMTS B5	0.712	0.289	0.425	0.454	0.055	0.059	0.160	0.096	0.087	/	0.090	/
LTE B2	0.836	0.918	0.516	0.623	0.226	0.289	0.366	0.380	0.088	/	0.615	/
LTE B4	0.815	0.941	0.587	0.719	0.168	0.257	0.248	0.298	0.060	/	0.515	/
LTE B5	0.782	0.408	0.505	0.409	0.088	0.099	0.147	0.151	0.086	/	0.168	/
LTE B7	0.914	0.993	0.307	0.402	0.468	0.797	0.333	0.639	0.271	/	0.860	/
LTE B12	0.130	0.110	0.067	0.070	0.015	0.012	0.015	0.027	0.028	/	0.029	/
LTE B17	0.138	0.102	0.079	0.084	0.015	0.013	0.016	0.026	0.023	/	0.031	/
LTE B26	0.641	0.420	0.432	0.368	0.058	0.071	0.095	0.112	0.059	/	0.111	/
LTE B38	1.094	1.117	0.349	0.409	0.260	0.360	0.432	0.694	0.491	/	0.554	/
LTE B41	0.816	1.023	0.281	0.388	0.258	0.537	0.324	0.600	0.266	/	0.992	/
LTE B66	0.860	0.883	0.612	0.692	0.184	0.221	0.297	0.360	0.073	/	0.509	/
WIFI 2.4G	0.437	0.442	0.763	0.606	0.218	0.216	0.282	0.322	/	0.213	0.378	/
WIFI 5.2G	/	/	/	/	/	/	0.132	0.248	/	0.214	0.270	/
WIFI 5.3G	0.059	0.149	0.276	0.325	0.268	0.554	/	/	/	/	/	/
WIFI 5.6G	0.192	0.234	0.229	0.348	0.125	0.534	/	/	/	/	/	/
WIFI 5.8G	0.250	0.287	0.249	0.385	0.105	0.457	0.062	0.307	/	0.220	0.296	/
Bluetooth	0.060	0.071	0.106	0.097	0.015	0.012	0.080	0.083	/	0.066	0.088	/
Max. SAR Summation	1.531	1.578	1.398	1.397	0.736	1.351	0.754	1.016	0.491	0.220	1.403	0.000

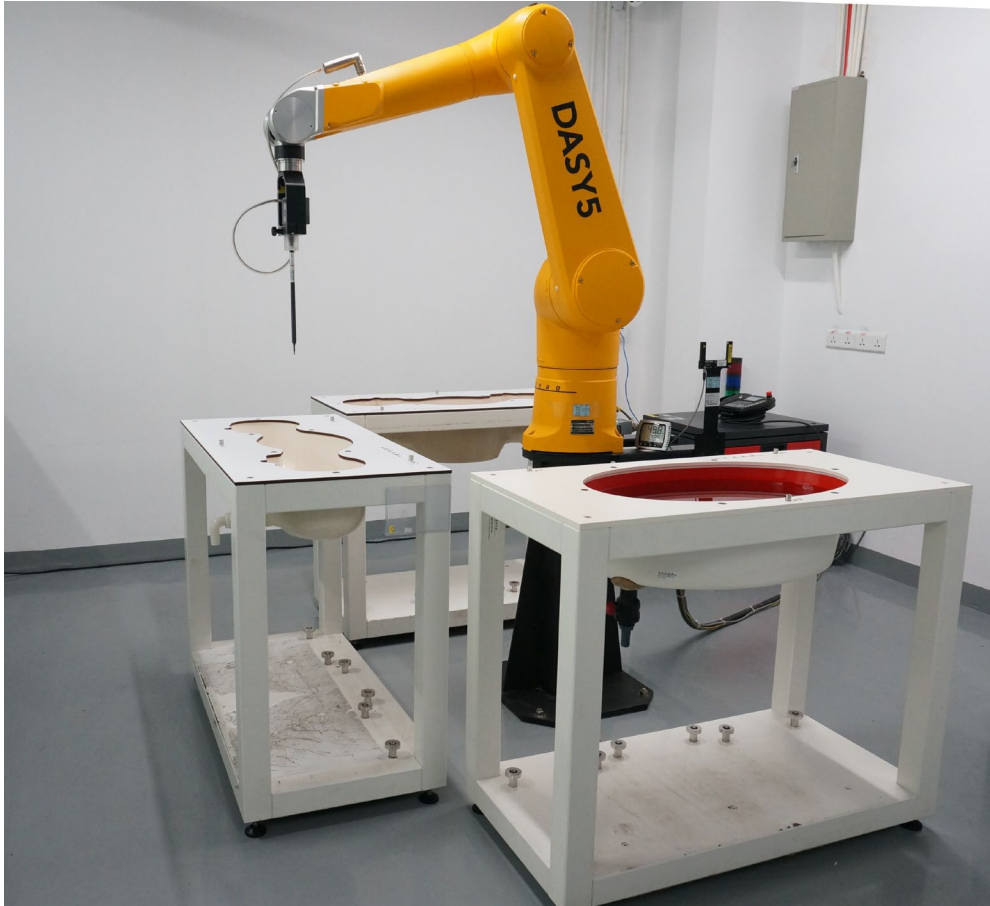
Note: MAX. $\sum \text{SAR}_{1g} = 1.578 \text{W/Kg} < 1.6 \text{W/Kg}$, so the SAR to peak location separation ratio should not be considered.

3. About product specific 10g SAR

Position	Specific 10g SAR					
	Front Face (0cm)	Rear Face (0cm)	Left Side (0cm)	Right Side (0cm)	Top Side (0cm)	Bottom Side (0cm)
GSM 850	/	/	/	/	/	/
GSM 1900	/	/	/	/	/	/
UMTS B2	/	/	/	/	/	/
UMTS B4	/	/	/	/	/	/
UMTS B5	/	/	/	/	/	/
LTE B2	/	/	/	/	/	/
LTE B4	/	/	/	/	/	/
LTE B5	/	/	/	/	/	/
LTE B7	/	/	/	/	/	/
LTE B12	/	/	/	/	/	/
LTE B26	/	/	/	/	/	/
LTE B38	/	/	/	/	/	/
LTE B41	/	/	/	/	/	/
LTE B66	/	/	/	/	/	/
WiFi 2.4G	/	/	/	/	/	/
WiFi 5.2G	/	/	/	/	/	/
WiFi 5.3G	0.325	0.343	/	0.327	0.672	/
WiFi 5.6G	0.128	0.537	/	0.407	0.587	/
WiFi 5.8G	/	/	/	/	/	/
BT	0.080	0.083	/	0.066	0.088	/
Max. SAR Summation	0.325	0.537	0.000	0.407	0.672	0.000

Note:

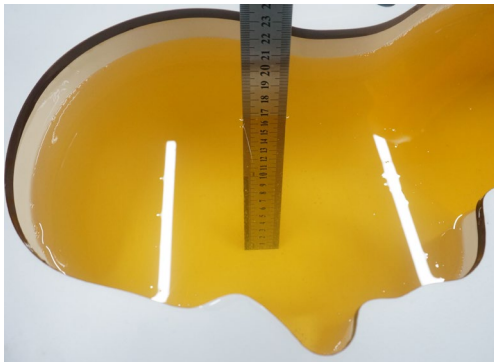
The Simultaneous SAR of product Specific 10-g SAR is 0.672W/Kg which less than 4.0W/Kg, so the Simultaneous SAR is not required to calculate.

APPENDIX**1. TEST LAYOUT****Specific Absorption Rate Test Layout**

Liquid depth in the flat Phantom ($\geq 15\text{cm}$ depth)

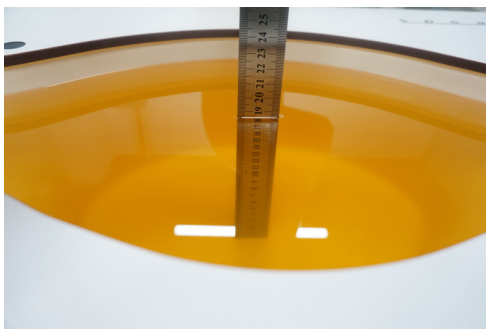
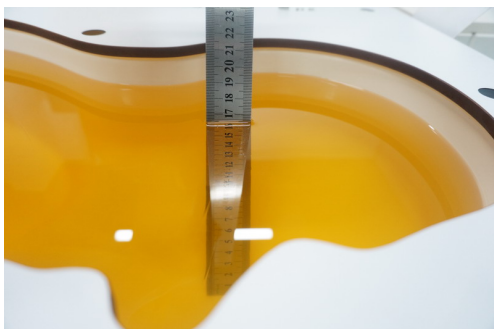
HSL_695MHz-925MHz_Head_16.7cm

HSL_695MHz-925MHz_Body_19.4cm



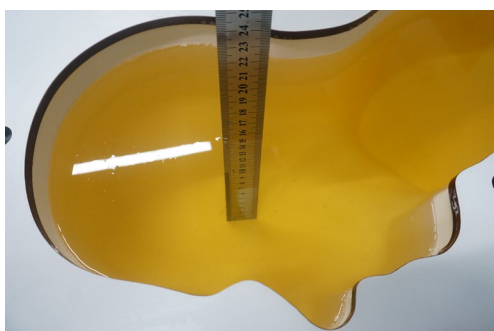
HSL_1700MHz-1900MHz_Head_16.6cm

HSL_1700MHz-1900MHz_Body_18.5cm

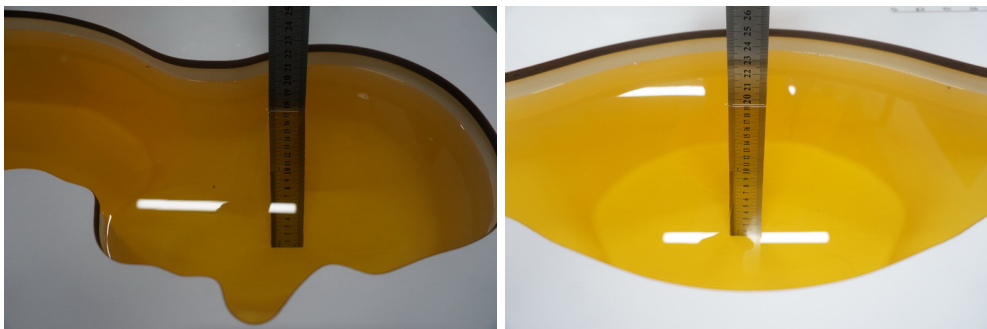


HSL_1900MHz-2300MHz_Head_15.9cm

HSL_1900MHz-2300MHz_Body_18.7cm



HSL_2300MHz-2700MHz_Head_17.4cm HSL_2300MHz-2700MHz_Body_19.5cm



HSL_5000MHz-6000MHz_Head_16.2cm HSL_5000MHz-6000MHz_Body_19cm



Appendix A. SAR Plots of System Verification

(Pls See BTL-FCC SAR-1-2110C043A_Appendix A.)

Appendix B. SAR Plots of SAR Measurement

(Pls See BTL-FCC SAR-1-2110C043A_Appendix B.)

Appendix C. Calibration Certificate

(Pls See BTL-FCC SAR-1-2110C043A_Appendix C.)

Appendix D. Photographs of the Test Set-Up

(Pls See BTL-FCC SAR-1-2110C043A_Appendix D.)

Appendix E. Antenna location

(Pls See BTL-FCC SAR-1-2110C043A_Appendix E.)

Appendix F. Conducted Power Measurement Result

(Pls See BTL-FCC SAR-1-2110C043A_Appendix F.)

End of Test Report