

FCC SAR Test Report

FCC ID: R9C-CPH2365

Project No. : 2108C136
Equipment : Mobile Phone
Brand Name : OPPO
Test Model : CPH2365
Series Model : N/A
Date of Receipt : Dec. 23, 2020
Date of Test : Dec. 29, 2020 ~ Aug. 31, 2021
Issued Date : Sep. 01, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG202108301, DG202108302.
Standard(s) : Please refer to page 2.
Applicant : Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address : NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China
Manufacturer : Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address : NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China
Factory : Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address : NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, 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 : Herbert Liu



TESTING CERT #5123.02

Add: No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, 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	41
6.2.1 HEAD TEST CONFIGURATION	41
6.2.2 BODY-WORN TEST CONFIGURATION	42
6.2.3 HOTSPOT TEST CONFIGURATION	42

Table of Contents	Page
6.2.4 PRODUCT SPECIFIC 10-G SAR TEST CONFIGURATION	42
6.3 GENERAL DESCRIPTION OF TEST PROCEDURES	43
6.4 RECEIVER DETECTION MECHANISM	43
6.4.1 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF 2G&3G&4G	43
6.4.2 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM OF WIFI	44
6.4.3 MORE DETAILS INFORMATION FOLLOWINGS	45
7 . TEST RESULT	46
7.1 CONDUCTED POWER RESULTS	46
7.2 SAR TEST RESULTS	47
7.2.1 SAR MEASUREMENT RESULT OF HEAD	49
7.2.2 SAR MEASUREMENT RESULT OF BODY-WORN	59
7.2.3 SAR MEASUREMENT RESULT OF HOTSPOT	66
7.2.4 SAR MEASUREMENT RESULT OF PRODUCT SPECIFIC 10-G SAR	76
7.3 MULTIPLE TRANSMITTER EVALUATION	86
7.3.1 SIMULTANEOUS TRANSMISSION CONDITIONS	86
7.3.2 SAR SUMMATION SCENARIO	87
APPENDIX	90
1. TEST LAYOUT	90
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.	Sep. 01, 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	1.17	0.18	0.46	/	1.55
GSM1900	0.79	0.29	0.97	/	
UMTS B2	0.69	0.65	0.57	/	
UMTS B4	0.60	0.62	0.83	/	
UMTS B5	0.76	0.25	0.27	/	
LTE B2	0.70	0.31	0.91	/	
LTE B4	1.01	0.42	1.12	/	
LTE B5	1.04	0.26	0.29	/	
LTE B7	0.54	0.52	0.87	/	
LTE B12	0.43	0.14	0.19	/	
LTE B17	0.64	0.18	0.17	/	
LTE B26	1.18	0.23	0.24	/	
LTE B38	0.71	0.38	0.94	/	
LTE B41	1.02	0.32	0.78	/	
LTE B66	0.89	0.62	0.64	/	
2.4G WLAN	0.66	0.18	0.37	/	
5.2G WLAN	/	/	0.44	/	
5.3G WLAN	0.71	0.58	/	1.41	
5.6G WLAN	0.71	0.61	/	1.63	
5.8G WLAN	0.59	0.26	0.43	/	
Bluetooth	0.38	0.03	/	0.25	

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. = 18°C, Max. = 25°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	OPPO		
Model Name	CPH2365		
IMEI	Sample 1	864213050021017	
	Sample 2	864213050022973	
S/N	Sample 1	72a788ef	
	Sample 2	9d875934	
Hardware Version	11		
Software Version	ColorOS V11.1		
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	2535~2655	
	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		

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	6																							
DC-HSDPA Category	24																							
HSPA+ Category	6																							
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)																							
	<table border="1"> <thead> <tr> <th>5G WiFi</th> <th>5.2G</th> <th>5.3G</th> <th>5.6G</th> <th>5.8G</th> </tr> </thead> <tbody> <tr> <td>802.11a/n HT20/ ac VHT20</td> <td>36-40-44-48</td> <td>52-56-60-64</td> <td>100-104-108- 112-116-132- 136-140</td> <td>149-153-157- 161-165</td> </tr> <tr> <td>802.11n HT40/ ac VHT40</td> <td>38-46</td> <td>54-62</td> <td>102-110-118- 126-134</td> <td>151-159</td> </tr> <tr> <td>802.11ac VHT80</td> <td>42</td> <td>58</td> <td>106-122</td> <td>155</td> </tr> </tbody> </table>					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
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	-3.60	-3.50	/
	GSM 1900	-0.68	-1.45	/
	UMTS B2	-1.10	-1.50	/
	UMTS B4	-3.90	-1.90	/
	UMTS B5	-3.60	-7.50	/
	LTE B2	-1.10	-1.50	/
	LTE B4	-3.90	-1.90	/
	LTE B5	-3.60	-3.50	/
	LTE B7	-3.40	-1.50	/
	LTE B12	-5.20	-3.00	/
	LTE B17	-4.80	-3.50	/
	LTE B26	-4.70	-3.10	/
	LTE B38	-3.40	-1.50	/
	LTE B41	-1.40	-1.40	/
	LTE B66	-3.30	-1.50	/
	Bluetooth	/	/	-3.00
WLAN 2.4G	/	/	-3.00	
WLAN 5G	/	/	-3.00	
Other Information				
Battery	Model Name	BLP851		
	Power Rating	3.87Vdc, 4880mAh/18.88Wh		
	Manufacturer	1# Sunwoda 2# TWS		
With Earphone(Yes/No)	Yes			

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	DAE3	540	Dec. 11, 2020	1 Year
4	Data Acquisition Electronics	Speag	DAE3	420	Jun. 22, 2020	1 Year
5	Data Acquisition Electronics	Speag	DAE4	420	Dec. 09, 2020	1 Year
6	E-field Probe	Speag	EX3DV4	3974	Dec. 18, 2020	1 Year
7	E-field Probe	Speag	ES3DV3	3162	May 09, 2020	1 Year
8*	E-field Probe	Speag	ES3DV3	3162	Jun. 15, 2021	1 Year
9	E-field Probe	Speag	EX3DV4	7544	Oct. 29, 2020	1 Year
10	System Validation Dipole	Speag	D750V3	1095	Jun. 05, 2018	3 Years
11*	System Validation Dipole	Speag	D750V3	1095	Jun. 01, 2021	3 Years
12	System Validation Dipole	Speag	D835V2	4d160	Jun. 05, 2018	3 Years
13*	System Validation Dipole	Speag	D835V2	4d160	Jun. 01, 2021	3 Years
14	System Validation Dipole	Speag	D1750V2	1101	Jun. 07, 2018	3 Years
15*	System Validation Dipole	Speag	D1750V2	1101	Jun. 01, 2021	3 Years
16	System Validation Dipole	Speag	D1900V2	5d179	Jun. 07, 2018	3 Years
17*	System Validation Dipole	Speag	D1900V2	5d179	May. 31, 2021	3 Years
18	System Validation Dipole	Speag	D2450V2	919	Jun. 11, 2018	3 Years
19*	System Validation Dipole	Speag	D2450V2	919	May. 28, 2021	3 Years
20	System Validation Dipole	Speag	D2600V2	1067	Jun. 11, 2018	3 Years
21*	System Validation Dipole	Speag	D2600V2	1067	May. 28, 2021	3 Years
22	System Validation Dipole	Speag	D5GHzV2	1160	Jun. 20, 2018	3 Years
23*	System Validation Dipole	Speag	D5GHzV2	1160	May. 27, 2021	3 Years
24	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1469	N/A	N/A
25	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1811	N/A	N/A
26	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1812	N/A	N/A
27	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1784	N/A	N/A
28	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1896	N/A	N/A
29	Radio Communication Analver	Anritsu	MT8821C	6261915479	Jul. 25, 2020	1 Year
30*	Radio Communication Analver	Anritsu	MT8821C	6261915479	Jul. 24, 2021	1 Year
31	Radio Communication Analver	Anritsu	MT8820C	6201525877	Jul. 25, 2020	1 Year
32*	Radio Communication Analver	Anritsu	MT8820C	6201525877	Jul. 24, 2021	1 Year

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
33	Wideband Radio Communication Tester	R&S	CMW500	104462	Jul. 25, 2020	1 Year
34*	Wideband Radio Communication Tester	R&S	CMW500	104462	Jul. 27, 2021	1 Year
35	Power Amplifier	Mini-Circuits	ZHL-42W+	QA1333003	Mar. 10, 2020	1 Year
36*	Power Amplifier	Mini-Circuits	ZHL-42W+	QA1333003	Dec. 29, 2020	1 Year
37	Power Amplifier	Mini-Circuits	ZVE-8G+	520701341	Mar. 10, 2020	1 Year
38*	Power Amplifier	Mini-Circuits	ZVE-8G+	520701341	Mar. 02, 2021	1 Year
39	DC Source metter	Iteck	IT6154	0061041267682 01001	Jul. 25, 2020	1 Year
40*	DC Source metter	Iteck	IT6154	0061041267682 01001	Jul. 24, 2021	1 Year
41	Signal Analyzer	R&S	FSV7	103120	Jul. 25, 2020	1 Year
42*	Signal Analyzer	R&S	FSV7	103120	Jul. 10, 2021	1 Year
43	Vector Network Analyzer	Anritsu	MS46522B	1538101	Jul. 25, 2020	1 Year
44*	Vector Network Analyzer	Anritsu	MS46522B	1538101	Jul. 10, 2021	1 Year
45	Signal Generator	R&S	SMF100A	101214	Feb. 29, 2020	1 Year
46*	Signal Generator	R&S	SMF100A	101214	Feb. 27, 2021	1 Year
47	Smart Power Sensor	R&S	NRP-Z21	102209	Mar. 07, 2020	1 Year
48*	Smart Power Sensor	R&S	NRP-Z21	102209	Feb. 28, 2021	1 Year
49	Dielectric Assessment Kit	Speag	DAK-3.5	1226	N/A	N/A
50	Directional Coupler	Woken	TS-PCC0M-05	107090019	Mar. 01, 2020	1 Year
51*	Directional Coupler	Woken	TS-PCC0M-05	0107090019	Feb. 27, 2021	1 Year
52	Coupler	Woken	0110A05601O-10	COM5BNW1A2	Mar. 01, 2020	1 Year
53*	Coupler	Woken	0110A05601O-10	COM5BNW1A2	Feb. 27, 2021	1 Year
54	Digital Themometer	LKM	DTM3000	3519	Jul. 02, 2020	1 Year
55*	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.
3. * The test equipment recalibrated between different test periods were within the valid period when the tests were performed.

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.

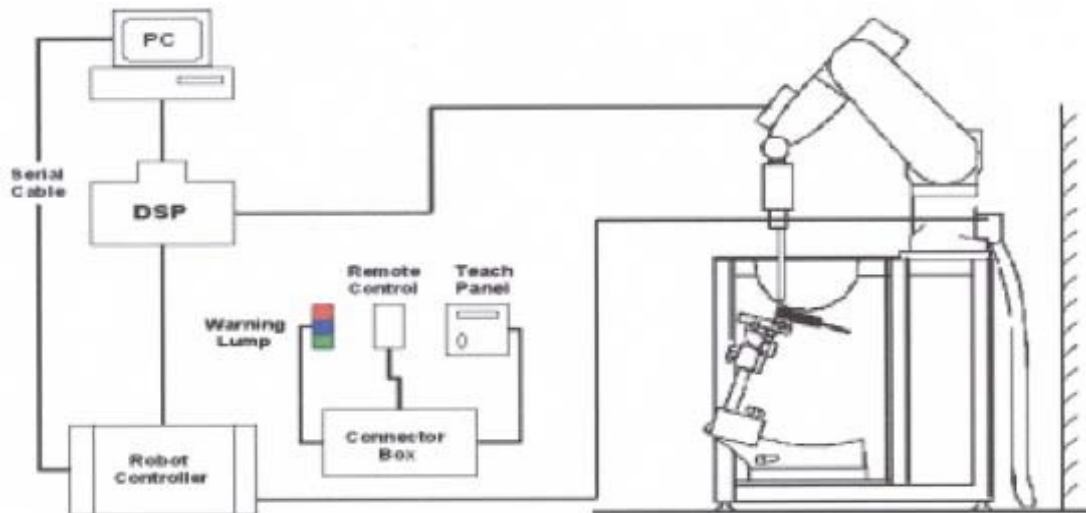
3. SAR MEASUREMENTS SYSTEM CONFIGURATION

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		
			$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	$\Delta z_{\text{zoom}}(n>1)^*$	
$\leq 2\text{GHz}$	$\leq 15\text{mm}$	$\leq 8\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 30\text{mm}$
2-3GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 30\text{mm}$
3-4GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 28\text{mm}$
4-5GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 2.5\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 25\text{mm}$
5-6GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 2\text{mm}$	$\leq 2\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 22\text{mm}$

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], [dBref], 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	Dcp _i
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)
	dcp _i = 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 parameter 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	22.1	0.882	40.732	0.89	41.9	-0.90	-2.79	Jan. 02, 2021
Head	750	22.2	0.883	42.935	0.89	41.9	-0.79	2.47	Jan. 03, 2021
Head	750	22.2	0.883	43.069	0.89	41.9	-0.79	2.79	Aug. 27, 2021
Head	835	22.3	0.941	40.647	0.90	41.5	4.56	-2.06	Dec. 30, 2020
Head	835	22.2	0.942	42.423	0.90	41.5	4.67	2.22	Dec. 31, 2020
Head	835	22.4	0.943	40.617	0.90	41.5	4.78	-2.13	Jan. 01, 2021
Head	835	22.4	0.939	40.843	0.90	41.5	4.33	-1.58	Jan. 14, 2021
Head	835	22.5	0.945	40.642	0.90	41.5	5.00	-2.07	Jan. 20, 2021
Head	835	22.2	0.943	42.435	0.90	41.5	4.78	2.25	Aug. 27, 2021
Head	1750	22.4	1.388	39.810	1.37	40.1	1.31	-0.72	Dec. 29, 2020
Head	1750	22.3	1.387	40.097	1.37	40.1	1.24	-0.01	Jan. 04, 2021
Head	1750	22.5	1.399	39.463	1.37	40.1	2.12	-1.59	Jan. 09, 2021
Head	1750	22.4	1.405	39.622	1.37	40.1	2.55	-1.19	Jan. 10, 2021
Head	1750	22.1	1.410	39.444	1.37	40.1	2.92	-1.64	Jan. 18, 2021
Head	1750	22.4	1.392	39.912	1.37	40.1	1.61	-0.47	Aug. 31, 2021
Head	1900	22.2	1.334	39.841	1.40	40.0	-4.71	-0.40	Jan. 08, 2021
Head	1900	22.4	1.335	39.045	1.40	40.0	-4.64	-2.39	Jan. 10, 2021
Head	1900	22.5	1.338	39.837	1.40	40.0	-4.43	-0.41	Jan. 18, 2021
Head	1900	22.1	1.334	39.841	1.40	40.0	-4.71	-0.40	Aug. 27, 2021
Head	2450	22.4	1.818	38.507	1.80	39.2	1.00	-1.77	Jan. 11, 2021
Head	2450	22.3	1.861	38.552	1.80	39.2	3.39	-1.65	Jan. 11, 2021
Head	2450	22.5	1.789	39.720	1.80	39.2	-0.61	1.33	Aug. 27, 2021
Head	2600	22.4	2.009	37.805	1.96	39.0	2.50	-3.06	Jan. 05, 2021
Head	2600	22.3	2.017	38.599	1.96	39.0	2.91	-1.03	Jan. 06, 2021
Head	2600	22.1	2.031	38.227	1.96	39.0	3.62	-1.98	Jan. 07, 2021
Head	2600	22.5	1.954	39.231	1.96	39.0	-0.31	0.59	Aug. 27, 2021
Head	5200	22.1	4.629	36.213	4.66	36.0	-0.67	0.59	Jan. 10, 2021
Head	5300	22.1	4.746	35.949	4.76	35.9	-0.29	0.14	Jan. 10, 2021
Head	5300	22.2	4.755	35.039	4.76	35.9	-0.11	-2.40	Jan. 11, 2021
Head	5250	22.3	4.832	35.636	4.71	36.0	2.59	-0.87	Aug. 28, 2021
Head	5600	22.1	5.113	35.162	5.07	35.5	0.85	-0.95	Jan. 10, 2021
Head	5600	22.2	5.086	34.380	5.07	35.5	0.32	-3.15	Jan. 11, 2021
Head	5600	22.3	5.245	34.796	5.07	35.5	3.45	-1.98	Aug. 28, 2021
Head	5750	22.3	5.439	34.425	5.22	35.4	4.20	-2.62	Aug. 28, 2021
Head	5800	22.1	5.393	34.704	5.27	35.3	2.33	-1.69	Jan. 10, 2021
Head	5800	22.2	5.283	33.901	5.27	35.3	0.25	-3.96	Jan. 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.

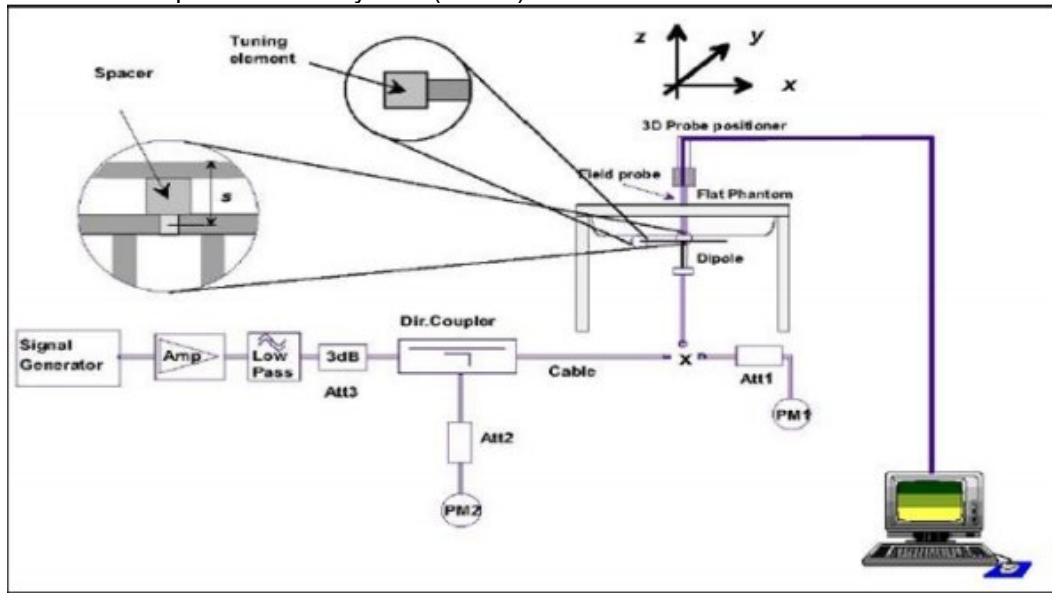
System Check	Date	Frequency (MHz)	Targeted SAR-1g (W/kg)	Measured SAR-1g (W/kg)	normalized SAR-1g (W/kg)	Deviation (%)	Dipole S/N
Head	Jan. 02, 2021	750	8.47	2.04	8.16	-3.66	1095
Head	Jan. 03, 2021	750	8.47	2.08	8.32	-1.77	1095
Head	Aug. 27, 2021	750	8.59	2.06	8.24	-4.07	1095
Head	Dec. 30, 2020	835	9.23	2.35	9.40	1.84	4d160
Head	Dec. 31, 2020	835	9.23	2.42	9.68	4.88	4d160
Head	Jan. 01, 2021	835	9.23	2.36	9.44	2.28	4d160
Head	Jan. 14, 2021	835	9.23	2.38	9.52	3.14	4d160
Head	Jan. 20, 2021	835	9.23	2.41	9.64	4.44	4d160
Head	Aug. 27, 2021	835	9.52	2.36	9.44	-0.84	4d160
Head	Dec. 29, 2020	1750	37.00	9.48	37.92	2.49	1101
Head	Jan. 04, 2021	1750	37.00	9.43	37.72	1.95	1101
Head	Jan. 09, 2021	1750	37.00	9.65	38.60	4.32	1101
Head	Jan. 10, 2021	1750	37.00	9.14	36.56	-1.19	1101
Head	Jan. 18, 2021	1750	37.00	9.10	36.40	-1.62	1101
Head	Aug. 31, 2021	1750	37.00	9.37	37.48	1.30	1101
Head	Jan. 08, 2021	1900	39.50	9.96	39.84	0.86	5d179
Head	Jan. 10, 2021	1900	39.50	9.61	38.44	-2.68	5d179
Head	Jan. 18, 2021	1900	39.50	10.01	40.04	1.37	5d179
Head	Aug. 27, 2021	1900	39.50	9.53	38.12	-3.49	5d179
Head	Jan. 11, 2021	2450	52.10	12.60	50.40	-3.26	919
Head	Jan. 11, 2021	2450	52.10	12.50	50.00	-4.03	919
Head	Aug. 27, 2021	2450	52.10	13.60	54.40	4.41	919
Head	Jan. 05, 2021	2600	56.10	14.60	58.40	4.10	1067
Head	Jan. 06, 2021	2600	56.10	13.80	55.20	-1.60	1067
Head	Jan. 07, 2021	2600	56.10	13.91	55.64	-0.82	1067
Head	Aug. 27, 2021	2600	56.90	14.50	58.00	1.93	1067
Head	Jan. 10, 2021	5200	75.30	7.50	75.00	-0.40	1160
Head	Jan. 10, 2021	5300	76.80	7.94	79.40	3.39	1160
Head	Jan. 11, 2021	5300	76.80	7.87	78.70	2.47	1160
Head	Aug. 28, 2021	5250	78.00	7.81	78.10	0.13	1160
Head	Jan. 10, 2021	5600	78.60	7.75	77.50	-1.40	1160
Head	Jan. 11, 2021	5600	78.60	7.48	74.80	-4.83	1160
Head	Aug. 28, 2021	5600	80.60	8.17	81.70	1.36	1160
Head	Aug. 28, 2021	5750	76.50	7.47	74.70	-2.35	1160
Head	Jan. 10, 2021	5800	77.90	7.77	77.70	-0.26	1160
Head	Jan. 11, 2021	5800	77.90	7.61	76.10	-2.31	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 level 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 $\Delta CQI = 8$ $A_{hs} = \beta_{hs} / \beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
 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 $\beta_d = 15/15$

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 $\leq 1.2W/kg$, 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) ³	β_c/β_d ²	β_{hs} ¹	β_{ec} ²	β_{ed} ²	β_e ² (SF) ³	β_{ed} ² (code) ³	CM ⁽²⁾ ⁴ (dB) ⁵	MP R ⁶ (dB) ⁷	AG ⁽⁴⁾ Index ⁸	E-TFC I ⁹
1 ¹	11/15 ⁽³⁾ ²	15/15 ⁽³⁾ ²	64 ³	11/15 ⁽³⁾ ²	22/15 ¹	209/225 ²	1039/225 ²	4 ³	1 ³	1.0 ⁴	0.0 ⁷	20 ⁸	75 ⁹
2 ¹	6/15 ²	15/15 ²	64 ³	6/15 ²	12/15 ¹	12/15 ²	94/75 ²	4 ³	1 ³	3.0 ⁴	2.0 ⁷	12 ⁸	67 ⁹
3 ¹	15/15 ²	9/15 ²	64 ³	15/9 ²	30/15 ¹	30/15 ²	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	4 ³	2 ³	2.0 ⁴	1.0 ⁷	15 ⁸	92 ⁹
4 ¹	2/15 ²	15/15 ²	64 ³	2/15 ²	4/15 ¹	2/15 ²	56/75 ²	4 ³	1 ³	3.0 ⁴	2.0 ⁷	17 ⁸	71 ⁹
5 ¹	15/15 ⁽⁴⁾ ²	15/15 ⁽⁴⁾ ²	64 ³	15/15 ⁽⁴⁾ ²	30/15 ¹	24/15 ²	134/15 ²	4 ³	1 ³	1.0 ⁴	0.0 ⁷	21 ⁸	81 ⁹

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, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference⁴

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 $\beta_d = 15/15$ ⁵

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 $\beta_d = 15/15$ ⁵

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g⁶

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.⁷

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.

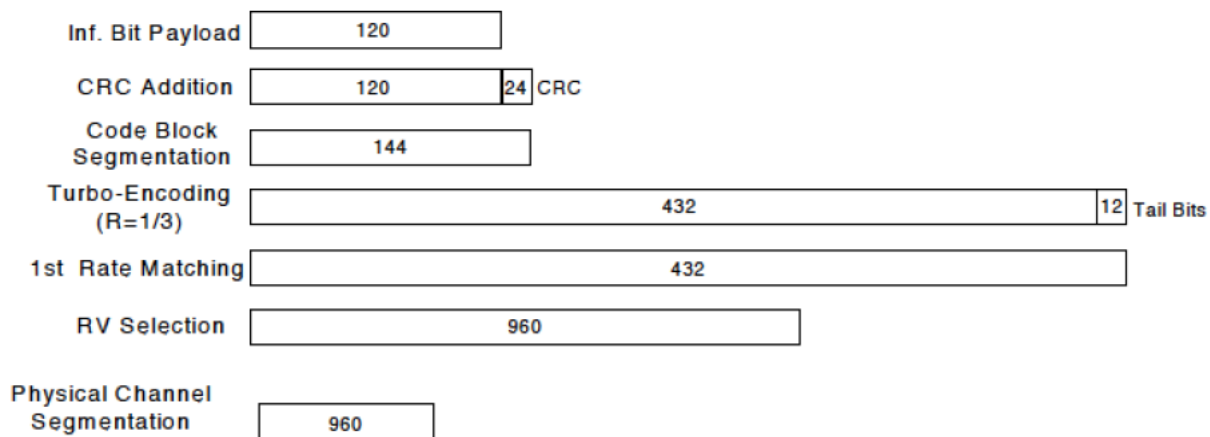


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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: 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 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 $\beta_{IS} = 30/15 * \beta_c$.

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

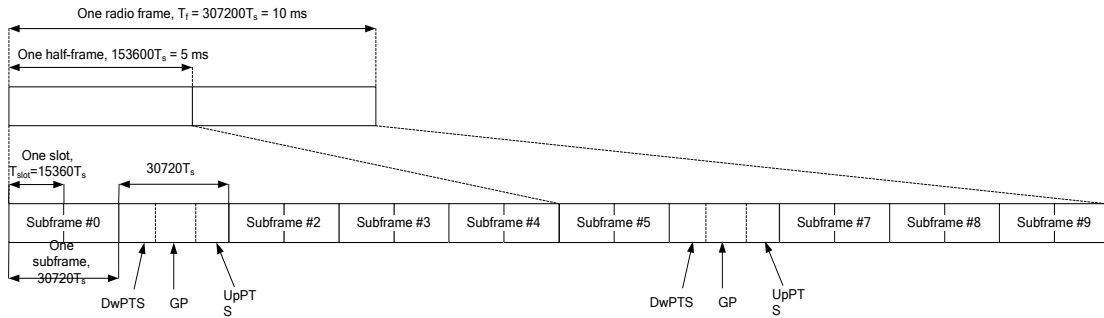


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
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:

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

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.

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

And we can get different Duty cycles under different configurations:

Uplink-downlink configuration	Configuration of special subframe										
	Subframe number			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 on
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 SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal.

2.4G

Mode	802.11b	802.11g	802.11n HT20	802.11n HT40
Duty cycle	100%			
Crest factor	1			

5G

Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20	802.11ac HT40	802.11ac VH80
Duty cycle	100%					
Crest factor	1					

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

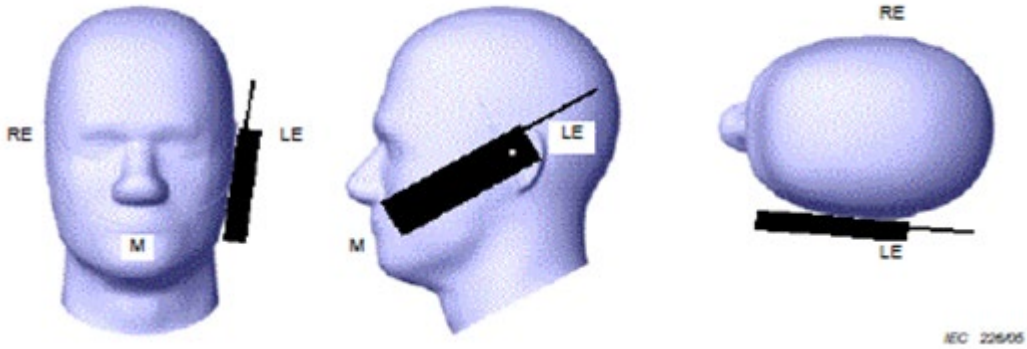
For OFDM, in both 2.4GHz and 5GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM 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

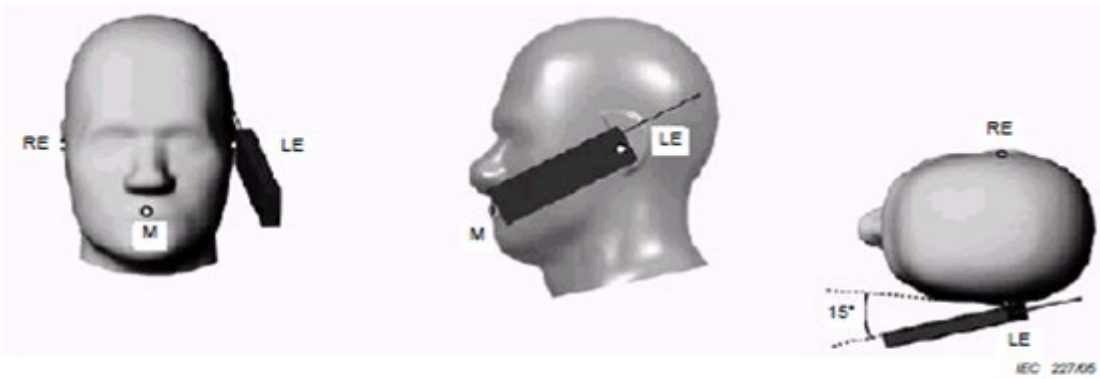
Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.



Key
M Mouth reference point
LE Left ear reference point (ERP)
RE Right ear reference point (ERP)

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.



Key
M Mouth reference point
LE Left ear reference point (ERP)
RE Right ear reference point (ERP)

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.

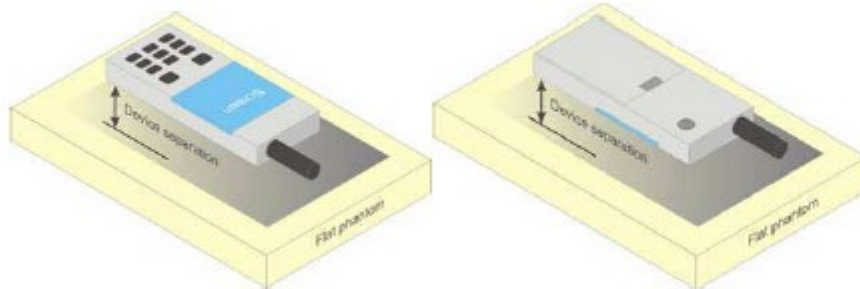


Figure 3 Test positions for body-worn device

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	31	24.5	24.5	24.5	24	24	24.5	23.5	24.5	24.5	24.5	24	24	24
Receiver off (Body-worn)	33.5	31	22.5	22.5	24.5	24	24	24.5	23.5	24.5	24.5	24.5	24	24	24
Receiver off (Hotspot & Specific 10g SAR)	33.5	31	24.5	24.5	24.5	24	24	24.5	23.5	24.5	24.5	24.5	24	24	24

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)	33.5	29	19	17.5	23	18	18	24.5	16	24.5	24.5	24.5	20	21	17
Receiver off (Body-worn)	33.5	31	24.5	25.3	24.5	24	24	24.5	23.5	24.5	24.5	24.5	24	24	24
Receiver off (Hotspot & Specific 10g SAR)	33.5	31	21	21	24.5	22.5	24	24.5	22	24.5	24.5	24.5	24	24	21

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 ac20	802.11 a/ac20	802.11 n20/ac40	802.11 n40/ac80	802.11 a/ac20	802.11 n20/ac40	802.11 n40/ac80
WiFi only (Full Power & Body-worn)	20	19	18	18.5	19	18	17	19	18	17
Receiver on (Head)	16	15	14	14.5	15	14	13	15	14	13
Receiver off (Hotspot)	20	19	18	18.5	17	16	15	-	-	-
Receiver off (Specific 10g SAR)	-	-	-	-	-	-	-	19	18	17
WiFi Antenna Simultaneous with 2G&3G&4G receiver on (Head)	-	-	-	-	15	14	13	14	13	12

Power scenario	2.4G		5G (Not Suport Hotspot) (5500MHz~5700MHz)			5G (5750MHz~5850MHz)		
	BT	BLE	802.11 a	802.11 n20/ac20	802.11 n40/ac40	802.11 a	802.11 n20/ac20	802.11 n40/ac40
WiFi only (Full Power & Body-worn)	12	7	19	18	17	16.5	16.5	16.5
Receiver on (Head)	-	-	17	16	15	16.5	16.5	16.5
Receiver off (Hotspot)	-	-	-	-	-	16.5	16.5	16.5
Receiver off (Specific 10g SAR)	-	-	19	18	17	-	-	-
WiFi Antenna Simultaneous with 2G&3G&4G receiver on (Head)	-	-	14	13	12	14	14	14

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	Battery	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	1	33.5	32.99	0.14	0.153	0.118	0.172
G02	GSM 850	GSM	190	Right Tilted	Down	1	1	33.5	32.99	0.06	0.067	0.060	0.075
G03	GSM 850	GSM	190	Left Cheek	Down	1	1	33.5	32.99	-0.05	0.179	0.136	0.201
G04	GSM 850	GSM	190	Left Tilted	Down	1	1	33.5	32.99	-0.1	0.092	0.077	0.103
G05	GSM 850	GSM	190	Left Cheek	Down	2	1	33.5	32.99	0.05	0.186	0.139	0.209
G06	GSM 850	GSM	190	Left Cheek	Down	2	2	33.5	32.99	0.08	0.158	0.141	0.178
G101	GSM 850	GSM	190	Left Cheek	Down	2	1	33.5	32.99	0.13	0.162	0.124	0.182
G08	GSM 850	GSM	190	Right Cheek	Up	1	1	33.5	33.19	-0.09	0.970	0.567	1.042
G09	GSM 850	GSM	190	Right Tilted	Up	1	1	33.5	33.19	0.06	0.883	0.452	0.948
G10	GSM 850	GSM	190	Left Cheek	Up	1	1	33.5	33.19	0.06	0.729	0.396	0.783
G11	GSM 850	GSM	190	Left Tilted	Up	1	1	33.5	33.19	0.12	0.637	0.362	0.684
G08	GSM 850	GSM	128	Right Cheek	Up	1	1	33.5	33.15	-0.02	0.953	0.553	1.033
G08	GSM 850	GSM	251	Right Cheek	Up	1	1	33.5	33.01	0.02	0.926	0.554	1.037
G08	GSM 850	GSM	128	Right Tilted	Up	1	1	33.5	33.15	-0.13	0.806	0.403	0.874
G08	GSM 850	GSM	251	Right Tilted	Up	1	1	33.5	33.01	-0.09	0.853	0.433	0.955
G12	GSM 850	GSM	190	Right Cheek	Up	2	1	33.5	33.19	0.02	0.926	0.554	0.995
G13	GSM 850	GSM	190	Right Cheek	Up	1	2	33.5	33.19	-0.03	0.918	0.534	0.986
G14	GSM 850	GSM	190	Right Cheek (Repeated)	Up	1	1	33.5	33.19	0	1.090	0.620	1.171
G102	GSM 850	GSM	190	Right Cheek (Repeated)	Up	1	1	33.5	33.19	0.11	0.687	0.267	0.738
G15	GSM 1900	GSM	661	Right Cheek	Down	1	1	31	29.74	0.09	0.044	0.029	0.059
G16	GSM 1900	GSM	661	Right Tilted	Down	1	1	31	29.74	0.02	0.040	0.023	0.054
G17	GSM 1900	GSM	661	Left Cheek	Down	1	1	31	29.74	-0.02	0.066	0.040	0.088
G18	GSM 1900	GSM	661	Left Tilted	Down	1	1	31	29.74	0.04	0.045	0.027	0.060
G19	GSM 1900	GSM	661	Left Cheek	Down	2	1	31	29.74	-0.14	0.064	0.039	0.086
G20	GSM 1900	GSM	661	Left Cheek	Down	1	2	31	29.74	0.02	0.061	0.038	0.082
G103	GSM 1900	GSM	661	Left Cheek	Down	1	1	31	29.74	0	0.042	0.026	0.056
G22	GSM 1900	GSM	661	Right Cheek	Up	1	1	29	28.23	0.03	0.523	0.247	0.624
G23	GSM 1900	GSM	661	Right Tilted	Up	1	1	29	28.23	0.15	0.654	0.292	0.781
G24	GSM 1900	GSM	661	Left Cheek	Up	1	1	29	28.23	-0.07	0.370	0.175	0.442
G25	GSM 1900	GSM	661	Left Tilted	Up	1	1	29	28.23	0.05	0.499	0.226	0.596
G26	GSM 1900	GSM	661	Right Tilted	Up	2	1	29	28.23	0.17	0.659	0.292	0.787
G27	GSM 1900	GSM	661	Right Tilted	Up	2	2	29	28.23	0	0.647	0.286	0.773
G104	GSM 1900	GSM	661	Right Tilted	Up	2	1	29	28.23	0.15	0.642	0.327	0.767

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	Battery	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	1	24.5	22.67	0.03	0.078	0.053	0.118
U02	UMTS B2	RMC12.2K	9400	Right Tilted	Down	1	1	24.5	22.67	0	0.087	0.054	0.133
U03	UMTS B2	RMC12.2K	9400	Left Cheek	Down	1	1	24.5	22.67	0.15	0.145	0.090	0.221
U04	UMTS B2	RMC12.2K	9400	Left Tilted	Down	1	1	24.5	22.67	-0.11	0.100	0.063	0.152
U05	UMTS B2	RMC12.2K	9400	Left Cheek	Down	2	1	24.5	22.67	-0.05	0.137	0.086	0.209
U06	UMTS B2	RMC12.2K	9400	Left Cheek	Down	1	2	24.5	22.67	0.02	0.141	0.089	0.215
U119	UMTS B2	RMC12.2K	9400	Left Cheek	Down	1	1	24.5	22.67	-0.03	0.087	0.056	0.133
U08	UMTS B2	RMC12.2K	9400	Right Cheek	Up	1	1	19	18.41	0.04	0.466	0.207	0.534
U09	UMTS B2	RMC12.2K	9400	Right Tilted	Up	1	1	19	18.41	0.03	0.600	0.263	0.687
U10	UMTS B2	RMC12.2K	9400	Left Cheek	Up	1	1	19	18.41	-0.01	0.381	0.166	0.436
U11	UMTS B2	RMC12.2K	9400	Left Tilted	Up	1	1	19	18.41	0.16	0.441	0.195	0.505
U12	UMTS B2	RMC12.2K	9400	Right Tilted	Up	2	1	19	18.41	0.01	0.576	0.257	0.660
U13	UMTS B2	RMC12.2K	9400	Right Tilted	Up	1	2	19	18.41	0.08	0.592	0.256	0.678
U120	UMTS B2	RMC12.2K	9400	Right Tilted	Up	1	1	19	18.41	-0.17	0.380	0.189	0.435
U15	UMTS B4	RMC12.2K	1413	Right Cheek	Down	1	1	24.5	23.01	0.09	0.099	0.061	0.139
U16	UMTS B4	RMC12.2K	1413	Right Tilted	Down	1	1	24.5	23.01	0.1	0.055	0.031	0.077
U17	UMTS B4	RMC12.2K	1413	Left Cheek	Down	1	1	24.5	23.01	-0.06	0.149	0.092	0.210
U18	UMTS B4	RMC12.2K	1413	Left Tilted	Down	1	1	24.5	23.01	0.05	0.085	0.051	0.120
U19	UMTS B4	RMC12.2K	1413	Left Cheek	Down	2	1	24.5	23.01	-0.19	0.118	0.074	0.166
U20	UMTS B4	RMC12.2K	1413	Left Cheek	Down	1	2	24.5	23.01	0.12	0.135	0.087	0.190
U121	UMTS B4	RMC12.2K	1413	Left Cheek	Down	1	1	24.5	23.01	0.11	0.088	0.047	0.124
U22	UMTS B4	RMC12.2K	1413	Right Cheek	Up	1	1	17.5	17.14	-0.12	0.424	0.185	0.461
U23	UMTS B4	RMC12.2K	1413	Right Tilted	Up	1	1	17.5	17.14	0.08	0.556	0.242	0.604
U24	UMTS B4	RMC12.2K	1413	Left Cheek	Up	1	1	17.5	17.14	-0.07	0.327	0.142	0.355
U25	UMTS B4	RMC12.2K	1413	Left Tilted	Up	1	1	17.5	17.14	-0.02	0.435	0.184	0.473
U26	UMTS B4	RMC12.2K	1413	Right Tilted	Up	2	1	17.5	17.14	0	0.552	0.240	0.600
U27	UMTS B4	RMC12.2K	1413	Right Tilted	Up	1	2	17.5	17.14	0.16	0.544	0.233	0.591
U122	UMTS B4	RMC12.2K	1413	Right Tilted	Up	1	1	17.5	17.14	0.18	0.370	0.185	0.402
U29	UMTS B5	RMC12.2K	4182	Right Cheek	Down	1	1	24.5	22.81	0.05	0.145	0.118	0.214
U30	UMTS B5	RMC12.2K	4182	Right Tilted	Down	1	1	24.5	22.81	-0.07	0.081	0.065	0.119
U31	UMTS B5	RMC12.2K	4182	Left Cheek	Down	1	1	24.5	22.81	0.04	0.186	0.140	0.274
U32	UMTS B5	RMC12.2K	4182	Left Tilted	Down	1	1	24.5	22.81	-0.11	0.108	0.083	0.159
U33	UMTS B5	RMC12.2K	4182	Left Cheek	Down	2	1	24.5	22.81	0.02	0.171	0.131	0.252
U34	UMTS B5	RMC12.2K	4182	Left Cheek	Down	1	2	24.5	22.81	0.03	0.175	0.147	0.258
U123	UMTS B5	RMC12.2K	4182	Left Cheek	Down	1	1	24.5	22.81	-0.14	0.219	0.100	0.323
U36	UMTS B5	RMC12.2K	4233	Right Cheek	Up	1	1	23	22.09	-0.06	0.558	0.318	0.688
U37	UMTS B5	RMC12.2K	4233	Right Tilted	Up	1	1	23	22.09	0.02	0.247	0.155	0.305
U38	UMTS B5	RMC12.2K	4233	Left Cheek	Up	1	1	23	22.09	0.06	0.271	0.184	0.334
U39	UMTS B5	RMC12.2K	4233	Left Tilted	Up	1	1	23	22.09	0.09	0.245	0.155	0.302
U40	UMTS B5	RMC12.2K	4233	Right Cheek	Up	2	1	23	22.09	0.01	0.616	0.352	0.760
U41	UMTS B5	RMC12.2K	4233	Right Cheek	Up	2	2	23	22.09	0.07	0.606	0.340	0.747
U124	UMTS B5	RMC12.2K	4233	Right Cheek	Up	2	1	23	22.09	-0.02	0.568	0.277	0.700

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	Battery	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	0	Right Cheek	Down	1	1	24.00	23.39	0.13	0.065	0.044	0.074
L02	LTE B2	QPSK20M	18900	1	0	Right Tilted	Down	1	1	24.00	23.39	0	0.066	0.041	0.075
L03	LTE B2	QPSK20M	18900	1	0	Left Cheek	Down	1	1	24.00	23.39	0.08	0.107	0.069	0.123
L04	LTE B2	QPSK20M	18900	1	0	Left Tilted	Down	1	1	24.00	23.39	0.01	0.084	0.052	0.096
L05	LTE B2	QPSK20M	18900	50	0	Right Cheek	Down	1	1	23.00	21.63	0.09	0.047	0.033	0.065
L06	LTE B2	QPSK20M	18900	50	0	Right Tilted	Down	1	1	23.00	21.63	-0.11	0.046	0.029	0.064
L07	LTE B2	QPSK20M	18900	50	0	Left Cheek	Down	1	1	23.00	21.63	0.04	0.078	0.050	0.106
L08	LTE B2	QPSK20M	18900	50	0	Left Tilted	Down	1	1	23.00	21.63	0.02	0.063	0.039	0.086
L09	LTE B2	QPSK20M	18900	1	0	Left Cheek	Down	2	1	24.00	23.39	-0.05	0.091	0.058	0.105
L10	LTE B2	QPSK20M	18900	1	0	Left Cheek	Down	1	2	24.00	23.39	-0.06	0.099	0.064	0.114
L650	LTE B2	QPSK20M	18900	1	0	Left Cheek	Down	1	1	24.00	23.39	-0.15	0.101	0.066	0.116
L12	LTE B2	QPSK20M	18900	1	50	Right Cheek	Up	1	1	18.00	17.92	-0.09	0.529	0.228	0.539
L13	LTE B2	QPSK20M	18900	1	50	Right Tilted	Up	1	1	18.00	17.92	0.08	0.614	0.273	0.625
L14	LTE B2	QPSK20M	18900	1	50	Left Cheek	Up	1	1	18.00	17.92	0.03	0.327	0.158	0.333
L15	LTE B2	QPSK20M	18900	1	50	Left Tilted	Up	1	1	18.00	17.92	0.16	0.449	0.208	0.457
L16	LTE B2	QPSK20M	18900	50	0	Right Cheek	Up	1	1	18.00	17.67	0.01	0.501	0.215	0.541
L17	LTE B2	QPSK20M	18900	50	0	Right Tilted	Up	1	1	18.00	17.67	0.09	0.635	0.285	0.685
L18	LTE B2	QPSK20M	18900	50	0	Left Cheek	Up	1	1	18.00	17.67	-0.02	0.341	0.164	0.368
L19	LTE B2	QPSK20M	18900	50	0	Left Tilted	Up	1	1	18.00	17.67	0	0.489	0.219	0.528
L20	LTE B2	QPSK20M	18900	50	0	Right Tilted	Up	2	1	18.00	17.67	-0.04	0.652	0.292	0.704
L21	LTE B2	QPSK20M	18900	50	0	Right Tilted	Up	2	2	18.00	17.67	0.07	0.639	0.281	0.690
L651	LTE B2	QPSK20M	18900	50	0	Right Tilted	Up	2	1	18.00	17.67	0.1	0.516	0.262	0.557
L23	LTE B4	QPSK20M	20175	1	0	Right Cheek	Down	1	1	24.00	22.93	0.12	0.068	0.043	0.087
L24	LTE B4	QPSK20M	20175	1	0	Right Tilted	Down	1	1	24.00	22.93	0.08	0.057	0.033	0.073
L25	LTE B4	QPSK20M	20175	1	0	Left Cheek	Down	1	1	24.00	22.93	-0.03	0.112	0.070	0.143
L26	LTE B4	QPSK20M	20175	1	0	Left Tilted	Down	1	1	24.00	22.93	0.01	0.048	0.030	0.062
L27	LTE B4	QPSK20M	20050	50	25	Right Cheek	Down	1	1	23.00	21.79	-0.15	0.054	0.035	0.072
L28	LTE B4	QPSK20M	20050	50	25	Right Tilted	Down	1	1	23.00	21.79	0.03	0.048	0.027	0.064
L29	LTE B4	QPSK20M	20050	50	25	Left Cheek	Down	1	1	23.00	21.79	0.02	0.089	0.055	0.117
L30	LTE B4	QPSK20M	20050	50	25	Left Tilted	Down	1	1	23.00	21.79	0.09	0.045	0.026	0.060
L31	LTE B4	QPSK20M	20175	1	0	Left Cheek	Down	2	1	24.00	22.93	0.04	0.115	0.072	0.147
L32	LTE B4	QPSK20M	20175	1	0	Left Cheek	Down	2	2	24.00	22.93	0.13	0.103	0.060	0.132
L652	LTE B4	QPSK20M	20175	1	0	Left Cheek	Down	2	1	24.00	22.93	0	0.068	0.043	0.087

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L34	LTE B4	QPSK20M	20175	1	99	Right Cheek	Up	1	1	18.00	17.90	0.03	0.579	0.250	0.593
L35	LTE B4	QPSK20M	20175	1	99	Right Tilted	Up	1	1	18.00	17.90	-0.1	0.815	0.353	0.835
L36	LTE B4	QPSK20M	20175	1	99	Left Cheek	Up	1	1	18.00	17.90	0.06	0.365	0.176	0.374
L37	LTE B4	QPSK20M	20175	1	99	Left Tilted	Up	1	1	18.00	17.90	-0.11	0.545	0.261	0.558
L38	LTE B4	QPSK20M	20175	50	50	Right Cheek	Up	1	1	18.00	17.73	-0.18	0.641	0.278	0.682
L39	LTE B4	QPSK20M	20175	50	50	Right Tilted	Up	1	1	18.00	17.73	0.08	0.830	0.358	0.883
L40	LTE B4	QPSK20M	20175	50	50	Left Cheek	Up	1	1	18.00	17.73	-0.03	0.376	0.186	0.400
L41	LTE B4	QPSK20M	20175	50	50	Left Tilted	Up	1	1	18.00	17.73	0.02	0.580	0.263	0.617
L42	LTE B4	QPSK20M	20050	1	99	Right Tilted	Up	1	1	18.00	17.85	-0.05	0.759	0.329	0.786
L43	LTE B4	QPSK20M	20300	1	99	Right Tilted	Up	1	1	18.00	17.78	0.17	0.846	0.370	0.890
L44	LTE B4	QPSK20M	20050	50	50	Right Tilted	Up	1	1	18.00	17.72	0.13	0.773	0.346	0.824
L45	LTE B4	QPSK20M	20300	50	50	Right Tilted	Up	1	1	18.00	17.71	0.08	0.817	0.365	0.874
L46	LTE B4	QPSK20M	20050	100	0	Right Tilted	Up	1	1	18.00	17.70	0.05	0.801	0.353	0.859
L47	LTE B4	QPSK20M	20300	1	99	Right Tilted	Up	2	1	18.00	17.78	0.06	0.887	0.395	0.933
L48	LTE B4	QPSK20M	20300	1	99	Right Tilted	Up	2	2	18.00	17.78	-0.11	0.812	0.367	0.854
L49	LTE B4	QPSK20M	20300	1	99	Right Tilted (Repeated)	Up	2	1	18.00	17.78	0.02	0.959	0.426	1.009
L653	LTE B4	QPSK20M	20300	1	99	Right Tilted (Repeated)	Up	2	1	18.00	17.78	0.07	0.896	0.406	0.943
L51	LTE B5	QPSK10M	20450	1	49	Right Cheek	Down	1	1	24.50	23.86	0.01	0.186	0.144	0.216
L52	LTE B5	QPSK10M	20450	1	49	Right Tilted	Down	1	1	24.50	23.86	0.06	0.088	0.075	0.102
L53	LTE B5	QPSK10M	20450	1	49	Left Cheek	Down	1	1	24.50	23.86	0.02	0.202	0.151	0.234
L54	LTE B5	QPSK10M	20450	1	49	Left Tilted	Down	1	1	24.50	23.86	-0.01	0.116	0.091	0.134
L55	LTE B5	QPSK10M	20450	25	12	Right Cheek	Down	1	1	23.50	22.73	-0.16	0.126	0.106	0.151
L56	LTE B5	QPSK10M	20450	25	12	Right Tilted	Down	1	1	23.50	22.73	0.13	0.072	0.062	0.086
L57	LTE B5	QPSK10M	20450	25	12	Left Cheek	Down	1	1	23.50	22.73	0.02	0.145	0.109	0.173
L58	LTE B5	QPSK10M	20450	25	12	Left Tilted	Down	1	1	23.50	22.73	0.04	0.095	0.076	0.114
L59	LTE B5	QPSK10M	20450	1	49	Left Cheek	Down	2	1	24.50	23.86	0.02	0.204	0.156	0.236
L60	LTE B5	QPSK10M	20450	1	49	Left Cheek	Down	2	2	24.50	23.86	-0.06	0.201	0.148	0.233
L654	LTE B5	QPSK10M	20450	1	49	Left Cheek	Down	2	1	24.50	23.86	0.17	0.188	0.125	0.218
L62	LTE B5	QPSK10M	20450	1	49	Right Cheek	Up	1	1	24.50	24.12	0.09	0.864	0.515	0.944
L63	LTE B5	QPSK10M	20450	1	49	Right Tilted	Up	1	1	24.50	24.12	0.05	0.685	0.383	0.748
L64	LTE B5	QPSK10M	20450	1	49	Left Cheek	Up	1	1	24.50	24.12	-0.04	0.724	0.499	0.791
L65	LTE B5	QPSK10M	20450	1	49	Left Tilted	Up	1	1	24.50	24.12	-0.06	0.560	0.327	0.612
L66	LTE B5	QPSK10M	20450	25	12	Right Cheek	Up	1	1	23.50	22.95	0.01	0.570	0.339	0.646
L67	LTE B5	QPSK10M	20450	25	12	Right Tilted	Up	1	1	23.50	22.95	0.03	0.505	0.287	0.573
L68	LTE B5	QPSK10M	20450	25	12	Left Cheek	Up	1	1	23.50	22.95	0.07	0.529	0.328	0.600
L69	LTE B5	QPSK10M	20450	25	12	Left Tilted	Up	1	1	23.50	22.95	-0.12	0.471	0.274	0.534
L70	LTE B5	QPSK10M	20525	1	0	Right Cheek	Up	1	1	24.50	24.09	0.03	0.889	0.716	1.008
L71	LTE B5	QPSK10M	20600	1	49	Right Cheek	Up	1	1	24.50	23.99	0.05	0.920	0.630	1.043
L72	LTE B5	QPSK10M	20450	50	0	Right Cheek	Up	1	1	23.50	22.97	0.08	0.675	0.622	0.765
L73	LTE B5	QPSK10M	20600	1	49	Right Cheek	Up	2	1	24.50	24.12	0.11	0.867	0.563	0.947
L74	LTE B5	QPSK10M	20600	1	49	Right Cheek	Up	1	2	24.50	24.12	0.02	0.887	0.524	0.969
L75	LTE B5	QPSK10M	20600	1	49	Right Cheek (Repeated)	Up	1	1	24.50	24.12	0.07	0.894	0.559	0.977
L655	LTE B5	QPSK10M	20600	1	49	Right Cheek	Up	1	1	24.50	23.99	-0.08	0.882	0.326	0.992

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L77	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	1	1	23.50	22.33	-0.17	0.414	0.216	0.542
L78	LTE B7	QPSK20M	21100	1	50	Right Tilted	Down	1	1	23.50	22.33	0.01	0.252	0.126	0.330
L79	LTE B7	QPSK20M	21100	1	50	Left Cheek	Down	1	1	23.50	22.33	0.08	0.189	0.106	0.248
L80	LTE B7	QPSK20M	21100	1	50	Left Tilted	Down	1	1	23.50	22.33	0.11	0.191	0.099	0.250
L81	LTE B7	QPSK20M	21100	50	25	Right Cheek	Down	1	1	22.50	21.18	-0.06	0.351	0.181	0.476
L82	LTE B7	QPSK20M	21100	50	25	Right Tilted	Down	1	1	22.50	21.18	0.07	0.090	0.049	0.122
L83	LTE B7	QPSK20M	21100	50	25	Left Cheek	Down	1	1	22.50	21.18	0.15	0.082	0.050	0.111
L84	LTE B7	QPSK20M	21100	50	25	Left Tilted	Down	1	1	22.50	21.18	-0.12	0.068	0.039	0.092
L85	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	2	1	23.50	22.33	0.03	0.415	0.216	0.544
L86	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	2	2	23.50	22.33	0.02	0.388	0.197	0.508
L656	LTE B7	QPSK20M	21100	1	50	Right Cheek	Down	2	1	23.50	22.33	-0.03	0.335	0.187	0.439
L88	LTE B7	QPSK20M	21100	1	50	Right Cheek	Up	1	1	16.00	15.94	0.09	0.347	0.141	0.352
L89	LTE B7	QPSK20M	21100	1	50	Right Tilted	Up	1	1	16.00	15.94	0.07	0.501	0.191	0.508
L90	LTE B7	QPSK20M	21100	1	50	Left Cheek	Up	1	1	16.00	15.94	-0.15	0.168	0.089	0.170
L91	LTE B7	QPSK20M	21100	1	50	Left Tilted	Up	1	1	16.00	15.94	0	0.199	0.102	0.202
L92	LTE B7	QPSK20M	21100	50	25	Right Cheek	Up	1	1	16.00	15.86	0	0.483	0.209	0.499
L93	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	1	1	16.00	15.86	0.05	0.513	0.196	0.530
L94	LTE B7	QPSK20M	21100	50	25	Left Cheek	Up	1	1	16.00	15.86	-0.19	0.136	0.067	0.141
L95	LTE B7	QPSK20M	21100	50	25	Left Tilted	Up	1	1	16.00	15.86	0.04	0.189	0.084	0.195
L96	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	2	1	16.00	15.86	0.06	0.510	0.189	0.527
L97	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	1	2	16.00	15.86	-0.04	0.497	0.178	0.514
L657	LTE B7	QPSK20M	21100	50	25	Right Tilted	Up	1	1	16.00	15.86	0.02	0.509	0.228	0.526
L99	LTE B12	QPSK10M	23095	1	0	Right Cheek	Down	1	1	24.50	23.63	0.08	0.091	0.077	0.111
L100	LTE B12	QPSK10M	23095	1	0	Right Tilted	Down	1	1	24.50	23.63	-0.02	0.049	0.040	0.060
L101	LTE B12	QPSK10M	23095	1	0	Left Cheek	Down	1	1	24.50	23.63	0.19	0.108	0.086	0.132
L102	LTE B12	QPSK10M	23095	1	0	Left Tilted	Down	1	1	24.50	23.63	0.06	0.059	0.048	0.072
L103	LTE B12	QPSK10M	23130	25	0	Right Cheek	Down	1	1	23.50	22.45	-0.01	0.081	0.069	0.103
L104	LTE B12	QPSK10M	23130	25	0	Right Tilted	Down	1	1	23.50	22.45	-0.02	0.044	0.035	0.056
L105	LTE B12	QPSK10M	23130	25	0	Left Cheek	Down	1	1	23.50	22.45	-0.18	0.091	0.073	0.116
L106	LTE B12	QPSK10M	23130	25	0	Left Tilted	Down	1	1	23.50	22.45	0	0.050	0.040	0.064
L107	LTE B12	QPSK10M	23095	1	0	Left Cheek	Down	2	1	24.50	23.63	0.02	0.116	0.091	0.142
L108	LTE B12	QPSK10M	23095	1	0	Left Cheek	Down	2	2	24.50	23.63	0.03	0.111	0.082	0.136
L658	LTE B12	QPSK10M	23095	1	0	Left Cheek	Down	2	1	24.50	23.63	-0.11	0.113	0.060	0.138
L110	LTE B12	QPSK10M	23130	1	0	Right Cheek	Up	1	1	24.50	23.71	-0.15	0.243	0.166	0.291
L111	LTE B12	QPSK10M	23130	1	0	Right Tilted	Up	1	1	24.50	23.71	0.14	0.241	0.155	0.289
L112	LTE B12	QPSK10M	23130	1	0	Left Cheek	Up	1	1	24.50	23.71	-0.08	0.360	0.237	0.431
L113	LTE B12	QPSK10M	23130	1	0	Left Tilted	Up	1	1	24.50	23.71	0.09	0.261	0.169	0.313
L114	LTE B12	QPSK10M	23130	25	12	Right Cheek	Up	1	1	23.50	22.53	0.02	0.310	0.202	0.387
L115	LTE B12	QPSK10M	23130	25	12	Right Tilted	Up	1	1	23.50	22.53	0	0.226	0.146	0.282
L116	LTE B12	QPSK10M	23130	25	12	Left Cheek	Up	1	1	23.50	22.53	-0.04	0.291	0.191	0.364
L117	LTE B12	QPSK10M	23130	25	12	Left Tilted	Up	1	1	23.50	22.53	0	0.199	0.128	0.249
L118	LTE B12	QPSK10M	23130	1	0	Left Cheek	Up	2	1	24.50	23.71	-0.04	0.312	0.209	0.374
L119	LTE B12	QPSK10M	23130	1	0	Left Cheek	Up	1	2	24.50	23.71	-0.13	0.328	0.215	0.393
L659	LTE B12	QPSK10M	23130	1	0	Left Cheek	Up	1	1	24.50	23.71	-0.13	0.291	0.196	0.349

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L121	LTE B17	QPSK10M	23800	1	0	Right Cheek	Down	1	1	24.50	23.60	0.13	0.057	0.048	0.070
L122	LTE B17	QPSK10M	23800	1	0	Right Tilted	Down	1	1	24.50	23.60	0.05	0.103	0.089	0.127
L123	LTE B17	QPSK10M	23800	1	0	Left Cheek	Down	1	1	24.50	23.60	0.02	0.125	0.099	0.154
L124	LTE B17	QPSK10M	23800	1	0	Left Tilted	Down	1	1	24.50	23.60	0	0.061	0.048	0.075
L125	LTE B17	QPSK10M	23790	25	12	Right Cheek	Down	1	1	23.50	22.40	-0.03	0.080	0.068	0.103
L126	LTE B17	QPSK10M	23790	25	12	Right Tilted	Down	1	1	23.50	22.40	-0.15	0.045	0.037	0.058
L127	LTE B17	QPSK10M	23790	25	12	Left Cheek	Down	1	1	23.50	22.40	0.09	0.101	0.080	0.130
L128	LTE B17	QPSK10M	23790	25	12	Left Tilted	Down	1	1	23.50	22.40	0.17	0.050	0.041	0.064
L129	LTE B17	QPSK10M	23800	1	0	Left Cheek	Down	2	1	24.50	23.60	-0.07	0.126	0.099	0.155
L130	LTE B17	QPSK10M	23800	1	0	Left Cheek	Down	2	2	24.50	23.60	0.06	0.122	0.091	0.150
L660	LTE B17	QPSK10M	23800	1	0	Left Cheek	Down	2	1	24.50	23.60	0.05	0.124	0.077	0.153
L132	LTE B17	QPSK10M	23790	1	0	Right Cheek	Up	1	1	24.50	23.81	0	0.507	0.298	0.594
L133	LTE B17	QPSK10M	23790	1	0	Right Tilted	Up	1	1	24.50	23.81	0.09	0.468	0.271	0.548
L134	LTE B17	QPSK10M	23790	1	0	Left Cheek	Up	1	1	24.50	23.81	0.16	0.511	0.318	0.598
L135	LTE B17	QPSK10M	23790	1	0	Left Tilted	Up	1	1	24.50	23.81	-0.02	0.427	0.243	0.500
L136	LTE B17	QPSK10M	23780	25	0	Right Cheek	Up	1	1	23.50	22.58	-0.07	0.518	0.304	0.641
L137	LTE B17	QPSK10M	23780	25	0	Right Tilted	Up	1	1	23.50	22.58	0.03	0.367	0.216	0.454
L138	LTE B17	QPSK10M	23780	25	0	Left Cheek	Up	1	1	23.50	22.58	0.1	0.394	0.238	0.488
L139	LTE B17	QPSK10M	23780	25	0	Left Tilted	Up	1	1	23.50	22.58	0.18	0.328	0.188	0.406
L140	LTE B17	QPSK10M	23780	25	0	Right Cheek	Up	2	1	23.50	22.58	-0.1	0.515	0.300	0.637
L141	LTE B17	QPSK10M	23780	25	0	Right Cheek	Up	1	2	23.50	22.58	0.04	0.509	0.307	0.630
L661	LTE B17	QPSK10M	23780	25	0	Right Cheek	Up	1	1	23.50	22.58	0.02	0.483	0.250	0.598
L143	LTE B26	QPSK15M	26865	1	0	Right Cheek	Down	1	1	24.50	23.60	0.06	0.153	0.118	0.188
L144	LTE B26	QPSK15M	26865	1	0	Right Tilted	Down	1	1	24.50	23.60	0.01	0.080	0.068	0.098
L145	LTE B26	QPSK15M	26865	1	0	Left Cheek	Down	1	1	24.50	23.60	0.06	0.166	0.127	0.204
L146	LTE B26	QPSK15M	26865	1	0	Left Tilted	Down	1	1	24.50	23.60	-0.05	0.096	0.075	0.117
L147	LTE B26	QPSK15M	26865	36	19	Right Cheek	Down	1	1	23.50	22.58	0.14	0.114	0.098	0.141
L148	LTE B26	QPSK15M	26865	36	19	Right Tilted	Down	1	1	23.50	22.58	-0.17	0.069	0.050	0.085
L149	LTE B26	QPSK15M	26865	36	19	Left Cheek	Down	1	1	23.50	22.58	0.16	0.133	0.101	0.164
L150	LTE B26	QPSK15M	26865	36	19	Left Tilted	Down	1	1	23.50	22.58	0.08	0.078	0.061	0.096
L151	LTE B26	QPSK15M	26865	1	0	Left Cheek	Down	2	1	24.50	23.60	0.01	0.164	0.125	0.202
L152	LTE B26	QPSK15M	26865	1	0	Left Cheek	Down	1	2	24.50	23.60	-0.03	0.160	0.121	0.197
L662	LTE B26	QPSK15M	26865	1	0	Left Cheek	Down	1	1	24.50	23.60	0.16	0.162	0.117	0.199
L154	LTE B26	QPSK15M	26865	1	0	Right Cheek	Up	1	1	24.50	23.75	0.12	0.817	0.483	0.972
L155	LTE B26	QPSK15M	26865	1	0	Right Tilted	Up	1	1	24.50	23.75	0.03	0.567	0.319	0.674
L156	LTE B26	QPSK15M	26865	1	0	Left Cheek	Up	1	1	24.50	23.75	-0.01	0.534	0.339	0.635
L157	LTE B26	QPSK15M	26865	1	0	Left Tilted	Up	1	1	24.50	23.75	0	0.449	0.271	0.534
L158	LTE B26	QPSK15M	26765	36	0	Right Cheek	Up	1	1	23.50	22.82	0.03	0.621	0.365	0.726
L159	LTE B26	QPSK15M	26765	36	0	Right Tilted	Up	1	1	23.50	22.82	-0.14	0.521	0.293	0.609
L160	LTE B26	QPSK15M	26765	36	0	Left Cheek	Up	1	1	23.50	22.82	0.09	0.442	0.283	0.517
L161	LTE B26	QPSK15M	26765	36	0	Left Tilted	Up	1	1	23.50	22.82	0.12	0.380	0.227	0.444
L162	LTE B26	QPSK15M	26765	1	0	Right Cheek	Up	1	1	24.50	23.63	0.13	0.637	0.379	0.778
L163	LTE B26	QPSK15M	26965	1	74	Right Cheek	Up	1	1	24.50	23.74	-0.11	0.989	0.586	1.177
L164	LTE B26	QPSK15M	26865	75	0	Right Cheek	Up	1	1	23.50	22.49	0.01	0.611	0.363	0.771
L165	LTE B26	QPSK15M	26965	1	74	Right Cheek	Up	2	1	24.50	23.74	-0.05	0.838	0.495	0.997
L166	LTE B26	QPSK15M	26965	1	74	Right Cheek	Up	1	2	24.50	23.74	-0.04	0.816	0.471	0.971
L167	LTE B26	QPSK15M	26965	1	74	Right Cheek (Repeated)	Up	1	1	24.50	23.74	0.14	0.975	0.571	1.160
L663	LTE B26	QPSK15M	26965	1	74	Right Cheek	Up	1	1	24.50	23.74	-0.12	0.780	0.516	0.928

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L169	LTE B38	QPSK20M	37850	1	0	Right Cheek	Down	1	1	24.00	23.22	0.19	0.267	0.136	0.319
L170	LTE B38	QPSK20M	37850	1	0	Right Tilted	Down	1	1	24.00	23.22	0.11	0.142	0.070	0.170
L171	LTE B38	QPSK20M	37850	1	0	Left Cheek	Down	1	1	24.00	23.22	0.05	0.134	0.071	0.160
L172	LTE B38	QPSK20M	37850	1	0	Left Tilted	Down	1	1	24.00	23.22	-0.13	0.118	0.060	0.141
L173	LTE B38	QPSK20M	37850	50	25	Right Cheek	Down	1	1	23.00	22.06	0.09	0.202	0.102	0.251
L174	LTE B38	QPSK20M	37850	50	25	Right Tilted	Down	1	1	23.00	22.06	0.04	0.111	0.054	0.138
L175	LTE B38	QPSK20M	37850	50	25	Left Cheek	Down	1	1	23.00	22.06	0.18	0.115	0.061	0.143
L176	LTE B38	QPSK20M	37850	50	25	Left Tilted	Down	1	1	23.00	22.06	0.16	0.095	0.048	0.118
L177	LTE B38	QPSK20M	37850	1	0	Right Cheek	Down	2	1	24.00	23.22	-0.15	0.264	0.137	0.316
L178	LTE B38	QPSK20M	37850	1	0	Right Cheek	Down	1	2	24.00	23.22	-0.03	0.258	0.127	0.308
L664	LTE B38	QPSK20M	37850	1	0	Right Cheek	Down	1	1	24.00	23.22	0.14	0.251	0.138	0.300
L180	LTE B38	QPSK20M	38000	1	99	Right Cheek	Up	1	1	20.00	19.17	0.01	0.460	0.208	0.556
L181	LTE B38	QPSK20M	38000	1	99	Right Tilted	Up	1	1	20.00	19.17	-0.08	0.563	0.227	0.681
L182	LTE B38	QPSK20M	38000	1	99	Left Cheek	Up	1	1	20.00	19.17	-0.12	0.156	0.076	0.189
L183	LTE B38	QPSK20M	38000	1	99	Left Tilted	Up	1	1	20.00	19.17	0	0.194	0.095	0.235
L184	LTE B38	QPSK20M	38000	50	50	Right Cheek	Up	1	1	20.00	18.90	0.06	0.464	0.208	0.597
L185	LTE B38	QPSK20M	38000	50	50	Right Tilted	Up	1	1	20.00	18.90	0.03	0.555	0.225	0.714
L186	LTE B38	QPSK20M	38000	50	50	Left Cheek	Up	1	1	20.00	18.90	-0.05	0.158	0.077	0.203
L187	LTE B38	QPSK20M	38000	50	50	Left Tilted	Up	1	1	20.00	18.90	0.09	0.199	0.091	0.256
L188	LTE B38	QPSK20M	38000	50	50	Right Tilted	Up	2	1	20.00	18.90	-0.13	0.475	0.199	0.611
L189	LTE B38	QPSK20M	38000	50	50	Right Tilted	Up	1	2	20.00	18.90	0.11	0.531	0.216	0.683
L665	LTE B38	QPSK20M	38000	50	50	Right Tilted	Up	1	1	20.00	18.90	-0.03	0.532	0.208	0.685
L191	LTE B41	QPSK20M	40140	1	0	Right Cheek	Down	1	1	24.00	22.91	0.18	0.273	0.142	0.351
L192	LTE B41	QPSK20M	40140	1	0	Right Tilted	Down	1	1	24.00	22.91	0.03	0.159	0.080	0.204
L193	LTE B41	QPSK20M	40140	1	0	Left Cheek	Down	1	1	24.00	22.91	-0.11	0.168	0.088	0.216
L194	LTE B41	QPSK20M	40140	1	0	Left Tilted	Down	1	1	24.00	22.91	0	0.138	0.070	0.177
L195	LTE B41	QPSK20M	40140	50	25	Right Cheek	Down	1	1	23.00	21.84	0.03	0.190	0.098	0.248
L196	LTE B41	QPSK20M	40140	50	25	Right Tilted	Down	1	1	23.00	21.84	0.09	0.126	0.063	0.165
L197	LTE B41	QPSK20M	40140	50	25	Left Cheek	Down	1	1	23.00	21.84	0.1	0.134	0.071	0.175
L198	LTE B41	QPSK20M	40140	50	25	Left Tilted	Down	1	1	23.00	21.84	0.07	0.118	0.059	0.154
L199	LTE B41	QPSK20M	40140	1	0	Right Cheek	Down	2	1	24.00	22.91	0.06	0.245	0.128	0.315
L200	LTE B41	QPSK20M	40140	1	0	Right Cheek	Down	1	2	24.00	22.91	-0.15	0.263	0.132	0.338
L666	LTE B41	QPSK20M	40140	1	0	Right Cheek	Down	1	1	24.00	22.91	0.05	0.224	0.123	0.288

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L202	LTE B41	QPSK20M	40440	1	0	Right Cheek	Up	1	1	21.00	20.76	0.03	0.741	0.311	0.783
L203	LTE B41	QPSK20M	40440	1	0	Right Tilted	Up	1	1	21.00	20.76	0.09	0.871	0.352	0.921
L204	LTE B41	QPSK20M	40440	1	0	Left Cheek	Up	1	1	21.00	20.76	-0.05	0.246	0.118	0.260
L205	LTE B41	QPSK20M	40440	1	0	Left Tilted	Up	1	1	21.00	20.76	0.12	0.326	0.140	0.345
L206	LTE B41	QPSK20M	41140	50	0	Right Cheek	Up	1	1	21.00	20.35	0.17	0.638	0.317	0.741
L207	LTE B41	QPSK20M	41140	50	0	Right Tilted	Up	1	1	21.00	20.35	0.03	0.673	0.319	0.782
L208	LTE B41	QPSK20M	41140	50	0	Left Cheek	Up	1	1	21.00	20.35	-0.1	0.217	0.114	0.252
L209	LTE B41	QPSK20M	41140	50	0	Left Tilted	Up	1	1	21.00	20.35	-0.19	0.252	0.126	0.293
L210	LTE B41	QPSK20M	40140	1	0	Right Tilted	Up	1	1	21.00	20.68	0.14	0.920	0.356	0.990
L211	LTE B41	QPSK20M	40840	1	0	Right Tilted	Up	1	1	21.00	20.21	0.02	0.821	0.316	0.985
L212	LTE B41	QPSK20M	41140	1	0	Right Tilted	Up	1	1	21.00	20.70	0.04	0.787	0.366	0.844
L213	LTE B41	QPSK20M	40440	100	0	Right Tilted	Up	1	1	21.00	20.23	0.09	0.844	0.332	1.008
L214	LTE B41	QPSK20M	40440	100	0	Right Tilted	Up	2	1	21.00	20.23	0.03	0.815	0.321	0.973
L215	LTE B41	QPSK20M	40440	100	0	Right Tilted	Up	1	2	21.00	20.23	0.15	0.834	0.310	0.996
L216	LTE B41	QPSK20M	40440	100	0	Right Tilted (Repeated)	Up	1	1	21.00	20.23	0.1	0.855	0.352	1.021
L667	LTE B41	QPSK20M	40440	100	0	Right Tilted (Repeated)	Up	1	1	21.00	20.23	-0.19	0.840	0.337	1.003
L218	LTE B66	QPSK20M	132322	1	99	Right Cheek	Down	1	1	24.00	23.23	-0.01	0.100	0.064	0.119
L219	LTE B66	QPSK20M	132322	1	99	Right Tilted	Down	1	1	24.00	23.23	0.05	0.073	0.042	0.087
L220	LTE B66	QPSK20M	132322	1	99	Left Cheek	Down	1	1	24.00	23.23	0.06	0.126	0.078	0.151
L221	LTE B66	QPSK20M	132322	1	99	Left Tilted	Down	1	1	24.00	23.23	0.09	0.078	0.045	0.093
L222	LTE B66	QPSK20M	132322	50	25	Right Cheek	Down	1	1	23.00	21.88	0.18	0.084	0.053	0.108
L223	LTE B66	QPSK20M	132322	50	25	Right Tilted	Down	1	1	23.00	21.88	0	0.064	0.036	0.082
L224	LTE B66	QPSK20M	132322	50	25	Left Cheek	Down	1	1	23.00	21.88	0.08	0.089	0.056	0.116
L225	LTE B66	QPSK20M	132322	50	25	Left Tilted	Down	1	1	23.00	21.88	-0.15	0.067	0.039	0.086
L226	LTE B66	QPSK20M	132322	1	99	Left Cheek	Down	2	1	24.00	23.23	0.17	0.108	0.068	0.129
L227	LTE B66	QPSK20M	132322	1	99	Left Cheek	Down	1	2	24.00	23.23	0.03	0.116	0.063	0.139
L668	LTE B66	QPSK20M	132322	1	99	Left Cheek	Down	1	1	24.00	23.23	0.09	0.103	0.065	0.123
L708	LTE B66	QPSK20M	132572	1	99	Right Cheek	Up	1	1	17.00	16.98	-0.05	0.731	0.368	0.734
L709	LTE B66	QPSK20M	132572	1	99	Right Tilted	Up	1	1	17.00	16.98	0.11	0.876	0.410	0.880
L710	LTE B66	QPSK20M	132572	1	99	Left Cheek	Up	1	1	17.00	16.98	0.02	0.546	0.287	0.549
L711	LTE B66	QPSK20M	132572	1	99	Left Tilted	Up	1	1	17.00	16.98	0.13	0.689	0.353	0.692
L712	LTE B66	QPSK20M	132072	50	50	Right Cheek	Up	1	1	17.00	16.58	-0.15	0.613	0.336	0.675
L713	LTE B66	QPSK20M	132072	50	50	Right Tilted	Up	1	1	17.00	16.58	0.1	0.771	0.362	0.849
L714	LTE B66	QPSK20M	132072	50	50	Left Cheek	Up	1	1	17.00	16.58	0.07	0.501	0.271	0.552
L715	LTE B66	QPSK20M	132072	50	50	Left Tilted	Up	1	1	17.00	16.58	0.12	0.615	0.322	0.677
L716	LTE B66	QPSK20M	132322	1	99	Right Tilted	Up	1	1	17.00	16.96	-0.09	0.883	0.413	0.891
L717	LTE B66	QPSK20M	132072	1	99	Right Tilted	Up	1	1	17.00	16.93	0.06	0.853	0.400	0.867
L718	LTE B66	QPSK20M	132572	1	99	Right Tilted	Up	2	1	17.00	16.98	0.01	0.819	0.382	0.823
L719	LTE B66	QPSK20M	132572	1	99	Right Tilted	Up	1	2	17.00	16.98	-0.03	0.856	0.403	0.860
720	LTE B66	QPSK20M	132322	1	99	Right Tilted (Repeated)	Up	1	1	17.00	16.96	0.18	0.878	0.411	0.886

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

4. Head SAR test results of 2.4G WiFi

WiFi only

Test No.	Band	Channel	Test Position	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W01	802.11b	1	Right Cheek	1	1	16	15.67	0.11	0.311	0.151	0.336
W02	802.11b	1	Right Tilted	1	1	16	15.67	-0.15	0.380	0.161	0.410
W03	802.11b	1	Left Cheek	1	1	16	15.67	-0.02	0.605	0.282	0.653
W04	802.11b	1	Left Tilted	1	1	16	15.67	0.19	0.446	0.201	0.481
W06	802.11b	1	Left Cheek	2	1	16	15.67	-0.03	0.611	0.285	0.659

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	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W08	BT DH5	39	Right Cheek	1	1	12	11.35	0.11	0.188	0.092	0.218
W09	BT DH5	39	Right Tilted	1	1	12	11.35	-0.04	0.239	0.105	0.278
W10	BT DH5	39	Left Cheek	1	1	12	11.35	0.09	0.278	0.128	0.323
W11	BT DH5	39	Left Tilted	1	1	12	11.35	-0.08	0.331	0.138	0.384
W12	BT DH5	39	Left Cheek	2	1	12	11.35	-0.06	0.277	0.130	0.322

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

6. Head SAR test results of 5G WiFi

WiFi only

Test No.	Band	Channel	Test Position	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W14	802.11ac VHT20	56	Right Cheek	1	MCS0	15	14.58	0.07	0.333	0.109	0.367
W15	802.11ac VHT20	56	Right Tilted	1	MCS0	15	14.58	-0.03	0.342	0.119	0.377
W16	802.11ac VHT20	56	Left Cheek	1	MCS0	15	14.58	0.04	1.120	0.299	1.234
W17	802.11ac VHT20	56	Left Tilted	1	MCS0	15	14.58	0.01	1.100	0.293	1.212
W19	802.11ac VHT20	56	Left Cheek	2	MCS0	15	14.58	0.08	1.240	0.334	1.366
W21	802.11a	136	Right Cheek	1	6	17	16.95	-0.03	0.694	0.267	0.702
W22	802.11a	136	Right Tilted	1	6	17	16.95	-0.12	0.857	0.304	0.867
W23	802.11a	136	Left Cheek	1	6	17	16.95	0.11	1.190	0.386	1.204
W24	802.11a	136	Left Tilted	1	6	17	16.95	0.06	1.370	0.458	1.386
W27	802.11a	136	Left Tilted	2	6	17	16.95	0.07	1.280	0.452	1.295
W29	802.11a	153	Right Cheek	1	6	16.5	16.48	-0.1	0.726	0.262	0.729
W30	802.11a	153	Right Tilted	1	6	16.5	16.48	0.02	0.718	0.273	0.721
W31	802.11a	153	Left Cheek	1	6	16.5	16.48	0.13	1.050	0.323	1.055
W32	802.11a	153	Left Tilted	1	6	16.5	16.48	0.16	1.330	0.415	1.336
W34	802.11a	153	Left Tilted	2	6	16.5	16.48	0.03	1.260	0.423	1.266

WiFi Antenna Simultaneous with 2G&3G&4G

Test No.	Band	Channel	Test Position	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W41	802.11ac VHT20	56	Right Cheek	1	MCS0	14	13.81	0.12	0.270	0.085	0.282
W42	802.11ac VHT20	56	Right Tilted	1	MCS0	14	13.81	0.09	0.312	0.099	0.326
W43	802.11ac VHT20	56	Left Cheek	1	MCS0	14	13.81	0.09	0.678	0.187	0.708
W44	802.11ac VHT20	56	Left Tilted	1	MCS0	14	13.81	-0.07	0.621	0.273	0.649
W45	802.11ac VHT20	56	Left Cheek	2	MCS0	14	13.81	0.14	0.656	0.172	0.685
W47	802.11a	136	Right Cheek	1	6	14	13.69	-0.1	0.344	0.122	0.369
W48	802.11a	136	Right Tilted	1	6	14	13.69	0.16	0.361	0.131	0.388
W49	802.11a	136	Left Cheek	1	6	14	13.69	-0.04	0.417	0.132	0.448
W50	802.11a	136	Left Tilted	1	6	14	13.69	-0.07	0.658	0.209	0.707
W51	802.11a	136	Left Tilted	2	6	14	13.69	-0.06	0.653	0.210	0.701
W53	802.11a	153	Right Cheek	1	6	14	13.98	0.11	0.356	0.145	0.358
W54	802.11a	153	Right Tilted	1	6	14	13.98	0	0.422	0.176	0.424
W55	802.11a	153	Left Cheek	1	6	14	13.98	0.02	0.512	0.167	0.514
W56	802.11a	153	Left Tilted	1	6	14	13.98	0.02	0.592	0.180	0.595
W57	802.11a	153	Left Tilted	2	6	14	13.98	-0.15	0.587	0.171	0.590

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G28	GSM 850	GSM	190	Front Face	1.5	Down	1	1	33.5	32.99	0.1	0.136	0.103	0.153
G29	GSM 850	GSM	190	Rear Face	1.5	Down	1	1	33.5	32.99	-0.03	0.162	0.121	0.182
G30	GSM 850	GSM	190	Rear Face	1.5	Down	2	1	33.5	32.99	0.09	0.160	0.120	0.180
G31	GSM 850	GSM	190	Rear Face	1.5	Down	1	2	33.5	32.99	0.11	0.149	0.113	0.168
G105	GSM 850	GSM	190	Rear Face	1.5	Down	1	1	33.5	32.99	-0.02	0.155	0.112	0.174
G41	GSM 850	GSM	190	Front Face	1.5	Up	1	1	33.5	33.19	-0.09	0.088	0.059	0.094
G42	GSM 850	GSM	190	Rear Face	1.5	Up	1	1	33.5	33.19	-0.08	0.117	0.080	0.126
G43	GSM 850	GSM	190	Rear Face	1.5	Up	2	1	33.5	33.19	0.02	0.116	0.079	0.125
G44	GSM 850	GSM	190	Rear Face	1.5	Up	1	2	33.5	33.19	0.09	0.102	0.068	0.110
G107	GSM 850	GSM	190	Rear Face	1.5	Up	1	1	33.5	33.19	-0.07	0.114	0.071	0.122
G53	GSM 1900	GSM	661	Front Face	1.5	Down	1	1	31	29.74	0.11	0.113	0.072	0.151
G54	GSM 1900	GSM	661	Rear Face	1.5	Down	1	1	31	29.74	0.03	0.176	0.113	0.235
G55	GSM 1900	GSM	661	Rear Face	1.5	Down	2	1	31	29.74	-0.12	0.168	0.104	0.225
G56	GSM 1900	GSM	661	Rear Face	1.5	Down	1	2	31	29.74	0.05	0.170	0.108	0.227
G109	GSM 1900	GSM	661	Rear Face	1.5	Down	1	1	31	29.74	0.12	0.169	0.113	0.226
G66	GSM 1900	GSM	661	Front Face	1.5	Up	1	1	31	30.54	0.09	0.175	0.100	0.195
G67	GSM 1900	GSM	661	Rear Face	1.5	Up	1	1	31	30.54	0.12	0.262	0.149	0.291
G68	GSM 1900	GSM	661	Rear Face	1.5	Up	2	1	31	30.54	0.03	0.259	0.147	0.288
G69	GSM 1900	GSM	661	Rear Face	1.5	Up	1	2	31	30.54	-0.05	0.254	0.145	0.282
G111	GSM 1900	GSM	661	Rear Face	1.5	Up	1	1	31	30.54	-0.03	0.249	0.123	0.277

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U43	UMTS B2	RMC12.2K	9400	Front Face	1.5	Down	1	1	24.5	22.67	-0.13	0.239	0.156	0.364
U44	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	1	1	24.5	22.67	-0.04	0.354	0.227	0.540
U45	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	2	1	24.5	22.67	0.09	0.356	0.226	0.543
U46	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	2	2	24.5	22.67	-0.07	0.358	0.230	0.546
U125	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Down	2	2	24.5	22.67	0.02	0.276	0.169	0.421
U56	UMTS B2	RMC12.2K	9400	Front Face	1.5	Up	1	1	24.5	23.45	0.02	0.345	0.198	0.439
U57	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	1	1	24.5	23.45	-0.18	0.514	0.292	0.655
U58	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	2	1	24.5	23.45	-0.07	0.509	0.290	0.648
U59	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	1	2	24.5	23.45	0.13	0.502	0.287	0.639
U127	UMTS B2	RMC12.2K	9400	Rear Face	1.5	Up	1	1	24.5	23.45	0.06	0.394	0.247	0.502
U68	UMTS B4	RMC12.2K	1413	Front Face	1.5	Down	1	1	24.5	23.01	0.08	0.292	0.177	0.412
U69	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	1	1	24.5	23.01	0.1	0.427	0.262	0.602
U70	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	2	1	24.5	23.01	-0.06	0.415	0.247	0.585
U71	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	1	2	24.5	23.01	0.03	0.412	0.216	0.581
U129	UMTS B4	RMC12.2K	1413	Rear Face	1.5	Down	1	1	24.5	23.01	0.13	0.364	0.195	0.513
U81	UMTS B4	RMC12.2K	1312	Front Face	1.5	Up	1	1	25.3	23.56	0.02	0.330	0.186	0.493
U82	UMTS B4	RMC12.2K	1312	Rear Face	1.5	Up	1	1	25.3	23.56	0.02	0.416	0.237	0.621
U83	UMTS B4	RMC12.2K	1312	Rear Face	1.5	Up	2	1	25.3	23.56	0.05	0.410	0.239	0.612
U84	UMTS B4	RMC12.2K	1312	Rear Face	1.5	Up	1	2	25.3	23.56	-0.07	0.409	0.230	0.611
U131	UMTS B4	RMC12.2K	1312	Rear Face	1.5	Up	1	1	25.3	23.56	-0.06	0.38	0.238	0.567
U95	UMTS B5	RMC12.2K	4182	Front Face	1.5	Down	1	1	24.5	22.81	0.03	0.147	0.111	0.217
U96	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	1	1	24.5	22.81	-0.07	0.171	0.129	0.252
U97	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	2	1	24.5	22.81	0.02	0.162	0.108	0.239
U98	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	1	2	24.5	22.81	0.09	0.158	0.112	0.233
U133	UMTS B5	RMC12.2K	4182	Rear Face	1.5	Down	1	1	24.5	22.81	0.11	0.163	0.111	0.241
U108	UMTS B5	RMC12.2K	4132	Front Face	1.5	Up	1	1	24.5	23.29	0.04	0.105	0.080	0.139
U109	UMTS B5	RMC12.2K	4132	Rear Face	1.5	Up	1	1	24.5	23.29	0.01	0.125	0.086	0.165
U110	UMTS B5	RMC12.2K	4132	Rear Face	1.5	Up	2	1	24.5	23.29	-0.09	0.132	0.099	0.174
U111	UMTS B5	RMC12.2K	4132	Rear Face	1.5	Up	2	2	24.5	23.29	0.12	0.123	0.076	0.163
U135	UMTS B5	RMC12.2K	4132	Rear Face	1.5	Up	2	1	24.5	23.29	0.07	0.113	0.078	0.149

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L239	LTE B2	QPSK20M	18900	1	0	Front Face	1.5	Down	1	1	24.00	23.39	-0.02	0.170	0.110	0.196
L240	LTE B2	QPSK20M	18900	1	0	Rear Face	1.5	Down	1	1	24.00	23.39	-0.03	0.272	0.178	0.313
L241	LTE B2	QPSK20M	18900	50	0	Front Face	1.5	Down	1	1	23.00	21.63	0.13	0.128	0.082	0.175
L242	LTE B2	QPSK20M	18900	50	0	Rear Face	1.5	Down	1	1	23.00	21.63	-0.09	0.195	0.127	0.267
L243	LTE B2	QPSK20M	18900	1	0	Rear Face	1.5	Down	2	1	24.00	23.39	0.05	0.265	0.174	0.305
L244	LTE B2	QPSK20M	18900	1	0	Rear Face	1.5	Down	1	2	24.00	23.39	-0.02	0.257	0.147	0.296
L670	LTE B2	QPSK20M	18900	1	0	Rear Face	1.5	Down	1	1	24.00	23.39	-0.07	0.169	0.105	0.195
L263	LTE B2	QPSK20M	18900	1	0	Front Face	1.5	Up	1	1	24.00	23.76	-0.03	0.132	0.075	0.140
L264	LTE B2	QPSK20M	18900	1	0	Rear Face	1.5	Up	1	1	24.00	23.76	-0.02	0.155	0.088	0.164
L265	LTE B2	QPSK20M	18900	50	25	Front Face	1.5	Up	1	1	23.00	22.21	0.15	0.112	0.057	0.134
L266	LTE B2	QPSK20M	18900	50	25	Rear Face	1.5	Up	1	1	23.00	22.21	-0.09	0.164	0.092	0.197
L267	LTE B2	QPSK20M	18900	50	25	Rear Face	1.5	Up	2	1	23.00	22.21	0.08	0.156	0.087	0.187
L268	LTE B2	QPSK20M	18900	50	25	Rear Face	1.5	Up	1	2	23.00	22.21	0.04	0.151	0.083	0.181
L672	LTE B2	QPSK20M	18900	50	25	Rear Face	1.5	Up	1	1	23.00	22.21	-0.01	0.114	0.058	0.137
L281	LTE B4	QPSK20M	20175	1	0	Front Face	1.5	Down	1	1	24.00	22.93	0.17	0.241	0.145	0.309
L282	LTE B4	QPSK20M	20175	1	0	Rear Face	1.5	Down	1	1	24.00	22.93	-0.13	0.316	0.195	0.405
L283	LTE B4	QPSK20M	20050	50	25	Front Face	1.5	Down	1	1	23.00	21.79	0.02	0.200	0.124	0.264
L284	LTE B4	QPSK20M	20050	50	25	Rear Face	1.5	Down	1	1	23.00	21.79	0.09	0.259	0.162	0.342
L285	LTE B4	QPSK20M	20175	1	0	Rear Face	1.5	Down	2	1	24.00	22.93	0.16	0.327	0.202	0.419
L286	LTE B4	QPSK20M	20175	1	0	Rear Face	1.5	Down	2	2	24.00	22.93	0.07	0.309	0.158	0.396
L674	LTE B4	QPSK20M	20175	1	0	Rear Face	1.5	Down	2	1	24.00	22.93	0.12	0.173	0.105	0.221
L307	LTE B4	QPSK20M	20050	1	99	Front Face	1.5	Up	1	1	24.00	23.47	0.02	0.240	0.132	0.271
L308	LTE B4	QPSK20M	20050	1	99	Rear Face	1.5	Up	1	1	24.00	23.47	-0.04	0.319	0.181	0.361
L309	LTE B4	QPSK20M	20050	50	0	Front Face	1.5	Up	1	1	23.00	22.33	-0.03	0.198	0.109	0.231
L310	LTE B4	QPSK20M	20050	50	0	Rear Face	1.5	Up	1	1	23.00	22.33	-0.08	0.228	0.131	0.266
L311	LTE B4	QPSK20M	20050	1	99	Rear Face	1.5	Up	2	1	24.00	23.47	0.12	0.311	0.174	0.352
L312	LTE B4	QPSK20M	20050	1	99	Rear Face	1.5	Up	1	2	24.00	23.47	-0.01	0.314	0.178	0.355
L676	LTE B4	QPSK20M	20050	1	99	Rear Face	1.5	Up	1	1	24.00	23.47	0.03	0.316	0.18	0.357
L331	LTE B5	QPSK10M	20450	1	49	Front Face	1.5	Down	1	1	24.50	23.86	-0.04	0.179	0.136	0.207
L332	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Down	1	1	24.50	23.86	-0.18	0.225	0.170	0.261
L333	LTE B5	QPSK10M	20450	25	12	Front Face	1.5	Down	1	1	23.50	22.73	0.13	0.146	0.112	0.174
L334	LTE B5	QPSK10M	20450	25	12	Rear Face	1.5	Down	1	1	23.50	22.73	0.05	0.169	0.122	0.202
L335	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Down	2	1	24.50	23.86	-0.03	0.221	0.168	0.256
L336	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Down	1	2	24.50	23.86	0.14	0.219	0.164	0.254
L678	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Down	1	1	24.50	23.86	0.08	0.202	0.146	0.234
L351	LTE B5	QPSK10M	20450	1	49	Front Face	1.5	Up	1	1	24.50	24.12	-0.06	0.112	0.100	0.122
L352	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Up	1	1	24.50	24.12	0.05	0.136	0.121	0.149
L353	LTE B5	QPSK10M	20450	25	12	Front Face	1.5	Up	1	1	23.50	22.95	0.12	0.091	0.082	0.104
L354	LTE B5	QPSK10M	20450	25	12	Rear Face	1.5	Up	1	1	23.50	22.95	0.1	0.103	0.077	0.117
L355	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Up	2	1	24.50	24.12	-0.03	0.140	0.106	0.153
L356	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Up	2	2	24.50	24.12	0.09	0.129	0.096	0.141
L680	LTE B5	QPSK10M	20450	1	49	Rear Face	1.5	Up	2	1	24.50	24.12	-0.12	0.126	0.101	0.138

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L369	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Down	1	1	23.50	22.33	0.11	0.242	0.135	0.317
L370	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	Down	1	1	23.50	22.33	-0.01	0.212	0.118	0.278
L371	LTE B7	QPKS20M	21100	50	25	Front Face	1.5	Down	1	1	22.50	21.18	0.12	0.200	0.110	0.271
L372	LTE B7	QPKS20M	21100	50	25	Rear Face	1.5	Down	1	1	22.50	21.18	-0.02	0.161	0.093	0.218
L373	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Down	2	1	23.50	22.33	0.08	0.250	0.138	0.328
L374	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Down	2	2	23.50	22.33	0.17	0.230	0.127	0.301
L682	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	Down	2	1	23.50	22.33	-0.05	0.213	0.128	0.279
L389	LTE B7	QPKS20M	20850	1	50	Front Face	1.5	Up	1	1	23.50	23.27	0.01	0.235	0.120	0.248
L390	LTE B7	QPKS20M	20850	1	50	Rear Face	1.5	Up	1	1	23.50	23.27	0.05	0.491	0.221	0.518
L391	LTE B7	QPKS20M	21350	50	25	Front Face	1.5	Up	1	1	22.50	22.00	0	0.193	0.096	0.216
L392	LTE B7	QPKS20M	21350	50	25	Rear Face	1.5	Up	1	1	22.50	22.00	0.07	0.396	0.182	0.444
L393	LTE B7	QPKS20M	20850	1	50	Rear Face	1.5	Up	2	1	23.50	23.27	-0.09	0.496	0.235	0.524
L394	LTE B7	QPKS20M	20850	1	50	Rear Face	1.5	Up	2	2	23.50	23.27	0.02	0.490	0.218	0.517
L684	LTE B7	QPKS20M	20850	1	50	Rear Face	1.5	Up	2	1	23.50	23.27	0.12	0.434	0.211	0.458
L411	LTE B12	QPSK10M	23095	1	0	Front Face	1.5	Down	1	1	24.50	23.63	-0.06	0.102	0.079	0.125
L412	LTE B12	QPSK10M	23095	1	0	Rear Face	1.5	Down	1	1	24.50	23.63	-0.15	0.111	0.086	0.136
L413	LTE B12	QPSK10M	23130	25	0	Front Face	1.5	Down	1	1	23.50	22.45	0.03	0.078	0.062	0.099
L414	LTE B12	QPSK10M	23130	25	0	Rear Face	1.5	Down	1	1	23.50	22.45	0	0.095	0.074	0.121
L415	LTE B12	QPSK10M	23095	1	0	Rear Face	1.5	Down	2	1	24.50	23.63	0.1	0.107	0.086	0.131
L416	LTE B12	QPSK10M	23095	1	0	Rear Face	1.5	Down	1	2	24.50	23.63	0.05	0.100	0.083	0.122
L686	LTE B12	QPSK10M	23095	1	0	Rear Face	1.5	Down	1	1	24.50	23.63	0.16	0.102	0.08	0.125
L431	LTE B12	QPSK10M	23130	1	0	Front Face	1.5	Up	1	1	24.50	23.71	-0.11	0.091	0.075	0.109
L432	LTE B12	QPSK10M	23130	1	0	Rear Face	1.5	Up	1	1	24.50	23.71	-0.13	0.095	0.074	0.114
L433	LTE B12	QPSK10M	23130	25	12	Front Face	1.5	Up	1	1	23.50	22.53	0.03	0.070	0.055	0.088
L434	LTE B12	QPSK10M	23130	25	12	Rear Face	1.5	Up	1	1	23.50	22.53	0.04	0.078	0.061	0.097
L435	LTE B12	QPSK10M	23130	1	0	Rear Face	1.5	Up	2	1	23.50	22.53	-0.03	0.090	0.073	0.112
L436	LTE B12	QPSK10M	23130	1	0	Rear Face	1.5	Up	1	2	23.50	22.53	0.11	0.089	0.056	0.111
L688	LTE B12	QPSK10M	23130	1	0	Rear Face	1.5	Up	1	1	24.50	23.71	0.17	0.093	0.073	0.111
L449	LTE B17	QPSK10M	23800	1	0	Front Face	1.5	Down	1	1	24.50	23.60	0.07	0.131	0.102	0.161
L450	LTE B17	QPSK10M	23800	1	0	Rear Face	1.5	Down	1	1	24.50	23.60	0.02	0.147	0.114	0.181
L451	LTE B17	QPSK10M	23790	25	12	Front Face	1.5	Down	1	1	23.50	22.40	-0.05	0.105	0.084	0.135
L452	LTE B17	QPSK10M	23790	25	12	Rear Face	1.5	Down	1	1	23.50	22.40	0.03	0.121	0.093	0.156
L453	LTE B17	QPSK10M	23800	1	0	Rear Face	1.5	Down	2	1	24.50	23.60	-0.01	0.145	0.112	0.178
L454	LTE B17	QPSK10M	23800	1	0	Rear Face	1.5	Down	1	2	24.50	23.60	0.06	0.143	0.110	0.176
L690	LTE B17	QPSK10M	23800	1	0	Rear Face	1.5	Down	1	1	24.50	23.60	0.18	0.143	0.113	0.176
L469	LTE B17	QPSK10M	23790	1	0	Front Face	1.5	Up	1	1	24.50	23.81	0.03	0.094	0.075	0.110
L470	LTE B17	QPSK10M	23790	1	0	Rear Face	1.5	Up	1	1	24.50	23.81	-0.04	0.104	0.081	0.122
L471	LTE B17	QPSK10M	23780	25	0	Front Face	1.5	Up	1	1	23.50	22.58	0.01	0.075	0.059	0.093
L472	LTE B17	QPSK10M	23780	25	0	Rear Face	1.5	Up	1	1	23.50	22.58	0	0.073	0.056	0.090
L473	LTE B17	QPSK10M	23790	1	0	Rear Face	1.5	Up	2	1	24.50	23.81	-0.12	0.101	0.078	0.118
L474	LTE B17	QPSK10M	23790	1	0	Rear Face	1.5	Up	1	2	24.50	23.81	0.13	0.102	0.080	0.119
L692	LTE B17	QPSK10M	23790	1	0	Rear Face	1.5	Up	1	1	24.50	23.81	0.04	0.098	0.072	0.115

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L487	LTE B26	QPSK15M	26865	1	0	Front Face	1.5	Down	1	1	24.50	23.60	0.12	0.152	0.116	0.187
L488	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Down	1	1	24.50	23.60	-0.19	0.189	0.143	0.232
L489	LTE B26	QPSK15M	26865	36	19	Front Face	1.5	Down	1	1	23.50	22.58	0.03	0.128	0.097	0.158
L490	LTE B26	QPSK15M	26865	36	19	Rear Face	1.5	Down	1	1	23.50	22.58	-0.04	0.154	0.116	0.190
L491	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Down	2	1	24.50	23.60	0.02	0.178	0.129	0.219
L492	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Down	1	2	24.50	23.60	0.17	0.181	0.135	0.223
L694	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Down	1	1	24.50	23.60	0.02	0.182	0.132	0.224
L507	LTE B26	QPSK15M	26865	1	0	Front Face	1.5	Up	1	1	24.50	23.75	0.19	0.095	0.072	0.113
L508	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Up	1	1	24.50	23.75	0.03	0.115	0.086	0.137
L509	LTE B26	QPSK15M	26765	36	0	Front Face	1.5	Up	1	1	23.50	22.82	0	0.079	0.060	0.092
L510	LTE B26	QPSK15M	26765	36	0	Rear Face	1.5	Up	1	1	23.50	22.82	0.09	0.077	0.058	0.090
L511	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Up	2	1	24.50	23.75	-0.05	0.107	0.078	0.127
L512	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Up	1	2	24.50	23.75	-0.13	0.098	0.067	0.117
L696	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	Up	1	1	24.50	23.75	0	0.111	0.082	0.132
L525	LTE B38	QPSK20M	37850	1	0	Front Face	1.5	Down	1	1	24.00	23.22	0.02	0.160	0.090	0.191
L526	LTE B38	QPSK20M	37850	1	0	Rear Face	1.5	Down	1	1	24.00	23.22	0.09	0.138	0.075	0.165
L527	LTE B38	QPSK20M	37850	50	25	Front Face	1.5	Down	1	1	23.00	22.06	0.07	0.126	0.070	0.157
L528	LTE B38	QPSK20M	37850	50	25	Rear Face	1.5	Down	1	1	23.00	22.06	0.15	0.112	0.061	0.139
L529	LTE B38	QPSK20M	37850	1	0	Front Face	1.5	Down	2	1	24.00	23.22	-0.01	0.167	0.093	0.200
L530	LTE B38	QPSK20M	37850	1	0	Front Face	1.5	Down	2	2	24.00	23.22	-0.05	0.165	0.092	0.197
L698	LTE B38	QPSK20M	37850	1	0	Front Face	1.5	Down	2	1	24.00	23.22	0.15	0.14	0.079	0.167
L545	LTE B38	QPSK20M	37850	1	99	Front Face	1.5	Up	1	1	24.00	23.74	-0.09	0.221	0.119	0.234
L546	LTE B38	QPSK20M	37850	1	99	Rear Face	1.5	Up	1	1	24.00	23.74	-0.05	0.354	0.168	0.375
L547	LTE B38	QPSK20M	37850	50	50	Front Face	1.5	Up	1	1	23.00	22.54	0	0.186	0.099	0.207
L548	LTE B38	QPSK20M	37850	50	50	Rear Face	1.5	Up	1	1	23.00	22.54	0.04	0.288	0.137	0.320
L549	LTE B38	QPSK20M	37850	1	99	Rear Face	1.5	Up	2	1	24.00	23.74	-0.18	0.312	0.148	0.331
L550	LTE B38	QPSK20M	37850	1	99	Rear Face	1.5	Up	1	2	24.00	23.74	0.01	0.349	0.159	0.370
L700	LTE B38	QPSK20M	37850	1	99	Rear Face	1.5	Up	1	1	24.00	23.74	-0.03	0.205	0.104	0.217
L567	LTE B41	QPSK20M	40140	1	0	Front Face	1.5	Down	1	1	24.00	22.91	-0.01	0.176	0.099	0.226
L568	LTE B41	QPSK20M	40140	1	0	Rear Face	1.5	Down	1	1	24.00	22.91	-0.06	0.117	0.068	0.150
L569	LTE B41	QPSK20M	40140	50	25	Front Face	1.5	Down	1	1	23.00	21.84	0.09	0.141	0.079	0.184
L570	LTE B41	QPSK20M	40140	50	25	Rear Face	1.5	Down	1	1	23.00	21.84	0.15	0.091	0.053	0.119
L571	LTE B41	QPSK20M	40140	1	0	Front Face	1.5	Down	2	1	24.00	22.91	-0.07	0.178	0.095	0.229
L572	LTE B41	QPSK20M	40140	1	0	Front Face	1.5	Down	2	2	24.00	22.91	-0.03	0.172	0.096	0.221
L702	LTE B41	QPSK20M	40140	1	0	Front Face	1.5	Down	2	1	24.00	22.91	-0.18	0.13	0.079	0.167
L587	LTE B41	QPSK20M	40440	1	0	Front Face	1.5	Up	1	1	24.00	23.48	-0.13	0.192	0.095	0.217
L588	LTE B41	QPSK20M	40440	1	0	Rear Face	1.5	Up	1	1	24.00	23.48	-0.01	0.280	0.132	0.316
L589	LTE B41	QPSK20M	40140	50	0	Front Face	1.5	Up	1	1	23.00	22.45	0	0.154	0.078	0.175
L590	LTE B41	QPSK20M	40140	50	0	Rear Face	1.5	Up	1	1	23.00	22.45	0.11	0.231	0.107	0.262
L591	LTE B41	QPSK20M	40440	1	0	Rear Face	1.5	Up	2	1	24.00	23.48	-0.07	0.281	0.133	0.317
L592	LTE B41	QPSK20M	40440	1	0	Rear Face	1.5	Up	2	2	24.00	23.48	0.02	0.277	0.126	0.313
L704	LTE B41	QPSK20M	40440	1	0	Rear Face	1.5	Up	2	1	24.00	23.48	0.1	0.233	0.117	0.263

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L605	LTE B66	QPSK20M	132322	1	99	Front Face	1.5	Down	1	1	24.00	23.23	0.11	0.215	0.132	0.257
L606	LTE B66	QPSK20M	132322	1	99	Rear Face	1.5	Down	1	1	24.00	23.23	-0.09	0.292	0.182	0.349
L607	LTE B66	QPSK20M	132322	50	25	Front Face	1.5	Down	1	1	23.00	21.88	0.03	0.167	0.102	0.216
L608	LTE B66	QPSK20M	132322	50	25	Rear Face	1.5	Down	1	1	23.00	21.88	-0.01	0.219	0.136	0.283
L609	LTE B66	QPSK20M	132322	1	99	Rear Face	1.5	Down	2	1	24.00	23.23	0.15	0.278	0.171	0.332
L610	LTE B66	QPSK20M	132322	1	99	Rear Face	1.5	Down	1	2	24.00	23.23	0.17	0.283	0.175	0.338
L706	LTE B66	QPSK20M	132322	1	99	Rear Face	1.5	Down	1	1	24.00	23.23	0.02	0.251	0.151	0.300
L631	LTE B66	QPSK20M	132572	1	99	Front Face	1.5	Up	1	1	24.00	23.64	0.05	0.412	0.253	0.448
L632	LTE B66	QPSK20M	132572	1	99	Rear Face	1.5	Up	1	1	24.00	23.64	-0.09	0.557	0.324	0.605
L633	LTE B66	QPSK20M	132572	50	25	Front Face	1.5	Up	1	1	23.00	22.31	0.14	0.267	0.159	0.313
L634	LTE B66	QPSK20M	132572	50	25	Rear Face	1.5	Up	1	1	23.00	22.31	0.02	0.413	0.240	0.484
L635	LTE B66	QPSK20M	132572	1	99	Rear Face	1.5	Up	2	1	24.00	23.64	0.08	0.571	0.331	0.621
L636	LTE B66	QPSK20M	132572	1	99	Rear Face	1.5	Up	2	2	24.00	23.64	-0.01	0.563	0.326	0.612

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)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W58	802.11b	1	Front Face	1.5	1	1	20	19.77	0.07	0.162	0.091	0.171
W59	802.11b	1	Rear Face	1.5	1	1	20	19.77	0.02	0.166	0.094	0.175
W60	802.11b	1	Rear Face	1.5	2	1	20	19.77	0.03	0.157	0.086	0.166

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)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W68	BT DH5	39	Front Face	1.5	1	1	12	11.35	0.05	0.025	0.015	0.029
W69	BT DH5	39	Rear Face	1.5	1	1	12	11.35	0.07	0.027	0.016	0.031
W70	BT DH5	39	Rear Face	1.5	2	1	12	11.35	0.04	0.028	0.016	0.032

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)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W84	802.11ac VHT20	60	Front Face	1.5	1	MCS0	19	18.98	-0.08	0.286	0.106	0.287
W85	802.11ac VHT20	60	Rear Face	1.5	1	MCS0	19	18.98	0.06	0.552	0.207	0.555
W86	802.11ac VHT20	60	Rear Face	1.5	2	MCS0	19	18.98	0.01	0.576	0.223	0.579
W94	802.11a	108	Front Face	1.5	1	6	19	18.99	0.11	0.378	0.113	0.379
W95	802.11a	108	Rear Face	1.5	1	6	19	18.99	-0.03	0.610	0.237	0.611
W96	802.11a	108	Rear Face	1.5	2	6	19	18.99	0.05	0.522	0.189	0.523
W104	802.11a	157	Front Face	1.5	1	6	16.5	16.47	0.13	0.136	0.053	0.137
W105	802.11a	157	Rear Face	1.5	1	6	16.5	16.47	-0.02	0.253	0.096	0.255
W106	802.11a	157	Rear Face	1.5	2	6	16.5	16.47	0.01	0.226	0.078	0.228

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G33	GSM 850	GPRS2TX	190	Front Face	1	Down	1	1	31.5	30.65	-0.09	0.241	0.102	0.293
G34	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	1	31.5	30.65	-0.01	0.375	0.151	0.456
G35	GSM 850	GPRS2TX	190	Left Side	1	Down	1	1	31.5	30.65	0	0.097	0.044	0.118
G36	GSM 850	GPRS2TX	190	Right Side	1	Down	1	1	31.5	30.65	0.12	0.060	0.028	0.073
G37	GSM 850	GPRS2TX	190	Bottom Side	1	Down	1	1	31.5	30.65	-0.02	0.324	0.127	0.394
G38	GSM 850	GPRS2TX	190	Rear Face	1	Down	2	1	31.5	30.65	0.05	0.329	0.123	0.400
G39	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	2	31.5	30.65	0.13	0.369	0.144	0.448
G106	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	1	31.5	30.65	0.03	0.282	0.118	0.343
G46	GSM 850	GPRS2TX	190	Front Face	1	Up	1	1	31.5	30.72	0.11	0.181	0.106	0.217
G47	GSM 850	GPRS2TX	190	Rear Face	1	Up	1	1	31.5	30.72	-0.06	0.239	0.153	0.286
G48	GSM 850	GPRS2TX	190	Left Side	1	Up	1	1	31.5	30.72	0.03	0.094	0.058	0.112
G49	GSM 850	GPRS2TX	190	Top Side	1	Up	1	1	31.5	30.72	-0.07	0.192	0.119	0.230
G50	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	1	31.5	30.72	-0.04	0.259	0.153	0.310
G51	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	2	31.5	30.72	-0.01	0.238	0.144	0.285
G108	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	1	31.5	30.72	0.17	0.203	0.138	0.243
G58	GSM 1900	GPRS4TX	661	Front Face	1	Down	1	1	25	23.92	0.13	0.210	0.125	0.269
G59	GSM 1900	GPRS4TX	661	Rear Face	1	Down	1	1	25	23.92	-0.02	0.267	0.168	0.342
G60	GSM 1900	GPRS4TX	661	Left Side	1	Down	1	1	25	23.92	0.15	0.046	0.025	0.059
G61	GSM 1900	GPRS4TX	661	Right Side	1	Down	1	1	25	23.92	-0.02	0.090	0.053	0.115
G62	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	1	25	23.92	0.02	0.522	0.287	0.669
G63	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	2	1	25	23.92	0.05	0.508	0.278	0.651
G64	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	2	25	23.92	0.07	0.507	0.272	0.650
G110	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	1	25	23.92	0.11	0.503	0.232	0.645
G71	GSM 1900	GPRS4TX	661	Front Face	1	Up	1	1	25	24.56	0.06	0.301	0.146	0.333
G72	GSM 1900	GPRS4TX	661	Rear Face	1	Up	1	1	25	24.56	-0.01	0.504	0.259	0.558
G73	GSM 1900	GPRS4TX	661	Left Side	1	Up	1	1	25	24.56	0.15	0.051	0.032	0.056
G74	GSM 1900	GPRS4TX	661	Top Side	1	Up	1	1	25	24.56	0.08	0.780	0.388	0.863
G75	GSM 1900	GPRS4TX	512	Top Side	1	Up	1	1	25	24.35	0.1	0.609	0.306	0.707
G76	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	1	25	24.32	0.15	0.831	0.416	0.972
G77	GSM 1900	GPRS4TX	810	Top Side	1	Up	2	1	25	24.32	-0.01	0.813	0.401	0.951
G78	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	2	25	24.32	0.05	0.821	0.411	0.960
G79	GSM 1900	GPRS4TX	810	Top Side (Repeated)	1	Up	1	1	25	24.32	0.12	0.826	0.413	0.966
G112	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	1	25	24.32	0.14	0.733	0.393	0.857

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U48	UMTS B2	RMC12.2K	9400	Front Face	1	Down	1	1	22.5	21.67	0.12	0.167	0.101	0.202
U49	UMTS B2	RMC12.2K	9400	Rear Face	1	Down	1	1	22.5	21.67	0.09	0.256	0.156	0.310
U50	UMTS B2	RMC12.2K	9400	Left Side	1	Down	1	1	22.5	21.67	-0.03	0.062	0.035	0.075
U51	UMTS B2	RMC12.2K	9400	Right Side	1	Down	1	1	22.5	21.67	0.01	0.047	0.026	0.057
U52	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	1	1	22.5	21.67	-0.06	0.401	0.219	0.485
U53	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	1	22.5	21.67	-0.08	0.404	0.223	0.489
U54	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	2	22.5	21.67	0.09	0.403	0.221	0.488
U126	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	1	22.5	21.67	0.06	0.396	0.213	0.479
U61	UMTS B2	RMC12.2K	9400	Front Face	1	Up	1	1	21	20.37	-0.11	0.206	0.107	0.238
U62	UMTS B2	RMC12.2K	9400	Rear Face	1	Up	1	1	21	20.37	0.07	0.294	0.157	0.340
U63	UMTS B2	RMC12.2K	9400	Left Side	1	Up	1	1	21	20.37	0	0.042	0.025	0.048
U64	UMTS B2	RMC12.2K	9400	Top Side	1	Up	1	1	21	20.37	0.15	0.486	0.240	0.562
U65	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	1	21	20.37	0.05	0.495	0.246	0.572
U66	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	2	21	20.37	-0.02	0.489	0.243	0.565
U128	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	1	21	20.37	0.15	0.481	0.229	0.556
U73	UMTS B4	RMC12.2K	1413	Front Face	1	Down	1	1	22.5	21.98	0.01	0.239	0.144	0.269
U74	UMTS B4	RMC12.2K	1413	Rear Face	1	Down	1	1	22.5	21.98	0.05	0.307	0.191	0.346
U75	UMTS B4	RMC12.2K	1413	Left Side	1	Down	1	1	22.5	21.98	0.08	0.055	0.033	0.062
U76	UMTS B4	RMC12.2K	1413	Right Side	1	Down	1	1	22.5	21.98	0.04	0.092	0.515	0.104
U77	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	1	22.5	21.98	0.08	0.495	0.266	0.558
U78	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	2	1	22.5	21.98	-0.18	0.455	0.246	0.513
U79	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	2	22.5	21.98	0.02	0.480	0.255	0.541
U130	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	1	22.5	21.98	-0.02	0.465	0.237	0.524
U86	UMTS B4	RMC12.2K	1312	Front Face	1	Up	1	1	21	20.55	0.12	0.181	0.089	0.201
U87	UMTS B4	RMC12.2K	1312	Rear Face	1	Up	1	1	21	20.55	0	0.226	0.115	0.251
U88	UMTS B4	RMC12.2K	1312	Left Side	1	Up	1	1	21	20.55	-0.01	0.031	0.017	0.034
U89	UMTS B4	RMC12.2K	1312	Top Side	1	Up	1	1	21	20.55	0.09	0.726	0.351	0.805
U90	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	1	21	20.51	0.09	0.741	0.369	0.830
U91	UMTS B4	RMC12.2K	1513	Top Side	1	Up	1	1	21	20.35	0.05	0.705	0.341	0.819
U92	UMTS B4	RMC12.2K	1413	Top Side	1	Up	2	1	21	20.51	0.04	0.728	0.353	0.815
U93	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	2	21	20.51	-0.13	0.733	0.359	0.821
U132	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	1	21	20.51	-0.15	0.686	0.345	0.768
U100	UMTS B5	RMC12.2K	4182	Front Face	1	Down	1	1	24.5	22.81	-0.02	0.125	0.100	0.184
U101	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	1	1	24.5	22.81	0.09	0.166	0.107	0.245
U102	UMTS B5	RMC12.2K	4182	Left Side	1	Down	1	1	24.5	22.81	0.11	0.065	0.047	0.096
U103	UMTS B5	RMC12.2K	4182	Right Side	1	Down	1	1	24.5	22.81	0.07	0.051	0.036	0.075
U104	UMTS B5	RMC12.2K	4182	Bottom Side	1	Down	1	1	24.5	22.81	-0.04	0.143	0.079	0.211
U105	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	1	24.5	22.81	-0.09	0.181	0.112	0.267
U106	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	2	24.5	22.81	0.03	0.169	0.106	0.249
U134	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	1	24.5	22.81	0	0.169	0.107	0.249
U113	UMTS B5	RMC12.2K	4132	Front Face	1	Up	1	1	24.5	23.29	0.03	0.113	0.073	0.149
U114	UMTS B5	RMC12.2K	4132	Rear Face	1	Up	1	1	24.5	23.29	-0.04	0.152	0.096	0.201
U115	UMTS B5	RMC12.2K	4132	Left Side	1	Up	1	1	24.5	23.29	0.07	0.077	0.052	0.102
U116	UMTS B5	RMC12.2K	4132	Top Side	1	Up	1	1	24.5	23.29	0.1	0.162	0.094	0.214
U117	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	1	24.5	23.29	-0.12	0.168	0.102	0.222
U118	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	2	24.5	23.29	0.09	0.156	0.096	0.206
U136	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	1	24.5	23.29	0.12	0.143	0.084	0.189

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L246	LTE B2	QPSK20M	18900	1	0	Front Face	1	Down	1	1	24.00	23.39	0.12	0.298	0.188	0.343
L247	LTE B2	QPSK20M	18900	1	0	Rear Face	1	Down	1	1	24.00	23.39	-0.06	0.451	0.290	0.519
L248	LTE B2	QPSK20M	18900	1	0	Left Side	1	Down	1	1	24.00	23.39	0.05	0.076	0.046	0.088
L249	LTE B2	QPSK20M	18900	1	0	Right Side	1	Down	1	1	24.00	23.39	0.04	0.064	0.037	0.074
L250	LTE B2	QPSK20M	18900	1	0	Bottom Side	1	Down	1	1	24.00	23.39	-0.01	0.752	0.437	0.866
L251	LTE B2	QPSK20M	18900	50	0	Front Face	1	Down	1	1	23.00	21.63	-0.15	0.219	0.137	0.300
L252	LTE B2	QPSK20M	18900	50	0	Rear Face	1	Down	1	1	23.00	21.63	0.08	0.331	0.210	0.454
L253	LTE B2	QPSK20M	18900	50	0	Left Side	1	Down	1	1	23.00	21.63	-0.02	0.054	0.033	0.073
L254	LTE B2	QPSK20M	18900	50	0	Right Side	1	Down	1	1	23.00	21.63	0.01	0.066	0.038	0.090
L255	LTE B2	QPSK20M	18900	50	0	Bottom Side	1	Down	1	1	23.00	21.63	0.16	0.565	0.325	0.774
L256	LTE B2	QPSK20M	18700	1	0	Bottom Side	1	Down	1	1	24.00	23.24	-0.12	0.713	0.405	0.850
L257	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	1	24.00	23.30	-0.11	0.774	0.443	0.909
L258	LTE B2	QPSK20M	19100	100	0	Bottom Side	1	Down	1	1	23.00	21.58	0.05	0.543	0.314	0.752
L259	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	2	1	24.00	23.30	0.08	0.765	0.412	0.899
L260	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	2	24.00	23.30	0.06	0.728	0.422	0.855
L261	LTE B2	QPSK20M	19100	1	0	Bottom Side (Repeated)	1	Down	1	1	24.00	23.30	0.01	0.757	0.426	0.889
L671	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	1	24.00	23.30	-0.06	0.697	0.366	0.819
L270	LTE B2	QPSK20M	18900	1	0	Front Face	1	Up	1	1	22.50	22.22	0.13	0.217	0.120	0.232
L271	LTE B2	QPSK20M	18900	1	0	Rear Face	1	Up	1	1	22.50	22.22	0.06	0.313	0.167	0.334
L272	LTE B2	QPSK20M	18900	1	0	Left Side	1	Up	1	1	22.50	22.22	-0.09	0.043	0.026	0.046
L273	LTE B2	QPSK20M	18900	1	0	Top Side	1	Up	1	1	22.50	22.22	0.03	0.477	0.240	0.509
L274	LTE B2	QPSK20M	18900	50	25	Front Face	1	Up	1	1	22.50	22.03	0.05	0.227	0.123	0.253
L275	LTE B2	QPSK20M	18900	50	25	Rear Face	1	Up	1	1	22.50	22.03	0.07	0.312	0.170	0.347
L276	LTE B2	QPSK20M	18900	50	25	Left Side	1	Up	1	1	22.50	22.03	-0.13	0.054	0.033	0.060
L277	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	1	22.50	22.03	0.05	0.502	0.252	0.559
L278	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	2	1	22.50	22.03	0.08	0.489	0.243	0.545
L279	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	2	22.50	22.03	0.01	0.495	0.249	0.551
L673	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	1	22.50	22.03	-0.12	0.474	0.221	0.528
L288	LTE B4	QPSK20M	20175	1	0	Front Face	1	Down	1	1	24.00	22.93	0.12	0.413	0.244	0.529
L289	LTE B4	QPSK20M	20175	1	0	Rear Face	1	Down	1	1	24.00	22.93	0.06	0.516	0.321	0.661
L290	LTE B4	QPSK20M	20175	1	0	Left Side	1	Down	1	1	24.00	22.93	0.09	0.060	0.038	0.077
L291	LTE B4	QPSK20M	20175	1	0	Right Side	1	Down	1	1	24.00	22.93	0.01	0.081	0.044	0.104
L292	LTE B4	QPSK20M	20175	1	0	Bottom Side	1	Down	1	1	24.00	22.93	-0.05	0.771	0.420	0.987
L293	LTE B4	QPSK20M	20050	50	25	Front Face	1	Down	1	1	23.00	21.79	-0.13	0.342	0.204	0.452
L294	LTE B4	QPSK20M	20050	50	25	Rear Face	1	Down	1	1	23.00	21.79	0.08	0.412	0.258	0.544
L295	LTE B4	QPSK20M	20050	50	25	Left Side	1	Down	1	1	23.00	21.79	0	0.091	0.054	0.120
L296	LTE B4	QPSK20M	20050	50	25	Right Side	1	Down	1	1	23.00	21.79	0.04	0.061	0.036	0.081
L297	LTE B4	QPSK20M	20050	50	25	Bottom Side	1	Down	1	1	23.00	21.79	0.02	0.654	0.358	0.864
L298	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	1	24.00	22.92	0.01	0.872	0.480	1.118
L299	LTE B4	QPSK20M	20050	1	0	Bottom Side	1	Down	1	1	24.00	22.91	-0.09	0.770	0.416	0.990
L300	LTE B4	QPSK20M	20300	50	50	Bottom Side	1	Down	1	1	23.00	21.72	0.12	0.711	0.384	0.954
L301	LTE B4	QPSK20M	20175	50	0	Bottom Side	1	Down	1	1	23.00	21.73	0.05	0.654	0.350	0.876
L302	LTE B4	QPSK20M	20050	100	0	Bottom Side	1	Down	1	1	23.00	21.72	0.06	0.637	0.345	0.856
L303	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	2	1	24.00	22.92	0.19	0.741	0.411	0.950
L304	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	2	24.00	22.92	0.02	0.813	0.475	1.042
L305	LTE B4	QPSK20M	20300	1	99	Bottom Side (Repeated)	1	Down	1	1	24.00	22.92	0.04	0.865	0.479	1.109
L675	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	1	24.00	22.92	-0.05	0.856	0.457	1.097

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L314	LTE B4	QPSK20M	20050	1	99	Front Face	1	Up	1	1	24.00	23.47	0.13	0.508	0.281	0.574
L315	LTE B4	QPSK20M	20050	1	99	Rear Face	1	Up	1	1	24.00	23.47	-0.05	0.679	0.383	0.768
L316	LTE B4	QPSK20M	20050	1	99	Left Side	1	Up	1	1	24.00	23.47	0.01	0.083	0.051	0.093
L317	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	1	1	24.00	23.47	0.08	0.892	0.432	1.009
L318	LTE B4	QPSK20M	20050	50	0	Front Face	1	Up	1	1	23.00	22.33	0.15	0.433	0.234	0.505
L319	LTE B4	QPSK20M	20050	50	0	Rear Face	1	Up	1	1	23.00	22.33	-0.06	0.575	0.319	0.670
L320	LTE B4	QPSK20M	20050	50	0	Left Side	1	Up	1	1	23.00	22.33	0.01	0.060	0.037	0.070
L321	LTE B4	QPSK20M	20050	50	0	Top Side	1	Up	1	1	23.00	22.33	0.18	0.805	0.401	0.938
L322	LTE B4	QPSK20M	20175	1	99	Top Side	1	Up	1	1	24.00	23.26	0.05	0.853	0.461	1.012
L323	LTE B4	QPSK20M	20300	1	99	Top Side	1	Up	1	1	24.00	23.18	0.12	0.828	0.442	1.000
L324	LTE B4	QPSK20M	20175	50	0	Top Side	1	Up	1	1	23.00	22.25	0.1	0.688	0.348	0.817
L325	LTE B4	QPSK20M	20300	50	0	Top Side	1	Up	1	1	23.00	22.30	0.13	0.710	0.384	0.834
L326	LTE B4	QPSK20M	20050	100	0	Top Side	1	Up	1	1	24.00	23.47	0.07	0.661	0.333	0.747
L327	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	2	1	24.00	23.47	-0.05	0.824	0.414	0.932
L328	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	1	2	24.00	23.47	0.07	0.892	0.431	1.009
L329	LTE B4	QPSK20M	20050	1	99	Top Side (Repeated)	1	Up	1	1	24.00	23.47	0	0.900	0.449	1.018
L677	LTE B4	QPSK20M	20050	1	99	Top Side (Repeated)	1	Up	1	1	24.00	23.47	0.17	0.883	0.413	0.998
L338	LTE B5	QPSK10M	20450	1	49	Front Face	1	Down	1	1	24.50	23.86	0.02	0.184	0.136	0.213
L339	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	1	1	24.50	23.86	-0.13	0.240	0.146	0.278
L340	LTE B5	QPSK10M	20450	1	49	Left Side	1	Down	1	1	24.50	23.86	0.09	0.119	0.080	0.138
L341	LTE B5	QPSK10M	20450	1	49	Right Side	1	Down	1	1	24.50	23.86	-0.05	0.073	0.048	0.085
L342	LTE B5	QPSK10M	20450	1	49	Bottom Side	1	Down	1	1	24.50	23.86	0.18	0.193	0.108	0.224
L343	LTE B5	QPSK10M	20450	25	12	Front Face	1	Down	1	1	23.50	22.73	0.04	0.146	0.109	0.174
L344	LTE B5	QPSK10M	20450	25	12	Rear Face	1	Down	1	1	23.50	22.73	-0.09	0.173	0.107	0.207
L345	LTE B5	QPSK10M	20450	25	12	Left Side	1	Down	1	1	23.50	22.73	0.01	0.092	0.062	0.109
L346	LTE B5	QPSK10M	20450	25	12	Right Side	1	Down	1	1	23.50	22.73	0.06	0.058	0.039	0.070
L347	LTE B5	QPSK10M	20450	25	12	Bottom Side	1	Down	1	1	23.50	22.73	-0.01	0.147	0.079	0.176
L348	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	1	24.50	23.86	-0.07	0.249	0.150	0.289
L349	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	2	24.50	23.86	0.16	0.241	0.146	0.279
L679	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	1	24.50	23.86	-0.07	0.228	0.147	0.264
L358	LTE B5	QPSK10M	20450	1	49	Front Face	1	Up	1	1	24.50	24.12	0.03	0.128	0.090	0.140
L359	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Up	1	1	24.50	24.12	-0.12	0.150	0.095	0.164
L360	LTE B5	QPSK10M	20450	1	49	Left Side	1	Up	1	1	24.50	24.12	0.06	0.059	0.044	0.064
L361	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	1	24.50	24.12	0.03	0.152	0.101	0.166
L362	LTE B5	QPSK10M	20450	1	24	Front Face	1	Up	1	1	23.50	22.95	-0.11	0.102	0.073	0.116
L363	LTE B5	QPSK10M	20450	1	24	Rear Face	1	Up	1	1	23.50	22.95	0.02	0.143	0.091	0.162
L364	LTE B5	QPSK10M	20450	1	24	Left Side	1	Up	1	1	23.50	22.95	0.09	0.063	0.048	0.072
L365	LTE B5	QPSK10M	20450	1	24	Top Side	1	Up	1	1	23.50	22.95	0.05	0.109	0.068	0.124
L366	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	2	1	24.50	24.12	-0.14	0.151	0.118	0.165
L367	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	2	24.50	24.12	0.04	0.153	0.094	0.167
L681	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	2	24.50	24.12	-0.06	0.145	0.085	0.158

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L376	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	1	23.50	22.33	-0.12	0.540	0.290	0.707
L377	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	1	1	23.50	22.33	0.11	0.481	0.251	0.630
L378	LTE B7	QPSK20M	21100	1	50	Left Side	1	Down	1	1	23.50	22.33	-0.03	0.074	0.041	0.097
L379	LTE B7	QPSK20M	21100	1	50	Right Side	1	Down	1	1	23.50	22.33	0.1	0.401	0.205	0.525
L380	LTE B7	QPSK20M	21100	1	50	Bottom Side	1	Down	1	1	23.50	22.33	0.17	0.482	0.218	0.632
L381	LTE B7	QPSK20M	21100	50	25	Front Face	1	Down	1	1	22.50	21.18	-0.01	0.421	0.227	0.571
L382	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Down	1	1	22.50	21.18	0.08	0.379	0.201	0.514
L383	LTE B7	QPSK20M	21100	50	25	Left Side	1	Down	1	1	22.50	21.18	0.06	0.062	0.033	0.084
L384	LTE B7	QPSK20M	21100	50	25	Right Side	1	Down	1	1	22.50	21.18	-0.12	0.342	0.177	0.464
L385	LTE B7	QPSK20M	21100	50	25	Bottom Side	1	Down	1	1	22.50	21.18	0	0.317	0.151	0.430
L386	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	2	1	23.50	22.33	0.06	0.501	0.271	0.656
L387	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	2	23.50	22.33	0.02	0.529	0.278	0.693
L683	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	1	23.50	22.33	-0.11	0.436	0.238	0.571
L396	LTE B7	QPSK20M	21100	1	0	Front Face	1	Up	1	1	22.00	21.70	0.18	0.275	0.138	0.295
L397	LTE B7	QPSK20M	21100	1	0	Rear Face	1	Up	1	1	22.00	21.70	-0.01	0.637	0.269	0.683
L398	LTE B7	QPSK20M	21100	1	0	Left Side	1	Up	1	1	22.00	21.70	0.01	0.291	0.156	0.312
L399	LTE B7	QPSK20M	21100	1	0	Top Side	1	Up	1	1	22.00	21.70	0.03	0.767	0.318	0.822
L400	LTE B7	QPSK20M	21100	50	25	Front Face	1	Up	1	1	22.00	21.43	0.09	0.271	0.135	0.309
L401	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Up	1	1	22.00	21.43	-0.12	0.634	0.292	0.723
L402	LTE B7	QPSK20M	21100	50	25	Left Side	1	Up	1	1	22.00	21.43	0	0.287	0.152	0.327
L403	LTE B7	QPSK20M	21100	50	25	Top Side	1	Up	1	1	22.00	21.43	0.17	0.692	0.289	0.789
L404	LTE B7	QPSK20M	20850	1	0	Top Side	1	Up	1	1	22.00	21.69	-0.15	0.810	0.339	0.869
L405	LTE B7	QPSK20M	21350	1	50	Top Side	1	Up	1	1	22.00	21.64	-0.02	0.629	0.260	0.683
L406	LTE B7	QPSK20M	20850	100	0	Top Side	1	Up	1	1	22.00	21.48	-0.16	0.751	0.291	0.846
L407	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	2	1	22.00	21.69	-0.17	0.794	0.335	0.852
L408	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	1	2	22.00	21.69	0.05	0.794	0.309	0.852
L409	LTE B7	QPSK20M	20850	1	50	Top Side (Repeated)	1	Up	1	1	22.00	21.64	0.16	0.800	0.311	0.868
L685	LTE B7	QPSK20M	20850	1	0	Top Side	1	Up	1	1	22.00	21.69	0.19	0.783	0.308	0.841
L418	LTE B12	QPSK10M	23095	1	0	Front Face	1	Down	1	1	24.50	23.63	0.02	0.099	0.078	0.121
L419	LTE B12	QPSK10M	23095	1	0	Rear Face	1	Down	1	1	24.50	23.63	0.01	0.119	0.093	0.145
L420	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	1	24.50	23.63	-0.06	0.153	0.107	0.187
L421	LTE B12	QPSK10M	23095	1	0	Right Side	1	Down	1	1	24.50	23.63	-0.05	0.082	0.058	0.101
L422	LTE B12	QPSK10M	23095	1	0	Bottom Side	1	Down	1	1	24.50	23.63	0.11	0.051	0.029	0.062
L423	LTE B12	QPSK10M	23130	25	0	Front Face	1	Down	1	1	23.50	22.45	0.09	0.084	0.066	0.106
L424	LTE B12	QPSK10M	23130	25	0	Rear Face	1	Down	1	1	23.50	22.45	0.03	0.105	0.082	0.134
L425	LTE B12	QPSK10M	23130	25	0	Left Side	1	Down	1	1	23.50	22.45	0.08	0.128	0.083	0.163
L426	LTE B12	QPSK10M	23130	25	0	Right Side	1	Down	1	1	23.50	22.45	-0.02	0.079	0.052	0.101
L427	LTE B12	QPSK10M	23130	25	0	Bottom Side	1	Down	1	1	23.50	22.45	0.07	0.041	0.024	0.053
L428	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	2	1	24.50	23.63	0.0.1	0.120	0.095	0.147
L429	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	2	24.50	23.63	-0.15	0.151	0.105	0.185
L687	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	1	24.50	23.63	0.02	0.096	0.064	0.117

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L438	LTE B12	QPSK10M	23130	1	0	Front Face	1	Up	1	1	24.50	23.71	0.03	0.082	0.056	0.098
L439	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	1	24.50	23.71	-0.04	0.096	0.065	0.114
L440	LTE B12	QPSK10M	23130	1	0	Left Side	1	Up	1	1	24.50	23.71	0.05	0.076	0.061	0.091
L441	LTE B12	QPSK10M	23130	1	0	Top Side	1	Up	1	1	24.50	23.71	0.09	0.064	0.033	0.077
L442	LTE B12	QPSK10M	23130	25	12	Front Face	1	Up	1	1	23.50	22.53	0.11	0.069	0.044	0.086
L443	LTE B12	QPSK10M	23130	25	12	Rear Face	1	Up	1	1	23.50	22.53	0.13	0.080	0.054	0.099
L444	LTE B12	QPSK10M	23130	25	12	Left Side	1	Up	1	1	23.50	22.53	-0.07	0.071	0.050	0.089
L445	LTE B12	QPSK10M	23130	25	12	Top Side	1	Up	1	1	23.50	22.53	0.03	0.053	0.032	0.067
L446	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	2	1	24.50	23.71	0.08	0.091	0.062	0.110
L447	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	2	24.50	23.71	0.03	0.093	0.063	0.111
L689	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	1	24.50	23.71	0.16	0.086	0.048	0.103
L456	LTE B17	QPSK10M	23800	1	0	Front Face	1	Down	1	1	24.50	23.60	0.07	0.112	0.073	0.138
L457	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	1	1	24.50	23.60	-0.08	0.140	0.091	0.172
L458	LTE B17	QPSK10M	23800	1	0	Left Side	1	Down	1	1	24.50	23.60	0.04	0.053	0.032	0.065
L459	LTE B17	QPSK10M	23800	1	0	Right Side	1	Down	1	1	24.50	23.60	0.12	0.043	0.026	0.053
L460	LTE B17	QPSK10M	23800	1	0	Bottom Side	1	Down	1	1	24.50	23.60	0.03	0.072	0.035	0.089
L461	LTE B17	QPSK10M	23790	25	12	Front Face	1	Down	1	1	23.50	22.40	-0.05	0.089	0.057	0.114
L462	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Down	1	1	23.50	22.40	0.06	0.111	0.087	0.143
L463	LTE B17	QPSK10M	23790	25	12	Left Side	1	Down	1	1	23.50	22.40	0.01	0.042	0.025	0.054
L464	LTE B17	QPSK10M	23790	25	12	Right Side	1	Down	1	1	23.50	22.40	-0.17	0.038	0.022	0.049
L465	LTE B17	QPSK10M	23790	25	12	Bottom Side	1	Down	1	1	23.50	22.40	0.07	0.052	0.025	0.067
L466	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	1	24.50	23.60	-0.09	0.141	0.091	0.173
L467	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	2	24.50	23.60	0.15	0.137	0.088	0.168
L691	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	1	24.50	23.60	0.03	0.123	0.084	0.151
L476	LTE B17	QPSK10M	23790	1	0	Front Face	1	Up	1	1	24.50	23.81	-0.03	0.082	0.057	0.096
L477	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	1	1	24.50	23.81	-0.18	0.097	0.064	0.113
L478	LTE B17	QPSK10M	23790	1	0	Left Side	1	Up	1	1	24.50	23.81	0.12	0.047	0.028	0.055
L479	LTE B17	QPSK10M	23790	1	0	Top Side	1	Up	1	1	24.50	23.81	0.16	0.074	0.036	0.086
L480	LTE B17	QPSK10M	23780	25	0	Front Face	1	Up	1	1	23.50	22.58	-0.12	0.066	0.045	0.082
L481	LTE B17	QPSK10M	23780	25	0	Rear Face	1	Up	1	1	23.50	22.58	-0.06	0.079	0.052	0.097
L482	LTE B17	QPSK10M	23780	25	0	Left Side	1	Up	1	1	23.50	22.58	0.01	0.042	0.026	0.051
L483	LTE B17	QPSK10M	23780	25	0	Top Side	1	Up	1	1	23.50	22.58	0.13	0.061	0.028	0.075
L484	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	1	24.50	23.81	-0.13	0.099	0.068	0.116
L485	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	2	24.50	23.81	0.05	0.091	0.062	0.107
L693	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	1	24.50	23.81	0.01	0.086	0.052	0.101

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L494	LTE B26	QPSK15M	26865	1	0	Front Face	1	Down	1	1	24.50	23.60	0.17	0.142	0.109	0.175
L495	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	1	24.50	23.60	0.01	0.199	0.124	0.245
L496	LTE B26	QPSK15M	26865	1	0	Left Side	1	Down	1	1	24.50	23.60	0.08	0.071	0.049	0.087
L497	LTE B26	QPSK15M	26865	1	0	Right Side	1	Down	1	1	24.50	23.60	-0.02	0.048	0.034	0.059
L498	LTE B26	QPSK15M	26865	1	0	Bottom Side	1	Down	1	1	24.50	23.60	0.15	0.131	0.074	0.161
L499	LTE B26	QPSK15M	26865	36	19	Front Face	1	Down	1	1	23.50	22.58	-0.18	0.117	0.091	0.145
L500	LTE B26	QPSK15M	26865	36	19	Rear Face	1	Down	1	1	23.50	22.58	-0.01	0.159	0.097	0.197
L501	LTE B26	QPSK15M	26865	36	19	Left Side	1	Down	1	1	23.50	22.58	0.07	0.059	0.042	0.073
L502	LTE B26	QPSK15M	26865	36	19	Right Side	1	Down	1	1	23.50	22.58	0.11	0.043	0.030	0.053
L503	LTE B26	QPSK15M	26865	36	19	Bottom Side	1	Down	1	1	23.50	22.58	0.13	0.119	0.068	0.147
L504	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	2	1	24.50	23.60	-0.05	0.198	0.123	0.243
L505	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	2	24.50	23.60	0.09	0.184	0.115	0.226
L695	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	1	24.50	23.60	-0.08	0.189	0.103	0.232
L514	LTE B26	QPSK15M	26865	1	0	Front Face	1	Up	1	1	24.50	23.75	0.19	0.108	0.060	0.128
L515	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	1	24.50	23.75	-0.05	0.141	0.090	0.168
L516	LTE B26	QPSK15M	26865	1	0	Left Side	1	Up	1	1	24.50	23.75	0.01	0.060	0.035	0.072
L517	LTE B26	QPSK15M	26865	1	0	Top Side	1	Up	1	1	24.50	23.75	0.15	0.113	0.055	0.134
L518	LTE B26	QPSK15M	26765	36	0	Front Face	1	Up	1	1	23.50	22.82	0.03	0.091	0.051	0.106
L519	LTE B26	QPSK15M	26765	36	0	Rear Face	1	Up	1	1	23.50	22.82	0.02	0.116	0.073	0.136
L520	LTE B26	QPSK15M	26765	36	0	Left Side	1	Up	1	1	23.50	22.82	0.07	0.053	0.031	0.062
L521	LTE B26	QPSK15M	26765	36	0	Top Side	1	Up	1	1	23.50	22.82	-0.13	0.093	0.042	0.109
L522	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	2	1	24.50	23.75	0.09	0.133	0.072	0.158
L523	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	2	24.50	23.75	-0.01	0.138	0.078	0.164
L697	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	1	24.50	23.75	0	0.131	0.077	0.156
L532	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	1	1	24.00	23.22	0.01	0.347	0.186	0.415
L533	LTE B38	QPSK20M	37850	1	0	Rear Face	1	Down	1	1	24.00	23.22	0.09	0.327	0.169	0.391
L534	LTE B38	QPSK20M	37850	1	0	Left Side	1	Down	1	1	24.00	23.22	0.08	0.072	0.040	0.087
L535	LTE B38	QPSK20M	37850	1	0	Right Side	1	Down	1	1	24.00	23.22	0.03	0.307	0.158	0.367
L536	LTE B38	QPSK20M	37850	1	0	Bottom Side	1	Down	1	1	24.00	23.22	-0.18	0.284	0.135	0.340
L537	LTE B38	QPSK20M	37850	50	25	Front Face	1	Down	1	1	23.00	22.06	0.05	0.268	0.142	0.333
L538	LTE B38	QPSK20M	37850	50	25	Rear Face	1	Down	1	1	23.00	22.06	-0.05	0.275	0.140	0.342
L539	LTE B38	QPSK20M	37850	50	25	Left Side	1	Down	1	1	23.00	22.06	-0.18	0.066	0.037	0.082
L540	LTE B38	QPSK20M	37850	50	25	Right Side	1	Down	1	1	23.00	22.06	-0.15	0.248	0.131	0.308
L541	LTE B38	QPSK20M	37850	50	25	Bottom Side	1	Down	1	1	23.00	22.06	0.1	0.228	0.105	0.283
L542	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	1	24.00	23.22	0.01	0.358	0.191	0.428
L543	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	2	24.00	23.22	0.02	0.350	0.189	0.418
L699	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	1	24.00	23.22	-0.18	0.216	0.116	0.258

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L552	LTE B38	QPSK20M	37850	1	99	Front Face	1	Up	1	1	24.00	23.74	0.03	0.436	0.210	0.462
L553	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	1	24.00	23.74	-0.02	0.885	0.389	0.939
L554	LTE B38	QPSK20M	37850	1	99	Left Side	1	Up	1	1	24.00	23.74	0.09	0.718	0.311	0.762
L555	LTE B38	QPSK20M	37850	1	99	Top Side	1	Up	1	1	24.00	23.74	0.04	0.707	0.289	0.750
L556	LTE B38	QPSK20M	37850	50	50	Front Face	1	Up	1	1	23.00	22.54	0.12	0.341	0.170	0.379
L557	LTE B38	QPSK20M	37850	50	50	Rear Face	1	Up	1	1	23.00	22.54	0.14	0.689	0.302	0.766
L558	LTE B38	QPSK20M	37850	50	50	Left Side	1	Up	1	1	23.00	22.54	-0.06	0.605	0.240	0.672
L559	LTE B38	QPSK20M	37850	50	50	Top Side	1	Up	1	1	23.00	22.54	0.01	0.643	0.246	0.715
L560	LTE B38	QPSK20M	38000	1	99	Rear Face	1	Up	1	1	24.00	23.60	-0.1	0.804	0.359	0.882
L561	LTE B38	QPSK20M	38150	1	99	Rear Face	1	Up	1	1	24.00	23.57	-0.05	0.745	0.341	0.823
L562	LTE B38	QPSK20M	37850	100	0	Rear Face	1	Up	1	1	23.00	22.55	-0.08	0.551	0.241	0.612
L563	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	2	1	24.00	23.74	-0.16	0.822	0.365	0.872
L564	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	2	24.00	23.74	0.07	0.834	0.377	0.885
L565	LTE B38	QPSK20M	37850	1	99	Rear Face (Repeated)	1	Up	1	1	24.00	23.74	-0.03	0.726	0.316	0.770
L701	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	1	24.00	23.74	-0.14	0.878	0.381	0.931
L574	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	1	24.00	22.91	0.01	0.355	0.193	0.456
L575	LTE B41	QPSK20M	40140	1	0	Rear Face	1	Down	1	1	24.00	22.91	-0.08	0.325	0.171	0.418
L576	LTE B41	QPSK20M	40140	1	0	Left Side	1	Down	1	1	24.00	22.91	0	0.058	0.034	0.075
L577	LTE B41	QPSK20M	40140	1	0	Right Side	1	Down	1	1	24.00	22.91	-0.15	0.214	0.120	0.275
L578	LTE B41	QPSK20M	40140	1	0	Bottom Side	1	Down	1	1	24.00	22.91	-0.09	0.256	0.127	0.329
L579	LTE B41	QPSK20M	40140	50	25	Front Face	1	Down	1	1	23.00	21.84	-0.09	0.284	0.153	0.371
L580	LTE B41	QPSK20M	40140	50	25	Rear Face	1	Down	1	1	23.00	21.84	0.05	0.239	0.133	0.312
L581	LTE B41	QPSK20M	40140	50	25	Left Side	1	Down	1	1	23.00	21.84	0.03	0.031	0.017	0.040
L582	LTE B41	QPSK20M	40140	50	25	Right Side	1	Down	1	1	23.00	21.84	0.02	0.192	0.106	0.251
L583	LTE B41	QPSK20M	40140	50	25	Bottom Side	1	Down	1	1	23.00	21.84	0.18	0.231	0.107	0.301
L584	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	2	1	24.00	22.91	0.05	0.353	0.192	0.454
L585	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	2	24.00	22.91	0.03	0.350	0.192	0.450
L703	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	1	24.00	22.91	0.06	0.318	0.179	0.409
L594	LTE B41	QPSK20M	40440	1	0	Front Face	1	Up	1	1	24.00	23.48	0.02	0.362	0.177	0.408
L595	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	1	24.00	23.48	-0.07	0.689	0.306	0.777
L596	LTE B41	QPSK20M	40440	1	0	Left Side	1	Up	1	1	24.00	23.48	0	0.495	0.236	0.559
L597	LTE B41	QPSK20M	40440	1	0	Top Side	1	Up	1	1	24.00	23.48	-0.11	0.583	0.241	0.658
L598	LTE B41	QPSK20M	40140	50	0	Front Face	1	Up	1	1	23.00	22.45	0.07	0.283	0.141	0.321
L599	LTE B41	QPSK20M	40140	50	0	Rear Face	1	Up	1	1	23.00	22.45	-0.1	0.586	0.253	0.665
L600	LTE B41	QPSK20M	40140	50	0	Left Side	1	Up	1	1	23.00	22.45	0.05	0.354	0.169	0.402
L601	LTE B41	QPSK20M	40140	50	0	Top Side	1	Up	1	1	23.00	22.45	0.08	0.516	0.212	0.586
L602	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	2	1	24.00	23.48	0.05	0.670	0.284	0.756
L603	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	2	24.00	23.48	-0.07	0.657	0.275	0.741
L705	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	1	24.00	23.48	-0.1	0.598	0.255	0.675

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L612	LTE B66	QPSK20M	132322	1	99	Front Face	1	Down	1	1	24.00	23.23	0.19	0.442	0.255	0.528
L613	LTE B66	QPSK20M	132322	1	99	Rear Face	1	Down	1	1	24.00	23.23	0.1	0.561	0.343	0.670
L614	LTE B66	QPSK20M	132322	1	99	Left Side	1	Down	1	1	24.00	23.23	-0.09	0.059	0.035	0.070
L615	LTE B66	QPSK20M	132322	1	99	Right Side	1	Down	1	1	24.00	23.23	0.13	0.077	0.044	0.092
L616	LTE B66	QPSK20M	132322	1	99	Bottom Side	1	Down	1	1	24.00	23.23	-0.01	0.907	0.489	1.084
L617	LTE B66	QPSK20M	132322	50	25	Front Face	1	Down	1	1	23.00	21.88	0.04	0.358	0.208	0.463
L618	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Down	1	1	23.00	21.88	0.02	0.444	0.278	0.574
L619	LTE B66	QPSK20M	132322	50	25	Left Side	1	Down	1	1	23.00	21.88	0	0.068	0.040	0.088
L620	LTE B66	QPSK20M	132322	50	25	Right Side	1	Down	1	1	23.00	21.88	0.06	0.073	0.043	0.094
L621	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	1	1	23.00	21.88	-0.07	0.691	0.375	0.893
L622	LTE B66	QPSK20M	132072	1	99	Bottom Side	1	Down	1	1	24.00	23.21	0.11	0.836	0.456	1.003
L623	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	1	24.00	23.19	-0.18	0.954	0.525	1.149
L624	LTE B66	QPSK20M	132072	50	50	Bottom Side	1	Down	1	1	23.00	21.84	0.11	0.624	0.334	0.814
L625	LTE B66	QPSK20M	132572	50	25	Bottom Side	1	Down	1	1	23.00	21.72	-0.18	0.748	0.406	1.004
L626	LTE B66	QPSK20M	132072	100	0	Bottom Side	1	Down	1	1	23.00	21.79	0.11	0.673	0.361	0.889
L627	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	2	1	24.00	23.19	0.13	0.927	0.505	1.117
L628	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	2	24.00	23.19	0.01	0.944	0.512	1.137
L629	LTE B66	QPSK20M	132572	1	99	Bottom Side (Repeated)	1	Down	1	1	24.00	23.19	-0.06	0.951	0.521	1.146
L707	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	1	24.00	23.19	0.06	0.912	0.47	1.099
L638	LTE B66	QPSK20M	132572	1	99	Front Face	1	Up	1	1	21.00	20.26	0.03	0.291	0.153	0.345
L639	LTE B66	QPSK20M	132572	1	99	Rear Face	1	Up	1	1	21.00	20.26	0.15	0.457	0.238	0.542
L640	LTE B66	QPSK20M	132572	1	99	Left Side	1	Up	1	1	21.00	20.26	0.1	0.044	0.026	0.052
L641	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	1	1	21.00	20.26	-0.16	0.590	0.291	0.700
L642	LTE B66	QPSK20M	132572	50	25	Front Face	1	Up	1	1	21.00	19.78	0.07	0.264	0.139	0.350
L643	LTE B66	QPSK20M	132572	50	25	Rear Face	1	Up	1	1	21.00	19.78	0.12	0.431	0.225	0.571
L644	LTE B66	QPSK20M	132572	50	25	Left Side	1	Up	1	1	21.00	19.78	0.18	0.041	0.025	0.055
L645	LTE B66	QPSK20M	132572	50	25	Top Side	1	Up	1	1	21.00	19.78	0.06	0.543	0.268	0.719
L646	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	2	1	21.00	20.26	-0.05	0.560	0.276	0.664
L647	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	1	2	21.00	20.26	0.01	0.583	0.287	0.691

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)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W62	802.11b	1	Front Face	1	1	1	20	19.77	0.01	0.309	0.158	0.326
W63	802.11b	1	Rear Face	1	1	1	20	19.77	0.02	0.271	0.137	0.286
W64	802.11b	1	Right Side	1	1	1	20	19.77	-0.09	0.059	0.034	0.062
W65	802.11b	1	Top Side	1	1	1	20	19.77	-0.16	0.352	0.184	0.371
W66	802.11b	1	Top Side	1	2	1	20	19.77	0.05	0.341	0.178	0.360

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)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
W78	802.11a	36	Front Face	1	1	6	17	16.77	0.12	0.251	0.092	0.265
W79	802.11a	36	Rear Face	1	1	6	17	16.77	0.04	0.408	0.138	0.430
W80	802.11a	36	Right Side	1	1	6	17	16.77	-0.01	0.038	0.011	0.040
W81	802.11a	36	Top Side	1	1	6	17	16.77	0.04	0.418	0.154	0.441
W82	802.11a	36	Top Side	1	2	6	17	16.77	0.09	0.413	0.150	0.435
W108	802.11a	157	Front Face	1	1	6	16.5	16.47	-0.05	0.196	0.083	0.197
W109	802.11a	157	Rear Face	1	1	6	16.5	16.47	0.11	0.426	0.140	0.429
W110	802.11a	157	Right Side	1	1	6	16.5	16.47	0.12	0.389	0.117	0.392
W111	802.11a	157	Top Side	1	1	6	16.5	16.47	0.02	0.407	0.146	0.410
W112	802.11a	157	Rear Face	1	2	6	16.5	16.47	-0.03	0.411	0.132	0.414

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	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
G33	GSM 850	GPRS2TX	190	Front Face	1	Down	1	1	31.5	30.65	0.102	YES
G34	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	1	31.5	30.65	0.151	YES
G35	GSM 850	GPRS2TX	190	Left Side	1	Down	1	1	31.5	30.65	0.044	YES
G36	GSM 850	GPRS2TX	190	Right Side	1	Down	1	1	31.5	30.65	0.028	YES
G37	GSM 850	GPRS2TX	190	Bottom Side	1	Down	1	1	31.5	30.65	0.127	YES
G38	GSM 850	GPRS2TX	190	Rear Face	1	Down	2	1	31.5	30.65	0.123	YES
G39	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	2	31.5	30.65	0.144	YES
G106	GSM 850	GPRS2TX	190	Rear Face	1	Down	1	1	31.5	30.65	0.118	YES
G46	GSM 850	GPRS2TX	190	Front Face	1	Up	1	1	31.5	30.72	0.106	YES
G47	GSM 850	GPRS2TX	190	Rear Face	1	Up	1	1	31.5	30.72	0.153	YES
G48	GSM 850	GPRS2TX	190	Left Side	1	Up	1	1	31.5	30.72	0.058	YES
G49	GSM 850	GPRS2TX	190	Top Side	1	Up	1	1	31.5	30.72	0.119	YES
G50	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	1	31.5	30.72	0.153	YES
G51	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	2	31.5	30.72	0.144	YES
G108	GSM 850	GPRS2TX	190	Rear Face	1	Up	2	1	31.5	30.72	0.138	YES
G58	GSM 1900	GPRS4TX	661	Front Face	1	Down	1	1	25	23.92	0.125	YES
G59	GSM 1900	GPRS4TX	661	Rear Face	1	Down	1	1	25	23.92	0.168	YES
G60	GSM 1900	GPRS4TX	661	Left Side	1	Down	1	1	25	23.92	0.025	YES
G61	GSM 1900	GPRS4TX	661	Right Side	1	Down	1	1	25	23.92	0.053	YES
G62	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	1	25	23.92	0.287	YES
G63	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	2	1	25	23.92	0.278	YES
G64	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	2	25	23.92	0.272	YES
G110	GSM 1900	GPRS4TX	661	Bottom Side	1	Down	1	1	25	23.92	0.232	YES
G71	GSM 1900	GPRS4TX	661	Front Face	1	Up	1	1	25	24.56	0.146	YES
G72	GSM 1900	GPRS4TX	661	Rear Face	1	Up	1	1	25	24.56	0.259	YES
G73	GSM 1900	GPRS4TX	661	Left Side	1	Up	1	1	25	24.56	0.032	YES
G74	GSM 1900	GPRS4TX	661	Top Side	1	Up	1	1	25	24.56	0.388	YES
G75	GSM 1900	GPRS4TX	512	Top Side	1	Up	1	1	25	24.35	0.306	YES
G76	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	1	25	24.32	0.416	YES
G77	GSM 1900	GPRS4TX	810	Top Side	1	Up	2	1	25	24.32	0.401	YES
G78	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	2	25	24.32	0.411	YES
G79	GSM 1900	GPRS4TX	810	Top Side (Repeated)	1	Up	1	1	25	24.32	0.413	YES
G112	GSM 1900	GPRS4TX	810	Top Side	1	Up	1	1	25	24.32	0.393	YES

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
U48	UMTS B2	RMC12.2K	9400	Front Face	1	Down	1	1	22.5	21.67	0.101	YES
U49	UMTS B2	RMC12.2K	9400	Rear Face	1	Down	1	1	22.5	21.67	0.156	YES
U50	UMTS B2	RMC12.2K	9400	Left Side	1	Down	1	1	22.5	21.67	0.035	YES
U51	UMTS B2	RMC12.2K	9400	Right Side	1	Down	1	1	22.5	21.67	0.026	YES
U52	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	1	1	22.5	21.67	0.219	YES
U53	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	1	22.5	21.67	0.223	YES
U54	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	2	22.5	21.67	0.221	YES
U126	UMTS B2	RMC12.2K	9400	Bottom Side	1	Down	2	1	22.5	21.67	0.213	YES
U61	UMTS B2	RMC12.2K	9400	Front Face	1	Up	1	1	21	20.37	0.107	YES
U62	UMTS B2	RMC12.2K	9400	Rear Face	1	Up	1	1	21	20.37	0.157	YES
U63	UMTS B2	RMC12.2K	9400	Left Side	1	Up	1	1	21	20.37	0.025	YES
U64	UMTS B2	RMC12.2K	9400	Top Side	1	Up	1	1	21	20.37	0.240	YES
U65	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	1	21	20.37	0.246	YES
U66	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	2	21	20.37	0.243	YES
U128	UMTS B2	RMC12.2K	9400	Top Side	1	Up	2	1	21	20.37	0.229	YES
U73	UMTS B4	RMC12.2K	1413	Front Face	1	Down	1	1	22.5	21.98	0.144	YES
U74	UMTS B4	RMC12.2K	1413	Rear Face	1	Down	1	1	22.5	21.98	0.191	YES
U75	UMTS B4	RMC12.2K	1413	Left Side	1	Down	1	1	22.5	21.98	0.033	YES
U76	UMTS B4	RMC12.2K	1413	Right Side	1	Down	1	1	22.5	21.98	0.515	YES
U77	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	1	22.5	21.98	0.266	YES
U78	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	2	1	22.5	21.98	0.246	YES
U79	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	2	22.5	21.98	0.255	YES
U130	UMTS B4	RMC12.2K	1413	Bottom Side	1	Down	1	1	22.5	21.98	0.237	YES
U86	UMTS B4	RMC12.2K	1312	Front Face	1	Up	1	1	21	20.55	0.089	YES
U87	UMTS B4	RMC12.2K	1312	Rear Face	1	Up	1	1	21	20.55	0.115	YES
U88	UMTS B4	RMC12.2K	1312	Left Side	1	Up	1	1	21	20.55	0.017	YES
U89	UMTS B4	RMC12.2K	1312	Top Side	1	Up	1	1	21	20.55	0.351	YES
U90	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	1	21	20.51	0.369	YES
U91	UMTS B4	RMC12.2K	1513	Top Side	1	Up	1	1	21	20.35	0.341	YES
U92	UMTS B4	RMC12.2K	1413	Top Side	1	Up	2	1	21	20.51	0.353	YES
U93	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	2	21	20.51	0.359	YES
U132	UMTS B4	RMC12.2K	1413	Top Side	1	Up	1	1	21	20.51	0.345	YES
U100	UMTS B5	RMC12.2K	4182	Front Face	1	Down	1	1	24.5	22.81	0.100	YES
U101	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	1	1	24.5	22.81	0.107	YES
U102	UMTS B5	RMC12.2K	4182	Left Side	1	Down	1	1	24.5	22.81	0.047	YES
U103	UMTS B5	RMC12.2K	4182	Right Side	1	Down	1	1	24.5	22.81	0.036	YES
U104	UMTS B5	RMC12.2K	4182	Bottom Side	1	Down	1	1	24.5	22.81	0.079	YES
U105	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	1	24.5	22.81	0.112	YES
U106	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	2	24.5	22.81	0.106	YES
U134	UMTS B5	RMC12.2K	4182	Rear Face	1	Down	2	1	24.5	22.81	0.107	YES
U113	UMTS B5	RMC12.2K	4132	Front Face	1	Up	1	1	24.5	23.29	0.073	YES
U114	UMTS B5	RMC12.2K	4132	Rear Face	1	Up	1	1	24.5	23.29	0.096	YES
U115	UMTS B5	RMC12.2K	4132	Left Side	1	Up	1	1	24.5	23.29	0.052	YES
U116	UMTS B5	RMC12.2K	4132	Top Side	1	Up	1	1	24.5	23.29	0.094	YES
U117	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	1	24.5	23.29	0.102	YES
U118	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	2	24.5	23.29	0.096	YES
U136	UMTS B5	RMC12.2K	4132	Top Side	1	Up	2	1	24.5	23.29	0.084	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L246	LTE B2	QPSK20M	18900	1	0	Front Face	1	Down	1	1	24.00	23.39	0.188	YES
L247	LTE B2	QPSK20M	18900	1	0	Rear Face	1	Down	1	1	24.00	23.39	0.290	YES
L248	LTE B2	QPSK20M	18900	1	0	Left Side	1	Down	1	1	24.00	23.39	0.046	YES
L249	LTE B2	QPSK20M	18900	1	0	Right Side	1	Down	1	1	24.00	23.39	0.037	YES
L250	LTE B2	QPSK20M	18900	1	0	Bottom Side	1	Down	1	1	24.00	23.39	0.437	YES
L251	LTE B2	QPSK20M	18900	50	0	Front Face	1	Down	1	1	23.00	21.63	0.137	YES
L252	LTE B2	QPSK20M	18900	50	0	Rear Face	1	Down	1	1	23.00	21.63	0.210	YES
L253	LTE B2	QPSK20M	18900	50	0	Left Side	1	Down	1	1	23.00	21.63	0.033	YES
L254	LTE B2	QPSK20M	18900	50	0	Right Side	1	Down	1	1	23.00	21.63	0.038	YES
L255	LTE B2	QPSK20M	18900	50	0	Bottom Side	1	Down	1	1	23.00	21.63	0.325	YES
L256	LTE B2	QPSK20M	18700	1	0	Bottom Side	1	Down	1	1	24.00	23.24	0.405	YES
L257	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	1	24.00	23.30	0.443	YES
L258	LTE B2	QPSK20M	19100	100	0	Bottom Side	1	Down	1	1	23.00	21.58	0.314	YES
L259	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	2	1	24.00	23.30	0.412	YES
L260	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	2	24.00	23.30	0.422	YES
L261	LTE B2	QPSK20M	19100	1	0	Bottom Side (Repeated)	1	Down	1	1	24.00	23.30	0.426	YES
L671	LTE B2	QPSK20M	19100	1	0	Bottom Side	1	Down	1	1	24.00	23.30	0.366	YES
L270	LTE B2	QPSK20M	18900	1	0	Front Face	1	Up	1	1	22.50	22.22	0.120	YES
L271	LTE B2	QPSK20M	18900	1	0	Rear Face	1	Up	1	1	22.50	22.22	0.167	YES
L272	LTE B2	QPSK20M	18900	1	0	Left Side	1	Up	1	1	22.50	22.22	0.026	YES
L273	LTE B2	QPSK20M	18900	1	0	Top Side	1	Up	1	1	22.50	22.22	0.240	YES
L274	LTE B2	QPSK20M	18900	50	25	Front Face	1	Up	1	1	22.50	22.03	0.123	YES
L275	LTE B2	QPSK20M	18900	50	25	Rear Face	1	Up	1	1	22.50	22.03	0.170	YES
L276	LTE B2	QPSK20M	18900	50	25	Left Side	1	Up	1	1	22.50	22.03	0.033	YES
L277	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	1	22.50	22.03	0.252	YES
L278	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	2	1	22.50	22.03	0.243	YES
L279	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	2	22.50	22.03	0.249	YES
L673	LTE B2	QPSK20M	18900	50	25	Top Side	1	Up	1	1	22.50	22.03	0.221	YES
L288	LTE B4	QPSK20M	20175	1	0	Front Face	1	Down	1	1	24.00	22.93	0.244	YES
L289	LTE B4	QPSK20M	20175	1	0	Rear Face	1	Down	1	1	24.00	22.93	0.321	YES
L290	LTE B4	QPSK20M	20175	1	0	Left Side	1	Down	1	1	24.00	22.93	0.038	YES
L291	LTE B4	QPSK20M	20175	1	0	Right Side	1	Down	1	1	24.00	22.93	0.044	YES
L292	LTE B4	QPSK20M	20175	1	0	Bottom Side	1	Down	1	1	24.00	22.93	0.420	YES
L293	LTE B4	QPSK20M	20050	50	25	Front Face	1	Down	1	1	23.00	21.79	0.204	YES
L294	LTE B4	QPSK20M	20050	50	25	Rear Face	1	Down	1	1	23.00	21.79	0.258	YES
L295	LTE B4	QPSK20M	20050	50	25	Left Side	1	Down	1	1	23.00	21.79	0.054	YES
L296	LTE B4	QPSK20M	20050	50	25	Right Side	1	Down	1	1	23.00	21.79	0.036	YES
L297	LTE B4	QPSK20M	20050	50	25	Bottom Side	1	Down	1	1	23.00	21.79	0.358	YES
L298	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	1	24.00	22.92	0.480	YES
L299	LTE B4	QPSK20M	20050	1	0	Bottom Side	1	Down	1	1	24.00	22.91	0.416	YES
L300	LTE B4	QPSK20M	20300	50	50	Bottom Side	1	Down	1	1	23.00	21.72	0.384	YES
L301	LTE B4	QPSK20M	20175	50	0	Bottom Side	1	Down	1	1	23.00	21.73	0.350	YES
L302	LTE B4	QPSK20M	20050	100	0	Bottom Side	1	Down	1	1	23.00	21.72	0.345	YES
L303	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	2	1	24.00	22.92	0.411	YES
L304	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	2	24.00	22.92	0.475	YES
L305	LTE B4	QPSK20M	20300	1	99	Bottom Side (Repeated)	1	Down	1	1	24.00	22.92	0.479	YES
L675	LTE B4	QPSK20M	20300	1	99	Bottom Side	1	Down	1	1	24.00	22.92	0.457	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L314	LTE B4	QPSK20M	20050	1	99	Front Face	1	Up	1	1	24.00	23.47	0.281	YES
L315	LTE B4	QPSK20M	20050	1	99	Rear Face	1	Up	1	1	24.00	23.47	0.383	YES
L316	LTE B4	QPSK20M	20050	1	99	Left Side	1	Up	1	1	24.00	23.47	0.051	YES
L317	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	1	1	24.00	23.47	0.432	YES
L318	LTE B4	QPSK20M	20050	50	0	Front Face	1	Up	1	1	23.00	22.33	0.234	YES
L319	LTE B4	QPSK20M	20050	50	0	Rear Face	1	Up	1	1	23.00	22.33	0.319	YES
L320	LTE B4	QPSK20M	20050	50	0	Left Side	1	Up	1	1	23.00	22.33	0.037	YES
L321	LTE B4	QPSK20M	20050	50	0	Top Side	1	Up	1	1	23.00	22.33	0.401	YES
L322	LTE B4	QPSK20M	20175	1	99	Top Side	1	Up	1	1	24.00	23.26	0.461	YES
L323	LTE B4	QPSK20M	20300	1	99	Top Side	1	Up	1	1	24.00	23.18	0.442	YES
L324	LTE B4	QPSK20M	20175	50	0	Top Side	1	Up	1	1	23.00	22.25	0.348	YES
L325	LTE B4	QPSK20M	20300	50	0	Top Side	1	Up	1	1	23.00	22.30	0.384	YES
L326	LTE B4	QPSK20M	20050	100	0	Top Side	1	Up	1	1	24.00	23.47	0.333	YES
L327	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	2	1	24.00	23.47	0.414	YES
L328	LTE B4	QPSK20M	20050	1	99	Top Side	1	Up	1	2	24.00	23.47	0.431	YES
L329	LTE B4	QPSK20M	20050	1	99	Top Side (Repeated)	1	Up	1	1	24.00	23.47	0.449	YES
L677	LTE B4	QPSK20M	20050	1	99	Top Side (Repeated)	1	Up	1	1	24.00	23.47	0.413	YES
L338	LTE B5	QPSK10M	20450	1	49	Front Face	1	Down	1	1	24.50	23.86	0.136	YES
L339	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	1	1	24.50	23.86	0.146	YES
L340	LTE B5	QPSK10M	20450	1	49	Left Side	1	Down	1	1	24.50	23.86	0.080	YES
L341	LTE B5	QPSK10M	20450	1	49	Right Side	1	Down	1	1	24.50	23.86	0.048	YES
L342	LTE B5	QPSK10M	20450	1	49	Bottom Side	1	Down	1	1	24.50	23.86	0.108	YES
L343	LTE B5	QPSK10M	20450	25	12	Front Face	1	Down	1	1	23.50	22.73	0.109	YES
L344	LTE B5	QPSK10M	20450	25	12	Rear Face	1	Down	1	1	23.50	22.73	0.107	YES
L345	LTE B5	QPSK10M	20450	25	12	Left Side	1	Down	1	1	23.50	22.73	0.062	YES
L346	LTE B5	QPSK10M	20450	25	12	Right Side	1	Down	1	1	23.50	22.73	0.039	YES
L347	LTE B5	QPSK10M	20450	25	12	Bottom Side	1	Down	1	1	23.50	22.73	0.079	YES
L348	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	1	24.50	23.86	0.150	YES
L349	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	2	24.50	23.86	0.146	YES
L679	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Down	2	1	24.50	23.86	0.147	YES
L358	LTE B5	QPSK10M	20450	1	49	Front Face	1	Up	1	1	24.50	24.12	0.090	YES
L359	LTE B5	QPSK10M	20450	1	49	Rear Face	1	Up	1	1	24.50	24.12	0.095	YES
L360	LTE B5	QPSK10M	20450	1	49	Left Side	1	Up	1	1	24.50	24.12	0.044	YES
L361	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	1	24.50	24.12	0.101	YES
L362	LTE B5	QPSK10M	20450	1	24	Front Face	1	Up	1	1	23.50	22.95	0.073	YES
L363	LTE B5	QPSK10M	20450	1	24	Rear Face	1	Up	1	1	23.50	22.95	0.091	YES
L364	LTE B5	QPSK10M	20450	1	24	Left Side	1	Up	1	1	23.50	22.95	0.048	YES
L365	LTE B5	QPSK10M	20450	1	24	Top Side	1	Up	1	1	23.50	22.95	0.068	YES
L366	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	2	1	24.50	24.12	0.118	YES
L367	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	2	24.50	24.12	0.094	YES
L681	LTE B5	QPSK10M	20450	1	49	Top Side	1	Up	1	2	24.50	24.12	0.085	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L376	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	1	23.50	22.33	0.290	YES
L377	LTE B7	QPSK20M	21100	1	50	Rear Face	1	Down	1	1	23.50	22.33	0.251	YES
L378	LTE B7	QPSK20M	21100	1	50	Left Side	1	Down	1	1	23.50	22.33	0.041	YES
L379	LTE B7	QPSK20M	21100	1	50	Right Side	1	Down	1	1	23.50	22.33	0.205	YES
L380	LTE B7	QPSK20M	21100	1	50	Bottom Side	1	Down	1	1	23.50	22.33	0.218	YES
L381	LTE B7	QPSK20M	21100	50	25	Front Face	1	Down	1	1	22.50	21.18	0.227	YES
L382	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Down	1	1	22.50	21.18	0.201	YES
L383	LTE B7	QPSK20M	21100	50	25	Left Side	1	Down	1	1	22.50	21.18	0.033	YES
L384	LTE B7	QPSK20M	21100	50	25	Right Side	1	Down	1	1	22.50	21.18	0.177	YES
L385	LTE B7	QPSK20M	21100	50	25	Bottom Side	1	Down	1	1	22.50	21.18	0.151	YES
L386	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	2	1	23.50	22.33	0.271	YES
L387	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	2	23.50	22.33	0.278	YES
L683	LTE B7	QPSK20M	21100	1	50	Front Face	1	Down	1	1	23.50	22.33	0.238	YES
L396	LTE B7	QPSK20M	21100	1	0	Front Face	1	Up	1	1	22.00	21.70	0.138	YES
L397	LTE B7	QPSK20M	21100	1	0	Rear Face	1	Up	1	1	22.00	21.70	0.269	YES
L398	LTE B7	QPSK20M	21100	1	0	Left Side	1	Up	1	1	22.00	21.70	0.156	YES
L399	LTE B7	QPSK20M	21100	1	0	Top Side	1	Up	1	1	22.00	21.70	0.318	YES
L400	LTE B7	QPSK20M	21100	50	25	Front Face	1	Up	1	1	22.00	21.43	0.135	YES
L401	LTE B7	QPSK20M	21100	50	25	Rear Face	1	Up	1	1	22.00	21.43	0.292	YES
L402	LTE B7	QPSK20M	21100	50	25	Left Side	1	Up	1	1	22.00	21.43	0.152	YES
L403	LTE B7	QPSK20M	21100	50	25	Top Side	1	Up	1	1	22.00	21.43	0.289	YES
L404	LTE B7	QPSK20M	20850	1	0	Top Side	1	Up	1	1	22.00	21.69	0.339	YES
L405	LTE B7	QPSK20M	21350	1	50	Top Side	1	Up	1	1	22.00	21.64	0.260	YES
L406	LTE B7	QPSK20M	20850	100	0	Top Side	1	Up	1	1	22.00	21.48	0.291	YES
L407	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	2	1	22.00	21.69	0.335	YES
L408	LTE B7	QPSK20M	20850	1	50	Top Side	1	Up	1	2	22.00	21.69	0.309	YES
L409	LTE B7	QPSK20M	20850	1	50	Top Side (Repeated)	1	Up	1	1	22.00	21.64	0.311	YES
L685	LTE B7	QPSK20M	20850	1	0	Top Side	1	Up	1	1	22.00	21.69	0.308	YES
L418	LTE B12	QPSK10M	23095	1	0	Front Face	1	Down	1	1	24.50	23.63	0.078	YES
L419	LTE B12	QPSK10M	23095	1	0	Rear Face	1	Down	1	1	24.50	23.63	0.093	YES
L420	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	1	24.50	23.63	0.107	YES
L421	LTE B12	QPSK10M	23095	1	0	Right Side	1	Down	1	1	24.50	23.63	0.058	YES
L422	LTE B12	QPSK10M	23095	1	0	Bottom Side	1	Down	1	1	24.50	23.63	0.029	YES
L423	LTE B12	QPSK10M	23130	25	0	Front Face	1	Down	1	1	23.50	22.45	0.066	YES
L424	LTE B12	QPSK10M	23130	25	0	Rear Face	1	Down	1	1	23.50	22.45	0.082	YES
L425	LTE B12	QPSK10M	23130	25	0	Left Side	1	Down	1	1	23.50	22.45	0.083	YES
L426	LTE B12	QPSK10M	23130	25	0	Right Side	1	Down	1	1	23.50	22.45	0.052	YES
L427	LTE B12	QPSK10M	23130	25	0	Bottom Side	1	Down	1	1	23.50	22.45	0.024	YES
L428	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	2	1	24.50	23.63	0.095	YES
L429	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	2	24.50	23.63	0.105	YES
L687	LTE B12	QPSK10M	23095	1	0	Left Side	1	Down	1	1	24.50	23.63	0.064	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L438	LTE B12	QPSK10M	23130	1	0	Front Face	1	Up	1	1	24.50	23.71	0.056	YES
L439	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	1	24.50	23.71	0.065	YES
L440	LTE B12	QPSK10M	23130	1	0	Left Side	1	Up	1	1	24.50	23.71	0.061	YES
L441	LTE B12	QPSK10M	23130	1	0	Top Side	1	Up	1	1	24.50	23.71	0.033	YES
L442	LTE B12	QPSK10M	23130	25	12	Front Face	1	Up	1	1	23.50	22.53	0.044	YES
L443	LTE B12	QPSK10M	23130	25	12	Rear Face	1	Up	1	1	23.50	22.53	0.054	YES
L444	LTE B12	QPSK10M	23130	25	12	Left Side	1	Up	1	1	23.50	22.53	0.050	YES
L445	LTE B12	QPSK10M	23130	25	12	Top Side	1	Up	1	1	23.50	22.53	0.032	YES
L446	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	2	1	24.50	23.71	0.062	YES
L447	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	2	24.50	23.71	0.063	YES
L689	LTE B12	QPSK10M	23130	1	0	Rear Face	1	Up	1	1	24.50	23.71	0.048	YES
L456	LTE B17	QPSK10M	23800	1	0	Front Face	1	Down	1	1	24.50	23.60	0.073	YES
L457	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	1	1	24.50	23.60	0.091	YES
L458	LTE B17	QPSK10M	23800	1	0	Left Side	1	Down	1	1	24.50	23.60	0.032	YES
L459	LTE B17	QPSK10M	23800	1	0	Right Side	1	Down	1	1	24.50	23.60	0.026	YES
L460	LTE B17	QPSK10M	23800	1	0	Bottom Side	1	Down	1	1	24.50	23.60	0.035	YES
L461	LTE B17	QPSK10M	23790	25	12	Front Face	1	Down	1	1	23.50	22.40	0.057	YES
L462	LTE B17	QPSK10M	23790	25	12	Rear Face	1	Down	1	1	23.50	22.40	0.087	YES
L463	LTE B17	QPSK10M	23790	25	12	Left Side	1	Down	1	1	23.50	22.40	0.025	YES
L464	LTE B17	QPSK10M	23790	25	12	Right Side	1	Down	1	1	23.50	22.40	0.022	YES
L465	LTE B17	QPSK10M	23790	25	12	Bottom Side	1	Down	1	1	23.50	22.40	0.025	YES
L466	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	1	24.50	23.60	0.091	YES
L467	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	2	24.50	23.60	0.088	YES
L691	LTE B17	QPSK10M	23800	1	0	Rear Face	1	Down	2	1	24.50	23.60	0.084	YES
L476	LTE B17	QPSK10M	23790	1	0	Front Face	1	Up	1	1	24.50	23.81	0.057	YES
L477	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	1	1	24.50	23.81	0.064	YES
L478	LTE B17	QPSK10M	23790	1	0	Left Side	1	Up	1	1	24.50	23.81	0.028	YES
L479	LTE B17	QPSK10M	23790	1	0	Top Side	1	Up	1	1	24.50	23.81	0.036	YES
L480	LTE B17	QPSK10M	23780	25	0	Front Face	1	Up	1	1	23.50	22.58	0.045	YES
L481	LTE B17	QPSK10M	23780	25	0	Rear Face	1	Up	1	1	23.50	22.58	0.052	YES
L482	LTE B17	QPSK10M	23780	25	0	Left Side	1	Up	1	1	23.50	22.58	0.026	YES
L483	LTE B17	QPSK10M	23780	25	0	Top Side	1	Up	1	1	23.50	22.58	0.028	YES
L484	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	1	24.50	23.81	0.068	YES
L485	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	2	24.50	23.81	0.062	YES
L693	LTE B17	QPSK10M	23790	1	0	Rear Face	1	Up	2	1	24.50	23.81	0.052	YES
L494	LTE B26	QPSK15M	26865	1	0	Front Face	1	Down	1	1	24.50	23.60	0.109	YES
L495	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	1	24.50	23.60	0.124	YES
L496	LTE B26	QPSK15M	26865	1	0	Left Side	1	Down	1	1	24.50	23.60	0.049	YES
L497	LTE B26	QPSK15M	26865	1	0	Right Side	1	Down	1	1	24.50	23.60	0.034	YES
L498	LTE B26	QPSK15M	26865	1	0	Bottom Side	1	Down	1	1	24.50	23.60	0.074	YES
L499	LTE B26	QPSK15M	26865	36	19	Front Face	1	Down	1	1	23.50	22.58	0.091	YES
L500	LTE B26	QPSK15M	26865	36	19	Rear Face	1	Down	1	1	23.50	22.58	0.097	YES
L501	LTE B26	QPSK15M	26865	36	19	Left Side	1	Down	1	1	23.50	22.58	0.042	YES
L502	LTE B26	QPSK15M	26865	36	19	Right Side	1	Down	1	1	23.50	22.58	0.030	YES
L503	LTE B26	QPSK15M	26865	36	19	Bottom Side	1	Down	1	1	23.50	22.58	0.068	YES
L504	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	2	1	24.50	23.60	0.123	YES
L505	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	2	24.50	23.60	0.115	YES
L695	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Down	1	1	24.50	23.60	0.103	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L514	LTE B26	QPSK15M	26865	1	0	Front Face	1	Up	1	1	24.50	23.75	0.060	YES
L515	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	1	24.50	23.75	0.090	YES
L516	LTE B26	QPSK15M	26865	1	0	Left Side	1	Up	1	1	24.50	23.75	0.035	YES
L517	LTE B26	QPSK15M	26865	1	0	Top Side	1	Up	1	1	24.50	23.75	0.055	YES
L518	LTE B26	QPSK15M	26765	36	0	Front Face	1	Up	1	1	23.50	22.82	0.051	YES
L519	LTE B26	QPSK15M	26765	36	0	Rear Face	1	Up	1	1	23.50	22.82	0.073	YES
L520	LTE B26	QPSK15M	26765	36	0	Left Side	1	Up	1	1	23.50	22.82	0.031	YES
L521	LTE B26	QPSK15M	26765	36	0	Top Side	1	Up	1	1	23.50	22.82	0.042	YES
L522	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	2	1	24.50	23.75	0.072	YES
L523	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	2	24.50	23.75	0.078	YES
L697	LTE B26	QPSK15M	26865	1	0	Rear Face	1	Up	1	1	24.50	23.75	0.077	YES
L532	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	1	1	24.00	23.22	0.186	YES
L533	LTE B38	QPSK20M	37850	1	0	Rear Face	1	Down	1	1	24.00	23.22	0.169	YES
L534	LTE B38	QPSK20M	37850	1	0	Left Side	1	Down	1	1	24.00	23.22	0.040	YES
L535	LTE B38	QPSK20M	37850	1	0	Right Side	1	Down	1	1	24.00	23.22	0.158	YES
L536	LTE B38	QPSK20M	37850	1	0	Bottom Side	1	Down	1	1	24.00	23.22	0.135	YES
L537	LTE B38	QPSK20M	37850	50	25	Front Face	1	Down	1	1	23.00	22.06	0.142	YES
L538	LTE B38	QPSK20M	37850	50	25	Rear Face	1	Down	1	1	23.00	22.06	0.140	YES
L539	LTE B38	QPSK20M	37850	50	25	Left Side	1	Down	1	1	23.00	22.06	0.037	YES
L540	LTE B38	QPSK20M	37850	50	25	Right Side	1	Down	1	1	23.00	22.06	0.131	YES
L541	LTE B38	QPSK20M	37850	50	25	Bottom Side	1	Down	1	1	23.00	22.06	0.105	YES
L542	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	1	24.00	23.22	0.191	YES
L543	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	2	24.00	23.22	0.189	YES
L699	LTE B38	QPSK20M	37850	1	0	Front Face	1	Down	2	1	24.00	23.22	0.116	YES
L552	LTE B38	QPSK20M	37850	1	99	Front Face	1	Up	1	1	24.00	23.74	0.210	YES
L553	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	1	24.00	23.74	0.389	YES
L554	LTE B38	QPSK20M	37850	1	99	Left Side	1	Up	1	1	24.00	23.74	0.311	YES
L555	LTE B38	QPSK20M	37850	1	99	Top Side	1	Up	1	1	24.00	23.74	0.289	YES
L556	LTE B38	QPSK20M	37850	50	50	Front Face	1	Up	1	1	23.00	22.54	0.170	YES
L557	LTE B38	QPSK20M	37850	50	50	Rear Face	1	Up	1	1	23.00	22.54	0.302	YES
L558	LTE B38	QPSK20M	37850	50	50	Left Side	1	Up	1	1	23.00	22.54	0.240	YES
L559	LTE B38	QPSK20M	37850	50	50	Top Side	1	Up	1	1	23.00	22.54	0.246	YES
L560	LTE B38	QPSK20M	38000	1	99	Rear Face	1	Up	1	1	24.00	23.60	0.359	YES
L561	LTE B38	QPSK20M	38150	1	99	Rear Face	1	Up	1	1	24.00	23.57	0.341	YES
L562	LTE B38	QPSK20M	37850	100	0	Rear Face	1	Up	1	1	23.00	22.55	0.241	YES
L563	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	2	1	24.00	23.74	0.365	YES
L564	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	2	24.00	23.74	0.377	YES
L565	LTE B38	QPSK20M	37850	1	99	Rear Face (Repeated)	1	Up	1	1	24.00	23.74	0.316	YES
L701	LTE B38	QPSK20M	37850	1	99	Rear Face	1	Up	1	1	24.00	23.74	0.381	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L574	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	1	24.00	22.91	0.193	YES
L575	LTE B41	QPSK20M	40140	1	0	Rear Face	1	Down	1	1	24.00	22.91	0.171	YES
L576	LTE B41	QPSK20M	40140	1	0	Left Side	1	Down	1	1	24.00	22.91	0.034	YES
L577	LTE B41	QPSK20M	40140	1	0	Right Side	1	Down	1	1	24.00	22.91	0.120	YES
L578	LTE B41	QPSK20M	40140	1	0	Bottom Side	1	Down	1	1	24.00	22.91	0.127	YES
L579	LTE B41	QPSK20M	40140	50	25	Front Face	1	Down	1	1	23.00	21.84	0.153	YES
L580	LTE B41	QPSK20M	40140	50	25	Rear Face	1	Down	1	1	23.00	21.84	0.133	YES
L581	LTE B41	QPSK20M	40140	50	25	Left Side	1	Down	1	1	23.00	21.84	0.017	YES
L582	LTE B41	QPSK20M	40140	50	25	Right Side	1	Down	1	1	23.00	21.84	0.106	YES
L583	LTE B41	QPSK20M	40140	50	25	Bottom Side	1	Down	1	1	23.00	21.84	0.107	YES
L584	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	2	1	24.00	22.91	0.192	YES
L585	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	2	24.00	22.91	0.192	YES
L703	LTE B41	QPSK20M	40140	1	0	Front Face	1	Down	1	1	24.00	22.91	0.179	YES
L594	LTE B41	QPSK20M	40440	1	0	Front Face	1	Up	1	1	24.00	23.48	0.177	YES
L595	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	1	24.00	23.48	0.306	YES
L596	LTE B41	QPSK20M	40440	1	0	Left Side	1	Up	1	1	24.00	23.48	0.236	YES
L597	LTE B41	QPSK20M	40440	1	0	Top Side	1	Up	1	1	24.00	23.48	0.241	YES
L598	LTE B41	QPSK20M	40140	50	0	Front Face	1	Up	1	1	23.00	22.45	0.141	YES
L599	LTE B41	QPSK20M	40140	50	0	Rear Face	1	Up	1	1	23.00	22.45	0.253	YES
L600	LTE B41	QPSK20M	40140	50	0	Left Side	1	Up	1	1	23.00	22.45	0.169	YES
L601	LTE B41	QPSK20M	40140	50	0	Top Side	1	Up	1	1	23.00	22.45	0.212	YES
L602	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	2	1	24.00	23.48	0.284	YES
L603	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	2	24.00	23.48	0.275	YES
L705	LTE B41	QPSK20M	40440	1	0	Rear Face	1	Up	1	1	24.00	23.48	0.255	YES
L612	LTE B66	QPSK20M	132322	1	99	Front Face	1	Down	1	1	24.00	23.23	0.255	YES
L613	LTE B66	QPSK20M	132322	1	99	Rear Face	1	Down	1	1	24.00	23.23	0.343	YES
L614	LTE B66	QPSK20M	132322	1	99	Left Side	1	Down	1	1	24.00	23.23	0.035	YES
L615	LTE B66	QPSK20M	132322	1	99	Right Side	1	Down	1	1	24.00	23.23	0.044	YES
L616	LTE B66	QPSK20M	132322	1	99	Bottom Side	1	Down	1	1	24.00	23.23	0.489	YES
L617	LTE B66	QPSK20M	132322	50	25	Front Face	1	Down	1	1	23.00	21.88	0.208	YES
L618	LTE B66	QPSK20M	132322	50	25	Rear Face	1	Down	1	1	23.00	21.88	0.278	YES
L619	LTE B66	QPSK20M	132322	50	25	Left Side	1	Down	1	1	23.00	21.88	0.040	YES
L620	LTE B66	QPSK20M	132322	50	25	Right Side	1	Down	1	1	23.00	21.88	0.043	YES
L621	LTE B66	QPSK20M	132322	50	25	Bottom Side	1	Down	1	1	23.00	21.88	0.375	YES
L622	LTE B66	QPSK20M	132072	1	99	Bottom Side	1	Down	1	1	24.00	23.21	0.456	YES
L623	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	1	24.00	23.19	0.525	YES
L624	LTE B66	QPSK20M	132072	50	50	Bottom Side	1	Down	1	1	23.00	21.84	0.334	YES
L625	LTE B66	QPSK20M	132572	50	25	Bottom Side	1	Down	1	1	23.00	21.72	0.406	YES
L626	LTE B66	QPSK20M	132072	100	0	Bottom Side	1	Down	1	1	23.00	21.79	0.361	YES
L627	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	2	1	24.00	23.19	0.505	YES
L628	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	2	24.00	23.19	0.512	YES
L629	LTE B66	QPSK20M	132572	1	99	Bottom Side (Repeated)	1	Down	1	1	24.00	23.19	0.521	YES
L707	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	Down	1	1	24.00	23.19	0.47	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Battery	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L638	LTE B66	QPSK20M	132572	1	99	Front Face	1	Up	1	1	24.00	23.64	0.153	YES
L639	LTE B66	QPSK20M	132572	1	99	Rear Face	1	Up	1	1	24.00	23.64	0.238	YES
L640	LTE B66	QPSK20M	132572	1	99	Left Side	1	Up	1	1	24.00	23.64	0.026	YES
L641	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	1	1	24.00	23.64	0.291	YES
L642	LTE B66	QPSK20M	132572	50	25	Front Face	1	Up	1	1	23.00	22.31	0.139	YES
L643	LTE B66	QPSK20M	132572	50	25	Rear Face	1	Up	1	1	23.00	22.31	0.225	YES
L644	LTE B66	QPSK20M	132572	50	25	Left Side	1	Up	1	1	23.00	22.31	0.025	YES
L645	LTE B66	QPSK20M	132572	50	25	Top Side	1	Up	1	1	23.00	22.31	0.268	YES
L646	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	2	1	24.00	23.64	0.276	YES
L647	LTE B66	QPSK20M	132572	1	99	Top Side	1	Up	1	2	24.00	23.64	0.287	YES

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
W62	802.11b	1	Front Face	1	1	1	20	19.77	0.158	YES
W63	802.11b	1	Rear Face	1	1	1	20	19.77	0.137	YES
W64	802.11b	1	Right Side	1	1	1	20	19.77	0.034	YES
W65	802.11b	1	Top Side	1	1	1	20	19.77	0.184	YES
W66	802.11b	1	Top Side	1	2	1	20	19.77	0.178	YES
W78	802.11a	36	Front Face	1	1	6	17	16.77	0.092	YES
W79	802.11a	36	Rear Face	1	1	6	17	16.77	0.138	YES
W80	802.11a	36	Right Side	1	1	6	17	16.77	0.011	YES
W81	802.11a	36	Top Side	1	1	6	17	16.77	0.154	YES
W82	802.11a	36	Top Side	1	2	6	17	16.77	0.150	YES
W108	802.11a	157	Front Face	1	1	6	16.5	16.47	0.083	YES
W109	802.11a	157	Rear Face	1	1	6	16.5	16.47	0.140	YES
W110	802.11a	157	Right Side	1	1	6	16.5	16.47	0.117	YES
W111	802.11a	157	Top Side	1	1	6	16.5	16.47	0.146	YES
W112	802.11a	157	Rear Face	1	2	6	16.5	16.47	0.132	YES

Product specific 10-g SAR test results

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Battery	Data Rate	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR
W72	BT DH5	39	Front Face	0	1	1	12	11.35	0.01	0.537	0.217	0.252
W73	BT DH5	39	Rear Face	0	1	1	12	11.35	0.03	0.257	0.118	0.137
W74	BT DH5	39	Right Side	0	1	1	12	11.35	0.14	0.255	0.102	0.118
W75	BT DH5	39	Top Side	0	1	1	12	11.35	-0.08	0.516	0.179	0.208
W76	BT DH5	39	Front Face	0	2	1	12	11.35	0.08	0.368	0.154	0.179
W88	802.11ac VHT20	60	Front Face	0	1	MCS0	19	18.98	-0.08	3.110	0.913	0.917
W89	802.11ac VHT20	60	Rear Face	0	1	MCS0	19	18.98	0.05	4.360	1.100	1.105
W90	802.11ac VHT20	60	Right Side	0	1	MCS0	19	18.98	0.13	2.560	0.856	0.860
W91	802.11ac VHT20	60	Top Side	0	1	MCS0	19	18.98	-0.06	6.180	1.400	1.406
W92	802.11ac VHT20	60	Top Side	0	2	MCS0	19	18.98	0.17	5.890	1.230	1.236
W98	802.11a	108	Front Face	0	1	6	19	18.99	0.18	3.830	1.380	1.383
W99	802.11a	108	Rear Face	0	1	6	19	18.99	0.03	5.820	1.430	1.433
W100	802.11a	108	Right Side	0	1	6	19	18.99	0	3.170	0.883	0.885
W101	802.11a	108	Top Side	0	1	6	19	18.99	-0.04	6.730	1.630	1.634
W102	802.11a	108	Top Side	0	2	6	19	18.99	-0.05	6.560	1.570	1.574

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(Main Ant) + 2.4G WIFI	Yes	Yes	Yes	Yes
2	GSM/UMTS/LTE(Main Ant) + 5G WIFI	Yes	Yes	Yes	Yes
3	GSM/UMTS/LTE(Main Ant) + BT	Yes	Yes	No	Yes
4	GSM/UMTS/LTE(Second Ant) + 2.4G WIFI	Yes	Yes	Yes	Yes
5	GSM/UMTS/LTE(Second Ant) + 5G WIFI	Yes	Yes	Yes	Yes
6	GSM/UMTS/LTE(Second Ant) + 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) Main Ant and Second Ant can't transmit simultaneously.

7.3.2 SAR SUMMATION SCENARIO

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

Position	Head				Bodyworn		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	0.172	0.075	0.209	0.103	0.153	0.182	0.293	0.456	0.118	0.073	/	0.394
GSM 1900	0.059	0.054	0.088	0.060	0.151	0.235	0.269	0.342	0.059	0.115	/	0.669
UMTS B2	0.118	0.133	0.221	0.152	0.364	0.546	0.202	0.310	0.075	0.057	/	0.489
UMTS B4	0.139	0.077	0.210	0.120	0.412	0.602	0.269	0.346	0.062	0.104	/	0.558
UMTS B5	0.214	0.119	0.274	0.159	0.217	0.252	0.184	0.267	0.096	0.075	/	0.211
LTE B2	0.074	0.075	0.123	0.096	0.196	0.313	0.343	0.519	0.088	0.090	/	0.942
LTE B4	0.087	0.073	0.147	0.062	0.309	0.419	0.529	0.661	0.120	0.104	/	1.118
LTE B5	0.216	0.102	0.236	0.134	0.207	0.261	0.213	0.289	0.138	0.085	/	0.224
LTE B7	0.544	0.330	0.248	0.250	0.328	0.278	0.707	0.630	0.097	0.525	/	0.632
LTE B12	0.111	0.060	0.142	0.072	0.125	0.136	0.121	0.145	0.187	0.101	/	0.062
LTE B17	0.103	0.127	0.155	0.075	0.161	0.181	0.138	0.173	0.065	0.053	/	0.089
LTE B26	0.188	0.098	0.204	0.117	0.187	0.232	0.175	0.245	0.087	0.059	/	0.161
LTE B38	0.319	0.170	0.160	0.141	0.200	0.165	0.428	0.391	0.087	0.367	/	0.340
LTE B41	0.351	0.204	0.216	0.177	0.229	0.150	0.456	0.418	0.075	0.275	/	0.329
LTE B66	0.119	0.087	0.151	0.093	0.257	0.349	0.528	0.670	0.088	0.094	/	1.149
802.11b/g	0.336	0.410	0.659	0.481	0.171	0.175	0.326	0.286	/	0.062	0.371	/
5.2G	/	/	/	/	/	/	0.265	0.430	/	0.040	0.441	/
5.3G	0.282	0.326	0.708	0.649	0.287	0.579	/	/	/	/	/	/
5.6G	0.369	0.388	0.448	0.707	0.379	0.611	/	/	/	/	/	/
5.8G	0.358	0.424	0.514	0.595	0.137	0.255	0.197	0.429	/	0.392	0.410	/
Bluetooth	0.218	0.278	0.323	0.384	0.029	0.032	/	/	/	/	/	/
Max. SAR Summation	0.913	0.754	0.982	0.957	0.791	1.213	1.033	1.100	0.187	0.917	0.441	1.149

Note: MAX. $\sum SAR_{1g} = 1.213W/Kg < 1.6W/Kg$, so the SAR to peak location separation ratio should not be considered.

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

Position	Head				Bodyworn		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	1.171	0.955	0.783	0.684	0.094	0.126	0.217	0.310	0.112	/	0.230	/
GSM 1900	0.624	0.787	0.442	0.596	0.195	0.291	0.333	0.558	0.056	/	0.972	/
UMTS B2	0.534	0.687	0.436	0.505	0.439	0.655	0.238	0.340	0.048	/	0.572	/
UMTS B4	0.461	0.604	0.355	0.473	0.493	0.621	0.201	0.251	0.034	/	0.830	/
UMTS B5	0.760	0.305	0.334	0.302	0.139	0.174	0.149	0.201	0.102	/	0.222	/
LTE B2	0.541	0.704	0.368	0.528	0.140	0.197	0.253	0.347	0.060	/	0.559	/
LTE B4	0.682	1.009	0.400	0.617	0.271	0.361	0.574	0.768	0.093	/	1.029	/
LTE B5	1.043	0.748	0.791	0.612	0.122	0.153	0.140	0.164	0.072	/	0.167	/
LTE B7	0.499	0.530	0.170	0.202	0.248	0.524	0.309	0.723	0.327	/	0.869	/
LTE B12	0.387	0.289	0.431	0.313	0.109	0.114	0.098	0.114	0.091	/	0.077	/
LTE B17	0.641	0.548	0.598	0.500	0.110	0.122	0.096	0.116	0.055	/	0.086	/
LTE B26	1.177	0.674	0.635	0.534	0.113	0.137	0.128	0.168	0.072	/	0.134	/
LTE B38	0.597	0.714	0.203	0.256	0.234	0.375	0.462	0.939	0.762	/	0.750	/
LTE B41	0.783	1.021	0.260	0.345	0.217	0.317	0.408	0.777	0.559	/	0.658	/
LTE B66	0.734	0.891	0.552	0.692	0.448	0.621	0.316	0.497	0.048	/	0.641	/
802.11b/g	0.336	0.410	0.659	0.481	0.171	0.175	0.326	0.286	/	0.062	0.371	/
5.2G	/	/	/	/	/	/	0.265	0.430	/	0.040	0.441	/
5.3G	0.282	0.326	0.708	0.649	0.287	0.579	/	/	/	/	/	/
5.6G	0.369	0.388	0.448	0.707	0.379	0.611	/	/	/	/	/	/
5.8G	0.358	0.424	0.514	0.595	0.137	0.255	0.197	0.429	/	0.392	0.410	/
Bluetooth	0.218	0.278	0.323	0.384	0.029	0.032	/	/	/	/	/	/
Max. SAR Summation	1.546	1.445	1.499	1.399	0.872	1.266	0.900	1.369	0.762	0.392	1.470	0.000

Note: MAX. $\sum SAR_{1g} = 1.546W/Kg < 1.6W/Kg$, 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	0.917	1.105	/	0.860	1.406	/
WiFi 5.6G	1.383	1.433	/	0.885	1.634	/
WiFi 5.8G	/	/	/	/	/	/
BT	0.252	0.137	/	0.118	0.208	/
Max. SAR Summation	1.383	1.433	0.000	0.885	1.634	0.000

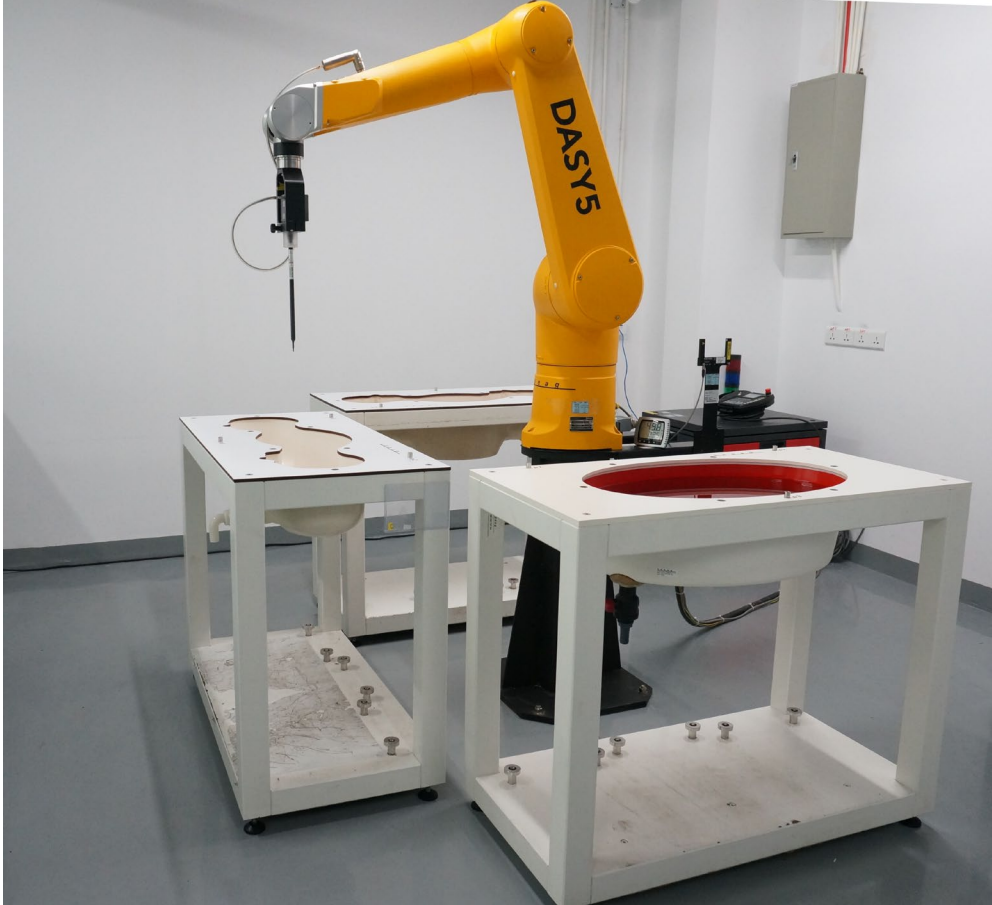
Note:

The Simultaneous SAR of product Specific 10-g SAR is 1.634W/Kg which less than 4.0W/Kg, so the Simultaneous SAR is not required to calculate.

APPENDIX

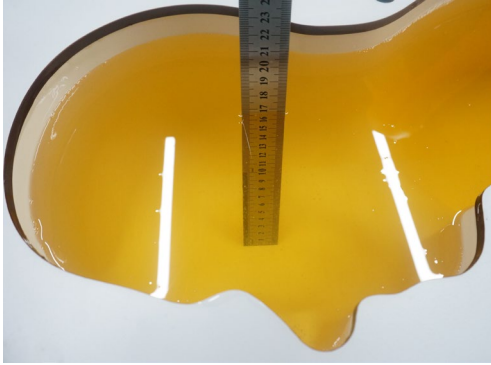
1. TEST LAYOUT

Specific Absorption Rate Test Layout



Liquid depth in the flat Phantom (≥ 15 cm depth)

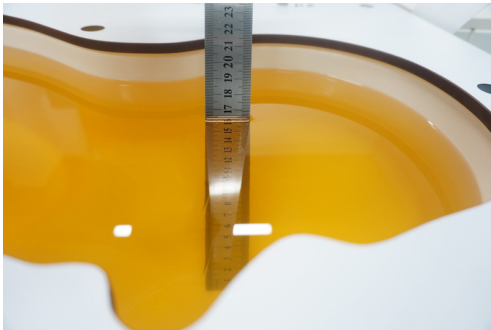
HSL695-925_Head_16.7cm



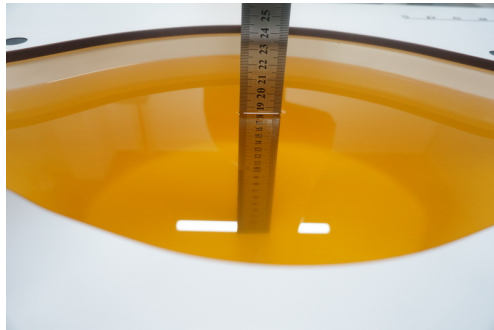
HSL695-925_Body_19.4cm



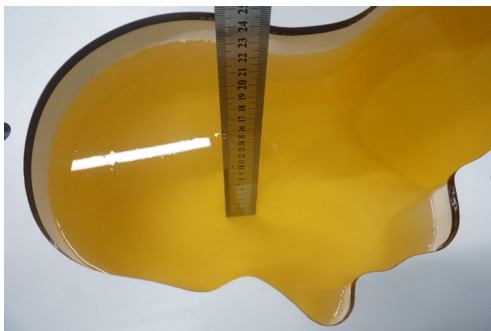
HSL1700-1900_Head_16.6cm



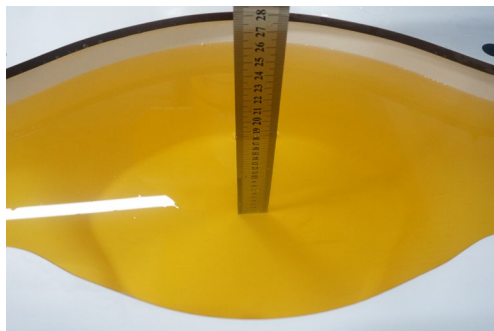
HSL1700-1900_Body_18.5cm



HSL1900-2300_Head_15.9cm



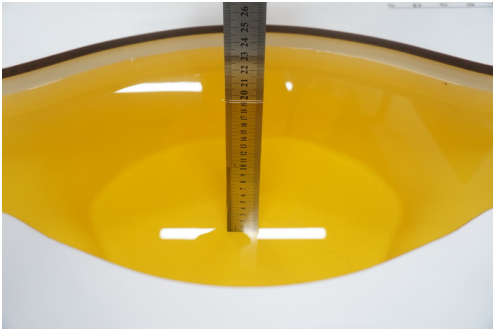
HSL1900-2300_Body_18.7cm



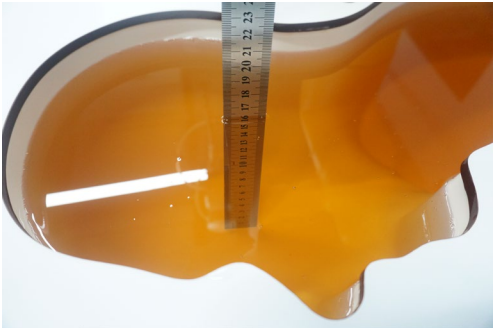
HSL2300-2700_Head_17.4cm



HSL2300-2700_Body_19.5cm



HSL5000-6000_Head_16.2cm



HSL5000-6000_Body_19cm



Appendix A. SAR Plots of System Verification

(Pls See BTL-FCC SAR-1-2108C136_Appendix A.)

Appendix B. SAR Plots of SAR Measurement

(Pls See BTL-FCC SAR-1-2108C136_Appendix B.)

Appendix C. Calibration Certificate

(Pls See BTL-FCC SAR-1-2108C136_Appendix C.)

Appendix D. Photographs of the Test Set-Up

(Pls See BTL-FCC SAR-1-2108C136_Appendix D.)

Appendix E. Antenna location

(Pls See BTL-FCC SAR-1-2108C136_Appendix E.)

Appendix F. Conducted Power Measurement Result

(Pls See BTL-FCC SAR-1-2108C136_Appendix F.)

End of Test Report