

FCC SAR Test Report

FCC ID: 2AUYFRMX3686

Report No. : BTL-FCC SAR-1-2208G029
Equipment : Mobile Phone
Brand Name : realme
Test Model : RMX3686
Series Model : N/A
Applicant : Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address : No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China.
Manufacturer : Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address : No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China.
Factory : Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address : No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China.
Radio Function : WLAN 2.4G, WLAN 5G, Bluetooth, GSM, WCDMA, LTE, 5G NR
Standard(s) : **KDB941225 D01** 3G SAR Procedures v03r01
KDB941225 D05 SAR for LTE Devices v02r05
KDB941225 D06 Hotspot Mode V02r01
KDB447498 D04 Interim General RF Exposure Guidance v01
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
FCC§2.1093 Radiofrequency radiation exposure evaluation: portable devices
IEEE C95.1:2019 Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz - 300 GHz.
IEC/IEEE 62209-1528:2020 Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures(Frequency range of 4 MHz to 10 GHz)
Date of Receipt : Aug. 18, 2022
Date of Test : Oct. 13, 2022 ~ Oct. 25, 2022
Issued Date : Nov. 01, 2022

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

Prepared by

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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.

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.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Oct. 28, 2022
R01	Updated the data of power level description, SAR test result, max SAR and simultaneous transmission SAR calculation.	Oct. 29, 2022
R02	Added the power and test data of CA.	Nov. 01, 2022

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone	
Brand Name	realme	
Test Model	RMX3686	
Series Model	N/A	
Model Difference(s)	N/A	
IMEI Code	Sample 1	863756060019810
		863756060019802
	Sample 2	863756060019794
		863756060019796
S/N	Sample 1	9TR48PZD4HUGUOMV
	Sample 2	I7LZ69JRFI9TQCPR
Sample Status	Engineering Sample: SSL2022083025, SSL2022083024	
Hardware Version	11	
Software Version	realme UI 4.0	
Power Source	#1 DC voltage supplied from AC/DC Adapter. #2 Supplied from Li-ion battery. #3 Supplied from USB port.	
Power Rating	#1 For VCB7CAUH: 1. I/P: 100-130V~ 50/60Hz 1.8A O/P: 5V === 2A or 5-11V === 5A(MAX) I/P: 200-240V~ 50/60Hz 1.8A O/P: 5V === 2A or 5-11V === 6.1A(MAX) For VCB8JAUH: 1. I/P: 100-130V~ 50/60Hz 2.0A O/P: 5V === 2A or 5.0-11.0V === 6.1A MAX (67W MAX) 2. I/P: 200-240V~ 50/60Hz 2.0A O/P: 5V === 2A or 5.0-11.0V === 7.3A MAX (80W MAX) #2 DC 3.87V, 4890mAh/18.92Wh (Min) #3 DC 5V	
Products Covered	2 * Adapter: (1) VCB7CAUH (2) VCB8JAUH 1 * Li-ion battery: realme / BLP951 1 * TYPE-C Cable	
Modulation	GSM(GMSK/8PSK), UMTS(QPSK/16QAM), LTE(QPSK/16QAM/64QAM), 5G NR(QPSK/16QAM/64QAM/256QAM)	

Operation Frequency Range(s)	Band	TX (MHz)	
	GSM850	824~849	
	GSM1900	1850~1910	
	UMTS B2	1850~1910	
	UMTS B4	1710~1755	
	UMTS B5	824~849	
	LTE B2	1850~1910	
	LTE B4	1710~1755	
	LTE B5	824~849	
	LTE B7	2500~2570	
	LTE B12	699~716	
	LTE B13	777~787	
	LTE B17	704~716	
	LTE B26	814~849	
	LTE B38	2570~2620	
	LTE B41	2535~2655	
	LTE B66	1710~1780	
	5G NR n5 (SA/NSA)	824~849	
	5G NR n7 (SA/NSA)	2500~2570	
	5G NR n38 (SA)	2570~2620	
	5G NR n41 (SA/NSA)	2496~2690	
	5G NR n66 (SA/NSA)	1710~1780	
	Bluetooth	2400~2483.5	
	2.4G WLAN	2400~2483.5	
	5.2G WLAN	5090~5250	
	5.3G WLAN	5250~5400	
	5.6G WLAN	5500~5700	
	5.8G WLAN	5750~5850	
Operation Frequency Range(s)	ENDC	5G NR	LTE
		n5	B7/B66
		n7	B5/B66
		n41	B26
		n66	B5/B7/B12
GPRS/EDGE Multislot Class(12)	Max Number of Timeslots in Uplink:		4
	Max Number of Timeslots in Downlink:		4
	Max Total Timeslot:		5
GSM Device class	Class B		
HSDPA UE Category	24		
HSUPA UE Category	7		
DC-HSDPA Category	24		
HSPA+ Category	7		
Power Class	4, tested with power level 5(GSM850)		
	1, tested with power level 0(GSM1900)		
	3, tested with power control "all up bits" (UMTS B2/4/5)		
	3, tested with power control "all Max" (LTE B2/4/5/7/12/13/17/26/38/41/66)		

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)				
23230 (LTE B13 BW=10MHz)				
23780-23790-23800 (LTE B17 BW=10MHz)				
26765-26865-26965 (LTE B26 BW=15MHz)				
37850-38000-38150 (LTE B38 BW=20MHz)				
39750-40620-41490 (LTE B41 BW=20MHz)				
132072-132322-132572 (LTE B66 BW=20MHz)				
167300-167800-166800 (5G NR n5 BW=20MHz)				
502000-507000-512000 (5G NR n7 BW=20MHz)				
516000-519000-522000 (5G NR n38 BW=20MHz)				
509202-518598-528000 (5G NR n41 BW=100MHz)				
344000-349000-354000 (5G NR n66 BW=20MHz)				
0-39-78 (BT)				
0-19-39 (BLE)				
1-6-11 (2.4G WiFi 802.11b/g/n HT20/ax HE20)				
3-6-9 (2.4G WiFi 802.11n HT40/ax HE40)				
5G WiFi	5.2G	5.3G	5.6G	5.8G
802.11a/n HT20/ ac VHT20/ ax HE20	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/ ax HE40	38-46	54-62	102-110-118- 126-134	151-159
802.11ac VHT80/ ax HE80	42	58	106-122	155

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCC SAR-1-2208G029) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is SAR Test room at the location of No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan.

2.2 MEASUREMENT UNCERTAINTY

Uncertainty Budget for Frequency range of 300 MHz to 3 GHz

Error Description	Uncertainty Value (± %)		Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi V _{eff}
Measurement System									
Probe Calibration	6.05		Normal	1	1	1	± 6.05 %	± 6.05 %	∞
Axial Isotropy	4.7		Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %	∞
Hemispherical Isotropy	9.6		Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %	∞
Boundary Effects	1		Rectangular	√3	1	1	± 0.6 %	± 0.6 %	∞
Linearity	4.7		Rectangular	√3	1	1	± 2.7 %	± 2.7 %	∞
Detection Limits	1		Rectangular	√3	1	1	± 0.6 %	± 0.6 %	∞
Modulation response	2.4		Rectangular	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	0.3		Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response Time	0.8		Rectangular	√3	1	1	± 0.5%	± 0.5 %	∞
Integration Time	2.6		Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient - Noise	3		Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient - Reflections	3		Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	0.4		Rectangular	√3	1	1	± 0.2 %	± 0.2 %	∞
Probe Positioning	2.9		Rectangular	√3	1	1	± 1.7 %	±1.7 %	∞
Post-processing	4		Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Max.SAR Evaluation	2		Rectangular	√3	1	1	± 1.15 %	± 1.15 %	∞
Test Sample Related									
Device Positioning	1.6	1.8	Normal	1	1	1	± 1.6 %	± 1.8 %	145
Device Holder	1.5	1.7	Normal	1	1	1	± 1.5 %	± 1.7 %	5
Power Drift	5.0		Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
Phantom and Setup									
Phantom Production Tolerances	6.1		Rectangular	√3	1	1	3.52	3.52	∞
SAR correction	1.9		Rectangular	√3	1	0.84	1.10	1.10	∞
Liquid Conductivity (mea.)	2.4		Rectangular	√3	0.78	0.71	1.08	1.08	∞
Liquid Permittivity (mea.)	2.4		Rectangular	√3	0.26	0.26	0.36	0.36	∞
Temp. unc. - Conductivity	3.4		Rectangular	√3	0.78	0.71	1.53	1.53	∞
Temp. unc. - Permittivity	0.4		Rectangular	√3	0.23	0.26	0.05	0.05	∞
Combined Standard Uncertainty (K = 1)							± 10.42 %	± 10.48 %	361
Expanded Uncertainty (K = 2)							± 20.84 %	± 20.97 %	

Uncertainty Budget for Frequency range of 3 GHz to 6 GHz

Error Description	Uncertainty Value (± %)		Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi V _{eff}
Measurement System									
Probe Calibration	6.65		Normal	1	1	1	± 6.65 %	± 6.65 %	∞
Axial Isotropy	4.7		Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %	∞
Hemispherical Isotropy	9.6		Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %	∞
Boundary Effects	2		Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Linearity	4.7		Rectangular	√3	1	1	± 2.7 %	± 2.7 %	∞
Detection Limits	1		Rectangular	√3	1	1	± 0.6 %	± 0.6 %	∞
Modulation response	2.4		Rectangular	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	0.3		Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response Time	0.8		Rectangular	√3	1	1	± 0.5%	± 0.5 %	∞
Integration Time	2.6		Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient - Noise	3		Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient - Reflections	3		Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	0.4		Rectangular	√3	1	1	± 0.2 %	± 0.2 %	∞
Probe Positioning	6.7		Rectangular	√3	1	1	± 3.9 %	±3.9 %	∞
Post-processing	4		Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Max.SAR Evaluation	4		Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related									
Device Positioning	1.6	1.8	Normal	1	1	1	±1.6 %	± 1.8 %	145
Device Holder	1.5	1.7	Normal	1	1	1	± 1.5 %	± 1.7 %	5
Power Drift	5.0		Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
Phantom and Setup									
Phantom Production Tolerances	6.6		Rectangular	√3	1	1	3.81	3.81	∞
SAR correction	1.9		Rectangular	√3	1	0.84	1.10	0.92	∞
Liquid Conductivity (mea.)	2.4		Rectangular	√3	0.78	0.71	1.08	0.98	∞
Liquid Permittivity (mea.)	2.4		Rectangular	√3	0.26	0.26	0.36	0.36	∞
Temp. unc. - Conductivity	3.4		Rectangular	√3	0.78	0.71	1.53	1.39	∞
Temp. unc. - Permittivity	0.4		Rectangular	√3	0.23	0.26	0.05	0.06	∞
Combined Standard Uncertainty (K = 1)							± 11.65 %	± 11.66 %	361
Expanded Uncertainty (K = 2)							± 23.29 %	± 23.33 %	

2.3 ANTENNA INFORMATION

Brand Name	realme										
Antenna Type	IFA										
Gain (dBi)	Band	Ant 0	Ant 1	Ant 2	Ant 3	Ant 4	Ant 5	Ant 6	Ant 7	Ant 8	Ant 9
	GSM 850	-6.09	-8.83	/	/	/	/	/	/	/	/
	GSM 1900	/	/	/	-3.18	-4.94	/	/	/	/	/
	UMTS B2	/	/	/	-3.18	-4.94	/	/	/	/	/
	UMTS B4	/	/	/	-3.18	-4.74	/	/	/	/	/
	UMTS B5	-6.09	-8.83	/	/	/	/	/	/	/	/
	LTE B2	/	/	/	-3.18	-4.94	/	/	/	/	/
	LTE B4	/	/	/	-3.18	-4.74	-2.81	/	/	/	/
	LTE B5	-6.09	-8.83	/	/	/	/	/	/	/	/
	LTE B7	/	/	/	-2.03	-0.29	-2.01	/	/	/	/
	LTE B12	-6.51	-9.70	/	/	/	/	/	/	/	/
	LTE B13	-6.51	-9.70	/	/	/	/	/	/	/	/
	LTE B17	-6.51	-9.70	/	/	/	/	/	/	/	/
	LTE B26	-6.76	-9.70	/	/	/	/	/	/	/	/
	LTE B38	/	/	/	-2.08	0.006	-1.59	/	/	/	/
	LTE B41	/	/	/	-2.03	0.008	-0.72	/	/	/	/
	LTE B66	/	/	/	-2.59	-4.21	-2.81	/	/	/	/
	5G NR n5	-6.09	-8.83	/	/	/	/	/	/	/	/
	5G NR n7	/	/	/	-2.03	-0.29	-2.01	-5.13	/	/	/
	5G NR n38	/	/	/	-2.08	0.006	-1.59	-3.69	/	/	/
	5G NR n41	/	/	/	-2.03	0.008	-0.72	-3.59	/	/	/
	5G NR n66	/	/	/	-2.59	-4.21	-2.81	-6.44	/	/	/
	Bluetooth	/	/	/	/	/	/	/	/	-1.90	/
	WLAN 2.4G	/	/	-2.40	/	/	/	/	/	-1.90	/
	WLAN 5G	UNII-1	/	/	/	/	/	/	-1.50	/	-3.90
		UNII-2A	/	/	/	/	/	/	-1.70	/	-1.70
		UNII-2C	/	/	/	/	/	/	-0.70	/	-1.70
		UNII-3	/	/	/	/	/	/	-0.40	/	-2.20

Note: The antenna gain is provided by the manufacturer.

2.4 THE MAXIMUM SAR-1G VALUES

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)
GSM850	0.518	0.178	0.483	-
GSM1900	0.609	0.227	0.598	-
UMTS B2	1.067	0.225	0.830	-
UMTS B4	0.615	0.243	0.531	-
UMTS B5	0.747	0.232	0.819	-
LTE B2	0.631	0.253	0.494	-
LTE B4	0.601	0.374	0.484	-
LTE B5	0.406	0.161	0.439	-
LTE B7	1.010	0.305	0.560	-
LTE B12	0.400	0.119	0.430	-
LTE B13	0.425	0.189	0.581	-
LTE B17	0.251	0.120	0.349	-
LTE B26	0.478	0.121	0.412	-
LTE B38	0.910	0.249	0.443	-
LTE B41	0.986	0.256	0.486	-
LTE B66	0.381	0.476	0.773	-
5G NR n5	0.395	0.223	0.617	-
5G NR n7	0.908	0.542	0.502	-
5G NR n38	1.145	1.023	0.881	-
5G NR n41	1.080	0.692	1.054	-
5G NR n66	0.898	0.435	0.981	-
2.4G WLAN	0.789	0.107	0.232	-
5.2G WLAN	0.507	0.157	0.487	-
5.3G WLAN	0.420	0.188	-	1.345
5.6G WLAN	0.483	0.191	-	1.303
5.8G WLAN	0.877	0.236	0.531	-
Bluetooth	-	-	-	-

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 IEC/IEEE 62209-1528:2020.
- 2) WLAN SAR result refer the "168395172_2208G029_RMX3686_For WiFi_SAR_FCC".

2.5 LABORATORY ENVIRONMENT

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

2.6 MAIN TEST INSTRUMENTS

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
1	Data Acquisition Electronics	Speag	DAE4	1289	May 31, 2022	1 Year
2	Data Acquisition Electronics	Speag	DAE4	1486	May 31, 2022	1 Year
3	E-field Probe	Speag	EX3DV4	7369	May 28, 2022	1 Year
4	E-field Probe	Speag	EX3DV4	7678	Aug. 30, 2022	1 Year
5	System Validation Dipole	Speag	D750V3	1145	May 27, 2022	3 Year
6	System Validation Dipole	Speag	D835V2	4d084	Apr. 13, 2021	3 Year
7	System Validation Dipole	Speag	D1800V2	2d210	May 30, 2022	3 Year
8	System Validation Dipole	Speag	D1900V2	5d208	May 23, 2022	3 Year
9	System Validation Dipole	Speag	D2600V2	1111	May 25, 2022	3 Year
10	SAM Twin Phantom V5.0	Speag	Phantom	1661	N/A	N/A
11	SAM Twin Phantom V5.0	Speag	Phantom	1897	N/A	N/A
12	ENA Network Analyzer	Agilent	E5071C	MY46524658	Mar. 21, 2022	1 Year
13	Signal Generator	R&S	SMR40	100502	Jan. 10, 2022	1 Year
14	Spectrum Analyzer	Keysight	N9020A	MY57120120	Mar. 07, 2022	1 Year
15	Power Meter	Anritsu	ML2487A	1128008	Jun. 01, 2022	1 Year
16	Power Sensor	Anritsu	MA2491A	1126001	Jun. 01, 2022	1 Year
17	Dielectric Probe Kit	Agilent	85070E	2593	N/A	N/A
18	Low pass filter	Mini-Circuits	SLP-2950+	M108294	N/A	N/A
19	Power Amplifier	Mini-Circuits	ZVE-2W-272+	N650001538	N/A	N/A
20	Power Amplifier	Mini-Circuits	ZVE-8G+	N628801631	N/A	N/A
21	Thermometer	PA	O-230PK	N/A	Mar. 10, 2022	1 Year

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

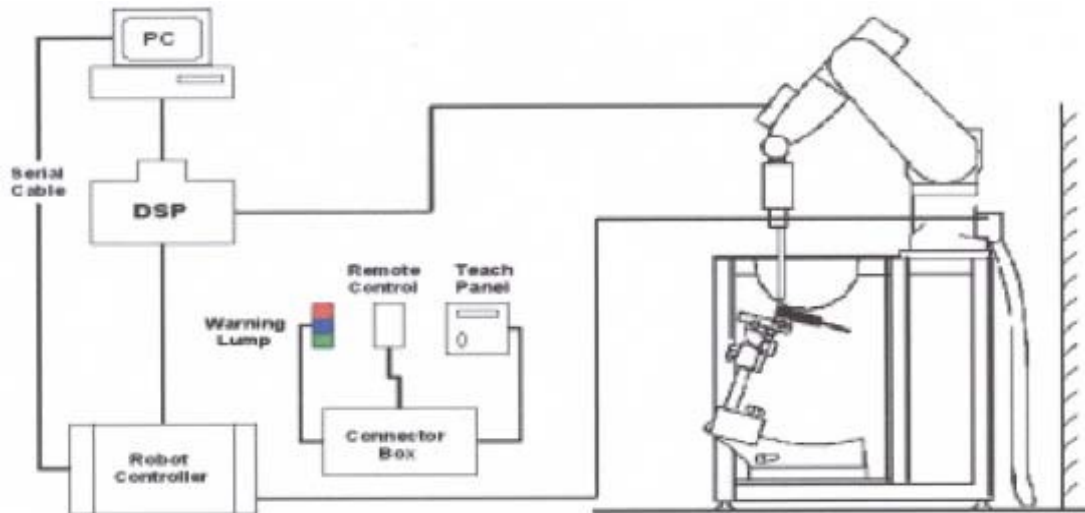
3. SAR MEASUREMENTS SYSTEM CONFIGURATION

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



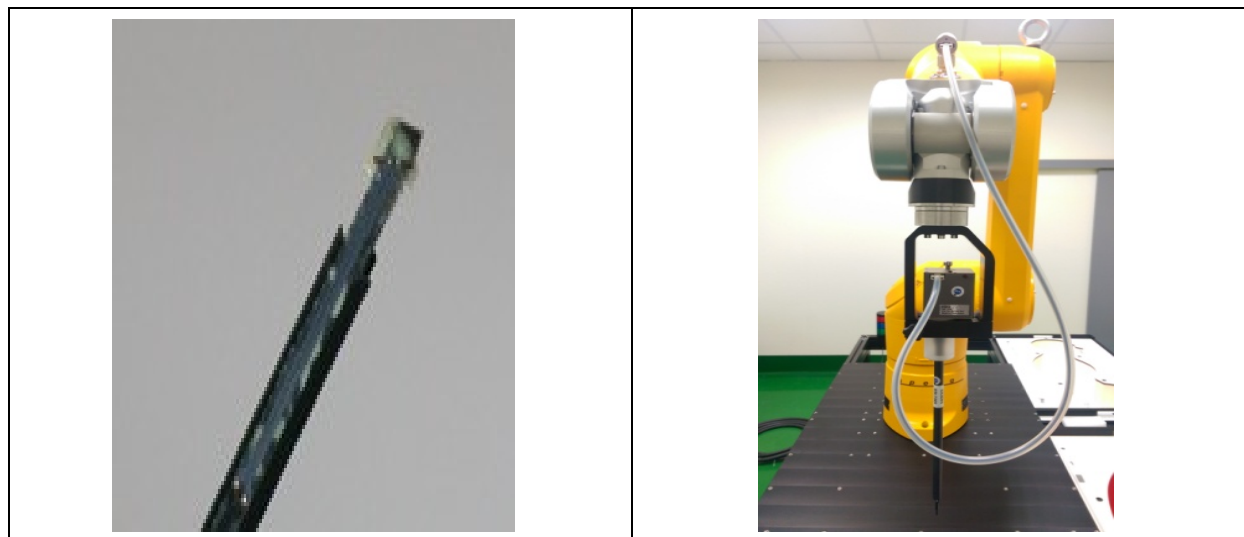
3.2 DASY5 E-FIELD PROBE SYSTEM

The SAR measurements were conducted with the dosimetric probe EX3DV4 (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



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 IEC/IEEE 62209-1528 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: $\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}} \leq 2\text{GHz} \leq 8\text{mm}$, 2-4GHz $\leq 5\text{mm}$ and 4-6 GHz $\leq 4\text{mm}$; $\Delta z_{\text{zoom}} \leq 3\text{GHz} \leq 5\text{mm}$, 3-4 GHz $\leq 4\text{mm}$ and 4-6GHz $\leq 2\text{mm}$ where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.) are shown in table form in chapter 7.2.

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

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

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

3.2.5 SPATIAL PEAK SAR EVALUATION

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

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

Extrapolation

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

Interpolation

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

Volume Averaging

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

Advanced Extrapolation

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

3.2.6 DATA STORAGE AND EVALUATION

3.2.6.1 Data Storage

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

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

3.2.7 DATA EVALUATION BY SEMCAD

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

Probe parameters:	Sensitivity	Normi, a _{i0} , a _{i1} , a _{i2}
	Conversion factor	ConvF _i
	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 parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

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

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Head 750	0.2	-	0.2	1.5	56.0	-	42.1	-
Head 835	0.2	-	0.2	1.5	57.0	-	41.1	-
Head 1800	-	44.5	-	0.3	-	-	55.2	-
Head 1900	-	44.5	-	0.2	-	-	55.3	-
Head 2600	-	45.1	-	0.1	-	-	54.8	-

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	0.905	42.477	0.89	41.9	1.69	1.38	Oct. 16, 2022
Head	750	22	0.923	42.155	0.89	41.9	3.71	0.61	Oct. 20, 2022
Head	750	22	0.924	41.978	0.89	41.9	3.82	0.19	Oct. 21, 2022
Head	835	22	0.939	41.717	0.90	41.5	4.33	0.52	Oct. 21, 2022
Head	835	22	0.908	43.415	0.90	41.5	0.93	4.61	Oct. 15, 2022
Head	835	22	0.894	42.431	0.90	41.5	-0.67	2.24	Oct. 15, 2022
Head	835	22	0.898	42.862	0.90	41.5	-0.25	3.28	Oct. 20, 2022
Head	835	22	0.921	41.895	0.90	41.5	2.33	0.95	Oct. 20, 2022
Head	835	22	0.904	43.280	0.90	41.5	0.44	4.29	Oct. 24, 2022
Head	1800	22	1.404	39.906	1.37	40.1	2.49	-0.48	Oct. 20, 2022
Head	1800	22	1.376	41.088	1.37	40.1	0.43	2.46	Oct. 19, 2022
Head	1800	22	1.368	40.972	1.37	40.1	-0.15	2.17	Oct. 14, 2022
Head	1800	22	1.378	41.521	1.37	40.1	0.59	3.54	Oct. 22, 2022
Head	1800	22	1.358	40.153	1.37	40.1	-0.88	0.13	Oct. 25, 2022
Head	1800	22	1.402	39.734	1.37	40.1	2.36	-0.91	Oct. 21, 2022
Head	1800	22	1.377	41.420	1.37	40.1	0.51	3.29	Oct. 24, 2022
Head	1900	22	1.417	40.571	1.40	40.0	1.21	1.43	Oct. 13, 2022
Head	1900	22	1.462	39.787	1.40	40.0	4.46	-0.53	Oct. 20, 2022
Head	1900	22	1.403	40.674	1.40	40.0	0.21	1.69	Oct. 24, 2022
Head	2600	22	1.956	39.519	1.96	39.0	-0.20	1.33	Oct. 25, 2022
Head	2600	22	1.895	38.364	1.96	39.0	-3.34	-1.63	Oct. 22, 2022
Head	2600	22	1.975	39.567	1.96	39.0	0.79	1.45	Oct. 20, 2022
Head	2600	22	1.946	38.514	1.96	39.0	-0.71	-1.25	Oct. 19, 2022
Head	2600	22	2.036	38.696	1.96	39.0	3.90	-0.78	Oct. 19, 2022
Head	2600	22	2.026	38.584	1.96	39.0	3.37	-1.07	Oct. 18, 2022
Head	2600	22	2.015	37.066	1.96	39.0	2.81	-4.96	Oct. 17, 2022
Head	2600	22	2.017	37.487	1.96	39.0	2.91	-3.88	Oct. 15, 2022
Head	2600	22	1.949	39.395	1.96	39.0	-0.56	1.01	Oct. 17, 2022
Head	2600	22	2.026	38.584	1.96	39.0	3.37	-1.07	Oct. 18, 2022
Head	2600	22	2.034	38.321	1.96	39.0	3.78	-1.74	Oct. 24, 2022
Head	2600	22	2.034	38.325	1.96	39.0	3.80	-1.73	Oct. 25, 2022
Head	2600	22	1.919	38.860	1.96	39.0	-2.09	-0.36	Oct. 24, 2022
Head	2600	22	2.027	37.750	1.96	39.0	3.41	-3.21	Oct. 20, 2022
Head	2600	22	2.046	37.560	1.96	39.0	4.38	-3.69	Oct. 21, 2022

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.

5 SYSTEM CHECK

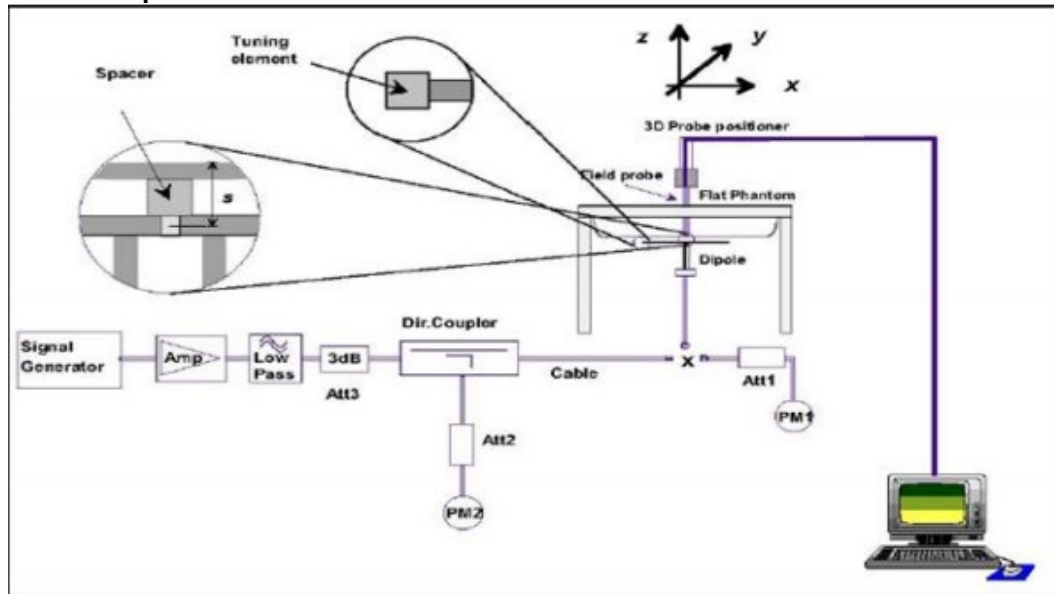
5.1 SYSTEM CHECK PROCEDURE

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW(below 3GHz) or 100mW(3-6GHz), which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the 6.2.

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

System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.

System Check Set-up



5.2 DESCRIPTION OF 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 P1528 (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 (W/kg)		Measured SAR (W/kg)		normalized SAR (W/kg)		Deviation (%)		Dipole S/N
			1g	10g	1g	10g	1g	10g	1g	10g	
Head	Oct. 16, 2022	750	8.55	5.54	2.03	1.37	8.12	5.48	-5.03	-1.08	1145
Head	Oct. 20, 2022	750	8.55	5.54	2.07	1.40	8.28	5.60	-3.16	1.08	1145
Head	Oct. 21, 2022	750	8.55	5.54	2.16	1.46	8.64	5.84	1.05	5.42	1145
Head	Oct. 21, 2022	835	9.53	6.29	2.55	1.65	10.20	6.60	7.03	4.93	4d084
Head	Oct. 15, 2022	835	9.53	6.29	2.40	1.62	9.60	6.48	0.73	3.02	4d084
Head	Oct. 15, 2022	835	9.53	6.29	2.61	1.67	10.44	6.68	9.55	6.20	4d084
Head	Oct. 20, 2022	835	9.53	6.29	2.62	1.67	10.48	6.68	9.97	6.20	4d084
Head	Oct. 20, 2022	835	9.53	6.29	2.44	1.58	9.76	6.32	2.41	0.48	4d084
Head	Oct. 24, 2022	835	9.53	6.29	2.31	1.50	9.24	6.00	-3.04	-4.61	4d084
Head	Oct. 20, 2022	1800	38.20	19.90	9.89	5.34	39.56	21.36	3.56	7.34	2d210
Head	Oct. 19, 2022	1800	38.20	19.90	10.30	5.42	41.20	21.68	7.85	8.94	2d210
Head	Oct. 14, 2022	1800	38.20	19.90	9.64	5.20	38.56	20.80	0.94	4.52	2d210
Head	Oct. 22, 2022	1800	38.20	19.90	10.30	5.44	41.20	21.76	7.85	9.35	2d210
Head	Oct. 25, 2022	1800	38.20	19.90	10.20	5.36	40.80	21.44	6.81	7.74	2d210
Head	Oct. 21, 2022	1800	38.20	19.90	9.02	4.87	36.08	19.48	-5.55	-2.11	2d210
Head	Oct. 24, 2022	1800	38.20	19.90	9.70	5.24	38.80	20.96	1.57	5.33	2d210
Head	Oct. 13, 2022	1900	40.20	20.80	10.30	5.47	41.20	21.88	2.49	5.19	5d028
Head	Oct. 20, 2022	1900	40.20	20.80	10.70	5.56	42.80	22.24	6.47	6.92	5d028
Head	Oct. 24, 2022	1900	40.20	20.80	10.00	5.30	40.00	21.20	-0.50	1.92	5d028
Head	Oct. 25, 2022	2600	55.80	24.70	13.30	5.79	53.20	23.16	-4.66	-6.23	1111
Head	Oct. 22, 2022	2600	55.80	24.70	12.90	5.61	51.60	22.44	-7.53	-9.15	1111
Head	Oct. 20, 2022	2600	55.80	24.70	13.40	5.85	53.60	23.40	-3.94	-5.26	1111
Head	Oct. 19, 2022	2600	55.80	24.70	13.20	5.76	52.80	23.04	-5.38	-6.72	1111
Head	Oct. 19, 2022	2600	55.80	24.70	13.60	6.25	54.40	25.00	-2.51	1.21	1111
Head	Oct. 18, 2022	2600	55.80	24.70	13.80	6.00	55.20	24.00	-1.08	-2.83	1111
Head	Oct. 17, 2022	2600	55.80	24.70	14.50	6.64	58.00	26.56	3.94	7.53	1111
Head	Oct. 15, 2022	2600	55.80	24.70	13.50	6.19	54.00	24.76	-3.23	0.24	1111
Head	Oct. 17, 2022	2600	55.80	24.70	13.50	5.88	54.00	23.52	-3.23	-4.78	1111
Head	Oct. 18, 2022	2600	55.80	24.70	14.00	6.41	56.00	25.64	0.36	3.81	1111
Head	Oct. 24, 2022	2600	55.80	24.70	14.90	6.49	59.60	25.96	6.81	5.10	1111
Head	Oct. 25, 2022	2600	55.80	24.70	14.30	6.54	57.20	26.16	2.51	5.91	1111
Head	Oct. 24, 2022	2600	55.80	24.70	13.50	6.17	54.00	24.68	-3.23	-0.08	1111
Head	Oct. 20, 2022	2600	55.80	24.70	13.60	6.22	54.40	24.88	-2.51	0.73	1111
Head	Oct. 21, 2022	2600	55.80	24.70	14.20	6.47	56.80	25.88	1.79	4.78	1111

6. SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

6.1 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.

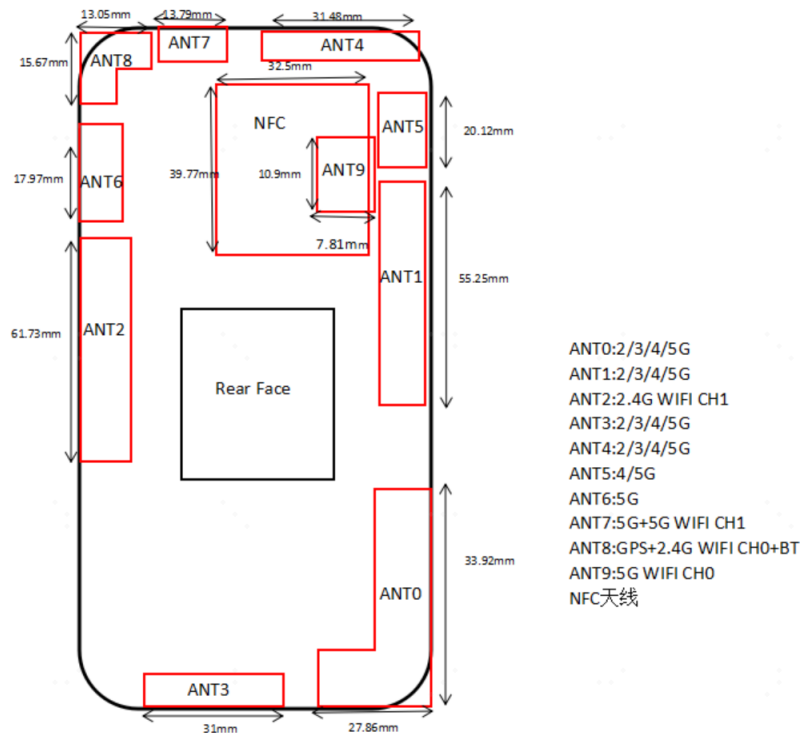
The detailed repeated measurement results are shown in Section 7.2.

7. OPERATIONAL CONDITIONS DURING TEST

7.1 GENERAL DESCRIPTION OF TEST PROCEDURES

Connection to the EUT is established via air interface with base station, and the EUT is set to maximum output power by base station. 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.

7.2 TEST POSITION ANTENNA LOCATION



7.3 TEST POSITION OF PORTABLE DEVICES

For each antenna, the EUT is tested in Hotspot and Specific 10g SAR at the following test positions:

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
Ant 0	YES	YES	YES			YES
Ant 1	YES	YES	YES			
Ant 3	YES	YES		YES		YES
Ant 4	YES	YES	YES		YES	
Ant 5	YES	YES	YES		YES	
Ant 6	YES	YES		YES	YES	

Note:

1) The distance of the positions to edge which more than 25mm are not required to test.

7.4 TEST POSITION

7.4.1 HEAD TEST CONFIGURATION

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

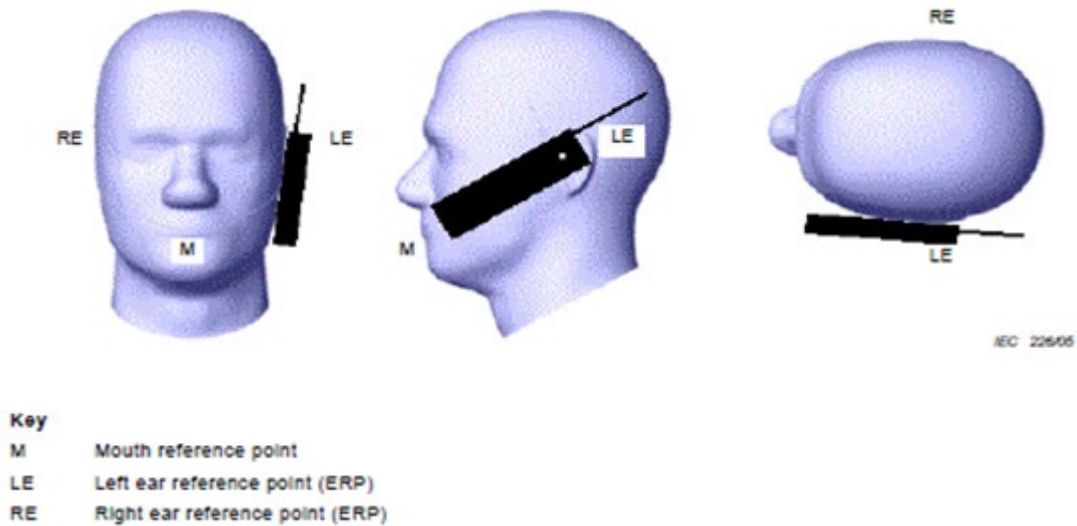


Figure 1 Cheek position of the wireless device on the left side of SAM

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

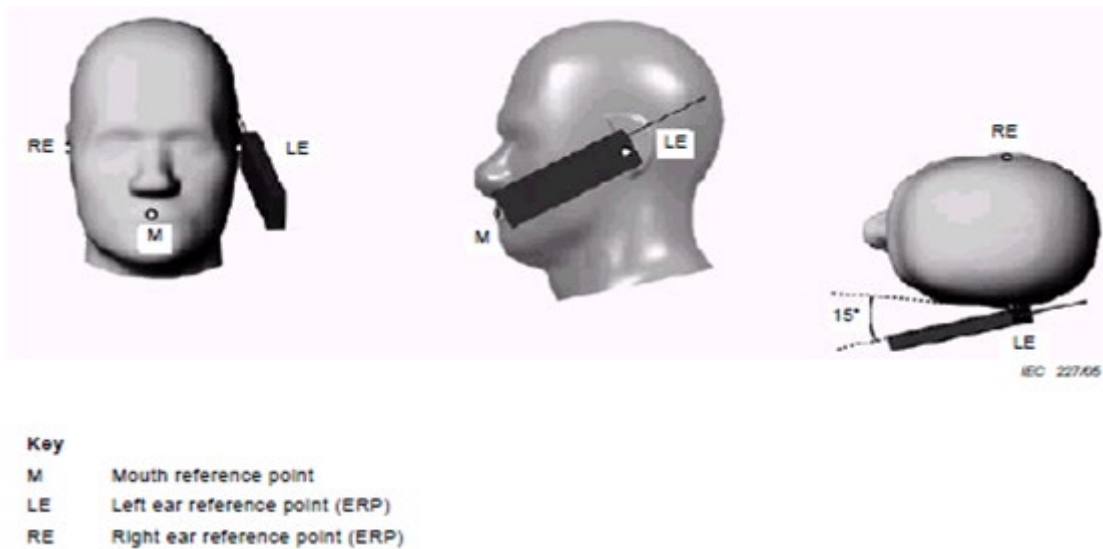


Figure 2 Tilt position of the wireless device on the left side of SAM

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

7.4.2 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.

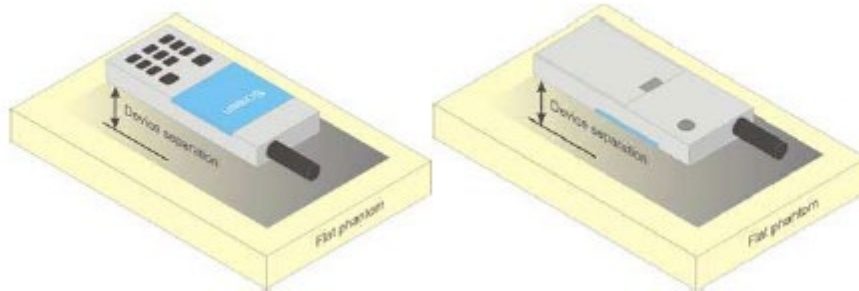


Figure 3 Test positions for body-worn device

7.4.3 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.

7.4.4 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.

7.5 RECEIVER DETECTION MECHANISM

7.5.1 GENERAL DESCRIPTION OF RECEIVER DETECTION MECHANISM

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&5G NR antenna accordingly. Users will be in full power when using WiFi alone. When WiFi+2G/3G/4G/5G NR are used simultaneously, WiFi power reduction will be triggered, i.e. WiFi will be in power level B3 state.

Antenna_0&3 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 B13	LTE B17	LTE B26	LTE B38	LTE B41	LTE B66
Receiver on (Head)	33.5	30.5	24	24	24.5	23.5	23.5	24.5	23.5	24.5	24.5	24.5	24	24	24.5	24
Receiver off (Body-worn 1.5cm)	33.5	30.5	22	22	24.5	22.5	21.5	24.5	20.5	24.5	24.5	24.5	24	22.5	22.5	24
Receiver off (Body-worn 1.0cm)	31	26.5	20.5	20.5	23	21	20	23	19	23.5	24.5	23.5	24	21	21	22.5

Antenna_1&4 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 B13	LTE B17	LTE B26	LTE B38	LTE B41	LTE B66
Receiver on (Head)	0	28	20	17.5	25	19	18	25	18.5	25	25	25	24.5	20.5	20.5	17
Receiver off (Body-worn 1.5cm)	34	29.5	21	21	25	22	22	25	20.5	25	25	25	24.5	22	22	23.5
Receiver off (Body-worn 1.0cm)	31.5	25.5	20	19.5	24.5	20.5	20.5	25	19	25	25	25	24.5	20.5	20.5	22
Simultaneous with WiFi Receiver on (head)	-	-	18.5	-	-	-	-	-	16.5	-	-	-	-	-	19	-

Antenna_5 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 B13	LTE B17	LTE B26	LTE B38	LTE B41	LTE B66
Receiver on (Head)	-	-	-	-	-	-	18.8	-	19.6	-	-	-	-	21	21	18.3
Receiver off (Body-worn 1.5cm)	-	-	-	-	-	-	21.3	-	21.1	-	-	-	-	23	22	23.3
Receiver off (Body-worn 1.0cm)	-	-	-	-	-	-	20.3	-	19.1	-	-	-	-	21	20.5	21.8
Simultaneous with WiFi Receiver on (head)	-	-	-	-	-	-	-	-	18.1	-	-	-	-	19.5	19.5	-

WIFI Antenna_8&9 Max Power (dBm)									
Power scenario	2.4G				5G (5150MHz~5250MHz)				
	802.11 b	802.11 g	802.11 n20/ ax20	802.11 n40/ ax40	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 1.5cm)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 1.0cm)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 0cm)	-	-	-	-	-	-	-	-	-
Simultaneous with WiFi Receiver on (Head)	15	14.5	14.5	14.5	-	-	-	-	-

WIFI Antenna_8&9 Max Power (dBm)										
Power scenario	5G (5250MHz~5400MHz)					5G (5500MHz~5700MHz)				
	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	14	14	16.5	16.5	15.5	13.5	13.5	16	16	15
Receiver off (Body-worn 1.5cm)	14	14	16.5	16.5	15.5	13.5	13.5	16	16	15
Receiver off (Body-worn 1.0cm)	-	-	-	-	-	-	-	-	-	-
Receiver off (Body-worn 0cm)	14	14	16.5	16.5	15.5	13.5	13.5	16	16	15
Simultaneous with WiFi Receiver on (Head)	-	-	-	-	-	-	-	-	-	-

WIFI Antenna_8&9 Max Power (dBm)					
Power scenario	5G (5750MHz~5850MHz)				
	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	17	17	17	16	17
Receiver off (Body-worn 1.5cm)	17	17	17	16	17
Receiver off (Body-worn 1.0cm)	17	17	17	16	17
Receiver off (Body-worn 0cm)	-	-	-	-	-
Simultaneous with WiFi Receiver on (Head)	-	-	-	-	-

WIFI Antenna_8&9 Max Power (dBm)		
Power scenario	2.4G	
	BT	BLE
Receiver on (Head)	15	9
Receiver off (Body-worn 1.5 & 0cm)	15	9

WIFI Antenna_2&7 Max Power (dBm)									
Power scenario	2.4G				5G (5150MHz~5250MHz)				
	802.11 b	802.11 g	802.11 n20/ ax20	802.11 n40/ ax40	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 1.5cm)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 1.0cm)	17	16.5	16.5	16.5	12.5	12.5	15.5	16	15
Receiver off (Body-worn 0cm)	-	-	-	-	-	-	-	-	-
Simultaneous with WiFi Receiver on (Head)	-	-	-	-	-	-	-	-	-

WIFI Antenna_8&9 Max Power (dBm)										
Power scenario	5G (5250MHz~5400MHz)					5G (5500MHz~5700MHz)				
	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	14	14	16.5	15.5	16.5	13.5	13.5	16	15	16
Receiver off (Body-worn 1.5cm)	14	14	16.5	15.5	16.5	13.5	13.5	16	15	16
Receiver off (Body-worn 1.0cm)	-	-	-	-	-	-	-	-	-	-
Receiver off (Body-worn 0cm)	14	14	16.5	15.5	16.5	13.5	13.5	16	15	16
Simultaneous with WiFi Receiver on (Head)	-	-	-	-	-	-	-	-	-	-

WiFi Antenna_8&9 Max Power (dBm)					
Power scenario	5G (5750MHz~5850MHz)				
	802.11 a	802.11 n20/ ac20/ ax20	802.11 n40/ ac40/ ax40	802.11 ac80	802.11 ax80
Receiver on (Head)	17	17	16	17	16
Receiver off (Body-worn 1.5cm)	17	17	16	17	16
Receiver off (Body-worn 1.0cm)	17	17	16	17	16
Receiver off (Body-worn 0cm)	-	-	16	-	-
Simultaneous with WiFi Receiver on (Head)	16	16	15	16	15

5G n5		
Power scenario	Ant 0 Antenna Max Power (dBm)	Ant 1 Antenna Max Power (dBm)
Receiver on (Head)	24.5	25
Receiver off (Body-worn 1.5cm)	24.5	25
Receiver off (Body-worn 1.0cm)	24.5	25

Ant 3 Antenna Max Power (dBm)				
Power scenario	5G n7	5G n38	5G n41	5G n66
Receiver on (Head)	23.7	24.2	24.2	24.2
Receiver off (Body-worn 1.5cm)	19.7	20.7	20.7	24.2
Receiver off (Body-worn 1.0cm)	18.2	19.2	19.2	23.7

Ant 6 Antenna Max Power (dBm)				
Power scenario	5G n7	5G n38	5G n41	5G n66
Receiver on (Head)	16.2	16.7	18.2	20.5
Receiver off (Body-worn 1.5cm)	19.7	20.7	20.7	23
Receiver off (Body-worn 1.0cm)	18.2	19.2	19.2	23

Ant 4 Antenna Max Power (dBm)				
Power scenario	5G n7	5G n38	5G n41	5G n66
Receiver on (Head)	17.2	17.2	16.7	18.5
Receiver off (Body-worn 1.5cm)	21.2	22.2	22.2	21
Receiver off (Body-worn 1.0cm)	19.7	20.7	20.7	19.5
Receiver off (Body-worn 0cm)	-	-	-	-
Simultaneous with WiFi Receiver on (Head)	15.2	15.2	15.2	16.5
Simultaneous with WiFi Receiver on (Body-worn 1.0cm)	-	18.7	18.7	-

Ant 5 Antenna Max Power (dBm)				
Power scenario	5G n7	5G n38	5G n41	5G n66
Receiver on (Head)	18.7	17.2	17.5	18.5
Receiver off (Body-worn 1.5cm)	22.7	20.7	21	23.5
Receiver off (Body-worn 1.0cm)	20.7	19.2	19.5	23.5
Receiver off (Body-worn 0cm)	-	-	-	-
Simultaneous with WiFi Receiver on (Head)	-	-	-	-
Simultaneous with WiFi Receiver on (Body-worn 1.0cm)	-	-	-	20.5

7.6 INQUIRY FOR CE MTK DUTY CYCLE SAR TEST PLAN

Currently, we plan to introduce MTK Duty Cycle technology into our mobile phone products. This technology can significantly improve OTA performance while meeting SAR compliance. MTK Duty Cycle technology is applied to NR TDD frequency band, and the conducted power under specific Duty Cycle is compensated according to the following table lookup method in the case of different Duty Cycle stages.

In this technology, the duty cycle is divided into 10 sections, and the power boost in different sections is inconsistent, but the power boost in the same section is consistent. The division of duty cycle sections and power boost levels are shown below.

No.	Duty Cycle range	Power Boost(dB)
1	$0\% < x \leq 11\%$	9.5
2	$11\% < x \leq 21\%$	6.7
3	$21\% < x \leq 31\%$	5.0
4	$31\% < x \leq 41\%$	3.8
5	$41\% < x \leq 51\%$	2.9
6	$51\% < x \leq 61\%$	2.1
7	$61\% < x \leq 71\%$	1.4
8	$71\% < x \leq 81\%$	0.9
9	$81\% < x \leq 91\%$	0.4
10	$91\% < x \leq 100\%$	0.0

Testing strategy:

This technology is used in NR TDD frequency band, and the detailed test strategy is as follows:

1. Considering the testing capability of various callbox in the current industry, three duty cycles of 21.40%, 41.40% and 61.40% are selected for power verification, and the traversal method are as follows:

1) frequency band: verify all NR TDD frequency bands.

2) Antenna: Verify all transmitting antennas in each frequency band.

3) DSI: verify DSI of all scenarios.

4) Bandwidth, modulation, channel, RB: verify the maximum bandwidth, DFT-s-OFDM QPSK modulation, intermediate channel, Inner RB

2. The signaling power tested under each duty cycle is uniformly converted into the signaling average power under 100% duty cycle. If the signaling average power is not more than 100% Duty Cycle FTM mode power of 0.25dB and above, and the 10-g reported SAR is ≤ 1.2 W/kg, only the SAR of 100% Duty Cycle FTM mode will be tested, otherwise, the SAR test under the corresponding duty cycle will be added.

3. If the same antenna supports SA and NSA modes, and they share the same PA and TX path, only SA mode will be verified. Otherwise, verify SAR separately.

The power test data and SAR test data please refer to section 7 and 8.

7.7 SAR TEST CONFIGURATION

7.7.1 GSM TEST CONFIGURATION

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using 8960 Series the power lever is set to “5” and “0” in SAR of GSM850 and GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

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

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

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

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

7.7.2 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 $\leq 1.2\text{W/kg}$, 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 , ΔNACK , $\Delta\text{CQI} = 8$. The variation of the β_c/β_d ratio causes a power reduction at sub-tests 2 - 4.

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

Note 1: ΔACK , ΔNACK and $\Delta\text{CQI} = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
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.²
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 $\beta_d = 15/15$ ²

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 $\leq \frac{1}{4}$ 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 $\leq 1.2\text{W/kg}$, SAR measurement is not required for the secondary mode.

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

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

Subtests for WCDMA Release 6 HSUPA

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

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

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 difference.

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 $\beta_d = 15/15$

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 $\beta_d = 15/15$

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

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

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.

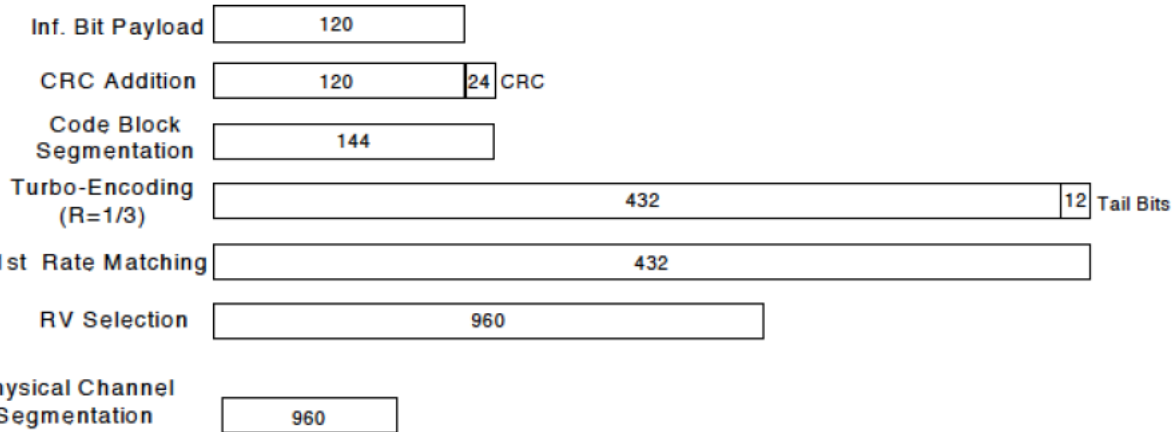


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

Note1: Δ ACK, Δ NACK and Δ CQI=8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$ ^o

Note2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.^o

Note3: For subtest2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$ ^o

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

6. HSPA+

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

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

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Note:

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

7.7.3 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
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3. A-MPR

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

4. LTE procedures for SAR testing**A) Largest channel bandwidth standalone SAR test requirements****i) QPSK with 1 RB allocation**

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

ii) QPSK with 50% RB allocation

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

iii) QPSK with 100% RB allocation

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

iv) Higher order modulations

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

B) Other channel bandwidth standalone SAR test requirements

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

LTE (TDD) Test Configuration

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

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

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

Figure 4.2-1: Frame structure type 2

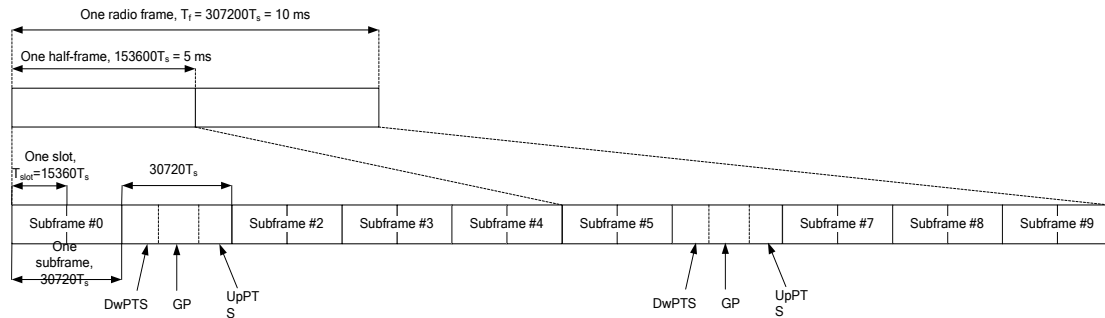


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

Table 4.2-2: Uplink-downlink configurations

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

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

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

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

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

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

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

And we can get different Duty cycles under different configurations:

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

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

7.7.4 LTE CARRIER AGGREGATION POWER

LTE Rel.11 Carrier Aggregation

As the KDB 941225 D05A, when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4dB higher than the maximum output power measured when downlink carrier aggregation is inactive, the CA test is not required.

The LTE CA test for the worst case at highest SAR antenna of the head and body.

E-UTRA CA configurations and bandwidth combination sets defined for intra-band contiguous CA

E-UTRA CA configuration / Bandwidth combination set					
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	CA_7C	15	15	40	0
		20	20		
		10	20	40	1
		15	15, 20		
		20	10, 15, 20		
CA_38C	CA_38C	15	15	40	0
		20	20		
CA_41C	CA_41C	10	20	40	0
		15	15, 20		
		20	10, 15, 20		
		5, 10	20	40	1
		15	15, 20		
		20	5, 10, 15, 20		
		10	15, 20	40	2

NOTE 1: The CA configuration refers to an operating band and a CA bandwidth class specified in Table 5.6A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes

Note:

- 1) For the inter-band CA combinations, all the listed bands above can be used as PCC or SCC.
- 2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V13.2.0.
- 3) The reference test frequencies for CA refers to 3GPP TS 36.508 V13.1.0

1. Carrier Aggregation power test results (Uplink)_Head

Ant 4

E-UTRA CA configuration		PCC						SCC						Tune-up For LTE CA TX Power	LTE CA TX Power
		Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset	Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset		
CA_7C	Low	LTE B7	20	QPSK	20850	2510	1/99	LTE B7	20	QPSK	21048	2529.8	1/0	18.50	17.45
CA_7C	Mid	LTE B7	20	QPSK	21001	2525.1	1/99	LTE B7	20	QPSK	21199	2544.9	1/0	18.50	17.54
CA_7C	High	LTE B7	20	QPSK	21152	2540.2	1/99	LTE B7	20	QPSK	21350	2560	1/0	18.50	17.69
CA_38C	Low	LTE B38	20	QPSK	37850	2580	1/99	LTE B38	20	QPSK	38048	2599.8	1/0	20.50	19.73
CA_38C	Mid	LTE B38	20	QPSK	37901	2585.1	1/99	LTE B38	20	QPSK	38099	2604.9	1/0	20.50	19.68
CA_38C	High	LTE B38	20	QPSK	37952	2590.2	1/99	LTE B38	20	QPSK	38150	2610	1/0	20.50	19.58
CA_41C	Low	LTE B41	20	QPSK	39750	2506	1/99	LTE B41	20	QPSK	39948	2525.8	1/0	20.50	19.33
CA_41C	Mid	LTE B41	20	QPSK	40521	2583.1	1/99	LTE B41	20	QPSK	40719	2602.9	1/0	20.50	19.55
CA_41C	High	LTE B41	20	QPSK	41292	2660.2	1/99	LTE B41	20	QPSK	41490	2680	1/0	20.50	19.38

Note: The tested channel results are marks in bold.

2. Carrier Aggregation power test results (Uplink)_Body

Ant 4

E-UTRA CA configuration		PCC						SCC						Tune-up For LTE CA TX Power	LTE CA TX Power
		Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset	Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset		
CA_7C	Low	LTE B7	20	QPSK	20850	2510	1/99	LTE B7	20	QPSK	21048	2529.8	1/0	20.50	19.31
CA_7C	Mid	LTE B7	20	QPSK	21001	2525.1	1/99	LTE B7	20	QPSK	21199	2544.9	1/0	20.50	19.38
CA_7C	High	LTE B7	20	QPSK	21152	2540.2	1/99	LTE B7	20	QPSK	21350	2560	1/0	20.50	19.18
CA_38C	Low	LTE B38	20	QPSK	37850	2580	1/99	LTE B38	20	QPSK	38048	2599.8	1/0	22.00	20.68
CA_38C	Mid	LTE B38	20	QPSK	37901	2585.1	1/99	LTE B38	20	QPSK	38099	2604.9	1/0	22.00	20.78
CA_38C	High	LTE B38	20	QPSK	37952	2590.2	1/99	LTE B38	20	QPSK	38150	2610	1/0	22.00	20.48
CA_41C	Low	LTE B41	20	QPSK	39750	2506	1/99	LTE B41	20	QPSK	39948	2525.8	1/0	22.00	20.46
CA_41C	Mid	LTE B41	20	QPSK	40521	2583.1	1/99	LTE B41	20	QPSK	40719	2602.9	1/0	22.00	20.57
CA_41C	High	LTE B41	20	QPSK	41292	2660.2	1/99	LTE B41	20	QPSK	41490	2680	1/0	22.00	20.32

Note: The tested channel results are marks in bold.

3. Carrier Aggregation power test results (Uplink)_Hotspot

Ant 4

E-UTRA CA configuration		PCC						SCC						Tune-up For LTE CA TX Power	LTE CA TX Power
		Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset	Band	Band width [MHZ]	Modulation	Channel (UL)	Frequency [MHZ]	RB Size/Offset		
CA_7C	Low	LTE B7	20	QPSK	20850	2510	1/99	LTE B7	20	QPSK	21048	2529.8	1/0	19.00	18.05
CA_7C	Mid	LTE B7	20	QPSK	21001	2525.1	1/99	LTE B7	20	QPSK	21199	2544.9	1/0	19.00	18.18
CA_7C	High	LTE B7	20	QPSK	21152	2540.2	1/99	LTE B7	20	QPSK	21350	2560	1/0	19.00	18.03
CA_38C	Low	LTE B38	20	QPSK	37850	2580	1/99	LTE B38	20	QPSK	38048	2599.8	1/0	20.50	19.70
CA_38C	Mid	LTE B38	20	QPSK	37901	2585.1	1/99	LTE B38	20	QPSK	38099	2604.9	1/0	20.50	19.69
CA_38C	High	LTE B38	20	QPSK	37952	2590.2	1/99	LTE B38	20	QPSK	38150	2610	1/0	20.50	19.66
CA_41C	Low	LTE B41	20	QPSK	39750	2506	1/99	LTE B41	20	QPSK	39948	2525.8	1/0	20.50	19.53
CA_41C	Mid	LTE B41	20	QPSK	40521	2583.1	1/99	LTE B41	20	QPSK	40719	2602.9	1/0	20.50	19.46
CA_41C	High	LTE B41	20	QPSK	41292	2660.2	1/99	LTE B41	20	QPSK	41490	2680	1/0	20.50	19.45

Note: The tested channel results are marks in bold.

8. TEST RESULT

8.1 CONDUCTED POWER RESULTS

The conducted power measurement result please refer to Appendix E.

8.2 SAR TEST RESULTS

General Notes:

- 1) Per KDB447498 D04, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.
- 2) Per KDB447498 D04, 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).

8.2.1 SAR MEASUREMENT RESULT OF HEAD

1. Head SAR test results of GSM

2G only

Test No.	Band	Mode	Channel	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G01	GSM 850	GSM	190	Right Cheek	0	1	33.5	32.62	0.16	0.122	0.092	0.149
G02	GSM 850	GSM	190	Right Tilted	0	1	33.5	32.62	0.01	0.057	0.043	0.069
G03	GSM 850	GSM	190	Left Cheek	0	1	33.5	32.62	-0.17	0.122	0.0959	0.149
G04	GSM 850	GSM	190	Left Tilted	0	1	33.5	32.62	-0.01	0.055	0.0422	0.067
G06	GSM 850	GSM	190	Right Cheek	1	1	34	32.93	0.12	0.229	0.139	0.293
G07	GSM 850	GSM	190	Right Tilted	1	1	34	32.93	0.15	0.047	0.033	0.060
G08	GSM 850	GSM	190	Left Cheek	1	1	34	32.93	-0.02	0.405	0.222	0.518
G09	GSM 850	GSM	190	Left Tilted	1	1	34	32.93	-0.02	0.057	0.040	0.073
G11	GSM 1900	GSM	661	Right Cheek	3	1	30.5	29.50	0.12	0.058	0.036	0.073
G12	GSM 1900	GSM	661	Right Tilted	3	1	30.5	29.50	-0.15	0.027	0.016	0.034
G13	GSM 1900	GSM	661	Left Cheek	3	1	30.5	29.50	0.11	0.046	0.029	0.057
G14	GSM 1900	GSM	661	Left Tilted	3	1	30.5	29.50	-0.08	0.028	0.016	0.035
G16	GSM 1900	GSM	661	Right Cheek	4	1	28	27.74	-0.04	0.574	0.250	0.609
G17	GSM 1900	GSM	661	Right Tilted	4	1	28	27.74	0.16	0.376	0.142	0.399
G18	GSM 1900	GSM	661	Left Cheek	4	1	28	27.74	0.02	0.348	0.166	0.369
G19	GSM 1900	GSM	661	Left Tilted	4	1	28	27.74	-0.06	0.483	0.227	0.513

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

2. Head SAR test results of UMTS

3G only

Test No.	Band	Mode	Channel	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U01	UMTS B2	RMC12.2K	9400	Right Cheek	3	1	24	23.01	-0.03	0.147	0.088	0.185
U02	UMTS B2	RMC12.2K	9400	Right Tilted	3	1	24	23.01	-0.13	0.038	0.023	0.047
U03	UMTS B2	RMC12.2K	9400	Left Cheek	3	1	24	23.01	0.17	0.042	0.026	0.053
U04	UMTS B2	RMC12.2K	9400	Left Tilted	3	1	24	23.01	-0.18	0.034	0.021	0.043
U06	UMTS B2	RMC12.2K	9400	Right Cheek	4	1	20	18.80	-0.18	0.769	0.416	1.014
U07	UMTS B2	RMC12.2K	9400	Right Tilted	4	1	20	18.80	0	0.800	0.419	1.055
U08	UMTS B2	RMC12.2K	9400	Left Cheek	4	1	20	18.80	-0.04	0.442	0.271	0.583
U09	UMTS B2	RMC12.2K	9400	Left Tilted	4	1	20	18.80	-0.09	0.466	0.278	0.614
U79	UMTS B2	RMC12.2K	9262	Right Cheek	4	1	20	18.97	-0.12	0.729	0.388	0.924
U80	UMTS B2	RMC12.2K	9538	Right Cheek	4	1	20	18.66	0.04	0.601	0.331	0.818
U81	UMTS B2	RMC12.2K	9262	Right Tilted	4	1	20	18.97	0.02	0.842	0.439	1.067
U82	UMTS B2	RMC12.2K	9538	Right Tilted	4	1	20	18.66	-0.02	0.606	0.328	0.825
U10	UMTS B2	RMC12.2K	9400	Right Tilted	4	2	20	18.80	-0.03	0.777	0.367	1.024
U11	UMTS B4	RMC12.2K	1413	Right Cheek	3	1	24	23.00	-0.02	0.140	0.087	0.176
U12	UMTS B4	RMC12.2K	1413	Right Tilted	3	1	24	23.00	0.14	0.038	0.023	0.048
U13	UMTS B4	RMC12.2K	1413	Left Cheek	3	1	24	23.00	0.15	0.045	0.030	0.057
U14	UMTS B4	RMC12.2K	1413	Left Tilted	3	1	24	23.00	-0.01	0.025	0.015	0.031
U16	UMTS B4	RMC12.2K	1413	Right Cheek	4	1	17.5	16.74	0.01	0.495	0.282	0.590
U17	UMTS B4	RMC12.2K	1413	Right Tilted	4	1	17.5	16.74	0.06	0.457	0.267	0.544
U18	UMTS B4	RMC12.2K	1413	Left Cheek	4	1	17.5	16.74	-0.06	0.516	0.328	0.615
U19	UMTS B4	RMC12.2K	1413	Left Tilted	4	1	17.5	16.74	0.01	0.410	0.251	0.488
U21	UMTS B5	RMC12.2K	4182	Right Cheek	0	1	24.5	23.72	-0.07	0.068	0.052	0.081
U22	UMTS B5	RMC12.2K	4182	Right Tilted	0	1	24.5	23.72	-0.08	0.041	0.032	0.049
U23	UMTS B5	RMC12.2K	4182	Left Cheek	0	1	24.5	23.72	0.12	0.096	0.074	0.115
U24	UMTS B5	RMC12.2K	4182	Left Tilted	0	1	24.5	23.72	0.01	0.048	0.037	0.057
U26	UMTS B5	RMC12.2K	4182	Right Cheek	1	1	25	24.07	0.02	0.331	0.185	0.410
U27	UMTS B5	RMC12.2K	4182	Right Tilted	1	1	25	24.07	-0.07	0.045	0.032	0.056
U28	UMTS B5	RMC12.2K	4182	Left Cheek	1	1	25	24.07	-0.09	0.603	0.316	0.747
U29	UMTS B5	RMC12.2K	4182	Left Tilted	1	1	25	24.07	0.03	0.072	0.049	0.090

3G Simultaneous with WiFi

Test No.	Band	Mode	Channel	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U83	UMTS B2	RMC12.2K	9400	Right Cheek	4	1	18.5	17.26	0.01	0.588	0.302	0.782
U84	UMTS B2	RMC12.2K	9400	Right Tilted	4	1	18.5	17.26	0.01	0.638	0.317	0.849
U85	UMTS B2	RMC12.2K	9400	Left Cheek	4	1	18.5	17.26	0.03	0.345	0.203	0.459
U86	UMTS B2	RMC12.2K	9400	Left Tilted	4	1	18.5	17.26	0	0.658	0.360	0.875

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

3. Head SAR test results of LTE

4G only

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L01	LTE B2	QPSK20M	18700	1	0	Right Cheek	3	1	23.5	23.21	-0.13	0.132	0.082	0.141
L02	LTE B2	QPSK20M	18700	1	0	Right Tilted	3	1	23.5	23.21	-0.11	0.054	0.033	0.057
L03	LTE B2	QPSK20M	18700	1	0	Left Cheek	3	1	23.5	23.21	0.06	0.076	0.048	0.081
L04	LTE B2	QPSK20M	18700	1	0	Left Tilted	3	1	23.5	23.21	0.16	0.053	0.032	0.057
L05	LTE B2	QPSK20M	19100	50	0	Right Cheek	3	1	22.5	22.11	0.01	0.105	0.062	0.115
L06	LTE B2	QPSK20M	19100	50	0	Right Tilted	3	1	22.5	22.11	0.04	0.042	0.025	0.045
L07	LTE B2	QPSK20M	19100	50	0	Left Cheek	3	1	22.5	22.11	0.15	0.063	0.039	0.069
L08	LTE B2	QPSK20M	19100	50	0	Left Tilted	3	1	22.5	22.11	-0.08	0.043	0.025	0.046
L10	LTE B2	QPSK20M	18700	1	0	Right Cheek	4	1	19	18.70	-0.05	0.504	0.259	0.541
L11	LTE B2	QPSK20M	18700	1	0	Right Tilted	4	1	19	18.70	0.02	0.588	0.272	0.631
L12	LTE B2	QPSK20M	18700	1	0	Left Cheek	4	1	19	18.70	0.04	0.246	0.148	0.264
L13	LTE B2	QPSK20M	18700	1	0	Left Tilted	4	1	19	18.70	0	0.411	0.229	0.441
L16	LTE B2	QPSK20M	18900	50	50	Right Cheek	4	1	19	18.66	0.01	0.418	0.222	0.452
L17	LTE B2	QPSK20M	18900	50	50	Right Tilted	4	1	19	18.66	-0.01	0.490	0.236	0.529
L18	LTE B2	QPSK20M	18900	50	50	Left Cheek	4	1	19	18.66	-0.02	0.250	0.150	0.270
L19	LTE B2	QPSK20M	18900	50	50	Left Tilted	4	1	19	18.66	-0.02	0.426	0.235	0.460
L21	LTE B4	QPSK20M	20300	1	0	Right Cheek	3	1	23.5	23.05	0.03	0.203	0.129	0.225
L22	LTE B4	QPSK20M	20300	1	0	Right Tilted	3	1	23.5	23.05	0.16	0.055	0.033	0.061
L23	LTE B4	QPSK20M	20300	1	0	Left Cheek	3	1	23.5	23.05	0.08	0.087	0.057	0.096
L24	LTE B4	QPSK20M	20300	1	0	Left Tilted	3	1	23.5	23.05	0.13	0.030	0.018	0.033
L25	LTE B4	QPSK20M	20300	50	0	Right Cheek	3	1	22.5	21.93	0.04	0.165	0.104	0.188
L26	LTE B4	QPSK20M	20300	50	0	Right Tilted	3	1	22.5	21.93	0.08	0.044	0.026	0.050
L27	LTE B4	QPSK20M	20300	50	0	Left Cheek	3	1	22.5	21.93	0.1	0.070	0.045	0.079
L28	LTE B4	QPSK20M	20300	50	0	Left Tilted	3	1	22.5	21.93	0.05	0.024	0.015	0.027
L31	LTE B4	QPSK20M	20300	1	99	Right Cheek	4	1	18	17.55	-0.12	0.463	0.253	0.514
L32	LTE B4	QPSK20M	20300	1	99	Right Tilted	4	1	18	17.55	0	0.541	0.280	0.601
L33	LTE B4	QPSK20M	20300	1	99	Left Cheek	4	1	18	17.55	0	0.364	0.226	0.404
L34	LTE B4	QPSK20M	20300	1	99	Left Tilted	4	1	18	17.55	-0.01	0.458	0.266	0.508
L35	LTE B4	QPSK20M	20175	50	50	Right Cheek	4	1	18	17.52	0.00	0.443	0.256	0.495
L36	LTE B4	QPSK20M	20175	50	50	Right Tilted	4	1	18	17.52	0	0.524	0.273	0.586
L37	LTE B4	QPSK20M	20175	50	50	Left Cheek	4	1	18	17.52	0.03	0.361	0.225	0.404
L38	LTE B4	QPSK20M	20175	50	50	Left Tilted	4	1	18	17.52	-0.12	0.443	0.258	0.495
L41	LTE B4	QPSK20M	20300	1	50	Right Cheek	5	1	18.8	18.78	0.08	0.464	0.246	0.466
L42	LTE B4	QPSK20M	20300	1	50	Right Tilted	5	1	18.8	18.78	0.01	0.199	0.106	0.200
L43	LTE B4	QPSK20M	20300	1	50	Left Cheek	5	1	18.8	18.78	0	0.147	0.094	0.148
L44	LTE B4	QPSK20M	20300	1	50	Left Tilted	5	1	18.8	18.78	-0.05	0.160	0.097	0.161
L45	LTE B4	QPSK20M	20300	50	50	Right Cheek	5	1	18.8	18.76	0.06	0.464	0.247	0.468
L46	LTE B4	QPSK20M	20300	50	50	Right Tilted	5	1	18.8	18.76	0.1	0.202	0.106	0.204
L47	LTE B4	QPSK20M	20300	50	50	Left Cheek	5	1	18.8	18.76	0.09	0.151	0.096	0.152
L48	LTE B4	QPSK20M	20300	50	50	Left Tilted	5	1	18.8	18.76	-0.14	0.138	0.084	0.139

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L51	LTE B5	QPSK10M	20450	1	0	Right Cheek	0	1	24.5	24.17	0.14	0.091	0.070	0.099
L52	LTE B5	QPSK10M	20450	1	0	Right Tilted	0	1	24.5	24.17	0.03	0.034	0.026	0.036
L53	LTE B5	QPSK10M	20450	1	0	Left Cheek	0	1	24.5	24.17	0.18	0.107	0.083	0.115
L54	LTE B5	QPSK10M	20450	1	0	Left Tilted	0	1	24.5	24.17	0.12	0.040	0.031	0.043
L55	LTE B5	QPSK10M	20525	25	0	Right Cheek	0	1	23.5	23.24	0.13	0.085	0.065	0.091
L56	LTE B5	QPSK10M	20525	25	0	Right Tilted	0	1	23.5	23.24	0.05	0.028	0.021	0.029
L57	LTE B5	QPSK10M	20525	25	0	Left Cheek	0	1	23.5	23.24	0.04	0.063	0.049	0.067
L58	LTE B5	QPSK10M	20525	25	0	Left Tilted	0	1	23.5	23.24	0.02	0.037	0.028	0.039
L61	LTE B5	QPSK10M	20450	1	0	Right Cheek	1	1	25	24.38	0.03	0.232	0.144	0.268
L62	LTE B5	QPSK10M	20450	1	0	Right Tilted	1	1	25	24.38	0.01	0.056	0.040	0.064
L63	LTE B5	QPSK10M	20450	1	0	Left Cheek	1	1	25	24.38	0.08	0.352	0.195	0.406
L64	LTE B5	QPSK10M	20450	1	0	Left Tilted	1	1	25	24.38	-0.07	0.051	0.036	0.059
L65	LTE B5	QPSK10M	20525	25	0	Right Cheek	1	1	24	23.45	-0.07	0.216	0.133	0.245
L66	LTE B5	QPSK10M	20525	25	0	Right Tilted	1	1	24	23.45	0.08	0.049	0.035	0.056
L67	LTE B5	QPSK10M	20525	25	0	Left Cheek	1	1	24	23.45	-0.08	0.345	0.191	0.391
L68	LTE B5	QPSK10M	20525	25	0	Left Tilted	1	1	24	23.45	0.08	0.048	0.033	0.054
L71	LTE B7	QPSK20M	21100	1	50	Right Cheek	3	1	23.5	23.11	0.04	0.093	0.051	0.102
L72	LTE B7	QPSK20M	21100	1	50	Right Tilted	3	1	23.5	23.11	0.14	0.043	0.019	0.047
L73	LTE B7	QPSK20M	21100	1	50	Left Cheek	3	1	23.5	23.11	0	0.040	0.020	0.043
L74	LTE B7	QPSK20M	21100	1	50	Left Tilted	3	1	23.5	23.11	0.18	0.032	0.010	0.035
L75	LTE B7	QPSK20M	21350	50	0	Right Cheek	3	1	22.5	22.11	0.12	0.099	0.054	0.109
L76	LTE B7	QPSK20M	21350	50	0	Right Tilted	3	1	22.5	22.11	0.12	0.033	0.017	0.036
L77	LTE B7	QPSK20M	21350	50	0	Left Cheek	3	1	22.5	22.11	0	0.035	0.018	0.038
L78	LTE B7	QPSK20M	21350	50	0	Left Tilted	3	1	22.5	22.11	0.13	0.027	0.013	0.029
L81	LTE B7	QPSK20M	21350	1	99	Right Cheek	4	1	18.5	17.82	0.07	0.572	0.260	0.670
L82	LTE B7	QPSK20M	21350	1	99	Right Tilted	4	1	18.5	17.82	0.10	0.734	0.320	0.859
L83	LTE B7	QPSK20M	21350	1	99	Left Cheek	4	1	18.5	17.82	0.11	0.557	0.281	0.588
L84	LTE B7	QPSK20M	21350	1	99	Left Tilted	4	1	18.5	17.82	-0.03	0.657	0.316	0.769
L85	LTE B7	QPSK20M	21350	50	0	Right Cheek	4	1	18.5	17.77	0.08	0.667	0.298	0.788
L86	LTE B7	QPSK20M	21350	50	0	Right Tilted	4	1	18.5	17.77	0.03	0.854	0.368	1.010
L87	LTE B7	QPSK20M	21350	50	0	Left Cheek	4	1	18.5	17.77	-0.06	0.568	0.288	0.672
L88	LTE B7	QPSK20M	21350	50	0	Left Tilted	4	1	18.5	17.77	-0.02	0.674	0.324	0.797
L680	LTE B7	QPSK20M	20850	1	99	Right Tilted	4	1	18.5	17.78	0.02	0.704	0.310	0.831
L681	LTE B7	QPSK20M	21100	1	99	Right Tilted	4	1	18.5	17.72	-0.05	0.737	0.324	0.882
L682	LTE B7	QPSK20M	20850	50	0	Right Tilted	4	1	18.5	17.66	0.07	0.757	0.339	0.919
L683	LTE B7	QPSK20M	21100	50	0	Right Tilted	4	1	18.5	17.71	0.09	0.761	0.337	0.913
L684	LTE B7	QPSK20M	21350	100	0	Right Tilted	4	1	18.5	17.71	0.03	0.773	0.335	0.927
L685	LTE B7	QPSK20M	21350	50	0	Right Tilted (Repeated)	4	1	18.5	17.77	0.08	0.795	0.344	0.940

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L91	LTE B7	QPSK20M	21100	1	50	Right Cheek	5	1	19.6	19.52	0.17	0.528	0.171	0.538
L92	LTE B7	QPSK20M	21100	1	50	Right Tilted	5	1	19.6	19.52	-0.04	0.378	0.170	0.385
L93	LTE B7	QPSK20M	21100	1	50	Left Cheek	5	1	19.6	19.52	0.13	0.135	0.067	0.138
L94	LTE B7	QPSK20M	21100	1	50	Left Tilted	5	1	19.6	19.52	-0.15	0.085	0.041	0.087
L95	LTE B7	QPSK20M	21350	50	0	Right Cheek	5	1	19.6	19.47	0.01	0.523	0.210	0.539
L96	LTE B7	QPSK20M	21350	50	0	Right Tilted	5	1	19.6	19.47	0.17	0.469	0.207	0.484
L97	LTE B7	QPSK20M	21350	50	0	Left Cheek	5	1	19.6	19.47	0.15	0.159	0.078	0.164
L98	LTE B7	QPSK20M	21350	50	0	Left Tilted	5	1	19.6	19.47	-0.09	0.148	0.071	0.153
L101	LTE B12	QPSK10M	23130	1	49	Right Cheek	0	1	24.5	23.88	0.05	0.045	0.035	0.052
L102	LTE B12	QPSK10M	23130	1	49	Right Tilted	0	1	24.5	23.88	0.09	0.035	0.027	0.041
L103	LTE B12	QPSK10M	23130	1	49	Left Cheek	0	1	24.5	23.88	-0.05	0.089	0.071	0.102
L104	LTE B12	QPSK10M	23130	1	49	Left Tilted	0	1	24.5	23.88	0.05	0.034	0.026	0.039
L105	LTE B12	QPSK10M	23130	25	0	Right Cheek	0	1	23.5	22.84	-0.07	0.033	0.025	0.038
L106	LTE B12	QPSK10M	23130	25	0	Right Tilted	0	1	23.5	22.84	0.03	0.026	0.020	0.030
L107	LTE B12	QPSK10M	23130	25	0	Left Cheek	0	1	23.5	22.84	0.12	0.039	0.030	0.045
L108	LTE B12	QPSK10M	23130	25	0	Left Tilted	0	1	23.5	22.84	0.04	0.025	0.020	0.029
L111	LTE B12	QPSK10M	23130	1	24	Right Cheek	1	1	25	23.98	-0.06	0.134	0.081	0.169
L112	LTE B12	QPSK10M	23130	1	24	Right Tilted	1	1	25	23.98	-0.05	0.038	0.026	0.048
L113	LTE B12	QPSK10M	23130	1	24	Left Cheek	1	1	25	23.98	0.04	0.316	0.173	0.400
L114	LTE B12	QPSK10M	23130	1	24	Left Tilted	1	1	25	23.98	0.1	0.037	0.024	0.046
L115	LTE B12	QPSK10M	23130	25	0	Right Cheek	1	1	24	23.03	0.05	0.107	0.065	0.134
L116	LTE B12	QPSK10M	23130	25	0	Right Tilted	1	1	24	23.03	0.03	0.031	0.023	0.039
L117	LTE B12	QPSK10M	23130	25	0	Left Cheek	1	1	24	23.03	0.03	0.244	0.133	0.305
L118	LTE B12	QPSK10M	23130	25	0	Left Tilted	1	1	24	23.03	0.14	0.036	0.023	0.045
L121	LTE B13	QPSK10M	23230	1	0	Right Cheek	0	1	24.5	24.11	-0.06	0.109	0.083	0.119
L122	LTE B13	QPSK10M	23230	1	0	Right Tilted	0	1	24.5	24.11	-0.02	0.031	0.024	0.033
L123	LTE B13	QPSK10M	23230	1	0	Left Cheek	0	1	24.5	24.11	-0.01	0.123	0.096	0.135
L124	LTE B13	QPSK10M	23230	1	0	Left Tilted	0	1	24.5	24.11	0.04	0.061	0.047	0.067
L125	LTE B13	QPSK10M	23230	25	0	Right Cheek	0	1	23.5	23.00	-0.08	0.042	0.033	0.047
L126	LTE B13	QPSK10M	23230	25	0	Right Tilted	0	1	23.5	23.00	-0.03	0.023	0.018	0.025
L127	LTE B13	QPSK10M	23230	25	0	Left Cheek	0	1	23.5	23.00	0.1	0.140	0.085	0.157
L128	LTE B13	QPSK10M	23230	25	0	Left Tilted	0	1	23.5	23.00	0.014	0.044	0.030	0.049
L131	LTE B13	QPSK10M	23230	1	0	Right Cheek	1	1	25	24.17	-0.1	0.193	0.116	0.234
L132	LTE B13	QPSK10M	23230	1	0	Right Tilted	1	1	25	24.17	0.05	0.043	0.030	0.052
L133	LTE B13	QPSK10M	23230	1	0	Left Cheek	1	1	25	24.17	-0.04	0.351	0.192	0.425
L134	LTE B13	QPSK10M	23230	1	0	Left Tilted	1	1	25	24.17	0.02	0.062	0.042	0.075
L135	LTE B13	QPSK10M	23230	25	0	Right Cheek	1	1	24	23.13	0.07	0.148	0.089	0.181
L136	LTE B13	QPSK10M	23230	25	0	Right Tilted	1	1	24	23.13	0.03	0.033	0.028	0.040
L137	LTE B13	QPSK10M	23230	25	0	Left Cheek	1	1	24	23.13	0.14	0.271	0.148	0.331
L138	LTE B13	QPSK10M	23230	25	0	Left Tilted	1	1	24	23.13	0.03	0.048	0.032	0.058

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L141	LTE B17	QPSK10M	23780	1	49	Right Cheek	0	1	24.5	24.03	0.04	0.046	0.035	0.051
L142	LTE B17	QPSK10M	23780	1	49	Right Tilted	0	1	24.5	24.03	0.03	0.030	0.024	0.033
L143	LTE B17	QPSK10M	23780	1	49	Left Cheek	0	1	24.5	24.03	-0.04	0.090	0.071	0.100
L144	LTE B17	QPSK10M	23780	1	49	Left Tilted	0	1	24.5	24.03	0.08	0.029	0.023	0.033
L145	LTE B17	QPSK10M	23800	25	0	Right Cheek	0	1	23.5	22.92	0.06	0.034	0.026	0.039
L146	LTE B17	QPSK10M	23800	25	0	Right Tilted	0	1	23.5	22.92	0.01	0.022	0.018	0.026
L147	LTE B17	QPSK10M	23800	25	0	Left Cheek	0	1	23.5	22.92	0.06	0.038	0.030	0.044
L148	LTE B17	QPSK10M	23800	25	0	Left Tilted	0	1	23.5	22.92	0.05	0.022	0.017	0.025
L151	LTE B17	QPSK10M	23800	1	49	Right Cheek	1	1	25	23.97	0.01	0.143	0.086	0.181
L152	LTE B17	QPSK10M	23800	1	49	Right Tilted	1	1	25	23.97	-0.03	0.042	0.029	0.053
L153	LTE B17	QPSK10M	23800	1	49	Left Cheek	1	1	25	23.97	0.03	0.198	0.110	0.251
L154	LTE B17	QPSK10M	23800	1	49	Left Tilted	1	1	25	23.97	0.02	0.044	0.029	0.055
L155	LTE B17	QPSK10M	23800	25	0	Right Cheek	1	1	24	23.04	-0.02	0.132	0.080	0.164
L156	LTE B17	QPSK10M	23800	25	0	Right Tilted	1	1	24	23.04	0.01	0.028	0.019	0.035
L157	LTE B17	QPSK10M	23800	25	0	Left Cheek	1	1	24	23.04	0.04	0.191	0.107	0.238
L158	LTE B17	QPSK10M	23800	25	0	Left Tilted	1	1	24	23.04	-0.08	0.042	0.024	0.052
L161	LTE B26	QPSK15M	26965	1	74	Right Cheek	0	1	24	23.70	-0.03	0.094	0.071	0.101
L162	LTE B26	QPSK15M	26965	1	74	Right Tilted	0	1	24	23.70	0.16	0.034	0.027	0.036
L163	LTE B26	QPSK15M	26965	1	74	Left Cheek	0	1	24	23.70	0.08	0.073	0.058	0.078
L164	LTE B26	QPSK15M	26965	1	74	Left Tilted	0	1	24	23.70	-0.12	0.042	0.036	0.045
L165	LTE B26	QPSK15M	26765	36	0	Right Cheek	0	1	23	22.69	-0.06	0.050	0.039	0.054
L166	LTE B26	QPSK15M	26765	36	0	Right Tilted	0	1	23	22.69	0.07	0.022	0.017	0.024
L167	LTE B26	QPSK15M	26765	36	0	Left Cheek	0	1	23	22.69	-0.14	0.026	0.020	0.028
L168	LTE B26	QPSK15M	26765	36	0	Left Tilted	0	1	23	22.69	-0.08	0.048	0.037	0.052
L171	LTE B26	QPSK15M	26865	1	0	Right Cheek	1	1	24.5	23.66	0.01	0.117	0.073	0.142
L172	LTE B26	QPSK15M	26865	1	0	Right Tilted	1	1	24.5	23.66	0.04	0.045	0.031	0.055
L173	LTE B26	QPSK15M	26865	1	0	Left Cheek	1	1	24.5	23.66	0.01	0.394	0.216	0.478
L174	LTE B26	QPSK15M	26865	1	0	Left Tilted	1	1	24.5	23.66	-0.03	0.062	0.041	0.076
L175	LTE B26	QPSK15M	26865	36	0	Right Cheek	1	1	23.5	23.34	0.08	0.102	0.064	0.106
L176	LTE B26	QPSK15M	26865	36	0	Right Tilted	1	1	23.5	23.34	0.04	0.039	0.027	0.040
L177	LTE B26	QPSK15M	26865	36	0	Left Cheek	1	1	23.5	23.34	0.06	0.296	0.161	0.307
L178	LTE B26	QPSK15M	26865	36	0	Left Tilted	1	1	23.5	23.34	0.03	0.044	0.030	0.046
L181	LTE B38	QPSK20M	38000	1	0	Right Cheek	3	1	24	23.68	0	0.047	0.025	0.050
L182	LTE B38	QPSK20M	38000	1	0	Right Tilted	3	1	24	23.68	0.04	0.031	0.016	0.033
L183	LTE B38	QPSK20M	38000	1	0	Left Cheek	3	1	24	23.68	0	0.004	0.000	0.004
L184	LTE B38	QPSK20M	38000	1	0	Left Tilted	3	1	24	23.68	0.03	0.020	0.010	0.022
L185	LTE B38	QPSK20M	37850	50	0	Right Cheek	3	1	23	22.56	0.01	0.038	0.020	0.042
L186	LTE B38	QPSK20M	37850	50	0	Right Tilted	3	1	23	22.56	0.04	0.023	0.010	0.025
L187	LTE B38	QPSK20M	37850	50	0	Left Cheek	3	1	23	22.56	0	0.014	0.007	0.016
L188	LTE B38	QPSK20M	37850	50	0	Left Tilted	3	1	23	22.56	0	0.008	0.002	0.009

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L191	LTE B38	QPSK20M	37850	1	99	Right Cheek	4	1	20.5	19.91	0.13	0.564	0.251	0.646
L192	LTE B38	QPSK20M	37850	1	99	Right Tilted	4	1	20.5	19.91	-0.02	0.712	0.311	0.815
L193	LTE B38	QPSK20M	37850	1	99	Left Cheek	4	1	20.5	19.91	-0.14	0.456	0.223	0.522
L194	LTE B38	QPSK20M	37850	1	99	Left Tilted	4	1	20.5	19.91	0	0.575	0.280	0.658
L195	LTE B38	QPSK20M	38000	50	0	Right Cheek	4	1	20.5	19.89	-0.03	0.639	0.286	0.735
L196	LTE B38	QPSK20M	38000	50	0	Right Tilted	4	1	20.5	19.89	0.06	0.763	0.326	0.878
L197	LTE B38	QPSK20M	38000	50	0	Left Cheek	4	1	20.5	19.89	-0.01	0.497	0.254	0.572
L198	LTE B38	QPSK20M	38000	50	0	Left Tilted	4	1	20.5	19.89	0	0.584	0.284	0.672
L686	LTE B38	QPSK20M	38000	1	99	Right Tilted	4	1	20.5	19.89	0.03	0.746	0.318	0.858
L687	LTE B38	QPSK20M	38150	1	99	Right Tilted	4	1	20.5	19.87	-0.02	0.740	0.313	0.855
L688	LTE B38	QPSK20M	37850	50	0	Right Cheek	4	1	20.5	19.86	0.04	0.638	0.286	0.739
L689	LTE B38	QPSK20M	38150	50	0	Right Cheek	4	1	20.5	19.82	-0.01	0.650	0.289	0.760
L690	LTE B38	QPSK20M	37850	50	0	Right Tilted	4	1	20.5	19.86	0.03	0.755	0.322	0.875
L691	LTE B38	QPSK20M	38150	50	0	Right Tilted	4	1	20.5	19.82	-0.08	0.568	0.240	0.664
L692	LTE B38	QPSK20M	38150	100	0	Right Tilted	4	1	20.5	19.85	-0.03	0.767	0.326	0.890
L693	LTE B38	QPSK20M	38150	50	0	Right Tilted (Repeated)	4	1	20.5	19.82	0.02	0.778	0.331	0.910
L201	LTE B38	QPSK20M	38000	1	50	Right Cheek	5	1	21	20.98	0.09	0.450	0.202	0.452
L202	LTE B38	QPSK20M	38000	1	50	Right Tilted	5	1	21	20.98	0.16	0.240	0.107	0.241
L203	LTE B38	QPSK20M	38000	1	50	Left Cheek	5	1	21	20.98	0.07	0.079	0.038	0.079
L204	LTE B38	QPSK20M	38000	1	50	Left Tilted	5	1	21	20.98	0.04	0.084	0.040	0.084
L205	LTE B38	QPSK20M	38000	50	25	Right Cheek	5	1	21	20.92	0.03	0.375	0.164	0.382
L206	LTE B38	QPSK20M	38000	50	25	Right Tilted	5	1	21	20.92	0.03	0.254	0.112	0.259
L207	LTE B38	QPSK20M	38000	50	25	Left Cheek	5	1	21	20.92	0.04	0.077	0.039	0.079
L208	LTE B38	QPSK20M	38000	50	25	Left Tilted	5	1	21	20.92	0.01	0.080	0.038	0.081
L211	LTE B41	QPSK20M	40620	1	0	Right Cheek	3	1	24.5	24.12	-0.06	0.145	0.094	0.158
L212	LTE B41	QPSK20M	40620	1	0	Right Tilted	3	1	24.5	24.12	0.03	0.096	0.059	0.105
L213	LTE B41	QPSK20M	40620	1	0	Left Cheek	3	1	24.5	24.12	0.05	0.149	0.099	0.162
L214	LTE B41	QPSK20M	40620	1	0	Left Tilted	3	1	24.5	24.12	0.11	0.056	0.034	0.061
L215	LTE B41	QPSK20M	40620	50	0	Right Cheek	3	1	23.5	23.08	0.09	0.117	0.076	0.129
L216	LTE B41	QPSK20M	40620	50	0	Right Tilted	3	1	23.5	23.08	0.14	0.075	0.046	0.083
L217	LTE B41	QPSK20M	40620	50	0	Left Cheek	3	1	23.5	23.08	0.04	0.124	0.082	0.136
L218	LTE B41	QPSK20M	40620	50	0	Left Tilted	3	1	23.5	23.08	0.01	0.045	0.027	0.050
L221	LTE B41	QPSK20M	40620	1	50	Right Cheek	4	1	20.5	19.66	0.08	0.504	0.218	0.612
L222	LTE B41	QPSK20M	40620	1	50	Right Tilted	4	1	20.5	19.66	0.11	0.712	0.300	0.865
L223	LTE B41	QPSK20M	40620	1	50	Left Cheek	4	1	20.5	19.66	0.04	0.358	0.182	0.435
L224	LTE B41	QPSK20M	40620	1	50	Left Tilted	4	1	20.5	19.66	-0.08	0.480	0.232	0.583
L225	LTE B41	QPSK20M	40620	50	0	Right Cheek	4	1	20.5	19.64	0	0.549	0.237	0.669
L226	LTE B41	QPSK20M	40620	50	0	Right Tilted	4	1	20.5	19.64	0.02	0.734	0.309	0.894
L227	LTE B41	QPSK20M	40620	50	0	Left Cheek	4	1	20.5	19.64	0.04	0.357	0.182	0.435
L228	LTE B41	QPSK20M	40620	50	0	Left Tilted	4	1	20.5	19.64	-0.01	0.481	0.233	0.586
L696	LTE B41	QPSK20M	39750	1	50	Right Tilted	4	1	20.5	19.61	-0.01	0.782	0.354	0.960
L697	LTE B41	QPSK20M	41490	1	50	Right Tilted	4	1	20.5	19.63	0.01	0.768	0.324	0.938
L700	LTE B41	QPSK20M	39750	50	0	Right Tilted	4	1	20.5	19.57	-0.03	0.517	0.232	0.640
L701	LTE B41	QPSK20M	41490	50	0	Right Tilted	4	1	20.5	19.56	0.07	0.794	0.334	0.986
L702	LTE B41	QPSK20M	41490	100	0	Right Tilted	4	1	20.5	19.64	-0.02	0.779	0.328	0.949

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L231	LTE B41	QPSK20M	41490	1	50	Right Cheek	5	1	21	20.94	-0.1	0.578	0.249	0.586
L232	LTE B41	QPSK20M	41490	1	50	Right Tilted	5	1	21	20.94	0.14	0.330	0.148	0.335
L233	LTE B41	QPSK20M	41490	1	50	Left Cheek	5	1	21	20.94	0.05	0.165	0.079	0.167
L234	LTE B41	QPSK20M	41490	1	50	Left Tilted	5	1	21	20.94	-0.17	0.144	0.067	0.146
L235	LTE B41	QPSK20M	41490	50	25	Right Cheek	5	1	21	20.92	0.11	0.505	0.251	0.515
L236	LTE B41	QPSK20M	41490	50	25	Right Tilted	5	1	21	20.92	0.12	0.332	0.149	0.338
L237	LTE B41	QPSK20M	41490	50	25	Left Cheek	5	1	21	20.92	0.04	0.167	0.079	0.170
L238	LTE B41	QPSK20M	41490	50	25	Left Tilted	5	1	21	20.92	-0.12	0.146	0.068	0.149
L241	LTE B66	QPSK20M	132572	1	0	Right Cheek	3	1	24	23.63	0.06	0.085	0.055	0.092
L242	LTE B66	QPSK20M	132572	1	0	Right Tilted	3	1	24	23.63	0.03	0.056	0.034	0.061
L243	LTE B66	QPSK20M	132572	1	0	Left Cheek	3	1	24	23.63	0.05	0.087	0.058	0.095
L244	LTE B66	QPSK20M	132572	1	0	Left Tilted	3	1	24	23.63	0.11	0.033	0.020	0.036
L245	LTE B66	QPSK20M	132572	50	0	Right Cheek	3	1	23	22.53	0.07	0.069	0.044	0.077
L246	LTE B66	QPSK20M	132572	50	0	Right Tilted	3	1	23	22.53	0.14	0.044	0.027	0.049
L247	LTE B66	QPSK20M	132572	50	0	Left Cheek	3	1	23	22.53	0.04	0.073	0.048	0.081
L248	LTE B66	QPSK20M	132572	50	0	Left Tilted	3	1	23	22.53	0.03	0.027	0.016	0.030
L251	LTE B66	QPSK20M	132572	1	99	Right Cheek	4	1	17	15.91	0.04	0.145	0.098	0.187
L252	LTE B66	QPSK20M	132572	1	99	Right Tilted	4	1	17	15.91	0.06	0.236	0.126	0.304
L253	LTE B66	QPSK20M	132572	1	99	Left Cheek	4	1	17	15.91	0.02	0.083	0.074	0.107
L254	LTE B66	QPSK20M	132572	1	99	Left Tilted	4	1	17	15.91	0.01	0.171	0.114	0.220
L255	LTE B66	QPSK20M	132572	50	25	Right Cheek	4	1	17	15.88	0.03	0.169	0.110	0.219
L256	LTE B66	QPSK20M	132572	50	25	Right Tilted	4	1	17	15.88	0	0.245	0.125	0.317
L257	LTE B66	QPSK20M	132572	50	25	Left Cheek	4	1	17	15.88	0.03	0.103	0.087	0.133
L258	LTE B66	QPSK20M	132572	50	25	Left Tilted	4	1	17	15.88	-0.06	0.198	0.129	0.256
L261	LTE B66	QPSK20M	132572	1	50	Right Cheek	5	1	18.3	18.28	0.08	0.275	0.152	0.276
L262	LTE B66	QPSK20M	132572	1	50	Right Tilted	5	1	18.3	18.28	0.01	0.204	0.109	0.205
L263	LTE B66	QPSK20M	132572	1	50	Left Cheek	5	1	18.3	18.28	0.01	0.150	0.096	0.151
L264	LTE B66	QPSK20M	132572	1	50	Left Tilted	5	1	18.3	18.28	0.05	0.164	0.100	0.165
L265	LTE B66	QPSK20M	132572	50	25	Right Cheek	5	1	18.3	18.24	0.06	0.376	0.153	0.381
L266	LTE B66	QPSK20M	132572	50	25	Right Tilted	5	1	18.3	18.24	0.10	0.207	0.109	0.210
L267	LTE B66	QPSK20M	132572	50	25	Left Cheek	5	1	18.3	18.24	0.07	0.155	0.098	0.157
L268	LTE B66	QPSK20M	132572	50	25	Left Tilted	5	1	18.3	18.24	-0.14	0.142	0.086	0.144

Ant 4

Test No.	PCC					SCC					Tune-up For LTE CA TX Power	LTE CA TX Power	Test Position	Power Drift	SAR 1g	SAR 10g	Reported 1g SAR
	Band	Band width [MHZ]	Modulation	Chan nel (UL)	RB Size/ Offset	Band	Band width [MHZ]	Modulation	Chan nel (UL)	RB Size/ Offset							
C01	LTE B7	20	QPSK	21152	1/99	LTE B7	20	QPSK	21350	1/0	18.50	17.69	Right Tilted	0.01	0.813	0.324	0.980
C04	LTE B38	20	QPSK	37850	1/99	LTE B38	20	QPSK	38048	1/0	20.50	19.73	Right Tilted	0.05	0.726	0.289	0.867
C07	LTE B41	20	QPSK	40521	1/99	LTE B41	20	QPSK	40719	1/0	20.50	19.55	Right Tilted	0.11	0.668	0.218	0.831

Note: The test data of CA for worst case is not larger than the LTE's, so the maximum SAR Value of CA does not need to be bold.

4G Simultaneous with WiFi

Test No.	Band	Mode	Channel	RB	offset	Test Position	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L709	LTE B7	QPSK20M	21350	1	99	Right Cheek	4	1	16.5	15.78	0.04	0.133	0.109	0.157
L710	LTE B7	QPSK20M	21350	1	99	Right Tilted	4	1	16.5	15.78	-0.04	0.177	0.115	0.209
L711	LTE B7	QPSK20M	21350	1	99	Left Cheek	4	1	16.5	15.78	0.06	0.052	0.079	0.061
L712	LTE B7	QPSK20M	21350	1	99	Left Tilted	4	1	16.5	15.78	-0.02	0.156	0.141	0.184
L713	LTE B7	QPSK20M	21350	50	0	Right Cheek	4	1	16.5	15.69	0.01	0.091	0.091	0.110
L714	LTE B7	QPSK20M	21350	50	0	Right Tilted	4	1	16.5	15.69	0.01	0.244	0.144	0.294
L715	LTE B7	QPSK20M	21350	50	0	Left Cheek	4	1	16.5	15.69	-0.04	0.051	0.075	0.061
L716	LTE B7	QPSK20M	21350	50	0	Left Tilted	4	1	16.5	15.69	-0.03	0.127	0.131	0.153
L729	LTE B41	QPSK20M	41490	50	0	Right Cheek	4	1	19	17.98	0.03	0.223	-0.621	0.282
L730	LTE B41	QPSK20M	41490	50	0	Right Tilted	4	1	19	17.98	-0.17	0.421	-0.555	0.532
L731	LTE B41	QPSK20M	41490	50	0	Left Cheek	4	1	19	17.98	-0.05	0.240	-1.426	0.304
L732	LTE B41	QPSK20M	41490	50	0	Left Tilted	4	1	19	17.98	-0.03	0.281	-1.371	0.355

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

4. Head SAR test results of 5G NR

5G NR only

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N285	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Right Cheek	0	15	24.5	23.52	-0.14	0.050	0.038	0.062
N286	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Right Tilted	0	15	24.5	23.52	0.03	0.026	0.020	0.032
N287	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Left Cheek	0	15	24.5	23.52	-0.01	0.065	0.051	0.081
N288	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Left Tilted	0	15	24.5	23.52	0.05	0.029	0.023	0.037
N289	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Right Cheek	0	15	23.5	23.42	0.03	0.031	0.024	0.031
N290	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Right Tilted	0	15	23.5	23.42	0.01	0.018	0.014	0.018
N291	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Left Cheek	0	15	23.5	23.42	-0.03	0.042	0.033	0.043
N292	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Left Tilted	0	15	23.5	23.42	0.02	0.019	0.015	0.020
N293	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Left Cheek	0	15	24.5	23.36	0.18	0.066	0.052	0.086
N295	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Right Cheek	1	15	25	23.88	-0.01	0.109	0.153	0.141
N296	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Right Tilted	1	15	25	23.88	0.1	0.047	0.034	0.061
N297	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Left Cheek	1	15	25	23.88	-0.08	0.305	0.211	0.395
N298	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Left Tilted	1	15	25	23.88	0.08	0.065	0.046	0.085
N299	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Right Cheek	1	15	24	23.87	0.06	0.105	0.121	0.108
N300	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Right Tilted	1	15	24	23.87	0.04	0.037	0.026	0.038
N301	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Left Cheek	1	15	24	23.87	0.06	0.431	0.242	0.444
N302	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Left Tilted	1	15	24	23.87	-0.04	0.051	0.036	0.053
N303	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Left Cheek	1	15	25	23.75	0.03	0.490	0.275	0.653

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N305	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Cheek	3	15	23.7	22.76	0.04	0.074	0.039	0.092
N306	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Tilted	3	15	23.7	22.76	0.09	0.038	0.017	0.047
N307	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Left Cheek	3	15	23.7	22.76	0.09	0.019	0.011	0.023
N308	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Left Tilted	3	15	23.7	22.76	0.04	0.061	0.032	0.076
N309	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	104	Right Cheek	3	15	22.7	22.68	0.08	0.065	0.034	0.065
N310	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	104	Right Tilted	3	15	22.7	22.68	0.07	0.035	0.015	0.035
N311	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	104	Left Cheek	3	15	22.7	22.68	0.06	0.020	0.009	0.020
N312	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	104	Left Tilted	3	15	22.7	22.68	0.01	0.035	0.011	0.035
N313	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Left Cheek	3	15	23.7	22.61	0.03	0.048	0.010	0.062
N315	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Right Cheek	4	15	17.2	17.16	0.08	0.768	0.338	0.775
N316	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Right Tilted	4	15	17.2	17.16	-0.02	0.900	0.382	0.908
N317	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Left Cheek	4	15	17.2	17.16	0.12	0.404	0.208	0.408
N318	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Left Tilted	4	15	17.2	17.16	-0.11	0.503	0.249	0.508
N319	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Cheek	4	15	17.2	17.01	-0.04	0.790	0.357	0.825
N320	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Tilted	4	15	17.2	17.01	0.06	0.740	0.325	0.773
N321	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Cheek	4	15	17.2	17.01	0.03	0.400	0.208	0.418
N322	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Tilted	4	15	17.2	17.01	-0.13	0.504	0.249	0.527
N323	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Cheek	4	15	17.2	17.12	-0.02	0.797	0.36	0.812
N324	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Right Cheek	4	15	17.2	17.11	0.02	0.848	0.367	0.866
N498	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Tilted	4	15	17.2	17.12	-0.02	0.694	0.291	0.707
N499	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Right Tilted	4	15	17.2	17.11	0.02	0.733	0.307	0.748
N502	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	100	0	Right Tilted	4	15	17.2	17.01	-0.08	0.812	0.346	0.848
N503	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	100	0	Right Tilted	4	15	17.2	17.01	0.13	0.734	0.316	0.767
N325	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Right Tilted	4	15	17.2	17.09	0	0.665	0.287	0.682

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N327	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Cheek	5	15	18.7	18.59	-0.03	0.235	0.110	0.241
N328	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Right Tilted	5	15	18.7	18.59	0.08	0.138	0.062	0.142
N329	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Left Cheek	5	15	18.7	18.59	0.08	0.094	0.046	0.096
N330	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Left Tilted	5	15	18.7	18.59	0.05	0.049	0.025	0.050
N331	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Cheek	5	15	18.7	18.55	0.04	0.234	0.110	0.242
N332	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Tilted	5	15	18.7	18.55	0.04	0.134	0.061	0.139
N333	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Cheek	5	15	18.7	18.55	-0.14	0.095	0.045	0.098
N334	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Tilted	5	15	18.7	18.55	-0.02	0.049	0.024	0.051
N335	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Right Cheek	5	15	18.7	18.48	0.19	0.211	0.099	0.222
N337	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Right Cheek	6	15	16.2	16.19	0.04	0.145	0.055	0.145
N338	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Right Tilted	6	15	16.2	16.19	0.06	0.037	0.017	0.037
N339	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Left Cheek	6	15	16.2	16.19	0.06	0.212	0.086	0.212
N340	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Left Tilted	6	15	16.2	16.19	0.04	0.100	0.047	0.100
N341	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Cheek	6	15	16.2	15.83	0.05	0.097	0.038	0.105
N342	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Tilted	6	15	16.2	15.83	0.18	0.039	0.018	0.042
N343	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Cheek	6	15	16.2	15.83	0.8	0.215	0.087	0.234
N344	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Tilted	6	15	16.2	15.83	-0.01	0.107	0.050	0.117
N345	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	104	Left Cheek	6	15	16.2	16.17	0.03	0.205	0.087	0.206
N347	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Cheek	3	30	24.2	23.33	0.08	0.122	0.063	0.149
N348	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Tilted	3	30	24.2	23.33	0.02	0.041	0.018	0.050
N349	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Cheek	3	30	24.2	23.33	0.08	0.047	0.022	0.057
N350	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Tilted	3	30	24.2	23.33	-0.16	0.081	0.041	0.098
N351	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Right Cheek	3	30	23.2	23.12	-0.07	0.113	0.060	0.115
N352	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Right Tilted	3	30	23.2	23.12	-0.12	0.036	0.018	0.037
N353	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Left Cheek	3	30	23.2	23.12	-0.01	0.039	0.016	0.040
N354	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Left Tilted	3	30	23.2	23.12	-0.08	0.061	0.031	0.062
N355	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Cheek	3	30	23.2	23.12	-0.01	0.119	0.062	0.121

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N357	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Cheek	4	30	17.2	16.79	-0.02	0.857	0.389	0.942
N504	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Tilted	4	30	17.2	16.79	0.03	1.020	0.450	1.121
N359	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Cheek	4	30	17.2	16.79	0	0.694	0.345	0.763
N360	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Tilted	4	30	17.2	16.79	0.07	0.846	0.404	0.930
N361	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	0	Right Cheek	4	30	17.2	16.69	0.05	0.522	0.365	0.587
N362	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	0	Right Tilted	4	30	17.2	16.69	0.02	0.951	0.418	1.069
N363	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	0	Left Cheek	4	30	17.2	16.69	0.06	0.667	0.328	0.750
N364	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	0	Left Tilted	4	30	17.2	16.69	-0.01	0.792	0.379	0.891
N365	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Right Cheek	4	30	17.2	16.72	0.04	0.868	0.385	0.969
N366	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Right Cheek	4	30	17.2	16.74	0.04	0.876	0.392	0.974
N367	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Right Tilted	4	30	17.2	16.72	0.05	0.926	0.400	1.034
N368	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Right Tilted	4	30	17.2	16.74	-0.02	1.030	0.457	1.145
N369	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Left Cheek	4	30	17.2	16.72	-0.02	0.708	0.346	0.791
N370	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Left Cheek	4	30	17.2	16.74	0.04	0.749	0.366	0.833
N371	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Left Tilted	4	30	17.2	16.72	-0.01	0.825	0.394	0.921
N372	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Left Tilted	4	30	17.2	16.74	0.03	0.848	0.406	0.943
N373	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	0	Right Cheek	4	30	17.2	16.67	0.05	0.834	0.372	0.942
N374	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	0	Right Cheek	4	30	17.2	16.62	0.04	0.824	0.373	0.942
N375	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	0	Right Tilted	4	30	17.2	16.67	-0.01	0.982	0.432	1.109
N376	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	0	Right Tilted	4	30	17.2	16.62	0.01	0.976	0.434	1.115
N377	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	0	Left Cheek	4	30	17.2	16.67	0.03	0.696	0.341	0.786
N378	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	0	Left Cheek	4	30	17.2	16.62	0.02	0.725	0.354	0.829
N379	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	0	Left Tilted	4	30	17.2	16.67	-0.01	0.787	0.378	0.889
N380	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	0	Left Tilted	4	30	17.2	16.62	-0.02	0.816	0.390	0.933
N381	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Tilted	4	30	17.2	16.59	-0.03	0.991	0.437	1.140

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N383	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Cheek	5	30	17.2	17.17	0.04	0.500	0.222	0.504
N384	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Tilted	5	30	17.2	17.17	-0.02	0.340	0.150	0.342
N385	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Cheek	5	30	17.2	17.17	0.06	0.159	0.074	0.160
N386	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Tilted	5	30	17.2	17.17	0.05	0.100	0.048	0.101
N387	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Right Cheek	5	30	17.2	17.13	0.05	0.503	0.223	0.511
N388	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Right Tilted	5	30	17.2	17.13	0.04	0.340	0.150	0.346
N389	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Left Cheek	5	30	17.2	17.13	0.06	0.158	0.074	0.161
N390	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Left Tilted	5	30	17.2	17.13	0.06	0.100	0.048	0.102
N391	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Cheek	5	30	17.2	17.06	0.05	0.407	0.180	0.420
N393	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Cheek	6	30	16.7	16.67	0.03	0.273	0.096	0.275
N394	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Tilted	6	30	16.7	16.67	0.04	0.044	0.020	0.044
N395	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Left Cheek	6	30	16.7	16.67	0.04	0.183	0.082	0.184
N396	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Left Tilted	6	30	16.7	16.67	0.02	0.084	0.041	0.085
N397	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Right Cheek	6	30	16.7	16.52	0.05	0.275	0.099	0.287
N398	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Right Tilted	6	30	16.7	16.52	0.06	0.036	0.018	0.038
N399	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Left Cheek	6	30	16.7	16.52	0.15	0.247	0.103	0.257
N400	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	2	0	Left Tilted	6	30	16.7	16.52	0.09	0.095	0.046	0.099
N401	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	49	Right Cheek	6	30	16.7	16.59	0.01	0.262	0.091	0.269
N403	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Right Cheek	3	30	24.2	23.28	0.07	0.121	0.064	0.150
N404	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Right Tilted	3	30	24.2	23.28	0.07	0.039	0.019	0.048
N405	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Left Cheek	3	30	24.2	23.28	0.04	0.048	0.023	0.060
N406	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Left Tilted	3	30	24.2	23.28	-0.01	0.083	0.042	0.103
N407	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Right Cheek	3	30	23.2	23.09	-0.01	0.126	0.066	0.129
N408	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Right Tilted	3	30	23.2	23.09	0.08	0.121	0.064	0.124
N409	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Left Cheek	3	30	23.2	23.09	0.05	0.042	0.017	0.043
N410	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Left Tilted	3	30	23.2	23.09	0.08	0.065	0.033	0.066
N411	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	271	Right Cheek	3	30	24.2	22.36	0.04	0.050	0.024	0.076

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N413	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Right Cheek	4	30	16.7	16.65	0.01	0.864	0.385	0.874
N505	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Right Tilted	4	30	16.7	16.65	0.09	0.970	0.408	0.981
N415	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Cheek	4	30	16.7	16.65	-0.09	0.557	0.278	0.563
N416	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Tilted	4	30	16.7	16.65	0.02	0.668	0.319	0.676
N417	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Right Cheek	4	30	16.7	16.65	0.09	0.863	0.386	0.873
N418	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Right Tilted	4	30	16.7	16.65	0.16	0.925	0.396	0.936
N419	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Left Cheek	4	30	16.7	16.65	0.05	0.518	0.264	0.524
N420	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Left Tilted	4	30	16.7	16.65	-0.01	0.632	0.306	0.639
N421	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	271	Right Cheek	4	30	16.7	16.63	-0.03	0.808	0.353	0.821
N422	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	271	Right Cheek	4	30	16.7	16.23	-0.08	0.669	0.297	0.745
N423	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	271	Right Tilted	4	30	16.7	16.63	0.04	0.946	0.397	0.961
N424	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	271	Right Tilted	4	30	16.7	16.23	-0.07	0.818	0.344	0.911
N425	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	271	Left Cheek	4	30	16.7	16.63	-0.01	0.620	0.162	0.630
N426	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	271	Left Cheek	4	30	16.7	16.23	0.05	0.669	0.330	0.745
N427	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	271	Left Tilted	4	30	16.7	16.63	0	0.678	0.322	0.689
N428	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	271	Left Tilted	4	30	16.7	16.23	0.02	0.623	0.295	0.694
N429	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	2	0	Right Cheek	4	30	16.7	16.35	0.08	0.790	0.364	0.856
N430	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Right Cheek	4	30	16.7	16.60	-0.07	0.956	0.423	0.978
N431	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	2	0	Right Tilted	4	30	16.7	16.35	-0.05	0.917	0.403	0.994
N432	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Right Tilted	4	30	16.7	16.60	-0.02	1.050	0.441	1.074
N433	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	2	0	Left Cheek	4	30	16.7	16.35	0.08	0.721	0.375	0.782
N434	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Left Cheek	4	30	16.7	16.60	0	0.768	0.389	0.786
N435	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	2	0	Left Tilted	4	30	16.7	16.35	0.04	0.716	0.345	0.776
N436	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Left Tilted	4	30	16.7	16.60	0	0.786	0.376	0.804
N506	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	1	1	Right Tilted	4	30	16.7	16.62	0.05	1.060	0.442	1.080

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N439	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Right Cheek	5	30	17.5	17.48	0.08	0.679	0.295	0.682
N440	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Right Tilted	5	30	17.5	17.48	0.05	0.387	0.169	0.389
N441	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Left Cheek	5	30	17.5	17.48	0.13	0.157	0.076	0.158
N442	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Left Tilted	5	30	17.5	17.48	0.04	0.145	0.068	0.146
N443	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Right Cheek	5	30	17.5	17.47	0.03	0.517	0.222	0.521
N444	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Right Tilted	5	30	17.5	17.47	0.05	0.232	0.102	0.234
N445	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Left Cheek	5	30	17.5	17.47	0.04	0.151	0.072	0.152
N446	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	2	0	Left Tilted	5	30	17.5	17.47	0.07	0.104	0.049	0.105
N447	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	1	Right Cheek	5	30	17.5	17.38	0.07	0.210	0.092	0.216
N449	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Right Cheek	6	30	18.2	18.18	0.03	0.288	0.101	0.289
N450	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Right Tilted	6	30	18.2	18.18	0.07	0.046	0.021	0.046
N451	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Left Cheek	6	30	18.2	18.18	0.07	0.177	0.079	0.178
N452	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Left Tilted	6	30	18.2	18.18	0.09	0.082	0.040	0.082
N453	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Right Cheek	6	30	18.2	18.13	0.01	0.294	0.106	0.299
N454	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Right Tilted	6	30	18.2	18.13	-0.02	0.039	0.019	0.040
N455	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Left Cheek	6	30	18.2	18.13	0.15	0.243	0.101	0.247
N456	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Left Tilted	6	30	18.2	18.13	0.09	0.094	0.045	0.096
N457	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Right Cheek	6	30	18.2	18.14	-0.14	0.159	0.066	0.161
N459	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Right Cheek	3	15	24.2	23.03	0.05	0.074	0.039	0.096
N460	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Right Tilted	3	15	24.2	23.03	0.07	0.023	0.011	0.030
N461	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Left Cheek	3	15	24.2	23.03	0.04	0.028	0.014	0.037
N462	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Left Tilted	3	15	24.2	23.03	0.18	0.049	0.025	0.064
N463	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Right Cheek	3	15	23.2	23.01	-0.07	0.048	0.038	0.050
N464	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Right Tilted	3	15	23.2	23.01	0.13	0.071	0.038	0.074
N465	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Left Cheek	3	15	23.2	23.01	0.15	0.024	0.010	0.025
N466	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Left Tilted	3	15	23.2	23.01	0.08	0.038	0.019	0.039
N467	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	1	104	Right Cheek	3	15	24.2	22.85	0.03	0.115	0.007	0.157

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N469	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Right Cheek	4	15	18.5	18.46	-0.03	0.646	0.332	0.652
N470	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Right Tilted	4	15	18.5	18.46	0.02	0.771	0.384	0.778
N471	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Left Cheek	4	15	18.5	18.46	0	0.324	0.202	0.327
N472	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Left Tilted	4	15	18.5	18.46	0.02	0.497	0.291	0.502
N473	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Cheek	4	15	18.5	18.3	-0.06	0.867	0.467	0.908
N474	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Tilted	4	15	18.5	18.30	0.15	0.845	0.481	0.885
N475	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Cheek	4	15	18.5	18.30	-0.11	0.419	0.262	0.439
N476	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Tilted	4	15	18.5	18.30	-0.06	0.666	0.388	0.697
N477	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Right Tilted	4	15	18.5	18.41	0.03	0.880	0.447	0.898
N479	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Right Cheek	5	15	18.5	18.47	-0.16	0.648	0.339	0.652
N480	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Right Tilted	5	15	18.5	18.47	-0.04	0.261	0.133	0.263
N481	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Cheek	5	15	18.5	18.47	-0.01	0.197	0.123	0.198
N482	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Tilted	5	15	18.5	18.47	0.09	0.188	0.110	0.189
N483	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Cheek	5	15	18.5	18.43	0.03	0.458	0.256	0.465
N484	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Tilted	5	15	18.5	18.43	0.08	0.255	0.130	0.259
N485	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Cheek	5	15	18.5	18.43	0.1	0.181	0.106	0.184
N486	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Tilted	5	15	18.5	18.43	0.1	0.181	0.106	0.184
N487	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Right Cheek	5	15	18.5	18.32	0.18	0.459	0.248	0.478
N489	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Right Cheek	6	15	20.5	20.48	-0.13	0.173	0.061	0.174
N490	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Right Tilted	6	15	20.5	20.48	0.13	0.028	0.013	0.028
N491	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Cheek	6	15	20.5	20.48	0.17	0.115	0.052	0.116
N492	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Tilted	6	15	20.5	20.48	0.09	0.061	0.030	0.061
N493	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	2	0	Right Cheek	6	15	20.5	20.13	0.01	0.168	0.060	0.183
N494	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	2	0	Right Tilted	6	15	20.5	20.13	0.06	0.022	0.011	0.024
N495	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	2	0	Left Cheek	6	15	20.5	20.13	0.15	0.151	0.063	0.164
N496	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	2	0	Left Tilted	6	15	20.5	20.13	0.09	0.051	0.025	0.055
N497	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Left Cheek	6	15	20.5	20.27	0.05	0.471	0.219	0.497

5G NR Simultaneous with WiFi

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
N300	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Right Cheek	4	15	15.2	14.92	-0.19	0.306	0.171	0.326
N301	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Right Tilted	4	15	15.2	14.92	-0.08	0.361	0.184	0.385
N302	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Left Cheek	4	15	15.2	14.92	0	0.174	0.096	0.186
N303	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Left Tilted	4	15	15.2	14.92	0.02	0.307	0.155	0.327
N304	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Cheek	4	15	15.2	14.90	0.1	0.274	0.144	0.294
N305	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Right Tilted	4	15	15.2	14.90	-0.01	0.271	0.138	0.290
N306	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Cheek	4	15	15.2	14.90	0.08	0.129	0.075	0.138
N307	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Tilted	4	15	15.2	14.90	-0.15	0.224	0.115	0.240
N308	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Cheek	4	30	15.2	15.18	-0.09	0.556	0.248	0.559
N309	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Right Tilted	4	30	15.2	15.18	0.05	0.640	0.273	0.643
N310	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Cheek	4	30	15.2	15.18	0.15	0.344	0.180	0.346
N311	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Tilted	4	30	15.2	15.18	0.01	0.507	0.251	0.509
N312	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Right Cheek	4	30	15.2	14.95	-0.03	0.549	0.243	0.582
N313	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Right Tilted	4	30	15.2	14.95	0.17	0.602	0.257	0.638
N314	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Cheek	4	30	15.2	14.95	0.09	0.310	0.163	0.328
N315	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Tilted	4	30	15.2	14.95	0.11	0.464	0.229	0.491
N316	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Right Cheek	4	15	16.5	16.36	-0.15	0.282	0.150	0.291
N317	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Right Tilted	4	15	16.5	16.36	-0.19	0.359	0.179	0.371
N318	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Left Cheek	4	15	16.5	16.36	0.12	0.196	0.127	0.202
N319	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Left Tilted	4	15	16.5	16.36	0	0.274	0.165	0.283
N320	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Cheek	4	15	16.5	16.35	0.01	0.332	0.194	0.344
N321	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Right Tilted	4	15	16.5	16.35	0.13	0.429	0.224	0.444
N322	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Cheek	4	15	16.5	16.35	-0.01	0.272	0.176	0.282
N323	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	100	0	Left Tilted	4	15	16.5	16.35	-0.04	0.369	0.221	0.382

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

8.2.2 SAR MEASUREMENT RESULT OF BODY-WORN

1. Body-worn SAR test results of GSM

2G only

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G21	GSM 850	GSM	190	Front Face	1.5	0	1	33.5	32.62	-0.01	0.059	0.038	0.073
G22	GSM 850	GSM	190	Rear Face	1.5	0	1	33.5	32.62	0.01	0.094	0.058	0.115
G24	GSM 850	GSM	190	Front Face	1.5	1	1	34	32.93	-0.13	0.079	0.050	0.102
G25	GSM 850	GSM	190	Rear Face	1.5	1	1	34	32.93	-0.1	0.139	0.085	0.178
G27	GSM 1900	GSM	661	Front Face	1.5	3	1	30.5	29.5	-0.08	0.135	0.078	0.170
G28	GSM 1900	GSM	661	Rear Face	1.5	3	1	30.5	29.5	-0.09	0.180	0.105	0.227
G30	GSM 1900	GSM	661	Front Face	1.5	4	1	29.5	28.8	-0.14	0.066	0.038	0.078
G31	GSM 1900	GSM	661	Rear Face	1.5	4	1	29.5	28.8	0.05	0.131	0.072	0.154

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

2. Body-worn SAR test results of UMTS

3G only

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U31	UMTS B2	RMC12.2K	9400	Front Face	1.5	3	1	22	20.96	-0.09	0.107	0.066	0.136
U32	UMTS B2	RMC12.2K	9400	Rear Face	1.5	3	1	22	20.96	0.05	0.177	0.108	0.225
U34	UMTS B2	RMC12.2K	9400	Front Face	1.5	4	1	21	19.22	-0.02	0.0678	0.042	0.102
U35	UMTS B2	RMC12.2K	9400	Rear Face	1.5	4	1	21	19.22	-0.04	0.0886	0.055	0.133
U37	UMTS B4	RMC12.2K	1413	Front Face	1.5	3	1	22	20.91	-0.05	0.144	0.087	0.185
U38	UMTS B4	RMC12.2K	1413	Rear Face	1.5	3	1	22	20.91	0.04	0.189	0.11	0.243
U40	UMTS B4	RMC12.2K	1413	Front Face	1.5	4	1	21	20.03	-0.07	0.115	0.0706	0.144
U41	UMTS B4	RMC12.2K	1413	Rear Face	1.5	4	1	21	20.03	0	0.131	0.0668	0.164
U43	UMTS B5	RMC12.2K	4182	Front Face	1.5	0	1	24.5	23.72	-0.06	0.061	0.040	0.073
U44	UMTS B5	RMC12.2K	4182	Rear Face	1.5	0	1	24.5	23.72	-0.1	0.119	0.072	0.142
U46	UMTS B5	RMC12.2K	4182	Front Face	1.5	1	1	25	24.07	-0.03	0.109	0.069	0.135
U47	UMTS B5	RMC12.2K	4182	Rear Face	1.5	1	1	25	24.07	-0.1	0.187	0.114	0.232

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

3. Body-worn SAR test results of LTE

4G only

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L270	LTE B2	QPSK20M	18900	1	99	Front Face	1.5	3	1	22.5	22.29	-0.19	0.181	0.101	0.190
L271	LTE B2	QPSK20M	18900	1	99	Rear Face	1.5	3	1	22.5	22.29	-0.07	0.228	0.132	0.239
L272	LTE B2	QPSK20M	19100	50	0	Front Face	1.5	3	1	22.5	22.23	0.01	0.188	0.109	0.200
L273	LTE B2	QPSK20M	19100	50	0	Rear Face	1.5	3	1	22.5	22.23	-0.02	0.238	0.138	0.253
L276	LTE B2	QPSK20M	18700	1	0	Front Face	1.5	4	1	22	20.81	0.06	0.132	0.082	0.174
L277	LTE B2	QPSK20M	18700	1	0	Rear Face	1.5	4	1	22	20.81	0.11	0.161	0.094	0.212
L278	LTE B2	QPSK20M	18900	50	50	Front Face	1.5	4	1	22	20.76	-0.09	0.133	0.082	0.177
L279	LTE B2	QPSK20M	18900	50	50	Rear Face	1.5	4	1	22	20.76	0.03	0.158	0.096	0.210
L281	LTE B4	QPSK20M	20175	1	99	Front Face	1.5	3	1	21.5	21.38	0.02	0.156	0.093	0.160
L282	LTE B4	QPSK20M	20175	1	99	Rear Face	1.5	3	1	21.5	21.38	0	0.195	0.118	0.200
L283	LTE B4	QPSK20M	20300	50	0	Front Face	1.5	3	1	21.5	21.36	0.03	0.156	0.093	0.161
L284	LTE B4	QPSK20M	20300	50	0	Rear Face	1.5	3	1	21.5	21.36	0.06	0.200	0.120	0.206
L285	LTE B4	QPSK20M	20300	50	0	Rear Face	1.5	3	2	21.5	21.36	0.16	0.158	0.095	0.163
L287	LTE B4	QPSK20M	20300	1	50	Front Face	1.5	4	1	22	21.23	0.03	0.294	0.189	0.351
L288	LTE B4	QPSK20M	20300	1	50	Rear Face	1.5	4	1	22	21.23	0.02	0.302	0.194	0.360
L289	LTE B4	QPSK20M	20300	50	25	Front Face	1.5	4	1	22	21.16	-0.03	0.303	0.194	0.368
L290	LTE B4	QPSK20M	20300	50	25	Rear Face	1.5	4	1	22	21.16	0	0.308	0.197	0.374
L293	LTE B4	QPSK20M	20175	1	50	Front Face	1.5	5	1	21.3	21.27	-0.13	0.122	0.078	0.123
L294	LTE B4	QPSK20M	20175	1	50	Rear Face	1.5	5	1	21.3	21.27	-0.09	0.130	0.087	0.131
L295	LTE B4	QPSK20M	20175	50	50	Front Face	1.5	5	1	21.3	21.27	-0.03	0.112	0.075	0.113
L296	LTE B4	QPSK20M	20175	50	50	Rear Face	1.5	5	1	21.3	21.27	0.01	0.126	0.080	0.127
L298	LTE B5	QPSK10M	20450	1	0	Front Face	1.5	0	1	24.5	24.17	0.04	0.045	0.029	0.049
L299	LTE B5	QPSK10M	20450	1	0	Rear Face	1.5	0	1	24.5	24.17	-0.03	0.075	0.047	0.081
L300	LTE B5	QPSK10M	20525	25	0	Front Face	1.5	0	1	23.5	23.24	0	0.055	0.035	0.058
L301	LTE B5	QPSK10M	20525	25	0	Rear Face	1.5	0	1	23.5	23.24	0	0.090	0.056	0.096
L304	LTE B5	QPSK10M	20450	1	0	Front Face	1.5	1	1	25	24.38	-0.06	0.127	0.080	0.146
L305	LTE B5	QPSK10M	20450	1	0	Rear Face	1.5	1	1	25	24.38	0.04	0.111	0.070	0.128
L306	LTE B5	QPSK10M	20525	25	0	Front Face	1.5	1	1	24	23.45	-0.05	0.100	0.063	0.113
L307	LTE B5	QPSK10M	20525	25	0	Rear Face	1.5	1	1	24	23.45	-0.06	0.142	0.089	0.161

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L309	LTE B7	QPKS20M	21350	1	0	Front Face	1.5	3	1	20.5	20.38	-0.03	0.138	0.076	0.142
L310	LTE B7	QPKS20M	21350	1	0	Rear Face	1.5	3	1	20.5	20.38	-0.02	0.174	0.094	0.179
L311	LTE B7	QPKS20M	21350	50	50	Front Face	1.5	3	1	20.5	20.33	-0.02	0.146	0.080	0.152
L312	LTE B7	QPKS20M	21350	50	50	Rear Face	1.5	3	1	20.5	20.33	0.01	0.188	0.101	0.195
L315	LTE B7	QPKS20M	21350	1	50	Front Face	1.5	4	1	20.5	19.66	0.07	0.177	0.099	0.215
L316	LTE B7	QPKS20M	21350	1	50	Rear Face	1.5	4	1	20.5	19.66	0.04	0.234	0.132	0.284
L317	LTE B7	QPKS20M	21350	50	0	Front Face	1.5	4	1	20.5	19.62	-0.06	0.190	0.106	0.233
L318	LTE B7	QPKS20M	21350	50	0	Rear Face	1.5	4	1	20.5	19.62	-0.11	0.249	0.141	0.305
L321	LTE B7	QPKS20M	21100	1	50	Front Face	1.5	5	1	21.1	20.98	0.01	0.079	0.042	0.081
L322	LTE B7	QPKS20M	21100	1	50	Rear Face	1.5	5	1	21.1	20.98	0.05	0.118	0.062	0.121
L323	LTE B7	QPKS20M	21350	50	0	Front Face	1.5	5	1	21.1	20.95	0.12	0.088	0.048	0.091
L324	LTE B7	QPKS20M	21350	50	0	Rear Face	1.5	5	1	21.1	20.95	0.07	0.138	0.072	0.143
L326	LTE B12	QPSK10M	23130	1	49	Front Face	1.5	0	1	24.5	23.88	0.01	0.064	0.049	0.074
L327	LTE B12	QPSK10M	23130	1	49	Rear Face	1.5	0	1	24.5	23.88	0.03	0.071	0.054	0.081
L328	LTE B12	QPSK10M	23130	25	0	Front Face	1.5	0	1	23.5	22.84	-0.05	0.044	0.034	0.051
L329	LTE B12	QPSK10M	23130	25	0	Rear Face	1.5	0	1	23.5	22.84	-0.02	0.051	0.039	0.059
L332	LTE B12	QPSK10M	23130	1	24	Front Face	1.5	1	1	25	23.98	-0.03	0.096	0.059	0.121
L333	LTE B12	QPSK10M	23130	1	24	Rear Face	1.5	1	1	25	23.98	-0.12	0.094	0.059	0.119
L334	LTE B12	QPSK10M	23130	25	0	Front Face	1.5	1	1	24	23.03	-0.11	0.065	0.040	0.081
L335	LTE B12	QPSK10M	23130	25	0	Rear Face	1.5	1	1	24	23.03	-0.09	0.063	0.040	0.079
L337	LTE B13	QPSK10M	23230	1	0	Front Face	1.5	0	1	24.5	24.11	0.02	0.084	0.064	0.092
L338	LTE B13	QPSK10M	23230	1	0	Rear Face	1.5	0	1	24.5	24.11	0.03	0.095	0.059	0.103
L339	LTE B13	QPSK10M	23230	25	0	Front Face	1.5	0	1	23.5	23.00	0	0.065	0.049	0.072
L340	LTE B13	QPSK10M	23230	25	0	Rear Face	1.5	0	1	23.5	23.00	0.02	0.072	0.045	0.080
L343	LTE B13	QPSK10M	23230	1	0	Front Face	1.5	1	1	25	24.17	-0.03	0.113	0.072	0.137
L344	LTE B13	QPSK10M	23230	1	0	Rear Face	1.5	1	1	25	24.17	-0.03	0.156	0.097	0.189
L345	LTE B13	QPSK10M	23230	25	0	Front Face	1.5	1	1	24	23.13	0.08	0.091	0.058	0.111
L346	LTE B13	QPSK10M	23230	25	0	Rear Face	1.5	1	1	24	23.13	0.03	0.121	0.076	0.148

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L348	LTE B17	QPSK10M	23780	1	49	Front Face	1.5	0	1	24.5	24.03	0.04	0.053	0.035	0.059
L349	LTE B17	QPSK10M	23780	1	49	Rear Face	1.5	0	1	24.5	24.03	-0.01	0.062	0.040	0.068
L350	LTE B17	QPSK10M	23800	25	0	Front Face	1.5	0	1	23.5	22.92	0.03	0.038	0.025	0.044
L351	LTE B17	QPSK10M	23800	25	0	Rear Face	1.5	0	1	23.5	22.92	0.07	0.045	0.029	0.052
L354	LTE B17	QPSK10M	23800	1	49	Front Face	1.5	1	1	25	23.97	0.05	0.078	0.049	0.099
L355	LTE B17	QPSK10M	23800	1	49	Rear Face	1.5	1	1	25	23.97	0.02	0.095	0.060	0.120
L356	LTE B17	QPSK10M	23800	25	0	Front Face	1.5	1	1	24	23.04	0.09	0.052	0.033	0.065
L357	LTE B17	QPSK10M	23800	25	0	Rear Face	1.5	1	1	24	23.04	0.02	0.046	0.041	0.058
L359	LTE B26	QPSK15M	26965	1	74	Front Face	1.5	0	1	24	23.70	-0.04	0.073	0.046	0.078
L360	LTE B26	QPSK15M	26965	1	74	Rear Face	1.5	0	1	24	23.70	-0.03	0.101	0.063	0.108
L361	LTE B26	QPSK15M	26765	36	0	Front Face	1.5	0	1	23	22.69	-0.03	0.037	0.023	0.040
L362	LTE B26	QPSK15M	26765	36	0	Rear Face	1.5	0	1	23	22.69	0.04	0.053	0.033	0.057
L365	LTE B26	QPSK15M	26865	1	0	Front Face	1.5	1	1	24.5	23.66	0.03	0.100	0.063	0.121
L366	LTE B26	QPSK15M	26865	1	0	Rear Face	1.5	1	1	24.5	23.66	0.04	0.100	0.063	0.121
L367	LTE B26	QPSK15M	26865	36	0	Front Face	1.5	1	1	23.5	23.34	0.08	0.084	0.053	0.087
L368	LTE B26	QPSK15M	26865	36	0	Rear Face	1.5	1	1	23.5	23.34	-0.05	0.089	0.056	0.092
L370	LTE B38	QPSK20M	37850	1	0	Front Face	1.5	3	1	22.5	22.19	-0.05	0.040	0.022	0.043
L371	LTE B38	QPSK20M	37850	1	0	Rear Face	1.5	3	1	22.5	22.19	0.04	0.041	0.023	0.044
L372	LTE B38	QPSK20M	37850	50	25	Front Face	1.5	3	1	22.5	22.18	-0.01	0.060	0.032	0.064
L373	LTE B38	QPSK20M	37850	50	25	Rear Face	1.5	3	1	22.5	22.18	0.02	0.044	0.024	0.047
L376	LTE B38	QPSK20M	37850	1	50	Front Face	1.5	4	1	22	20.95	-0.03	0.149	0.081	0.190
L377	LTE B38	QPSK20M	37850	1	50	Rear Face	1.5	4	1	22	20.95	0.03	0.186	0.103	0.237
L378	LTE B38	QPSK20M	37850	50	25	Front Face	1.5	4	1	22	20.91	-0.07	0.153	0.084	0.197
L379	LTE B38	QPSK20M	37850	50	25	Rear Face	1.5	4	1	22	20.91	-0.07	0.194	0.107	0.249
L382	LTE B38	QPSK20M	38000	1	50	Front Face	1.5	5	1	23	22.96	0.07	0.119	0.063	0.120
L383	LTE B38	QPSK20M	38000	1	50	Rear Face	1.5	5	1	23	22.96	0.04	0.180	0.091	0.182
L384	LTE B38	QPSK20M	38000	50	0	Front Face	1.5	5	1	23	21.94	-0.05	0.140	0.070	0.179
L385	LTE B38	QPSK20M	38000	50	0	Rear Face	1.5	5	1	23	21.94	-0.08	0.140	0.070	0.179

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L387	LTE B41	QPSK20M	39750	1	0	Front Face	1.5	3	1	22.5	22.18	-0.14	0.056	0.030	0.060
L388	LTE B41	QPSK20M	39750	1	0	Rear Face	1.5	3	1	22.5	22.18	0	0.099	0.048	0.107
L389	LTE B41	QPSK20M	41490	50	0	Front Face	1.5	3	1	22.5	22.13	0.07	0.029	0.015	0.031
L390	LTE B41	QPSK20M	41490	50	0	Rear Face	1.5	3	1	22.5	22.13	0.05	0.043	0.022	0.047
L393	LTE B41	QPSK20M	40620	1	50	Front Face	1.5	4	1	22	20.88	-0.03	0.156	0.085	0.202
L394	LTE B41	QPSK20M	40620	1	50	Rear Face	1.5	4	1	22	20.88	0.04	0.185	0.103	0.239
L395	LTE B41	QPSK20M	40620	50	0	Front Face	1.5	4	1	22	20.80	-0.06	0.150	0.082	0.198
L396	LTE B41	QPSK20M	40620	50	0	Rear Face	1.5	4	1	22	20.80	-0.2	0.194	0.011	0.256
L399	LTE B41	QPSK20M	41490	1	50	Front Face	1.5	5	1	22	21.93	0.14	0.100	0.053	0.102
L400	LTE B41	QPSK20M	41490	1	50	Rear Face	1.5	5	1	22	21.93	0.02	0.145	0.074	0.147
L401	LTE B41	QPSK20M	40620	50	0	Front Face	1.5	5	1	22	21.91	0.11	0.093	0.049	0.095
L402	LTE B41	QPSK20M	40620	50	0	Rear Face	1.5	5	1	22	21.91	0.06	0.136	0.070	0.139
L404	LTE B66	QPSK20M	132572	1	0	Front Face	1.5	3	1	24	23.63	-0.01	0.379	0.221	0.413
L405	LTE B66	QPSK20M	132572	1	0	Rear Face	1.5	3	1	24	23.63	0.07	0.437	0.256	0.476
L406	LTE B66	QPSK20M	132572	50	0	Front Face	1.5	3	1	23	22.53	-0.03	0.308	0.179	0.343
L407	LTE B66	QPSK20M	132572	50	0	Rear Face	1.5	3	1	23	22.53	-0.02	0.358	0.209	0.399
L408	LTE B66	QPSK20M	132572	1	0	Rear Face	1.5	3	2	24	23.63	0.03	0.245	0.155	0.267
L410	LTE B66	QPSK20M	132572	1	50	Front Face	1.5	4	1	23.5	22.74	0.09	0.368	0.237	0.438
L411	LTE B66	QPSK20M	132572	1	50	Rear Face	1.5	4	1	23.5	22.74	0.01	0.393	0.237	0.468
L412	LTE B66	QPSK20M	132572	50	25	Front Face	1.5	4	1	22.5	21.63	0	0.286	0.185	0.349
L413	LTE B66	QPSK20M	132572	50	25	Rear Face	1.5	4	1	22.5	21.63	-0.03	0.309	0.200	0.377
L416	LTE B66	QPSK20M	132572	1	50	Front Face	1.5	5	1	23.3	23.26	0.04	0.179	0.121	0.181
L417	LTE B66	QPSK20M	132572	1	50	Rear Face	1.5	5	1	23.3	23.26	0.01	0.237	0.153	0.239
L418	LTE B66	QPSK20M	132572	50	25	Front Face	1.5	5	1	22.3	22.23	0.03	0.144	0.097	0.146
L419	LTE B66	QPSK20M	132572	50	25	Rear Face	1.5	5	1	22.3	22.23	0.06	0.190	0.123	0.193

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

Ant 4 Separation distance: 1.5cm

Test No.	PCC					SCC					Tune-up For LTE CA TX Power	LTE CA TX Power	Test Position	Power Drift	SAR 1g	SAR 10g	Reported 1g SAR
	Band	Band width [MHZ]	Modulation	Channel (UL)	RB Size/Offset	Band	Band width [MHZ]	Modulation	Channel (UL)	RB Size/Offset							
C02	LTE B7	20	QPSK	21001	1/99	LTE B7	20	QPSK	21199	1/0	20.50	19.38	Rear Face	-0.03	0.219	0.117	0.283
C05	LTE B38	20	QPSK	37901	1/99	LTE B38	20	QPSK	38099	1/0	22.00	20.78	Rear Face	-0.03	0.168	0.081	0.223
C08	LTE B41	20	QPSK	40521	1/99	LTE B41	20	QPSK	40719	1/0	22.00	20.57	Rear Face	0.06	0.174	0.010	0.242

Note: The test data of CA for worst case is not larger than the LTE's, so the maximum SAR Value of CA does not need to be bold.

4. Body-worn SAR test results of 5G NR (Separation distance: 1.5cm)

5G NR only

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N178	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Front Face	0	15	24.5	23.52	-0.16	0.042	0.027	0.052
N179	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Rear Face	0	15	24.5	23.52	0.05	0.082	0.050	0.103
N180	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Front Face	0	15	23.5	23.42	0.06	0.040	0.030	0.040
N181	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Rear Face	0	15	23.5	23.42	0.12	0.068	0.041	0.069
N182	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Rear Face	0	15	24.5	23.36	-0.01	0.078	0.050	0.101
N184	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Front Face	1	15	25	23.88	0.19	0.079	0.052	0.102
N185	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Rear Face	1	15	25	23.88	0.09	0.148	0.091	0.192
N186	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Front Face	1	15	24	23.87	0.03	0.072	0.046	0.074
N187	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Rear Face	1	15	24	23.87	-0.1	0.146	0.089	0.150
N188	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Rear Face	1	15	25	23.75	-0.02	0.167	0.106	0.223
N190	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Front Face	3	15	19.7	19.68	-0.08	0.065	0.034	0.065
N191	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	50	25	Rear Face	3	15	19.7	19.68	0.02	0.048	0.026	0.048
N192	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Front Face	3	15	19.7	19.64	0.01	0.067	0.035	0.068
N193	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Rear Face	3	15	19.7	19.64	-0.07	0.032	0.017	0.032
N194	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Front Face	3	15	19.7	19.56	-0.05	0.072	0.039	0.074
N196	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Front Face	4	15	21.2	21.09	0.04	0.350	0.193	0.359
N197	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Rear Face	4	15	21.2	21.09	0.08	0.292	0.151	0.299
N198	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Front Face	4	15	21.2	20.88	-0.04	0.335	0.185	0.361
N199	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Rear Face	4	15	21.2	20.88	-0.09	0.440	0.224	0.474
N200	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	50	25	Rear Face	4	15	21.2	21.07	-0.16	0.526	0.259	0.542

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N202	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Front Face	5	15	22.7	21.69	0.01	0.085	0.043	0.108
N203	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Rear Face	5	15	22.7	21.69	0.12	0.246	0.115	0.310
N204	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Front Face	5	15	21.7	21.62	0.02	0.083	0.042	0.085
N205	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Rear Face	5	15	21.7	21.62	0.06	0.178	0.084	0.181
N206	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Rear Face	5	15	22.7	21.53	0.03	0.143	0.070	0.187
N208	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Front Face	6	15	19.7	19.69	0.02	0.179	0.082	0.179
N209	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Rear Face	6	15	19.7	19.69	0.04	0.159	0.073	0.159
N210	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Front Face	6	15	19.7	19.26	0.04	0.191	0.087	0.211
N211	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Rear Face	6	15	19.7	19.26	0.08	0.204	0.096	0.226
N212	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Rear Face	6	15	19.7	19.65	-0.01	0.172	0.088	0.174
N214	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Front Face	3	30	20.7	20.59	-0.12	0.105	0.055	0.108
N215	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Rear Face	3	30	20.7	20.59	0.06	0.042	0.022	0.043
N216	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Front Face	3	30	20.7	20.58	0.06	0.101	0.052	0.104
N217	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Rear Face	3	30	20.7	20.58	0.03	0.042	0.020	0.043
N218	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	49	Front Face	3	30	20.7	20.54	-0.05	0.055	0.029	0.057
N220	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Front Face	4	30	22.2	21.53	0.09	0.674	0.357	0.786
N221	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Rear Face	4	30	22.2	21.53	0.01	0.877	0.418	1.023
N222	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Front Face	4	30	21.2	21.17	-0.16	0.648	0.344	0.652
N223	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Rear Face	4	30	21.2	21.17	0.05	0.858	0.398	0.864
N224	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Rear Face	4	30	22.2	21.31	-0.09	0.435	0.223	0.534

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N226	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Front Face	5	30	20.7	20.59	0.05	0.174	0.085	0.178
N227	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Rear Face	5	30	20.7	20.59	0.07	0.482	0.220	0.496
N228	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Front Face	5	30	20.7	20.58	0.11	0.174	0.085	0.179
N229	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Rear Face	5	30	20.7	20.58	-0.05	0.431	0.197	0.443
N230	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Rear Face	5	30	20.7	20.42	0.04	0.173	0.087	0.185
N232	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Front Face	6	30	20.7	20.65	0.05	0.299	0.133	0.302
N233	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Rear Face	6	30	20.7	20.65	0.08	0.168	0.081	0.170
N234	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Front Face	6	30	20.7	20.58	0	0.274	0.123	0.282
N235	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Rear Face	6	30	20.7	20.58	-0.05	0.167	0.080	0.172
N236	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	49	Front Face	6	30	20.7	20.63	-0.07	0.125	0.061	0.127
N238	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Front Face	3	30	20.7	20.68	-0.06	0.048	0.026	0.048
N239	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Rear Face	3	30	20.7	20.68	-0.07	0.041	0.022	0.041
N240	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Front Face	3	30	20.7	20.59	-0.03	0.048	0.026	0.049
N241	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Rear Face	3	30	20.7	20.59	0.01	0.044	0.024	0.045
N242	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	135	67	Front Face	3	30	20.7	20.64	0.16	0.055	0.028	0.055
N244	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Front Face	4	30	22.2	21.45	0.18	0.295	0.164	0.351
N245	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Rear Face	4	30	22.2	21.45	-0.06	0.582	0.289	0.692
N246	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Front Face	4	30	21.2	21.01	0.08	0.231	0.126	0.241
N247	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	270	0	Rear Face	4	30	21.2	21.01	0.06	0.547	0.291	0.571
N248	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Rear Face	4	30	22.2	20.75	0.07	0.327	0.173	0.457

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N250	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	1	Front Face	5	30	21	20.95	-0.03	0.112	0.055	0.113
N251	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	1	Rear Face	5	30	21	20.95	0.05	0.096	0.049	0.097
N252	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Front Face	5	30	21	20.87	0.07	0.113	0.055	0.116
N253	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Rear Face	5	30	21	20.87	0.08	0.097	0.050	0.100
N254	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Front Face	5	30	21	20.91	0.01	0.201	0.099	0.205
N256	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Front Face	6	30	20.7	20.6	0	0.299	0.125	0.306
N257	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Rear Face	6	30	20.7	20.6	0.1	0.100	0.052	0.102
N258	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Front Face	6	30	20.7	20.28	-0.02	0.321	0.142	0.354
N259	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Rear Face	6	30	20.7	20.28	0.04	0.192	0.092	0.211
N260	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Front Face	6	30	20.7	20.28	0.03	0.137	0.068	0.151
N262	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Front Face	3	15	24.2	23.03	0.03	0.248	0.075	0.325
N263	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Rear Face	3	15	24.2	23.03	0.09	0.202	0.122	0.264
N264	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Front Face	3	15	23.2	23.01	-0.12	0.206	0.124	0.215
N265	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Rear Face	3	15	23.2	23.01	0.15	0.199	0.121	0.208
N266	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	1	104	Front Face	3	15	24.2	22.85	0	0.229	0.143	0.312
N268	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Front Face	4	15	21	20.93	0.09	0.314	0.197	0.319
N269	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Rear Face	4	15	21	20.93	0.07	0.428	0.234	0.435
N270	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Front Face	4	15	21	20.88	0.02	0.237	0.149	0.244
N271	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Rear Face	4	15	21	20.88	0.02	0.326	0.175	0.335
N272	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	1	Rear Face	4	15	21	20.92	0.02	0.354	0.234	0.361

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N274	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Front Face	5	15	23.5	22.55	0.11	0.149	0.101	0.185
N275	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Rear Face	5	15	23.5	22.55	0.01	0.309	0.167	0.385
N276	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Front Face	5	15	22.5	22.43	0.04	0.142	0.097	0.144
N277	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Rear Face	5	15	22.5	22.43	-0.06	0.300	0.164	0.305
N278	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Rear Face	5	15	23.5	22.42	-0.03	0.161	0.108	0.206
N280	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Front Face	6	15	23	21.75	0.18	0.132	0.069	0.176
N281	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Rear Face	6	15	23	21.75	0.11	0.267	0.147	0.356
N282	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Front Face	6	15	22	21.62	0.02	0.132	0.070	0.144
N283	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Rear Face	6	15	22	21.62	0.02	0.267	0.147	0.291
N284	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	1	104	Rear Face	6	15	23	21.59	-0.13	0.086	0.049	0.119

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

8.2.3 SAR MEASUREMENT RESULT OF HOTSPOT

1. Hotspot SAR test results of GSM

2G only

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
G33	GSM 850	GPRS2TX	190	Front Face	1	0	1	31	29.87	-0.05	0.102	0.066	0.132
G34	GSM 850	GPRS2TX	190	Rear Face	1	0	1	31	29.87	-0.04	0.180	0.110	0.233
G35	GSM 850	GPRS2TX	190	Left Side	1	0	1	31	29.87	-0.13	0.094	0.050	0.122
G36	GSM 850	GPRS2TX	190	Bottom Side	1	0	1	31	29.87	-0.08	0.110	0.065	0.143
G38	GSM 850	GPRS2TX	190	Front Face	1	1	1	31.5	30.14	-0.12	0.135	0.085	0.185
G39	GSM 850	GPRS2TX	190	Rear Face	1	1	1	31.5	30.14	-0.09	0.250	0.150	0.342
G40	GSM 850	GPRS2TX	190	Left Side	1	1	1	31.5	30.14	-0.02	0.353	0.192	0.483
G42	GSM 1900	GPRS2TX	661	Front Face	1	3	1	26.5	25.32	-0.11	0.241	0.138	0.316
G43	GSM 1900	GPRS2TX	661	Rear Face	1	3	1	26.5	25.32	0.11	0.329	0.181	0.432
G44	GSM 1900	GPRS2TX	661	Right Side	1	3	1	26.5	25.32	-0.08	0.071	0.041	0.093
G45	GSM 1900	GPRS2TX	661	Bottom Side	1	3	1	26.5	25.32	-0.01	0.456	0.246	0.598
G47	GSM 1900	GPRS2TX	661	Front Face	1	4	1	25.5	24.75	-0.18	0.144	0.0825	0.171
G48	GSM 1900	GPRS2TX	661	Rear Face	1	4	1	25.5	24.75	-0.11	0.256	0.138	0.304
G49	GSM 1900	GPRS2TX	661	Left Side	1	4	1	25.5	24.75	-0.17	0.127	0.0622	0.151
G50	GSM 1900	GPRS2TX	661	Top Side	1	4	1	25.5	24.75	-0.01	0.494	0.262	0.587

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

2. Hotspot SAR test results of UMTS

3G only

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
U49	UMTS B2	RMC12.2K	9400	Front Face	1	3	1	20.5	19.37	-0.14	0.212	0.119	0.275
U50	UMTS B2	RMC12.2K	9400	Rear Face	1	3	1	20.5	19.37	-0.1	0.248	0.142	0.322
U51	UMTS B2	RMC12.2K	9400	Right Side	1	3	1	20.5	19.37	-0.03	0.075	0.043	0.098
U52	UMTS B2	RMC12.2K	9400	Bottom Side	1	3	1	20.5	19.37	0.06	0.640	0.323	0.830
U53	UMTS B2	RMC12.2K	9400	Bottom Side	1	3	2	20.5	19.37	0.05	0.471	0.252	0.611
U54	UMTS B2	RMC12.2K	9400	Front Face	1	4	1	20	18.8	-0.17	0.101	0.059	0.133
U55	UMTS B2	RMC12.2K	9400	Rear Face	1	4	1	20	18.8	-0.02	0.220	0.118	0.290
U56	UMTS B2	RMC12.2K	9400	Left Side	1	4	1	20	18.8	0.05	0.103	0.052	0.136
U57	UMTS B2	RMC12.2K	9400	Top Side	1	4	1	20	18.8	-0.04	0.383	0.195	0.505
U59	UMTS B4	RMC12.2K	1413	Front Face	1	3	1	20.5	19.56	-0.13	0.239	0.138	0.297
U60	UMTS B4	RMC12.2K	1413	Rear Face	1	3	1	20.5	19.56	-0.06	0.241	0.142	0.299
U61	UMTS B4	RMC12.2K	1413	Right Side	1	3	1	20.5	19.56	-0.08	0.0814	0.0482	0.101
U62	UMTS B4	RMC12.2K	1413	Bottom Side	1	3	1	20.5	19.56	-0.01	0.397	0.218	0.493
U64	UMTS B4	RMC12.2K	1413	Front Face	1	4	1	19.5	18.57	0.08	0.187	0.124	0.232
U65	UMTS B4	RMC12.2K	1413	Rear Face	1	4	1	19.5	18.57	0.16	0.249	0.153	0.308
U66	UMTS B4	RMC12.2K	1413	Left Side	1	4	1	19.5	18.57	0.06	0.0984	0.0586	0.122
U67	UMTS B4	RMC12.2K	1413	Top Side	1	4	1	19.5	18.57	-0.01	0.429	0.231	0.531
U69	UMTS B5	RMC12.2K	4182	Front Face	1	0	1	23	22.18	-0.09	0.075	0.049	0.091
U70	UMTS B5	RMC12.2K	4182	Rear Face	1	0	1	23	22.18	-0.07	0.144	0.089	0.174
U71	UMTS B5	RMC12.2K	4182	Left Side	1	0	1	23	22.18	-0.05	0.157	0.107	0.190
U72	UMTS B5	RMC12.2K	4182	Bottom Side	1	0	1	23	22.18	-0.08	0.108	0.064	0.130
U74	UMTS B5	RMC12.2K	4182	Front Face	1	1	1	24.5	23.62	-0.09	0.157	0.099	0.192
U75	UMTS B5	RMC12.2K	4182	Rear Face	1	1	1	24.5	23.62	-0.19	0.340	0.201	0.416
U76	UMTS B5	RMC12.2K	4182	Left Side	1	1	1	24.5	23.62	0.11	0.669	0.346	0.819

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

3. Hotspot SAR test results of LTE

4G only

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L421	LTE B2	QPSK20M	18900	1	0	Front Face	1	3	1	21	20.79	-0.05	0.270	0.147	0.283
L422	LTE B2	QPSK20M	18900	1	0	Rear Face	1	3	1	21	20.79	0.12	0.341	0.186	0.358
L423	LTE B2	QPSK20M	18900	1	0	Right Side	1	3	1	21	20.79	0	0.080	0.048	0.084
L424	LTE B2	QPSK20M	18900	1	0	Bottom Side	1	3	1	21	20.79	-0.03	0.460	0.249	0.483
L425	LTE B2	QPSK20M	19100	50	0	Front Face	1	3	1	21	20.78	0.06	0.275	0.150	0.289
L426	LTE B2	QPSK20M	19100	50	0	Rear Face	1	3	1	21	20.78	0.13	0.338	0.185	0.356
L427	LTE B2	QPSK20M	19100	50	0	Right Side	1	3	1	21	20.78	-0.05	0.082	0.049	0.086
L428	LTE B2	QPSK20M	19100	50	0	Bottom Side	1	3	1	21	20.78	-0.02	0.469	0.254	0.494
L431	LTE B2	QPSK20M	18900	1	0	Front Face	1	4	1	20.5	20.27	0.06	0.188	0.101	0.198
L432	LTE B2	QPSK20M	18900	1	0	Rear Face	1	4	1	20.5	20.27	-0.01	0.255	0.135	0.269
L433	LTE B2	QPSK20M	18900	1	0	Left Side	1	4	1	20.5	20.27	-0.04	0.117	0.059	0.123
L434	LTE B2	QPSK20M	18900	1	0	Top Side	1	4	1	20.5	20.27	-0.03	0.346	0.187	0.365
L435	LTE B2	QPSK20M	18900	50	50	Front Face	1	4	1	20.5	20.18	-0.13	0.174	0.094	0.187
L436	LTE B2	QPSK20M	18900	50	50	Rear Face	1	4	1	20.5	20.18	0.1	0.233	0.124	0.251
L437	LTE B2	QPSK20M	18900	50	50	Left Side	1	4	1	20.5	20.18	-0.16	0.105	0.054	0.113
L438	LTE B2	QPSK20M	18900	50	50	Top Side	1	4	1	20.5	20.18	0.02	0.341	0.186	0.367
L440	LTE B4	QPSK20M	20050	1	0	Front Face	1	3	1	20	19.86	-0.03	0.176	0.096	0.182
L441	LTE B4	QPSK20M	20050	1	0	Rear Face	1	3	1	20	19.86	0.16	0.224	0.126	0.231
L442	LTE B4	QPSK20M	20050	1	0	Right Side	1	3	1	20	19.86	-0.04	0.074	0.043	0.076
L443	LTE B4	QPSK20M	20050	1	0	Bottom Side	1	3	1	20	19.86	0.03	0.362	0.199	0.374
L444	LTE B4	QPSK20M	20300	50	0	Front Face	1	3	1	20	19.77	0.04	0.215	0.117	0.227
L445	LTE B4	QPSK20M	20300	50	0	Rear Face	1	3	1	20	19.77	0.09	0.232	0.131	0.245
L446	LTE B4	QPSK20M	20300	50	0	Right Side	1	3	1	20	19.77	0.1	0.090	0.053	0.095
L447	LTE B4	QPSK20M	20300	50	0	Bottom Side	1	3	1	20	19.77	-0.03	0.458	0.252	0.483
L450	LTE B4	QPSK20M	20050	1	99	Front Face	1	4	1	20.5	20.37	-0.15	0.249	0.157	0.257
L451	LTE B4	QPSK20M	20050	1	99	Rear Face	1	4	1	20.5	20.37	0.08	0.256	0.152	0.264
L452	LTE B4	QPSK20M	20050	1	99	Left Side	1	4	1	20.5	20.37	-0.02	0.113	0.066	0.117
L453	LTE B4	QPSK20M	20050	1	99	Top Side	1	4	1	20.5	20.37	0	0.420	0.235	0.433
L454	LTE B4	QPSK20M	20175	50	50	Front Face	1	4	1	20.5	20.32	0.03	0.245	0.155	0.255
L455	LTE B4	QPSK20M	20175	50	50	Rear Face	1	4	1	20.5	20.32	0.07	0.295	0.188	0.308
L456	LTE B4	QPSK20M	20175	50	50	Left Side	1	4	1	20.5	20.32	-0.03	0.124	0.073	0.129
L457	LTE B4	QPSK20M	20175	50	50	Top Side	1	4	1	20.5	20.32	-0.6	0.464	0.260	0.484
L460	LTE B4	QPSK20M	20300	1	50	Front Face	1	5	1	20.3	20.28	-0.01	0.144	0.083	0.145
L461	LTE B4	QPSK20M	20300	1	50	Rear Face	1	5	1	20.3	20.28	-0.04	0.199	0.118	0.200
L462	LTE B4	QPSK20M	20300	1	50	Left Side	1	5	1	20.3	20.28	0.01	0.244	0.133	0.245
L463	LTE B4	QPSK20M	20300	1	50	Top Side	1	5	1	20.3	20.28	-0.03	0.108	0.063	0.108
L464	LTE B4	QPSK20M	20300	50	25	Front Face	1	5	1	20.3	20.19	0	0.140	0.088	0.144
L465	LTE B4	QPSK20M	20300	50	25	Rear Face	1	5	1	20.3	20.19	0.03	0.203	0.120	0.208
L466	LTE B4	QPSK20M	20300	50	25	Left Side	1	5	1	20.3	20.19	0.09	0.248	0.136	0.254
L467	LTE B4	QPSK20M	20300	50	25	Top Side	1	5	1	20.3	20.19	-0.05	0.108	0.063	0.111

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L469	LTE B5	QPSK10M	20450	1	0	Front Face	1	0	1	23	22.85	-0.05	0.078	0.048	0.081
L470	LTE B5	QPSK10M	20450	1	0	Rear Face	1	0	1	23	22.85	0.02	0.125	0.074	0.130
L471	LTE B5	QPSK10M	20450	1	0	Left Side	1	0	1	23	22.85	-0.03	0.058	0.032	0.060
L472	LTE B5	QPSK10M	20450	1	0	Bottom Side	1	0	1	23	22.85	-0.12	0.085	0.050	0.088
L473	LTE B5	QPSK10M	20450	25	0	Front Face	1	0	1	23	22.73	-0.02	0.080	0.049	0.085
L474	LTE B5	QPSK10M	20450	25	0	Rear Face	1	0	1	23	22.73	0.01	0.128	0.076	0.136
L475	LTE B5	QPSK10M	20450	25	0	Left Side	1	0	1	23	22.73	-0.01	0.061	0.034	0.065
L476	LTE B5	QPSK10M	20450	25	0	Bottom Side	1	0	1	23	22.73	-0.05	0.085	0.050	0.091
L479	LTE B5	QPSK10M	20450	1	0	Front Face	1	1	1	25	24.38	0.03	0.209	0.124	0.241
L480	LTE B5	QPSK10M	20450	1	0	Rear Face	1	1	1	25	24.38	-0.05	0.269	0.160	0.310
L481	LTE B5	QPSK10M	20450	1	0	Left Side	1	1	1	25	24.38	-0.06	0.381	0.212	0.439
L482	LTE B5	QPSK10M	20525	25	0	Front Face	1	1	1	24	23.45	0.09	0.177	0.105	0.201
L483	LTE B5	QPSK10M	20525	25	0	Rear Face	1	1	1	24	23.45	-0.03	0.230	0.136	0.261
L484	LTE B5	QPSK10M	20525	25	0	Left Side	1	1	1	24	23.45	-0.05	0.325	0.181	0.369
L486	LTE B7	QPSK20M	21100	1	0	Front Face	1	3	1	19	18.88	-0.04	0.125	0.065	0.129
L487	LTE B7	QPSK20M	21100	1	0	Rear Face	1	3	1	19	18.88	-0.07	0.187	0.093	0.192
L488	LTE B7	QPSK20M	21100	1	0	Right Side	1	3	1	19	18.88	0.03	0.021	0.009	0.021
L489	LTE B7	QPSK20M	21100	1	0	Bottom Side	1	3	1	19	18.88	-0.09	0.290	0.141	0.298
L490	LTE B7	QPSK20M	21350	50	0	Front Face	1	3	1	19	18.79	0.19	0.137	0.071	0.144
L491	LTE B7	QPSK20M	21350	50	0	Rear Face	1	3	1	19	18.79	-0.02	0.104	0.050	0.109
L492	LTE B7	QPSK20M	21350	50	0	Right Side	1	3	1	19	18.79	-0.01	0.021	0.011	0.022
L493	LTE B7	QPSK20M	21350	50	0	Bottom Side	1	3	1	19	18.79	-0.05	0.327	0.158	0.343
L496	LTE B7	QPSK20M	21350	1	99	Front Face	1	4	1	19	18.35	0.01	0.191	0.103	0.222
L497	LTE B7	QPSK20M	21350	1	99	Rear Face	1	4	1	19	18.35	0.02	0.235	0.127	0.273
L498	LTE B7	QPSK20M	21350	1	99	Left Side	1	4	1	19	18.35	0.02	0.095	0.045	0.111
L499	LTE B7	QPSK20M	21350	1	99	Top Side	1	4	1	19	18.35	0.02	0.455	0.222	0.528
L500	LTE B7	QPSK20M	21350	50	0	Front Face	1	4	1	19	18.28	0.03	0.200	0.108	0.236
L501	LTE B7	QPSK20M	21350	50	0	Rear Face	1	4	1	19	18.28	0.06	0.239	0.116	0.282
L502	LTE B7	QPSK20M	21350	50	0	Left Side	1	4	1	19	18.28	-0.04	0.112	0.053	0.132
L503	LTE B7	QPSK20M	21350	50	0	Top Side	1	4	1	19	18.28	0.01	0.475	0.231	0.560
L506	LTE B7	QPSK20M	21100	1	99	Front Face	1	5	1	19.1	18.86	-0.05	0.122	0.058	0.129
L507	LTE B7	QPSK20M	21100	1	99	Rear Face	1	5	1	19.1	18.86	-0.02	0.127	0.060	0.134
L508	LTE B7	QPSK20M	21100	1	99	Left Side	1	5	1	19.1	18.86	0	0.387	0.161	0.409
L509	LTE B7	QPSK20M	21100	1	99	Top Side	1	5	1	19.1	18.86	0.07	0.033	0.013	0.035
L510	LTE B7	QPSK20M	21350	50	0	Front Face	1	5	1	19.1	18.79	-0.14	0.083	0.041	0.089
L511	LTE B7	QPSK20M	21350	50	0	Rear Face	1	5	1	19.1	18.79	0.46	0.148	0.070	0.159
L512	LTE B7	QPSK20M	21350	50	0	Left Side	1	5	1	19.1	18.79	-0.07	0.362	0.151	0.389
L513	LTE B7	QPSK20M	21350	50	0	Top Side	1	5	1	19.1	18.79	0.01	0.043	0.021	0.047

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L515	LTE B12	QPSK10M	23095	1	49	Front Face	1	0	1	23.5	22.89	-0.04	0.068	0.042	0.079
L516	LTE B12	QPSK10M	23095	1	49	Rear Face	1	0	1	23.5	22.89	0.05	0.166	0.093	0.191
L517	LTE B12	QPSK10M	23095	1	49	Left Side	1	0	1	23.5	22.89	0.05	0.070	0.049	0.081
L518	LTE B12	QPSK10M	23095	1	49	Bottom Side	1	0	1	23.5	22.89	0.06	0.057	0.033	0.066
L519	LTE B12	QPSK10M	23130	25	0	Front Face	1	0	1	23.5	22.87	-0.01	0.091	0.055	0.105
L520	LTE B12	QPSK10M	23130	25	0	Rear Face	1	0	1	23.5	22.87	-0.08	0.155	0.088	0.179
L521	LTE B12	QPSK10M	23130	25	0	Left Side	1	0	1	23.5	22.87	0.08	0.083	0.052	0.096
L522	LTE B12	QPSK10M	23130	25	0	Bottom Side	1	0	1	23.5	22.87	-0.03	0.054	0.032	0.063
L525	LTE B12	QPSK10M	23130	1	24	Front Face	1	1	1	25	23.98	0.08	0.180	0.107	0.228
L526	LTE B12	QPSK10M	23130	1	24	Rear Face	1	1	1	25	23.98	0.04	0.236	0.136	0.298
L527	LTE B12	QPSK10M	23130	1	24	Left Side	1	1	1	25	23.98	0.13	0.340	0.179	0.430
L528	LTE B12	QPSK10M	23130	25	0	Front Face	1	1	1	24	23.03	0.06	0.146	0.087	0.182
L529	LTE B12	QPSK10M	23130	25	0	Rear Face	1	1	1	24	23.03	0.02	0.187	0.108	0.234
L530	LTE B12	QPSK10M	23130	25	0	Left Side	1	1	1	24	23.03	0.08	0.279	0.147	0.349
L532	LTE B13	QPSK10M	23230	1	0	Front Face	1	0	1	24.5	24.11	0.06	0.143	0.109	0.157
L533	LTE B13	QPSK10M	23230	1	0	Rear Face	1	0	1	24.5	24.11	-0.03	0.172	0.130	0.188
L534	LTE B13	QPSK10M	23230	1	0	Left Side	1	0	1	24.5	24.11	-0.02	0.211	0.145	0.231
L535	LTE B13	QPSK10M	23230	1	0	Bottom Side	1	0	1	24.5	24.11	0.01	0.120	0.070	0.131
L536	LTE B13	QPSK10M	23230	25	0	Front Face	1	0	1	23.5	23.00	0.02	0.109	0.083	0.122
L537	LTE B13	QPSK10M	23230	25	0	Rear Face	1	0	1	23.5	23.00	0.01	0.130	0.098	0.146
L538	LTE B13	QPSK10M	23230	25	0	Left Side	1	0	1	23.5	23.00	-0.01	0.158	0.108	0.177
L539	LTE B13	QPSK10M	23230	25	0	Bottom Side	1	0	1	23.5	23.00	0	0.092	0.054	0.103
L542	LTE B13	QPSK10M	23230	1	0	Front Face	1	1	1	25	24.17	0.01	0.177	0.107	0.214
L543	LTE B13	QPSK10M	23230	1	0	Rear Face	1	1	1	25	24.17	-0.02	0.261	0.156	0.316
L544	LTE B13	QPSK10M	23230	1	0	Left Side	1	1	1	25	24.17	0.01	0.480	0.263	0.581
L545	LTE B13	QPSK10M	23230	25	0	Front Face	1	1	1	24	23.13	0.07	0.137	0.083	0.167
L546	LTE B13	QPSK10M	23230	25	0	Rear Face	1	1	1	24	23.13	0.01	0.202	0.120	0.247
L547	LTE B13	QPSK10M	23230	25	0	Left Side	1	1	1	24	23.13	0.03	0.372	0.203	0.454
L549	LTE B17	QPSK10M	23800	1	49	Front Face	1	0	1	23.5	22.82	0.07	0.044	0.028	0.051
L550	LTE B17	QPSK10M	23800	1	49	Rear Face	1	0	1	23.5	22.82	0.05	0.095	0.057	0.111
L551	LTE B17	QPSK10M	23800	1	49	Left Side	1	0	1	23.5	22.82	0.05	0.056	0.035	0.065
L552	LTE B17	QPSK10M	23800	1	49	Bottom Side	1	0	1	23.5	22.82	0.03	0.051	0.031	0.060
L553	LTE B17	QPSK10M	23800	25	0	Front Face	1	0	1	23.5	22.79	0.09	0.044	0.028	0.051
L554	LTE B17	QPSK10M	23800	25	0	Rear Face	1	0	1	23.5	22.79	0.03	0.086	0.052	0.101
L555	LTE B17	QPSK10M	23800	25	0	Left Side	1	0	1	23.5	22.79	0.06	0.053	0.034	0.063
L556	LTE B17	QPSK10M	23800	25	0	Bottom Side	1	0	1	23.5	22.79	0.03	0.046	0.028	0.054
L559	LTE B17	QPSK10M	23800	1	49	Front Face	1	1	1	25	23.97	0.08	0.170	0.100	0.216
L560	LTE B17	QPSK10M	23800	1	49	Rear Face	1	1	1	25	23.97	-0.04	0.226	0.131	0.287
L561	LTE B17	QPSK10M	23800	1	49	Left Side	1	1	1	25	23.97	-0.02	0.275	0.151	0.349
L562	LTE B17	QPSK10M	23800	25	0	Front Face	1	1	1	24	23.04	-0.04	0.119	0.070	0.148
L563	LTE B17	QPSK10M	23800	25	0	Rear Face	1	1	1	24	23.04	-0.08	0.161	0.094	0.201
L564	LTE B17	QPSK10M	23800	25	0	Left Side	1	1	1	24	23.04	-0.08	0.194	0.105	0.242

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L566	LTE B26	QPSK15M	26965	1	74	Front Face	1	0	1	24	23.70	-0.03	0.118	0.075	0.127
L567	LTE B26	QPSK15M	26965	1	74	Rear Face	1	0	1	24	23.70	-0.02	0.175	0.106	0.188
L568	LTE B26	QPSK15M	26965	1	74	Left Side	1	0	1	24	23.70	-0.06	0.163	0.110	0.175
L569	LTE B26	QPSK15M	26965	1	74	Bottom Side	1	0	1	24	23.70	-0.03	0.148	0.085	0.159
L570	LTE B26	QPSK15M	26765	36	0	Front Face	1	0	1	23	22.69	-0.08	0.060	0.037	0.064
L571	LTE B26	QPSK15M	26765	36	0	Rear Face	1	0	1	23	22.69	0	0.089	0.054	0.096
L572	LTE B26	QPSK15M	26765	36	0	Left Side	1	0	1	23	22.69	-0.01	0.069	0.049	0.074
L573	LTE B26	QPSK15M	26765	36	0	Bottom Side	1	0	1	23	22.69	-0.02	0.082	0.047	0.088
L576	LTE B26	QPSK15M	26865	1	0	Front Face	1	1	1	24.5	23.66	-0.08	0.149	0.090	0.181
L577	LTE B26	QPSK15M	26865	1	0	Rear Face	1	1	1	24.5	23.66	0.07	0.215	0.127	0.261
L578	LTE B26	QPSK15M	26865	1	0	Left Side	1	1	1	24.5	23.66	-0.07	0.340	0.188	0.412
L579	LTE B26	QPSK15M	26865	36	0	Front Face	1	1	1	23.5	23.34	0.06	0.128	0.077	0.133
L580	LTE B26	QPSK15M	26865	36	0	Rear Face	1	1	1	23.5	23.34	0.14	0.182	0.107	0.189
L581	LTE B26	QPSK15M	26865	36	0	Left Side	1	1	1	23.5	23.34	-0.06	0.291	0.161	0.302
L583	LTE B38	QPSK20M	37850	1	99	Front Face	1	3	1	21	20.84	0.02	0.035	0.017	0.037
L584	LTE B38	QPSK20M	37850	1	99	Rear Face	1	3	1	21	20.84	0.05	0.042	0.021	0.044
L585	LTE B38	QPSK20M	37850	1	99	Right Side	1	3	1	21	20.84	-0.07	0.022	0.010	0.023
L586	LTE B38	QPSK20M	37850	1	99	Bottom Side	1	3	1	21	20.84	-0.12	0.380	0.179	0.395
L587	LTE B38	QPSK20M	37850	50	50	Front Face	1	3	1	21	20.74	0.04	0.039	0.019	0.041
L588	LTE B38	QPSK20M	37850	50	50	Rear Face	1	3	1	21	20.74	0.07	0.052	0.025	0.055
L589	LTE B38	QPSK20M	37850	50	50	Right Side	1	3	1	21	20.74	0.05	0.021	0.011	0.022
L590	LTE B38	QPSK20M	37850	50	50	Bottom Side	1	3	1	21	20.74	-0.05	0.389	0.183	0.413
L593	LTE B38	QPSK20M	37850	1	99	Front Face	1	4	1	20.5	19.91	0.04	0.164	0.088	0.188
L594	LTE B38	QPSK20M	37850	1	99	Rear Face	1	4	1	20.5	19.91	0.05	0.205	0.111	0.235
L595	LTE B38	QPSK20M	37850	1	99	Left Side	1	4	1	20.5	19.91	0.08	0.055	0.027	0.063
L596	LTE B38	QPSK20M	37850	1	99	Top Side	1	4	1	20.5	19.91	0.05	0.365	0.180	0.418
L597	LTE B38	QPSK20M	38000	50	0	Front Face	1	4	1	20.5	19.89	0.04	0.170	0.089	0.196
L598	LTE B38	QPSK20M	38000	50	0	Rear Face	1	4	1	20.5	19.89	0.06	0.221	0.120	0.254
L599	LTE B38	QPSK20M	38000	50	0	Left Side	1	4	1	20.5	19.89	0.12	0.054	0.027	0.062
L600	LTE B38	QPSK20M	38000	50	0	Top Side	1	4	1	20.5	19.89	0.02	0.385	0.189	0.443
L603	LTE B38	QPSK20M	38000	1	50	Front Face	1	5	1	21	20.98	0.16	0.113	0.055	0.114
L604	LTE B38	QPSK20M	38000	1	50	Rear Face	1	5	1	21	20.98	0.05	0.198	0.094	0.199
L605	LTE B38	QPSK20M	38000	1	50	Left Side	1	5	1	21	20.98	0.04	0.306	0.135	0.307
L606	LTE B38	QPSK20M	38000	1	50	Top Side	1	5	1	21	20.98	0.02	0.056	0.027	0.056
L607	LTE B38	QPSK20M	38000	50	25	Front Face	1	5	1	21	20.92	0.07	0.122	0.060	0.124
L608	LTE B38	QPSK20M	38000	50	25	Rear Face	1	5	1	21	20.92	0.18	0.179	0.085	0.182
L609	LTE B38	QPSK20M	38000	50	25	Left Side	1	5	1	21	20.92	0.09	0.306	0.136	0.312
L610	LTE B38	QPSK20M	38000	50	25	Top Side	1	5	1	21	20.92	0.16	0.049	0.024	0.050

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L612	LTE B41	QPSK20M	39750	1	99	Front Face	1	3	1	21	20.78	0.11	0.123	0.064	0.129
L613	LTE B41	QPSK20M	39750	1	99	Rear Face	1	3	1	21	20.78	0.05	0.204	0.098	0.214
L614	LTE B41	QPSK20M	39750	1	99	Right Side	1	3	1	21	20.78	0.05	0.015	0.006	0.016
L615	LTE B41	QPSK20M	39750	1	99	Bottom Side	1	3	1	21	20.78	-0.13	0.346	0.165	0.364
L616	LTE B41	QPSK20M	41490	50	0	Front Face	1	3	1	21	20.73	-0.04	0.150	0.074	0.160
L617	LTE B41	QPSK20M	41490	50	0	Rear Face	1	3	1	21	20.73	-0.05	0.222	0.107	0.236
L618	LTE B41	QPSK20M	41490	50	0	Right Side	1	3	1	21	20.73	-0.11	0.018	0.009	0.019
L619	LTE B41	QPSK20M	41490	50	0	Bottom Side	1	3	1	21	20.73	-0.04	0.405	0.189	0.431
L622	LTE B41	QPSK20M	40620	1	50	Front Face	1	4	1	20.5	19.66	0.08	0.163	0.088	0.198
L623	LTE B41	QPSK20M	40620	1	50	Rear Face	1	4	1	20.5	19.66	0.1	0.210	0.114	0.255
L624	LTE B41	QPSK20M	40620	1	50	Left Side	1	4	1	20.5	19.66	0.04	0.062	0.026	0.075
L625	LTE B41	QPSK20M	40620	1	50	Top Side	1	4	1	20.5	19.66	-0.01	0.400	0.197	0.486
L626	LTE B41	QPSK20M	40620	50	0	Front Face	1	4	1	20.5	19.64	-0.04	0.159	0.086	0.194
L627	LTE B41	QPSK20M	40620	50	0	Rear Face	1	4	1	20.5	19.64	-0.08	0.207	0.113	0.252
L628	LTE B41	QPSK20M	40620	50	0	Left Side	1	4	1	20.5	19.64	0.050	0.054	0.026	0.065
L629	LTE B41	QPSK20M	40620	50	0	Top Side	1	4	1	20.5	19.64	0	0.394	0.194	0.480
L632	LTE B41	QPSK20M	40620	1	50	Front Face	1	5	1	20.5	20.38	-0.08	0.099	0.050	0.102
L633	LTE B41	QPSK20M	40620	1	50	Rear Face	1	5	1	20.5	20.38	0.04	0.168	0.080	0.173
L634	LTE B41	QPSK20M	40620	1	50	Left Side	1	5	1	20.5	20.38	-0.07	0.251	0.113	0.258
L635	LTE B41	QPSK20M	40620	1	50	Top Side	1	5	1	20.5	20.38	-0.10	0.057	0.028	0.058
L636	LTE B41	QPSK20M	40620	50	0	Front Face	1	5	1	20.5	20.28	0.13	0.093	0.047	0.098
L637	LTE B41	QPSK20M	40620	50	0	Rear Face	1	5	1	20.5	20.28	-0.05	0.159	0.076	0.167
L638	LTE B41	QPSK20M	40620	50	0	Left Side	1	5	1	20.5	20.28	0.01	0.251	0.113	0.264
L639	LTE B41	QPSK20M	40620	50	0	Top Side	1	5	1	20.5	20.28	-0.07	0.055	0.027	0.057
L641	LTE B66	QPSK20M	132572	1	99	Front Face	1	3	1	22.5	22.18	-0.06	0.333	0.188	0.358
L642	LTE B66	QPSK20M	132572	1	99	Rear Face	1	3	1	22.5	22.18	0.05	0.346	0.204	0.372
L643	LTE B66	QPSK20M	132572	1	99	Right Side	1	3	1	22.5	22.18	-0.07	0.180	0.105	0.194
L644	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	3	1	22.5	22.18	-0.09	0.645	0.351	0.694
L645	LTE B66	QPSK20M	132322	50	0	Front Face	1	3	1	22.5	22.07	0	0.339	0.192	0.374
L646	LTE B66	QPSK20M	132322	50	0	Rear Face	1	3	1	22.5	22.07	0.04	0.349	0.206	0.385
L647	LTE B66	QPSK20M	132322	50	0	Right Side	1	3	1	22.5	22.07	-0.03	0.146	0.085	0.161
L648	LTE B66	QPSK20M	132322	50	0	Bottom Side	1	3	1	22.5	22.07	0.18	0.700	0.387	0.773
L651	LTE B66	QPSK20M	132072	1	99	Front Face	1	4	1	22	21.86	0.03	0.096	0.057	0.099
L652	LTE B66	QPSK20M	132072	1	99	Rear Face	1	4	1	22	21.86	-0.01	0.579	0.330	0.598
L653	LTE B66	QPSK20M	132072	1	99	Left Side	1	4	1	22	21.86	-0.01	0.037	0.021	0.039
L654	LTE B66	QPSK20M	132072	1	99	Top Side	1	4	1	22	21.86	0.05	0.138	0.074	0.143
L655	LTE B66	QPSK20M	132572	50	25	Front Face	1	4	1	22	21.73	0.12	0.119	0.073	0.127
L656	LTE B66	QPSK20M	132572	50	25	Rear Face	1	4	1	22	21.73	0.05	0.429	0.157	0.457
L657	LTE B66	QPSK20M	132572	50	25	Left Side	1	4	1	22	21.73	0.05	0.035	0.020	0.037
L658	LTE B66	QPSK20M	132572	50	25	Top Side	1	4	1	22	21.73	-0.04	0.136	0.073	0.145

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR
L661	LTE B66	QPSK20M	132572	1	50	Front Face	1	5	1	21.8	21.78	0.06	0.091	0.052	0.092
L662	LTE B66	QPSK20M	132572	1	50	Rear Face	1	5	1	21.8	21.78	-0.05	0.397	0.224	0.399
L663	LTE B66	QPSK20M	132572	1	50	Left Side	1	5	1	21.8	21.78	0.04	0.129	0.069	0.130
L664	LTE B66	QPSK20M	132572	1	50	Top Side	1	5	1	21.8	21.78	-0.07	0.037	0.021	0.037
L665	LTE B66	QPSK20M	132572	50	25	Front Face	1	5	1	21.8	21.77	-0.05	0.096	0.055	0.097
L666	LTE B66	QPSK20M	132572	50	25	Rear Face	1	5	1	21.8	21.77	0.05	0.419	0.236	0.422
L667	LTE B66	QPSK20M	132572	50	25	Left Side	1	5	1	21.8	21.77	-0.1	0.134	0.072	0.135
L668	LTE B66	QPSK20M	132572	50	25	Top Side	1	5	1	21.8	21.77	-0.09	0.037	0.021	0.038

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

Ant 4 Separation distance: 1.0cm

Test No.	PCC					SCC					Tune-up For LTE CA TX Power	LTE CA TX Power	Test Position	Power Drift	SAR 1g	SAR 10g	Reported 1g SAR
	Band	Band width [MHZ]	Modulation	Channel (UL)	RB Size/Offset	Band	Band width [MHZ]	Modulation	Channel (UL)	RB Size/Offset							
C03	LTE B7	20	QPSK	21001	1/99	LTE B7	20	QPSK	21199	1/0	19.00	18.18	Top Side	0.12	0.369	0.127	0.446
C06	LTE B38	20	QPSK	37850	1/99	LTE B38	20	QPSK	38048	1/0	20.50	19.70	Top Side	0.09	0.347	0.153	0.418
C09	LTE B41	20	QPSK	39750	1/99	LTE B41	20	QPSK	39948	1/0	20.50	19.53	Top Side	-0.01	0.374	0.157	0.468

Note: The test data of CA for worst case is not larger than the LTE's, so the maximum SAR Value of CA does not need to be bold.

4. Hotspot SAR test results of 5G NR (Separation distance: 1cm)

5G NR only

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N1	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Front Face	0	15	24.5	23.52	-0.03	0.109	0.068	0.137
N2	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Rear Face	0	15	24.5	23.52	0.01	0.190	0.113	0.238
N3	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Left Side	0	15	24.5	23.52	-0.07	0.121	0.084	0.152
N4	5G N5	DFT-s-OFDM QPSK	20M	166800	834	50	25	Bottom Side	0	15	24.5	23.52	-0.02	0.121	0.072	0.152
N5	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Front Face	0	15	23.5	23.42	-0.08	0.089	0.055	0.091
N6	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Rear Face	0	15	23.5	23.42	0	0.158	0.094	0.161
N7	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Left Side	0	15	23.5	23.42	-0.03	0.070	0.043	0.072
N8	5G N5	DFT-s-OFDM QPSK	20M	166800	834	2	0	Bottom Side	0	15	23.5	23.42	-0.01	0.142	0.082	0.145
N9	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Rear Face	0	15	24.5	23.36	0.03	0.206	0.123	0.268
N11	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Front Face	1	15	25	23.88	-0.01	0.212	0.128	0.274
N12	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Rear Face	1	15	25	23.88	0.01	0.297	0.177	0.384
N13	5G N5	DFT-s-OFDM QPSK	20M	167300	836.5	50	25	Left Side	1	15	25	23.88	0.05	0.477	0.261	0.617
N14	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Front Face	1	15	24	23.87	0.08	0.211	0.128	0.217
N15	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Rear Face	1	15	24	23.87	-0.04	0.291	0.174	0.300
N16	5G N5	DFT-s-OFDM QPSK	20M	167800	839	100	0	Left Side	1	15	24	23.87	-0.04	0.383	0.213	0.395
N17	5G N5	DFT-s-OFDM QPSK	20M	167800	839	1	104	Left Side	1	15	25	23.75	-0.02	0.368	0.205	0.491
N19	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Front Face	3	15	18.2	18.18	0.04	0.044	0.022	0.044
N20	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Rear Face	3	15	18.2	18.18	0.04	0.086	0.042	0.086
N21	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Right Side	3	15	18.2	18.18	-0.09	0.017	0.008	0.017
N22	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	1	Bottom Side	3	15	18.2	18.18	-0.19	0.378	0.183	0.380
N23	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	100	0	Front Face	3	15	18.2	17.85	0.01	0.043	0.022	0.047
N24	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	100	0	Rear Face	3	15	18.2	17.85	0.13	0.086	0.043	0.094
N25	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	100	0	Right Side	3	15	18.2	17.85	-0.17	0.019	0.010	0.020
N26	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	100	0	Bottom Side	3	15	18.2	17.85	0.07	0.426	0.204	0.462
N27	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	1	104	Bottom Side	3	15	18.2	18.17	-0.05	0.407	0.197	0.410

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N29	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Front Face	4	15	19.7	19.63	0	0.358	0.188	0.364
N30	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Rear Face	4	15	19.7	19.63	-0.06	0.476	0.218	0.484
N31	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Left Side	4	15	19.7	19.63	-0.11	0.079	0.040	0.081
N32	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Top Side	4	15	19.7	19.63	0.11	0.421	0.212	0.428
N33	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	1	105	Front Face	4	15	19.7	19.59	0.07	0.370	0.195	0.379
N34	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	1	105	Rear Face	4	15	19.7	19.59	0.09	0.489	0.224	0.502
N35	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	1	105	Left Side	4	15	19.7	19.59	-0.13	0.111	0.054	0.114
N36	5G N7	DFT-s-OFDM QPSK	20M	512000	2560	1	105	Top Side	4	15	19.7	19.59	0.16	0.437	0.220	0.448
N37	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Rear Face	4	15	19.7	19.59	-0.05	0.374	0.190	0.384
N39	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Front Face	5	15	20.7	20.63	-0.02	0.085	0.041	0.087
N40	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Rear Face	5	15	20.7	20.63	0.07	0.268	0.117	0.272
N41	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Left Side	5	15	20.7	20.63	0.09	0.271	0.120	0.275
N42	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Top Side	5	15	20.7	20.63	-0.14	0.034	0.017	0.035
N43	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Front Face	5	15	20.7	20.62	0.02	0.083	0.040	0.085
N44	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Rear Face	5	15	20.7	20.62	-0.04	0.207	0.093	0.211
N45	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Left Side	5	15	20.7	20.62	0.02	0.229	0.102	0.233
N46	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	100	0	Top Side	5	15	20.7	20.62	0.12	0.024	0.012	0.024
N47	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Left Side	5	15	20.7	20.58	0.03	0.210	0.093	0.216
N49	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Front Face	6	15	18.2	18.15	0.06	0.109	0.048	0.110
N50	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Rear Face	6	15	18.2	18.15	0.09	0.090	0.043	0.091
N51	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Right Side	6	15	18.2	18.15	0.1	0.174	0.078	0.176
N52	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	50	25	Top Side	6	15	18.2	18.15	0.08	0.031	0.016	0.032
N53	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Front Face	6	15	18.2	18.05	0	0.102	0.046	0.106
N54	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Rear Face	6	15	18.2	18.05	0	0.089	0.042	0.092
N55	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Right Side	6	15	18.2	18.05	-0.01	0.156	0.069	0.161
N56	5G N7	DFT-s-OFDM QPSK	20M	507000	2535	2	0	Top Side	6	15	18.2	18.05	0.05	0.025	0.012	0.025
N57	5G N7	DFT-s-OFDM QPSK	20M	502000	2510	1	1	Right Side	6	15	18.2	18.14	0.11	0.169	0.074	0.171

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N59	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Front Face	3	30	19.2	19.17	-0.02	0.053	0.025	0.053
N60	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Rear Face	3	30	19.2	19.17	-0.16	0.057	0.026	0.057
N61	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Right Side	3	30	19.2	19.17	-0.12	0.013	0.006	0.013
N62	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	25	12	Bottom Side	3	30	19.2	19.17	0.12	0.454	0.220	0.457
N63	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Front Face	3	30	19.2	19.11	-0.09	0.045	0.020	0.046
N64	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Rear Face	3	30	19.2	19.11	-0.05	0.059	0.028	0.060
N65	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Right Side	3	30	19.2	19.11	0.01	0.012	0.005	0.013
N66	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	2	0	Bottom Side	3	30	19.2	19.11	0.16	0.432	0.211	0.441
N67	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Bottom Side	3	30	19.2	19.05	0.19	0.412	0.202	0.426
N69	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Front Face	4	30	20.7	20.54	0	0.352	0.182	0.365
N70	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Rear Face	4	30	20.7	20.54	-0.1	0.680	0.327	0.706
N71	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Left Side	4	30	20.7	20.54	-0.04	0.182	0.092	0.189
N72	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Top Side	4	30	20.7	20.54	0.09	0.710	0.360	0.737
N73	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Front Face	4	30	20.7	20.53	-0.11	0.490	0.258	0.510
N74	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Rear Face	4	30	20.7	20.53	-0.13	0.635	0.309	0.660
N75	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Left Side	4	30	20.7	20.53	-0.01	0.146	0.074	0.152
N76	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Top Side	4	30	20.7	20.53	0.03	0.839	0.421	0.872
N77	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Top Side	4	30	20.7	20.34	0.09	0.811	0.409	0.881
N79	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Front Face	5	30	19.2	19.05	-0.15	0.105	0.0537	0.109
N80	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Rear Face	5	30	19.2	19.05	-0.18	0.348	0.161	0.360
N81	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Left Side	5	30	19.2	19.05	0.05	0.367	0.165	0.380
N82	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	25	12	Top Side	5	30	19.2	19.05	-0.13	0.057	0.0284	0.059
N83	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Front Face	5	30	19.2	19.03	-0.16	0.105	0.0539	0.109
N84	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Rear Face	5	30	19.2	19.03	-0.09	0.350	0.162	0.364
N85	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Left Side	5	30	19.2	19.03	0.05	0.376	0.168	0.391
N86	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	50	0	Top Side	5	30	19.2	19.03	-0.09	0.062	0.0306	0.065
N87	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Left Side	5	30	19.2	18.91	0.04	0.304	0.136	0.325

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N89	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Front Face	6	30	19.2	19.18	0	0.116	0.057	0.117
N90	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Rear Face	6	30	19.2	19.18	0	0.155	0.067	0.156
N91	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Right Side	6	30	19.2	19.18	0.04	0.478	0.199	0.480
N92	5G N38	DFT-s-OFDM QPSK	20M	519000	2595	1	1	Top Side	6	30	19.2	19.18	-0.17	0.023	0.012	0.023
N93	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Front Face	6	30	19.2	19.05	0	0.109	0.054	0.113
N94	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Rear Face	6	30	19.2	19.05	0	0.149	0.066	0.154
N95	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Right Side	6	30	19.2	19.05	0.12	0.435	0.183	0.450
N96	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	50	0	Top Side	6	30	19.2	19.05	-0.15	0.032	0.015	0.033
N97	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	1	49	Right Side	6	30	19.2	19.15	0.09	0.462	0.191	0.467
N99	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Front Face	3	15	19.2	19.18	-0.06	0.130	0.066	0.131
N100	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Rear Face	3	15	19.2	19.18	0.13	0.088	0.043	0.089
N101	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Right Side	3	15	19.2	19.18	0.11	0.036	0.019	0.036
N102	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Bottom Side	3	15	19.2	19.18	0.06	0.477	0.231	0.479
N103	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Front Face	3	15	19.2	19.08	-0.16	0.153	0.077	0.157
N104	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Rear Face	3	15	19.2	19.08	0.03	0.111	0.051	0.114
N105	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Right Side	3	15	19.2	19.08	0.12	0.030	0.016	0.031
N106	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Bottom Side	3	15	19.2	19.08	-0.05	0.553	0.270	0.568
N107	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Bottom Side	3	15	19.2	19.17	0.05	0.327	0.161	0.329
N109	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Front Face	4	15	20.7	20.66	-0.17	0.513	0.276	0.518
N110	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Rear Face	4	15	20.7	20.66	0.13	0.765	0.361	0.772
N111	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Side	4	15	20.7	20.66	0.04	0.223	0.108	0.225
N112	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Top Side	4	15	20.7	20.66	0.02	0.931	0.469	0.940
N113	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Front Face	4	15	20.7	20.51	-0.03	0.415	0.226	0.434
N114	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Rear Face	4	15	20.7	20.51	-0.07	0.568	0.272	0.593
N115	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Left Side	4	15	20.7	20.51	0.01	0.116	0.059	0.121
N116	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Top Side	4	15	20.7	20.51	-0.05	0.882	0.445	0.921
N117	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Top Side	4	15	20.7	20.64	0	1.040	0.526	1.054

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N119	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Front Face	5	15	19.5	19.46	-0.01	0.206	0.101	0.208
N120	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Rear Face	5	15	19.5	19.46	0.14	0.503	0.232	0.508
N121	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Left Side	5	15	19.5	19.46	-0.02	0.559	0.248	0.564
N122	5G N41	DFT-s-OFDM QPSK	100M	528000	2640	135	67	Top Side	5	15	19.5	19.46	-0.08	0.179	0.084	0.181
N123	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Front Face	5	15	19.5	19.43	0.12	0.105	0.051	0.107
N124	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Rear Face	5	15	19.5	19.43	-0.13	0.244	0.112	0.248
N125	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Left Side	5	15	19.5	19.43	-0.01	0.326	0.147	0.331
N126	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	2	0	Top Side	5	15	19.5	19.43	-0.07	0.036	0.018	0.036
N127	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	1	Left Side	5	15	19.5	19.44	-0.03	0.185	0.083	0.188
N129	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Front Face	6	15	19.2	19.4	0.02	0.204	0.092	0.195
N130	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Rear Face	6	15	19.2	19.4	0.17	0.261	0.114	0.249
N131	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Right Side	6	15	19.2	19.4	0.01	0.601	0.250	0.574
N132	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Top Side	6	15	19.2	19.4	-0.05	0.045	0.025	0.043
N133	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Front Face	6	15	19.2	19.25	0.1	0.156	0.070	0.154
N134	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Rear Face	6	15	19.2	19.25	0.19	0.255	0.119	0.252
N135	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Right Side	6	15	19.2	19.25	0.07	0.479	0.201	0.474
N136	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	270	0	Top Side	6	15	19.2	19.25	-0.05	0.034	0.019	0.034
N137	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	271	Right Side	6	15	19.2	19.35	0.15	0.205	0.085	0.198
N139	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Front Face	3	15	23.7	23.03	-0.03	0.433	0.245	0.505
N140	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Rear Face	3	15	23.7	23.03	0.05	0.396	0.232	0.462
N141	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Right Side	3	15	23.7	23.03	-0.06	0.174	0.105	0.203
N142	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	50	25	Bottom Side	3	15	23.7	23.03	0.07	0.841	0.466	0.981
N143	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Front Face	3	15	23.7	22.63	0.05	0.431	0.244	0.551
N144	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Rear Face	3	15	23.7	22.63	0.08	0.360	0.212	0.461
N145	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Right Side	3	15	23.7	22.63	-0.07	0.174	0.105	0.223
N146	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	100	0	Bottom Side	3	15	23.7	22.63	0.07	0.740	0.403	0.947
N147	5G N66	DFT-s-OFDM QPSK	20M	349000	1745	1	104	Bottom Side	3	15	23.7	22.85	0.05	0.783	0.451	0.952

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N149	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Front Face	4	15	19.5	19.43	0.11	0.184	0.117	0.187
N150	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Rear Face	4	15	19.5	19.43	0.05	0.489	0.256	0.497
N151	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Left Side	4	15	19.5	19.43	-0.18	0.089	0.047	0.091
N152	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Top Side	4	15	19.5	19.43	0.1	0.542	0.305	0.551
N153	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Front Face	4	15	19.5	19.35	0.11	0.152	0.096	0.157
N154	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Rear Face	4	15	19.5	19.35	0.03	0.402	0.208	0.416
N155	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Left Side	4	15	19.5	19.35	-0.11	0.084	0.044	0.087
N156	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Top Side	4	15	19.5	19.35	-0.17	0.344	0.189	0.356
N157	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	1	Top Side	4	15	19.5	19.4	0.07	0.414	0.242	0.424
N159	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Front Face	5	15	23.5	22.55	0.02	0.237	0.142	0.295
N160	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Rear Face	5	15	23.5	22.55	-0.01	0.511	0.266	0.636
N161	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Side	5	15	23.5	22.55	0.11	0.537	0.287	0.668
N162	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Top Side	5	15	23.5	22.55	0.06	0.148	0.085	0.184
N163	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Front Face	5	15	22.5	22.43	0.09	0.140	0.095	0.142
N164	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Rear Face	5	15	22.5	22.43	0.03	0.496	0.259	0.504
N165	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Left Side	5	15	22.5	22.43	0.1	0.451	0.236	0.458
N166	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Top Side	5	15	22.5	22.43	0.1	0.109	0.065	0.111
N167	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Left Side	5	15	23.5	22.42	-0.01	0.530	0.285	0.680
N169	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Front Face	6	15	23	21.75	0.03	0.094	0.051	0.125
N170	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Rear Face	6	15	23	21.75	0.03	0.171	0.092	0.228
N171	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Right Side	6	15	23	21.75	-0.01	0.336	0.172	0.448
N172	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	50	25	Top Side	6	15	23	21.75	-0.13	0.015	0.009	0.020
N173	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Front Face	6	15	22	21.62	0	0.095	0.052	0.104
N174	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Rear Face	6	15	22	21.62	0.08	0.174	0.093	0.190
N175	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Right Side	6	15	22	21.62	0.01	0.267	0.137	0.291
N176	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	100	0	Top Side	6	15	22	21.62	-0.1	0.015	0.009	0.016
N177	5G N66	DFT-s-OFDM QPSK	20M	344000	1720	1	1	Right Side	6	15	23	21.59	0.05	0.290	0.150	0.401

5G NR Simultaneous with WiFi

Test No.	Band	Mode	BW	Channel	Frequency (MHz)	RB	off set	Test Position	Ant	SCS Setting	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 1g SAR (W/kg)
N317	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Front Face	4	30	18.7	18.56	-0.06	0.217	0.120	0.224
N318	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Rear Face	4	30	18.7	18.56	-0.17	0.477	0.229	0.493
N319	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Left Side	4	30	18.7	18.56	-0.03	0.126	0.063	0.130
N320	5G N38	DFT-s-OFDM QPSK	20M	516000	2580	25	12	Top Side	4	30	18.7	18.56	0.04	0.562	0.280	0.580
N321	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Front Face	4	30	18.7	18.55	-0.18	0.225	0.123	0.233
N322	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Rear Face	4	30	18.7	18.55	-0.08	0.401	0.194	0.415
N323	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Left Side	4	30	18.7	18.55	-0.11	0.129	0.065	0.134
N324	5G N38	DFT-s-OFDM QPSK	20M	522000	2610	1	50	Top Side	4	30	18.7	18.55	0.12	0.532	0.267	0.551
N326	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Front Face	4	15	18.7	18.53	0.11	0.319	0.171	0.332
N327	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Rear Face	4	15	18.7	18.53	0.01	0.484	0.227	0.503
N328	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Left Side	4	15	18.7	18.53	0.05	0.143	0.069	0.149
N329	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	1	271	Top Side	4	15	18.7	18.53	0.11	0.608	0.288	0.632
N330	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Front Face	4	15	18.7	18.49	0.01	0.326	0.178	0.342
N331	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Rear Face	4	15	18.7	18.49	0.11	0.452	0.216	0.474
N332	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Left Side	4	15	18.7	18.49	-0.01	0.094	0.048	0.099
N333	5G N41	DFT-s-OFDM QPSK	100M	518598	2592.99	1	0	Top Side	4	15	18.7	18.49	-0.01	0.587	0.293	0.616
N334	5G N41	DFT-s-OFDM QPSK	100M	509202	2546.01	135	67	Top Side	4	15	18.7	18.52	0.04	0.552	0.275	0.575
N335	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Front Face	5	15	20.5	20.39	-0.13	0.192	0.115	0.197
N336	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Rear Face	5	15	20.5	20.39	-0.08	0.182	0.105	0.187
N337	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Left Side	5	15	20.5	20.39	-0.03	0.299	0.160	0.307
N338	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	50	25	Top Side	5	15	20.5	20.39	-0.03	0.055	0.032	0.056
N339	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Front Face	5	15	20.5	20.35	-0.05	0.110	0.076	0.114
N340	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Rear Face	5	15	20.5	20.35	0.03	0.177	0.102	0.183
N341	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Left Side	5	15	20.5	20.35	0	0.280	0.149	0.290
N342	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	2	0	Top Side	5	15	20.5	20.35	0.1	0.059	0.034	0.061
N343	5G N66	DFT-s-OFDM QPSK	20M	354000	1770	1	104	Left Side	5	15	20.5	20.27	0.01	0.294	0.158	0.310

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.

8.2.4 SAR MEASUREMENT RESULT OF PRODUCT SPECIFIC 10-G SAR

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

Test No.	Band	Mode	Channel	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
G33	GSM 850	GPRS2TX	190	Front Face	1	0	1	31	29.87	0.066	YES
G34	GSM 850	GPRS2TX	190	Rear Face	1	0	1	31	29.87	0.110	YES
G35	GSM 850	GPRS2TX	190	Left Side	1	0	1	31	29.87	0.050	YES
G36	GSM 850	GPRS2TX	190	Bottom Side	1	0	1	31	29.87	0.065	YES
G38	GSM 850	GPRS2TX	190	Front Face	1	1	1	31.5	30.14	0.085	YES
G39	GSM 850	GPRS2TX	190	Rear Face	1	1	1	31.5	30.14	0.150	YES
G40	GSM 850	GPRS2TX	190	Left Side	1	1	1	31.5	30.14	0.192	YES
G42	GSM 1900	GPRS2TX	661	Front Face	1	3	1	26.5	25.32	0.138	YES
G43	GSM 1900	GPRS2TX	661	Rear Face	1	3	1	26.5	25.32	0.181	YES
G44	GSM 1900	GPRS2TX	661	Right Side	1	3	1	26.5	25.32	0.041	YES
G45	GSM 1900	GPRS2TX	661	Bottom Side	1	3	1	26.5	25.32	0.246	YES
G47	GSM 1900	GPRS2TX	661	Front Face	1	4	1	25.5	24.75	0.0825	YES
G48	GSM 1900	GPRS2TX	661	Rear Face	1	4	1	25.5	24.75	0.138	YES
G49	GSM 1900	GPRS2TX	661	Left Side	1	4	1	25.5	24.75	0.0622	YES
G50	GSM 1900	GPRS2TX	661	Top Side	1	4	1	25.5	24.75	0.262	YES
U49	UMTS B2	RMC12.2K	9400	Front Face	1	3	1	20.5	19.37	0.119	YES
U50	UMTS B2	RMC12.2K	9400	Rear Face	1	3	1	20.5	19.37	0.142	YES
U51	UMTS B2	RMC12.2K	9400	Right Side	1	3	1	20.5	19.37	0.043	YES
U52	UMTS B2	RMC12.2K	9400	Bottom Side	1	3	1	20.5	19.37	0.323	YES
U54	UMTS B2	RMC12.2K	9400	Front Face	1	4	1	20	18.8	0.059	YES
U55	UMTS B2	RMC12.2K	9400	Rear Face	1	4	1	20	18.8	0.118	YES
U56	UMTS B2	RMC12.2K	9400	Left Side	1	4	1	20	18.8	0.052	YES
U57	UMTS B2	RMC12.2K	9400	Top Side	1	4	1	20	18.8	0.195	YES
U59	UMTS B4	RMC12.2K	1413	Front Face	1	3	1	20.5	19.56	0.138	YES
U60	UMTS B4	RMC12.2K	1413	Rear Face	1	3	1	20.5	19.56	0.142	YES
U61	UMTS B4	RMC12.2K	1413	Right Side	1	3	1	20.5	19.56	0.0482	YES
U62	UMTS B4	RMC12.2K	1413	Bottom Side	1	3	1	20.5	19.56	0.218	YES
U64	UMTS B4	RMC12.2K	1413	Front Face	1	4	1	19.5	18.57	0.124	YES
U65	UMTS B4	RMC12.2K	1413	Rear Face	1	4	1	19.5	18.57	0.153	YES
U66	UMTS B4	RMC12.2K	1413	Left Side	1	4	1	19.5	18.57	0.0586	YES
U67	UMTS B4	RMC12.2K	1413	Top Side	1	4	1	19.5	18.57	0.231	YES
U69	UMTS B5	RMC12.2K	4182	Front Face	1	0	1	23	22.18	0.049	YES
U70	UMTS B5	RMC12.2K	4182	Rear Face	1	0	1	23	22.18	0.089	YES
U71	UMTS B5	RMC12.2K	4182	Left Side	1	0	1	23	22.18	0.107	YES
U72	UMTS B5	RMC12.2K	4182	Bottom Side	1	0	1	23	22.18	0.064	YES
U74	UMTS B5	RMC12.2K	4182	Front Face	1	1	1	24.5	23.62	0.099	YES
U75	UMTS B5	RMC12.2K	4182	Rear Face	1	1	1	24.5	23.62	0.201	YES
U76	UMTS B5	RMC12.2K	4182	Left Side	1	1	1	24.5	23.62	0.346	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L421	LTE B2	QPSK20M	18900	1	0	Front Face	1	3	1	21	20.79	0.147	YES
L422	LTE B2	QPSK20M	18900	1	0	Rear Face	1	3	1	21	20.79	0.186	YES
L423	LTE B2	QPSK20M	18900	1	0	Right Side	1	3	1	21	20.79	0.048	YES
L424	LTE B2	QPSK20M	18900	1	0	Bottom Side	1	3	1	21	20.79	0.249	YES
L425	LTE B2	QPSK20M	19100	50	0	Front Face	1	3	1	21	20.78	0.150	YES
L426	LTE B2	QPSK20M	19100	50	0	Rear Face	1	3	1	21	20.78	0.185	YES
L427	LTE B2	QPSK20M	19100	50	0	Right Side	1	3	1	21	20.78	0.049	YES
L428	LTE B2	QPSK20M	19100	50	0	Bottom Side	1	3	1	21	20.78	0.254	YES
L431	LTE B2	QPSK20M	18900	1	0	Front Face	1	4	1	20.5	20.27	0.101	YES
L432	LTE B2	QPSK20M	18900	1	0	Rear Face	1	4	1	20.5	20.27	0.135	YES
L433	LTE B2	QPSK20M	18900	1	0	Left Side	1	4	1	20.5	20.27	0.059	YES
L434	LTE B2	QPSK20M	18900	1	0	Top Side	1	4	1	20.5	20.27	0.187	YES
L435	LTE B2	QPSK20M	18900	50	50	Front Face	1	4	1	20.5	20.18	0.094	YES
L436	LTE B2	QPSK20M	18900	50	50	Rear Face	1	4	1	20.5	20.18	0.124	YES
L437	LTE B2	QPSK20M	18900	50	50	Left Side	1	4	1	20.5	20.18	0.054	YES
L438	LTE B2	QPSK20M	18900	50	50	Top Side	1	4	1	20.5	20.18	0.186	YES
L440	LTE B4	QPSK20M	20050	1	0	Front Face	1	3	1	20	19.86	0.096	YES
L441	LTE B4	QPSK20M	20050	1	0	Rear Face	1	3	1	20	19.86	0.126	YES
L442	LTE B4	QPSK20M	20050	1	0	Right Side	1	3	1	20	19.86	0.043	YES
L443	LTE B4	QPSK20M	20050	1	0	Bottom Side	1	3	1	20	19.86	0.199	YES
L444	LTE B4	QPSK20M	20300	50	0	Front Face	1	3	1	20	19.77	0.117	YES
L445	LTE B4	QPSK20M	20300	50	0	Rear Face	1	3	1	20	19.77	0.131	YES
L446	LTE B4	QPSK20M	20300	50	0	Right Side	1	3	1	20	19.77	0.053	YES
L447	LTE B4	QPSK20M	20300	50	0	Bottom Side	1	3	1	20	19.77	0.252	YES
L450	LTE B4	QPSK20M	20050	1	99	Front Face	1	4	1	20.5	20.37	0.157	YES
L451	LTE B4	QPSK20M	20050	1	99	Rear Face	1	4	1	20.5	20.37	0.152	YES
L452	LTE B4	QPSK20M	20050	1	99	Left Side	1	4	1	20.5	20.37	0.066	YES
L453	LTE B4	QPSK20M	20050	1	99	Top Side	1	4	1	20.5	20.37	0.235	YES
L454	LTE B4	QPSK20M	20175	50	50	Front Face	1	4	1	20.5	20.32	0.155	YES
L455	LTE B4	QPSK20M	20175	50	50	Rear Face	1	4	1	20.5	20.32	0.188	YES
L456	LTE B4	QPSK20M	20175	50	50	Left Side	1	4	1	20.5	20.32	0.073	YES
L457	LTE B4	QPSK20M	20175	50	50	Top Side	1	4	1	20.5	20.32	0.260	YES
L460	LTE B4	QPSK20M	20300	1	50	Front Face	1	5	1	20.3	20.28	0.083	YES
L461	LTE B4	QPSK20M	20300	1	50	Rear Face	1	5	1	20.3	20.28	0.118	YES
L462	LTE B4	QPSK20M	20300	1	50	Left Side	1	5	1	20.3	20.28	0.133	YES
L463	LTE B4	QPSK20M	20300	1	50	Top Side	1	5	1	20.3	20.28	0.063	YES
L464	LTE B4	QPSK20M	20300	50	25	Front Face	1	5	1	20.3	20.19	0.088	YES
L465	LTE B4	QPSK20M	20300	50	25	Rear Face	1	5	1	20.3	20.19	0.120	YES
L466	LTE B4	QPSK20M	20300	50	25	Left Side	1	5	1	20.3	20.19	0.136	YES
L467	LTE B4	QPSK20M	20300	50	25	Top Side	1	5	1	20.3	20.19	0.063	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L469	LTE B5	QPSK10M	20450	1	0	Front Face	1	0	1	23	22.85	0.048	YES
L470	LTE B5	QPSK10M	20450	1	0	Rear Face	1	0	1	23	22.85	0.074	YES
L471	LTE B5	QPSK10M	20450	1	0	Left Side	1	0	1	23	22.85	0.032	YES
L472	LTE B5	QPSK10M	20450	1	0	Bottom Side	1	0	1	23	22.85	0.050	YES
L473	LTE B5	QPSK10M	20450	25	0	Front Face	1	0	1	23	22.73	0.049	YES
L474	LTE B5	QPSK10M	20450	25	0	Rear Face	1	0	1	23	22.73	0.076	YES
L475	LTE B5	QPSK10M	20450	25	0	Left Side	1	0	1	23	22.73	0.034	YES
L476	LTE B5	QPSK10M	20450	25	0	Bottom Side	1	0	1	23	22.73	0.050	YES
L479	LTE B5	QPSK10M	20450	1	0	Front Face	1	1	1	25	24.38	0.124	YES
L480	LTE B5	QPSK10M	20450	1	0	Rear Face	1	1	1	25	24.38	0.160	YES
L481	LTE B5	QPSK10M	20450	1	0	Left Side	1	1	1	25	24.38	0.212	YES
L482	LTE B5	QPSK10M	20525	25	0	Front Face	1	1	1	24	23.45	0.105	YES
L483	LTE B5	QPSK10M	20525	25	0	Rear Face	1	1	1	24	23.45	0.136	YES
L484	LTE B5	QPSK10M	20525	25	0	Left Side	1	1	1	24	23.45	0.181	YES
L486	LTE B7	QPSK20M	21100	1	0	Front Face	1	3	1	19	18.88	0.065	YES
L487	LTE B7	QPSK20M	21100	1	0	Rear Face	1	3	1	19	18.88	0.093	YES
L488	LTE B7	QPSK20M	21100	1	0	Right Side	1	3	1	19	18.88	0.009	YES
L489	LTE B7	QPSK20M	21100	1	0	Bottom Side	1	3	1	19	18.88	0.141	YES
L490	LTE B7	QPSK20M	21350	50	0	Front Face	1	3	1	19	18.79	0.071	YES
L491	LTE B7	QPSK20M	21350	50	0	Rear Face	1	3	1	19	18.79	0.050	YES
L492	LTE B7	QPSK20M	21350	50	0	Right Side	1	3	1	19	18.79	0.011	YES
L493	LTE B7	QPSK20M	21350	50	0	Bottom Side	1	3	1	19	18.79	0.158	YES
L496	LTE B7	QPSK20M	21350	1	99	Front Face	1	4	1	19	18.35	0.103	YES
L497	LTE B7	QPSK20M	21350	1	99	Rear Face	1	4	1	19	18.35	0.127	YES
L498	LTE B7	QPSK20M	21350	1	99	Left Side	1	4	1	19	18.35	0.045	YES
L499	LTE B7	QPSK20M	21350	1	99	Top Side	1	4	1	19	18.35	0.222	YES
L500	LTE B7	QPSK20M	21350	50	0	Front Face	1	4	1	19	18.28	0.108	YES
L501	LTE B7	QPSK20M	21350	50	0	Rear Face	1	4	1	19	18.28	0.116	YES
L502	LTE B7	QPSK20M	21350	50	0	Left Side	1	4	1	19	18.28	0.053	YES
L503	LTE B7	QPSK20M	21350	50	0	Top Side	1	4	1	19	18.28	0.231	YES
L506	LTE B7	QPSK20M	21100	1	99	Front Face	1	5	1	19.1	18.86	0.058	YES
L507	LTE B7	QPSK20M	21100	1	99	Rear Face	1	5	1	19.1	18.86	0.060	YES
L508	LTE B7	QPSK20M	21100	1	99	Left Side	1	5	1	19.1	18.86	0.161	YES
L509	LTE B7	QPSK20M	21100	1	99	Top Side	1	5	1	19.1	18.86	0.013	YES
L510	LTE B7	QPSK20M	21350	50	0	Front Face	1	5	1	19.1	18.79	0.041	YES
L511	LTE B7	QPSK20M	21350	50	0	Rear Face	1	5	1	19.1	18.79	0.070	YES
L512	LTE B7	QPSK20M	21350	50	0	Left Side	1	5	1	19.1	18.79	0.151	YES
L513	LTE B7	QPSK20M	21350	50	0	Top Side	1	5	1	19.1	18.79	0.021	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L515	LTE B12	QPSK10M	23095	1	49	Front Face	1	0	1	23.5	22.89	0.042	YES
L516	LTE B12	QPSK10M	23095	1	49	Rear Face	1	0	1	23.5	22.89	0.093	YES
L517	LTE B12	QPSK10M	23095	1	49	Left Side	1	0	1	23.5	22.89	0.049	YES
L518	LTE B12	QPSK10M	23095	1	49	Bottom Side	1	0	1	23.5	22.89	0.033	YES
L519	LTE B12	QPSK10M	23130	25	0	Front Face	1	0	1	23.5	22.87	0.055	YES
L520	LTE B12	QPSK10M	23130	25	0	Rear Face	1	0	1	23.5	22.87	0.088	YES
L521	LTE B12	QPSK10M	23130	25	0	Left Side	1	0	1	23.5	22.87	0.052	YES
L522	LTE B12	QPSK10M	23130	25	0	Bottom Side	1	0	1	23.5	22.87	0.032	YES
L525	LTE B12	QPSK10M	23130	1	24	Front Face	1	1	1	25	23.98	0.107	YES
L526	LTE B12	QPSK10M	23130	1	24	Rear Face	1	1	1	25	23.98	0.136	YES
L527	LTE B12	QPSK10M	23130	1	24	Left Side	1	1	1	25	23.98	0.179	YES
L528	LTE B12	QPSK10M	23130	25	0	Front Face	1	1	1	24	23.03	0.087	YES
L529	LTE B12	QPSK10M	23130	25	0	Rear Face	1	1	1	24	23.03	0.108	YES
L530	LTE B12	QPSK10M	23130	25	0	Left Side	1	1	1	24	23.03	0.147	YES
L532	LTE B13	QPSK10M	23230	1	0	Front Face	1	0	1	24.5	24.11	0.109	YES
L533	LTE B13	QPSK10M	23230	1	0	Rear Face	1	0	1	24.5	24.11	0.130	YES
L534	LTE B13	QPSK10M	23230	1	0	Left Side	1	0	1	24.5	24.11	0.145	YES
L535	LTE B13	QPSK10M	23230	1	0	Bottom Side	1	0	1	24.5	24.11	0.070	YES
L536	LTE B13	QPSK10M	23230	25	0	Front Face	1	0	1	23.5	23.00	0.083	YES
L537	LTE B13	QPSK10M	23230	25	0	Rear Face	1	0	1	23.5	23.00	0.098	YES
L538	LTE B13	QPSK10M	23230	25	0	Left Side	1	0	1	23.5	23.00	0.108	YES
L539	LTE B13	QPSK10M	23230	25	0	Bottom Side	1	0	1	23.5	23.00	0.054	YES
L542	LTE B13	QPSK10M	23230	1	0	Front Face	1	1	1	25	24.17	0.107	YES
L543	LTE B13	QPSK10M	23230	1	0	Rear Face	1	1	1	25	24.17	0.156	YES
L544	LTE B13	QPSK10M	23230	1	0	Left Side	1	1	1	25	24.17	0.263	YES
L545	LTE B13	QPSK10M	23230	25	0	Front Face	1	1	1	24	23.13	0.083	YES
L546	LTE B13	QPSK10M	23230	25	0	Rear Face	1	1	1	24	23.13	0.120	YES
L547	LTE B13	QPSK10M	23230	25	0	Left Side	1	1	1	24	23.13	0.203	YES
L549	LTE B17	QPSK10M	23800	1	49	Front Face	1	0	1	23.5	22.82	0.028	YES
L550	LTE B17	QPSK10M	23800	1	49	Rear Face	1	0	1	23.5	22.82	0.057	YES
L551	LTE B17	QPSK10M	23800	1	49	Left Side	1	0	1	23.5	22.82	0.035	YES
L552	LTE B17	QPSK10M	23800	1	49	Bottom Side	1	0	1	23.5	22.82	0.031	YES
L553	LTE B17	QPSK10M	23800	25	0	Front Face	1	0	1	23.5	22.79	0.028	YES
L554	LTE B17	QPSK10M	23800	25	0	Rear Face	1	0	1	23.5	22.79	0.052	YES
L555	LTE B17	QPSK10M	23800	25	0	Left Side	1	0	1	23.5	22.79	0.034	YES
L556	LTE B17	QPSK10M	23800	25	0	Bottom Side	1	0	1	23.5	22.79	0.028	YES
L559	LTE B17	QPSK10M	23800	1	49	Front Face	1	1	1	25	23.97	0.100	YES
L560	LTE B17	QPSK10M	23800	1	49	Rear Face	1	1	1	25	23.97	0.131	YES
L561	LTE B17	QPSK10M	23800	1	49	Left Side	1	1	1	25	23.97	0.151	YES
L562	LTE B17	QPSK10M	23800	25	0	Front Face	1	1	1	24	23.04	0.070	YES
L563	LTE B17	QPSK10M	23800	25	0	Rear Face	1	1	1	24	23.04	0.094	YES
L564	LTE B17	QPSK10M	23800	25	0	Left Side	1	1	1	24	23.04	0.105	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L566	LTE B26	QPSK15M	26965	1	74	Front Face	1	0	1	24	23.70	0.075	YES
L567	LTE B26	QPSK15M	26965	1	74	Rear Face	1	0	1	24	23.70	0.106	YES
L568	LTE B26	QPSK15M	26965	1	74	Left Side	1	0	1	24	23.70	0.110	YES
L569	LTE B26	QPSK15M	26965	1	74	Bottom Side	1	0	1	24	23.70	0.085	YES
L570	LTE B26	QPSK15M	26765	36	0	Front Face	1	0	1	23	22.69	0.037	YES
L571	LTE B26	QPSK15M	26765	36	0	Rear Face	1	0	1	23	22.69	0.054	YES
L572	LTE B26	QPSK15M	26765	36	0	Left Side	1	0	1	23	22.69	0.049	YES
L573	LTE B26	QPSK15M	26765	36	0	Bottom Side	1	0	1	23	22.69	0.047	YES
L576	LTE B26	QPSK15M	26865	1	0	Front Face	1	1	1	24.5	23.66	0.090	YES
L577	LTE B26	QPSK15M	26865	1	0	Rear Face	1	1	1	24.5	23.66	0.127	YES
L578	LTE B26	QPSK15M	26865	1	0	Left Side	1	1	1	24.5	23.66	0.188	YES
L579	LTE B26	QPSK15M	26865	36	0	Front Face	1	1	1	23.5	23.34	0.077	YES
L580	LTE B26	QPSK15M	26865	36	0	Rear Face	1	1	1	23.5	23.34	0.107	YES
L581	LTE B26	QPSK15M	26865	36	0	Left Side	1	1	1	23.5	23.34	0.161	YES
L583	LTE B38	QPSK20M	37850	1	99	Front Face	1	3	1	21	20.84	0.017	YES
L584	LTE B38	QPSK20M	37850	1	99	Rear Face	1	3	1	21	20.84	0.021	YES
L585	LTE B38	QPSK20M	37850	1	99	Right Side	1	3	1	21	20.84	0.010	YES
L586	LTE B38	QPSK20M	37850	1	99	Bottom Side	1	3	1	21	20.84	0.179	YES
L587	LTE B38	QPSK20M	37850	50	50	Front Face	1	3	1	21	20.74	0.019	YES
L588	LTE B38	QPSK20M	37850	50	50	Rear Face	1	3	1	21	20.74	0.025	YES
L589	LTE B38	QPSK20M	37850	50	50	Right Side	1	3	1	21	20.74	0.011	YES
L590	LTE B38	QPSK20M	37850	50	50	Bottom Side	1	3	1	21	20.74	0.183	YES
L593	LTE B38	QPSK20M	37850	1	99	Front Face	1	4	1	20.5	19.91	0.088	YES
L594	LTE B38	QPSK20M	37850	1	99	Rear Face	1	4	1	20.5	19.91	0.111	YES
L595	LTE B38	QPSK20M	37850	1	99	Left Side	1	4	1	20.5	19.91	0.027	YES
L596	LTE B38	QPSK20M	37850	1	99	Top Side	1	4	1	20.5	19.91	0.180	YES
L597	LTE B38	QPSK20M	38000	50	0	Front Face	1	4	1	20.5	19.89	0.089	YES
L598	LTE B38	QPSK20M	38000	50	0	Rear Face	1	4	1	20.5	19.89	0.120	YES
L599	LTE B38	QPSK20M	38000	50	0	Left Side	1	4	1	20.5	19.89	0.027	YES
L600	LTE B38	QPSK20M	38000	50	0	Top Side	1	4	1	20.5	19.89	0.189	YES
L603	LTE B38	QPSK20M	38000	1	50	Front Face	1	5	1	21	20.98	0.055	YES
L604	LTE B38	QPSK20M	38000	1	50	Rear Face	1	5	1	21	20.98	0.094	YES
L605	LTE B38	QPSK20M	38000	1	50	Left Side	1	5	1	21	20.98	0.135	YES
L606	LTE B38	QPSK20M	38000	1	50	Top Side	1	5	1	21	20.98	0.027	YES
L607	LTE B38	QPSK20M	38000	50	25	Front Face	1	5	1	21	20.92	0.060	YES
L608	LTE B38	QPSK20M	38000	50	25	Rear Face	1	5	1	21	20.92	0.085	YES
L609	LTE B38	QPSK20M	38000	50	25	Left Side	1	5	1	21	20.92	0.136	YES
L610	LTE B38	QPSK20M	38000	50	25	Top Side	1	5	1	21	20.92	0.024	YES
L612	LTE B41	QPSK20M	39750	1	99	Front Face	1	3	1	21	20.78	0.064	YES
L613	LTE B41	QPSK20M	39750	1	99	Rear Face	1	3	1	21	20.78	0.098	YES
L614	LTE B41	QPSK20M	39750	1	99	Right Side	1	3	1	21	20.78	0.006	YES
L615	LTE B41	QPSK20M	39750	1	99	Bottom Side	1	3	1	21	20.78	0.165	YES
L616	LTE B41	QPSK20M	41490	50	0	Front Face	1	3	1	21	20.73	0.074	YES
L617	LTE B41	QPSK20M	41490	50	0	Rear Face	1	3	1	21	20.73	0.107	YES
L618	LTE B41	QPSK20M	41490	50	0	Right Side	1	3	1	21	20.73	0.009	YES
L619	LTE B41	QPSK20M	41490	50	0	Bottom Side	1	3	1	21	20.73	0.189	YES

Test No.	Band	Mode	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	SIM	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
L622	LTE B41	QPSK20M	40620	1	50	Front Face	1	4	1	20.5	19.66	0.088	YES
L623	LTE B41	QPSK20M	40620	1	50	Rear Face	1	4	1	20.5	19.66	0.114	YES
L624	LTE B41	QPSK20M	40620	1	50	Left Side	1	4	1	20.5	19.66	0.026	YES
L625	LTE B41	QPSK20M	40620	1	50	Top Side	1	4	1	20.5	19.66	0.197	YES
L626	LTE B41	QPSK20M	40620	50	0	Front Face	1	4	1	20.5	19.64	0.086	YES
L627	LTE B41	QPSK20M	40620	50	0	Rear Face	1	4	1	20.5	19.64	0.113	YES
L628	LTE B41	QPSK20M	40620	50	0	Left Side	1	4	1	20.5	19.64	0.026	YES
L629	LTE B41	QPSK20M	40620	50	0	Top Side	1	4	1	20.5	19.64	0.194	YES
L632	LTE B41	QPSK20M	40620	1	50	Front Face	1	5	1	20.5	20.38	0.050	YES
L633	LTE B41	QPSK20M	40620	1	50	Rear Face	1	5	1	20.5	20.38	0.080	YES
L634	LTE B41	QPSK20M	40620	1	50	Left Side	1	5	1	20.5	20.38	0.113	YES
L635	LTE B41	QPSK20M	40620	1	50	Top Side	1	5	1	20.5	20.38	0.028	YES
L636	LTE B41	QPSK20M	40620	50	0	Front Face	1	5	1	20.5	20.28	0.047	YES
L637	LTE B41	QPSK20M	40620	50	0	Rear Face	1	5	1	20.5	20.28	0.076	YES
L638	LTE B41	QPSK20M	40620	50	0	Left Side	1	5	1	20.5	20.28	0.113	YES
L639	LTE B41	QPSK20M	40620	50	0	Top Side	1	5	1	20.5	20.28	0.027	YES
L641	LTE B66	QPSK20M	132572	1	99	Front Face	1	3	1	22.5	22.18	0.188	YES
L642	LTE B66	QPSK20M	132572	1	99	Rear Face	1	3	1	22.5	22.18	0.204	YES
L643	LTE B66	QPSK20M	132572	1	99	Right Side	1	3	1	22.5	22.18	0.105	YES
L644	LTE B66	QPSK20M	132572	1	99	Bottom Side	1	3	1	22.5	22.18	0.351	YES
L645	LTE B66	QPSK20M	132322	50	0	Front Face	1	3	1	22.5	22.07	0.192	YES
L646	LTE B66	QPSK20M	132322	50	0	Rear Face	1	3	1	22.5	22.07	0.206	YES
L647	LTE B66	QPSK20M	132322	50	0	Right Side	1	3	1	22.5	22.07	0.085	YES
L648	LTE B66	QPSK20M	132322	50	0	Bottom Side	1	3	1	22.5	22.07	0.387	YES
L651	LTE B66	QPSK20M	132072	1	99	Front Face	1	4	1	22	21.86	0.057	YES
L652	LTE B66	QPSK20M	132072	1	99	Rear Face	1	4	1	22	21.86	0.330	YES
L653	LTE B66	QPSK20M	132072	1	99	Left Side	1	4	1	22	21.86	0.021	YES
L654	LTE B66	QPSK20M	132072	1	99	Top Side	1	4	1	22	21.86	0.074	YES
L655	LTE B66	QPSK20M	132572	50	25	Front Face	1	4	1	22	21.73	0.073	YES
L656	LTE B66	QPSK20M	132572	50	25	Rear Face	1	4	1	22	21.73	0.357	YES
L657	LTE B66	QPSK20M	132572	50	25	Left Side	1	4	1	22	21.73	0.020	YES
L658	LTE B66	QPSK20M	132572	50	25	Top Side	1	4	1	22	21.73	0.073	YES
L661	LTE B66	QPSK20M	132572	1	50	Front Face	1	5	1	21.8	21.78	0.052	YES
L662	LTE B66	QPSK20M	132572	1	50	Rear Face	1	5	1	21.8	21.78	0.224	YES
L663	LTE B66	QPSK20M	132572	1	50	Left Side	1	5	1	21.8	21.78	0.069	YES
L664	LTE B66	QPSK20M	132572	1	50	Top Side	1	5	1	21.8	21.78	0.021	YES
L665	LTE B66	QPSK20M	132572	50	25	Front Face	1	5	1	21.8	21.77	0.055	YES
L666	LTE B66	QPSK20M	132572	50	25	Rear Face	1	5	1	21.8	21.77	0.236	YES
L667	LTE B66	QPSK20M	132572	50	25	Left Side	1	5	1	21.8	21.77	0.072	YES
L668	LTE B66	QPSK20M	132572	50	25	Top Side	1	5	1	21.8	21.77	0.021	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N1	5G N5	DFT-s-OFDM QPSK	20M	166800	50	25	Front Face	1	0	24.5	23.52	0.068	YES
N2	5G N5	DFT-s-OFDM QPSK	20M	166800	50	25	Rear Face	1	0	24.5	23.52	0.113	YES
N3	5G N5	DFT-s-OFDM QPSK	20M	166800	50	25	Left Side	1	0	24.5	23.52	0.084	YES
N4	5G N5	DFT-s-OFDM QPSK	20M	166800	50	25	Bottom Side	1	0	24.5	23.52	0.072	YES
N5	5G N5	DFT-s-OFDM QPSK	20M	166800	2	0	Front Face	1	0	23.5	23.42	0.055	YES
N6	5G N5	DFT-s-OFDM QPSK	20M	166800	2	0	Rear Face	1	0	23.5	23.42	0.094	YES
N7	5G N5	DFT-s-OFDM QPSK	20M	166800	2	0	Left Side	1	0	23.5	23.42	0.043	YES
N8	5G N5	DFT-s-OFDM QPSK	20M	166800	2	0	Bottom Side	1	0	23.5	23.42	0.082	YES
N9	5G N5	DFT-s-OFDM QPSK	20M	167800	1	104	Rear Face	1	0	24.5	23.36	0.123	YES
N11	5G N5	DFT-s-OFDM QPSK	20M	167300	50	25	Front Face	1	1	25	23.88	0.128	YES
N12	5G N5	DFT-s-OFDM QPSK	20M	167300	50	25	Rear Face	1	1	25	23.88	0.177	YES
N13	5G N5	DFT-s-OFDM QPSK	20M	167300	50	25	Left Side	1	1	25	23.88	0.261	YES
N14	5G N5	DFT-s-OFDM QPSK	20M	167800	100	0	Front Face	1	1	24	23.87	0.128	YES
N15	5G N5	DFT-s-OFDM QPSK	20M	167800	100	0	Rear Face	1	1	24	23.87	0.174	YES
N16	5G N5	DFT-s-OFDM QPSK	20M	167800	100	0	Left Side	1	1	24	23.87	0.213	YES
N17	5G N5	DFT-s-OFDM QPSK	20M	167800	1	104	Left Side	1	1	25	23.75	0.205	YES
N19	5G N7	DFT-s-OFDM QPSK	20M	507000	1	1	Front Face	1	3	18.2	18.18	0.022	YES
N20	5G N7	DFT-s-OFDM QPSK	20M	507000	1	1	Rear Face	1	3	18.2	18.18	0.042	YES
N21	5G N7	DFT-s-OFDM QPSK	20M	507000	1	1	Right Side	1	3	18.2	18.18	0.008	YES
N22	5G N7	DFT-s-OFDM QPSK	20M	507000	1	1	Bottom Side	1	3	18.2	18.18	0.183	YES
N23	5G N7	DFT-s-OFDM QPSK	20M	507000	100	0	Front Face	1	3	18.2	17.85	0.022	YES
N24	5G N7	DFT-s-OFDM QPSK	20M	507000	100	0	Rear Face	1	3	18.2	17.85	0.043	YES
N25	5G N7	DFT-s-OFDM QPSK	20M	507000	100	0	Right Side	1	3	18.2	17.85	0.010	YES
N26	5G N7	DFT-s-OFDM QPSK	20M	507000	100	0	Bottom Side	1	3	18.2	17.85	0.204	YES
N27	5G N7	DFT-s-OFDM QPSK	20M	507000	1	104	Bottom Side	1	3	18.2	18.17	0.197	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N29	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Front Face	1	4	19.7	19.63	0.188	YES
N30	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Rear Face	1	4	19.7	19.63	0.218	YES
N31	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Left Side	1	4	19.7	19.63	0.040	YES
N32	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Top Side	1	4	19.7	19.63	0.212	YES
N33	5G N7	DFT-s-OFDM QPSK	20M	512000	1	105	Front Face	1	4	19.7	19.59	0.195	YES
N34	5G N7	DFT-s-OFDM QPSK	20M	512000	1	105	Rear Face	1	4	19.7	19.59	0.224	YES
N35	5G N7	DFT-s-OFDM QPSK	20M	512000	1	105	Left Side	1	4	19.7	19.59	0.054	YES
N36	5G N7	DFT-s-OFDM QPSK	20M	512000	1	105	Top Side	1	4	19.7	19.59	0.220	YES
N37	5G N7	DFT-s-OFDM QPSK	20M	502000	1	1	Rear Face	1	4	19.7	19.59	0.190	YES
N39	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Front Face	1	5	20.7	20.63	0.041	YES
N40	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Rear Face	1	5	20.7	20.63	0.117	YES
N41	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Left Side	1	5	20.7	20.63	0.120	YES
N42	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Top Side	1	5	20.7	20.63	0.017	YES
N43	5G N7	DFT-s-OFDM QPSK	20M	502000	100	0	Front Face	1	5	20.7	20.62	0.040	YES
N44	5G N7	DFT-s-OFDM QPSK	20M	502000	100	0	Rear Face	1	5	20.7	20.62	0.093	YES
N45	5G N7	DFT-s-OFDM QPSK	20M	502000	100	0	Left Side	1	5	20.7	20.62	0.102	YES
N46	5G N7	DFT-s-OFDM QPSK	20M	502000	100	0	Top Side	1	5	20.7	20.62	0.012	YES
N47	5G N7	DFT-s-OFDM QPSK	20M	502000	1	1	Left Side	1	5	20.7	20.58	0.093	YES
N49	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Front Face	1	6	18.2	18.15	0.048	YES
N50	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Rear Face	1	6	18.2	18.15	0.043	YES
N51	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Right Side	1	6	18.2	18.15	0.078	YES
N52	5G N7	DFT-s-OFDM QPSK	20M	507000	50	25	Top Side	1	6	18.2	18.15	0.016	YES
N53	5G N7	DFT-s-OFDM QPSK	20M	507000	2	0	Front Face	1	6	18.2	18.05	0.046	YES
N54	5G N7	DFT-s-OFDM QPSK	20M	507000	2	0	Rear Face	1	6	18.2	18.05	0.042	YES
N55	5G N7	DFT-s-OFDM QPSK	20M	507000	2	0	Right Side	1	6	18.2	18.05	0.069	YES
N56	5G N7	DFT-s-OFDM QPSK	20M	507000	2	0	Top Side	1	6	18.2	18.05	0.012	YES
N57	5G N7	DFT-s-OFDM QPSK	20M	502000	1	1	Right Side	1	6	18.2	18.14	0.074	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N59	5G N38	DFT-s-OFDM QPSK	20M	519000	25	12	Front Face	1	3	19.2	19.17	0.025	YES
N60	5G N38	DFT-s-OFDM QPSK	20M	519000	25	12	Rear Face	1	3	19.2	19.17	0.026	YES
N61	5G N38	DFT-s-OFDM QPSK	20M	519000	25	12	Right Side	1	3	19.2	19.17	0.006	YES
N62	5G N38	DFT-s-OFDM QPSK	20M	519000	25	12	Bottom Side	1	3	19.2	19.17	0.220	YES
N63	5G N38	DFT-s-OFDM QPSK	20M	519000	2	0	Front Face	1	3	19.2	19.11	0.020	YES
N64	5G N38	DFT-s-OFDM QPSK	20M	519000	2	0	Rear Face	1	3	19.2	19.11	0.028	YES
N65	5G N38	DFT-s-OFDM QPSK	20M	519000	2	0	Right Side	1	3	19.2	19.11	0.005	YES
N66	5G N38	DFT-s-OFDM QPSK	20M	519000	2	0	Bottom Side	1	3	19.2	19.11	0.211	YES
N67	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Bottom Side	1	3	19.2	19.05	0.202	YES
N69	5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Front Face	1	4	20.7	20.54	0.182	YES
N70	5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Rear Face	1	4	20.7	20.54	0.327	YES
N71	5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Left Side	1	4	20.7	20.54	0.092	YES
N72	5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Top Side	1	4	20.7	20.54	0.360	YES
N73	5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Front Face	1	4	20.7	20.53	0.258	YES
N74	5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Rear Face	1	4	20.7	20.53	0.309	YES
N75	5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Left Side	1	4	20.7	20.53	0.074	YES
N76	5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Top Side	1	4	20.7	20.53	0.421	YES
N77	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Top Side	1	4	20.7	20.34	0.409	YES
N79	5G N38	DFT-s-OFDM QPSK	20M	522000	25	12	Front Face	1	5	19.2	19.05	0.0537	YES
N80	5G N38	DFT-s-OFDM QPSK	20M	522000	25	12	Rear Face	1	5	19.2	19.05	0.161	YES
N81	5G N38	DFT-s-OFDM QPSK	20M	522000	25	12	Left Side	1	5	19.2	19.05	0.165	YES
N82	5G N38	DFT-s-OFDM QPSK	20M	522000	25	12	Top Side	1	5	19.2	19.05	0.0284	YES
N83	5G N38	DFT-s-OFDM QPSK	20M	522000	50	0	Front Face	1	5	19.2	19.03	0.0539	YES
N84	5G N38	DFT-s-OFDM QPSK	20M	522000	50	0	Rear Face	1	5	19.2	19.03	0.162	YES
N85	5G N38	DFT-s-OFDM QPSK	20M	522000	50	0	Left Side	1	5	19.2	19.03	0.168	YES
N86	5G N38	DFT-s-OFDM QPSK	20M	522000	50	0	Top Side	1	5	19.2	19.03	0.0306	YES
N87	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Left Side	1	5	19.2	18.91	0.136	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N89	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Front Face	1	6	19.2	19.18	0.057	YES
N90	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Rear Face	1	6	19.2	19.18	0.067	YES
N91	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Right Side	1	6	19.2	19.18	0.199	YES
N92	5G N38	DFT-s-OFDM QPSK	20M	519000	1	1	Top Side	1	6	19.2	19.18	0.012	YES
N93	5G N38	DFT-s-OFDM QPSK	20M	516000	50	0	Front Face	1	6	19.2	19.05	0.054	YES
N94	5G N38	DFT-s-OFDM QPSK	20M	516000	50	0	Rear Face	1	6	19.2	19.05	0.066	YES
N95	5G N38	DFT-s-OFDM QPSK	20M	516000	50	0	Right Side	1	6	19.2	19.05	0.183	YES
N96	5G N38	DFT-s-OFDM QPSK	20M	516000	50	0	Top Side	1	6	19.2	19.05	0.015	YES
N97	5G N38	DFT-s-OFDM QPSK	20M	516000	1	49	Right Side	1	6	19.2	19.15	0.191	YES
N99	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Front Face	1	3	19.2	19.18	0.066	YES
N100	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Rear Face	1	3	19.2	19.18	0.043	YES
N101	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Right Side	1	3	19.2	19.18	0.019	YES
N102	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Bottom Side	1	3	19.2	19.18	0.231	YES
N103	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Front Face	1	3	19.2	19.08	0.077	YES
N104	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Rear Face	1	3	19.2	19.08	0.051	YES
N105	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Right Side	1	3	19.2	19.08	0.016	YES
N106	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Bottom Side	1	3	19.2	19.08	0.270	YES
N107	5G N41	DFT-s-OFDM QPSK	100M	528000	135	67	Bottom Side	1	3	19.2	19.17	0.161	YES
N109	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Front Face	1	4	20.7	20.66	0.276	YES
N110	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Rear Face	1	4	20.7	20.66	0.361	YES
N111	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Left Side	1	4	20.7	20.66	0.108	YES
N112	5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Top Side	1	4	20.7	20.66	0.469	YES
N113	5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Front Face	1	4	20.7	20.51	0.226	YES
N114	5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Rear Face	1	4	20.7	20.51	0.272	YES
N115	5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Left Side	1	4	20.7	20.51	0.059	YES
N116	5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Top Side	1	4	20.7	20.51	0.445	YES
N117	5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Top Side	1	4	20.7	20.64	0.526	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N119	5G N41	DFT-s-OFDM QPSK	100M	528000	135	67	Front Face	1	5	19.5	19.46	0.101	YES
N120	5G N41	DFT-s-OFDM QPSK	100M	528000	135	67	Rear Face	1	5	19.5	19.46	0.232	YES
N121	5G N41	DFT-s-OFDM QPSK	100M	528000	135	67	Left Side	1	5	19.5	19.46	0.248	YES
N122	5G N41	DFT-s-OFDM QPSK	100M	528000	135	67	Top Side	1	5	19.5	19.46	0.084	YES
N123	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Front Face	1	5	19.5	19.43	0.051	YES
N124	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Rear Face	1	5	19.5	19.43	0.112	YES
N125	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Left Side	1	5	19.5	19.43	0.147	YES
N126	5G N41	DFT-s-OFDM QPSK	100M	518598	2	0	Top Side	1	5	19.5	19.43	0.018	YES
N127	5G N41	DFT-s-OFDM QPSK	100M	509202	1	1	Left Side	1	5	19.5	19.44	0.083	YES
N129	5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Front Face	1	6	19.2	19.4	0.092	YES
N130	5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Rear Face	1	6	19.2	19.4	0.114	YES
N131	5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Right Side	1	6	19.2	19.4	0.250	YES
N132	5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Top Side	1	6	19.2	19.4	0.025	YES
N133	5G N41	DFT-s-OFDM QPSK	100M	509202	270	0	Front Face	1	6	19.2	19.25	0.070	YES
N134	5G N41	DFT-s-OFDM QPSK	100M	509202	270	0	Rear Face	1	6	19.2	19.25	0.119	YES
N135	5G N41	DFT-s-OFDM QPSK	100M	509202	270	0	Right Side	1	6	19.2	19.25	0.201	YES
N136	5G N41	DFT-s-OFDM QPSK	100M	509202	270	0	Top Side	1	6	19.2	19.25	0.019	YES
N137	5G N41	DFT-s-OFDM QPSK	100M	518598	1	271	Right Side	1	6	19.2	19.35	0.085	YES
N139	5G N66	DFT-s-OFDM QPSK	20M	349000	50	25	Front Face	1	3	23.7	23.03	0.245	YES
N140	5G N66	DFT-s-OFDM QPSK	20M	349000	50	25	Rear Face	1	3	23.7	23.03	0.232	YES
N141	5G N66	DFT-s-OFDM QPSK	20M	349000	50	25	Right Side	1	3	23.7	23.03	0.105	YES
N142	5G N66	DFT-s-OFDM QPSK	20M	349000	50	25	Bottom Side	1	3	23.7	23.03	0.466	YES
N143	5G N66	DFT-s-OFDM QPSK	20M	349000	100	0	Front Face	1	3	23.7	22.63	0.244	YES
N144	5G N66	DFT-s-OFDM QPSK	20M	349000	100	0	Rear Face	1	3	23.7	22.63	0.212	YES
N145	5G N66	DFT-s-OFDM QPSK	20M	349000	100	0	Right Side	1	3	23.7	22.63	0.105	YES
N146	5G N66	DFT-s-OFDM QPSK	20M	349000	100	0	Bottom Side	1	3	23.7	22.63	0.403	YES
N147	5G N66	DFT-s-OFDM QPSK	20M	349000	1	104	Bottom Side	1	3	23.7	22.85	0.451	YES

Test No.	Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
N149	5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Front Face	1	4	19.5	19.43	0.117	YES
N150	5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Rear Face	1	4	19.5	19.43	0.256	YES
N151	5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Left Side	1	4	19.5	19.43	0.047	YES
N152	5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Top Side	1	4	19.5	19.43	0.305	YES
N153	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Front Face	1	4	19.5	19.35	0.096	YES
N154	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Rear Face	1	4	19.5	19.35	0.208	YES
N155	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Left Side	1	4	19.5	19.35	0.044	YES
N156	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Top Side	1	4	19.5	19.35	0.189	YES
N157	5G N66	DFT-s-OFDM QPSK	20M	354000	1	1	Top Side	1	4	19.5	19.4	0.242	YES
N159	5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Front Face	1	5	23.5	22.55	0.142	YES
N160	5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Rear Face	1	5	23.5	22.55	0.266	YES
N161	5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Left Side	1	5	23.5	22.55	0.287	YES
N162	5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Top Side	1	5	23.5	22.55	0.085	YES
N163	5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Front Face	1	5	22.5	22.43	0.095	YES
N164	5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Rear Face	1	5	22.5	22.43	0.259	YES
N165	5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Left Side	1	5	22.5	22.43	0.236	YES
N166	5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Top Side	1	5	22.5	22.43	0.065	YES
N167	5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Left Side	1	5	23.5	22.42	0.285	YES
N169	5G N66	DFT-s-OFDM QPSK	20M	344000	50	25	Front Face	1	6	23	21.75	0.051	YES
N170	5G N66	DFT-s-OFDM QPSK	20M	344000	50	25	Rear Face	1	6	23	21.75	0.092	YES
N171	5G N66	DFT-s-OFDM QPSK	20M	344000	50	25	Right Side	1	6	23	21.75	0.172	YES
N172	5G N66	DFT-s-OFDM QPSK	20M	344000	50	25	Top Side	1	6	23	21.75	0.009	YES
N173	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Front Face	1	6	22	21.62	0.052	YES
N174	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Rear Face	1	6	22	21.62	0.093	YES
N175	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Right Side	1	6	22	21.62	0.137	YES
N176	5G N66	DFT-s-OFDM QPSK	20M	344000	100	0	Top Side	1	6	22	21.62	0.009	YES
N177	5G N66	DFT-s-OFDM QPSK	20M	344000	1	1	Right Side	1	6	23	21.59	0.150	YES

Band	Mode	BW	Channel	RB	offset	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Front Face	1	4	18.7	18.56	0.120	YES
5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Rear Face	1	4	18.7	18.56	0.229	YES
5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Left Side	1	4	18.7	18.56	0.063	YES
5G N38	DFT-s-OFDM QPSK	20M	516000	25	12	Top Side	1	4	18.7	18.56	0.280	YES
5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Front Face	1	4	18.7	18.55	0.123	YES
5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Rear Face	1	4	18.7	18.55	0.194	YES
5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Left Side	1	4	18.7	18.55	0.065	YES
5G N38	DFT-s-OFDM QPSK	20M	522000	1	50	Top Side	1	4	18.7	18.55	0.267	YES
5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Front Face	1	4	18.7	18.53	0.171	YES
5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Rear Face	1	4	18.7	18.53	0.227	YES
5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Left Side	1	4	18.7	18.53	0.069	YES
5G N41	DFT-s-OFDM QPSK	100M	509202	1	271	Top Side	1	4	18.7	18.53	0.288	YES
5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Front Face	1	4	18.7	18.49	0.178	YES
5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Rear Face	1	4	18.7	18.49	0.216	YES
5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Left Side	1	4	18.7	18.49	0.048	YES
5G N41	DFT-s-OFDM QPSK	100M	518598	1	0	Top Side	1	4	18.7	18.49	0.293	YES
5G N41	DFT-s-OFDM QPSK	100M	509202	135	67	Top Side	1	4	18.7	18.52	0.275	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Front Face	1	5	20.5	20.39	0.115	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Rear Face	1	5	20.5	20.39	0.105	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Left Side	1	5	20.5	20.39	0.160	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	50	25	Top Side	1	5	20.5	20.39	0.032	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Front Face	1	5	20.5	20.35	0.076	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Rear Face	1	5	20.5	20.35	0.102	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Left Side	1	5	20.5	20.35	0.149	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	2	0	Top Side	1	5	20.5	20.35	0.034	YES
5G N66	DFT-s-OFDM QPSK	20M	354000	1	104	Left Side	1	5	20.5	20.27	0.158	YES

Product specific 10-g SAR test results of WiFi

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
	802.11b	1	Front Face	1	8	17	16.82	0.095	YES
	802.11b	1	Rear Face	1	8	17	16.82	0.068	YES
	802.11b	1	Right Side	1	8	17	16.82	0.046	YES
25	802.11b	1	Top Side	1	8	17	16.82	0.107	YES
	802.11b	6	Front Face	1	2	17	16.78	0.008	YES
	802.11b	6	Rear Face	1	2	17	16.78	0.010	YES
26	802.11b	6	Right Side	1	2	17	16.78	0.019	YES
	802.11b	6	Top Side	1	2	17	16.78	0.004	YES
	802.11ac VHT80	42	Front Face	1	7	16	15.78	0.038	YES
	802.11ac VHT80	42	Rear Face	1	7	16	15.78	0.101	YES
	802.11ac VHT80	42	Right Side	1	7	16	15.78	0.012	YES
28	802.11ac VHT80	42	Top Side	1	7	16	15.78	0.175	YES
	802.11ac VHT80	42	Front Face	1	9	16	15.75	0.017	YES
29	802.11ac VHT80	42	Rear Face	1	9	16	15.75	0.089	YES
	802.11ac VHT80	42	Left Side	1	9	16	15.75	0.070	YES
	802.11ac VHT80	42	Top Side	1	9	16	15.75	0.033	YES
	802.11ac VHT80	155	Front Face	1	7	17	16.89	0.049	YES
	802.11ac VHT80	155	Rear Face	1	7	17	16.89	0.112	YES
	802.11ac VHT80	155	Right Side	1	7	17	16.89	0.025	YES
34	802.11ac VHT80	155	Top Side	1	7	17	16.89	0.194	YES
	802.11ac VHT80	155	Front Face	1	9	17	16.83	0.036	YES
	802.11ac VHT80	155	Rear Face	1	9	17	16.83	0.048	YES
35	802.11ac VHT80	155	Left Side	1	9	17	16.83	0.086	YES
	802.11ac VHT80	155	Top Side	1	9	17	16.83	0.028	YES

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Ant	Maximum Tune-up (dBm)	Conducted Power (dBm)	SAR 10g (W/kg)	Product Specific 10-g SAR Exclusion
	802.11ac VHT80	155	Front Face	1	7	16	15.84	0.038	YES
	802.11ac VHT80	155	Rear Face	1	7	16	15.84	0.094	YES
	802.11ac VHT80	155	Right Side	1	7	16	15.84	0.022	YES
36	802.11ac VHT80	155	Top Side	1	7	16	15.84	0.157	YES

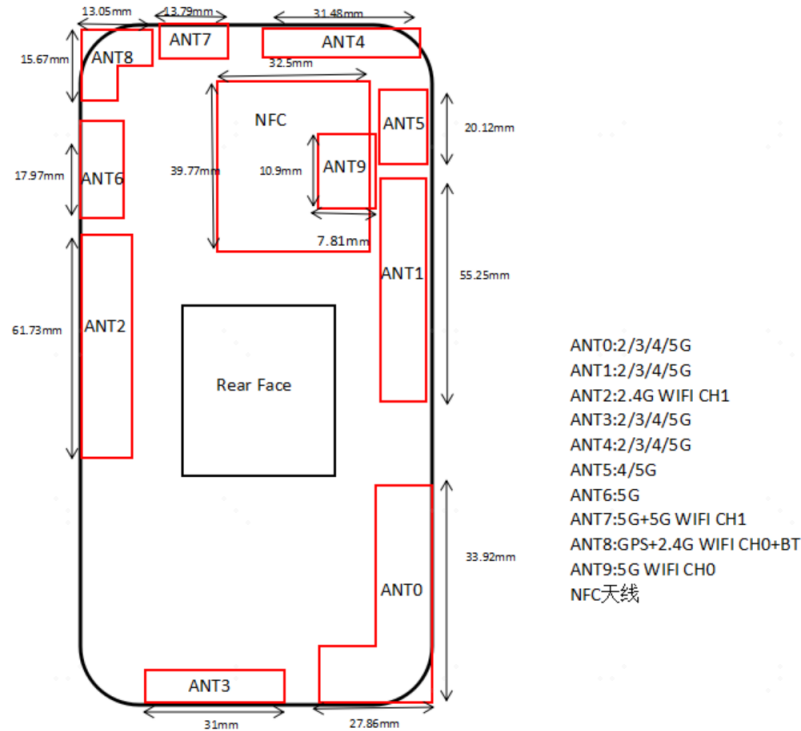
Note: The value with boldface is the maximum SAR Value of each test band.

9. SIMULTANEOUS TRANSMISSION CONDITIONS

9.1 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 as below:



9.2 STAND-ALONE SAR TEST EXCLUSION

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/5G NR + 2.4G WIFI	Yes	Yes	Yes	Yes
2	GSM/UMTS/LTE/5G NR + 5G WIFI	Yes	Yes	Yes	Yes
3	GSM/UMTS/LTE/5G NR + BT	Yes	Yes	No	Yes
4	LTE + 5G NR	Yes	Yes	Yes	Yes
5	LTE + 5G NR + 2.4G WIFI	Yes	Yes	Yes	Yes
6	LTE + 5G NR + 5G WIFI	Yes	Yes	No	Yes
7	LTE + 5G NR + BT	Yes	Yes	No	Yes

9.3 SIMULTANEOUS TRANSMISSION CONDITIONS

KDB 447498 D01 General RF Exposure Guidance v06, introduces a new formula for calculating the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / R_i$$

Where:

SAR₁ is the highest Reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest Reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

R_i is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$

A new threshold of 0.04 is also introduced in the KDB. Thus, in order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04$$

9.4 SAR SUMMATION SCENARIO

The MAX $\sum SAR_{1g}$ for Head & Body & Hotspot is under the 1.6 W/Kg, the MAX $\sum SAR_{10g}$ for Product Specific 10-g is under the 4 W/Kg.

Head: 1.497 W/Kg

Body: 1.484 W/Kg

Hotspot: 1.482 W/Kg

Product Specific 10-g: 1.567 W/Kg

The detail calculations refer to Appendix F.

APPENDIX

1. TEST LAYOUT

Specific Absorption Rate Test Layout



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

HSL_600MHz-10000MHz_Body_19.2cm HSL_600MHz-10000MHz_Head_15.7cm



Appendix A. SAR Plots of System Verification

(Pls See BTL-FCC SAR-1-2208G029_Appendix A.)

Appendix B. SAR Plots of SAR Measurement

(Pls See BTL-FCC SAR-1-2208G029_Appendix B.)

Appendix C. Calibration Certificate

(Pls See BTL-FCC SAR-1-2208G029_Appendix C.)

Appendix D. Photographs of the Test Set-Up

(Pls See BTL-FCC SAR-1-2208G029_Appendix D.)

Appendix E. Conducted Power Measurement Result

(Pls See BTL-FCC SAR-1-2208G029_Appendix E.)

Appendix F. Simultaneous Transmission SAR Calculation

(Pls See BTL-FCC SAR-1-2208G029_Appendix F.)

End of Test Report