FCC SAR Test Report

APPLICANT	: Realme Chongqing Mobile Telecommunications Corp., Ltd.
EQUIPMENT	: Mobile Phone
BRAND NAME	: realme
MODEL NAME	: RMX3997
FCC ID	: 2AUYFRMX3997
STANDARD	: FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

Approved by: Si Zhang

Sporton International Inc. (Shenzhen)
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA3D1301-01	Rev. 01	Initial issue of report.	Feb. 02, 2024

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Realme Chongqing Mobile Telecommunications Corp., Ltd., Mobile Phone, RMX3997,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 15mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.97	0.65	0.30	1.53
		GSM1900	0.98	0.90	0.51	
	WCDMA	WCDMA V	1.03	0.44	0.20	
		WCDMA IV	1.03	0.80	0.43	
		WCDMA II	0.98	0.90	0.46	
	LTE	LTE Band 12/17	**1.16**	0.19	0.27	
		LTE Band 13	1.10	0.32	0.26	
		LTE Band 5	0.99	0.40	0.22	
		LTE Band 26	1.05	0.34	0.21	
		LTE Band 4	0.99	0.79	0.40	
		LTE Band 66	1.08	0.79	0.42	
		LTE Band 2	0.80	0.97	0.47	
		LTE Band 7	0.93	0.91	0.59	
		LTE Band 38	0.96	**1.14**	0.59	
		LTE Band 41	1.02	0.91	0.41	
	5G NR	FR1 n5	0.86	0.40	0.20	
		FR1 n66	**1.16**	0.95	0.58	
		FR1 n7	1.03	1.05	**0.66**	
		FR1 n38	0.97	0.96	0.64	
		FR1 n41	1.10	1.02	0.60	
DTS	WLAN	2.4GHz WLAN	0.76	0.21	0.15	1.29
NII		5GHz WLAN	1.14	0.35	0.56	1.53
DSS	Bluetooth	2.4GHz Bluetooth	0.21	<0.10	<0.10	1.53

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	LTE	LTE Band 7	**2.77**	3.10
		LTE Band 38	2.28	
		LTE Band 41	2.62	
	5G NR	FR1 n7	2.37	
		FR1 n38	2.33	
		FR1 n41	1.92	
NII	WLAN	5GHz WLAN	1.30	3.10
DXX	NFC	NFC	<0.10	3.10
Date of Testing:			2024/1/10 ~ 2024/1/19	

Remark:
1. This device supports LTE B17 and B12. Since the supported frequency span for LTE B17 falls completely within the supports frequency span for LTE B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR02-SZ	CN1256	421272

Applicant	
Company Name	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China

Manufacturer	
Company Name	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China

3. Data Reuse Approach

3.1 Introduction Section

This application re-uses data collected on a similar device, FCC ID: 2AUYFRMX3999 (reference model) and FCC ID: 2AUYFRMX3997 (variant model). Due to the same design are identical between parent model and variant model, SAR data reuse is requested and spot check data in this report is used to justify the SAR data reuse.

Per KDB 484596 D01 v02r02, the deviation of variant model 1g SAR and 10g SAR spot check result was no larger than 3 dB, the WWAN/WLAN/BT maximum SAR summary was always choose the higher SAR between parent model and variant model.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2AUYFRMX3997

3.2 Model Difference Information

The **main** difference between FCC ID: 2AUYFRMX3999 and FCC ID: 2AUYFRMX3997 is as below:

- Change battery capacity is 4890mAh, change screen is 6.67HD and charge IC apply to 15W.
- Back camera height

Other differences and all the details of similarity and difference can be found in the confidential documents (RMX3997_Operational Description of Product Equality Declaration).

3.3 Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	FCC ID (Reference)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Test on the variant
Part 2.1093	PCE	GSM	GSM850/1900	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
		WCDMA	B2/4/5	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
		LTE	B2/4/5/7/12/13/17/26 B38/41/66	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
		5G NR	n5/n7/n41/n38/n66	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
	DTS	BLE/ Wi-Fi	2400~2483.5	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
	NII	Wi-Fi	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
	DSS	Bluetooth	2400~2483.5	2AUYFRMX3999	Original Grant	FA3D1301	2AUYFRMX3997	Spot check
	DXX	NFC	13.56	2AUYFRMX3999	Original Grant	FA3D1301A	2AUYFRMX3997	Spot check

4. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 484596 D01 Referencing Test Data v02r02
-

5. Equipment Under Test (EUT) Information

5.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	realme
Model Name	RMX3997
FCC ID	2AUYFRMX3997
IMEI Code	IMEI 1: 860211070022431 IMEI 2: 860211070022423
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM(Downlink) 5G NR : CP-OFDM / DFT-s-OFDM, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ac VHT20/VHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	11
SW Version	realme UI 5.0
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Production Unit
Remark: 1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation. 2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications. 3. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only). 4. This device does not support DTM operation and support GRPS/EGRPS mode up to multi-slot class 12. 5. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by	

either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.

6. The device implements receiver detect mechanism reduced power for the power management for SAR compliance at different exposure conditions (head, hotspot, body-worn, and extremity). It 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 and Wi-Fi antennas accordingly. The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E and the detailed DSI descriptions of below table.

DSI	Trigger Conditions	Antenna No.	Exposure conditions	
DSI1	Receiver off	All Ant	Body Worn/Extremity Standalone	Body Worn/Extremity all Position
DSI2	Receiver on	All Ant	Head Standalone	Head all Position
DSI3	Receiver off WWAN+ WLAN2.4GHz Receiver off WWAN+WLAN 5GHz	All Ant	Hotspot Body-worn / Extremity Simultaneous	Hotspot/ Body Worn/Extremity all Position
DSI4	Receiver on WWAN+ WLAN2.4GHz Receiver on WWAN+WLAN 5GHz	All Ant	Head Simultaneous	Head all Position
DSI5	Receiver off WWAN+WLAN 5GHz+BT	All Ant	Hotspot Body-worn / Extremity Simultaneous	Hotspot/ Body Worn/Extremity all Position
DSI6	Receiver on WWAN+WLAN 5GHz+BT	All Ant	Head Simultaneous	Head all Position

7. For WLAN when transmit, when transmit simultaneously together with WWAN/BT, the device power will be reduced power at head, body worn and extremity conditions.
8. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
9. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
10. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20
	n41	TDD	30	10, 15, 20, 40, 50, 60, 80, 90, 100
SA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20
	n41	TDD	30	10, 15, 20, 40, 50, 60, 80, 90, 100

5.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>2AUYFRMX3997</td></tr>
<tr><td>Equipment Name</td><td>Mobile Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15, Cat18</td></tr>
<tr><td>CA Support</td><td>Supported, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in receiver detect mechanism, head/ body-worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to reference model report.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to reference model report.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 5

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844

LTE Band 7

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

LTE Band 12

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 13

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

LTE Band 17

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 26

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 38

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

<For LTE SA Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		

2) LTE Bands tune up:

Band	Antenna	DSI 1 Tune-up Limit	DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 4 Tune-up Limit	DSI 5 Tune-up Limit	DSI 6 Tune-up Limit	Default Tune-up Limit
LTE Band 12	Ant 0	24.5	24.5	24	24.5	24	24.5	24.5
LTE Band 17	Ant 0	24.5	24.5	24	24.5	24	24.5	24.5

Band	Antenna	DSI 1 Tune-up Limit	DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 4 Tune-up Limit	DSI 5 Tune-up Limit	DSI 6 Tune-up Limit	Default Tune-up Limit
LTE Band 12	Ant 1	24.5	24.5	24.5	24.5	24.5	24.5	24.5
LTE Band 17	Ant 1	24.5	24.5	24.5	24.5	24.5	24.5	24.5

5.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n5	LTE B7/66
LTE Anchor Bands for n7	LTE B2/4/5/7/66
LTE Anchor Bands for n41	LTE B2/4/66/26/41
LTE Anchor Bands for n66	LTE B2/5/7/66
LTE Anchor Bands for n38	LTE B2/4/5/38/66

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band

NR Band 5

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 7

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560

NR Band 66

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720
M	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770

NR Band 38

	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580
M	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610

NR Band 41

	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500202	2501.01	500700	2503.5	501204	2506.02	503202	2516.01	504204	2521.02	505200	2526	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

6. RF Exposure Limits

6.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

6.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

7. Specific Absorption Rate (SAR)

7.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

7.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

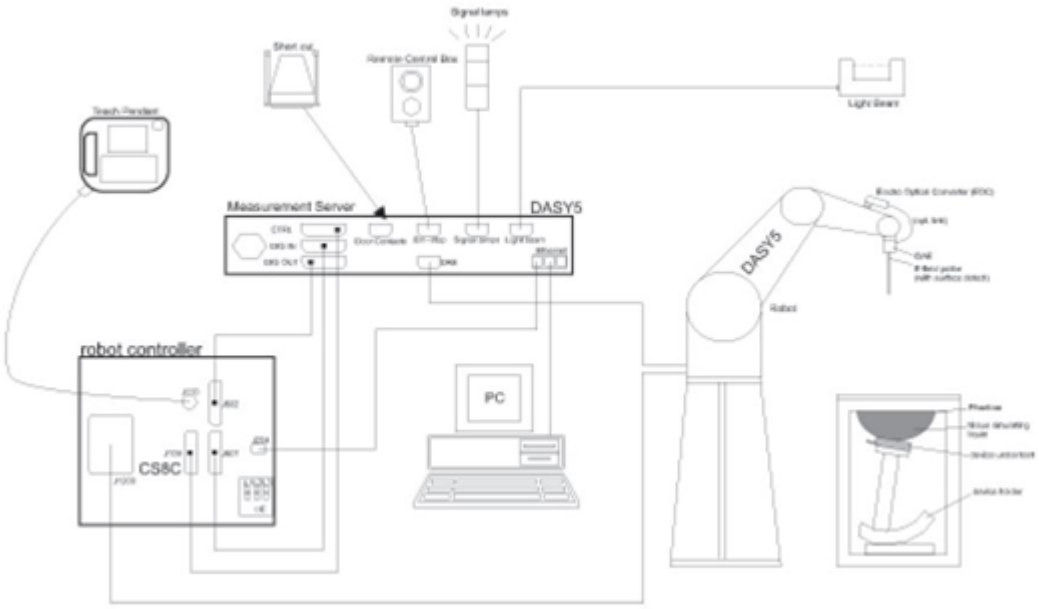
SAR is expressed in units of Watts per kilogram (W/kg)

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

8. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

8.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

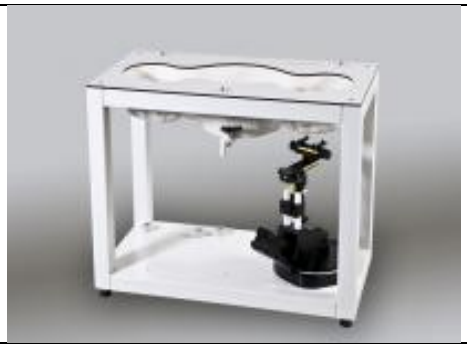
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

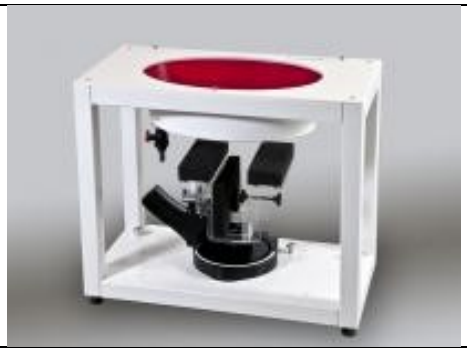
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 15, 2021	Dec. 13, 2024
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 15, 2024
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Feb. 24, 2022	Feb. 23, 2025
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 18, 2024
SPEAG	2450MHz System Validation Kit	D2450V2	1040	Apr. 25, 2023	Apr. 24, 2024
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 18, 2024
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 11, 2024
SPEAG	13MHz System Validation Kit	CLA13	1020	May 11, 2023	May 10, 2024
SPEAG	Data Acquisition Electronics	DAE4	1303	Nov. 20, 2023	Nov. 19, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	Jun. 06, 2023	Jun. 05, 2024
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1670	NCR	NCR
SPEAG	ELI Phantom	QD OVA 004 AA	1233	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 05, 2023	Jul. 04, 2024
Anritsu	Radio communication analyzer	MT8821C	6272416846	Apr. 06, 2023	Apr. 05, 2024
Anritsu	Radio communication analyzer	MT8821C	6272416863	Apr. 03, 2023	Apr. 02, 2024
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 05, 2023	Jul. 04, 2024
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 16, 2023	Oct. 15, 2024
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Feb. 20, 2023	Feb. 19, 2024
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Senor	MA2411B	1306099	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Meter	ML2495A	1349001	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2023	Dec. 27, 2024
R&S	Power Sensor	NRP50S	101254	Apr. 06, 2023	Apr. 05, 2024
R&S	Power Sensor	NRP8S	109228	Apr. 06, 2023	Apr. 05, 2024
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2023	Dec. 27, 2024
R&S	Spectrum Analyzer	FSP7	100818	Jul. 05, 2023	Jul. 04, 2024
TES	Hygrometer	1310	200505600	Jul. 08, 2023	Jul. 07, 2024
Anymetre	Thermo-Hygrometer	JR593	2015030904	Jul. 08, 2023	Jul. 07, 2024
SPEAG	Device Holder	N/A	N/A	N/A	N/A
AR	Amplifier	5S1G4	333096	Note 1	
Mini-Circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
Mini-Circuits	Amplifier	ZVA-183W-S+	726202215	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
Jinkexinhua	Attenuator	10db-8G	N/A	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

11. System Verification

11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

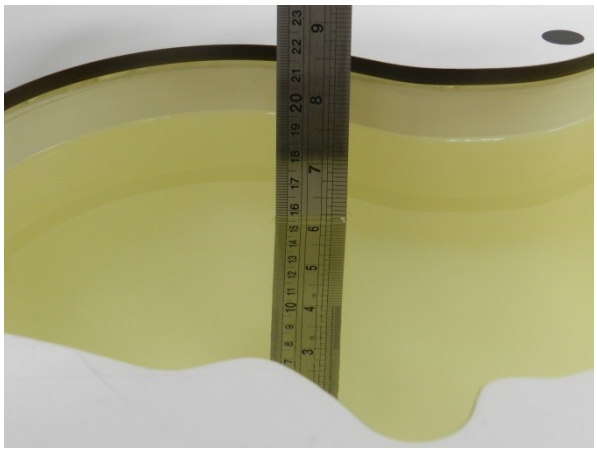


Fig 11.1 Photo of Liquid Height for Head SAR

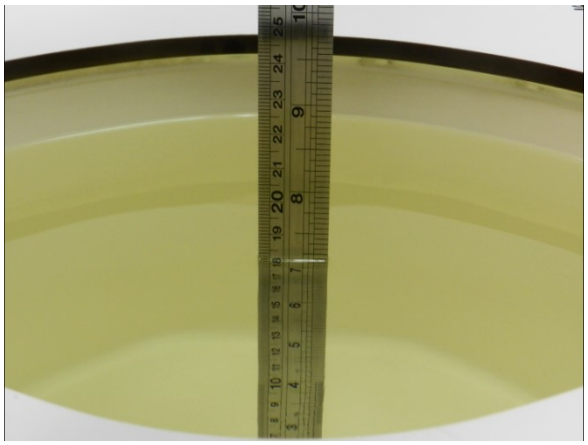


Fig 11.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.2	0.903	41.798	0.89	41.90	1.46	-0.24	±5	2024/1/13
835	Head	22.4	0.940	42.874	0.90	41.50	4.44	3.31	±5	2024/1/13
1750	Head	22.1	1.365	41.256	1.37	40.10	-0.36	2.88	±5	2024/1/10
1900	Head	22.3	1.426	39.524	1.40	40.00	1.86	-1.19	±5	2024/1/12
2450	Head	22.5	1.812	38.742	1.80	39.20	0.67	-1.17	±5	2024/1/14
2600	Head	22.2	1.894	38.752	1.96	39.00	-3.37	-0.64	±5	2024/1/14
5250	Head	22.2	4.521	34.916	4.71	35.95	-4.01	-2.88	±5	2024/1/15
5600	Head	22.6	4.892	34.894	5.07	35.50	-3.51	-1.71	±5	2024/1/18
5750	Head	22.4	5.089	34.954	5.22	35.35	-2.51	-1.12	±5	2024/1/16
13	Head	22.2	0.744	56.214	0.75	55.00	-0.80	2.21	±5	2024/1/19

11.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

<1g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2024/1/13	750	Head	250	1099	3819	1303	2.210	8.540	8.84	3.51
2024/1/13	835	Head	250	4d162	3819	1303	2.580	9.640	10.32	7.05
2024/1/10	1750	Head	250	1090	3819	1303	8.940	37.000	35.76	-3.35
2024/1/12	1900	Head	250	5d182	3819	1303	10.200	39.600	40.8	3.03
2024/1/14	2450	Head	250	1040	3819	1303	13.700	52.700	54.8	3.98
2024/1/14	2600	Head	250	1070	3819	1303	13.600	56.200	54.4	-3.20
2024/1/15	5250	Head	100	1341	3819	1303	8.450	80.700	84.5	4.71
2024/1/18	5600	Head	100	1341	3819	1303	8.550	84.500	85.5	1.18
2024/1/16	5750	Head	100	1341	3819	1303	8.560	80.600	85.6	6.20

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2024/1/13	750	Head	250	1099	3819	1303	1.470	5.650	5.88	4.07
2024/1/13	835	Head	250	4d162	3819	1303	1.700	6.260	6.8	8.63
2024/1/10	1750	Head	250	1090	3819	1303	4.860	19.500	19.44	-0.31
2024/1/12	1900	Head	250	5d182	3819	1303	5.340	20.200	21.36	5.74
2024/1/14	2450	Head	250	1040	3819	1303	6.460	24.600	25.84	5.04
2024/1/14	2600	Head	250	1070	3819	1303	6.210	24.600	24.84	0.98
2024/1/15	5250	Head	100	1341	3819	1303	2.310	23.100	23.1	0.00
2024/1/18	5600	Head	100	1341	3819	1303	2.350	24.000	23.5	-2.08
2024/1/16	5750	Head	100	1341	3819	1303	2.340	22.700	23.4	3.08
2024/1/19	13	Head	250	1020	3819	1303	0.082	0.347	0.328	-6.29

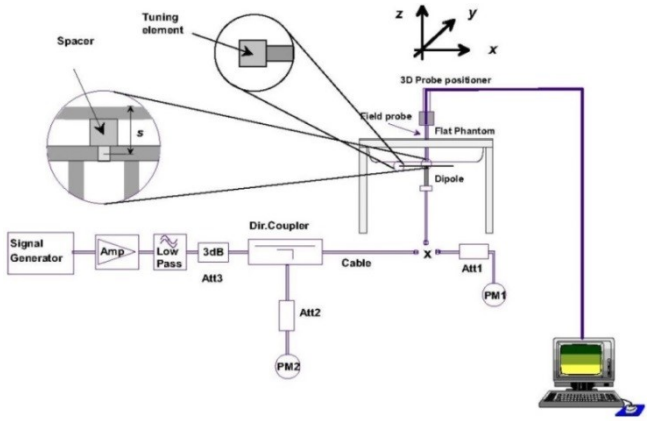


Fig 11.3.1 System Performance Check Setup

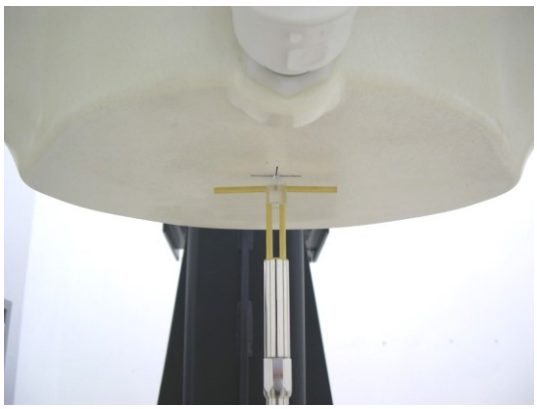


Fig 11.3.2 Setup Photo

Fig 10.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

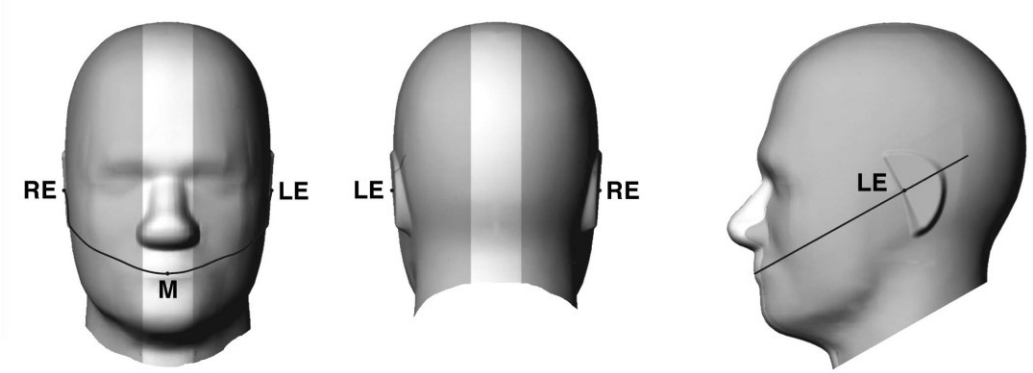


Fig 12.1.1 Front, back, and side views of SAM twin phantom

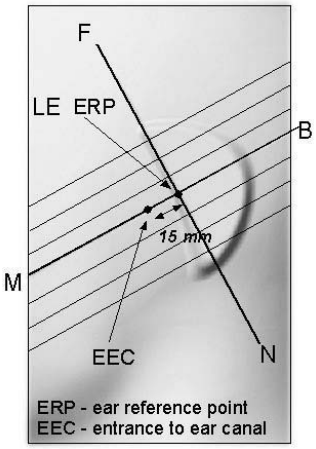


Fig 12.1.2 Close-up side view of phantom showing the ear region.

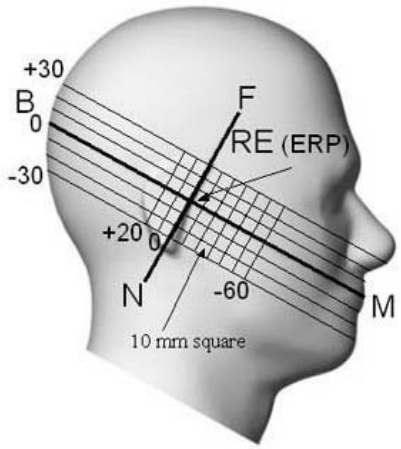


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 12.2.1 and Figure 12.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 12.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 12.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 12.2.3. The actual rotation angles should be documented in the test report.

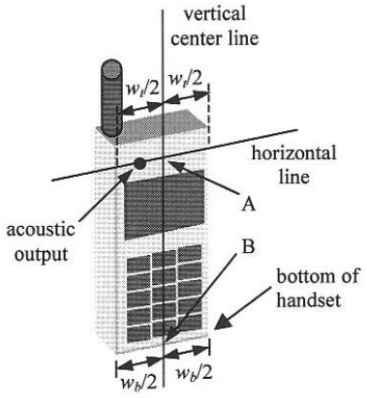


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

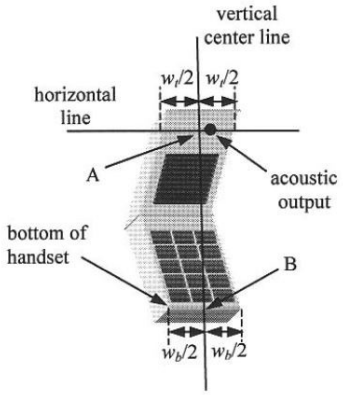


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

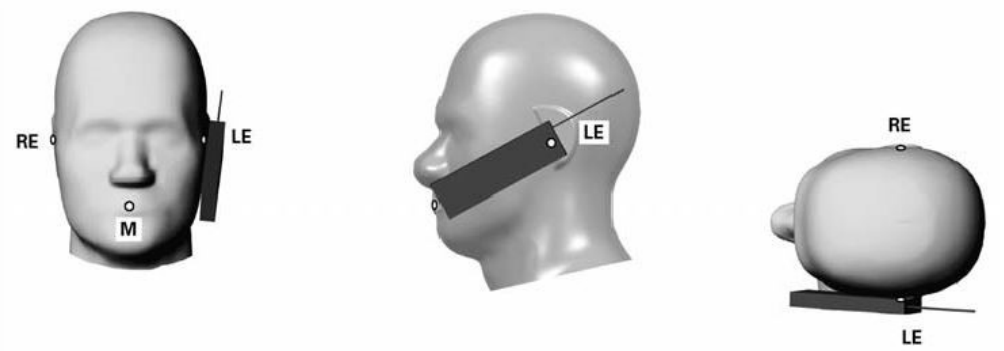


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

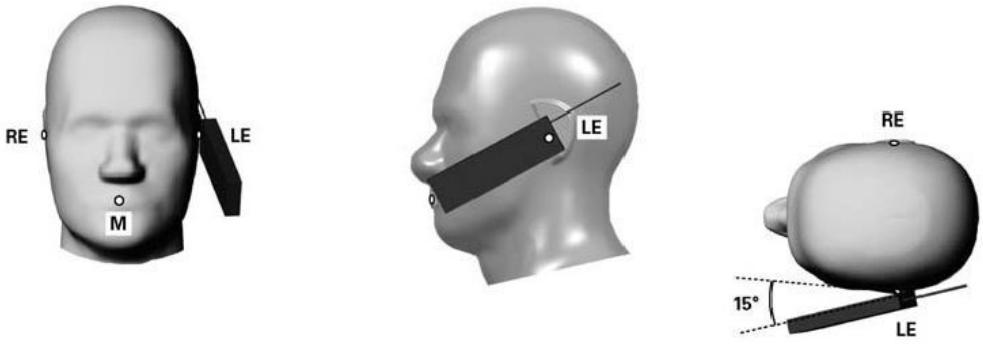


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

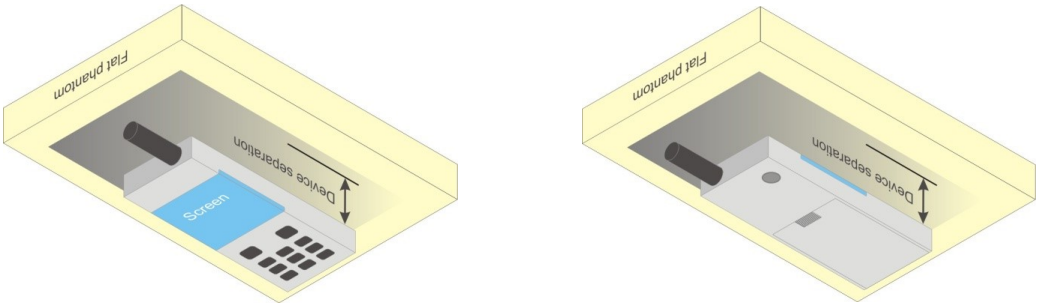


Fig 12.4 Body Worn Position

12.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

12.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

13. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

14. Spot Check SAR Test Results

Spot Check General Note:

1. According to section 3.3, spot check conducted power test against the variant project based on the worst-case SAR condition from the original project was performed in this filing to demonstrate the test data from original project remains representative for the variant project. Detail Conducted power measurement referred to appendix E.
2. SAR spot check verification on the worst cases from the original model was performed to demonstrate the test data from original model remains representative for the variant model.
3. Per KDB 484596 D01 v02r02, the variant filings must demonstrate that the referenced test data remain valid for the variant device by including spot-check measurements that meet the following criteria:
   a. Spot-check measurements shall be made in correspondence to the worst-case scenario reported in the reference device filing, i.e., for those conditions that are the closest to non-compliance
   b. Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, may show a deviation ddB from the reference data no larger than 3 dB:
      $$d_{dB} = | VdB – RdB | \leq 3\ dB \quad (1)$$
      where between VdB, the variant spot-check level in dB, and RdB is the corresponding measurement level in dB for the reference model.
4. The Spot check results showed that deviation of the SAR results did not exceed 3 dB, therefore referring to the guidance in the KDB inquiry, SAR data reuse is justified.
5. 1st as parent model, 2nd as variant model.

14.1 Head SAR

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
750MHz																						
	1st	LTE Band 12	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	23.62	24.50	1.225	-	-	-0.19	0.092	0.113	0.61
	2nd	LTE Band 12	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	22.96	24.50	1.426	-	-	0.05	0.091	0.130	
	1st	LTE Band 12	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	23095	707.5	23.34	24.50	1.306	-	-	0.09	0.887	1.159	0.81
01	2nd	LTE Band 12	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	23095	707.5	22.80	24.50	1.479	-	-	0.04	0.650	**0.961**	
	1st	LTE Band 13	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	23230	782	23.54	24.50	1.247	-	-	0.04	0.108	0.135	0.40
	2nd	LTE Band 13	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	23230	782	22.83	24.50	1.469	-	-	-0.07	0.101	0.148	
	1st	LTE Band 13	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	23230	782	22.15	23.50	1.365	-	-	0.04	0.803	1.096	0.76
02	2nd	LTE Band 13	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	23230	782	21.53	23.50	1.574	-	-	0.05	0.585	**0.921**	
835MHz																						
	1st	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	189	836.4	30.69	32.00	1.352	-	-	0.07	0.243	0.329	1.50
	2nd	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	189	836.4	30.11	32.00	1.545	-	-	0.01	0.151	0.233	
	1st	GSM850	-	-	-	-	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 1	DSI 2	251	848.8	24.07	24.50	1.104	-	-	0.06	0.879	0.970	1.13
03	2nd	GSM850	-	-	-	-	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 1	DSI 2	251	848.8	24.04	24.50	1.112	-	-	-0.01	0.672	**0.747**	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	4182	836.4	23.68	24.50	1.208	-	-	0.19	0.183	0.221	0.00
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	4182	836.4	23.34	24.50	1.306	-	-	0.05	0.169	0.221	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	4132	826.4	21.37	22.50	1.297	-	-	-0.07	0.797	1.034	0.71
04	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	4132	826.4	21.09	22.50	1.384	-	-	0.02	0.635	**0.879**	
	1st	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	23.39	24.00	1.151	-	-	0.15	0.149	0.171	0.70
	2nd	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	22.62	24.00	1.374	-	-	0.03	0.146	0.201	
	1st	LTE Band 26	15M	QPSK	1	37	-	Right Cheek	0mm	Ant 1	DSI 2	26865	831.5	21.84	22.75	1.233	-	-	-0.11	0.849	1.047	0.58
05	2nd	LTE Band 26	15M	QPSK	1	37	-	Right Cheek	0mm	Ant 1	DSI 2	26865	831.5	21.20	22.75	1.429	-	-	-0.01	0.641	**0.916**	
	1st	LTE Band 5	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	20525	836.5	23.75	24.50	1.189	-	-	-0.04	0.169	0.201	0.47
	2nd	LTE Band 5	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	20525	836.5	22.99	24.50	1.416	-	-	0.08	0.158	0.224	
	1st	LTE Band 5	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	20525	836.5	21.89	23.00	1.291	-	-	-0.06	0.766	0.989	0.07
06	2nd	LTE Band 5	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 1	DSI 2	20525	836.5	21.25	23.00	1.496	-	-	0.02	0.651	**0.974**	
	1st	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	167300	836.5	22.91	24.20	1.346	-	-	-0.09	0.165	0.222	0.12
	2nd	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	167300	836.5	22.73	24.20	1.403	-	-	0.07	0.154	0.216	
	1st	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	167300	836.5	20.28	21.95	1.469	-	-	0.11	0.582	0.855	1.16
07	2nd	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	167300	836.5	20.25	21.95	1.479	-	-	-0.04	0.442	**0.654**	
1750MHz																						
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	1413	1732.6	23.42	24.50	1.282	-	-	-0.05	0.143	0.183	0.07
	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	1413	1732.6	23.21	24.50	1.346	-	-	0.01	0.138	0.186	
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 2	1413	1732.6	17.20	18.00	1.202	-	-	-0.05	0.757	0.910	0.54
08	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 2	1413	1732.6	17.08	18.00	1.236	-	-	-0.01	0.834	**1.031**	
	1st	LTE Band 4	20M	QPSK	50	24	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.24	23.00	1.191	-	-	0.17	0.106	0.126	0.76
	2nd	LTE Band 4	20M	QPSK	50	24	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.08	23.00	1.236	-	-	0.05	0.121	0.150	
	1st	LTE Band 4	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	20175	1732.5	16.35	17.00	1.161	-	-	0.06	0.593	0.689	1.56
09	2nd	LTE Band 4	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	20175	1732.5	16.32	17.00	1.169	-	-	0.02	0.843	**0.986**	
	1st	LTE Band 4	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	20175	1732.5	20.92	22.00	1.282	-	-	-0.04	0.126	0.162	0.16
	2nd	LTE Band 4	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	20175	1732.5	20.67	22.00	1.358	-	-	-0.03	0.115	0.156	
	1st	LTE Band 66	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	23.18	24.00	1.208	-	-	-0.12	0.162	0.196	0.18
	2nd	LTE Band 66	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	23.14	24.00	1.219	-	-	0.05	0.154	0.188	
	1st	LTE Band 66	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	16.87	17.25	1.091	-	-	0.12	0.743	0.811	1.23
10	2nd	LTE Band 66	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	16.85	17.25	1.096	-	-	0.03	0.982	**1.077**	
	1st	LTE Band 66	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	132322	1745	21.58	22.50	1.236	-	-	0.14	0.186	0.230	0.61
	2nd	LTE Band 66	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	132322	1745	21.56	22.50	1.242	-	-	0.05	0.161	0.200	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	349000	1745	23.36	24.20	1.213	-	-	-0.01	0.172	0.209	0.95
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	349000	1745	23.14	24.20	1.276	-	-	0.11	0.132	0.168	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	349000	1745	17.58	18.20	1.153	-	-	0.19	0.687	0.792	1.64
11	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	349000	1745	17.30	18.20	1.230	-	-	0.05	0.940	**1.156**	

	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	344000	1720	17.25	18.20	1.245	-	-	0.01	0.842	1.048	
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	354000	1770	17.13	18.20	1.279	-	-	0.02	0.888	1.136	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	349000	1745	22.04	23.20	1.306	-	-	-0.08	0.155	0.202	0.45
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	349000	1745	21.90	23.20	1.349	-	-	0.02	0.135	0.182	
1900MHz																						
	1st	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	661	1880	28.07	29.00	1.239	-	-	0.1	0.135	0.167	1.36
	2nd	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	661	1880	27.48	29.00	1.419	-	-	0.07	0.086	0.122	
	1st	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 1	DSI 2	661	1880	19.82	20.50	1.169	-	-	-0.01	0.769	0.899	0.39
12	2nd	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 1	DSI 2	661	1880	19.74	20.50	1.191	-	-	-0.01	0.825	**0.983**	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	9400	1880	23.58	24.50	1.236	-	-	0.12	0.171	0.211	0.34
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	9400	1880	23.51	24.50	1.256	-	-	0.07	0.155	0.195	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 2	9400	1880	16.83	17.50	1.167	-	-	-0.14	0.843	0.984	0.32
13	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 2	9400	1880	16.80	17.50	1.175	-	-	-0.09	0.779	**0.915**	
	1st	LTE Band 2	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	18900	1880	22.39	23.50	1.291	-	-	0.06	0.132	0.170	0.64
	2nd	LTE Band 2	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	18900	1880	22.25	23.50	1.334	-	-	0.03	0.148	0.197	
	1st	LTE Band 2	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	18900	1880	15.92	16.50	1.143	-	-	0.07	0.635	0.726	
14	2nd	LTE Band 2	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	18900	1880	15.94	16.50	1.138	-	-	0.08	0.707	**0.804**	0.44
	2nd	LTE Band 2	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	18700	1860	15.92	16.50	1.143	-	-	0.04	0.652	0.745	
	2nd	LTE Band 2	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	19100	1900	15.87	16.50	1.156	-	-	0.02	0.670	0.775	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.78	23.50	1.180	-	-	0.07	0.386	0.456	0.04
	2nd	LTE Band 7	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.55	23.50	1.245	-	-	0.11	0.370	0.460	
	1st	LTE Band 7	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	21350	2560	15.76	16.00	1.057	-	-	0.14	0.882	0.932	1.74
15	2nd	LTE Band 7	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	21350	2560	15.03	16.00	1.250	-	-	-0.1	0.499	**0.624**	
	1st	LTE Band 7	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	21100	2535	20.79	21.50	1.178	-	-	-0.15	0.489	0.576	0.81
	2nd	LTE Band 7	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	21100	2535	20.79	21.50	1.178	-	-	-0.05	0.406	0.478	
	1st	LTE Band 38	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	38000	2595	23.39	24.00	1.151	62.9	1.006	0.05	0.344	0.398	0.48
	2nd	LTE Band 38	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	38000	2595	23.38	24.00	1.153	62.9	1.006	0.07	0.307	0.356	
	1st	LTE Band 38	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	17.37	18.00	1.156	62.9	1.006	-0.1	0.828	0.963	2.72
16	2nd	LTE Band 38	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	17.31	18.00	1.172	62.9	1.006	0.04	0.437	**0.515**	
	1st	LTE Band 38	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	38000	2595	22.08	23.00	1.236	62.9	1.006	-0.1	0.373	0.464	0.32
	2nd	LTE Band 38	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	38000	2595	22.03	23.00	1.250	62.9	1.006	0.03	0.343	0.431	
	1st	LTE Band 41	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	41055	2636.5	23.91	24.50	1.146	62.9	1.006	-0.13	0.219	0.252	1.17
	2nd	LTE Band 41	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	41055	2636.5	23.75	24.50	1.189	62.9	1.006	0.17	0.276	0.330	
	1st	LTE Band 41	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	39750	2506	17.23	18.00	1.194	62.9	1.006	0.15	0.848	1.019	2.78
17	2nd	LTE Band 41	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	39750	2506	17.13	18.00	1.222	62.9	1.006	0.12	0.437	**0.537**	
	1st	LTE Band 41	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	39750	2506	22.67	23.50	1.211	62.9	1.006	0.12	0.547	0.666	1.86
	2nd	LTE Band 41	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	39750	2506	22.81	23.50	1.172	62.9	1.006	0.03	0.368	0.434	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	507000	2535	23.14	23.70	1.138	-	-	0.14	0.437	0.497	0.28
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	507000	2535	23.05	23.70	1.161	-	-	0.02	0.401	0.466	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	15.11	15.70	1.146	-	-	-0.14	0.863	0.989	1.43
18	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	14.92	15.70	1.197	-	-	0.05	0.594	**0.711**	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	507000	2535	21.73	23.20	1.403	-	-	-0.12	0.736	1.032	2.39
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	507000	2535	21.41	23.20	1.510	-	-	-0.06	0.394	0.595	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	519000	2595	23.34	24.20	1.219	-	-	-0.08	0.452	0.551	0.73
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	519000	2595	23.33	24.20	1.222	-	-	0.03	0.381	0.466	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	519000	2595	15.04	15.70	1.164	-	-	0.07	0.832	0.969	2.10
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	519000	2595	14.91	15.70	1.199	-	-	0.01	0.498	0.597	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	519000	2595	20.68	22.20	1.419	-	-	-0.11	0.585	0.830	1.02
19	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	519000	2595	20.31	22.20	1.545	-	-	-0.02	0.425	**0.657**	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	518598	2592.99	23.32	24.20	1.225	-	-	-0.03	0.516	0.632	0.30
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	518598	2592.99	23.28	24.20	1.236	-	-	0.05	0.477	0.590	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	15.53	16.45	1.236	-	-	0.07	0.890	1.100	2.48
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	15.11	16.45	1.361	-	-	-0.01	0.457	0.622	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	518598	2592.99	21.15	22.70	1.429	-	-	-0.04	0.673	0.962	0.15
20	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	518598	2592.99	20.85	22.70	1.531	-	-	-0.16	0.650	**0.995**	

<ENDC SAR>

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
835MHz																						
	1st	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	23.39	24.00	1.151	-	-	0.15	0.149	0.171	0.70
	2nd	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	22.62	24.00	1.374	-	-	0.03	0.146	0.201	
	1st	LTE Band 5	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	20525	836.5	23.75	24.50	1.189	-	-	-0.04	0.169	0.201	0.47
	2nd	LTE Band 5	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 0	DSI 2	20525	836.5	22.99	24.50	1.416	-	-	0.08	0.158	0.224	
	1st	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	167300	836.5	19.22	20.95	1.489	-	-	-0.18	0.472	0.703	1.11
	2nd	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	167300	836.5	19.11	20.95	1.528	-	-	0.05	0.357	0.545	
1750MHz																						
	1st	LTE Band 4 Other PA	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.88	23.50	1.153	-	-	0.13	0.126	0.145	0.28
	2nd	LTE Band 4 Other PA	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.85	23.50	1.161	-	-	0.03	0.117	0.136	
	1st	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.90	23.50	1.148	-	-	-0.01	0.111	0.127	0.21
	2nd	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	22.89	23.50	1.151	-	-	-0.05	0.105	0.121	
	1st	LTE Band 66	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.68	23.50	1.208	-	-	0.06	0.135	0.163	0.25
	2nd	LTE Band 66	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.66	23.50	1.213	-	-	0.01	0.127	0.154	
	1st	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.63	23.50	1.222	-	-	0.16	0.088	0.108	2.15
	2nd	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.33	23.50	1.309	-	-	0.03	0.135	0.177	
	1st	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.65	23.50	1.216	-	-	0.09	0.080	0.097	2.66
	2nd	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	22.30	23.50	1.318	-	-	-0.01	0.136	0.179	
	1st	LTE Band 66	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	132322	1745	21.58	22.50	1.236	-	-	0.14	0.186	0.230	0.61
	2nd	LTE Band 66	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 2	DSI 2	132322	1745	21.56	22.50	1.242	-	-	0.05	0.161	0.200	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	349000	1745	16.47	17.20	1.183	-	-	-0.11	0.623	0.737	0.02
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	349000	1745	16.43	17.20	1.194	-	-	0.02	0.614	0.733	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	349000	1745	21.01	22.20	1.315	-	-	0.03	0.123	0.162	0.57
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	349000	1745	20.84	22.20	1.368	-	-	0.01	0.104	0.142	
1900MHz																						
	1st	LTE Band 2	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	18900	1880	22.39	23.50	1.291	-	-	0.06	0.132	0.170	0.64
	2nd	LTE Band 2	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 0	DSI 2	18900	1880	22.25	23.50	1.334	-	-	0.03	0.148	0.197	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.78	23.50	1.180	-	-	0.07	0.386	0.456	0.04
	2nd	LTE Band 7	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.55	23.50	1.245	-	-	0.11	0.370	0.460	
	1st	LTE Band 7 Other PA	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.58	23.50	1.236	-	-	0.14	0.426	0.527	0.65
	2nd	LTE Band 7 Other PA	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	22.55	23.50	1.245	-	-	0.13	0.365	0.454	
	1st	LTE Band 7	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	21100	2535	19.69	20.00	1.074	-	-	-0.06	0.270	0.290	1.15
	2nd	LTE Band 7	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 2	DSI 2	21100	2535	19.29	20.00	1.178	-	-	-0.02	0.321	0.378	
	1st	LTE Band 38 Other PA	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 0	DSI 2	38000	2595	22.34	24.00	1.466	62.9	1.006	0.07	0.238	0.351	0.55
	2nd	LTE Band 38 Other PA	20M	QPSK	50	24	-	Right Cheek	0mm	Ant 0	DSI 2	38000	2595	22.21	24.00	1.510	62.9	1.006	0.03	0.262	0.398	
	1st	LTE Band 41 Other PA	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	41055	2636.5	23.91	24.50	1.146	62.9	1.006	0.07	0.324	0.373	0.14
	2nd	LTE Band 41 Other PA	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	DSI 2	41055	2636.5	23.75	24.50	1.189	62.9	1.006	-0.02	0.302	0.361	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	14.11	14.70	1.146	-	-	-0.06	0.649	0.743	2.16
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	13.68	14.70	1.265	-	-	-0.05	0.357	0.452	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	507000	2535	20.74	22.20	1.400	-	-	0.02	0.532	0.745	1.88
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	507000	2535	20.34	22.20	1.535	-	-	0.04	0.315	0.483	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	519000	2595	13.37	14.20	1.211	-	-	0.07	0.587	0.711	2.13
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	519000	2595	13.35	14.20	1.216	-	-	0.03	0.358	0.435	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	519000	2595	19.69	21.20	1.416	-	-	-0.06	0.415	0.588	1.98
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	519000	2595	19.38	21.20	1.521	-	-	0.04	0.245	0.373	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	13.45	14.45	1.259	-	-	0.06	0.583	0.734	2.08
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	13.12	14.45	1.358	-	-	0.03	0.335	0.455	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	518598	2592.99	20.07	21.70	1.455	-	-	-0.17	0.493	0.718	1.69
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	518598	2592.99	19.76	21.70	1.563	-	-	0.04	0.311	0.486	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
2450MHz																		
	1st	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 8	Full	0	2402	12.80	14.00	1.318	76.84	1.301	0.03	0.124	0.213	2.14
21	2nd	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 8	Full	0	2402	12.50	14.00	1.413	76.84	1.301	-0.06	0.071	**0.130**	
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	15.81	17.50	1.476	100	1.000	-0.18	0.260	0.384	2.95
22	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	15.71	17.50	1.510	100	1.000	0.05	0.502	**0.758**	
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Simultaneous	1	2412	12.71	14.50	1.510	100	1.000	0.07	0.110	0.166	2.98
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Simultaneous	1	2412	12.62	14.50	1.542	100	1.000	0.05	0.214	0.330	
5000MHz																		
	1st	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	62	5310	13.11	15.00	1.544	94.77	1.055	0.19	0.634	1.033	2.36
23	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	62	5310	14.23	15.00	1.194	94.77	1.055	0.14	0.476	**0.600**	
	1st	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	62	5310	10.05	12.00	1.566	94.77	1.055	-0.19	0.299	0.494	2.80
	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	62	5310	11.34	12.00	1.164	94.77	1.055	0.06	0.211	0.259	
	1st	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	102	5510	12.18	14.00	1.519	94.77	1.055	-0.06	0.710	1.138	2.05
24	2nd	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	102	5510	12.31	14.00	1.475	94.77	1.055	-0.05	0.456	**0.709**	
	1st	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	110	5550	9.20	11.00	1.512	94.77	1.055	0.15	0.328	0.523	2.44
	2nd	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	110	5550	9.30	11.00	1.478	94.77	1.055	0.03	0.191	0.298	
	1st	WLAN5.8GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	151	5755	12.57	14.50	1.558	94.77	1.055	0.12	0.648	1.065	2.84
25	2nd	WLAN5.8GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Standalone	151	5755	12.58	14.50	1.555	94.77	1.055	0.05	0.338	**0.554**	
	1st	WLAN5.8GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	159	5795	9.67	11.50	1.523	94.77	1.055	-0.05	0.296	0.476	2.73
	2nd	WLAN5.8GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	159	5795	9.91	11.50	1.441	94.77	1.055	0.05	0.167	0.254	

14.2 Hotspot SAR

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
750MHz																						
	1st	LTE Band 12	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	23095	707.5	23.11	24.00	1.227	-	-	-0.01	0.140	0.172	0.43
26	2nd	LTE Band 12	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	23095	707.5	22.42	24.00	1.439	-	-	-0.12	0.132	**0.190**	
	1st	LTE Band 12	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	23095	707.5	23.34	24.50	1.306	-	-	0.17	0.120	0.157	0.14
	2nd	LTE Band 12	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	23095	707.5	22.80	24.50	1.479	-	-	0.04	0.103	0.152	
	1st	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	23230	782	23.54	24.50	1.247	-	-	0.05	0.198	0.247	0.37
	2nd	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	23230	782	22.83	24.50	1.469	-	-	0.05	0.183	0.269	
	1st	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	23230	782	23.11	24.50	1.377	-	-	-0.07	0.230	0.317	0.36
27	2nd	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	23230	782	22.54	24.50	1.570	-	-	-0.03	0.186	**0.292**	
835MHz																						
	1st	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 0	DSI 3/5	189	836.4	30.69	32.00	1.352	-	-	0.11	0.477	0.645	1.39
28	2nd	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 0	DSI 3/5	189	836.4	30.11	32.00	1.545	-	-	0.06	0.303	**0.468**	
	1st	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 1	DSI 3/5	189	836.4	30.22	32.00	1.507	-	-	0.15	0.380	0.573	2.41
	2nd	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 1	DSI 3/5	189	836.4	30.05	32.00	1.567	-	-	0.01	0.210	0.329	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	DSI 3/5	4182	836.4	22.60	23.50	1.230	-	-	-0.08	0.359	0.442	1.28
29	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	DSI 3/5	4182	836.4	22.33	23.50	1.309	-	-	-0.09	0.251	**0.329**	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 3/5	4182	836.4	20.91	22.00	1.285	-	-	0.16	0.157	0.202	0.70
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 3/5	4182	836.4	20.51	22.00	1.409	-	-	-0.05	0.122	0.172	
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 0	DSI 3/5	26865	831.5	23.39	24.00	1.151	-	-	0.08	0.284	0.327	0.16
30	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 0	DSI 3/5	26865	831.5	22.62	24.00	1.374	-	-	-0.02	0.247	**0.339**	
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 1	DSI 3/5	26865	831.5	23.12	24.00	1.225	-	-	-0.16	0.216	0.265	0.41
	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 1	DSI 3/5	26865	831.5	22.48	24.00	1.419	-	-	-0.07	0.205	0.291	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	20525	836.5	23.75	24.50	1.189	-	-	0.16	0.332	0.395	0.18
31	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	20525	836.5	22.99	24.50	1.416	-	-	-0.07	0.268	**0.379**	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	20525	836.5	23.58	24.50	1.236	-	-	-0.04	0.243	0.300	0.23
	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 1	DSI 3/5	20525	836.5	22.76	24.50	1.493	-	-	-0.01	0.212	0.316	
	1st	FR1 n5	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 0	DSI 3/5	167300	836.5	22.91	24.20	1.346	-	-	-0.09	0.300	0.404	0.08
32	2nd	FR1 n5	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 0	DSI 3/5	167300	836.5	22.73	24.20	1.403	-	-	-0.18	0.283	**0.397**	
	1st	FR1 n5	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 1	DSI 3/5	167300	836.5	22.74	24.20	1.400	-	-	-0.03	0.259	0.362	1.29
	2nd	FR1 n5	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 1	DSI 3/5	167300	836.5	22.71	24.20	1.409	-	-	-0.05	0.191	0.269	
1750MHz																						
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	DSI 3/5	1413	1732.6	20.45	21.50	1.274	-	-	-0.16	0.625	0.796	0.16
33	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	DSI 3/5	1413	1732.6	20.22	21.50	1.343	-	-	-0.05	0.572	**0.768**	
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 1	DSI 3/5	1413	1732.6	19.21	20.00	1.199	-	-	0.19	0.320	0.384	2.05
	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 1	DSI 3/5	1413	1732.6	19.04	20.00	1.247	-	-	0.03	0.494	0.616	
	1st	LTE Band 4	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	20.03	20.75	1.180	-	-	-0.02	0.626	0.739	0.02
	2nd	LTE Band 4	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	20.04	20.75	1.178	-	-	-0.05	0.624	0.735	
	1st	LTE Band 4	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	20175	1732.5	19.41	20.00	1.146	-	-	0.03	0.402	0.460	2.33
34	2nd	LTE Band 4	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	20175	1732.5	19.25	20.00	1.189	-	-	-0.04	0.661	**0.786**	
	1st	LTE Band 4	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	20175	1732.5	20.39	22.00	1.449	-	-	-0.1	0.056	0.081	0.16
	2nd	LTE Band 4	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	20175	1732.5	20.74	22.00	1.337	-	-	0.05	0.058	0.078	
	1st	LTE Band 66	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	19.64	20.50	1.219	-	-	-0.16	0.644	0.785	0.20
35	2nd	LTE Band 66	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	19.50	20.50	1.259	-	-	-0.1	0.595	**0.749**	
	1st	LTE Band 66	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	132322	1745	18.77	19.00	1.054	-	-	0.11	0.385	0.406	1.18
	2nd	LTE Band 66	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	132322	1745	18.60	19.00	1.096	-	-	0.04	0.486	0.533	
	1st	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	132322	1745	20.12	21.00	1.225	-	-	0.11	0.062	0.076	0.48
	2nd	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	132322	1745	20.07	21.00	1.239	-	-	0.06	0.055	0.068	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Bottom Side	10mm	Ant 0	DSI 3/5	349000	1745	20.88	21.70	1.208	-	-	-0.11	0.783	0.946	0.31
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Bottom Side	10mm	Ant 0	DSI 3/5	349000	1745	20.65	21.70	1.274	-	-	0.02	0.692	0.881	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	349000	1745	20.07	20.70	1.156	-	-	0.12	0.435	0.503	2.34
36	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	349000	1745	19.95	20.70	1.189	-	-	-0.14	0.725	**0.862**	

	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	344000	1720	19.81	20.70	1.227	-	-	-0.11	0.701	0.860	
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	354000	1770	19.88	20.70	1.208	-	-	-0.03	0.683	0.825	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	349000	1745	22.04	23.20	1.306	-	-	-0.19	0.088	0.115	1.36
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	349000	1745	21.90	23.20	1.349	-	-	-0.02	0.062	0.084	
1900MHz																						
	1st	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Bottom Side	10mm	Ant 0	DSI 3/5	512	1850.2	23.92	25.00	1.282	-	-	0.08	0.702	0.900	0.30
37	2nd	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Bottom Side	10mm	Ant 0	DSI 3/5	512	1850.2	23.70	25.00	1.349	-	-	0.06	0.623	**0.840**	
	1st	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Top Side	10mm	Ant 1	DSI 3/5	661	1880	21.82	22.50	1.169	-	-	0.09	0.499	0.584	0.29
	2nd	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Top Side	10mm	Ant 1	DSI 3/5	661	1880	21.67	22.50	1.211	-	-	0.02	0.516	0.625	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	DSI 3/5	9538	1907.6	20.59	21.50	1.233	-	-	0.1	0.730	0.900	0.52
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	DSI 3/5	9538	1907.6	20.55	21.50	1.245	-	-	0.02	0.641	0.798	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 1	DSI 3/5	9400	1880	19.30	20.00	1.175	-	-	-0.18	0.538	0.632	0.99
38	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 1	DSI 3/5	9400	1880	19.29	20.00	1.178	-	-	0.02	0.673	**0.793**	
	1st	LTE Band 2	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	19100	1900	19.76	21.00	1.330	-	-	0.08	0.648	0.862	0.52
39	2nd	LTE Band 2	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	19100	1900	19.44	21.00	1.432	-	-	0.16	0.679	**0.972**	
	1st	LTE Band 2	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	18900	1880	18.39	19.00	1.151	-	-	-0.14	0.440	0.506	1.98
	2nd	LTE Band 2	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	18900	1880	18.21	19.00	1.199	-	-	0.02	0.665	0.798	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	20.69	21.50	1.205	-	-	-0.18	0.463	0.558	0.12
	2nd	LTE Band 7	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	20.44	21.50	1.276	-	-	0.05	0.449	0.573	
	1st	LTE Band 7	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	21100	2535	17.66	18.00	1.081	-	-	-0.11	0.837	0.905	1.44
40	2nd	LTE Band 7	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	21100	2535	16.88	18.00	1.294	-	-	0.13	0.502	**0.650**	
	1st	LTE Band 7	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	21100	2535	16.65	17.00	1.084	-	-	-0.09	0.176	0.191	0.53
	2nd	LTE Band 7	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	21100	2535	16.43	17.00	1.140	-	-	0.02	0.148	0.169	
	1st	LTE Band 38	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	38000	2595	23.39	24.00	1.151	62.9	1.006	-0.13	0.529	0.612	0.63
	2nd	LTE Band 38	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	38000	2595	23.38	24.00	1.153	62.9	1.006	-0.05	0.456	0.529	
	1st	LTE Band 38	20M	QPSK	1	49	-	Top Side	10mm	Ant 1	DSI 3/5	38000	2595	19.69	20.50	1.205	62.9	1.006	0.19	0.940	1.140	2.58
41	2nd	LTE Band 38	20M	QPSK	1	49	-	Top Side	10mm	Ant 1	DSI 3/5	38000	2595	19.80	20.50	1.175	62.9	1.006	0.07	0.533	**0.630**	
	1st	LTE Band 38	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	38000	2595	18.57	19.50	1.239	62.9	1.006	-0.11	0.227	0.283	0.64
	2nd	LTE Band 38	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	38000	2595	18.35	19.50	1.303	62.9	1.006	0.04	0.250	0.328	
	1st	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	41055	2636.5	23.91	24.50	1.146	62.9	1.006	-0.01	0.393	0.453	0.83
42	2nd	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	41055	2636.5	23.75	24.50	1.189	62.9	1.006	-0.05	0.458	**0.548**	
	1st	LTE Band 41	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	40185	2549.5	19.73	20.25	1.127	62.9	1.006	0.16	0.805	0.913	2.01
	2nd	LTE Band 41	20M	QPSK	50	24	-	Top Side	10mm	Ant 1	DSI 3/5	40185	2549.5	19.20	20.25	1.274	62.9	1.006	0.08	0.449	0.575	
	1st	LTE Band 41	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	40185	2549.5	19.07	19.50	1.104	62.9	1.006	0.18	0.202	0.224	1.02
	2nd	LTE Band 41	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	40185	2549.5	19.01	19.50	1.119	62.9	1.006	0.04	0.157	0.177	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 0	DSI 3/5	507000	2535	21.63	22.20	1.140	-	-	-0.03	0.583	0.665	0.07
43	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 0	DSI 3/5	507000	2535	21.33	22.20	1.222	-	-	0.07	0.536	**0.655**	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	507000	2535	18.15	18.70	1.135	-	-	-0.01	0.924	1.049	2.17
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	507000	2535	17.90	18.70	1.202	-	-	0.05	0.529	0.636	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	507000	2535	19.27	20.70	1.390	-	-	0.17	0.346	0.481	0.98
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	507000	2535	18.78	20.70	1.556	-	-	-0.05	0.247	0.384	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Back	10mm	Ant 0	DSI 3/5	519000	2595	21.85	22.70	1.216	-	-	0.08	0.587	0.714	1.13
44	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Back	10mm	Ant 0	DSI 3/5	519000	2595	21.78	22.70	1.236	-	-	0.07	0.446	**0.551**	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	519000	2595	17.48	18.20	1.180	-	-	-0.17	0.817	0.964	2.77
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	519000	2595	17.39	18.20	1.205	-	-	0.01	0.423	0.510	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	519000	2595	17.70	19.20	1.413	-	-	0.01	0.274	0.387	0.66
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	519000	2595	17.35	19.20	1.531	-	-	-0.07	0.294	0.450	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 0	DSI 3/5	518598	2592.99	19.91	20.95	1.271	-	-	-0.14	0.320	0.407	0.24
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 0	DSI 3/5	518598	2592.99	19.71	20.95	1.330	-	-	0.04	0.323	0.430	
	1st	FR1 n41	100M	QPSK	1	137	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	518598	2592.99	17.55	18.45	1.230	-	-	0.06	0.827	1.017	2.06
45	2nd	FR1 n41	100M	QPSK	1	137	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	518598	2592.99	17.31	18.45	1.300	-	-	0.07	0.487	**0.633**	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	518598	2592.99	16.64	18.45	1.517	-	-	-0.03	0.206	0.313	0.11
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	518598	2592.99	16.57	18.45	1.542	-	-	0.05	0.208	0.321	

<ENDC SAR>

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
835MHz																						
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 0	DSI 3/5	26865	831.5	20.33	21.00	1.167	-	-	0.12	0.123	0.144	0.15
	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 0	DSI 3/5	26865	831.5	19.75	21.00	1.334	-	-	0.05	0.112	0.149	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	20525	836.5	20.83	21.50	1.167	-	-	0.01	0.153	0.179	0.15
	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	10mm	Ant 0	DSI 3/5	20525	836.5	20.05	21.50	1.396	-	-	0.04	0.124	0.173	
	1st	FR1 n5	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 1	DSI 3/5	167300	836.5	21.69	23.20	1.416	-	-	-0.14	0.206	0.292	1.13
	2nd	FR1 n5	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 1	DSI 3/5	167300	836.5	21.61	23.20	1.442	-	-	0.03	0.156	0.225	
1750MHz																						
	1st	LTE Band 4 Other PA	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	17.35	18.00	1.161	-	-	0.16	0.312	0.362	0.65
	2nd	LTE Band 4 Other PA	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	17.33	18.00	1.167	-	-	0.05	0.360	0.420	
	1st	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	17.42	18.00	1.143	-	-	0.04	0.326	0.373	0.35
	2nd	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	20175	1732.5	17.39	18.00	1.151	-	-	0.08	0.351	0.404	
	1st	LTE Band 66	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	16.04	17.25	1.321	-	-	-0.07	0.294	0.388	0.99
	2nd	LTE Band 66	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	16.00	17.25	1.334	-	-	0.05	0.232	0.309	
	1st	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	15.98	17.25	1.340	-	-	0.18	0.283	0.379	0.71
	2nd	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	15.84	17.25	1.384	-	-	-0.04	0.233	0.322	
	1st	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	16.05	17.25	1.318	-	-	-0.16	0.294	0.388	0.86
	2nd	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 0	DSI 3/5	132322	1745	15.83	17.25	1.387	-	-	0.05	0.229	0.318	
	1st	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	132322	1745	16.97	18.00	1.268	-	-	0.02	0.044	0.056	1.46
	2nd	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 2	DSI 3/5	132322	1745	16.92	18.00	1.282	-	-	0.05	0.031	0.040	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	349000	1745	17.46	18.45	1.256	-	-	0	0.245	0.308	1.72
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	349000	1745	17.33	18.45	1.294	-	-	-0.05	0.354	0.458	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	349000	1745	18.98	20.20	1.324	-	-	-0.03	0.044	0.058	1.40
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	349000	1745	18.87	20.20	1.358	-	-	0.03	0.031	0.042	
1900MHz																						
	1st	LTE Band 2	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	18900	1880	16.66	18.25	1.442	-	-	-0.16	0.334	0.482	0.37
	2nd	LTE Band 2	20M	QPSK	50	24	-	Bottom Side	10mm	Ant 0	DSI 3/5	18900	1880	16.69	18.25	1.432	-	-	-0.05	0.309	0.443	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	17.70	18.50	1.202	-	-	-0.1	0.193	0.232	0.36
	2nd	LTE Band 7	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	17.45	18.50	1.274	-	-	-0.07	0.198	0.252	
	1st	LTE Band 7 Other PA	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	17.56	18.50	1.242	-	-	0.08	0.192	0.238	0.36
	2nd	LTE Band 7 Other PA	20M	QPSK	1	49	-	Back	10mm	Ant 0	DSI 3/5	21100	2535	17.55	18.50	1.245	-	-	0.05	0.176	0.219	
	1st	LTE Band 7	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	21100	2535	13.60	14.25	1.161	-	-	-0.06	0.067	0.078	0.52
	2nd	LTE Band 7	20M	QPSK	50	24	-	Left Side	10mm	Ant 2	DSI 3/5	21100	2535	13.28	14.25	1.250	-	-	0.03	0.070	0.088	
	1st	LTE Band 38 Other PA	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	38000	2595	20.20	21.25	1.274	62.9	1.006	-0.11	0.240	0.307	1.00
	2nd	LTE Band 38 Other PA	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	38000	2595	19.88	21.25	1.371	62.9	1.006	0.07	0.177	0.244	
	1st	LTE Band 41 Other PA	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	41055	2636.5	20.39	21.50	1.291	62.9	1.006	0.07	0.199	0.258	0.15
	2nd	LTE Band 41 Other PA	20M	QPSK	50	24	-	Back	10mm	Ant 0	DSI 3/5	41055	2636.5	20.27	21.50	1.327	62.9	1.006	0.05	0.200	0.267	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	507000	2535	16.11	16.95	1.213	-	-	-0.07	0.583	0.707	1.65
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 1	DSI 3/5	507000	2535	15.64	16.95	1.352	-	-	-0.05	0.358	0.484	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	507000	2535	16.14	17.95	1.517	-	-	0.04	0.173	0.262	0.98
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 2	DSI 3/5	507000	2535	15.96	17.95	1.581	-	-	0.03	0.132	0.209	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	519000	2595	15.83	16.70	1.222	-	-	0.01	0.578	0.706	2.48
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	519000	2595	15.81	16.70	1.227	-	-	0.03	0.325	0.399	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	519000	2595	14.55	16.20	1.462	-	-	-0.18	0.137	0.200	0.88
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	519000	2595	14.30	16.20	1.549	-	-	0.07	0.158	0.245	
	1st	FR1 n41	100M	QPSK	1	137	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	518598	2592.99	15.47	16.20	1.183	-	-	-0.01	0.522	0.618	2.57
	2nd	FR1 n41	100M	QPSK	1	137	DFT-30	Top Side	10mm	Ant 1	DSI 3/5	518598	2592.99	15.27	16.20	1.239	-	-	0.05	0.276	0.342	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	518598	2592.99	13.62	15.45	1.524	-	-	-0.12	0.103	0.157	0.62
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 2	DSI 3/5	518598	2592.99	13.52	15.45	1.560	-	-	0.07	0.116	0.181	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
2450MHz																		
	1st	Bluetooth	DH5 1Mbps	Back	10mm	Ant 8	Full	0	2402	12.80	14.00	1.318	76.84	1.301	-0.05	0.040	0.069	1.23
46	2nd	Bluetooth	DH5 1Mbps	Back	10mm	Ant 8	Full	0	2402	12.50	14.00	1.413	76.84	1.301	0.01	0.028	**0.052**	
	1st	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 8	Hotspot on	1	2412	15.81	17.50	1.476	100	1.000	-0.06	0.079	0.116	2.64
47	2nd	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 8	Hotspot on	1	2412	15.71	17.50	1.510	100	1.000	0.05	0.141	**0.213**	
5000MHz																		
	1st	WLAN5.2GHz	802.11n-HT40 MCS0	Back	10mm	Ant 8	Hotspot on	38	5190	11.11	13.00	1.545	94.77	1.055	0.04	0.152	0.248	2.67
48	2nd	WLAN5.2GHz	802.11n-HT40 MCS0	Back	10mm	Ant 8	Hotspot on	38	5190	11.44	13.00	1.432	94.77	1.055	0.11	0.089	**0.134**	
	1st	WLAN5.8GHz	802.11n-HT40 MCS0	Back	10mm	Ant 8	Hotspot on	159	5795	12.64	14.50	1.533	94.77	1.055	0.08	0.217	0.351	0.97
49	2nd	WLAN5.8GHz	802.11n-HT40 MCS0	Back	10mm	Ant 8	Hotspot on	159	5795	12.68	14.50	1.519	94.77	1.055	0.02	0.175	**0.281**	

14.3 Body Worn Accessory SAR

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
750MHz																						
	1st	LTE Band 12	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	23095	707.5	23.62	24.50	1.225	-	-	-0.14	0.216	0.265	0.10
50	2nd	LTE Band 12	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	23095	707.5	22.96	24.50	1.426	-	-	-0.03	0.190	**0.271**	
	1st	LTE Band 12	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	23095	707.5	23.34	24.50	1.306	-	-	0.03	0.123	0.161	1.13
	2nd	LTE Band 12	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	23095	707.5	22.80	24.50	1.479	-	-	0.02	0.084	0.124	
	1st	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	23230	782	23.54	24.50	1.247	-	-	0.04	0.088	0.110	1.38
	2nd	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	23230	782	22.83	24.50	1.469	-	-	0.02	0.103	0.151	
	1st	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	23230	782	23.11	24.50	1.377	-	-	-0.1	0.190	0.262	0.88
51	2nd	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	23230	782	22.54	24.50	1.570	-	-	0.03	0.136	**0.214**	
835MHz																						
	1st	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 0	DSI 1	189	836.4	30.69	32.00	1.352	-	-	-0.01	0.219	0.296	0.23
52	2nd	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 0	DSI 1	189	836.4	30.11	32.00	1.545	-	-	0.03	0.182	**0.281**	
	1st	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 1	DSI 1	189	836.4	30.22	32.00	1.507	-	-	-0.12	0.181	0.273	1.96
	2nd	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 1	DSI 1	189	836.4	30.05	32.00	1.567	-	-	-0.05	0.111	0.174	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	4182	836.4	23.68	24.50	1.208	-	-	0.08	0.022	0.027	2.12
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	4182	836.4	23.34	24.50	1.306	-	-	0.01	0.034	0.044	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	4182	836.4	21.90	23.00	1.288	-	-	0.17	0.151	0.195	1.35
53	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	4182	836.4	21.53	23.00	1.403	-	-	-0.04	0.102	**0.143**	
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 0	DSI 1	26865	831.5	23.39	24.00	1.151	-	-	-0.13	0.159	0.183	0.51
54	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 0	DSI 1	26865	831.5	22.62	24.00	1.374	-	-	-0.05	0.150	**0.206**	
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 1	DSI 1	26865	831.5	23.12	24.00	1.225	-	-	0.05	0.104	0.127	1.73
	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 1	DSI 1	26865	831.5	22.48	24.00	1.419	-	-	0.04	0.133	0.189	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	20525	836.5	23.75	24.50	1.189	-	-	0.03	0.172	0.204	0.29
55	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	20525	836.5	22.99	24.50	1.416	-	-	-0.05	0.154	**0.218**	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	20525	836.5	23.58	24.50	1.236	-	-	-0.1	0.121	0.150	1.38
	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 1	DSI 1	20525	836.5	22.76	24.50	1.493	-	-	0.01	0.138	0.206	
	1st	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	167300	836.5	22.91	24.20	1.346	-	-	0.09	0.142	0.191	0.11
56	2nd	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	167300	836.5	22.73	24.20	1.403	-	-	0.03	0.140	**0.196**	
	1st	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	167300	836.5	22.65	24.20	1.429	-	-	-0.15	0.126	0.180	0.40
	2nd	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	167300	836.5	22.50	24.20	1.479	-	-	-0.07	0.111	0.164	
1750MHz																						
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	1413	1732.6	21.44	22.50	1.276	-	-	-0.19	0.334	0.426	0.05
57	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	1413	1732.6	21.20	22.50	1.349	-	-	0.05	0.312	**0.421**	
	1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	1413	1732.6	20.22	21.00	1.197	-	-	0.12	0.049	0.059	1.91
	2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	1413	1732.6	20.14	21.00	1.219	-	-	0.04	0.031	0.038	
	1st	LTE Band 4	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	20.99	21.75	1.191	-	-	0.06	0.324	0.386	0.19
58	2nd	LTE Band 4	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	20.91	21.75	1.213	-	-	0.02	0.332	**0.403**	
	1st	LTE Band 4	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	20175	1732.5	20.40	21.00	1.148	-	-	-0.05	0.187	0.215	1.65
	2nd	LTE Band 4	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	20175	1732.5	20.25	21.00	1.189	-	-	0.03	0.124	0.147	
	1st	LTE Band 4	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	20175	1732.5	21.38	22.50	1.294	-	-	0.18	0.031	0.040	1.71
	2nd	LTE Band 4	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	20175	1732.5	21.37	22.50	1.297	-	-	0.07	0.021	0.027	
	1st	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	132322	1745	20.66	21.50	1.213	-	-	0.02	0.342	0.415	0.10
59	2nd	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	132322	1745	20.36	21.50	1.300	-	-	0.03	0.312	**0.406**	
	1st	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	132322	1745	19.71	20.00	1.069	-	-	0.07	0.176	0.188	2.12
	2nd	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	132322	1745	19.72	20.00	1.067	-	-	0.02	0.287	0.306	
	1st	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	132322	1745	21.07	22.00	1.239	-	-	-0.18	0.034	0.042	2.25
	2nd	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	132322	1745	21.06	22.00	1.242	-	-	-0.05	0.020	0.025	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	349000	1745	21.87	22.70	1.211	-	-	0.14	0.476	0.576	0.48
60	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	349000	1745	21.58	22.70	1.294	-	-	0.03	0.399	**0.516**	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	349000	1745	21.05	21.70	1.161	-	-	0.06	0.192	0.223	1.55
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	349000	1745	21.01	21.70	1.172	-	-	0.05	0.272	0.319	

	1st	FR1 n66	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 2	DSI 1	349000	1745	22.08	23.20	1.294	-	-	-0.18	0.041	0.053	1.22
	2nd	FR1 n66	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 2	DSI 1	349000	1745	22.05	23.20	1.303	-	-	0.07	0.031	0.040	
1900MHz																						
	1st	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 0	DSI 1	661	1880	28.07	29.00	1.239	-	-	0.14	0.413	0.512	0.66
61	2nd	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 0	DSI 1	661	1880	27.48	29.00	1.419	-	-	0.02	0.310	**0.440**	
	1st	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Back	15mm	Ant 1	DSI 1	661	1880	22.52	23.25	1.183	-	-	0.12	0.184	0.218	0.93
	2nd	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Back	15mm	Ant 1	DSI 1	661	1880	22.38	23.25	1.222	-	-	0.01	0.221	0.270	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	9400	1880	21.67	22.50	1.211	-	-	-0.18	0.380	0.460	0.44
62	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 0	DSI 1	9400	1880	21.57	22.50	1.239	-	-	0.03	0.336	**0.416**	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	9400	1880	20.02	20.75	1.183	-	-	-0.07	0.117	0.138	2.87
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 1	9400	1880	19.97	20.75	1.197	-	-	0.01	0.223	0.267	
	1st	LTE Band 2	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	18900	1880	20.88	22.00	1.294	-	-	0.02	0.359	0.465	0.04
63	2nd	LTE Band 2	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	18900	1880	20.50	22.00	1.413	-	-	0.07	0.332	**0.469**	
	1st	LTE Band 2	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	18900	1880	19.27	20.00	1.183	-	-	-0.16	0.190	0.225	1.26
	2nd	LTE Band 2	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	18900	1880	19.20	20.00	1.202	-	-	0.05	0.250	0.301	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	21.88	22.50	1.153	-	-	0.17	0.316	0.364	0.18
	2nd	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	21.59	22.50	1.233	-	-	0.05	0.307	0.379	
	1st	LTE Band 7	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	21350	2560	19.84	20.50	1.164	-	-	-0.03	0.508	0.591	1.24
64	2nd	LTE Band 7	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	21350	2560	19.35	20.50	1.303	-	-	-0.04	0.341	**0.444**	
	1st	LTE Band 7	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	21100	2535	17.78	18.00	1.052	-	-	-0.03	0.078	0.082	1.14
	2nd	LTE Band 7	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	21100	2535	17.28	18.00	1.180	-	-	-0.04	0.053	0.063	
	1st	LTE Band 38	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	38000	2595	23.39	24.00	1.151	62.9	1.006	-0.06	0.300	0.347	0.65
	2nd	LTE Band 38	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	38000	2595	23.38	24.00	1.153	62.9	1.006	-0.07	0.258	0.299	
	1st	LTE Band 38	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	38000	2595	22.20	23.00	1.202	62.9	1.006	-0.18	0.487	0.589	0.80
65	2nd	LTE Band 38	20M	QPSK	50	24	-	Back	15mm	Ant 1	DSI 1	38000	2595	21.91	23.00	1.285	62.9	1.006	-0.05	0.379	**0.490**	
	1st	LTE Band 38	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	38000	2595	19.69	20.50	1.205	62.9	1.006	0.07	0.095	0.116	1.37
	2nd	LTE Band 38	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	38000	2595	19.65	20.50	1.216	62.9	1.006	0.05	0.130	0.159	
	1st	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	41055	2636.5	23.91	24.50	1.146	62.9	1.006	0.11	0.247	0.285	0.06
	2nd	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	41055	2636.5	23.75	24.50	1.189	62.9	1.006	0.07	0.235	0.281	
	1st	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 1	DSI 1	41055	2636.5	22.29	22.75	1.112	62.9	1.006	-0.03	0.370	0.414	0.96
66	2nd	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 1	DSI 1	41055	2636.5	21.98	22.75	1.194	62.9	1.006	0.05	0.276	**0.332**	
	1st	LTE Band 41	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	40185	2549.5	19.95	20.50	1.135	62.9	1.006	0.09	0.097	0.111	1.53
	2nd	LTE Band 41	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	40185	2549.5	19.62	20.50	1.225	62.9	1.006	-0.04	0.063	0.078	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	507000	2535	22.23	22.95	1.180	-	-	-0.1	0.391	0.462	1.22
67	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 0	DSI 1	507000	2535	22.16	22.95	1.199	-	-	0.05	0.291	**0.349**	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	507000	2535	19.66	20.45	1.199	-	-	0.14	0.553	0.663	2.62
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	507000	2535	19.41	20.45	1.271	-	-	0.06	0.286	0.363	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 2	DSI 1	507000	2535	20.27	21.95	1.472	-	-	0.04	0.136	0.200	0.81
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 2	DSI 1	507000	2535	20.00	21.95	1.567	-	-	0.07	0.106	0.166	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 0	DSI 1	519000	2595	22.85	23.70	1.216	-	-	-0.09	0.388	0.472	0.74
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 0	DSI 1	519000	2595	22.81	23.70	1.227	-	-	0.03	0.324	0.398	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 1	DSI 1	519000	2595	20.48	21.20	1.180	-	-	0.09	0.545	0.643	1.60
68	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 1	DSI 1	519000	2595	20.41	21.20	1.199	-	-	0.09	0.371	**0.445**	
	1st	FR1 n38	20M	QPSK	25	13	DFT-30	Back	15mm	Ant 2	DSI 1	519000	2595	18.65	20.20	1.429	-	-	0.15	0.096	0.137	2.93
	2nd	FR1 n38	20M	QPSK	25	13	DFT-30	Back	15mm	Ant 2	DSI 1	519000	2595	18.52	20.20	1.472	-	-	0.03	0.183	0.269	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 0	DSI 1	518598	2592.99	20.89	21.95	1.276	-	-	-0.16	0.253	0.323	0.32
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 0	DSI 1	518598	2592.99	20.72	21.95	1.327	-	-	0.08	0.226	0.300	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 1	DSI 1	518598	2592.99	19.00	19.95	1.245	-	-	0.01	0.478	0.595	2.22
69	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 1	DSI 1	518598	2592.99	18.77	19.95	1.312	-	-	0.03	0.272	**0.357**	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 2	DSI 1	518598	2592.99	17.65	19.45	1.514	-	-	-0.19	0.075	0.114	2.78
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 2	DSI 1	518598	2592.99	17.50	19.45	1.567	-	-	0.02	0.138	0.216	

<ENDC SAR>

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
835MHz																						
	1st	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 0	DSI 1	26865	831.5	21.83	22.50	1.167	-	-	0.11	0.108	0.126	0.33
	2nd	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 0	DSI 1	26865	831.5	21.02	22.50	1.406	-	-	-0.06	0.097	0.136	
	1st	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	20525	836.5	21.84	22.75	1.233	-	-	0.18	0.109	0.134	0.03
	2nd	LTE Band 5	10M	QPSK	1	25	-	Back	15mm	Ant 0	DSI 1	20525	836.5	21.04	22.75	1.483	-	-	0.04	0.091	0.135	
	1st	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	167300	836.5	22.65	24.20	1.429	-	-	-0.15	0.126	0.180	0.40
	2nd	FR1 n5	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	167300	836.5	22.50	24.20	1.479	-	-	-0.07	0.111	0.164	
1750MHz																						
	1st	LTE Band 4 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	18.86	19.50	1.159	-	-	-0.12	0.232	0.269	0.11
	2nd	LTE Band 4 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	18.80	19.50	1.175	-	-	0.07	0.235	0.276	
	1st	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	18.93	19.50	1.140	-	-	0.01	0.235	0.268	0.19
	2nd	LTE Band 4 Other PA(4A-n7A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	20175	1732.5	18.81	19.50	1.172	-	-	0.05	0.239	0.280	
	1st	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.60	18.50	1.230	-	-	0.01	0.171	0.210	0.67
	2nd	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.57	18.50	1.239	-	-	-0.02	0.145	0.180	
	1st	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.52	18.50	1.253	-	-	0.08	0.136	0.170	0.81
	2nd	LTE Band 66 Other PA(66A-n7A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.39	18.50	1.291	-	-	-0.01	0.159	0.205	
	1st	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.50	18.50	1.259	-	-	0.05	0.137	0.172	0.89
	2nd	LTE Band 66 Other PA(66A-n38A)	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	132322	1745	17.35	18.50	1.303	-	-	0.03	0.162	0.211	
	1st	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	132322	1745	18.48	19.50	1.265	-	-	-0.05	0.198	0.250	0.80
	2nd	LTE Band 66	20M	QPSK	50	24	-	Back	15mm	Ant 2	DSI 1	132322	1745	18.17	19.50	1.358	-	-	0.01	0.153	0.208	
	1st	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	349000	1745	19.01	19.70	1.172	-	-	-0.15	0.121	0.142	1.92
	2nd	FR1 n66	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	349000	1745	18.79	19.70	1.233	-	-	0.04	0.179	0.221	
	1st	FR1 n66	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 2	DSI 1	349000	1745	21.03	22.20	1.309	-	-	0.08	0.037	0.048	2.34
	2nd	FR1 n66	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 2	DSI 1	349000	1745	21.02	22.20	1.312	-	-	0.06	0.021	0.028	
1900MHz																						
	1st	LTE Band 2	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	18900	1880	18.25	19.50	1.334	-	-	0.01	0.167	0.223	0.15
	2nd	LTE Band 2	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	18900	1880	18.21	19.50	1.346	-	-	-0.01	0.172	0.231	
2600MHz																						
	1st	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	19.22	20.00	1.197	-	-	0.06	0.133	0.159	0.95
	2nd	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	19.03	20.00	1.250	-	-	0.02	0.158	0.198	
	1st	LTE Band 7 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	19.07	20.00	1.239	-	-	0.11	0.088	0.109	1.50
	2nd	LTE Band 7 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	21100	2535	19.06	20.00	1.242	-	-	0.1	0.124	0.154	
	1st	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	21100	2535	15.18	15.50	1.076	-	-	0.16	0.026	0.028	1.86
	2nd	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 2	DSI 1	21100	2535	14.98	15.50	1.127	-	-	-0.03	0.038	0.043	
	1st	LTE Band 38 Other PA	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	38000	2595	21.76	22.75	1.256	62.9	1.006	0.1	0.131	0.166	0.87
	2nd	LTE Band 38 Other PA	20M	QPSK	50	24	-	Back	15mm	Ant 0	DSI 1	38000	2595	21.34	22.75	1.384	62.9	1.006	-0.01	0.146	0.203	
	1st	LTE Band 41 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	41055	2636.5	22.36	23.00	1.159	62.9	1.006	0.17	0.157	0.183	0.60
	2nd	LTE Band 41 Other PA	20M	QPSK	1	49	-	Back	15mm	Ant 0	DSI 1	41055	2636.5	22.05	23.00	1.245	62.9	1.006	0.02	0.168	0.210	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	507000	2535	18.12	18.95	1.211	-	-	-0.04	0.391	0.473	1.58
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 1	DSI 1	507000	2535	17.64	18.95	1.352	-	-	0.03	0.243	0.329	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 2	DSI 1	507000	2535	18.17	19.95	1.507	-	-	0.17	0.086	0.130	0.73
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 2	DSI 1	507000	2535	17.99	19.95	1.570	-	-	-0.05	0.070	0.110	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 1	DSI 1	519000	2595	18.38	19.20	1.208	-	-	-0.03	0.344	0.415	2.06
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Back	15mm	Ant 1	DSI 1	519000	2595	18.33	19.20	1.222	-	-	0.04	0.211	0.258	
	1st	FR1 n38	20M	QPSK	25	13	DFT-30	Back	15mm	Ant 2	DSI 1	519000	2595	16.49	18.20	1.483	-	-	0.14	0.061	0.090	2.99
	2nd	FR1 n38	20M	QPSK	25	13	DFT-30	Back	15mm	Ant 2	DSI 1	519000	2595	16.36	18.20	1.528	-	-	0.03	0.117	0.179	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 1	DSI 1	518598	2592.99	16.97	17.95	1.253	-	-	-0.08	0.302	0.378	1.73
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 1	DSI 1	518598	2592.99	16.66	17.95	1.346	-	-	0.05	0.189	0.254	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 2	DSI 1	518598	2592.99	15.68	17.45	1.503	-	-	0.08	0.047	0.071	2.92
	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 2	DSI 1	518598	2592.99	15.50	17.45	1.567	-	-	0.01	0.089	0.139	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation d_{dB}(dB)
2450MHz																		
	1st	Bluetooth	DH5 1Mbps	Back	15mm	Ant 8	Full	0	2402	12.80	14.00	1.318	76.84	1.301	0.01	0.017	0.029	2.58
70	2nd	Bluetooth	DH5 1Mbps	Back	15mm	Ant 8	Full	0	2402	12.50	14.00	1.413	76.84	1.301	0.07	0.008	**0.016**	
	1st	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 8	Standalone	1	2412	18.40	20.00	1.445	100	1.000	0.08	0.053	0.076	2.92
71	2nd	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 8	Standalone	1	2412	18.40	20.00	1.445	100	1.000	0.05	0.103	**0.149**	
5000MHz																		
	1st	WLAN5.3GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	54	5270	15.01	17.00	1.581	94.77	1.055	0.04	0.263	0.439	2.75
72	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	54	5270	15.35	17.00	1.462	94.77	1.055	-0.05	0.151	**0.233**	
	1st	WLAN5.5GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	110	5550	15.73	17.50	1.502	94.77	1.055	0.06	0.350	0.555	1.65
73	2nd	WLAN5.5GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	110	5550	15.88	17.50	1.451	94.77	1.055	0.01	0.248	**0.380**	
	1st	WLAN5.8GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	159	5795	15.68	17.50	1.519	94.77	1.055	-0.1	0.242	0.388	0.91
74	2nd	WLAN5.8GHz	802.11n-HT40 MCS0	Back	15mm	Ant 8	Standalone	159	5795	15.92	17.50	1.438	94.77	1.055	0.07	0.208	**0.315**	

14.4 Product specific 10g SAR

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Deviation d_{dB}(dB)
2600MHz																						
	1st	LTE Band 7	20M	QPSK	50	24	-	Top Side	0mm	Ant 1	DSI 1	20850	2510	19.78	20.50	1.180	-	-	-0.07	2.350	2.774	0.01
75	2nd	LTE Band 7	20M	QPSK	50	24	-	Top Side	0mm	Ant 1	DSI 1	20850	2510	19.44	20.50	1.276	-	-	0.05	2.170	**2.770**	
	1st	LTE Band 7	20M	QPSK	50	24	-	Top Side	0mm	Ant 1	DSI 3/5	20850	2510	17.71	18.00	1.069	-	-	-0.07	1.260	1.347	0.20
	2nd	LTE Band 7	20M	QPSK	50	24	-	Top Side	0mm	Ant 1	DSI 3/5	20850	2510	16.84	18.00	1.306	-	-	-0.06	1.080	1.411	
	1st	LTE Band 38	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 1	38000	2595	22.53	23.25	1.180	62.9	1.006	0.05	1.780	2.114	0.33
76	2nd	LTE Band 38	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 1	38000	2595	22.55	23.25	1.175	62.9	1.006	0.07	1.930	**2.281**	
	1st	LTE Band 38	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 3/5	38000	2595	19.69	20.50	1.205	62.9	1.006	0.03	1.050	1.273	1.62
	2nd	LTE Band 38	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 3/5	38000	2595	19.80	20.50	1.175	62.9	1.006	0.01	0.742	0.877	
	1st	LTE Band 41	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 1	39750	2506	21.88	22.75	1.222	62.9	1.006	-0.14	2.130	2.618	0.56
77	2nd	LTE Band 41	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 1	39750	2506	21.58	22.75	1.308	62.9	1.006	0.03	1.750	**2.303**	
	1st	LTE Band 41	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 3/5	39750	2506	19.65	20.25	1.148	62.9	1.006	-0.14	1.246	1.439	1.84
	2nd	LTE Band 41	20M	QPSK	1	49	-	Top Side	0mm	Ant 1	DSI 3/5	39750	2506	19.50	20.25	1.189	62.9	1.006	-0.11	0.788	0.942	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 1	DSI 1	502000	2510	19.62	20.45	1.211	-	-	-0.15	1.960	2.373	0.77
78	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 1	DSI 1	502000	2510	19.40	20.45	1.274	-	-	-0.04	1.560	**1.987**	
	1st	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 1	DSI 3/5	502000	2510	18.08	18.70	1.153	-	-	0.02	1.320	1.523	1.27
	2nd	FR1 n7	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 1	DSI 3/5	502000	2510	17.86	18.70	1.213	-	-	0.01	0.936	1.136	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 1	DSI 1	519000	2595	20.48	21.20	1.180	-	-	-0.04	1.970	2.325	0.83
79	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 1	DSI 1	519000	2595	20.41	21.20	1.199	-	-	0.07	1.600	**1.919**	
	1st	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 1	DSI 3/5	519000	2595	17.48	18.20	1.180	-	-	-0.04	0.923	1.089	0.24
	2nd	FR1 n38	20M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 1	DSI 3/5	519000	2595	17.39	18.20	1.205	-	-	-0.01	0.855	1.030	
	1st	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 1	DSI 1	518598	2592.99	19.00	19.95	1.245	-	-	0.13	1.540	1.917	1.15
80	2nd	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 1	DSI 1	518598	2592.99	18.77	19.95	1.312	-	-	0.04	1.120	**1.470**	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Deviation d_{dB}(dB)
2450MHz																		
	1st	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	54	5270	15.01	17.00	1.581	94.77	1.055	0.12	0.779	1.300	1.63
81	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	54	5270	15.35	17.00	1.462	94.77	1.055	0.07	0.579	**0.893**	
	1st	WLAN5.5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	110	5550	15.73	17.50	1.502	94.77	1.055	-0.08	0.717	1.136	0.20
82	2nd	WLAN5.5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	110	5550	15.88	17.50	1.451	94.77	1.055	0.05	0.709	**1.085**	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Freq. (MHz)	Power Drift (dB)	Measured 10g SAR (W/kg)	Deviation d_{dB}(dB)
	1st	NFC	ASK	Back	0mm	13.56	0.01	0.009	2.55
83	2nd	NFC	ASK	Back	0mm	13.56	0.03	**0.005**	

14.5 Repeated SAR Measurement

<1g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 66	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	16.85	17.25	1.096	-	-	0.03	0.982	1	1.077
2nd	LTE Band 66	20M	QPSK	50	24	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	16.85	17.25	1.096	-	-	0.09	0.975	1.007	1.069
1st	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 1	DSI 2	661	1880	19.74	20.50	1.191	-	-	-0.01	0.825	1	0.983
2nd	GSM1900	-	-	-	-	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 1	DSI 2	661	1880	19.74	20.50	1.191	-	-	-0.05	0.816	1.011	0.972

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	LTE Band 7	20M	QPSK	50	24	Top Side	0mm	Ant 1	DSI 1	20850	2510	19.44	20.50	1.276	0.05	2.170	1	2.770
2nd	LTE Band 7	20M	QPSK	50	24	Top Side	0mm	Ant 1	DSI 1	20850	2510	19.44	20.50	1.276	0.02	2.030	1.069	2.591

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, 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.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	WLAN 5GHz + Bluetooth	Yes	Yes	Yes	Yes
5.	WWAN + WLAN 5GHz + Bluetooth	Yes	Yes	Yes	Yes
6.	WWAN + WLAN2.4GHz+NFC				Yes
7.	WWAN + WLAN5GHz+NFC				Yes
8.	WWAN + Bluetooth+NFC				Yes
9.	WLAN 5GHz + Bluetooth+NFC				Yes
10.	WWAN + WLAN 5GHz + Bluetooth+NFC				Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands and EN-DC combination.
3. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
4. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
5. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
6. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
7. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
8. According to the EUT characteristic, WLAN 2.4GHz and Bluetooth cannot transmit simultaneously.
9. According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
10. According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz cannot transmit simultaneously.
11. NFC can transmit simultaneously with other Radios in extremity exposure condition.
12. When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
13. The maximum SAR summation is calculated based on the same configuration and test position.
14. For standalone WWAN, always choose the highest SAR among the selected WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band.
15. When EN-DC SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position and also the worst SAR of the selected 5GNR Bands within the selected antenna to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands and each 5GNR bands.
16. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
    iii) If SPLSR ≤ 0.04 for 1g SAR and SPLSR≤ 0.10 for 10g SAR, simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.

Conclusion:

1. The Spot check results showed that Deviation of the SAR results did not exceed 3dB, SAR data reuse is justified.
2. Simultaneous transmission analysis for all bands and all position are based on maximum SAR results chosen between the original filing and Spot check Verification Data

15.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	4	5	1+5	4+5
		WWAN	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Right Cheek	0.632	0.293	0.046	0.68	0.34
	Right Tilted	0.321	0.298	0.042	0.36	0.34
	Left Cheek	0.345	1.138	0.213	0.56	1.35
	Left Tilted	0.278	0.730	0.142	0.42	0.87
Ant 1	Right Cheek	1.159	0.293	0.046	1.21	0.34
	Right Tilted	1.156	0.298	0.042	1.20	0.34
	Left Cheek	0.796	1.138	0.213	1.01	1.35
	Left Tilted	0.703	0.730	0.142	0.85	0.87
Ant 2	Right Cheek	1.032	0.293	0.046	1.08	0.34
	Right Tilted	0.193	0.298	0.042	0.24	0.34
	Left Cheek	0.304	1.138	0.213	0.52	1.35
	Left Tilted	0.142	0.730	0.142	0.28	0.87

WWAN Band	Exposure Position	1	3	4	1+3	1+4
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Right Cheek	0.632	0.017	0.142	0.65	0.77
	Right Tilted	0.321	0.062	0.167	0.38	0.49
	Left Cheek	0.345	0.330	0.523	0.68	0.87
	Left Tilted	0.278	0.113	0.327	0.39	0.61
Ant 1	Right Cheek	1.159	0.017	0.142	1.18	1.30
	Right Tilted	1.156	0.062	0.167	1.22	1.32
	Left Cheek	0.796	0.330	0.523	1.13	1.32
	Left Tilted	0.703	0.113	0.327	0.82	1.03
Ant 2	Right Cheek	1.032	0.017	0.142	1.05	1.17
	Right Tilted	0.193	0.062	0.167	0.26	0.36
	Left Cheek	0.304	0.330	0.523	0.63	0.83
	Left Tilted	0.142	0.113	0.327	0.26	0.47

WWAN Band	Exposure Position	1	4	5	1+4+5
		WWAN	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Right Cheek	0.632	0.142	0.046	0.82
	Right Tilted	0.321	0.167	0.042	0.53
	Left Cheek	0.345	0.523	0.213	1.08
	Left Tilted	0.278	0.327	0.142	0.75
Ant 1	Right Cheek	1.159	0.142	0.046	1.35
	Right Tilted	1.156	0.167	0.042	1.37
	Left Cheek	0.796	0.523	0.213	**1.53**
	Left Tilted	0.703	0.327	0.142	1.17
Ant 2	Right Cheek	1.032	0.142	0.046	1.22
	Right Tilted	0.193	0.167	0.042	0.40
	Left Cheek	0.304	0.523	0.213	1.04
	Left Tilted	0.142	0.327	0.142	0.61

<ENDC>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands LTE Ant 0	All Bands FR1 Ant 1	Right Cheek	0.527	0.703	0.017	0.142	0.046	1.25	1.37	1.28	1.42
		Right Tilted	0.254	0.743	0.062	0.167	0.042	1.06	1.16	1.04	1.21
		Left Cheek	0.263	0.486	0.330	0.523	0.213	1.08	1.27	0.96	1.49
		Left Tilted	0.203	0.472	0.113	0.327	0.142	0.79	1.00	0.82	1.14
All Bands LTE Ant 0	All Bands FR1 Ant 2	Right Cheek	0.527	0.745	0.017	0.142	0.046	**1.29**	1.41	1.32	1.46
		Right Tilted	0.254	0.139	0.062	0.167	0.042	0.46	0.56	0.44	0.60
		Left Cheek	0.263	0.245	0.330	0.523	0.213	0.84	1.03	0.72	1.24
		Left Tilted	0.203	0.112	0.113	0.327	0.142	0.43	0.64	0.46	0.78
All Bands LTE Ant 2	All Bands FR1 Ant 1	Right Cheek	0.378	0.703	0.017	0.142	0.046	1.10	1.22	1.13	1.27
		Right Tilted	0.084	0.743	0.062	0.167	0.042	0.89	0.99	0.87	1.04
		Left Cheek	0.131	0.486	0.330	0.523	0.213	0.95	1.14	0.83	1.35
		Left Tilted	0.082	0.472	0.113	0.327	0.142	0.67	0.88	0.70	1.02

15.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4	1+5	4+5	1+4+5
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Front	0.473	0.065	0.236	0.024	0.54	0.71	0.50	0.26	0.73
	Back	0.809	0.213	0.351	0.069	1.02	1.16	0.88	0.42	1.23
	Left side	0.361				0.36	0.36	0.36	0.00	0.36
	Right side	0.519	0.089	0.265	0.059	0.61	0.78	0.58	0.32	0.84
	Top side		0.069	0.330	0.017	0.07	0.33	0.02	0.35	0.35
	Bottom side	0.972				0.97	0.97	0.97	0.00	0.97
Ant 1	Front	0.345	0.065	0.236	0.024	0.41	0.58	0.37	0.26	0.61
	Back	0.889	0.213	0.351	0.069	1.10	1.24	0.96	0.42	1.31
	Left side	0.209				0.21	0.21	0.21	0.00	0.21
	Right side		0.089	0.265	0.059	0.09	0.27	0.06	0.32	0.32
	Top side	1.140	0.069	0.330	0.017	1.21	1.47	1.16	0.35	1.49
	Bottom side					0.00	0.00	0.00	0.00	0.00
Ant 2	Front	0.125	0.065	0.236	0.024	0.19	0.36	0.15	0.26	0.39
	Back	0.363	0.213	0.351	0.069	0.58	0.71	0.43	0.42	0.78
	Left side	0.481				0.48	0.48	0.48	0.00	0.48

<ENDC>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands LTE Ant 0	All Bands FR1 Ant 1	Front	0.217	0.203	0.065	0.236	0.024	0.49	0.66	0.44	0.68
		Back	0.353	0.591	0.213	0.351	0.069	1.16	1.30	1.01	1.36
		Left side	0.089	0.113				0.20	0.20	0.20	0.20
		Right side	0.234		0.089	0.265	0.059	0.32	0.50	0.29	0.56
		Top side		0.707	0.069	0.330	0.017	0.78	1.04	0.72	1.05
		Bottom side	0.482					0.48	0.48	0.48	0.48
All Bands LTE Ant 0	All Bands FR1 Ant 2	Front	0.217	0.068	0.065	0.236	0.024	0.35	0.52	0.31	0.55
		Back	0.353	0.199	0.213	0.351	0.069	0.77	0.90	0.62	0.97
		Left side	0.089	0.262				0.35	0.35	0.35	0.35
		Right side	0.234		0.089	0.265	0.059	0.32	0.50	0.29	0.56
		Top side			0.069	0.330	0.017	0.07	0.33	0.02	0.35
		Bottom side	0.482					0.48	0.48	0.48	0.48
All Bands LTE Ant 2	All Bands FR1 Ant 1	Front	0.024	0.203	0.065	0.236	0.024	0.29	0.46	0.25	0.49
		Back	0.072	0.591	0.213	0.351	0.069	0.88	1.01	0.73	1.08
		Left side	0.088	0.113				0.20	0.20	0.20	0.20
		Right side			0.089	0.265	0.059	0.09	0.27	0.06	0.32
		Top side		0.707	0.069	0.330	0.017	0.78	1.04	0.72	1.05
		Bottom side						0.00	0.00	0.00	0.00

15.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4	1+5	1+4+5	5+4
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Front	0.355	0.043	0.368	0.015	0.40	0.72	0.37	0.74	0.38
	Back	0.576	0.149	0.555	0.029	0.73	1.13	0.61	1.16	0.58
Ant 1	Front	0.284	0.043	0.368	0.015	0.33	0.65	0.30	0.67	0.38
	Back	0.663	0.149	0.555	0.029	0.81	1.22	0.69	1.25	0.58
Ant 2	Front	0.088	0.043	0.368	0.015	0.13	0.46	0.10	0.47	0.38
	Back	0.269	0.149	0.555	0.029	0.42	0.82	0.30	0.85	0.58

<ENDC>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands LTE Ant 0	All Bands FR1 Ant 1	Front	0.163	0.178	0.043	0.368	0.015	0.38	0.71	0.36	0.72
		Back	0.280	0.473	0.149	0.555	0.029	0.90	1.31	0.78	1.34
All Bands LTE Ant 0	All Bands FR1 Ant 2	Front	0.163	0.052	0.043	0.368	0.015	0.26	0.58	0.23	0.60
		Back	0.280	0.179	0.149	0.555	0.029	0.61	1.01	0.49	1.04
All Bands LTE Ant 2	All Bands FR1 Ant 1	Front	0.139	0.178	0.043	0.368	0.015	0.36	0.69	0.33	0.70
		Back	0.250	0.473	0.149	0.555	0.029	0.87	1.28	0.75	1.31

15.4 Product specific 10g SAR Exposure Conditions

Remark:

1. For WLAN2.4GHz/Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

WWAN Band	Exposure Position	1	4	6	1+4+6
		WWAN	WLAN5GHz Ant 8	NFC	Summed
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
ant 0	Front		1.118		1.12
	Back		0.955	0.009	0.96
	Left side				0.00
	Right side		1.300		1.30
	Top side		1.149	0.001	1.15
	Bottom side				0.00
ant 1	Front		1.118		1.12
	Back	2.136	0.955	0.009	**3.10**
	Left side				0.00
	Right side		1.300		1.30
	Top side	1.917	1.149	0.001	3.07
	Bottom side				0.00
ant 2	Front		1.118		1.12
	Back		0.955	0.009	0.96
	Left side				0.00
	Right side		1.300		1.30
	Top side		1.149	0.001	1.15
	Bottom side				0.00

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16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

17. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[6] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.

[7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

[8] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[9] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[10] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[11] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[12] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

[13] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[14] FCC KDB 484596 D01 v02r02, “Test Reductions Via Data Referencing”, Dec. 2023

[15]

------THE END------