FCC SAR TEST REPORT

FCC ID	:	**R9C-CPH2065**
Equipment	:	**Mobile Phone**
Brand Name	:	**OPPO**
Model Name	:	**CPH2065**
Applicant	:	**Guangdong OPPO Mobile Telecommunications Corp., Ltd. NO.18 HaiBin Road, Wusha village, Chang An Town, DongGuan City, GuangDong, China**
Manufacturer	:	**Guangdong OPPO Mobile Telecommunications Corp., Ltd. NO.18 HaiBin Road, Wusha village, Chang An Town, DongGuan City, GuangDong, China**
Standard	:	**FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013**

The product was received on Jun. 01, 2020 and testing was started from Jun. 06, 2020 and completed on Jul. 11, 2020. We, SPORTON INTERNATIONAL (Kunshan) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

Rose Wang

Reviewed by: Rose Wang / Supervisor

Kat Yin

Approved by: Kat Yin / Manager

ACCREDITED Cert #5145.02

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FA060110	01	Initial issue of report	Jul. 29, 2020

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Guangdong OPPO Mobile Telecommunications Corp., Ltd., Mobile Phone, CPH2065, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 15mm)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.42	0.63	0.35		1.41
	GSM1900	0.46	**0.79**	0.31		
	WCDMA V	0.37	0.46	0.28		
	WCDMA IV	0.49	0.61	0.29		
	WCDMA II	0.67	0.75	0.49		
	LTE Band 12 / 17	0.48	0.17	0.17		
	LTE Band 5	0.46	0.42	0.29		
	LTE Band 26	0.59	0.36	0.26		
	LTE Band 66 / 4	0.47	0.56	0.31		
	LTE Band 2	0.62	0.67	0.41		
	LTE Band 7	0.56	0.70	0.36		
	LTE Band 41 / 38	0.55	0.55	0.32		
	SA N7	0.68	0.67	0.40		
	NSA N5	0.27	0.33	0.24		
DTS	2.4GHz WLAN	**1.06**	0.28	0.14		1.12
NII	5GHz WLAN	0.60	0.38	**0.64**	**1.46**	1.41
DSS	Bluetooth	0.80	0.18	<0.10		1.41
Date of Testing:		2020/06/06 ~ 2020/07/11				

Remark:
This device supports both LTE B17/B4/B38 and LTE B12/B66/B41. Since the supported frequency span for LTE B17/B4/B38 falls completely within the supports frequency span for LTE B12/B66/B41, 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/B66/B41.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 10-gram SAR for Product Specific 10g SAR, limit: 4.0W/kg) 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 (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory		
Test Firm	Sporton International (Kunshan) Inc.	
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958	
Test Site No.	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CN1257	314309

3. 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 941225 D07 UMPC Mini Tablet v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	OPPO
Model Name	CPH2065
FCC ID	R9C-CPH2065
IMEI Code	IMEI 1: 863597040018179 IMEI 2: 863597040018161
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz 5G NR n5 : 826.5 MHz ~ 846.5 MHz 5G NR n7 : 2502.5 MHz ~ 2567.5 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 AMR / RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM) WLAN 2.4GHz : 802.11b/g/n HT20/HT40 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	ColorOS 7.1
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	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP) and LTE supports VoLTE operation.
2. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 12.
3. This device WLAN 2.4GHz/ 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
4. This device has WWAN UAT and WWAN LAT transmitter antennas which can refer to antenna location chapter. They are all performed SAR testing, and they can't transmit simultaneously.
5. This device support the receiver detection mechanism, the main purpose is to minimize triggering associated with power reduction scenarios by receiver detection mechanisms and provide enhanced user experience. 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.

6. For WWAN UAT antenna, when earpiece receiver worked, head condition is detected and near to human head, power reduction will be active.
   Reduced power level 1-While the device WWAN is transmitting at the WWAN UAT antenna.
   Reduced power level 2- While the device WLAN 2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN UAT antenna.
7. For WWAN LAT antenna, when earpiece receiver worked, head condition is detected and near to human head, power reduction will be active.
   Reduced power level 1-While the device WWAN is transmitting at the WWAN LAT antenna.
   Reduced power level 2- While the device WLAN 2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN LAT antenna.
8. For WWAN UAT/LAT antenna, when earpiece receiver is not worked, mobile phone away from head and near to body, power reduction will be active.
9. For WWAN UAT antenna, hotspot mode is enabled, power reduction will be activated to limit the maximum power.
10. For WWAN LAT antenna, hotspot mode is enabled, power reduction will be activated to limit the maximum power.
11. For WLAN when transmit standalone or transmit simultaneous with WWAN LAT or UAT, power reduction will be activated to limit the different maximum power level for head / hotspot/ body worn / product specific.
    Reduced power level 1- While the device WLAN is transmitting standalone.
    Reduced power level 2- While the device WLAN2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN antenna.
12. The device has two batteries with the same battery capacity, only Manufacturer is different, we choose the battery 1 to full test and the battery 2 is verified the worst of battery 1.
13. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode.
14. NSA and SA mode performed SAR separately.
15. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
16. The device implanted DPS (Dynamic Power Share) function to achieve higher uplink data rate keeping the total power unchanged in 5G NR NSA EN-DC mode according to 3GPP 38.213, when the equipment has a dynamic power sharing capability, it adjusts the LTE or NR transmission power so that the instantaneous total power does not exceed the specified value, when the maximum transmission power of NR (P LTE, P NR) and the specified total power (P total) have been set and the instantaneous calculated total transmission power exceeds P total, the NR transmission power is reduced so that the actual transmission power of the user equipment will not exceed Ptotal power. So if the LTE and NR standalone SAR is testing at total power level, the EN-DC combine SAR(LTE+NR) will not higher than the each standalone LTE and NR SAR, therefore, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
17. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
18. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n5	FDD	15	5, 10, 15, 20
SA	n7	FDD	15	5, 10, 15, 20

4.2 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>R9C-CPH2065</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: 1850.7 MHz ~ 1909.3 MHz
LTE Band 4: 1710.7 MHz ~ 1754.3 MHz
LTE Band 5: 824.7 MHz ~ 848.3 MHz
LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
LTE Band 12: 699.7 MHz ~ 715.3 MHz
LTE Band 17: 706.5 MHz ~ 713.5 MHz
LTE Band 26: 814.7 MHz ~ 848.3 MHz
LTE Band 38: 2572.5 MHz ~ 2617.5 MHz
LTE Band 41: 2498.5 MHz ~ 2687.5 MHz
LTE Band 66: 1710.7 MHz ~ 1779.3 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 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 CA supports</td><td>Yes</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, receiver detected /hotspot / receiver off will trigger reduced power for some LTE bands, the detail please referred to section 12.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for LTE B7/B38/B41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</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 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
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	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

5. RF Exposure Limits

5.1 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.

5.2 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

1. 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.

6. Specific Absorption Rate (SAR)

6.1 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.

6.2 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:

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

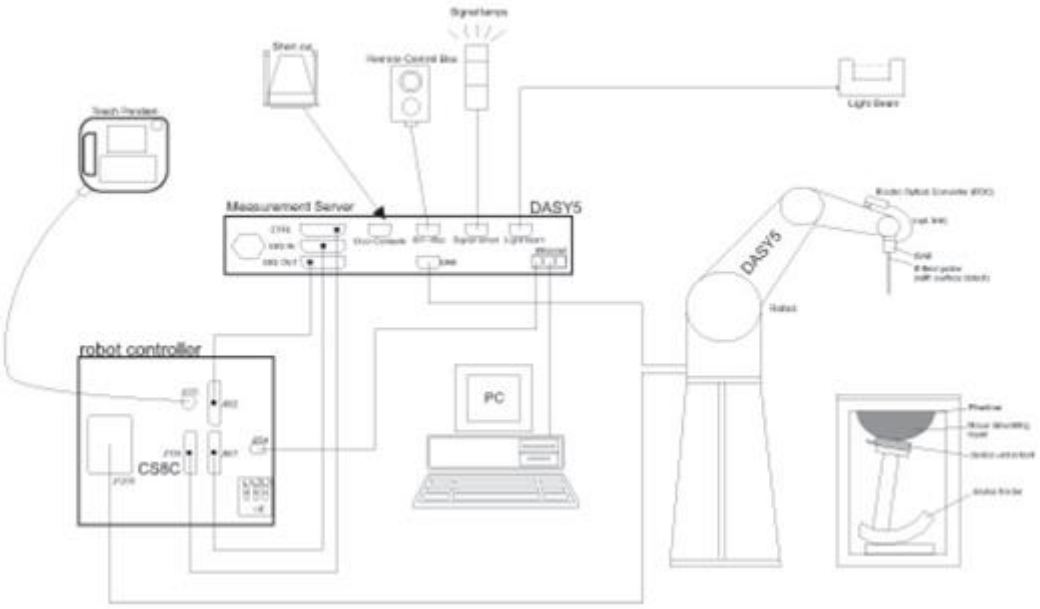
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

The DASY 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 DASY5 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.

7.1 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

7.2 Data Acquisition Electronics (DAE)

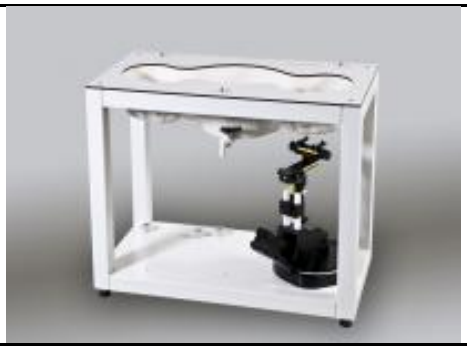
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an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

Fig 5.1 Photo of DAE

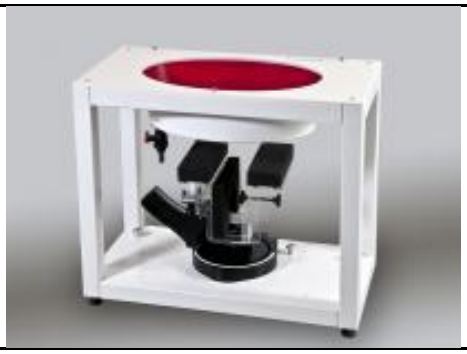
7.3 Phantom

<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 in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

7.4 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

8. 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

8.1 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

8.2 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.

8.3 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.	

8.4 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.

8.5 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.

8.6 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.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 06, 2018	Dec. 05, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 05, 2018	Dec. 04, 2021
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Jul. 30, 2018	Jul. 29, 2021
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 07, 2018	Dec. 06, 2021
SPEAG	2450MHz System Validation Kit	D2450V2	924	Apr. 15, 2019	Apr. 14, 2022
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 07, 2018	Dec. 06, 2021
SPEAG	5000MHz System Validation Kit	D5GHzV2	1167	Aug. 03, 2018	Aug. 02, 2021
SPEAG	Data Acquisition Electronics	DAE3	528	Mar. 16, 2020	Mar. 15, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	7576	Jan. 22, 2020	Jan. 21, 2021
SPEAG	SAM Twin Phantom	SAM V5.0	1795	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Radio communication analyzer	MT8821C	6201588572	Dec. 26, 2019	Dec. 25, 2020
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 22, 2019	Jul. 21, 2020
Agilent	Network Analyzer	E5071C	MY46523671	Oct. 17, 2019	Oct. 16, 2020
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Oct. 28, 2019	Oct. 27, 2020
Agilent	Signal Generator	N5181A	MY50145381	Dec. 26, 2019	Dec. 25, 2020
Anritsu	Power Senor	MA2411B	1306099	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Power Meter	ML2495A	1349001	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Power Sensor	MA2411B	1207253	Dec. 26, 2019	Dec. 25, 2020
Anritsu	Power Meter	ML2495A	1218010	Dec. 26, 2019	Dec. 25, 2020
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 26, 2019	Dec. 25, 2020
R&S	Spectrum Analyzer	FSP7	100818	Jul. 22, 2019	Jul. 21, 2020
LKM electronic	Hygrometer	DTM3000	3241	Jul. 25, 2019	Jul. 24, 2020
Anymetre	Thermo-Hygrometer	JR593	2015102801	Dec. 30, 2019	Dec. 29, 2020
ARRA	Power Divider	A3200-2	N/A	Note 1	
PASTERNACK	Dual Directional Coupler	PE2214-10	N/A	Note 1	
Agilent	Dual Directional Coupler	778D	50422	Note 1	
MCL	Attenuation1	BW-S10W5	N/A	Note 1	
Weinschel	Attenuation2	3M-20	N/A	Note 1	
Zhongjilianhe	Attenuation3	MVE2214-03	N/A	Note 1	
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	

General 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 source.
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.

10. System Verification

10.1 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. 10.1. 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. 10.2.

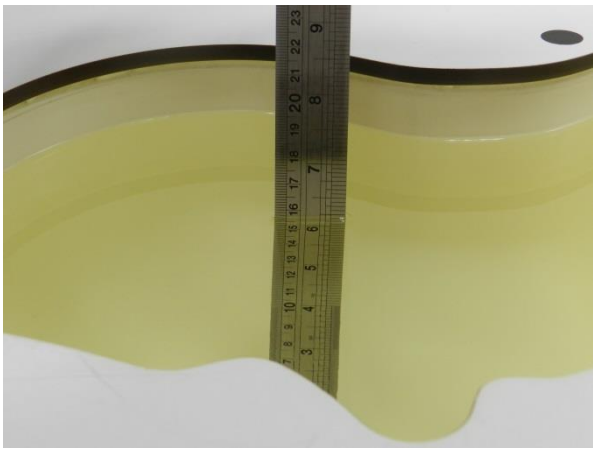


Fig 10.1Photo of Liquid Height for Head SAR

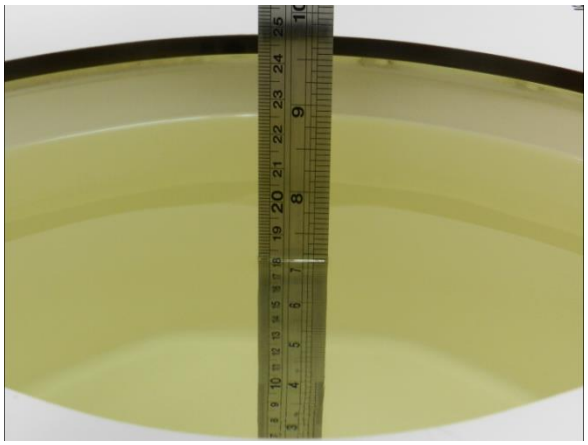


Fig 10.2 Photo of Liquid Height for Body SAR

10.2 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)
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
900	40.3	57.9	0.2	1.4	0.2	0	0.97	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)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	22.4	0.882	40.803	0.89	41.90	-0.90	-2.62	±5	2020/6/10
750	22.7	0.881	40.783	0.89	41.90	-1.01	-2.67	±5	2020/7/11
835	22.4	0.910	42.910	0.90	41.50	1.11	3.40	±5	2020/6/11
835	22.7	0.915	41.980	0.90	41.50	1.67	1.16	±5	2020/7/8
1750	22.4	1.388	41.364	1.37	40.10	1.31	3.15	±5	2020/6/8
1750	22.6	1.398	41.384	1.37	40.10	2.04	3.20	±5	2020/7/2
1900	22.5	1.422	40.315	1.40	40.00	1.57	0.79	±5	2020/6/6
1900	22.7	1.447	40.017	1.40	40.00	3.36	0.04	±5	2020/7/5
2450	22.6	1.861	39.575	1.80	39.20	3.39	0.96	±5	2020/6/15
2600	22.5	2.053	38.335	1.96	39.00	4.74	-1.71	±5	2020/6/13
2600	22.5	1.935	38.814	1.96	39.00	-1.28	-0.48	±5	2020/6/29
5250	22.4	4.597	36.617	4.71	35.95	-2.40	1.86	±5	2020/6/19
5600	22.6	5.006	36.080	5.07	35.50	-1.26	1.63	±5	2020/6/22
5750	22.5	5.175	35.814	5.22	35.35	-0.86	1.31	±5	2020/6/26

10.3 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)	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 (%)
2020/6/10	750	250	1099	7576	528	2.11	8.52	8.44	-0.94
2020/7/11	750	250	1099	7576	528	2.18	8.52	8.72	2.35
2020/6/11	835	250	4d162	7576	528	2.46	9.61	9.84	2.39
2020/7/8	835	250	4d162	7576	528	2.42	9.61	9.68	0.73
2020/6/8	1750	250	1137	7576	528	8.92	36.50	35.68	-2.25
2020/7/2	1750	250	1137	7576	528	8.50	36.50	34	-6.85
2020/6/6	1900	250	5d182	7576	528	9.71	39.60	38.84	-1.92
2020/7/5	1900	250	5d182	7576	528	9.64	39.60	38.56	-2.63
2020/6/15	2450	250	924	7576	528	12.60	52.10	50.4	-3.26
2020/6/13	2600	250	1070	7576	528	14.40	58.10	57.6	-0.86
2020/6/29	2600	250	1070	7576	528	13.60	58.10	54.4	-6.37
2020/6/19	5250	100	1167	7576	528	8.03	77.00	80.3	4.29
2020/6/22	5600	100	1167	7576	528	8.14	80.80	81.4	0.74
2020/6/26	5750	100	1167	7576	528	7.89	76.90	78.9	2.60

<10g SAR>

Date	Frequency (MHz)	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 (%)
2020/6/19	5250	100	1167	7576	528	2.27	22.00	22.7	3.18
2020/6/22	5600	100	1167	7576	528	2.31	23.20	23.1	-0.43

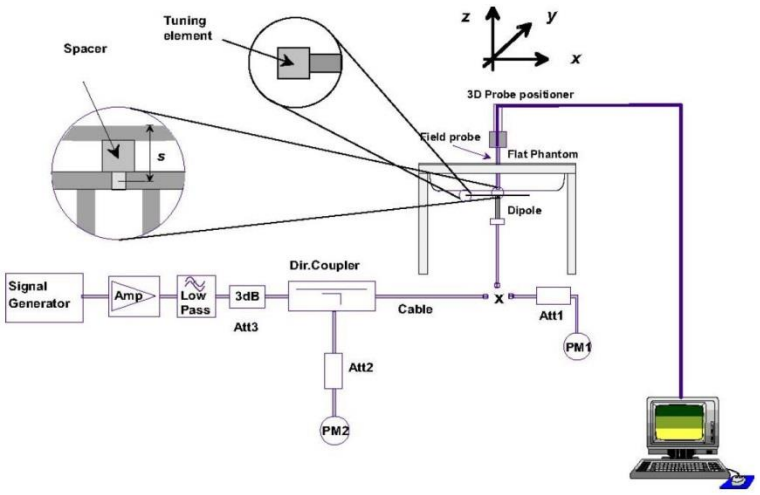


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 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 9.1.2 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 9.1.3). 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 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

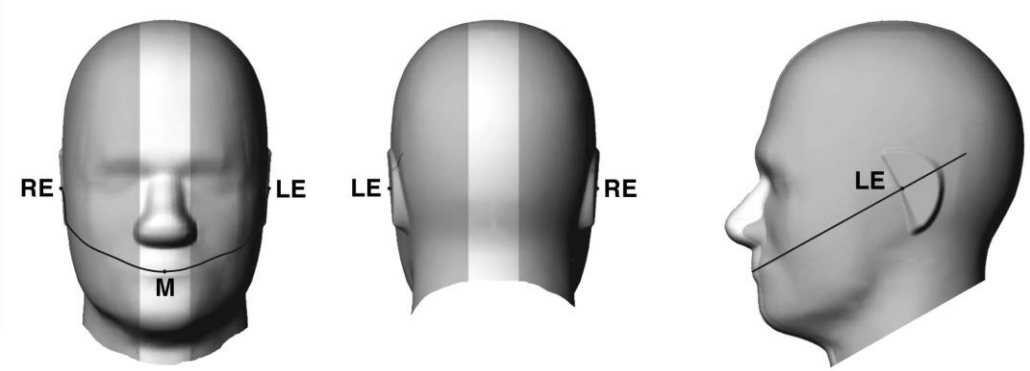


Fig 9.1.1 Front, back, and side views of SAM twin phantom

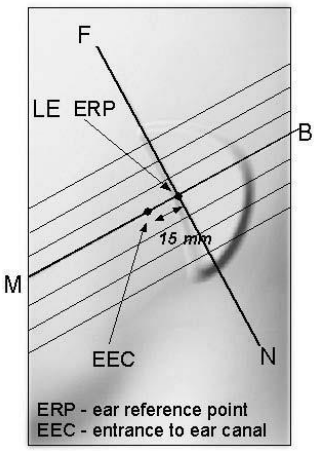


Fig 9.1.2 Close-up side view of phantom showing the ear region.

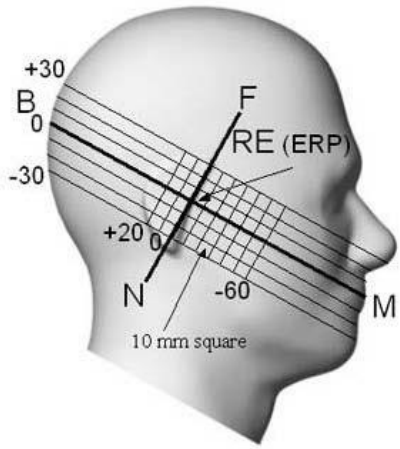


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 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 9.2.1 and Figure 9.2.2), 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 9.2.1). 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 9.2.2), 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 9.2.3), 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 9.2.3. The actual rotation angles should be documented in the test report.

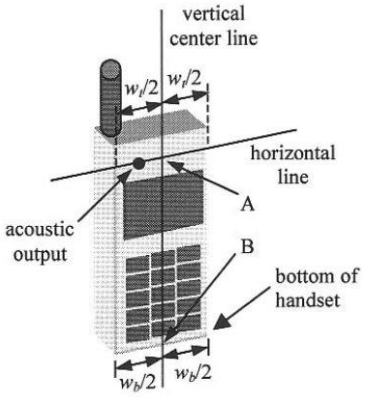


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

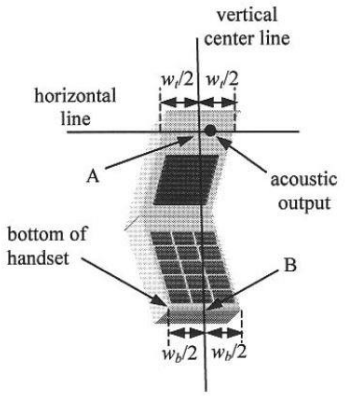


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

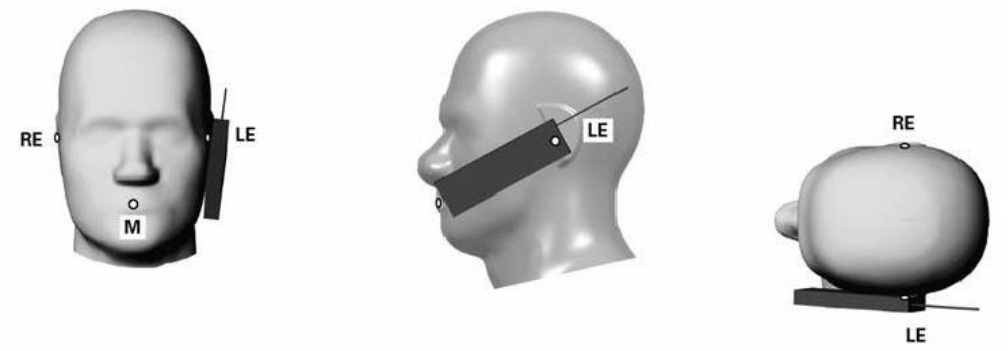


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 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 9.3.1. 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

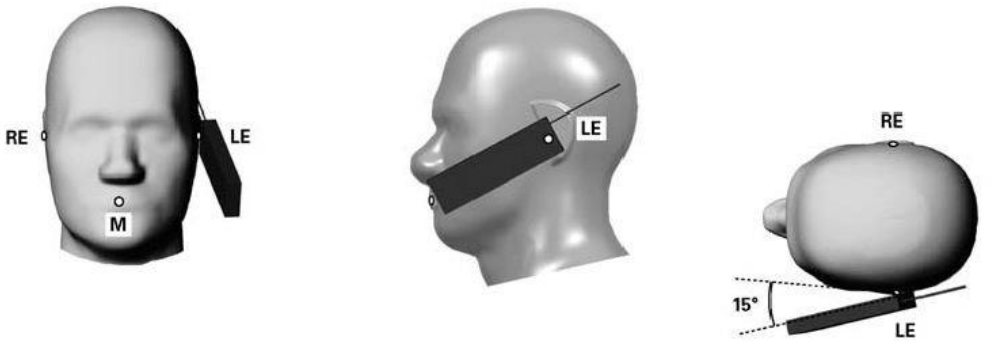


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 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 9.4). 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 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.

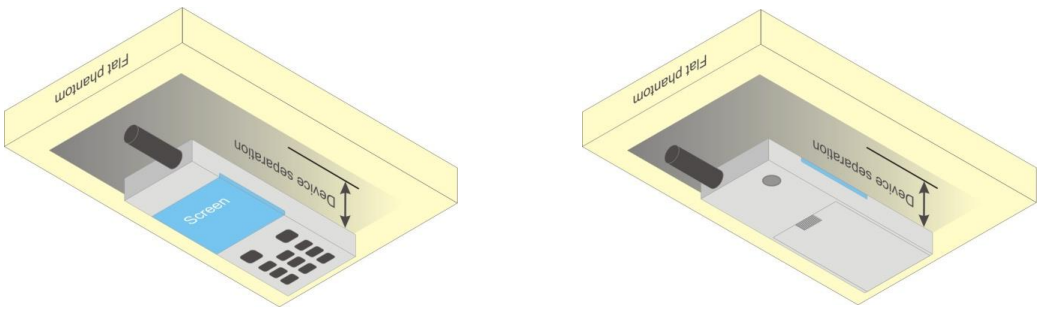


Fig 9.4 Body Worn Position

11.5 Product Specific Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, 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.

11.6 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.

12. GSM/UMTS/CDMA/LTE Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850, and GPRS (3Tx slots) for GSM1900 are considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

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

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

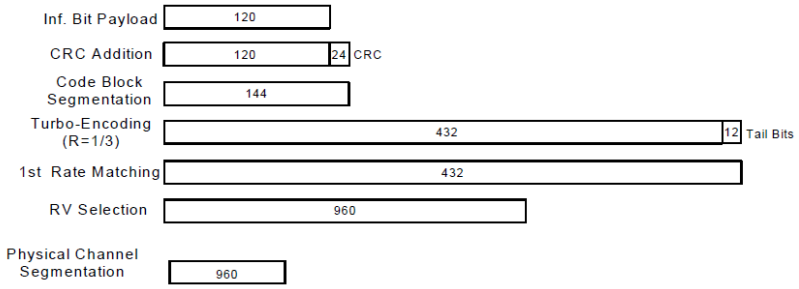


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2E:HSPA+:UL with 16QAM
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

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

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>

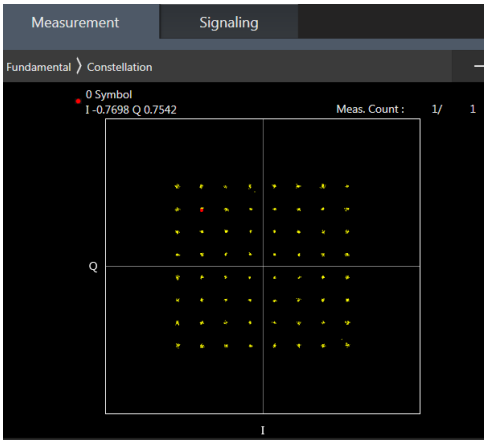
General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

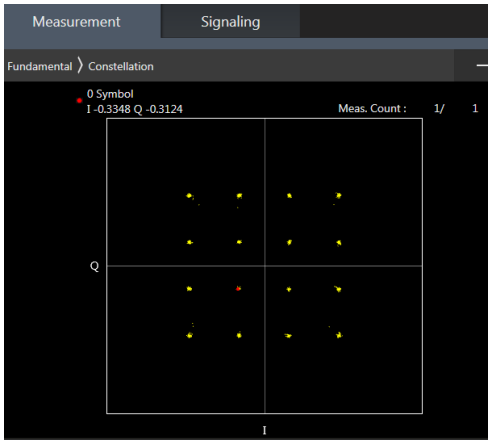
<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 17/4/38 SAR test was covered by Band 12/66/41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM



16QAM

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

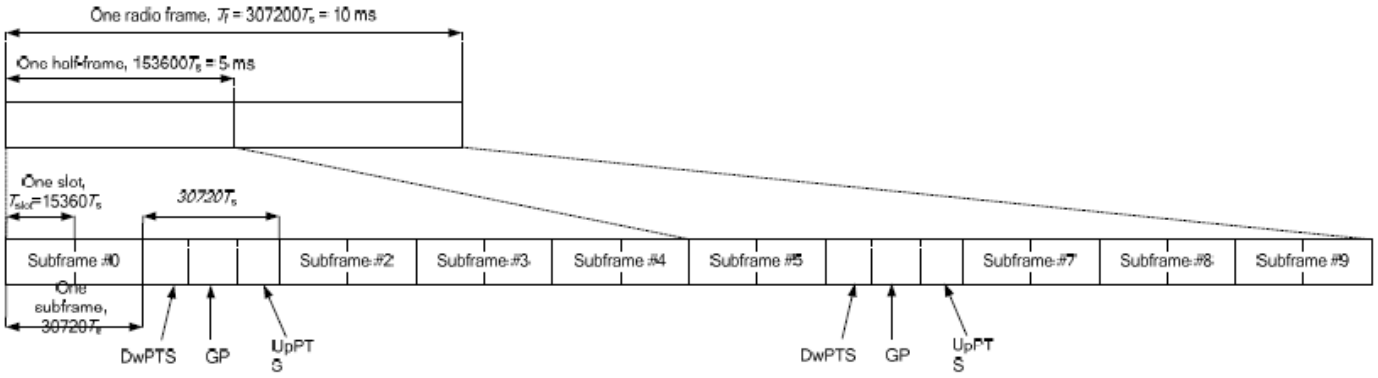


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~4**	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~3**	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

<LTE Downlink Carrier Aggregation>

General Note:

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band and uplink CA. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation					3CC Downlink Carrier Aggregation				
Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset
1	CA_5A-7A	B7		3CC-1	1	CA_5A-7A-7A	B7		
2	CA_7A-7A	B7		3CC-1					
3	CA_41A-41A	B41							
4	CA_7B	B7							
5	CA_7C	B7							
6	CA_38C	B38							
7	CA_41C	B41							

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation				
Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset
1	7C			
2	38C			
3	41C			

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.

ii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers. For 48C, the measured power is extremity low compared to standalone LTE power, so 48C SAR verified is not required.

iii. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

13. 5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n5 is NSA mode, and 5G NR n7 supports SA mode.
2. NR implementation of n5 is limited to EN-DC operations only (NSA), with LTE Bands 7 acting as anchor bands, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
3. Following 5G NR n5/n7 support SCS 15KHz DFT/CP-OFDM, PI/2 BPSK/QPSK/16QAM/64QAM/256QAM, Bandwidth 5M/10M/15M/20M.
4. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
   d. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
   e. PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
   f. QPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
5. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.
6. The device implanted DPS (Dynamic Power Share) function to achieve higher uplink data rate keeping the total power unchanged in 5G NR NSA EN-DC mode according to 3GPP 38.213, when the equipment has a dynamic power sharing capability, it adjusts the LTE or NR transmission power so that the instantaneous total power does not exceed the specified value, when the maximum transmission power of NR (P LTE, P NR) and the specified total power (P total) have been set and the instantaneous calculated total transmission power exceeds P total, the NR transmission power is reduced so that the actual transmission power of the user equipment will not exceed Ptotal power.

<3GPP 38.101 MPR for EN-DC>

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5	≤ 2.5	
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

Inter Band EN-DC Component

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
DC_7A_n5A	DC_7A_n5A	7A	n5A

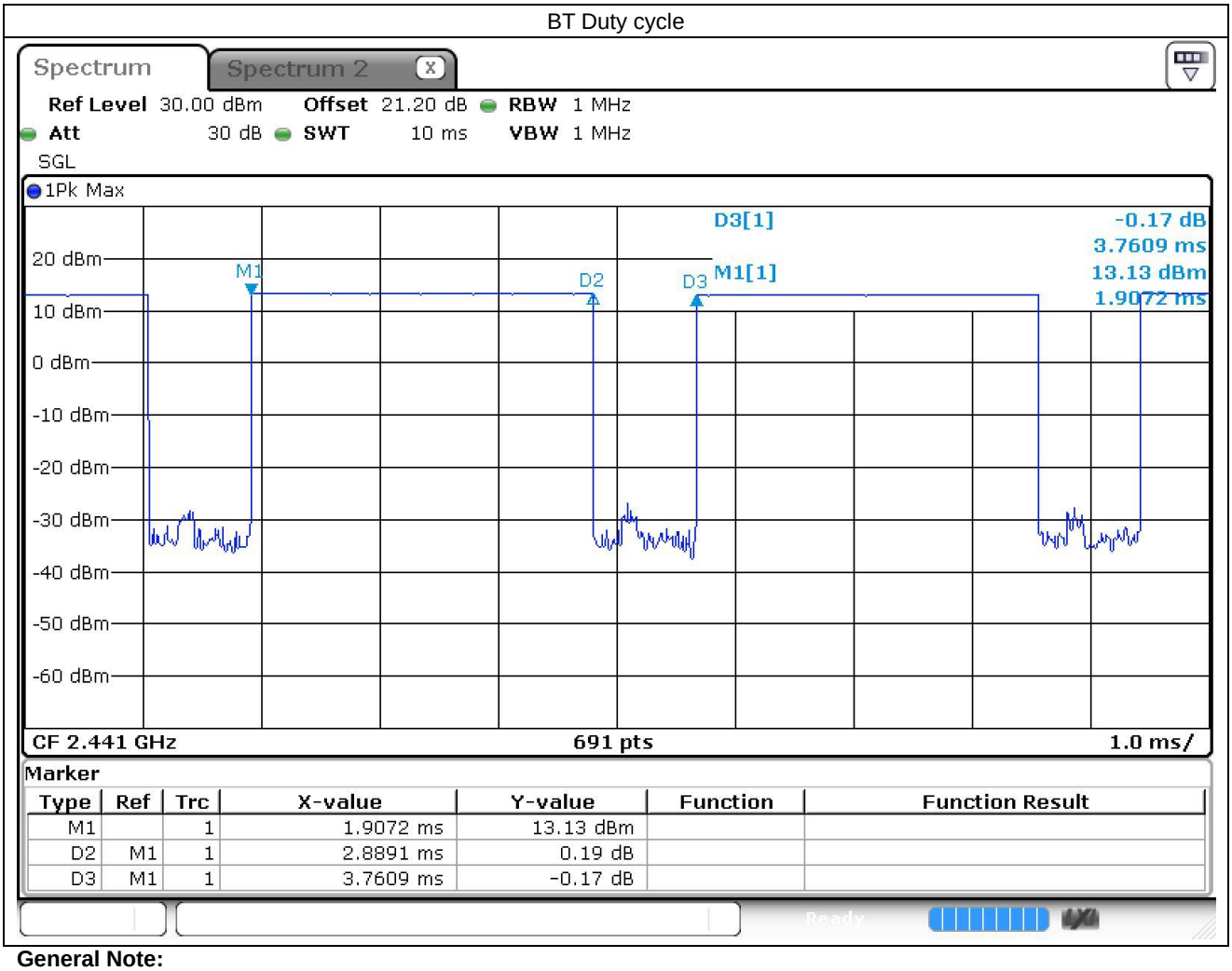
N5A				
Band	Modulations	Single carrier FDD Bandwidth (MHz)	Single carrier N5 Bandwidth (MHz)	Maximum Aggregated Bandwidth Bandwidth (MHz)
DC_7A_n5A	π/2 BPSK	20	5, 10, 15, 20	40MHz
	QPSK			
	16QAM			
	64QAM			
	256 QAM			

14. WiFi/Bluetooth Output Power (Unit: dBm)

General Note:

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

BT Duty cycle

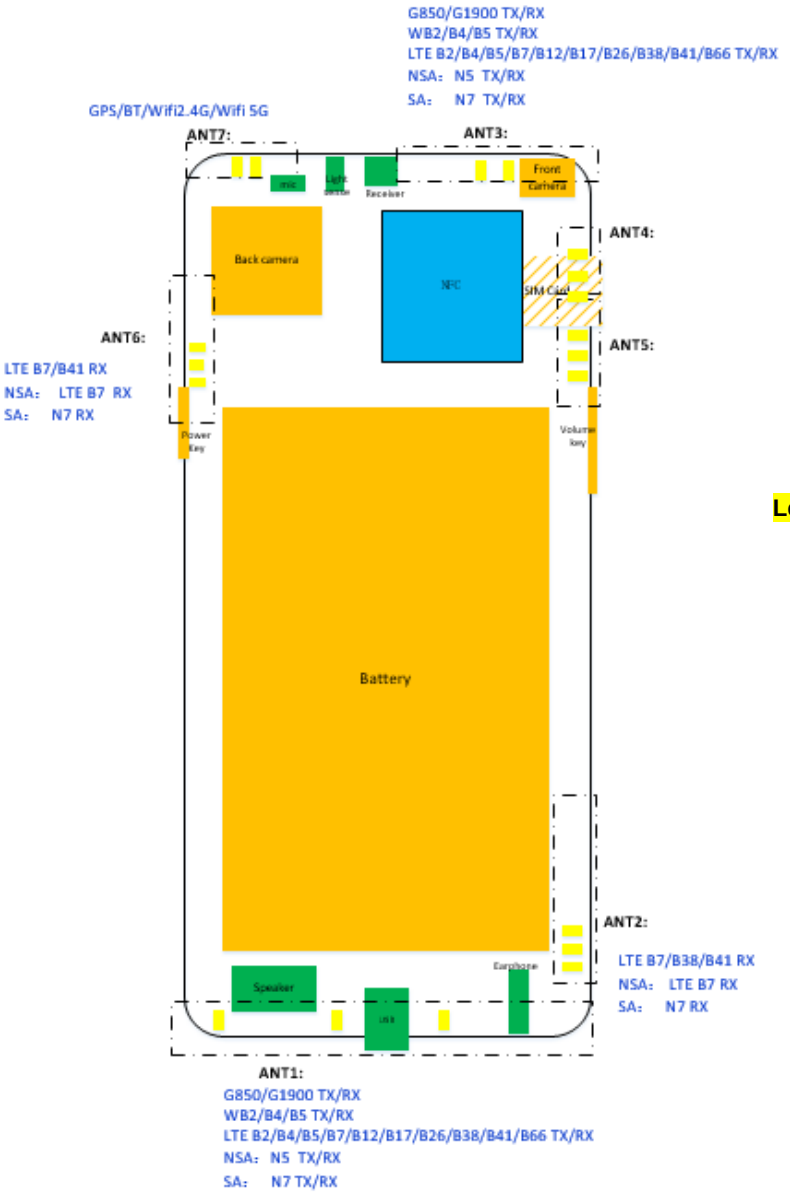


General Note:
For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.82% considered in SAR testing.

15. Antenna Location

<Mobile Phone>

Top Side



Right Side

Left Side

Back View

Bottom Side

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN UAT(Ant.3)	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm
WWAN LAT(Ant.1)	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
BT&WLAN(Ant.7)	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN UAT(Ant.3)	Yes	Yes	Yes	No	Yes	Yes
WWAN LAT(Ant.1)	Yes	Yes	No	Yes	Yes	Yes
BT&WLAN(Ant.7)	Yes	Yes	Yes	No	Yes	No

General Note:

1. Referring to KDB 941225 D06 v02r01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

16. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   · ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   · ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   · ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg. 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. This device has WWAN UAT and WWAN LAT transmitter antennas which can refer to antenna location chapter. They are all performed SAR testing, and they can't transmit simultaneously.
5. This device support the receiver detection mechanism, the main purpose is to minimize triggering associated with power reduction scenarios by receiver detection mechanisms and provide enhanced user experience. 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.
6. For WWAN UAT antenna, when earpiece receiver worked, head condition is detected and near to human head, power reduction will be active.
   Reduced power level 1-While the device WWAN is transmitting at the WWAN UAT antenna.
   Reduced power level 2- While the device WLAN 2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN UAT antenna.
7. For WWAN LAT antenna, when earpiece receiver worked, head condition is detected and near to human head, power reduction will be active.
   Reduced power level 1-While the device WWAN is transmitting at the WWAN LAT antenna.
   Reduced power level 2- While the device WLAN 2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN LAT antenna.
8. For WWAN UAT/LAT antenna, when earpiece receiver is not worked, mobile phone away from head and near to body, power reduction will be active.
9. For WWAN UAT antenna, hotspot mode is enabled, power reduction will be activated to limit the maximum power.
10. For WWAN LAT antenna, hotspot mode is enabled, power reduction will be activated to limit the maximum power.
11. For WLAN when transmit standalone or transmit simultaneous with WWAN LAT or UAT, power reduction will be activated to limit the different maximum power level for head / hotspot/ body worn / product specific.
    Reduced power level 1- While the device WLAN is transmitting standalone.
    Reduced power level 2- While the device WLAN2.4GHz/5GHz or Bluetooth and WLAN 5GHz is transmitting simultaneously with the WWAN antenna.
12. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
13. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15cm or an overall diagonal dimension > 16cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, in this report all the hotspot mode results are < 1.2W/kg.
14. For 5.3/5.5GHz WLAN product specific 10g SAR is necessary too, due to an overall diagonal dimension is >16cm.
15. The device has two batteries with the same battery capacity, only Manufacturer is different, we choose the battery 1 to full test and the battery 2 is verified the worst of battery 1.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850, and GPRS (3Tx slots) for GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 17/4/38 SAR test was covered by Band 12/66/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
2. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
3. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
4. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
5. 16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, 16QAM/64QAM/256QAM SAR testing are not required.
6. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 or U-NII-2A SAR testing is not required when the U-NII-1 or U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band or U-NII-2A.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

16.1 Head SAR

<GSM SAR>

Plot No.	Battery	Band	Mode	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	1	GSM850_UAT	GPRS(4 Tx slot)	Right Cheek	Reduced power level 1	189	836.4	22.30	23.80	1.413	-0.02	0.298	**0.421**
	1	GSM850_UAT	GPRS(4 Tx slot)	Right Tilted	Reduced power level 1	189	836.4	22.30	23.80	1.413	-0.11	0.270	0.381
	1	GSM850_UAT	GPRS(4 Tx slot)	Left Cheek	Reduced power level 1	189	836.4	22.30	23.80	1.413	0.17	0.269	0.380
	1	GSM850_UAT	GPRS(4 Tx slot)	Left Tilted	Reduced power level 1	189	836.4	22.30	23.80	1.413	-0.1	0.234	0.331
	1	GSM850_UAT	GPRS(4 Tx slot)	Right Cheek	Reduced power level 2	189	836.4	20.33	21.80	1.403	-0.09	0.189	0.265
	1	GSM850_UAT	GPRS(4 Tx slot)	Right Tilted	Reduced power level 2	189	836.4	20.33	21.80	1.403	0.11	0.170	0.238
	1	GSM850_UAT	GPRS(4 Tx slot)	Left Cheek	Reduced power level 2	189	836.4	20.33	21.80	1.403	0.13	0.164	0.230
	1	GSM850_UAT	GPRS(4 Tx slot)	Left Tilted	Reduced power level 2	189	836.4	20.33	21.80	1.403	-0.08	0.148	0.208
	1	GSM850_LAT	GPRS(4 Tx slot)	Right Cheek	Full	189	836.4	27.64	29.30	1.466	-0.04	0.175	0.256
	1	GSM850_LAT	GPRS(4 Tx slot)	Right Tilted	Full	189	836.4	27.64	29.30	1.466	0.14	0.075	0.111
	1	GSM850_LAT	GPRS(4 Tx slot)	Left Cheek	Full	189	836.4	27.64	29.30	1.466	0.08	0.190	0.278
	1	GSM850_LAT	GPRS(4 Tx slot)	Left Tilted	Full	189	836.4	27.64	29.30	1.466	-0.06	0.078	0.114
	1	GSM1900_UAT	GPRS(3 Tx slot)	Right Cheek	Reduced power level 1	661	1880	19.20	20.30	1.288	0.11	0.273	0.352
02	1	GSM1900_UAT	GPRS(3 Tx slot)	Right Tilted	Reduced power level 1	661	1880	19.20	20.30	1.288	0.13	0.358	**0.461**
	1	GSM1900_UAT	GPRS(3 Tx slot)	Left Cheek	Reduced power level 1	661	1880	19.20	20.30	1.288	0.1	0.210	0.271
	1	GSM1900_UAT	GPRS(3 Tx slot)	Left Tilted	Reduced power level 1	661	1880	19.20	20.30	1.288	0.07	0.269	0.347
	1	GSM1900_UAT	GPRS(3 Tx slot)	Right Cheek	Reduced power level 2	661	1880	17.18	18.30	1.294	-0.07	0.186	0.241
	1	GSM1900_UAT	GPRS(3 Tx slot)	Right Tilted	Reduced power level 2	661	1880	17.18	18.30	1.294	-0.09	0.232	0.300
	1	GSM1900_UAT	GPRS(3 Tx slot)	Left Cheek	Reduced power level 2	661	1880	17.18	18.30	1.294	0.01	0.129	0.167
	1	GSM1900_UAT	GPRS(3 Tx slot)	Left Tilted	Reduced power level 2	661	1880	17.18	18.30	1.294	0.04	0.183	0.237
	1	GSM1900_LAT	GPRS(3 Tx slot)	Right Cheek	Full	661	1880	25.41	26.80	1.377	0.02	0.048	0.066
	1	GSM1900_LAT	GPRS(3 Tx slot)	Right Tilted	Full	661	1880	25.41	26.80	1.377	-0.04	0.042	0.058
	1	GSM1900_LAT	GPRS(3 Tx slot)	Left Cheek	Full	661	1880	25.41	26.80	1.377	0.1	0.089	0.123
	1	GSM1900_LAT	GPRS(3 Tx slot)	Left Tilted	Full	661	1880	25.41	26.80	1.377	0.05	0.055	0.076

<WCDMA SAR>

Plot No.	Battery	Band	Mode	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
03	1	WCDMA V_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 1	4233	846.6	19.15	19.80	1.161	-0.18	0.321	**0.373**
	1	WCDMA V_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 1	4233	846.6	19.15	19.80	1.161	-0.11	0.287	0.333
	1	WCDMA V_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 1	4233	846.6	19.15	19.80	1.161	-0.04	0.245	0.285
	1	WCDMA V_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 1	4233	846.6	19.15	19.80	1.161	0.01	0.223	0.259
	1	WCDMA V_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 2	4233	846.6	17.58	18.30	1.180	-0.04	0.222	0.262
	1	WCDMA V_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 2	4233	846.6	17.58	18.30	1.180	-0.12	0.199	0.235
	1	WCDMA V_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 2	4233	846.6	17.58	18.30	1.180	-0.1	0.179	0.211
	1	WCDMA V_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 2	4233	846.6	17.58	18.30	1.180	0.17	0.163	0.192
	1	WCDMA V_LAT	RMC 12.2Kbps	Right Cheek	Full	4233	846.6	24.16	24.80	1.159	0.18	0.147	0.170
	1	WCDMA V_LAT	RMC 12.2Kbps	Right Tilted	Full	4233	846.6	24.16	24.80	1.159	0.05	0.072	0.083
	1	WCDMA V_LAT	RMC 12.2Kbps	Left Cheek	Full	4233	846.6	24.16	24.80	1.159	-0.06	0.160	0.185
	1	WCDMA V_LAT	RMC 12.2Kbps	Left Tilted	Full	4233	846.6	24.16	24.80	1.159	-0.01	0.078	0.091
	1	WCDMA IV_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 1	1413	1732.6	13.68	14.30	1.153	0.03	0.361	0.416
04	1	WCDMA IV_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 1	1413	1732.6	13.68	14.30	1.153	0.09	0.424	**0.489**
	1	WCDMA IV_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 1	1413	1732.6	13.68	14.30	1.153	-0.09	0.257	0.296
	1	WCDMA IV_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 1	1413	1732.6	13.68	14.30	1.153	0.04	0.341	0.393
	1	WCDMA IV_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 2	1413	1732.6	11.72	12.30	1.143	-0.08	0.227	0.259
	1	WCDMA IV_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 2	1413	1732.6	11.72	12.30	1.143	-0.1	0.262	0.299
	1	WCDMA IV_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 2	1413	1732.6	11.72	12.30	1.143	0.09	0.154	0.176
	1	WCDMA IV_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 2	1413	1732.6	11.72	12.30	1.143	0.13	0.208	0.238
	1	WCDMA IV_LAT	RMC 12.2Kbps	Right Cheek	Full	1413	1732.6	23.62	24.30	1.169	0.17	0.090	0.106
	1	WCDMA IV_LAT	RMC 12.2Kbps	Right Tilted	Full	1413	1732.6	23.62	24.30	1.169	-0.12	0.095	0.111
	1	WCDMA IV_LAT	RMC 12.2Kbps	Left Cheek	Full	1413	1732.6	23.62	24.30	1.169	-0.1	0.153	0.179
	1	WCDMA IV_LAT	RMC 12.2Kbps	Left Tilted	Full	1413	1732.6	23.62	24.30	1.169	0.16	0.090	0.106
	1	WCDMA II_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 1	9262	1852.4	14.87	15.30	1.104	0.01	0.508	0.561
05	1	WCDMA II_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 1	9262	1852.4	14.87	15.30	1.104	0.03	0.602	**0.665**
	1	WCDMA II_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 1	9262	1852.4	14.87	15.30	1.104	0.03	0.354	0.391
	1	WCDMA II_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 1	9262	1852.4	14.87	15.30	1.104	-0.08	0.462	0.510
	1	WCDMA II_UAT	RMC 12.2Kbps	Right Cheek	Reduced power level 2	9262	1852.4	12.97	13.30	1.079	0.07	0.318	0.343
	1	WCDMA II_UAT	RMC 12.2Kbps	Right Tilted	Reduced power level 2	9262	1852.4	12.97	13.30	1.079	-0.01	0.387	0.418
	1	WCDMA II_UAT	RMC 12.2Kbps	Left Cheek	Reduced power level 2	9262	1852.4	12.97	13.30	1.079	-0.06	0.224	0.242
	1	WCDMA II_UAT	RMC 12.2Kbps	Left Tilted	Reduced power level 2	9262	1852.4	12.97	13.30	1.079	0.02	0.294	0.317
	1	WCDMA II_LAT	RMC 12.2Kbps	Right Cheek	Full	9262	1852.4	23.79	24.30	1.125	0.1	0.077	0.086
	1	WCDMA II_LAT	RMC 12.2Kbps	Right Tilted	Full	9262	1852.4	23.79	24.30	1.125	-0.08	0.062	0.070
	1	WCDMA II_LAT	RMC 12.2Kbps	Left Cheek	Full	9262	1852.4	23.79	24.30	1.125	-0.12	0.100	0.112
	1	WCDMA II_LAT	RMC 12.2Kbps	Left Tilted	Full	9262	1852.4	23.79	24.30	1.125	0.09	0.076	0.086

<FDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	1	LTE Band 12_UAT	10M	QPSK	1	25	Right Cheek	Reduced power level 1	23095	707.5	22.68	23.30	1.153	-0.06	0.412	**0.475**
	1	LTE Band 12_UAT	10M	QPSK	1	25	Right Tilted	Reduced power level 1	23095	707.5	22.68	23.30	1.153	0.05	0.364	0.420
	1	LTE Band 12_UAT	10M	QPSK	1	25	Left Cheek	Reduced power level 1	23095	707.5	22.68	23.30	1.153	0.02	0.358	0.413
	1	LTE Band 12_UAT	10M	QPSK	1	25	Left Tilted	Reduced power level 1	23095	707.5	22.68	23.30	1.153	0.04	0.315	0.363
	1	LTE Band 12_UAT	10M	QPSK	25	12	Right Cheek	Reduced power level 1	23095	707.5	22.66	23.30	1.159	0.05	0.382	0.443
	1	LTE Band 12_UAT	10M	QPSK	25	12	Right Tilted	Reduced power level 1	23095	707.5	22.66	23.30	1.159	0.18	0.339	0.393
	1	LTE Band 12_UAT	10M	QPSK	25	12	Left Cheek	Reduced power level 1	23095	707.5	22.66	23.30	1.159	0.03	0.325	0.377
	1	LTE Band 12_UAT	10M	QPSK	25	12	Left Tilted	Reduced power level 1	23095	707.5	22.66	23.30	1.159	0.01	0.299	0.346
	1	LTE Band 12_UAT	10M	QPSK	1	25	Right Cheek	Reduced power level 2	23095	707.5	20.77	21.30	1.130	0.14	0.272	0.307
	1	LTE Band 12_UAT	10M	QPSK	1	25	Right Tilted	Reduced power level 2	23095	707.5	20.77	21.30	1.130	0.13	0.239	0.270
	1	LTE Band 12_UAT	10M	QPSK	1	25	Left Cheek	Reduced power level 2	23095	707.5	20.77	21.30	1.130	0.11	0.233	0.263
	1	LTE Band 12_UAT	10M	QPSK	1	25	Left Tilted	Reduced power level 2	23095	707.5	20.77	21.30	1.130	0.13	0.209	0.236
	1	LTE Band 12_UAT	10M	QPSK	25	12	Right Cheek	Reduced power level 2	23095	707.5	20.75	21.30	1.135	0.18	0.269	0.305
	1	LTE Band 12_UAT	10M	QPSK	25	12	Right Tilted	Reduced power level 2	23095	707.5	20.75	21.30	1.135	0.14	0.237	0.269
	1	LTE Band 12_UAT	10M	QPSK	25	12	Left Cheek	Reduced power level 2	23095	707.5	20.75	21.30	1.135	0.12	0.230	0.261
	1	LTE Band 12_UAT	10M	QPSK	25	12	Left Tilted	Reduced power level 2	23095	707.5	20.75	21.30	1.135	0.08	0.203	0.230
	1	LTE Band 12_LAT	10M	QPSK	1	25	Right Cheek	Full	23095	707.5	23.74	24.30	1.138	-0.09	0.062	0.070
	1	LTE Band 12_LAT	10M	QPSK	1	25	Right Tilted	Full	23095	707.5	23.74	24.30	1.138	0.08	0.026	0.029
	1	LTE Band 12_LAT	10M	QPSK	1	25	Left Cheek	Full	23095	707.5	23.74	24.30	1.138	0.03	0.060	0.068
	1	LTE Band 12_LAT	10M	QPSK	1	25	Left Tilted	Full	23095	707.5	23.74	24.30	1.138	0.04	0.021	0.024
	1	LTE Band 12_LAT	10M	QPSK	25	12	Right Cheek	Full	23095	707.5	22.40	23.30	1.230	-0.02	0.049	0.060
	1	LTE Band 12_LAT	10M	QPSK	25	12	Right Tilted	Full	23095	707.5	22.40	23.30	1.230	-0.11	0.017	0.021
	1	LTE Band 12_LAT	10M	QPSK	25	12	Left Cheek	Full	23095	707.5	22.40	23.30	1.230	0.14	0.045	0.055
	1	LTE Band 12_LAT	10M	QPSK	25	12	Left Tilted	Full	23095	707.5	22.40	23.30	1.230	-0.1	0.016	0.019
	1	LTE Band 5_UAT	10M	QPSK	1	25	Right Cheek	Reduced power level 1	20525	836.5	19.84	20.30	1.112	-0.02	0.410	0.456
	1	LTE Band 5_UAT	10M	QPSK	1	25	Right Tilted	Reduced power level 1	20525	836.5	19.84	20.30	1.112	-0.03	0.341	0.379
	1	LTE Band 5_UAT	10M	QPSK	1	25	Left Cheek	Reduced power level 1	20525	836.5	19.84	20.30	1.112	-0.1	0.342	0.380
	1	LTE Band 5_UAT	10M	QPSK	1	25	Left Tilted	Reduced power level 1	20525	836.5	19.84	20.30	1.112	-0.12	0.302	0.336
07	1	LTE Band 5_UAT	10M	QPSK	25	12	Right Cheek	Reduced power level 1	20525	836.5	19.82	20.30	1.117	0.02	0.411	**0.459**
	1	LTE Band 5_UAT	10M	QPSK	25	12	Right Tilted	Reduced power level 1	20525	836.5	19.82	20.30	1.117	0.01	0.346	0.386
	1	LTE Band 5_UAT	10M	QPSK	25	12	Left Cheek	Reduced power level 1	20525	836.5	19.82	20.30	1.117	0.05	0.347	0.388
	1	LTE Band 5_UAT	10M	QPSK	25	12	Left Tilted	Reduced power level 1	20525	836.5	19.82	20.30	1.117	-0.01	0.307	0.343
	1	LTE Band 5_UAT	10M	QPSK	1	25	Right Cheek	Reduced power level 2	20525	836.5	18.31	18.80	1.119	0.04	0.290	0.325
	1	LTE Band 5_UAT	10M	QPSK	1	25	Right Tilted	Reduced power level 2	20525	836.5	18.31	18.80	1.119	0.11	0.238	0.266
	1	LTE Band 5_UAT	10M	QPSK	1	25	Left Cheek	Reduced power level 2	20525	836.5	18.31	18.80	1.119	0.1	0.242	0.271
	1	LTE Band 5_UAT	10M	QPSK	1	25	Left Tilted	Reduced power level 2	20525	836.5	18.31	18.80	1.119	-0.07	0.210	0.235
	1	LTE Band 5_UAT	10M	QPSK	25	12	Right Cheek	Reduced power level 2	20525	836.5	18.30	18.80	1.122	0.05	0.291	0.327
	1	LTE Band 5_UAT	10M	QPSK	25	12	Right Tilted	Reduced power level 2	20525	836.5	18.30	18.80	1.122	-0.07	0.241	0.270
	1	LTE Band 5_UAT	10M	QPSK	25	12	Left Cheek	Reduced power level 2	20525	836.5	18.30	18.80	1.122	0.11	0.245	0.275
	1	LTE Band 5_UAT	10M	QPSK	25	12	Left Tilted	Reduced power level 2	20525	836.5	18.30	18.80	1.122	-0.04	0.213	0.239
	1	LTE Band 5_LAT	10M	QPSK	1	25	Right Cheek	Full	20525	836.5	24.36	24.80	1.107	0.15	0.147	0.163
	1	LTE Band 5_LAT	10M	QPSK	1	25	Right Tilted	Full	20525	836.5	24.36	24.80	1.107	0.04	0.072	0.080
	1	LTE Band 5_LAT	10M	QPSK	1	25	Left Cheek	Full	20525	836.5	24.36	24.80	1.107	-0.07	0.165	0.183
	1	LTE Band 5_LAT	10M	QPSK	1	25	Left Tilted	Full	20525	836.5	24.36	24.80	1.107	-0.07	0.093	0.103
	1	LTE Band 5_LAT	10M	QPSK	25	12	Right Cheek	Full	20525	836.5	22.27	23.80	1.422	0.05	0.091	0.129
	1	LTE Band 5_LAT	10M	QPSK	25	12	Right Tilted	Full	20525	836.5	22.27	23.80	1.422	0.01	0.044	0.063
	1	LTE Band 5_LAT	10M	QPSK	25	12	Left Cheek	Full	20525	836.5	22.27	23.80	1.422	0.06	0.102	0.145
	1	LTE Band 5_LAT	10M	QPSK	25	12	Left Tilted	Full	20525	836.5	22.27	23.80	1.422	0.16	0.058	0.082

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
08	1	LTE Band 26_UAT	15M	QPSK	1	37	Right Cheek	Reduced power level 1	26865	831.5	19.84	20.80	1.247	0.03	0.469	**0.585**
	1	LTE Band 26_UAT	15M	QPSK	1	37	Right Tilted	Reduced power level 1	26865	831.5	19.84	20.80	1.247	0.11	0.389	0.485
	1	LTE Band 26_UAT	15M	QPSK	1	37	Left Cheek	Reduced power level 1	26865	831.5	19.84	20.80	1.247	0.08	0.391	0.488
	1	LTE Band 26_UAT	15M	QPSK	1	37	Left Tilted	Reduced power level 1	26865	831.5	19.84	20.80	1.247	0.17	0.337	0.420
	1	LTE Band 26_UAT	15M	QPSK	36	20	Right Cheek	Reduced power level 1	26865	831.5	19.83	20.80	1.250	-0.12	0.463	0.579
	1	LTE Band 26_UAT	15M	QPSK	36	20	Right Tilted	Reduced power level 1	26865	831.5	19.83	20.80	1.250	0.03	0.381	0.476
	1	LTE Band 26_UAT	15M	QPSK	36	20	Left Cheek	Reduced power level 1	26865	831.5	19.83	20.80	1.250	-0.01	0.383	0.479
	1	LTE Band 26_UAT	15M	QPSK	36	20	Left Tilted	Reduced power level 1	26865	831.5	19.83	20.80	1.250	0.07	0.328	0.410
	1	LTE Band 26_UAT	15M	QPSK	1	37	Right Cheek	Reduced power level 2	26865	831.5	17.45	18.30	1.216	0.14	0.269	0.327
	1	LTE Band 26_UAT	15M	QPSK	1	37	Right Tilted	Reduced power level 2	26865	831.5	17.45	18.30	1.216	-0.11	0.224	0.272
	1	LTE Band 26_UAT	15M	QPSK	1	37	Left Cheek	Reduced power level 2	26865	831.5	17.45	18.30	1.216	0.06	0.225	0.274
	1	LTE Band 26_UAT	15M	QPSK	1	37	Left Tilted	Reduced power level 2	26865	831.5	17.45	18.30	1.216	-0.12	0.192	0.234
	1	LTE Band 26_UAT	15M	QPSK	36	20	Right Cheek	Reduced power level 2	26865	831.5	17.43	18.30	1.222	0.04	0.263	0.321
	1	LTE Band 26_UAT	15M	QPSK	36	20	Right Tilted	Reduced power level 2	26865	831.5	17.43	18.30	1.222	0.12	0.219	0.268
	1	LTE Band 26_UAT	15M	QPSK	36	20	Left Cheek	Reduced power level 2	26865	831.5	17.43	18.30	1.222	-0.08	0.220	0.269
	1	LTE Band 26_UAT	15M	QPSK	36	20	Left Tilted	Reduced power level 2	26865	831.5	17.43	18.30	1.222	-0.05	0.190	0.232
	1	LTE Band 26_LAT	15M	QPSK	1	37	Right Cheek	Full	26865	831.5	23.48	24.30	1.208	0.06	0.101	0.122
	1	LTE Band 26_LAT	15M	QPSK	1	37	Right Tilted	Full	26865	831.5	23.48	24.30	1.208	0.04	0.048	0.058
	1	LTE Band 26_LAT	15M	QPSK	1	37	Left Cheek	Full	26865	831.5	23.48	24.30	1.208	0.02	0.121	0.146
	1	LTE Band 26_LAT	15M	QPSK	1	37	Left Tilted	Full	26865	831.5	23.48	24.30	1.208	0.13	0.064	0.077
	1	LTE Band 26_LAT	15M	QPSK	36	20	Right Cheek	Full	26865	831.5	22.17	23.30	1.297	-0.03	0.073	0.095
	1	LTE Band 26_LAT	15M	QPSK	36	20	Right Tilted	Full	26865	831.5	22.17	23.30	1.297	0.05	0.035	0.046
	1	LTE Band 26_LAT	15M	QPSK	36	20	Left Cheek	Full	26865	831.5	22.17	23.30	1.297	-0.12	0.089	0.115
	1	LTE Band 26_LAT	15M	QPSK	36	20	Left Tilted	Full	26865	831.5	22.17	23.30	1.297	0.03	0.046	0.060
	1	LTE Band 66_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 1	132322	1745	13.75	14.30	1.135	-0.04	0.316	0.359
	1	LTE Band 66_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 1	132322	1745	13.75	14.30	1.135	-0.08	0.405	0.460
	1	LTE Band 66_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 1	132322	1745	13.75	14.30	1.135	-0.1	0.233	0.264
	1	LTE Band 66_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 1	132322	1745	13.75	14.30	1.135	0.15	0.332	0.377
	1	LTE Band 66_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 1	132322	1745	13.74	14.30	1.138	-0.05	0.318	0.362
09	1	LTE Band 66_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	132322	1745	13.74	14.30	1.138	-0.08	0.410	**0.466**
	1	LTE Band 66_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 1	132322	1745	13.74	14.30	1.138	0.02	0.235	0.267
	1	LTE Band 66_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 1	132322	1745	13.74	14.30	1.138	0.1	0.335	0.381
	1	LTE Band 66_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	132322	1745	11.62	12.30	1.169	-0.06	0.197	0.230
	1	LTE Band 66_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	132322	1745	11.62	12.30	1.169	0.07	0.258	0.302
	1	LTE Band 66_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	132322	1745	11.62	12.30	1.169	-0.02	0.134	0.157
	1	LTE Band 66_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	132322	1745	11.62	12.30	1.169	-0.11	0.205	0.240
	1	LTE Band 66_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	132322	1745	11.60	12.30	1.175	0.12	0.204	0.240
	1	LTE Band 66_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	132322	1745	11.60	12.30	1.175	0.14	0.259	0.304
	1	LTE Band 66_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	132322	1745	11.60	12.30	1.175	0.07	0.134	0.157
	1	LTE Band 66_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	132322	1745	11.60	12.30	1.175	0.09	0.206	0.242
	1	LTE Band 66_LAT	20M	QPSK	1	49	Right Cheek	Full	132322	1745	23.63	24.30	1.167	0.1	0.108	0.126
	1	LTE Band 66_LAT	20M	QPSK	1	49	Right Tilted	Full	132322	1745	23.63	24.30	1.167	0.12	0.078	0.091
	1	LTE Band 66_LAT	20M	QPSK	1	49	Left Cheek	Full	132322	1745	23.63	24.30	1.167	0.04	0.127	0.148
	1	LTE Band 66_LAT	20M	QPSK	1	49	Left Tilted	Full	132322	1745	23.63	24.30	1.167	-0.02	0.062	0.072
	1	LTE Band 66_LAT	20M	QPSK	50	24	Right Cheek	Full	132322	1745	22.60	23.30	1.175	-0.05	0.094	0.110
	1	LTE Band 66_LAT	20M	QPSK	50	24	Right Tilted	Full	132322	1745	22.60	23.30	1.175	-0.07	0.054	0.064
	1	LTE Band 66_LAT	20M	QPSK	50	24	Left Cheek	Full	132322	1745	22.60	23.30	1.175	-0.08	0.100	0.117
	1	LTE Band 66_LAT	20M	QPSK	50	24	Left Tilted	Full	132322	1745	22.60	23.30	1.175	-0.1	0.052	0.061

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 2_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 1	18900	1880	14.25	15.30	1.274	0.1	0.345	0.439
	1	LTE Band 2_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 1	18900	1880	14.25	15.30	1.274	0.18	0.479	0.610
	1	LTE Band 2_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 1	18900	1880	14.25	15.30	1.274	-0.02	0.272	0.346
	1	LTE Band 2_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 1	18900	1880	14.25	15.30	1.274	0.08	0.362	0.461
	1	LTE Band 2_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 1	18900	1880	14.23	15.30	1.279	0.05	0.348	0.445
10	1	LTE Band 2_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	18900	1880	14.23	15.30	1.279	-0.12	0.486	**0.622**
	1	LTE Band 2_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 1	18900	1880	14.23	15.30	1.279	0.09	0.274	0.351
	1	LTE Band 2_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 1	18900	1880	14.23	15.30	1.279	-0.03	0.364	0.466
	1	LTE Band 2_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	18900	1880	12.67	13.80	1.297	0.07	0.248	0.322
	1	LTE Band 2_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	18900	1880	12.67	13.80	1.297	0.08	0.341	0.442
	1	LTE Band 2_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	18900	1880	12.67	13.80	1.297	-0.11	0.181	0.235
	1	LTE Band 2_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	18900	1880	12.67	13.80	1.297	0.15	0.229	0.297
	1	LTE Band 2_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	18900	1880	12.65	13.80	1.303	0.07	0.248	0.323
	1	LTE Band 2_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	18900	1880	12.65	13.80	1.303	-0.02	0.343	0.447
	1	LTE Band 2_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	18900	1880	12.65	13.80	1.303	0.05	0.182	0.237
	1	LTE Band 2_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	18900	1880	12.65	13.80	1.303	-0.08	0.230	0.300
	1	LTE Band 2_LAT	20M	QPSK	1	49	Right Cheek	Full	18900	1880	23.08	24.30	1.324	-0.11	0.065	0.086
	1	LTE Band 2_LAT	20M	QPSK	1	49	Right Tilted	Full	18900	1880	23.08	24.30	1.324	0.09	0.063	0.083
	1	LTE Band 2_LAT	20M	QPSK	1	49	Left Cheek	Full	18900	1880	23.08	24.30	1.324	0.17	0.109	0.144
	1	LTE Band 2_LAT	20M	QPSK	1	49	Left Tilted	Full	18900	1880	23.08	24.30	1.324	0.08	0.051	0.067
	1	LTE Band 2_LAT	20M	QPSK	50	24	Right Cheek	Full	18900	1880	22.05	23.30	1.334	-0.08	0.053	0.071
	1	LTE Band 2_LAT	20M	QPSK	50	24	Right Tilted	Full	18900	1880	22.05	23.30	1.334	0.15	0.052	0.069
	1	LTE Band 2_LAT	20M	QPSK	50	24	Left Cheek	Full	18900	1880	22.05	23.30	1.334	-0.03	0.088	0.117
	1	LTE Band 2_LAT	20M	QPSK	50	24	Left Tilted	Full	18900	1880	22.05	23.30	1.334	0.15	0.038	0.051

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 7_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 1	21350	2560	15.49	16.30	1.205	-0.06	0.389	0.469
	1	LTE Band 7_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 1	21350	2560	15.49	16.30	1.205	0.08	0.462	0.557
	1	LTE Band 7_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 1	21350	2560	15.49	16.30	1.205	0.1	0.194	0.234
	1	LTE Band 7_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 1	21350	2560	15.49	16.30	1.205	0.07	0.249	0.300
	1	LTE Band 7_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 1	21350	2560	15.48	16.30	1.208	0.08	0.407	0.492
11	1	LTE Band 7_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	21350	2560	15.48	16.30	1.208	0.07	0.467	**0.564**
	1	LTE Band 7_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 1	21350	2560	15.48	16.30	1.208	0.01	0.207	0.250
	1	LTE Band 7_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 1	21350	2560	15.48	16.30	1.208	-0.02	0.266	0.321
	1	LTE Band 7C_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	15.46	16.30	1.213	0.09	0.464	0.563
	1	LTE Band 7_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	21350	2560	13.99	14.80	1.205	0.13	0.273	0.329
	1	LTE Band 7_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	21350	2560	13.99	14.80	1.205	-0.04	0.321	0.387
	1	LTE Band 7_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	21350	2560	13.99	14.80	1.205	0.13	0.133	0.160
	1	LTE Band 7_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	21350	2560	13.99	14.80	1.205	-0.02	0.186	0.224
	1	LTE Band 7_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	21350	2560	13.96	14.80	1.213	-0.01	0.289	0.351
	1	LTE Band 7_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	21350	2560	13.96	14.80	1.213	-0.1	0.327	0.397
	1	LTE Band 7_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	21350	2560	13.96	14.80	1.213	-0.03	0.149	0.181
	1	LTE Band 7_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	21350	2560	13.96	14.80	1.213	0.16	0.198	0.240
	1	LTE Band 7C_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	13.99	14.80	1.205	0.04	0.328	0.395
	1	LTE Band 7_LAT	20M	QPSK	1	49	Right Cheek	Full	21350	2560	22.86	23.80	1.242	0.03	0.291	0.361
	1	LTE Band 7_LAT	20M	QPSK	1	49	Right Tilted	Full	21350	2560	22.86	23.80	1.242	0.06	0.139	0.173
	1	LTE Band 7_LAT	20M	QPSK	1	49	Left Cheek	Full	21350	2560	22.86	23.80	1.242	-0.04	0.163	0.202
	1	LTE Band 7_LAT	20M	QPSK	1	49	Left Tilted	Full	21350	2560	22.86	23.80	1.242	-0.01	0.122	0.151
	1	LTE Band 7C_LAT	20M	QPSK	1	49	Right Cheek	Full	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	22.80	23.80	1.259	0.02	0.267	0.336
	1	LTE Band 7_LAT	20M	QPSK	50	24	Right Cheek	Full	21350	2560	21.85	22.80	1.245	0.09	0.239	0.297
	1	LTE Band 7_LAT	20M	QPSK	50	24	Right Tilted	Full	21350	2560	21.85	22.80	1.245	0.01	0.101	0.126
	1	LTE Band 7_LAT	20M	QPSK	50	24	Left Cheek	Full	21350	2560	21.85	22.80	1.245	-0.05	0.140	0.174
	1	LTE Band 7_LAT	20M	QPSK	50	24	Left Tilted	Full	21350	2560	21.85	22.80	1.245	0.09	0.085	0.106

<TDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	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)
	1	LTE Band 41_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 1	40620	2593	17.79	18.30	1.125	62.9	1.006	0.18	0.400	0.453
	1	LTE Band 41_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 1	40620	2593	17.79	18.30	1.125	62.9	1.006	-0.02	0.479	0.542
	1	LTE Band 41_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 1	40620	2593	17.79	18.30	1.125	62.9	1.006	-0.05	0.175	0.198
	1	LTE Band 41_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 1	40620	2593	17.79	18.30	1.125	62.9	1.006	0.05	0.207	0.234
	1	LTE Band 41_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 1	40620	2593	17.77	18.30	1.130	62.9	1.006	0.05	0.401	0.456
12	1	LTE Band 41_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	40620	2593	17.77	18.30	1.130	62.9	1.006	-0.01	0.481	**0.547**
	1	LTE Band 41_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 1	40620	2593	17.77	18.30	1.130	62.9	1.006	0.11	0.178	0.202
	1	LTE Band 41_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 1	40620	2593	17.77	18.30	1.130	62.9	1.006	0.08	0.207	0.235
	1	LTE Band 41C_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	17.85	18.30	1.109	62.9	1.006	0.04	0.463	0.517
	1	LTE Band 41_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	40620	2593	16.20	16.80	1.148	62.9	1.006	0.06	0.307	0.355
	1	LTE Band 41_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	40620	2593	16.20	16.80	1.148	62.9	1.006	-0.01	0.338	0.390
	1	LTE Band 41_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	40620	2593	16.20	16.80	1.148	62.9	1.006	-0.03	0.122	0.141
	1	LTE Band 41_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	40620	2593	16.20	16.80	1.148	62.9	1.006	0.09	0.177	0.204
	1	LTE Band 41_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	40620	2593	16.19	16.80	1.151	62.9	1.006	-0.08	0.308	0.357
	1	LTE Band 41_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	40620	2593	16.19	16.80	1.151	62.9	1.006	-0.04	0.339	0.392
	1	LTE Band 41_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	40620	2593	16.19	16.80	1.151	62.9	1.006	0.13	0.122	0.141
	1	LTE Band 41_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	40620	2593	16.19	16.80	1.151	62.9	1.006	0.17	0.178	0.206
	1	LTE Band 41C_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	16.24	16.80	1.138	62.9	1.006	0.03	0.326	0.373
	1	LTE Band 41_LAT	20M	QPSK	1	49	Right Cheek	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.07	0.229	0.266
	1	LTE Band 41_LAT	20M	QPSK	1	49	Right Tilted	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.11	0.101	0.117
	1	LTE Band 41_LAT	20M	QPSK	1	49	Left Cheek	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	-0.04	0.122	0.142
	1	LTE Band 41_LAT	20M	QPSK	1	49	Left Tilted	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.16	0.103	0.120
	1	LTE Band 41C_LAT	20M	QPSK	1	49	Right Cheek	Full	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	23.63	24.30	1.167	62.9	1.006	0.09	0.193	0.227
	1	LTE Band 41_LAT	20M	QPSK	50	24	Right Cheek	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.03	0.169	0.214
	1	LTE Band 41_LAT	20M	QPSK	50	24	Right Tilted	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.08	0.075	0.095
	1	LTE Band 41_LAT	20M	QPSK	50	24	Left Cheek	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	-0.08	0.089	0.112
	1	LTE Band 41_LAT	20M	QPSK	50	24	Left Tilted	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	-0.09	0.069	0.087

<EN-DC SAR >

Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 1	21350	2560	12.51	13.30	1.199	0.13	0.197	0.236
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 1	21350	2560	12.51	13.30	1.199	0.14	0.234	0.281
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 1	21350	2560	12.51	13.30	1.199	-0.01	0.082	0.098
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 1	21350	2560	12.51	13.30	1.199	0.02	0.101	0.121
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 1	21350	2560	12.49	13.30	1.205	-0.1	0.200	0.241
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 1	21350	2560	12.49	13.30	1.205	-0.1	0.241	0.290
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 1	21350	2560	12.49	13.30	1.205	-0.04	0.083	0.100
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 1	21350	2560	12.49	13.30	1.205	0.12	0.104	0.125
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	21350	2560	11.00	11.80	1.202	-0.09	0.139	0.167
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	21350	2560	11.00	11.80	1.202	-0.03	0.167	0.201
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	21350	2560	11.00	11.80	1.202	-0.08	0.059	0.071
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	21350	2560	11.00	11.80	1.202	-0.02	0.070	0.085
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	21350	2560	10.99	11.80	1.205	0.13	0.149	0.180
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	21350	2560	10.99	11.80	1.205	-0.03	0.170	0.205
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	21350	2560	10.99	11.80	1.205	0.09	0.061	0.074
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	21350	2560	10.99	11.80	1.205	0.03	0.072	0.086
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Right Cheek	Full	21350	2560	22.86	23.80	1.242	-0.09	0.291	0.361
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Right Tilted	Full	21350	2560	22.86	23.80	1.242	0.05	0.139	0.173
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Left Cheek	Full	21350	2560	22.86	23.80	1.242	0.04	0.163	0.202
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Left Tilted	Full	21350	2560	22.86	23.80	1.242	-0.11	0.122	0.151
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Right Cheek	Full	21350	2560	21.85	22.80	1.245	0.18	0.239	0.297
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Right Tilted	Full	21350	2560	21.85	22.80	1.245	0.03	0.101	0.126
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Left Cheek	Full	21350	2560	21.85	22.80	1.245	0.13	0.140	0.174
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Left Tilted	Full	21350	2560	21.85	22.80	1.245	0.15	0.085	0.106
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Right Cheek	Reduced power level 2	21350	2560	20.08	20.80	1.180	0.04	0.218	0.257
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Right Tilted	Reduced power level 2	21350	2560	20.08	20.80	1.180	0.02	0.061	0.072
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Left Cheek	Reduced power level 2	21350	2560	20.08	20.80	1.180	0.07	0.091	0.107
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Left Tilted	Reduced power level 2	21350	2560	20.08	20.80	1.180	0.16	0.080	0.094
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Right Cheek	Reduced power level 2	21350	2560	20.05	20.80	1.189	0.1	0.218	0.259
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Right Tilted	Reduced power level 2	21350	2560	20.05	20.80	1.189	-0.07	0.064	0.076
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Left Cheek	Reduced power level 2	21350	2560	20.05	20.80	1.189	-0.01	0.096	0.114
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Left Tilted	Reduced power level 2	21350	2560	20.05	20.80	1.189	0.15	0.082	0.097

<5G NR SAR SA Mode>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Reduced power level 1	507000	2535	15.81	17.00	1.315	0.01	0.431	0.567
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Reduced power level 1	507000	2535	15.81	17.00	1.315	0.16	0.491	0.646
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Reduced power level 1	507000	2535	15.81	17.00	1.315	0.17	0.190	0.250
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Reduced power level 1	507000	2535	15.81	17.00	1.315	0.12	0.222	0.292
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Reduced power level 1	507000	2535	15.79	17.00	1.321	0.05	0.445	0.588
13	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Reduced power level 1	507000	2535	15.79	17.00	1.321	-0.17	0.513	**0.678**
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Reduced power level 1	507000	2535	15.79	17.00	1.321	0.09	0.195	0.258
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Reduced power level 1	507000	2535	15.79	17.00	1.321	0.01	0.227	0.300
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Reduced power level 2	507000	2535	13.86	15.00	1.300	-0.12	0.252	0.328
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Reduced power level 2	507000	2535	13.86	15.00	1.300	-0.06	0.323	0.420
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Reduced power level 2	507000	2535	13.86	15.00	1.300	0.04	0.108	0.140
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Reduced power level 2	507000	2535	13.86	15.00	1.300	-0.07	0.131	0.170
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Reduced power level 2	507000	2535	13.84	15.00	1.306	0.12	0.274	0.358
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Reduced power level 2	507000	2535	13.84	15.00	1.306	-0.01	0.332	0.434
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Reduced power level 2	507000	2535	13.84	15.00	1.306	0.06	0.109	0.142
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Reduced power level 2	507000	2535	13.84	15.00	1.306	-0.12	0.134	0.175
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Full	507000	2535	22.88	24.00	1.294	0.05	0.319	0.413
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Full	507000	2535	22.88	24.00	1.294	0.05	0.127	0.164
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Full	507000	2535	22.88	24.00	1.294	0.1	0.167	0.216
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Full	507000	2535	22.88	24.00	1.294	0.05	0.126	0.163
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Full	507000	2535	22.86	24.00	1.300	-0.04	0.325	0.423
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Full	507000	2535	22.86	24.00	1.300	-0.12	0.135	0.176
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Full	507000	2535	22.86	24.00	1.300	-0.02	0.168	0.218
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Full	507000	2535	22.86	24.00	1.300	-0.02	0.137	0.178
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Reduced power level 2	507000	2535	21.88	23.00	1.294	0.1	0.248	0.321
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Reduced power level 2	507000	2535	21.88	23.00	1.294	-0.08	0.105	0.136
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Reduced power level 2	507000	2535	21.88	23.00	1.294	-0.07	0.139	0.180
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Reduced power level 2	507000	2535	21.88	23.00	1.294	0.08	0.106	0.137
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Reduced power level 2	507000	2535	21.86	23.00	1.300	0.12	0.253	0.329
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Reduced power level 2	507000	2535	21.86	23.00	1.300	0.14	0.121	0.157
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Reduced power level 2	507000	2535	21.86	23.00	1.300	0.03	0.156	0.203
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Reduced power level 2	507000	2535	21.86	23.00	1.300	-0.07	0.106	0.138

<5G NR SAR NSA Mode >

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Reduced power level 1	167300	836.5	17.89	18.00	1.026	-0.07	0.255	0.262
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Reduced power level 1	167300	836.5	17.89	18.00	1.026	-0.06	0.220	0.226
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Reduced power level 1	167300	836.5	17.89	18.00	1.026	0.11	0.182	0.187
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Reduced power level 1	167300	836.5	17.89	18.00	1.026	-0.11	0.156	0.160
14	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Reduced power level 1	167300	836.5	17.87	18.00	1.030	-0.05	0.257	**0.265**
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Reduced power level 1	167300	836.5	17.87	18.00	1.030	0.03	0.224	0.231
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Reduced power level 1	167300	836.5	17.87	18.00	1.030	0.09	0.193	0.199
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Reduced power level 1	167300	836.5	17.87	18.00	1.030	0.04	0.159	0.164
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Reduced power level 2	167300	836.5	15.79	16.00	1.050	-0.07	0.168	0.176
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Reduced power level 2	167300	836.5	15.79	16.00	1.050	-0.01	0.145	0.152
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Reduced power level 2	167300	836.5	15.79	16.00	1.050	0.01	0.116	0.122
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Reduced power level 2	167300	836.5	15.79	16.00	1.050	0.03	0.099	0.103
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Reduced power level 2	167300	836.5	15.78	16.00	1.052	-0.11	0.172	0.181
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Reduced power level 2	167300	836.5	15.78	16.00	1.052	0.05	0.150	0.158
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Reduced power level 2	167300	836.5	15.78	16.00	1.052	0.16	0.126	0.133
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Reduced power level 2	167300	836.5	15.78	16.00	1.052	-0.11	0.110	0.116
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Cheek	Full	167300	836.5	23.84	24.00	1.038	0.12	0.091	0.095
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Tilted	Full	167300	836.5	23.84	24.00	1.038	0.17	0.043	0.044
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Cheek	Full	167300	836.5	23.84	24.00	1.038	-0.01	0.109	0.113
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Tilted	Full	167300	836.5	23.84	24.00	1.038	0.13	0.049	0.051
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Cheek	Full	167300	836.5	23.82	24.00	1.042	-0.02	0.108	0.113
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Tilted	Full	167300	836.5	23.82	24.00	1.042	-0.01	0.055	0.057
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Cheek	Full	167300	836.5	23.82	24.00	1.042	-0.05	0.122	0.127
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Tilted	Full	167300	836.5	23.82	24.00	1.042	0.03	0.058	0.060

<Bluetooth SAR>

Plot No.	Battery	Band	Mode	Test Position	Power Reduction	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)
	1	Bluetooth	DH5 1Mbps	Right Cheek	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.02	0.168	0.257
	1	Bluetooth	DH5 1Mbps	Right Tilted	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.07	0.143	0.219
15	1	Bluetooth	DH5 1Mbps	Left Cheek	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.05	0.520	**0.796**
	1	Bluetooth	DH5 1Mbps	Left Tilted	Full	39	2441	13.90	15.40	1.413	76.82	1.084	-0.04	0.364	0.557

<WLAN2.4G SAR>

Plot No.	Battery	Band	Mode	Test Position	Power Reduction	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)
	1	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Reduced power level 1	6	2437	17.20	17.50	1.072	99.31	1.007	0.06	0.330	0.356
	1	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Reduced power level 1	6	2437	17.20	17.50	1.072	99.31	1.007	-0.02	0.241	0.260
	1	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced power level 1	6	2437	17.20	17.50	1.072	99.31	1.007	0.01	0.778	0.839
	1	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Reduced power level 1	6	2437	17.20	17.50	1.072	99.31	1.007	0.11	0.555	0.599
	1	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced power level 1	1	2412	16.80	17.50	1.175	99.31	1.007	0.07	0.698	0.826
16	1	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced power level 1	11	2462	16.80	17.50	1.175	99.31	1.007	-0.03	0.899	**1.064**
	2	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced power level 1	11	2462	16.80	17.50	1.175	99.31	1.007	0.04	0.896	1.060
	1	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Reduced power level 2	6	2437	11.70	12.00	1.072	99.31	1.007	-0.02	0.079	0.085
	1	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Reduced power level 2	6	2437	11.70	12.00	1.072	99.31	1.007	0.02	0.053	0.057
	1	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced power level 2	6	2437	11.70	12.00	1.072	99.31	1.007	0.14	0.201	0.217
	1	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Reduced power level 2	6	2437	11.70	12.00	1.072	99.31	1.007	-0.08	0.134	0.145

<WLAN5G SAR>

Plot No.	Battery	Band	Mode	Test Position	Power Reduction	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)
	1	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	Reduced power level 1	52	5260	9.66	10.00	1.081	96.79	1.033	-0.05	0.107	0.120
	1	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	Reduced power level 1	52	5260	9.66	10.00	1.081	96.79	1.033	0.04	0.124	0.139
	1	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	Reduced power level 1	52	5260	9.66	10.00	1.081	96.79	1.033	-0.03	0.147	0.164
17	1	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	Reduced power level 1	52	5260	9.66	10.00	1.081	96.79	1.033	-0.12	0.218	**0.244**
	1	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	Reduced power level 2	52	5260	7.66	8.00	1.081	96.79	1.033	-0.07	0.065	0.073
	1	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	Reduced power level 2	52	5260	7.66	8.00	1.081	96.79	1.033	0.17	0.084	0.094
	1	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	Reduced power level 2	52	5260	7.66	8.00	1.081	96.79	1.033	-0.1	0.116	0.130
	1	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	Reduced power level 2	52	5260	7.66	8.00	1.081	96.79	1.033	-0.01	0.131	0.146
	1	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	Reduced power level 1	132	5660	9.44	10.00	1.138	96.79	1.033	0.03	0.338	0.397
	1	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	Reduced power level 1	132	5660	9.44	10.00	1.138	96.79	1.033	-0.11	0.396	0.465
	1	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	Reduced power level 1	132	5660	9.44	10.00	1.138	96.79	1.033	0.05	0.374	0.440
	1	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	Reduced power level 1	132	5660	9.44	10.00	1.138	96.79	1.033	0.09	0.473	0.556
	1	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	Reduced power level 1	124	5620	9.40	10.00	1.148	96.79	1.033	0.03	0.372	0.441
	1	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	Reduced power level 1	124	5620	9.40	10.00	1.148	96.79	1.033	-0.08	0.418	0.496
18	1	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	Reduced power level 1	124	5620	9.40	10.00	1.148	96.79	1.033	-0.06	0.505	**0.599**
	1	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	Reduced power level 2	132	5660	7.44	8.00	1.138	96.79	1.033	0.16	0.209	0.246
	1	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	Reduced power level 2	132	5660	7.44	8.00	1.138	96.79	1.033	0.18	0.245	0.288
	1	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	Reduced power level 2	132	5660	7.44	8.00	1.138	96.79	1.033	0.17	0.284	0.334
	1	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	Reduced power level 2	132	5660	7.44	8.00	1.138	96.79	1.033	-0.1	0.314	0.369
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Reduced power level 1	155	5775	9.40	10.00	1.148	88.19	1.134	0.03	0.286	0.372
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	Reduced power level 1	155	5775	9.40	10.00	1.148	88.19	1.134	0.08	0.323	0.421
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Reduced power level 1	155	5775	9.40	10.00	1.148	88.19	1.134	-0.01	0.335	0.436
19	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	Reduced power level 1	155	5775	9.40	10.00	1.148	88.19	1.134	-0.07	0.391	**0.509**
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Reduced power level 2	155	5775	7.40	8.00	1.148	88.19	1.134	0.15	0.169	0.220
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	Reduced power level 2	155	5775	7.40	8.00	1.148	88.19	1.134	-0.01	0.213	0.277
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Reduced power level 2	155	5775	7.40	8.00	1.148	88.19	1.134	0.03	0.176	0.229
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	Reduced power level 2	155	5775	7.40	8.00	1.148	88.19	1.134	0.11	0.217	0.283

16.2 Hotspot SAR

<GSM SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	GSM850_UAT	GPRS(4 Tx slots)	Front	10mm	Full	189	836.4	27.64	29.30	1.466	0.02	0.252	0.369
20	1	GSM850_UAT	GPRS(4 Tx slots)	Back	10mm	Full	189	836.4	27.64	29.30	1.466	-0.1	0.428	**0.627**
	1	GSM850_UAT	GPRS(4 Tx slots)	Left Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.03	0.214	0.314
	1	GSM850_UAT	GPRS(4 Tx slots)	Right Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.05	0.193	0.283
	1	GSM850_UAT	GPRS(4 Tx slots)	Top Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.14	0.240	0.352
	1	GSM850_LAT	GPRS(4 Tx slots)	Front	10mm	Full	189	836.4	27.64	29.30	1.466	0.03	0.157	0.230
	1	GSM850_LAT	GPRS(4 Tx slots)	Back	10mm	Full	189	836.4	27.64	29.30	1.466	0.01	0.332	0.487
	1	GSM850_LAT	GPRS(4 Tx slots)	Left Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.1	0.177	0.259
	1	GSM850_LAT	GPRS(4 Tx slots)	Right Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.17	0.111	0.163
	1	GSM850_LAT	GPRS(4 Tx slots)	Bottom Side	10mm	Full	189	836.4	27.64	29.30	1.466	0.14	0.217	0.318
	1	GSM1900_UAT	GPRS(3 Tx slots)	Front	10mm	Reduced	661	1880	21.16	22.30	1.300	-0.03	0.148	0.192
	1	GSM1900_UAT	GPRS(3 Tx slots)	Back	10mm	Reduced	661	1880	21.16	22.30	1.300	0.1	0.250	0.325
	1	GSM1900_UAT	GPRS(3 Tx slots)	Left Side	10mm	Reduced	661	1880	21.16	22.30	1.300	0	0.083	0.107
	1	GSM1900_UAT	GPRS(3 Tx slots)	Right Side	10mm	Reduced	661	1880	21.16	22.30	1.300	0.04	0.070	0.091
	1	GSM1900_UAT	GPRS(3 Tx slots)	Top Side	10mm	Reduced	661	1880	21.16	22.30	1.300	-0.09	0.331	0.430
	1	GSM1900_LAT	GPRS(3 Tx slots)	Front	10mm	Full	661	1880	25.41	26.80	1.377	0.09	0.236	0.325
	1	GSM1900_LAT	GPRS(3 Tx slots)	Back	10mm	Full	661	1880	25.41	26.80	1.377	0.05	0.457	0.629
	1	GSM1900_LAT	GPRS(3 Tx slots)	Left Side	10mm	Full	661	1880	25.41	26.80	1.377	-0.04	0.082	0.113
	1	GSM1900_LAT	GPRS(3 Tx slots)	Right Side	10mm	Full	661	1880	25.41	26.80	1.377	0.03	0.115	0.158
21	1	GSM1900_LAT	GPRS(3 Tx slots)	Bottom Side	10mm	Full	661	1880	25.41	26.80	1.377	0.04	0.572	**0.788**
	2	GSM1900_LAT	GPRS(3 Tx slots)	Bottom Side	10mm	Full	661	1880	25.41	26.80	1.377	0.04	0.543	0.748

<WCDMA SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WCDMA V_UAT	RMC 12.2Kbps	Front	10mm	Full	4233	846.6	24.16	24.80	1.159	0.06	0.265	0.307
22	1	WCDMA V_UAT	RMC 12.2Kbps	Back	10mm	Full	4233	846.6	24.16	24.80	1.159	-0.17	0.395	**0.458**
	1	WCDMA V_UAT	RMC 12.2Kbps	Left Side	10mm	Full	4233	846.6	24.16	24.80	1.159	0.11	0.257	0.298
	1	WCDMA V_UAT	RMC 12.2Kbps	Right Side	10mm	Full	4233	846.6	24.16	24.80	1.159	0.09	0.172	0.199
	1	WCDMA V_UAT	RMC 12.2Kbps	Top Side	10mm	Full	4233	846.6	24.16	24.80	1.159	-0.03	0.229	0.265
	1	WCDMA V_LAT	RMC 12.2Kbps	Front	10mm	Full	4233	846.6	24.16	24.80	1.159	-0.12	0.145	0.168
	1	WCDMA V_LAT	RMC 12.2Kbps	Back	10mm	Full	4233	846.6	24.16	24.80	1.159	0.12	0.244	0.283
	1	WCDMA V_LAT	RMC 12.2Kbps	Left Side	10mm	Full	4233	846.6	24.16	24.80	1.159	0.18	0.155	0.180
	1	WCDMA V_LAT	RMC 12.2Kbps	Right Side	10mm	Full	4233	846.6	24.16	24.80	1.159	-0.02	0.099	0.114
	1	WCDMA V_LAT	RMC 12.2Kbps	Bottom Side	10mm	Full	4233	846.6	24.16	24.80	1.159	0.05	0.170	0.197
	1	WCDMA IV_UAT	RMC 12.2Kbps	Front	10mm	Reduced	1413	1732.6	17.70	18.30	1.148	0.05	0.214	0.246
	1	WCDMA IV_UAT	RMC 12.2Kbps	Back	10mm	Reduced	1413	1732.6	17.70	18.30	1.148	-0.04	0.343	0.394
	1	WCDMA IV_UAT	RMC 12.2Kbps	Left Side	10mm	Reduced	1413	1732.6	17.70	18.30	1.148	0.05	0.033	0.038
	1	WCDMA IV_UAT	RMC 12.2Kbps	Right Side	10mm	Reduced	1413	1732.6	17.70	18.30	1.148	0.06	0.013	0.015
23	1	WCDMA IV_UAT	RMC 12.2Kbps	Top Side	10mm	Reduced	1413	1732.6	17.70	18.30	1.148	0.1	0.533	**0.612**
	1	WCDMA IV_LAT	RMC 12.2Kbps	Front	10mm	Reduced	1413	1732.6	19.18	19.80	1.153	0.13	0.181	0.209
	1	WCDMA IV_LAT	RMC 12.2Kbps	Back	10mm	Reduced	1413	1732.6	19.18	19.80	1.153	0.09	0.302	0.348
	1	WCDMA IV_LAT	RMC 12.2Kbps	Left Side	10mm	Reduced	1413	1732.6	19.18	19.80	1.153	-0.03	0.066	0.076
	1	WCDMA IV_LAT	RMC 12.2Kbps	Right Side	10mm	Reduced	1413	1732.6	19.18	19.80	1.153	0.18	0.070	0.080
	1	WCDMA IV_LAT	RMC 12.2Kbps	Bottom Side	10mm	Reduced	1413	1732.6	19.18	19.80	1.153	-0.05	0.385	0.444
	1	WCDMA II_UAT	RMC 12.2Kbps	Front	10mm	Reduced	9262	1852.4	17.81	18.30	1.119	-0.06	0.248	0.278
	1	WCDMA II_UAT	RMC 12.2Kbps	Back	10mm	Reduced	9262	1852.4	17.81	18.30	1.119	-0.07	0.461	0.516
	1	WCDMA II_UAT	RMC 12.2Kbps	Left Side	10mm	Reduced	9262	1852.4	17.81	18.30	1.119	0.1	0.040	0.044
	1	WCDMA II_UAT	RMC 12.2Kbps	Right Side	10mm	Reduced	9262	1852.4	17.81	18.30	1.119	0.07	0.025	0.028
	1	WCDMA II_UAT	RMC 12.2Kbps	Top Side	10mm	Reduced	9262	1852.4	17.81	18.30	1.119	0.17	0.565	0.632
	1	WCDMA II_LAT	RMC 12.2Kbps	Front	10mm	Reduced	9262	1852.4	21.35	21.80	1.109	0.01	0.273	0.303
	1	WCDMA II_LAT	RMC 12.2Kbps	Back	10mm	Reduced	9262	1852.4	21.35	21.80	1.109	0.06	0.565	0.627
	1	WCDMA II_LAT	RMC 12.2Kbps	Left Side	10mm	Reduced	9262	1852.4	21.35	21.80	1.109	-0.11	0.091	0.101
	1	WCDMA II_LAT	RMC 12.2Kbps	Right Side	10mm	Reduced	9262	1852.4	21.35	21.80	1.109	-0.03	0.131	0.145
24	1	WCDMA II_LAT	RMC 12.2Kbps	Bottom Side	10mm	Reduced	9262	1852.4	21.35	21.80	1.109	0.03	0.673	**0.746**

<FDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 12_UAT	10M	QPSK	1	25	Front	10mm	Full	23095	707.5	23.74	24.30	1.138	0.08	0.126	0.143
	1	LTE Band 12_UAT	10M	QPSK	1	25	Back	10mm	Full	23095	707.5	23.74	24.30	1.138	0.02	0.151	0.172
25	1	LTE Band 12_UAT	10M	QPSK	1	25	Left Side	10mm	Full	23095	707.5	23.74	24.30	1.138	0.04	0.153	**0.174**
	1	LTE Band 12_UAT	10M	QPSK	1	25	Right Side	10mm	Full	23095	707.5	23.74	24.30	1.138	0.11	0.109	0.124
	1	LTE Band 12_UAT	10M	QPSK	1	25	Top Side	10mm	Full	23095	707.5	23.74	24.30	1.138	0.05	0.060	0.068
	1	LTE Band 12_UAT	10M	QPSK	25	12	Front	10mm	Full	23095	707.5	22.40	23.30	1.230	0.09	0.093	0.114
	1	LTE Band 12_UAT	10M	QPSK	25	12	Back	10mm	Full	23095	707.5	22.40	23.30	1.230	-0.08	0.110	0.135
	1	LTE Band 12_UAT	10M	QPSK	25	12	Left Side	10mm	Full	23095	707.5	22.40	23.30	1.230	0.14	0.112	0.138
	1	LTE Band 12_UAT	10M	QPSK	25	12	Right Side	10mm	Full	23095	707.5	22.40	23.30	1.230	-0.11	0.080	0.099
	1	LTE Band 12_UAT	10M	QPSK	25	12	Top Side	10mm	Full	23095	707.5	22.40	23.30	1.230	0.16	0.044	0.054
	1	LTE Band 12_LAT	10M	QPSK	1	25	Front	10mm	Full	23095	707.5	23.74	24.30	1.138	0.17	0.078	0.089
	1	LTE Band 12_LAT	10M	QPSK	1	25	Back	10mm	Full	23095	707.5	23.74	24.30	1.138	-0.1	0.103	0.117
	1	LTE Band 12_LAT	10M	QPSK	1	25	Left Side	10mm	Full	23095	707.5	23.74	24.30	1.138	-0.06	0.111	0.126
	1	LTE Band 12_LAT	10M	QPSK	1	25	Right Side	10mm	Full	23095	707.5	23.74	24.30	1.138	-0.02	0.071	0.081
	1	LTE Band 12_LAT	10M	QPSK	1	25	Bottom Side	10mm	Full	23095	707.5	23.74	24.30	1.138	0.1	0.055	0.062
	1	LTE Band 12_LAT	10M	QPSK	25	12	Front	10mm	Full	23095	707.5	22.40	23.30	1.230	-0.12	0.057	0.071
	1	LTE Band 12_LAT	10M	QPSK	25	12	Back	10mm	Full	23095	707.5	22.40	23.30	1.230	0.13	0.079	0.097
	1	LTE Band 12_LAT	10M	QPSK	25	12	Left Side	10mm	Full	23095	707.5	22.40	23.30	1.230	0.02	0.082	0.101
	1	LTE Band 12_LAT	10M	QPSK	25	12	Right Side	10mm	Full	23095	707.5	22.40	23.30	1.230	0.04	0.053	0.065
	1	LTE Band 12_LAT	10M	QPSK	25	12	Bottom Side	10mm	Full	23095	707.5	22.40	23.30	1.230	0.04	0.040	0.049
	1	LTE Band 5_UAT	10M	QPSK	1	25	Front	10mm	Full	20525	836.5	24.36	24.80	1.107	0.06	0.292	0.323
26	1	LTE Band 5_UAT	10M	QPSK	1	25	Back	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.03	0.380	**0.421**
	1	LTE Band 5_UAT	10M	QPSK	1	25	Left Side	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.11	0.249	0.276
	1	LTE Band 5_UAT	10M	QPSK	1	25	Right Side	10mm	Full	20525	836.5	24.36	24.80	1.107	0.02	0.186	0.206
	1	LTE Band 5_UAT	10M	QPSK	1	25	Top Side	10mm	Full	20525	836.5	24.36	24.80	1.107	0.08	0.226	0.250
	1	LTE Band 5_UAT	10M	QPSK	25	12	Front	10mm	Full	20525	836.5	22.27	23.80	1.422	0.13	0.182	0.259
	1	LTE Band 5_UAT	10M	QPSK	25	12	Back	10mm	Full	20525	836.5	22.27	23.80	1.422	0.01	0.264	0.375
	1	LTE Band 5_UAT	10M	QPSK	25	12	Left Side	10mm	Full	20525	836.5	22.27	23.80	1.422	-0.11	0.156	0.222
	1	LTE Band 5_UAT	10M	QPSK	25	12	Right Side	10mm	Full	20525	836.5	22.27	23.80	1.422	-0.12	0.116	0.165
	1	LTE Band 5_UAT	10M	QPSK	25	12	Top Side	10mm	Full	20525	836.5	22.27	23.80	1.422	0.1	0.142	0.202
	1	LTE Band 5_LAT	10M	QPSK	1	25	Front	10mm	Full	20525	836.5	24.36	24.80	1.107	0.04	0.151	0.167
	1	LTE Band 5_LAT	10M	QPSK	1	25	Back	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.02	0.248	0.274
	1	LTE Band 5_LAT	10M	QPSK	1	25	Left Side	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.05	0.157	0.174
	1	LTE Band 5_LAT	10M	QPSK	1	25	Right Side	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.08	0.085	0.095
	1	LTE Band 5_LAT	10M	QPSK	1	25	Bottom Side	10mm	Full	20525	836.5	24.36	24.80	1.107	-0.05	0.145	0.160
	1	LTE Band 5_LAT	10M	QPSK	25	12	Front	10mm	Full	20525	836.5	22.27	23.80	1.422	0.17	0.086	0.122
	1	LTE Band 5_LAT	10M	QPSK	25	12	Back	10mm	Full	20525	836.5	22.27	23.80	1.422	0.08	0.134	0.191
	1	LTE Band 5_LAT	10M	QPSK	25	12	Left Side	10mm	Full	20525	836.5	22.27	23.80	1.422	0.17	0.099	0.140
	1	LTE Band 5_LAT	10M	QPSK	25	12	Right Side	10mm	Full	20525	836.5	22.27	23.80	1.422	0.01	0.066	0.094
	1	LTE Band 5_LAT	10M	QPSK	25	12	Bottom Side	10mm	Full	20525	836.5	22.27	23.80	1.422	0.08	0.090	0.128

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 26_UAT	15M	QPSK	1	37	Front	10mm	Full	26865	831.5	23.48	24.30	1.208	0.06	0.189	0.228
27	1	LTE Band 26_UAT	15M	QPSK	1	37	Back	10mm	Full	26865	831.5	23.48	24.30	1.208	-0.1	0.296	**0.358**
	1	LTE Band 26_UAT	15M	QPSK	1	37	Left Side	10mm	Full	26865	831.5	23.48	24.30	1.208	-0.09	0.196	0.237
	1	LTE Band 26_UAT	15M	QPSK	1	37	Right Side	10mm	Full	26865	831.5	23.48	24.30	1.208	0.05	0.146	0.176
	1	LTE Band 26_UAT	15M	QPSK	1	37	Top Side	10mm	Full	26865	831.5	23.48	24.30	1.208	0.11	0.174	0.210
	1	LTE Band 26_UAT	15M	QPSK	36	20	Front	10mm	Full	26865	831.5	22.17	23.30	1.297	-0.01	0.137	0.178
	1	LTE Band 26_UAT	15M	QPSK	36	20	Back	10mm	Full	26865	831.5	22.17	23.30	1.297	0.01	0.202	0.262
	1	LTE Band 26_UAT	15M	QPSK	36	20	Left Side	10mm	Full	26865	831.5	22.17	23.30	1.297	-0.08	0.144	0.187
	1	LTE Band 26_UAT	15M	QPSK	36	20	Right Side	10mm	Full	26865	831.5	22.17	23.30	1.297	0.08	0.103	0.134
	1	LTE Band 26_UAT	15M	QPSK	36	20	Top Side	10mm	Full	26865	831.5	22.17	23.30	1.297	0.03	0.127	0.165
	1	LTE Band 26_LAT	15M	QPSK	1	37	Front	10mm	Full	26865	831.5	23.48	24.30	1.208	0.03	0.123	0.149
	1	LTE Band 26_LAT	15M	QPSK	1	37	Back	10mm	Full	26865	831.5	23.48	24.30	1.208	0.12	0.192	0.232
	1	LTE Band 26_LAT	15M	QPSK	1	37	Left Side	10mm	Full	26865	831.5	23.48	24.30	1.208	0.17	0.121	0.146
	1	LTE Band 26_LAT	15M	QPSK	1	37	Right Side	10mm	Full	26865	831.5	23.48	24.30	1.208	-0.1	0.083	0.100
	1	LTE Band 26_LAT	15M	QPSK	1	37	Bottom Side	10mm	Full	26865	831.5	23.48	24.30	1.208	0.01	0.110	0.133
	1	LTE Band 26_LAT	15M	QPSK	36	20	Front	10mm	Full	26865	831.5	22.17	23.30	1.297	-0.01	0.090	0.116
	1	LTE Band 26_LAT	15M	QPSK	36	20	Back	10mm	Full	26865	831.5	22.17	23.30	1.297	-0.09	0.133	0.173
	1	LTE Band 26_LAT	15M	QPSK	36	20	Left Side	10mm	Full	26865	831.5	22.17	23.30	1.297	0.09	0.087	0.113
	1	LTE Band 26_LAT	15M	QPSK	36	20	Right Side	10mm	Full	26865	831.5	22.17	23.30	1.297	-0.08	0.060	0.078
	1	LTE Band 26_LAT	15M	QPSK	36	20	Bottom Side	10mm	Full	26865	831.5	22.17	23.30	1.297	0.12	0.080	0.104
	1	LTE Band 66_UAT	20M	QPSK	1	49	Front	10mm	Reduced	132322	1745	17.58	18.30	1.180	0.11	0.219	0.258
	1	LTE Band 66_UAT	20M	QPSK	1	49	Back	10mm	Reduced	132322	1745	17.58	18.30	1.180	0.07	0.336	0.397
	1	LTE Band 66_UAT	20M	QPSK	1	49	Left Side	10mm	Reduced	132322	1745	17.58	18.30	1.180	0.09	0.033	0.039
	1	LTE Band 66_UAT	20M	QPSK	1	49	Right Side	10mm	Reduced	132322	1745	17.58	18.30	1.180	0.04	0.020	0.024
	1	LTE Band 66_UAT	20M	QPSK	1	49	Top Side	10mm	Reduced	132322	1745	17.58	18.30	1.180	-0.04	0.465	0.549
	1	LTE Band 66_UAT	20M	QPSK	50	24	Front	10mm	Reduced	132322	1745	17.56	18.30	1.186	0.06	0.219	0.260
	1	LTE Band 66_UAT	20M	QPSK	50	24	Back	10mm	Reduced	132322	1745	17.56	18.30	1.186	0.07	0.346	0.410
	1	LTE Band 66_UAT	20M	QPSK	50	24	Left Side	10mm	Reduced	132322	1745	17.56	18.30	1.186	-0.03	0.033	0.039
	1	LTE Band 66_UAT	20M	QPSK	50	24	Right Side	10mm	Reduced	132322	1745	17.56	18.30	1.186	0.05	0.022	0.026
28	1	LTE Band 66_UAT	20M	QPSK	50	24	Top Side	10mm	Reduced	132322	1745	17.56	18.30	1.186	0.07	0.473	**0.561**
	1	LTE Band 66_LAT	20M	QPSK	1	49	Front	10mm	Reduced	132322	1745	19.15	19.80	1.161	-0.07	0.167	0.194
	1	LTE Band 66_LAT	20M	QPSK	1	49	Back	10mm	Reduced	132322	1745	19.15	19.80	1.161	-0.12	0.308	0.358
	1	LTE Band 66_LAT	20M	QPSK	1	49	Left Side	10mm	Reduced	132322	1745	19.15	19.80	1.161	-0.1	0.059	0.068
	1	LTE Band 66_LAT	20M	QPSK	1	49	Right Side	10mm	Reduced	132322	1745	19.15	19.80	1.161	-0.03	0.081	0.095
	1	LTE Band 66_LAT	20M	QPSK	1	49	Bottom Side	10mm	Reduced	132322	1745	19.15	19.80	1.161	0.03	0.380	0.441
	1	LTE Band 66_LAT	20M	QPSK	50	24	Front	10mm	Reduced	132322	1745	19.14	19.80	1.164	-0.05	0.168	0.196
	1	LTE Band 66_LAT	20M	QPSK	50	24	Back	10mm	Reduced	132322	1745	19.14	19.80	1.164	0.12	0.310	0.361
	1	LTE Band 66_LAT	20M	QPSK	50	24	Left Side	10mm	Reduced	132322	1745	19.14	19.80	1.164	0.03	0.058	0.068
	1	LTE Band 66_LAT	20M	QPSK	50	24	Right Side	10mm	Reduced	132322	1745	19.14	19.80	1.164	0.06	0.083	0.096
	1	LTE Band 66_LAT	20M	QPSK	50	24	Bottom Side	10mm	Reduced	132322	1745	19.14	19.80	1.164	0.16	0.381	0.444

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 2_UAT	20M	QPSK	1	49	Front	10mm	Reduced	18900	1880	17.27	18.30	1.268	0.13	0.198	0.251
	1	LTE Band 2_UAT	20M	QPSK	1	49	Back	10mm	Reduced	18900	1880	17.27	18.30	1.268	-0.05	0.359	0.455
	1	LTE Band 2_UAT	20M	QPSK	1	49	Left Side	10mm	Reduced	18900	1880	17.27	18.30	1.268	0.09	0.032	0.040
	1	LTE Band 2_UAT	20M	QPSK	1	49	Right Side	10mm	Reduced	18900	1880	17.27	18.30	1.268	0.12	0.019	0.023
	1	LTE Band 2_UAT	20M	QPSK	1	49	Top Side	10mm	Reduced	18900	1880	17.27	18.30	1.268	0.03	0.469	0.595
	1	LTE Band 2_UAT	20M	QPSK	50	24	Front	10mm	Reduced	18900	1880	17.26	18.30	1.271	-0.06	0.203	0.258
	1	LTE Band 2_UAT	20M	QPSK	50	24	Back	10mm	Reduced	18900	1880	17.26	18.30	1.271	-0.03	0.361	0.459
	1	LTE Band 2_UAT	20M	QPSK	50	24	Left Side	10mm	Reduced	18900	1880	17.26	18.30	1.271	-0.06	0.032	0.040
	1	LTE Band 2_UAT	20M	QPSK	50	24	Right Side	10mm	Reduced	18900	1880	17.26	18.30	1.271	0.14	0.019	0.024
	1	LTE Band 2_UAT	20M	QPSK	50	24	Top Side	10mm	Reduced	18900	1880	17.26	18.30	1.271	0.11	0.470	0.597
	1	LTE Band 2_LAT	20M	QPSK	1	49	Front	10mm	Reduced	18900	1880	20.71	21.80	1.285	0.02	0.200	0.257
	1	LTE Band 2_LAT	20M	QPSK	1	49	Back	10mm	Reduced	18900	1880	20.71	21.80	1.285	0.11	0.401	0.515
	1	LTE Band 2_LAT	20M	QPSK	1	49	Left Side	10mm	Reduced	18900	1880	20.71	21.80	1.285	0.08	0.063	0.081
	1	LTE Band 2_LAT	20M	QPSK	1	49	Right Side	10mm	Reduced	18900	1880	20.71	21.80	1.285	0.02	0.080	0.103
	1	LTE Band 2_LAT	20M	QPSK	1	49	Bottom Side	10mm	Reduced	18900	1880	20.71	21.80	1.285	-0.03	0.518	0.666
	1	LTE Band 2_LAT	20M	QPSK	50	24	Front	10mm	Reduced	18900	1880	20.70	21.80	1.288	0.09	0.200	0.258
	1	LTE Band 2_LAT	20M	QPSK	50	24	Back	10mm	Reduced	18900	1880	20.70	21.80	1.288	0.07	0.408	0.526
	1	LTE Band 2_LAT	20M	QPSK	50	24	Left Side	10mm	Reduced	18900	1880	20.70	21.80	1.288	0.11	0.063	0.081
	1	LTE Band 2_LAT	20M	QPSK	50	24	Right Side	10mm	Reduced	18900	1880	20.70	21.80	1.288	-0.03	0.081	0.104
29	1	LTE Band 2_LAT	20M	QPSK	50	24	Bottom Side	10mm	Reduced	18900	1880	20.70	21.80	1.288	-0.05	0.520	**0.670**
	1	LTE Band 7_UAT	20M	QPSK	1	49	Front	10mm	Reduced	21350	2560	17.92	18.80	1.225	-0.08	0.104	0.127
	1	LTE Band 7_UAT	20M	QPSK	1	49	Back	10mm	Reduced	21350	2560	17.92	18.80	1.225	-0.01	0.460	0.563
	1	LTE Band 7_UAT	20M	QPSK	1	49	Left Side	10mm	Reduced	21350	2560	17.92	18.80	1.225	0.04	0.079	0.097
	1	LTE Band 7_UAT	20M	QPSK	1	49	Right Side	10mm	Reduced	21350	2560	17.92	18.80	1.225	0.14	0.027	0.033
	1	LTE Band 7_UAT	20M	QPSK	1	49	Top Side	10mm	Reduced	21350	2560	17.92	18.80	1.225	0.09	0.291	0.356
	1	LTE Band 7_UAT	20M	QPSK	50	24	Front	10mm	Reduced	21350	2560	17.90	18.80	1.230	0.15	0.106	0.130
	1	LTE Band 7_UAT	20M	QPSK	50	24	Back	10mm	Reduced	21350	2560	17.90	18.80	1.230	0.07	0.461	0.567
	1	LTE Band 7_UAT	20M	QPSK	50	24	Left Side	10mm	Reduced	21350	2560	17.90	18.80	1.230	0.04	0.080	0.098
	1	LTE Band 7_UAT	20M	QPSK	50	24	Right Side	10mm	Reduced	21350	2560	17.90	18.80	1.230	0.11	0.028	0.034
	1	LTE Band 7_UAT	20M	QPSK	50	24	Top Side	10mm	Reduced	21350	2560	17.90	18.80	1.230	0.01	0.294	0.362
	1	LTE Band 7C_UAT	20M	QPSK	50	24	Back	10mm	Reduced	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	17.93	18.80	1.222	0.06	0.452	0.552
	1	LTE Band 7_LAT	20M	QPSK	1	49	Front	10mm	Full	21350	2560	22.86	23.80	1.242	0.08	0.398	0.494
30	1	LTE Band 7_LAT	20M	QPSK	1	49	Back	10mm	Full	21350	2560	22.86	23.80	1.242	-0.01	0.562	**0.698**
	1	LTE Band 7_LAT	20M	QPSK	1	49	Left Side	10mm	Full	21350	2560	22.86	23.80	1.242	0.04	0.055	0.068
	1	LTE Band 7_LAT	20M	QPSK	1	49	Right Side	10mm	Full	21350	2560	22.86	23.80	1.242	0.05	0.248	0.308
	1	LTE Band 7_LAT	20M	QPSK	1	49	Bottom Side	10mm	Full	21350	2560	22.86	23.80	1.242	0.12	0.279	0.346
	1	LTE Band 7C_LAT	20M	QPSK	1	49	Back	10mm	Full	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	22.80	23.80	1.259	0.03	0.451	0.568
	1	LTE Band 7_LAT	20M	QPSK	50	24	Front	10mm	Full	21350	2560	21.85	22.80	1.245	0.1	0.279	0.347
	1	LTE Band 7_LAT	20M	QPSK	50	24	Back	10mm	Full	21350	2560	21.85	22.80	1.245	0.18	0.439	0.546
	1	LTE Band 7_LAT	20M	QPSK	50	24	Left Side	10mm	Full	21350	2560	21.85	22.80	1.245	-0.01	0.048	0.060
	1	LTE Band 7_LAT	20M	QPSK	50	24	Right Side	10mm	Full	21350	2560	21.85	22.80	1.245	-0.04	0.196	0.244
	1	LTE Band 7_LAT	20M	QPSK	50	24	Bottom Side	10mm	Full	21350	2560	21.85	22.80	1.245	0.07	0.216	0.269

<TDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	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)
	1	LTE Band 41_UAT	20M	QPSK	1	49	Front	10mm	Reduced	40620	2593	20.78	21.30	1.127	62.9	1.006	-0.11	0.123	0.139
	1	LTE Band 41_UAT	20M	QPSK	1	49	Back	10mm	Reduced	40620	2593	20.78	21.30	1.127	62.9	1.006	0.03	0.484	0.549
	1	LTE Band 41_UAT	20M	QPSK	1	49	Left Side	10mm	Reduced	40620	2593	20.78	21.30	1.127	62.9	1.006	-0.09	0.103	0.117
	1	LTE Band 41_UAT	20M	QPSK	1	49	Right Side	10mm	Reduced	40620	2593	20.78	21.30	1.127	62.9	1.006	-0.07	0.027	0.030
	1	LTE Band 41_UAT	20M	QPSK	1	49	Top Side	10mm	Reduced	40620	2593	20.78	21.30	1.127	62.9	1.006	-0.11	0.322	0.365
	1	LTE Band 41_UAT	20M	QPSK	50	24	Front	10mm	Reduced	40620	2593	20.76	21.30	1.132	62.9	1.006	0.09	0.125	0.142
31	1	LTE Band 41_UAT	20M	QPSK	50	24	Back	10mm	Reduced	40620	2593	20.76	21.30	1.132	62.9	1.006	-0.18	0.485	**0.553**
	1	LTE Band 41_UAT	20M	QPSK	50	24	Left Side	10mm	Reduced	40620	2593	20.76	21.30	1.132	62.9	1.006	0.11	0.103	0.117
	1	LTE Band 41_UAT	20M	QPSK	50	24	Right Side	10mm	Reduced	40620	2593	20.76	21.30	1.132	62.9	1.006	0.13	0.029	0.032
	1	LTE Band 41_UAT	20M	QPSK	50	24	Top Side	10mm	Reduced	40620	2593	20.76	21.30	1.132	62.9	1.006	-0.1	0.323	0.368
	1	LTE Band 41C_UAT	20M	QPSK	50	24	Back	10mm	Reduced	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	20.65	21.30	1.161	62.9	1.006	0.05	0.441	0.515
	1	LTE Band 41_LAT	20M	QPSK	1	49	Front	10mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.06	0.299	0.348
	1	LTE Band 41_LAT	20M	QPSK	1	49	Back	10mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.17	0.374	0.435
	1	LTE Band 41_LAT	20M	QPSK	1	49	Left Side	10mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.08	0.041	0.047
	1	LTE Band 41_LAT	20M	QPSK	1	49	Right Side	10mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.04	0.212	0.247
	1	LTE Band 41_LAT	20M	QPSK	1	49	Bottom Side	10mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	-0.11	0.179	0.208
	1	LTE Band 41C_LAT	20M	QPSK	1	49	Back	10mm	Full	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	23.63	24.30	1.167	62.9	1.006	0.02	0.280	0.329
	1	LTE Band 41_LAT	20M	QPSK	50	24	Front	10mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	-0.07	0.217	0.274
	1	LTE Band 41_LAT	20M	QPSK	50	24	Back	10mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	-0.05	0.272	0.344
	1	LTE Band 41_LAT	20M	QPSK	50	24	Left Side	10mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.09	0.030	0.038
	1	LTE Band 41_LAT	20M	QPSK	50	24	Right Side	10mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.17	0.155	0.196
	1	LTE Band 41_LAT	20M	QPSK	50	24	Bottom Side	10mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.1	0.128	0.162

<EN-DC SAR >

Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Front	10mm	Reduced	21350	2560	15.49	16.30	1.205	0.12	0.057	0.069
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Back	10mm	Reduced	21350	2560	15.49	16.30	1.205	-0.07	0.269	0.324
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Left Side	10mm	Reduced	21350	2560	15.49	16.30	1.205	0.18	0.051	0.061
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Right Side	10mm	Reduced	21350	2560	15.49	16.30	1.205	0.02	0.021	0.025
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Top Side	10mm	Reduced	21350	2560	15.49	16.30	1.205	-0.02	0.154	0.186
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Front	10mm	Reduced	21350	2560	15.48	16.30	1.208	-0.01	0.059	0.071
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Back	10mm	Reduced	21350	2560	15.48	16.30	1.208	-0.03	0.273	0.330
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Left Side	10mm	Reduced	21350	2560	15.48	16.30	1.208	0.09	0.051	0.061
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Right Side	10mm	Reduced	21350	2560	15.48	16.30	1.208	0.06	0.021	0.025
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Top Side	10mm	Reduced	21350	2560	15.48	16.30	1.208	0.14	0.160	0.193
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Front	10mm	Reduced	21350	2560	20.31	21.30	1.256	-0.1	0.255	0.320
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Back	10mm	Reduced	21350	2560	20.31	21.30	1.256	0.01	0.407	0.511
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Left Side	10mm	Reduced	21350	2560	20.31	21.30	1.256	0.18	0.040	0.050
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Right Side	10mm	Reduced	21350	2560	20.31	21.30	1.256	-0.06	0.172	0.216
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Bottom Side	10mm	Reduced	21350	2560	20.31	21.30	1.256	0.11	0.163	0.205
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Front	10mm	Reduced	21350	2560	20.29	21.30	1.262	0.06	0.256	0.323
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Back	10mm	Reduced	21350	2560	20.29	21.30	1.262	0.11	0.409	0.516
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Left Side	10mm	Reduced	21350	2560	20.29	21.30	1.262	-0.02	0.041	0.052
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Right Side	10mm	Reduced	21350	2560	20.29	21.30	1.262	0.05	0.175	0.221
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Bottom Side	10mm	Reduced	21350	2560	20.29	21.30	1.262	0.09	0.165	0.208

<5G NR SAR SA Mode >

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Front	10mm	Reduced	507000	2535	18.39	19.50	1.291	-0.01	0.126	0.163
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Back	10mm	Reduced	507000	2535	18.39	19.50	1.291	-0.05	0.475	0.613
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Side	10mm	Reduced	507000	2535	18.39	19.50	1.291	-0.12	0.078	0.101
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Side	10mm	Reduced	507000	2535	18.39	19.50	1.291	0.13	0.024	0.030
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Top Side	10mm	Reduced	507000	2535	18.39	19.50	1.291	0.08	0.380	0.491
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Front	10mm	Reduced	507000	2535	18.36	19.50	1.300	0.07	0.133	0.173
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Back	10mm	Reduced	507000	2535	18.36	19.50	1.300	0.16	0.486	0.632
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Side	10mm	Reduced	507000	2535	18.36	19.50	1.300	-0.05	0.081	0.106
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Side	10mm	Reduced	507000	2535	18.36	19.50	1.300	0.09	0.024	0.032
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Top Side	10mm	Reduced	507000	2535	18.36	19.50	1.300	0.16	0.393	0.511
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Front	10mm	Full	507000	2535	22.88	24.00	1.294	0.15	0.342	0.443
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Back	10mm	Full	507000	2535	22.88	24.00	1.294	-0.12	0.497	0.643
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Side	10mm	Full	507000	2535	22.88	24.00	1.294	-0.01	0.054	0.070
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Side	10mm	Full	507000	2535	22.88	24.00	1.294	-0.01	0.238	0.308
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Bottom Side	10mm	Full	507000	2535	22.88	24.00	1.294	-0.05	0.231	0.299
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Front	10mm	Full	507000	2535	22.86	24.00	1.300	0.13	0.354	0.460
32	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Back	10mm	Full	507000	2535	22.86	24.00	1.300	-0.09	0.512	**0.666**
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Side	10mm	Full	507000	2535	22.86	24.00	1.300	0.06	0.055	0.071
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Side	10mm	Full	507000	2535	22.86	24.00	1.300	-0.03	0.243	0.316
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Bottom Side	10mm	Full	507000	2535	22.86	24.00	1.300	0.04	0.249	0.324

<5G NR SAR NSA Mode >

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Front	10mm	Full	167300	836.5	23.84	24.00	1.038	-0.09	0.185	0.192
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Back	10mm	Full	167300	836.5	23.84	24.00	1.038	0.12	0.290	0.301
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Left Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.09	0.207	0.215
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Right Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.13	0.149	0.155
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Top Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.08	0.187	0.194
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Front	10mm	Full	167300	836.5	23.82	24.00	1.042	0.05	0.199	0.207
33	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Back	10mm	Full	167300	836.5	23.82	24.00	1.042	-0.16	0.317	**0.330**
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Left Side	10mm	Full	167300	836.5	23.82	24.00	1.042	0.06	0.224	0.233
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Right Side	10mm	Full	167300	836.5	23.82	24.00	1.042	0.04	0.156	0.163
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Top Side	10mm	Full	167300	836.5	23.82	24.00	1.042	-0.12	0.190	0.198
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Front	10mm	Full	167300	836.5	23.84	24.00	1.038	0.05	0.087	0.090
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Back	10mm	Full	167300	836.5	23.84	24.00	1.038	-0.11	0.141	0.146
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Left Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.08	0.099	0.102
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Right Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.03	0.066	0.069
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Bottom Side	10mm	Full	167300	836.5	23.84	24.00	1.038	0.13	0.089	0.092
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Front	10mm	Full	167300	836.5	23.82	24.00	1.042	-0.04	0.097	0.102
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Back	10mm	Full	167300	836.5	23.82	24.00	1.042	0.1	0.165	0.172
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Left Side	10mm	Full	167300	836.5	23.82	24.00	1.042	0.01	0.115	0.120
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Right Side	10mm	Full	167300	836.5	23.82	24.00	1.042	0.18	0.071	0.074
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Bottom Side	10mm	Full	167300	836.5	23.82	24.00	1.042	0.04	0.099	0.103

<Bluetooth SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	Bluetooth	DH5 1Mbps	Front	10mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.01	0.085	0.131
34	1	Bluetooth	DH5 1Mbps	Back	10mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	-0.03	0.119	**0.182**
	1	Bluetooth	DH5 1Mbps	Left Side	10mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.05	0.010	0.015
	1	Bluetooth	DH5 1Mbps	Right Side	10mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.06	0.042	0.064
	1	Bluetooth	DH5 1Mbps	Top Side	10mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.09	0.043	0.066

<WLAN2.4G SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	0.11	0.216	0.233
35	1	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	0.02	0.256	**0.276**
	1	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	-0.09	0.024	0.026
	1	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	-0.05	0.191	0.206
	1	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	0.11	0.125	0.135

<WLAN5G SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Reduced	155	5775	12.40	13.00	1.148	88.19	1.134	0.18	0.105	0.137
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Reduced	155	5775	12.40	13.00	1.148	88.19	1.134	0.13	0.244	0.318
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Reduced	155	5775	12.40	13.00	1.148	88.19	1.134	0.08	0.010	0.013
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Reduced	155	5775	12.40	13.00	1.148	88.19	1.134	-0.06	0.071	0.093
36	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Reduced	155	5775	12.40	13.00	1.148	88.19	1.134	0.04	0.292	**0.380**

16.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	GSM850_UAT	GPRS(4 Tx slots)	Front	15mm	Full	189	836.4	27.64	29.30	1.466	0.09	0.219	0.321
37	1	GSM850_UAT	GPRS(4 Tx slots)	Back	15mm	Full	189	836.4	27.64	29.30	1.466	-0.02	0.236	**0.346**
	1	GSM850_LAT	GPRS(4 Tx slots)	Front	15mm	Full	189	836.4	27.64	29.30	1.466	0.15	0.159	0.233
	1	GSM850_LAT	GPRS(4 Tx slots)	Back	15mm	Full	189	836.4	27.64	29.30	1.466	-0.08	0.162	0.237
	1	GSM1900_UAT	GPRS(3 Tx slots)	Front	15mm	Reduced	661	1880	22.71	23.80	1.285	0.01	0.070	0.090
	1	GSM1900_UAT	GPRS(3 Tx slots)	Back	15mm	Reduced	661	1880	22.71	23.80	1.285	0.16	0.164	0.211
	1	GSM1900_LAT	GPRS(3 Tx slots)	Front	15mm	Full	661	1880	25.41	26.80	1.377	0.11	0.145	0.200
38	1	GSM1900_LAT	GPRS(3 Tx slots)	Back	15mm	Full	661	1880	25.41	26.80	1.377	-0.1	0.223	**0.307**

<WCDMA SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WCDMA V_UAT	RMC 12.2Kbps	Front	15mm	Full	4233	846.6	24.16	24.80	1.159	0.05	0.236	0.273
39	1	WCDMA V_UAT	RMC 12.2Kbps	Back	15mm	Full	4233	846.6	24.16	24.80	1.159	0.01	0.242	**0.280**
	1	WCDMA V_LAT	RMC 12.2Kbps	Front	15mm	Full	4233	846.6	24.16	24.80	1.159	-0.08	0.145	0.168
	1	WCDMA V_LAT	RMC 12.2Kbps	Back	15mm	Full	4233	846.6	24.16	24.80	1.159	0.12	0.154	0.178
	1	WCDMA IV_UAT	RMC 12.2Kbps	Front	15mm	Reduced	1413	1732.6	19.18	19.80	1.153	0.15	0.148	0.171
	1	WCDMA IV_UAT	RMC 12.2Kbps	Back	15mm	Reduced	1413	1732.6	19.18	19.80	1.153	-0.09	0.250	0.288
	1	WCDMA IV_LAT	RMC 12.2Kbps	Front	15mm	Reduced	1413	1732.6	21.18	21.80	1.153	0.06	0.150	0.173
40	1	WCDMA IV_LAT	RMC 12.2Kbps	Back	15mm	Reduced	1413	1732.6	21.18	21.80	1.153	-0.01	0.251	**0.290**
	1	WCDMA II_UAT	RMC 12.2Kbps	Front	15mm	Reduced	9262	1852.4	19.39	19.80	1.099	0.16	0.167	0.184
	1	WCDMA II_UAT	RMC 12.2Kbps	Back	15mm	Reduced	9262	1852.4	19.39	19.80	1.099	0.14	0.307	0.337
	1	WCDMA II_LAT	RMC 12.2Kbps	Front	15mm	Reduced	9262	1852.4	22.72	23.30	1.143	0.08	0.225	0.257
41	1	WCDMA II_LAT	RMC 12.2Kbps	Back	15mm	Reduced	9262	1852.4	22.72	23.30	1.143	-0.13	0.428	**0.489**

<FDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 12_UAT	10M	QPSK	1	25	Front	15mm	Full	23095	707.5	23.74	24.30	1.138	0.04	0.112	0.127
42	1	LTE Band 12_UAT	10M	QPSK	1	25	Back	15mm	Full	23095	707.5	23.74	24.30	1.138	0.08	0.148	**0.168**
	1	LTE Band 12_UAT	10M	QPSK	25	12	Front	15mm	Full	23095	707.5	22.40	23.30	1.230	-0.08	0.082	0.101
	1	LTE Band 12_UAT	10M	QPSK	25	12	Back	15mm	Full	23095	707.5	22.40	23.30	1.230	-0.07	0.109	0.134
	1	LTE Band 12_LAT	10M	QPSK	1	25	Front	15mm	Full	23095	707.5	23.74	24.30	1.138	-0.06	0.076	0.086
	1	LTE Band 12_LAT	10M	QPSK	1	25	Back	15mm	Full	23095	707.5	23.74	24.30	1.138	0.13	0.090	0.102
	1	LTE Band 12_LAT	10M	QPSK	25	12	Front	15mm	Full	23095	707.5	22.40	23.30	1.230	-0.03	0.055	0.068
	1	LTE Band 12_LAT	10M	QPSK	25	12	Back	15mm	Full	23095	707.5	22.40	23.30	1.230	-0.07	0.067	0.083
	1	LTE Band 5_UAT	10M	QPSK	1	25	Front	15mm	Full	20525	836.5	24.36	24.80	1.107	0.05	0.264	0.292
43	1	LTE Band 5_UAT	10M	QPSK	1	25	Back	15mm	Full	20525	836.5	24.36	24.80	1.107	-0.06	0.264	**0.292**
	1	LTE Band 5_UAT	10M	QPSK	25	12	Front	15mm	Full	20525	836.5	22.27	23.30	1.268	-0.01	0.150	0.190
	1	LTE Band 5_UAT	10M	QPSK	25	12	Back	15mm	Full	20525	836.5	22.27	23.30	1.268	0.03	0.166	0.210
	1	LTE Band 5_LAT	10M	QPSK	1	25	Front	15mm	Full	20525	836.5	24.36	24.80	1.107	-0.01	0.148	0.164
	1	LTE Band 5_LAT	10M	QPSK	1	25	Back	15mm	Full	20525	836.5	24.36	24.80	1.107	-0.12	0.155	0.172
	1	LTE Band 5_LAT	10M	QPSK	25	12	Front	15mm	Full	20525	836.5	22.27	23.30	1.268	0.02	0.093	0.118
	1	LTE Band 5_LAT	10M	QPSK	25	12	Back	15mm	Full	20525	836.5	22.27	23.30	1.268	0.09	0.094	0.119
	1	LTE Band 26_UAT	15M	QPSK	1	37	Front	15mm	Full	26865	831.5	23.48	24.30	1.208	0.11	0.194	0.234
44	1	LTE Band 26_UAT	15M	QPSK	1	37	Back	15mm	Full	26865	831.5	23.48	24.30	1.208	0.03	0.214	**0.258**
	1	LTE Band 26_UAT	15M	QPSK	36	20	Front	15mm	Full	26865	831.5	22.17	23.30	1.297	0.05	0.142	0.184
	1	LTE Band 26_UAT	15M	QPSK	36	20	Back	15mm	Full	26865	831.5	22.17	23.30	1.297	0.13	0.159	0.206
	1	LTE Band 26_LAT	15M	QPSK	1	37	Front	15mm	Full	26865	831.5	23.48	24.30	1.208	-0.04	0.115	0.139
	1	LTE Band 26_LAT	15M	QPSK	1	37	Back	15mm	Full	26865	831.5	23.48	24.30	1.208	-0.03	0.126	0.152
	1	LTE Band 26_LAT	15M	QPSK	36	20	Front	15mm	Full	26865	831.5	22.17	23.30	1.297	0.1	0.092	0.119
	1	LTE Band 26_LAT	15M	QPSK	36	20	Back	15mm	Full	26865	831.5	22.17	23.30	1.297	0.15	0.093	0.121
	1	LTE Band 66_UAT	20M	QPSK	1	49	Front	15mm	Reduced	132322	1745	19.62	20.30	1.169	0.1	0.167	0.195
	1	LTE Band 66_UAT	20M	QPSK	1	49	Back	15mm	Reduced	132322	1745	19.62	20.30	1.169	0.09	0.257	0.301
	1	LTE Band 66_UAT	20M	QPSK	50	24	Front	15mm	Reduced	132322	1745	19.60	20.30	1.175	0.09	0.168	0.197
	1	LTE Band 66_UAT	20M	QPSK	50	24	Back	15mm	Reduced	132322	1745	19.60	20.30	1.175	-0.03	0.260	0.305
	1	LTE Band 66_LAT	20M	QPSK	1	49	Front	15mm	Reduced	132322	1745	21.06	21.80	1.186	0.02	0.159	0.189
	1	LTE Band 66_LAT	20M	QPSK	1	49	Back	15mm	Reduced	132322	1745	21.06	21.80	1.186	0.01	0.254	0.301
	1	LTE Band 66_LAT	20M	QPSK	50	24	Front	15mm	Reduced	132322	1745	21.04	21.80	1.191	0.06	0.161	0.192
45	1	LTE Band 66_LAT	20M	QPSK	50	24	Back	15mm	Reduced	132322	1745	21.04	21.80	1.191	0.01	0.256	**0.305**
	1	LTE Band 2_UAT	20M	QPSK	1	49	Front	15mm	Reduced	18900	1880	19.26	20.30	1.271	-0.01	0.144	0.183
	1	LTE Band 2_UAT	20M	QPSK	1	49	Back	15mm	Reduced	18900	1880	19.26	20.30	1.271	0.04	0.263	0.334
	1	LTE Band 2_UAT	20M	QPSK	50	24	Front	15mm	Reduced	18900	1880	19.23	20.30	1.279	0.03	0.144	0.184
	1	LTE Band 2_UAT	20M	QPSK	50	24	Back	15mm	Reduced	18900	1880	19.23	20.30	1.279	0.18	0.262	0.335
	1	LTE Band 2_LAT	20M	QPSK	1	49	Front	15mm	Reduced	18900	1880	22.58	23.80	1.324	-0.02	0.193	0.256
46	1	LTE Band 2_LAT	20M	QPSK	1	49	Back	15mm	Reduced	18900	1880	22.58	23.80	1.324	-0.19	0.310	**0.411**
	1	LTE Band 2_LAT	20M	QPSK	50	24	Front	15mm	Reduced	18900	1880	22.16	23.30	1.300	0.18	0.171	0.222
	1	LTE Band 2_LAT	20M	QPSK	50	24	Back	15mm	Reduced	18900	1880	22.16	23.30	1.300	0.13	0.308	0.400

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	LTE Band 7_UAT	20M	QPSK	1	49	Front	15mm	Reduced	21350	2560	20.08	20.80	1.180	0.14	0.072	0.085
	1	LTE Band 7_UAT	20M	QPSK	1	49	Back	15mm	Reduced	21350	2560	20.08	20.80	1.180	-0.06	0.276	0.326
	1	LTE Band 7_UAT	20M	QPSK	50	24	Front	15mm	Reduced	21350	2560	20.05	20.80	1.189	-0.06	0.073	0.087
	1	LTE Band 7_UAT	20M	QPSK	50	24	Back	15mm	Reduced	21350	2560	20.05	20.80	1.189	0.15	0.276	0.328
47	1	LTE Band 7C_UAT	20M	QPSK	50	24	Back	15mm	Reduced	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	20.01	20.80	1.199	-0.01	0.298	**0.357**
	1	LTE Band 7_LAT	20M	QPSK	1	49	Front	15mm	Full	21350	2560	22.86	23.80	1.242	0.13	0.209	0.260
	1	LTE Band 7_LAT	20M	QPSK	1	49	Back	15mm	Full	21350	2560	22.86	23.80	1.242	0.15	0.280	0.348
	1	LTE Band 7C_LAT	20M	QPSK	1	49	Back	15mm	Full	21350(PCC) +21152(SCC)	2560(PCC) +2540.2(SCC)	22.80	23.80	1.259	0.18	0.211	0.266
	1	LTE Band 7_LAT	20M	QPSK	50	24	Front	15mm	Full	21350	2560	21.85	22.80	1.245	0.01	0.165	0.205
	1	LTE Band 7_LAT	20M	QPSK	50	24	Back	15mm	Full	21350	2560	21.85	22.80	1.245	0.18	0.224	0.279

<TDD LTE SAR>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	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)
	1	LTE Band 41_UAT	20M	QPSK	1	49	Front	15mm	Reduced	40620	2593	22.18	22.80	1.153	62.9	1.006	0.03	0.086	0.100
	1	LTE Band 41_UAT	20M	QPSK	1	49	Back	15mm	Reduced	40620	2593	22.18	22.80	1.153	62.9	1.006	-0.09	0.274	0.318
	1	LTE Band 41_UAT	20M	QPSK	50	24	Front	15mm	Reduced	40620	2593	22.15	22.80	1.161	62.9	1.006	0.05	0.086	0.100
48	1	LTE Band 41_UAT	20M	QPSK	50	24	Back	15mm	Reduced	40620	2593	22.15	22.80	1.161	62.9	1.006	-0.13	0.274	**0.320**
	1	LTE Band 41C_UAT	20M	QPSK	50	24	Back	15mm	Reduced	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	22.24	22.80	1.138	62.9	1.006	0.03	0.252	0.288
	1	LTE Band 41_LAT	20M	QPSK	1	49	Front	15mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.16	0.150	0.174
	1	LTE Band 41_LAT	20M	QPSK	1	49	Back	15mm	Full	40620	2593	23.67	24.30	1.156	62.9	1.006	0.08	0.197	0.229
	1	LTE Band 41C_LAT	20M	QPSK	1	49	Back	15mm	Full	40620(PCC) +40422(SCC)	2593(PCC) +2573.2(SCC)	23.63	24.30	1.167	62.9	1.006	0.09	0.152	0.178
	1	LTE Band 41_LAT	20M	QPSK	50	24	Front	15mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.03	0.109	0.138
	1	LTE Band 41_LAT	20M	QPSK	50	24	Back	15mm	Full	40620	2593	22.31	23.30	1.256	62.9	1.006	0.07	0.143	0.181

<EN-DC SAR >

Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Front	15mm	Reduced	21350	2560	16.49	17.30	1.205	0.06	0.043	0.052
1	LTE Band 7_EN-DC_UAT	20M	QPSK	1	49	Back	15mm	Reduced	21350	2560	16.49	17.30	1.205	0.09	0.140	0.169
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Front	15mm	Reduced	21350	2560	16.47	17.30	1.211	-0.01	0.044	0.053
1	LTE Band 7_EN-DC_UAT	20M	QPSK	50	24	Back	15mm	Reduced	21350	2560	16.47	17.30	1.211	0.04	0.142	0.172
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Front	15mm	Reduced	21350	2560	21.55	22.30	1.189	0.04	0.144	0.171
1	LTE Band 7_EN-DC_LAT	20M	QPSK	1	49	Back	15mm	Reduced	21350	2560	21.55	22.30	1.189	0.14	0.273	0.324
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Front	15mm	Reduced	21350	2560	21.53	22.30	1.194	0.04	0.146	0.174
1	LTE Band 7_EN-DC_LAT	20M	QPSK	50	24	Back	15mm	Reduced	21350	2560	21.53	22.30	1.194	-0.06	0.275	0.328

<5G NR SAR SA Mode>

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Front	15mm	Reduced	507000	2535	20.30	21.50	1.318	-0.03	0.090	0.119
	1	SA N7_UAT	20M	PI/2 BPSK	1	53	DFT-15	Back	15mm	Reduced	507000	2535	20.30	21.50	1.318	0.08	0.286	0.377
	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Front	15mm	Reduced	507000	2535	20.25	21.50	1.334	0.16	0.091	0.121
49	1	SA N7_UAT	20M	PI/2 BPSK	50	28	DFT-15	Back	15mm	Reduced	507000	2535	20.25	21.50	1.334	-0.04	0.303	**0.404**
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Front	15mm	Full	507000	2535	22.88	24.00	1.294	0.1	0.205	0.265
	1	SA N7_LAT	20M	PI/2 BPSK	1	53	DFT-15	Back	15mm	Full	507000	2535	22.88	24.00	1.294	-0.01	0.243	0.314
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Front	15mm	Full	507000	2535	22.86	24.00	1.300	-0.11	0.210	0.273
	1	SA N7_LAT	20M	PI/2 BPSK	50	28	DFT-15	Back	15mm	Full	507000	2535	22.86	24.00	1.300	0.12	0.255	0.332

<5G NR SAR NSA Mode >

Plot No.	Battery	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Front	15mm	Full	167300	836.5	23.84	24.00	1.038	0.17	0.187	0.194
	1	NSA N5_UAT	20M	PI/2 BPSK	1	53	DFT-15	Back	15mm	Full	167300	836.5	23.84	24.00	1.038	0.09	0.205	0.213
	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Front	15mm	Full	167300	836.5	23.82	24.00	1.042	0.08	0.195	0.203
50	1	NSA N5_UAT	20M	PI/2 BPSK	50	28	DFT-15	Back	15mm	Full	167300	836.5	23.82	24.00	1.042	0.02	0.230	**0.240**
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Front	15mm	Full	167300	836.5	23.84	24.00	1.038	-0.07	0.088	0.092
	1	NSA N5_LAT	20M	PI/2 BPSK	1	53	DFT-15	Back	15mm	Full	167300	836.5	23.84	24.00	1.038	-0.11	0.096	0.100
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Front	15mm	Full	167300	836.5	23.82	24.00	1.042	0.09	0.098	0.102
	1	NSA N5_LAT	20M	PI/2 BPSK	50	28	DFT-15	Back	15mm	Full	167300	836.5	23.82	24.00	1.042	0.05	0.105	0.109

<Bluetooth SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	Bluetooth	DH5 1Mbps	Front	15mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	-0.06	0.045	0.068
51	1	Bluetooth	DH5 1Mbps	Back	15mm	Full	39	2441	13.90	15.40	1.413	76.82	1.084	0.04	0.047	**0.072**

<WLAN2.4G SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	0.12	0.118	0.127
52	1	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Full	6	2437	19.20	19.50	1.072	99.31	1.007	-0.08	0.125	**0.135**

<WLAN5G SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	WLAN5.3GHz	802.11a 6Mbps	Front	15mm	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	0.09	0.146	0.163
53	1	WLAN5.3GHz	802.11a 6Mbps	Back	15mm	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	-0.07	0.395	**0.441**
	1	WLAN5.5GHz	802.11a 6Mbps	Front	15mm	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	0.02	0.179	0.210
	1	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	0.12	0.450	0.529
	1	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Reduced	124	5620	16.40	17.00	1.148	96.79	1.033	-0.16	0.468	0.555
54	2	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Reduced	124	5620	16.40	17.00	1.148	96.79	1.033	0.11	0.542	**0.643**
	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	15mm	Reduced	155	5775	16.40	17.00	1.148	88.19	1.134	0.06	0.175	0.228
55	1	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	15mm	Reduced	155	5775	16.40	17.00	1.148	88.19	1.134	-0.04	0.339	**0.441**

16.4 Product Specific 10g SAR

<WLAN5G SAR>

Plot No.	Battery	Band	Mode	Test Position	Gap (mm)	Power Reduction	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)
	1	WLAN5.3GHz	802.11a 6Mbps	Front	0	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	0.16	0.453	0.506
	1	WLAN5.3GHz	802.11a 6Mbps	Back	0	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	0.18	0.809	0.904
	1	WLAN5.3GHz	802.11a 6Mbps	Left Side	0	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	-0.08	0.087	0.097
	1	WLAN5.3GHz	802.11a 6Mbps	Right Side	0	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	-0.01	0.194	0.217
56	1	WLAN5.3GHz	802.11a 6Mbps	Top Side	0	Reduced	52	5260	16.66	17.00	1.081	96.79	1.033	-0.03	0.962	**1.075**
	1	WLAN5.5GHz	802.11a 6Mbps	Front	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	-0.04	0.568	0.667
	1	WLAN5.5GHz	802.11a 6Mbps	Back	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	0.03	0.985	1.158
	1	WLAN5.5GHz	802.11a 6Mbps	Left Side	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	-0.08	0.041	0.048
	1	WLAN5.5GHz	802.11a 6Mbps	Right Side	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	-0.07	0.280	0.329
57	1	WLAN5.5GHz	802.11a 6Mbps	Top Side	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	-0.1	1.240	**1.457**
	2	WLAN5.5GHz	802.11a 6Mbps	Top Side	0	Reduced	132	5660	16.44	17.00	1.138	96.79	1.033	0.05	1.230	1.445

16.5 Repeated SAR Measurement

<1g>

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	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	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Reduced power level 1	11	2462	16.80	17.50	1.175	99.31	1.007	-0.03	0.899	1	1.064
2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Reduced power level 1	11	2462	16.80	17.50	1.175	99.31	1.007	0.03	0.891	1.009	1.054

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. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

17. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product Specific
1.	GSM Voice + 2.4GHz WLAN	Yes	Yes		Yes
2.	GPRS/EDGE + 2.4GHz WLAN	Yes	Yes	Yes	Yes
3.	WCDMA + 2.4GHz WLAN	Yes	Yes	Yes	Yes
4.	LTE + 2.4GHz WLAN	Yes	Yes	Yes	Yes
5.	GSM Voice + 5.2/5.3/5.5GHz WLAN	Yes	Yes		Yes
6.	GPRS/EDGE + 5.2/5.3/5.5GHz WLAN	Yes	Yes		Yes
7.	WCDMA + 5.2/5.3/5.5GHz WLAN	Yes	Yes		Yes
8.	LTE + 5.2/5.3/5.5GHz WLAN	Yes	Yes		Yes
9.	GSM Voice + 5.8GHz WLAN	Yes	Yes		Yes
10.	GPRS/EDGE + 5.8GHz WLAN	Yes	Yes	Yes	Yes
11.	WCDMA + 5.8GHz WLAN	Yes	Yes	Yes	Yes
12.	LTE + 5.8GHz WLAN	Yes	Yes	Yes	Yes
13.	GSM Voice + Bluetooth	Yes	Yes		Yes
14.	GPRS/EDGE + Bluetooth	Yes	Yes	Yes	Yes
15.	WCDMA + Bluetooth	Yes	Yes	Yes	Yes
16.	LTE + Bluetooth	Yes	Yes	Yes	Yes
17.	GSM Voice + 5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
18.	GPRS/EDGE + 5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
19.	WCDMA + 5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
20.	LTE + 5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
21.	GSM Voice + 5.8GHz WLAN + Bluetooth	Yes	Yes		Yes
22.	GPRS/EDGE + 5.8GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
23.	WCDMA + 5.8GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
24.	LTE + 5.8GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
25.	5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
26.	5.8GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
27.	EN-DC(LTE + 5G NR)+2.4GHz WLAN	Yes	Yes	Yes	Yes
28.	EN-DC(LTE + 5G NR)+5.2/5.3/5.5GHz WLAN	Yes	Yes		Yes
29.	EN-DC(LTE + 5G NR)+5.8GHz WLAN	Yes	Yes	Yes	Yes
30.	EN-DC(LTE + 5G NR)+ Bluetooth	Yes	Yes		Yes
31.	EN-DC(LTE + 5G NR)+ 5.2/5.3/5.5GHz WLAN + Bluetooth	Yes	Yes		Yes
32.	EN-DC(LTE + 5G NR)+ 5.8GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP) and LTE supports VoLTE function.
2. EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. This device 2.4GHz WLAN/ 5.8GHz WLAN support hotspot operation, and 5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.2GHz / 5.5GHz supports WLAN Direct (GC only).
4. WWAN UAT antenna and WWAN LAT antenna can't transmit simultaneously.
5. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
6. 2.4GHz WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
7. All licensed modes share the same antenna part and cannot transmit simultaneously.
8. According to the EUT character, WLAN 5GHz and Bluetooth can transmit simultaneously.
9. For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
10. The Scaled SAR summation is calculated based on the same configuration and test position.

11. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) Scalar SAR summation < 1.6W/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, simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

17.1 Head Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Right Cheek	0.421	0.397	0.257	0.68	0.65
		Right Tilted	0.381	0.465	0.219	0.60	0.68
		Left Cheek	0.380	0.496	0.796	1.18	1.29
		Left Tilted	0.331	0.599	0.557	0.89	1.16
	GSM1900_UAT	Right Cheek	0.352	0.397	0.257	0.61	0.65
		Right Tilted	0.461	0.465	0.219	0.68	0.68
		Left Cheek	0.271	0.496	0.796	1.07	1.29
		Left Tilted	0.347	0.599	0.557	0.90	1.16
WCDMA	WCDMA V_UAT	Right Cheek	0.373	0.397	0.257	0.63	0.65
		Right Tilted	0.333	0.465	0.219	0.55	0.68
		Left Cheek	0.285	0.496	0.796	1.08	1.29
		Left Tilted	0.259	0.599	0.557	0.82	1.16
	WCDMA IV_UAT	Right Cheek	0.416	0.397	0.257	0.67	0.65
		Right Tilted	0.489	0.465	0.219	0.71	0.68
		Left Cheek	0.296	0.496	0.796	1.09	1.29
		Left Tilted	0.393	0.599	0.557	0.95	1.16
	WCDMA II_UAT	Right Cheek	0.561	0.397	0.257	0.82	0.65
		Right Tilted	0.665	0.465	0.219	0.88	0.68
		Left Cheek	0.391	0.496	0.796	1.19	1.29
		Left Tilted	0.510	0.599	0.557	1.07	1.16
LTE	LTE Band 12_UAT	Right Cheek	0.475	0.397	0.257	0.73	0.65
		Right Tilted	0.420	0.465	0.219	0.64	0.68
		Left Cheek	0.413	0.496	0.796	1.21	1.29
		Left Tilted	0.363	0.599	0.557	0.92	1.16
	LTE Band 5_UAT	Right Cheek	0.459	0.397	0.257	0.72	0.65
		Right Tilted	0.386	0.465	0.219	0.61	0.68
		Left Cheek	0.388	0.496	0.796	1.18	1.29
		Left Tilted	0.343	0.599	0.557	0.90	1.16
	LTE Band 26_UAT	Right Cheek	0.585	0.397	0.257	0.84	0.65
		Right Tilted	0.485	0.465	0.219	0.70	0.68
		Left Cheek	0.488	0.496	0.796	1.28	1.29
		Left Tilted	0.420	0.599	0.557	0.98	1.16
	LTE Band 66_UAT	Right Cheek	0.362	0.397	0.257	0.62	0.65
		Right Tilted	0.466	0.465	0.219	0.69	0.68
		Left Cheek	0.267	0.496	0.796	1.06	1.29
		Left Tilted	0.381	0.599	0.557	0.94	1.16
	LTE Band 2_UAT	Right Cheek	0.445	0.397	0.257	0.70	0.65
		Right Tilted	0.622	0.465	0.219	0.84	0.68
		Left Cheek	0.351	0.496	0.796	1.15	1.29
		Left Tilted	0.466	0.599	0.557	1.02	1.16
	LTE Band 7_UAT	Right Cheek	0.492	0.397	0.257	0.75	0.65
		Right Tilted	0.564	0.465	0.219	0.78	0.68
		Left Cheek	0.250	0.496	0.796	1.05	1.29
		Left Tilted	0.321	0.599	0.557	0.88	1.16
	LTE Band 41_UAT	Right Cheek	0.456	0.397	0.257	0.71	0.65
		Right Tilted	0.547	0.465	0.219	0.77	0.68
		Left Cheek	0.202	0.496	0.796	1.00	1.29
		Left Tilted	0.235	0.599	0.557	0.79	1.16
5G NR	SA N7_UAT	Right Cheek	0.588	0.397	0.257	0.85	0.65
		Right Tilted	0.678	0.465	0.219	0.90	0.68
		Left Cheek	0.258	0.496	0.796	1.05	1.29
		Left Tilted	0.300	0.599	0.557	0.86	1.16

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Right Cheek	0.265	0.085	0.246	0.257	0.35	0.51	0.77
		Right Tilted	0.238	0.057	0.288	0.219	0.30	0.53	0.75
		Left Cheek	0.230	0.217	0.334	0.796	0.45	0.56	1.36
		Left Tilted	0.208	0.145	0.369	0.557	0.35	0.58	1.13
	GSM1900_UAT	Right Cheek	0.241	0.085	0.246	0.257	0.33	0.49	0.74
		Right Tilted	0.300	0.057	0.288	0.219	0.36	0.59	0.81
		Left Cheek	0.167	0.217	0.334	0.796	0.38	0.50	1.30
		Left Tilted	0.237	0.145	0.369	0.557	0.38	0.61	1.16
WCDMA	WCDMA V_UAT	Right Cheek	0.262	0.085	0.246	0.257	0.35	0.51	0.77
		Right Tilted	0.235	0.057	0.288	0.219	0.29	0.52	0.74
		Left Cheek	0.211	0.217	0.334	0.796	0.43	0.55	1.34
		Left Tilted	0.192	0.145	0.369	0.557	0.34	0.56	1.12
	WCDMA IV_UAT	Right Cheek	0.259	0.085	0.246	0.257	0.34	0.51	0.76
		Right Tilted	0.299	0.057	0.288	0.219	0.36	0.59	0.81
		Left Cheek	0.176	0.217	0.334	0.796	0.39	0.51	1.31
		Left Tilted	0.238	0.145	0.369	0.557	0.38	0.61	1.16
	WCDMA II_UAT	Right Cheek	0.343	0.085	0.246	0.257	0.43	0.59	0.85
		Right Tilted	0.418	0.057	0.288	0.219	0.48	0.71	0.93
		Left Cheek	0.242	0.217	0.334	0.796	0.46	0.58	1.37
		Left Tilted	0.317	0.145	0.369	0.557	0.46	0.69	1.24
LTE	LTE Band 12_UAT	Right Cheek	0.307	0.085	0.246	0.257	0.39	0.55	0.81
		Right Tilted	0.270	0.057	0.288	0.219	0.33	0.56	0.78
		Left Cheek	0.263	0.217	0.334	0.796	0.48	0.60	1.39
		Left Tilted	0.236	0.145	0.369	0.557	0.38	0.61	1.16
	LTE Band 5_UAT	Right Cheek	0.327	0.085	0.246	0.257	0.41	0.57	0.83
		Right Tilted	0.270	0.057	0.288	0.219	0.33	0.56	0.78
		Left Cheek	0.275	0.217	0.334	0.796	0.49	0.61	**1.41**
		Left Tilted	0.239	0.145	0.369	0.557	0.38	0.61	1.17
	LTE Band 26_UAT	Right Cheek	0.327	0.085	0.246	0.257	0.41	0.57	0.83
		Right Tilted	0.272	0.057	0.288	0.219	0.33	0.56	0.78
		Left Cheek	0.274	0.217	0.334	0.796	0.49	0.61	1.40
		Left Tilted	0.234	0.145	0.369	0.557	0.38	0.60	1.16
	LTE Band 66_UAT	Right Cheek	0.240	0.085	0.246	0.257	0.33	0.49	0.74
		Right Tilted	0.304	0.057	0.288	0.219	0.36	0.59	0.81
		Left Cheek	0.157	0.217	0.334	0.796	0.37	0.49	1.29
		Left Tilted	0.242	0.145	0.369	0.557	0.39	0.61	1.17
	LTE Band 2_UAT	Right Cheek	0.323	0.085	0.246	0.257	0.41	0.57	0.83
		Right Tilted	0.447	0.057	0.288	0.219	0.50	0.74	0.95
		Left Cheek	0.237	0.217	0.334	0.796	0.45	0.57	1.37
		Left Tilted	0.300	0.145	0.369	0.557	0.45	0.67	1.23
	LTE Band 7_UAT	Right Cheek	0.351	0.085	0.246	0.257	0.44	0.60	0.85
		Right Tilted	0.397	0.057	0.288	0.219	0.45	0.69	0.90
		Left Cheek	0.181	0.217	0.334	0.796	0.40	0.52	1.31
		Left Tilted	0.240	0.145	0.369	0.557	0.39	0.61	1.17
	LTE Band 41_UAT	Right Cheek	0.357	0.085	0.246	0.257	0.44	0.60	0.86
		Right Tilted	0.392	0.057	0.288	0.219	0.45	0.68	0.90
		Left Cheek	0.141	0.217	0.334	0.796	0.36	0.48	1.27
		Left Tilted	0.206	0.145	0.369	0.557	0.35	0.58	1.13
5G NR	SA N7_UAT	Right Cheek	0.358	0.085	0.246	0.257	0.44	0.60	0.86
		Right Tilted	0.434	0.057	0.288	0.219	0.49	0.72	0.94
		Left Cheek	0.142	0.217	0.334	0.796	0.36	0.48	1.27
		Left Tilted	0.175	0.145	0.369	0.557	0.32	0.54	1.10

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_LAT	Right Cheek	0.256	0.397	0.257	0.51	0.65
		Right Tilted	0.111	0.465	0.219	0.33	0.68
		Left Cheek	0.278	0.496	0.796	1.07	1.29
		Left Tilted	0.114	0.599	0.557	0.67	1.16
	GSM1900_LAT	Right Cheek	0.066	0.397	0.257	0.32	0.65
		Right Tilted	0.058	0.465	0.219	0.28	0.68
		Left Cheek	0.123	0.496	0.796	0.92	1.29
		Left Tilted	0.076	0.599	0.557	0.63	1.16
WCDMA	WCDMA V_LAT	Right Cheek	0.170	0.397	0.257	0.43	0.65
		Right Tilted	0.083	0.465	0.219	0.30	0.68
		Left Cheek	0.185	0.496	0.796	0.98	1.29
		Left Tilted	0.091	0.599	0.557	0.65	1.16
	WCDMA IV_LAT	Right Cheek	0.106	0.397	0.257	0.36	0.65
		Right Tilted	0.111	0.465	0.219	0.33	0.68
		Left Cheek	0.179	0.496	0.796	0.98	1.29
		Left Tilted	0.106	0.599	0.557	0.66	1.16
	WCDMA II_LAT	Right Cheek	0.086	0.397	0.257	0.34	0.65
		Right Tilted	0.070	0.465	0.219	0.29	0.68
		Left Cheek	0.112	0.496	0.796	0.91	1.29
		Left Tilted	0.086	0.599	0.557	0.64	1.16
LTE	LTE Band 12_LAT	Right Cheek	0.070	0.397	0.257	0.33	0.65
		Right Tilted	0.029	0.465	0.219	0.25	0.68
		Left Cheek	0.068	0.496	0.796	0.86	1.29
		Left Tilted	0.024	0.599	0.557	0.58	1.16
	LTE Band 5_LAT	Right Cheek	0.163	0.397	0.257	0.42	0.65
		Right Tilted	0.080	0.465	0.219	0.30	0.68
		Left Cheek	0.183	0.496	0.796	0.98	1.29
		Left Tilted	0.103	0.599	0.557	0.66	1.16
	LTE Band 26_LAT	Right Cheek	0.122	0.397	0.257	0.38	0.65
		Right Tilted	0.058	0.465	0.219	0.28	0.68
		Left Cheek	0.146	0.496	0.796	0.94	1.29
		Left Tilted	0.077	0.599	0.557	0.63	1.16
	LTE Band 66_LAT	Right Cheek	0.126	0.397	0.257	0.38	0.65
		Right Tilted	0.091	0.465	0.219	0.31	0.68
		Left Cheek	0.148	0.496	0.796	0.94	1.29
		Left Tilted	0.072	0.599	0.557	0.63	1.16
	LTE Band 2_LAT	Right Cheek	0.086	0.397	0.257	0.34	0.65
		Right Tilted	0.083	0.465	0.219	0.30	0.68
		Left Cheek	0.144	0.496	0.796	0.94	1.29
		Left Tilted	0.067	0.599	0.557	0.62	1.16
	LTE Band 7_LAT	Right Cheek	0.361	0.397	0.257	0.62	0.65
		Right Tilted	0.173	0.465	0.219	0.39	0.68
		Left Cheek	0.202	0.496	0.796	1.00	1.29
		Left Tilted	0.151	0.599	0.557	0.71	1.16
	LTE Band 41_LAT	Right Cheek	0.266	0.397	0.257	0.52	0.65
		Right Tilted	0.117	0.465	0.219	0.34	0.68
		Left Cheek	0.142	0.496	0.796	0.94	1.29
		Left Tilted	0.120	0.599	0.557	0.68	1.16
5G NR	SA N7_LAT	Right Cheek	0.423	0.397	0.257	0.68	0.65
		Right Tilted	0.176	0.465	0.219	0.40	0.68
		Left Cheek	0.218	0.496	0.796	1.01	1.29
		Left Tilted	0.178	0.599	0.557	0.74	1.16

WWAN Band		Exposure Position	1	2	4	6	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM	GSM850_LAT	Right Cheek	0.256	0.085	0.246	0.257	0.34	0.50	0.76
		Right Tilted	0.111	0.057	0.288	0.219	0.17	0.40	0.62
		Left Cheek	0.278	0.217	0.334	0.796	0.50	0.61	1.41
		Left Tilted	0.114	0.145	0.369	0.557	0.26	0.48	1.04
	GSM1900_LAT	Right Cheek	0.066	0.085	0.246	0.257	0.15	0.31	0.57
		Right Tilted	0.058	0.057	0.288	0.219	0.12	0.35	0.57
		Left Cheek	0.123	0.217	0.334	0.796	0.34	0.46	1.25
		Left Tilted	0.076	0.145	0.369	0.557	0.22	0.45	1.00
WCDMA	WCDMA V_LAT	Right Cheek	0.170	0.085	0.246	0.257	0.26	0.42	0.67
		Right Tilted	0.083	0.057	0.288	0.219	0.14	0.37	0.59
		Left Cheek	0.185	0.217	0.334	0.796	0.40	0.52	1.32
		Left Tilted	0.091	0.145	0.369	0.557	0.24	0.46	1.02
	WCDMA IV_LAT	Right Cheek	0.106	0.085	0.246	0.257	0.19	0.35	0.61
		Right Tilted	0.111	0.057	0.288	0.219	0.17	0.40	0.62
		Left Cheek	0.179	0.217	0.334	0.796	0.40	0.51	1.31
		Left Tilted	0.106	0.145	0.369	0.557	0.25	0.48	1.03
	WCDMA II_LAT	Right Cheek	0.086	0.085	0.246	0.257	0.17	0.33	0.59
		Right Tilted	0.070	0.057	0.288	0.219	0.13	0.36	0.58
		Left Cheek	0.112	0.217	0.334	0.796	0.33	0.45	1.24
		Left Tilted	0.086	0.145	0.369	0.557	0.23	0.46	1.01
LTE	LTE Band 12_LAT	Right Cheek	0.070	0.085	0.246	0.257	0.16	0.32	0.57
		Right Tilted	0.029	0.057	0.288	0.219	0.09	0.32	0.54
		Left Cheek	0.068	0.217	0.334	0.796	0.29	0.40	1.20
		Left Tilted	0.024	0.145	0.369	0.557	0.17	0.39	0.95
	LTE Band 5_LAT	Right Cheek	0.163	0.085	0.246	0.257	0.25	0.41	0.67
		Right Tilted	0.080	0.057	0.288	0.219	0.14	0.37	0.59
		Left Cheek	0.183	0.217	0.334	0.796	0.40	0.52	1.31
		Left Tilted	0.103	0.145	0.369	0.557	0.25	0.47	1.03
	LTE Band 26_LAT	Right Cheek	0.122	0.085	0.246	0.257	0.21	0.37	0.63
		Right Tilted	0.058	0.057	0.288	0.219	0.12	0.35	0.57
		Left Cheek	0.146	0.217	0.334	0.796	0.36	0.48	1.28
		Left Tilted	0.077	0.145	0.369	0.557	0.22	0.45	1.00
	LTE Band 66_LAT	Right Cheek	0.126	0.085	0.246	0.257	0.21	0.37	0.63
		Right Tilted	0.091	0.057	0.288	0.219	0.15	0.38	0.60
		Left Cheek	0.148	0.217	0.334	0.796	0.37	0.48	1.28
		Left Tilted	0.072	0.145	0.369	0.557	0.22	0.44	1.00
	LTE Band 2_LAT	Right Cheek	0.086	0.085	0.246	0.257	0.17	0.33	0.59
		Right Tilted	0.083	0.057	0.288	0.219	0.14	0.37	0.59
		Left Cheek	0.144	0.217	0.334	0.796	0.36	0.48	1.27
		Left Tilted	0.067	0.145	0.369	0.557	0.21	0.44	0.99
	LTE Band 7_LAT	Right Cheek	0.361	0.085	0.246	0.257	0.45	0.61	0.86
		Right Tilted	0.173	0.057	0.288	0.219	0.23	0.46	0.68
		Left Cheek	0.202	0.217	0.334	0.796	0.42	0.54	1.33
		Left Tilted	0.151	0.145	0.369	0.557	0.30	0.52	1.08
	LTE Band 41_LAT	Right Cheek	0.266	0.085	0.246	0.257	0.35	0.51	0.77
		Right Tilted	0.117	0.057	0.288	0.219	0.17	0.41	0.62
		Left Cheek	0.142	0.217	0.334	0.796	0.36	0.48	1.27
		Left Tilted	0.120	0.145	0.369	0.557	0.27	0.49	1.05
5G NR	SA N7_LAT	Right Cheek	0.329	0.085	0.246	0.257	0.41	0.58	0.83
		Right Tilted	0.157	0.057	0.288	0.219	0.21	0.45	0.66
		Left Cheek	0.203	0.217	0.334	0.796	0.42	0.54	1.33
		Left Tilted	0.138	0.145	0.369	0.557	0.28	0.51	1.06

<5G NR NAS>

WWAN Band		Exposure Position	1	3	6	1+3+6 Summed 1g SAR (W/kg)
			NR_UAT	LTE B7_LAT	Bluetooth	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR	NSA N5_UAT	Right Cheek	0.265	0.361	0.257	0.88
		Right Tilted	0.231	0.173	0.219	0.62
		Left Cheek	0.199	0.202	0.796	1.20
		Left Tilted	0.164	0.151	0.557	0.87

WWAN Band		Exposure Position	1	3	4	5	6	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)	1+3+5+6 Summed 1g SAR (W/kg)
			NR_UAT	LTE B7_LAT	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
5G NR	NSA N5_UAT	Right Cheek	0.181	0.259	0.085	0.246	0.257	0.53	0.69	0.94
		Right Tilted	0.158	0.076	0.057	0.288	0.219	0.29	0.52	0.74
		Left Cheek	0.133	0.114	0.217	0.334	0.796	0.46	0.58	1.38
		Left Tilted	0.116	0.097	0.145	0.369	0.557	0.36	0.58	1.14

WWAN Band		Exposure Position	1	2	6	1+2+6 Summed 1g SAR (W/kg)
			NR_LAT	LTE B7_UAT	Bluetooth	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR	NSA N5_LAT	Right Cheek	0.113	0.241	0.257	0.61
		Right Tilted	0.057	0.290	0.219	0.57
		Left Cheek	0.127	0.100	0.796	1.02
		Left Tilted	0.060	0.125	0.557	0.74

WWAN Band		Exposure Position	1	2	4	5	6	1+2+4 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
			NR_LAT	LTE B7_UAT	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
5G NR	NSA N5_LAT	Right Cheek	0.113	0.180	0.085	0.246	0.257	0.38	0.54	0.80
		Right Tilted	0.057	0.205	0.057	0.288	0.219	0.32	0.55	0.77
		Left Cheek	0.127	0.074	0.217	0.334	0.796	0.42	0.54	1.33
		Left Tilted	0.060	0.086	0.145	0.369	0.557	0.29	0.52	1.07

17.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Front	0.369	0.137	0.131	0.50	0.27
		Back	0.627	0.318	0.182	0.81	0.50
		Left side	0.314	0.013	0.015	0.33	0.03
		Right side	0.283	0.093	0.064	0.35	0.16
		Top side	0.352	0.380	0.066	0.42	0.45
		Bottom side					
	GSM1900_UAT	Front	0.192	0.137	0.131	0.32	0.27
		Back	0.325	0.318	0.182	0.51	0.50
		Left side	0.107	0.013	0.015	0.12	0.03
		Right side	0.091	0.093	0.064	0.16	0.16
		Top side	0.430	0.380	0.066	0.50	0.45
		Bottom side					
WCDMA	WCDMA V_UAT	Front	0.307	0.137	0.131	0.44	0.27
		Back	0.458	0.318	0.182	0.64	0.50
		Left side	0.298	0.013	0.015	0.31	0.03
		Right side	0.199	0.093	0.064	0.26	0.16
		Top side	0.265	0.380	0.066	0.33	0.45
		Bottom side					
	WCDMA IV_UAT	Front	0.246	0.137	0.131	0.38	0.27
		Back	0.394	0.318	0.182	0.58	0.50
		Left side	0.038	0.013	0.015	0.05	0.03
		Right side	0.015	0.093	0.064	0.08	0.16
		Top side	0.612	0.380	0.066	0.68	0.45
		Bottom side					
	WCDMA II_UAT	Front	0.278	0.137	0.131	0.41	0.27
		Back	0.516	0.318	0.182	0.70	0.50
		Left side	0.044	0.013	0.015	0.06	0.03
		Right side	0.028	0.093	0.064	0.09	0.16
		Top side	0.632	0.380	0.066	0.70	0.45
		Bottom side					
LTE	LTE Band 12_UAT	Front	0.143	0.137	0.131	0.27	0.27
		Back	0.172	0.318	0.182	0.35	0.50
		Left side	0.174	0.013	0.015	0.19	0.03
		Right side	0.124	0.093	0.064	0.19	0.16
		Top side	0.068	0.380	0.066	0.13	0.45
		Bottom side					
	LTE Band 5_UAT	Front	0.323	0.137	0.131	0.45	0.27
		Back	0.421	0.318	0.182	0.60	0.50
		Left side	0.276	0.013	0.015	0.29	0.03
		Right side	0.206	0.093	0.064	0.27	0.16
		Top side	0.250	0.380	0.066	0.32	0.45
		Bottom side					
	LTE Band 26_UAT	Front	0.228	0.137	0.131	0.36	0.27
		Back	0.358	0.318	0.182	0.54	0.50
		Left side	0.237	0.013	0.015	0.25	0.03
		Right side	0.176	0.093	0.064	0.24	0.16
		Top side	0.210	0.380	0.066	0.28	0.45
		Bottom side					
	LTE Band 66_UAT	Front	0.260	0.137	0.131	0.39	0.27
		Back	0.410	0.318	0.182	0.59	0.50

		Left side	0.039	0.013	0.015	0.05	0.03
		Right side	0.026	0.093	0.064	0.09	0.16
		Top side	0.561	0.380	0.066	0.63	0.45
		Bottom side					
	LTE Band 2_UAT	Front	0.258	0.137	0.131	0.39	0.27
		Back	0.459	0.318	0.182	0.64	0.50
		Left side	0.040	0.013	0.015	0.06	0.03
		Right side	0.024	0.093	0.064	0.09	0.16
		Top side	0.597	0.380	0.066	0.66	0.45
		Bottom side					
	LTE Band 7_UAT	Front	0.130	0.137	0.131	0.26	0.27
		Back	0.567	0.318	0.182	0.75	0.50
		Left side	0.098	0.013	0.015	0.11	0.03
		Right side	0.034	0.093	0.064	0.10	0.16
		Top side	0.362	0.380	0.066	0.43	0.45
		Bottom side					
	LTE Band 41_UAT	Front	0.142	0.137	0.131	0.27	0.27
		Back	0.553	0.318	0.182	0.74	0.50
		Left side	0.117	0.013	0.015	0.13	0.03
		Right side	0.032	0.093	0.064	0.10	0.16
		Top side	0.368	0.380	0.066	0.43	0.45
		Bottom side					
5G NR	SA N7_UAT	Front	0.173	0.137	0.131	0.30	0.27
		Back	0.632	0.318	0.182	0.81	0.50
		Left side	0.106	0.013	0.015	0.12	0.03
		Right side	0.032	0.093	0.064	0.10	0.16
		Top side	0.511	0.380	0.066	0.58	0.45
		Bottom side					

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Front	0.369	0.233	0.137	0.131	0.60	0.51	0.64
		Back	0.627	0.276	0.318	0.182	0.90	0.95	1.13
		Left side	0.314	0.026	0.013	0.015	0.34	0.33	0.34
		Right side	0.283	0.206	0.093	0.064	0.49	0.38	0.44
		Top side	0.352	0.135	0.380	0.066	0.49	0.73	0.80
		Bottom side							
	GSM1900_UAT	Front	0.192	0.233	0.137	0.131	0.43	0.33	0.46
		Back	0.325	0.276	0.318	0.182	0.60	0.64	0.83
		Left side	0.107	0.026	0.013	0.015	0.13	0.12	0.14
		Right side	0.091	0.206	0.093	0.064	0.30	0.18	0.25
		Top side	0.430	0.135	0.380	0.066	0.57	0.81	0.88
		Bottom side							
WCDMA	WCDMA V_UAT	Front	0.307	0.233	0.137	0.131	0.54	0.44	0.58
		Back	0.458	0.276	0.318	0.182	0.73	0.78	0.96
		Left side	0.298	0.026	0.013	0.015	0.32	0.31	0.33
		Right side	0.199	0.206	0.093	0.064	0.41	0.29	0.36
		Top side	0.265	0.135	0.380	0.066	0.40	0.65	0.71
		Bottom side							
	WCDMA IV_UAT	Front	0.246	0.233	0.137	0.131	0.48	0.38	0.51
		Back	0.394	0.276	0.318	0.182	0.67	0.71	0.89
		Left side	0.038	0.026	0.013	0.015	0.06	0.05	0.07
		Right side	0.015	0.206	0.093	0.064	0.22	0.11	0.17
		Top side	0.612	0.135	0.380	0.066	0.75	0.99	1.06
		Bottom side							
	WCDMA II_UAT	Front	0.278	0.233	0.137	0.131	0.51	0.42	0.55
		Back	0.516	0.276	0.318	0.182	0.79	0.83	1.02
		Left side	0.044	0.026	0.013	0.015	0.07	0.06	0.07
		Right side	0.028	0.206	0.093	0.064	0.23	0.12	0.19
		Top side	0.632	0.135	0.380	0.066	0.77	1.01	1.08
		Bottom side							
LTE	LTE Band 12_UAT	Front	0.143	0.233	0.137	0.131	0.38	0.28	0.41
		Back	0.172	0.276	0.318	0.182	0.45	0.49	0.67
		Left side	0.174	0.026	0.013	0.015	0.20	0.19	0.20
		Right side	0.124	0.206	0.093	0.064	0.33	0.22	0.28
		Top side	0.068	0.135	0.380	0.066	0.20	0.45	0.51
		Bottom side							
	LTE Band 5_UAT	Front	0.323	0.233	0.137	0.131	0.56	0.46	0.59
		Back	0.421	0.276	0.318	0.182	0.70	0.74	0.92
		Left side	0.276	0.026	0.013	0.015	0.30	0.29	0.30
		Right side	0.206	0.206	0.093	0.064	0.41	0.30	0.36
		Top side	0.250	0.135	0.380	0.066	0.39	0.63	0.70
		Bottom side							
	LTE Band 26_UAT	Front	0.228	0.233	0.137	0.131	0.46	0.37	0.50
		Back	0.358	0.276	0.318	0.182	0.63	0.68	0.86
		Left side	0.237	0.026	0.013	0.015	0.26	0.25	0.27
		Right side	0.176	0.206	0.093	0.064	0.38	0.27	0.33
		Top side	0.210	0.135	0.380	0.066	0.35	0.59	0.66
		Bottom side							
	LTE Band 66_UAT	Front	0.260	0.233	0.137	0.131	0.49	0.40	0.53
		Back	0.410	0.276	0.318	0.182	0.69	0.73	0.91
		Left side	0.039	0.026	0.013	0.015	0.07	0.05	0.07
		Right side	0.026	0.206	0.093	0.064	0.23	0.12	0.18

		Top side	0.561	0.135	0.380	0.066	0.70	0.94	1.01
		Bottom side							
	LTE Band 2_UAT	Front	0.258	0.233	0.137	0.131	0.49	0.40	0.53
		Back	0.459	0.276	0.318	0.182	0.74	0.78	0.96
		Left side	0.040	0.026	0.013	0.015	0.07	0.05	0.07
		Right side	0.024	0.206	0.093	0.064	0.23	0.12	0.18
		Top side	0.597	0.135	0.380	0.066	0.73	0.98	1.04
		Bottom side							
	LTE Band 7_UAT	Front	0.130	0.233	0.137	0.131	0.36	0.27	0.40
		Back	0.567	0.276	0.318	0.182	0.84	0.89	1.07
		Left side	0.098	0.026	0.013	0.015	0.12	0.11	0.13
		Right side	0.034	0.206	0.093	0.064	0.24	0.13	0.19
		Top side	0.362	0.135	0.380	0.066	0.50	0.74	0.81
		Bottom side							
	LTE Band 41_UAT	Front	0.142	0.233	0.137	0.131	0.38	0.28	0.41
		Back	0.553	0.276	0.318	0.182	0.83	0.87	1.05
		Left side	0.117	0.026	0.013	0.015	0.14	0.13	0.15
		Right side	0.032	0.206	0.093	0.064	0.24	0.13	0.19
		Top side	0.368	0.135	0.380	0.066	0.50	0.75	0.81
		Bottom side							
5G NR	SA N7_UAT	Front	0.173	0.233	0.137	0.131	0.41	0.31	0.44
		Back	0.632	0.276	0.318	0.182	0.91	0.95	1.13
		Left side	0.106	0.026	0.013	0.015	0.13	0.12	0.13
		Right side	0.032	0.206	0.093	0.064	0.24	0.13	0.19
		Top side	0.511	0.135	0.380	0.066	0.65	0.89	0.96
		Bottom side							

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_LAT	Front	0.230	0.137	0.131	0.36	0.27
		Back	0.487	0.318	0.182	0.67	0.50
		Left side	0.259	0.013	0.015	0.27	0.03
		Right side	0.163	0.093	0.064	0.23	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.318			0.32	
	GSM1900_LAT	Front	0.325	0.137	0.131	0.46	0.27
		Back	0.629	0.318	0.182	0.81	0.50
		Left side	0.113	0.013	0.015	0.13	0.03
		Right side	0.158	0.093	0.064	0.22	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.788			0.79	
WCDMA	WCDMA V_LAT	Front	0.168	0.137	0.131	0.30	0.27
		Back	0.283	0.318	0.182	0.47	0.50
		Left side	0.180	0.013	0.015	0.20	0.03
		Right side	0.114	0.093	0.064	0.18	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.197			0.20	
	WCDMA IV_LAT	Front	0.209	0.137	0.131	0.34	0.27
		Back	0.348	0.318	0.182	0.53	0.50
		Left side	0.076	0.013	0.015	0.09	0.03
		Right side	0.080	0.093	0.064	0.14	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.444			0.44	
	WCDMA II_LAT	Front	0.303	0.137	0.131	0.43	0.27
		Back	0.627	0.318	0.182	0.81	0.50
		Left side	0.101	0.013	0.015	0.12	0.03
		Right side	0.145	0.093	0.064	0.21	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.746			0.75	
LTE	LTE Band 12_LAT	Front	0.089	0.137	0.131	0.22	0.27
		Back	0.117	0.318	0.182	0.30	0.50
		Left side	0.126	0.013	0.015	0.14	0.03
		Right side	0.081	0.093	0.064	0.15	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.062			0.06	
	LTE Band 5_LAT	Front	0.167	0.137	0.131	0.30	0.27
		Back	0.274	0.318	0.182	0.46	0.50
		Left side	0.174	0.013	0.015	0.19	0.03
		Right side	0.095	0.093	0.064	0.16	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.160			0.16	
	LTE Band 26_LAT	Front	0.149	0.137	0.131	0.28	0.27
		Back	0.232	0.318	0.182	0.41	0.50
		Left side	0.146	0.013	0.015	0.16	0.03
		Right side	0.100	0.093	0.064	0.16	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.133			0.13	
	LTE Band 66_LAT	Front	0.196	0.137	0.131	0.33	0.27
		Back	0.361	0.318	0.182	0.54	0.50
		Left side	0.068	0.013	0.015	0.08	0.03
		Right side	0.096	0.093	0.064	0.16	0.16

		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.444			0.44	
	LTE Band 2_LAT	Front	0.258	0.137	0.131	0.39	0.27
		Back	0.526	0.318	0.182	0.71	0.50
		Left side	0.081	0.013	0.015	0.10	0.03
		Right side	0.104	0.093	0.064	0.17	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.670			0.67	
	LTE Band 7_LAT	Front	0.494	0.137	0.131	0.63	0.27
		Back	0.698	0.318	0.182	0.88	0.50
		Left side	0.068	0.013	0.015	0.08	0.03
		Right side	0.308	0.093	0.064	0.37	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.346			0.35	
	LTE Band 41_LAT	Front	0.348	0.137	0.131	0.48	0.27
		Back	0.435	0.318	0.182	0.62	0.50
		Left side	0.047	0.013	0.015	0.06	0.03
		Right side	0.247	0.093	0.064	0.31	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.208			0.21	
5G NR	SA N7_LAT	Front	0.460	0.137	0.131	0.59	0.27
		Back	0.666	0.318	0.182	0.85	0.50
		Left side	0.071	0.013	0.015	0.09	0.03
		Right side	0.316	0.093	0.064	0.38	0.16
		Top side		0.380	0.066	0.07	0.45
		Bottom side	0.324			0.32	

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
GSM	GSM850_LAT	Front	0.230	0.233	0.137	0.131	0.46	0.37	0.50
		Back	0.487	0.276	0.318	0.182	0.76	0.81	0.99
		Left side	0.259	0.026	0.013	0.015	0.29	0.27	0.29
		Right side	0.163	0.206	0.093	0.064	0.37	0.26	0.32
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.318				0.32	0.32	0.32
	GSM1900_LAT	Front	0.325	0.233	0.137	0.131	0.56	0.46	0.59
		Back	0.629	0.276	0.318	0.182	0.91	0.95	1.13
		Left side	0.113	0.026	0.013	0.015	0.14	0.13	0.14
		Right side	0.158	0.206	0.093	0.064	0.36	0.25	0.32
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.788				0.79	0.79	0.79
WCDMA	WCDMA V_LAT	Front	0.168	0.233	0.137	0.131	0.40	0.31	0.44
		Back	0.283	0.276	0.318	0.182	0.56	0.60	0.78
		Left side	0.180	0.026	0.013	0.015	0.21	0.19	0.21
		Right side	0.114	0.206	0.093	0.064	0.32	0.21	0.27
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.197				0.20	0.20	0.20
	WCDMA IV_LAT	Front	0.209	0.233	0.137	0.131	0.44	0.35	0.48
		Back	0.348	0.276	0.318	0.182	0.62	0.67	0.85
		Left side	0.076	0.026	0.013	0.015	0.10	0.09	0.10
		Right side	0.080	0.206	0.093	0.064	0.29	0.17	0.24
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.444				0.44	0.44	0.44
	WCDMA II_LAT	Front	0.303	0.233	0.137	0.131	0.54	0.44	0.57
		Back	0.627	0.276	0.318	0.182	0.90	0.95	1.13
		Left side	0.101	0.026	0.013	0.015	0.13	0.11	0.13
		Right side	0.145	0.206	0.093	0.064	0.35	0.24	0.30
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.746				0.75	0.75	0.75
LTE	LTE Band 12_LAT	Front	0.089	0.233	0.137	0.131	0.32	0.23	0.36
		Back	0.117	0.276	0.318	0.182	0.39	0.44	0.62
		Left side	0.126	0.026	0.013	0.015	0.15	0.14	0.15
		Right side	0.081	0.206	0.093	0.064	0.29	0.17	0.24
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.062				0.06	0.06	0.06
	LTE Band 5_LAT	Front	0.167	0.233	0.137	0.131	0.40	0.30	0.44
		Back	0.274	0.276	0.318	0.182	0.55	0.59	0.77
		Left side	0.174	0.026	0.013	0.015	0.20	0.19	0.20
		Right side	0.095	0.206	0.093	0.064	0.30	0.19	0.25
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.160				0.16	0.16	0.16
	LTE Band 26_LAT	Front	0.149	0.233	0.137	0.131	0.38	0.29	0.42
		Back	0.232	0.276	0.318	0.182	0.51	0.55	0.73
		Left side	0.146	0.026	0.013	0.015	0.17	0.16	0.17
		Right side	0.100	0.206	0.093	0.064	0.31	0.19	0.26
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.133				0.13	0.13	0.13
	LTE Band 66_LAT	Front	0.196	0.233	0.137	0.131	0.43	0.33	0.46
		Back	0.361	0.276	0.318	0.182	0.64	0.68	0.86
		Left side	0.068	0.026	0.013	0.015	0.09	0.08	0.10

		Right side	0.096	0.206	0.093	0.064	0.30	0.19	0.25
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.444				0.44	0.44	0.44
	LTE Band 2_LAT	Front	0.258	0.233	0.137	0.131	0.49	0.40	0.53
		Back	0.526	0.276	0.318	0.182	0.80	0.84	1.03
		Left side	0.081	0.026	0.013	0.015	0.11	0.09	0.11
		Right side	0.104	0.206	0.093	0.064	0.31	0.20	0.26
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.670				0.67	0.67	0.67
	LTE Band 7_LAT	Front	0.494	0.233	0.137	0.131	0.73	0.63	0.76
		Back	0.698	0.276	0.318	0.182	0.97	1.02	1.20
		Left side	0.068	0.026	0.013	0.015	0.09	0.08	0.10
		Right side	0.308	0.206	0.093	0.064	0.51	0.40	0.47
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.346				0.35	0.35	0.35
	LTE Band 41_LAT	Front	0.348	0.233	0.137	0.131	0.58	0.49	0.62
		Back	0.435	0.276	0.318	0.182	0.71	0.75	0.94
		Left side	0.047	0.026	0.013	0.015	0.07	0.06	0.08
		Right side	0.247	0.206	0.093	0.064	0.45	0.34	0.40
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.208				0.21	0.21	0.21
5G NR	SA N7_LAT	Front	0.460	0.233	0.137	0.131	0.69	0.60	0.73
		Back	0.666	0.276	0.318	0.182	0.94	0.98	1.17
		Left side	0.071	0.026	0.013	0.015	0.10	0.08	0.10
		Right side	0.316	0.206	0.093	0.064	0.52	0.41	0.47
		Top side		0.135	0.380	0.066	0.14	0.38	0.45
		Bottom side	0.324				0.32	0.32	0.32

<5G NR NSA>

WWAN Band		Exposure Position	1 NR_UAT 1g SAR (W/kg)	3 LTE B7_LAT 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)
5G NR	NSA N5_UAT	Front	0.207	0.323	0.131	0.66
		Back	0.330	0.516	0.182	1.03
		Left side	0.233	0.052	0.015	0.30
		Right side	0.163	0.221	0.064	0.45
		Top side	0.198		0.066	0.26
		Bottom side		0.208		0.21

WWAN Band		Exposure Position	1 NR_UAT 1g SAR (W/kg)	3 LTE B7_LAT 1g SAR (W/kg)	4 2.4GHz WLAN 1g SAR (W/kg)	5 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)	1+3+5+6 Summed 1g SAR (W/kg)
5G NR	NSA N5_UAT	Front	0.207	0.323	0.233	0.137	0.131	0.76	0.67	0.80
		Back	0.330	0.516	0.276	0.318	0.182	**1.12**	1.16	1.35
		Left side	0.233	0.052	0.026	0.013	0.015	0.31	0.30	0.31
		Right side	0.163	0.221	0.206	0.093	0.064	0.59	0.48	0.54
		Top side	0.198		0.135	0.380	0.066	0.33	0.58	0.64
		Bottom side		0.208				0.21	0.21	0.21

WWAN Band		Exposure Position	1 NR_LAT 1g SAR (W/kg)	2 LTE B7_UAT 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)
5G NR	NSA N5_LAT	Front	0.102	0.071	0.131	0.30
		Back	0.172	0.330	0.182	0.68
		Left side	0.120	0.061	0.015	0.20
		Right side	0.074	0.025	0.064	0.16
		Top side		0.193	0.066	0.26
		Bottom side	0.103			0.10

WWAN Band		Exposure Position	1 NR_LAT 1g SAR (W/kg)	2 LTE B7_UAT 1g SAR (W/kg)	4 2.4GHz WLAN 1g SAR (W/kg)	5 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2+4 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
5G NR	NSA N5_LAT	Front	0.102	0.071	0.233	0.137	0.131	0.41	0.31	0.44
		Back	0.172	0.330	0.276	0.318	0.182	0.78	0.82	1.00
		Left side	0.120	0.061	0.026	0.013	0.015	0.21	0.19	0.21
		Right side	0.074	0.025	0.206	0.093	0.064	0.31	0.19	0.26
		Top side		0.193	0.135	0.380	0.066	0.33	0.57	0.64
		Bottom side	0.103					0.10	0.10	0.10

17.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Front	0.321	0.228	0.068	0.39	0.30
		Back	0.346	0.643	0.072	0.42	0.72
	GSM1900_UAT	Front	0.090	0.228	0.068	0.16	0.30
		Back	0.211	0.643	0.072	0.28	0.72
WCDMA	WCDMA V_UAT	Front	0.273	0.228	0.068	0.34	0.30
		Back	0.280	0.643	0.072	0.35	0.72
	WCDMA IV_UAT	Front	0.171	0.228	0.068	0.24	0.30
		Back	0.288	0.643	0.072	0.36	0.72
	WCDMA II_UAT	Front	0.184	0.228	0.068	0.25	0.30
		Back	0.337	0.643	0.072	0.41	0.72
LTE	LTE Band 12_UAT	Front	0.127	0.228	0.068	0.20	0.30
		Back	0.168	0.643	0.072	0.24	0.72
	LTE Band 5_UAT	Front	0.292	0.228	0.068	0.36	0.30
		Back	0.292	0.643	0.072	0.36	0.72
	LTE Band 26_UAT	Front	0.234	0.228	0.068	0.30	0.30
		Back	0.258	0.643	0.072	0.33	0.72
	LTE Band 66_UAT	Front	0.197	0.228	0.068	0.27	0.30
		Back	0.305	0.643	0.072	0.38	0.72
	LTE Band 2_UAT	Front	0.184	0.228	0.068	0.25	0.30
		Back	0.335	0.643	0.072	0.41	0.72
	LTE Band 7_UAT	Front	0.087	0.228	0.068	0.16	0.30
		Back	0.357	0.643	0.072	0.43	0.72
	LTE Band 41_UAT	Front	0.100	0.228	0.068	0.17	0.30
		Back	0.320	0.643	0.072	0.39	0.72
5G NR	SA N7_UAT	Front	0.121	0.228	0.068	0.19	0.30
		Back	0.404	0.643	0.072	0.48	0.72

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
GSM	GSM850_UAT	Front	0.321	0.127	0.228	0.068	0.45	0.55	0.62
		Back	0.346	0.135	0.643	0.072	0.48	0.99	1.06
	GSM1900_UAT	Front	0.090	0.127	0.228	0.068	0.22	0.32	0.39
		Back	0.211	0.135	0.643	0.072	0.35	0.85	0.93
WCDMA	WCDMA V_UAT	Front	0.273	0.127	0.228	0.068	0.40	0.50	0.57
		Back	0.280	0.135	0.643	0.072	0.42	0.92	1.00
	WCDMA IV_UAT	Front	0.171	0.127	0.228	0.068	0.30	0.40	0.47
		Back	0.288	0.135	0.643	0.072	0.42	0.93	1.00
	WCDMA II_UAT	Front	0.184	0.127	0.228	0.068	0.31	0.41	0.48
		Back	0.337	0.135	0.643	0.072	0.47	0.98	1.05
LTE	LTE Band 12_UAT	Front	0.127	0.127	0.228	0.068	0.25	0.36	0.42
		Back	0.168	0.135	0.643	0.072	0.30	0.81	0.88
	LTE Band 5_UAT	Front	0.292	0.127	0.228	0.068	0.42	0.52	0.59
		Back	0.292	0.135	0.643	0.072	0.43	0.94	1.01
	LTE Band 26_UAT	Front	0.234	0.127	0.228	0.068	0.36	0.46	0.53
		Back	0.258	0.135	0.643	0.072	0.39	0.90	0.97
	LTE Band 66_UAT	Front	0.197	0.127	0.228	0.068	0.32	0.43	0.49
		Back	0.305	0.135	0.643	0.072	0.44	0.95	1.02
	LTE Band 2_UAT	Front	0.184	0.127	0.228	0.068	0.31	0.41	0.48
		Back	0.335	0.135	0.643	0.072	0.47	0.98	1.05
	LTE Band 7_UAT	Front	0.087	0.127	0.228	0.068	0.21	0.32	0.38
		Back	0.357	0.135	0.643	0.072	0.49	1.00	1.07
	LTE Band 41_UAT	Front	0.100	0.127	0.228	0.068	0.23	0.33	0.40
		Back	0.320	0.135	0.643	0.072	0.46	0.96	1.04
5G NR	SA N7_UAT	Front	0.121	0.127	0.228	0.068	0.25	0.35	0.42
		Back	0.404	0.135	0.643	0.072	0.54	1.05	1.12

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	4+6 Summed 1g SAR (W/kg)
GSM	GSM850_LAT	Front	0.233	0.228	0.068	0.30	0.30
		Back	0.237	0.643	0.072	0.31	0.72
	GSM1900_LAT	Front	0.200	0.228	0.068	0.27	0.30
		Back	0.307	0.643	0.072	0.38	0.72
WCDMA	WCDMA V_LAT	Front	0.168	0.228	0.068	0.24	0.30
		Back	0.178	0.643	0.072	0.25	0.72
	WCDMA IV_LAT	Front	0.173	0.228	0.068	0.24	0.30
		Back	0.290	0.643	0.072	0.36	0.72
	WCDMA II_LAT	Front	0.257	0.228	0.068	0.33	0.30
		Back	0.489	0.643	0.072	0.56	0.72
LTE	LTE Band 12_LAT	Front	0.086	0.228	0.068	0.15	0.30
		Back	0.102	0.643	0.072	0.17	0.72
	LTE Band 5_LAT	Front	0.164	0.228	0.068	0.23	0.30
		Back	0.172	0.643	0.072	0.24	0.72
	LTE Band 26_LAT	Front	0.139	0.228	0.068	0.21	0.30
		Back	0.152	0.643	0.072	0.22	0.72
	LTE Band 66_LAT	Front	0.192	0.228	0.068	0.26	0.30
		Back	0.305	0.643	0.072	0.38	0.72
	LTE Band 2_LAT	Front	0.256	0.228	0.068	0.32	0.30
		Back	0.411	0.643	0.072	0.48	0.72
	LTE Band 7_LAT	Front	0.260	0.228	0.068	0.33	0.30
		Back	0.348	0.643	0.072	0.42	0.72
	LTE Band 41_LAT	Front	0.174	0.228	0.068	0.24	0.30
		Back	0.229	0.643	0.072	0.30	0.72
5G NR	SA N7_LAT	Front	0.273	0.228	0.068	0.34	0.30
		Back	0.332	0.643	0.072	0.40	0.72

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)
GSM	GSM850_LAT	Front	0.233	0.127	0.228	0.068	0.36	0.46	0.53
		Back	0.237	0.135	0.643	0.072	0.37	0.88	0.95
	GSM1900_LAT	Front	0.200	0.127	0.228	0.068	0.33	0.43	0.50
		Back	0.307	0.135	0.643	0.072	0.44	0.95	1.02
WCDMA	WCDMA V_LAT	Front	0.168	0.127	0.228	0.068	0.30	0.40	0.46
		Back	0.178	0.135	0.643	0.072	0.31	0.82	0.89
	WCDMA IV_LAT	Front	0.173	0.127	0.228	0.068	0.30	0.40	0.47
		Back	0.290	0.135	0.643	0.072	0.43	0.93	1.01
	WCDMA II_LAT	Front	0.257	0.127	0.228	0.068	0.38	0.49	0.55
		Back	0.489	0.135	0.643	0.072	0.62	1.13	1.20
LTE	LTE Band 12_LAT	Front	0.086	0.127	0.228	0.068	0.21	0.31	0.38
		Back	0.102	0.135	0.643	0.072	0.24	0.75	0.82
	LTE Band 5_LAT	Front	0.164	0.127	0.228	0.068	0.29	0.39	0.46
		Back	0.172	0.135	0.643	0.072	0.31	0.82	0.89
	LTE Band 26_LAT	Front	0.139	0.127	0.228	0.068	0.27	0.37	0.44
		Back	0.152	0.135	0.643	0.072	0.29	0.80	0.87
	LTE Band 66_LAT	Front	0.192	0.127	0.228	0.068	0.32	0.42	0.49
		Back	0.305	0.135	0.643	0.072	0.44	0.95	1.02
	LTE Band 2_LAT	Front	0.256	0.127	0.228	0.068	0.38	0.48	0.55
		Back	0.411	0.135	0.643	0.072	0.55	1.05	1.13
	LTE Band 7_LAT	Front	0.260	0.127	0.228	0.068	0.39	0.49	0.56
		Back	0.348	0.135	0.643	0.072	0.48	0.99	1.06
	LTE Band 41_LAT	Front	0.174	0.127	0.228	0.068	0.30	0.40	0.47
		Back	0.229	0.135	0.643	0.072	0.36	0.87	0.94
5G NR	SA N7_LAT	Front	0.273	0.127	0.228	0.068	0.40	0.50	0.57
		Back	0.332	0.135	0.643	0.072	0.47	0.98	1.05

<5G NR NSA>

WWAN Band		Exposure Position	1	3	6	1+3+6 Summed 1g SAR (W/kg)
			NR_UAT	LTE B7_LAT	Bluetooth	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR	NSA N5_UAT	Front	0.203	0.174	0.068	0.45
		Back	0.240	0.328	0.072	0.64

WWAN Band		Exposure Position	1	3	4	5	6	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)	1+3+5+6 Summed 1g SAR (W/kg)
			NR_UAT	LTE B7_LAT	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
5G NR	NSA N5_UAT	Front	0.203	0.174	0.127	0.228	0.068	0.50	0.61	0.67
		Back	0.240	0.328	0.135	0.643	0.072	0.70	1.21	1.28

WWAN Band		Exposure Position	1	2	6	1+2+6 Summed 1g SAR (W/kg)
			NR_LAT	LTE B7_UAT	Bluetooth	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR	NSA N5_LAT	Front	0.102	0.053	0.068	0.22
		Back	0.109	0.172	0.072	0.35

WWAN Band		Exposure Position	1	2	4	5	6	1+2+4 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
			NR_LAT	LTE B7_UAT	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
5G NR	NSA N5_LAT	Front	0.102	0.053	0.127	0.228	0.068	0.28	0.38	0.45
		Back	0.109	0.172	0.135	0.643	0.072	0.42	0.92	1.00

Test Engineer : Nick Hu, Yuan Zhao, Jiaxing Chang, Yuankai Kong

18. 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.

19. 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 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

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

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

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

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

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

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

[12] FCC KDB 941225 D07 v01r02, " SAR Evaluation Procedures for UMPC Mini-Tablet Devices", Oct 2015.

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

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

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.06.10

System Check_Head_750MHz

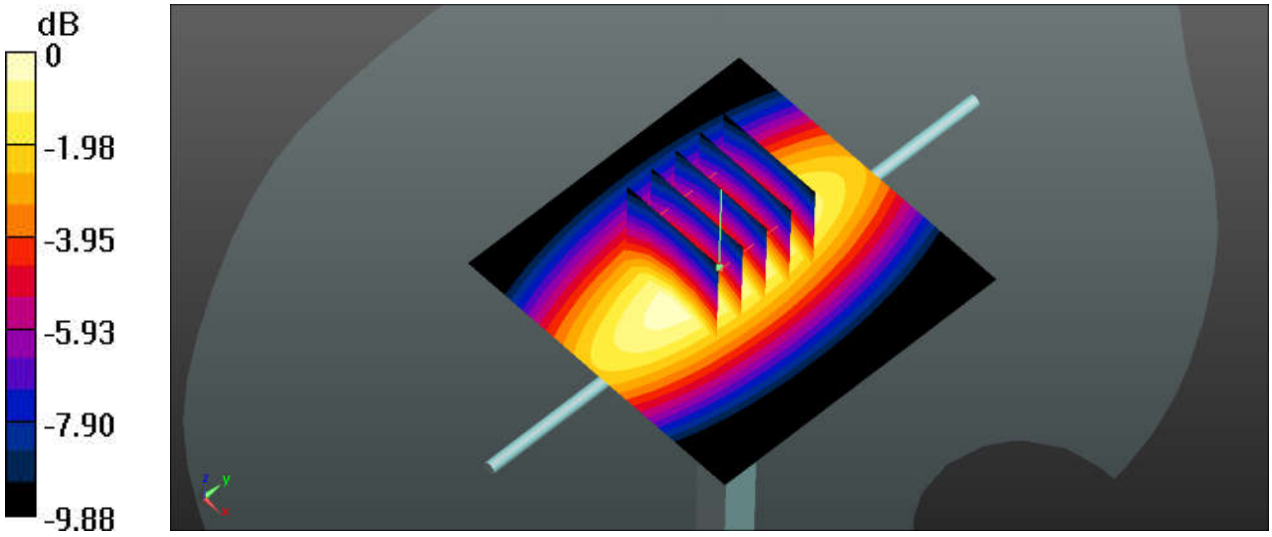
DUT: D750V3-SN:1099

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_200610 Medium parameters used: f = 750 MHz; σ = 0.882 S/m; ε_r = 40.803; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.71, 10.71, 10.71); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.62 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.49 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.05 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.42 W/kg
Maximum value of SAR (measured) = 2.63 W/kg



0 dB = 2.62 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.11

System Check_Head_750MHz

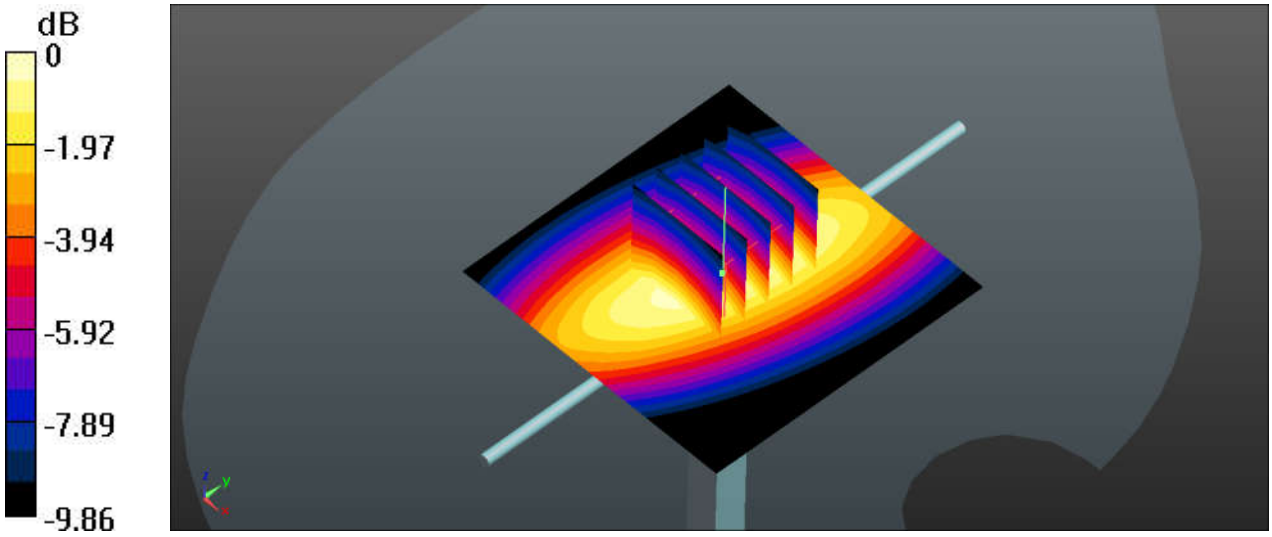
DUT: D750V3-SN:1099

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_200711 Medium parameters used: f = 750 MHz; σ = 0.881 S/m; ε_r = 40.783; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.71, 10.71, 10.71); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.72 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.86 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.15 W/kg
SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 2.71 W/kg



0 dB = 2.71 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.06.11

System Check_Head_835MHz

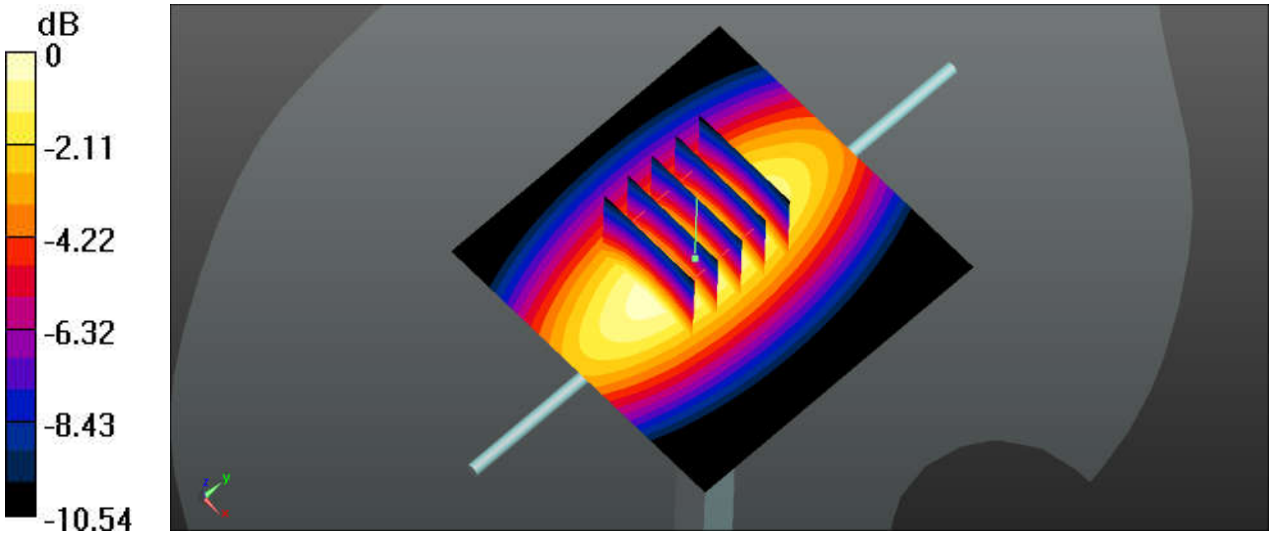
DUT: D835V2-SN:4d162

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_200611 Medium parameters used: f = 835 MHz; σ = 0.91 S/m; ε_r = 42.91; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.07 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.22 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.60 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 3.10 W/kg



0 dB = 3.07 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.08

System Check_Head_835MHz

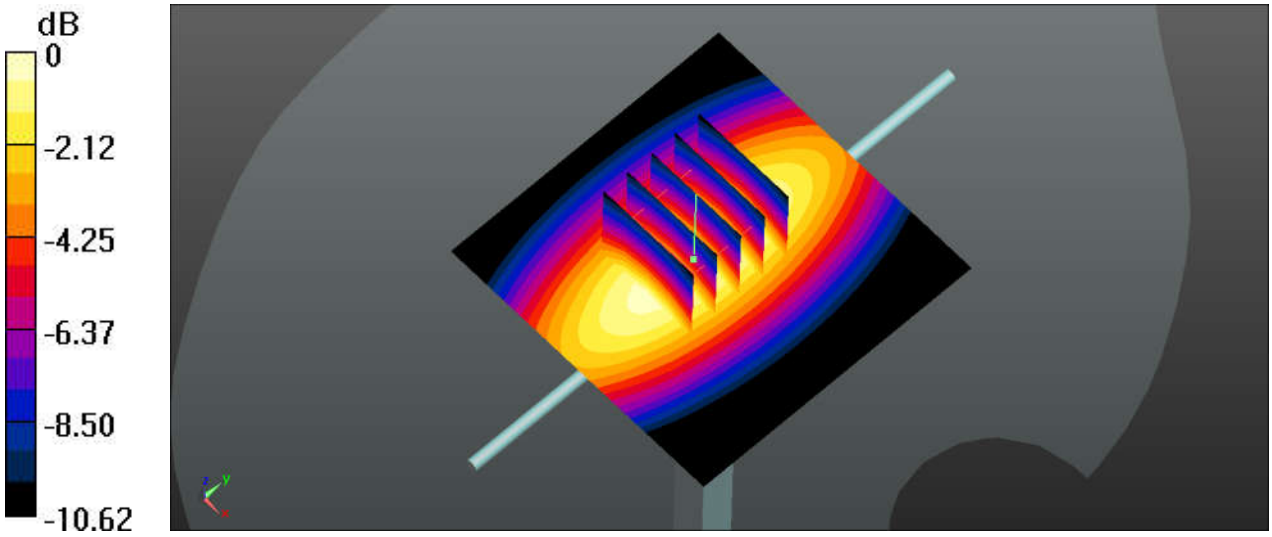
DUT: D835V2-SN:4d162

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_200708 Medium parameters used: f = 835 MHz; σ = 0.915 S/m; ε_r = 41.98; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.03 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.36 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.54 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 3.05 W/kg



0 dB = 3.05 W/kg

System Check_Head_1750MHz

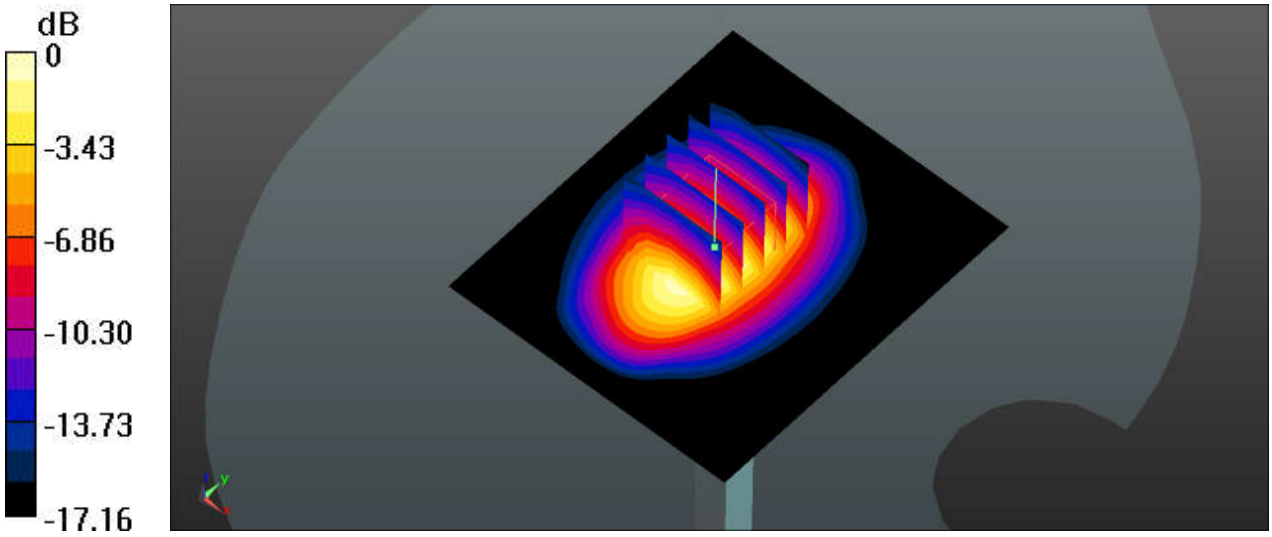
DUT: D1750V2-SN:1137

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200608 Medium parameters used: f = 1750 MHz; σ = 1.388 S/m; ε_r = 41.364; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.88, 8.88, 8.88); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.2 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 92.06 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 8.92 W/kg; SAR(10 g) = 4.81 W/kg
Maximum value of SAR (measured) = 12.2 W/kg



0 dB = 12.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.02

System Check_Head_1750MHz

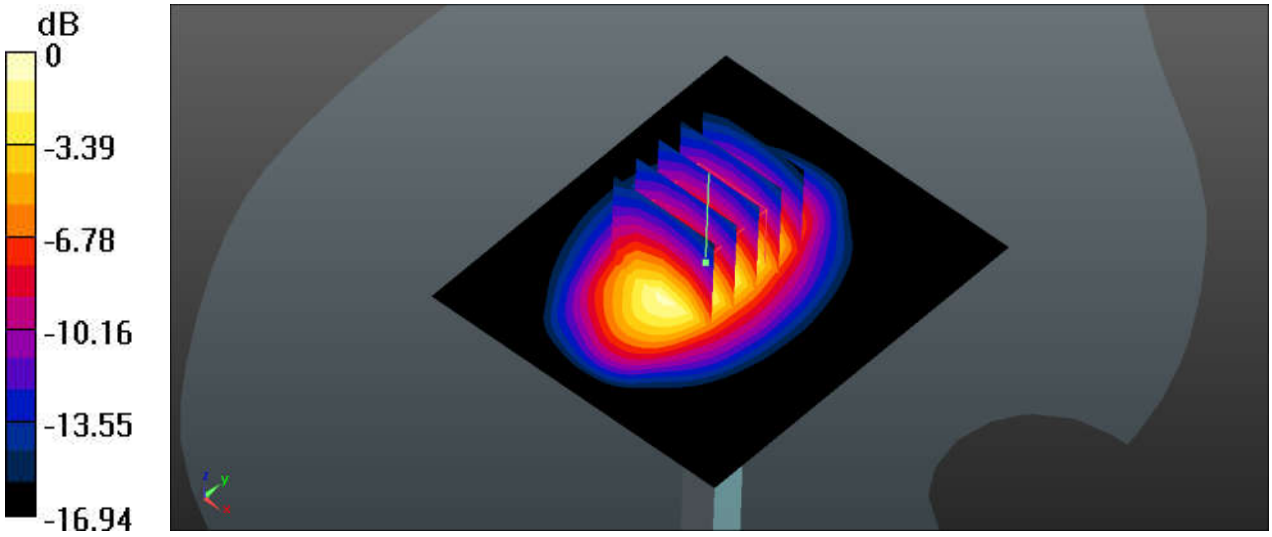
DUT: D1750V2-SN:1137

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200702 Medium parameters used: f = 1750 MHz; σ = 1.398 S/m; ε_r = 41.384; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.88, 8.88, 8.88); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 12.5 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.36 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 14.7 W/kg
SAR(1 g) = 8.5 W/kg; SAR(10 g) = 4.61 W/kg
Maximum value of SAR (measured) = 11.8 W/kg



0 dB = 11.8 W/kg

System Check_Head_1900MHz

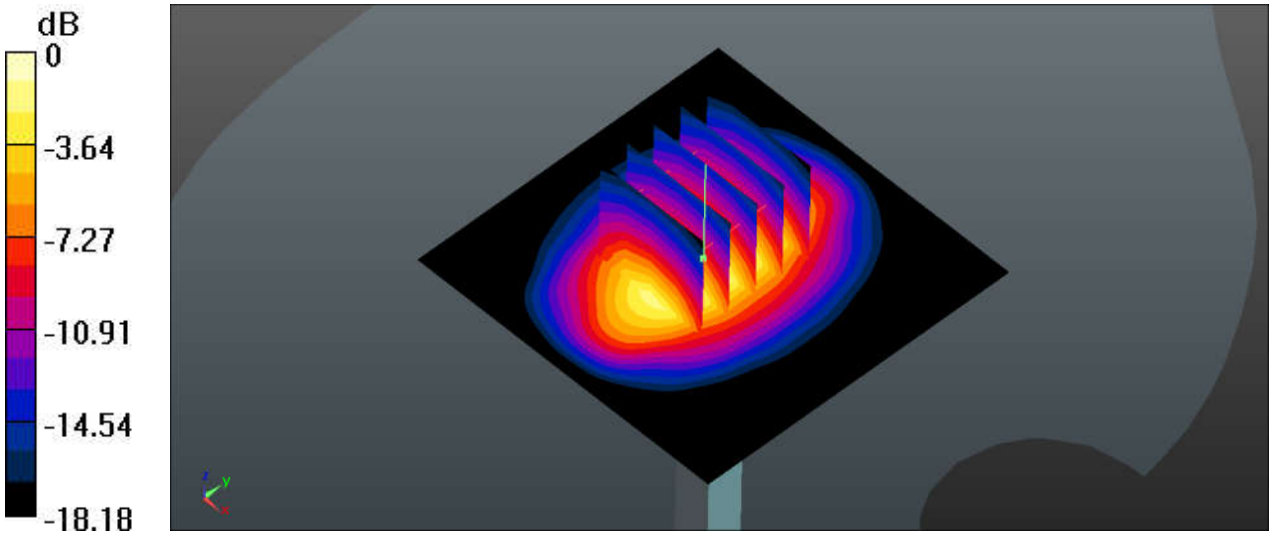
DUT: D1900V2-SN:5d182

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200606 Medium parameters used: f = 1900 MHz; σ = 1.422 S/m; ε_r = 40.315; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.58, 8.58, 8.58); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.9 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.15 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.71 W/kg; SAR(10 g) = 5.01 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 13.9 W/kg

System Check_Head_1900MHz

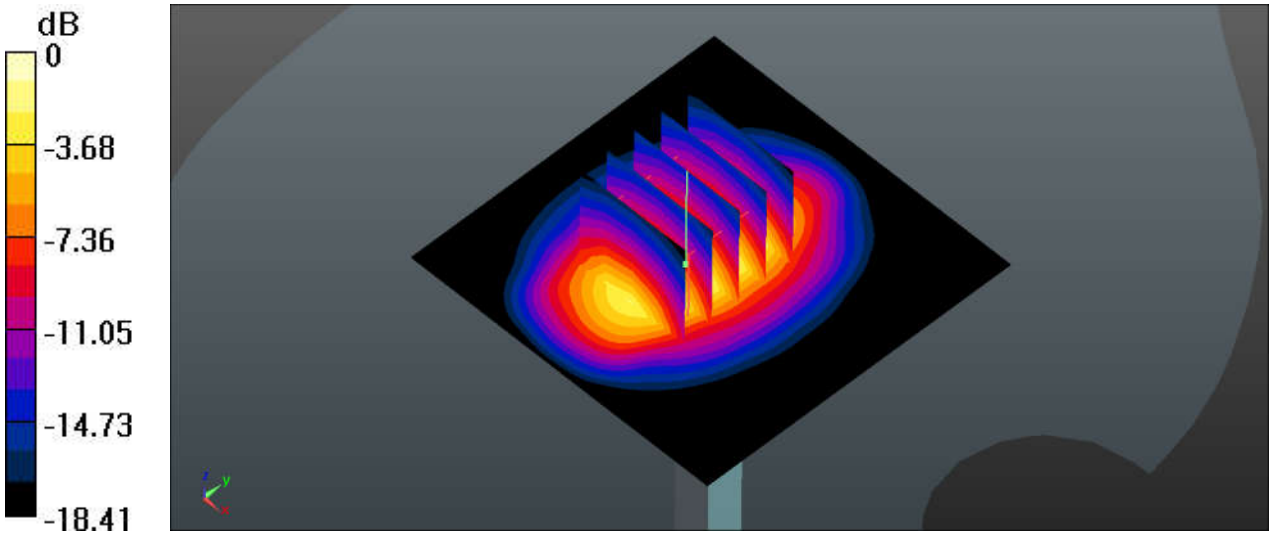
DUT: D1900V2-SN:5d182

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200705 Medium parameters used: f = 1900 MHz; σ = 1.447 S/m; ε_r = 40.017; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.58, 8.58, 8.58); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.0 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 94.80 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 9.64 W/kg; SAR(10 g) = 4.98 W/kg
Maximum value of SAR (measured) = 14.0 W/kg



0 dB = 14.0 W/kg

System Check_Head_2450MHz

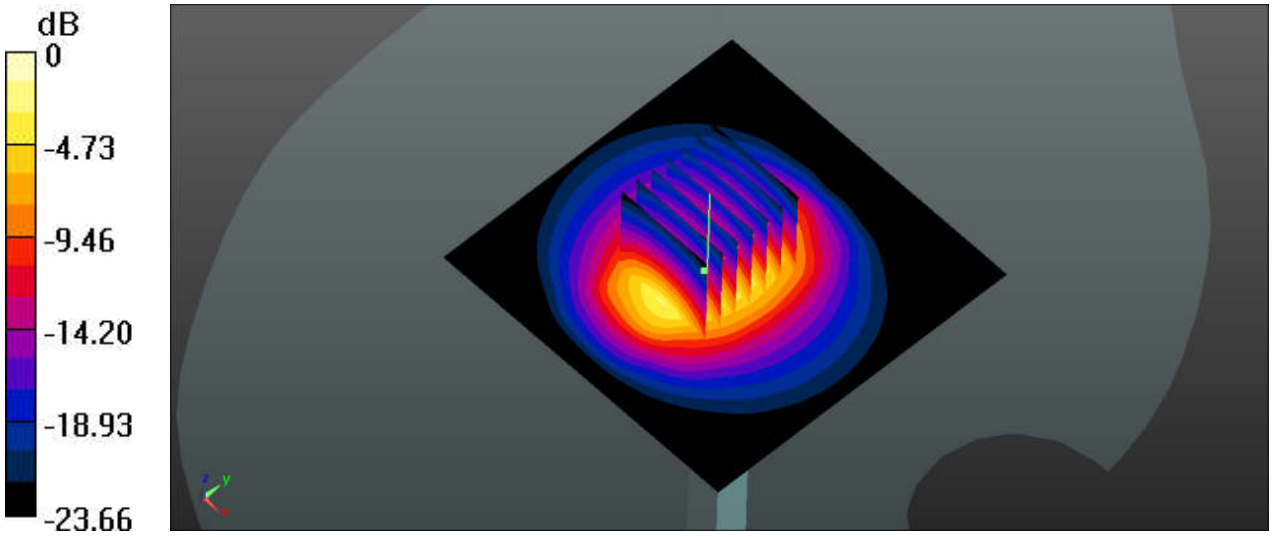
DUT: D2450V2-SN:924

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_200615 Medium parameters used: f = 2450 MHz; σ = 1.861 S/m; ε_r = 39.575; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.76, 7.76, 7.76); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.9 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.28 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 27.1 W/kg
SAR(1 g) = 12.6 W/kg; SAR(10 g) = 5.66 W/kg
Maximum value of SAR (measured) = 19.7 W/kg



0 dB = 19.7 W/kg

System Check_Head_2600MHz

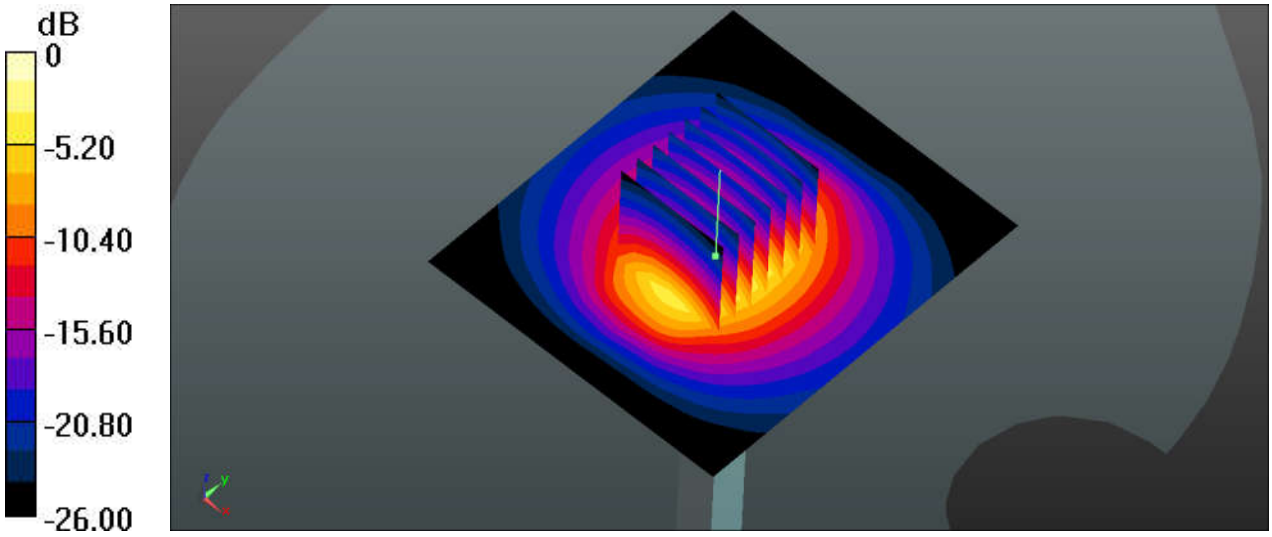
DUT: D2600V2-SN:1070

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200613 Medium parameters used: f = 2600 MHz; σ = 2.053 S/m; ε_r = 38.335; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.47, 7.47, 7.47); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 23.9 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.7 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.22 W/kg
Maximum value of SAR (measured) = 23.1 W/kg



0 dB = 23.1 W/kg

System Check_Head_2600MHz

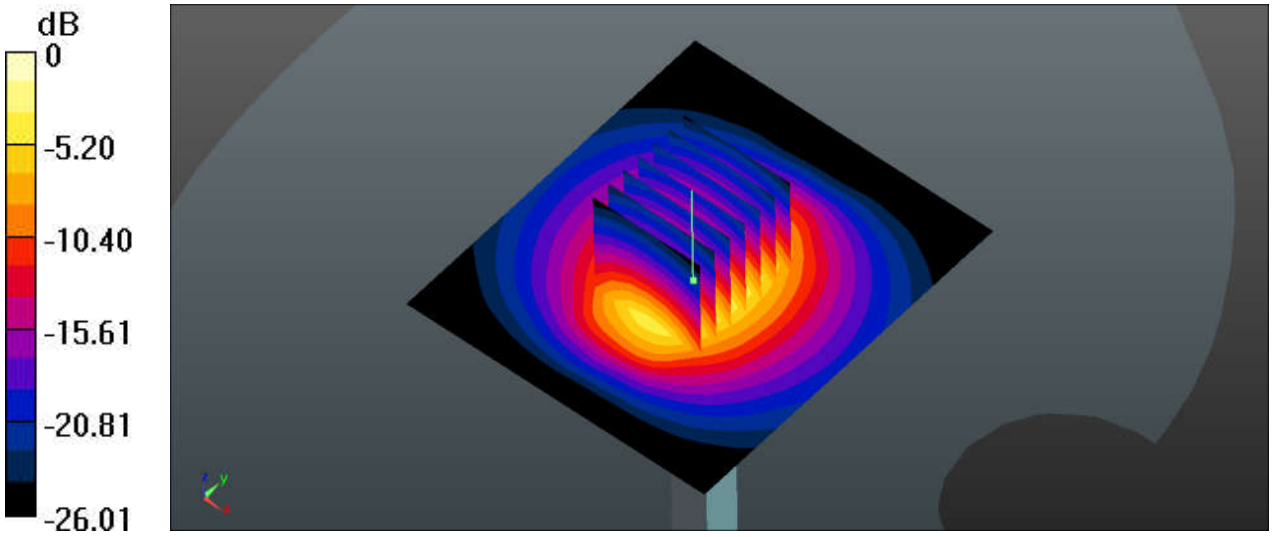
DUT: D2600V2-SN:1070

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200629 Medium parameters used: f = 2600 MHz; σ = 1.935 S/m; ε_r = 38.814; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.47, 7.47, 7.47); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 22.6 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.7 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 30.7 W/kg
SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.03 W/kg
Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg

System Check_Head_5250MHz

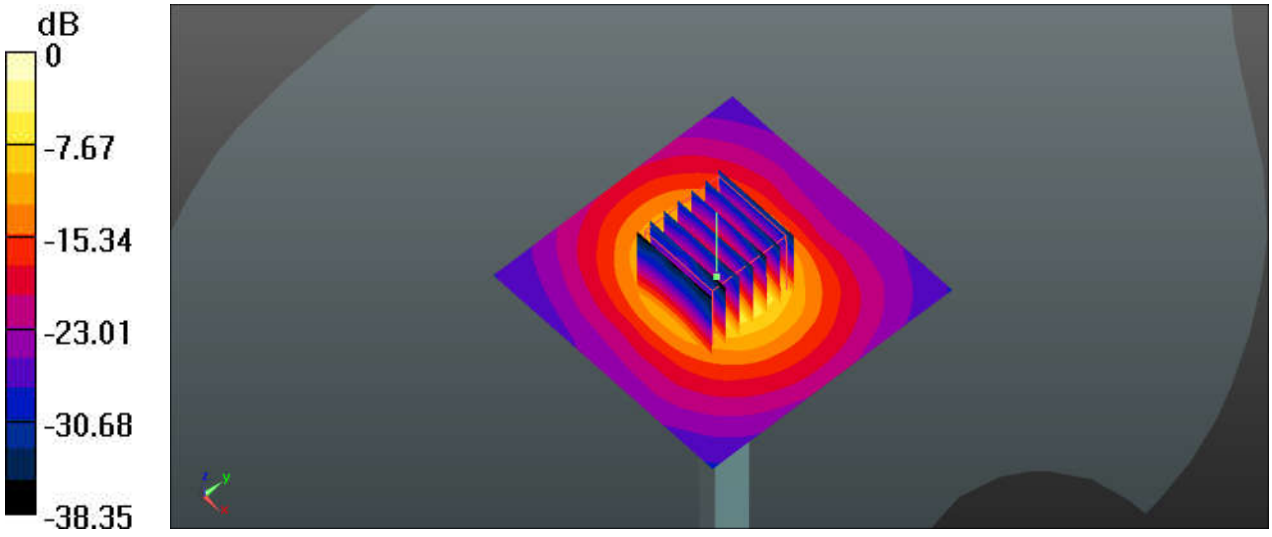
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL_5250_200619 Medium parameters used: f = 5250 MHz; σ = 4.597 S/m; ε_r = 36.617; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(5.2, 5.2, 5.2); Calibrated: 2020.01.22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000mm, dy=1.000mm
Maximum value of SAR (interpolated) = 18.2 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.59 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 30.3 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.27 W/kg
Maximum value of SAR (measured) = 18.7 W/kg



0 dB = 18.7 W/kg

System Check_Head_5600MHz

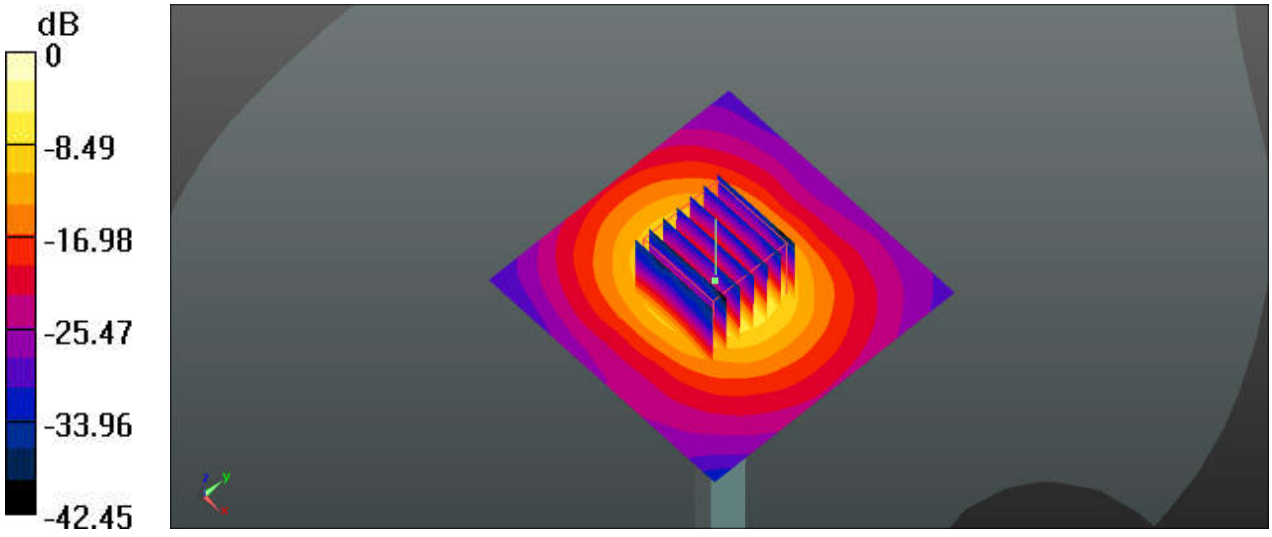
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5600_200622 Medium parameters used: f = 5600 MHz; σ = 5.006 S/m; ε_r = 36.08; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(4.62, 4.62, 4.62); Calibrated: 2020.01.22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.9 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.62 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 36.9 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 21.9 W/kg



0 dB = 20.9 W/kg

System Check_Head_5750MHz

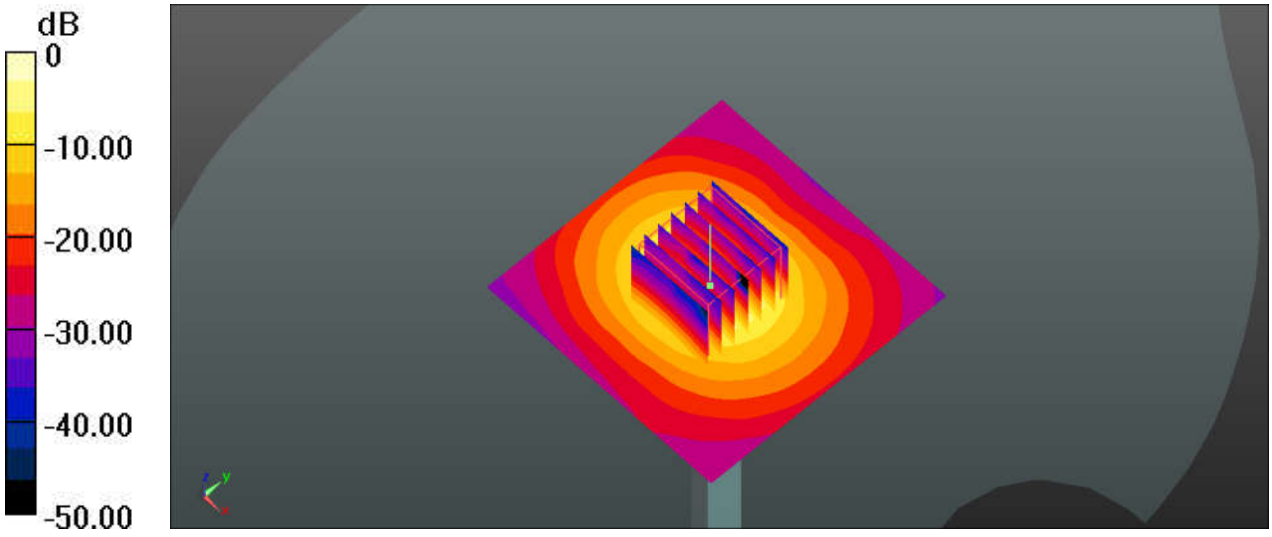
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: HSL_5750_200626 Medium parameters used: f = 5750 MHz; σ = 5.175 S/m; ε_r = 35.814; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(4.83, 4.83, 4.83); Calibrated: 2020.01.22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.7 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.64 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 34.5 W/kg
SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 20.2 W/kg



0 dB = 20.2 W/kg

Appendix B. Plots of SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.08

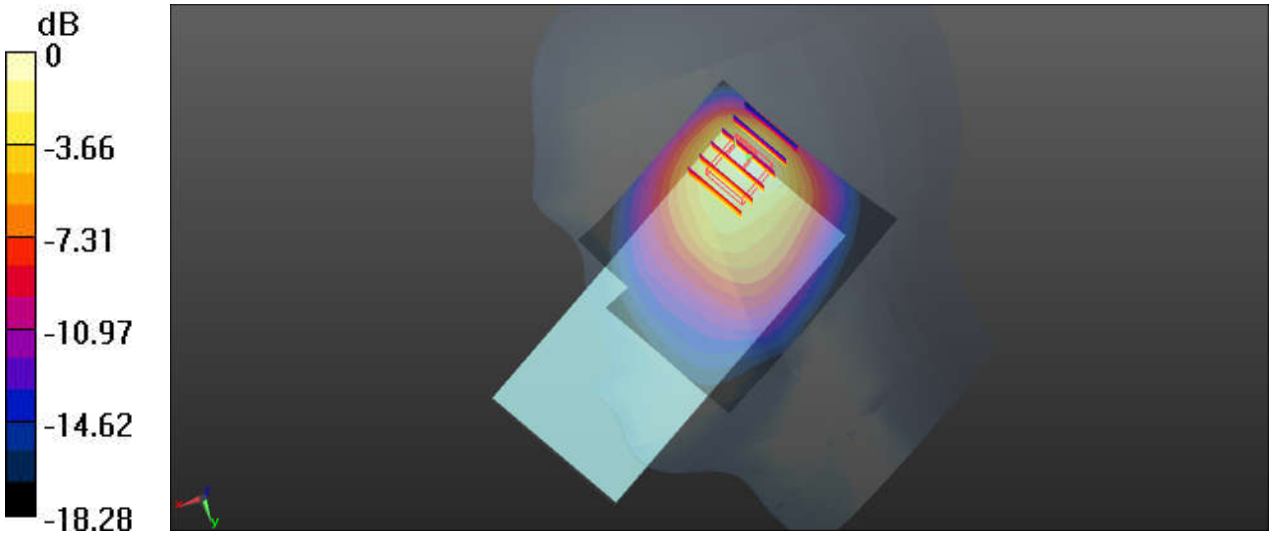
01_GSM850_GPRS(4 Tx slot)_Right Cheek_Ch189

Communication System: UID 0, GPRS/EDGE12 (0); Frequency: 836.4 MHz;Duty Cycle: 1:2.08
Medium: HSL_835_200708 Medium parameters used: f = 836.4 MHz; σ = 0.917 S/m; ε_r = 41.975; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch189/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.479 W/kg

Ch189/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.61 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.592 W/kg
SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.182 W/kg
Maximum value of SAR (measured) = 0.438 W/kg



0 dB = 0.438 W/kg

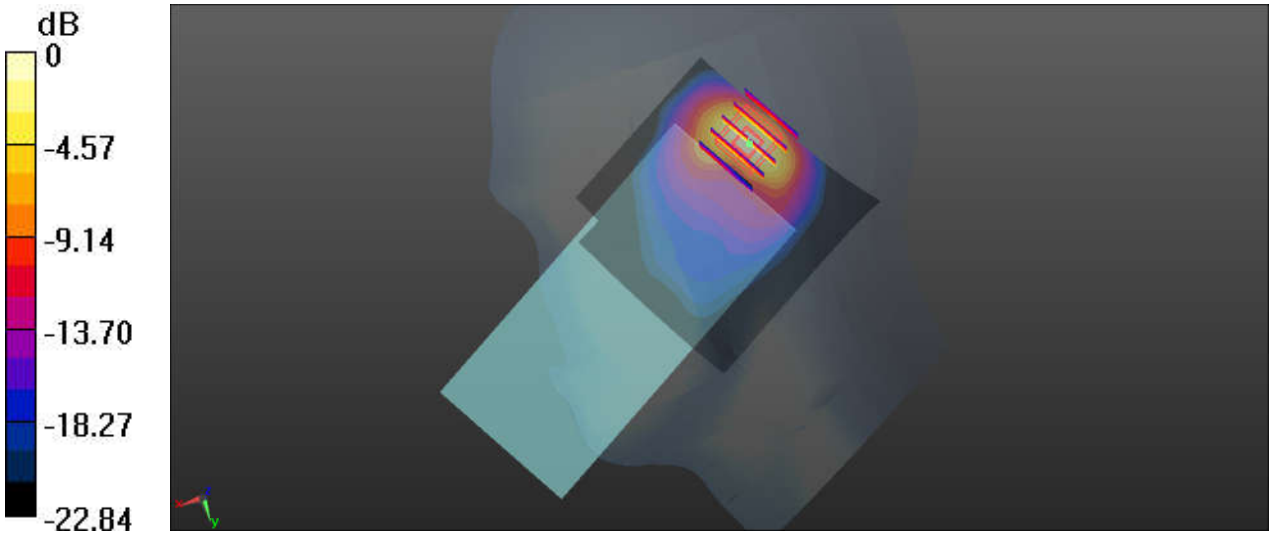
02_GSM1900_GPRS(3 Tx slot)_Right Tilted_Ch661

Communication System: UID 0, GPRS/EDGE11 (0); Frequency: 1880 MHz;Duty Cycle: 1:2.77
Medium: HSL_1900_200705 Medium parameters used: f = 1880 MHz; σ = 1.427 S/m; ε_r = 40.109; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.58, 8.58, 8.58); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch661/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.476 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.467 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.716 W/kg
SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.163 W/kg
Maximum value of SAR (measured) = 0.485 W/kg



0 dB = 0.485 W/kg

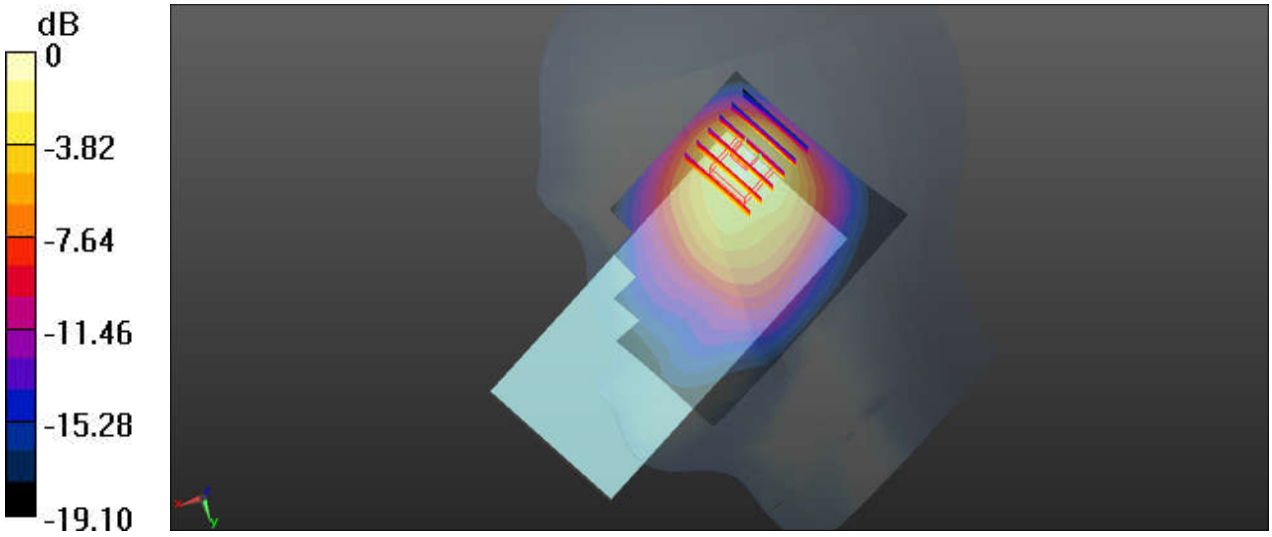
03_WCDMA V_RMC 12.2Kbps_Right Cheek_Ch4233

Communication System: UID 0, UMTS (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835_200708 Medium parameters used: f = 847 MHz; σ = 0.927 S/m; ε_r = 41.879; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.398 W/kg

Ch4233/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.473 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.660 W/kg
SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.195 W/kg
Maximum value of SAR (measured) = 0.478 W/kg



0 dB = 0.478 W/kg

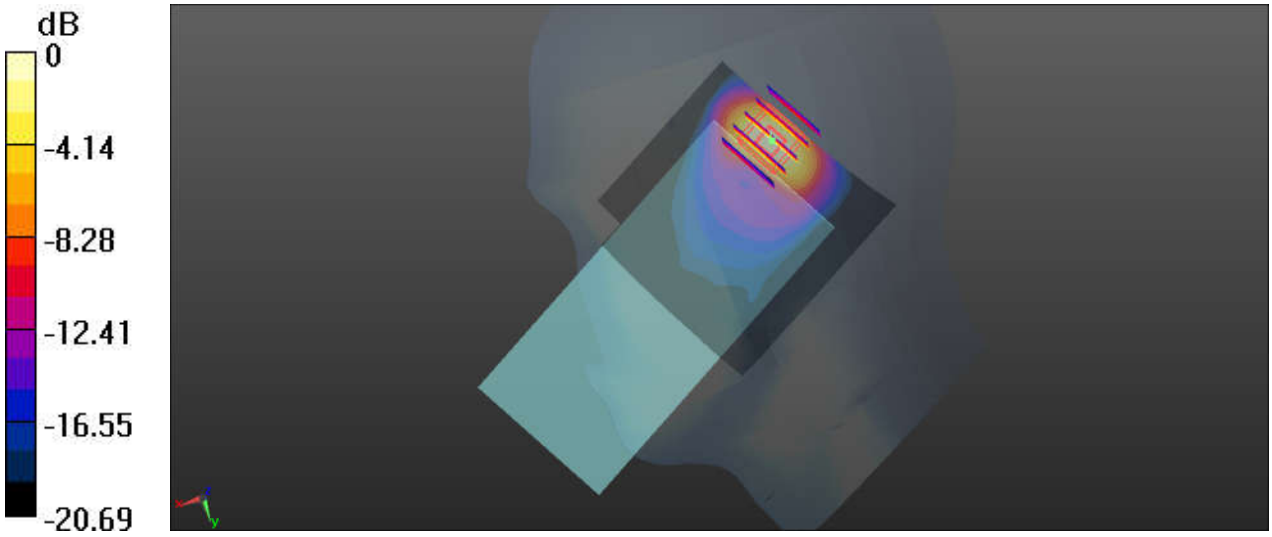
04_WCDMA IV_RMC 12.2Kbps_Right Tilted_Ch1413

Communication System: UID 0, UMTS (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200702 Medium parameters used: f = 1733 MHz; σ = 1.379 S/m; ε_r = 41.432; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.88, 8.88, 8.88); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1413/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.664 W/kg

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.199 W/kg
Maximum value of SAR (measured) = 0.628 W/kg



0 dB = 0.628 W/kg

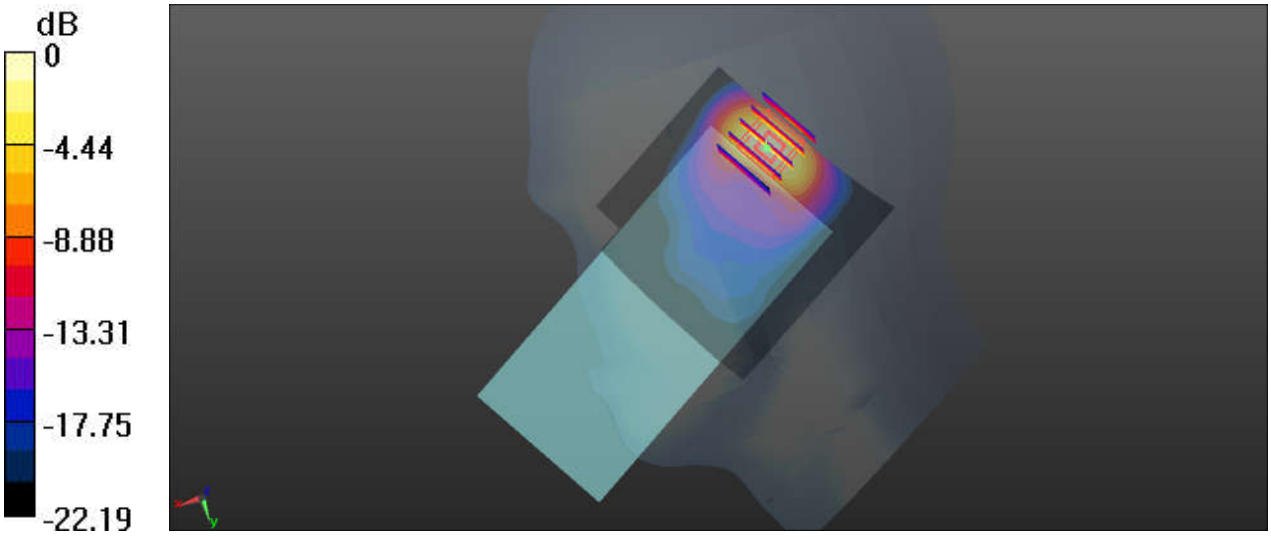
05_WCDMA II_RMC 12.2Kbps_Right Tilted_Ch9262

Communication System: UID 0, UMTS (0); Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200705 Medium parameters used: f = 1852.4 MHz; σ = 1.398 S/m; ε_r = 40.233; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.58, 8.58, 8.58); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9262/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.946 W/kg

Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.602 W/kg; SAR(10 g) = 0.276 W/kg
Maximum value of SAR (measured) = 0.938 W/kg



0 dB = 0.938 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.11

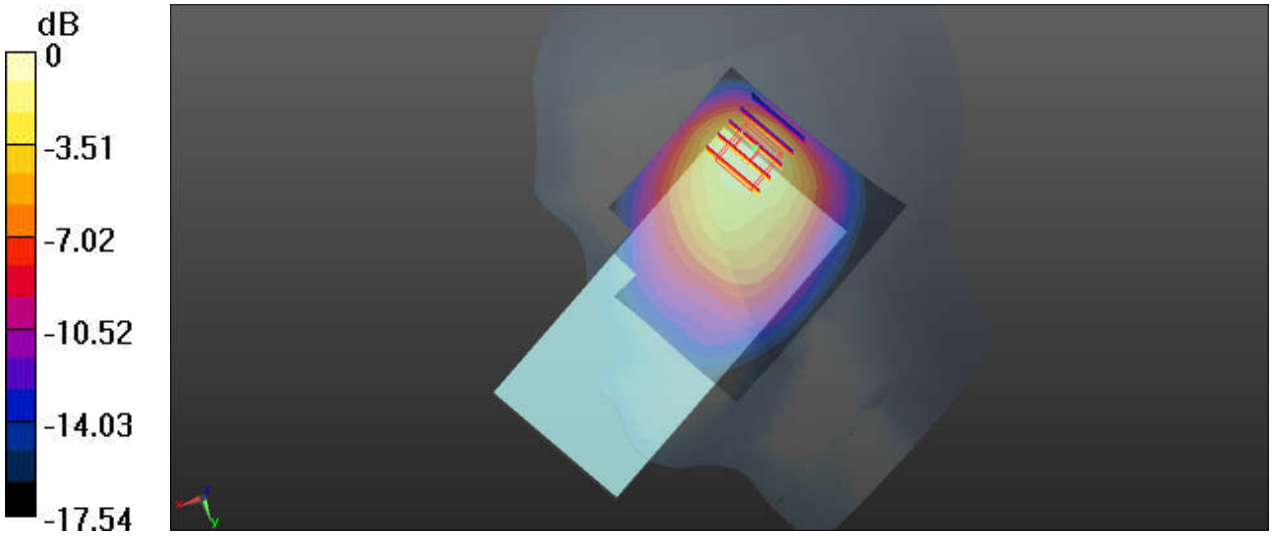
06_LTE Band 12_10M_QPSK_1_25_Right Cheek_Ch23095

Communication System: UID 0, LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: HSL_750_200711 Medium parameters used: f = 707.5 MHz; σ = 0.858 S/m; ε_r = 41.716; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.71, 10.71, 10.71); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch23095/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.515 W/kg

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.577 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.868 W/kg
SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 0.612 W/kg



0 dB = 0.612 W/kg

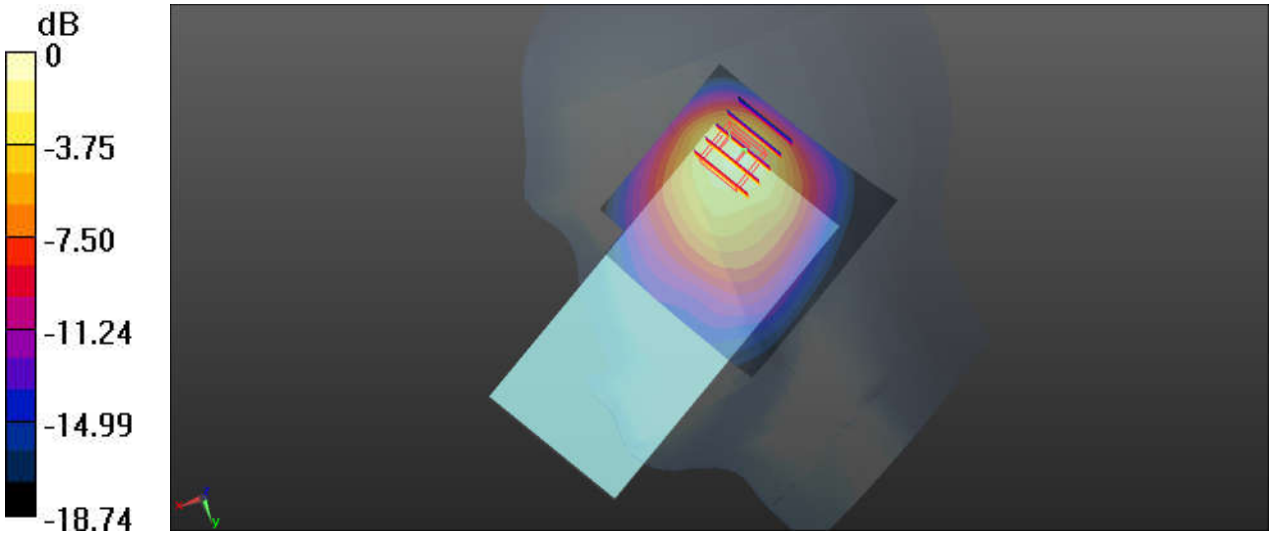
07_LTE Band 5_10M_QPSK_25_12_Right Cheek_Ch20525

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835_200708 Medium parameters used: f = 836.5 MHz; σ = 0.917 S/m; ε_r = 41.974; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.499 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.23 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.844 W/kg
SAR(1 g) = 0.411 W/kg; SAR(10 g) = 0.244 W/kg
Maximum value of SAR (measured) = 0.624 W/kg



0 dB = 0.624 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.07.08

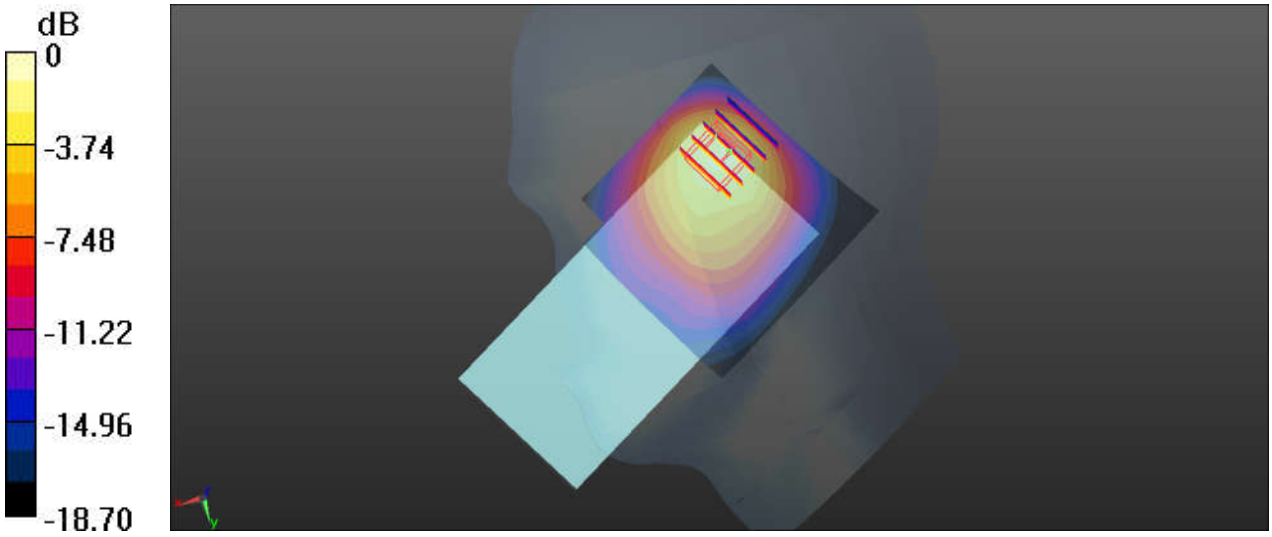
08_LTE Band 26_15M_QPSK_1_37_Right Cheek_Ch26865

Communication System: UID 0, LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_835_200708 Medium parameters used: f = 831.5 MHz; σ = 0.911 S/m; ε_r = 42.008; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(10.45, 10.45, 10.45); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26865/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.568 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.78 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.957 W/kg
SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 0.710 W/kg



0 dB = 0.710 W/kg

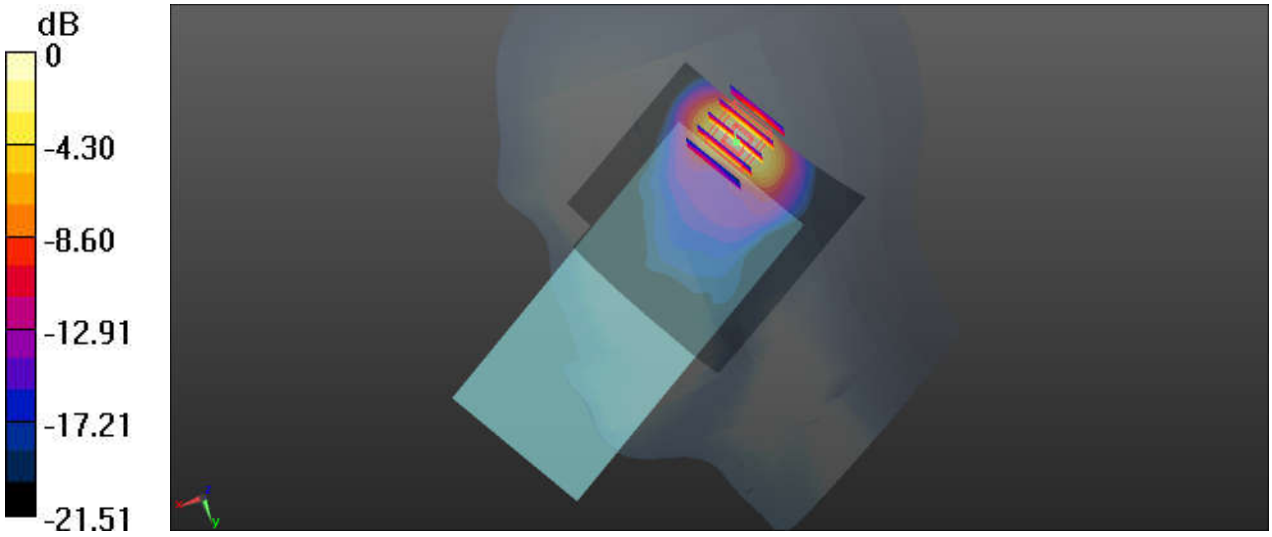
09_LTE Band 66_20M_QPSK_50_24_Right Tilted_Ch132322

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200702 Medium parameters used: f = 1745 MHz; σ = 1.393 S/m; ε_r = 41.394; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.88, 8.88, 8.88); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch132322/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.645 W/kg

Ch132322/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.2270 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.800 W/kg
SAR(1 g) = 0.410 W/kg; SAR(10 g) = 0.192 W/kg
Maximum value of SAR (measured) = 0.633 W/kg



0 dB = 0.633 W/kg

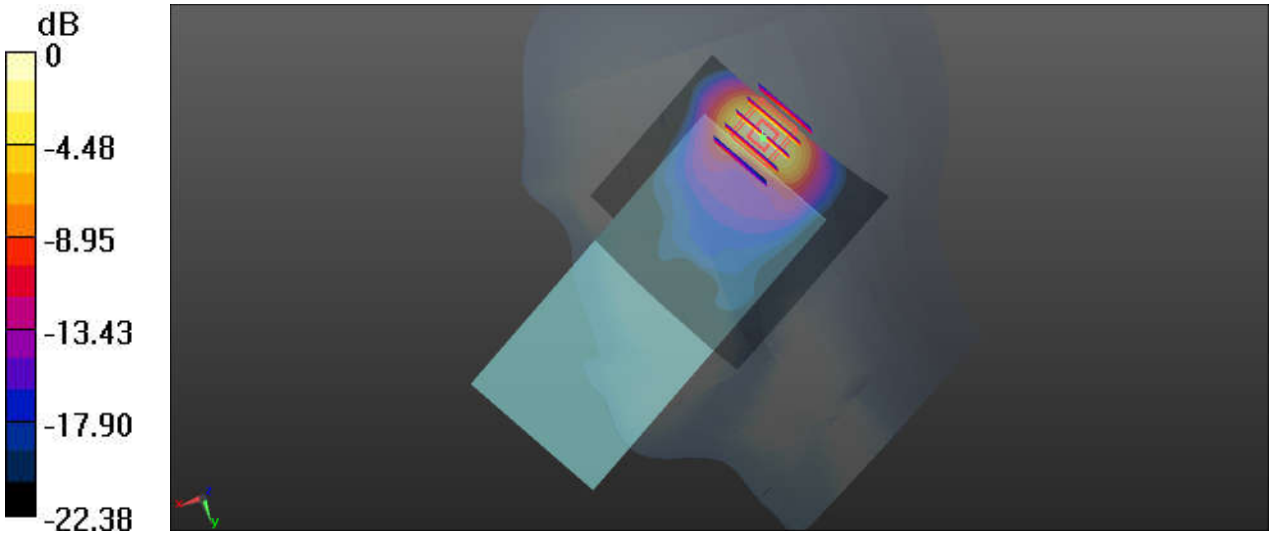
10_LTE Band 2_20M_QPSK_50_24_Right Tilted_Ch18900

Communication System: UID 0, LTE (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200705 Medium parameters used: f = 1880 MHz; σ = 1.427 S/m; ε_r = 40.109; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(8.58, 8.58, 8.58); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18900/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.756 W/kg

Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.4120 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.980 W/kg
SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.220 W/kg
Maximum value of SAR (measured) = 0.757 W/kg



0 dB = 0.757 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.06.29

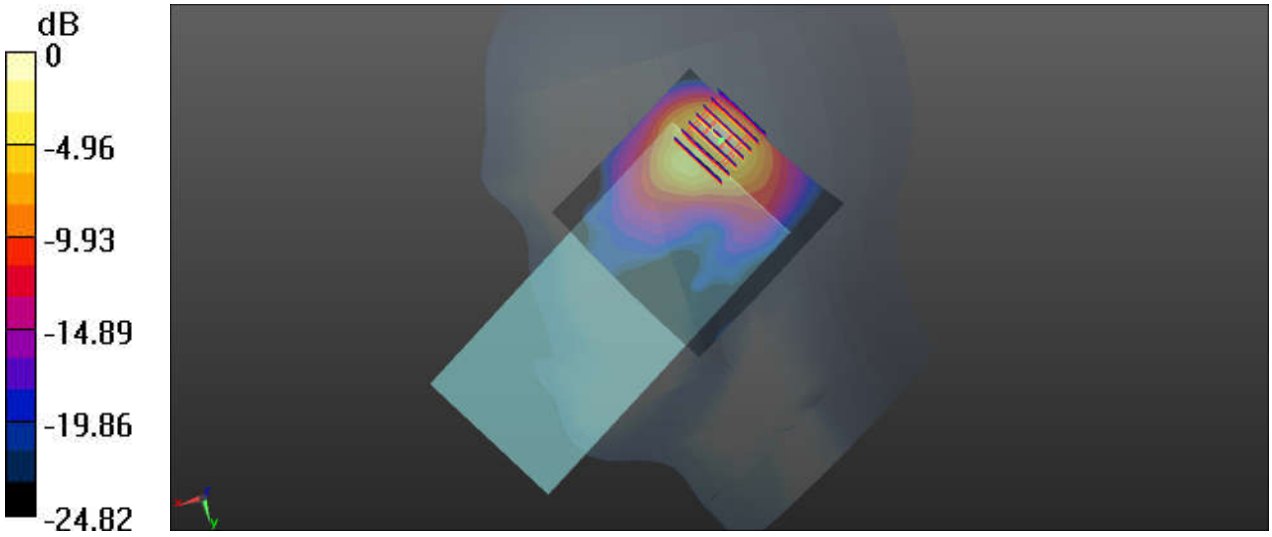
11_LTE Band 7_20M_QPSK_50_24_Right Tilted_Ch21350

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200629 Medium parameters used: f = 2560 MHz; σ = 1.89 S/m; ε_r = 38.979; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.47, 7.47, 7.47); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch21350/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.710 W/kg

Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.56 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.467 W/kg; SAR(10 g) = 0.179 W/kg
Maximum value of SAR (measured) = 0.820 W/kg



0 dB = 0.820 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020.06.29

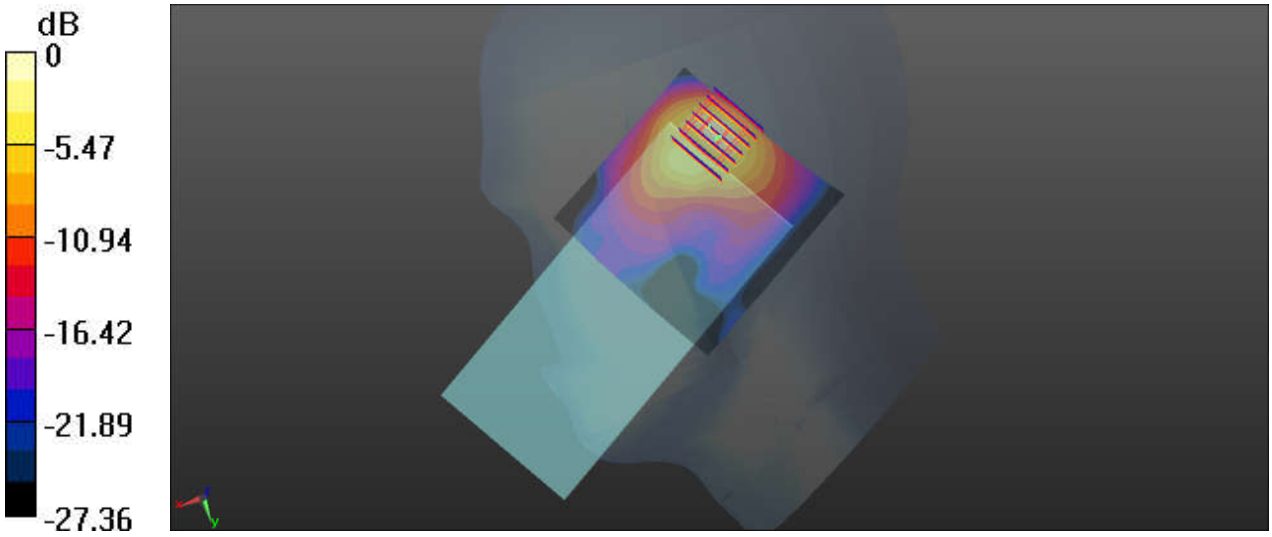
12_LTE Band 41_20M_QPSK_50_24_Right Tilted_Ch40620

Communication System: UID 0, LTE (0); Frequency: 2593 MHz;Duty Cycle: 1:1.59
Medium: HSL_2600_200629 Medium parameters used: f = 2593 MHz; σ = 1.927 S/m; ε_r = 38.834; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.47, 7.47, 7.47); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch40620/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.730 W/kg

Ch40620/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.66 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.481 W/kg; SAR(10 g) = 0.183 W/kg
Maximum value of SAR (measured) = 0.861 W/kg



0 dB = 0.861 W/kg

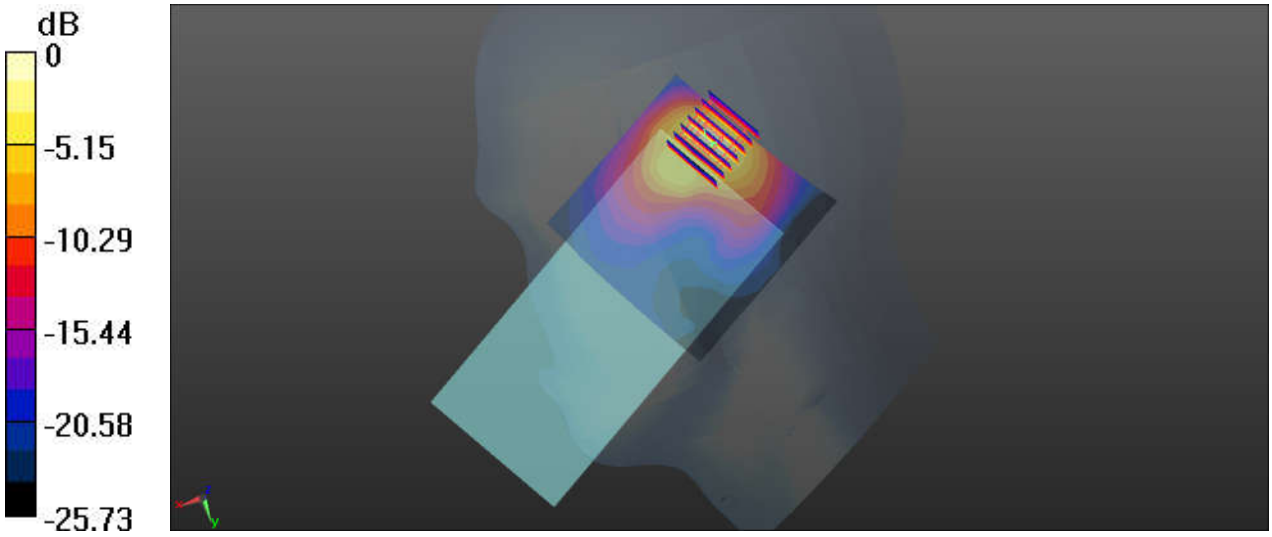
13_SA N7_20M_BPSK_50_28_DFT-15_Right Tilted_Ch507000

Communication System: UID 0, 5G NR (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200613 Medium parameters used: f = 2535 MHz; σ = 1.978 S/m; ε_r = 38.613; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7576; ConvF(7.47, 7.47, 7.47); Calibrated: 2020.01.22;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn528; Calibrated: 2020.03.16
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch507000/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.822 W/kg

Ch507000/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.555 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.513 W/kg; SAR(10 g) = 0.194 W/kg
Maximum value of SAR (measured) = 0.900 W/kg



0 dB = 0.900 W/kg