FCC SAR Test Report

APPLICANT	:	vivo Mobile Communication Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	vivo
MODEL NAME	:	V2206
FCC ID	:	2AUCY-V2206
STANDARD	:	FCC 47 CFR PART 2 (2.1093)

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

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

Approved by: Si Zhang

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

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA270412	Rev. 01	Initial issue of report	Aug. 09, 2022

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **vivo Mobile Communication Co., Ltd. , Mobile Phone, V2206,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 15mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	**0.99**	0.42	0.36	1.39
		GSM1900	<0.10	0.58	0.76	
	WCDMA	WCDMA II	0.15	0.65	0.78	
		WCDMA IV	0.12	0.51	0.53	
		WCDMA V	0.86	0.21	0.34	
	LTE	LTE Band 2	0.14	0.58	0.76	
		LTE Band 4		0.44		
		LTE Band 7	0.51	0.61	**0.97**	
		LTE Band 13	0.60	0.29	0.30	
		LTE Band 26/5	0.68	0.39	0.22	
		LTE Band 66	0.12	0.50	0.58	
		LTE Band 38		0.62		
		LTE Band 41	0.31	0.77	0.60	
DTS	WLAN	2.4GHz WLAN	0.83	0.52	0.21	1.34
NII		5GHz WLAN	0.88	**0.80**	0.87	1.39
DSS	Bluetooth	Bluetooth	0.23	0.10	<0.10	1.02

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM1900	1.25	2.74
	WCDMA	WCDMA II	1.70	
		WCDMA IV	2.13	
	LTE	LTE Band 2	1.63	
		LTE Band 4	1.35	
		LTE Band 7	1.54	
		LTE Band 66	1.72	
		LTE Band 38	2.00	
		LTE Band 41	1.99	
NII	WLAN	5GHz WLAN	**2.74**	2.74
Date of Testing:			2022/07/21~2022/07/31	

Remark:

1. This device supports LTE B5 and B26. Since the supported frequency span for LTE B5 falls completely within the supported frequency span for LTE B26, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B26 at all exposure conditions.
2. This device supports LTE B4 and B66. Since the supported frequency span for LTE B4 falls completely within the supported frequency span for LTE B66 at Antenna 31 at all exposure condition, and at Antenna 13 at Body-worn exposure condition, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66 at Antenna 31 at all exposure condition, and at Antenna 13 at

Body-worn exposure condition.

3. This device supports LTE B38 and B41. Since the supported frequency span for LTE B38 falls completely within the supported frequency span for LTE B41 at Antenna 31 at all exposure condition, and at Antenna 13 at Hotspot/Body-worn exposure condition, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66 at Antenna 31 at all exposure condition, and at Antenna 13 at Hotspot/Body-worn exposure condition.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

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

2. Administration Data

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

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR04-SZ	CN1256	421272

Applicant	
Company Name	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan,Guangdong,China

Manufacturer	
Company Name	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan,Guangdong,China

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 D06 Hotspot Mode SAR v02r01
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	vivo
Model Name	V2206
FCC ID	2AUCY-V2206
IMEI Code	SIM1: 865419069993570 SIM2: 865419069993562
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2535 MHz ~ 2655 MHz LTE Band 66: 1710 MHz ~ 1780 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 ~ 5720MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK/ 16QAM / 64QAM WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	MP_0.1
SW Version	PD2228EF_EX_A_12.0.5.3.W30.V000L1
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Production Unit

Remark:

1. 802.11n-HT40 is not supported in 2.4GHz WLAN.
2. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
3. This device does not support DTM operation and support GRPS/EGRPS mode up to multi-slot class 33.
4. This device WLAN 2.4GHz supports hotspot operation and Bluetooth support tethering applications.
5. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).
6. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
7. The device implements Proximity sensors/receiver detect mechanism trigger reduced power for the power management for SAR compliance at different exposure conditions (head, hotspot, body, and extremity). It uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for 2G&3G&4G and Wi-Fi antennas accordingly. The device will invoke corresponding work

scenarios power level base on frequency bands/antennas, which can refer to appendix E and the detail DSI descriptions of below table.

DSI	Trigger Conditions	Antenna No.	Exposure conditions	
DSI0	Default power	all Ant	Full power	-
DSI2	Receiver on	all Ant	Head Standalone	Head all Position
DSI3	Receiver on+ WLAN	all Ant	Head Simultaneous	Head all Position
DSI4	Receiver off/Sensor on	Ant 13	Body-worn/Extremity Standalone	See by section 5
	Receiver off	Ant 31	Body-worn/Extremity Standalone	Body all Position
DSI5	Receiver off/Sensor on + WLAN	Ant 13	Body-worn/Extremity Simultaneous	See by section 5
	Receiver off + WLAN	Ant 31	Body-worn/Extremity Simultaneous	Body all Position
DSI6	Receiver off/Sensor off + WLAN	Ant 13	Body-worn/Extremity Simultaneous	See by section 5
	Receiver off/hotspot on	all Ant	Hotspot Standalone/ Simultaneous	Body all Position
DSI7	Receiver off/Sensor off	Ant 13	Sensor Trigger Distance -1mm	See by section 5
			Body-worn/Extremity Standalone	No Sensor Position

8. For WLAN transmitter, while the device WWAN is transmitting simultaneously with the WLAN/Bluetooth antenna, the device power will be reduced power at body-worn and extremity conditions.
9. When the user is making a call in head scenario and the receiver detect mechanism trigger, GSM1900, WCDMA B2/B4, and LTE B2/B4/B7/B38/B41/B66 at Antenna 13 cannot be transmitted, so the SAR test for GSM1900, WCDMA B2/B4, and LTE B2/B4/B7/B38/B41/B66 at Antenna 13 were not required.
10. This device has two samples. They are 6G+128G capacity and 4G+128G capacity. According to the difference, we choose sample 1 with 6G+128G capacity for full SAR testing.

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>2AUCY-V2206</td></tr>
<tr><td>Equipment Name</td><td>Mobile Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2535 MHz ~ 2655 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>Uplink Modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R10, category 4</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in Proximity sensors/receiver detect mechanism trigger reduction power applied to satisfy SAR compliance the detail please referred to section 13.</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 13				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

LTE Band 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	40065	2537.5	40090	2540	40115	2542.5	40140	2545
LM	40385	2569.5	40390	2570	40395	2570.5	40400	2571
HM	40705	2601.5	40690	2600	40685	2599.5	40670	2598
H	41215	2652.5	41190	2650	41165	2647.5	41140	2645

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

<For LTE Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2) LTE Bands tune up:

TX. freq.	Ant	Full (Default)	DSI2	DSI3	DSI4	DSI5	DSI6	DSI7
		max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)
LTE Band 4	13	23.70			20.70	19.20	19.20	23.70
LTE Band 66	13	24.00			20.00	19.00	19.00	24.00
LTE Band 5	13	24.00	22.00	21.00	23.00	21.00	24.00	24.00
LTE Band 26	13	24.00	22.00	21.00	24.00	24.00	24.00	24.00
LTE Band 38	13	24.30			21.80	20.80	20.80	23.80
LTE Band 41	13	24.30			21.30	20.80	20.80	23.80

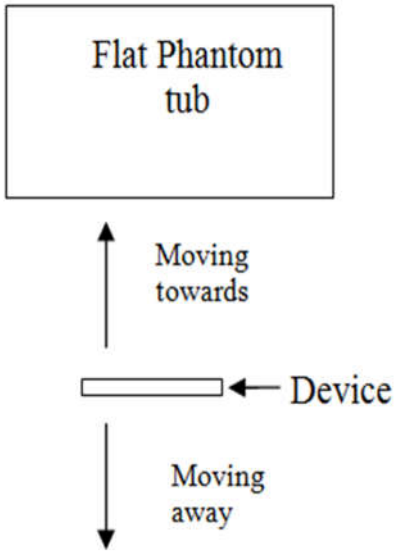
TX. freq.	Ant	Full (Default)	DSI2	DSI3	DSI4	DSI5	DSI6	DSI7
		max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)	max. tune up limit (dBm)
LTE Band 4	31	23.40	23.40	23.40	20.40	19.40	19.40	20.40
LTE Band 66	31	23.80	23.80	23.80	21.30	19.80	19.80	21.30
LTE Band 5	31	23.80	23.80	23.80	23.80	23.30	23.30	23.80
LTE Band 26	31	23.80	23.80	23.80	23.80	23.30	23.30	23.80
LTE Band 38	31	24.10	23.60	23.60	19.60	18.60	18.60	19.60
LTE Band 41	31	24.10	23.60	23.60	23.10	22.60	22.60	23.10

Note: LTE B5 was covered by B26 at all exposure conditions; LTE B4 was covered by B66 at Antenna 31 at all exposure condition, and at Antenna 13 at Body-worn exposure condition; LTE B38 was covered by B41 at Antenna 31 at all exposure condition, and at Antenna 13 at Hotspot/Body-worn exposure condition.

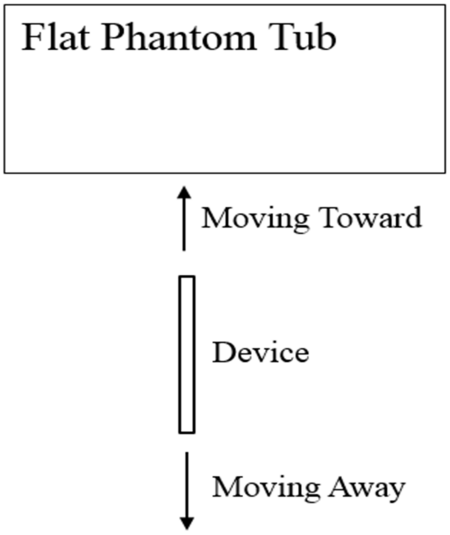
5. Proximity Sensor Triggering Test

5.1 Proximity sensor triggering distances(Per KDB616217§6.2)

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (2600MHz) and lowest (1750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensor placed coincident with antenna elements at the top end of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back or top side of the device. There is no need to do sensor coverage testing for the proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna.
3. The device employs proximity sensors that detect the presence of the user's body at the front, back, top sides of the device. When front, back, top sides of body condition is detected, reduced power will be active. The data shown in the sections below shows the distance(s).
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed.



Sensor detection test set-up, front and back sides



Sensor detection test set-up, top sides

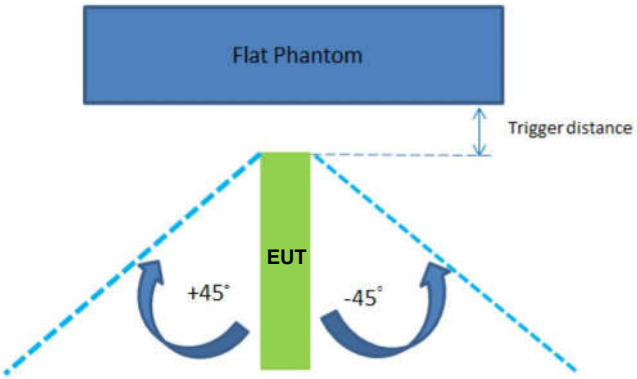
<P-Sensor>

Antenna 13:

Proximity Sensor Trigger Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	9	9	13	13	15	15

5.2 proximity sensor triggering (KDB 616217 D04 section 6.4):

The influence of Phone tilt angles to proximity sensor triggering was determined by positioning each Phone edge that contains a transmitting antenna, perpendicular to the flat phantom, at above separation distance.
Rotating the Phone around the edge next to the phantom in ≤ 10° increments until the Phone is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



Antenna 13：

The Sensor Trigger Distance (mm)	
Position	Top Side
Minimum	15

6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

7. Specific Absorption Rate (SAR)

7.1 Introduction

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

7.2 SAR Definition

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

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

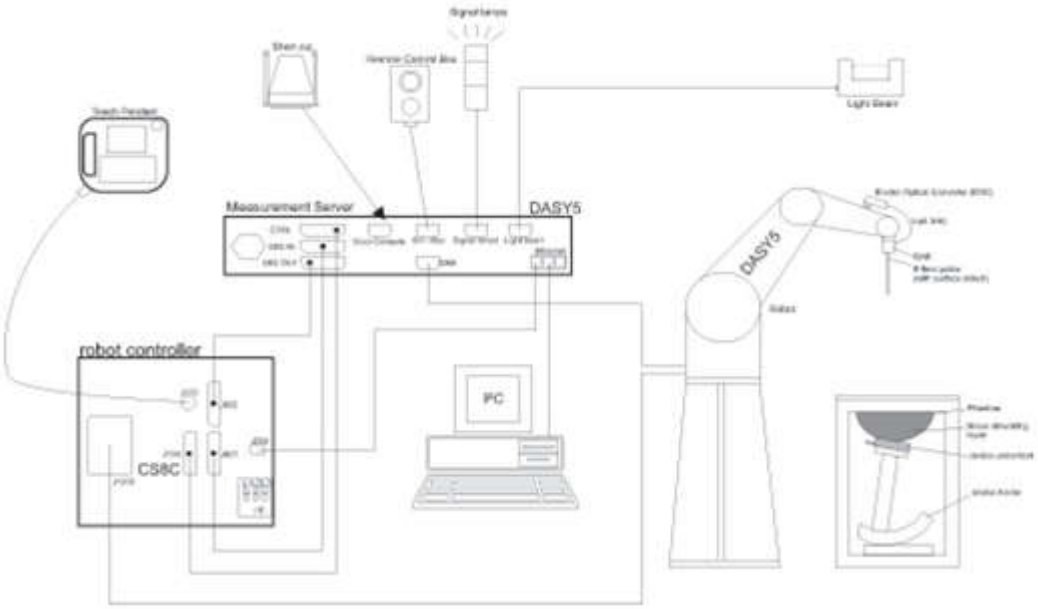
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

The 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.

8.1 E-Field Probe

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

<EX3DV4 Probe>

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

8.2 Data Acquisition Electronics (DAE)

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

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

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

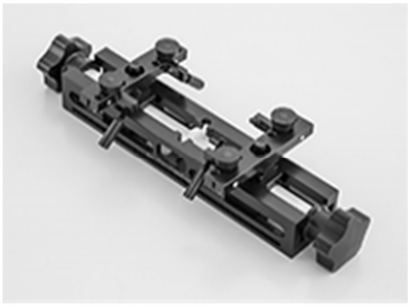
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

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

9.2 Power Reference Measurement

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

9.3 Area Scan

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

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

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

9.4 Zoom Scan

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

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

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

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

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

9.5 Volume Scan Procedures

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

9.6 Power Drift Monitoring

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

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 15, 2021	Dec. 14, 2022
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 16, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Oct. 19, 2021	Oct. 18, 2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 19, 2022
SPEAG	2450MHz System Validation Kit	D2450V2	924	Sep. 02, 2020	Sep. 01, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 19, 2022
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 12, 2022
SPEAG	Data Acquisition Electronics	DAE4	715	Dec. 29, 2021	Dec. 28, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	May 30, 2022	May 29, 2023
SPEAG	SAM Twin Phantom	QD 000 P40 CC	TP-1500	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201563813	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Radio communication analyzer	MT8821C	6272416863	Apr. 06, 2022	Apr. 05, 2023
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 07, 2022	Jul. 06, 2023
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 25, 2021	Oct. 24, 2022
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Jan. 24, 2022	Jan. 23, 2023
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Senor	MA2411B	1306099	Sep. 29, 2021	Sep. 28, 2022
Anritsu	Power Meter	ML2495A	1349001	Sep. 29, 2021	Sep. 28, 2022
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2021	Dec. 27, 2022
R&S	Power Sensor	NRP8S	109228	Apr. 07, 2022	Apr. 06, 2023
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2021	Dec. 27, 2022
R&S	Spectrum Analyzer	FSP7	100818	Jul. 07, 2022	Jul. 06, 2023
Anymetre	Thermo-Hygrometer	JR593	2018100801	Apr. 12, 2022	Apr. 11, 2023
SPEAG	Device Holder	N/A	N/A	Note 1	
AR	Amplifier	5S1G4	0333096	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
Weinschel	Attenuator 1	3M-10	N/A	Note 1	
Weinschel	Attenuator 2	3M-20	N/A	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

11. System Verification

11.1 Tissue Simulating Liquids

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

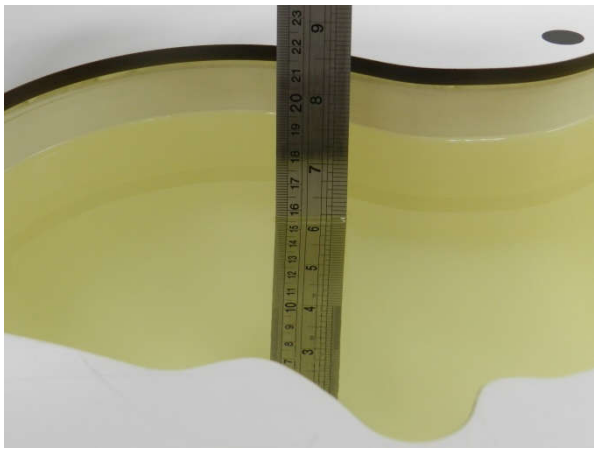


Fig 10.1Photo of Liquid Height for Head SAR

Fig 10.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

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

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.3	0.880	40.936	0.89	41.90	-1.12	-2.30	±5	2022/7/22
835	Head	22.5	0.931	42.730	0.90	41.50	3.44	2.96	±5	2022/7/25
1750	Head	22.7	1.360	39.886	1.37	40.10	-0.73	-0.53	±5	2022/7/23
1900	Head	22.5	1.398	40.365	1.40	40.00	-0.14	0.91	±5	2022/7/26
2450	Head	22.6	1.822	37.986	1.80	39.20	1.22	-3.10	±5	2022/7/24
2600	Head	22.5	2.055	38.316	1.96	39.00	4.85	-1.75	±5	2022/7/21
5250	Head	22.4	4.626	37.038	4.71	35.95	-1.78	3.03	±5	2022/7/25
5600	Head	22.7	5.124	35.657	5.07	35.50	1.07	0.44	±5	2022/7/26
5750	Head	22.3	5.303	35.218	5.22	35.35	1.59	-0.37	±5	2022/7/31

11.3 System Performance Check Results

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

<1g>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2022/7/22	750	Head	250	1099	3819	715	2.090	8.540	8.36	-2.11
2022/7/25	835	Head	250	4d162	3819	715	2.490	9.640	9.96	3.32
2022/7/23	1750	Head	250	1137	3819	715	8.800	36.500	35.2	-3.56
2022/7/26	1900	Head	250	5d182	3819	715	9.990	39.600	39.96	0.91
2022/7/24	2450	Head	250	924	3819	715	13.500	51.400	54	5.06
2022/7/21	2600	Head	250	1070	3819	715	14.400	56.200	57.6	2.49
2022/7/25	5250	Head	100	1341	3819	715	8.800	80.700	88	9.05
2022/7/26	5600	Head	100	1341	3819	715	8.910	84.500	89.1	5.44
2022/7/31	5750	Head	100	1341	3819	715	8.590	80.600	85.9	6.58

<10g>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2022/7/22	750	Head	250	1099	3819	715	1.420	5.650	5.68	0.53
2022/7/25	835	Head	250	4d162	3819	715	1.620	6.260	6.48	3.51
2022/7/23	1750	Head	250	1137	3819	715	4.670	19.200	18.68	-2.71
2022/7/26	1900	Head	250	5d182	3819	715	5.140	20.200	20.56	1.78
2022/7/24	2450	Head	250	924	3819	715	6.220	24.000	24.88	3.67
2022/7/21	2600	Head	250	1070	3819	715	6.410	24.600	25.64	4.23
2022/7/25	5250	Head	100	1341	3819	715	2.490	23.100	24.9	7.79
2022/7/26	5600	Head	100	1341	3819	715	2.520	24.000	25.2	5.00
2022/7/31	5750	Head	100	1341	3819	715	2.390	22.700	23.9	5.29

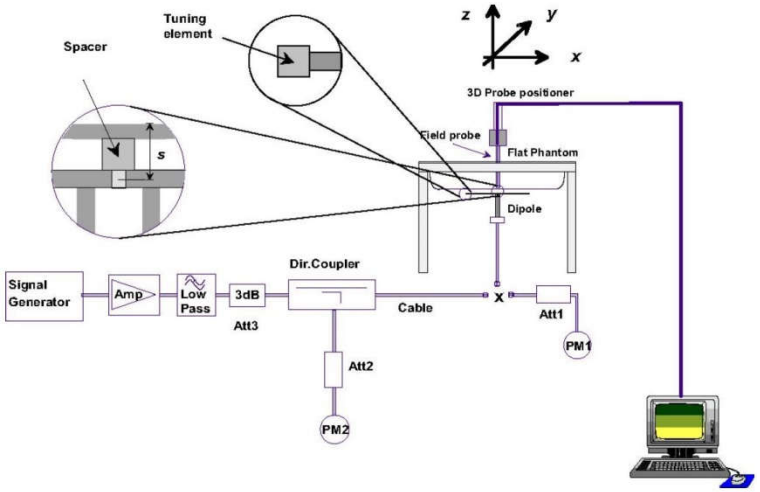


Fig 10.3.1 System Performance Check Setup

Fig 10.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

Figure 11.1.1 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 11.1.2 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 11.1.3). 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 11.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

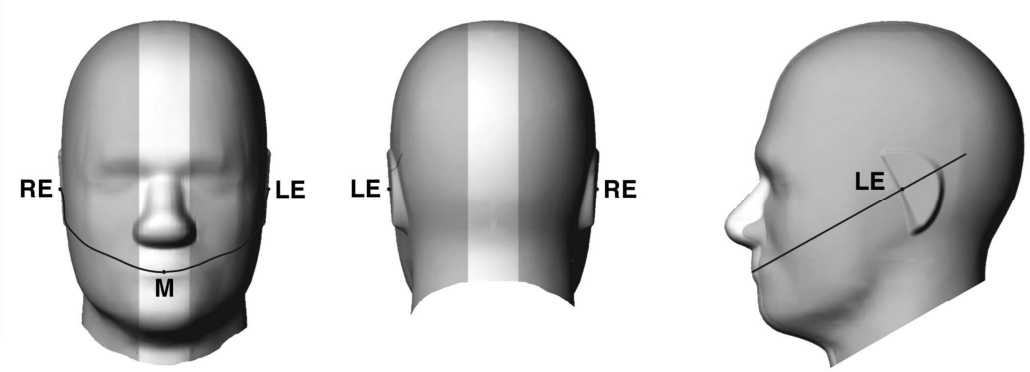


Fig 11.1.1 Front, back, and side views of SAM twin phantom

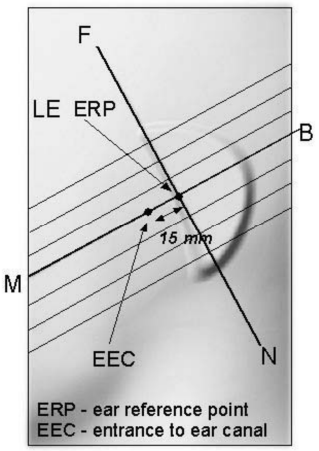


Fig 11.1.2 Close-up side view of phantom showing the ear region.

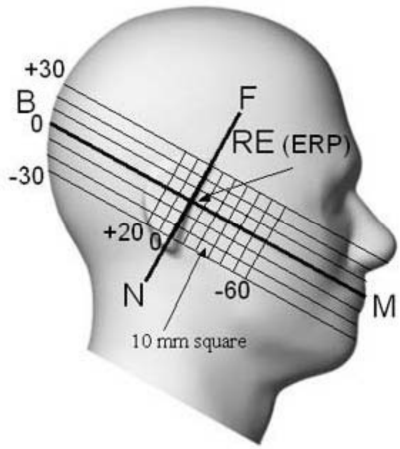


Fig 11.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 11.2.1 and Figure 11.2.2), 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 11.2.1). 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 11.2.2), 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 11.2.3), 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 11.2.3. The actual rotation angles should be documented in the test report.

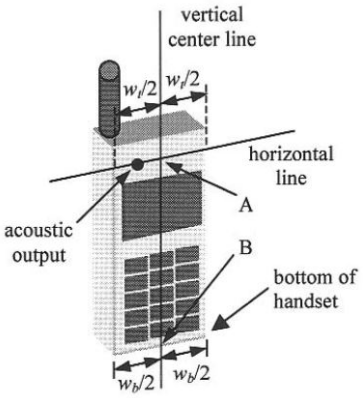


Fig 11.2.1 Handset vertical and horizontal reference lines—"fixed case

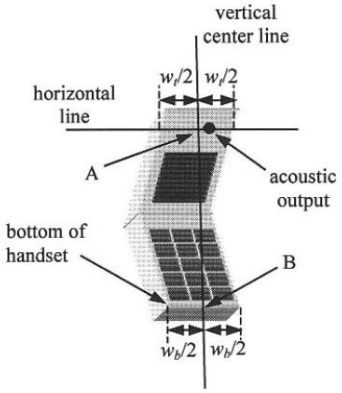


Fig 11.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

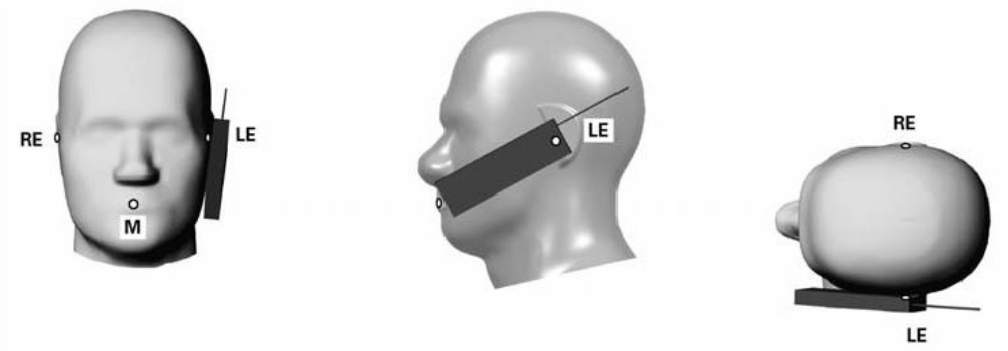


Fig 11.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 11.3.1. 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

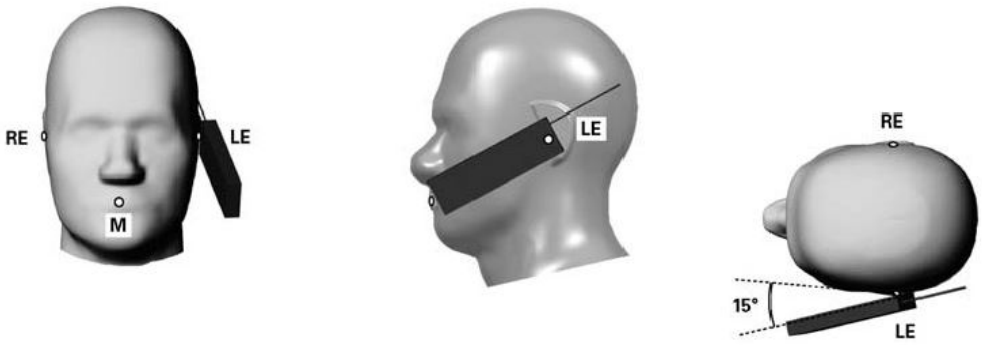


Fig 11.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

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

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components 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.

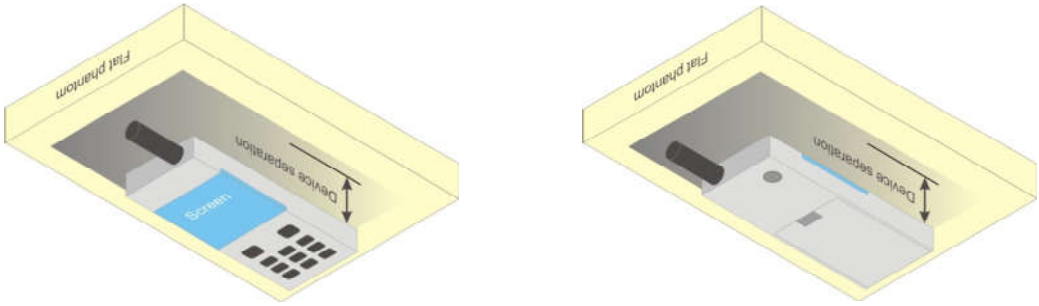


Fig 11.4 Body Worn Position

12.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that 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.

12.6 Wireless Router

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

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

13. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

General Note:

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.
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 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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 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.		

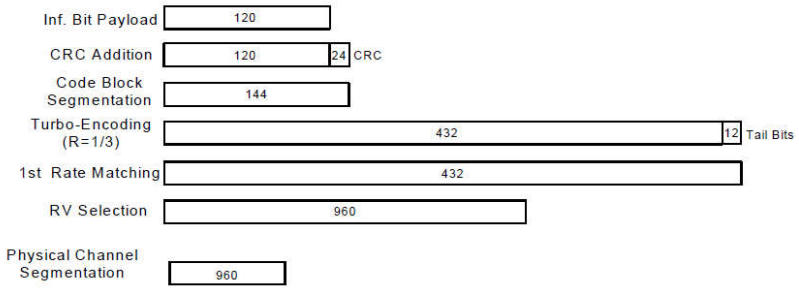


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

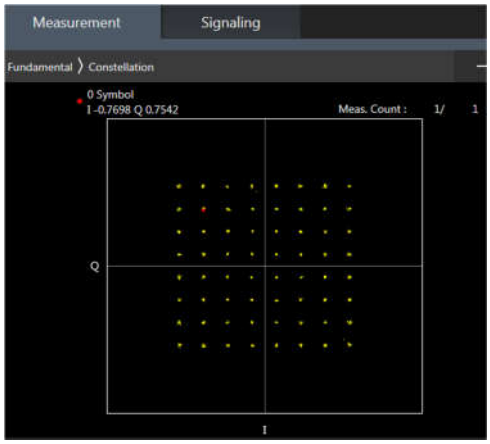
General Note:

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 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<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 / 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 B5 was covered by B26 at all exposure conditions; LTE B4 was covered by B66 at Antenna 31 at all exposure condition, and at Antenna 13 at Body-worn exposure condition; LTE B38 was covered by B41 at Antenna 31 at all exposure condition, and at Antenna 13 at Hotspot/Body-worn exposure condition; 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 May 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.

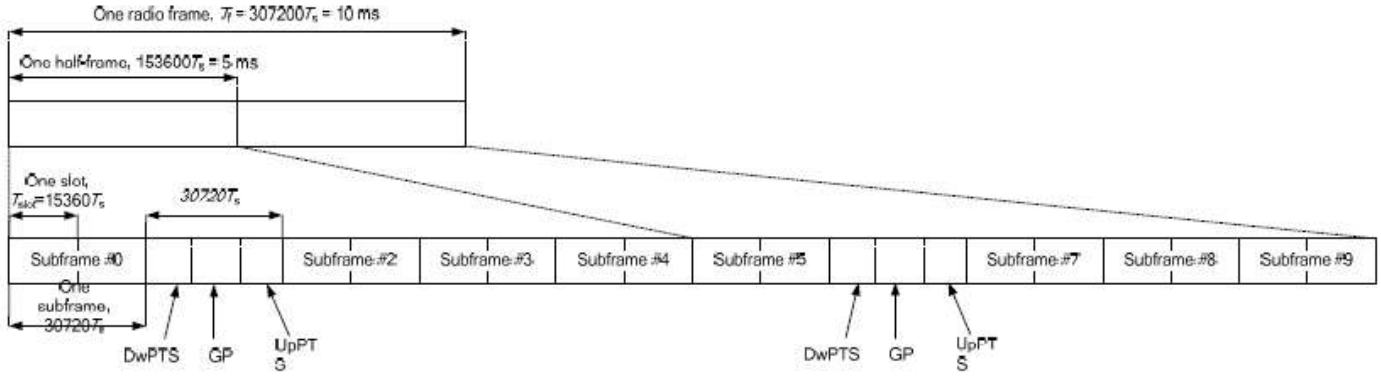


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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.

<WLAN Conducted Power>

General Note:

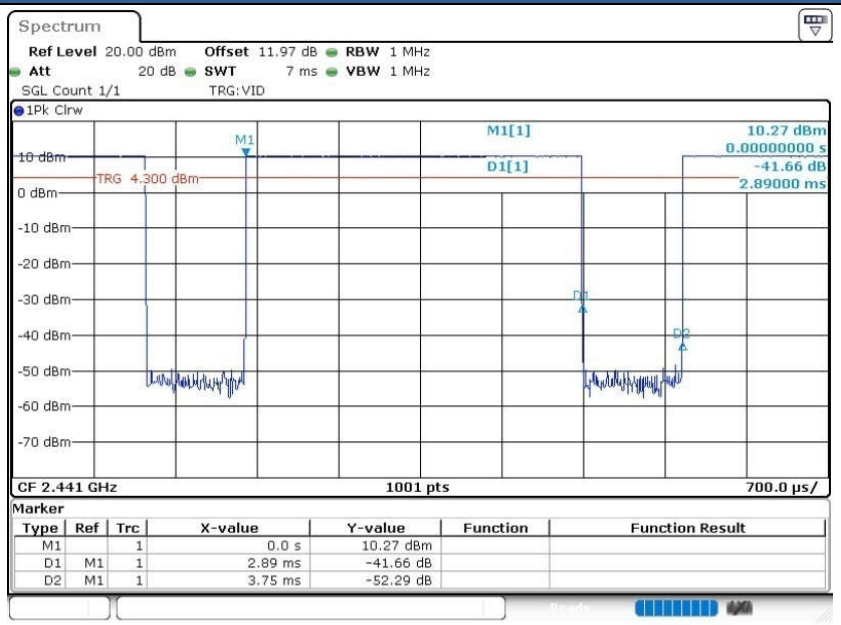
1. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) 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 in the initial test configuration. Additional output power measurements were not necessary.
2. 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.
3. 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).
4. 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.
5. 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.

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 77.07% see as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to100% for Bluetooth reported SAR calculation.

Bluetooth time-domain plot



14. Antenna Location

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

15. 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 BT/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 (W/kg) = 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.
4. 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.
5. 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.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, 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, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power (for handheld on state, the maximum full power means reduced power), including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
   a. For this device SAR for WWAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM1900, WCDMA Band II/IV, LTE Band 2/4/7/66/38/41, and5.2/5.8GHz WIFI, therefore product specific 10g SAR is necessary.
   b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
   c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
7. For distance SAR and non-distance SAR, always chose higher SAR to do co-located analysis.

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.
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.

WCDMA 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 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

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/64QAM 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/64QAM 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 / 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 B5 was covered by B26 at all exposure conditions; LTE B4 was covered by B66 at Antenna 31 at all exposure condition, and at Antenna 13 at Body-worn exposure condition; LTE B38 was covered by B41 at Antenna 31 at all exposure condition, and at Antenna 13 at Hotspot/Body-worn exposure condition.

WLAN/Bluetooth 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 SAR testing is not required when the 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.
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.

15.1 Head SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																				
01	LTE Band 13	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 13	DSI 2	23230	782	22.05	23.00	1.245	-	-	-0.08	0.485	**0.604**
	LTE Band 13	10M	QPSK	1	25	-	Right Tilted	0mm	Ant 13	DSI 2	23230	782	22.05	23.00	1.245	-	-	0.17	0.432	0.538
	LTE Band 13	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 13	DSI 2	23230	782	22.05	23.00	1.245	-	-	0.06	0.452	0.563
	LTE Band 13	10M	QPSK	1	25	-	Left Tilted	0mm	Ant 13	DSI 2	23230	782	22.05	23.00	1.245	-	-	-0.09	0.408	0.508
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 13	DSI 2	23230	782	21.42	22.50	1.282	-	-	-0.15	0.413	0.530
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 13	DSI 2	23230	782	21.42	22.50	1.282	-	-	-0.09	0.363	0.465
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 13	DSI 2	23230	782	21.42	22.50	1.282	-	-	0.16	0.380	0.487
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 13	DSI 2	23230	782	21.42	22.50	1.282	-	-	0.18	0.347	0.445
	LTE Band 13	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 13	DSI 3	23230	782	20.95	22.00	1.274	-	-	0.12	0.371	0.472
	LTE Band 13	10M	QPSK	1	25	-	Right Tilted	0mm	Ant 13	DSI 3	23230	782	20.95	22.00	1.274	-	-	0.03	0.329	0.419
	LTE Band 13	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 13	DSI 3	23230	782	20.95	22.00	1.274	-	-	0.17	0.345	0.439
	LTE Band 13	10M	QPSK	1	25	-	Left Tilted	0mm	Ant 13	DSI 3	23230	782	20.95	22.00	1.274	-	-	0.06	0.343	0.437
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 13	DSI 3	23230	782	20.88	22.00	1.294	-	-	0.04	0.336	0.435
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 13	DSI 3	23230	782	20.88	22.00	1.294	-	-	0.16	0.331	0.428
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 13	DSI 3	23230	782	20.88	22.00	1.294	-	-	-0.05	0.332	0.430
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 13	DSI 3	23230	782	20.88	22.00	1.294	-	-	0.11	0.341	0.441
	LTE Band 13	10M	QPSK	1	25	-	Right Cheek	0mm	Ant 31	DSI 2/3	23230	782	21.92	23.30	1.374	-	-	0.06	0.057	0.078
	LTE Band 13	10M	QPSK	1	25	-	Right Tilted	0mm	Ant 31	DSI 2/3	23230	782	21.92	23.30	1.374	-	-	0.01	0.004	0.005
	LTE Band 13	10M	QPSK	1	25	-	Left Cheek	0mm	Ant 31	DSI 2/3	23230	782	21.92	23.30	1.374	-	-	-0.04	0.090	0.124
	LTE Band 13	10M	QPSK	1	25	-	Left Tilted	0mm	Ant 31	DSI 2/3	23230	782	21.92	23.30	1.374	-	-	0.03	0.009	0.012
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	23230	782	20.99	22.30	1.352	-	-	0.07	0.044	0.059
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	23230	782	20.99	22.30	1.352	-	-	0.03	0.003	0.004
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	23230	782	20.99	22.30	1.352	-	-	0.14	0.053	0.072
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	23230	782	20.99	22.30	1.352	-	-	0.06	0.007	0.009
835MHz																				
02	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 13	DSI 2	189	836.4	25.28	26.50	1.324	-	-	0.05	0.747	**0.989**
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Tilted	0mm	Ant 13	DSI 2	189	836.4	25.28	26.50	1.324	-	-	-0.15	0.592	0.784
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Cheek	0mm	Ant 13	DSI 2	189	836.4	25.28	26.50	1.324	-	-	-0.13	0.486	0.644
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Tilted	0mm	Ant 13	DSI 2	189	836.4	25.28	26.50	1.324	-	-	0.04	0.439	0.581
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 13	DSI 2	128	824.2	25.25	26.50	1.334	-	-	-0.07	0.700	0.933
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 13	DSI 2	251	848.8	25.17	26.50	1.358	-	-	-0.11	0.690	0.937
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 13	DSI 3	189	836.4	24.38	25.50	1.294	-	-	0.18	0.546	0.707
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Tilted	0mm	Ant 13	DSI 3	189	836.4	24.38	25.50	1.294	-	-	-0.09	0.528	0.683
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Cheek	0mm	Ant 13	DSI 3	189	836.4	24.38	25.50	1.294	-	-	-0.19	0.378	0.489
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Tilted	0mm	Ant 13	DSI 3	189	836.4	24.38	25.50	1.294	-	-	0.09	0.300	0.388
	GSM850	-	-	-	-	GPRS 2 Tx slots	Right Cheek	0mm	Ant 31	DSI 2/3	189	836.4	30.20	31.00	1.202	-	-	-0.18	0.060	0.072
	GSM850	-	-	-	-	GPRS 2 Tx slots	Right Tilted	0mm	Ant 31	DSI 2/3	189	836.4	30.20	31.00	1.202	-	-	0.03	0.007	0.008
	GSM850	-	-	-	-	GPRS 2 Tx slots	Left Cheek	0mm	Ant 31	DSI 2/3	189	836.4	30.20	31.00	1.202	-	-	-0.12	0.065	0.078
	GSM850	-	-	-	-	GPRS 2 Tx slots	Left Tilted	0mm	Ant 31	DSI 2/3	189	836.4	30.20	31.00	1.202	-	-	0.06	0.011	0.013
03	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	4182	836.4	21.07	22.50	1.390	-	-	0.03	0.620	**0.862**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	4182	836.4	21.07	22.50	1.390	-	-	0.18	0.475	0.660
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 13	DSI 2	4182	836.4	21.07	22.50	1.390	-	-	-0.15	0.506	0.703
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 13	DSI 2	4182	836.4	21.07	22.50	1.390	-	-	-0.06	0.455	0.632
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	4132	826.4	21.00	22.50	1.413	-	-	-0.18	0.588	0.831
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	4233	846.6	20.98	22.50	1.419	-	-	0.06	0.590	0.837
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 3	4182	836.4	20.59	22.00	1.384	-	-	0.02	0.545	0.754
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 3	4182	836.4	20.59	22.00	1.384	-	-	-0.06	0.413	0.571
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 13	DSI 3	4182	836.4	20.59	22.00	1.384	-	-	-0.15	0.370	0.512
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 13	DSI 3	4182	836.4	20.59	22.00	1.384	-	-	0.11	0.355	0.491
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2/3	4182	836.4	23.10	24.30	1.318	-	-	-0.01	0.089	0.117
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2/3	4182	836.4	23.10	24.30	1.318	-	-	0.17	0.050	0.066

	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2/3	4182	836.4	23.10	24.30	1.318	-	-	0.01	0.135	0.178
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2/3	4182	836.4	23.10	24.30	1.318	-	-	0.17	0.060	0.079
04	LTE Band 26	15M	QPSK	1	37	-	Right Cheek	0mm	Ant 13	DSI 2	26865	831.5	21.35	22.00	1.161	-	-	-0.12	0.584	**0.678**
	LTE Band 26	15M	QPSK	1	37	-	Right Tilted	0mm	Ant 13	DSI 2	26865	831.5	21.35	22.00	1.161	-	-	-0.15	0.480	0.557
	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 13	DSI 2	26865	831.5	21.35	22.00	1.161	-	-	-0.02	0.476	0.553
	LTE Band 26	15M	QPSK	1	37	-	Left Tilted	0mm	Ant 13	DSI 2	26865	831.5	21.35	22.00	1.161	-	-	0.07	0.468	0.544
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 13	DSI 2	26865	831.5	20.92	22.00	1.282	-	-	-0.04	0.461	0.591
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 13	DSI 2	26865	831.5	20.92	22.00	1.282	-	-	-0.13	0.436	0.559
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 13	DSI 2	26865	831.5	20.92	22.00	1.282	-	-	-0.12	0.477	0.612
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 13	DSI 2	26865	831.5	20.92	22.00	1.282	-	-	-0.19	0.452	0.580
	LTE Band 26	15M	QPSK	1	37	-	Right Cheek	0mm	Ant 13	DSI 3	26865	831.5	20.15	21.00	1.216	-	-	-0.16	0.372	0.452
	LTE Band 26	15M	QPSK	1	37	-	Right Tilted	0mm	Ant 13	DSI 3	26865	831.5	20.15	21.00	1.216	-	-	0.05	0.350	0.426
	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 13	DSI 3	26865	831.5	20.15	21.00	1.216	-	-	0.02	0.400	0.486
	LTE Band 26	15M	QPSK	1	37	-	Left Tilted	0mm	Ant 13	DSI 3	26865	831.5	20.15	21.00	1.216	-	-	0.04	0.379	0.461
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 13	DSI 3	26865	831.5	19.99	21.00	1.262	-	-	0.05	0.361	0.456
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 13	DSI 3	26865	831.5	19.99	21.00	1.262	-	-	0.17	0.337	0.425
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 13	DSI 3	26865	831.5	19.99	21.00	1.262	-	-	0.15	0.370	0.467
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 13	DSI 3	26865	831.5	19.99	21.00	1.262	-	-	0.08	0.350	0.442
	LTE Band 26	15M	QPSK	1	37	-	Right Cheek	0mm	Ant 31	DSI 2/3	26865	831.5	23.15	23.80	1.161	-	-	0.15	0.068	0.079
	LTE Band 26	15M	QPSK	1	37	-	Right Tilted	0mm	Ant 31	DSI 2/3	26865	831.5	23.15	23.80	1.161	-	-	0.02	0.011	0.013
	LTE Band 26	15M	QPSK	1	37	-	Left Cheek	0mm	Ant 31	DSI 2/3	26865	831.5	23.15	23.80	1.161	-	-	-0.06	0.084	0.098
	LTE Band 26	15M	QPSK	1	37	-	Left Tilted	0mm	Ant 31	DSI 2/3	26865	831.5	23.15	23.80	1.161	-	-	0.1	0.022	0.026
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	26865	831.5	21.95	22.80	1.216	-	-	0.06	0.050	0.061
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	26865	831.5	21.95	22.80	1.216	-	-	-0.08	0.008	0.010
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	26865	831.5	21.95	22.80	1.216	-	-	0.02	0.053	0.064
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	26865	831.5	21.95	22.80	1.216	-	-	0.12	0.017	0.021
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2/3	1413	1732.6	23.06	24.30	1.330	-	-	-0.02	0.045	0.060
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2/3	1413	1732.6	23.06	24.30	1.330	-	-	0.05	0.007	0.009
05	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2/3	1413	1732.6	23.06	24.30	1.330	-	-	0.07	0.091	**0.121**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2/3	1413	1732.6	23.06	24.30	1.330	-	-	-0.01	0.011	0.015
	LTE Band 66	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 31	DSI 2/3	132322	1745	23.30	23.80	1.122	-	-	0.02	0.048	0.054
	LTE Band 66	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 31	DSI 2/3	132322	1745	23.30	23.80	1.122	-	-	0.05	0.009	0.010
06	LTE Band 66	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 31	DSI 2/3	132322	1745	23.30	23.80	1.122	-	-	0.08	0.110	**0.123**
	LTE Band 66	20M	QPSK	1	49	-	Left Tilted	0mm	Ant 31	DSI 2/3	132322	1745	23.30	23.80	1.122	-	-	0.1	0.012	0.013
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	132322	1745	22.07	22.80	1.183	-	-	-0.08	0.039	0.046
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	132322	1745	22.07	22.80	1.183	-	-	0.07	0.080	0.095
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	132322	1745	22.07	22.80	1.183	-	-	-0.18	0.086	0.102
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	132322	1745	22.07	22.80	1.183	-	-	0.06	0.010	0.012
1900MHz																				
	GSM1900	-	-	-	-	GPRS 2 Tx slots	Right Cheek	0mm	Ant 31	DSI 2/3	661	1880	27.35	28.50	1.303	-	-	-0.07	0.020	0.026
	GSM1900	-	-	-	-	GPRS 2 Tx slots	Right Tilted	0mm	Ant 31	DSI 2/3	661	1880	27.35	28.50	1.303	-	-	0.06	0.015	0.020
07	GSM1900	-	-	-	-	GPRS 2 Tx slots	Left Cheek	0mm	Ant 31	DSI 2/3	661	1880	27.35	28.50	1.303	-	-	0.01	0.069	**0.089**
	GSM1900	-	-	-	-	GPRS 2 Tx slots	Left Tilted	0mm	Ant 31	DSI 2/3	661	1880	27.35	28.50	1.303	-	-	0.12	0.031	0.040
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2/3	9400	1880	23.05	24.30	1.334	-	-	-0.13	0.060	0.080
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2/3	9400	1880	23.05	24.30	1.334	-	-	0.13	0.061	0.081
08	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2/3	9400	1880	23.05	24.30	1.334	-	-	0.1	0.115	**0.153**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2/3	9400	1880	23.05	24.30	1.334	-	-	0.16	0.056	0.075
	LTE Band 2	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 31	DSI 2/3	18900	1880	23.21	23.80	1.146	-	-	-0.04	0.062	0.071
	LTE Band 2	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 31	DSI 2/3	18900	1880	23.21	23.80	1.146	-	-	-0.04	0.051	0.058
09	LTE Band 2	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 31	DSI 2/3	18900	1880	23.21	23.80	1.146	-	-	0.09	0.120	**0.137**
	LTE Band 2	20M	QPSK	1	49	-	Left Tilted	0mm	Ant 31	DSI 2/3	18900	1880	23.21	23.80	1.146	-	-	0.18	0.056	0.064
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	18900	1880	21.95	22.80	1.216	-	-	-0.17	0.047	0.057
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	18900	1880	21.95	22.80	1.216	-	-	0.04	0.049	0.060
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	18900	1880	21.95	22.80	1.216	-	-	-0.17	0.077	0.094
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	18900	1880	21.95	22.80	1.216	-	-	-0.16	0.043	0.052

2600MHz																				
10	LTE Band 7	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 31	DSI 2/3	21100	2535	22.85	23.70	1.216	-	-	-0.07	0.422	**0.513**
	LTE Band 7	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 31	DSI 2/3	21100	2535	22.85	23.70	1.216	-	-	-0.08	0.122	0.148
	LTE Band 7	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 31	DSI 2/3	21100	2535	22.85	23.70	1.216	-	-	-0.02	0.143	0.174
	LTE Band 7	20M	QPSK	1	49	-	Left Tilted	0mm	Ant 31	DSI 2/3	21100	2535	22.85	23.70	1.216	-	-	0.16	0.089	0.108
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	21100	2535	21.88	22.70	1.208	-	-	-0.07	0.231	0.279
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	21100	2535	21.88	22.70	1.208	-	-	0.01	0.096	0.116
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	21100	2535	21.88	22.70	1.208	-	-	-0.07	0.114	0.138
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	21100	2535	21.88	22.70	1.208	-	-	-0.08	0.069	0.083
11	LTE Band 41	20M	QPSK	1	49	-	Right Cheek	0mm	Ant 31	DSI 2/3	40400	2571	22.64	23.60	1.247	62.9	1.006	0.05	0.244	**0.306**
	LTE Band 41	20M	QPSK	1	49	-	Right Tilted	0mm	Ant 31	DSI 2/3	40400	2571	22.64	23.60	1.247	62.9	1.006	0.11	0.081	0.102
	LTE Band 41	20M	QPSK	1	49	-	Left Cheek	0mm	Ant 31	DSI 2/3	40400	2571	22.64	23.60	1.247	62.9	1.006	-0.02	0.098	0.123
	LTE Band 41	20M	QPSK	1	49	-	Left Tilted	0mm	Ant 31	DSI 2/3	40400	2571	22.64	23.60	1.247	62.9	1.006	0.07	0.070	0.088
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2/3	40400	2571	22.00	23.10	1.288	62.9	1.006	-0.09	0.186	0.241
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2/3	40400	2571	22.00	23.10	1.288	62.9	1.006	0.17	0.069	0.089
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2/3	40400	2571	22.00	23.10	1.288	62.9	1.006	0.14	0.085	0.110
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2/3	40400	2571	22.00	23.10	1.288	62.9	1.006	0.15	0.062	0.080

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
BT/WLAN															
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.18	0.063	0.098
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.18	0.081	0.126
12	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.13	0.151	**0.234**
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	-0.15	0.102	0.158
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Reduced	11	2462	15.23	16.50	1.340	98.54	1.015	-0.17	0.268	0.364
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Reduced	11	2462	15.23	16.50	1.340	98.54	1.015	0.03	0.317	0.431
13	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Reduced	11	2462	15.23	16.50	1.340	98.54	1.015	-0.06	0.612	**0.832**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Reduced	11	2462	15.23	16.50	1.340	98.54	1.015	-0.11	0.423	0.575
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Reduced	6	2437	15.22	16.50	1.343	98.54	1.015	0.02	0.453	0.617
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Cheek	0mm	Reduced	54	5270	14.15	15.50	1.365	95.88	1.043	0.11	0.261	0.371
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Reduced	54	5270	14.15	15.50	1.365	95.88	1.043	0.08	0.280	0.399
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Reduced	54	5270	14.15	15.50	1.365	95.88	1.043	0.11	0.520	0.740
14	WLAN5.3GHz	802.11n-HT40 MCS0	Left Tilted	0mm	Reduced	54	5270	14.15	15.50	1.365	95.88	1.043	-0.05	0.616	**0.877**
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Tilted	0mm	Reduced	62	5310	14.09	15.00	1.233	95.88	1.043	0.08	0.386	0.496
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Reduced	138	5690	14.12	15.50	1.374	91.84	1.089	-0.06	0.140	0.209
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Reduced	138	5690	14.12	15.50	1.374	91.84	1.089	0.11	0.146	0.218
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Reduced	138	5690	14.12	15.50	1.374	91.84	1.089	-0.06	0.564	0.844
15	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Reduced	138	5690	14.12	15.50	1.374	91.84	1.089	-0.01	0.568	**0.850**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Reduced	122	5610	14.08	15.50	1.387	91.84	1.089	0.06	0.368	0.556
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Reduced	122	5610	14.08	15.50	1.387	91.84	1.089	0.06	0.307	0.464
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	0.16	0.119	0.195
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	-0.17	0.155	0.254
16	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	0.08	0.532	**0.873**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	0.09	0.250	0.410

15.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																				
	LTE Band 13	10M	QPSK	1	25	-	Front	10mm	Ant 13	DSI 6	23230	782	22.51	23.50	1.256	-	-	-0.18	0.098	0.123
17	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 13	DSI 6	23230	782	22.51	23.50	1.256	-	-	0.15	0.231	**0.290**
	LTE Band 13	10M	QPSK	1	25	-	Left Side	10mm	Ant 13	DSI 6	23230	782	22.51	23.50	1.256	-	-	-0.12	0.116	0.146
	LTE Band 13	10M	QPSK	1	25	-	Right Side	10mm	Ant 13	DSI 6	23230	782	22.51	23.50	1.256	-	-	0.19	0.133	0.167
	LTE Band 13	10M	QPSK	1	25	-	Top Side	10mm	Ant 13	DSI 6	23230	782	22.51	23.50	1.256	-	-	-0.02	0.113	0.142
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 13	DSI 6	23230	782	21.35	22.50	1.303	-	-	-0.14	0.078	0.102
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 13	DSI 6	23230	782	21.35	22.50	1.303	-	-	0.16	0.200	0.261
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 13	DSI 6	23230	782	21.35	22.50	1.303	-	-	-0.19	0.092	0.120
	LTE Band 13	10M	QPSK	25	0	-	Right Side	10mm	Ant 13	DSI 6	23230	782	21.35	22.50	1.303	-	-	0.18	0.096	0.125
	LTE Band 13	10M	QPSK	25	0	-	Top Side	10mm	Ant 13	DSI 6	23230	782	21.35	22.50	1.303	-	-	0.07	0.077	0.100
	LTE Band 13	10M	QPSK	1	25	-	Front	10mm	Ant 31	DSI 6	23230	782	21.92	23.30	1.374	-	-	-0.04	0.082	0.113
	LTE Band 13	10M	QPSK	1	25	-	Back	10mm	Ant 31	DSI 6	23230	782	21.92	23.30	1.374	-	-	0.19	0.102	0.140
	LTE Band 13	10M	QPSK	1	25	-	Left Side	10mm	Ant 31	DSI 6	23230	782	21.92	23.30	1.374	-	-	0.15	0.104	0.143
	LTE Band 13	10M	QPSK	1	25	-	Right Side	10mm	Ant 31	DSI 6	23230	782	21.92	23.30	1.374	-	-	0.02	0.072	0.099
	LTE Band 13	10M	QPSK	1	25	-	Bottom Side	10mm	Ant 31	DSI 6	23230	782	21.92	23.30	1.374	-	-	-0.16	0.049	0.067
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 31	DSI 6	23230	782	20.99	22.30	1.352	-	-	0.06	0.062	0.084
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 31	DSI 6	23230	782	20.99	22.30	1.352	-	-	-0.08	0.078	0.105
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 31	DSI 6	23230	782	20.99	22.30	1.352	-	-	-0.09	0.082	0.111
	LTE Band 13	10M	QPSK	25	0	-	Right Side	10mm	Ant 31	DSI 6	23230	782	20.99	22.30	1.352	-	-	-0.01	0.059	0.080
	LTE Band 13	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 31	DSI 6	23230	782	20.99	22.30	1.352	-	-	0.06	0.030	0.041
835MHz																				
	GSM850	-	-	-	-	GPRS 4 Tx slots	Front	10mm	Ant 13	DSI 6	189	836.4	26.78	28.00	1.324	-	-	0.03	0.169	0.224
18	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	10mm	Ant 13	DSI 6	189	836.4	26.78	28.00	1.324	-	-	-0.11	0.320	**0.424**
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Side	10mm	Ant 13	DSI 6	189	836.4	26.78	28.00	1.324	-	-	-0.09	0.100	0.132
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Side	10mm	Ant 13	DSI 6	189	836.4	26.78	28.00	1.324	-	-	0.04	0.129	0.171
	GSM850	-	-	-	-	GPRS 4 Tx slots	Top Side	10mm	Ant 13	DSI 6	189	836.4	26.78	28.00	1.324	-	-	-0.01	0.206	0.273
	GSM850	-	-	-	-	GPRS 3 Tx slots	Front	10mm	Ant 31	DSI 6	189	836.4	27.92	29.00	1.282	-	-	-0.12	0.060	0.077
	GSM850	-	-	-	-	GPRS 3 Tx slots	Back	10mm	Ant 31	DSI 6	189	836.4	27.92	29.00	1.282	-	-	-0.05	0.089	0.114
	GSM850	-	-	-	-	GPRS 3 Tx slots	Left Side	10mm	Ant 31	DSI 6	189	836.4	27.92	29.00	1.282	-	-	-0.01	0.053	0.068
	GSM850	-	-	-	-	GPRS 3 Tx slots	Right Side	10mm	Ant 31	DSI 6	189	836.4	27.92	29.00	1.282	-	-	-0.18	0.047	0.060
	GSM850	-	-	-	-	GPRS 3 Tx slots	Bottom Side	10mm	Ant 31	DSI 6	189	836.4	27.92	29.00	1.282	-	-	0.01	0.020	0.026
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 6	4182	836.4	19.01	20.50	1.409	-	-	0.06	0.071	0.100
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 6	4182	836.4	19.01	20.50	1.409	-	-	-0.13	0.141	0.199
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 6	4182	836.4	19.01	20.50	1.409	-	-	0.02	0.010	0.014
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 13	DSI 6	4182	836.4	19.01	20.50	1.409	-	-	-0.09	0.055	0.078
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 6	4182	836.4	19.01	20.50	1.409	-	-	0.07	0.008	0.011
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 6	4182	836.4	23.10	24.30	1.318	-	-	-0.02	0.094	0.124
19	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 6	4182	836.4	23.10	24.30	1.318	-	-	-0.15	0.160	**0.211**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 6	4182	836.4	23.10	24.30	1.318	-	-	0.17	0.120	0.158
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 6	4182	836.4	23.10	24.30	1.318	-	-	0.1	0.019	0.025
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 6	4182	836.4	23.10	24.30	1.318	-	-	-0.02	0.100	0.132
	LTE Band 26	15M	QPSK	1	37	-	Front	10mm	Ant 13	DSI 6	26865	831.5	23.28	24.00	1.180	-	-	0.13	0.157	0.185
20	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 13	DSI 6	26865	831.5	23.28	24.00	1.180	-	-	0.02	0.327	**0.386**
	LTE Band 26	15M	QPSK	1	37	-	Left Side	10mm	Ant 13	DSI 6	26865	831.5	23.28	24.00	1.180	-	-	0.16	0.091	0.107
	LTE Band 26	15M	QPSK	1	37	-	Right Side	10mm	Ant 13	DSI 6	26865	831.5	23.28	24.00	1.180	-	-	0.11	0.118	0.139
	LTE Band 26	15M	QPSK	1	37	-	Top Side	10mm	Ant 13	DSI 6	26865	831.5	23.28	24.00	1.180	-	-	0.12	0.169	0.199
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 13	DSI 6	26865	831.5	22.15	23.00	1.216	-	-	-0.17	0.121	0.147
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 13	DSI 6	26865	831.5	22.15	23.00	1.216	-	-	0.02	0.183	0.223
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 13	DSI 6	26865	831.5	22.15	23.00	1.216	-	-	0.14	0.068	0.083
	LTE Band 26	15M	QPSK	36	0	-	Right Side	10mm	Ant 13	DSI 6	26865	831.5	22.15	23.00	1.216	-	-	-0.11	0.093	0.113
	LTE Band 26	15M	QPSK	36	0	-	Top Side	10mm	Ant 13	DSI 6	26865	831.5	22.15	23.00	1.216	-	-	0.16	0.135	0.164

	LTE Band 26	15M	QPSK	1	37	-	Front	10mm	Ant 31	DSI 6	26865	831.5	22.65	23.30	1.161	-	-	-0.02	0.063	0.073
	LTE Band 26	15M	QPSK	1	37	-	Back	10mm	Ant 31	DSI 6	26865	831.5	22.65	23.30	1.161	-	-	0.19	0.091	0.106
	LTE Band 26	15M	QPSK	1	37	-	Left Side	10mm	Ant 31	DSI 6	26865	831.5	22.65	23.30	1.161	-	-	-0.06	0.053	0.062
	LTE Band 26	15M	QPSK	1	37	-	Right Side	10mm	Ant 31	DSI 6	26865	831.5	22.65	23.30	1.161	-	-	0.16	0.054	0.063
	LTE Band 26	15M	QPSK	1	37	-	Bottom Side	10mm	Ant 31	DSI 6	26865	831.5	22.65	23.30	1.161	-	-	0.06	0.010	0.012
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 31	DSI 6	26865	831.5	21.83	22.80	1.250	-	-	0.06	0.057	0.071
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 31	DSI 6	26865	831.5	21.83	22.80	1.250	-	-	-0.06	0.084	0.105
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 31	DSI 6	26865	831.5	21.83	22.80	1.250	-	-	0.09	0.055	0.069
	LTE Band 26	15M	QPSK	36	0	-	Right Side	10mm	Ant 31	DSI 6	26865	831.5	21.83	22.80	1.250	-	-	0.05	0.048	0.060
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	10mm	Ant 31	DSI 6	26865	831.5	21.83	22.80	1.250	-	-	0.02	0.012	0.015
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 6	1413	1732.6	16.69	18.00	1.352	-	-	-0.02	0.139	0.188
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 6	1413	1732.6	16.69	18.00	1.352	-	-	-0.13	0.149	0.201
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 6	1413	1732.6	16.69	18.00	1.352	-	-	0.06	0.012	0.016
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 13	DSI 6	1413	1732.6	16.69	18.00	1.352	-	-	0.15	0.020	0.027
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 6	1413	1732.6	16.69	18.00	1.352	-	-	0.11	0.244	0.330
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 6	1413	1732.6	18.62	19.80	1.312	-	-	-0.05	0.151	0.198
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 6	1413	1732.6	18.62	19.80	1.312	-	-	-0.03	0.266	0.349
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 6	1413	1732.6	18.62	19.80	1.312	-	-	0.03	0.030	0.039
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 6	1413	1732.6	18.62	19.80	1.312	-	-	0.07	0.049	0.064
21	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 6	1413	1732.6	18.62	19.80	1.312	-	-	-0.05	0.387	**0.508**
	LTE Band 4	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	20175	1732.5	18.22	19.20	1.253	-	-	-0.18	0.220	0.276
	LTE Band 4	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	20175	1732.5	18.22	19.20	1.253	-	-	-0.12	0.236	0.296
	LTE Band 4	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	20175	1732.5	18.22	19.20	1.253	-	-	0.11	0.019	0.024
	LTE Band 4	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	20175	1732.5	18.22	19.20	1.253	-	-	-0.06	0.032	0.040
22	LTE Band 4	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	20175	1732.5	18.22	19.20	1.253	-	-	0.1	0.352	**0.441**
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	20175	1732.5	18.20	19.20	1.259	-	-	0.15	0.216	0.272
	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	20175	1732.5	18.20	19.20	1.259	-	-	0.14	0.231	0.291
	LTE Band 4	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	20175	1732.5	18.20	19.20	1.259	-	-	-0.03	0.019	0.024
	LTE Band 4	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	20175	1732.5	18.20	19.20	1.259	-	-	-0.01	0.031	0.039
	LTE Band 4	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	20175	1732.5	18.20	19.20	1.259	-	-	-0.01	0.331	0.417
	LTE Band 66	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	132322	1745	18.44	19.00	1.138	-	-	0.17	0.223	0.254
	LTE Band 66	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	132322	1745	18.44	19.00	1.138	-	-	0.17	0.225	0.256
	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	132322	1745	18.44	19.00	1.138	-	-	0.03	0.045	0.051
	LTE Band 66	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	132322	1745	18.44	19.00	1.138	-	-	0.09	0.010	0.011
	LTE Band 66	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	132322	1745	18.44	19.00	1.138	-	-	-0.12	0.417	0.474
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	132322	1745	18.33	19.00	1.167	-	-	0.09	0.201	0.235
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	132322	1745	18.33	19.00	1.167	-	-	-0.13	0.224	0.261
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	132322	1745	18.33	19.00	1.167	-	-	-0.15	0.030	0.035
	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	132322	1745	18.33	19.00	1.167	-	-	0.05	0.012	0.014
	LTE Band 66	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	132322	1745	18.33	19.00	1.167	-	-	0.02	0.322	0.376
	LTE Band 66	20M	QPSK	1	49	-	Front	10mm	Ant 31	DSI 6	132322	1745	19.20	19.80	1.148	-	-	-0.12	0.179	0.206
	LTE Band 66	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	132322	1745	19.20	19.80	1.148	-	-	-0.18	0.274	0.315
	LTE Band 66	20M	QPSK	1	49	-	Left Side	10mm	Ant 31	DSI 6	132322	1745	19.20	19.80	1.148	-	-	0.08	0.033	0.038
	LTE Band 66	20M	QPSK	1	49	-	Right Side	10mm	Ant 31	DSI 6	132322	1745	19.20	19.80	1.148	-	-	0.03	0.069	0.079
23	LTE Band 66	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 31	DSI 6	132322	1745	19.20	19.80	1.148	-	-	-0.06	0.434	**0.498**
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 6	132322	1745	19.15	19.80	1.161	-	-	0.18	0.174	0.202
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	132322	1745	19.15	19.80	1.161	-	-	-0.05	0.271	0.315
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 6	132322	1745	19.15	19.80	1.161	-	-	0.11	0.036	0.042
	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 6	132322	1745	19.15	19.80	1.161	-	-	-0.17	0.068	0.079
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 6	132322	1745	19.15	19.80	1.161	-	-	0.15	0.371	0.431
1900MHz																				
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Front	10mm	Ant 13	DSI 6	661	1880	20.44	21.00	1.138	-	-	-0.15	0.229	0.261
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	10mm	Ant 13	DSI 6	661	1880	20.44	21.00	1.138	-	-	0.03	0.249	0.283
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Left Side	10mm	Ant 13	DSI 6	661	1880	20.44	21.00	1.138	-	-	0.02	0.061	0.069
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Right Side	10mm	Ant 13	DSI 6	661	1880	20.44	21.00	1.138	-	-	-0.16	0.015	0.017

24	GSM1900	-	-	-	-	GPRS 4 Tx slots	Top Side	10mm	Ant 13	DSI 6	661	1880	20.44	21.00	1.138	-	-	0.01	0.507	**0.577**
	GSM1900	-	-	-	-	GPRS 1 Tx slots	Front	10mm	Ant 31	DSI 6	661	1880	28.43	29.50	1.279	-	-	-0.18	0.189	0.242
	GSM1900	-	-	-	-	GPRS 1 Tx slots	Back	10mm	Ant 31	DSI 6	661	1880	28.43	29.50	1.279	-	-	-0.13	0.224	0.287
	GSM1900	-	-	-	-	GPRS 1 Tx slots	Left Side	10mm	Ant 31	DSI 6	661	1880	28.43	29.50	1.279	-	-	-0.14	0.021	0.027
	GSM1900	-	-	-	-	GPRS 1 Tx slots	Right Side	10mm	Ant 31	DSI 6	661	1880	28.43	29.50	1.279	-	-	-0.11	0.051	0.065
	GSM1900	-	-	-	-	GPRS 1 Tx slots	Bottom Side	10mm	Ant 31	DSI 6	661	1880	28.43	29.50	1.279	-	-	-0.19	0.187	0.239
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 6	9400	1880	15.64	17.00	1.368	-	-	-0.08	0.184	0.252
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 6	9400	1880	15.64	17.00	1.368	-	-	0.01	0.242	0.331
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 6	9400	1880	15.64	17.00	1.368	-	-	-0.14	0.045	0.062
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 13	DSI 6	9400	1880	15.64	17.00	1.368	-	-	0.01	0.023	0.031
25	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 6	9400	1880	15.64	17.00	1.368	-	-	-0.07	0.476	**0.651**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 6	9400	1880	18.13	19.30	1.309	-	-	-0.19	0.139	0.182
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 6	9400	1880	18.13	19.30	1.309	-	-	0.14	0.210	0.275
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 6	9400	1880	18.13	19.30	1.309	-	-	0.1	0.040	0.052
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 6	9400	1880	18.13	19.30	1.309	-	-	-0.15	0.058	0.076
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 6	9400	1880	18.13	19.30	1.309	-	-	0.15	0.357	0.467
	LTE Band 2	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	18900	1880	16.32	17.00	1.169	-	-	0.16	0.205	0.240
	LTE Band 2	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	18900	1880	16.32	17.00	1.169	-	-	0.02	0.243	0.284
	LTE Band 2	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	18900	1880	16.32	17.00	1.169	-	-	-0.06	0.048	0.056
	LTE Band 2	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	18900	1880	16.32	17.00	1.169	-	-	0.17	0.012	0.014
	LTE Band 2	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	18900	1880	16.32	17.00	1.169	-	-	-0.16	0.459	0.537
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	18900	1880	16.20	17.00	1.202	-	-	0.11	0.186	0.224
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	18900	1880	16.20	17.00	1.202	-	-	-0.15	0.257	0.309
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	18900	1880	16.20	17.00	1.202	-	-	0.07	0.044	0.053
	LTE Band 2	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	18900	1880	16.20	17.00	1.202	-	-	0.03	0.018	0.022
	LTE Band 2	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	18900	1880	16.20	17.00	1.202	-	-	-0.12	0.402	0.483
	LTE Band 2	20M	QPSK	1	49	-	Front	10mm	Ant 31	DSI 6	18900	1880	19.63	20.30	1.167	-	-	-0.17	0.178	0.208
	LTE Band 2	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	18900	1880	19.63	20.30	1.167	-	-	0.02	0.284	0.331
	LTE Band 2	20M	QPSK	1	49	-	Left Side	10mm	Ant 31	DSI 6	18900	1880	19.63	20.30	1.167	-	-	0.16	0.047	0.055
	LTE Band 2	20M	QPSK	1	49	-	Right Side	10mm	Ant 31	DSI 6	18900	1880	19.63	20.30	1.167	-	-	-0.09	0.081	0.095
26	LTE Band 2	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 31	DSI 6	18900	1880	19.63	20.30	1.167	-	-	-0.07	0.494	**0.576**
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 6	18900	1880	19.62	20.30	1.169	-	-	0.08	0.158	0.185
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	18900	1880	19.62	20.30	1.169	-	-	-0.06	0.276	0.323
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 6	18900	1880	19.62	20.30	1.169	-	-	-0.01	0.046	0.054
	LTE Band 2	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 6	18900	1880	19.62	20.30	1.169	-	-	-0.07	0.079	0.092
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 6	18900	1880	19.62	20.30	1.169	-	-	-0.12	0.364	0.426
2600MHz																				
	LTE Band 7	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	21100	2535	17.25	18.00	1.189	-	-	0.15	0.126	0.150
27	LTE Band 7	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	21100	2535	17.25	18.00	1.189	-	-	0.09	0.516	**0.613**
	LTE Band 7	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	21100	2535	17.25	18.00	1.189	-	-	-0.04	0.149	0.177
	LTE Band 7	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	21100	2535	17.25	18.00	1.189	-	-	0.1	0.023	0.027
	LTE Band 7	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	21100	2535	17.25	18.00	1.189	-	-	-0.1	0.304	0.361
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	21100	2535	17.18	18.00	1.208	-	-	0.09	0.125	0.151
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	21100	2535	17.18	18.00	1.208	-	-	-0.12	0.456	0.551
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	21100	2535	17.18	18.00	1.208	-	-	-0.13	0.154	0.186
	LTE Band 7	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	21100	2535	17.18	18.00	1.208	-	-	0.07	0.020	0.024
	LTE Band 7	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	21100	2535	17.18	18.00	1.208	-	-	-0.06	0.309	0.373
	LTE Band 7	20M	QPSK	1	49	-	Front	10mm	Ant 31	DSI 6	21100	2535	15.90	16.70	1.202	-	-	0.04	0.079	0.095
	LTE Band 7	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	21100	2535	15.90	16.70	1.202	-	-	0.1	0.222	0.267
	LTE Band 7	20M	QPSK	1	49	-	Left Side	10mm	Ant 31	DSI 6	21100	2535	15.90	16.70	1.202	-	-	-0.08	0.030	0.036
	LTE Band 7	20M	QPSK	1	49	-	Right Side	10mm	Ant 31	DSI 6	21100	2535	15.90	16.70	1.202	-	-	0.18	0.063	0.076
	LTE Band 7	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 31	DSI 6	21100	2535	15.90	16.70	1.202	-	-	-0.11	0.054	0.065
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 6	21100	2535	15.88	16.70	1.208	-	-	-0.1	0.072	0.087
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	21100	2535	15.88	16.70	1.208	-	-	0.19	0.202	0.244
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 6	21100	2535	15.88	16.70	1.208	-	-	0.04	0.028	0.034
	LTE Band 7	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 6	21100	2535	15.88	16.70	1.208	-	-	-0.13	0.060	0.072

	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 6	21100	2535	15.88	16.70	1.208	-	-	-0.07	0.053	0.064
	LTE Band 38	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	38000	2595	19.98	20.80	1.208	62.9	1.006	0.09	0.141	0.171
28	LTE Band 38	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	38000	2595	19.98	20.80	1.208	62.9	1.006	-0.17	0.511	**0.621**
	LTE Band 38	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	38000	2595	19.98	20.80	1.208	62.9	1.006	-0.05	0.191	0.232
	LTE Band 38	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	38000	2595	19.98	20.80	1.208	62.9	1.006	0.17	0.029	0.035
	LTE Band 38	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	38000	2595	19.98	20.80	1.208	62.9	1.006	0.15	0.218	0.265
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	38000	2595	19.85	20.80	1.245	62.9	1.006	-0.13	0.134	0.168
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	38000	2595	19.85	20.80	1.245	62.9	1.006	-0.19	0.488	0.611
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	38000	2595	19.85	20.80	1.245	62.9	1.006	-0.09	0.182	0.228
	LTE Band 38	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	38000	2595	19.85	20.80	1.245	62.9	1.006	0.14	0.027	0.034
	LTE Band 38	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	38000	2595	19.85	20.80	1.245	62.9	1.006	-0.03	0.208	0.260
	LTE Band 41	20M	QPSK	1	49	-	Front	10mm	Ant 13	DSI 6	40400	2571	20.10	20.80	1.175	62.9	1.006	-0.08	0.177	0.209
29	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	40400	2571	20.10	20.80	1.175	62.9	1.006	-0.17	0.654	**0.773**
	LTE Band 41	20M	QPSK	1	49	-	Left Side	10mm	Ant 13	DSI 6	40400	2571	20.10	20.80	1.175	62.9	1.006	-0.18	0.240	0.284
	LTE Band 41	20M	QPSK	1	49	-	Right Side	10mm	Ant 13	DSI 6	40400	2571	20.10	20.80	1.175	62.9	1.006	0.01	0.036	0.043
	LTE Band 41	20M	QPSK	1	49	-	Top Side	10mm	Ant 13	DSI 6	40400	2571	20.10	20.80	1.175	62.9	1.006	0.12	0.274	0.324
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	40140	2545	19.97	20.80	1.211	62.9	1.006	0.06	0.620	0.755
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	40670	2598	19.92	20.80	1.225	62.9	1.006	0.01	0.605	0.745
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 13	DSI 6	41140	2645	19.90	20.80	1.230	62.9	1.006	0.08	0.600	0.743
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 6	40400	2571	20.00	20.80	1.202	62.9	1.006	0.09	0.159	0.192
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	40400	2571	20.00	20.80	1.202	62.9	1.006	-0.17	0.553	0.669
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 6	40400	2571	20.00	20.80	1.202	62.9	1.006	-0.05	0.226	0.273
	LTE Band 41	20M	QPSK	50	0	-	Right Side	10mm	Ant 13	DSI 6	40400	2571	20.00	20.80	1.202	62.9	1.006	0.05	0.032	0.039
	LTE Band 41	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 6	40400	2571	20.00	20.80	1.202	62.9	1.006	-0.03	0.155	0.187
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	40140	2545	19.85	20.80	1.245	62.9	1.006	0.04	0.520	0.651
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	40670	2598	19.95	20.80	1.216	62.9	1.006	0.02	0.512	0.626
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 6	41140	2645	19.87	20.80	1.239	62.9	1.006	0.09	0.530	0.661
	LTE Band 41	20M	QPSK	100	0	-	Back	10mm	Ant 13	DSI 6	40400	2571	19.88	20.80	1.236	62.9	1.006	0.05	0.560	0.696
	LTE Band 41	20M	QPSK	1	49	-	Front	10mm	Ant 31	DSI 6	40400	2571	21.55	22.60	1.274	62.9	1.006	0.15	0.214	0.274
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	40400	2571	21.55	22.60	1.274	62.9	1.006	0.06	0.555	0.711
	LTE Band 41	20M	QPSK	1	49	-	Left Side	10mm	Ant 31	DSI 6	40400	2571	21.55	22.60	1.274	62.9	1.006	-0.17	0.021	0.027
	LTE Band 41	20M	QPSK	1	49	-	Right Side	10mm	Ant 31	DSI 6	40400	2571	21.55	22.60	1.274	62.9	1.006	-0.11	0.153	0.196
	LTE Band 41	20M	QPSK	1	49	-	Bottom Side	10mm	Ant 31	DSI 6	40400	2571	21.55	22.60	1.274	62.9	1.006	0.17	0.128	0.164
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	40140	2545	21.38	22.60	1.324	62.9	1.006	-0.17	0.520	0.693
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	40670	2598	21.42	22.60	1.312	62.9	1.006	-0.17	0.511	0.675
	LTE Band 41	20M	QPSK	1	49	-	Back	10mm	Ant 31	DSI 6	41140	2645	21.40	22.60	1.318	62.9	1.006	-0.17	0.514	0.682
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 6	40400	2571	21.50	22.60	1.288	62.9	1.006	-0.16	0.241	0.312
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	40400	2571	21.50	22.60	1.288	62.9	1.006	-0.12	0.538	0.697
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 6	40400	2571	21.50	22.60	1.288	62.9	1.006	-0.03	0.015	0.019
	LTE Band 41	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 6	40400	2571	21.50	22.60	1.288	62.9	1.006	0.1	0.168	0.218
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 6	40400	2571	21.50	22.60	1.288	62.9	1.006	-0.16	0.124	0.161
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	40140	2545	21.41	22.60	1.315	62.9	1.006	-0.17	0.511	0.676
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	40670	2598	21.47	22.60	1.297	62.9	1.006	-0.17	0.499	0.651
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 6	41140	2645	21.36	22.60	1.330	62.9	1.006	-0.17	0.492	0.659
	LTE Band 41	20M	QPSK	100	0	-	Back	10mm	Ant 31	DSI 6	40400	2571	21.49	22.60	1.291	62.9	1.006	0.02	0.515	0.669

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
BT/WLAN															
	Bluetooth	DH5 1Mbps	Front	10mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	-0.03	0.011	0.017
30	Bluetooth	DH5 1Mbps	Back	10mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	-0.06	0.067	**0.104**
	Bluetooth	DH5 1Mbps	Left Side	10mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.08	0.005	0.008
	Bluetooth	DH5 1Mbps	Right Side	10mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.07	0.034	0.053
	Bluetooth	DH5 1Mbps	Top Side	10mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	-0.05	0.067	0.103
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	-0.06	0.236	0.312
31	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	-0.09	0.389	**0.515**
	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	0.02	0.038	0.050
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	0.08	0.207	0.274
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	-0.01	0.306	0.405
	WLAN5.2GHz	802.11n-HT40 MCS0	Front	10mm	Reduced	46	5230	13.66	15.50	1.528	95.88	1.043	0.07	0.108	0.172
	WLAN5.2GHz	802.11n-HT40 MCS0	Back	10mm	Reduced	46	5230	13.66	15.50	1.528	95.88	1.043	0.09	0.195	0.311
	WLAN5.2GHz	802.11n-HT40 MCS0	Left Side	10mm	Reduced	46	5230	13.66	15.50	1.528	95.88	1.043	0.05	0.016	0.025
32	WLAN5.2GHz	802.11n-HT40 MCS0	Right Side	10mm	Reduced	46	5230	13.66	15.50	1.528	95.88	1.043	-0.17	0.295	**0.470**
	WLAN5.2GHz	802.11n-HT40 MCS0	Top Side	10mm	Reduced	46	5230	13.66	15.50	1.528	95.88	1.043	0.07	0.210	0.335
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	0.18	0.091	0.150
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	0.17	0.223	0.366
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	-0.19	0.012	0.020
33	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	-0.01	0.487	**0.799**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Reduced	155	5775	10.72	12.50	1.507	91.84	1.089	-0.09	0.069	0.113

15.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																				
	LTE Band 13	10M	QPSK	1	25	-	Front	15mm	Ant 13	DSI 7	23230	782	22.51	23.50	1.256	-	-	0.15	0.103	0.129
34	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 13	DSI 7	23230	782	22.51	23.50	1.256	-	-	-0.19	0.241	**0.303**
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 13	DSI 7	23230	782	21.35	22.50	1.303	-	-	0.09	0.081	0.106
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 13	DSI 7	23230	782	21.35	22.50	1.303	-	-	0.12	0.190	0.248
	LTE Band 13	10M	QPSK	1	25	-	Front	15mm	Ant 31	DSI 7	23230	782	21.92	23.30	1.374	-	-	-0.04	0.083	0.114
	LTE Band 13	10M	QPSK	1	25	-	Back	15mm	Ant 31	DSI 7	23230	782	21.92	23.30	1.374	-	-	0.02	0.093	0.128
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 31	DSI 7	23230	782	20.99	22.30	1.352	-	-	-0.18	0.064	0.087
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 31	DSI 7	23230	782	20.99	22.30	1.352	-	-	-0.02	0.074	0.100
835MHz																				
	GSM850	-	-	-	-	GPRS 2 Tx slots	Front	15mm	Ant 13	DSI 7	189	836.4	30.58	31.80	1.324	-	-	0.01	0.130	0.172
35	GSM850	-	-	-	-	GPRS 2 Tx slots	Back	15mm	Ant 13	DSI 7	189	836.4	30.58	31.80	1.324	-	-	0.06	0.273	**0.362**
	GSM850	-	-	-	-	GPRS 3 Tx slots	Front	15mm	Ant 31	DSI 7	189	836.4	27.92	29.00	1.282	-	-	-0.09	0.049	0.063
	GSM850	-	-	-	-	GPRS 3 Tx slots	Back	15mm	Ant 31	DSI 7	189	836.4	27.92	29.00	1.282	-	-	-0.06	0.050	0.064
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 7	4182	836.4	22.95	24.50	1.429	-	-	-0.07	0.118	0.169
36	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 7	4182	836.4	22.95	24.50	1.429	-	-	0.11	0.239	**0.342**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 7	4182	836.4	23.10	24.30	1.318	-	-	0.04	0.094	0.124
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 7	4182	836.4	23.10	24.30	1.318	-	-	-0.17	0.103	0.136
	LTE Band 26	15M	QPSK	1	37	-	Front	15mm	Ant 13	DSI 7	26865	831.5	23.28	24.00	1.180	-	-	-0.08	0.109	0.129
37	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 13	DSI 7	26865	831.5	23.28	24.00	1.180	-	-	0.03	0.184	**0.217**
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 13	DSI 7	26865	831.5	22.15	23.00	1.216	-	-	0.07	0.080	0.097
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 13	DSI 7	26865	831.5	22.15	23.00	1.216	-	-	0.14	0.143	0.174
	LTE Band 26	15M	QPSK	1	37	-	Front	15mm	Ant 31	DSI 7	26865	831.5	23.15	23.80	1.161	-	-	0.14	0.064	0.074
	LTE Band 26	15M	QPSK	1	37	-	Back	15mm	Ant 31	DSI 7	26865	831.5	23.15	23.80	1.161	-	-	-0.06	0.072	0.084
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 31	DSI 7	26865	831.5	21.95	22.80	1.216	-	-	0.13	0.053	0.064
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 31	DSI 7	26865	831.5	21.95	22.80	1.216	-	-	0.16	0.056	0.068
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 7	1413	1732.6	23.10	24.50	1.380	-	-	-0.01	0.191	0.264
38	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 7	1413	1732.6	23.10	24.50	1.380	-	-	-0.17	0.380	**0.525**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 7	1413	1732.6	20.11	21.30	1.315	-	-	0.09	0.117	0.154
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 7	1413	1732.6	20.11	21.30	1.315	-	-	0.15	0.173	0.228
	LTE Band 66	20M	QPSK	1	49	-	Front	15mm	Ant 13	DSI 7	132322	1745	23.15	24.00	1.216	-	-	0.11	0.335	0.407
39	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	132322	1745	23.15	24.00	1.216	-	-	0.11	0.479	**0.583**
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 7	132322	1745	22.17	23.00	1.211	-	-	0.16	0.264	0.320
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	132322	1745	22.17	23.00	1.211	-	-	-0.17	0.375	0.454
	LTE Band 66	20M	QPSK	1	49	-	Front	15mm	Ant 31	DSI 7	132322	1745	20.66	21.30	1.159	-	-	-0.18	0.152	0.176
	LTE Band 66	20M	QPSK	1	49	-	Back	15mm	Ant 31	DSI 7	132322	1745	20.66	21.30	1.159	-	-	-0.06	0.212	0.246
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 7	132322	1745	20.60	21.30	1.175	-	-	0.01	0.143	0.168
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 7	132322	1745	20.60	21.30	1.175	-	-	-0.09	0.206	0.242
1900MHz																				
	GSM1900	-	-	-	-	GPRS 3 Tx slots	Front	15mm	Ant 13	DSI 7	661	1880	26.04	27.00	1.247	-	-	0.18	0.318	0.397
40	GSM1900	-	-	-	-	GPRS 3 Tx slots	Back	15mm	Ant 13	DSI 7	661	1880	26.04	27.00	1.247	-	-	-0.12	0.611	**0.762**
	GSM1900	-	-	-	-	GPRS 2 Tx slots	Front	15mm	Ant 31	DSI 7	661	1880	26.36	27.50	1.300	-	-	-0.12	0.088	0.114
	GSM1900	-	-	-	-	GPRS 2 Tx slots	Back	15mm	Ant 31	DSI 7	661	1880	26.36	27.50	1.300	-	-	-0.14	0.145	0.189
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 7	9400	1880	21.55	23.00	1.396	-	-	0.15	0.318	0.444
41	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 7	9400	1880	21.55	23.00	1.396	-	-	-0.07	0.559	**0.781**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 7	9400	1880	20.12	21.30	1.312	-	-	-0.01	0.116	0.152
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 7	9400	1880	20.12	21.30	1.312	-	-	0.06	0.186	0.244
	LTE Band 2	20M	QPSK	1	49	-	Front	15mm	Ant 13	DSI 7	18900	1880	22.15	23.00	1.216	-	-	0.16	0.455	0.553
42	LTE Band 2	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	18900	1880	22.15	23.00	1.216	-	-	-0.19	0.625	**0.760**
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 7	18900	1880	21.95	23.00	1.274	-	-	0.03	0.420	0.535

	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	18900	1880	21.95	23.00	1.274	-	-	0.03	0.571	0.727
	LTE Band 2	20M	QPSK	1	49	-	Front	15mm	Ant 31	DSI 7	18900	1880	21.11	21.80	1.172	-	-	-0.13	0.149	0.175
	LTE Band 2	20M	QPSK	1	49	-	Back	15mm	Ant 31	DSI 7	18900	1880	21.11	21.80	1.172	-	-	0.18	0.266	0.312
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 7	18900	1880	21.01	21.80	1.199	-	-	0.13	0.140	0.168
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 7	18900	1880	21.01	21.80	1.199	-	-	0.14	0.214	0.257
2600MHz																				
	LTE Band 7	20M	QPSK	1	49	-	Front	15mm	Ant 13	DSI 7	21100	2535	23.12	24.00	1.225	-	-	-0.01	0.244	0.299
43	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	21100	2535	23.12	24.00	1.225	-	-	0.03	0.794	**0.972**
	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	20850	2510	23.08	24.00	1.236	-	-	0.05	0.782	0.967
	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	21350	2560	22.70	24.00	1.349	-	-	-0.02	0.711	0.959
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 7	21100	2535	22.10	23.00	1.230	-	-	0.18	0.192	0.236
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	21100	2535	22.10	23.00	1.230	-	-	-0.08	0.708	0.871
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	20850	2510	22.00	23.00	1.259	-	-	0.16	0.688	0.866
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	21350	2560	21.97	23.00	1.268	-	-	-0.11	0.679	0.861
	LTE Band 7	20M	QPSK	100	0	-	Back	15mm	Ant 13	DSI 7	21100	2535	22.05	23.00	1.245	-	-	-0.02	0.656	0.816
	LTE Band 7	20M	QPSK	1	49	-	Front	15mm	Ant 31	DSI 7	21100	2535	17.24	17.70	1.112	-	-	-0.16	0.054	0.060
	LTE Band 7	20M	QPSK	1	49	-	Back	15mm	Ant 31	DSI 7	21100	2535	17.24	17.70	1.112	-	-	-0.17	0.102	0.113
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 7	21100	2535	16.92	17.70	1.197	-	-	0.16	0.053	0.063
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 7	21100	2535	16.92	17.70	1.197	-	-	0.13	0.103	0.123
	LTE Band 41	20M	QPSK	1	49	-	Front	15mm	Ant 13	DSI 7	40400	2571	22.79	23.80	1.262	62.9	1.006	-0.09	0.201	0.255
44	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	40400	2571	22.79	23.80	1.262	62.9	1.006	-0.16	0.474	**0.602**
	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	40140	2545	22.77	23.80	1.268	62.9	1.006	0.03	0.454	0.579
	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	40670	2598	22.53	23.80	1.340	62.9	1.006	-0.12	0.420	0.566
	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 13	DSI 7	41140	2645	22.73	23.80	1.279	62.9	1.006	-0.05	0.431	0.555
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 7	40400	2571	22.33	23.30	1.250	62.9	1.006	-0.03	0.162	0.204
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 7	40400	2571	22.33	23.30	1.250	62.9	1.006	-0.06	0.422	0.531
	LTE Band 41	20M	QPSK	100	0	-	Back	15mm	Ant 13	DSI 7	40400	2571	22.28	23.30	1.265	62.9	1.006	-0.05	0.411	0.523
	LTE Band 41	20M	QPSK	1	49	-	Front	15mm	Ant 31	DSI 7	40400	2571	22.09	23.10	1.262	62.9	1.006	0.19	0.127	0.161
	LTE Band 41	20M	QPSK	1	49	-	Back	15mm	Ant 31	DSI 7	40400	2571	22.09	23.10	1.262	62.9	1.006	0.08	0.210	0.267
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 7	40400	2571	22.06	23.10	1.271	62.9	1.006	-0.1	0.118	0.151
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 7	40400	2571	22.06	23.10	1.271	62.9	1.006	0.03	0.202	0.258

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
BT/WLAN															
	Bluetooth	DH5 1Mbps	Front	15mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.12	0.028	0.044
45	Bluetooth	DH5 1Mbps	Back	15mm	Full	39	2441	11.23	12.00	1.194	77.07	1.298	0.05	0.030	**0.046**
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	-0.06	0.138	0.183
46	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Full	6	2437	18.85	20.00	1.303	98.54	1.015	0.01	0.158	**0.209**
	WLAN5.3GHz	802.11a 6Mbps	Front	15mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	0.03	0.239	0.352
47	WLAN5.3GHz	802.11a 6Mbps	Back	15mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	0.07	0.402	**0.593**
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	15mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	-0.11	0.098	0.139
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	15mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.08	0.178	0.253
	WLAN5.5GHz	802.11a 6Mbps	Front	15mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.15	0.213	0.318
48	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.03	0.342	**0.511**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	15mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.07	0.058	0.087
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	15mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	-0.01	0.130	0.195
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	15mm	Standalone	155	5775	15.12	17.00	1.542	91.84	1.089	0.15	0.112	0.188
49	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	15mm	Standalone	155	5775	15.12	17.00	1.542	91.84	1.089	-0.03	0.515	**0.865**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	15mm	Simultaneous	155	5775	10.72	12.50	1.507	91.84	1.089	0.11	0.039	0.064
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	15mm	Simultaneous	155	5775	10.72	12.50	1.507	91.84	1.089	0.06	0.188	0.308

15.4 Product specific 10g SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
1750MHz																				
50	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 4	1413	1732.6	19.65	21.00	1.365	-	-	0.03	1.560	**2.129**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 4	1312	1712.4	19.49	21.00	1.416	-	-	0.08	1.470	2.081
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 4	1513	1752.6	19.48	21.00	1.419	-	-	0.01	1.460	2.072
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	14mm	Ant 13	DSI 7	1413	1732.6	23.10	24.50	1.380	-	-	-0.11	0.303	0.418
51	LTE Band 4	20M	QPSK	1	49	-	Top Side	0mm	Ant 13	DSI 4	20175	1732.5	19.88	20.70	1.208	-	-	-0.05	1.120	**1.353**
	LTE Band 4	20M	QPSK	1	49	-	Top Side	14mm	Ant 13	DSI 7	20175	1732.5	22.55	23.70	1.303	-	-	-0.07	0.250	0.326
	LTE Band 4	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 4	20175	1732.5	19.70	20.70	1.259	-	-	-0.09	1.040	1.309
52	LTE Band 66	20M	QPSK	1	49	-	Top Side	0mm	Ant 13	DSI 4	132322	1745	19.40	20.00	1.148	-	-	-0.14	1.500	**1.722**
	LTE Band 66	20M	QPSK	1	49	-	Top Side	14mm	Ant 13	DSI 7	132322	1745	23.15	24.00	1.216	-	-	0.05	0.292	0.355
	LTE Band 66	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 4	132322	1745	19.26	20.00	1.186	-	-	0.09	1.330	1.577
1900MHz																				
53	GSM1900	-	-	-	-	GPRS 4 Tx slots	Top Side	0mm	Ant 13	DSI 4	661	1880	21.09	21.50	1.099	-	-	0.06	1.140	**1.253**
	GSM1900	-	-	-	-	GPRS 3 Tx slots	Top Side	14mm	Ant 13	DSI 7	661	1880	26.04	27.00	1.247	-	-	0.02	0.442	0.551
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 13	DSI 4	9400	1880	17.17	18.50	1.358	-	-	-0.11	0.803	1.091
54	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 4	9400	1880	17.17	18.50	1.358	-	-	-0.13	1.250	**1.698**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	12mm	Ant 13	DSI 7	9400	1880	21.55	23.00	1.396	-	-	0.09	0.360	0.503
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	14mm	Ant 13	DSI 7	9400	1880	21.55	23.00	1.396	-	-	0.08	0.484	0.676
	LTE Band 2	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	18900	1880	17.71	18.50	1.199	-	-	-0.07	0.876	1.051
55	LTE Band 2	20M	QPSK	1	49	-	Top Side	0mm	Ant 13	DSI 4	18900	1880	17.71	18.50	1.199	-	-	-0.15	1.360	**1.631**
	LTE Band 2	20M	QPSK	1	49	-	Back	12mm	Ant 13	DSI 7	18900	1880	22.15	23.00	1.216	-	-	-0.11	0.391	0.476
	LTE Band 2	20M	QPSK	1	49	-	Top Side	14mm	Ant 13	DSI 7	18900	1880	22.15	23.00	1.216	-	-	0.09	0.423	0.514
	LTE Band 2	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	18900	1880	17.60	18.50	1.230	-	-	-0.11	0.850	1.046
	LTE Band 2	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 4	18900	1880	17.60	18.50	1.230	-	-	-0.04	1.220	1.501
2600MHz																				
56	LTE Band 7	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	21100	2535	18.50	19.00	1.122	-	-	-0.16	1.370	**1.537**
	LTE Band 7	20M	QPSK	1	49	-	Top Side	0mm	Ant 13	DSI 4	21100	2535	18.50	19.00	1.122	-	-	0.06	0.827	0.928
	LTE Band 7	20M	QPSK	1	49	-	Back	12mm	Ant 13	DSI 7	21100	2535	23.12	24.00	1.225	-	-	0.03	0.424	0.519
	LTE Band 7	20M	QPSK	1	49	-	Top Side	14mm	Ant 13	DSI 7	21100	2535	23.12	24.00	1.225	-	-	0.05	0.346	0.424
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	21100	2535	18.16	19.00	1.213	-	-	-0.01	1.250	1.517
	LTE Band 7	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 4	21100	2535	18.16	19.00	1.213	-	-	0.04	0.750	0.910
57	LTE Band 38	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	38000	2595	21.09	21.80	1.178	62.9	1.006	-0.13	1.690	**2.002**
	LTE Band 38	20M	QPSK	1	49	-	Back	12mm	Ant 13	DSI 7	38000	2595	22.63	23.80	1.309	62.9	1.006	-0.18	0.202	0.266
	LTE Band 38	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	38000	2595	20.75	21.80	1.274	62.9	1.006	0.04	1.480	1.896
	LTE Band 38	20M	QPSK	100	0	-	Back	0mm	Ant 13	DSI 4	38000	2595	20.61	21.80	1.315	62.9	1.006	0.16	1.430	1.892
58	LTE Band 41	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	40400	2571	20.39	21.30	1.233	62.9	1.006	0.19	1.600	**1.985**
	LTE Band 41	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	40140	2545	20.03	21.30	1.340	62.9	1.006	0.06	1.460	1.968
	LTE Band 41	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	40670	2598	20.12	21.30	1.312	62.9	1.006	0.03	1.430	1.888
	LTE Band 41	20M	QPSK	1	49	-	Back	0mm	Ant 13	DSI 4	41140	2645	20.10	21.30	1.318	62.9	1.006	0.05	1.490	1.976
	LTE Band 41	20M	QPSK	1	49	-	Back	12mm	Ant 13	DSI 7	40400	2571	22.79	23.80	1.262	62.9	1.006	0.09	0.181	0.230
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	40400	2571	20.22	21.30	1.282	62.9	1.006	0.17	1.510	1.948
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	40140	2545	20.03	21.30	1.340	62.9	1.006	0.01	1.430	1.927
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	40670	2598	20.09	21.30	1.321	62.9	1.006	0.09	1.390	1.848
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 4	41140	2645	20.13	21.30	1.309	62.9	1.006	0.05	1.410	1.857
	LTE Band 41	20M	QPSK	100	0	-	Back	0mm	Ant 13	DSI 4	40400	2571	20.14	21.30	1.306	62.9	1.006	0.06	1.490	1.958

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
WLAN															
59	WLAN5.2GHz	802.11a 6Mbps	Right Side	0mm	Standalone	48	5240	17.27	19.00	1.489	98.07	1.020	0.19	1.130	**1.717**
	WLAN5.2GHz	802.11n-HT40 MCS0	Right Side	0mm	Simultaneous	46	5230	13.66	15.50	1.528	95.88	1.043	-0.02	0.522	0.832
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	-0.03	0.780	1.150
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	-0.05	0.790	1.165
	WLAN5.3GHz	802.11a 6Mbps	Left Side	0mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	-0.06	0.073	0.108
60	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	-0.03	1.750	**2.580**
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Standalone	60	5300	17.40	19.00	1.445	98.07	1.020	-0.07	0.866	1.277
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Standalone	56	5280	17.39	19.00	1.449	98.07	1.020	0.14	1.390	2.054
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	0mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.04	0.326	0.464
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.08	0.342	0.487
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Side	0mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.04	0.025	0.036
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.15	0.732	1.042
	WLAN5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Simultaneous	54	5270	14.15	15.50	1.365	95.88	1.043	0.08	0.397	0.565
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.13	0.802	1.199
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.14	0.878	1.312
	WLAN5.5GHz	802.11a 6Mbps	Left Side	0mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.13	0.050	0.075
61	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.04	1.810	**2.706**
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Standalone	100	5500	17.34	19.00	1.466	98.07	1.020	0.14	0.866	1.295
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	116	5580	17.27	19.00	1.489	98.07	1.020	0.1	1.560	2.370
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	124	5620	17.23	19.00	1.503	98.07	1.020	0.11	1.490	2.284
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	132	5660	17.22	19.00	1.507	98.07	1.020	0.14	1.510	2.320
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	140	5700	17.07	19.00	1.560	98.07	1.020	0.09	1.550	2.466
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Standalone	144	5720	17.05	19.00	1.567	98.07	1.020	0.04	1.550	2.477
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.12	0.285	0.426
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.19	0.367	0.549
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.05	0.022	0.033
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.06	0.744	1.113
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Simultaneous	138	5690	14.12	15.50	1.374	91.84	1.089	0.14	0.335	0.501
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	0mm	Standalone	155	5775	15.12	17.00	1.542	91.84	1.089	-0.14	1.050	1.763
62	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Standalone	155	5775	15.12	17.00	1.542	91.84	1.089	-0.01	1.630	**2.737**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	0mm	Simultaneous	155	5775	10.72	12.50	1.507	91.84	1.089	-0.14	0.411	0.674
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Simultaneous	155	5775	10.72	12.50	1.507	91.84	1.089	-0.01	0.633	1.039

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + 2.4GHz WLAN	Yes	Yes	Yes	Yes
2.	WWAN + 5GHz WLAN	Yes	Yes	Yes	Yes
3.	WWAN + 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, WCDM, and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. This device WLAN 2.4GHz supports hotspot operation and Bluetooth support tethering applications.
4. This device 2.4GHz WLAN/ 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
5. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
6. WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.
7. According to the EUT characteristic, 5GHz and Bluetooth cannot transmit simultaneously.
8. According to the EUT characteristic, WLAN 2.4GHz and WLAN 5GHz cannot transmit simultaneously.
9. For distance SAR and non-distance SAR, always chose higher SAR to do co-located analysis.
10. The reported SAR summation is calculated based on the same configuration and test position
11. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
    iii) If SPLSR ≤ 0.04 for 1g SAR and SPLSR≤ 0.10 for 10g SAR , simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.

16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9
		WWAN	WLAN2.4GHz	WLAN5GHz	Bluetooth	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
GSM850 ANT 13	Right Cheek	0.707	0.364	0.371	0.098	1.07	1.08	0.81
	Right Tilted	0.683	0.431	0.399	0.126	1.11	1.08	0.81
	Left Cheek	0.489	0.832	0.873	0.234	1.32	1.36	0.72
	Left Tilted	0.388	0.575	0.877	0.158	0.96	1.27	0.55
GSM850 ANT 31	Right Cheek	0.072	0.364	0.371	0.098	0.44	0.44	0.17
	Right Tilted	0.008	0.431	0.399	0.126	0.44	0.41	0.13
	Left Cheek	0.078	0.832	0.873	0.234	0.91	0.95	0.31
	Left Tilted	0.013	0.575	0.877	0.158	0.59	0.89	0.17
GSM1900 ANT 31	Right Cheek	0.026	0.364	0.371	0.098	0.39	0.40	0.12
	Right Tilted	0.020	0.431	0.399	0.126	0.45	0.42	0.15
	Left Cheek	0.089	0.832	0.873	0.234	0.92	0.96	0.32
	Left Tilted	0.040	0.575	0.877	0.158	0.62	0.92	0.20
WCDMA II ANT 31	Right Cheek	0.080	0.364	0.371	0.098	0.44	0.45	0.18
	Right Tilted	0.081	0.431	0.399	0.126	0.51	0.48	0.21
	Left Cheek	0.153	0.832	0.873	0.234	0.99	1.03	0.39
	Left Tilted	0.075	0.575	0.877	0.158	0.65	0.95	0.23
WCDMA IV ANT 31	Right Cheek	0.060	0.364	0.371	0.098	0.42	0.43	0.16
	Right Tilted	0.009	0.431	0.399	0.126	0.44	0.41	0.14
	Left Cheek	0.121	0.832	0.873	0.234	0.95	0.99	0.36
	Left Tilted	0.015	0.575	0.877	0.158	0.59	0.89	0.17
WCDMA V ANT 13	Right Cheek	0.754	0.364	0.371	0.098	1.12	1.13	0.85
	Right Tilted	0.571	0.431	0.399	0.126	1.00	0.97	0.70
	Left Cheek	0.512	0.832	0.873	0.234	1.34	1.39	0.75
	Left Tilted	0.491	0.575	0.877	0.158	1.07	1.37	0.65
WCDMA V ANT 31	Right Cheek	0.117	0.364	0.371	0.098	0.48	0.49	0.22
	Right Tilted	0.066	0.431	0.399	0.126	0.50	0.47	0.19
	Left Cheek	0.178	0.832	0.873	0.234	1.01	1.05	0.41
	Left Tilted	0.079	0.575	0.877	0.158	0.65	0.96	0.24
LTE Band 13 ANT 13	Right Cheek	0.472	0.364	0.371	0.098	0.84	0.84	0.57
	Right Tilted	0.428	0.431	0.399	0.126	0.86	0.83	0.55
	Left Cheek	0.439	0.832	0.873	0.234	1.27	1.31	0.67
	Left Tilted	0.441	0.575	0.877	0.158	1.02	1.32	0.60
LTE Band 13 ANT 31	Right Cheek	0.078	0.364	0.371	0.098	0.44	0.45	0.18
	Right Tilted	0.005	0.431	0.399	0.126	0.44	0.40	0.13
	Left Cheek	0.124	0.832	0.873	0.234	0.96	1.00	0.36
	Left Tilted	0.012	0.575	0.877	0.158	0.59	0.89	0.17
LTE Band 26 ANT 13	Right Cheek	0.456	0.364	0.371	0.098	0.82	0.83	0.55
	Right Tilted	0.426	0.431	0.399	0.126	0.86	0.83	0.55
	Left Cheek	0.486	0.832	0.873	0.234	1.32	1.36	0.72
	Left Tilted	0.461	0.575	0.877	0.158	1.04	1.34	0.62
LTE Band 26 ANT 31	Right Cheek	0.079	0.364	0.371	0.098	0.44	0.45	0.18
	Right Tilted	0.013	0.431	0.399	0.126	0.44	0.41	0.14
	Left Cheek	0.098	0.832	0.873	0.234	0.93	0.97	0.33
	Left Tilted	0.026	0.575	0.877	0.158	0.60	0.90	0.18
LTE Band 66 ANT 31	Right Cheek	0.054	0.364	0.371	0.098	0.42	0.43	0.15
	Right Tilted	0.095	0.431	0.399	0.126	0.53	0.49	0.22
	Left Cheek	0.123	0.832	0.873	0.234	0.96	1.00	0.36
	Left Tilted	0.013	0.575	0.877	0.158	0.59	0.89	0.17
LTE Band 2 ANT 31	Right Cheek	0.071	0.364	0.371	0.098	0.44	0.44	0.17
	Right Tilted	0.060	0.431	0.399	0.126	0.49	0.46	0.19
	Left Cheek	0.137	0.832	0.873	0.234	0.97	1.01	0.37

	Left Tilted	0.064	0.575	0.877	0.158	0.64	0.94	0.22
LTE Band 7 ANT 31	Right Cheek	0.513	0.364	0.371	0.098	0.88	0.88	0.61
	Right Tilted	0.148	0.431	0.399	0.126	0.58	0.55	0.27
	Left Cheek	0.174	0.832	0.873	0.234	1.01	1.05	0.41
	Left Tilted	0.108	0.575	0.877	0.158	0.68	0.99	0.27
LTE Band 41 ANT 31	Right Cheek	0.306	0.364	0.371	0.098	0.67	0.68	0.40
	Right Tilted	0.102	0.431	0.399	0.126	0.53	0.50	0.23
	Left Cheek	0.123	0.832	0.873	0.234	0.96	1.00	0.36
	Left Tilted	0.088	0.575	0.877	0.158	0.66	0.97	0.25

16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9
		WWAN	WLAN2.4GHz	WLAN5GHz	Bluetooth	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
GSM850 ANT 13	Front	0.224	0.312	0.172	0.017	0.54	0.40	0.24
	Back	0.424	0.515	0.366	0.104	0.94	0.79	0.53
	Left side	0.132	0.050	0.025	0.008	0.18	0.16	0.14
	Right side	0.171	0.274	0.799	0.053	0.45	0.97	0.22
	Top side	0.273	0.405	0.335	0.103	0.68	0.61	0.38
	Bottom side					0.00	0.00	0.00
GSM850 ANT 31	Front	0.077	0.312	0.172	0.017	0.39	0.25	0.09
	Back	0.114	0.515	0.366	0.104	0.63	0.48	0.22
	Left side	0.068	0.050	0.025	0.008	0.12	0.09	0.08
	Right side	0.060	0.274	0.799	0.053	0.33	0.86	0.11
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.026				0.03	0.03	0.03
GSM1900 ANT 13	Front	0.261	0.312	0.172	0.017	0.57	0.43	0.28
	Back	0.283	0.515	0.366	0.104	0.80	0.65	0.39
	Left side	0.069	0.050	0.025	0.008	0.12	0.09	0.08
	Right side	0.017	0.274	0.799	0.053	0.29	0.82	0.07
	Top side	0.577	0.405	0.335	0.103	0.98	0.91	0.68
	Bottom side					0.00	0.00	0.00
GSM1900 ANT 31	Front	0.242	0.312	0.172	0.017	0.55	0.41	0.26
	Back	0.287	0.515	0.366	0.104	0.80	0.65	0.39
	Left side	0.027	0.050	0.025	0.008	0.08	0.05	0.04
	Right side	0.065	0.274	0.799	0.053	0.34	0.86	0.12
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.239				0.24	0.24	0.24
WCDMA II ANT 13	Front	0.252	0.312	0.172	0.017	0.56	0.42	0.27
	Back	0.331	0.515	0.366	0.104	0.85	0.70	0.44
	Left side	0.062	0.050	0.025	0.008	0.11	0.09	0.07
	Right side	0.031	0.274	0.799	0.053	0.31	0.83	0.08
	Top side	0.651	0.405	0.335	0.103	1.06	0.99	0.75
	Bottom side					0.00	0.00	0.00
WCDMA II ANT 31	Front	0.182	0.312	0.172	0.017	0.49	0.35	0.20
	Back	0.275	0.515	0.366	0.104	0.79	0.64	0.38
	Left side	0.052	0.050	0.025	0.008	0.10	0.08	0.06
	Right side	0.076	0.274	0.799	0.053	0.35	0.88	0.13
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.467				0.47	0.47	0.47
WCDMA IV ANT 13	Front	0.188	0.312	0.172	0.017	0.50	0.36	0.21
	Back	0.201	0.515	0.366	0.104	0.72	0.57	0.31
	Left side	0.016	0.050	0.025	0.008	0.07	0.04	0.02
	Right side	0.027	0.274	0.799	0.053	0.30	0.83	0.08
	Top side	0.330	0.405	0.335	0.103	0.74	0.67	0.43
	Bottom side					0.00	0.00	0.00
WCDMA IV ANT 31	Front	0.198	0.312	0.172	0.017	0.51	0.37	0.22
	Back	0.349	0.515	0.366	0.104	0.86	0.72	0.45
	Left side	0.039	0.050	0.025	0.008	0.09	0.06	0.05
	Right side	0.064	0.274	0.799	0.053	0.34	0.86	0.12
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.508				0.51	0.51	0.51
WCDMA V ANT 13	Front	0.100	0.312	0.172	0.017	0.41	0.27	0.12
	Back	0.199	0.515	0.366	0.104	0.71	0.57	0.30
	Left side	0.014	0.050	0.025	0.008	0.06	0.04	0.02

	Right side	0.078	0.274	0.799	0.053	0.35	0.88	0.13
	Top side	0.011	0.405	0.335	0.103	0.42	0.35	0.11
	Bottom side					0.00	0.00	0.00
WCDMA V ANT 31	Front	0.124	0.312	0.172	0.017	0.44	0.30	0.14
	Back	0.211	0.515	0.366	0.104	0.73	0.58	0.32
	Left side	0.158	0.050	0.025	0.008	0.21	0.18	0.17
	Right side	0.025	0.274	0.799	0.053	0.30	0.82	0.08
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.132				0.13	0.13	0.13
LTE Band 13 ANT 13	Front	0.123	0.312	0.172	0.017	0.44	0.30	0.14
	Back	0.290	0.515	0.366	0.104	0.81	0.66	0.39
	Left side	0.146	0.050	0.025	0.008	0.20	0.17	0.15
	Right side	0.167	0.274	0.799	0.053	0.44	0.97	0.22
	Top side	0.142	0.405	0.335	0.103	0.55	0.48	0.25
	Bottom side					0.00	0.00	0.00
LTE Band 13 ANT 31	Front	0.113	0.312	0.172	0.017	0.43	0.29	0.13
	Back	0.140	0.515	0.366	0.104	0.66	0.51	0.24
	Left side	0.143	0.050	0.025	0.008	0.19	0.17	0.15
	Right side	0.099	0.274	0.799	0.053	0.37	0.90	0.15
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.067				0.07	0.07	0.07
LTE Band 26 ANT 13	Front	0.185	0.312	0.172	0.017	0.50	0.36	0.20
	Back	0.386	0.515	0.366	0.104	0.90	0.75	0.49
	Left side	0.107	0.050	0.025	0.008	0.16	0.13	0.12
	Right side	0.139	0.274	0.799	0.053	0.41	0.94	0.19
	Top side	0.199	0.405	0.335	0.103	0.60	0.53	0.30
	Bottom side					0.00	0.00	0.00
LTE Band 26 ANT 31	Front	0.073	0.312	0.172	0.017	0.39	0.25	0.09
	Back	0.106	0.515	0.366	0.104	0.62	0.47	0.21
	Left side	0.069	0.050	0.025	0.008	0.12	0.09	0.08
	Right side	0.063	0.274	0.799	0.053	0.34	0.86	0.12
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.015				0.02	0.02	0.02
LTE Band 4 ANT 13	Front	0.276	0.312	0.172	0.017	0.59	0.45	0.29
	Back	0.296	0.515	0.366	0.104	0.81	0.66	0.40
	Left side	0.024	0.050	0.025	0.008	0.07	0.05	0.03
	Right side	0.040	0.274	0.799	0.053	0.31	0.84	0.09
	Top side	0.441	0.405	0.335	0.103	0.85	0.78	0.54
	Bottom side					0.00	0.00	0.00
LTE Band 66 ANT 13	Front	0.254	0.312	0.172	0.017	0.57	0.43	0.27
	Back	0.261	0.515	0.366	0.104	0.78	0.63	0.37
	Left side	0.051	0.050	0.025	0.008	0.10	0.08	0.06
	Right side	0.014	0.274	0.799	0.053	0.29	0.81	0.07
	Top side	0.474	0.405	0.335	0.103	0.88	0.81	0.58
	Bottom side					0.00	0.00	0.00
LTE Band 66 ANT 31	Front	0.206	0.312	0.172	0.017	0.52	0.38	0.22
	Back	0.315	0.515	0.366	0.104	0.83	0.68	0.42
	Left side	0.042	0.050	0.025	0.008	0.09	0.07	0.05
	Right side	0.079	0.274	0.799	0.053	0.35	0.88	0.13
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.498				0.50	0.50	0.50
LTE Band 2 ANT 13	Front	0.240	0.312	0.172	0.017	0.55	0.41	0.26
	Back	0.309	0.515	0.366	0.104	0.82	0.68	0.41
	Left side	0.056	0.050	0.025	0.008	0.11	0.08	0.06
	Right side	0.022	0.274	0.799	0.053	0.30	0.82	0.08
	Top side	0.537	0.405	0.335	0.103	0.94	0.87	0.64

	Bottom side					0.00	0.00	0.00
LTE Band 2 ANT 31	Front	0.208	0.312	0.172	0.017	0.52	0.38	0.23
	Back	0.331	0.515	0.366	0.104	0.85	0.70	0.44
	Left side	0.055	0.050	0.025	0.008	0.11	0.08	0.06
	Right side	0.095	0.274	0.799	0.053	0.37	0.89	0.15
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.576				0.58	0.58	0.58
LTE Band 7 ANT 13	Front	0.151	0.312	0.172	0.017	0.46	0.32	0.17
	Back	0.613	0.515	0.366	0.104	1.13	0.98	0.72
	Left side	0.186	0.050	0.025	0.008	0.24	0.21	0.19
	Right side	0.027	0.274	0.799	0.053	0.30	0.83	0.08
	Top side	0.373	0.405	0.335	0.103	0.78	0.71	0.48
	Bottom side					0.00	0.00	0.00
LTE Band 7 ANT 31	Front	0.095	0.312	0.172	0.017	0.41	0.27	0.11
	Back	0.267	0.515	0.366	0.104	0.78	0.63	0.37
	Left side	0.036	0.050	0.025	0.008	0.09	0.06	0.04
	Right side	0.076	0.274	0.799	0.053	0.35	0.88	0.13
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.065				0.07	0.07	0.07
LTE Band 38 ANT 13	Front	0.171	0.312	0.172	0.017	0.48	0.34	0.19
	Back	0.621	0.515	0.366	0.104	1.14	0.99	0.73
	Left side	0.232	0.050	0.025	0.008	0.28	0.26	0.24
	Right side	0.035	0.274	0.799	0.053	0.31	0.83	0.09
	Top side	0.265	0.405	0.335	0.103	0.67	0.60	0.37
	Bottom side					0.00	0.00	0.00
LTE Band 41 ANT 13	Front	0.209	0.312	0.172	0.017	0.52	0.38	0.23
	Back	0.773	0.515	0.366	0.104	1.29	1.14	0.88
	Left side	0.284	0.050	0.025	0.008	0.33	0.31	0.29
	Right side	0.043	0.274	0.799	0.053	0.32	0.84	0.10
	Top side	0.324	0.405	0.335	0.103	0.73	0.66	0.43
	Bottom side					0.00	0.00	0.00
LTE Band 41 ANT 31	Front	0.312	0.312	0.172	0.017	0.62	0.48	0.33
	Back	0.711	0.515	0.366	0.104	1.23	1.08	0.82
	Left side	0.027	0.050	0.025	0.008	0.08	0.05	0.04
	Right side	0.218	0.274	0.799	0.053	0.49	1.02	0.27
	Top side		0.405	0.335	0.103	0.41	0.34	0.10
	Bottom side	0.164				0.16	0.16	0.16

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9
		WWAN	WLAN2.4GHz	WLAN5GHz	Bluetooth	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
GSM850 ANT 13	Front	0.172	0.183	0.139	0.044	0.36	0.31	0.22
	Back	0.362	0.209	0.308	0.046	0.57	0.67	0.41
GSM850 ANT 31	Front	0.063	0.183	0.139	0.044	0.25	0.20	0.11
	Back	0.064	0.209	0.308	0.046	0.27	0.37	0.11
GSM1900 ANT 13	Front	0.397	0.183	0.139	0.044	0.58	0.54	0.44
	Back	0.762	0.209	0.308	0.046	0.97	1.07	0.81
GSM1900 ANT 31	Front	0.114	0.183	0.139	0.044	0.30	0.25	0.16
	Back	0.189	0.209	0.308	0.046	0.40	0.50	0.24
WCDMA II ANT 13	Front	0.444	0.183	0.139	0.044	0.63	0.58	0.49
	Back	0.781	0.209	0.308	0.046	0.99	1.09	0.83
WCDMA II ANT 31	Front	0.152	0.183	0.139	0.044	0.34	0.29	0.20
	Back	0.244	0.209	0.308	0.046	0.45	0.55	0.29
WCDMA IV ANT 13	Front	0.264	0.183	0.139	0.044	0.45	0.40	0.31
	Back	0.525	0.209	0.308	0.046	0.73	0.83	0.57
WCDMA IV ANT 31	Front	0.154	0.183	0.139	0.044	0.34	0.29	0.20
	Back	0.228	0.209	0.308	0.046	0.44	0.54	0.27
WCDMA V ANT 13	Front	0.169	0.183	0.139	0.044	0.35	0.31	0.21
	Back	0.342	0.209	0.308	0.046	0.55	0.65	0.39
WCDMA V ANT 31	Front	0.124	0.183	0.139	0.044	0.31	0.26	0.17
	Back	0.136	0.209	0.308	0.046	0.35	0.44	0.18
LTE Band 13 ANT 13	Front	0.129	0.183	0.139	0.044	0.31	0.27	0.17
	Back	0.303	0.209	0.308	0.046	0.51	0.61	0.35
LTE Band 13 ANT 31	Front	0.114	0.183	0.139	0.044	0.30	0.25	0.16
	Back	0.128	0.209	0.308	0.046	0.34	0.44	0.17
LTE Band 26 ANT 13	Front	0.129	0.183	0.139	0.044	0.31	0.27	0.17
	Back	0.217	0.209	0.308	0.046	0.43	0.53	0.26
LTE Band 26 ANT 31	Front	0.074	0.183	0.139	0.044	0.26	0.21	0.12
	Back	0.084	0.209	0.308	0.046	0.29	0.39	0.13
LTE Band 66 ANT 13	Front	0.407	0.183	0.139	0.044	0.59	0.55	0.45
	Back	0.583	0.209	0.308	0.046	0.79	0.89	0.63
LTE Band 66 ANT 31	Front	0.176	0.183	0.139	0.044	0.36	0.32	0.22
	Back	0.246	0.209	0.308	0.046	0.46	0.55	0.29
LTE Band 2 ANT 13	Front	0.553	0.183	0.139	0.044	0.74	0.69	0.60
	Back	0.760	0.209	0.308	0.046	0.97	1.07	0.81
LTE Band 2 ANT 31	Front	0.175	0.183	0.139	0.044	0.36	0.31	0.22
	Back	0.312	0.209	0.308	0.046	0.52	0.62	0.36
LTE Band 7 ANT 13	Front	0.299	0.183	0.139	0.044	0.48	0.44	0.34
	Back	0.972	0.209	0.308	0.046	1.18	1.28	**1.02**
LTE Band 7 ANT 31	Front	0.063	0.183	0.139	0.044	0.25	0.20	0.11
	Back	0.123	0.209	0.308	0.046	0.33	0.43	0.17
LTE Band 41 ANT 13	Front	0.255	0.183	0.139	0.044	0.44	0.39	0.30
	Back	0.602	0.209	0.308	0.046	0.81	0.91	0.65
LTE Band 41 ANT 31	Front	0.161	0.183	0.139	0.044	0.34	0.30	0.21
	Back	0.267	0.209	0.308	0.046	0.48	0.58	0.31

16.4 Product specific 10g SAR Exposure Conditions

WWAN Band	Exposure Position	1	6	1+6
		WWAN	WLAN5GHz	Summed
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
WCDMA II ANT 13	Front		0.464	0.46
	Back	1.091	0.674	1.77
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	1.698	0.565	2.26
WCDMA IV ANT 13	Front		0.464	0.46
	Back		0.674	0.67
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	2.129	0.565	**2.69**
LTE Band 4 ANT 13	Front		0.464	0.46
	Back		0.674	0.67
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	1.353	0.565	1.92
LTE Band 66 ANT 13	Front		0.464	0.46
	Back		0.674	0.67
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	1.722	0.565	2.29
LTE Band 2 ANT 13	Front		0.464	0.46
	Back	1.051	0.674	1.73
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	1.631	0.565	2.20
LTE Band 7 ANT 13	Front		0.464	0.46
	Back	1.537	0.674	2.21
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side	0.928	0.565	1.49
LTE Band 38 ANT 13	Front		0.464	0.46
	Back	2.002	0.674	2.68
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side		0.565	0.57
LTE Band 41 ANT 13	Front		0.464	0.46
	Back	1.985	0.674	2.66
	Left side		0.036	0.04
	Right side		1.113	1.11
	Top side		0.565	0.57

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

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17. 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.

18. 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 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

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

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

[13] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

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