FCC SAR Test Report

APPLICANT	**:**	**Motorola Mobility LLC**
EQUIPMENT	**:**	**Mobile Cellular Phone**
BRAND NAME	**:**	**Motorola**
MODEL NAME	**:**	**XT2005-4, XT2005-5, XT2005DL**
FCC ID	**:**	**IHDT56YA2**
STANDARD	**:**	**FCC 47 CFR Part 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2013**

The product was received on Feb. 21, 2019 and testing was started from Apr. 25, 2019 and completed on May 02, 2019. We, Sporton International (Kunshan) Inc, would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

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

Mark Qu

Approved by: Mark Qu / Manager

NVLAP TESTING
NVLAP LAB CODE 600155-0

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone,
Jiangsu Province 215335, China

Table of Contents

1. Statement of Compliance 4
2. Administration Data 5
3. Guidance Applied 5
4. Equipment Under Test (EUT) Information 6
4.1 General Information 6
4.2 General LTE SAR Test and Reporting Considerations 8
5. Proximity Sensor Triggering Test 11
5.1 Proximity sensor triggering distances(Per KDB616217§6.2) 11
6. RF Exposure Limits 18
6.1 Uncontrolled Environment 18
6.2 Controlled Environment 18
7. Specific Absorption Rate (SAR) 19
7.1 Introduction 19
7.2 SAR Definition 19
8. System Description and Setup 20
8.1 E-Field Probe 21
8.2 Data Acquisition Electronics (DAE) 21
8.3 Phantom 22
8.4 Device Holder 23
9. Measurement Procedures 24
9.1 Spatial Peak SAR Evaluation 24
9.2 Power Reference Measurement 25
9.3 Area Scan 25
9.4 Zoom Scan 26
9.5 Volume Scan Procedures 26
9.6 Power Drift Monitoring 26
10. Test Equipment List 27
11. System Verification 28
11.1 Tissue Simulating Liquids 28
11.2 Tissue Verification 29
11.3 System Performance Check Results 30
12. RF Exposure Positions 31
12.1 Ear and handset reference point 31
12.2 Definition of the cheek position 32
12.3 Definition of the tilt position 33
12.4 Body Worn Accessory 34
12.5 Wireless Router 34
13. Conducted RF Output Power (Unit: dBm) 35
14. Antenna Location 130
15. SAR Test Results 131
15.1 Head SAR 134
15.2 Hotspot SAR 138
15.3 Body Worn Accessory SAR 146
15.4 TDD LTE Band 41(HPUE) Linearity Data Analysis 152
15.5 Repeated SAR Measurement 153
16. Simultaneous Transmission Analysis 154
16.1 Head Exposure Conditions 155
16.2 Hotspot Exposure Conditions 157
16.3 Body-Worn Accessory Exposure Conditions 159
16.4 SPLSR Evaluation and Analysis 160
17. Uncertainty Assessment 210
18. References 211
Appendix A. Plots of System Performance Check
Appendix B. Plots of High SAR Measurement
Appendix C. DASY Calibration Certificate
Appendix D. Test Setup Photos

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA922110-01	Rev. 01	Initial issue of report	May 13, 2019

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2005-4, XT2005-5, XT2005DL**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.65	1.10	1.10	1.59
		GSM1900	0.35	1.33	1.25	
	WCDMA	Band V	0.62	1.08	0.95	
		Band IV	0.38	1.36	1.36	
		Band II	0.71	1.36	1.36	
	CDMA2000	BC0	0.62	1.07	1.30	
		BC10	0.66	1.17	1.35	
		BC1	0.79	1.37	**1.43**	
	LTE	Band 71	0.36	0.70	0.70	
		Band 12	0.57	0.94	0.92	
		Band 13	0.73	1.35	0.95	
		Band 26/Band 5	0.64	1.04	0.97	
		Band 66/Band 4	0.36	1.35	1.35	
		Band 25/Band 2	0.74	1.26	1.26	
		Band 41	0.32	**1.40**	1.40	
DTS	WLAN	2.4GHz WLAN	**1.14**	1.09	1.09	1.58
NII		5GHz WLAN	0.23	1.20	1.20	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.27	0.21	0.21	1.59
Date of Testing:			2019/4/25~2019/5/2			
Remark: This device supports LTE B2 / B4 / B5 and B25 / B66 / B26. Since the supported frequency span for LTE B2 / B4 / B5 falls completely within the supports frequency span for LTE B25 / B66 / 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 B25 / B66 / B26.						

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) 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

Testing Laboratory	
Test Site	Sporton International (Kunshan) Inc.
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958

Applicant	
Company Name	Motorola Mobility LLC
Address	222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

Manufacturer	
Company Name	Motorola Mobility LLC
Address	222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

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 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2005-4, XT2005-5, XT2005DL
FCC ID	IHDT56YA2
IMEI Code	352177100020312
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~1779.3 MHz LTE Band 71: 665.5 MHz ~695.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM CDMA2000 : 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 Bluetooth BR/EDR/LE
HW Version	88941-1-12
SW Version	fastboot_surfna_oem_userdebug_9_PPB29.12_2fc78_intcfg-test-keys_oem
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, CDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
3. This device 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).
4. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 12.
5. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at WLAN2.4GHz.

6. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. When front or back body worn condition is detected, WCDMA band II/IV, CDMA2000 BC1, LTE band 2/4/25/41/66 and WLAN2.4GHz/WLAN5GHz reduced power will be active. (P-sensor can't work at detecting presence of the user's body at the four edges of the device.)
7. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of GSM1900, WCDMA band II/IV, CDMA2000 BC1, LTE band 2/4/25/41/66 and WLAN2.4GHz/WLAN5GHz.
8. When hotspot mode is enabled, front and back side of GSM1900 using full power SAR can represent reduced power SAR conservatively, no need to perform reduced power SAR for front and back side of GSM1900.
9. This device hotspot reduced power and P-sensor reduced power level are the same for WLAN2.4GHz/WLAN5GHz. And for other bands are different.
10. For P-sensor reduced power level is higher than hotspot reduced power, so for front/back P-sensor SAR can represent conservatively for front/back hotspot SAR.
11. This device supports HPUE for LTE band 41 with class 2 level, so HPUE SAR has been performed.
12. There are two type batteries, the same capacity, only difference manufacturer, only chose battery 1 to perform 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>IHDT56YA2</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850.7 MHz ~ 1909.3 MHz
LTE Band 4: 1710.7 MHz ~ 1754.3 MHz
LTE Band 5: 824.7 MHz ~ 848.3 MHz
LTE Band 12: 699.7 MHz ~ 715.3 MHz
LTE Band 13: 779.5 MHz ~ 784.5 MHz
LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
LTE Band 26: 814.7 MHz ~ 848.3 MHz
LTE Band 41: 2498.5 MHz ~ 2687.5 MHz
LTE Band 66: 1710.7 MHz ~1779.3 MHz
LTE Band 71: 665.5 MHz ~ 695.5 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 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66: 1.4MHz, 3MHz,5MHz, 10MHz, 15MHz, 20MHz
LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK, 16QAM and 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R10, Cat4</td></tr>
<tr><td>CA Support</td><td>Yes</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes
1. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. When front or back body worn condition is detected, LTE band 2/4/25/41/66 reduced power will be active. (P-sensor can't work at detecting presence of the user's body at the four edges of the device.)
2. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of LTE band 2/4/25/41/66.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for LTE B41 with two component carriers in the uplink and downlink with two component carriers for inter band and intra band. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	23205		779.5		23230		782					
M	23230		782									
H	23255		784.5									
LTE Band 25												
	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	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
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 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				

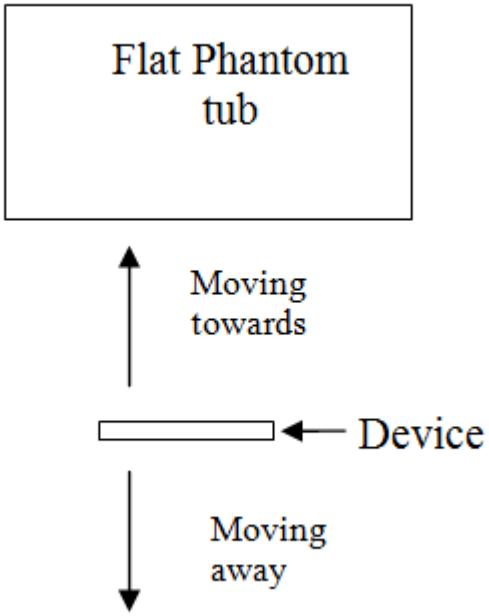
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047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

LTE Band 71								
	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	133147	665.5	133172	668	133197	670.5	133222	673
M	133247	675.5	133272	678	133297	680.5	133322	683
H	133447	695.5	133422	693	133397	690.5	133372	688

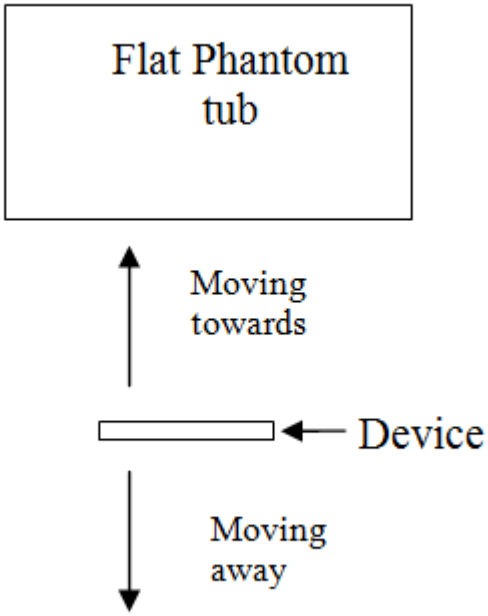
5. Proximity Sensor Triggering Test

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 (5850MHz) and lowest (1750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensor placed coincident with antenna elements at the top/bottom of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back side surface 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. When the sensor is active, WCDMA band II/IV, CDMA2000 BC1, LTE band 2/4/25/41/66, and WLAN2.4GHz/WLAN5GHz reduced power will be active.
4. The sensors used to detect the proximity of the user's body at the front or back side surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s).



Sensor detection test set-up, front face

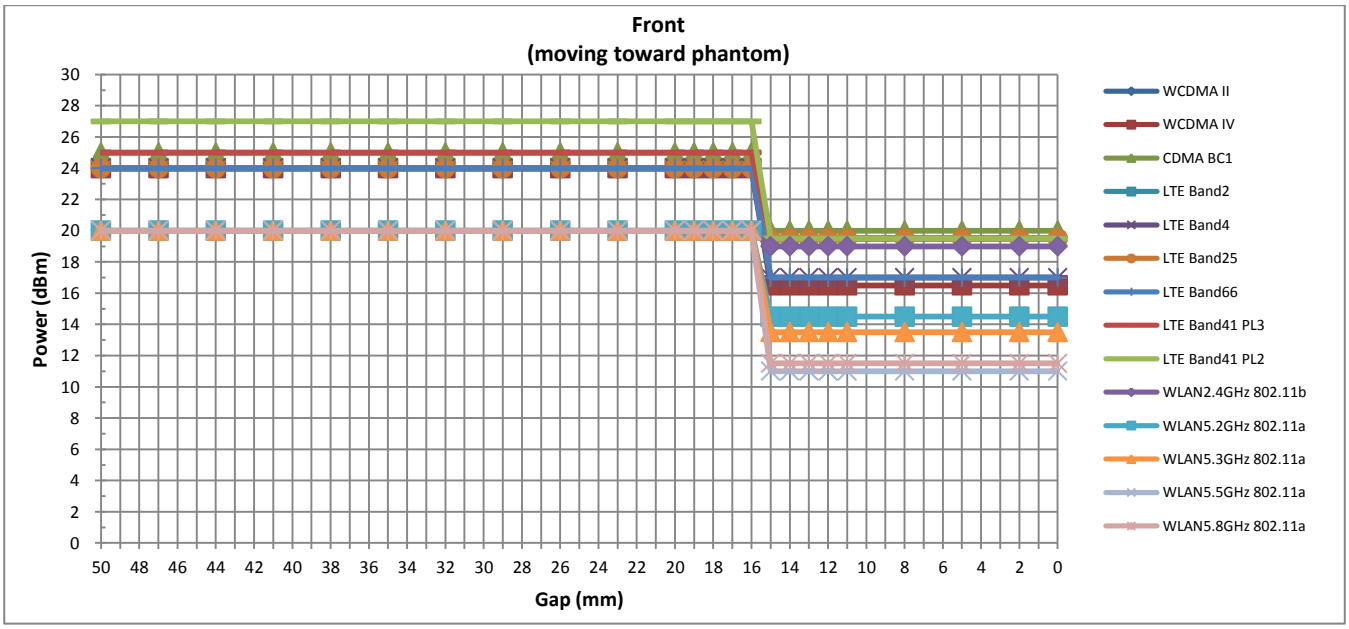


Sensor detection test set-up, back face

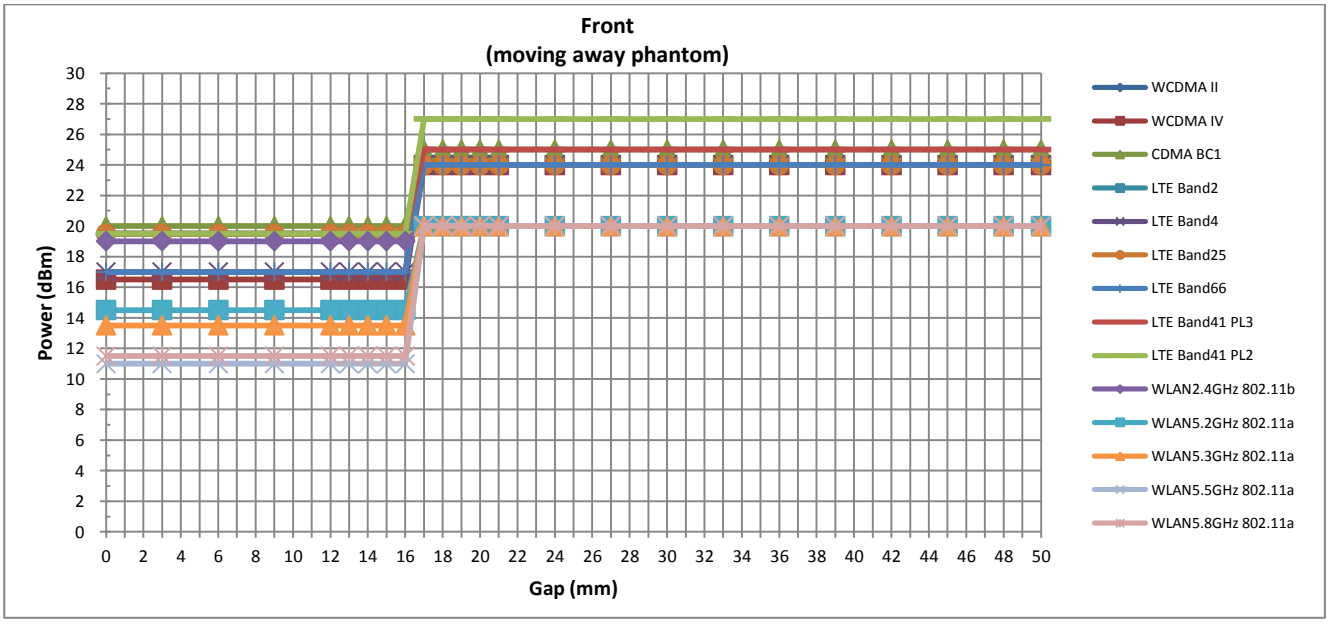
Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	15	16	19	22

TX. Band	Proximity Sensor Triggering Power (dBm)		
	Full	Reduced	Power Reduction (dB)
	Max. Tune Up Limit (dBm)	Max. Tune Up Limit (dBm)	
WCDMA Band II	24.00	19.50	4.50
WCDMA Band IV	24.00	16.50	7.50
CDMA2000 BC1	25.00	20.00	5.00
LTE Band 2	24.00	19.50	4.50
LTE Band 4	24.00	17.00	7.00
LTE Band 25	24.00	19.50	4.50
LTE Band 66	24.00	17.00	7.00
LTE Band 41 Power Class 3	25.00	19.50	5.50
LTE Band 41 Power Class 2	27.00	19.50	7.50
WLAN 2.4GHz	20.00	19.00	1.00
WLAN 5.2GHz	20.00	14.50	5.50
WLAN 5.3GHz	20.00	13.50	6.50
WLAN 5.5GHz	20.00	11.00	9.00
WLAN 5.8GHz	20.00	11.50	8.50

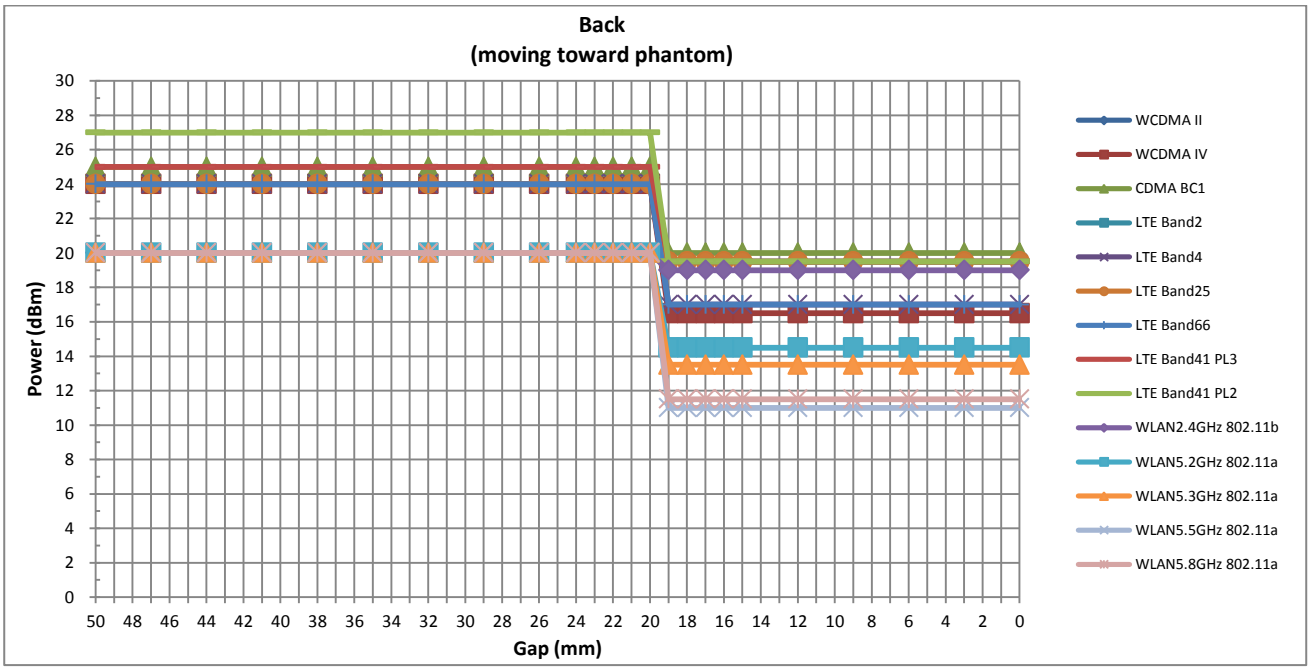
Proximity Sensor Triggering Distance (mm) and Triggering Power (dBm)																								
Front																								
Distance	50	47	44	41	38	35	32	29	26	23	20	19	18	17	16	15	14	13	12	11	8	5	2	0
WCDMA Band II	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
WCDMA Band IV	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
CDMA2000 BC1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
LTE Band 2	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band 4	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
LTE Band 25	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band 66	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
LTE Band 41 Power Class 3	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band 41 Power Class 2	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
WLAN 2.4GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
WLAN 5.2GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
WLAN 5.3GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
WLAN 5.5GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
WLAN 5.8GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5



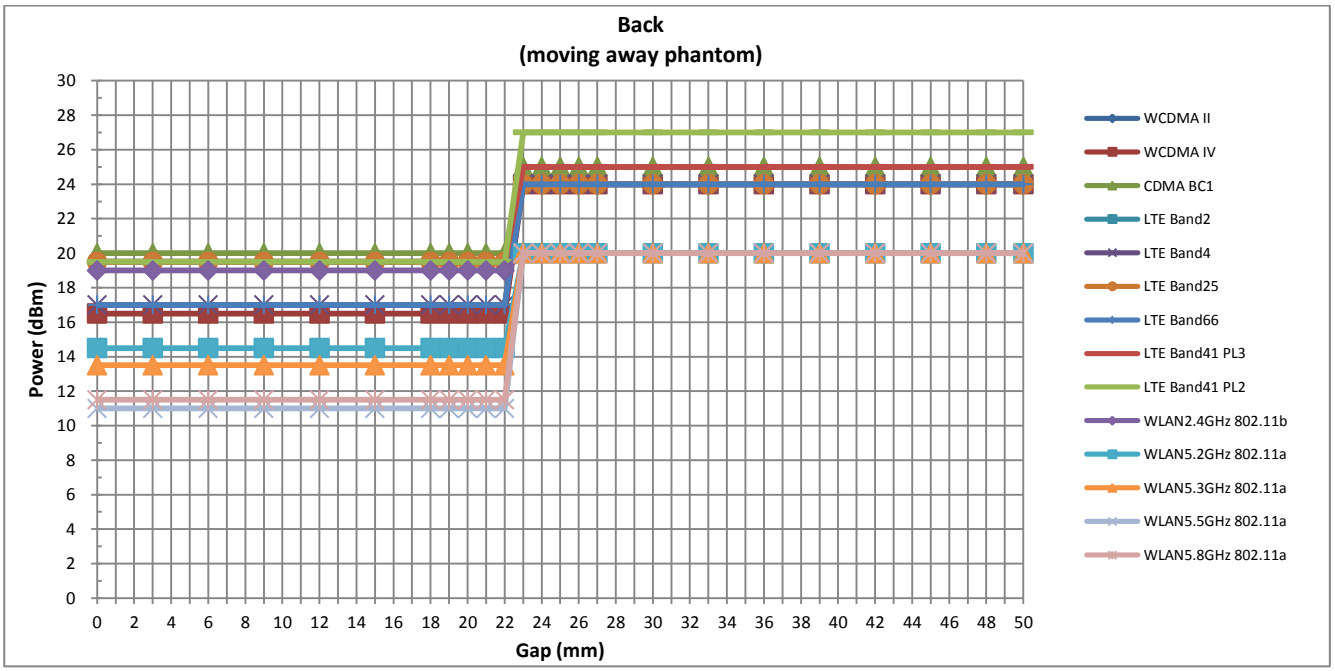
Proximity Sensor Triggering Distance (mm) and Triggering Power (dBm)																								
Front																								
Distance	0	3	6	9	12	13	14	15	16	17	18	19	20	21	24	27	30	33	36	39	42	45	48	50
WCDMA Band II	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
WCDMA Band IV	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
CDMA2000 BC1	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
LTE Band2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band4	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band25	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band66	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band 41 Power Class 3	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
LTE Band 41 Power Class 2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
WLAN 2.4GHz	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.2GHz	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.3GHz	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.5GHz	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.8GHz	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0



Proximity Sensor Triggering Distance (mm) and Triggering Power (dBm)																								
Back																								
Distance	50	47	44	41	38	35	32	29	26	24	23	22	21	20	19	18	17	16	15	12	9	6	3	0
WCDMA Band II	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
WCDMA Band IV	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
CDMA2000 BC1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
LTE Band2	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band4	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
LTE Band25	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band66	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
LTE Band 41 Power Class 3	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
LTE Band 41 Power Class 2	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
WLAN 2.4GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
WLAN 5.2GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
WLAN 5.3GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
WLAN 5.5GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
WLAN 5.8GHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5



Proximity Sensor Triggering Distance (mm) and Triggering Power (dBm)																								
Back																								
Distance	0	3	6	9	12	15	18	19	20	21	22	23	24	25	26	27	30	33	36	39	42	45	48	50
WCDMA Band II	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
WCDMA Band IV	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
CDMA2000 BC1	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
LTE Band2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band4	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band25	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band66	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band 41 Power Class 3	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
LTE Band 41 Power Class 2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
WLAN 2.4GHz	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.2GHz	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.3GHz	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.5GHz	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
WLAN 5.8GHz	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0



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:

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

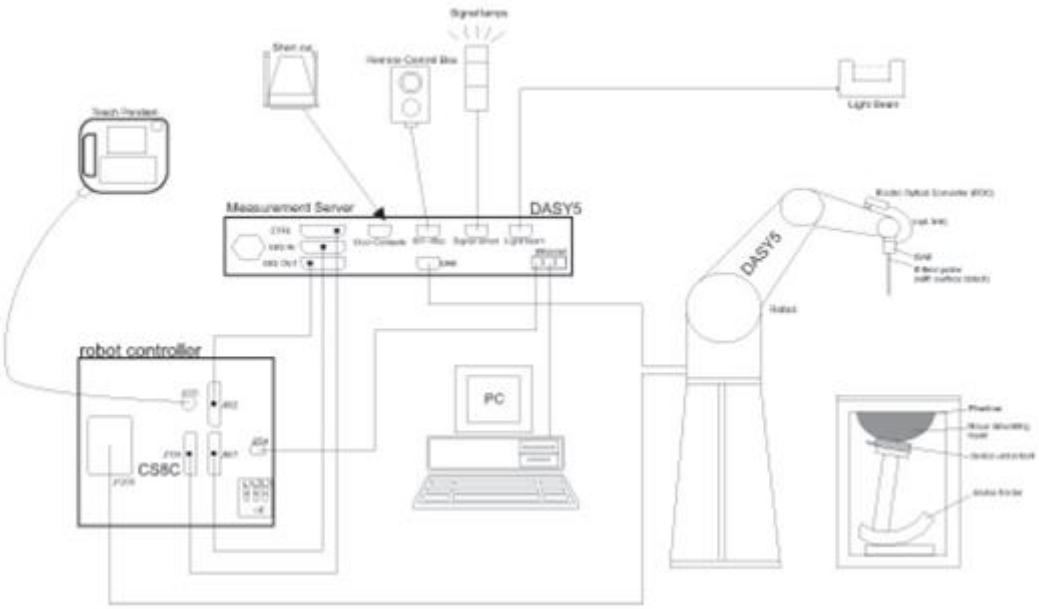
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

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.

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm

<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.

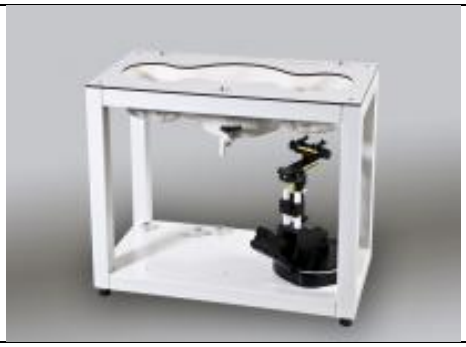
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

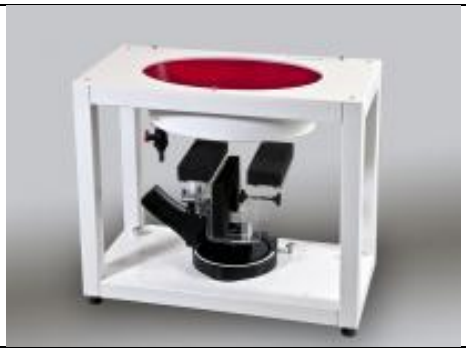
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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	1087	2019/3/27	2020/3/26
SPEAG	835MHz System Validation Kit	D835V2	4d151	2019/3/27	2020/3/26
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2019/3/27	2020/3/26
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2019/3/26	2020/3/25
SPEAG	2450MHz System Validation Kit	D2450V2	908	2019/3/25	2020/3/24
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2018/12/7	2019/12/6
SPEAG	5000MHz System Validation Kit	D5GHzV2	1006	2018/9/27	2019/9/26
SPEAG	Data Acquisition Electronics	DAE4	1210	2019/1/25	2020/1/24
SPEAG	Data Acquisition Electronics	DAE4	1279	2018/10/22	2019/10/21
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	2018/5/31	2019/5/30
SPEAG	Dosimetric E-Field Probe	ES3DV3	3279	2019/3/4	2020/3/3
SPEAG	Dosimetric E-Field Probe	ES3DV3	3293	2018/10/25	2019/10/24
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1697	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1542	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201274349	2018/8/16	2019/8/15
Anritsu	Radio Communication Analyzer	MT8821C	6201432831	2019/4/17	2020/4/16
Agilent	Wireless Communication Test Set	E5515C	MY52102706	2019/4/16	2020/4/15
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	2019/4/16	2020/4/15
SPEAG	Dielectric Probe Kit	DAK-3.5	1138	2018/11/20	2019/11/19
Anritsu	Vector Signal Generator	MG3710A	6201682672	2019/1/14	2020/1/13
Rohde & Schwarz	Power Meter	NRVD	102081	2018/8/20	2019/8/19
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2018/8/20	2019/8/19
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2018/8/20	2019/8/19
R&S	CBT BLUETOOTH TESTER	CBT	101641	2019/1/14	2020/1/13
EXA	Spectrum Analyzer	FSV7	101631	2019/1/14	2020/1/13
Testo	Hygrometer	608-H1	1241332126	2018/8/21	2019/8/20
FLUKE	DIGITAC THERMOMETER	51II	97240029	2018/8/8	2019/8/7
ARRA	Power Divider	A3200-2	N/A	Note	
MCL	Attenuation1	BW-S10W5+	N/A	Note	
MCL	Attenuation2	BW-S10W5+	N/A	Note	
MCL	Attenuation3	BW-S10W5+	N/A	Note	
Agilent	Dual Directional Coupler	778D	20500	Note	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note	

Note: 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.

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/body SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

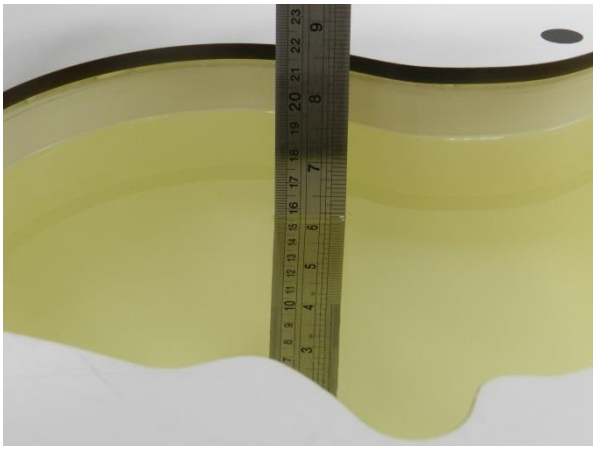


Fig 11.1 Photo of Liquid Height for Head SAR

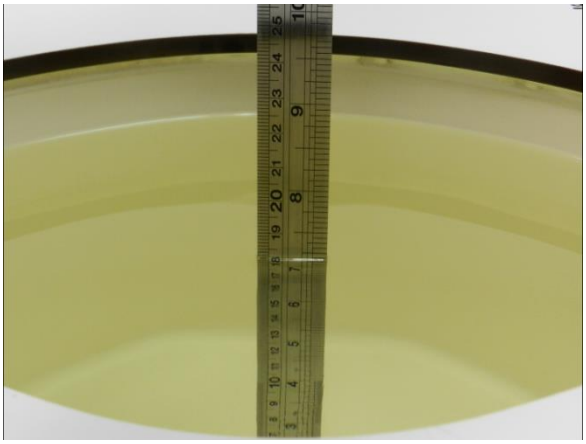


Fig 11.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

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	22.8	0.900	41.707	0.89	41.90	1.12	-0.46	±5	2019/4/26
835	Head	22.7	0.902	41.778	0.90	41.50	0.22	0.67	±5	2019/4/26
1750	Head	22.8	1.351	40.495	1.37	40.10	-1.39	0.99	±5	2019/4/27
1900	Head	22.9	1.427	38.730	1.40	40.00	1.93	-3.18	±5	2019/4/26
2450	Head	22.8	1.845	38.195	1.80	39.20	2.50	-2.56	±5	2019/4/25
2600	Head	22.6	2.037	38.900	1.96	39.00	3.93	-0.26	±5	2019/4/25
5250	Head	22.6	4.844	36.985	4.71	35.90	2.85	3.02	±5	2019/5/2
5600	Head	22.8	5.212	36.458	5.07	35.50	2.80	2.70	±5	2019/5/2
5750	Head	22.7	5.377	36.232	5.22	35.40	3.01	2.35	±5	2019/5/2

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.

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 (%)
2019/4/26	750	Head	250	1087	3279	1279	2.01	8.36	8.04	-3.83
2019/4/26	835	Head	250	4d151	3279	1279	2.43	9.30	9.72	4.52
2019/4/27	1750	Head	250	1090	3279	1279	9.32	36.40	37.28	2.42
2019/4/26	1900	Head	250	5d170	3279	1279	9.90	39.00	39.6	1.54
2019/4/25	2450	Head	250	908	3293	1210	12.50	52.80	50	-5.30
2019/4/25	2600	Head	250	1061	3293	1210	14.10	57.70	56.4	-2.25
2019/5/2	5250	Head	100	1006	3857	1279	7.89	80.70	78.9	-2.23
2019/5/2	5600	Head	100	1006	3857	1279	7.81	83.30	78.1	-6.24
2019/5/2	5750	Head	100	1006	3857	1279	7.65	80.40	76.5	-4.85

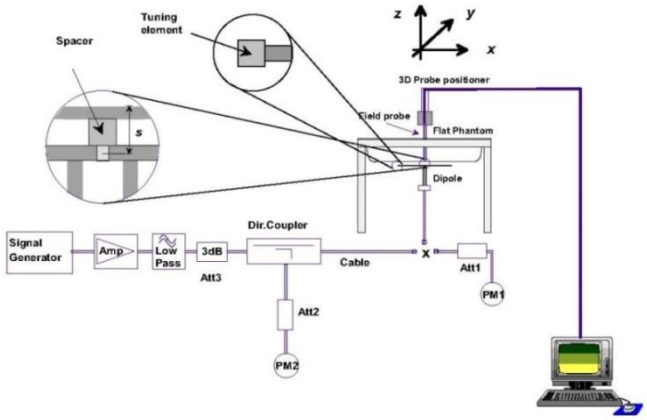


Fig 11.3.1 System Performance Check Setup

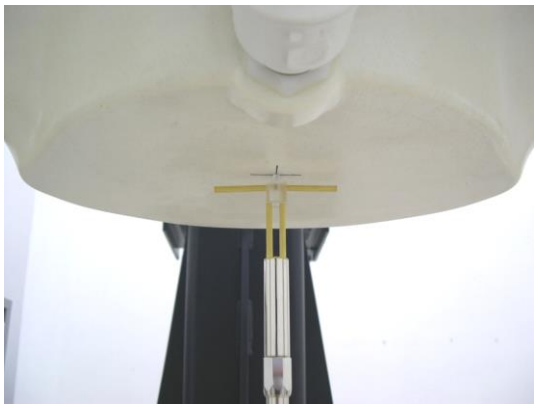


Fig 11.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

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

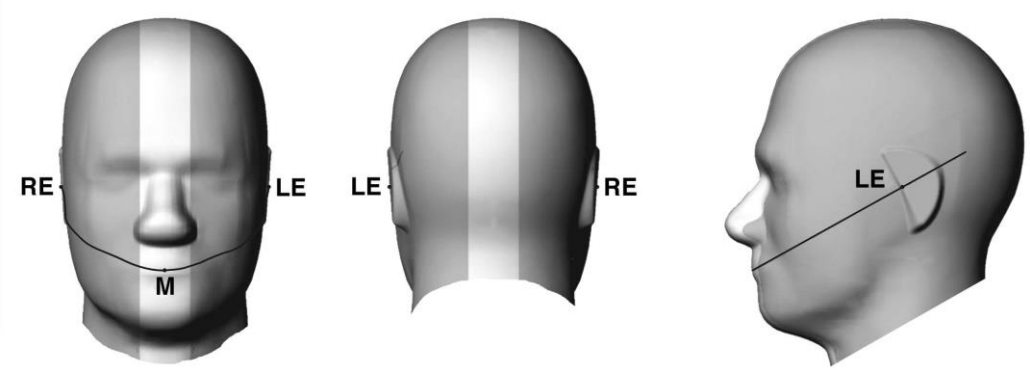


Fig 12.1.1 Front, back, and side views of SAM twin phantom

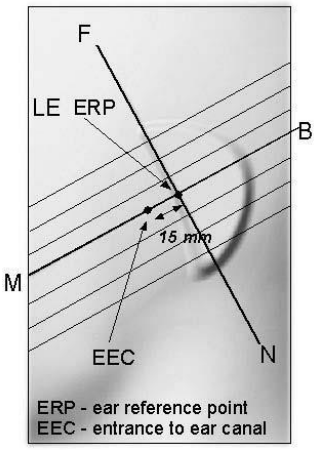


Fig 12.1.2 Close-up side view of phantom showing the ear region.

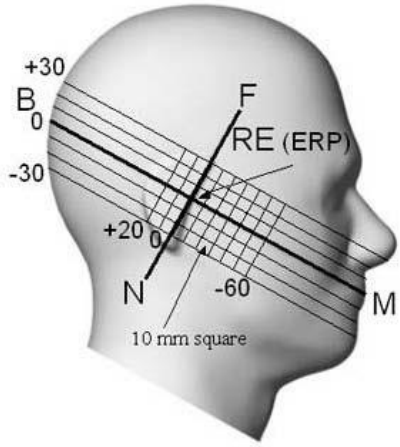


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

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

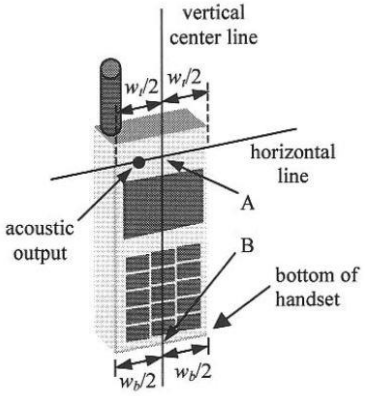


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

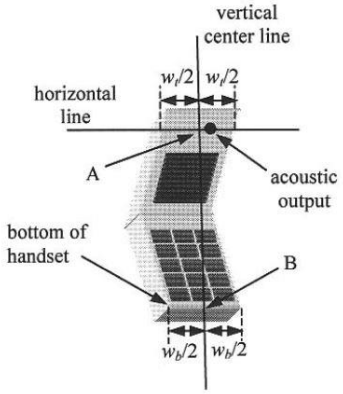


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

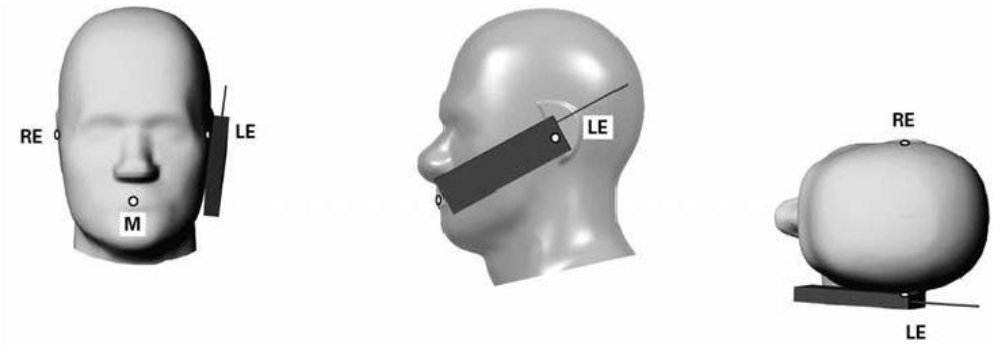


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

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

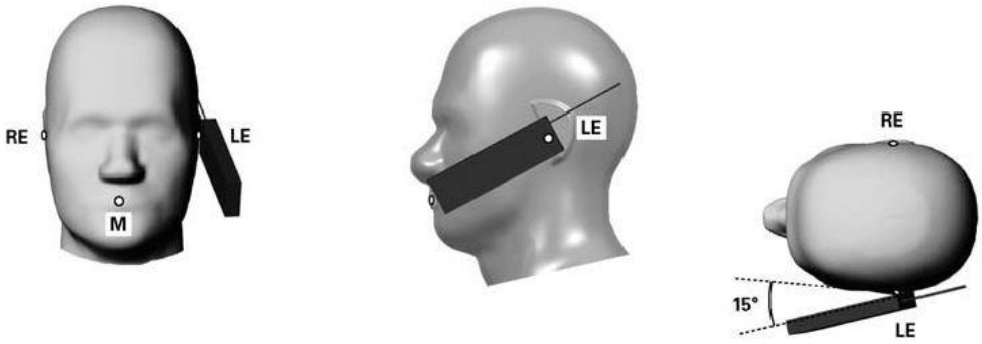


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

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

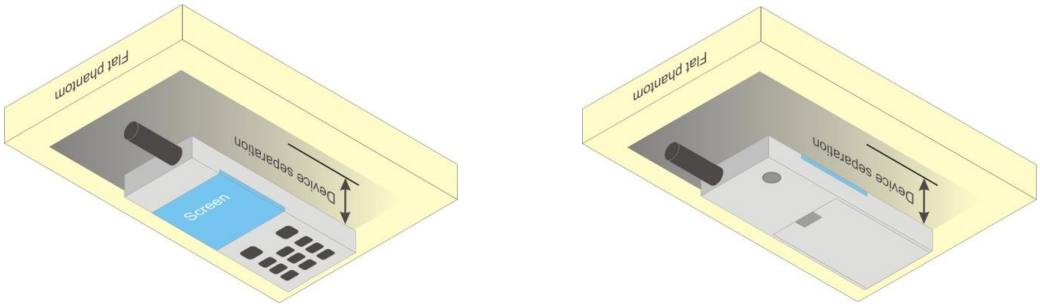


Fig 12.4 Body Worn Position

12.5 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)

<GSM Conducted Power>

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

<Full Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
Tx Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.71	32.70	32.73	33.50	23.71	23.70	23.73	24.50
GPRS 1 Tx slot	32.72	32.71	32.74	33.50	23.72	23.71	23.74	24.50
GPRS 2 Tx slots	29.74	29.85	29.95	30.50	23.74	23.85	23.95	24.50
GPRS 3 Tx slots	27.69	27.68	27.86	28.75	23.43	23.42	23.60	24.49
GPRS 4 Tx slots	26.31	26.28	26.43	27.50	23.31	23.28	23.43	**24.50**
EDGE 1 Tx slot	26.23	26.35	26.45	28.00	17.23	17.35	17.45	19.00
EDGE 2 Tx slots	26.04	26.17	26.27	28.00	20.04	20.17	20.27	22.00
EDGE 3 Tx slots	24.65	24.78	24.85	26.25	20.39	20.52	20.59	21.99
EDGE 4 Tx slots	23.29	23.40	23.46	25.00	20.29	20.40	20.46	22.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
Tx Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.56	29.70	29.72	30.50	20.56	20.70	20.72	21.50
GPRS 1 Tx slot	29.48	29.52	29.54	30.50	20.48	20.52	20.54	21.50
GPRS 2 Tx slots	26.78	26.79	27.00	27.50	20.78	20.79	21.00	21.50
GPRS 3 Tx slots	24.95	24.90	25.10	25.75	20.69	20.64	20.84	21.49
GPRS 4 Tx slots	23.53	23.51	23.68	24.50	20.53	20.51	20.68	**21.50**
EDGE 1 Tx slot	25.60	25.83	25.85	27.00	16.60	16.83	16.85	18.00
EDGE 2 Tx slots	25.50	25.70	25.71	27.00	19.50	19.70	19.71	21.00
EDGE 3 Tx slots	24.15	24.19	24.29	25.25	19.89	19.93	20.03	20.99
EDGE 4 Tx slots	22.76	22.74	22.91	24.00	19.76	19.74	19.91	21.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

<Reduced Power Mode for Hotspot On>

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
Tx Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.29	29.00	28.92	29.50	20.29	20.00	19.92	20.50
GPRS 1 Tx slot	29.28	28.99	28.90	29.50	20.28	19.99	19.90	20.50
GPRS 2 Tx slots	26.41	26.25	26.24	26.50	20.41	20.25	20.24	20.50
GPRS 3 Tx slots	24.59	24.25	24.27	24.75	20.33	19.99	20.01	20.49
GPRS 4 Tx slots	22.94	22.90	23.14	23.50	19.94	19.90	20.14	**20.50**
EDGE 1 Tx slot	25.68	25.38	25.20	26.00	16.68	16.38	16.20	17.00
EDGE 2 Tx slots	25.53	25.20	25.10	26.00	19.53	19.20	19.10	20.00
EDGE 3 Tx slots	23.61	23.28	23.17	24.25	19.35	19.02	18.91	19.99
EDGE 4 Tx slots	22.18	21.91	21.72	23.00	19.18	18.91	18.72	20.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

<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 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 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 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	Processes	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.		

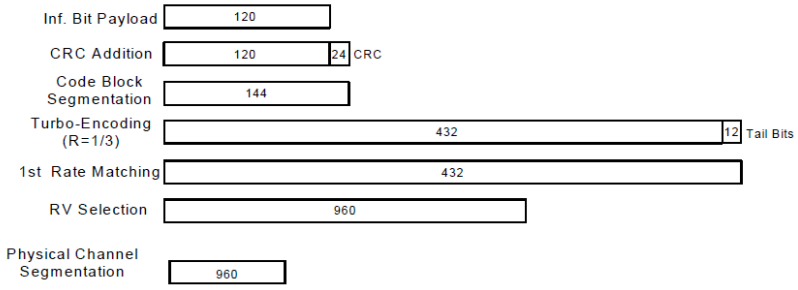


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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.

<Full Power Mode>

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)	WCDMA Band V			Tune-up Limit (dBm)
Tx Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	23.12	23.36	23.34	24.00	22.72	22.77	22.68	24.00	23.12	23.10	23.13	24.00
3GPP Rel 99	RMC 12.2Kbps	23.14	23.38	23.35	24.00	22.73	22.79	22.69	24.00	23.14	23.11	23.12	24.00
3GPP Rel 6	HSDPA Subtest-1	21.73	21.77	21.58	23.00	21.43	21.60	21.50	23.00	21.97	21.86	21.96	23.00
3GPP Rel 6	HSDPA Subtest-2	21.76	21.75	21.56	23.00	21.46	21.61	21.45	23.00	21.97	21.85	21.96	23.00
3GPP Rel 6	HSDPA Subtest-3	21.23	21.26	21.02	22.50	20.96	21.13	20.95	22.50	21.46	21.35	21.46	22.50
3GPP Rel 6	HSDPA Subtest-4	21.27	21.26	21.10	22.50	20.95	21.12	20.94	22.50	21.47	21.36	21.47	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.61	21.63	21.48	23.00	21.31	21.46	21.40	23.00	21.85	21.72	21.86	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.64	21.61	21.46	23.00	21.34	21.47	21.35	23.00	21.85	21.71	21.86	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.11	21.12	20.92	22.50	20.84	20.99	20.85	22.50	21.34	21.21	21.36	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.15	21.12	21.00	22.50	20.83	20.98	20.84	22.50	21.35	21.22	21.37	22.50
3GPP Rel 6	HSUPA Subtest-1	21.43	21.43	21.25	23.00	21.06	21.28	21.15	23.00	21.27	21.18	21.22	23.00
3GPP Rel 6	HSUPA Subtest-2	19.39	19.42	19.27	21.00	19.14	19.28	19.29	21.00	19.28	19.12	19.24	21.00
3GPP Rel 6	HSUPA Subtest-3	20.44	20.45	20.25	22.00	20.17	20.31	20.25	22.00	20.25	20.12	20.29	22.00
3GPP Rel 6	HSUPA Subtest-4	19.42	19.43	19.25	21.00	19.18	19.25	19.11	21.00	19.29	19.17	19.28	21.00
3GPP Rel 6	HSUPA Subtest-5	21.48	21.38	21.28	23.00	21.08	21.28	21.40	23.00	21.23	21.13	21.23	23.00

<Reduced Power Mode for P-Sensor On>

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)
Tx Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	AMR 12.2Kbps	18.46	18.50	18.42	19.50	15.57	15.70	15.60	16.50
3GPP Rel 99	RMC 12.2Kbps	18.48	18.53	18.45	19.50	15.59	15.71	15.62	16.50
3GPP Rel 6	HSDPA Subtest-1	17.43	17.40	17.22	18.50	14.58	14.70	14.62	15.50
3GPP Rel 6	HSDPA Subtest-2	17.43	17.45	17.25	18.50	14.57	14.71	14.63	15.50
3GPP Rel 6	HSDPA Subtest-3	16.93	16.94	16.75	18.00	14.05	14.22	14.12	15.00
3GPP Rel 6	HSDPA Subtest-4	16.89	16.93	16.76	18.00	14.08	14.22	14.11	15.00
3GPP Rel 8	DC-HSDPA Subtest-1	17.42	17.45	17.40	18.50	14.50	14.57	14.56	15.50
3GPP Rel 8	DC-HSDPA Subtest-2	17.37	17.38	17.39	18.50	14.56	14.52	14.53	15.50
3GPP Rel 8	DC-HSDPA Subtest-3	16.85	16.81	16.83	18.00	14.01	14.01	14.02	15.00
3GPP Rel 8	DC-HSDPA Subtest-4	16.87	16.80	16.70	18.00	14.02	14.02	14.05	15.00
3GPP Rel 6	HSUPA Subtest-1	17.35	17.40	17.22	18.50	14.48	14.73	14.52	15.50
3GPP Rel 6	HSUPA Subtest-2	15.37	15.43	15.21	16.50	12.52	12.72	12.51	13.50
3GPP Rel 6	HSUPA Subtest-3	16.37	16.42	16.27	17.50	13.48	13.76	13.50	14.50
3GPP Rel 6	HSUPA Subtest-4	15.40	15.40	15.23	16.50	12.49	12.74	12.49	13.50
3GPP Rel 6	HSUPA Subtest-5	17.40	17.40	17.20	18.50	14.50	14.80	14.50	15.50

<Reduced Power Mode for Hotspot On>

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)
Tx Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	AMR 12.2Kbps	17.51	17.59	17.43	18.50	13.56	13.70	13.63	15.50
3GPP Rel 99	RMC 12.2Kbps	17.52	17.61	17.44	18.50	13.58	13.72	13.65	15.50
3GPP Rel 6	HSDPA Subtest-1	16.50	16.51	16.30	17.50	12.59	12.75	12.63	14.50
3GPP Rel 6	HSDPA Subtest-2	16.51	16.48	16.29	17.50	12.59	12.75	12.61	14.50
3GPP Rel 6	HSDPA Subtest-3	16.03	15.99	15.80	17.00	12.10	12.28	12.12	14.00
3GPP Rel 6	HSDPA Subtest-4	16.03	15.99	15.78	17.00	12.09	12.24	12.12	14.00
3GPP Rel 8	DC-HSDPA Subtest-1	16.45	16.51	16.41	17.50	12.59	12.61	12.63	14.50
3GPP Rel 8	DC-HSDPA Subtest-2	16.41	16.50	16.44	17.50	12.51	12.50	12.58	14.50
3GPP Rel 8	DC-HSDPA Subtest-3	16.02	16.00	15.91	17.00	12.05	12.06	12.01	14.00
3GPP Rel 8	DC-HSDPA Subtest-4	16.04	16.03	15.87	17.00	12.01	12.03	12.01	14.00
3GPP Rel 6	HSUPA Subtest-1	16.55	16.54	16.47	17.50	12.61	12.75	12.70	14.50
3GPP Rel 6	HSUPA Subtest-2	14.55	14.49	14.48	15.50	10.61	10.69	10.60	12.50
3GPP Rel 6	HSUPA Subtest-3	15.53	15.53	15.46	16.50	11.59	11.71	11.62	13.50
3GPP Rel 6	HSUPA Subtest-4	14.58	14.56	14.50	15.50	10.51	10.73	10.59	12.50
3GPP Rel 6	HSUPA Subtest-5	16.60	16.50	16.50	17.50	12.50	12.80	12.60	14.50

<CDMA2000 Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, SAR for head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

<Full Power Mode>

Band	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)	CDMA2000 BC10			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175		476	580	684	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	823.1	
RC1 SO55	24.23	24.08	24.01	25.00	24.22	24.06	24.15	25.00	23.92	24.17	24.16	25.00
RC3 SO55	24.24	24.10	24.03	25.00	24.31	24.08	24.16	25.00	23.93	24.21	24.17	25.00
RC3 SO32 (F+SCH)	24.23	24.08	24.04	25.00	24.30	24.12	24.17	25.00	24.03	24.20	24.19	25.00
RC3 SO32 (+SCH)	24.21	24.07	24.02	25.00	24.30	24.11	24.15	25.00	24.02	24.20	24.17	25.00
RTAP 153.6Kbps	24.15	24.12	24.13	25.00	24.24	24.07	24.17	25.00	24.01	24.19	24.02	25.00
RETAP 4096Bits	24.12	24.10	24.12	25.00	24.20	24.05	24.15	25.00	24.00	24.18	24.01	25.00

<Reduced Power Mode for P-Sensor On>

Band	CDMA2000 BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	19.75	19.46	19.59	20.00
RC3 SO55	19.76	19.42	19.54	20.00
RC3 SO32 (F+SCH)	19.62	19.44	19.51	20.00
RC3 SO32 (+SCH)	19.61	19.48	19.48	20.00
RTAP 153.6Kbps	19.99	19.48	19.98	20.00
RETAP 4096Bits	19.68	19.50	19.51	20.00

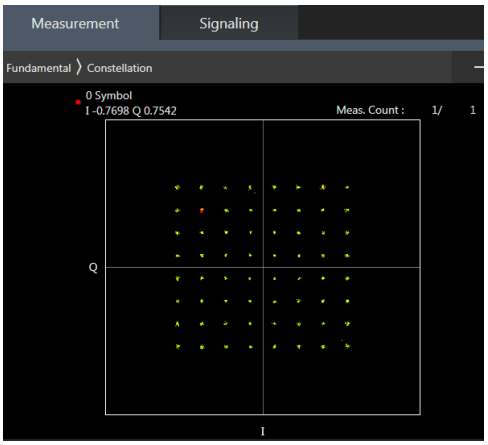
<Reduced Power Mode for Hotspot On>

Band	CDMA2000 BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	18.72	18.57	18.58	19.00
RC3 SO55	18.76	18.54	18.55	19.00
RC3 SO32 (F+SCH)	18.71	18.51	18.54	19.00
RC3 SO32 (+SCH)	18.75	18.52	18.55	19.00
RTAP 153.6Kbps	18.68	18.51	18.52	19.00
RETAP 4096Bits	18.70	18.51	18.50	19.00

<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/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.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B26 / B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2 / 5 / 4 SAR test was covered by Band 25 / 26 / 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM

16QAM

<Full Power Mode>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.79	22.75	22.77	24	0
20	QPSK	1	49	22.81	22.84	22.86		
20	QPSK	1	99	22.79	22.92	22.91		
20	QPSK	50	0	21.49	21.65	21.65	23	1
20	QPSK	50	24	21.43	21.53	21.53		
20	QPSK	50	50	21.44	21.51	21.58		
20	QPSK	100	0	21.45	21.63	21.70		
20	16QAM	1	0	21.89	21.92	22.07	23	1
20	16QAM	1	49	21.69	21.77	21.93		
20	16QAM	1	99	21.63	21.93	21.91		
20	16QAM	50	0	20.43	20.61	20.61	22	2
20	16QAM	50	24	20.47	20.56	20.53		
20	16QAM	50	50	20.46	20.54	20.59		
20	16QAM	100	0	20.44	20.55	20.66		
20	64QAM	1	0	20.76	20.84	20.83	22	2
20	64QAM	1	49	20.43	20.58	20.82		
20	64QAM	1	99	20.64	20.84	20.81		
20	64QAM	50	0	19.43	19.60	19.59	21	3
20	64QAM	50	24	19.44	19.55	19.52		
20	64QAM	50	50	19.42	19.53	19.53		
20	64QAM	100	0	19.44	19.55	19.68		

Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.73	22.76	22.72	24	0
15	QPSK	1	37	22.84	22.86	22.83		
15	QPSK	1	74	22.85	22.88	22.87		
15	QPSK	36	0	21.62	21.63	21.59	23	1
15	QPSK	36	20	21.51	21.56	21.56		
15	QPSK	36	39	21.61	21.57	21.61		
15	QPSK	75	0	21.53	21.62	21.56		
15	16QAM	1	0	22.05	22.08	22.06	23	1
15	16QAM	1	37	21.70	21.82	21.84		
15	16QAM	1	74	22.00	22.10	22.03		
15	16QAM	36	0	20.60	20.63	20.62	22	2
15	16QAM	36	20	20.47	20.53	20.55		
15	16QAM	36	39	20.52	20.54	20.63		
15	16QAM	75	0	20.53	20.57	20.62		
15	64QAM	1	0	20.94	21.03	21.01	22	2
15	64QAM	1	37	20.65	20.59	20.60		
15	64QAM	1	74	20.90	20.93	21.03		
15	64QAM	36	0	19.59	19.59	19.61	21	3
15	64QAM	36	20	19.46	19.50	19.54		
15	64QAM	36	39	19.44	19.52	19.61		
15	64QAM	75	0	19.49	19.56	19.61		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.84	22.84	22.79	24	0
10	QPSK	1	25	22.89	22.85	22.89		
10	QPSK	1	49	22.88	22.86	22.88		
10	QPSK	25	0	21.65	21.71	21.62	23	1
10	QPSK	25	12	21.58	21.62	21.67		
10	QPSK	25	25	21.54	21.70	21.64		
10	QPSK	50	0	21.54	21.64	21.61		
10	16QAM	1	0	22.08	22.14	22.19	23	1
10	16QAM	1	25	21.82	21.85	21.81		
10	16QAM	1	49	22.04	22.07	22.08		
10	16QAM	25	0	20.61	20.69	20.65	22	2
10	16QAM	25	12	20.53	20.62	20.62		
10	16QAM	25	25	20.52	20.63	20.66		
10	16QAM	50	0	20.64	20.61	20.65		
10	64QAM	1	0	20.95	21.00	21.07	22	2
10	64QAM	1	25	20.74	20.74	20.69		
10	64QAM	1	49	21.00	20.96	20.95		
10	64QAM	25	0	19.62	19.68	19.65	21	3
10	64QAM	25	12	19.53	19.63	19.65		
10	64QAM	25	25	19.53	19.69	19.65		
10	64QAM	50	0	19.58	19.62	19.62		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.86	22.85	22.88	24	0
5	QPSK	1	12	22.85	22.90	22.84		
5	QPSK	1	24	22.86	22.83	22.89		
5	QPSK	12	0	21.63	21.64	21.64	23	1
5	QPSK	12	7	21.57	21.54	21.56		
5	QPSK	12	13	21.48	21.52	21.52		
5	QPSK	25	0	21.60	21.58	21.61		
5	16QAM	1	0	21.90	21.96	21.95	23	1
5	16QAM	1	12	21.72	21.75	21.85		
5	16QAM	1	24	21.74	21.83	21.83		
5	16QAM	12	0	20.60	20.64	20.67	22	2
5	16QAM	12	7	20.54	20.55	20.56		
5	16QAM	12	13	20.52	20.52	20.54		
5	16QAM	25	0	20.52	20.57	20.60		
5	64QAM	1	0	20.79	20.84	20.83	22	2
5	64QAM	1	12	20.61	20.70	20.68		
5	64QAM	1	24	20.64	20.71	20.67		
5	64QAM	12	0	19.55	19.63	19.64	21	3
5	64QAM	12	7	19.51	19.52	19.55		
5	64QAM	12	13	19.47	19.51	19.54		
5	64QAM	25	0	19.51	19.58	19.59		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.81	22.71	22.85	24	0
3	QPSK	1	8	22.85	22.83	22.83		
3	QPSK	1	14	22.76	22.75	22.78		
3	QPSK	8	0	21.48	21.49	21.54	23	1
3	QPSK	8	4	21.48	21.49	21.49		
3	QPSK	8	7	21.43	21.43	21.47		
3	QPSK	15	0	21.44	21.46	21.49		
3	16QAM	1	0	21.81	21.82	21.83	23	1
3	16QAM	1	8	21.79	21.74	21.82		
3	16QAM	1	14	21.67	21.69	21.76		
3	16QAM	8	0	20.52	20.52	20.56	22	2
3	16QAM	8	4	20.52	20.51	20.56		
3	16QAM	8	7	20.48	20.45	20.50		
3	16QAM	15	0	20.53	20.47	20.53		
3	64QAM	1	0	20.59	20.63	20.71	22	2
3	64QAM	1	8	20.61	20.66	20.67		
3	64QAM	1	14	20.52	20.49	20.66		
3	64QAM	8	0	19.46	19.49	19.53	21	3
3	64QAM	8	4	19.48	19.48	19.53		
3	64QAM	8	7	19.43	19.42	19.47		
3	64QAM	15	0	19.44	19.44	19.53		

Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.76	22.77	22.84	24	0
1.4	QPSK	1	3	22.85	22.86	22.85		
1.4	QPSK	1	5	22.74	22.76	22.77		
1.4	QPSK	3	0	22.44	22.46	22.42		
1.4	QPSK	3	1	22.48	22.48	22.41		
1.4	QPSK	3	3	22.42	22.41	22.39		
1.4	QPSK	6	0	21.41	21.45	21.46	23	1
1.4	16QAM	1	0	21.72	21.77	21.82	23	1
1.4	16QAM	1	3	21.77	21.76	21.87		
1.4	16QAM	1	5	21.74	21.75	21.78		
1.4	16QAM	3	0	21.47	21.48	21.43		
1.4	16QAM	3	1	21.46	21.51	21.51		
1.4	16QAM	3	3	21.39	21.48	21.48		
1.4	16QAM	6	0	20.56	20.51	20.52	22	2
1.4	64QAM	1	0	20.57	20.60	20.62	22	2
1.4	64QAM	1	3	20.61	20.62	20.66		
1.4	64QAM	1	5	20.50	20.54	20.57		
1.4	64QAM	3	0	20.49	20.52	20.47		
1.4	64QAM	3	1	20.58	20.52	20.54		
1.4	64QAM	3	3	20.49	20.49	20.46		
1.4	64QAM	6	0	19.46	19.44	19.46	21	3

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.71	22.90	22.82	24	0
20	QPSK	1	49	22.87	22.95	22.65		
20	QPSK	1	99	22.73	22.62	22.65		
20	QPSK	50	0	21.80	21.82	21.68	23	1
20	QPSK	50	24	21.74	21.79	21.72		
20	QPSK	50	50	21.63	21.70	21.65		
20	QPSK	100	0	21.60	21.84	21.70		
20	16QAM	1	0	21.92	22.25	21.99	23	1
20	16QAM	1	49	22.25	22.23	21.98		
20	16QAM	1	99	22.06	21.96	21.92		
20	16QAM	50	0	20.76	20.79	20.71	22	2
20	16QAM	50	24	20.71	20.78	20.74		
20	16QAM	50	50	20.59	20.74	20.67		
20	16QAM	100	0	20.74	20.88	20.66		
20	64QAM	1	0	20.63	20.76	20.74	22	2
20	64QAM	1	49	20.72	20.74	20.61		
20	64QAM	1	99	20.81	20.76	20.73		
20	64QAM	50	0	19.64	19.72	19.57	21	3
20	64QAM	50	24	19.62	19.67	19.60		
20	64QAM	50	50	19.48	19.62	19.50		
20	64QAM	100	0	19.65	19.80	19.56		

Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.77	22.85	22.70	24	0
15	QPSK	1	37	22.70	22.86	22.67		
15	QPSK	1	74	22.68	22.67	22.62		
15	QPSK	36	0	21.72	21.95	21.80	23	1
15	QPSK	36	20	21.75	21.91	21.70		
15	QPSK	36	39	21.69	21.82	21.74		
15	QPSK	75	0	21.73	21.90	21.79		
15	16QAM	1	0	22.09	22.40	22.07	23	1
15	16QAM	1	37	22.04	21.96	21.86		
15	16QAM	1	74	22.14	22.00	21.95		
15	16QAM	36	0	20.81	20.99	20.76	22	2
15	16QAM	36	20	20.79	20.92	20.76		
15	16QAM	36	39	20.69	20.85	20.70		
15	16QAM	75	0	20.74	20.88	20.84		
15	64QAM	1	0	20.79	21.13	20.93	22	2
15	64QAM	1	37	20.98	21.11	20.78		
15	64QAM	1	74	20.79	20.70	20.72		
15	64QAM	36	0	19.74	19.88	19.67	21	3
15	64QAM	36	20	19.71	19.83	19.64		
15	64QAM	36	39	19.61	19.67	19.60		
15	64QAM	75	0	19.62	19.76	19.75		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.58	22.70	22.64	24	0
10	QPSK	1	25	22.70	22.67	22.74		
10	QPSK	1	49	22.69	22.76	22.69		
10	QPSK	25	0	21.80	21.88	21.82	23	1
10	QPSK	25	12	21.76	21.89	21.77		
10	QPSK	25	25	21.87	21.87	21.86		
10	QPSK	50	0	21.82	21.86	21.78		
10	16QAM	1	0	22.45	22.40	22.31	23	1
10	16QAM	1	25	22.13	22.17	22.06		
10	16QAM	1	49	22.43	22.43	22.46		
10	16QAM	25	0	20.78	20.81	20.77	22	2
10	16QAM	25	12	20.78	20.82	20.80		
10	16QAM	25	25	20.87	20.80	20.85		
10	16QAM	50	0	20.89	20.90	20.84		
10	64QAM	1	0	21.16	21.16	21.05	22	2
10	64QAM	1	25	20.91	20.91	20.84		
10	64QAM	1	49	21.33	21.22	21.31		
10	64QAM	25	0	19.77	19.77	19.67	21	3
10	64QAM	25	12	19.72	19.73	19.70		
10	64QAM	25	25	19.83	19.77	19.83		
10	64QAM	50	0	19.75	19.77	19.72		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.71	22.70	22.73	24	0
5	QPSK	1	12	22.59	22.67	22.65		
5	QPSK	1	24	22.69	22.71	22.72		
5	QPSK	12	0	21.82	21.84	21.87	23	1
5	QPSK	12	7	21.75	21.79	21.73		
5	QPSK	12	13	21.68	21.74	21.75		
5	QPSK	25	0	21.76	21.82	21.76		
5	16QAM	1	0	22.14	22.20	22.16	23	1
5	16QAM	1	12	21.83	21.94	21.92		
5	16QAM	1	24	21.90	22.01	21.99		
5	16QAM	12	0	20.84	20.87	20.90	22	2
5	16QAM	12	7	20.85	20.85	20.77		
5	16QAM	12	13	20.80	20.79	20.80		
5	16QAM	25	0	20.70	20.76	20.74		
5	64QAM	1	0	20.91	20.94	20.87	22	2
5	64QAM	1	12	20.75	20.80	20.81		
5	64QAM	1	24	20.75	20.73	20.78		
5	64QAM	12	0	19.70	19.70	19.74	21	3
5	64QAM	12	7	19.67	19.72	19.66		
5	64QAM	12	13	19.69	19.68	19.68		
5	64QAM	25	0	19.68	19.74	19.70		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.60	22.58	22.73	24	0
3	QPSK	1	8	22.66	22.72	22.74		
3	QPSK	1	14	22.59	22.57	22.64		
3	QPSK	8	0	21.64	21.68	21.70	23	1
3	QPSK	8	4	21.74	21.75	21.73		
3	QPSK	8	7	21.54	21.68	21.70		
3	QPSK	15	0	21.69	21.72	21.61		
3	16QAM	1	0	21.93	21.99	22.00	23	1
3	16QAM	1	8	21.96	22.05	21.94		
3	16QAM	1	14	21.77	21.93	21.84		
3	16QAM	8	0	20.77	20.77	20.79	22	2
3	16QAM	8	4	20.82	20.84	20.82		
3	16QAM	8	7	20.73	20.82	20.80		
3	16QAM	15	0	20.73	20.77	20.66		
3	64QAM	1	0	20.70	20.66	20.75	22	2
3	64QAM	1	8	20.72	20.76	20.74		
3	64QAM	1	14	20.67	20.65	20.68		
3	64QAM	8	0	19.52	19.52	19.58	21	3
3	64QAM	8	4	19.60	19.64	19.68		
3	64QAM	8	7	19.51	19.57	19.59		
3	64QAM	15	0	19.62	19.65	19.53		

Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.51	22.64	22.59	24	0
1.4	QPSK	1	3	22.57	22.67	22.62		
1.4	QPSK	1	5	22.58	22.61	22.57		
1.4	QPSK	3	0	22.66	22.61	22.70		
1.4	QPSK	3	1	22.71	22.74	22.72		
1.4	QPSK	3	3	22.56	22.66	22.65		
1.4	QPSK	6	0	21.59	21.73	21.65	23	1
1.4	16QAM	1	0	21.85	21.85	21.97	23	1
1.4	16QAM	1	3	21.89	21.99	21.97		
1.4	16QAM	1	5	21.90	21.96	21.83		
1.4	16QAM	3	0	21.81	21.75	21.81		
1.4	16QAM	3	1	21.87	21.89	21.85		
1.4	16QAM	3	3	21.76	21.75	21.71		
1.4	16QAM	6	0	20.68	20.77	20.75	22	2
1.4	64QAM	1	0	20.69	20.62	20.75	22	2
1.4	64QAM	1	3	20.69	20.75	20.69		
1.4	64QAM	1	5	20.60	20.66	20.59		
1.4	64QAM	3	0	20.65	20.61	20.63		
1.4	64QAM	3	1	20.72	20.74	20.69		
1.4	64QAM	3	3	20.57	20.64	20.64		
1.4	64QAM	6	0	19.57	19.64	19.59	21	3

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.91	22.97	22.93	24	0
10	QPSK	1	25	22.95	22.69	22.71		
10	QPSK	1	49	22.92	22.94	22.95		
10	QPSK	25	0	21.89	21.86	21.90	23	1
10	QPSK	25	12	21.97	21.82	21.87		
10	QPSK	25	25	21.94	21.92	22.03		
10	QPSK	50	0	21.96	21.81	22.00		
10	16QAM	1	0	22.24	22.19	22.30	23	1
10	16QAM	1	25	22.09	22.04	22.22		
10	16QAM	1	49	22.51	22.32	22.47		
10	16QAM	25	0	20.85	20.83	20.85	22	2
10	16QAM	25	12	20.93	20.78	20.81		
10	16QAM	25	25	20.92	20.87	20.93		
10	16QAM	50	0	20.96	20.81	20.98		
10	64QAM	1	0	21.13	20.98	21.20	22	2
10	64QAM	1	25	21.03	20.91	20.96		
10	64QAM	1	49	21.40	21.28	21.31		
10	64QAM	25	0	19.85	19.81	19.91	21	3
10	64QAM	25	12	19.91	19.81	19.84		
10	64QAM	25	25	19.96	19.91	19.98		
10	64QAM	50	0	19.93	19.77	19.94		

Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.81	22.82	22.91	24	0
5	QPSK	1	12	22.77	22.75	22.74		
5	QPSK	1	24	22.82	22.81	22.77		
5	QPSK	12	0	21.82	21.83	21.89	23	1
5	QPSK	12	7	21.78	21.83	21.86		
5	QPSK	12	13	21.85	21.79	21.79		
5	QPSK	25	0	21.75	21.81	21.84		
5	16QAM	1	0	22.09	22.17	21.94	23	1
5	16QAM	1	12	21.96	21.97	22.06		
5	16QAM	1	24	22.07	22.04	22.00		
5	16QAM	12	0	20.82	20.90	20.87	22	2
5	16QAM	12	7	20.79	20.83	20.87		
5	16QAM	12	13	20.85	20.79	20.85		
5	16QAM	25	0	20.76	20.79	20.80		
5	64QAM	1	0	20.97	21.02	20.85	22	2
5	64QAM	1	12	20.86	20.83	20.88		
5	64QAM	1	24	20.98	20.95	20.93		
5	64QAM	12	0	19.77	19.85	19.84	21	3
5	64QAM	12	7	19.76	19.78	19.82		
5	64QAM	12	13	19.83	19.73	19.79		
5	64QAM	25	0	19.78	19.78	19.84		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.86	22.84	22.95	24	0
3	QPSK	1	8	22.81	22.81	22.78		
3	QPSK	1	14	22.71	22.62	22.75		
3	QPSK	8	0	21.80	21.73	21.82	23	1
3	QPSK	8	4	21.80	21.68	21.81		
3	QPSK	8	7	21.74	21.69	21.80		
3	QPSK	15	0	21.79	21.66	21.80		
3	16QAM	1	0	22.03	21.92	21.94	23	1
3	16QAM	1	8	22.08	21.94	22.12		
3	16QAM	1	14	22.04	21.86	22.10		
3	16QAM	8	0	20.83	20.84	20.90	22	2
3	16QAM	8	4	20.85	20.80	20.89		
3	16QAM	8	7	20.78	20.77	20.85		
3	16QAM	15	0	20.79	20.78	20.77		
3	64QAM	1	0	20.89	20.92	20.84	22	2
3	64QAM	1	8	20.91	20.95	20.99		
3	64QAM	1	14	20.87	20.82	20.94		
3	64QAM	8	0	19.79	19.68	19.80	21	3
3	64QAM	8	4	19.78	19.68	19.79		
3	64QAM	8	7	19.76	19.65	19.81		
3	64QAM	15	0	19.75	19.77	19.83		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.84	22.83	22.94	24	0
1.4	QPSK	1	3	22.81	22.79	22.79		
1.4	QPSK	1	5	22.73	22.63	22.72		
1.4	QPSK	3	0	22.77	22.68	22.67		
1.4	QPSK	3	1	22.81	22.70	22.73		
1.4	QPSK	3	3	22.76	22.64	22.78		
1.4	QPSK	6	0	21.79	21.65	21.78	23	1
1.4	16QAM	1	0	22.08	21.92	22.04	23	1
1.4	16QAM	1	3	22.10	21.95	22.07		
1.4	16QAM	1	5	22.05	21.85	22.07		
1.4	16QAM	3	0	21.80	21.71	21.84		
1.4	16QAM	3	1	21.85	21.80	21.87		
1.4	16QAM	3	3	21.77	21.72	21.84		
1.4	16QAM	6	0	20.84	20.72	20.79	22	2
1.4	64QAM	1	0	20.92	20.78	20.97	22	2
1.4	64QAM	1	3	20.91	20.81	20.96		
1.4	64QAM	1	5	20.89	20.72	20.87		
1.4	64QAM	3	0	20.77	20.70	20.77		
1.4	64QAM	3	1	20.84	20.74	20.81		
1.4	64QAM	3	3	20.77	20.65	20.79		
1.4	64QAM	6	0	19.76	19.65	19.67	21	3

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.97	22.96	22.96	24	0
10	QPSK	1	25	22.78	22.83	22.82		
10	QPSK	1	49	22.95	22.94	22.92		
10	QPSK	25	0	21.91	21.94	21.89	23	1
10	QPSK	25	12	21.90	21.92	21.82		
10	QPSK	25	25	21.93	21.85	21.90		
10	QPSK	50	0	21.91	21.82	21.86		
10	16QAM	1	0	22.35	22.37	22.31	23	1
10	16QAM	1	25	22.12	22.08	22.12		
10	16QAM	1	49	22.26	22.26	22.26		
10	16QAM	25	0	20.90	20.76	20.84	22	2
10	16QAM	25	12	20.84	20.86	20.83		
10	16QAM	25	25	20.85	20.83	20.87		
10	16QAM	50	0	20.91	20.82	20.87		
10	64QAM	1	0	21.14	21.16	21.17	22	2
10	64QAM	1	25	20.93	20.90	20.93		
10	64QAM	1	49	21.16	21.16	21.13		
10	64QAM	25	0	19.94	19.81	19.87	21	3
10	64QAM	25	12	19.90	19.91	19.83		
10	64QAM	25	25	19.89	19.82	19.89		
10	64QAM	50	0	19.89	19.80	19.80		

Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.68	22.73	22.71	24	0
5	QPSK	1	12	22.64	22.69	22.79		
5	QPSK	1	24	22.74	22.78	22.81		
5	QPSK	12	0	21.71	21.72	21.87	23	1
5	QPSK	12	7	21.73	21.78	21.83		
5	QPSK	12	13	21.77	21.80	21.80		
5	QPSK	25	0	21.75	21.77	21.84		
5	16QAM	1	0	21.97	22.02	22.08	23	1
5	16QAM	1	12	21.85	21.91	21.94		
5	16QAM	1	24	21.96	22.03	22.10		
5	16QAM	12	0	20.74	20.77	20.90	22	2
5	16QAM	12	7	20.80	20.81	20.89		
5	16QAM	12	13	20.77	20.81	20.85		
5	16QAM	25	0	20.70	20.73	20.79		
5	64QAM	1	0	20.80	20.89	20.90	22	2
5	64QAM	1	12	20.81	20.75	20.83		
5	64QAM	1	24	20.88	20.91	20.98		
5	64QAM	12	0	19.70	19.75	19.86	21	3
5	64QAM	12	7	19.69	19.73	19.86		
5	64QAM	12	13	19.73	19.76	19.81		
5	64QAM	25	0	19.70	19.76	19.85		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.84	22.76	22.80	24	0
3	QPSK	1	8	22.89	22.77	22.80		
3	QPSK	1	14	22.83	22.75	22.73		
3	QPSK	8	0	21.77	21.78	21.80	23	1
3	QPSK	8	4	21.81	21.77	21.81		
3	QPSK	8	7	21.79	21.74	21.78		
3	QPSK	15	0	21.82	21.76	21.79		
3	16QAM	1	0	22.05	22.08	22.11	23	1
3	16QAM	1	8	22.07	22.09	22.26		
3	16QAM	1	14	22.05	21.99	22.14		
3	16QAM	8	0	20.88	20.88	20.90	22	2
3	16QAM	8	4	20.94	20.83	20.86		
3	16QAM	8	7	20.89	20.85	20.83		
3	16QAM	15	0	20.82	20.74	20.77		
3	64QAM	1	0	20.81	20.92	20.92	22	2
3	64QAM	1	8	20.94	20.92	20.93		
3	64QAM	1	14	20.90	20.86	20.98		
3	64QAM	8	0	19.77	19.75	19.78	21	3
3	64QAM	8	4	19.83	19.77	19.81		
3	64QAM	8	7	19.79	19.74	19.80		
3	64QAM	15	0	19.83	19.71	19.84		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.63	22.67	22.78	24	0
1.4	QPSK	1	3	22.72	22.74	22.72		
1.4	QPSK	1	5	22.74	22.72	22.73		
1.4	QPSK	3	0	22.76	22.72	22.69		
1.4	QPSK	3	1	22.73	22.62	22.74		
1.4	QPSK	3	3	22.75	22.71	22.62		
1.4	QPSK	6	0	21.74	21.70	21.85	23	1
1.4	16QAM	1	0	21.97	21.99	22.27	23	1
1.4	16QAM	1	3	22.04	22.13	22.21		
1.4	16QAM	1	5	21.97	22.03	22.05		
1.4	16QAM	3	0	21.90	21.88	21.83		
1.4	16QAM	3	1	21.90	21.93	21.81		
1.4	16QAM	3	3	21.82	21.76	21.76		
1.4	16QAM	6	0	20.78	20.72	20.78	22	2
1.4	64QAM	1	0	20.86	20.82	20.84	22	2
1.4	64QAM	1	3	20.87	20.86	20.97		
1.4	64QAM	1	5	20.84	20.79	20.92		
1.4	64QAM	3	0	20.85	20.79	20.79		
1.4	64QAM	3	1	20.80	20.90	20.80		
1.4	64QAM	3	3	20.76	20.79	20.74		
1.4	64QAM	6	0	19.70	19.66	19.66	21	3

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel					23230			
Frequency (MHz)					782			
10	QPSK	1	0		22.92		24	0
10	QPSK	1	25		22.78			
10	QPSK	1	49		22.88			
10	QPSK	25	0		21.74		23	1
10	QPSK	25	12		21.79			
10	QPSK	25	25		21.84			
10	QPSK	50	0		21.87			
10	16QAM	1	0		22.17		23	1
10	16QAM	1	25		22.02			
10	16QAM	1	49		22.19			
10	16QAM	25	0		20.67		22	2
10	16QAM	25	12		20.72			
10	16QAM	25	25		20.85			
10	16QAM	50	0		20.89			
10	64QAM	1	0		20.97		22	2
10	64QAM	1	25		20.87			
10	64QAM	1	49		21.09			
10	64QAM	25	0		19.74		21	3
10	64QAM	25	12		19.74			
10	64QAM	25	25		19.85			
10	64QAM	50	0		19.86			

Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.76	22.78	22.70	24	0
5	QPSK	1	12	22.74	22.72	22.69		
5	QPSK	1	24	22.80	22.66	22.69		
5	QPSK	12	0	21.82	21.78	21.72	23	1
5	QPSK	12	7	21.93	21.75	21.77		
5	QPSK	12	13	21.79	21.68	21.76		
5	QPSK	25	0	21.86	21.78	21.80		
5	16QAM	1	0	22.04	21.97	21.99	23	1
5	16QAM	1	12	21.96	21.96	21.99		
5	16QAM	1	24	22.08	21.91	21.91		
5	16QAM	12	0	20.82	20.79	20.80	22	2
5	16QAM	12	7	20.92	20.78	20.83		
5	16QAM	12	13	20.82	20.73	20.80		
5	16QAM	25	0	20.73	20.73	20.76		
5	64QAM	1	0	20.77	20.80	20.87	22	2
5	64QAM	1	12	21.01	20.76	20.87		
5	64QAM	1	24	21.01	20.75	20.79		
5	64QAM	12	0	19.73	19.74	19.68	21	3
5	64QAM	12	7	19.84	19.73	19.80		
5	64QAM	12	13	19.78	19.70	19.77		
5	64QAM	25	0	19.79	19.75	19.80		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.42	22.62	22.93	24	0
20	QPSK	1	49	22.41	22.38	22.41		
20	QPSK	1	99	22.32	22.52	22.42		
20	QPSK	50	0	21.90	21.90	21.98	23	1
20	QPSK	50	24	21.91	21.94	21.94		
20	QPSK	50	50	21.87	21.87	21.90		
20	QPSK	100	0	21.90	21.93	22.04		
20	16QAM	1	0	22.19	22.31	22.23	23	1
20	16QAM	1	49	22.10	22.22	22.37		
20	16QAM	1	99	21.95	21.89	21.99		
20	16QAM	50	0	20.92	20.92	20.91	22	2
20	16QAM	50	24	20.93	20.91	20.88		
20	16QAM	50	50	20.88	20.84	20.89		
20	16QAM	100	0	20.98	20.88	20.92		
20	64QAM	1	0	21.13	21.14	21.12	22	2
20	64QAM	1	49	20.88	21.05	21.14		
20	64QAM	1	99	20.85	20.72	20.81		
20	64QAM	50	0	19.92	19.90	19.87	21	3
20	64QAM	50	24	19.89	19.89	19.84		
20	64QAM	50	50	19.84	19.80	19.79		
20	64QAM	100	0	19.96	19.86	19.90		

Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.05	22.03	22.05	24	0
15	QPSK	1	37	22.42	22.39	22.31		
15	QPSK	1	74	22.41	22.33	22.30		
15	QPSK	36	0	22.06	21.97	22.00	23	1
15	QPSK	36	20	22.06	21.96	21.95		
15	QPSK	36	39	22.03	21.92	21.94		
15	QPSK	75	0	22.05	22.03	22.03		
15	16QAM	1	0	22.35	22.27	22.49	23	1
15	16QAM	1	37	22.15	22.21	22.31		
15	16QAM	1	74	22.12	22.18	22.13		
15	16QAM	36	0	21.05	20.93	21.01	22	2
15	16QAM	36	20	21.02	20.94	21.00		
15	16QAM	36	39	20.99	20.91	20.97		
15	16QAM	75	0	21.03	21.01	21.05		
15	64QAM	1	0	21.20	21.15	21.22	22	2
15	64QAM	1	37	21.16	21.06	21.12		
15	64QAM	1	74	21.00	20.99	21.03		
15	64QAM	36	0	20.02	19.91	19.99	21	3
15	64QAM	36	20	19.97	19.93	19.90		
15	64QAM	36	39	19.91	19.87	19.93		
15	64QAM	75	0	19.92	19.99	19.94		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.19	22.21	22.35	24	0
10	QPSK	1	25	22.35	22.58	22.54		
10	QPSK	1	49	22.54	22.60	22.12		
10	QPSK	25	0	22.44	22.25	22.28	23	1
10	QPSK	25	12	22.38	22.32	22.30		
10	QPSK	25	25	22.47	22.25	22.29		
10	QPSK	50	0	22.38	22.33	22.35		
10	16QAM	1	0	22.50	22.78	22.78	23	1
10	16QAM	1	25	22.66	22.64	22.56		
10	16QAM	1	49	22.45	22.62	22.59		
10	16QAM	25	0	21.40	21.21	21.24	22	2
10	16QAM	25	12	21.40	21.26	21.28		
10	16QAM	25	25	21.40	21.23	21.29		
10	16QAM	50	0	21.39	21.31	21.28		
10	64QAM	1	0	21.20	21.09	21.04	22	2
10	64QAM	1	25	21.04	20.98	20.92		
10	64QAM	1	49	21.22	21.15	20.91		
10	64QAM	25	0	19.89	19.71	19.81	21	3
10	64QAM	25	12	19.89	19.83	19.77		
10	64QAM	25	25	19.96	19.79	19.83		
10	64QAM	50	0	19.84	19.79	19.76		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.32	22.67	22.21	24	0
5	QPSK	1	12	22.42	22.66	22.62		
5	QPSK	1	24	22.61	22.63	22.41		
5	QPSK	12	0	22.48	22.36	22.23	23	1
5	QPSK	12	7	22.39	22.26	22.21		
5	QPSK	12	13	22.34	22.23	22.17		
5	QPSK	25	0	22.42	22.30	22.23		
5	16QAM	1	0	22.78	22.60	22.72	23	1
5	16QAM	1	12	22.53	22.45	22.47		
5	16QAM	1	24	22.53	22.49	22.56		
5	16QAM	12	0	21.49	21.34	21.34	22	2
5	16QAM	12	7	21.44	21.31	21.31		
5	16QAM	12	13	21.36	21.23	21.23		
5	16QAM	25	0	21.32	21.23	21.26		
5	64QAM	1	0	21.10	20.93	21.00	22	2
5	64QAM	1	12	20.96	20.88	20.80		
5	64QAM	1	24	20.90	20.80	20.84		
5	64QAM	12	0	19.96	19.81	19.78	21	3
5	64QAM	12	7	19.87	19.73	19.73		
5	64QAM	12	13	19.84	19.69	19.72		
5	64QAM	25	0	19.87	19.77	19.77		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	22.62	22.67	22.38	24	0
3	QPSK	1	8	22.73	22.54	22.50		
3	QPSK	1	14	22.59	22.48	22.48		
3	QPSK	8	0	22.26	22.11	22.09	23	1
3	QPSK	8	4	22.22	22.10	22.10		
3	QPSK	8	7	22.21	22.08	22.05		
3	QPSK	15	0	22.24	22.11	22.07		
3	16QAM	1	0	22.58	22.37	22.56	23	1
3	16QAM	1	8	22.45	22.39	22.60		
3	16QAM	1	14	22.40	22.27	22.67		
3	16QAM	8	0	21.35	21.17	21.16	22	2
3	16QAM	8	4	21.29	21.13	21.16		
3	16QAM	8	7	21.30	21.12	21.15		
3	16QAM	15	0	21.22	21.08	21.11		
3	64QAM	1	0	21.25	21.06	21.08	22	2
3	64QAM	1	8	21.16	21.09	21.08		
3	64QAM	1	14	21.11	20.96	20.95		
3	64QAM	8	0	20.09	19.94	19.90	21	3
3	64QAM	8	4	20.08	19.94	19.89		
3	64QAM	8	7	19.99	19.87	19.83		
3	64QAM	15	0	20.06	19.89	19.91		

Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	22.68	22.63	22.59	24	0
1.4	QPSK	1	3	22.65	22.52	22.52		
1.4	QPSK	1	5	22.55	22.42	22.51		
1.4	QPSK	3	0	22.70	22.54	22.41		
1.4	QPSK	3	1	22.71	22.57	22.48		
1.4	QPSK	3	3	22.71	22.51	22.46		
1.4	QPSK	6	0	22.17	22.06	22.04	23	1
1.4	16QAM	1	0	22.49	22.27	22.60	23	1
1.4	16QAM	1	3	22.46	22.30	22.52		
1.4	16QAM	1	5	22.37	22.20	22.50		
1.4	16QAM	3	0	22.25	22.11	22.00		
1.4	16QAM	3	1	22.27	22.17	22.08		
1.4	16QAM	3	3	22.21	22.10	21.96		
1.4	16QAM	6	0	21.27	21.06	21.00	22	2
1.4	64QAM	1	0	21.07	21.02	20.87	22	2
1.4	64QAM	1	3	21.20	20.99	20.97		
1.4	64QAM	1	5	21.07	20.95	20.90		
1.4	64QAM	3	0	21.07	20.91	20.92		
1.4	64QAM	3	1	21.13	20.97	20.94		
1.4	64QAM	3	3	21.06	20.87	20.88		
1.4	64QAM	6	0	20.03	19.84	19.77	21	3

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.92	22.73	22.87	24	0
15	QPSK	1	37	22.73	22.68	22.62		
15	QPSK	1	74	23.07	23.09	23.10		
15	QPSK	36	0	21.87	21.80	21.72	23	1
15	QPSK	36	20	21.55	21.51	21.49		
15	QPSK	36	39	21.47	21.31	21.42		
15	QPSK	75	0	21.60	21.55	21.61		
15	16QAM	1	0	21.88	21.85	21.70	23	1
15	16QAM	1	37	21.64	21.55	21.56		
15	16QAM	1	74	21.93	21.98	21.96		
15	16QAM	36	0	20.86	20.79	20.74	22	2
15	16QAM	36	20	20.58	20.51	20.51		
15	16QAM	36	39	20.43	20.32	20.38		
15	16QAM	75	0	20.63	20.53	20.64		
15	64QAM	1	0	20.60	20.60	20.62	22	2
15	64QAM	1	37	20.46	20.39	20.42		
15	64QAM	1	74	20.56	20.58	20.94		
15	64QAM	36	0	19.82	19.76	19.73	21	3
15	64QAM	36	20	19.56	19.49	19.50		
15	64QAM	36	39	19.35	19.28	19.28		
15	64QAM	75	0	19.57	19.54	19.63		

Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.56	22.59	22.68	24	0
10	QPSK	1	25	22.82	22.76	22.67		
10	QPSK	1	49	22.94	22.97	23.00		
10	QPSK	25	0	21.62	21.54	21.51	23	1
10	QPSK	25	12	21.58	21.46	21.47		
10	QPSK	25	25	21.58	21.55	21.46		
10	QPSK	50	0	21.58	21.46	21.47		
10	16QAM	1	0	21.89	21.87	21.76	23	1
10	16QAM	1	25	21.66	21.52	21.63		
10	16QAM	1	49	21.92	21.77	21.79		
10	16QAM	25	0	20.64	20.54	20.46	22	2
10	16QAM	25	12	20.59	20.48	20.43		
10	16QAM	25	25	20.59	20.52	20.44		
10	16QAM	50	0	20.66	20.51	20.53		
10	64QAM	1	0	20.78	20.82	20.64	22	2
10	64QAM	1	25	20.59	20.43	20.45		
10	64QAM	1	49	20.89	20.75	20.71		
10	64QAM	25	0	19.62	19.52	19.45	21	3
10	64QAM	25	12	19.59	19.45	19.46		
10	64QAM	25	25	19.57	19.49	19.48		
10	64QAM	50	0	19.60	19.45	19.44		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.90	22.70	22.79	24	0
5	QPSK	1	12	22.91	22.68	22.61		
5	QPSK	1	24	22.88	22.78	22.66		
5	QPSK	12	0	21.56	21.55	21.40	23	1
5	QPSK	12	7	21.66	21.47	21.38		
5	QPSK	12	13	21.63	21.47	21.33		
5	QPSK	25	0	21.66	21.47	21.41		
5	16QAM	1	0	21.77	21.71	21.56	23	1
5	16QAM	1	12	21.77	21.60	21.50		
5	16QAM	1	24	21.82	21.68	21.53		
5	16QAM	12	0	20.61	20.54	20.43	22	2
5	16QAM	12	7	20.63	20.52	20.38		
5	16QAM	12	13	20.65	20.47	20.41		
5	16QAM	25	0	20.67	20.38	20.36		
5	64QAM	1	0	20.66	20.54	20.53	22	2
5	64QAM	1	12	20.64	20.30	20.33		
5	64QAM	1	24	20.72	20.59	20.47		
5	64QAM	12	0	19.61	19.50	19.38	21	3
5	64QAM	12	7	19.68	19.51	19.40		
5	64QAM	12	13	19.65	19.38	19.40		
5	64QAM	25	0	19.68	19.39	19.43		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.67	22.72	22.70	24	0
3	QPSK	1	8	22.70	22.71	22.64		
3	QPSK	1	14	22.87	22.66	22.61		
3	QPSK	8	0	21.58	21.50	21.40	23	1
3	QPSK	8	4	21.57	21.48	21.43		
3	QPSK	8	7	21.53	21.48	21.37		
3	QPSK	15	0	21.53	21.49	21.37		
3	16QAM	1	0	21.75	21.71	21.59	23	1
3	16QAM	1	8	21.79	21.73	21.65		
3	16QAM	1	14	21.88	21.64	21.54		
3	16QAM	8	0	20.62	20.52	20.43	22	2
3	16QAM	8	4	20.64	20.57	20.46		
3	16QAM	8	7	20.58	20.48	20.38		
3	16QAM	15	0	20.60	20.49	20.41		
3	64QAM	1	0	20.62	20.63	20.47	22	2
3	64QAM	1	8	20.69	20.65	20.51		
3	64QAM	1	14	20.74	20.57	20.52		
3	64QAM	8	0	19.60	19.54	19.40	21	3
3	64QAM	8	4	19.64	19.52	19.43		
3	64QAM	8	7	19.60	19.50	19.46		
3	64QAM	15	0	19.62	19.48	19.44		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.71	22.68	22.66	24	0
1.4	QPSK	1	3	22.85	22.73	22.66		
1.4	QPSK	1	5	22.84	22.69	22.64		
1.4	QPSK	3	0	22.80	22.70	22.51		
1.4	QPSK	3	1	22.83	22.73	22.55		
1.4	QPSK	3	3	22.81	22.71	22.61		
1.4	QPSK	6	0	21.56	21.43	21.40	23	1
1.4	16QAM	1	0	21.71	21.64	21.59	23	1
1.4	16QAM	1	3	21.78	21.77	21.64		
1.4	16QAM	1	5	21.78	21.65	21.57		
1.4	16QAM	3	0	21.54	21.41	21.26		
1.4	16QAM	3	1	21.60	21.46	21.36		
1.4	16QAM	3	3	21.53	21.39	21.25		
1.4	16QAM	6	0	20.63	20.52	20.43	22	2
1.4	64QAM	1	0	20.65	20.60	20.56	22	2
1.4	64QAM	1	3	20.71	20.65	20.49		
1.4	64QAM	1	5	20.58	20.53	20.44		
1.4	64QAM	3	0	20.58	20.45	20.30		
1.4	64QAM	3	1	20.60	20.47	20.39		
1.4	64QAM	3	3	20.55	20.44	20.35		
1.4	64QAM	6	0	19.55	19.45	19.30	21	3

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.45	23.96	23.63	24	0
20	QPSK	1	49	23.38	23.67	23.58		
20	QPSK	1	99	23.39	23.75	23.53		
20	QPSK	50	0	22.44	22.71	22.66	23	1
20	QPSK	50	24	22.41	22.74	22.72		
20	QPSK	50	50	22.38	22.71	22.61		
20	QPSK	100	0	22.42	22.81	22.80		
20	16QAM	1	0	22.63	22.92	22.94	23	1
20	16QAM	1	49	22.76	22.85	22.98		
20	16QAM	1	99	22.83	22.97	23.00		
20	16QAM	50	0	21.40	21.73	21.69	22	2
20	16QAM	50	24	21.39	21.78	21.72		
20	16QAM	50	50	21.37	21.73	21.63		
20	16QAM	100	0	21.52	21.80	21.74		
20	64QAM	1	0	21.58	21.78	21.39	22	2
20	64QAM	1	49	21.81	21.65	21.75		
20	64QAM	1	99	21.86	21.81	21.83		
20	64QAM	50	0	20.55	20.60	20.57	21	3
20	64QAM	50	24	20.65	20.72	20.60		
20	64QAM	50	50	20.60	20.67	20.49		
20	64QAM	100	0	20.67	20.26	20.67		

Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.63	23.59	23.49	24	0
15	QPSK	1	37	23.34	23.60	23.36		
15	QPSK	1	74	23.55	23.82	23.47		
15	QPSK	36	0	22.56	22.83	22.62	23	1
15	QPSK	36	20	22.38	22.77	22.58		
15	QPSK	36	39	22.61	22.78	22.59		
15	QPSK	75	0	22.53	22.77	22.52		
15	16QAM	1	0	22.80	22.98	22.99	23	1
15	16QAM	1	37	22.66	22.73	22.65		
15	16QAM	1	74	22.99	22.94	22.83		
15	16QAM	36	0	21.51	21.74	21.55	22	2
15	16QAM	36	20	21.51	21.72	21.47		
15	16QAM	36	39	21.45	21.75	21.52		
15	16QAM	75	0	21.45	21.76	21.65		
15	64QAM	1	0	21.59	21.80	21.60	22	2
15	64QAM	1	37	21.54	21.53	21.42		
15	64QAM	1	74	21.76	21.92	21.56		
15	64QAM	36	0	20.44	20.63	20.47	21	3
15	64QAM	36	20	20.43	20.60	20.43		
15	64QAM	36	39	20.35	20.64	20.41		
15	64QAM	75	0	20.38	20.73	20.51		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.44	23.45	23.54	24	0
10	QPSK	1	25	23.51	23.85	23.70		
10	QPSK	1	49	23.37	23.56	23.42		
10	QPSK	25	0	22.44	22.62	22.51	23	1
10	QPSK	25	12	22.52	22.26	22.55		
10	QPSK	25	25	22.54	22.58	22.61		
10	QPSK	50	0	22.54	22.75	22.65		
10	16QAM	1	0	22.74	22.83	22.84	23	1
10	16QAM	1	25	22.79	22.87	22.83		
10	16QAM	1	49	22.90	22.82	22.91		
10	16QAM	25	0	21.55	21.74	21.85	22	2
10	16QAM	25	12	21.56	21.85	21.77		
10	16QAM	25	25	21.51	21.77	21.85		
10	16QAM	50	0	21.57	21.81	21.74		
10	64QAM	1	0	21.57	21.54	21.60	22	2
10	64QAM	1	25	21.61	21.73	21.58		
10	64QAM	1	49	21.29	21.26	21.46		
10	64QAM	25	0	20.71	20.80	20.63	21	3
10	64QAM	25	12	20.77	20.73	20.57		
10	64QAM	25	25	20.41	20.66	20.59		
10	64QAM	50	0	20.44	20.70	20.54		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.51	23.69	23.59	24	0
5	QPSK	1	12	23.36	23.65	23.57		
5	QPSK	1	24	23.40	23.61	23.53		
5	QPSK	12	0	22.64	22.80	22.76	23	1
5	QPSK	12	7	22.59	22.74	22.73		
5	QPSK	12	13	22.55	22.76	22.67		
5	QPSK	25	0	22.60	22.74	22.74		
5	16QAM	1	0	22.88	22.83	22.82	23	1
5	16QAM	1	12	22.69	22.83	22.85		
5	16QAM	1	24	22.73	22.87	22.99		
5	16QAM	12	0	21.64	21.86	21.74	22	2
5	16QAM	12	7	21.59	21.77	21.72		
5	16QAM	12	13	21.51	21.76	21.67		
5	16QAM	25	0	21.53	21.75	21.73		
5	64QAM	1	0	21.65	21.86	21.88	22	2
5	64QAM	1	12	21.44	21.62	21.56		
5	64QAM	1	24	21.56	21.71	21.74		
5	64QAM	12	0	20.45	20.77	20.65	21	3
5	64QAM	12	7	20.49	20.70	20.62		
5	64QAM	12	13	20.42	20.69	20.54		
5	64QAM	25	0	20.49	20.67	20.63		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.41	23.63	23.53	24	0
3	QPSK	1	8	23.36	23.50	23.54		
3	QPSK	1	14	23.27	23.35	23.45		
3	QPSK	8	0	22.52	22.68	22.69	23	1
3	QPSK	8	4	22.44	22.66	22.66		
3	QPSK	8	7	22.47	22.66	22.63		
3	QPSK	15	0	22.46	22.59	22.61		
3	16QAM	1	0	22.91	22.74	22.92	23	1
3	16QAM	1	8	22.83	22.92	22.92		
3	16QAM	1	14	22.72	22.83	22.97		
3	16QAM	8	0	21.54	21.79	21.74	22	2
3	16QAM	8	4	21.54	21.77	21.79		
3	16QAM	8	7	21.57	21.83	21.72		
3	16QAM	15	0	21.46	21.73	21.72		
3	64QAM	1	0	21.49	21.64	21.78	22	2
3	64QAM	1	8	21.56	21.70	21.79		
3	64QAM	1	14	21.45	21.54	21.66		
3	64QAM	8	0	20.47	20.74	20.65	21	3
3	64QAM	8	4	20.40	20.68	20.61		
3	64QAM	8	7	20.43	20.70	20.66		
3	64QAM	15	0	20.35	20.63	20.59		

Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.34	23.49	23.46	24	0
1.4	QPSK	1	3	23.35	23.46	23.65		
1.4	QPSK	1	5	23.32	23.37	23.53		
1.4	QPSK	3	0	23.37	23.51	23.51		
1.4	QPSK	3	1	23.36	23.55	23.56		
1.4	QPSK	3	3	23.34	23.50	23.51		
1.4	QPSK	6	0	22.43	22.64	22.66	23	1
1.4	16QAM	1	0	22.86	22.91	22.87	23	1
1.4	16QAM	1	3	22.86	22.90	22.88		
1.4	16QAM	1	5	22.84	22.96	22.91		
1.4	16QAM	3	0	22.42	22.80	22.65		
1.4	16QAM	3	1	22.53	22.78	22.70		
1.4	16QAM	3	3	22.38	22.67	22.64		
1.4	16QAM	6	0	21.48	21.85	21.77	22	2
1.4	64QAM	1	0	21.42	21.73	21.64	22	2
1.4	64QAM	1	3	21.56	21.68	21.72		
1.4	64QAM	1	5	21.49	21.76	21.59		
1.4	64QAM	3	0	21.40	21.53	21.58		
1.4	64QAM	3	1	21.50	21.64	21.60		
1.4	64QAM	3	3	21.45	21.61	21.57		
1.4	64QAM	6	0	20.34	20.61	20.59	21	3

<LTE Band 71>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				133222	133322	133372		
Frequency (MHz)				673	683	688		
20	QPSK	1	0	22.60	22.79	22.60	24	0
20	QPSK	1	49	22.55	22.76	22.50		
20	QPSK	1	99	22.45	22.79	22.59		
20	QPSK	50	0	21.64	21.85	21.78	23	1
20	QPSK	50	24	21.63	21.85	21.70		
20	QPSK	50	50	21.67	21.85	21.78		
20	QPSK	100	0	21.63	21.77	21.69		
20	16QAM	1	0	21.64	21.94	21.78	23	1
20	16QAM	1	49	21.58	21.86	21.77		
20	16QAM	1	99	21.54	21.97	21.71		
20	16QAM	50	0	20.33	20.57	20.52	22	2
20	16QAM	50	24	20.46	20.47	20.46		
20	16QAM	50	50	20.27	20.53	20.37		
20	16QAM	100	0	20.41	20.43	20.36		
20	64QAM	1	0	20.38	20.59	20.35	22	2
20	64QAM	1	49	20.26	20.29	20.17		
20	64QAM	1	99	20.37	20.49	20.55		
20	64QAM	50	0	19.49	19.81	19.72	21	3
20	64QAM	50	24	19.52	19.65	19.62		
20	64QAM	50	50	19.59	19.64	19.65		
20	64QAM	100	0	19.60	19.42	19.32		

Channel				133197	133297	133397	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				670.5	680.5	690.5		
15	QPSK	1	0	22.68	22.65	22.48	24	0
15	QPSK	1	37	22.66	22.62	22.43		
15	QPSK	1	74	22.49	22.40	22.52		
15	QPSK	36	0	21.24	21.27	21.19	23	1
15	QPSK	36	20	21.27	21.34	21.25		
15	QPSK	36	39	21.41	21.15	21.34		
15	QPSK	75	0	21.34	21.18	21.26		
15	16QAM	1	0	21.45	21.47	21.17	23	1
15	16QAM	1	37	21.73	21.39	21.45		
15	16QAM	1	74	21.54	21.45	21.51		
15	16QAM	36	0	20.15	20.30	20.03	22	2
15	16QAM	36	20	20.33	20.33	20.37		
15	16QAM	36	39	20.23	20.09	20.07		
15	16QAM	75	0	20.29	20.18	20.20		
15	64QAM	1	0	20.48	20.70	20.51	22	2
15	64QAM	1	37	20.62	20.87	20.55		
15	64QAM	1	74	20.75	20.59	20.62		
15	64QAM	36	0	19.42	19.34	19.29	21	3
15	64QAM	36	20	19.38	19.47	19.35		
15	64QAM	36	39	19.36	19.35	19.40		
15	64QAM	75	0	19.31	19.32	19.30		
Channel				133172	133272	133422	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				668	678	693		
10	QPSK	1	0	22.57	22.66	22.58	24	0
10	QPSK	1	25	22.49	22.65	22.54		
10	QPSK	1	49	22.43	22.59	22.52		
10	QPSK	25	0	21.10	21.30	21.24	23	1
10	QPSK	25	12	21.40	21.57	21.41		
10	QPSK	25	25	21.42	21.39	21.53		
10	QPSK	50	0	21.25	21.48	21.35		
10	16QAM	1	0	21.61	21.95	21.01	23	1
10	16QAM	1	25	21.53	21.71	21.65		
10	16QAM	1	49	21.86	22.05	21.90		
10	16QAM	25	0	20.04	20.38	20.22	22	2
10	16QAM	25	12	20.33	20.46	20.48		
10	16QAM	25	25	20.49	20.47	20.54		
10	16QAM	50	0	20.30	20.44	20.36		
10	64QAM	1	0	20.82	20.99	20.89	22	2
10	64QAM	1	25	20.56	20.79	20.64		
10	64QAM	1	49	20.90	21.22	20.82		
10	64QAM	25	0	19.06	19.36	19.17	21	3
10	64QAM	25	12	19.35	19.55	19.38		
10	64QAM	25	25	19.40	19.62	19.61		
10	64QAM	50	0	19.25	19.45	19.26		

Channel				133147	133247	133447	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				665.5	675.5	695.5		
5	QPSK	1	0	22.50	22.65	22.48	24	0
5	QPSK	1	12	22.61	22.51	22.52		
5	QPSK	1	24	22.46	22.59	22.41		
5	QPSK	12	0	21.33	21.58	21.53	23	1
5	QPSK	12	7	21.44	21.53	21.39		
5	QPSK	12	13	21.40	21.53	21.32		
5	QPSK	25	0	21.48	21.50	21.40		
5	16QAM	1	0	21.59	21.74	21.79	23	1
5	16QAM	1	12	21.78	21.67	21.54		
5	16QAM	1	24	21.71	21.90	21.65		
5	16QAM	12	0	20.72	20.59	20.56	22	2
5	16QAM	12	7	20.56	20.67	20.47		
5	16QAM	12	13	20.43	20.58	20.37		
5	16QAM	25	0	20.34	20.46	20.44		
5	64QAM	1	0	20.73	20.86	20.86	22	2
5	64QAM	1	12	20.70	20.83	20.77		
5	64QAM	1	24	20.93	21.14	20.81		
5	64QAM	12	0	19.47	19.54	19.42	21	3
5	64QAM	12	7	19.61	19.55	19.47		
5	64QAM	12	13	19.40	19.57	19.38		
5	64QAM	25	0	19.43	19.46	19.42		

<Reduced Power Mode for P-Sensor On>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	18.04	18.54	18.06	19.5	0
20	QPSK	1	49	18.06	18.07	18.05		
20	QPSK	1	99	18.05	18.12	18.04		
20	QPSK	50	0	17.96	18.11	18.10	19.5	0
20	QPSK	50	24	17.90	18.03	17.97		
20	QPSK	50	50	17.83	17.99	18.05		
20	QPSK	100	0	17.88	18.12	18.15		
20	16QAM	1	0	18.31	18.29	18.52	19.5	0
20	16QAM	1	49	18.08	18.19	18.34		
20	16QAM	1	99	18.10	18.40	18.33		
20	16QAM	50	0	17.88	18.15	18.08	19.5	0
20	16QAM	50	24	17.96	18.08	18.00		
20	16QAM	50	50	17.94	18.07	18.10		
20	16QAM	100	0	17.96	18.10	18.15		
20	64QAM	1	0	18.19	18.21	18.42	19.5	0
20	64QAM	1	49	18.10	18.03	18.13		
20	64QAM	1	99	18.02	18.29	18.25		
20	64QAM	50	0	17.92	18.13	18.08	19.5	0
20	64QAM	50	24	17.94	18.08	17.98		
20	64QAM	50	50	17.94	18.05	18.06		
20	64QAM	100	0	17.98	18.13	18.13		

Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	17.99	17.94	17.99	19.5	0
15	QPSK	1	37	17.88	17.98	17.95		
15	QPSK	1	74	18.14	18.29	18.31		
15	QPSK	36	0	18.00	18.14	18.11	19.5	0
15	QPSK	36	20	17.90	18.05	17.99		
15	QPSK	36	39	17.92	18.06	18.14		
15	QPSK	75	0	17.84	18.07	18.03		
15	16QAM	1	0	18.30	18.01	18.49	19.5	0
15	16QAM	1	37	18.30	18.15	18.17		
15	16QAM	1	74	18.26	18.48	18.51		
15	16QAM	36	0	17.94	18.11	18.07	19.5	0
15	16QAM	36	20	17.82	18.01	17.98		
15	16QAM	36	39	17.89	18.02	18.04		
15	16QAM	75	0	17.92	18.12	18.08		
15	64QAM	1	0	18.18	18.44	18.41	19.5	0
15	64QAM	1	37	18.20	18.00	18.02		
15	64QAM	1	74	18.21	18.43	18.40		
15	64QAM	36	0	17.94	18.06	18.04	19.5	0
15	64QAM	36	20	17.87	17.99	17.96		
15	64QAM	36	39	17.84	18.02	18.01		
15	64QAM	75	0	17.91	18.10	18.08		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	17.93	17.95	17.98	19.5	0
10	QPSK	1	25	18.02	18.10	18.07		
10	QPSK	1	49	18.32	18.27	18.28		
10	QPSK	25	0	18.10	18.17	18.08	19.5	0
10	QPSK	25	12	18.02	18.10	18.08		
10	QPSK	25	25	18.02	18.19	18.10		
10	QPSK	50	0	17.98	18.11	18.02		
10	16QAM	1	0	18.01	18.00	18.01	19.5	0
10	16QAM	1	25	18.19	18.22	18.27		
10	16QAM	1	49	18.47	18.43	18.46		
10	16QAM	25	0	18.08	18.13	18.08	19.5	0
10	16QAM	25	12	18.01	18.13	18.05		
10	16QAM	25	25	17.97	18.12	18.10		
10	16QAM	50	0	18.12	18.12	18.08		
10	64QAM	1	0	18.40	18.47	18.49	19.5	0
10	64QAM	1	25	18.09	18.12	18.16		
10	64QAM	1	49	18.40	18.41	18.42		
10	64QAM	25	0	18.09	18.13	18.11	19.5	0
10	64QAM	25	12	18.01	18.07	18.06		
10	64QAM	25	25	17.99	18.15	18.11		
10	64QAM	50	0	18.05	18.14	18.08		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	17.93	17.96	17.93	19.5	0
5	QPSK	1	12	17.92	18.06	18.03		
5	QPSK	1	24	17.90	18.04	17.96		
5	QPSK	12	0	18.06	18.10	18.11	19.5	0
5	QPSK	12	7	18.00	18.03	17.98		
5	QPSK	12	13	17.96	17.94	17.96		
5	QPSK	25	0	18.00	18.07	18.06		
5	16QAM	1	0	18.44	18.44	18.38	19.5	0
5	16QAM	1	12	18.11	18.25	18.18		
5	16QAM	1	24	18.28	18.33	18.22		
5	16QAM	12	0	18.03	18.10	18.10	19.5	0
5	16QAM	12	7	18.02	18.07	18.05		
5	16QAM	12	13	17.93	17.95	17.99		
5	16QAM	25	0	18.01	18.07	18.05		
5	64QAM	1	0	18.26	18.33	18.25	19.5	0
5	64QAM	1	12	18.00	18.10	18.10		
5	64QAM	1	24	18.05	18.21	18.13		
5	64QAM	12	0	18.04	18.05	18.11	19.5	0
5	64QAM	12	7	17.99	18.04	17.99		
5	64QAM	12	13	17.92	17.96	18.02		
5	64QAM	25	0	18.01	18.06	18.03		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	17.96	17.90	17.97	19.5	0
3	QPSK	1	8	17.98	18.03	17.98		
3	QPSK	1	14	17.87	17.92	17.93		
3	QPSK	8	0	17.99	18.06	18.06	19.5	0
3	QPSK	8	4	17.97	18.06	18.00		
3	QPSK	8	7	17.97	17.99	17.98		
3	QPSK	15	0	18.00	18.03	17.99		
3	16QAM	1	0	18.51	18.49	18.39	19.5	0
3	16QAM	1	8	18.34	18.38	18.34		
3	16QAM	1	14	18.29	18.33	18.30		
3	16QAM	8	0	18.05	18.05	18.08	19.5	0
3	16QAM	8	4	18.03	18.04	18.03		
3	16QAM	8	7	17.96	17.98	18.01		
3	16QAM	15	0	18.06	18.07	18.05		
3	64QAM	1	0	18.14	18.28	18.24	19.5	0
3	64QAM	1	8	18.09	18.19	18.25		
3	64QAM	1	14	18.04	18.16	18.19		
3	64QAM	8	0	18.09	18.11	18.04	19.5	0
3	64QAM	8	4	18.02	18.10	18.07		
3	64QAM	8	7	17.99	18.03	18.05		
3	64QAM	15	0	18.02	18.06	18.03		

Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	17.94	17.97	17.80	19.5	0
1.4	QPSK	1	3	18.01	18.04	18.02		
1.4	QPSK	1	5	17.92	17.97	17.96		
1.4	QPSK	3	0	17.99	18.04	17.95		
1.4	QPSK	3	1	18.00	18.02	17.97		
1.4	QPSK	3	3	17.95	17.97	17.98		
1.4	QPSK	6	0	17.94	18.01	17.98	19.5	0
1.4	16QAM	1	0	18.37	18.39	18.30	19.5	0
1.4	16QAM	1	3	18.36	18.38	18.38		
1.4	16QAM	1	5	18.31	18.33	18.28		
1.4	16QAM	3	0	17.95	18.00	17.98		
1.4	16QAM	3	1	18.02	18.04	17.99		
1.4	16QAM	3	3	17.97	17.98	17.94		
1.4	16QAM	6	0	18.06	18.13	18.07	19.5	0
1.4	64QAM	1	0	18.17	18.20	18.14	19.5	0
1.4	64QAM	1	3	18.17	18.18	18.21		
1.4	64QAM	1	5	18.07	18.12	18.17		
1.4	64QAM	3	0	18.04	18.10	18.01		
1.4	64QAM	3	1	18.07	18.11	18.07		
1.4	64QAM	3	3	18.03	18.06	17.97		
1.4	64QAM	6	0	17.98	17.98	17.97	19.5	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	15.07	15.08	15.07	17	0
20	QPSK	1	49	15.18	15.55	15.11		
20	QPSK	1	99	15.14	15.12	15.11		
20	QPSK	50	0	15.10	15.07	15.02	17	0
20	QPSK	50	24	15.08	15.02	15.03		
20	QPSK	50	50	15.01	15.02	15.03		
20	QPSK	100	0	15.05	15.08	15.08		
20	16QAM	1	0	15.32	15.46	15.40	17	0
20	16QAM	1	49	15.44	15.50	15.38		
20	16QAM	1	99	15.45	15.23	15.28		
20	16QAM	50	0	15.03	15.04	15.02	17	0
20	16QAM	50	24	15.05	15.01	15.06		
20	16QAM	50	50	15.01	15.02	15.03		
20	16QAM	100	0	15.06	15.11	15.01		
20	64QAM	1	0	15.11	15.19	15.18	17	0
20	64QAM	1	49	15.01	15.01	15.03		
20	64QAM	1	99	15.28	15.13	15.16		
20	64QAM	50	0	15.09	15.02	15.02	17	0
20	64QAM	50	24	15.04	15.02	15.05		
20	64QAM	50	50	15.01	15.01	15.03		
20	64QAM	100	0	15.07	15.11	15.01		

Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	15.01	15.03	15.01	17	0
15	QPSK	1	37	15.04	15.12	15.04		
15	QPSK	1	74	15.03	15.02	15.01		
15	QPSK	36	0	15.10	15.20	15.11	17	0
15	QPSK	36	20	15.09	15.17	15.08		
15	QPSK	36	39	15.04	15.02	15.06		
15	QPSK	75	0	15.09	15.10	15.09		
15	16QAM	1	0	15.23	15.27	15.23	17	0
15	16QAM	1	37	15.17	15.25	15.20		
15	16QAM	1	74	15.48	15.30	15.37		
15	16QAM	36	0	15.12	15.17	15.13	17	0
15	16QAM	36	20	15.10	15.17	15.08		
15	16QAM	36	39	15.01	15.04	15.04		
15	16QAM	75	0	15.02	15.12	15.18		
15	64QAM	1	0	15.28	15.40	15.33	17	0
15	64QAM	1	37	15.50	15.47	15.28		
15	64QAM	1	74	15.31	15.14	15.21		
15	64QAM	36	0	15.10	15.21	15.14	17	0
15	64QAM	36	20	15.13	15.15	15.02		
15	64QAM	36	39	15.04	15.04	15.05		
15	64QAM	75	0	15.00	15.13	15.16		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	15.01	15.02	15.06	17	0
10	QPSK	1	25	15.03	15.11	15.07		
10	QPSK	1	49	15.46	15.49	15.51		
10	QPSK	25	0	15.14	15.17	15.13	17	0
10	QPSK	25	12	15.12	15.21	15.10		
10	QPSK	25	25	15.21	15.17	15.22		
10	QPSK	50	0	15.18	15.20	15.12		
10	16QAM	1	0	15.22	15.28	15.27	17	0
10	16QAM	1	25	15.27	15.29	15.39		
10	16QAM	1	49	15.26	15.21	15.29		
10	16QAM	25	0	15.11	15.14	15.10	17	0
10	16QAM	25	12	15.11	15.15	15.10		
10	16QAM	25	25	15.17	15.12	15.21		
10	16QAM	50	0	15.19	15.24	15.19		
10	64QAM	1	0	15.50	15.50	15.48	17	0
10	64QAM	1	25	15.30	15.33	15.27		
10	64QAM	1	49	15.25	15.29	15.20		
10	64QAM	25	0	15.16	15.20	15.09	17	0
10	64QAM	25	12	15.12	15.18	15.10		
10	64QAM	25	25	15.26	15.19	15.20		
10	64QAM	50	0	15.17	15.20	15.14		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	15.04	15.04	15.02	17	0
5	QPSK	1	12	15.01	15.03	15.01		
5	QPSK	1	24	15.04	15.03	15.05		
5	QPSK	12	0	15.12	15.15	15.16	17	0
5	QPSK	12	7	15.05	15.14	15.08		
5	QPSK	12	13	15.06	15.03	15.11		
5	QPSK	25	0	15.10	15.16	15.12		
5	16QAM	1	0	15.46	15.53	15.44	17	0
5	16QAM	1	12	15.22	15.20	15.23		
5	16QAM	1	24	15.36	15.34	15.34		
5	16QAM	12	0	15.16	15.18	15.21	17	0
5	16QAM	12	7	15.14	15.17	15.11		
5	16QAM	12	13	15.05	15.11	15.12		
5	16QAM	25	0	15.04	15.11	15.10		
5	64QAM	1	0	15.30	15.39	15.33	17	0
5	64QAM	1	12	15.17	15.26	15.22		
5	64QAM	1	24	15.19	15.16	15.20		
5	64QAM	12	0	15.15	15.16	15.20	17	0
5	64QAM	12	7	15.12	15.13	15.05		
5	64QAM	12	13	15.03	15.10	15.09		
5	64QAM	25	0	15.04	15.15	15.10		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	15.01	15.03	15.02	17	0
3	QPSK	1	8	15.07	15.14	15.10		
3	QPSK	1	14	15.03	15.00	15.02		
3	QPSK	8	0	15.05	15.08	15.09	17	0
3	QPSK	8	4	15.07	15.15	15.13		
3	QPSK	8	7	15.01	15.06	15.07		
3	QPSK	15	0	15.09	15.14	15.07		
3	16QAM	1	0	15.26	15.34	15.39	17	0
3	16QAM	1	8	15.32	15.42	15.41		
3	16QAM	1	14	15.28	15.23	15.24		
3	16QAM	8	0	15.19	15.21	15.20	17	0
3	16QAM	8	4	15.20	15.23	15.23		
3	16QAM	8	7	15.12	15.19	15.21		
3	16QAM	15	0	15.11	15.15	15.06		
3	64QAM	1	0	15.17	15.19	15.26	17	0
3	64QAM	1	8	15.24	15.24	15.28		
3	64QAM	1	14	15.13	15.15	15.16		
3	64QAM	8	0	15.01	15.07	15.08	17	0
3	64QAM	8	4	15.08	15.15	15.20		
3	64QAM	8	7	15.01	15.08	15.08		
3	64QAM	15	0	15.12	15.16	15.05		

Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	15.03	15.01	15.02	17	0
1.4	QPSK	1	3	15.01	15.06	15.08		
1.4	QPSK	1	5	15.01	15.01	15.01		
1.4	QPSK	3	0	15.04	15.01	15.10		
1.4	QPSK	3	1	15.10	15.12	15.15		
1.4	QPSK	3	3	15.01	15.08	15.04		
1.4	QPSK	6	0	15.01	15.10	15.10	17	0
1.4	16QAM	1	0	15.23	15.29	15.36	17	0
1.4	16QAM	1	3	15.31	15.37	15.41		
1.4	16QAM	1	5	15.28	15.34	15.29		
1.4	16QAM	3	0	15.13	15.14	15.22		
1.4	16QAM	3	1	15.19	15.26	15.22		
1.4	16QAM	3	3	15.06	15.16	15.11		
1.4	16QAM	6	0	15.03	15.14	15.16	17	0
1.4	64QAM	1	0	15.13	15.11	15.20	17	0
1.4	64QAM	1	3	15.06	15.25	15.23		
1.4	64QAM	1	5	15.13	15.12	15.12		
1.4	64QAM	3	0	15.11	15.12	15.21		
1.4	64QAM	3	1	15.16	15.28	15.20		
1.4	64QAM	3	3	15.07	15.13	15.12		
1.4	64QAM	6	0	15.01	15.16	15.09	17	0

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	18.00	17.85	18.36	19.5	0
20	QPSK	1	49	18.02	18.16	18.20		
20	QPSK	1	99	18.34	18.32	18.21		
20	QPSK	50	0	17.81	17.77	17.96	19.5	0
20	QPSK	50	24	17.78	17.79	17.81		
20	QPSK	50	50	17.72	17.72	17.77		
20	QPSK	100	0	17.81	17.86	17.96		
20	16QAM	1	0	18.01	18.14	18.02	19.5	0
20	16QAM	1	49	18.02	17.95	18.03		
20	16QAM	1	99	17.65	17.73	17.73		
20	16QAM	50	0	17.85	17.82	17.83	19.5	0
20	16QAM	50	24	17.82	17.80	17.82		
20	16QAM	50	50	17.79	17.74	17.81		
20	16QAM	100	0	17.87	17.74	17.86		
20	64QAM	1	0	18.00	18.03	18.09	19.5	0
20	64QAM	1	49	17.63	17.70	17.89		
20	64QAM	1	99	17.60	17.61	17.65		
20	64QAM	50	0	17.81	17.78	17.80	19.5	0
20	64QAM	50	24	17.80	17.81	17.84		
20	64QAM	50	50	17.73	17.72	17.78		
20	64QAM	100	0	17.87	17.77	17.87		

Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	17.92	17.83	17.89	19.5	0
15	QPSK	1	37	17.82	17.78	17.79		
15	QPSK	1	74	17.76	17.71	17.82		
15	QPSK	36	0	17.93	17.79	17.93	19.5	0
15	QPSK	36	20	17.94	17.88	17.88		
15	QPSK	36	39	17.87	17.81	17.88		
15	QPSK	75	0	17.94	17.86	17.91		
15	16QAM	1	0	18.24	18.13	18.23	19.5	0
15	16QAM	1	37	17.94	17.91	17.96		
15	16QAM	1	74	18.05	17.97	18.03		
15	16QAM	36	0	17.95	17.83	17.95	19.5	0
15	16QAM	36	20	17.92	17.83	17.89		
15	16QAM	36	39	17.88	17.81	17.92		
15	16QAM	75	0	17.93	17.88	18.01		
15	64QAM	1	0	18.07	17.99	18.08	19.5	0
15	64QAM	1	37	18.04	17.88	17.87		
15	64QAM	1	74	17.90	17.81	17.92		
15	64QAM	36	0	17.94	17.81	17.97	19.5	0
15	64QAM	36	20	17.89	17.80	17.83		
15	64QAM	36	39	17.88	17.81	17.88		
15	64QAM	75	0	17.94	17.88	18.00		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	17.62	17.70	17.77	19.5	0
10	QPSK	1	25	17.78	17.75	17.78		
10	QPSK	1	49	18.07	17.94	17.90		
10	QPSK	25	0	17.95	17.71	17.79	19.5	0
10	QPSK	25	12	17.88	17.77	17.77		
10	QPSK	25	25	17.89	17.72	17.80		
10	QPSK	50	0	17.83	17.77	17.80		
10	16QAM	1	0	18.00	18.13	18.00	19.5	0
10	16QAM	1	25	18.10	17.99	17.99		
10	16QAM	1	49	18.00	18.19	18.12		
10	16QAM	25	0	17.88	17.70	17.77	19.5	0
10	16QAM	25	12	17.84	17.74	17.79		
10	16QAM	25	25	17.89	17.72	17.81		
10	16QAM	50	0	17.92	17.79	17.78		
10	64QAM	1	0	18.21	18.03	18.04	19.5	0
10	64QAM	1	25	17.96	17.88	17.89		
10	64QAM	1	49	18.20	18.08	18.05		
10	64QAM	25	0	17.98	17.73	17.82	19.5	0
10	64QAM	25	12	17.84	17.79	17.78		
10	64QAM	25	25	17.92	17.72	17.81		
10	64QAM	50	0	17.85	17.78	17.78		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	17.93	17.78	17.76	19.5	0
5	QPSK	1	12	17.77	17.65	17.65		
5	QPSK	1	24	17.76	17.63	17.68		
5	QPSK	12	0	17.93	17.75	17.78	19.5	0
5	QPSK	12	7	17.87	17.69	17.72		
5	QPSK	12	13	17.78	17.65	17.68		
5	QPSK	25	0	17.89	17.73	17.72		
5	16QAM	1	0	18.26	18.04	18.05	19.5	0
5	16QAM	1	12	18.01	17.87	17.85		
5	16QAM	1	24	18.05	17.92	17.90		
5	16QAM	12	0	17.93	17.78	17.76	19.5	0
5	16QAM	12	7	17.89	17.74	17.72		
5	16QAM	12	13	17.83	17.68	17.71		
5	16QAM	25	0	17.82	17.71	17.76		
5	64QAM	1	0	18.11	17.87	17.97	19.5	0
5	64QAM	1	12	17.92	17.79	17.78		
5	64QAM	1	24	17.93	17.84	17.86		
5	64QAM	12	0	17.89	17.76	17.77	19.5	0
5	64QAM	12	7	17.87	17.73	17.74		
5	64QAM	12	13	17.80	17.67	17.71		
5	64QAM	25	0	17.85	17.76	17.77		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	17.89	17.80	17.87	19.5	0
3	QPSK	1	8	17.85	17.68	17.70		
3	QPSK	1	14	17.78	17.59	17.66		
3	QPSK	8	0	17.91	17.71	17.75	19.5	0
3	QPSK	8	4	17.87	17.69	17.69		
3	QPSK	8	7	17.83	17.67	17.73		
3	QPSK	15	0	17.82	17.66	17.71		
3	16QAM	1	0	18.17	18.00	18.00	19.5	0
3	16QAM	1	8	18.10	17.99	17.95		
3	16QAM	1	14	18.04	17.89	17.96		
3	16QAM	8	0	17.94	17.80	17.87	19.5	0
3	16QAM	8	4	17.95	17.78	17.85		
3	16QAM	8	7	17.92	17.69	17.87		
3	16QAM	15	0	17.89	17.72	17.81		
3	64QAM	1	0	18.05	17.89	17.97	19.5	0
3	64QAM	1	8	17.97	17.85	17.98		
3	64QAM	1	14	17.84	17.76	17.92		
3	64QAM	8	0	17.89	17.74	17.85	19.5	0
3	64QAM	8	4	17.93	17.72	17.88		
3	64QAM	8	7	17.81	17.69	17.83		
3	64QAM	15	0	17.85	17.72	17.83		

Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	17.77	17.72	17.84	19.5	0
1.4	QPSK	1	3	17.77	17.72	17.69		
1.4	QPSK	1	5	17.72	17.64	17.63		
1.4	QPSK	3	0	17.86	17.64	17.66		
1.4	QPSK	3	1	17.85	17.66	17.68		
1.4	QPSK	3	3	17.83	17.67	17.67		
1.4	QPSK	6	0	17.88	17.68	17.66	19.5	0
1.4	16QAM	1	0	18.07	18.00	17.91	19.5	0
1.4	16QAM	1	3	18.04	18.02	18.03		
1.4	16QAM	1	5	18.03	17.91	17.97		
1.4	16QAM	3	0	17.82	17.73	17.83		
1.4	16QAM	3	1	17.89	17.72	17.85		
1.4	16QAM	3	3	17.78	17.70	17.82		
1.4	16QAM	6	0	17.87	17.72	17.84	19.5	0
1.4	64QAM	1	0	17.94	17.80	17.92	19.5	0
1.4	64QAM	1	3	17.98	17.83	17.95		
1.4	64QAM	1	5	17.99	17.75	17.93		
1.4	64QAM	3	0	17.86	17.78	17.85		
1.4	64QAM	3	1	17.91	17.77	17.87		
1.4	64QAM	3	3	17.88	17.69	17.80		
1.4	64QAM	6	0	17.85	17.71	17.76	19.5	0

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	16.15	16.42	16.29	17	0
20	QPSK	1	49	16.15	16.23	16.23		
20	QPSK	1	99	16.24	16.30	16.04		
20	QPSK	50	0	15.64	15.84	15.75	17	0
20	QPSK	50	24	15.74	15.89	15.86		
20	QPSK	50	50	15.67	15.86	15.72		
20	QPSK	100	0	15.74	15.93	15.81		
20	16QAM	1	0	15.86	16.15	16.04	17	0
20	16QAM	1	49	15.61	16.13	15.75		
20	16QAM	1	99	15.95	16.25	15.90		
20	16QAM	50	0	15.58	15.89	15.76	17	0
20	16QAM	50	24	15.64	15.91	15.80		
20	16QAM	50	50	15.53	15.86	15.72		
20	16QAM	100	0	15.71	15.91	15.79		
20	64QAM	1	0	15.56	15.87	15.86	17	0
20	64QAM	1	49	15.90	15.92	15.83		
20	64QAM	1	99	15.90	15.91	15.79		
20	64QAM	50	0	15.73	15.86	15.76	17	0
20	64QAM	50	24	15.71	15.92	15.81		
20	64QAM	50	50	15.65	15.87	15.72		
20	64QAM	100	0	15.69	15.96	15.89		

Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	16.01	15.38	15.87	17	0
15	QPSK	1	37	15.51	15.81	15.84		
15	QPSK	1	74	15.71	16.11	15.90		
15	QPSK	36	0	15.81	16.07	15.87	17	0
15	QPSK	36	20	15.76	16.01	15.83		
15	QPSK	36	39	15.71	15.99	15.76		
15	QPSK	75	0	15.78	15.97	15.89		
15	16QAM	1	0	16.25	16.36	16.19	17	0
15	16QAM	1	37	15.94	16.01	16.16		
15	16QAM	1	74	16.09	16.26	15.95		
15	16QAM	36	0	15.79	16.03	15.78	17	0
15	16QAM	36	20	15.75	16.02	15.77		
15	16QAM	36	39	15.71	15.97	15.87		
15	16QAM	75	0	15.80	16.01	15.96		
15	64QAM	1	0	15.82	15.99	16.09	17	0
15	64QAM	1	37	15.60	15.84	16.32		
15	64QAM	1	74	16.14	16.30	15.13		
15	64QAM	36	0	15.78	15.94	15.85	17	0
15	64QAM	36	20	15.79	15.99	15.85		
15	64QAM	36	39	15.59	16.07	15.80		
15	64QAM	75	0	15.74	16.00	15.89		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	15.82	15.71	15.22	17	0
10	QPSK	1	25	15.72	15.92	15.82		
10	QPSK	1	49	15.94	16.19	16.06		
10	QPSK	25	0	15.77	16.04	15.92	17	0
10	QPSK	25	12	15.83	15.99	15.86		
10	QPSK	25	25	15.72	15.89	15.98		
10	QPSK	50	0	15.79	15.97	15.93		
10	16QAM	1	0	15.73	16.23	16.15	17	0
10	16QAM	1	25	16.40	16.09	15.94		
10	16QAM	1	49	16.42	16.41	16.10		
10	16QAM	25	0	15.63	15.98	16.03	17	0
10	16QAM	25	12	15.70	15.96	15.86		
10	16QAM	25	25	15.65	15.92	15.94		
10	16QAM	50	0	15.69	15.93	15.83		
10	64QAM	1	0	16.36	16.32	16.36	17	0
10	64QAM	1	25	16.34	15.94	16.35		
10	64QAM	1	49	16.20	16.36	15.89		
10	64QAM	25	0	15.76	15.95	15.98	17	0
10	64QAM	25	12	15.74	15.92	15.83		
10	64QAM	25	25	15.68	15.89	15.87		
10	64QAM	50	0	15.80	15.91	15.96		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	15.64	15.70	15.82	17	0
5	QPSK	1	12	15.76	15.68	15.79		
5	QPSK	1	24	15.63	15.83	15.74		
5	QPSK	12	0	15.77	15.96	15.84	17	0
5	QPSK	12	7	15.72	15.84	15.88		
5	QPSK	12	13	15.62	15.88	15.75		
5	QPSK	25	0	15.71	15.87	15.86		
5	16QAM	1	0	16.23	16.32	16.33	17	0
5	16QAM	1	12	15.57	15.74	15.88		
5	16QAM	1	24	16.40	16.35	15.87		
5	16QAM	12	0	15.76	16.03	15.90	17	0
5	16QAM	12	7	15.79	15.81	16.05		
5	16QAM	12	13	15.71	15.87	15.81		
5	16QAM	25	0	15.74	15.96	15.75		
5	64QAM	1	0	16.30	16.18	16.39	17	0
5	64QAM	1	12	16.07	16.00	16.03		
5	64QAM	1	24	15.88	15.66	15.98		
5	64QAM	12	0	15.74	15.62	15.87	17	0
5	64QAM	12	7	15.58	15.95	15.84		
5	64QAM	12	13	15.68	15.88	15.84		
5	64QAM	25	0	15.71	15.83	15.92		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	15.07	15.55	15.83	17	0
3	QPSK	1	8	15.53	15.87	15.88		
3	QPSK	1	14	15.59	15.79	15.75		
3	QPSK	8	0	15.63	15.86	15.83	17	0
3	QPSK	8	4	15.65	15.81	15.89		
3	QPSK	8	7	15.66	15.86	15.79		
3	QPSK	15	0	15.58	15.81	15.84		
3	16QAM	1	0	16.38	15.92	15.96	17	0
3	16QAM	1	8	15.91	16.01	16.13		
3	16QAM	1	14	15.71	16.41	16.32		
3	16QAM	8	0	15.82	15.93	15.82	17	0
3	16QAM	8	4	15.67	15.79	16.07		
3	16QAM	8	7	15.60	15.92	15.82		
3	16QAM	15	0	15.66	15.83	15.92		
3	64QAM	1	0	15.81	15.97	16.43	17	0
3	64QAM	1	8	15.73	15.90	15.82		
3	64QAM	1	14	15.87	15.70	15.86		
3	64QAM	8	0	15.57	15.93	15.82	17	0
3	64QAM	8	4	15.52	15.80	15.99		
3	64QAM	8	7	15.56	15.81	15.81		
3	64QAM	15	0	15.57	15.83	15.87		

Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	15.52	15.50	15.65	17	0
1.4	QPSK	1	3	15.51	15.81	15.86		
1.4	QPSK	1	5	15.52	15.68	15.69		
1.4	QPSK	3	0	15.53	15.81	15.78		
1.4	QPSK	3	1	15.60	15.74	15.86		
1.4	QPSK	3	3	15.57	15.77	15.78		
1.4	QPSK	6	0	15.56	15.78	15.78	17	0
1.4	16QAM	1	0	15.56	16.10	15.61	17	0
1.4	16QAM	1	3	15.71	16.38	16.25		
1.4	16QAM	1	5	15.75	15.89	15.94		
1.4	16QAM	3	0	15.75	15.89	15.94		
1.4	16QAM	3	1	15.81	15.95	16.03		
1.4	16QAM	3	3	15.66	15.82	15.89		
1.4	16QAM	6	0	15.43	15.85	15.74	17	0
1.4	64QAM	1	0	16.18	15.82	15.89	17	0
1.4	64QAM	1	3	16.02	16.07	15.81		
1.4	64QAM	1	5	15.74	15.74	15.55		
1.4	64QAM	3	0	15.57	15.67	15.95		
1.4	64QAM	3	1	15.66	15.90	15.86		
1.4	64QAM	3	3	15.71	15.63	15.96		
1.4	64QAM	6	0	15.59	15.88	15.84	17	0

<Reduced Power Mode for Hotspot On>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	17.00	17.01	17.45	18.5	0
20	QPSK	1	49	16.97	16.98	17.02		
20	QPSK	1	99	17.00	17.13	17.05		
20	QPSK	50	0	16.99	17.15	17.10	18.5	0
20	QPSK	50	24	16.95	17.05	17.03		
20	QPSK	50	50	16.95	17.03	17.07		
20	QPSK	100	0	16.96	17.13	17.18		
20	16QAM	1	0	17.44	17.41	17.11	18.5	0
20	16QAM	1	49	17.14	17.21	17.31		
20	16QAM	1	99	17.14	17.41	17.32		
20	16QAM	50	0	16.97	17.16	17.14	18.5	0
20	16QAM	50	24	17.03	17.09	17.05		
20	16QAM	50	50	16.99	17.09	17.13		
20	16QAM	100	0	17.04	17.12	17.18		
20	64QAM	1	0	17.28	17.30	17.43	18.5	0
20	64QAM	1	49	16.97	17.09	17.17		
20	64QAM	1	99	17.10	17.31	17.20		
20	64QAM	50	0	17.01	17.17	17.14	18.5	0
20	64QAM	50	24	16.97	17.10	17.04		
20	64QAM	50	50	16.97	17.03	17.06		
20	64QAM	100	0	17.00	17.12	17.19		

Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	17.12	17.10	17.12	18.5	0
15	QPSK	1	37	17.12	17.02	16.94		
15	QPSK	1	74	17.18	17.32	17.30		
15	QPSK	36	0	17.05	17.16	17.10	18.5	0
15	QPSK	36	20	16.91	17.06	17.04		
15	QPSK	36	39	16.97	17.06	17.09		
15	QPSK	75	0	16.91	17.07	17.05		
15	16QAM	1	0	17.41	17.15	17.40	18.5	0
15	16QAM	1	37	17.00	17.11	17.11		
15	16QAM	1	74	17.30	17.40	17.41		
15	16QAM	36	0	16.99	17.12	17.05	18.5	0
15	16QAM	36	20	16.85	17.06	16.98		
15	16QAM	36	39	16.95	17.06	17.09		
15	16QAM	75	0	16.96	17.11	17.06		
15	64QAM	1	0	17.28	17.44	17.40	18.5	0
15	64QAM	1	37	16.96	17.02	16.97		
15	64QAM	1	74	17.26	17.37	17.40		
15	64QAM	36	0	17.00	17.12	17.04	18.5	0
15	64QAM	36	20	16.85	17.02	16.99		
15	64QAM	36	39	16.91	17.03	17.02		
15	64QAM	75	0	16.94	17.09	17.06		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	17.15	16.67	16.54	18.5	0
10	QPSK	1	25	17.06	17.11	17.06		
10	QPSK	1	49	17.35	17.28	17.33		
10	QPSK	25	0	17.17	17.18	17.10	18.5	0
10	QPSK	25	12	17.08	17.12	17.11		
10	QPSK	25	25	17.05	17.12	17.08		
10	QPSK	50	0	17.04	17.13	17.05		
10	16QAM	1	0	17.16	17.17	17.18	18.5	0
10	16QAM	1	25	17.30	17.23	17.20		
10	16QAM	1	49	17.18	17.12	17.40		
10	16QAM	25	0	17.12	17.16	17.09	18.5	0
10	16QAM	25	12	17.06	17.14	17.04		
10	16QAM	25	25	17.04	17.11	17.10		
10	16QAM	50	0	17.15	17.13	17.14		
10	64QAM	1	0	17.40	17.44	17.40	18.5	0
10	64QAM	1	25	17.11	17.12	17.15		
10	64QAM	1	49	17.40	17.39	17.43		
10	64QAM	25	0	17.13	17.11	17.06	18.5	0
10	64QAM	25	12	17.09	17.12	17.05		
10	64QAM	25	25	17.04	17.13	17.10		
10	64QAM	50	0	17.07	17.12	17.05		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	17.00	17.01	17.05	18.5	0
5	QPSK	1	12	16.99	17.08	16.98		
5	QPSK	1	24	16.98	17.05	16.96		
5	QPSK	12	0	17.10	17.06	17.06	18.5	0
5	QPSK	12	7	16.98	17.04	17.02		
5	QPSK	12	13	16.96	16.94	16.92		
5	QPSK	25	0	17.07	17.09	17.03		
5	16QAM	1	0	17.44	17.40	17.34	18.5	0
5	16QAM	1	12	17.14	17.26	17.24		
5	16QAM	1	24	17.27	17.39	17.24		
5	16QAM	12	0	17.07	17.07	17.09	18.5	0
5	16QAM	12	7	17.04	17.06	16.98		
5	16QAM	12	13	17.00	16.95	16.93		
5	16QAM	25	0	17.00	17.09	17.04		
5	64QAM	1	0	17.32	17.26	17.30	18.5	0
5	64QAM	1	12	17.03	17.05	17.03		
5	64QAM	1	24	17.12	17.11	17.19		
5	64QAM	12	0	17.08	17.14	17.05	18.5	0
5	64QAM	12	7	17.03	17.04	17.03		
5	64QAM	12	13	17.00	16.93	16.93		
5	64QAM	25	0	17.02	17.08	17.03		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	17.05	17.01	17.01	18.5	0
3	QPSK	1	8	16.99	16.99	16.95		
3	QPSK	1	14	16.92	16.87	16.91		
3	QPSK	8	0	17.00	17.02	17.01	18.5	0
3	QPSK	8	4	16.98	17.00	16.97		
3	QPSK	8	7	16.96	16.96	16.95		
3	QPSK	15	0	17.01	16.99	16.95		
3	16QAM	1	0	17.40	17.40	17.39	18.5	0
3	16QAM	1	8	17.40	17.44	17.36		
3	16QAM	1	14	17.30	17.38	17.37		
3	16QAM	8	0	17.03	17.01	17.00	18.5	0
3	16QAM	8	4	17.05	17.06	17.02		
3	16QAM	8	7	17.02	17.01	16.92		
3	16QAM	15	0	17.02	17.05	17.05		
3	64QAM	1	0	17.13	17.22	17.24	18.5	0
3	64QAM	1	8	17.18	17.21	17.16		
3	64QAM	1	14	17.13	17.15	17.19		
3	64QAM	8	0	17.10	17.09	17.03	18.5	0
3	64QAM	8	4	17.09	17.06	17.04		
3	64QAM	8	7	16.98	17.03	17.03		
3	64QAM	15	0	17.01	17.01	17.01		

Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	17.00	16.98	17.00	18.5	0
1.4	QPSK	1	3	16.99	16.99	17.00		
1.4	QPSK	1	5	16.89	16.92	16.94		
1.4	QPSK	3	0	16.95	16.95	16.89		
1.4	QPSK	3	1	16.97	16.99	16.91		
1.4	QPSK	3	3	16.95	16.97	16.93		
1.4	QPSK	6	0	16.90	16.95	16.93	18.5	0
1.4	16QAM	1	0	17.41	17.36	17.30	18.5	0
1.4	16QAM	1	3	17.37	17.36	17.35		
1.4	16QAM	1	5	17.25	17.27	17.38		
1.4	16QAM	3	0	16.97	16.96	16.93		
1.4	16QAM	3	1	16.97	16.97	16.95		
1.4	16QAM	3	3	16.89	16.92	16.86		
1.4	16QAM	6	0	17.07	17.04	17.03	18.5	0
1.4	64QAM	1	0	17.10	17.14	17.12	18.5	0
1.4	64QAM	1	3	17.14	17.19	17.16		
1.4	64QAM	1	5	17.14	17.16	17.03		
1.4	64QAM	3	0	16.97	17.01	16.94		
1.4	64QAM	3	1	17.04	17.04	17.00		
1.4	64QAM	3	3	16.97	16.97	16.97		
1.4	64QAM	6	0	16.99	16.98	16.89	18.5	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	14.66	14.29	14.66	16	0
20	QPSK	1	49	14.35	14.79	14.35		
20	QPSK	1	99	14.35	14.45	14.35		
20	QPSK	50	0	14.15	14.10	14.06	16	0
20	QPSK	50	24	14.10	14.06	14.06		
20	QPSK	50	50	14.00	14.15	14.02		
20	QPSK	100	0	14.05	14.10	14.04		
20	16QAM	1	0	14.34	14.46	14.39	16	0
20	16QAM	1	49	14.52	14.51	14.38		
20	16QAM	1	99	14.46	14.23	14.34		
20	16QAM	50	0	14.11	14.02	14.07	16	0
20	16QAM	50	24	14.09	14.05	14.08		
20	16QAM	50	50	14.08	14.00	14.01		
20	16QAM	100	0	14.11	14.13	14.03		
20	64QAM	1	0	14.17	14.27	14.28	16	0
20	64QAM	1	49	14.01	14.09	14.14		
20	64QAM	1	99	14.27	14.13	14.20		
20	64QAM	50	0	14.11	14.05	14.05	16	0
20	64QAM	50	24	14.08	14.04	14.09		
20	64QAM	50	50	14.07	14.09	14.00		
20	64QAM	100	0	14.13	14.15	14.02		

Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	14.00	14.10	14.12	16	0
15	QPSK	1	37	14.16	14.19	14.07		
15	QPSK	1	74	14.03	14.09	14.00		
15	QPSK	36	0	14.14	14.23	14.14	16	0
15	QPSK	36	20	14.14	14.16	14.10		
15	QPSK	36	39	14.06	14.05	14.07		
15	QPSK	75	0	14.14	14.17	14.20		
15	16QAM	1	0	14.48	14.68	14.54	16	0
15	16QAM	1	37	14.31	14.31	14.23		
15	16QAM	1	74	14.51	14.32	14.36		
15	16QAM	36	0	14.21	14.26	14.16	16	0
15	16QAM	36	20	14.19	14.17	14.09		
15	16QAM	36	39	14.07	14.08	14.10		
15	16QAM	75	0	14.08	14.14	14.17		
15	64QAM	1	0	14.28	14.44	14.35	16	0
15	64QAM	1	37	14.59	14.64	14.24		
15	64QAM	1	74	14.34	14.17	14.17		
15	64QAM	36	0	14.20	14.27	14.12	16	0
15	64QAM	36	20	14.18	14.18	14.09		
15	64QAM	36	39	14.07	14.03	14.04		
15	64QAM	75	0	14.08	14.14	14.18		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	14.10	14.10	14.10	16	0
10	QPSK	1	25	14.11	14.06	14.10		
10	QPSK	1	49	14.53	14.46	14.56		
10	QPSK	25	0	14.18	14.23	14.17	16	0
10	QPSK	25	12	14.16	14.17	14.12		
10	QPSK	25	25	14.27	14.22	14.25		
10	QPSK	50	0	14.22	14.23	14.16		
10	16QAM	1	0	14.54	14.59	14.56	16	0
10	16QAM	1	25	14.49	14.55	14.33		
10	16QAM	1	49	14.70	14.70	14.70		
10	16QAM	25	0	14.17	14.20	14.15	16	0
10	16QAM	25	12	14.17	14.15	14.11		
10	16QAM	25	25	14.22	14.15	14.21		
10	16QAM	50	0	14.23	14.25	14.18		
10	64QAM	1	0	14.60	14.54	14.53	16	0
10	64QAM	1	25	14.34	14.34	14.23		
10	64QAM	1	49	14.51	14.68	14.57		
10	64QAM	25	0	14.21	14.25	14.17	16	0
10	64QAM	25	12	14.17	14.21	14.17		
10	64QAM	25	25	14.28	14.19	14.26		
10	64QAM	50	0	14.21	14.20	14.18		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	14.00	14.09	14.00	16	0
5	QPSK	1	12	14.08	14.04	14.04		
5	QPSK	1	24	14.05	14.04	14.06		
5	QPSK	12	0	14.14	14.14	14.20	16	0
5	QPSK	12	7	14.08	14.16	14.10		
5	QPSK	12	13	14.07	14.05	14.11		
5	QPSK	25	0	14.13	14.16	14.12		
5	16QAM	1	0	14.47	14.59	14.46	16	0
5	16QAM	1	12	14.30	14.21	14.27		
5	16QAM	1	24	14.33	14.34	14.38		
5	16QAM	12	0	14.17	14.20	14.23	16	0
5	16QAM	12	7	14.20	14.20	14.16		
5	16QAM	12	13	14.10	14.14	14.17		
5	16QAM	25	0	14.09	14.11	14.10		
5	64QAM	1	0	14.40	14.41	14.36	16	0
5	64QAM	1	12	14.21	14.29	14.20		
5	64QAM	1	24	14.21	14.17	14.25		
5	64QAM	12	0	14.16	14.16	14.21	16	0
5	64QAM	12	7	14.10	14.17	14.14		
5	64QAM	12	13	14.07	14.06	14.17		
5	64QAM	25	0	14.09	14.17	14.10		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	14.00	14.01	14.10	16	0
3	QPSK	1	8	14.14	14.13	14.10		
3	QPSK	1	14	14.05	14.00	14.01		
3	QPSK	8	0	14.05	14.07	14.07	16	0
3	QPSK	8	4	14.11	14.14	14.18		
3	QPSK	8	7	14.03	14.06	14.06		
3	QPSK	15	0	14.09	14.12	14.06		
3	16QAM	1	0	14.32	14.25	14.43	16	0
3	16QAM	1	8	14.35	14.35	14.41		
3	16QAM	1	14	14.30	14.29	14.28		
3	16QAM	8	0	14.15	14.21	14.16	16	0
3	16QAM	8	4	14.22	14.24	14.19		
3	16QAM	8	7	14.17	14.24	14.18		
3	16QAM	15	0	14.10	14.17	14.05		
3	64QAM	1	0	14.22	14.18	14.25	16	0
3	64QAM	1	8	14.22	14.25	14.33		
3	64QAM	1	14	14.18	14.08	14.19		
3	64QAM	8	0	14.04	14.05	14.12	16	0
3	64QAM	8	4	14.13	14.16	14.17		
3	64QAM	8	7	14.02	14.05	14.12		
3	64QAM	15	0	14.09	14.14	14.06		

Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	14.00	14.01	14.00	16	0
1.4	QPSK	1	3	14.04	14.02	14.06		
1.4	QPSK	1	5	14.02	14.06	14.04		
1.4	QPSK	3	0	14.04	14.01	14.05		
1.4	QPSK	3	1	14.10	14.14	14.08		
1.4	QPSK	3	3	14.02	14.02	14.04		
1.4	QPSK	6	0	14.09	14.05	14.06	16	0
1.4	16QAM	1	0	14.30	14.24	14.34	16	0
1.4	16QAM	1	3	14.33	14.34	14.36		
1.4	16QAM	1	5	14.20	14.26	14.32		
1.4	16QAM	3	0	14.08	14.13	14.12		
1.4	16QAM	3	1	14.07	14.28	14.15		
1.4	16QAM	3	3	14.07	14.13	14.10		
1.4	16QAM	6	0	14.08	14.15	14.15	16	0
1.4	64QAM	1	0	14.15	14.10	14.20	16	0
1.4	64QAM	1	3	14.24	14.21	14.23		
1.4	64QAM	1	5	14.16	14.09	14.13		
1.4	64QAM	3	0	14.18	14.12	14.16		
1.4	64QAM	3	1	14.17	14.22	14.19		
1.4	64QAM	3	3	14.08	14.12	14.09		
1.4	64QAM	6	0	14.00	14.13	14.10	16	0

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	17.00	16.81	17.15	18.5	0
20	QPSK	1	49	17.11	16.87	17.01		
20	QPSK	1	99	17.01	17.06	17.04		
20	QPSK	50	0	16.91	16.88	17.01	18.5	0
20	QPSK	50	24	17.00	16.81	16.88		
20	QPSK	50	50	16.69	16.82	16.76		
20	QPSK	100	0	17.01	16.93	17.02		
20	16QAM	1	0	17.00	17.12	17.15	18.5	0
20	16QAM	1	49	17.02	16.84	17.00		
20	16QAM	1	99	16.67	16.65	16.68		
20	16QAM	50	0	16.78	16.86	16.79	18.5	0
20	16QAM	50	24	16.90	16.91	16.91		
20	16QAM	50	50	16.95	16.83	16.81		
20	16QAM	100	0	17.02	16.88	16.94		
20	64QAM	1	0	16.94	17.20	17.12	18.5	0
20	64QAM	1	49	16.98	16.74	16.75		
20	64QAM	1	99	17.08	16.74	16.74		
20	64QAM	50	0	17.01	16.84	16.87	18.5	0
20	64QAM	50	24	16.83	16.89	16.89		
20	64QAM	50	50	16.88	16.80	16.86		
20	64QAM	100	0	16.97	16.89	16.93		

Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	17.12	16.89	16.93	18.5	0
15	QPSK	1	37	17.07	16.81	16.86		
15	QPSK	1	74	16.82	16.77	16.64		
15	QPSK	36	0	16.95	16.89	16.95	18.5	0
15	QPSK	36	20	17.12	16.89	16.93		
15	QPSK	36	39	16.96	16.91	16.94		
15	QPSK	75	0	16.96	16.96	16.90		
15	16QAM	1	0	17.17	17.15	17.14	18.5	0
15	16QAM	1	37	17.13	16.88	16.72		
15	16QAM	1	74	17.01	16.88	16.94		
15	16QAM	36	0	17.06	16.92	16.92	18.5	0
15	16QAM	36	20	17.02	16.91	16.95		
15	16QAM	36	39	16.92	16.91	16.89		
15	16QAM	75	0	17.12	17.01	17.00		
15	64QAM	1	0	17.18	17.37	17.12	18.5	0
15	64QAM	1	37	17.41	17.03	17.32		
15	64QAM	1	74	17.47	17.15	17.00		
15	64QAM	36	0	17.03	16.91	16.96	18.5	0
15	64QAM	36	20	16.90	16.88	16.84		
15	64QAM	36	39	16.95	16.91	16.83		
15	64QAM	75	0	17.10	16.99	17.05		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	16.99	16.80	16.87	18.5	0
10	QPSK	1	25	17.03	16.92	16.79		
10	QPSK	1	49	17.28	16.99	16.99		
10	QPSK	25	0	17.10	16.79	16.79	18.5	0
10	QPSK	25	12	16.90	16.92	16.78		
10	QPSK	25	25	16.99	16.80	16.87		
10	QPSK	50	0	16.95	16.81	16.74		
10	16QAM	1	0	16.68	16.78	16.90	18.5	0
10	16QAM	1	25	16.65	16.90	16.65		
10	16QAM	1	49	16.69	16.52	16.63		
10	16QAM	25	0	17.01	16.82	16.77	18.5	0
10	16QAM	25	12	16.88	16.90	16.76		
10	16QAM	25	25	17.01	16.83	16.82		
10	16QAM	50	0	16.98	16.90	16.78		
10	64QAM	1	0	17.02	17.05	17.03	18.5	0
10	64QAM	1	25	16.78	16.78	16.70		
10	64QAM	1	49	17.00	17.17	17.02		
10	64QAM	25	0	17.00	16.84	16.80	18.5	0
10	64QAM	25	12	16.98	16.88	16.79		
10	64QAM	25	25	16.97	16.84	16.92		
10	64QAM	50	0	16.92	16.78	16.89		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	16.95	16.77	16.66	18.5	0
5	QPSK	1	12	16.91	16.66	16.65		
5	QPSK	1	24	16.87	16.76	16.66		
5	QPSK	12	0	17.04	16.87	16.74	18.5	0
5	QPSK	12	7	16.95	16.77	16.66		
5	QPSK	12	13	16.93	16.74	16.67		
5	QPSK	25	0	16.97	16.82	16.78		
5	16QAM	1	0	16.98	16.92	16.89	18.5	0
5	16QAM	1	12	17.28	17.02	17.17		
5	16QAM	1	24	17.09	16.99	16.96		
5	16QAM	12	0	16.97	16.86	16.77	18.5	0
5	16QAM	12	7	17.01	16.76	16.71		
5	16QAM	12	13	16.91	16.79	16.69		
5	16QAM	25	0	16.88	16.81	16.76		
5	64QAM	1	0	17.00	16.63	17.01	18.5	0
5	64QAM	1	12	16.81	16.92	16.78		
5	64QAM	1	24	17.01	16.85	16.63		
5	64QAM	12	0	17.12	16.98	16.85	18.5	0
5	64QAM	12	7	16.98	16.79	16.76		
5	64QAM	12	13	16.89	16.73	16.74		
5	64QAM	25	0	16.97	16.81	16.73		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	16.96	16.78	16.65	18.5	0
3	QPSK	1	8	16.94	16.78	16.59		
3	QPSK	1	14	16.72	16.70	16.59		
3	QPSK	8	0	17.00	16.78	16.65	18.5	0
3	QPSK	8	4	16.99	16.74	16.72		
3	QPSK	8	7	16.87	16.69	16.70		
3	QPSK	15	0	16.82	16.74	16.72		
3	16QAM	1	0	16.97	17.15	17.16	18.5	0
3	16QAM	1	8	17.06	16.76	16.85		
3	16QAM	1	14	16.76	17.12	16.94		
3	16QAM	8	0	16.89	16.85	16.76	18.5	0
3	16QAM	8	4	16.87	16.79	16.75		
3	16QAM	8	7	16.84	16.82	16.70		
3	16QAM	15	0	17.05	16.92	16.82		
3	64QAM	1	0	17.21	16.81	17.17	18.5	0
3	64QAM	1	8	17.10	16.93	16.74		
3	64QAM	1	14	17.16	16.80	17.09		
3	64QAM	8	0	17.00	16.88	16.72	18.5	0
3	64QAM	8	4	17.00	16.83	16.85		
3	64QAM	8	7	16.87	16.71	16.77		
3	64QAM	15	0	16.87	16.74	16.65		

Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	16.92	16.68	16.65	18.5	0
1.4	QPSK	1	3	16.88	16.84	16.64		
1.4	QPSK	1	5	16.85	16.73	16.62		
1.4	QPSK	3	0	16.87	16.69	16.65		
1.4	QPSK	3	1	16.92	16.76	16.66		
1.4	QPSK	3	3	16.92	16.68	16.65		
1.4	QPSK	6	0	16.90	16.73	16.71	18.5	0
1.4	16QAM	1	0	17.17	17.24	17.05	18.5	0
1.4	16QAM	1	3	17.22	16.90	16.88		
1.4	16QAM	1	5	17.04	17.13	17.24		
1.4	16QAM	3	0	16.91	16.85	16.72		
1.4	16QAM	3	1	17.02	16.82	16.79		
1.4	16QAM	3	3	16.92	16.71	16.71		
1.4	16QAM	6	0	16.95	16.75	16.71	18.5	0
1.4	64QAM	1	0	16.95	16.85	17.07	18.5	0
1.4	64QAM	1	3	17.11	16.97	16.94		
1.4	64QAM	1	5	17.20	17.10	16.96		
1.4	64QAM	3	0	16.97	16.74	16.85		
1.4	64QAM	3	1	16.96	16.74	16.84		
1.4	64QAM	3	3	16.97	16.78	16.79		
1.4	64QAM	6	0	16.90	16.70	16.72	18.5	0

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	14.91	15.17	14.78	16	0
20	QPSK	1	49	14.82	15.02	14.87		
20	QPSK	1	99	14.90	15.16	14.22		
20	QPSK	50	0	14.29	14.62	14.50	16	0
20	QPSK	50	24	14.36	14.69	14.44		
20	QPSK	50	50	14.28	14.62	14.65		
20	QPSK	100	0	14.37	14.66	14.51		
20	16QAM	1	0	14.36	14.46	15.07	16	0
20	16QAM	1	49	14.42	14.75	14.49		
20	16QAM	1	99	15.04	14.81	14.17		
20	16QAM	50	0	14.37	14.63	14.52	16	0
20	16QAM	50	24	14.35	14.75	14.58		
20	16QAM	50	50	14.35	14.70	14.47		
20	16QAM	100	0	14.50	14.81	14.53		
20	64QAM	1	0	14.47	14.62	14.40	16	0
20	64QAM	1	49	14.49	14.71	14.68		
20	64QAM	1	99	14.62	14.63	14.46		
20	64QAM	50	0	14.41	14.55	14.47	16	0
20	64QAM	50	24	14.40	14.79	14.59		
20	64QAM	50	50	14.35	14.66	14.51		
20	64QAM	100	0	14.33	14.65	14.53		

Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	14.46	14.46	14.59	16	0
15	QPSK	1	37	14.04	14.65	14.32		
15	QPSK	1	74	14.41	14.92	14.39		
15	QPSK	36	0	14.49	14.72	14.56	16	0
15	QPSK	36	20	14.46	14.67	14.47		
15	QPSK	36	39	14.40	14.68	14.46		
15	QPSK	75	0	14.49	14.74	14.58		
15	16QAM	1	0	15.13	14.99	14.72	16	0
15	16QAM	1	37	15.14	14.87	14.91		
15	16QAM	1	74	15.14	15.16	14.26		
15	16QAM	36	0	14.51	14.74	14.57	16	0
15	16QAM	36	20	14.43	14.73	14.49		
15	16QAM	36	39	14.37	14.67	14.47		
15	16QAM	75	0	14.49	14.76	14.53		
15	64QAM	1	0	14.64	14.70	15.00	16	0
15	64QAM	1	37	14.35	14.95	14.67		
15	64QAM	1	74	14.60	15.13	14.24		
15	64QAM	36	0	14.47	14.63	14.53	16	0
15	64QAM	36	20	14.42	14.70	14.45		
15	64QAM	36	39	14.33	14.69	14.40		
15	64QAM	75	0	14.47	14.74	14.61		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	14.56	14.51	14.07	16	0
10	QPSK	1	25	14.49	14.62	14.52		
10	QPSK	1	49	14.67	14.93	14.94		
10	QPSK	25	0	14.53	14.74	14.64	16	0
10	QPSK	25	12	14.50	14.69	14.70		
10	QPSK	25	25	14.50	14.59	14.78		
10	QPSK	50	0	14.44	14.66	14.65		
10	16QAM	1	0	14.91	15.10	14.83	16	0
10	16QAM	1	25	14.72	15.10	14.72		
10	16QAM	1	49	14.67	15.12	14.67		
10	16QAM	25	0	14.46	14.66	14.77	16	0
10	16QAM	25	12	14.49	14.61	14.68		
10	16QAM	25	25	14.53	14.53	14.63		
10	16QAM	50	0	14.42	14.66	14.57		
10	64QAM	1	0	14.94	14.98	14.99	16	0
10	64QAM	1	25	14.93	15.04	14.92		
10	64QAM	1	49	15.13	14.99	14.44		
10	64QAM	25	0	14.48	14.65	14.74	16	0
10	64QAM	25	12	14.51	14.54	14.61		
10	64QAM	25	25	14.44	14.69	14.64		
10	64QAM	50	0	14.48	14.65	14.69		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	14.41	14.37	14.19	16	0
5	QPSK	1	12	14.36	14.49	14.64		
5	QPSK	1	24	14.30	14.50	14.41		
5	QPSK	12	0	14.46	14.73	14.66	16	0
5	QPSK	12	7	14.41	14.59	14.60		
5	QPSK	12	13	14.33	14.55	14.51		
5	QPSK	25	0	14.41	14.63	14.66		
5	16QAM	1	0	15.01	14.92	15.07	16	0
5	16QAM	1	12	14.43	14.63	14.75		
5	16QAM	1	24	14.91	14.77	15.01		
5	16QAM	12	0	14.44	14.67	14.75	16	0
5	16QAM	12	7	14.42	14.60	14.67		
5	16QAM	12	13	14.47	14.58	14.59		
5	16QAM	25	0	14.44	14.62	14.61		
5	64QAM	1	0	14.99	14.84	15.07	16	0
5	64QAM	1	12	14.45	15.01	15.05		
5	64QAM	1	24	15.11	14.63	15.04		
5	64QAM	12	0	14.41	14.66	14.70	16	0
5	64QAM	12	7	14.43	14.63	14.61		
5	64QAM	12	13	14.39	14.73	14.47		
5	64QAM	25	0	14.50	14.57	14.57		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	14.54	14.32	14.48	16	0
3	QPSK	1	8	14.30	14.52	14.57		
3	QPSK	1	14	14.12	14.50	14.50		
3	QPSK	8	0	14.45	14.61	14.54	16	0
3	QPSK	8	4	14.34	14.58	14.61		
3	QPSK	8	7	14.36	14.61	14.48		
3	QPSK	15	0	14.29	14.54	14.55		
3	16QAM	1	0	14.57	14.59	14.75	16	0
3	16QAM	1	8	14.30	15.13	15.14		
3	16QAM	1	14	14.40	14.95	15.01		
3	16QAM	8	0	14.39	14.77	14.80	16	0
3	16QAM	8	4	14.31	14.68	14.55		
3	16QAM	8	7	14.32	14.64	14.43		
3	16QAM	15	0	14.31	14.63	14.55		
3	64QAM	1	0	14.79	14.47	14.73	16	0
3	64QAM	1	8	15.06	14.57	14.74		
3	64QAM	1	14	14.62	14.48	14.76		
3	64QAM	8	0	14.36	14.70	14.59	16	0
3	64QAM	8	4	14.37	14.62	14.59		
3	64QAM	8	7	14.38	14.52	14.42		
3	64QAM	15	0	14.34	14.65	14.63		

Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	14.22	14.52	14.22	16	0
1.4	QPSK	1	3	14.29	14.53	14.70		
1.4	QPSK	1	5	14.28	14.39	14.62		
1.4	QPSK	3	0	14.26	14.53	14.54		
1.4	QPSK	3	1	14.33	14.50	14.64		
1.4	QPSK	3	3	14.34	14.59	14.58		
1.4	QPSK	6	0	14.30	14.50	14.59	16	0
1.4	16QAM	1	0	14.53	14.68	14.86	16	0
1.4	16QAM	1	3	14.89	14.47	15.13		
1.4	16QAM	1	5	14.28	14.83	14.61		
1.4	16QAM	3	0	14.37	14.57	14.58		
1.4	16QAM	3	1	14.27	14.62	14.63		
1.4	16QAM	3	3	14.33	14.50	14.66		
1.4	16QAM	6	0	14.43	14.63	14.63	16	0
1.4	64QAM	1	0	14.35	14.65	15.12	16	0
1.4	64QAM	1	3	14.69	14.68	14.75		
1.4	64QAM	1	5	14.34	14.60	14.65		
1.4	64QAM	3	0	14.35	14.44	14.62		
1.4	64QAM	3	1	14.37	14.75	14.76		
1.4	64QAM	3	3	14.28	14.30	14.50		
1.4	64QAM	6	0	14.28	14.22	14.65	16	0

<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.

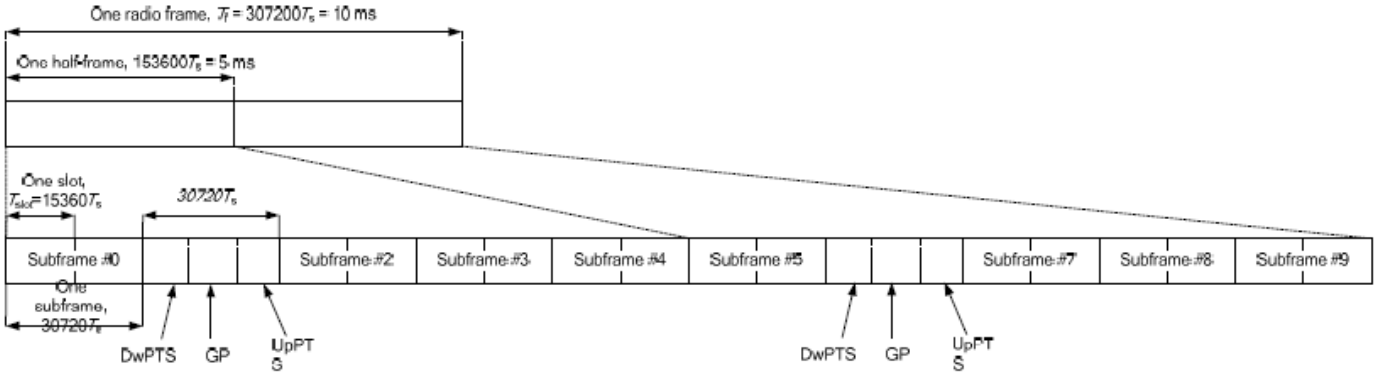


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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:

For LTE Band 41 Power class 2

i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subfames, uplink operation is in 2 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: (2+0.167)/5 = 43.3%
iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.143)/5 = 42.9%
v. For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 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.

For LTE Band 41 Power class 3

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.

The device can adjust uplink/downlink configuration automatically according to the transmitting power class level for LTE band 41.

<Full Power Mode>

<LTE Band 41 Power Class 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	25.60	25.40	25.54	25.55	25.44	27	0
20	QPSK	1	49	25.86	25.72	25.92	25.95	25.83		
20	QPSK	1	99	25.32	25.16	25.30	25.46	25.37		
20	QPSK	50	0	24.78	24.80	24.97	24.99	24.75	26	1
20	QPSK	50	24	25.03	24.95	24.92	25.07	25.02		
20	QPSK	50	50	24.90	24.68	24.73	24.75	24.98		
20	QPSK	100	0	24.94	24.86	24.92	24.99	24.98		
20	16QAM	1	0	24.89	24.67	24.73	24.76	24.19	26	1
20	16QAM	1	49	24.97	24.72	24.92	24.87	24.97		
20	16QAM	1	99	24.27	24.29	24.15	24.43	24.36		
20	16QAM	50	0	24.11	24.05	23.86	24.02	23.97	25	2
20	16QAM	50	24	24.03	24.01	24.05	24.10	24.15		
20	16QAM	50	50	23.99	23.83	23.79	23.89	23.91		
20	16QAM	100	0	24.02	24.00	23.94	24.02	24.04		
20	64QAM	1	0	24.64	24.57	24.52	24.61	24.10	25	2
20	64QAM	1	49	24.60	24.77	24.59	24.92	24.69		
20	64QAM	1	99	24.15	23.85	24.20	24.33	24.19		
20	64QAM	50	0	23.88	23.74	23.79	23.83	23.72	24	3
20	64QAM	50	24	23.85	23.83	23.82	23.89	23.73		
20	64QAM	50	50	23.73	23.46	23.68	23.62	23.64		
20	64QAM	100	0	23.81	23.56	23.65	23.74	23.54		

Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	25.52	25.40	25.18	25.20	25.14	27	0
15	QPSK	1	37	25.75	25.83	25.55	25.50	25.71		
15	QPSK	1	74	25.41	25.32	25.33	25.53	25.27		
15	QPSK	36	0	25.08	25.02	24.89	24.83	24.86	26	1
15	QPSK	36	20	25.11	25.03	25.01	25.03	24.72		
15	QPSK	36	39	25.10	24.99	24.92	25.04	25.15		
15	QPSK	75	0	25.12	25.13	24.91	24.97	25.07		
15	16QAM	1	0	24.88	24.75	24.32	24.58	24.40	26	1
15	16QAM	1	37	24.87	24.65	24.48	24.56	24.61		
15	16QAM	1	74	24.62	24.20	24.25	24.42	24.36		
15	16QAM	36	0	24.04	24.02	23.93	23.90	23.72	25	2
15	16QAM	36	20	24.09	23.87	23.90	23.80	24.00		
15	16QAM	36	39	24.06	23.64	24.03	24.01	24.01		
15	16QAM	75	0	24.20	24.10	23.91	24.07	24.03		
15	64QAM	1	0	24.56	24.56	24.32	24.47	24.45	25	2
15	64QAM	1	37	24.80	24.74	24.88	24.60	24.81		
15	64QAM	1	74	24.27	24.70	24.20	24.39	24.41		
15	64QAM	36	0	23.77	23.64	23.42	23.24	23.39	24	3
15	64QAM	36	20	23.81	23.44	23.59	23.52	23.61		
15	64QAM	36	39	23.70	23.65	23.58	22.96	23.62		
15	64QAM	75	0	23.81	23.36	23.51	23.53	23.32		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	25.37	25.30	25.33	25.46	25.41	27	0
10	QPSK	1	25	25.67	25.24	25.74	25.05	25.08		
10	QPSK	1	49	25.99	25.03	25.46	25.07	25.35		
10	QPSK	25	0	25.21	24.76	25.49	25.03	25.50	26	1
10	QPSK	25	12	25.17	25.04	25.03	25.12	25.09		
10	QPSK	25	25	25.07	24.93	24.79	25.03	24.81		
10	QPSK	50	0	25.09	25.00	24.92	25.07	25.06		
10	16QAM	1	0	24.79	24.86	24.84	24.94	24.89	26	1
10	16QAM	1	25	24.90	25.05	25.27	25.15	25.14		
10	16QAM	1	49	24.59	24.46	24.83	24.49	24.44		
10	16QAM	25	0	24.46	24.23	24.08	24.08	24.06	25	2
10	16QAM	25	12	24.16	24.06	24.16	24.10	24.15		
10	16QAM	25	25	24.06	23.89	24.06	24.12	23.92		
10	16QAM	50	0	24.10	24.08	24.01	24.21	24.22		
10	64QAM	1	0	24.61	24.85	24.42	24.88	24.99	25	2
10	64QAM	1	25	24.96	24.67	24.77	24.89	24.95		
10	64QAM	1	49	24.41	24.25	24.33	24.44	24.46		
10	64QAM	25	0	23.80	23.91	23.70	23.75	23.70	24	3
10	64QAM	25	12	23.92	23.93	23.64	23.78	23.80		
10	64QAM	25	25	23.73	23.93	23.74	23.59	23.53		
10	64QAM	50	0	23.91	23.96	23.76	23.61	23.51		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	25.58	25.49	25.58	25.47	25.53	27	0
5	QPSK	1	12	25.02	25.05	25.74	25.22	25.32		
5	QPSK	1	24	25.81	25.38	25.54	25.18	25.39		
5	QPSK	12	0	25.20	24.32	25.07	25.04	24.20	26	1
5	QPSK	12	7	25.14	25.00	25.05	25.04	24.83		
5	QPSK	12	13	25.01	24.92	24.85	24.97	25.01		
5	QPSK	25	0	25.16	24.94	24.98	24.97	24.92		
5	16QAM	1	0	24.93	24.84	25.02	25.05	25.00	26	1
5	16QAM	1	12	24.84	24.90	25.10	24.97	24.96		
5	16QAM	1	24	24.85	24.80	24.91	24.78	24.70		
5	16QAM	12	0	24.27	24.12	24.30	24.23	24.16	25	2
5	16QAM	12	7	24.20	24.12	23.98	24.05	24.13		
5	16QAM	12	13	24.15	24.05	23.91	23.99	24.13		
5	16QAM	25	0	24.16	23.99	24.00	24.09	24.05		
5	64QAM	1	0	24.67	24.80	24.88	24.91	24.91	25	2
5	64QAM	1	12	24.77	24.84	24.86	24.87	24.97		
5	64QAM	1	24	24.66	24.71	24.78	24.65	24.71		
5	64QAM	12	0	23.84	23.71	23.67	23.87	23.91	24	3
5	64QAM	12	7	23.79	23.72	23.68	23.90	23.83		
5	64QAM	12	13	23.89	23.64	23.57	23.62	23.76		
5	64QAM	25	0	23.94	23.87	23.85	23.95	23.91		

<LTE Band 41 Power Class 3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	23.96	23.82	23.88	23.57	23.56	25	0
20	QPSK	1	49	23.99	24.03	24.01	24.09	24.04		
20	QPSK	1	99	23.44	23.42	23.54	23.54	23.48		
20	QPSK	50	0	22.12	22.08	22.00	22.02	22.03	24	1
20	QPSK	50	24	22.13	22.01	22.03	22.03	22.11		
20	QPSK	50	50	22.02	22.01	22.08	22.19	22.07		
20	QPSK	100	0	22.03	22.18	22.11	22.27	22.18		
20	16QAM	1	0	22.24	22.12	22.14	22.14	22.22	24	1
20	16QAM	1	49	22.13	22.12	22.19	22.30	22.18		
20	16QAM	1	99	22.14	22.29	22.22	22.18	22.39		
20	16QAM	50	0	21.15	21.05	21.02	21.03	21.08	23	2
20	16QAM	50	24	21.15	21.01	21.08	21.07	21.17		
20	16QAM	50	50	21.03	21.09	21.06	21.08	21.07		
20	16QAM	100	0	21.10	21.04	21.08	21.10	21.08		
20	64QAM	1	0	21.54	21.73	21.58	21.54	21.01	23	2
20	64QAM	1	49	21.71	21.81	21.70	21.80	21.76		
20	64QAM	1	99	21.12	21.09	21.16	21.21	21.21		
20	64QAM	50	0	20.88	20.75	20.88	20.79	20.82	22	3
20	64QAM	50	24	20.85	20.85	20.74	20.86	20.88		
20	64QAM	50	50	20.69	20.57	20.66	20.64	20.77		
20	64QAM	100	0	20.75	20.78	20.67	20.79	20.77		

Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	23.71	23.38	23.32	23.53	23.29	25	0
15	QPSK	1	37	23.79	23.50	23.62	23.75	23.68		
15	QPSK	1	74	23.43	23.40	23.40	23.43	23.30		
15	QPSK	36	0	22.07	22.07	22.10	22.12	22.14	24	1
15	QPSK	36	20	22.07	22.10	22.16	22.06	22.01		
15	QPSK	36	39	22.10	22.08	22.16	22.08	22.08		
15	QPSK	75	0	22.24	22.13	22.07	22.01	22.19		
15	16QAM	1	0	22.12	22.11	22.15	22.12	22.15	24	1
15	16QAM	1	37	22.49	22.17	22.05	22.20	22.19		
15	16QAM	1	74	22.01	22.01	22.25	22.00	22.13		
15	16QAM	36	0	21.48	21.13	21.24	21.17	21.24	23	2
15	16QAM	36	20	21.40	21.30	21.32	21.32	21.25		
15	16QAM	36	39	21.07	21.09	21.19	21.09	21.03		
15	16QAM	75	0	21.16	21.09	21.07	21.06	21.05		
15	64QAM	1	0	21.51	21.45	21.18	21.15	21.08	23	2
15	64QAM	1	37	21.70	21.62	21.23	21.63	21.35		
15	64QAM	1	74	21.12	21.17	21.00	21.07	21.15		
15	64QAM	36	0	20.90	20.78	20.67	20.71	20.72	22	3
15	64QAM	36	20	21.02	20.71	20.85	20.90	20.87		
15	64QAM	36	39	20.90	20.78	20.84	20.82	20.76		
15	64QAM	75	0	20.98	20.86	20.72	20.77	20.80		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	23.83	23.27	23.20	23.71	23.74	25	0
10	QPSK	1	25	23.20	23.65	23.12	23.83	23.88		
10	QPSK	1	49	23.83	23.48	23.38	23.44	23.18		
10	QPSK	25	0	22.40	22.07	22.16	22.14	22.42	24	1
10	QPSK	25	12	22.34	22.09	22.13	22.06	22.16		
10	QPSK	25	25	22.22	22.00	22.13	22.07	22.13		
10	QPSK	50	0	22.23	22.07	22.19	22.04	22.07		
10	16QAM	1	0	22.32	22.19	22.12	22.14	22.16	24	1
10	16QAM	1	25	22.38	22.38	22.30	22.25	22.22		
10	16QAM	1	49	22.15	22.05	22.13	22.05	22.08		
10	16QAM	25	0	21.22	21.20	21.50	21.17	21.09	23	2
10	16QAM	25	12	21.26	21.21	21.35	21.18	21.07		
10	16QAM	25	25	21.26	21.00	21.05	21.08	21.07		
10	16QAM	50	0	21.37	21.05	21.16	21.10	21.05		
10	64QAM	1	0	21.98	21.70	21.74	21.79	21.73	23	2
10	64QAM	1	25	21.96	21.69	21.99	21.76	21.73		
10	64QAM	1	49	21.45	21.31	21.28	21.43	21.24		
10	64QAM	25	0	21.11	21.29	21.17	20.94	20.96	22	3
10	64QAM	25	12	21.16	20.92	21.01	20.96	20.95		
10	64QAM	25	25	21.03	20.82	20.94	20.89	20.98		
10	64QAM	50	0	21.02	20.87	20.82	20.86	20.85		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	23.51	23.70	23.36	23.88	23.52	25	0
5	QPSK	1	12	23.02	23.09	23.02	23.94	23.89		
5	QPSK	1	24	23.17	23.83	23.13	23.91	23.69		
5	QPSK	12	0	22.27	22.16	22.14	22.13	22.34	24	1
5	QPSK	12	7	22.05	22.08	22.28	22.14	22.02		
5	QPSK	12	13	22.15	22.00	22.08	22.19	22.01		
5	QPSK	25	0	22.15	22.02	22.18	22.19	22.07		
5	16QAM	1	0	22.18	22.15	22.16	22.20	22.30	24	1
5	16QAM	1	12	22.45	22.23	22.26	22.07	22.18		
5	16QAM	1	24	22.22	22.08	22.16	22.13	22.09		
5	16QAM	12	0	21.37	21.26	21.01	21.12	21.17	23	2
5	16QAM	12	7	21.38	21.27	21.04	21.05	21.03		
5	16QAM	12	13	21.08	21.00	21.16	21.18	21.00		
5	16QAM	25	0	21.14	21.24	21.01	21.13	21.11		
5	64QAM	1	0	21.79	21.77	21.79	21.86	21.79	23	2
5	64QAM	1	12	21.95	21.70	21.95	21.69	21.70		
5	64QAM	1	24	21.56	21.57	21.60	21.53	21.63		
5	64QAM	12	0	21.00	20.91	20.91	21.02	20.88	22	3
5	64QAM	12	7	21.05	20.93	21.01	20.93	20.84		
5	64QAM	12	13	20.97	20.84	20.79	20.87	20.84		
5	64QAM	25	0	20.98	20.89	20.88	20.90	20.92		

<Reduced Power Mode for P-Sensor On/Hotspot On>

<LTE Band 41 Power Class 2/3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	18.02	18.39	18.12	18.01	18.12	19.5	0
20	QPSK	1	49	18.13	18.27	18.05	17.99	18.12		
20	QPSK	1	99	18.00	17.91	18.10	18.00	17.90		
20	QPSK	50	0	18.08	18.12	18.10	17.91	17.97	19.5	0
20	QPSK	50	24	17.99	18.11	17.97	18.00	18.07		
20	QPSK	50	50	18.02	17.91	17.93	17.94	17.94		
20	QPSK	100	0	18.02	18.04	17.88	17.94	17.88		
20	16QAM	1	0	18.06	18.02	18.00	17.85	17.81	19.5	0
20	16QAM	1	49	18.10	18.10	18.07	18.04	18.06		
20	16QAM	1	99	17.76	17.66	17.64	17.66	17.68		
20	16QAM	50	0	18.16	18.18	18.05	17.94	17.90	19.5	0
20	16QAM	50	24	18.18	18.17	18.03	18.08	18.02		
20	16QAM	50	50	17.93	17.96	17.95	18.16	17.90		
20	16QAM	100	0	17.93	18.11	17.96	17.98	18.00		
20	64QAM	1	0	17.87	17.87	17.87	17.88	17.87	19.5	0
20	64QAM	1	49	17.92	17.83	17.90	18.10	17.90		
20	64QAM	1	99	17.75	17.81	17.70	17.79	17.82		
20	64QAM	50	0	18.01	18.01	17.88	17.88	17.84	19.5	0
20	64QAM	50	24	18.02	18.12	17.98	17.79	17.95		
20	64QAM	50	50	17.90	17.89	17.86	18.11	17.92		
20	64QAM	100	0	18.18	18.14	17.97	18.02	18.04		

Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	18.11	18.17	18.03	17.98	17.88	19.5	0
15	QPSK	1	37	17.90	17.75	17.75	17.98	17.76		
15	QPSK	1	74	17.71	17.74	17.71	17.74	17.78		
15	QPSK	36	0	18.15	18.09	17.91	17.89	17.81	19.5	0
15	QPSK	36	20	18.16	18.14	18.01	18.12	17.90		
15	QPSK	36	39	18.30	18.16	18.12	18.05	18.03		
15	QPSK	75	0	18.11	18.17	18.03	17.98	17.88		
15	16QAM	1	0	17.88	17.90	17.71	17.78	17.76	19.5	0
15	16QAM	1	37	17.93	17.90	18.17	17.86	18.20		
15	16QAM	1	74	17.71	17.74	17.66	17.74	17.79		
15	16QAM	36	0	18.02	18.14	17.82	17.77	17.69	19.5	0
15	16QAM	36	20	18.06	18.07	17.93	18.04	17.87		
15	16QAM	36	39	18.15	18.19	18.05	18.14	17.96		
15	16QAM	75	0	18.29	18.24	17.97	17.78	17.92		
15	64QAM	1	0	17.76	17.75	17.77	17.72	17.79	19.5	0
15	64QAM	1	37	18.04	17.64	17.84	17.67	17.87		
15	64QAM	1	74	17.76	17.79	17.74	17.79	17.72		
15	64QAM	36	0	18.19	18.06	17.85	17.83	17.86	19.5	0
15	64QAM	36	20	18.23	18.12	17.96	18.08	18.00		
15	64QAM	36	39	18.18	18.12	18.18	18.07	18.05		
15	64QAM	75	0	18.20	18.24	17.98	18.01	17.99		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	17.87	17.91	17.95	18.09	18.01	19.5	0
10	QPSK	1	25	18.12	17.90	17.81	17.74	17.96		
10	QPSK	1	49	17.65	17.80	17.88	17.82	17.76		
10	QPSK	25	0	17.82	17.87	17.78	18.07	17.94	19.5	0
10	QPSK	25	12	17.87	17.91	17.95	18.09	18.01		
10	QPSK	25	25	18.15	18.06	17.78	18.00	17.77		
10	QPSK	50	0	18.18	18.12	18.03	17.91	18.04		
10	16QAM	1	0	18.10	17.97	17.80	18.17	17.91	19.5	0
10	16QAM	1	25	18.13	18.15	18.14	18.11	18.10		
10	16QAM	1	49	17.68	17.68	17.83	17.70	17.82		
10	16QAM	25	0	18.15	18.29	18.21	18.21	17.93	19.5	0
10	16QAM	25	12	18.20	18.22	18.18	18.23	18.03		
10	16QAM	25	25	18.27	18.12	18.29	17.92	17.80		
10	16QAM	50	0	18.31	18.21	18.33	18.11	18.00		
10	64QAM	1	0	17.85	17.82	17.74	17.91	17.65	19.5	0
10	64QAM	1	25	17.98	18.00	18.07	18.13	18.03		
10	64QAM	1	49	17.95	17.86	17.66	17.77	17.77		
10	64QAM	25	0	18.18	18.14	18.26	18.17	18.07	19.5	0
10	64QAM	25	12	18.27	18.16	18.13	18.28	18.08		
10	64QAM	25	25	18.30	18.09	18.24	18.09	17.83		
10	64QAM	50	0	18.23	18.17	18.28	17.87	17.93		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	18.20	17.95	18.22	17.99	17.93	19.5	0
5	QPSK	1	12	17.90	17.82	17.97	17.86	17.86		
5	QPSK	1	24	18.09	17.82	18.06	17.89	17.89		
5	QPSK	12	0	18.24	17.84	18.11	18.09	18.02	19.5	0
5	QPSK	12	7	18.31	17.85	18.03	18.07	17.99		
5	QPSK	12	13	18.20	17.95	18.22	17.99	17.93		
5	QPSK	25	0	18.05	17.99	18.09	18.05	18.01		
5	16QAM	1	0	18.24	18.19	18.25	18.13	18.03	19.5	0
5	16QAM	1	12	18.30	18.25	18.31	17.90	17.97		
5	16QAM	1	24	18.17	18.09	18.27	17.96	17.94		
5	16QAM	12	0	18.23	18.21	18.12	18.27	17.93	19.5	0
5	16QAM	12	7	18.27	18.21	18.07	18.27	17.89		
5	16QAM	12	13	18.08	18.01	18.17	17.94	17.86		
5	16QAM	25	0	18.33	18.13	18.13	17.84	17.99		
5	64QAM	1	0	18.03	17.96	17.85	18.04	18.01	19.5	0
5	64QAM	1	12	18.15	18.00	17.87	18.09	17.72		
5	64QAM	1	24	17.93	17.76	17.90	17.87	17.71		
5	64QAM	12	0	18.13	18.11	18.11	18.25	17.93	19.5	0
5	64QAM	12	7	18.19	18.02	18.25	17.96	17.98		
5	64QAM	12	13	18.08	18.00	18.16	17.90	17.91		
5	64QAM	25	0	18.30	18.07	18.10	17.98	18.01		

<LTE Carrier Aggregation>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band, uplink CA is for intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and for this device that all the configurations were choose to power measurement.
3. All permutations exist. No restrictions on Pcell & Scell combinations.

Index	2CC	Restriction	Completely Covered by Measurement Superset
2CC #1	CA_25A-25A		No
2CC #2	CA_25A-26A		No
2CC #3	CA_26A-41A		No
2CC #4	CA_41A-41A		No
2CC #5	CA_41C		No

LTE Carrier Aggregation Conducted Power (Downlink)

General Note:

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

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

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

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

v. The device supports uplink carrier aggregation for CA_41C only for power class 3 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the above 3GPP requirement.

vi. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.

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

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

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

<Full Power Mode>

<Two Carrier power verification>

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	W/O CA Tx. Power (dBm)
Inter-Band		CA_25A-26A	Band 25	20M	1800	26340	QPSK	1	0	Band 26	15M	876.5	8865	22.88	22.93
			Band 26	15M	841.5	26965	QPSK	1	74	Band 25	20M	1962.5	8365	23.05	23.10
		CA_26A-41A	Band 26	15M	841.5	26965	QPSK	1	74	Band 41	20M	2593	40620	23.09	23.10
			Band 41	20M	2636.5	41055	QPSK	1	49	Band 26	15M	876.5	8865	24.01	24.09
Intra-Band	Contiguous	CA_41C	Band 41	20M	2636.5	41055	QPSK	1	49	Band 41	20M	2656.3	41253	23.99	24.09
	Non-Contiguous	CA_25A-25A	Band 25	20M	1905	26590	QPSK	1	0	Band 25	5M	1932.5	8065	22.91	22.93
		CA_41A-41A	Band 41	20M	2636.5	41055	QPSK	1	49	Band 41	5M	2498.5	39675	24.03	24.09

<Reduced Power Mode for P-Sensor On>

<Two Carrier power verification>

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	W/O CA Tx. Power (dBm)
Inter-Band		CA_25A-26A	Band 25	20M	1800	26340	QPSK	1	0	Band 26	15M	876.5	8865	18.25	18.36
			Band 26	15M	841.5	26965	QPSK	1	74	Band 25	20M	1962.5	8365	23.05	23.10
		CA_26A-41A	Band 26	15M	841.5	26965	QPSK	1	74	Band 41	20M	2593	40620	23.09	23.10
			Band 41	20M	2549.5	40185	QPSK	1	0	Band 26	15M	876.5	8865	18.15	18.39
Intra-Band	Contiguous	CA_41C	Band 41	20M	2549.5	40185	QPSK	1	0	Band 41	20M	2569.3	40383	18.14	18.39
	Non-Contiguous	CA_25A-25A	Band 25	20M	1905	26590	QPSK	1	0	Band 25	5M	1932.5	8065	18.32	18.36
		CA_41A-41A	Band 41	20M	2549.5	40185	QPSK	1	0	Band 41	5M	2687.5	41565	18.23	18.39

<Reduced Power Mode for Hotspot On>

<Two Carrier power verification>

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	W/O CA Tx. Power (dBm)
Inter-Band		CA_25A-26A	Band 25	20M	1800	26340	QPSK	1	0	Band 26	15M	876.5	8865	17.12	17.15
			Band 26	15M	841.5	26965	QPSK	1	74	Band 25	20M	1962.5	8365	23.05	23.10
		CA_26A-41A	Band 26	15M	841.5	26965	QPSK	1	74	Band 41	20M	2593	40620	23.09	23.10
			Band 41	20M	2549.5	40185	QPSK	1	0	Band 26	15M	876.5	8865	18.15	18.39
Intra-Band	Contiguous	CA_41C	Band 41	20M	2549.5	40185	QPSK	1	0	Band 41	20M	2569.3	40383	18.14	18.39
	Non-Contiguous	CA_25A-25A	Band 25	20M	1905	26590	QPSK	1	0	Band 25	5M	1932.5	8065	17.08	17.15
		CA_41A-41A	Band 41	20M	2549.5	40185	QPSK	1	0	Band 41	5M	2687.5	41565	18.23	18.39

LTE Carrier Aggregation Conducted Power (Uplink)

1. This device supports uplink carrier aggregation for CA_41C only for power class 3 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. For the non-contiguously allocated resource blocks which the MPR level is determined by various RB separation and RB sizes requirement, and the allowed MPR levels, settings and the conducted powers are permanently implemented in this device per the 3GPP 36.36.101 section 6.2.3A.1.3 requirements.
2. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
3. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.
4. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC.

<Power Measurement Setup>

<Full Power>

<LTE Band 41 Power Class 3>

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	49	0	0	1	0	23.92	25.00
40185	39987	QPSK	1	49	0	0	1	0	23.93	25.00
40620	40422	QPSK	1	49	0	0	1	0	23.47	25.00
41055	40857	QPSK	1	49	0	0	1	0	23.60	25.00
41490	41292	QPSK	1	49	0	0	1	0	23.73	25.00

<Reduced Power Mode for P-Sensor/Hotspot On>

<LTE Band 41 Power Class 3>

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	17.25	19.50
40185	39987	QPSK	1	0	0	0	1	0	18.14	19.50
40620	40422	QPSK	1	0	0	0	1	0	17.26	19.50
41055	40857	QPSK	1	0	0	0	1	0	17.58	19.50
41490	41292	QPSK	1	0	0	0	1	0	17.72	19.50

<WLAN Conducted Power>

General Note:

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

<Full Power Mode>

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.14	20.00	97.60
		6	2437	18.96	20.00	
		11	2462	18.90	20.00	
	802.11g 6Mbps	1	2412	13.06	13.50	87.04
		6	2437	12.52	13.50	
		11	2462	11.76	13.50	
	802.11n-HT20 MCS0	1	2412	11.81	12.00	86.27
		6	2437	11.65	12.00	
		11	2462	10.47	12.00	
	802.11n-HT40 MCS0	3	2422	10.85	12.00	85.79
		6	2437	10.19	12.00	
		9	2452	10.23	12.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	18.14	20.00	87.22
		40	5200	18.05	20.00	
		44	5220	18.11	20.00	
		48	5240	18.07	20.00	
	802.11n-HT20 MCS0	36	5180	18.40	18.50	85.98
		40	5200	18.28	18.50	
		44	5220	18.23	18.50	
		48	5240	18.15	18.50	
	802.11n-HT40 MCS0	38	5190	14.95	15.50	85.56
		46	5230	14.57	15.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	18.20	20.00	87.22
		56	5280	18.12	20.00	
		60	5300	18.13	20.00	
		64	5320	18.27	20.00	
	802.11n-HT20 MCS0	52	5260	18.22	18.50	85.98
		56	5280	18.28	18.50	
		60	5300	18.40	18.50	
		64	5320	18.45	18.50	
	802.11n-HT40 MCS0	54	5270	14.92	15.50	85.56
		62	5310	14.93	15.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	18.21	20.00	87.22
		116	5580	18.53	20.00	
		132	5660	17.12	18.50	
		140	5700	14.71	16.50	
	802.11n-HT20 MCS0	100	5500	17.77	18.50	85.98
		116	5580	18.04	18.50	
		132	5660	16.65	18.50	
		140	5700	14.88	16.50	
	802.11n-HT40 MCS0	102	5510	15.06	16.00	85.56
		110	5550	15.24	16.00	
		134	5670	13.49	15.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	17.93	19.50	87.22
		157	5785	18.82	20.00	
		165	5825	19.10	20.00	
	802.11n-HT20 MCS0	149	5745	17.95	19.50	85.98
		157	5785	18.94	19.50	
		165	5825	19.16	19.50	
	802.11n-HT40 MCS0	151	5755	14.96	16.00	85.56
		159	5795	15.46	16.00	

<Reduced Power Mode for Receiver On>

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.87	17.00	97.60
		6	2437	16.95	17.00	
		11	2462	16.91	17.00	
	802.11g 6Mbps	1	2412	13.06	13.50	87.04
		6	2437	12.52	13.50	
		11	2462	11.76	13.50	
	802.11n-HT20 MCS0	1	2412	11.81	12.00	86.27
		6	2437	11.65	12.00	
		11	2462	10.47	12.00	
	802.11n-HT40 MCS0	3	2422	10.85	12.00	85.79
		6	2437	10.19	12.00	
		9	2452	10.23	12.00	

<Reduced Power Mode for P-Sensor On>

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.14	19.00	97.60
		6	2437	18.96	19.00	
		11	2462	18.90	19.00	
	802.11g 6Mbps	1	2412	13.06	13.50	87.04
		6	2437	12.52	13.50	
		11	2462	11.76	13.50	
	802.11n-HT20 MCS0	1	2412	11.81	12.00	86.27
		6	2437	11.65	12.00	
		11	2462	10.47	12.00	
	802.11n-HT40 MCS0	3	2422	10.85	12.00	85.79
		6	2437	10.19	12.00	
		9	2452	10.23	12.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	14.10	14.50	87.22
		40	5200	13.97	14.50	
		44	5220	14.02	14.50	
		48	5240	14.03	14.50	
	802.11n-HT20 MCS0	36	5180	13.32	14.50	85.98
		40	5200	13.37	14.50	
		44	5220	13.25	14.50	
		48	5240	13.24	14.50	
	802.11n-HT40 MCS0	38	5190	13.38	14.00	85.56
		46	5230	13.42	14.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	13.19	13.50	87.22
		56	5280	13.25	13.50	
		60	5300	13.06	13.50	
		64	5320	13.17	13.50	
	802.11n-HT20 MCS0	52	5260	12.60	13.50	85.98
		56	5280	12.53	13.50	
		60	5300	12.39	13.50	
		64	5320	12.43	13.50	
	802.11n-HT40 MCS0	54	5270	12.32	13.00	85.56
		62	5310	12.26	13.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	10.47	11.00	87.22
		116	5580	10.95	11.00	
		132	5660	10.93	11.00	
		140	5700	9.95	11.00	
	802.11n-HT20 MCS0	100	5500	9.90	11.00	85.98
		116	5580	10.00	11.00	
		132	5660	9.74	11.00	
		140	5700	9.26	11.00	
	802.11n-HT40 MCS0	102	5510	9.69	10.50	85.56
		110	5550	9.81	10.50	
		134	5670	9.45	10.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	11.08	11.50	87.22
		157	5785	11.23	11.50	
		165	5825	11.35	11.50	
	802.11n-HT20 MCS0	149	5745	10.24	11.50	85.98
		157	5785	10.49	11.50	
		165	5825	10.62	11.50	
	802.11n-HT40 MCS0	151	5755	10.53	11.00	85.56
		159	5795	10.60	11.00	

<Reduced Power Mode for Hotspot On>

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.14	19.00	97.60
		6	2437	18.96	19.00	
		11	2462	18.90	19.00	
	802.11g 6Mbps	1	2412	13.06	13.50	87.04
		6	2437	12.52	13.50	
		11	2462	11.76	13.50	
	802.11n-HT20 MCS0	1	2412	11.81	12.00	86.27
		6	2437	11.65	12.00	
		11	2462	10.47	12.00	
	802.11n-HT40 MCS0	3	2422	10.85	12.00	85.79
		6	2437	10.19	12.00	
		9	2452	10.23	12.00	

<5GHz WLAN>

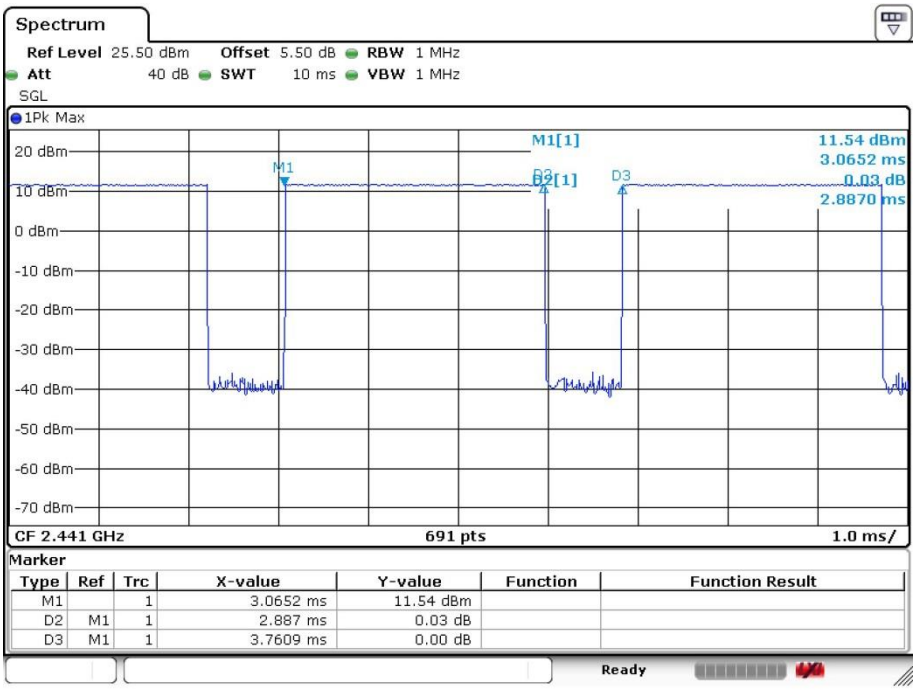
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	14.10	14.50	87.22
		40	5200	13.97	14.50	
		44	5220	14.02	14.50	
		48	5240	14.03	14.50	
	802.11n-HT20 MCS0	36	5180	13.32	14.50	85.98
		40	5200	13.37	14.50	
		44	5220	13.25	14.50	
		48	5240	13.24	14.50	
	802.11n-HT40 MCS0	38	5190	13.38	14.00	85.56
		46	5230	13.42	14.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	11.08	11.50	87.22
		157	5785	11.23	11.50	
		165	5825	11.35	11.50	
	802.11n-HT20 MCS0	149	5745	10.24	11.50	85.98
		157	5785	10.49	11.50	
		165	5825	10.62	11.50	
	802.11n-HT40 MCS0	151	5755	10.53	11.00	85.56
		159	5795	10.60	11.00	

<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 76.76 % as following picture, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation.

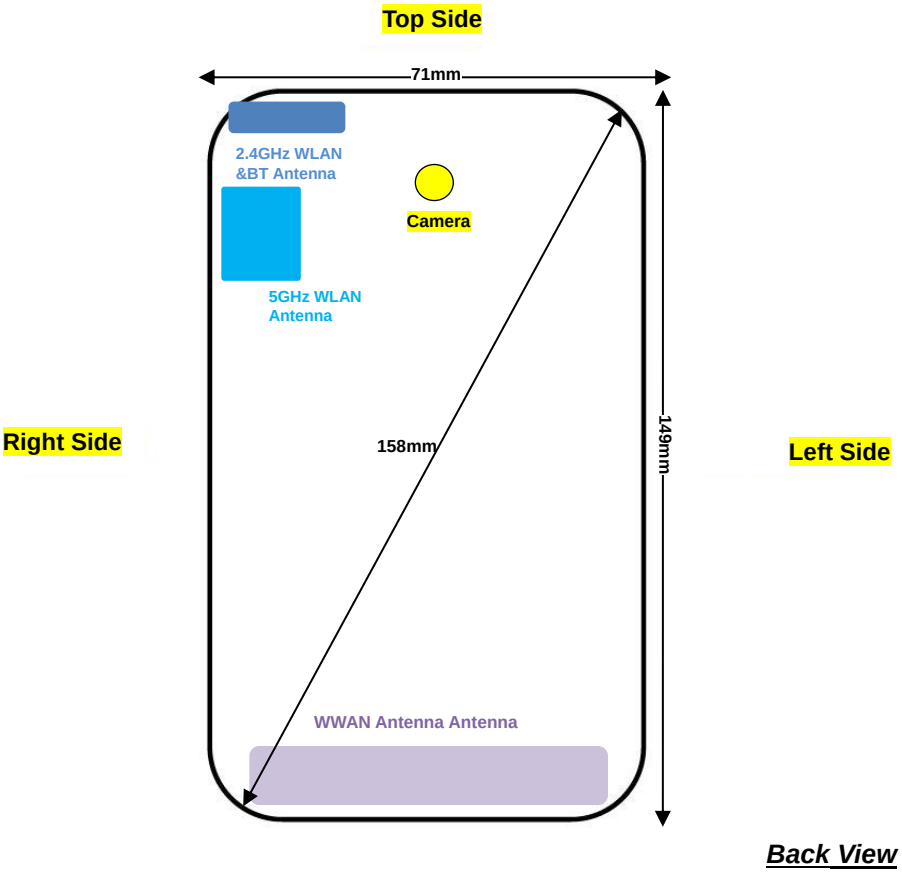


Date: 4.MAR.2019 15:11:29

Mode	Channel	Frequency (MHz)	Average power (dBm)
			1Mbps
BR/EDR	CH 00	2402	10.77
	CH 39	2441	11.74
	CH 78	2480	10.51
Tune-up limit (dBm)			12.00

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	1.61
	CH 19	2440	2.53
	CH 39	2480	1.25
Tune-up Limit			4.00

14. Antenna Location



Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Antenna	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
2.4GHz WLAN & BT	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
5GHz WLAN	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Antenna	Yes	Yes	No	Yes	Yes	Yes
2.4GHz WLAN & BT	Yes	Yes	Yes	No	Yes	No
5GHz WLAN	Yes	Yes	Yes	No	Yes	No

General Note:

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

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 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 BT/WLAN: 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 1:2.33 (42.9 %) for power class 2 and 1:1.59 (62.9 %) for power class 3 were used perform testing and considering the theoretical duty cycle of 43.3% for power class 2 and 63.3% for power class 3 for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for power class 2 and 62.9% for power class 3 for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 for power class 2 and 63.3%/62.9% = 1.006 for power class 3 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg.
4. Pre KDB648474 D04v01r03, when the reported SAR for a 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 headset attached to the handset.
5. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at WLAN2.4GHz.
6. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. When front or back body worn condition is detected, WCDMA band II/IV, CDMA2000 BC1, LTE band 2/4/25/41/66 and WLAN2.4GHz/WLAN5GHz reduced power will be active. (P-sensor can't work at detecting presence of the user's body at the four edges of the device.)
7. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of GSM1900, WCDMA band II/IV, CDMA2000 BC1, LTE band 2/4/25/41/66 and WLAN2.4GHz/WLAN5GHz.
8. When hotspot mode is enabled, front and back side of GSM1900 using full power SAR can represent reduced power SAR conservatively, no need to perform reduced power SAR for front and back side of GSM1900.
9. This device hotspot reduced power and P-sensor reduced power level are the same for WLAN2.4GHz/WLAN5GHz. And for other bands are different.
10. For P-sensor reduced power level is higher than hotspot reduced power, so for front/back P-sensor SAR can represent conservatively for front/back hotspot SAR.
11. For Bluetooth SAR, only the worst case of WLAN 2.4GHz was evaluated due to Bluetooth and WLAN 2.4GHz share the same antenna with consistent pattern.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS 4 Tx slots for GSM850/GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.
3. Power reduction which is triggered by hotspot mode/p-sensor on are implemented in GSM1900 band, for SAR testing EUT was set in reduced power mode and GPRS 4 Tx slots due to its highest frame-average power.

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.

CDMA Note:

1. Per KDB 941225 D01v03r01, SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

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. According to November 2017 TCB workshop, the following applied to intra-band contiguous UL CA only;
   a. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC.
   b. UL CA SAR is measured for each exposure condition in each frequency band using the highest SAR configuration tested in standalone LTE mode to establish the UL CA PCC. The SCC and subsequent CC must use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions.
   c. When the SAR configuration tested in step b) has a maximum output power specification more than ¼ dB lower than the highest maximum output power conditions measured in the power measurements in step a) above and the reported SAR in step b) is larger than 1.2 W/kg, SAR measurement is also required for the configuration in step a)
   d. All standalone SAR configurations with SAR > 1.2 W/kg must also be tested by applying the procedures in step b)
7. For LTE B4 / B5 / B12 / B26 / B71 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.
8. LTE band B2 / B5 / B4 SAR test was covered by B25 / B26 / B66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   c. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   d. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 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

<GSM SAR>

Plot No.	Band	Mode	Test Position	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Right Cheek	Full	251	848.8	26.43	27.50	1.279	0.01	0.487	0.623
	GSM850	GPRS (4 Tx slots)	Right Tilted	Full	251	848.8	26.43	27.50	1.279	0.03	0.299	0.383
01	GSM850	GPRS (4 Tx slots)	Left Cheek	Full	251	848.8	26.43	27.50	1.279	0.02	0.506	**0.647**
	GSM850	GPRS (4 Tx slots)	Left Tilted	Full	251	848.8	26.43	27.50	1.279	0.02	0.269	0.344
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Full	810	1909.8	23.68	24.50	1.208	0.05	0.150	0.181
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Full	810	1909.8	23.68	24.50	1.208	-0.02	0.090	0.109
02	GSM1900	GPRS (4 Tx slots)	Left Cheek	Full	810	1909.8	23.68	24.50	1.208	0.14	0.291	**0.351**
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Full	810	1909.8	23.68	24.50	1.208	0.03	0.113	0.136

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC 12.2Kbps	Right Cheek	Full	4132	826.4	23.14	24.00	1.219	0.01	0.480	0.585
	WCDMA Band V	RMC 12.2Kbps	Right Tilted	Full	4132	826.4	23.14	24.00	1.219	0.09	0.294	0.358
03	WCDMA Band V	RMC 12.2Kbps	Left Cheek	Full	4132	826.4	23.14	24.00	1.219	0.14	0.505	**0.616**
	WCDMA Band V	RMC 12.2Kbps	Left Tilted	Full	4132	826.4	23.14	24.00	1.219	-0.02	0.325	0.396
04	WCDMA Band IV	RMC 12.2Kbps	Right Cheek	Full	1413	1732.6	22.79	24.00	1.321	-0.03	0.290	**0.383**
	WCDMA Band IV	RMC 12.2Kbps	Right Tilted	Full	1413	1732.6	22.79	24.00	1.321	0.06	0.143	0.189
	WCDMA Band IV	RMC 12.2Kbps	Left Cheek	Full	1413	1732.6	22.79	24.00	1.321	0.07	0.188	0.248
	WCDMA Band IV	RMC 12.2Kbps	Left Tilted	Full	1413	1732.6	22.79	24.00	1.321	0.03	0.171	0.226
	WCDMA Band II	RMC 12.2Kbps	Right Cheek	Full	9400	1880	23.38	24.00	1.153	0.02	0.561	0.647
	WCDMA Band II	RMC 12.2Kbps	Right Tilted	Full	9400	1880	23.38	24.00	1.153	0.05	0.314	0.362
05	WCDMA Band II	RMC 12.2Kbps	Left Cheek	Full	9400	1880	23.38	24.00	1.153	0.06	0.617	**0.712**
	WCDMA Band II	RMC 12.2Kbps	Left Tilted	Full	9400	1880	23.38	24.00	1.153	0.19	0.435	0.502

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RC3 SO55	Right Cheek	Full	1013	824.7	24.24	25.00	1.191	0.02	0.420	0.500
	CDMA2000 BC0	RC3 SO55	Right Tilted	Full	1013	824.7	24.24	25.00	1.191	0.06	0.263	0.313
06	CDMA2000 BC0	RC3 SO55	Left Cheek	Full	1013	824.7	24.24	25.00	1.191	0.06	0.520	**0.619**
	CDMA2000 BC0	RC3 SO55	Left Tilted	Full	1013	824.7	24.24	25.00	1.191	0.05	0.306	0.365
	CDMA2000 BC10	RC3 SO55	Right Cheek	Full	580	820.5	24.21	25.00	1.199	0.05	0.429	0.515
	CDMA2000 BC10	RC3 SO55	Right Tilted	Full	580	820.5	24.21	25.00	1.199	0.09	0.276	0.331
07	CDMA2000 BC10	RC3 SO55	Left Cheek	Full	580	820.5	24.21	25.00	1.199	0.05	0.551	**0.661**
	CDMA2000 BC10	RC3 SO55	Left Tilted	Full	580	820.5	24.21	25.00	1.199	0.01	0.321	0.385
	CDMA2000 BC1	RC3 SO55	Right Cheek	Full	25	1851.25	24.31	25.00	1.172	0.03	0.635	0.744
	CDMA2000 BC1	RC3 SO55	Right Tilted	Full	25	1851.25	24.31	25.00	1.172	0.02	0.343	0.402
08	CDMA2000 BC1	RC3 SO55	Left Cheek	Full	25	1851.25	24.31	25.00	1.172	0.13	0.677	**0.794**
	CDMA2000 BC1	RC3 SO55	Left Tilted	Full	25	1851.25	24.31	25.00	1.172	0.03	0.484	0.567

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 71	20M	QPSK	1	0	Right Cheek	Full	133322	683	22.79	24.00	1.321	0.05	0.269	**0.355**
	LTE Band 71	20M	QPSK	50	50	Right Cheek	Full	133322	683	21.86	23.00	1.300	0.02	0.158	0.205
	LTE Band 71	20M	QPSK	1	0	Right Tilted	Full	133322	683	22.79	24.00	1.321	0.06	0.173	0.229
	LTE Band 71	20M	QPSK	50	50	Right Tilted	Full	133322	683	21.86	23.00	1.300	-0.03	0.110	0.143
	LTE Band 71	20M	QPSK	1	0	Left Cheek	Full	133322	683	22.79	24.00	1.321	0.04	0.253	0.334
	LTE Band 71	20M	QPSK	50	50	Left Cheek	Full	133322	683	21.86	23.00	1.300	0.06	0.152	0.198
	LTE Band 71	20M	QPSK	1	0	Left Tilted	Full	133322	683	22.79	24.00	1.321	0.04	0.161	0.213
	LTE Band 71	20M	QPSK	50	50	Left Tilted	Full	133322	683	21.86	23.00	1.300	0.06	0.104	0.135
	LTE Band 12	10M	QPSK	1	0	Right Cheek	Full	23095	707.5	22.96	24.00	1.271	0.05	0.436	0.554
	LTE Band 12	10M	QPSK	25	0	Right Cheek	Full	23095	707.5	21.94	23.00	1.276	0.04	0.219	0.280
	LTE Band 12	10M	QPSK	1	0	Right Tilted	Full	23095	707.5	22.96	24.00	1.271	0.02	0.300	0.381
	LTE Band 12	10M	QPSK	25	0	Right Tilted	Full	23095	707.5	21.94	23.00	1.276	0.06	0.146	0.186
10	LTE Band 12	10M	QPSK	1	0	Left Cheek	Full	23095	707.5	22.96	24.00	1.271	-0.03	0.447	**0.568**
	LTE Band 12	10M	QPSK	25	0	Left Cheek	Full	23095	707.5	21.94	23.00	1.276	0.04	0.248	0.317
	LTE Band 12	10M	QPSK	1	0	Left Tilted	Full	23095	707.5	22.96	24.00	1.271	0.06	0.320	0.407
	LTE Band 12	10M	QPSK	25	0	Left Tilted	Full	23095	707.5	21.94	23.00	1.276	0.04	0.173	0.221
	LTE Band 13	10M	QPSK	1	0	Right Cheek	Full	23230	782	22.92	24.00	1.282	0.02	0.535	0.686
	LTE Band 13	10M	QPSK	25	25	Right Cheek	Full	23230	782	21.84	23.00	1.306	0.05	0.255	0.333
	LTE Band 13	10M	QPSK	1	0	Right Tilted	Full	23230	782	22.92	24.00	1.282	0.06	0.393	0.504
	LTE Band 13	10M	QPSK	25	25	Right Tilted	Full	23230	782	21.84	23.00	1.306	0.07	0.190	0.248
11	LTE Band 13	10M	QPSK	1	0	Left Cheek	Full	23230	782	22.92	24.00	1.282	-0.01	0.571	**0.732**
	LTE Band 13	10M	QPSK	25	25	Left Cheek	Full	23230	782	21.84	23.00	1.306	0.01	0.284	0.371
	LTE Band 13	10M	QPSK	1	0	Left Tilted	Full	23230	782	22.92	24.00	1.282	0.03	0.454	0.582
	LTE Band 13	10M	QPSK	25	25	Left Tilted	Full	23230	782	21.84	23.00	1.306	0.02	0.217	0.283
	LTE Band 26	15M	QPSK	1	74	Right Cheek	Full	26865	831.5	23.09	24.00	1.233	0.02	0.472	0.582
	LTE Band 26	15M	QPSK	36	0	Right Cheek	Full	26865	831.5	21.80	23.00	1.318	0.05	0.252	0.332
	LTE Band 26	15M	QPSK	1	74	Right Tilted	Full	26865	831.5	23.09	24.00	1.233	0.06	0.304	0.375
	LTE Band 26	15M	QPSK	36	0	Right Tilted	Full	26865	831.5	21.80	23.00	1.318	0.04	0.168	0.221
12	LTE Band 26	15M	QPSK	1	74	Left Cheek	Full	26865	831.5	23.09	24.00	1.233	-0.06	0.521	**0.642**
	LTE Band 26	15M	QPSK	36	0	Left Cheek	Full	26865	831.5	21.80	23.00	1.318	0.02	0.264	0.348
	LTE Band 26	15M	QPSK	1	74	Left Tilted	Full	26865	831.5	23.09	24.00	1.233	0.02	0.310	0.382
	LTE Band 26	15M	QPSK	36	0	Left Tilted	Full	26865	831.5	21.80	23.00	1.318	0.03	0.174	0.229
13	LTE Band 66	20M	QPSK	1	0	Right Cheek	Full	132322	1745	23.96	24.00	1.009	-0.07	0.355	**0.358**
	LTE Band 66	20M	QPSK	50	24	Right Cheek	Full	132322	1745	22.74	23.00	1.062	0.02	0.230	0.244
	LTE Band 66	20M	QPSK	1	0	Right Tilted	Full	132322	1745	23.96	24.00	1.009	0.05	0.149	0.150
	LTE Band 66	20M	QPSK	50	24	Right Tilted	Full	132322	1745	22.74	23.00	1.062	0.06	0.093	0.099
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Full	132322	1745	23.96	24.00	1.009	0.07	0.227	0.229
	LTE Band 66	20M	QPSK	50	24	Left Cheek	Full	132322	1745	22.74	23.00	1.062	-0.01	0.145	0.154
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Full	132322	1745	23.96	24.00	1.009	0.01	0.184	0.186
	LTE Band 66	20M	QPSK	50	24	Left Tilted	Full	132322	1745	22.74	23.00	1.062	0.03	0.119	0.126
	LTE Band 25	20M	QPSK	1	0	Right Cheek	Full	26590	1905	22.93	24.00	1.279	0.07	0.557	0.713
	LTE Band 25	20M	QPSK	50	0	Right Cheek	Full	26590	1905	21.98	23.00	1.265	-0.01	0.317	0.401
	LTE Band 25	20M	QPSK	1	0	Right Tilted	Full	26590	1905	22.93	24.00	1.279	0.01	0.361	0.462
	LTE Band 25	20M	QPSK	50	0	Right Tilted	Full	26590	1905	21.98	23.00	1.265	0.07	0.206	0.261
14	LTE Band 25	20M	QPSK	1	0	Left Cheek	Full	26590	1905	22.93	24.00	1.279	0.1	0.578	**0.739**
	LTE Band 25	20M	QPSK	50	0	Left Cheek	Full	26590	1905	21.98	23.00	1.265	0.01	0.386	0.488
	LTE Band 25	20M	QPSK	1	0	Left Tilted	Full	26590	1905	22.93	24.00	1.279	0.03	0.407	0.521
	LTE Band 25	20M	QPSK	50	0	Left Tilted	Full	26590	1905	21.98	23.00	1.265	0.02	0.259	0.328

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Full	3	41055	2636.5	24.09	25.00	1.233	62.9	1.006	0.02	0.218	0.270
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Full	3	41055(PCC) + 40875(SCC)	2636.5(PCC) + 2616.7(SCC)	23.60	25.00	1.380	62.9	1.006	0.08	0.172	0.239
	LTE Band 41	20M	QPSK	50	50	Right Cheek	Full	3	41055	2636.5	22.19	24.00	1.517	62.9	1.006	0.07	0.126	0.192
	LTE Band 41	20M	QPSK	1	49	Right Tilted	Full	3	41055	2636.5	24.09	25.00	1.233	62.9	1.006	0.01	0.095	0.118
	LTE Band 41	20M	QPSK	50	50	Right Tilted	Full	3	41055	2636.5	22.19	24.00	1.517	62.9	1.006	0.06	0.033	0.050
	LTE Band 41	20M	QPSK	1	49	Left Cheek	Full	3	41055	2636.5	24.09	25.00	1.233	62.9	1.006	0.04	0.103	0.128
	LTE Band 41	20M	QPSK	50	50	Left Cheek	Full	3	41055	2636.5	22.19	24.00	1.517	62.9	1.006	0.02	0.056	0.085
	LTE Band 41	20M	QPSK	1	49	Left Tilted	Full	3	41055	2636.5	24.09	25.00	1.233	62.9	1.006	0.02	0.095	0.118
	LTE Band 41	20M	QPSK	50	50	Left Tilted	Full	3	41055	2636.5	22.19	24.00	1.517	62.9	1.006	0.09	0.046	0.069
15	LTE Band 41	20M	QPSK	1	49	Right Cheek	Full	2	41055	2636.5	25.95	27.00	1.274	42.9	1.009	0.06	0.246	**0.316**

<WLAN 2.4GHz SAR>

Plot No.	Band	Mode	Test Position	Power Mode	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)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Reduced	6	2437	16.95	17.00	1.012	97.6	1.025	0.03	0.578	0.599
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Reduced	6	2437	16.95	17.00	1.012	97.6	1.025	0.01	0.571	0.592
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced	6	2437	16.95	17.00	1.012	97.6	1.025	0.09	0.923	0.957
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Reduced	6	2437	16.95	17.00	1.012	97.6	1.025	0.05	0.751	0.779
16	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Reduced	11	2462	16.91	17.00	1.021	97.6	1.025	0.07	1.090	**1.141**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Reduced	11	2462	16.91	17.00	1.021	97.6	1.025	0.03	0.836	0.875

<WLAN 5GHz SAR>

Plot No.	Band	Mode	Test Position	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Max Area Scan SAR	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	Full	64	5320	18.27	20.00	1.489	87.22	1.147		0.129		
	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	Full	64	5320	18.27	20.00	1.489	87.22	1.147		0.318		
17	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	Full	64	5320	18.27	20.00	1.489	87.22	1.147	0.09	0.367	0.059	**0.101**
	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	Full	64	5320	18.27	20.00	1.489	87.22	1.147		0.151		
	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	Full	116	5580	18.53	20.00	1.402	87.22	1.147		0.205		
	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	Full	116	5580	18.53	20.00	1.402	87.22	1.147		0.241		
18	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	Full	116	5580	18.53	20.00	1.402	87.22	1.147	0.01	0.616	0.140	**0.225**
	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	Full	116	5580	18.53	20.00	1.402	87.22	1.147		0.254		
	WLAN 5.8GHz	802.11a 6Mbps	Right Cheek	Full	165	5825	19.10	20.00	1.229	87.22	1.147		0.177		
	WLAN 5.8GHz	802.11a 6Mbps	Right Tilted	Full	165	5825	19.10	20.00	1.229	87.22	1.147		0.235		
19	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	Full	165	5825	19.10	20.00	1.229	87.22	1.147	0.05	0.505	0.158	**0.223**
	WLAN 5.8GHz	802.11a 6Mbps	Left Tilted	Full	165	5825	19.10	20.00	1.229	87.22	1.147		0.244		

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Power Mode	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)
	Bluetooth	1Mbps	Left Cheek	Full	39	2441	11.74	12.00	1.062	76.76	1.085	0.02	0.167	0.192
	Bluetooth	1Mbps	Left Cheek	Full	0	2402	10.77	12.00	1.327	76.76	1.085	0.09	0.159	0.229
20	Bluetooth	1Mbps	Left Cheek	Full	78	2480	10.51	12.00	1.409	76.76	1.085	0.08	0.174	**0.266**

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slot)	Front	5	Full	251	848.8	26.43	27.50	1.279	0.02	0.461	0.590
21	GSM850	GPRS (4 Tx slot)	Back	5	Full	251	848.8	26.43	27.50	1.279	0.04	0.862	**1.103**
	GSM850	GPRS (4 Tx slot)	Back	5	Full	128	824.2	26.31	27.50	1.315	0.03	0.643	0.846
	GSM850	GPRS (4 Tx slot)	Back	5	Full	189	836.4	26.28	27.50	1.324	0.05	0.813	1.077
	GSM850	GPRS (4 Tx slot)	Left Side	5	Full	251	848.8	26.43	27.50	1.279	-0.04	0.770	0.985
	GSM850	GPRS (4 Tx slot)	Left Side	5	Full	128	824.2	26.31	27.50	1.315	0.06	0.540	0.710
	GSM850	GPRS (4 Tx slot)	Left Side	5	Full	189	836.4	26.28	27.50	1.324	0.01	0.563	0.746
	GSM850	GPRS (4 Tx slot)	Right Side	5	Full	251	848.8	26.43	27.50	1.279	0.08	0.602	0.770
	GSM850	GPRS (4 Tx slot)	Bottom Side	5	Full	251	848.8	26.43	27.50	1.279	0.03	0.109	0.139
	GSM1900	GPRS (4 Tx slot)	Front	5	Full	810	1909.8	23.68	24.50	1.208	0.02	0.817	0.987
	GSM1900	GPRS (4 Tx slot)	Front	5	Full	512	1850.2	23.53	24.50	1.250	0.01	0.785	0.981
	GSM1900	GPRS (4 Tx slot)	Front	5	Full	661	1880	23.51	24.50	1.256	-0.03	0.758	0.952
	GSM1900	GPRS (4 Tx slot)	Back	5	Full	810	1909.8	23.68	24.50	1.208	0.03	1.020	1.232
	GSM1900	GPRS (4 Tx slot)	Back	5	Full	512	1850.2	23.53	24.50	1.250	0.01	0.945	1.181
	GSM1900	GPRS (4 Tx slot)	Back	5	Full	661	1880	23.51	24.50	1.256	0.01	0.993	1.247
	GSM1900	GPRS (4 Tx slot)	Left Side	5	Reduced	810	1909.8	23.14	23.50	1.086	0.02	0.379	0.412
	GSM1900	GPRS (4 Tx slot)	Right Side	5	Reduced	810	1909.8	23.14	23.50	1.086	0.03	0.170	0.185
	GSM1900	GPRS (4 Tx slot)	Bottom Side	5	Reduced	810	1909.8	23.14	23.50	1.086	0.02	0.811	0.881
22	GSM1900	GPRS (4 Tx slot)	Bottom Side	5	Reduced	512	1850.2	22.94	23.50	1.138	0.02	1.170	**1.331**
	GSM1900	GPRS (4 Tx slot)	Bottom Side	5	Reduced	661	1880	22.90	23.50	1.148	0.04	0.869	0.998

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	5	Full	4132	826.4	23.14	24.00	1.219	0.01	0.635	0.774
	WCDMA Band V	RMC12.2Kbps	Back	5	Full	4132	826.4	23.14	24.00	1.219	0.12	0.727	0.886
	WCDMA Band V	RMC12.2Kbps	Back	5	Full	4182	836.4	23.11	24.00	1.227	0.03	0.745	0.914
	WCDMA Band V	RMC12.2Kbps	Back	5	Full	4233	846.6	23.12	24.00	1.225	-0.01	0.779	0.954
	WCDMA Band V	RMC12.2Kbps	Left Side	5	Full	4132	826.4	23.14	24.00	1.219	0.12	0.876	1.068
	WCDMA Band V	RMC12.2Kbps	Left Side	5	Full	4182	836.4	23.11	24.00	1.227	0.08	0.856	1.051
23	WCDMA Band V	RMC12.2Kbps	Left Side	5	Full	4233	846.6	23.12	24.00	1.225	0.1	0.878	**1.075**
	WCDMA Band V	RMC12.2Kbps	Right Side	5	Full	4132	826.4	23.14	24.00	1.219	0.06	0.698	0.851
	WCDMA Band V	RMC12.2Kbps	Right Side	5	Full	4182	836.4	23.11	24.00	1.227	0.04	0.668	0.820
	WCDMA Band V	RMC12.2Kbps	Right Side	5	Full	4233	846.6	23.12	24.00	1.225	0.05	0.676	0.828
	WCDMA Band V	RMC12.2Kbps	Bottom Side	5	Full	4132	826.4	23.14	24.00	1.219	0.01	0.202	0.246
	WCDMA Band IV	RMC12.2Kbps	Front	5	Reduced	1413	1732.6	15.71	16.50	1.199	0.01	0.515	0.618
	WCDMA Band IV	RMC12.2Kbps	Back	5	Reduced	1413	1732.6	15.71	16.50	1.199	0.03	0.845	1.014
24	WCDMA Band IV	RMC12.2Kbps	Back	5	Reduced	1312	1712.4	15.59	16.50	1.233	0.03	1.100	**1.356**
	WCDMA Band IV	RMC12.2Kbps	Back	5	Reduced	1513	1752.6	15.62	16.50	1.225	0.03	0.750	0.918
	WCDMA Band IV	RMC12.2Kbps	Left Side	5	Reduced	1413	1732.6	13.72	15.50	1.507	0.02	0.024	0.037
	WCDMA Band IV	RMC12.2Kbps	Right Side	5	Reduced	1413	1732.6	13.72	15.50	1.507	0.06	0.036	0.054
	WCDMA Band IV	RMC12.2Kbps	Bottom Side	5	Reduced	1413	1732.6	13.72	15.50	1.507	0.05	0.723	1.089
	WCDMA Band IV	RMC12.2Kbps	Bottom Side	5	Reduced	1312	1712.4	13.58	15.50	1.556	0.01	0.766	1.192
	WCDMA Band IV	RMC12.2Kbps	Bottom Side	5	Reduced	1513	1752.6	13.65	15.50	1.531	0.03	0.667	1.021
	WCDMA Band II	RMC12.2Kbps	Front	5	Reduced	9400	1880	18.53	19.50	1.250	0.01	0.872	1.090
	WCDMA Band II	RMC12.2Kbps	Front	5	Reduced	9262	1852.4	18.48	19.50	1.265	0.01	0.852	1.078
	WCDMA Band II	RMC12.2Kbps	Front	5	Reduced	9538	1907.6	18.45	19.50	1.274	0.03	0.890	1.133
	WCDMA Band II	RMC12.2Kbps	Back	5	Reduced	9400	1880	18.53	19.50	1.250	0.01	0.968	1.210
	WCDMA Band II	RMC12.2Kbps	Back	5	Reduced	9262	1852.4	18.48	19.50	1.265	0.02	0.915	1.157
25	WCDMA Band II	RMC12.2Kbps	Back	5	Reduced	9538	1907.6	18.45	19.50	1.274	0.08	1.070	**1.363**
	WCDMA Band II	RMC12.2Kbps	Left Side	5	Reduced	9400	1880	17.61	18.50	1.227	0.03	0.399	0.490
	WCDMA Band II	RMC12.2Kbps	Right Side	5	Reduced	9400	1880	17.61	18.50	1.227	0.08	0.138	0.169
	WCDMA Band II	RMC12.2Kbps	Bottom Side	5	Reduced	9400	1880	17.61	18.50	1.227	-0.01	0.830	1.019
	WCDMA Band II	RMC12.2Kbps	Bottom Side	5	Reduced	9262	1852.4	17.52	18.50	1.253	0	0.980	1.228
	WCDMA Band II	RMC12.2Kbps	Bottom Side	5	Reduced	9538	1907.6	17.44	18.50	1.276	0.02	0.744	0.950

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RTAP 153.6Kbps	Front	5	Full	1013	824.7	24.15	25.00	1.216	-0.01	0.578	0.703
	CDMA2000 BC0	RTAP 153.6Kbps	Back	5	Full	1013	824.7	24.15	25.00	1.216	0	0.712	0.866
	CDMA2000 BC0	RTAP 153.6Kbps	Back	5	Full	384	836.52	24.12	25.00	1.225	0.04	0.783	0.959
	CDMA2000 BC0	RTAP 153.6Kbps	Back	5	Full	777	848.31	24.13	25.00	1.222	-0.18	0.788	0.963
	CDMA2000 BC0	RTAP 153.6Kbps	Left Side	5	Full	1013	824.7	24.15	25.00	1.216	0.06	0.801	0.974
26	CDMA2000 BC0	RTAP 153.6Kbps	Left Side	5	Full	384	836.52	24.12	25.00	1.225	0.06	0.871	**1.067**
	CDMA2000 BC0	RTAP 153.6Kbps	Left Side	5	Full	777	848.31	24.13	25.00	1.222	0.04	0.744	0.909
	CDMA2000 BC0	RTAP 153.6Kbps	Right Side	5	Full	1013	824.7	24.15	25.00	1.216	0.06	0.621	0.755
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Side	5	Full	1013	824.7	24.15	25.00	1.216	0.04	0.217	0.264
	CDMA2000 BC10	RTAP 153.6Kbps	Front	5	Full	580	820.5	24.19	25.00	1.205	0.01	0.546	0.658
	CDMA2000 BC10	RTAP 153.6Kbps	Back	5	Full	580	820.5	24.19	25.00	1.205	-0.18	0.706	0.851
	CDMA2000 BC10	RTAP 153.6Kbps	Back	5	Full	476	817.9	24.01	25.00	1.256	0.03	0.691	0.868
	CDMA2000 BC10	RTAP 153.6Kbps	Back	5	Full	684	823.1	24.02	25.00	1.253	0.02	0.719	0.901
	CDMA2000 BC10	RTAP 153.6Kbps	Left Side	5	Full	580	820.5	24.19	25.00	1.205	0.01	0.853	1.028
	CDMA2000 BC10	RTAP 153.6Kbps	Left Side	5	Full	476	817.9	24.01	25.00	1.256	0.06	0.813	1.021
27	CDMA2000 BC10	RTAP 153.6Kbps	Left Side	5	Full	684	823.1	24.02	25.00	1.253	0.1	0.935	**1.172**
	CDMA2000 BC10	RTAP 153.6Kbps	Right Side	5	Full	580	820.5	24.19	25.00	1.205	0.04	0.670	0.807
	CDMA2000 BC10	RTAP 153.6Kbps	Right Side	5	Full	476	817.9	24.01	25.00	1.256	0.05	0.696	0.874
	CDMA2000 BC10	RTAP 153.6Kbps	Right Side	5	Full	684	823.1	24.02	25.00	1.253	0.06	0.701	0.878
	CDMA2000 BC10	RTAP 153.6Kbps	Bottom Side	5	Full	580	820.5	24.19	25.00	1.205	0.04	0.220	0.265
	CDMA2000 BC1	RTAP 153.6Kbps	Front	5	Reduced	25	1851.25	18.68	19.00	1.076	0.01	1.010	1.087
	CDMA2000 BC1	RTAP 153.6Kbps	Front	5	Reduced	600	1880	18.51	19.00	1.119	0.09	0.947	1.060
	CDMA2000 BC1	RTAP 153.6Kbps	Front	5	Reduced	1175	1908.75	18.52	19.00	1.117	0.05	1.020	1.139
	CDMA2000 BC1	RTAP 153.6Kbps	Back	5	Reduced	25	1851.25	18.68	19.00	1.076	0.09	1.140	1.227
	CDMA2000 BC1	RTAP 153.6Kbps	Back	5	Reduced	600	1880	18.51	19.00	1.119	0.01	1.120	1.254
28	CDMA2000 BC1	RTAP 153.6Kbps	Back	5	Reduced	1175	1908.75	18.52	19.00	1.117	-0.08	1.230	**1.374**
	CDMA2000 BC1	RTAP 153.6Kbps	Left Side	5	Reduced	25	1851.25	18.68	19.00	1.076	0.02	0.303	0.326
	CDMA2000 BC1	RTAP 153.6Kbps	Right Side	5	Reduced	25	1851.25	18.68	19.00	1.076	0.03	0.150	0.161
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Side	5	Reduced	25	1851.25	18.68	19.00	1.076	0.03	1.190	1.281
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Side	5	Reduced	600	1880	18.51	19.00	1.119	0.07	0.967	1.082
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Side	5	Reduced	1175	1908.75	18.52	19.00	1.117	0.03	0.864	0.965

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 71	20M	QPSK	1	0	Front	5	Full	133322	683	22.79	24.00	1.321	0.05	0.391	0.517
	LTE Band 71	20M	QPSK	50	50	Front	5	Full	133322	683	21.86	23.00	1.300	0.01	0.205	0.267
29	LTE Band 71	20M	QPSK	1	0	Back	5	Full	133322	683	22.79	24.00	1.321	-0.04	0.529	**0.699**
	LTE Band 71	20M	QPSK	50	50	Back	5	Full	133322	683	21.86	23.00	1.300	0.01	0.364	0.473
	LTE Band 71	20M	QPSK	1	0	Left Side	5	Full	133322	683	22.79	24.00	1.321	0.09	0.343	0.453
	LTE Band 71	20M	QPSK	50	50	Left Side	5	Full	133322	683	21.86	23.00	1.300	0.03	0.204	0.265
	LTE Band 71	20M	QPSK	1	0	Right Side	5	Full	133322	683	22.79	24.00	1.321	0.05	0.394	0.521
	LTE Band 71	20M	QPSK	50	50	Right Side	5	Full	133322	683	21.86	23.00	1.300	0.01	0.241	0.313
	LTE Band 71	20M	QPSK	1	0	Bottom Side	5	Full	133322	683	22.79	24.00	1.321	0.06	0.158	0.209
	LTE Band 71	20M	QPSK	50	50	Bottom Side	5	Full	133322	683	21.86	23.00	1.300	0.01	0.100	0.130
	LTE Band 12	10M	QPSK	1	0	Front	5	Full	23095	707.5	22.96	24.00	1.271	0.03	0.540	0.686
	LTE Band 12	10M	QPSK	25	0	Front	5	Full	23095	707.5	21.94	23.00	1.276	0.05	0.265	0.338
	LTE Band 12	10M	QPSK	1	0	Back	5	Full	23095	707.5	22.96	24.00	1.271	0.05	0.727	0.924
	LTE Band 12	10M	QPSK	25	0	Back	5	Full	23095	707.5	21.94	23.00	1.276	-0.1	0.383	0.489
	LTE Band 12	10M	QPSK	50	0	Back	5	Full	23095	707.5	21.82	23.00	1.312	0.09	0.370	0.486
30	LTE Band 12	10M	QPSK	1	0	Left Side	5	Full	23095	707.5	22.96	24.00	1.271	0.01	0.739	**0.939**
	LTE Band 12	10M	QPSK	25	0	Left Side	5	Full	23095	707.5	21.94	23.00	1.276	0.06	0.371	0.474
	LTE Band 12	10M	QPSK	50	0	Left Side	5	Full	23095	707.5	21.82	23.00	1.312	0.02	0.373	0.489
	LTE Band 12	10M	QPSK	1	0	Right Side	5	Full	23095	707.5	22.96	24.00	1.271	0.01	0.365	0.464
	LTE Band 12	10M	QPSK	25	0	Right Side	5	Full	23095	707.5	21.94	23.00	1.276	0.06	0.371	0.474
	LTE Band 12	10M	QPSK	1	0	Bottom Side	5	Full	23095	707.5	22.96	24.00	1.271	0.08	0.167	0.212
	LTE Band 12	10M	QPSK	25	0	Bottom Side	5	Full	23095	707.5	21.94	23.00	1.276	0.09	0.090	0.115
	LTE Band 13	10M	QPSK	1	0	Front	5	Full	23230	782	22.92	24.00	1.282	0.01	0.649	0.832
	LTE Band 13	10M	QPSK	25	25	Front	5	Full	23230	782	21.84	23.00	1.306	0.02	0.308	0.402
	LTE Band 13	10M	QPSK	50	0	Front	5	Full	23230	782	21.87	23.00	1.297	0.03	0.360	0.467
	LTE Band 13	10M	QPSK	1	0	Back	5	Full	23230	782	22.92	24.00	1.282	-0.01	0.742	0.951
	LTE Band 13	10M	QPSK	25	25	Back	5	Full	23230	782	21.84	23.00	1.306	-0.01	0.381	0.498
	LTE Band 13	10M	QPSK	50	0	Back	5	Full	23230	782	21.87	23.00	1.297	0.05	0.399	0.518
	LTE Band 13	10M	QPSK	1	0	Left Side	5	Full	23230	782	22.92	24.00	1.282	0.06	1.020	1.308
	LTE Band 13	10M	QPSK	25	25	Left Side	5	Full	23230	782	21.84	23.00	1.306	0.05	0.502	0.656
	LTE Band 13	10M	QPSK	50	0	Left Side	5	Full	23230	782	21.87	23.00	1.297	0.09	0.525	0.681
31	LTE Band 13	10M	QPSK	1	0	Right Side	5	Full	23230	782	22.92	24.00	1.282	0.01	1.050	**1.346**
	LTE Band 13	10M	QPSK	25	25	Right Side	5	Full	23230	782	21.84	23.00	1.306	0.05	0.514	0.671
	LTE Band 13	10M	QPSK	50	0	Right Side	5	Full	23230	782	21.87	23.00	1.297	-0.03	0.535	0.694
	LTE Band 13	10M	QPSK	1	0	Bottom Side	5	Full	23230	782	22.92	24.00	1.282	0.02	0.280	0.359
	LTE Band 13	10M	QPSK	25	25	Bottom Side	5	Full	23230	782	21.84	23.00	1.306	0.02	0.120	0.157

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 26	15M	QPSK	1	74	Front	5	Full	26865	831.5	23.09	24.00	1.233	-0.03	0.689	0.850
	LTE Band 26	15M	QPSK	36	0	Front	5	Full	26865	831.5	21.80	23.00	1.318	0.02	0.358	0.472
	LTE Band 26	15M	QPSK	75	0	Front	5	Full	26865	831.5	21.55	23.00	1.396	0.06	0.361	0.504
	LTE Band 26	15M	QPSK	1	74	Back	5	Full	26865	831.5	23.09	24.00	1.233	-0.07	0.784	0.967
	LTE Band 26	15M	QPSK	36	0	Back	5	Full	26865	831.5	21.80	23.00	1.318	0.07	0.531	0.700
	LTE Band 26	15M	QPSK	75	0	Back	5	Full	26865	831.5	21.55	23.00	1.396	0.04	0.399	0.557
32	LTE Band 26	15M	QPSK	1	74	Left Side	5	Full	26865	831.5	23.09	24.00	1.233	0.01	0.841	**1.037**
	LTE Band 26	15M	QPSK	36	0	Left Side	5	Full	26865	831.5	21.80	23.00	1.318	0.15	0.479	0.631
	LTE Band 26	15M	QPSK	75	0	Left Side	5	Full	26865	831.5	21.55	23.00	1.396	0.03	0.468	0.654
	LTE Band 26	15M	QPSK	1	74	Right Side	5	Full	26865	831.5	23.09	24.00	1.233	-0.01	0.652	0.804
	LTE Band 26	15M	QPSK	36	0	Right Side	5	Full	26865	831.5	21.80	23.00	1.318	0.05	0.382	0.504
	LTE Band 26	15M	QPSK	75	0	Right Side	5	Full	26865	831.5	21.55	23.00	1.396	0.05	0.382	0.533
	LTE Band 26	15M	QPSK	1	74	Bottom Side	5	Full	26865	831.5	23.09	24.00	1.233	0.09	0.226	0.279
	LTE Band 26	15M	QPSK	36	0	Bottom Side	5	Full	26865	831.5	21.80	23.00	1.318	0.01	0.110	0.145
	LTE Band 66	20M	QPSK	1	0	Front	5	Reduced	132322	1745	16.42	17.00	1.143	0.01	0.496	0.567
	LTE Band 66	20M	QPSK	50	24	Front	5	Reduced	132322	1745	15.89	17.00	1.291	-0.03	0.433	0.559
	LTE Band 66	20M	QPSK	1	0	Back	5	Reduced	132322	1745	16.42	17.00	1.143	0.02	0.854	0.976
	LTE Band 66	20M	QPSK	1	0	Back	5	Reduced	132072	1720	16.15	17.00	1.216	-0.07	0.993	1.208
	LTE Band 66	20M	QPSK	1	0	Back	5	Reduced	132572	1770	16.29	17.00	1.178	0.07	0.719	0.847
	LTE Band 66	20M	QPSK	50	24	Back	5	Reduced	132322	1745	15.89	17.00	1.291	0.04	0.836	1.079
33	LTE Band 66	20M	QPSK	50	24	Back	5	Reduced	132072	1720	15.74	17.00	1.337	0.01	1.010	**1.350**
	LTE Band 66	20M	QPSK	50	24	Back	5	Reduced	132572	1770	15.86	17.00	1.300	0.15	0.684	0.889
	LTE Band 66	20M	QPSK	100	0	Back	5	Reduced	132322	1745	15.93	17.00	1.279	0.03	0.923	1.181
	LTE Band 66	20M	QPSK	1	0	Left Side	5	Reduced	132322	1745	15.17	16.00	1.211	-0.01	0.026	0.031
	LTE Band 66	20M	QPSK	50	24	Left Side	5	Reduced	132322	1745	14.69	16.00	1.352	0.05	0.031	0.042
	LTE Band 66	20M	QPSK	1	0	Right Side	5	Reduced	132322	1745	15.17	16.00	1.211	0.09	0.033	0.040
	LTE Band 66	20M	QPSK	50	24	Right Side	5	Reduced	132322	1745	14.69	16.00	1.352	0.01	0.036	0.049
	LTE Band 66	20M	QPSK	1	0	Bottom Side	5	Reduced	132322	1745	15.17	16.00	1.211	-0.07	0.885	1.071
	LTE Band 66	20M	QPSK	1	0	Bottom Side	5	Reduced	132072	1720	14.91	16.00	1.285	0.07	0.900	1.157
	LTE Band 66	20M	QPSK	1	0	Bottom Side	5	Reduced	132572	1770	14.78	16.00	1.324	0.04	0.802	1.062
	LTE Band 66	20M	QPSK	50	24	Bottom Side	5	Reduced	132322	1745	14.69	16.00	1.352	0.04	0.856	1.157
	LTE Band 66	20M	QPSK	50	24	Bottom Side	5	Reduced	132072	1720	14.36	16.00	1.459	0.04	0.883	1.288
	LTE Band 66	20M	QPSK	50	24	Bottom Side	5	Reduced	132572	1770	14.44	16.00	1.432	0.07	0.773	1.107
	LTE Band 66	20M	QPSK	100	0	Bottom Side	5	Reduced	132322	1745	14.66	16.00	1.361	0.04	0.864	1.176

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 25	20M	QPSK	1	0	Front	5	Reduced	26590	1905	18.36	19.50	1.300	0.06	0.669	0.870
	LTE Band 25	20M	QPSK	1	0	Front	5	Reduced	26140	1860	18.00	19.50	1.413	0.05	0.684	0.966
	LTE Band 25	20M	QPSK	1	0	Front	5	Reduced	26340	1880	17.85	19.50	1.462	0.09	0.667	0.975
	LTE Band 25	20M	QPSK	50	0	Front	5	Reduced	26590	1905	17.96	19.50	1.426	0.01	0.661	0.942
	LTE Band 25	20M	QPSK	50	0	Front	5	Reduced	26140	1860	17.81	19.50	1.476	0.05	0.678	1.001
	LTE Band 25	20M	QPSK	50	0	Front	5	Reduced	26340	1880	17.77	19.50	1.489	-0.03	0.648	0.965
	LTE Band 25	20M	QPSK	100	0	Front	5	Reduced	26590	1905	17.96	19.50	1.426	0.02	0.704	1.004
	LTE Band 25	20M	QPSK	1	0	Back	5	Reduced	26590	1905	18.36	19.50	1.300	-0.07	0.867	1.127
34	LTE Band 25	20M	QPSK	1	0	Back	5	Reduced	26140	1860	18.00	19.50	1.413	0.03	0.889	**1.256**
	LTE Band 25	20M	QPSK	1	0	Back	5	Reduced	26340	1880	17.85	19.50	1.462	0.04	0.858	1.255
	LTE Band 25	20M	QPSK	50	0	Back	5	Reduced	26590	1905	17.96	19.50	1.426	0.04	0.856	1.220
	LTE Band 25	20M	QPSK	50	0	Back	5	Reduced	26140	1860	17.81	19.50	1.476	0.04	0.831	1.226
	LTE Band 25	20M	QPSK	50	0	Back	5	Reduced	26340	1880	17.77	19.50	1.489	0.07	0.805	1.199
	LTE Band 25	20M	QPSK	100	0	Back	5	Reduced	26590	1905	17.96	19.50	1.426	0.04	0.803	1.145
	LTE Band 25	20M	QPSK	1	0	Left Side	5	Reduced	26590	1905	17.15	18.50	1.365	0.05	0.235	0.321
	LTE Band 25	20M	QPSK	50	0	Left Side	5	Reduced	26590	1905	17.01	18.50	1.409	0.09	0.232	0.327
	LTE Band 25	20M	QPSK	1	0	Right Side	5	Reduced	26590	1905	17.15	18.50	1.365	0.01	0.096	0.131
	LTE Band 25	20M	QPSK	50	0	Right Side	5	Reduced	26590	1905	17.01	18.50	1.409	0.05	0.093	0.131
	LTE Band 25	20M	QPSK	1	0	Bottom Side	5	Reduced	26590	1905	17.15	18.50	1.365	-0.03	0.679	0.927
	LTE Band 25	20M	QPSK	1	0	Bottom Side	5	Reduced	26140	1860	17.00	18.50	1.413	0.02	0.820	1.158
	LTE Band 25	20M	QPSK	1	0	Bottom Side	5	Reduced	26340	1880	16.81	18.50	1.476	-0.07	0.747	1.102
	LTE Band 25	20M	QPSK	50	0	Bottom Side	5	Reduced	26590	1905	17.01	18.50	1.409	-0.1	0.667	0.940
	LTE Band 25	20M	QPSK	50	0	Bottom Side	5	Reduced	26140	1860	16.91	18.50	1.442	0.03	0.812	1.171
	LTE Band 25	20M	QPSK	50	0	Bottom Side	5	Reduced	26340	1880	16.88	18.50	1.452	-0.01	0.703	1.021
	LTE Band 25	20M	QPSK	100	0	Bottom Side	5	Reduced	26590	1905	17.02	18.50	1.406	0.01	0.646	0.908

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	0	Front	5	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.04	0.558	0.789
	LTE Band 41	20M	QPSK	1	0	Front	5	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.07	0.556	0.722
	LTE Band 41	20M	QPSK	1	0	Front	5	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.04	0.503	0.695
	LTE Band 41	20M	QPSK	1	0	Front	5	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.07	0.529	0.750
	LTE Band 41	20M	QPSK	1	0	Front	5	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.01	0.472	0.652
	LTE Band 41	20M	QPSK	50	0	Front	5	Reduced	3	39750	2506	18.08	19.50	1.387	62.9	1.006	0.09	0.623	0.869
	LTE Band 41	20M	QPSK	50	0	Front	5	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.02	0.573	0.792
	LTE Band 41	20M	QPSK	50	0	Front	5	Reduced	3	40620	2593	18.10	19.50	1.380	62.9	1.006	0.02	0.582	0.808
	LTE Band 41	20M	QPSK	50	0	Front	5	Reduced	3	41055	2636.5	17.91	19.50	1.442	62.9	1.006	0.01	0.632	0.917
	LTE Band 41	20M	QPSK	50	0	Front	5	Reduced	3	41490	2680	17.97	19.50	1.422	62.9	1.006	0.03	0.624	0.893
	LTE Band 41	20M	QPSK	100	0	Front	5	Reduced	3	40185	2549.5	18.04	19.50	1.400	62.9	1.006	0.06	0.574	0.808
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.05	0.842	1.191
35	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.06	1.080	**1.403**
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	40185(PCC) + 39987(SCC)	2549.5(PCC) + 2529.7(SCC)	18.14	19.50	1.368	62.9	1.006	-0.01	0.850	1.170
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.01	0.744	1.028
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.05	0.650	0.922
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.01	0.573	0.792
	LTE Band 41	20M	QPSK	50	0	Back	5	Reduced	3	39750	2506	18.08	19.50	1.387	62.9	1.006	-0.12	0.901	1.257
	LTE Band 41	20M	QPSK	50	0	Back	5	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.04	0.884	1.222
	LTE Band 41	20M	QPSK	50	0	Back	5	Reduced	3	40620	2593	18.10	19.50	1.380	62.9	1.006	0.15	0.753	1.046
	LTE Band 41	20M	QPSK	50	0	Back	5	Reduced	3	41055	2636.5	17.91	19.50	1.442	62.9	1.006	0.04	0.685	0.994
	LTE Band 41	20M	QPSK	50	0	Back	5	Reduced	3	41490	2680	17.97	19.50	1.422	62.9	1.006	0.06	0.764	1.093
	LTE Band 41	20M	QPSK	100	0	Back	5	Reduced	3	40185	2549.5	18.04	19.50	1.400	62.9	1.006	0.02	0.909	1.280
	LTE Band 41	20M	QPSK	1	0	Left Side	5	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.03	0.063	0.081
	LTE Band 41	20M	QPSK	50	0	Left Side	5	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.12	0.0629	0.087
	LTE Band 41	20M	QPSK	1	0	Right Side	5	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.02	0.190	0.247
	LTE Band 41	20M	QPSK	50	0	Right Side	5	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	-0.01	0.181	0.250
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.06	0.694	0.982
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.14	0.828	1.076
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.13	0.726	1.004
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.09	0.720	1.021
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.01	0.615	0.850
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5	Reduced	3	39750	2506	18.08	19.50	1.387	62.9	1.006	0.03	0.756	1.055
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.07	0.730	1.009
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5	Reduced	3	40620	2593	18.10	19.50	1.380	62.9	1.006	0.01	0.743	1.032
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5	Reduced	3	41055	2636.5	17.91	19.50	1.442	62.9	1.006	0.02	0.743	1.078
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5	Reduced	3	41490	2680	17.97	19.50	1.422	62.9	1.006	0.01	0.723	1.035
	LTE Band 41	20M	QPSK	100	0	Bottom Side	5	Reduced	3	40185	2549.5	18.04	19.50	1.400	62.9	1.006	0.02	0.851	1.198
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	2	39750	2506	18.02	19.50	1.406	42.9	1.009	0.04	0.655	0.929
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	2	40185	2549.5	18.39	19.50	1.291	42.9	1.009	0.03	0.533	0.694
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	2	40620	2593	18.12	19.50	1.374	42.9	1.009	0.06	0.517	0.717
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	2	41055	2636.5	18.01	19.50	1.409	42.9	1.009	0.03	0.511	0.727
	LTE Band 41	20M	QPSK	1	0	Back	5	Reduced	2	41490	2680	18.12	19.50	1.374	42.9	1.009	0.01	0.493	0.683

<WLAN 2.4GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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)
	WLAN2.4GHz	802.11b 1Mbps	Front	5	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	0.03	0.553	0.572
36	WLAN2.4GHz	802.11b 1Mbps	Back	5	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	0.09	1.050	**1.086**
	WLAN2.4GHz	802.11b 1Mbps	Back	5	Reduced	11	2462	18.90	19.00	1.023	97.6	1.025	0.01	0.901	0.945
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	-0.01	0.220	0.228
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	0.16	1.040	1.076
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5	Reduced	11	2462	18.90	19.00	1.023	97.6	1.025	0.17	1.010	1.059

<WLAN 5GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Max Area Scan SAR	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN5.2GHz	802.11a 6Mbps	Front	5	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147	0.01	0.092	0.032	0.040
37	WLAN5.2GHz	802.11a 6Mbps	Back	5	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147	-0.02	2.179	0.950	**1.195**
	WLAN5.2GHz	802.11a 6Mbps	Back	5	Reduced	48	5240	14.03	14.50	1.114	87.22	1.147	-0.05		0.900	1.150
	WLAN5.2GHz	802.11a 6Mbps	Right Side	5	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147	0.01	0.711	0.192	0.241
	WLAN5.2GHz	802.11a 6Mbps	Top Side	5	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147		0.246		
	WLAN 5.8GHz	802.11a 6Mbps	Front	5	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147	0.01	0.025	0.001	0.001
	WLAN 5.8GHz	802.11a 6Mbps	Back	5	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147	-0.03	2.090	0.718	0.852
38	WLAN 5.8GHz	802.11a 6Mbps	Back	5	Reduced	157	5785	11.23	11.50	1.064	87.22	1.147	0.09		0.871	**1.063**
	WLAN 5.8GHz	802.11a 6Mbps	Right Side	5	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147	0.06	0.437	0.142	0.169
	WLAN 5.8GHz	802.11a 6Mbps	Top Side	5	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147		0.125		

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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)
	Bluetooth	1Mbps	Back	5	Full	39	2441	11.74	12.00	1.062	76.76	1.085	0.03	0.139	0.160
	Bluetooth	1Mbps	Back	5	Full	0	2402	10.77	12.00	1.327	76.76	1.085	0.01	0.137	0.197
39	Bluetooth	1Mbps	Back	5	Full	78	2480	10.51	12.00	1.409	76.76	1.085	-0.09	0.140	**0.214**

15.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slot)	Front	5	-	Full	251	848.8	26.43	27.50	1.279	0.02	0.461	0.590
40	GSM850	GPRS (4 Tx slot)	Back	5	-	Full	251	848.8	26.43	27.50	1.279	0.04	0.862	**1.103**
	GSM850	GPRS (4 Tx slot)	Back	5	-	Full	128	824.2	26.31	27.50	1.315	0.03	0.643	0.846
	GSM850	GPRS (4 Tx slot)	Back	5	-	Full	189	836.4	26.28	27.50	1.324	0.05	0.813	1.077
	GSM1900	GPRS (4 Tx slot)	Front	5	-	Full	810	1909.8	23.68	24.50	1.208	0.02	0.817	0.987
	GSM1900	GPRS (4 Tx slot)	Front	5	-	Full	512	1850.2	23.53	24.50	1.250	0.01	0.785	0.981
	GSM1900	GPRS (4 Tx slot)	Front	5	-	Full	661	1880	23.51	24.50	1.256	-0.03	0.758	0.952
	GSM1900	GPRS (4 Tx slot)	Back	5	-	Full	810	1909.8	23.68	24.50	1.208	0.03	1.020	1.232
	GSM1900	GPRS (4 Tx slot)	Back	5	-	Full	512	1850.2	23.53	24.50	1.250	0.01	0.945	1.181
41	GSM1900	GPRS (4 Tx slot)	Back	5	-	Full	661	1880	23.51	24.50	1.256	0.01	0.993	**1.247**
	GSM1900	GPRS (4 Tx slot)	Back	5	Headset	Full	810	1909.8	23.68	24.50	1.208	0.02	0.851	1.028
	GSM1900	GPRS (4 Tx slot)	Back	5	Headset	Full	512	1850.2	23.53	24.50	1.250	0.04	0.930	1.163
	GSM1900	GPRS (4 Tx slot)	Back	5	Headset	Full	661	1880	23.51	24.50	1.256	0.06	0.815	1.024

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	5	-	Full	4132	826.4	23.14	24.00	1.219	0.01	0.635	0.774
	WCDMA Band V	RMC12.2Kbps	Back	5	-	Full	4132	826.4	23.14	24.00	1.219	0.12	0.727	0.886
	WCDMA Band V	RMC12.2Kbps	Back	5	-	Full	4182	836.4	23.11	24.00	1.227	0.03	0.745	0.914
42	WCDMA Band V	RMC12.2Kbps	Back	5	-	Full	4233	846.6	23.12	24.00	1.225	-0.01	0.779	**0.954**
	WCDMA Band IV	RMC12.2Kbps	Front	5	-	Reduced	1413	1732.6	15.71	16.50	1.199	0.01	0.515	0.618
	WCDMA Band IV	RMC12.2Kbps	Back	5	-	Reduced	1413	1732.6	15.71	16.50	1.199	0.03	0.845	1.014
43	WCDMA Band IV	RMC12.2Kbps	Back	5	-	Reduced	1312	1712.4	15.59	16.50	1.233	0.03	1.100	**1.356**
	WCDMA Band IV	RMC12.2Kbps	Back	5	-	Reduced	1513	1752.6	15.62	16.50	1.225	0.03	0.750	0.918
	WCDMA Band IV	RMC12.2Kbps	Back	5	Headset	Reduced	1312	1712.4	15.59	16.50	1.233	0.02	0.927	1.143
	WCDMA Band IV	RMC12.2Kbps	Back	5	Headset	Reduced	1413	1732.6	15.71	16.50	1.199	0.01	0.847	1.016
	WCDMA Band IV	RMC12.2Kbps	Back	5	Headset	Reduced	1513	1752.6	15.62	16.50	1.225	0.02	0.732	0.896
	WCDMA Band II	RMC12.2Kbps	Front	5	-	Reduced	9400	1880	18.53	19.50	1.250	0.01	0.872	1.090
	WCDMA Band II	RMC12.2Kbps	Front	5	-	Reduced	9262	1852.4	18.48	19.50	1.265	0.01	0.852	1.078
	WCDMA Band II	RMC12.2Kbps	Front	5	-	Reduced	9538	1907.6	18.45	19.50	1.274	0.03	0.890	1.133
	WCDMA Band II	RMC12.2Kbps	Back	5	-	Reduced	9400	1880	18.53	19.50	1.250	0.01	0.968	1.210
	WCDMA Band II	RMC12.2Kbps	Back	5	-	Reduced	9262	1852.4	18.48	19.50	1.265	0.02	0.915	1.157
44	WCDMA Band II	RMC12.2Kbps	Back	5	-	Reduced	9538	1907.6	18.45	19.50	1.274	0.08	1.070	**1.363**
	WCDMA Band II	RMC12.2Kbps	Back	5	Headset	Reduced	9538	1907.6	18.45	19.50	1.274	0.02	1.050	1.337
	WCDMA Band II	RMC12.2Kbps	Back	5	Headset	Reduced	9262	1852.4	18.48	19.50	1.265	0.02	0.874	1.105
	WCDMA Band II	RMC12.2Kbps	Back	5	Headset	Reduced	9400	1880	18.53	19.50	1.250	0.02	0.994	1.243

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Front	5	-	Full	1013	824.7	24.23	25.00	1.194	0.01	0.687	0.820
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Front	5	-	Full	384	836.52	24.08	25.00	1.236	0.02	0.676	0.836
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Front	5	-	Full	777	848.31	24.04	25.00	1.247	0.09	0.724	0.903
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	-	Full	1013	824.7	24.23	25.00	1.194	0.12	0.914	1.091
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	-	Full	384	836.52	24.08	25.00	1.236	0.03	0.966	1.194
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	-	Full	777	848.31	24.04	25.00	1.247	0.06	1.010	1.260
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	Headset	Full	1013	824.7	24.23	25.00	1.194	0.07	1.010	1.206
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	Headset	Full	384	836.52	24.08	25.00	1.236	0.06	1.040	1.285
45	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	5	Headset	Full	777	848.31	24.04	25.00	1.247	0.02	1.040	**1.297**
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Front	5	-	Full	580	820.5	24.20	25.00	1.202	0.06	0.690	0.830
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Front	5	-	Full	476	817.9	24.03	25.00	1.250	0.01	0.659	0.824
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Front	5	-	Full	684	823.1	24.19	25.00	1.205	0.09	0.718	0.865
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	-	Full	580	820.5	24.20	25.00	1.202	-0.01	0.934	1.123
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	-	Full	476	817.9	24.03	25.00	1.250	0.05	0.915	1.144
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	-	Full	684	823.1	24.19	25.00	1.205	0.02	1.010	1.217
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	Headset	Full	580	820.5	24.20	25.00	1.202	0.01	1.050	1.262
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	Headset	Full	476	817.9	24.03	25.00	1.250	0.12	1.030	1.288
46	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	5	Headset	Full	684	823.1	24.19	25.00	1.205	0.06	1.120	**1.350**
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	-	Reduced	25	1851.25	19.62	20.00	1.091	-0.01	1.080	1.179
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	-	Reduced	600	1880	19.44	20.00	1.138	0.02	1.030	1.172
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	-	Reduced	1175	1908.75	19.51	20.00	1.119	0.06	1.100	1.231
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	Headset	Reduced	25	1851.25	19.62	20.00	1.091	0.1	1.110	1.211
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	Headset	Reduced	600	1880	19.44	20.00	1.138	0.02	1.080	1.229
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	5	Headset	Reduced	1175	1908.75	19.51	20.00	1.119	0.03	1.110	1.243
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	-	Reduced	25	1851.25	19.62	20.00	1.091	-0.08	1.170	1.277
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	-	Reduced	600	1880	19.44	20.00	1.138	0.02	1.060	1.206
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	-	Reduced	1175	1908.75	19.51	20.00	1.119	-0.03	1.150	1.287
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	Headset	Reduced	25	1851.25	19.62	20.00	1.091	0.01	1.160	1.266
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	Headset	Reduced	600	1880	19.44	20.00	1.138	0.03	1.100	1.251
47	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	5	Headset	Reduced	1175	1908.75	19.51	20.00	1.119	-0.05	1.280	**1.433**

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Headset	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 71	20M	QPSK	1	0	Front	5	-	Full	133322	683	22.79	24.00	1.321	0.05	0.391	0.517
	LTE Band 71	20M	QPSK	50	50	Front	5	-	Full	133322	683	21.86	23.00	1.300	0.01	0.205	0.267
48	LTE Band 71	20M	QPSK	1	0	Back	5	-	Full	133322	683	22.79	24.00	1.321	-0.04	0.529	**0.699**
	LTE Band 71	20M	QPSK	50	50	Back	5	-	Full	133322	683	21.86	23.00	1.300	0.01	0.364	0.473
	LTE Band 12	10M	QPSK	1	0	Front	5	-	Full	23095	707.5	22.96	24.00	1.271	0.03	0.540	0.686
	LTE Band 12	10M	QPSK	25	0	Front	5	-	Full	23095	707.5	21.94	23.00	1.276	0.05	0.265	0.338
49	LTE Band 12	10M	QPSK	1	0	Back	5	-	Full	23095	707.5	22.96	24.00	1.271	0.05	0.727	**0.924**
	LTE Band 12	10M	QPSK	25	0	Back	5	-	Full	23095	707.5	21.94	23.00	1.276	-0.1	0.383	0.489
	LTE Band 12	10M	QPSK	50	0	Back	5	-	Full	23095	707.5	21.82	23.00	1.312	0.09	0.370	0.486
	LTE Band 13	10M	QPSK	1	0	Front	5	-	Full	23230	782	22.92	24.00	1.282	0.01	0.649	0.832
	LTE Band 13	10M	QPSK	25	25	Front	5	-	Full	23230	782	21.84	23.00	1.306	0.02	0.308	0.402
	LTE Band 13	10M	QPSK	50	0	Front	5	-	Full	23230	782	21.87	23.00	1.297	0.03	0.360	0.467
50	LTE Band 13	10M	QPSK	1	0	Back	5	-	Full	23230	782	22.92	24.00	1.282	-0.01	0.742	**0.951**
	LTE Band 13	10M	QPSK	25	25	Back	5	-	Full	23230	782	21.84	23.00	1.306	-0.01	0.381	0.498
	LTE Band 13	10M	QPSK	50	0	Back	5	-	Full	23230	782	21.87	23.00	1.297	0.05	0.399	0.518
	LTE Band 26	15M	QPSK	1	74	Front	5	-	Full	26865	831.5	23.09	24.00	1.233	-0.03	0.689	0.850
	LTE Band 26	15M	QPSK	36	0	Front	5	-	Full	26865	831.5	21.80	23.00	1.318	0.02	0.358	0.472
	LTE Band 26	15M	QPSK	75	0	Front	5	-	Full	26865	831.5	21.55	23.00	1.396	0.06	0.361	0.504
51	LTE Band 26	15M	QPSK	1	74	Back	5	-	Full	26865	831.5	23.09	24.00	1.233	-0.07	0.784	**0.967**
	LTE Band 26	15M	QPSK	36	0	Back	5	-	Full	26865	831.5	21.80	23.00	1.318	0.07	0.531	0.700
	LTE Band 26	15M	QPSK	75	0	Back	5	-	Full	26865	831.5	21.55	23.00	1.396	0.04	0.399	0.557
	LTE Band 66	20M	QPSK	1	0	Front	5	-	Reduced	132322	1745	16.42	17.00	1.143	0.01	0.496	0.567
	LTE Band 66	20M	QPSK	50	24	Front	5	-	Reduced	132322	1745	15.89	17.00	1.291	-0.03	0.433	0.559
	LTE Band 66	20M	QPSK	1	0	Back	5	-	Reduced	132322	1745	16.42	17.00	1.143	0.02	0.854	0.976
	LTE Band 66	20M	QPSK	1	0	Back	5	-	Reduced	132072	1720	16.15	17.00	1.216	-0.07	0.993	1.208
	LTE Band 66	20M	QPSK	1	0	Back	5	-	Reduced	132572	1770	16.29	17.00	1.178	0.07	0.719	0.847
	LTE Band 66	20M	QPSK	50	24	Back	5	-	Reduced	132322	1745	15.89	17.00	1.291	0.04	0.836	1.079
52	LTE Band 66	20M	QPSK	50	24	Back	5	-	Reduced	132072	1720	15.74	17.00	1.337	0.01	1.010	**1.350**
	LTE Band 66	20M	QPSK	50	24	Back	5	-	Reduced	132572	1770	15.86	17.00	1.300	0.15	0.684	0.889
	LTE Band 66	20M	QPSK	100	0	Back	5	-	Reduced	132322	1745	15.93	17.00	1.279	0.03	0.923	1.181
	LTE Band 66	20M	QPSK	50	24	Back	5	Headset	Reduced	132072	1720	15.74	17.00	1.337	0.02	0.939	1.255
	LTE Band 66	20M	QPSK	50	24	Back	5	Headset	Reduced	132322	1745	15.89	17.00	1.291	0.02	0.877	1.132
	LTE Band 66	20M	QPSK	50	24	Back	5	Headset	Reduced	132572	1770	15.86	17.00	1.300	0.04	0.796	1.035

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Headset	Power Mode	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 25	20M	QPSK	1	0	Front	5	-	Reduced	26590	1905	18.36	19.50	1.300	0.06	0.669	0.870
	LTE Band 25	20M	QPSK	1	0	Front	5	-	Reduced	26140	1860	18.00	19.50	1.413	0.05	0.684	0.966
	LTE Band 25	20M	QPSK	1	0	Front	5	-	Reduced	26340	1880	17.85	19.50	1.462	0.09	0.667	0.975
	LTE Band 25	20M	QPSK	50	0	Front	5	-	Reduced	26590	1905	17.96	19.50	1.426	0.01	0.661	0.942
	LTE Band 25	20M	QPSK	50	0	Front	5	-	Reduced	26140	1860	17.81	19.50	1.476	0.05	0.678	1.001
	LTE Band 25	20M	QPSK	50	0	Front	5	-	Reduced	26340	1880	17.77	19.50	1.489	-0.03	0.648	0.965
	LTE Band 25	20M	QPSK	100	0	Front	5	-	Reduced	26590	1905	17.96	19.50	1.426	0.02	0.704	1.004
	LTE Band 25	20M	QPSK	1	0	Back	5	-	Reduced	26590	1905	18.36	19.50	1.300	-0.07	0.867	1.127
53	LTE Band 25	20M	QPSK	1	0	Back	5	-	Reduced	26140	1860	18.00	19.50	1.413	0.03	0.889	**1.256**
	LTE Band 25	20M	QPSK	1	0	Back	5	-	Reduced	26340	1880	17.85	19.50	1.462	0.04	0.858	1.255
	LTE Band 25	20M	QPSK	50	0	Back	5	-	Reduced	26590	1905	17.96	19.50	1.426	0.04	0.856	1.220
	LTE Band 25	20M	QPSK	50	0	Back	5	-	Reduced	26140	1860	17.81	19.50	1.476	0.04	0.831	1.226
	LTE Band 25	20M	QPSK	50	0	Back	5	-	Reduced	26340	1880	17.77	19.50	1.489	0.07	0.805	1.199
	LTE Band 25	20M	QPSK	100	0	Back	5	-	Reduced	26590	1905	17.96	19.50	1.426	0.04	0.803	1.145
	LTE Band 25	20M	QPSK	1	0	Back	5	Headset	Reduced	26590	1905	18.36	19.50	1.300	0.02	0.778	1.012
	LTE Band 25	20M	QPSK	1	0	Back	5	Headset	Reduced	26140	1860	18.00	19.50	1.413	0.06	0.750	1.059
	LTE Band 25	20M	QPSK	1	0	Back	5	Headset	Reduced	26340	1880	17.85	19.50	1.462	0.07	0.757	1.107

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Headset	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	0	Front	5	-	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.04	0.558	0.789
	LTE Band 41	20M	QPSK	1	0	Front	5	-	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.07	0.556	0.722
	LTE Band 41	20M	QPSK	1	0	Front	5	-	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.04	0.503	0.695
	LTE Band 41	20M	QPSK	1	0	Front	5	-	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.07	0.529	0.750
	LTE Band 41	20M	QPSK	1	0	Front	5	-	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.01	0.472	0.652
	LTE Band 41	20M	QPSK	50	0	Front	5	-	Reduced	3	39750	2506	18.08	19.50	1.387	62.9	1.006	0.09	0.623	0.869
	LTE Band 41	20M	QPSK	50	0	Front	5	-	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.02	0.573	0.792
	LTE Band 41	20M	QPSK	50	0	Front	5	-	Reduced	3	40620	2593	18.10	19.50	1.380	62.9	1.006	0.02	0.582	0.808
	LTE Band 41	20M	QPSK	50	0	Front	5	-	Reduced	3	41055	2636.5	17.91	19.50	1.442	62.9	1.006	0.01	0.632	0.917
	LTE Band 41	20M	QPSK	50	0	Front	5	-	Reduced	3	41490	2680	17.97	19.50	1.422	62.9	1.006	0.03	0.624	0.893
	LTE Band 41	20M	QPSK	100	0	Front	5	-	Reduced	3	40185	2549.5	18.04	19.50	1.400	62.9	1.006	0.06	0.574	0.808
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.05	0.842	1.191
54	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.06	1.080	**1.403**
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	40185(PCC) + 39987(SCC)	2549.5(PCC) + 2529.7(SCC)	18.14	19.50	1.368	62.9	1.006	-0.01	0.850	1.170
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.01	0.744	1.028
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.05	0.650	0.922
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.01	0.573	0.792
	LTE Band 41	20M	QPSK	50	0	Back	5	-	Reduced	3	39750	2506	18.08	19.50	1.387	62.9	1.006	-0.12	0.901	1.257
	LTE Band 41	20M	QPSK	50	0	Back	5	-	Reduced	3	40185	2549.5	18.12	19.50	1.374	62.9	1.006	0.04	0.884	1.222
	LTE Band 41	20M	QPSK	50	0	Back	5	-	Reduced	3	40620	2593	18.10	19.50	1.380	62.9	1.006	0.15	0.753	1.046
	LTE Band 41	20M	QPSK	50	0	Back	5	-	Reduced	3	41055	2636.5	17.91	19.50	1.442	62.9	1.006	0.04	0.685	0.994
	LTE Band 41	20M	QPSK	50	0	Back	5	-	Reduced	3	41490	2680	17.97	19.50	1.422	62.9	1.006	0.06	0.764	1.093
	LTE Band 41	20M	QPSK	100	0	Back	5	-	Reduced	3	40185	2549.5	18.04	19.50	1.400	62.9	1.006	0.02	0.909	1.280
	LTE Band 41	20M	QPSK	1	0	Back	5	Headset	Reduced	3	39750	2506	18.02	19.50	1.406	62.9	1.006	0.06	0.833	1.178
	LTE Band 41	20M	QPSK	1	0	Back	5	Headset	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.05	0.767	0.996
	LTE Band 41	20M	QPSK	1	0	Back	5	Headset	Reduced	3	40620	2593	18.12	19.50	1.374	62.9	1.006	0.05	0.743	1.027
	LTE Band 41	20M	QPSK	1	0	Back	5	Headset	Reduced	3	41055	2636.5	18.01	19.50	1.409	62.9	1.006	0.02	0.757	1.073
	LTE Band 41	20M	QPSK	1	0	Back	5	Headset	Reduced	3	41490	2680	18.12	19.50	1.374	62.9	1.006	0.05	0.715	0.988
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	2	39750	2506	18.02	19.50	1.406	42.9	1.009	0.04	0.655	0.929
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	2	40185	2549.5	18.39	19.50	1.291	42.9	1.009	0.03	0.533	0.694
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	2	40620	2593	18.12	19.50	1.374	42.9	1.009	0.06	0.517	0.717
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	2	41055	2636.5	18.01	19.50	1.409	42.9	1.009	0.03	0.511	0.727
	LTE Band 41	20M	QPSK	1	0	Back	5	-	Reduced	2	41490	2680	18.12	19.50	1.374	42.9	1.009	0.01	0.493	0.683

<WLAN 2.4GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	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)
	WLAN2.4GHz	802.11b 1Mbps	Front	5	-	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	0.03	0.553	0.572
55	WLAN2.4GHz	802.11b 1Mbps	Back	5	-	Reduced	6	2437	18.96	19.00	1.009	97.6	1.025	0.09	1.050	**1.086**
	WLAN2.4GHz	802.11b 1Mbps	Back	5	-	Reduced	11	2462	18.90	19.00	1.023	97.6	1.025	0.01	0.901	0.945

<WLAN 5GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	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)
	WLAN5.2GHz	802.11a 6Mbps	Front	5	-	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147	0.01	0.032	0.040
56	WLAN5.2GHz	802.11a 6Mbps	Back	5	-	Reduced	36	5180	14.10	14.50	1.096	87.22	1.147	-0.02	0.950	**1.195**
	WLAN5.2GHz	802.11a 6Mbps	Back	5	-	Reduced	48	5240	14.03	14.50	1.114	87.22	1.147	-0.05	0.900	1.150
	WLAN 5.3GHz	802.11a 6Mbps	Front	5	-	Reduced	56	5280	13.25	13.50	1.059	87.22	1.147	-0.03	0.010	0.012
57	WLAN 5.3GHz	802.11a 6Mbps	Back	5	-	Reduced	56	5280	13.25	13.50	1.059	87.22	1.147	-0.01	0.982	**1.193**
	WLAN 5.3GHz	802.11a 6Mbps	Back	5	-	Reduced	52	5260	13.19	13.50	1.074	87.22	1.147	0.09	0.591	0.728
	WLAN5.5GHz	802.11a 6Mbps	Front	5	-	Reduced	116	5580	10.95	11.00	1.012	87.22	1.147	0	<0.001	<0.001
	WLAN5.5GHz	802.11a 6Mbps	Back	5	-	Reduced	116	5580	10.95	11.00	1.012	87.22	1.147	0.03	0.848	0.984
58	WLAN5.5GHz	802.11a 6Mbps	Back	5	-	Reduced	132	5660	10.93	11.00	1.016	87.22	1.147	-0.01	1.020	**1.189**
	WLAN 5.8GHz	802.11a 6Mbps	Front	5	-	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147	0.01	0.001	0.001
	WLAN 5.8GHz	802.11a 6Mbps	Back	5	-	Reduced	165	5825	11.35	11.50	1.035	87.22	1.147	-0.03	0.718	0.852
59	WLAN 5.8GHz	802.11a 6Mbps	Back	5	-	Reduced	157	5785	11.23	11.50	1.064	87.22	1.147	0.09	0.871	**1.063**

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Power Mode	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)
	Bluetooth	1Mbps	Back	5	-	Full	39	2441	11.74	12.00	1.062	76.76	1.085	0.03	0.139	0.160
	Bluetooth	1Mbps	Back	5	-	Full	0	2402	10.77	12.00	1.327	76.76	1.085	0.01	0.137	0.197
60	Bluetooth	1Mbps	Back	5	-	Full	78	2480	10.51	12.00	1.409	76.76	1.085	-0.09	0.140	**0.214**

15.4 TDD LTE Band 41(HPUE) Linearity Data Analysis

LTE Band 41(HPUE)-Linearity Data for Head		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	27.00
Reported 1g SAR (W/kg)	0.270	0.316
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	200.17	217.01
Linearity SAR (W/kg)	0.293	
% deviation from expected linearity		7.95%

LTE Band 41(HPUE)-Linearity Data for Hotspot		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	19.50	19.50
Reported 1g SAR (W/kg)	1.403	0.929
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	56.42	38.59
Linearity SAR (W/kg)	0.960	
% deviation from expected linearity		-3.20%

LTE Band 41(HPUE)-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	19.50	19.50
Reported 1g SAR (W/kg)	1.403	0.929
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	56.42	38.59
Linearity SAR (W/kg)	0.960	
% deviation from expected linearity		-3.20%

General Note:

1. The device can adjust uplink/downlink configuration automatically according to the transmitting power class level for LTE band 41.
2. According to TCB Workshop May 2017, Rel. 14 has introduced HPUE Power Class 2 for Band 41. HPUE Power Class 2 does not support uplink downlink configurations 0 and 6.
3. Power class 3 is expected to be the dominant use configuration; therefore, SAR should be tested as normally required.
4. Power class 2 is tested using the highest SAR test configuration in power class 3 of each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in power class 2.
5. Separate SAR testing for Power Class 2 is not required when
   – the reported SAR vs. output power can be linearly scaled with < 10%
   – discrepancy between power classes and all *reported* 1g SAR are < 1.4 W/kg (The same procedures should be adapted for measurements according to extremity limits by applying a factor of 2.5 for extremity exposure.)

15.5 Repeated SAR Measurement

No.	Band	Mode	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Headset	Power Mode	Power Class	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WLAN 2.4GHz	802.11b 1Mbps	-	-	-	-	Left Cheek	0	-	Full	-	11	2462	16.91	17.00	1.021	97.6	1.025	0.07	1.090	1	1.141
2nd	WLAN 2.4GHz	802.11b 1Mbps	-	-	-	-	Left Cheek	0	-	Full	-	11	2462	16.91	17.00	1.021	97.6	1.025	-0.01	1.070	1.019	1.120
1st	WCDMA Band IV	RMC 12.2Kbps	-	-	-	-	Back	5	-	Reduced	-	1312	1712.4	15.59	16.50	1.233	-	-	0.03	1.100	1	1.356
2nd	WCDMA Band IV	RMC 12.2Kbps	-	-	-	-	Back	5	-	Reduced	-	1312	1712.4	15.59	16.50	1.233	-	-	-0.03	1.080	1.019	1.332
1st	WCDMA Band II	RMC 12.2Kbps	-	-	-	-	Back	5	-	Reduced	-	9538	1907.6	18.45	19.50	1.274	-	-	0.08	1.070	1	1.363
2nd	WCDMA Band II	RMC 12.2Kbps	-	-	-	-	Back	5	-	Reduced	-	9538	1907.6	18.45	19.50	1.274	-	-	0.06	1.000	1.070	1.274
1st	CDMA2000 BC10	RC3 SO32 (F+SCH)	-	-	-	-	Back	5	Headset	Full	-	684	823.1	24.19	25.00	1.205	-	-	0.06	1.120	1	1.350
2nd	CDMA2000 BC10	RC3 SO32 (F+SCH)	-	-	-	-	Back	5	Headset	Full	-	684	823.1	24.19	25.00	1.205	-	-	-0.06	1.110	1.009	1.338
1st	CDMA2000 BC1	RC3 SO32 (F+SCH)	-	-	-	-	Back	5	Headset	Reduced	-	1175	1908.75	19.51	20.00	1.119	-	-	-0.05	1.280	1	1.433
2nd	CDMA2000 BC1	RC3 SO32 (F+SCH)	-	-	-	-	Back	5	Headset	Reduced	-	1175	1908.75	19.51	20.00	1.119	-	-	0.01	1.260	1.016	1.410
1st	LTE Band 13	-	10M	QPSK	1	0	Right Side	5	-	Full	-	23230	782	22.92	24.00	1.282	-	-	0.01	1.050	1	1.346
2nd	LTE Band 13	-	10M	QPSK	1	0	Right Side	5	-	Full	-	23230	782	22.92	24.00	1.282	-	-	0.01	1.010	1.040	1.295
1st	LTE Band 41	-	20M	QPSK	1	0	Back	5	-	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.06	1.080	1	1.403
2nd	LTE Band 41	-	20M	QPSK	1	0	Back	5	-	Reduced	3	40185	2549.5	18.39	19.50	1.291	62.9	1.006	0.06	1.050	1.029	1.364

General Note:

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

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset		
		Head	Body-worn	Hotspot
1.	GSM Voice + WLAN2.4GHz	Yes	Yes	
2.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes	Yes
3.	WCDMA + WLAN2.4GHz	Yes	Yes	Yes
4.	CDMA + WLAN2.4GHz	Yes	Yes	Yes
5.	LTE + WLAN2.4GHz	Yes	Yes	Yes
6.	GSM Voice + WLAN5.3/5.5GHz	Yes	Yes	
7.	GPRS/EDGE + WLAN5.3/5.5GHz	Yes	Yes	
8.	WCDMA + WLAN5.3/5.5GHz	Yes	Yes	
9.	CDMA + WLAN5.3/5.5GHz	Yes	Yes	
10.	LTE + WLAN5.3/5.5GHz	Yes	Yes	
11.	GSM Voice + WLAN5.2/5.8GHz	Yes	Yes	
12.	GPRS/EDGE + WLAN5.2/5.8GHz	Yes	Yes	Yes
13.	WCDMA + WLAN5.2/5.8GHz	Yes	Yes	Yes
14.	CDMA + WLAN5.2/5.8GHz	Yes	Yes	Yes
15.	LTE + WLAN5.2/5.8GHz	Yes	Yes	Yes
16.	GSM Voice + Bluetooth	Yes	Yes	
17.	GPRS/EDGE + Bluetooth	Yes	Yes	Yes
18.	WCDMA + Bluetooth	Yes	Yes	Yes
19.	CDMA + Bluetooth	Yes	Yes	Yes
20.	LTE + Bluetooth	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, CDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. EUT will choose each GSM, WCDMA, CDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. This device 2.4GHz WLAN support 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. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment though they have independent antenna.
6. WLAN 2.4GHz and Bluetooth share the same antenna so can't transmit simultaneously.
7. WLAN 5GHz and Bluetooth can't transmit simultaneously according to the EUT's characteristics.
8. Chose the worst zoom scan SAR of WLAN correspondingly for co-located with WWAN analysis.
9. The reported SAR summation is calculated based on the same configuration and test position.
10. 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, simultaneously transmission SAR measurement is not necessary.
    iv) The SPLSR calculated results please refer to section 16.4.

16.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN 1g SAR (W/kg)	2.4GHz WLAN 1g SAR (W/kg)	5GHz WLAN 1g SAR (W/kg)	Bluetooth 1g SAR (W/kg)	Summed 1g SAR (W/kg)	SPLSR	Case No		
GSM	GSM850	Right Cheek	0.623	0.599	0.225	0.266	1.22			0.85	0.89
		Right Tilted	0.383	0.592	0.225	0.266	0.98			0.61	0.65
		Left Cheek	0.647	1.141	0.225	0.266	**1.79**	**0.03**	**#01**	0.87	0.91
		Left Tilted	0.344	0.875	0.225	0.266	1.22			0.57	0.61
	GSM1900	Right Cheek	0.181	0.599	0.225	0.266	0.78			0.41	0.45
		Right Tilted	0.109	0.592	0.225	0.266	0.70			0.33	0.38
		Left Cheek	0.351	1.141	0.225	0.266	1.49			0.58	0.62
		Left Tilted	0.136	0.875	0.225	0.266	1.01			0.36	0.40
WCDMA	Band V	Right Cheek	0.585	0.599	0.225	0.266	1.18			0.81	0.85
		Right Tilted	0.358	0.592	0.225	0.266	0.95			0.58	0.62
		Left Cheek	0.616	1.141	0.225	0.266	**1.76**	**0.03**	**#02**	0.84	0.88
		Left Tilted	0.396	0.875	0.225	0.266	1.27			0.62	0.66
	Band IV	Right Cheek	0.383	0.599	0.225	0.266	0.98			0.61	0.65
		Right Tilted	0.189	0.592	0.225	0.266	0.78			0.41	0.46
		Left Cheek	0.248	1.141	0.225	0.266	1.39			0.47	0.51
		Left Tilted	0.226	0.875	0.225	0.266	1.10			0.45	0.49
	Band II	Right Cheek	0.647	0.599	0.225	0.266	1.25			0.87	0.91
		Right Tilted	0.362	0.592	0.225	0.266	0.95			0.59	0.63
		Left Cheek	0.712	1.141	0.225	0.266	**1.85**	**0.03**	**#03**	0.94	0.98
		Left Tilted	0.502	0.875	0.225	0.266	1.38			0.73	0.77
CDMA2000	BC0	Right Cheek	0.500	0.599	0.225	0.266	1.10			0.73	0.77
		Right Tilted	0.313	0.592	0.225	0.266	0.91			0.54	0.58
		Left Cheek	0.619	1.141	0.225	0.266	**1.76**	**0.03**	**#04**	0.84	0.89
		Left Tilted	0.365	0.875	0.225	0.266	1.24			0.59	0.63
	BC10	Right Cheek	0.515	0.599	0.225	0.266	1.11			0.74	0.78
		Right Tilted	0.331	0.592	0.225	0.266	0.92			0.56	0.60
		Left Cheek	0.661	1.141	0.225	0.266	**1.80**	**0.03**	**#05**	0.89	0.93
		Left Tilted	0.385	0.875	0.225	0.266	1.26			0.61	0.65
	BC1	Right Cheek	0.744	0.599	0.225	0.266	1.34			0.97	1.01
		Right Tilted	0.402	0.592	0.225	0.266	0.99			0.63	0.67
		Left Cheek	0.794	1.141	0.225	0.266	**1.94**	**0.03**	**#06**	1.02	1.06
		Left Tilted	0.567	0.875	0.225	0.266	1.44			0.79	0.83

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)					
LTE	Band 71	Right Cheek	0.355	0.599	0.225	0.266	0.95			0.58	0.62
		Right Tilted	0.229	0.592	0.225	0.266	0.82			0.45	0.50
		Left Cheek	0.334	1.141	0.225	0.266	1.48			0.56	0.60
		Left Tilted	0.213	0.875	0.225	0.266	1.09			0.44	0.48
	Band 12	Right Cheek	0.554	0.599	0.225	0.266	1.15			0.78	0.82
		Right Tilted	0.381	0.592	0.225	0.266	0.97			0.61	0.65
		Left Cheek	0.568	1.141	0.225	0.266	**1.71**	**0.03**	**#07**	0.79	0.83
		Left Tilted	0.407	0.875	0.225	0.266	1.28			0.63	0.67
	Band 13	Right Cheek	0.686	0.599	0.225	0.266	1.29			0.91	0.95
		Right Tilted	0.504	0.592	0.225	0.266	1.10			0.73	0.77
		Left Cheek	0.732	1.141	0.225	0.266	**1.87**	**0.03**	**#08**	0.96	1.00
		Left Tilted	0.582	0.875	0.225	0.266	1.46			0.81	0.85
	Band 26	Right Cheek	0.582	0.599	0.225	0.266	1.18			0.81	0.85
		Right Tilted	0.375	0.592	0.225	0.266	0.97			0.60	0.64
		Left Cheek	0.642	1.141	0.225	0.266	**1.78**	**0.03**	**#09**	0.87	0.91
		Left Tilted	0.382	0.875	0.225	0.266	1.26			0.61	0.65
	Band 66	Right Cheek	0.358	0.599	0.225	0.266	0.96			0.58	0.62
		Right Tilted	0.150	0.592	0.225	0.266	0.74			0.38	0.42
		Left Cheek	0.229	1.141	0.225	0.266	1.37			0.45	0.50
		Left Tilted	0.186	0.875	0.225	0.266	1.06			0.41	0.45
	Band 25	Right Cheek	0.713	0.599	0.225	0.266	1.31			0.94	0.98
		Right Tilted	0.462	0.592	0.225	0.266	1.05			0.69	0.73
		Left Cheek	0.739	1.141	0.225	0.266	**1.88**	**0.03**	**#10**	0.96	1.01
		Left Tilted	0.521	0.875	0.225	0.266	1.40			0.75	0.79
	Band 41	Right Cheek	0.316	0.599	0.225	0.266	0.92			0.54	0.58
		Right Tilted	0.118	0.592	0.225	0.266	0.71			0.34	0.38
		Left Cheek	0.128	1.141	0.225	0.266	1.27			0.35	0.39
		Left Tilted	0.118	0.875	0.225	0.266	0.99			0.34	0.38

16.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
GSM	GSM850	Front	0.590	0.572	0.040	0.214	1.16			0.63			0.80		
		Back	1.103	1.086	1.195	0.214	**2.19**	**0.02**	**#11**	**2.30**	**0.03**	**#12**	1.32		
		Left Side	0.985				0.99			0.99			0.99		
		Right Side	0.770	0.228	0.241	0.214	1.10			1.01			0.98		
		Bottom Side	0.139				0.14			0.14			0.14		
	GSM1900	Front	0.987	0.572	0.040	0.214	1.56			1.03			1.20		
		Back	1.247	1.086	1.195	0.214	**2.33**	**0.03**	**#13**	**2.44**	**0.03**	**#14**	1.46		
		Left Side	0.412				0.41			0.41			0.41		
		Right Side	0.185	0.228	0.241	0.214	0.52			0.43			0.40		
		Bottom Side	1.331				1.33			1.33			1.33		
WCDMA	Band V	Front	0.774	0.572	0.040	0.214	1.35			0.81			0.99		
		Back	0.954	1.086	1.195	0.214	**2.04**	**0.02**	**#15**	**2.15**	**0.03**	**#16**	1.17		
		Left Side	1.075				1.08			1.08			1.08		
		Right Side	0.851	0.228	0.241	0.214	1.18			1.09			1.07		
		Bottom Side	0.246				0.25			0.25			0.25		
	Band IV	Front	0.618	0.572	0.040	0.214	1.19			0.66			0.83		
		Back	1.356	1.086	1.195	0.214	**2.44**	**0.03**	**#17**	**2.55**	**0.03**	**#18**	1.57		
		Left Side	0.037				0.04			0.04			0.04		
		Right Side	0.054	0.228	0.241	0.214	0.39			0.30			0.27		
		Bottom Side	1.192				1.19			1.19			1.19		
	Band II	Front	1.133	0.572	0.040	0.214	**1.71**	**0.02**	**#19**	1.17			1.35		
		Back	1.363	1.086	1.195	0.214	**2.45**	**0.03**	**#20**	**2.56**	**0.03**	**#21**	1.58		
		Left Side	0.490				0.49			0.49			0.49		
		Right Side	0.169	0.228	0.241	0.214	0.50			0.41			0.38		
		Bottom Side	1.228				1.23			1.23			1.23		
CDMA2000	BC0	Front	0.703	0.572	0.040	0.214	1.28			0.74			0.92		
		Back	0.963	1.086	1.195	0.214	**2.05**	**0.02**	**#22**	**2.16**	**0.03**	**#23**	1.18		
		Left Side	1.067				1.07			1.07			1.07		
		Right Side	0.755	0.228	0.241	0.214	1.09			1.00			0.97		
		Bottom Side	0.264				0.26			0.26			0.26		
	BC10	Front	0.658	0.572	0.040	0.214	1.23			0.70			0.87		
		Back	0.901	1.086	1.195	0.214	**1.99**	**0.02**	**#24**	**2.10**	**0.03**	**#25**	1.12		
		Left Side	1.172				1.17			1.17			1.17		
		Right Side	0.878	0.228	0.241	0.214	1.21			1.12			1.09		
		Bottom Side	0.265				0.27			0.27			0.27		
	BC1	Front	1.139	0.572	0.040	0.214	**1.71**	**0.01**	**#26**	1.18			1.35		
		Back	1.374	1.086	1.195	0.214	**2.46**	**0.03**	**#27**	**2.57**	**0.03**	**#28**	**1.59**		
		Left Side	0.326				0.33			0.33			0.33		
		Right Side	0.161	0.228	0.241	0.214	0.49			0.40			0.38		
		Bottom Side	1.281				1.28			1.28			1.28		

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	Band 71	Front	0.517	0.572	0.040	0.214	1.09			0.56			0.73		
		Back	0.699	1.086	1.195	0.214	**1.79**	**0.02**	**#29**	**1.89**	**0.02**	**#30**	0.91		
		Left Side	0.453				0.45			0.45			0.45		
		Right Side	0.521	0.228	0.241	0.214	0.75			0.76			0.74		
		Bottom Side	0.209				0.21			0.21			0.21		
	Band 12	Front	0.686	0.572	0.040	0.214	1.26			0.73			0.90		
		Back	0.924	1.086	1.195	0.214	**2.01**	**0.02**	**#31**	**2.12**	**0.03**	**#32**	1.14		
		Left Side	0.939				0.94			0.94			0.94		
		Right Side	0.474	0.228	0.241	0.214	0.70			0.72			0.69		
		Bottom Side	0.212				0.21			0.21			0.21		
	Band 13	Front	0.832	0.572	0.040	0.214	1.40			0.87			1.05		
		Back	0.951	1.086	1.195	0.214	**2.04**	**0.02**	**#33**	**2.15**	**0.03**	**#34**	1.17		
		Left Side	1.308				1.31			1.31			1.31		
		Right Side	1.346	0.228	0.241	0.214	1.57			**1.59**			1.56		
		Bottom Side	0.359				0.36			0.36			0.36		
	Band 26	Front	0.850	0.572	0.040	0.214	1.42			0.89			1.06		
		Back	0.967	1.086	1.195	0.214	**2.05**	**0.02**	**#36**	**2.16**	**0.03**	**#37**	1.18		
		Left Side	1.037				1.04			1.04			1.04		
		Right Side	0.804	0.228	0.241	0.214	1.03			1.05			1.02		
		Bottom Side	0.279				0.28			0.28			0.28		
	Band 66	Front	0.567	0.572	0.040	0.214	1.14			0.61			0.78		
		Back	1.350	1.086	1.195	0.214	**2.44**	**0.03**	**#38**	**2.55**	**0.03**	**#39**	1.56		
		Left Side	0.042				0.04			0.04			0.04		
		Right Side	0.049	0.228	0.241	0.214	0.28			0.29			0.26		
		Bottom Side	1.288				1.29			1.29			1.29		
	Band 25	Front	1.004	0.572	0.040	0.214	**1.58**			1.04			1.22		
		Back	1.256	1.086	1.195	0.214	**2.34**	**0.03**	**#40**	**2.45**	**0.03**	**#41**	1.47		
		Left Side	0.327				0.33			0.33			0.33		
		Right Side	0.131	0.228	0.241	0.214	0.36			0.37			0.35		
		Bottom Side	1.171				1.17			1.17			1.17		
	Band 41	Front	0.917	0.572	0.040	0.214	1.49			0.96			1.13		
		Back	1.403	1.086	1.195	0.214	**2.49**	**0.03**	**#42**	**2.60**	**0.03**	**#43**	**1.62**	**0.01**	**#44**
		Left Side	0.087				0.09			0.09			0.09		
		Right Side	0.250	0.228	0.241	0.214	0.48			0.49			0.46		
		Bottom Side	1.198				1.20			1.20			1.20		

16.3 Body-Worn Accessory Exposure Conditions

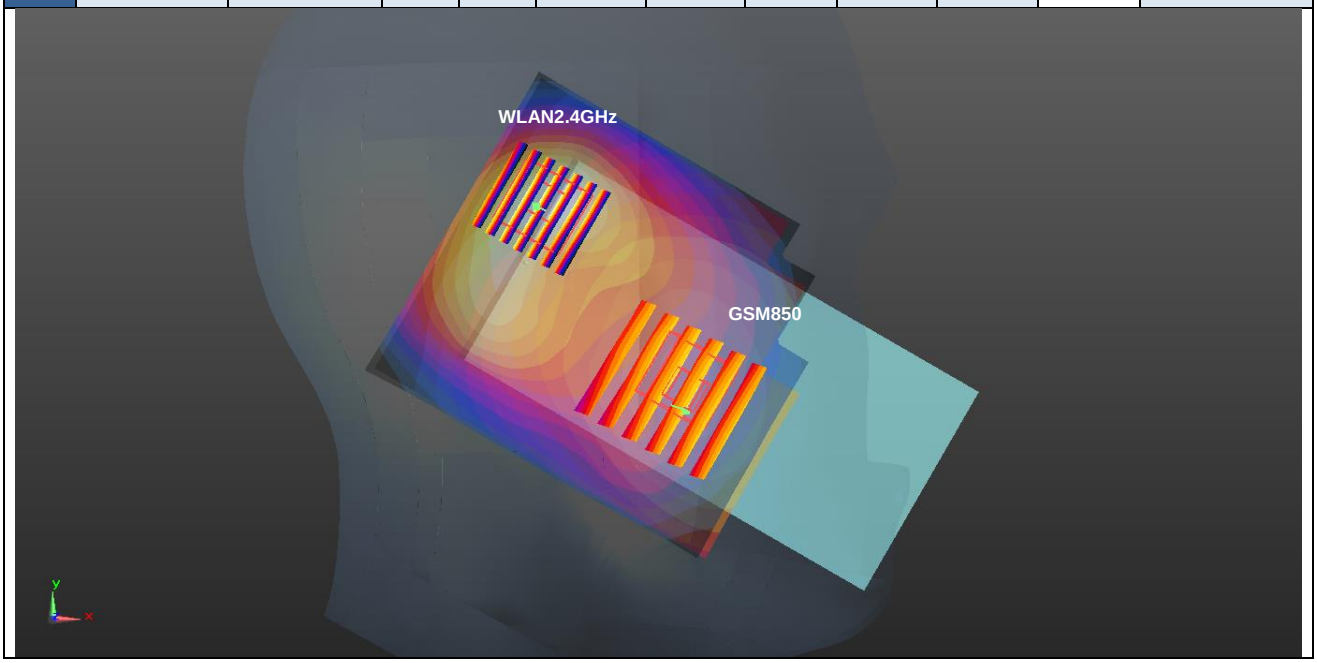
WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
GSM	GSM850	Front	0.590	0.572	0.040	0.214	1.16			0.63			0.80		
		Back	1.103	1.086	1.195	0.214	**2.19**	**0.02**	**#11**	**2.30**	**0.03**	**#12**	1.32		
	GSM1900	Front	0.987	0.572	0.040	0.214	1.56			1.03			1.20		
		Back	1.247	1.086	1.195	0.214	**2.33**	**0.03**	**#13**	**2.44**	**0.03**	**#14**	1.46		
		Back with Headset	1.163				1.16			1.16			1.16		
WCDMA	Band V	Front	0.774	0.572	0.040	0.214	1.35			0.81			0.99		
		Back	0.954	1.086	1.195	0.214	**2.04**	**0.02**	**#15**	**2.15**	**0.03**	**#16**	1.17		
	Band IV	Front	0.618	0.572	0.040	0.214	1.19			0.66			0.83		
		Back	1.356	1.086	1.195	0.214	**2.44**	**0.03**	**#17**	**2.55**	**0.03**	**#18**	1.57		
		Back with Headset	1.143				1.14			1.14			1.14		
	Band II	Front	1.133	0.572	0.040	0.214	**1.71**	**0.02**	**#19**	1.17			1.35		
		Back	1.363	1.086	1.195	0.214	**2.45**	**0.03**	**#20**	**2.56**	**0.03**	**#21**	1.58		
		Back with Headset	1.337				1.34			1.34			1.34		
CDMA2000	BC0	Front	0.903	0.572	0.040	0.214	1.48			0.94			1.12		
		Back	1.260	1.086	1.195	0.214	**2.35**	**0.03**	**#45**	**2.46**	**0.03**	**#46**	1.47		
		Back with Headset	1.297				1.30			1.30			1.30		
	BC10	Front	0.865	0.572	0.040	0.214	1.44			0.91			1.08		
		Back	1.217	1.086	1.195	0.214	**2.30**	**0.03**	**#47**	**2.41**	**0.03**	**#48**	1.43		
		Back with Headset	1.350				1.35			1.35			1.35		
	BC1	Front	1.231	0.572	0.040	0.214	**1.80**	**0.02**	**#49**	1.27			1.45		
		Back	1.287	1.086	1.195	0.214	**2.37**	**0.03**	**#50**	**2.48**	**0.03**	**#51**	1.50		
		Front with Headset	1.243				1.24			1.24			1.24		
		Back with Headset	1.433				1.43			1.43			1.43		
LTE	Band 71	Front	0.517	0.572	0.040	0.214	1.09			0.56			0.73		
		Back	0.699	1.086	1.195	0.214	**1.79**	**0.02**	**#29**	**1.89**	**0.02**	**#30**	0.91		
	Band 12	Front	0.686	0.572	0.040	0.214	1.26			0.73			0.90		
		Back	0.924	1.086	1.195	0.214	**2.01**	**0.02**	**#31**	**2.12**	**0.03**	**#32**	1.14		
	Band 13	Front	0.832	0.572	0.040	0.214	1.40			0.87			1.05		
		Back	0.951	1.086	1.195	0.214	**2.04**	**0.02**	**#33**	**2.15**	**0.03**	**#34**	1.17		
	Band 26	Front	0.850	0.572	0.040	0.214	1.42			0.89			1.06		
		Back	0.967	1.086	1.195	0.214	**2.05**	**0.02**	**#36**	**2.16**	**0.03**	**#37**	1.18		
	Band 66	Front	0.567	0.572	0.040	0.214	1.14			0.61			0.78		
		Back	1.350	1.086	1.195	0.214	**2.44**	**0.03**	**#38**	**2.55**	**0.03**	**#39**	1.56		
		Back with Headset	1.255				1.26			1.26			1.26		
	Band 25	Front	1.004	0.572	0.040	0.214	1.58			1.04			1.22		
		Back	1.256	1.086	1.195	0.214	**2.34**	**0.03**	**#40**	**2.45**	**0.03**	**#41**	1.47		
		Back with Headset	1.107				1.11			1.11			1.11		
	Band 41	Front	0.917	0.572	0.040	0.214	1.49			0.96			1.13		
		Back	1.403	1.086	1.195	0.214	**2.49**	**0.03**	**#42**	**2.60**	**0.03**	**#43**	**1.62**	**0.01**	**#44**
		Back with Headset	1.178				1.18			1.18			1.18		

16.4 SPLSR Evaluation and Analysis

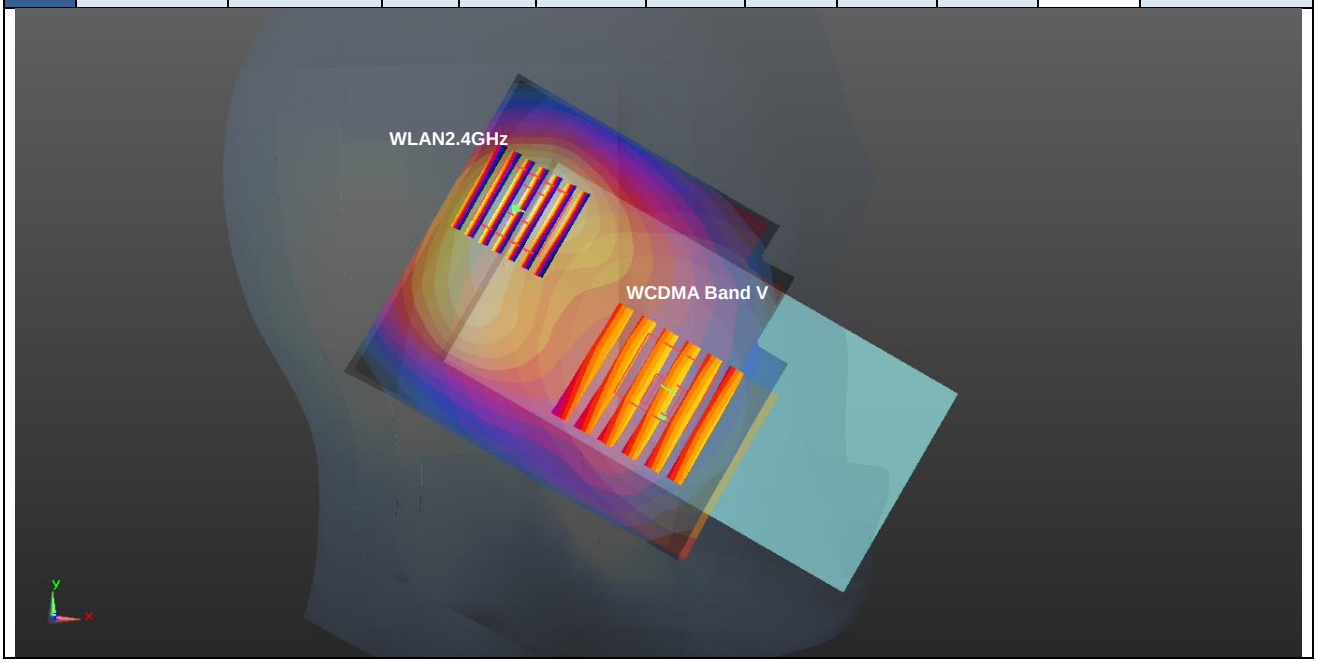
General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

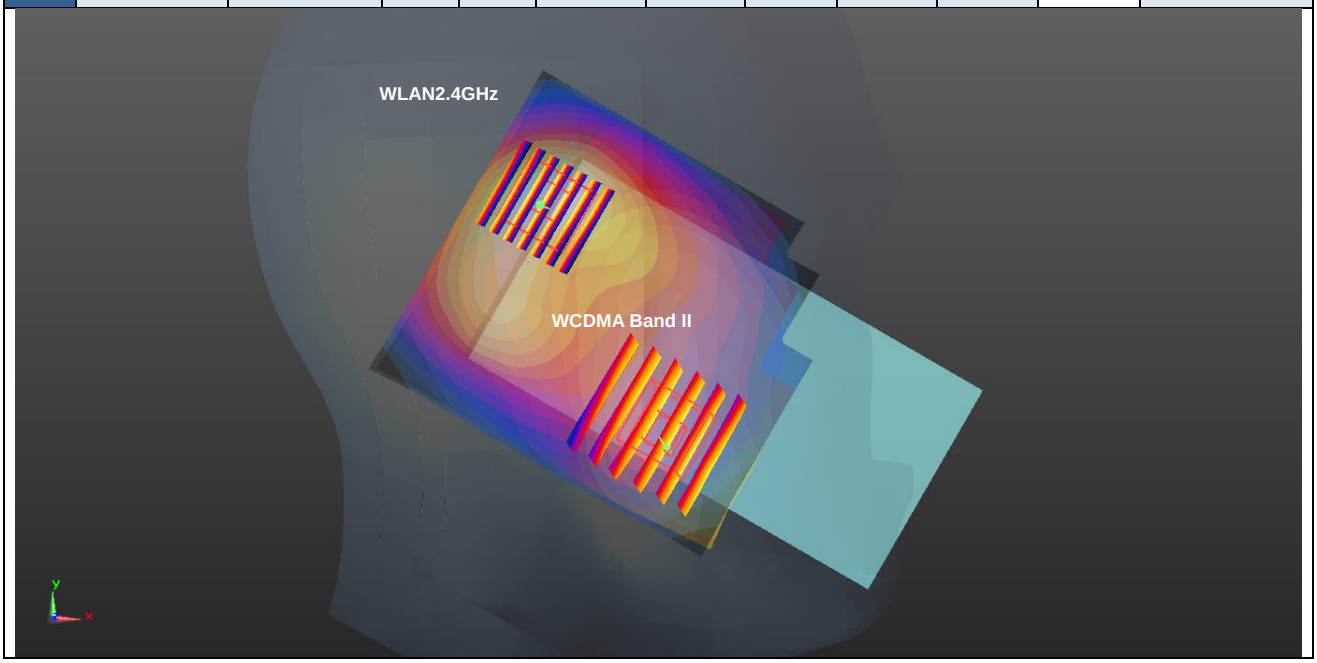
Case #1	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Left Cheek	0.647	0	48.35	-43.4	-4.56	77.4	1.79	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



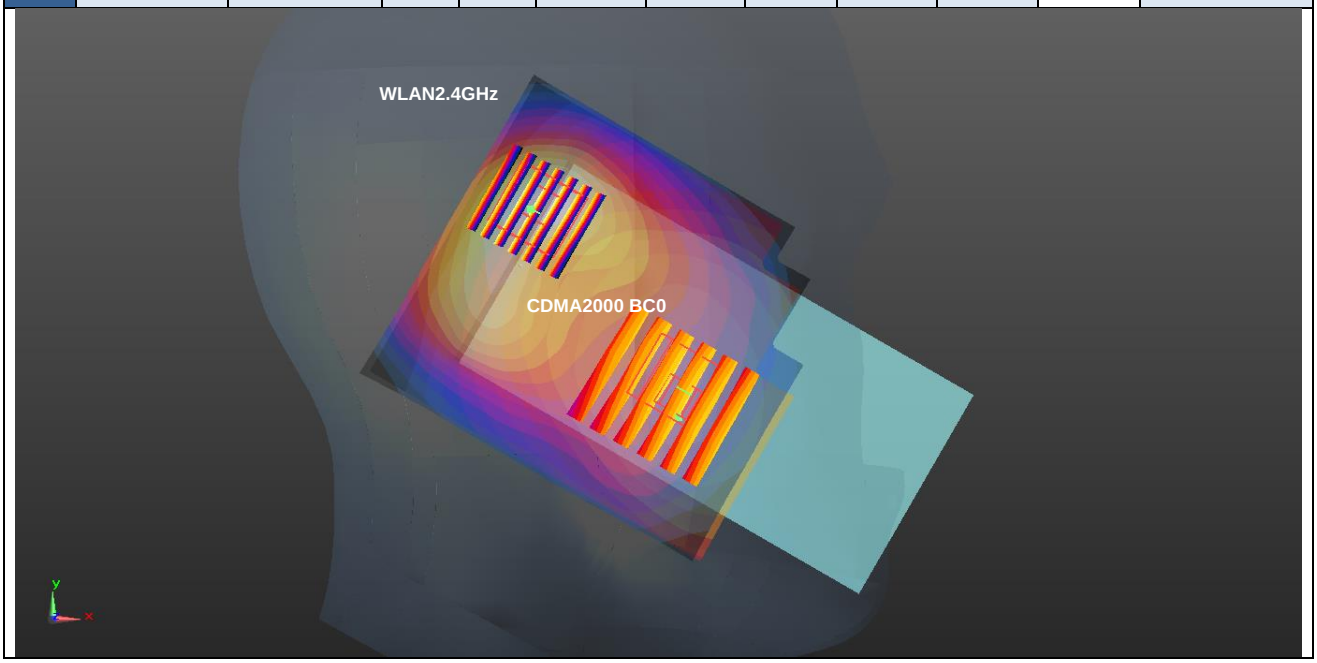
Case #2	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band V	Left Cheek	0.616	0	47.59	-44.74	-4.55	78.1	1.76	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



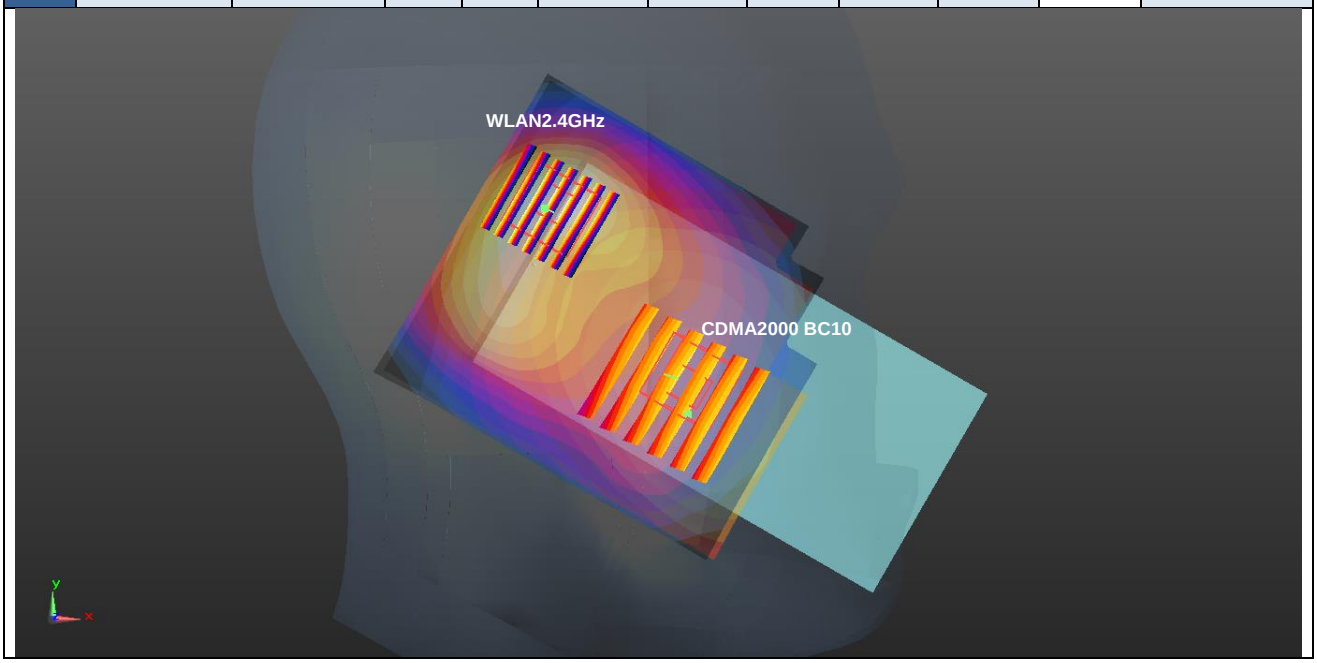
Case #3	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Left Cheek	0.712	0	40.44	-56.28	-1.53	84.5	1.85	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



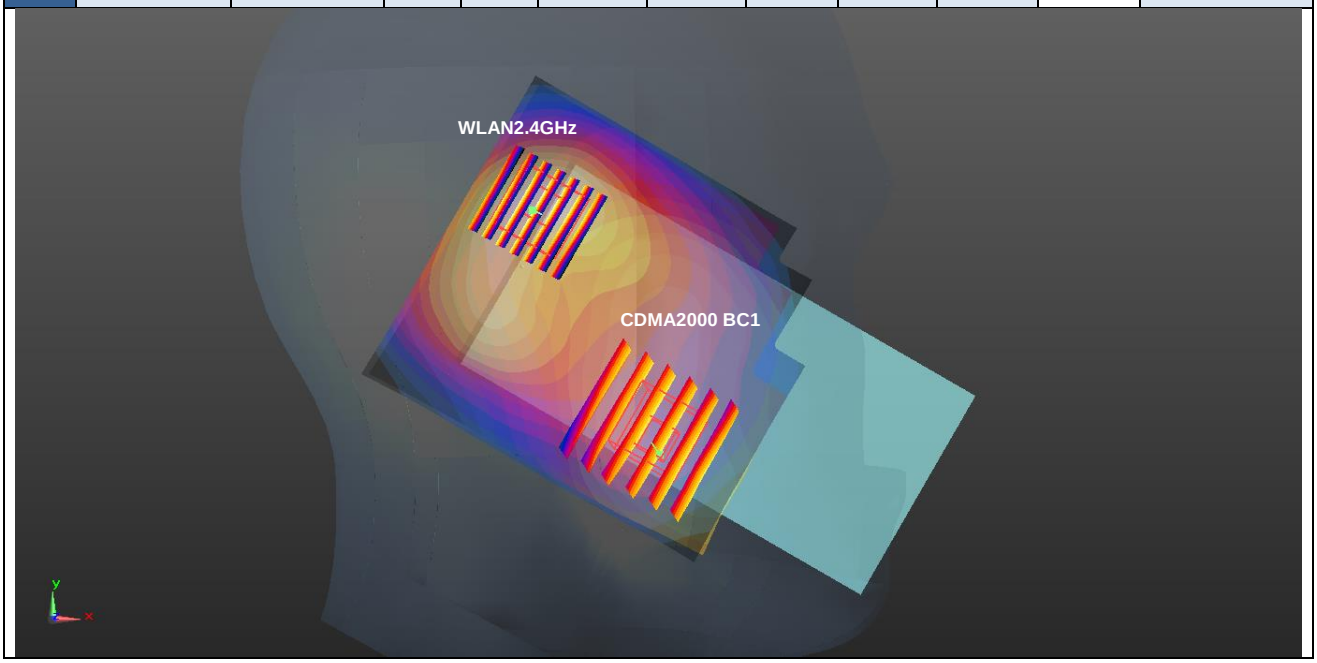
Case #4	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC0	Left Cheek	0.619	0	47.59	-44.73	-4.56	78.1	1.76	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



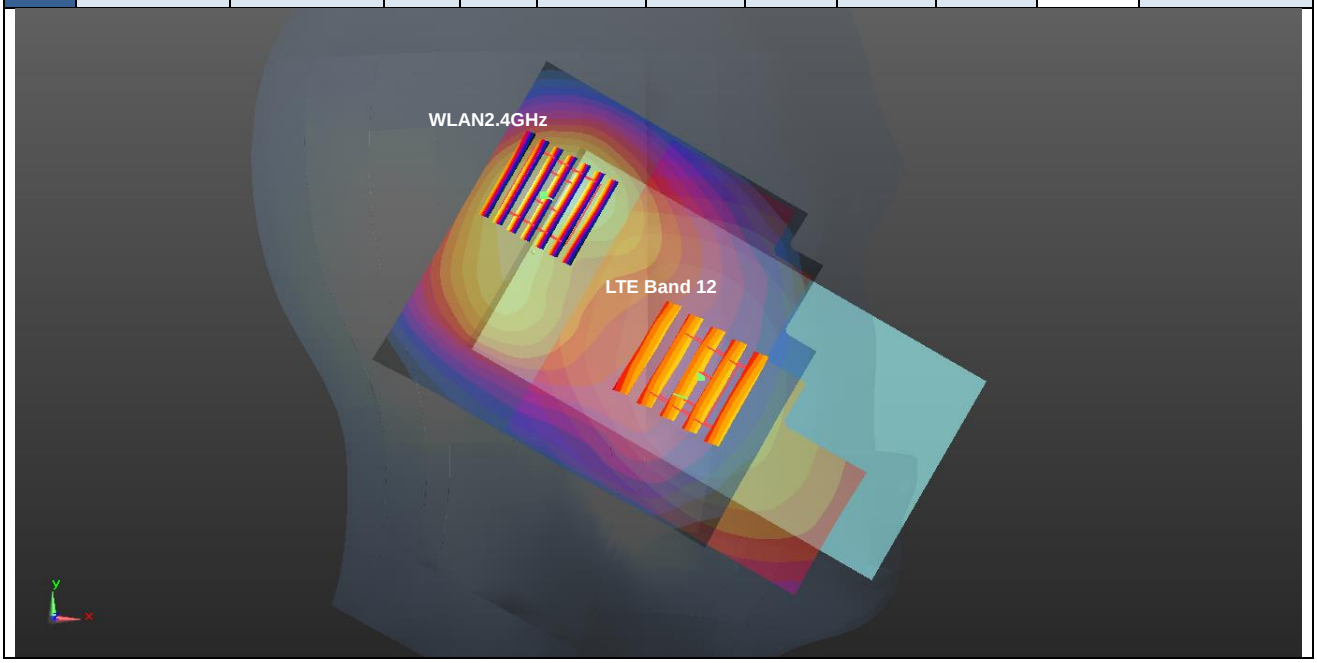
Case #5	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC10	Left Cheek	0.661	0	47.99	-37.55	-4.69	72.5	1.80	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



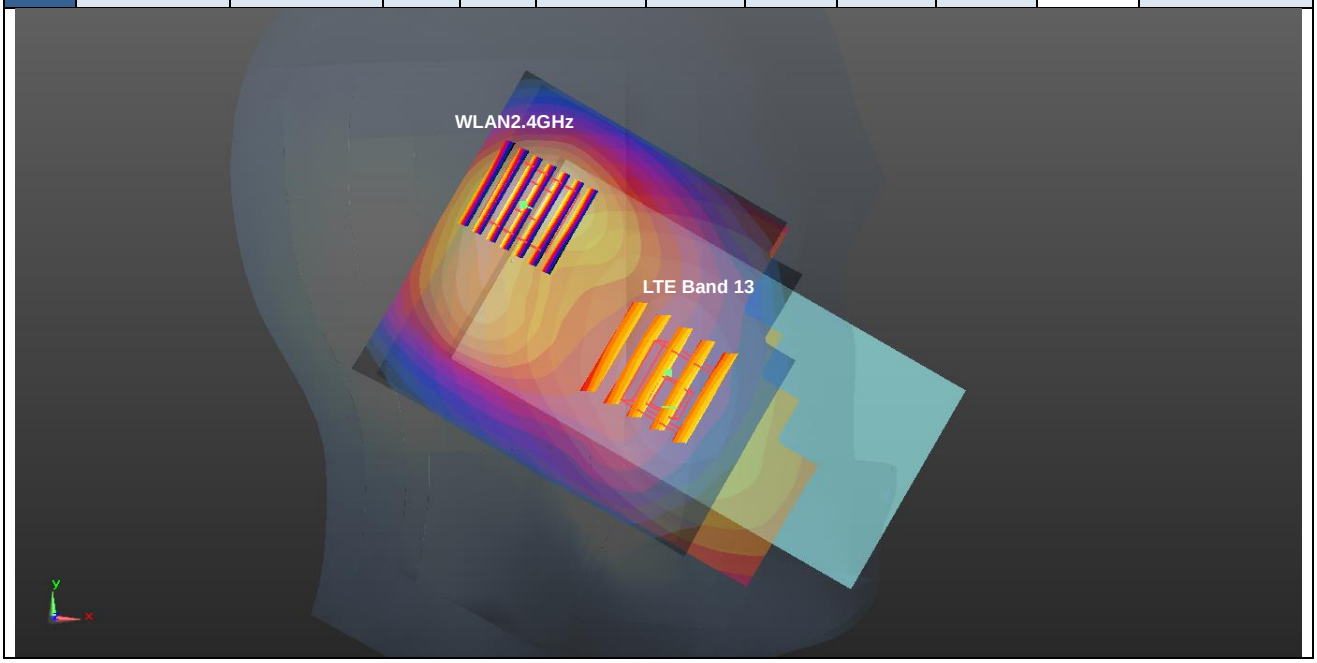
Case #6	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC1	Left Cheek	0.794	0	40.43	-56.29	-1.54	84.5	1.94	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



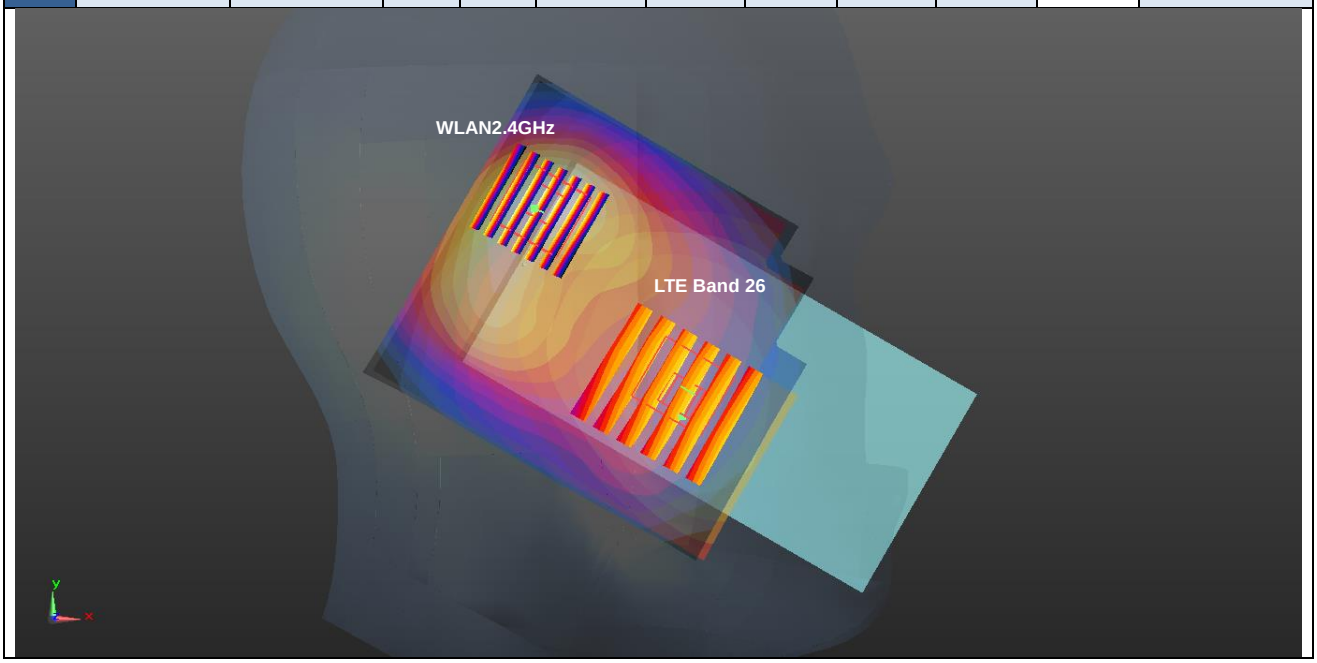
Case #7	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 12	Left Cheek	0.568	0	52.25	-46.87	-4.07	82.5	1.71	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



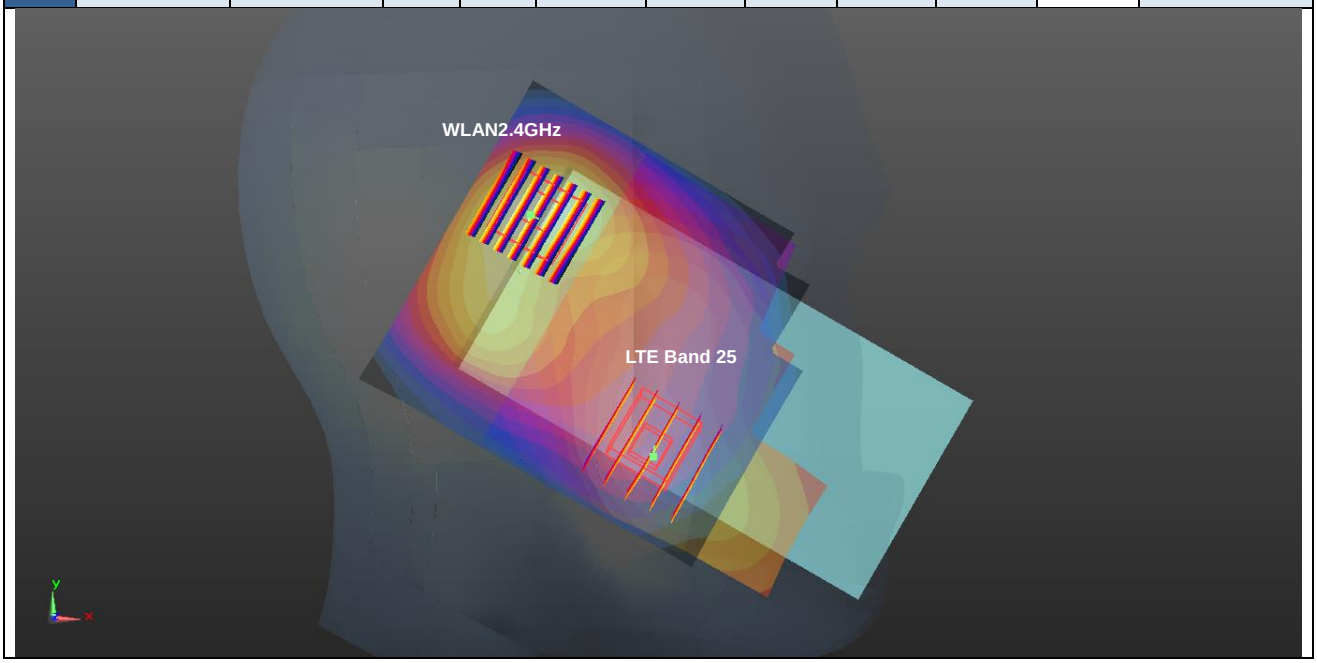
Case #8	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Left Cheek	0.732	0	48.03	-45.78	-4.44	79.2	1.87	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



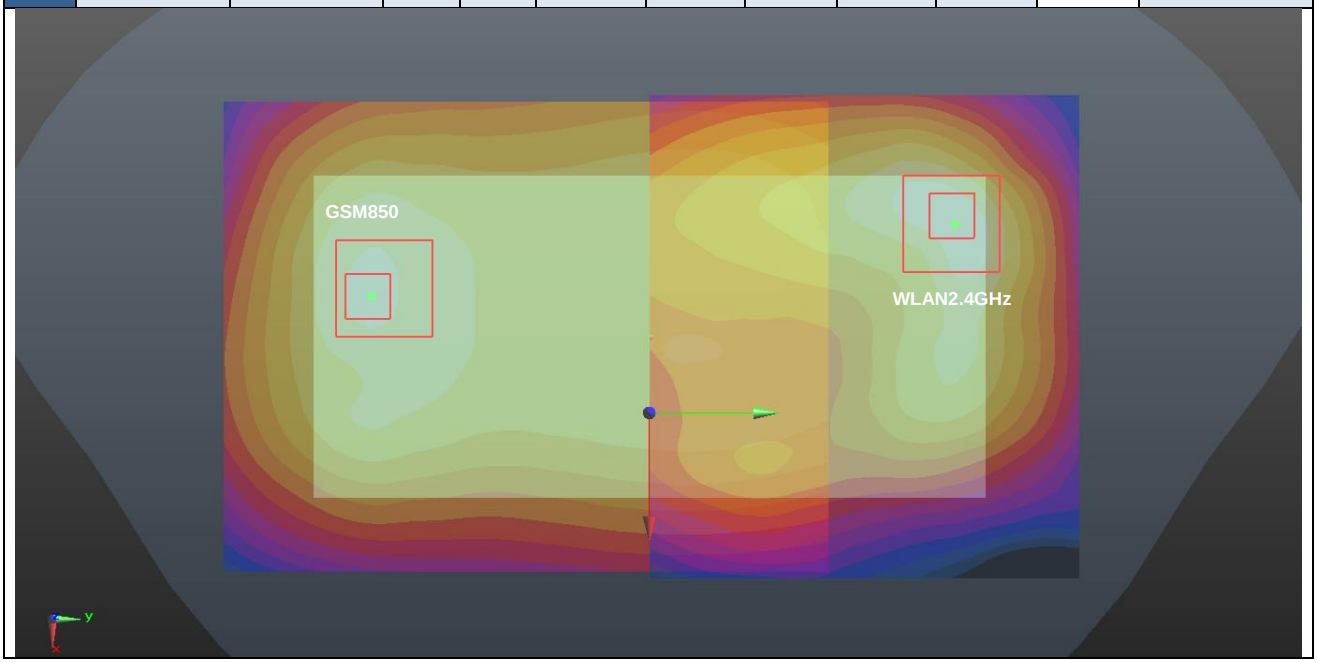
Case #9	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Left Cheek	0.642	0	47.59	-44.73	-4.54	78.1	1.78	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



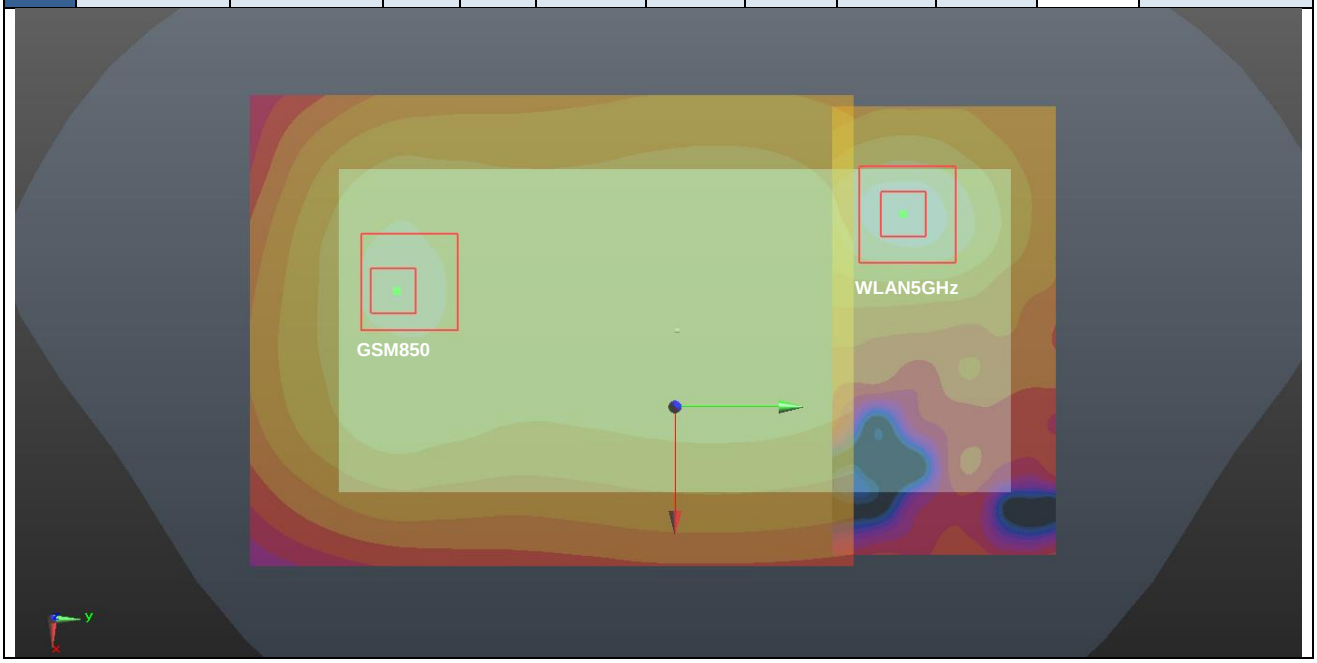
Case #10	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Left Cheek	0.739	0	40.66	-58.24	-0.89	86.3	1.88	0.03	Not required
	WLAN2.4GHz		1.141	0	3.47	19.65	-2.24				



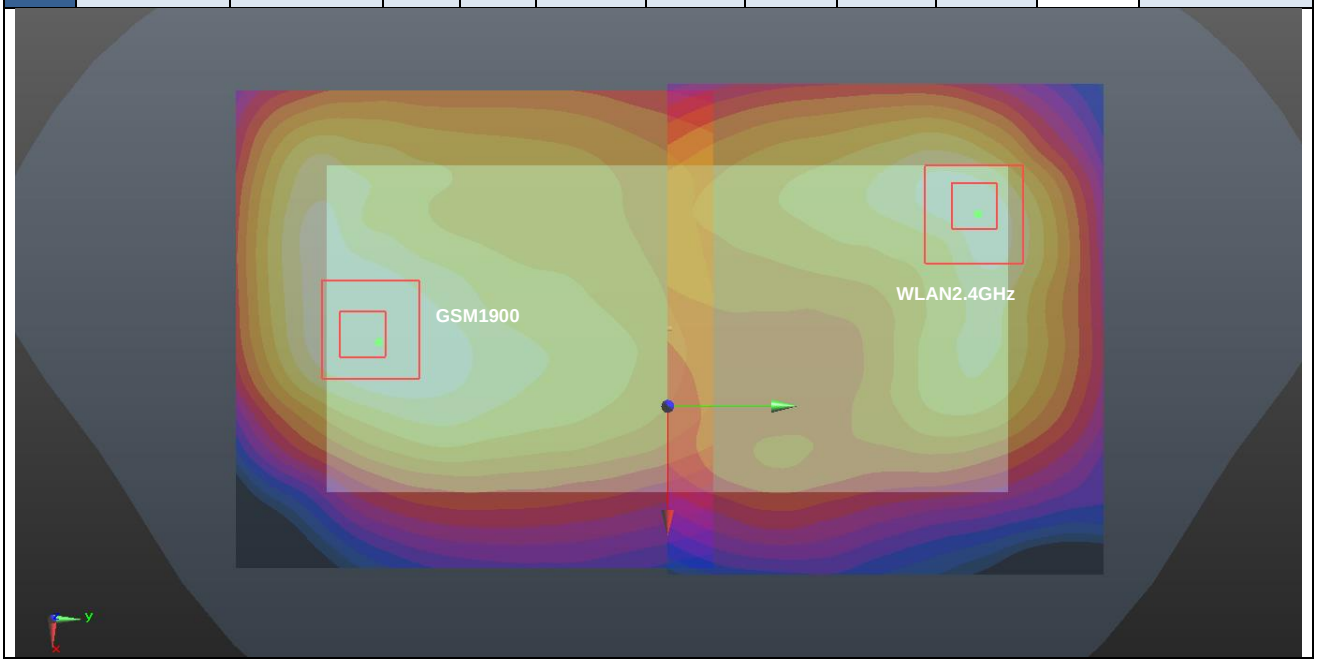
Case #11	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Back	1.103	5	-4.2	-63.6	-2.72	132.2	2.19	0.02	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



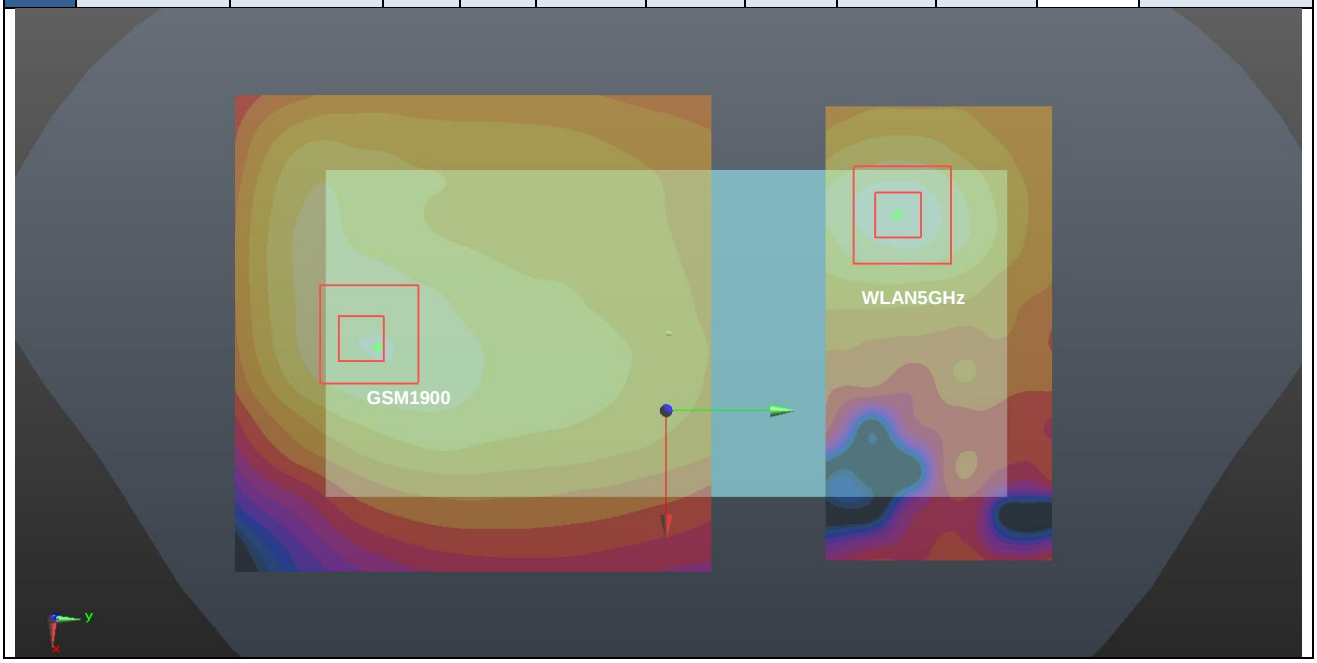
Case #12	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Back	1.103	5	-4.2	-63.6	-2.72	116.5	2.30	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33				



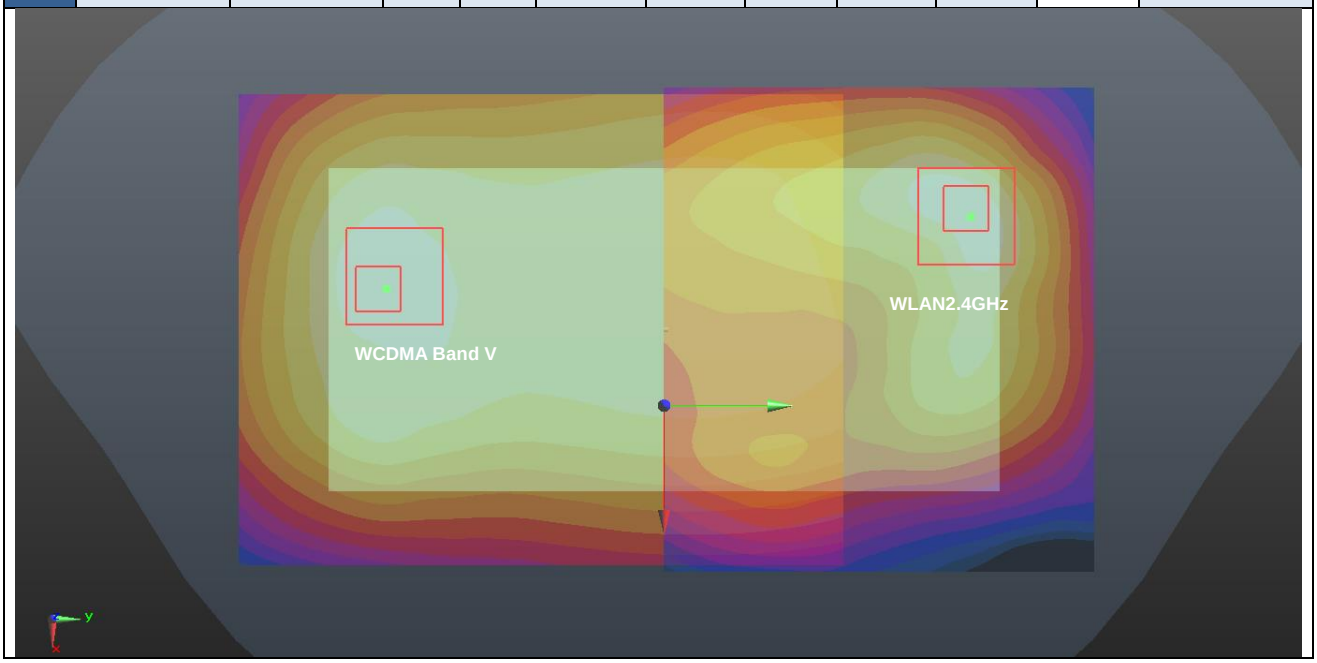
Case #13	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Back	1.247	5	3	-68.3	-2.34	138.3	2.33	0.03	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



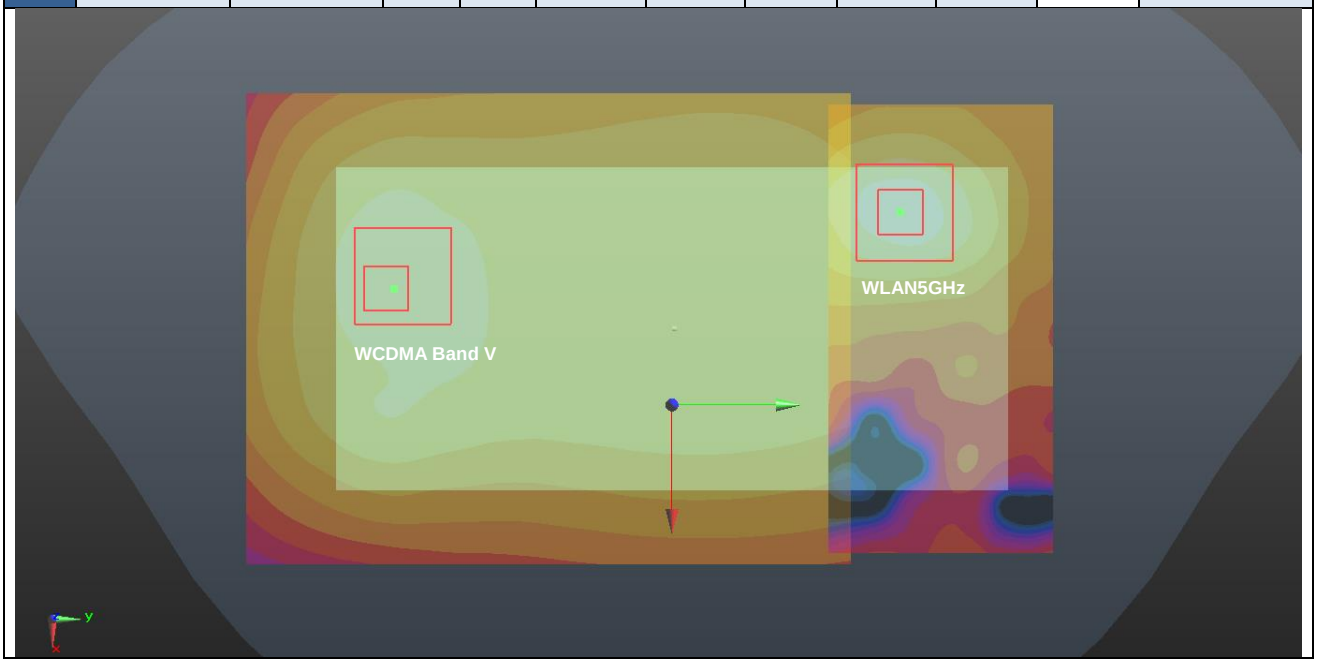
Case #14	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Back	1.247	5	3	-68.3	-2.34	122.6	2.44	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33				



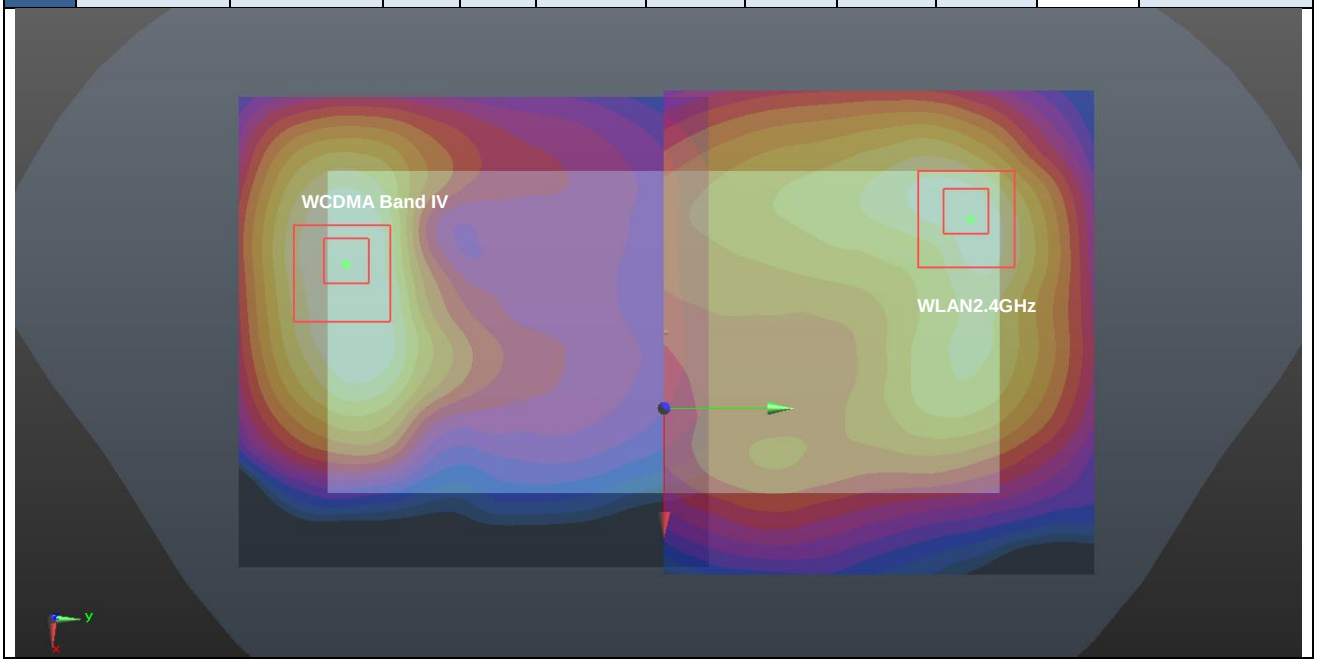
Case #15	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band V	Back	0.954	5	-5.8	-65.2	-2.73	133.5	2.04	0.02	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



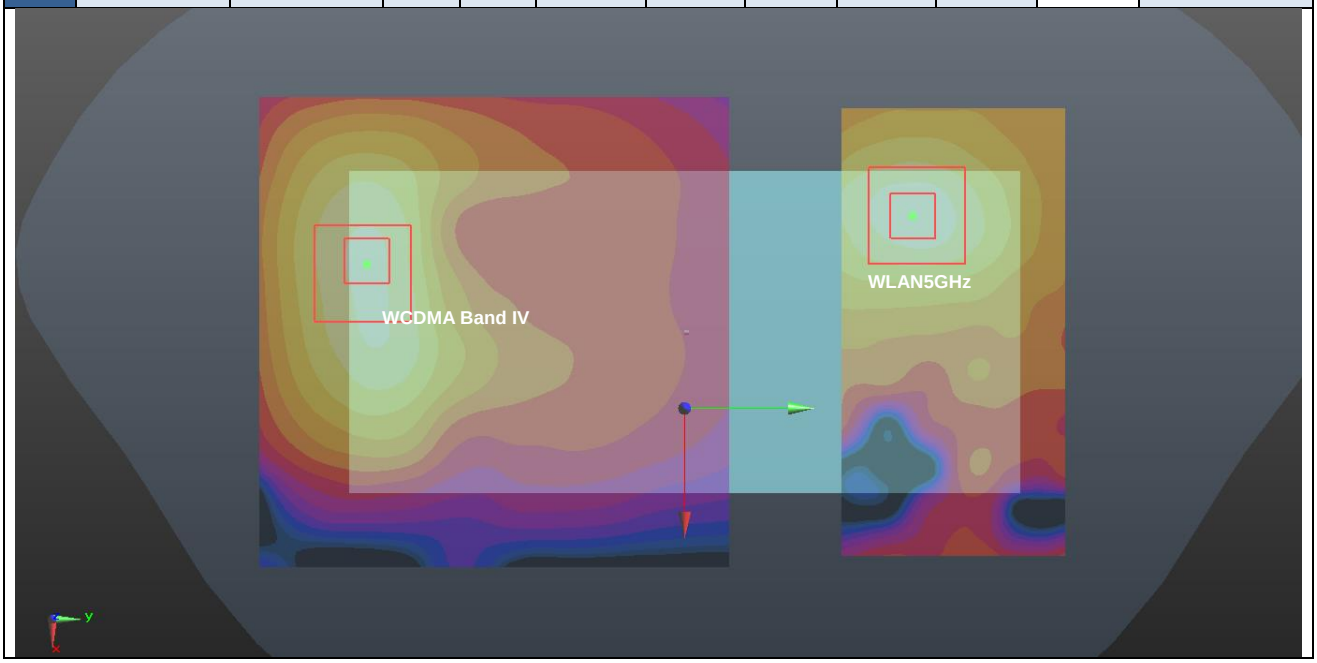
Case #16	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band V	Back	0.954	5	-5.8	-65.2	-2.73	117.8	2.15	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33				



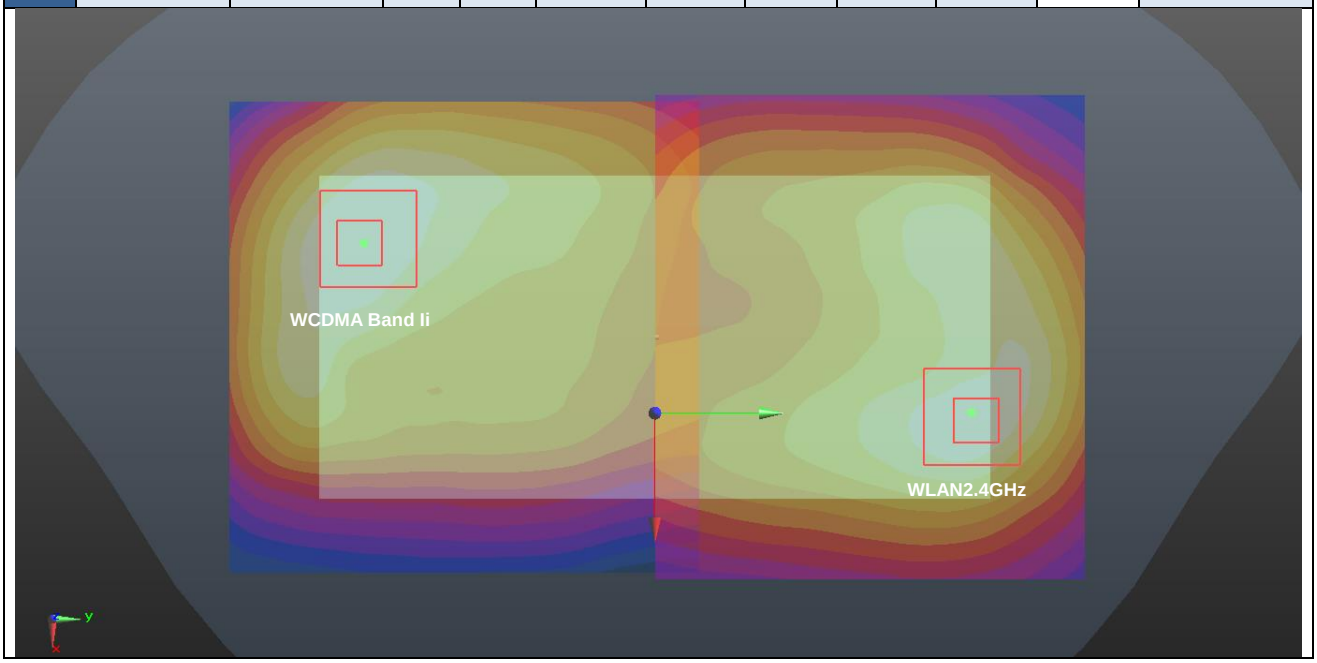
Case #17	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band IV	Back	1.356	5	-18.2	-71	-2.47	137.8	2.44	0.03	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



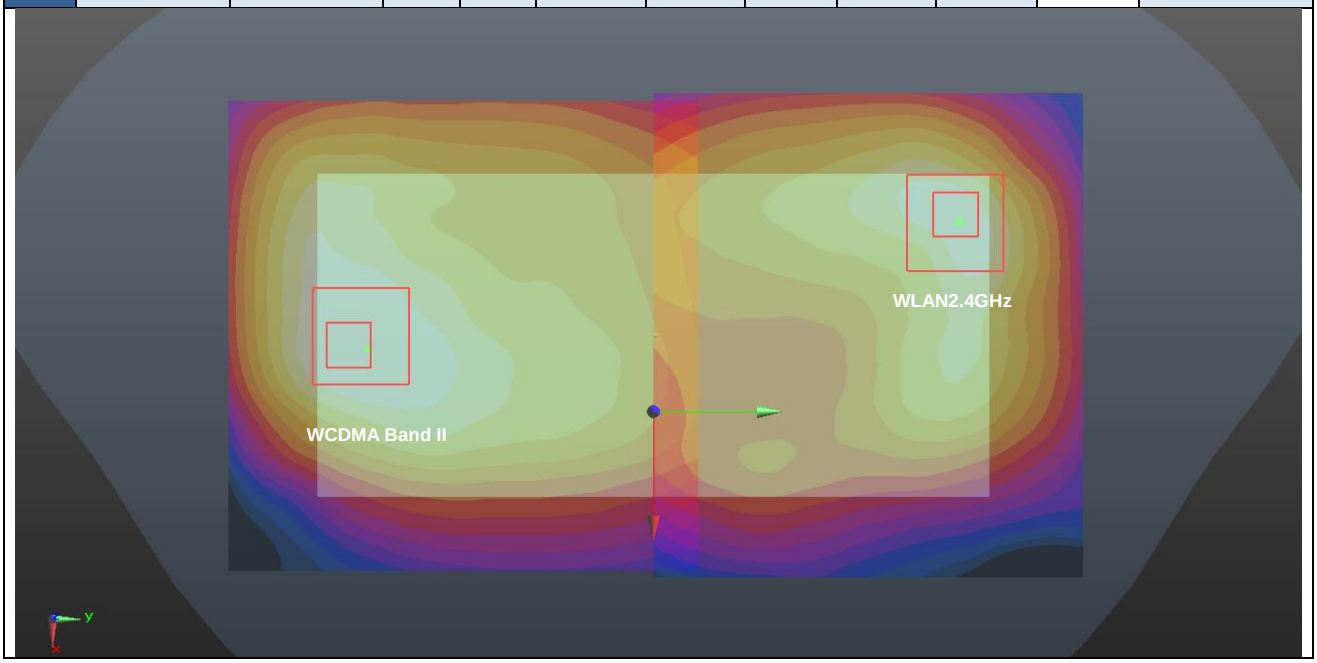
Case #18	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band IV	Back	1.356	5	-18.2	-71	-2.47	122.2	2.55	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33				



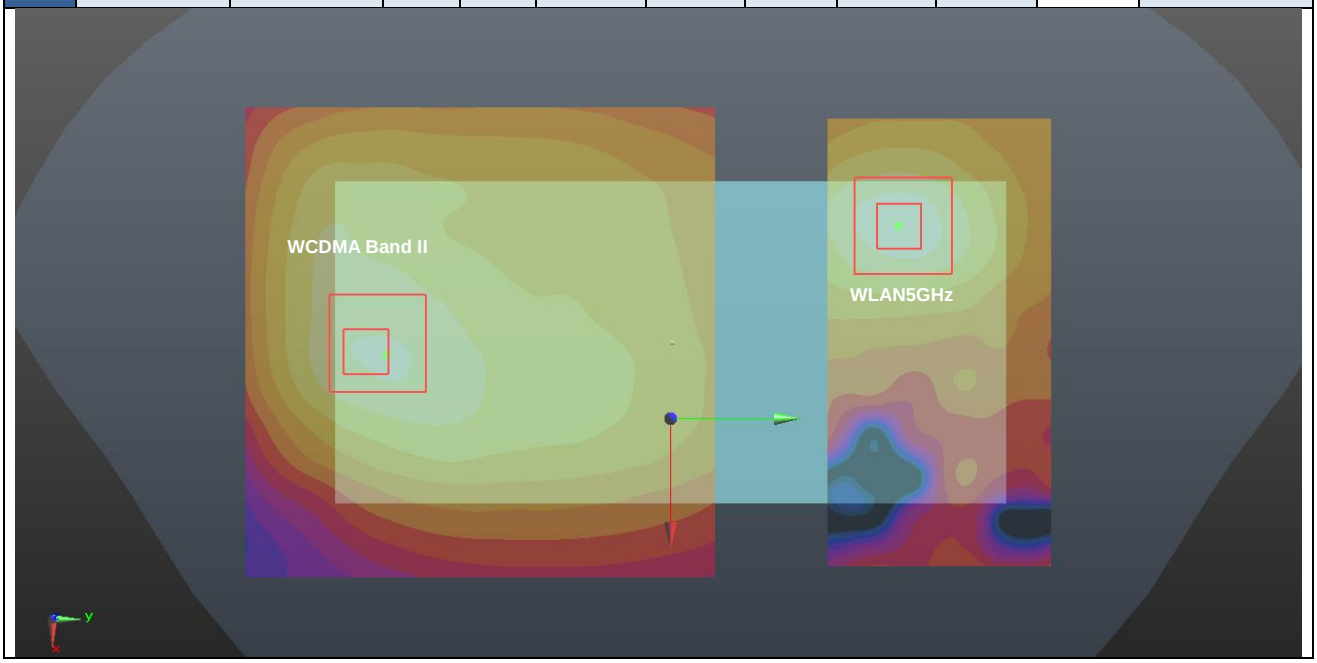
Case #19	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Front	1.133	5	-19.4	-68.2	-2.5	146.3	1.71	0.02	Not required
	WLAN2.4GHz		0.572	5	16.7	73.6	-1.7				



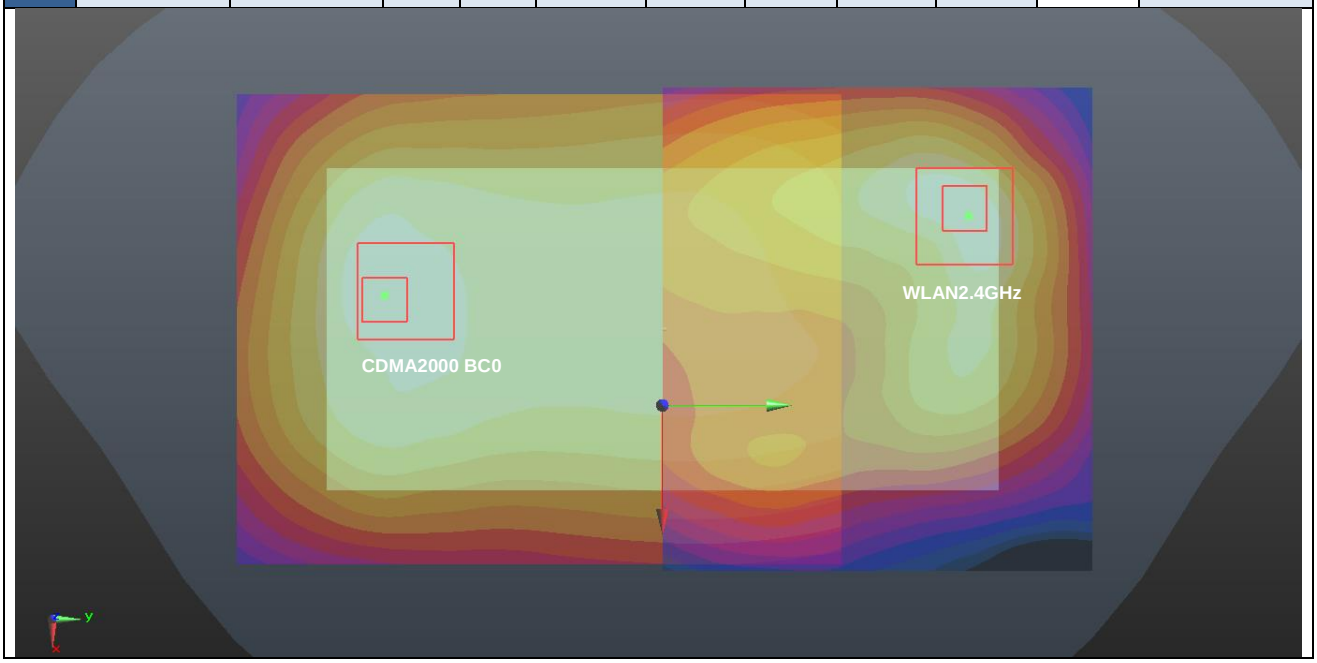
Case #20	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Back	1.363	5	3	-68.3	-2.43	138.3	2.45	0.03	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



Case #21	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Back	1.363	5	3	-68.3	-2.43	122.6	2.56	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33				



Case #22	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC0	Back	0.963	5	-2.7	-63.6	-2.71	132.5	2.05	0.02	Not required
	WLAN2.4GHz		1.086	5	-28.2	66.4	-2.19				



Case #23	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC0	Back	0.963	5	-2.7	-63.6	-2.71	116.8	2.16	0.03	Not required
	WLAN5GHz		1.195	5	-25.2	51	-2.33