FCC SAR TEST REPORT

FCC ID	:	**IHDT56ZS5**
Equipment	:	**Mobile Cellular Phone**
Brand Name	:	**Motorola**
Model Name	:	**XT2147-1**
Applicant	:	**Motorola Mobility LLC** **222 W,Merchandise Mart Plaza, Chicago IL 60654 USA**
Manufacturer	:	**Motorola Mobility LLC** **222 W,Merchandise Mart Plaza, Chicago IL 60654 USA**
Standard	:	**FCC 47 CFR Part 2 (2.1093)**

The product was received on Jan. 25, 2021 and testing was started from Jan. 28, 2021 and completed on Feb. 04, 2021. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan

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History of this test report

Report No.	Version	Description	Issued Date
FA0N2018-03	01	Initial issue of report	Feb. 22, 2021

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2147-1**, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)	Highest Simultaneous Transmission 10g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 5mm)	Hotspot (Separation 5mm)	Product Specific (Separation 0mm)		
		1g SAR (W/kg)			10g SAR (W/kg)		
Licensed	GSM850	0.23	1.37	1.37	2.05	1.58	3.93
	GSM1900	0.10	1.29	1.33	3.59		
	WCDMA II	0.20	1.32	1.32	3.30		
	WCDMA IV	0.27	1.31	1.34	3.44		
	WCDMA V	0.47	1.29	1.29	3.33		
	LTE Band 2	0.12	1.38	1.38	3.25		
	LTE Band 4	0.14	1.37	1.37	3.10		
	LTE Band 7	0.53	1.35	1.35	3.24		
	LTE Band 5 / 26	0.47	1.31	1.31	2.92		
	LTE Band 38 / 41	0.32	1.40	1.40	2.30		
DTS	2.4GHz WLAN	0.93	0.99	0.99		1.58	3.59
NII	5GHz WLAN	1.14	0.86	1.13	1.45	1.53	3.93
DSS	Bluetooth	< 0.01	< 0.01	< 0.01		1.40	3.59
Date of Testing:		2021/1/28 ~ 2021/2/4					

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Jason Wang
Report Producer: Daisy Peng

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 941225 D07 UMPC Mini Tablet v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2147-1
FCC ID	IHDT56ZS5
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2535 MHz ~ 2655 MHz WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN U-NII 1: 5150 MHz ~ 5250 MHz WLAN U-NII 2: 5250 MHz ~ 5350 MHz WLAN U-NII 3: 5470 MHz ~ 5725 MHz WLAN U-NII 4: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
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 WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.	

3.2 Maximum Output Power

General Note:

1. The device implements audio receiver, sensor detection and hotspot power reduction for SAR compliance at different exposure conditions (Head / Hotspot / Body-worn / Extremity) and the device will manage to ensure the averaged power level not exceeding the associated below power table. Proximity sensors are used to detect the exposure conditions and the verification is illustrated in section 4. Details about the power management decision are provided in the operational description.
2. Below table shows maximum tune up output power configured for this EUT for various transmit conditions by manufacturer, and the detail power measurement refer to section 13 and 14
3. In the table below which the output power states may have difference output power level. If some output power states measurement was not include in the section13 and 14, because the same output power level has been presented within the other output power states and use the same level to do SAR tested.

Frequency Band	Default	Head State 1		Hotspot State 2		Body-worn State 3		Extremity State 4	
	Tune-Up Limit (dBm)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)
GSM850 GSM 1 Tx slot	33.50	33.50	0.00	33.50	0.00	32.00	1.50	33.50	0.00
GSM850 GPRS 1 Tx slot	33.50	33.50	0.00	33.50	0.00	32.00	1.50	33.50	0.00
GSM850 GPRS 2 Tx slots	31.50	31.50	0.00	31.50	0.00	30.00	1.50	31.50	0.00
GSM850 GPRS 3 Tx slots	29.50	29.50	0.00	29.50	0.00	28.00	1.50	29.50	0.00
GSM850 GPRS 4 Tx slots	27.50	27.50	0.00	27.50	0.00	26.00	1.50	27.50	0.00
GSM850 EDGE 1 Tx slot	27.50	27.50	0.00	27.50	0.00	26.00	1.50	27.50	0.00
GSM850 EDGE 2 Tx slots	25.50	25.50	0.00	25.50	0.00	24.00	1.50	25.50	0.00
GSM850 EDGE 3 Tx slots	23.50	23.50	0.00	23.50	0.00	22.00	1.50	23.50	0.00
GSM850 EDGE 4 Tx slots	21.00	21.00	0.00	21.00	0.00	19.50	1.50	21.00	0.00
GSM1900 GSM 1 Tx slot	30.50	30.50	0.00	24.50	6.00	27.50	3.00	29.50	1.00
GSM1900 GPRS 1 Tx slot	30.50	30.50	0.00	24.50	6.00	27.50	3.00	29.50	1.00
GSM1900 GPRS 2 Tx slots	28.50	28.50	0.00	22.50	6.00	25.50	3.00	27.50	1.00
GSM1900 GPRS 3 Tx slots	26.50	26.50	0.00	20.50	6.00	23.50	3.00	25.50	1.00
GSM1900 GPRS 4 Tx slots	24.50	24.50	0.00	18.50	6.00	21.50	3.00	23.50	1.00
GSM1900 EDGE 1 Tx slot	26.50	26.50	0.00	20.50	6.00	23.50	3.00	25.50	1.00
GSM1900 EDGE 2 Tx slots	24.50	24.50	0.00	18.50	6.00	21.50	3.00	23.50	1.00
GSM1900 EDGE 3 Tx slots	22.50	22.50	0.00	16.50	6.00	19.50	3.00	21.50	1.00
GSM1900 EDGE 4 Tx slots	20.50	20.50	0.00	14.50	6.00	17.50	3.00	19.50	1.00
WCDMA II	24.00	24.00	0.00	15.00	9.00	18.50	5.50	20.00	4.00
WCDMA IV	24.00	24.00	0.00	18.00	6.00	19.00	5.00	22.50	1.50
WCDMA V	24.00	24.00	0.00	24.00	0.00	21.00	3.00	24.00	0.00
LTE B2	24.00	24.00	0.00	15.50	8.50	17.00	7.00	20.50	3.50
LTE B4	24.00	24.00	0.00	19.00	5.00	20.00	4.00	23.50	0.50
LTE B5	24.00	24.00	0.00	24.00	0.00	22.00	2.00	24.00	0.00
LTE B7	24.00	24.00	0.00	24.00	0.00	20.50	3.50	23.00	1.00
LTE B26	24.00	24.00	0.00	24.00	0.00	22.00	2.00	24.00	0.00
LTE B38	24.00	24.00	0.00	24.00	0.00	22.50	1.50	24.00	0.00
LTE B41	24.00	24.00	0.00	24.00	0.00	22.50	1.50	24.00	0.00

Band	Mode	Channel	Frequency	Default	Head State 1		Hotspot State 2		Body-worn State 3		Extremity State 4	
				Tune-Up Limit (dBm)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)	Tune-Up Limit (dBm)	power reduction (dB)
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.00	16.00	0.00	16.00	0.00	16.00	0.00	16.00	0.00
		6	2437	16.50	16.50	0.00	16.50	0.00	16.50	0.00	16.50	0.00
		11	2462	18.50	17.00	1.50	17.00	1.50	17.00	1.50	18.50	0.00
	802.11g 6Mbps	1	2412	16.00	16.00	0.00	16.00	0.00	16.00	0.00	16.00	0.00
		6	2437	17.00	17.00	0.00	17.00	0.00	17.00	0.00	17.00	0.00
		11	2462	15.00	15.00	0.00	15.00	0.00	15.00	0.00	15.00	0.00
	802.11n-HT20 MCS0	1	2412	16.00	16.00	0.00	16.00	0.00	16.00	0.00	16.00	0.00
		6	2437	17.00	17.00	0.00	17.00	0.00	17.00	0.00	17.00	0.00
		11	2462	14.00	14.00	0.00	14.00	0.00	14.00	0.00	14.00	0.00
5.2GHz WLAN	802.11a 6Mbps	36	5180	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		40	5200	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		44	5220	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		48	5240	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
	802.11n-HT20 MCS0	36	5180	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		40	5200	18.00	18.00	0.00	12.50	5.50	12.50	5.50	18.00	0.00
		44	5220	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		48	5240	18.00	18.00	0.00	12.50	5.50	12.50	5.50	18.00	0.00
	802.11n-HT40 MCS0	38	5190	14.00	14.00	0.00	8.50	5.50	8.50	5.50	14.00	0.00
		46	5230	17.50	17.50	0.00	12.00	5.50	12.00	5.50	17.50	0.00
	802.11ac-VHT20 MCS0	36	5180	18.50	18.50	0.00	13.00	5.50	13.00	5.50	18.50	0.00
		40	5200	18.00	18.00	0.00	12.50	5.50	12.50	5.50	18.00	0.00
		44	5220	18.00	18.00	0.00	12.50	5.50	12.50	5.50	18.00	0.00
		48	5240	18.00	18.00	0.00	12.50	5.50	12.50	5.50	18.00	0.00
	802.11ac-VHT40 MCS0	38	5190	17.50	17.50	0.00	12.00	5.50	12.00	5.50	17.50	0.00
		46	5230	17.50	17.50	0.00	12.00	5.50	12.00	5.50	17.50	0.00
	802.11ac-VHT80 MCS0	42	5210	12.00	12.00	0.00	12.00	0.00	12.00	0.00	12.00	0.00
5.3GHz WLAN	802.11a 6Mbps	52	5260	18.00	18.00	0.00	18.00	0.00	15.00	3.00	18.00	0.00
		56	5280	18.50	18.50	0.00	18.50	0.00	15.00	3.50	18.50	0.00
		60	5300	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
		64	5320	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
	802.11n-HT20 MCS0	52	5260	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
		56	5280	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
		60	5300	18.00	18.00	0.00	18.00	0.00	15.00	3.00	18.00	0.00
		64	5320	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
	802.11n-HT40 MCS0	54	5270	17.50	17.50	0.00	17.50	0.00	14.50	3.00	17.50	0.00
		62	5310	15.00	15.00	0.00	15.00	0.00	12.00	3.00	15.00	0.00
	802.11ac-VHT20 MCS0	52	5260	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
		56	5280	18.50	18.50	0.00	18.50	0.00	15.50	3.00	18.50	0.00
		60	5300	18.00	18.00	0.00	18.00	0.00	15.00	3.00	18.00	0.00
		64	5320	18.00	18.00	0.00	18.00	0.00	15.00	3.00	18.00	0.00
	802.11ac-VHT40 MCS0	54	5270	17.50	17.50	0.00	17.50	0.00	14.50	3.00	17.50	0.00
		62	5310	17.50	17.50	0.00	17.50	0.00	14.50	3.00	17.50	0.00
	802.11ac-VHT80 MCS0	58	5290	14.00	14.00	0.00	14.00	0.00	14.00	0.00	14.00	0.00
5.5GHz WLAN	802.11a 6Mbps	100	5500	18.00	16.50	1.50	18.00	0.00	18.00	0.00	18.00	0.00
		116	5580	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		124	5620	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		132	5660	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		144	5720	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
	802.11n-HT20 MCS0	100	5500	18.00	16.50	1.50	18.00	0.00	18.00	0.00	18.00	0.00
		116	5580	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00

		124	5620	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		132	5660	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		144	5720	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
	802.11n-HT40 MCS0	102	5510	15.00	15.00	0.00	15.00	0.00	15.00	0.00	15.00	0.00
		110	5550	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		126	5630	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		134	5670	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		142	5710	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
	802.11ac-VHT20 MCS0	100	5500	18.00	16.50	1.50	18.00	0.00	18.00	0.00	18.00	0.00
		116	5580	18.00	17.00	1.00	18.00	0.00	18.00	0.00	18.00	0.00
		124	5620	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		132	5660	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
		144	5720	18.50	17.00	1.50	18.50	0.00	18.50	0.00	18.50	0.00
	802.11ac-VHT40 MCS0	102	5510	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		110	5550	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		126	5630	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		134	5670	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
		142	5710	17.50	16.50	1.00	17.50	0.00	17.50	0.00	17.50	0.00
	802.11ac-VHT80 MCS0	106	5530	13.00	13.00	0.00	13.00	0.00	13.00	0.00	13.00	0.00
		122	5610	17.00	16.00	1.00	17.00	0.00	17.00	0.00	17.00	0.00
		138	5690	17.00	16.00	1.00	17.00	0.00	17.00	0.00	17.00	0.00
5.8GHz WLAN	802.11a 6Mbps	149	5745	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
		157	5785	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
		165	5825	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
	802.11n-HT20 MCS0	149	5745	18.00	15.00	3.00	18.00	0.00	18.00	0.00	18.00	0.00
		157	5785	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
		165	5825	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
	802.11n-HT40 MCS0	151	5755	17.50	14.50	3.00	17.50	0.00	17.50	0.00	17.50	0.00
		159	5795	17.50	14.50	3.00	17.50	0.00	17.50	0.00	17.50	0.00
	802.11ac-VHT20 MCS0	149	5745	18.00	15.00	3.00	18.00	0.00	18.00	0.00	18.00	0.00
		157	5785	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
		165	5825	18.50	15.50	3.00	18.50	0.00	18.50	0.00	18.50	0.00
	802.11ac-VHT40 MCS0	151	5755	17.50	14.50	3.00	17.50	0.00	17.50	0.00	17.50	0.00
		159	5795	17.50	14.50	3.00	17.50	0.00	17.50	0.00	17.50	0.00
	802.11ac-VHT80 MCS0	155	5775	17.00	15.00	2.00	17.00	0.00	17.00	0.00	17.00	0.00

3.3 General LTE SAR Test and Reporting Considerations

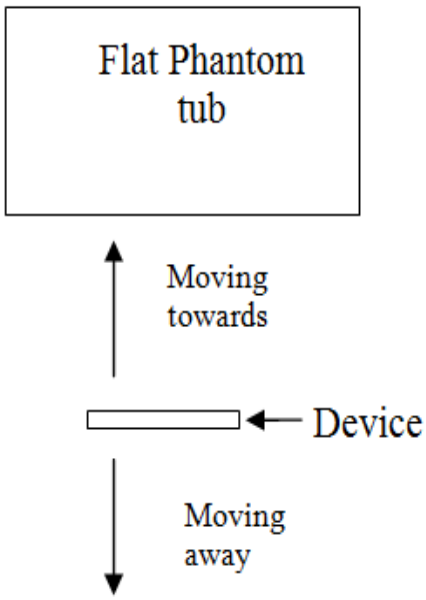
<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>IHDT56ZS5</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2535 MHz ~ 2655 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Data only / Voice and Data</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in hotspot mode that LTE B2 / B4 power reduction applied to satisfy SAR compliance.</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 13.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>This device supports maximum of 3 carriers in the downlink.Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5
LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	40065	2537.5	40090	2540	40115	2542.5	40140	2545
L M	40385	2569.5	40390	2570	40395	2570.5	40400	2571
H M	40705	2601.5	40690	2600	40685	2599.5	40670	2598
H	41215	2652.5	41190	2650	41165	2647.5	41140	2645

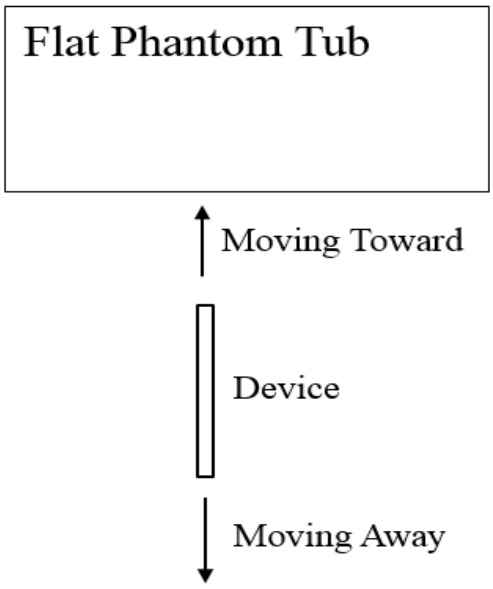
4. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

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 (3700MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. When the sensor is active, the device will reduce maximum output powers on the GSM850/1900, WCDMA B2/4/5, and LTE B2/4/5/7/26/38/41 transmitter.
4. Body-worn/Hotspot SAR was tested at 5mm separation and extremity SAR was tested at 0mm separation, at the reduced power level in each associated power table. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   a. For Body-worn:
      Front: 13 mm
      Back: 24 mm
   b. For Extremity:
      Front: 7 mm
      Back: 19 mm
      Bottom: 15 mm
   c. For Extremity(LTE B7)
      Front: 6 mm
      Back: 17 mm
      Bottom: 14 mm



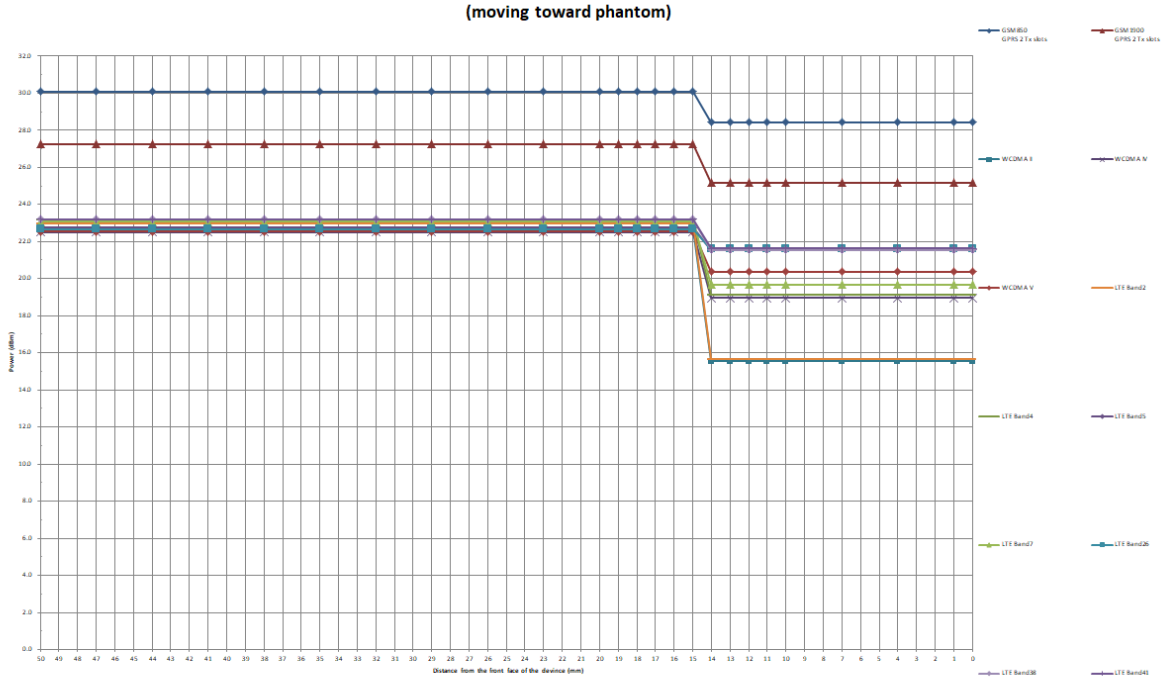
Sensor detection test set-up, front and back faces



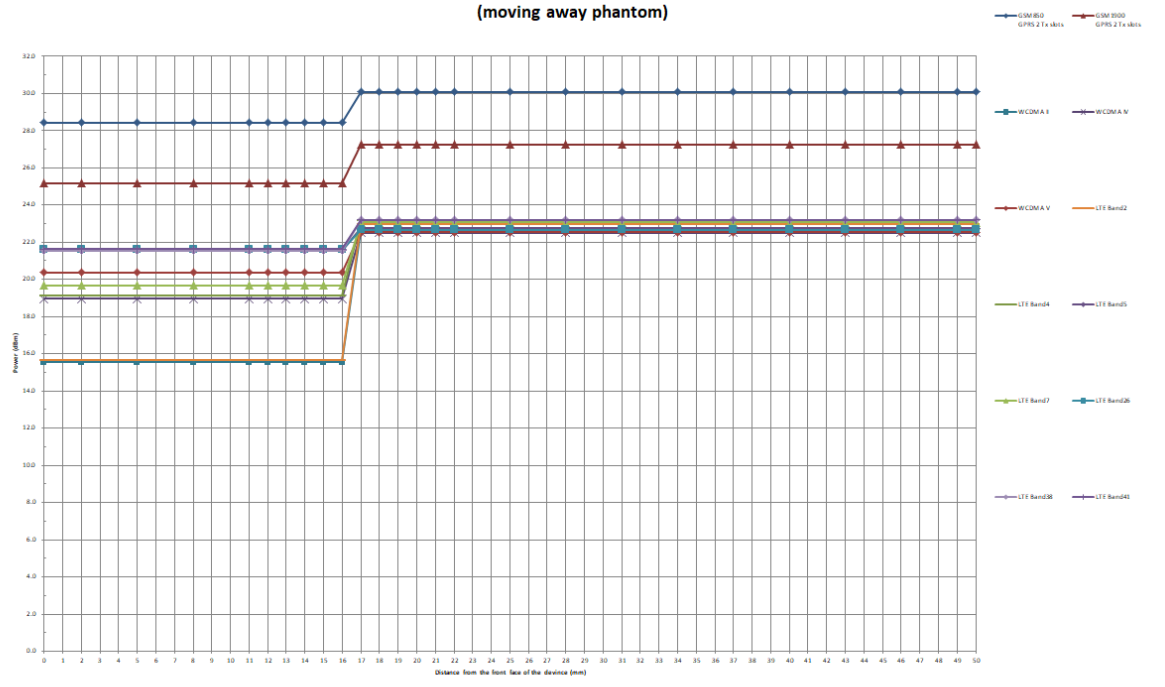
Sensor detection test set-up, bottom face

Proximity Top+ Bottom Sensor Trigger Distance for Body-worn(mm)				
Position	Front		Back	
Position	Moving towards	Moving away	Moving towards	Moving away
Minimum	14	16	25	27

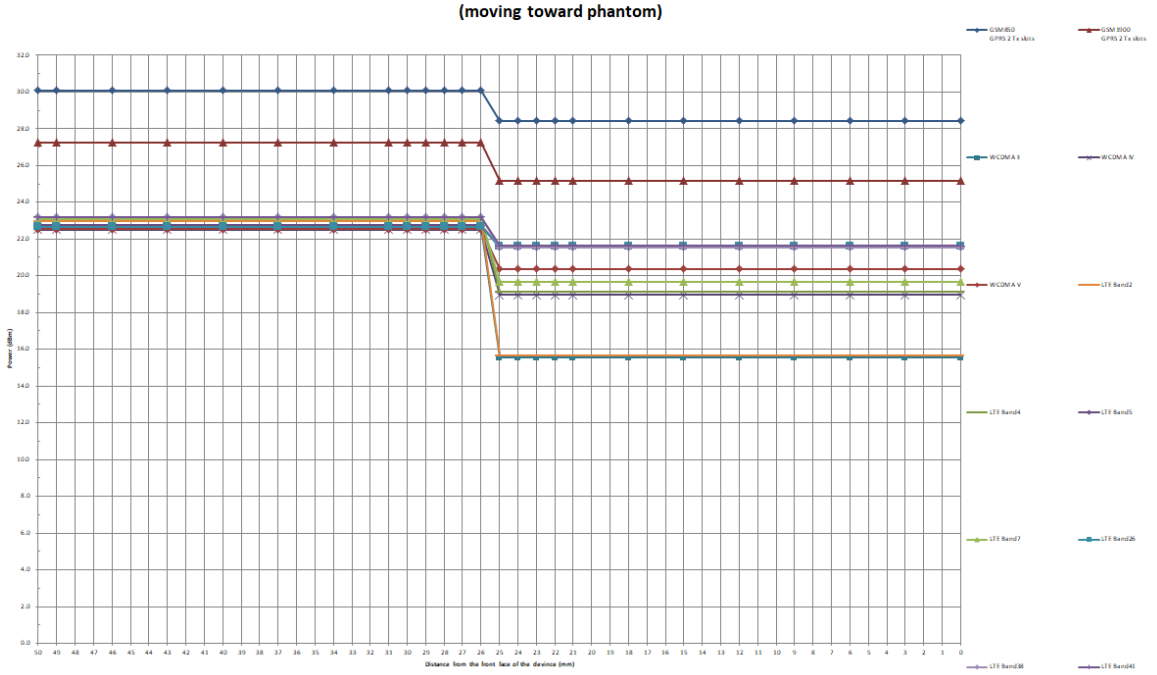
Front Sensor Near/Far Dectection threshold
(moving toward phantom)



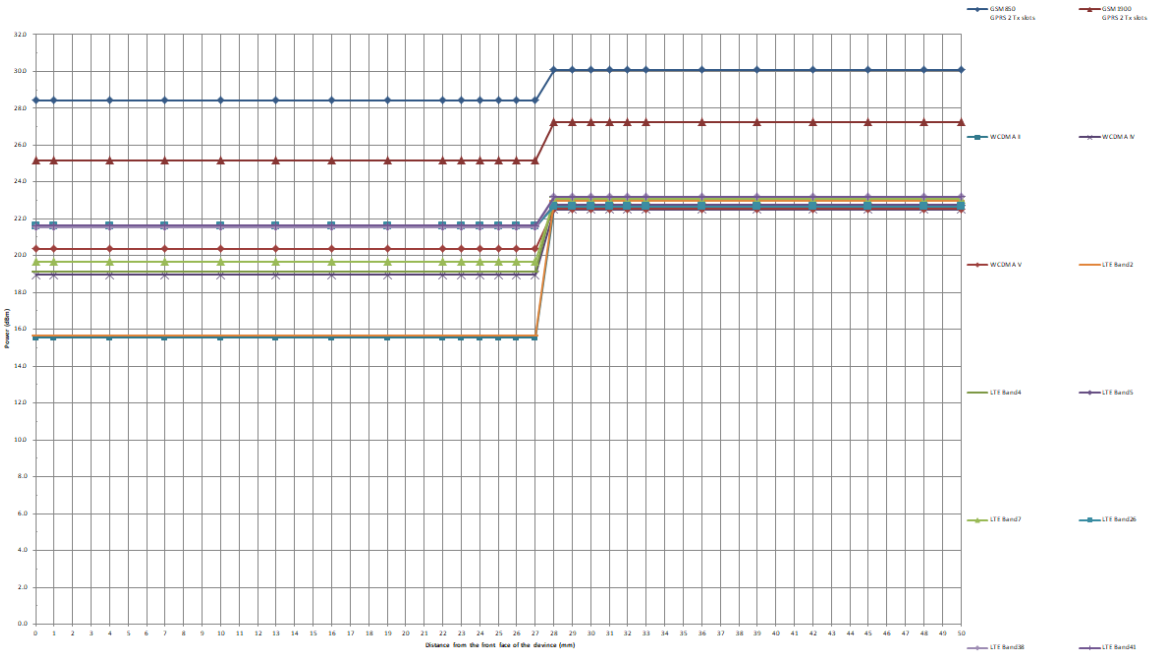
Front Sensor Near/Far Dectection threshold
(moving away phantom)



Rear Sensor Near/Far Dectection threshold
(moving toward phantom)

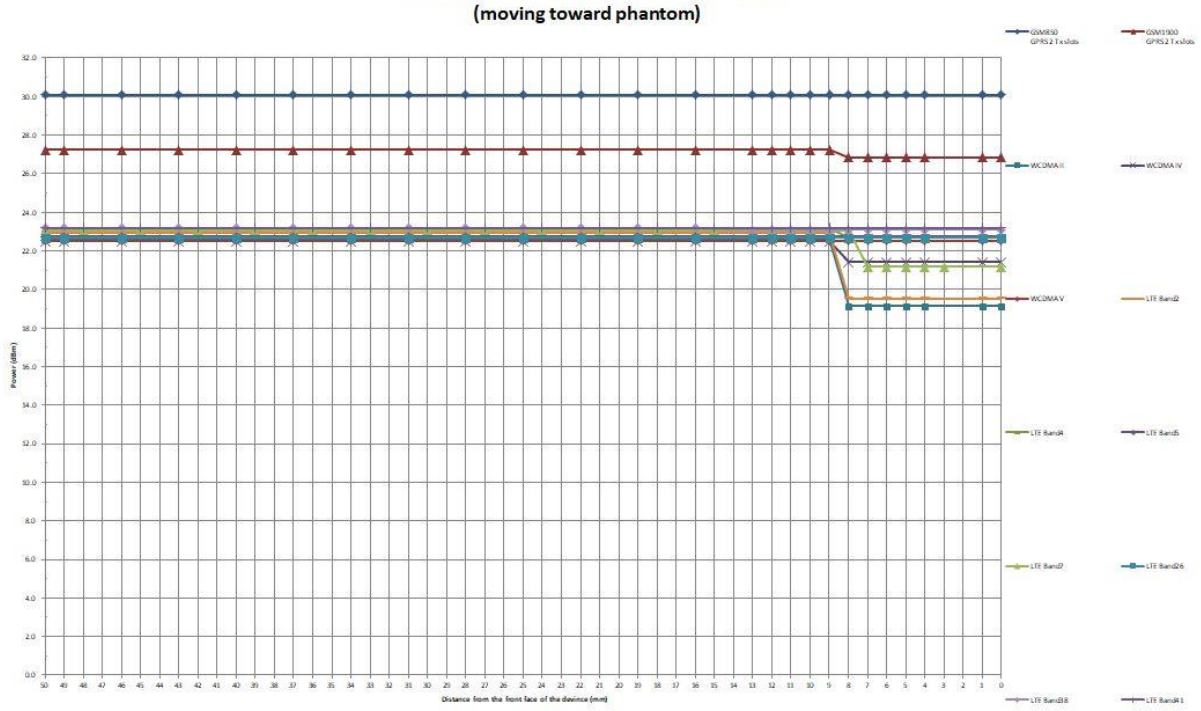


Rear Sensor Near/Far Dectection threshold
(moving away phantom)

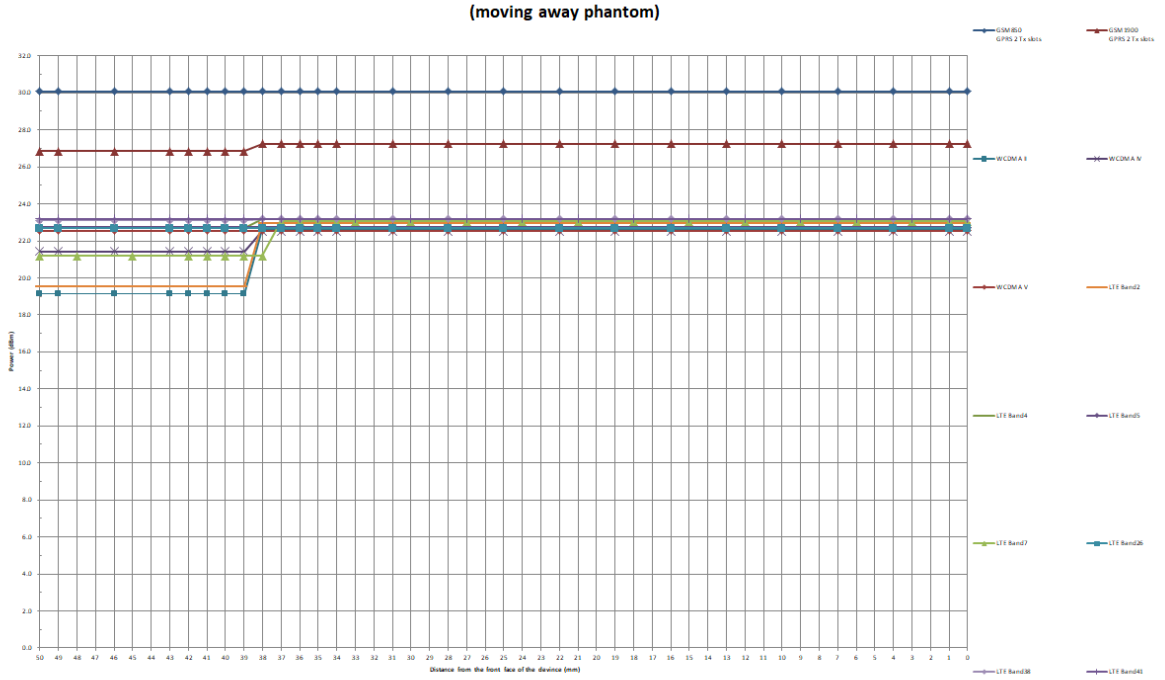


Proximity Bottom Sensor Trigger Distance (mm) for Extremity						
Position	Front		Back		Bottom Side	
Position	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	8	11	20	24	16	22
Minimum (LTE B7)	7	11	18	19	15	21

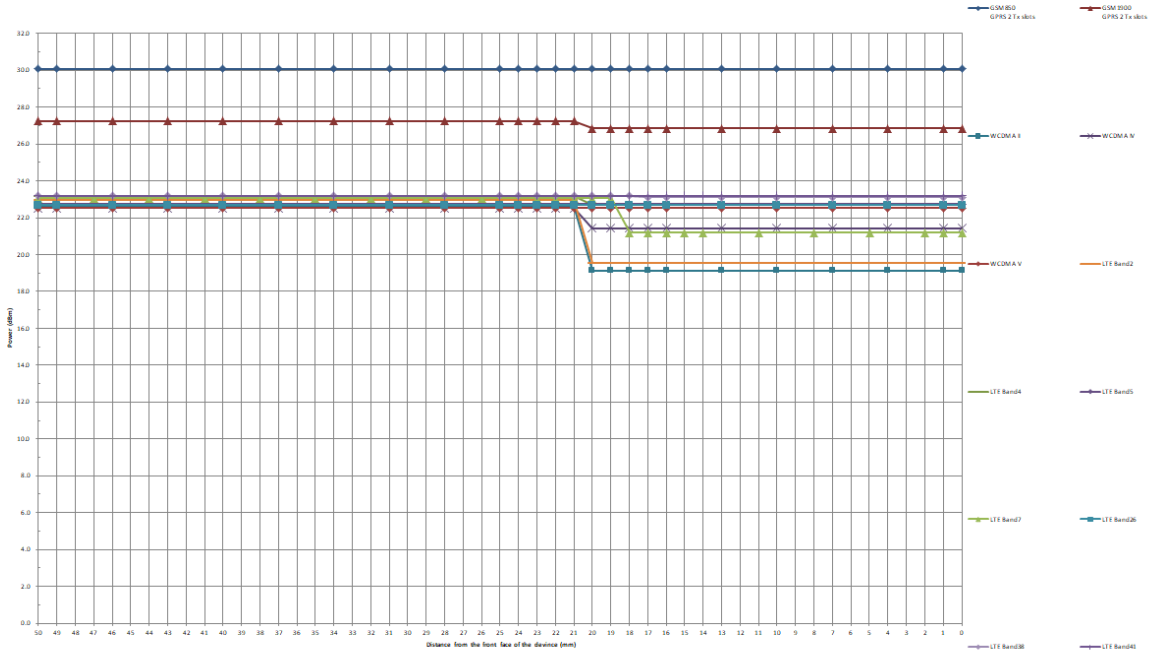
Front Sensor Near/Far Dectection threshold
(moving toward phantom)



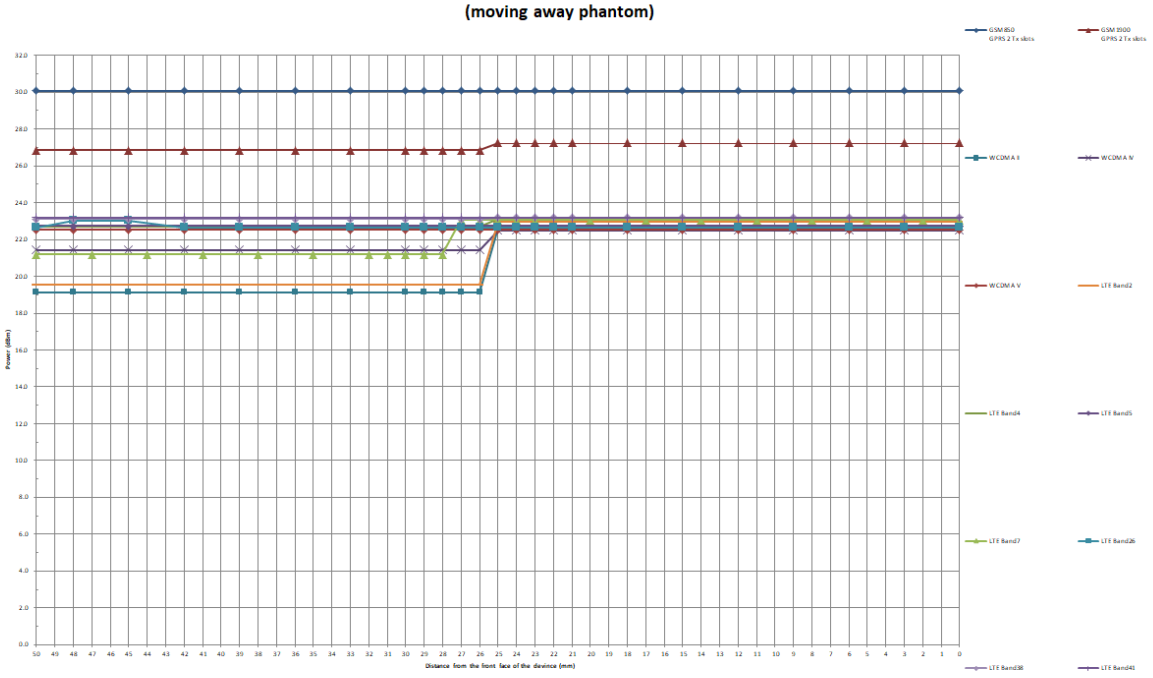
Front Sensor Near/Far Dectection threshold
(moving away phantom)



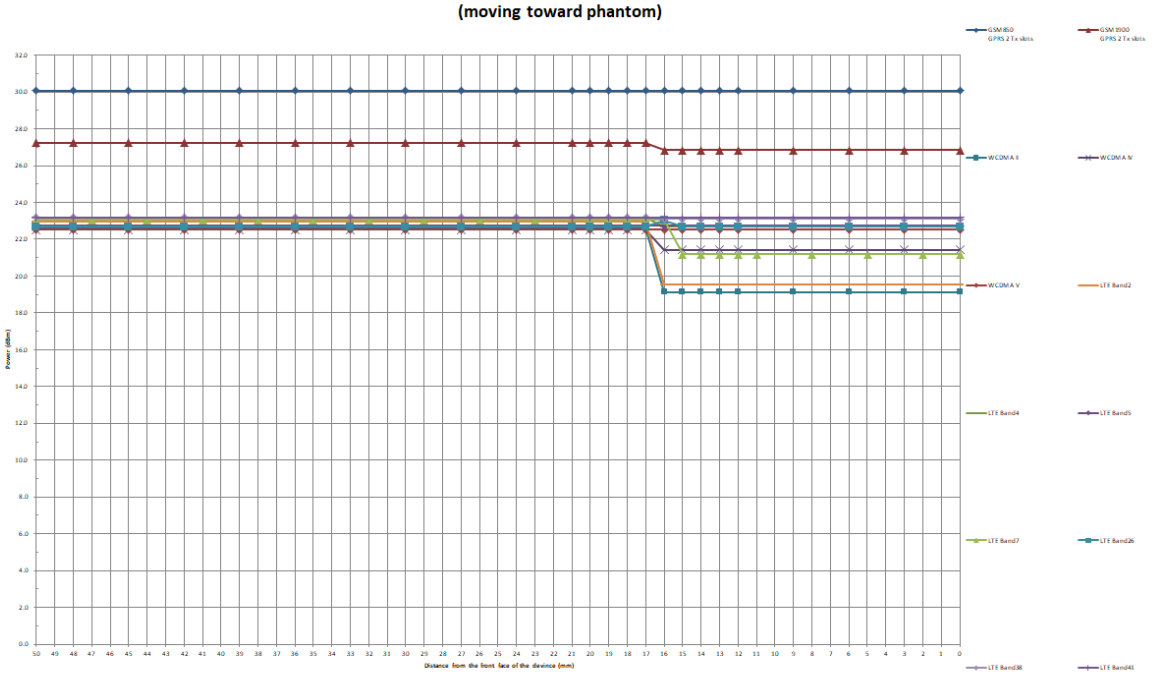
Rear Sensor Near/Far Dectection threshold
(moving toward phantom)



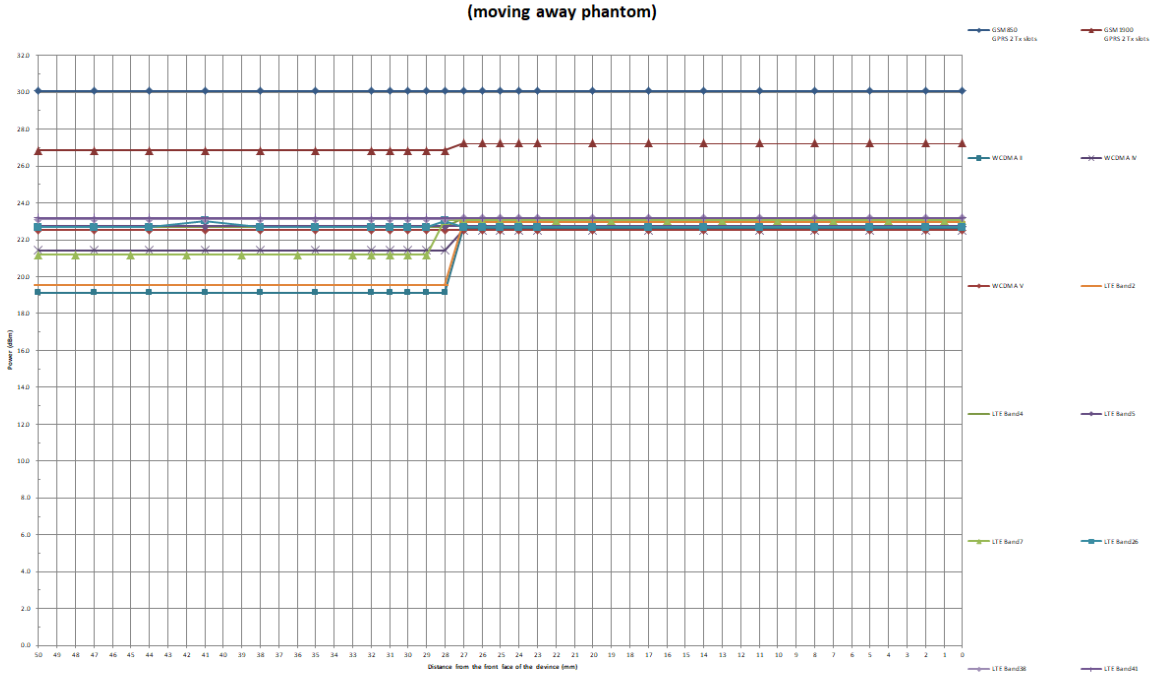
Rear Sensor Near/Far Dectection threshold
(moving away phantom)



Bottom Side Sensor Near/Far Dectection threshold
(moving toward phantom)



Bottom Side Sensor Near/Far Dectection threshold
(moving away phantom)



5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

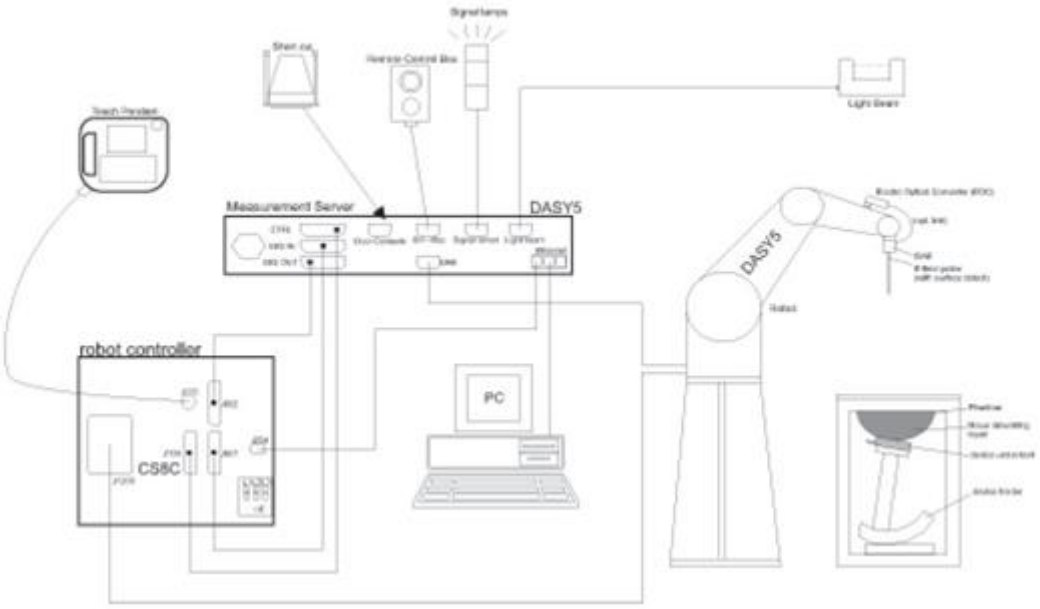
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

7.1 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 0007) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory			
Test Site Location	TW1190 No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, CHINESE TAIPEI		TW0007 No. 58, Aly. 75, Ln. 564, Wehnua 3rd, Rd., Guishan Dist., Taoyuan City, CHINESE TAIPEI	
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY
	SAR06-HY	SAR10-HY		

7.2 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	

7.3 Data Acquisition Electronics (DAE)

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

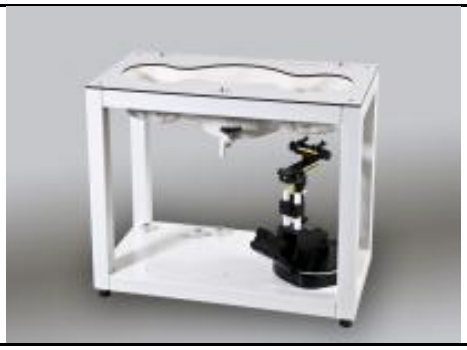
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

7.4 Phantom

<SAM Twin Phantom>

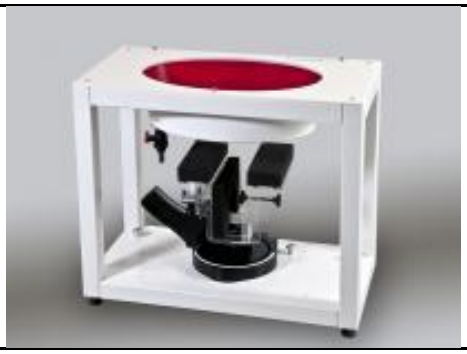
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



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

7.5 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

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

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

8.4 Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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.

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit(2)	D835V2	4d167	Nov. 25, 2019	Nov. 23, 2021
SPEAG	1750MHz System Validation Kit(2)	D1750V2	1112	Mar. 07, 2019	Mar. 05, 2021
SPEAG	1900MHz System Validation Kit(2)	D1900V2	5d185	Mar. 07, 2019	Mar. 05, 2021
SPEAG	2450MHz System Validation Kit(2)	D2450V2	736	Aug. 31, 2018	Aug. 28, 2021
SPEAG	2600MHz System Validation Kit(2)	D2600V2	1078	Mar. 06, 2019	Mar. 04, 2021
SPEAG	5GHz System Validation Kit(2)	D5GHzV2	1006	Sep. 27, 2018	Sep. 24, 2021
SPEAG	Data Acquisition Electronics	DAE4	1311	Aug. 25, 2020	Aug. 24, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	3642	Apr. 29, 2020	Apr. 28, 2021
RCPTWN	Thermometer	HTC-1	TM560-2	Nov. 10, 2020	Nov. 09, 2021
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 10, 2020	Nov. 09, 2021
Keysight	Wireless Communication Test Set	E5515C	MY50267236	Mar. 18, 2020	Mar. 17, 2021
R&S	BT Base Station	CBT	100815	Feb. 15, 2020	Feb. 14, 2021
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Nov. 11, 2020	Nov. 10, 2021
Keysight	ENA Network Analyzer	E5071C	MY46101588	Jun. 10, 2020	Jun. 09, 2021
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 16, 2020	Sep. 15, 2021
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Nov. 06, 2020	Nov. 05, 2021
Anritsu	Power Meter	ML2495A	1419002	Aug. 19, 2020	Aug. 18, 2021
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2020	Aug. 17, 2021
Anritsu	Power Meter	ML2495A	1804003	Oct. 21, 2020	Oct. 20, 2021
Anritsu	Power Sensor	MA2411B	1726150	Oct. 21, 2020	Oct. 20, 2021
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 30, 2020	Jun. 29, 2021
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Mar. 12, 2020	Mar. 11, 2021
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 21, 2020	Oct. 20, 2021
Mini-Circuits	Power Amplifier	ZVE-8G+	479102029	Aug. 26, 2020	Aug. 25, 2021
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

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

10. System Verification

10.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18℃ to 25℃, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18℃ to 25℃ and within ± 2℃ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.
The liquid tissue depth was at least 15cm in the phantom for all SAR testing

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
835	22.5	0.869	40.802	0.90	41.50	-3.44	-1.68	±5	2021/1/29
835	22.6	0.877	40.962	0.90	41.50	-2.56	-1.30	±5	2021/2/3
1750	22.5	1.335	40.211	1.37	40.10	-2.55	0.28	±5	2021/1/30
1750	22.6	1.371	40.329	1.37	40.10	0.07	0.57	±5	2021/2/2
1900	22.5	1.366	40.279	1.40	40.00	-2.43	0.70	±5	2021/1/28
1900	22.5	1.435	41.039	1.40	40.00	2.50	2.60	±5	2021/2/1
1900	22.6	1.448	38.781	1.40	40.00	3.43	-3.05	±5	2021/2/2
2450	22.5	1.789	38.644	1.80	39.20	-0.61	-1.42	±5	2021/2/3
2600	22.5	1.995	38.259	1.96	39.00	1.79	-1.90	±5	2021/1/31
2600	22.6	1.963	38.038	1.96	39.00	0.15	-2.47	±5	2021/2/3
5250	22.5	4.630	36.960	4.71	35.95	-1.70	2.81	±5	2021/2/4
5600	22.5	4.990	36.432	5.07	35.50	-1.58	2.63	±5	2021/2/4
5750	22.5	5.149	36.298	5.22	35.35	-1.36	2.68	±5	2021/2/4

10.2 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)	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 (%)
2021/1/29	835	250	D835V2-4d167	EX3DV4 - SN3642	DAE4 Sn1311	2.37	9.55	9.48	-0.73
2021/2/3	835	250	D835V2-4d167	EX3DV4 - SN3642	DAE4 Sn1311	2.39	9.55	9.56	0.10
2021/1/30	1750	250	D1750V2-1112	EX3DV4 - SN3642	DAE4 Sn1311	8.49	36.70	33.96	-7.47
2021/2/2	1750	250	D1750V2-1112	EX3DV4 - SN3642	DAE4 Sn1311	8.72	36.70	34.88	-4.96
2021/1/28	1900	250	D1900V2-5d185	EX3DV4 - SN3642	DAE4 Sn1311	9.27	39.40	37.08	-5.89
2021/2/1	1900	250	D1900V2-5d185	EX3DV4 - SN3642	DAE4 Sn1311	10.40	39.40	41.6	5.58
2021/2/2	1900	250	D1900V2-5d185	EX3DV4 - SN3642	DAE4 Sn1311	9.88	39.40	39.52	0.30
2021/2/3	2450	250	D2450V2-736	EX3DV4 - SN3642	DAE4 Sn1311	13.30	52.70	53.2	0.95
2021/1/31	2600	250	D2600V2-1078	EX3DV4 - SN3642	DAE4 Sn1311	14.50	57.60	58	0.69
2021/2/3	2600	250	D2600V2-1078	EX3DV4 - SN3642	DAE4 Sn1311	14.20	57.60	56.8	-1.39
2021/2/4	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN3642	DAE4 Sn1311	8.43	80.70	84.3	4.46
2021/2/4	5600	100	D5GHzV2-1006-5600	EX3DV4 - SN3642	DAE4 Sn1311	8.85	83.30	88.5	6.24
2021/2/4	5750	100	D5GHzV2-1006-5750	EX3DV4 - SN3642	DAE4 Sn1311	8.40	80.40	84	4.48

Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2021/1/29	835	250	D835V2-4d167	EX3DV4 - SN3642	DAE4 Sn1311	1.55	6.21	6.2	-0.16
2021/1/30	1750	250	D1750V2-1112	EX3DV4 - SN3642	DAE4 Sn1311	4.49	19.40	17.96	-7.42
2021/1/28	1900	250	D1900V2-5d185	EX3DV4 - SN3642	DAE4 Sn1311	4.74	20.50	18.96	-7.51
2021/2/1	1900	250	D1900V2-5d185	EX3DV4 - SN3642	DAE4 Sn1311	5.34	20.50	21.36	4.20
2021/1/31	2600	250	D2600V2-1078	EX3DV4 - SN3642	DAE4 Sn1311	6.64	25.50	26.56	4.16
2021/2/4	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN3642	DAE4 Sn1311	2.38	23.20	23.8	2.59
2021/2/4	5600	100	D5GHzV2-1006-5600	EX3DV4 - SN3642	DAE4 Sn1311	2.47	23.80	24.7	3.78

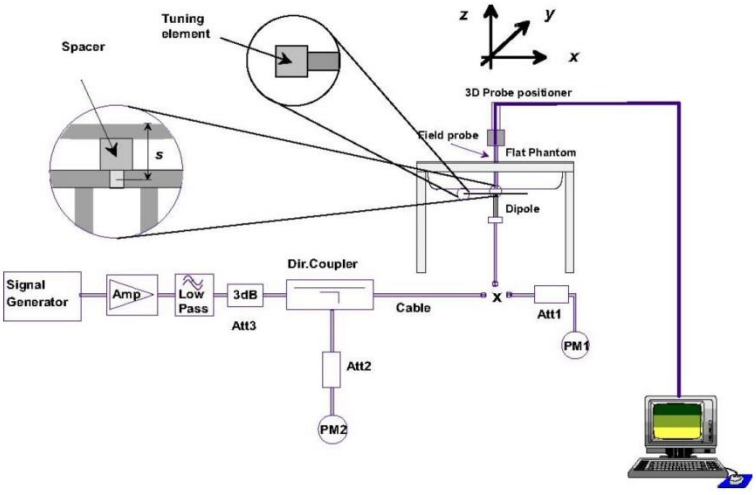


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

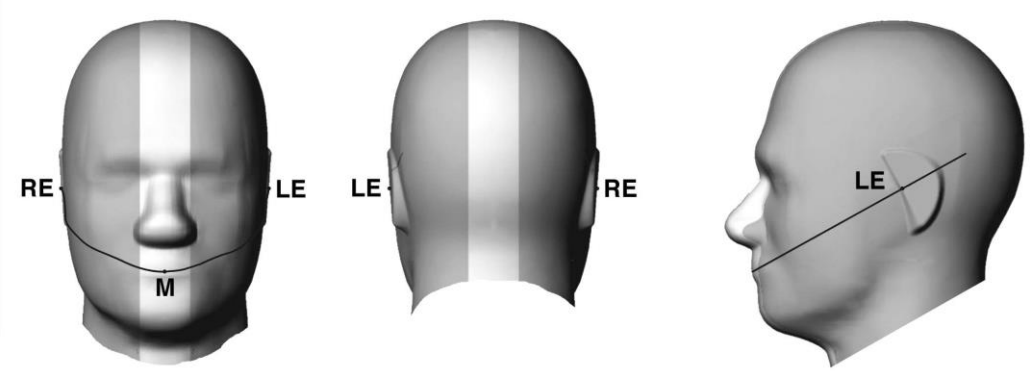


Fig 9.1.1 Front, back, and side views of SAM twin phantom

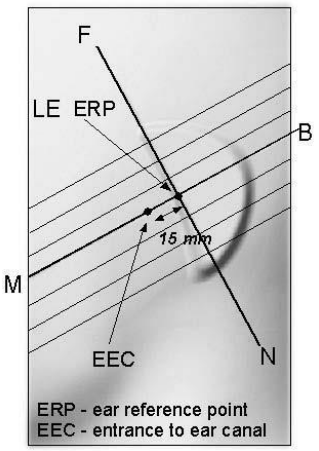


Fig 9.1.2 Close-up side view of phantom showing the ear region.

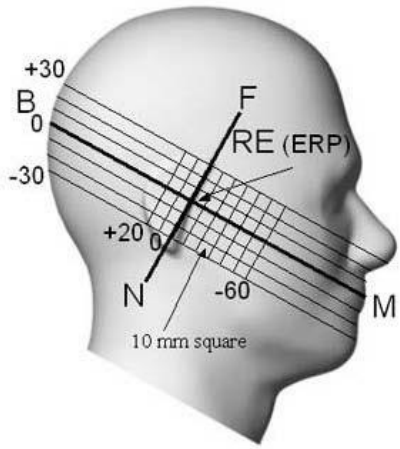


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

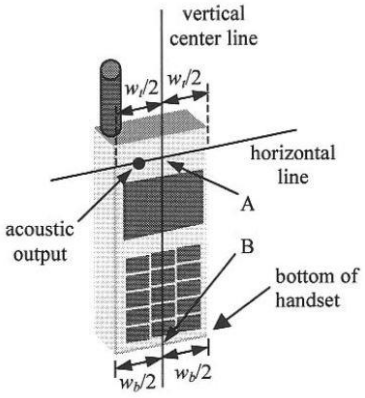


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

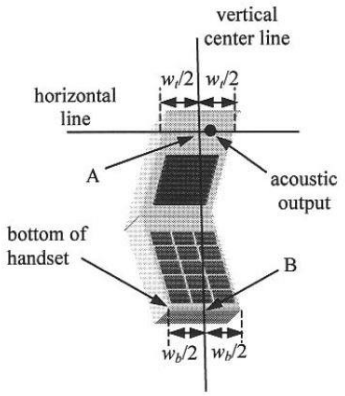


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

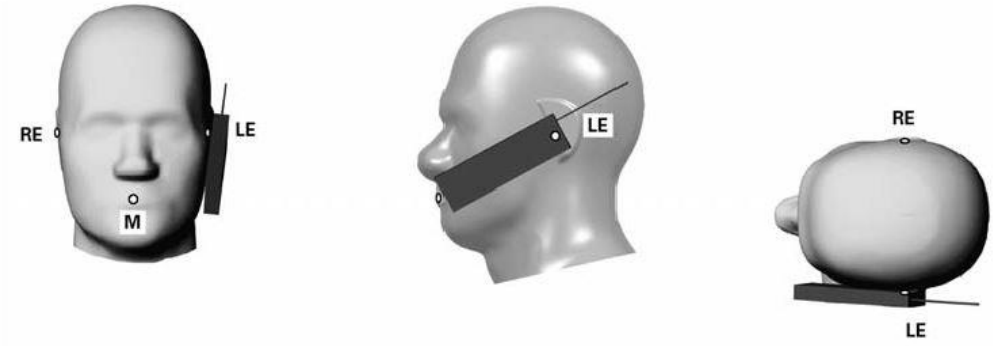


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

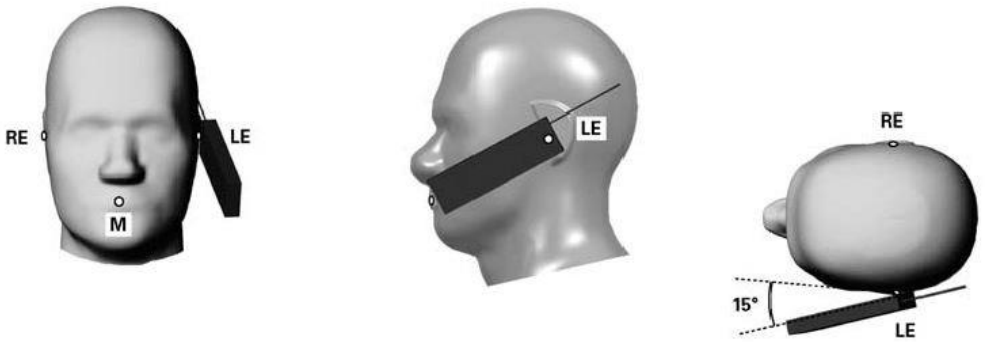


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

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

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

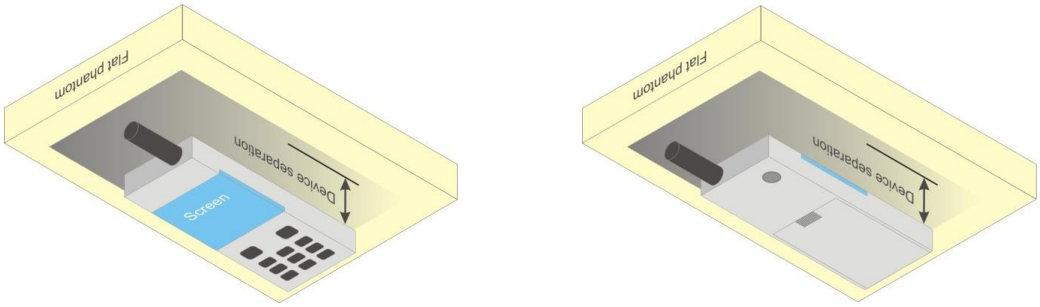


Fig 9.4 Body Worn Position

11.5 Product Specific Exposure

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

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

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

11.6 Wireless Router

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

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

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

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (2Tx slots) for GSM850/GSM1900 is 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 is implemented in GSM1900 band, for hotspot mode SAR testing EUT was set in reduced power mode and GPRS 2 Tx slot due to its highest frame-average power.

<State 1>

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	31.93	32.22	32.23	33.50	22.93	23.22	23.23	24.50
GPRS 1 Tx slot	31.91	32.21	32.22	33.50	22.91	23.21	23.22	24.50
GPRS 2 Tx slots	29.66	30.08	29.89	31.50	23.66	24.08	23.89	25.50
GPRS 3 Tx slots	27.51	27.67	27.68	29.50	23.25	23.41	23.42	25.24
GPRS 4 Tx slots	25.57	25.68	25.70	27.50	22.57	22.68	22.70	24.50
EDGE 1 Tx slot	25.93	26.19	26.07	27.50	16.93	17.19	17.07	18.50
EDGE 2 Tx slots	23.69	24.04	23.91	25.50	17.69	18.04	17.91	19.50
EDGE 3 Tx slots	21.57	21.55	21.69	23.50	17.31	17.29	17.43	19.24
EDGE 4 Tx slots	19.18	19.21	19.47	21.00	16.18	16.21	16.47	18.00

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	29.55	29.14	29.14	30.50	20.55	20.14	20.14	21.50
GPRS 1 Tx slot	29.53	29.13	29.12	30.50	20.53	20.13	20.12	21.50
GPRS 2 Tx slots	27.25	26.79	27.04	28.50	21.25	20.79	21.04	22.50
GPRS 3 Tx slots	24.99	24.58	24.78	26.50	20.73	20.32	20.52	22.24
GPRS 4 Tx slots	22.72	22.56	22.57	24.50	19.72	19.56	19.57	21.50
EDGE 1 Tx slot	25.35	25.12	25.23	26.50	16.35	16.12	16.23	17.50
EDGE 2 Tx slots	23.14	22.84	23.06	24.50	17.14	16.84	17.06	18.50
EDGE 3 Tx slots	20.97	20.63	20.86	22.50	16.71	16.37	16.60	18.24
EDGE 4 Tx slots	18.61	18.56	18.75	20.50	15.61	15.56	15.75	17.50

<State 2>

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	24.18	24.25	24.30	24.50	15.18	15.25	15.30	15.50
GPRS 1 Tx slot	24.16	24.23	24.29	24.50	15.16	15.23	15.29	15.50
GPRS 2 Tx slots	22.16	22.03	22.13	22.50	16.16	16.03	16.13	16.50
GPRS 3 Tx slots	19.86	19.79	19.86	20.50	15.60	15.53	15.60	16.24
GPRS 4 Tx slots	17.53	17.51	17.62	18.50	14.53	14.51	14.62	15.50
EDGE 1 Tx slot	20.32	20.30	20.41	20.50	11.32	11.30	11.41	11.50
EDGE 2 Tx slots	18.25	18.25	18.32	18.50	12.25	12.25	12.32	12.50
EDGE 3 Tx slots	16.13	16.27	16.19	16.50	11.87	12.01	11.93	12.24
EDGE 4 Tx slots	14.37	14.45	14.49	14.50	11.37	11.45	11.49	11.50

<State 3>

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	30.34	30.45	30.27	32.00	21.34	21.45	21.27	23.00
GPRS 1 Tx slot	30.33	30.43	30.26	32.00	21.33	21.43	21.26	23.00
GPRS 2 Tx slots	28.42	28.44	28.36	30.00	22.42	22.44	22.36	24.00
GPRS 3 Tx slots	26.25	26.39	26.44	28.00	21.99	22.13	22.18	23.74
GPRS 4 Tx slots	23.57	23.75	23.83	26.00	20.57	20.75	20.83	23.00
EDGE 1 Tx slot	24.85	24.83	24.87	26.00	15.85	15.83	15.87	17.00
EDGE 2 Tx slots	22.75	22.66	22.70	24.00	16.75	16.66	16.70	18.00
EDGE 3 Tx slots	20.51	20.42	20.55	22.00	16.25	16.16	16.29	17.74
EDGE 4 Tx slots	18.24	18.36	18.52	19.50	15.24	15.36	15.52	16.50

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	27.08	27.18	27.27	27.50	18.08	18.18	18.27	18.50
GPRS 1 Tx slot	27.07	27.16	27.26	27.50	18.07	18.16	18.26	18.50
GPRS 2 Tx slots	25.18	25.03	25.16	25.50	19.18	19.03	19.16	19.50
GPRS 3 Tx slots	22.93	22.92	22.94	23.50	18.67	18.66	18.68	19.24
GPRS 4 Tx slots	20.58	20.57	20.67	21.50	17.58	17.57	17.67	18.50
EDGE 1 Tx slot	23.37	23.35	23.45	23.50	14.37	14.35	14.45	14.50
EDGE 2 Tx slots	21.25	21.24	21.36	21.50	15.25	15.24	15.36	15.50
EDGE 3 Tx slots	19.10	19.07	19.11	19.50	14.84	14.81	14.85	15.24
EDGE 4 Tx slots	16.90	16.98	17.02	17.50	13.90	13.98	14.02	14.50

<State 4>

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	29.00	28.99	28.97	29.50	20.00	19.99	19.97	20.50
GPRS 1 Tx slot	28.99	28.97	28.96	29.50	19.99	19.97	19.96	20.50
GPRS 2 Tx slots	26.85	26.60	26.81	27.50	20.85	20.60	20.81	21.50
GPRS 3 Tx slots	24.48	24.49	24.52	25.50	20.22	20.23	20.26	21.24
GPRS 4 Tx slots	22.08	22.23	22.34	23.50	19.08	19.23	19.34	20.50
EDGE 1 Tx slot	24.91	24.90	25.00	25.50	15.91	15.90	16.00	16.50
EDGE 2 Tx slots	22.78	22.77	22.89	23.50	16.78	16.77	16.89	17.50
EDGE 3 Tx slots	20.68	20.60	20.59	21.50	16.42	16.34	16.33	17.24
EDGE 4 Tx slots	18.33	18.30	18.42	19.50	15.33	15.30	15.42	16.50

<WCDMA Conducted Power>

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

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

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

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

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

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

Setup Configuration

HSUPA Setup Configuration:

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

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

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

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

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

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

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

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

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

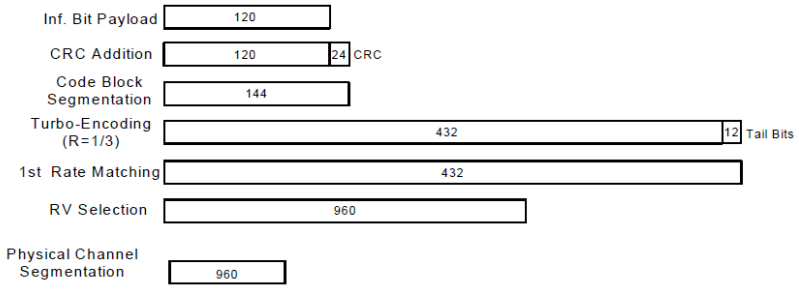


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<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 (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<State 1>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA 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	22.47	22.50	22.61	24.00	22.47	22.49	22.46	24.00	22.53	22.51	22.39	24.00
3GPP Rel 99	RMC 12.2Kbps	22.48	22.51	22.63	24.00	22.49	22.51	22.48	24.00	22.54	22.52	22.41	24.00
3GPP Rel 6	HSDPA Subtest-1	21.81	21.89	21.96	23.00	21.77	21.76	21.77	23.00	21.87	21.95	21.85	23.00
3GPP Rel 6	HSDPA Subtest-2	21.79	21.93	22.00	23.00	21.81	21.82	21.81	23.00	21.91	21.98	21.90	23.00
3GPP Rel 6	HSDPA Subtest-3	21.34	21.40	21.48	22.50	21.31	21.28	21.29	22.50	21.41	21.44	21.35	22.50
3GPP Rel 6	HSDPA Subtest-4	21.29	21.43	21.51	22.50	21.28	21.30	21.25	22.50	21.45	21.46	21.41	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.67	21.73	21.86	23.00	21.64	21.65	21.69	23.00	21.70	21.79	21.74	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.73	21.80	21.84	23.00	21.71	21.70	21.67	23.00	21.75	21.83	21.72	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.22	21.30	21.42	22.50	21.24	21.10	21.14	22.50	21.30	21.33	21.18	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.18	21.26	21.42	22.50	21.13	21.16	21.20	22.50	21.29	21.29	21.25	22.50
3GPP Rel 6	HSUPA Subtest-1	21.80	21.93	22.01	23.00	21.76	21.73	21.82	23.00	21.91	21.91	21.92	23.00
3GPP Rel 6	HSUPA Subtest-2	19.83	19.89	20.01	21.00	19.78	19.80	19.82	21.00	20.03	19.90	19.82	21.00
3GPP Rel 6	HSUPA Subtest-3	20.81	20.97	21.02	22.00	20.75	20.76	20.84	22.00	20.98	20.93	20.84	22.00
3GPP Rel 6	HSUPA Subtest-4	19.81	19.84	20.04	21.00	19.81	19.73	19.78	21.00	19.92	19.89	19.78	21.00
3GPP Rel 6	HSUPA Subtest-5	21.80	22.00	22.00	23.00	21.70	21.80	21.80	23.00	22.00	21.90	21.80	23.00

<State 2>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA 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	13.92	13.94	13.91	15.00	16.91	16.93	16.93	18.00
3GPP Rel 99	RMC 12.2Kbps	13.96	13.95	14.00	15.00	16.92	16.95	16.94	18.00
3GPP Rel 6	HSDPA Subtest-1	12.88	12.94	13.05	14.50	15.68	15.64	15.69	17.00
3GPP Rel 6	HSDPA Subtest-2	12.89	13.00	13.09	14.50	15.71	15.75	15.74	17.00
3GPP Rel 6	HSDPA Subtest-3	12.46	12.51	12.57	13.50	15.23	15.21	15.21	16.50
3GPP Rel 6	HSDPA Subtest-4	12.44	12.54	12.66	13.50	15.22	15.23	15.14	16.50
3GPP Rel 8	DC-HSDPA Subtest-1	12.76	12.87	13.01	14.50	15.55	15.59	15.64	17.00
3GPP Rel 8	DC-HSDPA Subtest-2	12.86	12.91	12.92	14.50	15.60	15.62	15.56	17.00
3GPP Rel 8	DC-HSDPA Subtest-3	12.32	12.44	12.54	13.50	15.17	15.02	15.05	16.50
3GPP Rel 8	DC-HSDPA Subtest-4	12.27	12.37	12.50	13.50	15.05	15.06	15.12	16.50
3GPP Rel 6	HSUPA Subtest-1	12.90	13.03	13.13	14.50	15.67	15.66	15.74	17.00
3GPP Rel 6	HSUPA Subtest-2	10.92	11.03	11.12	12.50	13.67	13.72	13.77	15.00
3GPP Rel 6	HSUPA Subtest-3	11.91	12.07	12.16	13.50	14.70	14.69	14.77	16.00
3GPP Rel 6	HSUPA Subtest-4	10.91	10.96	11.15	12.50	13.72	13.63	13.73	15.00
3GPP Rel 6	HSUPA Subtest-5	12.93	13.11	13.15	14.50	15.59	15.73	15.71	17.00

<State 3>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA 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	15.44	15.44	15.53	16.50	18.91	18.93	18.92	19.00	20.37	20.30	20.17	21.00
3GPP Rel 99	RMC 12.2Kbps	15.46	15.45	15.54	16.50	18.92	18.95	18.93	19.00	20.38	20.32	20.18	21.00
3GPP Rel 6	HSDPA Subtest-1	14.39	14.48	14.59	15.50	17.65	17.69	17.71	18.00	19.31	19.32	19.23	20.00
3GPP Rel 6	HSDPA Subtest-2	14.39	14.51	14.59	15.50	17.75	17.75	17.73	18.00	19.30	19.37	19.31	20.00
3GPP Rel 6	HSDPA Subtest-3	13.98	14.01	14.07	15.00	17.19	17.20	17.20	17.50	18.80	18.86	18.72	19.50
3GPP Rel 6	HSDPA Subtest-4	13.94	14.06	14.16	15.00	17.21	17.22	17.15	17.50	18.88	18.84	18.83	19.50
3GPP Rel 8	DC-HSDPA Subtest-1	14.26	14.37	14.51	18.50	17.52	17.53	17.61	18.00	19.09	19.15	19.12	20.00
3GPP Rel 8	DC-HSDPA Subtest-2	14.36	14.41	14.42	18.50	17.65	17.63	17.56	18.00	19.19	19.24	19.09	20.00
3GPP Rel 8	DC-HSDPA Subtest-3	13.82	13.94	14.04	18.00	17.17	16.98	17.04	17.50	18.69	18.73	18.61	19.50
3GPP Rel 8	DC-HSDPA Subtest-4	13.77	13.87	14.00	18.00	17.03	17.09	17.10	17.50	18.67	18.69	18.70	19.50
3GPP Rel 6	HSUPA Subtest-1	14.40	14.53	14.63	15.50	17.69	17.66	17.75	18.00	19.32	19.28	19.30	20.00
3GPP Rel 6	HSUPA Subtest-2	12.42	12.53	12.62	13.50	15.68	15.70	15.76	16.00	17.48	17.32	17.19	18.00
3GPP Rel 6	HSUPA Subtest-3	13.41	13.57	13.66	14.50	16.63	16.68	16.74	17.00	18.40	18.31	18.29	19.00
3GPP Rel 6	HSUPA Subtest-4	12.41	12.46	12.65	13.50	15.75	15.61	15.73	16.00	17.31	17.27	17.21	18.00
3GPP Rel 6	HSUPA Subtest-5	14.43	14.61	14.65	15.50	17.62	17.73	17.68	18.00	19.41	19.35	19.22	20.00

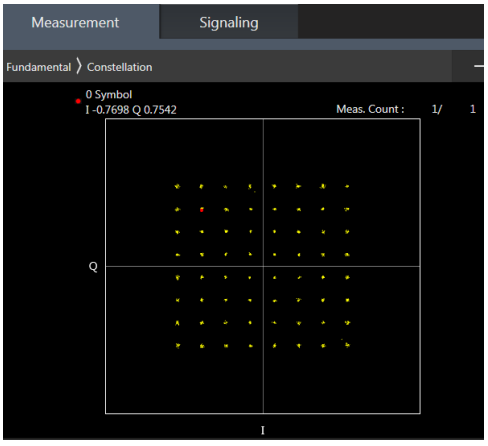
<State 4>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA 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	19.11	19.07	19.12	20.00	21.38	21.41	21.40	22.50
3GPP Rel 99	RMC 12.2Kbps	19.12	19.08	19.13	20.00	21.40	21.43	21.42	22.50
3GPP Rel 6	HSDPA Subtest-1	17.76	17.79	17.87	19.00	20.28	20.25	20.28	21.50
3GPP Rel 6	HSDPA Subtest-2	17.67	17.88	17.93	19.00	20.30	20.29	20.31	21.50
3GPP Rel 6	HSDPA Subtest-3	17.25	17.33	17.36	18.50	19.82	19.78	19.80	21.00
3GPP Rel 6	HSDPA Subtest-4	17.23	17.32	17.40	18.50	19.78	19.78	19.74	21.00
3GPP Rel 8	DC-HSDPA Subtest-1	17.61	17.66	17.78	19.00	20.15	20.17	20.15	21.50
3GPP Rel 8	DC-HSDPA Subtest-2	17.62	17.71	17.75	19.00	20.18	20.22	20.12	21.50
3GPP Rel 8	DC-HSDPA Subtest-3	17.15	17.19	17.32	18.50	19.72	19.59	19.62	21.00
3GPP Rel 8	DC-HSDPA Subtest-4	17.11	17.18	17.35	18.50	19.62	19.62	19.71	21.00
3GPP Rel 6	HSUPA Subtest-1	17.72	17.83	17.96	19.00	20.26	20.25	20.31	21.50
3GPP Rel 6	HSUPA Subtest-2	15.73	15.80	15.94	17.00	18.27	18.32	18.31	19.50
3GPP Rel 6	HSUPA Subtest-3	16.69	16.89	16.95	18.00	19.20	19.21	19.31	20.50
3GPP Rel 6	HSUPA Subtest-4	15.74	15.75	15.94	17.00	18.30	18.19	18.29	19.50
3GPP Rel 6	HSUPA Subtest-5	17.73	17.92	17.93	19.00	20.17	20.28	20.25	21.50

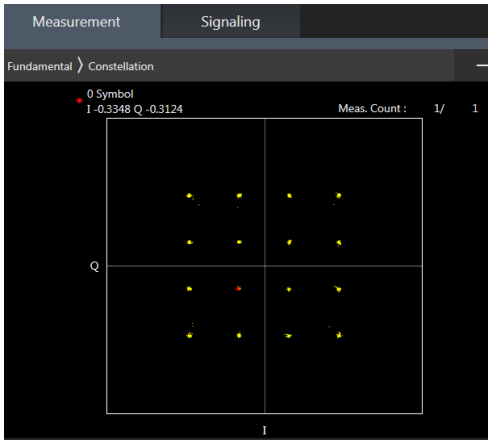
<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B26/B41 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 5/38 SAR test was covered by Band 26/41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM



16QAM

State 1

<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	22.50	22.63	22.95	24	0
20	QPSK	1	49	22.48	22.70	22.84		
20	QPSK	1	99	22.47	22.65	22.88		
20	QPSK	50	0	21.48	21.73	21.95	23	1
20	QPSK	50	24	21.50	21.73	21.93		
20	QPSK	50	50	21.53	21.72	21.87		
20	QPSK	100	0	21.60	21.69	21.92		
20	16QAM	1	0	21.70	21.99	22.10	23	1
20	16QAM	1	49	21.78	21.88	22.11		
20	16QAM	1	99	21.87	22.04	22.08		
20	16QAM	50	0	20.63	20.82	21.03	22	2
20	16QAM	50	24	20.62	20.81	20.98		
20	16QAM	50	50	20.70	20.75	20.97		
20	16QAM	100	0	20.67	20.76	20.97		
20	64QAM	1	0	20.53	20.83	20.95	22	2
20	64QAM	1	49	20.69	20.88	21.03		
20	64QAM	1	99	20.73	20.80	21.00		
20	64QAM	50	0	19.62	19.81	19.94	21	3
20	64QAM	50	24	19.59	19.80	20.03		
20	64QAM	50	50	19.69	19.80	19.96		
20	64QAM	100	0	19.66	19.76	19.98		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.43	22.58	22.81	24	0
15	QPSK	1	37	22.44	22.56	22.88		
15	QPSK	1	74	22.42	22.51	22.83		
15	QPSK	36	0	21.56	21.65	21.86	23	1
15	QPSK	36	20	21.59	21.65	21.90		
15	QPSK	36	39	21.49	21.62	21.92		
15	QPSK	75	0	21.56	21.65	21.82		
15	16QAM	1	0	21.73	21.86	22.11	23	1
15	16QAM	1	37	21.69	21.84	22.15		
15	16QAM	1	74	21.72	21.89	22.01		
15	16QAM	36	0	20.51	20.67	20.90	22	2
15	16QAM	36	20	20.50	20.75	20.94		
15	16QAM	36	39	20.51	20.69	20.98		
15	16QAM	75	0	20.46	20.69	20.88		
15	64QAM	1	0	20.61	20.88	21.03	22	2
15	64QAM	1	37	20.61	20.79	21.07		
15	64QAM	1	74	20.61	20.78	20.94		
15	64QAM	36	0	19.70	19.78	19.94	21	3
15	64QAM	36	20	19.60	19.81	19.98		
15	64QAM	36	39	19.57	19.71	20.00		
15	64QAM	75	0	19.52	19.73	19.94		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.50	22.58	22.87	24	0
10	QPSK	1	25	22.48	22.55	22.94		
10	QPSK	1	49	22.49	22.53	22.87		
10	QPSK	25	0	21.56	21.60	21.91	23	1

10	QPSK	25	12	21.53	21.64	22.00		
10	QPSK	25	25	21.51	21.62	21.97		
10	QPSK	50	0	21.54	21.60	21.89		
10	16QAM	1	0	21.82	21.93	22.17	23	1
10	16QAM	1	25	21.84	21.93	22.10		
10	16QAM	1	49	21.88	21.91	22.08		
10	16QAM	25	0	20.60	20.67	20.97	22	2
10	16QAM	25	12	20.63	20.71	21.09		
10	16QAM	25	25	20.60	20.70	21.02		
10	16QAM	50	0	20.66	20.69	20.96		
10	64QAM	1	0	20.75	20.75	21.11	22	2
10	64QAM	1	25	20.79	20.88	21.23		
10	64QAM	1	49	20.75	20.81	21.10		
10	64QAM	25	0	19.65	19.72	20.03	21	3
10	64QAM	25	12	19.63	19.73	20.07		
10	64QAM	25	25	19.58	19.70	20.04		
10	64QAM	50	0	19.50	19.70	19.96		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.49	22.50	22.83	24	0
5	QPSK	1	12	22.51	22.55	22.93		
5	QPSK	1	24	22.47	22.55	22.84		
5	QPSK	12	0	21.53	21.49	21.97	23	1
5	QPSK	12	7	21.56	21.59	21.95		
5	QPSK	12	13	21.52	21.58	21.89		
5	QPSK	25	0	21.56	21.51	21.93		
5	16QAM	1	0	21.76	21.77	22.07	23	1
5	16QAM	1	12	21.85	21.77	22.02		
5	16QAM	1	24	21.78	21.71	22.09		
5	16QAM	12	0	20.58	20.60	20.98	22	2
5	16QAM	12	7	20.61	20.64	21.01		
5	16QAM	12	13	20.59	20.60	21.00		
5	16QAM	25	0	20.59	20.61	21.00		
5	64QAM	1	0	20.74	20.72	21.09	22	2
5	64QAM	1	12	20.75	20.83	21.13		
5	64QAM	1	24	20.72	20.72	21.14		
5	64QAM	12	0	19.65	19.63	20.05	21	3
5	64QAM	12	7	19.70	19.67	20.04		
5	64QAM	12	13	19.68	19.66	20.01		
5	64QAM	25	0	19.62	19.64	20.05		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.57	22.53	22.86	24	0
3	QPSK	1	8	22.59	22.51	22.80		
3	QPSK	1	14	22.51	22.44	22.86		
3	QPSK	8	0	21.60	21.49	21.91	23	1
3	QPSK	8	4	21.62	21.59	21.96		
3	QPSK	8	7	21.58	21.51	21.91		
3	QPSK	15	0	21.55	21.53	21.90		
3	16QAM	1	0	21.74	21.81	22.14	23	1
3	16QAM	1	8	21.85	21.84	22.09		
3	16QAM	1	14	21.77	21.87	22.07		
3	16QAM	8	0	20.70	20.60	21.06	22	2
3	16QAM	8	4	20.70	20.65	21.07		
3	16QAM	8	7	20.72	20.63	20.99		
3	16QAM	15	0	20.66	20.63	21.04		

3	64QAM	1	0	21.04	20.68	21.01	22	2
3	64QAM	1	8	21.11	20.76	21.10		
3	64QAM	1	14	21.08	20.74	21.01		
3	64QAM	8	0	20.00	19.64	19.98	21	3
3	64QAM	8	4	20.03	19.69	20.04		
3	64QAM	8	7	20.03	19.64	19.97		
3	64QAM	15	0	19.72	19.60	20.03		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.51	22.45	22.82	24	0
1.4	QPSK	1	3	22.62	22.44	22.88		
1.4	QPSK	1	5	22.43	22.43	22.77		
1.4	QPSK	3	0	22.53	22.49	22.89		
1.4	QPSK	3	1	22.55	22.50	22.83		
1.4	QPSK	3	3	22.49	22.45	22.90		
1.4	QPSK	6	0	21.48	21.46	21.82	23	1
1.4	16QAM	1	0	21.74	21.77	22.03	23	1
1.4	16QAM	1	3	21.78	21.84	22.03		
1.4	16QAM	1	5	21.75	21.77	22.04		
1.4	16QAM	3	0	21.52	21.54	21.81		
1.4	16QAM	3	1	21.60	21.53	21.85		
1.4	16QAM	3	3	21.53	21.50	21.75		
1.4	16QAM	6	0	20.71	20.59	20.98	22	2
1.4	64QAM	1	0	20.53	20.69	20.96	22	2
1.4	64QAM	1	3	20.71	20.58	20.97		
1.4	64QAM	1	5	20.60	20.61	20.83		
1.4	64QAM	3	0	20.58	20.58	20.85		
1.4	64QAM	3	1	20.66	20.63	20.87		
1.4	64QAM	3	3	20.57	20.52	20.88		
1.4	64QAM	6	0	19.52	19.57	19.92	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	22.86	23.15	22.93	24	0
20	QPSK	1	49	22.91	23.00	23.05		
20	QPSK	1	99	22.76	22.95	23.03		
20	QPSK	50	0	22.07	22.16	22.09	23	1
20	QPSK	50	24	21.97	22.11	22.09		
20	QPSK	50	50	22.07	22.09	22.15		
20	QPSK	100	0	22.00	22.13	22.06		
20	16QAM	1	0	22.15	22.44	22.17	23	1
20	16QAM	1	49	22.22	22.23	22.25		
20	16QAM	1	99	22.18	22.10	22.26		
20	16QAM	50	0	21.09	21.23	21.16	22	2
20	16QAM	50	24	21.13	21.21	21.17		
20	16QAM	50	50	21.15	21.09	21.24		
20	16QAM	100	0	21.00	21.13	21.10		
20	64QAM	1	0	21.04	21.21	21.16	22	2
20	64QAM	1	49	21.09	21.19	21.31		
20	64QAM	1	99	21.08	21.08	21.21		
20	64QAM	50	0	20.09	20.23	20.17	21	3
20	64QAM	50	24	20.15	20.20	20.22		
20	64QAM	50	50	20.13	20.16	20.30		
20	64QAM	100	0	20.07	20.16	20.09		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.89	23.10	23.02	24	0
15	QPSK	1	37	22.92	23.06	23.09		
15	QPSK	1	74	22.80	22.93	23.02		
15	QPSK	36	0	21.98	22.07	22.05	23	1
15	QPSK	36	20	21.99	22.13	22.17		
15	QPSK	36	39	21.96	22.06	22.09		
15	QPSK	75	0	21.94	22.08	22.04		
15	16QAM	1	0	22.12	22.44	22.14	23	1
15	16QAM	1	37	22.29	22.23	22.31		
15	16QAM	1	74	22.12	22.15	22.33		
15	16QAM	36	0	21.02	21.11	21.10	22	2
15	16QAM	36	20	21.06	21.15	21.22		
15	16QAM	36	39	21.05	21.12	21.17		
15	16QAM	75	0	21.06	21.16	21.11		
15	64QAM	1	0	21.12	21.32	21.08	22	2
15	64QAM	1	37	21.20	21.24	21.24		
15	64QAM	1	74	21.03	21.06	21.29		
15	64QAM	36	0	20.09	20.19	20.13	21	3
15	64QAM	36	20	20.13	20.24	20.26		
15	64QAM	36	39	20.12	20.17	20.27		
15	64QAM	75	0	20.08	20.13	20.12		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.80	23.07	23.14	24	0
10	QPSK	1	25	22.78	23.05	23.12		
10	QPSK	1	49	22.85	23.08	23.02		
10	QPSK	25	0	21.86	22.15	22.16	23	1
10	QPSK	25	12	21.96	22.16	22.17		

10	QPSK	25	25	21.90	22.05	22.12		
10	QPSK	50	0	21.89	22.10	22.18		
10	16QAM	1	0	22.05	22.42	22.42	23	1
10	16QAM	1	25	22.10	22.18	22.37		
10	16QAM	1	49	22.22	22.20	22.29		
10	16QAM	25	0	20.93	21.21	21.25	22	2
10	16QAM	25	12	21.03	21.21	21.22		
10	16QAM	25	25	20.99	21.13	21.17		
10	16QAM	50	0	20.98	21.15	21.24		
10	64QAM	1	0	21.04	21.27	21.38	22	2
10	64QAM	1	25	21.06	21.19	21.35		
10	64QAM	1	49	21.03	21.15	21.28		
10	64QAM	25	0	19.95	20.20	20.25	21	3
10	64QAM	25	12	20.08	20.20	20.26		
10	64QAM	25	25	19.96	20.16	20.22		
10	64QAM	50	0	20.04	20.19	20.22		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.91	23.09	23.06	24	0
5	QPSK	1	12	22.63	23.02	23.10		
5	QPSK	1	24	22.87	23.04	23.08		
5	QPSK	12	0	22.14	22.09	22.03	23	1
5	QPSK	12	7	22.02	22.17	22.04		
5	QPSK	12	13	22.13	22.04	22.07		
5	QPSK	25	0	21.92	22.12	22.08		
5	16QAM	1	0	22.23	22.29	22.42	23	1
5	16QAM	1	12	22.14	22.34	22.41		
5	16QAM	1	24	22.08	22.24	22.30		
5	16QAM	12	0	20.96	21.15	21.24	22	2
5	16QAM	12	7	20.90	21.21	21.28		
5	16QAM	12	13	20.93	21.15	21.20		
5	16QAM	25	0	20.92	21.14	21.25		
5	64QAM	1	0	21.58	21.22	21.32	22	2
5	64QAM	1	12	21.60	21.26	21.34		
5	64QAM	1	24	21.58	21.22	21.27		
5	64QAM	12	0	19.96	20.17	20.30	21	3
5	64QAM	12	7	20.09	20.24	20.28		
5	64QAM	12	13	19.93	20.17	20.27		
5	64QAM	25	0	19.95	20.15	20.21		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.91	23.03	23.04	24	0
3	QPSK	1	8	22.91	23.06	23.07		
3	QPSK	1	14	22.83	23.02	23.03		
3	QPSK	8	0	21.85	22.04	22.11	23	1
3	QPSK	8	4	21.88	22.09	22.15		
3	QPSK	8	7	21.84	22.03	22.15		
3	QPSK	15	0	21.84	22.08	22.13		
3	16QAM	1	0	22.09	22.33	22.27	23	1
3	16QAM	1	8	22.03	22.35	22.25		
3	16QAM	1	14	22.08	22.28	22.38		
3	16QAM	8	0	20.92	21.20	21.23	22	2
3	16QAM	8	4	20.95	21.18	21.27		
3	16QAM	8	7	20.98	21.12	21.21		
3	16QAM	15	0	20.88	21.20	21.19		
3	64QAM	1	0	20.99	21.13	21.27	22	2

3	64QAM	1	8	20.97	21.21	21.41		
3	64QAM	1	14	20.99	21.17	21.23		
3	64QAM	8	0	19.89	20.19	20.28	21	3
3	64QAM	8	4	19.96	20.15	20.30		
3	64QAM	8	7	19.92	20.11	20.23		
3	64QAM	15	0	19.89	20.16	20.25		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.82	22.93	22.97	24	0
1.4	QPSK	1	3	22.86	23.03	23.04		
1.4	QPSK	1	5	22.73	22.98	22.99		
1.4	QPSK	3	0	22.82	23.03	23.05		
1.4	QPSK	3	1	22.87	23.09	23.08		
1.4	QPSK	3	3	22.80	22.95	23.06		
1.4	QPSK	6	0	21.84	22.04	22.02	23	1
1.4	16QAM	1	0	22.00	22.17	22.36	23	1
1.4	16QAM	1	3	22.19	22.21	22.45		
1.4	16QAM	1	5	22.06	22.23	22.27		
1.4	16QAM	3	0	21.80	22.07	22.12		
1.4	16QAM	3	1	21.88	22.08	22.19		
1.4	16QAM	3	3	21.80	22.04	21.99		
1.4	16QAM	6	0	20.92	21.15	21.20	22	2
1.4	64QAM	1	0	20.90	21.19	21.20	22	2
1.4	64QAM	1	3	20.94	21.11	21.20		
1.4	64QAM	1	5	20.83	21.12	21.19		
1.4	64QAM	3	0	20.86	21.10	21.13		
1.4	64QAM	3	1	20.93	21.06	21.18		
1.4	64QAM	3	3	20.83	21.04	21.08		
1.4	64QAM	6	0	19.83	20.03	20.11	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	22.75	22.75	23.05	24	0
10	QPSK	1	25	22.67	22.70	22.95		
10	QPSK	1	49	22.68	22.66	22.87		
10	QPSK	25	0	21.75	21.75	21.96	23	1
10	QPSK	25	12	21.80	21.74	21.95		
10	QPSK	25	25	21.80	21.73	21.92		
10	QPSK	50	0	21.81	21.72	21.92		
10	16QAM	1	0	22.05	22.07	22.26	23	1
10	16QAM	1	25	21.89	22.07	22.35		
10	16QAM	1	49	21.97	21.92	22.28		
10	16QAM	25	0	20.89	20.85	21.03	22	2
10	16QAM	25	12	20.94	20.85	20.97		
10	16QAM	25	25	20.85	20.74	21.07		
10	16QAM	50	0	20.92	20.85	20.97		
10	64QAM	1	0	20.89	20.93	21.11	22	2
10	64QAM	1	25	20.89	20.92	21.27		
10	64QAM	1	49	20.94	20.90	21.18		
10	64QAM	25	0	19.84	19.88	20.00	21	3
10	64QAM	25	12	19.93	19.90	20.05		
10	64QAM	25	25	19.88	19.81	20.06		
10	64QAM	50	0	19.96	19.86	19.96		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.81	22.75	23.03	24	0
5	QPSK	1	12	22.67	22.73	23.04		
5	QPSK	1	24	22.71	22.64	22.98		
5	QPSK	12	0	21.66	21.77	22.11	23	1
5	QPSK	12	7	21.80	21.78	22.10		
5	QPSK	12	13	21.72	21.72	22.01		
5	QPSK	25	0	21.82	21.73	22.04		
5	16QAM	1	0	22.12	22.03	22.31	23	1
5	16QAM	1	12	22.06	22.05	22.46		
5	16QAM	1	24	21.98	22.08	22.36		
5	16QAM	12	0	20.90	20.87	21.14	22	2
5	16QAM	12	7	20.86	20.89	21.17		
5	16QAM	12	13	20.79	20.82	21.17		
5	16QAM	25	0	20.83	20.83	21.13		
5	64QAM	1	0	21.30	21.28	21.38	22	2
5	64QAM	1	12	20.99	21.27	21.27		
5	64QAM	1	24	21.09	21.23	21.30		
5	64QAM	12	0	20.12	20.14	20.22	21	3
5	64QAM	12	7	20.13	19.90	20.26		
5	64QAM	12	13	20.13	19.88	20.19		
5	64QAM	25	0	20.14	19.84	20.21		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.72	22.69	23.01	24	0
3	QPSK	1	8	22.72	22.69	22.99		
3	QPSK	1	14	22.71	22.65	23.03		
3	QPSK	8	0	21.79	21.71	22.02	23	1
3	QPSK	8	4	21.75	21.73	22.07		

3	QPSK	8	7	21.76	21.76	22.05		
3	QPSK	15	0	21.75	21.70	22.02		
3	16QAM	1	0	22.02	21.94	22.38	23	1
3	16QAM	1	8	21.99	21.98	22.44		
3	16QAM	1	14	22.02	21.99	22.28		
3	16QAM	8	0	20.93	20.85	21.15	22	2
3	16QAM	8	4	20.92	20.86	21.16		
3	16QAM	8	7	20.85	20.83	21.16		
3	16QAM	15	0	20.88	20.86	21.13		
3	64QAM	1	0	21.05	20.90	21.38	22	2
3	64QAM	1	8	20.98	20.97	21.28		
3	64QAM	1	14	20.93	21.01	21.22		
3	64QAM	8	0	19.89	19.88	20.18	21	3
3	64QAM	8	4	19.92	19.86	20.21		
3	64QAM	8	7	19.90	19.88	20.21		
3	64QAM	15	0	19.87	19.82	20.17		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.68	22.58	22.88	24	0
1.4	QPSK	1	3	22.70	22.64	22.99		
1.4	QPSK	1	5	22.63	22.57	22.92		
1.4	QPSK	3	0	22.70	22.63	22.97		
1.4	QPSK	3	1	22.74	22.69	23.01		
1.4	QPSK	3	3	22.69	22.66	22.96		
1.4	QPSK	6	0	21.70	21.68	21.94	23	1
1.4	16QAM	1	0	21.92	21.95	22.28	23	1
1.4	16QAM	1	3	22.02	21.93	22.27		
1.4	16QAM	1	5	21.87	21.86	22.18		
1.4	16QAM	3	0	21.71	21.68	22.05		
1.4	16QAM	3	1	21.72	21.77	22.09		
1.4	16QAM	3	3	21.76	21.76	22.03		
1.4	16QAM	6	0	20.86	20.86	21.14	22	2
1.4	64QAM	1	0	20.89	20.81	21.13	22	2
1.4	64QAM	1	3	20.94	20.92	21.12		
1.4	64QAM	1	5	20.71	20.68	21.15		
1.4	64QAM	3	0	20.79	20.76	21.08		
1.4	64QAM	3	1	20.84	20.82	21.09		
1.4	64QAM	3	3	20.75	20.75	21.04		
1.4	64QAM	6	0	19.94	19.77	20.04	21	3

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.74	23.07	23.04	24	0
20	QPSK	1	49	22.93	22.98	22.74		
20	QPSK	1	99	22.79	22.94	22.86		
20	QPSK	50	0	21.93	22.03	21.93	23	1
20	QPSK	50	24	21.94	22.01	21.93		
20	QPSK	50	50	21.93	21.91	21.88		
20	QPSK	100	0	21.90	21.93	21.89		
20	16QAM	1	0	22.29	22.40	22.32	23	1
20	16QAM	1	49	22.50	22.01	22.47		
20	16QAM	1	99	22.01	22.18	22.01		
20	16QAM	50	0	21.09	21.07	21.02	22	2
20	16QAM	50	24	20.91	20.95	20.98		
20	16QAM	50	50	20.99	20.98	20.95		
20	16QAM	100	0	21.00	21.08	21.01		
20	64QAM	1	0	20.89	21.22	21.26	22	2
20	64QAM	1	49	20.84	20.89	21.10		
20	64QAM	1	99	21.02	20.99	21.23		
20	64QAM	50	0	19.93	20.08	19.99	21	3
20	64QAM	50	24	20.02	20.02	19.95		
20	64QAM	50	50	19.92	20.00	19.93		
20	64QAM	100	0	19.97	19.97	19.98		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.81	22.97	22.95	24	0
15	QPSK	1	37	22.84	22.95	22.69		
15	QPSK	1	74	22.94	22.85	22.85		
15	QPSK	36	0	21.89	22.01	21.95	23	1
15	QPSK	36	20	21.95	21.96	21.92		
15	QPSK	36	39	21.86	21.91	21.87		
15	QPSK	75	0	21.90	21.92	21.93		
15	16QAM	1	0	22.07	22.39	22.22	23	1
15	16QAM	1	37	22.43	22.17	22.28		
15	16QAM	1	74	22.45	22.35	22.09		
15	16QAM	36	0	21.03	21.13	21.01	22	2
15	16QAM	36	20	21.02	21.06	20.99		
15	16QAM	36	39	20.89	21.01	20.91		
15	16QAM	75	0	20.93	21.03	20.90		
15	64QAM	1	0	21.18	21.14	21.24	22	2
15	64QAM	1	37	20.98	21.25	21.16		
15	64QAM	1	74	21.15	21.01	20.87		
15	64QAM	36	0	20.02	20.18	19.97	21	3
15	64QAM	36	20	19.92	20.00	19.98		
15	64QAM	36	39	20.04	20.03	19.94		
15	64QAM	75	0	19.78	20.04	19.90		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.75	23.03	22.97	24	0
10	QPSK	1	25	22.80	22.91	22.76		
10	QPSK	1	49	22.93	22.85	22.82		
10	QPSK	25	0	21.77	21.94	21.90	23	1
10	QPSK	25	12	21.97	21.94	21.92		

10	QPSK	25	25	21.87	21.89	21.81		
10	QPSK	50	0	21.90	21.95	21.88		
10	16QAM	1	0	22.26	22.06	22.27	23	1
10	16QAM	1	25	21.83	22.04	22.10		
10	16QAM	1	49	21.93	21.99	22.28		
10	16QAM	25	0	20.84	21.10	20.97	22	2
10	16QAM	25	12	20.87	21.09	20.92		
10	16QAM	25	25	21.04	21.02	20.94		
10	16QAM	50	0	20.93	20.92	20.93		
10	64QAM	1	0	21.18	21.04	21.17	22	2
10	64QAM	1	25	21.10	21.12	21.01		
10	64QAM	1	49	21.43	21.08	21.08		
10	64QAM	25	0	19.96	19.97	19.95	21	3
10	64QAM	25	12	19.94	19.99	19.99		
10	64QAM	25	25	19.90	19.91	19.86		
10	64QAM	50	0	19.98	20.01	19.93		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.65	22.83	22.84	24	0
5	QPSK	1	12	22.73	22.83	22.86		
5	QPSK	1	24	22.85	22.73	22.73		
5	QPSK	12	0	21.73	21.89	21.85	23	1
5	QPSK	12	7	21.85	21.99	21.86		
5	QPSK	12	13	21.74	21.96	21.85		
5	QPSK	25	0	21.75	21.90	21.89		
5	16QAM	1	0	22.16	22.22	22.08	23	1
5	16QAM	1	12	21.91	22.28	22.05		
5	16QAM	1	24	21.98	22.13	21.80		
5	16QAM	12	0	20.86	21.03	20.89	22	2
5	16QAM	12	7	20.87	21.02	21.02		
5	16QAM	12	13	20.83	21.02	20.87		
5	16QAM	25	0	20.84	20.98	21.01		
5	64QAM	1	0	21.24	21.06	21.35	22	2
5	64QAM	1	12	20.90	21.21	21.02		
5	64QAM	1	24	20.98	21.35	21.31		
5	64QAM	12	0	19.80	19.95	19.78	21	3
5	64QAM	12	7	19.83	20.10	19.80		
5	64QAM	12	13	19.78	19.96	19.83		
5	64QAM	25	0	19.86	20.00	19.92		

<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	22.65	22.67	22.91	24	0
15	QPSK	1	37	22.51	22.66	22.69		
15	QPSK	1	74	22.55	22.56	22.67		
15	QPSK	36	0	21.52	21.69	21.83	23	1
15	QPSK	36	20	21.64	21.65	21.80		
15	QPSK	36	39	21.50	21.63	21.73		
15	QPSK	75	0	21.55	21.65	21.69		
15	16QAM	1	0	21.96	21.89	21.90	23	1
15	16QAM	1	37	21.99	21.98	22.00		
15	16QAM	1	74	21.60	21.91	21.72		
15	16QAM	36	0	20.61	20.80	20.80	22	2
15	16QAM	36	20	20.73	20.74	20.83		
15	16QAM	36	39	20.61	20.69	20.78		
15	16QAM	75	0	20.64	20.72	20.73		
15	64QAM	1	0	21.21	20.87	21.18	22	2
15	64QAM	1	37	21.10	21.09	20.91		
15	64QAM	1	74	21.13	20.99	20.98		
15	64QAM	36	0	19.94	19.90	19.86	21	3
15	64QAM	36	20	19.97	19.80	19.96		
15	64QAM	36	39	19.90	19.70	19.77		
15	64QAM	75	0	19.66	19.78	19.78		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.62	22.60	22.81	24	0
10	QPSK	1	25	22.51	22.61	22.84		
10	QPSK	1	49	22.50	22.55	22.87		
10	QPSK	25	0	21.56	21.74	21.92	23	1
10	QPSK	25	12	21.54	21.66	21.87		
10	QPSK	25	25	21.53	21.60	21.85		
10	QPSK	50	0	21.64	21.71	21.85		
10	16QAM	1	0	21.74	21.69	21.72	23	1
10	16QAM	1	25	21.83	21.80	21.98		
10	16QAM	1	49	21.84	21.62	21.82		
10	16QAM	25	0	20.53	20.74	20.92	22	2
10	16QAM	25	12	20.68	20.75	20.97		
10	16QAM	25	25	20.74	20.74	21.03		
10	16QAM	50	0	20.67	20.77	20.93		
10	64QAM	1	0	20.93	20.97	20.91	22	2
10	64QAM	1	25	20.51	20.90	20.81		
10	64QAM	1	49	20.60	20.69	20.69		
10	64QAM	25	0	19.68	19.77	20.03	21	3
10	64QAM	25	12	19.63	19.83	19.95		
10	64QAM	25	25	19.70	19.76	19.93		
10	64QAM	50	0	19.74	19.79	20.11		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.58	22.61	22.81	24	0
5	QPSK	1	12	22.52	22.64	22.87		
5	QPSK	1	24	22.47	22.55	22.90		
5	QPSK	12	0	21.64	21.68	21.88	23	1
5	QPSK	12	7	21.58	21.65	21.84		

5	QPSK	12	13	21.55	21.68	21.84		
5	QPSK	25	0	21.60	21.68	21.84		
5	16QAM	1	0	21.74	21.71	21.99	23	1
5	16QAM	1	12	21.89	21.88	22.05		
5	16QAM	1	24	21.75	21.92	21.62		
5	16QAM	12	0	20.63	20.86	20.91	22	2
5	16QAM	12	7	20.64	20.77	21.00		
5	16QAM	12	13	20.56	20.77	21.04		
5	16QAM	25	0	20.74	20.73	20.78		
5	64QAM	1	0	20.73	20.70	20.84	22	2
5	64QAM	1	12	20.67	21.01	20.91		
5	64QAM	1	24	20.65	21.06	20.94		
5	64QAM	12	0	19.89	19.86	20.19	21	3
5	64QAM	12	7	19.79	19.81	20.12		
5	64QAM	12	13	19.83	19.81	20.01		
5	64QAM	25	0	19.69	19.80	19.98		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.64	22.60	22.81	24	0
3	QPSK	1	8	22.65	22.57	22.89		
3	QPSK	1	14	22.54	22.72	22.81		
3	QPSK	8	0	21.52	21.65	21.88	23	1
3	QPSK	8	4	21.59	21.72	21.93		
3	QPSK	8	7	21.62	21.66	21.95		
3	QPSK	15	0	21.62	21.68	21.84		
3	16QAM	1	0	21.66	21.80	21.89	23	1
3	16QAM	1	8	21.74	21.77	22.01		
3	16QAM	1	14	21.96	21.94	22.03		
3	16QAM	8	0	20.77	20.78	21.05	22	2
3	16QAM	8	4	20.66	20.91	20.83		
3	16QAM	8	7	20.76	20.70	20.85		
3	16QAM	15	0	20.65	20.71	21.04		
3	64QAM	1	0	20.85	21.14	21.04	22	2
3	64QAM	1	8	21.05	20.81	21.00		
3	64QAM	1	14	20.86	21.02	21.15		
3	64QAM	8	0	19.76	19.83	19.81	21	3
3	64QAM	8	4	19.85	19.80	20.12		
3	64QAM	8	7	19.67	19.87	20.07		
3	64QAM	15	0	19.67	19.85	20.11		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.17	22.26	22.39	24	0
1.4	QPSK	1	3	22.22	22.31	22.45		
1.4	QPSK	1	5	22.13	22.25	22.35		
1.4	QPSK	3	0	22.21	22.30	22.49		
1.4	QPSK	3	1	22.29	22.38	22.47		
1.4	QPSK	3	3	22.21	22.29	22.48		
1.4	QPSK	6	0	21.19	21.33	21.44	23	1
1.4	16QAM	1	0	21.24	21.29	21.39	23	1
1.4	16QAM	1	3	21.32	21.31	21.51		
1.4	16QAM	1	5	21.14	21.21	21.40		
1.4	16QAM	3	0	21.03	21.05	21.21		
1.4	16QAM	3	1	21.07	21.09	21.27		
1.4	16QAM	3	3	21.03	21.07	21.16		
1.4	16QAM	6	0	20.07	20.09	20.34	22	2
1.4	64QAM	1	0	20.96	21.19	21.38	22	2

1.4	64QAM	1	3	21.15	21.12	21.41		
1.4	64QAM	1	5	21.18	21.21	21.29		
1.4	64QAM	3	0	21.08	21.16	21.26		
1.4	64QAM	3	1	21.04	21.14	21.32		
1.4	64QAM	3	3	21.00	21.14	21.27		
1.4	64QAM	6	0	19.97	20.13	20.21	21	3

State 2

<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	15.31	15.40	15.45	15.5	0
20	QPSK	1	49	15.25	15.32	15.40		
20	QPSK	1	99	15.24	15.32	15.23		
20	QPSK	50	0	15.28	15.25	15.30	15.5	0
20	QPSK	50	24	15.27	15.25	15.26		
20	QPSK	50	50	15.23	15.26	15.23		
20	QPSK	100	0	15.18	15.20	15.25		
20	16QAM	1	0	15.45	15.45	15.33	15.5	0
20	16QAM	1	49	15.28	15.39	15.32		
20	16QAM	1	99	15.30	15.37	15.29		
20	16QAM	50	0	15.42	15.20	15.36	15.5	0
20	16QAM	50	24	15.44	15.40	15.35		
20	16QAM	50	50	15.41	15.42	15.30		
20	16QAM	100	0	15.45	15.44	15.31		
20	64QAM	1	0	15.40	15.47	15.30	15.5	0
20	64QAM	1	49	15.26	15.39	15.27		
20	64QAM	1	99	15.33	15.43	15.32		
20	64QAM	50	0	15.41	15.41	15.37	15.5	0
20	64QAM	50	24	15.42	15.46	15.35		
20	64QAM	50	50	15.39	15.37	15.30		
20	64QAM	100	0	15.45	15.44	15.30		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	15.26	15.35	15.41	15.5	0
15	QPSK	1	37	15.26	15.30	15.48		
15	QPSK	1	74	15.14	15.20	15.48		
15	QPSK	36	0	15.31	15.35	15.42	15.5	0
15	QPSK	36	20	15.32	15.35	15.44		
15	QPSK	36	39	15.26	15.29	15.32		
15	QPSK	75	0	15.25	15.31	15.43		
15	16QAM	1	0	15.45	15.42	15.48	15.5	0
15	16QAM	1	37	15.24	15.40	15.31		
15	16QAM	1	74	15.36	15.33	15.26		
15	16QAM	36	0	15.42	15.47	15.33	15.5	0
15	16QAM	36	20	15.39	15.32	15.36		
15	16QAM	36	39	15.37	15.41	15.36		
15	16QAM	75	0	15.36	15.41	15.32		
15	64QAM	1	0	15.42	15.47	15.29	15.5	0
15	64QAM	1	37	15.24	15.45	15.21		
15	64QAM	1	74	15.18	15.34	15.24		
15	64QAM	36	0	15.44	15.32	15.38	15.5	0
15	64QAM	36	20	15.43	15.23	15.40		

15	64QAM	36	39	15.41	15.45	15.25		
15	64QAM	75	0	15.40	15.49	15.32		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.26	15.31	15.31	15.5	0
10	QPSK	1	25	15.22	15.21	15.35		
10	QPSK	1	49	15.19	15.26	15.36		
10	QPSK	25	0	15.26	15.29	15.34	15.5	0
10	QPSK	25	12	15.24	15.29	15.42		
10	QPSK	25	25	15.20	15.28	15.39		
10	QPSK	50	0	15.22	15.30	15.29		
10	16QAM	1	0	15.27	15.48	15.20	15.5	0
10	16QAM	1	25	15.27	15.45	15.25		
10	16QAM	1	49	15.26	15.36	15.32		
10	16QAM	25	0	15.37	15.44	15.20	15.5	0
10	16QAM	25	12	15.42	15.48	15.30		
10	16QAM	25	25	15.39	15.40	15.28		
10	16QAM	50	0	15.35	15.42	15.20		
10	64QAM	1	0	15.30	15.43	15.22	15.5	0
10	64QAM	1	25	15.40	15.43	15.23		
10	64QAM	1	49	15.38	15.39	15.20		
10	64QAM	25	0	15.42	15.48	15.21	15.5	0
10	64QAM	25	12	15.46	15.48	15.32		
10	64QAM	25	25	15.41	15.44	15.28		
10	64QAM	50	0	15.39	15.46	15.21		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.24	15.22	15.23	15.5	0
5	QPSK	1	12	15.22	15.29	15.26		
5	QPSK	1	24	15.19	15.26	15.22		
5	QPSK	12	0	15.27	15.29	15.31	15.5	0
5	QPSK	12	7	15.28	15.29	15.33		
5	QPSK	12	13	15.28	15.25	15.27		
5	QPSK	25	0	15.20	15.22	15.30		
5	16QAM	1	0	15.35	15.41	15.22	15.5	0
5	16QAM	1	12	15.34	15.38	15.31		
5	16QAM	1	24	15.31	15.43	15.25		
5	16QAM	12	0	15.39	15.46	15.38	15.5	0
5	16QAM	12	7	15.45	15.47	15.42		
5	16QAM	12	13	15.39	15.42	15.36		
5	16QAM	25	0	15.38	15.40	15.38		
5	64QAM	1	0	15.43	15.34	15.36	15.5	0
5	64QAM	1	12	15.37	15.40	15.41		
5	64QAM	1	24	15.46	15.40	15.31		
5	64QAM	12	0	15.49	15.48	15.46	15.5	0
5	64QAM	12	7	15.47	15.48	15.48		
5	64QAM	12	13	15.49	15.49	15.43		
5	64QAM	25	0	15.43	15.43	15.39		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.21	15.22	15.32	15.5	0
3	QPSK	1	8	15.23	15.30	15.33		
3	QPSK	1	14	15.19	15.21	15.46		
3	QPSK	8	0	15.24	15.32	15.27	15.5	0
3	QPSK	8	4	15.29	15.30	15.30		
3	QPSK	8	7	15.24	15.28	15.26		

3	QPSK	15	0	15.24	15.23	15.25		
3	16QAM	1	0	15.33	15.37	15.34	15.5	0
3	16QAM	1	8	15.41	15.36	15.45		
3	16QAM	1	14	15.41	15.34	15.37		
3	16QAM	8	0	15.42	15.45	15.41	15.5	0
3	16QAM	8	4	15.44	15.48	15.42		
3	16QAM	8	7	15.41	15.44	15.41		
3	16QAM	15	0	15.38	15.40	15.35		
3	64QAM	1	0	15.33	15.42	15.29	15.5	0
3	64QAM	1	8	15.40	15.31	15.33		
3	64QAM	1	14	15.33	15.37	15.29		
3	64QAM	8	0	15.44	15.49	15.41	15.5	0
3	64QAM	8	4	15.31	15.32	15.48		
3	64QAM	8	7	15.31	15.48	15.41		
3	64QAM	15	0	15.38	15.39	15.36		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.16	15.18	15.44	15.5	0
1.4	QPSK	1	3	15.20	15.24	15.25		
1.4	QPSK	1	5	15.18	15.14	15.25		
1.4	QPSK	3	0	15.18	15.23	15.23		
1.4	QPSK	3	1	15.22	15.25	15.24		
1.4	QPSK	3	3	15.17	15.20	15.42		
1.4	QPSK	6	0	15.20	15.19	15.41	15.5	0
1.4	16QAM	1	0	15.23	15.25	15.34	15.5	0
1.4	16QAM	1	3	15.24	15.25	15.24		
1.4	16QAM	1	5	15.27	15.23	15.27		
1.4	16QAM	3	0	15.20	15.19	15.24		
1.4	16QAM	3	1	15.41	15.37	15.36		
1.4	16QAM	3	3	15.33	15.24	15.32		
1.4	16QAM	6	0	15.37	15.42	15.40	15.5	0
1.4	64QAM	1	0	15.40	15.41	15.40	15.5	0
1.4	64QAM	1	3	15.49	15.34	15.33		
1.4	64QAM	1	5	15.40	15.44	15.38		
1.4	64QAM	3	0	15.34	15.39	15.32		
1.4	64QAM	3	1	15.35	15.43	15.33		
1.4	64QAM	3	3	15.31	15.34	15.33		
1.4	64QAM	6	0	15.29	15.30	15.30	15.5	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	17.60	18.07	17.80	19	0
20	QPSK	1	49	17.66	17.83	17.89		
20	QPSK	1	99	17.70	17.68	17.75		
20	QPSK	50	0	17.68	17.95	17.74	19	0
20	QPSK	50	24	17.67	17.84	17.80		
20	QPSK	50	50	17.74	17.80	17.79		
20	QPSK	100	0	17.64	17.91	17.74		
20	16QAM	1	0	17.86	17.97	18.05	19	0
20	16QAM	1	49	18.04	18.02	18.05		
20	16QAM	1	99	17.95	17.97	17.95		
20	16QAM	50	0	17.63	17.81	17.69	19	0
20	16QAM	50	24	17.51	17.79	17.75		
20	16QAM	50	50	17.71	17.76	17.74		
20	16QAM	100	0	17.65	17.77	17.68		
20	64QAM	1	0	17.67	17.90	17.92	19	0
20	64QAM	1	49	17.84	17.92	17.90		
20	64QAM	1	99	17.79	17.83	17.85		
20	64QAM	50	0	17.61	17.78	17.68	19	0
20	64QAM	50	24	17.62	17.79	17.70		
20	64QAM	50	50	17.68	17.72	17.69		
20	64QAM	100	0	17.61	17.79	17.65		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	17.62	17.83	17.71	19	0
15	QPSK	1	37	17.63	17.85	17.78		
15	QPSK	1	74	17.60	17.74	17.69		
15	QPSK	36	0	17.70	17.84	17.73	19	0
15	QPSK	36	20	17.72	17.86	17.85		
15	QPSK	36	39	17.68	17.81	17.78		
15	QPSK	75	0	17.67	17.81	17.73		
15	16QAM	1	0	17.87	18.00	17.86	19	0
15	16QAM	1	37	17.88	18.06	17.88		
15	16QAM	1	74	17.82	17.89	17.96		
15	16QAM	36	0	17.65	17.79	17.67	19	0
15	16QAM	36	20	17.68	17.81	17.78		
15	16QAM	36	39	17.67	17.72	17.72		
15	16QAM	75	0	17.65	17.72	17.67		
15	64QAM	1	0	17.73	18.05	17.90	19	0
15	64QAM	1	37	17.71	17.89	17.92		
15	64QAM	1	74	17.66	17.80	17.83		
15	64QAM	36	0	17.65	17.78	17.70	19	0
15	64QAM	36	20	17.68	17.82	17.74		
15	64QAM	36	39	17.68	17.70	17.68		
15	64QAM	75	0	17.64	17.74	17.63		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	17.53	17.81	17.77	19	0
10	QPSK	1	25	17.69	17.85	17.76		
10	QPSK	1	49	17.55	17.72	17.73		
10	QPSK	25	0	17.68	17.85	17.83	19	0
10	QPSK	25	12	17.60	17.80	17.80		

10	QPSK	25	25	17.55	17.78	17.72		
10	QPSK	50	0	17.59	17.81	17.81		
10	16QAM	1	0	17.66	18.06	17.92	19	0
10	16QAM	1	25	17.68	18.06	17.90		
10	16QAM	1	49	17.78	17.94	17.95		
10	16QAM	25	0	17.57	17.79	17.73	19	0
10	16QAM	25	12	17.56	17.76	17.74		
10	16QAM	25	25	17.50	17.74	17.69		
10	16QAM	50	0	17.53	17.77	17.75		
10	64QAM	1	0	17.55	17.99	17.85	19	0
10	64QAM	1	25	17.50	17.89	17.86		
10	64QAM	1	49	17.64	17.73	17.75		
10	64QAM	25	0	17.60	17.75	17.74	19	0
10	64QAM	25	12	17.53	17.77	17.72		
10	64QAM	25	25	17.50	17.73	17.73		
10	64QAM	50	0	17.69	17.76	17.68		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	17.50	17.83	17.74	19	0
5	QPSK	1	12	17.56	17.78	17.69		
5	QPSK	1	24	17.60	17.77	17.64		
5	QPSK	12	0	17.50	17.82	17.75	19	0
5	QPSK	12	7	17.56	17.82	17.78		
5	QPSK	12	13	17.55	17.83	17.74		
5	QPSK	25	0	17.57	17.77	17.70		
5	16QAM	1	0	17.63	17.95	17.98	19	0
5	16QAM	1	12	17.69	17.50	17.90		
5	16QAM	1	24	17.75	17.88	17.89		
5	16QAM	12	0	17.50	17.83	17.69	19	0
5	16QAM	12	7	17.55	17.80	17.76		
5	16QAM	12	13	17.56	17.74	17.69		
5	16QAM	25	0	17.54	17.71	17.65		
5	64QAM	1	0	17.56	17.80	17.71	19	0
5	64QAM	1	12	17.62	17.89	17.79		
5	64QAM	1	24	17.60	17.84	17.82		
5	64QAM	12	0	17.59	17.77	17.76	19	0
5	64QAM	12	7	17.53	17.74	17.89		
5	64QAM	12	13	17.61	17.69	17.79		
5	64QAM	25	0	17.58	17.71	17.72		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	17.59	17.71	17.71	19	0
3	QPSK	1	8	17.63	17.76	17.69		
3	QPSK	1	14	17.54	17.72	17.72		
3	QPSK	8	0	17.62	17.81	17.75	19	0
3	QPSK	8	4	17.68	17.84	17.73		
3	QPSK	8	7	17.67	17.77	17.72		
3	QPSK	15	0	17.62	17.79	17.72		
3	16QAM	1	0	17.81	18.01	17.96	19	0
3	16QAM	1	8	17.90	18.00	18.02		
3	16QAM	1	14	17.76	18.02	17.84		
3	16QAM	8	0	17.67	17.78	17.75	19	0
3	16QAM	8	4	17.70	17.85	17.76		
3	16QAM	8	7	17.65	17.77	17.72		
3	16QAM	15	0	17.59	17.74	17.69		
3	64QAM	1	0	17.72	17.88	17.83	19	0

3	64QAM	1	8	17.81	17.94	17.83		
3	64QAM	1	14	17.68	17.93	17.85		
3	64QAM	8	0	17.61	17.85	17.78	19	0
3	64QAM	8	4	17.66	17.85	17.81		
3	64QAM	8	7	17.63	17.85	17.75		
3	64QAM	15	0	17.55	17.74	17.70		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	17.54	17.74	17.61	19	0
1.4	QPSK	1	3	17.61	17.72	17.62		
1.4	QPSK	1	5	17.53	17.62	17.53		
1.4	QPSK	3	0	17.60	17.72	17.62		
1.4	QPSK	3	1	17.52	17.80	17.67		
1.4	QPSK	3	3	17.56	17.73	17.62		
1.4	QPSK	6	0	17.53	17.70	17.67	19	0
1.4	16QAM	1	0	17.76	17.97	17.75	19	0
1.4	16QAM	1	3	17.83	18.00	17.86		
1.4	16QAM	1	5	17.83	17.87	17.75		
1.4	16QAM	3	0	17.50	17.71	17.58		
1.4	16QAM	3	1	17.50	17.67	17.65		
1.4	16QAM	3	3	17.51	17.69	17.58		
1.4	16QAM	6	0	17.55	17.76	17.63	19	0
1.4	64QAM	1	0	17.67	17.76	17.67	19	0
1.4	64QAM	1	3	17.69	17.83	17.83		
1.4	64QAM	1	5	17.63	17.74	17.66		
1.4	64QAM	3	0	17.51	17.75	17.62		
1.4	64QAM	3	1	17.64	17.72	17.68		
1.4	64QAM	3	3	17.53	17.73	17.61		
1.4	64QAM	6	0	17.51	17.62	17.57	19	0

State 3

<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	15.31	15.40	15.65	17	0
20	QPSK	1	49	15.25	15.32	15.46		
20	QPSK	1	99	15.24	15.32	15.43		
20	QPSK	50	0	15.28	15.35	15.50	17	0
20	QPSK	50	24	15.27	15.34	15.46		
20	QPSK	50	50	15.23	15.26	15.43		
20	QPSK	100	0	15.33	15.30	15.45		
20	16QAM	1	0	15.45	15.45	15.53	17	0
20	16QAM	1	49	15.28	15.39	15.52		
20	16QAM	1	99	15.30	15.37	15.49		
20	16QAM	50	0	15.42	15.51	15.56	17	0
20	16QAM	50	24	15.44	15.49	15.55		
20	16QAM	50	50	15.41	15.42	15.50		
20	16QAM	100	0	15.45	15.44	15.51		
20	64QAM	1	0	15.40	15.47	15.50	17	0
20	64QAM	1	49	15.26	15.39	15.47		
20	64QAM	1	99	15.33	15.43	15.52		
20	64QAM	50	0	15.41	15.50	15.57	17	0
20	64QAM	50	24	15.42	15.46	15.55		
20	64QAM	50	50	15.39	15.37	15.50		
20	64QAM	100	0	15.45	15.44	15.50		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	15.26	15.35	15.41	17	0
15	QPSK	1	37	15.26	15.30	15.48		
15	QPSK	1	74	15.14	15.20	15.48		
15	QPSK	36	0	15.31	15.35	15.42	17	0
15	QPSK	36	20	15.32	15.35	15.44		
15	QPSK	36	39	15.26	15.29	15.49		
15	QPSK	75	0	15.25	15.31	15.43		
15	16QAM	1	0	15.45	15.42	15.48	17	0
15	16QAM	1	37	15.24	15.40	15.51		
15	16QAM	1	74	15.36	15.33	15.46		
15	16QAM	36	0	15.42	15.47	15.53	17	0
15	16QAM	36	20	15.39	15.51	15.56		
15	16QAM	36	39	15.37	15.41	15.56		
15	16QAM	75	0	15.36	15.41	15.52		
15	64QAM	1	0	15.42	15.47	15.49	17	0
15	64QAM	1	37	15.24	15.45	15.41		
15	64QAM	1	74	15.18	15.34	15.44		
15	64QAM	36	0	15.44	15.58	15.58	17	0
15	64QAM	36	20	15.43	15.54	15.60		
15	64QAM	36	39	15.41	15.45	15.45		
15	64QAM	75	0	15.40	15.49	15.52		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.26	15.31	15.51	17	0
10	QPSK	1	25	15.22	15.21	15.55		
10	QPSK	1	49	15.19	15.26	15.56		
10	QPSK	25	0	15.26	15.29	15.54	17	0

10	QPSK	25	12	15.24	15.29	15.62		
10	QPSK	25	25	15.20	15.28	15.59		
10	QPSK	50	0	15.22	15.30	15.49		
10	16QAM	1	0	15.27	15.48	15.40		
10	16QAM	1	25	15.27	15.45	15.45	17	0
10	16QAM	1	49	15.26	15.36	15.52		
10	16QAM	25	0	15.37	15.44	15.40		
10	16QAM	25	12	15.42	15.48	15.50	17	0
10	16QAM	25	25	15.39	15.40	15.48		
10	16QAM	50	0	15.35	15.42	15.40		
10	64QAM	1	0	15.30	15.43	15.42		
10	64QAM	1	25	15.40	15.43	15.43	17	0
10	64QAM	1	49	15.38	15.39	15.40		
10	64QAM	25	0	15.42	15.48	15.41		
10	64QAM	25	12	15.46	15.48	15.52	17	0
10	64QAM	25	25	15.41	15.44	15.48		
10	64QAM	50	0	15.39	15.46	15.41		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.24	15.22	15.23		
5	QPSK	1	12	15.22	15.29	15.26	17	0
5	QPSK	1	24	15.19	15.26	15.22		
5	QPSK	12	0	15.27	15.29	15.31		
5	QPSK	12	7	15.28	15.29	15.33	17	0
5	QPSK	12	13	15.28	15.25	15.27		
5	QPSK	25	0	15.20	15.22	15.30		
5	16QAM	1	0	15.35	15.41	15.22		
5	16QAM	1	12	15.34	15.38	15.31	17	0
5	16QAM	1	24	15.31	15.43	15.25		
5	16QAM	12	0	15.39	15.46	15.38		
5	16QAM	12	7	15.45	15.47	15.42	17	0
5	16QAM	12	13	15.39	15.42	15.36		
5	16QAM	25	0	15.38	15.40	15.38		
5	64QAM	1	0	15.43	15.34	15.36		
5	64QAM	1	12	15.37	15.40	15.41	17	0
5	64QAM	1	24	15.46	15.40	15.31		
5	64QAM	12	0	15.49	15.48	15.46		
5	64QAM	12	7	15.47	15.48	15.48	17	0
5	64QAM	12	13	15.49	15.49	15.43		
5	64QAM	25	0	15.43	15.43	15.39		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.21	15.22	15.55		
3	QPSK	1	8	15.23	15.30	15.59	17	0
3	QPSK	1	14	15.19	15.21	15.50		
3	QPSK	8	0	15.24	15.32	15.27		
3	QPSK	8	4	15.29	15.30	15.30	17	0
3	QPSK	8	7	15.24	15.28	15.26		
3	QPSK	15	0	15.24	15.23	15.25		
3	16QAM	1	0	15.33	15.37	15.34		
3	16QAM	1	8	15.41	15.52	15.45	17	0
3	16QAM	1	14	15.41	15.34	15.37		
3	16QAM	8	0	15.42	15.45	15.41		
3	16QAM	8	4	15.44	15.48	15.42	17	0
3	16QAM	8	7	15.41	15.44	15.41		
3	16QAM	15	0	15.38	15.40	15.35		

3	64QAM	1	0	15.33	15.42	15.29	17	0
3	64QAM	1	8	15.40	15.31	15.33		
3	64QAM	1	14	15.33	15.37	15.29		
3	64QAM	8	0	15.44	15.49	15.41	17	0
3	64QAM	8	4	15.52	15.50	15.48		
3	64QAM	8	7	15.50	15.48	15.41		
3	64QAM	15	0	15.38	15.39	15.36		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.16	15.18	15.44	17	0
1.4	QPSK	1	3	15.20	15.24	15.54		
1.4	QPSK	1	5	15.18	15.14	15.45		
1.4	QPSK	3	0	15.18	15.23	15.53		
1.4	QPSK	3	1	15.22	15.25	15.58		
1.4	QPSK	3	3	15.17	15.20	15.48		
1.4	QPSK	6	0	15.20	15.19	15.24	17	0
1.4	16QAM	1	0	15.53	15.55	15.53	17	0
1.4	16QAM	1	3	15.54	15.55	15.54		
1.4	16QAM	1	5	15.57	15.53	15.57		
1.4	16QAM	3	0	15.24	15.29	15.26		
1.4	16QAM	3	1	15.41	15.37	15.36		
1.4	16QAM	3	3	15.33	15.24	15.32		
1.4	16QAM	6	0	15.37	15.42	15.40	17	0
1.4	64QAM	1	0	15.40	15.41	15.40	17	0
1.4	64QAM	1	3	15.49	15.52	15.53		
1.4	64QAM	1	5	15.40	15.44	15.38		
1.4	64QAM	3	0	15.34	15.39	15.32		
1.4	64QAM	3	1	15.35	15.43	15.33		
1.4	64QAM	3	3	15.31	15.34	15.33		
1.4	64QAM	6	0	15.29	15.30	15.30	17	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	18.89	19.12	19.02	20	0
20	QPSK	1	49	18.78	18.92	19.04		
20	QPSK	1	99	18.82	18.88	19.01		
20	QPSK	50	0	18.71	18.93	18.85	20	0
20	QPSK	50	24	18.73	18.91	18.78		
20	QPSK	50	50	18.82	18.82	18.80		
20	QPSK	100	0	18.72	18.89	18.75		
20	16QAM	1	0	18.64	19.00	18.86	20	0
20	16QAM	1	49	18.80	19.04	18.97		
20	16QAM	1	99	18.94	18.74	18.84		
20	16QAM	50	0	18.87	19.03	18.93	20	0
20	16QAM	50	24	18.85	19.00	18.94		
20	16QAM	50	50	18.94	18.96	18.97		
20	16QAM	100	0	18.82	19.01	18.85		
20	64QAM	1	0	18.56	18.73	18.87	20	0
20	64QAM	1	49	18.70	18.85	18.81		
20	64QAM	1	99	18.76	18.72	18.86		
20	64QAM	50	0	18.88	19.02	18.64	20	0
20	64QAM	50	24	18.86	19.07	18.94		
20	64QAM	50	50	18.94	18.95	18.97		
20	64QAM	100	0	18.85	18.95	18.90		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	18.65	18.90	18.79	20	0
15	QPSK	1	37	18.71	18.87	18.89		
15	QPSK	1	74	18.65	18.76	18.71		
15	QPSK	36	0	18.77	18.85	18.76	20	0
15	QPSK	36	20	18.77	18.87	18.88		
15	QPSK	36	39	18.74	18.85	18.83		
15	QPSK	75	0	18.73	18.85	18.76		
15	16QAM	1	0	18.82	19.01	18.88	20	0
15	16QAM	1	37	18.71	18.97	18.86		
15	16QAM	1	74	18.77	18.81	18.90		
15	16QAM	36	0	18.86	19.01	18.89	20	0
15	16QAM	36	20	18.90	19.05	18.99		
15	16QAM	36	39	18.86	19.01	18.96		
15	16QAM	75	0	18.84	19.02	18.94		
15	64QAM	1	0	18.62	18.91	18.77	20	0
15	64QAM	1	37	18.72	18.86	18.83		
15	64QAM	1	74	18.59	18.72	18.66		
15	64QAM	36	0	18.87	19.05	18.94	20	0
15	64QAM	36	20	18.89	19.07	19.05		
15	64QAM	36	39	18.90	18.96	18.98		
15	64QAM	75	0	18.84	18.98	18.89		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	18.55	18.88	18.89	20	0
10	QPSK	1	25	18.48	18.77	18.84		
10	QPSK	1	49	18.54	18.86	18.77		
10	QPSK	25	0	18.54	18.93	18.81	20	0
10	QPSK	25	12	18.66	18.92	18.87		

10	QPSK	25	25	18.65	18.83	18.81		
10	QPSK	50	0	18.63	18.88	18.88		
10	16QAM	1	0	18.67	19.08	19.00	20	0
10	16QAM	1	25	18.61	19.04	18.97		
10	16QAM	1	49	18.75	18.97	18.80		
10	16QAM	25	0	18.66	19.03	18.99	20	0
10	16QAM	25	12	18.83	19.03	18.99		
10	16QAM	25	25	18.74	19.01	18.94		
10	16QAM	50	0	18.74	19.02	18.98		
10	64QAM	1	0	18.51	18.88	18.89	20	0
10	64QAM	1	25	18.58	18.88	18.82		
10	64QAM	1	49	18.52	18.83	18.72		
10	64QAM	25	0	18.69	19.03	19.00	20	0
10	64QAM	25	12	18.79	19.05	18.97		
10	64QAM	25	25	18.76	18.97	18.94		
10	64QAM	50	0	18.80	19.03	18.99		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	18.48	18.80	18.76	20	0
5	QPSK	1	12	18.53	18.84	18.71		
5	QPSK	1	24	18.54	18.84	18.72		
5	QPSK	12	0	18.52	18.90	18.79	20	0
5	QPSK	12	7	18.61	18.88	18.83		
5	QPSK	12	13	18.52	18.84	18.81		
5	QPSK	25	0	18.52	18.87	18.80		
5	16QAM	1	0	18.62	19.06	19.01	20	0
5	16QAM	1	12	18.56	18.93	18.96		
5	16QAM	1	24	18.74	18.93	18.87		
5	16QAM	12	0	18.72	19.02	18.95	20	0
5	16QAM	12	7	18.76	19.06	19.02		
5	16QAM	12	13	18.71	19.07	18.94		
5	16QAM	25	0	18.70	19.03	18.91		
5	64QAM	1	0	18.50	18.96	18.76	20	0
5	64QAM	1	12	18.50	18.84	18.78		
5	64QAM	1	24	18.49	18.81	18.71		
5	64QAM	12	0	18.70	19.03	18.94	20	0
5	64QAM	12	7	18.82	18.93	18.98		
5	64QAM	12	13	18.74	19.03	18.93		
5	64QAM	25	0	18.66	18.98	18.95		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	18.51	18.80	18.76	20	0
3	QPSK	1	8	18.54	18.85	18.73		
3	QPSK	1	14	18.49	18.81	18.64		
3	QPSK	8	0	18.81	18.88	18.79	20	0
3	QPSK	8	4	18.87	18.88	18.82		
3	QPSK	8	7	18.51	18.89	18.80		
3	QPSK	15	0	18.55	18.89	18.80		
3	16QAM	1	0	18.71	19.03	18.85	20	0
3	16QAM	1	8	18.65	18.97	18.83		
3	16QAM	1	14	18.63	18.99	18.84		
3	16QAM	8	0	18.78	19.08	18.96	20	0
3	16QAM	8	4	18.78	19.09	19.01		
3	16QAM	8	7	18.76	19.07	18.94		
3	16QAM	15	0	18.70	18.99	18.92		
3	64QAM	1	0	18.52	18.87	18.70	20	0

3	64QAM	1	8	18.67	18.83	18.78		
3	64QAM	1	14	18.49	18.87	18.67		
3	64QAM	8	0	18.69	19.06	18.97	20	0
3	64QAM	8	4	18.77	19.05	18.97		
3	64QAM	8	7	18.79	19.03	18.94		
3	64QAM	15	0	18.73	19.03	18.94		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	18.48	18.77	18.75	20	0
1.4	QPSK	1	3	18.52	18.82	18.79		
1.4	QPSK	1	5	18.43	18.75	18.63		
1.4	QPSK	3	0	18.50	18.83	18.76		
1.4	QPSK	3	1	18.55	18.86	18.80		
1.4	QPSK	3	3	18.51	18.81	18.77		
1.4	QPSK	6	0	18.48	18.86	18.74	20	0
1.4	16QAM	1	0	18.62	18.91	18.79	20	0
1.4	16QAM	1	3	18.67	18.90	18.91		
1.4	16QAM	1	5	18.71	18.94	18.75		
1.4	16QAM	3	0	18.64	18.96	18.91		
1.4	16QAM	3	1	18.67	18.92	18.92		
1.4	16QAM	3	3	18.63	18.95	18.92		
1.4	16QAM	6	0	18.74	19.08	18.98	20	0
1.4	64QAM	1	0	18.52	18.80	18.64	20	0
1.4	64QAM	1	3	18.58	18.94	18.81		
1.4	64QAM	1	5	18.57	18.85	18.63		
1.4	64QAM	3	0	18.73	19.08	18.99		
1.4	64QAM	3	1	18.81	18.83	19.05		
1.4	64QAM	3	3	18.79	19.09	18.92		
1.4	64QAM	6	0	18.65	18.90	18.86	20	0

<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	21.52	21.54	21.53	22	0
10	QPSK	1	25	21.37	21.37	21.43		
10	QPSK	1	49	21.34	21.32	21.52		
10	QPSK	25	0	21.14	21.13	21.33	22	0
10	QPSK	25	12	21.22	21.12	21.28		
10	QPSK	25	25	21.12	21.06	21.30		
10	QPSK	50	0	21.19	21.15	21.26		
10	16QAM	1	0	21.45	21.44	21.41	22	0
10	16QAM	1	25	21.32	21.33	21.46		
10	16QAM	1	49	21.44	21.32	21.44		
10	16QAM	25	0	20.20	20.27	20.41	22	0
10	16QAM	25	12	20.33	20.23	20.37		
10	16QAM	25	25	20.22	20.17	20.42		
10	16QAM	50	0	20.22	20.21	20.40		
10	64QAM	1	0	20.30	20.33	20.55	22	0
10	64QAM	1	25	20.31	20.40	20.59		
10	64QAM	1	49	20.29	20.18	20.46		
10	64QAM	25	0	19.20	19.21	19.41	21	1
10	64QAM	25	12	19.30	19.26	19.43		
10	64QAM	25	25	19.22	19.17	19.42		
10	64QAM	50	0	19.23	19.22	19.38		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	21.08	21.13	21.46	22	0
5	QPSK	1	12	21.04	21.07	21.38		
5	QPSK	1	24	21.02	21.06	21.39		
5	QPSK	12	0	21.12	21.13	21.43	22	0
5	QPSK	12	7	21.15	21.16	21.46		
5	QPSK	12	13	21.07	21.08	21.43		
5	QPSK	25	0	21.12	21.10	21.43		
5	16QAM	1	0	21.41	21.41	21.42	22	0
5	16QAM	1	12	21.33	21.50	21.39		
5	16QAM	1	24	21.37	21.30	21.41		
5	16QAM	12	0	20.24	20.22	20.59	22	0
5	16QAM	12	7	20.25	20.28	20.59		
5	16QAM	12	13	20.17	20.22	20.56		
5	16QAM	25	0	20.21	20.22	20.54		
5	64QAM	1	0	20.28	20.32	20.30	22	0
5	64QAM	1	12	20.31	20.34	20.36		
5	64QAM	1	24	20.12	20.24	20.26		
5	64QAM	12	0	19.19	19.23	19.32	21	1
5	64QAM	12	7	19.21	19.19	19.37		
5	64QAM	12	13	19.13	19.19	19.37		
5	64QAM	25	0	19.19	19.20	19.32		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	21.08	21.09	21.40	22	0
3	QPSK	1	8	21.07	21.09	21.39		
3	QPSK	1	14	21.03	21.03	21.34		
3	QPSK	8	0	21.08	21.13	21.40	22	0
3	QPSK	8	4	21.12	21.13	21.44		

3	QPSK	8	7	21.09	21.10	21.44		
3	QPSK	15	0	21.12	21.13	21.45		
3	16QAM	1	0	21.44	21.46	21.39	22	0
3	16QAM	1	8	21.25	21.48	21.46		
3	16QAM	1	14	21.27	21.40	21.46		
3	16QAM	8	0	20.24	20.27	20.60	22	0
3	16QAM	8	4	20.32	20.31	20.60		
3	16QAM	8	7	20.21	20.26	20.60		
3	16QAM	15	0	20.19	20.23	20.57		
3	64QAM	1	0	20.32	20.35	20.48	22	0
3	64QAM	1	8	20.31	20.31	20.36		
3	64QAM	1	14	20.27	20.31	20.33		
3	64QAM	8	0	19.23	19.24	19.55	21	1
3	64QAM	8	4	19.24	19.29	19.61		
3	64QAM	8	7	19.18	19.23	19.55		
3	64QAM	15	0	19.23	19.21	19.50		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	21.13	21.08	21.41	22	0
1.4	QPSK	1	3	21.17	21.19	21.47		
1.4	QPSK	1	5	21.10	21.09	21.41		
1.4	QPSK	3	0	21.07	21.07	21.36		
1.4	QPSK	3	1	21.09	21.11	21.39		
1.4	QPSK	3	3	21.06	21.07	21.35		
1.4	QPSK	6	0	21.09	21.03	21.38	22	0
1.4	16QAM	1	0	21.30	21.41	21.42	22	0
1.4	16QAM	1	3	21.42	21.53	20.69		
1.4	16QAM	1	5	21.28	21.41	21.48		
1.4	16QAM	3	0	21.14	21.13	21.42		
1.4	16QAM	3	1	21.21	21.22	21.49		
1.4	16QAM	3	3	21.09	21.14	21.49		
1.4	16QAM	6	0	20.21	20.26	20.55	22	0
1.4	64QAM	1	0	20.26	20.25	20.42	22	0
1.4	64QAM	1	3	20.19	20.30	20.40		
1.4	64QAM	1	5	20.09	20.20	20.32		
1.4	64QAM	3	0	20.18	20.15	20.51		
1.4	64QAM	3	1	20.22	20.21	20.55		
1.4	64QAM	3	3	20.11	20.14	20.51		
1.4	64QAM	6	0	19.10	19.14	19.44	21	1

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	19.51	19.68	19.40	20.5	0
20	QPSK	1	49	19.44	19.28	19.37		
20	QPSK	1	99	19.25	19.24	19.36		
20	QPSK	50	0	19.50	19.55	19.46	20.5	0
20	QPSK	50	24	19.44	19.34	19.45		
20	QPSK	50	50	19.40	19.30	19.41		
20	QPSK	100	0	19.45	19.50	19.44		
20	16QAM	1	0	19.47	19.60	19.52	20.5	0
20	16QAM	1	49	19.46	19.50	19.53		
20	16QAM	1	99	19.60	19.47	19.60		
20	16QAM	50	0	19.66	19.30	19.29	20.5	0
20	16QAM	50	24	19.62	19.29	19.32		
20	16QAM	50	50	19.50	19.27	19.34		
20	16QAM	100	0	19.56	19.25	19.32		
20	64QAM	1	0	19.48	19.54	19.47	20.5	0
20	64QAM	1	49	19.53	19.33	19.39		
20	64QAM	1	99	19.48	19.35	19.38		
20	64QAM	50	0	19.63	19.28	19.29	20.5	0
20	64QAM	50	24	19.58	19.29	19.31		
20	64QAM	50	50	19.50	19.18	19.29		
20	64QAM	100	0	19.57	19.24	19.34		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	19.49	19.16	19.16	20.5	0
15	QPSK	1	37	19.46	19.08	19.16		
15	QPSK	1	74	19.41	19.07	19.21		
15	QPSK	36	0	19.59	19.19	19.19	20.5	0
15	QPSK	36	20	19.51	19.16	19.20		
15	QPSK	36	39	19.48	19.16	19.19		
15	QPSK	75	0	19.55	19.12	19.24		
15	16QAM	1	0	19.52	19.54	19.52	20.5	0
15	16QAM	1	37	19.49	19.45	19.54		
15	16QAM	1	74	19.58	19.54	19.48		
15	16QAM	36	0	19.63	19.24	19.30	20.5	0
15	16QAM	36	20	19.60	19.27	19.34		
15	16QAM	36	39	19.55	19.24	19.32		
15	16QAM	75	0	19.59	19.28	19.27		
15	64QAM	1	0	19.51	19.51	19.47	20.5	0
15	64QAM	1	37	19.67	19.31	19.44		
15	64QAM	1	74	19.50	19.31	19.39		
15	64QAM	36	0	19.66	19.25	19.33	20.5	0
15	64QAM	36	20	19.50	19.29	19.35		
15	64QAM	36	39	19.57	19.24	19.35		
15	64QAM	75	0	19.60	19.19	19.28		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	19.45	19.08	19.18	20.5	0
10	QPSK	1	25	19.40	19.05	19.22		
10	QPSK	1	49	19.48	19.05	19.18		
10	QPSK	25	0	19.45	19.09	19.23	20.5	0
10	QPSK	25	12	19.52	19.12	19.22		

10	QPSK	25	25	19.52	19.06	19.25		
10	QPSK	50	0	19.53	19.09	19.23		
10	16QAM	1	0	19.57	19.38	19.48	20.5	0
10	16QAM	1	25	19.53	19.42	19.61		
10	16QAM	1	49	19.47	19.38	19.58		
10	16QAM	25	0	19.60	19.29	19.33	20.5	0
10	16QAM	25	12	19.51	19.25	19.36		
10	16QAM	25	25	19.59	19.25	19.29		
10	16QAM	50	0	19.61	19.26	19.31		
10	64QAM	1	0	19.55	19.46	19.36	20.5	0
10	64QAM	1	25	19.52	19.33	19.37		
10	64QAM	1	49	19.52	19.34	19.54		
10	64QAM	25	0	19.52	19.22	19.30	20.5	0
10	64QAM	25	12	19.65	19.26	19.34		
10	64QAM	25	25	19.62	19.17	19.31		
10	64QAM	50	0	19.62	19.21	19.30		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	19.43	19.09	19.21	20.5	0
5	QPSK	1	12	19.45	19.07	19.21		
5	QPSK	1	24	19.48	19.06	19.18		
5	QPSK	12	0	19.50	19.15	19.19	20.5	0
5	QPSK	12	7	19.52	19.12	19.26		
5	QPSK	12	13	19.48	19.12	19.23		
5	QPSK	25	0	19.48	19.07	19.24		
5	16QAM	1	0	19.46	19.41	19.62	20.5	0
5	16QAM	1	12	19.50	19.38	19.45		
5	16QAM	1	24	19.49	19.43	19.49		
5	16QAM	12	0	19.61	19.20	19.33	20.5	0
5	16QAM	12	7	19.63	19.27	19.35		
5	16QAM	12	13	19.58	19.23	19.38		
5	16QAM	25	0	19.59	19.24	19.34		
5	64QAM	1	0	19.54	19.39	19.47	20.5	0
5	64QAM	1	12	19.52	19.31	19.56		
5	64QAM	1	24	19.63	19.34	19.35		
5	64QAM	12	0	19.60	19.25	19.35	20.5	0
5	64QAM	12	7	19.64	19.20	19.36		
5	64QAM	12	13	19.61	19.27	19.34		
5	64QAM	25	0	19.55	19.22	19.30		

<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	21.55	21.60	21.85	22	0
15	QPSK	1	37	21.34	21.53	21.60		
15	QPSK	1	74	21.34	21.53	21.55		
15	QPSK	36	0	21.41	21.64	21.72	22	0
15	QPSK	36	20	21.50	21.58	21.71		
15	QPSK	36	39	21.40	21.48	21.60		
15	QPSK	75	0	21.47	21.57	21.62		
15	16QAM	1	0	21.43	21.58	21.72	22	0
15	16QAM	1	37	21.37	21.58	21.73		
15	16QAM	1	74	21.35	21.51	21.60		
15	16QAM	36	0	20.49	20.68	20.73	22	0
15	16QAM	36	20	20.58	20.66	20.80		
15	16QAM	36	39	20.48	20.60	20.70		
15	16QAM	75	0	20.55	20.62	20.70		
15	64QAM	1	0	20.71	20.75	20.89	22	0
15	64QAM	1	37	20.61	20.72	20.89		
15	64QAM	1	74	20.52	20.65	20.80		
15	64QAM	36	0	19.46	19.64	19.75	21	1
15	64QAM	36	20	19.54	19.61	19.72		
15	64QAM	36	39	19.45	19.60	19.77		
15	64QAM	75	0	19.52	19.64	19.74		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	21.40	21.46	21.76	22	0
10	QPSK	1	25	21.31	21.46	21.72		
10	QPSK	1	49	21.35	21.42	21.64		
10	QPSK	25	0	21.37	21.55	21.73	22	0
10	QPSK	25	12	21.36	21.57	21.78		
10	QPSK	25	25	21.43	21.47	21.74		
10	QPSK	50	0	21.49	21.56	21.78		
10	16QAM	1	0	21.49	21.54	21.70	22	0
10	16QAM	1	25	21.44	21.60	21.73		
10	16QAM	1	49	21.38	21.59	21.69		
10	16QAM	25	0	20.48	20.63	20.87	22	0
10	16QAM	25	12	20.52	20.62	20.89		
10	16QAM	25	25	20.48	20.60	20.86		
10	16QAM	50	0	20.55	20.63	20.84		
10	64QAM	1	0	20.70	20.62	20.99	22	0
10	64QAM	1	25	20.65	20.80	21.03		
10	64QAM	1	49	20.67	20.71	20.87		
10	64QAM	25	0	19.50	19.66	19.91	21	1
10	64QAM	25	12	19.54	19.64	19.90		
10	64QAM	25	25	19.53	19.62	19.83		
10	64QAM	50	0	19.60	19.64	19.87		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	21.36	21.51	21.69	22	0
5	QPSK	1	12	21.36	21.50	21.70		
5	QPSK	1	24	21.39	21.47	21.78		
5	QPSK	12	0	21.42	21.59	21.72	22	0
5	QPSK	12	7	21.40	21.58	21.74		

5	QPSK	12	13	21.36	21.52	21.71		
5	QPSK	25	0	21.42	21.55	21.73		
5	16QAM	1	0	21.43	21.58	21.66	22	0
5	16QAM	1	12	21.49	21.56	21.65		
5	16QAM	1	24	21.34	21.55	21.75		
5	16QAM	12	0	20.47	20.66	20.95	22	0
5	16QAM	12	7	20.55	20.70	20.94		
5	16QAM	12	13	20.49	20.64	20.91		
5	16QAM	25	0	20.50	20.65	20.91		
5	64QAM	1	0	20.70	20.83	21.09	22	0
5	64QAM	1	12	20.68	20.82	21.08		
5	64QAM	1	24	20.63	20.74	20.94		
5	64QAM	12	0	19.54	19.71	19.97	21	1
5	64QAM	12	7	19.54	19.73	19.98		
5	64QAM	12	13	19.50	19.66	19.95		
5	64QAM	25	0	19.50	19.66	19.92		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	21.31	21.45	21.72	22	0
3	QPSK	1	8	21.26	21.45	21.74		
3	QPSK	1	14	21.30	21.40	21.72		
3	QPSK	8	0	21.30	21.49	21.75	22	0
3	QPSK	8	4	21.31	21.49	21.75		
3	QPSK	8	7	21.29	21.47	21.76		
3	QPSK	15	0	21.33	21.48	21.77		
3	16QAM	1	0	21.40	21.46	21.74	22	0
3	16QAM	1	8	21.41	21.41	21.67		
3	16QAM	1	14	21.29	21.50	21.66		
3	16QAM	8	0	20.49	20.61	20.92	22	0
3	16QAM	8	4	20.50	20.64	20.95		
3	16QAM	8	7	20.48	20.61	20.89		
3	16QAM	15	0	20.41	20.62	20.89		
3	64QAM	1	0	20.54	20.70	21.01	22	0
3	64QAM	1	8	20.60	20.64	20.94		
3	64QAM	1	14	20.56	20.65	20.97		
3	64QAM	8	0	19.46	19.59	19.81	21	1
3	64QAM	8	4	19.45	19.64	19.83		
3	64QAM	8	7	19.41	19.60	19.83		
3	64QAM	15	0	19.42	19.58	19.85		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	21.33	21.37	21.66	22	0
1.4	QPSK	1	3	21.33	21.44	21.72		
1.4	QPSK	1	5	21.28	21.33	21.63		
1.4	QPSK	3	0	21.31	21.45	21.71		
1.4	QPSK	3	1	21.32	21.48	21.70		
1.4	QPSK	3	3	21.28	21.39	21.68		
1.4	QPSK	6	0	21.29	21.42	21.69	22	0
1.4	16QAM	1	0	21.48	21.64	21.76	22	0
1.4	16QAM	1	3	21.64	21.75	21.78		
1.4	16QAM	1	5	21.59	21.70	21.73		
1.4	16QAM	3	0	21.37	21.52	21.75		
1.4	16QAM	3	1	21.40	21.51	21.75		
1.4	16QAM	3	3	21.37	21.56	21.66		
1.4	16QAM	6	0	20.42	20.60	20.88	22	0
1.4	64QAM	1	0	20.47	20.52	20.89	22	0

1.4	64QAM	1	3	20.53	20.66	20.87		
1.4	64QAM	1	5	20.47	20.59	20.86		
1.4	64QAM	3	0	20.43	20.50	20.76		
1.4	64QAM	3	1	20.41	20.54	20.81		
1.4	64QAM	3	3	20.40	20.53	20.82		
1.4	64QAM	6	0	19.36	19.49	19.73	21	1

State 4

<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	19.17	19.31	19.53	20.5	0
20	QPSK	1	49	19.15	19.18	19.32		
20	QPSK	1	99	19.11	19.25	19.34		
20	QPSK	50	0	19.16	19.26	19.48	20.5	0
20	QPSK	50	24	19.16	19.21	19.34		
20	QPSK	50	50	19.12	19.14	19.33		
20	QPSK	100	0	19.26	19.21	19.45		
20	16QAM	1	0	19.46	19.46	19.46	20.5	0
20	16QAM	1	49	19.16	19.49	19.42		
20	16QAM	1	99	19.46	19.40	19.48		
20	16QAM	50	0	19.27	19.36	19.41	20.5	0
20	16QAM	50	24	19.27	19.37	19.45		
20	16QAM	50	50	19.30	19.31	19.43		
20	16QAM	100	0	19.43	19.38	19.46		
20	64QAM	1	0	19.41	19.47	19.48	20.5	0
20	64QAM	1	49	19.40	19.42	19.40		
20	64QAM	1	99	19.47	19.44	19.49		
20	64QAM	50	0	19.24	19.45	19.44	20.5	0
20	64QAM	50	24	19.26	19.42	19.43		
20	64QAM	50	50	19.35	19.33	19.42		
20	64QAM	100	0	19.37	19.39	19.41		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.09	19.27	19.26	20.5	0
15	QPSK	1	37	19.11	19.25	19.36		
15	QPSK	1	74	19.05	19.07	19.31		
15	QPSK	36	0	19.13	19.20	19.31	20.5	0
15	QPSK	36	20	19.20	19.29	19.38		
15	QPSK	36	39	19.09	19.18	19.41		
15	QPSK	75	0	19.12	19.21	19.31		
15	16QAM	1	0	19.48	19.34	19.44	20.5	0
15	16QAM	1	37	19.19	19.15	19.43		
15	16QAM	1	74	19.24	19.42	19.40		
15	16QAM	36	0	19.33	19.39	19.42	20.5	0
15	16QAM	36	20	19.28	19.32	19.40		
15	16QAM	36	39	19.25	19.33	19.44		
15	16QAM	75	0	19.21	19.27	19.48		
15	64QAM	1	0	19.34	19.43	19.23	20.5	0
15	64QAM	1	37	19.36	19.45	19.40		
15	64QAM	1	74	19.37	19.43	19.29		
15	64QAM	36	0	19.27	19.35	19.47	20.5	0

15	64QAM	36	20	19.33	19.38	19.38		
15	64QAM	36	39	19.21	19.30	19.40		
15	64QAM	75	0	19.25	19.30	19.38		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.14	19.16	19.46	20.5	0
10	QPSK	1	25	19.04	19.28	19.50		
10	QPSK	1	49	19.14	19.07	19.40		
10	QPSK	25	0	19.15	19.26	19.34	20.5	0
10	QPSK	25	12	19.21	19.18	19.46		
10	QPSK	25	25	19.13	19.17	19.44		
10	QPSK	50	0	19.13	19.16	19.43		
10	16QAM	1	0	19.21	19.24	19.33	20.5	0
10	16QAM	1	25	19.11	19.19	19.38		
10	16QAM	1	49	19.31	19.04	19.43		
10	16QAM	25	0	19.22	19.33	19.30	20.5	0
10	16QAM	25	12	19.18	19.32	19.47		
10	16QAM	25	25	19.30	19.20	19.36		
10	16QAM	50	0	19.21	19.28	19.46		
10	64QAM	1	0	19.15	19.02	19.25	20.5	0
10	64QAM	1	25	19.25	19.14	19.44		
10	64QAM	1	49	19.04	19.05	19.40		
10	64QAM	25	0	19.26	19.29	19.24	20.5	0
10	64QAM	25	12	19.26	19.32	19.46		
10	64QAM	25	25	19.19	19.27	19.39		
10	64QAM	50	0	19.28	19.33	19.31		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.13	19.16	19.28	20.5	0
5	QPSK	1	12	19.19	19.23	19.33		
5	QPSK	1	24	19.17	18.96	19.22		
5	QPSK	12	0	19.18	19.22	19.37	20.5	0
5	QPSK	12	7	19.15	19.21	19.40		
5	QPSK	12	13	19.13	19.18	19.37		
5	QPSK	25	0	19.15	19.13	19.40		
5	16QAM	1	0	19.20	19.48	19.33	20.5	0
5	16QAM	1	12	19.16	19.36	19.49		
5	16QAM	1	24	19.11	19.45	19.33		
5	16QAM	12	0	19.23	19.24	19.40	20.5	0
5	16QAM	12	7	19.15	19.29	19.42		
5	16QAM	12	13	19.17	19.26	19.26		
5	16QAM	25	0	19.25	19.23	19.32		
5	64QAM	1	0	19.33	19.40	19.24	20.5	0
5	64QAM	1	12	19.35	19.22	19.44		
5	64QAM	1	24	19.14	19.00	19.45		
5	64QAM	12	0	19.23	19.30	19.39	20.5	0
5	64QAM	12	7	19.21	19.26	19.41		
5	64QAM	12	13	19.23	19.26	19.42		
5	64QAM	25	0	19.29	19.29	19.40		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.15	19.24	19.47	20.5	0
3	QPSK	1	8	19.15	19.20	19.46		
3	QPSK	1	14	19.10	19.08	19.36		
3	QPSK	8	0	19.17	19.19	19.31	20.5	0
3	QPSK	8	4	19.15	19.26	19.44		

3	QPSK	8	7	19.10	19.17	19.35		
3	QPSK	15	0	19.13	19.22	19.32		
3	16QAM	1	0	19.08	19.46	19.49	20.5	0
3	16QAM	1	8	19.09	19.47	19.05		
3	16QAM	1	14	19.28	19.45	19.23		
3	16QAM	8	0	19.23	19.26	19.37	20.5	0
3	16QAM	8	4	19.43	19.45	19.45		
3	16QAM	8	7	19.26	19.37	19.48		
3	16QAM	15	0	19.20	19.25	19.34		
3	64QAM	1	0	19.38	19.07	19.39	20.5	0
3	64QAM	1	8	19.14	19.00	19.23		
3	64QAM	1	14	19.10	19.08	19.42		
3	64QAM	8	0	19.36	19.45	19.46	20.5	0
3	64QAM	8	4	19.40	19.32	19.41		
3	64QAM	8	7	19.42	19.40	19.43		
3	64QAM	15	0	19.23	19.37	19.43		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.15	19.18	19.39	20.5	0
1.4	QPSK	1	3	19.14	19.20	19.49		
1.4	QPSK	1	5	19.13	19.12	19.40		
1.4	QPSK	3	0	19.10	19.15	19.35		
1.4	QPSK	3	1	19.18	19.19	19.32		
1.4	QPSK	3	3	19.16	19.18	19.36		
1.4	QPSK	6	0	19.05	19.15	19.46	20.5	0
1.4	16QAM	1	0	19.44	19.16	19.42	20.5	0
1.4	16QAM	1	3	19.20	19.22	19.25		
1.4	16QAM	1	5	19.22	19.33	19.21		
1.4	16QAM	3	0	19.27	19.22	19.31		
1.4	16QAM	3	1	19.27	19.24	19.41		
1.4	16QAM	3	3	19.18	19.21	19.41		
1.4	16QAM	6	0	19.22	19.15	19.25	20.5	0
1.4	64QAM	1	0	19.34	19.27	19.40	20.5	0
1.4	64QAM	1	3	19.21	19.42	19.37		
1.4	64QAM	1	5	19.29	19.19	19.15		
1.4	64QAM	3	0	19.27	19.39	19.47		
1.4	64QAM	3	1	19.23	19.25	19.30		
1.4	64QAM	3	3	19.20	19.36	19.38		
1.4	64QAM	6	0	19.18	19.12	19.35	20.5	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	22.35	22.68	22.39	23.5	0
20	QPSK	1	49	22.36	22.51	22.40		
20	QPSK	1	99	22.42	22.40	22.46		
20	QPSK	50	0	22.00	22.08	22.07	23	0.5
20	QPSK	50	24	21.98	22.13	21.97		
20	QPSK	50	50	22.00	22.07	22.08		
20	QPSK	100	0	21.96	22.01	22.00		
20	16QAM	1	0	21.98	22.23	22.13	23	0.5
20	16QAM	1	49	22.25	22.25	22.01		
20	16QAM	1	99	22.25	21.86	22.20		
20	16QAM	50	0	21.08	21.23	21.10	22	1.5
20	16QAM	50	24	21.09	21.26	21.14		
20	16QAM	50	50	21.15	21.21	21.15		
20	16QAM	100	0	21.09	21.18	21.04		
20	64QAM	1	0	21.09	21.03	21.03	22	1.5
20	64QAM	1	49	21.06	21.05	21.08		
20	64QAM	1	99	21.00	21.02	20.95		
20	64QAM	50	0	20.10	20.17	20.11	21	2.5
20	64QAM	50	24	20.05	20.20	20.02		
20	64QAM	50	50	20.06	20.13	20.16		
20	64QAM	100	0	19.96	20.15	20.04		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.34	22.63	22.43	23.5	0
15	QPSK	1	37	22.48	22.67	22.61		
15	QPSK	1	74	22.39	22.41	22.41		
15	QPSK	36	0	21.97	22.05	21.92	23	0.5
15	QPSK	36	20	21.99	22.07	22.09		
15	QPSK	36	39	21.95	22.04	21.99		
15	QPSK	75	0	21.94	22.01	21.96		
15	16QAM	1	0	22.16	22.15	22.16	23	0.5
15	16QAM	1	37	22.25	22.21	22.19		
15	16QAM	1	74	22.20	22.17	22.18		
15	16QAM	36	0	21.02	21.20	21.06	22	1.5
15	16QAM	36	20	21.07	21.16	21.11		
15	16QAM	36	39	20.99	21.08	21.04		
15	16QAM	75	0	21.02	21.19	21.06		
15	64QAM	1	0	20.94	21.37	21.34	22	1.5
15	64QAM	1	37	21.33	21.18	21.05		
15	64QAM	1	74	21.00	21.08	21.13		
15	64QAM	36	0	20.07	20.22	20.15	21	2.5
15	64QAM	36	20	20.02	20.23	20.23		
15	64QAM	36	39	20.01	20.13	20.15		
15	64QAM	75	0	20.01	20.17	19.96		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.26	22.57	22.56	23.5	0
10	QPSK	1	25	22.21	22.52	22.45		
10	QPSK	1	49	22.27	22.49	22.38		
10	QPSK	25	0	21.81	22.07	22.06	23	0.5
10	QPSK	25	12	21.85	22.05	22.11		

10	QPSK	25	25	21.86	22.03	21.97		
10	QPSK	50	0	21.89	22.09	21.99		
10	16QAM	1	0	22.27	22.02	22.05	23	0.5
10	16QAM	1	25	22.11	22.18	22.37		
10	16QAM	1	49	22.04	22.18	22.31		
10	16QAM	25	0	20.92	21.07	21.05	22	1.5
10	16QAM	25	12	20.90	21.16	21.23		
10	16QAM	25	25	20.96	21.14	20.99		
10	16QAM	50	0	20.96	21.18	21.13		
10	64QAM	1	0	21.32	21.43	21.42	22	1.5
10	64QAM	1	25	21.10	21.30	21.35		
10	64QAM	1	49	21.18	21.16	21.37		
10	64QAM	25	0	19.94	20.23	20.16	21	2.5
10	64QAM	25	12	20.00	20.23	20.25		
10	64QAM	25	25	20.03	20.14	20.13		
10	64QAM	50	0	19.99	20.20	20.16		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.26	22.53	22.51	23.5	0
5	QPSK	1	12	22.27	22.57	22.43		
5	QPSK	1	24	22.27	22.46	22.44		
5	QPSK	12	0	21.79	21.99	22.02	23	0.5
5	QPSK	12	7	21.81	22.06	22.10		
5	QPSK	12	13	21.81	22.02	21.99		
5	QPSK	25	0	21.72	22.09	22.09		
5	16QAM	1	0	22.32	22.20	22.10	23	0.5
5	16QAM	1	12	21.86	22.28	22.21		
5	16QAM	1	24	22.04	22.35	21.99		
5	16QAM	12	0	20.91	21.17	21.08	22	1.5
5	16QAM	12	7	20.83	21.14	21.18		
5	16QAM	12	13	20.95	21.10	20.99		
5	16QAM	25	0	20.83	21.18	21.16		
5	64QAM	1	0	20.96	21.13	21.16	22	1.5
5	64QAM	1	12	21.11	21.01	21.21		
5	64QAM	1	24	20.94	21.09	21.06		
5	64QAM	12	0	19.87	20.20	20.15	21	2.5
5	64QAM	12	7	19.92	20.15	20.13		
5	64QAM	12	13	19.93	20.18	20.12		
5	64QAM	25	0	19.86	20.22	20.08		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.20	22.53	22.57	23.5	0
3	QPSK	1	8	22.31	22.56	22.59		
3	QPSK	1	14	22.20	22.58	22.45		
3	QPSK	8	0	21.80	22.05	21.94	23	0.5
3	QPSK	8	4	21.76	22.03	22.02		
3	QPSK	8	7	21.73	22.04	21.99		
3	QPSK	15	0	21.73	22.10	21.99		
3	16QAM	1	0	22.10	22.25	22.23	23	0.5
3	16QAM	1	8	22.07	22.30	22.27		
3	16QAM	1	14	22.04	22.39	22.16		
3	16QAM	8	0	20.97	21.29	21.15	22	1.5
3	16QAM	8	4	20.91	21.23	21.09		
3	16QAM	8	7	20.91	21.18	20.99		
3	16QAM	15	0	20.89	21.07	21.19		
3	64QAM	1	0	21.00	21.08	21.02	22	1.5

3	64QAM	1	8	20.88	21.09	21.26		
3	64QAM	1	14	21.09	20.97	21.13		
3	64QAM	8	0	19.93	20.15	20.06	21	2.5
3	64QAM	8	4	20.02	20.22	20.05		
3	64QAM	8	7	19.94	20.14	20.06		
3	64QAM	15	0	19.90	20.18	20.17		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.29	22.43	22.33	23.5	0
1.4	QPSK	1	3	22.28	22.51	22.48		
1.4	QPSK	1	5	22.29	22.52	22.46		
1.4	QPSK	3	0	22.22	22.54	22.43		
1.4	QPSK	3	1	22.27	22.58	22.51		
1.4	QPSK	3	3	22.25	22.49	22.51		
1.4	QPSK	6	0	21.72	22.00	21.97	23	0.5
1.4	16QAM	1	0	22.24	22.56	22.28	23	0.5
1.4	16QAM	1	3	22.40	22.23	22.09		
1.4	16QAM	1	5	22.20	22.26	22.27		
1.4	16QAM	3	0	21.66	21.93	21.99		
1.4	16QAM	3	1	21.63	21.96	21.94		
1.4	16QAM	3	3	21.70	22.08	21.96		
1.4	16QAM	6	0	20.86	21.17	21.13	22	1.5
1.4	64QAM	1	0	21.17	21.19	21.07	22	1.5
1.4	64QAM	1	3	21.34	21.12	21.29		
1.4	64QAM	1	5	21.05	20.95	21.31		
1.4	64QAM	3	0	21.16	21.06	21.04		
1.4	64QAM	3	1	20.81	21.00	21.23		
1.4	64QAM	3	3	21.04	21.12	21.16		
1.4	64QAM	6	0	19.80	20.14	19.98	21	2.5

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.16	22.26	22.00	23	0
20	QPSK	1	49	22.10	21.88	21.91		
20	QPSK	1	99	21.94	21.83	22.00		
20	QPSK	50	0	22.20	22.15	21.94	23	0
20	QPSK	50	24	22.14	21.79	21.89		
20	QPSK	50	50	21.96	21.75	21.92		
20	QPSK	100	0	22.00	22.11	21.89		
20	16QAM	1	0	22.14	22.15	22.11	23	0
20	16QAM	1	49	22.13	22.18	22.10		
20	16QAM	1	99	22.12	22.14	22.10		
20	16QAM	50	0	21.38	20.95	20.93	22	1
20	16QAM	50	24	21.28	20.97	20.95		
20	16QAM	50	50	21.16	20.98	20.90		
20	16QAM	100	0	21.18	20.83	20.96		
20	64QAM	1	0	21.03	21.35	21.03	22	1
20	64QAM	1	49	21.22	20.93	21.40		
20	64QAM	1	99	20.97	20.99	21.06		
20	64QAM	50	0	20.26	19.96	19.95	21	2
20	64QAM	50	24	20.17	19.90	19.94		
20	64QAM	50	50	20.10	19.89	19.96		
20	64QAM	100	0	20.21	19.91	19.98		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.15	21.94	21.97	23	0
15	QPSK	1	37	22.12	21.98	21.93		
15	QPSK	1	74	21.99	21.86	21.82		
15	QPSK	36	0	22.13	21.83	21.83	23	0
15	QPSK	36	20	22.13	21.82	21.85		
15	QPSK	36	39	22.07	21.72	21.92		
15	QPSK	75	0	22.17	21.75	21.88		
15	16QAM	1	0	22.10	22.04	22.11	23	0
15	16QAM	1	37	22.13	22.06	22.14		
15	16QAM	1	74	22.03	22.11	22.13		
15	16QAM	36	0	21.38	20.90	20.91	22	1
15	16QAM	36	20	21.19	20.88	20.96		
15	16QAM	36	39	21.16	20.90	21.01		
15	16QAM	75	0	21.21	20.85	21.05		
15	64QAM	1	0	21.09	21.05	21.00	22	1
15	64QAM	1	37	20.73	20.85	20.94		
15	64QAM	1	74	20.77	20.62	20.63		
15	64QAM	36	0	20.25	19.91	20.01	21	2
15	64QAM	36	20	20.31	19.94	19.94		
15	64QAM	36	39	20.29	19.85	19.93		
15	64QAM	75	0	20.25	19.84	19.98		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.10	21.87	21.92	23	0
10	QPSK	1	25	22.12	21.82	22.06		
10	QPSK	1	49	22.16	21.81	21.88		
10	QPSK	25	0	22.14	21.81	21.84	23	0
10	QPSK	25	12	22.15	21.76	21.91		

10	QPSK	25	25	22.13	21.75	21.82		
10	QPSK	50	0	22.20	21.77	21.81		
10	16QAM	1	0	21.61	21.93	21.79	23	0
10	16QAM	1	25	21.92	21.51	21.67		
10	16QAM	1	49	21.60	21.97	21.56		
10	16QAM	25	0	21.22	20.85	21.00	22	1
10	16QAM	25	12	21.25	20.83	20.97		
10	16QAM	25	25	21.21	20.93	20.99		
10	16QAM	50	0	21.37	20.94	20.99		
10	64QAM	1	0	20.75	20.71	20.72	22	1
10	64QAM	1	25	20.84	20.95	20.87		
10	64QAM	1	49	20.90	21.14	20.80		
10	64QAM	25	0	20.17	19.87	19.88	21	2
10	64QAM	25	12	20.20	19.84	20.02		
10	64QAM	25	25	20.26	19.91	19.90		
10	64QAM	50	0	20.23	19.87	19.95		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.20	21.86	21.93	23	0
5	QPSK	1	12	22.14	21.98	22.02		
5	QPSK	1	24	22.09	21.81	21.95		
5	QPSK	12	0	22.12	21.79	21.90	23	0
5	QPSK	12	7	22.12	21.79	21.89		
5	QPSK	12	13	22.09	21.76	21.92		
5	QPSK	25	0	22.06	21.70	21.91		
5	16QAM	1	0	21.91	21.74	22.14	23	0
5	16QAM	1	12	21.77	22.07	21.79		
5	16QAM	1	24	22.19	22.14	21.77		
5	16QAM	12	0	21.17	20.85	20.93	22	1
5	16QAM	12	7	21.19	20.88	20.98		
5	16QAM	12	13	21.24	20.79	20.99		
5	16QAM	25	0	21.24	20.91	20.92		
5	64QAM	1	0	20.79	21.09	21.19	22	1
5	64QAM	1	12	21.12	21.00	20.92		
5	64QAM	1	24	20.85	21.28	20.82		
5	64QAM	12	0	20.08	19.86	19.97	21	2
5	64QAM	12	7	20.00	19.72	19.83		
5	64QAM	12	13	20.06	19.90	19.98		
5	64QAM	25	0	20.21	19.79	19.91		

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

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

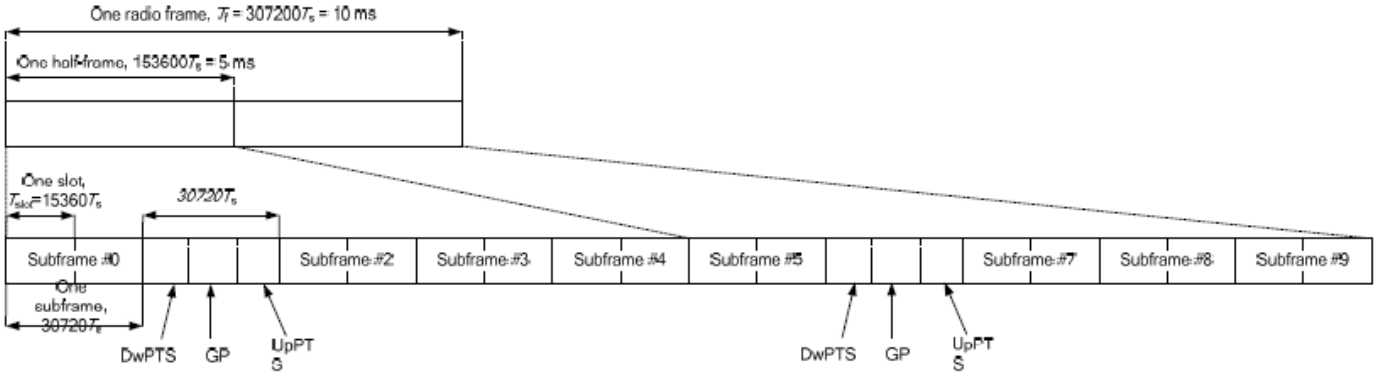


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

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

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

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

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

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

State 1

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	23.03	22.95	23.20	24	0
20	QPSK	1	49	22.94	22.98	23.19		
20	QPSK	1	99	22.90	22.90	23.10		
20	QPSK	50	0	22.02	22.02	22.12	23	1
20	QPSK	50	24	22.00	22.04	22.10		
20	QPSK	50	50	21.98	21.95	22.11		
20	QPSK	100	0	22.03	21.97	22.04		
20	16QAM	1	0	22.64	22.65	22.77	23	1
20	16QAM	1	49	22.64	22.57	22.78		
20	16QAM	1	99	22.47	22.49	22.69		
20	16QAM	50	0	21.21	21.12	21.28	22	2
20	16QAM	50	24	21.20	21.13	21.19		
20	16QAM	50	50	21.07	21.05	21.30		
20	16QAM	100	0	21.08	21.12	21.19		
20	64QAM	1	0	21.03	21.05	21.44	22	2
20	64QAM	1	49	20.97	21.00	21.11		
20	64QAM	1	99	21.27	20.95	21.12		
20	64QAM	50	0	20.17	20.17	20.23	21	3
20	64QAM	50	24	20.15	20.19	20.24		
20	64QAM	50	50	20.05	20.11	20.27		
20	64QAM	100	0	20.16	20.09	20.26		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.04	23.05	23.13	24	0
15	QPSK	1	37	22.93	22.92	23.15		
15	QPSK	1	74	23.00	22.98	23.12		
15	QPSK	36	0	21.98	21.94	22.07	23	1
15	QPSK	36	20	21.97	21.95	22.17		
15	QPSK	36	39	21.97	21.89	22.13		
15	QPSK	75	0	21.96	21.94	22.07		
15	16QAM	1	0	22.66	22.61	22.68	23	1
15	16QAM	1	37	22.60	22.58	22.76		
15	16QAM	1	74	22.58	22.55	22.78		
15	16QAM	36	0	21.19	21.15	21.17	22	2
15	16QAM	36	20	21.18	21.16	21.28		
15	16QAM	36	39	21.09	21.10	21.24		
15	16QAM	75	0	21.12	21.10	21.13		
15	64QAM	1	0	21.07	21.01	21.35	22	2
15	64QAM	1	37	21.22	20.91	21.18		
15	64QAM	1	74	20.91	20.99	21.12		
15	64QAM	36	0	20.26	20.20	20.23	21	3
15	64QAM	36	20	20.15	20.12	20.35		
15	64QAM	36	39	20.16	20.07	20.30		
15	64QAM	75	0	20.10	20.07	20.21		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	23.04	22.98	23.13	24	0
10	QPSK	1	25	23.02	22.94	23.10		
10	QPSK	1	49	22.98	22.98	23.08		
10	QPSK	25	0	22.02	21.98	22.21	23	1

10	QPSK	25	12	22.00	21.94	22.21		
10	QPSK	25	25	21.92	21.96	22.20		
10	QPSK	50	0	21.99	21.99	22.18		
10	16QAM	1	0	22.57	22.57	22.79	23	1
10	16QAM	1	25	22.37	22.64	22.79		
10	16QAM	1	49	22.57	22.51	22.77		
10	16QAM	25	0	21.12	21.08	21.32	22	2
10	16QAM	25	12	21.10	21.14	21.32		
10	16QAM	25	25	21.12	21.06	21.32		
10	16QAM	50	0	21.18	21.17	21.27		
10	64QAM	1	0	21.06	20.96	21.21	22	2
10	64QAM	1	25	21.05	20.95	21.20		
10	64QAM	1	49	21.01	20.94	21.10		
10	64QAM	25	0	20.14	20.09	20.35	21	3
10	64QAM	25	12	20.12	20.26	20.34		
10	64QAM	25	25	20.25	20.09	20.35		
10	64QAM	50	0	20.13	20.12	20.35		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	22.94	22.90	23.16	24	0
5	QPSK	1	12	22.85	22.92	23.19		
5	QPSK	1	24	22.91	22.95	23.09		
5	QPSK	12	0	22.02	21.95	22.16	23	1
5	QPSK	12	7	21.99	21.98	22.24		
5	QPSK	12	13	21.98	21.91	22.13		
5	QPSK	25	0	22.02	22.00	22.17		
5	16QAM	1	0	22.63	22.52	22.76	23	1
5	16QAM	1	12	22.52	22.54	22.79		
5	16QAM	1	24	22.53	22.56	22.73		
5	16QAM	12	0	21.03	20.97	21.17	22	2
5	16QAM	12	7	21.14	21.01	21.25		
5	16QAM	12	13	21.01	21.04	21.25		
5	16QAM	25	0	21.15	21.13	21.25		
5	64QAM	1	0	21.42	20.94	21.17	22	2
5	64QAM	1	12	20.97	20.92	21.23		
5	64QAM	1	24	20.99	20.93	21.19		
5	64QAM	12	0	20.09	20.11	20.29	21	3
5	64QAM	12	7	20.20	20.07	20.42		
5	64QAM	12	13	20.19	20.10	20.29		
5	64QAM	25	0	20.16	20.12	20.33		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Low Ch. / Freq.	Power Middle High Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				40140	40400	40670	41140		
Frequency (MHz)				2545	2571	2598	2645		
20	QPSK	1	0	23.15	23.05	23.01	23.19	24	0
20	QPSK	1	49	23.11	23.08	23.08	22.97		
20	QPSK	1	99	23.07	23.04	22.93	22.98		
20	QPSK	50	0	22.25	22.13	22.14	22.26	23	1
20	QPSK	50	24	22.16	22.07	22.03	22.10		
20	QPSK	50	50	22.11	22.11	22.13	22.14		
20	QPSK	100	0	22.11	22.10	22.12	22.13		
20	16QAM	1	0	22.84	22.77	22.72	22.63	23	1
20	16QAM	1	49	22.71	22.68	22.67	22.54		
20	16QAM	1	99	22.66	22.59	22.62	22.64		
20	16QAM	50	0	21.34	21.30	21.18	21.25	22	2
20	16QAM	50	24	21.35	21.28	21.20	21.25		
20	16QAM	50	50	21.20	21.20	21.17	21.21		
20	16QAM	100	0	21.27	21.24	21.27	21.06		
20	64QAM	1	0	21.23	21.15	21.21	21.37	22	2
20	64QAM	1	49	21.23	21.08	21.09	21.09		
20	64QAM	1	99	21.09	21.39	21.36	21.08		
20	64QAM	50	0	20.39	20.34	20.36	20.28	21	3
20	64QAM	50	24	20.30	20.31	20.24	20.29		
20	64QAM	50	50	20.26	20.26	20.21	20.25		
20	64QAM	100	0	20.21	20.20	20.27	20.10		
Channel				40115	40395	40685	41165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2542.5	2570.5	2599.5	2647.5		
15	QPSK	1	0	23.17	23.16	23.18	23.10	24	0
15	QPSK	1	37	23.09	23.11	23.01	23.03		
15	QPSK	1	74	23.11	23.09	23.06	23.01		
15	QPSK	36	0	22.22	22.13	22.24	22.09	23	1
15	QPSK	36	20	22.21	22.12	22.25	22.09		
15	QPSK	36	39	22.14	22.07	22.22	22.02		
15	QPSK	75	0	22.21	22.14	22.20	22.12		
15	16QAM	1	0	22.84	22.72	22.87	22.71	23	1
15	16QAM	1	37	22.73	22.66	22.65	22.69		
15	16QAM	1	74	22.78	22.66	22.82	22.53		
15	16QAM	36	0	21.33	21.23	21.36	21.28	22	2
15	16QAM	36	20	21.32	21.35	21.43	21.30		
15	16QAM	36	39	21.25	21.28	21.18	21.21		
15	16QAM	75	0	21.28	21.30	21.26	21.19		
15	64QAM	1	0	21.24	21.32	21.17	21.13	22	2
15	64QAM	1	37	21.13	21.17	21.15	21.12		
15	64QAM	1	74	21.14	21.16	21.24	21.30		
15	64QAM	36	0	20.39	20.29	20.32	20.25	21	3
15	64QAM	36	20	20.38	20.28	20.41	20.27		
15	64QAM	36	39	20.31	20.24	20.28	20.19		
15	64QAM	75	0	20.35	20.24	20.24	20.26		
Channel				40090	40390	40690	41190	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2540	2570	2600	2650		
10	QPSK	1	0	23.17	23.18	23.15	23.05	24	0
10	QPSK	1	25	23.12	23.15	23.12	23.08		
10	QPSK	1	49	23.11	23.07	23.04	22.99		
10	QPSK	25	0	22.13	22.04	22.19	22.04	23	1
10	QPSK	25	12	22.18	22.12	22.25	22.06		

10	QPSK	25	25	22.13	22.06	22.21	22.02		
10	QPSK	50	0	22.20	22.12	22.07	22.09		
10	16QAM	1	0	22.74	22.77	22.63	22.70	23	1
10	16QAM	1	25	22.79	22.65	22.90	22.66		
10	16QAM	1	49	22.69	22.61	22.64	22.61		
10	16QAM	25	0	21.33	21.28	21.25	21.23	22	2
10	16QAM	25	12	21.30	21.32	21.37	21.27		
10	16QAM	25	25	21.35	21.28	21.35	21.23		
10	16QAM	50	0	21.29	21.33	21.20	21.19		
10	64QAM	1	0	21.23	21.15	21.13	21.06	22	2
10	64QAM	1	25	21.19	21.52	21.08	21.09		
10	64QAM	1	49	21.13	21.10	21.23	21.07		
10	64QAM	25	0	20.35	20.27	20.25	20.27	21	3
10	64QAM	25	12	20.32	20.25	20.39	20.22		
10	64QAM	25	25	20.31	20.21	20.39	20.18		
10	64QAM	50	0	20.35	20.27	20.47	20.26		
Channel				40065	40385	40705	41215	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2537.5	2569.5	2601.5	2652.5		
5	QPSK	1	0	23.12	23.10	23.12	23.07	24	0
5	QPSK	1	12	23.09	23.12	23.12	22.98		
5	QPSK	1	24	23.10	23.04	23.06	22.99		
5	QPSK	12	0	22.13	22.08	22.17	22.03	23	1
5	QPSK	12	7	22.23	22.15	22.18	22.12		
5	QPSK	12	13	22.19	22.09	22.23	22.09		
5	QPSK	25	0	22.14	22.05	22.06	22.03		
5	16QAM	1	0	22.73	22.70	22.72	22.65	23	1
5	16QAM	1	12	22.76	22.70	22.88	22.65		
5	16QAM	1	24	22.76	22.72	22.77	22.67		
5	16QAM	12	0	21.15	21.19	21.10	21.04	22	2
5	16QAM	12	7	21.25	21.16	21.28	21.13		
5	16QAM	12	13	21.22	21.10	21.29	21.11		
5	16QAM	25	0	21.25	21.16	21.32	21.14		
5	64QAM	1	0	21.21	21.09	21.30	21.07	22	2
5	64QAM	1	12	21.15	21.11	21.31	20.99		
5	64QAM	1	24	21.16	21.34	21.23	21.35		
5	64QAM	12	0	20.25	20.18	20.28	20.19	21	3
5	64QAM	12	7	20.25	20.26	20.30	20.26		
5	64QAM	12	13	20.30	20.21	20.31	20.13		
5	64QAM	25	0	20.36	20.20	20.27	20.21		

State 3

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	21.36	21.33	21.54	22.5	0
20	QPSK	1	49	21.31	21.23	21.42		
20	QPSK	1	99	21.25	21.20	21.38		
20	QPSK	50	0	21.37	21.34	21.47	22.5	0
20	QPSK	50	24	21.37	21.36	21.41		
20	QPSK	50	50	21.35	21.31	21.46		
20	QPSK	100	0	21.39	21.33	21.41		
20	16QAM	1	0	21.51	21.48	21.47	22.5	0
20	16QAM	1	49	21.44	21.43	21.46		
20	16QAM	1	99	21.39	21.35	21.51		
20	16QAM	50	0	20.95	20.93	21.03	22	0.5
20	16QAM	50	24	20.94	20.92	21.00		
20	16QAM	50	50	20.91	20.87	21.06		
20	16QAM	100	0	20.94	20.90	20.99		
20	64QAM	1	0	21.22	21.23	21.28	22	0.5
20	64QAM	1	49	21.14	21.10	21.25		
20	64QAM	1	99	21.10	21.06	21.20		
20	64QAM	50	0	19.92	19.87	19.96	21	1.5
20	64QAM	50	24	19.90	19.87	19.93		
20	64QAM	50	50	19.87	19.82	19.99		
20	64QAM	100	0	19.97	19.94	20.02		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	21.39	21.40	21.48	22.5	0
15	QPSK	1	37	21.31	21.33	21.48		
15	QPSK	1	74	21.34	21.37	21.51		
15	QPSK	36	0	21.36	21.39	21.43	22.5	0
15	QPSK	36	20	21.37	21.39	21.45		
15	QPSK	36	39	21.31	21.33	21.48		
15	QPSK	75	0	21.39	21.36	21.44		
15	16QAM	1	0	21.50	21.45	21.43	22.5	0
15	16QAM	1	37	21.48	21.45	21.40		
15	16QAM	1	74	21.50	21.49	21.41		
15	16QAM	36	0	20.89	20.90	20.99	22	0.5
15	16QAM	36	20	20.94	20.94	21.09		
15	16QAM	36	39	20.89	20.88	21.03		
15	16QAM	75	0	20.95	20.97	21.02		
15	64QAM	1	0	21.27	21.26	21.31	22	0.5
15	64QAM	1	37	21.17	21.18	21.33		
15	64QAM	1	74	21.21	21.18	21.34		
15	64QAM	36	0	19.94	19.95	20.02	21	1.5
15	64QAM	36	20	19.95	19.95	20.11		
15	64QAM	36	39	19.91	19.89	20.06		
15	64QAM	75	0	19.95	19.96	20.04		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	21.35	21.35	21.40	22.5	0
10	QPSK	1	25	21.34	21.34	21.51		
10	QPSK	1	49	21.35	21.35	21.53		
10	QPSK	25	0	21.35	21.36	21.53	22.5	0

10	QPSK	25	12	21.39	21.39	21.50		
10	QPSK	25	25	21.34	21.36	21.52		
10	QPSK	50	0	21.38	21.40	21.48		
10	16QAM	1	0	21.50	21.52	21.51	22.5	0
10	16QAM	1	25	21.47	21.49	21.47		
10	16QAM	1	49	21.48	21.48	21.43		
10	16QAM	25	0	20.90	20.92	21.14	22	0.5
10	16QAM	25	12	20.93	20.97	21.13		
10	16QAM	25	25	20.92	20.91	21.09		
10	16QAM	50	0	20.96	20.97	21.14		
10	64QAM	1	0	21.23	21.21	20.81	22	0.5
10	64QAM	1	25	21.19	21.19	20.76		
10	64QAM	1	49	21.19	21.19	20.77		
10	64QAM	25	0	19.85	19.88	20.01	21	1.5
10	64QAM	25	12	19.89	19.91	20.09		
10	64QAM	25	25	19.89	19.89	20.04		
10	64QAM	50	0	19.91	20.00	20.04		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	21.34	21.33	21.52	22.5	0
5	QPSK	1	12	21.34	21.31	21.50		
5	QPSK	1	24	21.29	21.30	21.46		
5	QPSK	12	0	21.38	21.36	21.46	22.5	0
5	QPSK	12	7	21.40	21.36	21.50		
5	QPSK	12	13	21.36	21.36	21.53		
5	QPSK	25	0	21.35	21.35	21.52		
5	16QAM	1	0	21.50	21.47	21.44	22.5	0
5	16QAM	1	12	21.45	21.47	21.40		
5	16QAM	1	24	21.47	21.49	21.42		
5	16QAM	12	0	20.88	20.87	21.06	22	0.5
5	16QAM	12	7	20.91	20.86	21.06		
5	16QAM	12	13	20.89	20.90	21.04		
5	16QAM	25	0	20.92	20.93	21.10		
5	64QAM	1	0	20.60	20.60	20.75	22	0.5
5	64QAM	1	12	20.58	20.58	20.78		
5	64QAM	1	24	20.57	20.59	20.75		
5	64QAM	12	0	19.96	19.96	20.16	21	1.5
5	64QAM	12	7	19.97	19.98	20.18		
5	64QAM	12	13	19.97	20.00	20.17		
5	64QAM	25	0	19.99	19.95	20.15		

<LTE Band 40>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Low Ch. / Freq.	Power Middle High Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				40140	40400	40670	41140		
Frequency (MHz)				2545	2571	2598	2645		
20	QPSK	1	0	21.44	21.42	21.42	21.64	22.5	0
20	QPSK	1	49	21.35	21.34	21.35	21.44		
20	QPSK	1	99	21.35	21.34	21.29	21.43		
20	QPSK	50	0	21.48	21.43	21.47	21.56	22.5	0
20	QPSK	50	24	21.43	21.34	21.42	21.54		
20	QPSK	50	50	21.44	21.38	21.41	21.53		
20	QPSK	100	0	21.42	21.42	21.43	21.45		
20	16QAM	1	0	21.60	21.62	21.58	21.61	22.5	0
20	16QAM	1	49	21.53	21.53	21.49	21.63		
20	16QAM	1	99	21.49	21.48	21.44	21.63		
20	16QAM	50	0	21.08	21.07	21.04	21.09	22	0.5
20	16QAM	50	24	21.07	21.05	21.04	21.15		
20	16QAM	50	50	21.03	21.02	21.02	21.13		
20	16QAM	100	0	21.05	21.02	21.02	21.03		
20	64QAM	1	0	20.76	20.70	20.70	20.74	22	0.5
20	64QAM	1	49	20.63	20.61	20.59	20.71		
20	64QAM	1	99	20.59	20.58	20.56	20.72		
20	64QAM	50	0	20.07	20.07	20.06	20.06	21	1.5
20	64QAM	50	24	20.07	20.05	20.04	20.14		
20	64QAM	50	50	20.04	20.01	20.01	20.10		
20	64QAM	100	0	20.07	20.03	20.03	20.04		
Channel				40115	40395	40685	41165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2542.5	2570.5	2599.5	2647.5		
15	QPSK	1	0	21.35	21.41	21.43	21.51	22.5	0
15	QPSK	1	37	21.30	21.36	21.35	21.46		
15	QPSK	1	74	21.29	21.40	21.37	21.50		
15	QPSK	36	0	21.31	21.40	21.41	21.52	22.5	0
15	QPSK	36	20	21.35	21.39	21.39	21.53		
15	QPSK	36	39	21.27	21.37	21.35	21.45		
15	QPSK	75	0	21.28	21.38	21.37	21.51		
15	16QAM	1	0	21.51	21.55	21.57	21.55	22.5	0
15	16QAM	1	37	21.43	21.49	21.47	21.59		
15	16QAM	1	74	21.47	21.55	21.49	21.63		
15	16QAM	36	0	20.89	20.95	20.97	21.10	22	0.5
15	16QAM	36	20	20.89	20.95	20.97	21.09		
15	16QAM	36	39	20.84	20.92	20.91	21.06		
15	16QAM	75	0	20.90	20.99	20.99	21.12		
15	64QAM	1	0	20.60	20.68	20.69	20.78	22	0.5
15	64QAM	1	37	20.57	20.58	20.62	20.70		
15	64QAM	1	74	20.55	20.62	20.61	20.75		
15	64QAM	36	0	19.90	20.02	20.01	20.11	21	1.5
15	64QAM	36	20	19.91	20.00	20.01	20.14		
15	64QAM	36	39	19.89	19.97	19.97	20.09		
15	64QAM	75	0	19.93	20.02	20.03	20.13		
Channel				40090	40390	40690	41190	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2540	2570	2600	2650		
10	QPSK	1	0	21.31	21.36	21.39	21.48	22.5	0
10	QPSK	1	25	21.25	21.34	21.36	21.44		
10	QPSK	1	49	21.30	21.38	21.37	21.49		
10	QPSK	25	0	21.32	21.37	21.39	21.50	22.5	0
10	QPSK	25	12	21.33	21.37	21.40	21.50		

10	QPSK	25	25	21.31	21.36	21.39	21.47		
10	QPSK	50	0	21.34	21.39	21.40	21.50		
10	16QAM	1	0	21.48	21.54	21.56	21.54	22.5	0
10	16QAM	1	25	21.46	21.49	21.51	21.63		
10	16QAM	1	49	21.44	21.50	21.48	21.62		
10	16QAM	25	0	20.93	20.99	20.98	21.11	22	0.5
10	16QAM	25	12	20.94	20.99	21.00	21.13		
10	16QAM	25	25	20.90	20.97	20.97	21.08		
10	16QAM	50	0	20.94	21.01	21.02	21.14		
10	64QAM	1	0	20.60	20.65	20.69	20.79	22	0.5
10	64QAM	1	25	20.56	20.60	20.61	20.74		
10	64QAM	1	49	20.54	20.62	20.63	20.75		
10	64QAM	25	0	19.97	20.05	20.03	20.14	21	1.5
10	64QAM	25	12	19.97	20.06	20.09	20.17		
10	64QAM	25	25	19.97	20.02	20.02	20.14		
10	64QAM	50	0	19.95	20.00	19.98	20.14		
Channel				40065	40385	40705	41215	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2537.5	2569.5	2601.5	2652.5		
5	QPSK	1	0	21.28	21.33	21.35	21.45	22.5	0
5	QPSK	1	12	21.28	21.33	21.33	21.42		
5	QPSK	1	24	21.24	21.31	21.30	21.41		
5	QPSK	12	0	21.31	21.37	21.35	21.49	22.5	0
5	QPSK	12	7	21.31	21.39	21.37	21.50		
5	QPSK	12	13	21.32	21.38	21.38	21.50		
5	QPSK	25	0	21.29	21.36	21.35	21.47		
5	16QAM	1	0	21.41	21.48	21.48	21.57	22.5	0
5	16QAM	1	12	21.44	21.47	21.49	21.60		
5	16QAM	1	24	21.44	21.49	21.50	21.60		
5	16QAM	12	0	20.84	20.89	20.91	20.98	22	0.5
5	16QAM	12	7	20.86	20.94	20.91	21.02		
5	16QAM	12	13	20.85	20.90	20.91	21.04		
5	16QAM	25	0	20.90	20.95	20.96	21.07		
5	64QAM	1	0	20.56	20.60	20.61	20.71	22	0.5
5	64QAM	1	12	20.55	20.62	20.61	20.71		
5	64QAM	1	24	20.55	20.60	20.66	20.72		
5	64QAM	12	0	19.94	19.98	20.03	20.12	21	1.5
5	64QAM	12	7	19.98	20.03	20.01	20.12		
5	64QAM	12	13	19.93	20.03	20.04	20.12		
5	64QAM	25	0	19.96	20.03	20.02	20.12		

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.
3. All permutations exist. No restrictions on Pcell & Scell combinations. Only LTE Band 29A is limited to Scell.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	4A-5A		9	4A-7C	
2	4A-7A	3CC-9			
3	7A-7A				
4	7B				
5	7C	3CC-9			
6	38C				
7	41A-41A				
8	41C				

<Power verification when LTE Carrier Aggregation Active>

General Note:

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

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

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

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

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

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

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

<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)	Without CA Tx. Power (dBm)
Inter-Band		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	23.02	23.15
			Band 5	10M	844	20600	QPSK	1	0	Band 4	20M	2132.5	2175	22.89	23.05
		CA_4A-7A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	23.07	23.15
			Band 7	20M	2535	21100	QPSK	1	0	Band 4	20M	2132.5	2175	22.93	23.07
Inter-Band	Non-Configuration	CA_7B	Band 7	15M	2535	21100	QPSK	1	0	Band 7	5M	2664.3	3193	22.99	23.07
		CA_38C	Band 38	20M	2585.1	37901	QPSK	1	0	Band 38	20M	2604.9	38099	23.11	23.20
		CA_41C	Band 41	20M	2645	41140	QPSK	1	0	Band 41	20M	2664.8	41338	23.08	23.19
	Configuration	CA_7A-7A	Band 7	20M	2535	21100	QPSK	1	0	Band 7	5M	2687.5	3425	23.00	23.07
		CA_41A-41A	Band 41	20M	2645	41140	QPSK	1	0	Band 41	5M	2537.5	40065	23.01	23.19

<Three Carrier power verification>

Configure	CA Configuration (BCS)	PCC							SCC1				SCC2				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	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band	CA_4A-7C	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	Band 7	20M	2674.8	3298	23.1	23.15
		Band 7	20M	2535	21100	QPSK	1	0	Band 7	20M	2674.8	3298	Band 4	20M	2132.5	2175	23.03	23.07

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

General Note:

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

State 1

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.53	16.00	100.00
		6	2437	16.04	16.50	
		11	2462	18.12	18.50	
	802.11g 6Mbps	1	2412	15.80	16.00	98.28
		6	2437	16.89	17.00	
		11	2462	14.44	15.00	
	802.11n-HT20 MCS0	1	2412	15.62	16.00	98.16
		6	2437	16.74	17.00	
		11	2462	13.78	14.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.73	18.50	98.28
		40	5200	16.71	18.50	
		44	5220	16.60	18.50	
		48	5240	16.55	18.50	
	802.11n-HT20 MCS0	36	5180	16.63	18.50	98.16
		40	5200	16.16	18.00	
		44	5220	16.51	18.50	
		48	5240	16.47	18.00	
	802.11n-HT40 MCS0	38	5190	13.42	14.00	96.32
		46	5230	16.33	17.50	
	802.11ac-VHT20 MCS0	36	5180	16.61	18.50	98.16
		40	5200	16.17	18.00	
		44	5220	16.39	18.00	
		48	5240	16.31	18.00	
	802.11ac-VHT40 MCS0	38	5190	16.24	17.50	96.32
		46	5230	16.21	17.50	
	802.11ac-VHT80 MCS0	42	5210	11.53	12.00	93.02

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.40	18.00	98.28
		56	5280	16.84	18.50	
		60	5300	16.70	18.50	
		64	5320	16.89	18.50	
	802.11n-HT20 MCS0	52	5260	16.63	18.50	98.16
		56	5280	16.86	18.50	
		60	5300	16.40	18.00	
		64	5320	16.65	18.50	
	802.11n-HT40 MCS0	54	5270	16.09	17.50	96.32
		62	5310	14.96	15.00	
	802.11ac-VHT20 MCS0	52	5260	16.50	18.50	98.16
		56	5280	16.69	18.50	
		60	5300	16.29	18.00	
		64	5320	16.40	18.00	
	802.11ac-VHT40 MCS0	54	5270	15.99	17.50	96.32
		62	5310	16.07	17.50	
	802.11ac-VHT80 MCS0	58	5290	13.36	14.00	93.02

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	16.47	18.00	98.28
		116	5580	16.70	18.50	
		124	5620	16.80	18.50	
		132	5660	16.77	18.50	
		144	5720	16.79	18.50	
	802.11n-HT20 MCS0	100	5500	16.27	18.00	98.16
		116	5580	16.51	18.50	
		124	5620	16.70	18.50	
		132	5660	16.74	18.50	
		144	5720	16.74	18.50	
	802.11n-HT40 MCS0	102	5510	14.62	15.00	96.32
		110	5550	16.03	17.50	
		126	5630	15.98	17.50	
		134	5670	16.02	17.50	
		142	5710	15.81	17.50	
	802.11ac-VHT20 MCS0	100	5500	16.23	18.00	98.16
		116	5580	16.39	18.00	
		124	5620	16.51	18.50	
		132	5660	16.64	18.50	
		144	5720	16.70	18.50	
	802.11ac-VHT40 MCS0	102	5510	15.77	17.50	96.32
		110	5550	15.89	17.50	
		126	5630	15.85	17.50	
		134	5670	15.92	17.50	
		142	5710	15.69	17.50	
	802.11ac-VHT80 MCS0	106	5530	12.99	13.00	93.02
		122	5610	15.78	17.00	
		138	5690	15.77	17.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.50	18.50	98.28
		157	5785	16.60	18.50	
		165	5825	16.86	18.50	
	802.11n-HT20 MCS0	149	5745	16.49	18.00	98.16
		157	5785	16.71	18.50	
		165	5825	16.84	18.50	
	802.11n-HT40 MCS0	151	5755	16.24	17.50	96.32
		159	5795	16.06	17.50	
	802.11ac-VHT20 MCS0	149	5745	16.39	18.00	98.16
		157	5785	16.51	18.50	
		165	5825	16.65	18.50	
	802.11ac-VHT40 MCS0	151	5755	16.05	17.50	96.32
		159	5795	15.87	17.50	
	802.11ac-VHT80 MCS0	155	5775	15.70	17.00	93.02

State 2

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.53	16.00	100.00
		6	2437	16.04	16.50	
		11	2462	16.45	17.00	
	802.11g 6Mbps	1	2412	15.80	16.00	98.28
		6	2437	16.89	17.00	
		11	2462	14.44	15.00	
	802.11n-HT20 MCS0	1	2412	15.62	16.00	98.16
		6	2437	16.74	17.00	
		11	2462	13.78	14.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	14.99	16.50	98.62
		116	5580	15.06	17.00	
		124	5620	15.28	17.00	
		132	5660	15.03	17.00	
		144	5720	15.19	17.00	
	802.11n-HT20 MCS0	100	5500	Not required	16.50	98.16
		116	5580		17.00	
		124	5620		17.00	
		132	5660		17.00	
		144	5720		17.00	
	802.11n-HT40 MCS0	102	5510		15.00	96.32
		110	5550		16.50	
		126	5630		16.50	
		134	5670		16.50	
		142	5710		16.50	
	802.11ac-VHT20 MCS0	100	5500		16.50	98.16
		116	5580		17.00	
		124	5620		17.00	
		132	5660		17.00	
		144	5720		17.00	
	802.11ac-VHT40 MCS0	102	5510		16.50	96.32
		110	5550		16.50	
		126	5630		16.50	
		134	5670		16.50	
		142	5710		16.50	
	802.11ac-VHT80 MCS0	106	5530		13.00	93.02
		122	5610		16.00	
		138	5690		16.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	14.74	15.50	98.62
		157	5785	14.56	15.50	
		165	5825	14.81	15.50	
	802.11n-HT20 MCS0	149	5745	Not required	15.00	98.16
		157	5785		15.50	
		165	5825		15.50	
	802.11n-HT40 MCS0	151	5755		14.50	96.32
		159	5795		14.50	
	802.11ac-VHT20 MCS0	149	5745		15.00	98.16
		157	5785		15.50	
		165	5825		15.50	
	802.11ac-VHT40 MCS0	151	5755		14.50	96.32
		159	5795		14.50	
	802.11ac-VHT80 MCS0	155	5775		15.00	93.02

State 3

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.37	13.00	98.62
		40	5200	12.14	13.00	
		44	5220	12.06	13.00	
		48	5240	12.22	13.00	
	802.11n-HT20 MCS0	36	5180	Not required	13.00	98.16
		40	5200		12.50	
		44	5220		13.00	
		48	5240		12.50	
	802.11n-HT40 MCS0	38	5190		8.50	96.32
		46	5230		12.00	
	802.11ac-VHT20 MCS0	36	5180		13.00	98.16
		40	5200		12.50	
		44	5220		12.50	
		48	5240		12.50	
	802.11ac-VHT40 MCS0	38	5190		12.00	96.32
		46	5230		12.00	
	802.11ac-VHT80 MCS0	42	5210		12.00	93.02

State 4

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.37	13.00	98.62
		40	5200	12.14	13.00	
		44	5220	12.06	13.00	
		48	5240	12.22	13.00	
	802.11n-HT20 MCS0	36	5180	Not required	13.00	98.16
		40	5200		12.50	
		44	5220		13.00	
		48	5240		12.50	
	802.11n-HT40 MCS0	38	5190		8.50	96.32
		46	5230		12.00	
	802.11ac-VHT20 MCS0	36	5180		13.00	98.16
		40	5200		12.50	
		44	5220		12.50	
		48	5240		12.50	
	802.11ac-VHT40 MCS0	38	5190		12.00	96.32
		46	5230		12.00	
	802.11ac-VHT80 MCS0	42	5210		12.00	93.02

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	13.48	15.00	98.62
		56	5280	13.41	15.00	
		60	5300	13.56	15.50	
		64	5320	13.83	15.50	
	802.11n-HT20 MCS0	52	5260	Not required	15.50	98.16
		56	5280		15.50	
		60	5300		15.00	
		64	5320		15.50	
	802.11n-HT40 MCS0	54	5270		14.50	96.32
		62	5310		12.00	
	802.11ac-VHT20 MCS0	52	5260		15.50	98.16
		56	5280		15.50	
		60	5300		15.00	
		64	5320		15.00	
	802.11ac-VHT40 MCS0	54	5270		14.50	96.32
		62	5310		14.50	
	802.11ac-VHT80 MCS0	58	5290		14.00	93.02

<2.4GHz Bluetooth>

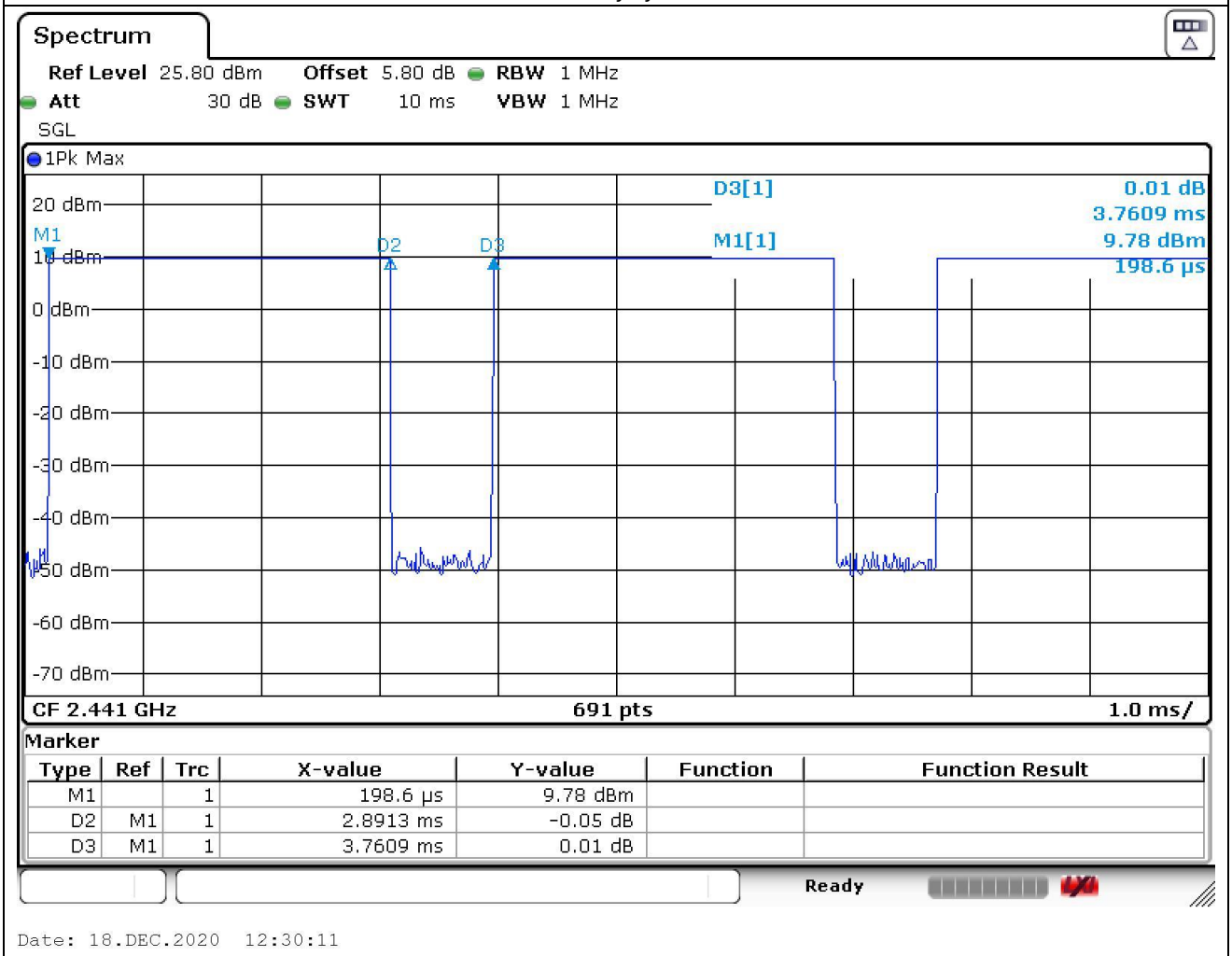
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	10.92	8.53	8.66
	CH 39	2441	9.86	6.99	7.25
	CH 78	2480	10.31	7.72	7.75
Tune-up Limit			11.00	9.00	9.00

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	5.91	6.01
	CH 19	2440	4.89	5.00
	CH 39	2480	6.02	6.06
Tune-up Limit			6.50	6.50

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.88% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

BT Duty cycle



14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.=>有 TDD LTE 使用
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

     (IC 請移除Note 2)
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of GSM1900, WCDMA B2 / B4 and LTE B2 / B4.
5. This product does not come with headphones, therefore, even the body-worn SAR is higher than 1.2W/kg, a headset attached to the handset unnecessary
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for this device only bottom side SAR for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg of GSM850/1900, WCDMA B2/B4/B5 and LTE B2/B4/B7/B26/B41, therefore product specific SAR is necessary.
7. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.
8. When the sensor is active, the device will reduce maximum output powers on the GSM1900, WCDMA B2, CDMA BC1 and LTE B2 / B4 / B7 / B66 / B48 transmitter.
9. Body-worn/Hotspot SAR was tested at 5mm separation and extremity SAR was tested at 0mm separation, at the reduced power level in each associated power table. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1 was performed:
   a. For Body-worn:
      Front: 13 mm
      Back: 24 mm
   b. For Extremity:
      Front: 7 mm
      Back: 19 mm
   c. Bottom: 15 mm
   d. For Extremity(LTE B7)
      Front: 6 mm
      Back: 17 mm
      Bottom: 14 mm

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 (2Tx slots) for GSM850/GSM1900 is 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 is implemented in GSM1900 band, for hotspot mode SAR testing EUT was set in reduced power mode and GPRS 2 Tx slot due to its highest frame-average power.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA 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 (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B26/B41 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 5/38 SAR test was covered by Band 26/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

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.

14.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	GSM850	GPRS (2 Tx slots)	Right Cheek	0mm	State 1	189	836.4	30.08	31.50	1.387	-0.01	0.169	0.234
	GSM850	GPRS (2 Tx slots)	Right Tilted	0mm	State 1	189	836.4	30.08	31.50	1.387	0.12	0.107	0.148
	GSM850	GPRS (2 Tx slots)	Left Cheek	0mm	State 1	189	836.4	30.08	31.50	1.387	-0.03	0.158	0.219
	GSM850	GPRS (2 Tx slots)	Left Tilted	0mm	State 1	189	836.4	30.08	31.50	1.387	0.02	0.096	0.133
	GSM1900	GPRS (2 Tx slots)	Right Cheek	0mm	State 1	512	1850.2	27.25	28.50	1.334	0.06	0.069	0.092
	GSM1900	GPRS (2 Tx slots)	Right Tilted	0mm	State 1	512	1850.2	27.25	28.50	1.334	0.12	0.057	0.076
02	GSM1900	GPRS (2 Tx slots)	Left Cheek	0mm	State 1	512	1850.2	27.25	28.50	1.334	-0.08	0.074	0.099
	GSM1900	GPRS (2 Tx slots)	Left Tilted	0mm	State 1	512	1850.2	27.25	28.50	1.334	0.05	0.070	0.093

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
03	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	State 1	9538	1907.6	22.63	24.00	1.371	-0.07	0.143	0.196
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	State 1	9538	1907.6	22.63	24.00	1.371	0.01	0.094	0.129
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	State 1	9538	1907.6	22.63	24.00	1.371	0.15	0.137	0.188
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	State 1	9538	1907.6	22.63	24.00	1.371	-0.06	0.108	0.148
04	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	State 1	1413	1732.6	22.51	24.00	1.409	0.02	0.188	0.265
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	State 1	1413	1732.6	22.51	24.00	1.409	0.06	0.089	0.125
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	State 1	1413	1732.6	22.51	24.00	1.409	0.05	0.166	0.234
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	State 1	1413	1732.6	22.51	24.00	1.409	0.1	0.139	0.196
05	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	State 1	4132	826.4	22.54	24.00	1.400	-0.08	0.339	0.474
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	State 1	4132	826.4	22.54	24.00	1.400	0.04	0.222	0.311
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	State 1	4132	826.4	22.54	24.00	1.400	0.02	0.335	0.469
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	State 1	4132	826.4	22.54	24.00	1.400	0.12	0.217	0.304

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	State 1	19100	1900	22.95	24.00	1.274	-0.01	0.096	0.122
	LTE Band 2	20M	QPSK	50	0	Right Cheek	0mm	State 1	19100	1900	21.95	23.00	1.274	0.11	0.076	0.097
	LTE Band 2	20M	QPSK	1	0	Right Tilted	0mm	State 1	19100	1900	22.95	24.00	1.274	0.06	0.058	0.074
	LTE Band 2	20M	QPSK	50	0	Right Tilted	0mm	State 1	19100	1900	21.95	23.00	1.274	0.05	0.046	0.059
	LTE Band 2	20M	QPSK	1	0	Left Cheek	0mm	State 1	19100	1900	22.95	24.00	1.274	0.03	0.079	0.101
	LTE Band 2	20M	QPSK	50	0	Left Cheek	0mm	State 1	19100	1900	21.95	23.00	1.274	-0.06	0.065	0.083
	LTE Band 2	20M	QPSK	1	0	Left Tilted	0mm	State 1	19100	1900	22.95	24.00	1.274	0.02	0.071	0.090
	LTE Band 2	20M	QPSK	50	0	Left Tilted	0mm	State 1	19100	1900	21.95	23.00	1.274	0.01	0.056	0.071
07	LTE Band 4	20M	QPSK	1	0	Right Cheek	0mm	State 1	20175	1732.5	23.15	24.00	1.216	-0.09	0.113	0.137
	LTE Band 4	20M	QPSK	50	0	Right Cheek	0mm	State 1	20175	1732.5	22.16	23.00	1.213	0.03	0.090	0.109
	LTE Band 4	20M	QPSK	1	0	Right Tilted	0mm	State 1	20175	1732.5	23.15	24.00	1.216	0.02	0.060	0.073
	LTE Band 4	20M	QPSK	50	0	Right Tilted	0mm	State 1	20175	1732.5	22.16	23.00	1.213	-0.06	0.048	0.058
	LTE Band 4	20M	QPSK	1	0	Left Cheek	0mm	State 1	20175	1732.5	23.15	24.00	1.216	-0.01	0.109	0.133
	LTE Band 4	20M	QPSK	50	0	Left Cheek	0mm	State 1	20175	1732.5	22.16	23.00	1.213	-0.04	0.087	0.106
	LTE Band 4	20M	QPSK	1	0	Left Tilted	0mm	State 1	20175	1732.5	23.15	24.00	1.216	0.06	0.084	0.102
	LTE Band 4	20M	QPSK	50	0	Left Tilted	0mm	State 1	20175	1732.5	22.16	23.00	1.213	0.03	0.068	0.083
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	State 1	21100	2535	23.07	24.00	1.239	0.11	0.309	0.383
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	State 1	21100	2535	22.03	23.00	1.250	-0.03	0.244	0.305
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	State 1	21100	2535	23.07	24.00	1.239	0.03	0.278	0.344
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	State 1	21100	2535	22.03	23.00	1.250	-0.08	0.219	0.274
08	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	State 1	21100	2535	23.07	24.00	1.239	0.06	0.425	0.526
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	State 1	21100	2535	22.03	23.00	1.250	0.06	0.335	0.419
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	State 1	21100	2535	23.07	24.00	1.239	0.06	0.132	0.164
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	State 1	21100	2535	22.03	23.00	1.250	-0.04	0.104	0.130
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	State 1	26865	831.5	22.67	24.00	1.358	-0.02	0.345	0.469
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	State 1	26865	831.5	21.69	23.00	1.352	-0.06	0.269	0.364
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	State 1	26865	831.5	22.67	24.00	1.358	0.13	0.211	0.287
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	State 1	26865	831.5	21.69	23.00	1.352	-0.08	0.165	0.223
09	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	State 1	26865	831.5	22.67	24.00	1.358	0.07	0.349	0.474
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	State 1	26865	831.5	21.69	23.00	1.352	0.06	0.276	0.373
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	State 1	26865	831.5	22.91	24.00	1.285	0.01	0.207	0.266
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	State 1	26865	831.5	21.69	23.00	1.352	0.03	0.162	0.219

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	-0.03	0.165	0.200
	LTE Band 41	20M	QPSK	50	0	Right Cheek	0mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	-0.06	0.134	0.160
	LTE Band 41	20M	QPSK	1	0	Right Tilted	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.01	0.147	0.178
	LTE Band 41	20M	QPSK	50	0	Right Tilted	0mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	0.03	0.119	0.142
10	LTE Band 41	20M	QPSK	1	0	Left Cheek	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.09	0.263	0.319
	LTE Band 41	20M	QPSK	50	0	Left Cheek	0mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	0.07	0.213	0.254
	LTE Band 41	20M	QPSK	1	0	Left Tilted	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.02	0.097	0.118
	LTE Band 41	20M	QPSK	50	0	Left Tilted	0mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	-0.06	0.078	0.093

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	State 1	11	2462	16.45	17.00	1.135	100	1.000	-0.19	0.500	0.568
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	State 1	11	2462	16.45	17.00	1.135	100	1.000	0.11	0.537	0.609
11	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	State 1	11	2462	16.45	17.00	1.135	100	1.000	-0.06	0.822	0.933
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	State 1	1	2412	15.53	16.00	1.114	100	1.000	0.17	0.686	0.764
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	State 1	6	2437	16.04	16.50	1.112	100	1.000	0.17	0.686	0.763
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	State 1	11	2462	16.45	17.00	1.135	100	1.000	-0.04	0.766	0.869
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	State 1	1	2412	15.53	16.00	1.114	100	1.000	0.05	0.619	0.690
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	State 1	6	2437	16.04	16.50	1.112	100	1.000	-0.13	0.613	0.681
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Default	64	5320	16.89	18.50	1.449	98.28	1.018	-0.15	0.183	0.270
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Default	64	5320	16.89	18.50	1.449	98.28	1.018	0.16	0.230	0.339
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Default	64	5320	16.89	18.50	1.449	98.28	1.018	0	0.205	0.303
12	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Default	64	5320	16.89	18.50	1.449	98.28	1.018	0.12	0.265	0.391
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	State 1	124	5620	15.28	17.00	1.486	98.28	1.018	-0.13	0.454	0.687
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	State 1	124	5620	15.28	17.00	1.486	98.28	1.018	-0.14	0.598	0.904
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	State 1	144	5720	15.19	17.00	1.517	98.28	1.018	0.05	0.561	0.866
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	State 1	124	5620	15.28	17.00	1.486	98.28	1.018	-0.14	0.634	0.959
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	State 1	144	5720	15.19	17.00	1.517	98.28	1.018	0.04	0.602	0.930
13	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	State 1	124	5620	15.28	17.00	1.486	98.28	1.018	0.02	0.754	1.141
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	State 1	144	5720	15.19	17.00	1.517	98.28	1.018	-0.11	0.735	1.135
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	State 1	165	5825	14.81	15.50	1.172	98.28	1.018	-0.08	0.544	0.650
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	State 1	165	5825	14.81	15.50	1.172	98.28	1.018	0.13	0.681	0.812
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	State 1	149	5745	14.74	15.50	1.191	98.28	1.018	0.03	0.601	0.729
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	State 1	165	5825	14.81	15.50	1.172	98.28	1.018	-0.14	0.586	0.699
14	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	State 1	165	5825	14.81	15.50	1.172	98.28	1.018	0.17	0.708	0.845
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	State 1	149	5745	14.74	15.50	1.191	98.28	1.018	0.01	0.612	0.742

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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	Right Cheek	0mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
	Bluetooth	1Mbps	Right Tilted	0mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
15	Bluetooth	1Mbps	Left Cheek	0mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
	Bluetooth	1Mbps	Left Tilted	0mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001

14.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	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 (2 Tx slots)	Front	5mm	State 3	189	836.4	28.44	30.00	1.432	0.18	0.362	0.518
	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	189	836.4	28.44	30.00	1.432	-0.14	0.792	1.134
	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	128	824.2	28.42	30.00	1.439	-0.06	0.827	1.190
16	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	251	848.8	28.36	30.00	1.459	0.04	0.939	1.370
	GSM850	GPRS (2 Tx slots)	Left Side	5mm	State 3	189	836.4	28.44	30.00	1.432	0.09	0.088	0.126
	GSM850	GPRS (2 Tx slots)	Right Side	5mm	State 3	189	836.4	28.44	30.00	1.432	-0.03	0.250	0.358
	GSM850	GPRS (2 Tx slots)	Bottom Side	5mm	State 3	189	836.4	28.44	30.00	1.432	-0.11	0.488	0.699
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	512	1850.2	25.18	25.50	1.076	-0.15	0.804	0.865
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	661	1880	25.03	25.50	1.114	0.03	0.726	0.809
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	810	1909.8	25.16	25.50	1.081	0.12	0.763	0.825
	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	512	1850.2	25.18	25.50	1.076	-0.09	1.200	1.292
	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	661	1880	25.03	25.50	1.114	0.02	1.120	1.248
	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	810	1909.8	25.16	25.50	1.081	0.03	1.080	1.168
	GSM1900	GPRS (2 Tx slots)	Left Side	5mm	State 2	512	1850.2	22.16	22.50	1.081	0.07	0.049	0.053
	GSM1900	GPRS (2 Tx slots)	Right Side	5mm	State 2	512	1850.2	22.16	22.50	1.081	0.11	0.037	0.040
	GSM1900	GPRS (2 Tx slots)	Bottom Side	5mm	State 2	512	1850.2	22.16	22.50	1.081	-0.04	0.895	0.968
	GSM1900	GPRS (2 Tx slots)	Bottom Side	5mm	State 2	661	1880	22.03	22.50	1.114	-0.1	1.000	1.114
17	GSM1900	GPRS (2 Tx slots)	Bottom Side	5mm	State 2	810	1909.8	22.13	22.50	1.089	0.02	1.220	1.328

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	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 II	RMC 12.2Kbps	Front	5mm	State 3	9538	1907.6	15.54	16.50	1.247	-0.05	0.623	0.777
18	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9538	1907.6	15.54	16.50	1.247	0.07	1.060	1.322
	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9262	1852.4	15.46	16.50	1.271	0.03	0.946	1.202
	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9400	1880	15.45	16.50	1.274	0.12	0.988	1.258
	WCDMA II	RMC 12.2Kbps	Left Side	5mm	State 2	9538	1907.6	14.00	15.00	1.259	-0.19	0.040	0.051
	WCDMA II	RMC 12.2Kbps	Right Side	5mm	State 2	9538	1907.6	14.00	15.00	1.259	-0.1	0.038	0.048
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	State 2	9538	1907.6	14.00	15.00	1.259	0.1	1.010	1.272
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	State 2	9262	1852.4	13.96	15.00	1.271	-0.14	0.820	1.041
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	State 2	9400	1880	13.95	15.00	1.274	0.08	0.854	1.088
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1413	1732.6	18.95	19.00	1.012	0.03	0.987	0.998
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1312	1712.4	18.92	19.00	1.019	0.01	0.946	0.964
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1513	1752.6	18.93	19.00	1.016	0.03	0.958	0.974
	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1413	1732.6	18.95	19.00	1.012	0.04	1.290	1.305
	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1312	1712.4	18.92	19.00	1.019	0.06	1.220	1.243
	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1513	1752.6	18.93	19.00	1.016	0.11	1.230	1.250
	WCDMA IV	RMC 12.2Kbps	Left Side	5mm	State 2	1413	1732.6	16.95	18.00	1.274	0.08	0.064	0.082
	WCDMA IV	RMC 12.2Kbps	Right Side	5mm	State 2	1413	1732.6	16.95	18.00	1.274	-0.08	0.089	0.113
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	State 2	1413	1732.6	16.95	18.00	1.274	0.13	0.936	1.192
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	State 2	1312	1712.4	16.92	18.00	1.282	0.06	1.010	1.295
19	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	State 2	1513	1752.6	16.94	18.00	1.276	0.02	1.050	1.340
	WCDMA V	RMC 12.2Kbps	Front	5mm	State 3	4132	826.4	20.38	21.00	1.153	-0.09	0.373	0.430
	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4132	826.4	20.38	21.00	1.153	0.05	1.060	1.223
	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4182	836.4	20.32	21.00	1.169	0.02	1.020	1.193
20	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4233	846.6	20.18	21.00	1.208	-0.09	1.070	1.292
	WCDMA V	RMC 12.2Kbps	Left Side	5mm	State 3	4132	826.4	20.38	21.00	1.153	-0.14	0.137	0.158
	WCDMA V	RMC 12.2Kbps	Right Side	5mm	State 3	4132	826.4	20.38	21.00	1.153	-0.05	0.310	0.358
	WCDMA V	RMC 12.2Kbps	Bottom Side	5mm	State 3	4132	826.4	20.38	21.00	1.153	0.19	0.631	0.728

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	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 2	20M	QPSK	1	0	Front	5mm	State 3	19100	1900	15.65	17.00	1.365	-0.11	0.581	0.793
	LTE Band 2	20M	QPSK	50	0	Front	5mm	State 3	19100	1900	15.50	17.00	1.413	0.03	0.560	0.791
21	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	19100	1900	15.65	17.00	1.365	-0.1	1.010	1.378
	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	18700	1860	15.31	17.00	1.476	0.02	0.920	1.358
	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	18900	1880	15.40	17.00	1.445	0.06	0.895	1.294
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	19100	1900	15.50	17.00	1.413	-0.01	0.897	1.267
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	18700	1860	15.28	17.00	1.486	0.03	0.862	1.281
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	18900	1880	15.35	17.00	1.462	0.07	0.873	1.276
	LTE Band 2	20M	QPSK	100	0	Back	5mm	State 3	19100	1900	15.45	17.00	1.429	0.12	0.886	1.266
	LTE Band 2	20M	QPSK	1	0	Left Side	5mm	State 2	19100	1900	15.45	15.50	1.012	-0.04	0.054	0.055
	LTE Band 2	20M	QPSK	50	0	Left Side	5mm	State 2	19100	1900	15.30	15.50	1.047	0.03	0.046	0.048
	LTE Band 2	20M	QPSK	1	0	Right Side	5mm	State 2	19100	1900	15.45	15.50	1.012	-0.06	0.051	0.052
	LTE Band 2	20M	QPSK	50	0	Right Side	5mm	State 2	19100	1900	15.30	15.50	1.047	-0.04	0.048	0.050
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	State 2	19100	1900	15.45	15.50	1.012	0.09	1.250	1.264
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	State 2	18700	1860	15.31	15.50	1.045	0.14	1.010	1.055
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	State 2	18900	1880	15.40	15.50	1.023	-0.09	1.110	1.136
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	State 2	19100	1900	15.30	15.50	1.047	0.09	1.100	1.152
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	State 2	18700	1860	15.28	15.50	1.052	0.01	1.020	1.073
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	State 2	18900	1880	15.25	15.50	1.059	0.06	0.987	1.045
	LTE Band 2	20M	QPSK	100	0	Bottom Side	5mm	State 2	19100	1900	15.25	15.50	1.059	0.02	0.946	1.002
	LTE Band 4	20M	QPSK	1	0	Front	5mm	State 3	20175	1732.5	19.12	20.00	1.225	-0.08	0.801	0.981
	LTE Band 4	20M	QPSK	50	0	Front	5mm	State 3	20175	1732.5	18.93	20.00	1.279	0.02	0.776	0.993
	LTE Band 4	20M	QPSK	100	0	Front	5mm	State 3	20175	1732.5	18.89	20.00	1.291	0.14	0.768	0.992
22	LTE Band 4	20M	QPSK	1	0	Back	5mm	State 3	20175	1732.5	19.12	20.00	1.225	-0.12	1.120	1.372
	LTE Band 4	20M	QPSK	50	0	Back	5mm	State 3	20175	1732.5	18.93	20.00	1.279	-0.19	1.040	1.331
	LTE Band 4	20M	QPSK	100	0	Back	5mm	State 3	20175	1732.5	18.89	20.00	1.291	0.01	1.010	1.304
	LTE Band 4	20M	QPSK	1	0	Left Side	5mm	State 2	20175	1732.5	18.07	19.00	1.239	0.07	0.073	0.090
	LTE Band 4	20M	QPSK	50	0	Left Side	5mm	State 2	20175	1732.5	17.95	19.00	1.274	-0.06	0.068	0.087
	LTE Band 4	20M	QPSK	1	0	Right Side	5mm	State 2	20175	1732.5	18.07	19.00	1.239	0.12	0.085	0.105
	LTE Band 4	20M	QPSK	50	0	Right Side	5mm	State 2	20175	1732.5	17.95	19.00	1.274	0.07	0.080	0.102
	LTE Band 4	20M	QPSK	1	0	Bottom Side	5mm	State 2	20175	1732.5	18.07	19.00	1.239	0.01	0.993	1.230
	LTE Band 4	20M	QPSK	50	0	Bottom Side	5mm	State 2	20175	1732.5	17.95	19.00	1.274	-0.11	0.930	1.184
	LTE Band 4	20M	QPSK	100	0	Bottom Side	5mm	State 2	20175	1732.5	17.91	19.00	1.285	0.05	0.912	1.172
	LTE Band 7	20M	QPSK	1	0	Front	5mm	State 3	21100	2535	19.68	20.50	1.208	0.08	0.624	0.754
	LTE Band 7	20M	QPSK	50	0	Front	5mm	State 3	21100	2535	19.55	20.50	1.245	0.03	0.612	0.762
23	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	21100	2535	19.68	20.50	1.208	-0.01	1.120	1.353
	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	20850	2510	19.51	20.50	1.256	0.19	0.967	1.215
	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	21350	2560	19.40	20.50	1.288	0.12	1.020	1.314
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	21100	2535	19.55	20.50	1.245	0.12	1.050	1.307
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	20850	2510	19.50	20.50	1.259	0.03	0.907	1.142
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	21350	2560	19.46	20.50	1.271	0.11	0.956	1.215
	LTE Band 7	20M	QPSK	100	0	Back	5mm	State 3	21100	2535	19.50	20.50	1.259	0.06	1.020	1.284
	LTE Band 7	20M	QPSK	1	0	Left Side	5mm	State 3	21100	2535	19.68	20.50	1.208	0.06	0.476	0.575
	LTE Band 7	20M	QPSK	50	0	Left Side	5mm	State 3	21100	2535	19.55	20.50	1.245	-0.04	0.446	0.555
	LTE Band 7	20M	QPSK	1	0	Right Side	5mm	State 3	21100	2535	19.68	20.50	1.208	0.02	0.076	0.092
	LTE Band 7	20M	QPSK	50	0	Right Side	5mm	State 3	21100	2535	19.55	20.50	1.245	0.02	0.068	0.085
	LTE Band 7	20M	QPSK	1	0	Bottom Side	5mm	State 3	21100	2535	19.68	20.50	1.208	0.15	0.483	0.583
	LTE Band 7	20M	QPSK	50	0	Bottom Side	5mm	State 3	21100	2535	19.55	20.50	1.245	0.03	0.472	0.587

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	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	0	Front	5mm	State 3	26865	831.5	21.60	22.00	1.096	-0.11	0.559	0.613
	LTE Band 26	15M	QPSK	36	0	Front	5mm	State 3	26865	831.5	21.64	22.00	1.086	0.02	0.542	0.589
24	LTE Band 26	15M	QPSK	1	0	Back	5mm	State 3	26865	831.5	21.60	22.00	1.096	-0.01	1.190	1.305
	LTE Band 26	15M	QPSK	36	0	Back	5mm	State 3	26865	831.5	21.64	22.00	1.086	-0.1	1.080	1.173
	LTE Band 26	15M	QPSK	75	0	Back	5mm	State 3	26865	831.5	21.57	22.00	1.104	-0.06	1.030	1.137
	LTE Band 26	15M	QPSK	1	0	Left Side	5mm	State 3	26865	831.5	21.60	22.00	1.096	0.17	0.117	0.128
	LTE Band 26	15M	QPSK	36	0	Left Side	5mm	State 3	26865	831.5	21.64	22.00	1.086	0.08	0.101	0.110
	LTE Band 26	15M	QPSK	1	0	Right Side	5mm	State 3	26865	831.5	21.60	22.00	1.096	0.19	0.290	0.318
	LTE Band 26	15M	QPSK	36	0	Right Side	5mm	State 3	26865	831.5	21.64	22.00	1.086	-0.09	0.280	0.304
	LTE Band 26	15M	QPSK	1	0	Bottom Side	5mm	State 3	26865	831.5	21.60	22.00	1.096	0.18	0.591	0.648
	LTE Band 26	15M	QPSK	36	0	Bottom Side	5mm	State 3	26865	831.5	21.64	22.00	1.086	-0.12	0.571	0.620

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	0.05	0.712	0.873
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40140	2545	21.44	22.50	1.276	62.9	1.006	0.06	0.610	0.783
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40400	2571	21.42	22.50	1.282	62.9	1.006	0.15	0.590	0.761
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40670	2598	21.42	22.50	1.282	62.9	1.006	-0.14	0.668	0.862
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	-0.05	0.687	0.858
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40140	2545	21.48	22.50	1.265	62.9	1.006	0.03	0.621	0.790
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40400	2571	21.43	22.50	1.279	62.9	1.006	0.06	0.653	0.840
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40670	2598	21.47	22.50	1.268	62.9	1.006	0.11	0.616	0.786
	LTE Band 41	20M	QPSK	100	0	Front	5mm	State 3	41140	2645	21.45	22.50	1.274	62.9	1.006	-0.07	0.602	0.771
25	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	-0.17	1.140	1.398
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40140	2545	21.44	22.50	1.276	62.9	1.006	-0.04	0.976	1.253
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40400	2571	21.42	22.50	1.282	62.9	1.006	0.08	0.944	1.218
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40670	2598	21.42	22.50	1.282	62.9	1.006	0.06	1.070	1.380
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	0.06	1.100	1.374
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40140	2545	21.48	22.50	1.265	62.9	1.006	0.14	0.942	1.199
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40400	2571	21.43	22.50	1.279	62.9	1.006	0.01	0.911	1.173
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40670	2598	21.47	22.50	1.268	62.9	1.006	0.08	1.030	1.314
	LTE Band 41	20M	QPSK	100	0	Back	5mm	State 3	41140	2645	21.45	22.50	1.274	62.9	1.006	0.15	0.928	1.189
	LTE Band 41	20M	QPSK	1	0	Left Side	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	0.08	0.484	0.594
	LTE Band 41	20M	QPSK	50	0	Left Side	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	-0.06	0.474	0.592
	LTE Band 41	20M	QPSK	1	0	Right Side	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	0.01	0.098	0.120
	LTE Band 41	20M	QPSK	50	0	Right Side	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	-0.04	0.084	0.105
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	0.14	0.625	0.766
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5mm	State 3	40140	2545	21.44	22.50	1.276	62.9	1.006	0.05	0.593	0.761
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5mm	State 3	40400	2571	21.42	22.50	1.282	62.9	1.006	0.09	0.535	0.690
	LTE Band 41	20M	QPSK	1	0	Bottom Side	5mm	State 3	40670	2598	21.42	22.50	1.282	62.9	1.006	-0.01	0.517	0.667
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	0.04	0.598	0.747
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5mm	State 3	40140	2545	21.48	22.50	1.265	62.9	1.006	0.09	0.593	0.754
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5mm	State 3	40400	2571	21.43	22.50	1.279	62.9	1.006	0.03	0.516	0.664
	LTE Band 41	20M	QPSK	50	0	Bottom Side	5mm	State 3	40670	2598	21.47	22.50	1.268	62.9	1.006	0.03	0.499	0.636
	LTE Band 41	20M	QPSK	100	0	Bottom Side	5mm	State 3	41140	2645	21.45	22.50	1.274	62.9	1.006	0.05	0.564	0.723

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.03	0.512	0.581
26	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.07	0.870	0.987
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 2	1	2412	15.53	16.00	1.114	100	1.000	0.16	0.800	0.891
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 2	6	2437	16.04	16.50	1.112	100	1.000	-0.05	0.812	0.903
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.05	0.435	0.494
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.11	0.608	0.690
	WLAN5GHz	802.11a 6Mbps	Front	5mm	State 2	36	5180	12.37	13.00	1.156	98.28	1.018	-0.03	0.067	0.079
27	WLAN5GHz	802.11a 6Mbps	Back	5mm	State 2	36	5180	12.37	13.00	1.156	98.28	1.018	0.01	0.593	0.698
	WLAN5GHz	802.11a 6Mbps	Right Side	5mm	State 2	36	5180	12.37	13.00	1.156	98.28	1.018	-0.13	0.091	0.107
	WLAN5GHz	802.11a 6Mbps	Top Side	5mm	State 2	36	5180	12.37	13.00	1.156	98.28	1.018	-0.16	0.445	0.524
	WLAN5GHz	802.11a 6Mbps	Front	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	0.02	0.323	0.480
	WLAN5GHz	802.11a 6Mbps	Back	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	0.01	0.301	0.447
	WLAN5GHz	802.11a 6Mbps	Right Side	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	0.01	0.120	0.178
28	WLAN5GHz	802.11a 6Mbps	Top Side	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	0.04	0.760	1.130
	WLAN5GHz	802.11a 6Mbps	Top Side	5mm	Default	157	5785	16.60	18.50	1.550	98.28	1.018	-0.03	0.686	1.083

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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	Front	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
29	Bluetooth	1Mbps	Back	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
	Bluetooth	1Mbps	Right Side	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
	Bluetooth	1Mbps	Top Side	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001

14.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	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 (2 Tx slots)	Front	5mm	State 3	189	836.4	28.44	30.00	1.432	0.18	0.362	0.518
	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	189	836.4	28.44	30.00	1.432	-0.14	0.792	1.134
	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	128	824.2	28.42	30.00	1.439	-0.06	0.827	1.190
30	GSM850	GPRS (2 Tx slots)	Back	5mm	State 3	251	848.8	28.36	30.00	1.459	0.04	0.939	1.370
	GSM850	GPRS (2 Tx slots)	Front	13mm	State 1	189	836.4	30.08	31.50	1.387	-0.1	0.205	0.284
	GSM850	GPRS (2 Tx slots)	Back	24mm	State 1	189	836.4	30.08	31.50	1.387	-0.04	0.199	0.276
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	512	1850.2	25.18	25.50	1.076	-0.15	0.804	0.865
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	661	1880	25.03	25.50	1.114	0.03	0.726	0.809
	GSM1900	GPRS (2 Tx slots)	Front	5mm	State 3	810	1909.8	25.16	25.50	1.081	0.12	0.763	0.825
31	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	512	1850.2	25.18	25.50	1.076	-0.09	1.200	1.292
	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	661	1880	25.03	25.50	1.114	0.02	1.120	1.248
	GSM1900	GPRS (2 Tx slots)	Back	5mm	State 3	810	1909.8	25.16	25.50	1.081	0.03	1.080	1.168
	GSM1900	GPRS (2 Tx slots)	Front	13mm	State 1	512	1850.2	27.25	28.50	1.334	-0.02	0.318	0.424
	GSM1900	GPRS (2 Tx slots)	Back	24mm	State 1	512	1850.2	27.25	28.50	1.334	0.06	0.198	0.264

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	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 II	RMC 12.2Kbps	Front	5mm	State 3	9538	1907.6	15.54	16.50	1.247	-0.05	0.623	0.777
32	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9538	1907.6	15.54	16.50	1.247	0.07	1.060	1.322
	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9262	1852.4	15.46	16.50	1.271	0.03	0.946	1.202
	WCDMA II	RMC 12.2Kbps	Back	5mm	State 3	9400	1880	15.45	16.50	1.274	0.12	0.988	1.258
	WCDMA II	RMC 12.2Kbps	Front	13mm	State 1	9538	1907.6	22.63	24.00	1.371	0.06	0.668	0.916
	WCDMA II	RMC 12.2Kbps	Front	13mm	State 1	9262	1852.4	22.48	24.00	1.419	0.09	0.642	0.911
	WCDMA II	RMC 12.2Kbps	Front	13mm	State 1	9400	1880	22.51	24.00	1.409	-0.07	0.633	0.892
	WCDMA II	RMC 12.2Kbps	Back	24mm	State 1	9538	1907.6	22.63	24.00	1.371	-0.01	0.418	0.573
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1413	1732.6	18.95	19.00	1.012	0.03	0.987	0.998
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1312	1712.4	18.92	19.00	1.019	0.01	0.946	0.964
	WCDMA IV	RMC 12.2Kbps	Front	5mm	State 3	1513	1752.6	18.93	19.00	1.016	0.03	0.958	0.974
33	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1413	1732.6	18.95	19.00	1.012	0.04	1.290	1.305
	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1312	1712.4	18.92	19.00	1.019	0.06	1.220	1.243
	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1513	1752.6	18.93	19.00	1.016	0.11	1.230	1.250
	WCDMA IV	RMC 12.2Kbps	Front	13mm	State 1	1413	1732.6	22.51	24.00	1.409	0.09	0.537	0.757
	WCDMA IV	RMC 12.2Kbps	Back	24mm	State 1	1413	1732.6	22.51	24.00	1.409	0.07	0.249	0.351
	WCDMA V	RMC 12.2Kbps	Front	5mm	State 3	4132	826.4	20.38	21.00	1.153	-0.09	0.373	0.430
	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4132	826.4	20.38	21.00	1.153	0.05	1.060	1.223
	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4182	836.4	20.32	21.00	1.169	0.02	1.020	1.193
34	WCDMA V	RMC 12.2Kbps	Back	5mm	State 3	4233	846.6	20.18	21.00	1.208	-0.09	1.070	1.292
	WCDMA V	RMC 12.2Kbps	Front	13mm	State 1	4132	826.4	22.54	24.00	1.400	0.05	0.366	0.512
	WCDMA V	RMC 12.2Kbps	Back	24mm	State 1	4132	826.4	22.54	24.00	1.400	-0.06	0.339	0.474

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	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 2	20M	QPSK	1	0	Front	5mm	State 3	19100	1900	15.65	17.00	1.365	-0.11	0.581	0.793
	LTE Band 2	20M	QPSK	50	0	Front	5mm	State 3	19100	1900	15.50	17.00	1.413	0.03	0.560	0.791
35	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	19100	1900	15.65	17.00	1.365	-0.1	1.010	1.378
	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	18700	1860	15.31	17.00	1.476	0.02	0.920	1.358
	LTE Band 2	20M	QPSK	1	0	Back	5mm	State 3	18900	1880	15.40	17.00	1.445	0.06	0.895	1.294
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	19100	1900	15.50	17.00	1.413	-0.01	0.897	1.267
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	18700	1860	15.28	17.00	1.486	0.03	0.862	1.281
	LTE Band 2	20M	QPSK	50	0	Back	5mm	State 3	18900	1880	15.35	17.00	1.462	0.07	0.873	1.276
	LTE Band 2	20M	QPSK	100	0	Back	5mm	State 3	19100	1900	15.45	17.00	1.429	0.12	0.886	1.266
	LTE Band 2	20M	QPSK	1	0	Front	13mm	State 1	19100	1900	22.95	24.00	1.274	0.06	0.746	0.950
	LTE Band 2	20M	QPSK	1	0	Front	13mm	State 1	18700	1860	22.50	24.00	1.413	-0.09	0.665	0.939
	LTE Band 2	20M	QPSK	1	0	Front	13mm	State 1	18900	1880	22.63	24.00	1.371	-0.12	0.682	0.935
	LTE Band 2	20M	QPSK	50	0	Front	13mm	State 1	19100	1900	21.95	23.00	1.274	-0.05	0.594	0.756
	LTE Band 2	20M	QPSK	100	0	Front	13mm	State 1	19100	1900	21.92	23.00	1.282	0.07	0.576	0.739
	LTE Band 2	20M	QPSK	1	0	Back	24mm	State 1	19100	1900	22.95	24.00	1.274	0.01	0.387	0.493
	LTE Band 2	20M	QPSK	50	0	Back	24mm	State 1	19100	1900	21.95	23.00	1.274	-0.04	0.306	0.390
	LTE Band 4	20M	QPSK	1	0	Front	5mm	State 3	20175	1732.5	19.12	20.00	1.225	-0.08	0.801	0.981
	LTE Band 4	20M	QPSK	50	0	Front	5mm	State 3	20175	1732.5	18.93	20.00	1.279	0.02	0.776	0.993
	LTE Band 4	20M	QPSK	100	0	Front	5mm	State 3	20175	1732.5	18.89	20.00	1.291	0.14	0.768	0.992
36	LTE Band 4	20M	QPSK	1	0	Back	5mm	State 3	20175	1732.5	19.12	20.00	1.225	-0.12	1.120	1.372
	LTE Band 4	20M	QPSK	50	0	Back	5mm	State 3	20175	1732.5	18.93	20.00	1.279	-0.19	1.040	1.331
	LTE Band 4	20M	QPSK	100	0	Back	5mm	State 3	20175	1732.5	18.89	20.00	1.291	0.01	1.010	1.304
	LTE Band 4	20M	QPSK	1	0	Front	13mm	State 1	20175	1732.5	23.15	24.00	1.216	0.07	0.543	0.660
	LTE Band 4	20M	QPSK	50	0	Front	13mm	State 1	20175	1732.5	22.16	23.00	1.213	-0.05	0.488	0.592
	LTE Band 4	20M	QPSK	1	0	Back	24mm	State 1	20175	1732.5	23.15	24.00	1.216	0.12	0.203	0.247
	LTE Band 4	20M	QPSK	50	0	Back	24mm	State 1	20175	1732.5	22.16	23.00	1.213	0.14	0.162	0.197
	LTE Band 7	20M	QPSK	1	0	Front	5mm	State 3	21100	2535	19.68	20.50	1.208	0.08	0.624	0.754
	LTE Band 7	20M	QPSK	50	0	Front	5mm	State 3	21100	2535	19.55	20.50	1.245	0.03	0.612	0.762
37	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	21100	2535	19.68	20.50	1.208	-0.01	1.120	1.353
	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	20850	2510	19.51	20.50	1.256	0.19	0.967	1.215
	LTE Band 7	20M	QPSK	1	0	Back	5mm	State 3	21350	2560	19.40	20.50	1.288	0.12	1.020	1.314
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	21100	2535	19.55	20.50	1.245	0.12	1.050	1.307
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	20850	2510	19.50	20.50	1.259	0.03	0.907	1.142
	LTE Band 7	20M	QPSK	50	0	Back	5mm	State 3	21350	2560	19.46	20.50	1.271	0.11	0.956	1.215
	LTE Band 7	20M	QPSK	100	0	Back	5mm	State 3	21100	2535	19.50	20.50	1.259	0.06	1.020	1.284
	LTE Band 7	20M	QPSK	1	0	Front	13mm	State 1	21100	2535	23.07	24.00	1.239	0.05	0.377	0.467
	LTE Band 7	20M	QPSK	50	0	Front	13mm	State 1	21100	2535	22.03	23.00	1.250	0.01	0.342	0.428
	LTE Band 7	20M	QPSK	1	0	Back	24mm	State 1	21100	2535	23.07	24.00	1.239	-0.03	0.167	0.207
	LTE Band 7	20M	QPSK	50	0	Back	24mm	State 1	21100	2535	22.03	23.00	1.250	0.11	0.129	0.161
	LTE Band 26	15M	QPSK	1	0	Front	5mm	State 3	26865	831.5	21.60	22.00	1.096	-0.11	0.559	0.613
	LTE Band 26	15M	QPSK	36	0	Front	5mm	State 3	26865	831.5	21.64	22.00	1.086	0.02	0.542	0.589
38	LTE Band 26	15M	QPSK	1	0	Back	5mm	State 3	26865	831.5	21.60	22.00	1.096	-0.01	1.190	1.305
	LTE Band 26	15M	QPSK	36	0	Back	5mm	State 3	26865	831.5	21.64	22.00	1.086	-0.1	1.080	1.173
	LTE Band 26	15M	QPSK	75	0	Back	5mm	State 3	26865	831.5	21.57	22.00	1.104	-0.06	1.030	1.137
	LTE Band 26	15M	QPSK	1	0	Front	13mm	State 1	26865	831.5	22.67	24.00	1.358	0.02	0.335	0.455
	LTE Band 26	15M	QPSK	36	0	Front	13mm	State 1	26865	831.5	21.69	23.00	1.352	0.1	0.305	0.412
	LTE Band 26	15M	QPSK	1	0	Back	24mm	State 1	26865	831.5	22.67	24.00	1.358	0.09	0.248	0.337
	LTE Band 26	15M	QPSK	36	0	Back	24mm	State 1	26865	831.5	21.69	23.00	1.352	-0.07	0.212	0.287

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	0.05	0.712	0.873
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40140	2545	21.44	22.50	1.276	62.9	1.006	0.06	0.610	0.783
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40400	2571	21.42	22.50	1.282	62.9	1.006	0.15	0.590	0.761
	LTE Band 41	20M	QPSK	1	0	Front	5mm	State 3	40670	2598	21.42	22.50	1.282	62.9	1.006	-0.14	0.668	0.862
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	-0.05	0.687	0.858
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40140	2545	21.48	22.50	1.265	62.9	1.006	0.06	0.621	0.790
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40400	2571	21.43	22.50	1.279	62.9	1.006	0.01	0.653	0.840
	LTE Band 41	20M	QPSK	50	0	Front	5mm	State 3	40670	2598	21.47	22.50	1.268	62.9	1.006	-0.03	0.616	0.786
	LTE Band 41	20M	QPSK	100	0	Front	5mm	State 3	41140	2645	21.45	22.50	1.274	62.9	1.006	-0.07	0.602	0.771
39	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	-0.17	1.140	1.398
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40140	2545	21.44	22.50	1.276	62.9	1.006	-0.04	0.976	1.253
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40400	2571	21.42	22.50	1.282	62.9	1.006	0.08	0.944	1.218
	LTE Band 41	20M	QPSK	1	0	Back	5mm	State 3	40670	2598	21.42	22.50	1.282	62.9	1.006	0.06	1.070	1.380
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	41140	2645	21.56	22.50	1.242	62.9	1.006	0.06	1.100	1.374
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40140	2545	21.48	22.50	1.265	62.9	1.006	0.14	0.942	1.199
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40400	2571	21.43	22.50	1.279	62.9	1.006	0.01	0.911	1.173
	LTE Band 41	20M	QPSK	50	0	Back	5mm	State 3	40670	2598	21.47	22.50	1.268	62.9	1.006	0.08	1.030	1.314
	LTE Band 41	20M	QPSK	100	0	Back	5mm	State 3	41140	2645	21.45	22.50	1.274	62.9	1.006	0.15	0.928	1.189
	LTE Band 41	20M	QPSK	1	0	Front	13mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.03	0.226	0.274
	LTE Band 41	20M	QPSK	50	0	Front	13mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	0.12	0.211	0.252
	LTE Band 41	20M	QPSK	1	0	Back	24mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.01	0.100	0.121
	LTE Band 41	20M	QPSK	50	0	Back	24mm	State 1	41140	2645	22.26	23.00	1.186	62.9	1.006	-0.05	0.088	0.105

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	State 3	11	2462	16.45	17.00	1.135	100	1.000	-0.11	0.512	0.581
40	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 3	11	2462	16.45	17.00	1.135	100	1.000	-0.07	0.870	0.987
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 3	1	2412	15.53	16.00	1.114	100	1.000	0.16	0.800	0.891
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 3	6	2437	16.04	16.50	1.112	100	1.000	-0.05	0.812	0.903
	WLAN2.4GHz	802.11b 1Mbps	Front	13mm	Default	11	2462	18.12	18.50	1.091	100	1.000	0.06	0.171	0.187
	WLAN2.4GHz	802.11b 1Mbps	Back	24mm	Default	11	2462	18.12	18.50	1.091	100	1.000	0.12	0.237	0.259
	WLAN5GHz	802.11a 6Mbps	Front	5mm	State 3	64	5320	13.83	15.50	1.469	98.28	1.018	0	0.102	0.153
41	WLAN5GHz	802.11a 6Mbps	Back	5mm	State 3	64	5320	13.83	15.50	1.469	98.28	1.018	0.07	0.575	0.860
	WLAN5GHz	802.11a 6Mbps	Back	5mm	State 3	60	5300	13.56	15.50	1.563	98.28	1.018	-0.14	0.531	0.845
	WLAN5GHz	802.11a 6Mbps	Front	13mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	-0.02	0.037	0.055
	WLAN5GHz	802.11a 6Mbps	Back	24mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	0.13	0.217	0.320
	WLAN5GHz	802.11a 6Mbps	Front	5mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	-0.11	0.277	0.418
42	WLAN5GHz	802.11a 6Mbps	Back	5mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	-0.04	0.401	0.604
43	WLAN5GHz	802.11a 6Mbps	Front	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	-0.1	0.356	0.529
	WLAN5GHz	802.11a 6Mbps	Back	5mm	Default	165	5825	16.86	18.50	1.460	98.28	1.018	0.13	0.330	0.491

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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	Front	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001
44	Bluetooth	1Mbps	Back	5mm	0	2402	10.92	11.00	1.018	76.88	1.084	0	< 0.001	< 0.001

14.4 Product Specific SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Back	0mm	State 1	189	836.4	30.08	31.50	1.387	0.17	0.722	1.001
45	GSM850	GPRS (2 Tx slots)	Back	0mm	State 1	128	824.2	29.66	31.50	1.528	-0.13	1.340	2.047
	GSM850	GPRS (2 Tx slots)	Back	0mm	State 1	251	848.8	29.89	31.50	1.449	0.17	0.586	0.849
	GSM1900	GPRS (2 Tx slots)	Front	0mm	State 4	512	1850.2	26.85	27.50	1.161	-0.06	1.730	2.009
	GSM1900	GPRS (2 Tx slots)	Front	0mm	State 4	661	1880	26.60	27.50	1.230	0.03	1.600	1.968
	GSM1900	GPRS (2 Tx slots)	Front	0mm	State 4	810	1909.8	26.81	27.50	1.172	-0.09	1.740	2.040
	GSM1900	GPRS (2 Tx slots)	Back	0mm	State 4	512	1850.2	26.85	27.50	1.161	-0.06	1.730	2.009
	GSM1900	GPRS (2 Tx slots)	Back	0mm	State 4	661	1880	26.60	27.50	1.230	-0.05	1.610	1.981
	GSM1900	GPRS (2 Tx slots)	Back	0mm	State 4	810	1909.8	26.81	27.50	1.172	0.04	1.750	2.051
	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	State 4	512	1850.2	26.85	27.50	1.161	0.06	3.010	3.496
	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	State 4	661	1880	26.60	27.50	1.230	0.07	2.810	3.457
46	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	State 4	810	1909.8	26.81	27.50	1.172	0.08	3.060	3.587
	GSM1900	GPRS (2 Tx slots)	Front	7mm	State 1	512	1850.2	27.25	28.50	1.334	0.09	0.235	0.313
	GSM1900	GPRS (2 Tx slots)	Back	19mm	State 1	512	1850.2	27.25	28.50	1.334	0.06	0.117	0.156
	GSM1900	GPRS (2 Tx slots)	Bottom Side	15mm	State 1	512	1850.2	27.25	28.50	1.334	0.18	0.360	0.480

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	State 4	9538	1907.6	19.13	20.00	1.222	-0.06	1.120	1.368
	WCDMA II	RMC 12.2Kbps	Front	0mm	State 4	9262	1852.4	19.12	20.00	1.225	-0.04	1.000	1.225
	WCDMA II	RMC 12.2Kbps	Front	0mm	State 4	9400	1880	19.08	20.00	1.236	0.03	1.030	1.273
	WCDMA II	RMC 12.2Kbps	Back	0mm	State 4	9538	1907.6	19.13	20.00	1.222	0.08	1.460	1.784
	WCDMA II	RMC 12.2Kbps	Back	0mm	State 4	9262	1852.4	19.12	20.00	1.225	-0.09	1.330	1.629
	WCDMA II	RMC 12.2Kbps	Back	0mm	State 4	9400	1880	19.08	20.00	1.236	0.04	1.370	1.693
47	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	State 4	9538	1907.6	19.13	20.00	1.222	-0.14	2.700	3.299
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	State 4	9262	1852.4	19.12	20.00	1.225	0.16	2.470	3.025
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	State 4	9400	1880	19.08	20.00	1.236	-0.17	2.550	3.152
	WCDMA II	RMC 12.2Kbps	Front	7mm	State 1	9538	1907.6	22.63	24.00	1.371	0.11	0.994	1.363
	WCDMA II	RMC 12.2Kbps	Back	19mm	State 1	9538	1907.6	22.63	24.00	1.371	0.18	0.452	0.620
	WCDMA II	RMC 12.2Kbps	Bottom Side	15mm	State 1	9538	1907.6	22.63	24.00	1.371	-0.08	0.873	1.197
	WCDMA IV	RMC 12.2Kbps	Front	0mm	State 4	1413	1732.6	21.43	22.50	1.279	-0.12	1.320	1.689
	WCDMA IV	RMC 12.2Kbps	Front	0mm	State 4	1312	1712.4	21.40	22.50	1.288	0.01	1.450	1.868
	WCDMA IV	RMC 12.2Kbps	Front	0mm	State 4	1513	1752.6	21.42	22.50	1.282	0.11	1.370	1.757
	WCDMA IV	RMC 12.2Kbps	Back	0mm	State 4	1413	1732.6	21.43	22.50	1.279	-0.14	1.830	2.341
	WCDMA IV	RMC 12.2Kbps	Back	0mm	State 4	1312	1712.4	21.40	22.50	1.288	0.06	1.980	2.551
	WCDMA IV	RMC 12.2Kbps	Back	0mm	State 4	1513	1752.6	21.42	22.50	1.282	0.07	1.810	2.321
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	State 4	1413	1732.6	21.43	22.50	1.279	0.08	2.430	3.109
48	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	State 4	1312	1712.4	21.40	22.50	1.288	-0.15	2.670	3.440
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	State 4	1513	1752.6	21.42	22.50	1.282	-0.01	2.540	3.257
	WCDMA IV	RMC 12.2Kbps	Front	7mm	State 1	1413	1732.6	22.51	24.00	1.409	0.09	0.718	1.012
	WCDMA IV	RMC 12.2Kbps	Back	19mm	State 1	1413	1732.6	22.51	24.00	1.409	0.02	0.279	0.393
	WCDMA IV	RMC 12.2Kbps	Bottom Side	15mm	State 1	1413	1732.6	22.51	24.00	1.409	-0.02	0.414	0.583
	WCDMA V	RMC 12.2Kbps	Back	0mm	State 1	4132	826.4	22.54	24.00	1.400	0.12	2.110	2.953
	WCDMA V	RMC 12.2Kbps	Back	0mm	State 1	4182	836.4	22.52	24.00	1.406	-0.03	1.980	2.784
49	WCDMA V	RMC 12.2Kbps	Back	0mm	State 1	4233	846.6	22.41	24.00	1.442	-0.13	2.310	3.331
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	State 1	4132	826.4	22.54	24.00	1.400	-0.11	1.540	2.155
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	State 1	4182	836.4	22.52	24.00	1.406	0.05	1.440	2.025
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	State 1	4233	846.6	22.41	24.00	1.442	-0.08	1.680	2.423

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	0mm	State 4	19100	1900	19.53	20.50	1.250	-0.19	0.895	1.119
	LTE Band 2	20M	QPSK	50	0	Front	0mm	State 4	19100	1900	19.48	20.50	1.265	0.08	0.871	1.102
	LTE Band 2	20M	QPSK	1	0	Back	0mm	State 4	19100	1900	19.53	20.50	1.250	0.19	1.850	2.313
	LTE Band 2	20M	QPSK	1	0	Back	0mm	State 4	18700	1860	19.17	20.50	1.358	0.14	1.620	2.200
	LTE Band 2	20M	QPSK	1	0	Back	0mm	State 4	18900	1880	19.31	20.50	1.315	-0.08	1.910	2.512
	LTE Band 2	20M	QPSK	50	0	Back	0mm	State 4	19100	1900	19.48	20.50	1.265	0.09	1.880	2.378
	LTE Band 2	20M	QPSK	50	0	Back	0mm	State 4	18700	1860	19.16	20.50	1.361	-0.15	1.600	2.178
	LTE Band 2	20M	QPSK	50	0	Back	0mm	State 4	18900	1880	19.26	20.50	1.330	0.06	1.650	2.195
	LTE Band 2	20M	QPSK	100	0	Back	0mm	State 4	19100	1900	19.45	20.50	1.274	0.02	1.790	2.280
50	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	State 4	19100	1900	19.53	20.50	1.250	-0.14	2.600	3.251
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	State 4	18700	1860	19.17	20.50	1.358	-0.19	2.350	3.192
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	State 4	18900	1880	19.31	20.50	1.315	-0.01	2.290	3.012
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	State 4	19100	1900	19.48	20.50	1.265	-0.07	2.510	3.174
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	State 4	18700	1860	19.16	20.50	1.361	0.06	2.350	3.199
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	State 4	18900	1880	19.26	20.50	1.330	0.04	2.360	3.140
	LTE Band 2	20M	QPSK	100	0	Bottom Side	0mm	State 4	19100	1900	19.45	20.50	1.274	-0.05	2.480	3.158
	LTE Band 2	20M	QPSK	1	0	Front	7mm	State 1	19100	1900	22.95	24.00	1.274	-0.05	0.852	1.085
	LTE Band 2	20M	QPSK	1	0	Back	19mm	State 1	19100	1900	22.95	24.00	1.274	0.03	0.694	0.884
	LTE Band 2	20M	QPSK	1	0	Bottom Side	15mm	State 1	19100	1900	22.95	24.00	1.274	0.06	0.840	1.070
	LTE Band 4	20M	QPSK	1	0	Front	0mm	State 4	20175	1732.5	22.68	23.50	1.208	0.15	1.590	1.920
	LTE Band 4	20M	QPSK	50	0	Front	0mm	State 4	20175	1732.5	22.08	23.00	1.236	-0.08	1.380	1.706
	LTE Band 4	20M	QPSK	100	0	Front	0mm	State 4	20175	1732.5	22.01	23.00	1.256	0.05	1.290	1.620
51	LTE Band 4	20M	QPSK	1	0	Back	0mm	State 4	20175	1732.5	22.68	23.50	1.208	-0.07	2.570	3.104
	LTE Band 4	20M	QPSK	50	0	Back	0mm	State 4	20175	1732.5	22.08	23.00	1.236	-0.04	2.200	2.719
	LTE Band 4	20M	QPSK	100	0	Back	0mm	State 4	20175	1732.5	22.01	23.00	1.256	0.05	2.150	2.700
	LTE Band 4	20M	QPSK	1	0	Bottom Side	0mm	State 4	20175	1732.5	22.68	23.50	1.208	-0.18	2.480	2.995
	LTE Band 4	20M	QPSK	50	0	Bottom Side	0mm	State 4	20175	1732.5	22.08	23.00	1.236	-0.05	2.110	2.608
	LTE Band 4	20M	QPSK	100	0	Bottom Side	0mm	State 4	20175	1732.5	22.01	23.00	1.256	0.04	2.040	2.562
	LTE Band 4	20M	QPSK	1	0	Front	7mm	State 1	20175	1732.5	23.15	24.00	1.216	0.03	0.702	0.854
	LTE Band 4	20M	QPSK	1	0	Back	19mm	State 1	20175	1732.5	23.15	24.00	1.216	0.08	0.337	0.410
	LTE Band 4	20M	QPSK	1	0	Bottom Side	15mm	State 1	20175	1732.5	23.15	24.00	1.216	0.08	0.420	0.511
	LTE Band 7	20M	QPSK	1	0	Front	0mm	State 4	21100	2535	22.26	23.00	1.186	0.14	1.660	1.968
	LTE Band 7	20M	QPSK	50	0	Front	0mm	State 4	21100	2535	22.15	23.00	1.216	0.05	1.480	1.800
52	LTE Band 7	20M	QPSK	1	0	Back	0mm	State 4	21100	2535	22.26	23.00	1.186	0.04	2.730	3.237
	LTE Band 7	20M	QPSK	1	0	Back	0mm	State 4	20850	2510	22.16	23.00	1.213	0.18	2.320	2.815
	LTE Band 7	20M	QPSK	1	0	Back	0mm	State 4	21350	2560	22.00	23.00	1.259	-0.08	2.560	3.223
	LTE Band 7	20M	QPSK	50	0	Back	0mm	State 4	21100	2535	22.15	23.00	1.216	0.03	2.590	3.150
	LTE Band 7	20M	QPSK	50	0	Back	0mm	State 4	20850	2510	22.20	23.00	1.202	-0.05	2.650	3.186
	LTE Band 7	20M	QPSK	50	0	Back	0mm	State 4	21350	2560	21.94	23.00	1.276	0.04	2.530	3.229
	LTE Band 7	20M	QPSK	100	0	Back	0mm	State 4	21100	2535	22.11	23.00	1.227	-0.08	2.580	3.167
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	State 4	21100	2535	22.26	23.00	1.186	0.19	1.120	1.328
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	State 4	21100	2535	22.15	23.00	1.216	-0.13	1.020	1.241
	LTE Band 7	20M	QPSK	1	0	Front	6mm	State 1	21100	2535	23.07	24.00	1.239	0.05	0.504	0.624
	LTE Band 7	20M	QPSK	1	0	Back	17mm	State 1	21100	2535	23.07	24.00	1.239	-0.02	0.318	0.394
	LTE Band 7	20M	QPSK	1	0	Bottom Side	14mm	State 1	21100	2535	23.07	24.00	1.239	0.01	0.201	0.249
53	LTE Band 26	15M	QPSK	1	0	Back	0mm	State 1	26865	831.5	22.67	24.00	1.358	-0.03	2.150	2.920
	LTE Band 26	15M	QPSK	36	0	Back	0mm	State 1	26865	831.5	21.69	23.00	1.352	0.02	1.620	2.190
	LTE Band 26	15M	QPSK	75	0	Back	0mm	State 1	26865	831.5	21.65	23.00	1.365	-0.05	1.600	2.183

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Front	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	0.13	1.180	1.430
54	LTE Band 41	20M	QPSK	1	0	Back	0mm	State 1	41140	2645	23.19	24.00	1.205	62.9	1.006	-0.09	1.900	2.303
	LTE Band 41	20M	QPSK	1	0	Back	0mm	State 1	40140	2545	23.15	24.00	1.216	62.9	1.006	0.07	1.620	1.982
	LTE Band 41	20M	QPSK	1	0	Back	0mm	State 1	40400	2571	23.05	24.00	1.245	62.9	1.006	-0.16	1.780	2.229
	LTE Band 41	20M	QPSK	1	0	Back	0mm	State 1	40670	2598	23.01	24.00	1.256	62.9	1.006	0.15	1.550	1.959

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	-0.1	0.068	0.101
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	0.08	0.687	1.014
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	-0.19	0.136	0.201
55	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Default	64	5320	16.89	18.50	1.450	98.28	1.018	-0.07	0.982	1.450
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	-0.01	0.239	0.360
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	0	0.355	0.535
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	-0.18	0.169	0.254
56	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Default	124	5620	16.80	18.50	1.481	98.28	1.018	-0.1	0.823	1.240

14.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1413	1732.6	18.95	19.00	1.012			0.04	1.290		1.305
2nd	WCDMA IV	RMC 12.2Kbps	Back	5mm	State 3	1413	1732.6	18.95	19.00	1.012			0.01	1.260	1.02	1.275
1st	LTE Band 2	20M_QPSK_1_0	Bottom Side	5mm	State 2	19100	1900	15.45	15.50	1.012			0.09	1.250		1.264
2nd	LTE Band 2	20M_QPSK_1_0	Bottom Side	5mm	State 2	19100	1900	15.45	15.50	1.012			0.05	1.210	1.03	1.224
1st	LTE Band 26	15M_QPSK_1_0	Back	5mm	State 3	26865	831.5	21.60	22.00	1.096			-0.01	1.190		1.305
2nd	LTE Band 26	15M_QPSK_1_0	Back	5mm	State 3	26865	831.5	21.60	22.00	1.096			-0.12	1.130	1.05	1.239
1st	LTE Band 41	20M_QPSK_1_0	Back	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	-0.17	1.140		1.398
2nd	LTE Band 41	20M_QPSK_1_0	Back	5mm	State 3	41140	2645	21.64	22.50	1.219	62.9	1.006	-0.08	1.120	1.02	1.373
1st	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.07	0.870		0.987
2nd	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	State 2	11	2462	16.45	17.00	1.135	100	1.000	-0.01	0.860	1.01	0.976

No.	Band	Mode	Test Position	Gap (mm)	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	State 4	810	1909.8	26.81	27.50	1.172	0.08	3.060		3.587
2nd	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	State 4	810	1909.8	26.81	27.50	1.172	0.04	3.020	1.01	3.540
1st	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	State 4	1312	1712.4	21.40	22.50	1.288	-0.15	2.670		3.440
2nd	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	State 4	1312	1712.4	21.40	22.50	1.288	-0.11	2.610	1.02	3.362
1st	WCDMA V	RMC 12.2Kbps	Back	0mm	State 1	4233	846.6	22.41	24.00	1.442	-0.13	2.310		3.331
2nd	WCDMA V	RMC 12.2Kbps	Back	0mm	State 1	4233	846.6	22.41	24.00	1.442	-0.05	2.260	1.02	3.259
1st	LTE Band 7	20M_QPSK_1_0	Back	0mm	State 4	21100	2535	22.26	23.00	1.186	0.04	2.730		3.237
2nd	LTE Band 7	20M_QPSK_1_0	Back	0mm	State 4	21100	2535	22.26	23.00	1.186	0.04	2.700	1.01	3.202

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
3.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes

General Note:

1. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. All licensed modes share the same antenna part and cannot transmit simultaneously
4. 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.
5. The Scaled SAR summation is calculated based on the same configuration and test position.
6. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
   v) The SPLSR calculated results please refer to section 17.5.

15.1 Head Exposure Conditions

WWAN Band	Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM850	Right Cheek	0.234	0.568	0.687	0.001	**0.802**	**0.921**	**0.235**		
	Right Tilted	0.148	0.609	0.904	0.001	**0.757**	**1.052**	**0.149**		
	Left Cheek	0.219	0.933	0.959	0.001	**1.152**	**1.178**	**0.220**		
	Left Tilted	0.133	0.869	1.141	0.001	**1.002**	**1.274**	**0.134**		
GSM1900	Right Cheek	0.092	0.568	0.687	0.001	**0.660**	**0.779**	**0.093**		
	Right Tilted	0.076	0.609	0.904	0.001	**0.685**	**0.980**	**0.077**		
	Left Cheek	0.099	0.933	0.959	0.001	**1.032**	**1.058**	**0.100**		
	Left Tilted	0.093	0.869	1.141	0.001	**0.962**	**1.234**	**0.094**		
WCDMA II	Right Cheek	0.196	0.568	0.687	0.001	**0.764**	**0.883**	**0.197**		
	Right Tilted	0.129	0.609	0.904	0.001	**0.738**	**1.033**	**0.130**		
	Left Cheek	0.188	0.933	0.959	0.001	**1.121**	**1.147**	**0.189**		
	Left Tilted	0.148	0.869	1.141	0.001	**1.017**	**1.289**	**0.149**		
WCDMA IV	Right Cheek	0.265	0.568	0.687	0.001	**0.833**	**0.952**	**0.266**		
	Right Tilted	0.125	0.609	0.904	0.001	**0.734**	**1.029**	**0.126**		
	Left Cheek	0.234	0.933	0.959	0.001	**1.167**	**1.193**	**0.235**		
	Left Tilted	0.196	0.869	1.141	0.001	**1.065**	**1.337**	**0.197**		
WCDMA V	Right Cheek	0.474	0.568	0.687	0.001	**1.042**	**1.161**	**0.475**		
	Right Tilted	0.311	0.609	0.904	0.001	**0.920**	**1.215**	**0.312**		
	Left Cheek	0.469	0.933	0.959	0.001	**1.402**	**1.428**	**0.470**		
	Left Tilted	0.304	0.869	1.141	0.001	**1.173**	**1.445**	**0.305**		
LTE Band 2	Right Cheek	0.122	0.568	0.687	0.001	**0.690**	**0.809**	**0.123**		
	Right Tilted	0.074	0.609	0.904	0.001	**0.683**	**0.978**	**0.075**		
	Left Cheek	0.101	0.933	0.959	0.001	**1.034**	**1.060**	**0.102**		
	Left Tilted	0.090	0.869	1.141	0.001	**0.959**	**1.231**	**0.091**		
LTE Band 4	Right Cheek	0.137	0.568	0.687	0.001	**0.705**	**0.824**	**0.138**		
	Right Tilted	0.073	0.609	0.904	0.001	**0.682**	**0.977**	**0.074**		
	Left Cheek	0.133	0.933	0.959	0.001	**1.066**	**1.092**	**0.134**		
	Left Tilted	0.102	0.869	1.141	0.001	**0.971**	**1.243**	**0.103**		
LTE Band 7	Right Cheek	0.383	0.568	0.687	0.001	**0.951**	**1.070**	**0.384**		
	Right Tilted	0.344	0.609	0.904	0.001	**0.953**	**1.248**	**0.345**		
	Left Cheek	0.526	0.933	0.959	0.001	**1.459**	**1.485**	**0.527**		
	Left Tilted	0.164	0.869	1.141	0.001	**1.033**	**1.305**	**0.165**		
LTE Band 26	Right Cheek	0.469	0.568	0.687	0.001	**1.037**	**1.156**	**0.470**		
	Right Tilted	0.287	0.609	0.904	0.001	**0.896**	**1.191**	**0.288**		
	Left Cheek	0.474	0.933	0.959	0.001	**1.407**	**1.433**	**0.475**		
	Left Tilted	0.266	0.869	1.141	0.001	**1.135**	**1.407**	**0.267**		
LTE Band 41	Right Cheek	0.200	0.568	0.687	0.001	**0.768**	**0.887**	**0.201**		
	Right Tilted	0.178	0.609	0.904	0.001	**0.787**	**1.082**	**0.179**		
	Left Cheek	0.319	0.933	0.959	0.001	**1.252**	**1.278**	**0.320**		
	Left Tilted	0.118	0.869	1.141	0.001	**0.987**	**1.259**	**0.119**		

15.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM850	Front	0.518	0.581	0.480	0.001	**1.099**	**0.998**	**0.519**		
	Back	1.370	0.987	0.698	0.001	**2.357**	**2.068**	**1.371**	0.02	Case 11
	Left side	0.126				**0.126**	**0.126**	**0.126**		
	Right side	0.358	0.494	0.178	0.001	**0.852**	**0.536**	**0.359**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	0.699				**0.699**	**0.699**	**0.699**		
GSM1900	Front	0.865	0.581	0.480	0.001	**1.446**	**1.345**	**0.866**		
	Back	1.292	0.987	0.698	0.001	**2.279**	**1.990**	**1.293**	0.02	Case 12
	Left side	0.053				**0.053**	**0.053**	**0.053**		
	Right side	0.040	0.494	0.178	0.001	**0.534**	**0.218**	**0.041**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	1.328				**1.328**	**1.328**	**1.328**		
WCDMA II	Front	0.777	0.581	0.480	0.001	**1.358**	**1.257**	**0.778**		
	Back	1.322	0.987	0.698	0.001	**2.309**	**2.020**	**1.323**	0.02	Case 13
	Left side	0.051				**0.051**	**0.051**	**0.051**		
	Right side	0.048	0.494	0.178	0.001	**0.542**	**0.226**	**0.049**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	1.272				**1.272**	**1.272**	**1.272**		
WCDMA IV	Front	0.998	0.581	0.480	0.001	**1.579**	**1.478**	**0.999**		
	Back	1.305	0.987	0.698	0.001	**2.292**	**2.003**	**1.306**	0.02	Case 14
	Left side	0.082				**0.082**	**0.082**	**0.082**		
	Right side	0.113	0.494	0.178	0.001	**0.607**	**0.291**	**0.114**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	1.340				**1.340**	**1.340**	**1.340**		
WCDMA V	Front	0.430	0.581	0.480	0.001	**1.011**	**0.910**	**0.431**		
	Back	1.292	0.987	0.698	0.001	**2.279**	**1.990**	**1.293**	0.02	Case 15
	Left side	0.158				**0.158**	**0.158**	**0.158**		
	Right side	0.358	0.494	0.178	0.001	**0.852**	**0.536**	**0.359**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	0.728				**0.728**	**0.728**	**0.728**		
LTE Band 2	Front	0.793	0.581	0.480	0.001	**1.374**	**1.273**	**0.794**		
	Back	1.378	0.987	0.698	0.001	**2.365**	**2.076**	**1.379**	0.02	Case 16
	Left side	0.055				**0.055**	**0.055**	**0.055**		
	Right side	0.052	0.494	0.178	0.001	**0.546**	**0.230**	**0.053**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	1.264				**1.264**	**1.264**	**1.264**		
LTE Band 4	Front	0.993	0.581	0.480	0.001	**1.574**	**1.473**	**0.994**		
	Back	1.372	0.987	0.698	0.001	**2.359**	**2.070**	**1.373**	0.02	Case 17
	Left side	0.090				**0.090**	**0.090**	**0.090**		
	Right side	0.105	0.494	0.178	0.001	**0.599**	**0.283**	**0.106**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	1.230				**1.230**	**1.230**	**1.230**		
LTE Band 7	Front	0.762	0.581	0.480	0.001	**1.343**	**1.242**	**0.763**		
	Back	1.353	0.987	0.698	0.001	**2.340**	**2.051**	**1.354**	0.02	Case 18
	Left side	0.575				**0.575**	**0.575**	**0.575**		
	Right side	0.092	0.494	0.178	0.001	**0.586**	**0.270**	**0.093**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	0.587				**0.587**	**0.587**	**0.587**		
LTE Band 26	Front	0.613	0.581	0.480	0.001	**1.194**	**1.093**	**0.614**		
	Back	1.305	0.987	0.698	0.001	**2.292**	**2.003**	**1.306**	0.02	Case 19
	Left side	0.128				**0.128**	**0.128**	**0.128**		

	Right side	0.318	0.494	0.178	0.001	**0.812**	**0.496**	**0.319**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	0.648				**0.648**	**0.648**	**0.648**		
LTE Band 41	Front	0.873	0.581	0.480	0.001	**1.454**	**1.353**	**0.874**		
	Back	1.398	0.987	0.698	0.001	**2.385**	**2.096**	**1.399**	0.02	Case 20
	Left side	0.594				**0.594**	**0.594**	**0.594**		
	Right side	0.120	0.494	0.178	0.001	**0.614**	**0.298**	**0.121**		
	Top side		0.690	1.130	0.001	**0.690**	**1.130**	**0.001**		
	Bottom side	0.766				**0.766**	**0.766**	**0.766**		

15.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
		WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth					
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)					
GSM850	Front	0.518	0.581	0.529	0.001	**1.099**	**1.047**	**0.519**		
	Back	1.370	0.987	0.860	0.001	**2.357**	**2.230**	**1.371**	0.02	Case 1
GSM1900	Front	0.865	0.581	0.529	0.001	**1.446**	**1.394**	**0.866**		
	Back	1.292	0.987	0.860	0.001	**2.279**	**2.152**	**1.293**	0.02	Case 2
WCDMA II	Front	0.916	0.581	0.529	0.001	**1.497**	**1.445**	**0.917**		
	Back	1.322	0.987	0.860	0.001	**2.309**	**2.182**	**1.323**	0.02	Case 3
WCDMA IV	Front	0.998	0.581	0.529	0.001	**1.579**	**1.527**	**0.999**		
	Back	1.305	0.987	0.860	0.001	**2.292**	**2.165**	**1.306**	0.02	Case 4
WCDMA V	Front	0.512	0.581	0.529	0.001	**1.093**	**1.041**	**0.513**		
	Back	1.292	0.987	0.860	0.001	**2.279**	**2.152**	**1.293**	0.02	Case 5
LTE Band 2	Front	0.950	0.581	0.529	0.001	**1.531**	**1.479**	**0.951**		
	Back	1.378	0.987	0.860	0.001	**2.365**	**2.238**	**1.379**	0.02	Case 6
LTE Band 4	Front	0.993	0.581	0.529	0.001	**1.574**	**1.522**	**0.994**		
	Back	1.372	0.987	0.860	0.001	**2.359**	**2.232**	**1.373**	0.02	Case 7
LTE Band 7	Front	0.762	0.581	0.529	0.001	**1.343**	**1.291**	**0.763**		
	Back	1.353	0.987	0.860	0.001	**2.340**	**2.213**	**1.354**	0.02	Case 8
LTE Band 26	Front	0.613	0.581	0.529	0.001	**1.194**	**1.142**	**0.614**		
	Back	1.305	0.987	0.860	0.001	**2.292**	**2.165**	**1.306**	0.02	Case 9
LTE Band 41	Front	0.873	0.581	0.529	0.001	**1.454**	**1.402**	**0.874**		
	Back	1.398	0.987	0.860	0.001	**2.385**	**2.258**	**1.399**	0.02	Case 10

15.4 Product Specific Exposure Conditions

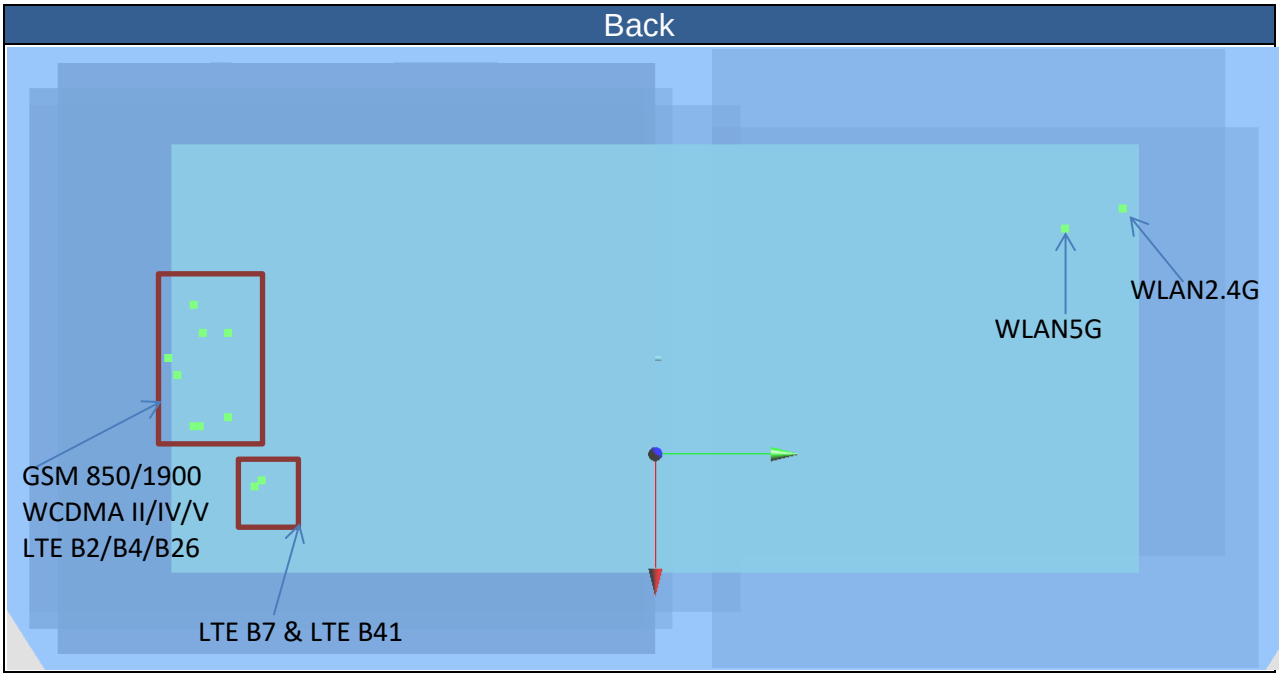
WWAN Band	Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM850	Front			0.360		0.000	0.360	0.000		
	Back	2.047		1.014		2.047	3.061	2.047		
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side					0.000	0.000	0.000		
GSM1900	Front	2.040		0.360		2.040	2.400	2.040		
	Back	2.051		1.014		2.051	3.065	2.051		
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	3.587				3.587	3.587	3.587		
WCDMA II	Front	1.368		0.360		1.368	1.728	1.368		
	Back	1.784		1.014		1.784	2.798	1.784		
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	3.299				3.299	3.299	3.299		
WCDMA IV	Front	1.868		0.360		1.868	2.228	1.868		
	Back	2.551		1.014		2.551	3.565	2.551		
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	3.440				3.440	3.440	3.440		
WCDMA V	Front			0.360		0.000	0.360	0.000		
	Back	3.331		1.014		3.331	4.345	3.331	0.06	Case 31
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	2.423				2.423	2.423	2.423		
LTE Band 2	Front	1.119		0.360		1.119	1.479	1.119		
	Back	2.512		1.014		2.512	3.526	2.512		
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	3.251				3.251	3.251	3.251		
LTE Band 4	Front	1.920		0.360		1.920	2.280	1.920		
	Back	3.104		1.014		3.104	4.118	3.104	0.05	Case 32
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	2.995				2.995	2.995	2.995		
LTE Band 7	Front	1.968		0.360		1.968	2.328	1.968		
	Back	3.237		1.014		3.237	4.251	3.237	0.06	Case 33
	Left side					0.000	0.000	0.000		
	Right side			0.254		0.000	0.254	0.000		
	Top side			1.450		0.000	1.450	0.000		
	Bottom side	1.328				1.328	1.328	1.328		
LTE Band 26	Front			0.360		0.000	0.360	0.000		
	Back	2.920		1.014		2.920	3.934	2.920		
	Left side					0.000	0.000	0.000		

	Right side			0.254		**0.000**	**0.254**	**0.000**		
	Top side			1.450		**0.000**	**1.450**	**0.000**		
	Bottom side					**0.000**	**0.000**	**0.000**		
LTE Band 41	Front	1.430		0.360		**1.430**	**1.790**	**1.430**		
	Back	2.303		1.014		**2.303**	**3.317**	**2.303**		
	Left side					**0.000**	**0.000**	**0.000**		
	Right side			0.254		**0.000**	**0.254**	**0.000**		
	Top side			1.450		**0.000**	**1.450**	**0.000**		
	Bottom side					**0.000**	**0.000**	**0.000**		

15.5 SPLSR Evaluation and Analysis

General Note:

1. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary



	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
Case 1	GSM850	Back	1.37	5mm	-10.87	-76.6	-1.99	162.4	2.36	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	GSM850	Back	1.37	5mm	-10.87	-76.6	-1.99	157.8	2.23	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	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**
Case 2	GSM1900	Back	1.292	5mm	-1.76	-84.02	-2.1	170.8	2.28	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	GSM1900	Back	1.292	5mm	-1.76	-84.02	-2.1	166.0	2.15	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	**Position**	**SAR (W/kg)**	**Gap (mm)**	**SAR peak location (cm) X**	**Y**	**Z**	**3D distance (mm)**	**Summed SAR (W/kg)**	**SPLSR Results**	**Simultaneous SAR**
Case 3	WCDMA II	Back	1.322	5mm	0.34	-81.1	-2.2	168.3	2.31	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA II	Back	1.322	5mm	0.34	-81.1	-2.2	163.4	2.18	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	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**
Case 4	WCDMA IV	Back	1.305	5mm	8.86	-83.21	-2.17	171.9	2.29	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA IV	Back	1.305	5mm	8.86	-83.21	-2.17	166.8	2.17	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				

	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 5	WCDMA V	Back	1.292	5mm	-13.55	-81.9	-2.08	167.4	2.28	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA V	Back	1.292	5mm	-13.55	-81.9	-2.08	162.9	2.15	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 6	LTE B2	Back	1.378	5mm	-3.17	-83.9	-2.12	170.5	2.37	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B2	Back	1.378	5mm	-3.17	-83.9	-2.12	165.7	2.24	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 7	LTE B4	Back	1.372	5mm	10.44	-82.61	-2.1	171.7	2.36	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B4	Back	1.372	5mm	10.44	-82.61	-2.1	166.5	2.23	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 8	LTE B7	Back	1.353	5mm	21.83	-71.4	-1.99	163.7	2.34	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B7	Back	1.353	5mm	21.83	-71.4	-1.99	158.2	2.21	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 9	LTE B26	Back	1.305	5mm	-5.46	-82.99	-2.06	169.3	2.29	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B26	Back	1.305	5mm	-5.46	-82.99	-2.06	164.6	2.17	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 10	LTE B41	Back	1.398	5mm	18.62	-73.21	-2.02	164.5	2.39	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B41	Back	1.398	5mm	18.62	-73.21	-2.02	159.1	2.26	0.02	Not required
	WLAN5GHz		0.86	5mm	-21.37	80.8	-1.12				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 11	GSM850	Back	1.37	5mm	-10.87	-76.6	-1.99	162.4	2.36	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	GSM850	Back	1.37	5mm	-10.87	-76.6	-1.99	160.1	2.07	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 12	GSM1900	Back	1.292	5mm	-1.76	-84.02	-2.1	170.8	2.28	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	GSM1900	Back	1.292	5mm	-1.76	-84.02	-2.1	168.3	1.99	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 13	WCDMA II	Back	1.322	5mm	0.34	-81.1	-2.2	168.3	2.31	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA II	Back	1.322	5mm	0.34	-81.1	-2.2	165.7	2.02	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				

	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 14	WCDMA IV	Back	1.305	5mm	8.86	-83.21	-2.17	171.9	2.29	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA IV	Back	1.305	5mm	8.86	-83.21	-2.17	169.1	2.00	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 15	WCDMA V	Back	1.292	5mm	-13.55	-81.9	-2.08	167.4	2.28	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	WCDMA V	Back	1.292	5mm	-13.55	-81.9	-2.08	165.3	1.99	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 16	LTE B2	Back	1.378	5mm	-3.17	-83.9	-2.12	170.5	2.37	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B2	Back	1.378	5mm	-3.17	-83.9	-2.12	168.0	2.08	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 17	LTE B4	Back	1.372	5mm	10.44	-82.61	-2.1	171.7	2.36	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B4	Back	1.372	5mm	10.44	-82.61	-2.1	168.8	2.07	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 18	LTE B7	Back	1.353	5mm	21.83	-71.4	-1.99	163.7	2.34	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B7	Back	1.353	5mm	21.83	-71.4	-1.99	160.4	2.05	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 19	LTE B26	Back	1.305	5mm	-5.46	-82.99	-2.06	169.3	2.29	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B26	Back	1.305	5mm	-5.46	-82.99	-2.06	166.9	2.00	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 20	LTE B41	Back	1.398	5mm	18.62	-73.21	-2.02	164.5	2.39	0.02	Not required
	WLAN2.4GHz		0.987	5mm	-26.57	85.01	-1.11				
	LTE B41	Back	1.398	5mm	18.62	-73.21	-2.02	161.3	2.10	0.02	Not required
	WLAN5GHz		0.698	5mm	-20.97	83.2	-1.13				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 31	WCDMA V	Back	3.331	0mm	-25.77	-76.71	-1.96	152.9	4.35	0.06	Not required
	WLAN5GHz		1.014	0mm	-18.99	76	-1.14				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 32	LTE B4	Back	3.104	0mm	12.03	-76.6	-1.78	155.7	4.12	0.05	Not required
	WLAN5GHz		1.014	0mm	-18.99	76	-1.14				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 33	LTE B7	Back	3.237	0mm	27.82	-73.41	-1.49	156.6	4.25	0.06	Not required
	WLAN5GHz		1.014	0mm	-18.99	76	-1.14				

16. Supplemental Antenna tuner tests results

General Note:

1. This device implements antenna tuning techniques for UMTS B2/4/5, LTE B2/4/5/26. SAR test proposal was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing and this design will provide the highest power at different user scenarios and would not influence to the antenna characteristics other than impedance matching.
2. The following test procedure was followed to demonstrate that the SAR results in this report represent the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR will be measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements will be evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values.
3. To evaluate all of the tuner states, the 144 tuner states are divided evenly among band, mode and exposure combinations so that at least one single point SAR measurement is measured in each configuration. Single point time-sweep measurements will be performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state will be established remotely so that the device is not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe will remain stationary at the same position throughout the entire series of single point measurements for each combination.
4. The device supports LTE B5/26. Since the supported frequency span for LTE B5 falls completely within the supported frequency span for LTE B26, and both bands have the same target power and both LTE bands share the same transmission path, therefore standalone SAR was only assessed for LTE B26. The single point SAR time-sweep measurements were treated independently for each supported ACL frequency band. For the LTE B5 single point SAR measurement selected the highest measured SAR configuration and exposure condition of LTE B26.
5. The tuner state was established remotely through Wi-Fi so that the device is not moved for the entire series of single point SAR for the tuner states in each combination (band, mode, exposure conditions).
6. if any single point SAR measurement result is > 1.2 W/kg for a band/exposure condition combination set, all supported tuner states are evaluated with single point SAR measurements for the combination

16.1 Supplemental SAR results

Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 27)	0	12	24	36	48	60	72	84	96	108	120	132
WCDMA B2	RMC12.2K	1907.6	9538	N/A	N/A	Right Cheek	0 mm	0.143	0.192	0.18	0.028	0.133	0.085	0.171	0.028	0.047	0.19	0.076	0.095	0.038	0.038
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 10)	1	13	25	37	49	61	73	85	97	109	121	133
WCDMA B4	RMC12.2K	1732.6	1413	N/A	N/A	Right Cheek	0 mm	0.188	0.245	0.11	0.176	0.1	0.176	0.091	0.195	0.11	0.157	0.043	0.024	0.119	0.024
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 133)	2	14	26	38	50	62	74	86	98	110	122	134
WCDMA B5	RMC12.2K	826.4	4132	N/A	N/A	Right Cheek	0 mm	0.339	0.418	0.235	0.264	0.226	0.264	0.178	0.187	0.159	0.187	0.197	0.416	0.406	0.302
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 27)	3	15	27	39	51	63	75	87	99	111	123	135
LTE B2	QPSK	1900	19100	1	0	Right Cheek	0 mm	0.096	0.131	0.119	0.043	0.062	0.062	0.119	0.072	0.043	0.11	0.1	0.129	0.11	0.005
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 10)	4	16	28	40	52	64	76	88	100	112	124	136
LTE B4	QPSK	1732.5	20175	1	0	Right Cheek	0 mm	0.113	0.155	0.067	0.02	0.134	0.086	0.067	0.077	0.115	0.048	0.105	0.067	0.105	0.115
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 71)	5	17	29	41	53	65	77	89	101	113	125	137
LTE B26	QPSK	831.5	26865	1	0	Left Cheek	0 mm	0.349	0.481	0.336	0.469	0.108	0.203	0.308	0.136	0.127	0.231	0.155	0.231	0.127	0.279
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 27)	6	18	30	42	54	66	78	90	102	114	126	138
WCDMA B2	RMC12.2K	1907.6	9538	N/A	N/A	Bottom Side	5mm	1.01	1.7	1.146	0.298	1.384	1.679	1.498	1.193	1.403	0.365	1.193	0.679	0.784	0.384
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 10)	7	19	31	43	55	67	79	91	103	115	127	139
WCDMA B4	RMC12.2K	1752.6	1513	N/A	N/A	Bottom Side	5mm	1.05	1.91	1.518	1.422	1.327	1.108	0.498	1.87	1.318	0.441	1.089	1.546	1.546	0.737
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 114)	8	20	32	44	56	68	80	92	104	116	128	140
WCDMA B5	RMC12.2K	846.6	4233	N/A	N/A	Back	5mm	1.07	1.98	0.483	1.407	1.483	1.797	1.892	0.788	1.207	1.035	1.626	1.93	0.388	0.492
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 27)	9	21	33	45	57	69	81	93	105	117	129	141
LTE B2	QPSK	1900	19100	1	0	Bottom Side	5mm	1.25	2.3	0.393	1.441	1.888	1.793	1.069	1.574	0.184	0.65	1.965	0.365	0.403	2.003
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 10)	10	22	34	46	58	70	82	94	106	118	130	142
LTE B4	QPSK	1732.5	20175	1	0	Bottom Side	5mm	0.993	1.85	1.172	0.162	1.638	0.41	0.315	1.658	0.2	0.343	0.21	1.343	1.01	1.324
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)												
									Auto-Tune (State 114)	11	23	35	47	59	71	83	95	107	119	131	143
LTE B26	QPSK	831.5	26865	1	0	Back	5mm	1.19	2.24	1.762	0.667	1.752	2.057	1.048	1.39	0.981	0.2	2.219	2.238	2.095	2.095

When SAR is higher then 1.2W/kg

Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																	
									Auto-Tune (State 27)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
									2.3	1.25	1.869	0.422	1.927	1.965	1.879	1.003	1.631	1.269	0.393	0.631	0.346	0.727	0.708	1.612	1.45
									16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
									0.508	1.593	1.365	1.698	0.698	1.441	1.308	2.288	0.927	1.269	1.86	2.228	1.155	0.584	0.279	0.527	1.469
									33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
									1888	0.927	0.146	0.679	1.146	1.317	1.517	0.317	2.079	2.165	0.279	0.679	1.793	0.955	0.45	1.003	1.631
									50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
									0.936	0.26	1.05	0.412	0.631	0.488	0.346	1.069	1.203	0.269	1.708	0.279	0.717	1.355	0.679	1.26	0.355
									67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
LTE B2	QPSK	1900	19100	1	0	Bottom Side	5mm	1.25	1.374	1.184	1.574	0.117	1.288	2.212	1.888	2.012	0.146	0.469	2.203	0.346	2.165	1.746	0.184	0.384	1.612
									84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
									1.203	1.422	1.469	1.955	1.174	0.298	0.603	0.736	1.488	0.65	1.841	1.822	1.888	1.403	0.774	1.003	1.746
									101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117
									2.041	1.936	2.127	2.117	1.965	2.127	1.46	1.193	0.574	2.222	0.479	1.717	1.536	1.384	0.317	0.774	0.365
									118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
									0.774	2.203	1.803	1.412	0.288	0.431	0.612	1.003	1.241	2.003	2.241	0.403	2.184	1.365	1.708	1.831	0.431
									135	136	137	138	139	140	141	142	143								
									1.06	2.155	2.193	0.527	1.774	1.184	2.003	0.222	0.822								

Test Engineer：Thomas Wang, Jimmy Lu, Ken Lin and Randy Lin

17. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.
Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

18. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

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

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

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

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

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