FCC SAR Test Report

APPLICANT	:	Lenovo (Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT	:	Tablet PC
BRAND NAME	:	Lenovo
MODEL NAME	:	Lenovo Miix 630-12Q35; 81F1
FCC ID	:	O57MIIX630
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

We, Sporton International (Xi'an) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

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

Mark Qu

Approved by: Mark Qu / Manager

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA7D1210	Rev. 01	Initial issue of report	Apr. 16, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Lenovo (Shanghai) Electronics Technology Co., Ltd., Tablet PC, Lenovo Miix 630-12Q35; 81F1,** are as follows.

Highest Standalone 1g SAR Summary				
Equipment Class	Frequency Band		Body 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	WCDMA	Band V	1.15	1.59
		Band IV	1.09	
		Band II	1.12	
	LTE	Band 12/ Band 17	0.90	
		Band 13	0.97	
		Band 5	0.91	
		Band 26	0.73	
		Band 66/Band 4	1.09	
		Band 25/ Band 2	0.99	
		Band 30	**1.19**	
		Band 7	1.12	
		Band 41/Band 38	0.94	
DTS	WLAN	2.4GHz WLAN	1.07	1.58
NII		5GHz WLAN	1.04	1.59
DSS	Bluetooth	Bluetooth	0.32	1.45
Date of Testing:		2018/2/6 ~ 2018/4/13		
Remark: This device supports LTE B2 / B4 / B17 / B38 and LTE B25 / B66 / B12 / B41. Since the supported frequency span for LTE B2 / B4 / B17 / B38 falls completely within the supports frequency span for B25 / B66 / B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25 / B66 / B12 / B41.				

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.

2. Administration Data

Testing Laboratory	
Test Site	Sporton International (Xi'an) Inc.
Test Site Location	1F, Bldg. A3, No.39, Chuangye Ave. New Industrial Park, High-Tech District Xi'an Shaanxi Province 710119 China TEL: +86-29-8860-8767 FAX: +86-29-8860-8791

Applicant	
Company Name	Lenovo (Shanghai) Electronics Technology Co., Ltd.
Address	NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

Manufacturer	
Company Name	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

3. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Tablet PC
Brand Name	Lenovo
Model Name	Lenovo Miix 630-12Q35; 81F1
FCC ID	O57MIIX630
IMEI Code	867370030016207
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz: 802.11b/g/n HT20/HT40 WLAN 5GHz: 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth v3.0+EDR, Bluetooth v4.0 LE, Bluetooth v4.1 LE, Bluetooth v4.2 LE
HW Version	81835_1_14
SW Version	16299.192 windows 10S
EUT Stage	Identical Prototype

Remark:

1. This device has no voice function.
2. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
3. The device has two operating mode which is tablet mode and laptop mode. For laptop mode is actually tablet with a keyboard holder which is supplied by the manufacturer. Laptop mode is not necessary to perform SAR testing for tablet has evaluated conservatively.
4. This device implanted proximity sensor function at bottom face and edge 1 for tablet mode, power reduction will be implemented immediately at all WWAN and WLAN bands.
5. There are three types of sample; the differences of three samples are the suppliers of RAM+EMMC/Battery/TP+LCM/Camera, and the capacity of RAM/EMMC/Battery. Sample 1 with higher capacity, sample 2 and sample 3 with the same capacity, only supplier different. We evaluate there were no effect on SAR distribution, so we only chose sample 1 to perform SAR testing.
6. This device has two WWAN transmitter antennas which can refer to antenna location chapter. WWAN antenna 1 frequency bands include WCDMA B2 / B4 / B5, LTE B2 / B4 / B5 / B12 / B13 / B17 / B25 / B26 / B66, WWAN antenna 2 frequency bands include LTE B7 / B30 / B38 / B41. And they can’t transmit simultaneously.

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	O57MIIX630
Equipment Name	Tablet PC
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
Uplink Modulations Used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Data only
LTE Release	R11, Cat11
CA Support	Downlink Only
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3** Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) | MPR (dB) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 256 QAM | ≥ 1 | ≤ 5
LTE A-MPR	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)
Spectrum plots for RB configuration	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.
Power reduction applied to satisfy SAR compliance	1. Yes, Proximity Sensor. 2. Power reduction will be active at all WWAN bands.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations as below page and the detail power verification please referred to section 13.
LTE Carrier Aggregation Additional Information	This device supports maximum of 2 and 3 carriers in the downlink only. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. Due to carrier capability, only the combinations listed above are supported. The following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

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

LTE Band 2

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

LTE Band 4

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

LTE Band 5

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

LTE Band 7

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

LTE Band 12

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

LTE Band 13

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

LTE Band 17

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

LTE Band 25

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

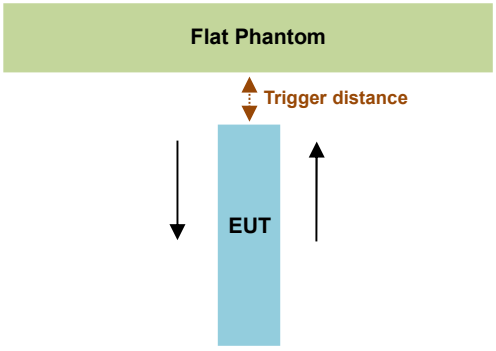
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593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

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

5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

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. The details are illustrated in the exhibit “P-Sensor operational description”, and the shortest triggering distances were reported and used for SAR assessment.
In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



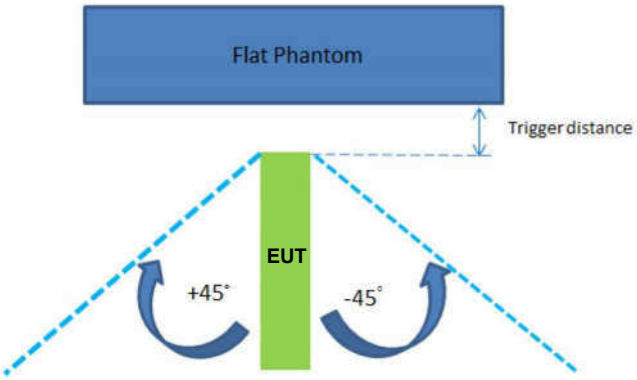
Proximity Sensor Trigger Distance (mm)		
Position	Bottom Face	Edge 1
Minimum	19	15

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.
Illustrated in the internal photo exhibit, although the senor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 15 mm separation at Edge 1.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



Proximity Sensor Trigger Distance (mm)	
Position	Edge 1
Minimum	15

Proximity sensor power reduction

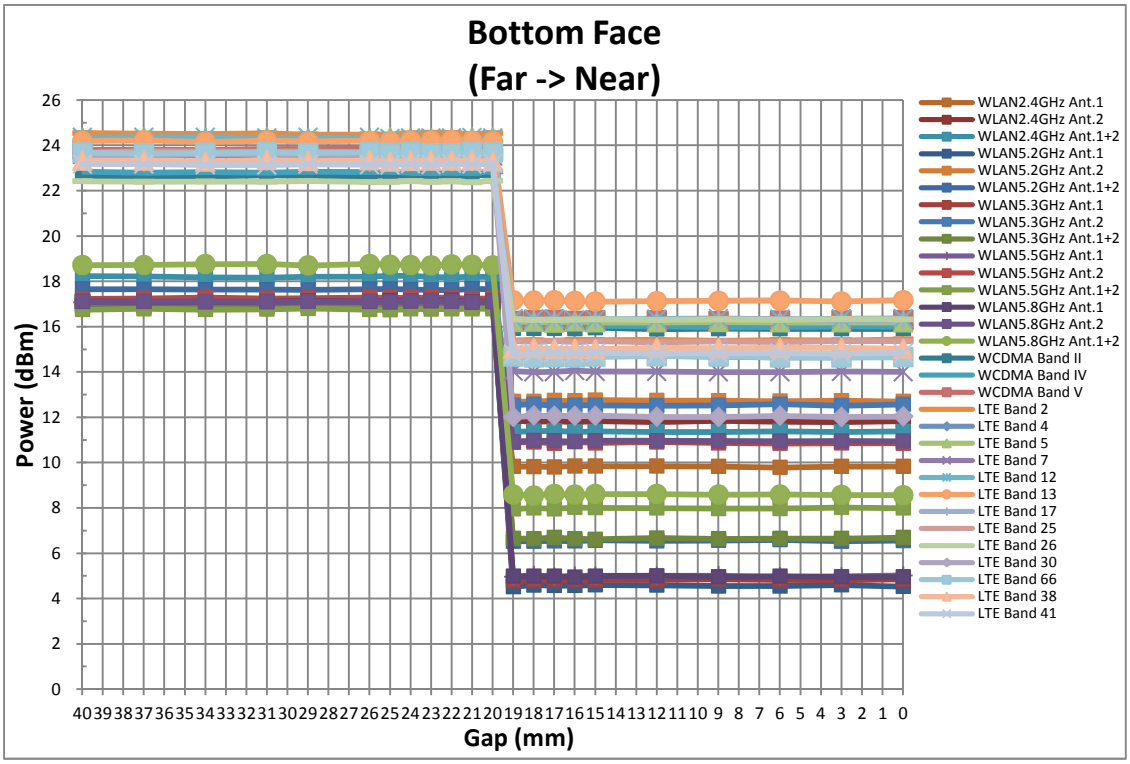
Exposure Position / wireless mode	Bottom Face(1)	Edge 1(1)	Edge 2	Edge 3	Edge 4
WCDMA Band II	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
WCDMA Band IV	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
WCDMA Band V	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
LTE Band 2	8.0 dB	8.0 dB	0 dB	0 dB	0 dB
LTE Band 4	8.5 dB	8.5 dB	0 dB	0 dB	0 dB
LTE Band 5	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
LTE Band 7	9.5 dB	9.5 dB	0 dB	0 dB	0 dB
LTE Band 12	8.0 dB	8.0 dB	0 dB	0 dB	0 dB
LTE Band 13	7.0 dB	7.0 dB	0 dB	0 dB	0 dB
LTE Band 17	8.0 dB	8.0 dB	0 dB	0 dB	0 dB
LTE Band 25	8.0 dB	8.0 dB	0 dB	0 dB	0 dB
LTE Band 26	6.0 dB	6.0 dB	0 dB	0 dB	0 dB
LTE Band 30	11.3 dB	11.3 dB	0 dB	0 dB	0 dB
LTE Band 38	8.5 dB	8.5 dB	0 dB	0 dB	0 dB
LTE Band 41	8.5 dB	8.5 dB	0 dB	0 dB	0 dB
LTE Band 66	8.5 dB	8.5 dB	0 dB	0 dB	0 dB
WLAN 2.4GHz Ant.1	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
WLAN 2.4GHz Ant.2	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
WLAN 2.4GHz Ant.1+2	6.5 dB	6.5 dB	0 dB	0 dB	0 dB
WLAN 5.2GHz Ant.1	12.5 dB	12.5 dB	0 dB	0 dB	0 dB
WLAN 5.2GHz Ant.2	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
WLAN 5.2GHz Ant.1+2	10.0 dB	10.0 dB	0 dB	0 dB	0 dB
WLAN 5.3GHz Ant.1	12.5 dB	12.5 dB	0 dB	0 dB	0 dB
WLAN 5.3GHz Ant.2	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
WLAN 5.3GHz Ant.1+2	10.0 dB	10.0 dB	0 dB	0 dB	0 dB
WLAN 5.5GHz Ant.1	12.5 dB	12.5 dB	0 dB	0 dB	0 dB
WLAN 5.5GHz Ant.2	6.5 dB	6.5 dB	0 dB	0 dB	0 dB
WLAN 5.5GHz Ant.1+2	9.5 dB	9.5 dB	0 dB	0 dB	0 dB
WLAN 5.8GHz Ant.1	12.5 dB	12.5 dB	0 dB	0 dB	0 dB
WLAN 5.8GHz Ant.2	6.5 dB	6.5 dB	0 dB	0 dB	0 dB
WLAN 5.8GHz Ant. 1+2	10.0 dB	10.0 dB	0 dB	0 dB	0 dB

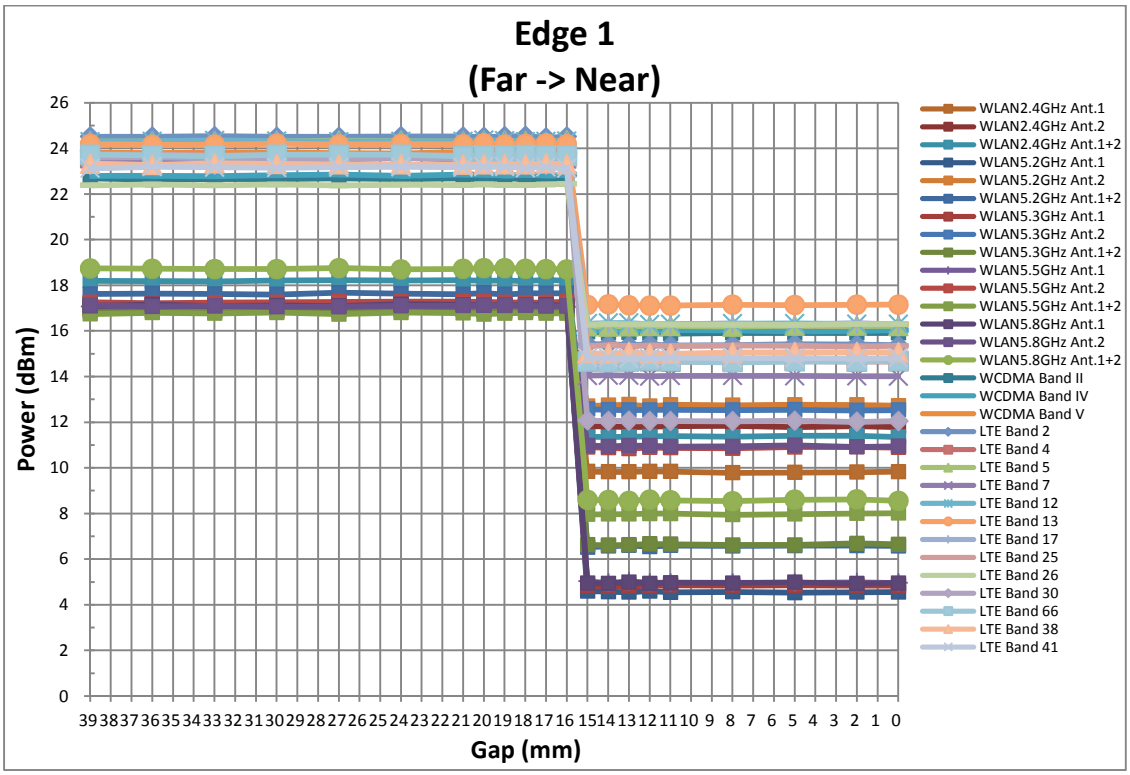
Remark:

1. (1): Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit "P-Sensor operational description
4. 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:
   - Bottom Face/Edge 1: 11 mm for WWAN/WLAN

Power Measurement during Sensor Trigger distance testing

Band/Mode	Ch #	Measured power reduction (dBm)		Reduction Levels
		w/o power back-off	w/ power back-off	(dB)
WCDMA Band II (RMC 12.2Kbps)	9400	22.62	15.88	6.74
WCDMA Band IV (RMC 12.2Kbps)	1413	22.77	15.96	6.81
WCDMA Band V (RMC 12.2Kbps)	4182	23.63	16.11	7.52
LTE Band 2 (QPSK, 20M, 1RB 0Offset)	18900	24.04	15.04	9.00
LTE Band 4 (QPSK, 20M, 1RB 0Offset)	20175	23.56	14.63	8.93
LTE Band 5 (QPSK, 10M, 1RB 0Offset)	20525	24.29	16.16	8.13
LTE Band 7 (QPSK, 20M, 1RB 0Offset)	21100	23.38	13.97	9.41
LTE Band 12 (QPSK, 10M, 1RB 0Offset)	23095	24.28	16.28	8.00
LTE Band 13 (QPSK, 10M, 1RB 0Offset)	23230	24.08	16.99	7.09
LTE Band 17 (QPSK, 10M, 1RB 0Offset)	23790	24.09	16.20	7.89
LTE Band 25 (QPSK, 20M, 1RB 0Offset)	26340	23.58	15.06	8.52
LTE Band 26 (QPSK, 15M, 1RB 0Offset)	26865	22.22	16.26	5.96
LTE Band 30 (QPSK, 10M, 1RB 0Offset)	27710	23.53	12.00	11.53
LTE Band 38 (QPSK, 20M, 1RB 0Offset)	38000	23.10	14.89	8.21
LTE Band 41 (QPSK, 20M, 1RB 0Offset)	40620	22.91	14.88	8.03
LTE Band 66 (QPSK, 20M, 1RB 0Offset)	132322	23.58	14.54	9.04
WLAN 2.4GHz Ant.1	6	16.42	9.76	6.66
WLAN 2.4GHz Ant.2	6	13.34	6.19	7.15
WLAN 2.4GHz Ant.1+2	6	18.16	11.34	6.82
WLAN 5.2GHz Ant.1	44	13.28	2.78	10.50
WLAN 5.2GHz Ant.2	44	14.86	3.97	10.89
WLAN 5.2GHz Ant.1+2	44	17.15	6.43	10.72
WLAN 5.3GHz Ant.1	60	13.10	3.24	9.86
WLAN 5.3GHz Ant.2	60	14.64	3.92	10.72
WLAN 5.3GHz Ant.1+2	60	16.95	6.61	10.34
WLAN 5.5GHz Ant.1	116	12.36	3.72	8.64
WLAN 5.5GHz Ant.2	116	12.99	4.41	8.58
WLAN 5.5GHz Ant.1+2	116	15.70	7.09	8.61
WLAN 5.8GHz Ant.1	157	14.71	4.47	10.24
WLAN 5.8GHz Ant.2	157	15.26	5.40	9.86
WLAN 5.8GHz Ant. 1+2	157	18.01	7.91	10.10


Bottom Face
(Far -> Near)
Power (dBm)
Gap (mm)
WLAN2.4GHz Ant.1
WLAN2.4GHz Ant.2
WLAN2.4GHz Ant.1+2
WLAN5.2GHz Ant.1
WLAN5.2GHz Ant.2
WLAN5.2GHz Ant.1+2
WLAN5.3GHz Ant.1
WLAN5.3GHz Ant.2
WLAN5.3GHz Ant.1+2
WLAN5.5GHz Ant.1
WLAN5.5GHz Ant.2
WLAN5.5GHz Ant.1+2
WLAN5.8GHz Ant.1
WLAN5.8GHz Ant.2
WLAN5.8GHz Ant.1+2
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 17
LTE Band 25
LTE Band 26
LTE Band 30
LTE Band 66
LTE Band 38
LTE Band 41


Edge 1
(Far -> Near)
Power (dBm)
Gap (mm)
WLAN2.4GHz Ant.1
WLAN2.4GHz Ant.2
WLAN2.4GHz Ant.1+2
WLAN5.2GHz Ant.1
WLAN5.2GHz Ant.2
WLAN5.2GHz Ant.1+2
WLAN5.3GHz Ant.1
WLAN5.3GHz Ant.2
WLAN5.3GHz Ant.1+2
WLAN5.5GHz Ant.1
WLAN5.5GHz Ant.2
WLAN5.5GHz Ant.1+2
WLAN5.8GHz Ant.1
WLAN5.8GHz Ant.2
WLAN5.8GHz Ant.1+2
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 17
LTE Band 25
LTE Band 26
LTE Band 30
LTE Band 66
LTE Band 38
LTE Band 41

6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

7. Specific Absorption Rate (SAR)

7.1 Introduction

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

7.2 SAR Definition

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

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

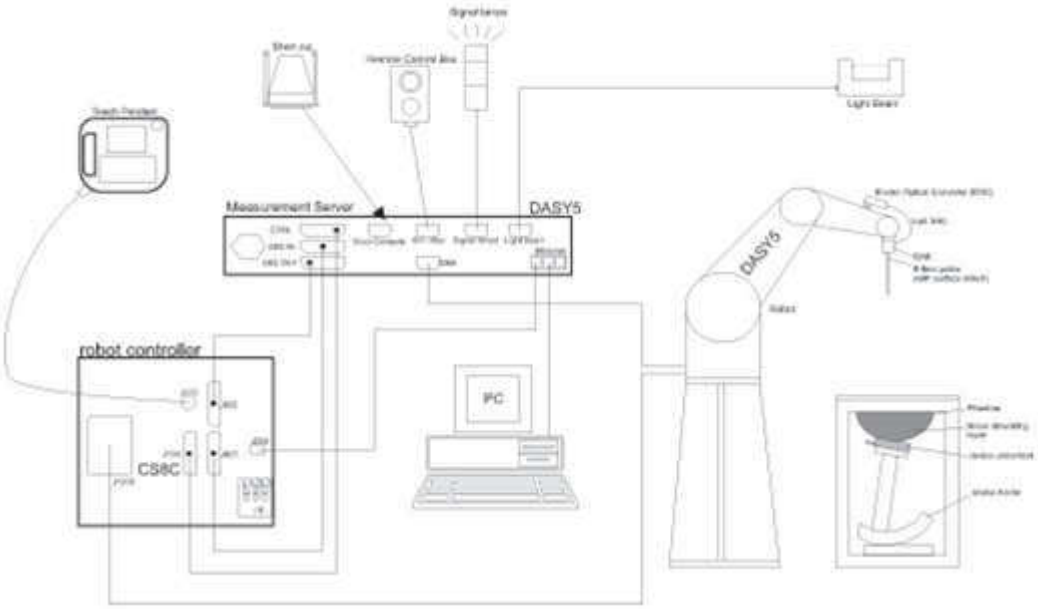
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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



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

8.1 E-Field Probe

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

<EX3DV4 Probe>

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

8.2 Data Acquisition Electronics (DAE)

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

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

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

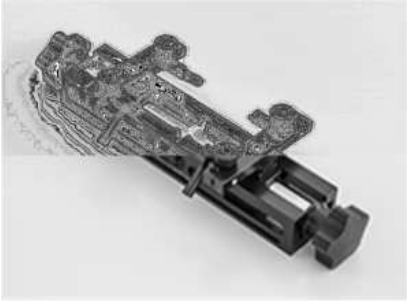
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

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

9.2 Power Reference Measurement

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

9.3 Area Scan

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

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

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

9.4 Zoom Scan

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

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

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

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

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

9.5 Volume Scan Procedures

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

9.6 Power Drift Monitoring

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

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1078	2017/6/20	2018/6/19
SPEAG	835MHz System Validation Kit	D835V2	4d120	2017/7/3	2018/7/2
SPEAG	1750MHz System Validation Kit	D1750V2	1023	2017/6/27	2018/6/26
SPEAG	1900MHz System Validation Kit	D1900V2	5d142	2017/6/21	2018/6/20
SPEAG	2300MHz System Validation Kit	D2300V2	1055	2017/8/30	2018/8/29
SPEAG	2450MHz System Validation Kit	D2450V2	908	2017/3/21	2018/3/20
SPEAG	2600MHz System Validation Kit	D2600V2	1112	2017/9/18	2018/9/17
SPEAG	5GHz System Validation Kit	D5GHzV2	1128	2017/9/25	2018/9/24
SPEAG	Data Acquisition Electronics	DAE4	1358	2017/10/24	2018/10/23
SPEAG	Dosimetric E-Field Probe	EX3DV4	3935	2017/12/14	2018/12/13
SPEAG	SAM Twin Phantom	QD OVA 002 AA	TP-1201	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Agilent	Wireless Communication Test Set	E5515C	MY50267224	2017/9/12	2018/9/11
Anritsu	Radio communication analyzer	MT8820C	6201300653	2017/7/19	2018/7/18
Anritsu	Radio communication analyzer	MT8821C	6201692204	2017/3/29	2018/3/28
R&S	System Simulator	CMW500	120050000309	2018/4/12	2019/4/11
Agilent	Signal Generator	N5181A	MY50145381	2017/12/26	2018/12/25
Agilent	Network Analyzer	E5071C	MY46523671	2017/10/18	2018/10/17
SPEAG	Dielectric Probe Kit	DAK 3.5	1138	2017/11/28	2018/11/27
Anritsu	Power Senor	ML2495A	1602009	2017/4/22	2018/4/21
Anritsu	Power Meter	MA2411B	1531051	2017/5/18	2018/5/17
Anritsu	Power Senor	MA2411B	1306099	2017/8/21	2018/8/20
Anritsu	Power Meter	ML2495A	1349001	2017/7/19	2018/7/18
R&S	CBT BLUETOOTH TESTER	CBT	100783	2017/8/8	2018/8/7
R&S	Spectrum Analyzer	N9010A	MY55150244	2017/4/18	2018/4/17
TES	Liquid thermometer	TES 1310	141004807	2017/4/21	2018/4/20
VICTOR	Temperature and humidity meter	VC230	H-3	2017/4/18	2018/4/17
ARRA	Power Divider	A3200-2	NA	Note	
Agilent	Dual Directional Coupler	778D	50422	Note	
Woken	Attenuation1	WK0602-XX	N/A	Note	
PE	Attenuation2	PE7005-10	N/A	Note	
PE	Attenuation3	PE7005-3	N/A	Note	
AR	Amplifier	5S1G4	342137	Note	

Note:
Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

11. System Verification

11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1.

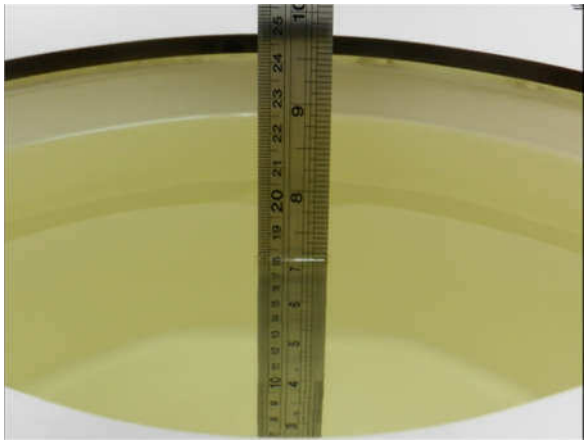


Fig 10.1 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Body	22.8	0.959	56.956	0.96	55.50	-0.10	2.62	±5	2018/2/9
835	Body	22.6	0.999	55.505	0.97	55.20	2.99	0.55	±5	2018/2/10
1750	Body	22.6	1.514	53.694	1.49	53.40	1.61	0.55	±5	2018/2/6
1900	Body	22.3	1.561	53.103	1.52	53.30	2.70	-0.37	±5	2018/2/8
2300	Body	22.6	1.766	53.030	1.81	52.90	-2.43	0.25	±5	2018/2/7
2450	Body	22.5	1.964	52.500	1.95	52.70	0.72	-0.38	±5	2018/3/10
2600	Body	22.6	2.171	51.943	2.16	52.50	0.51	-1.06	±5	2018/2/7
5200	Body	22.5	5.251	49.528	5.30	49.00	-0.92	1.08	±5	2018/3/11
5300	Body	22.5	5.377	49.382	5.42	48.90	-0.79	0.99	±5	2018/3/11
5500	Body	22.5	5.630	49.098	5.65	48.60	-0.35	1.02	±5	2018/3/11
5600	Body	22.5	5.767	48.953	5.77	48.50	-0.05	0.93	±5	2018/3/11
5800	Body	22.5	6.038	48.684	6.00	48.20	0.63	1.00	±5	2018/3/11

11.3 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/2/9	750	Body	250	1078	3935	1358	2.27	8.67	9.08	4.73
2018/2/10	835	Body	250	4d120	3935	1358	2.57	9.68	10.28	6.20
2018/2/6	1750	Body	250	1023	3935	1358	9.49	36.90	37.96	2.87
2018/2/8	1900	Body	250	5d142	3935	1358	10.40	40.40	41.6	2.97
2018/2/7	2300	Body	250	1055	3935	1358	12.10	48.90	48.4	-1.02
2018/3/10	2450	Body	250	908	3935	1358	13.30	50.90	53.2	4.52
2018/2/7	2600	Body	250	1112	3935	1358	14.10	55.00	56.4	2.55
2018/3/11	5200	Body	100	1128	3935	1358	6.88	74.60	68.8	-7.77
2018/3/11	5300	Body	100	1128	3935	1358	7.71	75.90	77.1	1.58
2018/3/11	5500	Body	100	1128	3935	1358	8.18	82.10	81.8	-0.37
2018/3/11	5600	Body	100	1128	3935	1358	8.44	80.00	84.4	5.50
2018/3/11	5800	Body	100	1128	3935	1358	7.37	78.20	73.7	-5.75

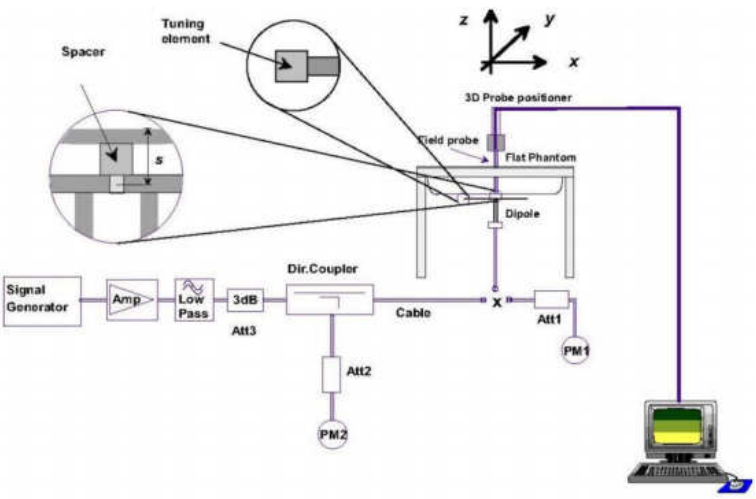


Fig 11.3.1 System Performance Check Setup

Fig 11.3.2 Setup Photo

12. RF Exposure Positions

The device has two operating mode which is tablet mode and laptop mode. For laptop mode is actually tablet with a holder which is supplied by the manufacturer. Laptop mode is not necessary to perform SAR testing for tablet has evaluated conservatively. So the DUT were tested in bottom face and edge1 / edge2 / edge3 / edge4 for tablet mode.

EUT has proximity sensor function, it would be on bottom face, and edge1. The distance is 11 mm for WWAN and WLAN frequency bands at bottom face and edge1 when EUT transmitting with full power was performed and 0mm with reduced power. Additional the surface of EUT is touching with phantom 0mm with full power.

<EUT Setup Photos>

Please refer to Appendix D for the test setup photos.

13. Conducted RF Output Power (Unit: dBm)

<WCDMA Conducted Power>

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

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

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

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

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

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

Setup Configuration

HSUPA Setup Configuration:

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

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

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

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

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

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

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

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

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

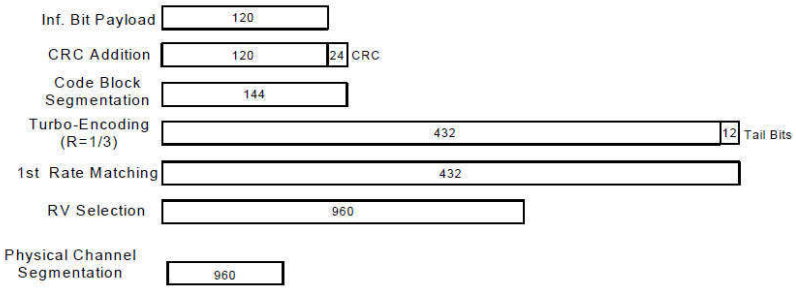


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

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

<Maximum Average RF Power (Proximity Sensor Inactive)>

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)	WCDMA Band V			Tune-up Limit (dBm)
Tx Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	22.57	22.62	22.52	24.00	22.75	22.77	22.64	23.50	23.75	23.63	23.77	24.50
3GPP Rel 6	HSDPA Subtest-1	21.41	21.36	21.28	22.50	21.59	21.62	21.51	22.50	22.62	22.50	22.65	23.00
3GPP Rel 6	HSDPA Subtest-2	21.40	21.29	21.20	22.50	21.58	21.55	21.49	22.50	22.60	22.44	22.61	23.00
3GPP Rel 6	HSDPA Subtest-3	20.91	20.83	20.79	22.00	21.00	21.01	20.91	22.00	22.09	22.00	22.12	22.50
3GPP Rel 6	HSDPA Subtest-4	20.92	20.85	20.81	22.00	21.01	21.06	20.92	22.00	22.15	22.02	22.16	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.38	21.28	21.23	22.50	21.52	21.61	21.48	22.50	22.55	22.48	22.65	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.35	21.35	21.18	22.50	21.56	21.58	21.45	22.50	22.48	22.52	22.51	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	20.88	20.81	20.75	22.00	21.01	21.05	20.89	22.00	22.01	22.01	22.08	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	20.75	20.86	20.73	22.00	21.05	21.00	20.88	22.00	22.05	22.08	22.19	22.50
3GPP Rel 6	HSUPA Subtest-1	21.31	21.36	21.28	22.00	21.55	21.57	21.49	22.00	22.59	22.50	22.62	23.00
3GPP Rel 6	HSUPA Subtest-2	19.61	19.66	19.54	20.00	19.54	19.57	19.50	20.00	20.63	20.60	20.69	21.00
3GPP Rel 6	HSUPA Subtest-3	20.35	20.42	20.36	21.00	20.61	20.65	20.54	21.00	21.59	21.55	21.65	22.00
3GPP Rel 6	HSUPA Subtest-4	19.41	19.45	19.41	20.00	19.54	19.55	19.46	20.00	20.77	20.71	20.79	21.00
3GPP Rel 6	HSUPA Subtest-5	21.40	21.47	21.39	22.00	21.55	21.60	21.59	22.00	22.64	22.63	22.72	23.00

<Maximum Average RF Power (Proximity Sensor Active)>

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)	WCDMA Band V			Tune-up Limit (dBm)
Tx Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	15.79	15.88	15.84	16.50	15.94	15.96	15.81	16.00	16.21	16.11	16.22	17.00
3GPP Rel 6	HSDPA Subtest-1	14.85	14.87	14.75	15.50	15.01	15.02	14.88	15.50	15.11	15.02	15.14	16.00
3GPP Rel 6	HSDPA Subtest-2	14.79	14.82	14.72	15.50	14.98	15.00	14.87	15.50	15.09	15.00	15.11	16.00
3GPP Rel 6	HSDPA Subtest-3	14.31	14.35	14.26	15.00	14.44	14.48	14.31	15.00	14.49	14.43	14.55	15.50
3GPP Rel 6	HSDPA Subtest-4	14.35	14.40	14.29	15.00	14.45	14.48	14.32	15.00	14.52	14.47	14.59	15.50
3GPP Rel 8	DC-HSDPA Subtest-1	14.81	14.65	14.76	15.50	15.01	15.01	14.86	15.50	15.08	15.10	15.13	16.00
3GPP Rel 8	DC-HSDPA Subtest-2	14.68	14.76	14.71	15.50	14.96	15.05	14.85	15.50	15.01	15.02	15.15	16.00
3GPP Rel 8	DC-HSDPA Subtest-3	14.25	14.28	14.25	15.00	14.38	14.41	14.28	15.00	14.36	14.25	14.52	15.50
3GPP Rel 8	DC-HSDPA Subtest-4	14.28	14.31	14.25	15.00	14.35	14.51	14.30	15.00	14.44	14.18	14.56	15.50
3GPP Rel 6	HSUPA Subtest-1	14.89	14.92	14.88	16.00	15.01	15.03	14.95	16.00	15.26	15.20	15.31	16.00
3GPP Rel 6	HSUPA Subtest-2	12.99	13.02	12.94	14.00	13.02	13.05	12.95	14.00	13.21	13.16	13.26	14.00
3GPP Rel 6	HSUPA Subtest-3	13.91	13.94	13.84	15.00	14.05	14.08	13.96	15.00	14.22	14.14	14.25	15.00
3GPP Rel 6	HSUPA Subtest-4	12.98	13.02	12.96	14.00	13.09	13.12	13.02	14.00	13.26	13.19	13.26	14.00
3GPP Rel 6	HSUPA Subtest-5	14.91	14.93	14.84	16.00	15.04	15.06	14.99	16.00	15.29	15.23	15.32	16.00

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B2 / B 4 / B17 / B38 SAR test was covered by LTE B25 / B66 / B12 / B41; 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

<Maximum Average RF Power (Proximity Sensor Inactive)>

<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	24.01	24.04	24.47	24.5	0
20	QPSK	1	49	23.82	23.90	24.28		
20	QPSK	1	99	23.74	23.79	24.20		
20	QPSK	50	0	22.98	23.03	23.44	23.5	1
20	QPSK	50	24	22.93	22.98	23.37		
20	QPSK	50	50	22.85	22.91	23.35		
20	QPSK	100	0	22.94	22.97	23.39		
20	16QAM	1	0	23.22	23.28	23.46	23.5	1
20	16QAM	1	49	23.00	23.15	23.43		
20	16QAM	1	99	22.97	22.97	23.35		
20	16QAM	50	0	22.00	22.05	22.48	22.5	2
20	16QAM	50	24	21.94	21.98	22.39		
20	16QAM	50	50	21.87	21.93	22.36		
20	16QAM	100	0	21.97	21.98	22.42		
20	64QAM	1	0	22.05	22.19	22.40	22.5	2
20	64QAM	1	49	21.87	22.13	22.22		
20	64QAM	1	99	21.93	22.02	22.24		
20	64QAM	50	0	20.80	20.91	21.09	21.5	3
20	64QAM	50	24	20.76	20.87	21.04		
20	64QAM	50	50	20.75	20.87	21.03		
20	64QAM	100	0	20.77	20.86	21.06		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	24.09	24.07	24.37	24.5	0
15	QPSK	1	37	23.89	23.87	24.23		
15	QPSK	1	74	23.87	23.84	24.24		
15	QPSK	36	0	23.09	23.00	23.43	23.5	1
15	QPSK	36	20	23.02	22.98	23.39		
15	QPSK	36	39	22.97	22.90	23.33		
15	QPSK	75	0	23.05	22.96	23.39		
15	16QAM	1	0	23.32	23.34	23.49	23.5	1
15	16QAM	1	37	23.14	23.20	23.42		
15	16QAM	1	74	23.12	23.13	23.44		
15	16QAM	36	0	22.09	22.03	22.42	22.5	2
15	16QAM	36	20	22.04	22.00	22.39		
15	16QAM	36	39	21.97	21.89	22.35		
15	16QAM	75	0	22.08	21.98	22.40		
15	64QAM	1	0	22.07	22.25	22.29	22.5	2
15	64QAM	1	37	21.88	22.07	22.14		
15	64QAM	1	74	21.88	22.06	22.26		
15	64QAM	36	0	20.78	20.90	21.07	21.5	3
15	64QAM	36	20	20.75	20.87	21.04		
15	64QAM	36	39	20.75	20.85	21.05		
15	64QAM	75	0	20.73	20.88	21.04		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	24.06	23.98	24.39	24.5	0
10	QPSK	1	25	23.95	23.90	24.26		
10	QPSK	1	49	23.89	23.84	24.25		
10	QPSK	25	0	23.06	22.96	23.41	23.5	1
10	QPSK	25	12	23.01	22.96	23.39		
10	QPSK	25	25	22.99	22.94	23.36		
10	QPSK	50	0	23.01	22.96	23.38		
10	16QAM	1	0	23.22	23.23	23.49	23.5	1
10	16QAM	1	25	23.15	23.13	23.44		
10	16QAM	1	49	23.10	23.06	23.42		
10	16QAM	25	0	22.09	22.01	22.41	22.5	2
10	16QAM	25	12	22.04	22.00	22.38		
10	16QAM	25	25	21.98	21.95	22.34		
10	16QAM	50	0	22.03	21.96	22.38		
10	64QAM	1	0	21.89	22.07	22.24	22.5	2
10	64QAM	1	25	21.89	22.00	22.16		
10	64QAM	1	49	21.80	21.98	22.21		
10	64QAM	25	0	20.73	20.84	21.03	21.5	3
10	64QAM	25	12	20.71	20.85	21.03		
10	64QAM	25	25	20.69	20.82	21.02		
10	64QAM	50	0	20.74	20.86	21.03		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	24.01	23.95	24.34	24.5	0
5	QPSK	1	12	23.93	23.88	24.24		
5	QPSK	1	24	23.95	23.88	24.30		
5	QPSK	12	0	23.02	22.96	23.37	23.5	1
5	QPSK	12	7	23.02	22.94	23.35		
5	QPSK	12	13	22.97	22.89	23.34		
5	QPSK	25	0	23.00	22.93	23.36		
5	16QAM	1	0	23.12	23.18	23.46	23.5	1
5	16QAM	1	12	23.11	23.17	23.43		
5	16QAM	1	24	23.04	23.09	23.40		
5	16QAM	12	0	22.05	21.97	22.36	22.5	2
5	16QAM	12	7	22.04	21.96	22.36		
5	16QAM	12	13	21.99	21.94	22.31		
5	16QAM	25	0	22.03	21.94	22.37		
5	64QAM	1	0	21.88	21.89	22.22	22.5	2
5	64QAM	1	12	21.83	21.94	22.16		
5	64QAM	1	24	21.82	21.90	22.18		
5	64QAM	12	0	20.76	20.78	21.05	21.5	3
5	64QAM	12	7	20.75	20.77	21.06		
5	64QAM	12	13	20.70	20.75	21.03		
5	64QAM	25	0	20.68	20.70	20.99		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	24.01	23.92	24.28	24.5	0
3	QPSK	1	8	23.94	23.91	24.25		
3	QPSK	1	14	23.91	23.88	24.25		
3	QPSK	8	0	23.00	22.95	23.37	23.5	1
3	QPSK	8	4	23.02	22.94	23.38		
3	QPSK	8	7	22.97	22.91	23.35		
3	QPSK	15	0	22.97	22.93	23.33		
3	16QAM	1	0	23.12	23.17	23.42	23.5	1
3	16QAM	1	8	23.10	23.19	23.42		
3	16QAM	1	14	23.07	23.13	23.41		
3	16QAM	8	0	22.06	21.99	22.40	22.5	2
3	16QAM	8	4	22.08	22.01	22.43		
3	16QAM	8	7	22.04	21.97	22.39		
3	16QAM	15	0	22.00	21.98	22.33		
3	64QAM	1	0	21.83	21.96	22.19	22.5	2
3	64QAM	1	8	21.84	21.93	22.16		
3	64QAM	1	14	21.78	21.90	22.18		
3	64QAM	8	0	20.70	20.74	21.05	21.5	3
3	64QAM	8	4	20.71	20.70	21.06		
3	64QAM	8	7	20.70	20.72	21.03		
3	64QAM	15	0	20.66	20.71	21.02		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.92	23.85	24.19	24.5	0
1.4	QPSK	1	3	23.93	23.91	24.27		
1.4	QPSK	1	5	23.87	23.86	24.22		
1.4	QPSK	3	0	23.97	23.92	24.27		
1.4	QPSK	3	1	24.01	23.93	24.33		
1.4	QPSK	3	3	23.96	23.90	24.22		
1.4	QPSK	6	0	22.94	22.89	23.29	23.5	1
1.4	16QAM	1	0	23.10	23.11	23.35	23.5	1
1.4	16QAM	1	3	23.15	23.15	23.41		
1.4	16QAM	1	5	23.06	23.08	23.36		
1.4	16QAM	3	0	22.94	22.92	23.28		
1.4	16QAM	3	1	22.93	22.97	23.32		
1.4	16QAM	3	3	22.94	22.91	23.23		
1.4	16QAM	6	0	22.06	21.98	22.33	22.5	2
1.4	64QAM	1	0	21.84	21.85	22.11	22.5	2
1.4	64QAM	1	3	21.80	21.84	22.17		
1.4	64QAM	1	5	21.81	21.77	22.15		
1.4	64QAM	3	0	21.76	21.82	22.09		
1.4	64QAM	3	1	21.82	21.86	22.14		
1.4	64QAM	3	3	21.76	21.82	22.07		
1.4	64QAM	6	0	20.61	20.66	20.92	21.5	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	23.42	23.56	23.51	24	0
20	QPSK	1	49	23.13	23.28	23.34		
20	QPSK	1	99	23.13	23.23	23.33		
20	QPSK	50	0	22.33	22.48	22.54	23	1
20	QPSK	50	24	22.20	22.37	22.43		
20	QPSK	50	50	22.25	22.38	22.45		
20	QPSK	100	0	22.23	22.40	22.45		
20	16QAM	1	0	22.62	22.79	22.77	23	1
20	16QAM	1	49	22.36	22.55	22.51		
20	16QAM	1	99	22.35	22.42	22.54		
20	16QAM	50	0	21.34	21.51	21.56	22	2
20	16QAM	50	24	21.27	21.40	21.43		
20	16QAM	50	50	21.25	21.38	21.46		
20	16QAM	100	0	21.21	21.39	21.45		
20	64QAM	1	0	21.50	21.45	21.52	22	2
20	64QAM	1	49	21.29	21.29	21.30		
20	64QAM	1	99	21.18	21.20	21.21		
20	64QAM	50	0	20.01	20.01	20.03	21	3
20	64QAM	50	24	19.95	19.92	19.91		
20	64QAM	50	50	19.87	19.86	19.88		
20	64QAM	100	0	19.97	19.90	19.93		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.35	23.50	23.51	24	0
15	QPSK	1	37	23.09	23.23	23.25		
15	QPSK	1	74	23.13	23.27	23.33		
15	QPSK	36	0	22.29	22.44	22.47	23	1
15	QPSK	36	20	22.20	22.38	22.40		
15	QPSK	36	39	22.24	22.29	22.45		
15	QPSK	75	0	22.24	22.34	22.43		
15	16QAM	1	0	22.63	22.77	22.77	23	1
15	16QAM	1	37	22.38	22.51	22.50		
15	16QAM	1	74	22.44	22.49	22.60		
15	16QAM	36	0	21.32	21.47	21.47	22	2
15	16QAM	36	20	21.24	21.36	21.40		
15	16QAM	36	39	21.27	21.30	21.46		
15	16QAM	75	0	21.22	21.37	21.44		
15	64QAM	1	0	21.38	21.40	21.41	22	2
15	64QAM	1	37	21.38	21.34	21.35		
15	64QAM	1	74	21.25	21.23	21.22		
15	64QAM	36	0	19.97	19.96	19.98	21	3
15	64QAM	36	20	19.93	19.94	19.95		
15	64QAM	36	39	19.90	19.84	19.85		
15	64QAM	75	0	19.93	19.91	19.94		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.39	23.43	23.50	24	0
10	QPSK	1	25	23.24	23.30	23.43		
10	QPSK	1	49	23.19	23.21	23.35		
10	QPSK	25	0	22.39	22.38	22.44	23	1
10	QPSK	25	12	22.32	22.33	22.50		
10	QPSK	25	25	22.29	22.32	22.47		
10	QPSK	50	0	22.30	22.34	22.48		
10	16QAM	1	0	22.60	22.66	22.61	23	1
10	16QAM	1	25	22.47	22.52	22.65		
10	16QAM	1	49	22.41	22.42	22.59		
10	16QAM	25	0	21.38	21.37	21.40	22	2
10	16QAM	25	12	21.31	21.38	21.48		
10	16QAM	25	25	21.27	21.29	21.44		
10	16QAM	50	0	21.33	21.37	21.49		
10	64QAM	1	0	21.25	21.30	21.23	22	2
10	64QAM	1	25	21.36	21.28	21.22		
10	64QAM	1	49	21.22	21.20	21.16		
10	64QAM	25	0	20.04	20.06	19.99	21	3
10	64QAM	25	12	20.00	20.01	19.90		
10	64QAM	25	25	19.98	19.95	19.87		
10	64QAM	50	0	19.96	19.98	19.89		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.32	23.33	23.44	24	0
5	QPSK	1	12	23.20	23.24	23.36		
5	QPSK	1	24	23.21	23.26	23.34		
5	QPSK	12	0	22.30	22.34	22.45	23	1
5	QPSK	12	7	22.28	22.35	22.44		
5	QPSK	12	13	22.26	22.28	22.38		
5	QPSK	25	0	22.27	22.30	22.43		
5	16QAM	1	0	22.52	22.59	22.64	23	1
5	16QAM	1	12	22.43	22.47	22.60		
5	16QAM	1	24	22.42	22.45	22.59		
5	16QAM	12	0	21.32	21.33	21.45	22	2
5	16QAM	12	7	21.32	21.33	21.47		
5	16QAM	12	13	21.25	21.26	21.39		
5	16QAM	25	0	21.27	21.33	21.41		
5	64QAM	1	0	21.35	21.38	21.29	22	2
5	64QAM	1	12	21.40	21.43	21.30		
5	64QAM	1	24	21.21	21.31	21.13		
5	64QAM	12	0	20.18	20.22	20.00	21	3
5	64QAM	12	7	20.19	20.27	19.97		
5	64QAM	12	13	20.22	20.25	19.96		
5	64QAM	25	0	20.11	20.15	19.98		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.28	23.31	23.37	24	0
3	QPSK	1	8	23.26	23.25	23.36		
3	QPSK	1	14	23.22	23.25	23.34		
3	QPSK	8	0	22.33	22.36	22.48	23	1
3	QPSK	8	4	22.33	22.32	22.45		
3	QPSK	8	7	22.29	22.29	22.41		
3	QPSK	15	0	22.30	22.31	22.43		
3	16QAM	1	0	22.48	22.54	22.63	23	1
3	16QAM	1	8	22.48	22.53	22.62		
3	16QAM	1	14	22.41	22.47	22.60		
3	16QAM	8	0	21.36	21.39	21.51	22	2
3	16QAM	8	4	21.37	21.42	21.53		
3	16QAM	8	7	21.34	21.35	21.50		
3	16QAM	15	0	21.33	21.35	21.46		
3	64QAM	1	0	21.22	21.28	21.32	22	2
3	64QAM	1	8	21.17	21.37	21.26		
3	64QAM	1	14	21.18	21.34	21.28		
3	64QAM	8	0	20.18	20.22	20.20	21	3
3	64QAM	8	4	20.17	20.21	20.10		
3	64QAM	8	7	20.19	20.18	20.14		
3	64QAM	15	0	20.14	20.13	19.98		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.19	23.23	23.31	24	0
1.4	QPSK	1	3	23.22	23.29	23.41		
1.4	QPSK	1	5	23.17	23.19	23.30		
1.4	QPSK	3	0	23.24	23.29	23.38		
1.4	QPSK	3	1	23.31	23.33	23.43		
1.4	QPSK	3	3	23.26	23.29	23.39		
1.4	QPSK	6	0	22.24	22.26	22.39	23	1
1.4	16QAM	1	0	22.45	22.45	22.56	23	1
1.4	16QAM	1	3	22.45	22.50	22.60		
1.4	16QAM	1	5	22.41	22.43	22.55		
1.4	16QAM	3	0	22.22	22.27	22.40		
1.4	16QAM	3	1	22.31	22.33	22.43		
1.4	16QAM	3	3	22.26	22.27	22.36		
1.4	16QAM	6	0	21.30	21.34	21.45	22	2
1.4	64QAM	1	0	21.11	21.12	21.21	22	2
1.4	64QAM	1	3	21.16	21.16	21.30		
1.4	64QAM	1	5	21.08	21.09	21.27		
1.4	64QAM	3	0	21.07	21.08	21.20		
1.4	64QAM	3	1	21.14	21.15	21.27		
1.4	64QAM	3	3	21.17	21.12	21.22		
1.4	64QAM	6	0	20.14	20.12	20.25	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	24.16	24.29	24.25	24.5	0
10	QPSK	1	25	24.06	24.20	24.25		
10	QPSK	1	49	24.09	24.12	24.14		
10	QPSK	25	0	23.16	23.30	23.37	23.5	1
10	QPSK	25	12	23.15	23.26	23.34		
10	QPSK	25	25	23.20	23.22	23.29		
10	QPSK	50	0	23.15	23.24	23.32		
10	16QAM	1	0	23.42	23.47	23.45	23.5	1
10	16QAM	1	25	23.25	23.42	23.46		
10	16QAM	1	49	23.30	23.37	23.33		
10	16QAM	25	0	22.18	22.28	22.37	22.5	2
10	16QAM	25	12	22.14	22.27	22.36		
10	16QAM	25	25	22.18	22.21	22.27		
10	16QAM	50	0	22.14	22.26	22.33		
10	64QAM	1	0	22.21	22.26	22.25	22.5	2
10	64QAM	1	25	22.23	22.21	22.30		
10	64QAM	1	49	22.14	22.17	22.15		
10	64QAM	25	0	21.15	21.11	21.08	21.5	3
10	64QAM	25	12	21.16	21.12	21.10		
10	64QAM	25	25	21.09	21.03	21.08		
10	64QAM	50	0	21.17	21.11	21.11		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	24.24	24.26	24.19	24.5	0
5	QPSK	1	12	24.18	24.17	24.12		
5	QPSK	1	24	24.18	24.18	24.13		
5	QPSK	12	0	23.29	23.26	23.17	23.5	1
5	QPSK	12	7	23.24	23.23	23.17		
5	QPSK	12	13	23.21	23.22	23.14		
5	QPSK	25	0	23.25	23.25	23.18		
5	16QAM	1	0	23.49	23.42	23.39	23.5	1
5	16QAM	1	12	23.43	23.40	23.37		
5	16QAM	1	24	23.36	23.38	23.30		
5	16QAM	12	0	22.30	22.29	22.20	22.5	2
5	16QAM	12	7	22.26	22.26	22.18		
5	16QAM	12	13	22.23	22.20	22.14		
5	16QAM	25	0	22.26	22.23	22.20		
5	64QAM	1	0	22.39	22.44	22.45	22.5	2
5	64QAM	1	12	22.43	22.46	22.50		
5	64QAM	1	24	22.18	22.20	22.21		
5	64QAM	12	0	21.03	21.04	21.01	21.5	3
5	64QAM	12	7	21.18	21.17	21.20		
5	64QAM	12	13	21.16	21.13	21.15		
5	64QAM	25	0	21.08	21.06	21.07		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.22	24.22	24.11	24.5	0
3	QPSK	1	8	24.20	24.17	24.10		
3	QPSK	1	14	24.20	24.18	24.10		
3	QPSK	8	0	23.26	23.26	23.18	23.5	1
3	QPSK	8	4	23.27	23.23	23.16		
3	QPSK	8	7	23.22	23.23	23.16		
3	QPSK	15	0	23.22	23.20	23.14		
3	16QAM	1	0	23.44	23.38	23.36	23.5	1
3	16QAM	1	8	23.45	23.40	23.29		
3	16QAM	1	14	23.38	23.37	23.22		
3	16QAM	8	0	22.32	22.29	22.23	22.5	2
3	16QAM	8	4	22.31	22.30	22.23		
3	16QAM	8	7	22.30	22.29	22.22		
3	16QAM	15	0	22.23	22.24	22.15		
3	64QAM	1	0	22.21	22.25	22.26	22.5	2
3	64QAM	1	8	22.19	22.20	22.18		
3	64QAM	1	14	22.22	22.21	22.23		
3	64QAM	8	0	21.18	21.14	21.16	21.5	3
3	64QAM	8	4	21.17	21.19	21.19		
3	64QAM	8	7	21.14	21.15	21.16		
3	64QAM	15	0	21.08	21.09	21.07		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.17	24.12	24.06	24.5	0
1.4	QPSK	1	3	24.20	24.14	24.07		
1.4	QPSK	1	5	24.14	24.11	24.01		
1.4	QPSK	3	0	24.20	24.17	24.07		
1.4	QPSK	3	1	24.26	24.21	24.12		
1.4	QPSK	3	3	24.19	24.17	24.09		
1.4	QPSK	6	0	23.16	23.15	23.08	23.5	1
1.4	16QAM	1	0	23.40	23.31	23.25	23.5	1
1.4	16QAM	1	3	23.44	23.37	23.27		
1.4	16QAM	1	5	23.37	23.31	23.20		
1.4	16QAM	3	0	23.22	23.17	23.10		
1.4	16QAM	3	1	23.27	23.20	23.14		
1.4	16QAM	3	3	23.17	23.15	23.05		
1.4	16QAM	6	0	22.25	22.20	22.15	22.5	2
1.4	64QAM	1	0	22.33	22.36	22.34	22.5	2
1.4	64QAM	1	3	22.41	22.40	22.35		
1.4	64QAM	1	5	22.37	22.38	22.35		
1.4	64QAM	3	0	22.18	22.21	22.19		
1.4	64QAM	3	1	22.16	22.22	22.10		
1.4	64QAM	3	3	22.09	22.11	22.07		
1.4	64QAM	6	0	21.03	21.10	21.12	21.5	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	23.40	23.38	23.51	24	0
20	QPSK	1	49	23.38	23.19	23.32		
20	QPSK	1	99	23.34	23.17	23.29		
20	QPSK	50	0	22.52	22.34	22.56	23	1
20	QPSK	50	24	22.49	22.28	22.44		
20	QPSK	50	50	22.41	22.26	22.41		
20	QPSK	100	0	22.47	22.33	22.44		
20	16QAM	1	0	22.81	22.63	22.78	23	1
20	16QAM	1	49	22.67	22.49	22.59		
20	16QAM	1	99	22.62	22.46	22.57		
20	16QAM	50	0	21.51	21.36	21.50	22	2
20	16QAM	50	24	21.49	21.29	21.45		
20	16QAM	50	50	21.41	21.27	21.40		
20	16QAM	100	0	21.46	21.31	21.44		
20	64QAM	1	0	21.38	21.41	21.36	22	2
20	64QAM	1	49	21.20	21.23	21.18		
20	64QAM	1	99	21.28	21.30	21.25		
20	64QAM	50	0	20.21	20.23	20.18	21	3
20	64QAM	50	24	20.15	20.18	20.17		
20	64QAM	50	50	20.19	20.20	20.17		
20	64QAM	100	0	20.18	20.21	20.17		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.42	23.33	23.45	24	0
15	QPSK	1	37	23.37	23.20	23.34		
15	QPSK	1	74	23.33	23.17	23.30		
15	QPSK	36	0	22.47	22.32	22.45	23	1
15	QPSK	36	20	22.44	22.27	22.44		
15	QPSK	36	39	22.41	22.26	22.38		
15	QPSK	75	0	22.45	22.33	22.41		
15	16QAM	1	0	22.79	22.60	22.70	23	1
15	16QAM	1	37	22.69	22.49	22.55		
15	16QAM	1	74	22.63	22.47	22.58		
15	16QAM	36	0	21.49	21.33	21.46	22	2
15	16QAM	36	20	21.47	21.30	21.46		
15	16QAM	36	39	21.43	21.24	21.39		
15	16QAM	75	0	21.48	21.28	21.43		
15	64QAM	1	0	21.19	21.27	21.23	22	2
15	64QAM	1	37	21.26	21.28	21.25		
15	64QAM	1	74	21.22	21.23	21.21		
15	64QAM	36	0	20.15	20.21	20.09	21	3
15	64QAM	36	20	20.18	20.22	20.16		
15	64QAM	36	39	20.19	20.20	20.18		
15	64QAM	75	0	20.15	20.19	20.16		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.43	23.29	23.44	24	0
10	QPSK	1	25	23.39	23.21	23.35		
10	QPSK	1	49	23.35	23.16	23.32		
10	QPSK	25	0	22.48	22.28	22.40	23	1
10	QPSK	25	12	22.48	22.31	22.42		
10	QPSK	25	25	22.40	22.23	22.39		
10	QPSK	50	0	22.40	22.25	22.41		
10	16QAM	1	0	22.70	22.51	22.62	23	1
10	16QAM	1	25	22.66	22.47	22.56		
10	16QAM	1	49	22.63	22.42	22.58		
10	16QAM	25	0	21.47	21.30	21.41	22	2
10	16QAM	25	12	21.45	21.32	21.42		
10	16QAM	25	25	21.42	21.24	21.36		
10	16QAM	50	0	21.44	21.25	21.42		
10	64QAM	1	0	21.32	21.36	21.35	22	2
10	64QAM	1	25	21.19	21.26	21.18		
10	64QAM	1	49	21.22	21.26	21.24		
10	64QAM	25	0	20.13	20.15	20.08	21	3
10	64QAM	25	12	20.11	20.17	20.12		
10	64QAM	25	25	20.14	20.18	20.15		
10	64QAM	50	0	20.16	20.17	20.17		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	23.40	23.23	23.35	24	0
5	QPSK	1	12	23.38	23.20	23.32		
5	QPSK	1	24	23.37	23.19	23.29		
5	QPSK	12	0	22.46	22.25	22.39	23	1
5	QPSK	12	7	22.43	22.26	22.40		
5	QPSK	12	13	22.39	22.26	22.34		
5	QPSK	25	0	22.45	22.23	22.38		
5	16QAM	1	0	22.65	22.48	22.60	23	1
5	16QAM	1	12	22.67	22.50	22.61		
5	16QAM	1	24	22.64	22.45	22.58		
5	16QAM	12	0	21.47	21.29	21.39	22	2
5	16QAM	12	7	21.45	21.30	21.39		
5	16QAM	12	13	21.40	21.27	21.34		
5	16QAM	25	0	21.42	21.29	21.41		
5	64QAM	1	0	21.22	21.26	21.25	22	2
5	64QAM	1	12	21.28	21.27	21.23		
5	64QAM	1	24	21.29	21.24	21.27		
5	64QAM	12	0	20.19	20.20	20.21	21	3
5	64QAM	12	7	20.23	20.22	20.25		
5	64QAM	12	13	20.13	20.16	20.20		
5	64QAM	25	0	20.11	20.15	20.14		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	24.13	24.28	24.09	24.5	0
10	QPSK	1	25	24.23	24.21	24.13		
10	QPSK	1	49	24.25	24.21	24.15		
10	QPSK	25	0	23.26	23.19	23.16	23.5	1
10	QPSK	25	12	23.27	23.35	23.19		
10	QPSK	25	25	23.34	23.27	23.22		
10	QPSK	50	0	23.26	23.30	23.15		
10	16QAM	1	0	23.28	23.38	23.34	23.5	1
10	16QAM	1	25	23.40	23.41	23.32		
10	16QAM	1	49	23.40	23.44	23.35		
10	16QAM	25	0	22.24	22.20	22.16	22.5	2
10	16QAM	25	12	22.27	22.34	22.17		
10	16QAM	25	25	22.32	22.26	22.21		
10	16QAM	50	0	22.37	22.28	22.15		
10	64QAM	1	0	22.21	22.26	22.27	22.5	2
10	64QAM	1	25	22.14	22.13	22.08		
10	64QAM	1	49	22.00	22.03	22.07		
10	64QAM	25	0	20.93	20.85	20.91	21.5	3
10	64QAM	25	12	20.95	20.92	20.94		
10	64QAM	25	25	20.94	20.89	20.93		
10	64QAM	50	0	20.99	20.91	21.00		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	24.07	24.15	24.08	24.5	0
5	QPSK	1	12	24.16	24.23	24.13		
5	QPSK	1	24	24.17	24.22	24.12		
5	QPSK	12	0	23.13	23.31	23.23	23.5	1
5	QPSK	12	7	23.27	23.31	23.24		
5	QPSK	12	13	23.21	23.25	23.19		
5	QPSK	25	0	23.23	23.30	23.22		
5	16QAM	1	0	23.26	23.37	23.32	23.5	1
5	16QAM	1	12	23.42	23.37	23.42		
5	16QAM	1	24	23.43	23.38	23.35		
5	16QAM	12	0	22.16	22.29	22.24	22.5	2
5	16QAM	12	7	22.29	22.30	22.23		
5	16QAM	12	13	22.24	22.26	22.18		
5	16QAM	25	0	22.23	22.27	22.20		
5	64QAM	1	0	22.23	22.18	22.22	22.5	2
5	64QAM	1	12	22.14	22.13	22.10		
5	64QAM	1	24	22.00	22.02	21.99		
5	64QAM	12	0	20.96	20.94	20.98	21.5	3
5	64QAM	12	7	20.97	20.93	20.98		
5	64QAM	12	13	20.96	20.90	20.96		
5	64QAM	25	0	20.90	20.88	20.91		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	24.11	24.24	24.25	24.5	0
3	QPSK	1	8	24.08	24.22	24.23		
3	QPSK	1	14	24.18	24.19	24.16		
3	QPSK	8	0	23.13	23.29	23.29	23.5	1
3	QPSK	8	4	23.14	23.30	23.30		
3	QPSK	8	7	23.08	23.26	23.27		
3	QPSK	15	0	23.09	23.24	23.25		
3	16QAM	1	0	23.22	23.40	23.41	23.5	1
3	16QAM	1	8	23.32	23.39	23.46		
3	16QAM	1	14	23.40	23.38	23.40		
3	16QAM	8	0	22.17	22.33	22.31	22.5	2
3	16QAM	8	4	22.19	22.33	22.36		
3	16QAM	8	7	22.12	22.32	22.31		
3	16QAM	15	0	22.16	22.28	22.26		
3	64QAM	1	0	22.30	22.24	22.25	22.5	2
3	64QAM	1	8	22.23	22.20	22.19		
3	64QAM	1	14	22.24	22.23	22.26		
3	64QAM	8	0	20.93	20.95	20.97	21.5	3
3	64QAM	8	4	20.95	20.93	20.96		
3	64QAM	8	7	20.94	20.92	21.00		
3	64QAM	15	0	20.97	20.90	20.98		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	24.01	24.08	24.13	24.5	0
1.4	QPSK	1	3	24.07	24.17	24.14		
1.4	QPSK	1	5	24.03	24.09	24.09		
1.4	QPSK	3	0	24.07	24.17	24.16		
1.4	QPSK	3	1	24.16	24.23	24.19		
1.4	QPSK	3	3	24.08	24.18	24.18		
1.4	QPSK	6	0	23.03	23.19	23.18	23.5	1
1.4	16QAM	1	0	23.18	23.33	23.36	23.5	1
1.4	16QAM	1	3	23.24	23.39	23.41		
1.4	16QAM	1	5	23.17	23.24	23.32		
1.4	16QAM	3	0	23.05	23.15	23.19		
1.4	16QAM	3	1	23.11	23.16	23.21		
1.4	16QAM	3	3	23.05	23.16	23.18		
1.4	16QAM	6	0	22.12	22.24	22.25	22.5	2
1.4	64QAM	1	0	22.21	22.26	22.25	22.5	2
1.4	64QAM	1	3	22.09	22.15	22.08		
1.4	64QAM	1	5	22.08	22.11	22.15		
1.4	64QAM	3	0	21.96	21.93	21.93		
1.4	64QAM	3	1	21.97	21.96	21.94		
1.4	64QAM	3	3	21.95	21.91	21.93		
1.4	64QAM	6	0	20.90	20.88	20.96	21.5	3

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel					23230			
Frequency (MHz)					782			
10	QPSK	1	0		24.08		24.5	0
10	QPSK	1	25		24.15			
10	QPSK	1	49		24.04			
10	QPSK	25	0		23.15		23.5	1
10	QPSK	25	12		23.17			
10	QPSK	25	25		23.13			
10	QPSK	50	0		23.14			
10	16QAM	1	0		23.33		23.5	1
10	16QAM	1	25		23.33			
10	16QAM	1	49		23.18			
10	16QAM	25	0		22.19		22.5	2
10	16QAM	25	12		22.21			
10	16QAM	25	25		22.11			
10	16QAM	50	0		22.19			
10	64QAM	1	0		22.12		22.5	2
10	64QAM	1	25		22.17			
10	64QAM	1	49		22.08			
10	64QAM	25	0		21.00		21.5	3
10	64QAM	25	12		20.94			
10	64QAM	25	25		20.89			
10	64QAM	50	0		20.92			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	24.06	24.10	24.13	24.5	0
5	QPSK	1	12	24.02	24.11	24.06		
5	QPSK	1	24	24.13	24.09	24.05		
5	QPSK	12	0	23.11	23.17	23.14	23.5	1
5	QPSK	12	7	23.09	23.17	23.14		
5	QPSK	12	13	23.14	23.11	23.09		
5	QPSK	25	0	23.04	23.12	23.15		
5	16QAM	1	0	23.31	23.38	23.34	23.5	1
5	16QAM	1	12	23.28	23.31	23.31		
5	16QAM	1	24	23.30	23.29	23.14		
5	16QAM	12	0	22.14	22.19	22.18	22.5	2
5	16QAM	12	7	22.15	22.19	22.17		
5	16QAM	12	13	22.14	22.15	22.11		
5	16QAM	25	0	22.09	22.16	22.15		
5	64QAM	1	0	22.10	22.11	22.08	22.5	2
5	64QAM	1	12	22.10	22.07	22.01		
5	64QAM	1	24	22.03	22.08	22.04		
5	64QAM	12	0	20.97	20.93	20.96	21.5	3
5	64QAM	12	7	20.98	20.97	21.00		
5	64QAM	12	13	20.99	20.91	20.98		
5	64QAM	25	0	20.90	20.88	20.89		

<LTE Band 17>

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	24.11	24.09	24.10	24.5	0
10	QPSK	1	25	24.16	24.16	24.07		
10	QPSK	1	49	24.28	24.26	24.11		
10	QPSK	25	0	23.27	23.26	23.17	23.5	1
10	QPSK	25	12	23.30	23.29	23.14		
10	QPSK	25	25	23.22	23.29	23.24		
10	QPSK	50	0	23.26	23.27	23.11		
10	16QAM	1	0	23.32	23.29	23.30	23.5	1
10	16QAM	1	25	23.30	23.37	23.27		
10	16QAM	1	49	23.42	23.41	23.34		
10	16QAM	25	0	22.27	22.25	22.13	22.5	2
10	16QAM	25	12	22.29	22.29	22.14		
10	16QAM	25	25	22.21	22.30	22.20		
10	16QAM	50	0	22.26	22.24	22.12		
10	64QAM	1	0	21.97	21.91	21.95	22.5	2
10	64QAM	1	25	21.93	21.90	21.92		
10	64QAM	1	49	22.01	22.00	22.06		
10	64QAM	25	0	20.89	20.84	20.87	21.5	3
10	64QAM	25	12	20.89	20.85	20.86		
10	64QAM	25	25	20.96	20.93	20.94		
10	64QAM	50	0	20.87	20.84	20.90		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	24.00	24.18	24.03	24.5	0
5	QPSK	1	12	24.08	24.12	24.09		
5	QPSK	1	24	24.10	24.09	24.09		
5	QPSK	12	0	23.11	23.26	23.22	23.5	1
5	QPSK	12	7	23.20	23.26	23.20		
5	QPSK	12	13	23.14	23.20	23.18		
5	QPSK	25	0	23.18	23.25	23.20		
5	16QAM	1	0	23.21	23.32	23.26	23.5	1
5	16QAM	1	12	23.29	23.34	23.39		
5	16QAM	1	24	23.27	23.41	23.29		
5	16QAM	12	0	22.12	22.24	22.21	22.5	2
5	16QAM	12	7	22.20	22.27	22.22		
5	16QAM	12	13	22.14	22.21	22.18		
5	16QAM	25	0	22.17	22.24	22.21		
5	64QAM	1	0	22.04	22.03	22.09	22.5	2
5	64QAM	1	12	21.93	21.90	21.94		
5	64QAM	1	24	21.97	21.99	21.98		
5	64QAM	12	0	20.90	20.85	20.83	21.5	3
5	64QAM	12	7	20.88	20.89	20.91		
5	64QAM	12	13	20.85	20.86	20.87		
5	64QAM	25	0	20.87	20.80	20.83		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	23.46	23.58	23.68	24.5	0
20	QPSK	1	49	23.27	23.41	23.46		
20	QPSK	1	99	23.17	23.31	22.83		
20	QPSK	50	0	22.43	22.56	22.66	23.5	1
20	QPSK	50	24	22.37	22.53	22.61		
20	QPSK	50	50	22.30	22.43	22.48		
20	QPSK	100	0	22.37	22.52	22.60		
20	16QAM	1	0	22.65	22.84	22.92	23.5	1
20	16QAM	1	49	22.46	22.71	22.67		
20	16QAM	1	99	22.43	22.53	22.20		
20	16QAM	50	0	21.45	21.60	21.67	22.5	2
20	16QAM	50	24	21.38	21.52	21.61		
20	16QAM	50	50	21.31	21.45	21.46		
20	16QAM	100	0	21.39	21.52	21.62		
20	64QAM	1	0	21.31	21.36	21.30	22.5	2
20	64QAM	1	49	21.20	21.25	21.22		
20	64QAM	1	99	21.28	21.32	21.30		
20	64QAM	50	0	20.10	20.15	20.11	21.5	3
20	64QAM	50	24	20.21	20.18	20.13		
20	64QAM	50	50	20.11	20.17	20.19		
20	64QAM	100	0	20.17	20.17	20.16		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	23.43	23.60	23.64	24.5	0
15	QPSK	1	37	23.23	23.42	23.33		
15	QPSK	1	74	23.19	23.37	22.94		
15	QPSK	36	0	22.39	22.52	22.64	23.5	1
15	QPSK	36	20	22.37	22.49	22.50		
15	QPSK	36	39	22.32	22.44	22.46		
15	QPSK	75	0	22.37	22.49	22.51		
15	16QAM	1	0	22.67	22.86	22.88	23.5	1
15	16QAM	1	37	22.48	22.71	22.60		
15	16QAM	1	74	22.42	22.63	22.30		
15	16QAM	36	0	21.39	21.56	21.64	22.5	2
15	16QAM	36	20	21.36	21.52	21.47		
15	16QAM	36	39	21.29	21.43	21.43		
15	16QAM	75	0	21.38	21.50	21.52		
15	64QAM	1	0	21.38	21.44	21.42	22.5	2
15	64QAM	1	37	21.38	21.43	21.39		
15	64QAM	1	74	21.31	21.37	21.39		
15	64QAM	36	0	20.15	20.11	20.10	21.5	3
15	64QAM	36	20	20.12	20.07	20.09		
15	64QAM	36	39	20.06	20.03	20.07		
15	64QAM	75	0	20.05	20.08	20.05		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	23.37	23.50	23.64	24.5	0
10	QPSK	1	25	23.28	23.42	23.40		
10	QPSK	1	49	23.24	23.38	22.85		
10	QPSK	25	0	22.34	22.48	22.50	23.5	1
10	QPSK	25	12	22.35	22.49	22.50		
10	QPSK	25	25	22.30	22.46	22.47		
10	QPSK	50	0	22.34	22.47	22.49		
10	16QAM	1	0	22.54	22.80	22.81	23.5	1
10	16QAM	1	25	22.45	22.70	22.62		
10	16QAM	1	49	22.40	22.62	22.25		
10	16QAM	25	0	21.37	21.54	21.51	22.5	2
10	16QAM	25	12	21.36	21.50	21.49		
10	16QAM	25	25	21.32	21.47	21.47		
10	16QAM	50	0	21.37	21.48	21.49		
10	64QAM	1	0	21.38	21.43	21.41	22.5	2
10	64QAM	1	25	21.33	21.36	21.39		
10	64QAM	1	49	21.31	21.33	21.35		
10	64QAM	25	0	20.03	20.09	20.01	21.5	3
10	64QAM	25	12	20.01	20.05	20.08		
10	64QAM	25	25	20.07	20.01	20.09		
10	64QAM	50	0	20.06	20.07	20.03		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	23.42	23.43	23.26	24.5	0
5	QPSK	1	12	23.35	23.38	23.33		
5	QPSK	1	24	23.34	23.39	22.85		
5	QPSK	12	0	22.46	22.47	22.47	23.5	1
5	QPSK	12	7	22.44	22.45	22.52		
5	QPSK	12	13	22.38	22.40	22.45		
5	QPSK	25	0	22.41	22.43	22.49		
5	16QAM	1	0	22.60	22.72	22.53	23.5	1
5	16QAM	1	12	22.54	22.70	22.63		
5	16QAM	1	24	22.50	22.66	22.23		
5	16QAM	12	0	21.48	21.47	21.49	22.5	2
5	16QAM	12	7	21.45	21.49	21.49		
5	16QAM	12	13	21.41	21.45	21.45		
5	16QAM	25	0	21.45	21.46	21.47		
5	64QAM	1	0	21.48	21.40	21.43	22.5	2
5	64QAM	1	12	21.52	21.43	21.41		
5	64QAM	1	24	21.39	21.37	21.31		
5	64QAM	12	0	20.01	20.10	20.08	21.5	3
5	64QAM	12	7	20.09	20.12	20.15		
5	64QAM	12	13	20.09	20.10	20.03		
5	64QAM	25	0	20.02	20.01	20.03		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	23.38	23.43	23.28	24.5	0
3	QPSK	1	8	23.36	23.40	23.25		
3	QPSK	1	14	23.36	23.38	22.87		
3	QPSK	8	0	22.43	22.46	22.47	23.5	1
3	QPSK	8	4	22.43	22.44	22.48		
3	QPSK	8	7	22.39	22.43	22.47		
3	QPSK	15	0	22.41	22.46	22.43		
3	16QAM	1	0	22.56	22.69	22.56	23.5	1
3	16QAM	1	8	22.56	22.68	22.59		
3	16QAM	1	14	22.51	22.65	22.26		
3	16QAM	8	0	21.48	21.50	21.52	22.5	2
3	16QAM	8	4	21.50	21.55	21.54		
3	16QAM	8	7	21.43	21.52	21.51		
3	16QAM	15	0	21.42	21.48	21.46		
3	64QAM	1	0	21.22	21.26	21.24	22.5	2
3	64QAM	1	8	21.29	21.31	21.30		
3	64QAM	1	14	21.28	21.32	21.35		
3	64QAM	8	0	20.09	20.07	20.01	21.5	3
3	64QAM	8	4	20.07	20.11	20.08		
3	64QAM	8	7	20.19	20.15	20.17		
3	64QAM	15	0	20.15	20.11	20.16		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	23.22	23.36	23.17	24.5	0
1.4	QPSK	1	3	23.28	23.40	23.02		
1.4	QPSK	1	5	23.19	23.36	22.82		
1.4	QPSK	3	0	23.31	23.44	23.08		
1.4	QPSK	3	1	23.33	23.47	23.05		
1.4	QPSK	3	3	23.28	23.42	22.88		
1.4	QPSK	6	0	22.28	22.40	22.39	23.5	1
1.4	16QAM	1	0	22.53	22.63	22.43	23.5	1
1.4	16QAM	1	3	22.56	22.69	22.37		
1.4	16QAM	1	5	22.53	22.61	22.19		
1.4	16QAM	3	0	22.40	22.45	22.27		
1.4	16QAM	3	1	22.40	22.50	22.26		
1.4	16QAM	3	3	22.36	22.44	22.12		
1.4	16QAM	6	0	21.43	21.50	21.47	22.5	2
1.4	64QAM	1	0	21.35	21.33	21.36	22.5	2
1.4	64QAM	1	3	21.37	21.36	21.38		
1.4	64QAM	1	5	21.30	21.28	21.22		
1.4	64QAM	3	0	21.12	21.15	21.09		
1.4	64QAM	3	1	21.14	21.22	21.20		
1.4	64QAM	3	3	21.18	21.21	21.22		
1.4	64QAM	6	0	20.16	20.18	20.19	21.5	3

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.36	22.22	22.21	23	0
15	QPSK	1	37	22.33	22.18	22.22		
15	QPSK	1	74	22.24	22.02	22.06		
15	QPSK	36	0	21.26	21.26	21.22	22	1
15	QPSK	36	20	21.36	21.28	21.27		
15	QPSK	36	39	21.27	21.17	21.16		
15	QPSK	75	0	21.32	21.23	21.24		
15	16QAM	1	0	21.58	21.52	21.48	22	1
15	16QAM	1	37	21.62	21.46	21.54		
15	16QAM	1	74	21.56	21.33	21.39		
15	16QAM	36	0	20.27	20.30	20.22	21	2
15	16QAM	36	20	20.36	20.28	20.26		
15	16QAM	36	39	20.26	20.13	20.11		
15	16QAM	75	0	20.33	20.24	20.24		
15	64QAM	1	0	20.22	20.30	20.25	21	2
15	64QAM	1	37	20.19	20.13	20.18		
15	64QAM	1	74	20.14	20.12	20.19		
15	64QAM	36	0	19.08	19.11	19.05	20	3
15	64QAM	36	20	19.07	19.08	19.03		
15	64QAM	36	39	19.06	19.04	19.08		
15	64QAM	75	0	19.10	19.05	19.11		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.15	22.13	22.25	23	0
10	QPSK	1	25	22.17	22.14	22.17		
10	QPSK	1	49	22.10	22.07	22.08		
10	QPSK	25	0	21.12	21.24	21.22	22	1
10	QPSK	25	12	21.23	21.20	21.20		
10	QPSK	25	25	21.21	21.14	21.17		
10	QPSK	50	0	21.20	21.21	21.21		
10	16QAM	1	0	21.43	21.40	21.53	22	1
10	16QAM	1	25	21.47	21.42	21.53		
10	16QAM	1	49	21.41	21.34	21.37		
10	16QAM	25	0	20.13	20.24	20.23	21	2
10	16QAM	25	12	20.25	20.23	20.22		
10	16QAM	25	25	20.17	20.15	20.14		
10	16QAM	50	0	20.26	20.21	20.20		
10	64QAM	1	0	20.18	20.22	20.19	21	2
10	64QAM	1	25	20.14	20.13	20.11		
10	64QAM	1	49	20.09	20.08	20.10		
10	64QAM	25	0	19.18	19.12	19.20	20	3
10	64QAM	25	12	19.08	19.07	19.06		
10	64QAM	25	25	19.07	19.08	19.09		
10	64QAM	50	0	19.03	19.07	19.05		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.21	22.20	22.18	23	0
5	QPSK	1	12	22.17	22.12	22.12		
5	QPSK	1	24	22.27	22.12	22.10		
5	QPSK	12	0	21.24	21.22	21.18	22	1
5	QPSK	12	7	21.27	21.19	21.18		
5	QPSK	12	13	21.23	21.13	21.15		
5	QPSK	25	0	21.24	21.19	21.16		
5	16QAM	1	0	21.49	21.47	21.52	22	1
5	16QAM	1	12	21.49	21.42	21.45		
5	16QAM	1	24	21.56	21.37	21.41		
5	16QAM	12	0	20.29	20.22	20.18	21	2
5	16QAM	12	7	20.28	20.24	20.18		
5	16QAM	12	13	20.25	20.15	20.14		
5	16QAM	25	0	20.26	20.17	20.15		
5	64QAM	1	0	20.20	20.28	20.24	21	2
5	64QAM	1	12	20.06	20.11	20.09		
5	64QAM	1	24	20.10	20.12	20.07		
5	64QAM	12	0	19.10	19.05	19.00	20	3
5	64QAM	12	7	19.15	19.11	19.16		
5	64QAM	12	13	19.10	19.04	19.08		
5	64QAM	25	0	19.04	19.05	19.07		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.22	22.16	22.13	23	0
3	QPSK	1	8	22.20	22.12	22.14		
3	QPSK	1	14	22.16	22.08	22.09		
3	QPSK	8	0	21.22	21.15	21.14	22	1
3	QPSK	8	4	21.27	21.17	21.15		
3	QPSK	8	7	21.23	21.17	21.11		
3	QPSK	15	0	21.23	21.18	21.13		
3	16QAM	1	0	21.47	21.45	21.48	22	1
3	16QAM	1	8	21.45	21.43	21.49		
3	16QAM	1	14	21.44	21.39	21.43		
3	16QAM	8	0	20.31	20.26	20.21	21	2
3	16QAM	8	4	20.32	20.28	20.22		
3	16QAM	8	7	20.29	20.23	20.18		
3	16QAM	15	0	20.25	20.22	20.16		
3	64QAM	1	0	20.18	20.15	20.17	21	2
3	64QAM	1	8	20.18	20.14	20.15		
3	64QAM	1	14	20.20	20.17	20.21		
3	64QAM	8	0	19.07	19.05	19.08	20	3
3	64QAM	8	4	19.09	19.06	19.10		
3	64QAM	8	7	19.10	19.04	19.08		
3	64QAM	15	0	19.09	19.03	19.08		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.12	22.08	22.05	23	0
1.4	QPSK	1	3	22.21	22.12	22.12		
1.4	QPSK	1	5	22.09	22.03	22.02		
1.4	QPSK	3	0	22.18	22.11	22.08		
1.4	QPSK	3	1	22.23	22.14	22.13		
1.4	QPSK	3	3	22.18	22.08	22.08		
1.4	QPSK	6	0	21.17	21.08	21.05	22	1
1.4	16QAM	1	0	21.42	21.38	21.36	22	1
1.4	16QAM	1	3	21.44	21.42	21.46		
1.4	16QAM	1	5	21.36	21.34	21.36		
1.4	16QAM	3	0	21.19	21.10	21.10		
1.4	16QAM	3	1	21.22	21.14	21.17		
1.4	16QAM	3	3	21.16	21.09	21.08		
1.4	16QAM	6	0	20.23	20.14	20.13	21	2
1.4	64QAM	1	0	20.21	20.24	20.23	21	2
1.4	64QAM	1	3	20.18	20.13	20.16		
1.4	64QAM	1	5	20.09	20.11	20.08		
1.4	64QAM	3	0	20.10	20.01	20.09		
1.4	64QAM	3	1	20.11	20.07	20.13		
1.4	64QAM	3	3	20.07	20.04	20.08		
1.4	64QAM	6	0	19.01	19.00	19.02	20	3

<LTE Band 30>

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					27710			
Frequency (MHz)					2310			
10	QPSK	1	0		23.53		23.8	0
10	QPSK	1	25		23.33			
10	QPSK	1	49		23.18			
10	QPSK	25	0		22.40		22.8	1
10	QPSK	25	12		22.39			
10	QPSK	25	25		22.23			
10	QPSK	50	0		22.37			
10	16QAM	1	0		22.75		22.8	1
10	16QAM	1	25		22.59			
10	16QAM	1	49		22.41			
10	16QAM	25	0		21.41		21.8	2
10	16QAM	25	12		21.38			
10	16QAM	25	25		21.25			
10	16QAM	50	0		21.39			
10	64QAM	1	0		21.57		21.8	2
10	64QAM	1	25		21.52			
10	64QAM	1	49		21.40			
10	64QAM	25	0		20.18		20.8	3
10	64QAM	25	12		20.17			
10	64QAM	25	25		20.14			
10	64QAM	50	0		20.17			
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	23.47	23.37	23.37	23.8	0
5	QPSK	1	12	23.29	23.32	23.22		
5	QPSK	1	24	23.32	23.20	23.22		
5	QPSK	12	0	22.50	22.39	22.37	22.8	1
5	QPSK	12	7	22.36	22.41	22.28		
5	QPSK	12	13	22.33	22.35	22.25		
5	QPSK	25	0	22.36	22.35	22.28		
5	16QAM	1	0	22.72	22.63	22.61	22.8	1
5	16QAM	1	12	22.57	22.61	22.48		
5	16QAM	1	24	22.56	22.45	22.45		
5	16QAM	12	0	21.51	21.41	21.39	21.8	2
5	16QAM	12	7	21.38	21.40	21.30		
5	16QAM	12	13	21.32	21.36	21.26		
5	16QAM	25	0	21.38	21.35	21.25		
5	64QAM	1	0	21.30	21.34	21.36	21.8	2
5	64QAM	1	12	21.29	21.28	21.25		
5	64QAM	1	24	21.26	21.27	21.25		
5	64QAM	12	0	20.18	20.16	20.15	20.8	3
5	64QAM	12	7	20.21	20.20	20.18		
5	64QAM	12	13	20.17	20.13	20.10		
5	64QAM	25	0	20.15	20.11	20.08		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.55	23.58	23.64	24	0
20	QPSK	1	49	23.33	23.31	23.34		
20	QPSK	1	99	23.32	23.21	23.25		
20	QPSK	50	0	22.42	22.54	22.56	23	1
20	QPSK	50	24	22.44	22.45	22.45		
20	QPSK	50	50	22.31	22.34	22.33		
20	QPSK	100	0	22.44	22.44	22.47		
20	16QAM	1	0	22.73	22.82	22.91	23	1
20	16QAM	1	49	22.60	22.48	22.59		
20	16QAM	1	99	22.56	22.44	22.48		
20	16QAM	50	0	21.47	21.56	21.55	22	2
20	16QAM	50	24	21.47	21.46	21.48		
20	16QAM	50	50	21.36	21.35	21.37		
20	16QAM	100	0	21.42	21.44	21.43		
20	64QAM	1	0	21.19	21.27	21.20	22	2
20	64QAM	1	49	21.14	21.20	21.18		
20	64QAM	1	99	21.18	21.17	21.10		
20	64QAM	50	0	20.08	20.13	20.10	21	3
20	64QAM	50	24	20.09	20.03	20.04		
20	64QAM	50	50	20.08	20.02	20.01		
20	64QAM	100	0	20.00	19.99	20.01		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.46	23.54	23.55	24	0
15	QPSK	1	37	23.23	23.27	23.28		
15	QPSK	1	74	23.29	23.18	23.24		
15	QPSK	36	0	22.47	22.48	22.50	23	1
15	QPSK	36	20	22.43	22.44	22.44		
15	QPSK	36	39	22.39	22.35	22.34		
15	QPSK	75	0	22.35	22.42	22.46		
15	16QAM	1	0	22.68	22.84	22.83	23	1
15	16QAM	1	37	22.53	22.51	22.61		
15	16QAM	1	74	22.60	22.50	22.53		
15	16QAM	36	0	21.44	21.52	21.50	22	2
15	16QAM	36	20	21.46	21.42	21.41		
15	16QAM	36	39	21.37	21.33	21.33		
15	16QAM	75	0	21.40	21.44	21.43		
15	64QAM	1	0	21.34	21.38	21.32	22	2
15	64QAM	1	37	21.29	21.28	21.22		
15	64QAM	1	74	21.25	21.23	21.22		
15	64QAM	36	0	20.08	20.04	20.01	21	3
15	64QAM	36	20	20.10	20.09	20.06		
15	64QAM	36	39	20.00	19.99	19.98		
15	64QAM	75	0	19.95	19.91	19.90		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.43	23.47	23.46	24	0
10	QPSK	1	25	23.28	23.33	23.36		
10	QPSK	1	49	23.30	23.28	23.28		
10	QPSK	25	0	22.38	22.43	22.44	23	1
10	QPSK	25	12	22.36	22.41	22.41		
10	QPSK	25	25	22.40	22.36	22.35		
10	QPSK	50	0	22.37	22.40	22.40		
10	16QAM	1	0	22.60	22.65	22.71	23	1
10	16QAM	1	25	22.52	22.52	22.59		
10	16QAM	1	49	22.56	22.47	22.55		
10	16QAM	25	0	21.37	21.45	21.41	22	2
10	16QAM	25	12	21.33	21.41	21.39		
10	16QAM	25	25	21.38	21.34	21.33		
10	16QAM	50	0	21.35	21.38	21.40		
10	64QAM	1	0	21.28	21.33	21.31	22	2
10	64QAM	1	25	21.09	21.12	21.10		
10	64QAM	1	49	21.14	21.20	21.18		
10	64QAM	25	0	20.06	20.05	20.01	21	3
10	64QAM	25	12	20.08	20.03	20.05		
10	64QAM	25	25	20.00	19.99	20.01		
10	64QAM	50	0	20.00	19.91	19.92		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.36	23.39	23.35	24	0
5	QPSK	1	12	23.25	23.31	23.30		
5	QPSK	1	24	23.37	23.34	23.30		
5	QPSK	12	0	22.35	22.42	22.38	23	1
5	QPSK	12	7	22.43	22.37	22.38		
5	QPSK	12	13	22.39	22.33	22.35		
5	QPSK	25	0	22.33	22.37	22.39		
5	16QAM	1	0	22.56	22.57	22.64	23	1
5	16QAM	1	12	22.52	22.59	22.54		
5	16QAM	1	24	22.60	22.49	22.50		
5	16QAM	12	0	21.36	21.40	21.40	22	2
5	16QAM	12	7	21.46	21.39	21.37		
5	16QAM	12	13	21.40	21.34	21.34		
5	16QAM	25	0	21.31	21.36	21.37		
5	64QAM	1	0	21.25	21.28	21.30	22	2
5	64QAM	1	12	21.20	21.18	21.17		
5	64QAM	1	24	21.25	21.23	21.24		
5	64QAM	12	0	20.08	20.03	20.01	21	3
5	64QAM	12	7	19.98	19.94	19.97		
5	64QAM	12	13	20.05	20.02	20.07		
5	64QAM	25	0	19.95	19.92	19.93		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.30	23.38	23.29	24	0
3	QPSK	1	8	23.33	23.31	23.27		
3	QPSK	1	14	23.33	23.28	23.27		
3	QPSK	8	0	22.34	22.39	22.35	23	1
3	QPSK	8	4	22.44	22.38	22.35		
3	QPSK	8	7	22.39	22.34	22.34		
3	QPSK	15	0	22.31	22.35	22.34		
3	16QAM	1	0	22.50	22.48	22.55	23	1
3	16QAM	1	8	22.62	22.46	22.59		
3	16QAM	1	14	22.57	22.44	22.50		
3	16QAM	8	0	21.36	21.42	21.40	22	2
3	16QAM	8	4	21.49	21.43	21.42		
3	16QAM	8	7	21.45	21.38	21.37		
3	16QAM	15	0	21.31	21.36	21.35		
3	64QAM	1	0	21.21	21.23	21.25	22	2
3	64QAM	1	8	21.23	21.19	21.25		
3	64QAM	1	14	21.16	21.18	21.18		
3	64QAM	8	0	19.99	20.00	19.98	21	3
3	64QAM	8	4	19.96	19.99	19.97		
3	64QAM	8	7	20.08	20.04	20.10		
3	64QAM	15	0	19.99	19.97	19.95		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.18	23.19	23.22	24	0
1.4	QPSK	1	3	23.23	23.24	23.25		
1.4	QPSK	1	5	23.26	23.20	23.22		
1.4	QPSK	3	0	23.25	23.26	23.32		
1.4	QPSK	3	1	23.30	23.34	23.35		
1.4	QPSK	3	3	23.34	23.26	23.25		
1.4	QPSK	6	0	22.22	22.28	22.26	23	1
1.4	16QAM	1	0	22.44	22.43	22.48	23	1
1.4	16QAM	1	3	22.52	22.44	22.54		
1.4	16QAM	1	5	22.50	22.40	22.45		
1.4	16QAM	3	0	22.26	22.27	22.31		
1.4	16QAM	3	1	22.28	22.31	22.35		
1.4	16QAM	3	3	22.33	22.22	22.26		
1.4	16QAM	6	0	21.31	21.34	21.33	22	2
1.4	64QAM	1	0	21.20	21.19	21.16	22	2
1.4	64QAM	1	3	21.13	21.14	21.19		
1.4	64QAM	1	5	21.07	21.08	21.08		
1.4	64QAM	3	0	21.00	20.99	21.01		
1.4	64QAM	3	1	21.03	21.05	20.99		
1.4	64QAM	3	3	21.06	21.03	21.10		
1.4	64QAM	6	0	20.00	19.91	20.01	21	3

<Maximum Average RF Power (Proximity Sensor Active)>

<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	15.03	15.04	15.36	16.5	0
20	QPSK	1	49	14.88	14.90	15.19		
20	QPSK	1	99	14.70	14.76	15.16		
20	QPSK	50	0	15.01	15.07	15.27	16.5	0
20	QPSK	50	24	14.97	14.97	15.29		
20	QPSK	50	50	14.88	14.91	15.25		
20	QPSK	100	0	14.96	14.98	15.29		
20	16QAM	1	0	15.04	15.21	15.27	16.5	0
20	16QAM	1	49	15.10	15.09	15.22		
20	16QAM	1	99	14.96	15.00	15.22		
20	16QAM	50	0	15.04	15.06	15.26	16.5	0
20	16QAM	50	24	14.94	14.90	15.31		
20	16QAM	50	50	14.87	14.94	15.24		
20	16QAM	100	0	14.98	15.00	15.32		
20	64QAM	1	0	14.53	14.70	14.76	15.5	1
20	64QAM	1	49	14.62	14.61	14.74		
20	64QAM	1	99	14.54	14.58	14.80		
20	64QAM	50	0	14.59	14.61	14.81	15.5	1
20	64QAM	50	24	14.59	14.55	14.96		
20	64QAM	50	50	14.49	14.56	14.86		
20	64QAM	100	0	14.51	14.53	14.85		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	15.05	15.05	15.35	16.5	0
15	QPSK	1	37	14.84	14.78	15.18		
15	QPSK	1	74	14.80	14.86	15.18		
15	QPSK	36	0	15.02	14.91	15.31	16.5	0
15	QPSK	36	20	14.95	14.88	15.28		
15	QPSK	36	39	14.90	14.84	15.24		
15	QPSK	75	0	14.95	14.87	15.29		
15	16QAM	1	0	15.27	15.19	15.29	16.5	0
15	16QAM	1	37	15.10	15.07	15.29		
15	16QAM	1	74	15.05	15.11	15.15		
15	16QAM	36	0	15.00	14.91	15.34	16.5	0
15	16QAM	36	20	14.94	14.90	15.28		
15	16QAM	36	39	14.85	14.81	15.23		
15	16QAM	75	0	14.97	14.88	15.30		
15	64QAM	1	0	14.84	14.76	14.86	15.5	1
15	64QAM	1	37	14.62	14.59	14.81		
15	64QAM	1	74	14.58	14.64	14.68		
15	64QAM	36	0	14.66	14.57	15.00	15.5	1
15	64QAM	36	20	14.60	14.56	14.94		
15	64QAM	36	39	14.57	14.53	14.95		
15	64QAM	75	0	14.63	14.54	14.96		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	14.93	14.97	15.30	16.5	0
10	QPSK	1	25	14.86	14.88	15.19		
10	QPSK	1	49	14.80	14.87	15.18		
10	QPSK	25	0	14.96	14.96	15.30	16.5	0
10	QPSK	25	12	14.94	14.95	15.28		
10	QPSK	25	25	14.86	14.94	15.27		
10	QPSK	50	0	14.93	14.94	15.28		
10	16QAM	1	0	15.16	15.16	15.25	16.5	0
10	16QAM	1	25	15.07	15.09	15.20		
10	16QAM	1	49	15.02	15.06	15.24		
10	16QAM	25	0	14.95	15.01	15.29	16.5	0
10	16QAM	25	12	14.96	14.99	15.26		
10	16QAM	25	25	14.87	14.92	15.25		
10	16QAM	50	0	14.96	14.97	15.30		
10	64QAM	1	0	14.66	14.66	14.75	15.5	1
10	64QAM	1	25	14.56	14.58	14.69		
10	64QAM	1	49	14.54	14.58	14.76		
10	64QAM	25	0	14.49	14.55	14.83	15.5	1
10	64QAM	25	12	14.51	14.54	14.81		
10	64QAM	25	25	14.44	14.49	14.82		
10	64QAM	50	0	14.50	14.51	14.84		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	14.90	14.92	15.23	16.5	0
5	QPSK	1	12	14.82	14.88	15.17		
5	QPSK	1	24	14.82	14.86	15.19		
5	QPSK	12	0	14.93	14.98	15.25	16.5	0
5	QPSK	12	7	14.93	14.99	15.25		
5	QPSK	12	13	14.87	14.94	15.21		
5	QPSK	25	0	14.86	14.90	15.26		
5	16QAM	1	0	15.14	15.15	15.27	16.5	0
5	16QAM	1	12	15.07	15.10	15.26		
5	16QAM	1	24	15.06	15.09	15.21		
5	16QAM	12	0	14.94	14.97	15.23	16.5	0
5	16QAM	12	7	14.95	14.97	15.27		
5	16QAM	12	13	14.89	14.93	15.20		
5	16QAM	25	0	14.93	14.95	15.24		
5	64QAM	1	0	14.65	14.66	14.78	15.5	1
5	64QAM	1	12	14.55	14.58	14.74		
5	64QAM	1	24	14.57	14.60	14.72		
5	64QAM	12	0	14.52	14.55	14.81	15.5	1
5	64QAM	12	7	14.53	14.55	14.85		
5	64QAM	12	13	14.47	14.51	14.78		
5	64QAM	25	0	14.47	14.49	14.78		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	14.90	14.93	15.22	16.5	0
3	QPSK	1	8	14.86	14.86	15.18		
3	QPSK	1	14	14.85	14.88	15.18		
3	QPSK	8	0	14.88	14.97	15.26	16.5	0
3	QPSK	8	4	14.92	14.99	15.25		
3	QPSK	8	7	14.87	14.92	15.26		
3	QPSK	15	0	14.90	14.92	15.24		
3	16QAM	1	0	15.13	15.10	15.22	16.5	0
3	16QAM	1	8	15.11	15.11	15.24		
3	16QAM	1	14	15.07	15.07	15.13		
3	16QAM	8	0	14.98	15.00	15.31	16.5	0
3	16QAM	8	4	15.00	15.05	15.33		
3	16QAM	8	7	14.96	15.00	15.30		
3	16QAM	15	0	14.92	14.98	15.25		
3	64QAM	1	0	14.49	14.50	14.62	15.5	1
3	64QAM	1	8	14.55	14.58	14.74		
3	64QAM	1	14	14.54	14.57	14.69		
3	64QAM	8	0	14.39	14.42	14.68	15.5	1
3	64QAM	8	4	14.43	14.45	14.75		
3	64QAM	8	7	14.35	14.39	14.66		
3	64QAM	15	0	14.34	14.36	14.65		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	14.83	14.85	15.12	16.5	0
1.4	QPSK	1	3	14.87	14.88	15.19		
1.4	QPSK	1	5	14.78	14.81	15.12		
1.4	QPSK	3	0	14.86	14.90	15.15		
1.4	QPSK	3	1	14.92	14.94	15.22		
1.4	QPSK	3	3	14.84	14.90	15.16		
1.4	QPSK	6	0	14.88	14.89	15.17	16.5	0
1.4	16QAM	1	0	15.02	15.04	15.28	16.5	0
1.4	16QAM	1	3	15.11	15.13	15.25		
1.4	16QAM	1	5	15.00	15.00	15.19		
1.4	16QAM	3	0	14.85	14.89	15.21		
1.4	16QAM	3	1	14.89	14.91	15.21		
1.4	16QAM	3	3	14.80	14.87	15.18		
1.4	16QAM	6	0	14.93	14.97	15.24	16.5	0
1.4	64QAM	1	0	14.51	14.52	14.64	15.5	1
1.4	64QAM	1	3	14.57	14.60	14.76		
1.4	64QAM	1	5	14.49	14.52	14.64		
1.4	64QAM	3	0	14.49	14.52	14.78		
1.4	64QAM	3	1	14.43	14.45	14.75		
1.4	64QAM	3	3	14.36	14.40	14.67		
1.4	64QAM	6	0	14.29	14.31	14.60	15.5	1

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	14.53	14.63	14.59	15.5	0
20	QPSK	1	49	14.24	14.32	14.36		
20	QPSK	1	99	14.22	14.28	14.34		
20	QPSK	50	0	14.46	14.52	14.61	15.5	0
20	QPSK	50	24	14.38	14.46	14.46		
20	QPSK	50	50	14.36	14.42	14.47		
20	QPSK	100	0	14.39	14.44	14.48		
20	16QAM	1	0	14.50	14.54	14.39	15.5	0
20	16QAM	1	49	14.50	14.52	14.56		
20	16QAM	1	99	14.46	14.46	14.56		
20	16QAM	50	0	14.47	14.52	14.56	15.5	0
20	16QAM	50	24	14.39	14.40	14.45		
20	16QAM	50	50	14.34	14.40	14.44		
20	16QAM	100	0	14.35	14.39	14.43		
20	64QAM	1	0	14.02	14.06	13.91	14.5	1
20	64QAM	1	49	13.76	13.78	13.82		
20	64QAM	1	99	13.76	13.76	13.86		
20	64QAM	50	0	13.80	13.85	13.89	14.5	1
20	64QAM	50	24	13.75	13.76	13.81		
20	64QAM	50	50	13.65	13.71	13.75		
20	64QAM	100	0	13.75	13.79	13.83		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	14.50	14.57	14.61	15.5	0
15	QPSK	1	37	14.23	14.32	14.32		
15	QPSK	1	74	14.34	14.33	14.36		
15	QPSK	36	0	14.41	14.49	14.55	15.5	0
15	QPSK	36	20	14.36	14.44	14.45		
15	QPSK	36	39	14.39	14.36	14.45		
15	QPSK	75	0	14.33	14.40	14.49		
15	16QAM	1	0	14.58	14.59	14.36	15.5	0
15	16QAM	1	37	14.51	14.55	14.57		
15	16QAM	1	74	14.55	14.55	14.59		
15	16QAM	36	0	14.45	14.50	14.51	15.5	0
15	16QAM	36	20	14.34	14.39	14.41		
15	16QAM	36	39	14.35	14.28	14.43		
15	16QAM	75	0	14.37	14.41	14.43		
15	64QAM	1	0	13.99	14.03	13.88	14.5	1
15	64QAM	1	37	13.77	13.79	13.83		
15	64QAM	1	74	13.83	13.83	13.93		
15	64QAM	36	0	13.76	13.81	13.85	14.5	1
15	64QAM	36	20	13.74	13.75	13.80		
15	64QAM	36	39	13.66	13.72	13.76		
15	64QAM	75	0	13.71	13.75	13.79		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	14.42	14.45	14.46	15.5	0
10	QPSK	1	25	14.25	14.32	14.43		
10	QPSK	1	49	14.20	14.24	14.39		
10	QPSK	25	0	14.37	14.44	14.48	15.5	0
10	QPSK	25	12	14.33	14.38	14.50		
10	QPSK	25	25	14.27	14.34	14.45		
10	QPSK	50	0	14.36	14.38	14.52		
10	16QAM	1	0	14.45	14.50	14.57	15.5	0
10	16QAM	1	25	14.55	14.55	14.57		
10	16QAM	1	49	14.47	14.47	14.43		
10	16QAM	25	0	14.40	14.44	14.43	15.5	0
10	16QAM	25	12	14.35	14.41	14.54		
10	16QAM	25	25	14.29	14.33	14.45		
10	16QAM	50	0	14.34	14.40	14.51		
10	64QAM	1	0	13.88	13.92	13.77	14.5	1
10	64QAM	1	25	13.78	13.80	13.84		
10	64QAM	1	49	13.77	13.77	13.87		
10	64QAM	25	0	13.71	13.76	13.80	14.5	1
10	64QAM	25	12	13.73	13.74	13.79		
10	64QAM	25	25	13.62	13.68	13.72		
10	64QAM	50	0	13.71	13.75	13.79		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	14.33	14.42	14.50	15.5	0
5	QPSK	1	12	14.26	14.32	14.42		
5	QPSK	1	24	14.25	14.30	14.38		
5	QPSK	12	0	14.37	14.44	14.50	15.5	0
5	QPSK	12	7	14.36	14.38	14.51		
5	QPSK	12	13	14.27	14.32	14.46		
5	QPSK	25	0	14.30	14.38	14.47		
5	16QAM	1	0	14.39	14.42	14.51	15.5	0
5	16QAM	1	12	14.55	14.58	14.34		
5	16QAM	1	24	14.49	14.50	14.32		
5	16QAM	12	0	14.37	14.39	14.50	15.5	0
5	16QAM	12	7	14.34	14.39	14.47		
5	16QAM	12	13	14.33	14.34	14.44		
5	16QAM	25	0	14.34	14.35	14.49		
5	64QAM	1	0	13.85	13.88	13.97	14.5	1
5	64QAM	1	12	13.75	13.78	13.54		
5	64QAM	1	24	13.80	13.81	13.63		
5	64QAM	12	0	13.74	13.76	13.87	14.5	1
5	64QAM	12	7	13.69	13.74	13.82		
5	64QAM	12	13	13.71	13.72	13.82		
5	64QAM	25	0	13.71	13.72	13.86		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	14.27	14.32	14.43	15.5	0
3	QPSK	1	8	14.27	14.31	14.40		
3	QPSK	1	14	14.23	14.29	14.37		
3	QPSK	8	0	14.35	14.41	14.46	15.5	0
3	QPSK	8	4	14.36	14.37	14.46		
3	QPSK	8	7	14.26	14.35	14.41		
3	QPSK	15	0	14.31	14.33	14.43		
3	16QAM	1	0	14.38	14.39	14.45	15.5	0
3	16QAM	1	8	14.55	14.57	14.53		
3	16QAM	1	14	14.48	14.50	14.40		
3	16QAM	8	0	14.40	14.38	14.49	15.5	0
3	16QAM	8	4	14.39	14.43	14.51		
3	16QAM	8	7	14.39	14.36	14.49		
3	16QAM	15	0	14.33	14.36	14.46		
3	64QAM	1	0	13.80	13.83	13.92	14.5	1
3	64QAM	1	8	13.77	13.80	13.56		
3	64QAM	1	14	13.77	13.78	13.60		
3	64QAM	8	0	13.70	13.72	13.83	14.5	1
3	64QAM	8	4	13.69	13.74	13.82		
3	64QAM	8	7	13.69	13.70	13.80		
3	64QAM	15	0	13.66	13.67	13.81		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	14.21	14.26	14.35	15.5	0
1.4	QPSK	1	3	14.25	14.32	14.39		
1.4	QPSK	1	5	14.18	14.24	14.31		
1.4	QPSK	3	0	14.26	14.27	14.37		
1.4	QPSK	3	1	14.32	14.33	14.42		
1.4	QPSK	3	3	14.21	14.28	14.35		
1.4	QPSK	6	0	14.28	14.30	14.38	15.5	0
1.4	16QAM	1	0	14.48	14.51	14.58	15.5	0
1.4	16QAM	1	3	14.29	14.26	14.25		
1.4	16QAM	1	5	14.48	14.45	14.57		
1.4	16QAM	3	0	14.26	14.30	14.36		
1.4	16QAM	3	1	14.32	14.33	14.41		
1.4	16QAM	3	3	14.28	14.24	14.34		
1.4	16QAM	6	0	14.32	14.35	14.44	15.5	0
1.4	64QAM	1	0	13.73	13.76	13.85	14.5	1
1.4	64QAM	1	3	13.77	13.80	13.56		
1.4	64QAM	1	5	13.72	13.73	13.55		
1.4	64QAM	3	0	13.70	13.72	13.83		
1.4	64QAM	3	1	13.72	13.77	13.85		
1.4	64QAM	3	3	13.70	13.71	13.81		
1.4	64QAM	6	0	13.60	13.61	13.75	14.5	1

<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	16.05	16.16	16.15	17	0
10	QPSK	1	25	15.94	16.08	16.15		
10	QPSK	1	49	15.99	16.01	16.04		
10	QPSK	25	0	16.05	16.01	16.12	17	0
10	QPSK	25	12	16.05	16.08	16.08		
10	QPSK	25	25	16.08	16.11	16.06		
10	QPSK	50	0	16.02	16.06	16.08		
10	16QAM	1	0	16.05	16.03	16.04	17	0
10	16QAM	1	25	16.02	16.03	16.01		
10	16QAM	1	49	16.06	16.07	16.02		
10	16QAM	25	0	16.10	16.02	16.04	17	0
10	16QAM	25	12	16.05	16.01	16.05		
10	16QAM	25	25	16.02	16.01	16.07		
10	16QAM	50	0	16.07	16.08	16.02		
10	64QAM	1	0	15.87	15.98	15.97	17	0
10	64QAM	1	25	15.78	15.92	15.99		
10	64QAM	1	49	15.90	15.92	15.95		
10	64QAM	25	0	15.92	15.88	15.94	17	0
10	64QAM	25	12	15.86	15.89	15.93		
10	64QAM	25	25	15.78	15.82	15.76		
10	64QAM	50	0	15.79	15.83	15.85		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	16.10	16.12	16.14	17	0
5	QPSK	1	12	16.08	16.08	16.09		
5	QPSK	1	24	16.07	16.04	15.99		
5	QPSK	12	0	16.04	16.06	16.01	17	0
5	QPSK	12	7	16.07	16.07	16.05		
5	QPSK	12	13	16.02	16.09	16.11		
5	QPSK	25	0	16.03	16.02	16.08		
5	16QAM	1	0	16.09	16.07	16.01	17	0
5	16QAM	1	12	16.09	16.02	16.08		
5	16QAM	1	24	16.03	16.01	16.05		
5	16QAM	12	0	16.08	16.05	16.02	17	0
5	16QAM	12	7	16.02	16.07	16.09		
5	16QAM	12	13	16.04	16.04	16.08		
5	16QAM	25	0	16.05	16.05	16.09		
5	64QAM	1	0	15.99	15.97	15.91	17	0
5	64QAM	1	12	16.00	15.93	15.99		
5	64QAM	1	24	15.94	15.92	15.96		
5	64QAM	12	0	15.89	15.86	15.83	17	0
5	64QAM	12	7	15.83	15.88	15.90		
5	64QAM	12	13	15.88	15.88	15.92		
5	64QAM	25	0	15.80	15.80	15.84		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	16.08	16.09	16.11	17	0
3	QPSK	1	8	16.06	16.06	15.99		
3	QPSK	1	14	16.04	16.01	15.98		
3	QPSK	8	0	16.15	16.15	16.08	17	0
3	QPSK	8	4	16.11	16.13	16.09		
3	QPSK	8	7	16.11	16.13	16.05		
3	QPSK	15	0	16.15	16.11	16.06		
3	16QAM	1	0	16.08	16.05	16.07	17	0
3	16QAM	1	8	16.07	16.04	16.05		
3	16QAM	1	14	16.06	16.08	16.01		
3	16QAM	8	0	16.09	16.02	16.04	17	0
3	16QAM	8	4	16.05	16.02	16.04		
3	16QAM	8	7	16.07	16.09	16.01		
3	16QAM	15	0	16.08	16.04	16.08		
3	64QAM	1	0	15.91	15.89	15.83	17	0
3	64QAM	1	8	15.94	15.87	15.93		
3	64QAM	1	14	15.92	15.90	15.94		
3	64QAM	8	0	15.89	15.86	15.83	17	0
3	64QAM	8	4	15.80	15.85	15.87		
3	64QAM	8	7	15.86	15.86	15.90		
3	64QAM	15	0	15.80	15.80	15.84		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	16.01	16.00	16.03	17	0
1.4	QPSK	1	3	16.10	16.09	16.08		
1.4	QPSK	1	5	16.00	15.98	15.89		
1.4	QPSK	3	0	16.07	16.06	15.94		
1.4	QPSK	3	1	16.03	16.09	16.02		
1.4	QPSK	3	3	16.03	16.04	15.93		
1.4	QPSK	6	0	16.01	16.05	15.97	17	0
1.4	16QAM	1	0	16.03	16.04	16.06	17	0
1.4	16QAM	1	3	16.04	16.03	16.02		
1.4	16QAM	1	5	16.07	16.03	16.13		
1.4	16QAM	3	0	16.01	16.06	16.00		
1.4	16QAM	3	1	16.06	16.11	16.02		
1.4	16QAM	3	3	16.04	16.03	16.00		
1.4	16QAM	6	0	16.08	16.02	16.02	17	0
1.4	64QAM	1	0	15.90	15.88	15.82	17	0
1.4	64QAM	1	3	15.93	15.86	15.92		
1.4	64QAM	1	5	15.86	15.84	15.88		
1.4	64QAM	3	0	15.85	15.82	15.79		
1.4	64QAM	3	1	15.81	15.86	15.88		
1.4	64QAM	3	3	15.79	15.79	15.83		
1.4	64QAM	6	0	15.69	15.69	15.73	17	0

<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	13.96	13.97	13.98	14.5	0
20	QPSK	1	49	13.86	13.82	13.93		
20	QPSK	1	99	13.94	13.95	13.94		
20	QPSK	50	0	13.92	13.91	13.94	14.5	0
20	QPSK	50	24	13.93	13.88	13.90		
20	QPSK	50	50	13.94	13.86	13.88		
20	QPSK	100	0	13.94	13.89	13.91		
20	16QAM	1	0	13.80	13.78	13.75	14.5	0
20	16QAM	1	49	13.72	13.62	13.65		
20	16QAM	1	99	13.76	13.80	13.74		
20	16QAM	50	0	13.46	13.47	13.46	14.5	0
20	16QAM	50	24	13.47	13.45	13.45		
20	16QAM	50	50	13.45	13.43	13.42		
20	16QAM	100	0	13.46	13.45	13.44		
20	64QAM	1	0	13.74	13.72	13.69	14.5	0
20	64QAM	1	49	13.67	13.57	13.60		
20	64QAM	1	99	13.64	13.68	13.62		
20	64QAM	50	0	13.54	13.55	13.54	14.5	0
20	64QAM	50	24	13.54	13.52	13.52		
20	64QAM	50	50	13.53	13.51	13.50		
20	64QAM	100	0	13.55	13.54	13.53		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	13.92	13.91	13.91	14.5	0
15	QPSK	1	37	13.82	13.84	13.85		
15	QPSK	1	74	13.91	13.93	13.91		
15	QPSK	36	0	13.87	13.88	13.90	14.5	0
15	QPSK	36	20	13.88	13.88	13.89		
15	QPSK	36	39	13.85	13.86	13.87		
15	QPSK	75	0	13.91	13.90	13.89		
15	16QAM	1	0	13.75	13.71	13.70	14.5	0
15	16QAM	1	37	13.65	13.68	13.67		
15	16QAM	1	74	13.76	13.74	13.70		
15	16QAM	36	0	13.43	13.42	13.41	14.5	0
15	16QAM	36	20	13.45	13.44	13.45		
15	16QAM	36	39	13.42	13.39	13.41		
15	16QAM	75	0	13.42	13.45	13.42		
15	64QAM	1	0	13.68	13.66	13.63	14.5	0
15	64QAM	1	37	13.71	13.61	13.64		
15	64QAM	1	74	13.62	13.66	13.60		
15	64QAM	36	0	13.51	13.52	13.51	14.5	0
15	64QAM	36	20	13.56	13.54	13.54		
15	64QAM	36	39	13.55	13.53	13.52		
15	64QAM	75	0	13.50	13.49	13.48		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	13.89	13.90	13.91	14.5	0
10	QPSK	1	25	13.80	13.75	13.78		
10	QPSK	1	49	13.87	13.91	13.86		
10	QPSK	25	0	13.83	13.82	13.85	14.5	0
10	QPSK	25	12	13.88	13.85	13.86		
10	QPSK	25	25	13.84	13.83	13.85		
10	QPSK	50	0	13.86	13.81	13.87		
10	16QAM	1	0	13.68	13.70	13.70	14.5	0
10	16QAM	1	25	13.65	13.62	13.61		
10	16QAM	1	49	13.67	13.67	13.64		
10	16QAM	25	0	13.38	13.37	13.35	14.5	0
10	16QAM	25	12	13.36	13.38	13.32		
10	16QAM	25	25	13.39	13.40	13.41		
10	16QAM	50	0	13.38	13.39	13.42		
10	64QAM	1	0	13.66	13.64	13.61	14.5	0
10	64QAM	1	25	13.71	13.61	13.64		
10	64QAM	1	49	13.60	13.64	13.58		
10	64QAM	25	0	13.47	13.48	13.47	14.5	0
10	64QAM	25	12	13.51	13.49	13.49		
10	64QAM	25	25	13.50	13.48	13.47		
10	64QAM	50	0	13.51	13.50	13.49		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	13.83	13.76	13.84	14.5	0
5	QPSK	1	12	13.78	13.77	13.79		
5	QPSK	1	24	13.79	13.76	13.86		
5	QPSK	12	0	13.85	13.82	13.83	14.5	0
5	QPSK	12	7	13.84	13.86	13.85		
5	QPSK	12	13	13.78	13.79	13.80		
5	QPSK	25	0	13.81	13.80	13.83		
5	16QAM	1	0	13.63	13.65	13.64	14.5	0
5	16QAM	1	12	13.62	13.60	13.58		
5	16QAM	1	24	13.68	13.66	13.61		
5	16QAM	12	0	13.40	13.38	13.39	14.5	0
5	16QAM	12	7	13.44	13.42	13.45		
5	16QAM	12	13	13.40	13.35	13.37		
5	16QAM	25	0	13.33	13.35	13.36		
5	64QAM	1	0	13.64	13.62	13.59	14.5	0
5	64QAM	1	12	13.68	13.58	13.61		
5	64QAM	1	24	13.53	13.57	13.51		
5	64QAM	12	0	13.47	13.48	13.47	14.5	0
5	64QAM	12	7	13.52	13.50	13.50		
5	64QAM	12	13	13.53	13.51	13.50		
5	64QAM	25	0	13.49	13.48	13.47		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	16.24	16.28	16.23	16.5	0
10	QPSK	1	25	16.19	16.22	16.09		
10	QPSK	1	49	16.24	16.19	16.13		
10	QPSK	25	0	16.14	16.08	16.09	16.5	0
10	QPSK	25	12	16.16	16.21	16.04		
10	QPSK	25	25	16.20	16.16	16.13		
10	QPSK	50	0	16.21	16.22	16.04		
10	16QAM	1	0	16.11	16.17	16.12	16.5	0
10	16QAM	1	25	16.17	16.19	16.17		
10	16QAM	1	49	16.18	16.16	16.11		
10	16QAM	25	0	16.17	16.14	16.08	16.5	0
10	16QAM	25	12	16.19	16.13	16.12		
10	16QAM	25	25	16.21	16.16	16.14		
10	16QAM	50	0	16.17	16.20	16.06		
10	64QAM	1	0	15.79	15.83	15.78	16.5	0
10	64QAM	1	25	15.87	15.90	15.77		
10	64QAM	1	49	15.95	15.90	15.84		
10	64QAM	25	0	15.78	15.72	15.73	16.5	0
10	64QAM	25	12	15.79	15.84	15.67		
10	64QAM	25	25	15.85	15.81	15.78		
10	64QAM	50	0	15.81	15.82	15.64		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	16.11	16.16	16.12	16.5	0
5	QPSK	1	12	16.09	16.11	16.03		
5	QPSK	1	24	16.08	16.11	16.03		
5	QPSK	12	0	16.08	16.01	16.10	16.5	0
5	QPSK	12	7	16.09	16.08	16.04		
5	QPSK	12	13	16.04	16.12	16.07		
5	QPSK	25	0	16.12	16.08	16.08		
5	16QAM	1	0	16.08	16.02	16.04	16.5	0
5	16QAM	1	12	16.10	16.11	16.13		
5	16QAM	1	24	16.06	16.09	16.08		
5	16QAM	12	0	16.10	16.10	16.05	16.5	0
5	16QAM	12	7	16.04	16.01	16.05		
5	16QAM	12	13	16.07	16.06	16.10		
5	16QAM	25	0	16.08	16.07	16.04		
5	64QAM	1	0	15.81	15.85	15.80	16.5	0
5	64QAM	1	12	15.86	15.89	15.76		
5	64QAM	1	24	15.93	15.88	15.82		
5	64QAM	12	0	15.92	15.86	15.87	16.5	0
5	64QAM	12	7	15.80	15.85	15.68		
5	64QAM	12	13	15.87	15.83	15.80		
5	64QAM	25	0	15.77	15.78	15.60		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	16.13	16.12	16.12	16.5	0
3	QPSK	1	8	16.00	16.11	16.08		
3	QPSK	1	14	16.06	16.09	16.10		
3	QPSK	8	0	16.05	16.11	16.06	16.5	0
3	QPSK	8	4	16.05	16.09	16.07		
3	QPSK	8	7	16.02	16.04	16.06		
3	QPSK	15	0	16.04	16.11	16.07		
3	16QAM	1	0	16.07	16.09	16.09	16.5	0
3	16QAM	1	8	16.05	16.06	16.09		
3	16QAM	1	14	16.07	16.01	16.06		
3	16QAM	8	0	16.12	16.05	16.05	16.5	0
3	16QAM	8	4	16.13	16.04	16.07		
3	16QAM	8	7	16.10	16.02	16.04		
3	16QAM	15	0	16.06	16.11	16.09		
3	64QAM	1	0	15.86	15.90	15.85	16.5	0
3	64QAM	1	8	15.85	15.88	15.75		
3	64QAM	1	14	15.92	15.87	15.81		
3	64QAM	8	0	15.88	15.82	15.83	16.5	0
3	64QAM	8	4	15.81	15.86	15.69		
3	64QAM	8	7	15.86	15.82	15.79		
3	64QAM	15	0	15.78	15.79	15.61		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	16.15	16.13	16.12	16.5	0
1.4	QPSK	1	3	16.02	16.11	16.09		
1.4	QPSK	1	5	15.93	16.01	16.03		
1.4	QPSK	3	0	16.00	16.05	16.06		
1.4	QPSK	3	1	16.04	16.04	16.11		
1.4	QPSK	3	3	15.98	16.08	16.05		
1.4	QPSK	6	0	15.99	16.10	16.09	16.5	0
1.4	16QAM	1	0	16.11	16.09	16.04	16.5	0
1.4	16QAM	1	3	16.05	16.09	16.11		
1.4	16QAM	1	5	16.08	16.08	16.02		
1.4	16QAM	3	0	16.02	16.10	16.13		
1.4	16QAM	3	1	16.04	16.04	16.03		
1.4	16QAM	3	3	15.99	16.07	16.12		
1.4	16QAM	6	0	16.07	16.07	16.09	16.5	0
1.4	64QAM	1	0	15.81	15.85	15.80	16.5	0
1.4	64QAM	1	3	15.88	15.91	15.78		
1.4	64QAM	1	5	15.87	15.82	15.76		
1.4	64QAM	3	0	15.88	15.82	15.83		
1.4	64QAM	3	1	15.80	15.85	15.68		
1.4	64QAM	3	3	15.82	15.78	15.75		
1.4	64QAM	6	0	15.69	15.70	15.52	16.5	0

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel					23230			
Frequency (MHz)					782			
10	QPSK	1	0		16.99		17.5	0
10	QPSK	1	25		17.10			
10	QPSK	1	49		16.92			
10	QPSK	25	0		16.98		17.5	0
10	QPSK	25	12		16.99			
10	QPSK	25	25		16.92			
10	QPSK	50	0		16.91			
10	16QAM	1	0		16.90		17.5	0
10	16QAM	1	25		16.96			
10	16QAM	1	49		16.95			
10	16QAM	25	0		16.92		17.5	0
10	16QAM	25	12		16.91			
10	16QAM	25	25		16.92			
10	16QAM	50	0		16.97			
10	64QAM	1	0		16.82		17.5	0
10	64QAM	1	25		16.81			
10	64QAM	1	49		16.72			
10	64QAM	25	0		16.77		17.5	0
10	64QAM	25	12		16.76			
10	64QAM	25	25		16.69			
10	64QAM	50	0		16.74			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	17.01	17.02	16.99	17.5	0
5	QPSK	1	12	16.95	16.95	16.98		
5	QPSK	1	24	16.97	16.94	16.95		
5	QPSK	12	0	16.96	16.95	16.93	17.5	0
5	QPSK	12	7	16.93	16.96	16.91		
5	QPSK	12	13	16.99	16.97	16.95		
5	QPSK	25	0	16.94	16.91	16.92		
5	16QAM	1	0	16.98	16.96	16.91	17.5	0
5	16QAM	1	12	16.95	16.95	16.90		
5	16QAM	1	24	16.96	16.97	16.93		
5	16QAM	12	0	16.95	16.87	16.86	17.5	0
5	16QAM	12	7	16.98	16.95	16.93		
5	16QAM	12	13	16.93	16.92	16.91		
5	16QAM	25	0	16.95	16.88	16.87		
5	64QAM	1	0	16.88	16.89	16.86	17.5	0
5	64QAM	1	12	16.80	16.80	16.83		
5	64QAM	1	24	16.82	16.79	16.80		
5	64QAM	12	0	16.76	16.75	16.73	17.5	0
5	64QAM	12	7	16.71	16.74	16.69		
5	64QAM	12	13	16.76	16.74	16.72		
5	64QAM	25	0	16.74	16.71	16.72		

<LTE Band 17>

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	16.21	16.20	16.27	16.5	0
10	QPSK	1	25	16.22	16.23	16.15		
10	QPSK	1	49	16.19	16.18	16.08		
10	QPSK	25	0	16.14	16.09	16.12	16.5	0
10	QPSK	25	12	16.04	16.01	16.11		
10	QPSK	25	25	16.08	16.04	16.13		
10	QPSK	50	0	16.11	16.17	16.11		
10	16QAM	1	0	16.15	16.11	16.09	16.5	0
10	16QAM	1	25	16.11	16.16	16.14		
10	16QAM	1	49	16.13	16.12	16.11		
10	16QAM	25	0	16.14	16.13	16.12	16.5	0
10	16QAM	25	12	16.13	16.12	16.10		
10	16QAM	25	25	16.10	16.14	16.17		
10	16QAM	50	0	16.13	16.08	16.10		
10	64QAM	1	0	15.71	15.72	15.69	16.5	0
10	64QAM	1	25	15.75	15.75	15.78		
10	64QAM	1	49	15.93	15.90	15.91		
10	64QAM	25	0	15.72	15.71	15.69	16.5	0
10	64QAM	25	12	15.64	15.67	15.62		
10	64QAM	25	25	15.83	15.81	15.79		
10	64QAM	50	0	15.70	15.67	15.68		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	16.16	16.23	16.15	16.5	0
5	QPSK	1	12	16.11	16.23	16.07		
5	QPSK	1	24	16.09	16.19	16.07		
5	QPSK	12	0	16.03	16.18	16.11	16.5	0
5	QPSK	12	7	16.06	16.09	16.14		
5	QPSK	12	13	16.10	16.15	16.15		
5	QPSK	25	0	16.13	16.19	16.13		
5	16QAM	1	0	16.16	16.19	16.17	16.5	0
5	16QAM	1	12	16.12	16.18	16.09		
5	16QAM	1	24	16.12	16.14	16.12		
5	16QAM	12	0	16.06	16.12	16.09	16.5	0
5	16QAM	12	7	16.14	16.13	16.06		
5	16QAM	12	13	16.08	16.07	16.12		
5	16QAM	25	0	16.11	16.09	16.13		
5	64QAM	1	0	15.78	15.79	15.76	16.5	0
5	64QAM	1	12	15.76	15.76	15.79		
5	64QAM	1	24	15.94	15.91	15.92		
5	64QAM	12	0	15.71	15.70	15.68	16.5	0
5	64QAM	12	7	15.68	15.71	15.66		
5	64QAM	12	13	15.72	15.70	15.68		
5	64QAM	25	0	15.69	15.66	15.67		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	15.03	15.06	15.30	16.5	0
20	QPSK	1	49	14.77	14.91	15.10		
20	QPSK	1	99	14.65	14.79	15.00		
20	QPSK	50	0	14.92	15.06	15.29	16.5	0
20	QPSK	50	24	14.89	14.99	15.24		
20	QPSK	50	50	14.83	14.95	15.09		
20	QPSK	100	0	14.89	15.01	15.16		
20	16QAM	1	0	15.12	15.20	15.21	16.5	0
20	16QAM	1	49	15.04	15.17	15.22		
20	16QAM	1	99	14.90	15.03	15.25		
20	16QAM	50	0	14.98	15.09	15.21	16.5	0
20	16QAM	50	24	14.89	15.03	15.11		
20	16QAM	50	50	14.81	14.97	14.98		
20	16QAM	100	0	14.91	15.02	15.16		
20	64QAM	1	0	14.64	14.72	14.73	15.5	1
20	64QAM	1	49	14.47	14.60	14.65		
20	64QAM	1	99	14.47	14.60	14.82		
20	64QAM	50	0	14.47	14.58	14.70	15.5	1
20	64QAM	50	24	14.42	14.56	14.64		
20	64QAM	50	50	14.35	14.51	14.52		
20	64QAM	100	0	14.45	14.56	14.70		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	14.97	15.07	15.27	16.5	0
15	QPSK	1	37	14.75	14.91	14.99		
15	QPSK	1	74	14.72	14.87	15.01		
15	QPSK	36	0	14.91	15.04	15.24	16.5	0
15	QPSK	36	20	14.88	15.02	15.11		
15	QPSK	36	39	14.83	14.97	14.99		
15	QPSK	75	0	14.89	14.99	15.07		
15	16QAM	1	0	15.19	15.23	15.26	16.5	0
15	16QAM	1	37	15.04	15.17	15.14		
15	16QAM	1	74	14.96	15.13	15.21		
15	16QAM	36	0	14.95	15.07	15.27	16.5	0
15	16QAM	36	20	14.89	15.04	15.02		
15	16QAM	36	39	14.81	14.96	14.97		
15	16QAM	75	0	14.88	15.02	15.13		
15	64QAM	1	0	14.69	14.77	14.78	15.5	1
15	64QAM	1	37	14.49	14.62	14.67		
15	64QAM	1	74	14.53	14.66	14.88		
15	64QAM	36	0	14.47	14.58	14.70	15.5	1
15	64QAM	36	20	14.40	14.54	14.62		
15	64QAM	36	39	14.39	14.55	14.56		
15	64QAM	75	0	14.41	14.52	14.66		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	14.85	14.99	15.21	16.5	0
10	QPSK	1	25	14.79	14.92	15.00		
10	QPSK	1	49	14.82	14.86	15.01		
10	QPSK	25	0	14.99	15.00	15.12	16.5	0
10	QPSK	25	12	14.92	14.98	15.08		
10	QPSK	25	25	14.91	14.94	15.06		
10	QPSK	50	0	14.94	14.96	15.08		
10	16QAM	1	0	15.12	15.20	15.14	16.5	0
10	16QAM	1	25	15.07	15.11	15.18		
10	16QAM	1	49	15.00	15.09	15.13		
10	16QAM	25	0	14.99	15.05	15.12	16.5	0
10	16QAM	25	12	14.99	15.03	15.13		
10	16QAM	25	25	14.91	14.97	15.06		
10	16QAM	50	0	14.98	15.00	15.11		
10	64QAM	1	0	14.58	14.66	14.67	15.5	1
10	64QAM	1	25	14.46	14.59	14.64		
10	64QAM	1	49	14.46	14.59	14.81		
10	64QAM	25	0	14.42	14.53	14.65	15.5	1
10	64QAM	25	12	14.40	14.54	14.62		
10	64QAM	25	25	14.32	14.48	14.49		
10	64QAM	50	0	14.40	14.51	14.65		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	15.06	15.15	15.24	16.5	0
5	QPSK	1	12	14.85	14.88	14.98		
5	QPSK	1	24	14.86	14.90	15.02		
5	QPSK	12	0	14.96	14.95	15.05	16.5	0
5	QPSK	12	7	14.92	14.97	15.11		
5	QPSK	12	13	14.91	14.92	15.04		
5	QPSK	25	0	14.89	14.93	15.08		
5	16QAM	1	0	15.18	15.08	15.11	16.5	0
5	16QAM	1	12	15.12	15.06	15.13		
5	16QAM	1	24	15.06	15.08	15.12		
5	16QAM	12	0	14.97	15.01	15.11	16.5	0
5	16QAM	12	7	14.97	15.01	15.13		
5	16QAM	12	13	14.91	14.96	15.06		
5	16QAM	25	0	14.96	14.98	15.09		
5	64QAM	1	0	14.55	14.63	14.64	15.5	1
5	64QAM	1	12	14.47	14.60	14.65		
5	64QAM	1	24	14.45	14.58	14.80		
5	64QAM	12	0	14.44	14.55	14.67	15.5	1
5	64QAM	12	7	14.40	14.54	14.62		
5	64QAM	12	13	14.35	14.51	14.52		
5	64QAM	25	0	14.38	14.49	14.63		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	14.89	14.92	15.19	16.5	0
3	QPSK	1	8	14.84	14.90	14.98		
3	QPSK	1	14	14.86	14.86	14.99		
3	QPSK	8	0	14.93	14.96	15.04	16.5	0
3	QPSK	8	4	14.93	14.98	15.09		
3	QPSK	8	7	14.91	14.95	15.05		
3	QPSK	15	0	14.91	14.93	15.04		
3	16QAM	1	0	15.14	15.16	15.11	16.5	0
3	16QAM	1	8	15.11	15.14	15.13		
3	16QAM	1	14	15.11	15.11	15.07		
3	16QAM	8	0	14.97	15.02	15.13	16.5	0
3	16QAM	8	4	14.99	15.03	15.16		
3	16QAM	8	7	14.96	15.00	15.12		
3	16QAM	15	0	14.93	14.97	15.07		
3	64QAM	1	0	14.58	14.60	14.55	15.5	1
3	64QAM	1	8	14.54	14.57	14.56		
3	64QAM	1	14	14.58	14.58	14.54		
3	64QAM	8	0	14.46	14.51	14.62	15.5	1
3	64QAM	8	4	14.49	14.53	14.66		
3	64QAM	8	7	14.46	14.50	14.62		
3	64QAM	15	0	14.41	14.45	14.55		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	14.81	14.85	14.94	16.5	0
1.4	QPSK	1	3	14.87	14.89	14.99		
1.4	QPSK	1	5	14.77	14.82	14.92		
1.4	QPSK	3	0	14.88	14.87	14.98		
1.4	QPSK	3	1	14.92	14.94	15.03		
1.4	QPSK	3	3	14.85	14.89	14.97		
1.4	QPSK	6	0	14.86	14.89	14.98	16.5	0
1.4	16QAM	1	0	15.07	15.09	15.21	16.5	0
1.4	16QAM	1	3	15.08	15.14	15.16		
1.4	16QAM	1	5	15.01	15.05	15.23		
1.4	16QAM	3	0	14.89	14.89	15.02		
1.4	16QAM	3	1	14.90	14.92	15.06		
1.4	16QAM	3	3	14.86	14.90	14.99		
1.4	16QAM	6	0	14.96	14.98	15.07	16.5	0
1.4	64QAM	1	0	14.51	14.53	14.48	15.5	1
1.4	64QAM	1	3	14.57	14.60	14.59		
1.4	64QAM	1	5	14.52	14.52	14.48		
1.4	64QAM	3	0	14.48	14.53	14.64		
1.4	64QAM	3	1	14.54	14.58	14.71		
1.4	64QAM	3	3	14.47	14.51	14.63		
1.4	64QAM	6	0	14.35	14.39	14.49	15.5	1

<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	16.33	16.26	16.31	17	0
15	QPSK	1	37	16.23	16.24	16.25		
15	QPSK	1	74	16.20	16.09	16.05		
15	QPSK	36	0	16.21	16.11	16.02	17	0
15	QPSK	36	20	16.22	16.18	16.13		
15	QPSK	36	39	16.10	16.12	16.02		
15	QPSK	75	0	16.14	16.05	16.11		
15	16QAM	1	0	16.20	16.18	16.19	17	0
15	16QAM	1	37	16.18	16.07	16.13		
15	16QAM	1	74	16.15	16.02	16.20		
15	16QAM	36	0	16.15	16.03	16.16	17	0
15	16QAM	36	20	16.14	16.09	16.14		
15	16QAM	36	39	16.11	16.12	16.14		
15	16QAM	75	0	16.16	16.05	16.11		
15	64QAM	1	0	15.92	15.90	15.91	17	0
15	64QAM	1	37	16.02	15.91	15.97		
15	64QAM	1	74	16.01	15.88	16.06		
15	64QAM	36	0	16.00	15.88	16.01	17	0
15	64QAM	36	20	15.92	15.87	15.92		
15	64QAM	36	39	15.79	15.80	15.82		
15	64QAM	75	0	15.94	15.83	15.89		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	16.17	16.19	16.28	17	0
10	QPSK	1	25	16.22	16.21	16.19		
10	QPSK	1	49	16.11	16.11	16.10		
10	QPSK	25	0	16.20	16.27	16.27	17	0
10	QPSK	25	12	16.19	16.24	16.26		
10	QPSK	25	25	16.24	16.22	16.21		
10	QPSK	50	0	16.24	16.22	16.24		
10	16QAM	1	0	16.16	16.15	16.21	17	0
10	16QAM	1	25	16.15	16.25	16.17		
10	16QAM	1	49	16.19	16.24	16.16		
10	16QAM	25	0	16.13	16.26	16.18	17	0
10	16QAM	25	12	16.13	16.27	16.19		
10	16QAM	25	25	16.12	16.21	16.14		
10	16QAM	50	0	16.18	16.26	16.16		
10	64QAM	1	0	15.90	15.88	15.89	17	0
10	64QAM	1	25	16.01	15.90	15.96		
10	64QAM	1	49	16.00	15.87	16.05		
10	64QAM	25	0	15.96	15.84	15.97	17	0
10	64QAM	25	12	15.91	15.86	15.91		
10	64QAM	25	25	15.78	15.79	15.81		
10	64QAM	50	0	15.91	15.80	15.86		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	16.24	16.22	16.28	17	0
5	QPSK	1	12	16.22	16.18	16.16		
5	QPSK	1	24	16.21	16.12	16.11		
5	QPSK	12	0	16.21	16.27	16.23	17	0
5	QPSK	12	7	16.17	16.23	16.22		
5	QPSK	12	13	16.14	16.22	16.19		
5	QPSK	25	0	16.17	16.14	16.23		
5	16QAM	1	0	16.21	16.18	16.23	17	0
5	16QAM	1	12	16.24	16.20	16.20		
5	16QAM	1	24	16.24	16.18	16.14		
5	16QAM	12	0	16.14	16.15	16.16	17	0
5	16QAM	12	7	16.21	16.14	16.17		
5	16QAM	12	13	16.18	16.12	16.19		
5	16QAM	25	0	16.11	16.15	16.12		
5	64QAM	1	0	15.99	15.97	15.98	17	0
5	64QAM	1	12	16.00	15.89	15.95		
5	64QAM	1	24	16.03	15.90	16.08		
5	64QAM	12	0	15.99	15.87	16.00	17	0
5	64QAM	12	7	15.93	15.88	15.93		
5	64QAM	12	13	15.83	15.84	15.86		
5	64QAM	25	0	15.89	15.78	15.84		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	16.26	16.17	16.25	17	0
3	QPSK	1	8	16.19	16.16	16.14		
3	QPSK	1	14	16.18	16.12	16.20		
3	QPSK	8	0	16.19	16.12	16.23	17	0
3	QPSK	8	4	16.16	16.12	16.21		
3	QPSK	8	7	16.22	16.08	16.17		
3	QPSK	15	0	16.24	16.09	16.20		
3	16QAM	1	0	16.22	16.14	16.22	17	0
3	16QAM	1	8	16.21	16.15	16.23		
3	16QAM	1	14	16.22	16.09	16.19		
3	16QAM	8	0	16.15	16.11	16.24	17	0
3	16QAM	8	4	16.14	16.17	16.13		
3	16QAM	8	7	16.20	16.13	16.16		
3	16QAM	15	0	16.19	16.12	16.15		
3	64QAM	1	0	16.00	15.92	16.00	17	0
3	64QAM	1	8	15.94	15.88	15.96		
3	64QAM	1	14	16.04	15.91	16.01		
3	64QAM	8	0	15.90	15.86	15.99	17	0
3	64QAM	8	4	15.85	15.88	15.84		
3	64QAM	8	7	15.90	15.83	15.86		
3	64QAM	15	0	15.88	15.81	15.84		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	16.25	16.21	16.16	17	0
1.4	QPSK	1	3	16.23	16.16	16.11		
1.4	QPSK	1	5	16.11	16.08	16.03		
1.4	QPSK	3	0	16.17	16.13	16.12		
1.4	QPSK	3	1	16.22	16.17	16.14		
1.4	QPSK	3	3	16.20	16.13	16.09		
1.4	QPSK	6	0	16.19	16.13	16.09	17	0
1.4	16QAM	1	0	16.21	16.13	16.14	17	0
1.4	16QAM	1	3	16.18	16.14	16.06		
1.4	16QAM	1	5	16.17	16.13	16.11		
1.4	16QAM	3	0	16.21	16.16	16.13		
1.4	16QAM	3	1	16.22	16.20	16.12		
1.4	16QAM	3	3	16.17	16.15	16.11		
1.4	16QAM	6	0	16.18	16.20	16.09	17	0
1.4	64QAM	1	0	15.94	15.86	15.94	17	0
1.4	64QAM	1	3	15.99	15.93	16.01		
1.4	64QAM	1	5	15.99	15.86	15.96		
1.4	64QAM	3	0	15.84	15.80	15.93		
1.4	64QAM	3	1	15.85	15.88	15.84		
1.4	64QAM	3	3	15.89	15.82	15.85		
1.4	64QAM	6	0	15.79	15.72	15.75	17	0

<LTE Band 30>

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					27710			
Frequency (MHz)					2310			
10	QPSK	1	0		12.00		12.5	0
10	QPSK	1	25		11.79			
10	QPSK	1	49		11.81			
10	QPSK	25	0		11.98		12.5	0
10	QPSK	25	12		11.97			
10	QPSK	25	25		11.82			
10	QPSK	50	0		11.86			
10	16QAM	1	0		11.97		12.5	0
10	16QAM	1	25		11.96			
10	16QAM	1	49		11.97			
10	16QAM	25	0		11.92		12.5	0
10	16QAM	25	12		11.90			
10	16QAM	25	25		11.86			
10	16QAM	50	0		11.91			
10	64QAM	1	0		11.77		12.5	0
10	64QAM	1	25		11.57			
10	64QAM	1	49		11.57			
10	64QAM	25	0		11.52		12.5	0
10	64QAM	25	12		11.51			
10	64QAM	25	25		11.47			
10	64QAM	50	0		11.50			
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	11.93	11.82	11.86	12.5	0
5	QPSK	1	12	11.78	11.76	11.77		
5	QPSK	1	24	11.83	11.82	11.83		
5	QPSK	12	0	11.84	11.83	11.85	12.5	0
5	QPSK	12	7	11.90	11.88	11.90		
5	QPSK	12	13	11.85	11.83	11.84		
5	QPSK	25	0	11.84	11.82	11.85		
5	16QAM	1	0	11.98	11.99	11.99	12.5	0
5	16QAM	1	12	11.99	11.98	11.99		
5	16QAM	1	24	11.98	11.98	11.98		
5	16QAM	12	0	11.92	11.90	11.80	12.5	0
5	16QAM	12	7	11.91	11.92	11.95		
5	16QAM	12	13	11.86	11.85	11.87		
5	16QAM	25	0	11.88	11.86	11.87		
5	64QAM	1	0	11.62	11.63	11.63	12.5	0
5	64QAM	1	12	11.56	11.55	11.56		
5	64QAM	1	24	11.58	11.58	11.58		
5	64QAM	12	0	11.53	11.51	11.50	12.5	0
5	64QAM	12	7	11.50	11.51	11.54		
5	64QAM	12	13	11.49	11.48	11.50		
5	64QAM	25	0	11.48	11.46	11.47		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	14.44	14.54	14.62	15.5	0
20	QPSK	1	49	14.16	14.58	14.19		
20	QPSK	1	99	14.12	14.45	14.09		
20	QPSK	50	0	14.13	14.50	14.58	15.5	0
20	QPSK	50	24	14.00	14.52	14.10		
20	QPSK	50	50	14.01	14.47	13.98		
20	QPSK	100	0	14.03	14.42	14.51		
20	16QAM	1	0	14.14	14.55	14.21	15.5	0
20	16QAM	1	49	13.88	14.41	13.94		
20	16QAM	1	99	13.83	14.22	13.81		
20	16QAM	50	0	14.12	14.56	14.18	15.5	0
20	16QAM	50	24	13.98	14.49	14.09		
20	16QAM	50	50	13.98	14.44	13.97		
20	16QAM	100	0	14.00	14.53	14.07		
20	64QAM	1	0	14.10	13.99	14.03	14.5	1
20	64QAM	1	49	13.73	13.71	13.72		
20	64QAM	1	99	13.70	13.69	13.70		
20	64QAM	50	0	13.77	13.76	13.78	14.5	1
20	64QAM	50	24	13.74	13.72	13.74		
20	64QAM	50	50	13.65	13.63	13.64		
20	64QAM	100	0	13.74	13.72	13.75		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	14.57	14.39	14.48	15.5	0
15	QPSK	1	37	14.49	14.10	14.20		
15	QPSK	1	74	14.52	14.05	14.16		
15	QPSK	36	0	14.57	14.08	14.11	15.5	0
15	QPSK	36	20	14.52	13.99	14.05		
15	QPSK	36	39	14.47	13.90	13.96		
15	QPSK	75	0	14.53	13.96	14.07		
15	16QAM	1	0	14.57	14.08	14.18	15.5	0
15	16QAM	1	37	14.43	13.82	13.92		
15	16QAM	1	74	14.39	13.76	13.85		
15	16QAM	36	0	14.56	13.99	14.11	15.5	0
15	16QAM	36	20	14.51	13.90	14.01		
15	16QAM	36	39	14.49	13.85	13.97		
15	16QAM	75	0	14.52	13.92	14.03		
15	64QAM	1	0	14.10	13.99	14.03	14.5	1
15	64QAM	1	37	13.75	13.73	13.74		
15	64QAM	1	74	13.73	13.72	13.73		
15	64QAM	36	0	13.76	13.75	13.77	14.5	1
15	64QAM	36	20	13.72	13.70	13.72		
15	64QAM	36	39	13.69	13.67	13.68		
15	64QAM	75	0	13.73	13.71	13.74		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	14.52	14.24	14.23	15.5	0
10	QPSK	1	25	14.56	14.09	14.11		
10	QPSK	1	49	14.55	14.03	14.05		
10	QPSK	25	0	14.52	13.97	13.96	15.5	0
10	QPSK	25	12	14.52	13.93	13.92		
10	QPSK	25	25	14.46	13.86	13.85		
10	QPSK	50	0	14.50	13.95	13.92		
10	16QAM	1	0	14.47	13.97	13.97	15.5	0
10	16QAM	1	25	14.40	13.82	13.81		
10	16QAM	1	49	14.35	13.73	13.75		
10	16QAM	25	0	14.47	13.94	13.93	15.5	0
10	16QAM	25	12	14.49	13.93	13.88		
10	16QAM	25	25	14.45	13.84	13.85		
10	16QAM	50	0	14.45	13.93	13.88		
10	64QAM	1	0	14.01	13.90	13.94	14.5	1
10	64QAM	1	25	13.75	13.73	13.74		
10	64QAM	1	49	13.73	13.72	13.73		
10	64QAM	25	0	13.75	13.74	13.76	14.5	1
10	64QAM	25	12	13.70	13.68	13.70		
10	64QAM	25	25	13.64	13.62	13.63		
10	64QAM	50	0	13.68	13.66	13.69		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	14.34	14.35	14.34	15.5	0
5	QPSK	1	12	14.28	14.31	14.28		
5	QPSK	1	24	14.32	14.24	14.24		
5	QPSK	12	0	14.09	14.17	14.12	15.5	0
5	QPSK	12	7	14.19	14.14	14.12		
5	QPSK	12	13	14.13	14.05	14.06		
5	QPSK	25	0	14.04	14.12	14.11		
5	16QAM	1	0	14.04	14.09	14.09	15.5	0
5	16QAM	1	12	13.96	14.03	14.02		
5	16QAM	1	24	14.04	14.02	13.99		
5	16QAM	12	0	14.05	14.11	14.10	15.5	0
5	16QAM	12	7	14.17	14.07	14.08		
5	16QAM	12	13	14.09	14.05	14.06		
5	16QAM	25	0	14.02	14.07	14.07		
5	64QAM	1	0	13.95	13.84	13.88	14.5	1
5	64QAM	1	12	13.75	13.73	13.74		
5	64QAM	1	24	13.74	13.73	13.74		
5	64QAM	12	0	13.70	13.69	13.71	14.5	1
5	64QAM	12	7	13.70	13.68	13.70		
5	64QAM	12	13	13.69	13.67	13.68		
5	64QAM	25	0	13.67	13.65	13.68		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	14.33	14.40	14.41	15.5	0
3	QPSK	1	8	14.43	14.41	14.39		
3	QPSK	1	14	14.39	14.35	14.35		
3	QPSK	8	0	14.23	14.26	14.23	15.5	0
3	QPSK	8	4	14.32	14.28	14.24		
3	QPSK	8	7	14.31	14.24	14.18		
3	QPSK	15	0	14.19	14.21	14.16		
3	16QAM	1	0	14.11	14.14	14.12	15.5	0
3	16QAM	1	8	14.14	14.10	14.09		
3	16QAM	1	14	14.15	14.08	14.05		
3	16QAM	8	0	14.14	14.19	14.16	15.5	0
3	16QAM	8	4	14.27	14.16	14.15		
3	16QAM	8	7	14.23	14.15	14.11		
3	16QAM	15	0	14.14	14.17	14.12		
3	64QAM	1	0	13.85	13.74	13.78	14.5	1
3	64QAM	1	8	13.75	13.73	13.74		
3	64QAM	1	14	13.73	13.72	13.73		
3	64QAM	8	0	13.69	13.68	13.70	14.5	1
3	64QAM	8	4	13.69	13.67	13.69		
3	64QAM	8	7	13.70	13.68	13.69		
3	64QAM	15	0	13.66	13.64	13.67		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	14.52	14.56	14.53	15.5	0
1.4	QPSK	1	3	14.58	14.59	14.59		
1.4	QPSK	1	5	14.52	14.54	14.53		
1.4	QPSK	3	0	14.48	14.34	14.33		
1.4	QPSK	3	1	14.49	14.37	14.37		
1.4	QPSK	3	3	14.42	14.31	14.30		
1.4	QPSK	6	0	14.51	14.40	14.37	15.5	0
1.4	16QAM	1	0	14.57	14.24	14.23	15.5	0
1.4	16QAM	1	3	14.41	14.30	14.32		
1.4	16QAM	1	5	14.43	14.24	14.23		
1.4	16QAM	3	0	14.42	14.28	14.29		
1.4	16QAM	3	1	14.42	14.36	14.32		
1.4	16QAM	3	3	14.40	14.30	14.27		
1.4	16QAM	6	0	14.43	14.32	14.28	15.5	0
1.4	64QAM	1	0	13.81	13.70	13.74	14.5	1
1.4	64QAM	1	3	13.76	13.74	13.75		
1.4	64QAM	1	5	13.69	13.68	13.69		
1.4	64QAM	3	0	13.69	13.68	13.70		
1.4	64QAM	3	1	13.74	13.72	13.74		
1.4	64QAM	3	3	13.67	13.65	13.66		
1.4	64QAM	6	0	13.57	13.55	13.58	14.5	1

<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.

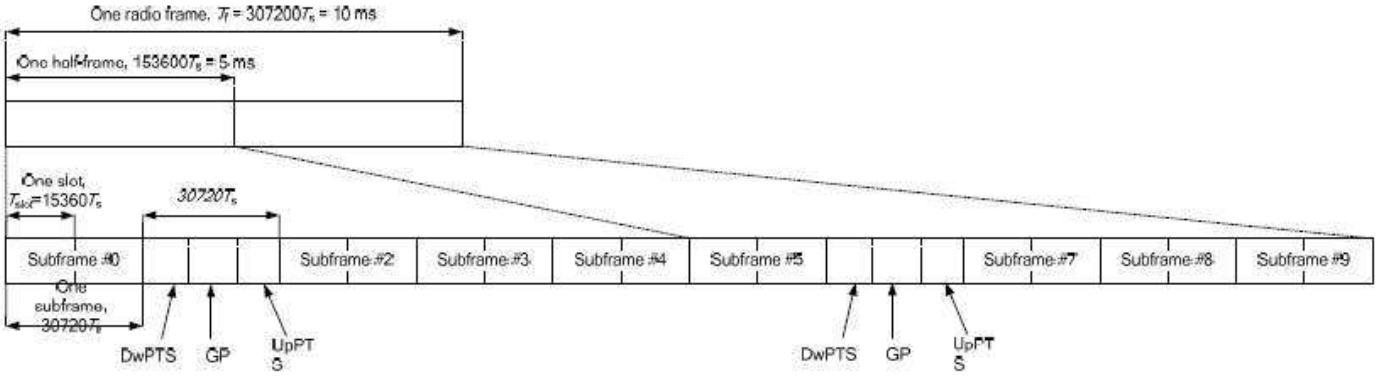


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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.

<Maximum Average RF Power (Proximity Sensor Inactive)>

<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	23.17	23.10	23.27	24	0
20	QPSK	1	49	22.97	22.92	23.08		
20	QPSK	1	99	22.88	22.84	23.02		
20	QPSK	50	0	22.01	22.05	22.31	23	1
20	QPSK	50	24	21.90	21.99	22.15		
20	QPSK	50	50	21.82	21.97	22.10		
20	QPSK	100	0	22.01	22.07	22.11		
20	16QAM	1	0	22.10	22.21	22.30	23	1
20	16QAM	1	49	21.98	21.98	22.10		
20	16QAM	1	99	21.97	21.94	22.04		
20	16QAM	50	0	21.09	21.16	21.33	22	2
20	16QAM	50	24	21.01	21.11	21.24		
20	16QAM	50	50	20.95	20.99	21.04		
20	16QAM	100	0	21.01	21.01	21.25		
20	64QAM	1	0	21.23	21.28	21.19	22	2
20	64QAM	1	49	20.90	20.96	21.00		
20	64QAM	1	99	20.93	20.94	20.98		
20	64QAM	50	0	20.01	20.08	20.10	21	3
20	64QAM	50	24	19.98	19.95	19.96		
20	64QAM	50	50	19.90	19.89	19.93		
20	64QAM	100	0	20.00	20.02	20.06		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.03	23.10	23.19	24	0
15	QPSK	1	37	22.88	22.94	23.11		
15	QPSK	1	74	22.79	22.79	22.92		
15	QPSK	36	0	21.96	22.03	22.18	23	1
15	QPSK	36	20	21.97	21.96	22.22		
15	QPSK	36	39	21.91	21.99	22.08		
15	QPSK	75	0	21.93	21.98	22.22		
15	16QAM	1	0	22.07	22.08	22.27	23	1
15	16QAM	1	37	21.95	21.97	22.13		
15	16QAM	1	74	21.93	21.87	22.01		
15	16QAM	36	0	21.01	21.10	21.21	22	2
15	16QAM	36	20	21.00	21.03	21.19		
15	16QAM	36	39	20.93	20.90	21.00		
15	16QAM	75	0	21.04	21.01	21.19		
15	64QAM	1	0	21.21	21.19	21.21	22	2
15	64QAM	1	37	21.03	21.00	21.08		
15	64QAM	1	74	21.00	20.98	20.99		
15	64QAM	36	0	20.03	20.02	20.06	21	3
15	64QAM	36	20	20.08	20.04	20.00		
15	64QAM	36	39	19.90	19.88	19.87		
15	64QAM	75	0	19.98	19.91	19.90		

Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	23.18	23.06	23.26	24	0
10	QPSK	1	25	23.09	22.94	23.20		
10	QPSK	1	49	23.07	22.91	23.13		
10	QPSK	25	0	22.16	22.09	22.28	23	1
10	QPSK	25	12	22.06	22.04	22.29		
10	QPSK	25	25	22.06	22.03	22.20		
10	QPSK	50	0	22.03	22.00	22.18		
10	16QAM	1	0	22.14	22.00	22.34	23	1
10	16QAM	1	25	22.05	22.00	22.30		
10	16QAM	1	49	22.09	21.99	22.17		
10	16QAM	25	0	21.20	21.10	21.35	22	2
10	16QAM	25	12	21.15	21.08	21.26		
10	16QAM	25	25	21.10	21.00	21.21		
10	16QAM	50	0	21.20	21.06	21.29		
10	64QAM	1	0	21.01	21.08	21.06	22	2
10	64QAM	1	25	21.03	21.00	21.01		
10	64QAM	1	49	21.00	20.95	21.00		
10	64QAM	25	0	20.05	20.03	20.06	21	3
10	64QAM	25	12	20.01	20.06	20.03		
10	64QAM	25	25	20.00	19.99	20.01		
10	64QAM	50	0	19.98	19.97	19.93		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	23.13	22.99	23.26	24	0
5	QPSK	1	12	23.08	22.97	23.24		
5	QPSK	1	24	22.97	22.99	23.03		
5	QPSK	12	0	22.05	21.97	22.15	23	1
5	QPSK	12	7	22.11	22.04	22.22		
5	QPSK	12	13	22.07	21.98	22.23		
5	QPSK	25	0	22.03	21.94	22.22		
5	16QAM	1	0	22.12	22.02	22.18	23	1
5	16QAM	1	12	22.07	22.04	22.21		
5	16QAM	1	24	22.12	21.95	22.11		
5	16QAM	12	0	21.04	21.00	21.28	22	2
5	16QAM	12	7	21.12	21.01	21.23		
5	16QAM	12	13	21.04	20.86	21.25		
5	16QAM	25	0	21.13	20.97	21.25		
5	64QAM	1	0	21.03	21.04	21.06	22	2
5	64QAM	1	12	21.04	21.02	21.06		
5	64QAM	1	24	21.05	21.01	21.08		
5	64QAM	12	0	20.03	20.00	20.01	21	3
5	64QAM	12	7	20.07	20.02	20.05		
5	64QAM	12	13	20.00	19.97	19.99		
5	64QAM	25	0	20.01	19.99	19.98		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	23.09	23.02	22.91	22.86	23.12	24	0
20	QPSK	1	49	22.99	22.82	22.72	22.67	22.94		
20	QPSK	1	99	22.95	22.72	22.70	22.72	22.83		
20	QPSK	50	0	22.10	22.00	21.80	21.76	22.11	23	1
20	QPSK	50	24	21.98	21.94	21.83	21.61	22.00		
20	QPSK	50	50	21.99	21.88	21.72	21.69	21.84		
20	QPSK	100	0	21.97	21.99	21.74	21.76	22.00		
20	16QAM	1	0	22.20	22.16	22.03	21.94	22.20	23	1
20	16QAM	1	49	22.08	21.97	21.88	21.78	21.97		
20	16QAM	1	99	21.94	21.91	21.79	21.85	21.83		
20	16QAM	50	0	21.12	21.06	20.90	20.84	21.03	22	2
20	16QAM	50	24	21.06	20.91	20.79	20.76	21.01		
20	16QAM	50	50	20.95	20.88	20.79	20.79	20.90		
20	16QAM	100	0	21.03	20.91	20.74	20.84	21.01		
20	64QAM	1	0	21.22	21.18	21.05	20.96	21.22	22	2
20	64QAM	1	49	21.04	20.93	20.84	20.74	20.93		
20	64QAM	1	99	21.01	20.98	20.86	20.92	20.90		
20	64QAM	50	0	20.11	20.05	19.89	19.83	20.02	21	3
20	64QAM	50	24	20.16	20.01	19.89	19.86	20.11		
20	64QAM	50	50	19.92	19.85	19.76	19.76	19.87		
20	64QAM	100	0	20.14	20.02	19.85	19.95	20.12		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	23.06	23.01	22.82	22.77	23.09	24	0
15	QPSK	1	37	22.98	22.81	22.72	22.62	22.89		
15	QPSK	1	74	22.97	22.78	22.73	22.66	22.82		
15	QPSK	36	0	22.15	21.99	21.81	21.76	22.01	23	1
15	QPSK	36	20	22.11	21.93	21.82	21.76	21.94		
15	QPSK	36	39	22.03	21.86	21.75	21.76	21.88		
15	QPSK	75	0	22.06	21.90	21.78	21.80	21.97		
15	16QAM	1	0	22.23	22.10	21.93	21.94	22.13	23	1
15	16QAM	1	37	22.15	21.94	21.79	21.83	21.96		
15	16QAM	1	74	22.04	21.89	21.77	21.74	21.83		
15	16QAM	36	0	21.14	21.00	20.81	20.75	21.02	22	2
15	16QAM	36	20	21.10	20.98	20.78	20.77	20.95		
15	16QAM	36	39	21.02	20.81	20.70	20.71	20.85		
15	16QAM	75	0	21.18	20.98	20.81	20.76	20.95		
15	64QAM	1	0	21.25	21.22	21.05	21.06	21.25	22	2
15	64QAM	1	37	21.28	21.07	20.92	20.96	21.09		
15	64QAM	1	74	21.14	20.99	20.87	20.84	20.93		
15	64QAM	36	0	20.15	20.10	19.91	19.85	20.12	21	3
15	64QAM	36	20	20.09	19.97	19.77	19.76	19.94		
15	64QAM	36	39	20.03	19.82	19.71	19.72	19.86		
15	64QAM	75	0	20.19	19.99	19.82	19.77	19.96		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	23.10	22.96	22.78	22.82	23.10	24	0
10	QPSK	1	25	23.06	22.92	22.73	22.69	23.00		
10	QPSK	1	49	23.07	22.88	22.72	22.71	22.94		
10	QPSK	25	0	22.11	21.88	21.78	21.85	22.01	23	1
10	QPSK	25	12	22.06	21.99	21.75	21.77	21.94		
10	QPSK	25	25	21.97	21.92	21.74	21.66	21.90		
10	QPSK	50	0	22.08	21.90	21.77	21.76	21.94		
10	16QAM	1	0	22.18	21.99	21.93	21.90	22.11	23	1
10	16QAM	1	25	22.18	21.99	21.79	21.80	21.95		
10	16QAM	1	49	22.12	21.91	21.69	21.78	21.89		
10	16QAM	25	0	21.12	20.92	20.82	20.83	21.03	22	2
10	16QAM	25	12	21.13	21.02	20.88	20.85	21.03		
10	16QAM	25	25	21.05	20.92	20.70	20.76	20.93		
10	16QAM	50	0	21.12	21.02	20.76	20.82	20.96		
10	64QAM	1	0	21.28	21.05	20.99	20.96	21.17	22	2
10	64QAM	1	25	21.30	21.11	20.91	20.92	21.07		
10	64QAM	1	49	21.30	21.09	20.87	20.96	21.07		
10	64QAM	25	0	20.21	20.01	19.91	19.92	20.12	21	3
10	64QAM	25	12	20.19	20.08	19.94	19.91	20.09		
10	64QAM	25	25	20.18	20.05	19.83	19.89	20.06		
10	64QAM	50	0	20.20	20.10	19.84	19.90	20.04		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	23.04	22.88	22.70	22.71	22.92	24	0
5	QPSK	1	12	23.09	22.84	22.72	22.79	22.97		
5	QPSK	1	24	22.98	22.77	22.65	22.63	22.80		
5	QPSK	12	0	22.07	21.89	21.68	21.73	21.94	23	1
5	QPSK	12	7	22.09	21.94	21.76	21.77	21.97		
5	QPSK	12	13	22.07	21.92	21.74	21.75	21.90		
5	QPSK	25	0	22.00	21.90	21.70	21.73	21.97		
5	16QAM	1	0	22.12	21.97	21.85	21.90	21.93	23	1
5	16QAM	1	12	22.14	21.93	21.87	21.86	21.93		
5	16QAM	1	24	22.06	21.93	21.85	21.81	21.84		
5	16QAM	12	0	21.05	20.94	20.78	20.79	20.97	22	2
5	16QAM	12	7	21.13	20.88	20.71	20.83	20.98		
5	16QAM	12	13	21.01	20.95	20.79	20.73	20.92		
5	16QAM	25	0	21.06	20.91	20.77	20.80	20.99		
5	64QAM	1	0	21.24	21.09	20.95	20.98	21.17	22	2
5	64QAM	1	12	21.10	21.09	20.88	20.91	21.10		
5	64QAM	1	24	21.09	20.94	20.83	20.83	21.02		
5	64QAM	12	0	20.15	20.00	19.86	19.89	20.08	21	3
5	64QAM	12	7	20.18	20.03	19.89	19.92	20.11		
5	64QAM	12	13	20.16	20.01	19.87	19.90	20.09		
5	64QAM	25	0	20.13	19.98	19.84	19.87	20.06		

< Maximum Average RF Power (Proximity Sensor Active)>

<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	14.92	14.89	14.99	15.5	0
20	QPSK	1	49	14.69	14.78	14.81		
20	QPSK	1	99	14.72	14.65	14.67		
20	QPSK	50	0	14.76	14.78	14.83	15.5	0
20	QPSK	50	24	14.72	14.77	14.80		
20	QPSK	50	50	14.64	14.69	14.72		
20	QPSK	100	0	14.68	14.71	14.79		
20	16QAM	1	0	14.76	14.80	14.85	15.5	0
20	16QAM	1	49	14.65	14.65	14.64		
20	16QAM	1	99	14.66	14.58	14.63		
20	16QAM	50	0	14.78	14.76	14.84	15.5	0
20	16QAM	50	24	14.68	14.72	14.77		
20	16QAM	50	50	14.58	14.66	14.67		
20	16QAM	100	0	14.68	14.67	14.76		
20	64QAM	1	0	14.49	14.46	14.56	15.5	0
20	64QAM	1	49	14.13	14.22	14.25		
20	64QAM	1	99	14.23	14.16	14.18		
20	64QAM	50	0	14.53	14.55	14.60	15.5	0
20	64QAM	50	24	14.41	14.46	14.49		
20	64QAM	50	50	14.37	14.42	14.45		
20	64QAM	100	0	14.48	14.51	14.59		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	14.88	14.89	14.98	15.5	0
15	QPSK	1	37	14.76	14.73	14.86		
15	QPSK	1	74	14.67	14.68	14.79		
15	QPSK	36	0	14.71	14.70	14.76	15.5	0
15	QPSK	36	20	14.63	14.66	14.72		
15	QPSK	36	39	14.59	14.61	14.64		
15	QPSK	75	0	14.67	14.73	14.72		
15	16QAM	1	0	14.76	14.76	14.85	15.5	0
15	16QAM	1	37	14.62	14.65	14.70		
15	16QAM	1	74	14.61	14.61	14.66		
15	16QAM	36	0	14.67	14.71	14.73	15.5	0
15	16QAM	36	20	14.69	14.70	14.74		
15	16QAM	36	39	14.61	14.64	14.72		
15	16QAM	75	0	14.69	14.68	14.71		
15	64QAM	1	0	14.45	14.42	14.52	15.5	0
15	64QAM	1	37	14.14	14.23	14.26		
15	64QAM	1	74	14.26	14.19	14.21		
15	64QAM	36	0	14.53	14.55	14.60	15.5	0
15	64QAM	36	20	14.42	14.47	14.50		
15	64QAM	36	39	14.35	14.40	14.43		
15	64QAM	75	0	14.42	14.45	14.53		

Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	14.78	14.88	14.94	15.5	0
10	QPSK	1	25	14.76	14.76	14.89		
10	QPSK	1	49	14.63	14.65	14.83		
10	QPSK	25	0	14.77	14.71	14.80	15.5	0
10	QPSK	25	12	14.72	14.78	14.79		
10	QPSK	25	25	14.63	14.64	14.70		
10	QPSK	50	0	14.72	14.71	14.79		
10	16QAM	1	0	14.69	14.70	14.82	15.5	0
10	16QAM	1	25	14.64	14.65	14.77		
10	16QAM	1	49	14.59	14.55	14.67		
10	16QAM	25	0	14.66	14.69	14.78	15.5	0
10	16QAM	25	12	14.73	14.73	14.74		
10	16QAM	25	25	14.68	14.66	14.67		
10	16QAM	50	0	14.70	14.71	14.73		
10	64QAM	1	0	14.40	14.37	14.47	15.5	0
10	64QAM	1	25	14.18	14.27	14.30		
10	64QAM	1	49	14.31	14.24	14.26		
10	64QAM	25	0	14.49	14.51	14.56	15.5	0
10	64QAM	25	12	14.46	14.51	14.54		
10	64QAM	25	25	14.43	14.48	14.51		
10	64QAM	50	0	14.42	14.45	14.53		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	14.79	14.78	14.80	15.5	0
5	QPSK	1	12	14.75	14.71	14.82		
5	QPSK	1	24	14.69	14.69	14.78		
5	QPSK	12	0	14.67	14.69	14.70	15.5	0
5	QPSK	12	7	14.68	14.67	14.75		
5	QPSK	12	13	14.63	14.61	14.70		
5	QPSK	25	0	14.70	14.67	14.72		
5	16QAM	1	0	14.57	14.64	14.66	15.5	0
5	16QAM	1	12	14.60	14.64	14.66		
5	16QAM	1	24	14.53	14.56	14.59		
5	16QAM	12	0	14.66	14.71	14.74	15.5	0
5	16QAM	12	7	14.66	14.69	14.77		
5	16QAM	12	13	14.64	14.66	14.66		
5	16QAM	25	0	14.65	14.65	14.72		
5	64QAM	1	0	14.30	14.27	14.37	15.5	0
5	64QAM	1	12	14.17	14.26	14.29		
5	64QAM	1	24	14.29	14.22	14.24		
5	64QAM	12	0	14.44	14.46	14.51	15.5	0
5	64QAM	12	7	14.39	14.44	14.47		
5	64QAM	12	13	14.38	14.43	14.46		
5	64QAM	25	0	14.48	14.51	14.59		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	14.86	14.83	14.88	14.76	14.89	15.5	0
20	QPSK	1	49	14.81	14.68	14.66	14.59	14.77		
20	QPSK	1	99	14.79	14.69	14.60	14.66	14.62		
20	QPSK	50	0	14.82	14.76	14.60	14.63	14.83	15.5	0
20	QPSK	50	24	14.81	14.73	14.61	14.58	14.70		
20	QPSK	50	50	14.74	14.65	14.54	14.52	14.63		
20	QPSK	100	0	14.76	14.71	14.62	14.58	14.81		
20	16QAM	1	0	14.86	14.78	14.69	14.61	14.82	15.5	0
20	16QAM	1	49	14.68	14.63	14.48	14.46	14.63		
20	16QAM	1	99	14.69	14.57	14.45	14.46	14.46		
20	16QAM	50	0	14.80	14.75	14.67	14.60	14.77	15.5	0
20	16QAM	50	24	14.76	14.69	14.59	14.57	14.66		
20	16QAM	50	50	14.68	14.60	14.51	14.49	14.56		
20	16QAM	100	0	14.76	14.67	14.56	14.51	14.67		
20	64QAM	1	0	14.50	14.47	14.52	14.40	14.53	15.5	0
20	64QAM	1	49	14.40	14.27	14.25	14.18	14.36		
20	64QAM	1	99	14.39	14.29	14.20	14.26	14.22		
20	64QAM	50	0	14.85	14.79	14.63	14.66	14.86	15.5	0
20	64QAM	50	24	14.75	14.67	14.55	14.52	14.64		
20	64QAM	50	50	14.68	14.59	14.48	14.46	14.57		
20	64QAM	100	0	14.71	14.66	14.57	14.53	14.76		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	14.83	14.78	14.83	14.70	14.87	15.5	0
15	QPSK	1	37	14.85	14.79	14.61	14.65	14.72		
15	QPSK	1	74	14.77	14.76	14.60	14.60	14.61		
15	QPSK	36	0	14.81	14.66	14.61	14.56	14.69	15.5	0
15	QPSK	36	20	14.76	14.66	14.57	14.55	14.68		
15	QPSK	36	39	14.69	14.58	14.54	14.46	14.50		
15	QPSK	75	0	14.79	14.68	14.59	14.53	14.67		
15	16QAM	1	0	14.83	14.74	14.63	14.63	14.77	15.5	0
15	16QAM	1	37	14.72	14.62	14.53	14.49	14.61		
15	16QAM	1	74	14.66	14.57	14.46	14.42	14.50		
15	16QAM	36	0	14.79	14.63	14.58	14.57	14.73	15.5	0
15	16QAM	36	20	14.76	14.66	14.56	14.52	14.68		
15	16QAM	36	39	14.68	14.59	14.49	14.46	14.60		
15	16QAM	75	0	14.76	14.65	14.58	14.55	14.66		
15	64QAM	1	0	14.45	14.42	14.47	14.35	14.48	15.5	0
15	64QAM	1	37	14.43	14.30	14.28	14.21	14.39		
15	64QAM	1	74	14.48	14.38	14.29	14.35	14.31		
15	64QAM	36	0	14.78	14.72	14.56	14.59	14.79	15.5	0
15	64QAM	36	20	14.70	14.62	14.50	14.47	14.59		
15	64QAM	36	39	14.65	14.56	14.45	14.43	14.54		
15	64QAM	75	0	14.67	14.62	14.53	14.49	14.72		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	14.85	14.79	14.66	14.78	14.85	15.5	0
10	QPSK	1	25	14.83	14.82	14.75	14.65	14.75		
10	QPSK	1	49	14.70	14.70	14.56	14.55	14.67		
10	QPSK	25	0	14.74	14.68	14.63	14.53	14.74	15.5	0
10	QPSK	25	12	14.75	14.70	14.62	14.59	14.68		
10	QPSK	25	25	14.69	14.60	14.60	14.48	14.61		
10	QPSK	50	0	14.77	14.69	14.57	14.55	14.67		
10	16QAM	1	0	14.86	14.69	14.59	14.56	14.72	15.5	0
10	16QAM	1	25	14.77	14.62	14.55	14.51	14.60		
10	16QAM	1	49	14.65	14.60	14.50	14.47	14.59		
10	16QAM	25	0	14.39	14.68	14.54	14.61	14.72	15.5	0
10	16QAM	25	12	14.73	14.65	14.56	14.49	14.67		
10	16QAM	25	25	14.67	14.60	14.55	14.43	14.60		
10	16QAM	50	0	14.72	14.62	14.54	14.56	14.65		
10	64QAM	1	0	14.42	14.39	14.44	14.32	14.45	15.5	0
10	64QAM	1	25	14.46	14.33	14.31	14.24	14.42		
10	64QAM	1	49	14.43	14.33	14.24	14.30	14.26		
10	64QAM	25	0	14.80	14.74	14.58	14.61	14.81	15.5	0
10	64QAM	25	12	14.75	14.67	14.55	14.52	14.64		
10	64QAM	25	25	14.69	14.60	14.49	14.47	14.58		
10	64QAM	50	0	14.64	14.59	14.50	14.46	14.69		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	14.86	14.76	14.64	14.70	14.74	15.5	0
5	QPSK	1	12	14.72	14.76	14.67	14.60	14.67		
5	QPSK	1	24	14.81	14.71	14.54	14.59	14.62		
5	QPSK	12	0	14.73	14.63	14.58	14.52	14.65	15.5	0
5	QPSK	12	7	14.74	14.68	14.65	14.57	14.66		
5	QPSK	12	13	14.66	14.61	14.54	14.47	14.60		
5	QPSK	25	0	14.71	14.70	14.60	14.55	14.66		
5	16QAM	1	0	14.69	14.61	14.51	14.49	14.65	15.5	0
5	16QAM	1	12	14.69	14.58	14.54	14.47	14.60		
5	16QAM	1	24	14.63	14.55	14.41	14.38	14.52		
5	16QAM	12	0	14.73	14.64	14.56	14.49	14.65	15.5	0
5	16QAM	12	7	14.74	14.61	14.51	14.55	14.60		
5	16QAM	12	13	14.71	14.60	14.56	14.46	14.59		
5	16QAM	25	0	14.66	14.65	14.54	14.54	14.62		
5	64QAM	1	0	14.47	14.39	14.29	14.27	14.43	15.5	0
5	64QAM	1	12	14.46	14.35	14.31	14.24	14.37		
5	64QAM	1	24	14.49	14.41	14.27	14.24	14.38		
5	64QAM	12	0	14.72	14.63	14.55	14.48	14.64	15.5	0
5	64QAM	12	7	14.78	14.65	14.55	14.59	14.64		
5	64QAM	12	13	14.66	14.55	14.51	14.41	14.54		
5	64QAM	25	0	14.62	14.61	14.50	14.50	14.58		

<LTE Carrier Aggregation>

General Note:

This device supports Carrier Aggregation on downlink for inter and intra band, uplink CA is not supported. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.

<Inter-Band for Two Carrier Combination>

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-4A	-	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
		4			Yes	Yes	Yes	Yes		
		2			Yes	Yes			20	1
		4			Yes	Yes				
		2			Yes	Yes	Yes	Yes	40	2
		4			Yes	Yes	Yes	Yes		
CA_2A-5A	-	2			Yes	Yes	Yes	Yes	30	0
		5			Yes	Yes				
		2			Yes	Yes			20	1
		5			Yes	Yes				
CA_2A-7A	-	2			Yes	Yes	Yes	Yes	40	0
		7			Yes	Yes	Yes	Yes		
CA_2A-12A	-	2			Yes	Yes	Yes	Yes	30	0
		12			Yes	Yes				
		2			Yes	Yes	Yes	Yes	30	1
		12		Yes	Yes	Yes				
		2			Yes	Yes			20	2
		12			Yes	Yes				
CA_2A-13A	-	2			Yes	Yes	Yes	Yes	30	0
		13				Yes				
		2			Yes	Yes			20	1
		13				Yes				
CA_2A-17A	-	2			Yes	Yes			20	0
		17			Yes	Yes				
CA_2A-29A	-	2			Yes	Yes			20	0
		29		Yes	Yes	Yes				
		2			Yes	Yes			20	1
		29			Yes	Yes				
		2			Yes	Yes	Yes	Yes	30	2
		29			Yes	Yes				
CA_2A-30A	-	2			Yes	Yes	Yes	Yes	30	0
		30			Yes	Yes				
CA_2A-66A	-	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
		66			Yes	Yes	Yes	Yes		
		2			Yes	Yes			20	1
		66			Yes	Yes				
		2			Yes	Yes	Yes	Yes	40	2
		66			Yes	Yes	Yes	Yes		

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_4A-5A	-	4			Yes	Yes			20	0
		5			Yes	Yes				
		4			Yes	Yes	Yes	Yes	30	0
		5			Yes	Yes				
CA_4A-7A	-	4			Yes	Yes			30	0
		7			Yes	Yes	Yes	Yes		
		4			Yes	Yes	Yes	Yes	40	1
		7			Yes	Yes	Yes	Yes		
CA_4A-12A	-	4	Yes	Yes	Yes	Yes			20	0
		12			Yes	Yes				
		4	Yes	Yes	Yes	Yes	Yes	Yes	30	1
		12			Yes	Yes				
		4			Yes	Yes	Yes	Yes	30	2
		12		Yes	Yes	Yes				
		4			Yes	Yes			20	3
		12			Yes	Yes				
		4			Yes	Yes	Yes	Yes	30	4
		12			Yes	Yes				
		4			Yes	Yes	Yes		20	5
		12			Yes					
CA_4A-13A	-	4			Yes	Yes	Yes	Yes	30	0
		13				Yes				
		4			Yes	Yes			20	1
		13				Yes				
CA_4A-17A	-	4			Yes	Yes			20	0
		17			Yes	Yes				
CA_4A-29A	-	4			Yes	Yes			20	0
		29		Yes	Yes	Yes				
		4			Yes	Yes			20	1
		29			Yes	Yes				
		4			Yes	Yes	Yes	Yes	30	2
		29			Yes	Yes				
CA_4A-30A	-	4			Yes	Yes	Yes	Yes	30	0
		30			Yes	Yes				

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_5A-30A	-	5			Yes	Yes			20	0
		30			Yes	Yes				
CA_5A-66A	-	5			Yes	Yes			30	0
		66			Yes	Yes	Yes	Yes		
CA_7A-12A	-	7			Yes	Yes	Yes	Yes	30	0
		12			Yes	Yes				
CA_12A-30A	-	12			Yes	Yes			20	0
		30			Yes	Yes				
CA_12A-66A	-	12			Yes	Yes			20	0
		66	Yes	Yes	Yes	Yes				
		12			Yes	Yes			30	1
		66	Yes	Yes	Yes	Yes	Yes	Yes		
		12		Yes	Yes	Yes			30	2
		66			Yes	Yes	Yes	Yes		
		12			Yes	Yes			20	3
		66			Yes	Yes				
		12			Yes	Yes			30	4
		66			Yes	Yes	Yes	Yes		
		12			Yes				20	5
		66			Yes	Yes	Yes			
CA_13A-66A	-	13			Yes	Yes			30	0
		66			Yes	Yes	Yes	Yes		
CA_30A-29A	-	30			Yes	Yes			20	0
		29			Yes	Yes				
CA_66A-29A	-	66			Yes	Yes	Yes	Yes	30	0
		29			Yes	Yes				
CA_66A-30A	-	66			Yes	Yes	Yes	Yes	30	0
		30			Yes	Yes				

<Inter-Band for Three Carrier Combination> (three bands)

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-4A-5A	-	2			Yes	Yes	Yes	Yes	50	0
		4			Yes	Yes	Yes	Yes		
		5			Yes	Yes				
CA_2A-4A-7A	-	2			Yes	Yes	Yes	Yes	60	0
		4			Yes	Yes	Yes	Yes		
		7			Yes	Yes	Yes	Yes		
CA_2A-4A-12A	-	2			Yes	Yes	Yes	Yes	50	0
		4			Yes	Yes	Yes	Yes		
		12			Yes	Yes				
CA_2A-4A-13A	-	2			Yes	Yes	Yes	Yes	50	0
		4			Yes	Yes	Yes	Yes		
		13				Yes				
CA_2A-4A-29A	-	2			Yes	Yes	Yes	Yes	50	0
		4			Yes	Yes	Yes	Yes		
		29			Yes	Yes				
CA_2A-4A-30A	-	2			Yes	Yes	Yes	Yes	50	0
		4			Yes	Yes	Yes	Yes		
		30			Yes	Yes				
CA_2A-5A-30A	-	2			Yes	Yes	Yes	Yes	40	0
		5			Yes	Yes				
		30			Yes	Yes				
CA_2A-7A-12A	-	2			Yes	Yes	Yes	Yes	50	0
		7			Yes	Yes	Yes	Yes		
		12			Yes	Yes				
CA_2A-12A-30A	-	2			Yes	Yes	Yes	Yes	40	0
		12			Yes	Yes				
		30			Yes	Yes				
CA_2A-13A-66A	-	2			Yes	Yes	Yes	Yes	50	0
		13			Yes	Yes				
		66			Yes	Yes	Yes	Yes		
CA_2A-29A-30A	-	2			Yes	Yes	Yes	Yes	40	0
		29			Yes	Yes				
		30			Yes	Yes				
CA_2A-66A-12A	-	2			Yes	Yes	Yes	Yes	50	0
		66			Yes	Yes	Yes	Yes		
		12			Yes	Yes				
		2			Yes	Yes			40	1
		66			Yes	Yes	Yes	Yes		
		12			Yes	Yes				

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_4A-5A-30A	-	4			Yes	Yes	Yes	Yes	40	0
		5			Yes	Yes				
		30			Yes	Yes				
CA_4A-7A-12A	-	4			Yes	Yes			40	0
		7			Yes	Yes	Yes	Yes		
		12			Yes	Yes				
		4			Yes	Yes	Yes	Yes	50	1
		7			Yes	Yes	Yes	Yes		
		12			Yes	Yes				
CA_4A-12A-30A	-	4			Yes	Yes	Yes	Yes	40	0
		12			Yes	Yes				
		30			Yes	Yes				
CA_4A-29A-30A	-	4			Yes	Yes	Yes	Yes	40	0
		29			Yes	Yes				
		30			Yes	Yes				
CA_5A-66A-2A	-	5			Yes	Yes			50	0
		66			Yes	Yes	Yes	Yes		
		2			Yes	Yes	Yes	Yes		
CA_66A-5A-30A	-	66			Yes	Yes	Yes	Yes	40	0
		5			Yes	Yes				
		30			Yes	Yes				
CA_66A-12A-30A	-	66			Yes	Yes	Yes	Yes	40	0
		12			Yes	Yes				
		30			Yes	Yes				
CA_66A-29A-30A	-	66			Yes	Yes	Yes	Yes	40	0
		29			Yes	Yes				
		30			Yes	Yes				

<Inter-Band for Three Carrier Combination> (two bands)

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	Uplink CA configurations	E- UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-2A-12A	-	2	See CA_2A-2A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		12			Yes	Yes				
CA_2A-2A-13A	-	2	See CA_2A-2A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		13				Yes				
CA_2A-2A-66A	-	2	See CA_2A-2A Bandwidth Combination Set 0 in Table 5.6A.1-3						60	0
		66			Yes	Yes	Yes	Yes		
CA_2A-4A-4A	-	2			Yes	Yes	Yes	Yes	60	0
		4	See CA_4A-4A Bandwidth Combination Set 0 in Table 5.6A.1-3							
CA_2A-7A-7A	-	2			Yes	Yes	Yes	Yes	60	0
		7	See CA_7A-7A Bandwidth Combination Set 1 in Table 5.6A.1-3							
CA_4A-4A-12A	-	4	See CA_4A-4A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		12			Yes	Yes				
CA_4A-4A-13A	-	4	See CA_4A-4A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		13				Yes				
CA_4A-4A-30A	-	4	See CA_4A-4A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		30			Yes	Yes				
CA_4A-7A-7A	-	4			Yes	Yes	Yes	Yes	60	0
		7	See CA_7A-7A Bandwidth Combination Set 1 in Table 5.6A.1-3							
CA_5A-2A-2A	-	5			Yes	Yes			50	0
		2	See CA_2A-2A Bandwidth Combination Set 0 in Table 5.6A.1-3							
CA_5A-4A-4A	-	5			Yes	Yes			50	0
		4	See CA_4A-4A Bandwidth Combination Set 0 in Table 5.6A.1-3							
CA_5A-66A-66A	-	5			Yes	Yes			50	0
		66	See CA_66A-66A Bandwidth Combination Set 0 in Table 5.6A.1-3							
CA_13A-66A-66A	-	13			Yes	Yes			50	0
		66	See CA_66A-66A Bandwidth Combination Set 0 in Table 5.6A.1-3							
CA_66A-66A-2A	-	66	See CA_66A-66A Bandwidth Combination Set 0 in Table 5.6A.1-3						60	0
		2			Yes	Yes	Yes	Yes		
CA_66A-66A-12A	-	66	See CA_66A-66A Bandwidth Combination Set 0 in Table 5.6A.1-3						50	0
		12			Yes	Yes				

<Intra-Band Carrier Combination> (Contiguous)

E-UTRA CA configuration / Bandwidth combination set							
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency				Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_5B	-	5, 10	10			20	0
		10	5				
		3	5			8	1
		5	3				
CA_7C	-	15	15			40	0
		20	20				
		10	20			40	1
		15	15, 20				
		20	10, 15, 20				
		15	10, 15			40	2
		20	15, 20				

<Intra-Band Carrier Combination> (Non-Contiguous)

E-UTRA CA configuration / Bandwidth combination set							
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency				Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2A-2A	-	5, 10, 15, 20	5, 10, 15, 20			40	0
CA_4A-4A	-	5, 10, 15, 20	5, 10, 15, 20			40	0
		5, 10	5, 10			20	1
CA_7A-7A	-	5	15			40	0
		10	10, 15				
		15	15, 20				
		20	20				
		5, 10, 15, 20	5, 10, 15, 20			40	1
		5, 10, 15, 20	5, 10			30	2
		10, 15, 20	10, 15, 20			40	3
CA_41A-41A	-	10, 15, 20	10, 15, 20			40	0
		5, 10, 15, 20	5, 10, 15, 20			40	1
CA_66A-66A	-	5, 10, 15, 20	5, 10, 15, 20			40	0

<DL CA power measurement test reduction for UL SAR test exclusion>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band, uplink CA is not supported. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, 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.
4. Only the conducted powers of DL CA which were boldface marked were reported.

<Inter-Band Carrier Combination>

2 bands / 2 CC	2 bands / 3 CC	3 bands / 3 CC
CA_2A-4A	CA_2A-4A-4A	**CA_2A-4A-5A**
CA_2A-5A	CA_5A-2A-2A	
CA_4A-5A	CA_5A-4A-4A	
CA_2A-7A	CA_2A-7A-7A	**CA_2A-4A-7A**
CA_2A-12A	CA_2A-2A-12A	**CA_2A-4A-12A**
		CA_2A-7A-12A
CA_2A-13A	CA_2A-2A-13A	**CA_2A-4A-13A**
CA_4A-13A	CA_4A-4A-13A	
CA_2A-29A		**CA_2A-4A-29A**
CA_4A-29A		
		CA_4A-29A-30A
CA_2A-30A		**CA_2A-12A-30A**
CA_12A-30A		
CA_2A-66A	CA_2A-2A-66A	**CA_2A-13A-66A**
	CA_66A-66A-2A	
CA_13A-66A	CA_13A-66A-66A	
CA_4A-30A	CA_4A-4A-30A	**CA_4A-5A-30A**
		CA_2A-4A-30A
		CA_4A-12A-30A
CA_4A-7A	CA_4A-7A-7A	**CA_4A-7A-12A**
CA_4A-12A	CA_4A-4A-12A	
CA_7A-12A		
CA_5A-30A		**CA_2A-5A-30A**
CA_66A-30A		**CA_66A-5A-30A**
CA_5A-66A	CA_5A-66A-66A	
		CA_66A-12A-30A
		CA_5A-66A-2A
CA_12A-66A	CA_66A-66A-12A	**CA_2A-66A-12A**
CA_30A-29A		**CA_2A-29A-30A**
CA_66A-29A		**CA_66A-29A-30A**
CA_2A-17A		
CA_4A-17A		

<Intra-Band Carrier Combination>

Contiguous	Non-Contiguous
CA_5B	**CA_2A_2A**
CA_7C	**CA_4A_4A**
	CA_7A_7A
	CA_41A_41A
	CA_66A_66A

LTE Carrier Aggregation Conducted Power (Downlink)

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

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

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

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

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

vi. 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.

vii. 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.

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

<Maximum Average RF Power (Proximity Sensor Inactive)>

<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_2A-17A	Band 2	10M	1905	19150	QPSK	1	0	Band 17	10M	740	5790	24.32	24.39
			Band 17	10M	709	23780	QPSK	1	49	Band 2	10M	1960	900	24.22	24.28
		CA_4A-17A	Band 4	10M	1750	20350	QPSK	1	0	Band 17	10M	740	5790	23.51	23.50
			Band 17	10M	709	23780	QPSK	1	49	Band 4	10M	2132.5	2175	24.23	24.28
Intra-Band	Contiguous	CA_5B	Band 5	10M	836.5	20525	QPSK	1	0	Band 5	10M	891.4	2624	24.23	24.29
		CA_7C	Band 7	20M	2560	21350	QPSK	1	0	Band 7	20M	2660.2	3152	23.45	23.51
	Non-Contiguous	CA_2A_2A	Band 2	20M	1900	19100	QPSK	1	0	Band 2	5M	1932.5	625	24.41	24.47
		CA_4A_4A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 4	5M	2152.5	2375	23.52	23.56
		CA_7A_7A	Band 7	20M	2560	21350	QPSK	1	0	Band 7	5M	2622.5	2775	23.46	23.51
		CA_41A_41A	Band 41	20M	2680	41490	QPSK	1	0	Band 41	5M	2498.5	39675	23.09	23.12
		CA_66A_66A	Band 66	20M	1770	132572	QPSK	1	0	Band 66	5M	2112.5	66461	23.61	23.64

<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_2A-4A-5A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 5	10M	881.5	2525	24.35	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	Band 2	20M	1960	900	23.48	23.56
		Band 5	10M	836.5	20525	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	24.21	24.29
	CA_2A-4A-7A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 7	20M	2655	3100	24.45	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	Band 2	20M	1960	900	23.52	23.56
		Band 7	20M	2560	21350	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	23.50	23.51
	CA_2A-4A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 12	10M	737.5	5095	24.45	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	Band 2	20M	1960	900	23.50	23.56
		Band 12	10M	707.5	23095	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	24.24	24.28
	CA_2A-7A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 7	20M	2655	3100	Band 12	10M	737.5	5095	24.49	24.47
		Band 7	20M	2560	21350	QPSK	1	0	Band 12	10M	737.5	5095	Band 2	20M	1960	900	23.55	23.51
		Band 12	10M	707.5	23095	QPSK	1	0	Band 2	20M	1960	900	Band 7	20M	2655	3100	24.30	24.28
	CA_2A-4A-13A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 13	10M	751	5230	24.43	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 13	10M	751	5230	Band 2	20M	1960	900	23.50	23.56
		Band 13	10M	782	23230	QPSK	1	25	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	24.10	24.15
	CA_2A-4A-29A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 29	10M	722.5	9715	24.46	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 29	10M	722.5	9715	Band 2	20M	1960	900	23.52	23.56
	CA_4A-29A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	23.50	23.56
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 29	10M	722.5	9715	23.51	23.53
	CA_2A-12A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	24.49	24.47
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	24.29	24.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 12	10M	737.5	5095	23.50	23.53
	CA_2A-13A-66A	Band 2	20M	1900	19100	QPSK	1	0	Band 13	10M	751	5230	Band 66	20M	2155	66886	24.48	24.47
		Band 13	10M	782	23230	QPSK	1	25	Band 66	20M	2155	66886	Band 2	20M	1960	900	24.17	24.15
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 13	10M	751	5230	23.60	23.64
	CA_4A-5A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	23.54	23.56
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 4	20M	2132.5	2175	24.23	24.29
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 5	10M	881.5	2525	23.51	23.53
	CA_2A-4A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 30	10M	2355	9820	24.45	24.47
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	23.55	23.56
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	23.54	23.53
	CA_4A-12A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	23.55	23.56
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 4	20M	2132.5	2175	24.21	24.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 12	10M	737.5	5095	23.50	23.53
	CA_4A-7A-12A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	Band 12	10M	737.5	5095	23.52	23.56
		Band 7	20M	2560	21350	QPSK	1	0	Band 12	10M	737.5	5095	Band 4	20M	2132.5	2175	23.46	23.51
		Band 12	10M	707.5	23095	QPSK	1	0	Band 4	20M	2132.5	2175	Band 7	20M	2655	3100	24.23	24.28
	CA_2A-5A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	24.40	24.47
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	24.25	24.29
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 5	10M	881.5	2525	23.50	23.53
	CA_66A-5A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	23.61	23.64
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 66	20M	2155	66886	24.23	24.29
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 5	10M	881.5	2525	23.51	23.53
	CA_66A-12A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	23.63	23.64
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 66	20M	2155	66886	24.23	24.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 12	10M	737.5	5095	23.51	23.53
	CA_5A-66A-2A	Band 5	10M	836.5	20525	QPSK	1	0	Band 66	20M	2155	66886	Band 2	20M	1960	900	24.25	24.29
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 5	10M	881.5	2525	23.61	23.64
		Band 2	20M	1900	19100	QPSK	1	0	Band 5	10M	881.5	2525	Band 66	20M	2155	66886	24.50	24.47
	CA_2A-66A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 12	10M	737.5	5095	Band 66	20M	2155	66886	24.45	24.47
		Band 12	10M	707.5	23095	QPSK	1	0	Band 66	20M	2155	66886	Band 2	20M	1960	900	24.25	24.28
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 12	10M	737.5	5095	23.66	23.64
	CA_2A-29A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	24.49	24.47
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 29	10M	722.5	9715	23.50	23.53
	CA_66A-29A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	23.61	23.64
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 29	10M	722.5	9715	23.51	23.53

Note: The conducted powers of some LTE CA DL above were provided by the client, and the CA DL lists are as below: CA_2A-4A-7A, CA_2A-4A-12A, CA_2A-7A-12A, CA_2A-4A-13A, CA_2A-12A-30A, CA_2A-13A-66A, CA_2A-4A-30A, CA_2A-5A-30A, CA_5A-66A-2A, CA_2A-66A-12A, CA_2A-29A-30A.

<Maximum Average RF Power (Proximity Sensor Active)>

<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_2A-17A	Band 2	10M	1905	19150	QPSK	1	0	Band 17	10M	740	5790	15.23	15.30
			Band 17	10M	711	23800	QPSK	1	0	Band 2	10M	1960	900	16.24	16.27
		CA_4A-17A	Band 4	10M	1750	20350	QPSK	1	0	Band 17	10M	740	5790	14.61	14.46
			Band 17	10M	711	23800	QPSK	1	0	Band 4	10M	2132.5	2175	16.25	16.27
Intra-Band	Contiguous	CA_5B	Band 5	10M	836.5	20525	QPSK	1	0	Band 5	10M	891.4	2624	16.13	16.16
		CA_7C	Band 7	20M	2560	21350	QPSK	1	0	Band 7	20M	2660.2	3152	13.92	13.98
	Non-Contiguous	CA_2A_2A	Band 2	20M	1900	19100	QPSK	1	0	Band 2	5M	1932.5	625	15.32	15.36
		CA_4A_4A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 4	5M	2152.5	2375	14.61	14.63
		CA_7A_7A	Band 7	20M	2560	21350	QPSK	1	0	Band 7	5M	2622.5	2775	13.94	13.98
		CA_41A_41A	Band 41	20M	2680	41490	QPSK	1	0	Band 41	5M	2498.5	39675	14.75	14.89
		CA_66A_66A	Band 66	20M	1770	132572	QPSK	1	0	Band 66	5M	2112.5	66461	14.56	14.62

<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_2A-4A-5A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 5	10M	881.5	2525	15.31	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	Band 2	20M	1960	900	14.58	14.63
		Band 5	10M	836.5	20525	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	16.15	16.16
	CA_2A-4A-7A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 7	20M	2655	3100	15.35	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	Band 2	20M	1960	900	14.62	14.63
		Band 7	20M	2560	21350	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	13.70	13.98
	CA_2A-4A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 12	10M	737.5	5095	15.40	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	Band 2	20M	1960	900	14.60	14.63
		Band 12	10M	707.5	23095	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	16.28	16.28
	CA_2A-7A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 7	20M	2655	3100	Band 12	10M	737.5	5095	15.38	15.36
		Band 7	20M	2560	21350	QPSK	1	0	Band 12	10M	737.5	5095	Band 2	20M	1960	900	13.95	13.98
		Band 12	10M	707.5	23095	QPSK	1	0	Band 2	20M	1960	900	Band 7	20M	2655	3100	16.30	16.28
	CA_2A-4A-13A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 13	10M	751	5230	15.37	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 13	10M	751	5230	Band 2	20M	1960	900	14.65	14.63
		Band 13	10M	782	23230	QPSK	1	25	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	17.30	17.10
	CA_2A-4A-29A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 29	10M	722.5	9715	15.34	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 29	10M	722.5	9715	Band 2	20M	1960	900	14.61	14.63
	CA_4A-29A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	14.60	14.63
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 29	10M	722.5	9715	11.94	12.00
	CA_2A-12A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	15.35	15.36
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	16.29	16.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 12	10M	737.5	5095	12.10	12.00
	CA_2A-13A-66A	Band 2	20M	1900	19100	QPSK	1	0	Band 13	10M	751	5230	Band 66	20M	2155	66886	15.38	15.36
		Band 13	10M	782	23230	QPSK	1	25	Band 66	20M	2155	66886	Band 2	20M	1960	900	17.20	17.10
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 13	10M	751	5230	14.64	14.62
	CA_4A-5A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	14.59	14.63
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 4	20M	2132.5	2175	16.13	16.16
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 5	10M	881.5	2525	11.94	12.00
	CA_2A-4A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	Band 30	10M	2355	9820	15.35	15.36
		Band 4	20M	1732.5	20175	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	14.60	14.63
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 4	20M	2132.5	2175	12.20	12.00
	CA_4A-12A-30A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	14.61	14.63
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 4	20M	2132.5	2175	16.21	16.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 4	20M	2132.5	2175	Band 12	10M	737.5	5095	11.92	12.00
	CA_4A-7A-12A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	Band 12	10M	737.5	5095	14.64	14.63
		Band 7	20M	2560	21350	QPSK	1	0	Band 12	10M	737.5	5095	Band 4	20M	2132.5	2175	13.91	13.98
		Band 12	10M	707.5	23095	QPSK	1	0	Band 4	20M	2132.5	2175	Band 7	20M	2655	3100	16.23	16.28
	CA_2A-5A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	15.35	15.36
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 2	20M	1960	900	16.20	16.16
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 5	10M	881.5	2525	12.10	12.00
	CA_66A-5A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 5	10M	881.5	2525	Band 30	10M	2355	9820	14.60	14.62
		Band 5	10M	836.5	20525	QPSK	1	0	Band 30	10M	2355	9820	Band 66	20M	2155	66886	16.12	16.16
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 5	10M	881.5	2525	11.89	12.00
	CA_66A-12A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 12	10M	737.5	5095	Band 30	10M	2355	9820	14.61	14.62
		Band 12	10M	707.5	23095	QPSK	1	0	Band 30	10M	2355	9820	Band 66	20M	2155	66886	16.23	16.28
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 12	10M	737.5	5095	11.94	12.00
	CA_5A-66A-2A	Band 5	10M	836.5	20525	QPSK	1	0	Band 66	20M	2155	66886	Band 2	20M	1960	900	16.18	16.16
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 5	10M	881.5	2525	14.63	14.62
		Band 2	20M	1900	19100	QPSK	1	0	Band 5	10M	881.5	2525	Band 66	20M	2155	66886	15.35	15.36
	CA_2A-66A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 66	20M	2155	66886	Band 12	10M	737.5	5095	15.37	15.36
		Band 12	10M	707.5	23095	QPSK	1	0	Band 66	20M	2155	66886	Band 2	20M	1960	900	16.27	16.28
		Band 66	20M	1770	132572	QPSK	1	0	Band 2	20M	1960	900	Band 12	10M	737.5	5095	14.61	14.62
	CA_2A-29A-30A	Band 2	20M	1900	19100	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	15.35	15.36
		Band 30	10M	2310	27710	QPSK	1	0	Band 2	20M	1960	900	Band 29	10M	722.5	9715	12.10	12.00
	CA_66A-29A-30A	Band 66	20M	1770	132572	QPSK	1	0	Band 29	10M	722.5	9715	Band 30	10M	2355	9820	14.56	14.62
		Band 30	10M	2310	27710	QPSK	1	0	Band 66	20M	2155	66886	Band 29	10M	722.5	9715	11.96	12.00

Note: The conducted powers of some LTE CA DL above were provided by the client, and the CA DL lists are as below: CA_2A-4A-7A, CA_2A-4A-12A, CA_2A-7A-12A, CA_2A-4A-13A, CA_2A-12A-30A, CA_2A-13A-66A, CA_2A-4A-30A, CA_2A-5A-30A, CA_5A-66A-2A, CA_2A-66A-12A, CA_2A-29A-30A.

<WLAN Conducted Power>

General Note:

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

<Maximum Average RF Power (Proximity Sensor Inactive)>

<2.4GHz WLAN Ant.1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.96	17.50	100.00
		6	2437	16.89	17.50	
		11	2462	16.82	17.50	
	802.11g 6Mbps	1	2412	13.47	14.50	95.00
		6	2437	16.91	17.50	
		11	2462	12.57	13.50	
	802.11n-HT20 MCS0	1	2412	12.61	13.50	94.66
		6	2437	16.42	17.00	
		11	2462	12.12	13.00	
	802.11n-HT40 MCS0	3	2422	12.11	13.00	89.73
		6	2437	10.71	11.50	
		9	2452	8.31	9.50	

<2.4GHz WLAN Ant.2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.86	17.50	100.00
		6	2437	16.76	17.50	
		11	2462	16.85	17.50	
	802.11g 6Mbps	1	2412	16.78	17.50	95.00
		6	2437	16.82	17.50	
		11	2462	16.80	17.50	
	802.11n-HT20 MCS0	1	2412	9.12	10.00	94.66
		6	2437	13.34	14.50	
		11	2462	8.50	9.50	
	802.11n-HT40 MCS0	3	2422	8.36	9.50	90.35
		6	2437	6.72	7.50	
		9	2452	4.37	5.50	

<2.4GHz WLAN Ant.1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11n-HT20 MCS0	1	2412	14.22	15.50	94.66
		6	2437	18.16	18.50	
		11	2462	13.69	14.50	
	802.11n-HT40 MCS0	3	2422	13.64	14.50	90.35
		6	2437	12.17	13.50	
		9	2452	9.78	10.50	

<5GHz WLAN Ant.1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.69	17.50	95.44
		40	5200	16.96	17.50	
		44	5220	16.63	17.50	
		48	5240	16.91	17.50	
	802.11n-HT20 MCS0	36	5180	13.59	14.50	94.79
		40	5200	13.78	14.50	
		44	5220	13.28	14.50	
		48	5240	13.60	14.50	
	802.11n-HT40 MCS0	38	5190	13.91	14.50	90.83
		46	5230	13.79	14.50	
	802.11ac-VHT20 MCS0	36	5180	13.48	14.50	94.61
		40	5200	13.65	14.50	
		44	5220	13.24	14.50	
		48	5240	13.55	14.50	
	802.11ac-VHT40 MCS0	38	5190	13.84	14.50	90.21
		46	5230	13.75	14.50	
	802.11ac-VHT80 MCS0	42	5210	13.83	14.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.55	17.50	95.44
		56	5280	16.90	17.50	
		60	5300	17.06	17.50	
		64	5320	17.12	17.50	
	802.11n-HT20 MCS0	52	5260	12.78	14.50	94.79
		56	5280	13.08	14.50	
		60	5300	13.10	14.50	
		64	5320	13.05	14.50	
	802.11n-HT40 MCS0	54	5270	13.11	14.50	90.83
		62	5310	13.17	14.50	
	802.11ac-VHT20 MCS0	52	5260	12.76	14.50	94.61
		56	5280	13.04	14.50	
		60	5300	13.06	14.50	
		64	5320	13.01	14.50	
	802.11ac-VHT40 MCS0	54	5270	13.01	14.50	90.21
		62	5310	12.99	14.50	
	802.11ac-VHT80 MCS0	58	5290	13.27	14.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.68	17.00	95.44
		116	5580	16.01	17.00	
		132	5660	15.73	17.00	
		140	5700	16.75	17.50	
		144	5720	17.03	17.50	
	802.11n-HT20 MCS0	100	5500	11.92	13.50	94.79
		116	5580	12.36	13.50	
		132	5660	12.46	13.50	
		140	5700	13.01	13.50	
		144	5720	13.21	13.50	
	802.11n-HT40 MCS0	102	5510	11.87	13.50	90.83
		110	5550	12.37	13.50	
		134	5670	12.50	13.50	
		142	5710	12.99	13.50	
	802.11ac-VHT20 MCS0	100	5500	11.78	13.50	94.61
		116	5580	12.30	13.50	
		132	5660	12.42	13.50	
		140	5700	12.96	13.50	
		144	5720	13.14	13.50	
	802.11ac-VHT40 MCS0	102	5510	11.84	13.50	90.21
		110	5550	12.31	13.50	
		134	5670	12.47	13.50	
		142	5710	12.95	13.50	
	802.11ac-VHT80 MCS0	106	5530	12.43	13.50	83.55
		138	5690	12.73	13.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	16.32	17.50	95.44
		157	5785	16.56	17.50	
		165	5825	17.09	17.50	
	802.11n-HT20 MCS0	149	5745	14.46	16.00	94.79
		157	5785	14.71	16.00	
		165	5825	15.19	16.00	
	802.11n-HT40 MCS0	151	5755	14.83	16.00	90.83
		159	5795	15.03	16.00	
	802.11ac-VHT20 MCS0	149	5745	14.40	16.00	94.61
		157	5785	14.56	16.00	
		165	5825	15.01	16.00	
	802.11ac-VHT40 MCS0	151	5755	14.81	16.00	90.21
		159	5795	15.02	16.00	
	802.11ac-VHT80 MCS0	155	5775	15.03	16.00	83.55

<5GHz WLAN Ant.2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.67	17.50	95.12
		40	5200	17.07	17.50	
		44	5220	16.64	17.50	
		48	5240	16.93	17.50	
	802.11n-HT20 MCS0	36	5180	14.81	15.50	94.46
		40	5200	15.25	15.50	
		44	5220	14.86	15.50	
		48	5240	15.14	15.50	
	802.11n-HT40 MCS0	38	5190	14.84	15.50	90.59
		46	5230	15.07	15.50	
	802.11ac-VHT20 MCS0	36	5180	14.78	15.50	94.82
		40	5200	15.21	15.50	
		44	5220	14.74	15.50	
		48	5240	15.08	15.50	
	802.11ac-VHT40 MCS0	38	5190	14.84	15.50	90.58
		46	5230	15.04	15.50	
	802.11ac-VHT80 MCS0	42	5210	15.03	15.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.37	17.50	95.12
		56	5280	16.80	17.50	
		60	5300	17.04	17.50	
		64	5320	16.97	17.50	
	802.11n-HT20 MCS0	52	5260	14.04	15.50	94.46
		56	5280	14.28	15.50	
		60	5300	14.64	15.50	
		64	5320	14.51	15.50	
	802.11n-HT40 MCS0	54	5270	14.24	15.50	90.59
		62	5310	14.34	15.50	
	802.11ac-VHT20 MCS0	52	5260	13.91	15.50	94.82
		56	5280	14.25	15.50	
		60	5300	14.49	15.50	
		64	5320	14.38	15.50	
	802.11ac-VHT40 MCS0	54	5270	14.22	15.50	90.58
		62	5310	14.31	15.50	
	802.11ac-VHT80 MCS0	58	5290	14.40	15.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.44	17.00	95.12
		116	5580	16.37	17.00	
		132	5660	16.17	17.00	
		140	5700	16.59	17.50	
		144	5720	17.21	17.50	
	802.11n-HT20 MCS0	100	5500	12.06	13.50	94.46
		116	5580	12.99	13.50	
		132	5660	13.14	13.50	
		140	5700	13.38	13.50	
		144	5720	14.18	14.50	
	802.11n-HT40 MCS0	102	5510	11.90	13.50	90.59
		110	5550	12.74	13.50	
		134	5670	12.93	13.50	
		142	5710	13.60	14.50	
	802.11ac-VHT20 MCS0	100	5500	12.01	13.50	94.82
		116	5580	12.96	13.50	
		132	5660	13.00	13.50	
		140	5700	13.25	13.50	
		144	5720	14.15	14.50	
	802.11ac-VHT40 MCS0	102	5510	11.75	13.50	90.58
		110	5550	12.61	13.50	
		134	5670	12.82	13.50	
		142	5710	13.51	14.50	
	802.11ac-VHT80 MCS0	106	5530	12.49	13.50	83.55
		138	5690	13.22	13.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	16.81	17.50	95.12
		157	5785	16.17	17.50	
		165	5825	17.05	17.50	
	802.11n-HT20 MCS0	149	5745	15.75	16.50	94.46
		157	5785	15.26	16.50	
		165	5825	16.09	16.50	
	802.11n-HT40 MCS0	151	5755	16.03	16.50	90.59
		159	5795	15.84	16.50	
	802.11ac-VHT20 MCS0	149	5745	15.60	16.50	94.82
		157	5785	15.15	16.50	
		165	5825	16.01	16.50	
	802.11ac-VHT40 MCS0	151	5755	15.97	16.50	90.58
		159	5795	15.79	16.50	
	802.11ac-VHT80 MCS0	155	5775	15.89	16.50	83.55

<5GHz WLAN Ant.1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11n-HT20 MCS0	36	5180	17.26	18.00	94.79
		40	5200	17.59	18.00	
		44	5220	17.15	18.00	
		48	5240	17.45	18.00	
	802.11n-HT40 MCS0	38	5190	17.41	17.50	90.83
		46	5230	17.48	17.50	
	802.11ac-VHT20 MCS0	36	5180	17.19	18.00	94.82
		40	5200	17.51	18.00	
		44	5220	17.07	18.00	
		48	5240	17.39	18.00	
	802.11ac-VHT40 MCS0	38	5190	17.38	17.50	90.58
		46	5230	17.45	17.50	
	802.11ac-VHT80 MCS0	42	5210	17.48	17.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11n-HT20 MCS0	52	5260	16.47	18.00	94.79
		56	5280	16.73	18.00	
		60	5300	16.95	18.00	
		64	5320	16.85	18.00	
	802.11n-HT40 MCS0	54	5270	16.72	17.50	90.83
		62	5310	16.80	17.50	
	802.11ac-VHT20 MCS0	52	5260	16.38	18.00	94.82
		56	5280	16.70	18.00	
		60	5300	16.84	18.00	
		64	5320	16.76	18.00	
	802.11ac-VHT40 MCS0	54	5270	16.67	17.50	90.58
		62	5310	16.71	17.50	
	802.11ac-VHT80 MCS0	58	5290	16.88	17.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11n-HT20 MCS0	100	5500	15.00	16.00	94.79
		116	5580	15.70	16.50	
		132	5660	15.83	16.50	
		140	5700	16.21	17.00	
		144	5720	16.73	17.50	
	802.11n-HT40 MCS0	102	5510	14.89	15.50	90.83
		110	5550	15.57	16.00	
		134	5670	15.73	16.00	
		142	5710	16.31	17.00	
	802.11ac-VHT20 MCS0	100	5500	14.91	16.00	94.82
		116	5580	15.65	16.50	
		132	5660	15.73	16.50	
		140	5700	16.12	17.00	
		144	5720	16.69	17.50	
	802.11ac-VHT40 MCS0	102	5510	14.81	15.50	90.58
		110	5550	15.47	16.00	
		134	5670	15.66	16.00	
		142	5710	16.25	17.00	
	802.11ac-VHT80 MCS0	106	5530	15.47	15.50	83.55
		138	5690	15.99	16.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11n-HT20 MCS0	149	5745	18.17	19.00	94.79
		157	5785	18.01	19.00	
		165	5825	18.68	19.00	
	802.11n-HT40 MCS0	151	5755	18.48	18.50	90.83
		159	5795	18.46	18.50	
	802.11ac-VHT20 MCS0	149	5745	18.05	19.00	94.82
		157	5785	17.88	19.00	
		165	5825	18.55	19.00	
	802.11ac-VHT40 MCS0	151	5755	18.44	18.50	90.58
		159	5795	18.43	18.50	
	802.11ac-VHT80 MCS0	155	5775	18.49	18.50	83.55

<Maximum Average RF Power (Proximity Sensor Active)>

<2.4GHz WLAN Ant.1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	9.69	10.00	100.00
		6	2437	9.73	10.00	
		11	2462	9.77	10.00	
	802.11g 6Mbps	1	2412	9.90	10.00	95.00
		6	2437	9.94	10.00	
		11	2462	9.86	10.00	
	802.11n-HT20 MCS0	1	2412	9.69	10.00	94.66
		6	2437	9.76	10.00	
		11	2462	9.55	10.00	
	802.11n-HT40 MCS0	3	2422	9.61	10.00	89.73
		6	2437	9.67	10.00	
		9	2452	9.58	10.00	

<2.4GHz WLAN Ant.2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	11.68	12.00	100.00
		6	2437	11.77	12.00	
		11	2462	11.76	12.00	
	802.11g 6Mbps	1	2412	11.80	12.00	95.00
		6	2437	11.82	12.00	
		11	2462	11.81	12.00	
	802.11n-HT20 MCS0	1	2412	6.22	7.00	94.66
		6	2437	6.19	7.00	
		11	2462	6.17	7.00	
	802.11n-HT40 MCS0	3	2422	6.05	7.00	90.35
		6	2437	5.98	7.00	
		9	2452	6.06	7.00	

<2.4GHz WLAN Ant.1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11n-HT20 MCS0	1	2412	11.30	12.00	94.66
		6	2437	11.34	12.00	
		11	2462	11.19	12.00	
	802.11n-HT40 MCS0	3	2422	11.20	11.50	90.35
		6	2437	11.22	11.50	
		9	2452	11.18	11.50	

<5GHz WLAN Ant.1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	4.26	5.00	95.44
		40	5200	4.52	5.00	
		44	5220	4.35	5.00	
		48	5240	4.79	5.00	
	802.11n-HT20 MCS0	36	5180	2.70	3.50	94.79
		40	5200	2.89	3.50	
		44	5220	2.78	3.50	
		48	5240	3.25	3.50	
	802.11n-HT40 MCS0	38	5190	2.19	3.50	90.83
		46	5230	2.34	3.50	
	802.11ac-VHT20 MCS0	36	5180	2.64	3.50	94.61
		40	5200	2.87	3.50	
		44	5220	2.73	3.50	
		48	5240	3.16	3.50	
	802.11ac-VHT40 MCS0	38	5190	2.18	3.50	90.21
		46	5230	2.31	3.50	
	802.11ac-VHT80 MCS0	42	5210	2.53	3.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	4.23	5.00	95.44
		56	5280	4.52	5.00	
		60	5300	4.62	5.00	
		64	5320	4.78	5.00	
	802.11n-HT20 MCS0	52	5260	2.88	3.50	94.79
		56	5280	3.17	3.50	
		60	5300	3.24	3.50	
		64	5320	3.40	3.50	
	802.11n-HT40 MCS0	54	5270	2.26	3.50	90.83
		62	5310	2.44	3.50	
	802.11ac-VHT20 MCS0	52	5260	2.80	3.50	94.61
		56	5280	3.13	3.50	
		60	5300	3.20	3.50	
		64	5320	3.32	3.50	
	802.11ac-VHT40 MCS0	54	5270	2.25	3.50	90.21
		62	5310	2.41	3.50	
	802.11ac-VHT80 MCS0	58	5290	2.54	3.50	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	3.85	5.00	95.44
		116	5580	4.12	5.00	
		132	5660	3.68	5.00	
		140	5700	4.65	5.00	
		144	5720	4.95	5.00	
	802.11n-HT20 MCS0	100	5500	3.56	4.50	94.79
		116	5580	3.72	4.50	
		132	5660	3.16	4.50	
		140	5700	4.12	4.50	
		144	5720	4.31	4.50	
	802.11n-HT40 MCS0	102	5510	2.47	3.50	90.83
		110	5550	2.55	4.50	
		134	5670	2.51	4.50	
		142	5710	3.24	4.50	
	802.11ac-VHT20 MCS0	100	5500	3.53	4.50	94.61
		116	5580	3.67	4.50	
		132	5660	3.11	4.50	
		140	5700	4.10	4.50	
		144	5720	4.29	4.50	
	802.11ac-VHT40 MCS0	102	5510	2.44	3.50	90.21
		110	5550	2.51	4.50	
		134	5670	2.48	3.50	
		142	5710	3.22	4.50	
	802.11ac-VHT80 MCS0	106	5530	3.09	4.50	83.55
		138	5690	3.34	4.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	3.84	5.00	95.44
		157	5785	4.08	5.00	
		165	5825	4.92	5.00	
	802.11n-HT20 MCS0	149	5745	4.48	4.50	94.79
		157	5785	4.47	4.50	
		165	5825	4.46	4.50	
	802.11n-HT40 MCS0	151	5755	4.28	4.50	90.83
		159	5795	4.48	4.50	
	802.11ac-VHT20 MCS0	149	5745	4.47	4.50	94.61
		157	5785	4.44	4.50	
		165	5825	4.45	4.50	
	802.11ac-VHT40 MCS0	151	5755	4.23	4.50	90.21
		159	5795	4.46	4.50	
	802.11ac-VHT80 MCS0	155	5775	4.39	4.50	83.55

<5GHz WLAN Ant.2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.63	14.00	95.12
		40	5200	12.69	14.00	
		44	5220	12.40	14.00	
		48	5240	12.90	14.00	
	802.11n-HT20 MCS0	36	5180	4.11	5.00	94.46
		40	5200	4.05	5.00	
		44	5220	3.97	5.00	
		48	5240	4.39	5.00	
	802.11n-HT40 MCS0	38	5190	3.16	5.00	90.59
		46	5230	3.30	5.00	
	802.11ac-VHT20 MCS0	36	5180	4.06	5.00	94.82
		40	5200	4.02	5.00	
		44	5220	3.92	5.00	
		48	5240	4.35	5.00	
	802.11ac-VHT40 MCS0	38	5190	3.14	5.00	90.58
		46	5230	3.28	5.00	
	802.11ac-VHT80 MCS0	42	5210	3.25	5.00	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	12.48	14.00	95.12
		56	5280	12.30	14.00	
		60	5300	12.50	14.00	
		64	5320	12.87	14.00	
	802.11n-HT20 MCS0	52	5260	4.01	5.00	94.46
		56	5280	3.82	5.00	
		60	5300	3.92	5.00	
		64	5320	4.30	5.00	
	802.11n-HT40 MCS0	54	5270	3.04	5.00	90.59
		62	5310	3.31	5.00	
	802.11ac-VHT20 MCS0	52	5260	3.99	5.00	94.82
		56	5280	3.77	5.00	
		60	5300	3.90	5.00	
		64	5320	4.27	5.00	
	802.11ac-VHT40 MCS0	54	5270	3.02	5.00	90.58
		62	5310	3.30	5.00	
	802.11ac-VHT80 MCS0	58	5290	3.22	5.00	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	10.36	11.00	95.12
		116	5580	10.67	11.00	
		132	5660	10.50	11.00	
		140	5700	10.20	11.00	
		144	5720	10.84	11.00	
	802.11n-HT20 MCS0	100	5500	3.60	5.50	94.46
		116	5580	4.41	5.50	
		132	5660	4.67	5.50	
		140	5700	5.12	5.50	
		144	5720	5.47	5.50	
	802.11n-HT40 MCS0	102	5510	2.48	3.50	90.59
		110	5550	2.42	3.50	
		134	5670	3.51	5.50	
		142	5710	4.27	5.50	
	802.11ac-VHT20 MCS0	100	5500	3.55	5.50	94.82
		116	5580	4.40	5.50	
		132	5660	4.65	5.50	
		140	5700	5.10	5.50	
		144	5720	5.46	5.50	
	802.11ac-VHT40 MCS0	102	5510	2.46	3.50	90.58
		110	5550	2.37	3.50	
		134	5670	3.49	4.50	
		142	5710	4.24	5.50	
	802.11ac-VHT80 MCS0	106	5530	2.99	3.50	83.55
		138	5690	4.34	5.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	10.54	11.00	95.12
		157	5785	10.60	11.00	
		165	5825	10.91	11.00	
	802.11n-HT20 MCS0	149	5745	5.89	7.00	94.46
		157	5785	5.40	7.00	
		165	5825	6.38	7.00	
	802.11n-HT40 MCS0	151	5755	5.38	7.00	90.59
		159	5795	5.25	7.00	
	802.11ac-VHT20 MCS0	149	5745	5.85	7.00	94.82
		157	5785	5.38	7.00	
		165	5825	6.35	7.00	
	802.11ac-VHT40 MCS0	151	5755	5.35	7.00	90.58
		159	5795	5.22	7.00	
	802.11ac-VHT80 MCS0	155	5775	5.42	7.00	83.55

<5GHz WLAN Ant.1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11n-HT20 MCS0	36	5180	6.47	8.00	94.79
		40	5200	6.52	8.00	
		44	5220	6.43	8.00	
		48	5240	6.87	8.00	
	802.11n-HT40 MCS0	38	5190	5.71	7.00	90.83
		46	5230	5.85	7.00	
	802.11ac-VHT20 MCS0	36	5180	6.42	8.00	94.82
		40	5200	6.49	8.00	
		44	5220	6.38	8.00	
		48	5240	6.81	8.00	
	802.11ac-VHT40 MCS0	38	5190	5.70	7.00	90.58
		46	5230	5.83	7.00	
	802.11ac-VHT80 MCS0	42	5210	5.92	7.00	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11n-HT20 MCS0	52	5260	6.49	8.00	94.79
		56	5280	6.52	8.00	
		60	5300	6.61	8.00	
		64	5320	6.89	8.00	
	802.11n-HT40 MCS0	54	5270	5.68	7.00	90.83
		62	5310	5.90	7.00	
	802.11ac-VHT20 MCS0	52	5260	6.45	8.00	94.82
		56	5280	6.47	8.00	
		60	5300	6.58	8.00	
		64	5320	6.83	8.00	
	802.11ac-VHT40 MCS0	54	5270	5.66	7.00	90.58
		62	5310	5.89	7.00	
	802.11ac-VHT80 MCS0	58	5290	5.90	7.00	83.55

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11n-HT20 MCS0	100	5500	6.59	8.00	94.79
		116	5580	7.09	8.00	
		132	5660	6.99	8.00	
		140	5700	7.66	8.00	
		144	5720	7.94	8.00	
	802.11n-HT40 MCS0	102	5510	5.48	7.00	90.83
		110	5550	5.49	7.00	
		134	5670	6.05	7.00	
		142	5710	6.79	7.00	
	802.11ac-VHT20 MCS0	100	5500	6.55	8.00	94.82
		116	5580	7.06	8.00	
		132	5660	6.96	8.00	
		140	5700	7.64	8.00	
		144	5720	7.93	8.00	
	802.11ac-VHT40 MCS0	102	5510	5.46	7.00	90.58
		110	5550	5.45	7.00	
		134	5670	6.02	7.00	
		142	5710	6.77	7.00	
	802.11ac-VHT80 MCS0	106	5530	6.05	7.00	83.55
		138	5690	6.88	7.00	

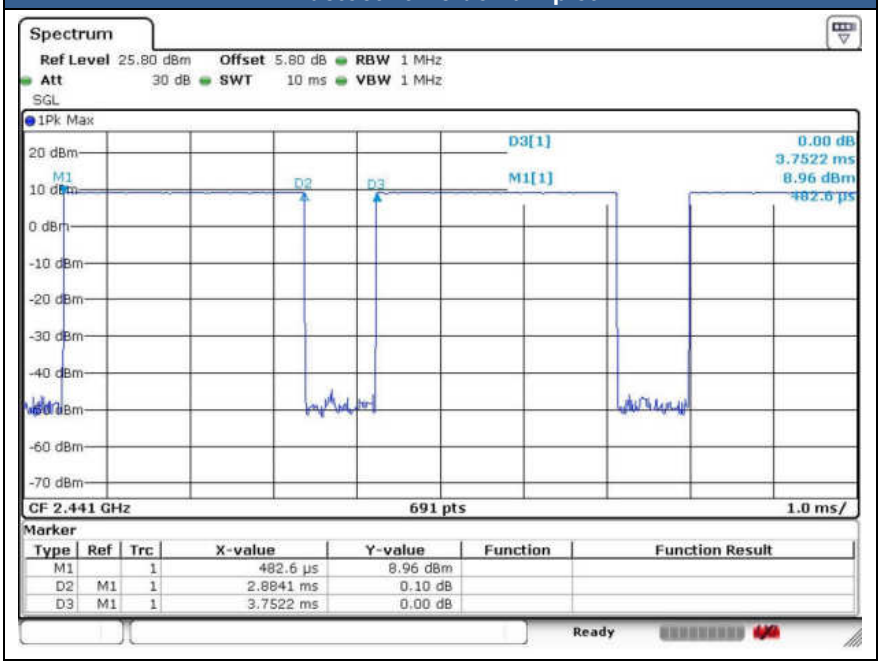
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11n-HT20 MCS0	149	5745	8.25	9.00	94.79
		157	5785	7.97	9.00	
		165	5825	8.54	9.00	
	802.11n-HT40 MCS0	151	5755	7.87	8.00	90.83
		159	5795	7.89	8.00	
	802.11ac-VHT20 MCS0	149	5745	8.23	9.00	94.82
		157	5785	7.95	9.00	
		165	5825	8.51	9.00	
	802.11ac-VHT40 MCS0	151	5755	7.84	8.00	90.58
		159	5795	7.87	8.00	
	802.11ac-VHT80 MCS0	155	5775	7.95	8.00	83.55

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 76.86 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation

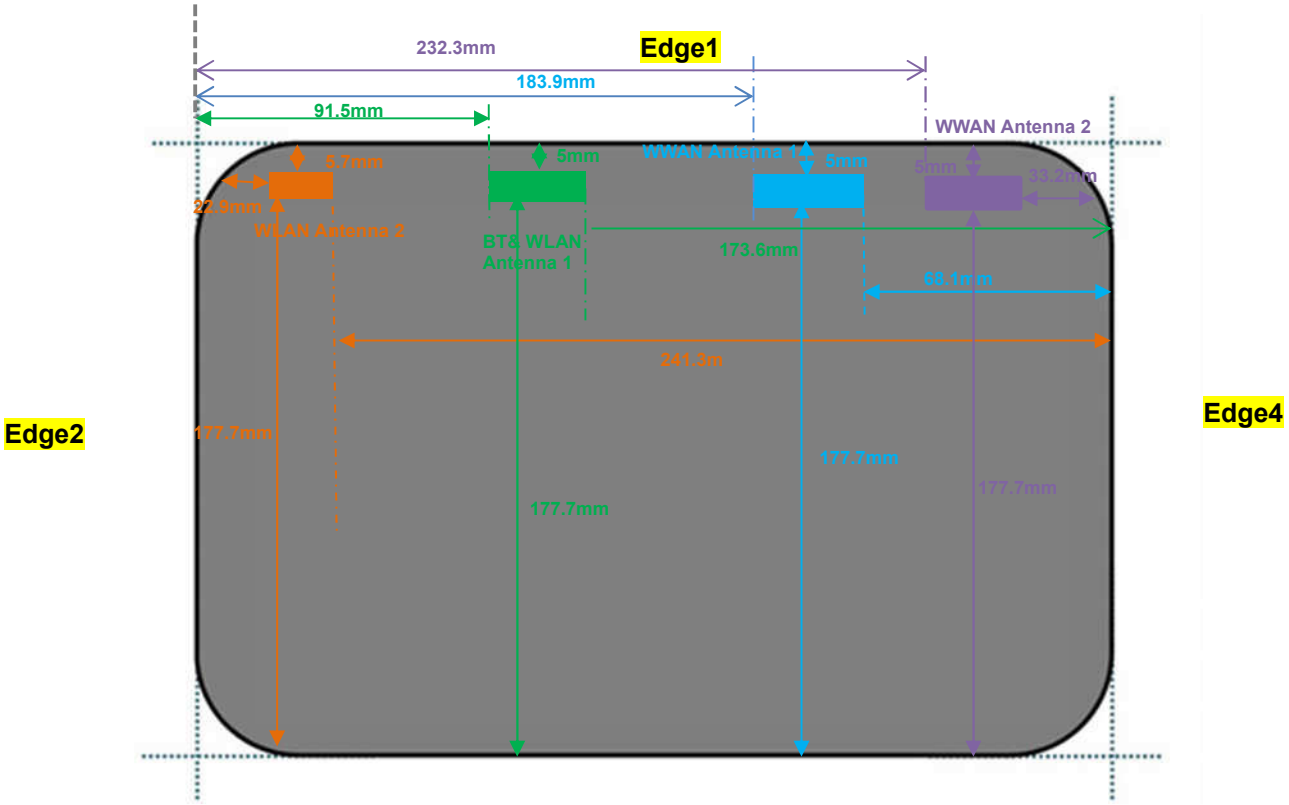
Bluetooth time-domain plot



Mode	Channel	Frequency (MHz)	Average power (dBm)
			1Mbps
v3.0+EDR	CH 00	2402	9.22
	CH 39	2441	8.97
	CH 78	2480	9.05
Tune-up limit (dBm)			10.50

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
v4.0/4.1/4.2 LE	CH 00	2402	-0.32
	CH 19	2440	-1.25
	CH 39	2480	-0.82
Tune-up limit (dBm)			0

14. Antenna Location



Diagonal Dimension: 358mm

Edge3

Back View

Antenna	Supported Frequency Bands
WWAN Antenna 1	WCDMA B2 / B4 / B5, LTE B2 / B4 / B5 / B12 / B13 / B17 / B25 / B26 / B66
WWAN Antenna 2	LTE B7 / B30 / B38 / B41
BT & WLAN Antenna 1	BT 2.4GHz, WLAN 2.4GHz/5GHz
WLAN Antenna 2	WLAN 2.4GHz/5GHz

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. Per KDB 447498 D01v06, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
4. Per KDB 447498 D01v06, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
5. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. Per KDB 447498 D01v06, at 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 12	LTE Band 17	LTE Band 13	LTE Band 5	LTE Band 26	LTE Band 4	LTE Band 66	LTE Band 2	LTE Band 25
Exposure Position	Calculated Frequency	846MHz	1750MHz	1907MHz	715MHz	713MHz	784MHz	848MHz	848MHz	1754MHz	1779MHz	1909MHz	1914MHz
	Maximum power (dBm)	24.50	23.5	24	24.5	24.5	24.5	24.5	23	24	24	24.5	24.5
	Maximum rated power(mW)	282.0	224.0	251.0	282.0	282.0	282.0	282.0	200.0	251.0	251.0	282.0	282.0
Bottom Face	Separation distance(mm)	0											
	exclusion threshold	51.9	59.3	69.3	47.7	47.6	49.9	51.9	36.8	66.5	67.0	77.9	78.0
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 1	Separation distance(mm)	5.0											
	exclusion threshold	51.9	59.3	69.3	47.7	47.6	49.9	51.9	36.8	66.5	67.0	77.9	78.0
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 2	Separation distance(mm)	183.9											
	exclusion threshold	918.0	1452.0	1447.0	816.0	814.0	869.0	920.0	920.0	1452.0	1451.0	1447.0	1447.0
	Testing required?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Edge 3	Separation distance(mm)	177.7											
	exclusion threshold	883.0	1390.0	1386.0	786.0	785.0	837.0	885.0	885.0	1390.0	1389.0	1386.0	1385.0
	Testing required?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Edge 4	Separation distance(mm)	68.1											
	exclusion threshold	265.0	294.0	290.0	264.0	264.0	264.0	265.0	265.0	294.0	293.0	290.0	289.0
	Testing required?	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**

Exposure Position	Wireless Interface	LTE Band 30	LTE Band 7	LTE Band 38	LTE Band 41
	Calculated Frequency	2312MHz	2567MHz	2617MHz	2687MHz
	Maximum power (dBm)	23.8	24	24	24
	Maximum rated power(mW)	240.0	251.0	251.0	251.0
Bottom Face	Separation distance(mm)	0			
	exclusion threshold	73.0	80.4	81.2	82.3
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**
Edge 1	Separation distance(mm)	5.0			
	exclusion threshold	73.0	80.4	81.2	82.3
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**
Edge 2	Separation distance(mm)	232.3			
	exclusion threshold	1921.0	1916.0	1915.0	1914.0
	Testing required?	**No**	**No**	**No**	**No**
Edge 3	Separation distance(mm)	177.7			
	exclusion threshold	1376.0	1371.0	1370.0	1369.0
	Testing required?	**No**	**No**	**No**	**No**
Edge 4	Separation distance(mm)	33.2			
	exclusion threshold	11.0	12.1	12.2	12.4
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**

Exposure Position	Wireless Interface	BT	2.4GHz WLAN ANT 1	2.4GHz WLAN ANT 2	2.4GHz WLAN ANT 1+2	5GHz WLAN ANT 1	5GHz WLAN ANT 2	5GHz WLAN ANT 1+2
	Calculated Frequency	2480MHz	2462MHz	2462MHz	2462MHz	5825MHz	5825MHz	5825MHz
	Maximum power (dBm)	10.5	17.5	17.5	18.5	17.5	17.5	19
	Maximum rated power(mW)	11.0	56.0	56.0	71.0	56.0	56.0	79.0
Bottom Face	Separation distance(mm)	0	0	0	0	0	0	0
	exclusion threshold	3.5	17.6	17.6	22.3	27.0	27.0	38.1
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 1	Separation distance(mm)	5.0	5.0	5.7	5.0	5.0	5.7	5.0
	exclusion threshold	3.5	17.6	15.4	22.3	27.0	23.7	38.1
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 2	Separation distance(mm)	91.5	91.5	22.9	22.9	91.5	22.9	22.9
	exclusion threshold	510.0	511.0	3.8	4.9	477.0	5.9	8.3
	Testing required?	**No**	**No**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Edge 3	Separation distance(mm)	177.7	177.7	177.7	177.7	177.7	177.7	177.7
	exclusion threshold	1372.0	1373.0	1373.0	1373.0	1339.0	1339.0	1339.0
	Testing required?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Edge 4	Separation distance(mm)	173.6	173.6	241.3	173.6	173.6	241.3	173.6
	exclusion threshold	1331.0	1332.0	2009.0	1332.0	1298.0	1975.0	1298.0
	Testing required?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. This device implanted proximity sensor function at bottom face and edge 1, power reduction will be implemented immediately at all WWAN and WLAN bands.

Tablet Note:

1. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in normal mode was performed; 11mm for bottom face / edge1 for WWAN and WLAN frequency bands.
2. Per KDB 616217 D04v01r02, the additional separation introduced by the contour against a flat phantom is < 5 mm on this device and reported SAR is < 1.2 W/kg, a curved or contoured back surface or edge SAR is not required, more detail information please refer to the setup photo.

WCDMA Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (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/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B2 / B4 / B17 / B38 SAR test was covered by LTE B25 / B66 / B12 / B41; 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

WLAN Note:

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

15.1 Body SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Bottom Face	11	Sensor off	4233	846.6	23.77	24.50	1.183	-0.02	0.801	0.948
	WCDMA Band V	RMC12.2Kbps	Bottom Face	11	Sensor off	4132	826.4	23.75	24.50	1.189	0.01	0.753	0.895
	WCDMA Band V	RMC12.2Kbps	Bottom Face	11	Sensor off	4182	836.4	23.63	24.50	1.222	0.01	0.729	0.891
#01	WCDMA Band V	RMC12.2Kbps	Edge 1	11	Sensor off	4233	846.6	23.77	24.50	1.183	0.01	0.972	**1.150**
	WCDMA Band V	RMC12.2Kbps	Edge 1	11	Sensor off	4132	826.4	23.75	24.50	1.189	0.06	0.902	1.072
	WCDMA Band V	RMC12.2Kbps	Edge 1	11	Sensor off	4182	836.4	23.63	24.50	1.222	0.1	0.923	1.128
	WCDMA Band V	RMC12.2Kbps	Edge 2	0	Sensor off	4233	846.6	23.77	24.50	1.183	0.08	0.086	0.102
	WCDMA Band V	RMC12.2Kbps	Edge 3	0	Sensor off	4233	846.6	23.77	24.50	1.183	0.01	0.022	0.026
	WCDMA Band V	RMC12.2Kbps	Edge 4	0	Sensor off	4233	846.6	23.77	24.50	1.183	0.17	0.169	0.200
	WCDMA Band V	RMC12.2Kbps	Bottom Face	0	Sensor on	4233	846.6	16.22	17.00	1.197	-0.09	0.594	0.711
	WCDMA Band V	RMC12.2Kbps	Edge 1	0	Sensor on	4233	846.6	16.22	17.00	1.197	0.08	0.194	0.232
	WCDMA Band IV	RMC12.2Kbps	Bottom Face	11	Sensor off	1413	1732.6	22.77	23.50	1.183	0.01	0.897	1.061
#02	WCDMA Band IV	RMC12.2Kbps	Bottom Face	11	Sensor off	1312	1712.4	22.75	23.50	1.189	0.01	0.919	**1.092**
	WCDMA Band IV	RMC12.2Kbps	Bottom Face	11	Sensor off	1513	1752.6	22.64	23.50	1.219	0.02	0.873	1.064
	WCDMA Band IV	RMC12.2Kbps	Edge 1	11	Sensor off	1413	1732.6	22.77	23.50	1.183	0.02	0.263	0.311
	WCDMA Band IV	RMC12.2Kbps	Bottom Face	0	Sensor on	1413	1732.6	15.96	16.00	1.009	0.01	1.030	1.040
	WCDMA Band IV	RMC12.2Kbps	Bottom Face	0	Sensor on	1312	1712.4	15.94	16.00	1.014	0.02	1.040	1.054
	WCDMA Band IV	RMC12.2Kbps	Bottom Face	0	Sensor on	1513	1752.6	15.81	16.00	1.045	0.07	1.000	1.045
	WCDMA Band IV	RMC12.2Kbps	Edge 1	0	Sensor on	1413	1732.6	15.96	16.00	1.009	0.1	0.717	0.724
	WCDMA Band II	RMC12.2Kbps	Bottom Face	11	Sensor off	9400	1880	22.62	24.00	1.374	0.01	0.612	0.841
	WCDMA Band II	RMC12.2Kbps	Bottom Face	11	Sensor off	9262	1852.4	22.57	24.00	1.390	0.06	0.610	0.848
	WCDMA Band II	RMC12.2Kbps	Bottom Face	11	Sensor off	9538	1907.6	22.52	24.00	1.406	0.05	0.562	0.790
	WCDMA Band II	RMC12.2Kbps	Edge 1	11	Sensor off	9400	1880	22.62	24.00	1.374	0.06	0.172	0.236
	WCDMA Band II	RMC12.2Kbps	Bottom Face	0	Sensor on	9400	1880	15.88	16.50	1.153	-0.1	0.934	1.077
	WCDMA Band II	RMC12.2Kbps	Bottom Face	0	Sensor on	9262	1852.4	15.79	16.50	1.178	-0.05	0.875	1.030
#03	WCDMA Band II	RMC12.2Kbps	Bottom Face	0	Sensor on	9538	1907.6	15.84	16.50	1.164	0.05	0.964	**1.122**
	WCDMA Band II	RMC12.2Kbps	Edge 1	0	Sensor on	9400	1880	15.88	16.50	1.153	0.05	0.112	0.129

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#04	LTE Band 12	10M	QPSK	1	0	Bottom Face	11	Sensor off	23095	707.5	24.28	24.50	1.052	-0.04	0.851	**0.895**
	LTE Band 12	10M	QPSK	25	12	Bottom Face	11	Sensor off	23095	707.5	23.35	23.50	1.035	0.17	0.738	0.764
	LTE Band 12	10M	QPSK	50	0	Bottom Face	11	Sensor off	23095	707.5	23.30	23.50	1.047	0.03	0.717	0.751
	LTE Band 12	10M	QPSK	1	0	Edge 1	11	Sensor off	23095	707.5	24.28	24.50	1.052	0.06	0.702	0.738
	LTE Band 12	10M	QPSK	25	12	Edge 1	11	Sensor off	23095	707.5	23.35	23.50	1.035	0.1	0.603	0.624
	LTE Band 12	10M	QPSK	1	0	Edge 2	0	Sensor off	23095	707.5	24.28	24.50	1.052	0.04	0.087	0.092
	LTE Band 12	10M	QPSK	25	12	Edge 2	0	Sensor off	23095	707.5	23.35	23.50	1.035	0.02	0.076	0.079
	LTE Band 12	10M	QPSK	1	0	Edge 3	0	Sensor off	23095	707.5	24.28	24.50	1.052	0.01	0.054	0.057
	LTE Band 12	10M	QPSK	25	12	Edge 3	0	Sensor off	23095	707.5	23.35	23.50	1.035	0.03	0.053	0.055
	LTE Band 12	10M	QPSK	1	0	Edge 4	0	Sensor off	23095	707.5	24.28	24.50	1.052	0.04	0.139	0.146
	LTE Band 12	10M	QPSK	25	12	Edge 4	0	Sensor off	23095	707.5	23.35	23.50	1.035	0.02	0.121	0.125
	LTE Band 12	10M	QPSK	1	0	Bottom Face	0	Sensor on	23095	707.5	16.28	16.50	1.052	0.09	0.691	0.727
	LTE Band 12	10M	QPSK	25	12	Bottom Face	0	Sensor on	23095	707.5	16.21	16.50	1.069	0.05	0.714	0.763
	LTE Band 12	10M	QPSK	1	0	Edge 1	0	Sensor on	23095	707.5	16.28	16.50	1.052	0.1	0.279	0.293
	LTE Band 12	10M	QPSK	25	12	Edge 1	0	Sensor on	23095	707.5	16.21	16.50	1.069	0.06	0.289	0.309
	LTE Band 13	10M	QPSK	1	25	Bottom Face	11	Sensor off	23230	782	24.15	24.50	1.084	0.02	0.884	0.958
	LTE Band 13	10M	QPSK	25	12	Bottom Face	11	Sensor off	23230	782	23.17	23.50	1.079	0.01	0.759	0.819
	LTE Band 13	10M	QPSK	50	0	Bottom Face	11	Sensor off	23230	782	23.14	23.50	1.086	0.07	0.697	0.757
#05	LTE Band 13	10M	QPSK	1	25	Edge 1	11	Sensor off	23230	782	24.15	24.50	1.084	0.07	0.893	**0.968**
	LTE Band 13	10M	QPSK	25	12	Edge 1	11	Sensor off	23230	782	23.17	23.50	1.079	0.07	0.722	0.779
	LTE Band 13	10M	QPSK	50	0	Edge 1	11	Sensor off	23230	782	23.14	23.50	1.086	0.08	0.720	0.782
	LTE Band 13	10M	QPSK	1	25	Edge 2	0	Sensor off	23230	782	24.15	24.50	1.084	0.05	0.069	0.075
	LTE Band 13	10M	QPSK	25	12	Edge 2	0	Sensor off	23230	782	23.17	23.50	1.079	0.05	0.052	0.056
	LTE Band 13	10M	QPSK	1	25	Edge 3	0	Sensor off	23230	782	24.15	24.50	1.084	0.09	0.039	0.042
	LTE Band 13	10M	QPSK	25	12	Edge 3	0	Sensor off	23230	782	23.17	23.50	1.079	0.09	0.032	0.035
	LTE Band 13	10M	QPSK	1	25	Edge 4	0	Sensor off	23230	782	24.15	24.50	1.084	0.09	0.151	0.164
	LTE Band 13	10M	QPSK	25	12	Edge 4	0	Sensor off	23230	782	23.17	23.50	1.079	0.06	0.124	0.134
	LTE Band 13	10M	QPSK	1	25	Bottom Face	0	Sensor on	23230	782	17.10	17.50	1.096	0.03	0.738	0.809
	LTE Band 13	10M	QPSK	25	12	Bottom Face	0	Sensor on	23230	782	16.99	17.50	1.125	-0.08	0.749	0.842
	LTE Band 13	10M	QPSK	50	0	Bottom Face	0	Sensor on	23230	782	16.91	17.50	1.146	0.04	0.740	0.848
	LTE Band 13	10M	QPSK	1	25	Edge 1	0	Sensor on	23230	782	17.10	17.50	1.096	0.09	0.339	0.372
	LTE Band 13	10M	QPSK	25	12	Edge 1	0	Sensor on	23230	782	16.99	17.50	1.125	0.08	0.348	0.391

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#06	LTE Band 5	10M	QPSK	1	0	Bottom Face	11	Sensor off	20525	836.5	24.29	24.50	1.050	0.04	0.869	**0.912**
	LTE Band 5	10M	QPSK	25	0	Bottom Face	11	Sensor off	20525	836.5	23.30	23.50	1.047	0.02	0.696	0.729
	LTE Band 5	10M	QPSK	50	0	Bottom Face	11	Sensor off	20525	836.5	23.24	23.50	1.062	0.04	0.692	0.735
	LTE Band 5	10M	QPSK	1	0	Edge 1	11	Sensor off	20525	836.5	24.29	24.50	1.050	0.04	0.823	0.864
	LTE Band 5	10M	QPSK	25	0	Edge 1	11	Sensor off	20525	836.5	23.30	23.50	1.047	0.03	0.682	0.714
	LTE Band 5	10M	QPSK	50	0	Edge 1	11	Sensor off	20525	836.5	23.24	23.50	1.062	0.03	0.679	0.721
	LTE Band 5	10M	QPSK	1	0	Edge 2	0	Sensor off	20525	836.5	24.29	24.50	1.050	0.02	0.096	0.101
	LTE Band 5	10M	QPSK	25	0	Edge 2	0	Sensor off	20525	836.5	23.30	23.50	1.047	0.07	0.077	0.081
	LTE Band 5	10M	QPSK	1	0	Edge 3	0	Sensor off	20525	836.5	24.29	24.50	1.050	0.07	0.017	0.018
	LTE Band 5	10M	QPSK	25	0	Edge 3	0	Sensor off	20525	836.5	23.30	23.50	1.047	0.06	0.020	0.021
	LTE Band 5	10M	QPSK	1	0	Edge 4	0	Sensor off	20525	836.5	24.29	24.50	1.050	0.11	0.178	0.187
	LTE Band 5	10M	QPSK	25	0	Edge 4	0	Sensor off	20525	836.5	23.30	23.50	1.047	0.05	0.145	0.152
	LTE Band 5	10M	QPSK	1	0	Bottom Face	0	Sensor on	20525	836.5	16.16	17.00	1.213	0.07	0.659	0.800
	LTE Band 5	10M	QPSK	25	0	Bottom Face	0	Sensor on	20525	836.5	16.01	17.00	1.256	0.05	0.676	0.849
	LTE Band 5	10M	QPSK	50	0	Bottom Face	0	Sensor on	20525	836.5	16.06	17.00	1.242	0.02	0.704	0.874
	LTE Band 5	10M	QPSK	1	0	Edge 1	0	Sensor on	20525	836.5	16.16	17.00	1.213	0.06	0.259	0.314
	LTE Band 5	10M	QPSK	25	0	Edge 1	0	Sensor on	20525	836.5	16.01	17.00	1.256	0.1	0.257	0.323
	LTE Band 26	15M	QPSK	1	0	Bottom Face	11	Sensor off	26865	831.5	22.22	23.00	1.197	0.05	0.530	0.634
	LTE Band 26	15M	QPSK	36	20	Bottom Face	11	Sensor off	26865	831.5	21.28	22.00	1.180	0.11	0.419	0.495
#07	LTE Band 26	15M	QPSK	1	0	Edge 1	11	Sensor off	26865	831.5	22.22	23.00	1.197	0.07	0.612	**0.732**
	LTE Band 26	15M	QPSK	36	20	Edge 1	11	Sensor off	26865	831.5	21.28	22.00	1.180	0.01	0.518	0.611
	LTE Band 26	15M	QPSK	1	0	Edge 2	0	Sensor off	26865	831.5	22.22	23.00	1.197	0.09	0.053	0.063
	LTE Band 26	15M	QPSK	36	20	Edge 2	0	Sensor off	26865	831.5	21.28	22.00	1.180	0.04	0.043	0.051
	LTE Band 26	15M	QPSK	1	0	Edge 3	0	Sensor off	26865	831.5	22.22	23.00	1.197	-0.04	0.017	0.020
	LTE Band 26	15M	QPSK	36	20	Edge 3	0	Sensor off	26865	831.5	21.28	22.00	1.180	-0.06	0.012	0.014
	LTE Band 26	15M	QPSK	1	0	Edge 4	0	Sensor off	26865	831.5	22.22	23.00	1.197	0.04	0.115	0.138
	LTE Band 26	15M	QPSK	36	20	Edge 4	0	Sensor off	26865	831.5	21.28	22.00	1.180	0.18	0.091	0.107
	LTE Band 26	15M	QPSK	1	0	Bottom Face	0	Sensor on	26865	831.5	16.26	17.00	1.186	0.03	0.612	0.726
	LTE Band 26	15M	QPSK	36	20	Bottom Face	0	Sensor on	26865	831.5	16.18	17.00	1.208	-0.01	0.605	0.731
	LTE Band 26	15M	QPSK	1	0	Edge 1	0	Sensor on	26865	831.5	16.26	17.00	1.186	0.01	0.251	0.298
	LTE Band 26	15M	QPSK	36	20	Edge 1	0	Sensor on	26865	831.5	16.18	17.00	1.208	0.09	0.244	0.295

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 66	20M	QPSK	1	0	Bottom Face	11	Sensor off	132572	1770	23.64	24.00	1.086	0.01	0.955	1.038
	LTE Band 66	20M	QPSK	1	0	Bottom Face	11	Sensor off	132072	1720	23.55	24.00	1.109	0.07	0.973	1.079
#08	LTE Band 66	20M	QPSK	1	0	Bottom Face	11	Sensor off	132322	1745	23.58	24.00	1.102	0.01	0.990	**1.091**
	LTE Band 66	20M	QPSK	50	0	Bottom Face	11	Sensor off	132572	1770	22.56	23.00	1.107	0.02	0.746	0.826
	LTE Band 66	20M	QPSK	50	0	Bottom Face	11	Sensor off	132072	1720	22.42	23.00	1.143	0.04	0.756	0.864
	LTE Band 66	20M	QPSK	50	0	Bottom Face	11	Sensor off	132322	1745	22.54	23.00	1.112	0.01	0.739	0.822
	LTE Band 66	20M	QPSK	100	0	Bottom Face	11	Sensor off	132572	1770	22.47	23.00	1.130	0.05	0.705	0.797
	LTE Band 66	20M	QPSK	1	0	Edge 1	11	Sensor off	132572	1770	23.64	24.00	1.086	0.07	0.249	0.271
	LTE Band 66	20M	QPSK	50	0	Edge 1	11	Sensor off	132572	1770	22.56	23.00	1.107	0.07	0.185	0.205
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0	Sensor on	132572	1770	14.62	15.50	1.225	-0.05	0.693	0.849
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0	Sensor on	132072	1720	14.44	15.50	1.276	0.09	0.652	0.832
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0	Sensor on	132322	1745	14.54	15.50	1.247	-0.06	0.672	0.838
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0	Sensor on	132572	1770	14.58	15.50	1.236	0.03	0.660	0.816
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0	Sensor on	132072	1720	14.13	15.50	1.371	0.09	0.634	0.869
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0	Sensor on	132322	1745	14.50	15.50	1.259	0.06	0.651	0.820
	LTE Band 66	20M	QPSK	100	0	Bottom Face	0	Sensor on	132572	1770	14.51	15.50	1.256	0.09	0.646	0.811
	LTE Band 66	20M	QPSK	1	0	Edge 1	0	Sensor on	132572	1770	14.62	15.50	1.225	-0.06	0.617	0.756
	LTE Band 66	20M	QPSK	50	0	Edge 1	0	Sensor on	132572	1770	14.58	15.50	1.236	0.06	0.565	0.698
	LTE Band 25	20M	QPSK	1	0	Bottom Face	11	Sensor off	26590	1905	23.68	24.50	1.208	0.05	0.717	0.866
	LTE Band 25	20M	QPSK	1	0	Bottom Face	11	Sensor off	26140	1860	23.46	24.50	1.271	0.04	0.720	0.915
	LTE Band 25	20M	QPSK	1	0	Bottom Face	11	Sensor off	26340	1880	23.58	24.50	1.236	0.04	0.696	0.860
	LTE Band 25	20M	QPSK	50	0	Bottom Face	11	Sensor off	26590	1905	22.66	23.50	1.213	0.07	0.557	0.676
	LTE Band 25	20M	QPSK	100	0	Bottom Face	11	Sensor off	26590	1905	22.60	23.50	1.230	0.02	0.556	0.684
	LTE Band 25	20M	QPSK	1	0	Edge 1	11	Sensor off	26590	1905	23.68	24.50	1.208	0.04	0.202	0.244
	LTE Band 25	20M	QPSK	50	0	Edge 1	11	Sensor off	26590	1905	22.66	23.50	1.213	0.05	0.158	0.192
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0	Sensor on	26590	1905	15.30	16.50	1.318	0.03	0.738	0.973
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0	Sensor on	26140	1860	15.03	16.50	1.403	0.04	0.651	0.913
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0	Sensor on	26340	1880	15.06	16.50	1.393	0.05	0.669	0.932
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0	Sensor on	26590	1905	15.29	16.50	1.321	0.18	0.734	0.970
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0	Sensor on	26140	1860	14.92	16.50	1.439	-0.07	0.654	0.941
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0	Sensor on	26340	1880	15.06	16.50	1.393	0.07	0.670	0.933
#09	LTE Band 25	20M	QPSK	100	0	Bottom Face	0	Sensor on	26590	1905	15.16	16.50	1.361	-0.1	0.729	**0.992**
	LTE Band 25	20M	QPSK	1	0	Edge 1	0	Sensor on	26590	1905	15.30	16.50	1.318	0.16	0.096	0.127
	LTE Band 25	20M	QPSK	50	0	Edge 1	0	Sensor on	26590	1905	15.29	16.50	1.321	0.03	0.094	0.124

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 30	10M	QPSK	1	0	Bottom Face	11	Sensor off	27710	2310	23.53	23.80	1.064	0.03	0.656	0.698
	LTE Band 30	10M	QPSK	25	0	Bottom Face	11	Sensor off	27710	2310	22.40	22.80	1.096	0.03	0.526	0.577
#10	LTE Band 30	10M	QPSK	1	0	Edge 1	11	Sensor off	27710	2310	23.53	23.80	1.064	0.19	1.120	**1.192**
	LTE Band 30	10M	QPSK	25	0	Edge 1	11	Sensor off	27710	2310	22.40	22.80	1.096	0.05	0.873	0.957
	LTE Band 30	10M	QPSK	50	0	Edge 1	11	Sensor off	27710	2310	22.37	22.80	1.104	0.16	0.856	0.945
	LTE Band 30	10M	QPSK	1	0	Edge 4	0	Sensor off	27710	2310	23.53	23.80	1.064	0.05	0.607	0.646
	LTE Band 30	10M	QPSK	25	0	Edge 4	0	Sensor off	27710	2310	22.40	22.80	1.096	0.07	0.502	0.550
	LTE Band 30	10M	QPSK	1	0	Bottom Face	0	Sensor on	27710	2310	12.00	12.50	1.122	0.07	0.392	0.440
	LTE Band 30	10M	QPSK	25	0	Bottom Face	0	Sensor on	27710	2310	11.98	12.50	1.127	0.04	0.376	0.424
	LTE Band 30	10M	QPSK	1	0	Edge 1	0	Sensor on	27710	2310	12.00	12.50	1.122	0.05	0.965	1.083
	LTE Band 30	10M	QPSK	25	0	Edge 1	0	Sensor on	27710	2310	11.98	12.50	1.127	0.02	0.939	1.058
	LTE Band 30	10M	QPSK	50	0	Edge 1	11	Sensor on	27710	2310	11.86	12.50	1.159	0.02	0.949	1.100
	LTE Band 7	20M	QPSK	1	0	Bottom Face	11	Sensor off	21350	2560	23.51	24.00	1.119	0.03	0.851	0.953
	LTE Band 7	20M	QPSK	1	0	Bottom Face	11	Sensor off	20850	2510	23.40	24.00	1.148	0.12	0.747	0.858
	LTE Band 7	20M	QPSK	1	0	Bottom Face	11	Sensor off	21100	2535	23.38	24.00	1.153	0.01	0.773	0.892
	LTE Band 7	20M	QPSK	50	0	Bottom Face	11	Sensor off	21350	2560	22.56	23.00	1.107	0.04	0.675	0.747
	LTE Band 7	20M	QPSK	100	0	Bottom Face	11	Sensor off	20850	2510	22.47	23.00	1.130	0.04	0.590	0.667
	LTE Band 7	20M	QPSK	1	0	Edge 1	11	Sensor off	21350	2560	23.51	24.00	1.119	0.06	0.489	0.547
	LTE Band 7	20M	QPSK	50	0	Edge 1	11	Sensor off	21350	2560	22.56	23.00	1.107	0.05	0.376	0.416
	LTE Band 7	20M	QPSK	1	0	Edge 4	0	Sensor off	21350	2560	23.51	24.00	1.119	0.06	0.662	0.741
	LTE Band 7	20M	QPSK	50	0	Edge 4	0	Sensor off	21350	2560	22.56	23.00	1.107	0.08	0.520	0.575
#11	LTE Band 7	20M	QPSK	1	0	Bottom Face	0	Sensor on	21350	2560	13.98	14.50	1.127	0.05	0.990	**1.116**
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0	Sensor on	20850	2510	13.96	14.50	1.132	0.07	0.954	1.080
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0	Sensor on	21100	2535	13.97	14.50	1.130	0.07	0.953	1.077
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0	Sensor on	21350	2560	13.94	14.50	1.138	0.01	0.965	1.098
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0	Sensor on	20850	2510	13.92	14.50	1.143	0.05	0.919	1.050
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0	Sensor on	21100	2535	13.91	14.50	1.146	0.08	0.933	1.069
	LTE Band 7	20M	QPSK	100	0	Bottom Face	0	Sensor on	20850	2510	13.94	14.50	1.138	0.09	0.905	1.030
	LTE Band 7	20M	QPSK	1	0	Edge 1	0	Sensor on	21350	2560	13.98	14.50	1.127	0.01	0.483	0.544
	LTE Band 7	20M	QPSK	50	0	Edge 1	0	Sensor on	21350	2560	13.94	14.50	1.138	0.05	0.474	0.539

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Bottom Face	11	Sensor off	41490	2680	23.12	24.00	1.225	62.9	1.006	0.01	0.628	0.774
	LTE Band 41	20M	QPSK	1	0	Bottom Face	11	Sensor off	39750	2506	23.09	24.00	1.233	62.9	1.006	0.08	0.476	0.590
	LTE Band 41	20M	QPSK	1	0	Bottom Face	11	Sensor off	40185	2549.5	23.02	24.00	1.253	62.9	1.006	0.1	0.531	0.669
	LTE Band 41	20M	QPSK	1	0	Bottom Face	11	Sensor off	40620	2593	22.91	24.00	1.285	62.9	1.006	0.07	0.538	0.696
	LTE Band 41	20M	QPSK	1	0	Bottom Face	11	Sensor off	41055	2636.5	22.86	24.00	1.300	62.9	1.006	0.15	0.564	0.738
	LTE Band 41	20M	QPSK	50	0	Bottom Face	11	Sensor off	41490	2680	22.11	23.00	1.227	62.9	1.006	0.09	0.494	0.610
	LTE Band 41	20M	QPSK	50	0	Bottom Face	11	Sensor off	39750	2506	22.10	23.00	1.230	62.9	1.006	0.09	0.386	0.478
	LTE Band 41	20M	QPSK	50	0	Bottom Face	11	Sensor off	40185	2549.5	22.00	23.00	1.259	62.9	1.006	0.06	0.354	0.448
	LTE Band 41	20M	QPSK	50	0	Bottom Face	11	Sensor off	40620	2593	21.80	23.00	1.318	62.9	1.006	0.04	0.430	0.570
	LTE Band 41	20M	QPSK	50	0	Bottom Face	11	Sensor off	41055	2636.5	21.76	23.00	1.330	62.9	1.006	0.05	0.377	0.505
	LTE Band 41	20M	QPSK	100	0	Bottom Face	11	Sensor off	41490	2680	22.00	23.00	1.259	62.9	1.006	0.04	0.407	0.515
	LTE Band 41	20M	QPSK	1	0	Edge 1	11	Sensor off	41490	2680	23.12	24.00	1.225	62.9	1.006	0.09	0.253	0.312
	LTE Band 41	20M	QPSK	50	0	Edge 1	11	Sensor off	41490	2680	22.11	23.00	1.227	62.9	1.006	0.18	0.194	0.240
	LTE Band 41	20M	QPSK	1	0	Edge 4	0	Sensor off	41490	2680	23.12	24.00	1.225	62.9	1.006	0.07	0.402	0.495
	LTE Band 41	20M	QPSK	50	0	Edge 4	0	Sensor off	41490	2680	22.11	23.00	1.227	62.9	1.006	0.03	0.322	0.398
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0	Sensor on	41490	2680	14.89	15.50	1.151	62.9	1.006	0.08	0.758	0.878
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0	Sensor on	39750	2506	14.86	15.50	1.159	62.9	1.006	0.09	0.576	0.671
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0	Sensor on	40185	2549.5	14.83	15.50	1.167	62.9	1.006	0.04	0.609	0.715
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0	Sensor on	40620	2593	14.88	15.50	1.153	62.9	1.006	0.07	0.621	0.721
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0	Sensor on	41055	2636.5	14.76	15.50	1.186	62.9	1.006	0.06	0.671	0.800
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0	Sensor on	41490	2680	14.83	15.50	1.167	62.9	1.006	0.01	0.756	0.887
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0	Sensor on	39750	2506	14.82	15.50	1.169	62.9	1.006	0.04	0.648	0.762
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0	Sensor on	40185	2549.5	14.76	15.50	1.186	62.9	1.006	0.05	0.664	0.792
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0	Sensor on	40620	2593	14.60	15.50	1.230	62.9	1.006	0.01	0.674	0.834
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0	Sensor on	41055	2636.5	14.63	15.50	1.222	62.9	1.006	0.03	0.726	0.892
#12	LTE Band 41	20M	QPSK	100	0	Bottom Face	0	Sensor on	41490	2680	14.81	15.50	1.172	62.9	1.006	-0.05	0.796	**0.939**
	LTE Band 41	20M	QPSK	1	0	Edge 1	0	Sensor on	41490	2680	14.89	15.50	1.151	62.9	1.006	0.04	0.266	0.308
	LTE Band 41	20M	QPSK	50	0	Edge 1	0	Sensor on	41490	2680	14.83	15.50	1.167	62.9	1.006	0.05	0.258	0.303

<WLAN2.4G SAR>

Plot No.	Ant. Port	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	11	Sensor off	1	2412	16.96	17.50	1.132	100	1.000	0.06	0.312	0.353
	1	WLAN2.4GHz	802.11b 1Mbps	Edge 1	11	Sensor off	1	2412	16.96	17.50	1.132	100	1.000	0.04	0.219	0.248
#13	1	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	11	2462	9.77	10.00	1.054	100	1.000	-0.04	0.825	**0.870**
	1	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	6	2437	9.73	10.00	1.064	100	1.000	-0.05	0.568	0.604
	1	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	1	2412	9.69	10.00	1.074	100	1.000	0.02	0.463	0.497
	1	WLAN2.4GHz	802.11b 1Mbps	Edge 1	0	Sensor on	11	2462	9.77	10.00	1.054	100	1.000	0.03	0.240	0.253
	2	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	11	Sensor off	1	2412	16.86	17.50	1.159	100	1.000	-0.05	0.186	0.216
	2	WLAN2.4GHz	802.11b 1Mbps	Edge 1	11	Sensor off	1	2412	16.86	17.50	1.159	100	1.000	-0.02	0.181	0.210
	2	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0	Sensor off	1	2412	16.86	17.50	1.159	100	1.000	0.03	0.315	0.365
#14	2	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	6	2437	11.77	12.00	1.054	100	1.000	0.07	0.866	**0.913**
	2	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	1	2412	11.68	12.00	1.076	100	1.000	0.09	0.825	0.888
	2	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	Sensor on	11	2462	11.76	12.00	1.057	100	1.000	-0.03	0.841	0.889
	2	WLAN2.4GHz	802.11b 1Mbps	Edge 1	0	Sensor on	6	2437	11.77	12.00	1.054	100	1.000	0.03	0.365	0.385
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Bottom Face	11	Sensor off	6	2437	18.16	18.50	1.081	94.66	1.056	-0.02	0.338	0.386
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Edge 1	11	Sensor off	6	2437	18.16	18.50	1.081	94.66	1.056	0.07	0.248	0.283
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Edge 2	0	Sensor off	6	2437	18.16	18.50	1.081	94.66	1.056	0.08	0.171	0.195
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	6	2437	11.34	12.00	1.164	94.66	1.056	0.01	0.706	0.868
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	1	2412	11.30	12.00	1.175	94.66	1.056	-0.06	0.570	0.707
#15	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	11	2462	11.19	12.00	1.205	94.66	1.056	0.08	0.841	**1.070**
	1+2	WLAN2.4GHz	802.11n-HT20 MCS0	Edge 1	0	Sensor on	6	2437	11.34	12.00	1.164	94.66	1.056	0.06	0.220	0.270

<WLAN5G SAR>

Plot No.	Ant. Port	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	64	5320	17.12	17.50	1.091	95.44	1.048	0.02	0.500	0.572
	1	WLAN5.3GHz	802.11a 6Mbps	Edge 1	11	Sensor off	64	5320	17.12	17.50	1.091	95.44	1.048	-0.04	0.342	0.391
#16	1	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	64	5320	4.78	5.00	1.052	95.44	1.048	-0.01	0.735	**0.810**
	1	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	60	5300	4.62	5.00	1.091	95.44	1.048	0.07	0.649	0.742
	1	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	52	5260	4.23	5.00	1.194	95.44	1.048	0.04	0.547	0.684
	1	WLAN5.3GHz	802.11a 6Mbps	Edge 1	0	Sensor on	64	5320	4.78	5.00	1.052	95.44	1.048	0.1	0.074	0.082
	2	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	60	5300	17.04	17.50	1.112	95.12	1.051	0.09	0.063	0.074
	2	WLAN5.3GHz	802.11a 6Mbps	Edge 1	11	Sensor off	60	5300	17.04	17.50	1.112	95.12	1.051	0.1	0.116	0.136
	2	WLAN5.3GHz	802.11a 6Mbps	Edge 2	0	Sensor off	60	5300	17.04	17.50	1.112	95.12	1.051	0.09	0.012	0.014
#17	2	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	64	5320	12.87	14.00	1.297	95.12	1.051	0.07	0.545	**0.743**
	2	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	60	5300	12.50	14.00	1.413	95.12	1.051	-0.06	0.492	0.730
	2	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	52	5260	12.48	14.00	1.419	95.12	1.051	0.07	0.373	0.556
	2	WLAN5.3GHz	802.11a 6Mbps	Edge 1	0	Sensor on	64	5320	12.87	14.00	1.297	95.12	1.051	0.08	0.289	0.394
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Bottom Face	11	Sensor off	60	5300	16.95	18.00	1.274	94.79	1.055	0.09	0.182	0.245
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Edge 1	11	Sensor off	60	5300	16.95	18.00	1.274	94.79	1.055	-0.08	0.108	0.145
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Edge 2	0	Sensor off	60	5300	16.95	18.00	1.274	94.79	1.055	0.09	0.029	0.038
#18	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	64	5320	6.89	8.00	1.291	94.79	1.055	-0.09	0.641	**0.873**
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	60	5300	6.61	8.00	1.377	94.79	1.055	0.02	0.529	0.769
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	52	5260	6.49	8.00	1.416	94.79	1.055	0.07	0.461	0.689
	1+2	WLAN5.3GHz	802.11n-HT20 MCS0	Edge 1	0	Sensor on	64	5320	6.89	8.00	1.291	94.79	1.055	0.06	0.063	0.086

Plot No.	Ant. Port	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	144	5720	17.03	17.50	1.114	95.44	1.048	0.05	0.604	0.705
	1	WLAN5.5GHz	802.11a 6Mbps	Edge 1	11	Sensor off	144	5720	17.03	17.50	1.114	95.44	1.048	-0.04	0.519	0.606
	1	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	144	5720	4.95	5.00	1.012	95.44	1.048	-0.06	0.689	0.730
	1	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	140	5700	4.65	5.00	1.084	95.44	1.048	0.01	0.743	0.844
#19	1	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	100	5500	3.85	5.00	1.303	95.44	1.048	-0.06	0.665	**0.908**
	1	WLAN5.5GHz	802.11a 6Mbps	Edge 1	0	Sensor on	144	5720	4.95	5.00	1.012	95.44	1.048	-0.08	0.148	0.157
	2	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	144	5720	17.21	17.50	1.069	95.12	1.051	0.05	0.170	0.191
	2	WLAN5.5GHz	802.11a 6Mbps	Edge 1	11	Sensor off	144	5720	17.21	17.50	1.069	95.12	1.051	-0.09	0.372	0.418
	2	WLAN5.5GHz	802.11a 6Mbps	Edge 2	0	Sensor off	144	5720	17.21	17.50	1.069	95.12	1.051	0.01	0.031	0.035
	2	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	144	5720	10.84	11.00	1.038	95.12	1.051	0.06	0.665	0.725
#20	2	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	116	5580	10.67	11.00	1.079	95.12	1.051	-0.04	0.760	**0.862**
	2	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	100	5500	10.36	11.00	1.159	95.12	1.051	0.06	0.668	0.814
	2	WLAN5.5GHz	802.11a 6Mbps	Edge 1	0	Sensor on	144	5720	10.84	11.00	1.038	95.12	1.051	-0.01	0.413	0.450
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Bottom Face	11	Sensor off	144	5720	16.73	17.50	1.194	94.79	1.055	0.08	0.246	0.310
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Edge 1	11	Sensor off	144	5720	16.73	17.50	1.194	94.79	1.055	-0.01	0.238	0.300
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Edge 2	0	Sensor off	144	5720	16.73	17.50	1.194	94.79	1.055	0.01	0.023	0.029
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	144	5720	7.94	8.00	1.014	94.79	1.055	0.08	0.757	0.810
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	140	5700	7.66	8.00	1.081	94.79	1.055	-0.08	0.689	0.786
#21	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	100	5500	6.59	8.00	1.384	94.79	1.055	0.08	0.651	**0.950**
	1+2	WLAN5.5GHz	802.11n-HT20 MCS0	Edge 1	0	Sensor on	144	5720	7.94	8.00	1.014	94.79	1.055	0.05	0.140	0.150

Plot No.	Ant. Port	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	1	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	165	5825	17.09	17.50	1.099	95.44	1.048	0.03	0.608	0.700
	1	WLAN5.8GHz	802.11a 6Mbps	Edge 1	11	Sensor off	165	5825	17.09	17.50	1.099	95.44	1.048	-0.06	0.460	0.530
	1	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	165	5825	4.92	5.00	1.019	95.44	1.048	-0.01	0.721	0.770
	1	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	157	5785	4.08	5.00	1.236	95.44	1.048	-0.07	0.633	0.820
#22	1	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	149	5745	3.84	5.00	1.306	95.44	1.048	-0.05	0.676	**0.925**
	1	WLAN5.8GHz	802.11a 6Mbps	Edge 1	0	Sensor on	165	5825	4.92	5.00	1.019	95.44	1.048	-0.05	0.146	0.156
	2	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	11	Sensor off	165	5825	17.05	17.50	1.109	95.12	1.051	0.07	0.141	0.164
	2	WLAN5.8GHz	802.11a 6Mbps	Edge 1	11	Sensor off	165	5825	17.05	17.50	1.109	95.12	1.051	-0.03	0.305	0.356
	2	WLAN5.8GHz	802.11a 6Mbps	Edge 2	0	Sensor off	165	5825	17.05	17.50	1.109	95.12	1.051	0.09	0.027	0.031
	2	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	165	5825	10.91	11.00	1.021	95.12	1.051	0.01	0.661	0.709
#23	2	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	157	5785	10.60	11.00	1.096	95.12	1.051	0.08	0.641	**0.739**
	2	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	Sensor on	149	5745	10.54	11.00	1.112	95.12	1.051	0.09	0.592	0.692
	2	WLAN5.8GHz	802.11a 6Mbps	Edge 1	0	Sensor on	165	5825	10.91	11.00	1.021	95.12	1.051	0.08	0.302	0.324
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Bottom Face	11	Sensor off	165	5825	18.68	19.00	1.076	94.79	1.055	-0.09	0.384	0.436
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Edge 1	11	Sensor off	165	5825	18.68	19.00	1.076	94.79	1.055	-0.07	0.282	0.320
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Edge 2	0	Sensor off	165	5825	18.68	19.00	1.076	94.79	1.055	0.02	0.051	0.058
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	165	5825	8.54	9.00	1.112	94.79	1.055	-0.09	0.877	1.029
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	149	5745	8.25	9.00	1.189	94.79	1.055	-0.04	0.804	1.008
#24	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Bottom Face	0	Sensor on	157	5785	7.97	9.00	1.268	94.79	1.055	-0.04	0.774	**1.035**
	1+2	WLAN5.8GHz	802.11n-HT20 MCS0	Edge 1	0	Sensor on	165	5825	8.54	9.00	1.112	94.79	1.055	-0.05	0.170	0.199

<Bluetooth SAR>

Plot No.	Ant. Port	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)
	1	Bluetooth	1Mbps	Bottom Face	0	00	2402	9.22	10.50	1.343	76.86	1.084	-0.07	0.198	0.288
	1	Bluetooth	1Mbps	Edge 1	0	00	2402	9.22	10.50	1.343	76.86	1.084	0.12	0.061	0.089
	1	Bluetooth	1Mbps	Bottom Face	0	39	2441	8.97	10.50	1.422	76.86	1.084	-0.05	0.205	0.316
#25	1	Bluetooth	1Mbps	Bottom Face	0	78	2480	9.05	10.50	1.396	76.86	1.084	-0.05	0.214	**0.324**

15.2 Repeated SAR Measurement

No.	Ant. Port	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Sensor	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 Band V	-	-	-	-	RMC 12.2Kbps	Edge 1	11	Off	4233	846.6	23.77	24.50	1.183	-	-	0.01	0.972	1	1.150
2nd	-	WCDMA Band V	-	-	-	-	RMC 12.2Kbps	Edge 1	11	Off	4233	846.6	23.77	24.50	1.183	-	-	0.06	0.945	1.029	1.118
1st	-	WCDMA Band IV	-	-	-	-	RMC 12.2Kbps	Bottom Face	0	On	1312	1712.4	15.94	16.00	1.014	-	-	0.02	1.040	1	1.054
2nd	-	WCDMA Band IV	-	-	-	-	RMC 12.2Kbps	Bottom Face	0	On	1312	1712.4	15.94	16.00	1.014	-	-	0.06	1.030	1.010	1.044
1st	-	WCDMA Band II	-	-	-	-	RMC 12.2Kbps	Bottom Face	0	On	9538	1907.6	15.84	16.50	1.164	-	-	0.05	0.964	1	1.122
2nd	-	WCDMA Band II	-	-	-	-	RMC 12.2Kbps	Bottom Face	0	On	9538	1907.6	15.84	16.50	1.164	-	-	0.05	0.960	1.004	1.118
1st	-	LTE Band 13	10M	QPSK	1	25	-	Edge 1	11	Off	23230	782	24.15	24.50	1.084	-	-	0.07	0.893	1	0.968
2nd	-	LTE Band 13	10M	QPSK	1	25	-	Edge 1	11	Off	23230	782	24.15	24.50	1.084	-	-	0.11	0.885	1.009	0.959
1st	-	LTE Band 30	10M	QPSK	1	0	-	Edge 1	11	Off	27710	2310	23.53	23.80	1.064	-	-	0.19	1.120	1	1.192
2nd	-	LTE Band 30	10M	QPSK	1	0	-	Edge 1	11	Off	27710	2310	23.53	23.80	1.064	-	-	0.04	1.110	1.009	1.181
1st	-	LTE Band 7	20M	QPSK	1	0	-	Bottom Face	0	On	21350	2560	13.98	14.50	1.127	-	-	0.05	0.990	1	1.116
2nd	-	LTE Band 7	20M	QPSK	1	0	-	Bottom Face	0	On	21350	2560	13.98	14.50	1.127	-	-	0.03	0.911	1.087	1.027
1st	2	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Bottom Face	0	On	6	2437	11.77	12.00	1.054	100	1.00	0.07	0.866	1	0.913
2nd	2	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Bottom Face	0	On	6	2437	11.77	12.00	1.054	100	1.00	-0.05	0.855	1.013	0.902
1st	1+2	WLAN5.8GHz	-	-	-	-	802.11n-HT20 MCS0	Bottom Face	0	On	165	5825	8.54	9.00	1.112	94.79	1.055	-0.09	0.877	1	1.029
2nd	1+2	WLAN5.8GHz	-	-	-	-	802.11n-HT20 MCS0	Bottom Face	0	On	165	5825	8.54	9.00	1.112	94.79	1.055	0.08	0.838	1.047	0.983

General Note:

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

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Body
1.	WCDMA(Data) + WLAN2.4GHz SISO(data)	Yes
2.	WCDMA(Data) + WLAN2.4GHz MIMO(data)	Yes
3.	WCDMA(Data) + WLAN5GHz SISO(data)	Yes
4.	WCDMA(Data) + WLAN5GHz MIMO(data)	Yes
5.	WCDMA(Data) + Bluetooth Ant.1(data)	Yes
6.	LTE (Data) + WLAN2.4GHz SISO(data)	Yes
7.	LTE (Data) + WLAN2.4GHz MIMO(data)	Yes
8.	LTE (Data) + WLAN5GHz SISO(data)	Yes
9.	LTE (Data) + WLAN5GHz MIMO(data)	Yes
10.	LTE (Data) + Bluetooth Ant.1(data)	Yes

General Note:

1. EUT will choose either WCDMA or LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
2. WLAN Ant.1 and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. 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.
4. The reported SAR summation is calculated based on the same configuration and test position.
5. The worst case 5GHz WLAN reported SAR for each configuration was used for SAR summation.
6. For simultaneous transmission analysis for exposure position of bottom face and edge 1 at 11mm, Bluetooth SAR tested at 0mm separation is worse and the test data is used for conservative SAR summation.
7. 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 16.2.

16.1 Body Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN Ant.1	2.4GHz WLAN Ant.2	2.4GHz WLAN Ant.1+2	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
WCDMA	Band V	Bottom Face at 11mm	0.948	0.353	0.216	0.386	1.30			1.16			1.33		
		Edge 1 at 11mm	1.150	0.248	0.210	0.283	1.40			1.36			1.43		
		Bottom Face at 0mm	0.711	0.870	0.913	1.070	**1.58**			**1.62**	**0.01**	**#11**	**1.78**	**0.02**	**#22**
		Edge 1 at 0mm	0.232	0.253	0.385	0.270	0.49			0.62			0.50		
		Edge 2 at 0mm	0.102		0.365	0.195	0.10			0.47			0.30		
		Edge 3 at 0mm	0.026				0.03			0.03			0.03		
		Edge 4 at 0mm	0.200				0.20			0.20			0.20		
	Band IV	Bottom Face at 11mm	1.092	0.353	0.216	0.386	1.45			1.31			1.48		
		Edge 1 at 11mm	0.311	0.248	0.210	0.283	0.56			0.52			0.59		
		Bottom Face at 0mm	1.054	0.870	0.913	1.070	**1.92**	**0.02**	**#01**	**1.97**	**0.02**	**#12**	**2.12**	**0.03**	**#23**
		Edge 1 at 0mm	0.724	0.253	0.385	0.270	0.98			1.11			0.99		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		
	Band II	Bottom Face at 11mm	0.848	0.353	0.216	0.386	1.20			1.06			1.23		
		Edge 1 at 11mm	0.236	0.248	0.210	0.283	0.48			0.45			0.52		
		Bottom Face at 0mm	1.122	0.870	0.913	1.070	**1.99**	**0.03**	**#02**	**2.04**	**0.02**	**#13**	**2.19**	**0.03**	**#24**
		Edge 1 at 0mm	0.129	0.253	0.385	0.270	0.38			0.51			0.40		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN Ant.1	2.4GHz WLAN Ant.2	2.4GHz WLAN Ant.1+2	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	Band 12	Bottom Face at 11mm	0.895	0.353	0.216	0.386	1.25			1.11			1.28		
		Edge 1 at 11mm	0.738	0.248	0.210	0.283	0.99			0.95			1.02		
		Bottom Face at 0mm	0.763	0.870	0.913	1.070	**1.63**	**0.02**	**#03**	**1.68**	**0.01**	**#14**	**1.83**	**0.03**	**#25**
		Edge 1 at 0mm	0.309	0.253	0.385	0.270	0.56			0.69			0.58		
		Edge 2 at 0mm	0.092		0.365	0.195	0.09			0.46			0.29		
		Edge 3 at 0mm	0.057				0.06			0.06			0.06		
		Edge 4 at 0mm	0.146				0.15			0.15			0.15		
	Band 13	Bottom Face at 11mm	0.958	0.353	0.216	0.386	1.31			1.17			1.34		
		Edge 1 at 11mm	0.968	0.248	0.210	0.283	1.22			1.18			1.25		
		Bottom Face at 0mm	0.848	0.870	0.913	1.070	**1.72**	**0.02**	**#04**	**1.76**	**0.01**	**#15**	**1.92**	**0.03**	**#26**
		Edge 1 at 0mm	0.391	0.253	0.385	0.270	0.64			0.78			0.66		
		Edge 2 at 0mm	0.075		0.365	0.195	0.08			0.44			0.27		
		Edge 3 at 0mm	0.042				0.04			0.04			0.04		
		Edge 4 at 0mm	0.164				0.16			0.16			0.16		
	Band 5	Bottom Face at 11mm	0.912	0.353	0.216	0.386	1.27			1.13			1.30		
		Edge 1 at 11mm	0.864	0.248	0.210	0.283	1.11			1.07			1.15		
		Bottom Face at 0mm	0.874	0.870	0.913	1.070	**1.74**	**0.02**	**#05**	**1.79**	**0.01**	**#16**	**1.94**	**0.02**	**#27**
		Edge 1 at 0mm	0.323	0.253	0.385	0.270	0.58			0.71			0.59		
		Edge 2 at 0mm	0.101		0.365	0.195	0.10			0.47			0.30		
		Edge 3 at 0mm	0.021				0.02			0.02			0.02		
		Edge 4 at 0mm	0.187				0.19			0.19			0.19		
	Band 26	Bottom Face at 11mm	0.634	0.353	0.216	0.386	0.99			0.85			1.02		
		Edge 1 at 11mm	0.732	0.248	0.210	0.283	0.98			0.94			1.02		
		Bottom Face at 0mm	0.731	0.870	0.913	1.070	**1.60**	**0.02**	**#06**	**1.64**	**0.01**	**#17**	**1.80**	**0.02**	**#28**
		Edge 1 at 0mm	0.298	0.253	0.385	0.270	0.55			0.68			0.57		
		Edge 2 at 0mm	0.063		0.365	0.195	0.06			0.43			0.26		
		Edge 3 at 0mm	0.020				0.02			0.02			0.02		
		Edge 4 at 0mm	0.138				0.14			0.14			0.14		
	Band 66	Bottom Face at 11mm	1.091	0.353	0.216	0.386	1.44			1.31			1.48		
		Edge 1 at 11mm	0.271	0.248	0.210	0.283	0.52			0.48			0.55		
		Bottom Face at 0mm	0.869	0.870	0.913	1.070	**1.74**	**0.02**	**#07**	**1.78**	**0.01**	**#18**	**1.94**	**0.03**	**#29**
		Edge 1 at 0mm	0.756	0.253	0.385	0.270	1.01			1.14			1.03		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		

WWAN Band		Exposure Position	1	2	3	4	1+2			1+3			1+4		
			WWAN	2.4GHz WLAN Ant.1	2.4GHz WLAN Ant.2	2.4GHz WLAN Ant.1+2	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	Band 25	Bottom Face at 11mm	0.915	0.353	0.216	0.386	1.27			1.13			1.30		
		Edge 1 at 11mm	0.244	0.248	0.210	0.283	0.49			0.45			0.53		
		Bottom Face at 0mm	0.992	0.870	0.913	1.070	**1.86**	**0.02**	**#08**	**1.91**	**0.02**	**#19**	**2.06**	**0.03**	**#30**
		Edge 1 at 0mm	0.127	0.253	0.385	0.270	0.38			0.51			0.40		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		
	Band 30	Bottom Face at 11mm	0.698	0.353	0.216	0.386	1.05			0.91			1.08		
		Edge 1 at 11mm	1.192	0.248	0.210	0.283	1.44			1.40			1.48		
		Bottom Face at 0mm	0.440	0.870	0.913	1.070	1.31			1.35			1.51		
		Edge 1 at 0mm	1.100	0.253	0.385	0.270	1.35			1.49			1.37		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		
		Edge 4 at 0mm	0.646				0.65			0.65			0.65		
	Band 7	Bottom Face at 11mm	0.953	0.353	0.216	0.386	1.31			1.17			1.34		
		Edge 1 at 11mm	0.547	0.248	0.210	0.283	0.80			0.76			0.83		
		Bottom Face at 0mm	1.116	0.870	0.913	1.070	**1.99**	**0.02**	**#09**	**2.03**	**0.01**	**#20**	**2.19**	**0.02**	**#31**
		Edge 1 at 0mm	0.544	0.253	0.385	0.270	0.80			0.93			0.81		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		
		Edge 4 at 0mm	0.741				0.74			0.74			0.74		
	Band 41	Bottom Face at 11mm	0.774	0.353	0.216	0.386	1.13			0.99			1.16		
		Edge 1 at 11mm	0.312	0.248	0.210	0.283	0.56			0.52			0.60		
		Bottom Face at 0mm	0.939	0.870	0.913	1.070	**1.81**	**0.02**	**#10**	**1.85**	**0.01**	**#21**	**2.01**	**0.02**	**#32**
		Edge 1 at 0mm	0.308	0.253	0.385	0.270	0.56			0.69			0.58		
		Edge 2 at 0mm			0.365	0.195				0.37			0.20		
		Edge 4 at 0mm	0.495				0.50			0.50			0.50		

WWAN Band		Exposure Position	1	5	6	7	8	1+5			1+6			1+7			1+8		
			WWAN	5GHz WLAN Ant.1	5GHz WLAN Ant.2	5GHz WLAN Ant.1+2	Bluetooth Ant.1	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)												
WCDMA	Band V	Bottom Face at 11mm	0.948	0.705	0.191	0.436	0.324	**1.65**	**0.02**	**#33**	1.14			1.38			1.27		
		Edge 1 at 11mm	1.150	0.606	0.418	0.320	0.089	**1.76**	**0.02**	**#34**	1.57			1.47			1.24		
		Bottom Face at 0mm	0.711	0.925	0.862	1.035	0.324	**1.64**	**0.02**	**#35**	1.57			**1.75**	**0.02**	**#64**	1.04		
		Edge 1 at 0mm	0.232	0.157	0.450	0.199	0.089	0.39			0.68			0.43			0.32		
		Edge 2 at 0mm	0.102		0.035	0.058		0.10			0.14			0.16			0.10		
		Edge 3 at 0mm	0.026					0.03			0.03			0.03			0.03		
		Edge 4 at 0mm	0.200					0.20			0.20			0.20			0.20		
	Band IV	Bottom Face at 11mm	1.092	0.705	0.191	0.436	0.324	**1.80**	**0.02**	**#36**	1.28			1.53			1.42		
		Edge 1 at 11mm	0.311	0.606	0.418	0.320	0.089	0.92			0.73			0.63			0.40		
		Bottom Face at 0mm	1.054	0.925	0.862	1.035	0.324	**1.98**	**0.03**	**#37**	**1.92**	**0.01**	**#54**	**2.09**	**0.03**	**#65**	1.38		
		Edge 1 at 0mm	0.724	0.157	0.450	0.199	0.089	0.88			1.17			0.92			0.81		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					
	Band II	Bottom Face at 11mm	0.848	0.705	0.191	0.436	0.324	1.55			1.04			1.28			1.17		
		Edge 1 at 11mm	0.236	0.606	0.418	0.320	0.089	0.84			0.65			0.56			0.33		
		Bottom Face at 0mm	1.122	0.925	0.862	1.035	0.324	**2.05**	**0.03**	**#38**	**1.98**	**0.02**	**#55**	**2.16**	**0.03**	**#66**	**1.45**		
		Edge 1 at 0mm	0.129	0.157	0.450	0.199	0.089	0.29			0.58			0.33			0.22		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					

WWAN Band		Exposure Position	1	5	6	7	8	1+5			1+6			1+7			1+8		
			WWAN	5GHz WLAN Ant.1	5GHz WLAN Ant.2	5GHz WLAN Ant.1+2	Bluetooth Ant.1	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)												
LTE	Band 12	Bottom Face at 11mm	0.895	0.705	0.191	0.436	0.324	**1.60**	**0.02**	**#39**	1.09			1.33			1.22		
		Edge 1 at 11mm	0.738	0.606	0.418	0.320	0.089	1.34			1.16			1.06			0.83		
		Bottom Face at 0mm	0.763	0.925	0.862	1.035	0.324	**1.69**	**0.02**	**#40**	**1.63**	**0.01**	**#56**	**1.80**	**0.03**	**#67**	1.09		
		Edge 1 at 0mm	0.309	0.157	0.450	0.199	0.089	0.47			0.76			0.51			0.40		
		Edge 2 at 0mm	0.092		0.035	0.058		0.09			0.13			0.15			0.09		
		Edge 3 at 0mm	0.057					0.06			0.06			0.06			0.06		
		Edge 4 at 0mm	0.146					0.15			0.15			0.15			0.15		
	Band 13	Bottom Face at 11mm	0.958	0.705	0.191	0.436	0.324	**1.66**	**0.03**	**#41**	1.15			1.39			1.28		
		Edge 1 at 11mm	0.968	0.606	0.418	0.320	0.089	1.57			1.39			1.29			1.06		
		Bottom Face at 0mm	0.848	0.925	0.862	1.035	0.324	**1.77**	**0.03**	**#42**	**1.71**	**0.01**	**#57**	**1.88**	**0.03**	**#68**	1.17		
		Edge 1 at 0mm	0.391	0.157	0.450	0.199	0.089	0.55			0.84			0.59			0.48		
		Edge 2 at 0mm	0.075		0.035	0.058		0.08			0.11			0.13			0.08		
		Edge 3 at 0mm	0.042					0.04			0.04			0.04			0.04		
		Edge 4 at 0mm	0.164					0.16			0.16			0.16			0.16		
	Band 5	Bottom Face at 11mm	0.912	0.705	0.191	0.436	0.324	**1.62**	**0.02**	**#43**	1.10			1.35			1.24		
		Edge 1 at 11mm	0.864	0.606	0.418	0.320	0.089	1.47			1.28			1.18			0.95		
		Bottom Face at 0mm	0.874	0.925	0.862	1.035	0.324	**1.80**	**0.02**	**#44**	**1.74**	**0.01**	**#58**	**1.91**	**0.02**	**#69**	1.20		
		Edge 1 at 0mm	0.323	0.157	0.450	0.199	0.089	0.48			0.77			0.52			0.41		
		Edge 2 at 0mm	0.101		0.035	0.058		0.10			0.14			0.16			0.10		
		Edge 3 at 0mm	0.021					0.02			0.02			0.02			0.02		
		Edge 4 at 0mm	0.187					0.19			0.19			0.19			0.19		
	Band 26	Bottom Face at 11mm	0.634	0.705	0.191	0.436	0.324	1.34			0.83			1.07			0.96		
		Edge 1 at 11mm	0.732	0.606	0.418	0.320	0.089	1.34			1.15			1.05			0.82		
		Bottom Face at 0mm	0.731	0.925	0.862	1.035	0.324	**1.66**	**0.02**	**#45**	**1.59**			**1.77**	**0.02**	**#70**	1.06		
		Edge 1 at 0mm	0.298	0.157	0.450	0.199	0.089	0.46			0.75			0.50			0.39		
		Edge 2 at 0mm	0.063		0.035	0.058		0.06			0.10			0.12			0.06		
		Edge 3 at 0mm	0.020					0.02			0.02			0.02			0.02		
		Edge 4 at 0mm	0.138					0.14			0.14			0.14			0.14		
	Band 66	Bottom Face at 11mm	1.091	0.705	0.191	0.436	0.324	**1.80**	**0.02**	**#46**	1.28			1.53			1.42		
		Edge 1 at 11mm	0.271	0.606	0.418	0.320	0.089	0.88			0.69			0.59			0.36		
		Bottom Face at 0mm	0.869	0.925	0.862	1.035	0.324	**1.79**	**0.02**	**#47**	**1.73**	**0.01**	**#59**	**1.90**	**0.02**	**#71**	1.19		
		Edge 1 at 0mm	0.756	0.157	0.450	0.199	0.089	0.91			1.21			0.96			0.85		
		Edge 2 at 0mm			0.035	0.058		0.00			0.04			0.06					

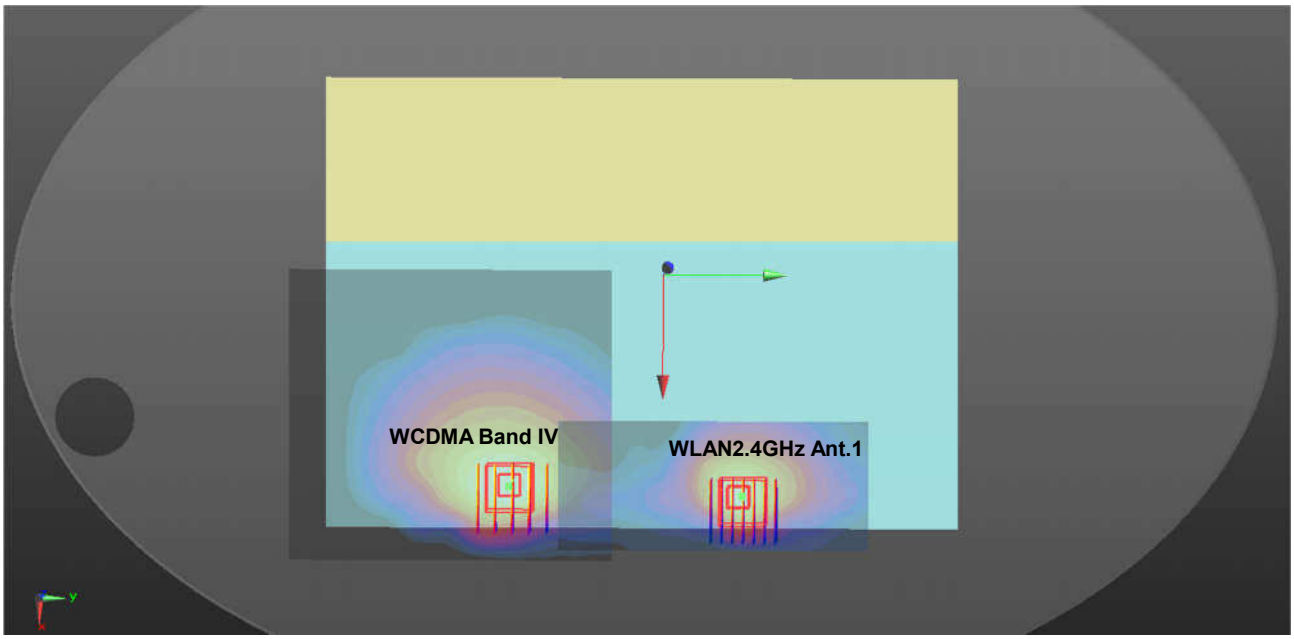
WWAN Band		Exposure Position	1	5	6	7	8	1+5			1+6			1+7			1+8		
			WWAN	5GHz WLAN Ant.1	5GHz WLAN Ant.2	5GHz WLAN Ant.1+2	Bluetooth Ant.1	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)												
LTE	Band 25	Bottom Face at 11mm	0.915	0.705	0.191	0.436	0.324	**1.62**	**0.02**	**#48**	1.11			1.35			1.24		
		Edge 1 at 11mm	0.244	0.606	0.418	0.320	0.089	0.85			0.66			0.56			0.33		
		Bottom Face at 0mm	0.992	0.925	0.862	1.035	0.324	**1.92**	**0.03**	**#49**	**1.85**	**0.01**	**#60**	**2.03**	**0.03**	**#72**	1.32		
		Edge 1 at 0mm	0.127	0.157	0.450	0.199	0.089	0.28			0.58			0.33			0.22		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					
	Band 30	Bottom Face at 11mm	0.698	0.705	0.191	0.436	0.324	1.40			0.89			1.13			1.02		
		Edge 1 at 11mm	1.192	0.606	0.418	0.320	0.089	**1.80**	**0.02**	**#50**	**1.61**	**0.01**	**#61**	1.51			1.28		
		Bottom Face at 0mm	0.440	0.925	0.862	1.035	0.324	1.37			1.30			1.48			0.76		
		Edge 1 at 0mm	1.100	0.157	0.450	0.199	0.089	1.26			1.55			1.30			1.19		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					
		Edge 4 at 0mm	0.646					0.65			0.65			0.65			0.65		
	Band 7	Bottom Face at 11mm	0.953	0.705	0.191	0.436	0.324	**1.66**	**0.01**	**#51**	1.14			1.39			1.28		
		Edge 1 at 11mm	0.547	0.606	0.418	0.320	0.089	1.15			0.97			0.87			0.64		
		Bottom Face at 0mm	1.116	0.925	0.862	1.035	0.324	**2.04**	**0.02**	**#52**	**1.98**	**0.01**	**#62**	**2.15**	**0.02**	**#73**	1.44		
		Edge 1 at 0mm	0.544	0.157	0.450	0.199	0.089	0.70			0.99			0.74			0.63		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					
		Edge 4 at 0mm	0.741					0.74			0.74			0.74			0.74		
	Band 41	Bottom Face at 11mm	0.774	0.705	0.191	0.436	0.324	1.48			0.97			1.21			1.10		
		Edge 1 at 11mm	0.312	0.606	0.418	0.320	0.089	0.92			0.73			0.63			0.40		
		Bottom Face at 0mm	0.939	0.925	0.862	1.035	0.324	**1.86**	**0.02**	**#53**	**1.80**	**0.01**	**#63**	**1.97**	**0.02**	**#74**	1.26		
		Edge 1 at 0mm	0.308	0.157	0.450	0.199	0.089	0.47			0.76			0.51			0.40		
		Edge 2 at 0mm			0.035	0.058					0.04			0.06					
		Edge 4 at 0mm	0.495					0.50			0.50			0.50			0.50		

16.2 SPLSR Evaluation and Analysis

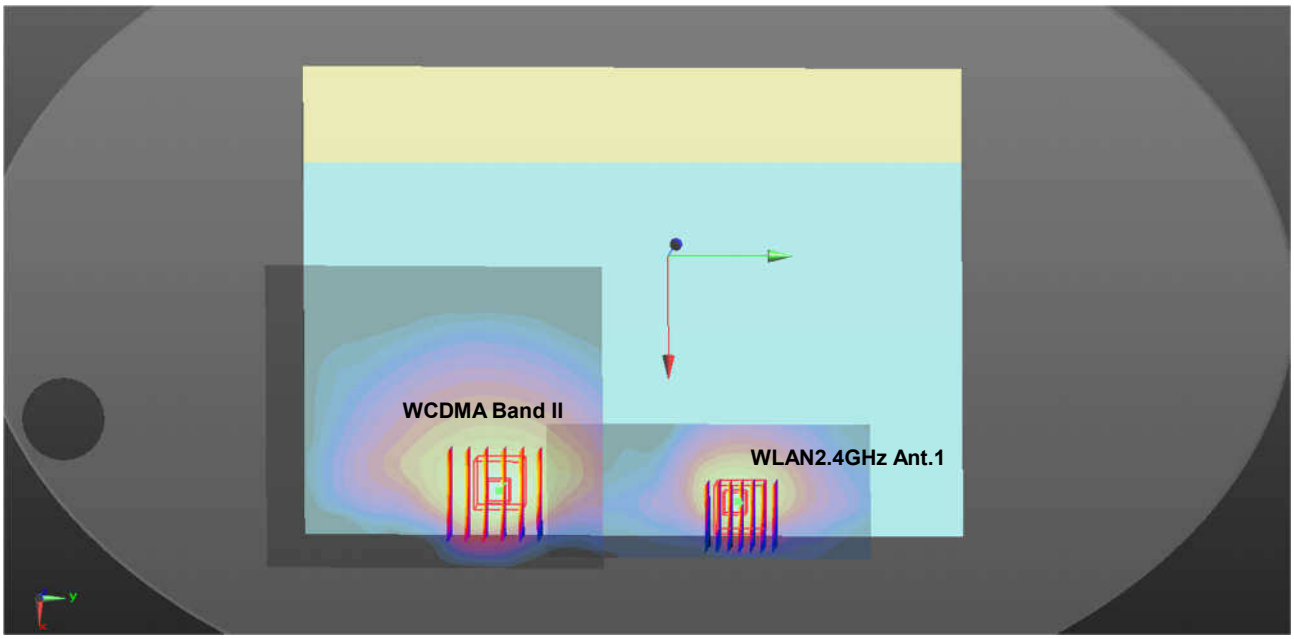
General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

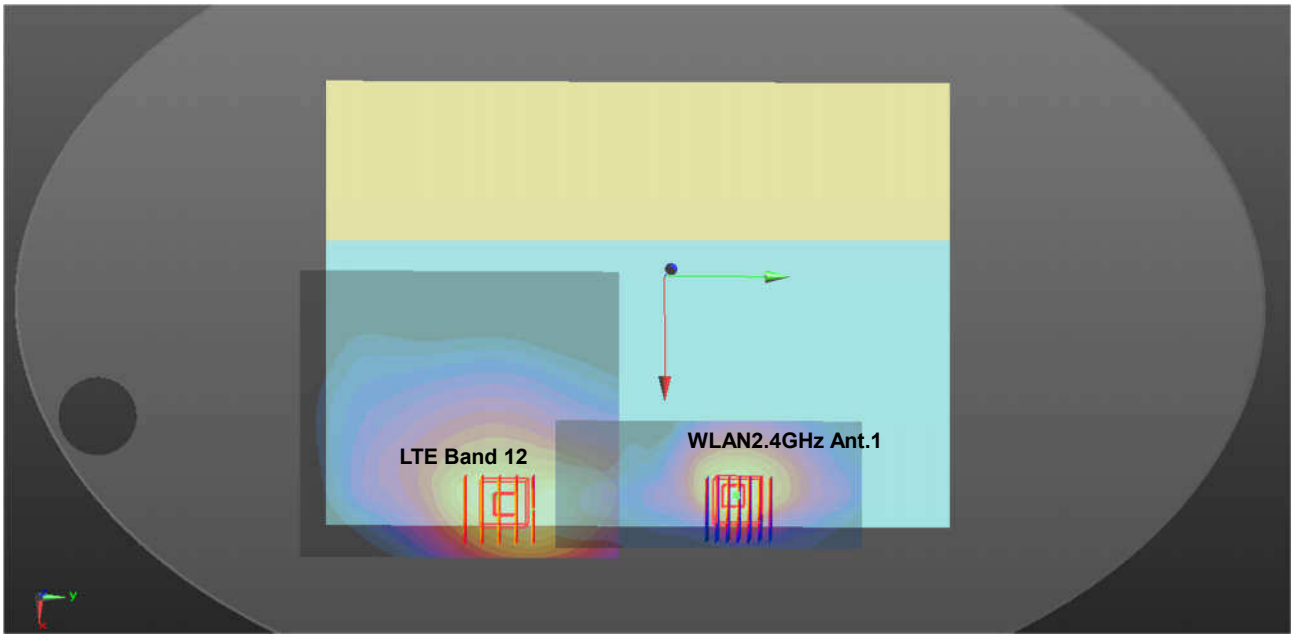
Case #01	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band IV	Bottom Face	1.054	0	8.77	-6.52	-0.38	108.5	1.92	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



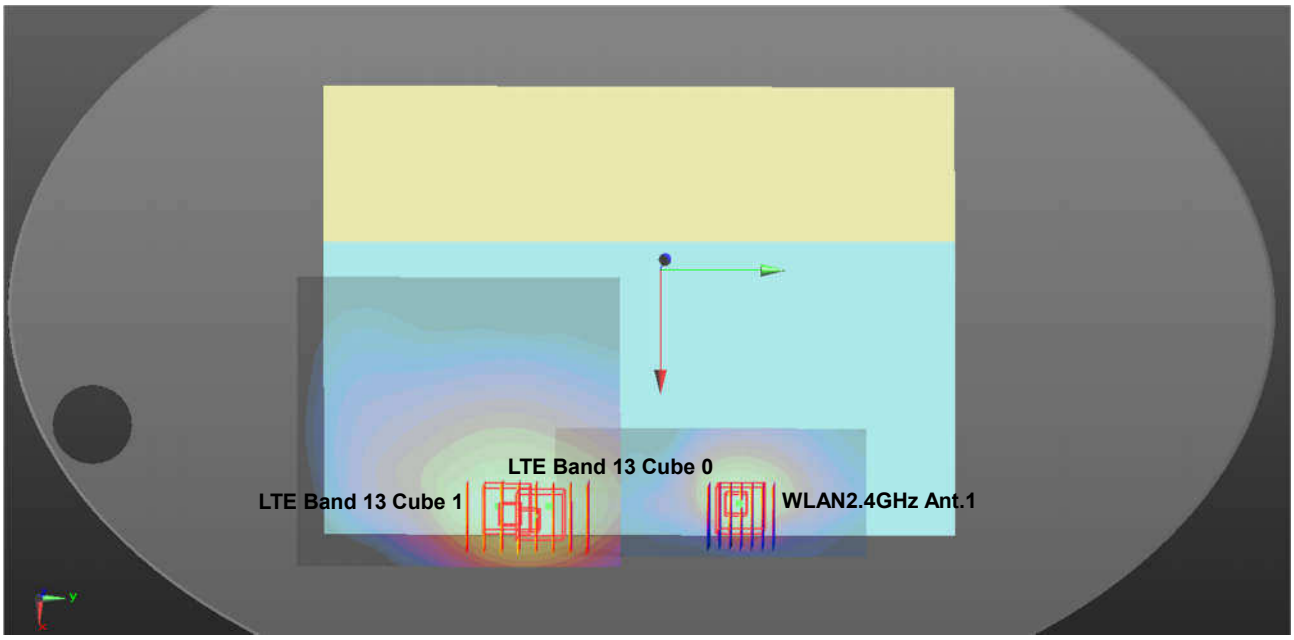
Case #02	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Bottom Face	1.122	0	8.77	-6.21	-0.4	105.4	1.99	0.03	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



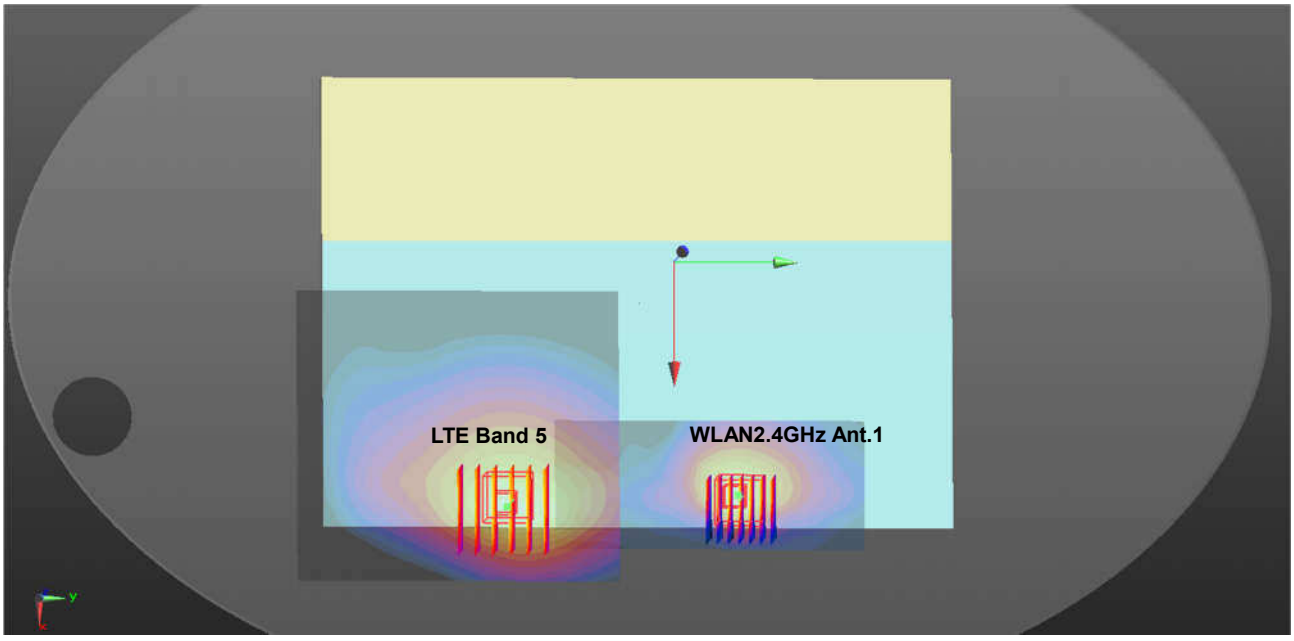
Case #03	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 12	Bottom Face	0.763	0	9.85	-5.15	-0.4	95.0	1.63	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



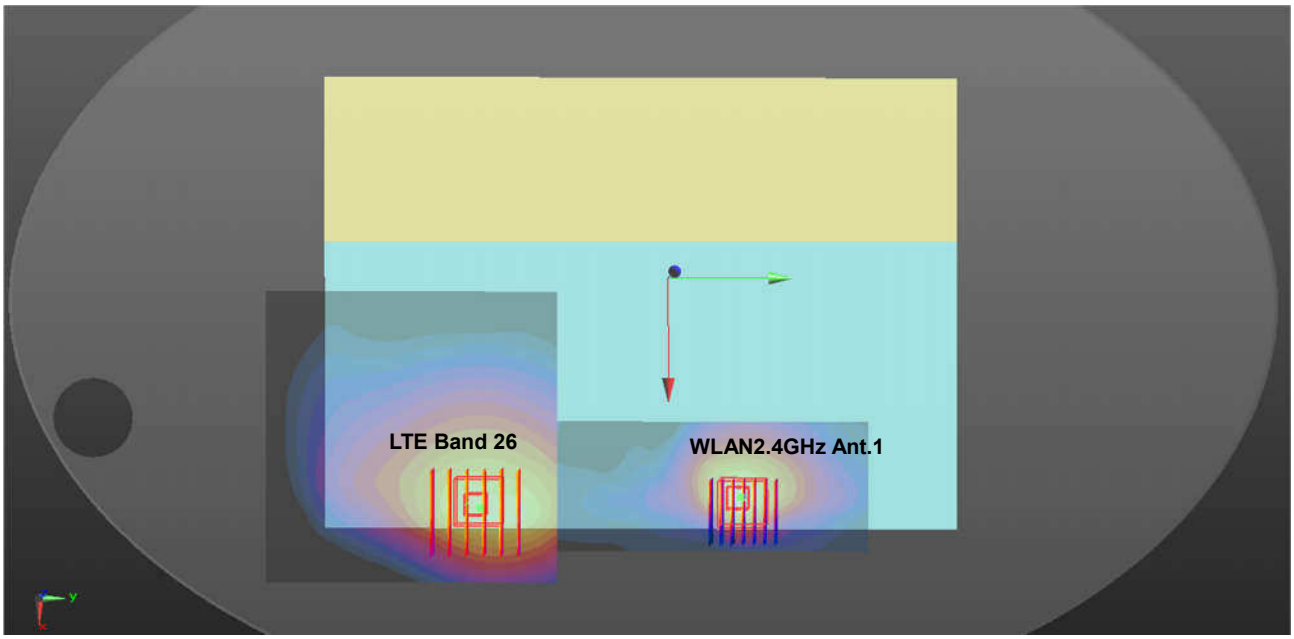
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case #04	LTE Band 13 Cube 0	Bottom Face	0.848	0	9.85	-5	-0.34	93.5	1.72	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				
	LTE Band 13 Cube 1		0.802	0	9.16	-5.15	-0.31	94.7	1.67	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



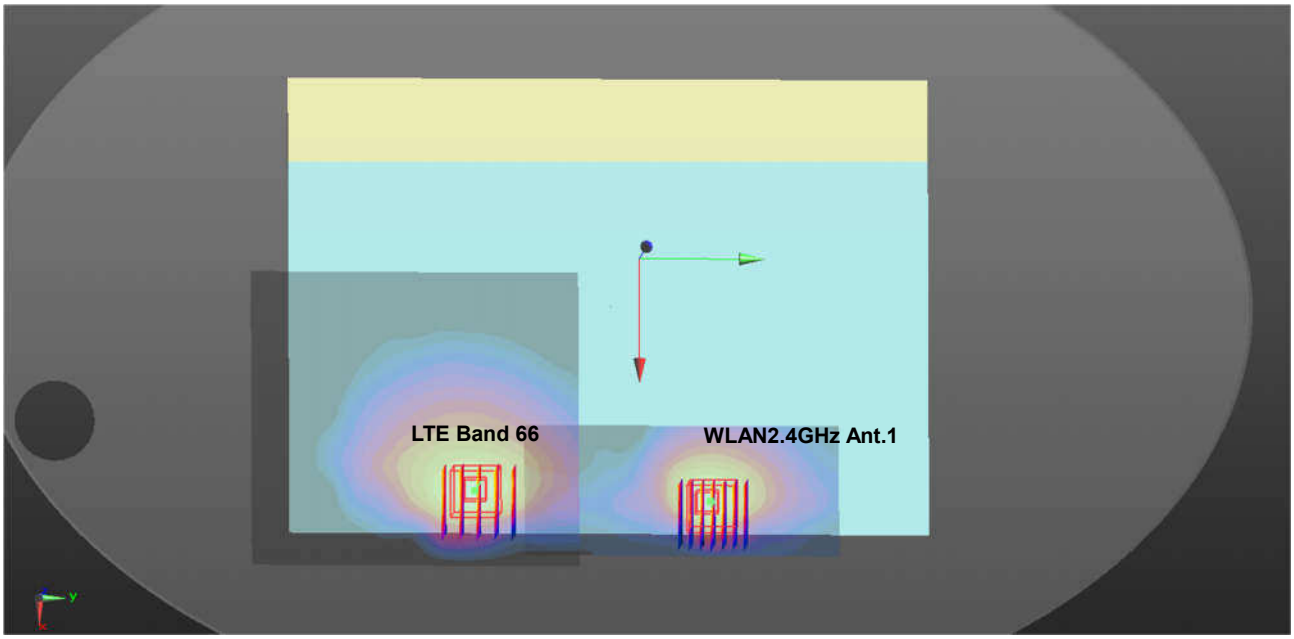
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case #05	LTE Band 5	Bottom Face	0.874	0	9.45	-6.63	-0.3	109.6	1.74	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



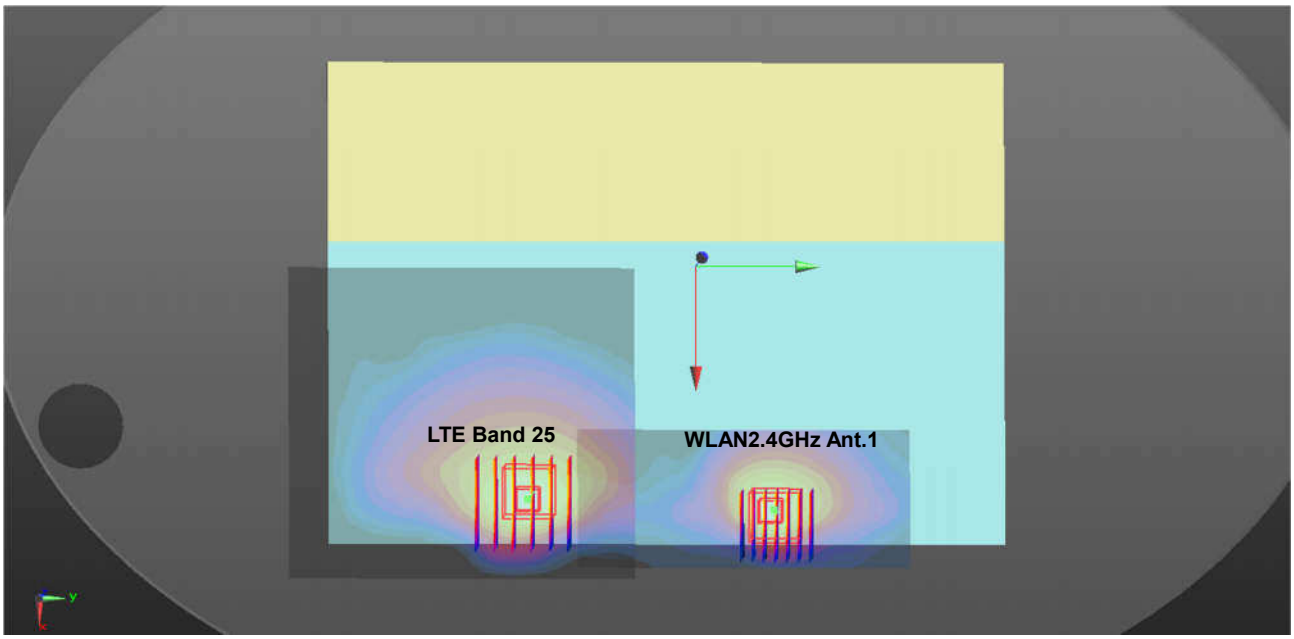
Case #06	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Bottom Face	0.731	0	9.45	-8.14	-0.4	124.7	1.60	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



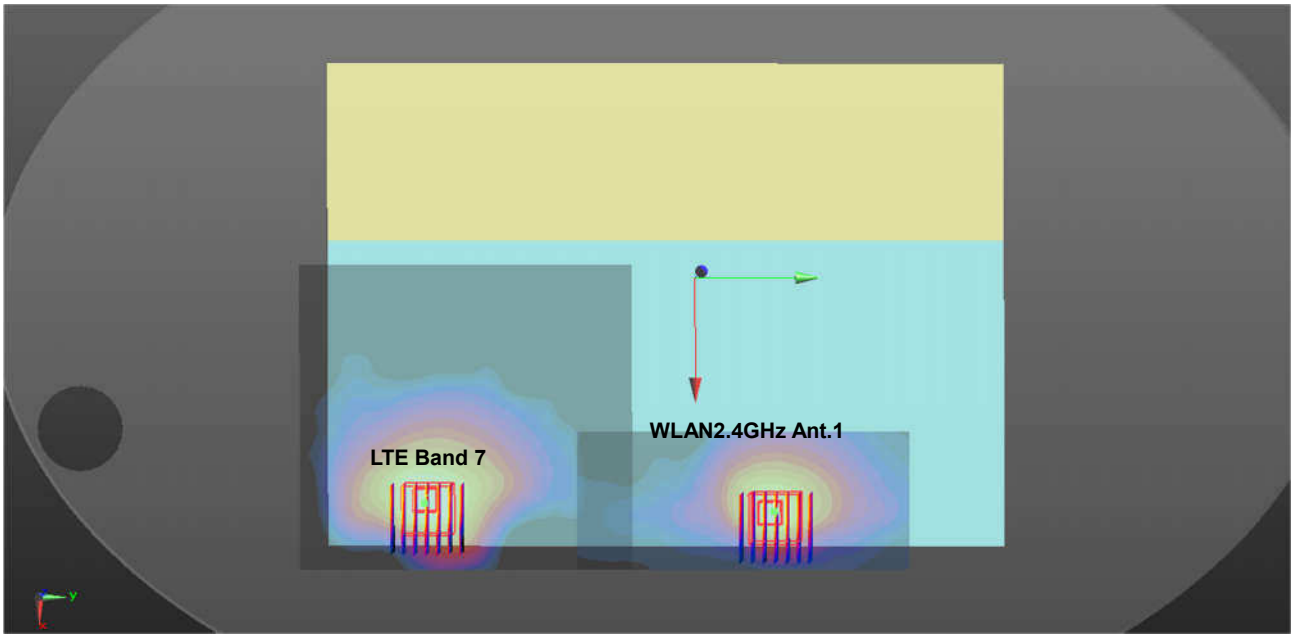
Case #07	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 66	Bottom Face	0.869	0	8.77	-6.52	-0.39	108.5	1.74	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



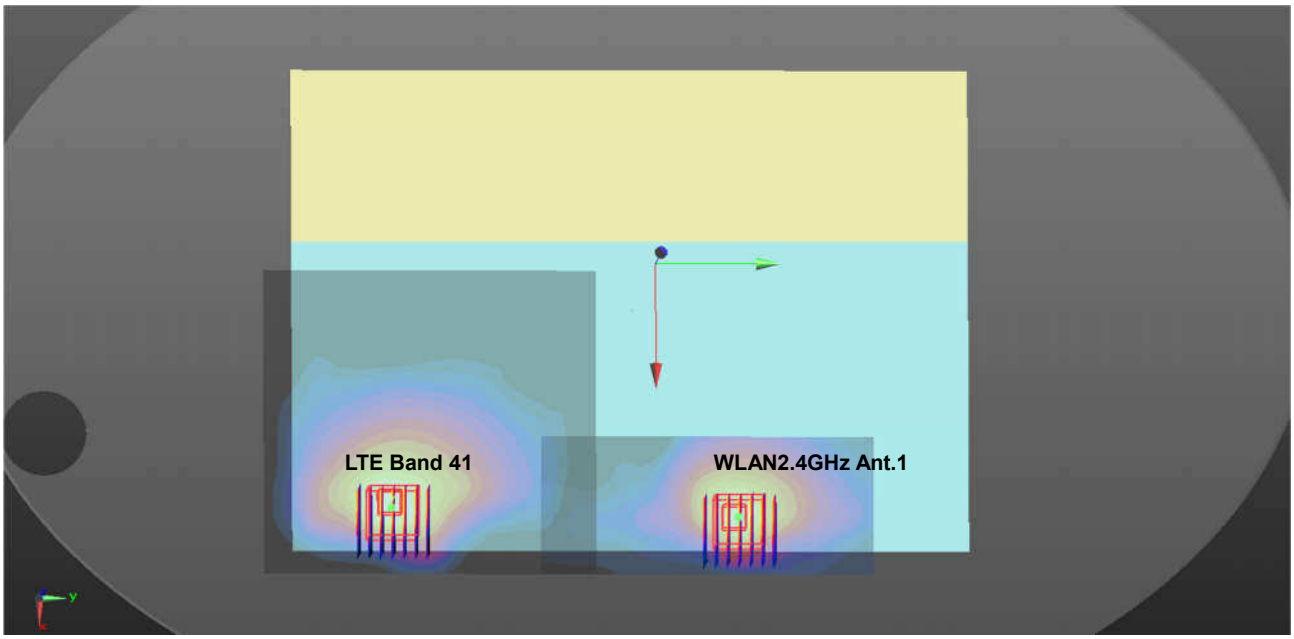
Case #08	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Bottom Face	0.992	0	8.77	-6.21	-0.4	105.4	1.86	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



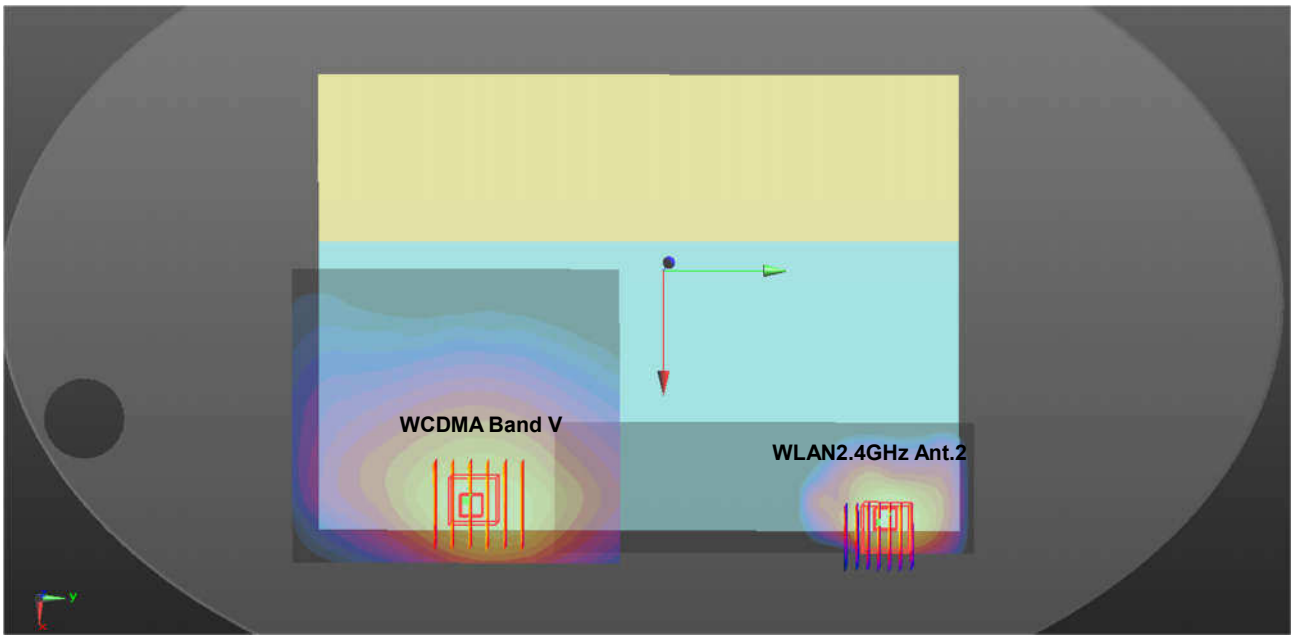
Case #09	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Bottom Face	1.116	0	8.72	-10.9	-0.27	152.2	1.99	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



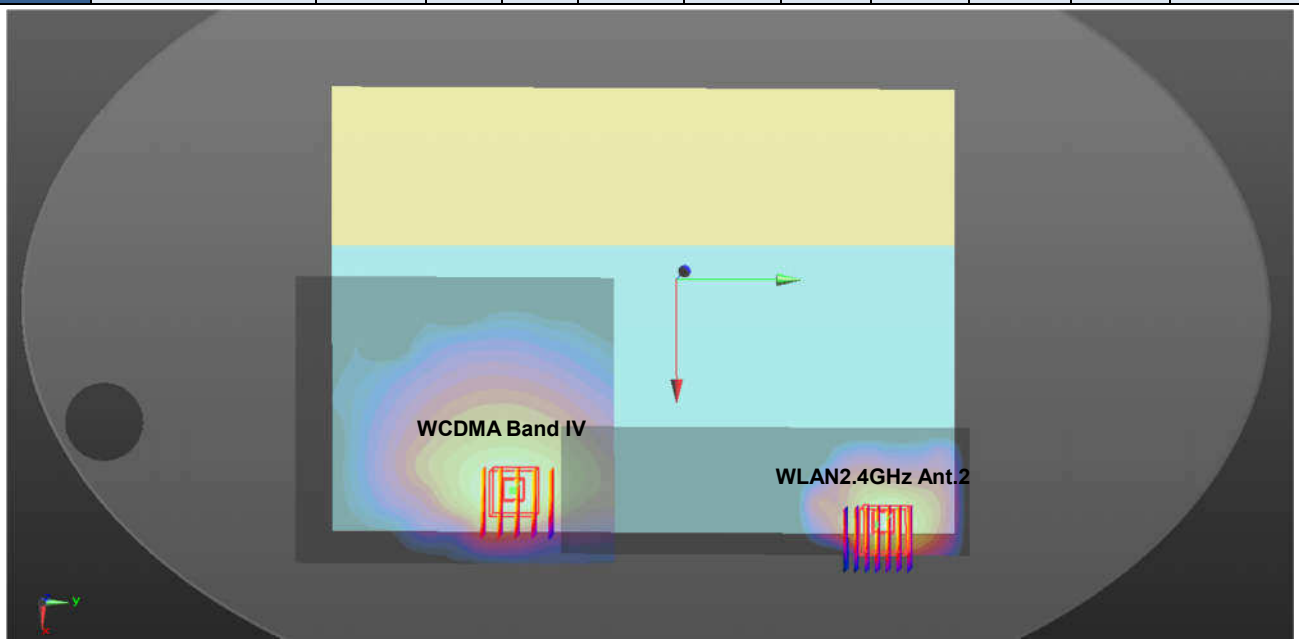
Case #10	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Bottom Face	0.939	0	8.52	-10.78	-0.36	151.1	1.81	0.02	Not required
	WLAN2.4GHz Ant 1		0.870	0	9.08	4.32	-0.26				



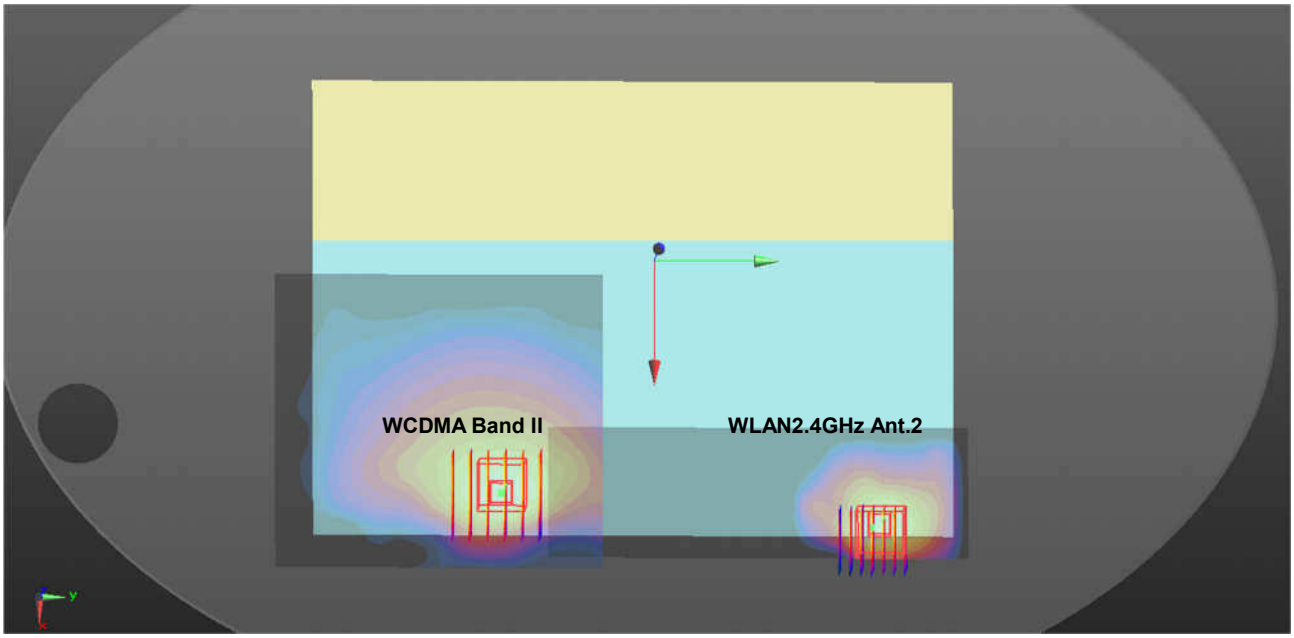
Case #11	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band V	Bottom Face	0.711	0	9.53	-7.95	-0.4	190.2	1.62	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



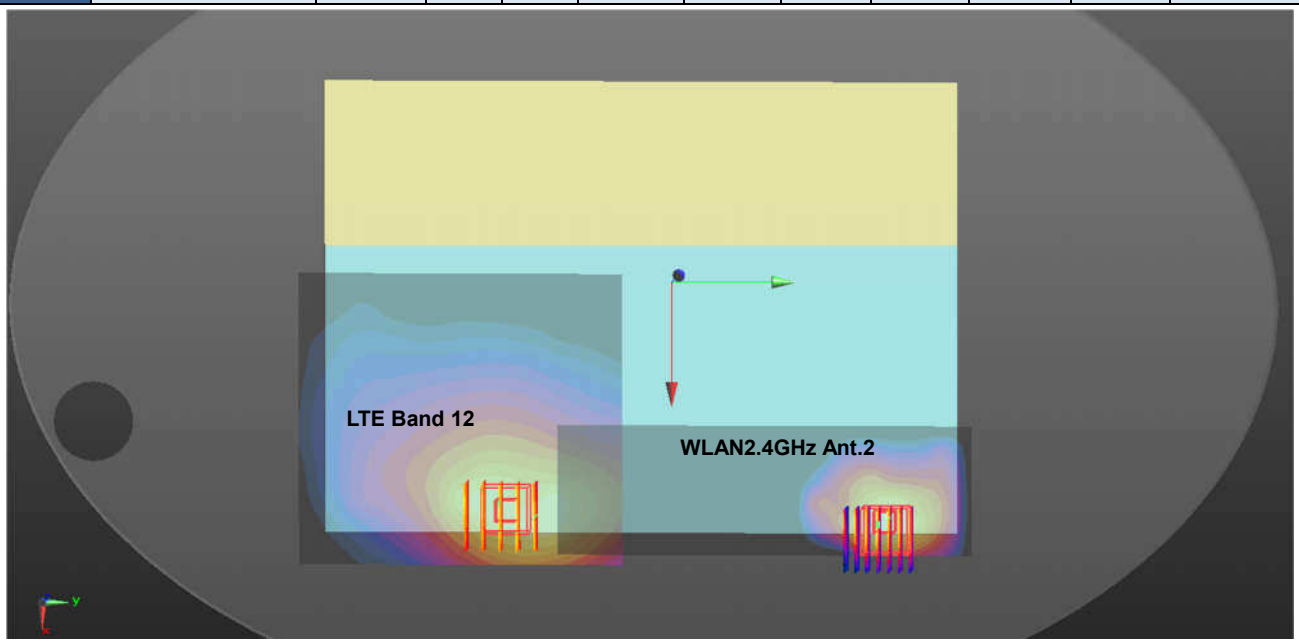
Case #12	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band IV	Bottom Face	1.054	0	8.77	-6.52	-0.38	176.2	1.97	0.02	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



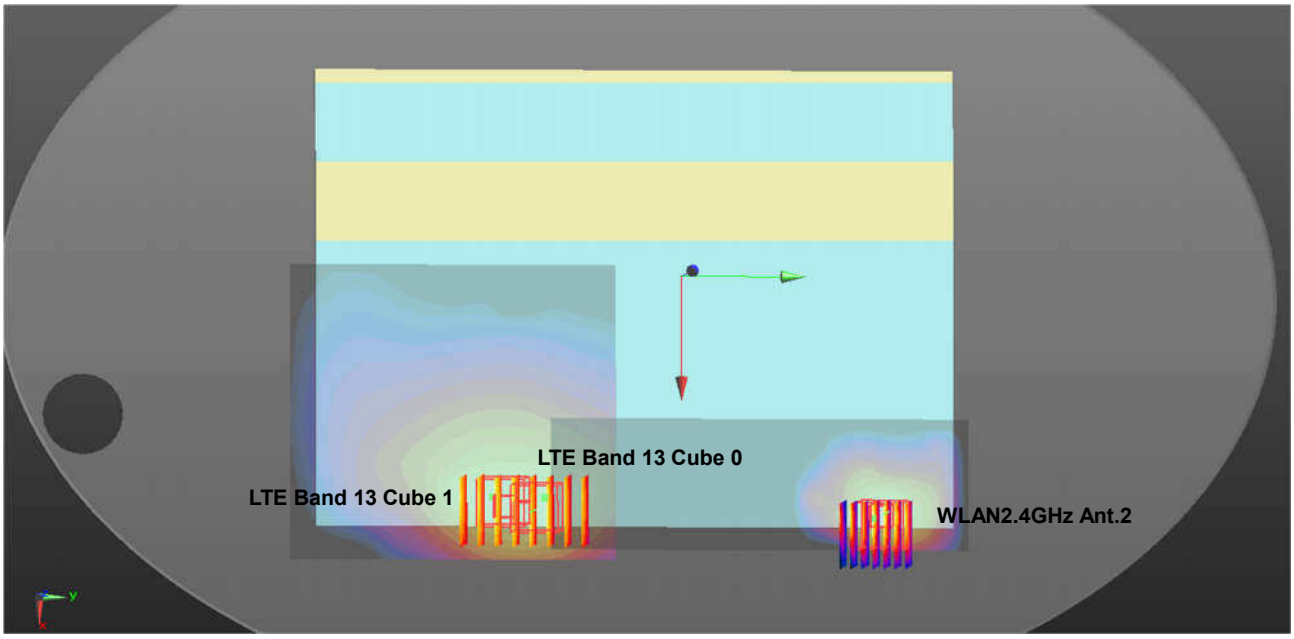
Case #13	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band II	Bottom Face	1.122	0	8.77	-6.21	-0.4	173.1	2.04	0.02	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



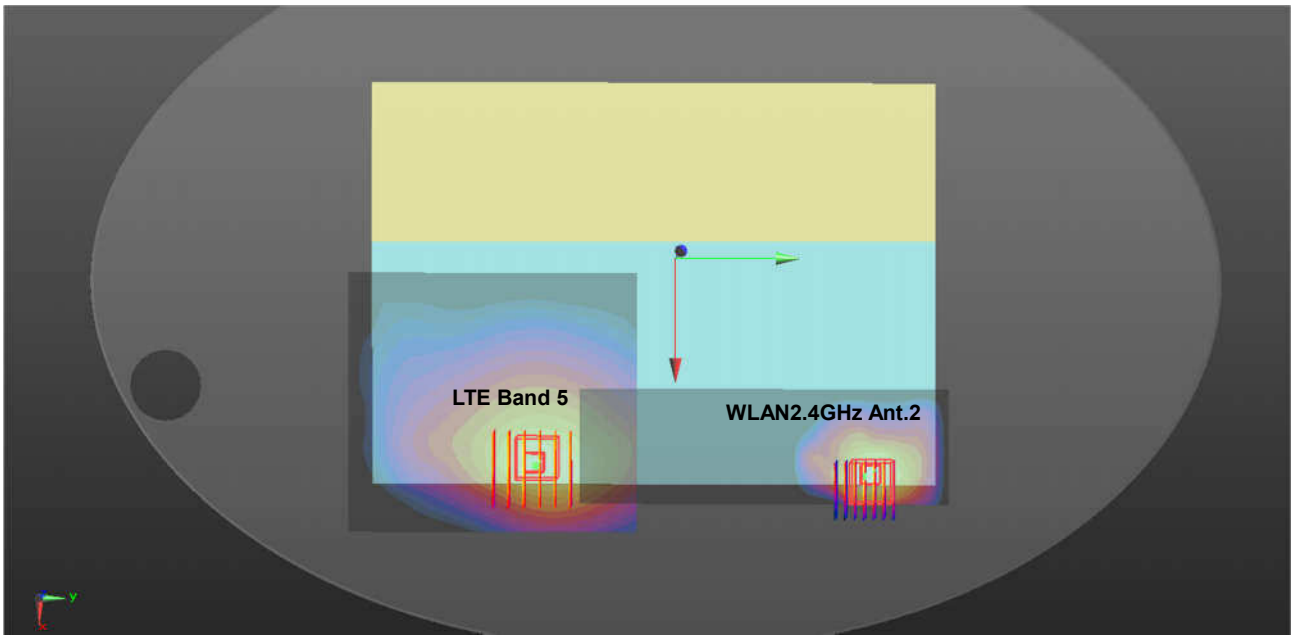
Case #14	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 12	Bottom Face	0.763	0	9.85	-5.15	-0.4	162.1	1.68	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



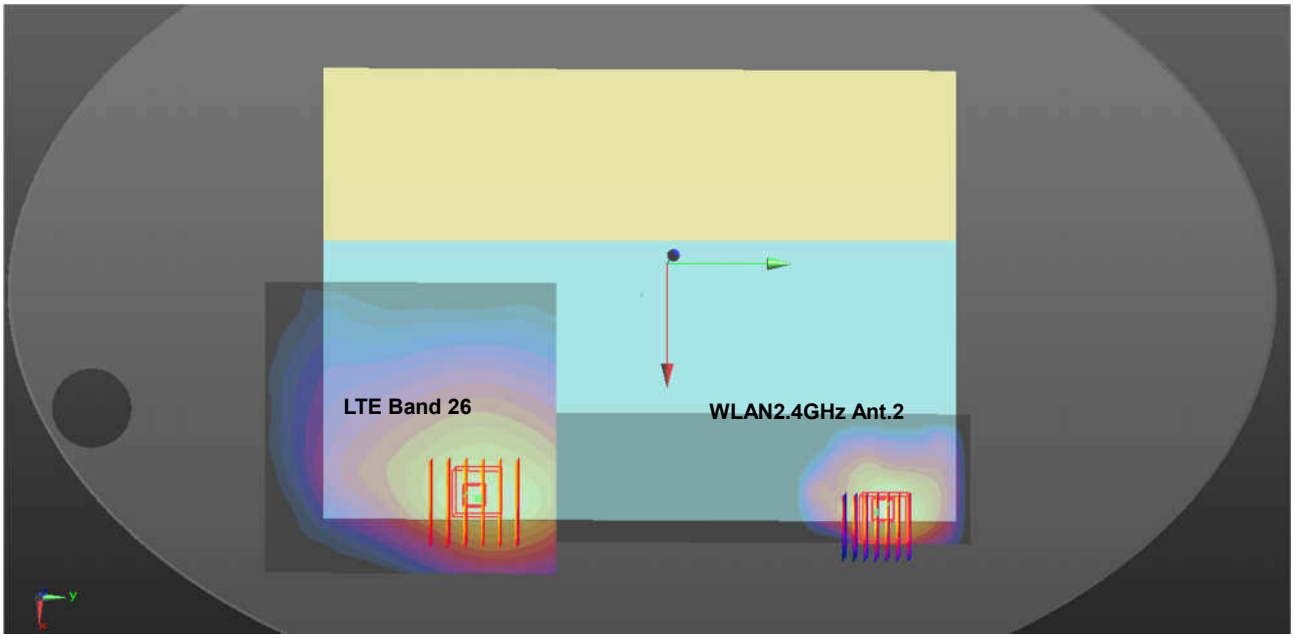
Case #15	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13 Cube 0	Bottom Face	0.848	0	9.85	-5	-0.34	160.6	1.76	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				
	LTE Band 13 Cube 1		0.802	0	9.16	-5.15	-0.31	162.30	1.72	0.01	162.30
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



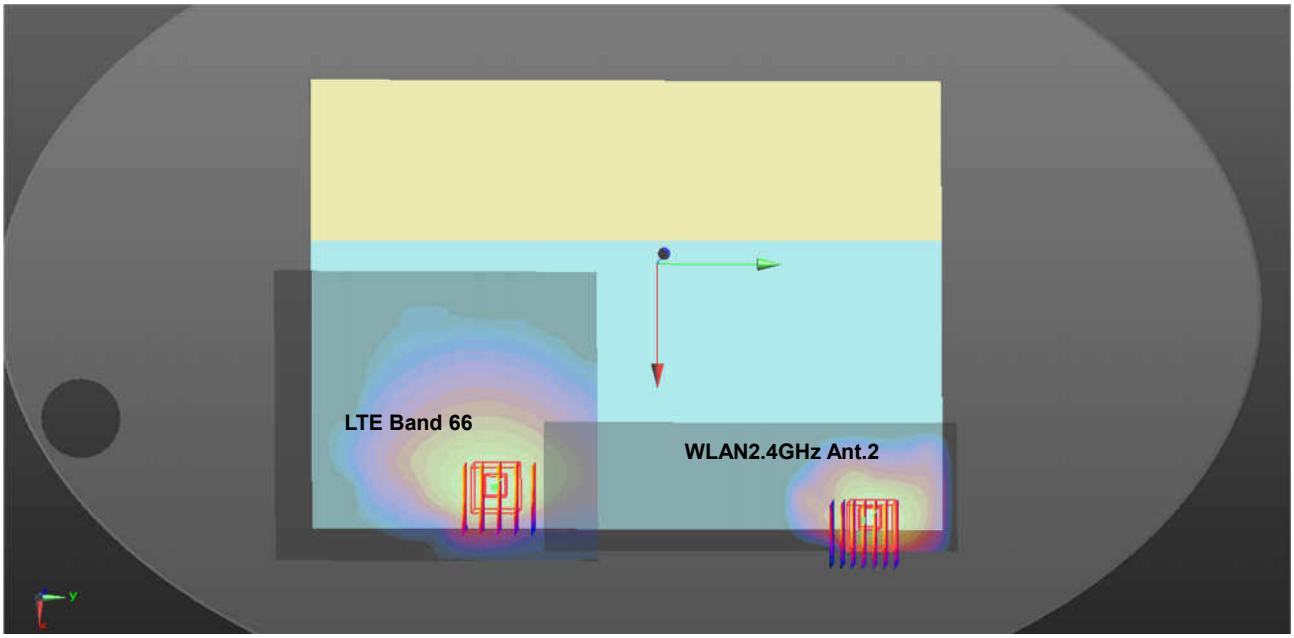
Case #16	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 5	Bottom Face	0.874	0	9.45	-6.63	-0.3	177.0	1.79	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



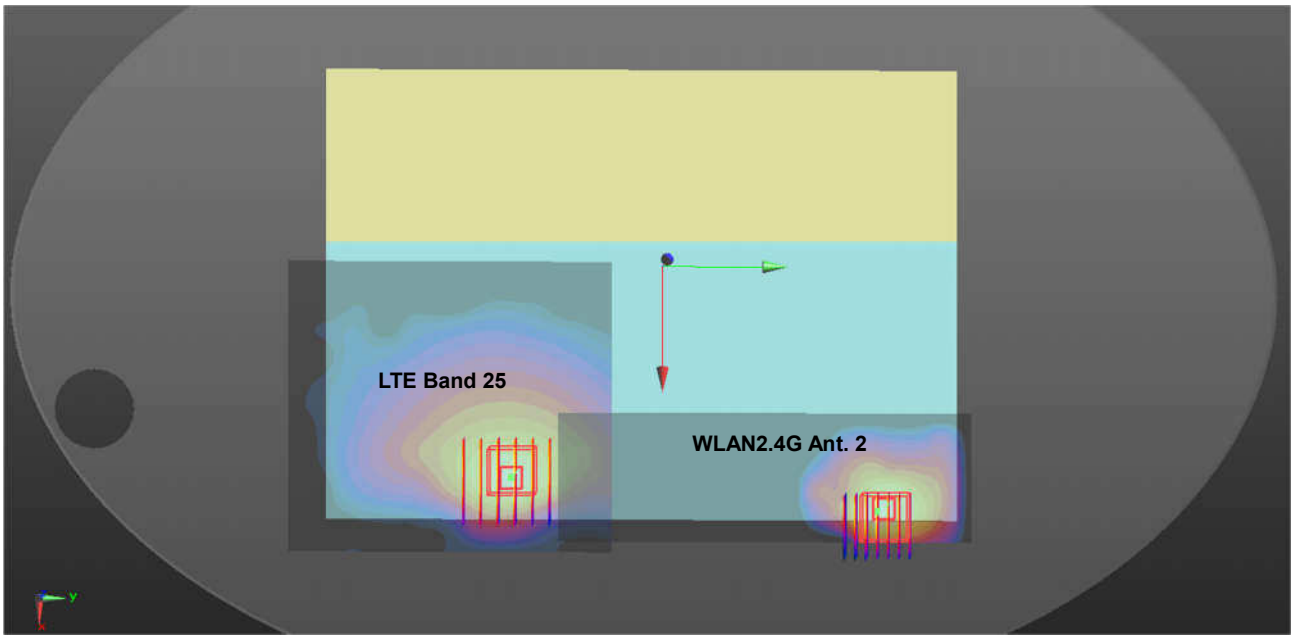
Case #17	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Bottom Face	0.731	0	9.45	-8.14	-0.4	192.1	1.64	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



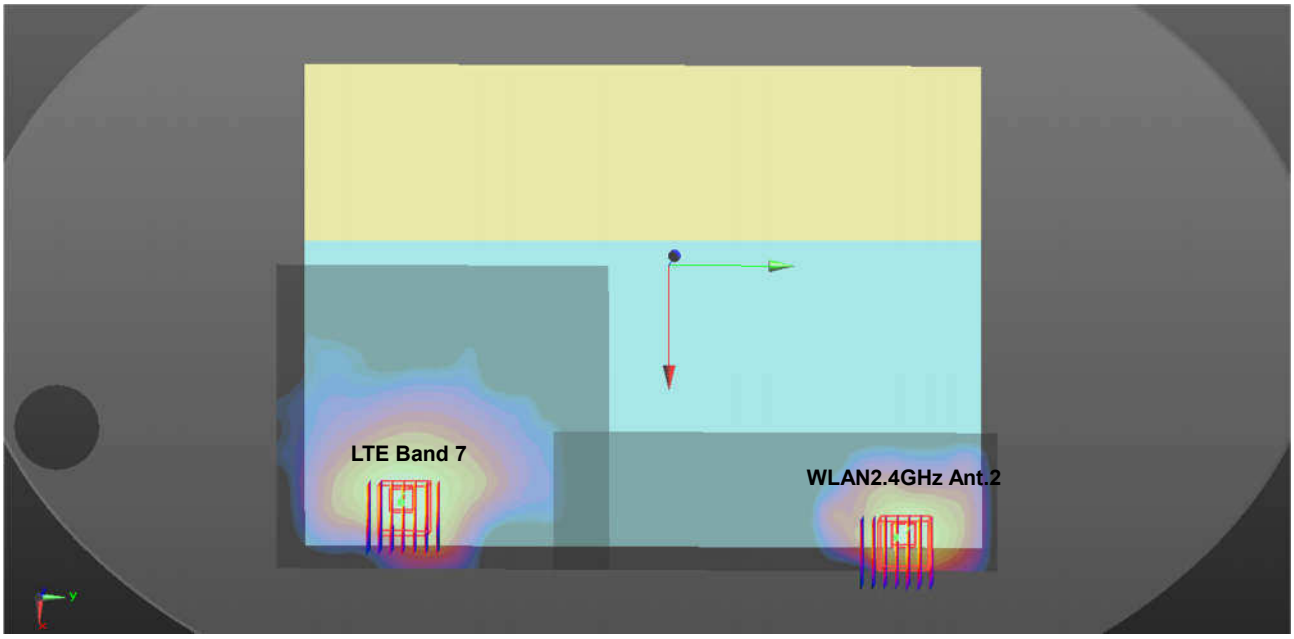
Case #18	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 66	Bottom Face	0.869	0	8.77	-6.52	-0.39	176.2	1.78	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



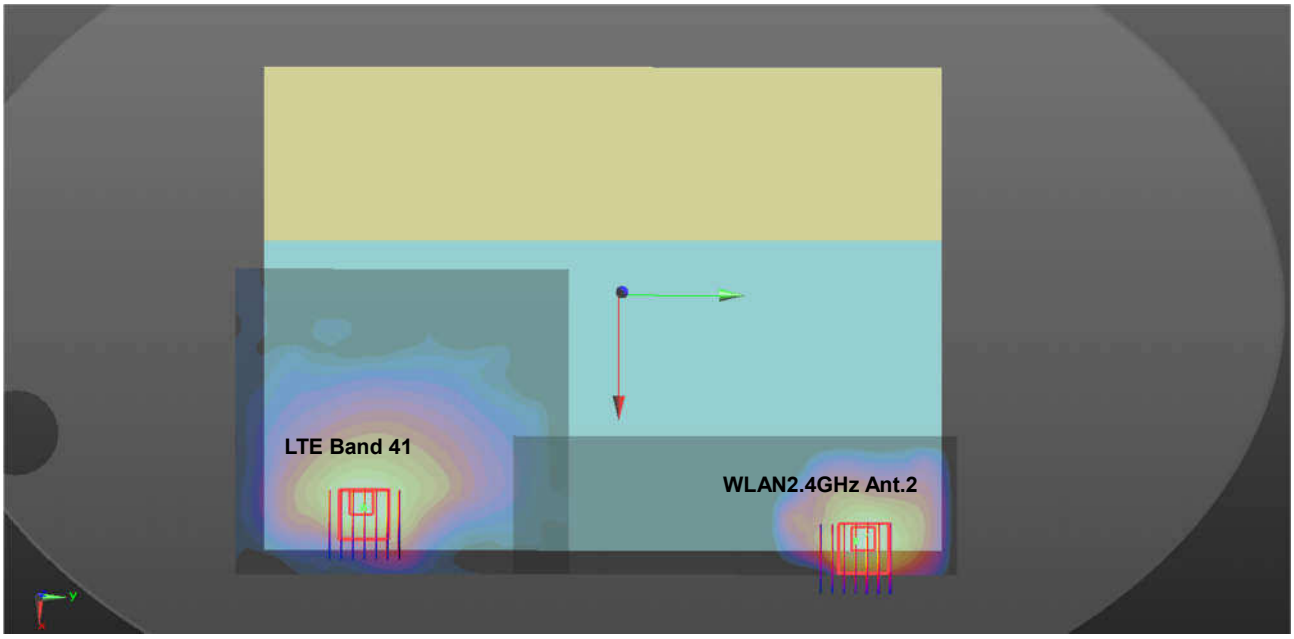
Case #19	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Bottom Face	0.992	0	8.77	-6.21	-0.4	173.1	1.91	0.02	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



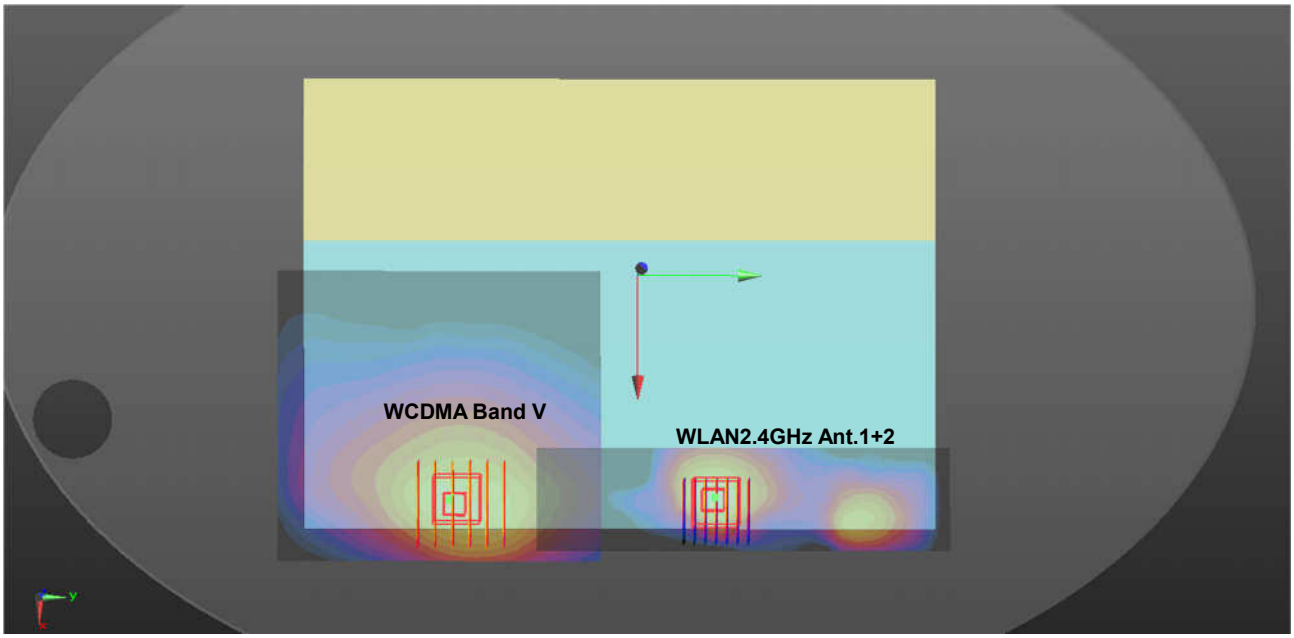
Case #20	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Bottom Face	1.116	0	8.72	-10.9	-0.27	220.0	2.03	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



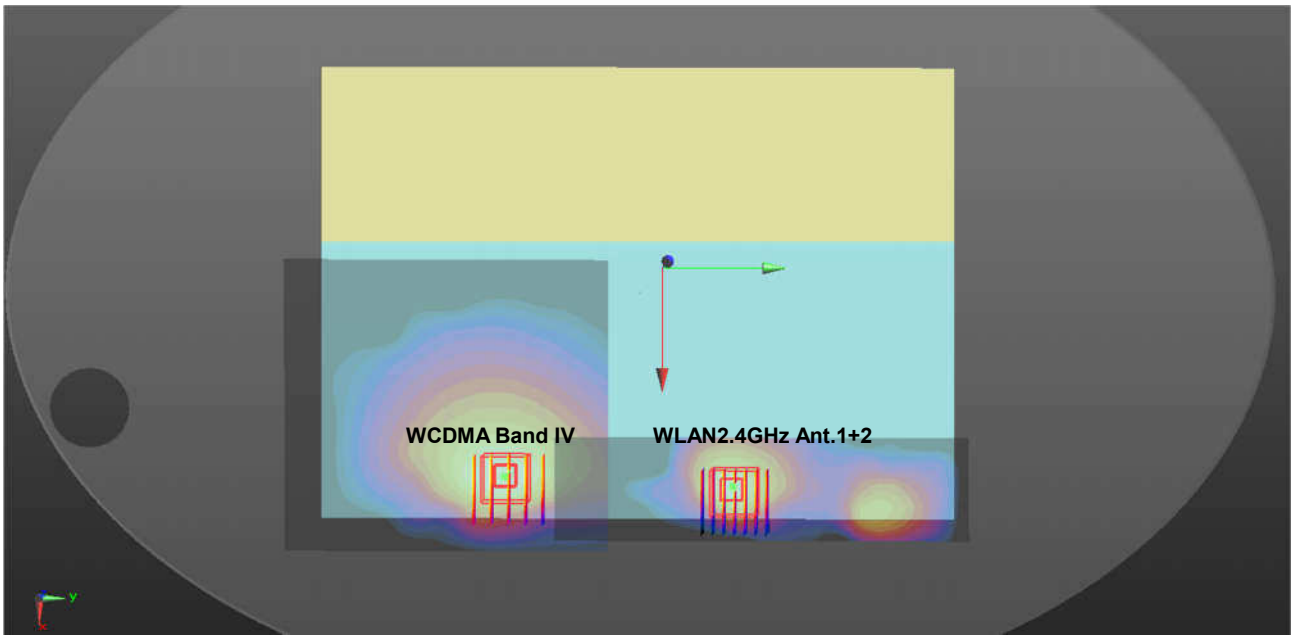
Case #21	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Bottom Face	0.939	0	8.52	-10.78	-0.36	218.9	1.85	0.01	Not required
	WLAN2.4GHz Ant 2		0.913	0	9.96	11.06	-0.19				



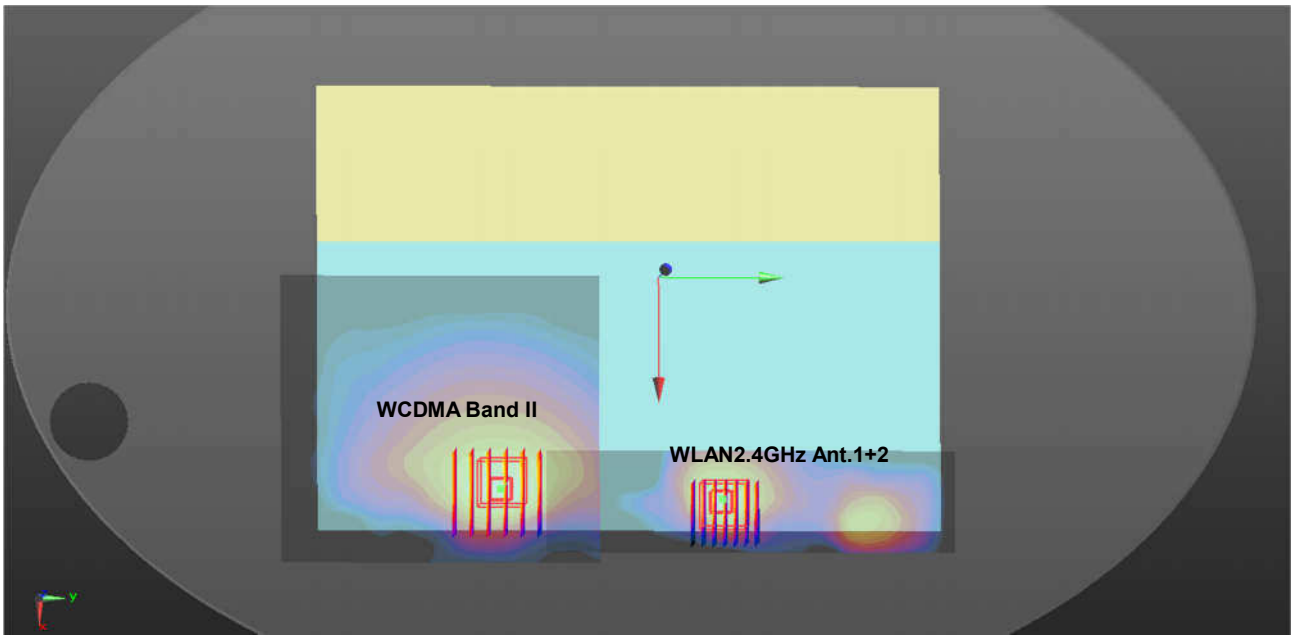
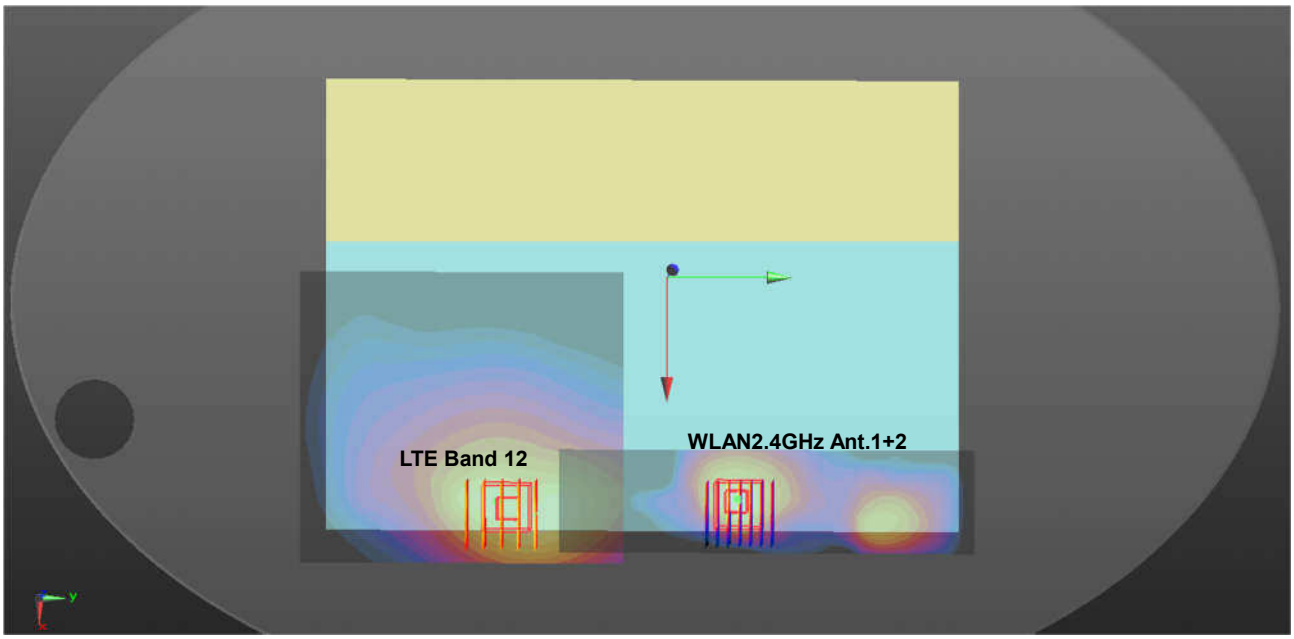
Case #22	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA Band V	Bottom Face	0.711	0	9.53	-7.95	-0.4	120.4	1.78	0.02	Not required
	WLAN2.4GHz Ant 1+2		1.070	0	9.18	4.08	-0.22				



Case #23	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
	WCDMA Band IV	Bottom Face	1.054	0	8.77	-6.52	-0.38	106.1	2.12	0.03	Not required
	WLAN2.4GHz Ant 1+2		1.070	0	9.18	4.08	-0.22				



Case #24	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
	WCDMA Band II	Bottom Face	1.122	0	8.77	-6.21	-0.4	103.0	2.19	0.03	Not required
	WLAN2.4GHz Ant 1+2		1.070	0	9.18	4.08	-0.22				



Case #25	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
	LTE Band 12	Bottom Face	0.763	0	9.85	-5.15	-0.4	92.6	1.83	0.03	Not required
	WLAN2.4GHz Ant 1+2		1.070	0	9.18	4.08	-0.22