

FCC SAR TEST REPORT

FCC ID : E2KEXMG1A
Equipment : LTE Module
Brand Name : COMPAL
Model Name : EXM-G1A
Marketing Name : LTE Module
Applicant : Dell Inc.
One Dell Way Round Rock, TX 78682, USA
Manufacturer : Dell Inc.
One Dell Way Round Rock, TX 78682, USA
Standard : FCC 47 CFR Part 2 (2.1093)

The product was installed into Portable Computer (Brand Name DELL, Model Name: P182G) during test.

The product was received on Apr. 01, 2024 and testing was started from Apr. 03, 2024 and completed on Apr. 07, 2024. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

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



Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA432922	01	Initial issue of report	May 22, 2024

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for **Dell Inc., LTE Module, EXM-G1A**, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary	Highest Simultaneous Transmission 1g SAR (W/kg)
			Body	
			1g SAR (W/kg)	
Licensed	WCDMA	WCDMA II	0.73	1.59
		WCDMA IV	0.81	
		WCDMA V	0.93	
	LTE	LTE Band 7	1.18	
		LTE Band 12	0.80	
		LTE Band 13	0.80	
		LTE Band 14	0.80	
		LTE Band 2 / 25	0.91	
		LTE Band 5 / 26	0.86	
		LTE Band 4 / 66	1.06	
		LTE Band 71	0.80	
		LTE Band 38 / 41	0.82	
		LTE Band 48	0.53	
Date of Testing:			2024/04/03 ~ 2024/04/07	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

Reviewed by: Jason Wang
Report Producer: Daisy Peng

2. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 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

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	LTE Module
Brand Name	COMPAL
Model Name	EXM-G1A
Marketing Name	LTE Module
FCC ID	E2KEXMG1A
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM, 64QAM
Remark: 1. The WWAN antenna has two antenna vendors by Auden and Speed; both antenna design, part number, gain all the same, but they're all called Wistron on the Antenna Report. The RF exposure evaluation selects Auden as the main test, Speed will spot check worst case found in Auden.	

Host Information	
Equipment Name	Portable Computer
Brand Name	DELL
Model Name	P182G
Integrated NFC Module	Brand Name: Dell Model Name: DWRFID2305-01
Wireless Technology and Frequency Range	NFC : 13.56 MHz
Mode	NFC: ASK
EUT Stage	Identical Prototype
Remark: 1. This device is convertible type notebook PC, and there are two mode as usage way, one is laptop mode, another is tablet mode.	

WALN Module 1	
Integrated WLAN Module 1	Brand Name: Intel® Wireless-6E AX211 Model Name: AX211NGW
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.8 GHz UNII4 Band: 5850 MHz ~ 5895 MHz WLAN 6E: 5925 MHz~6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz~6875 MHz, 6875 MHz~7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
Remark: 1. The Intel AX211NGW WLAN/BT module is integrated into this host. The WLAN 2.4GHz, 5GHz and Bluetooth SAR results are referenced from Intel SAR report, report number: 221026-01.TR02 (FCC ID: PD9AX211NG); WLAN 5.9GHz SAR referred to report No.: 221026-01.TR05 (FCC ID: PD9AX211NG); WLAN 6GHz SAR referred to report No.: 221026-01.TR03 (FCC ID: PD9AX211NG) and these SAR results are also used to perform simultaneous transmission analysis.	

WALN Module 2	
Integrated WLAN Module 2	Brand Name: REALTEK Model Name: RTL8852BE
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.8 GHz UNII4 Band: 5850 MHz ~ 5895 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/HE20/HE40/HE80 Bluetooth BR/EDR/LE
Remark: 1. The REALTEK RTL8852BE WLAN/Bluetooth module is also integrated into this host, WLAN/Bluetooth SAR testing data, which can be referred to Sporton SAR Test Report, Report No.: FA2N0214 (FCC ID: E2K-RTL8852BE) and the result is used to do simultaneous transmission analysis.	



Antenna Information			
Antenna Part Number	Manufacture	Antenna Type	Peak Gain W/ Cable loss (dBi)
Tx1/Rx1 Antenna P/N:77C82	Wistron Corp	Monopole coupling	617-698MHz
			-1.99 dBi (peak)
			698-821MHz
			0.02 dBi (peak)
			824-960MHz
			-0.98 dBi (peak)
			1452-1515MHz
			-2.04 dBi (peak)
			1710-2200MHz
			1.23 dBi (peak)
			2300-2690MHz
			2.42 dBi (peak)
			3300-3800MHz
			-0.04 dBi (peak)
			4200-5000MHz
Rx2 Antenna P/N: 77C82	Wistron Corp	Monopole coupling	-2.09 dBi (peak)
			5150-5925MHz
			-2.64 dBi (peak)
			617-698MHz
			-4.31 dBi (peak)
			698-821MHz
			-1.98 dBi (peak)
			716-821MHz
			-1.98 dBi (peak)
			824-960MHz
			-0.62 dBi (peak)
			1452-1515MHz
			-2.86 dBi (peak)
			1557-1610 MHz
			-0.71 dBi (peak)
			1805-2200MHz
			-1.31 dBi (peak)
			2300-2690MHz
			0.08 dBi (peak)
			3300-3800MHz
			-0.11 dBi (peak)
			4200-5000MHz
			-0.81 dBi (peak)
			5150-5925MHz
			-4.51 dBi (peak)

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																																							
FCC ID	E2KEXMG1A																																																																						
Equipment Name	LTE Module																																																																						
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 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 14: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																																						
uplink modulations used	QPSK / 16QAM / 64QAM																																																																						
LTE Voice / Data requirements	Data only																																																																						
LTE MPR permanently built-in by design	<table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table>	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
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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	Yes, Proximity Sensor.																																																																						
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.																																																																						
LTE Carrier Aggregation Additional Information	This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.																																																																						

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)	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)	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)	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 14												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Channel #		Channel #		Freq.(MHz)					
L	23305		790.5		23330		793					
M	23330		793									
H	23355		795.5									
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		

H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 48												
	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	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
L M	55810	3607	55815	3607.5	55820	3608	55830	3609				
M H	56170	3643	56165	3642.5	56160	3642	56150	3641				
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770
LTE Band 71												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	133147	665.5	133172	668	133197	670.5	133222	673				
M	133297	680.5	133297	680.5	133297	680.5	133297	680.5				
H	133447	695.5	133422	693	133397	690.5	133372	688				

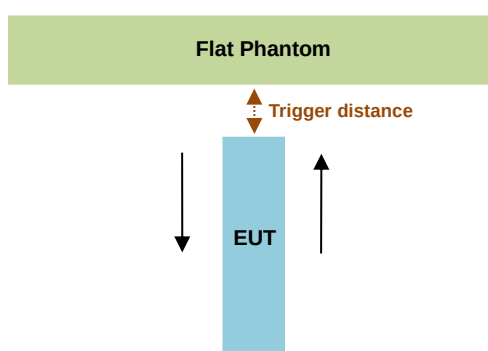
4. Proximity Sensor Triggering Test

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

For the device is fully integrated, touch sensing capacitive sensor. It uses a charge transfer capacitive acquisition method that is capable of near range proximity detection. In this device offers a state of the art capacitive sensing engine with an embedded sampling capacitor and voltage regulator allowing the overall solution cost to be reduced and improving system immunity in noisy environments.

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 as following, 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.



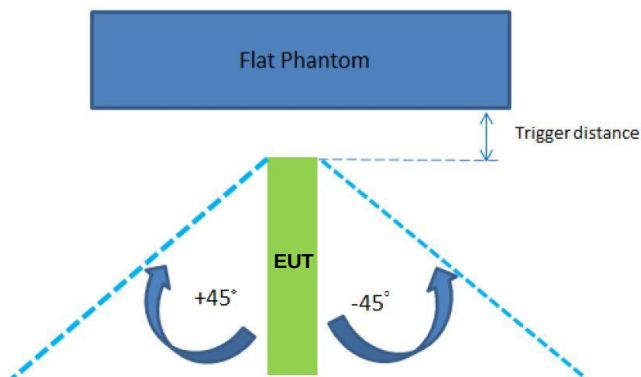
Proximity Sensor Trigger Distance (mm)				
Position	Bottom Face		Edge 1	
	moving toward	moving away	moving toward	moving away
Minimum	5	5	24	22

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

Since the antenna and sensor are collocated and all of the peak SAR location is overlapping with the sensor pad for this device, therefore, According to KDB 616217 section6.3, these procedures do not apply and are not required for this device. due to the antenna and sensor are collocated and the peak SAR location is overlapping with the sensor on this device.

<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 above separation distance. Rotating the tablet around the edge next to the phantom in $\leq 10^\circ$ increments until the tablet is $\pm 45^\circ$ from the vertical position at 0° , and the maximum output power remains in the reduced mode.



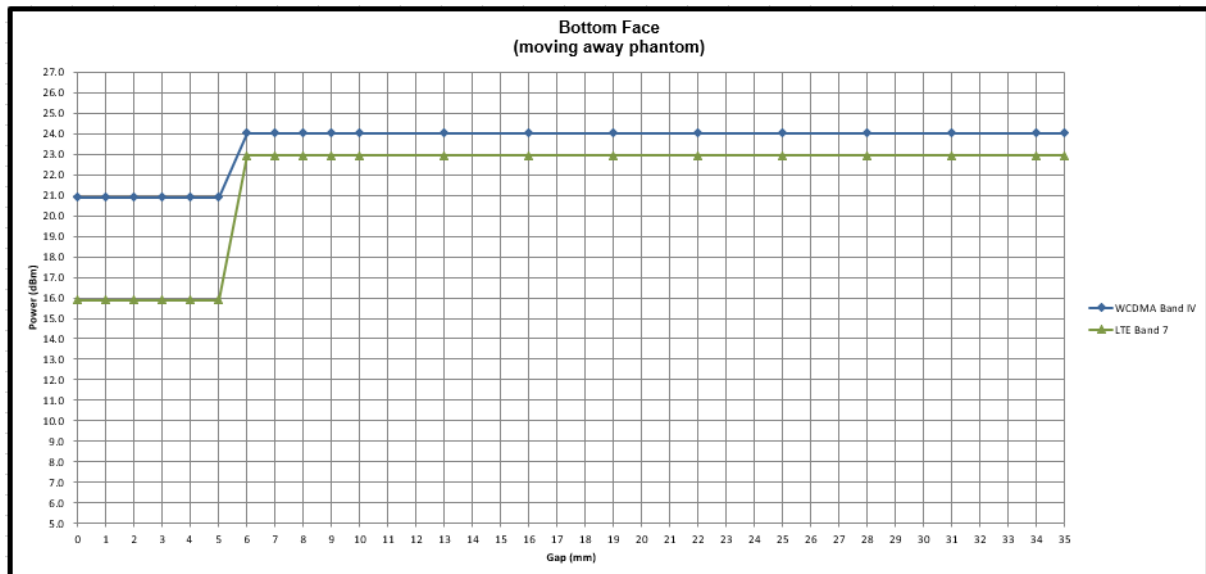
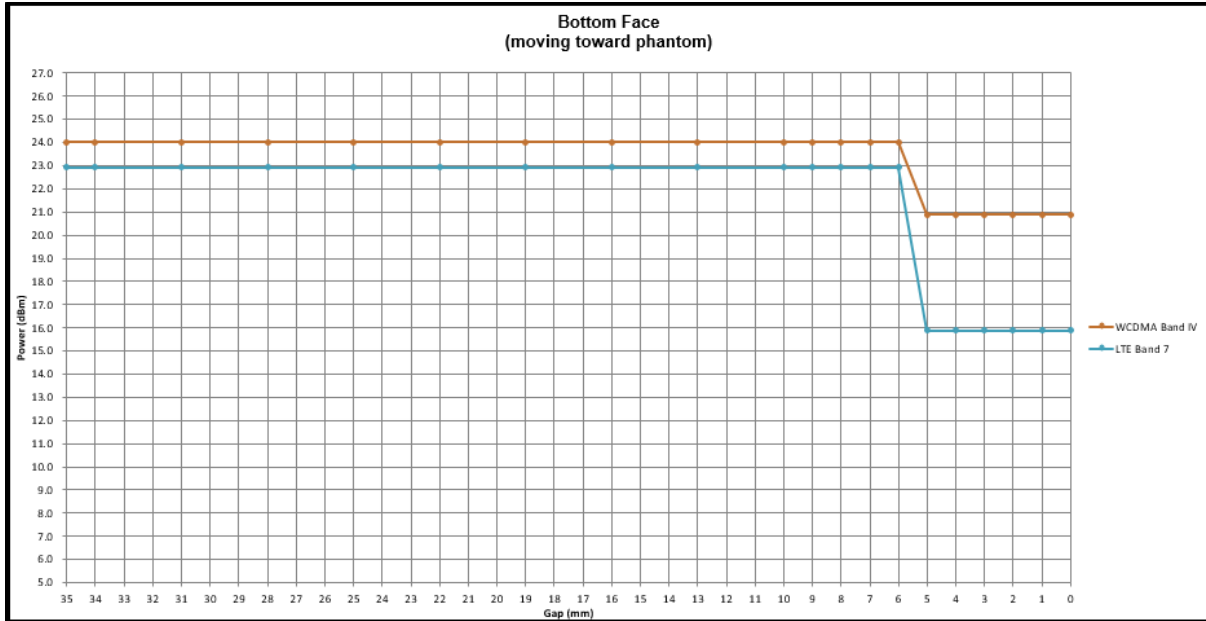
The Sensor Trigger Distance (mm)		
Position	Edge 1	
	45	-45
Minimum	22	22

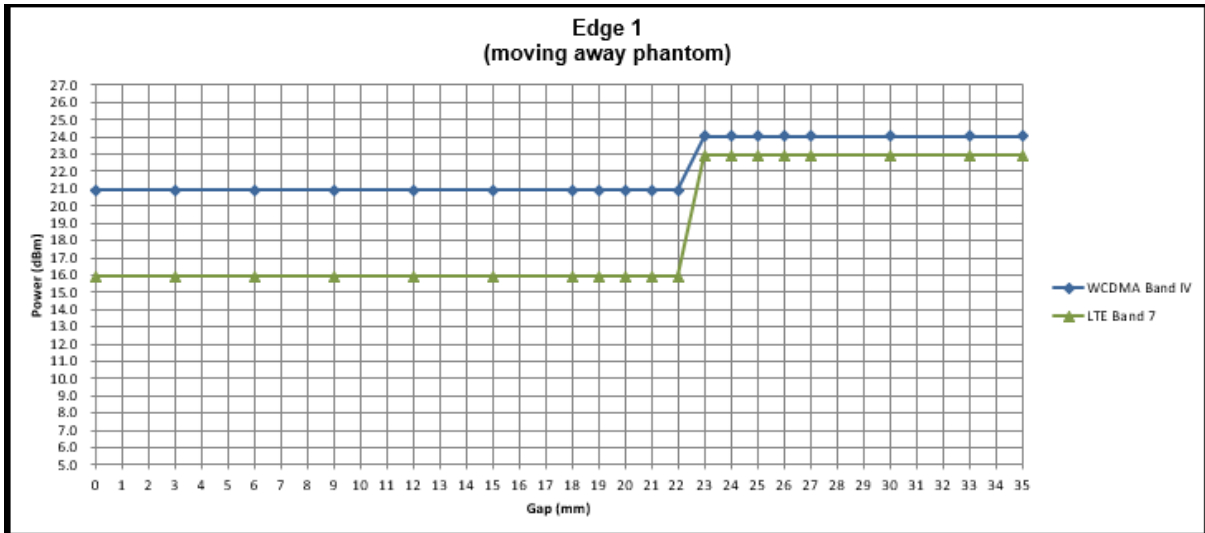
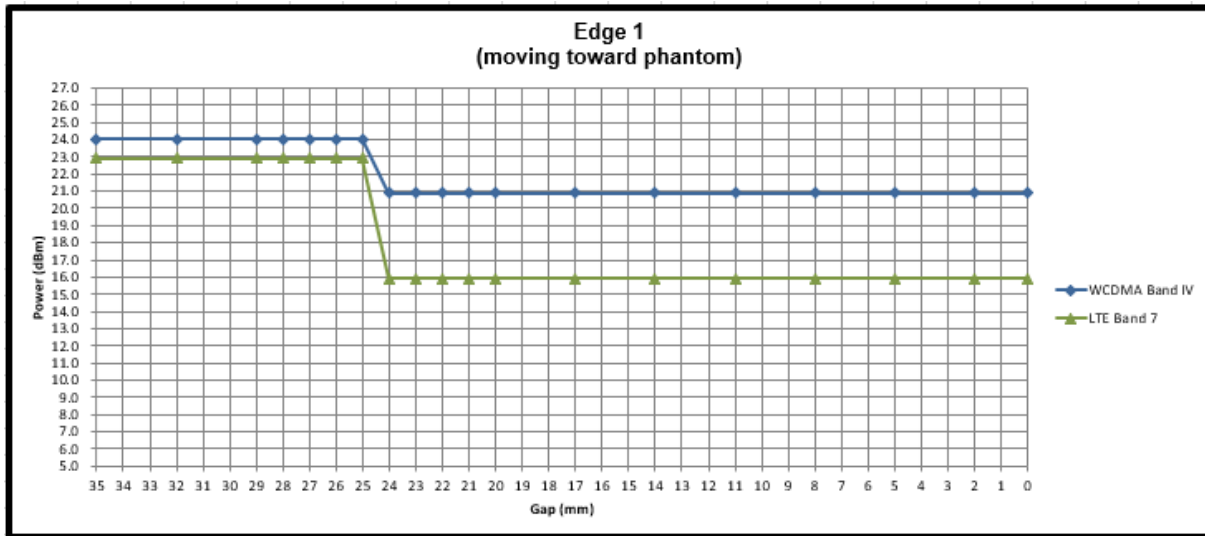
Proximity sensor power reduction

Exposure Position / wireless mode	Bottom Face ⁽¹⁾ / Edge 1 ⁽¹⁾
WCDMA II	3
WCDMA IV	3.5
WCDMA V	2.5
LTE Band 2	1.5
LTE Band 4	2.5
LTE Band 5	3
LTE Band 7	7.5
LTE Band 12	1.5
LTE Band 13	3
LTE Band 14	3
LTE Band 25	1.5
LTE Band 26	3
LTE Band 38	6
LTE Band 41	6
LTE Band 66	2.5
LTE Band 71	1.5

Remark:

- ⁽¹⁾: Reduced maximum limit applied by activation of proximity sensor.
- 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 below.
- The sensor power verification was selected worst DPR band to doing.
- 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: [4 mm](#)
 - Edge1: [21 mm](#)

Power Measurement during Sensor Trigger distance testing




5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

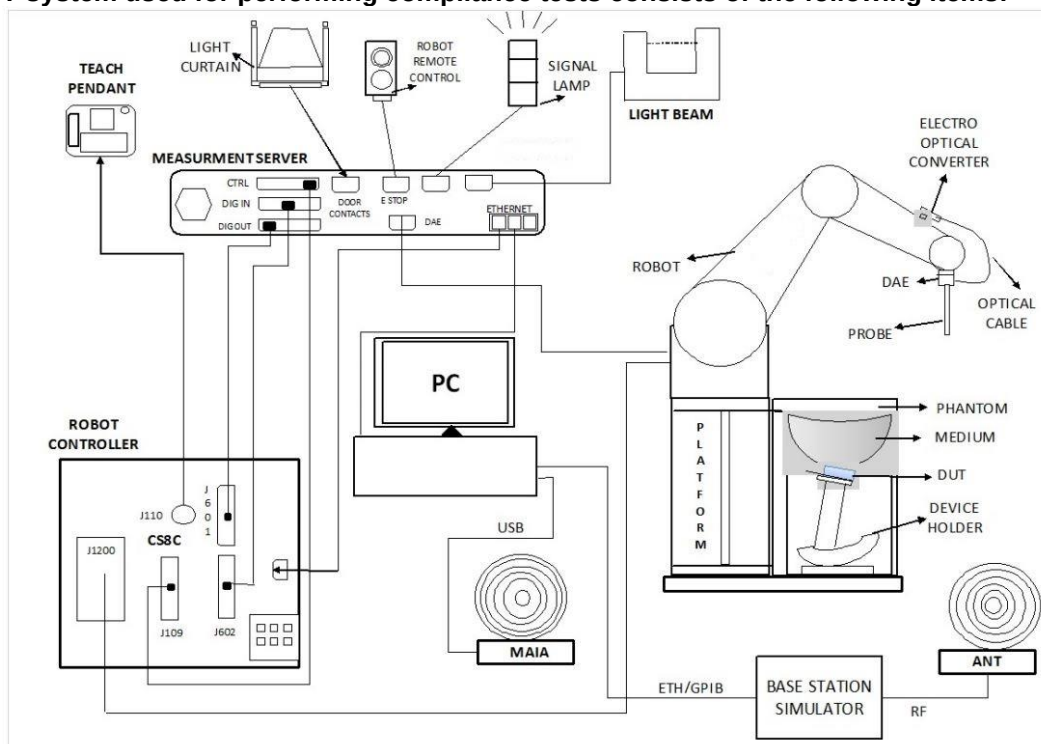
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



- The DASY system in SAR Configuration is shown above
- 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 windows software and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

7.1 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Laboratory	EMC & Wireless Communications Laboratory		Wensan Laboratory				
Test Site Location	TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan				
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY	SAR15-HY	SAR18-HY	SAR21-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	SAR16-HY	SAR19-HY	SAR22-HY
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	SAR17-HY	SAR20-HY	

7.2 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 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 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.3 Data Acquisition Electronics (DAE)

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

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

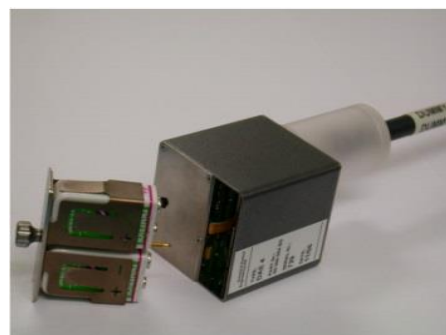


Fig 5.1 Photo of DAE

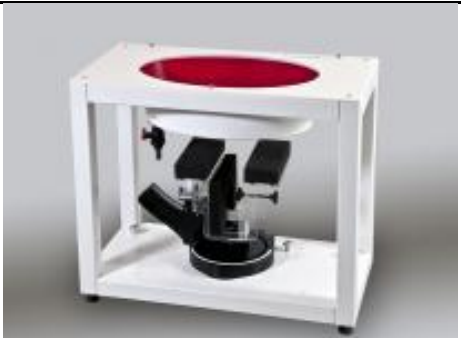
7.4 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

7.5 Device Holder

<Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

Zoom scans are used to 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 whose 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: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	$3 - 4$ GHz: ≤ 4 mm $4 - 5$ GHz: ≤ 3 mm $5 - 6$ GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	$3 - 4$ GHz: ≤ 3 mm $4 - 5$ GHz: ≤ 2.5 mm $5 - 6$ GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit ⁽²⁾	D750V3	1012	Aug. 18, 2021	Aug. 15, 2024
SPEAG	835MHz System Validation Kit ⁽²⁾	D835V2	4d060	Mar. 24, 2022	Mar. 21, 2025
SPEAG	1750MHz System Validation Kit ⁽²⁾	D1750V2	1112	Jun. 22, 2022	Jun. 19, 2025
SPEAG	1800MHz System Validation Kit ⁽²⁾	D1800V2	2d076	Aug. 18, 2021	Aug. 15, 2024
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d185	Jun. 17, 2022	Jun. 14, 2025
SPEAG	2600MHz System Validation Kit ⁽²⁾	D2600V2	1078	Jun. 23, 2022	Jun. 20, 2025
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1006	Jun. 20, 2022	Jun. 18, 2024
SPEAG	Data Acquisition Electronics	DAE4	1424	Dec. 07, 2023	Dec. 06, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7813	May. 24, 2023	May. 23, 2024
Testo	Hygro meter	608-H1	45196600	Nov. 02, 2023	Nov. 01, 2024
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 13, 2023	Nov. 12, 2024
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Sep. 27, 2023	Sep. 26, 2024
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 30, 2023	Oct. 29, 2024
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 19, 2023	Sep. 18, 2024
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3690	Aug. 09, 2023	Aug. 08, 2024
Anritsu	Power Meter	ML2495A	1419002	Aug. 17, 2023	Aug. 16, 2024
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2023	Aug. 17, 2024
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 10, 2023	Jul. 09, 2024
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 16, 2023	Oct. 15, 2024
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

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



11. RF Exposure Positions

11.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

12. UMTS/LTE 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.

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} (Note 1, 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 $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.

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 $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCCH, 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 $\beta_c = 11/15$ and $\beta_d = 15/15$.

Setup Configuration

HSUPA Setup Configuration:

- The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- The RF path losses were compensated into the measurements.
- A call was established between EUT and Base Station with following setting * :
 - Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - 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
 - Set Cell Power = -86 dBm
 - Set Channel Type = 12.2k + HSPA
 - Set UE Target Power
 - Power Ctrl Mode= Alternating bits
 - Set and observe the E-TFCI
 - Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
- 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} (Note 1)	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	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	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 $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_d/\beta_c = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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_d/β_c 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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

<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 is $\leq \frac{1}{4}$ 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA.

<WCDMA>													
Band		WCDMA II_Sensor OFF			Tune-up Limit (dBm)	WCDMA IV_Sensor OFF			Tune-up Limit (dBm)	WCDMA V_Sensor OFF			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	24.07	24.08	23.77	24.50	23.66	23.88	24.02	24.50	23.15	23.18	23.44	24.50
3GPP Rel 6	HSDPA Subtest-1	22.93	22.94	22.55	23.50	22.36	22.62	22.82	23.50	22.18	22.21	22.41	23.50
3GPP Rel 6	HSDPA Subtest-2	22.91	22.93	22.21	23.50	22.31	22.61	22.82	23.50	22.18	22.19	22.18	23.50
3GPP Rel 6	HSDPA Subtest-3	22.30	22.42	21.45	23.00	21.76	22.08	22.27	23.00	21.64	21.68	21.79	23.00
3GPP Rel 6	HSDPA Subtest-4	22.29	22.44	21.99	23.00	21.81	22.04	22.31	23.00	21.65	21.69	21.58	23.00
3GPP Rel 6	HSUPA Subtest-1	22.79	22.79	22.51	23.50	22.68	22.63	22.79	23.50	22.27	22.13	22.37	23.50
3GPP Rel 6	HSUPA Subtest-2	20.80	20.84	20.43	21.50	20.66	20.70	20.65	21.50	20.16	20.29	20.16	21.50
3GPP Rel 6	HSUPA Subtest-3	21.83	21.31	21.89	22.50	21.63	21.20	22.12	22.50	21.22	20.73	21.64	22.50
3GPP Rel 6	HSUPA Subtest-4	20.82	20.40	20.53	21.50	20.63	20.21	20.73	21.50	20.18	19.74	20.25	21.50
3GPP Rel 6	HSUPA Subtest-5	22.70	22.90	22.20	23.50	22.57	22.77	22.47	23.50	22.12	22.28	22.03	23.50

<WCDMA>													
Band		WCDMA II_Sensor ON			Tune-up Limit (dBm)	WCDMA IV_Sensor ON			Tune-up Limit (dBm)	WCDMA V_Sensor ON			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	20.83	20.79	20.40	21.50	20.60	20.80	20.90	21.00	21.26	21.22	21.48	22.00
3GPP Rel 6	HSDPA Subtest-1	19.76	19.71	19.48	20.50	19.99	19.43	19.69	20.00	20.42	20.21	20.72	21.00
3GPP Rel 6	HSDPA Subtest-2	19.78	19.71	19.48	20.50	19.60	19.26	19.87	20.00	20.39	20.54	20.54	21.00
3GPP Rel 6	HSDPA Subtest-3	19.17	19.23	18.95	20.00	19.35	18.74	19.23	19.50	19.89	19.78	20.20	20.50
3GPP Rel 6	HSDPA Subtest-4	19.17	19.23	19.01	20.00	19.49	19.08	19.23	19.50	19.99	17.79	20.30	20.50
3GPP Rel 6	HSUPA Subtest-1	19.81	19.79	19.48	20.50	19.63	19.64	19.73	20.00	20.24	20.21	20.32	21.00
3GPP Rel 6	HSUPA Subtest-2	17.80	17.84	17.37	18.50	17.60	17.60	17.60	18.00	18.24	18.23	18.31	19.00
3GPP Rel 6	HSUPA Subtest-3	18.78	18.78	18.38	19.50	18.65	18.63	18.72	19.00	19.18	19.10	19.29	20.00
3GPP Rel 6	HSUPA Subtest-4	17.83	17.82	17.44	18.50	17.60	17.63	17.60	18.00	18.20	18.23	18.27	19.00
3GPP Rel 6	HSUPA Subtest-5	19.80	19.70	19.40	20.50	19.80	19.80	19.70	20.00	20.10	20.20	20.20	21.00

<LTE Conducted Power>**General Note:**

1. A Base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5/B12/B26/B38/B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ 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

**<LTE Band 2_Sensor OFF>**

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				18700	18900	19100	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	22.95	23.25	22.97	24
20	QPSK	1	49	23.01	23.18	22.92	
20	QPSK	1	99	23.02	22.99	22.71	
20	QPSK	50	0	22.11	22.27	22.09	23
20	QPSK	50	24	22.11	22.24	22.08	
20	QPSK	50	50	22.17	22.20	22.04	
20	QPSK	100	0	22.10	22.24	22.06	
20	16QAM	1	0	22.32	22.42	22.33	23
20	16QAM	1	49	22.39	22.53	22.32	
20	16QAM	1	99	22.38	22.32	22.21	
20	16QAM	50	0	21.17	21.32	21.06	22
20	16QAM	50	24	21.12	21.28	21.08	
20	16QAM	50	50	21.22	21.25	21.07	
20	16QAM	100	0	21.12	21.27	21.06	
20	64QAM	1	0	21.92	21.33	21.17	22
20	64QAM	1	49	21.99	21.40	21.12	
20	64QAM	1	99	22.00	21.21	20.60	
20	64QAM	50	0	20.90	20.31	19.72	21
20	64QAM	50	24	20.87	20.28	19.70	
20	64QAM	50	50	20.93	20.21	19.65	
20	64QAM	100	0	20.88	20.26	19.67	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	22.79	23.13	22.85	24
15	QPSK	1	37	22.81	23.07	22.79	
15	QPSK	1	74	22.92	22.83	22.54	
15	QPSK	36	0	22.00	22.12	21.90	23
15	QPSK	36	20	22.01	22.09	21.93	
15	QPSK	36	39	22.03	22.08	21.92	
15	QPSK	75	0	21.96	22.04	21.89	
15	16QAM	1	0	22.22	22.24	22.13	23
15	16QAM	1	37	22.20	22.36	22.14	
15	16QAM	1	74	22.28	22.21	22.02	
15	16QAM	36	0	20.97	21.22	20.94	22
15	16QAM	36	20	20.93	21.18	20.95	
15	16QAM	36	39	21.05	21.08	20.92	
15	16QAM	75	0	20.94	21.12	20.87	
15	64QAM	1	0	21.74	21.18	20.97	22
15	64QAM	1	37	21.89	21.24	20.99	
15	64QAM	1	74	21.81	21.08	20.48	
15	64QAM	36	0	20.71	20.21	19.53	21
15	64QAM	36	20	20.75	20.10	19.56	
15	64QAM	36	39	20.74	20.10	19.53	
15	64QAM	75	0	20.76	20.09	19.50	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	22.76	23.05	22.82	24
10	QPSK	1	25	22.81	23.03	22.73	
10	QPSK	1	49	22.87	22.88	22.58	
10	QPSK	25	0	21.95	22.13	21.89	23
10	QPSK	25	12	21.91	22.14	21.98	
10	QPSK	25	25	21.97	22.05	21.86	
10	QPSK	50	0	21.98	22.08	21.94	
10	16QAM	1	0	22.15	22.25	22.19	23
10	16QAM	1	25	22.29	22.41	22.13	
10	16QAM	1	49	22.22	22.15	22.08	



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10	16QAM	25	0	21.02	21.20	20.90	22
10	16QAM	25	12	20.99	21.15	20.96	
10	16QAM	25	25	21.05	21.14	20.88	
10	16QAM	50	0	20.99	21.07	20.92	
10	64QAM	1	0	21.72	21.14	20.99	22
10	64QAM	1	25	21.88	21.22	21.00	
10	64QAM	1	49	21.89	21.11	20.41	
10	64QAM	25	0	20.78	20.17	19.52	21
10	64QAM	25	12	20.73	20.09	19.58	
10	64QAM	25	25	20.76	20.02	19.47	
10	64QAM	50	0	20.73	20.06	19.51	
Channel				18625	18900	19175	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	0	22.76	23.13	22.78	24
5	QPSK	1	12	22.81	23.07	22.79	
5	QPSK	1	24	22.87	22.83	22.61	
5	QPSK	12	0	21.97	22.14	21.97	23
5	QPSK	12	7	21.96	22.07	21.94	
5	QPSK	12	13	22.02	22.07	21.88	
5	QPSK	25	0	21.98	22.06	21.87	
5	16QAM	1	0	22.14	22.27	22.17	23
5	16QAM	1	12	22.20	22.36	22.19	
5	16QAM	1	24	22.21	22.16	22.01	
5	16QAM	12	0	21.00	21.17	20.88	
5	16QAM	12	7	20.98	21.13	20.90	22
5	16QAM	12	13	21.10	21.12	20.87	
5	16QAM	25	0	20.96	21.11	20.92	
5	64QAM	1	0	21.81	21.23	20.98	
5	64QAM	1	12	21.86	21.28	20.97	22
5	64QAM	1	24	21.86	21.04	20.40	
5	64QAM	12	0	20.75	20.16	19.59	
5	64QAM	12	7	20.68	20.15	19.50	
5	64QAM	12	13	20.79	20.07	19.54	21
5	64QAM	25	0	20.73	20.16	19.55	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	22.77	23.15	22.77	24
3	QPSK	1	8	22.87	23.07	22.73	
3	QPSK	15	0	21.92	22.13	21.86	23
3	16QAM	1	0	22.12	22.31	22.15	23
3	16QAM	1	8	22.29	22.36	22.16	
3	16QAM	1	14	22.26	22.12	22.11	
3	16QAM	8	0	21.07	21.19	20.87	22
3	16QAM	8	4	21.01	21.18	20.97	
3	16QAM	8	7	21.06	21.15	20.94	
3	16QAM	15	0	21.00	21.11	20.90	
3	64QAM	1	0	21.74	21.17	21.02	
3	64QAM	1	8	21.86	21.21	21.02	22
3	64QAM	1	14	21.88	21.05	20.42	
3	64QAM	8	0	20.75	20.12	19.52	21
3	64QAM	8	4	20.69	20.18	19.57	
3	64QAM	8	7	20.76	20.02	19.55	
3	64QAM	15	0	20.76	20.09	19.47	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	22.83	23.14	22.83	24
1.4	QPSK	1	3	22.83	23.00	22.75	
1.4	QPSK	1	5	22.87	22.80	22.51	
1.4	QPSK	3	0	22.06	22.14	22.04	
1.4	QPSK	3	1	22.08	22.13	22.02	
1.4	QPSK	3	3	22.04	22.07	22.02	
1.4	QPSK	6	0	21.97	22.13	21.95	23
1.4	16QAM	1	0	22.18	22.24	22.22	23



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1.4	16QAM	1	3	22.23	22.38	22.21	
1.4	16QAM	1	5	22.24	22.17	22.11	
1.4	16QAM	3	0	21.01	21.13	21.00	
1.4	16QAM	3	1	21.03	21.15	21.03	
1.4	16QAM	3	3	21.05	21.09	21.02	
1.4	16QAM	6	0	20.94	21.16	20.93	22
1.4	64QAM	1	0	21.78	21.22	21.02	22
1.4	64QAM	1	3	21.88	21.28	20.95	
1.4	64QAM	1	5	21.85	21.07	20.49	
1.4	64QAM	3	0	20.71	20.15	20.08	
1.4	64QAM	3	1	20.77	20.10	20.08	
1.4	64QAM	3	3	20.77	20.08	20.02	21
1.4	64QAM	6	0	20.77	20.09	19.53	

<LTE Band 2_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				18700	18900	19100	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	21.56	22.11	21.71	22.5
20	QPSK	1	49	21.62	21.84	21.68	
20	QPSK	1	99	21.62	21.61	21.49	
20	QPSK	50	0	21.75	21.96	21.72	22.5
20	QPSK	50	24	21.75	21.92	21.76	
20	QPSK	50	50	21.76	21.86	21.69	
20	QPSK	100	0	21.72	21.94	21.72	
20	16QAM	1	0	21.97	22.10	22.01	22.5
20	16QAM	1	49	22.00	22.10	22.04	
20	16QAM	1	99	21.97	22.00	21.84	
20	16QAM	50	0	21.30	21.55	21.25	22
20	16QAM	50	24	21.30	21.52	21.28	
20	16QAM	50	50	21.37	21.44	21.22	
20	16QAM	100	0	21.28	21.46	21.24	
20	64QAM	1	0	21.85	21.54	21.39	22
20	64QAM	1	49	21.88	21.64	21.39	
20	64QAM	1	99	21.86	21.38	21.20	
20	64QAM	50	0	20.90	20.53	20.27	21
20	64QAM	50	24	20.89	20.51	20.28	
20	64QAM	50	50	20.95	20.43	20.24	
20	64QAM	100	0	20.89	20.46	20.26	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	21.41	21.92	21.54	22.5
15	QPSK	1	37	21.50	21.68	21.58	
15	QPSK	1	74	21.47	21.44	21.36	
15	QPSK	36	0	21.62	21.78	21.58	22.5
15	QPSK	36	20	21.58	21.76	21.61	
15	QPSK	36	39	21.65	21.75	21.54	
15	QPSK	75	0	21.56	21.74	21.55	
15	16QAM	1	0	21.81	21.93	21.89	22.5
15	16QAM	1	37	21.81	21.98	21.84	
15	16QAM	1	74	21.81	21.82	21.66	
15	16QAM	36	0	21.13	21.41	21.08	22
15	16QAM	36	20	21.20	21.32	21.15	
15	16QAM	36	39	21.25	21.30	21.08	
15	16QAM	75	0	21.08	21.36	21.14	
15	64QAM	1	0	21.75	21.39	21.24	22
15	64QAM	1	37	21.70	21.52	21.28	
15	64QAM	1	74	21.70	21.20	21.04	
15	64QAM	36	0	20.74	20.36	20.11	21
15	64QAM	36	20	20.73	20.34	20.13	



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15	64QAM	36	39	20.78	20.29	20.11	
15	64QAM	75	0	20.78	20.31	20.13	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	21.36	21.96	21.53	22.5
10	QPSK	1	25	21.50	21.65	21.53	
10	QPSK	1	49	21.49	21.44	21.35	
10	QPSK	25	0	21.59	21.77	21.56	22.5
10	QPSK	25	12	21.63	21.79	21.56	
10	QPSK	25	25	21.56	21.74	21.58	
10	QPSK	50	0	21.60	21.80	21.54	
10	16QAM	1	0	21.77	21.97	21.87	22.5
10	16QAM	1	25	21.90	21.99	21.91	
10	16QAM	1	49	21.80	21.90	21.67	
10	16QAM	25	0	21.20	21.42	21.07	22
10	16QAM	25	12	21.16	21.33	21.15	
10	16QAM	25	25	21.26	21.26	21.09	
10	16QAM	50	0	21.09	21.28	21.04	
10	64QAM	1	0	21.74	21.42	21.19	22
10	64QAM	1	25	21.69	21.48	21.23	
10	64QAM	1	49	21.72	21.28	21.06	
10	64QAM	25	0	20.70	20.36	20.14	21
10	64QAM	25	12	20.69	20.35	20.15	
10	64QAM	25	25	20.80	20.31	20.09	
10	64QAM	50	0	20.75	20.34	20.07	
Channel				18625	18900	19175	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	0	21.46	21.95	21.51	22.5
5	QPSK	1	12	21.50	21.66	21.55	
5	QPSK	1	24	21.52	21.42	21.32	
5	QPSK	12	0	21.63	21.79	21.58	22.5
5	QPSK	12	7	21.60	21.79	21.60	
5	QPSK	12	13	21.61	21.70	21.53	
5	QPSK	25	0	21.59	21.83	21.56	
5	16QAM	1	0	21.85	22.00	21.82	22.5
5	16QAM	1	12	21.90	21.91	21.93	
5	16QAM	1	24	21.85	21.82	21.67	
5	16QAM	12	0	21.16	21.43	21.12	22
5	16QAM	12	7	21.13	21.37	21.11	
5	16QAM	12	13	21.21	21.27	21.10	
5	16QAM	25	0	21.12	21.31	21.07	
5	64QAM	1	0	21.71	21.36	21.28	22
5	64QAM	1	12	21.69	21.54	21.28	
5	64QAM	1	24	21.73	21.21	21.07	
5	64QAM	12	0	20.70	20.35	20.13	21
5	64QAM	12	7	20.79	20.41	20.16	
5	64QAM	12	13	20.84	20.27	20.06	
5	64QAM	25	0	20.75	20.35	20.09	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	21.37	21.99	21.54	22.5
3	QPSK	1	8	21.51	21.72	21.49	
3	QPSK	1	14	21.47	21.41	21.29	
3	QPSK	8	0	21.56	21.85	21.55	22.5
3	QPSK	8	4	21.60	21.75	21.57	
3	QPSK	8	7	21.60	21.70	21.54	
3	QPSK	15	0	21.52	21.79	21.53	
3	16QAM	1	0	21.80	21.96	21.85	22.5
3	16QAM	1	8	21.89	21.91	21.90	
3	16QAM	1	14	21.86	21.81	21.70	
3	16QAM	8	0	21.10	21.37	21.15	22
3	16QAM	8	4	21.13	21.37	21.08	
3	16QAM	8	7	21.21	21.24	21.06	



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3	16QAM	15	0	21.18	21.36	21.06	22
3	64QAM	1	0	21.71	21.42	21.29	
3	64QAM	1	8	21.75	21.48	21.20	
3	64QAM	1	14	21.76	21.21	21.00	
3	64QAM	8	0	20.70	20.42	20.07	21
3	64QAM	8	4	20.76	20.34	20.18	
3	64QAM	8	7	20.79	20.28	20.08	
3	64QAM	15	0	20.78	20.29	20.12	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	21.45	21.96	21.61	22.5
1.4	QPSK	1	3	21.51	21.65	21.50	
1.4	QPSK	1	5	21.49	21.49	21.32	
1.4	QPSK	3	0	21.62	21.85	21.59	
1.4	QPSK	3	1	21.63	21.73	21.58	
1.4	QPSK	3	3	21.66	21.72	21.56	
1.4	QPSK	6	0	21.59	21.76	21.59	22.5
1.4	16QAM	1	0	21.86	21.98	21.90	22.5
1.4	16QAM	1	3	21.81	21.97	21.85	
1.4	16QAM	1	5	21.80	21.90	21.72	
1.4	16QAM	3	0	21.11	21.45	21.11	
1.4	16QAM	3	1	21.19	21.36	21.14	
1.4	16QAM	3	3	21.20	21.31	21.04	
1.4	16QAM	6	0	21.16	21.34	21.11	22
1.4	64QAM	1	0	21.67	21.41	21.21	22
1.4	64QAM	1	3	21.69	21.45	21.19	
1.4	64QAM	1	5	21.76	21.21	21.06	
1.4	64QAM	3	0	20.71	20.40	20.11	
1.4	64QAM	3	1	20.78	20.32	20.18	
1.4	64QAM	3	3	20.80	20.31	20.06	
1.4	64QAM	6	0	20.71	20.31	20.09	21

<LTE Band 4_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	Tune-up limit (dBm)
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	22.33	22.80	22.98	24
20	QPSK	1	49	22.38	22.78	22.80	
20	QPSK	1	99	22.68	22.83	22.89	
20	QPSK	50	0	21.80	21.88	21.95	23
20	QPSK	50	24	21.70	21.87	21.90	
20	QPSK	50	50	21.62	21.83	21.89	
20	QPSK	100	0	21.61	21.86	21.94	
20	16QAM	1	0	22.03	22.15	22.17	23
20	16QAM	1	49	22.06	22.12	22.26	
20	16QAM	1	99	22.08	22.11	22.24	
20	16QAM	50	0	20.81	20.72	20.88	
20	16QAM	50	24	20.94	20.74	21.00	22
20	16QAM	50	50	20.91	20.79	20.96	
20	16QAM	100	0	20.86	20.76	20.99	
20	64QAM	1	0	20.96	20.89	21.07	
20	64QAM	1	49	20.95	20.95	21.15	22
20	64QAM	1	99	20.97	20.99	21.17	
20	64QAM	50	0	19.79	19.75	19.89	
20	64QAM	50	24	19.92	19.74	19.99	
20	64QAM	50	50	19.86	19.71	19.95	21
20	64QAM	100	0	19.87	19.81	19.96	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	22.23	22.68	22.85	24



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15	QPSK	1	37	22.26	22.59	22.70	23
15	QPSK	1	74	22.54	22.70	22.69	
15	QPSK	36	0	21.66	21.72	21.74	
15	QPSK	36	20	21.51	21.75	21.82	
15	QPSK	36	39	21.48	21.73	21.78	
15	QPSK	75	0	21.45	21.69	21.81	23
15	16QAM	1	0	21.83	21.97	22.06	
15	16QAM	1	37	21.96	21.92	22.10	
15	16QAM	1	74	21.91	21.92	22.12	
15	16QAM	36	0	20.71	20.55	20.78	
15	16QAM	36	20	20.84	20.59	20.84	22
15	16QAM	36	39	20.71	20.64	20.79	
15	16QAM	75	0	20.73	20.66	20.86	
15	64QAM	1	0	20.82	20.74	20.96	
15	64QAM	1	37	20.79	20.84	21.01	
15	64QAM	1	74	20.81	20.80	20.97	21
15	64QAM	36	0	19.67	19.61	19.73	
15	64QAM	36	20	19.76	19.54	19.85	
15	64QAM	36	39	19.76	19.52	19.83	
15	64QAM	75	0	19.72	19.63	19.82	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	22.14	22.63	22.85	24
10	QPSK	1	25	22.22	22.63	22.62	
10	QPSK	1	49	22.57	22.64	22.70	
10	QPSK	25	0	21.68	21.76	21.72	23
10	QPSK	25	12	21.51	21.71	21.85	
10	QPSK	25	25	21.42	21.66	21.75	
10	QPSK	50	0	21.47	21.67	21.81	
10	16QAM	1	0	21.84	22.02	21.97	23
10	16QAM	1	25	21.89	21.95	22.12	
10	16QAM	1	49	21.88	21.94	22.08	
10	16QAM	25	0	20.64	20.62	20.71	
10	16QAM	25	12	20.74	20.63	20.81	22
10	16QAM	25	25	20.74	20.69	20.84	
10	16QAM	50	0	20.69	20.58	20.81	
10	64QAM	1	0	20.76	20.75	20.92	
10	64QAM	1	25	20.77	20.82	21.04	22
10	64QAM	1	49	20.78	20.89	21.00	
10	64QAM	25	0	19.67	19.60	19.72	
10	64QAM	25	12	19.76	19.63	19.86	
10	64QAM	25	25	19.67	19.52	19.80	21
10	64QAM	50	0	19.70	19.64	19.82	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	22.13	22.60	22.79	24
5	QPSK	1	12	22.26	22.61	22.61	
5	QPSK	1	24	22.52	22.69	22.78	
5	QPSK	12	0	21.67	21.77	21.68	23
5	QPSK	12	7	21.53	21.77	21.75	
5	QPSK	12	13	21.47	21.63	21.69	
5	QPSK	25	0	21.45	21.76	21.75	
5	16QAM	1	0	21.87	22.00	22.04	23
5	16QAM	1	12	21.87	21.93	22.13	
5	16QAM	1	24	21.94	21.99	22.04	
5	16QAM	12	0	20.65	20.59	20.74	
5	16QAM	12	7	20.75	20.60	20.87	22
5	16QAM	12	13	20.81	20.61	20.83	
5	16QAM	25	0	20.75	20.57	20.81	
5	64QAM	1	0	20.86	20.75	20.97	
5	64QAM	1	12	20.84	20.81	21.01	22
5	64QAM	1	24	20.77	20.87	21.05	
5	64QAM	12	0	19.60	19.55	19.76	
5	64QAM	12	0	19.60	19.55	19.76	21



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5	64QAM	12	7	19.81	19.56	19.79	
5	64QAM	12	13	19.69	19.57	19.77	
5	64QAM	25	0	19.69	19.71	19.79	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	22.21	22.67	22.79	24
3	QPSK	1	8	22.18	22.67	22.63	
3	QPSK	15	0	21.47	21.67	21.82	23
3	16QAM	1	0	21.86	21.95	22.01	23
3	16QAM	1	8	21.90	21.98	22.11	
3	16QAM	1	14	21.90	21.98	22.08	
3	16QAM	8	0	20.62	20.54	20.77	22
3	16QAM	8	4	20.83	20.56	20.86	
3	16QAM	8	7	20.73	20.59	20.81	
3	16QAM	15	0	20.68	20.56	20.88	
3	64QAM	1	0	20.85	20.70	20.88	22
3	64QAM	1	8	20.80	20.84	20.96	
3	64QAM	1	14	20.78	20.84	21.05	
3	64QAM	8	0	19.68	19.62	19.72	
3	64QAM	8	4	19.72	19.64	19.84	21
3	64QAM	8	7	19.73	19.56	19.79	
3	64QAM	15	0	19.76	19.65	19.81	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	22.22	22.65	22.85	24
1.4	QPSK	1	3	22.28	22.64	22.65	
1.4	QPSK	1	5	22.52	22.64	22.70	
1.4	QPSK	3	0	22.27	22.34	22.36	
1.4	QPSK	3	1	22.13	22.30	22.40	
1.4	QPSK	3	3	22.05	22.29	22.39	
1.4	QPSK	6	0	21.42	21.70	21.82	23
1.4	16QAM	1	0	21.88	22.02	22.03	23
1.4	16QAM	1	3	21.94	21.93	22.15	
1.4	16QAM	1	5	21.91	21.99	22.13	
1.4	16QAM	3	0	21.20	21.03	21.20	
1.4	16QAM	3	1	21.24	21.10	21.33	
1.4	16QAM	3	3	21.29	21.10	21.26	
1.4	16QAM	6	0	20.74	20.58	20.81	22
1.4	64QAM	1	0	20.85	20.78	20.97	22
1.4	64QAM	1	3	20.85	20.76	21.00	
1.4	64QAM	1	5	20.87	20.84	20.98	
1.4	64QAM	3	0	20.17	20.12	20.21	
1.4	64QAM	3	1	20.31	20.10	20.37	
1.4	64QAM	3	3	20.16	20.03	20.30	
1.4	64QAM	6	0	19.77	19.61	19.77	21



<LTE Band 4_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	20.51	20.92	20.50	
20	QPSK	1	49	20.49	20.55	20.59	21.5
20	QPSK	1	99	20.46	20.53	20.53	
20	QPSK	50	0	20.54	20.65	20.59	
20	QPSK	50	24	20.62	20.63	20.60	21.5
20	QPSK	50	50	20.61	20.56	20.56	
20	QPSK	100	0	20.59	20.60	20.61	
20	16QAM	1	0	20.74	20.82	20.81	21.5
20	16QAM	1	49	20.72	20.88	20.82	
20	16QAM	1	99	20.78	20.85	20.90	
20	16QAM	50	0	20.52	20.62	20.55	21.5
20	16QAM	50	24	20.64	20.64	20.64	
20	16QAM	50	50	20.57	20.56	20.57	
20	16QAM	100	0	20.57	20.58	20.60	21.5
20	64QAM	1	0	20.64	20.72	20.73	
20	64QAM	1	49	20.67	20.72	20.83	
20	64QAM	1	99	20.61	20.71	20.79	21
20	64QAM	50	0	19.98	20.11	20.09	
20	64QAM	50	24	20.11	20.10	20.19	
20	64QAM	50	50	20.09	20.06	20.11	
20	64QAM	100	0	20.11	20.08	20.14	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	20.33	20.73	20.35	
15	QPSK	1	37	20.31	20.38	20.45	21.5
15	QPSK	1	74	20.26	20.38	20.41	
15	QPSK	36	0	20.44	20.49	20.49	
15	QPSK	36	20	20.47	20.50	20.50	21.5
15	QPSK	36	39	20.43	20.45	20.46	
15	QPSK	75	0	20.49	20.45	20.41	
15	16QAM	1	0	20.61	20.69	20.63	21.5
15	16QAM	1	37	20.61	20.74	20.65	
15	16QAM	1	74	20.58	20.68	20.72	
15	16QAM	36	0	20.32	20.51	20.45	21.5
15	16QAM	36	20	20.48	20.48	20.53	
15	16QAM	36	39	20.42	20.45	20.38	
15	16QAM	75	0	20.43	20.39	20.48	21.5
15	64QAM	1	0	20.44	20.53	20.54	
15	64QAM	1	37	20.55	20.59	20.65	
15	64QAM	1	74	20.44	20.56	20.63	21
15	64QAM	36	0	19.81	19.98	19.91	
15	64QAM	36	20	19.98	19.90	20.05	
15	64QAM	36	39	19.90	19.92	20.00	
15	64QAM	75	0	19.93	19.91	20.01	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	20.33	20.81	20.36	
10	QPSK	1	25	20.32	20.44	20.46	21.5
10	QPSK	1	49	20.36	20.34	20.36	
10	QPSK	25	0	20.36	20.47	20.41	
10	QPSK	25	12	20.42	20.48	20.48	21.5
10	QPSK	25	25	20.42	20.38	20.38	
10	QPSK	50	0	20.39	20.49	20.44	
10	16QAM	1	0	20.55	20.72	20.69	21.5
10	16QAM	1	25	20.60	20.75	20.66	
10	16QAM	1	49	20.62	20.75	20.76	



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10	16QAM	25	0	20.33	20.43	20.39	21.5
10	16QAM	25	12	20.45	20.54	20.49	
10	16QAM	25	25	20.42	20.42	20.42	
10	16QAM	50	0	20.43	20.47	20.50	
10	64QAM	1	0	20.53	20.62	20.63	21.5
10	64QAM	1	25	20.49	20.60	20.69	
10	64QAM	1	49	20.48	20.55	20.63	
10	64QAM	25	0	19.80	19.95	19.90	21
10	64QAM	25	12	20.00	19.94	19.99	
10	64QAM	25	25	19.97	19.86	19.93	
10	64QAM	50	0	19.99	19.89	19.97	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	20.31	20.80	20.35	21.5
5	QPSK	1	12	20.35	20.39	20.39	
5	QPSK	1	24	20.34	20.34	20.33	
5	QPSK	12	0	20.44	20.50	20.44	21.5
5	QPSK	12	7	20.46	20.44	20.42	
5	QPSK	12	13	20.41	20.46	20.36	
5	QPSK	25	0	20.49	20.46	20.43	
5	16QAM	1	0	20.62	20.66	20.63	21.5
5	16QAM	1	12	20.59	20.72	20.64	
5	16QAM	1	24	20.60	20.75	20.74	
5	16QAM	12	0	20.39	20.44	20.35	21.5
5	16QAM	12	7	20.48	20.46	20.46	
5	16QAM	12	13	20.46	20.36	20.37	
5	16QAM	25	0	20.47	20.39	20.47	21.5
5	64QAM	1	0	20.44	20.61	20.56	
5	64QAM	1	12	20.55	20.55	20.67	
5	64QAM	1	24	20.47	20.59	20.67	21
5	64QAM	12	0	19.82	19.93	19.90	
5	64QAM	12	7	19.95	19.92	20.01	
5	64QAM	12	13	19.94	19.89	19.93	
5	64QAM	25	0	19.99	19.94	19.94	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	20.33	20.74	20.33	21.5
3	QPSK	1	8	20.35	20.40	20.48	
3	QPSK	1	14	20.28	20.34	20.33	
3	QPSK	8	0	20.40	20.49	20.41	21.5
3	QPSK	8	4	20.42	20.44	20.46	
3	QPSK	8	7	20.48	20.45	20.37	
3	QPSK	15	0	20.40	20.49	20.46	
3	16QAM	1	0	20.54	20.67	20.66	21.5
3	16QAM	1	8	20.59	20.69	20.67	
3	16QAM	1	14	20.59	20.69	20.77	
3	16QAM	8	0	20.34	20.52	20.35	21.5
3	16QAM	8	4	20.46	20.51	20.49	
3	16QAM	8	7	20.45	20.40	20.43	
3	16QAM	15	0	20.38	20.44	20.49	
3	64QAM	1	0	20.44	20.54	20.57	21.5
3	64QAM	1	8	20.48	20.53	20.65	
3	64QAM	1	14	20.41	20.58	20.62	
3	64QAM	8	0	19.88	19.99	19.92	21
3	64QAM	8	4	19.99	19.94	20.07	
3	64QAM	8	7	19.99	19.90	19.94	
3	64QAM	15	0	19.92	19.89	19.94	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	20.36	20.78	20.33	21.5
1.4	QPSK	1	3	20.39	20.45	20.48	
1.4	QPSK	1	5	20.26	20.35	20.42	
1.4	QPSK	3	0	20.41	20.50	20.44	



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1.4	QPSK	3	1	20.44	20.43	20.43	21.5
1.4	QPSK	3	3	20.43	20.37	20.39	
1.4	QPSK	6	0	20.40	20.40	20.46	
1.4	16QAM	1	0	20.60	20.68	20.63	21.5
1.4	16QAM	1	3	20.52	20.72	20.68	
1.4	16QAM	1	5	20.62	20.71	20.73	
1.4	16QAM	3	0	20.39	20.43	20.43	
1.4	16QAM	3	1	20.49	20.44	20.51	
1.4	16QAM	3	3	20.39	20.36	20.40	21.5
1.4	16QAM	6	0	20.44	20.45	20.41	
1.4	64QAM	1	0	20.52	20.53	20.62	
1.4	64QAM	1	3	20.51	20.61	20.67	21.5
1.4	64QAM	1	5	20.51	20.57	20.60	
1.4	64QAM	3	0	19.81	20.00	19.96	
1.4	64QAM	3	1	19.96	19.92	20.04	
1.4	64QAM	3	3	19.90	19.91	19.96	
1.4	64QAM	6	0	19.91	19.95	20.04	21

<LTE Band 5_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20450	20525	20600	
Frequency (MHz)				829	836.5	844	
10	QPSK	1	0	23.26	23.22	23.39	25
10	QPSK	1	25	23.22	23.25	23.33	
10	QPSK	1	49	23.22	23.28	23.30	
10	QPSK	25	0	22.28	22.19	22.44	24
10	QPSK	25	12	22.38	22.05	22.40	
10	QPSK	25	25	22.34	22.22	22.21	
10	QPSK	50	0	22.38	22.16	22.40	24
10	16QAM	1	0	22.56	22.44	22.53	
10	16QAM	1	25	22.49	22.45	22.61	
10	16QAM	1	49	22.53	22.55	22.64	23
10	16QAM	25	0	21.27	21.23	21.34	
10	16QAM	25	12	21.40	21.26	21.41	
10	16QAM	25	25	21.34	21.26	21.42	23
10	16QAM	50	0	21.33	21.25	21.38	
10	64QAM	1	0	21.17	21.09	21.23	
10	64QAM	1	25	21.30	21.14	21.30	22
10	64QAM	1	49	21.21	21.14	21.27	
10	64QAM	25	0	20.24	20.17	20.37	
10	64QAM	25	12	20.26	20.11	20.30	22
10	64QAM	25	25	20.38	20.07	20.32	
10	64QAM	50	0	20.13	20.12	20.35	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	23.16	23.09	23.27	25
5	QPSK	1	12	23.12	23.09	23.13	
5	QPSK	1	24	23.05	23.16	23.18	
5	QPSK	12	0	22.17	22.05	22.14	24
5	QPSK	12	7	22.22	22.01	22.34	
5	QPSK	12	13	22.16	22.08	22.31	
5	QPSK	25	0	22.24	22.00	22.30	24
5	16QAM	1	0	22.36	22.32	22.33	
5	16QAM	1	12	22.29	22.25	22.46	
5	16QAM	1	24	22.43	22.37	22.51	23
5	16QAM	12	0	21.07	21.12	21.22	
5	16QAM	12	7	21.26	21.08	21.23	
5	16QAM	12	13	21.21	21.13	21.22	23
5	16QAM	25	0	21.21	21.14	21.23	
5	64QAM	1	0	21.05	21.05	21.06	23



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5	64QAM	1	12	21.20	21.00	21.12	22
5	64QAM	1	24	21.11	21.01	21.11	
5	64QAM	12	0	20.05	20.03	20.27	
5	64QAM	12	7	20.13	20.00	20.20	
5	64QAM	12	13	20.25	20.00	20.13	
5	64QAM	25	0	20.03	20.04	20.18	Tune-up limit (dBm)
Channel				20415	20525	20635	
Frequency (MHz)				825.5	836.5	847.5	25
3	QPSK	1	0	23.15	23.12	23.22	
3	QPSK	1	8	23.02	23.14	23.18	
3	QPSK	1	14	23.03	23.09	23.15	
3	QPSK	8	0	22.08	22.00	22.16	
3	QPSK	8	4	22.20	22.00	22.27	24
3	QPSK	8	7	22.17	22.09	22.31	
3	QPSK	15	0	22.18	22.03	22.23	
3	16QAM	1	0	22.45	22.27	22.40	24
3	16QAM	1	8	22.33	22.34	22.46	
3	16QAM	1	14	22.40	22.37	22.44	
3	16QAM	8	0	21.16	21.07	21.21	23
3	16QAM	8	4	21.20	21.08	21.24	
3	16QAM	8	7	21.15	21.07	21.27	
3	16QAM	15	0	21.13	21.09	21.18	
3	64QAM	1	0	21.01	21.12	21.09	23
3	64QAM	1	8	21.11	21.09	21.18	
3	64QAM	1	14	21.04	21.03	21.07	
3	64QAM	8	0	20.07	20.11	20.17	22
3	64QAM	8	4	20.10	20.06	20.13	
3	64QAM	8	7	20.28	20.05	20.12	
3	64QAM	15	0	20.11	20.02	20.19	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	23.10	23.05	23.25	25
1.4	QPSK	1	3	23.06	23.12	23.20	
1.4	QPSK	1	5	23.05	23.17	23.17	
1.4	QPSK	3	0	23.19	23.20	23.34	
1.4	QPSK	3	1	23.38	23.00	23.37	
1.4	QPSK	3	3	23.29	23.13	23.10	
1.4	QPSK	6	0	22.19	22.06	22.22	24
1.4	16QAM	1	0	22.40	22.26	22.41	24
1.4	16QAM	1	3	22.39	22.34	22.46	
1.4	16QAM	1	5	22.37	22.36	22.48	
1.4	16QAM	3	0	22.22	22.18	22.26	
1.4	16QAM	3	1	22.39	22.18	22.40	
1.4	16QAM	3	3	22.26	22.26	22.41	23
1.4	16QAM	6	0	21.13	21.15	21.26	
1.4	64QAM	1	0	21.04	21.01	21.10	23
1.4	64QAM	1	3	21.11	21.06	21.19	
1.4	64QAM	1	5	21.01	21.01	21.09	
1.4	64QAM	3	0	21.21	21.11	21.35	
1.4	64QAM	3	1	21.17	21.02	21.25	
1.4	64QAM	3	3	21.33	21.00	21.30	
1.4	64QAM	6	0	20.03	20.00	20.21	22



<LTE Band 5_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20450	20525	20600	
Frequency (MHz)				829	836.5	844	
10	QPSK	1	0	20.92	20.62	20.52	22
10	QPSK	1	25	20.62	20.66	20.53	
10	QPSK	1	49	20.57	20.64	20.64	
10	QPSK	25	0	20.51	20.50	20.68	22
10	QPSK	25	12	20.58	20.51	20.61	
10	QPSK	25	25	20.50	20.55	20.66	
10	QPSK	50	0	20.58	20.52	20.62	22
10	16QAM	1	0	20.79	20.71	20.79	
10	16QAM	1	25	20.72	20.74	20.84	
10	16QAM	1	49	20.72	20.73	20.91	22
10	16QAM	25	0	20.50	20.52	20.58	
10	16QAM	25	12	20.57	20.50	20.61	
10	16QAM	25	25	20.50	20.50	20.66	22
10	16QAM	50	0	20.58	20.50	20.62	
10	64QAM	1	0	20.63	20.58	20.69	
10	64QAM	1	25	20.59	20.61	20.72	22
10	64QAM	1	49	20.58	20.62	20.81	
10	64QAM	25	0	20.51	20.51	20.52	
10	64QAM	25	12	20.57	20.52	20.62	22
10	64QAM	25	25	20.51	20.52	20.67	
10	64QAM	50	0	20.58	20.52	20.62	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	20.74	20.46	20.38	22
5	QPSK	1	12	20.43	20.51	20.42	
5	QPSK	1	24	20.41	20.47	20.53	
5	QPSK	12	0	20.36	20.38	20.49	22
5	QPSK	12	7	20.39	20.41	20.42	
5	QPSK	12	13	20.38	20.43	20.52	
5	QPSK	25	0	20.47	20.33	20.49	22
5	16QAM	1	0	20.62	20.56	20.69	
5	16QAM	1	12	20.61	20.62	20.73	
5	16QAM	1	24	20.52	20.63	20.72	22
5	16QAM	12	0	20.31	20.33	20.40	
5	16QAM	12	7	20.42	20.32	20.51	
5	16QAM	12	13	20.37	20.31	20.56	22
5	16QAM	25	0	20.40	20.32	20.51	
5	64QAM	1	0	20.51	20.47	20.53	
5	64QAM	1	12	20.47	20.46	20.61	22
5	64QAM	1	24	20.42	20.49	20.61	
5	64QAM	12	0	20.32	20.36	20.36	
5	64QAM	12	7	20.40	20.35	20.46	22
5	64QAM	12	13	20.39	20.42	20.48	
5	64QAM	25	0	20.42	20.39	20.52	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	20.80	20.42	20.33	22
3	QPSK	1	8	20.42	20.52	20.37	
3	QPSK	1	14	20.40	20.54	20.45	
3	QPSK	8	0	20.39	20.39	20.51	22
3	QPSK	8	4	20.48	20.38	20.46	
3	QPSK	8	7	20.36	20.36	20.56	
3	QPSK	15	0	20.46	20.41	20.46	22
3	16QAM	1	0	20.59	20.55	20.67	
3	16QAM	1	8	20.58	20.56	20.67	
3	16QAM	1	14	20.59	20.58	20.78	



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3	16QAM	8	0	20.37	20.39	20.44	22
3	16QAM	8	4	20.46	20.40	20.44	
3	16QAM	8	7	20.32	20.34	20.53	
3	16QAM	15	0	20.41	20.36	20.45	
3	64QAM	1	0	20.46	20.48	20.50	22
3	64QAM	1	8	20.41	20.49	20.61	
3	64QAM	1	14	20.39	20.49	20.70	
3	64QAM	8	0	20.38	20.37	20.41	
3	64QAM	8	4	20.44	20.38	20.46	22
3	64QAM	8	7	20.31	20.33	20.55	
3	64QAM	15	0	20.43	20.35	20.50	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	20.75	20.43	20.37	22
1.4	QPSK	1	3	20.45	20.46	20.41	
1.4	QPSK	1	5	20.40	20.47	20.46	
1.4	QPSK	3	0	20.35	20.33	20.50	
1.4	QPSK	3	1	20.40	20.41	20.51	
1.4	QPSK	3	3	20.32	20.42	20.55	
1.4	QPSK	6	0	20.38	20.37	20.48	
1.4	16QAM	1	0	20.65	20.55	20.59	22
1.4	16QAM	1	3	20.59	20.58	20.68	
1.4	16QAM	1	5	20.52	20.62	20.71	
1.4	16QAM	3	0	20.31	20.32	20.41	
1.4	16QAM	3	1	20.46	20.40	20.46	
1.4	16QAM	3	3	20.35	20.31	20.46	
1.4	16QAM	6	0	20.39	20.34	20.52	
1.4	64QAM	1	0	20.46	20.40	20.59	22
1.4	64QAM	1	3	20.48	20.50	20.54	
1.4	64QAM	1	5	20.48	20.45	20.69	
1.4	64QAM	3	0	20.41	20.36	20.35	
1.4	64QAM	3	1	20.42	20.40	20.46	
1.4	64QAM	3	3	20.41	20.37	20.53	
1.4	64QAM	6	0	20.38	20.32	20.44	

<LTE Band 7_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	22.52	22.93	22.66	24
20	QPSK	1	49	22.47	22.66	22.61	
20	QPSK	1	99	22.51	22.77	22.58	
20	QPSK	50	0	21.83	21.86	21.80	23
20	QPSK	50	24	21.82	21.78	21.79	
20	QPSK	50	50	21.79	21.80	21.76	
20	QPSK	100	0	21.73	21.80	21.80	23
20	16QAM	1	0	22.00	21.98	22.06	
20	16QAM	1	49	22.11	22.00	22.06	
20	16QAM	1	99	22.11	22.16	22.17	22
20	16QAM	50	0	20.76	20.78	20.79	
20	16QAM	50	24	20.83	20.84	20.85	
20	16QAM	50	50	20.80	20.88	20.83	22
20	16QAM	100	0	20.75	20.80	20.82	
20	64QAM	1	0	20.86	20.88	20.96	
20	64QAM	1	49	20.97	20.93	20.93	22
20	64QAM	1	99	21.01	21.05	21.05	
20	64QAM	50	0	19.80	19.79	19.80	21
20	64QAM	50	24	19.84	19.83	19.86	
20	64QAM	50	50	19.78	19.89	19.81	
20	64QAM	100	0	19.74	19.79	19.84	



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Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	22.36	22.73	22.49	24
15	QPSK	1	37	22.28	22.52	22.50	
15	QPSK	1	74	22.44	22.67	22.63	
15	QPSK	36	0	21.58	21.65	21.62	23
15	QPSK	36	20	21.69	21.64	21.64	
15	QPSK	36	39	21.63	21.76	21.59	
15	QPSK	75	0	21.56	21.61	21.69	23
15	16QAM	1	0	21.84	21.81	21.94	
15	16QAM	1	37	21.95	21.90	21.96	
15	16QAM	1	74	21.95	22.00	22.00	22
15	16QAM	36	0	20.57	20.58	20.62	
15	16QAM	36	20	20.64	20.71	20.75	
15	16QAM	36	39	20.65	20.71	20.72	22
15	16QAM	75	0	20.65	20.60	20.72	
15	64QAM	1	0	20.68	20.72	20.84	
15	64QAM	1	37	20.79	20.73	20.83	22
15	64QAM	1	74	20.81	20.88	20.92	
15	64QAM	36	0	19.61	19.67	19.67	
15	64QAM	36	20	19.73	19.72	19.73	21
15	64QAM	36	39	19.60	19.77	19.61	
15	64QAM	75	0	19.59	19.64	19.68	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	22.41	22.77	22.52	24
10	QPSK	1	25	22.31	22.55	22.42	
10	QPSK	1	49	22.43	22.67	22.60	
10	QPSK	25	0	21.60	21.59	21.61	23
10	QPSK	25	12	21.63	21.58	21.60	
10	QPSK	25	25	21.60	21.73	21.61	
10	QPSK	50	0	21.60	21.66	21.68	23
10	16QAM	1	0	21.81	21.87	21.87	
10	16QAM	1	25	22.01	21.86	21.91	
10	16QAM	1	49	21.96	21.98	21.98	22
10	16QAM	25	0	20.60	20.60	20.59	
10	16QAM	25	12	20.71	20.74	20.72	
10	16QAM	25	25	20.66	20.78	20.72	22
10	16QAM	50	0	20.65	20.69	20.63	
10	64QAM	1	0	20.75	20.69	20.84	
10	64QAM	1	25	20.80	20.73	20.77	22
10	64QAM	1	49	20.84	20.90	20.92	
10	64QAM	25	0	19.65	19.66	19.66	
10	64QAM	25	12	19.70	19.73	19.71	21
10	64QAM	25	25	19.62	19.78	19.64	
10	64QAM	50	0	19.60	19.64	19.71	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	22.39	22.74	22.50	24
5	QPSK	1	12	22.36	22.54	22.46	
5	QPSK	1	24	22.41	22.64	22.62	
5	QPSK	12	0	21.60	21.68	21.58	23
5	QPSK	12	7	21.70	21.58	21.63	
5	QPSK	12	13	21.60	21.73	21.58	
5	QPSK	25	0	21.61	21.61	21.67	23
5	16QAM	1	0	21.88	21.83	21.90	
5	16QAM	1	12	21.94	21.83	21.88	
5	16QAM	1	24	21.93	21.99	22.04	22
5	16QAM	12	0	20.62	20.64	20.61	
5	16QAM	12	7	20.73	20.68	20.74	
5	16QAM	12	13	20.64	20.68	20.66	22
5	16QAM	25	0	20.64	20.64	20.69	
5	64QAM	1	0	20.76	20.71	20.81	



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5	64QAM	1	12	20.84	20.76	20.78	21
5	64QAM	1	24	20.85	20.95	20.93	
5	64QAM	12	0	19.61	19.60	19.64	
5	64QAM	12	7	19.69	19.65	19.76	
5	64QAM	12	13	19.62	19.79	19.65	
5	64QAM	25	0	19.61	19.67	19.67	

<LTE Band 7_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	15.53	15.90	15.59	16.5
20	QPSK	1	49	15.52	15.63	15.51	
20	QPSK	1	99	15.51	15.67	15.56	
20	QPSK	50	0	15.83	15.71	15.69	16.5
20	QPSK	50	24	15.80	15.68	15.65	
20	QPSK	50	50	15.72	15.70	15.67	
20	QPSK	100	0	15.66	15.72	15.65	16.5
20	16QAM	1	0	15.79	15.75	15.77	
20	16QAM	1	49	15.89	15.86	15.75	
20	16QAM	1	99	15.88	15.87	15.81	16.5
20	16QAM	50	0	15.69	15.64	15.66	
20	16QAM	50	24	15.77	15.72	15.73	
20	16QAM	50	50	15.71	15.79	15.69	16.5
20	16QAM	100	0	15.62	15.69	15.68	
20	64QAM	1	0	15.60	15.64	15.59	
20	64QAM	1	49	15.76	15.78	15.60	16.5
20	64QAM	1	99	15.74	15.77	15.65	
20	64QAM	50	0	15.66	15.67	15.61	
20	64QAM	50	24	15.73	15.73	15.69	16.5
20	64QAM	50	50	15.66	15.80	15.62	
20	64QAM	100	0	15.59	15.72	15.66	
Channel				75	0	-75	Tune-up limit (dBm)
Frequency (MHz)				7.5	0	-7.5	
15	QPSK	1	0	15.33	15.80	15.49	
15	QPSK	1	37	15.48	15.50	15.37	16.5
15	QPSK	1	74	15.53	15.47	15.45	
15	QPSK	36	0	15.71	15.58	15.53	16.5
15	QPSK	36	20	15.65	15.61	15.56	
15	QPSK	36	39	15.53	15.64	15.56	
15	QPSK	75	0	15.50	15.59	15.52	16.5
15	16QAM	1	0	15.64	15.62	15.63	
15	16QAM	1	37	15.71	15.67	15.58	
15	16QAM	1	74	15.71	15.77	15.65	16.5
15	16QAM	36	0	15.56	15.52	15.56	
15	16QAM	36	20	15.64	15.56	15.61	
15	16QAM	36	39	15.57	15.61	15.55	16.5
15	16QAM	75	0	15.45	15.59	15.53	
15	64QAM	1	0	15.48	15.52	15.43	
15	64QAM	1	37	15.62	15.65	15.46	16.5
15	64QAM	1	74	15.59	15.63	15.49	
15	64QAM	36	0	15.46	15.49	15.43	
15	64QAM	36	20	15.56	15.62	15.54	16.5
15	64QAM	36	39	15.51	15.65	15.51	
15	64QAM	75	0	15.42	15.53	15.48	
Channel				50	0	-50	Tune-up limit (dBm)
Frequency (MHz)				5	0	-5	
10	QPSK	1	0	15.36	15.70	15.49	
10	QPSK	1	25	15.48	15.53	15.38	16.5
10	QPSK	1	49	15.45	15.49	15.49	



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10	QPSK	25	0	15.73	15.57	15.49	16.5
10	QPSK	25	12	15.66	15.64	15.63	
10	QPSK	25	25	15.52	15.66	15.52	
10	QPSK	50	0	15.56	15.57	15.47	
10	16QAM	1	0	15.63	15.59	15.62	16.5
10	16QAM	1	25	15.76	15.73	15.56	
10	16QAM	1	49	15.68	15.77	15.61	
10	16QAM	25	0	15.59	15.44	15.51	
10	16QAM	25	12	15.59	15.58	15.63	16.5
10	16QAM	25	25	15.52	15.60	15.49	
10	16QAM	50	0	15.49	15.54	15.52	
10	64QAM	1	0	15.47	15.44	15.47	
10	64QAM	1	25	15.58	15.68	15.48	16.5
10	64QAM	1	49	15.54	15.64	15.51	
10	64QAM	25	0	15.49	15.54	15.46	
10	64QAM	25	12	15.60	15.57	15.51	
10	64QAM	25	25	15.48	15.64	15.46	16.5
10	64QAM	50	0	15.41	15.62	15.55	
Channel				25	0	-25	Tune-up limit (dBm)
Frequency (MHz)				2.5	0	-2.5	
5	QPSK	1	0	15.33	15.77	15.42	16.5
5	QPSK	1	12	15.51	15.48	15.40	
5	QPSK	1	24	15.45	15.55	15.51	
5	QPSK	12	0	15.70	15.58	15.56	
5	QPSK	12	7	15.69	15.62	15.56	16.5
5	QPSK	12	13	15.56	15.70	15.51	
5	QPSK	25	0	15.53	15.62	15.48	
5	16QAM	1	0	15.59	15.62	15.58	
5	16QAM	1	12	15.74	15.69	15.60	16.5
5	16QAM	1	24	15.70	15.75	15.62	
5	16QAM	12	0	15.54	15.47	15.56	
5	16QAM	12	7	15.66	15.61	15.61	
5	16QAM	12	13	15.61	15.69	15.55	16.5
5	16QAM	25	0	15.50	15.58	15.53	
5	64QAM	1	0	15.47	15.52	15.39	
5	64QAM	1	12	15.58	15.65	15.41	
5	64QAM	1	24	15.54	15.60	15.55	16.5
5	64QAM	12	0	15.51	15.51	15.46	
5	64QAM	12	7	15.58	15.62	15.52	
5	64QAM	12	13	15.55	15.70	15.48	
5	64QAM	25	0	15.46	15.54	15.46	

<LTE Band 12_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23060	23095	23130	
Frequency (MHz)				704	707.5	711	
10	QPSK	1	0	23.57	23.45	23.45	25
10	QPSK	1	25	23.51	23.44	23.39	
10	QPSK	1	49	23.52	23.40	23.46	
10	QPSK	25	0	22.61	22.53	22.47	24
10	QPSK	25	12	22.60	22.52	22.51	
10	QPSK	25	25	22.59	22.52	22.46	
10	QPSK	50	0	22.59	22.52	22.52	
10	16QAM	1	0	22.75	22.72	22.74	24
10	16QAM	1	25	22.77	22.78	22.65	
10	16QAM	1	49	22.80	22.65	22.75	
10	16QAM	25	0	21.60	21.53	21.48	23
10	16QAM	25	12	21.59	21.54	21.52	
10	16QAM	25	25	21.56	21.49	21.49	
10	16QAM	50	0	21.59	21.52	21.47	



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10	64QAM	1	0	21.54	21.51	21.45	23
10	64QAM	1	25	21.46	21.54	21.50	
10	64QAM	1	49	21.54	21.45	21.35	
10	64QAM	25	0	20.55	20.60	20.40	22
10	64QAM	25	12	20.60	20.49	20.38	
10	64QAM	25	25	20.36	20.64	20.48	
10	64QAM	50	0	20.47	20.44	20.26	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	23.41	23.33	23.31	25
5	QPSK	1	12	23.35	23.34	23.24	
5	QPSK	1	24	23.42	23.30	23.35	
5	QPSK	12	0	22.37	22.37	22.34	24
5	QPSK	12	7	22.43	22.37	22.32	
5	QPSK	12	13	22.46	22.40	22.33	
5	QPSK	25	0	22.43	22.40	22.42	
5	16QAM	1	0	22.57	22.57	22.64	24
5	16QAM	1	12	22.61	22.68	22.55	
5	16QAM	1	24	22.62	22.49	22.56	
5	16QAM	12	0	21.49	21.33	21.31	
5	16QAM	12	7	21.41	21.37	21.40	23
5	16QAM	12	13	21.45	21.38	21.38	
5	16QAM	25	0	21.40	21.36	21.29	
5	64QAM	1	0	21.43	21.38	21.33	
5	64QAM	1	12	21.35	21.42	21.37	23
5	64QAM	1	24	21.40	21.35	21.24	
5	64QAM	12	0	20.44	20.46	20.28	
5	64QAM	12	7	20.46	20.30	20.28	22
5	64QAM	12	13	20.19	20.45	20.31	
5	64QAM	25	0	20.31	20.24	20.15	
Channel				23025	23095	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	23.39	23.27	23.29	25
3	QPSK	1	8	23.41	23.33	23.23	
3	QPSK	1	14	23.41	23.26	23.32	
3	QPSK	8	0	22.47	22.36	22.27	24
3	QPSK	8	4	22.46	22.40	22.39	
3	QPSK	8	7	22.49	22.39	22.32	
3	QPSK	15	0	22.43	22.32	22.34	
3	16QAM	1	0	22.57	22.61	22.55	24
3	16QAM	1	8	22.57	22.65	22.49	
3	16QAM	1	14	22.69	22.54	22.56	
3	16QAM	8	0	21.45	21.34	21.33	23
3	16QAM	8	4	21.42	21.39	21.33	
3	16QAM	8	7	21.43	21.35	21.35	
3	16QAM	15	0	21.40	21.33	21.33	
3	64QAM	1	0	21.43	21.34	21.25	23
3	64QAM	1	8	21.26	21.38	21.37	
3	64QAM	1	14	21.42	21.27	21.17	
3	64QAM	8	0	20.40	20.44	20.20	22
3	64QAM	8	4	20.42	20.37	20.21	
3	64QAM	8	7	20.19	20.53	20.28	
3	64QAM	15	0	20.31	20.29	20.12	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	23.42	23.35	23.32	25
1.4	QPSK	1	3	23.37	23.39	23.29	
1.4	QPSK	1	5	23.34	23.21	23.29	
1.4	QPSK	3	0	23.01	23.03	23.08	
1.4	QPSK	3	1	23.04	23.00	23.11	
1.4	QPSK	3	3	23.07	23.02	23.09	
1.4	QPSK	6	0	22.40	22.38	22.37	24
1.4	16QAM	1	0	22.57	22.59	22.62	24



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1.4	16QAM	1	3	22.61	22.64	22.52	
1.4	16QAM	1	5	22.63	22.55	22.57	
1.4	16QAM	3	0	22.03	22.14	22.16	
1.4	16QAM	3	1	22.00	22.02	22.16	
1.4	16QAM	3	3	22.01	22.10	22.13	
1.4	16QAM	6	0	21.48	21.38	21.32	23
1.4	64QAM	1	0	21.41	21.36	21.32	23
1.4	64QAM	1	3	21.26	21.44	21.34	
1.4	64QAM	1	5	21.42	21.27	21.17	
1.4	64QAM	3	0	21.03	21.09	21.03	
1.4	64QAM	3	1	21.08	21.12	21.01	
1.4	64QAM	3	3	21.00	21.06	21.14	22
1.4	64QAM	6	0	20.29	20.29	20.12	

<LTE Band 12_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23060	23095	23130	
Frequency (MHz)				704	707.5	711	
10	QPSK	1	0	22.85	22.88	22.43	23.5
10	QPSK	1	25	22.54	22.49	22.42	
10	QPSK	1	49	22.54	22.45	22.41	
10	QPSK	25	0	22.41	22.42	22.23	22.5
10	QPSK	25	12	22.36	22.26	22.22	
10	QPSK	25	25	22.27	22.25	22.22	
10	QPSK	50	0	22.34	22.25	22.21	
10	16QAM	1	0	22.45	22.44	22.43	22.5
10	16QAM	1	25	21.39	21.33	21.23	
10	16QAM	1	49	21.38	21.22	21.32	
10	16QAM	25	0	20.67	20.59	20.54	
10	16QAM	25	12	20.68	20.61	20.57	21.5
10	16QAM	25	25	20.65	20.57	20.56	
10	16QAM	50	0	20.63	20.59	20.57	
10	64QAM	1	0	20.71	20.68	20.68	
10	64QAM	1	25	20.78	20.75	20.65	21.5
10	64QAM	1	49	20.74	20.66	20.70	
10	64QAM	25	0	19.64	19.62	19.55	
10	64QAM	25	12	19.67	19.64	19.61	20.5
10	64QAM	25	25	19.68	19.60	19.53	
10	64QAM	50	0	19.66	19.63	19.57	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	22.73	22.36	22.27	23.5
5	QPSK	1	12	22.41	22.37	22.30	
5	QPSK	1	24	22.38	22.29	22.40	
5	QPSK	12	0	22.26	22.06	22.12	22.5
5	QPSK	12	7	22.16	22.09	22.07	
5	QPSK	12	13	22.17	22.10	22.07	
5	QPSK	25	0	22.20	22.13	22.01	
5	16QAM	1	0	22.27	22.30	22.24	22.5
5	16QAM	1	12	21.21	21.22	21.05	
5	16QAM	1	24	21.22	21.04	21.22	
5	16QAM	12	0	20.54	20.42	20.34	
5	16QAM	12	7	20.58	20.44	20.39	21.5
5	16QAM	12	13	20.47	20.41	20.37	
5	16QAM	25	0	20.52	20.43	20.40	
5	64QAM	1	0	20.52	20.55	20.56	
5	64QAM	1	12	20.68	20.57	20.48	21.5
5	64QAM	1	24	20.59	20.56	20.55	
5	64QAM	12	0	19.53	19.49	19.39	
5	64QAM	12	7	19.53	19.44	19.44	20.5



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5	64QAM	12	13	19.48	19.43	19.43	
5	64QAM	25	0	19.55	19.48	19.43	
Channel				23025	23095	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	22.68	22.36	22.26	23.5
3	QPSK	1	8	22.40	22.30	22.28	
3	QPSK	1	14	22.40	22.25	22.40	
3	QPSK	8	0	22.29	22.10	22.11	22.5
3	QPSK	8	4	22.24	22.13	22.08	
3	QPSK	8	7	22.09	22.14	22.07	
3	QPSK	15	0	22.15	22.08	22.05	
3	16QAM	1	0	22.30	22.24	22.31	22.5
3	16QAM	1	8	21.26	21.14	21.07	
3	16QAM	1	14	21.22	21.12	21.14	
3	16QAM	8	0	20.49	20.47	20.40	21.5
3	16QAM	8	4	20.55	20.49	20.39	
3	16QAM	8	7	20.51	20.39	20.39	
3	16QAM	15	0	20.49	20.39	20.37	
3	64QAM	1	0	20.51	20.56	20.54	21.5
3	64QAM	1	8	20.66	20.65	20.46	
3	64QAM	1	14	20.58	20.52	20.59	
3	64QAM	8	0	19.53	19.49	19.37	20.5
3	64QAM	8	4	19.50	19.47	19.51	
3	64QAM	8	7	19.53	19.46	19.36	
3	64QAM	15	0	19.50	19.48	19.44	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	22.72	22.30	22.25	23.5
1.4	QPSK	1	3	22.43	22.38	22.31	
1.4	QPSK	1	5	22.35	22.26	22.38	
1.4	QPSK	3	0	22.23	22.15	22.11	
1.4	QPSK	3	1	22.17	22.07	22.04	
1.4	QPSK	3	3	22.14	22.05	22.12	
1.4	QPSK	6	0	22.21	22.08	22.05	22.5
1.4	16QAM	1	0	22.31	22.27	22.26	22.5
1.4	16QAM	1	3	21.28	21.16	21.13	
1.4	16QAM	1	5	21.20	21.04	21.21	
1.4	16QAM	3	0	20.50	20.50	20.50	
1.4	16QAM	3	1	20.52	20.53	20.50	
1.4	16QAM	3	3	20.55	20.55	20.50	
1.4	16QAM	6	0	20.44	20.44	20.40	21.5
1.4	64QAM	1	0	20.54	20.49	20.56	21.5
1.4	64QAM	1	3	20.66	20.55	20.54	
1.4	64QAM	1	5	20.55	20.56	20.53	
1.4	64QAM	3	0	19.58	19.53	19.52	
1.4	64QAM	3	1	19.59	19.61	19.55	
1.4	64QAM	3	3	19.59	19.50	19.51	
1.4	64QAM	6	0	19.52	19.52	19.42	20.5

<LTE Band 13_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23230			
Frequency (MHz)				782			
10	QPSK	1	0		24.14		25
10	QPSK	1	25		24.05		
10	QPSK	1	49		24.00		
10	QPSK	25	0		23.23		24
10	QPSK	25	12		23.23		
10	QPSK	25	25		23.17		
10	QPSK	50	0		23.22		



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10	16QAM	1	0		23.21		24
10	16QAM	1	25		23.27		
10	16QAM	1	49		23.24		
10	16QAM	25	0		22.18		23
10	16QAM	25	12		22.18		
10	16QAM	25	25		22.15		
10	16QAM	50	0		22.19		23
10	64QAM	1	0		22.12		
10	64QAM	1	25		22.34		
10	64QAM	1	49		22.28		22
10	64QAM	25	0		21.18		
10	64QAM	25	12		21.09		
10	64QAM	25	25		21.21		22
10	64QAM	50	0		21.24		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0		23.95		25
5	QPSK	1	12		23.91		
5	QPSK	1	24		23.81		
5	QPSK	12	0		23.09		24
5	QPSK	12	7		23.07		
5	QPSK	12	13		22.99		
5	QPSK	25	0		23.08		24
5	16QAM	1	0		23.06		
5	16QAM	1	12		23.12		
5	16QAM	1	24		23.11		23
5	16QAM	12	0		22.07		
5	16QAM	12	7		22.05		
5	16QAM	12	13		21.97		23
5	16QAM	25	0		21.99		
5	64QAM	1	0		22.02		
5	64QAM	1	12		22.16		23
5	64QAM	1	24		22.08		
5	64QAM	12	0		21.02		
5	64QAM	12	7		20.90		22
5	64QAM	12	13		21.03		
5	64QAM	25	0		21.12		

<LTE Band 13_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23230			
Frequency (MHz)				782			
10	QPSK	1	0		21.70		22
10	QPSK	1	25		21.42		
10	QPSK	1	49		21.34		
10	QPSK	25	0		21.63		22
10	QPSK	25	12		21.52		
10	QPSK	25	25		21.42		
10	QPSK	50	0		21.47		
10	16QAM	1	0		21.63		22
10	16QAM	1	25		21.61		
10	16QAM	1	49		21.63		
10	16QAM	25	0		21.55		
10	16QAM	25	12		21.52		22
10	16QAM	25	25		21.47		
10	16QAM	50	0		21.51		
10	64QAM	1	0		21.53		22
10	64QAM	1	25		21.56		
10	64QAM	1	49		21.50		
10	64QAM	25	0		21.53		



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10	64QAM	25	12		21.50		
10	64QAM	25	25		21.43		
10	64QAM	50	0		21.48		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0		21.57		22
5	QPSK	1	12		21.24		
5	QPSK	1	24		21.18		
5	QPSK	12	0		21.39		22
5	QPSK	12	7		21.40		
5	QPSK	12	13		21.32		
5	QPSK	25	0		21.36		22
5	16QAM	1	0		21.45		
5	16QAM	1	12		21.50		
5	16QAM	1	24		21.47		22
5	16QAM	12	0		21.36		
5	16QAM	12	7		21.34		
5	16QAM	12	13		21.37		22
5	16QAM	25	0		21.34		
5	64QAM	1	0		21.34		
5	64QAM	1	12		21.45		22
5	64QAM	1	24		21.39		
5	64QAM	12	0		21.43		
5	64QAM	12	7		21.37		22
5	64QAM	12	13		21.25		
5	64QAM	25	0		21.36		

<LTE Band 14_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23330			
Frequency (MHz)				793			
10	QPSK	1	0		24.14		25
10	QPSK	1	25		24.09		
10	QPSK	1	49		23.91		
10	QPSK	25	0		23.24		24
10	QPSK	25	12		23.22		
10	QPSK	25	25		23.19		
10	QPSK	50	0		23.22		24
10	16QAM	1	0		23.34		
10	16QAM	1	25		23.41		
10	16QAM	1	49		23.15		23
10	16QAM	25	0		22.19		
10	16QAM	25	12		22.21		
10	16QAM	25	25		22.18		23
10	16QAM	50	0		22.21		
10	64QAM	1	0		22.34		
10	64QAM	1	25		22.42		22
10	64QAM	1	49		22.07		
10	64QAM	25	0		21.26		
10	64QAM	25	12		21.31		22
10	64QAM	25	25		21.21		
10	64QAM	50	0		21.18		
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0		23.98		25
5	QPSK	1	12		23.90		
5	QPSK	1	24		23.72		
5	QPSK	12	0		23.12		24
5	QPSK	12	7		23.03		
5	QPSK	12	13		23.05		



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5	QPSK	25	0		23.09		
5	16QAM	1	0		23.18		
5	16QAM	1	12		23.25		24
5	16QAM	1	24		22.99		
5	16QAM	12	0		22.01		
5	16QAM	12	7		22.06		23
5	16QAM	12	13		21.99		
5	16QAM	25	0		22.09		
5	64QAM	1	0		22.23		
5	64QAM	1	12		22.32		23
5	64QAM	1	24		21.88		
5	64QAM	12	0		21.14		
5	64QAM	12	7		21.11		
5	64QAM	12	13		21.07		22
5	64QAM	25	0		21.06		

<LTE Band 14_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23330			
Frequency (MHz)				793			
10	QPSK	1	0		21.86		22
10	QPSK	1	25		21.46		
10	QPSK	1	49		21.26		
10	QPSK	25	0		21.62		22
10	QPSK	25	12		21.59		
10	QPSK	25	25		21.47		
10	QPSK	50	0		21.54		22
10	16QAM	1	0		21.85		
10	16QAM	1	25		21.81		
10	16QAM	1	49		21.60		22
10	16QAM	25	0		21.61		
10	16QAM	25	12		21.61		
10	16QAM	25	25		21.49		22
10	16QAM	50	0		21.58		
10	64QAM	1	0		21.74		
10	64QAM	1	25		21.68		22
10	64QAM	1	49		21.48		
10	64QAM	25	0		21.62		
10	64QAM	25	12		21.63		22
10	64QAM	25	25		21.51		
10	64QAM	50	0		21.55		
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0		21.68		22
5	QPSK	1	12		21.32		
5	QPSK	1	24		21.15		
5	QPSK	12	0		21.46		22
5	QPSK	12	7		21.43		
5	QPSK	12	13		21.31		
5	QPSK	25	0		21.44		22
5	16QAM	1	0		21.65		
5	16QAM	1	12		21.64		
5	16QAM	1	24		21.43		22
5	16QAM	12	0		21.47		
5	16QAM	12	7		21.46		
5	16QAM	12	13		21.35		22
5	16QAM	25	0		21.46		
5	64QAM	1	0		21.55		
5	64QAM	1	12		21.50		22
5	64QAM	1	24		21.31		



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5	64QAM	12	0		21.46		22
5	64QAM	12	7		21.44		
5	64QAM	12	13		21.34		
5	64QAM	25	0		21.45		

<LTE Band 25_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26140	26340	26590	
Frequency (MHz)				1860	1880	1905	
20	QPSK	1	0	23.03	23.17	22.88	24
20	QPSK	1	49	22.98	23.05	22.87	
20	QPSK	1	99	23.00	22.98	22.84	
20	QPSK	50	0	22.11	22.15	21.97	23
20	QPSK	50	24	22.08	22.12	21.96	
20	QPSK	50	50	22.10	22.10	21.95	
20	QPSK	100	0	22.14	22.14	22.01	23
20	16QAM	1	0	22.37	22.41	22.20	
20	16QAM	1	49	22.30	22.40	22.26	
20	16QAM	1	99	22.28	22.32	22.15	22
20	16QAM	50	0	21.13	21.19	21.00	
20	16QAM	50	24	21.09	21.17	21.03	
20	16QAM	50	50	21.13	21.10	21.00	22
20	16QAM	100	0	21.15	21.15	20.99	
20	64QAM	1	0	21.31	21.29	21.10	
20	64QAM	1	49	21.29	21.30	21.14	22
20	64QAM	1	99	21.28	21.19	21.07	
20	64QAM	50	0	20.19	20.19	20.01	21
20	64QAM	50	24	20.15	20.16	20.03	
20	64QAM	50	50	20.19	20.11	20.01	
20	64QAM	100	0	20.23	20.15	20.01	
Channel				26115	26340	26615	
Frequency (MHz)				1857.5	1880	1907.5	Tune-up limit (dBm)
15	QPSK	1	0	22.85	23.00	22.78	24
15	QPSK	1	37	22.79	22.86	22.75	
15	QPSK	1	74	22.89	22.80	22.67	
15	QPSK	36	0	21.98	22.02	21.84	23
15	QPSK	36	20	21.93	22.04	21.85	
15	QPSK	36	39	21.93	21.95	21.75	
15	QPSK	75	0	22.00	21.94	21.89	23
15	16QAM	1	0	22.24	22.27	22.08	
15	16QAM	1	37	22.15	22.29	22.15	
15	16QAM	1	74	22.13	22.16	22.00	22
15	16QAM	36	0	20.96	21.01	20.80	
15	16QAM	36	20	20.95	21.05	20.90	
15	16QAM	36	39	20.93	20.92	20.83	22
15	16QAM	75	0	20.95	21.05	20.88	
15	64QAM	1	0	21.19	21.12	20.95	
15	64QAM	1	37	21.17	21.15	20.95	22
15	64QAM	1	74	21.10	21.05	20.92	
15	64QAM	36	0	20.09	20.09	19.90	21
15	64QAM	36	20	19.97	20.05	19.83	
15	64QAM	36	39	20.01	19.95	19.82	
15	64QAM	75	0	20.03	19.98	19.87	
Channel				26090	26340	26640	
Frequency (MHz)				1855	1880	1910	Tune-up limit (dBm)
10	QPSK	1	0	22.87	23.05	22.68	24
10	QPSK	1	25	22.81	22.89	22.80	
10	QPSK	1	49	22.80	22.81	22.72	
10	QPSK	25	0	22.01	22.02	21.79	23
10	QPSK	25	12	21.94	22.00	21.87	



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10	QPSK	25	25	21.99	22.00	21.79	23
10	QPSK	50	0	22.03	21.99	21.87	
10	16QAM	1	0	22.18	22.30	22.10	
10	16QAM	1	25	22.13	22.24	22.06	
10	16QAM	1	49	22.15	22.13	22.02	22
10	16QAM	25	0	21.03	21.08	20.87	
10	16QAM	25	12	20.99	21.01	20.85	
10	16QAM	25	25	20.97	20.92	20.80	
10	16QAM	50	0	20.99	21.00	20.83	22
10	64QAM	1	0	21.17	21.19	20.90	
10	64QAM	1	25	21.12	21.17	21.01	
10	64QAM	1	49	21.10	21.08	20.88	
10	64QAM	25	0	20.05	20.01	19.83	21
10	64QAM	25	12	19.96	20.05	19.87	
10	64QAM	25	25	20.09	20.01	19.84	
10	64QAM	50	0	20.05	20.04	19.90	
Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	22.87	23.02	22.70	24
5	QPSK	1	12	22.88	22.87	22.72	
5	QPSK	1	24	22.88	22.83	22.73	
5	QPSK	12	0	21.92	21.98	21.77	23
5	QPSK	12	7	21.95	22.05	21.85	
5	QPSK	12	13	21.93	21.90	21.77	
5	QPSK	25	0	21.98	21.99	21.82	23
5	16QAM	1	0	22.20	22.27	22.05	
5	16QAM	1	12	22.19	22.30	22.10	
5	16QAM	1	24	22.16	22.17	21.97	22
5	16QAM	12	0	21.00	21.09	20.83	
5	16QAM	12	7	20.96	21.02	20.90	
5	16QAM	12	13	20.93	21.00	20.86	22
5	16QAM	25	0	20.98	20.99	20.89	
5	64QAM	1	0	21.15	21.12	20.96	
5	64QAM	1	12	21.13	21.12	20.96	21
5	64QAM	1	24	21.16	21.00	20.94	
5	64QAM	12	0	20.03	20.08	19.88	
5	64QAM	12	7	20.04	20.06	19.91	21
5	64QAM	12	13	20.06	20.01	19.88	
5	64QAM	25	0	20.07	19.95	19.87	
Channel				26055	26340	26675	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	22.92	23.01	22.78	24
3	QPSK	1	8	22.81	22.87	22.80	
3	QPSK	15	0	22.01	22.02	21.83	
3	16QAM	1	0	22.27	22.25	22.02	23
3	16QAM	1	8	22.19	22.22	22.13	
3	16QAM	1	14	22.16	22.21	21.97	
3	16QAM	8	0	20.98	21.07	20.82	22
3	16QAM	8	4	20.93	20.97	20.85	
3	16QAM	8	7	21.03	20.98	20.86	
3	16QAM	15	0	20.97	21.01	20.88	22
3	64QAM	1	0	21.21	21.11	20.99	
3	64QAM	1	8	21.12	21.15	20.99	
3	64QAM	1	14	21.11	21.06	20.97	21
3	64QAM	8	0	20.07	20.03	19.87	
3	64QAM	8	4	19.98	19.98	19.88	
3	64QAM	8	7	20.05	19.94	19.82	21
3	64QAM	15	0	20.08	20.01	19.83	
Channel				26047	26340	26683	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	22.83	23.04	22.74	24
1.4	QPSK	1	3	22.81	22.94	22.75	
1.4	QPSK	1	5	22.88	22.83	22.64	



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1.4	QPSK	3	0	22.11	22.02	22.02	
1.4	QPSK	3	1	22.08	22.05	22.02	
1.4	QPSK	3	3	22.01	22.06	22.00	
1.4	QPSK	6	0	22.01	22.02	21.83	23
1.4	16QAM	1	0	22.19	22.27	22.04	23
1.4	16QAM	1	3	22.12	22.24	22.07	
1.4	16QAM	1	5	22.08	22.15	21.99	
1.4	16QAM	3	0	21.01	21.01	21.03	
1.4	16QAM	3	1	21.13	21.14	21.17	
1.4	16QAM	3	3	21.00	21.15	21.00	22
1.4	16QAM	6	0	21.00	20.99	20.79	
1.4	64QAM	1	0	21.18	21.14	21.00	22
1.4	64QAM	1	3	21.15	21.14	21.00	
1.4	64QAM	1	5	21.12	21.06	20.93	
1.4	64QAM	3	0	20.08	20.15	20.01	
1.4	64QAM	3	1	20.02	20.05	20.09	
1.4	64QAM	3	3	20.00	20.10	20.00	21
1.4	64QAM	6	0	20.12	20.05	19.90	

<LTE Band 25_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26140	26340	26590	
Frequency (MHz)				1860	1880	1905	
20	QPSK	1	0	21.92	22.36	21.71	22.5
20	QPSK	1	49	21.89	22.02	21.66	
20	QPSK	1	99	21.84	21.86	21.63	
20	QPSK	50	0	21.98	22.07	21.78	22.5
20	QPSK	50	24	21.96	22.05	21.75	
20	QPSK	50	50	21.94	21.97	21.76	
20	QPSK	100	0	22.05	22.03	21.79	
20	16QAM	1	0	22.32	22.31	22.05	22.5
20	16QAM	1	49	22.26	22.35	22.11	
20	16QAM	1	99	22.19	22.19	21.96	
20	16QAM	50	0	21.53	21.59	21.33	22
20	16QAM	50	24	21.52	21.61	21.35	
20	16QAM	50	50	21.54	21.43	21.29	
20	16QAM	100	0	21.58	21.50	21.31	
20	64QAM	1	0	21.64	21.73	21.44	22
20	64QAM	1	49	21.61	21.62	21.49	
20	64QAM	1	99	21.56	21.47	21.35	
20	64QAM	50	0	20.55	20.53	20.34	21
20	64QAM	50	24	20.53	20.51	20.34	
20	64QAM	50	50	20.57	20.41	20.32	
20	64QAM	100	0	20.60	20.47	20.31	
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	21.82	22.20	21.51	22.5
15	QPSK	1	37	21.72	21.86	21.64	
15	QPSK	1	74	21.74	21.69	21.50	
15	QPSK	36	0	21.80	21.94	21.66	22.5
15	QPSK	36	20	21.83	21.94	21.71	
15	QPSK	36	39	21.83	21.81	21.61	
15	QPSK	75	0	21.94	21.83	21.59	22.5
15	16QAM	1	0	22.18	22.16	21.95	
15	16QAM	1	37	22.07	22.24	21.91	
15	16QAM	1	74	22.07	22.07	21.80	22
15	16QAM	36	0	21.33	21.47	21.16	
15	16QAM	36	20	21.35	21.45	21.23	
15	16QAM	36	39	21.39	21.31	21.16	
15	16QAM	75	0	21.39	21.39	21.19	



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15	64QAM	1	0	21.51	21.56	21.25	22
15	64QAM	1	37	21.47	21.49	21.37	
15	64QAM	1	74	21.44	21.36	21.17	
15	64QAM	36	0	20.42	20.33	20.19	21
15	64QAM	36	20	20.43	20.34	20.18	
15	64QAM	36	39	20.46	20.26	20.19	
15	64QAM	75	0	20.43	20.32	20.13	
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	21.72	22.21	21.60	22.5
10	QPSK	1	25	21.75	21.84	21.64	
10	QPSK	1	49	21.68	21.67	21.45	
10	QPSK	25	0	21.82	21.91	21.59	22.5
10	QPSK	25	12	21.83	21.93	21.61	
10	QPSK	25	25	21.88	21.86	21.65	
10	QPSK	50	0	21.86	21.88	21.65	
10	16QAM	1	0	22.21	22.13	21.94	22.5
10	16QAM	1	25	22.15	22.24	21.98	
10	16QAM	1	49	22.04	22.07	21.80	
10	16QAM	25	0	21.43	21.42	21.17	
10	16QAM	25	12	21.38	21.45	21.21	22
10	16QAM	25	25	21.37	21.27	21.16	
10	16QAM	50	0	21.40	21.33	21.13	
10	64QAM	1	0	21.48	21.55	21.27	
10	64QAM	1	25	21.49	21.47	21.32	22
10	64QAM	1	49	21.39	21.37	21.15	
10	64QAM	25	0	20.43	20.36	20.15	
10	64QAM	25	12	20.35	20.33	20.18	21
10	64QAM	25	25	20.38	20.26	20.19	
10	64QAM	50	0	20.43	20.27	20.14	
Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	21.74	22.22	21.55	22.5
5	QPSK	1	12	21.75	21.87	21.63	
5	QPSK	1	24	21.71	21.68	21.49	
5	QPSK	12	0	21.81	21.94	21.64	22.5
5	QPSK	12	7	21.76	21.94	21.70	
5	QPSK	12	13	21.84	21.85	21.63	
5	QPSK	25	0	21.85	21.88	21.65	
5	16QAM	1	0	22.16	22.18	21.90	22.5
5	16QAM	1	12	22.10	22.18	21.96	
5	16QAM	1	24	22.08	22.09	21.80	
5	16QAM	12	0	21.37	21.41	21.21	22
5	16QAM	12	7	21.42	21.49	21.24	
5	16QAM	12	13	21.40	21.24	21.13	
5	16QAM	25	0	21.43	21.35	21.21	
5	64QAM	1	0	21.44	21.62	21.30	22
5	64QAM	1	12	21.47	21.51	21.30	
5	64QAM	1	24	21.37	21.36	21.15	
5	64QAM	12	0	20.42	20.40	20.15	
5	64QAM	12	7	20.42	20.38	20.19	21
5	64QAM	12	13	20.41	20.26	20.21	
5	64QAM	25	0	20.50	20.30	20.21	
Channel				26055	26340	26675	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	21.81	22.18	21.55	22.5
3	QPSK	1	8	21.76	21.88	21.56	
3	QPSK	1	14	21.65	21.66	21.48	
3	QPSK	8	0	21.85	21.95	21.60	22.5
3	QPSK	8	4	21.84	21.88	21.64	
3	QPSK	8	7	21.86	21.83	21.58	
3	QPSK	15	0	21.93	21.92	21.68	
3	16QAM	1	0	22.18	22.19	21.90	22.5



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3	16QAM	1	8	22.15	22.19	21.99	22
3	16QAM	1	14	22.05	22.01	21.83	
3	16QAM	8	0	21.39	21.44	21.21	
3	16QAM	8	4	21.32	21.46	21.19	
3	16QAM	8	7	21.39	21.24	21.18	
3	16QAM	15	0	21.39	21.35	21.14	22
3	64QAM	1	0	21.49	21.54	21.26	
3	64QAM	1	8	21.46	21.46	21.30	
3	64QAM	1	14	21.40	21.33	21.17	
3	64QAM	8	0	20.37	20.39	20.15	
3	64QAM	8	4	20.37	20.35	20.19	21
3	64QAM	8	7	20.41	20.25	20.21	
3	64QAM	15	0	20.50	20.28	20.12	
Channel				26047	26340	26683	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	21.73	22.23	21.61	22.5
1.4	QPSK	1	3	21.78	21.87	21.64	
1.4	QPSK	1	5	21.71	21.70	21.45	
1.4	QPSK	3	0	21.81	21.89	21.65	
1.4	QPSK	3	1	21.86	21.87	21.62	
1.4	QPSK	3	3	21.83	21.82	21.66	
1.4	QPSK	6	0	21.87	21.85	21.69	22.5
1.4	16QAM	1	0	22.12	22.17	21.85	22.5
1.4	16QAM	1	3	22.07	22.22	22.00	
1.4	16QAM	1	5	22.03	22.04	21.78	
1.4	16QAM	3	0	21.36	21.41	21.19	
1.4	16QAM	3	1	21.36	21.41	21.24	
1.4	16QAM	3	3	21.34	21.27	21.12	
1.4	16QAM	6	0	21.46	21.38	21.15	22
1.4	64QAM	1	0	21.52	21.56	21.26	22
1.4	64QAM	1	3	21.45	21.49	21.36	
1.4	64QAM	1	5	21.40	21.37	21.15	
1.4	64QAM	3	0	20.41	20.35	20.21	
1.4	64QAM	3	1	20.40	20.36	20.22	
1.4	64QAM	3	3	20.44	20.23	20.14	
1.4	64QAM	6	0	20.43	20.28	20.19	21

<LTE Band 26_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26765	26865	26965	
Frequency (MHz)				821.5	831.5	841.5	
15	QPSK	1	0	23.71	23.43	23.26	25
15	QPSK	1	37	23.49	23.23	23.43	
15	QPSK	1	74	23.32	23.42	23.52	
15	QPSK	36	0	22.58	22.34	22.36	24
15	QPSK	36	20	22.61	22.31	22.50	
15	QPSK	36	39	22.44	22.32	22.56	
15	QPSK	75	0	22.59	22.28	22.54	
15	16QAM	1	0	23.00	22.73	22.54	24
15	16QAM	1	37	22.78	22.53	22.69	
15	16QAM	1	74	22.62	22.68	22.73	
15	16QAM	36	0	21.58	21.35	21.33	23
15	16QAM	36	20	21.59	21.33	21.54	
15	16QAM	36	39	21.42	21.34	21.56	
15	16QAM	75	0	21.55	21.29	21.49	
15	64QAM	1	0	21.88	21.62	21.42	23
15	64QAM	1	37	21.68	21.41	21.57	
15	64QAM	1	74	21.53	21.60	21.66	
15	64QAM	36	0	20.64	20.37	20.35	22
15	64QAM	36	20	20.59	20.34	20.54	



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15	64QAM	36	39	20.44	20.36	20.55	Tune-up limit (dBm)
15	64QAM	75	0	20.57	20.27	20.48	
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	23.60	23.23	23.12	25
10	QPSK	1	25	23.33	23.03	23.26	
10	QPSK	1	49	23.12	23.30	23.35	
10	QPSK	25	0	22.45	22.20	22.25	24
10	QPSK	25	12	22.41	22.13	22.40	
10	QPSK	25	25	22.31	22.14	22.36	
10	QPSK	50	0	22.39	22.18	22.34	
10	16QAM	1	0	22.85	22.56	22.40	24
10	16QAM	1	25	22.59	22.39	22.53	
10	16QAM	1	49	22.46	22.58	22.57	
10	16QAM	25	0	21.48	21.16	21.22	23
10	16QAM	25	12	21.42	21.22	21.36	
10	16QAM	25	25	21.26	21.16	21.43	
10	16QAM	50	0	21.45	21.17	21.38	
10	64QAM	1	0	21.70	21.51	21.25	23
10	64QAM	1	25	21.49	21.27	21.39	
10	64QAM	1	49	21.33	21.49	21.46	
10	64QAM	25	0	20.46	20.21	20.23	22
10	64QAM	25	12	20.43	20.19	20.40	
10	64QAM	25	25	20.26	20.20	20.38	
10	64QAM	50	0	20.46	20.09	20.32	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	23.57	23.24	23.16	25
5	QPSK	1	12	23.33	23.12	23.24	
5	QPSK	1	24	23.18	23.28	23.39	
5	QPSK	12	0	22.45	22.20	22.16	24
5	QPSK	12	7	22.45	22.14	22.40	
5	QPSK	12	13	22.32	22.18	22.44	
5	QPSK	25	0	22.39	22.17	22.34	
5	16QAM	1	0	22.86	22.63	22.43	24
5	16QAM	1	12	22.64	22.39	22.57	
5	16QAM	1	24	22.43	22.53	22.57	
5	16QAM	12	0	21.47	21.17	21.20	23
5	16QAM	12	7	21.45	21.21	21.43	
5	16QAM	12	13	21.23	21.20	21.46	
5	16QAM	25	0	21.40	21.10	21.30	
5	64QAM	1	0	21.68	21.44	21.24	23
5	64QAM	1	12	21.57	21.23	21.46	
5	64QAM	1	24	21.40	21.49	21.46	
5	64QAM	12	0	20.46	20.20	20.25	22
5	64QAM	12	7	20.39	20.14	20.39	
5	64QAM	12	13	20.24	20.26	20.40	
5	64QAM	25	0	20.47	20.13	20.35	
Channel				26705	26865	27025	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	
3	QPSK	1	0	23.54	23.33	23.09	25
3	QPSK	1	8	23.39	23.04	23.32	
3	QPSK	1	14	23.15	23.32	23.40	
3	QPSK	8	0	22.44	22.17	22.20	24
3	QPSK	8	4	22.41	22.12	22.39	
3	QPSK	8	7	22.24	22.13	22.42	
3	QPSK	15	0	22.49	22.18	22.35	
3	16QAM	1	0	22.84	22.58	22.42	24
3	16QAM	1	8	22.66	22.42	22.57	
3	16QAM	1	14	22.46	22.51	22.59	
3	16QAM	8	0	21.41	21.20	21.20	23
3	16QAM	8	4	21.48	21.14	21.38	
3	16QAM	8	7	21.26	21.15	21.38	



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3	16QAM	15	0	21.35	21.09	21.37	23
3	64QAM	1	0	21.77	21.44	21.24	
3	64QAM	1	8	21.58	21.25	21.47	
3	64QAM	1	14	21.38	21.43	21.51	
3	64QAM	8	0	20.54	20.21	20.15	22
3	64QAM	8	4	20.41	20.21	20.42	
3	64QAM	8	7	20.31	20.21	20.40	
3	64QAM	15	0	20.44	20.13	20.30	
Channel				26697	26865	27033	Tune-up limit (dBm)
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	23.54	23.28	23.12	25
1.4	QPSK	1	3	23.33	23.11	23.25	
1.4	QPSK	6	0	22.49	22.14	22.42	24
1.4	16QAM	1	0	22.80	22.59	22.42	24
1.4	16QAM	1	3	22.67	22.41	22.53	
1.4	16QAM	1	5	22.51	22.49	22.57	
1.4	16QAM	3	0	22.26	22.00	22.04	
1.4	16QAM	3	1	22.32	22.05	22.29	
1.4	16QAM	3	3	22.11	22.00	22.28	
1.4	16QAM	6	0	21.44	21.19	21.39	23
1.4	64QAM	1	0	21.77	21.48	21.27	23
1.4	64QAM	1	3	21.50	21.24	21.42	
1.4	64QAM	1	5	21.40	21.42	21.50	
1.4	64QAM	3	0	21.32	21.11	21.02	
1.4	64QAM	3	1	21.28	21.00	21.19	
1.4	64QAM	3	3	21.17	21.03	21.27	
1.4	64QAM	6	0	20.39	20.15	20.37	22

<LTE Band 26_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26765	26865	26965	
Frequency (MHz)				821.5	831.5	841.5	
15	QPSK	1	0	21.30	20.75	20.70	22
15	QPSK	1	37	20.79	20.70	20.79	
15	QPSK	1	74	20.70	20.73	20.82	
15	QPSK	36	0	20.92	20.76	20.77	22
15	QPSK	36	20	20.90	20.74	20.85	
15	QPSK	36	39	20.71	20.74	20.88	
15	QPSK	75	0	20.88	20.75	20.86	22
15	16QAM	1	0	21.26	21.03	20.88	
15	16QAM	1	37	21.10	20.82	21.03	
15	16QAM	1	74	20.86	20.99	21.06	22
15	16QAM	36	0	20.94	20.76	20.76	
15	16QAM	36	20	20.85	20.74	20.83	
15	16QAM	36	39	20.70	20.77	20.83	22
15	16QAM	75	0	20.85	20.73	20.82	
15	64QAM	1	0	21.19	20.92	20.75	
15	64QAM	1	37	20.96	20.70	20.93	22
15	64QAM	1	74	20.71	20.85	20.96	
15	64QAM	36	0	20.95	20.75	20.75	
15	64QAM	36	20	20.89	20.60	20.86	22
15	64QAM	36	39	20.70	20.65	20.85	
15	64QAM	75	0	20.84	20.57	20.80	
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	21.15	20.63	20.55	22
10	QPSK	1	25	20.60	20.60	20.64	
10	QPSK	1	49	20.51	20.55	20.62	
10	QPSK	25	0	20.75	20.56	20.57	22
10	QPSK	25	12	20.72	20.61	20.73	



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10	QPSK	25	25	20.61	20.54	20.70	22
10	QPSK	50	0	20.73	20.57	20.76	
10	16QAM	1	0	21.12	20.85	20.75	
10	16QAM	1	25	20.93	20.63	20.84	
10	16QAM	1	49	20.76	20.82	20.91	22
10	16QAM	25	0	20.77	20.60	20.64	
10	16QAM	25	12	20.72	20.60	20.67	
10	16QAM	25	25	20.51	20.66	20.65	
10	16QAM	50	0	20.69	20.59	20.70	22
10	64QAM	1	0	21.01	20.79	20.60	
10	64QAM	1	25	20.79	20.56	20.82	
10	64QAM	1	49	20.57	20.75	20.82	
10	64QAM	25	0	20.78	20.61	20.61	22
10	64QAM	25	12	20.78	20.49	20.70	
10	64QAM	25	25	20.51	20.45	20.71	
10	64QAM	50	0	20.69	20.40	20.66	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	21.20	20.61	20.50	22
5	QPSK	1	12	20.59	20.56	20.64	
5	QPSK	1	24	20.55	20.61	20.71	
5	QPSK	12	0	20.79	20.65	20.63	22
5	QPSK	12	7	20.74	20.59	20.69	
5	QPSK	12	13	20.58	20.55	20.71	
5	QPSK	25	0	20.71	20.62	20.69	
5	16QAM	1	0	21.13	20.91	20.77	22
5	16QAM	1	12	20.95	20.70	20.90	
5	16QAM	1	24	20.67	20.81	20.87	
5	16QAM	12	0	20.84	20.63	20.57	22
5	16QAM	12	7	20.75	20.58	20.72	
5	16QAM	12	13	20.58	20.65	20.68	
5	16QAM	25	0	20.66	20.53	20.70	
5	64QAM	1	0	20.99	20.72	20.56	22
5	64QAM	1	12	20.82	20.52	20.79	
5	64QAM	1	24	20.54	20.69	20.78	
5	64QAM	12	0	20.83	20.63	20.55	22
5	64QAM	12	7	20.77	20.42	20.68	
5	64QAM	12	13	20.52	20.55	20.69	
5	64QAM	25	0	20.70	20.37	20.69	
Channel				26705	26865	27025	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	
3	QPSK	1	0	21.12	20.55	20.53	22
3	QPSK	1	8	20.69	20.53	20.67	
3	QPSK	1	14	20.52	20.59	20.65	
3	QPSK	8	0	20.81	20.62	20.65	22
3	QPSK	8	4	20.76	20.59	20.74	
3	QPSK	8	7	20.55	20.60	20.76	
3	QPSK	15	0	20.75	20.58	20.71	
3	16QAM	1	0	21.16	20.90	20.70	22
3	16QAM	1	8	20.92	20.70	20.86	
3	16QAM	1	14	20.75	20.88	20.93	
3	16QAM	8	0	20.82	20.63	20.66	22
3	16QAM	8	4	20.71	20.55	20.67	
3	16QAM	8	7	20.58	20.61	20.71	
3	16QAM	15	0	20.72	20.59	20.65	
3	64QAM	1	0	21.04	20.74	20.59	22
3	64QAM	1	8	20.79	20.58	20.73	
3	64QAM	1	14	20.58	20.69	20.84	
3	64QAM	8	0	20.76	20.65	20.56	22
3	64QAM	8	4	20.77	20.45	20.75	
3	64QAM	8	7	20.51	20.51	20.69	
3	64QAM	15	0	20.70	20.42	20.60	
Channel				26697	26865	27033	Tune-up limit



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Frequency (MHz)				814.7	831.5	848.3	(dBm)
1.4	QPSK	1	0	21.10	20.60	20.55	22
1.4	QPSK	1	3	20.68	20.50	20.67	
1.4	QPSK	1	5	20.59	20.60	20.69	
1.4	QPSK	3	0	20.81	20.62	20.63	
1.4	QPSK	3	1	20.79	20.59	20.68	
1.4	QPSK	3	3	20.54	20.57	20.68	
1.4	QPSK	6	0	20.68	20.64	20.76	22
1.4	16QAM	1	0	21.12	20.84	20.72	22
1.4	16QAM	1	3	20.97	20.72	20.88	
1.4	16QAM	1	5	20.66	20.84	20.87	
1.4	16QAM	3	0	20.79	20.60	20.59	
1.4	16QAM	3	1	20.75	20.57	20.71	
1.4	16QAM	3	3	20.59	20.65	20.67	
1.4	16QAM	6	0	20.68	20.59	20.71	22
1.4	64QAM	1	0	21.08	20.72	20.63	22
1.4	64QAM	1	3	20.83	20.60	20.75	
1.4	64QAM	1	5	20.59	20.67	20.80	
1.4	64QAM	3	0	20.76	20.63	20.60	
1.4	64QAM	3	1	20.69	20.50	20.66	
1.4	64QAM	3	3	20.56	20.49	20.74	
1.4	64QAM	6	0	20.68	20.37	20.65	22

<LTE Band 66_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	22.63	22.99	23.19	24
20	QPSK	1	49	22.60	22.93	22.96	
20	QPSK	1	99	22.62	22.93	22.86	
20	QPSK	50	0	21.77	22.13	22.02	23
20	QPSK	50	24	21.71	22.11	22.00	
20	QPSK	50	50	21.76	22.06	22.01	
20	QPSK	100	0	21.87	22.11	21.96	23
20	16QAM	1	0	22.03	22.32	22.24	
20	16QAM	1	49	22.13	22.41	22.23	
20	16QAM	1	99	22.20	22.38	22.14	22
20	16QAM	50	0	20.90	21.21	21.04	
20	16QAM	50	24	20.92	21.18	21.01	
20	16QAM	50	50	20.97	21.13	21.04	22
20	16QAM	100	0	20.88	21.16	20.94	
20	64QAM	1	0	20.94	21.22	21.17	
20	64QAM	1	49	21.01	21.30	21.15	22
20	64QAM	1	99	21.08	21.29	21.06	
20	64QAM	50	0	19.89	20.19	20.02	21
20	64QAM	50	24	19.89	20.18	20.01	
20	64QAM	50	50	19.96	20.11	20.01	
20	64QAM	100	0	19.88	20.16	19.97	
Channel				132047	132322	132597	
Frequency (MHz)				1717.5	1745	1772.5	Tune-up limit (dBm)
15	QPSK	1	0	22.53	22.79	23.06	24
15	QPSK	1	37	22.58	22.83	22.84	
15	QPSK	1	74	22.65	22.88	22.71	
15	QPSK	36	0	21.58	21.93	21.91	23
15	QPSK	36	20	21.62	21.94	21.84	
15	QPSK	36	39	21.69	21.88	21.91	
15	QPSK	75	0	21.69	21.98	21.86	23
15	16QAM	1	0	21.86	22.18	22.05	
15	16QAM	1	37	21.95	22.24	22.06	
15	16QAM	1	74	22.05	22.26	21.97	



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15	16QAM	36	0	20.80	21.05	20.87	22
15	16QAM	36	20	20.81	21.05	20.86	
15	16QAM	36	39	20.85	20.99	20.86	
15	16QAM	75	0	20.73	21.00	20.79	
15	64QAM	1	0	20.81	21.11	20.98	22
15	64QAM	1	37	20.87	21.20	21.03	
15	64QAM	1	74	20.92	21.09	20.91	
15	64QAM	36	0	19.70	20.07	19.82	21
15	64QAM	36	20	19.74	20.01	19.83	
15	64QAM	36	39	19.77	19.96	19.88	
15	64QAM	75	0	19.72	19.96	19.82	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	22.53	22.86	23.00	24
10	QPSK	1	25	22.52	22.83	22.83	
10	QPSK	1	49	22.65	22.83	22.74	
10	QPSK	25	0	21.67	21.96	21.92	23
10	QPSK	25	12	21.68	21.91	21.89	
10	QPSK	25	25	21.72	21.88	21.87	
10	QPSK	50	0	21.70	21.95	21.78	
10	16QAM	1	0	21.84	22.19	22.14	23
10	16QAM	1	25	22.00	22.26	22.04	
10	16QAM	1	49	22.08	22.25	22.01	
10	16QAM	25	0	20.77	21.05	20.87	22
10	16QAM	25	12	20.77	21.01	20.82	
10	16QAM	25	25	20.79	20.95	20.90	
10	16QAM	50	0	20.69	20.98	20.84	
10	64QAM	1	0	20.76	21.03	21.06	22
10	64QAM	1	25	20.86	21.10	21.00	
10	64QAM	1	49	20.97	21.17	20.86	
10	64QAM	25	0	19.74	19.99	19.84	21
10	64QAM	25	12	19.77	20.03	19.89	
10	64QAM	25	25	19.78	19.99	19.85	
10	64QAM	50	0	19.69	20.06	19.83	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	22.48	22.83	23.00	24
5	QPSK	1	12	22.55	22.85	22.83	
5	QPSK	1	24	22.65	22.87	22.67	
5	QPSK	12	0	21.57	22.00	21.83	23
5	QPSK	12	7	21.70	21.98	21.87	
5	QPSK	12	13	21.71	21.86	21.88	
5	QPSK	25	0	21.73	21.94	21.80	23
5	16QAM	1	0	21.84	22.21	22.12	
5	16QAM	1	12	21.98	22.30	22.05	
5	16QAM	1	24	22.04	22.23	22.01	22
5	16QAM	12	0	20.70	21.01	20.92	
5	16QAM	12	7	20.81	21.04	20.88	
5	16QAM	12	13	20.79	20.96	20.84	
5	16QAM	25	0	20.72	20.99	20.82	22
5	64QAM	1	0	20.82	21.06	21.02	
5	64QAM	1	12	20.83	21.13	20.98	
5	64QAM	1	24	20.92	21.14	20.95	21
5	64QAM	12	0	19.70	19.99	19.88	
5	64QAM	12	7	19.71	20.05	19.82	
5	64QAM	12	13	19.86	19.98	19.90	
5	64QAM	25	0	19.74	20.05	19.80	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	22.43	22.89	22.99	24
3	QPSK	1	8	22.52	22.90	22.83	
3	QPSK	15	0	21.71	21.94	21.83	23
3	16QAM	1	0	21.92	22.13	22.06	23



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3	16QAM	1	8	21.96	22.27	22.08	22
3	16QAM	1	14	22.06	22.18	21.99	
3	16QAM	8	0	20.72	21.09	20.93	
3	16QAM	8	4	20.77	20.98	20.83	
3	16QAM	8	7	20.77	20.94	20.91	
3	16QAM	15	0	20.71	20.96	20.80	22
3	64QAM	1	0	20.77	21.11	21.01	
3	64QAM	1	8	20.86	21.14	21.02	
3	64QAM	1	14	20.91	21.18	20.88	21
3	64QAM	8	0	19.70	20.02	19.85	
3	64QAM	8	4	19.73	20.02	19.83	
3	64QAM	8	7	19.79	19.98	19.87	
3	64QAM	15	0	19.75	20.02	19.83	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	22.45	22.84	23.06	24
1.4	QPSK	1	3	22.56	22.93	22.85	
1.4	QPSK	1	5	22.62	22.87	22.70	
1.4	QPSK	3	0	22.00	22.42	22.23	
1.4	QPSK	3	1	22.05	22.34	22.30	
1.4	QPSK	3	3	22.11	22.36	22.25	
1.4	QPSK	6	0	21.68	21.93	21.76	23
1.4	16QAM	1	0	21.90	22.16	22.12	23
1.4	16QAM	1	3	22.02	22.31	22.10	
1.4	16QAM	1	5	22.08	22.23	21.99	
1.4	16QAM	3	0	21.20	21.43	21.25	
1.4	16QAM	3	1	21.13	21.45	21.27	
1.4	16QAM	3	3	21.19	21.38	21.26	
1.4	16QAM	6	0	20.71	21.01	20.84	22
1.4	64QAM	1	0	20.84	21.04	21.02	22
1.4	64QAM	1	3	20.86	21.14	21.03	
1.4	64QAM	1	5	20.88	21.09	20.91	
1.4	64QAM	3	0	20.14	20.46	20.26	
1.4	64QAM	3	1	20.14	20.47	20.22	
1.4	64QAM	3	3	20.22	20.35	20.23	
1.4	64QAM	6	0	19.75	20.05	19.82	21

<LTE Band 66_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	20.40	20.63	21.16	21.5
20	QPSK	1	49	20.36	20.62	20.70	
20	QPSK	1	99	20.38	20.61	20.53	
20	QPSK	50	0	20.54	20.81	20.66	21.5
20	QPSK	50	24	20.48	20.78	20.65	
20	QPSK	50	50	20.52	20.70	20.62	
20	QPSK	100	0	20.55	20.75	20.65	
20	16QAM	1	0	20.69	21.03	21.00	21.5
20	16QAM	1	49	20.82	21.15	20.98	
20	16QAM	1	99	20.85	21.11	20.86	
20	16QAM	50	0	20.56	20.86	20.74	21.5
20	16QAM	50	24	20.58	20.88	20.71	
20	16QAM	50	50	20.63	20.81	20.70	
20	16QAM	100	0	20.57	20.84	20.66	
20	64QAM	1	0	20.62	20.96	20.90	21.5
20	64QAM	1	49	20.75	21.05	20.89	
20	64QAM	1	99	20.73	20.98	20.74	
20	64QAM	50	0	20.07	20.37	20.22	21
20	64QAM	50	24	20.11	20.38	20.21	



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20	64QAM	50	50	20.14	20.34	20.22	
20	64QAM	100	0	20.05	20.33	20.18	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	20.24	20.53	21.04	21.5
15	QPSK	1	37	20.40	20.57	20.58	
15	QPSK	1	74	20.31	20.56	20.42	
15	QPSK	36	0	20.43	20.67	20.49	21.5
15	QPSK	36	20	20.41	20.60	20.49	
15	QPSK	36	39	20.48	20.55	20.56	
15	QPSK	75	0	20.36	20.64	20.54	
15	16QAM	1	0	20.54	20.85	20.88	21.5
15	16QAM	1	37	20.69	21.04	20.79	
15	16QAM	1	74	20.68	20.95	20.69	
15	16QAM	36	0	20.46	20.71	20.60	21.5
15	16QAM	36	20	20.46	20.70	20.53	
15	16QAM	36	39	20.52	20.67	20.54	
15	16QAM	75	0	20.42	20.67	20.51	
15	64QAM	1	0	20.43	20.84	20.72	21.5
15	64QAM	1	37	20.61	20.94	20.75	
15	64QAM	1	74	20.63	20.84	20.63	
15	64QAM	36	0	19.88	20.22	20.05	21
15	64QAM	36	20	20.01	20.18	20.03	
15	64QAM	36	39	19.94	20.20	20.11	
15	64QAM	75	0	19.92	20.22	20.02	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	20.21	20.49	21.04	21.5
10	QPSK	1	25	20.36	20.62	20.50	
10	QPSK	1	49	20.32	20.61	20.39	
10	QPSK	25	0	20.34	20.69	20.56	21.5
10	QPSK	25	12	20.38	20.58	20.55	
10	QPSK	25	25	20.46	20.55	20.59	
10	QPSK	50	0	20.41	20.61	20.46	
10	16QAM	1	0	20.56	20.91	20.86	21.5
10	16QAM	1	25	20.65	20.99	20.83	
10	16QAM	1	49	20.74	20.97	20.67	
10	16QAM	25	0	20.40	20.69	20.58	21.5
10	16QAM	25	12	20.38	20.73	20.55	
10	16QAM	25	25	20.47	20.68	20.59	
10	16QAM	50	0	20.41	20.70	20.49	
10	64QAM	1	0	20.51	20.76	20.80	21.5
10	64QAM	1	25	20.55	20.90	20.75	
10	64QAM	1	49	20.53	20.81	20.61	
10	64QAM	25	0	19.94	20.21	20.02	21
10	64QAM	25	12	19.94	20.25	20.01	
10	64QAM	25	25	20.04	20.15	20.03	
10	64QAM	50	0	19.86	20.18	20.07	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	20.23	20.52	20.97	21.5
5	QPSK	1	12	20.33	20.52	20.60	
5	QPSK	1	24	20.33	20.52	20.37	
5	QPSK	12	0	20.42	20.69	20.48	21.5
5	QPSK	12	7	20.43	20.65	20.50	
5	QPSK	12	13	20.48	20.60	20.54	
5	QPSK	25	0	20.42	20.57	20.52	
5	16QAM	1	0	20.58	20.93	20.86	21.5
5	16QAM	1	12	20.62	21.02	20.88	
5	16QAM	1	24	20.68	21.01	20.72	
5	16QAM	12	0	20.36	20.66	20.64	21.5
5	16QAM	12	7	20.48	20.78	20.58	
5	16QAM	12	13	20.49	20.64	20.55	



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5	16QAM	25	0	20.45	20.69	20.53	21.5
5	64QAM	1	0	20.47	20.82	20.73	
5	64QAM	1	12	20.64	20.85	20.74	
5	64QAM	1	24	20.62	20.84	20.62	
5	64QAM	12	0	19.87	20.21	20.05	21
5	64QAM	12	7	19.96	20.21	20.05	
5	64QAM	12	13	20.03	20.23	20.04	
5	64QAM	25	0	19.87	20.13	20.07	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	20.23	20.48	20.97	21.5
3	QPSK	1	8	20.33	20.57	20.52	
3	QPSK	1	14	20.37	20.53	20.40	
3	QPSK	8	0	20.35	20.67	20.48	21.5
3	QPSK	8	4	20.44	20.62	20.48	
3	QPSK	8	7	20.42	20.60	20.52	
3	QPSK	15	0	20.36	20.57	20.47	
3	16QAM	1	0	20.53	20.91	20.81	21.5
3	16QAM	1	8	20.64	21.05	20.82	
3	16QAM	1	14	20.65	21.01	20.67	
3	16QAM	8	0	20.36	20.71	20.64	21.5
3	16QAM	8	4	20.39	20.68	20.58	
3	16QAM	8	7	20.48	20.64	20.53	
3	16QAM	15	0	20.47	20.67	20.51	
3	64QAM	1	0	20.52	20.77	20.74	21.5
3	64QAM	1	8	20.64	20.90	20.70	
3	64QAM	1	14	20.62	20.78	20.57	
3	64QAM	8	0	19.93	20.24	20.03	21
3	64QAM	8	4	19.96	20.20	20.06	
3	64QAM	8	7	20.03	20.22	20.07	
3	64QAM	15	0	19.89	20.17	20.05	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	20.27	20.43	21.06	21.5
1.4	QPSK	1	3	20.35	20.56	20.56	
1.4	QPSK	1	5	20.32	20.52	20.35	
1.4	QPSK	3	0	20.41	20.62	20.53	
1.4	QPSK	3	1	20.40	20.65	20.53	
1.4	QPSK	3	3	20.48	20.60	20.55	
1.4	QPSK	6	0	20.37	20.64	20.55	21.5
1.4	16QAM	1	0	20.52	20.87	20.83	21.5
1.4	16QAM	1	3	20.68	21.05	20.85	
1.4	16QAM	1	5	20.68	20.95	20.76	
1.4	16QAM	3	0	20.46	20.69	20.55	
1.4	16QAM	3	1	20.38	20.71	20.53	
1.4	16QAM	3	3	20.49	20.62	20.56	
1.4	16QAM	6	0	20.46	20.64	20.52	21.5
1.4	64QAM	1	0	20.48	20.84	20.70	21.5
1.4	64QAM	1	3	20.56	20.89	20.71	
1.4	64QAM	1	5	20.56	20.80	20.59	
1.4	64QAM	3	0	19.94	20.19	20.04	
1.4	64QAM	3	1	19.96	20.23	20.02	
1.4	64QAM	3	3	20.03	20.20	20.10	
1.4	64QAM	6	0	19.90	20.19	20.01	21

<LTE Band 71_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				133222	133297	133372	
Frequency (MHz)				673	680.5	688	
20	QPSK	1	0	23.40	23.40	23.49	25



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20	QPSK	1	49	23.36	23.31	23.42	24
20	QPSK	1	99	23.33	23.38	23.47	
20	QPSK	50	0	22.54	22.62	22.47	
20	QPSK	50	24	22.55	22.55	22.50	
20	QPSK	50	50	22.60	22.47	22.55	
20	QPSK	100	0	22.53	22.54	22.50	24
20	16QAM	1	0	22.66	22.71	22.73	
20	16QAM	1	49	22.71	22.71	22.85	
20	16QAM	1	99	22.71	22.77	22.72	23
20	16QAM	50	0	21.55	21.58	21.51	
20	16QAM	50	24	21.53	21.53	21.52	
20	16QAM	50	50	21.60	21.43	21.56	
20	16QAM	100	0	21.51	21.52	21.49	
20	64QAM	1	0	21.57	21.61	21.67	23
20	64QAM	1	49	21.62	21.58	21.70	
20	64QAM	1	99	21.58	21.71	21.70	
20	64QAM	50	0	20.54	20.57	20.47	22
20	64QAM	50	24	20.53	20.54	20.49	
20	64QAM	50	50	20.59	20.47	20.56	
20	64QAM	100	0	20.54	20.51	20.47	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	23.25	23.30	23.33	25
15	QPSK	1	37	23.29	23.24	23.31	
15	QPSK	1	74	23.25	23.38	23.33	
15	QPSK	36	0	22.40	22.44	22.36	24
15	QPSK	36	20	22.44	22.44	22.38	
15	QPSK	36	39	22.45	22.27	22.37	
15	QPSK	75	0	22.38	22.44	22.34	
15	16QAM	1	0	22.52	22.52	22.53	24
15	16QAM	1	37	22.59	22.52	22.73	
15	16QAM	1	74	22.61	22.57	22.52	
15	16QAM	36	0	21.35	21.39	21.31	23
15	16QAM	36	20	21.42	21.42	21.34	
15	16QAM	36	39	21.44	21.33	21.37	
15	16QAM	75	0	21.38	21.34	21.36	
15	64QAM	1	0	21.38	21.43	21.49	23
15	64QAM	1	37	21.48	21.40	21.60	
15	64QAM	1	74	21.47	21.59	21.59	
15	64QAM	36	0	20.43	20.40	20.33	22
15	64QAM	36	20	20.39	20.43	20.30	
15	64QAM	36	39	20.40	20.36	20.45	
15	64QAM	75	0	20.42	20.31	20.32	
Channel				133172	133297	133422	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	23.27	23.22	23.39	25
10	QPSK	1	25	23.28	23.22	23.28	
10	QPSK	1	49	23.30	23.31	23.31	
10	QPSK	25	0	22.42	22.49	22.31	24
10	QPSK	25	12	22.37	22.42	22.36	
10	QPSK	25	25	22.42	22.35	22.38	
10	QPSK	50	0	22.41	22.36	22.31	
10	16QAM	1	0	22.50	22.54	22.54	24
10	16QAM	1	25	22.54	22.59	22.69	
10	16QAM	1	49	22.51	22.66	22.62	
10	16QAM	25	0	21.35	21.41	21.40	23
10	16QAM	25	12	21.43	21.33	21.40	
10	16QAM	25	25	21.44	21.30	21.38	
10	16QAM	50	0	21.37	21.40	21.38	
10	64QAM	1	0	21.47	21.50	21.57	23
10	64QAM	1	25	21.45	21.44	21.51	
10	64QAM	1	49	21.46	21.55	21.59	
10	64QAM	25	0	20.36	20.37	20.33	22



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10	64QAM	25	12	20.41	20.38	20.37	
10	64QAM	25	25	20.42	20.33	20.43	
10	64QAM	50	0	20.39	20.37	20.28	
Channel				133147	133297	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	QPSK	1	0	23.23	23.28	23.32	25
5	QPSK	1	12	23.34	23.30	23.28	
5	QPSK	1	24	23.32	23.35	23.30	
5	QPSK	12	0	22.42	22.50	22.30	24
5	QPSK	12	7	22.39	22.39	22.36	
5	QPSK	12	13	22.41	22.33	22.42	
5	QPSK	25	0	22.41	22.40	22.34	24
5	16QAM	1	0	22.55	22.59	22.58	
5	16QAM	1	12	22.58	22.54	22.71	
5	16QAM	1	24	22.56	22.62	22.52	23
5	16QAM	12	0	21.43	21.48	21.37	
5	16QAM	12	7	21.37	21.37	21.42	
5	16QAM	12	13	21.49	21.33	21.44	23
5	16QAM	25	0	21.37	21.41	21.34	
5	64QAM	1	0	21.37	21.48	21.47	
5	64QAM	1	12	21.52	21.39	21.59	22
5	64QAM	1	24	21.39	21.60	21.60	
5	64QAM	12	0	20.37	20.43	20.35	
5	64QAM	12	7	20.40	20.38	20.35	22
5	64QAM	12	13	20.46	20.35	20.39	
5	64QAM	25	0	20.35	20.31	20.34	

<LTE Band 71_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				133222	133297	133372	
Frequency (MHz)				673	680.5	688	
20	QPSK	1	0	22.12	22.42	22.63	23.5
20	QPSK	1	49	22.11	22.03	22.30	
20	QPSK	1	99	22.10	22.09	22.29	
20	QPSK	50	0	22.28	22.38	22.23	23.5
20	QPSK	50	24	22.20	22.33	22.20	
20	QPSK	50	50	22.26	22.24	22.20	
20	QPSK	100	0	22.33	22.27	22.23	23.5
20	16QAM	1	0	22.37	22.43	22.50	
20	16QAM	1	49	22.48	22.52	22.62	
20	16QAM	1	99	22.48	22.60	22.59	23
20	16QAM	50	0	21.74	21.84	21.71	
20	16QAM	50	24	21.82	21.78	21.77	
20	16QAM	50	50	21.84	21.71	21.81	23
20	16QAM	100	0	21.78	21.77	21.73	
20	64QAM	1	0	21.76	21.81	21.84	
20	64QAM	1	49	21.92	21.92	22.01	22
20	64QAM	1	99	21.90	21.95	21.91	
20	64QAM	50	0	20.75	20.83	20.73	
20	64QAM	50	24	20.79	20.81	20.79	22
20	64QAM	50	50	20.85	20.72	20.80	
20	64QAM	100	0	20.81	20.77	20.77	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	22.00	21.92	22.50	23.5
15	QPSK	1	37	22.07	22.06	22.18	
15	QPSK	1	74	22.05	22.17	22.19	
15	QPSK	36	0	22.12	22.20	22.06	23.5
15	QPSK	36	20	22.19	22.23	22.13	
15	QPSK	36	39	22.26	22.07	22.11	



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15	QPSK	75	0	22.14	22.09	22.03	23.5
15	16QAM	1	0	22.19	22.28	22.40	
15	16QAM	1	37	22.37	22.32	22.51	
15	16QAM	1	74	22.31	22.50	22.47	
15	16QAM	36	0	21.64	21.74	21.52	23
15	16QAM	36	20	21.67	21.65	21.57	
15	16QAM	36	39	21.74	21.52	21.62	
15	16QAM	75	0	21.63	21.61	21.60	
15	64QAM	1	0	21.61	21.68	21.67	23
15	64QAM	1	37	21.80	21.82	21.89	
15	64QAM	1	74	21.75	21.85	21.77	
15	64QAM	36	0	20.56	20.67	20.54	
15	64QAM	36	20	20.61	20.62	20.63	22
15	64QAM	36	39	20.72	20.61	20.65	
15	64QAM	75	0	20.67	20.57	20.63	
Channel				133172	133297	133422	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	21.94	21.98	22.44	23.5
10	QPSK	1	25	22.05	22.10	22.17	
10	QPSK	1	49	22.05	22.16	22.15	
10	QPSK	25	0	22.08	22.26	22.08	
10	QPSK	25	12	22.14	22.22	22.16	23.5
10	QPSK	25	25	22.26	22.12	22.15	
10	QPSK	50	0	22.20	22.15	22.13	
10	16QAM	1	0	22.22	22.32	22.33	
10	16QAM	1	25	22.30	22.33	22.46	23.5
10	16QAM	1	49	22.29	22.44	22.42	
10	16QAM	25	0	21.62	21.74	21.60	
10	16QAM	25	12	21.63	21.65	21.61	
10	16QAM	25	25	21.64	21.58	21.63	23
10	16QAM	50	0	21.59	21.67	21.58	
10	64QAM	1	0	21.56	21.62	21.73	
10	64QAM	1	25	21.76	21.78	21.88	
10	64QAM	1	49	21.76	21.80	21.76	22
10	64QAM	25	0	20.56	20.68	20.62	
10	64QAM	25	12	20.67	20.61	20.65	
10	64QAM	25	25	20.75	20.61	20.60	
10	64QAM	50	0	20.64	20.59	20.63	
Channel				133147	133297	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	QPSK	1	0	21.98	22.00	22.43	23.5
5	QPSK	1	12	22.05	22.07	22.10	
5	QPSK	1	24	22.05	22.18	22.11	
5	QPSK	12	0	22.13	22.24	22.05	
5	QPSK	12	7	22.17	22.14	22.13	23.5
5	QPSK	12	13	22.17	22.13	22.12	
5	QPSK	25	0	22.13	22.15	22.12	
5	16QAM	1	0	22.24	22.29	22.30	
5	16QAM	1	12	22.31	22.33	22.48	23.5
5	16QAM	1	24	22.31	22.48	22.42	
5	16QAM	12	0	21.64	21.64	21.58	
5	16QAM	12	7	21.69	21.67	21.64	
5	16QAM	12	13	21.64	21.51	21.63	23
5	16QAM	25	0	21.59	21.66	21.56	
5	64QAM	1	0	21.64	21.65	21.64	
5	64QAM	1	12	21.82	21.75	21.82	
5	64QAM	1	24	21.78	21.84	21.76	23
5	64QAM	12	0	20.62	20.65	20.55	
5	64QAM	12	7	20.68	20.67	20.61	
5	64QAM	12	13	20.73	20.55	20.67	
5	64QAM	25	0	20.65	20.63	20.59	

<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.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “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
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Base station simulator was used for LTE output power measurements and SAR testing.

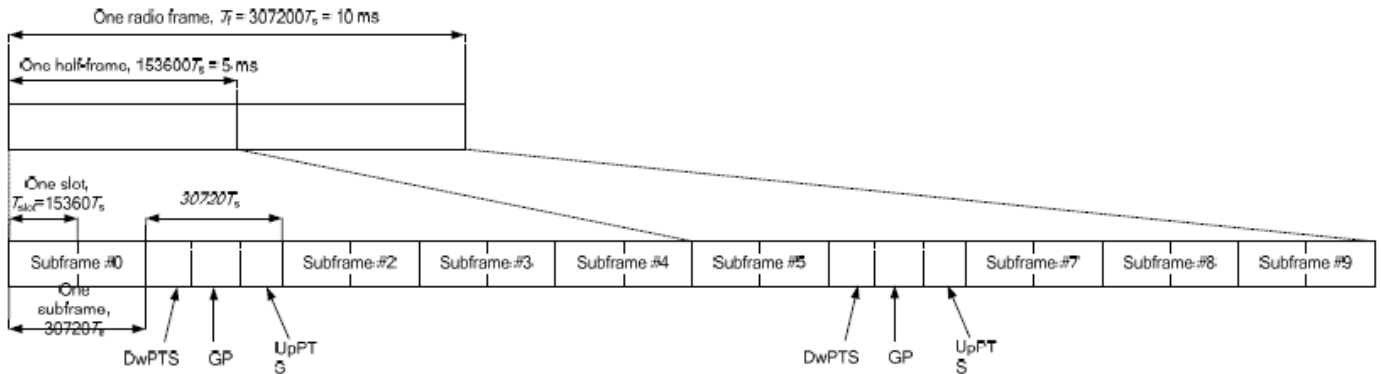


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
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:

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.



<LTE Band 38_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37850	38000	38150	
Frequency (MHz)				2580	2595	2610	
20	QPSK	1	0	22.77	22.78	22.28	24
20	QPSK	1	49	22.32	22.28	22.38	
20	QPSK	1	99	22.30	22.33	22.45	
20	QPSK	50	0	21.48	21.56	21.45	23
20	QPSK	50	24	21.50	21.46	21.47	
20	QPSK	50	50	21.38	21.44	21.50	
20	QPSK	100	0	21.51	21.44	21.47	
20	16QAM	1	0	21.77	21.69	21.66	23
20	16QAM	1	49	21.65	21.60	21.76	
20	16QAM	1	99	21.61	21.62	21.73	
20	16QAM	50	0	20.53	20.47	20.51	22
20	16QAM	50	24	20.55	20.49	20.50	
20	16QAM	50	50	20.47	20.52	20.64	
20	16QAM	100	0	20.51	20.51	20.52	
20	64QAM	1	0	20.62	20.59	20.58	22
20	64QAM	1	49	20.52	20.49	20.64	
20	64QAM	1	99	20.48	20.53	20.67	
20	64QAM	50	0	19.50	19.47	19.48	21
20	64QAM	50	24	19.54	19.48	19.54	
20	64QAM	50	50	19.46	19.49	19.63	
20	64QAM	100	0	19.55	19.47	19.50	
Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	22.62	22.65	22.11	24
15	QPSK	1	37	22.14	22.08	22.28	
15	QPSK	1	74	22.15	22.19	22.25	
15	QPSK	36	0	21.28	21.30	21.29	23
15	QPSK	36	20	21.33	21.28	21.34	
15	QPSK	36	39	21.21	21.26	21.41	
15	QPSK	75	0	21.33	21.33	21.34	
15	16QAM	1	0	21.61	21.55	21.49	23
15	16QAM	1	37	21.50	21.48	21.64	
15	16QAM	1	74	21.51	21.49	21.62	
15	16QAM	36	0	20.42	20.36	20.38	22
15	16QAM	36	20	20.40	20.34	20.36	
15	16QAM	36	39	20.36	20.32	20.44	
15	16QAM	75	0	20.37	20.36	20.41	
15	64QAM	1	0	20.49	20.46	20.39	22
15	64QAM	1	37	20.35	20.31	20.44	
15	64QAM	1	74	20.35	20.41	20.50	
15	64QAM	36	0	19.40	19.27	19.37	21
15	64QAM	36	20	19.38	19.31	19.44	
15	64QAM	36	39	19.28	19.37	19.43	
15	64QAM	75	0	19.41	19.33	19.36	
Channel				37800	38000	38200	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	22.58	22.66	22.11	24
10	QPSK	1	25	22.15	22.08	22.18	
10	QPSK	1	49	22.14	22.13	22.31	
10	QPSK	25	0	21.32	21.26	21.25	23
10	QPSK	25	12	21.30	21.28	21.33	
10	QPSK	25	25	21.22	21.29	21.36	
10	QPSK	50	0	21.31	21.26	21.27	
10	16QAM	1	0	21.58	21.54	21.53	23
10	16QAM	1	25	21.55	21.43	21.64	
10	16QAM	1	49	21.51	21.46	21.63	



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10	16QAM	25	0	20.43	20.35	20.38	22
10	16QAM	25	12	20.45	20.33	20.30	
10	16QAM	25	25	20.28	20.35	20.50	
10	16QAM	50	0	20.38	20.40	20.39	
10	64QAM	1	0	20.49	20.47	20.41	22
10	64QAM	1	25	20.39	20.34	20.50	
10	64QAM	1	49	20.36	20.39	20.52	
10	64QAM	25	0	19.33	19.36	19.31	21
10	64QAM	25	12	19.44	19.31	19.36	
10	64QAM	25	25	19.32	19.36	19.50	
10	64QAM	50	0	19.43	19.36	19.39	
Channel				37775	38000	38225	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	22.65	22.63	22.12	24
5	QPSK	1	12	22.20	22.08	22.27	
5	QPSK	1	24	22.11	22.14	22.34	
5	QPSK	12	0	21.31	21.24	21.29	23
5	QPSK	12	7	21.38	21.29	21.28	
5	QPSK	12	13	21.23	21.32	21.46	
5	QPSK	25	0	21.32	21.34	21.27	
5	16QAM	1	0	21.63	21.52	21.49	23
5	16QAM	1	12	21.51	21.43	21.58	
5	16QAM	1	24	21.45	21.45	21.54	
5	16QAM	12	0	20.40	20.34	20.33	22
5	16QAM	12	7	20.35	20.34	20.39	
5	16QAM	12	13	20.34	20.39	20.49	
5	16QAM	25	0	20.37	20.37	20.35	
5	64QAM	1	0	20.49	20.48	20.39	22
5	64QAM	1	12	20.39	20.38	20.52	
5	64QAM	1	24	20.33	20.35	20.52	
5	64QAM	12	0	19.39	19.28	19.32	21
5	64QAM	12	7	19.41	19.32	19.38	
5	64QAM	12	13	19.30	19.29	19.44	
5	64QAM	25	0	19.35	19.32	19.40	

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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37850	38000	38150	
Frequency (MHz)				2580	2595	2610	
20	QPSK	1	0	17.48	17.29	17.27	18
20	QPSK	1	49	17.28	17.22	17.33	
20	QPSK	1	99	17.24	17.24	17.37	
20	QPSK	50	0	17.46	17.33	17.35	18
20	QPSK	50	24	17.41	17.32	17.36	
20	QPSK	50	50	17.31	17.32	17.45	
20	QPSK	100	0	17.37	17.30	17.38	
20	16QAM	1	0	17.47	17.44	17.37	18
20	16QAM	1	49	17.41	17.35	17.47	
20	16QAM	1	99	17.41	17.39	17.44	
20	16QAM	50	0	17.43	17.39	17.39	18
20	16QAM	50	24	17.46	17.41	17.39	
20	16QAM	50	50	17.39	17.40	17.44	
20	16QAM	100	0	17.44	17.39	17.38	
20	64QAM	1	0	17.24	17.14	17.06	18
20	64QAM	1	49	17.10	17.11	17.14	
20	64QAM	1	99	17.08	17.06	17.17	
20	64QAM	50	0	17.39	17.33	17.35	18
20	64QAM	50	24	17.44	17.37	17.33	
20	64QAM	50	50	17.34	17.36	17.44	
20	64QAM	100	0	17.39	17.35	17.30	



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Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	17.38	17.19	17.15	18
15	QPSK	1	37	17.08	17.09	17.14	
15	QPSK	1	74	17.11	17.14	17.26	
15	QPSK	36	0	17.34	17.18	17.18	18
15	QPSK	36	20	17.22	17.17	17.25	
15	QPSK	36	39	17.19	17.18	17.28	
15	QPSK	75	0	17.18	17.16	17.28	18
15	16QAM	1	0	17.33	17.26	17.18	
15	16QAM	1	37	17.26	17.18	17.33	
15	16QAM	1	74	17.23	17.29	17.26	18
15	16QAM	36	0	17.32	17.19	17.20	
15	16QAM	36	20	17.29	17.26	17.24	
15	16QAM	36	39	17.28	17.21	17.34	18
15	16QAM	75	0	17.28	17.23	17.20	
15	64QAM	1	0	17.11	17.00	16.91	
15	64QAM	1	37	16.91	16.93	16.98	18
15	64QAM	1	74	16.96	16.94	17.01	
15	64QAM	36	0	17.25	17.14	17.22	
15	64QAM	36	20	17.26	17.17	17.20	18
15	64QAM	36	39	17.20	17.18	17.32	
15	64QAM	75	0	17.24	17.24	17.20	
Channel				37800	38000	38200	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	17.35	17.09	17.10	18
10	QPSK	1	25	17.15	17.11	17.16	
10	QPSK	1	49	17.09	17.11	17.22	
10	QPSK	25	0	17.32	17.23	17.16	18
10	QPSK	25	12	17.27	17.19	17.17	
10	QPSK	25	25	17.14	17.12	17.29	
10	QPSK	50	0	17.24	17.20	17.21	18
10	16QAM	1	0	17.32	17.24	17.27	
10	16QAM	1	25	17.31	17.21	17.35	
10	16QAM	1	49	17.30	17.22	17.34	18
10	16QAM	25	0	17.27	17.20	17.21	
10	16QAM	25	12	17.35	17.21	17.23	
10	16QAM	25	25	17.25	17.30	17.25	18
10	16QAM	50	0	17.25	17.25	17.23	
10	64QAM	1	0	17.05	16.99	16.86	
10	64QAM	1	25	16.93	16.92	17.02	18
10	64QAM	1	49	16.98	16.90	17.05	
10	64QAM	25	0	17.22	17.21	17.19	
10	64QAM	25	12	17.34	17.19	17.21	18
10	64QAM	25	25	17.17	17.25	17.25	
10	64QAM	50	0	17.26	17.20	17.18	
Channel				37775	38000	38225	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	17.36	17.19	17.15	18
5	QPSK	1	12	17.10	17.04	17.18	
5	QPSK	1	24	17.08	17.06	17.22	
5	QPSK	12	0	17.30	17.22	17.16	18
5	QPSK	12	7	17.31	17.18	17.19	
5	QPSK	12	13	17.13	17.12	17.34	
5	QPSK	25	0	17.21	17.11	17.21	18
5	16QAM	1	0	17.28	17.27	17.18	
5	16QAM	1	12	17.25	17.19	17.31	
5	16QAM	1	24	17.28	17.28	17.27	18
5	16QAM	12	0	17.31	17.27	17.22	
5	16QAM	12	7	17.35	17.29	17.29	
5	16QAM	12	13	17.20	17.27	17.31	18
5	16QAM	25	0	17.31	17.26	17.20	
5	64QAM	1	0	17.09	16.98	16.91	



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5	64QAM	1	12	17.00	16.96	16.96	18
5	64QAM	1	24	16.98	16.88	17.03	
5	64QAM	12	0	17.25	17.17	17.20	
5	64QAM	12	7	17.29	17.21	17.21	
5	64QAM	12	13	17.23	17.26	17.30	
5	64QAM	25	0	17.23	17.17	17.11	

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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)
Channel				39750	40185	40620	41055	41490	
Frequency (MHz)				2506	2549.5	2593	2636.5	2680	
20	QPSK	1	0	22.34	22.38	22.39	22.33	22.90	24
20	QPSK	1	49	22.28	22.36	22.26	22.31	22.30	
20	QPSK	1	99	22.27	22.32	22.34	22.32	22.00	
20	QPSK	50	0	21.49	21.52	21.45	21.50	21.57	23
20	QPSK	50	24	21.48	21.51	21.44	21.49	21.02	
20	QPSK	50	50	21.47	21.50	21.43	21.46	21.00	
20	QPSK	100	0	21.41	21.54	21.44	21.49	21.02	
20	16QAM	1	0	21.61	21.63	21.70	21.70	21.27	23
20	16QAM	1	49	21.57	21.68	21.59	21.66	21.10	
20	16QAM	1	99	21.63	21.76	21.62	21.60	21.13	
20	16QAM	50	0	20.53	20.56	20.48	20.58	20.05	22
20	16QAM	50	24	20.58	20.57	20.51	20.55	20.04	
20	16QAM	50	50	20.48	20.59	20.51	20.52	20.02	
20	16QAM	100	0	20.46	20.55	20.47	20.52	20.02	
20	64QAM	1	0	20.68	20.51	20.60	20.57	20.11	22
20	64QAM	1	49	20.62	20.53	20.47	20.47	20.03	
20	64QAM	1	99	20.57	20.59	20.51	20.50	20.00	
20	64QAM	50	0	19.55	19.55	19.51	19.54	19.05	21
20	64QAM	50	24	19.58	19.59	19.52	19.52	19.07	
20	64QAM	50	50	19.47	19.57	19.49	19.51	19.00	
20	64QAM	100	0	19.45	19.58	19.50	19.50	19.04	
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5	
15	QPSK	1	0	22.16	22.20	22.21	22.20	22.70	24.00
15	QPSK	1	37	22.08	22.24	22.14	22.16	22.17	
15	QPSK	1	74	22.11	22.24	22.14	22.25	22.00	
15	QPSK	36	0	21.29	21.42	21.29	21.34	21.01	23
15	QPSK	36	20	21.30	21.43	21.37	21.33	21.02	
15	QPSK	36	39	21.29	21.42	21.36	21.27	21.05	
15	QPSK	75	0	21.29	21.38	21.25	21.36	21.03	
15	16QAM	1	0	21.50	21.49	21.56	21.52	21.15	23
15	16QAM	1	37	21.44	21.53	21.47	21.55	21.10	
15	16QAM	1	74	21.43	21.66	21.46	21.43	21.08	
15	16QAM	36	0	20.39	20.44	20.32	20.39	20.04	22
15	16QAM	36	20	20.38	20.46	20.31	20.39	20.04	
15	16QAM	36	39	20.29	20.42	20.40	20.41	20.03	
15	16QAM	75	0	20.35	20.38	20.29	20.33	20.04	
15	64QAM	1	0	20.55	20.33	20.45	20.46	20.01	22
15	64QAM	1	37	20.52	20.33	20.28	20.29	20.00	
15	64QAM	1	74	20.42	20.40	20.35	20.30	20.00	
15	64QAM	36	0	19.42	19.37	19.41	19.34	19.06	21
15	64QAM	36	20	19.45	19.48	19.32	19.35	19.11	
15	64QAM	36	39	19.36	19.38	19.37	19.36	19.00	
15	64QAM	75	0	19.35	19.40	19.31	19.35	19.01	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	22.14	22.25	22.27	22.18	22.73	24.00
10	QPSK	1	25	22.10	22.25	22.06	22.19	22.19	
10	QPSK	1	49	22.11	22.24	22.21	22.15	22.05	



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10	QPSK	25	0	21.38	21.40	21.35	21.38	21.05	23
10	QPSK	25	12	21.36	21.43	21.36	21.31	21.07	
10	QPSK	25	25	21.31	21.40	21.30	21.31	21.00	
10	QPSK	50	0	21.29	21.43	21.24	21.29	21.01	
10	16QAM	1	0	21.43	21.52	21.54	21.53	21.11	23
10	16QAM	1	25	21.45	21.53	21.39	21.52	21.14	
10	16QAM	1	49	21.44	21.61	21.45	21.50	21.10	
10	16QAM	25	0	20.41	20.42	20.38	20.47	20.00	
10	16QAM	25	12	20.39	20.38	20.33	20.43	20.01	22
10	16QAM	25	25	20.35	20.47	20.35	20.40	20.03	
10	16QAM	50	0	20.36	20.44	20.32	20.41	20.07	
10	64QAM	1	0	20.58	20.38	20.48	20.46	20.31	
10	64QAM	1	25	20.50	20.42	20.32	20.37	20.00	22
10	64QAM	1	49	20.47	20.43	20.31	20.40	20.01	
10	64QAM	25	0	19.37	19.45	19.35	19.39	19.06	
10	64QAM	25	12	19.42	19.48	19.34	19.32	19.08	
10	64QAM	25	25	19.28	19.43	19.37	19.32	19.04	21
10	64QAM	50	0	19.34	19.43	19.36	19.31	19.00	
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	
5	QPSK	1	0	22.21	22.19	22.21	22.14	22.79	24.00
5	QPSK	1	12	22.08	22.25	22.14	22.21	22.18	
5	QPSK	1	24	22.09	22.29	22.15	22.25	22.01	
5	QPSK	12	0	21.29	21.39	21.30	21.33	21.01	
5	QPSK	12	7	21.33	21.42	21.37	21.40	21.03	23
5	QPSK	12	13	21.36	21.42	21.29	21.30	21.01	
5	QPSK	25	0	21.26	21.43	21.30	21.30	21.04	
5	16QAM	1	0	21.51	21.47	21.56	21.56	21.15	
5	16QAM	1	12	21.45	21.51	21.45	21.48	21.09	23
5	16QAM	1	24	21.43	21.61	21.52	21.48	21.11	
5	16QAM	12	0	20.35	20.38	20.31	20.38	20.03	
5	16QAM	12	7	20.44	20.47	20.41	20.42	20.00	
5	16QAM	12	13	20.35	20.44	20.34	20.36	20.03	22
5	16QAM	25	0	20.30	20.40	20.34	20.41	20.01	
5	64QAM	1	0	20.56	20.33	20.50	20.43	20.14	
5	64QAM	1	12	20.44	20.33	20.28	20.32	20.06	
5	64QAM	1	24	20.39	20.41	20.34	20.39	20.00	22
5	64QAM	12	0	19.40	19.44	19.35	19.38	19.00	
5	64QAM	12	7	19.42	19.43	19.40	19.41	19.02	
5	64QAM	12	13	19.29	19.43	19.36	19.33	19.03	
5	64QAM	25	0	19.31	19.41	19.32	19.37	19.05	21



<LTE Band 41_Sensor ON>

Band	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)
Channel				39750	40185	40620	41055	41490	18
Frequency (MHz)				2506	2549.5	2593	2636.5	2680	
20	QPSK	1	0	17.56	17.59	17.66	17.57	17.83	18
20	QPSK	1	49	17.53	17.55	17.61	17.55	17.68	
20	QPSK	1	99	17.52	17.58	17.63	17.56	17.70	
20	QPSK	50	0	17.63	17.68	17.66	17.63	17.74	18
20	QPSK	50	24	17.62	17.63	17.62	17.62	17.73	
20	QPSK	50	50	17.55	17.63	17.62	17.62	17.73	
20	QPSK	100	0	17.52	17.67	17.65	17.64	17.69	18
20	16QAM	1	0	17.68	17.72	17.77	17.70	17.82	
20	16QAM	1	49	17.71	17.76	17.71	17.67	17.77	
20	16QAM	1	99	17.60	17.81	17.68	17.68	17.73	18
20	16QAM	50	0	17.64	17.71	17.67	17.70	17.72	
20	16QAM	50	24	17.68	17.75	17.72	17.69	17.74	
20	16QAM	50	50	17.58	17.76	17.70	17.67	17.73	18
20	16QAM	100	0	17.56	17.72	17.64	17.68	17.71	
20	64QAM	1	0	17.43	17.47	17.49	17.37	17.51	
20	64QAM	1	49	17.47	17.52	17.42	17.42	17.48	18
20	64QAM	1	99	17.39	17.57	17.35	17.39	17.49	
20	64QAM	50	0	17.68	17.75	17.66	17.67	17.75	
20	64QAM	50	24	17.72	17.77	17.74	17.67	17.76	18
20	64QAM	50	50	17.61	17.79	17.70	17.65	17.73	
20	64QAM	100	0	17.60	17.77	17.66	17.65	17.72	
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5	
15	QPSK	1	0	17.40	17.46	17.50	17.38	17.69	18.00
15	QPSK	1	37	17.47	17.45	17.46	17.40	17.54	
15	QPSK	1	74	17.37	17.57	17.45	17.45	17.59	
15	QPSK	36	0	17.48	17.55	17.55	17.50	17.58	18
15	QPSK	36	20	17.52	17.61	17.53	17.53	17.60	
15	QPSK	36	39	17.35	17.57	17.53	17.47	17.55	
15	QPSK	75	0	17.32	17.57	17.49	17.53	17.57	18
15	16QAM	1	0	17.48	17.52	17.61	17.54	17.65	
15	16QAM	1	37	17.53	17.57	17.58	17.52	17.66	
15	16QAM	1	74	17.50	17.65	17.52	17.52	17.56	18
15	16QAM	36	0	17.48	17.57	17.49	17.60	17.59	
15	16QAM	36	20	17.52	17.60	17.56	17.49	17.60	
15	16QAM	36	39	17.42	17.56	17.59	17.54	17.63	18
15	16QAM	75	0	17.40	17.57	17.52	17.49	17.55	
15	64QAM	1	0	17.26	17.33	17.39	17.19	17.36	
15	64QAM	1	37	17.30	17.33	17.30	17.26	17.34	18
15	64QAM	1	74	17.25	17.46	17.17	17.22	17.36	
15	64QAM	36	0	17.48	17.55	17.46	17.51	17.57	
15	64QAM	36	20	17.58	17.67	17.56	17.57	17.61	18
15	64QAM	36	39	17.48	17.68	17.53	17.52	17.58	
15	64QAM	75	0	17.40	17.64	17.53	17.49	17.62	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	17.37	17.42	17.55	17.41	17.63	18.00
10	QPSK	1	25	17.41	17.42	17.41	17.36	17.56	
10	QPSK	1	49	17.42	17.56	17.53	17.44	17.51	
10	QPSK	25	0	17.43	17.58	17.46	17.51	17.62	18
10	QPSK	25	12	17.49	17.59	17.50	17.46	17.63	
10	QPSK	25	25	17.41	17.57	17.55	17.48	17.60	
10	QPSK	50	0	17.39	17.56	17.49	17.49	17.56	18
10	16QAM	1	0	17.57	17.60	17.65	17.59	17.67	
10	16QAM	1	25	17.52	17.65	17.53	17.56	17.67	
10	16QAM	1	49	17.50	17.61	17.55	17.57	17.57	



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10	16QAM	25	0	17.45	17.52	17.54	17.60	17.58	18
10	16QAM	25	12	17.52	17.56	17.53	17.55	17.59	
10	16QAM	25	25	17.47	17.60	17.55	17.54	17.61	
10	16QAM	50	0	17.39	17.53	17.49	17.56	17.59	
10	64QAM	1	0	17.25	17.31	17.29	17.17	17.34	18
10	64QAM	1	25	17.34	17.38	17.25	17.30	17.34	
10	64QAM	1	49	17.25	17.43	17.21	17.25	17.30	
10	64QAM	25	0	17.56	17.63	17.46	17.49	17.55	18
10	64QAM	25	12	17.53	17.65	17.62	17.48	17.64	
10	64QAM	25	25	17.41	17.61	17.51	17.50	17.62	
10	64QAM	50	0	17.49	17.59	17.55	17.50	17.61	
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	
5	QPSK	1	0	17.44	17.44	17.48	17.38	17.71	18.00
5	QPSK	1	12	17.38	17.42	17.44	17.40	17.55	
5	QPSK	1	24	17.33	17.57	17.46	17.45	17.58	
5	QPSK	12	0	17.53	17.52	17.53	17.43	17.57	18
5	QPSK	12	7	17.50	17.58	17.56	17.54	17.54	
5	QPSK	12	13	17.38	17.63	17.52	17.47	17.61	
5	QPSK	25	0	17.40	17.52	17.51	17.53	17.59	
5	16QAM	1	0	17.58	17.60	17.66	17.51	17.66	18
5	16QAM	1	12	17.60	17.63	17.58	17.57	17.62	
5	16QAM	1	24	17.50	17.62	17.55	17.50	17.56	
5	16QAM	12	0	17.51	17.58	17.48	17.52	17.52	18
5	16QAM	12	7	17.52	17.55	17.54	17.58	17.59	
5	16QAM	12	13	17.41	17.59	17.57	17.54	17.54	
5	16QAM	25	0	17.41	17.58	17.49	17.57	17.55	
5	64QAM	1	0	17.27	17.32	17.36	17.27	17.40	18
5	64QAM	1	12	17.32	17.40	17.28	17.23	17.28	
5	64QAM	1	24	17.20	17.37	17.25	17.27	17.36	
5	64QAM	12	0	17.53	17.61	17.50	17.55	17.56	18
5	64QAM	12	7	17.53	17.60	17.55	17.48	17.62	
5	64QAM	12	13	17.45	17.60	17.58	17.46	17.63	
5	64QAM	25	0	17.45	17.59	17.54	17.45	17.58	

<LTE Band 48_Sensor OFF>



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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	56150	56640	
Frequency (MHz)				3560	3609	3641	3690	
20	QPSK	1	0	20.59	20.73	20.80	20.64	22
20	QPSK	1	49	20.55	20.71	20.75	20.41	
20	QPSK	1	99	20.53	20.63	20.56	20.31	
20	QPSK	50	0	19.72	19.77	19.84	19.63	21
20	QPSK	50	24	19.71	19.76	19.80	19.60	
20	QPSK	50	50	19.64	19.74	19.78	19.40	
20	QPSK	100	0	19.68	19.73	19.77	19.57	
20	16QAM	1	0	19.78	19.86	19.92	19.75	21
20	16QAM	1	49	19.71	19.78	19.85	19.51	
20	16QAM	1	99	19.67	19.78	19.72	19.39	
20	16QAM	50	0	18.74	18.83	18.91	18.69	20
20	16QAM	50	24	18.72	18.81	18.88	18.63	
20	16QAM	50	50	18.66	18.76	18.81	18.43	
20	16QAM	100	0	18.71	18.80	18.86	18.62	
20	64QAM	1	0	18.49	18.58	18.63	18.47	20
20	64QAM	1	49	18.41	18.52	18.61	18.21	
20	64QAM	1	99	18.38	18.48	18.44	18.10	
20	64QAM	50	0	17.72	17.81	17.87	17.66	19
20	64QAM	50	24	17.70	17.79	17.85	17.64	
20	64QAM	50	50	17.68	17.78	17.82	17.43	
20	64QAM	100	0	17.68	17.76	17.82	17.61	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	20.46	20.57	20.68	20.51	22
15	QPSK	1	37	20.40	20.59	20.55	20.21	
15	QPSK	1	74	20.42	20.47	20.41	20.15	
15	QPSK	36	0	19.54	19.57	19.66	19.51	21
15	QPSK	36	20	19.51	19.59	19.65	19.44	
15	QPSK	36	39	19.53	19.62	19.64	19.21	
15	QPSK	75	0	19.49	19.59	19.64	19.37	
15	16QAM	1	0	19.59	19.73	19.78	19.56	21
15	16QAM	1	37	19.57	19.66	19.66	19.41	
15	16QAM	1	74	19.56	19.65	19.57	19.21	
15	16QAM	36	0	18.64	18.73	18.81	18.59	20
15	16QAM	36	20	18.55	18.66	18.77	18.45	
15	16QAM	36	39	18.53	18.64	18.62	18.26	
15	16QAM	75	0	18.53	18.62	18.70	18.52	
15	64QAM	1	0	18.30	18.46	18.49	18.35	20
15	64QAM	1	37	18.28	18.37	18.44	18.10	
15	64QAM	1	74	18.25	18.29	18.29	18.00	
15	64QAM	36	0	17.62	17.70	17.71	17.49	19
15	64QAM	36	20	17.58	17.62	17.75	17.53	
15	64QAM	36	39	17.53	17.67	17.63	17.25	
15	64QAM	75	0	17.54	17.57	17.66	17.47	
Channel				55290	55815	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3642.5	3695	
10	QPSK	1	0	20.48	20.57	20.62	20.52	22
10	QPSK	1	25	20.35	20.56	20.59	20.27	
10	QPSK	1	49	20.40	20.51	20.38	20.14	
10	QPSK	25	0	19.62	19.67	19.65	19.48	21
10	QPSK	25	12	19.57	19.63	19.70	19.47	
10	QPSK	25	25	19.54	19.61	19.64	19.24	



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10	QPSK	50	0	19.48	19.57	19.59	19.41	
10	16QAM	1	0	19.67	19.74	19.79	19.59	21
10	16QAM	1	25	19.54	19.59	19.75	19.38	
10	16QAM	1	49	19.47	19.62	19.53	19.23	
10	16QAM	25	0	18.61	18.71	18.73	18.52	20
10	16QAM	25	12	18.62	18.67	18.70	18.48	
10	16QAM	25	25	18.52	18.62	18.70	18.32	
10	16QAM	50	0	18.56	18.63	18.76	18.46	20
10	64QAM	1	0	18.31	18.42	18.49	18.28	
10	64QAM	1	25	18.26	18.42	18.46	18.07	
10	64QAM	1	49	18.19	18.35	18.34	18.01	19
10	64QAM	25	0	17.53	17.65	17.73	17.56	
10	64QAM	25	12	17.50	17.60	17.66	17.51	
10	64QAM	25	25	17.55	17.62	17.62	17.30	
10	64QAM	50	0	17.51	17.56	17.70	17.45	
Channel				55265	55810	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	20.46	20.58	20.69	20.49	22
5	QPSK	1	12	20.36	20.60	20.59	20.23	
5	QPSK	1	24	20.33	20.48	20.36	20.15	
5	QPSK	12	0	19.58	19.59	19.68	19.44	21
5	QPSK	12	7	19.60	19.61	19.63	19.40	
5	QPSK	12	13	19.50	19.57	19.60	19.20	
5	QPSK	25	0	19.51	19.62	19.60	19.40	
5	16QAM	1	0	19.68	19.73	19.78	19.55	21
5	16QAM	1	12	19.53	19.68	19.70	19.32	
5	16QAM	1	24	19.54	19.62	19.60	19.23	
5	16QAM	12	0	18.64	18.71	18.79	18.49	20
5	16QAM	12	7	18.52	18.63	18.73	18.48	
5	16QAM	12	13	18.52	18.64	18.64	18.25	
5	16QAM	25	0	18.61	18.69	18.67	18.42	
5	64QAM	1	0	18.39	18.42	18.49	18.28	20
5	64QAM	1	12	18.23	18.41	18.45	18.04	
5	64QAM	1	24	18.22	18.37	18.27	18.00	
5	64QAM	12	0	17.59	17.68	17.74	17.56	19
5	64QAM	12	7	17.53	17.66	17.74	17.47	
5	64QAM	12	13	17.58	17.64	17.70	17.30	
5	64QAM	25	0	17.49	17.64	17.64	17.44	

<LTE Carrier Aggregation combinations>
General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation		
Number	Combination	Covered by	Number	Combination	Covered by
		Measurement Superset			Measurement Superset
1	CA_1C	249	105	CA_40D	284
2	CA_2C	260	106	CA_41D	285
3	CA_3C	278	107	CA_42D	285
4	CA_5B	280	108	CA_48D	283
5	CA_7B	282	109	CA_66D	283
6	CA_7C	282	110	CA_40A-40C	284
7	CA_8B	281	111	CA_41A-41C	285
8	CA_12B	279	112	CA_66A-66B	283
9	CA_38C	284	113	CA_66A-66C	283
10	CA_39C	214	114	CA_1A-1A-5A	238
11	CA_40C	284	115	CA_1A-1A-7A	243
12	CA_41C	285	116	CA_1A-1A-28A	248
13	CA_42C	285	117	CA_1A-3C	235
14	CA_48C	283	118	CA_1A-3C	235
15	CA_66B	283	119	CA_1C-3A	235
16	CA_66C	283	120	CA_1A-7A-7A	243
17	CA_1A-1A	249	121	CA_1A-7C	243
18	CA_2A-2A	260	122	CA_1A-40C	244
19	CA_3A-3A	278	123	CA_1A-41C	249
20	CA_4A-4A	279	124	CA_1A-41C	249
21	CA_5A-5A	280	125	CA_1C-41A	249
22	CA_7A-7A	282	126	CA_1A-42C	249
23	CA_12A-12A	279	127	CA_2A-2A-5A	255
24	CA_25A-25A	206	128	CA_2A-2A-12A	256
25	CA_40A-40A	284	129	CA_2A-2A-13A	258
26	CA_41A-41A	285	130	CA_2A-2A-14A	259
27	CA_66A-66A	283	131	CA_2A-2A-29A	138
28	CA_1A-3A	235	132	CA_2A-2A-71A	260
29	CA_1A-5A	238	133	CA_2A-5B	255
30	CA_1A-7A	243	134	CA_2C-5A	255
31	CA_1A-8A	244	135	CA_2A-12A-12A	256
32	CA_1A-18A		136	CA_2A-12B	256
33	CA_1A-19A	245	137	CA_2C-12A	256
34	CA_1A-20A	246	138	CA_2C-29A	
35	CA_1A-26A	247	139	CA_2A-48C	257
36	CA_1A-28A	248	140	CA_2A-66B	260
37	CA_1A-38A	237	141	CA_2A-66C	260
38	CA_1A-40A	244	142	CA_2C-66A	260
39	CA_1A-41A	249	143	CA_3A-3A-5A	263
40	CA_1A-42A	249	144	CA_3A-3A-7A	268
41	CA_2A-4A	253	145	CA_3A-3A-8A	270
42	CA_2A-5A	255	146	CA_3A-3A-20A	273
43	CA_2A-12A	256	147	CA_3A-3A-28A	277
44	CA_2A-13A	258	148	CA_3A-3A-41A	278



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45	CA_2A-14A	259	149	CA_3C-5A	263
46	CA_2A-28A		150	CA_3A-7A-7A	268
47	CA_2A-29A	138	151	CA_3A-7B	268
48	CA_2A-66A	260	152	CA_3A-7C	268
49	CA_2A-71A	260	153	CA_3C-7A	268
50	CA_3A-5A	263	154	CA_3C-8A	270
51	CA_3A-7A	268	155	CA_3C-20A	273
52	CA_3A-8A	270	156	CA_3C-28A	277
53	CA_3A-19A	271	157	CA_3A-38C	274
54	CA_3A-20A	273	158	CA_3A-40A-40A	275
55	CA_3A-26A	230	159	CA_3A-40C	275
56	CA_3A-28A	277	160	CA_3C-40A	275
57	CA_3A-38A	274	161	CA_3A-41C	278
58	CA_3A-40A	275	162	CA_3C-41A	278
59	CA_3A-41A	278	163	CA_3A-42C	278
60	CA_3A-42A	278	164	CA_4A-4A-5A	250
61	CA_4A-5A	250	165	CA_4A-4A-7A	279
62	CA_4A-7A	279	166	CA_4A-4A-12A	279
63	CA_4A-12A	279	167	CA_4A-4A-13A	252
64	CA_4A-13A	252	168	CA_4A-4A-71A	253
65	CA_4A-28A		169	CA_4A-5B	250
66	CA_4A-29A		170	CA_4A-7A-7A	279
67	CA_4A-71A	253	171	CA_4A-7C	279
68	CA_5A-7A	261	172	CA_4A-12A-12A	279
69	CA_5A-25A		173	CA_4A-12B	279
70	CA_5A-38A	262	174	CA_4A-48C	
71	CA_5A-40A	263	175	CA_5A-5A-66A	280
72	CA_5A-41A		176	CA_5A-7A-7A	261
73	CA_5A-66A	280	177	CA_5A-7C	261
74	CA_7A-8A	281	178	CA_5A-40A-40A	263
75	CA_7A-12A	279	179	CA_5A-40C	263
76	CA_7A-20A	282	180	CA_5A-48C	280
77	CA_7A-28A	266	181	CA_5A-66A-66A	280
78	CA_7A-42A	282	182	CA_5A-66B	280
79	CA_8A-32A		183	CA_5A-66C	280
80	CA_8A-38A	269	184	CA_5B-66A	280
81	CA_8A-39A	191	185	CA_7A-7A-8A	281
82	CA_8A-40A	281	186	CA_7C-8A	281
83	CA_8A-41A	193	187	CA_7C-20A	282
84	CA_8A-42A	194	188	CA_7B-28A	266
85	CA_12A-25A		189	CA_7C-28A	266
86	CA_12A-66A	256	190	CA_7A-40C	281
87	CA_13A-66A	283	191	CA_8A-39C	
88	CA_14A-66A	259	192	CA_8A-40C	281
89	CA_19A-1A	245	193	CA_8A-41C	
90	CA_19A-3A	271	194	CA_8A-42C	
91	CA_19A-42A	271	195	CA_12A-66A-66A	256
92	CA_20A-32A		196	CA_12A-66B	256
93	CA_20A-40A	284	197	CA_12A-66C	256
94	CA_20A-42A	282	198	CA_13A-48C	283
95	CA_25A-26A	206	199	CA_13A-66A-66A	283
96	CA_26A-41A	247	200	CA_13A-66B	283
97	CA_28A-38A	274	201	CA_13A-66C	283
98	CA_28A-40A	275	202	CA_14A-66A-66A	259
99	CA_28A-41A	285	203	CA_19A-42C	271
100	CA_28A-42A	285	204	CA_20A-38C	284



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101	CA_29A-66A		205	CA_20A-40C	284
102	CA_39A-41A	214	206	CA_25A-25A-26A	
103	CA_41A-42A	285	207	CA_26A-41A-41A	247
104	CA_66A-71A	260	208	CA_26A-41C	247
			209	CA_28A-40C	275
			210	CA_28A-41C	285
			211	CA_28A-42C	285
			212	CA_38A-40C	284
			213	CA_39A-41C	214
			214	CA_39C-41A	
			215	CA_40A-42C	216
			216	CA_40C-42A	
			217	CA_41A-42C	285
			218	CA_41C-42A	285
			219	CA_48A-66A-66A	283
			220	CA_48A-66B	283
			221	CA_48A-66C	283
			222	CA_48C-66A	283
			223	CA_66A-66A-71A	260
			224	CA_66C-71A	260
			225	CA_1A-3A-5A	
			226	CA_1A-3A-7A	
			227	CA_1A-3A-8A	
			228	CA_1A-3A-19A	
			229	CA_1A-3A-20A	
			230	CA_1A-3A-26A	
			231	CA_1A-3A-28A	
			232	CA_1A-3A-38A	
			233	CA_1A-3A-40A	
			234	CA_1A-3A-41A	
			235	CA_1A-3A-42A	
			236	CA_1A-5A-7A	
			237	CA_1A-5A-38A	
			238	CA_1A-5A-40A	
			239	CA_1A-7A-8A	
			240	CA_1A-7A-20A	
			241	CA_1A-7A-28A	
			242	CA_1A-7A-40A	
			243	CA_1A-7A-42A	
			244	CA_1A-8A-40A	
			245	CA_1A-19A-42A	
			246	CA_1A-20A-42A	
			247	CA_1A-26A-41A	
			248	CA_1A-28A-42A	
			249	CA_1A-41A-42A	
			250	CA_2A-4A-5A	
			251	CA_2A-4A-12A	
			252	CA_2A-4A-13A	
			253	CA_2A-4A-71A	
			254	CA_2A-5A-48A	
			255	CA_2A-5A-66A	
			256	CA_2A-12A-66A	
			257	CA_2A-13A-48A	
			258	CA_2A-13A-66A	
			259	CA_2A-14A-66A	
			260	CA_2A-66A-71A	



			261	CA_3A-5A-7A	
			262	CA_3A-5A-38A	
			263	CA_3A-5A-40A	
			264	CA_3A-7A-8A	
			265	CA_3A-7A-20A	
			266	CA_3A-7A-28A	
			267	CA_3A-7A-40A	
			268	CA_3A-7A-42A	
			269	CA_3A-8A-38A	
			270	CA_3A-8A-40A	
			271	CA_3A-19A-42A	
			272	CA_3A-20A-38A	
			273	CA_3A-20A-42A	
			274	CA_3A-28A-38A	
			275	CA_3A-28A-40A	
			276	CA_3A-28A-41A	
			277	CA_3A-28A-42A	
			278	CA_3A-41A-42A	
			279	CA_4A-7A-12A	
			280	CA_5A-48A-66A	
			281	CA_7A-8A-40A	
			282	CA_7A-20A-42A	
			283	CA_13A-48A-66A	
			284	CA_20A-38A-40A	
			285	CA_28A-41A-42A	

<Power verification when LTE Carrier Aggregation Active>
General Note:

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

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

<Two Carrier power verification>

Configure	PCC							SCC				Power	
	LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	4	20	1745	20300	QPSK	1	0	29	10	722.5	9715	22.88	22.98
	5	10	829	20450	QPSK	1	0	25	20	1960	8340	23.28	23.39
	5	10	829	20450	QPSK	1	0	41	20	2593	40620	23.30	23.39
	12	10	704	23060	QPSK	1	0	25	20	1960	8340	23.41	23.57
	66	20	1770	132572	QPSK	1	0	29	10	722.5	9715	23.40	23.49

<Three Carrier power verification>

Configure	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)	W/O CA Tx.Power (dBm)
Inter-Band	2	20	1880	18900	QPSK	1	0	2	20	1960	900	29	10	722.5	9715	23.18	23.25
	4	20	1745	20300	QPSK	1	0	48	20	3625	55990	48	20	3644.8	56188	22.91	22.98
	25	20	1880	26340	QPSK	1	0	25	20	1985	8590	26	15	876.5	8865	23.00	23.03
	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	5	10	881.5	2525	23.14	23.25
	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	12	10	737.5	5095	23.11	23.25
	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	13	10	751	5230	23.17	23.25
	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	71	20	634.5	68761	23.18	23.25
	2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	48	20	3625	55990	23.16	23.25
	2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	66	20	2155	66886	23.19	23.25
	2	20	1880	18900	QPSK	1	0	12	10	737.5	5095	66	20	2155	66886	23.18	23.25
	2	20	1880	18900	QPSK	1	0	13	10	751	5230	48	20	3625	55990	23.21	23.25
	2	20	1880	18900	QPSK	1	0	13	10	751	5230	66	20	2155	66886	23.16	23.25
	2	20	1880	18900	QPSK	1	0	14	10	763	5330	66	20	2155	66886	23.19	23.25
	2	20	1880	18900	QPSK	1	0	66	20	2155	66886	71	20	634.5	68761	23.20	23.25
	4	20	1745	20300	QPSK	1	0	7	20	2655	3100	12	10	737.5	5095	22.90	22.98
	5	10	829	20450	QPSK	1	0	48	20	3625	55990	66	20	2155	66886	23.30	23.39
	13	10	782	23230	QPSK	1	0	48	20	3625	55990	66	20	2155	66886	24.08	24.14

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation	
Number	Combination
1	5B
2	7C
3	41C
4	48C

<Intra-band>
General Note:

- i. The device supports intra-band uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- v. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

CA_5B_Sensor OFF										
Combination 10MHz+10MHz (50RB+50RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20450	20549	QPSK	1	0	0	0	1	0	23.44	25
20475	20574	QPSK	1	49	1	0	2	0	23.76	25
20600	20501	QPSK	1	0	0	0	1	0	23.47	25

CA_5B_Sensor ON										
Combination 10MHz+10MHz (50RB+50RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20450	20549	QPSK	1	0	0	0	1	0	20.44	22
20475	20574	QPSK	1	49	1	0	2	0	20.68	22
20600	20501	QPSK	1	0	0	0	1	0	20.55	22

CA_7C_Sensor OFF										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	0	0	0	1	0	22.8	24
21100	20902	QPSK	1	0	0	0	1	0	22.72	24
21350	21152	QPSK	1	0	0	0	1	0	22.9	24

CA_7C_Sensor ON										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	0	0	0	1	0	15.81	16.5
21100	20902	QPSK	1	0	0	0	1	0	15.77	16.5
21350	21152	QPSK	1	0	0	0	1	0	15.76	16.5

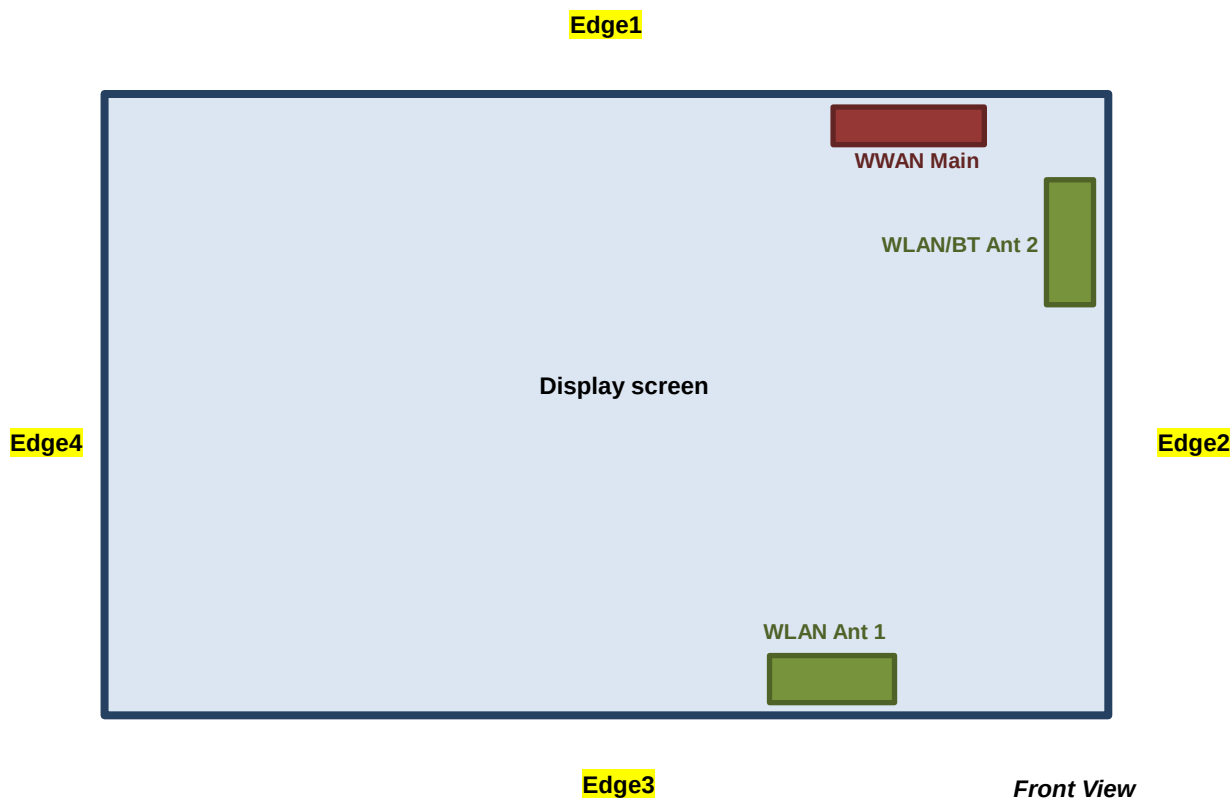
CA_41C_Sensor OFF										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	22.75	24
40185	39987	QPSK	1	0	0	0	1	0	22.87	24
40620	40422	QPSK	1	0	0	0	1	0	22.62	24
41055	40857	QPSK	1	0	1	99	2	0	22.8	24
41490	41292	QPSK	1	0	1	99	2	0	22.88	24

CA_41C_Sensor ON										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	17.73	18
40185	39987	QPSK	1	0	0	0	1	0	17.82	18
40620	40422	QPSK	1	0	0	0	1	0	17.61	18
41055	40857	QPSK	1	0	1	99	2	0	17.72	18
41490	41292	QPSK	1	0	1	99	2	0	17.84	18

CA_48C_Sensor OFF										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
55340	55538	QPSK	1	0	0	0	1	0	20.8	22
55830	55632	QPSK	1	0	0	0	1	0	20.86	22
56150	55952	QPSK	1	0	0	0	1	0	21	22
56640	56442	QPSK	1	0	1	99	2	0	20.57	22

13. Antenna Location

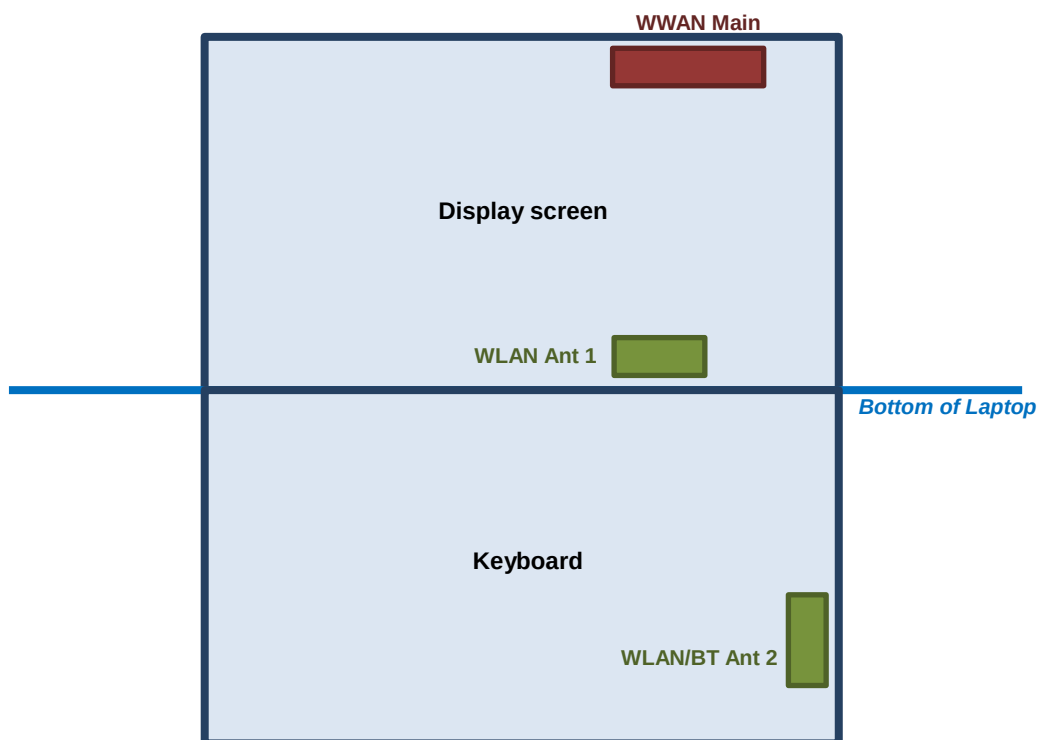
<For Tablet>



The separation distance for antenna to edge :

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Main	< 5	9.55	196.20	210.15
WLAN Antenna 1	197.50	76.35	< 5	194.35
WLAN/BT Antenna 2	59.59	5.75	126.75	291.45

<For Laptop>



The separation distance for antenna to edge :

Antenna	To Bottom of Laptop (mm)
WWAN Main Antenna	200.39
WLAN Antenna 1	< 5
WLAN/BT Antenna 2	< 5

<SAR test exclusion table>
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:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$
 - 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

Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 5	LTE Band 26	LTE Band 4	LTE Band 66	LTE Band 2	LTE Band 25	LTE Band 7	LTE Band 38	LTE Band 41	LTE Band 48
	Calculated Frequency (MHz)	846	1750	1907	695	715	784	795	848	848	1754	1779	1909	1914	2567	2617	2687	3697
	Maximum power (dBm)	24.5	24.5	24.5	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	22.0
	Maximum rated power(mW)	281.84	281.84	281.84	316.23	316.23	316.23	316.23	316.23	316.23	251.19	251.19	251.19	251.19	251.19	251.19	251.19	158.49
Bottom Face	Separation distance(mm)	5.0																
	exclusion threshold	51.9	74.6	77.8	52.7	53.5	56.0	56.4	58.2	58.2	66.5	67.0	69.4	69.5	80.5	81.3	82.4	61.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0																
	exclusion threshold	51.9	74.6	77.8	52.7	53.5	56.0	56.4	58.2	58.2	66.5	67.0	69.4	69.5	80.5	81.3	82.4	61.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	9.6																
	exclusion threshold	27.0	38.8	40.5	27.5	27.9	29.2	29.4	30.3	30.3	34.7	34.9	36.2	36.2	41.9	42.3	42.9	31.7
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 3	Separation distance(mm)	196.2																
	exclusion threshold	988.0	1575.0	1571.0	857.0	874.0	934.0	943.0	989.0	989.0	1575.0	1574.0	1571.0	1570.0	1556.0	1555.0	1554.0	1540.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 4	Separation distance(mm)	210.0																
	exclusion threshold	1065.0	1713.0	1709.0	921.0	940.0	1006.0	1016.0	1067.0	1067.0	1713.0	1712.0	1709.0	1708.0	1694.0	1693.0	1692.0	1678.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Bottom of Laptop	Separation distance(mm)	200.4																
	exclusion threshold	1011.0	1617.0	1613.0	877.0	894.0	955.0	965.0	1013.0	1013.0	1617.0	1616.0	1613.0	1612.0	1598.0	1597.0	1596.0	1582.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For 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 ≥ 0.8 W/kg.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA is $\leq \frac{1}{4}$ 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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/B26/B38/B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. The maximum output power, including tolerance, for the smaller band is $\leq$ 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.



14.1 Body SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Sensor ON / OFF	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9262	1852.4	Auden	20.83	21.50	1.167	0.01	0.237	0.277
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9262	1852.4	Auden	20.83	21.50	1.167	0.03	0.526	0.614
	WCDMA II	RMC 12.2Kbps	Edge 2	0mm	OFF	9400	1880	Auden	24.08	24.50	1.102	-0.08	0.175	0.193
	WCDMA II	RMC 12.2Kbps	Bottom Face	4mm	OFF	9400	1880	Auden	24.08	24.50	1.102	-0.08	0.215	0.237
	WCDMA II	RMC 12.2Kbps	Edge 1	21mm	OFF	9400	1880	Auden	24.08	24.50	1.102	0.1	0.050	0.055
01	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9262	1852.4	Speed	20.83	21.50	1.167	-0.03	0.623	0.727
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1513	1752.6	Auden	20.90	21.00	1.023	-0.03	0.278	0.284
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	Auden	20.90	21.00	1.023	0.14	0.613	0.627
	WCDMA IV	RMC 12.2Kbps	Edge 2	0mm	OFF	1513	1752.6	Auden	24.02	24.50	1.117	0.11	0.355	0.396
	WCDMA IV	RMC 12.2Kbps	Bottom Face	4mm	OFF	1513	1752.6	Auden	24.02	24.50	1.117	-0.05	0.347	0.388
	WCDMA IV	RMC 12.2Kbps	Edge 1	21mm	OFF	1513	1752.6	Auden	24.02	24.50	1.117	0.18	0.211	0.236
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	Speed	20.90	21.00	1.023	-0.05	0.783	0.801
02	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1312	1712.4	Speed	20.60	21.00	1.096	0	0.739	0.810
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1413	1732.6	Speed	20.80	21.00	1.047	0.17	0.732	0.766
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4233	846.6	Auden	21.48	22.00	1.127	0.1	0.242	0.273
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	Auden	21.48	22.00	1.127	-0.17	0.587	0.662
	WCDMA V	RMC 12.2Kbps	Edge 2	0mm	OFF	4233	846.6	Auden	23.44	24.50	1.276	0.04	0.170	0.217
	WCDMA V	RMC 12.2Kbps	Bottom Face	4mm	OFF	4233	846.6	Auden	23.44	24.50	1.276	-0.08	0.331	0.423
	WCDMA V	RMC 12.2Kbps	Edge 1	21mm	OFF	4233	846.6	Auden	23.44	24.50	1.276	0.05	0.180	0.230
03	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	Speed	21.48	22.00	1.127	0	0.827	0.932
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4132	826.4	Speed	21.26	22.00	1.186	0.13	0.680	0.806
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4182	836.4	Speed	21.22	22.00	1.197	-0.08	0.716	0.857



< LTE SAR >

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor ON / OFF	Ch.	Freq. (MHz)	Antenna Vendor	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 7	20M	QPSK	1	0	Bottom Face	0mm	ON	21100	2535	Auden	15.90	16.50	1.148			0.03	0.157	0.180
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	ON	20850	2510	Auden	15.83	16.50	1.167			-0.08	0.153	0.179
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21100	2535	Auden	15.90	16.50	1.148			-0.08	0.887	1.018
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	20850	2510	Auden	15.53	16.50	1.250			-0.05	0.704	0.880
04	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21350	2560	Auden	15.59	16.50	1.233			-0.01	0.960	1.184
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	ON	20850	2510	Auden	15.83	16.50	1.167			0.1	0.701	0.818
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	ON	21100	2535	Auden	15.71	16.50	1.199			0.18	0.915	1.098
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	ON	21350	2560	Auden	15.69	16.50	1.205			0.14	0.915	1.103
	LTE Band 7	20M	QPSK	100	0	Edge 1	0mm	ON	21100	2535	Auden	15.72	16.50	1.197			-0.17	0.951	1.138
	LTE Band 7	20M	QPSK	1	0	Edge 2	0mm	OFF	21100	2535	Auden	22.93	24.00	1.279			-0.18	0.208	0.266
	LTE Band 7	20M	QPSK	50	0	Edge 2	0mm	OFF	21100	2535	Auden	21.86	23.00	1.300			0.1	0.169	0.220
	LTE Band 7	20M	QPSK	1	0	Bottom Face	4mm	OFF	21100	2535	Auden	22.93	24.00	1.279			-0.17	0.494	0.632
	LTE Band 7	20M	QPSK	50	0	Bottom Face	4mm	OFF	21100	2535	Auden	21.86	23.00	1.300			-0.03	0.397	0.516
	LTE Band 7	20M	QPSK	1	0	Edge 1	21mm	OFF	21100	2535	Auden	22.93	24.00	1.279			0.14	0.540	0.691
	LTE Band 7	20M	QPSK	50	0	Edge 1	21mm	OFF	21100	2535	Auden	21.86	23.00	1.300			0.11	0.387	0.503
	LTE ULCA_7C	20M	QPSK	1	0	Edge 1	0mm	ON	20850+21048	2510	Auden	15.81	16.50	1.172			0.08	0.699	0.819
	LTE ULCA_7C	20M	QPSK	1	0	Edge 1	0mm	ON	21100+20902	2535	Auden	15.77	16.50	1.183			0.01	0.555	0.657
	LTE ULCA_7C	20M	QPSK	1	0	Edge 1	0mm	ON	21350+21152	2560	Auden	15.76	16.50	1.186			0.03	0.757	0.898
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21350	2560	Speed	15.59	16.50	1.233			0.17	0.876	1.080
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	20850	2510	Speed	15.53	16.50	1.250			0.01	0.915	1.144
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21100	2535	Speed	15.90	16.50	1.148			-0.05	0.924	1.061
	LTE Band 12	10M	QPSK	1	0	Bottom Face	0mm	ON	23095	707.5	Auden	22.88	23.50	1.153			0.04	0.201	0.232
	LTE Band 12	10M	QPSK	25	0	Bottom Face	0mm	ON	23095	707.5	Auden	22.42	22.50	1.019			-0.01	0.206	0.210
	LTE Band 12	10M	QPSK	1	0	Edge 1	0mm	ON	23095	707.5	Auden	22.88	23.50	1.153			-0.08	0.624	0.720
	LTE Band 12	10M	QPSK	25	0	Edge 1	0mm	ON	23095	707.5	Auden	22.42	22.50	1.019			0.05	0.478	0.487
	LTE Band 12	10M	QPSK	1	0	Edge 2	0mm	OFF	23095	707.5	Auden	23.45	25.00	1.429			0.06	0.284	0.406
	LTE Band 12	10M	QPSK	25	0	Edge 2	0mm	OFF	23095	707.5	Auden	22.53	24.00	1.403			-0.09	0.231	0.324
	LTE Band 12	10M	QPSK	1	0	Bottom Face	4mm	OFF	23095	707.5	Auden	23.45	25.00	1.429			0.12	0.209	0.299
	LTE Band 12	10M	QPSK	25	0	Bottom Face	4mm	OFF	23095	707.5	Auden	22.53	24.00	1.403			0.03	0.162	0.227
	LTE Band 12	10M	QPSK	1	0	Edge 1	21mm	OFF	23095	707.5	Auden	23.45	25.00	1.429			0.18	0.131	0.187
	LTE Band 12	10M	QPSK	25	0	Edge 1	21mm	OFF	23095	707.5	Auden	22.53	24.00	1.403			0.16	0.102	0.143
05	LTE Band 12	10M	QPSK	1	0	Edge 1	0mm	ON	23095	707.5	Speed	22.88	23.50	1.153			0.01	0.692	0.798
	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	Auden	21.70	22.00	1.072			0.01	0.239	0.256
	LTE Band 13	10M	QPSK	25	0	Bottom Face	0mm	ON	23230	782	Auden	21.63	22.00	1.089			-0.15	0.249	0.271
	LTE Band 13	10M	QPSK	1	0	Edge 1	0mm	ON	23230	782	Auden	21.70	22.00	1.072			0.19	0.548	0.587
	LTE Band 13	10M	QPSK	25	0	Edge 1	0mm	ON	23230	782	Auden	21.63	22.00	1.089			0.07	0.617	0.672
	LTE Band 13	10M	QPSK	1	0	Edge 2	0mm	OFF	23230	782	Auden	24.14	25.00	1.219			-0.18	0.266	0.324
	LTE Band 13	10M	QPSK	25	0	Edge 2	0mm	OFF	23230	782	Auden	23.23	24.00	1.194			0.03	0.215	0.257
	LTE Band 13	10M	QPSK	1	0	Bottom Face	4mm	OFF	23230	782	Auden	24.14	25.00	1.219			0.11	0.298	0.363
	LTE Band 13	10M	QPSK	25	0	Bottom Face	4mm	OFF	23230	782	Auden	23.23	24.00	1.194			-0.08	0.251	0.300
	LTE Band 13	10M	QPSK	1	0	Edge 1	21mm	OFF	23230	782	Auden	24.14	25.00	1.219			-0.17	0.163	0.199
	LTE Band 13	10M	QPSK	25	0	Edge 1	21mm	OFF	23230	782	Auden	23.23	24.00	1.194			-0.08	0.137	0.164
06	LTE Band 13	10M	QPSK	25	0	Edge 1	0mm	ON	23230	782	Speed	21.63	22.00	1.089			0.04	0.731	0.796
	LTE Band 14	10M	QPSK	1	0	Bottom Face	0mm	ON	23330	793	Auden	21.86	22.00	1.033			0.17	0.233	0.241
	LTE Band 14	10M	QPSK	25	0	Bottom Face	0mm	ON	23330	793	Auden	21.62	22.00	1.091			0.18	0.237	0.259
	LTE Band 14	10M	QPSK	1	0	Edge 1	0mm	ON	23330	793	Auden	21.86	22.00	1.033			-0.04	0.489	0.505
	LTE Band 14	10M	QPSK	25	0	Edge 1	0mm	ON	23330	793	Auden	21.62	22.00	1.091			-0.08	0.576	0.629
	LTE Band 14	10M	QPSK	1	0	Edge 2	0mm	OFF	23330	793	Auden	24.14	25.00	1.219			-0.13	0.247	0.301
	LTE Band 14	10M	QPSK	25	0	Edge 2	0mm	OFF	23330	793	Auden	23.24	24.00	1.191			-0.13	0.199	0.237
	LTE Band 14	10M	QPSK	1	0	Bottom Face	4mm	OFF	23330	793	Auden	24.14	25.00	1.219			-0.03	0.298	0.363
	LTE Band 14	10M	QPSK	25	0	Bottom Face	4mm	OFF	23330	793	Auden	23.24	24.00	1.191			0.08	0.254	0.303



FCC SAR TEST REPORT

Report No. : FA432922

	LTE Band 14	10M	QPSK	1	0	Edge 1	21mm	OFF	23330	793	Auden	24.14	25.00	1.219			-0.07	0.159	0.194
	LTE Band 14	10M	QPSK	25	0	Edge 1	21mm	OFF	23330	793	Auden	23.24	24.00	1.191			0.05	0.130	0.155
07	LTE Band 14	10M	QPSK	25	0	Edge 1	0mm	ON	23330	793	Speed	21.62	22.00	1.091			0.01	0.730	0.797
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26340	1880	Auden	22.36	22.50	1.033			0.03	0.331	0.342
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26340	1880	Auden	22.07	22.50	1.104			-0.16	0.335	0.370
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26340	1880	Auden	22.36	22.50	1.033			-0.02	0.788	0.814
08	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26140	1860	Auden	21.92	22.50	1.143			0	0.793	0.906
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26590	1905	Auden	21.71	22.50	1.199			-0.03	0.631	0.757
	LTE Band 25	20M	QPSK	50	0	Edge 1	0mm	ON	26340	1880	Auden	22.07	22.50	1.104			0.15	0.701	0.774
	LTE Band 25	20M	QPSK	100	0	Edge 1	0mm	ON	26140	1860	Auden	22.05	22.50	1.109			0.01	0.680	0.754
	LTE Band 25	20M	QPSK	1	0	Edge 2	0mm	OFF	26340	1880	Auden	23.17	24.00	1.211			-0.09	0.213	0.258
	LTE Band 25	20M	QPSK	50	0	Edge 2	0mm	OFF	26340	1880	Auden	22.15	23.00	1.216			0.11	0.224	0.272
	LTE Band 25	20M	QPSK	1	0	Bottom Face	4mm	OFF	26340	1880	Auden	23.17	24.00	1.211			-0.05	0.293	0.355
	LTE Band 25	20M	QPSK	50	0	Bottom Face	4mm	OFF	26340	1880	Auden	22.15	23.00	1.216			-0.08	0.249	0.303
	LTE Band 25	20M	QPSK	1	0	Edge 1	21mm	OFF	26340	1880	Auden	23.17	24.00	1.211			0.16	0.108	0.131
	LTE Band 25	20M	QPSK	50	0	Edge 1	21mm	OFF	26340	1880	Auden	22.15	23.00	1.216			0.05	0.082	0.100
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26140	1860	Speed	21.92	22.50	1.143			0.02	0.704	0.805
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26340	1880	Speed	22.36	22.50	1.033			0.07	0.655	0.676
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26590	1905	Speed	21.71	22.50	1.199			0.16	0.525	0.630
	LTE Band 26	15M	QPSK	1	0	Bottom Face	0mm	ON	26865	831.5	Auden	20.75	22.00	1.334			0.07	0.216	0.288
	LTE Band 26	15M	QPSK	36	0	Bottom Face	0mm	ON	26865	831.5	Auden	20.76	22.00	1.330			0	0.214	0.285
	LTE Band 26	15M	QPSK	1	0	Edge 1	0mm	ON	26865	831.5	Auden	20.75	22.00	1.334			0.01	0.641	0.855
	LTE Band 26	15M	QPSK	36	0	Edge 1	0mm	ON	26865	831.5	Auden	20.76	22.00	1.330			-0.01	0.422	0.561
	LTE Band 26	15M	QPSK	75	0	Edge 1	0mm	ON	26865	831.5	Auden	20.75	22.00	1.334			-0.05	0.630	0.840
	LTE Band 26	15M	QPSK	1	0	Edge 2	0mm	OFF	26865	831.5	Auden	23.43	25.00	1.435			-0.06	0.184	0.264
	LTE Band 26	15M	QPSK	36	0	Edge 2	0mm	OFF	26865	831.5	Auden	22.34	24.00	1.466			-0.04	0.140	0.205
	LTE Band 26	15M	QPSK	1	0	Bottom Face	4mm	OFF	26865	831.5	Auden	23.43	25.00	1.435			-0.1	0.268	0.385
	LTE Band 26	15M	QPSK	36	0	Bottom Face	4mm	OFF	26865	831.5	Auden	22.34	24.00	1.466			0.18	0.205	0.300
	LTE Band 26	15M	QPSK	1	0	Edge 1	21mm	OFF	26865	831.5	Auden	23.43	25.00	1.435			-0.17	0.142	0.204
	LTE Band 26	15M	QPSK	36	0	Edge 1	21mm	OFF	26865	831.5	Auden	22.34	24.00	1.466			-0.04	0.110	0.161
09	LTE Band 26	15M	QPSK	1	0	Edge 1	0mm	ON	26865	831.5	Speed	20.75	22.00	1.334			0	0.646	0.861
	LTE Band 5B	10M	QPSK	1	0	Edge 1	0mm	ON	20475+20574	831.5	Speed	20.68	22.00	1.355			0.03	0.561	0.760
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132572	1770	Auden	21.16	21.50	1.081			-0.18	0.231	0.250
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0mm	ON	132322	1745	Auden	20.81	21.50	1.172			-0.11	0.228	0.267
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132572	1770	Auden	21.16	21.50	1.081			-0.16	0.758	0.820
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132072	1720	Auden	20.40	21.50	1.288			-0.12	0.660	0.850
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132322	1745	Auden	20.63	21.50	1.222			0.07	0.766	0.936
	LTE Band 66	20M	QPSK	50	0	Edge 1	0mm	ON	132322	1745	Auden	20.81	21.50	1.172			-0.15	0.745	0.873
	LTE Band 66	20M	QPSK	50	0	Edge 1	0mm	ON	132072	1720	Auden	20.54	21.50	1.247			-0.02	0.743	0.927
	LTE Band 66	20M	QPSK	50	0	Edge 1	0mm	ON	132572	1770	Auden	20.66	21.50	1.213			-0.05	0.766	0.929
	LTE Band 66	20M	QPSK	100	0	Edge 1	0mm	ON	132322	1745	Auden	20.75	21.50	1.189			-0.13	0.774	0.920
	LTE Band 66	20M	QPSK	1	0	Edge 2	0mm	OFF	132572	1770	Auden	23.19	24.00	1.205			-0.06	0.305	0.368
	LTE Band 66	20M	QPSK	50	0	Edge 2	0mm	OFF	132322	1745	Auden	22.13	23.00	1.222			-0.14	0.266	0.325
	LTE Band 66	20M	QPSK	1	0	Bottom Face	4mm	OFF	132572	1770	Auden	23.19	24.00	1.205			0.06	0.285	0.343
	LTE Band 66	20M	QPSK	50	0	Bottom Face	4mm	OFF	132322	1745	Auden	22.13	23.00	1.222			0.02	0.237	0.290
	LTE Band 66	20M	QPSK	1	0	Edge 1	21mm	OFF	132572	1770	Auden	23.19	24.00	1.205			0.12	0.148	0.178
	LTE Band 66	20M	QPSK	50	0	Edge 1	21mm	OFF	132322	1745	Auden	22.13	23.00	1.222			-0.16	0.123	0.150
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132322	1745	Speed	20.63	21.50	1.222			0.08	0.814	0.995
10	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132072	1720	Speed	20.40	21.50	1.288			-0.07	0.820	1.056
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132572	1770	Speed	21.16	21.50	1.081			0.16	0.818	0.885
	LTE Band 71	20M	QPSK	1	0	Bottom Face	0mm	ON	133297	680.5	Auden	22.42	23.50	1.282			0.1	0.178	0.228
	LTE Band 71	20M	QPSK	50	0	Bottom Face	0mm	ON	133297	680.5	Auden	22.38	23.50	1.294			-0.04	0.182	0.236
	LTE Band 71	20M	QPSK	1	0	Edge 1	0mm	ON	133297	680.5	Auden	22.42	23.50	1.282			-0.01	0.463	0.594
	LTE Band 71	20M	QPSK	50	0	Edge 1	0mm	ON	133297	680.5	Auden	22.38	23.50	1.294			0	0.428	0.554
	LTE Band 71	20M	QPSK	1	0	Edge 2	0mm	OFF	133297	680.5	Auden	23.40	25.00	1.445			-0.11	0.182	0.263
	LTE Band 71	20M	QPSK	50	0	Edge 2	0mm	OFF	133297	680.5	Auden	22.62	24.00	1.374			-0.06	0.154	0.212



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	LTE Band 71	20M	QPSK	1	0	Bottom Face	4mm	OFF	133297	680.5	Auden	23.40	25.00	1.445			-0.13	0.148	0.214
	LTE Band 71	20M	QPSK	50	0	Bottom Face	4mm	OFF	133297	680.5	Auden	22.62	24.00	1.374			0.16	0.127	0.175
	LTE Band 71	20M	QPSK	1	0	Edge 1	21mm	OFF	133297	680.5	Auden	23.40	25.00	1.445			-0.15	0.071	0.103
	LTE Band 71	20M	QPSK	50	0	Edge 1	21mm	OFF	133297	680.5	Auden	22.62	24.00	1.374			-0.02	0.061	0.084
11	LTE Band 71	20M	QPSK	1	0	Edge 1	0mm	ON	133297	680.5	Speed	22.42	23.50	1.282			0	0.622	0.798
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	41490	2680	Auden	17.83	18.00	1.040	62.9	1.006	-0.09	0.146	0.153
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	41490	2680	Auden	17.74	18.00	1.062	62.9	1.006	-0.16	0.141	0.151
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41490	2680	Auden	17.83	18.00	1.040	62.9	1.006	-0.18	0.584	0.611
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	39750	2506	Auden	17.56	18.00	1.107	62.9	1.006	0.14	0.669	0.745
12	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40185	2549.5	Auden	17.59	18.00	1.099	62.9	1.006	0.08	0.737	0.815
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40620	2593	Auden	17.66	18.00	1.081	62.9	1.006	0.03	0.625	0.680
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41055	2636.5	Auden	17.57	18.00	1.104	62.9	1.006	0.1	0.621	0.690
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	41490	2680	Auden	17.74	18.00	1.062	62.9	1.006	-0.07	0.567	0.606
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	39750	2506	Auden	17.63	18.00	1.089	62.9	1.006	0.14	0.661	0.724
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	40185	2549.5	Auden	17.68	18.00	1.076	62.9	1.006	0.08	0.727	0.787
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	40620	2593	Auden	17.66	18.00	1.081	62.9	1.006	0.03	0.650	0.707
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	41055	2636.5	Auden	17.63	18.00	1.089	62.9	1.006	0.1	0.618	0.677
	LTE Band 41	20M	QPSK	100	0	Edge 1	0mm	ON	41490	2680	Auden	17.69	18.00	1.074	62.9	1.006	0.16	0.534	0.577
	LTE Band 41	20M	QPSK	1	0	Edge 2	0mm	OFF	41490	2680	Auden	22.90	24.00	1.288	62.9	1.006	0.11	0.102	0.132
	LTE Band 41	20M	QPSK	50	0	Edge 2	0mm	OFF	41490	2680	Auden	21.57	23.00	1.390	62.9	1.006	-0.08	0.079	0.110
	LTE Band 41	20M	QPSK	1	0	Bottom Face	4mm	OFF	41490	2680	Auden	22.90	24.00	1.288	62.9	1.006	-0.09	0.355	0.460
	LTE Band 41	20M	QPSK	50	0	Bottom Face	4mm	OFF	41490	2680	Auden	21.57	23.00	1.390	62.9	1.006	-0.06	0.284	0.397
	LTE Band 41	20M	QPSK	1	0	Edge 1	21mm	OFF	41490	2680	Auden	22.90	24.00	1.288	62.9	1.006	-0.17	0.236	0.306
	LTE Band 41	20M	QPSK	50	0	Edge 1	21mm	OFF	41490	2680	Auden	21.57	23.00	1.390	62.9	1.006	-0.01	0.185	0.259
	LTE ULCA_41C	20M	QPSK	1	0	Edge 1	0mm	ON	41490+41292	2680	Auden	17.84	18.00	1.038	62.9	1.006	-0.08	0.578	0.603
	LTE ULCA_41C	20M	QPSK	1	0	Edge 1	0mm	ON	39750+39948	2506	Auden	17.73	18.00	1.064	62.9	1.006	-0.08	0.679	0.727
	LTE ULCA_41C	20M	QPSK	1	0	Edge 1	0mm	ON	40185+39987	2549.5	Auden	17.82	18.00	1.042	62.9	1.006	-0.18	0.729	0.764
	LTE ULCA_41C	20M	QPSK	1	0	Edge 1	0mm	ON	40620+40422	2593	Auden	17.61	18.00	1.094	62.9	1.006	0.1	0.619	0.681
	LTE ULCA_41C	20M	QPSK	1	0	Edge 1	0mm	ON	41055+40857	2636.5	Auden	17.72	18.00	1.067	62.9	1.006	0.12	0.615	0.660
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40185	2549.5	Speed	17.59	18.00	1.099	62.9	1.006	-0.11	0.719	0.795
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	39750	2506	Speed	17.56	18.00	1.107	62.9	1.006	0.03	0.699	0.778
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40620	2593	Speed	17.66	18.00	1.081	62.9	1.006	-0.16	0.703	0.765
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41055	2636.5	Speed	17.57	18.00	1.104	62.9	1.006	-0.02	0.707	0.785
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41490	2680	Speed	17.83	18.00	1.040	62.9	1.006	0.15	0.700	0.732
	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	OFF	56150	3641	Auden	20.80	22.00	1.318	62.9	1.006	-0.03	0.182	0.241
	LTE Band 48	20M	QPSK	50	0	Bottom Face	0mm	OFF	56150	3641	Auden	19.84	21.00	1.306	62.9	1.006	0.17	0.153	0.201
	LTE Band 48	20M	QPSK	1	0	Edge 1	0mm	OFF	56150	3641	Auden	20.80	22.00	1.318	62.9	1.006	-0.15	0.348	0.462
	LTE Band 48	20M	QPSK	50	0	Edge 1	0mm	OFF	56150	3641	Auden	19.84	21.00	1.306	62.9	1.006	0.16	0.240	0.315
	LTE Band 48	20M	QPSK	1	0	Edge 2	0mm	OFF	56150	3641	Auden	20.80	22.00	1.318	62.9	1.006	0.05	0.167	0.221
	LTE Band 48	20M	QPSK	50	0	Edge 2	0mm	OFF	56150	3641	Auden	19.84	21.00	1.306	62.9	1.006	-0.06	0.135	0.177
	LTE ULCA_48C	20M	QPSK	1	0	Edge 1	0mm	OFF	56150+55952	3641	Auden	21.00	22.00	1.259	62.9	1.006	0.08	0.328	0.415
13	LTE Band 48	20M	QPSK	1	0	Edge 1	0mm	OFF	56150	3641	Speed	20.80	22.00	1.318	62.9	1.006	0	0.397	0.526

14.2 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Sensor ON / OFF	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	Speed	21.48	22.00	1.127	0	0.827	-	0.932
2nd	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	Speed	21.48	22.00	1.127	0.02	0.812	1.02	0.915
1st	LTE Band 7	20M_QPSK_1_0	Edge 1	0mm	ON	21350	2560	Auden	15.59	16.50	1.233	-0.01	0.960	-	1.184
2nd	LTE Band 7	20M_QPSK_1_0	Edge 1	0mm	ON	21350	2560	Auden	15.59	16.50	1.233	0.04	0.944	1.02	1.164
1st	LTE Band 66	20M_QPSK_1_0	Edge 1	0mm	ON	132072	1720	Speed	20.40	21.50	1.288	-0.07	0.820	-	1.056
2nd	LTE Band 66	20M_QPSK_1_0	Edge 1	0mm	ON	132072	1720	Speed	20.40	21.50	1.288	0.01	0.811	1.01	1.045

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8\text{W/kg}$.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45\text{W/kg}$, 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.

15. Simultaneous Transmission Analysis

WWAN + WLAN <Intel AX211NGW>		
NO.	Simultaneous Transmission Configurations	Body
1.	WWAN Main + 2.4GHz WLAN Ant 1 + 2.4GHz WLAN Ant 2	Yes
2.	WWAN Main + 2.4GHz WLAN Ant 1 + Bluetooth Ant 2	Yes
3.	WWAN Main + WLAN5/6GHz Ant 1 + WLAN5/6GHz Ant 2 + Bluetooth Ant 2	Yes

WWAN + WLAN <REALTEK RTL8852BE>		
NO.	Simultaneous Transmission Configurations	Body
1.	WWAN Main + WLAN2.4GHz Ant 1 + WLAN2.4GHz Ant 2	Yes
2.	WWAN Main + WLAN5GHz Ant 1 + WLAN5GHz Ant 2 + Bluetooth Ant 2	Yes

General Note:

- The Intel AX211NGW WLAN/BT module is integrated into this host. The WLAN 2.4GHz, 5GHz and Bluetooth SAR results are referenced from Intel SAR report, report number: 221026-01.TR02 (FCC ID: PD9AX211NG); WLAN 5.9GHz SAR referred to report No.: 221026-01.TR05 (FCC ID: PD9AX211NG); WLAN 6GHz SAR referred to report No.: 221026-01.TR03 (FCC ID: PD9AX211NG) and these SAR results are also used to perform simultaneous transmission analysis.
- The REALTEK RTL8852BE WLAN/Bluetooth module is also integrated into this host, WLAN/Bluetooth SAR testing data, which can be referred to Sporton SAR Test Report, Report No.: FA2N0214 and the result is used to do simultaneous transmission analysis.
- The Scaled SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - Scalar SAR summation < 1.6W/kg.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, 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.
 - If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
 - The SPLSR calculated results please refer to section 15.2.

15.1 Body Exposure Conditions

WWAN Main + WLAN <Intel AX211NGW> + Bluetooth

Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5+6 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 1 1g SAR (W/kg)	WLAN2.4GHz Ant 2 1g SAR (W/kg)	WLAN5/6GHz Ant 1 1g SAR (W/kg)	WLAN5/6GHz Ant 2 1g SAR (W/kg)	Bluetooth Ant 2 1g SAR (W/kg)			
Bottom Face at 0mm	0.370	0.050	0.030	0.070	1.140	0.010	0.450	1.590	0.430
Edge 1 at 0mm	1.184						1.184	1.184	1.184
Edge 2 at 0mm	0.406	0.400	0.010	0.400	0.740	0.010	0.816	1.556	0.816

WWAN Main + WLAN <REALTEK RTL8852BE> + Bluetooth

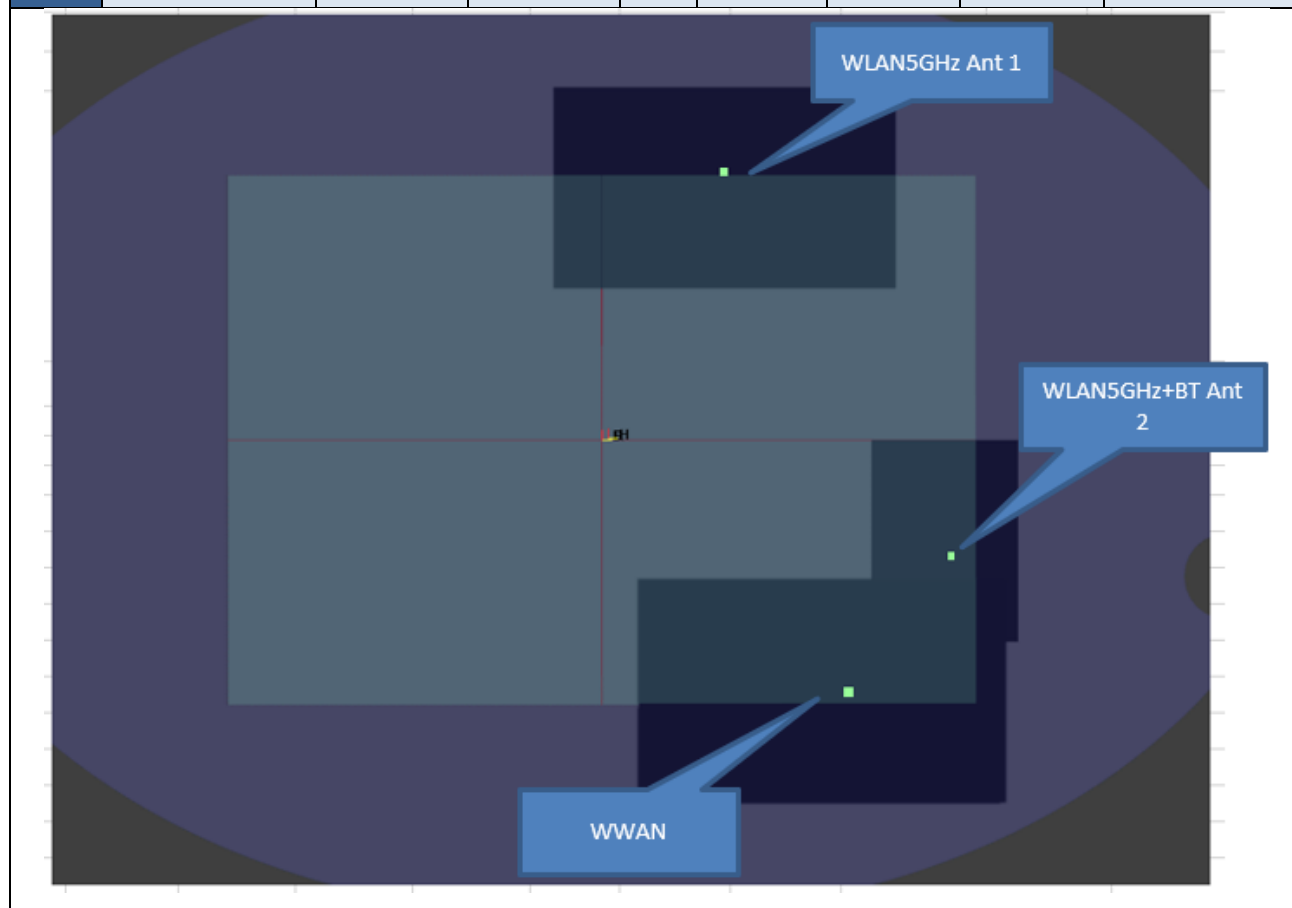
Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5+6 Summed 1g SAR (W/kg)	SPLSR	Case No
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 1 1g SAR (W/kg)	WLAN2.4GHz Ant 2 1g SAR (W/kg)	WLAN5GHz Ant 1 1g SAR (W/kg)	WLAN5GHz Ant 2 1g SAR (W/kg)	Bluetooth Ant 2 1g SAR (W/kg)				
Bottom Face at 0mm	0.370	0.046	1.082	0.125	1.193	0.376	1.498	2.064	0.04	Case 1
Edge 1 at 0mm	1.184						1.184	1.184		
Edge 2 at 0mm	0.406		0.402		0.723	0.189	0.808	1.318		

15.2 SPLSR Evaluation and Analysis

General Note:

1. According to antenna location the minimum distance between each transmit antenna is using for SPLSR analysis
2. Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Therefore, the adjacent transmit antennas will be summed first, and then the SPLSR calculation will be evaluated with the farther transmitted antennas.
3. $SPLSR = (SAR_1 + SAR_2)^{1.5} / (min. \text{ separation distance, mm})$. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary

Case 1	Band	Position	SAR (W/kg)	Gap (mm)	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 1	LTE Band 25	Bottom Face	0.370	0mm	211.4	0.50	0.00	Not required
	WLAN5GHz Ant 1		0.125	0mm				
	LTE Band 25	Bottom Face	0.370	0mm	71.1	1.94	0.04	Not required
	WLAN5GHz+BT Ant 2		1.569	0mm				
	WLAN5GHz Ant 1	Bottom Face	0.125	0mm	172.2	1.69	0.01	Not required
	WLAN5GHz+BT Ant 2		1.569	0mm				



Test Engineer : James Peng

16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:

The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

17. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [6] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [7] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [8] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [9] FCC KDB 616217 D04 v01r02, "SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers", Oct 2015
- [10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [11] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.