

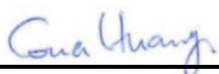
FCC SAR TEST REPORT

FCC ID : E2KFM350GL
Equipment : 5G Modue
Brand Name : DELL
Model Name : FM350-GL
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: P35S, P35S001) during test.

The product was received on Feb. 11, 2022 and testing was started from Feb. 02, 2022 and completed on Mar. 02, 2022. 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
FA212742-01	01	Initial issue of report	Apr. 12, 2022

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for DELL Inc., 5G Modue, FM350-GL, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary	Highest Simultaneous Transmission 1g SAR (W/kg)	
			Body (Separation 0mm)		
			1g SAR (W/kg)		
Licensed	WCDMA	WCDMA II	1.140	1.473	
		WCDMA IV	1.187		
		WCDMA V	1.180		
	LTE	LTE Band 7	1.162		
		LTE Band 12 / 17	1.068		
		LTE Band 13	1.157		
		LTE Band 14	1.160		
		LTE Band 2 / 25	1.178		
		LTE Band 5 / 26	1.060		
		LTE Band 30	1.158		
		LTE Band 4 / 66	1.134		
		LTE Band 71	1.078		
		LTE Band 38	1.130		
		LTE Band 41	1.071		
		LTE Band 48	1.057		
		FR1	FR1 n5		1.151
			FR1 n7		1.176
			FR1 n2/25		1.178
	FR1 n30		1.177		
	FR1 n66		1.071		
	FR1 n71		1.173		
	FR1 n38		1.186		
	FR1 n41		1.091		
FR1 n77 / n78	1.123				
Date of Testing:			2022/2/2 ~ 2022/3/2		

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg 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: Paula Chen

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	5G Modue
Brand Name	DELL
Model Name	FM350-GL
FCC ID	E2KFM350GL
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 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 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 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM
Remark: 1. This device has two antenna vendors, RF exposure evaluation selects Hong-Bo as the main test, SPEED will spot check worst case from each power state in Hong-Bo. 2. When the EN-DC is active only operating at WWAN main and MIMO antenna combination and the Sim-Tx analysis include in section16. 3. The device implements P and G sensor detection, the G-sensor is control when the device from laptop change to tablet mode that device will limit different output power for SAR compliance. For laptop mode the p-sensor will detect device is close or away human body and limit output power for SAR compliance.	

Host Information	
Equipment Name	Portable Computer
Brand Name	DELL
Model Name	P35S, P35S001
Integrated WLAN Module	Brand Name: Intel Model Name: AX211D2W
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 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
EUT Stage	Identical Prototype
Remark:	
1. The Intel AX211D2W WLAN/BT module is integrated into DELL P35S, P35S001 host, the WLAN/BT maximum output power is referenced from Sporton FCC SAR report, report no.: FA212106-03 (FCC ID: E2KAX211D2); the SAR results are also used to perform simultaneous transmission analysis in section 16.	

WWAN Antenna Information(Laptop)				
Main Antenna	Manufacturer	Hong-BO Co., Ltd	Peak gain(dBi)	2.69
	Part number	(P/N:350-24012 / (DC33002OV3L)	Type	PIFA
	Manufacturer	SPEED	Peak gain(dBi)	2.27
	Part number	P/N: F-0G-FH-6151-002-00 (DC33002OU3L)	Type	PIFA
MIMO 2 Antenna	Manufacturer	Hong-BO Co., Ltd	Peak gain(dBi)	0.75
	Part number	(P/N:330-24010 / (DC33002OV4L)	Type	PIFA
	Manufacturer	SPEED	Peak gain(dBi)	1.24
	Part number	P/N: F-0G-FH-6152-002-00 (DC33002OU4L)	Type	PIFA
WWAN Antenna Information (Tablet)				
Main Antenna	Manufacturer	Hong-BO Co., Ltd	Peak gain(dBi)	0.58
	Part number	(P/N:350-24012 / (DC33002OV3L)	Type	PIFA
	Manufacturer	SPEED	Peak gain(dBi)	2.2
	Part number	P/N: F-0G-FH-6151-002-00 (DC33002OU3L)	Type	PIFA
MIMO 2 Antenna	Manufacturer	Hong-BO Co., Ltd	Peak gain(dBi)	-0.39
	Part number	(P/N:330-24010 / (DC33002OV4L)	Type	PIFA
	Manufacturer	SPEED	Peak gain(dBi)	0.23
	Part number	P/N: F-0G-FH-6152-002-00 (DC33002OU4L)	Type	PIFA

WLAN Antenna Information									
1 SPEED Laptop Mode	Ant. Type	PIFA	connector		2 SPEED Tablet Mode	Ant. Type	PIFA	connector	
	Model No.	Main:F-0G-FH-6151-003-00(DC33002OU6L) Aux:F-0G-FH-6151-003-00(DC33002OU6L)				Model No.	Main:F-0G-FH-6151-003-00(DC33002OU6L) Aux:F-0G-FH-6151-003-00(DC33002OU6L)		
	Peak Gain (dBi)					Peak Gain (dBi)			
	2400~2483.5MHz	Main:1.92 Aux:1.97	5470~5725MHz	Main:2.87 Aux:2.65		2400~2483.5MHz	Main:1.1 Aux:-0.94	5470~5725MHz	Main:0.02 Aux:0.71
	5150~5250MHz	Main:2.31 Aux:1.76	5725~5850MHz	Main:3.27 Aux:2.95		5150~5250MHz	Main:1.34 Aux:-0.14	5725~5850MHz	Main:-0.72 Aux:0.71
	5250~5350MHz	Main:2.4 Aux:1.78	5925~6425MHz	Main:3.25 Aux:2.93		5250~5350MHz	Main:1.3 Aux:-0.14	5925~6425MHz	Main:1.72 Aux:2.64
	6425~6525MHz	Main:2.75 Aux:2.26	6525~6825MHz	Main:3.69 Aux:3.11		6425~6525MHz	Main:0.58 Aux:-0.19	6525~6825MHz	Main:0.49 Aux:0.3
	6875~7125 MHz	Main:3.69 Aux:3.23				6875~7125 MHz	Main:-0.13 Aux:-0.32		
1 Hong-Bo Laptop Mode	Ant. Type	PIFA	connector		2 Hong-Bo Tablet Mode	Ant. Type	PIFA	connector	
	Model No.	Main:330-24012(DC33002OV6L) Aux:330-24012(DC33002OV6L)				Model No.	Main:330-24012(DC33002OV6L) Aux:330-24012(DC33002OV6L)		
	Peak Gain (dBi)					Peak Gain (dBi)			
	2400~2483.5MHz	Main:1.54 Aux:-0.62	5470~5725MHz	Main:0.53 Aux:2.67		2400~2483.5MHz	Main:-1.74 Aux:-1.86	5470~5725MHz	Main:0.44 Aux:-1.31
	5150~5250MHz	Main:0.53 Aux:0.18	5725~5850MHz	Main:0.16 Aux:2.64		5150~5250MHz	Main:2.52 Aux:-0.81	5725~5850MHz	Main:0.07 Aux:-1.9
	5250~5350MHz	Main:0.53 Aux:-0.26	5925~6425MHz	Main:1.16 Aux:3.47		5250~5350MHz	Main:2.52 Aux:-1.27	5925~6425MHz	Main:1.21 Aux:1.17
	6425~6525MHz	Main:0.83 Aux:3.27	6525~6825MHz	Main:1.39 Aux:3.84		6425~6525MHz	Main:-0.98 Aux:1.62	6525~6825MHz	Main:0.76 Aux:3.35
	6875~7125 MHz	Main:1.56 Aux:3.5				6875~7125 MHz	Main:-0.41 Aux:2.18		

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																																													
FCC ID	E2KFM350GL																																																																												
Equipment Name	5G Modue																																																																												
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 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 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 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 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 / 256QAM																																																																												
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
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3																																																																													
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																																						
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																																																							
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																																						
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																																																						
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																																						
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																																						
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																																						
256 QAM	≥ 1						≤ 5																																																																						
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																																												
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																												
Power reduction applied to satisfy SAR compliance	Yes, P-Sensor and G-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 5 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 17														
	Bandwidth 5 MHz				Bandwidth 10 MHz									
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)							
L	23755		706.5		23780		709							
M	23790		710		23790		710							
H	23825		713.5		23800		711							

LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		
LTE Band 30												
	Bandwidth 5 MHz					Bandwidth 10 MHz						
	Channel #			Freq.(MHz)		Channel #				Freq.(MHz)		
L	27685			2307.5		27710				2310		
M	27710			2310								
H	27735			2312.5								
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
	40620	2593	40620	2593	40620	2593	40620	2593				
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
	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				
	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				

3.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information								
FCC ID	E2KFM350GL							
Equipment Name	5G Modue							
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz							
	5G NR n5: 824 MHz ~ 849 MHz							
	5G NR n7: 2500 MHz ~ 2570 MHz							
	5G NR n25: 1850 MHz ~ 1915 MHz							
	5G NR n30 : 2305 MHz ~ 2315 MHz							
	5G NR n38: 2570 MHz ~ 2620 MHz							
	5G NR n41: 2496 MHz ~ 2690 MHz							
	5G NR n66: 1710 MHz ~ 1780 MHz							
	5G NR n71: 663 MHz ~ 698 MHz							
	5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz							
5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz								
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz							
	5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz							
	5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz							
	5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz							
	5G NR n30: 5MHz, 10MHz							
	5G NR n38: 10MHz, 15MHz, 20MHz							
	5G NR n41: 10MHz, 15MHz, 30MHz, 40MHz, 50MHz, 80MHz, 100MHz							
	5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 40MHz							
	5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz							
	5G NR n77/n78: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz, 60MHz, 80MHz, 100MHz							
SCS	FDD/TDD: SCS15KHz and SCS30KHz							
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM							
A-MPR (Additional MPR) disabled for SAR Testing?	Yes							
LTE Anchor Bands for n2	LTE B5/12/13/14							
LTE Anchor Bands for n5	LTE B2/7/30/48/66							
LTE Anchor Bands for n41	LTE B2/41/66							
LTE Anchor Bands for n66	LTE B5/12/13/48							
LTE Anchor Bands for n71	LTE B2/66							
LTE Anchor Bands for n77	LTE B2/5/12/13/14/30/41/66							
LTE Anchor Bands for n78	LTE B2/5/7/38							
NR Band 2								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900
NR Band 5								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839
NR Band 7								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560
NR Band 25								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905

NR Band 30																
	Bandwidth 5MHz						Bandwidth 10MHz									
	Ch. #		Freq. (MHz)				Ch. #				Freq. (MHz)					
L	461500		2307.5				462000				2310					
M	462000		2310													
H	462500		2312.5													
NR Band 38																
	Bandwidth 10MHz				Bandwidth 15MHz				Bandwidth 20MHz							
	Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)					
L	515004		2575.02		515502		2577.51		516000		2580					
M	519000		2595		519000		2595		519000		2595					
H	522996		2614.98		522498		2612.49		522000		2610					
NR Band 41																
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 80MHz		Bandwidth100MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	501000	2505	501504	2507.52	503004	2515.02	504000	2520	505002	2525.01	508002	2540.01	510000	2550		
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99		
H	537000	2685	536496	2682.48	534996	2674.98	534000	2670	532998	2664.99	529998	2649.99	528000	2640		
NR Band 66																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz							
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)						
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	346000	1730						
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745						
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	352000	1760						
NR Band 71																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz									
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)								
L	133100	665.5	133600	668	13410	670.5	134600	673								
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5								
H	139100	695.5	138600	693	13810	690.5	137600	688								
NR Band 77 (3700 MHz – 3980MHz)																
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01	648668	3730.02	649334	3740.01	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664000	3960	663666	3954.99	663332	3949.98	662666	3939.99	662000	3930
NR Band 78 (3700 MHz – 3800MHz)																
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01	648668	3730.02	649334	3740.01	650000	3750
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652832	3792.48	652666	3789.99	652000	3780	651666	3774.99	651332	3769.98	650666	3759.99	650000	3750
NR Band 77/78(3450MHz ~ 3550MHz)																
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	631334	3470.01	631668	3475.02	632000	3480	632668	3490.02	633334	3500.01
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635332	3529.98	635000	3525	634666	3519.99	634000	3510	633332	3499.98

**4. Sensor Triggering angle and power verification****General Note:**

- The following guidance should be applied to laptops/tablets that use Hall Effect or gravity sensors to detect lid angle for the purpose of power reduction:

Step 1: With the lid is in closed mode (0 degrees), open the screen in 10 degree steps until laptop mode is obtained
 Step 2: Lower the screen 5 degrees. Closed mode should be reobtained. If not keep lowering in 5 degree steps
 Step 3: Open the screen in 1 degree steps until laptop mode is reobtained
 Step 4: Continue opening the screen in 1 degree steps until at least 5 degrees past where laptop mode was obtained
 Step 5: Then continue opening the screen in 10 degree steps until tablet mode is obtained
 Step 6: Power measurements should be taken at each step
 Step 7: Reverse this procedure going from tablet mode back down to closed mode

Level 1 to Level3																					
	Wireless		WWAN Main																	WWAN MIMO2	
	Band	WCDMA II	WCDM A IV	WCDMA V	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 7	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 25	LTE Band 26	LTE Band 30	LTE Band 66	LTE Band 71	LTE Band 38	LTE Band 41	LTE Band 48	
	Screen angle (degree) v.s. power	NB	0	23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92
10			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
20			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
30			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
40			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
50			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
60			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
70			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
80			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
90			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
100			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
110			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
120			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
130			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
140			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
150			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
160			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
170			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
180			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
181			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
182			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
183			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
184			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
185			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
186			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
187			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
188			23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91
189	23.47	23.97	23.71	22.98	23.29	23.15	23.19	23.25	23.17	23.20	23.43	23.05	23.25	22.74	23.43	23.42	23.23	22.92	21.91		
TB	190	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	191	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	192	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	193	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	194	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	195	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	196	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	197	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	198	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	199	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	200	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	
	210	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11	



Report No. : FA212742-01

Level 2 to Level3																					
	Wireless	WWAN Main																		WWAN MIMO2	
	Band	WCDMA II	WCDMA IV	WCDMA V	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 7	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 25	LTE Band 26	LTE Band 30	LTE Band 66	LTE Band 71	LTE Band 38	LTE Band 41	LTE Band 45	
Screen angle (degree) v.s. power	NB	0	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		10	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		20	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		30	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		40	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		50	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		60	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		70	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		80	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		90	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		100	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		110	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		120	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		130	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		140	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		150	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		160	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		170	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		180	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
		181	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36
182	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
183	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
184	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
185	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
186	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
187	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
188	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
189	16.40	15.24	21.18	17.62	14.80	21.52	16.31	22.21	22.16	22.31	22.08	17.61	21.66	17.84	14.91	23.03	17.72	14.79	15.36		
	TB	190	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		191	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		192	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		193	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		194	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		195	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		196	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
		197	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11
198	16.90	15.94	20.18	17.67	15.82	20.48	14.41	22.21	22.16	22.31	22.08	17.61	20.51	16.62	15.84	21.96	16.87	14.79	11.11		

[illegible]

TEL : 886-3-327-3456
FAX : 886-3-328-4978
Template version: 211220



FCC SAR TEST REPORT

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		196	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		197	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		198	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		199	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		200	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		210	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		220	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		230	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		240	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		250	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		260	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		270	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		280	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		290	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		300	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		310	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		320	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		330	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		340	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		350	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		360	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69

Level 2 to Level3													
Screen angle (degree) v.s. power	Wireless		WWAN Main							WWAN MIMO2			
	Band		FR1 n2	FR1 n5	FR1 n7	FR1 n25	FR1 n30	FR1 n66	FR1 n71	FR1 n38	FR1 n41	FR1 n77	FR1 n78
NB	0	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	10	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	20	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	30	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	40	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	50	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	60	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	70	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	80	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	90	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	100	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	110	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	120	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	130	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	140	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	150	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	160	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	170	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	180	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	181	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	182	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	183	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	184	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	185	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	186	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	187	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	188	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
	189	17.42	22.42	16.08	17.49	18.32	14.81	22.56	15.97	13.92	14.76	18.00	14.65
TB	190	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
	191	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
	192	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69



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		193	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		194	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		195	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		196	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		197	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		198	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		199	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		200	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		210	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		220	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		230	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		240	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		250	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		260	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		270	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		280	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		290	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		300	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		310	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		320	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		330	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		340	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		350	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69
		360	16.47	21.48	14.33	16.45	16.42	14.81	22.56	13.78	12.98	14.76	17.90	14.69

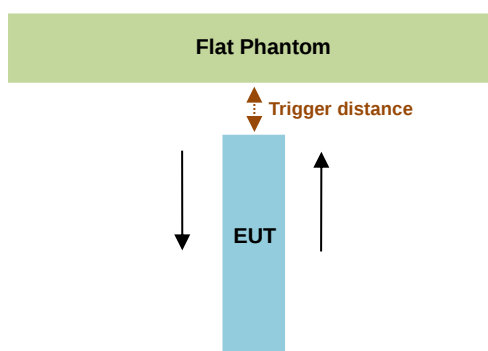
5. Proximity Sensor Triggering Test

<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.



Main Antenna		
Proximity Sensor Trigger Distance (mm)		
Exposure Position	Bottom of Laptop	
	moving toward	moving away
Minimum	16	16

MIMO2 Antenna		
Proximity Sensor Trigger Distance (mm)		
Exposure Position	Bottom of Laptop	
	moving toward	moving away
Minimum	15	15

<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.

Proximity sensor power reduction

Exposure Position / wireless mode	Bottom of Laptop ⁽¹⁾
WCDMA Band II Main	7.0 dB
WCDMA Band IV Main	8.5 dB
WCDMA Band V Main	2.5 dB
LTE Band 7 Main	7.0 dB
LTE Band 12 Main / 17 Main	2.0 dB
LTE Band 13 Main	2.5 dB
LTE Band 14 Main	2.5 dB
LTE Band 2 Main / 25 Main	5.5 dB
LTE Band 5 Main / 26 Main	3.0 dB
LTE Band 30 Main	4.5 dB
LTE Band 38 Main	5.5 dB
LTE Band 41 MIMO2	8.0 dB
LTE Band 48 MIMO2	5.0 dB
LTE Band 4 Main / 66 Main	8.5 dB
LTE Band 71 Main	1.5 dB
FR1 n2 Main / 25 Main	6.0 dB
FR1 n5 Main	2.5 dB
FR1 n7 Main	7.5 dB
FR1 n30 Main	4.0 dB
FR1 n38 Main	7.5 dB
FR1 n41 MIMO2	9.5 dB
FR1 n66 Main	8.5 dB
FR1 n71 Main	1.5 dB
FR1 n77 MIMO2 / 78 MIMO2	8.5 dB
FR1 n77_HPUE MIMO2	8.5 dB

Remark:

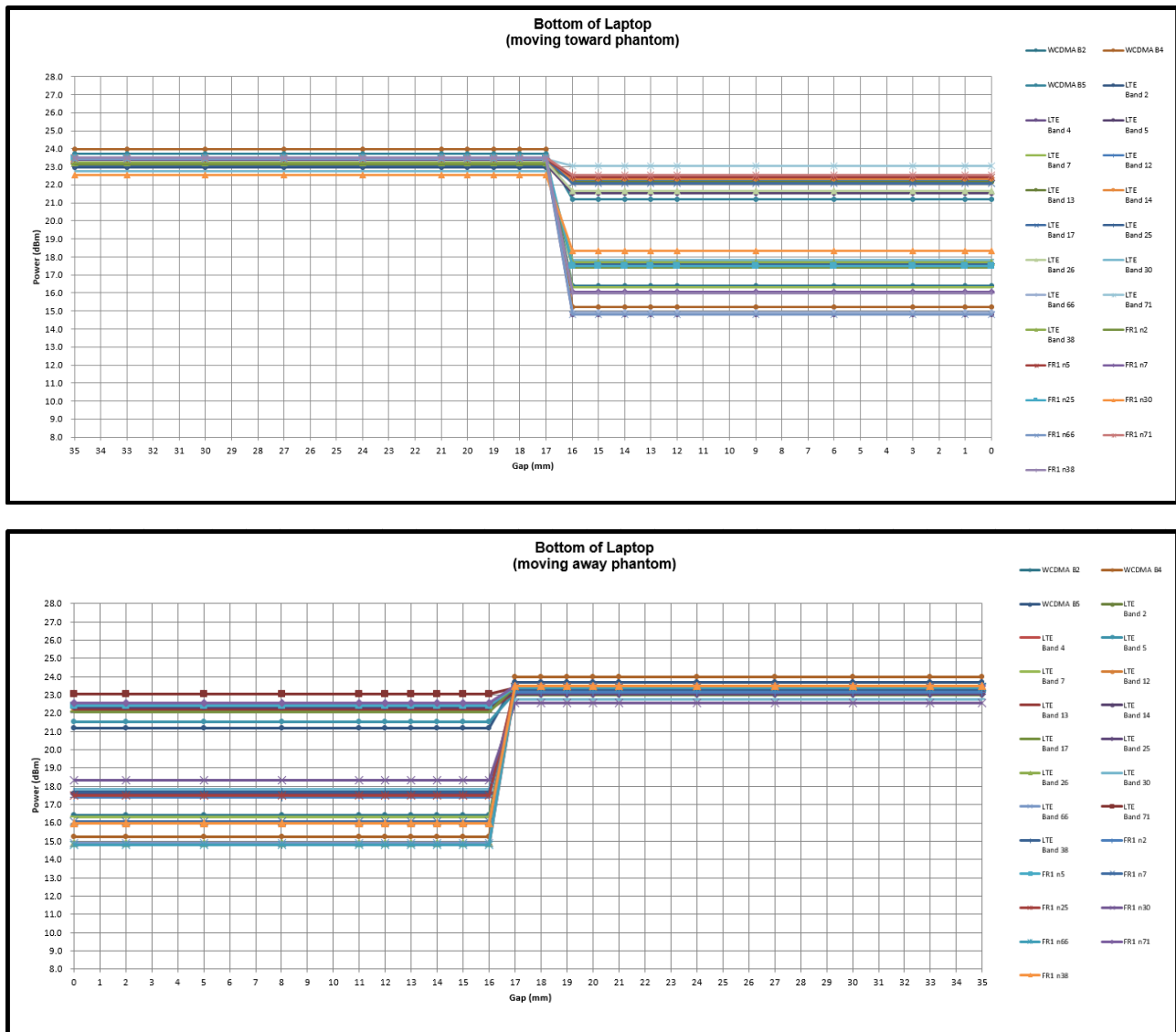
- ⁽¹⁾: Reduced maximum limit applied by activation of proximity sensor.
- Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown as below
- For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:

Main Antenna:

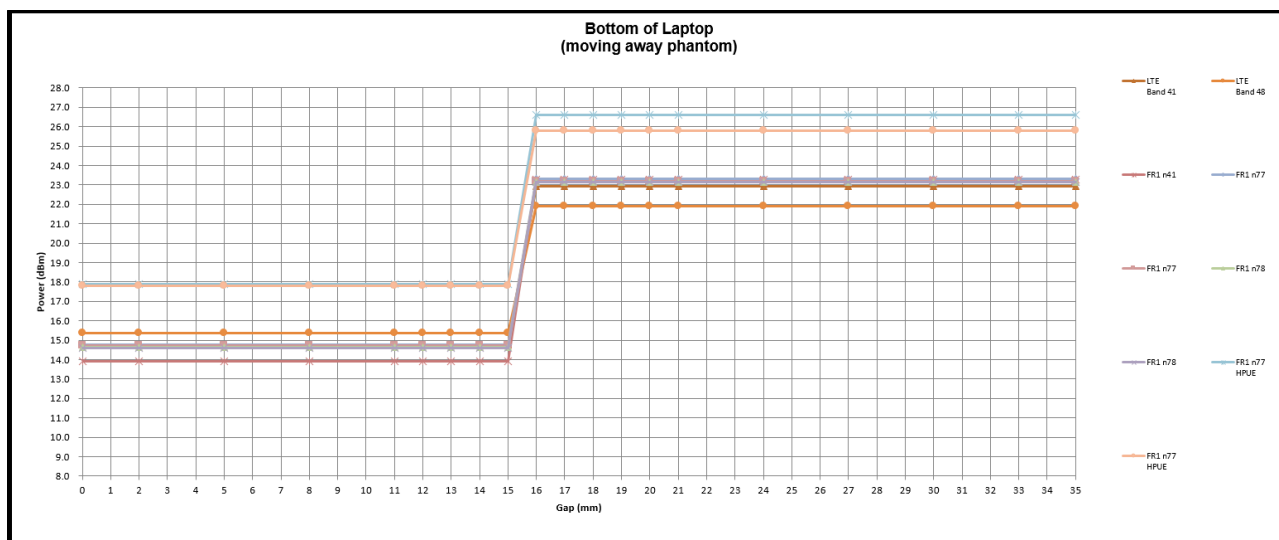
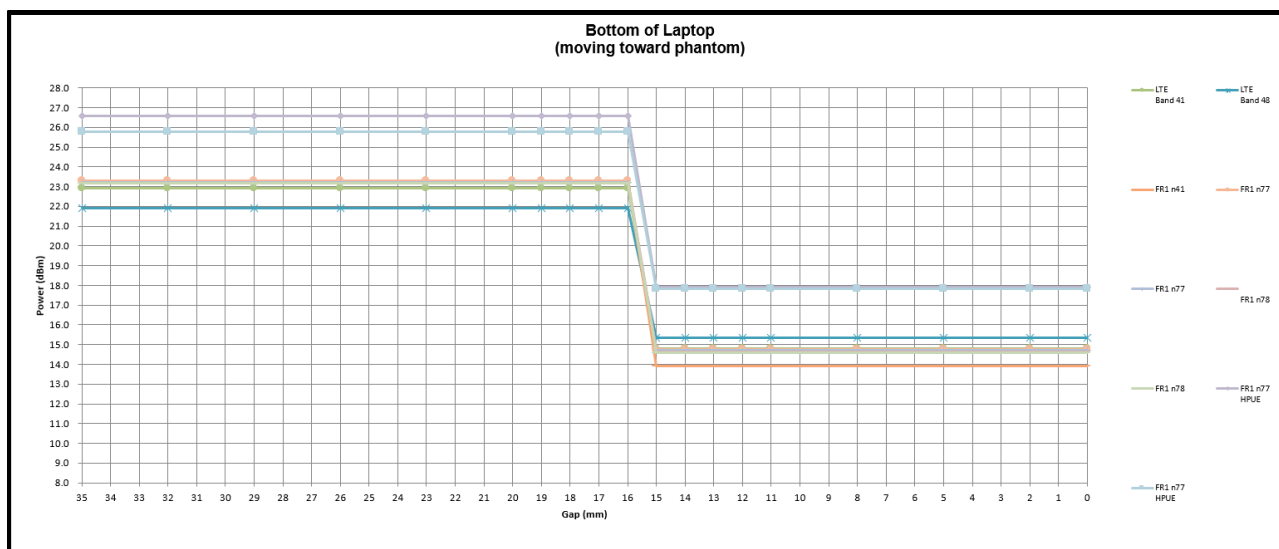
- Bottom of Laptop: [15 mm](#)

MIMO2 Antenna:

- Bottom of Laptop: [14 mm](#)

Power Measurement during Sensor Trigger distance testing
Main Antenna


MIMO2 Antenna



6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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.

7. Specific Absorption Rate (SAR)

7.1 Introduction

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

7.2 SAR Definition

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

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

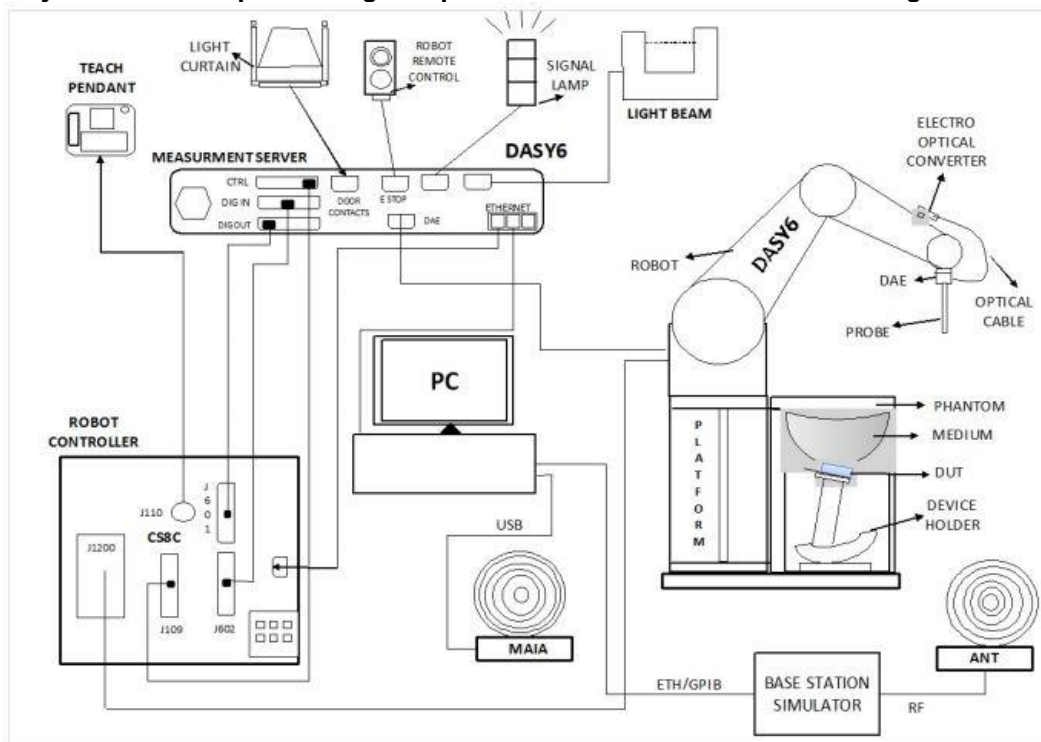
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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



- The DASY system in DASY6/DASY5 V5.2 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 DASY5/DASY6 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8.1 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.

Test Site	EMC & Wireless Communications Laboratory		Wensan Laboratory		
	TW1190		TW3786		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		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
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	

8.2 E-Field Probe

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

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ± 0.2 dB (30 MHz – 4 GHz)	
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 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	10 MHz – >6 GHz Linearity: ± 0.2 dB (30 MHz – 6 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 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	

8.3 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

8.4 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.

8.5 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

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values 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

9.2 Power Reference Measurement

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

9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) 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.	

9.4 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.				

9.5 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.

9.6 Power Drift Monitoring

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

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	Aug. 18, 2021	Aug. 17, 2022
SPEAG	835MHz System Validation Kit	D835V2	499	Aug. 18, 2021	Aug. 17, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 25, 2021	Nov. 24, 2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Aug. 19, 2021	Aug. 18, 2022
SPEAG	2300MHz System Validation Kit	D2300V2	1088	Jul. 13, 2021	Jul. 12, 2022
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Aug. 17, 2021	Aug. 16, 2022
SPEAG	3300MHz System Validation Kit ⁽²⁾	D3300V2	1005	Apr. 11, 2019	Apr. 08, 2022
SPEAG	3500MHz System Validation Kit	D3500V2	1013	Apr. 15, 2021	Apr. 12, 2022
SPEAG	3700MHz System Validation Kit	D3700V2	1022	Jul. 14, 2021	Jul. 13, 2022
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1017	Apr. 29, 2019	Apr. 26, 2022
SPEAG	Data Acquisition Electronics	DAE4	778	May. 21, 2021	May. 20, 2022
SPEAG	Data Acquisition Electronics	DAE4	1311	Aug. 20, 2021	Aug. 19, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	Apr. 23, 2021	Apr. 22, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 27, 2022	Jan. 26, 2023
RCPTWN	Thermometer	HTC-1	TM685-1	Oct. 28, 2021	Oct. 27, 2022
RCPTWN	Thermometer	HTC-1	TM560-2	Oct. 28, 2021	Oct. 27, 2022
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 21, 2021	Oct. 20, 2022
Keysight	Wireless Communication Test Set	E5515C	MY50266977	May. 12, 2021	May. 11, 2022
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Oct. 24, 2021	Oct. 23, 2022
Keysight	ENA Network Analyzer	E5071C	MY46104758	Sep. 07, 2021	Sep. 06, 2022
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 24, 2021	Sep. 23, 2022
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Oct. 26, 2021	Oct. 25, 2022
Anritsu	Power Meter	ML2495A	1419002	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Meter	ML2495A	1804003	Oct. 09, 2021	Oct. 08, 2022
Anritsu	Power Sensor	MA2411B	1726150	Oct. 09, 2021	Oct. 08, 2022
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 16, 2021	Jul. 15, 2022
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 19, 2021	Aug. 18, 2022
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 12, 2021	Oct. 11, 2022
Mini-Circuits	Power Amplifier	ZVE-8G+	479102029	Sep. 06, 2021	Sep. 05, 2022
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

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

11. System Verification

11.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing.

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	22.2	0.899	43.788	0.89	41.90	1.01	4.51	± 5	2022/2/26
750	22.2	0.904	41.980	0.89	41.90	1.57	0.19	± 5	2022/2/28
835	22.2	0.932	43.352	0.90	41.50	3.56	4.46	± 5	2022/2/24
1750	22.2	1.380	40.278	1.37	40.10	0.73	0.44	± 5	2022/2/23
1900	22.2	1.400	40.134	1.40	40.00	0.00	0.34	± 5	2022/2/22
1900	22.2	1.418	40.524	1.40	40.00	1.29	1.31	± 5	2022/2/27
2300	22.2	1.683	39.702	1.67	39.50	0.78	0.51	± 5	2022/2/27
2600	22.2	2.033	38.533	1.96	39.00	3.72	-1.20	± 5	2022/2/25
2600	22.6	2.014	38.501	1.96	39.00	2.76	-1.28	± 5	2022/2/25
2600	22.2	1.984	38.438	1.96	39.00	1.22	-1.44	± 5	2022/3/2
3300	22.6	2.782	38.681	2.70	38.13	3.04	1.45	± 5	2022/2/26
3500	22.6	2.996	38.487	2.91	37.90	2.96	1.55	± 5	2022/2/26
3500	22.9	2.836	39.343	2.91	37.90	-2.54	3.81	± 5	2022/3/1
3700	22.6	3.200	38.165	3.12	37.70	2.56	1.23	± 5	2022/2/26
3700	22.9	3.011	39.016	3.12	37.70	-3.49	3.49	± 5	2022/3/1
3900	22.6	3.428	38.117	3.33	37.51	2.94	1.62	± 5	2022/2/26

11.2 System Performance Check Results

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

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
SAR06	2022/2/26	750	50	D750V3-1012	EX3DV4 - SN3976	DAE4 Sn778	0.390	8.56	7.8	-8.88
SAR06	2022/2/28	750	50	D750V3-1012	EX3DV4 - SN3976	DAE4 Sn778	0.396	8.56	7.92	-7.48
SAR06	2022/2/24	835	50	D835V2-499	EX3DV4 - SN3976	DAE4 Sn778	0.452	9.68	9.04	-6.61
SAR06	2022/2/23	1750	50	D1750V2-1068	EX3DV4 - SN3976	DAE4 Sn778	1.750	36.60	35	-4.37
SAR06	2022/2/22	1900	50	D1900V2-5d041	EX3DV4 - SN3976	DAE4 Sn778	1.930	40.60	38.6	-4.93
SAR06	2022/2/27	1900	50	D1900V2-5d041	EX3DV4 - SN3976	DAE4 Sn778	1.940	40.60	38.8	-4.43
SAR06	2022/2/27	2300	50	D2300V2-1088	EX3DV4 - SN3976	DAE4 Sn778	2.440	49.70	48.8	-1.81
SAR06	2022/2/25	2600	50	D2600V2-1008	EX3DV4 - SN3976	DAE4 Sn778	2.810	58.00	56.2	-3.10
SAR04	2022/2/25	2600	50	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn1311	2.820	58.00	56.4	-2.76
SAR06	2022/3/2	2600	50	D2600V2-1008	EX3DV4 - SN3976	DAE4 Sn778	2.800	58.00	56	-3.45
SAR04	2022/2/26	3300	50	D3300V2-1005	EX3DV4 - SN3925	DAE4 Sn1311	3.460	65.50	69.2	5.65
SAR04	2022/2/26	3500	50	D3500V2-1013	EX3DV4 - SN3925	DAE4 Sn1311	3.450	65.60	69	5.18
SAR06	2022/3/1	3500	50	D3500V2-1013	EX3DV4 - SN3976	DAE4 Sn778	3.190	65.60	63.8	-2.74
SAR04	2022/2/26	3700	50	D3700V2-1022	EX3DV4 - SN3925	DAE4 Sn1311	3.610	68.20	72.2	5.87
SAR06	2022/3/1	3700	50	D3700V2-1022	EX3DV4 - SN3976	DAE4 Sn778	3.190	68.20	63.8	-6.45
SAR04	2022/2/26	3900	50	D3900V2-1017-3900	EX3DV4 - SN3925	DAE4 Sn1311	3.480	69.50	69.6	0.14

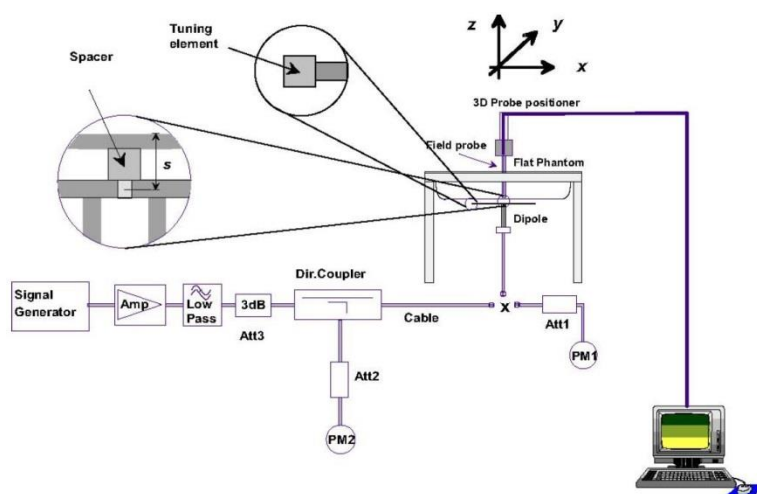


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

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.
3. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (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:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (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

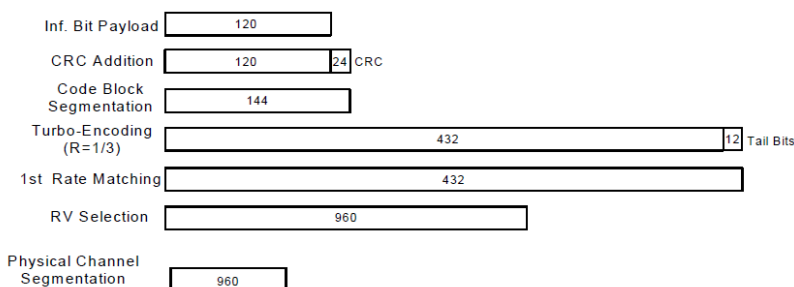
DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

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

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


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

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2E:HSPA+:UL with 16QAM
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
 - iii. Set Channel Parms
 - iv. Set Cell Power = -86 dBm
 - v. Set Channel Type = HSPA
 - vi. Set UE Target Power =21 dBm
 - vii. Power Ctrl Mode= All Up Bits
 - viii. Set Manual Uplink DPCH Bc/Bd = Manual
 - ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
 - x. Set HSPA Conn DL Channel Levels
 - xi. Set HS-SCCH Configs
 - xii. Set RB Test Mode Setup
 - xiii. Set Common HSUPA Parameters
 - xiv. Set Serving Grant
 - xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
- d. The transmitted maximum output power was recorded.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.
 Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
 Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.
 Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
 Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>
General Note:

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

State 1(NB sensor off)

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	23.40	23.42	23.47	24.50	23.97	23.95	23.92	24.50	23.71	23.68	23.68	24.50
3GPP Rel 6	HSDPA Subtest-1	22.45	22.45	22.44	23.50	22.85	22.86	22.80	23.50	22.69	22.69	22.66	23.50
3GPP Rel 6	HSDPA Subtest-2	22.29	22.25	22.48	23.50	22.89	22.86	22.96	23.50	22.62	22.65	22.68	23.50
3GPP Rel 6	HSDPA Subtest-3	21.90	21.78	21.81	23.00	22.34	22.36	22.30	23.00	22.12	22.05	22.10	23.00
3GPP Rel 6	HSDPA Subtest-4	21.79	21.82	21.89	23.00	22.36	22.32	22.37	23.00	22.17	22.10	22.24	23.00
3GPP Rel 8	DC-HSDPA Subtest-1	22.41	22.47	22.32	23.50	22.86	22.73	22.96	23.50	22.60	22.72	22.67	23.50
3GPP Rel 8	DC-HSDPA Subtest-2	22.23	22.37	22.39	23.50	22.99	22.85	22.82	23.50	22.60	22.49	22.57	23.50
3GPP Rel 8	DC-HSDPA Subtest-3	21.86	21.68	21.83	23.00	22.35	22.30	22.19	23.00	22.14	22.01	22.09	23.00
3GPP Rel 8	DC-HSDPA Subtest-4	21.72	21.90	21.84	23.00	22.32	22.32	22.40	23.00	22.23	22.20	22.18	23.00
3GPP Rel 6	HSUPA Subtest-1	22.44	22.40	22.55	23.50	22.89	22.97	22.86	23.50	22.58	22.75	22.50	23.50
3GPP Rel 6	HSUPA Subtest-2	20.39	20.32	20.38	21.50	20.96	20.89	20.85	21.50	20.62	20.61	20.62	21.50
3GPP Rel 6	HSUPA Subtest-3	21.24	21.47	21.27	22.50	22.04	21.92	21.85	22.50	21.74	21.57	21.56	22.50
3GPP Rel 6	HSUPA Subtest-4	20.34	20.43	20.37	21.50	20.98	20.97	20.99	21.50	20.58	20.68	20.64	21.50
3GPP Rel 6	HSUPA Subtest-5	22.26	22.42	22.53	23.50	22.88	22.94	22.78	23.50	22.63	22.58	22.54	23.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	19.94	19.82	19.84	21.00	20.44	20.25	20.40	21.00	20.08	20.11	20.15	21.00

State 2(NB sensor on)

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	16.30	16.32	16.40	17.50	15.24	15.20	15.22	16.00	21.17	21.18	21.18	22.00
3GPP Rel 6	HSDPA Subtest-1	15.22	15.15	15.45	16.50	14.44	14.24	14.22	15.50	20.04	20.08	19.94	21.00
3GPP Rel 6	HSDPA Subtest-2	15.09	15.27	15.38	16.00	14.52	14.21	14.25	15.50	20.09	20.17	20.05	21.00
3GPP Rel 6	HSDPA Subtest-3	14.87	14.82	14.87	15.50	13.76	13.84	13.75	15.00	19.77	19.73	19.64	20.50
3GPP Rel 6	HSDPA Subtest-4	14.76	14.77	14.94	15.50	13.98	13.81	13.77	15.00	19.62	19.70	19.64	20.50
3GPP Rel 8	DC-HSDPA Subtest-1	15.21	15.10	15.30	16.50	14.15	14.16	14.15	15.50	19.84	20.30	20.03	21.00
3GPP Rel 8	DC-HSDPA Subtest-2	15.31	15.11	15.54	16.00	14.24	14.45	14.28	15.50	20.07	19.98	20.06	21.00
3GPP Rel 8	DC-HSDPA Subtest-3	14.78	14.68	14.65	15.50	13.68	13.65	13.57	15.00	19.71	19.70	19.67	20.50
3GPP Rel 8	DC-HSDPA Subtest-4	14.80	14.67	14.82	15.50	13.67	13.74	13.48	15.00	19.68	19.80	19.70	20.50
3GPP Rel 6	HSUPA Subtest-1	13.29	13.05	13.33	15.50	12.19	12.14	12.09	13.50	20.04	19.99	19.88	21.00
3GPP Rel 6	HSUPA Subtest-2	13.29	13.25	13.29	15.50	12.13	12.31	12.37	13.50	19.14	19.09	19.12	20.00
3GPP Rel 6	HSUPA Subtest-3	13.97	13.83	14.05	16.00	12.95	12.92	13.09	14.50	19.77	19.88	19.86	20.00
3GPP Rel 6	HSUPA Subtest-4	13.22	13.19	13.36	15.50	12.17	12.20	12.19	13.50	18.94	19.27	19.04	20.00
3GPP Rel 6	HSUPA Subtest-5	14.19	14.26	14.35	16.00	13.22	13.19	13.16	14.50	19.87	19.92	20.06	21.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	14.23	14.21	14.39	16.00	13.19	13.21	13.08	14.50	18.74	18.87	18.88	19.50



State 3(TB)

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	16.80	16.82	16.90	17.50	15.94	15.90	15.92	16.00	20.17	20.18	20.11	21.00
3GPP Rel 6	HSDPA Subtest-1	15.72	15.65	15.95	16.50	14.94	15.14	14.96	15.50	19.04	19.08	18.94	20.00
3GPP Rel 6	HSDPA Subtest-2	15.59	15.77	15.88	16.50	14.95	15.24	15.02	15.50	19.09	19.17	19.05	20.00
3GPP Rel 6	HSDPA Subtest-3	15.37	15.32	15.37	16.00	14.47	14.61	14.49	15.00	18.77	18.73	18.64	19.50
3GPP Rel 6	HSDPA Subtest-4	15.26	15.27	15.44	16.00	14.68	14.53	14.47	15.00	18.62	18.70	18.64	19.50
3GPP Rel 8	DC-HSDPA Subtest-1	15.71	15.60	15.80	16.50	14.91	14.94	14.95	15.50	18.84	19.30	19.03	20.00
3GPP Rel 8	DC-HSDPA Subtest-2	15.81	15.61	16.04	16.50	15.03	15.16	15.00	15.50	19.07	18.98	19.06	20.00
3GPP Rel 8	DC-HSDPA Subtest-3	15.28	15.18	15.15	16.00	14.38	14.37	14.29	15.00	18.71	18.70	18.67	19.50
3GPP Rel 8	DC-HSDPA Subtest-4	15.30	15.17	15.32	16.00	14.41	14.50	14.28	15.00	18.68	18.80	18.70	19.50
3GPP Rel 6	HSUPA Subtest-1	13.79	13.55	13.83	15.50	12.96	12.90	12.88	13.50	19.04	18.99	18.88	20.00
3GPP Rel 6	HSUPA Subtest-2	13.79	13.75	13.79	15.50	12.88	13.09	13.11	13.50	18.14	18.09	18.12	19.00
3GPP Rel 6	HSUPA Subtest-3	14.47	14.33	14.55	16.00	13.68	13.72	13.86	14.50	18.77	18.88	18.86	19.00
3GPP Rel 6	HSUPA Subtest-4	13.72	13.69	13.86	15.50	12.91	12.96	12.94	13.50	17.94	18.27	18.04	19.00
3GPP Rel 6	HSUPA Subtest-5	14.69	14.76	14.85	16.00	13.99	13.99	13.96	14.50	18.87	18.92	19.06	20.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	14.73	14.71	14.89	16.00	13.89	13.97	13.85	14.50	17.74	17.87	17.88	18.50

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

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $> \text{not } \frac{1}{2}$ 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 $> \text{not } \frac{1}{2}$ 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/B17/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 SAR test was covered by Band 25/66/26/12; 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

State 1(NB sensor off)
<LTE Band 2_Main>

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	22.98	22.93	22.88	
20	QPSK	1	49	22.94	22.86	22.91	24
20	QPSK	1	99	22.78	22.78	22.77	
20	QPSK	50	0	22.02	21.98	21.94	
20	QPSK	50	24	21.88	21.89	21.87	23
20	QPSK	50	50	21.80	21.91	21.80	
20	QPSK	100	0	21.92	21.88	21.78	
20	16QAM	1	0	21.96	22.10	21.98	23
20	16QAM	1	49	22.03	22.03	22.02	
20	16QAM	1	99	21.91	22.00	21.91	
20	16QAM	50	0	20.93	20.65	20.92	22
20	16QAM	50	24	20.84	20.83	20.84	
20	16QAM	50	50	20.80	20.85	20.82	
20	16QAM	100	0	20.80	20.83	20.82	22
20	64QAM	1	0	20.84	20.86	20.90	
20	64QAM	1	49	20.91	20.99	20.99	
20	64QAM	1	99	20.79	20.84	20.87	21
20	64QAM	50	0	19.94	19.69	19.83	
20	64QAM	50	24	19.84	19.88	19.90	
20	64QAM	50	50	19.77	19.87	19.78	19
20	64QAM	100	0	19.84	19.78	19.84	
20	256QAM	1	0	17.87	17.98	17.86	
20	256QAM	1	49	17.85	17.93	17.82	19
20	256QAM	1	99	17.63	17.68	17.75	
20	256QAM	50	0	17.87	17.96	17.82	19
20	256QAM	50	24	17.89	17.88	17.90	
20	256QAM	50	50	17.74	17.89	17.86	
20	256QAM	100	0	17.76	17.82	17.79	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	22.95	22.93	22.88	
15	QPSK	1	37	22.84	22.80	22.83	24
15	QPSK	1	74	22.74	22.77	22.69	
15	QPSK	36	0	21.98	21.95	21.93	23
15	QPSK	36	20	21.81	21.83	21.87	
15	QPSK	36	39	21.80	21.84	21.77	
15	QPSK	75	0	21.82	21.81	21.71	23
15	16QAM	1	0	21.95	22.07	21.96	
15	16QAM	1	37	22.00	22.03	22.02	
15	16QAM	1	74	21.85	21.92	21.85	22
15	16QAM	36	0	20.91	20.60	20.91	
15	16QAM	36	20	20.78	20.81	20.79	
15	16QAM	36	39	20.75	20.80	20.76	22
15	16QAM	75	0	20.76	20.80	20.74	
15	64QAM	1	0	20.74	20.78	20.90	
15	64QAM	1	37	20.86	20.89	20.94	21
15	64QAM	1	74	20.76	20.79	20.84	
15	64QAM	36	0	19.84	19.62	19.83	
15	64QAM	36	20	19.84	19.82	19.86	



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15	64QAM	36	39	19.67	19.85	19.76	
15	64QAM	75	0	19.82	19.73	19.83	
15	256QAM	1	0	17.83	17.88	17.78	
15	256QAM	1	37	17.80	17.83	17.82	19
15	256QAM	1	74	17.61	17.61	17.71	
15	256QAM	36	0	17.85	17.94	17.76	
15	256QAM	36	20	17.84	17.83	17.89	19
15	256QAM	36	39	17.66	17.85	17.82	
15	256QAM	75	0	17.71	17.77	17.70	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	22.98	22.83	22.78	24
10	QPSK	1	25	22.88	22.78	22.89	
10	QPSK	1	49	22.72	22.78	22.76	
10	QPSK	25	0	21.97	21.89	21.84	23
10	QPSK	25	12	21.81	21.85	21.78	
10	QPSK	25	25	21.74	21.89	21.71	
10	QPSK	50	0	21.88	21.83	21.75	23
10	16QAM	1	0	21.89	22.02	21.88	
10	16QAM	1	25	21.94	21.94	21.96	
10	16QAM	1	49	21.87	21.96	21.87	22
10	16QAM	25	0	20.92	20.58	20.92	
10	16QAM	25	12	20.80	20.79	20.75	
10	16QAM	25	25	20.78	20.77	20.76	22
10	16QAM	50	0	20.80	20.77	20.79	
10	64QAM	1	0	20.78	20.78	20.86	
10	64QAM	1	25	20.88	20.89	20.95	21
10	64QAM	1	49	20.77	20.84	20.87	
10	64QAM	25	0	19.93	19.65	19.77	
10	64QAM	25	12	19.77	19.85	19.83	19
10	64QAM	25	25	19.71	19.78	19.70	
10	64QAM	50	0	19.83	19.68	19.78	
10	256QAM	1	0	17.82	17.89	17.77	19
10	256QAM	1	25	17.79	17.88	17.78	
10	256QAM	1	49	17.62	17.59	17.69	
10	256QAM	25	0	17.85	17.92	17.82	19
10	256QAM	25	12	17.83	17.84	17.81	
10	256QAM	25	25	17.67	17.83	17.76	
10	256QAM	50	0	17.73	17.82	17.74	
Channel				18625	18900	19175	
Frequency (MHz)				1852.5	1880	1907.5	Tune-up limit (dBm)
5	QPSK	1	0	22.92	22.92	22.81	24
5	QPSK	1	12	22.90	22.82	22.82	
5	QPSK	1	24	22.73	22.74	22.72	
5	QPSK	12	0	21.98	21.96	21.85	23
5	QPSK	12	7	21.85	21.85	21.87	
5	QPSK	12	13	21.71	21.85	21.74	
5	QPSK	25	0	21.84	21.88	21.73	23
5	16QAM	1	0	21.86	22.01	21.90	
5	16QAM	1	12	21.95	21.97	21.95	
5	16QAM	1	24	21.89	21.92	21.84	22
5	16QAM	12	0	20.93	20.58	20.85	
5	16QAM	12	7	20.80	20.82	20.80	
5	16QAM	12	13	20.72	20.82	20.76	
5	16QAM	25	0	20.70	20.75	20.77	
5	64QAM	1	0	20.75	20.81	20.83	22



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5	64QAM	1	12	20.86	20.91	20.93	
5	64QAM	1	24	20.79	20.81	20.84	
5	64QAM	12	0	19.88	19.68	19.76	
5	64QAM	12	7	19.76	19.87	19.82	21
5	64QAM	12	13	19.75	19.87	19.68	
5	64QAM	25	0	19.78	19.70	19.77	
5	256QAM	1	0	17.84	17.91	17.85	19
5	256QAM	1	12	17.80	17.84	17.82	
5	256QAM	1	24	17.53	17.60	17.67	
5	256QAM	12	0	17.86	17.88	17.81	19
5	256QAM	12	7	17.81	17.86	17.80	
5	256QAM	12	13	17.73	17.82	17.86	
5	256QAM	25	0	17.69	17.78	17.71	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	22.89	22.93	22.82	24
3	QPSK	1	8	22.86	22.78	22.84	
3	QPSK	1	14	22.70	22.75	22.74	
3	QPSK	8	0	21.98	21.89	21.89	23
3	QPSK	8	4	21.84	21.88	21.79	
3	QPSK	8	7	21.79	21.86	21.74	
3	QPSK	15	0	21.91	21.82	21.75	
3	16QAM	1	0	21.90	22.07	21.97	23
3	16QAM	1	8	21.94	21.95	21.96	
3	16QAM	1	14	21.89	21.90	21.84	
3	16QAM	8	0	20.85	20.64	20.83	22
3	16QAM	8	4	20.76	20.77	20.79	
3	16QAM	8	7	20.74	20.80	20.77	
3	16QAM	15	0	20.70	20.75	20.82	
3	64QAM	1	0	20.83	20.80	20.87	22
3	64QAM	1	8	20.86	20.96	20.99	
3	64QAM	1	14	20.69	20.82	20.85	
3	64QAM	8	0	19.93	19.63	19.82	21
3	64QAM	8	4	19.80	19.84	19.82	
3	64QAM	8	7	19.69	19.82	19.75	
3	64QAM	15	0	19.74	19.69	19.84	
3	256QAM	1	0	17.77	17.92	17.79	19
3	256QAM	1	8	17.82	17.93	17.76	
3	256QAM	1	14	17.63	17.68	17.71	
3	256QAM	8	0	17.82	17.96	17.73	19
3	256QAM	8	4	17.87	17.88	17.90	
3	256QAM	8	7	17.73	17.89	17.78	
3	256QAM	15	0	17.70	17.73	17.69	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	22.93	22.83	22.82	24
1.4	QPSK	1	3	22.93	22.79	22.89	
1.4	QPSK	1	5	22.68	22.73	22.74	
1.4	QPSK	3	0	22.93	22.78	22.89	
1.4	QPSK	3	1	22.76	22.76	22.69	
1.4	QPSK	3	3	22.72	22.72	22.71	
1.4	QPSK	6	0	21.91	21.86	21.68	23
1.4	16QAM	1	0	21.86	22.08	21.93	23
1.4	16QAM	1	3	22.01	21.93	22.00	
1.4	16QAM	1	5	21.85	22.00	21.84	
1.4	16QAM	3	0	21.88	21.82	21.72	

1.4	16QAM	3	1	21.89	22.09	21.95	
1.4	16QAM	3	3	21.95	21.98	21.97	
1.4	16QAM	6	0	20.74	20.82	20.77	22
1.4	64QAM	1	0	20.84	20.81	20.83	22
1.4	64QAM	1	3	20.85	20.91	20.91	
1.4	64QAM	1	5	20.70	20.82	20.77	
1.4	64QAM	3	0	20.75	20.78	20.78	
1.4	64QAM	3	1	20.70	20.76	20.72	
1.4	64QAM	3	3	20.79	20.76	20.82	21
1.4	64QAM	6	0	19.75	19.76	19.82	
1.4	256QAM	1	0	17.82	17.98	17.86	19
1.4	256QAM	1	3	17.79	17.89	17.81	
1.4	256QAM	1	5	17.55	17.68	17.73	
1.4	256QAM	3	0	17.86	17.89	17.82	
1.4	256QAM	3	1	17.80	17.80	17.84	
1.4	256QAM	3	3	17.67	17.81	17.84	19
1.4	256QAM	6	0	17.74	17.72	17.72	

<LTE Band 4_Main>

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	23.29	23.26	23.27	24
20	QPSK	1	49	23.28	23.19	23.26	
20	QPSK	1	99	23.15	23.07	23.10	
20	QPSK	50	0	22.29	22.29	22.26	23
20	QPSK	50	24	22.25	22.27	22.25	
20	QPSK	50	50	22.28	22.18	22.20	
20	QPSK	100	0	22.28	22.25	22.25	23
20	16QAM	1	0	22.52	22.43	22.49	
20	16QAM	1	49	22.59	22.49	22.56	
20	16QAM	1	99	22.43	22.34	22.39	22
20	16QAM	50	0	21.17	21.21	21.28	
20	16QAM	50	24	21.30	21.21	21.27	
20	16QAM	50	50	21.27	21.15	21.17	22
20	16QAM	100	0	21.28	21.20	21.22	
20	64QAM	1	0	21.40	21.31	21.35	
20	64QAM	1	49	21.43	21.35	21.43	21
20	64QAM	1	99	21.30	21.21	21.25	
20	64QAM	50	0	20.18	20.21	20.24	
20	64QAM	50	24	20.31	20.21	20.27	19
20	64QAM	50	50	20.27	20.16	20.21	
20	64QAM	100	0	20.25	20.20	20.23	
20	256QAM	1	0	18.38	18.16	18.36	19
20	256QAM	1	49	18.26	18.25	18.19	
20	256QAM	1	99	18.07	17.98	18.13	
20	256QAM	50	0	18.31	18.22	18.22	19
20	256QAM	50	24	18.30	18.18	18.24	
20	256QAM	50	50	18.31	18.13	18.22	
20	256QAM	100	0	18.22	18.30	18.19	Tune-up limit (dBm)
Channel				20025	20175	20325	
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	23.23	23.26	23.17	24



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15	QPSK	1	37	23.26	23.10	23.26	
15	QPSK	1	74	23.10	23.02	23.03	
15	QPSK	36	0	22.27	22.19	22.21	
15	QPSK	36	20	22.22	22.22	22.22	23
15	QPSK	36	39	22.25	22.11	22.19	
15	QPSK	75	0	22.28	22.21	22.21	
15	16QAM	1	0	22.49	22.36	22.40	23
15	16QAM	1	37	22.55	22.43	22.49	
15	16QAM	1	74	22.40	22.31	22.36	
15	16QAM	36	0	21.11	21.18	21.27	22
15	16QAM	36	20	21.25	21.19	21.25	
15	16QAM	36	39	21.24	21.09	21.13	
15	16QAM	75	0	21.19	21.10	21.14	22
15	64QAM	1	0	21.34	21.28	21.29	
15	64QAM	1	37	21.39	21.30	21.33	
15	64QAM	1	74	21.26	21.12	21.19	21
15	64QAM	36	0	20.12	20.20	20.16	
15	64QAM	36	20	20.23	20.19	20.23	
15	64QAM	36	39	20.27	20.08	20.20	19
15	64QAM	75	0	20.16	20.16	20.19	
15	256QAM	1	0	18.33	18.10	18.28	
15	256QAM	1	37	18.22	18.21	18.11	19
15	256QAM	1	74	17.99	17.94	18.07	
15	256QAM	36	0	18.28	18.16	18.19	
15	256QAM	36	20	18.27	18.10	18.19	19
15	256QAM	36	39	18.24	18.08	18.14	
15	256QAM	75	0	18.18	18.25	18.09	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	23.26	23.21	23.17	24
10	QPSK	1	25	23.22	23.19	23.16	
10	QPSK	1	49	23.09	23.00	23.09	
10	QPSK	25	0	22.22	22.25	22.19	23
10	QPSK	25	12	22.15	22.23	22.18	
10	QPSK	25	25	22.22	22.15	22.19	
10	QPSK	50	0	22.20	22.22	22.16	23
10	16QAM	1	0	22.48	22.36	22.39	
10	16QAM	1	25	22.55	22.49	22.52	
10	16QAM	1	49	22.33	22.26	22.35	22
10	16QAM	25	0	21.10	21.12	21.27	
10	16QAM	25	12	21.26	21.12	21.27	
10	16QAM	25	25	21.20	21.07	21.10	22
10	16QAM	50	0	21.19	21.20	21.12	
10	64QAM	1	0	21.37	21.28	21.32	
10	64QAM	1	25	21.41	21.27	21.37	22
10	64QAM	1	49	21.22	21.11	21.20	
10	64QAM	25	0	20.11	20.18	20.16	
10	64QAM	25	12	20.27	20.14	20.26	21
10	64QAM	25	25	20.19	20.16	20.18	
10	64QAM	50	0	20.16	20.18	20.15	
10	256QAM	1	0	18.37	18.13	18.36	19
10	256QAM	1	25	18.21	18.16	18.13	
10	256QAM	1	49	17.97	17.89	18.07	
10	256QAM	25	0	18.21	18.21	18.17	19
10	256QAM	25	12	18.30	18.14	18.24	
10	256QAM	25	25	18.28	18.08	18.14	



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10	256QAM	50	0	18.20	18.25	18.15	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	23.24	23.17	23.17	24
5	QPSK	1	12	23.27	23.14	23.20	
5	QPSK	1	24	23.09	23.04	23.08	
5	QPSK	12	0	22.24	22.29	22.16	23
5	QPSK	12	7	22.18	22.23	22.17	
5	QPSK	12	13	22.28	22.14	22.19	
5	QPSK	25	0	22.19	22.22	22.25	
5	16QAM	1	0	22.45	22.42	22.40	23
5	16QAM	1	12	22.54	22.45	22.50	
5	16QAM	1	24	22.37	22.31	22.31	
5	16QAM	12	0	21.17	21.13	21.20	22
5	16QAM	12	7	21.23	21.14	21.20	
5	16QAM	12	13	21.19	21.06	21.11	
5	16QAM	25	0	21.18	21.16	21.22	
5	64QAM	1	0	21.40	21.23	21.29	22
5	64QAM	1	12	21.40	21.32	21.38	
5	64QAM	1	24	21.23	21.12	21.18	
5	64QAM	12	0	20.10	20.18	20.22	21
5	64QAM	12	7	20.23	20.17	20.26	
5	64QAM	12	13	20.22	20.13	20.19	
5	64QAM	25	0	20.25	20.16	20.15	
5	256QAM	1	0	18.29	18.09	18.29	19
5	256QAM	1	12	18.25	18.22	18.17	
5	256QAM	1	24	18.00	17.88	18.12	
5	256QAM	12	0	18.29	18.15	18.13	19
5	256QAM	12	7	18.30	18.11	18.17	
5	256QAM	12	13	18.23	18.07	18.18	
5	256QAM	25	0	18.22	18.21	18.12	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	23.22	23.25	23.22	24
3	QPSK	1	8	23.19	23.11	23.25	
3	QPSK	1	14	23.08	23.07	23.07	
3	QPSK	8	0	22.21	22.29	22.22	23
3	QPSK	8	4	22.20	22.22	22.17	
3	QPSK	8	7	22.26	22.17	22.14	
3	QPSK	15	0	22.28	22.17	22.22	
3	16QAM	1	0	22.51	22.42	22.41	23
3	16QAM	1	8	22.50	22.46	22.55	
3	16QAM	1	14	22.41	22.33	22.38	
3	16QAM	8	0	21.07	21.15	21.22	22
3	16QAM	8	4	21.25	21.20	21.25	
3	16QAM	8	7	21.23	21.05	21.14	
3	16QAM	15	0	21.26	21.11	21.12	
3	64QAM	1	0	21.39	21.21	21.27	22
3	64QAM	1	8	21.39	21.33	21.34	
3	64QAM	1	14	21.25	21.15	21.19	
3	64QAM	8	0	20.16	20.15	20.16	21
3	64QAM	8	4	20.22	20.16	20.20	
3	64QAM	8	7	20.27	20.15	20.12	
3	64QAM	15	0	20.19	20.13	20.20	
3	256QAM	1	0	18.30	18.06	18.31	19
3	256QAM	1	8	18.26	18.21	18.11	

3	256QAM	1	14	17.99	17.89	18.13	19
3	256QAM	8	0	18.29	18.13	18.21	
3	256QAM	8	4	18.28	18.16	18.15	
3	256QAM	8	7	18.27	18.03	18.13	
3	256QAM	15	0	18.14	18.20	18.19	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	23.26	23.18	23.17	24
1.4	QPSK	1	3	23.27	23.13	23.20	
1.4	QPSK	1	5	23.11	23.05	23.07	
1.4	QPSK	3	0	23.19	23.13	23.11	
1.4	QPSK	3	1	23.18	23.16	23.10	
1.4	QPSK	3	3	23.10	23.04	23.08	
1.4	QPSK	6	0	22.25	22.23	22.21	23
1.4	16QAM	1	0	22.48	22.41	22.39	23
1.4	16QAM	1	3	22.49	22.39	22.54	
1.4	16QAM	1	5	22.40	22.25	22.36	
1.4	16QAM	3	0	22.42	22.43	22.39	
1.4	16QAM	3	1	22.50	22.42	22.52	
1.4	16QAM	3	3	22.38	22.25	22.30	
1.4	16QAM	6	0	21.20	21.17	21.21	22
1.4	64QAM	1	0	21.31	21.31	21.26	22
1.4	64QAM	1	3	21.41	21.26	21.33	
1.4	64QAM	1	5	21.30	21.11	21.25	
1.4	64QAM	3	0	21.23	21.14	21.24	
1.4	64QAM	3	1	21.25	21.11	21.10	
1.4	64QAM	3	3	21.27	21.12	21.20	
1.4	64QAM	6	0	20.18	20.16	20.16	21
1.4	256QAM	1	0	18.31	18.16	18.34	19
1.4	256QAM	1	3	18.17	18.18	18.16	
1.4	256QAM	1	5	18.02	17.97	18.03	
1.4	256QAM	3	0	18.27	18.14	18.12	
1.4	256QAM	3	1	18.26	18.16	18.19	
1.4	256QAM	3	3	18.23	18.06	18.22	
1.4	256QAM	6	0	18.14	18.25	18.12	19

<LTE Band 5_Main>

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	23.15	23.10	23.08	25
10	QPSK	1	25	23.14	23.09	23.06	
10	QPSK	1	49	23.09	23.09	23.05	
10	QPSK	25	0	22.21	22.16	22.06	24
10	QPSK	25	12	22.12	22.11	22.08	
10	QPSK	25	25	22.19	22.04	22.05	
10	QPSK	50	0	22.16	22.12	22.06	24
10	16QAM	1	0	22.39	22.42	22.31	
10	16QAM	1	25	22.46	22.39	22.28	
10	16QAM	1	49	22.36	22.37	22.27	23
10	16QAM	25	0	21.12	21.09	21.02	
10	16QAM	25	12	21.14	21.12	21.10	
10	16QAM	25	25	21.20	21.06	21.05	
10	16QAM	50	0	21.14	21.11	21.03	



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10	64QAM	1	0	21.23	21.30	21.14	23
10	64QAM	1	25	21.32	21.24	21.14	
10	64QAM	1	49	21.27	21.20	21.15	
10	64QAM	25	0	20.10	20.07	20.04	22
10	64QAM	25	12	20.14	20.07	20.06	
10	64QAM	25	25	20.21	20.04	20.04	
10	64QAM	50	0	20.13	20.08	20.02	20
10	256QAM	1	0	18.11	18.05	18.07	
10	256QAM	1	25	18.16	18.05	18.06	
10	256QAM	1	49	18.08	18.13	18.07	20
10	256QAM	25	0	18.23	18.23	18.10	
10	256QAM	25	12	18.05	18.05	18.18	
10	256QAM	25	25	18.19	18.15	18.13	20
10	256QAM	50	0	18.26	18.15	18.15	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	23.08	23.03	23.01	25
5	QPSK	1	12	23.06	23.01	23.05	
5	QPSK	1	24	23.02	23.01	23.02	
5	QPSK	12	0	22.11	22.12	22.02	24
5	QPSK	12	7	22.07	22.01	22.07	
5	QPSK	12	13	22.16	22.00	22.04	
5	QPSK	25	0	22.09	22.02	22.02	24
5	16QAM	1	0	22.30	22.39	22.23	
5	16QAM	1	12	22.46	22.35	22.26	
5	16QAM	1	24	22.30	22.29	22.17	23
5	16QAM	12	0	21.04	21.05	21.03	
5	16QAM	12	7	21.04	21.07	21.03	
5	16QAM	12	13	21.10	21.03	21.02	23
5	16QAM	25	0	21.10	21.04	21.01	
5	64QAM	1	0	21.21	21.26	21.04	
5	64QAM	1	12	21.32	21.23	21.13	23
5	64QAM	1	24	21.21	21.16	21.11	
5	64QAM	12	0	20.05	20.05	20.04	
5	64QAM	12	7	20.13	20.04	20.02	22
5	64QAM	12	13	20.15	20.02	20.04	
5	64QAM	25	0	20.08	20.08	20.04	
5	256QAM	1	0	18.09	18.07	18.07	20
5	256QAM	1	12	18.08	18.01	18.03	
5	256QAM	1	24	18.07	18.11	18.01	
5	256QAM	12	0	18.15	18.22	18.02	20
5	256QAM	12	7	18.02	18.01	18.17	
5	256QAM	12	13	18.16	18.15	18.05	
5	256QAM	25	0	18.18	18.10	18.05	20
Channel				20415	20525	20635	
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	23.07	23.01	23.04	25
3	QPSK	1	8	23.10	23.01	23.01	
3	QPSK	1	14	23.02	23.02	23.04	
3	QPSK	8	0	22.20	22.16	22.00	24
3	QPSK	8	4	22.06	22.11	22.04	
3	QPSK	8	7	22.14	22.08	22.01	
3	QPSK	15	0	22.16	22.12	22.03	24
3	16QAM	1	0	22.31	22.35	22.27	
3	16QAM	1	8	22.43	22.32	22.22	
3	16QAM	1	14	22.28	22.36	22.17	24



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3	16QAM	8	0	21.05	21.09	21.06	23
3	16QAM	8	4	21.13	21.05	21.07	
3	16QAM	8	7	21.15	21.07	21.03	
3	16QAM	15	0	21.07	21.03	21.03	
3	64QAM	1	0	21.14	21.25	21.10	23
3	64QAM	1	8	21.25	21.24	21.10	
3	64QAM	1	14	21.26	21.11	21.07	
3	64QAM	8	0	20.10	20.08	20.00	22
3	64QAM	8	4	20.07	20.01	20.04	
3	64QAM	8	7	20.13	20.01	20.01	
3	64QAM	15	0	20.06	20.09	20.02	
3	256QAM	1	0	18.03	18.01	18.00	20
3	256QAM	1	8	18.15	18.05	18.01	
3	256QAM	1	14	18.01	18.12	18.07	
3	256QAM	8	0	18.17	18.16	18.05	20
3	256QAM	8	4	18.02	18.07	18.08	
3	256QAM	8	7	18.12	18.08	18.11	
3	256QAM	15	0	18.25	18.15	18.10	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	23.14	23.09	23.07	25
1.4	QPSK	1	3	23.10	23.01	23.06	
1.4	QPSK	1	5	23.06	23.07	23.00	
1.4	QPSK	3	0	23.01	23.04	23.07	
1.4	QPSK	3	1	23.09	23.06	23.08	
1.4	QPSK	3	3	23.06	23.02	23.02	
1.4	QPSK	6	0	22.06	22.09	22.02	24
1.4	16QAM	1	0	22.29	22.39	22.27	24
1.4	16QAM	1	3	22.39	22.33	22.26	
1.4	16QAM	1	5	22.31	22.31	22.21	
1.4	16QAM	3	0	22.39	22.34	22.21	
1.4	16QAM	3	1	22.40	22.38	22.19	
1.4	16QAM	3	3	22.33	22.34	22.23	
1.4	16QAM	6	0	21.12	21.06	21.09	23
1.4	64QAM	1	0	21.16	21.25	21.09	23
1.4	64QAM	1	3	21.30	21.22	21.09	
1.4	64QAM	1	5	21.25	21.13	21.12	
1.4	64QAM	3	0	21.21	21.29	21.05	
1.4	64QAM	3	1	21.32	21.22	21.11	
1.4	64QAM	3	3	21.22	21.20	21.13	
1.4	64QAM	6	0	20.09	20.04	20.04	22
1.4	256QAM	1	0	18.10	18.01	18.05	20
1.4	256QAM	1	3	18.14	18.04	18.05	
1.4	256QAM	1	5	18.02	18.13	18.07	
1.4	256QAM	3	0	18.21	18.20	18.04	
1.4	256QAM	3	1	18.04	18.00	18.17	
1.4	256QAM	3	3	18.18	18.10	18.08	
1.4	256QAM	6	0	18.17	18.09	18.09	20



<LTE Band 7_Main>

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	23.19	23.07	23.06	24
20	QPSK	1	49	22.98	22.76	22.86	
20	QPSK	1	99	23.13	22.90	23.02	
20	QPSK	50	0	22.17	22.09	22.12	23
20	QPSK	50	24	22.16	21.98	22.11	
20	QPSK	50	50	22.16	22.03	22.04	
20	QPSK	100	0	22.16	22.04	22.06	
20	16QAM	1	0	22.29	22.10	22.21	23
20	16QAM	1	49	22.54	22.31	22.37	
20	16QAM	1	99	22.44	22.22	22.21	
20	16QAM	50	0	21.08	20.97	21.03	22
20	16QAM	50	24	21.21	20.97	21.05	
20	16QAM	50	50	21.17	21.03	21.09	
20	16QAM	100	0	21.11	20.94	21.05	
20	64QAM	1	0	21.19	20.95	21.05	22
20	64QAM	1	49	21.42	21.17	21.23	
20	64QAM	1	99	21.33	21.11	21.16	
20	64QAM	50	0	20.06	19.96	20.02	21
20	64QAM	50	24	20.14	19.91	20.02	
20	64QAM	50	50	20.15	19.93	20.07	
20	64QAM	100	0	20.09	19.92	20.05	
20	256QAM	1	0	18.10	17.99	17.98	19
20	256QAM	1	49	18.03	17.66	17.85	
20	256QAM	1	99	18.13	17.88	18.11	
20	256QAM	50	0	18.27	17.99	18.19	19
20	256QAM	50	24	18.08	17.99	18.13	
20	256QAM	50	50	18.13	17.97	18.00	
20	256QAM	100	0	18.16	18.03	18.15	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	23.17	22.99	23.03	24
15	QPSK	1	37	22.94	22.67	22.77	
15	QPSK	1	74	23.07	22.80	22.94	
15	QPSK	36	0	22.17	22.07	22.04	23
15	QPSK	36	20	22.09	21.97	22.01	
15	QPSK	36	39	22.12	21.95	22.00	
15	QPSK	75	0	22.13	21.98	21.99	
15	16QAM	1	0	22.19	22.06	22.14	23
15	16QAM	1	37	22.44	22.31	22.37	
15	16QAM	1	74	22.42	22.16	22.12	
15	16QAM	36	0	20.98	20.94	21.02	22
15	16QAM	36	20	21.12	20.90	20.99	
15	16QAM	36	39	21.15	20.98	21.00	
15	16QAM	75	0	21.06	20.91	21.05	
15	64QAM	1	0	21.19	20.90	21.05	22
15	64QAM	1	37	21.37	21.08	21.18	
15	64QAM	1	74	21.31	21.09	21.15	
15	64QAM	36	0	20.02	19.87	20.00	21
15	64QAM	36	20	20.04	19.87	19.99	
15	64QAM	36	39	20.08	19.83	19.97	
15	64QAM	75	0	20.03	19.89	20.04	



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15	256QAM	1	0	18.10	17.91	17.90	19
15	256QAM	1	37	17.95	17.59	17.78	
15	256QAM	1	74	18.08	17.88	18.06	
15	256QAM	36	0	18.19	17.99	18.12	19
15	256QAM	36	20	17.98	17.92	18.10	
15	256QAM	36	39	18.09	17.90	17.95	
15	256QAM	75	0	18.15	17.98	18.05	Tune-up limit (dBm)
Channel				20800	21100	21400	
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	23.09	23.01	23.02	24
10	QPSK	1	25	22.94	22.71	22.80	
10	QPSK	1	49	23.12	22.82	22.96	
10	QPSK	25	0	22.09	22.05	22.12	23
10	QPSK	25	12	22.15	21.98	22.07	
10	QPSK	25	25	22.07	22.01	22.04	
10	QPSK	50	0	22.14	21.95	22.02	23
10	16QAM	1	0	22.27	22.08	22.14	
10	16QAM	1	25	22.50	22.25	22.34	
10	16QAM	1	49	22.34	22.17	22.20	22
10	16QAM	25	0	21.06	20.92	20.93	
10	16QAM	25	12	21.21	20.96	20.99	
10	16QAM	25	25	21.13	20.96	21.08	22
10	16QAM	50	0	21.03	20.85	21.05	
10	64QAM	1	0	21.10	20.92	20.96	
10	64QAM	1	25	21.42	21.11	21.14	22
10	64QAM	1	49	21.30	21.10	21.16	
10	64QAM	25	0	20.06	19.87	19.97	21
10	64QAM	25	12	20.04	19.87	19.92	
10	64QAM	25	25	20.13	19.83	20.00	
10	64QAM	50	0	20.02	19.91	19.96	19
10	256QAM	1	0	18.04	17.89	17.88	
10	256QAM	1	25	18.01	17.57	17.85	
10	256QAM	1	49	18.10	17.84	18.01	19
10	256QAM	25	0	18.22	17.94	18.10	
10	256QAM	25	12	18.00	17.89	18.06	
10	256QAM	25	25	18.03	17.93	17.93	Tune-up limit (dBm)
10	256QAM	50	0	18.13	17.94	18.13	
Channel				20775	21100	21425	
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	23.15	23.07	23.04	24
5	QPSK	1	12	22.90	22.72	22.83	
5	QPSK	1	24	23.12	22.88	22.92	
5	QPSK	12	0	22.15	22.01	22.07	23
5	QPSK	12	7	22.06	21.94	22.02	
5	QPSK	12	13	22.07	21.93	22.03	
5	QPSK	25	0	22.15	22.00	22.00	23
5	16QAM	1	0	22.19	22.01	22.14	
5	16QAM	1	12	22.52	22.22	22.27	
5	16QAM	1	24	22.44	22.16	22.15	22
5	16QAM	12	0	21.03	20.90	20.99	
5	16QAM	12	7	21.20	20.94	21.00	
5	16QAM	12	13	21.12	20.93	21.08	22
5	16QAM	25	0	21.02	20.84	21.01	
5	64QAM	1	0	21.13	20.92	20.97	
5	64QAM	1	12	21.33	21.13	21.23	22
5	64QAM	1	24	21.26	21.10	21.08	



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5	64QAM	12	0	19.97	19.93	19.99	21
5	64QAM	12	7	20.14	19.91	20.02	
5	64QAM	12	13	20.05	19.83	20.07	
5	64QAM	25	0	20.03	19.86	19.95	
5	256QAM	1	0	18.08	17.95	17.97	19
5	256QAM	1	12	17.93	17.58	17.75	
5	256QAM	1	24	18.12	17.80	18.10	
5	256QAM	12	0	18.17	17.95	18.17	19
5	256QAM	12	7	18.03	17.94	18.04	
5	256QAM	12	13	18.11	17.93	18.00	
5	256QAM	25	0	18.12	17.99	18.06	

<LTE Band 12_Main>

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	23.22	23.22	23.25	25
10	QPSK	1	25	23.21	23.14	23.24	
10	QPSK	1	49	23.17	23.17	23.23	
10	QPSK	25	0	22.24	22.26	22.24	24
10	QPSK	25	12	22.21	22.10	22.21	
10	QPSK	25	25	22.23	22.12	22.23	
10	QPSK	50	0	22.19	22.21	22.23	24
10	16QAM	1	0	22.42	22.41	22.53	
10	16QAM	1	25	22.55	22.46	22.53	
10	16QAM	1	49	22.55	22.39	22.52	23
10	16QAM	25	0	21.25	21.06	21.14	
10	16QAM	25	12	21.23	21.12	21.20	
10	16QAM	25	25	21.28	21.16	21.20	23
10	16QAM	50	0	21.20	21.17	21.21	
10	64QAM	1	0	21.29	21.27	21.31	23
10	64QAM	1	25	21.36	21.30	21.36	
10	64QAM	1	49	21.31	21.31	21.37	
10	64QAM	25	0	20.24	20.07	20.12	22
10	64QAM	25	12	20.17	20.10	20.20	
10	64QAM	25	25	20.29	20.14	20.18	
10	64QAM	50	0	20.19	20.15	20.19	20
10	256QAM	1	0	18.14	18.12	18.27	
10	256QAM	1	25	18.17	18.24	18.31	
10	256QAM	1	49	18.10	18.16	18.27	20
10	256QAM	25	0	18.19	18.22	18.25	
10	256QAM	25	12	18.27	18.18	18.23	
10	256QAM	25	25	18.31	18.12	18.22	24
10	256QAM	50	0	18.21	18.18	18.30	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	23.17	23.22	23.16	25
5	QPSK	1	12	23.18	23.06	23.18	
5	QPSK	1	24	23.12	23.14	23.16	
5	QPSK	12	0	22.17	22.22	22.19	24
5	QPSK	12	7	22.15	22.06	22.20	
5	QPSK	12	13	22.18	22.07	22.18	
5	QPSK	25	0	22.15	22.19	22.19	24
5	16QAM	1	0	22.32	22.33	22.44	
5	16QAM	1	12	22.51	22.37	22.52	



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5	16QAM	1	24	22.54	22.31	22.51	23
5	16QAM	12	0	21.22	21.00	21.14	
5	16QAM	12	7	21.13	21.05	21.16	
5	16QAM	12	13	21.28	21.09	21.14	
5	16QAM	25	0	21.20	21.14	21.12	23
5	64QAM	1	0	21.19	21.20	21.27	
5	64QAM	1	12	21.26	21.21	21.26	
5	64QAM	1	24	21.30	21.23	21.28	
5	64QAM	12	0	20.20	20.07	20.05	22
5	64QAM	12	7	20.14	20.02	20.16	
5	64QAM	12	13	20.27	20.10	20.17	
5	64QAM	25	0	20.18	20.09	20.13	
5	256QAM	1	0	18.13	18.09	18.25	20
5	256QAM	1	12	18.11	18.22	18.25	
5	256QAM	1	24	18.00	18.11	18.25	
5	256QAM	12	0	18.18	18.20	18.22	
5	256QAM	12	7	18.20	18.15	18.14	20
5	256QAM	12	13	18.24	18.05	18.14	
5	256QAM	25	0	18.17	18.12	18.27	
Channel				23025	23095	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	23.22	23.17	23.24	25
3	QPSK	1	8	23.17	23.09	23.19	
3	QPSK	1	14	23.16	23.14	23.15	
3	QPSK	8	0	22.24	22.17	22.19	24
3	QPSK	8	4	22.19	22.01	22.18	
3	QPSK	8	7	22.14	22.05	22.19	
3	QPSK	15	0	22.12	22.15	22.21	
3	16QAM	1	0	22.39	22.36	22.48	24
3	16QAM	1	8	22.55	22.36	22.46	
3	16QAM	1	14	22.54	22.32	22.46	
3	16QAM	8	0	21.22	21.01	21.04	23
3	16QAM	8	4	21.22	21.02	21.19	
3	16QAM	8	7	21.23	21.08	21.19	
3	16QAM	15	0	21.13	21.15	21.20	
3	64QAM	1	0	21.28	21.22	21.25	23
3	64QAM	1	8	21.27	21.20	21.31	
3	64QAM	1	14	21.28	21.31	21.29	
3	64QAM	8	0	20.20	20.06	20.07	
3	64QAM	8	4	20.12	20.04	20.10	22
3	64QAM	8	7	20.26	20.10	20.08	
3	64QAM	15	0	20.09	20.12	20.19	
3	256QAM	1	0	18.05	18.11	18.19	
3	256QAM	1	8	18.08	18.18	18.31	20
3	256QAM	1	14	18.08	18.15	18.19	
3	256QAM	8	0	18.10	18.16	18.15	
3	256QAM	8	4	18.26	18.11	18.18	
3	256QAM	8	7	18.24	18.10	18.19	20
3	256QAM	15	0	18.15	18.18	18.24	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	23.18	23.17	23.22	25
1.4	QPSK	1	3	23.21	23.04	23.22	
1.4	QPSK	1	5	23.12	23.07	23.15	
1.4	QPSK	3	0	23.16	23.17	23.19	
1.4	QPSK	3	1	23.13	23.14	23.14	



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1.4	QPSK	3	3	23.08	23.16	23.23	
1.4	QPSK	6	0	22.17	22.19	22.18	24
1.4	16QAM	1	0	22.39	22.35	22.48	24
1.4	16QAM	1	3	22.49	22.42	22.53	
1.4	16QAM	1	5	22.47	22.29	22.47	
1.4	16QAM	3	0	22.36	22.39	22.53	
1.4	16QAM	3	1	22.48	22.37	22.44	
1.4	16QAM	3	3	22.51	22.38	22.44	
1.4	16QAM	6	0	21.16	21.14	21.19	23
1.4	64QAM	1	0	21.22	21.25	21.26	23
1.4	64QAM	1	3	21.29	21.24	21.27	
1.4	64QAM	1	5	21.22	21.29	21.34	
1.4	64QAM	3	0	21.19	21.09	21.15	
1.4	64QAM	3	1	21.19	21.12	21.11	
1.4	64QAM	3	3	21.18	21.09	21.18	
1.4	64QAM	6	0	20.09	20.09	20.09	22
1.4	256QAM	1	0	18.04	18.12	18.22	20
1.4	256QAM	1	3	18.15	18.19	18.24	
1.4	256QAM	1	5	18.06	18.12	18.17	
1.4	256QAM	3	0	18.18	18.14	18.22	
1.4	256QAM	3	1	18.23	18.16	18.18	
1.4	256QAM	3	3	18.22	18.05	18.21	
1.4	256QAM	6	0	18.19	18.09	18.22	20

<LTE Band 13_Main>

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		23.17		25
10	QPSK	1	25		23.12		
10	QPSK	1	49		23.13		
10	QPSK	25	0		22.17		24
10	QPSK	25	12		22.15		
10	QPSK	25	25		22.15		
10	QPSK	50	0		22.19		24
10	16QAM	1	0		22.36		
10	16QAM	1	25		22.36		
10	16QAM	1	49		22.27		23
10	16QAM	25	0		21.06		
10	16QAM	25	12		21.07		
10	16QAM	25	25		21.06		23
10	16QAM	50	0		21.07		
10	64QAM	1	0		21.26		
10	64QAM	1	25		21.22		22
10	64QAM	1	49		21.16		
10	64QAM	25	0		20.08		
10	64QAM	25	12		20.10		20
10	64QAM	25	25		20.10		
10	64QAM	50	0		20.08		
10	256QAM	1	0		18.18		20
10	256QAM	1	25		18.13		
10	256QAM	1	49		18.09		
10	256QAM	25	0		18.11		20
10	256QAM	25	12		18.13		

10	256QAM	25	25		18.07		
10	256QAM	50	0		18.15		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	23.13	23.07	23.10	25
5	QPSK	1	12	23.04	23.09	23.11	
5	QPSK	1	24	23.03	23.09	23.11	
5	QPSK	12	0	22.09	22.08	22.13	24
5	QPSK	12	7	22.07	22.12	22.10	
5	QPSK	12	13	22.14	22.05	22.06	
5	QPSK	25	0	22.11	22.18	22.13	24
5	16QAM	1	0	22.27	22.36	22.30	
5	16QAM	1	12	22.29	22.36	22.35	
5	16QAM	1	24	22.17	22.19	22.25	23
5	16QAM	12	0	21.01	21.06	21.06	
5	16QAM	12	7	21.07	21.03	21.05	
5	16QAM	12	13	21.05	21.01	21.05	23
5	16QAM	25	0	21.00	21.06	21.00	
5	64QAM	1	0	21.18	21.24	21.23	
5	64QAM	1	12	21.17	21.17	21.12	22
5	64QAM	1	24	21.15	21.15	21.13	
5	64QAM	12	0	20.01	20.02	20.05	
5	64QAM	12	7	20.06	20.08	20.04	22
5	64QAM	12	13	20.02	20.07	20.04	
5	64QAM	25	0	20.00	20.02	20.07	
5	256QAM	1	0	18.14	18.18	18.13	20
5	256QAM	1	12	18.06	18.09	18.08	
5	256QAM	1	24	18.06	18.00	18.00	
5	256QAM	12	0	18.04	18.02	18.06	20
5	256QAM	12	7	18.12	18.10	18.05	
5	256QAM	12	13	18.06	18.08	18.03	
5	256QAM	25	0	18.12	18.15	18.06	

<LTE Band 14_Main>

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		23.20		25
10	QPSK	1	25		23.16		
10	QPSK	1	49		23.07		
10	QPSK	25	0		22.18		24
10	QPSK	25	12		22.11		
10	QPSK	25	25		22.17		
10	QPSK	50	0		22.15		
10	16QAM	1	0		22.37		24
10	16QAM	1	25		22.44		
10	16QAM	1	49		22.31		
10	16QAM	25	0		21.15		23
10	16QAM	25	12		21.13		
10	16QAM	25	25		21.16		
10	16QAM	50	0		21.11		
10	64QAM	1	0		21.29		23
10	64QAM	1	25		21.29		
10	64QAM	1	49		21.18		



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10	64QAM	25	0		20.17		22
10	64QAM	25	12		20.11		
10	64QAM	25	25		20.13		
10	64QAM	50	0		20.11		
10	256QAM	1	0		18.27		20
10	256QAM	1	25		18.09		
10	256QAM	1	49		18.03		
10	256QAM	25	0		18.13		
10	256QAM	25	12		18.20		20
10	256QAM	25	25		18.10		
10	256QAM	50	0		18.12		
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0	23.15	23.16	23.12	25
5	QPSK	1	12	23.06	23.14	23.06	
5	QPSK	1	24	23.00	23.00	23.05	
5	QPSK	12	0	22.18	22.11	22.10	
5	QPSK	12	7	22.06	22.11	22.07	24
5	QPSK	12	13	22.09	22.15	22.11	
5	QPSK	25	0	22.08	22.08	22.12	
5	16QAM	1	0	22.33	22.37	22.29	
5	16QAM	1	12	22.37	22.44	22.37	24
5	16QAM	1	24	22.29	22.28	22.25	
5	16QAM	12	0	21.08	21.11	21.07	
5	16QAM	12	7	21.09	21.10	21.09	
5	16QAM	12	13	21.16	21.15	21.10	23
5	16QAM	25	0	21.10	21.03	21.11	
5	64QAM	1	0	21.23	21.19	21.20	
5	64QAM	1	12	21.27	21.25	21.19	
5	64QAM	1	24	21.17	21.15	21.13	22
5	64QAM	12	0	20.16	20.11	20.15	
5	64QAM	12	7	20.04	20.03	20.02	
5	64QAM	12	13	20.07	20.03	20.12	
5	64QAM	25	0	20.11	20.09	20.03	20
5	256QAM	1	0	18.23	18.24	18.17	
5	256QAM	1	12	18.08	18.01	18.06	
5	256QAM	1	24	18.03	18.03	18.08	
5	256QAM	12	0	18.06	18.11	18.12	20
5	256QAM	12	7	18.15	18.15	18.13	
5	256QAM	12	13	18.02	18.09	18.02	
5	256QAM	25	0	18.07	18.10	18.07	



<LTE Band 17_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23780	23790	23800	
Frequency (MHz)				709	710	711	
10	QPSK	1	0	23.43	23.41	23.41	
10	QPSK	1	25	23.42	23.39	23.40	25
10	QPSK	1	49	23.41	23.36	23.40	
10	QPSK	25	0	22.43	22.42	22.38	
10	QPSK	25	12	22.33	22.30	22.34	24
10	QPSK	25	25	22.36	22.34	22.35	
10	QPSK	50	0	22.38	22.39	22.38	
10	16QAM	1	0	22.66	22.67	22.60	24
10	16QAM	1	25	22.77	22.68	22.65	
10	16QAM	1	49	22.63	22.64	22.67	
10	16QAM	25	0	21.27	21.20	21.27	23
10	16QAM	25	12	21.35	21.33	21.33	
10	16QAM	25	25	21.34	21.32	21.38	
10	16QAM	50	0	21.37	21.32	21.37	23
10	64QAM	1	0	21.45	21.46	21.44	
10	64QAM	1	25	21.55	21.54	21.51	
10	64QAM	1	49	21.55	21.45	21.51	22
10	64QAM	25	0	20.26	20.22	20.25	
10	64QAM	25	12	20.37	20.33	20.35	
10	64QAM	25	25	20.37	20.30	20.34	20
10	64QAM	50	0	20.35	20.31	20.34	
10	256QAM	1	0	18.51	18.50	18.37	
10	256QAM	1	25	18.47	18.30	18.34	20
10	256QAM	1	49	18.31	18.27	18.45	
10	256QAM	25	0	18.35	18.50	18.34	
10	256QAM	25	12	18.26	18.23	18.25	20
10	256QAM	25	25	18.36	18.33	18.37	
10	256QAM	50	0	18.28	18.36	18.36	
Channel				23755	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	23.36	23.41	23.31	
5	QPSK	1	12	23.39	23.36	23.31	25
5	QPSK	1	24	23.31	23.36	23.31	
5	QPSK	12	0	22.43	22.32	22.29	
5	QPSK	12	7	22.24	22.22	22.34	24
5	QPSK	12	13	22.30	22.25	22.25	
5	QPSK	25	0	22.38	22.34	22.36	
5	16QAM	1	0	22.65	22.66	22.56	24
5	16QAM	1	12	22.73	22.60	22.59	
5	16QAM	1	24	22.53	22.56	22.66	
5	16QAM	12	0	21.26	21.19	21.19	23
5	16QAM	12	7	21.31	21.30	21.32	
5	16QAM	12	13	21.32	21.25	21.30	
5	16QAM	25	0	21.33	21.29	21.28	23
5	64QAM	1	0	21.43	21.45	21.34	
5	64QAM	1	12	21.51	21.47	21.45	
5	64QAM	1	24	21.45	21.45	21.44	22
5	64QAM	12	0	20.16	20.12	20.23	
5	64QAM	12	7	20.31	20.26	20.34	
5	64QAM	12	13	20.27	20.27	20.32	22
5	64QAM	25	0	20.25	20.22	20.25	

5	256QAM	1	0	18.50	18.50	18.32	20
5	256QAM	1	12	18.47	18.20	18.27	
5	256QAM	1	24	18.23	18.17	18.38	
5	256QAM	12	0	18.29	18.49	18.33	20
5	256QAM	12	7	18.18	18.15	18.17	
5	256QAM	12	13	18.32	18.30	18.34	
5	256QAM	25	0	18.23	18.32	18.35	

<LTE Band 25_Main>

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	22.99	23.05	24
20	QPSK	1	49	22.97	22.68	23.03	
20	QPSK	1	99	22.82	22.52	22.90	
20	QPSK	50	0	22.06	21.79	22.11	23
20	QPSK	50	24	22.02	21.68	22.05	
20	QPSK	50	50	21.98	21.70	22.00	
20	QPSK	100	0	21.97	21.70	22.05	
20	16QAM	1	0	22.24	21.94	22.31	23
20	16QAM	1	49	22.34	21.93	22.29	
20	16QAM	1	99	22.16	21.88	22.20	
20	16QAM	50	0	21.06	20.57	21.11	22
20	16QAM	50	24	21.02	20.65	21.07	
20	16QAM	50	50	20.94	20.65	20.97	
20	16QAM	100	0	20.97	20.63	21.00	
20	64QAM	1	0	21.10	20.78	21.13	22
20	64QAM	1	49	21.18	20.85	21.17	
20	64QAM	1	99	20.96	20.70	21.05	
20	64QAM	50	0	20.05	19.57	20.10	21
20	64QAM	50	24	20.00	19.66	20.03	
20	64QAM	50	50	19.94	19.67	19.96	
20	64QAM	100	0	19.97	19.63	20.02	
20	256QAM	1	0	17.97	17.90	18.00	19
20	256QAM	1	49	17.92	17.77	18.11	
20	256QAM	1	99	17.72	17.57	17.91	
20	256QAM	50	0	18.01	17.70	18.21	19
20	256QAM	50	24	18.00	17.69	17.97	
20	256QAM	50	50	17.90	17.76	17.94	
20	256QAM	100	0	18.01	17.70	18.04	
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	22.97	22.97	22.98	24
15	QPSK	1	37	22.97	22.67	23.01	
15	QPSK	1	74	22.72	22.48	22.82	
15	QPSK	36	0	21.96	21.77	22.08	23
15	QPSK	36	20	21.96	21.67	21.99	
15	QPSK	36	39	21.91	21.60	21.94	
15	QPSK	75	0	21.90	21.68	22.01	
15	16QAM	1	0	22.23	21.92	22.23	23
15	16QAM	1	37	22.32	21.83	22.22	
15	16QAM	1	74	22.14	21.81	22.16	
15	16QAM	36	0	20.98	20.55	21.01	22
15	16QAM	36	20	20.94	20.59	21.00	



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15	16QAM	36	39	20.85	20.62	20.92	
15	16QAM	75	0	20.94	20.61	20.98	
15	64QAM	1	0	21.03	20.77	21.09	
15	64QAM	1	37	21.18	20.82	21.10	22
15	64QAM	1	74	20.91	20.61	21.02	
15	64QAM	36	0	20.01	19.57	20.00	
15	64QAM	36	20	19.94	19.65	20.00	21
15	64QAM	36	39	19.91	19.65	19.94	
15	64QAM	75	0	19.96	19.59	19.96	
15	256QAM	1	0	17.91	17.90	17.99	19
15	256QAM	1	37	17.90	17.77	18.02	
15	256QAM	1	74	17.62	17.48	17.85	
15	256QAM	36	0	17.99	17.65	18.15	19
15	256QAM	36	20	17.97	17.68	17.93	
15	256QAM	36	39	17.81	17.70	17.88	
15	256QAM	75	0	17.92	17.61	17.94	
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	22.97	22.99	22.99	24
10	QPSK	1	25	22.94	22.68	22.94	
10	QPSK	1	49	22.73	22.48	22.88	
10	QPSK	25	0	22.01	21.75	22.01	23
10	QPSK	25	12	21.99	21.64	21.97	
10	QPSK	25	25	21.95	21.65	21.96	
10	QPSK	50	0	21.88	21.67	22.03	
10	16QAM	1	0	22.23	21.86	22.24	23
10	16QAM	1	25	22.28	21.93	22.26	
10	16QAM	1	49	22.07	21.85	22.19	
10	16QAM	25	0	20.98	20.50	21.11	22
10	16QAM	25	12	20.97	20.60	21.04	
10	16QAM	25	25	20.91	20.64	20.88	
10	16QAM	50	0	20.90	20.62	20.94	
10	64QAM	1	0	21.08	20.69	21.12	22
10	64QAM	1	25	21.12	20.81	21.13	
10	64QAM	1	49	20.89	20.67	21.02	
10	64QAM	25	0	19.99	19.53	20.09	21
10	64QAM	25	12	19.98	19.57	19.94	
10	64QAM	25	25	19.87	19.57	19.89	
10	64QAM	50	0	19.92	19.55	19.94	
10	256QAM	1	0	17.92	17.83	17.90	19
10	256QAM	1	25	17.91	17.67	18.06	
10	256QAM	1	49	17.66	17.51	17.89	
10	256QAM	25	0	17.94	17.64	18.14	19
10	256QAM	25	12	17.90	17.69	17.94	
10	256QAM	25	25	17.85	17.66	17.94	
10	256QAM	50	0	17.98	17.63	18.03	
Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	22.98	22.99	23.04	24
5	QPSK	1	12	22.87	22.60	22.98	
5	QPSK	1	24	22.75	22.48	22.84	
5	QPSK	12	0	22.01	21.69	22.02	23
5	QPSK	12	7	21.98	21.62	22.05	
5	QPSK	12	13	21.89	21.61	21.98	
5	QPSK	25	0	21.96	21.65	22.00	
5	16QAM	1	0	22.19	21.88	22.30	23



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5	16QAM	1	12	22.28	21.90	22.21	
5	16QAM	1	24	22.09	21.82	22.13	
5	16QAM	12	0	21.00	20.50	21.10	
5	16QAM	12	7	20.92	20.63	20.97	22
5	16QAM	12	13	20.89	20.59	20.97	
5	16QAM	25	0	20.91	20.61	20.90	
5	64QAM	1	0	21.04	20.71	21.10	22
5	64QAM	1	12	21.18	20.80	21.17	
5	64QAM	1	24	20.90	20.63	21.02	
5	64QAM	12	0	20.04	19.56	20.00	21
5	64QAM	12	7	19.94	19.59	19.98	
5	64QAM	12	13	19.88	19.67	19.94	
5	64QAM	25	0	19.90	19.54	20.00	19
5	256QAM	1	0	17.93	17.80	17.94	
5	256QAM	1	12	17.82	17.67	18.08	
5	256QAM	1	24	17.71	17.47	17.82	19
5	256QAM	12	0	17.94	17.67	18.15	
5	256QAM	12	7	17.97	17.67	17.89	
5	256QAM	12	13	17.90	17.71	17.84	Tune-up limit (dBm)
5	256QAM	25	0	18.00	17.67	17.98	
Channel				26055	26340	26675	
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	22.95	22.93	23.01	24
3	QPSK	1	8	22.96	22.58	22.97	
3	QPSK	1	14	22.75	22.49	22.87	
3	QPSK	8	0	22.00	21.76	22.05	23
3	QPSK	8	4	21.99	21.58	22.00	
3	QPSK	8	7	21.92	21.70	21.93	
3	QPSK	15	0	21.97	21.69	22.05	23
3	16QAM	1	0	22.15	21.85	22.30	
3	16QAM	1	8	22.32	21.93	22.23	
3	16QAM	1	14	22.11	21.86	22.12	22
3	16QAM	8	0	21.03	20.48	21.02	
3	16QAM	8	4	20.98	20.60	20.97	
3	16QAM	8	7	20.92	20.56	20.93	22
3	16QAM	15	0	20.93	20.58	20.98	
3	64QAM	1	0	21.10	20.76	21.09	
3	64QAM	1	8	21.14	20.80	21.09	21
3	64QAM	1	14	20.86	20.62	21.01	
3	64QAM	8	0	19.99	19.48	20.01	
3	64QAM	8	4	19.93	19.61	19.94	19
3	64QAM	8	7	19.89	19.61	19.94	
3	64QAM	15	0	19.96	19.54	19.97	
3	256QAM	1	0	17.89	17.87	17.90	19
3	256QAM	1	8	17.92	17.67	18.03	
3	256QAM	1	14	17.66	17.52	17.85	
3	256QAM	8	0	17.93	17.65	18.19	19
3	256QAM	8	4	17.94	17.66	17.97	
3	256QAM	8	7	17.84	17.76	17.92	
3	256QAM	15	0	17.91	17.64	17.94	Tune-up limit (dBm)
Channel				26047	26340	26683	
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	23.02	22.94	23.00	24
1.4	QPSK	1	3	22.87	22.66	22.93	
1.4	QPSK	1	5	22.77	22.43	22.84	
1.4	QPSK	3	0	22.88	22.65	22.93	



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1.4	QPSK	3	1	22.82	22.42	22.83	
1.4	QPSK	3	3	22.78	22.61	22.88	
1.4	QPSK	6	0	21.95	21.70	22.05	
1.4	16QAM	1	0	22.21	21.91	22.24	23
1.4	16QAM	1	3	22.34	21.93	22.25	
1.4	16QAM	1	5	22.15	21.81	22.10	
1.4	16QAM	3	0	22.24	21.87	22.22	
1.4	16QAM	3	1	22.24	21.84	22.27	
1.4	16QAM	3	3	22.11	21.86	22.12	22
1.4	16QAM	6	0	20.93	20.60	20.94	
1.4	64QAM	1	0	21.06	20.68	21.03	
1.4	64QAM	1	3	21.09	20.84	21.11	22
1.4	64QAM	1	5	20.94	20.67	20.97	
1.4	64QAM	3	0	20.98	20.55	20.99	
1.4	64QAM	3	1	20.94	20.62	20.97	
1.4	64QAM	3	3	20.91	20.60	20.92	
1.4	64QAM	6	0	19.97	19.56	19.93	21
1.4	256QAM	1	0	17.96	17.88	17.91	19
1.4	256QAM	1	3	17.82	17.70	18.08	
1.4	256QAM	1	5	17.66	17.52	17.83	
1.4	256QAM	3	0	17.93	17.67	18.16	
1.4	256QAM	3	1	17.94	17.64	17.87	
1.4	256QAM	3	3	17.88	17.71	17.93	19
1.4	256QAM	6	0	17.93	17.66	18.01	

<LTE Band 26_Main>

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	23.25	23.11	23.17	25
15	QPSK	1	37	23.23	23.06	23.07	
15	QPSK	1	74	23.15	23.07	23.15	
15	QPSK	36	0	22.36	22.05	22.18	24
15	QPSK	36	20	22.24	22.03	22.15	
15	QPSK	36	39	22.24	22.04	22.15	
15	QPSK	75	0	22.23	22.04	22.17	24
15	16QAM	1	0	22.38	22.27	22.37	
15	16QAM	1	37	22.53	22.39	22.46	
15	16QAM	1	74	22.53	22.28	22.31	23
15	16QAM	36	0	21.19	21.13	21.18	
15	16QAM	36	20	21.24	21.14	21.16	
15	16QAM	36	39	21.24	21.19	21.10	23
15	16QAM	75	0	21.22	21.10	21.18	
15	64QAM	1	0	21.26	21.12	21.25	
15	64QAM	1	37	21.44	21.25	21.35	22
15	64QAM	1	74	21.37	21.17	21.23	
15	64QAM	36	0	20.19	20.09	20.13	
15	64QAM	36	20	20.23	20.14	20.17	20
15	64QAM	36	39	20.23	20.08	20.11	
15	64QAM	75	0	20.20	20.09	20.10	
15	256QAM	1	0	18.18	18.11	18.13	20
15	256QAM	1	37	18.24	18.14	18.27	
15	256QAM	1	74	18.35	18.06	18.05	
15	256QAM	36	0	18.30	18.10	18.26	20
15	256QAM	36	20	18.23	18.12	18.10	



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15	256QAM	36	39	18.28	18.06	18.11	
15	256QAM	75	0	18.15	18.09	18.15	
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	23.18	23.06	23.09	25
10	QPSK	1	25	23.20	23.07	23.05	
10	QPSK	1	49	23.14	23.08	23.09	
10	QPSK	25	0	22.34	22.08	22.15	24
10	QPSK	25	12	22.17	22.09	22.12	
10	QPSK	25	25	22.22	22.03	22.09	
10	QPSK	50	0	22.20	22.09	22.12	
10	16QAM	1	0	22.38	22.26	22.27	24
10	16QAM	1	25	22.50	22.36	22.38	
10	16QAM	1	49	22.51	22.25	22.27	
10	16QAM	25	0	21.10	21.06	21.09	23
10	16QAM	25	12	21.20	21.04	21.14	
10	16QAM	25	25	21.22	21.19	21.08	
10	16QAM	50	0	21.12	21.07	21.13	
10	64QAM	1	0	21.24	21.08	21.21	23
10	64QAM	1	25	21.44	21.23	21.32	
10	64QAM	1	49	21.37	21.09	21.23	
10	64QAM	25	0	20.14	20.06	20.05	22
10	64QAM	25	12	20.20	20.09	20.07	
10	64QAM	25	25	20.14	19.99	20.02	
10	64QAM	50	0	20.10	19.99	20.06	
10	256QAM	1	0	18.12	18.03	18.05	20
10	256QAM	1	25	18.22	18.11	18.20	
10	256QAM	1	49	18.29	18.06	18.07	
10	256QAM	25	0	18.20	18.05	18.19	20
10	256QAM	25	12	18.22	18.12	18.06	
10	256QAM	25	25	18.21	18.08	18.07	
10	256QAM	50	0	18.15	18.09	18.13	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	23.19	23.07	23.17	25
5	QPSK	1	12	23.22	23.07	23.06	
5	QPSK	1	24	23.06	23.07	23.07	
5	QPSK	12	0	22.26	22.03	22.15	24
5	QPSK	12	7	22.14	22.09	22.06	
5	QPSK	12	13	22.17	22.08	22.10	
5	QPSK	25	0	22.19	22.08	22.16	
5	16QAM	1	0	22.34	22.25	22.37	24
5	16QAM	1	12	22.44	22.34	22.41	
5	16QAM	1	24	22.48	22.20	22.21	
5	16QAM	12	0	21.11	21.05	21.15	23
5	16QAM	12	7	21.14	21.11	21.06	
5	16QAM	12	13	21.24	21.16	21.10	
5	16QAM	25	0	21.16	21.06	21.17	
5	64QAM	1	0	21.16	21.04	21.15	23
5	64QAM	1	12	21.38	21.22	21.33	
5	64QAM	1	24	21.32	21.16	21.23	
5	64QAM	12	0	20.18	20.05	20.07	22
5	64QAM	12	7	20.17	20.10	20.13	
5	64QAM	12	13	20.18	20.05	20.10	
5	64QAM	25	0	20.16	20.07	20.08	
5	256QAM	1	0	18.14	18.04	18.08	20



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5	256QAM	1	12	18.15	18.07	18.27	20
5	256QAM	1	24	18.32	18.05	18.09	
5	256QAM	12	0	18.25	18.04	18.18	
5	256QAM	12	7	18.21	18.07	18.04	
5	256QAM	12	13	18.26	18.04	18.07	
5	256QAM	25	0	18.13	18.04	18.10	Tune-up limit (dBm)
Channel				26705	26865	27025	
Frequency (MHz)				815.5	831.5	847.5	25
3	QPSK	1	0	23.20	23.05	23.13	
3	QPSK	1	8	23.22	23.06	23.07	
3	QPSK	1	14	23.12	23.05	23.07	
3	QPSK	8	0	22.32	22.04	22.10	24
3	QPSK	8	4	22.21	22.10	22.05	
3	QPSK	8	7	22.24	22.14	22.08	
3	QPSK	15	0	22.18	22.14	22.12	
3	16QAM	1	0	22.29	22.27	22.32	
3	16QAM	1	8	22.53	22.39	22.42	23
3	16QAM	1	14	22.47	22.26	22.24	
3	16QAM	8	0	21.18	21.07	21.14	
3	16QAM	8	4	21.24	21.06	21.14	
3	16QAM	8	7	21.17	21.19	21.09	
3	16QAM	15	0	21.19	21.03	21.12	23
3	64QAM	1	0	21.17	21.09	21.17	
3	64QAM	1	8	21.38	21.15	21.25	
3	64QAM	1	14	21.32	21.15	21.17	
3	64QAM	8	0	20.17	20.06	20.08	
3	64QAM	8	4	20.15	20.04	20.07	22
3	64QAM	8	7	20.21	20.05	20.10	
3	64QAM	15	0	20.19	20.06	20.06	
3	256QAM	1	0	18.08	18.09	18.10	
3	256QAM	1	8	18.16	18.11	18.25	
3	256QAM	1	14	18.32	18.08	18.04	20
3	256QAM	8	0	18.26	18.04	18.26	
3	256QAM	8	4	18.13	18.05	18.05	
3	256QAM	8	7	18.24	18.04	18.04	
3	256QAM	15	0	18.15	18.07	18.12	
Channel				26697	26865	27033	Tune-up limit (dBm)
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	23.15	23.10	23.11	25
1.4	QPSK	1	3	23.13	23.06	23.08	
1.4	QPSK	1	5	23.10	23.04	23.07	
1.4	QPSK	3	0	23.05	23.07	23.14	
1.4	QPSK	3	1	23.11	23.03	23.05	
1.4	QPSK	3	3	23.16	23.05	23.10	24
1.4	QPSK	6	0	22.23	22.14	22.10	
1.4	16QAM	1	0	22.34	22.17	22.28	
1.4	16QAM	1	3	22.53	22.32	22.36	
1.4	16QAM	1	5	22.48	22.24	22.24	
1.4	16QAM	3	0	22.35	22.27	22.27	24
1.4	16QAM	3	1	22.51	22.38	22.40	
1.4	16QAM	3	3	22.46	22.23	22.28	
1.4	16QAM	6	0	21.17	21.04	21.10	
1.4	64QAM	1	0	21.18	21.08	21.19	
1.4	64QAM	1	3	21.34	21.25	21.11	23
1.4	64QAM	1	5	21.36	21.07	21.14	
1.4	64QAM	3	0	21.24	21.07	21.06	

1.4	64QAM	3	1	21.18	21.16	21.09	
1.4	64QAM	3	3	21.21	21.05	21.15	
1.4	64QAM	6	0	20.12	20.09	20.08	
1.4	256QAM	1	0	18.10	18.05	18.03	20
1.4	256QAM	1	3	18.15	18.09	18.17	
1.4	256QAM	1	5	18.33	18.04	18.16	
1.4	256QAM	3	0	18.26	18.04	18.16	
1.4	256QAM	3	1	18.22	18.09	18.08	
1.4	256QAM	3	3	18.18	18.03	18.09	
1.4	256QAM	6	0	18.08	18.06	18.13	20

<LTE Band 30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				27710			
Frequency (MHz)				2310			
10	QPSK	1	0		22.74		23
10	QPSK	1	25		22.73		
10	QPSK	1	49		22.68		
10	QPSK	25	0		21.73		22
10	QPSK	25	12		21.68		
10	QPSK	25	25		21.54		
10	QPSK	50	0		21.71		22
10	16QAM	1	0		21.92		
10	16QAM	1	25		21.97		
10	16QAM	1	49		21.96		21
10	16QAM	25	0		20.76		
10	16QAM	25	12		20.68		
10	16QAM	25	25		20.54		21
10	16QAM	50	0		20.68		
10	64QAM	1	0		20.80		
10	64QAM	1	25		20.87		21
10	64QAM	1	49		20.83		
10	64QAM	25	0		19.70		
10	64QAM	25	12		19.69		20
10	64QAM	25	25		19.53		
10	64QAM	50	0		19.69		
10	256QAM	1	0		17.68		18
10	256QAM	1	25		17.69		
10	256QAM	1	49		17.63		
10	256QAM	25	0		17.68		18
10	256QAM	25	12		17.69		
10	256QAM	25	25		17.50		
10	256QAM	50	0		17.70		
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	22.69	22.64	22.69	23
5	QPSK	1	12	22.63	22.68	22.73	
5	QPSK	1	24	22.59	22.65	22.62	
5	QPSK	12	0	21.73	21.63	21.63	22
5	QPSK	12	7	21.61	21.66	21.63	
5	QPSK	12	13	21.47	21.52	21.44	
5	QPSK	25	0	21.69	21.62	21.63	
5	16QAM	1	0	21.89	21.91	21.83	22
5	16QAM	1	12	21.94	21.95	21.91	



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5	16QAM	1	24	21.91	21.87	21.88	21
5	16QAM	12	0	20.73	20.71	20.67	
5	16QAM	12	7	20.59	20.62	20.58	
5	16QAM	12	13	20.52	20.46	20.49	
5	16QAM	25	0	20.60	20.61	20.59	
5	64QAM	1	0	20.72	20.80	20.75	21
5	64QAM	1	12	20.80	20.78	20.82	
5	64QAM	1	24	20.74	20.78	20.74	
5	64QAM	12	0	19.70	19.65	19.62	20
5	64QAM	12	7	19.66	19.68	19.66	
5	64QAM	12	13	19.51	19.46	19.45	
5	64QAM	25	0	19.69	19.67	19.62	
5	256QAM	1	0	17.60	17.59	17.59	18
5	256QAM	1	12	17.63	17.62	17.61	
5	256QAM	1	24	17.58	17.53	17.59	
5	256QAM	12	0	17.59	17.67	17.66	18
5	256QAM	12	7	17.65	17.67	17.60	
5	256QAM	12	13	17.40	17.50	17.49	
5	256QAM	25	0	17.63	17.63	17.69	

<LTE Band 66_Main>

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	23.43	23.42	23.29	24
20	QPSK	1	49	23.41	23.28	23.26	
20	QPSK	1	99	23.25	23.12	23.12	
20	QPSK	50	0	22.41	22.36	22.32	23
20	QPSK	50	24	22.40	22.31	22.31	
20	QPSK	50	50	22.36	22.21	22.24	
20	QPSK	100	0	22.39	22.34	22.27	
20	16QAM	1	0	22.55	22.47	22.43	23
20	16QAM	1	49	22.64	22.49	22.42	
20	16QAM	1	99	22.50	22.34	22.24	
20	16QAM	50	0	21.32	21.26	21.24	22
20	16QAM	50	24	21.39	21.29	21.29	
20	16QAM	50	50	21.34	21.22	21.27	
20	16QAM	100	0	21.37	21.24	21.24	
20	64QAM	1	0	21.45	21.37	21.36	22
20	64QAM	1	49	21.55	21.40	21.40	
20	64QAM	1	99	21.36	21.24	21.24	
20	64QAM	50	0	20.32	20.23	20.22	21
20	64QAM	50	24	20.41	20.28	20.28	
20	64QAM	50	50	20.36	20.20	20.23	
20	64QAM	100	0	20.36	20.23	20.24	
20	256QAM	1	0	18.53	18.39	18.20	19
20	256QAM	1	49	18.46	18.33	18.28	
20	256QAM	1	99	18.33	18.16	18.09	
20	256QAM	50	0	18.40	18.26	18.27	19
20	256QAM	50	24	18.33	18.25	18.28	
20	256QAM	50	50	18.29	18.29	18.33	
20	256QAM	100	0	18.40	18.40	18.32	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	23.40	23.39	23.22	24



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15	QPSK	1	37	23.36	23.22	23.19	
15	QPSK	1	74	23.25	23.12	23.06	
15	QPSK	36	0	22.36	22.27	22.28	
15	QPSK	36	20	22.37	22.21	22.26	23
15	QPSK	36	39	22.35	22.17	22.15	
15	QPSK	75	0	22.36	22.33	22.23	
15	16QAM	1	0	22.54	22.41	22.42	23
15	16QAM	1	37	22.60	22.42	22.33	
15	16QAM	1	74	22.49	22.29	22.21	
15	16QAM	36	0	21.25	21.25	21.14	22
15	16QAM	36	20	21.34	21.25	21.20	
15	16QAM	36	39	21.25	21.15	21.23	
15	16QAM	75	0	21.33	21.18	21.17	22
15	64QAM	1	0	21.39	21.30	21.32	
15	64QAM	1	37	21.45	21.35	21.31	
15	64QAM	1	74	21.36	21.16	21.24	21
15	64QAM	36	0	20.30	20.17	20.18	
15	64QAM	36	20	20.39	20.28	20.20	
15	64QAM	36	39	20.34	20.18	20.19	19
15	64QAM	75	0	20.29	20.14	20.24	
15	256QAM	1	0	18.46	18.38	18.16	
15	256QAM	1	37	18.38	18.24	18.19	19
15	256QAM	1	74	18.27	18.13	18.00	
15	256QAM	36	0	18.40	18.21	18.21	
15	256QAM	36	20	18.31	18.23	18.23	19
15	256QAM	36	39	18.24	18.27	18.27	
15	256QAM	75	0	18.40	18.37	18.24	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	23.33	23.32	23.26	24
10	QPSK	1	25	23.33	23.22	23.20	
10	QPSK	1	49	23.25	23.08	23.06	
10	QPSK	25	0	22.33	22.26	22.30	23
10	QPSK	25	12	22.34	22.21	22.29	
10	QPSK	25	25	22.35	22.11	22.24	
10	QPSK	50	0	22.38	22.30	22.18	23
10	16QAM	1	0	22.50	22.47	22.38	
10	16QAM	1	25	22.64	22.45	22.36	
10	16QAM	1	49	22.43	22.32	22.15	22
10	16QAM	25	0	21.24	21.24	21.17	
10	16QAM	25	12	21.30	21.29	21.28	
10	16QAM	25	25	21.27	21.21	21.18	22
10	16QAM	50	0	21.37	21.21	21.23	
10	64QAM	1	0	21.44	21.32	21.36	
10	64QAM	1	25	21.49	21.40	21.35	21
10	64QAM	1	49	21.32	21.24	21.24	
10	64QAM	25	0	20.28	20.15	20.21	
10	64QAM	25	12	20.34	20.28	20.18	19
10	64QAM	25	25	20.30	20.11	20.17	
10	64QAM	50	0	20.30	20.23	20.21	
10	256QAM	1	0	18.47	18.39	18.13	19
10	256QAM	1	25	18.41	18.28	18.21	
10	256QAM	1	49	18.29	18.13	18.04	
10	256QAM	25	0	18.34	18.20	18.17	19
10	256QAM	25	12	18.31	18.22	18.26	
10	256QAM	25	25	18.19	18.28	18.23	



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10	256QAM	50	0	18.38	18.39	18.30	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	23.33	23.42	23.26	24
5	QPSK	1	12	23.35	23.22	23.24	
5	QPSK	1	24	23.17	23.08	23.09	
5	QPSK	12	0	22.32	22.29	22.32	23
5	QPSK	12	7	22.35	22.24	22.29	
5	QPSK	12	13	22.27	22.17	22.17	
5	QPSK	25	0	22.39	22.24	22.23	23
5	16QAM	1	0	22.48	22.45	22.33	
5	16QAM	1	12	22.60	22.44	22.40	
5	16QAM	1	24	22.50	22.27	22.24	22
5	16QAM	12	0	21.28	21.22	21.15	
5	16QAM	12	7	21.34	21.19	21.27	
5	16QAM	12	13	21.30	21.19	21.24	22
5	16QAM	25	0	21.33	21.21	21.19	
5	64QAM	1	0	21.38	21.30	21.34	
5	64QAM	1	12	21.50	21.36	21.32	21
5	64QAM	1	24	21.29	21.23	21.14	
5	64QAM	12	0	20.24	20.20	20.19	
5	64QAM	12	7	20.40	20.24	20.28	21
5	64QAM	12	13	20.28	20.14	20.17	
5	64QAM	25	0	20.27	20.22	20.14	
5	256QAM	1	0	18.53	18.34	18.16	19
5	256QAM	1	12	18.39	18.25	18.23	
5	256QAM	1	24	18.31	18.14	18.06	
5	256QAM	12	0	18.39	18.21	18.26	19
5	256QAM	12	7	18.30	18.15	18.18	
5	256QAM	12	13	18.23	18.24	18.25	
5	256QAM	25	0	18.31	18.32	18.28	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	23.33	23.34	23.24	24
3	QPSK	1	8	23.37	23.24	23.23	
3	QPSK	1	14	23.18	23.09	23.07	
3	QPSK	8	0	22.39	22.27	22.31	23
3	QPSK	8	4	22.40	22.27	22.24	
3	QPSK	8	7	22.36	22.13	22.21	
3	QPSK	15	0	22.38	22.33	22.20	23
3	16QAM	1	0	22.52	22.40	22.36	
3	16QAM	1	8	22.54	22.45	22.35	
3	16QAM	1	14	22.46	22.27	22.22	22
3	16QAM	8	0	21.25	21.20	21.24	
3	16QAM	8	4	21.35	21.28	21.20	
3	16QAM	8	7	21.25	21.22	21.18	22
3	16QAM	15	0	21.35	21.16	21.15	
3	64QAM	1	0	21.38	21.37	21.35	
3	64QAM	1	8	21.55	21.36	21.30	21
3	64QAM	1	14	21.32	21.15	21.21	
3	64QAM	8	0	20.32	20.17	20.18	
3	64QAM	8	4	20.41	20.22	20.23	21
3	64QAM	8	7	20.29	20.17	20.13	
3	64QAM	15	0	20.26	20.13	20.14	
3	256QAM	1	0	18.45	18.38	18.15	19
3	256QAM	1	8	18.44	18.28	18.24	

3	256QAM	1	14	18.32	18.09	18.03	19
3	256QAM	8	0	18.38	18.26	18.24	
3	256QAM	8	4	18.30	18.21	18.21	
3	256QAM	8	7	18.19	18.28	18.25	
3	256QAM	15	0	18.35	18.30	18.29	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	23.41	23.34	23.29	24
1.4	QPSK	1	3	23.38	23.18	23.22	
1.4	QPSK	1	5	23.19	23.02	23.06	
1.4	QPSK	3	0	23.32	23.22	23.18	
1.4	QPSK	3	1	23.22	23.02	23.03	
1.4	QPSK	3	3	23.31	23.05	23.05	23
1.4	QPSK	6	0	22.33	22.33	22.19	
1.4	16QAM	1	0	22.46	22.42	22.35	23
1.4	16QAM	1	3	22.59	22.43	22.39	
1.4	16QAM	1	5	22.43	22.24	22.24	
1.4	16QAM	3	0	22.30	22.16	22.14	
1.4	16QAM	3	1	22.35	22.27	22.24	
1.4	16QAM	3	3	22.49	22.42	22.42	22
1.4	16QAM	6	0	21.27	21.24	21.24	
1.4	64QAM	1	0	21.41	21.33	21.27	22
1.4	64QAM	1	3	21.47	21.40	21.34	
1.4	64QAM	1	5	21.32	21.21	21.15	
1.4	64QAM	3	0	21.34	21.16	21.18	
1.4	64QAM	3	1	21.36	21.29	21.26	
1.4	64QAM	3	3	21.45	21.35	21.30	21
1.4	64QAM	6	0	20.27	20.15	20.24	
1.4	256QAM	1	0	18.45	18.38	18.17	19
1.4	256QAM	1	3	18.43	18.26	18.28	
1.4	256QAM	1	5	18.30	18.08	18.08	
1.4	256QAM	3	0	18.37	18.22	18.27	
1.4	256QAM	3	1	18.32	18.21	18.24	
1.4	256QAM	3	3	18.24	18.19	18.32	19
1.4	256QAM	6	0	18.33	18.31	18.22	

<LTE Band 71_Main>

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	23.36	23.42	23.36	25
20	QPSK	1	49	23.32	23.35	23.37	
20	QPSK	1	99	23.26	23.25	23.23	
20	QPSK	50	0	22.32	22.52	22.40	24
20	QPSK	50	24	22.39	22.47	22.44	
20	QPSK	50	50	22.30	22.49	22.37	
20	QPSK	100	0	22.34	22.43	22.36	24
20	16QAM	1	0	22.56	22.47	22.51	
20	16QAM	1	49	22.69	22.71	22.66	
20	16QAM	1	99	22.70	22.58	22.63	23
20	16QAM	50	0	21.30	21.50	21.40	
20	16QAM	50	24	21.31	21.42	21.38	
20	16QAM	50	50	21.30	21.54	21.44	
20	16QAM	100	0	21.27	21.46	21.35	



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20	64QAM	1	0	21.50	21.41	21.46	23
20	64QAM	1	49	21.57	21.56	21.55	
20	64QAM	1	99	21.51	21.47	21.49	
20	64QAM	50	0	20.35	20.53	20.42	22
20	64QAM	50	24	20.35	20.48	20.41	
20	64QAM	50	50	20.30	20.56	20.40	
20	64QAM	100	0	20.32	20.54	20.35	20
20	256QAM	1	0	18.38	18.50	18.35	
20	256QAM	1	49	18.31	18.44	18.26	
20	256QAM	1	99	18.09	18.27	18.08	20
20	256QAM	50	0	18.26	18.40	18.19	
20	256QAM	50	24	18.18	18.24	18.15	
20	256QAM	50	50	18.21	18.26	18.24	20
20	256QAM	100	0	18.34	18.39	18.35	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	23.32	23.39	23.30	25
15	QPSK	1	37	23.22	23.28	23.27	
15	QPSK	1	74	23.18	23.15	23.14	
15	QPSK	36	0	22.25	22.42	22.36	24
15	QPSK	36	20	22.33	22.44	22.34	
15	QPSK	36	39	22.22	22.59	22.30	
15	QPSK	75	0	22.30	22.36	22.36	24
15	16QAM	1	0	22.46	22.37	22.50	
15	16QAM	1	37	22.61	22.69	22.63	
15	16QAM	1	74	22.70	22.49	22.59	23
15	16QAM	36	0	21.21	21.44	21.30	
15	16QAM	36	20	21.29	21.32	21.33	
15	16QAM	36	39	21.25	21.46	21.40	23
15	16QAM	75	0	21.21	21.45	21.26	
15	64QAM	1	0	21.47	21.34	21.46	
15	64QAM	1	37	21.50	21.56	21.45	23
15	64QAM	1	74	21.48	21.47	21.40	
15	64QAM	36	0	20.35	20.44	20.39	
15	64QAM	36	20	20.34	20.43	20.39	22
15	64QAM	36	39	20.23	20.53	20.31	
15	64QAM	75	0	20.30	20.51	20.30	
15	256QAM	1	0	18.34	18.48	18.31	20
15	256QAM	1	37	18.28	18.39	18.17	
15	256QAM	1	74	18.19	18.23	18.01	
15	256QAM	36	0	18.16	18.39	18.15	20
15	256QAM	36	20	18.09	18.21	18.05	
15	256QAM	36	39	18.19	18.18	18.22	
15	256QAM	75	0	18.28	18.33	18.32	20
Channel				133172	133297	133422	
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	23.32	23.35	23.31	25
10	QPSK	1	25	23.24	23.33	23.32	
10	QPSK	1	49	23.26	23.23	23.13	
10	QPSK	25	0	22.25	22.45	22.37	24
10	QPSK	25	12	22.33	22.44	22.36	
10	QPSK	25	25	22.22	22.49	22.30	
10	QPSK	50	0	22.29	22.39	22.30	24
10	16QAM	1	0	22.50	22.43	22.42	
10	16QAM	1	25	22.63	22.61	22.62	
10	16QAM	1	49	22.66	22.51	22.56	24



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10	16QAM	25	0	21.26	21.42	21.39	23
10	16QAM	25	12	21.24	21.41	21.38	
10	16QAM	25	25	21.25	21.45	21.43	
10	16QAM	50	0	21.23	21.46	21.28	
10	64QAM	1	0	21.48	21.35	21.44	23
10	64QAM	1	25	21.57	21.51	21.52	
10	64QAM	1	49	21.47	21.45	21.40	
10	64QAM	25	0	20.30	20.45	20.41	22
10	64QAM	25	12	20.27	20.48	20.41	
10	64QAM	25	25	20.24	20.55	20.40	
10	64QAM	50	0	20.29	20.51	20.33	
10	256QAM	1	0	18.32	18.40	18.34	20
10	256QAM	1	25	18.24	18.38	18.22	
10	256QAM	1	49	18.08	18.26	18.08	
10	256QAM	25	0	18.25	18.40	18.15	20
10	256QAM	25	12	18.14	18.19	18.05	
10	256QAM	25	25	18.17	18.25	18.22	
10	256QAM	50	0	18.27	18.38	18.34	
Channel				133147	133297	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	QPSK	1	0	23.34	23.40	23.35	25
5	QPSK	1	12	23.27	23.31	23.34	
5	QPSK	1	24	23.20	23.20	23.17	
5	QPSK	12	0	22.32	22.50	22.40	24
5	QPSK	12	7	22.31	22.40	22.34	
5	QPSK	12	13	22.23	22.54	22.28	
5	QPSK	25	0	22.26	22.39	22.29	
5	16QAM	1	0	22.50	22.45	22.51	24
5	16QAM	1	12	22.60	22.65	22.66	
5	16QAM	1	24	22.66	22.54	22.61	
5	16QAM	12	0	21.21	21.40	21.35	23
5	16QAM	12	7	21.25	21.38	21.32	
5	16QAM	12	13	21.26	21.53	21.40	
5	16QAM	25	0	21.23	21.36	21.27	
5	64QAM	1	0	21.48	21.34	21.45	23
5	64QAM	1	12	21.55	21.53	21.49	
5	64QAM	1	24	21.41	21.42	21.47	
5	64QAM	12	0	20.33	20.44	20.40	22
5	64QAM	12	7	20.28	20.40	20.33	
5	64QAM	12	13	20.20	20.47	20.35	
5	64QAM	25	0	20.24	20.50	20.25	
5	256QAM	1	0	18.33	18.48	18.27	20
5	256QAM	1	12	18.25	18.36	18.26	
5	256QAM	1	24	18.03	18.20	18.08	
5	256QAM	12	0	18.19	18.40	18.16	20
5	256QAM	12	7	18.09	18.23	18.08	
5	256QAM	12	13	18.14	18.20	18.15	
5	256QAM	25	0	18.33	18.32	18.30	



State 2(NB sensor on)

<LTE Band 2_Main>

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	17.62	17.41	17.42	18.5
20	QPSK	1	49	17.46	17.33	17.26	
20	QPSK	1	99	17.42	17.28	17.38	
20	QPSK	50	0	17.35	17.24	17.17	18.5
20	QPSK	50	24	17.21	17.10	17.16	
20	QPSK	50	50	17.21	17.03	17.14	
20	QPSK	100	0	17.27	17.18	17.11	
20	16QAM	1	0	17.47	17.30	17.31	18.5
20	16QAM	1	49	17.24	17.13	17.22	
20	16QAM	1	99	17.28	16.97	17.14	
20	16QAM	50	0	17.24	17.13	17.18	18.5
20	16QAM	50	24	17.19	17.08	17.17	
20	16QAM	50	50	17.21	17.05	17.14	
20	16QAM	100	0	17.11	16.98	16.96	
20	64QAM	1	0	17.21	17.09	17.12	18.5
20	64QAM	1	49	17.00	16.95	17.08	
20	64QAM	1	99	17.30	16.96	17.18	
20	64QAM	50	0	17.25	17.15	17.19	18.5
20	64QAM	50	24	17.22	17.11	17.16	
20	64QAM	50	50	17.22	17.06	17.15	
20	64QAM	100	0	17.29	16.94	17.19	
20	256QAM	1	0	17.25	16.89	17.08	18.5
20	256QAM	1	49	17.16	17.04	17.16	
20	256QAM	1	99	17.19	17.05	17.10	
20	256QAM	50	0	17.15	16.95	17.12	18.5
20	256QAM	50	24	17.02	16.94	16.88	
20	256QAM	50	50	17.13	17.07	17.08	
20	256QAM	100	0	16.98	16.91	17.01	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	17.56	17.35	17.37	18.5
15	QPSK	1	37	17.38	17.23	17.24	
15	QPSK	1	74	17.38	17.27	17.35	
15	QPSK	36	0	17.28	17.10	17.15	18.5
15	QPSK	36	20	17.15	17.03	17.14	
15	QPSK	36	39	17.12	16.93	17.13	
15	QPSK	75	0	17.23	17.09	17.11	
15	16QAM	1	0	17.47	17.25	17.30	18.5
15	16QAM	1	37	17.18	17.08	17.22	
15	16QAM	1	74	17.25	16.91	17.06	
15	16QAM	36	0	17.14	17.04	17.09	18.5
15	16QAM	36	20	17.12	17.02	17.15	
15	16QAM	36	39	17.11	16.97	17.14	
15	16QAM	75	0	17.06	16.94	16.92	
15	64QAM	1	0	17.16	17.00	17.06	18.5
15	64QAM	1	37	16.95	16.85	17.05	
15	64QAM	1	74	17.21	16.87	17.18	
15	64QAM	36	0	17.23	17.08	17.17	18.5
15	64QAM	36	20	17.19	17.01	17.06	
15	64QAM	36	39	17.19	17.00	17.07	



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15	64QAM	75	0	17.28	16.88	17.09	
15	256QAM	1	0	17.21	16.80	17.06	
15	256QAM	1	37	17.07	17.00	17.14	18.5
15	256QAM	1	74	17.10	17.05	17.08	
15	256QAM	36	0	17.07	16.89	17.09	
15	256QAM	36	20	16.95	16.87	16.82	18.5
15	256QAM	36	39	17.11	17.06	16.98	
15	256QAM	75	0	16.98	16.89	16.91	
Channel				18650	18900	19150	Tune-up limit
Frequency (MHz)				1855	1880	1905	(dBm)
10	QPSK	1	0	17.57	17.34	17.38	
10	QPSK	1	25	17.41	17.30	17.22	18.5
10	QPSK	1	49	17.39	17.26	17.29	
10	QPSK	25	0	17.35	17.10	17.11	
10	QPSK	25	12	17.21	17.07	17.12	18.5
10	QPSK	25	25	17.15	17.00	17.04	
10	QPSK	50	0	17.21	17.18	17.11	
10	16QAM	1	0	17.40	17.23	17.21	
10	16QAM	1	25	17.16	17.04	17.14	18.5
10	16QAM	1	49	17.25	16.89	17.06	
10	16QAM	25	0	17.18	17.08	17.15	
10	16QAM	25	12	17.13	17.02	17.07	18.5
10	16QAM	25	25	17.11	16.95	17.11	
10	16QAM	50	0	17.10	16.96	16.87	
10	64QAM	1	0	17.15	17.09	17.04	
10	64QAM	1	25	16.99	16.86	17.00	18.5
10	64QAM	1	49	17.24	16.90	17.13	
10	64QAM	25	0	17.16	17.07	17.19	
10	64QAM	25	12	17.14	17.10	17.08	18.5
10	64QAM	25	25	17.14	17.02	17.13	
10	64QAM	50	0	17.29	16.84	17.13	
10	256QAM	1	0	17.19	16.83	17.08	
10	256QAM	1	25	17.14	16.99	17.09	18.5
10	256QAM	1	49	17.13	16.96	17.07	
10	256QAM	25	0	17.11	16.91	17.08	
10	256QAM	25	12	16.92	16.87	16.81	18.5
10	256QAM	25	25	17.08	17.06	17.06	
10	256QAM	50	0	16.97	16.81	16.99	
Channel				18625	18900	19175	Tune-up limit
Frequency (MHz)				1852.5	1880	1907.5	(dBm)
5	QPSK	1	0	17.53	17.35	17.41	
5	QPSK	1	12	17.40	17.31	17.22	18.5
5	QPSK	1	24	17.32	17.23	17.32	
5	QPSK	12	0	17.30	17.11	17.08	
5	QPSK	12	7	17.14	17.08	17.15	18.5
5	QPSK	12	13	17.13	17.03	17.13	
5	QPSK	25	0	17.24	17.14	17.06	
5	16QAM	1	0	17.40	17.23	17.29	
5	16QAM	1	12	17.19	17.09	17.19	18.5
5	16QAM	1	24	17.24	16.96	17.13	
5	16QAM	12	0	17.16	17.07	17.10	
5	16QAM	12	7	17.16	17.04	17.08	18.5
5	16QAM	12	13	17.18	16.99	17.06	
5	16QAM	25	0	17.03	16.94	16.95	
5	64QAM	1	0	17.11	17.01	17.10	
5	64QAM	1	12	16.97	16.94	17.04	18.5



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5	64QAM	1	24	17.30	16.88	17.13	18.5
5	64QAM	12	0	17.19	17.08	17.09	
5	64QAM	12	7	17.12	17.04	17.12	
5	64QAM	12	13	17.14	17.05	17.07	
5	64QAM	25	0	17.29	16.93	17.17	
5	256QAM	1	0	17.15	16.80	17.08	18.5
5	256QAM	1	12	17.10	17.04	17.16	
5	256QAM	1	24	17.19	16.97	17.01	
5	256QAM	12	0	17.11	16.91	17.12	18.5
5	256QAM	12	7	16.93	16.89	16.79	
5	256QAM	12	13	17.04	17.01	17.02	
5	256QAM	25	0	16.96	16.91	16.99	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	17.58	17.38	17.32	18.5
3	QPSK	1	8	17.36	17.25	17.18	
3	QPSK	1	14	17.38	17.20	17.33	
3	QPSK	8	0	17.31	17.14	17.07	18.5
3	QPSK	8	4	17.11	17.01	17.13	
3	QPSK	8	7	17.13	16.97	17.11	
3	QPSK	15	0	17.24	17.13	17.09	
3	16QAM	1	0	17.39	17.23	17.26	18.5
3	16QAM	1	8	17.24	17.04	17.15	
3	16QAM	1	14	17.21	16.95	17.14	
3	16QAM	8	0	17.14	17.13	17.16	18.5
3	16QAM	8	4	17.12	16.98	17.16	
3	16QAM	8	7	17.16	17.02	17.07	
3	16QAM	15	0	17.07	16.96	16.86	
3	64QAM	1	0	17.12	17.06	17.04	18.5
3	64QAM	1	8	16.95	16.87	17.03	
3	64QAM	1	14	17.29	16.92	17.16	
3	64QAM	8	0	17.16	17.11	17.09	18.5
3	64QAM	8	4	17.22	17.09	17.09	
3	64QAM	8	7	17.21	17.01	17.14	
3	64QAM	15	0	17.21	16.84	17.12	
3	256QAM	1	0	17.21	16.79	17.03	18.5
3	256QAM	1	8	17.07	16.99	17.15	
3	256QAM	1	14	17.11	17.05	17.03	
3	256QAM	8	0	17.13	16.86	17.09	18.5
3	256QAM	8	4	17.00	16.87	16.79	
3	256QAM	8	7	17.06	16.99	17.06	
3	256QAM	15	0	16.93	16.83	16.91	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	17.57	17.37	17.35	18.5
1.4	QPSK	1	3	17.40	17.29	17.16	
1.4	QPSK	1	5	17.32	17.21	17.34	
1.4	QPSK	3	0	17.30	17.12	17.07	
1.4	QPSK	3	1	17.18	17.09	17.11	
1.4	QPSK	3	3	17.15	17.00	17.08	
1.4	QPSK	6	0	17.25	17.09	17.10	18.5
1.4	16QAM	1	0	17.46	17.27	17.30	18.5
1.4	16QAM	1	3	17.17	17.13	17.16	
1.4	16QAM	1	5	17.18	16.94	17.08	
1.4	16QAM	3	0	17.18	17.04	17.09	
1.4	16QAM	3	1	17.09	17.06	17.14	



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1.4	16QAM	3	3	17.20	17.02	17.11	
1.4	16QAM	6	0	17.05	16.92	16.95	18.5
1.4	64QAM	1	0	17.19	17.01	17.07	18.5
1.4	64QAM	1	3	16.95	16.95	17.01	
1.4	64QAM	1	5	17.29	16.88	17.09	
1.4	64QAM	3	0	17.24	17.07	17.14	
1.4	64QAM	3	1	17.22	17.05	17.11	
1.4	64QAM	3	3	17.16	17.05	17.06	18.5
1.4	64QAM	6	0	17.22	16.89	17.17	
1.4	256QAM	1	0	17.16	16.83	17.08	
1.4	256QAM	1	3	17.11	16.99	17.08	
1.4	256QAM	1	5	17.15	17.01	17.04	
1.4	256QAM	3	0	17.08	16.86	17.07	18.5
1.4	256QAM	3	1	16.94	16.84	16.83	
1.4	256QAM	3	3	17.08	17.02	17.06	
1.4	256QAM	6	0	16.93	16.82	16.93	

<LTE Band 4_Main>

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	14.75	14.80	14.76	15.5
20	QPSK	1	49	14.67	14.63	14.54	
20	QPSK	1	99	14.38	14.51	14.43	
20	QPSK	50	0	14.46	14.64	14.56	15.5
20	QPSK	50	24	14.43	14.38	14.38	
20	QPSK	50	50	14.37	14.32	14.34	
20	QPSK	100	0	14.53	14.62	14.54	
20	16QAM	1	0	14.59	14.60	14.64	15.5
20	16QAM	1	49	14.50	14.51	14.43	
20	16QAM	1	99	14.37	14.44	14.35	
20	16QAM	50	0	14.46	14.41	14.39	15.5
20	16QAM	50	24	14.40	14.33	14.32	
20	16QAM	50	50	14.42	14.39	14.36	
20	16QAM	100	0	14.39	14.44	14.37	
20	64QAM	1	0	14.51	14.47	14.48	15.5
20	64QAM	1	49	14.30	14.26	14.25	
20	64QAM	1	99	14.36	14.45	14.35	
20	64QAM	50	0	14.51	14.47	14.48	15.5
20	64QAM	50	24	14.44	14.44	14.36	
20	64QAM	50	50	14.39	14.38	14.37	
20	64QAM	100	0	14.73	14.69	14.67	
20	256QAM	1	0	14.28	14.32	14.29	15.5
20	256QAM	1	49	14.33	14.32	14.33	
20	256QAM	1	99	14.26	14.35	14.37	
20	256QAM	50	0	14.41	14.44	14.46	15.5
20	256QAM	50	24	14.29	14.23	14.27	
20	256QAM	50	50	14.33	14.42	14.33	
20	256QAM	100	0	14.39	14.36	14.35	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	14.67	14.70	14.72	15.5
15	QPSK	1	37	14.59	14.57	14.46	
15	QPSK	1	74	14.31	14.41	14.34	
15	QPSK	36	0	14.45	14.47	14.45	15.5



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15	QPSK	36	20	14.35	14.28	14.30	
15	QPSK	36	39	14.37	14.30	14.25	
15	QPSK	75	0	14.53	14.56	14.48	
15	16QAM	1	0	14.49	14.51	14.62	15.5
15	16QAM	1	37	14.41	14.49	14.33	
15	16QAM	1	74	14.33	14.34	14.32	
15	16QAM	36	0	14.39	14.33	14.36	15.5
15	16QAM	36	20	14.34	14.30	14.27	
15	16QAM	36	39	14.40	14.39	14.32	
15	16QAM	75	0	14.35	14.44	14.36	15.5
15	64QAM	1	0	14.45	14.39	14.41	
15	64QAM	1	37	14.21	14.22	14.22	
15	64QAM	1	74	14.27	14.43	14.30	15.5
15	64QAM	36	0	14.45	14.42	14.39	
15	64QAM	36	20	14.43	14.36	14.34	
15	64QAM	36	39	14.33	14.28	14.30	15.5
15	64QAM	75	0	14.73	14.62	14.60	
15	256QAM	1	0	14.24	14.32	14.29	
15	256QAM	1	37	14.27	14.22	14.28	15.5
15	256QAM	1	74	14.26	14.30	14.27	
15	256QAM	36	0	14.37	14.37	14.46	
15	256QAM	36	20	14.20	14.18	14.23	15.5
15	256QAM	36	39	14.30	14.35	14.30	
15	256QAM	75	0	14.32	14.28	14.33	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	14.72	14.75	14.70	15.5
10	QPSK	1	25	14.62	14.63	14.51	
10	QPSK	1	49	14.29	14.43	14.41	
10	QPSK	25	0	14.44	14.50	14.45	15.5
10	QPSK	25	12	14.33	14.30	14.35	
10	QPSK	25	25	14.28	14.31	14.30	
10	QPSK	50	0	14.49	14.52	14.46	15.5
10	16QAM	1	0	14.56	14.52	14.61	
10	16QAM	1	25	14.41	14.49	14.33	
10	16QAM	1	49	14.34	14.40	14.30	15.5
10	16QAM	25	0	14.43	14.41	14.39	
10	16QAM	25	12	14.34	14.25	14.23	
10	16QAM	25	25	14.36	14.37	14.33	15.5
10	16QAM	50	0	14.35	14.43	14.27	
10	64QAM	1	0	14.43	14.42	14.43	
10	64QAM	1	25	14.20	14.18	14.19	15.5
10	64QAM	1	49	14.26	14.38	14.25	
10	64QAM	25	0	14.50	14.38	14.42	
10	64QAM	25	12	14.34	14.34	14.31	15.5
10	64QAM	25	25	14.36	14.33	14.32	
10	64QAM	50	0	14.71	14.68	14.58	
10	256QAM	1	0	14.19	14.29	14.25	15.5
10	256QAM	1	25	14.32	14.31	14.32	
10	256QAM	1	49	14.20	14.29	14.31	
10	256QAM	25	0	14.31	14.38	14.44	15.5
10	256QAM	25	12	14.23	14.22	14.20	
10	256QAM	25	25	14.31	14.35	14.30	
10	256QAM	50	0	14.38	14.26	14.27	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	



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5	QPSK	1	0	14.70	14.77	14.73	15.5
5	QPSK	1	12	14.57	14.61	14.48	
5	QPSK	1	24	14.32	14.48	14.33	
5	QPSK	12	0	14.46	14.51	14.44	15.5
5	QPSK	12	7	14.43	14.30	14.37	
5	QPSK	12	13	14.33	14.23	14.30	
5	QPSK	25	0	14.45	14.61	14.53	15.5
5	16QAM	1	0	14.51	14.59	14.63	
5	16QAM	1	12	14.47	14.48	14.43	
5	16QAM	1	24	14.32	14.34	14.25	15.5
5	16QAM	12	0	14.42	14.38	14.37	
5	16QAM	12	7	14.35	14.28	14.30	
5	16QAM	12	13	14.41	14.34	14.28	15.5
5	16QAM	25	0	14.29	14.36	14.32	
5	64QAM	1	0	14.48	14.37	14.38	
5	64QAM	1	12	14.30	14.22	14.20	15.5
5	64QAM	1	24	14.29	14.37	14.32	
5	64QAM	12	0	14.45	14.46	14.41	
5	64QAM	12	7	14.38	14.39	14.26	15.5
5	64QAM	12	13	14.29	14.32	14.33	
5	64QAM	25	0	14.73	14.61	14.67	
5	256QAM	1	0	14.18	14.28	14.22	15.5
5	256QAM	1	12	14.27	14.23	14.28	
5	256QAM	1	24	14.21	14.31	14.37	
5	256QAM	12	0	14.37	14.44	14.42	15.5
5	256QAM	12	7	14.24	14.13	14.27	
5	256QAM	12	13	14.26	14.37	14.27	
5	256QAM	25	0	14.34	14.30	14.25	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	14.71	14.77	14.70	15.5
3	QPSK	1	8	14.67	14.54	14.52	
3	QPSK	1	14	14.30	14.45	14.35	
3	QPSK	8	0	14.36	14.52	14.39	15.5
3	QPSK	8	4	14.39	14.29	14.30	
3	QPSK	8	7	14.35	14.29	14.26	
3	QPSK	15	0	14.48	14.55	14.50	15.5
3	16QAM	1	0	14.54	14.54	14.56	
3	16QAM	1	8	14.45	14.48	14.33	
3	16QAM	1	14	14.36	14.41	14.29	15.5
3	16QAM	8	0	14.40	14.31	14.36	
3	16QAM	8	4	14.38	14.29	14.22	
3	16QAM	8	7	14.34	14.36	14.28	15.5
3	16QAM	15	0	14.31	14.40	14.34	
3	64QAM	1	0	14.41	14.41	14.40	
3	64QAM	1	8	14.27	14.19	14.22	15.5
3	64QAM	1	14	14.31	14.36	14.25	
3	64QAM	8	0	14.51	14.44	14.45	
3	64QAM	8	4	14.38	14.36	14.26	15.5
3	64QAM	8	7	14.39	14.28	14.30	
3	64QAM	15	0	14.67	14.59	14.58	
3	256QAM	1	0	14.18	14.31	14.29	15.5
3	256QAM	1	8	14.32	14.26	14.32	
3	256QAM	1	14	14.26	14.28	14.33	
3	256QAM	8	0	14.33	14.39	14.46	15.5
3	256QAM	8	4	14.24	14.20	14.24	

3	256QAM	8	7	14.26	14.39	14.30	
3	256QAM	15	0	14.38	14.34	14.34	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	14.75	14.71	14.71	15.5
1.4	QPSK	1	3	14.57	14.55	14.45	
1.4	QPSK	1	5	14.31	14.41	14.33	
1.4	QPSK	3	0	14.39	14.45	14.36	
1.4	QPSK	3	1	14.39	14.29	14.38	
1.4	QPSK	3	3	14.31	14.24	14.33	
1.4	QPSK	6	0	14.44	14.54	14.48	15.5
1.4	16QAM	1	0	14.50	14.53	14.63	15.5
1.4	16QAM	1	3	14.50	14.47	14.41	
1.4	16QAM	1	5	14.35	14.34	14.30	
1.4	16QAM	3	0	14.44	14.33	14.30	
1.4	16QAM	3	1	14.32	14.24	14.32	
1.4	16QAM	3	3	14.36	14.32	14.26	
1.4	16QAM	6	0	14.38	14.39	14.30	15.5
1.4	64QAM	1	0	14.47	14.45	14.42	15.5
1.4	64QAM	1	3	14.24	14.19	14.22	
1.4	64QAM	1	5	14.33	14.38	14.28	
1.4	64QAM	3	0	14.47	14.46	14.48	
1.4	64QAM	3	1	14.43	14.42	14.27	
1.4	64QAM	3	3	14.32	14.35	14.32	
1.4	64QAM	6	0	14.69	14.64	14.66	15.5
1.4	256QAM	1	0	14.22	14.29	14.28	15.5
1.4	256QAM	1	3	14.23	14.24	14.28	
1.4	256QAM	1	5	14.20	14.35	14.36	
1.4	256QAM	3	0	14.38	14.40	14.36	
1.4	256QAM	3	1	14.20	14.21	14.19	
1.4	256QAM	3	3	14.27	14.34	14.33	
1.4	256QAM	6	0	14.35	14.27	14.29	15.5

<LTE Band 5_Main>

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	21.51	21.52	21.49	22
10	QPSK	1	25	21.49	21.50	21.29	
10	QPSK	1	49	21.39	21.45	21.30	
10	QPSK	25	0	21.32	21.40	21.31	22
10	QPSK	25	12	21.22	21.31	21.12	
10	QPSK	25	25	21.13	21.28	21.13	
10	QPSK	50	0	21.20	21.22	21.09	22
10	16QAM	1	0	21.27	21.34	21.16	
10	16QAM	1	25	21.37	21.30	21.17	
10	16QAM	1	49	21.34	21.22	21.11	22
10	16QAM	25	0	21.15	21.18	21.04	
10	16QAM	25	12	21.26	21.16	21.07	
10	16QAM	25	25	21.25	21.14	21.05	22
10	16QAM	50	0	21.19	21.11	21.00	
10	64QAM	1	0	21.12	21.13	21.03	
10	64QAM	1	25	21.16	21.10	20.96	22
10	64QAM	1	49	21.13	21.04	20.97	



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10	64QAM	25	0	20.18	20.17	20.11	22
10	64QAM	25	12	20.19	20.10	20.16	
10	64QAM	25	25	20.18	20.09	20.12	
10	64QAM	50	0	20.21	20.11	20.10	
10	256QAM	1	0	18.40	18.52	18.46	20
10	256QAM	1	25	18.56	18.60	18.60	
10	256QAM	1	49	18.59	18.31	18.39	
10	256QAM	25	0	18.58	18.47	18.59	20
10	256QAM	25	12	18.48	18.71	18.43	
10	256QAM	25	25	18.44	18.37	18.47	
10	256QAM	50	0	18.35	18.48	18.61	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	21.49	21.45	21.30	22
5	QPSK	1	12	21.48	21.46	21.23	
5	QPSK	1	24	21.31	21.41	21.20	
5	QPSK	12	0	21.13	21.26	21.04	22
5	QPSK	12	7	21.16	21.27	21.09	
5	QPSK	12	13	21.12	21.18	21.03	
5	QPSK	25	0	21.20	21.12	21.06	
5	16QAM	1	0	21.18	21.27	21.15	22
5	16QAM	1	12	21.31	21.25	21.07	
5	16QAM	1	24	21.28	21.13	21.03	
5	16QAM	12	0	21.05	21.08	20.99	22
5	16QAM	12	7	21.22	21.06	21.04	
5	16QAM	12	13	21.17	21.05	20.98	
5	16QAM	25	0	21.09	21.05	20.97	
5	64QAM	1	0	21.10	21.11	20.97	22
5	64QAM	1	12	21.08	21.10	20.90	
5	64QAM	1	24	21.09	20.97	20.89	
5	64QAM	12	0	20.18	20.14	20.02	22
5	64QAM	12	7	20.13	20.00	20.06	
5	64QAM	12	13	20.13	20.09	20.12	
5	64QAM	25	0	20.16	20.03	20.03	
5	256QAM	1	0	18.38	18.46	18.39	20
5	256QAM	1	12	18.52	18.57	18.50	
5	256QAM	1	24	18.59	18.29	18.37	
5	256QAM	12	0	18.49	18.45	18.55	20
5	256QAM	12	7	18.39	18.65	18.34	
5	256QAM	12	13	18.42	18.37	18.45	
5	256QAM	25	0	18.33	18.46	18.51	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	21.42	21.51	21.39	22
3	QPSK	1	8	21.48	21.47	21.24	
3	QPSK	1	14	21.35	21.44	21.28	
3	QPSK	8	0	21.15	21.30	21.04	22
3	QPSK	8	4	21.14	21.25	21.08	
3	QPSK	8	7	21.06	21.23	21.08	
3	QPSK	15	0	21.12	21.04	21.01	
3	16QAM	1	0	21.18	21.34	21.12	22
3	16QAM	1	8	21.37	21.28	21.07	
3	16QAM	1	14	21.28	21.19	21.08	
3	16QAM	8	0	21.14	21.13	20.97	22
3	16QAM	8	4	21.22	21.12	21.07	
3	16QAM	8	7	21.17	21.09	21.01	



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3	16QAM	15	0	21.14	21.09	20.98	
3	64QAM	1	0	21.03	21.10	20.93	
3	64QAM	1	8	21.14	21.02	20.95	22
3	64QAM	1	14	21.08	21.00	20.88	
3	64QAM	8	0	20.14	20.07	20.01	
3	64QAM	8	4	20.13	20.07	20.14	22
3	64QAM	8	7	20.16	20.04	20.07	
3	64QAM	15	0	20.11	20.07	20.03	
3	256QAM	1	0	18.38	18.43	18.46	20
3	256QAM	1	8	18.49	18.50	18.50	
3	256QAM	1	14	18.50	18.30	18.34	
3	256QAM	8	0	18.58	18.47	18.57	20
3	256QAM	8	4	18.45	18.67	18.35	
3	256QAM	8	7	18.34	18.36	18.45	
3	256QAM	15	0	18.32	18.38	18.51	
Channel				20407	20525	20643	Tune-up limit
Frequency (MHz)				824.7	836.5	848.3	(dBm)
1.4	QPSK	1	0	21.49	21.45	21.33	22
1.4	QPSK	1	3	21.41	21.50	21.19	
1.4	QPSK	1	5	21.31	21.38	21.30	
1.4	QPSK	3	0	21.21	21.34	21.24	
1.4	QPSK	3	1	21.41	21.43	21.22	
1.4	QPSK	3	3	21.34	21.44	21.32	
1.4	QPSK	6	0	21.20	21.29	21.19	22
1.4	16QAM	1	0	21.22	21.26	21.14	22
1.4	16QAM	1	3	21.37	21.29	21.10	
1.4	16QAM	1	5	21.29	21.12	21.01	
1.4	16QAM	3	0	21.11	21.10	21.04	
1.4	16QAM	3	1	21.26	21.09	21.00	
1.4	16QAM	3	3	21.19	21.13	21.02	
1.4	16QAM	6	0	21.19	21.09	20.90	22
1.4	64QAM	1	0	21.09	21.04	20.96	22
1.4	64QAM	1	3	21.16	21.03	20.91	
1.4	64QAM	1	5	21.13	20.98	20.87	
1.4	64QAM	3	0	21.11	21.01	20.94	
1.4	64QAM	3	1	21.18	21.08	20.94	
1.4	64QAM	3	3	21.12	21.06	20.92	
1.4	64QAM	6	0	20.11	20.05	20.10	22
1.4	256QAM	1	0	18.39	18.42	18.39	20
1.4	256QAM	1	3	18.52	18.59	18.54	
1.4	256QAM	1	5	18.50	18.24	18.33	
1.4	256QAM	3	0	18.56	18.44	18.57	
1.4	256QAM	3	1	18.45	18.67	18.41	
1.4	256QAM	3	3	18.36	18.29	18.41	
1.4	256QAM	6	0	18.25	18.39	18.60	20



<LTE Band 7_Main>

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	16.18	16.27	16.31	17
20	QPSK	1	49	16.16	16.22	16.30	
20	QPSK	1	99	15.78	15.91	16.01	
20	QPSK	50	0	15.99	15.96	16.04	17
20	QPSK	50	24	15.95	16.03	16.01	
20	QPSK	50	50	15.84	15.92	16.02	
20	QPSK	100	0	15.82	15.88	15.87	
20	16QAM	1	0	16.07	16.12	16.18	17
20	16QAM	1	49	16.04	16.10	16.18	
20	16QAM	1	99	15.81	15.91	15.97	
20	16QAM	50	0	15.89	15.96	16.04	17
20	16QAM	50	24	15.94	16.02	16.10	
20	16QAM	50	50	15.84	15.95	16.02	
20	16QAM	100	0	15.68	15.67	15.75	
20	64QAM	1	0	15.89	15.94	15.96	17
20	64QAM	1	49	15.85	15.94	16.01	
20	64QAM	1	99	15.79	15.89	16.02	
20	64QAM	50	0	15.91	15.97	16.04	17
20	64QAM	50	24	15.96	16.03	16.11	
20	64QAM	50	50	15.88	15.95	16.04	
20	64QAM	100	0	15.95	15.99	16.02	
20	256QAM	1	0	15.87	16.00	16.06	17
20	256QAM	1	49	15.82	15.92	16.01	
20	256QAM	1	99	15.58	15.64	15.69	
20	256QAM	50	0	15.89	15.88	15.86	17
20	256QAM	50	24	15.81	15.88	15.93	
20	256QAM	50	50	15.74	15.85	15.99	
20	256QAM	100	0	15.87	15.89	16.03	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	16.09	16.20	16.25	17
15	QPSK	1	37	16.14	16.15	16.20	
15	QPSK	1	74	15.73	15.88	15.91	
15	QPSK	36	0	15.79	15.96	16.02	17
15	QPSK	36	20	15.91	15.99	16.01	
15	QPSK	36	39	15.80	15.91	15.92	
15	QPSK	75	0	15.80	15.84	15.82	
15	16QAM	1	0	15.98	16.10	16.17	17
15	16QAM	1	37	15.99	16.09	16.17	
15	16QAM	1	74	15.73	15.84	15.94	
15	16QAM	36	0	15.80	15.86	16.04	17
15	16QAM	36	20	15.87	15.95	16.09	
15	16QAM	36	39	15.74	15.91	15.96	
15	16QAM	75	0	15.60	15.62	15.72	
15	64QAM	1	0	15.81	15.88	15.90	17
15	64QAM	1	37	15.81	15.94	16.01	
15	64QAM	1	74	15.72	15.80	15.92	
15	64QAM	36	0	15.90	15.95	15.97	17
15	64QAM	36	20	15.91	16.02	16.06	
15	64QAM	36	39	15.81	15.85	15.94	
15	64QAM	75	0	15.89	15.91	15.96	



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15	256QAM	1	0	15.79	16.00	16.04	17
15	256QAM	1	37	15.77	15.91	15.96	
15	256QAM	1	74	15.54	15.60	15.63	
15	256QAM	36	0	15.79	15.83	15.82	17
15	256QAM	36	20	15.80	15.86	15.85	
15	256QAM	36	39	15.64	15.83	15.89	
15	256QAM	75	0	15.79	15.81	15.96	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	16.14	16.22	16.29	17
10	QPSK	1	25	16.06	16.14	16.23	
10	QPSK	1	49	15.75	15.81	15.93	
10	QPSK	25	0	15.79	15.90	16.00	17
10	QPSK	25	12	15.93	16.03	16.01	
10	QPSK	25	25	15.80	15.86	16.01	
10	QPSK	50	0	15.82	15.81	15.77	
10	16QAM	1	0	16.06	16.09	16.16	17
10	16QAM	1	25	15.96	16.09	16.14	
10	16QAM	1	49	15.73	15.89	15.91	
10	16QAM	25	0	15.87	15.86	16.03	17
10	16QAM	25	12	15.91	15.93	16.09	
10	16QAM	25	25	15.74	15.86	15.93	
10	16QAM	50	0	15.66	15.57	15.66	
10	64QAM	1	0	15.84	15.93	15.95	17
10	64QAM	1	25	15.75	15.87	15.98	
10	64QAM	1	49	15.70	15.89	16.00	
10	64QAM	25	0	15.91	15.91	15.95	17
10	64QAM	25	12	15.90	16.00	16.10	
10	64QAM	25	25	15.85	15.89	15.98	
10	64QAM	50	0	15.94	15.99	15.95	
10	256QAM	1	0	15.87	15.96	15.96	17
10	256QAM	1	25	15.75	15.89	15.94	
10	256QAM	1	49	15.48	15.56	15.65	
10	256QAM	25	0	15.82	15.80	15.84	17
10	256QAM	25	12	15.77	15.88	15.89	
10	256QAM	25	25	15.72	15.77	15.92	
10	256QAM	50	0	15.87	15.80	16.03	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	16.16	16.21	16.27	17
5	QPSK	1	12	16.12	16.18	16.29	
5	QPSK	1	24	15.73	15.81	15.96	
5	QPSK	12	0	15.88	15.89	15.98	17
5	QPSK	12	7	15.92	16.03	15.99	
5	QPSK	12	13	15.74	15.91	15.99	
5	QPSK	25	0	15.82	15.86	15.78	
5	16QAM	1	0	16.01	16.02	16.13	17
5	16QAM	1	12	15.96	16.05	16.16	
5	16QAM	1	24	15.78	15.90	15.87	
5	16QAM	12	0	15.82	15.87	16.00	17
5	16QAM	12	7	15.92	15.93	16.04	
5	16QAM	12	13	15.81	15.86	15.97	
5	16QAM	25	0	15.64	15.63	15.72	
5	64QAM	1	0	15.87	15.89	15.94	17
5	64QAM	1	12	15.85	15.92	16.00	
5	64QAM	1	24	15.75	15.81	15.98	



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5	64QAM	12	0	15.89	15.90	16.00	17
5	64QAM	12	7	15.89	16.00	16.02	
5	64QAM	12	13	15.88	15.88	16.03	
5	64QAM	25	0	15.92	15.92	16.02	
5	256QAM	1	0	15.85	15.91	15.96	17
5	256QAM	1	12	15.79	15.84	15.97	
5	256QAM	1	24	15.48	15.59	15.69	
5	256QAM	12	0	15.89	15.78	15.86	17
5	256QAM	12	7	15.75	15.87	15.92	
5	256QAM	12	13	15.71	15.77	15.99	
5	256QAM	25	0	15.84	15.83	16.02	

<LTE Band 12_Main>

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	22.15	22.21	22.16	23
10	QPSK	1	25	22.20	22.12	22.12	
10	QPSK	1	49	22.05	22.09	22.18	
10	QPSK	25	0	21.95	21.96	21.92	23
10	QPSK	25	12	21.91	21.84	21.89	
10	QPSK	25	25	21.91	21.89	21.84	
10	QPSK	50	0	21.84	21.88	21.87	23
10	16QAM	1	0	21.81	21.79	21.82	
10	16QAM	1	25	21.84	21.89	21.84	
10	16QAM	1	49	21.85	21.85	21.84	23
10	16QAM	25	0	21.20	21.06	21.09	
10	16QAM	25	12	21.20	21.11	21.18	
10	16QAM	25	25	21.18	21.12	21.18	23
10	16QAM	50	0	21.15	21.08	21.19	
10	64QAM	1	0	21.25	21.24	21.22	23
10	64QAM	1	25	21.33	21.29	21.32	
10	64QAM	1	49	21.22	21.23	21.32	
10	64QAM	25	0	20.18	20.00	20.03	22
10	64QAM	25	12	20.12	20.07	20.10	
10	64QAM	25	25	20.20	20.12	20.10	
10	64QAM	50	0	20.13	20.05	20.19	20
10	256QAM	1	0	18.07	18.10	18.20	
10	256QAM	1	25	18.13	18.18	18.30	
10	256QAM	1	49	18.03	18.15	18.20	20
10	256QAM	25	0	18.09	18.20	18.17	
10	256QAM	25	12	18.17	18.08	18.22	
10	256QAM	25	25	18.27	18.08	18.16	23
10	256QAM	50	0	18.16	18.18	18.30	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	22.07	22.19	22.14	23
5	QPSK	1	12	22.11	22.09	22.02	
5	QPSK	1	24	21.96	22.03	22.09	
5	QPSK	12	0	21.80	21.90	21.72	23
5	QPSK	12	7	21.83	21.75	21.88	
5	QPSK	12	13	21.89	21.85	21.82	
5	QPSK	25	0	21.78	21.88	21.77	23
5	16QAM	1	0	21.77	21.77	21.74	
5	16QAM	1	12	21.78	21.84	21.84	



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5	16QAM	1	24	21.76	21.77	21.76	23
5	16QAM	12	0	21.14	21.00	21.04	
5	16QAM	12	7	21.11	21.03	21.14	
5	16QAM	12	13	21.10	21.04	21.11	
5	16QAM	25	0	21.06	21.05	21.13	23
5	64QAM	1	0	21.22	21.19	21.22	
5	64QAM	1	12	21.33	21.27	21.30	
5	64QAM	1	24	21.14	21.16	21.27	
5	64QAM	12	0	20.13	19.98	20.03	22
5	64QAM	12	7	20.03	19.97	20.05	
5	64QAM	12	13	20.11	20.07	20.00	
5	64QAM	25	0	20.06	20.01	20.11	
5	256QAM	1	0	18.07	18.03	18.20	20
5	256QAM	1	12	18.05	18.15	18.23	
5	256QAM	1	24	18.02	18.09	18.14	
5	256QAM	12	0	18.01	18.18	18.08	
5	256QAM	12	7	18.11	18.02	18.14	20
5	256QAM	12	13	18.20	18.01	18.14	
5	256QAM	25	0	18.14	18.10	18.28	
Channel				23025	23095	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	22.14	22.11	22.14	23
3	QPSK	1	8	22.10	22.08	22.10	
3	QPSK	1	14	21.99	22.09	22.11	
3	QPSK	8	0	21.89	21.91	21.76	23
3	QPSK	8	4	21.87	21.79	21.88	
3	QPSK	8	7	21.87	21.88	21.74	
3	QPSK	15	0	21.74	21.88	21.83	
3	16QAM	1	0	21.80	21.73	21.73	23
3	16QAM	1	8	21.80	21.86	21.75	
3	16QAM	1	14	21.85	21.82	21.83	
3	16QAM	8	0	21.17	20.98	21.05	23
3	16QAM	8	4	21.19	21.01	21.17	
3	16QAM	8	7	21.15	21.07	21.14	
3	16QAM	15	0	21.15	20.98	21.11	
3	64QAM	1	0	21.25	21.20	21.16	23
3	64QAM	1	8	21.29	21.26	21.25	
3	64QAM	1	14	21.12	21.17	21.29	
3	64QAM	8	0	20.18	19.96	19.95	22
3	64QAM	8	4	20.09	19.99	20.02	
3	64QAM	8	7	20.11	20.10	20.03	
3	64QAM	15	0	20.09	19.99	20.13	
3	256QAM	1	0	18.02	18.05	18.20	20
3	256QAM	1	8	18.08	18.09	18.28	
3	256QAM	1	14	17.98	18.12	18.12	
3	256QAM	8	0	18.01	18.14	18.07	20
3	256QAM	8	4	18.10	17.99	18.16	
3	256QAM	8	7	18.19	18.00	18.11	
3	256QAM	15	0	18.16	18.13	18.23	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	22.12	22.14	22.14	23
1.4	QPSK	1	3	22.18	22.12	22.10	
1.4	QPSK	1	5	22.12	22.07	22.15	
1.4	QPSK	3	0	22.15	22.03	22.09	
1.4	QPSK	3	1	22.02	22.07	22.13	

1.4	QPSK	3	3	21.82	21.80	21.84	
1.4	QPSK	6	0	21.78	21.84	21.86	23
1.4	16QAM	1	0	21.75	21.73	21.79	23
1.4	16QAM	1	3	21.82	21.81	21.75	
1.4	16QAM	1	5	21.79	21.79	21.84	
1.4	16QAM	3	0	21.81	21.81	21.88	
1.4	16QAM	3	1	21.85	21.86	21.77	
1.4	16QAM	3	3	21.84	21.86	21.84	
1.4	16QAM	6	0	21.10	21.05	21.12	23
1.4	64QAM	1	0	21.16	21.20	21.20	23
1.4	64QAM	1	3	21.24	21.24	21.32	
1.4	64QAM	1	5	21.14	21.20	21.30	
1.4	64QAM	3	0	21.14	21.05	21.06	
1.4	64QAM	3	1	21.17	21.08	21.10	
1.4	64QAM	3	3	21.12	21.03	21.08	
1.4	64QAM	6	0	20.04	20.03	20.17	22
1.4	256QAM	1	0	17.97	18.05	18.19	20
1.4	256QAM	1	3	18.05	18.16	18.23	
1.4	256QAM	1	5	17.94	18.11	18.15	
1.4	256QAM	3	0	18.01	18.13	18.17	
1.4	256QAM	3	1	18.16	17.98	18.15	
1.4	256QAM	3	3	18.27	18.04	18.12	
1.4	256QAM	6	0	18.15	18.14	18.27	20

<LTE Band 13_Main>

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		22.16		22.5
10	QPSK	1	25		22.15		
10	QPSK	1	49		22.05		
10	QPSK	25	0		22.00		22.5
10	QPSK	25	12		21.78		
10	QPSK	25	25		21.82		
10	QPSK	50	0		21.76		22.5
10	16QAM	1	0		21.79		
10	16QAM	1	25		21.81		
10	16QAM	1	49		21.69		22.5
10	16QAM	25	0		21.28		
10	16QAM	25	12		21.25		
10	16QAM	25	25		21.26		22.5
10	16QAM	50	0		21.22		
10	64QAM	1	0		21.31		
10	64QAM	1	25		21.27		22.5
10	64QAM	1	49		21.29		
10	64QAM	25	0		20.27		
10	64QAM	25	12		20.23		22
10	64QAM	25	25		20.30		
10	64QAM	50	0		20.26		
10	256QAM	1	0		18.25		20
10	256QAM	1	25		18.24		
10	256QAM	1	49		18.31		
10	256QAM	25	0		18.25		20
10	256QAM	25	12		18.24		

10	256QAM	25	25		18.23		
10	256QAM	50	0		18.23		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	21.91	21.98	21.94	22.5
5	QPSK	1	12	21.82	21.97	21.95	
5	QPSK	1	24	21.83	21.90	21.84	
5	QPSK	12	0	21.67	21.61	21.67	22.5
5	QPSK	12	7	21.55	21.61	21.63	
5	QPSK	12	13	21.64	21.59	21.62	
5	QPSK	25	0	21.58	21.62	21.62	22.5
5	16QAM	1	0	21.59	21.57	21.63	
5	16QAM	1	12	21.58	21.63	21.58	
5	16QAM	1	24	21.54	21.48	21.51	22.5
5	16QAM	12	0	21.06	21.06	21.09	
5	16QAM	12	7	21.05	21.09	21.05	
5	16QAM	12	13	21.06	21.11	21.07	22.5
5	16QAM	25	0	21.04	21.08	21.08	
5	64QAM	1	0	21.09	21.10	21.14	
5	64QAM	1	12	21.13	21.13	21.07	22
5	64QAM	1	24	21.15	21.06	21.15	
5	64QAM	12	0	20.14	20.04	20.10	
5	64QAM	12	7	20.01	20.08	20.10	20
5	64QAM	12	13	20.14	20.15	20.07	
5	64QAM	25	0	20.10	20.04	20.06	
5	256QAM	1	0	18.10	18.03	18.07	20
5	256QAM	1	12	18.01	18.03	18.11	
5	256QAM	1	24	18.08	18.16	18.10	
5	256QAM	12	0	18.02	18.05	18.09	20
5	256QAM	12	7	18.11	18.04	18.02	
5	256QAM	12	13	18.10	18.03	18.06	
5	256QAM	25	0	18.00	18.01	18.01	

<LTE Band 14_Main>

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		22.31		22.5
10	QPSK	1	25		22.21		
10	QPSK	1	49		22.17		
10	QPSK	25	0		21.99		22.5
10	QPSK	25	12		21.95		
10	QPSK	25	25		21.89		
10	QPSK	50	0		21.84		
10	16QAM	1	0		21.83		22.5
10	16QAM	1	25		21.79		
10	16QAM	1	49		21.83		
10	16QAM	25	0		21.37		22.5
10	16QAM	25	12		21.28		
10	16QAM	25	25		21.34		
10	16QAM	50	0		21.36		
10	64QAM	1	0		21.40		22.5
10	64QAM	1	25		21.41		
10	64QAM	1	49		21.30		



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10	64QAM	25	0		20.31		22
10	64QAM	25	12		20.25		
10	64QAM	25	25		20.23		
10	64QAM	50	0		20.27		
10	256QAM	1	0		18.41		20
10	256QAM	1	25		18.37		
10	256QAM	1	49		18.27		
10	256QAM	25	0		18.26		
10	256QAM	25	12		18.34		20
10	256QAM	25	25		18.30		
10	256QAM	50	0		18.32		
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0	22.09	22.08	22.10	22.5
5	QPSK	1	12	21.91	21.94	21.95	
5	QPSK	1	24	21.89	21.94	21.97	
5	QPSK	12	0	21.66	21.65	21.62	22.5
5	QPSK	12	7	21.71	21.68	21.68	
5	QPSK	12	13	21.72	21.78	21.78	
5	QPSK	25	0	21.54	21.54	21.62	
5	16QAM	1	0	21.62	21.61	21.58	22.5
5	16QAM	1	12	21.54	21.55	21.49	
5	16QAM	1	24	21.54	21.54	21.57	
5	16QAM	12	0	21.10	21.13	21.07	22.5
5	16QAM	12	7	21.09	21.07	21.03	
5	16QAM	12	13	21.04	21.10	21.07	
5	16QAM	25	0	21.10	21.14	21.08	
5	64QAM	1	0	21.18	21.17	21.10	22.5
5	64QAM	1	12	21.13	21.19	21.12	
5	64QAM	1	24	21.07	21.10	21.03	
5	64QAM	12	0	20.11	20.04	20.11	22
5	64QAM	12	7	20.03	20.05	20.01	
5	64QAM	12	13	20.03	20.06	20.01	
5	64QAM	25	0	20.00	20.08	20.02	
5	256QAM	1	0	18.11	18.20	18.11	20
5	256QAM	1	12	18.16	18.14	18.16	
5	256QAM	1	24	18.07	18.02	18.04	
5	256QAM	12	0	18.07	18.03	18.06	20
5	256QAM	12	7	18.10	18.12	18.13	
5	256QAM	12	13	18.09	18.09	18.02	
5	256QAM	25	0	18.05	18.10	18.02	

<LTE Band 17_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23780	23790	23800	
Frequency (MHz)				709	710	711	
10	QPSK	1	0	22.08	22.03	21.99	23
10	QPSK	1	25	22.06	22.01	22.03	
10	QPSK	1	49	22.04	21.99	22.02	
10	QPSK	25	0	21.88	21.78	21.83	23
10	QPSK	25	12	21.80	21.78	21.80	
10	QPSK	25	25	21.81	21.76	21.82	
10	QPSK	50	0	21.71	21.69	21.73	
10	16QAM	1	0	21.39	21.34	21.41	23
10	16QAM	1	25	21.36	21.36	21.36	



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10	16QAM	1	49	21.39	21.41	21.42	
10	16QAM	25	0	21.23	21.23	21.26	23
10	16QAM	25	12	21.34	21.28	21.33	
10	16QAM	25	25	21.32	21.28	21.30	
10	16QAM	50	0	21.30	21.35	21.34	
10	64QAM	1	0	21.39	21.43	21.39	23
10	64QAM	1	25	21.39	21.41	21.39	
10	64QAM	1	49	21.41	21.34	21.44	
10	64QAM	25	0	20.30	20.31	20.32	22
10	64QAM	25	12	20.41	20.37	20.41	
10	64QAM	25	25	20.38	20.36	20.39	
10	64QAM	50	0	20.37	20.39	20.37	
10	256QAM	1	0	18.69	18.79	18.60	20
10	256QAM	1	25	18.65	18.46	18.60	
10	256QAM	1	49	18.43	18.46	18.65	
10	256QAM	25	0	18.64	18.76	18.61	20
10	256QAM	25	12	18.48	18.47	18.54	
10	256QAM	25	25	18.58	18.63	18.58	
10	256QAM	50	0	18.47	18.53	18.59	
Channel				23755	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	22.01	21.99	21.95	23
5	QPSK	1	12	22.02	21.96	22.03	
5	QPSK	1	24	21.95	21.99	21.94	
5	QPSK	12	0	21.77	21.66	21.70	23
5	QPSK	12	7	21.78	21.74	21.75	
5	QPSK	12	13	21.72	21.72	21.74	
5	QPSK	25	0	21.65	21.65	21.71	
5	16QAM	1	0	21.32	21.28	21.40	23
5	16QAM	1	12	21.28	21.32	21.30	
5	16QAM	1	24	21.31	21.41	21.42	
5	16QAM	12	0	21.14	21.19	21.22	23
5	16QAM	12	7	21.32	21.21	21.24	
5	16QAM	12	13	21.26	21.20	21.25	
5	16QAM	25	0	21.22	21.29	21.32	
5	64QAM	1	0	21.39	21.38	21.39	23
5	64QAM	1	12	21.31	21.39	21.30	
5	64QAM	1	24	21.32	21.32	21.35	
5	64QAM	12	0	20.21	20.24	20.30	
5	64QAM	12	7	20.37	20.34	20.32	22
5	64QAM	12	13	20.38	20.31	20.33	
5	64QAM	25	0	20.32	20.30	20.37	
5	256QAM	1	0	18.59	18.73	18.52	
5	256QAM	1	12	18.63	18.45	18.60	20
5	256QAM	1	24	18.35	18.40	18.55	
5	256QAM	12	0	18.59	18.76	18.60	
5	256QAM	12	7	18.39	18.38	18.48	20
5	256QAM	12	13	18.57	18.60	18.50	
5	256QAM	25	0	18.46	18.52	18.53	



<LTE Band 25_Main>

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	17.55	17.54	17.61	
20	QPSK	1	49	17.43	17.46	17.54	18.5
20	QPSK	1	99	17.30	17.12	17.47	
20	QPSK	50	0	17.36	17.33	17.38	
20	QPSK	50	24	17.22	17.33	17.26	18.5
20	QPSK	50	50	17.27	17.21	17.28	
20	QPSK	100	0	17.29	17.32	17.35	
20	16QAM	1	0	17.41	17.39	17.49	18.5
20	16QAM	1	49	17.28	17.33	17.42	
20	16QAM	1	99	17.28	17.13	17.37	
20	16QAM	50	0	17.27	17.32	17.38	18.5
20	16QAM	50	24	17.23	17.33	17.27	
20	16QAM	50	50	17.30	17.22	17.31	
20	16QAM	100	0	17.14	17.14	17.20	18.5
20	64QAM	1	0	17.20	17.27	17.37	
20	64QAM	1	49	17.07	17.22	17.27	
20	64QAM	1	99	17.30	17.13	17.38	18.5
20	64QAM	50	0	17.29	17.33	17.38	
20	64QAM	50	24	17.24	17.32	17.25	
20	64QAM	50	50	17.28	17.25	17.31	18.5
20	64QAM	100	0	17.41	17.49	17.45	
20	256QAM	1	0	17.27	17.18	17.26	
20	256QAM	1	49	17.05	17.11	17.14	18.5
20	256QAM	1	99	17.12	17.18	17.32	
20	256QAM	50	0	17.07	17.17	17.24	
20	256QAM	50	24	17.22	17.08	17.33	18.5
20	256QAM	50	50	17.29	17.25	17.32	
20	256QAM	100	0	17.16	17.25	17.23	
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	17.49	17.46	17.54	
15	QPSK	1	37	17.38	17.36	17.48	18.5
15	QPSK	1	74	17.24	17.09	17.27	
15	QPSK	36	0	17.16	17.28	17.33	
15	QPSK	36	20	17.15	17.30	17.21	18.5
15	QPSK	36	39	17.26	17.17	17.27	
15	QPSK	75	0	17.25	17.32	17.28	
15	16QAM	1	0	17.34	17.29	17.47	18.5
15	16QAM	1	37	17.23	17.29	17.36	
15	16QAM	1	74	17.26	17.07	17.35	
15	16QAM	36	0	17.22	17.22	17.34	18.5
15	16QAM	36	20	17.21	17.29	17.20	
15	16QAM	36	39	17.29	17.15	17.31	
15	16QAM	75	0	17.14	17.12	17.18	18.5
15	64QAM	1	0	17.19	17.21	17.34	
15	64QAM	1	37	17.02	17.22	17.24	
15	64QAM	1	74	17.20	17.06	17.34	18.5
15	64QAM	36	0	17.28	17.25	17.29	
15	64QAM	36	20	17.24	17.22	17.19	
15	64QAM	36	39	17.22	17.22	17.22	18.5
15	64QAM	75	0	17.35	17.41	17.41	



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15	256QAM	1	0	17.26	17.12	17.25	18.5
15	256QAM	1	37	17.04	17.09	17.05	
15	256QAM	1	74	17.07	17.10	17.30	
15	256QAM	36	0	17.04	17.07	17.17	18.5
15	256QAM	36	20	17.22	17.06	17.24	
15	256QAM	36	39	17.25	17.19	17.31	
15	256QAM	75	0	17.13	17.25	17.21	
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	17.51	17.45	17.52	18.5
10	QPSK	1	25	17.40	17.38	17.48	
10	QPSK	1	49	17.30	17.11	17.34	
10	QPSK	25	0	17.20	17.23	17.37	18.5
10	QPSK	25	12	17.21	17.29	17.17	
10	QPSK	25	25	17.21	17.14	17.23	
10	QPSK	50	0	17.27	17.29	17.25	
10	16QAM	1	0	17.38	17.35	17.45	18.5
10	16QAM	1	25	17.27	17.30	17.40	
10	16QAM	1	49	17.27	17.07	17.37	
10	16QAM	25	0	17.19	17.23	17.32	18.5
10	16QAM	25	12	17.14	17.26	17.22	
10	16QAM	25	25	17.30	17.16	17.26	
10	16QAM	50	0	17.13	17.09	17.17	
10	64QAM	1	0	17.17	17.18	17.33	18.5
10	64QAM	1	25	17.03	17.12	17.23	
10	64QAM	1	49	17.26	17.12	17.28	
10	64QAM	25	0	17.24	17.26	17.34	18.5
10	64QAM	25	12	17.18	17.30	17.22	
10	64QAM	25	25	17.22	17.17	17.21	
10	64QAM	50	0	17.32	17.40	17.37	
10	256QAM	1	0	17.25	17.08	17.26	18.5
10	256QAM	1	25	17.02	17.08	17.08	
10	256QAM	1	49	17.05	17.13	17.23	
10	256QAM	25	0	17.06	17.10	17.18	18.5
10	256QAM	25	12	17.15	17.05	17.24	
10	256QAM	25	25	17.25	17.23	17.27	
10	256QAM	50	0	17.13	17.23	17.17	
Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	17.53	17.54	17.57	18.5
5	QPSK	1	12	17.42	17.44	17.44	
5	QPSK	1	24	17.22	17.07	17.37	
5	QPSK	12	0	17.23	17.25	17.34	18.5
5	QPSK	12	7	17.18	17.31	17.20	
5	QPSK	12	13	17.27	17.16	17.25	
5	QPSK	25	0	17.21	17.28	17.30	
5	16QAM	1	0	17.40	17.29	17.43	18.5
5	16QAM	1	12	17.24	17.28	17.37	
5	16QAM	1	24	17.19	17.07	17.28	
5	16QAM	12	0	17.20	17.27	17.28	18.5
5	16QAM	12	7	17.14	17.27	17.18	
5	16QAM	12	13	17.21	17.12	17.31	
5	16QAM	25	0	17.13	17.12	17.20	
5	64QAM	1	0	17.11	17.25	17.29	18.5
5	64QAM	1	12	16.99	17.12	17.24	
5	64QAM	1	24	17.25	17.11	17.29	



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5	64QAM	12	0	17.28	17.28	17.36	18.5
5	64QAM	12	7	17.20	17.25	17.16	
5	64QAM	12	13	17.21	17.15	17.31	
5	64QAM	25	0	17.32	17.44	17.45	
5	256QAM	1	0	17.24	17.14	17.19	18.5
5	256QAM	1	12	16.99	17.10	17.08	
5	256QAM	1	24	17.02	17.08	17.27	
5	256QAM	12	0	17.06	17.14	17.24	18.5
5	256QAM	12	7	17.16	16.98	17.26	
5	256QAM	12	13	17.28	17.19	17.30	
5	256QAM	25	0	17.11	17.20	17.16	
Channel				26055	26340	26675	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	17.55	17.45	17.55	18.5
3	QPSK	1	8	17.33	17.41	17.49	
3	QPSK	1	14	17.22	17.02	17.28	
3	QPSK	8	0	17.22	17.25	17.38	18.5
3	QPSK	8	4	17.12	17.33	17.19	
3	QPSK	8	7	17.18	17.17	17.24	
3	QPSK	15	0	17.25	17.30	17.30	
3	16QAM	1	0	17.37	17.32	17.45	18.5
3	16QAM	1	8	17.20	17.25	17.37	
3	16QAM	1	14	17.19	17.10	17.30	
3	16QAM	8	0	17.24	17.22	17.34	18.5
3	16QAM	8	4	17.14	17.23	17.27	
3	16QAM	8	7	17.24	17.22	17.27	
3	16QAM	15	0	17.05	17.10	17.10	
3	64QAM	1	0	17.13	17.27	17.30	18.5
3	64QAM	1	8	17.07	17.13	17.18	
3	64QAM	1	14	17.21	17.10	17.29	
3	64QAM	8	0	17.25	17.24	17.29	18.5
3	64QAM	8	4	17.21	17.23	17.24	
3	64QAM	8	7	17.21	17.25	17.31	
3	64QAM	15	0	17.38	17.47	17.35	
3	256QAM	1	0	17.24	17.14	17.20	18.5
3	256QAM	1	8	17.00	17.02	17.05	
3	256QAM	1	14	17.05	17.10	17.29	
3	256QAM	8	0	17.07	17.10	17.17	18.5
3	256QAM	8	4	17.21	17.08	17.32	
3	256QAM	8	7	17.24	17.25	17.28	
3	256QAM	15	0	17.15	17.17	17.22	
Channel				26047	26340	26683	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	17.46	17.51	17.59	18.5
1.4	QPSK	1	3	17.40	17.46	17.51	
1.4	QPSK	1	5	17.25	17.05	17.28	
1.4	QPSK	3	0	17.22	17.33	17.38	
1.4	QPSK	3	1	17.22	17.31	17.23	
1.4	QPSK	3	3	17.27	17.18	17.24	
1.4	QPSK	6	0	17.20	17.28	17.30	18.5
1.4	16QAM	1	0	17.39	17.30	17.43	18.5
1.4	16QAM	1	3	17.27	17.32	17.42	
1.4	16QAM	1	5	17.24	17.03	17.27	
1.4	16QAM	3	0	17.24	17.28	17.29	
1.4	16QAM	3	1	17.22	17.25	17.23	
1.4	16QAM	3	3	17.26	17.15	17.23	

1.4	16QAM	6	0	17.09	17.13	17.16	18.5
1.4	64QAM	1	0	17.12	17.19	17.29	18.5
1.4	64QAM	1	3	17.07	17.21	17.25	
1.4	64QAM	1	5	17.20	17.10	17.32	
1.4	64QAM	3	0	17.23	17.32	17.30	
1.4	64QAM	3	1	17.20	17.27	17.22	
1.4	64QAM	3	3	17.26	17.19	17.25	
1.4	64QAM	6	0	17.41	17.43	17.38	18.5
1.4	256QAM	1	0	17.26	17.14	17.19	18.5
1.4	256QAM	1	3	16.96	17.01	17.04	
1.4	256QAM	1	5	17.10	17.15	17.26	
1.4	256QAM	3	0	17.04	17.10	17.22	
1.4	256QAM	3	1	17.19	17.07	17.24	
1.4	256QAM	3	3	17.27	17.15	17.25	
1.4	256QAM	6	0	17.07	17.18	17.16	18.5

<LTE Band 26_Main>

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	21.66	21.60	21.34	22
15	QPSK	1	37	21.64	21.56	21.44	
15	QPSK	1	74	21.54	21.45	21.45	
15	QPSK	36	0	21.30	21.35	21.30	22
15	QPSK	36	20	21.27	21.26	21.17	
15	QPSK	36	39	21.28	21.20	21.18	
15	QPSK	75	0	21.25	21.27	21.24	22
15	16QAM	1	0	21.52	21.59	21.41	
15	16QAM	1	37	21.62	21.55	21.42	
15	16QAM	1	74	21.59	21.47	21.36	22
15	16QAM	36	0	21.40	21.43	21.29	
15	16QAM	36	20	21.51	21.41	21.32	
15	16QAM	36	39	21.50	21.39	21.30	22
15	16QAM	75	0	21.44	21.36	21.25	
15	64QAM	1	0	21.37	21.38	21.28	
15	64QAM	1	37	21.41	21.35	21.21	22
15	64QAM	1	74	21.38	21.29	21.22	
15	64QAM	36	0	20.24	20.16	20.26	
15	64QAM	36	20	20.29	20.29	20.29	22
15	64QAM	36	39	20.30	20.21	20.19	
15	64QAM	75	0	20.34	20.19	20.20	
15	256QAM	1	0	18.31	18.17	18.26	20
15	256QAM	1	37	18.33	18.28	18.38	
15	256QAM	1	74	18.48	18.18	18.15	
15	256QAM	36	0	18.40	18.20	18.40	20
15	256QAM	36	20	18.35	18.25	18.24	
15	256QAM	36	39	18.34	18.20	18.20	
15	256QAM	75	0	18.30	18.22	18.27	22
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	21.64	21.43	21.29	22
10	QPSK	1	25	21.64	21.50	21.42	
10	QPSK	1	49	21.48	21.56	21.40	
10	QPSK	25	0	21.26	21.17	21.16	22



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10	QPSK	25	12	21.27	21.22	21.16	
10	QPSK	25	25	21.29	21.19	21.18	
10	QPSK	50	0	21.31	21.27	21.17	
10	16QAM	1	0	21.43	21.55	21.37	22
10	16QAM	1	25	21.57	21.50	21.33	
10	16QAM	1	49	21.57	21.43	21.29	
10	16QAM	25	0	21.34	21.39	21.24	22
10	16QAM	25	12	21.48	21.41	21.25	
10	16QAM	25	25	21.47	21.38	21.26	
10	16QAM	50	0	21.36	21.32	21.23	22
10	64QAM	1	0	21.31	21.32	21.19	
10	64QAM	1	25	21.38	21.35	21.17	
10	64QAM	1	49	21.30	21.19	21.12	22
10	64QAM	25	0	20.19	20.16	20.25	
10	64QAM	25	12	20.23	20.19	20.28	
10	64QAM	25	25	20.23	20.21	20.18	20
10	64QAM	50	0	20.29	20.11	20.16	
10	256QAM	1	0	18.25	18.17	18.24	
10	256QAM	1	25	18.26	18.27	18.29	20
10	256QAM	1	49	18.47	18.18	18.08	
10	256QAM	25	0	18.33	18.13	18.33	
10	256QAM	25	12	18.31	18.20	18.21	20
10	256QAM	25	25	18.29	18.15	18.18	
10	256QAM	50	0	18.25	18.16	18.18	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	21.62	21.40	21.25	22
5	QPSK	1	12	21.61	21.51	21.40	
5	QPSK	1	24	21.50	21.59	21.36	
5	QPSK	12	0	21.24	21.15	21.15	22
5	QPSK	12	7	21.37	21.20	21.08	
5	QPSK	12	13	21.38	21.19	21.09	
5	QPSK	25	0	21.32	21.25	21.23	22
5	16QAM	1	0	21.48	21.53	21.36	
5	16QAM	1	12	21.59	21.48	21.34	
5	16QAM	1	24	21.53	21.38	21.29	22
5	16QAM	12	0	21.36	21.40	21.20	
5	16QAM	12	7	21.44	21.35	21.30	
5	16QAM	12	13	21.42	21.29	21.27	22
5	16QAM	25	0	21.39	21.31	21.16	
5	64QAM	1	0	21.35	21.33	21.18	
5	64QAM	1	12	21.34	21.34	21.21	22
5	64QAM	1	24	21.35	21.19	21.17	
5	64QAM	12	0	20.22	20.11	20.17	22
5	64QAM	12	7	20.24	20.24	20.25	
5	64QAM	12	13	20.22	20.15	20.15	
5	64QAM	25	0	20.29	20.16	20.18	20
5	256QAM	1	0	18.27	18.15	18.18	
5	256QAM	1	12	18.25	18.28	18.30	
5	256QAM	1	24	18.47	18.12	18.10	20
5	256QAM	12	0	18.34	18.14	18.30	
5	256QAM	12	7	18.30	18.24	18.14	
5	256QAM	12	13	18.34	18.16	18.19	20
5	256QAM	25	0	18.24	18.20	18.21	
Channel				26705	26865	27025	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	



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3	QPSK	1	0	21.58	21.44	21.28	22
3	QPSK	1	8	21.61	21.48	21.35	
3	QPSK	1	14	21.46	21.55	21.43	
3	QPSK	8	0	21.29	21.20	21.13	22
3	QPSK	8	4	21.34	21.17	21.16	
3	QPSK	8	7	21.32	21.18	21.14	
3	QPSK	15	0	21.27	21.22	21.23	22
3	16QAM	1	0	21.47	21.51	21.40	
3	16QAM	1	8	21.53	21.52	21.35	
3	16QAM	1	14	21.54	21.39	21.28	22
3	16QAM	8	0	21.40	21.40	21.24	
3	16QAM	8	4	21.49	21.36	21.30	
3	16QAM	8	7	21.41	21.30	21.24	22
3	16QAM	15	0	21.43	21.28	21.25	
3	64QAM	1	0	21.32	21.28	21.23	
3	64QAM	1	8	21.34	21.29	21.14	22
3	64QAM	1	14	21.35	21.22	21.16	
3	64QAM	8	0	20.23	20.06	20.20	
3	64QAM	8	4	20.28	20.27	20.20	22
3	64QAM	8	7	20.26	20.11	20.12	
3	64QAM	15	0	20.24	20.16	20.18	
3	256QAM	1	0	18.28	18.07	18.18	20
3	256QAM	1	8	18.31	18.23	18.33	
3	256QAM	1	14	18.47	18.18	18.08	
3	256QAM	8	0	18.33	18.13	18.32	20
3	256QAM	8	4	18.26	18.18	18.22	
3	256QAM	8	7	18.32	18.17	18.18	
3	256QAM	15	0	18.23	18.17	18.23	Tune-up limit (dBm)
Channel				26697	26865	27033	
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	21.60	21.37	21.30	22
1.4	QPSK	1	3	21.54	21.49	21.37	
1.4	QPSK	1	5	21.50	21.58	21.41	
1.4	QPSK	3	0	21.55	21.37	21.25	
1.4	QPSK	3	1	21.50	21.55	21.42	
1.4	QPSK	3	3	21.46	21.55	21.38	
1.4	QPSK	6	0	21.27	21.27	21.22	22
1.4	16QAM	1	0	21.42	21.50	21.38	22
1.4	16QAM	1	3	21.55	21.48	21.33	
1.4	16QAM	1	5	21.49	21.46	21.36	
1.4	16QAM	3	0	21.32	21.40	21.24	
1.4	16QAM	3	1	21.49	21.41	21.28	
1.4	16QAM	3	3	21.45	21.34	21.22	
1.4	16QAM	6	0	21.34	21.26	21.24	22
1.4	64QAM	1	0	21.33	21.32	21.18	22
1.4	64QAM	1	3	21.41	21.34	21.17	
1.4	64QAM	1	5	21.28	21.22	21.21	
1.4	64QAM	3	0	21.35	21.36	21.21	
1.4	64QAM	3	1	21.34	21.33	21.18	
1.4	64QAM	3	3	21.38	21.25	21.16	
1.4	64QAM	6	0	20.26	20.17	20.11	22
1.4	256QAM	1	0	18.25	18.14	18.23	20
1.4	256QAM	1	3	18.25	18.25	18.35	
1.4	256QAM	1	5	18.39	18.11	18.05	
1.4	256QAM	3	0	18.37	18.16	18.40	
1.4	256QAM	3	1	18.26	18.17	18.23	



1.4	256QAM	3	3	18.32	18.11	18.10	
1.4	256QAM	6	0	18.26	18.12	18.25	20

<LTE Band 30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				27710			
Frequency (MHz)				2310			
10	QPSK	1	0		17.84		18.5
10	QPSK	1	25		17.78		
10	QPSK	1	49		17.82		
10	QPSK	25	0		17.55		18.5
10	QPSK	25	12		17.52		
10	QPSK	25	25		17.35		
10	QPSK	50	0		17.48		18.5
10	16QAM	1	0		17.68		
10	16QAM	1	25		17.67		
10	16QAM	1	49		17.66		18.5
10	16QAM	25	0		17.53		
10	16QAM	25	12		17.53		
10	16QAM	25	25		17.37		18.5
10	16QAM	50	0		17.48		
10	64QAM	1	0		17.51		
10	64QAM	1	25		17.55		18.5
10	64QAM	1	49		17.53		
10	64QAM	25	0		17.53		
10	64QAM	25	12		17.51		18.5
10	64QAM	25	25		17.36		
10	64QAM	50	0		17.46		
10	256QAM	1	0		17.63		18
10	256QAM	1	25		17.52		
10	256QAM	1	49		17.53		
10	256QAM	25	0		17.37		18
10	256QAM	25	12		17.41		
10	256QAM	25	25		17.41		
10	256QAM	50	0		17.47		
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	17.79	17.75	17.78	18.5
5	QPSK	1	12	17.75	17.71	17.70	
5	QPSK	1	24	17.80	17.74	17.73	
5	QPSK	12	0	17.55	17.53	17.45	18.5
5	QPSK	12	7	17.47	17.52	17.46	
5	QPSK	12	13	17.33	17.30	17.29	
5	QPSK	25	0	17.38	17.48	17.44	18.5
5	16QAM	1	0	17.68	17.61	17.60	
5	16QAM	1	12	17.67	17.67	17.57	
5	16QAM	1	24	17.59	17.64	17.60	18.5
5	16QAM	12	0	17.52	17.43	17.51	
5	16QAM	12	7	17.52	17.43	17.46	
5	16QAM	12	13	17.34	17.33	17.30	18.5
5	16QAM	25	0	17.43	17.45	17.48	
5	64QAM	1	0	17.48	17.48	17.47	
5	64QAM	1	12	17.49	17.53	17.50	18.5
5	64QAM	1	24	17.47	17.51	17.52	



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5	64QAM	12	0	17.49	17.45	17.49	18.5
5	64QAM	12	7	17.47	17.50	17.45	
5	64QAM	12	13	17.28	17.26	17.36	
5	64QAM	25	0	17.39	17.37	17.45	
5	256QAM	1	0	17.59	17.55	17.60	18
5	256QAM	1	12	17.44	17.42	17.52	
5	256QAM	1	24	17.48	17.48	17.46	
5	256QAM	12	0	17.30	17.29	17.35	18
5	256QAM	12	7	17.31	17.41	17.34	
5	256QAM	12	13	17.38	17.37	17.39	
5	256QAM	25	0	17.37	17.47	17.38	

<LTE Band 66_Main>

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	14.90	14.91	14.89	15.5
20	QPSK	1	49	14.79	14.78	14.73	
20	QPSK	1	99	14.53	14.63	14.52	
20	QPSK	50	0	14.74	14.86	14.71	15.5
20	QPSK	50	24	14.60	14.52	14.50	
20	QPSK	50	50	14.53	14.50	14.49	
20	QPSK	100	0	14.70	14.71	14.61	15.5
20	16QAM	1	0	14.76	14.77	14.76	
20	16QAM	1	49	14.64	14.61	14.59	
20	16QAM	1	99	14.53	14.58	14.52	15.5
20	16QAM	50	0	14.59	14.60	14.58	
20	16QAM	50	24	14.55	14.51	14.49	
20	16QAM	50	50	14.52	14.52	14.49	15.5
20	16QAM	100	0	14.51	14.53	14.51	
20	64QAM	1	0	14.61	14.62	14.59	
20	64QAM	1	49	14.45	14.45	14.40	15.5
20	64QAM	1	99	14.55	14.62	14.53	
20	64QAM	50	0	14.62	14.62	14.62	
20	64QAM	50	24	14.58	14.53	14.52	15.5
20	64QAM	50	50	14.55	14.55	14.52	
20	64QAM	100	0	14.83	14.81	14.81	
20	256QAM	1	0	14.50	14.51	14.48	15.5
20	256QAM	1	49	14.42	14.48	14.40	
20	256QAM	1	99	14.50	14.48	14.48	
20	256QAM	50	0	14.55	14.58	14.49	15.5
20	256QAM	50	24	14.40	14.36	14.40	
20	256QAM	50	50	14.55	14.53	14.50	
20	256QAM	100	0	14.51	14.45	14.51	
Channel				132047	132322	132597	
Frequency (MHz)				1717.5	1745	1772.5	Tune-up limit (dBm)
15	QPSK	1	0	14.87	14.84	14.82	15.5
15	QPSK	1	37	14.69	14.73	14.65	
15	QPSK	1	74	14.48	14.58	14.44	
15	QPSK	36	0	14.56	14.58	14.59	15.5
15	QPSK	36	20	14.56	14.51	14.47	
15	QPSK	36	39	14.44	14.41	14.45	
15	QPSK	75	0	14.67	14.63	14.69	15.5
15	16QAM	1	0	14.71	14.77	14.73	
15	16QAM	1	37	14.55	14.52	14.50	



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15	16QAM	1	74	14.46	14.54	14.52	
15	16QAM	36	0	14.50	14.54	14.55	15.5
15	16QAM	36	20	14.49	14.50	14.45	
15	16QAM	36	39	14.43	14.47	14.41	
15	16QAM	75	0	14.47	14.52	14.43	
15	64QAM	1	0	14.51	14.60	14.51	15.5
15	64QAM	1	37	14.40	14.42	14.31	
15	64QAM	1	74	14.46	14.56	14.51	
15	64QAM	36	0	14.55	14.62	14.58	
15	64QAM	36	20	14.57	14.53	14.43	15.5
15	64QAM	36	39	14.45	14.47	14.49	
15	64QAM	75	0	14.80	14.80	14.71	
15	256QAM	1	0	14.50	14.50	14.44	
15	256QAM	1	37	14.34	14.44	14.32	15.5
15	256QAM	1	74	14.41	14.43	14.45	
15	256QAM	36	0	14.45	14.57	14.48	
15	256QAM	36	20	14.37	14.29	14.40	
15	256QAM	36	39	14.51	14.44	14.45	15.5
15	256QAM	75	0	14.46	14.41	14.46	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	14.85	14.82	14.83	15.5
10	QPSK	1	25	14.74	14.72	14.70	
10	QPSK	1	49	14.53	14.61	14.47	
10	QPSK	25	0	14.54	14.60	14.54	
10	QPSK	25	12	14.54	14.42	14.47	15.5
10	QPSK	25	25	14.46	14.50	14.45	
10	QPSK	50	0	14.70	14.65	14.62	
10	16QAM	1	0	14.74	14.72	14.72	
10	16QAM	1	25	14.59	14.55	14.56	15.5
10	16QAM	1	49	14.49	14.49	14.46	
10	16QAM	25	0	14.57	14.58	14.57	
10	16QAM	25	12	14.48	14.50	14.40	
10	16QAM	25	25	14.51	14.45	14.39	15.5
10	16QAM	50	0	14.48	14.52	14.46	
10	64QAM	1	0	14.60	14.58	14.54	
10	64QAM	1	25	14.38	14.37	14.30	
10	64QAM	1	49	14.54	14.58	14.52	15.5
10	64QAM	25	0	14.59	14.58	14.58	
10	64QAM	25	12	14.50	14.49	14.47	
10	64QAM	25	25	14.46	14.47	14.50	
10	64QAM	50	0	14.79	14.71	14.81	15.5
10	256QAM	1	0	14.49	14.51	14.39	
10	256QAM	1	25	14.34	14.38	14.31	
10	256QAM	1	49	14.44	14.48	14.47	
10	256QAM	25	0	14.50	14.48	14.40	15.5
10	256QAM	25	12	14.35	14.28	14.34	
10	256QAM	25	25	14.51	14.53	14.49	
10	256QAM	50	0	14.49	14.45	14.49	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	14.89	14.85	14.88	15.5
5	QPSK	1	12	14.71	14.69	14.69	
5	QPSK	1	24	14.47	14.60	14.50	
5	QPSK	12	0	14.60	14.66	14.51	
5	QPSK	12	7	14.55	14.47	14.41	15.5



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5	QPSK	12	13	14.53	14.43	14.42	
5	QPSK	25	0	14.70	14.66	14.70	
5	16QAM	1	0	14.67	14.73	14.66	
5	16QAM	1	12	14.57	14.58	14.57	15.5
5	16QAM	1	24	14.52	14.53	14.47	
5	16QAM	12	0	14.57	14.60	14.50	
5	16QAM	12	7	14.45	14.43	14.41	15.5
5	16QAM	12	13	14.49	14.49	14.43	
5	16QAM	25	0	14.42	14.43	14.41	
5	64QAM	1	0	14.59	14.52	14.56	15.5
5	64QAM	1	12	14.36	14.42	14.31	
5	64QAM	1	24	14.45	14.52	14.43	
5	64QAM	12	0	14.56	14.55	14.53	15.5
5	64QAM	12	7	14.53	14.44	14.46	
5	64QAM	12	13	14.50	14.52	14.43	
5	64QAM	25	0	14.76	14.77	14.76	15.5
5	256QAM	1	0	14.40	14.45	14.48	
5	256QAM	1	12	14.38	14.48	14.39	
5	256QAM	1	24	14.40	14.43	14.47	15.5
5	256QAM	12	0	14.51	14.52	14.40	
5	256QAM	12	7	14.40	14.35	14.40	
5	256QAM	12	13	14.53	14.45	14.45	15.5
5	256QAM	25	0	14.49	14.40	14.44	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	14.83	14.81	14.80	15.5
3	QPSK	1	8	14.70	14.69	14.67	
3	QPSK	1	14	14.46	14.60	14.52	
3	QPSK	8	0	14.57	14.61	14.61	15.5
3	QPSK	8	4	14.60	14.48	14.47	
3	QPSK	8	7	14.48	14.46	14.44	
3	QPSK	15	0	14.67	14.62	14.66	15.5
3	16QAM	1	0	14.68	14.77	14.68	
3	16QAM	1	8	14.54	14.58	14.53	
3	16QAM	1	14	14.47	14.50	14.46	15.5
3	16QAM	8	0	14.56	14.53	14.57	
3	16QAM	8	4	14.51	14.45	14.49	
3	16QAM	8	7	14.42	14.47	14.39	15.5
3	16QAM	15	0	14.50	14.45	14.47	
3	64QAM	1	0	14.55	14.58	14.49	
3	64QAM	1	8	14.35	14.37	14.35	15.5
3	64QAM	1	14	14.50	14.58	14.49	
3	64QAM	8	0	14.55	14.53	14.54	
3	64QAM	8	4	14.48	14.52	14.52	15.5
3	64QAM	8	7	14.50	14.51	14.50	
3	64QAM	15	0	14.79	14.78	14.77	
3	256QAM	1	0	14.49	14.45	14.43	15.5
3	256QAM	1	8	14.34	14.42	14.31	
3	256QAM	1	14	14.45	14.42	14.43	
3	256QAM	8	0	14.52	14.53	14.45	15.5
3	256QAM	8	4	14.30	14.30	14.30	
3	256QAM	8	7	14.47	14.51	14.45	
3	256QAM	15	0	14.49	14.35	14.41	15.5
Channel				131979	132322	132665	
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	14.85	14.82	14.86	15.5

1.4	QPSK	1	3	14.69	14.73	14.63	
1.4	QPSK	1	5	14.48	14.61	14.44	
1.4	QPSK	3	0	14.60	14.59	14.60	
1.4	QPSK	3	1	14.52	14.50	14.44	
1.4	QPSK	3	3	14.51	14.40	14.45	
1.4	QPSK	6	0	14.67	14.65	14.62	15.5
1.4	16QAM	1	0	14.70	14.72	14.74	15.5
1.4	16QAM	1	3	14.62	14.59	14.56	
1.4	16QAM	1	5	14.50	14.53	14.42	
1.4	16QAM	3	0	14.53	14.54	14.57	
1.4	16QAM	3	1	14.45	14.44	14.41	
1.4	16QAM	3	3	14.50	14.48	14.39	15.5
1.4	16QAM	6	0	14.50	14.43	14.49	
1.4	64QAM	1	0	14.54	14.59	14.56	
1.4	64QAM	1	3	14.41	14.36	14.40	
1.4	64QAM	1	5	14.45	14.57	14.46	
1.4	64QAM	3	0	14.52	14.61	14.55	15.5
1.4	64QAM	3	1	14.51	14.46	14.42	
1.4	64QAM	3	3	14.47	14.46	14.42	
1.4	64QAM	6	0	14.73	14.75	14.72	
1.4	256QAM	1	0	14.48	14.44	14.46	
1.4	256QAM	1	3	14.34	14.45	14.35	15.5
1.4	256QAM	1	5	14.50	14.48	14.48	
1.4	256QAM	3	0	14.45	14.54	14.41	
1.4	256QAM	3	1	14.35	14.26	14.35	
1.4	256QAM	3	3	14.46	14.48	14.42	
1.4	256QAM	6	0	14.46	14.35	14.43	15.5

<LTE Band 71_Main>

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	22.97	23.03	22.97	23.5
20	QPSK	1	49	22.91	22.92	22.89	
20	QPSK	1	99	22.85	22.79	22.83	
20	QPSK	50	0	22.26	22.54	22.33	23.5
20	QPSK	50	24	22.31	22.44	22.39	
20	QPSK	50	50	22.21	22.49	22.37	
20	QPSK	100	0	22.28	22.38	22.31	
20	16QAM	1	0	22.07	22.05	22.04	23.5
20	16QAM	1	49	22.30	22.23	22.18	
20	16QAM	1	99	22.29	22.09	22.15	
20	16QAM	50	0	21.25	21.49	21.38	23
20	16QAM	50	24	21.23	21.40	21.36	
20	16QAM	50	50	21.20	21.50	21.36	
20	16QAM	100	0	21.24	21.44	21.25	
20	64QAM	1	0	21.50	21.38	21.37	23
20	64QAM	1	49	21.52	21.46	21.45	
20	64QAM	1	99	21.51	21.47	21.44	
20	64QAM	50	0	20.34	20.52	20.37	22
20	64QAM	50	24	20.32	20.39	20.34	
20	64QAM	50	50	20.25	20.47	20.32	
20	64QAM	100	0	20.30	20.46	20.27	
20	256QAM	1	0	18.35	18.43	18.32	20



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20	256QAM	1	49	18.29	18.34	18.16	20
20	256QAM	1	99	18.19	18.26	18.17	
20	256QAM	50	0	18.20	18.34	18.18	
20	256QAM	50	24	18.14	18.24	18.17	
20	256QAM	50	50	18.15	18.25	18.14	
20	256QAM	100	0	18.26	18.32	18.32	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	22.97	22.97	22.88	23.5
15	QPSK	1	37	22.89	22.82	22.86	
15	QPSK	1	74	22.76	22.75	22.82	
15	QPSK	36	0	22.24	22.46	22.28	23.5
15	QPSK	36	20	22.27	22.35	22.32	
15	QPSK	36	39	22.15	22.46	22.31	
15	QPSK	75	0	22.23	22.30	22.31	
15	16QAM	1	0	21.99	22.02	22.00	23.5
15	16QAM	1	37	22.22	22.17	22.16	
15	16QAM	1	74	22.29	22.03	22.07	
15	16QAM	36	0	21.19	21.39	21.33	23
15	16QAM	36	20	21.23	21.36	21.31	
15	16QAM	36	39	21.10	21.45	21.26	
15	16QAM	75	0	21.21	21.44	21.24	
15	64QAM	1	0	21.48	21.33	21.37	23
15	64QAM	1	37	21.45	21.44	21.42	
15	64QAM	1	74	21.43	21.46	21.38	
15	64QAM	36	0	20.32	20.47	20.29	22
15	64QAM	36	20	20.24	20.39	20.28	
15	64QAM	36	39	20.20	20.45	20.25	
15	64QAM	75	0	20.25	20.39	20.20	
15	256QAM	1	0	18.35	18.35	18.30	20
15	256QAM	1	37	18.28	18.34	18.11	
15	256QAM	1	74	18.15	18.23	18.11	
15	256QAM	36	0	18.13	18.33	18.14	20
15	256QAM	36	20	18.07	18.15	18.08	
15	256QAM	36	39	18.11	18.24	18.07	
15	256QAM	75	0	18.23	18.25	18.26	
Channel				133172	133297	133422	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	22.90	22.93	22.90	23.5
10	QPSK	1	25	22.89	22.87	22.82	
10	QPSK	1	49	22.81	22.70	22.80	
10	QPSK	25	0	22.19	22.45	22.28	23.5
10	QPSK	25	12	22.25	22.42	22.31	
10	QPSK	25	25	22.13	22.43	22.34	
10	QPSK	50	0	22.20	22.35	22.27	
10	16QAM	1	0	22.00	21.97	22.02	23.5
10	16QAM	1	25	22.29	22.15	22.15	
10	16QAM	1	49	22.29	22.06	22.10	
10	16QAM	25	0	21.20	21.39	21.32	23
10	16QAM	25	12	21.15	21.35	21.36	
10	16QAM	25	25	21.13	21.49	21.30	
10	16QAM	50	0	21.24	21.43	21.25	
10	64QAM	1	0	21.46	21.37	21.37	23
10	64QAM	1	25	21.48	21.46	21.45	
10	64QAM	1	49	21.50	21.38	21.34	
10	64QAM	25	0	20.26	20.47	20.29	22



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10	64QAM	25	12	20.30	20.32	20.34	
10	64QAM	25	25	20.23	20.44	20.23	
10	64QAM	50	0	20.21	20.42	20.18	
10	256QAM	1	0	18.28	18.40	18.30	20
10	256QAM	1	25	18.21	18.29	18.13	
10	256QAM	1	49	18.13	18.17	18.11	
10	256QAM	25	0	18.14	18.28	18.14	20
10	256QAM	25	12	18.07	18.23	18.15	
10	256QAM	25	25	18.05	18.15	18.13	
10	256QAM	50	0	18.22	18.32	18.23	
Channel				133147	133297	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	QPSK	1	0	22.95	23.00	22.92	23.5
5	QPSK	1	12	22.85	22.85	22.89	
5	QPSK	1	24	22.82	22.77	22.77	
5	QPSK	12	0	22.16	22.48	22.31	23.5
5	QPSK	12	7	22.27	22.40	22.30	
5	QPSK	12	13	22.11	22.39	22.37	
5	QPSK	25	0	22.27	22.32	22.22	
5	16QAM	1	0	22.07	22.02	21.97	23.5
5	16QAM	1	12	22.20	22.20	22.10	
5	16QAM	1	24	22.19	21.99	22.13	
5	16QAM	12	0	21.25	21.48	21.38	23
5	16QAM	12	7	21.17	21.33	21.31	
5	16QAM	12	13	21.17	21.41	21.32	
5	16QAM	25	0	21.18	21.42	21.20	
5	64QAM	1	0	21.47	21.35	21.28	23
5	64QAM	1	12	21.47	21.38	21.40	
5	64QAM	1	24	21.49	21.39	21.44	
5	64QAM	12	0	20.34	20.51	20.34	22
5	64QAM	12	7	20.22	20.29	20.27	
5	64QAM	12	13	20.15	20.41	20.32	
5	64QAM	25	0	20.21	20.41	20.20	
5	256QAM	1	0	18.25	18.36	18.32	20
5	256QAM	1	12	18.25	18.33	18.11	
5	256QAM	1	24	18.14	18.17	18.13	
5	256QAM	12	0	18.17	18.32	18.17	20
5	256QAM	12	7	18.12	18.23	18.07	
5	256QAM	12	13	18.14	18.16	18.07	
5	256QAM	25	0	18.18	18.26	18.22	



State 3(TB)

<LTE Band 2_Main>

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	17.67	17.46	17.47	
20	QPSK	1	49	17.51	17.38	17.31	18.5
20	QPSK	1	99	17.47	17.33	17.43	
20	QPSK	50	0	17.52	17.19	17.22	
20	QPSK	50	24	17.26	17.15	17.21	18.5
20	QPSK	50	50	17.26	17.08	17.19	
20	QPSK	100	0	17.40	17.23	17.16	
20	16QAM	1	0	17.52	17.35	17.36	18.5
20	16QAM	1	49	17.29	17.18	17.27	
20	16QAM	1	99	17.33	17.02	17.19	
20	16QAM	50	0	17.29	17.18	17.23	18.5
20	16QAM	50	24	17.24	17.13	17.22	
20	16QAM	50	50	17.26	17.10	17.19	
20	16QAM	100	0	17.16	17.03	17.01	18.5
20	64QAM	1	0	17.26	17.14	17.17	
20	64QAM	1	49	17.05	17.00	17.13	
20	64QAM	1	99	17.35	17.01	17.23	18.5
20	64QAM	50	0	17.30	17.20	17.24	
20	64QAM	50	24	17.27	17.16	17.21	
20	64QAM	50	50	17.27	17.11	17.20	18.5
20	64QAM	100	0	17.34	16.99	17.24	
20	256QAM	1	0	17.27	17.01	17.18	
20	256QAM	1	49	17.26	17.09	17.18	18.5
20	256QAM	1	99	17.14	17.05	17.18	
20	256QAM	50	0	17.19	17.06	17.12	
20	256QAM	50	24	17.09	16.99	16.98	18.5
20	256QAM	50	50	17.17	17.09	17.11	
20	256QAM	100	0	17.20	17.09	17.17	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	17.58	17.43	17.46	
15	QPSK	1	37	17.43	17.34	17.27	18.5
15	QPSK	1	74	17.41	17.28	17.43	
15	QPSK	36	0	17.47	17.16	17.19	18.5
15	QPSK	36	20	17.19	17.09	17.17	
15	QPSK	36	39	17.23	17.07	17.09	
15	QPSK	75	0	17.38	17.23	17.07	18.5
15	16QAM	1	0	17.43	17.33	17.35	
15	16QAM	1	37	17.23	17.18	17.26	
15	16QAM	1	74	17.26	16.94	17.09	18.5
15	16QAM	36	0	17.24	17.08	17.18	
15	16QAM	36	20	17.19	17.11	17.19	
15	16QAM	36	39	17.19	17.05	17.16	18.5
15	16QAM	75	0	17.12	17.01	16.93	
15	64QAM	1	0	17.23	17.11	17.11	
15	64QAM	1	37	17.01	16.95	17.10	18.5
15	64QAM	1	74	17.25	16.93	17.22	
15	64QAM	36	0	17.28	17.17	17.14	
15	64QAM	36	20	17.26	17.11	17.14	18.5



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15	64QAM	36	39	17.25	17.06	17.13	
15	64QAM	75	0	17.30	16.95	17.14	
15	256QAM	1	0	17.15	17.07	17.07	
15	256QAM	1	37	17.21	16.94	17.14	18.5
15	256QAM	1	74	17.21	17.07	17.15	
15	256QAM	36	0	17.10	17.01	17.12	
15	256QAM	36	20	17.12	17.02	17.02	18.5
15	256QAM	36	39	17.03	16.99	16.95	
15	256QAM	75	0	17.15	17.06	17.08	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	17.63	17.37	17.41	18.5
10	QPSK	1	25	17.46	17.33	17.29	
10	QPSK	1	49	17.38	17.32	17.42	
10	QPSK	25	0	17.46	17.15	17.18	18.5
10	QPSK	25	12	17.19	17.13	17.17	
10	QPSK	25	25	17.23	17.08	17.12	
10	QPSK	50	0	17.32	17.13	17.14	18.5
10	16QAM	1	0	17.43	17.33	17.35	
10	16QAM	1	25	17.21	17.18	17.18	
10	16QAM	1	49	17.29	17.02	17.10	18.5
10	16QAM	25	0	17.26	17.08	17.16	
10	16QAM	25	12	17.16	17.05	17.13	
10	16QAM	25	25	17.21	17.10	17.19	18.5
10	16QAM	50	0	17.07	17.02	16.96	
10	64QAM	1	0	17.24	17.08	17.08	18.5
10	64QAM	1	25	17.03	16.98	17.03	
10	64QAM	1	49	17.25	16.95	17.19	
10	64QAM	25	0	17.29	17.19	17.15	18.5
10	64QAM	25	12	17.23	17.06	17.15	
10	64QAM	25	25	17.20	17.11	17.19	
10	64QAM	50	0	17.24	16.94	17.14	18.5
10	256QAM	1	0	17.18	17.08	17.11	
10	256QAM	1	25	17.21	16.97	17.10	
10	256QAM	1	49	17.19	17.07	17.17	18.5
10	256QAM	25	0	17.04	17.00	17.18	
10	256QAM	25	12	17.14	17.00	17.08	
10	256QAM	25	25	17.08	16.97	16.89	18.5
10	256QAM	50	0	17.10	17.02	17.10	
Channel				18625	18900	19175	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	0	17.58	17.38	17.42	18.5
5	QPSK	1	12	17.51	17.33	17.28	
5	QPSK	1	24	17.41	17.27	17.37	
5	QPSK	12	0	17.46	17.19	17.15	18.5
5	QPSK	12	7	17.23	17.07	17.12	
5	QPSK	12	13	17.25	17.02	17.15	
5	QPSK	25	0	17.37	17.15	17.10	18.5
5	16QAM	1	0	17.50	17.30	17.36	
5	16QAM	1	12	17.21	17.08	17.26	
5	16QAM	1	24	17.29	16.94	17.12	18.5
5	16QAM	12	0	17.28	17.08	17.22	
5	16QAM	12	7	17.22	17.04	17.16	
5	16QAM	12	13	17.18	17.09	17.14	18.5
5	16QAM	25	0	17.14	16.99	16.96	
5	64QAM	1	0	17.24	17.05	17.15	



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5	64QAM	1	12	16.97	16.95	17.09	
5	64QAM	1	24	17.32	16.94	17.15	
5	64QAM	12	0	17.28	17.11	17.17	
5	64QAM	12	7	17.26	17.16	17.21	18.5
5	64QAM	12	13	17.23	17.10	17.13	
5	64QAM	25	0	17.29	16.90	17.23	
5	256QAM	1	0	17.16	17.06	17.17	18.5
5	256QAM	1	12	17.27	17.01	17.18	
5	256QAM	1	24	17.26	17.00	17.12	
5	256QAM	12	0	17.12	17.00	17.18	18.5
5	256QAM	12	7	17.09	17.04	17.05	
5	256QAM	12	13	17.03	16.93	16.90	
5	256QAM	25	0	17.15	17.09	17.04	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	17.57	17.39	17.44	18.5
3	QPSK	1	8	17.45	17.34	17.23	
3	QPSK	1	14	17.37	17.24	17.33	
3	QPSK	8	0	17.45	17.09	17.19	18.5
3	QPSK	8	4	17.20	17.14	17.12	
3	QPSK	8	7	17.18	17.03	17.16	
3	QPSK	15	0	17.39	17.14	17.14	
3	16QAM	1	0	17.43	17.29	17.29	18.5
3	16QAM	1	8	17.26	17.09	17.18	
3	16QAM	1	14	17.32	16.97	17.10	
3	16QAM	8	0	17.22	17.11	17.21	18.5
3	16QAM	8	4	17.17	17.12	17.19	
3	16QAM	8	7	17.22	17.00	17.12	
3	16QAM	15	0	17.13	16.93	16.96	
3	64QAM	1	0	17.24	17.11	17.17	18.5
3	64QAM	1	8	17.03	17.00	17.03	
3	64QAM	1	14	17.27	16.93	17.20	
3	64QAM	8	0	17.27	17.13	17.19	18.5
3	64QAM	8	4	17.23	17.09	17.18	
3	64QAM	8	7	17.23	17.09	17.17	
3	64QAM	15	0	17.29	16.98	17.23	
3	256QAM	1	0	17.15	17.04	17.16	18.5
3	256QAM	1	8	17.23	16.97	17.10	
3	256QAM	1	14	17.24	17.06	17.09	
3	256QAM	8	0	17.10	16.98	17.11	18.5
3	256QAM	8	4	17.13	17.04	17.04	
3	256QAM	8	7	17.01	16.97	16.91	
3	256QAM	15	0	17.08	17.05	17.04	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	17.57	17.42	17.43	18.5
1.4	QPSK	1	3	17.47	17.29	17.22	
1.4	QPSK	1	5	17.44	17.31	17.33	
1.4	QPSK	3	0	17.45	17.18	17.20	
1.4	QPSK	3	1	17.22	17.10	17.18	
1.4	QPSK	3	3	17.24	17.02	17.16	
1.4	QPSK	6	0	17.34	17.13	17.16	18.5
1.4	16QAM	1	0	17.45	17.25	17.28	18.5
1.4	16QAM	1	3	17.20	17.18	17.27	
1.4	16QAM	1	5	17.28	16.98	17.17	
1.4	16QAM	3	0	17.19	17.09	17.15	

1.4	16QAM	3	1	17.17	17.12	17.21	
1.4	16QAM	3	3	17.21	17.01	17.16	
1.4	16QAM	6	0	17.08	17.00	16.95	
1.4	64QAM	1	0	17.22	17.10	17.11	18.5
1.4	64QAM	1	3	17.04	16.97	17.04	
1.4	64QAM	1	5	17.28	16.99	17.16	
1.4	64QAM	3	0	17.28	17.11	17.22	
1.4	64QAM	3	1	17.26	17.16	17.15	
1.4	64QAM	3	3	17.17	17.09	17.18	18.5
1.4	64QAM	6	0	17.32	16.98	17.15	
1.4	256QAM	1	0	17.13	17.07	17.12	
1.4	256QAM	1	3	17.23	16.99	17.08	18.5
1.4	256QAM	1	5	17.26	17.08	17.14	
1.4	256QAM	3	0	17.08	16.96	17.13	
1.4	256QAM	3	1	17.19	16.98	17.11	
1.4	256QAM	3	3	17.09	16.95	16.91	
1.4	256QAM	6	0	17.16	17.05	17.03	18.5

<LTE Band 4_Main>

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	15.78	15.82	15.80	16.5
20	QPSK	1	49	15.67	15.68	15.74	
20	QPSK	1	99	15.70	15.65	15.68	
20	QPSK	50	0	15.59	15.60	15.57	16.5
20	QPSK	50	24	15.51	15.52	15.48	
20	QPSK	50	50	15.42	15.49	15.48	
20	QPSK	100	0	15.46	15.51	15.43	16.5
20	16QAM	1	0	15.65	15.69	15.64	
20	16QAM	1	49	15.55	15.56	15.56	
20	16QAM	1	99	15.30	15.53	15.53	16.5
20	16QAM	50	0	15.50	15.53	15.52	
20	16QAM	50	24	15.52	15.48	15.46	
20	16QAM	50	50	15.43	15.51	15.48	16.5
20	16QAM	100	0	15.38	15.35	15.45	
20	64QAM	1	0	15.49	15.51	15.45	
20	64QAM	1	49	15.38	15.37	15.37	16.5
20	64QAM	1	99	15.33	15.56	15.54	
20	64QAM	50	0	15.54	15.55	15.52	
20	64QAM	50	24	15.55	15.52	15.46	16.5
20	64QAM	50	50	15.43	15.52	15.49	
20	64QAM	100	0	15.31	15.52	15.53	
20	256QAM	1	0	15.50	15.41	15.38	16.5
20	256QAM	1	49	15.38	15.41	15.40	
20	256QAM	1	99	15.30	15.32	15.37	
20	256QAM	50	0	15.39	15.49	15.35	16.5
20	256QAM	50	24	15.37	15.31	15.29	
20	256QAM	50	50	15.32	15.54	15.53	
20	256QAM	100	0	15.53	15.55	15.48	Tune-up limit (dBm)
Channel				20025	20175	20325	
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	15.74	15.74	15.73	16.5



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15	QPSK	1	37	15.57	15.63	15.74	
15	QPSK	1	74	15.65	15.61	15.61	
15	QPSK	36	0	15.42	15.45	15.46	
15	QPSK	36	20	15.44	15.44	15.47	16.5
15	QPSK	36	39	15.34	15.45	15.42	
15	QPSK	75	0	15.49	15.45	15.54	
15	16QAM	1	0	15.64	15.67	15.64	16.5
15	16QAM	1	37	15.47	15.53	15.51	
15	16QAM	1	74	15.22	15.52	15.47	
15	16QAM	36	0	15.43	15.44	15.46	16.5
15	16QAM	36	20	15.47	15.39	15.45	
15	16QAM	36	39	15.35	15.41	15.45	
15	16QAM	75	0	15.35	15.29	15.41	16.5
15	64QAM	1	0	15.44	15.45	15.44	
15	64QAM	1	37	15.32	15.33	15.29	
15	64QAM	1	74	15.28	15.49	15.54	16.5
15	64QAM	36	0	15.54	15.53	15.51	
15	64QAM	36	20	15.50	15.48	15.43	
15	64QAM	36	39	15.34	15.45	15.48	16.5
15	64QAM	75	0	15.27	15.46	15.49	
15	256QAM	1	0	15.47	15.32	15.33	
15	256QAM	1	37	15.32	15.32	15.35	16.5
15	256QAM	1	74	15.21	15.30	15.36	
15	256QAM	36	0	15.37	15.47	15.34	
15	256QAM	36	20	15.33	15.22	15.22	16.5
15	256QAM	36	39	15.23	15.44	15.51	
15	256QAM	75	0	15.47	15.46	15.44	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	15.71	15.79	15.71	16.5
10	QPSK	1	25	15.67	15.60	15.68	
10	QPSK	1	49	15.63	15.62	15.62	
10	QPSK	25	0	15.45	15.44	15.45	16.5
10	QPSK	25	12	15.42	15.52	15.44	
10	QPSK	25	25	15.38	15.45	15.38	
10	QPSK	50	0	15.54	15.41	15.60	16.5
10	16QAM	1	0	15.57	15.63	15.56	
10	16QAM	1	25	15.54	15.52	15.56	
10	16QAM	1	49	15.24	15.50	15.48	16.5
10	16QAM	25	0	15.48	15.47	15.51	
10	16QAM	25	12	15.43	15.44	15.36	
10	16QAM	25	25	15.35	15.44	15.41	16.5
10	16QAM	50	0	15.35	15.25	15.38	
10	64QAM	1	0	15.40	15.47	15.45	
10	64QAM	1	25	15.34	15.36	15.30	16.5
10	64QAM	1	49	15.23	15.51	15.53	
10	64QAM	25	0	15.51	15.52	15.43	
10	64QAM	25	12	15.54	15.43	15.42	16.5
10	64QAM	25	25	15.37	15.43	15.44	
10	64QAM	50	0	15.27	15.50	15.44	
10	256QAM	1	0	15.44	15.31	15.35	16.5
10	256QAM	1	25	15.30	15.36	15.32	
10	256QAM	1	49	15.27	15.24	15.34	
10	256QAM	25	0	15.31	15.41	15.32	16.5
10	256QAM	25	12	15.37	15.31	15.21	
10	256QAM	25	25	15.26	15.52	15.51	



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10	256QAM	50	0	15.51	15.47	15.40	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	15.75	15.75	15.71	16.5
5	QPSK	1	12	15.61	15.62	15.64	
5	QPSK	1	24	15.64	15.62	15.58	
5	QPSK	12	0	15.45	15.48	15.40	16.5
5	QPSK	12	7	15.42	15.42	15.45	
5	QPSK	12	13	15.39	15.48	15.47	
5	QPSK	25	0	15.54	15.41	15.56	
5	16QAM	1	0	15.55	15.66	15.54	16.5
5	16QAM	1	12	15.55	15.56	15.56	
5	16QAM	1	24	15.27	15.47	15.47	
5	16QAM	12	0	15.44	15.50	15.51	16.5
5	16QAM	12	7	15.48	15.42	15.37	
5	16QAM	12	13	15.39	15.47	15.46	
5	16QAM	25	0	15.35	15.27	15.42	
5	64QAM	1	0	15.40	15.42	15.35	16.5
5	64QAM	1	12	15.32	15.33	15.32	
5	64QAM	1	24	15.24	15.48	15.53	
5	64QAM	12	0	15.46	15.54	15.52	16.5
5	64QAM	12	7	15.52	15.50	15.42	
5	64QAM	12	13	15.37	15.43	15.48	
5	64QAM	25	0	15.22	15.49	15.53	
5	256QAM	1	0	15.42	15.31	15.38	16.5
5	256QAM	1	12	15.34	15.31	15.38	
5	256QAM	1	24	15.26	15.27	15.29	
5	256QAM	12	0	15.37	15.41	15.35	16.5
5	256QAM	12	7	15.32	15.31	15.27	
5	256QAM	12	13	15.28	15.52	15.44	
5	256QAM	25	0	15.47	15.48	15.46	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	15.70	15.72	15.76	16.5
3	QPSK	1	8	15.60	15.61	15.69	
3	QPSK	1	14	15.62	15.61	15.59	
3	QPSK	8	0	15.45	15.51	15.39	16.5
3	QPSK	8	4	15.46	15.42	15.38	
3	QPSK	8	7	15.36	15.41	15.43	
3	QPSK	15	0	15.47	15.48	15.61	
3	16QAM	1	0	15.60	15.69	15.59	16.5
3	16QAM	1	8	15.51	15.49	15.51	
3	16QAM	1	14	15.25	15.43	15.48	
3	16QAM	8	0	15.42	15.51	15.51	16.5
3	16QAM	8	4	15.52	15.38	15.46	
3	16QAM	8	7	15.39	15.48	15.39	
3	16QAM	15	0	15.29	15.32	15.45	
3	64QAM	1	0	15.39	15.50	15.44	16.5
3	64QAM	1	8	15.37	15.36	15.37	
3	64QAM	1	14	15.24	15.48	15.50	
3	64QAM	8	0	15.52	15.46	15.51	16.5
3	64QAM	8	4	15.53	15.42	15.40	
3	64QAM	8	7	15.40	15.43	15.45	
3	64QAM	15	0	15.29	15.45	15.53	
3	256QAM	1	0	15.40	15.35	15.29	16.5
3	256QAM	1	8	15.32	15.36	15.35	

3	256QAM	1	14	15.22	15.28	15.36	16.5
3	256QAM	8	0	15.31	15.46	15.25	
3	256QAM	8	4	15.29	15.26	15.24	
3	256QAM	8	7	15.29	15.52	15.45	
3	256QAM	15	0	15.45	15.51	15.46	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	15.74	15.75	15.74	16.5
1.4	QPSK	1	3	15.64	15.60	15.69	
1.4	QPSK	1	5	15.63	15.65	15.62	
1.4	QPSK	3	0	15.40	15.52	15.38	
1.4	QPSK	3	1	15.49	15.48	15.46	
1.4	QPSK	3	3	15.40	15.48	15.42	16.5
1.4	QPSK	6	0	15.47	15.41	15.61	
1.4	16QAM	1	0	15.62	15.66	15.58	16.5
1.4	16QAM	1	3	15.45	15.47	15.51	
1.4	16QAM	1	5	15.25	15.49	15.46	
1.4	16QAM	3	0	15.50	15.45	15.51	
1.4	16QAM	3	1	15.42	15.48	15.42	
1.4	16QAM	3	3	15.43	15.49	15.40	16.5
1.4	16QAM	6	0	15.36	15.31	15.41	
1.4	64QAM	1	0	15.42	15.41	15.41	16.5
1.4	64QAM	1	3	15.34	15.30	15.37	
1.4	64QAM	1	5	15.30	15.46	15.47	
1.4	64QAM	3	0	15.45	15.52	15.48	
1.4	64QAM	3	1	15.47	15.51	15.45	
1.4	64QAM	3	3	15.40	15.48	15.46	16.5
1.4	64QAM	6	0	15.22	15.43	15.49	
1.4	256QAM	1	0	15.40	15.38	15.35	16.5
1.4	256QAM	1	3	15.38	15.39	15.30	
1.4	256QAM	1	5	15.27	15.29	15.27	
1.4	256QAM	3	0	15.32	15.45	15.35	
1.4	256QAM	3	1	15.29	15.24	15.23	
1.4	256QAM	3	3	15.32	15.50	15.46	16.5
1.4	256QAM	6	0	15.50	15.48	15.43	

<LTE Band 5_Main>

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	20.48	20.35	20.28	21.5
10	QPSK	1	25	20.45	20.33	20.31	
10	QPSK	1	49	20.40	20.30	20.18	
10	QPSK	25	0	20.32	20.23	20.17	21.5
10	QPSK	25	12	20.19	20.08	20.06	
10	QPSK	25	25	20.22	20.06	20.04	
10	QPSK	50	0	20.19	20.09	20.03	21.5
10	16QAM	1	0	20.35	20.21	20.14	
10	16QAM	1	25	20.33	20.25	20.16	
10	16QAM	1	49	20.26	20.18	20.12	21.5
10	16QAM	25	0	20.19	20.09	20.07	
10	16QAM	25	12	20.17	20.12	20.01	
10	16QAM	25	25	20.16	20.10	20.04	21.5
10	16QAM	50	0	20.18	20.06	20.03	



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10	64QAM	1	0	20.15	20.05	20.00	21.5
10	64QAM	1	25	20.14	20.05	20.00	
10	64QAM	1	49	20.11	19.98	19.95	
10	64QAM	25	0	20.21	20.08	20.05	21.5
10	64QAM	25	12	20.19	20.07	20.05	
10	64QAM	25	25	20.21	20.07	20.03	
10	64QAM	50	0	20.22	20.11	20.05	
10	256QAM	1	0	18.63	18.54	18.51	20
10	256QAM	1	25	18.62	18.56	18.43	
10	256QAM	1	49	18.48	18.66	18.66	
10	256QAM	25	0	18.62	18.82	18.71	20
10	256QAM	25	12	18.57	18.55	18.78	
10	256QAM	25	25	18.74	18.53	18.61	
10	256QAM	50	0	18.68	18.71	18.74	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	20.38	20.27	20.28	21.5
5	QPSK	1	12	20.38	20.24	20.23	
5	QPSK	1	24	20.36	20.27	20.10	
5	QPSK	12	0	20.12	20.02	20.00	21.5
5	QPSK	12	7	20.13	20.02	20.00	
5	QPSK	12	13	20.13	20.04	19.95	
5	QPSK	25	0	20.15	20.02	19.95	
5	16QAM	1	0	20.26	20.12	20.14	21.5
5	16QAM	1	12	20.27	20.25	20.06	
5	16QAM	1	24	20.21	20.10	20.12	
5	16QAM	12	0	20.10	20.06	19.97	21.5
5	16QAM	12	7	20.10	20.07	20.01	
5	16QAM	12	13	20.16	20.05	19.95	
5	16QAM	25	0	20.17	19.97	19.93	
5	64QAM	1	0	20.09	20.03	19.94	21.5
5	64QAM	1	12	20.12	20.02	19.91	
5	64QAM	1	24	20.09	19.95	19.93	
5	64QAM	12	0	20.21	20.04	20.02	21.5
5	64QAM	12	7	20.13	20.07	20.05	
5	64QAM	12	13	20.15	20.01	19.96	
5	64QAM	25	0	20.17	20.10	19.97	
5	256QAM	1	0	18.62	18.45	18.45	20
5	256QAM	1	12	18.57	18.50	18.37	
5	256QAM	1	24	18.38	18.65	18.60	
5	256QAM	12	0	18.56	18.77	18.62	20
5	256QAM	12	7	18.47	18.46	18.72	
5	256QAM	12	13	18.71	18.48	18.60	
5	256QAM	25	0	18.60	18.67	18.73	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	20.45	20.29	20.24	21.5
3	QPSK	1	8	20.43	20.23	20.23	
3	QPSK	1	14	20.40	20.21	20.08	
3	QPSK	8	0	20.17	20.03	20.04	21.5
3	QPSK	8	4	20.17	20.07	20.06	
3	QPSK	8	7	20.20	19.96	19.96	
3	QPSK	15	0	20.09	20.08	19.95	
3	16QAM	1	0	20.28	20.21	20.13	21.5
3	16QAM	1	8	20.30	20.25	20.10	
3	16QAM	1	14	20.17	20.17	20.12	



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3	16QAM	8	0	20.19	20.02	20.02	21.5
3	16QAM	8	4	20.14	20.12	19.95	
3	16QAM	8	7	20.15	20.08	20.01	
3	16QAM	15	0	20.14	19.99	19.95	
3	64QAM	1	0	20.05	20.03	19.95	21.5
3	64QAM	1	8	20.05	20.05	19.94	
3	64QAM	1	14	20.05	19.90	19.93	
3	64QAM	8	0	20.11	20.05	20.03	
3	64QAM	8	4	20.10	20.03	19.98	21.5
3	64QAM	8	7	20.19	20.05	20.03	
3	64QAM	15	0	20.20	20.01	20.05	
3	256QAM	1	0	18.61	18.48	18.51	
3	256QAM	1	8	18.60	18.54	18.41	20
3	256QAM	1	14	18.47	18.58	18.62	
3	256QAM	8	0	18.53	18.81	18.69	
3	256QAM	8	4	18.57	18.46	18.74	
3	256QAM	8	7	18.69	18.49	18.57	20
3	256QAM	15	0	18.64	18.69	18.70	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	20.40	20.31	20.19	21.5
1.4	QPSK	1	3	20.45	20.32	20.21	
1.4	QPSK	1	5	20.30	20.20	20.16	
1.4	QPSK	3	0	20.36	20.25	20.21	
1.4	QPSK	3	1	20.39	20.25	20.09	
1.4	QPSK	3	3	20.22	20.02	19.97	
1.4	QPSK	6	0	20.18	20.03	20.00	21.5
1.4	16QAM	1	0	20.27	20.18	20.11	21.5
1.4	16QAM	1	3	20.32	20.21	20.15	
1.4	16QAM	1	5	20.19	20.14	20.09	
1.4	16QAM	3	0	20.27	20.20	20.10	
1.4	16QAM	3	1	20.19	20.09	20.02	
1.4	16QAM	3	3	20.12	19.99	20.04	
1.4	16QAM	6	0	20.12	20.05	20.02	21.5
1.4	64QAM	1	0	20.11	20.00	19.94	21.5
1.4	64QAM	1	3	20.07	20.02	19.97	
1.4	64QAM	1	5	20.10	19.90	19.85	
1.4	64QAM	3	0	20.16	20.05	20.05	
1.4	64QAM	3	1	20.09	19.99	19.96	
1.4	64QAM	3	3	20.18	19.97	19.98	
1.4	64QAM	6	0	20.18	20.02	20.01	21.5
1.4	256QAM	1	0	18.57	18.54	18.51	20
1.4	256QAM	1	3	18.57	18.46	18.35	
1.4	256QAM	1	5	18.38	18.63	18.66	
1.4	256QAM	3	0	18.55	18.75	18.69	
1.4	256QAM	3	1	18.49	18.52	18.68	
1.4	256QAM	3	3	18.71	18.48	18.57	
1.4	256QAM	6	0	18.68	18.65	18.71	20



<LTE Band 7_Main>

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	14.28	14.37	14.41	
20	QPSK	1	49	14.26	14.32	14.40	15.5
20	QPSK	1	99	13.88	14.01	14.11	
20	QPSK	50	0	14.19	14.26	14.34	
20	QPSK	50	24	14.05	14.13	14.18	15.5
20	QPSK	50	50	13.94	14.02	14.12	
20	QPSK	100	0	13.92	13.98	14.07	
20	16QAM	1	0	14.17	14.22	14.28	15.5
20	16QAM	1	49	14.14	14.20	14.28	
20	16QAM	1	99	13.91	14.01	14.07	
20	16QAM	50	0	13.99	14.06	14.14	15.5
20	16QAM	50	24	14.04	14.12	14.20	
20	16QAM	50	50	13.94	14.05	14.12	
20	16QAM	100	0	13.78	13.77	13.85	15.5
20	64QAM	1	0	13.99	14.04	14.06	
20	64QAM	1	49	13.95	14.04	14.11	
20	64QAM	1	99	13.89	13.99	14.12	15.5
20	64QAM	50	0	14.01	14.07	14.14	
20	64QAM	50	24	14.06	14.13	14.21	
20	64QAM	50	50	13.98	14.05	14.14	15.5
20	64QAM	100	0	14.05	14.09	14.12	
20	256QAM	1	0	14.07	14.16	14.28	
20	256QAM	1	49	14.05	14.14	14.27	15.5
20	256QAM	1	99	13.84	13.94	14.01	
20	256QAM	50	0	13.98	14.00	14.06	
20	256QAM	50	24	13.99	14.10	14.14	15.5
20	256QAM	50	50	13.89	13.95	14.03	
20	256QAM	100	0	13.77	13.68	13.82	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	14.27	14.29	14.35	
15	QPSK	1	37	14.18	14.27	14.39	15.5
15	QPSK	1	74	13.79	13.99	14.03	
15	QPSK	36	0	13.97	14.02	14.09	
15	QPSK	36	20	13.99	14.10	14.17	15.5
15	QPSK	36	39	13.90	13.98	14.12	
15	QPSK	75	0	13.85	13.91	13.91	
15	16QAM	1	0	14.15	14.14	14.22	15.5
15	16QAM	1	37	14.08	14.17	14.26	
15	16QAM	1	74	13.86	13.92	13.97	
15	16QAM	36	0	13.92	14.03	14.09	15.5
15	16QAM	36	20	13.95	14.07	14.17	
15	16QAM	36	39	13.84	13.99	14.07	
15	16QAM	75	0	13.75	13.69	13.83	15.5
15	64QAM	1	0	13.94	14.01	14.03	
15	64QAM	1	37	13.89	13.99	14.03	
15	64QAM	1	74	13.84	13.95	14.06	15.5
15	64QAM	36	0	13.95	14.03	14.06	
15	64QAM	36	20	14.00	14.09	14.14	
15	64QAM	36	39	13.91	13.95	14.04	15.5
15	64QAM	75	0	13.96	14.03	14.03	



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15	256QAM	1	0	14.02	14.14	14.26	15.5
15	256QAM	1	37	14.01	14.07	14.23	
15	256QAM	1	74	13.83	13.90	13.98	
15	256QAM	36	0	13.97	13.97	13.98	15.5
15	256QAM	36	20	13.97	14.09	14.14	
15	256QAM	36	39	13.83	13.86	13.97	
15	256QAM	75	0	13.71	13.59	13.81	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	14.26	14.28	14.36	15.5
10	QPSK	1	25	14.16	14.28	14.32	
10	QPSK	1	49	13.81	14.00	14.09	
10	QPSK	25	0	13.97	14.00	14.10	15.5
10	QPSK	25	12	14.00	14.05	14.14	
10	QPSK	25	25	13.85	13.96	14.11	
10	QPSK	50	0	13.87	13.94	13.93	
10	16QAM	1	0	14.11	14.19	14.23	15.5
10	16QAM	1	25	14.11	14.12	14.25	
10	16QAM	1	49	13.82	14.01	14.07	
10	16QAM	25	0	13.99	13.99	14.04	15.5
10	16QAM	25	12	13.95	14.05	14.12	
10	16QAM	25	25	13.91	13.98	14.04	
10	16QAM	50	0	13.76	13.69	13.77	
10	64QAM	1	0	13.99	13.94	13.99	15.5
10	64QAM	1	25	13.86	13.98	14.04	
10	64QAM	1	49	13.83	13.94	14.02	
10	64QAM	25	0	13.96	13.99	14.06	15.5
10	64QAM	25	12	13.97	14.07	14.12	
10	64QAM	25	25	13.88	14.00	14.08	
10	64QAM	50	0	14.02	14.08	14.02	
10	256QAM	1	0	13.99	14.11	14.18	15.5
10	256QAM	1	25	13.97	14.10	14.18	
10	256QAM	1	49	13.80	13.86	13.91	
10	256QAM	25	0	13.96	13.93	14.04	15.5
10	256QAM	25	12	13.97	14.01	14.12	
10	256QAM	25	25	13.84	13.95	14.00	
10	256QAM	50	0	13.71	13.61	13.75	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	14.27	14.33	14.39	15.5
5	QPSK	1	12	14.20	14.23	14.34	
5	QPSK	1	24	13.85	13.93	14.01	
5	QPSK	12	0	13.97	14.04	14.14	15.5
5	QPSK	12	7	14.01	14.05	14.15	
5	QPSK	12	13	13.93	14.00	14.06	
5	QPSK	25	0	13.86	13.97	13.89	
5	16QAM	1	0	14.15	14.17	14.20	15.5
5	16QAM	1	12	14.12	14.20	14.26	
5	16QAM	1	24	13.88	13.91	13.99	
5	16QAM	12	0	13.96	14.00	14.08	15.5
5	16QAM	12	7	14.02	14.06	14.18	
5	16QAM	12	13	13.92	14.03	14.03	
5	16QAM	25	0	13.77	13.68	13.79	
5	64QAM	1	0	13.91	13.96	14.05	15.5
5	64QAM	1	12	13.90	13.94	14.01	
5	64QAM	1	24	13.88	13.95	14.06	



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5	64QAM	12	0	13.92	13.99	14.12	15.5
5	64QAM	12	7	14.04	14.07	14.14	
5	64QAM	12	13	13.89	13.98	14.11	
5	64QAM	25	0	14.05	14.01	14.10	
5	256QAM	1	0	14.05	14.07	14.26	15.5
5	256QAM	1	12	14.05	14.04	14.24	
5	256QAM	1	24	13.75	13.91	13.98	
5	256QAM	12	0	13.93	13.97	13.99	15.5
5	256QAM	12	7	13.89	14.06	14.11	
5	256QAM	12	13	13.86	13.91	13.97	
5	256QAM	25	0	13.75	13.61	13.72	

<LTE Band 12_Main>

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	22.15	22.21	22.16	23
10	QPSK	1	25	22.20	22.12	22.12	
10	QPSK	1	49	22.05	22.09	22.18	
10	QPSK	25	0	21.95	21.96	21.92	23
10	QPSK	25	12	21.91	21.84	21.89	
10	QPSK	25	25	21.91	21.89	21.84	
10	QPSK	50	0	21.84	21.88	21.87	23
10	16QAM	1	0	21.81	21.79	21.82	
10	16QAM	1	25	21.84	21.89	21.84	
10	16QAM	1	49	21.85	21.85	21.84	23
10	16QAM	25	0	21.20	21.06	21.09	
10	16QAM	25	12	21.20	21.11	21.18	
10	16QAM	25	25	21.18	21.12	21.18	23
10	16QAM	50	0	21.15	21.08	21.19	
10	64QAM	1	0	21.25	21.24	21.22	23
10	64QAM	1	25	21.33	21.29	21.32	
10	64QAM	1	49	21.22	21.23	21.32	
10	64QAM	25	0	20.18	20.00	20.03	22
10	64QAM	25	12	20.12	20.07	20.10	
10	64QAM	25	25	20.20	20.12	20.10	
10	64QAM	50	0	20.13	20.05	20.19	20
10	256QAM	1	0	18.07	18.10	18.20	
10	256QAM	1	25	18.13	18.18	18.30	
10	256QAM	1	49	18.03	18.15	18.20	20
10	256QAM	25	0	18.09	18.20	18.17	
10	256QAM	25	12	18.17	18.08	18.22	
10	256QAM	25	25	18.27	18.08	18.16	20
10	256QAM	50	0	18.16	18.18	18.30	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	22.07	22.19	22.14	23
5	QPSK	1	12	22.11	22.09	22.02	
5	QPSK	1	24	21.96	22.03	22.09	
5	QPSK	12	0	21.80	21.90	21.72	23
5	QPSK	12	7	21.83	21.75	21.88	
5	QPSK	12	13	21.89	21.85	21.82	
5	QPSK	25	0	21.78	21.88	21.77	23
5	16QAM	1	0	21.77	21.77	21.74	
5	16QAM	1	12	21.78	21.84	21.84	



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5	16QAM	1	24	21.76	21.77	21.76	23
5	16QAM	12	0	21.14	21.00	21.04	
5	16QAM	12	7	21.11	21.03	21.14	
5	16QAM	12	13	21.10	21.04	21.11	
5	16QAM	25	0	21.06	21.05	21.13	23
5	64QAM	1	0	21.22	21.19	21.22	
5	64QAM	1	12	21.33	21.27	21.30	
5	64QAM	1	24	21.14	21.16	21.27	
5	64QAM	12	0	20.13	19.98	20.03	22
5	64QAM	12	7	20.03	19.97	20.05	
5	64QAM	12	13	20.11	20.07	20.00	
5	64QAM	25	0	20.06	20.01	20.11	
5	256QAM	1	0	18.07	18.03	18.20	20
5	256QAM	1	12	18.05	18.15	18.23	
5	256QAM	1	24	18.02	18.09	18.14	
5	256QAM	12	0	18.01	18.18	18.08	
5	256QAM	12	7	18.11	18.02	18.14	20
5	256QAM	12	13	18.20	18.01	18.14	
5	256QAM	25	0	18.14	18.10	18.28	
Channel				23025	23095	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	22.14	22.11	22.14	23
3	QPSK	1	8	22.10	22.08	22.10	
3	QPSK	1	14	21.99	22.09	22.11	
3	QPSK	8	0	21.89	21.91	21.76	23
3	QPSK	8	4	21.87	21.79	21.88	
3	QPSK	8	7	21.87	21.88	21.74	
3	QPSK	15	0	21.74	21.88	21.83	
3	16QAM	1	0	21.80	21.73	21.73	23
3	16QAM	1	8	21.80	21.86	21.75	
3	16QAM	1	14	21.85	21.82	21.83	
3	16QAM	8	0	21.17	20.98	21.05	23
3	16QAM	8	4	21.19	21.01	21.17	
3	16QAM	8	7	21.15	21.07	21.14	
3	16QAM	15	0	21.15	20.98	21.11	
3	64QAM	1	0	21.25	21.20	21.16	23
3	64QAM	1	8	21.29	21.26	21.25	
3	64QAM	1	14	21.12	21.17	21.29	
3	64QAM	8	0	20.18	19.96	19.95	22
3	64QAM	8	4	20.09	19.99	20.02	
3	64QAM	8	7	20.11	20.10	20.03	
3	64QAM	15	0	20.09	19.99	20.13	
3	256QAM	1	0	18.02	18.05	18.20	20
3	256QAM	1	8	18.08	18.09	18.28	
3	256QAM	1	14	17.98	18.12	18.12	
3	256QAM	8	0	18.01	18.14	18.07	20
3	256QAM	8	4	18.10	17.99	18.16	
3	256QAM	8	7	18.19	18.00	18.11	
3	256QAM	15	0	18.16	18.13	18.23	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	22.12	22.14	22.14	23
1.4	QPSK	1	3	22.18	22.12	22.10	
1.4	QPSK	1	5	22.12	22.07	22.15	
1.4	QPSK	3	0	22.15	22.03	22.09	
1.4	QPSK	3	1	22.02	22.07	22.13	



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1.4	QPSK	3	3	21.82	21.80	21.84	
1.4	QPSK	6	0	21.78	21.84	21.86	23
1.4	16QAM	1	0	21.75	21.73	21.79	23
1.4	16QAM	1	3	21.82	21.81	21.75	
1.4	16QAM	1	5	21.79	21.79	21.84	
1.4	16QAM	3	0	21.81	21.81	21.88	
1.4	16QAM	3	1	21.85	21.86	21.77	
1.4	16QAM	3	3	21.84	21.86	21.84	
1.4	16QAM	6	0	21.10	21.05	21.12	23
1.4	64QAM	1	0	21.16	21.20	21.20	23
1.4	64QAM	1	3	21.24	21.24	21.32	
1.4	64QAM	1	5	21.14	21.20	21.30	
1.4	64QAM	3	0	21.14	21.05	21.06	
1.4	64QAM	3	1	21.17	21.08	21.10	
1.4	64QAM	3	3	21.12	21.03	21.08	
1.4	64QAM	6	0	20.04	20.03	20.17	22
1.4	256QAM	1	0	17.97	18.05	18.19	20
1.4	256QAM	1	3	18.05	18.16	18.23	
1.4	256QAM	1	5	17.94	18.11	18.15	
1.4	256QAM	3	0	18.01	18.13	18.17	
1.4	256QAM	3	1	18.16	17.98	18.15	
1.4	256QAM	3	3	18.27	18.04	18.12	
1.4	256QAM	6	0	18.15	18.14	18.27	20

<LTE Band 13_Main>

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		22.16		22.5
10	QPSK	1	25		22.15		
10	QPSK	1	49		22.05		
10	QPSK	25	0		22.00		22.5
10	QPSK	25	12		21.78		
10	QPSK	25	25		21.82		
10	QPSK	50	0		21.76		22.5
10	16QAM	1	0		21.79		
10	16QAM	1	25		21.81		
10	16QAM	1	49		21.69		22.5
10	16QAM	25	0		21.28		
10	16QAM	25	12		21.25		
10	16QAM	25	25		21.26		22.5
10	16QAM	50	0		21.22		
10	64QAM	1	0		21.31		
10	64QAM	1	25		21.27		22.5
10	64QAM	1	49		21.29		
10	64QAM	25	0		20.27		
10	64QAM	25	12		20.23		22
10	64QAM	25	25		20.30		
10	64QAM	50	0		20.26		
10	256QAM	1	0		18.25		20
10	256QAM	1	25		18.24		
10	256QAM	1	49		18.31		
10	256QAM	25	0		18.25		20
10	256QAM	25	12		18.24		

10	256QAM	25	25		18.23		
10	256QAM	50	0		18.23		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	21.91	21.98	21.94	22.5
5	QPSK	1	12	21.82	21.97	21.95	
5	QPSK	1	24	21.83	21.90	21.84	
5	QPSK	12	0	21.67	21.61	21.67	22.5
5	QPSK	12	7	21.55	21.61	21.63	
5	QPSK	12	13	21.64	21.59	21.62	
5	QPSK	25	0	21.58	21.62	21.62	22.5
5	16QAM	1	0	21.59	21.57	21.63	
5	16QAM	1	12	21.58	21.63	21.58	
5	16QAM	1	24	21.54	21.48	21.51	22.5
5	16QAM	12	0	21.06	21.06	21.09	
5	16QAM	12	7	21.05	21.09	21.05	
5	16QAM	12	13	21.06	21.11	21.07	22.5
5	16QAM	25	0	21.04	21.08	21.08	
5	64QAM	1	0	21.09	21.10	21.14	
5	64QAM	1	12	21.13	21.13	21.07	22
5	64QAM	1	24	21.15	21.06	21.15	
5	64QAM	12	0	20.14	20.04	20.10	
5	64QAM	12	7	20.01	20.08	20.10	20
5	64QAM	12	13	20.14	20.15	20.07	
5	64QAM	25	0	20.10	20.04	20.06	
5	256QAM	1	0	18.10	18.03	18.07	20
5	256QAM	1	12	18.01	18.03	18.11	
5	256QAM	1	24	18.08	18.16	18.10	
5	256QAM	12	0	18.02	18.05	18.09	20
5	256QAM	12	7	18.11	18.04	18.02	
5	256QAM	12	13	18.10	18.03	18.06	
5	256QAM	25	0	18.00	18.01	18.01	

<LTE Band 14_Main>

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		22.31		22.5
10	QPSK	1	25		22.21		
10	QPSK	1	49		22.17		
10	QPSK	25	0		21.99		22.5
10	QPSK	25	12		21.95		
10	QPSK	25	25		21.89		
10	QPSK	50	0		21.84		
10	16QAM	1	0		21.83		22.5
10	16QAM	1	25		21.79		
10	16QAM	1	49		21.83		
10	16QAM	25	0		21.37		22.5
10	16QAM	25	12		21.28		
10	16QAM	25	25		21.34		
10	16QAM	50	0		21.36		
10	64QAM	1	0		21.40		22.5
10	64QAM	1	25		21.41		
10	64QAM	1	49		21.30		



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10	64QAM	25	0		20.31		22
10	64QAM	25	12		20.25		
10	64QAM	25	25		20.23		
10	64QAM	50	0		20.27		
10	256QAM	1	0		18.41		20
10	256QAM	1	25		18.37		
10	256QAM	1	49		18.27		
10	256QAM	25	0		18.26		
10	256QAM	25	12		18.34		20
10	256QAM	25	25		18.30		
10	256QAM	50	0		18.32		
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0	22.09	22.08	22.10	22.5
5	QPSK	1	12	21.91	21.94	21.95	
5	QPSK	1	24	21.89	21.94	21.97	
5	QPSK	12	0	21.66	21.65	21.62	22.5
5	QPSK	12	7	21.71	21.68	21.68	
5	QPSK	12	13	21.72	21.78	21.78	
5	QPSK	25	0	21.54	21.54	21.62	
5	16QAM	1	0	21.62	21.61	21.58	22.5
5	16QAM	1	12	21.54	21.55	21.49	
5	16QAM	1	24	21.54	21.54	21.57	
5	16QAM	12	0	21.10	21.13	21.07	22.5
5	16QAM	12	7	21.09	21.07	21.03	
5	16QAM	12	13	21.04	21.10	21.07	
5	16QAM	25	0	21.10	21.14	21.08	
5	64QAM	1	0	21.18	21.17	21.10	22.5
5	64QAM	1	12	21.13	21.19	21.12	
5	64QAM	1	24	21.07	21.10	21.03	
5	64QAM	12	0	20.11	20.04	20.11	22
5	64QAM	12	7	20.03	20.05	20.01	
5	64QAM	12	13	20.03	20.06	20.01	
5	64QAM	25	0	20.00	20.08	20.02	
5	256QAM	1	0	18.11	18.20	18.11	20
5	256QAM	1	12	18.16	18.14	18.16	
5	256QAM	1	24	18.07	18.02	18.04	
5	256QAM	12	0	18.07	18.03	18.06	20
5	256QAM	12	7	18.10	18.12	18.13	
5	256QAM	12	13	18.09	18.09	18.02	
5	256QAM	25	0	18.05	18.10	18.02	



<LTE Band 17_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23780	23790	23800	
Frequency (MHz)				709	710	711	
10	QPSK	1	0	22.08	22.03	21.99	23
10	QPSK	1	25	22.06	22.01	22.03	
10	QPSK	1	49	22.04	21.99	22.02	
10	QPSK	25	0	21.88	21.78	21.83	23
10	QPSK	25	12	21.80	21.78	21.80	
10	QPSK	25	25	21.81	21.76	21.82	
10	QPSK	50	0	21.71	21.69	21.73	
10	16QAM	1	0	21.39	21.34	21.41	23
10	16QAM	1	25	21.36	21.36	21.36	
10	16QAM	1	49	21.39	21.41	21.42	
10	16QAM	25	0	21.23	21.23	21.26	23
10	16QAM	25	12	21.34	21.28	21.33	
10	16QAM	25	25	21.32	21.28	21.30	
10	16QAM	50	0	21.30	21.35	21.34	
10	64QAM	1	0	21.39	21.43	21.39	23
10	64QAM	1	25	21.39	21.41	21.39	
10	64QAM	1	49	21.41	21.34	21.44	
10	64QAM	25	0	20.30	20.31	20.32	22
10	64QAM	25	12	20.41	20.37	20.41	
10	64QAM	25	25	20.38	20.36	20.39	
10	64QAM	50	0	20.37	20.39	20.37	
10	256QAM	1	0	18.69	18.79	18.60	20
10	256QAM	1	25	18.65	18.46	18.60	
10	256QAM	1	49	18.43	18.46	18.65	
10	256QAM	25	0	18.64	18.76	18.61	20
10	256QAM	25	12	18.48	18.47	18.54	
10	256QAM	25	25	18.58	18.63	18.58	
10	256QAM	50	0	18.47	18.53	18.59	
Channel				23755	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	22.01	21.99	21.95	23
5	QPSK	1	12	22.02	21.96	22.03	
5	QPSK	1	24	21.95	21.99	21.94	
5	QPSK	12	0	21.77	21.66	21.70	23
5	QPSK	12	7	21.78	21.74	21.75	
5	QPSK	12	13	21.72	21.72	21.74	
5	QPSK	25	0	21.65	21.65	21.71	
5	16QAM	1	0	21.32	21.28	21.40	23
5	16QAM	1	12	21.28	21.32	21.30	
5	16QAM	1	24	21.31	21.41	21.42	
5	16QAM	12	0	21.14	21.19	21.22	23
5	16QAM	12	7	21.32	21.21	21.24	
5	16QAM	12	13	21.26	21.20	21.25	
5	16QAM	25	0	21.22	21.29	21.32	
5	64QAM	1	0	21.39	21.38	21.39	23
5	64QAM	1	12	21.31	21.39	21.30	
5	64QAM	1	24	21.32	21.32	21.35	
5	64QAM	12	0	20.21	20.24	20.30	22
5	64QAM	12	7	20.37	20.34	20.32	
5	64QAM	12	13	20.38	20.31	20.33	
5	64QAM	25	0	20.32	20.30	20.37	



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5	256QAM	1	0	18.59	18.73	18.52	20
5	256QAM	1	12	18.63	18.45	18.60	
5	256QAM	1	24	18.35	18.40	18.55	
5	256QAM	12	0	18.59	18.76	18.60	20
5	256QAM	12	7	18.39	18.38	18.48	
5	256QAM	12	13	18.57	18.60	18.50	
5	256QAM	25	0	18.46	18.52	18.53	

<LTE Band 25_Main>

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	17.55	17.54	17.61	18.5
20	QPSK	1	49	17.43	17.46	17.54	
20	QPSK	1	99	17.30	17.12	17.37	
20	QPSK	50	0	17.26	17.33	17.38	18.5
20	QPSK	50	24	17.22	17.33	17.26	
20	QPSK	50	50	17.27	17.21	17.28	
20	QPSK	100	0	17.19	17.32	17.35	
20	16QAM	1	0	17.41	17.39	17.49	18.5
20	16QAM	1	49	17.28	17.33	17.42	
20	16QAM	1	99	17.28	17.13	17.37	
20	16QAM	50	0	17.27	17.32	17.38	18.5
20	16QAM	50	24	17.23	17.33	17.27	
20	16QAM	50	50	17.30	17.22	17.31	
20	16QAM	100	0	17.14	17.14	17.20	
20	64QAM	1	0	17.20	17.27	17.37	18.5
20	64QAM	1	49	17.07	17.22	17.27	
20	64QAM	1	99	17.30	17.13	17.38	
20	64QAM	50	0	17.29	17.33	17.38	18.5
20	64QAM	50	24	17.24	17.32	17.25	
20	64QAM	50	50	17.28	17.25	17.31	
20	64QAM	100	0	17.41	17.49	17.45	
20	256QAM	1	0	17.27	17.18	17.26	18.5
20	256QAM	1	49	17.05	17.11	17.14	
20	256QAM	1	99	17.12	17.18	17.32	
20	256QAM	50	0	17.07	17.17	17.24	18.5
20	256QAM	50	24	17.22	17.08	17.33	
20	256QAM	50	50	17.29	17.25	17.32	
20	256QAM	100	0	17.16	17.25	17.23	
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	17.49	17.46	17.54	18.5
15	QPSK	1	37	17.38	17.36	17.48	
15	QPSK	1	74	17.24	17.09	17.27	
15	QPSK	36	0	17.16	17.28	17.33	18.5
15	QPSK	36	20	17.15	17.30	17.21	
15	QPSK	36	39	17.26	17.17	17.27	
15	QPSK	75	0	17.25	17.32	17.28	
15	16QAM	1	0	17.34	17.29	17.47	18.5
15	16QAM	1	37	17.23	17.29	17.36	
15	16QAM	1	74	17.26	17.07	17.35	
15	16QAM	36	0	17.22	17.22	17.34	18.5
15	16QAM	36	20	17.21	17.29	17.20	
15	16QAM	36	39	17.29	17.15	17.31	



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15	16QAM	75	0	17.14	17.12	17.18	18.5
15	64QAM	1	0	17.19	17.21	17.34	
15	64QAM	1	37	17.02	17.22	17.24	
15	64QAM	1	74	17.20	17.06	17.34	
15	64QAM	36	0	17.28	17.25	17.29	18.5
15	64QAM	36	20	17.24	17.22	17.19	
15	64QAM	36	39	17.22	17.22	17.22	
15	64QAM	75	0	17.35	17.41	17.41	
15	256QAM	1	0	17.26	17.12	17.25	18.5
15	256QAM	1	37	17.04	17.09	17.05	
15	256QAM	1	74	17.07	17.10	17.30	
15	256QAM	36	0	17.04	17.07	17.17	18.5
15	256QAM	36	20	17.22	17.06	17.24	
15	256QAM	36	39	17.25	17.19	17.31	
15	256QAM	75	0	17.13	17.25	17.21	
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	17.51	17.45	17.52	18.5
10	QPSK	1	25	17.40	17.38	17.48	
10	QPSK	1	49	17.30	17.11	17.34	
10	QPSK	25	0	17.20	17.23	17.37	18.5
10	QPSK	25	12	17.21	17.29	17.17	
10	QPSK	25	25	17.21	17.14	17.23	
10	QPSK	50	0	17.27	17.29	17.25	
10	16QAM	1	0	17.38	17.35	17.45	18.5
10	16QAM	1	25	17.27	17.30	17.40	
10	16QAM	1	49	17.27	17.07	17.37	
10	16QAM	25	0	17.19	17.23	17.32	18.5
10	16QAM	25	12	17.14	17.26	17.22	
10	16QAM	25	25	17.30	17.16	17.26	
10	16QAM	50	0	17.13	17.09	17.17	
10	64QAM	1	0	17.17	17.18	17.33	18.5
10	64QAM	1	25	17.03	17.12	17.23	
10	64QAM	1	49	17.26	17.12	17.28	
10	64QAM	25	0	17.24	17.26	17.34	18.5
10	64QAM	25	12	17.18	17.30	17.22	
10	64QAM	25	25	17.22	17.17	17.21	
10	64QAM	50	0	17.32	17.40	17.37	
10	256QAM	1	0	17.25	17.08	17.26	18.5
10	256QAM	1	25	17.02	17.08	17.08	
10	256QAM	1	49	17.05	17.13	17.23	
10	256QAM	25	0	17.06	17.10	17.18	18.5
10	256QAM	25	12	17.15	17.05	17.24	
10	256QAM	25	25	17.25	17.23	17.27	
10	256QAM	50	0	17.13	17.23	17.17	
Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	17.53	17.54	17.57	18.5
5	QPSK	1	12	17.42	17.44	17.44	
5	QPSK	1	24	17.22	17.07	17.37	
5	QPSK	12	0	17.23	17.25	17.34	18.5
5	QPSK	12	7	17.18	17.31	17.20	
5	QPSK	12	13	17.27	17.16	17.25	
5	QPSK	25	0	17.21	17.28	17.30	
5	16QAM	1	0	17.40	17.29	17.43	18.5
5	16QAM	1	12	17.24	17.28	17.37	



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5	16QAM	1	24	17.19	17.07	17.28	18.5
5	16QAM	12	0	17.20	17.27	17.28	
5	16QAM	12	7	17.14	17.27	17.18	
5	16QAM	12	13	17.21	17.12	17.31	
5	16QAM	25	0	17.13	17.12	17.20	
5	64QAM	1	0	17.11	17.25	17.29	18.5
5	64QAM	1	12	16.99	17.12	17.24	
5	64QAM	1	24	17.25	17.11	17.29	
5	64QAM	12	0	17.28	17.28	17.36	18.5
5	64QAM	12	7	17.20	17.25	17.16	
5	64QAM	12	13	17.21	17.15	17.31	
5	64QAM	25	0	17.32	17.44	17.45	
5	256QAM	1	0	17.24	17.14	17.19	18.5
5	256QAM	1	12	16.99	17.10	17.08	
5	256QAM	1	24	17.02	17.08	17.27	
5	256QAM	12	0	17.06	17.14	17.24	18.5
5	256QAM	12	7	17.16	16.98	17.26	
5	256QAM	12	13	17.28	17.19	17.30	
5	256QAM	25	0	17.11	17.20	17.16	
Channel				26055	26340	26675	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	17.55	17.45	17.55	18.5
3	QPSK	1	8	17.33	17.41	17.49	
3	QPSK	1	14	17.22	17.02	17.28	
3	QPSK	8	0	17.22	17.25	17.38	18.5
3	QPSK	8	4	17.12	17.33	17.19	
3	QPSK	8	7	17.18	17.17	17.24	
3	QPSK	15	0	17.25	17.30	17.30	
3	16QAM	1	0	17.37	17.32	17.45	18.5
3	16QAM	1	8	17.20	17.25	17.37	
3	16QAM	1	14	17.19	17.10	17.30	
3	16QAM	8	0	17.24	17.22	17.34	18.5
3	16QAM	8	4	17.14	17.23	17.27	
3	16QAM	8	7	17.24	17.22	17.27	
3	16QAM	15	0	17.05	17.10	17.10	
3	64QAM	1	0	17.13	17.27	17.30	18.5
3	64QAM	1	8	17.07	17.13	17.18	
3	64QAM	1	14	17.21	17.10	17.29	
3	64QAM	8	0	17.25	17.24	17.29	18.5
3	64QAM	8	4	17.21	17.23	17.24	
3	64QAM	8	7	17.21	17.25	17.31	
3	64QAM	15	0	17.38	17.47	17.35	
3	256QAM	1	0	17.24	17.14	17.20	18.5
3	256QAM	1	8	17.00	17.02	17.05	
3	256QAM	1	14	17.05	17.10	17.29	
3	256QAM	8	0	17.07	17.10	17.17	18.5
3	256QAM	8	4	17.21	17.08	17.32	
3	256QAM	8	7	17.24	17.25	17.28	
3	256QAM	15	0	17.15	17.17	17.22	
Channel				26047	26340	26683	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	17.46	17.51	17.59	18.5
1.4	QPSK	1	3	17.40	17.46	17.51	
1.4	QPSK	1	5	17.25	17.05	17.28	
1.4	QPSK	3	0	17.22	17.33	17.38	
1.4	QPSK	3	1	17.22	17.31	17.23	



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1.4	QPSK	3	3	17.27	17.18	17.24	
1.4	QPSK	6	0	17.20	17.28	17.30	18.5
1.4	16QAM	1	0	17.39	17.30	17.43	18.5
1.4	16QAM	1	3	17.27	17.32	17.42	
1.4	16QAM	1	5	17.24	17.03	17.27	
1.4	16QAM	3	0	17.24	17.28	17.29	
1.4	16QAM	3	1	17.22	17.25	17.23	
1.4	16QAM	3	3	17.26	17.15	17.23	
1.4	16QAM	6	0	17.09	17.13	17.16	18.5
1.4	64QAM	1	0	17.12	17.19	17.29	18.5
1.4	64QAM	1	3	17.07	17.21	17.25	
1.4	64QAM	1	5	17.20	17.10	17.32	
1.4	64QAM	3	0	17.23	17.32	17.30	
1.4	64QAM	3	1	17.20	17.27	17.22	
1.4	64QAM	3	3	17.26	17.19	17.25	
1.4	64QAM	6	0	17.41	17.43	17.38	18.5
1.4	256QAM	1	0	17.26	17.14	17.19	18.5
1.4	256QAM	1	3	16.96	17.01	17.04	
1.4	256QAM	1	5	17.10	17.15	17.26	
1.4	256QAM	3	0	17.04	17.10	17.22	
1.4	256QAM	3	1	17.19	17.07	17.24	
1.4	256QAM	3	3	17.27	17.15	17.25	
1.4	256QAM	6	0	17.07	17.18	17.16	18.5

<LTE Band 26_Main>

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	20.51	20.50	20.19	21.5
15	QPSK	1	37	20.49	20.41	20.29	
15	QPSK	1	74	20.39	20.45	20.30	
15	QPSK	36	0	20.32	20.20	20.05	21.5
15	QPSK	36	20	20.22	20.11	20.02	
15	QPSK	36	39	20.13	20.05	20.03	
15	QPSK	75	0	20.20	20.12	20.09	21.5
15	16QAM	1	0	20.27	20.34	20.16	
15	16QAM	1	37	20.37	20.30	20.17	
15	16QAM	1	74	20.34	20.22	20.11	21.5
15	16QAM	36	0	20.15	20.18	20.04	
15	16QAM	36	20	20.26	20.16	20.07	
15	16QAM	36	39	20.25	20.14	20.05	21.5
15	16QAM	75	0	20.19	20.11	20.00	
15	64QAM	1	0	20.12	20.13	20.03	21.5
15	64QAM	1	37	20.16	20.10	19.96	
15	64QAM	1	74	20.13	20.04	19.97	
15	64QAM	36	0	20.18	20.17	20.01	21.5
15	64QAM	36	20	20.19	20.10	20.06	
15	64QAM	36	39	20.18	20.09	20.02	
15	64QAM	75	0	20.21	20.11	20.08	20
15	256QAM	1	0	18.46	18.61	18.54	
15	256QAM	1	37	18.60	18.60	18.67	
15	256QAM	1	74	18.69	18.39	18.45	20
15	256QAM	36	0	18.62	18.51	18.66	
15	256QAM	36	20	18.52	18.71	18.48	



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15	256QAM	36	39	18.54	18.46	18.52	
15	256QAM	75	0	18.43	18.56	18.63	
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	20.43	20.45	20.10	21.5
10	QPSK	1	25	20.43	20.41	20.21	
10	QPSK	1	49	20.30	20.41	20.22	
10	QPSK	25	0	20.12	20.18	19.98	21.5
10	QPSK	25	12	20.12	20.09	19.94	
10	QPSK	25	25	20.03	19.95	19.93	
10	QPSK	50	0	20.17	20.03	20.06	
10	16QAM	1	0	20.22	20.27	20.14	21.5
10	16QAM	1	25	20.27	20.23	20.14	
10	16QAM	1	49	20.34	20.13	20.04	
10	16QAM	25	0	20.05	20.17	20.03	21.5
10	16QAM	25	12	20.26	20.13	19.99	
10	16QAM	25	25	20.18	20.05	20.04	
10	16QAM	50	0	20.18	20.10	19.98	
10	64QAM	1	0	20.07	20.05	19.95	21.5
10	64QAM	1	25	20.13	20.10	19.96	
10	64QAM	1	49	20.12	20.01	19.95	
10	64QAM	25	0	20.18	20.11	19.99	21.5
10	64QAM	25	12	20.14	20.05	20.03	
10	64QAM	25	25	20.15	20.09	19.96	
10	64QAM	50	0	20.12	20.03	20.07	
10	256QAM	1	0	18.43	18.55	18.49	20
10	256QAM	1	25	18.54	18.54	18.59	
10	256QAM	1	49	18.59	18.34	18.35	
10	256QAM	25	0	18.62	18.50	18.61	20
10	256QAM	25	12	18.43	18.68	18.45	
10	256QAM	25	25	18.48	18.39	18.52	
10	256QAM	50	0	18.35	18.53	18.62	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	20.47	20.41	20.15	21.5
5	QPSK	1	12	20.46	20.39	20.24	
5	QPSK	1	24	20.32	20.40	20.26	
5	QPSK	12	0	20.12	20.16	19.97	21.5
5	QPSK	12	7	20.13	20.08	19.94	
5	QPSK	12	13	20.09	20.03	20.03	
5	QPSK	25	0	20.15	20.07	20.04	
5	16QAM	1	0	20.23	20.33	20.09	21.5
5	16QAM	1	12	20.28	20.21	20.09	
5	16QAM	1	24	20.25	20.19	20.04	
5	16QAM	12	0	20.14	20.11	19.98	21.5
5	16QAM	12	7	20.21	20.14	19.99	
5	16QAM	12	13	20.15	20.04	19.96	
5	16QAM	25	0	20.15	20.03	19.91	
5	64QAM	1	0	20.05	20.13	20.03	21.5
5	64QAM	1	12	20.14	20.04	19.88	
5	64QAM	1	24	20.13	20.04	19.87	
5	64QAM	12	0	20.16	20.17	20.01	21.5
5	64QAM	12	7	20.18	20.06	20.06	
5	64QAM	12	13	20.16	20.07	20.02	
5	64QAM	25	0	20.14	20.03	20.05	
5	256QAM	1	0	18.45	18.56	18.44	20



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5	256QAM	1	12	18.50	18.56	18.57	20
5	256QAM	1	24	18.60	18.36	18.45	
5	256QAM	12	0	18.60	18.41	18.66	
5	256QAM	12	7	18.43	18.64	18.40	
5	256QAM	12	13	18.47	18.40	18.49	
5	256QAM	25	0	18.36	18.51	18.57	Tune-up limit (dBm)
Channel				26705	26865	27025	
Frequency (MHz)				815.5	831.5	847.5	21.5
3	QPSK	1	0	20.41	20.41	20.19	
3	QPSK	1	8	20.46	20.38	20.19	
3	QPSK	1	14	20.35	20.41	20.27	
3	QPSK	8	0	20.13	20.13	19.97	21.5
3	QPSK	8	4	20.12	20.04	20.00	
3	QPSK	8	7	20.09	19.99	19.93	
3	QPSK	15	0	20.20	20.08	20.01	
3	16QAM	1	0	20.24	20.32	20.10	
3	16QAM	1	8	20.28	20.22	20.15	21.5
3	16QAM	1	14	20.33	20.20	20.03	
3	16QAM	8	0	20.11	20.09	20.01	
3	16QAM	8	4	20.20	20.16	19.98	
3	16QAM	8	7	20.15	20.14	20.01	
3	16QAM	15	0	20.18	20.02	19.94	21.5
3	64QAM	1	0	20.10	20.05	20.00	
3	64QAM	1	8	20.16	20.04	19.86	
3	64QAM	1	14	20.12	20.04	19.97	
3	64QAM	8	0	20.18	20.10	19.99	
3	64QAM	8	4	20.16	20.08	19.96	21.5
3	64QAM	8	7	20.18	20.08	19.95	
3	64QAM	15	0	20.17	20.08	20.05	
3	256QAM	1	0	18.40	18.53	18.47	
3	256QAM	1	8	18.54	18.60	18.58	
3	256QAM	1	14	18.66	18.38	18.43	20
3	256QAM	8	0	18.56	18.51	18.58	
3	256QAM	8	4	18.52	18.62	18.48	
3	256QAM	8	7	18.54	18.45	18.43	
3	256QAM	15	0	18.41	18.52	18.55	
Channel				26697	26865	27033	Tune-up limit (dBm)
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	20.45	20.46	20.14	21.5
1.4	QPSK	1	3	20.43	20.34	20.25	
1.4	QPSK	1	5	20.34	20.39	20.28	
1.4	QPSK	3	0	20.22	20.11	20.25	
1.4	QPSK	3	1	20.25	20.10	20.22	
1.4	QPSK	3	3	20.26	20.15	20.25	21.5
1.4	QPSK	6	0	20.11	20.12	20.09	
1.4	16QAM	1	0	20.25	20.30	20.13	
1.4	16QAM	1	3	20.34	20.25	20.08	
1.4	16QAM	1	5	20.28	20.17	20.07	
1.4	16QAM	3	0	20.34	20.19	20.02	21.5
1.4	16QAM	3	1	20.08	20.16	20.01	
1.4	16QAM	3	3	20.18	20.14	20.05	
1.4	16QAM	6	0	20.12	20.11	19.99	
1.4	64QAM	1	0	20.08	20.07	19.98	
1.4	64QAM	1	3	20.16	20.01	19.91	21.5
1.4	64QAM	1	5	20.09	20.00	19.88	
1.4	64QAM	3	0	20.14	20.15	19.96	



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1.4	64QAM	3	1	20.14	20.02	19.97	
1.4	64QAM	3	3	20.12	20.00	19.96	
1.4	64QAM	6	0	20.16	20.06	19.99	
1.4	256QAM	1	0	18.37	18.55	18.51	20
1.4	256QAM	1	3	18.53	18.50	18.62	
1.4	256QAM	1	5	18.68	18.34	18.42	
1.4	256QAM	3	0	18.57	18.47	18.63	
1.4	256QAM	3	1	18.46	18.67	18.46	
1.4	256QAM	3	3	18.47	18.41	18.51	
1.4	256QAM	6	0	18.39	18.56	18.58	20

<LTE Band 30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				27710			
Frequency (MHz)				2310			
10	QPSK	1	0		16.62		17.5
10	QPSK	1	25		16.56		
10	QPSK	1	49		16.60		
10	QPSK	25	0		16.43		17.5
10	QPSK	25	12		16.30		
10	QPSK	25	25		16.13		
10	QPSK	50	0		16.26		17.5
10	16QAM	1	0		16.46		
10	16QAM	1	25		16.45		
10	16QAM	1	49		16.44		17.5
10	16QAM	25	0		16.31		
10	16QAM	25	12		16.31		
10	16QAM	25	25		16.15		17.5
10	16QAM	50	0		16.26		
10	64QAM	1	0		16.29		
10	64QAM	1	25		16.33		17.5
10	64QAM	1	49		16.31		
10	64QAM	25	0		16.31		
10	64QAM	25	12		16.29		17.5
10	64QAM	25	25		16.14		
10	64QAM	50	0		16.24		
10	256QAM	1	0		16.22		17.5
10	256QAM	1	25		16.22		
10	256QAM	1	49		16.15		
10	256QAM	25	0		16.26		17.5
10	256QAM	25	12		16.22		
10	256QAM	25	25		16.26		
10	256QAM	50	0		16.28		
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	16.60	16.61	16.59	17.5
5	QPSK	1	12	16.50	16.46	16.54	
5	QPSK	1	24	16.50	16.58	16.52	
5	QPSK	12	0	16.24	16.29	16.33	17.5
5	QPSK	12	7	16.22	16.28	16.20	
5	QPSK	12	13	16.09	16.08	16.10	
5	QPSK	25	0	16.22	16.26	16.17	17.5
5	16QAM	1	0	16.37	16.44	16.46	
5	16QAM	1	12	16.41	16.45	16.43	



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5	16QAM	1	24	16.35	16.37	16.40	17.5
5	16QAM	12	0	16.23	16.23	16.27	
5	16QAM	12	7	16.30	16.28	16.22	
5	16QAM	12	13	16.15	16.11	16.06	
5	16QAM	25	0	16.18	16.25	16.26	
5	64QAM	1	0	16.19	16.20	16.23	17.5
5	64QAM	1	12	16.28	16.23	16.33	
5	64QAM	1	24	16.29	16.29	16.26	
5	64QAM	12	0	16.24	16.31	16.24	17.5
5	64QAM	12	7	16.19	16.27	16.22	
5	64QAM	12	13	16.05	16.13	16.05	
5	64QAM	25	0	16.24	16.20	16.18	
5	256QAM	1	0	16.13	16.18	16.15	17.5
5	256QAM	1	12	16.12	16.22	16.14	
5	256QAM	1	24	16.14	16.15	16.09	
5	256QAM	12	0	16.18	16.21	16.21	17.5
5	256QAM	12	7	16.18	16.15	16.16	
5	256QAM	12	13	16.25	16.23	16.21	
5	256QAM	25	0	16.28	16.25	16.27	

<LTE Band 66_Main>

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	15.83	15.84	15.82	16.5
20	QPSK	1	49	15.72	15.71	15.66	
20	QPSK	1	99	15.46	15.56	15.45	
20	QPSK	50	0	15.69	15.77	15.74	16.5
20	QPSK	50	24	15.53	15.45	15.43	
20	QPSK	50	50	15.46	15.43	15.42	
20	QPSK	100	0	15.63	15.64	15.64	
20	16QAM	1	0	15.69	15.70	15.69	16.5
20	16QAM	1	49	15.57	15.54	15.52	
20	16QAM	1	99	15.46	15.51	15.45	
20	16QAM	50	0	15.52	15.53	15.51	16.5
20	16QAM	50	24	15.48	15.44	15.42	
20	16QAM	50	50	15.45	15.45	15.42	
20	16QAM	100	0	15.44	15.46	15.44	
20	64QAM	1	0	15.54	15.55	15.52	16.5
20	64QAM	1	49	15.38	15.38	15.33	
20	64QAM	1	99	15.48	15.55	15.46	
20	64QAM	50	0	15.55	15.55	15.55	16.5
20	64QAM	50	24	15.51	15.46	15.45	
20	64QAM	50	50	15.48	15.48	15.45	
20	64QAM	100	0	15.76	15.74	15.74	
20	256QAM	1	0	15.40	15.36	15.36	16.5
20	256QAM	1	49	15.45	15.44	15.41	
20	256QAM	1	99	15.35	15.44	15.43	
20	256QAM	50	0	15.50	15.47	15.52	16.5
20	256QAM	50	24	15.32	15.35	15.32	
20	256QAM	50	50	15.39	15.46	15.43	
20	256QAM	100	0	15.43	15.43	15.41	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	15.83	15.75	15.82	16.5



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15	QPSK	1	37	15.71	15.65	15.66	
15	QPSK	1	74	15.42	15.46	15.44	
15	QPSK	36	0	15.46	15.49	15.46	
15	QPSK	36	20	15.44	15.39	15.39	16.5
15	QPSK	36	39	15.44	15.37	15.37	
15	QPSK	75	0	15.55	15.62	15.62	
15	16QAM	1	0	15.67	15.63	15.64	16.5
15	16QAM	1	37	15.47	15.47	15.49	
15	16QAM	1	74	15.44	15.46	15.36	
15	16QAM	36	0	15.51	15.45	15.50	16.5
15	16QAM	36	20	15.43	15.36	15.34	
15	16QAM	36	39	15.40	15.38	15.36	
15	16QAM	75	0	15.39	15.46	15.37	16.5
15	64QAM	1	0	15.48	15.53	15.46	
15	64QAM	1	37	15.35	15.28	15.28	
15	64QAM	1	74	15.45	15.45	15.42	16.5
15	64QAM	36	0	15.45	15.45	15.49	
15	64QAM	36	20	15.49	15.43	15.41	
15	64QAM	36	39	15.44	15.40	15.41	16.5
15	64QAM	75	0	15.76	15.68	15.73	
15	256QAM	1	0	15.38	15.34	15.26	
15	256QAM	1	37	15.36	15.41	15.39	16.5
15	256QAM	1	74	15.31	15.42	15.38	
15	256QAM	36	0	15.45	15.40	15.50	
15	256QAM	36	20	15.30	15.32	15.23	16.5
15	256QAM	36	39	15.31	15.41	15.43	
15	256QAM	75	0	15.36	15.37	15.35	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	15.77	15.77	15.76	16.5
10	QPSK	1	25	15.71	15.67	15.64	
10	QPSK	1	49	15.37	15.46	15.35	
10	QPSK	25	0	15.46	15.57	15.45	16.5
10	QPSK	25	12	15.44	15.38	15.38	
10	QPSK	25	25	15.36	15.33	15.37	
10	QPSK	50	0	15.55	15.60	15.61	16.5
10	16QAM	1	0	15.60	15.66	15.67	
10	16QAM	1	25	15.52	15.54	15.44	
10	16QAM	1	49	15.44	15.45	15.44	16.5
10	16QAM	25	0	15.49	15.52	15.51	
10	16QAM	25	12	15.38	15.35	15.35	
10	16QAM	25	25	15.44	15.37	15.38	16.5
10	16QAM	50	0	15.41	15.39	15.44	
10	64QAM	1	0	15.51	15.49	15.49	
10	64QAM	1	25	15.34	15.33	15.24	16.5
10	64QAM	1	49	15.47	15.50	15.37	
10	64QAM	25	0	15.52	15.53	15.49	
10	64QAM	25	12	15.50	15.42	15.42	16.5
10	64QAM	25	25	15.41	15.40	15.35	
10	64QAM	50	0	15.66	15.73	15.71	
10	256QAM	1	0	15.32	15.36	15.30	16.5
10	256QAM	1	25	15.44	15.40	15.32	
10	256QAM	1	49	15.35	15.43	15.43	
10	256QAM	25	0	15.40	15.39	15.43	16.5
10	256QAM	25	12	15.29	15.28	15.29	
10	256QAM	25	25	15.30	15.39	15.35	



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10	256QAM	50	0	15.35	15.40	15.39	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	15.81	15.76	15.72	16.5
5	QPSK	1	12	15.67	15.62	15.58	
5	QPSK	1	24	15.43	15.55	15.37	
5	QPSK	12	0	15.43	15.54	15.53	16.5
5	QPSK	12	7	15.50	15.37	15.43	
5	QPSK	12	13	15.37	15.34	15.37	
5	QPSK	25	0	15.54	15.59	15.64	
5	16QAM	1	0	15.65	15.69	15.66	16.5
5	16QAM	1	12	15.57	15.44	15.48	
5	16QAM	1	24	15.44	15.45	15.38	
5	16QAM	12	0	15.42	15.46	15.50	16.5
5	16QAM	12	7	15.44	15.36	15.36	
5	16QAM	12	13	15.44	15.42	15.38	
5	16QAM	25	0	15.39	15.46	15.44	
5	64QAM	1	0	15.44	15.45	15.44	16.5
5	64QAM	1	12	15.37	15.32	15.26	
5	64QAM	1	24	15.38	15.51	15.42	
5	64QAM	12	0	15.45	15.51	15.47	16.5
5	64QAM	12	7	15.48	15.44	15.44	
5	64QAM	12	13	15.41	15.38	15.43	
5	64QAM	25	0	15.72	15.72	15.70	
5	256QAM	1	0	15.38	15.36	15.36	16.5
5	256QAM	1	12	15.38	15.38	15.31	
5	256QAM	1	24	15.35	15.34	15.43	
5	256QAM	12	0	15.46	15.41	15.46	16.5
5	256QAM	12	7	15.31	15.34	15.28	
5	256QAM	12	13	15.34	15.39	15.40	
5	256QAM	25	0	15.43	15.42	15.34	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	15.74	15.78	15.76	16.5
3	QPSK	1	8	15.68	15.63	15.65	
3	QPSK	1	14	15.43	15.47	15.44	
3	QPSK	8	0	15.44	15.53	15.50	16.5
3	QPSK	8	4	15.44	15.44	15.41	
3	QPSK	8	7	15.40	15.43	15.42	
3	QPSK	15	0	15.57	15.63	15.59	
3	16QAM	1	0	15.64	15.64	15.64	16.5
3	16QAM	1	8	15.57	15.44	15.42	
3	16QAM	1	14	15.42	15.45	15.41	
3	16QAM	8	0	15.44	15.45	15.49	16.5
3	16QAM	8	4	15.44	15.37	15.40	
3	16QAM	8	7	15.44	15.39	15.39	
3	16QAM	15	0	15.35	15.41	15.43	
3	64QAM	1	0	15.48	15.53	15.48	16.5
3	64QAM	1	8	15.35	15.36	15.29	
3	64QAM	1	14	15.40	15.52	15.42	
3	64QAM	8	0	15.52	15.54	15.53	16.5
3	64QAM	8	4	15.45	15.38	15.36	
3	64QAM	8	7	15.41	15.45	15.45	
3	64QAM	15	0	15.70	15.65	15.67	
3	256QAM	1	0	15.37	15.34	15.27	16.5
3	256QAM	1	8	15.40	15.38	15.35	

3	256QAM	1	14	15.30	15.41	15.43	16.5
3	256QAM	8	0	15.49	15.40	15.50	
3	256QAM	8	4	15.28	15.26	15.22	
3	256QAM	8	7	15.37	15.36	15.41	
3	256QAM	15	0	15.41	15.34	15.34	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	15.82	15.76	15.73	16.5
1.4	QPSK	1	3	15.72	15.61	15.63	
1.4	QPSK	1	5	15.36	15.55	15.35	
1.4	QPSK	3	0	15.42	15.52	15.49	
1.4	QPSK	3	1	15.45	15.35	15.37	
1.4	QPSK	3	3	15.36	15.33	15.37	16.5
1.4	QPSK	6	0	15.59	15.60	15.63	
1.4	16QAM	1	0	15.69	15.69	15.65	16.5
1.4	16QAM	1	3	15.48	15.44	15.47	
1.4	16QAM	1	5	15.41	15.44	15.42	
1.4	16QAM	3	0	15.46	15.49	15.45	
1.4	16QAM	3	1	15.45	15.38	15.37	
1.4	16QAM	3	3	15.39	15.40	15.40	16.5
1.4	16QAM	6	0	15.43	15.40	15.40	
1.4	64QAM	1	0	15.45	15.54	15.48	16.5
1.4	64QAM	1	3	15.33	15.35	15.30	
1.4	64QAM	1	5	15.42	15.50	15.37	
1.4	64QAM	3	0	15.51	15.51	15.51	
1.4	64QAM	3	1	15.51	15.38	15.45	
1.4	64QAM	3	3	15.43	15.38	15.35	16.5
1.4	64QAM	6	0	15.69	15.65	15.71	
1.4	256QAM	1	0	15.31	15.33	15.30	16.5
1.4	256QAM	1	3	15.39	15.37	15.39	
1.4	256QAM	1	5	15.25	15.40	15.36	
1.4	256QAM	3	0	15.50	15.41	15.49	
1.4	256QAM	3	1	15.28	15.33	15.31	
1.4	256QAM	3	3	15.32	15.42	15.41	16.5
1.4	256QAM	6	0	15.39	15.40	15.41	

<LTE Band 71_Main>

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	21.90	21.96	21.90	23
20	QPSK	1	49	21.86	21.89	21.91	
20	QPSK	1	99	21.80	21.79	21.77	
20	QPSK	50	0	21.82	21.92	21.85	23
20	QPSK	50	24	21.79	21.87	21.84	
20	QPSK	50	50	21.80	21.79	21.77	
20	QPSK	100	0	21.84	21.88	21.76	23
20	16QAM	1	0	21.76	21.77	21.71	
20	16QAM	1	49	21.79	21.71	21.66	
20	16QAM	1	99	21.70	21.68	21.73	23
20	16QAM	50	0	21.30	21.50	21.40	
20	16QAM	50	24	21.31	21.42	21.38	
20	16QAM	50	50	21.30	21.54	21.44	
20	16QAM	100	0	21.27	21.46	21.35	



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20	64QAM	1	0	21.50	21.41	21.46	23
20	64QAM	1	49	21.57	21.56	21.55	
20	64QAM	1	99	21.51	21.47	21.49	
20	64QAM	50	0	20.35	20.53	20.42	22
20	64QAM	50	24	20.35	20.48	20.41	
20	64QAM	50	50	20.30	20.56	20.40	
20	64QAM	100	0	20.32	20.54	20.35	
20	256QAM	1	0	18.33	18.30	18.24	20
20	256QAM	1	49	18.28	18.32	18.43	
20	256QAM	1	99	18.31	18.49	18.47	
20	256QAM	50	0	18.40	18.36	18.55	20
20	256QAM	50	24	18.26	18.46	18.46	
20	256QAM	50	50	18.34	18.37	18.47	
20	256QAM	100	0	18.35	18.41	18.42	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	21.85	21.89	21.89	23
15	QPSK	1	37	21.85	21.84	21.91	
15	QPSK	1	74	21.74	21.77	21.77	
15	QPSK	36	0	21.72	21.74	21.65	23
15	QPSK	36	20	21.78	21.77	21.80	
15	QPSK	36	39	21.72	21.71	21.74	
15	QPSK	75	0	21.77	21.80	21.71	
15	16QAM	1	0	21.74	21.75	21.63	23
15	16QAM	1	37	21.77	21.62	21.63	
15	16QAM	1	74	21.65	21.64	21.64	
15	16QAM	36	0	21.30	21.41	21.36	23
15	16QAM	36	20	21.30	21.42	21.30	
15	16QAM	36	39	21.28	21.53	21.41	
15	16QAM	75	0	21.27	21.43	21.25	
15	64QAM	1	0	21.41	21.38	21.42	23
15	64QAM	1	37	21.49	21.49	21.55	
15	64QAM	1	74	21.46	21.38	21.49	
15	64QAM	36	0	20.31	20.43	20.32	22
15	64QAM	36	20	20.33	20.46	20.38	
15	64QAM	36	39	20.29	20.52	20.36	
15	64QAM	75	0	20.28	20.50	20.35	
15	256QAM	1	0	18.33	18.26	18.24	20
15	256QAM	1	37	18.25	18.23	18.43	
15	256QAM	1	74	18.22	18.44	18.47	
15	256QAM	36	0	18.37	18.27	18.50	20
15	256QAM	36	20	18.23	18.43	18.39	
15	256QAM	36	39	18.31	18.32	18.39	
15	256QAM	75	0	18.33	18.31	18.34	
Channel				133172	133297	133422	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	21.84	21.93	21.82	23
10	QPSK	1	25	21.76	21.83	21.83	
10	QPSK	1	49	21.75	21.77	21.75	
10	QPSK	25	0	21.81	21.74	21.60	23
10	QPSK	25	12	21.71	21.80	21.76	
10	QPSK	25	25	21.76	21.72	21.71	
10	QPSK	50	0	21.80	21.81	21.74	
10	16QAM	1	0	21.75	21.76	21.61	23
10	16QAM	1	25	21.76	21.69	21.56	
10	16QAM	1	49	21.65	21.68	21.70	



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10	16QAM	25	0	21.30	21.50	21.32	23
10	16QAM	25	12	21.27	21.41	21.29	
10	16QAM	25	25	21.28	21.48	21.42	
10	16QAM	50	0	21.26	21.36	21.25	
10	64QAM	1	0	21.42	21.41	21.46	23
10	64QAM	1	25	21.56	21.48	21.52	
10	64QAM	1	49	21.43	21.47	21.44	
10	64QAM	25	0	20.25	20.45	20.36	22
10	64QAM	25	12	20.34	20.39	20.40	
10	64QAM	25	25	20.29	20.46	20.34	
10	64QAM	50	0	20.27	20.47	20.29	
10	256QAM	1	0	18.30	18.21	18.16	20
10	256QAM	1	25	18.19	18.26	18.34	
10	256QAM	1	49	18.29	18.42	18.40	
10	256QAM	25	0	18.34	18.31	18.46	20
10	256QAM	25	12	18.20	18.45	18.39	
10	256QAM	25	25	18.28	18.35	18.46	
10	256QAM	50	0	18.35	18.41	18.34	
Channel				133147	133297	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	QPSK	1	0	21.84	21.88	21.84	23
5	QPSK	1	12	21.76	21.86	21.83	
5	QPSK	1	24	21.77	21.77	21.69	
5	QPSK	12	0	21.78	21.75	21.61	23
5	QPSK	12	7	21.75	21.82	21.84	
5	QPSK	12	13	21.77	21.78	21.68	
5	QPSK	25	0	21.75	21.73	21.68	
5	16QAM	1	0	21.71	21.67	21.70	23
5	16QAM	1	12	21.71	21.68	21.58	
5	16QAM	1	24	21.63	21.68	21.71	
5	16QAM	12	0	21.23	21.45	21.31	23
5	16QAM	12	7	21.26	21.39	21.37	
5	16QAM	12	13	21.21	21.48	21.35	
5	16QAM	25	0	21.26	21.46	21.25	
5	64QAM	1	0	21.42	21.36	21.44	23
5	64QAM	1	12	21.51	21.56	21.51	
5	64QAM	1	24	21.41	21.41	21.42	
5	64QAM	12	0	20.32	20.46	20.40	
5	64QAM	12	7	20.25	20.43	20.33	22
5	64QAM	12	13	20.20	20.54	20.32	
5	64QAM	25	0	20.28	20.45	20.29	
5	256QAM	1	0	18.27	18.23	18.21	
5	256QAM	1	12	18.21	18.24	18.42	20
5	256QAM	1	24	18.24	18.43	18.46	
5	256QAM	12	0	18.39	18.33	18.45	
5	256QAM	12	7	18.19	18.39	18.42	20
5	256QAM	12	13	18.27	18.28	18.39	
5	256QAM	25	0	18.31	18.35	18.38	

<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 Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

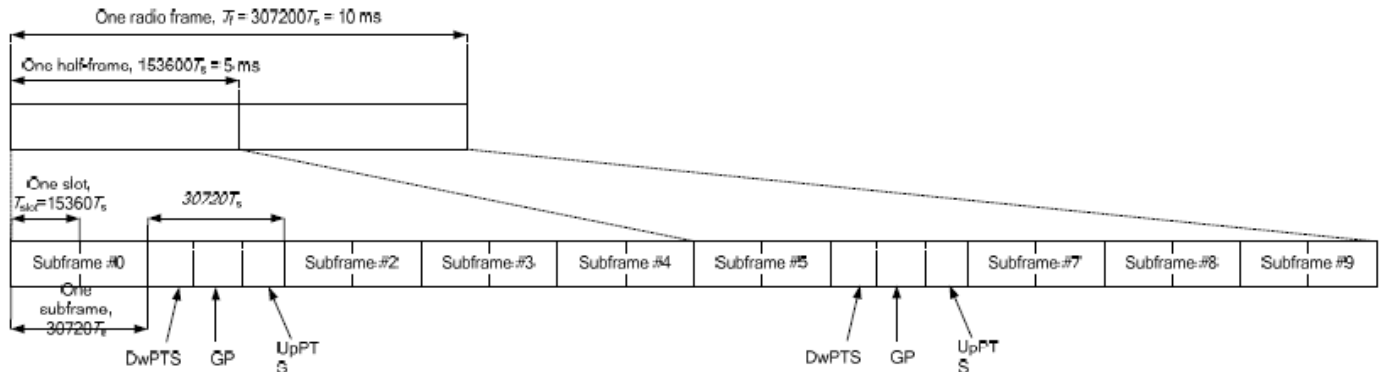


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
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.

State 1(NB sensor off)
<LTE Band 38_Main>

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	23.23	23.16	23.10	24
20	QPSK	1	49	23.12	23.07	23.05	
20	QPSK	1	99	23.15	23.06	23.07	
20	QPSK	50	0	22.35	22.16	22.15	23
20	QPSK	50	24	22.14	22.12	22.14	
20	QPSK	50	50	22.09	22.06	22.12	
20	QPSK	100	0	22.14	22.15	22.11	23
20	16QAM	1	0	22.12	22.06	21.95	
20	16QAM	1	49	22.22	22.17	22.15	
20	16QAM	1	99	22.13	22.12	22.13	22
20	16QAM	50	0	21.10	21.08	21.07	
20	16QAM	50	24	21.14	21.11	21.08	
20	16QAM	50	50	21.10	21.05	21.15	22
20	16QAM	100	0	21.12	21.07	21.07	
20	64QAM	1	0	20.83	20.75	20.69	
20	64QAM	1	49	20.91	20.85	20.86	22
20	64QAM	1	99	20.79	20.77	20.82	
20	64QAM	50	0	20.06	20.00	20.02	
20	64QAM	50	24	20.16	20.02	20.03	21
20	64QAM	50	50	20.04	20.07	20.10	
20	64QAM	100	0	20.05	19.98	20.01	
20	256QAM	1	0	18.20	18.12	18.20	19
20	256QAM	1	49	18.11	18.15	18.03	
20	256QAM	1	99	18.11	18.10	18.07	
20	256QAM	50	0	18.17	18.10	18.19	19
20	256QAM	50	24	18.22	18.14	18.11	
20	256QAM	50	50	18.15	18.08	18.11	
20	256QAM	100	0	18.06	18.16	18.21	
Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	23.15	23.16	23.00	24
15	QPSK	1	37	23.06	22.99	23.01	
15	QPSK	1	74	23.09	22.98	23.05	
15	QPSK	36	0	22.25	22.14	22.10	23
15	QPSK	36	20	22.05	22.03	22.14	
15	QPSK	36	39	22.05	21.96	22.07	
15	QPSK	75	0	22.13	22.15	22.03	23
15	16QAM	1	0	22.06	21.97	21.87	
15	16QAM	1	37	22.19	22.07	22.09	
15	16QAM	1	74	22.05	22.07	22.11	22
15	16QAM	36	0	21.03	21.08	20.98	
15	16QAM	36	20	21.10	21.09	21.03	
15	16QAM	36	39	21.05	21.05	21.14	22
15	16QAM	75	0	21.03	21.01	20.98	
15	64QAM	1	0	20.78	20.72	20.64	
15	64QAM	1	37	20.90	20.78	20.81	22
15	64QAM	1	74	20.71	20.69	20.74	
15	64QAM	36	0	20.00	19.96	19.93	
15	64QAM	36	20	20.06	19.98	19.99	21



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15	64QAM	36	39	19.98	20.05	20.08	
15	64QAM	75	0	19.98	19.96	19.93	
15	256QAM	1	0	18.10	18.04	18.20	
15	256QAM	1	37	18.04	18.08	18.03	19
15	256QAM	1	74	18.05	18.00	18.06	
15	256QAM	36	0	18.08	18.10	18.12	
15	256QAM	36	20	18.13	18.05	18.02	19
15	256QAM	36	39	18.13	18.03	18.08	
15	256QAM	75	0	17.99	18.08	18.17	
Channel				37800	38000	38200	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	23.20	23.13	23.09	24
10	QPSK	1	25	23.10	22.97	23.01	
10	QPSK	1	49	23.05	23.01	22.97	
10	QPSK	25	0	22.29	22.14	22.12	23
10	QPSK	25	12	22.13	22.10	22.08	
10	QPSK	25	25	22.07	22.04	22.06	
10	QPSK	50	0	22.04	22.05	22.06	23
10	16QAM	1	0	22.04	22.01	21.94	
10	16QAM	1	25	22.12	22.10	22.11	
10	16QAM	1	49	22.09	22.05	22.03	22
10	16QAM	25	0	21.03	20.99	20.97	
10	16QAM	25	12	21.06	21.11	21.08	
10	16QAM	25	25	21.04	20.96	21.07	22
10	16QAM	50	0	21.09	21.03	21.02	
10	64QAM	1	0	20.77	20.70	20.59	22
10	64QAM	1	25	20.90	20.77	20.79	
10	64QAM	1	49	20.72	20.74	20.78	
10	64QAM	25	0	20.02	19.95	20.02	21
10	64QAM	25	12	20.16	19.94	20.01	
10	64QAM	25	25	19.97	19.97	20.09	
10	64QAM	50	0	19.97	19.96	19.98	19
10	256QAM	1	0	18.11	18.06	18.16	
10	256QAM	1	25	18.04	18.06	17.98	
10	256QAM	1	49	18.09	18.10	17.97	19
10	256QAM	25	0	18.16	18.07	18.11	
10	256QAM	25	12	18.12	18.04	18.09	
10	256QAM	25	25	18.14	18.03	18.04	19
10	256QAM	50	0	17.99	18.16	18.19	
Channel				37775	38000	38225	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	23.17	23.13	23.01	24
5	QPSK	1	12	23.05	23.07	23.04	
5	QPSK	1	24	23.07	23.05	23.02	
5	QPSK	12	0	22.29	22.14	22.12	23
5	QPSK	12	7	22.08	22.11	22.09	
5	QPSK	12	13	22.00	22.04	22.05	
5	QPSK	25	0	22.11	22.05	22.03	23
5	16QAM	1	0	22.02	21.96	21.92	
5	16QAM	1	12	22.18	22.11	22.11	
5	16QAM	1	24	22.04	22.05	22.09	22
5	16QAM	12	0	21.10	21.06	20.98	
5	16QAM	12	7	21.05	21.02	21.05	
5	16QAM	12	13	21.04	21.05	21.12	22
5	16QAM	25	0	21.04	21.00	21.02	
5	64QAM	1	0	20.82	20.71	20.63	



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5	64QAM	1	12	20.82	20.77	20.83	
5	64QAM	1	24	20.74	20.68	20.80	
5	64QAM	12	0	19.99	20.00	20.02	
5	64QAM	12	7	20.13	20.00	20.03	21
5	64QAM	12	13	19.96	19.98	20.08	
5	64QAM	25	0	20.05	19.89	19.92	
5	256QAM	1	0	18.10	18.06	18.17	19
5	256QAM	1	12	18.08	18.13	17.98	
5	256QAM	1	24	18.02	18.09	17.98	
5	256QAM	12	0	18.14	18.01	18.16	19
5	256QAM	12	7	18.12	18.11	18.07	
5	256QAM	12	13	18.13	18.00	18.07	
5	256QAM	25	0	18.03	18.10	18.17	

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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	22.81	22.92	22.80	22.78	22.85	24
20	QPSK	1	49	22.80	22.86	22.79	22.76	22.83	
20	QPSK	1	99	22.63	22.89	22.69	22.67	22.59	
20	QPSK	50	0	21.83	21.94	21.88	21.76	21.88	23
20	QPSK	50	24	21.80	21.92	21.84	21.74	21.87	
20	QPSK	50	50	21.73	21.93	21.86	21.75	21.87	
20	QPSK	100	0	21.77	21.90	21.78	21.71	21.82	
20	16QAM	1	0	21.80	21.85	21.78	21.68	21.89	23
20	16QAM	1	49	21.86	21.91	21.84	21.79	21.87	
20	16QAM	1	99	21.74	21.96	21.74	21.74	21.67	
20	16QAM	50	0	20.80	20.92	20.88	20.73	20.87	22
20	16QAM	50	24	20.89	20.89	20.80	20.79	20.91	
20	16QAM	50	50	20.74	20.89	20.81	20.78	20.84	
20	16QAM	100	0	20.77	20.92	20.83	20.70	20.87	
20	64QAM	1	0	20.48	20.56	20.57	20.38	20.64	22
20	64QAM	1	49	20.58	20.63	20.62	20.54	20.64	
20	64QAM	1	99	20.47	20.67	20.53	20.52	20.45	
20	64QAM	50	0	19.83	19.95	19.83	19.77	19.95	21
20	64QAM	50	24	19.78	19.91	19.84	19.75	19.84	
20	64QAM	50	50	19.73	19.93	19.81	19.75	19.85	
20	64QAM	100	0	19.73	19.90	19.80	19.71	19.85	
20	256QAM	1	0	17.84	17.99	17.81	17.76	17.77	19
20	256QAM	1	49	17.74	17.79	17.81	17.83	17.76	
20	256QAM	1	99	17.71	17.98	17.72	17.57	17.57	
20	256QAM	50	0	17.82	17.88	17.94	17.77	17.98	19
20	256QAM	50	24	17.89	17.84	17.76	17.64	17.85	
20	256QAM	50	50	17.67	18.01	17.82	17.74	17.83	
20	256QAM	100	0	17.85	17.85	17.75	17.66	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	22.74	22.90	22.72	22.68	22.77	24.00
15	QPSK	1	37	22.72	22.77	22.75	22.72	22.82	
15	QPSK	1	74	22.60	22.86	22.65	22.60	22.59	
15	QPSK	36	0	21.73	21.94	21.84	21.69	21.81	23
15	QPSK	36	20	21.80	21.87	21.84	21.71	21.84	
15	QPSK	36	39	21.65	21.83	21.81	21.74	21.82	
15	QPSK	75	0	21.68	21.85	21.68	21.68	21.81	



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15	16QAM	1	0	21.76	21.81	21.69	21.59	21.79	23
15	16QAM	1	37	21.81	21.85	21.84	21.74	21.78	
15	16QAM	1	74	21.67	21.89	21.66	21.71	21.59	
15	16QAM	36	0	20.77	20.85	20.83	20.68	20.77	22
15	16QAM	36	20	20.87	20.87	20.75	20.72	20.87	
15	16QAM	36	39	20.65	20.88	20.76	20.77	20.81	
15	16QAM	75	0	20.67	20.86	20.77	20.64	20.78	22
15	64QAM	1	0	20.44	20.46	20.49	20.28	20.59	
15	64QAM	1	37	20.55	20.56	20.60	20.49	20.61	
15	64QAM	1	74	20.46	20.67	20.45	20.44	20.39	21
15	64QAM	36	0	19.83	19.86	19.80	19.73	19.93	
15	64QAM	36	20	19.73	19.83	19.84	19.73	19.83	
15	64QAM	36	39	19.65	19.89	19.76	19.65	19.78	19
15	64QAM	75	0	19.63	19.87	19.80	19.68	19.84	
15	256QAM	1	0	17.77	17.98	17.75	17.76	17.72	
15	256QAM	1	37	17.67	17.72	17.74	17.79	17.68	19
15	256QAM	1	74	17.65	17.88	17.66	17.49	17.49	
15	256QAM	36	0	17.78	17.88	17.85	17.73	17.89	
15	256QAM	36	20	17.81	17.77	17.69	17.61	17.82	19
15	256QAM	36	39	17.57	17.92	17.76	17.68	17.74	
15	256QAM	75	0	17.75	17.83	17.68	17.57	17.65	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	22.78	22.85	22.77	22.68	22.84	24.00
10	QPSK	1	25	22.76	22.83	22.72	22.68	22.81	
10	QPSK	1	49	22.62	22.86	22.59	22.57	22.54	
10	QPSK	25	0	21.74	21.91	21.80	21.69	21.86	23
10	QPSK	25	12	21.73	21.90	21.76	21.65	21.84	
10	QPSK	25	25	21.70	21.92	21.76	21.72	21.79	
10	QPSK	50	0	21.67	21.88	21.72	21.64	21.82	23
10	16QAM	1	0	21.77	21.78	21.72	21.60	21.82	
10	16QAM	1	25	21.82	21.86	21.82	21.73	21.84	
10	16QAM	1	49	21.73	21.91	21.65	21.67	21.63	22
10	16QAM	25	0	20.79	20.90	20.84	20.72	20.79	
10	16QAM	25	12	20.88	20.89	20.74	20.75	20.90	
10	16QAM	25	25	20.71	20.81	20.79	20.73	20.74	22
10	16QAM	50	0	20.71	20.85	20.83	20.69	20.78	
10	64QAM	1	0	20.40	20.49	20.48	20.34	20.58	
10	64QAM	1	25	20.57	20.57	20.53	20.54	20.62	21
10	64QAM	1	49	20.41	20.65	20.46	20.42	20.37	
10	64QAM	25	0	19.78	19.85	19.82	19.71	19.85	
10	64QAM	25	12	19.75	19.84	19.79	19.70	19.84	19
10	64QAM	25	25	19.70	19.84	19.73	19.69	19.84	
10	64QAM	50	0	19.70	19.90	19.75	19.62	19.79	
10	256QAM	1	0	17.75	17.97	17.80	17.74	17.75	19
10	256QAM	1	25	17.66	17.71	17.72	17.81	17.72	
10	256QAM	1	49	17.61	17.98	17.69	17.55	17.51	
10	256QAM	25	0	17.81	17.78	17.87	17.68	17.88	19
10	256QAM	25	12	17.81	17.80	17.72	17.56	17.82	
10	256QAM	25	25	17.64	17.91	17.72	17.70	17.83	
10	256QAM	50	0	17.75	17.78	17.70	17.64	17.66	Tune-up limit (dBm)
Channel				39675	40148	40620	41093	41565	
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	24.00
5	QPSK	1	0	22.79	22.88	22.72	22.74	22.84	
5	QPSK	1	12	22.72	22.80	22.78	22.68	22.83	
5	QPSK	1	24	22.57	22.83	22.66	22.62	22.53	

5	QPSK	12	0	21.76	21.86	21.88	21.75	21.81	23
5	QPSK	12	7	21.71	21.83	21.83	21.68	21.79	
5	QPSK	12	13	21.65	21.92	21.85	21.68	21.81	
5	QPSK	25	0	21.77	21.90	21.69	21.63	21.77	
5	16QAM	1	0	21.75	21.77	21.69	21.67	21.86	23
5	16QAM	1	12	21.83	21.85	21.82	21.75	21.81	
5	16QAM	1	24	21.67	21.96	21.64	21.64	21.57	
5	16QAM	12	0	20.75	20.91	20.79	20.65	20.87	22
5	16QAM	12	7	20.84	20.85	20.74	20.75	20.86	
5	16QAM	12	13	20.68	20.85	20.77	20.75	20.79	
5	16QAM	25	0	20.75	20.92	20.82	20.67	20.80	
5	64QAM	1	0	20.46	20.49	20.53	20.36	20.60	22
5	64QAM	1	12	20.58	20.56	20.55	20.49	20.54	
5	64QAM	1	24	20.40	20.57	20.51	20.47	20.44	
5	64QAM	12	0	19.77	19.89	19.73	19.77	19.85	21
5	64QAM	12	7	19.73	19.82	19.74	19.75	19.79	
5	64QAM	12	13	19.73	19.93	19.77	19.69	19.80	
5	64QAM	25	0	19.65	19.84	19.72	19.67	19.75	
5	256QAM	1	0	17.79	17.94	17.79	17.69	17.68	19
5	256QAM	1	12	17.73	17.70	17.74	17.79	17.76	
5	256QAM	1	24	17.71	17.89	17.70	17.50	17.50	
5	256QAM	12	0	17.73	17.85	17.92	17.70	17.91	19
5	256QAM	12	7	17.89	17.81	17.71	17.56	17.76	
5	256QAM	12	13	17.58	17.94	17.79	17.71	17.73	
5	256QAM	25	0	17.79	17.78	17.69	17.58	17.72	

<LTE Band 48_MIMO2>

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	21.40	21.60	21.78	21.91	22
20	QPSK	1	49	21.39	21.58	21.77	21.83	
20	QPSK	1	99	21.26	21.25	21.52	21.62	
20	QPSK	50	0	20.08	20.25	20.47	20.59	21
20	QPSK	50	24	20.07	20.23	20.39	20.56	
20	QPSK	50	50	20.00	20.06	20.37	20.38	
20	QPSK	100	0	20.03	20.14	20.38	20.47	
20	16QAM	1	0	19.96	20.29	20.52	20.64	21
20	16QAM	1	49	20.08	20.25	20.45	20.59	
20	16QAM	1	99	19.88	19.98	20.19	20.23	
20	16QAM	50	0	19.04	19.23	19.42	19.61	20
20	16QAM	50	24	19.03	19.23	19.41	19.56	
20	16QAM	50	50	19.05	19.07	19.30	19.42	
20	16QAM	100	0	18.99	19.13	19.38	19.47	
20	64QAM	1	0	18.73	18.98	19.17	19.43	20
20	64QAM	1	49	18.81	18.98	19.17	19.33	
20	64QAM	1	99	18.64	18.64	18.95	18.95	
20	64QAM	50	0	18.04	18.28	18.44	18.62	19
20	64QAM	50	24	18.00	18.21	18.37	18.51	
20	64QAM	50	50	17.98	18.04	18.28	18.35	
20	64QAM	100	0	17.97	18.12	18.37	18.43	
20	256QAM	1	0	16.05	16.29	16.32	16.52	17
20	256QAM	1	49	15.95	16.16	16.45	16.52	
20	256QAM	1	99	15.89	15.77	16.06	16.25	
20	256QAM	50	0	16.07	16.33	16.49	16.68	17



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20	256QAM	50	24	16.03	16.20	16.37	16.56	
20	256QAM	50	50	15.94	15.97	16.34	16.43	
20	256QAM	100	0	15.96	16.11	16.48	16.51	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	21.37	21.56	21.75	21.76	22
15	QPSK	1	37	21.39	21.54	21.77	21.79	
15	QPSK	1	74	21.16	21.25	21.42	21.64	
15	QPSK	36	0	20.08	20.16	20.43	20.52	21
15	QPSK	36	20	20.05	20.20	20.29	20.50	
15	QPSK	36	39	19.98	19.96	20.32	20.32	
15	QPSK	75	0	20.02	20.10	20.30	20.38	21
15	16QAM	1	0	19.86	20.27	20.48	20.60	
15	16QAM	1	37	20.07	20.23	20.45	20.59	
15	16QAM	1	74	19.80	19.89	20.13	20.21	20
15	16QAM	36	0	18.95	19.22	19.32	19.56	
15	16QAM	36	20	18.99	19.18	19.35	19.48	
15	16QAM	36	39	18.98	19.01	19.25	19.32	20
15	16QAM	75	0	18.89	19.03	19.36	19.38	
15	64QAM	1	0	18.65	18.96	19.12	19.37	
15	64QAM	1	37	18.79	18.88	19.12	19.24	19
15	64QAM	1	74	18.59	18.59	18.94	18.89	
15	64QAM	36	0	17.94	18.25	18.36	18.61	
15	64QAM	36	20	18.00	18.14	18.27	18.41	17
15	64QAM	36	39	17.97	17.98	18.26	18.32	
15	64QAM	75	0	17.88	18.10	18.36	18.41	
15	256QAM	1	0	15.97	16.19	16.30	16.47	17
15	256QAM	1	37	15.89	16.15	16.45	16.45	
15	256QAM	1	74	15.84	15.74	16.04	16.25	
15	256QAM	36	0	16.06	16.33	16.48	16.58	17
15	256QAM	36	20	15.97	16.19	16.37	16.51	
15	256QAM	36	39	15.88	15.97	16.28	16.43	
15	256QAM	75	0	15.93	16.04	16.45	16.45	Tune-up limit (dBm)
Channel				55290	55815	56165	56690	
Frequency (MHz)				3555	3607.5	3642.5	3695	22
10	QPSK	1	0	21.37	21.58	21.68	21.90	
10	QPSK	1	25	21.38	21.49	21.72	21.83	21
10	QPSK	1	49	21.24	21.23	21.45	21.52	
10	QPSK	25	0	20.03	20.21	20.42	20.57	
10	QPSK	25	12	20.03	20.14	20.30	20.56	21
10	QPSK	25	25	19.95	20.04	20.27	20.36	
10	QPSK	50	0	19.93	20.07	20.29	20.47	
10	16QAM	1	0	19.91	20.19	20.42	20.58	21
10	16QAM	1	25	20.08	20.23	20.42	20.54	
10	16QAM	1	49	19.80	19.91	20.15	20.17	
10	16QAM	25	0	18.99	19.17	19.41	19.53	20
10	16QAM	25	12	19.01	19.20	19.35	19.53	
10	16QAM	25	25	19.01	19.02	19.22	19.42	
10	16QAM	50	0	18.97	19.04	19.29	19.37	20
10	64QAM	1	0	18.63	18.92	19.14	19.33	
10	64QAM	1	25	18.80	18.94	19.09	19.32	
10	64QAM	1	49	18.55	18.61	18.91	18.92	19
10	64QAM	25	0	18.03	18.22	18.40	18.59	
10	64QAM	25	12	17.99	18.13	18.37	18.48	
10	64QAM	25	25	17.95	17.97	18.19	18.33	19
10	64QAM	50	0	17.90	18.02	18.34	18.34	



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10	256QAM	1	0	16.04	16.22	16.28	16.45	17
10	256QAM	1	25	15.94	16.08	16.41	16.49	
10	256QAM	1	49	15.81	15.69	16.03	16.25	
10	256QAM	25	0	16.07	16.27	16.48	16.61	17
10	256QAM	25	12	15.93	16.14	16.36	16.50	
10	256QAM	25	25	15.87	15.97	16.29	16.41	
10	256QAM	50	0	15.96	16.09	16.40	16.50	Tune-up limit (dBm)
Channel				55265	55810	56170	56715	
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	21.30	21.59	21.73	21.85	22
5	QPSK	1	12	21.35	21.51	21.76	21.81	
5	QPSK	1	24	21.16	21.20	21.42	21.58	
5	QPSK	12	0	20.02	20.17	20.47	20.58	21
5	QPSK	12	7	20.07	20.13	20.36	20.49	
5	QPSK	12	13	19.97	20.05	20.34	20.38	
5	QPSK	25	0	20.01	20.14	20.31	20.45	21
5	16QAM	1	0	19.89	20.28	20.45	20.63	
5	16QAM	1	12	20.07	20.17	20.41	20.59	
5	16QAM	1	24	19.87	19.89	20.10	20.21	20
5	16QAM	12	0	19.00	19.21	19.34	19.53	
5	16QAM	12	7	18.99	19.14	19.41	19.53	
5	16QAM	12	13	19.01	18.99	19.23	19.38	20
5	16QAM	25	0	18.96	19.07	19.38	19.44	
5	64QAM	1	0	18.67	18.97	19.11	19.35	
5	64QAM	1	12	18.76	18.96	19.15	19.32	19
5	64QAM	1	24	18.63	18.58	18.94	18.89	
5	64QAM	12	0	17.99	18.19	18.41	18.61	
5	64QAM	12	7	17.93	18.13	18.31	18.41	17
5	64QAM	12	13	17.97	17.94	18.25	18.34	
5	64QAM	25	0	17.94	18.02	18.34	18.43	
5	256QAM	1	0	15.95	16.25	16.29	16.44	17
5	256QAM	1	12	15.94	16.16	16.43	16.51	
5	256QAM	1	24	15.82	15.67	15.99	16.21	
5	256QAM	12	0	16.00	16.26	16.44	16.67	17
5	256QAM	12	7	15.94	16.17	16.28	16.55	
5	256QAM	12	13	15.87	15.90	16.33	16.41	
5	256QAM	25	0	15.95	16.10	16.38	16.41	

State 2(NB sensor on)
<LTE Band 38_Main>

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	17.55	17.60	17.72	18.5
20	QPSK	1	49	17.55	17.55	17.59	
20	QPSK	1	99	17.54	17.55	17.50	
20	QPSK	50	0	17.65	17.63	17.66	18.5
20	QPSK	50	24	17.53	17.53	17.67	
20	QPSK	50	50	17.60	17.61	17.63	
20	QPSK	100	0	17.66	17.67	17.70	18.5
20	16QAM	1	0	17.55	17.57	17.71	
20	16QAM	1	49	17.57	17.61	17.67	
20	16QAM	1	99	17.29	17.28	17.25	18.5
20	16QAM	50	0	17.38	17.35	17.39	
20	16QAM	50	24	17.29	17.27	17.40	
20	16QAM	50	50	17.59	17.55	17.64	18.5
20	16QAM	100	0	17.65	17.65	17.69	
20	64QAM	1	0	17.54	17.57	17.69	
20	64QAM	1	49	17.56	17.60	17.61	18.5
20	64QAM	1	99	17.45	17.46	17.40	
20	64QAM	50	0	17.59	17.58	17.60	
20	64QAM	50	24	17.50	17.46	17.62	18.5
20	64QAM	50	50	17.61	17.59	17.60	
20	64QAM	100	0	17.64	17.63	17.67	
20	256QAM	1	0	17.60	17.57	17.64	18.5
20	256QAM	1	49	17.50	17.50	17.61	
20	256QAM	1	99	17.52	17.54	17.56	
20	256QAM	50	0	17.37	17.45	17.38	18.5
20	256QAM	50	24	17.59	17.53	17.55	
20	256QAM	50	50	17.40	17.45	17.62	
20	256QAM	100	0	17.57	17.59	17.54	
Channel				37825	38000	38175	
Frequency (MHz)				2577.5	2595	2612.5	Tune-up limit (dBm)
15	QPSK	1	0	17.52	17.53	17.70	18.5
15	QPSK	1	37	17.52	17.54	17.58	
15	QPSK	1	74	17.49	17.45	17.40	
15	QPSK	36	0	17.63	17.56	17.57	18.5
15	QPSK	36	20	17.44	17.49	17.67	
15	QPSK	36	39	17.55	17.60	17.55	
15	QPSK	75	0	17.63	17.57	17.66	18.5
15	16QAM	1	0	17.55	17.54	17.65	
15	16QAM	1	37	17.55	17.53	17.66	
15	16QAM	1	74	17.25	17.25	17.20	18.5
15	16QAM	36	0	17.30	17.30	17.38	
15	16QAM	36	20	17.21	17.17	17.36	
15	16QAM	36	39	17.49	17.48	17.58	18.5
15	16QAM	75	0	17.56	17.56	17.69	
15	64QAM	1	0	17.47	17.50	17.65	
15	64QAM	1	37	17.51	17.55	17.59	18.5
15	64QAM	1	74	17.39	17.46	17.31	
15	64QAM	36	0	17.50	17.56	17.55	
15	64QAM	36	20	17.42	17.40	17.59	18.5



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15	64QAM	36	39	17.53	17.50	17.54	
15	64QAM	75	0	17.63	17.62	17.66	
15	256QAM	1	0	17.54	17.52	17.56	
15	256QAM	1	37	17.48	17.42	17.56	18.5
15	256QAM	1	74	17.48	17.46	17.50	
15	256QAM	36	0	17.30	17.42	17.33	
15	256QAM	36	20	17.51	17.50	17.47	18.5
15	256QAM	36	39	17.38	17.43	17.54	
15	256QAM	75	0	17.57	17.54	17.54	
Channel				37800	38000	38200	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	17.54	17.58	17.67	18.5
10	QPSK	1	25	17.46	17.56	17.58	
10	QPSK	1	49	17.48	17.51	17.42	
10	QPSK	25	0	17.56	17.59	17.56	18.5
10	QPSK	25	12	17.49	17.46	17.65	
10	QPSK	25	25	17.60	17.56	17.63	
10	QPSK	50	0	17.56	17.67	17.66	18.5
10	16QAM	1	0	17.54	17.56	17.62	
10	16QAM	1	25	17.51	17.53	17.64	
10	16QAM	1	49	17.23	17.20	17.21	18.5
10	16QAM	25	0	17.30	17.28	17.38	
10	16QAM	25	12	17.26	17.19	17.34	
10	16QAM	25	25	17.55	17.49	17.61	18.5
10	16QAM	50	0	17.55	17.59	17.62	
10	64QAM	1	0	17.49	17.48	17.68	18.5
10	64QAM	1	25	17.51	17.59	17.56	
10	64QAM	1	49	17.39	17.40	17.31	
10	64QAM	25	0	17.52	17.49	17.55	18.5
10	64QAM	25	12	17.44	17.36	17.58	
10	64QAM	25	25	17.56	17.51	17.52	
10	64QAM	50	0	17.55	17.55	17.58	18.5
10	256QAM	1	0	17.57	17.50	17.54	
10	256QAM	1	25	17.42	17.50	17.55	
10	256QAM	1	49	17.50	17.51	17.56	18.5
10	256QAM	25	0	17.33	17.42	17.34	
10	256QAM	25	12	17.55	17.48	17.47	
10	256QAM	25	25	17.40	17.42	17.59	18.5
10	256QAM	50	0	17.54	17.49	17.53	
Channel				37775	38000	38225	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	17.48	17.54	17.70	18.5
5	QPSK	1	12	17.45	17.52	17.51	
5	QPSK	1	24	17.54	17.55	17.43	
5	QPSK	12	0	17.62	17.59	17.61	18.5
5	QPSK	12	7	17.50	17.51	17.63	
5	QPSK	12	13	17.50	17.60	17.60	
5	QPSK	25	0	17.61	17.64	17.70	18.5
5	16QAM	1	0	17.54	17.54	17.62	
5	16QAM	1	12	17.54	17.58	17.64	
5	16QAM	1	24	17.26	17.28	17.24	18.5
5	16QAM	12	0	17.35	17.35	17.39	
5	16QAM	12	7	17.20	17.24	17.35	
5	16QAM	12	13	17.51	17.54	17.56	18.5
5	16QAM	25	0	17.64	17.60	17.60	
5	64QAM	1	0	17.50	17.55	17.64	



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5	64QAM	1	12	17.49	17.59	17.52	
5	64QAM	1	24	17.37	17.43	17.30	
5	64QAM	12	0	17.57	17.49	17.50	
5	64QAM	12	7	17.48	17.39	17.61	18.5
5	64QAM	12	13	17.54	17.53	17.53	
5	64QAM	25	0	17.59	17.55	17.61	
5	256QAM	1	0	17.54	17.56	17.57	18.5
5	256QAM	1	12	17.49	17.48	17.57	
5	256QAM	1	24	17.51	17.51	17.56	
5	256QAM	12	0	17.34	17.44	17.33	18.5
5	256QAM	12	7	17.59	17.43	17.49	
5	256QAM	12	13	17.33	17.44	17.55	
5	256QAM	25	0	17.52	17.50	17.47	

<LTE Band 41_MIMO2>

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	14.68	14.79	14.77	14.74	14.66	16
20	QPSK	1	49	14.59	14.56	14.74	14.50	14.59	
20	QPSK	1	99	14.60	14.66	14.73	14.55	14.75	
20	QPSK	50	0	14.61	14.76	14.72	14.71	14.72	16
20	QPSK	50	24	14.47	14.51	14.71	13.53	14.59	
20	QPSK	50	50	14.62	14.63	14.75	14.47	14.67	
20	QPSK	100	0	14.68	14.73	14.72	14.57	14.62	16
20	16QAM	1	0	14.56	14.61	14.73	14.57	14.73	
20	16QAM	1	49	14.44	14.50	14.71	14.45	14.57	
20	16QAM	1	99	14.51	14.53	14.78	14.49	14.74	16
20	16QAM	50	0	14.59	14.61	14.72	14.56	14.69	
20	16QAM	50	24	14.56	14.53	14.67	14.68	14.56	
20	16QAM	50	50	14.55	14.55	14.72	14.34	14.52	16
20	16QAM	100	0	14.59	14.56	14.64	14.53	14.53	
20	64QAM	1	0	14.54	14.49	14.68	14.68	14.74	16
20	64QAM	1	49	14.58	14.64	14.66	14.49	14.51	
20	64QAM	1	99	14.48	14.49	14.72	14.46	14.73	
20	64QAM	50	0	14.52	14.55	14.72	14.60	14.61	16
20	64QAM	50	24	14.55	14.64	14.66	14.59	14.54	
20	64QAM	50	50	14.62	14.64	14.54	14.39	14.73	
20	64QAM	100	0	14.59	14.72	14.77	14.52	14.55	16
20	256QAM	1	0	14.60	14.61	14.73	14.49	14.66	
20	256QAM	1	49	14.46	14.46	14.73	14.39	14.39	
20	256QAM	1	99	14.47	14.51	14.70	14.47	14.63	16
20	256QAM	50	0	14.56	14.54	14.63	14.52	14.70	
20	256QAM	50	24	14.50	14.55	14.61	14.55	14.58	
20	256QAM	50	50	14.67	14.60	14.78	14.35	14.71	16
20	256QAM	100	0	14.62	14.58	14.51	14.49	14.52	
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	14.62	14.63	14.78	14.71	14.75	16.00
15	QPSK	1	37	14.58	14.50	14.77	14.50	14.51	
15	QPSK	1	74	14.60	14.62	14.73	14.51	14.74	
15	QPSK	36	0	14.56	14.57	14.74	14.69	14.67	16
15	QPSK	36	20	14.42	14.49	14.74	13.55	14.58	
15	QPSK	36	39	14.53	14.62	14.80	14.46	14.74	
15	QPSK	75	0	14.65	14.65	14.64	14.56	14.62	



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15	16QAM	1	0	14.46	14.55	14.67	14.53	14.72	16
15	16QAM	1	37	14.39	14.43	14.71	14.51	14.55	
15	16QAM	1	74	14.45	14.49	14.73	14.49	14.69	
15	16QAM	36	0	14.56	14.56	14.80	14.57	14.67	16
15	16QAM	36	20	14.50	14.49	14.62	14.66	14.61	
15	16QAM	36	39	14.48	14.54	14.68	14.32	14.85	
15	16QAM	75	0	14.52	14.55	14.82	14.54	14.59	16
15	64QAM	1	0	14.45	14.49	14.64	14.66	14.65	
15	64QAM	1	37	14.51	14.54	14.83	14.53	14.50	
15	64QAM	1	74	14.38	14.48	14.64	14.55	14.74	16
15	64QAM	36	0	14.52	14.48	14.62	14.55	14.66	
15	64QAM	36	20	14.55	14.61	14.82	14.63	14.56	
15	64QAM	36	39	14.52	14.63	14.81	14.46	14.80	16
15	64QAM	75	0	14.50	14.62	14.76	14.53	14.61	
15	256QAM	1	0	14.59	14.60	14.68	14.50	14.71	
15	256QAM	1	37	14.44	14.41	14.71	14.42	14.48	16
15	256QAM	1	74	14.38	14.46	14.67	14.54	14.66	
15	256QAM	36	0	14.54	14.49	14.71	14.45	14.68	
15	256QAM	36	20	14.48	14.47	14.61	14.58	14.59	16
15	256QAM	36	39	14.60	14.60	14.72	14.28	14.79	
15	256QAM	75	0	14.61	14.51	14.83	14.57	14.53	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	14.58	14.65	14.86	14.65	14.81	16.00
10	QPSK	1	25	14.49	14.52	14.77	14.51	14.58	
10	QPSK	1	49	14.53	14.64	14.66	14.53	14.71	
10	QPSK	25	0	14.54	14.64	14.79	14.61	14.65	16
10	QPSK	25	12	14.41	14.51	14.69	13.54	14.59	
10	QPSK	25	25	14.60	14.53	14.75	14.39	14.66	
10	QPSK	50	0	14.62	14.60	14.63	14.63	14.64	16
10	16QAM	1	0	14.52	14.57	14.68	14.53	14.77	
10	16QAM	1	25	14.39	14.47	14.61	14.50	14.55	
10	16QAM	1	49	14.51	14.49	14.70	14.48	14.71	16
10	16QAM	25	0	14.49	14.60	14.72	14.48	14.65	
10	16QAM	25	12	14.47	14.50	14.57	14.59	14.53	
10	16QAM	25	25	14.45	14.49	14.68	14.30	14.82	16
10	16QAM	50	0	14.59	14.52	14.84	14.59	14.49	
10	64QAM	1	0	14.45	14.43	14.58	14.59	14.70	
10	64QAM	1	25	14.51	14.55	14.81	14.49	14.55	16
10	64QAM	1	49	14.41	14.41	14.64	14.46	14.68	
10	64QAM	25	0	14.47	14.54	14.70	14.60	14.61	
10	64QAM	25	12	14.45	14.63	14.80	14.55	14.55	16
10	64QAM	25	25	14.59	14.59	14.72	14.45	14.73	
10	64QAM	50	0	14.59	14.68	14.76	14.57	14.57	
10	256QAM	1	0	14.52	14.51	14.68	14.49	14.73	16
10	256QAM	1	25	14.46	14.40	14.70	14.44	14.46	
10	256QAM	1	49	14.46	14.48	14.65	14.49	14.72	
10	256QAM	25	0	14.53	14.53	14.72	14.43	14.61	16
10	256QAM	25	12	14.41	14.48	14.60	14.56	14.57	
10	256QAM	25	25	14.67	14.52	14.77	14.25	14.75	
10	256QAM	50	0	14.60	14.51	14.83	14.59	14.48	Tune-up limit (dBm)
Channel				39675	40148	40620	41093	41565	
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	16.00
5	QPSK	1	0	14.63	14.67	14.82	14.71	14.77	
5	QPSK	1	12	14.51	14.51	14.74	14.47	14.49	
5	QPSK	1	24	14.50	14.65	14.73	14.52	14.74	

5	QPSK	12	0	14.60	14.64	14.78	14.64	14.70	16
5	QPSK	12	7	14.38	14.45	14.69	13.61	14.60	
5	QPSK	12	13	14.55	14.59	14.75	14.42	14.74	
5	QPSK	25	0	14.59	14.62	14.65	14.58	14.61	
5	16QAM	1	0	14.46	14.61	14.72	14.52	14.74	16
5	16QAM	1	12	14.38	14.44	14.71	14.51	14.51	
5	16QAM	1	24	14.41	14.48	14.77	14.55	14.67	
5	16QAM	12	0	14.58	14.59	14.79	14.49	14.65	16
5	16QAM	12	7	14.47	14.45	14.64	14.65	14.58	
5	16QAM	12	13	14.53	14.52	14.67	14.36	14.76	
5	16QAM	25	0	14.54	14.51	14.83	14.55	14.50	
5	64QAM	1	0	14.46	14.39	14.60	14.68	14.75	16
5	64QAM	1	12	14.56	14.60	14.76	14.53	14.46	
5	64QAM	1	24	14.38	14.47	14.72	14.46	14.67	
5	64QAM	12	0	14.45	14.45	14.63	14.53	14.63	16
5	64QAM	12	7	14.55	14.61	14.73	14.54	14.54	
5	64QAM	12	13	14.57	14.63	14.80	14.38	14.72	
5	64QAM	25	0	14.49	14.63	14.68	14.57	14.56	
5	256QAM	1	0	14.51	14.56	14.69	14.50	14.65	16
5	256QAM	1	12	14.44	14.42	14.64	14.45	14.38	
5	256QAM	1	24	14.39	14.44	14.63	14.50	14.66	
5	256QAM	12	0	14.56	14.54	14.70	14.46	14.68	16
5	256QAM	12	7	14.42	14.47	14.52	14.53	14.60	
5	256QAM	12	13	14.58	14.58	14.73	14.30	14.80	
5	256QAM	25	0	14.55	14.53	14.82	14.57	14.54	

<LTE Band 48_MIMO2>

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	15.31	15.36	15.28	15.12	17
20	QPSK	1	49	15.02	15.11	14.95	14.98	
20	QPSK	1	99	15.14	15.26	15.12	15.11	
20	QPSK	50	0	15.32	15.35	15.27	15.23	17
20	QPSK	50	24	15.03	15.11	14.93	14.91	
20	QPSK	50	50	15.10	15.17	15.09	14.99	
20	QPSK	100	0	15.20	15.31	15.19	15.12	
20	16QAM	1	0	15.15	15.12	14.99	14.84	17
20	16QAM	1	49	15.00	15.14	14.91	14.85	
20	16QAM	1	99	15.02	15.13	15.03	14.97	
20	16QAM	50	0	15.19	15.19	15.07	14.94	17
20	16QAM	50	24	15.04	15.12	15.00	14.95	
20	16QAM	50	50	15.04	15.13	14.98	14.81	
20	16QAM	100	0	15.00	15.14	15.06	14.95	
20	64QAM	1	0	15.08	15.03	15.02	14.83	17
20	64QAM	1	49	15.09	15.19	15.01	14.94	
20	64QAM	1	99	14.90	15.04	14.85	14.88	
20	64QAM	50	0	15.10	15.11	14.91	14.92	17
20	64QAM	50	24	15.25	15.22	15.17	15.20	
20	64QAM	50	50	15.23	15.19	15.22	15.14	
20	64QAM	100	0	15.14	15.34	15.10	14.97	
20	256QAM	1	0	15.20	15.19	15.13	15.05	17
20	256QAM	1	49	14.98	15.11	14.92	14.89	
20	256QAM	1	99	15.07	15.09	15.04	15.05	
20	256QAM	50	0	15.08	15.14	14.92	14.93	17



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20	256QAM	50	24	15.12	15.18	15.04	15.00	
20	256QAM	50	50	15.10	15.21	14.99	15.00	
20	256QAM	100	0	15.15	15.20	15.01	15.05	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	15.23	15.28	15.11	15.10	17
15	QPSK	1	37	14.91	15.04	14.93	14.88	
15	QPSK	1	74	15.06	15.10	15.08	15.10	
15	QPSK	36	0	15.23	15.20	15.14	15.13	17
15	QPSK	36	20	15.00	15.03	14.94	14.81	
15	QPSK	36	39	15.03	15.18	14.95	14.91	
15	QPSK	75	0	15.21	15.29	15.12	15.17	17
15	16QAM	1	0	15.06	15.11	14.94	14.87	
15	16QAM	1	37	14.88	15.04	14.83	14.78	
15	16QAM	1	74	15.05	15.07	14.97	15.00	17
15	16QAM	36	0	15.03	15.23	15.10	14.92	
15	16QAM	36	20	15.06	15.07	14.97	14.78	
15	16QAM	36	39	14.99	15.07	14.99	14.87	17
15	16QAM	75	0	15.01	15.12	14.95	14.93	
15	64QAM	1	0	15.07	15.04	14.89	14.77	
15	64QAM	1	37	15.12	15.18	14.91	14.90	17
15	64QAM	1	74	14.96	15.03	14.77	14.78	
15	64QAM	36	0	15.02	15.01	14.88	14.95	
15	64QAM	36	20	15.12	15.12	15.16	15.19	17
15	64QAM	36	39	15.09	15.24	15.19	15.09	
15	64QAM	75	0	15.14	15.22	15.05	14.86	
15	256QAM	1	0	15.06	15.17	15.05	14.95	17
15	256QAM	1	37	14.97	15.09	14.85	14.89	
15	256QAM	1	74	15.01	15.13	15.08	14.96	
15	256QAM	36	0	15.08	15.19	14.91	14.91	17
15	256QAM	36	20	15.13	15.07	14.96	14.96	
15	256QAM	36	39	14.95	15.19	14.96	14.96	
15	256QAM	75	0	15.03	15.19	15.05	15.02	Tune-up limit (dBm)
Channel				55290	55815	56165	56690	
Frequency (MHz)				3555	3607.5	3642.5	3695	Tune-up limit (dBm)
10	QPSK	1	0	15.27	15.33	15.12	15.14	17
10	QPSK	1	25	14.97	15.00	14.90	14.99	
10	QPSK	1	49	15.18	15.15	15.03	15.07	
10	QPSK	25	0	15.25	15.36	15.22	15.18	17
10	QPSK	25	12	15.04	15.06	14.88	14.81	
10	QPSK	25	25	15.05	15.21	15.04	14.93	
10	QPSK	50	0	15.26	15.27	15.20	15.04	17
10	16QAM	1	0	15.00	15.11	14.93	14.82	
10	16QAM	1	25	15.01	15.09	14.82	14.83	
10	16QAM	1	49	15.03	15.01	15.03	15.07	17
10	16QAM	25	0	15.10	15.21	15.09	14.85	
10	16QAM	25	12	15.04	15.02	15.00	14.90	
10	16QAM	25	25	14.97	15.14	14.92	14.84	17
10	16QAM	50	0	15.00	15.06	15.02	14.93	
10	64QAM	1	0	15.02	15.10	14.90	14.81	
10	64QAM	1	25	15.02	15.16	14.98	14.82	17
10	64QAM	1	49	14.91	15.03	14.79	14.69	
10	64QAM	25	0	14.98	15.02	14.84	14.95	
10	64QAM	25	12	15.09	15.18	15.19	15.16	17
10	64QAM	25	25	15.15	15.23	15.20	15.02	
10	64QAM	50	0	15.18	15.32	15.03	15.01	



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10	256QAM	1	0	15.07	15.16	15.06	14.91	17
10	256QAM	1	25	14.96	15.09	14.92	14.82	
10	256QAM	1	49	15.09	15.00	15.02	15.05	
10	256QAM	25	0	15.03	15.17	14.96	14.93	17
10	256QAM	25	12	15.09	15.13	14.97	14.96	
10	256QAM	25	25	15.01	15.08	14.89	14.92	
10	256QAM	50	0	15.09	15.10	15.01	15.05	
Channel				55265	55810	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	15.16	15.34	15.18	15.13	17
5	QPSK	1	12	14.94	15.08	14.94	14.94	
5	QPSK	1	24	15.10	15.28	15.09	15.02	
5	QPSK	12	0	15.18	15.29	15.26	15.14	17
5	QPSK	12	7	14.96	15.04	14.91	14.88	
5	QPSK	12	13	15.06	15.25	15.01	14.88	
5	QPSK	25	0	15.23	15.28	15.06	15.12	
5	16QAM	1	0	15.04	15.11	14.97	14.76	17
5	16QAM	1	12	15.02	15.04	14.80	14.82	
5	16QAM	1	24	15.04	15.01	14.97	14.91	
5	16QAM	12	0	15.13	15.23	15.00	14.89	17
5	16QAM	12	7	15.08	15.07	15.05	14.87	
5	16QAM	12	13	15.00	15.09	14.94	14.83	
5	16QAM	25	0	15.03	15.09	14.97	14.89	
5	64QAM	1	0	14.99	15.03	14.91	14.84	17
5	64QAM	1	12	15.07	15.28	14.90	14.91	
5	64QAM	1	24	14.95	15.06	14.90	14.72	
5	64QAM	12	0	14.99	15.07	14.91	14.91	17
5	64QAM	12	7	15.16	15.21	15.16	15.17	
5	64QAM	12	13	15.17	15.19	15.14	14.96	
5	64QAM	25	0	15.15	15.22	15.00	14.93	
5	256QAM	1	0	15.17	15.19	15.06	14.97	17
5	256QAM	1	12	14.93	15.00	14.87	14.82	
5	256QAM	1	24	15.02	15.09	15.07	15.00	
5	256QAM	12	0	14.98	15.03	14.84	14.95	17
5	256QAM	12	7	15.00	15.07	14.97	14.87	
5	256QAM	12	13	15.06	15.10	14.92	14.87	
5	256QAM	25	0	15.16	15.04	15.05	14.96	



State 3(TB)

<LTE Band 38_Main>

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	16.70	16.75	16.87	17.5
20	QPSK	1	49	16.70	16.73	16.74	
20	QPSK	1	99	16.69	16.70	16.65	
20	QPSK	50	0	16.80	16.78	16.81	17.5
20	QPSK	50	24	16.68	16.68	16.82	
20	QPSK	50	50	16.75	16.76	16.78	
20	QPSK	100	0	16.81	16.82	16.85	17.5
20	16QAM	1	0	16.70	16.72	16.86	
20	16QAM	1	49	16.72	16.76	16.82	
20	16QAM	1	99	16.44	16.43	16.40	17.5
20	16QAM	50	0	16.53	16.50	16.54	
20	16QAM	50	24	16.44	16.42	16.55	
20	16QAM	50	50	16.74	16.70	16.79	17.5
20	16QAM	100	0	16.80	16.80	16.84	
20	64QAM	1	0	16.69	16.72	16.84	
20	64QAM	1	49	16.71	16.75	16.76	17.5
20	64QAM	1	99	16.60	16.61	16.55	
20	64QAM	50	0	16.74	16.73	16.75	
20	64QAM	50	24	16.65	16.61	16.77	17.5
20	64QAM	50	50	16.76	16.74	16.75	
20	64QAM	100	0	16.79	16.78	16.82	
20	256QAM	1	0	16.64	16.67	16.75	17.5
20	256QAM	1	49	16.62	16.66	16.68	
20	256QAM	1	99	16.60	16.51	16.50	
20	256QAM	50	0	16.67	16.68	16.72	17.5
20	256QAM	50	24	16.58	16.56	16.68	
20	256QAM	50	50	16.73	16.69	16.74	
20	256QAM	100	0	16.75	16.74	16.82	
Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	16.65	16.72	16.83	17.5
15	QPSK	1	37	16.60	16.73	16.72	
15	QPSK	1	74	16.67	16.65	16.60	
15	QPSK	36	0	16.72	16.68	16.74	17.5
15	QPSK	36	20	16.63	16.62	16.74	
15	QPSK	36	39	16.65	16.67	16.72	
15	QPSK	75	0	16.75	16.81	16.85	17.5
15	16QAM	1	0	16.70	16.69	16.77	
15	16QAM	1	37	16.63	16.75	16.76	
15	16QAM	1	74	16.35	16.34	16.38	17.5
15	16QAM	36	0	16.50	16.50	16.48	
15	16QAM	36	20	16.39	16.42	16.55	
15	16QAM	36	39	16.73	16.61	16.73	17.5
15	16QAM	75	0	16.80	16.71	16.74	
15	64QAM	1	0	16.64	16.62	16.82	
15	64QAM	1	37	16.63	16.67	16.72	17.5
15	64QAM	1	74	16.60	16.58	16.51	
15	64QAM	36	0	16.67	16.66	16.75	
15	64QAM	36	20	16.57	16.61	16.77	17.5



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15	64QAM	36	39	16.69	16.66	16.73	
15	64QAM	75	0	16.69	16.71	16.72	
15	256QAM	1	0	16.58	16.57	16.67	
15	256QAM	1	37	16.62	16.65	16.66	17.5
15	256QAM	1	74	16.54	16.46	16.43	
15	256QAM	36	0	16.65	16.63	16.71	
15	256QAM	36	20	16.58	16.50	16.67	17.5
15	256QAM	36	39	16.68	16.60	16.64	
15	256QAM	75	0	16.71	16.70	16.73	
Channel				37800	38000	38200	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	16.68	16.73	16.77	17.5
10	QPSK	1	25	16.60	16.76	16.68	
10	QPSK	1	49	16.66	16.69	16.59	
10	QPSK	25	0	16.71	16.77	16.74	17.5
10	QPSK	25	12	16.68	16.63	16.73	
10	QPSK	25	25	16.65	16.72	16.76	
10	QPSK	50	0	16.71	16.73	16.76	17.5
10	16QAM	1	0	16.60	16.63	16.80	
10	16QAM	1	25	16.67	16.67	16.79	
10	16QAM	1	49	16.34	16.40	16.31	17.5
10	16QAM	25	0	16.43	16.40	16.46	
10	16QAM	25	12	16.43	16.32	16.45	
10	16QAM	25	25	16.70	16.64	16.76	17.5
10	16QAM	50	0	16.80	16.70	16.79	
10	64QAM	1	0	16.66	16.67	16.75	17.5
10	64QAM	1	25	16.70	16.67	16.69	
10	64QAM	1	49	16.57	16.60	16.45	
10	64QAM	25	0	16.68	16.72	16.69	17.5
10	64QAM	25	12	16.60	16.52	16.75	
10	64QAM	25	25	16.74	16.65	16.68	
10	64QAM	50	0	16.79	16.78	16.81	17.5
10	256QAM	1	0	16.57	16.60	16.71	
10	256QAM	1	25	16.52	16.57	16.66	
10	256QAM	1	49	16.53	16.50	16.45	17.5
10	256QAM	25	0	16.65	16.66	16.70	
10	256QAM	25	12	16.51	16.49	16.67	
10	256QAM	25	25	16.65	16.62	16.68	17.5
10	256QAM	50	0	16.65	16.65	16.74	
Channel				37775	38000	38225	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	16.65	16.68	16.86	17.5
5	QPSK	1	12	16.63	16.73	16.67	
5	QPSK	1	24	16.61	16.63	16.65	
5	QPSK	12	0	16.70	16.70	16.72	17.5
5	QPSK	12	7	16.66	16.66	16.74	
5	QPSK	12	13	16.72	16.74	16.71	
5	QPSK	25	0	16.76	16.81	16.78	17.5
5	16QAM	1	0	16.64	16.70	16.83	
5	16QAM	1	12	16.70	16.68	16.76	
5	16QAM	1	24	16.39	16.34	16.32	17.5
5	16QAM	12	0	16.44	16.49	16.44	
5	16QAM	12	7	16.39	16.36	16.55	
5	16QAM	12	13	16.69	16.63	16.72	17.5
5	16QAM	25	0	16.80	16.71	16.84	
5	64QAM	1	0	16.63	16.62	16.79	



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5	64QAM	1	12	16.64	16.74	16.74	
5	64QAM	1	24	16.58	16.60	16.55	
5	64QAM	12	0	16.70	16.70	16.70	
5	64QAM	12	7	16.59	16.54	16.77	17.5
5	64QAM	12	13	16.70	16.67	16.70	
5	64QAM	25	0	16.69	16.69	16.79	
5	256QAM	1	0	16.64	16.63	16.74	17.5
5	256QAM	1	12	16.61	16.62	16.59	
5	256QAM	1	24	16.56	16.45	16.49	
5	256QAM	12	0	16.60	16.67	16.71	17.5
5	256QAM	12	7	16.50	16.56	16.60	
5	256QAM	12	13	16.72	16.59	16.65	
5	256QAM	25	0	16.75	16.72	16.82	

<LTE Band 41_MIMO2>

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	14.68	14.79	14.77	14.74	14.66	15
20	QPSK	1	49	14.59	14.56	14.74	14.50	14.59	
20	QPSK	1	99	14.60	14.66	14.73	14.55	14.75	
20	QPSK	50	0	14.61	14.76	14.72	14.71	14.72	15
20	QPSK	50	24	14.47	14.51	14.71	13.53	14.59	
20	QPSK	50	50	14.62	14.63	14.75	14.47	14.67	
20	QPSK	100	0	14.68	14.73	14.72	14.57	14.62	15
20	16QAM	1	0	14.56	14.61	14.73	14.57	14.73	
20	16QAM	1	49	14.44	14.50	14.71	14.45	14.57	
20	16QAM	1	99	14.51	14.53	14.78	14.49	14.74	15
20	16QAM	50	0	14.59	14.61	14.72	14.56	14.69	
20	16QAM	50	24	14.56	14.53	14.67	14.68	14.56	
20	16QAM	50	50	14.55	14.55	14.72	14.34	14.52	15
20	16QAM	100	0	14.59	14.56	14.64	14.53	14.53	
20	64QAM	1	0	14.54	14.49	14.68	14.68	14.74	15
20	64QAM	1	49	14.58	14.64	14.66	14.49	14.51	
20	64QAM	1	99	14.48	14.49	14.72	14.46	14.73	
20	64QAM	50	0	14.52	14.55	14.72	14.60	14.61	15
20	64QAM	50	24	14.55	14.64	14.66	14.59	14.54	
20	64QAM	50	50	14.62	14.64	14.54	14.39	14.73	
20	64QAM	100	0	14.59	14.72	14.77	14.52	14.55	15
20	256QAM	1	0	14.60	14.61	14.73	14.49	14.66	
20	256QAM	1	49	14.46	14.46	14.73	14.39	14.39	
20	256QAM	1	99	14.47	14.51	14.70	14.47	14.63	15
20	256QAM	50	0	14.56	14.54	14.63	14.52	14.70	
20	256QAM	50	24	14.50	14.55	14.61	14.55	14.58	
20	256QAM	50	50	14.67	14.60	14.78	14.35	14.71	15
20	256QAM	100	0	14.62	14.58	14.51	14.49	14.52	
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	14.62	14.63	14.78	14.71	14.75	15.00
15	QPSK	1	37	14.58	14.50	14.77	14.50	14.51	
15	QPSK	1	74	14.60	14.62	14.73	14.51	14.74	
15	QPSK	36	0	14.56	14.57	14.74	14.69	14.67	15
15	QPSK	36	20	14.42	14.49	14.74	13.55	14.58	
15	QPSK	36	39	14.53	14.62	14.80	14.46	14.74	
15	QPSK	75	0	14.65	14.65	14.64	14.56	14.62	



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15	16QAM	1	0	14.46	14.55	14.67	14.53	14.72	15
15	16QAM	1	37	14.39	14.43	14.71	14.51	14.55	
15	16QAM	1	74	14.45	14.49	14.73	14.49	14.69	
15	16QAM	36	0	14.56	14.56	14.80	14.57	14.67	15
15	16QAM	36	20	14.50	14.49	14.62	14.66	14.61	
15	16QAM	36	39	14.48	14.54	14.68	14.32	14.85	
15	16QAM	75	0	14.52	14.55	14.82	14.54	14.59	15
15	64QAM	1	0	14.45	14.49	14.64	14.66	14.65	
15	64QAM	1	37	14.51	14.54	14.83	14.53	14.50	
15	64QAM	1	74	14.38	14.48	14.64	14.55	14.74	15
15	64QAM	36	0	14.52	14.48	14.62	14.55	14.66	
15	64QAM	36	20	14.55	14.61	14.82	14.63	14.56	
15	64QAM	36	39	14.52	14.63	14.81	14.46	14.80	15
15	64QAM	75	0	14.50	14.62	14.76	14.53	14.61	
15	256QAM	1	0	14.59	14.60	14.68	14.50	14.71	
15	256QAM	1	37	14.44	14.41	14.71	14.42	14.48	15
15	256QAM	1	74	14.38	14.46	14.67	14.54	14.66	
15	256QAM	36	0	14.54	14.49	14.71	14.45	14.68	
15	256QAM	36	20	14.48	14.47	14.61	14.58	14.59	15
15	256QAM	36	39	14.60	14.60	14.72	14.28	14.79	
15	256QAM	75	0	14.61	14.51	14.83	14.57	14.53	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	14.58	14.65	14.86	14.65	14.81	15.00
10	QPSK	1	25	14.49	14.52	14.77	14.51	14.58	
10	QPSK	1	49	14.53	14.64	14.66	14.53	14.71	
10	QPSK	25	0	14.54	14.64	14.79	14.61	14.65	15
10	QPSK	25	12	14.41	14.51	14.69	13.54	14.59	
10	QPSK	25	25	14.60	14.53	14.75	14.39	14.66	
10	QPSK	50	0	14.62	14.60	14.63	14.63	14.64	15
10	16QAM	1	0	14.52	14.57	14.68	14.53	14.77	
10	16QAM	1	25	14.39	14.47	14.61	14.50	14.55	
10	16QAM	1	49	14.51	14.49	14.70	14.48	14.71	15
10	16QAM	25	0	14.49	14.60	14.72	14.48	14.65	
10	16QAM	25	12	14.47	14.50	14.57	14.59	14.53	
10	16QAM	25	25	14.45	14.49	14.68	14.30	14.82	15
10	16QAM	50	0	14.59	14.52	14.84	14.59	14.49	
10	64QAM	1	0	14.45	14.43	14.58	14.59	14.70	
10	64QAM	1	25	14.51	14.55	14.81	14.49	14.55	15
10	64QAM	1	49	14.41	14.41	14.64	14.46	14.68	
10	64QAM	25	0	14.47	14.54	14.70	14.60	14.61	
10	64QAM	25	12	14.45	14.63	14.80	14.55	14.55	15
10	64QAM	25	25	14.59	14.59	14.72	14.45	14.73	
10	64QAM	50	0	14.59	14.68	14.76	14.57	14.57	
10	256QAM	1	0	14.52	14.51	14.68	14.49	14.73	15
10	256QAM	1	25	14.46	14.40	14.70	14.44	14.46	
10	256QAM	1	49	14.46	14.48	14.65	14.49	14.72	
10	256QAM	25	0	14.53	14.53	14.72	14.43	14.61	15
10	256QAM	25	12	14.41	14.48	14.60	14.56	14.57	
10	256QAM	25	25	14.67	14.52	14.77	14.25	14.75	
10	256QAM	50	0	14.60	14.51	14.83	14.59	14.48	15.00
Channel				39675	40148	40620	41093	41565	
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	15.00
5	QPSK	1	0	14.63	14.67	14.82	14.71	14.77	
5	QPSK	1	12	14.51	14.51	14.74	14.47	14.49	
5	QPSK	1	24	14.50	14.65	14.73	14.52	14.74	

5	QPSK	12	0	14.60	14.64	14.78	14.64	14.70	15
5	QPSK	12	7	14.38	14.45	14.69	13.61	14.60	
5	QPSK	12	13	14.55	14.59	14.75	14.42	14.74	
5	QPSK	25	0	14.59	14.62	14.65	14.58	14.61	
5	16QAM	1	0	14.46	14.61	14.72	14.52	14.74	15
5	16QAM	1	12	14.38	14.44	14.71	14.51	14.51	
5	16QAM	1	24	14.41	14.48	14.77	14.55	14.67	
5	16QAM	12	0	14.58	14.59	14.79	14.49	14.65	15
5	16QAM	12	7	14.47	14.45	14.64	14.65	14.58	
5	16QAM	12	13	14.53	14.52	14.67	14.36	14.76	
5	16QAM	25	0	14.54	14.51	14.83	14.55	14.50	
5	64QAM	1	0	14.46	14.39	14.60	14.68	14.75	15
5	64QAM	1	12	14.56	14.60	14.76	14.53	14.46	
5	64QAM	1	24	14.38	14.47	14.72	14.46	14.67	
5	64QAM	12	0	14.45	14.45	14.63	14.53	14.63	15
5	64QAM	12	7	14.55	14.61	14.73	14.54	14.54	
5	64QAM	12	13	14.57	14.63	14.80	14.38	14.72	
5	64QAM	25	0	14.49	14.63	14.68	14.57	14.56	
5	256QAM	1	0	14.51	14.56	14.69	14.50	14.65	15
5	256QAM	1	12	14.44	14.42	14.64	14.45	14.38	
5	256QAM	1	24	14.39	14.44	14.63	14.50	14.66	
5	256QAM	12	0	14.56	14.54	14.70	14.46	14.68	15
5	256QAM	12	7	14.42	14.47	14.52	14.53	14.60	
5	256QAM	12	13	14.58	14.58	14.73	14.30	14.80	
5	256QAM	25	0	14.55	14.53	14.82	14.57	14.54	

<LTE Band 48_MIMO2>

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	11.11	11.02	11.02	10.99	12
20	QPSK	1	49	10.89	10.85	10.89	10.86	
20	QPSK	1	99	11.08	11.01	11.00	10.94	
20	QPSK	50	0	10.99	10.97	10.95	10.97	12
20	QPSK	50	24	10.99	10.88	10.84	10.83	
20	QPSK	50	50	10.94	10.85	10.88	10.95	
20	QPSK	100	0	10.97	10.92	10.94	10.93	
20	16QAM	1	0	11.04	10.94	11.03	10.96	12
20	16QAM	1	49	10.85	10.93	10.85	10.87	
20	16QAM	1	99	10.96	11.05	10.77	11.02	
20	16QAM	50	0	10.95	10.96	10.81	10.99	12
20	16QAM	50	24	10.83	10.85	10.81	10.85	
20	16QAM	50	50	10.77	10.87	10.81	10.70	
20	16QAM	100	0	10.79	10.86	10.78	10.72	
20	64QAM	1	0	10.98	10.96	11.06	10.95	12
20	64QAM	1	49	10.79	10.83	10.77	10.71	
20	64QAM	1	99	11.03	11.01	10.97	10.89	
20	64QAM	50	0	10.92	10.91	10.86	10.81	12
20	64QAM	50	24	10.83	10.79	10.87	10.70	
20	64QAM	50	50	11.02	11.01	10.91	10.99	
20	64QAM	100	0	10.95	10.80	10.86	10.81	
20	256QAM	1	0	11.03	10.94	10.90	10.96	12
20	256QAM	1	49	10.66	10.68	10.68	10.61	
20	256QAM	1	99	10.96	10.96	10.92	10.84	
20	256QAM	50	0	10.99	10.87	11.01	11.02	12



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20	256QAM	50	24	10.81	10.82	10.91	10.81	
20	256QAM	50	50	10.96	11.03	10.88	10.97	
20	256QAM	100	0	10.82	10.78	10.85	10.87	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	10.91	11.00	11.01	10.88	12
15	QPSK	1	37	10.88	10.82	10.84	10.79	
15	QPSK	1	74	11.03	11.00	10.97	10.88	
15	QPSK	36	0	10.97	10.89	10.93	10.90	12
15	QPSK	36	20	10.92	10.87	10.83	10.78	
15	QPSK	36	39	10.89	10.80	10.91	10.95	
15	QPSK	75	0	10.93	10.91	10.84	10.87	12
15	16QAM	1	0	11.00	10.88	10.95	10.93	
15	16QAM	1	37	10.83	10.90	10.83	10.80	
15	16QAM	1	74	10.94	10.95	10.72	10.95	12
15	16QAM	36	0	10.94	10.95	10.81	10.99	
15	16QAM	36	20	10.74	10.80	10.79	10.76	
15	16QAM	36	39	10.70	10.83	10.74	10.67	12
15	16QAM	75	0	10.74	10.85	10.68	10.70	
15	64QAM	1	0	10.96	10.96	10.98	10.85	
15	64QAM	1	37	10.77	10.74	10.70	10.61	12
15	64QAM	1	74	10.98	10.97	10.94	10.80	
15	64QAM	36	0	10.92	10.85	10.81	10.72	
15	64QAM	36	20	10.75	10.77	10.79	10.65	12
15	64QAM	36	39	10.95	10.92	10.87	10.96	
15	64QAM	75	0	10.86	10.70	10.85	10.74	
15	256QAM	1	0	10.96	10.90	10.82	10.96	12
15	256QAM	1	37	10.65	10.61	10.68	10.58	
15	256QAM	1	74	10.94	10.86	10.88	10.79	
15	256QAM	36	0	10.97	10.82	10.96	10.93	12
15	256QAM	36	20	10.78	10.77	10.81	10.71	
15	256QAM	36	39	10.92	10.94	10.82	10.94	
15	256QAM	75	0	10.78	10.75	10.79	10.84	Tune-up limit (dBm)
Channel				55290	55815	56165	56690	
Frequency (MHz)				3555	3607.5	3642.5	3695	Tune-up limit (dBm)
10	QPSK	1	0	11.03	10.96	10.99	10.92	12
10	QPSK	1	25	10.80	10.75	10.87	10.71	
10	QPSK	1	49	10.98	10.93	10.91	10.89	
10	QPSK	25	0	11.01	10.95	11.00	10.99	12
10	QPSK	25	12	10.88	10.77	10.81	10.75	
10	QPSK	25	25	10.83	10.82	10.88	10.90	
10	QPSK	50	0	10.90	10.97	10.90	10.84	12
10	16QAM	1	0	10.90	10.93	10.98	10.94	
10	16QAM	1	25	10.74	10.92	10.72	10.77	
10	16QAM	1	49	11.00	11.03	10.75	10.91	12
10	16QAM	25	0	10.84	10.89	10.83	10.86	
10	16QAM	25	12	10.83	10.73	10.84	10.82	
10	16QAM	25	25	10.80	10.82	10.68	10.68	12
10	16QAM	50	0	10.74	10.78	10.83	10.78	
10	64QAM	1	0	11.03	10.94	11.02	10.89	
10	64QAM	1	25	10.73	10.73	10.79	10.72	12
10	64QAM	1	49	10.95	11.04	10.90	10.89	
10	64QAM	25	0	10.82	10.85	10.83	10.81	
10	64QAM	25	12	10.81	10.82	10.75	10.70	12
10	64QAM	25	25	11.00	11.00	10.83	10.98	
10	64QAM	50	0	10.85	10.79	10.73	10.77	



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10	256QAM	1	0	10.99	10.87	10.89	10.96	12
10	256QAM	1	25	10.68	10.50	10.65	10.54	
10	256QAM	1	49	10.85	10.90	10.82	10.80	
10	256QAM	25	0	10.94	10.75	10.88	10.88	12
10	256QAM	25	12	10.78	10.70	10.85	10.84	
10	256QAM	25	25	10.95	10.96	10.81	10.87	
10	256QAM	50	0	10.85	10.78	10.77	10.81	Tune-up limit (dBm)
Channel				55265	55810	56170	56715	
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	11.08	10.87	11.02	10.89	12
5	QPSK	1	12	10.82	10.83	10.84	10.71	
5	QPSK	1	24	11.02	11.06	10.93	10.88	
5	QPSK	12	0	10.89	10.99	10.88	10.93	12
5	QPSK	12	7	10.83	10.75	10.87	10.69	
5	QPSK	12	13	10.86	10.82	10.98	10.83	
5	QPSK	25	0	11.00	10.88	10.94	10.90	12
5	16QAM	1	0	10.99	10.92	11.01	10.87	
5	16QAM	1	12	10.76	10.80	10.79	10.86	
5	16QAM	1	24	10.98	10.96	10.74	10.85	12
5	16QAM	12	0	11.03	10.80	10.81	10.93	
5	16QAM	12	7	10.84	10.74	10.83	10.77	
5	16QAM	12	13	10.69	10.82	10.76	10.68	12
5	16QAM	25	0	10.73	10.76	10.72	10.62	
5	64QAM	1	0	10.91	10.87	10.97	10.97	
5	64QAM	1	12	10.74	10.76	10.80	10.69	12
5	64QAM	1	24	10.89	10.99	10.94	10.92	
5	64QAM	12	0	10.87	10.80	10.80	10.84	
5	64QAM	12	7	10.85	10.75	10.85	10.71	12
5	64QAM	12	13	11.00	10.99	10.82	10.98	
5	64QAM	25	0	10.83	10.73	10.78	10.73	
5	256QAM	1	0	11.01	10.84	10.80	10.94	12
5	256QAM	1	12	10.62	10.59	10.70	10.54	
5	256QAM	1	24	10.92	10.93	10.87	10.81	
5	256QAM	12	0	11.03	10.78	10.97	10.96	12
5	256QAM	12	7	10.73	10.81	10.90	10.83	
5	256QAM	12	13	10.98	10.94	10.83	10.87	
5	256QAM	25	0	10.79	10.80	10.79	10.81	

<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			4CC Downlink Carrier Aggregation			5CC Downlink Carrier Aggregation		
NO.	Combination	Covered by measurement superset	NO.	Combination	Covered by measurement superset	NO.	Combination	Covered by measurement superset	NO.	Combination	Covered by measurement superset
	2A-2A			2A-2A-4A			2A-2A-4A-4A			2A-2A-5A-66A-66A	
	2A-4A			2A-2A-5A			2A-2A-4A-5A			2A-2A-5A-66B	
	2A-5A			2A-2A-12A			2A-2A-4A-12A			2A-2A-5A-66C	
	2A-7A			2A-2A-13A			2A-2A-4A-71A			2A-2A-12A-30A-66A	
	2A-12A			2A-2A-14A			2A-2A-5A-66A			2A-2A-12A-66A-66A	
	2A-13A			2A-2A-30A			2A-2A-12A-30A			2A-2A-13A-66A-66A	
	2A-14A			2A-2A-66A			2A-2A-12A-66A			2A-2A-13A-66B	
	2A-30A			2A-2A-71A			2A-2A-13A-66A			2A-2A-14A-30A-66A	
	2A-48A			2A-4A-4A			2A-2A-14A-30A			2A-2A-14A-66A-66A	
	2A-66A			2A-4A-5A			2A-2A-14A-66A			2A-5A-48A-48A-66A	
	2A-71A			2A-4A-7A			2A-2A-30A-66A			2A-5A-48A-48C	
	4A-4A			2A-4A-12A			2A-2A-66A-66A			2A-5A-48C-66A	
	4A-5A			2A-4A-13A			2A-2A-66A-71A			2A-5A-48D	
	4A-7A			2A-4A-30A			2A-2A-66B			2A-5B-30A-66A	
	4A-12A			2A-4A-71A			2A-2A-66C			2A-5B-66A-66A	
	4A-13A			2A-5A-30A			2A-4A-4A-5A			2A-5B-66B	
	4A-30A			2A-5A-48A			2A-4A-4A-12A			2A-5B-66C	
	4A-71A			2A-5A-66A			2A-4A-5A-30A			2A-12A-30A-66A-66A	
	5A-5A			2A-5B			2A-4A-5B			2A-13A-48A-48A-66A	
	5A-7A			2A-12A-30A			2A-4A-12A-30A			2A-13A-48A-48C	
	5A-30A			2A-12A-66A			2A-5A-30A-66A			2A-13A-48C-66A	
	5A-48A			2A-13A-48A			2A-5A-48A-48A			2A-13A-48D	
	5A-66A			2A-13A-66A			2A-5A-48A-66A			2A-14A-30A-66A-66A	
	7A-7A			2A-14A-30A			2A-5A-48C			2A-14A-66A-66A-66A	
	12A-30A			2A-14A-66A			2A-5A-66A-66A			2A-48A-48C-66A	
	12A-66A			2A-30A-66A			2A-5A-66B			2A-48A-48D	
	13A-48A			2A-48A-48A			2A-5A-66C			2A-48C-48C	
	13A-66A			2A-48A-66A			2A-5B-30A			2A-48D-66A	
	14A-30A			2A-48C			2A-5B-66A			2A-48E	
	14A-66A			2A-66A-66A			2A-12A-30A-66A			5A-48A-48C-66A	
	25A-25A			2A-66A-71A			2A-12A-66A-66A			5A-48A-48D	
	25A-26A			2A-66B			2A-12A-66C			5A-48C-48C	
	26A-41A			2A-66C			2A-13A-48A-48A			5A-48D-66A	
	30A-66A			2C-66A			2A-13A-48A-66A			5A-48E	
	38C			4A-4A-5A			2A-13A-48C			13A-48A-48C-66A	
	41A-41A			4A-4A-12A			2A-13A-66A-66A			13A-48C-48C	
	41C			4A-4A-13A			2A-13A-66B			13A-48C-66B	
	48A-48A			4A-4A-30A			2A-13A-66C			13A-48C-66C	
	48A-66A			4A-4A-71A			2A-14A-30A-66A			13A-48D-66A	
	48C			4A-5A-30A			2A-14A-66A-66A			13A-48E	
	66A-66A			4A-5B			2A-30A-66A-66A			41F	
	66A-71A			4A-12A-30A			2A-48A-48A-66A			48A-48A-48D	
	66B			5A-5A-66A			2A-48A-48C			48A-48C-48C	
	66C			5A-7A-7A			2A-48C-66A			48A-48C-66B	
	25A-41A			5A-30A-66A			2A-48D			48A-48C-66C	

4A-17A		5A-48A-48A		2A-66A-66A-66A		48A-48D-66A	
		5A-48A-66A		2A-66A-66A-71A		48C-48C-66A	
		5A-48C		2A-66C-71A		48C-66A-66A-66A	
		5A-66A-66A		2C-66A-66A		48E-66A	
		5A-66B		4A-4A-5B		48F	
		5A-66C		4A-4A-12A-30A		2A-5A-5A-66A-66A	
		5B-30A		5A-5A-66A-66A		2A-2A-5B-66A	
		5B-66A		5A-5A-66B			
		12A-30A-66A		5A-5A-66C			
		12A-66A-66A		5A-48A-48A-66A			
		13A-48A-48A		5A-48A-48C			
		13A-48A-66A		5A-48C-66A			
		13A-48C		5A-48D			
		13A-66A-66A		5B-30A-66A			
		13A-66B		5B-66A-66A			
		13A-66C		5B-66B			
		14A-30A-66A		5B-66C			
		14A-66A-66A		12A-30A-66A-66A			
		26A-41C		12A-66C			
		30A-66A-66A		13A-48A-48A-66A			
		41A-41C		13A-48A-48C			
		41D		13A-48A-66B			
		48A-48A-48A		13A-48A-66C			
		48A-48A-66A		13A-48C-66A			
		48A-48C		13A-48D			
		48A-66A-66A		14A-30A-66A-66A			
		48A-66B		14A-66A-66A-66A			
		48A-66C		30A-66A-66A-66A			
		48C-66A		41A-41D			
		48D		41C-41C			
		66A-66A-66A		41E			
		66A-66A-71A		48A-48A-48C			
		66A-66C		48A-48A-66A-66A			
		66C-71A		48A-48A-66B			
		2A-5A-5A		48A-48A-66C			
		25A-41C		48A-48C-66A			
				48A-48D			
				48A-66A-66A-66A			
				48C-48C			
				48C-66A-66A			
				48C-66B			
				48C-66C			
				48D-66A			
				48E			
				2A-2A-5A-30A			
				2A-5A-5A-66A			
				5A-30A-66A-66A			
				13A-66A-66A-66A			
				25A-41D			
				2A-2A-5B			

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

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

<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		25	20	1905	26590	QPSK	1	0	26	15	876.5	8865	22.82	23.05
		4	10	1750	20350	QPSK	1	0	17	10	740	5790	23.06	23.25
Intra-Band	Contiguous	38	20	2580	37850	QPSK	1	1	38	20	2599.80	38048	23.06	23.23

<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	Band 2	20	1860	18700	QPSK	1	0	0	4	20	2132.5	2175	7	20	2655	3100	22.72	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	4	20	2132.5	2175	13	10	751	5230	22.73	22.98
	Band 5	10	836.5	20525	QPSK	1	0	0	7	20	2655	3100	7	5	2687.5	3425	23.00	23.16
	Band 26	15	831.5	26865	QPSK	1	0	0	41	20	2593	40620	41	20	2612.8	40818	23.12	23.25

<Four Carrier power verification>

Configure		PCC							SCC1				SCC2				SCC3				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	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	Band 2	20	1860	18700	QPSK	1	0	0	2	5	1980	1100	4	20	2132.5	2175	71	20	634.5	68761	22.72	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	2	5	1980	1100	66	20	2155	66886	71	20	634.5	68761	22.80	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	4	20	2132.5	2175	5	10	881.5	2525	30	10	2355	9820	22.73	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	4	20	2132.5	2175	12	10	737.5	5095	30	10	2355	9820	22.69	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	66	20	2155	66886	66	20	2139.8	66734	71	20	634.5	68761	22.74	22.98
	Band 48	20	3609	55830	QPSK	1	0	0	48	20	3628.8	56028	66	20	2155	66886	66	20	2164.8	67084	21.20	21.60
	Band 48	20	3609	55830	QPSK	1	0	0	48	20	3628.8	56028	48	20	3648.6	56226	66	20	2155	66886	21.22	21.60
	Band 25	20	1905	26590	QPSK	1	0	0	41	20	2593	40620	41	20	2612.8	2175	41	20	2636.2	41052	22.82	23.05

<Five Carrier power verification>

Configure		PCC							SCC1				SCC2				SCC3				SCC4				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	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	Band 2	20	1860	18700	QPSK	1	0	0	2	5	1980	1100	12	10	737.5	5095	30	10	2355	9820	66	20	2155	66886	22.82	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	2	5	1980	1100	14	10	763	5330	30	10	2355	9820	66	20	2155	66886	22.73	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	5	10	881.5	2525	48	20	3625	55990	48	20	3644.8	56188	66	20	2155	66886	22.55	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	5	10	881.5	2525	5	10	891.4	2624	30	10	2355	9820	66	20	2155	66886	22.73	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	12	10	737.5	5095	30	10	2355	9820	66	20	2139.8	66734	66	5	2197.5	67311	22.82	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	13	10	751	5230	48	20	3625	55990	48	20	3648.6	56226	66	20	2139.8	66734	22.71	22.98
	Band 2	20	1860	18700	QPSK	1	0	0	14	10	763	5330	30	10	2355	9820	66	20	2155	66886	66	20	2164.8	67084	22.63	22.98

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation		
Number	Combination	
	Main_Ant	MIMO_Ant
1	5B	
2	7C	
3	66B	
4	66C	
5	38C	
6		41C
7		48C

<Intra-band>
General Note:

- i. The device supports intra-band uplink carrier aggregation for LTE B5/B7/B66/B38/B41/B48 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. 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.

State 1(NB sensor off)_Main

CA_5B										
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	23.12	25
20575	20476	QPSK	1	0	1	49	2	0	23.06	25
20600	20501	QPSK	1	0	1	49	2	0	23.11	25

CA_7C										
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	22.03	24
21100	20902	QPSK	1	0	1	99	2	0	22.11	24
21350	21152	QPSK	1	0	1	99	2	0	22.06	24

CA_66B										
Combination 15MHz+5MHz (75RB+25RB)										
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				
132047	132140	QPSK	1	0	0	0	1	0	22.06	24
132322	132229	QPSK	1	0	1	24	2	0	22.01	24
132597	132504	QPSK	1	0	1	24	2	0	22.03	24

CA_66C										
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				
132072	132270	QPSK	1	0	0	0	1	0	22.28	24
132322	132124	QPSK	1	0	1	99	2	0	22.19	24
132572	132374	QPSK	1	0	1	99	2	0	22.06	24

CA_38C										
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				
37850	38048	QPSK	1	0	0	0	1	0	22.18	24
37901	38099	QPSK	1	0	0	0	1	0	22.06	24
38150	37952	QPSK	1	0	1	99	2	0	22.12	24

State 1(NB sensor off)_MIMO2

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	22.06	24
40185	39987	QPSK	1	0	0	0	1	0	22.13	24
40620	40422	QPSK	1	0	0	0	1	0	22.14	24
41055	40857	QPSK	1	0	0	0	1	0	22.06	24
41490	41292	QPSK	1	0	0	0	1	0	22.08	24

CA_48C										
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	21.62	22
55830	55632	QPSK	1	0	1	99	2	0	21.52	22
56150	55952	QPSK	1	0	1	99	2	0	21.44	22
56640	56442	QPSK	1	0	1	99	2	0	21.39	22

State 2(NB sensor on)_Main

CA_5B										
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	20.41	22
20575	20476	QPSK	1	0	0	0	1	0	20.48	22
20600	20501	QPSK	1	0	0	0	1	0	20.55	22

CA_7C										
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	16.52	17
21100	20902	QPSK	1	0	0	0	1	0	16.55	17
21350	21152	QPSK	1	0	0	0	1	0	16.49	17

CA_66B										
Combination 15MHz+5MHz (75RB+25RB)										
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				
132047	132140	QPSK	1	0	0	0	1	0	13.66	15.5
132322	132229	QPSK	1	0	1	24	2	0	13.75	15.5
132597	132504	QPSK	1	0	1	24	2	0	13.73	15.5

CA_66C										
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				
132072	132270	QPSK	1	0	0	0	1	0	14.14	15.5
132322	132124	QPSK	1	0	0	0	1	0	14.22	15.5
132572	132374	QPSK	1	0	0	0	1	0	14.06	15.5

CA_38C										
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				
37850	38048	QPSK	1	0	0	0	1	0	16.92	18.5
37901	38099	QPSK	1	0	0	0	1	0	17	18.5
38150	37952	QPSK	1	0	1	99	2	0	16.77	18.5

State 2(NB sensor on)_MIMO2

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	14.21	16
40185	39987	QPSK	1	0	0	0	1	0	14.32	16
40620	40422	QPSK	1	0	0	0	1	0	14.35	16
41055	40857	QPSK	1	0	0	0	1	0	14.27	16
41490	41292	QPSK	1	0	0	0	1	0	14.23	16

CA_48C										
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	15.29	17
55830	55632	QPSK	1	0	0	0	1	0	15.36	17
56150	55952	QPSK	1	0	0	0	1	0	15.35	17
56640	56442	QPSK	1	0	0	0	1	0	15.29	17

State 3(TB)_Main

CA_5B										
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	19.93	21.5
20575	20476	QPSK	1	0	0	0	1	0	19.95	21.5
20600	20501	QPSK	1	0	0	0	1	0	20.05	21.5

CA_7C										
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	14.43	15.5
21100	20902	QPSK	1	0	0	0	1	0	14.55	15.5
21350	21152	QPSK	1	0	0	0	1	0	14.49	15.5

CA_66B										
Combination 15MHz+5MHz (75RB+25RB)										
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				
132047	132140	QPSK	1	0	0	0	1	0	15.11	16.5
132322	132229	QPSK	1	0	1	24	2	0	15.2	16.5
132597	132504	QPSK	1	0	1	24	2	0	15.13	16.5

CA_66C										
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				
132072	132270	QPSK	1	0	0	0	1	0	15.35	16.5
132322	132124	QPSK	1	0	0	0	1	0	15.42	16.5
132572	132374	QPSK	1	0	0	0	1	0	15.33	16.5

CA_38C										
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				
37850	38048	QPSK	1	0	0	0	1	0	16.42	17.5
37901	38099	QPSK	1	0	0	0	1	0	16.52	17.5
38150	37952	QPSK	1	0	1	99	2	0	16.43	17.5

State 3(TB)_MIMO2

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	13.22	15
40185	39987	QPSK	1	0	0	0	1	0	13.2	15
40620	40422	QPSK	1	0	0	0	1	0	13.35	15
41055	40857	QPSK	1	0	0	0	1	0	13.29	15
41490	41292	QPSK	1	0	0	0	1	0	13.21	15

CA_48C										
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	11.16	12
55830	55632	QPSK	1	0	0	0	1	0	11.18	12
56150	55952	QPSK	1	0	0	0	1	0	11.25	12
56640	56442	QPSK	1	0	0	0	1	0	11.33	12

13. 5G NR Output Power (Unit: dBm)

General Note:

1. The device support SCS 15KHz and 30KHz for NR FDD and TDD and have the same maximum power, in this report only select SCS 15KHz for NR FDD and SCS 30KHz for NR TDD power measurement, due to SCS 15KHz for FDD and SCS 30KHz for TDD have highest support bandwidth, and the NR SAR is < 1g SAR 1.45W/kg. Output power and SAR measurement for SCS30KHz for FDD and SCS15KHz for TDD shall be not necessary.
2. Referencing the procedure in KDB 941225, the test procedures are outlined as below
 - a. For DFT-OFDM output power measurement, full measurement was done for Pi/2 BPSK and QPSK and for the largest supported bandwidth, repeat test for 16QAM/64QAM/256QAM under 1RB 1Offset configuration. For smaller bandwidth, measure conducted power for Pi/2 BPSK and 1RB 1Offset configuration.
 - b. According to the tune-up, CP-OFDM output power is not ½ dB higher than DFT-OFDM mode, and the reported SAR of DFT-OFDM mode reported SAR is ≤ 1.45 W/kg, SAR test and thus conducted power for CP-OFDM mode is not required.
 - c. To start SAR test for the largest channel bandwidth for Pi/2 BPSK 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. Also do SAR test for 50% RB allocation for Pi/2 BPSK SAR testing using 1RB Pi/2 BPSK allocation procedure
 - d. For Pi/2 BPSK with 100% RB allocation, SAR test 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.
 - e. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not ½ dB higher than the same configuration in Pi/2 BPSK, also reported SAR for the Pi/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
 - f. Smaller bandwidth output power for each RB allocation configuration for this device is not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
 - g. The NR n5/n41/n66/n71 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.
 - h. The NR n2/n78 SAR test was covered by NR n25/n77; due to SAR test for overlapping NR bands can be reduced if the maximum power including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion and the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
3. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission. And only for TDD power class2 was performed using Factory Test Mode software to establish the connection and perform SAR with 50% transmission

<3GPP 38.101 MPR for EN-DC>
Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	0 ²
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
CP-OFDM	256 QAM	≤ 4.5		
	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5	≤ 2.5	
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

**State 1(NB sensor off)**

<n2_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	24.0
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	23.07	22.82	23.04	24.0
20	PI/2 BPSK	1	53	23.00	23.15	23.12	
20	PI/2 BPSK	1	104	22.86	23.04	23.07	
20	PI/2 BPSK	50	0	22.98	23.03	23.08	23.5
20	PI/2 BPSK	50	28	23.06	23.05	23.05	24.0
20	PI/2 BPSK	50	56	23.03	23.09	23.08	23.5
20	PI/2 BPSK	100	0	23.06	23.08	23.03	
20	QPSK	1	1	22.84	22.94	22.92	24.0
20	QPSK	1	53	22.97	23.06	23.09	
20	QPSK	1	104	22.97	23.02	23.04	
20	QPSK	50	0	22.93	22.95	22.97	23.0
20	QPSK	50	28	22.99	23.09	23.13	24.0
20	QPSK	50	56	22.97	22.93	22.93	23.0
20	QPSK	100	0	22.93	22.97	22.95	
20	16QAM	1	1	22.74	22.84	22.87	23.0
20	64QAM	1	1	21.34	21.41	21.45	21.5
20	256QAM	1	1	19.26	19.33	19.37	19.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	23.00	22.77	22.96	24.0
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	22.97	22.72	22.99	24.0
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	22.97	22.72	22.99	24.0



<n5_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	25.0
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	23.25	23.31	23.23	
20	PI/2 BPSK	1	53	23.31	23.42	23.44	24.5
20	PI/2 BPSK	1	104	23.24	23.25	23.37	
20	PI/2 BPSK	50	0	23.20	23.25	23.30	
20	PI/2 BPSK	50	28	23.28	23.37	23.42	24.5
20	PI/2 BPSK	50	56	23.25	23.31	23.40	
20	PI/2 BPSK	100	0	23.28	23.30	23.35	
20	QPSK	1	1	23.06	23.16	23.14	25.0
20	QPSK	1	53	23.19	23.28	23.31	
20	QPSK	1	104	23.19	23.24	23.26	
20	QPSK	50	0	23.15	23.22	23.29	24.0
20	QPSK	50	28	23.21	23.31	23.35	
20	QPSK	50	56	23.29	23.35	23.35	
20	QPSK	100	0	23.25	23.29	23.27	22.5
20	16QAM	1	1	22.96	23.06	23.09	
20	64QAM	1	1	22.34	22.41	22.45	
20	256QAM	1	1	20.26	20.33	20.37	20.5
Channel				166300	167300	168300	25.0
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	23.15	23.22	23.16	
Channel				165800	167300	168800	25.0
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	23.16	23.31	23.15	
Channel				165300	167300	169300	25.0
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	23.20	23.27	23.14	



<n7_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				502000	507000	512000	24.0
Frequency (MHz)				2510	2535	2560	
20	PI/2 BPSK	1	1	23.31	23.23	23.37	
20	PI/2 BPSK	1	53	23.45	23.39	23.41	23.5
20	PI/2 BPSK	1	104	23.33	23.37	23.40	
20	PI/2 BPSK	50	0	22.79	22.74	22.75	
20	PI/2 BPSK	50	28	23.35	23.30	23.31	23.5
20	PI/2 BPSK	50	56	22.87	22.82	22.83	
20	PI/2 BPSK	100	0	22.97	22.92	22.93	
20	QPSK	1	1	23.18	23.13	23.14	24.0
20	QPSK	1	53	23.32	23.27	23.28	
20	QPSK	1	104	23.20	23.15	23.16	
20	QPSK	50	0	22.27	22.22	22.23	23.0
20	QPSK	50	28	23.41	23.36	23.37	
20	QPSK	50	56	22.43	22.38	22.39	
20	QPSK	100	0	22.34	22.29	22.30	23.0
20	16QAM	1	1	22.14	22.09	22.10	
20	64QAM	1	1	20.38	20.33	20.34	
20	256QAM	1	1	18.96	18.91	18.92	19.5
Channel				501500	507000	512500	24.0
Frequency (MHz)				2507.5	2535	2562.5	
15	PI/2 BPSK	1	1	23.29	23.16	23.36	
Channel				501000	507000	513000	24.0
Frequency (MHz)				2505	2535	2565	
10	PI/2 BPSK	1	1	23.22	23.16	23.35	
Channel				500500	507000	513500	24.0
Frequency (MHz)				2502.5	2535	2567.5	
5	PI/2 BPSK	1	1	23.28	23.17	23.27	



<n25_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376500	381000	24.0
Frequency (MHz)				1860	1882.5	1905	
20	PI/2 BPSK	1	1	23.17	23.14	23.30	
20	PI/2 BPSK	1	53	23.18	23.42	23.47	23.5
20	PI/2 BPSK	1	104	23.00	23.22	23.29	
20	PI/2 BPSK	50	0	22.66	22.91	22.96	
20	PI/2 BPSK	50	28	23.16	23.41	23.46	23.5
20	PI/2 BPSK	50	56	22.55	22.80	22.85	
20	PI/2 BPSK	100	0	22.62	22.87	22.92	
20	QPSK	1	1	22.98	23.23	23.28	24.0
20	QPSK	1	53	23.08	23.33	23.38	
20	QPSK	1	104	22.91	23.16	23.21	
20	QPSK	50	0	22.05	22.30	22.35	24.0
20	QPSK	50	28	23.12	23.37	23.42	
20	QPSK	50	56	22.01	22.26	22.31	
20	QPSK	100	0	22.05	22.30	22.35	23.0
20	16QAM	1	1	21.98	22.23	22.28	
20	64QAM	1	1	20.16	20.41	20.46	
20	256QAM	1	1	18.69	18.94	18.99	19.5
Channel				371500	376500	381500	24.0
Frequency (MHz)				1857.5	1882.5	1907.5	
15	PI/2 BPSK	1	1	23.16	23.12	23.23	
Channel				371000	376500	382000	24.0
Frequency (MHz)				1855	1882.5	1910	
10	PI/2 BPSK	1	1	23.13	23.13	23.27	
Channel				370500	376500	382500	24.0
Frequency (MHz)				1852.5	1882.5	1912.5	
5	PI/2 BPSK	1	1	23.10	23.12	23.25	



<n30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					462000		23.0
Frequency (MHz)					2310		
10	PI/2 BPSK	1	1		22.43		23.0
10	PI/2 BPSK	1	26		22.56		
10	PI/2 BPSK	1	50		22.53		
10	PI/2 BPSK	25	0		22.09		22.5
10	PI/2 BPSK	25	14		22.43		23.0
10	PI/2 BPSK	25	27		22.00		22.5
10	PI/2 BPSK	50	0		22.11		
10	QPSK	1	1		22.32		23.0
10	QPSK	1	26		22.44		
10	QPSK	1	50		22.38		
10	QPSK	25	0		21.56		22.0
10	QPSK	25	14		22.48		23.0
10	QPSK	25	27		21.46		22.0
10	QPSK	50	0		21.46		
10	16QAM	1	1		21.39		22.0
10	64QAM	1	1		19.70		20.5
10	256QAM	1	1		18.02		18.5
Channel				461500	462000	462500	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	PI/2 BPSK	1	1	22.40	22.42	22.34	23.0



<n38_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				516000	519000	522000	24.0
Frequency (MHz)				2580	2595	2610	
20	PI/2 BPSK	1	1	23.27	23.36	23.23	
20	PI/2 BPSK	1	26	23.51	23.45	23.40	23.5
20	PI/2 BPSK	1	49	23.37	23.33	23.38	
20	PI/2 BPSK	25	0	23.07	23.02	22.97	
20	PI/2 BPSK	25	13	23.48	23.43	23.38	23.5
20	PI/2 BPSK	25	26	23.02	22.97	22.92	
20	PI/2 BPSK	50	0	23.05	23.00	22.95	
20	QPSK	1	1	23.42	23.37	23.32	24.0
20	QPSK	1	26	23.49	23.44	23.39	
20	QPSK	1	49	23.47	23.42	23.37	
20	QPSK	25	0	22.60	22.55	22.50	24.0
20	QPSK	25	13	23.45	23.40	23.35	
20	QPSK	25	26	22.48	22.43	22.38	
20	QPSK	50	0	22.51	22.46	22.41	23.0
20	16QAM	1	1	22.34	22.29	22.24	23.0
20	64QAM	1	1	20.52	20.47	20.42	21.5
20	256QAM	1	1	18.99	18.94	18.89	19.5
Channel				515502	519000	522498	Tune-up limit (dBm)
Frequency (MHz)				2577.51	2595	2612.49	
15	PI/2 BPSK	1	1	23.20	23.12	23.29	24.0
Channel				515004	519000	522996	Tune-up limit (dBm)
Frequency (MHz)				2575.02	2595	2614.98	
10	PI/2 BPSK	1	1	23.15	23.10	23.39	24.0



<n41_MIMO2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				507204	518598	529998	24.0
Frequency (MHz)				2536.02	2592.99	2649.99	
100	PI/2 BPSK	1	1	22.66	22.68	22.78	
100	PI/2 BPSK	1	137	23.24	22.91	23.28	23.5
100	PI/2 BPSK	1	271	22.61	22.79	22.74	
100	PI/2 BPSK	135	0	23.18	22.83	23.21	
100	PI/2 BPSK	135	69	23.08	22.86	23.11	23.5
100	PI/2 BPSK	135	138	22.87	22.65	22.90	
100	PI/2 BPSK	270	0	22.77	22.75	23.00	
100	QPSK	1	1	22.79	22.57	22.82	24.0
100	QPSK	1	137	23.15	22.93	23.18	
100	QPSK	1	271	22.53	22.31	22.56	
100	QPSK	135	0	22.97	22.75	23.00	24.0
100	QPSK	135	69	22.91	22.69	22.94	
100	QPSK	135	138	22.78	22.56	22.81	
100	QPSK	270	0	22.76	22.54	22.79	23.0
100	16QAM	1	1	22.66	22.44	22.69	23.0
100	64QAM	1	1	22.38	22.16	22.41	23.0
100	256QAM	1	1	21.35	21.13	21.38	22.0
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	22.64	22.65	22.74	24.0
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	22.64	22.67	22.77	24.0
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	22.63	22.66	22.68	24.0
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	22.64	22.66	22.68	24.0
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	22.63	22.60	22.77	24.0
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	22.59	22.66	22.72	24.0



<n66_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	24.0
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	22.91	22.97	22.88	
40	PI/2 BPSK	1	108	23.39	23.41	23.32	23.5
40	PI/2 BPSK	1	214	23.09	22.98	22.95	
40	PI/2 BPSK	108	0	22.74	22.77	22.67	
40	PI/2 BPSK	108	54	23.36	23.39	23.29	24.0
40	PI/2 BPSK	108	108	22.81	22.84	22.74	
40	PI/2 BPSK	216	0	22.82	22.85	22.75	
40	QPSK	1	1	22.97	23.00	22.90	24.0
40	QPSK	1	108	23.32	23.35	23.25	
40	QPSK	1	214	22.95	22.98	22.88	
40	QPSK	108	0	22.23	22.26	22.16	23.0
40	QPSK	108	54	23.36	23.39	23.29	
40	QPSK	108	108	22.17	22.20	22.10	
40	QPSK	216	0	22.14	22.17	22.07	23.0
40	16QAM	1	1	21.89	21.92	21.82	
40	64QAM	1	1	20.11	20.14	20.04	
40	256QAM	1	1	18.52	18.55	18.45	19.5
Channel				344000	349000	354000	24.0
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	22.90	22.87	22.80	
Channel				343500	349000	354500	24.0
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	22.81	22.92	22.78	
Channel				343000	349000	355000	24.0
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	22.90	22.87	22.80	
Channel				342500	349000	355500	24.0
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	22.88	22.88	22.87	



<n71_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				134600	136100	137600	25.0
Frequency (MHz)				673	680.5	688	
20	PI/2 BPSK	1	1	23.20	23.20	23.39	
20	PI/2 BPSK	1	53	23.24	23.49	23.37	24.5
20	PI/2 BPSK	1	104	23.30	23.26	23.37	
20	PI/2 BPSK	50	0	22.60	22.75	22.67	
20	PI/2 BPSK	50	28	23.15	23.30	23.22	24.5
20	PI/2 BPSK	50	56	22.80	22.95	22.87	
20	PI/2 BPSK	100	0	22.63	22.78	22.70	
20	QPSK	1	1	23.01	23.06	23.02	25.0
20	QPSK	1	53	23.09	23.24	23.16	
20	QPSK	1	104	23.02	23.11	23.03	
20	QPSK	50	0	22.16	22.31	22.23	24.0
20	QPSK	50	28	23.11	23.26	23.18	
20	QPSK	50	56	22.29	22.44	22.36	
20	QPSK	100	0	22.10	22.25	22.17	24.0
20	16QAM	1	1	22.05	22.10	22.03	
20	64QAM	1	1	20.57	20.66	20.61	
20	256QAM	1	1	18.71	18.74	18.80	20.5
Channel				134100	136100	138100	25.0
Frequency (MHz)				670.5	680.5	690.5	
15	PI/2 BPSK	1	1	23.10	23.14	23.32	
Channel				133600	136100	138600	25.0
Frequency (MHz)				668	680.5	693	
10	PI/2 BPSK	1	1	23.20	23.13	23.35	
Channel				133100	136100	139100	25.0
Frequency (MHz)				665.5	680.5	695.5	
5	PI/2 BPSK	1	1	23.13	23.15	23.37	



<n77_MIMO2(3700~3980)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	24.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	22.40	22.36	22.66	24.0
100	PI/2 BPSK	1	137	23.15	23.21	23.31	
100	PI/2 BPSK	1	271	22.55	22.82	22.69	
100	PI/2 BPSK	135	0	22.33	22.38	22.48	23.5
100	PI/2 BPSK	135	69	22.43	22.48	22.58	23.5
100	PI/2 BPSK	135	138	22.06	22.11	22.21	23.5
100	PI/2 BPSK	270	0	22.12	22.17	22.27	
100	QPSK	1	1	22.18	22.23	22.33	23.0
100	QPSK	1	137	22.09	22.14	22.24	
100	QPSK	1	271	21.46	21.51	21.61	
100	QPSK	135	0	22.19	22.24	22.34	23.0
100	QPSK	135	69	22.19	22.24	22.34	
100	QPSK	135	138	21.92	21.97	22.07	
100	QPSK	270	0	22.02	22.07	22.17	23.0
100	16QAM	1	1	21.77	21.82	21.92	23.0
100	64QAM	1	1	21.00	21.05	21.15	21.5
100	256QAM	1	1	19.80	19.85	19.95	20.5
Channel				649334	656000	662666	24.0
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	22.66	22.59	22.71	24.0
Channel				648668	656000	663332	24.0
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	22.64	22.65	22.68	24.0
Channel				648334	656000	663666	24.0
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	22.65	22.64	22.70	24.0
Channel				648000	656000	664000	24.0
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	22.38	22.29	22.63	24.0
Channel				647334	656000	664666	24.0
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	22.33	22.32	22.58	24.0
Channel				647168	656000	664832	24.0
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	22.38	22.32	22.57	24.0
Channel				647000	656000	665000	24.0
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	22.31	22.31	22.64	24.0



<n77_HPUE_MIMO2(3700~3980)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	27.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	26.52	26.60	26.45	27.0
100	PI/2 BPSK	1	137	25.93	26.12	26.22	
100	PI/2 BPSK	1	271	25.91	26.13	26.13	
100	PI/2 BPSK	135	0	25.51	25.42	25.72	26.5
100	PI/2 BPSK	135	69	26.55	26.38	26.42	27.0
100	PI/2 BPSK	135	138	25.78	25.82	26.12	26.5
100	PI/2 BPSK	270	0	24.89	25.27	25.35	
100	QPSK	1	1	25.42	25.38	25.47	27.0
100	QPSK	1	137	26.21	26.38	26.19	
100	QPSK	1	271	26.07	26.12	26.09	
100	QPSK	135	0	25.96	26.12	26.07	26.5
100	QPSK	135	69	25.41	25.23	25.37	
100	QPSK	135	138	25.64	25.77	25.72	
100	QPSK	270	0	25.45	25.62	25.82	26.5
100	16QAM	1	1	26.20	26.22	25.72	27.0
100	64QAM	1	1	26.13	25.92	25.83	27.0
100	256QAM	1	1	26.10	26.32	25.77	27.0
Channel				649334	656000	662666	27.0
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	26.42	26.47	26.35	27.0
Channel				648668	656000	663332	27.0
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	26.32	26.31	26.32	27.0
Channel				648334	656000	663666	27.0
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	26.45	26.30	26.29	27.0
Channel				648000	656000	664000	27.0
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	26.38	26.27	26.30	27.0
Channel				647334	656000	664666	27.0
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	26.42	26.25	26.37	27.0
Channel				647168	656000	664832	27.0
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	26.35	26.39	26.32	27.0
Channel				647000	656000	665000	27.0
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	26.30	26.38	26.30	27.0



<n77_MIMO2(3450~3550)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		24.0
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		22.27		24.0
100	PI/2 BPSK	1	137		23.20		
100	PI/2 BPSK	1	271		22.81		
100	PI/2 BPSK	135	0		22.37		23.5
100	PI/2 BPSK	135	69		22.48		24.0
100	PI/2 BPSK	135	138		22.02		23.5
100	PI/2 BPSK	270	0		22.14		
100	QPSK	1	1		22.20		23.0
100	QPSK	1	137		22.08		
100	QPSK	1	271		21.41		
100	QPSK	135	0		22.19		23.0
100	QPSK	135	69		22.14		
100	QPSK	135	138		21.89		
100	QPSK	270	0		22.04		23.0
100	16QAM	1	1		21.73		23.0
100	64QAM	1	1		20.95		21.5
100	256QAM	1	1		19.82		20.5
Channel				632668	633332	634000	24.0
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	22.32	22.35	22.60	24.0
Channel				632000	633332	634666	24.0
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	22.36	22.29	22.61	24.0
Channel				631668	633332	635000	24.0
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	22.30	22.34	22.63	24.0
Channel				631334	633332	635332	24.0
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	22.39	22.36	22.62	24.0
Channel				630668	633332	636000	24.0
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	22.31	22.33	22.63	24.0
Channel				630500	633332	636166	24.0
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	22.34	22.30	22.66	24.0
Channel				630334	633332	636332	24.0
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	22.32	22.35	22.59	24.0



<n77_HPUE MIMO2(3450~3550)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		27.0
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		25.78		27.0
100	PI/2 BPSK	1	137		25.66		
100	PI/2 BPSK	1	271		25.52		
100	PI/2 BPSK	135	0		25.42		26.5
100	PI/2 BPSK	135	69		25.39		27.0
100	PI/2 BPSK	135	138		25.37		26.5
100	PI/2 BPSK	270	0		25.32		
100	QPSK	1	1		25.38		26.0
100	QPSK	1	137		25.39		
100	QPSK	1	271		25.37		
100	QPSK	135	0		25.31		26.0
100	QPSK	135	69		25.06		
100	QPSK	135	138		25.27		
100	QPSK	270	0		25.62		26.5
100	16QAM	1	1		25.70		27.0
100	64QAM	1	1		25.68		27.0
100	256QAM	1	1		25.73		27.0
Channel				632668	633332	634000	27.0
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	25.66	25.72	25.62	27.0
Channel				632000	633332	634666	27.0
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	25.63	25.60	25.70	27.0
Channel				631668	633332	635000	27.0
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	25.57	25.55	25.68	27.0
Channel				631334	633332	635332	27.0
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	25.42	25.49	25.48	27.0
Channel				630668	633332	636000	27.0
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	25.43	25.46	25.49	27.0
Channel				630500	633332	636166	27.0
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	25.39	25.55	25.51	27.0
Channel				630334	633332	636332	27.0
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	25.51	25.49	25.48	27.0



<n78_MIMO2(3700~3800)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					650000		24.0
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		22.57		24.0
100	PI/2 BPSK	1	137		23.16		
100	PI/2 BPSK	1	271		22.82		
100	PI/2 BPSK	135	0		22.35		23.5
100	PI/2 BPSK	135	69		22.43		24.0
100	PI/2 BPSK	135	138		21.94		23.5
100	PI/2 BPSK	270	0		22.12		
100	QPSK	1	1		22.11		23.0
100	QPSK	1	137		22.03		
100	QPSK	1	271		21.39		
100	QPSK	135	0		22.16		23.0
100	QPSK	135	69		22.04		
100	QPSK	135	138		21.79		
100	QPSK	270	0		22.02		23.0
100	16QAM	1	1		21.69		23.0
100	64QAM	1	1		20.87		21.5
100	256QAM	1	1		19.80		20.5
Channel				649334	650000	650666	24.0
Frequency (MHz)				3740.01	3750	3759.99	
80	PI/2 BPSK	1	1	22.30	22.28	22.60	24.0
Channel				648668	650000	651332	24.0
Frequency (MHz)				3730.02	3750	3769.98	
60	PI/2 BPSK	1	1	22.31	22.33	22.58	24.0
Channel				648334	650000	651666	24.0
Frequency (MHz)				3725.01	3750	3774.99	
50	PI/2 BPSK	1	1	22.34	22.36	22.59	24.0
Channel				648000	650000	652000	24.0
Frequency (MHz)				3720	3750	3780	
40	PI/2 BPSK	1	1	22.40	22.30	22.65	24.0
Channel				647334	650000	652666	24.0
Frequency (MHz)				3710.01	3750	3789.99	
20	PI/2 BPSK	1	1	22.37	22.29	22.58	24.0
Channel				647168	650000	652832	24.0
Frequency (MHz)				3707.52	3750	3792.48	
15	PI/2 BPSK	1	1	22.30	22.30	22.59	24.0
Channel				647000	650000	653000	24.0
Frequency (MHz)				3705	3750	3795	
10	PI/2 BPSK	1	1	22.31	22.31	22.66	24.0



State 2(NB sensor on)

<n2_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	17.10	17.15	16.95	17.5
20	PI/2 BPSK	1	53	17.37	17.42	17.22	
20	PI/2 BPSK	1	104	17.30	17.35	17.35	
20	PI/2 BPSK	50	0	17.26	17.31	17.21	17.5
20	PI/2 BPSK	50	28	17.24	17.39	17.29	17.5
20	PI/2 BPSK	50	56	17.24	17.19	17.19	17.5
20	PI/2 BPSK	100	0	17.18	17.23	17.23	
20	QPSK	1	1	17.18	17.23	17.03	17.5
20	QPSK	1	53	17.27	17.32	17.12	
20	QPSK	1	104	17.21	17.26	17.06	
20	QPSK	50	0	17.33	17.38	17.18	17.5
20	QPSK	50	28	17.36	17.31	17.21	17.5
20	QPSK	50	56	17.38	17.33	17.23	17.5
20	QPSK	100	0	17.27	17.32	17.12	
20	16QAM	1	1	17.18	17.23	17.03	17.5
20	64QAM	1	1	16.95	17.00	16.80	17.5
20	256QAM	1	1	17.18	17.23	17.23	17.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	17.09	17.06	16.88	17.5
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	17.06	17.07	16.91	17.5
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	17.02	17.09	16.91	17.5



<n5_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	22.5
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	21.88	21.90	22.02	
20	PI/2 BPSK	1	53	22.31	22.42	22.40	22.5
20	PI/2 BPSK	1	104	22.04	22.06	22.17	
20	PI/2 BPSK	50	0	21.96	22.05	22.10	
20	PI/2 BPSK	50	28	22.10	22.25	22.15	22.5
20	PI/2 BPSK	50	56	22.05	22.15	22.20	22.5
20	PI/2 BPSK	100	0	22.04	22.08	22.15	
20	QPSK	1	1	21.90	21.93	22.04	
20	QPSK	1	53	21.94	21.94	22.11	22.5
20	QPSK	1	104	22.05	22.08	22.16	
20	QPSK	50	0	22.05	22.15	22.19	
20	QPSK	50	28	22.01	22.07	22.15	22.5
20	QPSK	50	56	21.95	21.97	22.15	22.5
20	QPSK	100	0	22.15	22.07	22.17	
20	16QAM	1	1	21.88	21.81	21.89	
20	64QAM	1	1	21.67	21.91	21.75	22.5
20	256QAM	1	1	20.16	20.23	20.19	20.5
Channel				166300	167300	168300	22.5
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	21.87	21.83	21.96	
Channel				165800	167300	168800	22.5
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	21.88	21.82	21.96	
Channel				165300	167300	169300	22.5
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	21.81	21.80	21.95	



<n7_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				502000	507000	512000	16.5
Frequency (MHz)				2510	2535	2560	
20	PI/2 BPSK	1	1	15.92	15.83	15.81	
20	PI/2 BPSK	1	53	16.08	15.92	16.04	16.5
20	PI/2 BPSK	1	104	16.04	15.90	15.90	
20	PI/2 BPSK	50	0	15.99	15.81	15.88	
20	PI/2 BPSK	50	28	16.05	15.83	15.91	16.5
20	PI/2 BPSK	50	56	16.01	15.80	15.87	16.5
20	PI/2 BPSK	100	0	15.97	15.82	15.89	
20	QPSK	1	1	15.87	15.72	15.83	
20	QPSK	1	53	15.97	15.89	15.87	16.5
20	QPSK	1	104	15.83	15.68	15.73	
20	QPSK	50	0	15.92	15.82	15.86	
20	QPSK	50	28	15.99	15.90	15.93	16.5
20	QPSK	50	56	15.86	15.77	15.75	16.5
20	QPSK	100	0	15.94	15.86	15.87	
20	16QAM	1	1	15.88	15.80	15.76	
20	64QAM	1	1	15.56	15.46	15.51	16.5
20	256QAM	1	1	15.96	15.86	15.83	16.5
Channel				501500	507000	512500	16.5
Frequency (MHz)				2507.5	2535	2562.5	
15	PI/2 BPSK	1	1	15.87	15.74	15.78	
Channel				501000	507000	513000	16.5
Frequency (MHz)				2505	2535	2565	
10	PI/2 BPSK	1	1	15.92	15.78	15.73	
Channel				500500	507000	513500	16.5
Frequency (MHz)				2502.5	2535	2567.5	
5	PI/2 BPSK	1	1	15.87	15.73	15.71	



<n25_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376500	381000	18.0
Frequency (MHz)				1860	1882.5	1905	
20	PI/2 BPSK	1	1	17.06	17.17	17.26	
20	PI/2 BPSK	1	53	17.29	17.47	17.49	18.0
20	PI/2 BPSK	1	104	17.13	17.23	17.25	
20	PI/2 BPSK	50	0	17.04	17.18	17.29	
20	PI/2 BPSK	50	28	17.14	17.24	17.32	18.0
20	PI/2 BPSK	50	56	17.06	17.19	17.21	18.0
20	PI/2 BPSK	100	0	17.05	17.24	17.28	
20	QPSK	1	1	17.05	17.21	17.24	
20	QPSK	1	53	17.04	17.30	17.34	18.0
20	QPSK	1	104	17.12	17.13	17.17	
20	QPSK	50	0	17.08	17.20	17.31	
20	QPSK	50	28	17.09	17.26	17.28	18.0
20	QPSK	50	56	17.12	17.23	17.27	18.0
20	QPSK	100	0	17.03	17.22	17.31	
20	16QAM	1	1	17.03	17.15	17.24	
20	64QAM	1	1	16.97	17.16	17.22	18.0
20	256QAM	1	1	16.87	17.08	17.15	18.0
Channel				371500	376500	381500	18.0
Frequency (MHz)				1857.5	1882.5	1907.5	
15	PI/2 BPSK	1	1	16.88	17.08	17.19	
Channel				371000	376500	382000	18.0
Frequency (MHz)				1855	1882.5	1910	
10	PI/2 BPSK	1	1	16.95	17.13	17.18	
Channel				370500	376500	382500	18.0
Frequency (MHz)				1852.5	1882.5	1912.5	
5	PI/2 BPSK	1	1	16.89	17.15	17.25	



<n30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					462000		
Frequency (MHz)					2310		
10	PI/2 BPSK	1	1		18.03		19.0
10	PI/2 BPSK	1	26		18.32		
10	PI/2 BPSK	1	50		18.23		
10	PI/2 BPSK	25	0		17.99		19.0
10	PI/2 BPSK	25	14		18.23		19.0
10	PI/2 BPSK	25	27		17.86		19.0
10	PI/2 BPSK	50	0		18.01		
10	QPSK	1	1		18.11		19.0
10	QPSK	1	26		18.14		
10	QPSK	1	50		18.08		
10	QPSK	25	0		17.86		19.0
10	QPSK	25	14		18.22		19.0
10	QPSK	25	27		17.96		19.0
10	QPSK	50	0		17.96		
10	16QAM	1	1		17.89		19.0
10	64QAM	1	1		18.07		19.0
10	256QAM	1	1		18.02		18.5
Channel				461500	462000	462500	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	PI/2 BPSK	1	1	17.94	18.00	17.93	19.0

<n38_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				516000	519000	522000	
Frequency (MHz)				2580	2595	2610	
20	PI/2 BPSK	1	1	15.74	15.80	15.73	16.5
20	PI/2 BPSK	1	26	15.96	15.97	15.94	
20	PI/2 BPSK	1	49	15.82	15.88	15.88	
20	PI/2 BPSK	25	0	15.90	15.95	15.88	16.5
20	PI/2 BPSK	25	13	15.91	15.91	15.81	16.5
20	PI/2 BPSK	25	26	15.88	15.94	15.87	16.5
20	PI/2 BPSK	50	0	15.80	15.88	15.84	
20	QPSK	1	1	15.84	15.92	15.87	16.5
20	QPSK	1	26	15.79	15.87	15.79	
20	QPSK	1	49	15.83	15.85	15.78	
20	QPSK	25	0	15.88	15.89	15.82	16.5
20	QPSK	25	13	15.92	15.92	15.91	
20	QPSK	25	26	15.87	15.92	15.92	
20	QPSK	50	0	15.85	15.93	15.89	16.5
20	16QAM	1	1	15.82	15.90	15.80	16.5
20	64QAM	1	1	15.63	15.63	15.54	16.5
20	256QAM	1	1	15.87	15.89	15.80	16.5
Channel				515502	519000	522498	Tune-up limit (dBm)
Frequency (MHz)				2577.51	2595	2612.49	
15	PI/2 BPSK	1	1	15.69	15.79	15.71	16.5
Channel				515004	519000	522996	Tune-up limit (dBm)
Frequency (MHz)				2575.02	2595	2614.98	
10	PI/2 BPSK	1	1	15.65	15.72	15.69	16.5

<n41_MIMO2 >

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				507204	518598	529998	14.5
Frequency (MHz)				2536.02	2592.99	2649.99	
100	PI/2 BPSK	1	1	13.66	13.90	13.80	14.5
100	PI/2 BPSK	1	137	13.88	13.92	13.85	
100	PI/2 BPSK	1	271	13.78	13.86	13.70	
100	PI/2 BPSK	135	0	13.88	13.88	13.86	14.5
100	PI/2 BPSK	135	69	13.87	13.90	13.81	14.5
100	PI/2 BPSK	135	138	13.84	13.89	13.87	14.5
100	PI/2 BPSK	270	0	13.74	13.87	13.77	
100	QPSK	1	1	13.84	13.88	13.90	14.5
100	QPSK	1	137	13.82	13.80	13.73	
100	QPSK	1	271	13.85	13.78	13.81	
100	QPSK	135	0	13.84	13.87	13.80	14.5
100	QPSK	135	69	13.88	13.87	13.85	
100	QPSK	135	138	13.87	13.91	13.80	
100	QPSK	270	0	13.88	13.88	13.91	14.5
100	16QAM	1	1	13.78	13.83	13.82	14.5
100	64QAM	1	1	13.66	13.68	13.67	14.5
100	256QAM	1	1	13.62	13.61	13.60	14.5
Channel				507204	518598	529998	14.5
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	13.64	13.81	13.74	14.5
Channel				504204	518598	532998	14.5
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	13.52	13.59	13.54	14.5
Channel				503202	518598	534000	14.5
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	13.57	13.50	13.51	14.5
Channel				502200	518598	534996	14.5
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	13.42	13.49	13.46	14.5
Channel				500700	518598	536496	14.5
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	13.44	13.46	13.41	14.5
Channel				500202	518598	537000	14.5
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	13.39	13.38	13.37	14.5



<n66_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	15.5
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	14.28	14.32	14.22	
40	PI/2 BPSK	1	108	14.78	14.81	14.69	15.5
40	PI/2 BPSK	1	214	14.27	14.27	14.15	
40	PI/2 BPSK	108	0	14.17	14.24	14.16	
40	PI/2 BPSK	108	54	14.69	14.70	14.57	15.5
40	PI/2 BPSK	108	108	14.27	14.28	14.14	15.5
40	PI/2 BPSK	216	0	14.28	14.30	14.24	
40	QPSK	1	1	14.44	14.42	14.35	
40	QPSK	1	108	14.73	14.70	14.61	15.5
40	QPSK	1	214	14.34	14.33	14.27	
40	QPSK	108	0	14.23	14.21	14.15	
40	QPSK	108	54	14.67	14.74	14.64	15.5
40	QPSK	108	108	14.30	14.35	14.23	15.5
40	QPSK	216	0	14.44	14.42	14.36	
40	16QAM	1	1	14.31	14.34	14.30	
40	64QAM	1	1	14.10	14.07	13.99	15.5
40	256QAM	1	1	14.61	14.62	14.51	15.5
Channel				344000	349000	354000	15.5
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	14.21	14.27	14.19	
Channel				343500	349000	354500	15.5
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	14.20	14.25	14.19	
Channel				343000	349000	355000	15.5
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	14.18	14.24	14.22	
Channel				342500	349000	355500	15.5
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	14.21	14.27	14.19	



<n71_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				134600	136100	137600	23.5
Frequency (MHz)				673	680.5	688	
20	PI/2 BPSK	1	1	22.10	22.20	22.37	
20	PI/2 BPSK	1	53	22.19	22.56	22.31	23.5
20	PI/2 BPSK	1	104	22.30	22.25	22.29	
20	PI/2 BPSK	50	0	21.96	22.13	21.61	
20	PI/2 BPSK	50	28	22.12	22.30	22.18	23.5
20	PI/2 BPSK	50	56	21.93	21.95	22.05	23.5
20	PI/2 BPSK	100	0	22.04	22.15	22.01	
20	QPSK	1	1	22.01	22.05	21.97	
20	QPSK	1	53	22.02	22.18	22.11	23.5
20	QPSK	1	104	21.93	22.10	21.98	
20	QPSK	50	0	21.99	21.99	21.96	
20	QPSK	50	28	21.92	21.91	21.88	23.5
20	QPSK	50	56	21.93	21.88	22.04	23.5
20	QPSK	100	0	21.79	21.85	21.81	
20	16QAM	1	1	21.68	21.72	21.67	
20	64QAM	1	1	20.50	20.56	20.60	22.5
20	256QAM	1	1	18.61	18.68	18.73	20.5
Channel				134100	136100	138100	23.5
Frequency (MHz)				670.5	680.5	690.5	
15	PI/2 BPSK	1	1	22.09	22.18	22.37	
Channel				133600	136100	138600	23.5
Frequency (MHz)				668	680.5	693	
10	PI/2 BPSK	1	1	22.04	22.11	22.36	
Channel				133100	136100	139100	23.5
Frequency (MHz)				665.5	680.5	695.5	
5	PI/2 BPSK	1	1	22.02	22.16	22.31	



<n77_MIMO2(3700 MHz ~3980 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	15.5
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	14.63	14.73	14.60	15.5
100	PI/2 BPSK	1	137	14.74	14.76	14.71	
100	PI/2 BPSK	1	271	14.65	14.67	14.62	
100	PI/2 BPSK	135	0	14.64	14.66	14.57	15.5
100	PI/2 BPSK	135	69	14.69	14.70	14.66	15.5
100	PI/2 BPSK	135	138	14.60	14.62	14.51	15.5
100	PI/2 BPSK	270	0	14.57	14.64	14.57	
100	QPSK	1	1	14.66	14.71	14.65	15.5
100	QPSK	1	137	14.54	14.56	14.54	
100	QPSK	1	271	14.42	14.51	14.44	
100	QPSK	135	0	14.69	14.70	14.64	15.5
100	QPSK	135	69	14.58	14.66	14.61	
100	QPSK	135	138	14.67	14.72	14.64	
100	QPSK	270	0	14.68	14.69	14.66	15.5
100	16QAM	1	1	14.52	14.62	14.55	15.5
100	64QAM	1	1	14.42	14.43	14.38	15.5
100	256QAM	1	1	14.37	14.38	14.31	15.5
Channel				649334	656000	662666	15.5
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	14.60	14.66	14.58	15.5
Channel				648668	656000	663332	15.5
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	14.60	14.63	14.61	15.5
Channel				648334	656000	663666	15.5
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	14.57	114.61	14.53	15.5
Channel				648000	656000	664000	15.5
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	14.51	14.58	14.57	15.5
Channel				647334	656000	664666	15.5
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	14.50	14.55	14.49	15.5
Channel				647168	656000	664832	15.5
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	14.55	14.51	14.46	15.5
Channel				647000	656000	665000	15.5
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	14.59	14.63	14.57	15.5



<n77_HPUE_MIMO2(3700 MHz ~3980 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	18.5
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	17.89	17.90	18.00	18.5
100	PI/2 BPSK	1	137	17.42	17.24	17.54	
100	PI/2 BPSK	1	271	17.57	17.35	17.51	
100	PI/2 BPSK	135	0	17.04	16.98	16.91	18.5
100	PI/2 BPSK	135	69	17.75	17.88	17.86	18.5
100	PI/2 BPSK	135	138	17.27	17.20	17.19	18.5
100	PI/2 BPSK	270	0	17.55	17.29	17.31	
100	QPSK	1	1	17.79	17.62	17.68	18.5
100	QPSK	1	137	17.64	17.63	17.74	
100	QPSK	1	271	17.51	17.44	17.44	
100	QPSK	135	0	17.55	17.26	17.48	18.5
100	QPSK	135	69	17.34	17.29	17.41	
100	QPSK	135	138	17.30	17.25	17.40	
100	QPSK	270	0	17.43	17.26	17.33	18.5
100	16QAM	1	1	17.63	17.74	17.60	18.5
100	64QAM	1	1	17.44	17.44	17.49	18.5
100	256QAM	1	1	17.26	17.48	17.37	18.5
Channel				649334	656000	662666	18.5
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	17.75	17.52	17.80	18.5
Channel				648668	656000	663332	18.5
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	17.28	17.57	17.55	18.5
Channel				648334	656000	663666	18.5
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	17.11	17.13	17.49	18.5
Channel				648000	656000	664000	18.5
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	17.80	17.77	17.53	18.5
Channel				647334	656000	664666	18.5
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	17.19	17.43	17.49	18.5
Channel				647168	656000	664832	18.5
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	17.57	17.55	17.21	18.5
Channel				647000	656000	665000	18.5
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	17.77	17.71	17.67	18.5



<n77_MIMO2(3450 MHz ~3550 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		15.5
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		14.68		15.5
100	PI/2 BPSK	1	137		14.72		
100	PI/2 BPSK	1	271		14.66		
100	PI/2 BPSK	135	0		14.68		15.5
100	PI/2 BPSK	135	69		14.71		15.5
100	PI/2 BPSK	135	138		14.65		15.5
100	PI/2 BPSK	270	0		14.64		
100	QPSK	1	1		14.52		15.5
100	QPSK	1	137		14.58		
100	QPSK	1	271		14.44		
100	QPSK	135	0		14.52		15.5
100	QPSK	135	69		14.59		
100	QPSK	135	138		14.54		
100	QPSK	270	0		14.69		15.5
100	16QAM	1	1		14.60		15.5
100	64QAM	1	1		14.46		15.5
100	256QAM	1	1		14.36		15.5
Channel				632668	633332	634000	15.5
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	14.55	14.59	14.57	15.5
Channel				632000	633332	634666	15.5
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	14.51	14.55	14.52	15.5
Channel				631668	633332	635000	15.5
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	14.60	14.61	14.54	15.5
Channel				631334	633332	635332	15.5
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	14.49	14.55	14.51	15.5
Channel				630668	633332	636000	15.5
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	14.49	14.55	14.53	15.5
Channel				630500	633332	636166	15.5
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	14.48	14.52	14.51	15.5
Channel				630334	633332	636332	15.5
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	14.51	14.59	14.57	15.5



<n77_HPUE_MIMO2(3450 MHz ~3550 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		18.5
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		17.81		18.5
100	PI/2 BPSK	1	137		17.64		
100	PI/2 BPSK	1	271		17.07		
100	PI/2 BPSK	135	0		17.14		18.0
100	PI/2 BPSK	135	69		17.68		18.5
100	PI/2 BPSK	135	138		17.28		18.0
100	PI/2 BPSK	270	0		16.78		
100	QPSK	1	1		17.08		18.5
100	QPSK	1	137		17.73		
100	QPSK	1	271		17.78		
100	QPSK	135	0		17.67		18.5
100	QPSK	135	69		17.34		
100	QPSK	135	138		17.31		
100	QPSK	270	0		17.30		18.5
100	16QAM	1	1		17.63		18.5
100	64QAM	1	1		17.49		18.5
100	256QAM	1	1		17.33		18.5
Channel				632668	633332	634000	18.5
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	17.21	17.28	17.27	18.5
Channel				632000	633332	634666	18.5
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	17.40	17.38	17.24	18.5
Channel				631668	633332	635000	18.5
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	17.45	17.43	17.25	18.5
Channel				631334	633332	635332	18.5
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	17.41	17.39	17.32	18.5
Channel				630668	633332	636000	18.5
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	17.45	17.48	17.38	18.5
Channel				630500	633332	636166	18.5
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	17.31	17.46	17.40	18.5
Channel				630334	633332	636332	18.5
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	17.42	17.39	17.33	18.5



<n78_MIMO2(3700 MHz ~3800 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					650000		15.5
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		14.61		15.5
100	PI/2 BPSK	1	137		14.65		
100	PI/2 BPSK	1	271		14.59		
100	PI/2 BPSK	135	0		14.54		15.5
100	PI/2 BPSK	135	69		14.50		15.5
100	PI/2 BPSK	135	138		14.56		15.5
100	PI/2 BPSK	270	0		14.57		
100	QPSK	1	1		14.50		15.5
100	QPSK	1	137		14.52		
100	QPSK	1	271		14.45		
100	QPSK	135	0		14.57		15.5
100	QPSK	135	69		14.52		
100	QPSK	135	138		14.60		
100	QPSK	270	0		14.58		15.5
100	16QAM	1	1		14.54		15.5
100	64QAM	1	1		14.40		15.5
100	256QAM	1	1		14.33		15.5
Channel				649334	650000	650666	15.5
Frequency (MHz)				3740.01	3750	3759.99	
80	PI/2 BPSK	1	1	14.42	14.49	14.45	15.5
Channel				648668	650000	651332	15.5
Frequency (MHz)				3730.02	3750	3769.98	
60	PI/2 BPSK	1	1	14.53	14.51	14.46	15.5
Channel				648334	650000	651666	15.5
Frequency (MHz)				3725.01	3750	3774.99	
50	PI/2 BPSK	1	1	14.49	14.55	14.53	15.5
Channel				648000	650000	652000	15.5
Frequency (MHz)				3720	3750	3780	
40	PI/2 BPSK	1	1	14.41	14.46	14.49	15.5
Channel				647334	650000	652666	15.5
Frequency (MHz)				3710.01	3750	3789.99	
20	PI/2 BPSK	1	1	14.43	14.52	14.46	15.5
Channel				647168	650000	652832	15.5
Frequency (MHz)				3707.52	3750	3792.48	
15	PI/2 BPSK	1	1	14.43	14.52	14.51	15.5
Channel				647000	650000	653000	15.5
Frequency (MHz)				3705	3750	3795	
10	PI/2 BPSK	1	1	14.52	14.51	14.49	15.5



State 3(TB)

<n2_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	16.14	16.19	15.90	16.5
20	PI/2 BPSK	1	53	16.32	16.47	16.21	
20	PI/2 BPSK	1	104	16.29	16.34	16.34	
20	PI/2 BPSK	50	0	16.30	16.29	16.25	16.5
20	PI/2 BPSK	50	28	16.25	16.42	16.30	16.5
20	PI/2 BPSK	50	56	16.18	16.23	16.17	16.5
20	PI/2 BPSK	100	0	16.18	16.19	16.21	
20	QPSK	1	1	16.14	16.23	15.97	
20	QPSK	1	53	16.31	16.28	16.11	16.5
20	QPSK	1	104	16.16	16.23	16.04	
20	QPSK	50	0	16.28	16.39	16.15	
20	QPSK	50	28	16.34	16.31	16.18	16.5
20	QPSK	50	56	16.38	16.28	16.21	16.5
20	QPSK	100	0	16.22	16.32	16.06	
20	16QAM	1	1	16.12	16.20	16.02	16.5
20	64QAM	1	1	15.96	15.97	15.83	16.5
20	256QAM	1	1	16.20	16.25	16.27	16.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	16.08	16.18	15.85	16.5
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	16.11	16.17	15.84	16.5
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	16.07	16.11	15.80	16.5



<n5_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	21.5
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	21.18	21.13	21.26	
20	PI/2 BPSK	1	53	21.26	21.48	21.40	21.5
20	PI/2 BPSK	1	104	21.02	21.05	21.15	
20	PI/2 BPSK	50	0	21.13	21.16	21.08	
20	PI/2 BPSK	50	28	21.11	21.26	21.18	21.5
20	PI/2 BPSK	50	56	20.99	21.12	21.16	21.5
20	PI/2 BPSK	100	0	21.00	21.11	21.10	
20	QPSK	1	1	21.04	21.07	21.05	
20	QPSK	1	53	21.05	20.99	21.12	21.5
20	QPSK	1	104	21.08	21.07	21.10	
20	QPSK	50	0	21.02	21.10	21.18	
20	QPSK	50	28	21.04	21.04	21.14	21.5
20	QPSK	50	56	21.19	21.16	21.10	21.5
20	QPSK	100	0	21.13	21.04	21.11	
20	16QAM	1	1	21.20	21.32	21.21	
20	64QAM	1	1	21.19	21.07	21.10	21.5
20	256QAM	1	1	20.06	20.14	20.18	20.5
Channel				166300	167300	168300	21.5
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	21.13	21.10	21.23	
Channel				165800	167300	168800	21.5
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	21.09	21.07	21.26	
Channel				165300	167300	169300	21.5
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	21.10	21.08	21.20	



<n7_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				502000	507000	512000	14.5
Frequency (MHz)				2510	2535	2560	
20	PI/2 BPSK	1	1	14.15	14.02	14.00	
20	PI/2 BPSK	1	53	14.33	14.25	14.21	14.5
20	PI/2 BPSK	1	104	14.21	14.06	14.05	
20	PI/2 BPSK	50	0	14.15	14.00	14.05	
20	PI/2 BPSK	50	28	14.29	14.02	14.11	14.5
20	PI/2 BPSK	50	56	14.25	13.98	14.02	14.5
20	PI/2 BPSK	100	0	14.17	13.97	14.09	
20	QPSK	1	1	14.10	13.92	14.05	
20	QPSK	1	53	14.21	14.10	14.06	14.5
20	QPSK	1	104	14.01	13.88	13.88	
20	QPSK	50	0	14.10	13.99	14.09	
20	QPSK	50	28	14.16	14.12	14.17	14.5
20	QPSK	50	56	14.04	13.96	13.97	14.5
20	QPSK	100	0	14.13	14.10	14.06	
20	16QAM	1	1	14.11	14.04	13.91	
20	64QAM	1	1	13.77	13.66	13.74	14.5
20	256QAM	1	1	14.11	14.09	14.07	14.5
Channel				501500	507000	512500	14.5
Frequency (MHz)				2507.5	2535	2562.5	
15	PI/2 BPSK	1	1	14.08	13.96	13.93	
Channel				501000	507000	513000	14.5
Frequency (MHz)				2505	2535	2565	
10	PI/2 BPSK	1	1	14.06	13.93	13.99	
Channel				500500	507000	513500	14.5
Frequency (MHz)				2502.5	2535	2567.5	
5	PI/2 BPSK	1	1	14.15	14.01	13.95	



<n25_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376500	381000	17.0
Frequency (MHz)				1860	1882.5	1905	
20	PI/2 BPSK	1	1	15.92	16.13	16.22	
20	PI/2 BPSK	1	53	16.14	16.43	16.45	17.0
20	PI/2 BPSK	1	104	15.89	16.19	16.21	
20	PI/2 BPSK	50	0	15.90	16.14	16.25	
20	PI/2 BPSK	50	28	15.90	16.20	16.28	17.0
20	PI/2 BPSK	50	56	15.82	16.15	16.17	17.0
20	PI/2 BPSK	100	0	15.91	16.20	16.24	
20	QPSK	1	1	15.91	16.17	16.20	
20	QPSK	1	53	16.00	16.26	16.30	17.0
20	QPSK	1	104	15.78	16.09	16.13	
20	QPSK	50	0	15.94	16.16	16.27	
20	QPSK	50	28	15.95	16.22	16.24	17.0
20	QPSK	50	56	15.88	16.19	16.23	17.0
20	QPSK	100	0	15.99	16.18	16.27	
20	16QAM	1	1	15.89	16.11	16.20	
20	64QAM	1	1	15.83	16.12	16.18	17.0
20	256QAM	1	1	15.83	16.04	16.11	17.0
Channel				371500	376500	381500	17.0
Frequency (MHz)				1857.5	1882.5	1907.5	
15	PI/2 BPSK	1	1	15.92	16.06	16.14	
Channel				371000	376500	382000	17.0
Frequency (MHz)				1855	1882.5	1910	
10	PI/2 BPSK	1	1	15.87	16.11	16.21	
Channel				370500	376500	382500	17.0
Frequency (MHz)				1852.5	1882.5	1912.5	
5	PI/2 BPSK	1	1	15.90	16.08	16.20	



<n30_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					462000		
Frequency (MHz)					2310		
10	PI/2 BPSK	1	1		16.11		17.0
10	PI/2 BPSK	1	26		16.42		
10	PI/2 BPSK	1	50		16.16		
10	PI/2 BPSK	25	0		15.96		17.0
10	PI/2 BPSK	25	14		16.14		17.0
10	PI/2 BPSK	25	27		15.85		17.0
10	PI/2 BPSK	50	0		16.01		
10	QPSK	1	1		16.09		17.0
10	QPSK	1	26		16.09		
10	QPSK	1	50		16.00		
10	QPSK	25	0		15.84		17.0
10	QPSK	25	14		16.21		17.0
10	QPSK	25	27		15.90		17.0
10	QPSK	50	0		15.90		
10	16QAM	1	1		15.83		17.0
10	64QAM	1	1		15.98		17.0
10	256QAM	1	1		15.94		16.5
Channel				461500	462000	462500	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	PI/2 BPSK	1	1	15.94	16.00	15.91	17.0

<n38_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				516000	519000	522000	
Frequency (MHz)				2580	2595	2610	
20	PI/2 BPSK	1	1	13.48	13.58	13.51	14.5
20	PI/2 BPSK	1	26	13.73	13.78	13.68	
20	PI/2 BPSK	1	49	13.56	13.63	13.62	
20	PI/2 BPSK	25	0	13.67	13.66	13.68	14.5
20	PI/2 BPSK	25	13	13.65	13.63	13.58	14.5
20	PI/2 BPSK	25	26	13.60	13.61	13.59	14.5
20	PI/2 BPSK	50	0	13.57	13.60	13.58	
20	QPSK	1	1	13.58	13.69	13.64	14.5
20	QPSK	1	26	13.52	13.65	13.51	
20	QPSK	1	49	13.57	13.55	13.53	
20	QPSK	25	0	13.59	13.68	13.56	14.5
20	QPSK	25	13	13.66	13.66	13.69	
20	QPSK	25	26	13.64	13.63	13.65	
20	QPSK	50	0	13.55	13.67	13.60	14.5
20	16QAM	1	1	13.54	13.61	13.56	14.5
20	64QAM	1	1	13.40	13.43	13.34	14.5
20	256QAM	1	1	13.65	13.67	13.53	14.5
Channel				515502	519000	522498	Tune-up limit (dBm)
Frequency (MHz)				2577.51	2595	2612.49	
15	PI/2 BPSK	1	1	13.43	13.56	13.44	14.5
Channel				515004	519000	522996	Tune-up limit (dBm)
Frequency (MHz)				2575.02	2595	2614.98	
10	PI/2 BPSK	1	1	13.38	13.54	13.47	14.5



<n41_MIMO2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				507204	518598	529998	13.5
Frequency (MHz)				2536.02	2592.99	2649.99	
100	PI/2 BPSK	1	1	12.93	12.94	12.87	13.5
100	PI/2 BPSK	1	137	12.94	12.98	12.90	
100	PI/2 BPSK	1	271	12.81	12.91	12.71	
100	PI/2 BPSK	135	0	12.74	12.85	12.70	13.5
100	PI/2 BPSK	135	69	12.80	12.89	12.71	13.5
100	PI/2 BPSK	135	138	12.74	12.83	12.68	13.5
100	PI/2 BPSK	270	0	12.81	12.84	12.76	
100	QPSK	1	1	12.80	12.81	12.77	13.5
100	QPSK	1	137	12.79	12.80	12.70	
100	QPSK	1	271	12.68	12.76	12.60	
100	QPSK	135	0	12.68	12.71	12.65	13.5
100	QPSK	135	69	12.71	12.73	12.65	
100	QPSK	135	138	12.60	12.68	12.54	
100	QPSK	270	0	12.65	12.69	12.57	13.5
100	16QAM	1	1	12.59	12.66	12.51	13.5
100	64QAM	1	1	12.56	12.64	12.49	13.5
100	256QAM	1	1	12.60	12.61	12.51	13.5
Channel				507204	518598	529998	13.5
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	12.88	12.91	12.81	13.5
Channel				504204	518598	532998	13.5
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	12.54	12.59	12.51	13.5
Channel				503202	518598	534000	13.5
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	12.63	12.67	12.60	13.5
Channel				502200	518598	534996	13.5
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	12.70	12.74	12.71	13.5
Channel				500700	518598	536496	13.5
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	12.61	12.70	12.64	13.5
Channel				500202	518598	537000	13.5
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	12.59	12.62	12.54	13.5



<n66_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	15.5
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	14.28	14.32	14.22	
40	PI/2 BPSK	1	108	14.78	14.81	14.69	15.5
40	PI/2 BPSK	1	214	14.27	14.27	14.15	
40	PI/2 BPSK	108	0	14.17	14.24	14.16	
40	PI/2 BPSK	108	54	14.69	14.70	14.57	15.5
40	PI/2 BPSK	108	108	14.27	14.28	14.14	15.5
40	PI/2 BPSK	216	0	14.28	14.30	14.24	
40	QPSK	1	1	14.44	14.42	14.35	
40	QPSK	1	108	14.73	14.70	14.61	15.5
40	QPSK	1	214	14.34	14.33	14.27	
40	QPSK	108	0	14.23	14.21	14.15	
40	QPSK	108	54	14.67	14.74	14.64	15.5
40	QPSK	108	108	14.30	14.35	14.23	15.5
40	QPSK	216	0	14.44	14.42	14.36	
40	16QAM	1	1	14.31	14.34	14.30	
40	64QAM	1	1	14.10	14.07	13.99	15.5
40	256QAM	1	1	14.61	14.62	14.51	15.5
Channel				344000	349000	354000	15.5
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	14.21	14.27	14.19	
Channel				343500	349000	354500	15.5
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	14.20	14.25	14.19	
Channel				343000	349000	355000	15.5
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	14.18	14.24	14.22	
Channel				342500	349000	355500	15.5
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	14.21	14.27	14.19	



<n71_Main>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				134600	136100	137600	23.0
Frequency (MHz)				673	680.5	688	
20	PI/2 BPSK	1	1	22.10	22.20	22.37	
20	PI/2 BPSK	1	53	22.19	22.56	22.31	23.0
20	PI/2 BPSK	1	104	22.30	22.25	22.29	
20	PI/2 BPSK	50	0	21.96	22.13	21.61	
20	PI/2 BPSK	50	28	22.12	22.30	22.18	23.0
20	PI/2 BPSK	50	56	21.93	21.95	22.05	23.0
20	PI/2 BPSK	100	0	22.04	22.15	22.01	
20	QPSK	1	1	22.01	22.05	21.97	
20	QPSK	1	53	22.02	22.18	22.11	23.0
20	QPSK	1	104	21.93	22.10	21.98	
20	QPSK	50	0	21.99	21.99	21.96	
20	QPSK	50	28	21.92	21.91	21.88	23.0
20	QPSK	50	56	21.93	21.88	22.04	23.0
20	QPSK	100	0	21.79	21.85	21.81	
20	16QAM	1	1	21.68	21.72	21.67	
20	64QAM	1	1	20.50	20.56	20.60	22.5
20	256QAM	1	1	18.61	18.68	18.73	20.5
Channel				134100	136100	138100	23.0
Frequency (MHz)				670.5	680.5	690.5	
15	PI/2 BPSK	1	1	22.09	22.18	22.37	
Channel				133600	136100	138600	23.0
Frequency (MHz)				668	680.5	693	
10	PI/2 BPSK	1	1	22.04	22.11	22.36	
Channel				133100	136100	139100	23.0
Frequency (MHz)				665.5	680.5	695.5	
5	PI/2 BPSK	1	1	22.02	22.16	22.31	



<n77_MIMO2(3700 MHz ~3980 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	15.5
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	14.63	14.73	14.60	15.5
100	PI/2 BPSK	1	137	14.74	14.76	14.71	
100	PI/2 BPSK	1	271	14.65	14.67	14.62	
100	PI/2 BPSK	135	0	14.64	14.66	14.57	15.5
100	PI/2 BPSK	135	69	14.69	14.70	14.66	15.5
100	PI/2 BPSK	135	138	14.60	14.62	14.51	15.5
100	PI/2 BPSK	270	0	14.57	14.64	14.57	
100	QPSK	1	1	14.66	14.71	14.65	15.5
100	QPSK	1	137	14.54	14.56	14.54	
100	QPSK	1	271	14.42	14.51	14.44	
100	QPSK	135	0	14.69	14.70	14.64	15.5
100	QPSK	135	69	14.58	14.66	14.61	
100	QPSK	135	138	14.67	14.72	14.64	
100	QPSK	270	0	14.68	14.69	14.66	15.5
100	16QAM	1	1	14.52	14.62	14.55	15.5
100	64QAM	1	1	14.42	14.43	14.38	15.5
100	256QAM	1	1	14.37	14.38	14.31	15.5
Channel				649334	656000	662666	15.5
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	14.60	14.66	14.58	15.5
Channel				648668	656000	663332	15.5
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	14.60	14.63	14.61	15.5
Channel				648334	656000	663666	15.5
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	14.57	114.61	14.53	15.5
Channel				648000	656000	664000	15.5
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	14.51	14.58	14.57	15.5
Channel				647334	656000	664666	15.5
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	14.50	14.55	14.49	15.5
Channel				647168	656000	664832	15.5
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	14.55	14.51	14.46	15.5
Channel				647000	656000	665000	15.5
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	14.59	14.63	14.57	15.5



<n77_HPUE_MIMO2(3700 MHz ~3980 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	18.5
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	17.89	17.90	18.00	
100	PI/2 BPSK	1	137	17.42	17.24	17.54	18.5
100	PI/2 BPSK	1	271	17.57	17.35	17.51	
100	PI/2 BPSK	135	0	17.04	16.98	16.91	
100	PI/2 BPSK	135	69	17.75	17.88	17.86	18.5
100	PI/2 BPSK	135	138	17.27	17.20	17.19	18.5
100	PI/2 BPSK	270	0	17.55	17.29	17.31	
100	QPSK	1	1	17.79	17.62	17.68	
100	QPSK	1	137	17.64	17.63	17.74	18.5
100	QPSK	1	271	17.51	17.44	17.44	
100	QPSK	135	0	17.55	17.26	17.48	
100	QPSK	135	69	17.34	17.29	17.41	18.5
100	QPSK	135	138	17.30	17.25	17.40	
100	QPSK	270	0	17.43	17.26	17.33	
100	16QAM	1	1	17.63	17.74	17.60	18.5
100	64QAM	1	1	17.44	17.44	17.49	18.5
100	256QAM	1	1	17.26	17.48	17.37	18.5
Channel				649334	656000	662666	18.5
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	17.75	17.52	17.80	
Channel				648668	656000	663332	18.5
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	17.28	17.57	17.55	
Channel				648334	656000	663666	18.5
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	17.11	17.13	17.49	
Channel				648000	656000	664000	18.5
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	17.80	17.77	17.53	
Channel				647334	656000	664666	18.5
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	17.19	17.43	17.49	
Channel				647168	656000	664832	18.5
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	17.57	17.55	17.21	
Channel				647000	656000	665000	18.5
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	17.77	17.71	17.67	



<n77_MIMO2(3450 MHz ~3550 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		15.5
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		14.68		15.5
100	PI/2 BPSK	1	137		14.72		
100	PI/2 BPSK	1	271		14.66		
100	PI/2 BPSK	135	0		14.68		15.5
100	PI/2 BPSK	135	69		14.71		15.5
100	PI/2 BPSK	135	138		14.65		15.5
100	PI/2 BPSK	270	0		14.64		
100	QPSK	1	1		14.62		15.5
100	QPSK	1	137		14.58		
100	QPSK	1	271		14.44		
100	QPSK	135	0		14.62		15.5
100	QPSK	135	69		14.59		
100	QPSK	135	138		14.64		
100	QPSK	270	0		14.69		15.5
100	16QAM	1	1		14.60		15.5
100	64QAM	1	1		14.46		15.5
100	256QAM	1	1		14.36		15.5
Channel				632668	633332	634000	15.5
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	14.55	14.59	14.57	15.5
Channel				632000	633332	634666	15.5
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	14.51	14.55	14.52	15.5
Channel				631668	633332	635000	15.5
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	14.60	14.61	14.54	15.5
Channel				631334	633332	635332	15.5
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	14.49	14.55	14.51	15.5
Channel				630668	633332	636000	15.5
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	14.49	14.55	14.53	15.5
Channel				630500	633332	636166	15.5
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	14.48	14.52	14.51	15.5
Channel				630334	633332	636332	15.5
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	14.51	14.59	14.57	15.5



<n77_HPUE MIMO2(3450 MHz ~3550 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		18.5
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		17.81		18.5
100	PI/2 BPSK	1	137		17.64		
100	PI/2 BPSK	1	271		17.07		
100	PI/2 BPSK	135	0		17.14		18.0
100	PI/2 BPSK	135	69		17.68		18.5
100	PI/2 BPSK	135	138		17.28		18.0
100	PI/2 BPSK	270	0		16.78		
100	QPSK	1	1		17.08		18.5
100	QPSK	1	137		17.73		
100	QPSK	1	271		17.78		
100	QPSK	135	0		17.67		18.5
100	QPSK	135	69		17.34		
100	QPSK	135	138		17.31		
100	QPSK	270	0		17.30		18.5
100	16QAM	1	1		17.63		18.5
100	64QAM	1	1		17.49		18.5
100	256QAM	1	1		17.33		18.5
Channel				632668	633332	634000	18.5
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	17.21	17.28	17.27	18.5
Channel				632000	633332	634666	18.5
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	17.40	17.38	17.24	18.5
Channel				631668	633332	635000	18.5
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	17.45	17.43	17.25	18.5
Channel				631334	633332	635332	18.5
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	17.41	17.39	17.32	18.5
Channel				630668	633332	636000	18.5
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	17.45	17.48	17.38	18.5
Channel				630500	633332	636166	18.5
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	17.31	17.46	17.40	18.5
Channel				630334	633332	636332	18.5
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	17.42	17.39	17.33	18.5

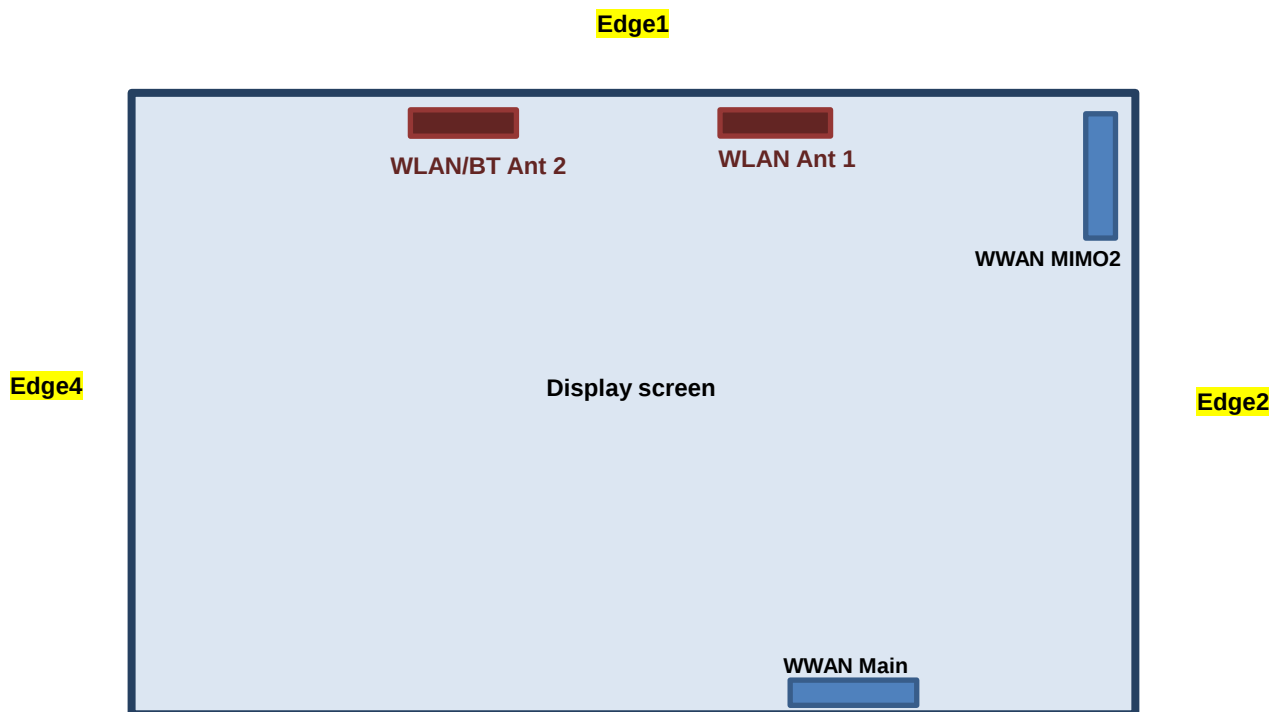


<n78_MIMO2(3700 MHz ~3800 MHz)>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					650000		15.5
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		14.65		15.5
100	PI/2 BPSK	1	137		14.69		
100	PI/2 BPSK	1	271		14.61		
100	PI/2 BPSK	135	0		14.64		15.5
100	PI/2 BPSK	135	69		14.60		15.5
100	PI/2 BPSK	135	138		14.66		15.5
100	PI/2 BPSK	270	0		14.67		
100	QPSK	1	1		14.60		15.5
100	QPSK	1	137		14.52		
100	QPSK	1	271		14.45		
100	QPSK	135	0		14.67		15.5
100	QPSK	135	69		14.52		
100	QPSK	135	138		14.62		
100	QPSK	270	0		14.68		15.5
100	16QAM	1	1		14.54		15.5
100	64QAM	1	1		14.40		15.5
100	256QAM	1	1		14.33		15.5
Channel				649334	650000	650666	15.5
Frequency (MHz)				3740.01	3750	3759.99	
80	PI/2 BPSK	1	1	14.42	14.49	14.55	15.5
Channel				648668	650000	651332	15.5
Frequency (MHz)				3730.02	3750	3769.98	
60	PI/2 BPSK	1	1	14.53	14.51	14.46	15.5
Channel				648334	650000	651666	15.5
Frequency (MHz)				3725.01	3750	3774.99	
50	PI/2 BPSK	1	1	14.49	14.55	14.53	15.5
Channel				648000	650000	652000	15.5
Frequency (MHz)				3720	3750	3780	
40	PI/2 BPSK	1	1	14.41	14.46	14.49	15.5
Channel				647334	650000	652666	15.5
Frequency (MHz)				3710.01	3750	3789.99	
20	PI/2 BPSK	1	1	14.43	14.52	14.46	15.5
Channel				647168	650000	652832	15.5
Frequency (MHz)				3707.52	3750	3792.48	
15	PI/2 BPSK	1	1	14.43	14.52	14.51	15.5
Channel				647000	650000	653000	15.5
Frequency (MHz)				3705	3750	3795	
10	PI/2 BPSK	1	1	14.52	14.51	14.49	15.5

14. Antenna Location

<Tablet mode>



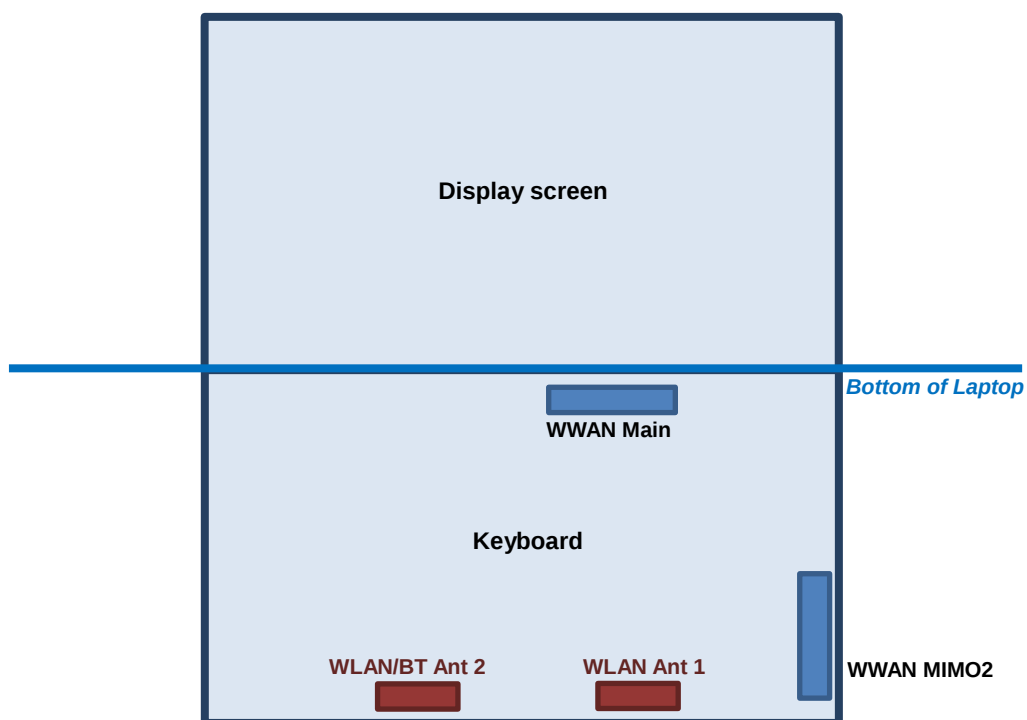
Edge3

Front View

The separation distance for antenna to edge :

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Main Antenna	190	63	5	163
WWAN MIMO2 Antenna	5	5	94	285
WLAN Antenna 1	3.3	104	192.7	144
WLAN / BT Antenna 2	3.3	164	192.7	80

<Laptop mode>



The separation distance for antenna to edge :

Antenna	To Bottom of Laptop (mm)
WWAN Main Antenna	5.0
WWAN MIMO2 Antenna	5.0
WLAN Antenna 1	3.6
WLAN / BT Antenna 2	3.6

<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

<Laptop mode>
WWAN Main Antenna

Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71 / n71	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 5 / n5	LTE Band 26	LTE Band 4	LTE Band 66 / n66	LTE Band 2 / n2	LTE Band 25 / n25	LTE Band 30 / n30	LTE Band 7 / n7	LTE Band 38 / n38
	Calculated Frequency (MHz)	846	1750	1907	695	715	784	795	713	848	848	1754	1779	1909	1914	2312	2567	2617
	Maximum power (dBm)	24.5	24.5	24.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	23.0	24.0	24.0
	Maximum rated power(mW)	281.84	281.84	281.84	316.23	316.23	316.23	316.23	316.23	316.23	316.23	251.19	251.19	251.19	251.19	199.53	251.19	251.19
Bottom of Laptop	Separation distance(mm)	5.0																
	exclusion threshold	51.9	74.6	77.8	52.7	53.5	56.0	56.4	53.4	58.2	58.2	66.5	67.0	69.4	69.5	60.7	80.5	81.3
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

WWAN MIMO2 Antenna

Exposure Position	Wireless Interface	LTE Band 41 / n41	LTE Band 48	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	2690	3700	3980	3800
	Maximum power (dBm)	24.0	22.0	27.0	24.0
	Maximum rated power(mW)	251.19	158.49	501.19	251.19
Bottom of Laptop	Separation distance(mm)	5.0			
	exclusion threshold	82.4	61.0	200.0	97.9
	Testing required?	Yes	Yes	Yes	Yes



<Tablet mode>

WWAN Main Antenna

Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71 / n71	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 5 / n5	LTE Band 26	LTE Band 4	LTE Band 66 / n66	LTE Band 2 / n2	LTE Band 25 / n25	LTE Band 30 /n30	LTE Band 7 / n7	LTE Band 38 / n38
	Calculated Frequency (MHz)	846	1750	1907	695	715	784	795	713	848	848	1754	1779	1909	1914	2312	2567	2617
	Maximum power (dBm)	21.0	16.0	17.5	23.0	23.0	22.5	22.5	23.0	21.5	21.5	16.5	16.5	18.5	18.5	17.5	15.5	17.5
	Maximum rated power(mW)	125.89	39.81	56.23	199.53	199.53	177.83	177.83	199.53	141.25	141.25	44.67	44.67	70.79	70.79	56.23	35.48	56.23
Bottom Face	Separation distance(mm)	5.0																
	exclusion threshold	23.2	10.5	15.5	33.3	33.7	31.5	31.7	30.0	26.0	26.0	11.8	11.9	19.6	19.6	17.1	11.4	18.2
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	190.0																
	exclusion threshold	953.0	1513.0	1509.0	829.0	845.0	901.0	910.0	843.0	954.0	954.0	1513.0	1512.0	1509.0	1508.0	1499.0	1494.0	1493.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 2	Separation distance(mm)	63.0																
	exclusion threshold	236.0	243.0	239.0	240.0	239.0	237.0	237.0	239.0	236.0	236.0	243.0	242.0	239.0	238.0	229.0	224.0	223.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 3	Separation distance(mm)	5.0																
	exclusion threshold	23.2	10.5	15.5	33.3	33.7	31.5	31.7	30.0	26.0	26.0	11.8	11.9	19.6	19.6	17.1	11.4	18.2
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 4	Separation distance(mm)	163.0																
	exclusion threshold	800.0	1243.0	1239.0	703.0	716.0	760.0	767.0	715.0	802.0	802.0	1243.0	1242.0	1239.0	1238.0	1229.0	1224.0	1223.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

WWAN MIMO2 Antenna

Exposure Position	Wireless Interface	LTE Band 41 / n41	LTE Band 48	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	2690	3700	3980	3800
	Maximum power (dBm)	15.0	12.0	18.5	15.5
	Maximum rated power(mW)	31.62	15.85	70.79	35.48
Bottom Face	Separation distance(mm)	5.0			
	exclusion threshold	10.4	6.1	28.3	13.8
	Testing required?	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0			
	exclusion threshold	10.4	6.1	28.3	13.8
	Testing required?	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	5.0			
	exclusion threshold	10.4	6.1	28.3	13.8
	Testing required?	Yes	Yes	Yes	Yes
Edge 3	Separation distance(mm)	94.0			
	exclusion threshold	531.0	518.0	515.0	517.0
	Testing required?	No	No	No	No
Edge 4	Separation distance(mm)	285.0			
	exclusion threshold	2441.0	2428.0	2425.0	2427.0
	Testing required?	No	No	No	No

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - c. 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.
4. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in sensor trigger distance was performed according to section 4. The test results just verification the sensor trigger distance to meet KDB 616217 requirement, when in normal usage will not operate at trigger distance, therefore, these results were not using performed Sim-Tx analysis

UMTS Note:

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

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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/B17/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 SAR test was covered by Band 25/66/26/12; 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.

5G NR Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
 - a. To start SAR test for the largest channel bandwidth for PI/2 BPSK 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. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
 - b. For PI/2 BPSK with 100% RB allocation, SAR test 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.
 - c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not $\frac{1}{2}$ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
 - d. Smaller bandwidth output power for each RB allocation configuration for this device 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, smaller bandwidth SAR testing is not required for this device
 - e. For 5G FR1 n5/n41/n66/n71/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
 - f. The NR n2 SAR test was covered by NR n25; due to SAR test for overlapping NR bands can be reduced if the maximum power including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion and the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
 - g. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission. And only for TDD power class2 was performed using Factory Test Mode software to establish the connection and perform SAR with 50% transmission

**15.1 Body SAR****<WCDMA SAR>**

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	HONG-BO	State 1	9538	1907.6	23.47	24.50	1.268	0.06	0.218	0.276
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Hong-Bo	State 2	9538	1907.6	16.40	17.50	1.288	0.19	0.772	0.994
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Hong-Bo	State 2	9262	1852.4	16.30	17.50	1.318	-0.09	0.689	0.908
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Hong-Bo	State 2	9400	1880	16.32	17.50	1.312	0.11	0.794	1.042
	WCDMA II_Main	RMC 12.2Kbps	Bottom Face	0mm	Hong-Bo	State 3	9538	1907.6	16.90	17.50	1.148	0.14	0.691	0.793
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Hong-Bo	State 3	9538	1907.6	16.90	17.50	1.148	-0.06	0.127	0.146
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Speed	State 1	9538	1907.6	23.47	24.50	1.268	0.14	0.331	0.420
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	9538	1907.6	16.40	17.50	1.288	0.1	0.855	1.102
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	9262	1852.4	16.30	17.50	1.318	-0.05	0.803	1.059
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	9400	1880	16.32	17.50	1.312	-0.02	0.863	1.132
01	WCDMA II_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	9538	1907.6	16.90	17.50	1.148	0.11	0.993	1.140
	WCDMA II_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	9262	1852.4	16.80	17.50	1.175	-0.1	0.898	1.056
	WCDMA II_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	9400	1880	16.82	17.50	1.169	0.03	0.943	1.103
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Speed	State 3	9538	1907.6	16.90	17.50	1.148	-0.08	0.213	0.244
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Hong-Bo	State 1	1312	1712.4	23.97	24.50	1.130	0.09	0.706	0.798
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Hong-Bo	State 2	1312	1712.4	15.24	16.00	1.191	-0.08	0.431	0.513
	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Hong-Bo	State 3	1312	1712.4	15.94	16.00	1.014	-0.15	0.606	0.614
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Hong-Bo	State 3	1312	1712.4	15.94	16.00	1.014	0.03	0.139	0.141
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Speed	State 1	1312	1712.4	23.97	24.50	1.130	0.01	0.749	0.846
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Speed	State 1	1413	1732.6	23.95	24.50	1.135	-0.01	0.752	0.854
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Speed	State 1	1513	1752.6	23.92	24.50	1.143	0.14	0.718	0.821
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	1312	1712.4	15.24	16.00	1.191	-0.09	0.977	1.164
02	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	1413	1732.6	15.20	16.00	1.202	-0.05	0.987	1.187
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	1513	1752.6	15.22	16.00	1.197	0.06	0.910	1.089
	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	1312	1712.4	15.94	16.00	1.014	0.12	1.120	1.136
	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	1413	1732.6	15.90	16.00	1.023	0.04	1.080	1.105
	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	1513	1752.6	15.92	16.00	1.019	-0.06	1.140	1.161
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Speed	State 3	1312	1712.4	15.94	16.00	1.014	0	0.382	0.387
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Hong-Bo	State 1	4132	826.4	23.71	24.50	1.199	-0.06	0.102	0.122
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Hong-Bo	State 2	4182	836.4	21.18	22.00	1.208	0.09	0.638	0.771
	WCDMA V_Main	RMC 12.2Kbps	Bottom Face	0mm	Hong-Bo	State 3	4182	836.4	20.18	21.00	1.208	-0.13	0.639	0.772
	WCDMA V_Main	RMC 12.2Kbps	Edge 1	0mm	Hong-Bo	State 3	4182	836.4	20.18	21.00	1.208	0	< 0.001	< 0.001
	WCDMA V_Main	RMC 12.2Kbps	Edge 2	0mm	Hong-Bo	State 3	4182	836.4	20.18	21.00	1.208	-0.08	0.001	0.001
	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Hong-Bo	State 3	4182	836.4	20.18	21.00	1.208	-0.02	0.298	0.360
	WCDMA V_Main	RMC 12.2Kbps	Edge 4	0mm	Hong-Bo	State 3	4182	836.4	20.18	21.00	1.208	-0.03	0.001	0.001
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	15mm	Speed	State 1	4132	826.4	23.71	24.50	1.199	0.02	0.175	0.210
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	4182	836.4	21.18	22.00	1.208	0.01	0.868	1.049
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	4132	826.4	21.17	22.00	1.211	-0.04	0.932	1.128
03	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Speed	State 2	4233	846.6	21.18	22.00	1.208	0.02	0.977	1.180
	WCDMA V_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	4182	836.4	20.18	21.00	1.208	0.09	0.865	1.045
	WCDMA V_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	4132	826.4	20.17	21.00	1.211	0.06	0.755	0.914
	WCDMA V_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	4233	846.6	20.11	21.00	1.227	0.01	0.816	1.002
	WCDMA V_Main	RMC 12.2Kbps	Edge 1	0mm	Speed	State 3	4182	836.4	20.18	21.00	1.208	0	< 0.001	< 0.001
	WCDMA V_Main	RMC 12.2Kbps	Edge 2	0mm	Speed	State 3	4182	836.4	20.18	21.00	1.208	-0.13	0.001	0.001
	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Speed	State 3	4182	836.4	20.18	21.00	1.208	-0.17	0.324	0.391
	WCDMA V_Main	RMC 12.2Kbps	Edge 4	0mm	Speed	State 3	4182	836.4	20.18	21.00	1.208	-0.01	0.001	0.001



<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	20850	2510	23.19	24.00	1.205	0.15	0.172	0.207
	LTE Band 7_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Hong-Bo	State 1	20850	2510	22.17	23.00	1.211	0.15	0.119	0.144
	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	21350	2560	16.31	17.00	1.172	0.18	0.512	0.601
	LTE Band 7_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	21350	2560	16.04	17.00	1.247	-0.18	0.468	0.584
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	21350	2560	14.41	15.50	1.285	0.16	0.649	0.834
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	20850	2510	14.28	15.50	1.324	-0.05	0.653	0.865
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	21100	2535	14.37	15.50	1.297	0.18	0.660	0.856
	LTE Band 7_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	21350	2560	14.34	15.50	1.306	0.14	0.617	0.806
	LTE Band 7_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	20850	2510	14.19	15.50	1.352	0.04	0.626	0.846
	LTE Band 7_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	21100	2535	14.26	15.50	1.330	0.15	0.611	0.813
	LTE Band 7_Main	20M	QPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	21350	2560	14.07	15.50	1.390	0.12	0.601	0.835
	LTE Band 7_Main	20M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	21350	2560	14.41	15.50	1.285	0.07	0.108	0.139
	LTE Band 7_Main	20M	QPSK	50	0	Edge 3	0mm	Hong-Bo	State 3	21350	2560	14.34	15.50	1.306	-0.13	0.096	0.125
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	21100	2535	14.55	15.50	1.245	0.04	0.612	0.762
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	20850	2510	14.43	15.50	1.279	0.04	0.608	0.778
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	21350	2560	14.49	15.50	1.262	0.11	0.619	0.781
	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	20850	2510	23.19	24.00	1.205	0.15	0.282	0.340
04	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	21350	2560	16.31	17.00	1.172	-0.03	0.991	1.162
	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	20850	2510	16.18	17.00	1.208	-0.14	0.846	1.022
	LTE Band 7_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	21100	2535	16.27	17.00	1.183	0.14	0.874	1.034
	LTE Band 7_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	21350	2560	16.04	17.00	1.247	0.06	0.922	1.150
	LTE Band 7_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	20850	2510	15.99	17.00	1.262	0.17	0.836	1.055
	LTE Band 7_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	21100	2535	15.96	17.00	1.271	0.09	0.849	1.079
	LTE Band 7_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Speed	State 2	21100	2535	15.88	17.00	1.294	0.04	0.829	1.073
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	21350	2560	14.41	15.50	1.285	-0.11	0.769	0.988
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	20850	2510	14.28	15.50	1.324	0.02	0.789	1.046
	LTE Band 7_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	21100	2535	14.37	15.50	1.297	0.04	0.858	1.113
	LTE Band 7_Main	20M	QPSK	1	0	Edge 3	0mm	Speed	State 3	21350	2560	14.41	15.50	1.285	-0.04	0.139	0.179
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	21100	2535	16.55	17.00	1.109	-0.03	0.922	1.023
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	20850	2510	16.52	17.00	1.117	0.01	0.895	1.000
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	21350	2560	16.49	17.00	1.125	-0.16	0.901	1.013



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23095	707.5	23.22	25.00	1.507	0.07	0.098	0.148
	LTE Band 12_Main	10M	QPSK	25	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23095	707.5	22.26	24.00	1.493	0.03	0.071	0.106
	LTE Band 12_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23095	707.5	22.21	23.00	1.199	0.05	0.648	0.777
	LTE Band 12_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23095	707.5	21.96	23.00	1.271	0.13	0.582	0.739
	LTE Band 12_Main	10M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	23095	707.5	22.21	23.00	1.199	0.13	0.774	0.928
	LTE Band 12_Main	10M	QPSK	25	0	Bottom Face	0mm	Hong-Bo	State 3	23095	707.5	21.96	23.00	1.271	-0.16	0.706	0.897
	LTE Band 12_Main	10M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	23095	707.5	21.88	23.00	1.294	-0.08	0.699	0.905
	LTE Band 12_Main	10M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	23095	707.5	22.21	23.00	1.199	0	< 0.001	< 0.001
	LTE Band 12_Main	10M	QPSK	25	0	Edge 1	0mm	Hong-Bo	State 3	23095	707.5	21.96	23.00	1.271	0	< 0.001	< 0.001
	LTE Band 12_Main	10M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	23095	707.5	22.21	23.00	1.199	-0.17	0.001	0.001
	LTE Band 12_Main	10M	QPSK	25	0	Edge 2	0mm	Hong-Bo	State 3	23095	707.5	21.96	23.00	1.271	0.08	0.001	0.001
	LTE Band 12_Main	10M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	23095	707.5	22.21	23.00	1.199	0.12	0.367	0.440
	LTE Band 12_Main	10M	QPSK	25	0	Edge 3	0mm	Hong-Bo	State 3	23095	707.5	21.96	23.00	1.271	-0.04	0.288	0.366
	LTE Band 12_Main	10M	QPSK	1	0	Edge 4	0mm	Hong-Bo	State 3	23095	707.5	22.21	23.00	1.199	0.08	0.001	0.001
	LTE Band 12_Main	10M	QPSK	25	0	Edge 4	0mm	Hong-Bo	State 3	23095	707.5	21.96	23.00	1.271	-0.11	0.001	0.001
	LTE Band 12_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	23095	707.5	23.22	25.00	1.507	-0.06	0.122	0.184
05	LTE Band 12_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	23095	707.5	22.21	23.00	1.199	0.02	0.890	1.068
	LTE Band 12_Main	10M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	23095	707.5	22.21	23.00	1.199	0.05	0.842	1.010
	LTE Band 12_Main	10M	QPSK	25	0	Bottom Face	0mm	Speed	State 3	23095	707.5	21.96	23.00	1.271	0.09	0.788	1.001
	LTE Band 12_Main	10M	QPSK	50	0	Bottom Face	0mm	Speed	State 3	23095	707.5	21.88	23.00	1.294	-0.07	0.771	0.998
	LTE Band 12_Main	10M	QPSK	1	0	Edge 1	0mm	Speed	State 3	23095	707.5	22.21	23.00	1.199	0	< 0.001	< 0.001
	LTE Band 12_Main	10M	QPSK	1	0	Edge 2	0mm	Speed	State 3	23095	707.5	22.21	23.00	1.199	0.17	0.001	0.001
	LTE Band 12_Main	10M	QPSK	1	0	Edge 3	0mm	Speed	State 3	23095	707.5	22.21	23.00	1.199	0.12	0.569	0.683
	LTE Band 12_Main	10M	QPSK	1	0	Edge 4	0mm	Speed	State 3	23095	707.5	22.21	23.00	1.199	-0.05	0.001	0.001
	LTE Band 13_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23230	782	23.17	25.00	1.524	0.09	0.074	0.113
	LTE Band 13_Main	10M	QPSK	25	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23230	782	22.17	24.00	1.524	-0.1	0.059	0.090
	LTE Band 13_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23230	782	22.16	22.50	1.081	0.13	0.876	0.947
	LTE Band 13_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23230	782	22.00	22.50	1.122	0.03	0.782	0.877
	LTE Band 13_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23230	782	21.76	22.50	1.186	0.15	0.746	0.885
	LTE Band 13_Main	10M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	23230	782	22.16	22.50	1.081	-0.07	0.909	0.984
	LTE Band 13_Main	10M	QPSK	25	0	Bottom Face	0mm	Hong-Bo	State 3	23230	782	22.00	22.50	1.122	0.14	0.836	0.938
	LTE Band 13_Main	10M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	23230	782	21.76	22.50	1.186	0.02	0.801	0.950
	LTE Band 13_Main	10M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	23230	782	22.16	22.50	1.081	0	< 0.001	< 0.001
	LTE Band 13_Main	10M	QPSK	25	0	Edge 1	0mm	Hong-Bo	State 3	23230	782	22.00	22.50	1.122	0	< 0.001	< 0.001
	LTE Band 13_Main	10M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	23230	782	22.16	22.50	1.081	-0.08	0.001	0.001
	LTE Band 13_Main	10M	QPSK	25	0	Edge 2	0mm	Hong-Bo	State 3	23230	782	22.00	22.50	1.122	-0.01	0.001	0.001
	LTE Band 13_Main	10M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	23230	782	22.16	22.50	1.081	0.03	0.353	0.382
	LTE Band 13_Main	10M	QPSK	25	0	Edge 3	0mm	Hong-Bo	State 3	23230	782	22.00	22.50	1.122	0.05	0.268	0.301
	LTE Band 13_Main	10M	QPSK	1	0	Edge 4	0mm	Hong-Bo	State 3	23230	782	22.16	22.50	1.081	0.14	0.001	0.001
	LTE Band 13_Main	10M	QPSK	25	0	Edge 4	0mm	Hong-Bo	State 3	23230	782	22.00	22.50	1.122	-0.12	0.001	0.001
	LTE Band 13_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	23230	782	23.17	25.00	1.524	-0.02	0.112	0.171
06	LTE Band 13_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	23230	782	22.16	22.50	1.081	-0.03	1.070	1.157
	LTE Band 13_Main	10M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	23230	782	22.16	22.50	1.081	-0.01	0.997	1.078
	LTE Band 13_Main	10M	QPSK	1	0	Edge 1	0mm	Speed	State 3	23230	782	22.16	22.50	1.081	0	< 0.001	< 0.001
	LTE Band 13_Main	10M	QPSK	1	0	Edge 2	0mm	Speed	State 3	23230	782	22.16	22.50	1.081	-0.02	0.001	0.001
	LTE Band 13_Main	10M	QPSK	1	0	Edge 3	0mm	Speed	State 3	23230	782	22.16	22.50	1.081	-0.07	0.448	0.484
	LTE Band 13_Main	10M	QPSK	1	0	Edge 4	0mm	Speed	State 3	23230	782	22.16	22.50	1.081	-0.19	0.001	0.001



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23330	793	23.20	25.00	1.514	-0.05	0.114	0.173
	LTE Band 14_Main	10M	QPSK	25	0	Bottom of Laptop	15mm	Hong-Bo	State 1	23330	793	22.18	24.00	1.521	0.16	0.077	0.117
	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23330	793	22.31	22.50	1.045	0	0.870	0.909
	LTE Band 14_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23330	793	21.99	22.50	1.125	0.04	0.708	0.796
	LTE Band 14_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	23330	793	21.84	22.50	1.164	-0.19	0.711	0.828
	LTE Band 14_Main	10M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	23330	793	22.31	22.50	1.045	0.08	0.824	0.861
	LTE Band 14_Main	10M	QPSK	25	0	Bottom Face	0mm	Hong-Bo	State 3	23330	793	21.99	22.50	1.125	-0.14	0.736	0.828
	LTE Band 14_Main	10M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	23330	793	21.84	22.50	1.164	-0.05	0.717	0.835
	LTE Band 14_Main	10M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	23330	793	22.31	22.50	1.045	0	< 0.001	< 0.001
	LTE Band 14_Main	10M	QPSK	25	0	Edge 1	0mm	Hong-Bo	State 3	23330	793	21.99	22.50	1.125	0	< 0.001	< 0.001
	LTE Band 14_Main	10M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	23330	793	22.31	22.50	1.045	0.14	0.001	0.001
	LTE Band 14_Main	10M	QPSK	25	0	Edge 2	0mm	Hong-Bo	State 3	23330	793	21.99	22.50	1.125	0.06	0.001	0.001
	LTE Band 14_Main	10M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	23330	793	22.31	22.50	1.045	-0.17	0.378	0.395
	LTE Band 14_Main	10M	QPSK	25	0	Edge 3	0mm	Hong-Bo	State 3	23330	793	21.99	22.50	1.125	-0.12	0.301	0.339
	LTE Band 14_Main	10M	QPSK	1	0	Edge 4	0mm	Hong-Bo	State 3	23330	793	22.31	22.50	1.045	0	0.001	0.001
	LTE Band 14_Main	10M	QPSK	25	0	Edge 4	0mm	Hong-Bo	State 3	23330	793	21.99	22.50	1.125	-0.07	0.001	0.001
	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	23330	793	23.20	25.00	1.514	-0.05	0.135	0.204
07	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	23330	793	22.31	22.50	1.045	0.03	1.110	1.160
	LTE Band 14_Main	10M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	23330	793	22.31	22.50	1.045	0.09	1.020	1.066
	LTE Band 14_Main	10M	QPSK	1	0	Edge 1	0mm	Speed	State 3	23330	793	22.31	22.50	1.045	0	< 0.001	< 0.001
	LTE Band 14_Main	10M	QPSK	1	0	Edge 2	0mm	Speed	State 3	23330	793	22.31	22.50	1.045	-0.14	0.001	0.001
	LTE Band 14_Main	10M	QPSK	1	0	Edge 3	0mm	Speed	State 3	23330	793	22.31	22.50	1.045	-0.01	0.403	0.421
	LTE Band 14_Main	10M	QPSK	1	0	Edge 4	0mm	Speed	State 3	23330	793	22.31	22.50	1.045	-0.18	0.001	0.001
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	26590	1905	23.05	24.00	1.245	0.09	0.225	0.280
	LTE Band 25_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Hong-Bo	State 1	26590	1905	22.11	23.00	1.227	0.01	0.172	0.211
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26590	1905	17.61	18.50	1.227	-0.05	0.924	1.134
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26140	1860	17.55	18.50	1.245	0.17	0.880	1.095
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26340	1880	17.54	18.50	1.247	-0.12	0.912	1.138
	LTE Band 25_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26590	1905	17.38	18.50	1.294	0.07	0.864	1.118
	LTE Band 25_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26140	1860	17.36	18.50	1.300	-0.07	0.813	1.057
	LTE Band 25_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26340	1880	17.33	18.50	1.309	0.18	0.832	1.089
	LTE Band 25_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26590	1905	17.35	18.50	1.303	-0.17	0.831	1.083
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	26590	1905	17.61	18.50	1.227	-0.17	0.662	0.812
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	26140	1860	17.55	18.50	1.245	0.03	0.677	0.843
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	26340	1880	17.54	18.50	1.247	-0.08	0.716	0.893
	LTE Band 25_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	26590	1905	17.38	18.50	1.294	0.01	0.625	0.809
	LTE Band 25_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	26140	1860	17.26	18.50	1.330	0.04	0.617	0.821
	LTE Band 25_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	26340	1880	17.33	18.50	1.309	-0.12	0.633	0.829
	LTE Band 25_Main	20M	QPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	26590	1905	17.35	18.50	1.303	-0.01	0.583	0.760
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	26590	1905	17.61	18.50	1.227	0.17	0.252	0.309
	LTE Band 25_Main	20M	QPSK	50	0	Edge 3	0mm	Hong-Bo	State 3	26590	1905	17.38	18.50	1.294	-0.19	0.196	0.254
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	26590	1905	23.05	24.00	1.245	0.09	0.271	0.337
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	26340	1880	17.54	18.50	1.247	-0.06	0.906	1.130
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	26590	1905	17.61	18.50	1.227	0.07	0.945	1.160
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	26140	1860	17.55	18.50	1.245	-0.16	0.888	1.105
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	26340	1880	17.54	18.50	1.247	-0.07	0.917	1.144
08	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	26590	1905	17.61	18.50	1.227	0.07	0.960	1.178
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	26140	1860	17.55	18.50	1.245	0.04	0.872	1.085
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Speed	State 3	26590	1905	17.61	18.50	1.227	-0.17	0.182	0.223



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 26_Main	15M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	26865	831.5	23.11	25.00	1.545	0.01	0.108	0.167
	LTE Band 26_Main	15M	QPSK	36	0	Bottom of Laptop	15mm	Hong-Bo	State 1	26865	831.5	22.05	24.00	1.567	0	0.081	0.127
	LTE Band 26_Main	15M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26865	831.5	21.60	22.00	1.096	-0.09	0.934	1.024
	LTE Band 26_Main	15M	QPSK	36	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26865	831.5	21.35	22.00	1.161	0.17	0.879	1.021
	LTE Band 26_Main	15M	QPSK	75	0	Bottom of Laptop	0mm	Hong-Bo	State 2	26865	831.5	21.27	22.00	1.183	0.14	0.857	1.014
	LTE Band 26_Main	15M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	26865	831.5	20.50	21.50	1.259	0.11	0.733	0.922
	LTE Band 26_Main	15M	QPSK	36	0	Bottom Face	0mm	Hong-Bo	State 3	26865	831.5	20.20	21.50	1.349	0.14	0.667	0.900
	LTE Band 26_Main	15M	QPSK	75	0	Bottom Face	0mm	Hong-Bo	State 3	26865	831.5	20.12	21.50	1.374	-0.01	0.665	0.914
	LTE Band 26_Main	15M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	26865	831.5	20.50	21.50	1.259	0	< 0.001	< 0.001
	LTE Band 26_Main	15M	QPSK	36	0	Edge 1	0mm	Hong-Bo	State 3	26865	831.5	20.20	21.50	1.349	0	< 0.001	< 0.001
	LTE Band 26_Main	15M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	26865	831.5	20.50	21.50	1.259	0.11	0.001	0.001
	LTE Band 26_Main	15M	QPSK	36	0	Edge 2	0mm	Hong-Bo	State 3	26865	831.5	20.20	21.50	1.349	-0.07	0.001	0.001
	LTE Band 26_Main	15M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	26865	831.5	20.50	21.50	1.259	-0.12	0.295	0.371
	LTE Band 26_Main	15M	QPSK	36	0	Edge 3	0mm	Hong-Bo	State 3	26865	831.5	20.20	21.50	1.349	-0.08	0.258	0.348
	LTE Band 26_Main	15M	QPSK	1	0	Edge 4	0mm	Hong-Bo	State 3	26865	831.5	20.50	21.50	1.259	0.05	0.001	0.001
	LTE Band 26_Main	15M	QPSK	36	0	Edge 4	0mm	Hong-Bo	State 3	26865	831.5	20.20	21.50	1.349	0	0.001	0.001
	LTE Band 5B_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	20575	841.5	20.48	22.00	1.419	-0.06	0.712	1.010
	LTE Band 26_Main	15M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	26865	831.5	23.11	25.00	1.545	0.07	0.121	0.187
	LTE Band 26_Main	15M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	26865	831.5	21.60	22.00	1.096	-0.08	0.956	1.048
09	LTE Band 26_Main	15M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	26865	831.5	20.50	21.50	1.259	0.06	0.842	1.060
	LTE Band 26_Main	15M	QPSK	1	0	Edge 1	0mm	Speed	State 3	26865	831.5	20.50	21.50	1.259	0	< 0.001	< 0.001
	LTE Band 26_Main	15M	QPSK	1	0	Edge 2	0mm	Speed	State 3	26865	831.5	20.50	21.50	1.259	0.02	0.001	0.001
	LTE Band 26_Main	15M	QPSK	1	0	Edge 3	0mm	Speed	State 3	26865	831.5	20.50	21.50	1.259	-0.06	0.318	0.400
	LTE Band 26_Main	15M	QPSK	1	0	Edge 4	0mm	Speed	State 3	26865	831.5	20.50	21.50	1.259	-0.02	0.001	0.001
	LTE Band 5B_Main	10M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	20575	841.5	19.95	21.50	1.429	0.12	0.715	1.022
	LTE Band 30_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	27710	2310	22.74	23.00	1.062	-0.01	0.189	0.201
	LTE Band 30_Main	10M	QPSK	25	0	Bottom of Laptop	15mm	Hong-Bo	State 1	27710	2310	21.73	22.00	1.064	0.14	0.144	0.153
	LTE Band 30_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	27710	2310	17.84	18.50	1.164	-0.05	0.917	1.068
	LTE Band 30_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Hong-Bo	State 2	27710	2310	17.55	18.50	1.245	-0.14	0.834	1.038
	LTE Band 30_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	27710	2310	17.48	18.50	1.265	0.13	0.829	1.048
	LTE Band 30_Main	10M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	27710	2310	16.62	17.50	1.225	0.05	0.719	0.881
	LTE Band 30_Main	10M	QPSK	25	0	Bottom Face	0mm	Hong-Bo	State 3	27710	2310	16.43	17.50	1.279	0.05	0.655	0.838
	LTE Band 30_Main	10M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	27710	2310	16.26	17.50	1.330	0.01	0.640	0.851
	LTE Band 30_Main	10M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	27710	2310	16.62	17.50	1.225	0.03	0.140	0.172
	LTE Band 30_Main	10M	QPSK	25	0	Edge 3	0mm	Hong-Bo	State 3	27710	2310	16.43	17.50	1.279	0.06	0.122	0.156
	LTE Band 30_Main	10M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	27710	2310	22.74	23.00	1.062	0.08	0.233	0.247
10	LTE Band 30_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	27710	2310	17.84	18.50	1.164	-0.03	0.995	1.158
	LTE Band 30_Main	10M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	27710	2310	16.62	17.50	1.225	0.15	0.869	1.064
	LTE Band 30_Main	10M	QPSK	1	0	Edge 3	0mm	Speed	State 3	27710	2310	16.62	17.50	1.225	-0.02	0.182	0.223



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	132072	1720	23.43	24.00	1.140	0.05	0.417	0.475
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Hong-Bo	State 1	132072	1720	22.41	23.00	1.146	0.04	0.320	0.367
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	132322	1745	14.91	15.50	1.146	-0.04	0.320	0.367
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	132322	1745	14.86	15.50	1.159	0	0.298	0.345
	LTE Band 66_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	132322	1745	15.84	16.50	1.164	0.11	0.449	0.523
	LTE Band 66_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	132322	1745	15.77	16.50	1.183	-0.1	0.413	0.489
	LTE Band 66_Main	20M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	132322	1745	15.84	16.50	1.164	0.14	0.094	0.110
	LTE Band 66_Main	20M	QPSK	50	0	Edge 3	0mm	Hong-Bo	State 3	132322	1745	15.77	16.50	1.183	-0.15	0.076	0.090
	LTE Band 66B_Main	15M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	132322	1745	15.20	16.50	1.349	0.02	0.371	0.500
	LTE Band 66C_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	132322	1745	15.42	16.50	1.282	0.09	0.392	0.503
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	132072	1720	23.43	24.00	1.140	0	0.837	0.954
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	132322	1745	23.42	24.00	1.143	0.06	0.819	0.936
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	132572	1770	23.29	24.00	1.178	-0.07	0.776	0.914
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Speed	State 1	132072	1720	22.41	23.00	1.146	0.12	0.572	0.655
	LTE Band 66_Main	20M	QPSK	100	0	Bottom of Laptop	15mm	Speed	State 1	132072	1720	22.39	23.00	1.151	0.07	0.536	0.617
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132322	1745	14.91	15.50	1.146	0.19	0.946	1.084
11	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132072	1720	14.90	15.50	1.148	0.11	0.988	1.134
	LTE Band 66_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132572	1770	14.89	15.50	1.151	0.18	0.904	1.040
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	132322	1745	14.86	15.50	1.159	0.19	0.901	1.044
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	132072	1720	14.74	15.50	1.191	0.11	0.891	1.061
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	132572	1770	14.71	15.50	1.199	0.18	0.885	1.062
	LTE Band 66_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Speed	State 2	132322	1745	14.71	15.50	1.199	0.19	0.904	1.084
	LTE Band 66_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	132322	1745	15.84	16.50	1.164	-0.11	0.902	1.050
	LTE Band 66_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	132072	1720	15.83	16.50	1.167	-0.09	0.916	1.069
	LTE Band 66_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	132572	1770	15.82	16.50	1.169	-0.07	0.937	1.096
	LTE Band 66_Main	20M	QPSK	50	0	Bottom Face	0mm	Speed	State 3	132322	1745	15.77	16.50	1.183	0.06	0.855	1.012
	LTE Band 66_Main	20M	QPSK	50	0	Bottom Face	0mm	Speed	State 3	132072	1720	15.69	16.50	1.205	-0.15	0.871	1.050
	LTE Band 66_Main	20M	QPSK	50	0	Bottom Face	0mm	Speed	State 3	132572	1770	15.74	16.50	1.191	0.14	0.862	1.027
	LTE Band 66_Main	20M	QPSK	100	0	Bottom Face	0mm	Speed	State 3	132572	1770	15.64	16.50	1.219	0.03	0.871	1.062
	LTE Band 66_Main	20M	QPSK	1	0	Edge 3	0mm	Speed	State 3	132322	1745	15.84	16.50	1.164	-0.18	0.156	0.182
	LTE Band 66B_Main	15M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132322	1717.5	13.75	15.50	1.496	0.13	0.722	1.080
	LTE Band 66B_Main	15M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132047	1745	13.66	15.50	1.528	0.03	0.681	1.040
	LTE Band 66B_Main	15M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132597	1772.5	13.73	15.50	1.503	-0.11	0.692	1.040
	LTE Band 66C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132322	1720	14.22	15.50	1.343	0.11	0.705	0.947
	LTE Band 66C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132072	1745	14.14	15.50	1.368	0.05	0.674	0.922
	LTE Band 66C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	132572	1770	14.06	15.50	1.393	-0.13	0.691	0.963



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 71_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	133297	680.5	23.42	25.00	1.439	0.02	0.146	0.210
	LTE Band 71_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Hong-Bo	State 1	133297	680.5	22.52	24.00	1.406	0.03	0.111	0.156
	LTE Band 71_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	133297	680.5	23.03	23.50	1.114	0.15	0.704	0.784
	LTE Band 71_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	133297	680.5	22.54	23.50	1.247	-0.06	0.599	0.747
	LTE Band 71_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	133297	680.5	21.96	23.00	1.271	-0.04	0.558	0.709
	LTE Band 71_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	133297	680.5	21.92	23.00	1.282	-0.04	0.541	0.694
	LTE Band 71_Main	20M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	133297	680.5	21.96	23.00	1.271	0	< 0.001	< 0.001
	LTE Band 71_Main	20M	QPSK	50	0	Edge 1	0mm	Hong-Bo	State 3	133297	680.5	21.92	23.00	1.282	0	< 0.001	< 0.001
	LTE Band 71_Main	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	133297	680.5	21.96	23.00	1.271	0.02	0.001	0.001
	LTE Band 71_Main	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	133297	680.5	21.92	23.00	1.282	0.11	0.001	0.001
	LTE Band 71_Main	20M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	133297	680.5	21.96	23.00	1.271	-0.08	0.196	0.249
	LTE Band 71_Main	20M	QPSK	50	0	Edge 3	0mm	Hong-Bo	State 3	133297	680.5	21.92	23.00	1.282	-0.02	0.182	0.233
	LTE Band 71_Main	20M	QPSK	1	0	Edge 4	0mm	Hong-Bo	State 3	133297	680.5	21.96	23.00	1.271	0.01	0.001	0.001
	LTE Band 71_Main	20M	QPSK	50	0	Edge 4	0mm	Hong-Bo	State 3	133297	680.5	21.92	23.00	1.282	-0.06	0.001	0.001
	LTE Band 71_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	133297	680.5	23.42	25.00	1.439	0.07	0.211	0.304
12	LTE Band 71_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	133297	680.5	23.03	23.50	1.114	0.01	0.967	1.078
	LTE Band 71_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	133297	680.5	22.54	23.50	1.247	0.09	0.861	1.074
	LTE Band 71_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Speed	State 2	133297	680.5	22.38	23.50	1.294	-0.17	0.831	1.075
	LTE Band 71_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	133297	680.5	21.96	23.00	1.271	0.1	0.839	1.066
	LTE Band 71_Main	20M	QPSK	50	0	Bottom Face	0mm	Speed	State 3	133297	680.5	21.92	23.00	1.282	0.04	0.810	1.039
	LTE Band 71_Main	20M	QPSK	100	0	Bottom Face	0mm	Speed	State 3	133297	680.5	21.88	23.00	1.294	-0.15	0.794	1.028
	LTE Band 71_Main	20M	QPSK	1	0	Edge 1	0mm	Speed	State 3	133297	680.5	21.96	23.00	1.271	0	< 0.001	< 0.001
	LTE Band 71_Main	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	133297	680.5	21.96	23.00	1.271	-0.17	0.001	0.001
	LTE Band 71_Main	20M	QPSK	1	0	Edge 3	0mm	Speed	State 3	133297	680.5	21.96	23.00	1.271	-0.19	0.254	0.323
	LTE Band 71_Main	20M	QPSK	1	0	Edge 4	0mm	Speed	State 3	133297	680.5	21.96	23.00	1.271	-0.08	0.001	0.001

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 38_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Hong-Bo	State 1	38000	2595	23.16	24.00	1.213	62.9	1.006	0	0.211	0.258
	LTE Band 38_Main	20M	QPSK	50	0	Bottom of Laptop	15mm	Hong-Bo	State 1	38000	2595	22.16	23.00	1.213	62.9	1.006	-0.09	0.163	0.199
	LTE Band 38_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	38000	2595	17.60	18.50	1.230	62.9	1.006	0.06	0.772	0.956
	LTE Band 38_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	38000	2595	17.63	18.50	1.222	62.9	1.006	0.05	0.722	0.887
	LTE Band 38_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	38000	2595	17.67	18.50	1.211	62.9	1.006	-0.05	0.689	0.839
	LTE Band 38_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	38000	2595	16.75	17.50	1.189	62.9	1.006	0.02	0.822	0.983
	LTE Band 38_Main	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	38000	2595	16.78	17.50	1.180	62.9	1.006	0.03	0.796	0.945
	LTE Band 38_Main	20M	QPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	38000	2595	16.82	17.50	1.169	62.9	1.006	0.04	0.805	0.947
	LTE Band 38_Main	20M	QPSK	1	0	Edge 3	0mm	Hong-Bo	State 3	38000	2595	16.75	17.50	1.189	62.9	1.006	-0.19	0.127	0.151
	LTE Band 38_Main	20M	QPSK	50	0	Edge 3	0mm	Hong-Bo	State 3	38000	2595	16.78	17.50	1.180	62.9	1.006	0.02	0.118	0.140
	LTE Band 38C_Main	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	37901	2585.1	16.52	17.50	1.253	62.9	1.006	0.11	0.745	0.939
	LTE Band 38_Main	20M	QPSK	1	0	Bottom of Laptop	15mm	Speed	State 1	38000	2595	23.16	24.00	1.213	62.9	1.006	0.06	0.246	0.300
13	LTE Band 38_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	38000	2595	17.60	18.50	1.230	62.9	1.006	-0.04	0.913	1.130
	LTE Band 38_Main	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	38000	2595	16.75	17.50	1.189	62.9	1.006	0.16	0.943	1.127
	LTE Band 38_Main	20M	QPSK	1	0	Edge 3	0mm	Speed	State 3	38000	2595	16.75	17.50	1.189	62.9	1.006	-0.06	0.183	0.219
	LTE Band 38C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	37901	2585.1	17.00	18.50	1.413	62.9	1.006	-0.12	0.792	1.125



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	14mm	Hong-Bo	State 1	40185	2549.5	22.92	24.00	1.282	62.9	1.006	0.03	0.173	0.223
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	14mm	Hong-Bo	State 1	40185	2549.5	21.94	23.00	1.276	62.9	1.006	0.05	0.129	0.166
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	40185	2549.5	14.79	16.00	1.321	62.9	1.006	-0.19	0.426	0.566
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	40185	2549.5	14.76	16.00	1.330	62.9	1.006	0.09	0.402	0.538
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	-0.07	0.261	0.276
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	40185	2549.5	14.76	15.00	1.057	62.9	1.006	0.09	0.255	0.271
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	0.07	0.176	0.186
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 1	0mm	Hong-Bo	State 3	40185	2549.5	14.76	15.00	1.057	62.9	1.006	0.08	0.159	0.169
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	0.12	0.655	0.692
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	39750	2506	14.68	15.00	1.076	62.9	1.006	0	0.625	0.677
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	40620	2593	14.77	15.00	1.054	62.9	1.006	-0.06	0.783	0.831
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	41055	2636.5	14.74	15.00	1.062	62.9	1.006	0.1	0.767	0.819
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	41490	2680	14.66	15.00	1.081	62.9	1.006	0.09	0.802	0.873
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	40185	2549.5	14.76	15.00	1.057	62.9	1.006	-0.03	0.632	0.672
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	39750	2506	14.61	15.00	1.094	62.9	1.006	0.05	0.609	0.670
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	40620	2593	14.72	15.00	1.067	62.9	1.006	0	0.741	0.795
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	41055	2636.5	14.71	15.00	1.069	62.9	1.006	-0.09	0.728	0.783
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	41490	2680	14.72	15.00	1.067	62.9	1.006	0.02	0.764	0.820
	LTE Band 41_MIMO2	20M	QPSK	100	0	Edge 2	0mm	Hong-Bo	State 3	40185	2549.5	14.73	15.00	1.064	62.9	1.006	0.04	0.618	0.662
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	40620	2593	13.35	15.00	1.462	62.9	1.006	0.07	0.574	0.844
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	39750	2506	13.22	15.00	1.507	62.9	1.006	0.14	0.566	0.858
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	40185	2549.5	13.20	15.00	1.514	62.9	1.006	-0.15	0.549	0.836
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	41055	2636.5	13.29	15.00	1.483	62.9	1.006	0.07	0.532	0.793
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	41490	2680	13.21	15.00	1.510	62.9	1.006	0.07	0.555	0.843
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	14mm	Speed	State 1	40185	2549.5	22.92	24.00	1.282	62.9	1.006	0.06	0.295	0.381
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	40185	2549.5	14.79	16.00	1.321	62.9	1.006	-0.05	0.659	0.876
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	39750	2506	14.68	16.00	1.355	62.9	1.006	0.16	0.737	1.005
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	40620	2593	14.77	16.00	1.327	62.9	1.006	-0.02	0.786	1.050
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	41055	2636.5	14.74	16.00	1.337	62.9	1.006	0	0.672	0.904
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	41490	2680	14.66	16.00	1.361	62.9	1.006	0.04	0.721	0.987
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	40185	2549.5	14.76	16.00	1.330	62.9	1.006	0.06	0.628	0.841
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	39750	2506	14.61	16.00	1.377	62.9	1.006	0.09	0.713	0.988
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	40620	2593	14.72	16.00	1.343	62.9	1.006	-0.05	0.759	1.025
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	41055	2636.5	14.71	16.00	1.346	62.9	1.006	0.04	0.641	0.868
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Speed	State 2	41490	2680	14.72	16.00	1.343	62.9	1.006	0.01	0.701	0.947
	LTE Band 41_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Speed	State 2	40185	2549.5	14.73	16.00	1.340	62.9	1.006	0.04	0.574	0.774
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	-0.17	0.109	0.115
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 1	0mm	Speed	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	0.13	0.268	0.283
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	40185	2549.5	14.79	15.00	1.050	62.9	1.006	0.08	0.817	0.863
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	39750	2506	14.68	15.00	1.076	62.9	1.006	0.12	0.941	1.019
14	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	40620	2593	14.77	15.00	1.054	62.9	1.006	0.07	1.010	1.071
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	41055	2636.5	14.74	15.00	1.062	62.9	1.006	-0.03	0.890	0.951
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	41490	2680	14.66	15.00	1.081	62.9	1.006	0.16	0.898	0.977
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	40620	2593	13.35	15.00	1.462	62.9	1.006	-0.12	0.722	1.062
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	39750	2506	13.22	15.00	1.507	62.9	1.006	-0.08	0.681	1.032
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	40185	2549.5	13.20	15.00	1.514	62.9	1.006	0.14	0.671	1.022
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	41055	2636.5	13.29	15.00	1.483	62.9	1.006	0.09	0.700	1.044
	LTE Band 41C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	41490	2680	13.21	15.00	1.510	62.9	1.006	-0.07	0.684	1.039



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	14mm	Hong-Bo	State 1	56640	3690	21.91	22.00	1.021	62.9	1.006	-0.05	0.083	0.085
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom of Laptop	14mm	Hong-Bo	State 1	56640	3690	20.59	21.00	1.099	62.9	1.006	-0.04	0.058	0.064
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55830	3609	15.36	17.00	1.459	62.9	1.006	0.01	0.555	0.814
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55340	3560	15.31	17.00	1.476	62.9	1.006	0.09	0.512	0.760
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56150	3641	15.28	17.00	1.486	62.9	1.006	0	0.523	0.782
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56640	3690	15.12	17.00	1.542	62.9	1.006	-0.13	0.510	0.791
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55830	3609	15.35	17.00	1.462	62.9	1.006	-0.07	0.522	0.768
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55340	3560	15.32	17.00	1.472	62.9	1.006	0.02	0.511	0.757
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56150	3641	15.27	17.00	1.489	62.9	1.006	0.03	0.520	0.779
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56640	3690	15.23	17.00	1.503	62.9	1.006	0.05	0.512	0.774
	LTE Band 48_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55830	3609	15.31	17.00	1.476	62.9	1.006	0.09	0.508	0.754
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Hong-Bo	State 3	55340	3560	11.11	12.00	1.227	62.9	1.006	0.18	0.077	0.095
	LTE Band 48_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	55340	3560	10.99	12.00	1.262	62.9	1.006	0.05	0.070	0.089
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 1	0mm	Hong-Bo	State 3	55340	3560	11.11	12.00	1.227	62.9	1.006	-0.12	0.112	0.138
	LTE Band 48_MIMO2	20M	QPSK	50	0	Edge 1	0mm	Hong-Bo	State 3	55340	3560	10.99	12.00	1.262	62.9	1.006	0.03	0.105	0.133
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	55340	3560	11.11	12.00	1.227	62.9	1.006	-0.17	0.582	0.719
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	55830	3609	11.02	12.00	1.253	62.9	1.006	-0.01	0.555	0.700
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	56150	3641	11.02	12.00	1.253	62.9	1.006	0.08	0.560	0.706
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Hong-Bo	State 3	56640	3690	10.99	12.00	1.262	62.9	1.006	0.09	0.544	0.691
	LTE Band 48_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	55340	3560	10.99	12.00	1.262	62.9	1.006	-0.01	0.561	0.712
	LTE Band 48_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	55830	3609	10.97	12.00	1.268	62.9	1.006	0.16	0.560	0.714
	LTE Band 48_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	56150	3641	10.95	12.00	1.274	62.9	1.006	0.14	0.555	0.711
	LTE Band 48_MIMO2	20M	QPSK	50	0	Edge 2	0mm	Hong-Bo	State 3	56640	3690	10.97	12.00	1.268	62.9	1.006	-0.09	0.555	0.708
	LTE Band 48_MIMO2	20M	QPSK	100	0	Edge 2	0mm	Hong-Bo	State 3	55340	3560	10.97	12.00	1.268	62.9	1.006	-0.06	0.542	0.691
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55830	3609	15.36	17.00	1.459	62.9	1.006	-0.13	0.515	0.756
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	55340	3560	15.29	17.00	1.483	62.9	1.006	0.02	0.485	0.723
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56150	3641	15.35	17.00	1.462	62.9	1.006	-0.07	0.508	0.747
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Hong-Bo	State 2	56640	3690	15.29	17.00	1.483	62.9	1.006	-0.14	0.498	0.743
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	14mm	Speed	State 1	56640	3690	21.91	22.00	1.021	62.9	1.006	-0.13	0.108	0.111
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	56640	3690	15.12	17.00	1.542	62.9	1.006	0.06	0.630	0.977
15	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	55830	3609	15.36	17.00	1.459	62.9	1.006	-0.03	0.720	1.057
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	55340	3560	15.31	17.00	1.476	62.9	1.006	-0.08	0.672	0.998
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Speed	State 2	56150	3641	15.28	17.00	1.486	62.9	1.006	0	0.654	0.978
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Speed	State 3	56640	3690	10.99	12.00	1.262	62.9	1.006	0.14	0.180	0.229
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 1	0mm	Speed	State 3	55340	3560	11.11	12.00	1.227	62.9	1.006	-0.12	0.112	0.138
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	55340	3560	11.11	12.00	1.227	62.9	1.006	-0.11	0.821	1.014
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	55830	3609	11.02	12.00	1.253	62.9	1.006	-0.09	0.797	1.005
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	56150	3641	11.02	12.00	1.253	62.9	1.006	-0.04	0.802	1.011
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	56640	3690	10.99	12.00	1.262	62.9	1.006	-0.16	0.773	0.981
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	56640	3690	11.33	12.00	1.167	62.9	1.006	0.12	0.825	0.968
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	55340	3560	11.16	12.00	1.213	62.9	1.006	0.14	0.811	0.990
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	55830	3609	11.18	12.00	1.208	62.9	1.006	0.17	0.795	0.966
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 2	0mm	Speed	State 3	56150	3641	11.25	12.00	1.189	62.9	1.006	-0.05	0.807	0.965



FCC SAR TEST REPORT

Report No. : FA212742-01

<5G NR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n5_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Hong-Bo	State 1	167300	836.5	23.42	25.00	1.439	0.08	0.122	0.176
	FR1 n5_Main	20M	BPSK	50	28	Bottom of Laptop	15mm	Hong-Bo	State 1	167300	836.5	23.37	25.00	1.455	0.06	0.114	0.166
	FR1 n5_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	167300	836.5	22.42	22.50	1.019	0.08	1.030	1.049
	FR1 n5_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	167300	836.5	22.25	22.50	1.059	0.18	0.943	0.999
	FR1 n5_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	167300	836.5	22.08	22.50	1.102	-0.17	0.927	1.021
	FR1 n5_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	167300	836.5	21.48	21.50	1.005	-0.01	0.964	0.969
	FR1 n5_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	167300	836.5	21.26	21.50	1.057	-0.18	0.897	0.948
	FR1 n5_Main	20M	BPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	167300	836.5	21.11	21.50	1.094	-0.12	0.852	0.932
	FR1 n5_Main	20M	BPSK	1	53	Edge 1	0mm	Hong-Bo	State 3	167300	836.5	21.48	21.50	1.005	0	< 0.001	< 0.001
	FR1 n5_Main	20M	BPSK	50	28	Edge 1	0mm	Hong-Bo	State 3	167300	836.5	21.26	21.50	1.057	0	< 0.001	< 0.001
	FR1 n5_Main	20M	BPSK	1	53	Edge 2	0mm	Hong-Bo	State 3	167300	836.5	21.48	21.50	1.005	0.15	0.001	0.001
	FR1 n5_Main	20M	BPSK	50	28	Edge 2	0mm	Hong-Bo	State 3	167300	836.5	21.26	21.50	1.057	0.14	0.001	0.001
	FR1 n5_Main	20M	BPSK	1	53	Edge 3	0mm	Hong-Bo	State 3	167300	836.5	21.48	21.50	1.005	-0.18	0.328	0.329
	FR1 n5_Main	20M	BPSK	50	28	Edge 3	0mm	Hong-Bo	State 3	167300	836.5	21.26	21.50	1.057	-0.08	0.237	0.250
	FR1 n5_Main	20M	BPSK	1	53	Edge 4	0mm	Hong-Bo	State 3	167300	836.5	21.48	21.50	1.005	-0.15	0.001	0.001
	FR1 n5_Main	20M	BPSK	50	28	Edge 4	0mm	Hong-Bo	State 3	167300	836.5	21.26	21.50	1.057	0.12	0.001	0.001
	FR1 n5_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Speed	State 1	167300	836.5	23.42	25.00	1.439	0.08	0.144	0.207
16	FR1 n5_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	167300	836.5	22.42	22.50	1.019	-0.06	1.130	1.151
	FR1 n5_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	167300	836.5	21.48	21.50	1.005	-0.04	1.120	1.125
	FR1 n5_Main	20M	BPSK	1	53	Edge 1	0mm	Speed	State 3	167300	836.5	21.48	21.50	1.005	0	< 0.001	< 0.001
	FR1 n5_Main	20M	BPSK	1	53	Edge 2	0mm	Speed	State 3	167300	836.5	21.48	21.50	1.005	0.13	0.001	0.001
	FR1 n5_Main	20M	BPSK	1	53	Edge 3	0mm	Speed	State 3	167300	836.5	21.48	21.50	1.005	0.14	0.564	0.567
	FR1 n5_Main	20M	BPSK	1	53	Edge 4	0mm	Speed	State 3	167300	836.5	21.48	21.50	1.005	0.02	0.001	0.001
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Hong-Bo	State 1	502000	2510	23.45	24.00	1.135	0.11	0.324	0.368
	FR1 n7_Main	20M	BPSK	50	28	Bottom of Laptop	15mm	Hong-Bo	State 1	502000	2510	23.35	24.00	1.161	0.15	0.309	0.359
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	502000	2510	16.08	16.50	1.102	0.08	0.804	0.885
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	507000	2535	15.92	16.50	1.143	0.12	0.775	0.886
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	512000	2560	16.04	16.50	1.112	0.1	0.823	0.915
	FR1 n7_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	502000	2510	16.05	16.50	1.109	0.19	0.762	0.845
	FR1 n7_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	507000	2535	15.83	16.50	1.167	-0.01	0.757	0.883
	FR1 n7_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	512000	2560	15.91	16.50	1.146	-0.09	0.788	0.903
	FR1 n7_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	502000	2510	15.97	16.50	1.130	-0.05	0.750	0.847
	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	502000	2510	14.33	14.50	1.040	-0.12	0.962	1.001
	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	507000	2535	14.25	14.50	1.059	0.15	0.982	1.040
	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	512000	2560	14.21	14.50	1.069	0.08	0.959	1.025
	FR1 n7_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	502000	2510	14.29	14.50	1.050	-0.19	0.914	0.959
	FR1 n7_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	507000	2535	14.02	14.50	1.117	0.18	0.902	1.007
	FR1 n7_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	512000	2560	14.11	14.50	1.094	0.05	0.893	0.977
	FR1 n7_Main	20M	BPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	502000	2510	14.17	14.50	1.079	-0.15	0.911	0.983
	FR1 n7_Main	20M	BPSK	1	53	Edge 3	0mm	Hong-Bo	State 3	502000	2510	14.33	14.50	1.040	-0.15	0.154	0.160
	FR1 n7_Main	20M	BPSK	50	28	Edge 3	0mm	Hong-Bo	State 3	502000	2510	14.29	14.50	1.050	-0.15	0.138	0.145
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Speed	State 1	502000	2510	23.45	24.00	1.135	0.11	0.408	0.463
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	512000	2560	16.04	16.50	1.112	-0.06	1.010	1.123
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	502000	2510	16.08	16.50	1.102	0.02	0.994	1.095
	FR1 n7_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	507000	2535	15.92	16.50	1.143	0.12	0.966	1.104
17	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	507000	2535	14.25	14.50	1.059	0.04	1.110	1.176
	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	502000	2510	14.33	14.50	1.040	-0.19	1.020	1.061
	FR1 n7_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	512000	2560	14.21	14.50	1.069	-0.03	1.060	1.133
	FR1 n7_Main	20M	BPSK	1	53	Edge 3	0mm	Speed	State 3	502000	2510	14.33	14.50	1.040	0.18	0.183	0.190



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Hong-Bo	State 1	381000	1905	23.47	24.00	1.130	0.07	0.234	0.264
	FR1 n25_Main	20M	BPSK	50	28	Bottom of Laptop	15mm	Hong-Bo	State 1	381000	1905	23.46	24.00	1.132	0.01	0.218	0.247
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	381000	1905	17.49	18.00	1.125	-0.12	0.893	1.004
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	372000	1860	17.29	18.00	1.178	-0.14	0.870	1.025
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	376500	1882.5	17.47	18.00	1.130	0.14	0.942	1.065
	FR1 n25_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	381000	1905	17.32	18.00	1.169	-0.06	0.861	1.007
	FR1 n25_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	372000	1860	17.14	18.00	1.219	-0.16	0.854	1.041
	FR1 n25_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	376500	1882.5	17.24	18.00	1.191	0.03	0.878	1.046
	FR1 n25_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	381000	1905	17.28	18.00	1.180	0.09	0.832	0.982
	FR1 n25_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	381000	1905	16.45	17.00	1.135	0.16	0.643	0.730
	FR1 n25_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	381000	1905	16.28	17.00	1.180	-0.05	0.618	0.729
	FR1 n25_Main	20M	BPSK	1	53	Edge 3	0mm	Hong-Bo	State 3	381000	1905	16.45	17.00	1.135	-0.1	0.205	0.233
	FR1 n25_Main	20M	BPSK	50	28	Edge 3	0mm	Hong-Bo	State 3	381000	1905	16.28	17.00	1.180	-0.09	0.187	0.221
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Speed	State 1	381000	1905	23.47	24.00	1.130	0.01	0.261	0.295
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	376500	1882.5	17.47	18.00	1.130	-0.18	0.950	1.073
	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	381000	1905	17.49	18.00	1.125	0.08	0.960	1.080
18	FR1 n25_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	372000	1860	17.29	18.00	1.178	-0.01	1.000	1.178
	FR1 n25_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	381000	1905	16.45	17.00	1.135	0.02	0.929	1.054
	FR1 n25_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	372000	1860	16.14	17.00	1.219	0.08	0.944	1.151
	FR1 n25_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	376500	1882.5	16.43	17.00	1.140	-0.03	0.886	1.010
	FR1 n25_Main	20M	BPSK	50	28	Bottom Face	0mm	Speed	State 3	381000	1905	16.28	17.00	1.180	0.09	0.885	1.045
	FR1 n25_Main	20M	BPSK	50	28	Bottom Face	0mm	Speed	State 3	372000	1860	15.90	17.00	1.288	0.11	0.877	1.130
	FR1 n25_Main	20M	BPSK	50	28	Bottom Face	0mm	Speed	State 3	376500	1882.5	16.20	17.00	1.202	0.15	0.883	1.062
	FR1 n25_Main	20M	BPSK	100	0	Bottom Face	0mm	Speed	State 3	376500	1882.5	16.20	17.00	1.202	0.09	0.862	1.036
	FR1 n25_Main	20M	BPSK	1	53	Edge 3	0mm	Speed	State 3	381000	1905	16.45	17.00	1.135	0.01	0.273	0.310
	FR1 n30_Main	10M	BPSK	1	26	Bottom of Laptop	15mm	Hong-Bo	State 1	462000	2310	22.56	23.00	1.107	0.09	0.275	0.304
	FR1 n30_Main	10M	BPSK	25	14	Bottom of Laptop	15mm	Hong-Bo	State 1	462000	2310	22.43	23.00	1.140	0.02	0.241	0.275
	FR1 n30_Main	10M	BPSK	1	26	Bottom of Laptop	0mm	Hong-Bo	State 2	462000	2310	18.32	19.00	1.169	-0.01	0.941	1.100
	FR1 n30_Main	10M	BPSK	25	14	Bottom of Laptop	0mm	Hong-Bo	State 2	462000	2310	18.23	19.00	1.194	0.12	0.903	1.078
	FR1 n30_Main	10M	BPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	462000	2310	18.01	19.00	1.256	0.01	0.832	1.045
	FR1 n30_Main	10M	BPSK	1	26	Bottom Face	0mm	Hong-Bo	State 3	462000	2310	16.42	17.00	1.143	-0.17	0.939	1.073
	FR1 n30_Main	10M	BPSK	25	14	Bottom Face	0mm	Hong-Bo	State 3	462000	2310	16.14	17.00	1.219	-0.05	0.827	1.008
	FR1 n30_Main	10M	BPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	462000	2310	16.01	17.00	1.256	0.17	0.819	1.029
	FR1 n30_Main	10M	BPSK	1	26	Edge 3	0mm	Hong-Bo	State 3	462000	2310	16.42	17.00	1.143	-0.15	0.126	0.144
	FR1 n30_Main	10M	BPSK	25	14	Edge 3	0mm	Hong-Bo	State 3	462000	2310	16.14	17.00	1.219	0.05	0.116	0.141
	FR1 n30_Main	10M	BPSK	1	26	Bottom of Laptop	15mm	Speed	State 1	462000	2310	22.56	23.00	1.107	0.06	0.322	0.356
	FR1 n30_Main	10M	BPSK	1	26	Bottom of Laptop	0mm	Speed	State 2	462000	2310	18.32	19.00	1.169	-0.01	0.828	0.968
19	FR1 n30_Main	10M	BPSK	1	26	Bottom Face	0mm	Speed	State 3	462000	2310	16.42	17.00	1.143	0.06	1.030	1.177
	FR1 n30_Main	10M	BPSK	1	26	Edge 3	0mm	Speed	State 3	462000	2310	16.42	17.00	1.143	-0.08	0.158	0.181



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n66_Main	40M	BPSK	1	108	Bottom of Laptop	15mm	Hong-Bo	State 1	349000	1745	23.41	24.00	1.146	0.15	0.315	0.361
	FR1 n66_Main	40M	BPSK	108	54	Bottom of Laptop	15mm	Hong-Bo	State 1	349000	1745	23.39	24.00	1.151	0.06	0.301	0.346
	FR1 n66_Main	40M	BPSK	1	108	Bottom of Laptop	0mm	Hong-Bo	State 2	349000	1745	14.81	15.50	1.172	-0.08	0.383	0.449
	FR1 n66_Main	40M	BPSK	108	54	Bottom of Laptop	0mm	Hong-Bo	State 2	349000	1745	14.70	15.50	1.202	-0.16	0.307	0.369
	FR1 n66_Main	40M	BPSK	1	108	Bottom Face	0mm	Hong-Bo	State 3	349000	1745	14.81	15.50	1.172	-0.16	0.574	0.673
	FR1 n66_Main	40M	BPSK	108	54	Bottom Face	0mm	Hong-Bo	State 3	349000	1745	14.70	15.50	1.202	-0.11	0.539	0.648
	FR1 n66_Main	40M	BPSK	1	108	Edge 3	0mm	Hong-Bo	State 3	349000	1745	14.81	15.50	1.172	-0.02	0.089	0.104
	FR1 n66_Main	40M	BPSK	108	54	Edge 3	0mm	Hong-Bo	State 3	349000	1745	14.70	15.50	1.202	0.02	0.076	0.091
	FR1 n66_Main	40M	BPSK	1	108	Bottom of Laptop	15mm	Speed	State 1	349000	1745	23.41	24.00	1.146	0.04	0.662	0.758
20	FR1 n66_Main	40M	BPSK	1	108	Bottom of Laptop	0mm	Speed	State 2	349000	1745	14.81	15.50	1.172	0	0.914	1.071
	FR1 n66_Main	40M	BPSK	108	54	Bottom of Laptop	0mm	Speed	State 2	349000	1745	14.70	15.50	1.202	0.06	0.885	1.064
	FR1 n66_Main	40M	BPSK	216	0	Bottom of Laptop	0mm	Speed	State 2	349000	1745	14.30	15.50	1.318	0.14	0.802	1.057
	FR1 n66_Main	40M	BPSK	1	108	Bottom Face	0mm	Speed	State 3	349000	1745	14.81	15.50	1.172	0.09	0.893	1.047
	FR1 n66_Main	40M	BPSK	108	54	Bottom Face	0mm	Speed	State 3	349000	1745	14.70	15.50	1.202	0.14	0.843	1.014
	FR1 n66_Main	40M	BPSK	216	0	Bottom Face	0mm	Speed	State 3	349000	1745	14.30	15.50	1.318	0.03	0.792	1.044
	FR1 n66_Main	40M	BPSK	1	108	Edge 3	0mm	Speed	State 3	349000	1745	14.81	15.50	1.172	0.06	0.143	0.168
	FR1 n71_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Hong-Bo	State 1	136100	680.5	23.49	25.00	1.416	-0.17	0.156	0.221
	FR1 n71_Main	20M	BPSK	50	28	Bottom of Laptop	15mm	Hong-Bo	State 1	136100	680.5	23.30	25.00	1.479	-0.02	0.107	0.158
	FR1 n71_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Hong-Bo	State 2	136100	680.5	22.56	23.50	1.242	-0.05	0.792	0.983
	FR1 n71_Main	20M	BPSK	50	28	Bottom of Laptop	0mm	Hong-Bo	State 2	136100	680.5	22.30	23.50	1.318	0.1	0.743	0.979
	FR1 n71_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Hong-Bo	State 2	136100	680.5	22.15	23.00	1.216	-0.17	0.717	0.872
	FR1 n71_Main	20M	BPSK	1	53	Bottom Face	0mm	Hong-Bo	State 3	136100	680.5	22.56	23.00	1.107	-0.16	0.950	1.051
	FR1 n71_Main	20M	BPSK	50	28	Bottom Face	0mm	Hong-Bo	State 3	136100	680.5	22.30	23.00	1.175	-0.14	0.887	1.042
	FR1 n71_Main	20M	BPSK	100	0	Bottom Face	0mm	Hong-Bo	State 3	136100	680.5	22.15	23.00	1.216	-0.11	0.843	1.025
	FR1 n71_Main	20M	BPSK	1	53	Edge 1	0mm	Hong-Bo	State 3	136100	680.5	22.56	23.00	1.107	0	< 0.001	< 0.001
	FR1 n71_Main	20M	BPSK	50	28	Edge 1	0mm	Hong-Bo	State 3	136100	680.5	22.30	23.00	1.175	0	< 0.001	< 0.001
	FR1 n71_Main	20M	BPSK	1	53	Edge 2	0mm	Hong-Bo	State 3	136100	680.5	22.56	23.00	1.107	-0.01	0.001	0.001
	FR1 n71_Main	20M	BPSK	50	28	Edge 2	0mm	Hong-Bo	State 3	136100	680.5	22.30	23.00	1.175	-0.17	0.001	0.001
	FR1 n71_Main	20M	BPSK	1	53	Edge 3	0mm	Hong-Bo	State 3	136100	680.5	22.56	23.00	1.107	0.09	0.296	0.328
	FR1 n71_Main	20M	BPSK	50	28	Edge 3	0mm	Hong-Bo	State 3	136100	680.5	22.30	23.00	1.175	0.11	0.272	0.320
	FR1 n71_Main	20M	BPSK	1	53	Edge 4	0mm	Hong-Bo	State 3	136100	680.5	22.56	23.00	1.107	-0.1	0.001	0.001
	FR1 n71_Main	20M	BPSK	50	28	Edge 4	0mm	Hong-Bo	State 3	136100	680.5	22.30	23.00	1.175	-0.05	0.001	0.001
	FR1 n71_Main	20M	BPSK	1	53	Bottom of Laptop	15mm	Speed	State 1	136100	680.5	23.49	25.00	1.416	0.03	0.183	0.259
	FR1 n71_Main	20M	BPSK	1	53	Bottom of Laptop	0mm	Speed	State 2	136100	680.5	22.56	23.50	1.242	-0.01	0.863	1.072
21	FR1 n71_Main	20M	BPSK	1	53	Bottom Face	0mm	Speed	State 3	136100	680.5	22.56	23.00	1.107	0.06	1.060	1.173
	FR1 n71_Main	20M	BPSK	1	53	Edge 1	0mm	Speed	State 3	136100	680.5	22.56	23.00	1.107	0	< 0.001	< 0.001
	FR1 n71_Main	20M	BPSK	1	53	Edge 2	0mm	Speed	State 3	136100	680.5	22.56	23.00	1.107	-0.02	0.001	0.001
	FR1 n71_Main	20M	BPSK	1	53	Edge 3	0mm	Speed	State 3	136100	680.5	22.56	23.00	1.107	0.19	0.378	0.418
	FR1 n71_Main	20M	BPSK	1	53	Edge 4	0mm	Speed	State 3	136100	680.5	22.56	23.00	1.107	-0.07	0.001	0.001



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n38_Main	20M	BPSK	1	26	Bottom of Laptop	15mm	Speed	State 1	519000	2595	23.45	24.00	1.135	-0.11	0.302	0.343
	FR1 n38_Main	20M	BPSK	25	13	Bottom of Laptop	15mm	Speed	State 1	519000	2595	23.43	23.50	1.016	0.07	0.254	0.258
	FR1 n38_Main	20M	BPSK	1	26	Bottom of Laptop	0mm	Hong-Bo	State 2	519000	2595	15.97	16.50	1.130	0.01	0.939	1.061
	FR1 n38_Main	20M	BPSK	25	0	Bottom of Laptop	0mm	Hong-Bo	State 2	519000	2595	15.95	16.50	1.135	0.12	0.927	1.052
	FR1 n38_Main	20M	BPSK	50	0	Bottom of Laptop	0mm	Hong-Bo	State 2	519000	2595	15.88	16.50	1.153	-0.08	0.902	1.040
	FR1 n38_Main	20M	BPSK	1	26	Bottom Face	0mm	Hong-Bo	State 3	519000	2595	13.78	14.50	1.180	0.08	0.815	0.962
	FR1 n38_Main	20M	BPSK	25	0	Bottom Face	0mm	Hong-Bo	State 3	519000	2595	13.66	14.50	1.213	-0.1	0.756	0.917
	FR1 n38_Main	20M	BPSK	50	0	Bottom Face	0mm	Hong-Bo	State 3	519000	2595	13.60	14.50	1.230	-0.01	0.743	0.914
	FR1 n38_Main	20M	BPSK	1	26	Edge 3	0mm	Hong-Bo	State 3	519000	2595	13.78	14.50	1.180	0.08	0.116	0.136
	FR1 n38_Main	20M	BPSK	25	0	Edge 3	0mm	Hong-Bo	State 3	519000	2595	13.66	14.50	1.213	0.1	0.108	0.131
	FR1 n38_Main	20M	BPSK	1	26	Bottom of Laptop	15mm	Speed	State 1	519000	2595	23.45	24.00	1.135	0.09	0.384	0.436
22	FR1 n38_Main	20M	BPSK	1	26	Bottom of Laptop	0mm	Speed	State 2	519000	2595	15.97	16.50	1.130	0	1.050	1.186
	FR1 n38_Main	20M	BPSK	1	26	Bottom Face	0mm	Speed	State 3	519000	2595	13.78	14.50	1.180	0.05	0.988	1.166
	FR1 n38_Main	20M	BPSK	1	26	Edge 3	0mm	Speed	State 3	519000	2595	13.78	14.50	1.180	0.02	0.154	0.182
	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Hong-Bo	State 1	518598	2592.99	22.91	24.00	1.285	0.08	0.419	0.539
	FR1 n41_MIMO2	100M	BPSK	135	69	Bottom of Laptop	14mm	Hong-Bo	State 1	518598	2592.99	22.86	23.50	1.159	-0.13	0.364	0.422
	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Hong-Bo	State 2	518598	2592.99	13.92	14.50	1.143	-0.04	0.830	0.949
	FR1 n41_MIMO2	100M	BPSK	135	69	Bottom of Laptop	0mm	Hong-Bo	State 2	518598	2592.99	13.90	14.50	1.148	0.05	0.812	0.932
	FR1 n41_MIMO2	100M	BPSK	270	0	Bottom of Laptop	0mm	Hong-Bo	State 2	518598	2592.99	13.87	14.50	1.156	-0.11	0.798	0.923
	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Hong-Bo	State 3	518598	2592.99	12.98	13.50	1.127	-0.06	0.102	0.115
	FR1 n41_MIMO2	100M	BPSK	135	69	Bottom Face	0mm	Hong-Bo	State 3	518598	2592.99	12.89	13.50	1.151	0.03	0.089	0.102
	FR1 n41_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Hong-Bo	State 3	518598	2592.99	12.98	13.50	1.127	0.06	0.094	0.106
	FR1 n41_MIMO2	100M	BPSK	135	69	Edge 1	0mm	Hong-Bo	State 3	518598	2592.99	12.89	13.50	1.151	0.09	0.091	0.105
	FR1 n41_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Hong-Bo	State 3	518598	2592.99	12.98	13.50	1.127	-0.13	0.810	0.913
	FR1 n41_MIMO2	100M	BPSK	135	69	Edge 2	0mm	Hong-Bo	State 3	518598	2592.99	12.89	13.50	1.151	0.12	0.789	0.908
	FR1 n41_MIMO2	100M	BPSK	270	0	Edge 2	0mm	Hong-Bo	State 3	518598	2592.99	12.84	13.50	1.164	-0.01	0.762	0.887
	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Speed	State 1	518598	2592.99	22.91	24.00	1.285	0.07	0.520	0.668
23	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Speed	State 2	518598	2592.99	13.92	14.50	1.143	0.03	0.955	1.091
	FR1 n41_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Speed	State 3	518598	2592.99	12.98	13.50	1.127	0.09	0.205	0.231
	FR1 n41_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Speed	State 3	518598	2592.99	12.98	13.50	1.127	0.15	0.112	0.126
	FR1 n41_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Speed	State 3	518598	2592.99	12.98	13.50	1.127	-0.08	0.910	1.026



FCC SAR TEST REPORT

Report No. : FA212742-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Hong-Bo	State 1	656000	3840	23.21	24.00	1.199	0.05	0.252	0.302
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	14mm	Hong-Bo	State 1	656000	3840	22.48	24.00	1.419	-0.04	0.203	0.288
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Hong-Bo	State 2	656000	3840	14.76	15.50	1.186	-0.01	0.632	0.749
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	0mm	Hong-Bo	State 2	656000	3840	14.70	15.50	1.202	0.07	0.608	0.731
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Hong-Bo	State 3	656000	3840	14.76	15.50	1.186	0.16	0.130	0.154
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom Face	0mm	Hong-Bo	State 3	656000	3840	14.70	15.50	1.202	-0.13	0.116	0.139
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Hong-Bo	State 3	656000	3840	14.76	15.50	1.186	0.17	0.061	0.072
	FR1 n77_MIMO2	100M	BPSK	135	69	Edge 1	0mm	Hong-Bo	State 3	656000	3840	14.70	15.50	1.202	0.06	0.051	0.061
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Hong-Bo	State 3	656000	3840	14.76	15.50	1.186	0.19	0.832	0.987
	FR1 n77_MIMO2	100M	BPSK	135	69	Edge 2	0mm	Hong-Bo	State 3	656000	3840	14.70	15.50	1.202	-0.05	0.816	0.981
	FR1 n77_MIMO2	100M	BPSK	270	0	Edge 2	0mm	Hong-Bo	State 3	656000	3840	14.64	15.50	1.219	0.01	0.801	0.976
	FR1 n77_HPUE_MIMO2	100M	BPSK	1	1	Edge 2	0mm	Hong-Bo	State 3	656000	3840	17.90	18.50	1.148	0.06	0.803	0.922
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Speed	State 1	656000	3840	23.21	24.00	1.199	0.05	0.391	0.469
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Speed	State 2	656000	3840	14.76	15.50	1.186	-0.04	0.849	1.007
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	0mm	Speed	State 2	656000	3840	14.70	15.50	1.202	0.09	0.816	0.981
	FR1 n77_MIMO2	100M	BPSK	270	0	Bottom of Laptop	0mm	Speed	State 2	656000	3840	14.64	15.50	1.219	-0.14	0.796	0.970
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Speed	State 3	656000	3840	14.76	15.50	1.186	-0.12	0.177	0.210
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Speed	State 3	656000	3840	14.76	15.50	1.186	0.14	0.089	0.106
24	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Speed	State 3	656000	3840	14.76	15.50	1.186	-0.02	0.947	1.123
	FR1 n77_HPUE_MIMO2	100M	BPSK	1	1	Edge 2	0mm	Speed	State 3	656000	3840	17.90	18.50	1.148	-0.15	0.923	1.060
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Hong-Bo	State 1	633332	3499.98	23.20	24.00	1.202	-0.1	0.189	0.227
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	14mm	Hong-Bo	State 1	633332	3499.98	22.48	24.00	1.419	0.03	0.102	0.145
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Hong-Bo	State 2	633332	3499.98	14.72	15.50	1.197	0.05	0.558	0.668
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	0mm	Hong-Bo	State 2	633332	3499.98	14.71	15.50	1.199	-0.03	0.532	0.638
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Hong-Bo	State 3	633332	3499.98	14.72	15.50	1.197	-0.09	0.116	0.139
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom Face	0mm	Hong-Bo	State 3	633332	3499.98	14.71	15.50	1.199	0.12	0.101	0.121
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Hong-Bo	State 3	633332	3499.98	14.72	15.50	1.197	0.07	0.055	0.066
	FR1 n77_MIMO2	100M	BPSK	135	69	Edge 1	0mm	Hong-Bo	State 3	633332	3499.98	14.71	15.50	1.199	0.01	0.041	0.049
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Hong-Bo	State 3	633332	3499.98	14.72	15.50	1.197	0.03	0.785	0.939
	FR1 n77_MIMO2	100M	BPSK	135	69	Edge 2	0mm	Hong-Bo	State 3	633332	3499.98	14.71	15.50	1.199	-0.09	0.761	0.913
	FR1 n77_MIMO2	100M	BPSK	270	0	Edge 2	0mm	Hong-Bo	State 3	633332	3499.98	14.64	15.50	1.219	0.14	0.733	0.894
	FR1 n77_HPUE_MIMO2	100M	BPSK	1	1	Edge 2	0mm	Hong-Bo	State 3	633332	3499.98	17.81	18.50	1.172	-0.09	0.735	0.862
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	14mm	Speed	State 1	633332	3499.98	23.20	24.00	1.202	0.08	0.277	0.333
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom of Laptop	0mm	Speed	State 2	633332	3499.98	14.72	15.50	1.197	-0.08	0.762	0.912
	FR1 n77_MIMO2	100M	BPSK	135	69	Bottom of Laptop	0mm	Speed	State 2	633332	3499.98	14.71	15.50	1.199	0.01	0.731	0.877
	FR1 n77_MIMO2	100M	BPSK	270	0	Bottom of Laptop	0mm	Speed	State 2	633332	3499.98	14.64	15.50	1.219	-0.16	0.708	0.863
	FR1 n77_MIMO2	100M	BPSK	1	137	Bottom Face	0mm	Speed	State 3	633332	3499.98	14.72	15.50	1.197	0.11	0.124	0.148
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 1	0mm	Speed	State 3	633332	3499.98	14.72	15.50	1.197	0.14	0.071	0.085
	FR1 n77_MIMO2	100M	BPSK	1	137	Edge 2	0mm	Speed	State 3	633332	3499.98	14.72	15.50	1.197	0.07	0.932	1.115
	FR1 n77_HPUE_MIMO2	100M	BPSK	1	1	Edge 2	0mm	Speed	State 3	633332	3499.98	17.81	18.50	1.172	0.17	0.894	1.048

**15.2 Repeated SAR Measurement**

No.	Band	Mode	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	1513	1752.6	15.92	16.00	1.019			-0.06	1.140	-	1.161
2nd	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Speed	State 3	1513	1752.6	15.92	16.00	1.019			0.07	1.070	1.065	1.090
1st	LTE Band 14_Main	10M_QPSK_1_0	Bottom of Laptop	0mm	Speed	State 2	23330	793	22.31	22.50	1.045			0.03	1.110	-	1.160
2nd	LTE Band 14_Main	10M_QPSK_1_0	Bottom of Laptop	0mm	Speed	State 2	23330	793	22.31	22.50	1.045			0.14	1.040	1.067	1.087
1st	LTE Band 48C_MIMO2	20M_QPSK_1_0	Edge 2	0mm	Speed	State 3	56640	3690	11.33	12.00	1.167	62.9	1.006	0.12	0.825	-	0.968
2nd	LTE Band 48C_MIMO2	20M_QPSK_1_0	Edge 2	0mm	Speed	State 3	56640	3690	11.33	12.00	1.167	62.9	1.006	0.06	0.792	1.042	0.930
1st	FR1 n5_Main	20M_BPSK_1_53	Bottom of Laptop	0mm	Speed	State 2	167300	836.5	22.42	22.50	1.019			-0.06	1.130	-	1.151
2nd	FR1 n5_Main	20M_BPSK_1_53	Bottom of Laptop	0mm	Speed	State 2	167300	836.5	22.42	22.50	1.019			0.14	1.060	1.066	1.080
1st	FR1 n7_Main	20M_BPSK_1_53	Bottom Face	0mm	Speed	State 3	507000	2535	14.25	14.50	1.059			0.04	1.110	-	1.176
2nd	FR1 n7_Main	20M_BPSK_1_53	Bottom Face	0mm	Speed	State 3	507000	2535	14.25	14.50	1.059			0.16	1.060	1.047	1.123
1st	FR1 n25_Main	20M_BPSK_1_53	Bottom of Laptop	0mm	Speed	State 2	372000	1860	17.29	18.00	1.178			-0.01	1.000	-	1.178
2nd	FR1 n25_Main	20M_BPSK_1_53	Bottom of Laptop	0mm	Speed	State 2	372000	1860	17.29	18.00	1.178			0.05	0.975	1.026	1.148
1st	FR1 n30_Main	10M_BPSK_1_26	Bottom Face	0mm	Speed	State 3	462000	2310	16.42	17.00	1.143			0.06	1.030	-	1.177
2nd	FR1 n30_Main	10M_BPSK_1_26	Bottom Face	0mm	Speed	State 3	462000	2310	16.42	17.00	1.143			-0.11	0.986	1.045	1.127
1st	FR1 n77_MIMO2	100M_BPSK_1_137	Edge 2	0mm	Speed	State 3	656000	3840	14.76	15.50	1.186			-0.02	0.947	-	1.123
2nd	FR1 n77_MIMO2	100M_BPSK_1_137	Edge 2	0mm	Speed	State 3	656000	3840	14.76	15.50	1.186			0.08	0.932	1.016	1.105
1st	FR1 n77_MIMO2	100M_BPSK_1_137	Edge 2	0mm	Speed	State 3	633332	3499.98	14.72	15.50	1.197			0.07	0.932	-	1.115
2nd	FR1 n77_MIMO2	100M_BPSK_1_137	Edge 2	0mm	Speed	State 3	633332	3499.98	14.72	15.50	1.197			0.01	0.912	1.022	1.091

General Note:

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

15.3 FR1 n77 Power Class 2 and Power Class 3 Linearity

This device support Power Class 2 and Power Class 3 operations for FR1 n77. The highest available duty cycle for Power Class 2 operation is 50% using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each FR1 configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with $< 10\%$ discrepancy between power classes and all reported SAR are < 1.4 W/kg, Separate SAR testing for Power Class 2 is not required.

Use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is $< 10\%$

FR1 n77_MIMO2 Ant	FR1 n77	FR1 n77
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	15.5	18.5
Reported 1g SAR (W/kg)	1.123	1.06
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	35.48	35.40
Linearity SAR(W/kg)	1.12	
% deviation from expected linearity		-5.39%

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
1.	WWAN Main + WWAN MIMO2 + 2.4GHz WLAN Ant 1 + 2.4GHz WLAN Ant 2	Yes
2.	WWAN Main + WWAN MIMO2 + 2.4GHz WLAN Ant 1 + Bluetooth Ant 2	Yes
3.	WWAN Main + WWAN MIMO2 + 5G/6GHz WLAN Ant 1 + 5G/6GHz WLAN Ant 2 + Bluetooth Ant 2	Yes

General Note:

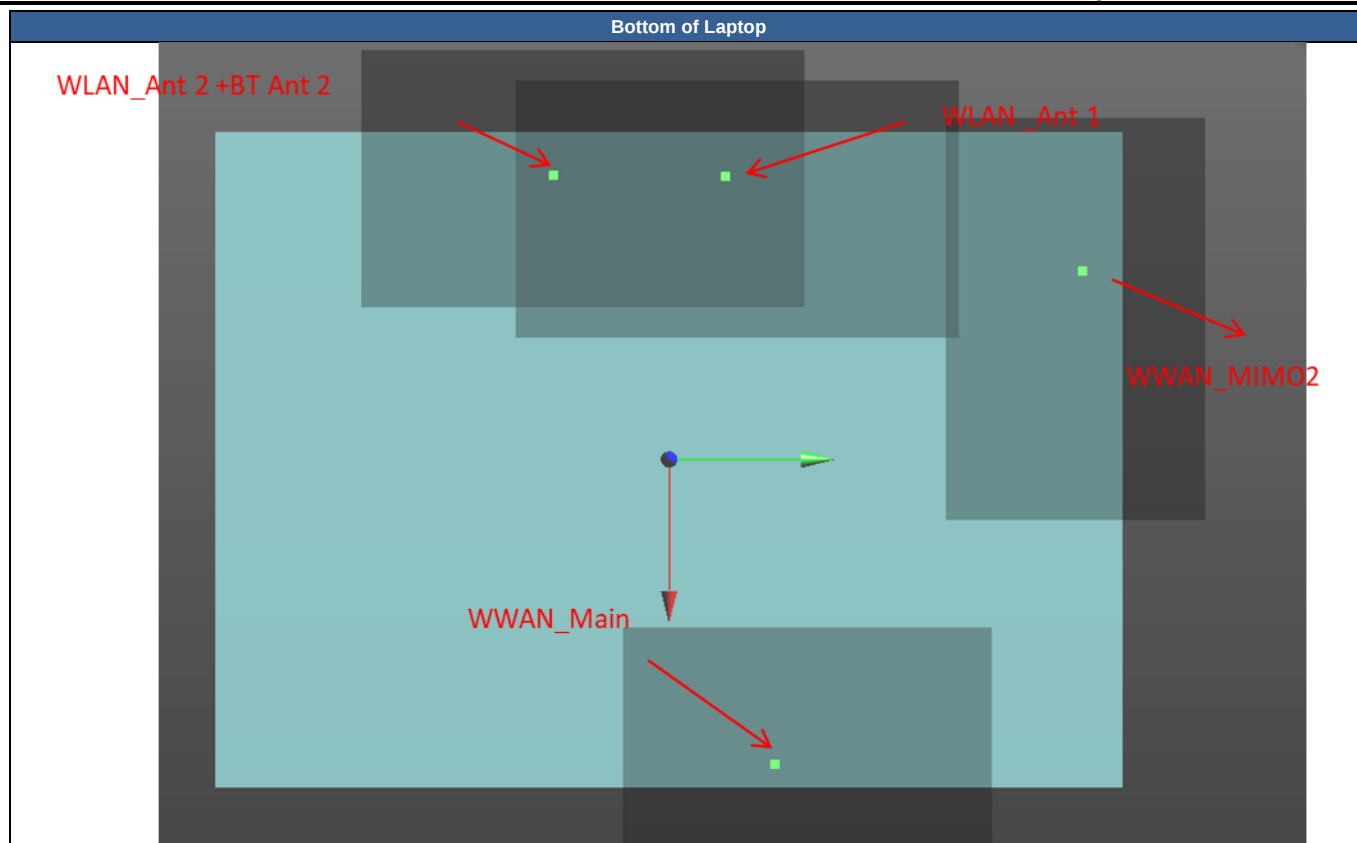
- The Intel AX211D2W WLAN/BT module is integrated into DELL P35S, P35S001 host, the WLAN/BT maximum output power is referenced from Sporton FCC SAR report, report no.: FA212106-03 (FCC ID: PD9AX211D2); the SAR results are also used to perform simultaneous transmission analysis.
- The Sim-Tx analysis for EN-DC active is choose the worst case standalone SAR from the WWAN main and MIMO antenna within the exposure positions, regardless of whether the EN-DC combinations. Therefore, the following summations represent the absolute worst cases for simultaneous transmission for this device and it is conservative.
- 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 $< 1.6\text{W/kg}$.
 - $\text{SPLSR} = (\text{SAR1} + \text{SAR2})^{1.5} / (\text{min. separation distance, mm})$, 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 $\text{SPLSR} \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band SAR $< 1.6\text{W/kg}$.
 - The SPLSR calculated results please refer to section 16.2.

16.1 Body Exposure Conditions

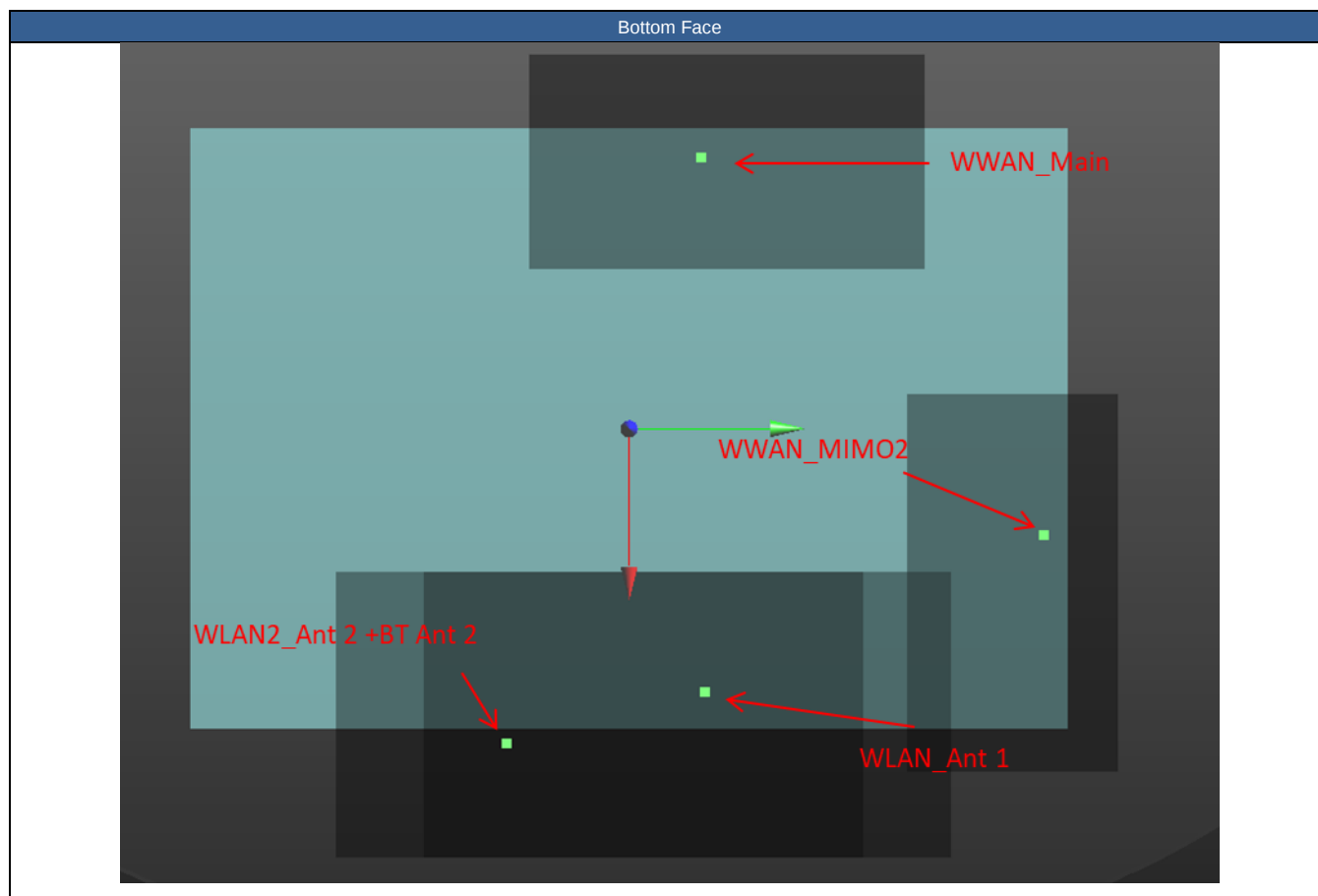
Exposure Position	1	2	3	4	5	6	7	8	1+2+3+7 Summed 1g SAR (W/kg)	1+2+3+4 Summed 1g SAR (W/kg)	1+2+5+6+7 Summed 1g SAR (W/kg)	1+2+7+8 Summed 1g SAR (W/kg)	SPLSR	Case No
	Maximum WWAN Main 1g SAR (W/kg)	Maximum WWAN MIMO2 1g SAR (W/kg)	WLAN2.4GHz Ant 1 1g SAR (W/kg)	WLAN2.4GHz Ant 2 1g SAR (W/kg)	WLAN5/6GHz Ant 1 1g SAR (W/kg)	WLAN5/6GHz Ant 2 1g SAR (W/kg)	Bluetooth Ant 2 1g SAR (W/kg)	WLAN5/6GHz Ant 1+2 1g SAR (W/kg)						
Bottom of Laptop at 0mm	1.187	1.091	0.826	1.055	1.174	1.090	0.569	0.825	3.673	4.159		3.672	0.04	Case 1
Bottom Face at 0mm	1.178	0.276	0.232	0.426	0.389	0.337	0.104		1.686	2.112	2.180		0.01	Case 2
Edge 1 at 0mm	0.001	0.283	1.189	1.162	1.081	0.975	0.124		1.473	2.635	2.340		0.04	Case 3
Edge 2 at 0mm	0.001	1.123							1.124	1.124	1.124			
Edge 3 at 0mm	0.683								0.683	0.683	0.683			
Edge 4 at 0mm	0.001								0.001	0.001	0.001			

**16.2 SPLSR Evaluation and Analysis****General Note:**

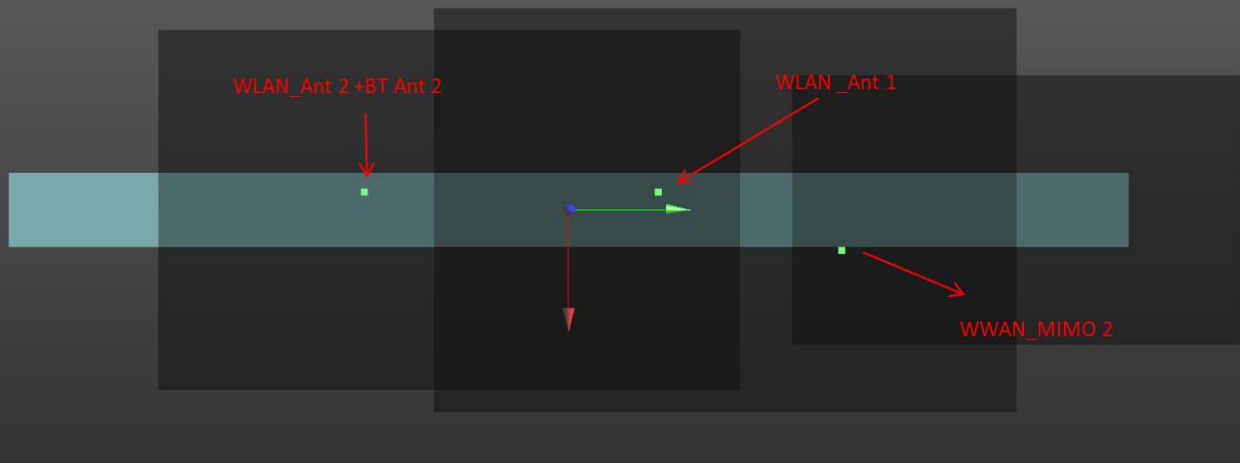
1. Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating 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.
2. $SPLSR = (SAR_1 + SAR_2)^{1.5} / (min. \text{ separation distance, mm})$. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary
3. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.



	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 1	WLAN2.4GHz_Ant 1	Bottom of Laptop	0.826	0	-93.2	23.4	2.72	69.4	1.88	0.04	Not required
	WLAN2.4GHz_Ant 2		1.055	0	-95.4	-46	2.79				
	WLAN2.4GHz_Ant 1	Bottom of Laptop	0.826	0	-93.2	23.4	2.72	198.1	2.01	0.01	Not required
	Maximum WWAN Main		1.187	0	104.8	28.1	-1.34				
	WLAN2.4GHz_Ant 1	Bottom of Laptop	0.826	0	-93.2	23.4	2.72	113.4	1.92	0.02	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				
	WLAN2.4GHz_Ant 2	Bottom of Laptop	1.055	0	-95.4	-46	2.79	213.5	2.24	0.02	Not required
	Maximum WWAN Main		1.187	0	104.8	28.1	-1.34				
	WLAN2.4GHz_Ant 2	Bottom of Laptop	1.055	0	-95.4	-46	2.79	181.2	2.15	0.02	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				
	Maximum WWAN Main	Bottom of Laptop	1.187	0	104.8	28.1	-1.34	193.3	2.28	0.02	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				
	WLAN2.4GHz_Ant 1	Bottom of Laptop	0.826	0	-93.2	23.4	2.72	69.4	1.40	0.02	Not required
	Bluetooth_Ant 2		0.569	0	-95.4	-46	2.79				
	Bluetooth_Ant 2	Bottom of Laptop	0.569	0	-95.4	-46	2.79	213.5	1.76	0.01	Not required
	Maximum WWAN Main		1.187	0	104.8	28.1	-1.34				
	Bluetooth_Ant 2	Bottom of Laptop	0.569	0	-95.4	-46	2.79	181.2	1.66	0.01	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				
	WLAN5/6GHz_Ant 1+2	Bottom of Laptop	0.825	0	-96.39	9.2	1.28	202.1	2.01	0.01	Not required
	Maximum WWAN Main		1.187	0	104.8	28.1	-1.34				
	WLAN5/6GHz_Ant 1+2	Bottom of Laptop	0.825	0	-96.39	9.2	1.28	127.9	1.92	0.02	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				
	WLAN5GHz_Ant 1+2+BT Ant 2	Bottom of Laptop	1.394	0	-97.17	-30.79	0.9	210.4	2.58	0.02	Not required
	Maximum WWAN Main		1.187	0	104.8	28.1	-1.34				
	WLAN5GHz_Ant 1+2+BT Ant 2	Bottom of Laptop	1.394	0	-97.17	-30.79	0.9	166.7	2.49	0.02	Not required
	Maximum WWAN MIMO2		1.091	0	-58.6	131.4	2.34				



	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 2	WLAN2.4GHz_Ant 1	Bottom Face	0.232	0	122.6	4.8	3.92	44.3	0.66	0.01	Not required
	WLAN2.4GHz_Ant 2		0.426	0	94.4	-29.4	3.25				
	WLAN2.4GHz_Ant 1	Bottom Face	0.232	0	122.6	4.8	3.92	217.8	1.41	0.01	Not required
	Maximum WWAN Main		1.178	0	-93.4	32.5	-1.8				
	WLAN2.4GHz_Ant 1	Bottom Face	0.232	0	122.6	4.8	3.92	164.0	0.51	0.00	Not required
	Maximum WWAN MIMO2		0.276	0	34.2	142.8	-2.82				
	WLAN2.4GHz_Ant 2	Bottom Face	0.426	0	94.4	-29.4	3.25	197.8	1.60	0.01	Not required
	Maximum WWAN Main		1.178	0	-93.4	32.5	-1.8				
	WLAN2.4GHz_Ant 2	Bottom Face	0.426	0	94.4	-29.4	3.25	182.5	0.70	0.00	Not required
	Maximum WWAN MIMO2		0.276	0	34.2	142.8	-2.82				
	WLAN2.4GHz_Ant 1	Bottom Face	0.232	0	122.6	4.8	3.92	44.3	0.34	0.00	Not required
	Bluetooth_Ant 2		0.104	0	94.4	-29.4	3.25				
	Maximum WWAN Main	Bottom Face	1.178	0	-93.4	32.5	-1.8	168.7	1.45	0.01	Not required
	Maximum WWAN MIMO2		0.276	0	34.2	142.8	-2.82				
	WLAN5/6GHz_Ant 1	Bottom Face	0.389	0	89.6	25.2	2.67	69.4	0.83	0.01	Not required
	WLAN5/6GHz_Ant 2+BT Ant 2		0.441	0	98.8	-43.6	2.58				
	WLAN5/6GHz_Ant 1	Bottom Face	0.389	0	89.6	25.2	2.67	183.2	1.57	0.01	Not required
	Maximum WWAN Main		1.178	0	-93.4	32.5	-1.8				
	WLAN5/6GHz_Ant 1	Bottom Face	0.389	0	89.6	25.2	2.67	130.1	0.67	0.00	Not required
	Maximum WWAN MIMO2		0.276	0	34.2	142.8	-2.82				
	WLAN5/6GHz_Ant 2+BT Ant 2	Bottom Face	0.441	0	98.8	-43.6	2.58	206.8	1.62	0.01	Not required
	Maximum WWAN Main		1.178	0	-93.4	32.5	-1.8				
	WLAN5/6GHz_Ant 2+BT Ant 2	Bottom Face	0.441	0	98.8	-43.6	2.58	197.4	0.72	0.00	Not required
	Maximum WWAN MIMO2		0.276	0	34.2	142.8	-2.82				

Edge1


	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 3	WLAN2.4GHz_Ant 1	Edge1	1.189	0	-8.8	27	2.04	83.8	2.35	0.04	Not required
	WLAN2.4GHz_Ant 2		1.162	0	-6.8	-56.8	3.17				
	WLAN2.4GHz_Ant 1	Edge1	1.189	0	-8.8	27	2.04	52.9	1.47	0.03	Not required
	Maximum WWAN MIMO2		0.283	0	9.8	76.2	-3.77				
	WLAN2.4GHz_Ant 2	Edge1	1.162	0	-6.8	-56.8	3.17	134.2	1.45	0.01	Not required
	Maximum WWAN MIMO2		0.283	0	9.8	76.2	-3.77				
	WLAN5/6GHz_Ant 1	Edge1	1.081	0	-2.4	33.8	5.64	72.7	2.18	0.04	Not required
	WLAN5/6GHz_Ant 2+BT Ant 2		1.099	0	0.4	-38.8	5.55				
	WLAN5/6GHz_Ant 1	Edge1	1.189	0	-8.8	27	2.04	52.9	1.47	0.03	Not required
	Maximum WWAN MIMO2		0.283	0	9.8	76.2	-3.77				
	WLAN5/6GHz_Ant 2+BT Ant 2	Edge1	1.099	0	0.4	-38.8	5.55	115.8	1.38	0.01	Not required
	Maximum WWAN MIMO2		0.283	0	9.8	76.2	-3.77				

Test Engineer : Bevis Chang and EN Liu

17. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, 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.

18. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 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.