

FCC SAR TEST REPORT

FCC ID : 2AQ68W696C
Equipment : 5G WWAN Module
Brand Name : Foxconn
Model Name : T99W696
Applicant : Hon Lin Technology Co., Ltd.
11F, No.32, Jihu Rd., Neihu Dist., Taipei City 114
Manufacturer : Lenovo Ireland International Limited
Viscount House, 6/7 Fitzwilliam Square East,
Dublin, D02 Y447, Ireland
Standard : FCC 47 CFR Part 2 (2.1093)

Equipment: Foxconn T99W696 and Intel BE211D2W tested inside of Lenovo Notebook Computer.

The product was received on Dec. 18, 2025 and testing was started from Jan. 02, 2026 and completed on Jan. 25, 2026. 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



Sporton International Inc. Wensan Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA5D1029B	01	Initial issue of report	Mar. 05, 2026

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for Hon Lin Technology Co., Ltd., 5G WWAN Module, T99W696, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary	Highest Body Simultaneous Transmission 1g SAR (W/kg)
		Body (Separation 0mm)	
		1g SAR (W/kg)	
Licensed	WCDMA II	1.18	1.19
	WCDMA IV	1.17	
	WCDMA V	0.54	
	LTE Band 7	1.18	
	LTE Band 12/17	0.79	
	LTE Band 13	0.66	
	LTE Band 14	0.65	
	LTE Band 2/25	1.19	
	LTE Band 5/26	0.60	
	LTE Band 30	1.18	
	LTE Band 38/41	0.69	
	LTE Band 48	1.18	
	LTE Band 4/66	1.18	
	LTE Band 71	0.93	
	LTE Band 42	0.61	
	LTE Band 43	0.96	
	FR1 n7	1.18	
	FR1 n12/n17	0.80	
	FR1 n13	0.69	
	FR1 n14	0.67	
	FR1 n2/n25	1.19	
	FR1 n5/n26	0.56	
	FR1 n30	1.18	
	FR1 n38/n41	1.19	
	FR1 n48	1.17	
	FR1 n66	1.18	
	FR1 n71	0.93	
	FR1 n77/n78	1.14	
Date of Testing:		2026/01/02 ~ 2026/01/25	

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

Reviewed by: Jason Wang

Report Producer: Carlie Tsai



2. Equipment Under Test (EUT) Information

2.1 General Information

Product Feature & Specification	
Equipment Name	5G WWAN Module
Brand Name	Foxconn
Model Name	T99W696
FCC ID	2AQ68W696C
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 42: 3450 MHz ~ 3550 MHz LTE Band 43: 3700 MHz ~ 3800 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 n12 : 699 MHz ~ 716 MHz 5G NR n13: 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450 MHz ~ 3550 MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450 MHz ~ 3550 MHz
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 AWAN as the main test, SAA will spot check worst case found in AWAN.	

Host Information	
Equipment Name	Notebook Computer
Brand Name	Lenovo
Model Name	TP00170A
Integrated WLAN Module	Brand Name: Intel Model Name: BE211D2W
Integrated NFC Module	Brand Name: Foxconn Model Name: T77H747
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.9 GHz Band: 5850 MHz ~ 5895 MHz WLAN 6GHz Band: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC: 13.56 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax/be HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160/EHT20/EHT40/EHT80/EHT160/EHT320 Bluetooth BR/EDR/LE NFC: ASK
Remark: 1. The FCC ID: PD9BE211D2, Intel BE211D2W WLAN/BT module is integrated into this host, and the Sim-Tx compliance include in section16. 2. NFC module is integrated into this host, and NFC with other transmitters which the maximum of overlapping transmission including network hand-offs is not greater than 30 seconds, therefore NFC with other transmitter for simultaneous transmission analysis and compliance is not required.	

WWAN Antenna Information				
Main Antenna	Manufacturer	Amphenol	Peak gain(dBi)	1.21
	Part number	SA31Q71821	Type	PIFA
	Manufacturer	AWAN	Peak gain(dBi)	1.29
	Part number	SA31Q71822	Type	PIFA
MIMO2 Antenna	Manufacturer	Amphenol	Peak gain(dBi)	1.95
	Part number	SA31Q71823	Type	PIFA
	Manufacturer	AWAN	Peak gain(dBi)	1.96
	Part number	SA31Q71824	Type	PIFA

WLAN Antenna Information					
Antenna 1	Manufacturer	AWAN			
	Antenna Type	PIFA Antenna		PIFA Antenna	
	Part number	SA31Q71837		SA31Q71820	
	Peak gain (dbi)	Main Antenna :		Aux Antenna :	
		BT/WLAN(2.4G):	-0.23 dBi	BT/WLAN(2.4G):	-0.16 dBi
		WLAN(5G B1):	2.34 dBi	WLAN(5G B1):	2.76 dBi
		WLAN(5G B2):	2.43 dBi	WLAN(5G B2):	2.67 dBi
		WLAN(5G B3):	3.92 dBi	WLAN(5G B3):	3.42 dBi
		WLAN(5G B4):	3.35 dBi	WLAN(5G B4):	3.46 dBi
		UNII-4	3.73 dBi	UNII-4	3.04 dBi
		UNII-5	4.10 dBi	UNII-5	3.79 dBi
		UNII-6	3.75 dBi	UNII-6	1.45 dBi
		UNII-7	4.02 dBi	UNII-7	3.54 dBi
		UNII-8	3.34 dBi	UNII-8	3.42 dBi
Antenna 2	Manufacturer	Amphenol Taiwan Corporation			
	Antenna Type	PIFA Antenna		PIFA Antenna	
	Part number	SA31Q71836		SA31Q71819	
	Peak gain (dbi)	Main Antenna :		Aux Antenna :	
		BT/WLAN(2.4G):	-0.07 dBi	BT/WLAN(2.4G):	-0.40 dBi
		WLAN(5G B1):	2.66 dBi	WLAN(5G B1):	2.38 dBi
		WLAN(5G B2):	2.88 dBi	WLAN(5G B2):	2.31 dBi
		WLAN(5G B3):	3.56 dBi	WLAN(5G B3):	3.31 dBi
		WLAN(5G B4):	3.56 dBi	WLAN(5G B4):	3.31 dBi
		UNII-4	3.50 dBi	UNII-4	3.49 dBi
		UNII-5	4.03 dBi	UNII-5	3.49 dBi
		UNII-6	3.47 dBi	UNII-6	1.87 dBi
		UNII-7	4.15 dBi	UNII-7	3.65 dBi
		UNII-8	3.09 dBi	UNII-8	3.10 dBi

3. 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

3.1 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05									
FCC ID		2AQ68W696C							
Equipment Name		5G WWAN Module							
Operating Frequency Range of each LTE transmission band		LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 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 42: 3450 MHz ~ 3550 MHz LTE Band 43: 3700 MHz ~ 3800 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 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 43: 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 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.							
LTE Carrier Aggregation Combinations		Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 13.							
LTE Carrier Aggregation Additional Information		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 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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	20450	829	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844	20600	844	20600	844
LTE Band 7												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 20MHz		Bandwidth 20MHz	
	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	20850	2510	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560
LTE Band 12												
	Bandwidth 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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	23060	704	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23115	713.5	23130	711	23130	711	23130	711
LTE Band 13												
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 15MHz			
	Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)	
L	23205		779.5		23230		782		23255		784.5	
M	23230		782		23255		784.5		23280		787	
H	23255		784.5		23280		787		23305		789.5	
LTE Band 14												
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 15MHz			
	Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)	
L	23305		790.5		23330		793		23355		795.5	
M	23330		793		23355		795.5		23380		798	
H	23355		795.5		23380		798		23405		800.5	
LTE Band 17												
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 15MHz			
	Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)	
L	23755		706.5		23780		709		23805		712	
M	23790		710		23815		714		23840		718	
H	23825		713.5		23850		717		23875		720.5	
LTE Band 25												
	Bandwidth 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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	26790	824
M	26865	831.5	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	26940	838.5
LTE Band 30												
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 15MHz			
	Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)		Ch. #		Freq. (MHz)	
L	27685		2307.5		27710		2310		27735		2312.5	
M	27710		2310		27735		2312.5		27760		2315	
H	27735		2312.5		27760		2315		27785		2317.5	



LTE Band 66												
	Bandwidth 1.4MHz		Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	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 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133147	665.5	133172	668	133197	670.5	133222	673	133222	673	133222	673
M	133297	680.5	133297	680.5	133297	680.5	133297	680.5	133297	680.5	133297	680.5
H	133447	695.5	133422	693	133397	690.5	133372	688	133372	688	133372	688
LTE Band 38												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580	37850	2580	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610	38150	2610	38150	2610
LTE Band 41												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506	39750	2506	39750	2506
LMM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5	40185	2549.5	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593	40620	2593	40620	2593
HMM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5	41055	2636.5	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680	41490	2680	41490	2680
LTE Band 42 (27Q)												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	42115	3452.5	42140	3455	42165	3457.5	42190	3460	42190	3460	42190	3460
M	42590	3500	42590	3500	42590	3500	42590	3500	42590	3500	42590	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540	42990	3540	42990	3540
LTE Band 43 (27Q)												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	44615	3702.5	44640	3705	44665	3707.5	44690	3710	44690	3710	44690	3710
M	45090	3750	45090	3750	45090	3750	45090	3750	45090	3750	45090	3750
H	45565	3797.5	45540	3795	45515	3792.5	45490	3790	45490	3790	45490	3790
LTE Band 48												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560	55340	3560	55340	3560
LMM	55810	3607	55815	3607.5	55820	3608	55830	3609	55830	3609	55830	3609
M	55990	3625	55990	3625	55990	3625	55990	3625	55990	3625	55990	3625
HMM	56170	3643	56165	3642.5	56160	3642	56150	3641	56150	3641	56150	3641
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690	56640	3690	56640	3690

3.2 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
FCC ID	2AQ68W696C
Equipment Name	5G WWAN Module
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 n12 : 699 MHz ~ 716 MHz 5G NR n13: 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450 MHz ~ 3550 MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450 MHz ~ 3550 MHz
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n12: 5MHz, 10MHz, 15MHz 5G NR n13: 5MHz, 10MHz 5G NR n14: 5MHz, 10MHz 5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 35MHz, 40MHz 5G NR n26: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n30: 5MHz, 10MHz 5G NR n38: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n41: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz 5G NR n48: 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 35MHz, 40MHz 5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n77/n78: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz
SCS	FDD: SCS15KHz, TDD: 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 B4/5/7/12/13/14/30/48/66/71
LTE Anchor Bands for n5	LTE B2/7/30/48/66
LTE Anchor Bands for n7	LTE B2/4/5/12/13/66/71
LTE Anchor Bands for n12	LTE B2/7/30/38/48/66
LTE Anchor Bands for n13	LTE B2/7/66
LTE Anchor Bands for n14	LTE B2/30/66
LTE Anchor Bands for n25	LTE B5/7/12/26/66/71
LTE Anchor Bands for n26	LTE B7/25
LTE Anchor Bands for n30	LTE B2/5/12/14/66
LTE Anchor Bands for n38	LTE B2/4/5/12/71
LTE Anchor Bands for n41	LTE B2/5/12/25/26/66
LTE Anchor Bands for n48	LTE B2/5/12/66/71
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/5/7/25/38/41/48/66
LTE Anchor Bands for n77	LTE B2/5/7/13/14/25/30/41/66/71
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/26/38/41/66/71



Transmission (H, M, L) channel numbers and frequencies in each FR1 band																
	FR1 n2															
	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		
	FR1 n5															
	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		
	FR1 n7															
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520		
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535		
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550		
	FR1 n12															
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 15MHz							
	Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)		
L	140300	701.5			140800				704			141300	706.5			
M	141500	707.5			141500				707.5			141500	707.5			
H	142700	713.5			142200				711			141700	708.5			
	FR1 n13															
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 10MHz							
	Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)		
L	155900				779.5				156400			782				
M	156400				782											
H	156900				784.5											
	FR1 n14															
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 10MHz							
	Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)		
L	158100	790.5			158600				793							
M	158600	793														
H	159100	795.5														
	FR1 n25															
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	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	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895
	FR1 n26															
	Bandwidth 3MHz		Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 20MHz		Bandwidth 20MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	163100	815.5	163300	816.5	163800		819		164300		821.5		164800		824	
M	166300	831.5	166300	831.5	166300		831.5		166300		831.5		166300		831.5	
H	169500	847.5	169300	846.5	168800		844		168300		841.5		167800		839	
	FR1 n30															
	Bandwidth 5MHz				Bandwidth 10MHz				Bandwidth 10MHz							
	Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)		
L	461500				2307.5				462000			2310				
M	462000				2310											
H	462500				2312.5											
	FR1 n66															
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	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	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760
	FR1 n71															
	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			134100	670.5			134600	673		
M	136100	680.5			136100	680.5			136100	680.5			136100	680.5		
H	139100	695.5			138600	693			138100	690.5			137600	688		



FR1 n38																											
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz														
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)													
L	514500	2572.5	515000	2575	515500	2577.5	516000	2580	516500	2582.5	517000	2585	518000	2590													
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595													
H	523500	2617.5	523000	2615	522500	2612.5	522000	2610	521500	2607.5	521000	2605	520000	2600													
FR1 n41																											
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz						
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	500202	2501.01	500700	2503.5	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	506202	2531.01	507204	2536.02	508200	2541	509202	2546.01					
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	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	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	531000	2655	529998	2649.99	528996	2644.98	528000	2640					
FR1 n48																											
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz				
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	636834	3552.51		637000		3555		637168		3557.52		637334		3560.01		637668		3565.02		638000		3570		638332		3575	
M	641666	3624.99		641666		3624.99		641666		3624.99		641666		3624.99		641666		3624.99		641666		3624.99		641666		3624.99	
H	646500		3697.5		646332		3694.98		646166		3692.49		646000		3690		645666		3684.99		645332		3679.98		645000		3675
FR1 n77 (27Q)																											
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz						
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495			633332		3499.98		
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	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	
H	636332	3544.98	636166	3542.49	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99			633332		3499.98		
FR1 n77 (27Q)																											
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz						
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750			650000	3750	
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	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	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930			661666	3924.99	
FR1 n78 (27Q)																											
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz						
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495			633332		3499.98		
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	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	
H	636332	3544.98	636166	3542.49	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99			633332		3499.98		
FR1 n78 (27Q)																											
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz						
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750			650000	3750	
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	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	652332	3784.98	652000	3780	651666	3774.99	651332	3769.98	651000	3765	650666	3759.99	650332	3754.98	650000	3750	650000	3750	650000	3750	

4. Smart Transmit feature for RF Exposure compliance

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target or PD_design_target, below the predefined time-averaged power limit (i.e., input.power.limit for 5G mmW NR), for each characterized technology and band (refer to RF exposure part0 report)

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

< Plimit for supported technologies and bands (Plimit in EFS file) >

Band	Antenna	Duty cycle	1g SAR design target (W/kg)	Tolerance (dB)	Plimit	Pmax (dBm)
WCDMA_B2	Main	100.00%	0.95	1	17.8	23.5
WCDMA_B4	Main	100.00%	0.95	1	18.9	23.5
WCDMA_B5	Main	100.00%	0.95	1	17.1	23.5
LTE_B2	Main	100.00%	0.95	1	17.6	23.0
LTE_B2	MIMO2	100.00%	0.95	1	15.7	23.0
LTE_B4	Main	100.00%	0.95	1	18.7	23.0
LTE_B4	MIMO2	100.00%	0.95	1	15.9	23.0
LTE_B5	Main	100.00%	0.95	1	17.5	23.5
LTE_B7	Main	100.00%	0.95	1	18.3	23.0
LTE_B7	MIMO2	100.00%	0.95	1	16.9	23.0
LTE_B12	Main	100.00%	0.95	1	18.4	23.5
LTE_B13	Main	100.00%	0.95	1	17.8	23.5
LTE_B14	Main	100.00%	0.95	1	17.6	23.5
LTE_B17	Main	100.00%	0.95	1	18.4	23.5
LTE_B25	Main	100.00%	0.95	1	17.6	23.0
LTE_B25	MIMO2	100.00%	0.95	1	15.7	23.0
LTE_B26	Main	100.00%	0.95	1	17.5	23.5
LTE_B30	Main	100.00%	0.95	1	17.1	22.0
LTE_B30	MIMO2	100.00%	0.95	1	16.3	22.0
LTE_B38	Main	63.30%	0.95	1	26.1	21.0
LTE_B38	MIMO2	63.30%	0.95	1	26.1	21.0
LTE_B41	Main	63.30%	0.95	1	26.1	21.0
LTE_B41(PC2)	Main	43.30%	0.95	1		22.4
LTE_B41	MIMO2	63.30%	0.95	1	26.1	21.0
LTE_B41(PC2)	MIMO2	43.30%	0.95	1		22.4
LTE_B42	Main	63.30%	0.95	1	27.8	21.0
LTE_B42	MIMO2	63.30%	0.95	1	27.8	21.0
LTE_B43	Main	63.30%	0.95	1	17.8	21.0
LTE_B43	MIMO2	63.30%	0.95	1	24.6	21.0
LTE_B48	Main	63.30%	0.95	1	17.1	19.0
LTE_B48	MIMO2	63.30%	0.95	1	24.8	19.0
LTE_B66	Main	100.00%	0.95	1	18.7	23.0
LTE_B66	MIMO2	100.00%	0.95	1	15.9	23.0
LTE_B71	Main	100.00%	0.95	1	19.0	23.5
NR5G_N2	Main	100.00%	0.95	1	17.4	23.0
NR5G_N2	MIMO2	100.00%	0.95	1	15.9	23.0
NR5G_N5	Main	100.00%	0.95	1	17.8	23.5
NR5G_N7	Main	100.00%	0.95	1	18.5	23.0
NR5G_N7	MIMO2	100.00%	0.95	1	16.7	23.0
NR5G_N12	Main	100.00%	0.95	1	18.4	23.5

NR5G_N13	Main	100.00%	0.95	1	17.8	23.5
NR5G_N14	Main	100.00%	0.95	1	17.9	23.5
NR5G_N25	Main	100.00%	0.95	1	17.4	23.0
NR5G_N25	MIMO2	100.00%	0.95	1	15.9	23.0
NR5G_N26	Main	100.00%	0.95	1	17.8	23.5
NR5G_N30	Main	100.00%	0.95	1	16.8	22.0
NR5G_N30	MIMO2	100.00%	0.95	1	15.8	22.0
NR5G_N38	Main	100.00%	0.95	1	26.7	23.0
NR5G_N38	MIMO2	100.00%	0.95	1	26.7	23.0
NR5G_N41	Main	100.00%	0.95	1	26.7	23.0
NR5G_N41(PC2)	Main	50.00%	0.95	1		23.0
NR5G_N41(PC1.5)	Main	50.00%	0.95	1		22.0
NR5G_N41	MIMO2	100.00%	0.95	1	26.7	23.0
NR5G_N41(PC2)	MIMO2	50.00%	0.95	1		23.0
NR5G_N41(PC1.5)	MIMO2	50.00%	0.95	1		22.0
NR5G_N41	MIMO1	100.00%	0.95	1	17.2	23.0
NR5G_N41(PC2)	MIMO1	50.00%	0.95	1		23.0
NR5G_N41(PC1.5)	MIMO1	50.00%	0.95	1		22.0
NR5G_N41	Aux	100.00%	0.95	1	18.7	23.0
NR5G_N41(PC2)	Aux	50.00%	0.95	1		23.0
NR5G_N41(PC1.5)	Aux	50.00%	0.95	1		22.0
NR5G_N48	Main	100.00%	0.95	1	17.4	21.0
NR5G_N48	MIMO2	100.00%	0.95	1	24.4	21.0
NR5G_N66	Main	100.00%	0.95	1	18.6	23.0
NR5G_N66	MIMO2	100.00%	0.95	1	16.2	23.0
NR5G_N71	Main	100.00%	0.95	1	18.9	23.5
NR5G_N77	Main	100.00%	0.95	1	26.7	23.0
NR5G_N77(PC2)	Main	50.00%	0.95	1		23.0
NR5G_N77(PC1.5)	Main	50.00%	0.95	1		22.0
NR5G_N77	MIMO2	100.00%	0.95	1	26.7	23.0
NR5G_N77(PC2)	MIMO2	50.00%	0.95	1		23.0
NR5G_N77(PC1.5)	MIMO2	50.00%	0.95	1		22.0
NR5G_N77	MIMO1	100.00%	0.95	1	23.2	23.0
NR5G_N77(PC2)	MIMO1	50.00%	0.95	1		23.0
NR5G_N77(PC1.5)	MIMO1	50.00%	0.95	1		22.0
NR5G_N77	Aux	100.00%	0.95	1	15.4	23.0
NR5G_N77(PC2)	Aux	50.00%	0.95	1		23.0
NR5G_N77(PC1.5)	Aux	50.00%	0.95	1		22.0
NR5G_N78	Main	100.00%	0.95	1	26.7	23.0
NR5G_N78(PC2)	Main	50.00%	0.95	1		23.0
NR5G_N78(PC1.5)	Main	50.00%	0.95	1		22.0
NR5G_N78	MIMO2	100.00%	0.95	1	26.7	23.0
NR5G_N78(PC2)	MIMO2	50.00%	0.95	1		23.0
NR5G_N78(PC1.5)	MIMO2	50.00%	0.95	1		22.0
NR5G_N78	MIMO1	100.00%	0.95	1	23.2	23.0
NR5G_N78(PC2)	MIMO1	50.00%	0.95	1		23.0
NR5G_N78(PC1.5)	MIMO1	50.00%	0.95	1		22.0
NR5G_N78	Aux	100.00%	0.95	1	15.4	23.0
NR5G_N78(PC2)	Aux	50.00%	0.95	1		23.0
NR5G_N78(PC1.5)	Aux	50.00%	0.95	1		22.0

*P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to P_{max} + 1dB uncertainty.

**All P_{limit} power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).



The max allowed output power is the $P_{\text{limit}} + 1\text{dB}$ device uncertainty, and if P_{limit} is higher than P_{max} , the device output power will be P_{max} instead.

5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

5.3 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm² per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

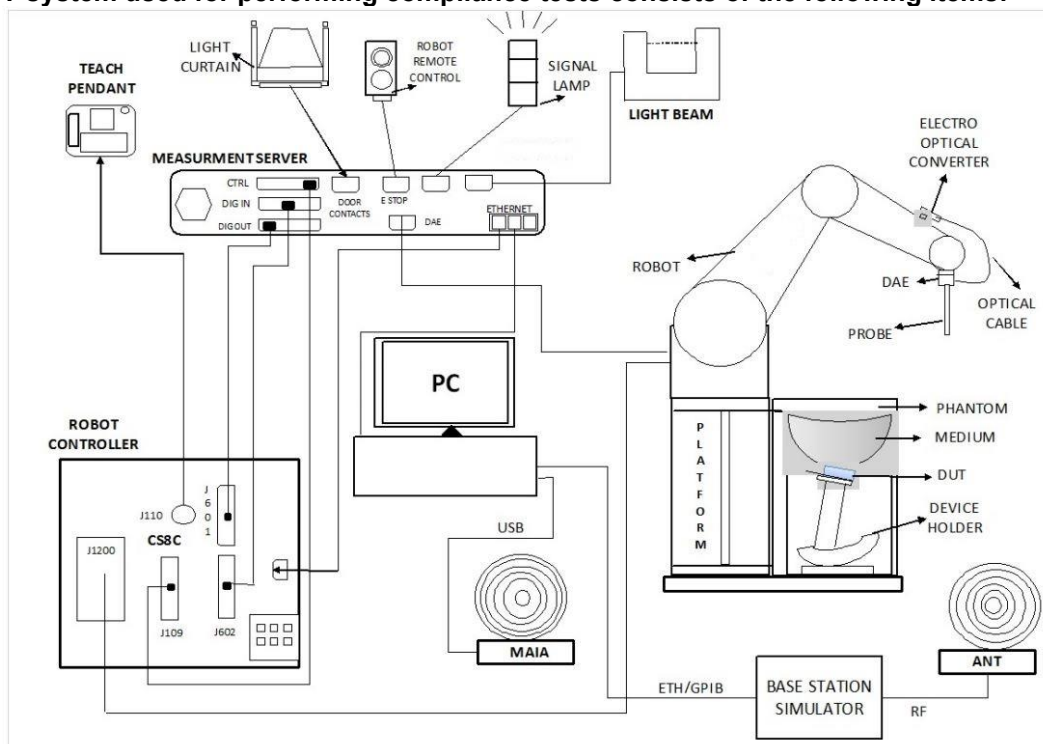
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



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

7.1 Test Site Location

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

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

7.2 E-Field Probe

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

< ES3DV3 Probe >

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

< EX3DV4 Probe >

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – > 6 GHz Linearity: ± 0.2 dB (30 MHz – 6 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.3 Data Acquisition Electronics (DAE)

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

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



Fig 5.1 Photo of DAE

7.4 Phantom

< SAM Twin Phantom >

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

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

< ELI Phantom >

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

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

7.5 Device Holder

< Mounting Device for Hand-Held Transmitter >

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

- (a) Configure the device RF transmitters to be in continuous transmission mode., at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

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

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

8.4 Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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



9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1117	Mar. 12, 2025	Mar. 11, 2026
SPEAG	835MHz System Validation Kit	D835V2	4d167	Dec. 02, 2025	Dec. 01, 2026
SPEAG	835MHz System Validation Kit	D835V2	4d060	Feb. 17, 2025	Feb. 16, 2026
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Feb. 20, 2025	Feb. 19, 2026
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d041	Aug. 15, 2024	Aug. 13, 2026
SPEAG	1900MHz System Validation Kit	D1900V2	5d185	Jun. 11, 2025	Jun. 10, 2026
SPEAG	2300MHz System Validation Kit ⁽²⁾	D2300V2	1006	Jan. 14, 2025	Jan. 12, 2027
SPEAG	2600MHz System Validation Kit ⁽²⁾	D2600V2	1008	Aug. 15, 2024	Aug. 13, 2026
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1014	Jan. 15, 2025	Jan. 13, 2027
SPEAG	3700MHz System Validation Kit	D3700V2	1006	Jun. 12, 2025	Jun. 11, 2026
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1092	May. 15, 2023	May. 12, 2026
SPEAG	Data Acquisition Electronics	DAE4	1647	Oct. 20, 2025	Oct. 19, 2026
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 18, 2025	Feb. 17, 2026
SPEAG	Data Acquisition Electronics	DAE4	661	May. 19, 2025	May. 18, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7694	Oct. 23, 2025	Oct. 22, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7700	Jan. 22, 2025	Jan. 21, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7791	Feb. 19, 2025	Feb. 18, 2026
SPEAG	Dielectric Probe Kit	DAK-3.5	1270	May. 19, 2025	May. 18, 2026
Testo	Hygro meter	608-H1	45196600	Nov. 04, 2025	Nov. 03, 2026
Testo	Hygro meter	608-H1	45207528	Nov. 04, 2025	Nov. 03, 2026
Anritsu	Radio Communication Analyzer	MT8821C	6201074414	Aug. 19, 2025	Aug. 18, 2026
Keysight	5G Wireless Test Platform	E7515B	MY59321595	Jun. 20, 2025	Jun. 19, 2026
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Sep. 24, 2025	Sep. 23, 2026
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 14, 2025	Oct. 13, 2026
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3902	Feb. 19, 2025	Feb. 18, 2026
Anritsu	Power Meter	ML2496A	2119003	Jul. 14, 2025	Jul. 13, 2026
R&S	Power Sensor	NRP8S	109687	Sep. 22, 2025	Sep. 21, 2026
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Sep. 09, 2025	Sep. 08, 2026
Mini-Circuits	Power Amplifier	ZVE-8G+	D120604	Oct. 17, 2025	Oct. 16, 2026
ATM	Dual Directional Coupler	C122H-10	P610410z-02	N/A	N/A
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005-3	N/A	Note 1	

General Note:

- 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.
- The dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

10. System Verification

10.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°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

The SPEAG Dasy Measurement system implement a SAR error compensation algorithm as documented in IEEE Std 1528-2013 to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, according to KDB 865664 D01 and IEC/IEEE 62209-1528, the tolerance for "Delta (σ)" and "Delta (ϵ_r)" can be relaxed to $\pm 10\%$

< 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	22.3	0.884	42.7	0.89	41.9	-0.67	1.91	± 10.0	2026-01-02
750	22.2	0.881	42.9	0.89	41.9	-1.01	2.39	± 10.0	2026-01-07
750	22.2	0.867	41.5	0.89	41.9	-2.58	-0.95	± 10.0	2026-01-22
835	22.3	0.914	42.5	0.9	41.5	1.56	2.41	± 10.0	2026-01-03
835	22.5	0.91	42.7	0.9	41.5	1.11	2.89	± 10.0	2026-01-07
835	22.2	0.895	41.3	0.9	41.5	-0.56	-0.48	± 10.0	2026-01-22
1750	22.4	1.34	41.0	1.37	40.1	-2.19	2.24	± 10.0	2026-01-08
1750	22.5	1.34	42.4	1.37	40.1	-2.19	5.74	± 10.0	2026-01-15
1750	22.3	1.29	39.5	1.37	40.1	-5.84	-1.50	± 10.0	2026-01-23
1900	22.4	1.41	40.7	1.4	40.0	0.71	1.75	± 10.0	2026-01-08
1900	22.5	1.41	42.1	1.4	40.0	0.71	5.25	± 10.0	2026-01-15
1900	22.3	1.36	39.2	1.4	40.0	-2.86	-2.00	± 10.0	2026-01-23
2300	22.5	1.71	40.0	1.67	39.5	2.40	1.27	± 10.0	2026-01-04
2300	22.6	1.7	40.2	1.67	39.5	1.80	1.77	± 10.0	2026-01-09
2300	22.4	1.62	38.7	1.67	39.5	-2.99	-2.03	± 10.0	2026-01-24
2600	22.5	1.94	39.5	1.96	39.0	-1.02	1.28	± 10.0	2026-01-05
2600	22.6	1.93	39.6	1.96	39.0	-1.53	1.54	± 10.0	2026-01-09
2600	22.4	1.83	38.2	1.96	39.0	-6.63	-2.05	± 10.0	2026-01-24
3500	22.8	2.69	38.0	2.91	37.9	-7.56	0.26	± 10.0	2026-01-10
3500	22.8	2.7	37.6	2.91	37.9	-7.22	-0.79	± 10.0	2026-01-18
3500	22.5	2.67	37.2	2.91	37.9	-8.25	-1.85	± 10.0	2026-01-25
3700	22.8	2.86	37.7	3.12	37.7	-8.33	0.00	± 10.0	2026-01-10
3700	22.8	2.88	37.3	3.12	37.7	-7.69	-1.06	± 10.0	2026-01-19
3700	22.5	2.85	36.9	3.12	37.7	-8.65	-2.12	± 10.0	2026-01-25
3900	22.8	3.03	37.4	3.33	37.51	-9.01	-0.29	± 10.0	2026-01-10
3900	22.8	3.05	37.0	3.33	37.51	-8.41	-1.36	± 10.0	2026-01-20
3900	22.5	3.04	36.6	3.33	37.51	-8.71	-2.43	± 10.0	2026-01-25

10.2 System Performance Check Results

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

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 (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR21	2026-01-02	750	251.19	D750V3 - 1117	EX3DV4 - SN7700	DAE4 Sn699	2.110	8.600	8.400	-2.33	1.410	5.570	5.613	0.78
SAR22	2026-01-07	750	251.19	D750V3 - 1117	EX3DV4 - SN7694	DAE4 Sn699	2.190	8.600	8.718	1.38	1.460	5.570	5.812	4.35
SAR22	2026-01-22	750	251.19	D750V3 - 1117	EX3DV4 - SN7694	DAE4 Sn1647	2.300	8.600	9.156	6.47	1.520	5.570	6.051	8.64
SAR21	2026-01-03	835	251.19	D835V2 - 4d060	EX3DV4 - SN7700	DAE4 Sn699	2.200	9.280	8.758	-5.62	1.450	6.010	5.773	-3.95
SAR22	2026-01-07	835	251.19	D835V2 - 4d060	EX3DV4 - SN7694	DAE4 Sn699	2.330	9.280	9.276	-0.04	1.520	6.010	6.051	0.69
SAR22	2026-01-22	835	251.19	D835V2 - 4d167	EX3DV4 - SN7694	DAE4 Sn1647	2.530	9.360	10.072	7.61	1.660	6.050	6.609	9.23
SAR22	2026-01-08	1750	251.19	D1750V2 - 1112	EX3DV4 - SN7694	DAE4 Sn699	8.540	36.300	33.998	-6.34	4.490	19.300	17.875	-7.38
SAR19	2026-01-15	1750	50.12	D1750V2 - 1112	EX3DV4 - SN7791	DAE4 Sn661	1.790	36.300	35.714	-1.61	0.946	19.300	18.875	-2.20
SAR22	2026-01-23	1750	50.12	D1750V2 - 1112	EX3DV4 - SN7694	DAE4 Sn1647	1.790	36.300	35.714	-1.61	0.952	19.300	18.994	-1.58
SAR22	2026-01-08	1900	251.19	D1900V2 - 5d041	EX3DV4 - SN7694	DAE4 Sn699	9.460	39.200	37.661	-3.93	4.910	20.700	19.547	-5.57
SAR19	2026-01-15	1900	50.12	D1900V2 - 5d185	EX3DV4 - SN7791	DAE4 Sn661	1.870	39.600	37.310	-5.78	0.971	20.800	19.374	-6.86
SAR22	2026-01-23	1900	50.12	D1900V2 - 5d185	EX3DV4 - SN7694	DAE4 Sn1647	1.810	39.600	36.113	-8.80	0.947	20.800	18.895	-9.16
SAR21	2026-01-04	2300	251.19	D2300V2 - 1006	EX3DV4 - SN7700	DAE4 Sn699	11.900	48.200	47.374	-1.71	5.630	23.200	22.413	-3.39
SAR22	2026-01-09	2300	251.19	D2300V2 - 1006	EX3DV4 - SN7694	DAE4 Sn699	11.600	48.200	46.180	-4.19	5.470	23.200	21.776	-6.14
SAR22	2026-01-24	2300	100.00	D2300V2 - 1006	EX3DV4 - SN7694	DAE4 Sn1647	4.630	48.200	46.300	-3.94	2.220	23.200	22.200	-4.31
SAR21	2026-01-05	2600	251.19	D2600V2 - 1008	EX3DV4 - SN7700	DAE4 Sn699	13.000	55.700	51.754	-7.09	5.810	25.300	23.130	-8.58
SAR22	2026-01-09	2600	251.19	D2600V2 - 1008	EX3DV4 - SN7694	DAE4 Sn699	13.200	55.700	52.550	-5.66	5.870	25.300	23.369	-7.63
SAR22	2026-01-24	2600	100.00	D2600V2 - 1008	EX3DV4 - SN7694	DAE4 Sn1647	5.460	55.700	54.600	-1.97	2.430	25.300	24.300	-3.95
SAR22	2026-01-10	3500	100.00	D3500V2 - 1014	EX3DV4 - SN7694	DAE4 Sn699	6.420	65.700	64.200	-2.28	2.410	24.900	24.100	-3.21
SAR22	2026-01-18	3500	100.00	D3500V2 - 1014	EX3DV4 - SN7694	DAE4 Sn699	6.450	65.700	64.500	-1.83	2.430	24.900	24.300	-2.41
SAR22	2026-01-25	3500	100.00	D3500V2 - 1014	EX3DV4 - SN7694	DAE4 Sn1647	6.490	65.700	64.900	-1.22	2.460	24.900	24.600	-1.20
SAR22	2026-01-10	3700	100.00	D3700V2 - 1006	EX3DV4 - SN7694	DAE4 Sn699	6.460	69.900	64.600	-7.58	2.340	25.600	23.400	-8.59
SAR22	2026-01-19	3700	100.00	D3700V2 - 1006	EX3DV4 - SN7694	DAE4 Sn699	6.470	69.900	64.700	-7.44	2.350	25.600	23.500	-8.20
SAR22	2026-01-25	3700	100.00	D3700V2 - 1006	EX3DV4 - SN7694	DAE4 Sn1647	6.610	69.900	66.100	-5.44	2.410	25.600	24.100	-5.86
SAR22	2026-01-10	3900	100.00	D3900V2 - 1092	EX3DV4 - SN7694	DAE4 Sn699	6.180	67.000	61.800	-7.76	2.150	23.200	21.500	-7.33
SAR22	2026-01-20	3900	100.00	D3900V2 - 1092	EX3DV4 - SN7694	DAE4 Sn699	6.180	67.000	61.800	-7.76	2.150	23.200	21.500	-7.33
SAR22	2026-01-25	3900	100.00	D3900V2 - 1092	EX3DV4 - SN7694	DAE4 Sn1647	6.530	67.000	65.300	-2.54	2.390	23.200	23.900	3.02

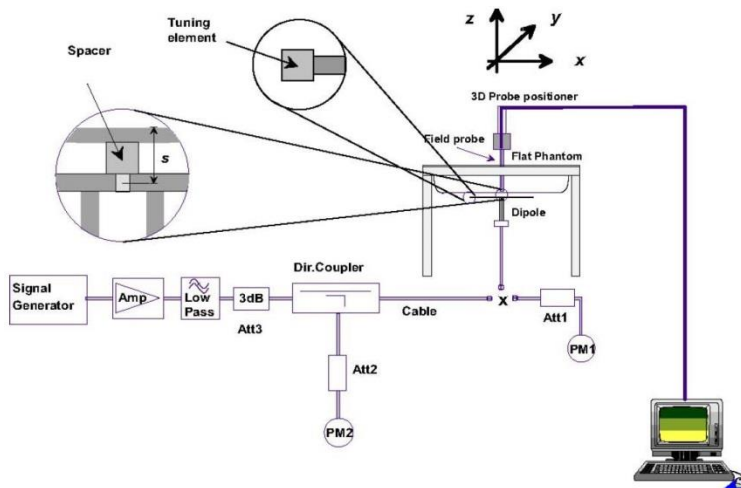


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

11. 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 DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases. Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ 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_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ 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

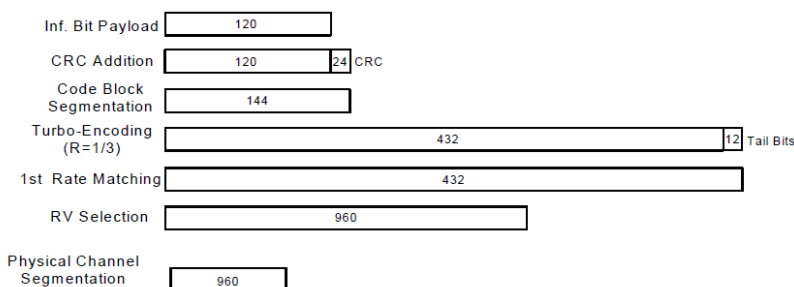
DC-HSDPA 3GPP release 8 Setup Configuration:

- 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 Factor to 2
 - x. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

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

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

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


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

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.

【WCDMA II】

TX Channel		9262	9400	9538	Tune-up Limit (dBm)
Frequency (MHz)		1852.4	1880	1907.6	
3GPP Rel 99	RMC 12.2Kbps	18.43	18.45	18.27	18.80
3GPP Rel 6	HSDPA Subtest-1	17.42	17.38	17.25	17.80
3GPP Rel 6	HSDPA Subtest-2	17.43	17.40	17.30	17.80
3GPP Rel 6	HSDPA Subtest-3	16.96	16.95	16.77	17.30
3GPP Rel 6	HSDPA Subtest-4	17.00	16.54	16.75	17.30
3GPP Rel 8	DC-HSDPA Subtest-1	17.41	17.38	17.17	17.80
3GPP Rel 8	DC-HSDPA Subtest-2	17.39	17.33	17.20	17.80
3GPP Rel 8	DC-HSDPA Subtest-3	16.86	16.93	16.75	17.30
3GPP Rel 8	DC-HSDPA Subtest-4	16.97	16.45	16.71	17.30
3GPP Rel 6	HSUPA Subtest-1	16.51	17.36	17.35	17.80
3GPP Rel 6	HSUPA Subtest-2	15.50	15.45	15.24	15.80
3GPP Rel 6	HSUPA Subtest-3	16.50	16.43	16.28	16.80
3GPP Rel 6	HSUPA Subtest-4	15.43	15.44	15.29	15.80
3GPP Rel 6	HSUPA Subtest-5	17.50	17.40	17.30	17.80
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	14.47	14.40	14.29	15.30

【WCDMA IV】

TX Channel		1312	1413	1513	Tune-up Limit (dBm)
Frequency (MHz)		1712.4	1732.6	1752.6	
3GPP Rel 99	RMC 12.2Kbps	19.36	19.46	19.42	19.90
3GPP Rel 6	HSDPA Subtest-1	18.49	18.66	18.62	18.90
3GPP Rel 6	HSDPA Subtest-2	18.55	18.60	18.63	18.90
3GPP Rel 6	HSDPA Subtest-3	18.09	18.13	18.12	18.40
3GPP Rel 6	HSDPA Subtest-4	18.03	18.13	18.13	18.40
3GPP Rel 8	DC-HSDPA Subtest-1	18.45	18.64	18.57	18.90
3GPP Rel 8	DC-HSDPA Subtest-2	18.47	18.60	18.57	18.90
3GPP Rel 8	DC-HSDPA Subtest-3	18.05	18.04	18.12	18.40
3GPP Rel 8	DC-HSDPA Subtest-4	18.01	18.09	18.11	18.40
3GPP Rel 6	HSUPA Subtest-1	18.51	18.64	18.60	18.90
3GPP Rel 6	HSUPA Subtest-2	16.50	16.65	16.57	16.90
3GPP Rel 6	HSUPA Subtest-3	17.49	17.60	17.62	17.90
3GPP Rel 6	HSUPA Subtest-4	16.49	16.64	16.61	16.90
3GPP Rel 6	HSUPA Subtest-5	18.50	18.60	18.60	18.90
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	16.27	16.29	16.22	16.40

【WCDMA V】

TX Channel		4132	4182	4233	Tune-up Limit (dBm)
Frequency (MHz)		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	17.37	17.42	17.57	18.10
3GPP Rel 6	HSDPA Subtest-1	17.41	17.38	17.25	17.60
3GPP Rel 6	HSDPA Subtest-2	17.43	17.40	17.30	17.60
3GPP Rel 6	HSDPA Subtest-3	16.96	16.95	16.77	17.10
3GPP Rel 6	HSDPA Subtest-4	17.00	16.54	16.75	17.10
3GPP Rel 8	DC-HSDPA Subtest-1	17.36	17.36	17.15	17.60
3GPP Rel 8	DC-HSDPA Subtest-2	17.42	17.35	17.22	17.60
3GPP Rel 8	DC-HSDPA Subtest-3	16.96	16.90	16.73	17.10
3GPP Rel 8	DC-HSDPA Subtest-4	16.95	16.52	16.72	17.10
3GPP Rel 6	HSUPA Subtest-1	16.51	17.36	17.35	17.60
3GPP Rel 6	HSUPA Subtest-2	15.49	15.45	15.24	15.60
3GPP Rel 6	HSUPA Subtest-3	16.49	16.43	16.28	16.60
3GPP Rel 6	HSUPA Subtest-4	15.43	15.44	15.29	15.60
3GPP Rel 6	HSUPA Subtest-5	17.49	17.40	17.30	17.60
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	14.89	14.87	14.67	15.60

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

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

< TDD LTE SAR Measurement >

TDD LTE configuration setup for SAR measurement

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

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

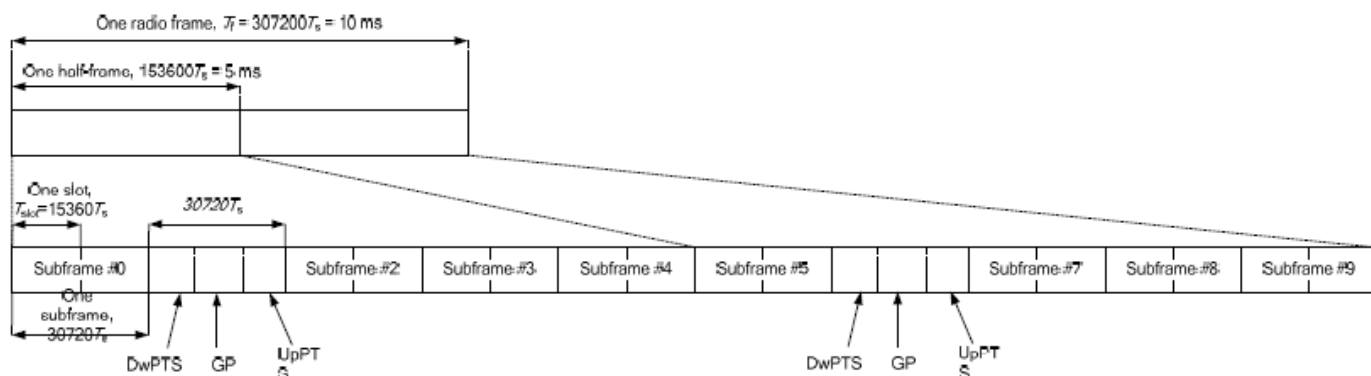


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

- i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.167)/5 = 63.3\%$
- iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.143)/5 = 62.9\%$
- v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
- vi. The device supports Power Class 3 uplink-downlink configurations 0 and 6, and Power Class 2 uplink-downlink configurations 1 to 5 operations for LTE Band 41.
- vii. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1, for Power Class 3 operation is 63.3% using UL-DL configuration 0. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition.



【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	17.71	17.81	17.67	18.60
20	QPSK	1	49	17.74	17.69	17.69	18.60
20	QPSK	1	99	17.61	17.58	17.62	18.60
20	QPSK	50	0	16.73	16.80	16.76	17.60
20	QPSK	50	24	16.79	16.69	16.77	17.60
20	QPSK	50	50	16.69	16.65	16.79	17.60
20	QPSK	100	0	16.80	16.66	16.78	17.60
20	16QAM	1	0	17.10	16.94	16.93	17.60
20	16QAM	1	49	16.93	16.95	16.90	17.60
20	16QAM	1	99	16.90	16.86	16.85	17.60
20	16QAM	50	0	15.85	15.80	15.76	16.60
20	16QAM	50	24	15.86	15.72	15.79	16.60
20	16QAM	50	50	15.70	15.68	15.80	16.60
20	16QAM	100	0	15.83	15.71	15.80	16.60
20	64QAM	1	0	15.94	15.95	15.88	16.60
20	64QAM	1	49	15.87	15.76	15.80	16.60
20	64QAM	1	99	15.58	15.60	15.68	16.60
20	64QAM	50	0	14.85	14.75	14.76	15.60
20	64QAM	50	24	14.81	14.73	14.78	15.60
20	64QAM	50	50	14.72	14.71	14.78	15.60
20	64QAM	100	0	14.81	14.70	14.80	15.60
20	256QAM	1	0	13.07	13.08	12.83	13.60
20	256QAM	1	49	13.11	12.96	12.85	13.60
20	256QAM	1	99	13.46	12.99	12.87	13.60
20	256QAM	50	0	12.90	12.91	12.95	13.60
20	256QAM	50	24	13.00	12.79	12.90	13.60
20	256QAM	50	50	13.11	12.95	12.99	13.60
20	256QAM	100	0	13.00	12.88	12.92	13.60
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	17.69	17.72	17.60	18.60
15	QPSK	1	37	17.69	17.63	17.56	18.60
15	QPSK	1	74	17.57	17.44	17.52	18.60
15	QPSK	36	0	16.61	16.72	16.73	17.60
15	QPSK	36	20	16.71	16.59	16.74	17.60
15	QPSK	36	39	16.55	16.53	16.67	17.60
15	QPSK	75	0	16.74	16.60	16.75	17.60
15	16QAM	1	0	17.08	16.92	16.84	17.60
15	16QAM	1	37	16.82	16.94	16.84	17.60
15	16QAM	1	74	16.88	16.72	16.73	17.60
15	16QAM	36	0	15.71	15.70	15.64	16.60
15	16QAM	36	20	15.81	15.62	15.66	16.60
15	16QAM	36	39	15.65	15.62	15.68	16.60
15	16QAM	75	0	15.72	15.65	15.72	16.60
15	64QAM	1	0	15.84	15.89	15.75	16.60
15	64QAM	1	37	15.74	15.73	15.67	16.60
15	64QAM	1	74	15.52	15.56	15.55	16.60
15	64QAM	36	0	14.81	14.69	14.68	15.60
15	64QAM	36	20	14.77	14.70	14.69	15.60
15	64QAM	36	39	14.61	14.68	14.63	15.60
15	64QAM	75	0	14.69	14.66	14.71	15.60
15	256QAM	1	0	13.01	12.97	12.73	13.60
15	256QAM	1	37	13.09	12.94	12.71	13.60
15	256QAM	1	74	13.33	12.84	12.80	13.60
15	256QAM	36	0	12.87	12.89	12.92	13.60
15	256QAM	36	20	12.98	12.78	12.75	13.60
15	256QAM	36	39	13.10	12.81	12.85	13.60
15	256QAM	75	0	12.90	12.76	12.81	13.60
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	17.64	17.80	17.57	18.60
10	QPSK	1	25	17.73	17.67	17.54	18.60
10	QPSK	1	49	17.51	17.53	17.48	18.60
10	QPSK	25	0	16.69	16.68	16.63	17.60
10	QPSK	25	12	16.68	16.64	16.75	17.60
10	QPSK	25	25	16.65	16.53	16.74	17.60
10	QPSK	50	0	16.66	16.61	16.65	17.60
10	16QAM	1	0	17.06	16.92	16.87	17.60
10	16QAM	1	25	16.82	16.92	16.88	17.60
10	16QAM	1	49	16.89	16.84	16.73	17.60
10	16QAM	25	0	15.73	15.72	15.66	16.60



FCC SAR TEST REPORT

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10	16QAM	25	12	15.79	15.66	15.71	16.60
10	16QAM	25	25	15.60	15.66	15.71	16.60
10	16QAM	50	0	15.70	15.65	15.68	16.60
10	64QAM	1	0	15.83	15.84	15.73	16.60
10	64QAM	1	25	15.81	15.61	15.75	16.60
10	64QAM	1	49	15.56	15.51	15.58	16.60
10	64QAM	25	0	14.77	14.68	14.67	15.60
10	64QAM	25	12	14.73	14.68	14.76	15.60
10	64QAM	25	25	14.66	14.64	14.73	15.60
10	64QAM	50	0	14.67	14.62	14.70	15.60
10	256QAM	1	0	12.94	13.01	12.78	13.60
10	256QAM	1	25	13.05	12.93	12.83	13.60
10	256QAM	1	49	13.43	12.97	12.81	13.60
10	256QAM	25	0	12.78	12.81	12.92	13.60
10	256QAM	25	12	12.95	12.72	12.86	13.60
10	256QAM	25	25	13.05	12.92	12.86	13.60
10	256QAM	50	0	12.88	12.75	12.90	13.60
Channel				18625	18900	19175	Tune-up limit
Frequency (MHz)				1852.5	1880	1907.5	(dBm)
5	QPSK	1	0	17.58	17.79	17.56	18.60
5	QPSK	1	12	17.66	17.56	17.58	18.60
5	QPSK	1	24	17.49	17.56	17.59	18.60
5	QPSK	12	0	16.59	16.74	16.71	17.60
5	QPSK	12	7	16.73	16.63	16.66	17.60
5	QPSK	12	13	16.57	16.54	16.72	17.60
5	QPSK	25	0	16.67	16.53	16.65	17.60
5	16QAM	1	0	16.96	16.82	16.86	17.60
5	16QAM	1	12	16.85	16.92	16.81	17.60
5	16QAM	1	24	16.78	16.77	16.83	17.60
5	16QAM	12	0	15.84	15.69	15.65	16.60
5	16QAM	12	7	15.82	15.70	15.72	16.60
5	16QAM	12	13	15.63	15.58	15.65	16.60
5	16QAM	25	0	15.73	15.64	15.70	16.60
5	64QAM	1	0	15.87	15.82	15.79	16.60
5	64QAM	1	12	15.82	15.62	15.68	16.60
5	64QAM	1	24	15.52	15.51	15.58	16.60
5	64QAM	12	0	14.73	14.69	14.74	15.60
5	64QAM	12	7	14.69	14.66	14.65	15.60
5	64QAM	12	13	14.58	14.62	14.69	15.60
5	64QAM	25	0	14.78	14.62	14.69	15.60
5	256QAM	1	0	12.96	12.94	12.72	13.60
5	256QAM	1	12	13.06	12.89	12.82	13.60
5	256QAM	1	24	13.34	12.95	12.84	13.60
5	256QAM	12	0	12.83	12.76	12.81	13.60
5	256QAM	12	7	12.95	12.74	12.87	13.60
5	256QAM	12	13	13.07	12.93	12.85	13.60
5	256QAM	25	0	12.96	12.86	12.90	13.60
Channel				18615	18900	19185	Tune-up limit
Frequency (MHz)				1851.5	1880	1908.5	(dBm)
3	QPSK	1	0	17.68	17.76	17.65	18.60
3	QPSK	1	8	17.63	17.57	17.62	18.60
3	QPSK	1	14	17.48	17.56	17.58	18.60
3	QPSK	8	0	16.58	16.66	16.73	17.60
3	QPSK	8	4	16.66	16.65	16.67	17.60
3	QPSK	8	7	16.56	16.53	16.70	17.60
3	QPSK	15	0	16.71	16.63	16.72	17.60
3	16QAM	1	0	17.04	16.88	16.91	17.60
3	16QAM	1	8	16.91	16.88	16.77	17.60
3	16QAM	1	14	16.76	16.81	16.79	17.60
3	16QAM	8	0	15.83	15.78	15.72	16.60
3	16QAM	8	4	15.84	15.70	15.67	16.60
3	16QAM	8	7	15.60	15.62	15.67	16.60
3	16QAM	15	0	15.74	15.68	15.65	16.60
3	64QAM	1	0	15.91	15.83	15.86	16.60
3	64QAM	1	8	15.83	15.69	15.68	16.60
3	64QAM	1	14	15.47	15.46	15.65	16.60
3	64QAM	8	0	14.74	14.64	14.62	15.60
3	64QAM	8	4	14.75	14.68	14.68	15.60
3	64QAM	8	7	14.58	14.57	14.70	15.60
3	64QAM	15	0	14.68	14.65	14.66	15.60
3	256QAM	1	0	12.98	12.99	12.73	13.60
3	256QAM	1	8	13.08	12.95	12.81	13.60
3	256QAM	1	14	13.31	12.91	12.82	13.60
3	256QAM	8	0	12.87	12.78	12.86	13.60
3	256QAM	8	4	12.88	12.66	12.76	13.60
3	256QAM	8	7	13.01	12.83	12.98	13.60
3	256QAM	15	0	12.93	12.86	12.88	13.60
Channel				18607	18900	19193	Tune-up limit

Frequency (MHz)				1850.7	1880	1909.3	(dBm)
1.4	QPSK	1	0	17.58	17.73	17.54	18.60
1.4	QPSK	1	3	17.71	17.56	17.57	18.60
1.4	QPSK	1	5	17.48	17.49	17.57	18.60
1.4	QPSK	3	0	17.71	17.75	17.73	18.60
1.4	QPSK	3	1	17.69	17.66	17.62	18.60
1.4	QPSK	3	3	17.64	17.52	17.67	18.60
1.4	QPSK	6	0	16.71	16.61	16.68	17.60
1.4	16QAM	1	0	17.00	16.83	16.81	17.60
1.4	16QAM	1	3	16.79	16.90	16.77	17.60
1.4	16QAM	1	5	16.88	16.72	16.83	17.60
1.4	16QAM	3	0	16.81	16.76	16.61	17.60
1.4	16QAM	3	1	16.72	16.69	16.72	17.60
1.4	16QAM	3	3	16.69	16.55	16.65	17.60
1.4	16QAM	6	0	15.78	15.68	15.75	16.60
1.4	64QAM	1	0	15.79	15.84	15.81	16.60
1.4	64QAM	1	3	15.83	15.66	15.78	16.60
1.4	64QAM	1	5	15.51	15.51	15.60	16.60
1.4	64QAM	3	0	15.72	15.65	15.72	16.60
1.4	64QAM	3	1	15.73	15.71	15.76	16.60
1.4	64QAM	3	3	15.58	15.65	15.65	16.60
1.4	64QAM	6	0	14.78	14.62	14.71	15.60
1.4	256QAM	1	0	12.92	12.99	12.70	13.60
1.4	256QAM	1	3	12.99	12.83	12.80	13.60
1.4	256QAM	1	5	13.33	12.91	12.76	13.60
1.4	256QAM	3	0	12.88	12.83	12.88	13.60
1.4	256QAM	3	1	12.87	12.66	12.79	13.60
1.4	256QAM	3	3	13.02	12.86	12.92	13.60
1.4	256QAM	6	0	12.93	12.79	12.84	13.60

【LTE Band 2_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				18700	18900	19100	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	16.27	16.43	16.38	16.70
20	QPSK	1	49	16.09	16.40	16.30	16.70
20	QPSK	1	99	16.11	16.36	16.25	16.70
20	QPSK	50	0	16.18	16.45	16.31	16.70
20	QPSK	50	24	16.16	16.41	16.29	16.70
20	QPSK	50	50	16.15	16.43	16.32	16.70
20	QPSK	100	0	16.22	16.42	16.26	16.70
20	16QAM	1	0	16.02	16.30	16.14	16.70
20	16QAM	1	49	16.12	16.35	16.23	16.70
20	16QAM	1	99	16.01	16.31	16.18	16.70
20	16QAM	50	0	16.10	16.33	16.21	16.70
20	16QAM	50	24	16.08	16.33	16.16	16.70
20	16QAM	50	50	16.08	16.35	16.24	16.70
20	16QAM	100	0	16.15	16.35	16.23	16.70
20	64QAM	1	0	16.15	16.37	16.28	16.70
20	64QAM	1	49	16.06	16.34	16.19	16.70
20	64QAM	1	99	16.10	16.30	16.23	16.70
20	64QAM	50	0	16.06	16.32	16.14	16.70
20	64QAM	50	24	16.16	16.40	16.23	16.70
20	64QAM	50	50	16.13	16.35	16.19	16.70
20	64QAM	100	0	16.16	16.37	16.25	16.70
20	256QAM	1	0	16.15	16.38	16.22	16.70
20	256QAM	1	49	16.11	16.30	16.12	16.70
20	256QAM	1	99	16.06	16.31	16.13	16.70
20	256QAM	50	0	16.14	16.36	16.26	16.70
20	256QAM	50	24	16.18	16.39	16.23	16.70
20	256QAM	50	50	16.05	16.35	16.27	16.70
20	256QAM	100	0	16.16	16.36	16.27	16.70
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	16.25	16.34	16.36	16.70
15	QPSK	1	37	16.03	16.38	16.22	16.70
15	QPSK	1	74	16.05	16.26	16.19	16.70
15	QPSK	36	0	16.04	16.38	16.29	16.70
15	QPSK	36	20	16.08	16.32	16.18	16.70
15	QPSK	36	39	16.09	16.40	16.21	16.70
15	QPSK	75	0	16.10	16.31	16.13	16.70
15	16QAM	1	0	16.00	16.25	16.06	16.70
15	16QAM	1	37	16.07	16.27	16.17	16.70
15	16QAM	1	74	15.94	16.17	16.09	16.70



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15	16QAM	36	0	16.03	16.21	16.08	16.70
15	16QAM	36	20	15.95	16.18	16.14	16.70
15	16QAM	36	39	16.03	16.24	16.16	16.70
15	16QAM	75	0	16.02	16.26	16.16	16.70
15	64QAM	1	0	16.01	16.23	16.16	16.70
15	64QAM	1	37	16.03	16.30	16.16	16.70
15	64QAM	1	74	16.03	16.26	16.10	16.70
15	64QAM	36	0	15.96	16.30	16.05	16.70
15	64QAM	36	20	16.02	16.32	16.18	16.70
15	64QAM	36	39	16.01	16.24	16.16	16.70
15	64QAM	75	0	16.10	16.27	16.17	16.70
15	256QAM	1	0	16.12	16.27	16.17	16.70
15	256QAM	1	37	16.03	16.24	15.98	16.70
15	256QAM	1	74	15.96	16.28	16.00	16.70
15	256QAM	36	0	16.13	16.24	16.14	16.70
15	256QAM	36	20	16.12	16.36	16.18	16.70
15	256QAM	36	39	15.95	16.24	16.20	16.70
15	256QAM	75	0	16.05	16.34	16.16	16.70
Channel				18650	18900	19150	Tune-up limit
Frequency (MHz)				1855	1880	1905	(dBm)
10	QPSK	1	0	16.25	16.39	16.36	16.70
10	QPSK	1	25	16.02	16.30	16.27	16.70
10	QPSK	1	49	16.00	16.34	16.23	16.70
10	QPSK	25	0	16.05	16.36	16.25	16.70
10	QPSK	25	12	16.01	16.39	16.21	16.70
10	QPSK	25	25	16.03	16.35	16.20	16.70
10	QPSK	50	0	16.19	16.38	16.12	16.70
10	16QAM	1	0	15.88	16.22	16.00	16.70
10	16QAM	1	25	15.98	16.23	16.16	16.70
10	16QAM	1	49	15.87	16.29	16.07	16.70
10	16QAM	25	0	15.98	16.20	16.07	16.70
10	16QAM	25	12	15.96	16.23	16.13	16.70
10	16QAM	25	25	16.03	16.21	16.15	16.70
10	16QAM	50	0	16.06	16.31	16.21	16.70
10	64QAM	1	0	16.10	16.23	16.18	16.70
10	64QAM	1	25	15.94	16.24	16.12	16.70
10	64QAM	1	49	16.00	16.23	16.18	16.70
10	64QAM	25	0	16.04	16.21	16.06	16.70
10	64QAM	25	12	16.06	16.38	16.10	16.70
10	64QAM	25	25	16.04	16.33	16.10	16.70
10	64QAM	50	0	16.03	16.31	16.22	16.70
10	256QAM	1	0	16.05	16.24	16.16	16.70
10	256QAM	1	25	16.00	16.22	16.08	16.70
10	256QAM	1	49	15.98	16.16	16.05	16.70
10	256QAM	25	0	16.02	16.25	16.12	16.70
10	256QAM	25	12	16.11	16.29	16.21	16.70
10	256QAM	25	25	16.01	16.29	16.15	16.70
10	256QAM	50	0	16.13	16.23	16.20	16.70
Channel				18625	18900	19175	Tune-up limit
Frequency (MHz)				1852.5	1880	1907.5	(dBm)
5	QPSK	1	0	16.23	16.37	16.26	16.70
5	QPSK	1	12	16.04	16.32	16.18	16.70
5	QPSK	1	24	16.06	16.28	16.15	16.70
5	QPSK	12	0	16.17	16.32	16.28	16.70
5	QPSK	12	7	16.06	16.38	16.19	16.70
5	QPSK	12	13	16.09	16.40	16.26	16.70
5	QPSK	25	0	16.16	16.30	16.19	16.70
5	16QAM	1	0	15.95	16.23	16.12	16.70
5	16QAM	1	12	16.05	16.32	16.10	16.70
5	16QAM	1	24	15.87	16.24	16.17	16.70
5	16QAM	12	0	16.04	16.24	16.11	16.70
5	16QAM	12	7	16.02	16.26	16.01	16.70
5	16QAM	12	13	16.06	16.22	16.17	16.70
5	16QAM	25	0	16.13	16.26	16.12	16.70
5	64QAM	1	0	16.08	16.31	16.18	16.70
5	64QAM	1	12	15.94	16.20	16.09	16.70
5	64QAM	1	24	16.00	16.20	16.18	16.70
5	64QAM	12	0	16.04	16.19	16.13	16.70
5	64QAM	12	7	16.09	16.28	16.15	16.70
5	64QAM	12	13	16.01	16.23	16.16	16.70
5	64QAM	25	0	16.02	16.23	16.20	16.70
5	256QAM	1	0	16.13	16.28	16.17	16.70
5	256QAM	1	12	16.00	16.17	15.97	16.70
5	256QAM	1	24	15.95	16.26	16.12	16.70
5	256QAM	12	0	16.00	16.23	16.24	16.70
5	256QAM	12	7	16.04	16.31	16.16	16.70
5	256QAM	12	13	15.91	16.32	16.25	16.70
5	256QAM	25	0	16.01	16.24	16.23	16.70

Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	16.17	16.32	16.32	16.70
3	QPSK	1	8	15.96	16.31	16.20	16.70
3	QPSK	1	14	16.06	16.21	16.21	16.70
3	QPSK	8	0	16.07	16.37	16.18	16.70
3	QPSK	8	4	16.14	16.34	16.23	16.70
3	QPSK	8	7	16.08	16.33	16.29	16.70
3	QPSK	15	0	16.16	16.37	16.14	16.70
3	16QAM	1	0	15.95	16.21	16.06	16.70
3	16QAM	1	8	16.01	16.26	16.08	16.70
3	16QAM	1	14	15.99	16.20	16.15	16.70
3	16QAM	8	0	16.08	16.23	16.08	16.70
3	16QAM	8	4	16.01	16.27	16.03	16.70
3	16QAM	8	7	15.94	16.28	16.12	16.70
3	16QAM	15	0	16.14	16.33	16.21	16.70
3	64QAM	1	0	16.13	16.33	16.18	16.70
3	64QAM	1	8	15.95	16.31	16.07	16.70
3	64QAM	1	14	16.04	16.21	16.18	16.70
3	64QAM	8	0	15.98	16.23	16.12	16.70
3	64QAM	8	4	16.09	16.31	16.20	16.70
3	64QAM	8	7	16.03	16.30	16.05	16.70
3	64QAM	15	0	16.14	16.35	16.20	16.70
3	256QAM	1	0	16.07	16.31	16.12	16.70
3	256QAM	1	8	16.08	16.16	16.03	16.70
3	256QAM	1	14	16.02	16.17	16.07	16.70
3	256QAM	8	0	16.11	16.22	16.17	16.70
3	256QAM	8	4	16.17	16.30	16.18	16.70
3	256QAM	8	7	15.99	16.34	16.17	16.70
3	256QAM	15	0	16.05	16.30	16.14	16.70
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	16.15	16.32	16.33	16.70
1.4	QPSK	1	3	16.06	16.37	16.15	16.70
1.4	QPSK	1	5	15.98	16.27	16.14	16.70
1.4	QPSK	3	0	16.13	16.26	16.23	16.70
1.4	QPSK	3	1	16.02	16.35	16.19	16.70
1.4	QPSK	3	3	16.05	16.40	16.23	16.70
1.4	QPSK	6	0	16.09	16.28	16.24	16.70
1.4	16QAM	1	0	15.98	16.19	16.01	16.70
1.4	16QAM	1	3	16.05	16.22	16.18	16.70
1.4	16QAM	1	5	15.93	16.22	16.04	16.70
1.4	16QAM	3	0	16.00	16.30	16.07	16.70
1.4	16QAM	3	1	15.94	16.23	16.09	16.70
1.4	16QAM	3	3	16.04	16.31	16.14	16.70
1.4	16QAM	6	0	16.06	16.30	16.11	16.70
1.4	64QAM	1	0	16.09	16.27	16.26	16.70
1.4	64QAM	1	3	15.96	16.29	16.13	16.70
1.4	64QAM	1	5	15.98	16.20	16.14	16.70
1.4	64QAM	3	0	16.04	16.30	16.04	16.70
1.4	64QAM	3	1	16.07	16.39	16.13	16.70
1.4	64QAM	3	3	16.09	16.26	16.10	16.70
1.4	64QAM	6	0	16.11	16.34	16.16	16.70
1.4	256QAM	1	0	16.09	16.26	16.20	16.70
1.4	256QAM	1	3	16.09	16.28	16.09	16.70
1.4	256QAM	1	5	15.99	16.21	16.00	16.70
1.4	256QAM	3	0	16.04	16.33	16.12	16.70
1.4	256QAM	3	1	16.04	16.34	16.12	16.70
1.4	256QAM	3	3	16.02	16.28	16.18	16.70
1.4	256QAM	6	0	16.13	16.28	16.25	16.70

【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	19.00	19.04	19.04	19.70
20	QPSK	1	49	18.98	19.03	18.98	19.70
20	QPSK	1	99	18.97	19.00	18.97	19.70
20	QPSK	50	0	17.92	18.08	18.00	18.70
20	QPSK	50	24	18.00	18.00	18.02	18.70
20	QPSK	50	50	18.02	18.01	18.07	18.70
20	QPSK	100	0	17.99	18.00	18.01	18.70
20	16QAM	1	0	18.34	18.45	18.29	18.70
20	16QAM	1	49	18.29	18.29	18.35	18.70



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20	16QAM	1	99	18.36	18.33	18.27	18.70
20	16QAM	50	0	16.92	17.04	17.01	17.70
20	16QAM	50	24	17.02	17.05	17.02	17.70
20	16QAM	50	50	17.02	17.10	17.06	17.70
20	16QAM	100	0	17.00	17.02	16.99	17.70
20	64QAM	1	0	17.14	17.25	17.20	17.70
20	64QAM	1	49	17.10	17.08	17.26	17.70
20	64QAM	1	99	17.13	17.14	17.13	17.70
20	64QAM	50	0	15.94	16.01	16.03	16.70
20	64QAM	50	24	15.99	16.03	16.02	16.70
20	64QAM	50	50	16.02	16.11	16.05	16.70
20	64QAM	100	0	16.00	16.00	16.00	16.70
20	256QAM	1	0	13.99	14.08	13.98	14.70
20	256QAM	1	49	13.62	14.26	14.22	14.70
20	256QAM	1	99	14.33	14.47	14.21	14.70
20	256QAM	50	0	13.98	14.07	14.12	14.70
20	256QAM	50	24	14.14	14.16	14.18	14.70
20	256QAM	50	50	14.19	14.15	14.17	14.70
20	256QAM	100	0	14.14	14.17	14.20	14.70
Channel				20025	20175	20325	Tune-up limit
Frequency (MHz)				1717.5	1732.5	1747.5	(dBm)
15	QPSK	1	0	18.85	18.91	19.01	19.70
15	QPSK	1	37	18.92	18.92	18.92	19.70
15	QPSK	1	74	18.94	18.90	18.90	19.70
15	QPSK	36	0	17.88	18.04	17.86	18.70
15	QPSK	36	20	17.97	17.89	17.93	18.70
15	QPSK	36	39	17.96	17.90	18.05	18.70
15	QPSK	75	0	17.96	17.98	17.95	18.70
15	16QAM	1	0	18.30	18.42	18.23	18.70
15	16QAM	1	37	18.16	18.28	18.22	18.70
15	16QAM	1	74	18.25	18.29	18.19	18.70
15	16QAM	36	0	16.90	16.94	16.97	17.70
15	16QAM	36	20	16.95	17.02	16.96	17.70
15	16QAM	36	39	16.90	17.08	16.94	17.70
15	16QAM	75	0	16.96	16.87	16.89	17.70
15	64QAM	1	0	17.00	17.13	17.10	17.70
15	64QAM	1	37	16.98	17.03	17.11	17.70
15	64QAM	1	74	16.98	17.09	17.04	17.70
15	64QAM	36	0	15.90	15.99	15.94	16.70
15	64QAM	36	20	15.93	15.92	15.87	16.70
15	64QAM	36	39	15.91	15.99	15.90	16.70
15	64QAM	75	0	15.95	15.86	15.87	16.70
15	256QAM	1	0	13.93	14.00	13.97	14.70
15	256QAM	1	37	13.57	14.20	14.10	14.70
15	256QAM	1	74	14.21	14.32	14.09	14.70
15	256QAM	36	0	13.97	13.94	14.00	14.70
15	256QAM	36	20	14.03	14.07	14.04	14.70
15	256QAM	36	39	14.17	14.08	14.09	14.70
15	256QAM	75	0	14.01	14.09	14.16	14.70
Channel				20000	20175	20350	Tune-up limit
Frequency (MHz)				1715	1732.5	1750	(dBm)
10	QPSK	1	0	18.91	19.00	19.01	19.70
10	QPSK	1	25	18.84	18.96	18.89	19.70
10	QPSK	1	49	18.87	18.94	18.89	19.70
10	QPSK	25	0	17.81	17.98	17.96	18.70
10	QPSK	25	12	17.89	17.86	17.93	18.70
10	QPSK	25	25	18.00	18.00	18.03	18.70
10	QPSK	50	0	17.87	17.93	17.87	18.70
10	16QAM	1	0	18.29	18.35	18.14	18.70
10	16QAM	1	25	18.27	18.21	18.32	18.70
10	16QAM	1	49	18.23	18.30	18.23	18.70
10	16QAM	25	0	16.84	16.93	16.97	17.70
10	16QAM	25	12	16.99	16.95	16.97	17.70
10	16QAM	25	25	16.93	17.00	17.00	17.70
10	16QAM	50	0	16.96	16.87	16.91	17.70
10	64QAM	1	0	17.05	17.23	17.06	17.70
10	64QAM	1	25	17.03	17.03	17.12	17.70
10	64QAM	1	49	17.05	17.04	17.07	17.70
10	64QAM	25	0	15.87	15.86	15.94	16.70
10	64QAM	25	12	15.90	16.02	15.92	16.70
10	64QAM	25	25	15.92	16.04	15.92	16.70
10	64QAM	50	0	15.94	15.92	15.90	16.70
10	256QAM	1	0	13.95	14.00	13.93	14.70
10	256QAM	1	25	13.58	14.13	14.19	14.70
10	256QAM	1	49	14.30	14.43	14.15	14.70
10	256QAM	25	0	13.93	13.95	14.03	14.70
10	256QAM	25	12	14.03	14.12	14.10	14.70
10	256QAM	25	25	14.13	14.04	14.03	14.70



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10	256QAM	50	0	14.04	14.12	14.18	14.70
Channel				19975	20175	20375	Tune-up limit
Frequency (MHz)				1712.5	1732.5	1752.5	(dBm)
5	QPSK	1	0	18.94	19.00	19.03	19.70
5	QPSK	1	12	18.85	18.97	18.93	19.70
5	QPSK	1	24	18.93	18.92	18.85	19.70
5	QPSK	12	0	17.90	18.05	17.87	18.70
5	QPSK	12	7	17.88	17.93	17.93	18.70
5	QPSK	12	13	17.95	17.92	18.04	18.70
5	QPSK	25	0	17.94	17.85	17.90	18.70
5	16QAM	1	0	18.32	18.44	18.16	18.70
5	16QAM	1	12	18.25	18.27	18.31	18.70
5	16QAM	1	24	18.34	18.30	18.17	18.70
5	16QAM	12	0	16.77	16.91	16.99	17.70
5	16QAM	12	7	16.97	16.93	16.92	17.70
5	16QAM	12	13	16.95	16.97	17.00	17.70
5	16QAM	25	0	16.97	16.99	16.91	17.70
5	64QAM	1	0	17.10	17.22	17.08	17.70
5	64QAM	1	12	17.07	16.94	17.21	17.70
5	64QAM	1	24	17.10	17.08	17.07	17.70
5	64QAM	12	0	15.87	15.93	15.90	16.70
5	64QAM	12	7	15.95	15.90	15.89	16.70
5	64QAM	12	13	15.95	16.07	15.93	16.70
5	64QAM	25	0	15.90	15.98	15.86	16.70
5	256QAM	1	0	13.95	14.02	13.90	14.70
5	256QAM	1	12	13.53	14.23	14.13	14.70
5	256QAM	1	24	14.25	14.41	14.09	14.70
5	256QAM	12	0	13.92	14.04	14.06	14.70
5	256QAM	12	7	14.08	14.13	14.09	14.70
5	256QAM	12	13	14.17	14.08	14.07	14.70
5	256QAM	25	0	14.05	14.08	14.17	14.70
Channel				19965	20175	20385	Tune-up limit
Frequency (MHz)				1711.5	1732.5	1753.5	(dBm)
3	QPSK	1	0	18.88	18.91	18.94	19.70
3	QPSK	1	8	18.83	18.95	18.93	19.70
3	QPSK	1	14	18.91	18.96	18.96	19.70
3	QPSK	8	0	17.79	18.00	17.90	18.70
3	QPSK	8	4	17.98	17.92	17.87	18.70
3	QPSK	8	7	17.97	17.89	17.99	18.70
3	QPSK	15	0	17.98	17.90	17.99	18.70
3	16QAM	1	0	18.26	18.36	18.27	18.70
3	16QAM	1	8	18.18	18.20	18.32	18.70
3	16QAM	1	14	18.34	18.29	18.25	18.70
3	16QAM	8	0	16.87	17.01	16.96	17.70
3	16QAM	8	4	16.97	17.04	17.00	17.70
3	16QAM	8	7	16.94	16.99	16.96	17.70
3	16QAM	15	0	16.93	16.90	16.90	17.70
3	64QAM	1	0	17.01	17.10	17.13	17.70
3	64QAM	1	8	17.05	16.94	17.20	17.70
3	64QAM	1	14	17.09	17.08	17.07	17.70
3	64QAM	8	0	15.81	15.97	15.99	16.70
3	64QAM	8	4	15.97	15.98	15.94	16.70
3	64QAM	8	7	16.00	16.09	15.93	16.70
3	64QAM	15	0	15.98	15.85	15.95	16.70
3	256QAM	1	0	13.93	14.04	13.97	14.70
3	256QAM	1	8	13.47	14.16	14.14	14.70
3	256QAM	1	14	14.31	14.41	14.13	14.70
3	256QAM	8	0	13.91	13.94	14.06	14.70
3	256QAM	8	4	14.06	14.07	14.06	14.70
3	256QAM	8	7	14.15	14.04	14.15	14.70
3	256QAM	15	0	14.05	14.15	14.15	14.70
Channel				19957	20175	20393	Tune-up limit
Frequency (MHz)				1710.7	1732.5	1754.3	(dBm)
1.4	QPSK	1	0	18.87	18.91	18.96	19.70
1.4	QPSK	1	3	18.95	18.93	18.89	19.70
1.4	QPSK	1	5	18.90	18.97	18.91	19.70
1.4	QPSK	3	0	18.78	19.03	18.90	19.70
1.4	QPSK	3	1	18.95	18.95	18.94	19.70
1.4	QPSK	3	3	18.87	18.86	19.00	19.70
1.4	QPSK	6	0	17.88	17.98	17.90	18.70
1.4	16QAM	1	0	18.27	18.36	18.23	18.70
1.4	16QAM	1	3	18.20	18.25	18.26	18.70
1.4	16QAM	1	5	18.28	18.26	18.24	18.70
1.4	16QAM	3	0	17.85	17.94	17.93	18.70
1.4	16QAM	3	1	17.94	17.93	17.87	18.70
1.4	16QAM	3	3	17.89	18.00	18.02	18.70
1.4	16QAM	6	0	16.98	17.00	16.88	17.70
1.4	64QAM	1	0	16.99	17.17	17.11	17.70

1.4	64QAM	1	3	17.00	17.02	17.21	17.70
1.4	64QAM	1	5	17.04	17.02	17.07	17.70
1.4	64QAM	3	0	16.87	16.91	16.94	17.70
1.4	64QAM	3	1	16.85	16.91	16.92	17.70
1.4	64QAM	3	3	16.90	17.00	16.96	17.70
1.4	64QAM	6	0	15.86	15.91	15.93	16.70
1.4	256QAM	1	0	13.89	14.06	13.95	14.70
1.4	256QAM	1	3	13.49	14.23	14.08	14.70
1.4	256QAM	1	5	14.31	14.38	14.20	14.70
1.4	256QAM	3	0	13.96	14.00	13.97	14.70
1.4	256QAM	3	1	14.08	14.08	14.14	14.70
1.4	256QAM	3	3	14.14	14.10	14.11	14.70
1.4	256QAM	6	0	14.09	14.03	14.09	14.70

【LTE Band 4_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				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	16.34	16.41	16.37	16.90
20	QPSK	1	49	16.25	16.34	16.26	16.90
20	QPSK	1	99	16.22	16.36	16.18	16.90
20	QPSK	50	0	16.09	16.32	16.14	16.90
20	QPSK	50	24	16.03	16.21	16.11	16.90
20	QPSK	50	50	16.13	16.26	16.26	16.90
20	QPSK	100	0	16.04	16.22	16.04	16.90
20	16QAM	1	0	16.24	16.36	16.21	16.90
20	16QAM	1	49	16.21	16.32	16.15	16.90
20	16QAM	1	99	16.15	16.31	16.20	16.90
20	16QAM	50	0	15.97	16.18	16.03	16.90
20	16QAM	50	24	16.07	16.21	16.14	16.90
20	16QAM	50	50	16.14	16.29	16.12	16.90
20	16QAM	100	0	16.04	16.19	16.12	16.90
20	64QAM	1	0	16.26	16.36	16.20	16.90
20	64QAM	1	49	16.12	16.33	16.21	16.90
20	64QAM	1	99	16.17	16.26	16.17	16.90
20	64QAM	50	0	16.01	16.21	16.05	16.90
20	64QAM	50	24	16.03	16.14	16.08	16.90
20	64QAM	50	50	16.14	16.23	16.07	16.90
20	64QAM	100	0	16.10	16.22	16.11	16.90
20	256QAM	1	0	16.25	16.34	16.22	16.90
20	256QAM	1	49	16.06	16.28	16.22	16.90
20	256QAM	1	99	16.09	16.30	16.22	16.90
20	256QAM	50	0	16.06	16.21	16.10	16.90
20	256QAM	50	24	15.95	16.12	15.94	16.90
20	256QAM	50	50	16.07	16.27	16.15	16.90
20	256QAM	100	0	16.10	16.20	16.13	16.90
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	16.26	16.37	16.30	16.90
15	QPSK	1	37	16.12	16.31	16.13	16.90
15	QPSK	1	74	16.12	16.33	16.07	16.90
15	QPSK	36	0	16.07	16.12	16.03	16.90
15	QPSK	36	20	15.95	16.07	16.03	16.90
15	QPSK	36	39	16.01	16.28	16.14	16.90
15	QPSK	75	0	16.01	16.18	15.93	16.90
15	16QAM	1	0	16.19	16.26	16.09	16.90
15	16QAM	1	37	16.17	16.28	16.04	16.90
15	16QAM	1	74	16.04	16.28	16.06	16.90
15	16QAM	36	0	15.82	16.05	15.99	16.90
15	16QAM	36	20	16.03	16.10	16.03	16.90
15	16QAM	36	39	16.03	16.24	16.02	16.90
15	16QAM	75	0	16.02	16.15	15.99	16.90
15	64QAM	1	0	16.15	16.30	16.16	16.90
15	64QAM	1	37	16.04	16.19	16.16	16.90
15	64QAM	1	74	16.09	16.18	16.06	16.90
15	64QAM	36	0	15.98	16.13	16.02	16.90
15	64QAM	36	20	15.97	16.13	15.98	16.90
15	64QAM	36	39	16.03	16.10	16.05	16.90
15	64QAM	75	0	16.05	16.17	16.09	16.90
15	256QAM	1	0	16.19	16.32	16.19	16.90
15	256QAM	1	37	16.03	16.17	16.09	16.90
15	256QAM	1	74	16.01	16.23	16.19	16.90
15	256QAM	36	0	15.92	16.18	16.04	16.90
15	256QAM	36	20	15.85	16.01	15.92	16.90



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15	256QAM	36	39	16.00	16.26	16.07	16.90
15	256QAM	75	0	15.98	16.05	16.07	16.90
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	16.24	16.39	16.35	16.90
10	QPSK	1	25	16.23	16.28	16.23	16.90
10	QPSK	1	49	16.08	16.23	16.08	16.90
10	QPSK	25	0	16.03	16.24	16.01	16.90
10	QPSK	25	12	15.91	16.18	15.96	16.90
10	QPSK	25	25	15.99	16.30	16.18	16.90
10	QPSK	50	0	15.98	16.09	15.89	16.90
10	16QAM	1	0	16.12	16.33	16.11	16.90
10	16QAM	1	25	16.17	16.22	16.06	16.90
10	16QAM	1	49	16.04	16.24	16.16	16.90
10	16QAM	25	0	15.96	16.16	16.00	16.90
10	16QAM	25	12	16.05	16.13	16.12	16.90
10	16QAM	25	25	16.09	16.22	16.02	16.90
10	16QAM	50	0	16.01	16.15	16.03	16.90
10	64QAM	1	0	16.23	16.23	16.17	16.90
10	64QAM	1	25	16.04	16.30	16.12	16.90
10	64QAM	1	49	16.07	16.22	16.11	16.90
10	64QAM	25	0	15.96	16.10	15.96	16.90
10	64QAM	25	12	15.95	16.12	16.02	16.90
10	64QAM	25	25	16.04	16.22	15.98	16.90
10	64QAM	50	0	16.08	16.11	16.05	16.90
10	256QAM	1	0	16.17	16.28	16.09	16.90
10	256QAM	1	25	15.91	16.21	16.17	16.90
10	256QAM	1	49	16.03	16.29	16.12	16.90
10	256QAM	25	0	16.00	16.10	16.05	16.90
10	256QAM	25	12	15.82	15.97	15.91	16.90
10	256QAM	25	25	15.95	16.18	16.14	16.90
10	256QAM	50	0	16.08	16.16	16.09	16.90
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	16.22	16.37	16.33	16.90
5	QPSK	1	12	16.13	16.33	16.16	16.90
5	QPSK	1	24	16.15	16.28	16.08	16.90
5	QPSK	12	0	15.98	16.15	16.10	16.90
5	QPSK	12	7	15.91	16.19	15.99	16.90
5	QPSK	12	13	16.00	16.25	16.19	16.90
5	QPSK	25	0	16.01	16.20	15.98	16.90
5	16QAM	1	0	16.22	16.24	16.18	16.90
5	16QAM	1	12	16.10	16.24	16.02	16.90
5	16QAM	1	24	16.05	16.22	16.18	16.90
5	16QAM	12	0	15.88	16.09	15.90	16.90
5	16QAM	12	7	15.97	16.20	15.99	16.90
5	16QAM	12	13	16.08	16.27	16.06	16.90
5	16QAM	25	0	15.91	16.05	16.02	16.90
5	64QAM	1	0	16.12	16.33	16.07	16.90
5	64QAM	1	12	16.00	16.30	16.18	16.90
5	64QAM	1	24	16.07	16.24	16.07	16.90
5	64QAM	12	0	15.90	16.12	15.93	16.90
5	64QAM	12	7	15.97	16.06	15.97	16.90
5	64QAM	12	13	16.02	16.21	15.97	16.90
5	64QAM	25	0	16.07	16.18	16.07	16.90
5	256QAM	1	0	16.15	16.23	16.11	16.90
5	256QAM	1	12	15.98	16.17	16.09	16.90
5	256QAM	1	24	16.00	16.26	16.13	16.90
5	256QAM	12	0	16.03	16.14	16.06	16.90
5	256QAM	12	7	15.90	16.10	15.79	16.90
5	256QAM	12	13	15.92	16.12	16.01	16.90
5	256QAM	25	0	16.05	16.12	16.04	16.90
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	16.29	16.38	16.30	16.90
3	QPSK	1	8	16.17	16.28	16.21	16.90
3	QPSK	1	14	16.12	16.28	16.13	16.90
3	QPSK	8	0	15.98	16.18	16.09	16.90
3	QPSK	8	4	15.98	16.17	16.07	16.90
3	QPSK	8	7	16.08	16.30	16.20	16.90
3	QPSK	15	0	16.00	16.19	16.02	16.90
3	16QAM	1	0	16.10	16.29	16.07	16.90
3	16QAM	1	8	16.08	16.25	16.04	16.90
3	16QAM	1	14	16.05	16.16	16.19	16.90
3	16QAM	8	0	15.85	16.06	15.95	16.90
3	16QAM	8	4	16.00	16.16	16.05	16.90
3	16QAM	8	7	15.99	16.24	16.11	16.90
3	16QAM	15	0	15.89	16.13	15.98	16.90

3	64QAM	1	0	16.15	16.29	16.18	16.90
3	64QAM	1	8	16.09	16.19	16.08	16.90
3	64QAM	1	14	16.08	16.13	16.13	16.90
3	64QAM	8	0	15.90	16.11	15.98	16.90
3	64QAM	8	4	15.97	16.11	15.98	16.90
3	64QAM	8	7	16.10	16.20	15.94	16.90
3	64QAM	15	0	16.01	16.18	16.01	16.90
3	256QAM	1	0	16.17	16.31	16.12	16.90
3	256QAM	1	8	15.97	16.26	16.14	16.90
3	256QAM	1	14	16.00	16.17	16.19	16.90
3	256QAM	8	0	16.01	16.07	16.09	16.90
3	256QAM	8	4	15.91	15.98	15.89	16.90
3	256QAM	8	7	15.97	16.25	16.10	16.90
3	256QAM	15	0	15.95	16.09	16.08	16.90
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	16.21	16.30	16.28	16.90
1.4	QPSK	1	3	16.14	16.31	16.14	16.90
1.4	QPSK	1	5	16.07	16.22	16.16	16.90
1.4	QPSK	3	0	16.03	16.15	16.11	16.90
1.4	QPSK	3	1	15.96	16.20	16.03	16.90
1.4	QPSK	3	3	16.02	16.31	16.24	16.90
1.4	QPSK	6	0	15.94	16.08	16.03	16.90
1.4	16QAM	1	0	16.21	16.30	16.18	16.90
1.4	16QAM	1	3	16.15	16.23	16.13	16.90
1.4	16QAM	1	5	16.01	16.16	16.11	16.90
1.4	16QAM	3	0	15.89	16.17	16.02	16.90
1.4	16QAM	3	1	16.04	16.12	16.05	16.90
1.4	16QAM	3	3	15.99	16.18	15.98	16.90
1.4	16QAM	6	0	15.99	16.13	16.05	16.90
1.4	64QAM	1	0	16.14	16.31	16.11	16.90
1.4	64QAM	1	3	16.07	16.30	16.13	16.90
1.4	64QAM	1	5	16.08	16.21	16.04	16.90
1.4	64QAM	3	0	15.89	16.17	15.97	16.90
1.4	64QAM	3	1	15.92	16.01	15.97	16.90
1.4	64QAM	3	3	16.08	16.09	15.98	16.90
1.4	64QAM	6	0	16.08	16.13	16.08	16.90
1.4	256QAM	1	0	16.17	16.21	16.17	16.90
1.4	256QAM	1	3	16.04	16.25	16.08	16.90
1.4	256QAM	1	5	16.07	16.17	16.18	16.90
1.4	256QAM	3	0	15.93	16.12	15.98	16.90
1.4	256QAM	3	1	15.85	16.01	15.80	16.90
1.4	256QAM	3	3	16.00	16.16	16.12	16.90
1.4	256QAM	6	0	16.01	16.15	16.06	16.90

【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	18.22	18.25	18.22	18.50
10	QPSK	1	25	18.26	18.24	18.37	18.50
10	QPSK	1	49	18.15	18.14	18.20	18.50
10	QPSK	25	0	17.19	17.26	17.23	17.50
10	QPSK	25	12	17.23	17.23	17.22	17.50
10	QPSK	25	25	17.22	17.25	17.21	17.50
10	QPSK	50	0	17.22	17.25	17.25	17.50
10	16QAM	1	0	17.43	17.44	17.48	17.50
10	16QAM	1	25	17.47	17.46	17.47	17.50
10	16QAM	1	49	17.41	17.45	17.46	17.50
10	16QAM	25	0	16.21	16.24	16.32	16.50
10	16QAM	25	12	16.29	16.32	16.42	16.50
10	16QAM	25	25	16.22	16.29	16.39	16.50
10	16QAM	50	0	16.27	16.24	16.24	16.50
10	64QAM	1	0	16.34	16.45	16.40	16.50
10	64QAM	1	25	16.37	16.38	16.45	16.50
10	64QAM	1	49	16.35	16.31	16.36	16.50
10	64QAM	25	0	15.19	15.21	15.27	15.50
10	64QAM	25	12	15.28	15.36	15.34	15.50
10	64QAM	25	25	15.32	15.25	15.38	15.50
10	64QAM	50	0	15.27	15.28	15.32	15.50
10	256QAM	1	0	13.34	13.30	13.37	13.50
10	256QAM	1	25	13.28	13.31	13.07	13.50
10	256QAM	1	49	13.33	13.39	13.47	13.50
10	256QAM	25	0	13.12	13.14	13.30	13.50



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10	256QAM	25	12	13.31	13.24	13.07	13.50
10	256QAM	25	25	13.24	13.20	13.31	13.50
10	256QAM	50	0	13.21	13.26	13.31	13.50
Channel				20425	20525	20625	Tune-up limit
Frequency (MHz)				826.5	836.5	846.5	(dBm)
5	QPSK	1	0	18.12	18.13	18.21	18.50
5	QPSK	1	12	18.19	18.16	18.25	18.50
5	QPSK	1	24	18.04	18.06	18.18	18.50
5	QPSK	12	0	17.04	17.16	17.10	17.50
5	QPSK	12	7	17.21	17.17	17.19	17.50
5	QPSK	12	13	17.16	17.16	17.13	17.50
5	QPSK	25	0	17.14	17.15	17.20	17.50
5	16QAM	1	0	17.29	17.39	17.44	17.50
5	16QAM	1	12	17.34	17.43	17.33	17.50
5	16QAM	1	24	17.28	17.31	17.42	17.50
5	16QAM	12	0	16.07	16.13	16.22	16.50
5	16QAM	12	7	16.25	16.24	16.38	16.50
5	16QAM	12	13	16.08	16.20	16.29	16.50
5	16QAM	25	0	16.14	16.12	16.13	16.50
5	64QAM	1	0	16.26	16.39	16.26	16.50
5	64QAM	1	12	16.31	16.37	16.41	16.50
5	64QAM	1	24	16.22	16.21	16.31	16.50
5	64QAM	12	0	15.14	15.19	15.12	15.50
5	64QAM	12	7	15.14	15.28	15.20	15.50
5	64QAM	12	13	15.21	15.19	15.29	15.50
5	64QAM	25	0	15.25	15.27	15.29	15.50
5	256QAM	1	0	13.23	13.15	13.23	13.50
5	256QAM	1	12	13.19	13.23	12.92	13.50
5	256QAM	1	24	13.24	13.31	13.35	13.50
5	256QAM	12	0	13.10	13.09	13.24	13.50
5	256QAM	12	7	13.25	13.17	13.05	13.50
5	256QAM	12	13	13.09	13.14	13.28	13.50
5	256QAM	25	0	13.15	13.24	13.21	13.50
Channel				20415	20525	20635	Tune-up limit
Frequency (MHz)				825.5	836.5	847.5	(dBm)
3	QPSK	1	0	18.16	18.21	18.09	18.50
3	QPSK	1	8	18.12	18.19	18.23	18.50
3	QPSK	1	14	18.05	18.10	18.07	18.50
3	QPSK	8	0	17.13	17.16	17.09	17.50
3	QPSK	8	4	17.19	17.14	17.12	17.50
3	QPSK	8	7	17.08	17.14	17.17	17.50
3	QPSK	15	0	17.08	17.22	17.23	17.50
3	16QAM	1	0	17.36	17.40	17.45	17.50
3	16QAM	1	8	17.34	17.34	17.40	17.50
3	16QAM	1	14	17.33	17.31	17.33	17.50
3	16QAM	8	0	16.09	16.21	16.21	16.50
3	16QAM	8	4	16.27	16.19	16.40	16.50
3	16QAM	8	7	16.08	16.21	16.32	16.50
3	16QAM	15	0	16.16	16.17	16.10	16.50
3	64QAM	1	0	16.24	16.43	16.32	16.50
3	64QAM	1	8	16.30	16.34	16.32	16.50
3	64QAM	1	14	16.30	16.26	16.22	16.50
3	64QAM	8	0	15.06	15.19	15.25	15.50
3	64QAM	8	4	15.19	15.34	15.20	15.50
3	64QAM	8	7	15.20	15.22	15.35	15.50
3	64QAM	15	0	15.14	15.21	15.29	15.50
3	256QAM	1	0	13.22	13.25	13.33	13.50
3	256QAM	1	8	13.17	13.23	12.94	13.50
3	256QAM	1	14	13.30	13.34	13.36	13.50
3	256QAM	8	0	12.98	13.12	13.22	13.50
3	256QAM	8	4	13.24	13.12	13.03	13.50
3	256QAM	8	7	13.19	13.05	13.20	13.50
3	256QAM	15	0	13.16	13.15	13.27	13.50
Channel				20407	20525	20643	Tune-up limit
Frequency (MHz)				824.7	836.5	848.3	(dBm)
1.4	QPSK	1	0	18.08	18.13	18.16	18.50
1.4	QPSK	1	3	18.17	18.13	18.25	18.50
1.4	QPSK	1	5	18.04	18.11	18.15	18.50
1.4	QPSK	3	0	18.15	18.16	18.16	18.50
1.4	QPSK	3	1	18.20	18.09	18.07	18.50
1.4	QPSK	3	3	18.13	18.18	18.10	18.50
1.4	QPSK	6	0	17.10	17.17	17.16	17.50
1.4	16QAM	1	0	17.37	17.36	17.41	17.50
1.4	16QAM	1	3	17.35	17.41	17.39	17.50
1.4	16QAM	1	5	17.31	17.32	17.34	17.50
1.4	16QAM	3	0	17.10	17.19	17.26	17.50
1.4	16QAM	3	1	17.19	17.19	17.29	17.50
1.4	16QAM	3	3	17.07	17.21	17.29	17.50

1.4	16QAM	6	0	16.25	16.20	16.11	16.50
1.4	64QAM	1	0	16.28	16.33	16.31	16.50
1.4	64QAM	1	3	16.30	16.24	16.41	16.50
1.4	64QAM	1	5	16.24	16.19	16.26	16.50
1.4	64QAM	3	0	16.07	16.17	16.21	16.50
1.4	64QAM	3	1	16.20	16.30	16.31	16.50
1.4	64QAM	3	3	16.19	16.10	16.37	16.50
1.4	64QAM	6	0	15.16	15.21	15.29	15.50
1.4	256QAM	1	0	13.24	13.27	13.27	13.50
1.4	256QAM	1	3	13.20	13.29	13.01	13.50
1.4	256QAM	1	5	13.28	13.26	13.40	13.50
1.4	256QAM	3	0	13.10	13.01	13.19	13.50
1.4	256QAM	3	1	13.29	13.12	13.02	13.50
1.4	256QAM	3	3	13.22	13.06	13.26	13.50
1.4	256QAM	6	0	13.13	13.15	13.26	13.50

【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	18.79	18.85	18.77	19.30
20	QPSK	1	49	18.77	18.51	18.60	19.30
20	QPSK	1	99	18.65	18.51	18.59	19.30
20	QPSK	50	0	17.82	17.95	17.76	18.80
20	QPSK	50	24	17.84	17.72	17.81	18.80
20	QPSK	50	50	17.85	17.81	17.89	18.80
20	QPSK	100	0	17.84	17.86	17.71	18.80
20	16QAM	1	0	17.88	17.78	17.91	18.80
20	16QAM	1	49	18.00	17.94	18.06	18.80
20	16QAM	1	99	18.02	18.05	18.16	18.80
20	16QAM	50	0	16.83	16.71	16.84	17.30
20	16QAM	50	24	16.86	16.75	16.90	17.30
20	16QAM	50	50	16.89	16.85	16.99	17.30
20	16QAM	100	0	16.88	16.72	16.89	17.30
20	64QAM	1	0	16.88	16.69	16.82	17.30
20	64QAM	1	49	16.88	16.83	17.01	17.30
20	64QAM	1	99	16.88	16.95	17.04	17.30
20	64QAM	50	0	15.84	15.71	15.82	16.30
20	64QAM	50	24	15.89	15.78	15.85	16.30
20	64QAM	50	50	15.88	15.87	15.98	16.30
20	64QAM	100	0	15.85	15.76	15.89	16.30
20	256QAM	1	0	14.00	13.87	14.01	14.30
20	256QAM	1	49	13.64	13.83	13.67	14.30
20	256QAM	1	99	13.95	14.14	14.00	14.30
20	256QAM	50	0	14.03	13.03	13.99	14.30
20	256QAM	50	24	13.88	13.74	14.03	14.30
20	256QAM	50	50	13.97	13.85	14.13	14.30
20	256QAM	100	0	14.09	13.82	14.00	14.30
Channel				20825	21100	21375	
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	18.66	18.73	18.62	19.30
15	QPSK	1	37	18.67	18.46	18.50	19.30
15	QPSK	1	74	18.51	18.38	18.54	19.30
15	QPSK	36	0	17.69	17.80	17.65	18.80
15	QPSK	36	20	17.79	17.64	17.74	18.80
15	QPSK	36	39	17.78	17.69	17.84	18.80
15	QPSK	75	0	17.76	17.79	17.67	18.80
15	16QAM	1	0	17.77	17.66	17.80	18.80
15	16QAM	1	37	17.91	17.86	18.02	18.80
15	16QAM	1	74	17.95	18.03	18.11	18.80
15	16QAM	36	0	16.78	16.59	16.82	17.30
15	16QAM	36	20	16.82	16.64	16.78	17.30
15	16QAM	36	39	16.75	16.71	16.86	17.30
15	16QAM	75	0	16.77	16.69	16.76	17.30
15	64QAM	1	0	16.74	16.65	16.72	17.30
15	64QAM	1	37	16.82	16.81	16.98	17.30
15	64QAM	1	74	16.85	16.83	16.94	17.30
15	64QAM	36	0	15.78	15.60	15.75	16.30
15	64QAM	36	20	15.85	15.71	15.80	16.30
15	64QAM	36	39	15.79	15.75	15.90	16.30
15	64QAM	75	0	15.72	15.74	15.84	16.30
15	256QAM	1	0	13.95	13.79	13.94	14.30
15	256QAM	1	37	13.51	13.77	13.64	14.30
15	256QAM	1	74	13.87	13.99	13.86	14.30

15	256QAM	36	0	13.96	12.92	13.91	14.30
15	256QAM	36	20	13.74	13.72	13.94	14.30
15	256QAM	36	39	13.85	13.82	14.10	14.30
15	256QAM	75	0	14.05	13.81	13.89	14.30
Channel				20800	21100	21400	Tune-up limit
Frequency (MHz)				2505	2535	2565	(dBm)
10	QPSK	1	0	18.67	18.77	18.64	19.30
10	QPSK	1	25	18.74	18.38	18.58	19.30
10	QPSK	1	49	18.60	18.38	18.48	19.30
10	QPSK	25	0	17.75	17.87	17.68	18.80
10	QPSK	25	12	17.81	17.63	17.74	18.80
10	QPSK	25	25	17.74	17.68	17.80	18.80
10	QPSK	50	0	17.78	17.79	17.57	18.80
10	16QAM	1	0	17.84	17.72	17.90	18.80
10	16QAM	1	25	17.96	17.82	18.04	18.80
10	16QAM	1	49	17.91	17.97	18.01	18.80
10	16QAM	25	0	16.80	16.64	16.81	17.30
10	16QAM	25	12	16.80	16.67	16.78	17.30
10	16QAM	25	25	16.81	16.76	16.95	17.30
10	16QAM	50	0	16.76	16.61	16.78	17.30
10	64QAM	1	0	16.87	16.59	16.80	17.30
10	64QAM	1	25	16.79	16.70	16.91	17.30
10	64QAM	1	49	16.85	16.84	16.98	17.30
10	64QAM	25	0	15.81	15.67	15.76	16.30
10	64QAM	25	12	15.86	15.70	15.76	16.30
10	64QAM	25	25	15.87	15.78	15.90	16.30
10	64QAM	50	0	15.76	15.63	15.83	16.30
10	256QAM	1	0	13.92	13.83	13.95	14.30
10	256QAM	1	25	13.62	13.69	13.63	14.30
10	256QAM	1	49	13.83	14.11	13.91	14.30
10	256QAM	25	0	13.89	13.01	13.84	14.30
10	256QAM	25	12	13.82	13.67	13.99	14.30
10	256QAM	25	25	13.90	13.82	14.05	14.30
10	256QAM	50	0	14.01	13.79	13.92	14.30
Channel				20775	21100	21425	Tune-up limit
Frequency (MHz)				2502.5	2535	2567.5	(dBm)
5	QPSK	1	0	18.72	18.82	18.75	19.30
5	QPSK	1	12	18.68	18.38	18.48	19.30
5	QPSK	1	24	18.64	18.47	18.55	19.30
5	QPSK	12	0	17.71	17.89	17.64	18.80
5	QPSK	12	7	17.71	17.69	17.75	18.80
5	QPSK	12	13	17.80	17.70	17.86	18.80
5	QPSK	25	0	17.75	17.84	17.59	18.80
5	16QAM	1	0	17.86	17.64	17.81	18.80
5	16QAM	1	12	17.88	17.93	17.98	18.80
5	16QAM	1	24	17.97	17.98	18.13	18.80
5	16QAM	12	0	16.78	16.69	16.79	17.30
5	16QAM	12	7	16.82	16.74	16.87	17.30
5	16QAM	12	13	16.79	16.71	16.90	17.30
5	16QAM	25	0	16.79	16.68	16.86	17.30
5	64QAM	1	0	16.75	16.60	16.78	17.30
5	64QAM	1	12	16.75	16.68	16.89	17.30
5	64QAM	1	24	16.73	16.91	16.98	17.30
5	64QAM	12	0	15.81	15.60	15.75	16.30
5	64QAM	12	7	15.84	15.63	15.78	16.30
5	64QAM	12	13	15.77	15.73	15.92	16.30
5	64QAM	25	0	15.74	15.63	15.75	16.30
5	256QAM	1	0	13.98	13.80	13.92	14.30
5	256QAM	1	12	13.55	13.73	13.62	14.30
5	256QAM	1	24	13.87	14.08	13.86	14.30
5	256QAM	12	0	14.00	12.91	13.84	14.30
5	256QAM	12	7	13.80	13.65	13.94	14.30
5	256QAM	12	13	14.08	14.06	14.06	14.30
5	256QAM	25	0	14.24	14.00	14.22	14.30

【LTE Band 7_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				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	17.48	17.62	17.52	17.90
20	QPSK	1	49	17.30	17.59	17.40	17.90
20	QPSK	1	99	17.41	17.58	17.42	17.90
20	QPSK	50	0	17.49	17.68	17.51	17.90
20	QPSK	50	24	17.44	17.63	17.49	17.90



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20	QPSK	50	50	17.39	17.67	17.43	17.90
20	QPSK	100	0	17.40	17.63	17.47	17.90
20	16QAM	1	0	17.39	17.59	17.43	17.90
20	16QAM	1	49	17.36	17.59	17.43	17.90
20	16QAM	1	99	17.34	17.54	17.41	17.90
20	16QAM	50	0	17.34	17.62	17.43	17.90
20	16QAM	50	24	17.41	17.63	17.44	17.90
20	16QAM	50	50	17.40	17.66	17.46	17.90
20	16QAM	100	0	17.44	17.60	17.36	17.90
20	64QAM	1	0	17.30	17.56	17.36	17.90
20	64QAM	1	49	17.35	17.55	17.35	17.90
20	64QAM	1	99	17.32	17.49	17.34	17.90
20	64QAM	50	0	17.50	17.68	17.51	17.90
20	64QAM	50	24	17.33	17.58	17.39	17.90
20	64QAM	50	50	17.49	17.66	17.41	17.90
20	64QAM	100	0	17.37	17.63	17.42	17.90
20	256QAM	1	0	17.35	17.56	17.35	17.90
20	256QAM	1	49	17.24	17.49	17.29	17.90
20	256QAM	1	99	17.25	17.52	17.38	17.90
20	256QAM	50	0	17.44	17.65	17.54	17.90
20	256QAM	50	24	17.44	17.60	17.38	17.90
20	256QAM	50	50	17.37	17.61	17.43	17.90
20	256QAM	100	0	17.29	17.56	17.33	17.90
Channel				20825	21100	21375	Tune-up limit
Frequency (MHz)				2507.5	2535	2562.5	(dBm)
15	QPSK	1	0	17.38	17.48	17.38	17.90
15	QPSK	1	37	17.20	17.51	17.30	17.90
15	QPSK	1	74	17.36	17.44	17.32	17.90
15	QPSK	36	0	17.38	17.62	17.45	17.90
15	QPSK	36	20	17.32	17.53	17.41	17.90
15	QPSK	36	39	17.35	17.55	17.34	17.90
15	QPSK	75	0	17.36	17.58	17.45	17.90
15	16QAM	1	0	17.24	17.57	17.35	17.90
15	16QAM	1	37	17.31	17.45	17.31	17.90
15	16QAM	1	74	17.21	17.41	17.27	17.90
15	16QAM	36	0	17.28	17.57	17.32	17.90
15	16QAM	36	20	17.39	17.54	17.33	17.90
15	16QAM	36	39	17.34	17.53	17.34	17.90
15	16QAM	75	0	17.37	17.58	17.27	17.90
15	64QAM	1	0	17.16	17.46	17.30	17.90
15	64QAM	1	37	17.25	17.51	17.33	17.90
15	64QAM	1	74	17.24	17.47	17.20	17.90
15	64QAM	36	0	17.39	17.54	17.49	17.90
15	64QAM	36	20	17.23	17.49	17.25	17.90
15	64QAM	36	39	17.40	17.57	17.40	17.90
15	64QAM	75	0	17.30	17.60	17.35	17.90
15	256QAM	1	0	17.31	17.52	17.32	17.90
15	256QAM	1	37	17.20	17.43	17.17	17.90
15	256QAM	1	74	17.11	17.47	17.24	17.90
15	256QAM	36	0	17.43	17.60	17.51	17.90
15	256QAM	36	20	17.40	17.50	17.25	17.90
15	256QAM	36	39	17.35	17.52	17.38	17.90
15	256QAM	75	0	17.27	17.52	17.25	17.90
Channel				20800	21100	21400	Tune-up limit
Frequency (MHz)				2505	2535	2565	(dBm)
10	QPSK	1	0	17.46	17.60	17.50	17.90
10	QPSK	1	25	17.21	17.48	17.30	17.90
10	QPSK	1	49	17.27	17.48	17.35	17.90
10	QPSK	25	0	17.35	17.59	17.42	17.90
10	QPSK	25	12	17.40	17.49	17.47	17.90
10	QPSK	25	25	17.28	17.54	17.33	17.90
10	QPSK	50	0	17.38	17.55	17.41	17.90
10	16QAM	1	0	17.35	17.48	17.29	17.90
10	16QAM	1	25	17.21	17.57	17.39	17.90
10	16QAM	1	49	17.20	17.45	17.39	17.90
10	16QAM	25	0	17.25	17.54	17.38	17.90
10	16QAM	25	12	17.37	17.57	17.35	17.90
10	16QAM	25	25	17.30	17.55	17.40	17.90
10	16QAM	50	0	17.38	17.55	17.21	17.90
10	64QAM	1	0	17.28	17.54	17.34	17.90
10	64QAM	1	25	17.25	17.52	17.25	17.90
10	64QAM	1	49	17.24	17.38	17.20	17.90
10	64QAM	25	0	17.40	17.55	17.49	17.90
10	64QAM	25	12	17.28	17.45	17.29	17.90
10	64QAM	25	25	17.44	17.54	17.32	17.90
10	64QAM	50	0	17.32	17.53	17.28	17.90
10	256QAM	1	0	17.26	17.45	17.32	17.90
10	256QAM	1	25	17.10	17.45	17.27	17.90

10	256QAM	1	49	17.16	17.48	17.34	17.90
10	256QAM	25	0	17.39	17.54	17.46	17.90
10	256QAM	25	12	17.38	17.47	17.24	17.90
10	256QAM	25	25	17.28	17.59	17.33	17.90
10	256QAM	50	0	17.15	17.50	17.19	17.90
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	17.39	17.50	17.48	17.90
5	QPSK	1	12	17.19	17.51	17.29	17.90
5	QPSK	1	24	17.39	17.53	17.40	17.90
5	QPSK	12	0	17.40	17.56	17.46	17.90
5	QPSK	12	7	17.40	17.54	17.36	17.90
5	QPSK	12	13	17.33	17.61	17.36	17.90
5	QPSK	25	0	17.37	17.53	17.40	17.90
5	16QAM	1	0	17.27	17.46	17.40	17.90
5	16QAM	1	12	17.21	17.51	17.30	17.90
5	16QAM	1	24	17.33	17.47	17.37	17.90
5	16QAM	12	0	17.21	17.53	17.36	17.90
5	16QAM	12	7	17.33	17.50	17.31	17.90
5	16QAM	12	13	17.34	17.63	17.38	17.90
5	16QAM	25	0	17.43	17.52	17.29	17.90
5	64QAM	1	0	17.17	17.50	17.26	17.90
5	64QAM	1	12	17.28	17.54	17.23	17.90
5	64QAM	1	24	17.29	17.38	17.26	17.90
5	64QAM	12	0	17.39	17.55	17.49	17.90
5	64QAM	12	7	17.20	17.51	17.25	17.90
5	64QAM	12	13	17.41	17.63	17.35	17.90
5	64QAM	25	0	17.30	17.52	17.32	17.90
5	256QAM	1	0	17.31	17.45	17.32	17.90
5	256QAM	1	12	17.16	17.40	17.20	17.90
5	256QAM	1	24	17.21	17.50	17.27	17.90
5	256QAM	12	0	17.33	17.63	17.46	17.90
5	256QAM	12	7	17.32	17.48	17.28	17.90
5	256QAM	12	13	17.23	17.51	17.31	17.90
5	256QAM	25	0	17.24	17.50	17.31	17.90

【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	18.36	18.35	18.32	19.40
10	QPSK	1	25	18.41	18.25	18.33	19.40
10	QPSK	1	49	18.18	18.19	18.16	19.40
10	QPSK	25	0	17.33	17.33	17.15	18.90
10	QPSK	25	12	17.39	17.30	17.36	18.90
10	QPSK	25	25	17.31	17.21	17.30	18.90
10	QPSK	50	0	17.49	17.29	17.41	18.90
10	16QAM	1	0	17.79	17.50	17.60	18.90
10	16QAM	1	25	17.59	17.51	17.49	18.90
10	16QAM	1	49	17.33	17.30	17.38	18.90
10	16QAM	25	0	16.30	16.35	16.23	17.40
10	16QAM	25	12	16.42	16.28	16.34	17.40
10	16QAM	25	25	16.30	16.39	16.27	17.40
10	16QAM	50	0	16.35	16.37	16.31	17.40
10	64QAM	1	0	16.41	16.42	16.40	17.40
10	64QAM	1	25	16.46	16.44	16.48	17.40
10	64QAM	1	49	16.50	16.30	16.47	17.40
10	64QAM	25	0	15.43	15.33	15.24	16.40
10	64QAM	25	12	15.41	15.29	15.34	16.40
10	64QAM	25	25	15.28	15.37	15.25	16.40
10	64QAM	50	0	15.44	15.33	15.41	16.40
10	256QAM	1	0	12.94	13.19	13.15	14.40
10	256QAM	1	25	12.47	12.46	12.52	14.40
10	256QAM	1	49	13.26	13.18	12.60	14.40
10	256QAM	25	0	12.56	13.06	12.69	14.40
10	256QAM	25	12	13.18	13.11	13.29	14.40
10	256QAM	25	25	13.34	13.09	13.35	14.40
10	256QAM	50	0	13.39	13.37	13.34	14.40
Channel				23035	23095	23115	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	18.29	18.27	18.26	19.40
5	QPSK	1	12	18.39	18.18	18.26	19.40
5	QPSK	1	24	18.06	18.11	18.08	19.40
5	QPSK	12	0	17.24	17.24	17.10	18.90



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5	QPSK	12	7	17.29	17.19	17.33	18.90
5	QPSK	12	13	17.24	17.18	17.29	18.90
5	QPSK	25	0	17.35	17.16	17.35	18.90
5	16QAM	1	0	17.73	17.37	17.54	18.90
5	16QAM	1	12	17.54	17.49	17.41	18.90
5	16QAM	1	24	17.18	17.25	17.32	18.90
5	16QAM	12	0	16.18	16.24	16.10	17.40
5	16QAM	12	7	16.33	16.26	16.30	17.40
5	16QAM	12	13	16.28	16.37	16.17	17.40
5	16QAM	25	0	16.25	16.23	16.24	17.40
5	64QAM	1	0	16.33	16.36	16.27	17.40
5	64QAM	1	12	16.38	16.43	16.37	17.40
5	64QAM	1	24	16.40	16.28	16.37	17.40
5	64QAM	12	0	15.38	15.19	15.19	16.40
5	64QAM	12	7	15.29	15.20	15.30	16.40
5	64QAM	12	13	15.21	15.25	15.13	16.40
5	64QAM	25	0	15.37	15.32	15.32	16.40
5	256QAM	1	0	12.82	13.13	13.06	14.40
5	256QAM	1	12	12.40	12.41	12.40	14.40
5	256QAM	1	24	13.22	13.03	12.52	14.40
5	256QAM	12	0	12.47	12.97	12.55	14.40
5	256QAM	12	7	13.04	13.06	13.25	14.40
5	256QAM	12	13	13.29	12.95	13.23	14.40
5	256QAM	25	0	13.31	13.35	13.21	14.40
Channel				23025	23095	23165	Tune-up limit
Frequency (MHz)				700.5	707.5	714.5	(dBm)
3	QPSK	1	0	18.27	18.28	18.29	19.40
3	QPSK	1	8	18.40	18.19	18.27	19.40
3	QPSK	1	14	18.08	18.17	18.04	19.40
3	QPSK	8	0	17.18	17.23	17.11	18.90
3	QPSK	8	4	17.25	17.23	17.23	18.90
3	QPSK	8	7	17.29	17.10	17.24	18.90
3	QPSK	15	0	17.36	17.16	17.38	18.90
3	16QAM	1	0	17.67	17.41	17.48	18.90
3	16QAM	1	8	17.46	17.42	17.45	18.90
3	16QAM	1	14	17.25	17.19	17.30	18.90
3	16QAM	8	0	16.21	16.24	16.16	17.40
3	16QAM	8	4	16.29	16.24	16.22	17.40
3	16QAM	8	7	16.22	16.37	16.22	17.40
3	16QAM	15	0	16.32	16.24	16.26	17.40
3	64QAM	1	0	16.29	16.36	16.29	17.40
3	64QAM	1	8	16.36	16.34	16.36	17.40
3	64QAM	1	14	16.48	16.21	16.40	17.40
3	64QAM	8	0	15.32	15.25	15.10	16.40
3	64QAM	8	4	15.35	15.26	15.20	16.40
3	64QAM	8	7	15.18	15.33	15.17	16.40
3	64QAM	15	0	15.37	15.31	15.26	16.40
3	256QAM	1	0	12.82	13.07	13.11	14.40
3	256QAM	1	8	12.41	12.41	12.49	14.40
3	256QAM	1	14	13.20	13.13	12.54	14.40
3	256QAM	8	0	12.52	12.93	12.56	14.40
3	256QAM	8	4	13.06	13.06	13.28	14.40
3	256QAM	8	7	13.31	13.02	13.33	14.40
3	256QAM	15	0	13.25	13.27	13.31	14.40
Channel				23017	23095	23173	Tune-up limit
Frequency (MHz)				699.7	707.5	715.3	(dBm)
1.4	QPSK	1	0	18.27	18.28	18.30	19.40
1.4	QPSK	1	3	18.29	18.19	18.22	19.40
1.4	QPSK	1	5	18.10	18.14	18.12	19.40
1.4	QPSK	3	0	17.78	17.71	17.55	19.40
1.4	QPSK	3	1	17.87	17.69	17.83	19.40
1.4	QPSK	3	3	17.79	17.59	17.77	19.40
1.4	QPSK	6	0	16.92	16.74	16.88	18.40
1.4	16QAM	1	0	17.22	16.97	16.97	18.40
1.4	16QAM	1	3	16.94	16.96	16.85	18.40
1.4	16QAM	1	5	16.80	16.68	16.82	18.40
1.4	16QAM	3	0	17.24	17.29	17.22	18.40
1.4	16QAM	3	1	17.41	17.26	17.26	18.40
1.4	16QAM	3	3	17.23	17.34	17.18	18.40
1.4	16QAM	6	0	16.29	16.32	16.25	17.40
1.4	64QAM	1	0	16.34	16.37	16.30	17.40
1.4	64QAM	1	3	16.34	16.30	16.41	17.40
1.4	64QAM	1	5	16.47	16.19	16.32	17.40
1.4	64QAM	3	0	16.35	16.32	16.16	17.40
1.4	64QAM	3	1	16.39	16.21	16.26	17.40
1.4	64QAM	3	3	16.24	16.31	16.19	17.40
1.4	64QAM	6	0	15.30	15.28	15.39	16.40
1.4	256QAM	1	0	12.87	13.11	13.09	14.40

1.4	256QAM	1	3	12.44	12.41	12.46	14.40
1.4	256QAM	1	5	13.17	13.15	12.45	14.40
1.4	256QAM	3	0	12.48	12.92	12.67	14.40
1.4	256QAM	3	1	13.10	13.09	13.18	14.40
1.4	256QAM	3	3	13.27	12.99	13.30	14.40
1.4	256QAM	6	0	13.29	13.27	13.24	14.40

【LTE Band 13_Main】

Channel	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
23230				
782				
10	QPSK	1	0	18.80
10	QPSK	1	25	18.80
10	QPSK	1	49	18.80
10	QPSK	25	0	18.30
10	QPSK	25	12	18.30
10	QPSK	25	25	18.30
10	QPSK	50	0	18.30
10	16QAM	1	0	18.30
10	16QAM	1	25	18.30
10	16QAM	1	49	18.30
10	16QAM	25	0	16.80
10	16QAM	25	12	16.80
10	16QAM	25	25	16.80
10	16QAM	50	0	16.80
10	64QAM	1	0	16.80
10	64QAM	1	25	16.80
10	64QAM	1	49	16.80
10	64QAM	25	0	15.80
10	64QAM	25	12	15.80
10	64QAM	25	25	15.80
10	64QAM	50	0	15.80
10	256QAM	1	0	13.80
10	256QAM	1	25	13.80
10	256QAM	1	49	13.80
10	256QAM	25	0	13.80
10	256QAM	25	12	13.80
10	256QAM	25	25	13.80
10	256QAM	50	0	13.80
23205				
779.5				
5	QPSK	1	0	18.80
5	QPSK	1	12	18.80
5	QPSK	1	24	18.80
5	QPSK	12	0	18.30
5	QPSK	12	7	18.30
5	QPSK	12	13	18.30
5	QPSK	25	0	18.30
5	16QAM	1	0	18.30
5	16QAM	1	12	18.30
5	16QAM	1	24	18.30
5	16QAM	12	0	16.80
5	16QAM	12	7	16.80
5	16QAM	12	13	16.80
5	16QAM	25	0	16.80
5	64QAM	1	0	16.80
5	64QAM	1	12	16.80
5	64QAM	1	24	16.80
5	64QAM	12	0	15.80
5	64QAM	12	7	15.80
5	64QAM	12	13	15.80
5	64QAM	25	0	15.80
5	256QAM	1	0	13.80
5	256QAM	1	12	13.80
5	256QAM	1	24	13.80
5	256QAM	12	0	13.80
5	256QAM	12	7	13.80
5	256QAM	12	13	13.80
5	256QAM	25	0	13.80

【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		18.36		18.60
10	QPSK	1	25		18.33		18.60
10	QPSK	1	49		18.13		18.60
10	QPSK	25	0		17.33		18.10
10	QPSK	25	12		17.27		18.10
10	QPSK	25	25		17.19		18.10
10	QPSK	50	0		17.31		18.10
10	16QAM	1	0		17.61		18.10
10	16QAM	1	25		17.57		18.10
10	16QAM	1	49		17.48		18.10
10	16QAM	25	0		16.30		16.60
10	16QAM	25	12		16.28		16.60
10	16QAM	25	25		16.20		16.60
10	16QAM	50	0		16.28		16.60
10	64QAM	1	0		16.43		16.60
10	64QAM	1	25		16.44		16.60
10	64QAM	1	49		16.17		16.60
10	64QAM	25	0		15.24		15.60
10	64QAM	25	12		15.23		15.60
10	64QAM	25	25		15.19		15.60
10	64QAM	50	0		15.28		15.60
10	256QAM	1	0		13.15		13.60
10	256QAM	1	25		13.28		13.60
10	256QAM	1	49		13.17		13.60
10	256QAM	25	0		13.33		13.60
10	256QAM	25	12		13.41		13.60
10	256QAM	25	25		13.19		13.60
10	256QAM	50	0		13.28		13.60
Channel				23305	23330	23355	Tune-up limit (dBm)
Frequency (MHz)				790.5	793	795.5	
5	QPSK	1	0	18.27	18.30	18.28	18.60
5	QPSK	1	12	18.18	18.30	18.15	18.60
5	QPSK	1	24	18.00	18.09	17.96	18.60
5	QPSK	12	0	17.16	17.31	17.23	18.10
5	QPSK	12	7	17.07	17.24	17.20	18.10
5	QPSK	12	13	17.05	17.13	17.08	18.10
5	QPSK	25	0	17.10	17.24	17.15	18.10
5	16QAM	1	0	17.39	17.56	17.47	18.10
5	16QAM	1	12	17.46	17.56	17.44	18.10
5	16QAM	1	24	17.33	17.42	17.27	18.10
5	16QAM	12	0	16.10	16.24	16.19	16.60
5	16QAM	12	7	16.23	16.28	16.15	16.60
5	16QAM	12	13	16.09	16.14	16.10	16.60
5	16QAM	25	0	16.09	16.24	16.17	16.60
5	64QAM	1	0	16.21	16.38	16.34	16.60
5	64QAM	1	12	16.25	16.41	16.31	16.60
5	64QAM	1	24	16.00	16.13	15.97	16.60
5	64QAM	12	0	15.07	15.24	15.16	15.60
5	64QAM	12	7	15.11	15.22	15.14	15.60
5	64QAM	12	13	14.96	15.12	15.05	15.60
5	64QAM	25	0	15.18	15.22	15.11	15.60
5	256QAM	1	0	13.02	13.12	12.96	13.60
5	256QAM	1	12	13.03	13.19	13.14	13.60
5	256QAM	1	24	12.94	13.07	13.00	13.60
5	256QAM	12	0	13.17	13.32	13.29	13.60
5	256QAM	12	7	13.33	13.39	13.28	13.60
5	256QAM	12	13	13.07	13.16	13.12	13.60
5	256QAM	25	0	13.23	13.27	13.22	13.60

【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	18.33	18.34	18.32	19.40
10	QPSK	1	25	18.31	18.32	18.35	19.40
10	QPSK	1	49	18.25	18.17	18.26	19.40
10	QPSK	25	0	17.25	17.28	17.27	18.90
10	QPSK	25	12	17.25	17.17	17.26	18.90
10	QPSK	25	25	17.27	17.24	17.21	18.90
10	QPSK	50	0	17.34	17.26	17.33	18.90
10	16QAM	1	0	17.44	17.44	17.48	18.90
10	16QAM	1	25	17.42	17.47	17.41	18.90
10	16QAM	1	49	17.39	17.42	17.45	18.90
10	16QAM	25	0	16.24	16.28	16.29	17.40
10	16QAM	25	12	16.31	16.39	16.39	17.40
10	16QAM	25	25	16.32	16.31	16.32	17.40
10	16QAM	50	0	16.35	16.29	16.23	17.40
10	64QAM	1	0	16.48	16.43	16.42	17.40
10	64QAM	1	25	16.47	16.33	16.42	17.40
10	64QAM	1	49	16.50	16.40	16.28	17.40
10	64QAM	25	0	15.26	15.35	15.31	16.40
10	64QAM	25	12	15.28	15.34	15.35	16.40
10	64QAM	25	25	15.29	15.38	15.24	16.40
10	64QAM	50	0	15.34	15.28	15.38	16.40
10	256QAM	1	0	13.23	13.17	13.27	14.40
10	256QAM	1	25	12.71	12.69	13.07	14.40
10	256QAM	1	49	13.25	13.11	13.23	14.40
10	256QAM	25	0	13.34	13.33	12.40	14.40
10	256QAM	25	12	13.09	13.19	12.89	14.40
10	256QAM	25	25	13.32	13.32	13.24	14.40
10	256QAM	50	0	13.30	13.43	13.38	14.40
Channel				23755	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	18.21	18.29	18.26	19.40
5	QPSK	1	12	18.30	18.23	18.21	19.40
5	QPSK	1	24	18.14	18.02	18.14	19.40
5	QPSK	12	0	17.18	17.24	17.24	18.90
5	QPSK	12	7	17.17	17.07	17.17	18.90
5	QPSK	12	13	17.23	17.18	17.09	18.90
5	QPSK	25	0	17.19	17.24	17.27	18.90
5	16QAM	1	0	17.41	17.43	17.45	18.90
5	16QAM	1	12	17.28	17.35	17.40	18.90
5	16QAM	1	24	17.37	17.32	17.35	18.90
5	16QAM	12	0	16.22	16.14	16.15	17.40
5	16QAM	12	7	16.23	16.29	16.34	17.40
5	16QAM	12	13	16.19	16.25	16.25	17.40
5	16QAM	25	0	16.32	16.24	16.15	17.40
5	64QAM	1	0	16.44	16.36	16.31	17.40
5	64QAM	1	12	16.34	16.27	16.40	17.40
5	64QAM	1	24	16.38	16.29	16.23	17.40
5	64QAM	12	0	15.17	15.32	15.19	16.40
5	64QAM	12	7	15.14	15.24	15.22	16.40
5	64QAM	12	13	15.15	15.27	15.14	16.40
5	64QAM	25	0	15.24	15.15	15.36	16.40
5	256QAM	1	0	13.12	13.15	13.13	14.40
5	256QAM	1	12	12.57	12.67	12.94	14.40
5	256QAM	1	24	13.17	13.03	13.09	14.40
5	256QAM	12	0	13.21	13.26	12.41	14.40
5	256QAM	12	7	12.97	13.09	12.77	14.40
5	256QAM	12	13	13.29	13.26	13.15	14.40
5	256QAM	25	0	13.19	13.39	13.35	14.40

**【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	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1905	
20	QPSK	1	0	17.85	17.81	17.77	18.60
20	QPSK	1	49	17.84	17.79	17.70	18.60
20	QPSK	1	99	17.68	17.71	17.72	18.60
20	QPSK	50	0	17.20	17.11	17.19	17.60
20	QPSK	50	24	17.01	17.08	17.12	17.60
20	QPSK	50	50	17.11	17.05	17.02	17.60
20	QPSK	100	0	17.13	17.02	17.06	17.60
20	16QAM	1	0	17.22	17.05	17.01	17.60
20	16QAM	1	49	17.19	17.14	17.06	17.60
20	16QAM	1	99	17.07	17.03	16.98	17.60
20	16QAM	50	0	15.97	15.88	15.82	16.60
20	16QAM	50	24	15.92	15.86	15.86	16.60
20	16QAM	50	50	15.81	15.82	15.84	16.60
20	16QAM	100	0	15.88	15.88	15.82	16.60
20	64QAM	1	0	16.00	15.90	15.85	16.60
20	64QAM	1	49	15.97	15.92	16.00	16.60
20	64QAM	1	99	15.82	15.94	15.86	16.60
20	64QAM	50	0	14.91	14.88	14.79	15.60
20	64QAM	50	24	14.92	14.87	14.86	15.60
20	64QAM	50	50	14.83	14.81	14.85	15.60
20	64QAM	100	0	14.90	14.85	14.79	15.60
20	256QAM	1	0	13.17	12.97	13.10	13.60
20	256QAM	1	49	13.12	12.99	12.56	13.60
20	256QAM	1	99	13.36	13.10	13.14	13.60
20	256QAM	50	0	12.95	12.99	13.34	13.60
20	256QAM	50	24	13.14	13.00	13.07	13.60
20	256QAM	50	50	13.00	13.05	13.06	13.60
20	256QAM	100	0	13.09	12.99	13.00	13.60
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	17.79	17.67	17.58	18.60
15	QPSK	1	37	17.72	17.73	17.63	18.60
15	QPSK	1	74	17.63	17.63	17.63	18.60
15	QPSK	36	0	17.00	17.00	17.00	17.60
15	QPSK	36	20	17.01	17.00	17.01	17.60
15	QPSK	36	39	17.00	17.02	17.02	17.60
15	QPSK	75	0	17.00	17.02	17.01	17.60
15	16QAM	1	0	17.20	16.98	16.91	17.60
15	16QAM	1	37	17.05	17.06	16.91	17.60
15	16QAM	1	74	17.06	16.88	16.84	17.60
15	16QAM	36	0	15.87	15.78	15.70	16.60
15	16QAM	36	20	15.78	15.78	15.82	16.60
15	16QAM	36	39	15.68	15.71	15.76	16.60
15	16QAM	75	0	15.83	15.84	15.81	16.60
15	64QAM	1	0	15.92	15.84	15.82	16.60
15	64QAM	1	37	15.87	15.81	15.96	16.60
15	64QAM	1	74	15.74	15.85	15.79	16.60
15	64QAM	36	0	14.86	14.86	14.69	15.60
15	64QAM	36	20	14.90	14.83	14.80	15.60
15	64QAM	36	39	14.80	14.66	14.71	15.60
15	64QAM	75	0	14.79	14.82	14.78	15.60
15	256QAM	1	0	13.16	12.95	13.03	13.60
15	256QAM	1	37	13.07	12.85	12.51	13.60
15	256QAM	1	74	13.22	13.00	13.07	13.60
15	256QAM	36	0	12.83	12.85	13.30	13.60
15	256QAM	36	20	13.12	12.89	13.05	13.60
15	256QAM	36	39	12.89	12.98	12.97	13.60
15	256QAM	75	0	12.95	12.87	12.92	13.60
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	17.73	17.72	17.68	18.60
10	QPSK	1	25	17.74	17.69	17.63	18.60
10	QPSK	1	49	17.55	17.58	17.60	18.60
10	QPSK	25	0	17.01	17.01	17.01	17.60
10	QPSK	25	12	17.01	17.00	17.01	17.60
10	QPSK	25	25	17.01	17.00	17.01	17.60
10	QPSK	50	0	17.01	17.00	17.00	17.60
10	16QAM	1	0	17.16	16.95	16.93	17.60
10	16QAM	1	25	17.17	17.08	16.93	17.60
10	16QAM	1	49	16.94	17.02	16.83	17.60
10	16QAM	25	0	15.88	15.85	15.75	16.60



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10	16QAM	25	12	15.83	15.76	15.74	16.60
10	16QAM	25	25	15.72	15.78	15.77	16.60
10	16QAM	50	0	15.77	15.74	15.70	16.60
10	64QAM	1	0	15.92	15.77	15.79	16.60
10	64QAM	1	25	15.88	15.86	15.98	16.60
10	64QAM	1	49	15.68	15.85	15.77	16.60
10	64QAM	25	0	14.83	14.82	14.64	15.60
10	64QAM	25	12	14.86	14.73	14.73	15.60
10	64QAM	25	25	14.78	14.70	14.79	15.60
10	64QAM	50	0	14.78	14.73	14.72	15.60
10	256QAM	1	0	13.06	12.85	13.03	13.60
10	256QAM	1	25	13.08	12.86	12.46	13.60
10	256QAM	1	49	13.26	13.08	13.04	13.60
10	256QAM	25	0	12.85	12.97	13.32	13.60
10	256QAM	25	12	13.10	12.89	12.94	13.60
10	256QAM	25	25	12.98	12.90	12.96	13.60
10	256QAM	50	0	12.96	12.94	12.96	13.60
Channel				26065	26340	26665	Tune-up limit
Frequency (MHz)				1852.5	1880	1912.5	(dBm)
5	QPSK	1	0	17.80	17.71	17.56	18.60
5	QPSK	1	12	17.75	17.77	17.71	18.60
5	QPSK	1	24	17.55	17.66	17.63	18.60
5	QPSK	12	0	17.01	17.00	17.00	17.60
5	QPSK	12	7	17.01	17.00	17.00	17.60
5	QPSK	12	13	17.01	17.02	17.00	17.60
5	QPSK	25	0	17.02	17.00	17.01	17.60
5	16QAM	1	0	17.14	17.00	16.88	17.60
5	16QAM	1	12	17.09	17.03	17.03	17.60
5	16QAM	1	24	16.98	16.94	16.95	17.60
5	16QAM	12	0	15.91	15.82	15.69	16.60
5	16QAM	12	7	15.87	15.78	15.77	16.60
5	16QAM	12	13	15.72	15.70	15.80	16.60
5	16QAM	25	0	15.73	15.76	15.77	16.60
5	64QAM	1	0	15.86	15.78	15.79	16.60
5	64QAM	1	12	15.94	15.84	15.93	16.60
5	64QAM	1	24	15.78	15.86	15.71	16.60
5	64QAM	12	0	14.90	14.84	14.69	15.60
5	64QAM	12	7	14.81	14.73	14.83	15.60
5	64QAM	12	13	14.81	14.68	14.79	15.60
5	64QAM	25	0	14.77	14.74	14.74	15.60
5	256QAM	1	0	13.07	12.84	12.97	13.60
5	256QAM	1	12	13.00	12.92	12.43	13.60
5	256QAM	1	24	13.23	13.08	13.06	13.60
5	256QAM	12	0	12.86	12.85	13.27	13.60
5	256QAM	12	7	13.06	12.98	12.99	13.60
5	256QAM	12	13	12.93	12.91	12.94	13.60
5	256QAM	25	0	12.94	12.86	12.97	13.60
Channel				26055	26340	26675	Tune-up limit
Frequency (MHz)				1851.5	1880	1913.5	(dBm)
3	QPSK	1	0	17.77	17.71	17.60	18.60
3	QPSK	1	8	17.76	17.74	17.65	18.60
3	QPSK	1	14	17.53	17.63	17.63	18.60
3	QPSK	8	0	17.00	17.02	17.00	17.60
3	QPSK	8	4	17.00	17.01	17.02	17.60
3	QPSK	8	7	17.00	17.00	17.00	17.60
3	QPSK	15	0	17.00	17.00	17.00	17.60
3	16QAM	1	0	17.14	16.92	16.99	17.60
3	16QAM	1	8	17.04	17.02	17.02	17.60
3	16QAM	1	14	17.01	16.97	16.88	17.60
3	16QAM	8	0	15.88	15.85	15.78	16.60
3	16QAM	8	4	15.89	15.71	15.83	16.60
3	16QAM	8	7	15.79	15.72	15.81	16.60
3	16QAM	15	0	15.73	15.85	15.74	16.60
3	64QAM	1	0	15.89	15.77	15.77	16.60
3	64QAM	1	8	15.91	15.80	15.95	16.60
3	64QAM	1	14	15.72	15.79	15.74	16.60
3	64QAM	8	0	14.81	14.79	14.71	15.60
3	64QAM	8	4	14.84	14.84	14.75	15.60
3	64QAM	8	7	14.70	14.74	14.81	15.60
3	64QAM	15	0	14.86	14.71	14.70	15.60
3	256QAM	1	0	13.12	12.86	13.04	13.60
3	256QAM	1	8	13.03	12.92	12.43	13.60
3	256QAM	1	14	13.33	13.02	13.07	13.60
3	256QAM	8	0	12.84	12.88	13.26	13.60
3	256QAM	8	4	13.10	12.94	13.00	13.60
3	256QAM	8	7	12.93	13.01	12.96	13.60
3	256QAM	15	0	13.01	12.86	12.98	13.60
Channel				26047	26340	26683	Tune-up limit

Frequency (MHz)				1850.7	1880	1914.3	(dBm)
1.4	QPSK	1	0	17.82	17.66	17.58	18.60
1.4	QPSK	1	3	17.80	17.66	17.73	18.60
1.4	QPSK	1	5	17.64	17.62	17.65	18.60
1.4	QPSK	3	0	17.01	17.00	17.02	18.60
1.4	QPSK	3	1	17.00	17.00	17.00	18.60
1.4	QPSK	3	3	17.01	17.01	17.00	18.60
1.4	QPSK	6	0	16.02	16.00	16.00	17.60
1.4	16QAM	1	0	17.20	16.93	16.88	17.60
1.4	16QAM	1	3	17.06	17.04	17.01	17.60
1.4	16QAM	1	5	17.05	16.99	16.91	17.60
1.4	16QAM	3	0	16.86	16.74	16.70	17.60
1.4	16QAM	3	1	16.91	16.76	16.77	17.60
1.4	16QAM	3	3	16.66	16.70	16.79	17.60
1.4	16QAM	6	0	15.81	15.78	15.72	16.60
1.4	64QAM	1	0	15.98	15.82	15.78	16.60
1.4	64QAM	1	3	15.83	15.78	15.94	16.60
1.4	64QAM	1	5	15.75	15.87	15.72	16.60
1.4	64QAM	3	0	15.79	15.86	15.74	16.60
1.4	64QAM	3	1	15.88	15.80	15.79	16.60
1.4	64QAM	3	3	15.74	15.74	15.80	16.60
1.4	64QAM	6	0	14.87	14.83	14.69	15.60
1.4	256QAM	1	0	13.05	12.92	13.06	13.60
1.4	256QAM	1	3	12.98	12.97	12.44	13.60
1.4	256QAM	1	5	13.21	13.03	13.13	13.60
1.4	256QAM	3	0	12.90	12.94	13.26	13.60
1.4	256QAM	3	1	13.01	12.87	13.03	13.60
1.4	256QAM	3	3	12.87	12.92	12.97	13.60
1.4	256QAM	6	0	13.00	12.95	12.94	13.60

【LTE Band 25_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				26140	26340	26590	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1905	
20	QPSK	1	0	16.22	16.35	16.28	16.70
20	QPSK	1	49	16.10	16.32	16.16	16.70
20	QPSK	1	99	16.05	16.21	16.11	16.70
20	QPSK	50	0	16.15	16.38	16.24	16.70
20	QPSK	50	24	16.11	16.34	16.20	16.70
20	QPSK	50	50	16.10	16.36	16.19	16.70
20	QPSK	100	0	16.10	16.33	16.11	16.70
20	16QAM	1	0	16.09	16.35	16.23	16.70
20	16QAM	1	49	16.05	16.22	16.09	16.70
20	16QAM	1	99	16.02	16.17	15.97	16.70
20	16QAM	50	0	16.13	16.32	16.24	16.70
20	16QAM	50	24	16.19	16.35	16.17	16.70
20	16QAM	50	50	16.17	16.31	16.19	16.70
20	16QAM	100	0	16.06	16.33	16.13	16.70
20	64QAM	1	0	16.07	16.26	16.15	16.70
20	64QAM	1	49	16.01	16.24	16.09	16.70
20	64QAM	1	99	15.98	16.12	15.93	16.70
20	64QAM	50	0	16.10	16.32	16.17	16.70
20	64QAM	50	24	16.08	16.35	16.18	16.70
20	64QAM	50	50	16.07	16.28	16.14	16.70
20	64QAM	100	0	16.08	16.27	16.07	16.70
20	256QAM	1	0	15.74	15.95	15.73	16.70
20	256QAM	1	49	15.72	15.93	15.73	16.70
20	256QAM	1	99	15.77	15.99	15.89	16.70
20	256QAM	50	0	16.07	16.33	16.24	16.70
20	256QAM	50	24	16.12	16.29	16.09	16.70
20	256QAM	50	50	16.12	16.31	16.15	16.70
20	256QAM	100	0	16.16	16.35	16.16	16.70
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	16.11	16.23	16.13	16.70
15	QPSK	1	37	16.05	16.18	16.06	16.70
15	QPSK	1	74	16.01	16.19	16.05	16.70
15	QPSK	36	0	16.07	16.31	16.17	16.70
15	QPSK	36	20	16.03	16.31	16.12	16.70
15	QPSK	36	39	15.96	16.27	16.17	16.70
15	QPSK	75	0	15.98	16.31	15.96	16.70
15	16QAM	1	0	16.01	16.29	16.08	16.70
15	16QAM	1	37	16.00	16.18	16.02	16.70
15	16QAM	1	74	15.88	16.16	15.89	16.70



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15	16QAM	36	0	16.01	16.25	16.18	16.70
15	16QAM	36	20	16.09	16.21	16.08	16.70
15	16QAM	36	39	16.14	16.27	16.10	16.70
15	16QAM	75	0	16.03	16.26	16.09	16.70
15	64QAM	1	0	15.96	16.15	16.14	16.70
15	64QAM	1	37	15.90	16.22	16.01	16.70
15	64QAM	1	74	15.86	16.11	15.88	16.70
15	64QAM	36	0	15.99	16.29	16.05	16.70
15	64QAM	36	20	16.05	16.28	16.09	16.70
15	64QAM	36	39	15.97	16.17	16.10	16.70
15	64QAM	75	0	15.95	16.16	15.94	16.70
15	256QAM	1	0	15.66	15.91	15.60	16.70
15	256QAM	1	37	15.62	15.79	15.69	16.70
15	256QAM	1	74	15.69	15.92	15.76	16.70
15	256QAM	36	0	16.03	16.30	16.15	16.70
15	256QAM	36	20	16.01	16.22	15.97	16.70
15	256QAM	36	39	16.01	16.21	16.12	16.70
15	256QAM	75	0	16.06	16.24	16.07	16.70
Channel				26090	26340	26640	Tune-up limit
Frequency (MHz)				1855	1880	1910	(dBm)
10	QPSK	1	0	16.21	16.28	16.25	16.70
10	QPSK	1	25	16.04	16.21	16.12	16.70
10	QPSK	1	49	16.02	16.15	16.00	16.70
10	QPSK	25	0	15.97	16.32	16.06	16.70
10	QPSK	25	12	16.12	16.35	16.22	16.70
10	QPSK	25	25	15.97	16.27	16.14	16.70
10	QPSK	50	0	16.00	16.25	16.02	16.70
10	16QAM	1	0	15.99	16.34	16.14	16.70
10	16QAM	1	25	15.95	16.10	15.99	16.70
10	16QAM	1	49	15.91	16.14	15.84	16.70
10	16QAM	25	0	16.01	16.25	16.20	16.70
10	16QAM	25	12	16.05	16.21	16.14	16.70
10	16QAM	25	25	16.04	16.27	16.11	16.70
10	16QAM	50	0	16.05	16.26	16.04	16.70
10	64QAM	1	0	16.03	16.14	16.14	16.70
10	64QAM	1	25	15.91	16.19	16.00	16.70
10	64QAM	1	49	15.96	16.00	15.81	16.70
10	64QAM	25	0	15.97	16.25	16.02	16.70
10	64QAM	25	12	15.99	16.32	16.09	16.70
10	64QAM	25	25	16.03	16.21	16.09	16.70
10	64QAM	50	0	15.94	16.22	16.03	16.70
10	256QAM	1	0	15.71	15.93	15.68	16.70
10	256QAM	1	25	15.58	15.84	15.66	16.70
10	256QAM	1	49	15.70	15.86	15.87	16.70
10	256QAM	25	0	15.94	16.24	16.11	16.70
10	256QAM	25	12	16.10	16.24	15.98	16.70
10	256QAM	25	25	15.98	16.29	16.05	16.70
10	256QAM	50	0	16.11	16.28	16.02	16.70
Channel				26065	26340	26665	Tune-up limit
Frequency (MHz)				1852.5	1880	1912.5	(dBm)
5	QPSK	1	0	16.15	16.32	16.14	16.70
5	QPSK	1	12	16.04	16.22	16.02	16.70
5	QPSK	1	24	15.93	16.07	16.06	16.70
5	QPSK	12	0	16.09	16.22	16.13	16.70
5	QPSK	12	7	16.07	16.28	16.09	16.70
5	QPSK	12	13	15.96	16.24	16.14	16.70
5	QPSK	25	0	16.01	16.27	16.00	16.70
5	16QAM	1	0	15.95	16.27	16.16	16.70
5	16QAM	1	12	15.95	16.17	16.05	16.70
5	16QAM	1	24	15.89	16.12	15.93	16.70
5	16QAM	12	0	16.10	16.23	16.11	16.70
5	16QAM	12	7	16.10	16.28	16.09	16.70
5	16QAM	12	13	16.14	16.26	16.13	16.70
5	16QAM	25	0	15.96	16.18	16.03	16.70
5	64QAM	1	0	15.93	16.13	16.10	16.70
5	64QAM	1	12	15.95	16.14	15.98	16.70
5	64QAM	1	24	15.91	16.05	15.90	16.70
5	64QAM	12	0	16.03	16.19	16.11	16.70
5	64QAM	12	7	16.00	16.25	16.06	16.70
5	64QAM	12	13	15.97	16.18	16.12	16.70
5	64QAM	25	0	15.94	16.19	16.00	16.70
5	256QAM	1	0	15.60	15.90	15.62	16.70
5	256QAM	1	12	15.65	15.80	15.65	16.70
5	256QAM	1	24	15.70	15.90	15.85	16.70
5	256QAM	12	0	16.03	16.19	16.12	16.70
5	256QAM	12	7	16.09	16.21	16.01	16.70
5	256QAM	12	13	16.09	16.29	16.10	16.70
5	256QAM	25	0	16.06	16.24	16.14	16.70



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Channel				26055	26340	26675	Tune-up limit
Frequency (MHz)				1851.5	1880	1913.5	(dBm)
3	QPSK	1	0	16.14	16.23	16.24	16.70
3	QPSK	1	8	16.01	16.19	16.14	16.70
3	QPSK	1	14	15.93	16.20	16.01	16.70
3	QPSK	8	0	16.05	16.30	16.10	16.70
3	QPSK	8	4	16.12	16.24	16.21	16.70
3	QPSK	8	7	16.08	16.31	16.13	16.70
3	QPSK	15	0	16.05	16.21	16.03	16.70
3	16QAM	1	0	15.97	16.20	16.21	16.70
3	16QAM	1	8	15.92	16.12	16.06	16.70
3	16QAM	1	14	15.96	16.15	15.83	16.70
3	16QAM	8	0	16.02	16.23	16.12	16.70
3	16QAM	8	4	16.10	16.22	16.10	16.70
3	16QAM	8	7	16.09	16.23	16.07	16.70
3	16QAM	15	0	16.01	16.20	16.01	16.70
3	64QAM	1	0	15.99	16.14	16.02	16.70
3	64QAM	1	8	15.94	16.09	16.02	16.70
3	64QAM	1	14	15.85	16.00	15.81	16.70
3	64QAM	8	0	16.01	16.29	16.15	16.70
3	64QAM	8	4	16.02	16.25	16.03	16.70
3	64QAM	8	7	16.01	16.26	16.06	16.70
3	64QAM	15	0	16.03	16.19	15.94	16.70
3	256QAM	1	0	15.69	15.93	15.59	16.70
3	256QAM	1	8	15.69	15.80	15.72	16.70
3	256QAM	1	14	15.69	15.87	15.75	16.70
3	256QAM	8	0	15.95	16.25	16.22	16.70
3	256QAM	8	4	15.99	16.24	16.05	16.70
3	256QAM	8	7	15.99	16.18	16.07	16.70
3	256QAM	15	0	16.12	16.24	16.05	16.70
Channel				26047	26340	26683	Tune-up limit
Frequency (MHz)				1850.7	1880	1914.3	(dBm)
1.4	QPSK	1	0	16.12	16.23	16.24	16.70
1.4	QPSK	1	3	15.99	16.22	16.01	16.70
1.4	QPSK	1	5	15.95	16.07	16.01	16.70
1.4	QPSK	3	0	16.04	16.22	16.14	16.70
1.4	QPSK	3	1	16.08	16.31	16.09	16.70
1.4	QPSK	3	3	16.02	16.34	16.17	16.70
1.4	QPSK	6	0	16.06	16.19	16.09	16.70
1.4	16QAM	1	0	15.97	16.34	16.14	16.70
1.4	16QAM	1	3	15.92	16.17	16.05	16.70
1.4	16QAM	1	5	15.91	16.15	15.93	16.70
1.4	16QAM	3	0	16.08	16.31	16.20	16.70
1.4	16QAM	3	1	16.05	16.22	16.11	16.70
1.4	16QAM	3	3	16.16	16.20	16.14	16.70
1.4	16QAM	6	0	15.92	16.24	16.05	16.70
1.4	64QAM	1	0	16.05	16.21	16.10	16.70
1.4	64QAM	1	3	15.95	16.19	16.04	16.70
1.4	64QAM	1	5	15.92	16.04	15.81	16.70
1.4	64QAM	3	0	16.09	16.22	16.05	16.70
1.4	64QAM	3	1	16.06	16.22	16.15	16.70
1.4	64QAM	3	3	15.95	16.25	16.05	16.70
1.4	64QAM	6	0	16.04	16.17	15.95	16.70
1.4	256QAM	1	0	15.63	15.90	15.66	16.70
1.4	256QAM	1	3	15.71	15.86	15.67	16.70
1.4	256QAM	1	5	15.72	15.90	15.88	16.70
1.4	256QAM	3	0	15.99	16.32	16.23	16.70
1.4	256QAM	3	1	16.02	16.18	16.07	16.70
1.4	256QAM	3	3	16.05	16.27	16.04	16.70
1.4	256QAM	6	0	16.05	16.30	16.08	16.70

【LTE Band 26 _ FCC (814~849MHz)_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	18.04	18.03	18.11	18.50
15	QPSK	1	37	18.07	18.00	18.11	18.50
15	QPSK	1	74	17.88	17.91	17.94	18.50
15	QPSK	36	0	17.04	17.11	17.13	17.50
15	QPSK	36	20	17.05	17.07	17.11	17.50
15	QPSK	36	39	17.02	17.07	17.10	17.50
15	QPSK	75	0	17.09	17.12	17.24	17.50
15	16QAM	1	0	17.23	17.19	17.21	17.50
15	16QAM	1	37	17.21	17.21	17.29	17.50



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15	16QAM	1	74	17.16	17.12	17.14	17.50
15	16QAM	36	0	16.12	16.08	16.14	16.50
15	16QAM	36	20	16.13	16.11	16.21	16.50
15	16QAM	36	39	16.11	16.09	16.08	16.50
15	16QAM	75	0	16.17	16.16	16.23	16.50
15	64QAM	1	0	16.27	16.03	16.21	16.50
15	64QAM	1	37	15.91	16.09	16.24	16.50
15	64QAM	1	74	16.05	16.07	15.96	16.50
15	64QAM	36	0	15.11	15.07	15.16	15.50
15	64QAM	36	20	15.14	15.12	15.18	15.50
15	64QAM	36	39	15.14	15.12	15.08	15.50
15	64QAM	75	0	15.20	15.14	15.15	15.50
15	256QAM	1	0	13.04	13.15	13.28	13.50
15	256QAM	1	37	13.29	13.06	13.08	13.50
15	256QAM	1	74	13.13	13.24	13.21	13.50
15	256QAM	36	0	13.11	13.02	13.50	13.50
15	256QAM	36	20	13.11	13.08	13.07	13.50
15	256QAM	36	39	13.12	13.13	12.92	13.50
15	256QAM	75	0	13.16	13.13	13.18	13.50
Channel				26740	26865	26990	Tune-up limit
Frequency (MHz)				819	831.5	844	(dBm)
10	QPSK	1	0	17.93	17.91	18.08	18.50
10	QPSK	1	25	18.03	17.97	17.97	18.50
10	QPSK	1	49	17.85	17.84	17.92	18.50
10	QPSK	25	0	16.95	16.96	17.06	17.50
10	QPSK	25	12	17.00	16.95	16.98	17.50
10	QPSK	25	25	17.01	16.96	17.05	17.50
10	QPSK	50	0	17.02	17.08	17.17	17.50
10	16QAM	1	0	17.17	17.10	17.13	17.50
10	16QAM	1	25	17.12	17.19	17.17	17.50
10	16QAM	1	49	17.09	17.00	17.05	17.50
10	16QAM	25	0	16.01	15.96	16.02	16.50
10	16QAM	25	12	16.08	15.98	16.10	16.50
10	16QAM	25	25	16.03	16.04	16.01	16.50
10	16QAM	50	0	16.16	16.12	16.21	16.50
10	64QAM	1	0	16.13	16.00	16.06	16.50
10	64QAM	1	25	15.77	15.96	16.19	16.50
10	64QAM	1	49	15.94	16.01	15.86	16.50
10	64QAM	25	0	15.09	14.96	15.07	15.50
10	64QAM	25	12	15.05	15.11	15.08	15.50
10	64QAM	25	25	15.10	15.06	14.95	15.50
10	64QAM	50	0	15.16	15.04	15.02	15.50
10	256QAM	1	0	12.91	13.03	13.15	13.50
10	256QAM	1	25	13.18	13.05	13.00	13.50
10	256QAM	1	49	13.07	13.20	13.15	13.50
10	256QAM	25	0	13.01	12.92	13.46	13.50
10	256QAM	25	12	12.99	12.97	13.02	13.50
10	256QAM	25	25	12.98	13.02	12.81	13.50
10	256QAM	50	0	13.03	12.98	13.12	13.50
Channel				26715	26865	27015	Tune-up limit
Frequency (MHz)				816.5	831.5	846.5	(dBm)
5	QPSK	1	0	17.97	17.96	18.07	18.50
5	QPSK	1	12	18.01	17.88	18.00	18.50
5	QPSK	1	24	17.76	17.89	17.86	18.50
5	QPSK	12	0	16.92	17.05	17.00	17.50
5	QPSK	12	7	16.96	17.04	17.02	17.50
5	QPSK	12	13	16.96	17.05	16.95	17.50
5	QPSK	25	0	17.03	17.04	17.14	17.50
5	16QAM	1	0	17.15	17.13	17.08	17.50
5	16QAM	1	12	17.07	17.07	17.25	17.50
5	16QAM	1	24	17.11	17.04	17.10	17.50
5	16QAM	12	0	16.04	15.96	16.12	16.50
5	16QAM	12	7	16.05	16.00	16.10	16.50
5	16QAM	12	13	16.03	16.03	15.96	16.50
5	16QAM	25	0	16.14	16.09	16.20	16.50
5	64QAM	1	0	16.18	15.95	16.20	16.50
5	64QAM	1	12	15.86	16.04	16.18	16.50
5	64QAM	1	24	15.92	15.98	15.87	16.50
5	64QAM	12	0	15.06	14.99	15.09	15.50
5	64QAM	12	7	15.11	15.06	15.11	15.50
5	64QAM	12	13	15.02	14.98	14.97	15.50
5	64QAM	25	0	15.09	15.04	15.10	15.50
5	256QAM	1	0	13.01	13.09	13.14	13.50
5	256QAM	1	12	13.21	13.03	12.96	13.50
5	256QAM	1	24	13.12	13.12	13.10	13.50
5	256QAM	12	0	12.99	12.91	13.41	13.50
5	256QAM	12	7	13.09	13.06	12.97	13.50
5	256QAM	12	13	13.08	13.05	12.84	13.50



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5	256QAM	25	0	13.11	13.01	13.12	13.50
Channel				26705	26865	27025	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	
3	QPSK	1	0	17.92	17.95	18.07	18.50
3	QPSK	1	8	18.01	17.85	17.97	18.50
3	QPSK	1	14	17.77	17.80	17.89	18.50
3	QPSK	8	0	16.90	17.06	17.01	17.50
3	QPSK	8	4	17.03	16.96	17.04	17.50
3	QPSK	8	7	17.01	17.05	17.00	17.50
3	QPSK	15	0	16.98	17.04	17.11	17.50
3	16QAM	1	0	17.22	17.09	17.09	17.50
3	16QAM	1	8	17.14	17.08	17.25	17.50
3	16QAM	1	14	17.13	17.10	17.03	17.50
3	16QAM	8	0	16.11	16.05	16.02	16.50
3	16QAM	8	4	16.08	16.09	16.15	16.50
3	16QAM	8	7	16.01	15.98	16.03	16.50
3	16QAM	15	0	16.07	16.14	16.21	16.50
3	64QAM	1	0	16.13	16.00	16.08	16.50
3	64QAM	1	8	15.83	15.97	16.15	16.50
3	64QAM	1	14	15.93	15.94	15.89	16.50
3	64QAM	8	0	15.09	14.94	15.05	15.50
3	64QAM	8	4	15.00	15.08	15.14	15.50
3	64QAM	8	7	15.03	15.02	14.94	15.50
3	64QAM	15	0	15.15	15.09	15.00	15.50
3	256QAM	1	0	12.95	13.10	13.14	13.50
3	256QAM	1	8	13.14	12.98	13.04	13.50
3	256QAM	1	14	13.10	13.18	13.18	13.50
3	256QAM	8	0	13.08	12.98	13.48	13.50
3	256QAM	8	4	13.06	13.04	12.93	13.50
3	256QAM	8	7	13.05	13.12	12.77	13.50
3	256QAM	15	0	13.09	13.01	13.12	13.50
Channel				26697	26865	27033	Tune-up limit (dBm)
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	17.91	17.89	18.01	18.50
1.4	QPSK	1	3	17.97	17.90	18.01	18.50
1.4	QPSK	1	5	17.73	17.84	17.89	18.50
1.4	QPSK	3	0	17.90	18.09	17.99	18.50
1.4	QPSK	3	1	17.98	18.06	18.10	18.50
1.4	QPSK	3	3	18.00	18.02	18.04	18.50
1.4	QPSK	6	0	16.96	17.01	17.14	17.50
1.4	16QAM	1	0	17.13	17.17	17.09	17.50
1.4	16QAM	1	3	17.14	17.19	17.19	17.50
1.4	16QAM	1	5	17.13	17.06	17.10	17.50
1.4	16QAM	3	0	17.00	16.96	17.00	17.50
1.4	16QAM	3	1	16.98	17.06	17.20	17.50
1.4	16QAM	3	3	17.03	17.02	16.95	17.50
1.4	16QAM	6	0	16.03	16.08	16.22	16.50
1.4	64QAM	1	0	16.17	15.89	16.16	16.50
1.4	64QAM	1	3	15.87	15.96	16.20	16.50
1.4	64QAM	1	5	15.97	15.95	15.85	16.50
1.4	64QAM	3	0	16.04	16.00	16.05	16.50
1.4	64QAM	3	1	16.06	15.99	16.07	16.50
1.4	64QAM	3	3	16.04	16.10	16.05	16.50
1.4	64QAM	6	0	15.11	15.00	15.12	15.50
1.4	256QAM	1	0	12.96	13.02	13.20	13.50
1.4	256QAM	1	3	13.20	13.00	12.98	13.50
1.4	256QAM	1	5	12.99	13.17	13.18	13.50
1.4	256QAM	3	0	12.97	12.97	13.45	13.50
1.4	256QAM	3	1	13.06	13.03	12.93	13.50
1.4	256QAM	3	3	13.00	13.05	12.84	13.50
1.4	256QAM	6	0	13.05	13.10	13.03	13.50

【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		17.69		18.10
10	QPSK	1	25		17.68		18.10
10	QPSK	1	49		17.54		18.10
10	QPSK	25	0		16.75		17.10
10	QPSK	25	12		16.68		17.10
10	QPSK	25	25		16.64		17.10
10	QPSK	50	0		16.69		17.10
10	16QAM	1	0		16.82		17.10

10	16QAM	1	25		17.00		17.10
10	16QAM	1	49		16.81		17.10
10	16QAM	25	0		15.70		16.10
10	16QAM	25	12		15.75		16.10
10	16QAM	25	25		15.65		16.10
10	16QAM	50	0		15.66		16.10
10	64QAM	1	0		15.70		16.10
10	64QAM	1	25		15.63		16.10
10	64QAM	1	49		15.58		16.10
10	64QAM	25	0		14.74		15.10
10	64QAM	25	12		14.71		15.10
10	64QAM	25	25		14.69		15.10
10	64QAM	50	0		14.67		15.10
10	256QAM	1	0		12.25		13.10
10	256QAM	1	25		12.64		13.10
10	256QAM	1	49		12.71		13.10
10	256QAM	25	0		12.24		13.10
10	256QAM	25	12		12.63		13.10
10	256QAM	25	25		12.65		13.10
10	256QAM	50	0		12.74		13.10
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	17.64	17.69	17.67	18.10
5	QPSK	1	12	17.44	17.61	17.54	18.10
5	QPSK	1	24	17.46	17.53	17.49	18.10
5	QPSK	12	0	16.53	16.65	16.54	17.10
5	QPSK	12	7	16.43	16.61	16.48	17.10
5	QPSK	12	13	16.55	16.64	16.48	17.10
5	QPSK	25	0	16.52	16.66	16.61	17.10
5	16QAM	1	0	16.70	16.80	16.75	17.10
5	16QAM	1	12	16.90	17.02	16.94	17.10
5	16QAM	1	24	16.62	16.78	16.69	17.10
5	16QAM	12	0	15.46	15.64	15.56	16.10
5	16QAM	12	7	15.56	15.70	15.61	16.10
5	16QAM	12	13	15.51	15.63	15.49	16.10
5	16QAM	25	0	15.49	15.62	15.52	16.10
5	64QAM	1	0	15.60	15.68	15.54	16.10
5	64QAM	1	12	15.56	15.63	15.54	16.10
5	64QAM	1	24	15.44	15.52	15.47	16.10
5	64QAM	12	0	14.53	14.70	14.56	15.10
5	64QAM	12	7	14.63	14.70	14.61	15.10
5	64QAM	12	13	14.43	14.62	14.50	15.10
5	64QAM	25	0	14.56	14.62	14.55	15.10
5	256QAM	1	0	12.06	12.19	12.11	13.10
5	256QAM	1	12	12.53	12.63	12.53	13.10
5	256QAM	1	24	12.47	12.62	12.52	13.10
5	256QAM	12	0	12.15	12.23	12.14	13.10
5	256QAM	12	7	12.45	12.62	12.52	13.10
5	256QAM	12	13	12.53	12.64	12.56	13.10
5	256QAM	25	0	12.55	12.69	12.58	13.10

【LTE Band 30_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					27710		
Frequency (MHz)					2310		
10	QPSK	1	0		16.94		17.30
10	QPSK	1	25		16.86		17.30
10	QPSK	1	49		16.92		17.30
10	QPSK	25	0		16.81		17.30
10	QPSK	25	12		16.75		17.30
10	QPSK	25	25		16.79		17.30
10	QPSK	50	0		16.77		17.30
10	16QAM	1	0		16.52		17.30
10	16QAM	1	25		16.85		17.30
10	16QAM	1	49		16.90		17.30
10	16QAM	25	0		16.76		17.30
10	16QAM	25	12		16.66		17.30
10	16QAM	25	25		16.72		17.30
10	16QAM	50	0		16.73		17.30
10	64QAM	1	0		16.88		17.30
10	64QAM	1	25		16.78		17.30
10	64QAM	1	49		16.86		17.30
10	64QAM	25	0		16.77		17.30
10	64QAM	25	12		16.75		17.30

10	64QAM	25	25		16.71		17.30
10	64QAM	50	0		16.73		17.30
10	256QAM	1	0		16.34		17.30
10	256QAM	1	25		16.29		17.30
10	256QAM	1	49		16.41		17.30
10	256QAM	25	0		16.30		17.30
10	256QAM	25	12		16.20		17.30
10	256QAM	25	25		16.29		17.30
10	256QAM	50	0		16.25		17.30
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	16.77	16.85	16.79	17.30
5	QPSK	1	12	16.66	16.77	16.75	17.30
5	QPSK	1	24	16.70	16.84	16.76	17.30
5	QPSK	12	0	16.61	16.73	16.74	17.30
5	QPSK	12	7	16.53	16.66	16.65	17.30
5	QPSK	12	13	16.59	16.71	16.58	17.30
5	QPSK	25	0	16.66	16.69	16.67	17.30
5	16QAM	1	0	16.31	16.46	16.43	17.30
5	16QAM	1	12	16.62	16.76	16.72	17.30
5	16QAM	1	24	16.69	16.84	16.70	17.30
5	16QAM	12	0	16.62	16.67	16.58	17.30
5	16QAM	12	7	16.55	16.61	16.48	17.30
5	16QAM	12	13	16.60	16.63	16.59	17.30
5	16QAM	25	0	16.56	16.66	16.54	17.30
5	64QAM	1	0	16.69	16.83	16.78	17.30
5	64QAM	1	12	16.59	16.70	16.61	17.30
5	64QAM	1	24	16.75	16.80	16.70	17.30
5	64QAM	12	0	16.62	16.72	16.63	17.30
5	64QAM	12	7	16.63	16.68	16.65	17.30
5	64QAM	12	13	16.49	16.61	16.59	17.30
5	64QAM	25	0	16.56	16.65	16.58	17.30
5	256QAM	1	0	16.14	16.26	16.17	17.30
5	256QAM	1	12	16.08	16.22	16.10	17.30
5	256QAM	1	24	16.23	16.31	16.30	17.30
5	256QAM	12	0	16.09	16.23	16.12	17.30
5	256QAM	12	7	16.04	16.12	16.02	17.30
5	256QAM	12	13	16.11	16.21	16.19	17.30
5	256QAM	25	0	16.15	16.17	16.05	17.30

【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	17.89	17.91	17.90	19.00
20	QPSK	1	49	17.81	17.87	17.83	19.00
20	QPSK	1	99	17.85	17.81	17.84	19.00
20	QPSK	50	0	16.88	16.92	16.89	18.00
20	QPSK	50	24	16.83	16.88	16.93	18.00
20	QPSK	50	50	16.85	16.85	16.93	18.00
20	QPSK	100	0	16.84	16.89	16.93	18.00
20	16QAM	1	0	16.80	16.78	16.87	18.00
20	16QAM	1	49	16.96	16.90	16.88	18.00
20	16QAM	1	99	16.81	16.82	16.89	18.00
20	16QAM	50	0	15.91	15.92	15.91	17.00
20	16QAM	50	24	15.85	15.92	15.95	17.00
20	16QAM	50	50	15.86	15.86	15.96	17.00
20	16QAM	100	0	15.83	15.92	15.93	17.00
20	64QAM	1	0	15.73	15.65	15.78	17.00
20	64QAM	1	49	15.82	15.82	15.84	17.00
20	64QAM	1	99	15.76	15.82	15.79	17.00
20	64QAM	50	0	14.87	14.89	14.90	16.00
20	64QAM	50	24	14.84	14.94	14.95	16.00
20	64QAM	50	50	14.81	14.87	14.94	16.00
20	64QAM	100	0	14.84	14.92	14.95	16.00
20	256QAM	1	0	12.98	12.92	12.94	14.00
20	256QAM	1	49	12.95	12.88	12.93	14.00
20	256QAM	1	99	12.96	12.98	12.97	14.00
20	256QAM	50	0	12.91	12.95	12.89	14.00
20	256QAM	50	24	12.97	12.92	12.96	14.00
20	256QAM	50	50	12.96	12.95	12.95	14.00
20	256QAM	100	0	12.95	12.94	12.93	14.00
Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	



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15	QPSK	1	0	17.77	17.79	17.87	19.00
15	QPSK	1	37	17.74	17.83	17.78	19.00
15	QPSK	1	74	17.72	17.79	17.70	19.00
15	QPSK	36	0	16.78	16.84	16.86	18.00
15	QPSK	36	20	16.72	16.75	16.79	18.00
15	QPSK	36	39	16.83	16.80	16.86	18.00
15	QPSK	75	0	16.78	16.85	16.80	18.00
15	16QAM	1	0	16.68	16.73	16.85	18.00
15	16QAM	1	37	16.95	16.84	16.83	18.00
15	16QAM	1	74	16.77	16.77	16.84	18.00
15	16QAM	36	0	15.80	15.81	15.81	17.00
15	16QAM	36	20	15.70	15.87	15.86	17.00
15	16QAM	36	39	15.80	15.82	15.83	17.00
15	16QAM	75	0	15.77	15.90	15.86	17.00
15	64QAM	1	0	15.61	15.59	15.72	17.00
15	64QAM	1	37	15.79	15.75	15.82	17.00
15	64QAM	1	74	15.66	15.72	15.66	17.00
15	64QAM	36	0	14.74	14.81	14.83	16.00
15	64QAM	36	20	14.80	14.90	14.83	16.00
15	64QAM	36	39	14.74	14.76	14.85	16.00
15	64QAM	75	0	14.70	14.83	14.82	16.00
15	256QAM	1	0	12.84	12.84	12.84	14.00
15	256QAM	1	37	12.90	12.87	12.89	14.00
15	256QAM	1	74	12.83	12.94	12.92	14.00
15	256QAM	36	0	12.88	12.84	12.76	14.00
15	256QAM	36	20	12.92	12.86	12.84	14.00
15	256QAM	36	39	12.91	12.90	12.84	14.00
15	256QAM	75	0	12.90	12.87	12.91	14.00
Channel				37800	38000	38200	Tune-up limit
Frequency (MHz)				2575	2595	2615	(dBm)
10	QPSK	1	0	17.77	17.84	17.88	19.00
10	QPSK	1	25	17.69	17.75	17.75	19.00
10	QPSK	1	49	17.75	17.78	17.70	19.00
10	QPSK	25	0	16.79	16.88	16.83	18.00
10	QPSK	25	12	16.81	16.83	16.92	18.00
10	QPSK	25	25	16.73	16.71	16.81	18.00
10	QPSK	50	0	16.82	16.76	16.82	18.00
10	16QAM	1	0	16.69	16.71	16.72	18.00
10	16QAM	1	25	16.91	16.86	16.74	18.00
10	16QAM	1	49	16.77	16.72	16.75	18.00
10	16QAM	25	0	15.89	15.90	15.85	17.00
10	16QAM	25	12	15.75	15.85	15.82	17.00
10	16QAM	25	25	15.81	15.84	15.85	17.00
10	16QAM	50	0	15.72	15.88	15.82	17.00
10	64QAM	1	0	15.58	15.59	15.75	17.00
10	64QAM	1	25	15.70	15.71	15.75	17.00
10	64QAM	1	49	15.67	15.72	15.66	17.00
10	64QAM	25	0	14.75	14.80	14.87	16.00
10	64QAM	25	12	14.82	14.91	14.83	16.00
10	64QAM	25	25	14.79	14.85	14.80	16.00
10	64QAM	50	0	14.70	14.81	14.85	16.00
10	256QAM	1	0	12.88	12.87	12.80	14.00
10	256QAM	1	25	12.90	12.76	12.83	14.00
10	256QAM	1	49	12.90	12.87	12.90	14.00
10	256QAM	25	0	12.89	12.92	12.78	14.00
10	256QAM	25	12	12.94	12.84	12.82	14.00
10	256QAM	25	25	12.86	12.92	12.87	14.00
10	256QAM	50	0	12.90	12.81	12.85	14.00
Channel				37775	38000	38225	Tune-up limit
Frequency (MHz)				2572.5	2595	2617.5	(dBm)
5	QPSK	1	0	17.87	17.85	17.89	19.00
5	QPSK	1	12	17.76	17.85	17.72	19.00
5	QPSK	1	24	17.74	17.70	17.81	19.00
5	QPSK	12	0	16.82	16.86	16.87	18.00
5	QPSK	12	7	16.82	16.75	16.86	18.00
5	QPSK	12	13	16.80	16.77	16.90	18.00
5	QPSK	25	0	16.71	16.83	16.91	18.00
5	16QAM	1	0	16.78	16.71	16.78	18.00
5	16QAM	1	12	16.86	16.84	16.85	18.00
5	16QAM	1	24	16.71	16.69	16.80	18.00
5	16QAM	12	0	15.78	15.83	15.77	17.00
5	16QAM	12	7	15.77	15.85	15.82	17.00
5	16QAM	12	13	15.75	15.75	15.89	17.00
5	16QAM	25	0	15.70	15.81	15.85	17.00
5	64QAM	1	0	15.67	15.62	15.72	17.00
5	64QAM	1	12	15.70	15.80	15.81	17.00
5	64QAM	1	24	15.62	15.74	15.64	17.00
5	64QAM	12	0	14.79	14.78	14.84	16.00

5	64QAM	12	7	14.70	14.80	14.87	16.00
5	64QAM	12	13	14.72	14.82	14.91	16.00
5	64QAM	25	0	14.78	14.86	14.90	16.00
5	256QAM	1	0	12.95	12.83	12.83	14.00
5	256QAM	1	12	12.83	12.84	12.87	14.00
5	256QAM	1	24	12.90	12.86	12.88	14.00
5	256QAM	12	0	12.85	12.90	12.88	14.00
5	256QAM	12	7	12.82	12.81	12.92	14.00
5	256QAM	12	13	12.84	12.83	12.88	14.00
5	256QAM	25	0	12.90	12.84	12.88	14.00

【LTE Band 38_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				37850	38000	38150	Tune-up limit (dBm)
Frequency (MHz)				2580	2595	2610	
20	QPSK	1	0	16.01	16.18	16.09	16.60
20	QPSK	1	49	15.93	16.14	15.92	16.60
20	QPSK	1	99	15.82	16.11	15.97	16.60
20	QPSK	50	0	16.10	16.32	16.20	16.60
20	QPSK	50	24	16.07	16.26	16.03	16.60
20	QPSK	50	50	16.01	16.30	16.11	16.60
20	QPSK	100	0	16.04	16.28	16.09	16.60
20	16QAM	1	0	15.90	16.13	15.89	16.60
20	16QAM	1	49	15.82	16.11	16.00	16.60
20	16QAM	1	99	15.81	16.06	15.89	16.60
20	16QAM	50	0	15.97	16.28	16.16	16.60
20	16QAM	50	24	15.90	16.21	16.00	16.60
20	16QAM	50	50	16.04	16.27	16.10	16.60
20	16QAM	100	0	15.96	16.23	16.02	16.60
20	64QAM	1	0	15.81	16.07	15.91	16.60
20	64QAM	1	49	15.75	16.07	15.97	16.60
20	64QAM	1	99	15.74	16.00	15.90	16.60
20	64QAM	50	0	16.02	16.24	16.08	16.60
20	64QAM	50	24	16.00	16.19	16.05	16.60
20	64QAM	50	50	16.03	16.22	16.06	16.60
20	64QAM	100	0	15.90	16.19	16.07	16.60
20	256QAM	1	0	15.76	16.04	15.87	16.60
20	256QAM	1	49	15.78	16.05	15.86	16.60
20	256QAM	1	99	15.66	15.97	15.86	16.60
20	256QAM	50	0	15.95	16.21	15.98	16.60
20	256QAM	50	24	15.88	16.16	16.01	16.60
20	256QAM	50	50	15.95	16.20	16.10	16.60
20	256QAM	100	0	15.89	16.17	16.04	16.60
Channel				37825	38000	38175	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	15.96	16.07	16.03	16.60
15	QPSK	1	37	15.82	16.02	15.87	16.60
15	QPSK	1	74	15.74	16.00	15.95	16.60
15	QPSK	36	0	16.02	16.27	16.15	16.60
15	QPSK	36	20	16.01	16.24	15.93	16.60
15	QPSK	36	39	15.95	16.21	16.03	16.60
15	QPSK	75	0	15.91	16.15	16.01	16.60
15	16QAM	1	0	15.77	16.05	15.78	16.60
15	16QAM	1	37	15.80	16.01	15.87	16.60
15	16QAM	1	74	15.79	15.99	15.87	16.60
15	16QAM	36	0	15.92	16.23	16.12	16.60
15	16QAM	36	20	15.77	16.20	15.86	16.60
15	16QAM	36	39	16.01	16.20	16.02	16.60
15	16QAM	75	0	15.81	16.19	15.89	16.60
15	64QAM	1	0	15.76	15.97	15.78	16.60
15	64QAM	1	37	15.64	15.99	15.86	16.60
15	64QAM	1	74	15.61	15.91	15.79	16.60
15	64QAM	36	0	15.87	16.22	16.01	16.60
15	64QAM	36	20	15.85	16.04	16.04	16.60
15	64QAM	36	39	15.91	16.14	15.93	16.60
15	64QAM	75	0	15.81	16.17	15.93	16.60
15	256QAM	1	0	15.75	15.91	15.82	16.60
15	256QAM	1	37	15.71	16.04	15.78	16.60
15	256QAM	1	74	15.56	15.93	15.72	16.60
15	256QAM	36	0	15.93	16.10	15.87	16.60
15	256QAM	36	20	15.85	16.12	15.88	16.60
15	256QAM	36	39	15.82	16.18	16.06	16.60
15	256QAM	75	0	15.80	16.04	16.03	16.60
Channel				37800	38000	38200	Tune-up limit

Frequency (MHz)				2575	2595	2615	(dBm)
10	QPSK	1	0	15.98	16.12	15.99	16.60
10	QPSK	1	25	15.84	16.02	15.86	16.60
10	QPSK	1	49	15.77	15.97	15.85	16.60
10	QPSK	25	0	16.05	16.23	16.09	16.60
10	QPSK	25	12	16.03	16.24	15.91	16.60
10	QPSK	25	25	15.90	16.28	16.00	16.60
10	QPSK	50	0	15.97	16.24	15.98	16.60
10	16QAM	1	0	15.88	16.06	15.82	16.60
10	16QAM	1	25	15.79	15.99	15.91	16.60
10	16QAM	1	49	15.70	15.96	15.86	16.60
10	16QAM	25	0	15.87	16.26	16.06	16.60
10	16QAM	25	12	15.85	16.07	15.97	16.60
10	16QAM	25	25	15.91	16.24	15.98	16.60
10	16QAM	50	0	15.88	16.11	15.91	16.60
10	64QAM	1	0	15.70	15.93	15.82	16.60
10	64QAM	1	25	15.66	16.03	15.90	16.60
10	64QAM	1	49	15.60	15.91	15.78	16.60
10	64QAM	25	0	15.91	16.19	15.97	16.60
10	64QAM	25	12	15.99	16.15	15.90	16.60
10	64QAM	25	25	15.88	16.19	16.04	16.60
10	64QAM	50	0	15.76	16.12	16.06	16.60
10	256QAM	1	0	15.62	15.99	15.77	16.60
10	256QAM	1	25	15.64	16.01	15.79	16.60
10	256QAM	1	49	15.56	15.89	15.76	16.60
10	256QAM	25	0	15.87	16.16	15.92	16.60
10	256QAM	25	12	15.74	16.03	15.99	16.60
10	256QAM	25	25	15.83	16.15	15.95	16.60
10	256QAM	50	0	15.88	16.15	16.03	16.60
Channel				37775	38000	38225	Tune-up limit
Frequency (MHz)				2572.5	2595	2617.5	(dBm)
5	QPSK	1	0	15.88	16.04	16.02	16.60
5	QPSK	1	12	15.91	16.01	15.85	16.60
5	QPSK	1	24	15.80	16.02	15.90	16.60
5	QPSK	12	0	16.03	16.23	16.12	16.60
5	QPSK	12	7	16.03	16.17	15.94	16.60
5	QPSK	12	13	15.95	16.19	16.06	16.60
5	QPSK	25	0	15.99	16.26	16.07	16.60
5	16QAM	1	0	15.76	15.99	15.84	16.60
5	16QAM	1	12	15.72	16.03	15.87	16.60
5	16QAM	1	24	15.77	16.02	15.84	16.60
5	16QAM	12	0	15.90	16.20	16.02	16.60
5	16QAM	12	7	15.82	16.08	15.94	16.60
5	16QAM	12	13	15.91	16.24	16.07	16.60
5	16QAM	25	0	15.94	16.13	15.92	16.60
5	64QAM	1	0	15.67	16.03	15.81	16.60
5	64QAM	1	12	15.71	15.98	15.86	16.60
5	64QAM	1	24	15.64	15.85	15.78	16.60
5	64QAM	12	0	15.93	16.17	16.01	16.60
5	64QAM	12	7	15.94	16.14	15.92	16.60
5	64QAM	12	13	15.98	16.19	15.99	16.60
5	64QAM	25	0	15.86	16.10	16.01	16.60
5	256QAM	1	0	15.71	16.01	15.75	16.60
5	256QAM	1	12	15.68	15.96	15.81	16.60
5	256QAM	1	24	15.52	15.85	15.82	16.60
5	256QAM	12	0	15.82	16.08	15.88	16.60
5	256QAM	12	7	15.76	16.09	15.91	16.60
5	256QAM	12	13	15.84	16.19	15.97	16.60
5	256QAM	25	0	15.84	16.11	15.90	16.60

【LTE Band 41_FCC (2496~2690MHz)_Main】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power 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	17.65	17.64	17.70	17.74	17.68	19.00
20	QPSK	1	49	17.55	17.54	17.68	17.67	17.59	19.00
20	QPSK	1	99	17.56	17.63	17.68	17.66	17.62	19.00
20	QPSK	50	0	16.63	16.65	16.66	16.69	16.63	18.00
20	QPSK	50	24	16.59	16.61	16.65	16.62	16.55	18.00
20	QPSK	50	50	16.61	16.65	16.68	16.62	16.60	18.00
20	QPSK	100	0	16.63	16.64	16.66	16.70	16.58	18.00
20	16QAM	1	0	16.66	16.57	16.64	16.73	16.63	18.00
20	16QAM	1	49	16.65	16.63	16.68	16.66	16.71	18.00
20	16QAM	1	99	16.52	16.58	16.72	16.68	16.71	18.00



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20	16QAM	50	0	15.66	15.63	15.68	15.68	15.61	17.00
20	16QAM	50	24	15.67	15.67	15.71	15.64	15.62	17.00
20	16QAM	50	50	15.65	15.68	15.70	15.63	15.63	17.00
20	16QAM	100	0	15.67	15.67	15.71	15.62	15.62	17.00
20	64QAM	1	0	15.57	15.61	15.70	15.63	15.51	17.00
20	64QAM	1	49	15.71	15.61	15.73	15.61	15.68	17.00
20	64QAM	1	99	15.44	15.56	15.67	15.59	15.67	17.00
20	64QAM	50	0	14.62	14.66	14.69	14.66	14.58	16.00
20	64QAM	50	24	14.68	14.67	14.70	14.64	14.63	16.00
20	64QAM	50	50	14.64	14.69	14.73	14.62	14.63	16.00
20	64QAM	100	0	14.65	14.68	14.73	14.61	14.64	16.00
20	256QAM	1	0	12.76	12.69	12.88	12.79	12.51	14.00
20	256QAM	1	49	12.77	12.67	12.82	12.77	12.73	14.00
20	256QAM	1	99	12.87	12.69	12.84	12.76	12.73	14.00
20	256QAM	50	0	12.75	12.70	12.80	12.72	12.76	14.00
20	256QAM	50	24	12.76	12.70	12.81	12.75	12.76	14.00
20	256QAM	50	50	12.78	12.74	12.84	12.72	12.78	14.00
20	256QAM	100	0	12.74	12.72	12.83	12.74	12.77	14.00
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5	
15	QPSK	1	0	17.52	17.49	17.58	17.72	17.60	19.00
15	QPSK	1	37	17.61	17.40	17.55	17.58	17.66	19.00
15	QPSK	1	74	17.43	17.61	17.48	17.58	17.63	19.00
15	QPSK	36	0	16.56	16.53	16.61	16.61	16.59	18.00
15	QPSK	36	20	16.60	16.50	16.46	16.48	16.51	18.00
15	QPSK	36	39	16.53	16.53	16.46	16.51	16.64	18.00
15	QPSK	75	0	16.48	16.62	16.46	16.62	16.61	18.00
15	16QAM	1	0	16.59	16.56	16.52	16.59	16.52	18.00
15	16QAM	1	37	16.61	16.55	16.58	16.56	16.54	18.00
15	16QAM	1	74	16.45	16.50	16.68	16.60	16.64	18.00
15	16QAM	36	0	15.58	15.49	15.46	15.58	15.63	17.00
15	16QAM	36	20	15.64	15.55	15.50	15.59	15.64	17.00
15	16QAM	36	39	15.59	15.55	15.56	15.59	15.68	17.00
15	16QAM	75	0	15.56	15.63	15.52	15.52	15.66	17.00
15	64QAM	1	0	15.49	15.57	15.49	15.62	15.63	17.00
15	64QAM	1	37	15.57	15.52	15.67	15.58	15.63	17.00
15	64QAM	1	74	15.33	15.55	15.55	15.47	15.57	17.00
15	64QAM	36	0	14.60	14.57	14.44	14.63	14.60	16.00
15	64QAM	36	20	14.64	14.64	14.51	14.52	14.62	16.00
15	64QAM	36	39	14.58	14.57	14.51	14.55	14.71	16.00
15	64QAM	75	0	14.55	14.58	14.63	14.49	14.72	16.00
15	256QAM	1	0	12.65	12.64	12.42	12.68	12.78	14.00
15	256QAM	1	37	12.68	12.65	12.59	12.68	12.72	14.00
15	256QAM	1	74	12.84	12.57	12.71	12.68	12.77	14.00
15	256QAM	36	0	12.65	12.64	12.74	12.69	12.76	14.00
15	256QAM	36	20	12.72	12.60	12.74	12.68	12.75	14.00
15	256QAM	36	39	12.63	12.66	12.65	12.67	12.72	14.00
15	256QAM	75	0	12.63	12.61	12.74	12.60	12.71	14.00
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	17.49	17.51	17.55	17.64	17.55	19.00
10	QPSK	1	25	17.57	17.44	17.56	17.53	17.53	19.00
10	QPSK	1	49	17.41	17.49	17.48	17.61	17.65	19.00
10	QPSK	25	0	16.54	16.64	16.55	16.54	16.55	18.00
10	QPSK	25	12	16.57	16.50	16.40	16.59	16.59	18.00
10	QPSK	25	25	16.58	16.63	16.57	16.53	16.55	18.00
10	QPSK	50	0	16.56	16.62	16.43	16.62	16.62	18.00
10	16QAM	1	0	16.60	16.45	16.59	16.70	16.52	18.00
10	16QAM	1	25	16.61	16.61	16.56	16.56	16.60	18.00
10	16QAM	1	49	16.42	16.56	16.64	16.63	16.68	18.00
10	16QAM	25	0	15.54	15.50	15.51	15.53	15.59	17.00
10	16QAM	25	12	15.56	15.59	15.57	15.51	15.61	17.00
10	16QAM	25	25	15.53	15.55	15.52	15.49	15.58	17.00
10	16QAM	50	0	15.57	15.57	15.51	15.59	15.57	17.00
10	64QAM	1	0	15.48	15.56	15.49	15.59	15.58	17.00
10	64QAM	1	25	15.70	15.60	15.53	15.50	15.64	17.00
10	64QAM	1	49	15.31	15.51	15.64	15.50	15.54	17.00
10	64QAM	25	0	14.51	14.64	14.55	14.59	14.57	16.00
10	64QAM	25	12	14.58	14.54	14.59	14.58	14.61	16.00
10	64QAM	25	25	14.52	14.61	14.55	14.59	14.64	16.00
10	64QAM	50	0	14.56	14.57	14.52	14.53	14.72	16.00
10	256QAM	1	0	12.62	12.64	12.45	12.71	12.73	14.00
10	256QAM	1	25	12.64	12.62	12.71	12.73	12.69	14.00
10	256QAM	1	49	12.84	12.56	12.60	12.73	12.71	14.00
10	256QAM	25	0	12.65	12.65	12.74	12.65	12.72	14.00
10	256QAM	25	12	12.72	12.58	12.64	12.61	12.75	14.00



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10	256QAM	25	25	12.68	12.72	12.72	12.70	12.77	14.00
10	256QAM	50	0	12.61	12.64	12.72	12.71	12.69	14.00
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5	
5	QPSK	1	0	17.46	17.58	17.63	17.68	17.59	19.00
5	QPSK	1	12	17.54	17.41	17.55	17.60	17.59	19.00
5	QPSK	1	24	17.44	17.58	17.50	17.64	17.61	19.00
5	QPSK	12	0	16.54	16.59	16.48	16.66	16.65	18.00
5	QPSK	12	7	16.57	16.53	16.43	16.56	16.59	18.00
5	QPSK	12	13	16.51	16.64	16.55	16.60	16.62	18.00
5	QPSK	25	0	16.62	16.62	16.44	16.67	16.57	18.00
5	16QAM	1	0	16.57	16.52	16.60	16.66	16.57	18.00
5	16QAM	1	12	16.56	16.55	16.63	16.65	16.60	18.00
5	16QAM	1	24	16.42	16.55	16.62	16.60	16.70	18.00
5	16QAM	12	0	15.58	15.60	15.53	15.64	15.61	17.00
5	16QAM	12	7	15.61	15.65	15.48	15.53	15.59	17.00
5	16QAM	12	13	15.63	15.62	15.57	15.53	15.63	17.00
5	16QAM	25	0	15.56	15.63	15.58	15.55	15.61	17.00
5	64QAM	1	0	15.43	15.55	15.39	15.50	15.64	17.00
5	64QAM	1	12	15.63	15.59	15.55	15.56	15.63	17.00
5	64QAM	1	24	15.30	15.47	15.56	15.46	15.64	17.00
5	64QAM	12	0	14.49	14.54	14.54	14.58	14.66	16.00
5	64QAM	12	7	14.64	14.53	14.61	14.53	14.60	16.00
5	64QAM	12	13	14.57	14.56	14.62	14.58	14.59	16.00
5	64QAM	25	0	14.55	14.56	14.50	14.58	14.65	16.00
5	256QAM	1	0	12.71	12.64	12.49	12.68	12.85	14.00
5	256QAM	1	12	12.70	12.52	12.67	12.75	12.78	14.00
5	256QAM	1	24	12.82	12.66	12.59	12.73	12.75	14.00
5	256QAM	12	0	12.70	12.63	12.63	12.62	12.69	14.00
5	256QAM	12	7	12.75	12.66	12.69	12.71	12.78	14.00
5	256QAM	12	13	12.72	12.61	12.67	12.62	12.71	14.00
5	256QAM	25	0	12.64	12.69	12.72	12.71	12.68	14.00

【LTE Band 41_FCC (2496~2690MHz)_MIMO2】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				39750	40185	40620	41055	41490	Tune-up limit (dBm)
Frequency (MHz)				2506	2549.5	2593	2636.5	2680	
20	QPSK	1	0	16.03	16.10	16.13	16.07	15.85	16.60
20	QPSK	1	49	15.97	15.94	16.11	16.03	15.79	16.60
20	QPSK	1	99	15.86	15.97	16.10	16.00	15.75	16.60
20	QPSK	50	0	15.95	16.07	16.16	16.05	15.80	16.60
20	QPSK	50	24	15.91	15.95	16.08	15.97	15.72	16.60
20	QPSK	50	50	15.97	15.99	16.09	15.92	15.68	16.60
20	QPSK	100	0	15.93	16.00	16.11	15.96	15.79	16.60
20	16QAM	1	0	15.83	16.00	16.07	15.95	15.65	16.60
20	16QAM	1	49	15.94	15.96	16.10	16.00	15.76	16.60
20	16QAM	1	99	15.85	16.00	16.04	15.93	15.62	16.60
20	16QAM	50	0	15.90	15.89	16.07	15.87	15.65	16.60
20	16QAM	50	24	15.89	15.89	16.04	15.95	15.71	16.60
20	16QAM	50	50	15.81	15.89	15.99	15.90	15.66	16.60
20	16QAM	100	0	15.78	15.97	16.03	15.84	15.71	16.60
20	64QAM	1	0	15.95	15.92	16.09	15.96	15.70	16.60
20	64QAM	1	49	15.86	15.89	16.03	15.96	15.62	16.60
20	64QAM	1	99	15.81	15.97	16.04	15.92	15.70	16.60
20	64QAM	50	0	15.91	16.09	16.15	15.95	15.75	16.60
20	64QAM	50	24	15.77	15.91	15.99	15.84	15.67	16.60
20	64QAM	50	50	15.87	15.94	16.02	15.88	15.72	16.60
20	64QAM	100	0	15.92	15.91	16.09	15.99	15.68	16.60
20	256QAM	1	0	15.81	15.84	16.00	15.82	15.65	16.60
20	256QAM	1	49	15.78	15.94	16.01	15.87	15.69	16.60
20	256QAM	1	99	15.87	15.97	16.04	15.86	15.71	16.60
20	256QAM	50	0	15.98	16.07	16.15	15.94	15.74	16.60
20	256QAM	50	24	15.92	15.91	16.05	15.96	15.74	16.60
20	256QAM	50	50	15.96	15.96	16.08	15.96	15.66	16.60
20	256QAM	100	0	15.87	15.97	16.08	15.96	15.76	16.60
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	15.93	16.02	15.99	16.01	15.71	16.60
15	QPSK	1	37	15.83	15.91	15.97	15.89	15.74	16.60
15	QPSK	1	74	15.84	15.92	16.06	15.85	15.62	16.60
15	QPSK	36	0	15.83	16.04	16.03	15.97	15.74	16.60
15	QPSK	36	20	15.89	15.84	16.00	15.88	15.71	16.60



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15	QPSK	36	39	15.84	15.94	16.00	15.84	15.61	16.60
15	QPSK	75	0	15.88	15.86	16.10	15.83	15.75	16.60
15	16QAM	1	0	15.74	15.91	15.93	15.94	15.55	16.60
15	16QAM	1	37	15.89	15.83	16.04	15.89	15.71	16.60
15	16QAM	1	74	15.82	15.95	15.89	15.88	15.59	16.60
15	16QAM	36	0	15.76	15.83	16.00	15.80	15.63	16.60
15	16QAM	36	20	15.83	15.81	15.92	15.81	15.66	16.60
15	16QAM	36	39	15.69	15.82	15.98	15.83	15.54	16.60
15	16QAM	75	0	15.65	15.94	16.01	15.69	15.59	16.60
15	64QAM	1	0	15.81	15.86	16.07	15.82	15.68	16.60
15	64QAM	1	37	15.80	15.79	15.91	15.84	15.59	16.60
15	64QAM	1	74	15.67	15.84	15.93	15.79	15.61	16.60
15	64QAM	36	0	15.79	15.99	16.14	15.84	15.63	16.60
15	64QAM	36	20	15.62	15.85	15.86	15.81	15.58	16.60
15	64QAM	36	39	15.83	15.89	15.89	15.81	15.65	16.60
15	64QAM	75	0	15.84	15.87	15.95	15.95	15.56	16.60
15	256QAM	1	0	15.79	15.83	15.96	15.76	15.51	16.60
15	256QAM	1	37	15.77	15.88	15.87	15.74	15.62	16.60
15	256QAM	1	74	15.79	15.87	16.00	15.82	15.58	16.60
15	256QAM	36	0	15.92	16.06	16.14	15.89	15.65	16.60
15	256QAM	36	20	15.87	15.80	15.96	15.89	15.71	16.60
15	256QAM	36	39	15.83	15.95	16.05	15.93	15.54	16.60
15	256QAM	75	0	15.77	15.88	15.98	15.88	15.64	16.60
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	15.95	16.06	16.06	16.02	15.78	16.60
10	QPSK	1	25	15.89	15.84	16.00	15.97	15.73	16.60
10	QPSK	1	49	15.82	15.93	16.01	15.93	15.63	16.60
10	QPSK	25	0	15.86	15.95	16.11	16.03	15.73	16.60
10	QPSK	25	12	15.84	15.90	16.06	15.83	15.71	16.60
10	QPSK	25	25	15.92	15.89	16.00	15.80	15.61	16.60
10	QPSK	50	0	15.81	15.88	16.08	15.84	15.78	16.60
10	16QAM	1	0	15.69	15.97	16.03	15.81	15.50	16.60
10	16QAM	1	25	15.88	15.83	16.01	15.90	15.65	16.60
10	16QAM	1	49	15.78	15.87	15.94	15.80	15.53	16.60
10	16QAM	25	0	15.85	15.80	16.01	15.81	15.57	16.60
10	16QAM	25	12	15.81	15.85	16.03	15.87	15.65	16.60
10	16QAM	25	25	15.79	15.83	15.86	15.77	15.56	16.60
10	16QAM	50	0	15.68	15.95	15.98	15.76	15.58	16.60
10	64QAM	1	0	15.88	15.82	16.03	15.91	15.66	16.60
10	64QAM	1	25	15.71	15.75	15.91	15.81	15.54	16.60
10	64QAM	1	49	15.75	15.92	15.99	15.91	15.65	16.60
10	64QAM	25	0	15.77	15.97	16.08	15.82	15.73	16.60
10	64QAM	25	12	15.68	15.81	15.84	15.76	15.66	16.60
10	64QAM	25	25	15.85	15.88	15.88	15.86	15.69	16.60
10	64QAM	50	0	15.89	15.87	15.95	15.86	15.56	16.60
10	256QAM	1	0	15.67	15.79	15.92	15.77	15.64	16.60
10	256QAM	1	25	15.77	15.79	15.93	15.82	15.57	16.60
10	256QAM	1	49	15.83	15.91	15.98	15.79	15.56	16.60
10	256QAM	25	0	15.86	16.00	16.01	15.91	15.70	16.60
10	256QAM	25	12	15.87	15.76	15.99	15.92	15.69	16.60
10	256QAM	25	25	15.89	15.86	16.01	15.89	15.58	16.60
10	256QAM	50	0	15.80	15.92	15.93	15.87	15.61	16.60
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5	
5	QPSK	1	0	15.91	16.09	16.11	15.92	15.81	16.60
5	QPSK	1	12	15.86	15.88	16.00	15.92	15.69	16.60
5	QPSK	1	24	15.76	15.94	15.97	15.98	15.68	16.60
5	QPSK	12	0	15.85	16.05	16.03	15.93	15.74	16.60
5	QPSK	12	7	15.81	15.91	15.99	15.93	15.68	16.60
5	QPSK	12	13	15.94	15.91	16.05	15.85	15.66	16.60
5	QPSK	25	0	15.78	15.93	16.03	15.82	15.72	16.60
5	16QAM	1	0	15.78	15.90	15.98	15.84	15.58	16.60
5	16QAM	1	12	15.82	15.85	16.07	15.95	15.68	16.60
5	16QAM	1	24	15.76	15.92	15.93	15.90	15.54	16.60
5	16QAM	12	0	15.83	15.86	16.00	15.73	15.55	16.60
5	16QAM	12	7	15.78	15.88	16.02	15.81	15.62	16.60
5	16QAM	12	13	15.70	15.75	15.88	15.76	15.56	16.60
5	16QAM	25	0	15.69	15.93	15.94	15.69	15.60	16.60
5	64QAM	1	0	15.86	15.80	16.06	15.89	15.60	16.60
5	64QAM	1	12	15.76	15.86	15.92	15.82	15.52	16.60
5	64QAM	1	24	15.77	15.90	15.93	15.78	15.63	16.60
5	64QAM	12	0	15.83	16.07	16.08	15.83	15.64	16.60
5	64QAM	12	7	15.67	15.77	15.95	15.73	15.61	16.60
5	64QAM	12	13	15.74	15.92	15.99	15.76	15.69	16.60
5	64QAM	25	0	15.88	15.89	15.97	15.93	15.66	16.60

5	256QAM	1	0	15.77	15.75	15.90	15.74	15.55	16.60
5	256QAM	1	12	15.76	15.82	15.98	15.73	15.58	16.60
5	256QAM	1	24	15.74	15.86	15.97	15.73	15.59	16.60
5	256QAM	12	0	15.92	16.04	16.12	15.83	15.67	16.60
5	256QAM	12	7	15.79	15.84	16.03	15.90	15.72	16.60
5	256QAM	12	13	15.92	15.91	16.05	15.85	15.57	16.60
5	256QAM	25	0	15.83	15.84	16.01	15.85	15.65	16.60

【LTE Band 41_FCC (2496~2690MHz)_HPUE_Main】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				39750	40185	40620	41055	41490	20.60
Frequency (MHz)				2506	2549.5	2593	2636.5	2680	
20	QPSK	1	0	20.46	20.39	20.53	20.59	20.47	20.60
20	QPSK	1	49	20.38	20.30	20.45	20.46	20.28	20.60
20	QPSK	1	99	20.39	20.19	20.50	20.42	20.37	20.60
20	QPSK	50	0	19.37	19.39	19.59	19.62	19.49	20.10
20	QPSK	50	24	19.49	19.38	19.53	19.50	19.31	20.10
20	QPSK	50	50	19.47	19.37	19.48	19.46	19.30	20.10
20	QPSK	100	0	19.36	19.38	19.52	19.58	19.42	20.10
20	16QAM	1	0	19.40	19.36	19.44	19.54	19.40	20.10
20	16QAM	1	49	19.31	19.26	19.42	19.43	19.20	20.10
20	16QAM	1	99	19.32	19.16	19.47	19.36	19.28	20.10
20	16QAM	50	0	18.28	18.28	18.52	18.54	18.44	19.10
20	16QAM	50	24	18.40	18.32	18.48	18.44	18.28	19.10
20	16QAM	50	50	18.39	18.35	18.45	18.39	18.22	19.10
20	16QAM	100	0	18.27	18.35	18.44	18.50	18.36	19.10
20	64QAM	1	0	18.33	18.32	18.40	18.49	18.31	19.10
20	64QAM	1	49	18.23	18.23	18.33	18.38	18.11	19.10
20	64QAM	1	99	18.25	18.09	18.43	18.32	18.20	19.10
20	64QAM	50	0	17.25	17.20	17.45	17.46	17.39	18.10
20	64QAM	50	24	17.31	17.27	17.42	17.39	17.25	18.10
20	64QAM	50	50	17.31	17.32	17.41	17.31	17.15	18.10
20	64QAM	100	0	17.22	17.29	17.39	17.47	17.33	18.10
20	256QAM	1	0	15.30	15.28	15.36	15.40	15.24	16.10
20	256QAM	1	49	15.17	15.20	15.24	15.34	15.06	16.10
20	256QAM	1	99	15.22	15.05	15.35	15.28	15.17	16.10
20	256QAM	50	0	15.22	15.14	15.41	15.38	15.33	16.10
20	256QAM	50	24	15.24	15.20	15.37	15.36	15.16	16.10
20	256QAM	50	50	15.24	15.25	15.36	15.26	15.08	16.10
20	256QAM	100	0	15.16	15.21	15.32	15.38	15.24	16.10
Channel				39725	40173	40620	41068	41515	20.60
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5	
15	QPSK	1	0	20.40	20.28	20.40	20.55	20.35	20.60
15	QPSK	1	37	20.28	20.17	20.36	20.44	20.23	20.60
15	QPSK	1	74	20.29	20.04	20.42	20.39	20.23	20.60
15	QPSK	36	0	19.28	19.26	19.54	19.54	19.36	20.10
15	QPSK	36	20	19.40	19.23	19.44	19.46	19.19	20.10
15	QPSK	36	39	19.46	19.23	19.36	19.45	19.19	20.10
15	QPSK	75	0	19.23	19.23	19.50	19.53	19.41	20.10
15	16QAM	1	0	19.38	19.24	19.29	19.47	19.37	20.10
15	16QAM	1	37	19.28	19.22	19.31	19.34	19.17	20.10
15	16QAM	1	74	19.25	19.05	19.35	19.31	19.18	20.10
15	16QAM	36	0	18.17	18.13	18.37	18.46	18.40	19.10
15	16QAM	36	20	18.31	18.27	18.45	18.34	18.24	19.10
15	16QAM	36	39	18.24	18.22	18.34	18.26	18.16	19.10
15	16QAM	75	0	18.20	18.24	18.37	18.36	18.25	19.10
15	64QAM	1	0	18.28	18.21	18.32	18.37	18.24	19.10
15	64QAM	1	37	18.09	18.18	18.31	18.25	18.06	19.10
15	64QAM	1	74	18.18	18.00	18.29	18.24	18.13	19.10
15	64QAM	36	0	17.15	17.09	17.30	17.38	17.25	18.10
15	64QAM	36	20	17.16	17.16	17.37	17.38	17.18	18.10
15	64QAM	36	39	17.29	17.20	17.40	17.21	17.07	18.10
15	64QAM	75	0	17.17	17.19	17.31	17.42	17.30	18.10
15	256QAM	1	0	15.16	15.22	15.30	15.37	15.22	16.10
15	256QAM	1	37	15.15	15.18	15.20	15.21	14.93	16.10
15	256QAM	1	74	15.19	14.97	15.24	15.26	15.04	16.10
15	256QAM	36	0	15.20	15.00	15.38	15.27	15.27	16.10
15	256QAM	36	20	15.11	15.13	15.25	15.28	15.15	16.10
15	256QAM	36	39	15.09	15.20	15.32	15.23	14.96	16.10
15	256QAM	75	0	15.06	15.16	15.28	15.27	15.11	16.10
Channel				39700	40160	40620	41080	41540	20.60
Frequency (MHz)				2501	2547	2593	2639	2685	

10	QPSK	1	0	20.32	20.30	20.44	20.55	20.40	20.60
10	QPSK	1	25	20.24	20.29	20.33	20.42	20.26	20.60
10	QPSK	1	49	20.27	20.14	20.48	20.33	20.32	20.60
10	QPSK	25	0	19.35	19.33	19.52	19.58	19.48	20.10
10	QPSK	25	12	19.47	19.30	19.49	19.38	19.22	20.10
10	QPSK	25	25	19.32	19.26	19.43	19.37	19.19	20.10
10	QPSK	50	0	19.24	19.36	19.39	19.56	19.38	20.10
10	16QAM	1	0	19.32	19.24	19.39	19.48	19.37	20.10
10	16QAM	1	25	19.29	19.24	19.32	19.37	19.18	20.10
10	16QAM	1	49	19.19	19.10	19.33	19.35	19.20	20.10
10	16QAM	25	0	18.22	18.13	18.42	18.51	18.41	19.10
10	16QAM	25	12	18.32	18.20	18.34	18.38	18.17	19.10
10	16QAM	25	25	18.26	18.30	18.36	18.27	18.18	19.10
10	16QAM	50	0	18.25	18.25	18.39	18.37	18.28	19.10
10	64QAM	1	0	18.25	18.22	18.30	18.48	18.20	19.10
10	64QAM	1	25	18.12	18.16	18.23	18.37	18.06	19.10
10	64QAM	1	49	18.12	17.99	18.35	18.22	18.10	19.10
10	64QAM	25	0	17.15	17.06	17.40	17.39	17.30	18.10
10	64QAM	25	12	17.22	17.26	17.30	17.29	17.22	18.10
10	64QAM	25	25	17.20	17.26	17.27	17.19	17.00	18.10
10	64QAM	50	0	17.10	17.24	17.36	17.35	17.23	18.10
10	256QAM	1	0	15.19	15.22	15.24	15.32	15.10	16.10
10	256QAM	1	25	15.04	15.15	15.15	15.30	14.93	16.10
10	256QAM	1	49	15.12	14.92	15.34	15.20	15.07	16.10
10	256QAM	25	0	15.10	15.08	15.26	15.30	15.27	16.10
10	256QAM	25	12	15.21	15.09	15.34	15.34	15.13	16.10
10	256QAM	25	25	15.22	15.13	15.23	15.23	15.04	16.10
10	256QAM	50	0	15.08	15.14	15.28	15.36	15.18	16.10
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5	
5	QPSK	1	0	20.32	20.35	20.50	20.52	20.41	20.60
5	QPSK	1	12	20.29	20.20	20.37	20.42	20.26	20.60
5	QPSK	1	24	20.27	20.14	20.35	20.32	20.32	20.60
5	QPSK	12	0	19.34	19.33	19.50	19.59	19.42	20.10
5	QPSK	12	7	19.37	19.25	19.41	19.47	19.27	20.10
5	QPSK	12	13	19.34	19.32	19.44	19.32	19.17	20.10
5	QPSK	25	0	19.31	19.31	19.50	19.44	19.39	20.10
5	16QAM	1	0	19.26	19.29	19.41	19.42	19.38	20.10
5	16QAM	1	12	19.24	19.11	19.29	19.35	19.14	20.10
5	16QAM	1	24	19.26	19.09	19.34	19.29	19.18	20.10
5	16QAM	12	0	18.20	18.21	18.50	18.50	18.42	19.10
5	16QAM	12	7	18.37	18.21	18.41	18.42	18.16	19.10
5	16QAM	12	13	18.31	18.22	18.42	18.31	18.13	19.10
5	16QAM	25	0	18.23	18.31	18.31	18.47	18.34	19.10
5	64QAM	1	0	18.29	18.18	18.35	18.48	18.26	19.10
5	64QAM	1	12	18.12	18.21	18.21	18.29	17.97	19.10
5	64QAM	1	24	18.14	17.95	18.37	18.19	18.08	19.10
5	64QAM	12	0	17.22	17.14	17.36	17.41	17.29	18.10
5	64QAM	12	7	17.23	17.25	17.32	17.29	17.12	18.10
5	64QAM	12	13	17.19	17.22	17.31	17.18	17.11	18.10
5	64QAM	25	0	17.12	17.21	17.28	17.43	17.21	18.10
5	256QAM	1	0	15.23	15.14	15.34	15.36	15.10	16.10
5	256QAM	1	12	15.12	15.14	15.13	15.20	15.03	16.10
5	256QAM	1	24	15.21	15.02	15.27	15.14	15.05	16.10
5	256QAM	12	0	15.09	15.07	15.36	15.30	15.27	16.10
5	256QAM	12	7	15.23	15.06	15.30	15.32	15.12	16.10
5	256QAM	12	13	15.16	15.13	15.25	15.15	15.06	16.10
5	256QAM	25	0	15.10	15.08	15.21	15.26	15.11	16.10

【LTE Band 41_FCC (2496~2690MHz)_HPUE_MIMO2】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power 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	19.12	19.18	19.25	19.09	19.03	19.60
20	QPSK	1	49	18.92	18.93	19.08	18.87	18.76	19.60
20	QPSK	1	99	19.02	19.14	19.23	18.96	18.93	19.60
20	QPSK	50	0	19.05	19.11	19.22	19.00	18.94	19.60
20	QPSK	50	24	18.99	18.94	19.15	18.93	18.88	19.60
20	QPSK	50	50	18.98	19.09	19.18	18.92	18.88	19.60
20	QPSK	100	0	18.97	19.03	19.14	18.89	18.88	19.60
20	16QAM	1	0	19.03	19.09	19.22	19.00	18.96	19.60
20	16QAM	1	49	18.81	18.91	19.05	18.81	18.79	19.60
20	16QAM	1	99	18.93	18.95	19.15	18.91	18.87	19.60



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20	16QAM	50	0	18.91	18.93	19.14	18.90	18.85	19.60
20	16QAM	50	24	18.91	18.90	19.10	18.91	18.83	19.60
20	16QAM	50	50	19.01	19.02	19.18	18.89	18.85	19.60
20	16QAM	100	0	18.90	18.91	19.12	18.85	18.77	19.60
20	64QAM	1	0	19.03	19.13	19.23	18.96	18.87	19.60
20	64QAM	1	49	18.72	18.84	18.99	18.78	18.70	19.60
20	64QAM	1	99	18.96	19.06	19.16	18.93	18.85	19.60
20	64QAM	50	0	19.02	19.04	19.18	18.95	18.89	19.60
20	64QAM	50	24	18.87	18.92	19.10	18.84	18.74	19.60
20	64QAM	50	50	18.84	18.97	19.11	18.80	18.76	19.60
20	64QAM	100	0	18.85	18.97	19.05	18.88	18.68	19.60
20	256QAM	1	0	17.79	17.86	17.99	17.79	17.65	18.60
20	256QAM	1	49	17.87	17.96	18.08	17.86	17.80	18.60
20	256QAM	1	99	17.77	17.79	18.00	17.81	17.70	18.60
20	256QAM	50	0	17.84	17.86	18.01	17.84	17.77	18.60
20	256QAM	50	24	17.79	17.84	17.93	17.65	17.66	18.60
20	256QAM	50	50	17.68	17.82	17.95	17.66	17.73	18.60
20	256QAM	100	0	17.66	17.75	17.86	17.67	17.53	18.60
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	19.05	19.14	19.16	19.04	18.97	19.60
15	QPSK	1	37	18.86	18.91	18.94	18.81	18.71	19.60
15	QPSK	1	74	18.96	19.08	19.11	18.84	18.92	19.60
15	QPSK	36	0	18.90	19.08	19.13	18.92	18.84	19.60
15	QPSK	36	20	18.94	18.83	19.07	18.91	18.86	19.60
15	QPSK	36	39	18.96	19.03	19.16	18.85	18.76	19.60
15	QPSK	75	0	18.86	18.95	19.00	18.79	18.85	19.60
15	16QAM	1	0	18.90	19.02	19.15	18.85	18.93	19.60
15	16QAM	1	37	18.79	18.84	18.96	18.78	18.72	19.60
15	16QAM	1	74	18.79	18.84	19.07	18.78	18.72	19.60
15	16QAM	36	0	18.87	18.86	19.06	18.86	18.73	19.60
15	16QAM	36	20	18.80	18.79	19.09	18.76	18.78	19.60
15	16QAM	36	39	18.89	18.99	19.13	18.83	18.82	19.60
15	16QAM	75	0	18.80	18.86	19.07	18.72	18.67	19.60
15	64QAM	1	0	18.95	19.08	19.12	18.90	18.86	19.60
15	64QAM	1	37	18.58	18.78	18.97	18.70	18.61	19.60
15	64QAM	1	74	18.95	19.05	19.08	18.90	18.73	19.60
15	64QAM	36	0	18.90	19.02	19.14	18.89	18.80	19.60
15	64QAM	36	20	18.83	18.82	18.97	18.82	18.72	19.60
15	64QAM	36	39	18.76	18.88	19.09	18.73	18.66	19.60
15	64QAM	75	0	18.80	18.93	18.94	18.76	18.56	19.60
15	256QAM	1	0	17.76	17.72	17.84	17.69	17.59	18.60
15	256QAM	1	37	17.75	17.93	17.99	17.78	17.74	18.60
15	256QAM	1	74	17.69	17.66	17.88	17.75	17.66	18.60
15	256QAM	36	0	17.73	17.76	17.97	17.70	17.75	18.60
15	256QAM	36	20	17.73	17.75	17.88	17.58	17.64	18.60
15	256QAM	36	39	17.56	17.75	17.90	17.57	17.63	18.60
15	256QAM	75	0	17.58	17.63	17.81	17.61	17.49	18.60
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	19.09	19.13	19.19	19.05	19.00	19.60
10	QPSK	1	25	18.77	18.89	19.03	18.74	18.71	19.60
10	QPSK	1	49	18.87	19.09	19.16	18.94	18.89	19.60
10	QPSK	25	0	18.95	19.01	19.19	18.93	18.80	19.60
10	QPSK	25	12	18.90	18.84	19.09	18.89	18.77	19.60
10	QPSK	25	25	18.91	18.99	19.08	18.86	18.77	19.60
10	QPSK	50	0	18.89	18.96	19.01	18.75	18.81	19.60
10	16QAM	1	0	18.89	19.08	19.17	18.95	18.91	19.60
10	16QAM	1	25	18.80	18.88	19.01	18.78	18.74	19.60
10	16QAM	1	49	18.79	18.86	19.05	18.88	18.78	19.60
10	16QAM	25	0	18.87	18.86	19.10	18.77	18.76	19.60
10	16QAM	25	12	18.80	18.76	19.03	18.89	18.80	19.60
10	16QAM	25	25	18.91	18.98	19.09	18.75	18.82	19.60
10	16QAM	50	0	18.77	18.81	19.03	18.72	18.67	19.60
10	64QAM	1	0	18.95	19.12	19.12	18.93	18.75	19.60
10	64QAM	1	25	18.64	18.73	18.85	18.73	18.59	19.60
10	64QAM	1	49	18.85	18.94	19.08	18.88	18.79	19.60
10	64QAM	25	0	18.90	18.95	19.14	18.86	18.86	19.60
10	64QAM	25	12	18.79	18.86	19.01	18.71	18.66	19.60
10	64QAM	25	25	18.80	18.85	19.01	18.66	18.65	19.60
10	64QAM	50	0	18.80	18.94	18.95	18.83	18.58	19.60
10	256QAM	1	0	17.78	17.76	17.90	17.75	17.55	18.60
10	256QAM	1	25	17.83	17.85	18.00	17.81	17.67	18.60
10	256QAM	1	49	17.62	17.65	17.92	17.75	17.61	18.60
10	256QAM	25	0	17.80	17.81	17.93	17.70	17.65	18.60
10	256QAM	25	12	17.77	17.71	17.92	17.61	17.60	18.60



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10	256QAM	25	25	17.62	17.73	17.87	17.56	17.67	18.60
10	256QAM	50	0	17.56	17.62	17.80	17.62	17.38	18.60
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5	
5	QPSK	1	0	19.02	19.17	19.13	18.97	18.90	19.60
5	QPSK	1	12	18.85	18.91	18.97	18.83	18.75	19.60
5	QPSK	1	24	18.96	19.00	19.17	18.90	18.91	19.60
5	QPSK	12	0	19.03	19.05	19.13	18.85	18.84	19.60
5	QPSK	12	7	18.94	18.80	19.14	18.88	18.81	19.60
5	QPSK	12	13	18.97	19.05	19.14	18.87	18.79	19.60
5	QPSK	25	0	18.93	18.89	19.05	18.75	18.82	19.60
5	16QAM	1	0	18.91	19.05	19.18	18.88	18.93	19.60
5	16QAM	1	12	18.76	18.86	18.98	18.73	18.73	19.60
5	16QAM	1	24	18.92	18.93	19.02	18.77	18.81	19.60
5	16QAM	12	0	18.85	18.79	19.09	18.77	18.76	19.60
5	16QAM	12	7	18.88	18.84	19.02	18.84	18.80	19.60
5	16QAM	12	13	18.95	18.93	19.10	18.81	18.82	19.60
5	16QAM	25	0	18.78	18.79	18.99	18.80	18.65	19.60
5	64QAM	1	0	18.92	18.98	19.14	18.85	18.76	19.60
5	64QAM	1	12	18.70	18.72	18.90	18.64	18.66	19.60
5	64QAM	1	24	18.82	18.99	19.11	18.85	18.75	19.60
5	64QAM	12	0	18.90	19.03	19.05	18.82	18.88	19.60
5	64QAM	12	7	18.73	18.83	19.01	18.77	18.66	19.60
5	64QAM	12	13	18.75	18.93	19.04	18.67	18.70	19.60
5	64QAM	25	0	18.77	18.89	19.00	18.81	18.62	19.60
5	256QAM	1	0	17.77	17.78	17.85	17.76	17.57	18.60
5	256QAM	1	12	17.84	17.84	17.94	17.75	17.69	18.60
5	256QAM	1	24	17.66	17.66	17.85	17.70	17.62	18.60
5	256QAM	12	0	17.69	17.72	17.91	17.76	17.74	18.60
5	256QAM	12	7	17.68	17.81	17.87	17.52	17.61	18.60
5	256QAM	12	13	17.59	17.81	17.86	17.60	17.60	18.60
5	256QAM	25	0	17.62	17.64	17.76	17.56	17.49	18.60

【LTE Band 42 (27Q) _ FCC_Part 27Q (3450~3550MHz) _ 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				42190	42590	42990	Tune-up limit (dBm)
Frequency (MHz)				3460	3500	3540	
20	QPSK	1	0	16.69	16.95	16.89	17.30
20	QPSK	1	49	16.63	16.64	16.80	17.30
20	QPSK	1	99	16.63	16.68	16.83	17.30
20	QPSK	50	0	15.76	16.08	15.77	16.30
20	QPSK	50	24	15.72	15.99	16.04	16.30
20	QPSK	50	50	15.68	16.07	15.78	16.30
20	QPSK	100	0	15.73	16.06	15.75	16.30
20	16QAM	1	0	15.71	15.95	15.66	16.30
20	16QAM	1	49	15.69	15.95	15.72	16.30
20	16QAM	1	99	15.52	15.95	15.66	16.30
20	16QAM	50	0	14.69	14.99	14.66	15.30
20	16QAM	50	24	14.75	15.11	14.79	15.30
20	16QAM	50	50	14.73	15.11	14.82	15.30
20	16QAM	100	0	14.74	15.09	14.76	15.30
20	64QAM	1	0	14.49	14.88	14.52	15.30
20	64QAM	1	49	14.63	14.90	14.60	15.30
20	64QAM	1	99	14.48	14.92	14.59	15.30
20	64QAM	50	0	13.66	13.94	13.63	14.30
20	64QAM	50	24	13.71	14.04	13.74	14.30
20	64QAM	50	50	13.71	14.06	13.76	14.30
20	64QAM	100	0	13.72	14.02	13.71	14.30
20	256QAM	1	0	11.70	11.95	11.66	12.30
20	256QAM	1	49	11.69	11.87	11.62	12.30
20	256QAM	1	99	11.67	12.05	11.70	12.30
20	256QAM	50	0	11.71	12.02	11.66	12.30
20	256QAM	50	24	11.81	12.12	11.79	12.30
20	256QAM	50	50	11.76	12.10	11.80	12.30
20	256QAM	100	0	11.74	12.14	11.78	12.30
Channel				42165	42590	43015	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3500	3542.5	
15	QPSK	1	0	16.58	16.91	16.77	17.30
15	QPSK	1	37	16.50	16.58	16.67	17.30
15	QPSK	1	74	16.63	16.55	16.79	17.30
15	QPSK	36	0	15.64	15.94	15.65	16.30
15	QPSK	36	20	15.63	15.94	15.98	16.30
15	QPSK	36	39	15.69	15.99	15.76	16.30



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15	QPSK	75	0	15.67	15.95	15.73	16.30
15	16QAM	1	0	15.56	15.91	15.54	16.30
15	16QAM	1	37	15.55	15.92	15.67	16.30
15	16QAM	1	74	15.40	15.86	15.56	16.30
15	16QAM	36	0	14.58	14.95	14.53	15.30
15	16QAM	36	20	14.72	14.98	14.77	15.30
15	16QAM	36	39	14.64	15.03	14.78	15.30
15	16QAM	75	0	14.71	15.05	14.64	15.30
15	64QAM	1	0	14.38	14.85	14.45	15.30
15	64QAM	1	37	14.52	14.81	14.48	15.30
15	64QAM	1	74	14.37	14.91	14.51	15.30
15	64QAM	36	0	13.65	13.80	13.50	14.30
15	64QAM	36	20	13.65	13.98	13.59	14.30
15	64QAM	36	39	13.67	13.94	13.62	14.30
15	64QAM	75	0	13.65	13.99	13.60	14.30
15	256QAM	1	0	11.56	11.82	11.55	12.30
15	256QAM	1	37	11.67	11.75	11.49	12.30
15	256QAM	1	74	11.65	12.02	11.58	12.30
15	256QAM	36	0	11.58	11.94	11.53	12.30
15	256QAM	36	20	11.72	12.09	11.70	12.30
15	256QAM	36	39	11.74	11.97	11.73	12.30
15	256QAM	75	0	11.66	12.00	11.65	12.30
Channel				42140	42590	43040	Tune-up limit
Frequency (MHz)				3455	3500	3545	(dBm)
10	QPSK	1	0	16.65	16.90	16.87	17.30
10	QPSK	1	25	16.54	16.61	16.75	17.30
10	QPSK	1	49	16.61	16.55	16.71	17.30
10	QPSK	25	0	15.72	16.00	15.70	16.30
10	QPSK	25	12	15.66	15.84	15.90	16.30
10	QPSK	25	25	15.69	16.02	15.73	16.30
10	QPSK	50	0	15.59	16.00	15.68	16.30
10	16QAM	1	0	15.67	15.87	15.61	16.30
10	16QAM	1	25	15.57	15.86	15.59	16.30
10	16QAM	1	49	15.41	15.92	15.61	16.30
10	16QAM	25	0	14.57	14.86	14.64	15.30
10	16QAM	25	12	14.62	15.10	14.77	15.30
10	16QAM	25	25	14.70	15.02	14.69	15.30
10	16QAM	50	0	14.73	15.00	14.63	15.30
10	64QAM	1	0	14.38	14.85	14.49	15.30
10	64QAM	1	25	14.54	14.77	14.46	15.30
10	64QAM	1	49	14.38	14.80	14.57	15.30
10	64QAM	25	0	13.52	13.80	13.51	14.30
10	64QAM	25	12	13.60	13.92	13.65	14.30
10	64QAM	25	25	13.65	13.94	13.75	14.30
10	64QAM	50	0	13.71	13.88	13.56	14.30
10	256QAM	1	0	11.59	11.88	11.52	12.30
10	256QAM	1	25	11.64	11.85	11.49	12.30
10	256QAM	1	49	11.54	11.93	11.67	12.30
10	256QAM	25	0	11.70	11.99	11.64	12.30
10	256QAM	25	12	11.77	11.98	11.68	12.30
10	256QAM	25	25	11.62	11.95	11.75	12.30
10	256QAM	50	0	11.62	12.01	11.77	12.30
Channel				42115	42590	43065	Tune-up limit
Frequency (MHz)				3452.5	3500	3547.5	(dBm)
5	QPSK	1	0	16.58	16.88	16.74	17.30
5	QPSK	1	12	16.60	16.53	16.75	17.30
5	QPSK	1	24	16.58	16.64	16.80	17.30
5	QPSK	12	0	15.71	16.04	15.63	16.30
5	QPSK	12	7	15.56	15.95	15.95	16.30
5	QPSK	12	13	15.62	16.02	15.73	16.30
5	QPSK	25	0	15.67	15.93	15.70	16.30
5	16QAM	1	0	15.67	15.83	15.57	16.30
5	16QAM	1	12	15.63	15.90	15.67	16.30
5	16QAM	1	24	15.47	15.83	15.64	16.30
5	16QAM	12	0	14.64	14.89	14.60	15.30
5	16QAM	12	7	14.62	15.03	14.66	15.30
5	16QAM	12	13	14.66	15.05	14.80	15.30
5	16QAM	25	0	14.66	15.06	14.66	15.30
5	64QAM	1	0	14.45	14.85	14.40	15.30
5	64QAM	1	12	14.59	14.81	14.51	15.30
5	64QAM	1	24	14.41	14.80	14.45	15.30
5	64QAM	12	0	13.54	13.90	13.60	14.30
5	64QAM	12	7	13.59	14.00	13.60	14.30
5	64QAM	12	13	13.62	13.95	13.74	14.30
5	64QAM	25	0	13.63	13.92	13.63	14.30
5	256QAM	1	0	11.55	11.89	11.52	12.30
5	256QAM	1	12	11.59	11.76	11.48	12.30
5	256QAM	1	24	11.61	12.03	11.55	12.30

5	256QAM	12	0	11.56	11.96	11.60	12.30
5	256QAM	12	7	11.73	12.04	11.73	12.30
5	256QAM	12	13	11.68	11.96	11.76	12.30
5	256QAM	25	0	11.63	12.07	11.77	12.30

【LTE Band 42 (27Q)_FCC_Part 27Q (3450~3550MHz)_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				42190	42590	42990	
Frequency (MHz)				3460	3500	3540	
20	QPSK	1	0	17.37	17.40	17.32	17.60
20	QPSK	1	49	17.18	17.34	17.19	17.60
20	QPSK	1	99	17.08	17.25	17.10	17.60
20	QPSK	50	0	17.26	17.38	17.18	17.60
20	QPSK	50	24	17.22	17.37	17.20	17.60
20	QPSK	50	50	17.31	17.37	17.20	17.60
20	QPSK	100	0	17.21	17.38	17.24	17.60
20	16QAM	1	0	17.03	17.13	17.12	17.60
20	16QAM	1	49	17.11	17.26	17.13	17.60
20	16QAM	1	99	17.19	17.25	17.11	17.60
20	16QAM	50	0	17.25	17.38	17.16	17.60
20	16QAM	50	24	17.14	17.29	17.10	17.60
20	16QAM	50	50	17.25	17.34	17.13	17.60
20	16QAM	100	0	17.31	17.35	17.26	17.60
20	64QAM	1	0	17.31	17.38	17.22	17.60
20	64QAM	1	49	17.19	17.28	17.18	17.60
20	64QAM	1	99	17.19	17.25	17.11	17.60
20	64QAM	50	0	17.30	17.38	17.25	17.60
20	64QAM	50	24	17.18	17.30	17.11	17.60
20	64QAM	50	50	17.20	17.34	17.13	17.60
20	64QAM	100	0	17.26	17.30	17.12	17.60
20	256QAM	1	0	17.09	17.15	17.10	17.60
20	256QAM	1	49	17.20	17.27	17.10	17.60
20	256QAM	1	99	17.11	17.18	17.11	17.60
20	256QAM	50	0	17.25	17.35	17.17	17.60
20	256QAM	50	24	17.21	17.37	17.16	17.60
20	256QAM	50	50	17.15	17.28	17.10	17.60
20	256QAM	100	0	17.25	17.32	17.10	17.60
Channel				42165	42590	43015	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3500	3542.5	
15	QPSK	1	0	17.34	17.34	17.21	17.60
15	QPSK	1	37	17.07	17.30	17.08	17.60
15	QPSK	1	74	17.07	17.21	16.99	17.60
15	QPSK	36	0	17.24	17.24	17.07	17.60
15	QPSK	36	20	17.18	17.26	17.16	17.60
15	QPSK	36	39	17.19	17.28	17.08	17.60
15	QPSK	75	0	17.12	17.36	17.15	17.60
15	16QAM	1	0	16.88	17.12	16.99	17.60
15	16QAM	1	37	17.00	17.22	17.01	17.60
15	16QAM	1	74	17.11	17.11	17.00	17.60
15	16QAM	36	0	17.22	17.34	17.08	17.60
15	16QAM	36	20	17.09	17.16	16.95	17.60
15	16QAM	36	39	17.20	17.25	17.05	17.60
15	16QAM	75	0	17.30	17.27	17.21	17.60
15	64QAM	1	0	17.29	17.35	17.10	17.60
15	64QAM	1	37	17.15	17.16	17.09	17.60
15	64QAM	1	74	17.05	17.18	17.08	17.60
15	64QAM	36	0	17.24	17.32	17.24	17.60
15	64QAM	36	20	17.09	17.19	17.05	17.60
15	64QAM	36	39	17.07	17.21	16.98	17.60
15	64QAM	75	0	17.12	17.24	17.02	17.60
15	256QAM	1	0	17.06	17.00	17.08	17.60
15	256QAM	1	37	17.13	17.15	17.06	17.60
15	256QAM	1	74	17.06	17.09	17.05	17.60
15	256QAM	36	0	17.21	17.28	17.03	17.60
15	256QAM	36	20	17.13	17.23	17.02	17.60
15	256QAM	36	39	17.12	17.22	17.08	17.60
15	256QAM	75	0	17.14	17.26	17.01	17.60
Channel				42140	42590	43040	Tune-up limit (dBm)
Frequency (MHz)				3455	3500	3545	
10	QPSK	1	0	17.23	17.39	17.21	17.60
10	QPSK	1	25	17.07	17.31	17.11	17.60
10	QPSK	1	49	16.98	17.13	17.09	17.60
10	QPSK	25	0	17.25	17.24	17.13	17.60
10	QPSK	25	12	17.12	17.32	17.13	17.60

10	QPSK	25	25	17.16	17.27	17.09	17.60
10	QPSK	50	0	17.14	17.27	17.15	17.60
10	16QAM	1	0	16.92	17.11	17.03	17.60
10	16QAM	1	25	17.02	17.21	17.04	17.60
10	16QAM	1	49	17.08	17.21	17.01	17.60
10	16QAM	25	0	17.20	17.37	17.12	17.60
10	16QAM	25	12	17.05	17.14	16.96	17.60
10	16QAM	25	25	17.17	17.26	17.10	17.60
10	16QAM	50	0	17.29	17.34	17.11	17.60
10	64QAM	1	0	17.17	17.36	17.15	17.60
10	64QAM	1	25	17.11	17.17	17.11	17.60
10	64QAM	1	49	17.11	17.15	16.96	17.60
10	64QAM	25	0	17.21	17.28	17.19	17.60
10	64QAM	25	12	17.08	17.18	17.04	17.60
10	64QAM	25	25	17.10	17.30	17.10	17.60
10	64QAM	50	0	17.17	17.26	17.05	17.60
10	256QAM	1	0	17.04	17.07	17.07	17.60
10	256QAM	1	25	17.14	17.22	16.98	17.60
10	256QAM	1	49	17.06	17.07	16.98	17.60
10	256QAM	25	0	17.16	17.21	17.09	17.60
10	256QAM	25	12	17.08	17.26	17.03	17.60
10	256QAM	25	25	17.07	17.14	17.05	17.60
10	256QAM	50	0	17.15	17.27	17.06	17.60
Channel				42115	42590	43065	Tune-up limit (dBm)
Frequency (MHz)				3452.5	3500	3547.5	
5	QPSK	1	0	17.28	17.26	17.25	17.60
5	QPSK	1	12	17.05	17.24	17.16	17.60
5	QPSK	1	24	16.99	17.23	16.95	17.60
5	QPSK	12	0	17.17	17.30	17.07	17.60
5	QPSK	12	7	17.09	17.25	17.18	17.60
5	QPSK	12	13	17.23	17.24	17.15	17.60
5	QPSK	25	0	17.13	17.24	17.18	17.60
5	16QAM	1	0	16.88	16.98	17.07	17.60
5	16QAM	1	12	17.00	17.22	17.00	17.60
5	16QAM	1	24	17.11	17.16	16.98	17.60
5	16QAM	12	0	17.21	17.28	17.15	17.60
5	16QAM	12	7	17.09	17.20	17.01	17.60
5	16QAM	12	13	17.17	17.26	17.12	17.60
5	16QAM	25	0	17.29	17.29	17.21	17.60
5	64QAM	1	0	17.17	17.23	17.20	17.60
5	64QAM	1	12	17.17	17.14	17.13	17.60
5	64QAM	1	24	17.08	17.13	17.03	17.60
5	64QAM	12	0	17.27	17.32	17.13	17.60
5	64QAM	12	7	17.13	17.16	17.00	17.60
5	64QAM	12	13	17.13	17.23	17.07	17.60
5	64QAM	25	0	17.14	17.18	17.06	17.60
5	256QAM	1	0	17.06	17.13	17.05	17.60
5	256QAM	1	12	17.11	17.13	16.96	17.60
5	256QAM	1	24	17.05	17.07	17.01	17.60
5	256QAM	12	0	17.13	17.26	17.08	17.60
5	256QAM	12	7	17.15	17.30	17.14	17.60
5	256QAM	12	13	17.03	17.22	17.06	17.60
5	256QAM	25	0	17.13	17.23	17.01	17.60

【LTE Band 43 (270) _ FCC Part 270 (3700~3800MHz) _ 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				44690	45090	45490	
Frequency (MHz)				3710	3750	3790	
20	QPSK	1	0	20.24	20.45	20.33	20.80
20	QPSK	1	49	20.20	20.26	20.15	20.80
20	QPSK	1	99	20.10	20.28	20.19	20.80
20	QPSK	50	0	19.39	19.42	19.36	19.80
20	QPSK	50	24	19.25	19.29	19.21	19.80
20	QPSK	50	50	19.29	19.37	19.31	19.80
20	QPSK	100	0	19.26	19.40	19.26	19.80
20	16QAM	1	0	19.39	19.32	19.16	19.80
20	16QAM	1	49	19.27	19.30	19.22	19.80
20	16QAM	1	99	19.11	19.19	19.12	19.80
20	16QAM	50	0	18.39	18.36	18.33	18.80
20	16QAM	50	24	18.26	18.28	18.21	18.80
20	16QAM	50	50	18.28	18.28	18.17	18.80
20	16QAM	100	0	18.24	18.27	18.25	18.80
20	64QAM	1	0	18.29	18.28	18.21	18.80
20	64QAM	1	49	18.16	18.07	18.11	18.80



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20	64QAM	1	99	18.29	18.17	18.10	18.80
20	64QAM	50	0	17.38	17.34	17.30	17.80
20	64QAM	50	24	17.28	17.28	17.20	17.80
20	64QAM	50	50	17.21	17.26	17.17	17.80
20	64QAM	100	0	17.25	17.28	17.23	17.80
20	256QAM	1	0	15.21	15.27	15.37	15.80
20	256QAM	1	49	15.16	15.15	15.19	15.80
20	256QAM	1	99	15.15	15.13	15.16	15.80
20	256QAM	50	0	15.31	15.32	15.38	15.80
20	256QAM	50	24	15.29	15.30	15.26	15.80
20	256QAM	50	50	15.17	15.21	15.20	15.80
20	256QAM	100	0	15.30	15.27	15.35	15.80
Channel				44665	45090	45515	Tune-up limit
Frequency (MHz)				3707.5	3750	3792.5	(dBm)
15	QPSK	1	0	20.17	20.34	20.22	20.80
15	QPSK	1	37	20.14	20.16	20.07	20.80
15	QPSK	1	74	20.08	20.19	20.12	20.80
15	QPSK	36	0	19.33	19.29	19.26	19.80
15	QPSK	36	20	19.24	19.22	19.12	19.80
15	QPSK	36	39	19.18	19.33	19.28	19.80
15	QPSK	75	0	19.24	19.30	19.12	19.80
15	16QAM	1	0	19.25	19.21	19.13	19.80
15	16QAM	1	37	19.15	19.21	19.10	19.80
15	16QAM	1	74	19.07	19.11	19.04	19.80
15	16QAM	36	0	18.28	18.28	18.19	18.80
15	16QAM	36	20	18.22	18.18	18.09	18.80
15	16QAM	36	39	18.22	18.16	18.06	18.80
15	16QAM	75	0	18.16	18.18	18.21	18.80
15	64QAM	1	0	18.27	18.17	18.08	18.80
15	64QAM	1	37	18.05	18.04	18.03	18.80
15	64QAM	1	74	18.18	18.04	18.06	18.80
15	64QAM	36	0	17.34	17.31	17.16	17.80
15	64QAM	36	20	17.18	17.20	17.15	17.80
15	64QAM	36	39	17.16	17.24	17.14	17.80
15	64QAM	75	0	17.23	17.23	17.19	17.80
15	256QAM	1	0	15.07	15.22	15.26	15.80
15	256QAM	1	37	15.02	15.02	15.06	15.80
15	256QAM	1	74	15.10	15.03	15.07	15.80
15	256QAM	36	0	15.17	15.27	15.28	15.80
15	256QAM	36	20	15.22	15.27	15.22	15.80
15	256QAM	36	39	15.13	15.11	15.13	15.80
15	256QAM	75	0	15.23	15.14	15.32	15.80
Channel				44640	45090	45540	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	QPSK	1	0	20.13	20.35	20.21	20.80
10	QPSK	1	25	20.11	20.20	20.07	20.80
10	QPSK	1	49	20.08	20.21	20.11	20.80
10	QPSK	25	0	19.33	19.38	19.25	19.80
10	QPSK	25	12	19.22	19.21	19.14	19.80
10	QPSK	25	25	19.16	19.30	19.25	19.80
10	QPSK	50	0	19.18	19.34	19.18	19.80
10	16QAM	1	0	19.31	19.17	19.14	19.80
10	16QAM	1	25	19.15	19.15	19.08	19.80
10	16QAM	1	49	19.05	19.11	19.08	19.80
10	16QAM	25	0	18.30	18.32	18.26	18.80
10	16QAM	25	12	18.15	18.25	18.10	18.80
10	16QAM	25	25	18.21	18.19	18.03	18.80
10	16QAM	50	0	18.23	18.15	18.23	18.80
10	64QAM	1	0	18.25	18.21	18.09	18.80
10	64QAM	1	25	18.07	18.03	18.05	18.80
10	64QAM	1	49	18.26	18.07	18.06	18.80
10	64QAM	25	0	17.23	17.27	17.16	17.80
10	64QAM	25	12	17.25	17.17	17.14	17.80
10	64QAM	25	25	17.08	17.15	17.16	17.80
10	64QAM	50	0	17.11	17.17	17.22	17.80
10	256QAM	1	0	15.14	15.12	15.33	15.80
10	256QAM	1	25	15.13	15.04	15.17	15.80
10	256QAM	1	49	15.10	15.10	15.08	15.80
10	256QAM	25	0	15.19	15.18	15.31	15.80
10	256QAM	25	12	15.26	15.25	15.13	15.80
10	256QAM	25	25	15.10	15.17	15.18	15.80
10	256QAM	50	0	15.20	15.18	15.21	15.80
Channel				44615	45090	45565	Tune-up limit
Frequency (MHz)				3702.5	3750	3797.5	(dBm)
5	QPSK	1	0	20.17	20.37	20.25	20.80
5	QPSK	1	12	20.16	20.14	20.06	20.80
5	QPSK	1	24	20.04	20.26	20.14	20.80
5	QPSK	12	0	19.38	19.29	19.31	19.80

5	QPSK	12	7	19.22	19.24	19.07	19.80
5	QPSK	12	13	19.28	19.33	19.19	19.80
5	QPSK	25	0	19.20	19.30	19.14	19.80
5	16QAM	1	0	19.35	19.19	19.12	19.80
5	16QAM	1	12	19.22	19.19	19.10	19.80
5	16QAM	1	24	19.03	19.15	19.09	19.80
5	16QAM	12	0	18.27	18.30	18.19	18.80
5	16QAM	12	7	18.23	18.16	18.06	18.80
5	16QAM	12	13	18.27	18.25	18.15	18.80
5	16QAM	25	0	18.20	18.12	18.23	18.80
5	64QAM	1	0	18.15	18.15	18.11	18.80
5	64QAM	1	12	18.13	18.04	18.08	18.80
5	64QAM	1	24	18.24	18.08	18.01	18.80
5	64QAM	12	0	17.25	17.21	17.20	17.80
5	64QAM	12	7	17.19	17.18	17.12	17.80
5	64QAM	12	13	17.12	17.16	17.12	17.80
5	64QAM	25	0	17.11	17.25	17.17	17.80
5	256QAM	1	0	15.16	15.21	15.32	15.80
5	256QAM	1	12	15.06	15.13	15.17	15.80
5	256QAM	1	24	15.08	15.08	15.08	15.80
5	256QAM	12	0	15.20	15.25	15.25	15.80
5	256QAM	12	7	15.28	15.20	15.23	15.80
5	256QAM	12	13	15.04	15.08	15.09	15.80
5	256QAM	25	0	15.28	15.17	15.34	15.80

【LTE Band 43 (270) _ FCC_Part 270 (3700~3800MHz) _ 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				44690	45090	45490	Tune-up limit (dBm)
Frequency (MHz)				3710	3750	3790	
20	QPSK	1	0	22.15	22.12	22.04	22.50
20	QPSK	1	49	22.09	22.11	22.00	22.50
20	QPSK	1	99	22.01	22.09	22.02	22.50
20	QPSK	50	0	21.79	21.76	21.65	22.00
20	QPSK	50	24	21.70	21.77	21.58	22.00
20	QPSK	50	50	21.75	21.78	21.58	22.00
20	QPSK	100	0	21.78	21.73	21.63	22.00
20	16QAM	1	0	21.74	21.79	21.69	22.00
20	16QAM	1	49	21.70	21.78	21.61	22.00
20	16QAM	1	99	21.77	21.77	21.67	22.00
20	16QAM	50	0	20.61	20.69	20.51	21.00
20	16QAM	50	24	20.65	20.75	20.54	21.00
20	16QAM	50	50	20.72	20.74	20.63	21.00
20	16QAM	100	0	20.64	20.73	20.55	21.00
20	64QAM	1	0	20.74	20.75	20.65	21.00
20	64QAM	1	49	20.64	20.74	20.54	21.00
20	64QAM	1	99	20.68	20.72	20.63	21.00
20	64QAM	50	0	19.62	19.69	19.56	20.00
20	64QAM	50	24	19.67	19.71	19.55	20.00
20	64QAM	50	50	19.65	19.68	19.50	20.00
20	64QAM	100	0	19.68	19.70	19.58	20.00
20	256QAM	1	0	17.53	17.62	17.54	18.00
20	256QAM	1	49	17.60	17.64	17.55	18.00
20	256QAM	1	99	17.62	17.63	17.47	18.00
20	256QAM	50	0	17.58	17.64	17.43	18.00
20	256QAM	50	24	17.60	17.60	17.40	18.00
20	256QAM	50	50	17.62	17.62	17.51	18.00
20	256QAM	100	0	17.55	17.63	17.50	18.00
Channel				44665	45090	45515	Tune-up limit (dBm)
Frequency (MHz)				3707.5	3750	3792.5	
15	QPSK	1	0	22.06	22.06	22.00	22.50
15	QPSK	1	37	22.00	22.08	22.01	22.50
15	QPSK	1	74	22.00	22.01	22.00	22.50
15	QPSK	36	0	21.69	21.76	21.61	22.00
15	QPSK	36	20	21.56	21.69	21.52	22.00
15	QPSK	36	39	21.73	21.67	21.56	22.00
15	QPSK	75	0	21.63	21.72	21.53	22.00
15	16QAM	1	0	21.72	21.70	21.61	22.00
15	16QAM	1	37	21.57	21.72	21.53	22.00
15	16QAM	1	74	21.63	21.74	21.60	22.00
15	16QAM	36	0	20.53	20.65	20.43	21.00
15	16QAM	36	20	20.54	20.65	20.48	21.00
15	16QAM	36	39	20.69	20.73	20.49	21.00
15	16QAM	75	0	20.62	20.67	20.48	21.00
15	64QAM	1	0	20.69	20.70	20.61	21.00

15	64QAM	1	37	20.61	20.70	20.49	21.00
15	64QAM	1	74	20.63	20.67	20.58	21.00
15	64QAM	36	0	19.55	19.54	19.42	20.00
15	64QAM	36	20	19.54	19.70	19.44	20.00
15	64QAM	36	39	19.62	19.67	19.38	20.00
15	64QAM	75	0	19.59	19.65	19.54	20.00
15	256QAM	1	0	17.51	17.54	17.47	18.00
15	256QAM	1	37	17.49	17.52	17.42	18.00
15	256QAM	1	74	17.59	17.54	17.46	18.00
15	256QAM	36	0	17.46	17.62	17.31	18.00
15	256QAM	36	20	17.49	17.49	17.27	18.00
15	256QAM	36	39	17.52	17.54	17.48	18.00
15	256QAM	75	0	17.50	17.59	17.37	18.00
Channel				44640	45090	45540	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	QPSK	1	0	22.07	22.07	22.01	22.50
10	QPSK	1	25	22.01	22.01	22.00	22.50
10	QPSK	1	49	22.00	22.03	22.00	22.50
10	QPSK	25	0	21.65	21.67	21.57	22.00
10	QPSK	25	12	21.59	21.63	21.47	22.00
10	QPSK	25	25	21.66	21.63	21.53	22.00
10	QPSK	50	0	21.62	21.71	21.59	22.00
10	16QAM	1	0	21.61	21.77	21.65	22.00
10	16QAM	1	25	21.57	21.69	21.52	22.00
10	16QAM	1	49	21.71	21.76	21.54	22.00
10	16QAM	25	0	20.60	20.66	20.40	21.00
10	16QAM	25	12	20.51	20.65	20.49	21.00
10	16QAM	25	25	20.61	20.64	20.50	21.00
10	16QAM	50	0	20.57	20.70	20.43	21.00
10	64QAM	1	0	20.67	20.67	20.51	21.00
10	64QAM	1	25	20.50	20.72	20.39	21.00
10	64QAM	1	49	20.58	20.66	20.51	21.00
10	64QAM	25	0	19.47	19.64	19.41	20.00
10	64QAM	25	12	19.56	19.64	19.49	20.00
10	64QAM	25	25	19.55	19.66	19.38	20.00
10	64QAM	50	0	19.65	19.62	19.55	20.00
10	256QAM	1	0	17.45	17.56	17.45	18.00
10	256QAM	1	25	17.58	17.56	17.54	18.00
10	256QAM	1	49	17.57	17.56	17.41	18.00
10	256QAM	25	0	17.48	17.59	17.38	18.00
10	256QAM	25	12	17.49	17.52	17.33	18.00
10	256QAM	25	25	17.50	17.61	17.42	18.00
10	256QAM	50	0	17.47	17.60	17.35	18.00
Channel				44615	45090	45565	Tune-up limit
Frequency (MHz)				3702.5	3750	3797.5	(dBm)
5	QPSK	1	0	22.12	22.08	22.01	22.50
5	QPSK	1	12	22.02	22.09	22.00	22.50
5	QPSK	1	24	22.00	22.03	22.02	22.50
5	QPSK	12	0	21.74	21.73	21.51	22.00
5	QPSK	12	7	21.59	21.73	21.57	22.00
5	QPSK	12	13	21.66	21.70	21.44	22.00
5	QPSK	25	0	21.58	21.70	21.58	22.00
5	16QAM	1	0	21.61	21.74	21.66	22.00
5	16QAM	1	12	21.57	21.74	21.58	22.00
5	16QAM	1	24	21.69	21.63	21.55	22.00
5	16QAM	12	0	20.49	20.59	20.46	21.00
5	16QAM	12	7	20.54	20.68	20.52	21.00
5	16QAM	12	13	20.65	20.67	20.54	21.00
5	16QAM	25	0	20.58	20.65	20.43	21.00
5	64QAM	1	0	20.73	20.63	20.61	21.00
5	64QAM	1	12	20.58	20.68	20.44	21.00
5	64QAM	1	24	20.53	20.69	20.51	21.00
5	64QAM	12	0	19.57	19.64	19.48	20.00
5	64QAM	12	7	19.55	19.61	19.48	20.00
5	64QAM	12	13	19.52	19.63	19.39	20.00
5	64QAM	25	0	19.56	19.56	19.54	20.00
5	256QAM	1	0	17.41	17.52	17.51	18.00
5	256QAM	1	12	17.50	17.56	17.50	18.00
5	256QAM	1	24	17.53	17.52	17.33	18.00
5	256QAM	12	0	17.48	17.54	17.37	18.00
5	256QAM	12	7	17.52	17.46	17.35	18.00
5	256QAM	12	13	17.60	17.56	17.45	18.00
5	256QAM	25	0	17.46	17.59	17.37	18.00

【LTE Band 48 FCC Part 96 IC RSS-192 (3550~3700MHz) Main】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	55990	56150	56640	Tune-up limit (dBm)
Frequency (MHz)				3560	3609	3625	3641	3690	
20	QPSK	1	0	18.99	19.11		19.23	19.34	20.10
20	QPSK	1	49	18.98	19.08		19.07	19.28	20.10
20	QPSK	1	99	18.85	18.97		19.07	19.01	20.10
20	QPSK	50	0	18.09	18.23		18.28	18.31	19.10
20	QPSK	50	24	18.03	18.15		18.26	18.27	19.10
20	QPSK	50	50	18.04	18.18		18.21	18.26	19.10
20	QPSK	100	0	18.10	18.22		18.24	18.27	19.10
20	16QAM	1	0	17.96	18.14		18.24	18.27	19.10
20	16QAM	1	49	17.97	18.10		18.24	18.26	19.10
20	16QAM	1	99	17.83	18.00		18.19	18.02	19.10
20	16QAM	50	0	17.03	17.19		17.28	17.30	18.10
20	16QAM	50	24	17.11	17.25		17.35	17.24	18.10
20	16QAM	50	50	17.00	17.19		17.29	17.22	18.10
20	16QAM	100	0	17.06	17.23		17.31	17.21	18.10
20	64QAM	1	0	16.98	17.14		17.25	17.38	18.10
20	64QAM	1	49	16.90	17.06		17.13	17.17	18.10
20	64QAM	1	99	16.87	16.94		17.04	17.02	18.10
20	64QAM	50	0	16.02	16.15		16.30	16.26	17.10
20	64QAM	50	24	16.09	16.22		16.34	16.26	17.10
20	64QAM	50	50	16.02	16.17		16.29	16.22	17.10
20	64QAM	100	0	16.06	16.20		16.35	16.20	17.10
20	256QAM	1	0	14.27	14.30		14.52	14.41	15.10
20	256QAM	1	49	14.32	14.52		14.53	14.44	15.10
20	256QAM	1	99	14.25	14.59		14.62	14.64	15.10
20	256QAM	50	0	14.30	14.46		14.62	14.53	15.10
20	256QAM	50	24	14.41	14.59		14.70	14.57	15.10
20	256QAM	50	50	14.42	14.58		14.70	14.67	15.10
20	256QAM	100	0	14.39	14.58		14.71	14.54	15.10
Channel				55315	55820	55990	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3625	3642	3692.5	
15	QPSK	1	0	18.88	19.06		19.18	19.25	20.10
15	QPSK	1	37	18.86	18.96		19.02	19.19	20.10
15	QPSK	1	74	18.71	18.94		18.96	18.88	20.10
15	QPSK	36	0	17.97	18.09		18.13	18.17	19.10
15	QPSK	36	20	17.97	18.20		18.19	18.25	19.10
15	QPSK	36	39	17.93	18.07		18.11	18.19	19.10
15	QPSK	75	0	18.00	18.07		18.16	18.16	19.10
15	16QAM	1	0	17.83	18.05		18.14	18.16	19.10
15	16QAM	1	37	17.83	18.04		18.10	18.15	19.10
15	16QAM	1	74	17.76	17.88		18.11	17.93	19.10
15	16QAM	36	0	16.98	17.16		17.25	17.26	18.10
15	16QAM	36	20	17.06	17.22		17.28	17.22	18.10
15	16QAM	36	39	16.92	17.10		17.16	17.12	18.10
15	16QAM	75	0	16.93	17.17		17.23	17.17	18.10
15	64QAM	1	0	16.91	17.11		17.23	17.34	18.10
15	64QAM	1	37	16.85	17.02		17.01	17.16	18.10
15	64QAM	1	74	16.78	16.89		17.03	16.95	18.10
15	64QAM	36	0	16.00	16.02		16.25	16.16	17.10
15	64QAM	36	20	15.96	16.18		16.23	16.18	17.10
15	64QAM	36	39	15.99	16.07		16.18	16.19	17.10
15	64QAM	75	0	15.94	16.17		16.26	16.12	17.10
15	256QAM	1	0	14.20	14.20		14.39	14.35	15.10
15	256QAM	1	37	14.22	14.40		14.48	14.41	15.10
15	256QAM	1	74	14.22	14.54		14.52	14.53	15.10
15	256QAM	36	0	14.21	14.42		14.58	14.40	15.10
15	256QAM	36	20	14.39	14.50		14.59	14.44	15.10
15	256QAM	36	39	14.32	14.49		14.60	14.59	15.10
15	256QAM	75	0	14.26	14.46		14.59	14.46	15.10
Channel				55290	55815	55990	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3625	3642.5	3695	
10	QPSK	1	0	18.92	19.07		19.08	19.31	20.10
10	QPSK	1	25	18.97	18.95		18.93	19.23	20.10
10	QPSK	1	49	18.76	18.93		18.98	19.00	20.10
10	QPSK	25	0	17.90	18.12		18.24	18.20	19.10
10	QPSK	25	12	18.02	18.16		18.22	18.17	19.10
10	QPSK	25	25	17.98	18.08		18.17	18.22	19.10
10	QPSK	50	0	18.02	18.09		18.10	18.19	19.10
10	16QAM	1	0	17.89	18.06		18.13	18.22	19.10
10	16QAM	1	25	17.85	18.07		18.20	18.16	19.10

10	16QAM	1	49	17.78	17.93		18.13	17.94	19.10
10	16QAM	25	0	16.93	17.14		17.21	17.26	18.10
10	16QAM	25	12	17.05	17.14		17.27	17.10	18.10
10	16QAM	25	25	16.88	17.14		17.20	17.18	18.10
10	16QAM	50	0	17.05	17.14		17.18	17.08	18.10
10	64QAM	1	0	16.88	17.08		17.12	17.34	18.10
10	64QAM	1	25	16.78	16.95		17.03	17.15	18.10
10	64QAM	1	49	16.78	16.84		16.95	16.99	18.10
10	64QAM	25	0	15.94	16.08		16.20	16.20	17.10
10	64QAM	25	12	15.98	16.14		16.25	16.23	17.10
10	64QAM	25	25	15.90	16.06		16.20	16.09	17.10
10	64QAM	50	0	16.04	16.15		16.33	16.10	17.10
10	256QAM	1	0	14.23	14.26		14.47	14.31	15.10
10	256QAM	1	25	14.23	14.41		14.44	14.32	15.10
10	256QAM	1	49	14.24	14.53		14.59	14.58	15.10
10	256QAM	25	0	14.16	14.38		14.57	14.42	15.10
10	256QAM	25	12	14.29	14.53		14.64	14.47	15.10
10	256QAM	25	25	14.36	14.51		14.67	14.61	15.10
10	256QAM	50	0	14.38	14.44		14.65	14.46	15.10
Channel				55265	55810	55990	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3625	3643	3697.5	
5	QPSK	1	0	18.95	19.05		19.17	19.25	20.10
5	QPSK	1	12	18.89	19.05		18.99	19.24	20.10
5	QPSK	1	24	18.78	18.90		18.99	18.92	20.10
5	QPSK	12	0	17.96	18.05		18.15	18.26	19.10
5	QPSK	12	7	17.98	18.15		18.13	18.21	19.10
5	QPSK	12	13	17.91	18.16		18.14	18.22	19.10
5	QPSK	25	0	18.02	18.20		18.17	18.20	19.10
5	16QAM	1	0	17.94	18.04		18.21	18.16	19.10
5	16QAM	1	12	17.94	17.98		18.16	18.11	19.10
5	16QAM	1	24	17.72	17.92		18.15	17.98	19.10
5	16QAM	12	0	17.00	17.05		17.20	17.25	18.10
5	16QAM	12	7	16.99	17.11		17.23	17.12	18.10
5	16QAM	12	13	16.98	17.05		17.28	17.20	18.10
5	16QAM	25	0	17.00	17.13		17.21	17.12	18.10
5	64QAM	1	0	16.85	17.04		17.11	17.29	18.10
5	64QAM	1	12	16.76	16.96		17.01	17.02	18.10
5	64QAM	1	24	16.82	16.80		16.99	16.95	18.10
5	64QAM	12	0	15.90	16.01		16.20	16.18	17.10
5	64QAM	12	7	16.07	16.18		16.23	16.12	17.10
5	64QAM	12	13	15.99	16.09		16.23	16.08	17.10
5	64QAM	25	0	15.94	16.07		16.22	16.14	17.10
5	256QAM	1	0	14.26	14.16		14.37	14.38	15.10
5	256QAM	1	12	14.19	14.49		14.43	14.33	15.10
5	256QAM	1	24	14.16	14.49		14.56	14.63	15.10
5	256QAM	12	0	14.17	14.39		14.58	14.39	15.10
5	256QAM	12	7	14.30	14.44		14.68	14.49	15.10
5	256QAM	12	13	14.29	14.56		14.67	14.57	15.10
5	256QAM	25	0	14.34	14.56		14.66	14.45	15.10

【LTE Band 48_FCC_Part 96 IC_RSS-192 (3550~3700MHz)_MIMO2】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	55990	56150	56640	
Frequency (MHz)				3560	3609	3625	3641	3690	
20	QPSK	1	0	20.01	20.05		20.18	20.08	22.00
20	QPSK	1	49	20.00	20.01		20.01	20.01	22.00
20	QPSK	1	99	20.01	20.00		20.02	20.01	22.00
20	QPSK	50	0	19.01	19.00		19.12	19.01	21.00
20	QPSK	50	24	19.00	19.00		19.06	19.00	21.00
20	QPSK	50	50	19.00	19.00		19.06	19.00	21.00
20	QPSK	100	0	19.01	19.00		19.07	19.00	21.00
20	16QAM	1	0	19.00	19.00		19.00	19.00	21.00
20	16QAM	1	49	19.02	19.00		19.01	19.01	21.00
20	16QAM	1	99	19.00	19.00		19.00	19.01	21.00
20	16QAM	50	0	18.00	18.00		18.01	18.02	20.00
20	16QAM	50	24	18.00	18.00		18.01	18.02	20.00
20	16QAM	50	50	18.00	18.01		18.00	18.01	20.00
20	16QAM	100	0	18.00	18.01		18.03	18.00	20.00
20	64QAM	1	0	18.01	18.00		18.18	18.06	20.00
20	64QAM	1	49	18.04	18.12		18.19	18.17	20.00
20	64QAM	1	99	18.00	18.00		18.10	18.02	20.00
20	64QAM	50	0	17.01	17.01		17.00	17.01	19.00
20	64QAM	50	24	17.02	17.00		17.00	17.00	19.00



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20	64QAM	50	50	17.01	17.01		17.09	17.00	19.00
20	64QAM	100	0	17.00	17.01		17.00	17.00	19.00
20	256QAM	1	0	15.01	15.00		15.03	15.00	17.00
20	256QAM	1	49	15.01	15.00		15.00	15.00	17.00
20	256QAM	1	99	15.00	15.00		15.08	15.01	17.00
20	256QAM	50	0	15.00	15.04		15.02	15.00	17.00
20	256QAM	50	24	15.02	15.01		15.09	15.06	17.00
20	256QAM	50	50	15.00	15.08		15.19	15.11	17.00
20	256QAM	100	0	15.01	15.00		15.09	15.00	17.00
Channel				55315	55820	55990	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3625	3642	3692.5	
15	QPSK	1	0	20.00	20.00		20.05	20.07	22.00
15	QPSK	1	37	20.01	20.00		20.01	20.01	22.00
15	QPSK	1	74	20.01	20.01		20.00	20.01	22.00
15	QPSK	36	0	19.00	19.00		19.06	19.01	21.00
15	QPSK	36	20	19.00	19.01		19.00	19.01	21.00
15	QPSK	36	39	19.00	19.00		19.00	19.02	21.00
15	QPSK	75	0	19.01	19.01		19.00	19.00	21.00
15	16QAM	1	0	19.00	19.01		19.01	19.00	21.00
15	16QAM	1	37	19.00	19.00		19.02	19.00	21.00
15	16QAM	1	74	19.00	19.00		19.00	19.01	21.00
15	16QAM	36	0	18.00	18.01		18.00	18.01	20.00
15	16QAM	36	20	18.00	18.00		18.01	18.01	20.00
15	16QAM	36	39	18.01	18.01		18.02	18.00	20.00
15	16QAM	75	0	18.00	18.01		18.00	18.00	20.00
15	64QAM	1	0	18.01	18.00		18.14	18.02	20.00
15	64QAM	1	37	18.02	18.03		18.12	18.07	20.00
15	64QAM	1	74	18.01	18.00		18.00	18.02	20.00
15	64QAM	36	0	17.01	17.00		17.00	17.01	19.00
15	64QAM	36	20	17.00	17.00		17.01	17.00	19.00
15	64QAM	36	39	17.02	17.01		17.07	17.02	19.00
15	64QAM	75	0	17.00	17.01		17.01	17.00	19.00
15	256QAM	1	0	15.01	15.01		15.00	15.00	17.00
15	256QAM	1	37	15.01	15.01		15.02	15.01	17.00
15	256QAM	1	74	15.00	15.01		15.01	15.00	17.00
15	256QAM	36	0	15.01	15.00		15.01	15.00	17.00
15	256QAM	36	20	15.00	15.02		15.00	15.02	17.00
15	256QAM	36	39	15.01	15.00		15.14	15.07	17.00
15	256QAM	75	0	15.00	15.00		15.00	15.00	17.00
Channel				55290	55815	55990	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3625	3642.5	3695	
10	QPSK	1	0	20.00	20.01		20.07	20.05	22.00
10	QPSK	1	25	20.00	20.01		20.01	20.02	22.00
10	QPSK	1	49	20.01	20.01		20.00	20.01	22.00
10	QPSK	25	0	19.00	19.01		19.04	19.01	21.00
10	QPSK	25	12	19.00	19.00		19.00	19.00	21.00
10	QPSK	25	25	19.00	19.00		19.00	19.00	21.00
10	QPSK	50	0	19.00	19.01		19.01	19.01	21.00
10	16QAM	1	0	19.01	19.02		19.02	19.01	21.00
10	16QAM	1	25	19.01	19.00		19.00	19.01	21.00
10	16QAM	1	49	19.00	19.00		19.00	19.00	21.00
10	16QAM	25	0	18.01	18.00		18.00	18.01	20.00
10	16QAM	25	12	18.01	18.00		18.00	18.00	20.00
10	16QAM	25	25	18.01	18.02		18.00	18.00	20.00
10	16QAM	50	0	18.00	18.01		18.02	18.00	20.00
10	64QAM	1	0	18.00	18.00		18.14	18.02	20.00
10	64QAM	1	25	18.00	18.01		18.14	18.06	20.00
10	64QAM	1	49	18.02	18.02		18.01	18.01	20.00
10	64QAM	25	0	17.01	17.01		17.01	17.00	19.00
10	64QAM	25	12	17.01	17.00		17.00	17.00	19.00
10	64QAM	25	25	17.00	17.01		17.00	17.00	19.00
10	64QAM	50	0	17.00	17.00		17.00	17.00	19.00
10	256QAM	1	0	15.00	15.02		15.00	15.01	17.00
10	256QAM	1	25	15.00	15.01		15.01	15.00	17.00
10	256QAM	1	49	15.01	15.01		15.02	15.01	17.00
10	256QAM	25	0	15.00	15.00		15.00	15.00	17.00
10	256QAM	25	12	15.00	15.00		15.00	15.03	17.00
10	256QAM	25	25	15.01	15.01		15.13	15.03	17.00
10	256QAM	50	0	15.00	15.00		15.00	15.01	17.00
Channel				55265	55810	55990	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3625	3643	3697.5	
5	QPSK	1	0	20.00	20.01		20.07	20.01	22.00
5	QPSK	1	12	20.01	20.00		20.00	20.01	22.00
5	QPSK	1	24	20.02	20.00		20.00	20.00	22.00
5	QPSK	12	0	19.00	19.00		19.04	19.00	21.00

5	QPSK	12	7	19.01	19.00		19.04	19.00	21.00
5	QPSK	12	13	19.01	19.00		19.01	19.01	21.00
5	QPSK	25	0	19.01	19.00		19.00	19.00	21.00
5	16QAM	1	0	19.01	19.00		19.00	19.00	21.00
5	16QAM	1	12	19.01	19.00		19.00	19.00	21.00
5	16QAM	1	24	19.00	19.01		19.01	19.01	21.00
5	16QAM	12	0	18.00	18.00		18.01	18.00	20.00
5	16QAM	12	7	18.02	18.00		18.00	18.00	20.00
5	16QAM	12	13	18.01	18.01		18.00	18.00	20.00
5	16QAM	25	0	18.00	18.00		18.02	18.01	20.00
5	64QAM	1	0	18.02	18.00		18.09	18.00	20.00
5	64QAM	1	12	18.01	18.03		18.09	18.13	20.00
5	64QAM	1	24	18.00	18.01		18.00	18.01	20.00
5	64QAM	12	0	17.00	17.00		17.00	17.00	19.00
5	64QAM	12	7	17.00	17.00		17.00	17.02	19.00
5	64QAM	12	13	17.00	17.01		17.01	17.00	19.00
5	64QAM	25	0	17.00	17.02		17.01	17.01	19.00
5	256QAM	1	0	15.00	15.01		15.00	15.00	17.00
5	256QAM	1	12	15.01	15.01		15.00	15.02	17.00
5	256QAM	1	24	15.00	15.00		15.00	15.00	17.00
5	256QAM	12	0	15.00	15.00		15.00	15.01	17.00
5	256QAM	12	7	15.00	15.00		15.03	15.01	17.00
5	256QAM	12	13	15.00	15.04		15.10	15.05	17.00
5	256QAM	25	0	15.00	15.01		15.00	15.01	17.00

【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	18.94	18.96	18.95	19.70
20	QPSK	1	49	18.90	18.92	18.92	19.70
20	QPSK	1	99	18.86	18.94	18.87	19.70
20	QPSK	50	0	18.06	18.10	18.08	18.70
20	QPSK	50	24	17.93	18.07	18.06	18.70
20	QPSK	50	50	18.02	18.02	18.08	18.70
20	QPSK	100	0	18.01	18.11	18.05	18.70
20	16QAM	1	0	18.33	18.31	18.15	18.70
20	16QAM	1	49	18.13	18.22	18.24	18.70
20	16QAM	1	99	18.18	18.22	18.17	18.70
20	16QAM	50	0	16.95	17.04	17.11	17.70
20	16QAM	50	24	17.03	17.04	17.12	17.70
20	16QAM	50	50	17.01	17.02	17.12	17.70
20	16QAM	100	0	17.04	17.06	17.11	17.70
20	64QAM	1	0	17.18	17.12	17.10	17.70
20	64QAM	1	49	17.00	17.13	17.12	17.70
20	64QAM	1	99	17.08	17.07	16.98	17.70
20	64QAM	50	0	15.92	16.04	16.12	16.70
20	64QAM	50	24	16.07	16.06	16.13	16.70
20	64QAM	50	50	16.02	16.05	16.12	16.70
20	64QAM	100	0	16.03	16.04	16.12	16.70
20	256QAM	1	0	13.97	14.04	14.26	14.70
20	256QAM	1	49	14.13	14.21	14.02	14.70
20	256QAM	1	99	14.26	14.25	14.45	14.70
20	256QAM	50	0	13.98	14.00	14.20	14.70
20	256QAM	50	24	14.07	14.17	14.13	14.70
20	256QAM	50	50	14.24	14.25	14.29	14.70
20	256QAM	100	0	14.10	14.17	14.28	14.70
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	18.87	18.84	18.89	19.70
15	QPSK	1	37	18.85	18.82	18.93	19.70
15	QPSK	1	74	18.82	18.93	18.78	19.70
15	QPSK	36	0	17.86	17.98	18.00	18.70
15	QPSK	36	20	17.94	17.93	17.97	18.70
15	QPSK	36	39	17.89	17.98	18.01	18.70
15	QPSK	75	0	17.90	17.97	18.02	18.70
15	16QAM	1	0	18.28	18.30	18.02	18.70
15	16QAM	1	37	18.03	18.08	18.17	18.70
15	16QAM	1	74	18.08	18.08	18.12	18.70
15	16QAM	36	0	16.83	16.96	17.01	17.70
15	16QAM	36	20	16.95	16.97	17.07	17.70
15	16QAM	36	39	16.97	16.93	17.09	17.70
15	16QAM	75	0	16.97	17.01	16.97	17.70
15	64QAM	1	0	17.04	16.98	17.08	17.70



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15	64QAM	1	37	16.94	17.03	17.06	17.70
15	64QAM	1	74	17.02	17.04	16.94	17.70
15	64QAM	36	0	15.79	16.02	16.07	16.70
15	64QAM	36	20	16.00	15.98	16.07	16.70
15	64QAM	36	39	15.94	15.96	15.97	16.70
15	64QAM	75	0	15.90	15.89	16.06	16.70
15	256QAM	1	0	13.95	13.92	14.23	14.70
15	256QAM	1	37	14.07	14.11	13.89	14.70
15	256QAM	1	74	14.22	14.12	14.34	14.70
15	256QAM	36	0	13.96	13.93	14.06	14.70
15	256QAM	36	20	14.05	14.10	14.09	14.70
15	256QAM	36	39	14.22	14.23	14.27	14.70
15	256QAM	75	0	13.98	14.06	14.21	14.70
Channel				132022	132322	132622	Tune-up limit
Frequency (MHz)				1715	1745	1775	(dBm)
10	QPSK	1	0	18.82	18.87	18.84	19.70
10	QPSK	1	25	18.89	18.88	18.88	19.70
10	QPSK	1	49	18.83	18.83	18.76	19.70
10	QPSK	25	0	17.86	18.05	18.06	18.70
10	QPSK	25	12	17.95	17.95	18.03	18.70
10	QPSK	25	25	17.94	17.96	18.04	18.70
10	QPSK	50	0	17.92	17.89	18.06	18.70
10	16QAM	1	0	18.19	18.28	18.08	18.70
10	16QAM	1	25	18.02	18.07	18.19	18.70
10	16QAM	1	49	18.05	18.12	18.06	18.70
10	16QAM	25	0	16.87	16.92	17.06	17.70
10	16QAM	25	12	17.01	16.97	16.98	17.70
10	16QAM	25	25	16.91	16.90	16.98	17.70
10	16QAM	50	0	16.98	16.96	17.04	17.70
10	64QAM	1	0	17.17	17.02	16.97	17.70
10	64QAM	1	25	16.92	17.03	17.00	17.70
10	64QAM	1	49	17.06	17.01	16.96	17.70
10	64QAM	25	0	15.87	16.03	15.97	16.70
10	64QAM	25	12	16.01	16.01	16.05	16.70
10	64QAM	25	25	16.00	15.92	16.03	16.70
10	64QAM	50	0	15.91	15.90	16.08	16.70
10	256QAM	1	0	13.90	13.91	14.18	14.70
10	256QAM	1	25	14.05	14.18	13.92	14.70
10	256QAM	1	49	14.13	14.14	14.42	14.70
10	256QAM	25	0	13.87	13.93	14.16	14.70
10	256QAM	25	12	13.98	14.14	14.03	14.70
10	256QAM	25	25	14.10	14.18	14.23	14.70
10	256QAM	50	0	13.99	14.12	14.18	14.70
Channel				131997	132322	132647	Tune-up limit
Frequency (MHz)				1712.5	1745	1777.5	(dBm)
5	QPSK	1	0	18.82	18.95	18.85	19.70
5	QPSK	1	12	18.83	18.79	18.92	19.70
5	QPSK	1	24	18.80	18.91	18.80	19.70
5	QPSK	12	0	17.90	17.96	18.04	18.70
5	QPSK	12	7	17.92	18.04	18.02	18.70
5	QPSK	12	13	17.92	17.98	18.02	18.70
5	QPSK	25	0	17.91	17.89	17.98	18.70
5	16QAM	1	0	18.21	18.21	18.01	18.70
5	16QAM	1	12	18.05	18.15	18.10	18.70
5	16QAM	1	24	18.07	18.21	18.02	18.70
5	16QAM	12	0	16.92	16.91	17.01	17.70
5	16QAM	12	7	16.91	16.99	17.11	17.70
5	16QAM	12	13	16.90	16.97	17.01	17.70
5	16QAM	25	0	16.94	16.93	16.97	17.70
5	64QAM	1	0	17.08	17.09	17.08	17.70
5	64QAM	1	12	16.95	17.07	17.02	17.70
5	64QAM	1	24	16.97	16.97	16.95	17.70
5	64QAM	12	0	15.82	15.92	16.02	16.70
5	64QAM	12	7	16.03	15.97	16.08	16.70
5	64QAM	12	13	15.98	15.99	16.02	16.70
5	64QAM	25	0	16.01	15.93	16.07	16.70
5	256QAM	1	0	13.85	14.01	14.17	14.70
5	256QAM	1	12	14.11	14.13	13.95	14.70
5	256QAM	1	24	14.18	14.21	14.40	14.70
5	256QAM	12	0	13.90	13.89	14.16	14.70
5	256QAM	12	7	14.00	14.12	14.01	14.70
5	256QAM	12	13	14.16	14.19	14.26	14.70
5	256QAM	25	0	13.97	14.03	14.18	14.70
Channel				131987	132322	132657	Tune-up limit
Frequency (MHz)				1711.5	1745	1778.5	(dBm)
3	QPSK	1	0	18.93	18.84	18.80	19.70
3	QPSK	1	8	18.78	18.87	18.80	19.70
3	QPSK	1	14	18.84	18.82	18.82	19.70

3	QPSK	8	0	17.81	18.04	18.00	18.70
3	QPSK	8	4	17.95	17.97	17.99	18.70
3	QPSK	8	7	17.95	17.99	18.03	18.70
3	QPSK	15	0	17.89	17.94	18.09	18.70
3	16QAM	1	0	18.24	18.24	18.03	18.70
3	16QAM	1	8	18.02	18.13	18.12	18.70
3	16QAM	1	14	18.09	18.16	18.06	18.70
3	16QAM	8	0	16.85	17.00	17.00	17.70
3	16QAM	8	4	16.94	16.89	17.04	17.70
3	16QAM	8	7	16.89	16.95	17.00	17.70
3	16QAM	15	0	16.94	17.05	16.97	17.70
3	64QAM	1	0	17.12	17.01	17.09	17.70
3	64QAM	1	8	16.92	17.03	16.98	17.70
3	64QAM	1	14	17.05	16.92	16.96	17.70
3	64QAM	8	0	15.88	15.94	16.10	16.70
3	64QAM	8	4	16.03	16.00	16.09	16.70
3	64QAM	8	7	15.91	15.96	16.02	16.70
3	64QAM	15	0	15.91	15.92	16.03	16.70
3	256QAM	1	0	13.87	14.02	14.21	14.70
3	256QAM	1	8	14.05	14.18	13.95	14.70
3	256QAM	1	14	14.23	14.11	14.41	14.70
3	256QAM	8	0	13.83	13.95	14.10	14.70
3	256QAM	8	4	14.05	14.04	14.06	14.70
3	256QAM	8	7	14.10	14.19	14.14	14.70
3	256QAM	15	0	14.02	14.10	14.17	14.70
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	18.80	18.92	18.87	19.70
1.4	QPSK	1	3	18.86	18.81	18.82	19.70
1.4	QPSK	1	5	18.77	18.88	18.78	19.70
1.4	QPSK	3	0	18.92	19.04	18.95	19.70
1.4	QPSK	3	1	18.94	19.01	18.92	19.70
1.4	QPSK	3	3	18.93	18.99	19.04	19.70
1.4	QPSK	6	0	17.98	17.96	17.98	18.70
1.4	16QAM	1	0	18.26	18.16	18.09	18.70
1.4	16QAM	1	3	18.01	18.12	18.21	18.70
1.4	16QAM	1	5	18.16	18.09	18.13	18.70
1.4	16QAM	3	0	17.92	17.91	18.07	18.70
1.4	16QAM	3	1	17.93	17.91	17.98	18.70
1.4	16QAM	3	3	17.96	17.99	18.02	18.70
1.4	16QAM	6	0	16.97	16.98	17.00	17.70
1.4	64QAM	1	0	17.10	16.97	17.05	17.70
1.4	64QAM	1	3	16.89	17.00	16.98	17.70
1.4	64QAM	1	5	17.00	16.93	16.90	17.70
1.4	64QAM	3	0	16.87	16.96	17.07	17.70
1.4	64QAM	3	1	17.01	17.00	17.07	17.70
1.4	64QAM	3	3	16.92	16.93	16.98	17.70
1.4	64QAM	6	0	15.88	16.02	16.02	16.70
1.4	256QAM	1	0	13.88	13.97	14.23	14.70
1.4	256QAM	1	3	13.99	14.09	13.97	14.70
1.4	256QAM	1	5	14.15	14.13	14.39	14.70
1.4	256QAM	3	0	13.84	13.85	14.08	14.70
1.4	256QAM	3	1	13.99	14.11	14.09	14.70
1.4	256QAM	3	3	14.20	14.22	14.23	14.70
1.4	256QAM	6	0	14.04	14.16	14.15	14.70

【LTE Band 66_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				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	16.30	16.32	16.18	16.90
20	QPSK	1	49	16.10	16.25	16.08	16.90
20	QPSK	1	99	16.11	16.27	15.99	16.90
20	QPSK	50	0	16.18	16.25	16.02	16.90
20	QPSK	50	24	16.07	16.19	15.90	16.90
20	QPSK	50	50	16.12	16.20	16.00	16.90
20	QPSK	100	0	16.10	16.19	15.99	16.90
20	16QAM	1	0	16.03	16.13	15.87	16.90
20	16QAM	1	49	16.10	16.25	16.08	16.90
20	16QAM	1	99	16.12	16.17	15.95	16.90
20	16QAM	50	0	16.17	16.24	16.08	16.90
20	16QAM	50	24	16.04	16.19	16.00	16.90
20	16QAM	50	50	16.02	16.11	15.95	16.90
20	16QAM	100	0	15.98	16.10	15.86	16.90



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20	64QAM	1	0	16.28	16.31	16.07	16.90
20	64QAM	1	49	16.10	16.21	15.97	16.90
20	64QAM	1	99	16.17	16.22	16.01	16.90
20	64QAM	50	0	16.01	16.15	15.93	16.90
20	64QAM	50	24	16.05	16.18	16.02	16.90
20	64QAM	50	50	16.09	16.17	15.91	16.90
20	64QAM	100	0	15.96	16.11	15.93	16.90
20	256QAM	1	0	15.75	15.88	15.72	16.90
20	256QAM	1	49	16.13	16.23	16.04	16.90
20	256QAM	1	99	16.15	16.23	16.01	16.90
20	256QAM	50	0	16.07	16.21	16.03	16.90
20	256QAM	50	24	16.15	16.18	16.03	16.90
20	256QAM	50	50	15.96	16.11	15.88	16.90
20	256QAM	100	0	16.08	16.13	15.93	16.90
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	16.17	16.29	16.12	16.90
15	QPSK	1	37	15.98	16.12	15.94	16.90
15	QPSK	1	74	16.01	16.15	15.87	16.90
15	QPSK	36	0	16.09	16.22	15.92	16.90
15	QPSK	36	20	16.00	16.07	15.77	16.90
15	QPSK	36	39	16.06	16.18	15.88	16.90
15	QPSK	75	0	15.90	16.11	15.87	16.90
15	16QAM	1	0	15.93	16.08	15.83	16.90
15	16QAM	1	37	16.07	16.15	15.98	16.90
15	16QAM	1	74	16.02	16.09	15.89	16.90
15	16QAM	36	0	16.13	16.11	16.03	16.90
15	16QAM	36	20	15.94	16.11	15.99	16.90
15	16QAM	36	39	15.94	16.08	15.87	16.90
15	16QAM	75	0	15.96	15.98	15.76	16.90
15	64QAM	1	0	16.26	16.29	15.92	16.90
15	64QAM	1	37	16.04	16.07	15.93	16.90
15	64QAM	1	74	16.09	16.09	15.99	16.90
15	64QAM	36	0	15.93	16.02	15.80	16.90
15	64QAM	36	20	16.00	16.11	15.89	16.90
15	64QAM	36	39	16.01	16.15	15.90	16.90
15	64QAM	75	0	15.94	16.08	15.78	16.90
15	256QAM	1	0	15.62	15.81	15.61	16.90
15	256QAM	1	37	16.01	16.11	15.95	16.90
15	256QAM	1	74	16.01	16.14	15.94	16.90
15	256QAM	36	0	15.99	16.11	15.94	16.90
15	256QAM	36	20	16.05	16.07	15.99	16.90
15	256QAM	36	39	15.82	15.97	15.85	16.90
15	256QAM	75	0	16.06	16.02	15.87	16.90
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	16.27	16.23	16.14	16.90
10	QPSK	1	25	16.09	16.20	15.96	16.90
10	QPSK	1	49	16.10	16.23	15.92	16.90
10	QPSK	25	0	16.16	16.21	15.94	16.90
10	QPSK	25	12	15.95	16.14	15.82	16.90
10	QPSK	25	25	16.06	16.07	16.01	16.90
10	QPSK	50	0	15.86	16.09	15.81	16.90
10	16QAM	1	0	15.98	15.99	15.76	16.90
10	16QAM	1	25	16.00	16.13	16.06	16.90
10	16QAM	1	49	16.03	16.03	15.81	16.90
10	16QAM	25	0	16.07	16.20	15.95	16.90
10	16QAM	25	12	16.00	16.07	15.92	16.90
10	16QAM	25	25	15.91	16.07	15.87	16.90
10	16QAM	50	0	15.97	16.00	15.81	16.90
10	64QAM	1	0	16.20	16.25	15.97	16.90
10	64QAM	1	25	16.01	16.19	15.94	16.90
10	64QAM	1	49	16.03	16.17	15.95	16.90
10	64QAM	25	0	15.91	16.14	15.85	16.90
10	64QAM	25	12	15.95	16.12	15.91	16.90
10	64QAM	25	25	15.97	16.10	15.80	16.90
10	64QAM	50	0	15.90	16.04	15.87	16.90
10	256QAM	1	0	15.65	15.73	15.57	16.90
10	256QAM	1	25	16.06	16.22	16.03	16.90
10	256QAM	1	49	16.03	16.21	15.94	16.90
10	256QAM	25	0	15.93	16.13	15.93	16.90
10	256QAM	25	12	16.11	16.04	16.00	16.90
10	256QAM	25	25	15.84	16.10	15.73	16.90
10	256QAM	50	0	15.94	16.05	15.78	16.90
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	16.26	16.30	16.09	16.90
5	QPSK	1	12	15.99	16.14	16.03	16.90



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5	QPSK	1	24	16.00	16.16	15.98	16.90
5	QPSK	12	0	16.09	16.12	15.85	16.90
5	QPSK	12	7	16.03	16.17	15.76	16.90
5	QPSK	12	13	15.99	16.15	15.93	16.90
5	QPSK	25	0	15.88	16.03	15.83	16.90
5	16QAM	1	0	15.95	16.09	15.73	16.90
5	16QAM	1	12	16.08	16.18	16.02	16.90
5	16QAM	1	24	16.06	16.05	15.88	16.90
5	16QAM	12	0	16.12	16.19	16.00	16.90
5	16QAM	12	7	15.96	16.09	15.87	16.90
5	16QAM	12	13	15.92	16.05	15.89	16.90
5	16QAM	25	0	15.95	16.07	15.77	16.90
5	64QAM	1	0	16.23	16.28	16.02	16.90
5	64QAM	1	12	16.01	16.08	15.85	16.90
5	64QAM	1	24	16.13	16.10	15.95	16.90
5	64QAM	12	0	15.93	16.09	15.78	16.90
5	64QAM	12	7	15.97	16.03	15.91	16.90
5	64QAM	12	13	15.99	16.10	15.77	16.90
5	64QAM	25	0	15.88	16.03	15.83	16.90
5	256QAM	1	0	15.63	15.78	15.64	16.90
5	256QAM	1	12	16.02	16.12	15.90	16.90
5	256QAM	1	24	16.01	16.16	15.87	16.90
5	256QAM	12	0	16.04	16.17	15.92	16.90
5	256QAM	12	7	16.04	16.06	15.94	16.90
5	256QAM	12	13	15.91	16.06	15.76	16.90
5	256QAM	25	0	15.94	16.08	15.90	16.90
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	16.20	16.20	16.04	16.90
3	QPSK	1	8	16.01	16.11	16.06	16.90
3	QPSK	1	14	16.10	16.24	15.97	16.90
3	QPSK	8	0	16.06	16.15	15.86	16.90
3	QPSK	8	4	16.03	16.14	15.86	16.90
3	QPSK	8	7	16.04	16.19	15.92	16.90
3	QPSK	15	0	15.99	16.07	15.92	16.90
3	16QAM	1	0	15.96	16.02	15.85	16.90
3	16QAM	1	8	16.00	16.15	16.01	16.90
3	16QAM	1	14	15.98	16.13	15.92	16.90
3	16QAM	8	0	16.15	16.23	16.06	16.90
3	16QAM	8	4	15.96	16.16	15.96	16.90
3	16QAM	8	7	15.89	16.00	15.85	16.90
3	16QAM	15	0	15.87	15.96	15.78	16.90
3	64QAM	1	0	16.19	16.26	15.94	16.90
3	64QAM	1	8	16.03	16.18	15.90	16.90
3	64QAM	1	14	16.02	16.20	15.93	16.90
3	64QAM	8	0	15.92	16.12	15.82	16.90
3	64QAM	8	4	15.92	16.10	15.92	16.90
3	64QAM	8	7	15.96	16.11	15.86	16.90
3	64QAM	15	0	15.90	16.04	15.90	16.90
3	256QAM	1	0	15.70	15.84	15.58	16.90
3	256QAM	1	8	16.02	16.11	15.94	16.90
3	256QAM	1	14	16.02	16.13	15.89	16.90
3	256QAM	8	0	16.06	16.19	15.96	16.90
3	256QAM	8	4	16.06	16.14	15.93	16.90
3	256QAM	8	7	15.95	15.97	15.74	16.90
3	256QAM	15	0	15.95	16.07	15.82	16.90
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	16.21	16.26	16.11	16.90
1.4	QPSK	1	3	15.97	16.23	15.95	16.90
1.4	QPSK	1	5	16.10	16.17	15.91	16.90
1.4	QPSK	3	0	16.13	16.12	15.97	16.90
1.4	QPSK	3	1	15.97	16.04	15.81	16.90
1.4	QPSK	3	3	15.97	16.10	15.93	16.90
1.4	QPSK	6	0	15.93	16.11	15.81	16.90
1.4	16QAM	1	0	15.89	15.99	15.73	16.90
1.4	16QAM	1	3	16.03	16.21	15.98	16.90
1.4	16QAM	1	5	16.08	16.14	15.91	16.90
1.4	16QAM	3	0	16.16	16.20	16.03	16.90
1.4	16QAM	3	1	15.99	16.11	15.95	16.90
1.4	16QAM	3	3	15.90	16.07	15.80	16.90
1.4	16QAM	6	0	15.87	16.00	15.82	16.90
1.4	64QAM	1	0	16.26	16.19	16.01	16.90
1.4	64QAM	1	3	16.01	16.15	15.95	16.90
1.4	64QAM	1	5	16.16	16.21	15.89	16.90
1.4	64QAM	3	0	15.99	16.04	15.90	16.90
1.4	64QAM	3	1	15.97	16.10	16.00	16.90
1.4	64QAM	3	3	16.02	16.03	15.76	16.90



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1.4	64QAM	6	0	15.86	16.10	15.79	16.90
1.4	256QAM	1	0	15.62	15.84	15.62	16.90
1.4	256QAM	1	3	16.00	16.17	15.92	16.90
1.4	256QAM	1	5	16.14	16.12	15.95	16.90
1.4	256QAM	3	0	16.01	16.14	15.93	16.90
1.4	256QAM	3	1	16.03	16.16	15.93	16.90
1.4	256QAM	3	3	15.94	15.96	15.78	16.90
1.4	256QAM	6	0	16.00	16.03	15.87	16.90

【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	Tune-up limit (dBm)
Frequency (MHz)				673	680.5	688	
20	QPSK	1	0	19.69	19.80	19.74	20.00
20	QPSK	1	49	19.66	19.74	19.59	20.00
20	QPSK	1	99	19.62	19.52	19.48	20.00
20	QPSK	50	0	18.66	18.80	18.74	19.00
20	QPSK	50	24	18.75	18.79	18.68	19.00
20	QPSK	50	50	18.69	18.68	18.68	19.00
20	QPSK	100	0	18.77	18.64	18.59	19.00
20	16QAM	1	0	18.97	18.90	18.91	19.00
20	16QAM	1	49	18.87	18.81	18.83	19.00
20	16QAM	1	99	18.88	18.81	18.79	19.00
20	16QAM	50	0	17.73	17.73	17.73	18.00
20	16QAM	50	24	17.72	17.74	17.69	18.00
20	16QAM	50	50	17.66	17.78	17.70	18.00
20	16QAM	100	0	17.83	17.76	17.71	18.00
20	64QAM	1	0	17.90	17.78	17.86	18.00
20	64QAM	1	49	17.74	17.79	17.87	18.00
20	64QAM	1	99	17.73	17.77	17.64	18.00
20	64QAM	50	0	16.63	16.75	16.77	17.00
20	64QAM	50	24	16.74	16.81	16.71	17.00
20	64QAM	50	50	16.73	16.77	16.70	17.00
20	64QAM	100	0	16.86	16.71	16.72	17.00
20	256QAM	1	0	14.22	14.45	14.93	15.00
20	256QAM	1	49	14.90	14.89	14.73	15.00
20	256QAM	1	99	14.82	14.88	14.76	15.00
20	256QAM	50	0	14.74	14.73	14.78	15.00
20	256QAM	50	24	14.73	14.74	14.76	15.00
20	256QAM	50	50	14.75	14.74	14.76	15.00
20	256QAM	100	0	14.80	14.79	14.71	15.00
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	19.65	19.71	19.64	20.00
15	QPSK	1	37	19.58	19.71	19.48	20.00
15	QPSK	1	74	19.53	19.47	19.40	20.00
15	QPSK	36	0	18.55	18.68	18.70	19.00
15	QPSK	36	20	18.70	18.72	18.61	19.00
15	QPSK	36	39	18.62	18.59	18.57	19.00
15	QPSK	75	0	18.70	18.59	18.45	19.00
15	16QAM	1	0	18.87	18.87	18.77	19.00
15	16QAM	1	37	18.81	18.77	18.71	19.00
15	16QAM	1	74	18.86	18.71	18.66	19.00
15	16QAM	36	0	17.60	17.71	17.61	18.00
15	16QAM	36	20	17.60	17.73	17.64	18.00
15	16QAM	36	39	17.53	17.72	17.66	18.00
15	16QAM	75	0	17.75	17.65	17.57	18.00
15	64QAM	1	0	17.89	17.76	17.84	18.00
15	64QAM	1	37	17.66	17.67	17.73	18.00
15	64QAM	1	74	17.65	17.68	17.61	18.00
15	64QAM	36	0	16.62	16.63	16.64	17.00
15	64QAM	36	20	16.64	16.72	16.61	17.00
15	64QAM	36	39	16.68	16.69	16.68	17.00
15	64QAM	75	0	16.74	16.66	16.64	17.00
15	256QAM	1	0	14.16	14.39	14.79	15.00
15	256QAM	1	37	14.84	14.78	14.72	15.00
15	256QAM	1	74	14.68	14.79	14.71	15.00
15	256QAM	36	0	14.66	14.63	14.66	15.00
15	256QAM	36	20	14.68	14.64	14.72	15.00
15	256QAM	36	39	14.68	14.64	14.69	15.00
15	256QAM	75	0	14.74	14.72	14.57	15.00
Channel				133172	133297	133422	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	QPSK	1	0	19.60	19.66	19.65	20.00

10	QPSK	1	25	19.63	19.62	19.50	20.00
10	QPSK	1	49	19.55	19.39	19.41	20.00
10	QPSK	25	0	18.56	18.67	18.67	19.00
10	QPSK	25	12	18.60	18.70	18.64	19.00
10	QPSK	25	25	18.60	18.57	18.53	19.00
10	QPSK	50	0	18.64	18.51	18.56	19.00
10	16QAM	1	0	18.90	18.86	18.77	19.00
10	16QAM	1	25	18.82	18.79	18.72	19.00
10	16QAM	1	49	18.83	18.67	18.71	19.00
10	16QAM	25	0	17.71	17.70	17.60	18.00
10	16QAM	25	12	17.59	17.64	17.56	18.00
10	16QAM	25	25	17.60	17.69	17.57	18.00
10	16QAM	50	0	17.71	17.62	17.59	18.00
10	64QAM	1	0	17.86	17.70	17.77	18.00
10	64QAM	1	25	17.65	17.69	17.75	18.00
10	64QAM	1	49	17.70	17.63	17.57	18.00
10	64QAM	25	0	16.59	16.63	16.70	17.00
10	64QAM	25	12	16.64	16.73	16.65	17.00
10	64QAM	25	25	16.63	16.63	16.59	17.00
10	64QAM	50	0	16.82	16.65	16.57	17.00
10	256QAM	1	0	14.14	14.39	14.85	15.00
10	256QAM	1	25	14.79	14.81	14.63	15.00
10	256QAM	1	49	14.79	14.80	14.62	15.00
10	256QAM	25	0	14.61	14.70	14.65	15.00
10	256QAM	25	12	14.69	14.62	14.68	15.00
10	256QAM	25	25	14.67	14.68	14.74	15.00
10	256QAM	50	0	14.78	14.74	14.67	15.00
Channel				133147	133297	133447	Tune-up limit
Frequency (MHz)				665.5	680.5	695.5	(dBm)
5	QPSK	1	0	19.62	19.68	19.68	20.00
5	QPSK	1	12	19.62	19.65	19.48	20.00
5	QPSK	1	24	19.58	19.49	19.35	20.00
5	QPSK	12	0	18.53	18.66	18.65	19.00
5	QPSK	12	7	18.68	18.72	18.58	19.00
5	QPSK	12	13	18.66	18.56	18.60	19.00
5	QPSK	25	0	18.63	18.53	18.44	19.00
5	16QAM	1	0	18.96	18.87	18.88	19.00
5	16QAM	1	12	18.78	18.67	18.75	19.00
5	16QAM	1	24	18.82	18.77	18.74	19.00
5	16QAM	12	0	17.63	17.71	17.71	18.00
5	16QAM	12	7	17.60	17.63	17.66	18.00
5	16QAM	12	13	17.56	17.65	17.55	18.00
5	16QAM	25	0	17.70	17.70	17.63	18.00
5	64QAM	1	0	17.80	17.64	17.80	18.00
5	64QAM	1	12	17.68	17.74	17.77	18.00
5	64QAM	1	24	17.60	17.63	17.59	18.00
5	64QAM	12	0	16.59	16.73	16.68	17.00
5	64QAM	12	7	16.66	16.75	16.57	17.00
5	64QAM	12	13	16.67	16.63	16.60	17.00
5	64QAM	25	0	16.79	16.64	16.59	17.00
5	256QAM	1	0	14.17	14.34	14.83	15.00
5	256QAM	1	12	14.84	14.74	14.68	15.00
5	256QAM	1	24	14.76	14.82	14.61	15.00
5	256QAM	12	0	14.63	14.69	14.67	15.00
5	256QAM	12	7	14.59	14.70	14.66	15.00
5	256QAM	12	13	14.64	14.63	14.74	15.00
5	256QAM	25	0	14.70	14.69	14.65	15.00

12. UL/DL Carrier aggregation

< LTE DL Carrier Aggregation >

General Note:

1. According to 202410 TCB workshop, the downlink (DL) pertains to receiver functionality, thus it is not related to RF exposure compliance limits related to cumulative effects of different transmitters.
2. According to 202410 TCB workshop, equipment authorization applications shall refer to the worst-case UL powers resulting from all the possible modes of operations. Accordingly, CA-DL cases do not need to be analyzed separately, unless pertinent to establishing UL power setting.
3. This device supports LTE carrier aggregation in the downlink. All 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

< LTE UL carrier aggregation >

General Note:

1. The device supports uplink carrier aggregation with a maximum of two 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.
2. 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.
3. Additional SAR measurement for 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.

2CC Uplink Carrier Aggregation	
Number	Combination
1	2C
2	5B
3	7C
4	66B
5	66C
6	41C
7	42C
8	48C

CA_2C_Main										
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				
18700	18898	QPSK	1	99	1	0	1	0	17.56	18.6
18900	18702	QPSK	1	0	1	99	1	0	17.54	18.6
19100	18902	QPSK	1	0	1	99	1	0	17.41	18.6

CA_5B_Main										
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	49	1	0	1	0	17.86	18.5
20475	20574	QPSK	1	49	1	0	2	0	18	18.5
20600	20501	QPSK	1	0	1	49	2	0	17.98	18.5

CA_7C_Main										
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	99	1	0	1	0	18.71	19.3
21100	20902	QPSK	1	0	1	99	2	0	18.79	19.3
21350	21152	QPSK	1	0	1	99	2	0	18.57	19.3

CA_66B_Main										
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	1	0	1	0	18.87	19.7
132229	132322	QPSK	1	0	1	0	2	0	18.85	19.7
132504	132597	QPSK	1	0	1	0	2	0	18.84	19.7

CA_66C_Main										
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	99	1	0	1	0	18.87	19.7
132322	132124	QPSK	1	0	1	99	2	0	18.81	19.7
132572	132374	QPSK	1	0	1	99	2	0	18.81	19.7

CA_41C_Main										
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	99	1	0	1	0	17.72	19
40185	39987	QPSK	1	0	1	99	2	0	17.65	19
40620	40422	QPSK	1	0	1	99	2	0	17.7	19
41055	40857	QPSK	1	0	1	99	2	0	17.71	19
41490	41292	QPSK	1	0	1	99	2	0	17.7	19

CA_41C_HPUE_Main										
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	99	1	0	1	0	20.53	20.6
40185	39987	QPSK	1	0	1	99	2	0	20.41	20.6
40620	40422	QPSK	1	0	1	99	2	0	20.56	20.6
41055	40857	QPSK	1	0	1	99	2	0	20.52	20.6
41490	41292	QPSK	1	0	1	99	2	0	20.55	20.6

CA_42C_Main										
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				
42190	42388	QPSK	1	99	1	0	1	0	16.76	17.3
42392	42590	QPSK	1	99	1	0	2	0	16.63	17.3
42792	42990	QPSK	1	99	1	0	2	0	16.74	17.3

CA_48C_Main										
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	99	1	0	1	0	19.16	20.1
55632	55830	QPSK	1	99	1	0	2	0	19.2	20.1
55952	56150	QPSK	1	99	1	0	2	0	19.19	20.1
56442	56640	QPSK	1	99	1	0	2	0	19.29	20.1

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

General Note:

1. 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
2. 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		

【FR1 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	17.95	17.99	17.92	18.40
20	PI/2 BPSK	1	53	17.77	17.91	17.74	18.40
20	PI/2 BPSK	1	104	17.76	17.92	17.77	18.40
20	PI/2 BPSK	50	0	17.77	17.97	17.80	18.40
20	PI/2 BPSK	50	28	17.80	17.91	17.80	18.40
20	PI/2 BPSK	50	56	17.84	17.96	17.77	18.40
20	PI/2 BPSK	100	0	17.85	17.94	17.77	18.40
20	QPSK	1	1	17.76	17.87	17.76	18.40
20	QPSK	1	53	17.70	17.85	17.70	18.40
20	QPSK	1	104	17.75	17.86	17.68	18.40
20	QPSK	50	0	17.50	17.96	17.49	18.40
20	QPSK	50	28	17.83	17.94	17.79	18.40
20	QPSK	50	56	17.92	17.95	17.93	18.40
20	QPSK	100	0	17.92	17.93	17.90	18.40
20	16QAM	1	1	17.92	17.70	17.96	18.40
20	64QAM	1	1	18.02	18.18	17.89	18.40
20	256QAM	1	1	17.77	17.57	17.60	18.40
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	17.81	17.90	17.90	18.40
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	17.91	17.88	17.77	18.40
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	17.93	17.92	17.86	18.40

【FR1 n2_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				372000	376000	380000	
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	16.42	16.54	16.45	16.90
20	PI/2 BPSK	1	53	16.35	16.50	16.28	16.90
20	PI/2 BPSK	1	104	16.15	16.41	16.24	16.90
20	PI/2 BPSK	50	0	16.25	16.48	16.28	16.90
20	PI/2 BPSK	50	28	16.37	16.50	16.27	16.90
20	PI/2 BPSK	50	56	16.26	16.49	16.31	16.90
20	PI/2 BPSK	100	0	16.31	16.49	16.25	16.90
20	QPSK	1	1	16.28	16.51	16.37	16.90
20	QPSK	1	53	16.28	16.50	16.33	16.90
20	QPSK	1	104	16.14	16.41	16.23	16.90
20	QPSK	50	0	16.29	16.47	16.24	16.90
20	QPSK	50	28	16.23	16.50	16.27	16.90
20	QPSK	50	56	16.24	16.39	16.16	16.90
20	QPSK	100	0	16.15	16.41	16.25	16.90
20	16QAM	1	1	16.29	16.49	16.32	16.90
20	64QAM	1	1	16.30	16.51	16.28	16.90
20	256QAM	1	1	16.04	16.19	16.02	16.90
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	16.34	16.47	16.32	16.90
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	16.32	16.44	16.43	16.90
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	16.29	16.49	16.44	16.90

【FR1 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	
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	18.28	18.44	18.38	18.80
20	PI/2 BPSK	1	53	18.20	18.38	18.31	18.80
20	PI/2 BPSK	1	104	18.33	18.35	18.34	18.80
20	PI/2 BPSK	50	0	18.29	18.43	18.31	18.80
20	PI/2 BPSK	50	28	18.24	18.41	18.37	18.80
20	PI/2 BPSK	50	56	18.23	18.37	18.34	18.80
20	PI/2 BPSK	100	0	18.27	18.41	18.35	18.80
20	QPSK	1	1	18.30	18.42	18.38	18.80
20	QPSK	1	53	18.29	18.44	18.39	18.80
20	QPSK	1	104	18.31	18.49	18.44	18.80
20	QPSK	50	0	18.24	18.35	18.23	18.80
20	QPSK	50	28	18.23	18.41	18.36	18.80
20	QPSK	50	56	18.29	18.41	18.42	18.80
20	QPSK	100	0	18.19	18.40	18.42	18.80
20	16QAM	1	1	18.21	18.42	18.43	18.80
20	64QAM	1	1	18.29	18.49	18.44	18.80
20	256QAM	1	1	17.73	17.89	17.80	18.80
Channel				166300	167300	168300	Tune-up limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	18.22	18.33	18.34	18.80
Channel				165800	167300	168800	Tune-up limit (dBm)
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	18.22	18.37	18.33	18.80
Channel				165300	167300	169300	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	18.24	18.37	18.26	18.80

【FR1 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				504000	507000	510000	
Frequency (MHz)				2520	2535	2550	
40	PI/2 BPSK	1	1	19.00	19.06	18.94	19.50
40	PI/2 BPSK	1	108	18.84	18.94	18.86	19.50
40	PI/2 BPSK	1	214	18.99	18.97	18.89	19.50
40	PI/2 BPSK	108	0	18.83	19.01	18.75	19.50
40	PI/2 BPSK	108	54	18.95	18.93	18.87	19.50
40	PI/2 BPSK	108	108	18.88	19.00	18.85	19.50
40	PI/2 BPSK	216	0	18.44	18.50	18.34	19.50
40	QPSK	1	1	18.87	18.96	18.81	19.50
40	QPSK	1	108	18.92	18.92	18.85	19.50
40	QPSK	1	214	19.03	19.03	18.88	19.50
40	QPSK	108	0	18.92	18.93	18.84	19.50
40	QPSK	108	54	18.78	18.85	18.74	19.50
40	QPSK	108	108	18.91	19.01	18.94	19.50
40	QPSK	216	0	18.82	18.90	18.77	19.50
40	16QAM	1	1	18.94	19.03	18.99	19.50
40	64QAM	1	1	18.93	19.00	18.95	19.50
40	256QAM	1	1	17.75	17.82	17.67	19.50
Channel				503000	507000	511000	Tune-up limit (dBm)
Frequency (MHz)				2515	2535	2555	
30	PI/2 BPSK	1	1	18.93	18.88	18.84	19.50
Channel				502500	507000	511500	Tune-up limit (dBm)
Frequency (MHz)				2512.5	2535	2557.5	
25	PI/2 BPSK	1	1	18.85	18.94	18.88	19.50
Channel				502000	507000	512000	Tune-up limit (dBm)
Frequency (MHz)				2510	2535	2560	
20	PI/2 BPSK	1	1	18.97	18.87	18.87	19.50
Channel				501500	507000	512500	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	PI/2 BPSK	1	1	18.86	18.86	18.90	19.50
Channel				501000	507000	513000	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	PI/2 BPSK	1	1	18.89	18.88	18.81	19.50
Channel				500500	507000	513500	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	PI/2 BPSK	1	1	18.93	18.93	18.82	19.50

【FR1 n7_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				504000	507000	510000	
Frequency (MHz)				2520	2535	2550	
40	PI/2 BPSK	1	1	17.51	17.54	17.53	17.70
40	PI/2 BPSK	1	108	17.43	17.49	17.43	17.70
40	PI/2 BPSK	1	214	17.39	17.50	17.40	17.70
40	PI/2 BPSK	108	0	17.43	17.50	17.35	17.70
40	PI/2 BPSK	108	54	17.47	17.58	17.43	17.70
40	PI/2 BPSK	108	108	17.46	17.52	17.42	17.70
40	PI/2 BPSK	216	0	17.40	17.52	17.39	17.70
40	QPSK	1	1	17.42	17.48	17.35	17.70
40	QPSK	1	108	17.41	17.46	17.33	17.70
40	QPSK	1	214	17.33	17.47	17.34	17.70
40	QPSK	108	0	17.42	17.48	17.41	17.70
40	QPSK	108	54	17.45	17.58	17.51	17.70
40	QPSK	108	108	17.27	17.44	17.38	17.70
40	QPSK	216	0	17.32	17.46	17.34	17.70
40	16QAM	1	1	17.20	17.34	17.23	17.70
40	64QAM	1	1	17.36	17.50	17.35	17.70
40	256QAM	1	1	17.08	17.16	17.11	17.70
Channel				503000	507000	511000	Tune-up limit (dBm)
Frequency (MHz)				2515	2535	2555	
30	PI/2 BPSK	1	1	17.42	17.52	17.41	17.70
Channel				502500	507000	511500	Tune-up limit (dBm)
Frequency (MHz)				2512.5	2535	2557.5	
25	PI/2 BPSK	1	1	17.46	17.47	17.38	17.70
Channel				502000	507000	512000	Tune-up limit (dBm)
Frequency (MHz)				2510	2535	2560	
20	PI/2 BPSK	1	1	17.41	17.44	17.51	17.70
Channel				501500	507000	512500	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	PI/2 BPSK	1	1	17.48	17.51	17.40	17.70
Channel				501000	507000	513000	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	PI/2 BPSK	1	1	17.38	17.51	17.45	17.70
Channel				500500	507000	513500	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	PI/2 BPSK	1	1	17.48	17.48	17.48	17.70

【FR1 n12_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				141300	141500	141700	
Frequency (MHz)				706.5	707.5	708.5	
15	PI/2 BPSK	1	1	18.94	18.92	18.82	19.40
15	PI/2 BPSK	1	40	18.71	18.81	18.62	19.40
15	PI/2 BPSK	1	77	18.70	18.75	18.51	19.40
15	PI/2 BPSK	36	0	18.88	18.92	18.72	19.40
15	PI/2 BPSK	36	22	18.69	18.80	18.58	19.40
15	PI/2 BPSK	36	43	18.78	18.80	18.63	19.40
15	PI/2 BPSK	75	0	18.87	18.88	18.75	19.40
15	QPSK	1	1	18.74	18.81	18.66	19.40
15	QPSK	1	40	18.70	18.82	18.68	19.40
15	QPSK	1	77	18.58	18.71	18.57	19.40
15	QPSK	36	0	18.77	18.85	18.68	19.40
15	QPSK	36	22	18.77	18.86	18.68	19.40
15	QPSK	36	43	18.75	18.78	18.64	19.40
15	QPSK	75	0	18.77	18.88	18.75	19.40
15	16QAM	1	1	18.84	18.83	18.63	19.40
15	64QAM	1	1	18.65	18.73	18.56	19.40
15	256QAM	1	1	18.25	18.26	18.11	19.40
Channel				140800	141500	142200	Tune-up limit (dBm)
Frequency (MHz)				704	707.5	711	
10	PI/2 BPSK	1	1	18.82	18.82	18.80	19.40
Channel				140300	141500	142700	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	PI/2 BPSK	1	1	18.88	18.91	18.70	19.40

【FR1 n13_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					156400		
Frequency (MHz)					782		
10	PI/2 BPSK	1	1		18.29		18.80
10	PI/2 BPSK	1	26		18.23		18.80
10	PI/2 BPSK	1	50		18.19		18.80
10	PI/2 BPSK	25	0		18.25		18.80
10	PI/2 BPSK	25	14		18.22		18.80
10	PI/2 BPSK	25	27		18.21		18.80
10	PI/2 BPSK	50	0		18.27		18.80
10	QPSK	1	1		18.28		18.80
10	QPSK	1	26		18.31		18.80
10	QPSK	1	50		18.22		18.80
10	QPSK	25	0		18.19		18.80
10	QPSK	25	14		18.28		18.80
10	QPSK	25	27		18.23		18.80
10	QPSK	50	0		18.26		18.80
10	16QAM	1	1		18.04		18.80
10	64QAM	1	1		18.41		18.80
10	256QAM	1	1		17.88		18.80
Channel				155900	156400	156900	
Frequency (MHz)				779.5	782	784.5	Tune-up limit (dBm)
5	PI/2 BPSK	1	1	18.21	18.26	18.22	18.80

【FR1 n14_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					158600		
Frequency (MHz)					793		
10	PI/2 BPSK	1	1		18.45		18.90
10	PI/2 BPSK	1	26		18.33		18.90
10	PI/2 BPSK	1	50		18.28		18.90
10	PI/2 BPSK	25	0		18.34		18.90
10	PI/2 BPSK	25	14		18.30		18.90
10	PI/2 BPSK	25	27		18.28		18.90
10	PI/2 BPSK	50	0		18.35		18.90
10	QPSK	1	1		18.43		18.90
10	QPSK	1	26		18.40		18.90
10	QPSK	1	50		18.29		18.90
10	QPSK	25	0		18.35		18.90
10	QPSK	25	14		18.32		18.90
10	QPSK	25	27		18.33		18.90
10	QPSK	50	0		18.33		18.90
10	16QAM	1	1		18.48		18.90
10	64QAM	1	1		18.30		18.90
10	256QAM	1	1		17.89		18.90
Channel				158100	158600	159100	
Frequency (MHz)				790.5	793	795.5	Tune-up limit (dBm)
5	PI/2 BPSK	1	1	18.37	18.44	18.40	18.90

【FR1 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				374000	376500	379000	
Frequency (MHz)				1870	1882.5	1895	
40	PI/2 BPSK	1	1	18.04	18.06	17.93	18.40
40	PI/2 BPSK	1	108	17.85	17.96	17.74	18.40
40	PI/2 BPSK	1	214	17.84	17.95	17.71	18.40
40	PI/2 BPSK	108	0	17.82	17.96	17.73	18.40
40	PI/2 BPSK	108	54	17.87	17.93	17.75	18.40
40	PI/2 BPSK	108	108	17.91	17.95	17.74	18.40
40	PI/2 BPSK	216	0	17.84	17.93	17.73	18.40
40	QPSK	1	1	18.05	18.09	17.90	18.40
40	QPSK	1	108	17.85	18.02	17.83	18.40
40	QPSK	1	214	17.96	18.01	17.81	18.40
40	QPSK	108	0	17.79	17.94	17.71	18.40
40	QPSK	108	54	17.80	17.95	17.69	18.40
40	QPSK	108	108	17.86	17.94	17.70	18.40
40	QPSK	216	0	17.89	17.93	17.75	18.40
40	16QAM	1	1	18.25	18.29	18.11	18.40
40	64QAM	1	1	18.10	18.20	17.98	18.40
40	256QAM	1	1	17.51	17.65	17.38	18.40
Channel				373500	376500	379500	Tune-up limit (dBm)
Frequency (MHz)				1867.5	1882.5	1897.5	
35	PI/2 BPSK	1	1	18.02	17.98	17.80	18.40
Channel				373000	376500	380000	Tune-up limit (dBm)
Frequency (MHz)				1865	1882.5	1900	
30	PI/2 BPSK	1	1	17.95	17.96	17.86	18.40
Channel				372500	376500	380500	Tune-up limit (dBm)
Frequency (MHz)				1862.5	1882.5	1902.5	
25	PI/2 BPSK	1	1	18.01	18.03	17.92	18.40
Channel				372000	376500	381000	Tune-up limit (dBm)
Frequency (MHz)				1860	1882.5	1905	
20	PI/2 BPSK	1	1	18.02	17.93	17.85	18.40
Channel				371500	376500	381500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1882.5	1907.5	
15	PI/2 BPSK	1	1	18.03	17.93	17.86	18.40
Channel				371000	376500	382000	Tune-up limit (dBm)
Frequency (MHz)				1855	1882.5	1910	
10	PI/2 BPSK	1	1	17.99	18.01	17.79	18.40
Channel				370500	376500	382500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1882.5	1912.5	
5	PI/2 BPSK	1	1	17.95	18.04	17.78	18.40

【FR1 n25_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				374000	376500	379000	
Frequency (MHz)				1870	1882.5	1895	
40	PI/2 BPSK	1	1	16.65	16.71	16.70	16.90
40	PI/2 BPSK	1	108	16.59	16.69	16.61	16.90
40	PI/2 BPSK	1	214	16.54	16.66	16.62	16.90
40	PI/2 BPSK	108	0	16.57	16.72	16.59	16.90
40	PI/2 BPSK	108	54	16.58	16.76	16.65	16.90
40	PI/2 BPSK	108	108	16.65	16.74	16.62	16.90
40	PI/2 BPSK	216	0	16.57	16.72	16.64	16.90
40	QPSK	1	1	16.62	16.70	16.66	16.90
40	QPSK	1	108	16.51	16.59	16.45	16.90
40	QPSK	1	214	16.51	16.60	16.55	16.90
40	QPSK	108	0	16.60	16.68	16.53	16.90
40	QPSK	108	54	16.54	16.67	16.55	16.90
40	QPSK	108	108	16.55	16.74	16.68	16.90
40	QPSK	216	0	16.51	16.71	16.65	16.90
40	16QAM	1	1	16.49	16.58	16.47	16.90
40	64QAM	1	1	16.61	16.68	16.54	16.90
40	256QAM	1	1	16.47	16.57	16.51	16.90
Channel				373500	376500	379500	Tune-up limit (dBm)
Frequency (MHz)				1867.5	1882.5	1897.5	
35	PI/2 BPSK	1	1	16.56	16.65	16.61	16.90
Channel				373000	376500	380000	Tune-up limit (dBm)
Frequency (MHz)				1865	1882.5	1900	
30	PI/2 BPSK	1	1	16.63	16.63	16.64	16.90
Channel				372500	376500	380500	Tune-up limit (dBm)
Frequency (MHz)				1862.5	1882.5	1902.5	
25	PI/2 BPSK	1	1	16.62	16.57	16.60	16.90
Channel				372000	376500	381000	Tune-up limit (dBm)
Frequency (MHz)				1860	1882.5	1905	
20	PI/2 BPSK	1	1	16.55	16.62	16.59	16.90
Channel				371500	376500	381500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1882.5	1907.5	
15	PI/2 BPSK	1	1	16.57	16.57	16.58	16.90
Channel				371000	376500	382000	Tune-up limit (dBm)
Frequency (MHz)				1855	1882.5	1910	
10	PI/2 BPSK	1	1	16.52	16.58	16.57	16.90
Channel				370500	376500	382500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1882.5	1912.5	
5	PI/2 BPSK	1	1	16.58	16.68	16.61	16.90

【FR1 n26_FCC_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				164800	166300	167800	
Frequency (MHz)				824	831.5	839	
20	PI/2 BPSK	1	1	18.45	18.52	18.43	18.80
20	PI/2 BPSK	1	53	18.13	18.23	18.06	18.80
20	PI/2 BPSK	1	104	18.16	18.31	18.15	18.80
20	PI/2 BPSK	50	0	18.33	18.47	18.29	18.80
20	PI/2 BPSK	50	28	18.30	18.45	18.27	18.80
20	PI/2 BPSK	50	56	18.36	18.45	18.26	18.80
20	PI/2 BPSK	100	0	18.15	18.36	18.20	18.80
20	QPSK	1	1	18.02	18.24	18.08	18.80
20	QPSK	1	53	18.11	18.26	18.14	18.80
20	QPSK	1	104	18.04	18.25	18.03	18.80
20	QPSK	50	0	18.21	18.40	18.22	18.80
20	QPSK	50	28	18.20	18.34	18.11	18.80
20	QPSK	50	56	18.25	18.47	18.30	18.80
20	QPSK	100	0	18.23	18.38	18.17	18.80
20	16QAM	1	1	18.07	18.18	18.02	18.80
20	64QAM	1	1	18.24	18.41	18.24	18.80
20	256QAM	1	1	17.88	18.07	17.91	18.80
Channel				164300	166300	168300	Tune-up limit (dBm)
Frequency (MHz)				821.5	831.5	841.5	
15	PI/2 BPSK	1	1	18.32	18.38	18.38	18.80
Channel				163800	166300	168800	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	PI/2 BPSK	1	1	18.35	18.51	18.28	18.80
Channel				163300	166300	169300	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	PI/2 BPSK	1	1	18.42	18.50	18.41	18.80
Channel				163100	166300	169500	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	
3	PI/2 BPSK	1	1	18.31	18.50	18.30	18.80

【FR1 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		17.02		17.80
10	PI/2 BPSK	1	26		16.95		17.80
10	PI/2 BPSK	1	50		16.96		17.80
10	PI/2 BPSK	25	0		16.85		17.80
10	PI/2 BPSK	25	14		16.84		17.80
10	PI/2 BPSK	25	27		16.84		17.80
10	PI/2 BPSK	50	0		16.86		17.80
10	QPSK	1	1		17.05		17.80
10	QPSK	1	26		16.93		17.80
10	QPSK	1	50		17.02		17.80
10	QPSK	25	0		16.84		17.80
10	QPSK	25	14		16.89		17.80
10	QPSK	25	27		16.85		17.80
10	QPSK	50	0		16.82		17.80
10	16QAM	1	1		16.85		17.80
10	64QAM	1	1		16.85		17.80
10	256QAM	1	1		16.46		17.80
Channel				461500	462000	462500	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	PI/2 BPSK	1	1	16.92	16.93	16.90	17.80

【FR1 n30_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					462000		
Frequency (MHz)					2310		
10	PI/2 BPSK	1	1		16.36		16.80
10	PI/2 BPSK	1	26		16.28		16.80
10	PI/2 BPSK	1	50		16.32		16.80
10	PI/2 BPSK	25	0		16.34		16.80
10	PI/2 BPSK	25	14		16.39		16.80
10	PI/2 BPSK	25	27		16.38		16.80
10	PI/2 BPSK	50	0		16.36		16.80
10	QPSK	1	1		16.35		16.80
10	QPSK	1	26		16.27		16.80
10	QPSK	1	50		16.25		16.80
10	QPSK	25	0		16.32		16.80
10	QPSK	25	14		16.29		16.80
10	QPSK	25	27		16.35		16.80
10	QPSK	50	0		16.31		16.80
10	16QAM	1	1		16.34		16.80
10	64QAM	1	1		16.33		16.80
10	256QAM	1	1		15.90		16.80
Channel				461500	462000	462500	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	PI/2 BPSK	1	1	16.21	16.30	16.27	16.80

【FR1 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				518000	519000	520000	
Frequency (MHz)				2590	2595	2600	
40	PI/2 BPSK	1	1	16.09	16.11	16.10	16.50
40	PI/2 BPSK	1	53	15.94	16.02	15.96	16.50
40	PI/2 BPSK	1	104	16.02	16.10	15.97	16.50
40	PI/2 BPSK	50	0	16.06	16.12	15.97	16.50
40	PI/2 BPSK	50	28	15.94	16.03	15.91	16.50
40	PI/2 BPSK	50	56	15.92	16.02	15.89	16.50
40	PI/2 BPSK	100	0	15.97	16.01	15.91	16.50
40	QPSK	1	1	16.15	16.19	16.13	16.50
40	QPSK	1	53	15.89	16.05	16.00	16.50
40	QPSK	1	104	16.12	16.16	16.09	16.50
40	QPSK	50	0	15.90	16.07	16.02	16.50
40	QPSK	50	28	15.85	15.99	15.86	16.50
40	QPSK	50	56	15.94	16.01	15.88	16.50
40	QPSK	100	0	15.91	15.99	15.90	16.50
40	16QAM	1	1	16.08	16.21	16.13	16.50
40	64QAM	1	1	16.17	16.32	16.26	16.50
40	256QAM	1	1	15.56	15.65	15.61	16.50
Channel				517000	519000	521000	Tune-up limit (dBm)
Frequency (MHz)				2585	2595	2605	
30	PI/2 BPSK	1	1	16.08	16.07	15.98	16.50
Channel				516500	519000	521500	Tune-up limit (dBm)
Frequency (MHz)				2582.5	2595	2607.5	
25	PI/2 BPSK	1	1	16.01	16.09	15.95	16.50
Channel				516000	519000	522000	Tune-up limit (dBm)
Frequency (MHz)				2580	2595	2610	
20	PI/2 BPSK	1	1	16.00	16.07	15.96	16.50
Channel				515500	519000	522500	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	PI/2 BPSK	1	1	16.02	15.98	15.95	16.50
Channel				515000	519000	523000	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	PI/2 BPSK	1	1	16.07	16.02	15.98	16.50
Channel				514500	519000	523500	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	PI/2 BPSK	1	1	16.08	16.07	16.07	16.50

【FR1 n38_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				518000	519000	520000	
Frequency (MHz)				2590	2595	2600	
40	PI/2 BPSK	1	1	14.53	14.54	14.51	15.80
40	PI/2 BPSK	1	53	14.37	14.50	14.45	15.80
40	PI/2 BPSK	1	104	14.47	14.52	14.40	15.80
40	PI/2 BPSK	50	0	14.43	14.45	14.38	15.80
40	PI/2 BPSK	50	28	14.51	14.54	14.40	15.80
40	PI/2 BPSK	50	56	14.35	14.48	14.41	15.80
40	PI/2 BPSK	100	0	14.40	14.46	14.30	15.80
40	QPSK	1	1	14.45	14.51	14.38	15.80
40	QPSK	1	53	14.36	14.46	14.41	15.80
40	QPSK	1	104	14.42	14.44	14.28	15.80
40	QPSK	50	0	14.35	14.41	14.36	15.80
40	QPSK	50	28	14.41	14.47	14.29	15.80
40	QPSK	50	56	14.24	14.37	14.29	15.80
40	QPSK	100	0	14.42	14.47	14.40	15.80
40	16QAM	1	1	14.34	14.47	14.35	15.80
40	64QAM	1	1	14.36	14.49	14.33	15.80
40	256QAM	1	1	14.01	14.07	13.93	15.30
Channel				517000	519000	521000	Tune-up limit (dBm)
Frequency (MHz)				2585	2595	2605	
30	PI/2 BPSK	1	1	14.43	14.53	14.47	15.80
Channel				516500	519000	521500	Tune-up limit (dBm)
Frequency (MHz)				2582.5	2595	2607.5	
25	PI/2 BPSK	1	1	14.38	14.41	14.37	15.80
Channel				516000	519000	522000	Tune-up limit (dBm)
Frequency (MHz)				2580	2595	2610	
20	PI/2 BPSK	1	1	14.47	14.47	14.43	15.80
Channel				515500	519000	522500	Tune-up limit (dBm)
Frequency (MHz)				2577.5	2595	2612.5	
15	PI/2 BPSK	1	1	14.42	14.46	14.43	15.80
Channel				515000	519000	523000	Tune-up limit (dBm)
Frequency (MHz)				2575	2595	2615	
10	PI/2 BPSK	1	1	14.48	14.50	14.47	15.80
Channel				514500	519000	523500	Tune-up limit (dBm)
Frequency (MHz)				2572.5	2595	2617.5	
5	PI/2 BPSK	1	1	14.42	14.39	14.48	15.80

【FR1 n41 _ FCC_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				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	16.02	16.12	16.11	16.50
100	PI/2 BPSK	1	137	15.87	16.10	16.04	16.50
100	PI/2 BPSK	1	271	15.95	16.07	16.01	16.50
100	PI/2 BPSK	135	0	15.90	16.03	15.93	16.50
100	PI/2 BPSK	135	69	15.85	16.08	16.05	16.50
100	PI/2 BPSK	135	138	15.87	16.07	15.94	16.50
100	PI/2 BPSK	270	0	15.91	16.09	15.99	16.50
100	QPSK	1	1	15.66	15.87	15.73	16.50
100	QPSK	1	137	16.05	16.17	16.09	16.50
100	QPSK	1	271	15.99	16.24	16.14	16.50
100	QPSK	135	0	15.81	15.93	15.77	16.50
100	QPSK	135	69	15.93	16.09	16.00	16.50
100	QPSK	135	138	15.94	16.10	15.97	16.50
100	QPSK	270	0	15.70	15.93	15.85	16.50
100	16QAM	1	1	15.74	15.90	15.87	16.50
100	64QAM	1	1	15.51	15.70	15.67	16.50
100	256QAM	1	1	15.18	15.34	15.21	16.50
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	16.01	16.01	15.97	16.50
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	15.90	16.07	16.09	16.50
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	15.87	16.00	16.09	16.50
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	15.90	16.07	16.05	16.50
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	15.88	16.09	15.98	16.50
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	16.01	15.98	15.97	16.50
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	15.93	16.07	16.07	16.50
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	15.92	16.07	16.07	16.50
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	15.96	16.10	16.06	16.50
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	15.96	16.06	15.97	16.50

【FR1 n41 _ FCC_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				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	14.43	14.65	14.35	15.80
100	PI/2 BPSK	1	137	14.18	14.43	14.00	15.80
100	PI/2 BPSK	1	271	14.24	14.58	14.26	15.80
100	PI/2 BPSK	135	0	14.18	14.47	14.14	15.80
100	PI/2 BPSK	135	69	14.32	14.58	14.19	15.80
100	PI/2 BPSK	135	138	14.28	14.53	14.09	15.80
100	PI/2 BPSK	270	0	14.14	14.49	14.13	15.80
100	QPSK	1	1	14.00	14.30	13.87	15.80
100	QPSK	1	137	14.16	14.43	14.04	15.80
100	QPSK	1	271	14.19	14.53	14.13	15.80
100	QPSK	135	0	14.13	14.45	14.04	15.80
100	QPSK	135	69	14.17	14.49	14.15	15.80
100	QPSK	135	138	14.09	14.43	14.07	15.80
100	QPSK	270	0	14.14	14.45	14.09	15.80
100	16QAM	1	1	14.20	14.46	14.02	15.80
100	64QAM	1	1	14.18	14.54	14.11	15.80
100	256QAM	1	1	13.14	13.39	13.02	14.80
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	14.40	14.50	14.26	15.80
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	14.41	14.55	14.25	15.80
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	14.33	14.60	14.23	15.80
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	14.39	14.61	14.21	15.80
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	14.28	14.52	14.31	15.80
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	14.33	14.54	14.33	15.80
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	14.35	14.60	14.31	15.80
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	14.36	14.63	14.34	15.80
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	14.32	14.64	14.27	15.80
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	14.34	14.62	14.24	15.80

【FR1 n41 FCC_MIMO1】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	17.63	17.46	17.54	18.20
100	PI/2 BPSK	1	137	17.39	17.31	17.38	18.20
100	PI/2 BPSK	1	271	17.50	17.39	17.43	18.20
100	PI/2 BPSK	135	0	17.62	17.53	17.54	18.20
100	PI/2 BPSK	135	69	17.75	17.67	17.73	18.20
100	PI/2 BPSK	135	138	17.74	17.62	17.61	18.20
100	PI/2 BPSK	270	0	17.69	17.66	17.65	18.20
100	QPSK	1	1	17.45	17.42	17.41	18.20
100	QPSK	1	137	17.51	17.36	17.43	18.20
100	QPSK	1	271	17.41	17.38	17.39	18.20
100	QPSK	135	0	17.61	17.51	17.51	18.20
100	QPSK	135	69	17.75	17.65	17.64	18.20
100	QPSK	135	138	17.68	17.61	17.61	18.20
100	QPSK	270	0	17.79	17.65	17.62	18.20
100	16QAM	1	1	17.55	17.40	17.37	18.20
100	64QAM	1	1	17.55	17.43	17.47	18.20
100	256QAM	1	1	17.41	17.35	17.39	18.20
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	17.58	17.44	17.45	18.20
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	17.57	17.42	17.39	18.20
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	17.57	17.33	17.43	18.20
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	17.58	17.34	17.39	18.20
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	17.57	17.39	17.50	18.20
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	17.57	17.42	17.52	18.20
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	17.56	17.45	17.49	18.20
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	17.49	17.40	17.49	18.20
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	17.54	17.40	17.40	18.20
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	17.49	17.37	17.51	18.20

【FR1 n41 FCC_Aux】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	18.74	18.84	18.49	19.70
100	PI/2 BPSK	1	137	18.29	18.79	18.17	19.70
100	PI/2 BPSK	1	271	18.13	18.59	18.01	19.70
100	PI/2 BPSK	135	0	18.16	18.64	18.01	19.70
100	PI/2 BPSK	135	69	18.35	18.77	18.03	19.70
100	PI/2 BPSK	135	138	18.16	18.58	18.00	19.70
100	PI/2 BPSK	270	0	18.07	18.61	18.00	19.70
100	QPSK	1	1	18.52	18.80	18.31	19.70
100	QPSK	1	137	18.33	18.80	18.02	19.70
100	QPSK	1	271	18.13	18.56	18.02	19.70
100	QPSK	135	0	18.21	18.65	18.00	19.70
100	QPSK	135	69	18.28	18.71	18.03	19.70
100	QPSK	135	138	18.08	18.55	18.01	19.70
100	QPSK	270	0	18.09	18.59	18.00	19.70
100	16QAM	1	1	18.67	18.77	18.37	19.70
100	64QAM	1	1	18.52	18.79	18.33	19.70
100	256QAM	1	1	17.05	17.49	16.76	18.20
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	18.67	18.76	18.42	19.70
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	18.67	18.73	18.42	19.70
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	18.73	18.70	18.40	19.70
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	18.72	18.82	18.48	19.70
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	18.59	18.79	18.34	19.70
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	18.72	18.81	18.42	19.70
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	18.62	18.73	18.45	19.70
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	18.62	18.79	18.35	19.70
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	18.60	18.75	18.42	19.70
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	18.62	18.82	18.38	19.70

【FR1 n41 FCC_HPUE_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				509202	518598	528000	Tune-up limit (dBm)
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	19.18	19.49	19.22	19.50
100	PI/2 BPSK	1	137	19.07	19.39	19.05	19.50
100	PI/2 BPSK	1	271	18.74	19.16	18.85	19.50
100	PI/2 BPSK	135	0	18.80	19.17	18.82	19.50
100	PI/2 BPSK	135	69	19.02	19.40	19.05	19.50
100	PI/2 BPSK	135	138	18.93	19.39	19.04	19.50
100	PI/2 BPSK	270	0	18.88	19.30	18.93	19.50
100	QPSK	1	1	18.71	19.15	18.78	19.50
100	QPSK	1	137	18.95	19.40	19.04	19.50
100	QPSK	1	271	19.04	19.43	19.08	19.50
100	QPSK	135	0	18.74	19.18	18.85	19.50
100	QPSK	135	69	19.00	19.33	18.96	19.50
100	QPSK	135	138	19.00	19.43	19.10	19.50
100	QPSK	270	0	19.06	19.41	19.07	19.50
100	16QAM	1	1	18.69	19.08	18.80	19.50
100	64QAM	1	1	18.88	19.25	18.93	19.50
100	256QAM	1	1	18.36	18.71	18.42	19.50
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	19.04	19.42	19.18	19.50
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	19.12	19.40	19.17	19.50
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	19.12	19.41	19.09	19.50
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	19.05	19.37	19.17	19.50
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	19.05	19.41	19.16	19.50
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	19.12	19.37	19.11	19.50
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	19.15	19.43	19.14	19.50
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	19.10	19.43	19.13	19.50
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	19.14	19.39	19.09	19.50
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	19.15	19.45	19.08	19.50

【FR1 n41 FCC_HPUE_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				509202	518598	528000	Tune-up limit (dBm)
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	17.47	17.65	17.38	18.80
100	PI/2 BPSK	1	137	17.29	17.52	17.19	18.80
100	PI/2 BPSK	1	271	17.29	17.58	17.23	18.80
100	PI/2 BPSK	135	0	17.20	17.50	17.13	18.80
100	PI/2 BPSK	135	69	17.35	17.61	17.27	18.80
100	PI/2 BPSK	135	138	17.30	17.53	17.23	18.80
100	PI/2 BPSK	270	0	17.18	17.51	17.22	18.80
100	QPSK	1	1	17.09	17.39	17.07	18.80
100	QPSK	1	137	17.14	17.46	17.11	18.80
100	QPSK	1	271	17.30	17.51	17.21	18.80
100	QPSK	135	0	17.25	17.50	17.16	18.80
100	QPSK	135	69	17.35	17.59	17.27	18.80
100	QPSK	135	138	17.34	17.53	17.23	18.80
100	QPSK	270	0	17.17	17.43	17.04	18.80
100	16QAM	1	1	17.24	17.53	17.21	18.80
100	64QAM	1	1	17.33	17.56	17.20	18.80
100	256QAM	1	1	16.67	16.88	16.54	17.80
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	17.41	17.50	17.28	18.80
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	17.39	17.55	17.28	18.80
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	17.46	17.59	17.32	18.80
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	17.42	17.60	17.34	18.80
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	17.44	17.50	17.27	18.80
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	17.34	17.59	17.31	18.80
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	17.42	17.63	17.26	18.80
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	17.40	17.60	17.30	18.80
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	17.38	17.58	17.27	18.80
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	17.34	17.54	17.34	18.80

【FR1 n41 FCC_HPUE_MIMO1】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	20.57	20.52	20.62	21.20
100	PI/2 BPSK	1	137	20.33	20.41	20.40	21.20
100	PI/2 BPSK	1	271	20.33	20.34	20.30	21.20
100	PI/2 BPSK	135	0	20.47	20.55	20.58	21.20
100	PI/2 BPSK	135	69	20.68	20.65	20.68	21.20
100	PI/2 BPSK	135	138	20.62	20.60	20.65	21.20
100	PI/2 BPSK	270	0	20.57	20.64	20.63	21.20
100	QPSK	1	1	20.40	20.44	20.44	21.20
100	QPSK	1	137	20.38	20.37	20.40	21.20
100	QPSK	1	271	20.36	20.33	20.30	21.20
100	QPSK	135	0	20.45	20.52	20.49	21.20
100	QPSK	135	69	20.63	20.63	20.65	21.20
100	QPSK	135	138	20.62	20.59	20.56	21.20
100	QPSK	270	0	20.54	20.60	20.60	21.20
100	16QAM	1	1	20.52	20.51	20.47	21.20
100	64QAM	1	1	20.40	20.48	20.52	21.20
100	256QAM	1	1	20.42	20.46	20.42	21.20
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	20.49	20.37	20.55	21.20
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	20.55	20.38	20.60	21.20
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	20.47	20.46	20.61	21.20
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	20.54	20.41	20.59	21.20
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	20.47	20.48	20.48	21.20
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	20.55	20.50	20.59	21.20
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	20.44	20.40	20.47	21.20
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	20.49	20.38	20.57	21.20
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	20.43	20.49	20.59	21.20
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	20.55	20.44	20.47	21.20

【FR1 n41 FCC_HPUE_Aux】

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				509202	518598	528000	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI/2 BPSK	1	1	21.77	21.81	21.55	22.70
100	PI/2 BPSK	1	137	21.67	21.75	21.35	22.70
100	PI/2 BPSK	1	271	21.48	21.61	21.34	22.70
100	PI/2 BPSK	135	0	21.58	21.70	21.32	22.70
100	PI/2 BPSK	135	69	21.64	21.73	21.42	22.70
100	PI/2 BPSK	135	138	21.59	21.64	21.26	22.70
100	PI/2 BPSK	270	0	21.66	21.72	21.37	22.70
100	QPSK	1	1	21.61	21.78	21.42	22.70
100	QPSK	1	137	21.62	21.72	21.39	22.70
100	QPSK	1	271	21.56	21.65	21.31	22.70
100	QPSK	135	0	21.61	21.68	21.35	22.70
100	QPSK	135	69	21.59	21.70	21.36	22.70
100	QPSK	135	138	21.47	21.59	21.22	22.70
100	QPSK	270	0	21.64	21.69	21.36	22.70
100	16QAM	1	1	21.55	21.70	21.35	22.70
100	64QAM	1	1	21.57	21.74	21.41	22.70
100	256QAM	1	1	19.67	19.75	19.42	21.20
Channel				508200	518598	528996	Tune-up limit (dBm)
Frequency (MHz)				2541	2592.99	2644.98	
90	PI/2 BPSK	1	1	21.64	21.67	21.50	22.70
Channel				507204	518598	529998	Tune-up limit (dBm)
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI/2 BPSK	1	1	21.71	21.69	21.51	22.70
Channel				506202	518598	531000	Tune-up limit (dBm)
Frequency (MHz)				2531.01	2592.99	2655	
70	PI/2 BPSK	1	1	21.73	21.68	21.45	22.70
Channel				505200	518598	531996	Tune-up limit (dBm)
Frequency (MHz)				2526	2592.99	2659.98	
60	PI/2 BPSK	1	1	21.74	21.72	21.53	22.70
Channel				504204	518598	532998	Tune-up limit (dBm)
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI/2 BPSK	1	1	21.70	21.70	21.52	22.70
Channel				503202	518598	534000	Tune-up limit (dBm)
Frequency (MHz)				2516.01	2592.99	2670	
40	PI/2 BPSK	1	1	21.64	21.73	21.44	22.70
Channel				502200	518598	534996	Tune-up limit (dBm)
Frequency (MHz)				2511	2592.99	2674.98	
30	PI/2 BPSK	1	1	21.75	21.72	21.51	22.70
Channel				501204	518598	535998	Tune-up limit (dBm)
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI/2 BPSK	1	1	21.62	21.72	21.41	22.70
Channel				500700	518598	536496	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2592.99	2682.48	
15	PI/2 BPSK	1	1	21.75	21.70	21.46	22.70
Channel				500202	518598	537000	Tune-up limit (dBm)
Frequency (MHz)				2501.01	2592.99	2685	
10	PI/2 BPSK	1	1	21.68	21.74	21.54	22.70

【FR1 n48_FCC_Part 96_IC_RSS-192 (3550~3700MHz)_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				638000	641666	645332	
Frequency (MHz)				3570	3624.99	3679.98	
40	PI/2 BPSK	1	1	16.78	17.08	17.06	18.40
40	PI/2 BPSK	1	53	16.65	17.04	16.92	18.40
40	PI/2 BPSK	1	104	16.67	17.05	16.96	18.40
40	PI/2 BPSK	50	0	16.69	17.02	16.97	18.40
40	PI/2 BPSK	50	28	16.57	17.00	16.89	18.40
40	PI/2 BPSK	50	56	16.66	17.01	16.94	18.40
40	PI/2 BPSK	100	0	16.72	17.11	16.98	18.40
40	QPSK	1	1	16.71	17.13	17.00	18.40
40	QPSK	1	53	16.80	17.16	17.07	18.40
40	QPSK	1	104	16.85	17.28	17.21	18.40
40	QPSK	50	0	16.61	16.99	16.87	18.40
40	QPSK	50	28	16.69	17.10	16.95	18.40
40	QPSK	50	56	16.68	17.04	16.94	18.40
40	QPSK	100	0	16.75	17.10	16.95	18.40
40	16QAM	1	1	16.80	17.11	17.03	18.40
40	64QAM	1	1	16.69	17.03	16.87	18.40
40	256QAM	1	1	16.64	16.66	16.54	18.40
Channel				637668	641666	645666	Tune-up limit (dBm)
Frequency (MHz)				3565.02	3624.99	3684.99	
30	PI/2 BPSK	1	1	16.75	17.02	16.92	18.40
Channel				637334	641666	646000	Tune-up limit (dBm)
Frequency (MHz)				3560.01	3624.99	3690	
20	PI/2 BPSK	1	1	16.67	17.03	16.91	18.40
Channel				637168	641666	646166	Tune-up limit (dBm)
Frequency (MHz)				3557.52	3624.99	3692.49	
15	PI/2 BPSK	1	1	16.75	17.02	16.99	18.40
Channel				637000	641666	646332	Tune-up limit (dBm)
Frequency (MHz)				3555	3624.99	3694.98	
10	PI/2 BPSK	1	1	16.76	16.95	16.95	18.40
Channel				636834	641666	646500	Tune-up limit (dBm)
Frequency (MHz)				3552.51	3624.99	3697.5	
5	PI/2 BPSK	1	1	16.69	17.04	16.99	18.40

【FR1 n48 _FCC_Part 96 IC_RSS-192 (3550~3700MHz)_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				638000	641666	645332	
Frequency (MHz)				3570	3624.99	3679.98	
40	PI/2 BPSK	1	1	19.46	19.62	19.65	20.20
40	PI/2 BPSK	1	53	19.40	19.59	19.55	20.20
40	PI/2 BPSK	1	104	19.40	19.60	19.53	20.20
40	PI/2 BPSK	50	0	19.27	19.52	19.49	20.20
40	PI/2 BPSK	50	28	19.33	19.58	19.63	20.20
40	PI/2 BPSK	50	56	19.27	19.55	19.54	20.20
40	PI/2 BPSK	100	0	19.35	19.52	19.54	20.20
40	QPSK	1	1	19.25	19.53	19.43	20.20
40	QPSK	1	53	19.39	19.57	19.54	20.20
40	QPSK	1	104	19.32	19.58	19.59	20.20
40	QPSK	50	0	19.23	19.49	19.46	20.20
40	QPSK	50	28	19.33	19.55	19.49	20.20
40	QPSK	50	56	19.21	19.51	19.46	20.20
40	QPSK	100	0	19.24	19.49	19.49	20.20
40	16QAM	1	1	19.32	19.57	19.50	20.20
40	64QAM	1	1	19.29	19.52	19.41	20.20
40	256QAM	1	1	18.13	18.30	18.26	19.20
Channel				637668	641666	645666	Tune-up limit (dBm)
Frequency (MHz)				3565.02	3624.99	3684.99	
30	PI/2 BPSK	1	1	19.41	19.53	19.63	20.20
Channel				637334	641666	646000	Tune-up limit (dBm)
Frequency (MHz)				3560.01	3624.99	3690	
20	PI/2 BPSK	1	1	19.44	19.61	19.53	20.20
Channel				637168	641666	646166	Tune-up limit (dBm)
Frequency (MHz)				3557.52	3624.99	3692.49	
15	PI/2 BPSK	1	1	19.36	19.53	19.63	20.20
Channel				637000	641666	646332	Tune-up limit (dBm)
Frequency (MHz)				3555	3624.99	3694.98	
10	PI/2 BPSK	1	1	19.45	19.57	19.60	20.20
Channel				636834	641666	646500	Tune-up limit (dBm)
Frequency (MHz)				3552.51	3624.99	3697.5	
5	PI/2 BPSK	1	1	19.45	19.54	19.60	20.20

【FR1 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	
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	18.78	18.81	18.80	19.60
40	PI/2 BPSK	1	108	18.64	18.69	18.55	19.60
40	PI/2 BPSK	1	214	18.72	18.80	18.72	19.60
40	PI/2 BPSK	108	0	18.68	18.75	18.67	19.60
40	PI/2 BPSK	108	54	17.66	17.73	17.68	19.60
40	PI/2 BPSK	108	108	18.66	18.74	18.70	19.60
40	PI/2 BPSK	216	0	18.69	18.78	18.62	19.60
40	QPSK	1	1	18.44	18.62	18.58	19.60
40	QPSK	1	108	18.59	18.64	18.59	19.60
40	QPSK	1	214	18.54	18.66	18.59	19.60
40	QPSK	108	0	18.65	18.71	18.56	19.60
40	QPSK	108	54	18.68	18.77	18.66	19.60
40	QPSK	108	108	18.63	18.73	18.59	19.60
40	QPSK	216	0	18.65	18.79	18.65	19.60
40	16QAM	1	1	17.99	18.13	18.04	19.60
40	64QAM	1	1	18.39	18.53	18.47	19.60
40	256QAM	1	1	16.87	16.96	16.88	18.60
Channel				345500	349000	352500	Tune-up limit (dBm)
Frequency (MHz)				1727.5	1745	1762.5	
35	PI/2 BPSK	1	1	18.72	18.79	18.68	19.60
Channel				345000	349000	353000	Tune-up limit (dBm)
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	18.72	18.75	18.77	19.60
Channel				344500	349000	353500	Tune-up limit (dBm)
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	18.64	18.70	18.71	19.60
Channel				344000	349000	354000	Tune-up limit (dBm)
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	18.77	18.69	18.69	19.60
Channel				343500	349000	354500	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	18.71	18.67	18.74	19.60
Channel				343000	349000	355000	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	18.64	18.73	18.78	19.60
Channel				342500	349000	355500	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	18.74	18.79	18.76	19.60

【FR1 n66_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				346000	349000	352000	
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	16.54	16.79	16.68	17.20
40	PI/2 BPSK	1	108	16.31	16.68	16.49	17.20
40	PI/2 BPSK	1	214	16.20	16.53	16.38	17.20
40	PI/2 BPSK	108	0	16.43	16.72	16.46	17.20
40	PI/2 BPSK	108	54	16.52	16.85	16.60	17.20
40	PI/2 BPSK	108	108	16.35	16.68	16.54	17.20
40	PI/2 BPSK	216	0	16.35	16.75	16.55	17.20
40	QPSK	1	1	16.40	16.75	16.56	17.20
40	QPSK	1	108	16.35	16.67	16.42	17.20
40	QPSK	1	214	16.16	16.52	16.31	17.20
40	QPSK	108	0	16.32	16.66	16.41	17.20
40	QPSK	108	54	16.48	16.85	16.66	17.20
40	QPSK	108	108	16.30	16.58	16.41	17.20
40	QPSK	216	0	16.31	16.67	16.43	17.20
40	16QAM	1	1	16.29	16.67	16.42	17.20
40	64QAM	1	1	16.32	16.63	16.42	17.20
40	256QAM	1	1	16.22	16.49	16.27	17.20
Channel				345500	349000	352500	Tune-up limit (dBm)
Frequency (MHz)				1727.5	1745	1762.5	
35	PI/2 BPSK	1	1	16.52	16.69	16.54	17.20
Channel				345000	349000	353000	Tune-up limit (dBm)
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	16.46	16.67	16.64	17.20
Channel				344500	349000	353500	Tune-up limit (dBm)
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	16.50	16.65	16.65	17.20
Channel				344000	349000	354000	Tune-up limit (dBm)
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	16.43	16.65	16.59	17.20
Channel				343500	349000	354500	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	16.43	16.76	16.66	17.20
Channel				343000	349000	355000	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	16.53	16.71	16.58	17.20
Channel				342500	349000	355500	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	16.45	16.77	16.65	17.20

【FR1 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	
Frequency (MHz)				673	680.5	688	
20	PI/2 BPSK	1	1	19.41	19.48	19.45	19.90
20	PI/2 BPSK	1	53	19.34	19.46	19.33	19.90
20	PI/2 BPSK	1	104	19.35	19.48	19.30	19.90
20	PI/2 BPSK	50	0	19.30	19.46	19.37	19.90
20	PI/2 BPSK	50	28	19.34	19.43	19.28	19.90
20	PI/2 BPSK	50	56	19.25	19.41	19.29	19.90
20	PI/2 BPSK	100	0	19.30	19.42	19.24	19.90
20	QPSK	1	1	19.26	19.38	19.26	19.90
20	QPSK	1	53	19.30	19.45	19.35	19.90
20	QPSK	1	104	19.23	19.39	19.31	19.90
20	QPSK	50	0	19.29	19.45	19.29	19.90
20	QPSK	50	28	19.33	19.44	19.30	19.90
20	QPSK	50	56	19.35	19.46	19.33	19.90
20	QPSK	100	0	19.27	19.44	19.34	19.90
20	16QAM	1	1	19.20	19.39	19.27	19.90
20	64QAM	1	1	19.29	19.43	19.27	19.90
20	256QAM	1	1	17.90	18.04	17.90	19.90
Channel				134100	136100	138100	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	PI/2 BPSK	1	1	19.39	19.41	19.34	19.90
Channel				133600	136100	138600	Tune-up limit (dBm)
Frequency (MHz)				668	680.5	693	
10	PI/2 BPSK	1	1	19.40	19.35	19.42	19.90
Channel				133100	136100	139100	Tune-up limit (dBm)
Frequency (MHz)				665.5	680.5	695.5	
5	PI/2 BPSK	1	1	19.33	19.35	19.37	19.90

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		14.27		15.70
100	PI/2 BPSK	1	137		14.22		15.70
100	PI/2 BPSK	1	271		14.25		15.70
100	PI/2 BPSK	135	0		14.21		15.70
100	PI/2 BPSK	135	69		14.26		15.70
100	PI/2 BPSK	135	138		14.22		15.70
100	PI/2 BPSK	270	0		14.21		15.70
100	QPSK	1	1		14.15		15.70
100	QPSK	1	137		14.36		15.70
100	QPSK	1	271		14.44		15.70
100	QPSK	135	0		14.20		15.70
100	QPSK	135	69		14.22		15.70
100	QPSK	135	138		14.17		15.70
100	QPSK	270	0		14.22		15.70
100	16QAM	1	1		14.23		15.70
100	64QAM	1	1		14.07		15.70
100	256QAM	1	1		14.02		15.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	14.20	14.24	14.22	15.70
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	14.05	14.23	14.14	15.70
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	14.17	14.19	14.12	15.70
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	14.17	14.13	14.20	15.70
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	14.15	14.14	14.11	15.70
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	14.07	14.13	14.17	15.70
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	14.13	14.09	14.12	15.70
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	14.11	14.17	14.10	15.70
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	14.15	14.13	14.19	15.70
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	14.13	14.22	14.16	15.70

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_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				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	14.44	14.59	14.49	15.70
100	PI/2 BPSK	1	137	14.23	14.52	14.35	15.70
100	PI/2 BPSK	1	271	14.01	14.29	14.06	15.70
100	PI/2 BPSK	135	0	14.28	14.46	14.30	15.70
100	PI/2 BPSK	135	69	14.27	14.54	14.38	15.70
100	PI/2 BPSK	135	138	14.35	14.52	14.39	15.70
100	PI/2 BPSK	270	0	14.30	14.52	14.28	15.70
100	QPSK	1	1	14.14	14.35	14.24	15.70
100	QPSK	1	137	14.28	14.56	14.34	15.70
100	QPSK	1	271	14.50	14.66	14.43	15.70
100	QPSK	135	0	14.24	14.49	14.25	15.70
100	QPSK	135	69	14.28	14.51	14.31	15.70
100	QPSK	135	138	14.36	14.56	14.38	15.70
100	QPSK	270	0	14.34	14.53	14.39	15.70
100	16QAM	1	1	14.25	14.46	14.30	15.70
100	64QAM	1	1	14.06	14.23	14.00	15.70
100	256QAM	1	1	13.95	14.14	13.96	15.70
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	14.31	14.47	14.36	15.70
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	14.33	14.57	14.45	15.70
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	14.40	14.55	14.39	15.70
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	14.42	14.45	14.45	15.70
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	14.39	14.46	14.44	15.70
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	14.31	14.51	14.36	15.70
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	14.33	14.49	14.42	15.70
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	14.36	14.49	14.42	15.70
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	14.42	14.47	14.47	15.70
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	14.32	14.49	14.40	15.70

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		13.77		15.20
100	PI/2 BPSK	1	137		13.75		15.20
100	PI/2 BPSK	1	271		13.65		15.20
100	PI/2 BPSK	135	0		13.72		15.20
100	PI/2 BPSK	135	69		13.79		15.20
100	PI/2 BPSK	135	138		13.67		15.20
100	PI/2 BPSK	270	0		13.73		15.20
100	QPSK	1	1		13.71		15.20
100	QPSK	1	137		13.70		15.20
100	QPSK	1	271		13.57		15.20
100	QPSK	135	0		13.70		15.20
100	QPSK	135	69		13.73		15.20
100	QPSK	135	138		13.64		15.20
100	QPSK	270	0		13.73		15.20
100	16QAM	1	1		13.69		15.20
100	64QAM	1	1		13.76		15.20
100	256QAM	1	1		13.40		15.20
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	13.62	13.70	13.68	15.20
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	13.51	13.62	13.63	15.20
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	13.50	13.58	13.63	15.20
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	13.50	13.57	13.62	15.20
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	13.51	13.61	13.63	15.20
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	13.57	13.66	13.53	15.20
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	13.56	13.63	13.63	15.20
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	13.52	13.57	13.56	15.20
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	13.56	13.62	13.66	15.20
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	13.54	13.64	13.53	15.20

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_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				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	13.37	13.73	13.70	15.20
100	PI/2 BPSK	1	137	13.32	13.61	13.51	15.20
100	PI/2 BPSK	1	271	13.21	13.56	13.42	15.20
100	PI/2 BPSK	135	0	13.23	13.50	13.37	15.20
100	PI/2 BPSK	135	69	13.36	13.64	13.50	15.20
100	PI/2 BPSK	135	138	13.21	13.50	13.37	15.20
100	PI/2 BPSK	270	0	13.20	13.52	13.39	15.20
100	QPSK	1	1	13.22	13.59	13.51	15.20
100	QPSK	1	137	13.20	13.61	13.44	15.20
100	QPSK	1	271	13.22	13.35	13.30	15.20
100	QPSK	135	0	13.29	13.57	13.48	15.20
100	QPSK	135	69	13.29	13.54	13.49	15.20
100	QPSK	135	138	13.21	13.55	13.44	15.20
100	QPSK	270	0	13.21	13.56	13.40	15.20
100	16QAM	1	1	13.20	13.53	13.42	15.20
100	64QAM	1	1	13.21	13.67	13.62	15.20
100	256QAM	1	1	13.20	13.50	13.45	15.20
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	13.26	13.57	13.61	15.20
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	13.33	13.57	13.58	15.20
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	13.32	13.66	13.69	15.20
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	13.23	13.62	13.66	15.20
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	13.29	13.67	13.64	15.20
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	13.30	13.59	13.68	15.20
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	13.31	13.62	13.58	15.20
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	13.30	13.57	13.60	15.20
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	13.35	13.58	13.65	15.20
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	13.33	13.66	13.57	15.20

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_MIMO1】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		18.66		19.00
100	PI/2 BPSK	1	137		18.31		19.00
100	PI/2 BPSK	1	271		18.47		19.00
100	PI/2 BPSK	135	0		18.34		18.50
100	PI/2 BPSK	135	69		18.37		19.00
100	PI/2 BPSK	135	138		18.26		18.50
100	PI/2 BPSK	270	0		18.28		18.50
100	QPSK	1	1		18.37		19.00
100	QPSK	1	137		18.31		19.00
100	QPSK	1	271		18.36		19.00
100	QPSK	135	0		18.27		19.00
100	QPSK	135	69		18.34		19.00
100	QPSK	135	138		18.22		19.00
100	QPSK	270	0		18.24		19.00
100	16QAM	1	1		18.35		19.00
100	64QAM	1	1		18.34		19.00
100	256QAM	1	1		17.12		18.00
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	18.51	18.54	18.55	19.00
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	18.49	18.55	18.52	19.00
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	18.42	18.47	18.50	19.00
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	18.39	18.52	18.43	19.00
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	18.39	18.47	18.50	19.00
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	18.50	18.43	18.45	19.00
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	18.41	18.40	18.46	19.00
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	18.45	18.41	18.42	19.00
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	18.41	18.52	18.48	19.00
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	18.44	18.45	18.53	19.00

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_MIMO1】

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	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	18.54	18.82	18.72	19.00
100	PI/2 BPSK	1	137	18.05	18.46	18.28	19.00
100	PI/2 BPSK	1	271	18.21	18.63	18.48	19.00
100	PI/2 BPSK	135	0	18.07	18.49	18.36	19.00
100	PI/2 BPSK	135	69	18.19	18.53	18.31	19.00
100	PI/2 BPSK	135	138	18.10	18.41	18.21	19.00
100	PI/2 BPSK	270	0	18.14	18.43	18.27	19.00
100	QPSK	1	1	18.14	18.53	18.38	19.00
100	QPSK	1	137	18.14	18.46	18.28	19.00
100	QPSK	1	271	18.19	18.52	18.40	19.00
100	QPSK	135	0	18.08	18.42	18.21	19.00
100	QPSK	135	69	18.09	18.49	18.37	19.00
100	QPSK	135	138	17.95	18.37	18.24	19.00
100	QPSK	270	0	18.00	18.39	18.16	19.00
100	16QAM	1	1	18.21	18.50	18.26	19.00
100	64QAM	1	1	18.10	18.49	18.37	19.00
100	256QAM	1	1	16.97	17.25	17.15	18.00
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	18.43	18.74	18.62	19.00
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	18.43	18.69	18.70	19.00
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	18.52	18.71	18.60	19.00
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	18.50	18.79	18.61	19.00
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	18.44	18.75	18.69	19.00
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	18.48	18.75	18.71	19.00
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	18.40	18.70	18.58	19.00
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	18.39	18.73	18.65	19.00
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	18.45	18.67	18.58	19.00
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	18.43	18.75	18.64	19.00

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_Aux】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		15.51		16.40
100	PI/2 BPSK	1	137		15.47		16.40
100	PI/2 BPSK	1	271		15.39		16.40
100	PI/2 BPSK	135	0		15.58		16.40
100	PI/2 BPSK	135	69		15.67		16.40
100	PI/2 BPSK	135	138		15.60		16.40
100	PI/2 BPSK	270	0		15.64		16.40
100	QPSK	1	1		15.45		16.40
100	QPSK	1	137		15.43		16.40
100	QPSK	1	271		15.39		16.40
100	QPSK	135	0		15.56		16.40
100	QPSK	135	69		15.65		16.40
100	QPSK	135	138		15.59		16.40
100	QPSK	270	0		15.62		16.40
100	16QAM	1	1		15.32		16.40
100	64QAM	1	1		15.34		16.40
100	256QAM	1	1		15.08		16.40
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	15.44	15.49	15.47	16.40
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	15.40	15.37	15.42	16.40
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	15.30	15.41	15.36	16.40
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	15.37	15.42	15.36	16.40
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	15.32	15.36	15.40	16.40
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	15.34	15.41	15.42	16.40
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	15.36	15.41	15.33	16.40
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	15.39	15.35	15.38	16.40
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	15.34	15.48	15.37	16.40
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	15.39	15.36	15.40	16.40

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_Aux】

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	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	15.84	16.43	16.39	16.70
100	PI/2 BPSK	1	137	15.62	16.34	16.20	16.70
100	PI/2 BPSK	1	271	15.71	16.36	16.19	16.70
100	PI/2 BPSK	135	0	15.53	16.22	16.14	16.70
100	PI/2 BPSK	135	69	15.78	16.36	16.36	16.70
100	PI/2 BPSK	135	138	15.55	16.14	16.02	16.70
100	PI/2 BPSK	270	0	15.73	16.40	16.31	16.70
100	QPSK	1	1	15.52	16.20	16.03	16.70
100	QPSK	1	137	15.58	16.18	16.10	16.70
100	QPSK	1	271	15.54	16.14	16.02	16.70
100	QPSK	135	0	15.59	16.31	16.20	16.70
100	QPSK	135	69	15.74	16.41	16.22	16.70
100	QPSK	135	138	15.68	16.35	16.19	16.70
100	QPSK	270	0	15.74	16.38	16.24	16.70
100	16QAM	1	1	15.36	16.06	15.99	16.70
100	64QAM	1	1	15.44	16.08	15.97	16.70
100	256QAM	1	1	15.18	15.81	15.75	16.20
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	15.79	16.32	16.25	16.70
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	15.82	16.34	16.36	16.70
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	15.82	16.30	16.37	16.70
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	15.74	16.38	16.25	16.70
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	15.70	16.41	16.25	16.70
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	15.74	16.37	16.36	16.70
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	15.74	16.28	16.29	16.70
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	15.82	16.35	16.28	16.70
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	15.69	16.38	16.37	16.70
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	15.73	16.32	16.32	16.70

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		17.68		18.70
100	PI/2 BPSK	1	137		17.56		18.70
100	PI/2 BPSK	1	271		17.65		18.70
100	PI/2 BPSK	135	0		17.55		18.70
100	PI/2 BPSK	135	69		17.60		18.70
100	PI/2 BPSK	135	138		17.24		18.70
100	PI/2 BPSK	270	0		17.25		18.70
100	QPSK	1	1		17.37		18.70
100	QPSK	1	137		17.51		18.70
100	QPSK	1	271		17.72		18.70
100	QPSK	135	0		17.50		18.70
100	QPSK	135	69		17.56		18.70
100	QPSK	135	138		17.58		18.70
100	QPSK	270	0		17.58		18.70
100	16QAM	1	1		17.51		18.70
100	64QAM	1	1		17.66		18.70
100	256QAM	1	1		17.05		17.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	17.21	17.25	17.23	18.70
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	17.16	17.18	17.20	18.70
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	17.18	17.16	17.19	18.70
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	17.11	17.23	17.21	18.70
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	17.06	17.19	17.09	18.70
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	17.18	17.11	17.10	18.70
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	17.14	17.22	17.11	18.70
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	17.10	17.13	17.10	18.70
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	17.16	17.19	17.08	18.70
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	17.09	17.17	17.21	18.70

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_HPUE_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				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	17.53	17.56	17.54	18.70
100	PI/2 BPSK	1	137	17.37	17.55	17.45	18.70
100	PI/2 BPSK	1	271	17.38	17.50	17.47	18.70
100	PI/2 BPSK	135	0	17.35	17.52	17.45	18.70
100	PI/2 BPSK	135	69	17.43	17.55	17.40	18.70
100	PI/2 BPSK	135	138	17.40	17.52	17.37	18.70
100	PI/2 BPSK	270	0	17.47	17.53	17.43	18.70
100	QPSK	1	1	17.33	17.44	17.37	18.70
100	QPSK	1	137	17.40	17.53	17.46	18.70
100	QPSK	1	271	17.48	17.64	17.47	18.70
100	QPSK	135	0	17.40	17.52	17.43	18.70
100	QPSK	135	69	17.39	17.51	17.37	18.70
100	QPSK	135	138	17.37	17.55	17.50	18.70
100	QPSK	270	0	17.48	17.53	17.45	18.70
100	16QAM	1	1	17.35	17.49	17.35	18.70
100	64QAM	1	1	17.47	17.64	17.57	18.70
100	256QAM	1	1	17.09	17.15	17.03	18.70
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	17.40	17.43	17.42	18.70
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	17.43	17.45	17.48	18.70
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	17.46	17.49	17.46	18.70
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	17.43	17.46	17.52	18.70
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	17.38	17.47	17.53	18.70
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	17.50	17.41	17.48	18.70
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	17.49	17.46	17.45	18.70
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	17.38	17.47	17.47	18.70
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	17.45	17.46	17.49	18.70
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	17.39	17.45	17.47	18.70

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		16.91		18.20
100	PI/2 BPSK	1	137		16.71		18.20
100	PI/2 BPSK	1	271		16.71		18.20
100	PI/2 BPSK	135	0		16.61		18.20
100	PI/2 BPSK	135	69		16.75		18.20
100	PI/2 BPSK	135	138		16.72		18.20
100	PI/2 BPSK	270	0		16.68		18.20
100	QPSK	1	1		16.67		18.20
100	QPSK	1	137		16.68		18.20
100	QPSK	1	271		16.74		18.20
100	QPSK	135	0		16.63		18.20
100	QPSK	135	69		16.73		18.20
100	QPSK	135	138		16.72		18.20
100	QPSK	270	0		16.68		18.20
100	16QAM	1	1		16.62		18.20
100	64QAM	1	1		16.77		18.20
100	256QAM	1	1		16.31		17.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	16.77	16.88	16.81	18.20
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	16.75	16.81	16.74	18.20
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	16.70	16.86	16.78	18.20
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	16.74	16.81	16.73	18.20
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	16.71	16.77	16.69	18.20
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	16.66	16.79	16.68	18.20
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	16.71	16.77	16.71	18.20
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	16.69	16.74	16.75	18.20
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	16.75	16.87	16.76	18.20
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	16.73	16.85	16.76	18.20

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_HPUE_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				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	16.49	16.89	16.74	18.20
100	PI/2 BPSK	1	137	16.36	16.77	16.53	18.20
100	PI/2 BPSK	1	271	16.33	16.80	16.51	18.20
100	PI/2 BPSK	135	0	16.31	16.73	16.51	18.20
100	PI/2 BPSK	135	69	16.38	16.83	16.60	18.20
100	PI/2 BPSK	135	138	16.32	16.80	16.64	18.20
100	PI/2 BPSK	270	0	16.38	16.79	16.55	18.20
100	QPSK	1	1	16.36	16.78	16.52	18.20
100	QPSK	1	137	16.26	16.69	16.41	18.20
100	QPSK	1	271	16.29	16.77	16.55	18.20
100	QPSK	135	0	16.20	16.71	16.42	18.20
100	QPSK	135	69	16.22	16.75	16.54	18.20
100	QPSK	135	138	16.34	16.79	16.53	18.20
100	QPSK	270	0	16.30	16.72	16.47	18.20
100	16QAM	1	1	16.20	16.73	16.50	18.20
100	64QAM	1	1	16.28	16.77	16.60	18.20
100	256QAM	1	1	15.92	16.35	16.13	17.70
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	16.40	16.75	16.67	18.20
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	16.39	16.78	16.72	18.20
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	16.38	16.78	16.59	18.20
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	16.34	16.82	16.65	18.20
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	16.37	16.75	16.60	18.20
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	16.43	16.74	16.64	18.20
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	16.38	16.76	16.59	18.20
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	16.44	16.88	16.71	18.20
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	16.38	16.79	16.71	18.20
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	16.36	16.81	16.66	18.20

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_MIMO1】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		21.77		22.00
100	PI/2 BPSK	1	137		21.76		22.00
100	PI/2 BPSK	1	271		21.73		22.00
100	PI/2 BPSK	135	0		21.82		22.00
100	PI/2 BPSK	135	69		21.90		22.00
100	PI/2 BPSK	135	138		21.87		22.00
100	PI/2 BPSK	270	0		21.87		22.00
100	QPSK	1	1		21.71		22.00
100	QPSK	1	137		21.78		22.00
100	QPSK	1	271		21.73		22.00
100	QPSK	135	0		21.81		22.00
100	QPSK	135	69		21.84		22.00
100	QPSK	135	138		21.88		22.00
100	QPSK	270	0		21.85		22.00
100	16QAM	1	1		21.60		22.00
100	64QAM	1	1		21.70		22.00
100	256QAM	1	1		19.93		20.00
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	21.71	21.74	21.71	22.00
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	21.69	21.66	21.62	22.00
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	21.68	21.67	21.56	22.00
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	21.70	21.70	21.63	22.00
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	21.57	21.66	21.70	22.00
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	21.61	21.72	21.64	22.00
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	21.66	21.65	21.69	22.00
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	21.65	21.61	21.68	22.00
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	21.67	21.61	21.70	22.00
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	21.60	21.72	21.62	22.00

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_HPUE_MIMO1】

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	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	21.71	21.76	21.70	22.00
100	PI/2 BPSK	1	137	21.55	21.73	21.62	22.00
100	PI/2 BPSK	1	271	21.62	21.75	21.55	22.00
100	PI/2 BPSK	135	0	21.73	21.85	21.71	22.00
100	PI/2 BPSK	135	69	21.82	21.86	21.66	22.00
100	PI/2 BPSK	135	138	21.73	21.82	21.73	22.00
100	PI/2 BPSK	270	0	21.79	21.87	21.68	22.00
100	QPSK	1	1	21.41	21.57	21.47	22.00
100	QPSK	1	137	21.55	21.68	21.47	22.00
100	QPSK	1	271	21.56	21.70	21.53	22.00
100	QPSK	135	0	21.74	21.82	21.68	22.00
100	QPSK	135	69	21.72	21.84	21.64	22.00
100	QPSK	135	138	21.67	21.85	21.76	22.00
100	QPSK	270	0	21.76	21.86	21.78	22.00
100	16QAM	1	1	21.14	21.29	21.14	22.00
100	64QAM	1	1	21.50	21.59	21.52	22.00
100	256QAM	1	1	19.65	19.72	19.56	21.00
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	21.58	21.70	21.62	22.00
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	21.69	21.71	21.68	22.00
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	21.65	21.73	21.65	22.00
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	21.67	21.63	21.65	22.00
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	21.69	21.69	21.60	22.00
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	21.70	21.67	21.65	22.00
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	21.63	21.70	21.56	22.00
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	21.68	21.72	21.69	22.00
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	21.68	21.67	21.61	22.00
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	21.58	21.68	21.60	22.00

【FR1 n77 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_Aux】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		18.45		19.40
100	PI/2 BPSK	1	137		18.16		19.40
100	PI/2 BPSK	1	271		18.16		19.40
100	PI/2 BPSK	135	0		18.21		19.40
100	PI/2 BPSK	135	69		18.55		19.40
100	PI/2 BPSK	135	138		18.26		19.40
100	PI/2 BPSK	270	0		18.38		19.40
100	QPSK	1	1		18.07		19.40
100	QPSK	1	137		18.15		19.40
100	QPSK	1	271		18.06		19.40
100	QPSK	135	0		18.26		19.40
100	QPSK	135	69		18.29		19.40
100	QPSK	135	138		18.25		19.40
100	QPSK	270	0		18.31		19.40
100	16QAM	1	1		18.02		19.40
100	64QAM	1	1		18.00		19.40
100	256QAM	1	1		17.76		18.90
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	18.38	18.44	18.35	19.40
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	18.26	18.30	18.31	19.40
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	18.37	18.37	18.21	19.40
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	18.35	18.37	18.26	19.40
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	18.25	18.34	18.28	19.40
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	18.36	18.36	18.33	19.40
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	18.25	18.43	18.20	19.40
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	18.29	18.30	18.28	19.40
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	18.28	18.36	18.24	19.40
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	18.31	18.31	18.33	19.40

【FR1 n77 (270) FCC_Part 270 (3700~3980MHz)_HPUE_Aux】

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	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	18.90	19.51	19.46	19.70
100	PI/2 BPSK	1	137	18.59	19.28	19.13	19.70
100	PI/2 BPSK	1	271	18.59	19.26	19.18	19.70
100	PI/2 BPSK	135	0	18.60	19.22	19.04	19.70
100	PI/2 BPSK	135	69	18.97	19.59	19.58	19.70
100	PI/2 BPSK	135	138	18.48	19.18	19.12	19.70
100	PI/2 BPSK	270	0	18.89	19.52	19.37	19.70
100	QPSK	1	1	18.51	19.19	19.02	19.70
100	QPSK	1	137	18.57	19.27	19.16	19.70
100	QPSK	1	271	18.57	19.18	19.04	19.70
100	QPSK	135	0	18.71	19.39	19.26	19.70
100	QPSK	135	69	18.78	19.41	19.24	19.70
100	QPSK	135	138	18.67	19.38	19.24	19.70
100	QPSK	270	0	18.82	19.44	19.34	19.70
100	16QAM	1	1	18.41	19.14	18.99	19.70
100	64QAM	1	1	18.43	19.12	19.04	19.70
100	256QAM	1	1	18.22	18.86	18.77	19.20
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	18.79	19.37	19.42	19.70
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	18.78	19.41	19.38	19.70
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	18.86	19.46	19.40	19.70
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	18.84	19.44	19.41	19.70
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	18.83	19.41	19.37	19.70
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	18.87	19.45	19.34	19.70
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840	3964.98	
30	PI/2 BPSK	1	1	18.75	19.41	19.40	19.70
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	18.83	19.44	19.34	19.70
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	18.78	19.43	19.38	19.70
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	18.75	19.41	19.43	19.70

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		14.27		15.70
100	PI/2 BPSK	1	137		14.22		15.70
100	PI/2 BPSK	1	271		14.25		15.70
100	PI/2 BPSK	135	0		14.21		15.70
100	PI/2 BPSK	135	69		14.26		15.70
100	PI/2 BPSK	135	138		14.22		15.70
100	PI/2 BPSK	270	0		14.21		15.70
100	QPSK	1	1		14.15		15.70
100	QPSK	1	137		14.36		15.70
100	QPSK	1	271		14.44		15.70
100	QPSK	135	0		14.20		15.70
100	QPSK	135	69		14.22		15.70
100	QPSK	135	138		14.17		15.70
100	QPSK	270	0		14.22		15.70
100	16QAM	1	1		14.23		15.70
100	64QAM	1	1		14.07		15.70
100	256QAM	1	1		14.02		15.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	14.20	14.24	14.22	15.70
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	14.15	14.19	14.15	15.70
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	14.16	14.10	14.09	15.70
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	14.09	14.17	14.10	15.70
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	14.15	14.10	14.17	15.70
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	14.16	14.14	14.14	15.70
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	14.19	14.12	14.18	15.70
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	14.08	14.20	14.13	15.70
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	14.07	14.21	14.19	15.70
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	14.16	14.16	14.09	15.70

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_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					650000		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		14.44		15.70
100	PI/2 BPSK	1	137		14.23		15.70
100	PI/2 BPSK	1	271		14.01		15.70
100	PI/2 BPSK	135	0		14.27		15.70
100	PI/2 BPSK	135	69		14.28		15.70
100	PI/2 BPSK	135	138		14.25		15.70
100	PI/2 BPSK	270	0		14.30		15.70
100	QPSK	1	1		14.14		15.70
100	QPSK	1	137		14.28		15.70
100	QPSK	1	271		14.50		15.70
100	QPSK	135	0		14.24		15.70
100	QPSK	135	69		14.28		15.70
100	QPSK	135	138		14.36		15.70
100	QPSK	270	0		14.34		15.70
100	16QAM	1	1		14.25		15.70
100	64QAM	1	1		14.06		15.70
100	256QAM	1	1		13.95		14.70
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	14.31	14.49	14.44	15.70
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	14.33	14.36	14.34	15.70
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	14.40	14.45	14.31	15.70
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	14.42	14.37	14.39	15.70
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	14.39	14.38	14.30	15.70
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	14.31	14.46	14.40	15.70
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	14.33	14.43	14.35	15.70
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	14.36	14.47	14.37	15.70
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	14.42	14.36	14.35	15.70
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	14.32	14.43	14.43	15.70

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		14.06		15.20
100	PI/2 BPSK	1	137		13.93		15.20
100	PI/2 BPSK	1	271		13.96		15.20
100	PI/2 BPSK	135	0		13.95		15.20
100	PI/2 BPSK	135	69		14.05		15.20
100	PI/2 BPSK	135	138		13.99		15.20
100	PI/2 BPSK	270	0		13.94		15.20
100	QPSK	1	1		13.92		15.20
100	QPSK	1	137		13.84		15.20
100	QPSK	1	271		13.78		15.20
100	QPSK	135	0		13.93		15.20
100	QPSK	135	69		13.87		15.20
100	QPSK	135	138		13.88		15.20
100	QPSK	270	0		13.92		15.20
100	16QAM	1	1		13.76		15.20
100	64QAM	1	1		13.92		15.20
100	256QAM	1	1		13.34		14.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	13.91	14.01	13.99	15.20
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	13.76	13.90	13.84	15.20
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	13.79	13.88	13.87	15.20
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	13.84	13.94	13.94	15.20
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	13.76	13.93	13.91	15.20
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	13.83	13.87	13.98	15.20
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	13.82	13.90	13.91	15.20
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	13.79	13.99	13.93	15.20
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	13.88	13.87	13.96	15.20
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	13.90	13.96	13.85	15.20

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_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					650000		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		14.02		15.20
100	PI/2 BPSK	1	137		13.81		15.20
100	PI/2 BPSK	1	271		13.84		15.20
100	PI/2 BPSK	135	0		13.94		15.20
100	PI/2 BPSK	135	69		13.88		15.20
100	PI/2 BPSK	135	138		13.96		15.20
100	PI/2 BPSK	270	0		13.90		15.20
100	QPSK	1	1		13.91		15.20
100	QPSK	1	137		13.80		15.20
100	QPSK	1	271		13.88		15.20
100	QPSK	135	0		13.92		15.20
100	QPSK	135	69		13.90		15.20
100	QPSK	135	138		13.81		15.20
100	QPSK	270	0		13.92		15.20
100	16QAM	1	1		13.66		15.20
100	64QAM	1	1		13.86		15.20
100	256QAM	1	1		13.34		14.70
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	13.81	13.88	13.83	15.20
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	13.76	13.75	13.81	15.20
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	13.71	13.79	13.71	15.20
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	13.79	13.84	13.73	15.20
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	13.67	13.74	13.76	15.20
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	13.76	13.87	13.72	15.20
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	13.72	13.82	13.80	15.20
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	13.68	13.85	13.75	15.20
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	13.74	13.80	13.74	15.20
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	13.77	13.81	13.75	15.20

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_MIMO1】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		18.66		19.00
100	PI/2 BPSK	1	137		18.31		19.00
100	PI/2 BPSK	1	271		18.47		19.00
100	PI/2 BPSK	135	0		18.34		18.50
100	PI/2 BPSK	135	69		18.37		19.00
100	PI/2 BPSK	135	138		18.26		18.50
100	PI/2 BPSK	270	0		18.28		18.50
100	QPSK	1	1		18.37		19.00
100	QPSK	1	137		18.31		19.00
100	QPSK	1	271		18.36		19.00
100	QPSK	135	0		18.27		19.00
100	QPSK	135	69		18.34		19.00
100	QPSK	135	138		18.22		19.00
100	QPSK	270	0		18.24		19.00
100	16QAM	1	1		18.35		19.00
100	64QAM	1	1		18.34		19.00
100	256QAM	1	1		17.12		18.00
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	18.51	18.54	18.55	19.00
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	18.49	18.55	18.52	19.00
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	18.42	18.47	18.50	19.00
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	18.39	18.52	18.43	19.00
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	18.39	18.47	18.50	19.00
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	18.50	18.43	18.45	19.00
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	18.41	18.40	18.46	19.00
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	18.45	18.41	18.42	19.00
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	18.41	18.52	18.48	19.00
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	18.44	18.45	18.53	19.00

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_MIMO1】

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		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		18.69		19.00
100	PI/2 BPSK	1	137		18.20		19.00
100	PI/2 BPSK	1	271		18.36		19.00
100	PI/2 BPSK	135	0		18.22		19.00
100	PI/2 BPSK	135	69		18.34		19.00
100	PI/2 BPSK	135	138		18.25		19.00
100	PI/2 BPSK	270	0		18.29		19.00
100	QPSK	1	1		18.29		19.00
100	QPSK	1	137		18.29		19.00
100	QPSK	1	271		18.34		19.00
100	QPSK	135	0		18.23		19.00
100	QPSK	135	69		18.24		19.00
100	QPSK	135	138		18.10		19.00
100	QPSK	270	0		18.15		19.00
100	16QAM	1	1		18.36		19.00
100	64QAM	1	1		18.25		19.00
100	256QAM	1	1		17.12		18.00
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	18.56	18.55	18.53	19.00
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	18.62	18.51	18.43	19.00
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	18.57	18.45	18.48	19.00
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	18.63	18.54	18.38	19.00
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	18.64	18.50	18.49	19.00
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	18.63	18.41	18.48	19.00
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	18.56	18.47	18.39	19.00
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	18.66	18.46	18.41	19.00
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	18.65	18.44	18.40	19.00
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	18.61	18.52	18.44	19.00

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_Aux】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		15.18		16.40
100	PI/2 BPSK	1	137		15.13		16.40
100	PI/2 BPSK	1	271		15.08		16.40
100	PI/2 BPSK	135	0		15.01		16.40
100	PI/2 BPSK	135	69		15.24		16.40
100	PI/2 BPSK	135	138		15.18		16.40
100	PI/2 BPSK	270	0		15.12		16.40
100	QPSK	1	1		15.10		16.40
100	QPSK	1	137		15.08		16.40
100	QPSK	1	271		15.13		16.40
100	QPSK	135	0		15.02		16.40
100	QPSK	135	69		15.22		16.40
100	QPSK	135	138		15.25		16.40
100	QPSK	270	0		15.14		16.40
100	16QAM	1	1		15.06		16.40
100	64QAM	1	1		15.02		16.40
100	256QAM	1	1		14.94		15.90
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	15.12	15.16	15.09	16.40
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	15.10	15.09	15.06	16.40
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	15.08	15.14	15.06	16.40
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	15.03	15.09	15.05	16.40
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	15.04	15.12	15.06	16.40
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	15.08	15.02	15.05	16.40
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	15.05	15.08	14.96	16.40
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	15.01	15.15	15.04	16.40
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	15.05	15.03	15.02	16.40
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	14.97	15.08	14.99	16.40

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_Aux】

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		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		16.13		16.40
100	PI/2 BPSK	1	137		16.07		16.40
100	PI/2 BPSK	1	271		16.03		16.40
100	PI/2 BPSK	135	0		16.16		16.40
100	PI/2 BPSK	135	69		16.24		16.40
100	PI/2 BPSK	135	138		16.19		16.40
100	PI/2 BPSK	270	0		15.95		16.40
100	QPSK	1	1		16.12		16.40
100	QPSK	1	137		16.08		16.40
100	QPSK	1	271		15.99		16.40
100	QPSK	135	0		15.88		16.40
100	QPSK	135	69		15.93		16.40
100	QPSK	135	138		15.93		16.40
100	QPSK	270	0		15.97		16.40
100	16QAM	1	1		16.11		16.40
100	64QAM	1	1		16.08		16.40
100	256QAM	1	1		15.82		15.90
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	15.97	16.00	15.98	16.40
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	15.89	15.99	15.86	16.40
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	15.89	15.88	15.83	16.40
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	15.92	15.87	15.83	16.40
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	15.88	15.94	15.97	16.40
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	15.95	15.95	15.91	16.40
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	15.89	15.94	15.93	16.40
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	15.87	15.89	15.89	16.40
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	15.89	15.90	15.89	16.40
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	15.94	15.86	15.93	16.40

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		17.68		18.70
100	PI/2 BPSK	1	137		17.56		18.70
100	PI/2 BPSK	1	271		17.65		18.70
100	PI/2 BPSK	135	0		17.55		18.70
100	PI/2 BPSK	135	69		17.60		18.70
100	PI/2 BPSK	135	138		17.24		18.70
100	PI/2 BPSK	270	0		17.25		18.70
100	QPSK	1	1		17.37		18.70
100	QPSK	1	137		17.51		18.70
100	QPSK	1	271		17.72		18.70
100	QPSK	135	0		17.50		18.70
100	QPSK	135	69		17.56		18.70
100	QPSK	135	138		17.58		18.70
100	QPSK	270	0		17.58		18.70
100	16QAM	1	1		17.51		18.70
100	64QAM	1	1		17.66		18.70
100	256QAM	1	1		17.05		17.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	17.21	17.25	17.23	18.70
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	17.15	17.11	17.16	18.70
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	17.09	17.16	17.14	18.70
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	17.12	17.12	17.21	18.70
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	17.11	17.16	17.21	18.70
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	17.12	17.19	17.15	18.70
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	17.12	17.18	17.18	18.70
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	17.15	17.12	17.13	18.70
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	17.16	17.14	17.09	18.70
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	17.11	17.14	17.14	18.70

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_HPUE_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					650000		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		17.53		18.70
100	PI/2 BPSK	1	137		17.37		18.70
100	PI/2 BPSK	1	271		17.38		18.70
100	PI/2 BPSK	135	0		17.35		18.70
100	PI/2 BPSK	135	69		17.43		18.70
100	PI/2 BPSK	135	138		17.40		18.70
100	PI/2 BPSK	270	0		17.47		18.70
100	QPSK	1	1		17.33		18.70
100	QPSK	1	137		17.40		18.70
100	QPSK	1	271		17.48		18.70
100	QPSK	135	0		17.40		18.70
100	QPSK	135	69		17.39		18.70
100	QPSK	135	138		17.37		18.70
100	QPSK	270	0		17.48		18.70
100	16QAM	1	1		17.35		18.70
100	64QAM	1	1		17.47		18.70
100	256QAM	1	1		17.09		18.70
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	17.40	17.44	17.42	18.70
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	17.39	17.31	17.28	18.70
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	17.30	17.29	17.32	18.70
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	17.28	17.41	17.35	18.70
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	17.31	17.33	17.40	18.70
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	17.34	17.32	17.32	18.70
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	17.28	17.37	17.41	18.70
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	17.39	17.31	17.28	18.70
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	17.32	17.31	17.31	18.70
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	17.30	17.35	17.33	18.70

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_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					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		17.23		18.20
100	PI/2 BPSK	1	137		17.03		18.20
100	PI/2 BPSK	1	271		17.03		18.20
100	PI/2 BPSK	135	0		17.09		18.20
100	PI/2 BPSK	135	69		17.10		18.20
100	PI/2 BPSK	135	138		17.02		18.20
100	PI/2 BPSK	270	0		16.99		18.20
100	QPSK	1	1		16.94		18.20
100	QPSK	1	137		17.00		18.20
100	QPSK	1	271		17.08		18.20
100	QPSK	135	0		17.12		18.20
100	QPSK	135	69		17.16		18.20
100	QPSK	135	138		17.06		18.20
100	QPSK	270	0		16.96		18.20
100	16QAM	1	1		16.87		18.20
100	64QAM	1	1		17.07		18.20
100	256QAM	1	1		16.66		17.70
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	17.16	17.21	17.11	18.20
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	17.10	17.06	17.09	18.20
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	17.12	17.13	17.01	18.20
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	17.05	17.08	17.06	18.20
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	17.03	17.10	17.02	18.20
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	17.12	17.09	16.97	18.20
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	17.14	17.18	16.98	18.20
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	17.02	17.10	17.00	18.20
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	17.12	17.20	17.07	18.20
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	17.07	17.18	17.01	18.20

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_HPUE_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					650000		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		17.09		18.20
100	PI/2 BPSK	1	137		16.86		18.20
100	PI/2 BPSK	1	271		16.98		18.20
100	PI/2 BPSK	135	0		16.98		18.20
100	PI/2 BPSK	135	69		17.04		18.20
100	PI/2 BPSK	135	138		16.99		18.20
100	PI/2 BPSK	270	0		16.83		18.20
100	QPSK	1	1		16.83		18.20
100	QPSK	1	137		16.87		18.20
100	QPSK	1	271		16.95		18.20
100	QPSK	135	0		16.94		18.20
100	QPSK	135	69		17.01		18.20
100	QPSK	135	138		16.86		18.20
100	QPSK	270	0		16.80		18.20
100	16QAM	1	1		16.84		18.20
100	64QAM	1	1		16.94		18.20
100	256QAM	1	1		16.56		17.70
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	17.01	17.07	16.93	18.20
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	16.91	17.05	16.80	18.20
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	16.92	16.93	16.89	18.20
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	16.98	17.05	16.85	18.20
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	16.98	16.94	16.85	18.20
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	16.90	17.02	16.82	18.20
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	16.89	16.95	16.78	18.20
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	16.93	16.93	16.84	18.20
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	16.98	17.01	16.80	18.20
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	16.88	16.98	16.89	18.20

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_MIMO1】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		21.77		22.00
100	PI/2 BPSK	1	137		21.76		22.00
100	PI/2 BPSK	1	271		21.73		22.00
100	PI/2 BPSK	135	0		21.82		22.00
100	PI/2 BPSK	135	69		21.90		22.00
100	PI/2 BPSK	135	138		21.87		22.00
100	PI/2 BPSK	270	0		21.87		22.00
100	QPSK	1	1		21.71		22.00
100	QPSK	1	137		21.78		22.00
100	QPSK	1	271		21.73		22.00
100	QPSK	135	0		21.81		22.00
100	QPSK	135	69		21.84		22.00
100	QPSK	135	138		21.88		22.00
100	QPSK	270	0		21.85		22.00
100	16QAM	1	1		21.60		22.00
100	64QAM	1	1		21.70		22.00
100	256QAM	1	1		19.93		20.00
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	21.71	21.74	21.71	22.00
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	21.69	21.66	21.62	22.00
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	21.68	21.67	21.56	22.00
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	21.70	21.70	21.63	22.00
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	21.57	21.66	21.70	22.00
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	21.61	21.72	21.64	22.00
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	21.66	21.65	21.69	22.00
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	21.65	21.61	21.68	22.00
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	21.67	21.61	21.70	22.00
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	21.60	21.72	21.62	22.00

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_HPUE_MIMO1】

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		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		21.71		22.00
100	PI/2 BPSK	1	137		21.55		22.00
100	PI/2 BPSK	1	271		21.62		22.00
100	PI/2 BPSK	135	0		21.73		22.00
100	PI/2 BPSK	135	69		21.82		22.00
100	PI/2 BPSK	135	138		21.73		22.00
100	PI/2 BPSK	270	0		21.79		22.00
100	QPSK	1	1		21.41		22.00
100	QPSK	1	137		21.55		22.00
100	QPSK	1	271		21.56		22.00
100	QPSK	135	0		21.74		22.00
100	QPSK	135	69		21.72		22.00
100	QPSK	135	138		21.67		22.00
100	QPSK	270	0		21.76		22.00
100	16QAM	1	1		21.14		22.00
100	64QAM	1	1		21.50		22.00
100	256QAM	1	1		19.65		21.00
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	21.69	21.67	21.64	22.00
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	21.56	21.55	21.53	22.00
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	21.60	21.64	21.55	22.00
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	21.62	21.56	21.53	22.00
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	21.64	21.58	21.61	22.00
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	21.60	21.53	21.57	22.00
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	21.57	21.62	21.55	22.00
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	21.60	21.52	21.59	22.00
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	21.64	21.63	21.58	22.00
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	21.64	21.56	21.54	22.00

【FR1 n78 (27Q) FCC_Part 27Q (3450~3550MHz)_HPUE_Aux】

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		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		18.32		19.40
100	PI/2 BPSK	1	137		18.25		19.40
100	PI/2 BPSK	1	271		18.18		19.40
100	PI/2 BPSK	135	0		18.39		19.40
100	PI/2 BPSK	135	69		18.50		19.40
100	PI/2 BPSK	135	138		18.42		19.40
100	PI/2 BPSK	270	0		18.44		19.40
100	QPSK	1	1		18.27		19.40
100	QPSK	1	137		18.17		19.40
100	QPSK	1	271		18.09		19.40
100	QPSK	135	0		18.31		19.40
100	QPSK	135	69		18.43		19.40
100	QPSK	135	138		18.35		19.40
100	QPSK	270	0		18.39		19.40
100	16QAM	1	1		18.31		19.40
100	64QAM	1	1		18.29		19.40
100	256QAM	1	1		17.78		18.90
Channel				633000	633332	633666	Tune-up limit
Frequency (MHz)				3495	3499.98	3504.99	(dBm)
90	PI/2 BPSK	1	1	18.26	18.28	18.19	19.40
Channel				632668	633332	634000	Tune-up limit
Frequency (MHz)				3490.02	3499.98	3510	(dBm)
80	PI/2 BPSK	1	1	18.15	18.20	18.14	19.40
Channel				632334	633332	634332	Tune-up limit
Frequency (MHz)				3485.01	3499.98	3514.98	(dBm)
70	PI/2 BPSK	1	1	18.11	18.15	18.06	19.40
Channel				632000	633332	634666	Tune-up limit
Frequency (MHz)				3480	3499.98	3519.99	(dBm)
60	PI/2 BPSK	1	1	18.12	18.23	18.11	19.40
Channel				631668	633332	635000	Tune-up limit
Frequency (MHz)				3475.02	3499.98	3525	(dBm)
50	PI/2 BPSK	1	1	18.11	18.23	18.04	19.40
Channel				631334	633332	635332	Tune-up limit
Frequency (MHz)				3470.01	3499.98	3529.98	(dBm)
40	PI/2 BPSK	1	1	18.17	18.22	18.08	19.40
Channel				631000	633332	635666	Tune-up limit
Frequency (MHz)				3465	3499.98	3534.99	(dBm)
30	PI/2 BPSK	1	1	18.18	18.26	18.11	19.40
Channel				630668	633332	636000	Tune-up limit
Frequency (MHz)				3460.02	3499.98	3540	(dBm)
20	PI/2 BPSK	1	1	18.23	18.24	18.10	19.40
Channel				630500	633332	636166	Tune-up limit
Frequency (MHz)				3457.5	3499.98	3542.49	(dBm)
15	PI/2 BPSK	1	1	18.22	18.24	18.07	19.40
Channel				630334	633332	636332	Tune-up limit
Frequency (MHz)				3455.01	3499.98	3544.98	(dBm)
10	PI/2 BPSK	1	1	18.12	18.17	18.04	19.40

【FR1 n78 (270) FCC_Part 270 (3700~3800MHz)_HPUE_Aux】

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		
Frequency (MHz)					3750		
100	PI/2 BPSK	1	1		19.22		19.40
100	PI/2 BPSK	1	137		19.07		19.40
100	PI/2 BPSK	1	271		19.03		19.40
100	PI/2 BPSK	135	0		19.11		19.40
100	PI/2 BPSK	135	69		19.32		19.40
100	PI/2 BPSK	135	138		19.19		19.40
100	PI/2 BPSK	270	0		19.28		19.40
100	QPSK	1	1		19.17		19.40
100	QPSK	1	137		19.09		19.40
100	QPSK	1	271		19.10		19.40
100	QPSK	135	0		19.24		19.40
100	QPSK	135	69		19.22		19.40
100	QPSK	135	138		19.18		19.40
100	QPSK	270	0		19.23		19.40
100	16QAM	1	1		19.03		19.40
100	64QAM	1	1		19.05		19.40
100	256QAM	1	1		18.79		18.90
Channel				649668	650000	650332	Tune-up limit
Frequency (MHz)				3745.02	3750	3754.98	(dBm)
90	PI/2 BPSK	1	1	19.05	19.08	19.07	19.40
Channel				649334	650000	650666	Tune-up limit
Frequency (MHz)				3740.01	3750	3759.99	(dBm)
80	PI/2 BPSK	1	1	18.94	19.05	18.95	19.40
Channel				649000	650000	651000	Tune-up limit
Frequency (MHz)				3735	3750	3765	(dBm)
70	PI/2 BPSK	1	1	18.98	19.07	18.96	19.40
Channel				648668	650000	651332	Tune-up limit
Frequency (MHz)				3730.02	3750	3769.98	(dBm)
60	PI/2 BPSK	1	1	18.98	19.05	18.96	19.40
Channel				648334	650000	651666	Tune-up limit
Frequency (MHz)				3725.01	3750	3774.99	(dBm)
50	PI/2 BPSK	1	1	18.97	18.94	19.03	19.40
Channel				648000	650000	652000	Tune-up limit
Frequency (MHz)				3720	3750	3780	(dBm)
40	PI/2 BPSK	1	1	18.92	19.04	19.03	19.40
Channel				647668	650000	652332	Tune-up limit
Frequency (MHz)				3715.02	3750	3784.98	(dBm)
30	PI/2 BPSK	1	1	18.92	19.02	18.98	19.40
Channel				647334	650000	652666	Tune-up limit
Frequency (MHz)				3710.01	3750	3789.99	(dBm)
20	PI/2 BPSK	1	1	18.95	19.00	18.96	19.40
Channel				647168	650000	652832	Tune-up limit
Frequency (MHz)				3707.52	3750	3792.48	(dBm)
15	PI/2 BPSK	1	1	18.93	18.95	19.01	19.40
Channel				647000	650000	653000	Tune-up limit
Frequency (MHz)				3705	3750	3795	(dBm)
10	PI/2 BPSK	1	1	18.99	18.97	19.02	19.40

< 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

Main

Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71 /n71	LTE Band 12/ /n12	LTE Band 13 /n13	LTE Band 14 /n14	LTE Band 17	LTE Band 5 /n5	LTE Band 26 /n26	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	LTE Band 41/n41	LTE Band 42	LTE Band 43	LTE Band 48 /n48	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	846	1750	1907	695	715	784	795	713	848	848	1754	1779	1909	1914	2312	2567	2617	2687	3597	3597	3697	3975	3795
	Maximum power (dBm)	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.0	24.0	24.0	24.0	23.0	24.0	24.0	27.0	24.0	24.0	22.0	27.0	27.0
	Maximum rated power(mW)	281.84	281.84	281.84	281.84	281.84	281.84	281.84	281.84	281.84	281.84	251.19	251.19	251.19	251.19	199.53	251.19	251.19	501.19	251.19	251.19	158.49	501.19	501.19
Bottom Side	Separation distance(mm)	10.4																						
	exclusion threshold	24.9	35.9	37.4	22.6	22.9	24.0	24.2	22.9	25.0	25.0	32.0	32.2	33.4	33.4	29.2	38.7	39.1	79.0	45.8	45.8	29.3	96.1	93.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

MIMO 2

Exposure Position	Wireless Interface	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	LTE Band 41/n41	LTE Band 42	LTE Band 43	LTE Band 48 /n48	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	1754	1779	1909	1914	2312	2567	2617	2687	3597	3597	3697	3975	3795
	Maximum power (dBm)	24.0	24.0	24.0	24.0	23.0	24.0	24.0	27.0	24.0	24.0	22.0	27.0	27.0
	Maximum rated power(mW)	251.19	251.19	251.19	251.19	199.53	251.19	251.19	501.19	251.19	251.19	158.49	501.19	501.19
Bottom Side	Separation distance(mm)	10.4												
	exclusion threshold	32.0	32.2	33.4	33.4	29.2	38.7	39.1	79.0	45.8	45.8	29.3	96.1	93.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

MIMO 1

Exposure Position	Wireless Interface	LTE Band 41/n41	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	2687	3975	3795
	Maximum power (dBm)	27.0	27.0	27.0
	Maximum rated power(mW)	501.19	501.19	501.19
Bottom Side	Separation distance(mm)	10.4		
	exclusion threshold	79.0	96.1	93.9
	Testing required?	Yes	Yes	Yes

Aux

Exposure Position	Wireless Interface	LTE Band 41/n41	LTE Band n77	LTE Band n78
	Calculated Frequency (MHz)	2687	3975	3795
	Maximum power (dBm)	27.0	27.0	27.0
	Maximum rated power(mW)	501.19	501.19	501.19
Bottom Side	Separation distance(mm)	10.4		
	exclusion threshold	79.0	96.1	93.9
	Testing required?	Yes	Yes	Yes

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For 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.

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 (HSDPA / HSUPA / 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 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. The maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion.
 - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

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/n12/n41/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. 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.
 - g. For NR FDD was establishing connections via a base station simulator to use for output power measurement and SAR testing.

14.1 Body SAR

【WCDMA SAR】

Plot No	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9400	1880	AWAN	18.45	18.80	1.084	0.02	0.980	1.062
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9262	1852.4	AWAN	18.43	18.80	1.089	0.03	1.080	1.176
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9538	1907.6	AWAN	18.27	18.80	1.13	-0.03	0.944	1.067
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9262	1852.4	SAA	18.43	18.80	1.089	0.18	0.953	1.038
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9400	1880	SAA	18.45	18.80	1.084	-0.04	0.962	1.043
02	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Main	9538	1907.6	SAA	18.27	18.80	1.13	-0.10	0.917	1.036
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1413	1732.6	AWAN	19.46	19.90	1.107	0.01	0.949	1.051
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1312	1712.4	AWAN	19.36	19.90	1.132	0.04	0.855	0.968
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1513	1752.6	AWAN	19.42	19.90	1.117	0.05	1.050	1.173
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1513	1752.6	SAA	19.42	19.90	1.117	-0.00	0.912	1.019
03	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1312	1712.4	SAA	19.36	19.90	1.132	0.15	0.841	0.952
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Main	1413	1732.6	SAA	19.46	19.90	1.107	-0.15	0.900	0.996
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	Main	4233	846.6	AWAN	17.57	18.10	1.13	0.01	0.462	0.522
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	Main	4233	846.6	SAA	17.57	18.10	1.13	0.18	0.478	0.540
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	Main	4233	846.6	SAA	17.57	18.10	1.13	0.18	0.478	0.540



FCC SAR TEST REPORT

Report No. : FA5D1029B

[LTE SAR]

Plot No	Band	BW	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
04	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	21100	2535	AWAN	18.85	19.30	1.109			-0.02	0.986	1.093
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	20850	2510	AWAN	18.79	19.30	1.125			0.07	0.968	1.089
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	21350	2560	AWAN	18.77	19.30	1.13			0.17	1.040	1.175
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	Main	21100	2535	AWAN	17.95	18.80	1.216			0.01	0.793	0.964
	LTE Band 7	20M	QPSK	50	50	Bottom Side	0mm	Main	20850	2510	AWAN	17.85	18.80	1.245			-0.15	0.784	0.976
	LTE Band 7	20M	QPSK	50	50	Bottom Side	0mm	Main	21350	2560	AWAN	17.89	18.80	1.233			0.10	0.824	1.016
	LTE Band 7	20M	QPSK	100	0	Bottom Side	0mm	Main	21100	2535	AWAN	17.86	18.80	1.242			-0.12	0.797	0.990
	LTE Band 7C	20M	QPSK	1	0	Bottom Side	0mm	Main	21100+20902	2535	AWAN	18.79	19.30	1.125			0.08	0.929	1.045
	LTE Band 7C	20M	QPSK	1	99	Bottom Side	0mm	Main	20850+21048	2510	AWAN	18.71	19.30	1.146			0.01	0.912	1.045
	LTE Band 7C	20M	QPSK	1	0	Bottom Side	0mm	Main	21350+21152	2560	AWAN	18.57	19.30	1.183			0.03	0.980	1.159
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	21350	2560	SAA	18.77	19.30	1.13			0.05	0.802	0.906
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	20850	2510	SAA	18.79	19.30	1.125			-0.05	0.683	0.768
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	Main	21100	2535	SAA	18.85	19.30	1.109			0.16	0.718	0.796
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	21100	2535	AWAN	17.62	17.90	1.067			0.03	1.050	1.120
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	20850	2510	AWAN	17.48	17.90	1.102			0.15	1.010	1.113
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	21350	2560	AWAN	17.52	17.90	1.091			-0.04	1.060	1.156
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	21100	2535	AWAN	17.68	17.90	1.052			0.17	1.050	1.105
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	20850	2510	AWAN	17.49	17.90	1.099			0.16	0.994	1.092
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	21350	2560	AWAN	17.51	17.90	1.094			0.01	1.070	1.171
	LTE Band 7	20M	QPSK	100	0	Bottom Side	0mm	MIMO2	21100	2535	AWAN	17.63	17.90	1.064			0.11	1.060	1.128
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	21350	2560	SAA	17.51	17.90	1.094			-0.02	0.944	1.033
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	20850	2510	SAA	17.49	17.90	1.099			-0.00	0.868	0.954
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	21100	2535	SAA	17.68	17.90	1.052			-0.12	0.812	0.854
	LTE Band 12	10M	QPSK	1	0	Bottom Side	0mm	Main	23095	707.5	AWAN	18.35	19.40	1.274			-0.14	0.510	0.650
	LTE Band 12	10M	QPSK	25	0	Bottom Side	0mm	Main	23095	707.5	AWAN	17.33	18.90	1.435			0.14	0.401	0.575
05	LTE Band 12	10M	QPSK	1	0	Bottom Side	0mm	Main	23095	707.5	SAA	18.35	19.40	1.274			0.00	0.620	0.790
	LTE Band 13	10M	QPSK	1	0	Bottom Side	0mm	Main	23230	782	AWAN	18.42	18.80	1.091			-0.00	0.514	0.561
	LTE Band 13	10M	QPSK	25	0	Bottom Side	0mm	Main	23230	782	AWAN	17.46	18.30	1.213			-0.03	0.420	0.509
06	LTE Band 13	10M	QPSK	1	0	Bottom Side	0mm	Main	23230	782	SAA	18.42	18.80	1.091			-0.00	0.609	0.664
	LTE Band 14	10M	QPSK	1	0	Bottom Side	0mm	Main	23330	793	AWAN	18.36	18.60	1.057			0.13	0.520	0.550
	LTE Band 14	10M	QPSK	25	0	Bottom Side	0mm	Main	23330	793	AWAN	17.33	18.10	1.194			0.11	0.411	0.491
07	LTE Band 14	10M	QPSK	1	0	Bottom Side	0mm	Main	23330	793	SAA	18.36	18.60	1.057			-0.00	0.612	0.647
08	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26140	1860	AWAN	17.85	18.60	1.189			-0.00	1.000	1.189
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26340	1880	AWAN	17.81	18.60	1.199			-0.09	0.941	1.128
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26590	1905	AWAN	17.77	18.60	1.211			0.12	0.865	1.048
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	Main	26140	1860	AWAN	17.20	17.60	1.096			0.13	0.820	0.899
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	Main	26340	1880	AWAN	17.11	17.60	1.119			-0.13	0.794	0.888
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	Main	26590	1905	AWAN	17.19	17.60	1.099			-0.18	0.761	0.836
	LTE Band 25	20M	QPSK	100	0	Bottom Side	0mm	Main	26140	1860	AWAN	17.13	17.60	1.114			-0.02	0.818	0.911
	LTE Band 2C	20M	QPSK	1	99	Bottom Side	0mm	Main	18700+18898	1860	AWAN	17.56	18.60	1.271			0.07	0.819	1.041
	LTE Band 2C	20M	QPSK	1	0	Bottom Side	0mm	Main	18900+18702	1880	AWAN	17.54	18.60	1.276			-0.08	0.771	0.984
	LTE Band 2C	20M	QPSK	1	0	Bottom Side	0mm	Main	19100+18902	1900	AWAN	17.41	18.60	1.315			0.10	0.708	0.931
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26140	1860	SAA	17.85	18.60	1.189			-0.05	0.940	1.118
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26340	1880	SAA	17.81	18.60	1.199			-0.01	0.926	1.110
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	Main	26590	1905	SAA	17.77	18.60	1.211			-0.12	0.928	1.124
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26340	1880	AWAN	16.35	16.70	1.084			0.07	1.040	1.127
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26140	1860	AWAN	16.22	16.70	1.117			0.01	1.050	1.173
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26590	1905	AWAN	16.28	16.70	1.102			-0.04	0.967	1.066
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	26340	1880	AWAN	16.38	16.70	1.076			0.03	1.020	1.098
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	26140	1860	AWAN	16.15	16.70	1.135			-0.01	1.030	1.169
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	26590	1905	AWAN	16.24	16.70	1.112			0.10	0.957	1.064
	LTE Band 25	20M	QPSK	100	0	Bottom Side	0mm	MIMO2	26340	1880	AWAN	16.33	16.70	1.089			0.11	1.030	1.122
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26140	1860	SAA	16.22	16.70	1.117			0.09	0.991	1.107
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26340	1880	SAA	16.35	16.70	1.084			0.17	0.961	1.042
	LTE Band 25	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	26590	1905	SAA	16.28	16.70	1.102			-0.02	0.921	1.015
	LTE Band 26	15M	QPSK	1	0	Bottom Side	0mm	Main	26865	831.5	AWAN	18.03	18.50	1.115			-0.17	0.531	0.592
	LTE Band 26	15M	QPSK	36	0	Bottom Side	0mm	Main	26865	831.5	AWAN	17.11	17.50	1.094			0.06	0.423	0.463
	LTE Band 5B	10M	QPSK	1	49	Bottom Side	0mm	Main	20475+20574	841.5	AWAN	18.00	18.50	1.122			-0.04	0.500	0.561
09	LTE Band 26	15M	QPSK	1	0	Bottom Side	0mm	Main	26865	831.5	SAA	18.03	18.50	1.115			0.01	0.536	0.598
	LTE Band 30	10M	QPSK	1	0	Bottom Side	0mm	Main	27710	2310	AWAN	17.69	18.10	1.099			0.02	1.060	1.165
	LTE Band 30	10M	QPSK	25	0	Bottom Side	0mm	Main	27710	2310	AWAN	16.75	17.10	1.084			0.02	0.840	0.911
	LTE Band 30	10M	QPSK	50	0	Bottom Side	0mm	Main	27710	2310	AWAN	16.69	17.10	1.099			0.04	0.827	0.909
	LTE Band 30	10M	QPSK	1	0	Bottom Side	0mm	Main	27710	2310	SAA	17.69	18.10	1.099			0.01	1.070	1.176
10	LTE Band 30	10M	QPSK	1	0	Bottom Side	0mm	MIMO2	27710	2310	AWAN	16.94	17.30	1.086			-0.01	1.090	1.184
	LTE Band 30	10M	QPSK	25	0	Bottom Side	0mm	MIMO2	27710	2310	AWAN	16.81	17.30	1.119			0.07	1.050	1.175
	LTE Band 30	10M	QPSK	50	0	Bottom Side	0mm	MIMO2	27710	2310	AWAN	16.77	17.30	1.13			0.08	1.020	1.153
	LTE Band 30	10M	QPSK	1	0	Bottom Side	0mm	MIMO2	27710	2310	SAA	16.94	17.30	1.086			0.01	1.040	1.129



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	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132322	1745	AWAN	18.96	19.70	1.186			0.06	0.811	0.962
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132072	1720	AWAN	18.94	19.70	1.191			0.17	0.766	0.912
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132572	1770	AWAN	18.95	19.70	1.189			0.17	0.882	1.049
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	Main	132322	1745	AWAN	18.10	18.70	1.148			-0.13	0.661	0.759
	LTE Band 66	20M	QPSK	100	0	Bottom Side	0mm	Main	132322	1745	AWAN	18.11	18.70	1.146			0.10	0.667	0.764
	LTE Band 66B	20M	QPSK	1	0	Bottom Side	0mm	Main	132047+132140	1717.5	AWAN	18.87	19.70	1.211			-0.07	0.759	0.919
	LTE Band 66B	20M	QPSK	1	0	Bottom Side	0mm	Main	132229+132322	1735.7	AWAN	18.85	19.70	1.216			0.06	0.716	0.871
	LTE Band 66B	20M	QPSK	1	0	Bottom Side	0mm	Main	132504+132597	1763.2	AWAN	18.84	19.70	1.219			-0.05	0.825	1.006
	LTE Band 66C	20M	QPSK	1	99	Bottom Side	0mm	Main	132072+132270	1720	AWAN	18.87	19.70	1.211			0.05	0.783	0.948
	LTE Band 66C	20M	QPSK	1	0	Bottom Side	0mm	Main	132322+132124	1745	AWAN	18.81	19.70	1.227			0.06	0.729	0.894
	LTE Band 66C	20M	QPSK	1	0	Bottom Side	0mm	Main	132572+132374	1770	AWAN	18.81	19.70	1.227			-0.11	0.841	1.032
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132572	1770	SAA	18.95	19.70	1.189			0.01	0.931	1.107
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132072	1720	SAA	18.94	19.70	1.191			0.04	0.711	0.847
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Main	132322	1745	SAA	18.96	19.70	1.186			0.14	0.750	0.890
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132322	1745	AWAN	16.32	16.90	1.143			0.03	1.000	1.143
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132072	1720	AWAN	16.30	16.90	1.148			-0.04	0.918	1.054
11	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132572	1770	AWAN	16.18	16.90	1.18			-0.01	0.997	1.176
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	132322	1745	AWAN	16.25	16.90	1.161			-0.11	0.938	1.089
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	132072	1720	AWAN	16.18	16.90	1.18			-0.03	0.858	1.012
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	132572	1770	AWAN	16.02	16.90	1.225			-0.02	0.940	1.152
	LTE Band 66	20M	QPSK	100	0	Bottom Side	0mm	MIMO2	132322	1745	AWAN	16.19	16.90	1.178			-0.03	0.930	1.096
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132572	1770	SAA	16.18	16.90	1.18			0.17	0.857	1.011
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132072	1720	SAA	16.30	16.90	1.148			0.18	0.871	1.000
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	132322	1745	SAA	16.32	16.90	1.143			-0.16	0.878	1.004
	LTE Band 71	20M	QPSK	1	0	Bottom Side	0mm	Main	133297	680.5	AWAN	19.80	20.00	1.047			-0.18	0.841	0.881
	LTE Band 71	20M	QPSK	50	0	Bottom Side	0mm	Main	133297	680.5	AWAN	18.80	19.00	1.047			0.12	0.677	0.709
	LTE Band 71	20M	QPSK	100	0	Bottom Side	0mm	Main	133297	680.5	AWAN	18.64	19.00	1.086			-0.08	0.766	0.832
12	LTE Band 71	20M	QPSK	1	0	Bottom Side	0mm	Main	133297	680.5	SAA	19.80	20.00	1.047			0.13	0.885	0.927
13	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	41055	2636.5	AWAN	17.74	19.00	1.337	62.9	1.006	0.00	0.512	0.689
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	39750	2506	AWAN	17.65	19.00	1.365	62.9	1.006	0.08	0.411	0.564
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	40185	2549.5	AWAN	17.64	19.00	1.368	62.9	1.006	-0.12	0.427	0.588
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	40620	2593	AWAN	17.70	19.00	1.349	62.9	1.006	-0.03	0.454	0.616
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	41490	2680	AWAN	17.68	19.00	1.355	62.9	1.006	0.01	0.492	0.671
	LTE Band 41	20M	QPSK	50	0	Bottom Side	0mm	Main	41055	2636.5	AWAN	16.69	18.00	1.352	62.9	1.006	-0.17	0.415	0.564
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	Main	41055	2636.5	AWAN	20.59	20.60	1.002	42.9	1.009	-0.02	0.655	0.662
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	Main	39750	2506	AWAN	20.46	20.60	1.033	42.9	1.009	0.14	0.606	0.632
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	Main	40185	2549.5	AWAN	20.39	20.60	1.05	42.9	1.009	0.11	0.536	0.568
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	Main	40620	2593	AWAN	20.53	20.60	1.016	42.9	1.009	-0.02	0.616	0.631
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	Main	41490	2680	AWAN	20.47	20.60	1.03	42.9	1.009	0.18	0.447	0.465
	LTE Band 41C	20M	QPSK	1	99	Bottom Side	0mm	Main	39750+39948	2506	AWAN	17.72	19.00	1.343	62.9	1.006	0.06	0.481	0.650
	LTE Band 41C	20M	QPSK	1	0	Bottom Side	0mm	Main	40185+39987	2549.5	AWAN	17.65	19.00	1.365	62.9	1.006	0.03	0.386	0.530
	LTE Band 41C	20M	QPSK	1	0	Bottom Side	0mm	Main	40620+40422	2593	AWAN	17.70	19.00	1.349	62.9	1.006	-0.01	0.403	0.547
	LTE Band 41C	20M	QPSK	1	0	Bottom Side	0mm	Main	41055+40857	2636.5	AWAN	17.71	19.00	1.346	62.9	1.006	-0.15	0.429	0.581
	LTE Band 41C	20M	QPSK	1	0	Bottom Side	0mm	Main	41490+41292	2680	AWAN	17.70	19.00	1.349	62.9	1.006	0.11	0.462	0.627
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	41055	2636.5	SAA	17.74	19.00	1.337	62.9	1.006	-0.06	0.486	0.654
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	39750	2506	SAA	17.65	19.00	1.365	62.9	1.006	0.08	0.326	0.448
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	40185	2549.5	SAA	17.64	19.00	1.368	62.9	1.006	0.01	0.355	0.489
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	40620	2593	SAA	17.70	19.00	1.349	62.9	1.006	0.03	0.438	0.594
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	Main	41490	2680	SAA	17.68	19.00	1.355	62.9	1.006	-0.08	0.478	0.652
	LTE Band 41	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	40620	2593	AWAN	16.13	16.60	1.114	62.9	1.006	0.01	0.449	0.503
	LTE Band 41	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	40620	2593	AWAN	16.16	16.60	1.107	62.9	1.006	-0.01	0.390	0.434
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	40620	2593	AWAN	19.25	19.60	1.084	42.9	1.009	0.09	0.547	0.598
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	40620	2593	SAA	19.25	19.60	1.084	42.9	1.009	-0.03	0.568	0.621
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	39750	2506	SAA	19.12	19.60	1.117	42.9	1.009	0.04	0.486	0.548
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	40185	2549.5	SAA	19.18	19.60	1.102	42.9	1.009	0.11	0.533	0.593
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	41055	2636.5	SAA	19.09	19.60	1.125	42.9	1.009	-0.15	0.479	0.544
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	41490	2680	SAA	19.03	19.60	1.14	42.9	1.009	0.09	0.373	0.429
14	LTE Band 42	20M	QPSK	1	0	Bottom Side	0mm	Main	42590	3500	AWAN	16.95	17.30	1.084	62.9	1.006	0.13	0.555	0.605
	LTE Band 42	20M	QPSK	50	0	Bottom Side	0mm	Main	42590	3500	AWAN	16.08	16.30	1.052	62.9	1.006	-0.15	0.432	0.457
	LTE Band 42C	20M	QPSK	1	99	Bottom Side	0mm	Main	42190+42388	3460	AWAN	16.76	17.30	1.132	62.9	1.006	0.05	0.522	0.594
	LTE Band 42	20M	QPSK	1	0	Bottom Side	0mm	Main	42590	3500	SAA	16.95	17.30	1.084	62.9	1.006	0.01	0.496	0.541
	LTE Band 42	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	42590	3500	AWAN	17.40	17.60	1.047	62.9	1.006	-0.02	0.198	0.209
	LTE Band 42	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	42590	3500	AWAN	17.38	17.60	1.052	62.9	1.006	0.17	0.184	0.195
	LTE Band 42	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	42590	3500	SAA	17.38	17.60	1.052	62.9	1.006	0.03	0.242	0.256
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	45090	3750	AWAN	20.45	20.80	1.084	62.9	1.006	-0.00	0.770	0.840
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	44690	3710	AWAN	20.24	20.80	1.138	62.9	1.006	0.01	0.784	0.898
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	45490	3790	AWAN	20.33	20.80	1.114	62.9	1.006	0.03	0.690	0.773
	LTE Band 43	20M	QPSK	50	0	Bottom Side	0mm	Main	45090	3750	AWAN	19.42	19.80	1.091	62.9	1.006	0.04	0.578	0.634
	LTE Band 43	20M	QPSK	100	0	Bottom Side	0mm	Main	45090	3750	AWAN	19.40	19.80	1.096	62.9	1.006	0.06	0.565	0.623
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	44690	3710	SAA	20.24	20.80	1.138	62.9	1.006	-0.02	0.602	0.689
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	45090	3750	SAA	20.45	20.80	1.084	62.9	1.006	0.03	0.751	0.819
15	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	Main	45490	3790	SAA	20.33	20.80	1.114	62.9	1.006	0.00	0.856	0.959
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	44690	3710	AWAN	22.15	22.50	1.084	62.9	1.006	0.00	0.331	



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	LTE Band 43	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	44690	3710	AWAN	21.79	22.00	1.05	62.9	1.006	-0.09	0.259	0.274
	LTE Band 43	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	44690	3710	SAA	22.15	22.50	1.084	62.9	1.006	0.11	0.330	0.360
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	56640	3690	AWAN	19.34	20.10	1.191	62.9	1.006	-0.11	0.619	0.742
16	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	55340	3560	AWAN	18.99	20.10	1.291	62.9	1.006	-0.01	0.907	1.178
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	55830	3609	AWAN	19.11	20.10	1.256	62.9	1.006	0.09	0.846	1.069
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	56150	3641	AWAN	19.23	20.10	1.222	62.9	1.006	-0.01	0.728	0.895
	LTE Band 48	20M	QPSK	50	0	Bottom Side	0mm	Main	56640	3690	AWAN	18.31	19.10	1.199	62.9	1.006	0.13	0.489	0.590
	LTE Band 48	20M	QPSK	100	0	Bottom Side	0mm	Main	56640	3690	AWAN	18.27	19.10	1.211	62.9	1.006	-0.18	0.493	0.601
	LTE Band 48C	20M	QPSK	1	99	Bottom Side	0mm	Main	56442+56640	3690	AWAN	19.29	20.10	1.205	62.9	1.006	0.17	0.599	0.726
	LTE Band 48C	20M	QPSK	1	99	Bottom Side	0mm	Main	55340+55538	3560	AWAN	19.16	20.10	1.242	62.9	1.006	-0.05	0.878	1.097
	LTE Band 48C	20M	QPSK	1	99	Bottom Side	0mm	Main	55632+55830	3609	AWAN	19.20	20.10	1.23	62.9	1.006	-0.18	0.819	1.013
	LTE Band 48C	20M	QPSK	1	99	Bottom Side	0mm	Main	55952+56150	3641	AWAN	19.19	20.10	1.233	62.9	1.006	0.14	0.705	0.874
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	55340	3560	SAA	18.99	20.10	1.291	62.9	1.006	-0.01	0.687	0.892
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	55830	3609	SAA	19.11	20.10	1.256	62.9	1.006	0.16	0.651	0.823
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	56150	3641	SAA	19.23	20.10	1.222	62.9	1.006	-0.04	0.544	0.669
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	Main	56640	3690	SAA	19.34	20.10	1.191	62.9	1.006	0.15	0.440	0.527
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	56150	3641	AWAN	20.18	22.00	1.521	62.9	1.006	0.00	0.204	0.312
	LTE Band 48	20M	QPSK	50	0	Bottom Side	0mm	MIMO2	56150	3641	AWAN	19.12	21.00	1.542	62.9	1.006	-0.04	0.166	0.258
	LTE Band 48	20M	QPSK	1	0	Bottom Side	0mm	MIMO2	56150	3641	SAA	20.18	22.00	1.521	62.9	1.006	-0.02	0.189	0.289

【FR1 SAR】

Plot No	Band	BW	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
17	FR1 n7	40M	BPSK	1	1	Bottom Side	0mm	Main	507000	2535	AWAN	19.06	19.50	1.107	0.06	1.070	1.184
	FR1 n7	40M	BPSK	108	0	Bottom Side	0mm	Main	507000	2535	AWAN	19.01	19.50	1.119	-0.17	1.040	1.164
	FR1 n7	40M	BPSK	216	0	Bottom Side	0mm	Main	507000	2535	AWAN	18.50	19.50	1.259	0.07	0.935	1.177
	FR1 n7	40M	BPSK	1	1	Bottom Side	0mm	Main	507000	2535	SAA	19.06	19.50	1.107	-0.06	0.910	1.007
	FR1 n7	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	507000	2535	AWAN	17.54	17.70	1.038	0.01	1.130	1.173
	FR1 n7	40M	BPSK	108	54	Bottom Side	0mm	MIMO2	507000	2535	AWAN	17.58	17.70	1.028	0.02	1.110	1.141
	FR1 n7	40M	BPSK	216	0	Bottom Side	0mm	MIMO2	507000	2535	AWAN	17.52	17.70	1.042	0.14	1.110	1.157
	FR1 n7	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	507000	2535	SAA	17.54	17.70	1.038	0.03	1.020	1.059
	FR1 n12	15M	BPSK	1	1	Bottom Side	0mm	Main	141500	707.5	AWAN	18.92	19.40	1.117	-0.12	0.602	0.672
	FR1 n12	15M	BPSK	36	0	Bottom Side	0mm	Main	141500	707.5	AWAN	18.92	19.40	1.117	0.12	0.596	0.666
18	FR1 n12	15M	BPSK	1	1	Bottom Side	0mm	Main	141500	707.5	SAA	18.92	19.40	1.117	0.11	0.717	0.801
	FR1 n13	10M	BPSK	1	1	Bottom Side	0mm	Main	156400	782	AWAN	18.29	18.80	1.125	-0.09	0.486	0.547
	FR1 n13	10M	BPSK	25	0	Bottom Side	0mm	Main	156400	782	AWAN	18.25	18.80	1.135	0.11	0.478	0.543
19	FR1 n13	10M	BPSK	1	1	Bottom Side	0mm	Main	156400	782	SAA	18.29	18.80	1.125	0.17	0.612	0.689
	FR1 n14	10M	BPSK	1	1	Bottom Side	0mm	Main	158600	793	AWAN	18.45	18.90	1.109	0.15	0.473	0.525
	FR1 n14	10M	BPSK	25	0	Bottom Side	0mm	Main	158600	793	AWAN	18.34	18.90	1.138	0.03	0.454	0.517
20	FR1 n14	10M	BPSK	1	1	Bottom Side	0mm	Main	158600	793	SAA	18.45	18.90	1.109	0.17	0.602	0.668
	FR1 n25	40M	BPSK	1	1	Bottom Side	0mm	Main	376500	1882.5	AWAN	18.06	18.40	1.081	0.01	1.090	1.178
	FR1 n25	40M	BPSK	108	0	Bottom Side	0mm	Main	376500	1882.5	AWAN	17.96	18.40	1.107	0.15	1.060	1.173
	FR1 n25	40M	BPSK	216	0	Bottom Side	0mm	Main	376500	1882.5	AWAN	17.93	18.40	1.114	0.04	1.040	1.159
	FR1 n25	40M	BPSK	1	1	Bottom Side	0mm	Main	376500	1882.5	SAA	18.06	18.40	1.081	0.12	1.030	1.113
21	FR1 n25	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	376500	1882.5	AWAN	16.71	16.90	1.045	0.02	1.140	1.191
	FR1 n25	40M	BPSK	108	54	Bottom Side	0mm	MIMO2	376500	1882.5	AWAN	16.76	16.90	1.033	0.00	1.090	1.126
	FR1 n25	40M	BPSK	216	0	Bottom Side	0mm	MIMO2	376500	1882.5	AWAN	16.72	16.90	1.042	0.17	1.130	1.177
	FR1 n25	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	376500	1882.5	SAA	16.71	16.90	1.045	0.18	1.080	1.129
	FR1 n26	20M	BPSK	1	1	Bottom Side	0mm	Main	166300	831.5	AWAN	18.52	18.80	1.067	-0.15	0.522	0.557
	FR1 n26	20M	BPSK	50	0	Bottom Side	0mm	Main	166300	831.5	AWAN	18.47	18.80	1.079	0.17	0.515	0.556
22	FR1 n26	20M	BPSK	1	1	Bottom Side	0mm	Main	166300	831.5	SAA	18.52	18.80	1.067	0.01	0.527	0.562
	FR1 n30	10M	BPSK	1	1	Bottom Side	0mm	Main	462000	2310	AWAN	17.02	17.80	1.197	0.00	0.971	1.162
	FR1 n30	10M	BPSK	25	0	Bottom Side	0mm	Main	462000	2310	AWAN	16.85	17.80	1.245	0.01	0.949	1.182
	FR1 n30	10M	BPSK	50	0	Bottom Side	0mm	Main	462000	2310	AWAN	16.86	17.80	1.242	-0.18	0.946	1.175
	FR1 n30	10M	BPSK	25	0	Bottom Side	0mm	Main	462000	2310	SAA	16.85	17.80	1.245	-0.05	0.881	1.097
23	FR1 n30	10M	BPSK	1	1	Bottom Side	0mm	MIMO2	462000	2310	AWAN	16.36	16.80	1.107	-0.01	1.070	1.184
	FR1 n30	10M	BPSK	25	14	Bottom Side	0mm	MIMO2	462000	2310	AWAN	16.39	16.80	1.099	-0.00	1.050	1.154
	FR1 n30	10M	BPSK	50	0	Bottom Side	0mm	MIMO2	462000	2310	AWAN	16.36	16.80	1.107	-0.05	1.050	1.162
	FR1 n30	10M	BPSK	1	1	Bottom Side	0mm	MIMO2	462000	2310	SAA	16.36	16.80	1.107	0.18	0.968	1.072
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	Main	349000	1745	AWAN	18.81	19.60	1.199	-0.02	0.687	0.824
	FR1 n66	40M	BPSK	108	0	Bottom Side	0mm	Main	349000	1745	AWAN	18.75	19.60	1.216	0.01	0.655	0.796
	FR1 n66	40M	BPSK	216	0	Bottom Side	0mm	Main	349000	1745	AWAN	18.78	19.60	1.208	0.01	0.651	0.786
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	Main	349000	1745	SAA	18.81	19.60	1.199	0.12	0.705	0.845
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	349000	1745	AWAN	16.79	17.20	1.099	0.02	1.050	1.154
	FR1 n66	40M	BPSK	108	54	Bottom Side	0mm	MIMO2	349000	1745	AWAN	16.85	17.20	1.084	-0.03	1.030	1.117
	FR1 n66	40M	BPSK	216	0	Bottom Side	0mm	MIMO2	349000	1745	AWAN	16.75	17.20	1.109	-0.12	1.040	1.153
24	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	349000	1745	SAA	16.79	17.20	1.099	0.01	1.070	1.176
	FR1 n71	20M	BPSK	1	1	Bottom Side	0mm	Main	136100	680.5	AWAN	19.48	19.90	1.102	0.16	0.773	0.852
	FR1 n71	20M	BPSK	50	0	Bottom Side	0mm	Main	136100	680.5	AWAN	19.46	19.90	1.107	-0.06	0.759	0.840



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25	FR1 n71	20M	BPSK	100	0	Bottom Side	0mm	Main	136100	680.5	AWAN	19.42	19.90	1.117	-0.06	0.757	0.846
	FR1 n71	20M	BPSK	1	1	Bottom Side	0mm	Main	136100	680.5	SAA	19.48	19.90	1.102	0.12	0.848	0.934
	FR1 n41	100M	BPSK	1	1	Bottom Side	0mm	Main	518598	2592.99	AWAN	16.12	16.50	1.091	0.04	0.567	0.619
	FR1 n41	100M	BPSK	135	69	Bottom Side	0mm	Main	518598	2592.99	AWAN	16.08	16.50	1.102	0.01	0.618	0.681
	FR1 n41_HPUE	100M	BPSK	135	69	Bottom Side	0mm	Main	518598	2592.99	AWAN	19.40	19.50	1.023	0.02	0.591	0.605
	FR1 n41	100M	BPSK	135	69	Bottom Side	0mm	Main	518598	2592.99	SAA	16.08	16.50	1.102	-0.05	0.586	0.646
	FR1 n41	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	518598	2592.99	AWAN	14.65	15.80	1.303	0.06	0.613	0.799
	FR1 n41	100M	BPSK	135	69	Bottom Side	0mm	MIMO2	518598	2592.99	AWAN	14.58	15.80	1.324	0.02	0.528	0.699
	FR1 n41_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	518598	2592.99	AWAN	17.65	18.80	1.303	-0.00	0.598	0.779
	FR1 n41	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	518598	2592.99	SAA	14.65	15.80	1.303	-0.14	0.608	0.792
	FR1 n41	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	518598	2592.99	AWAN	17.46	18.20	1.186	-0.01	0.344	0.408
	FR1 n41	100M	BPSK	135	69	Bottom Side	0mm	MIMO1	518598	2592.99	AWAN	17.67	18.20	1.13	0.04	1.040	1.175
26	FR1 n41	100M	BPSK	270	0	Bottom Side	0mm	MIMO1	518598	2592.99	AWAN	17.66	18.20	1.132	0.16	1.050	1.189
	FR1 n41_HPUE	100M	BPSK	270	0	Bottom Side	0mm	MIMO1	518598	2592.99	AWAN	20.64	21.20	1.138	0.13	1.030	1.172
	FR1 n41	100M	BPSK	270	0	Bottom Side	0mm	MIMO1	518598	2592.99	SAA	17.66	18.20	1.132	0.13	1.010	1.143
	FR1 n41	100M	BPSK	1	1	Bottom Side	0mm	Aux	518598	2592.99	AWAN	18.84	19.70	1.219	0.01	0.947	1.154
	FR1 n41	100M	BPSK	135	69	Bottom Side	0mm	Aux	518598	2592.99	AWAN	18.77	19.70	1.239	-0.03	0.919	1.139
	FR1 n41	100M	BPSK	270	0	Bottom Side	0mm	Aux	518598	2592.99	AWAN	18.61	19.70	1.285	-0.16	0.891	1.145
	FR1 n41_HPUE	100M	BPSK	1	1	Bottom Side	0mm	Aux	518598	2592.99	AWAN	21.81	22.70	1.227	0.01	0.957	1.174
	FR1 n41_HPUE	100M	BPSK	1	1	Bottom Side	0mm	Aux	518598	2592.99	SAA	21.81	22.70	1.227	0.00	0.617	0.757
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	641666	3624.99	AWAN	17.08	18.40	1.355	0.07	0.851	1.153
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	638000	3570	AWAN	16.78	18.40	1.452	0.14	0.808	1.173
27	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	645332	3679.98	AWAN	17.06	18.40	1.361	0.13	0.668	0.909
	FR1 n48	40M	BPSK	50	0	Bottom Side	0mm	Main	641666	3624.99	AWAN	17.02	18.40	1.374	0.02	0.812	1.116
	FR1 n48	40M	BPSK	50	0	Bottom Side	0mm	Main	638000	3570	AWAN	16.69	18.40	1.483	0.10	0.787	1.167
	FR1 n48	40M	BPSK	50	0	Bottom Side	0mm	Main	645332	3679.98	AWAN	16.97	18.40	1.39	-0.17	0.636	0.884
	FR1 n48	40M	BPSK	100	0	Bottom Side	0mm	Main	641666	3624.99	AWAN	17.11	18.40	1.346	-0.07	0.787	1.059
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	638000	3570	SAA	16.78	18.40	1.452	0.18	0.612	0.889
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	641666	3624.99	SAA	17.08	18.40	1.355	0.02	0.548	0.743
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	Main	645332	3679.98	SAA	17.06	18.40	1.361	-0.10	0.543	0.739
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	645332	3679.98	AWAN	19.65	20.20	1.135	0.12	0.277	0.314
	FR1 n48	40M	BPSK	50	28	Bottom Side	0mm	MIMO2	645332	3679.98	AWAN	19.63	20.20	1.14	0.03	0.275	0.314
	FR1 n48	40M	BPSK	1	1	Bottom Side	0mm	MIMO2	645332	3679.98	SAA	19.65	20.20	1.135	0.02	0.315	0.358
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Main	633332	3499.98	AWAN	14.27	15.70	1.39	-0.08	0.521	0.724
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Main	633332	3499.98	AWAN	14.26	15.70	1.393	0.10	0.510	0.710
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	Main	633332	3499.98	AWAN	17.68	18.70	1.265	-0.18	0.526	0.665
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Main	633332	3499.98	SAA	14.27	15.70	1.39	0.10	0.456	0.634
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	633332	3499.98	AWAN	13.77	15.20	1.39	0.08	0.095	0.132
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	MIMO2	633332	3499.98	AWAN	13.79	15.20	1.384	0.01	0.093	0.129
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	633332	3499.98	AWAN	16.91	18.20	1.346	0.05	0.102	0.137
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	633332	3499.98	SAA	16.91	18.20	1.346	0.15	0.086	0.116
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	633332	3499.98	AWAN	18.66	19.00	1.081	-0.02	0.328	0.355
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	MIMO1	633332	3499.98	AWAN	18.37	19.00	1.156	0.17	0.297	0.343
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	633332	3499.98	AWAN	21.77	22.00	1.054	-0.00	0.336	0.354
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	633332	3499.98	SAA	21.77	22.00	1.054	-0.11	0.299	0.315
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Aux	633332	3499.98	AWAN	15.51	16.40	1.227	-0.07	0.875	1.074
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Aux	633332	3499.98	AWAN	15.67	16.40	1.183	0.03	0.936	1.107
	FR1 n77	100M	BPSK	270	0	Bottom Side	0mm	Aux	633332	3499.98	AWAN	15.64	16.40	1.191	0.01	0.827	0.985
	FR1 n77_HPUE	100M	BPSK	135	69	Bottom Side	0mm	Aux	633332	3499.98	AWAN	18.55	19.40	1.216	0.02	0.934	1.136
28	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Aux	633332	3499.98	SAA	15.67	16.40	1.183	0.06	0.871	1.030
	FR1 n77_HPUE	100M	BPSK	135	69	Bottom Side	0mm	Aux	633332	3499.98	SAA	18.55	19.40	1.216	0.06	0.930	1.131
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Main	656000	3840	AWAN	14.59	15.70	1.291	0.12	0.257	0.332
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Main	656000	3840	AWAN	14.54	15.70	1.306	0.08	0.247	0.323
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	Main	656000	3840	AWAN	17.56	18.70	1.3	-0.17	0.253	0.329
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Main	656000	3840	SAA	14.59	15.70	1.291	-0.03	0.231	0.298
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	656000	3840	AWAN	13.73	15.20	1.403	-0.17	0.078	0.109
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	MIMO2	656000	3840	AWAN	13.64	15.20	1.432	0.04	0.061	0.087
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	656000	3840	AWAN	16.89	18.20	1.352	-0.01	0.077	0.104
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	656000	3840	SAA	13.73	15.20	1.403	-0.08	0.119	0.167
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO2	656000	3840	SAA	16.89	18.20	1.352	0.05	0.127	0.172
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	656000	3840	AWAN	18.82	19.00	1.042	0.00	0.333	0.347
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	MIMO1	656000	3840	AWAN	18.53	19.00	1.114	-0.13	0.305	0.340
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	656000	3840	AWAN	21.76	22.00	1.057	-0.08	0.327	0.346
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	656000	3840	SAA	18.82	19.00	1.042	0.05	0.325	0.339
	FR1 n77_HPUE	100M	BPSK	1	1	Bottom Side	0mm	MIMO1	656000	3840	SAA	21.76	22.00	1.057	-0.06	0.319	0.337
	FR1 n77	100M	BPSK	1	1	Bottom Side	0mm	Aux	656000	3840	AWAN	16.43	16.70	1.064	-0.07	0.662	0.704
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Aux	656000	3840	AWAN	16.36	16.70	1.081	-0.03	0.708	0.765
	FR1 n77_HPUE	100M	BPSK	135	69	Bottom Side	0mm	Aux	656000	3840	AWAN	19.59	19.70	1.026	-0.10	0.675	0.693
	FR1 n77	100M	BPSK	135	69	Bottom Side	0mm	Aux	656000	3840	SAA	16.36	16.70	1.081	-0.05	0.664	0.718

14.2 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Ratio
1st	LTE Band 71	20M_QPSK_1_0	Bottom Side	0.0	Main	133297	680.5	SAA	19.80	20.00	1.047	0.13	0.885	0.927	-
2nd	LTE Band 71	20M_QPSK_1_0	Bottom Side	0.0	Main	133297	680.5	SAA	19.80	20.00	1.047	-0.06	0.850	0.890	1.04
1st	FR1 n66	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	349000	1745	SAA	16.79	17.20	1.099	0.01	1.070	1.176	-
2nd	FR1 n66	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	349000	1745	SAA	16.79	17.20	1.099	-0.11	1.030	1.132	1.04
1st	FR1 n25	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	376500	1882.5	AWAN	16.71	16.90	1.045	0.02	1.140	1.191	-
2nd	FR1 n25	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	376500	1882.5	AWAN	16.71	16.90	1.045	0.06	1.070	1.118	1.07
1st	LTE Band 30	10M_QPSK_1_0	Bottom Side	0.0	MIMO2	27710	2310	AWAN	16.94	17.30	1.086	-0.01	1.090	1.184	-
2nd	LTE Band 30	10M_QPSK_1_0	Bottom Side	0.0	MIMO2	27710	2310	AWAN	16.94	17.30	1.086	0.01	1.050	1.140	1.04
1st	FR1 n7	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	507000	2535	AWAN	17.54	17.70	1.038	0.01	1.130	1.173	-
2nd	FR1 n7	40M_BPSK_1_1	Bottom Side	0.0	MIMO2	507000	2535	AWAN	17.54	17.70	1.038	-0.05	1.100	1.142	1.03
1st	FR1 n77	100M_BPSK_135_69	Bottom Side	0.0	Aux	633332	3499.98	AWAN	15.67	16.40	1.183	0.03	0.936	1.107	-
2nd	FR1 n77	100M_BPSK_135_69	Bottom Side	0.0	Aux	633332	3499.98	AWAN	15.67	16.40	1.183	0.15	0.891	1.054	1.05

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.

14.3 Power Class 2 and Power Class 3 Linearity

General Note:

This device support Power Class 2 and Power Class 3 operations. 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 LTE and FR1 configuration and exposure condition combination, according to the highest time averaged power for 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%

Body

LTE Band 41_Main	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	19.0	20.6
Reported 1g SAR (W/kg)	0.689	0.662
Duty Cycle (%)	63.30%	43.30%
Frame Averaged (mW)	50.28	49.72
Linearity SAR(W/kg)	0.68	
% deviation from Expected Linearity		-2.84%

LTE Band 41_MIMO2	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	16.6	19.6
Reported 1g SAR (W/kg)	0.503	0.621
Duty Cycle (%)	63.30%	43.30%
Frame Averaged (mW)	28.93	39.49
Linearity SAR(W/kg)	0.69	
% deviation from Expected Linearity		-9.55%

FR1 n41_Main	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	16.5	19.5
Reported 1g SAR (W/kg)	0.619	0.605
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	44.67	44.56
Linearity SAR(W/kg)	0.62	
% deviation from Expected Linearity		-2.02%

FR1 n41_MIMO2	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	15.8	18.8
Reported 1g SAR (W/kg)	0.799	0.779
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	38.02	37.93
Linearity SAR(W/kg)	0.80	
% deviation from Expected Linearity		-2.27%

FR1 n41_MIMO1	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	18.2	21.2
Reported 1g SAR (W/kg)	1.189	1.172
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	66.07	65.91
Linearity SAR(W/kg)	1.19	
% deviation from Expected Linearity		-1.19%

FR1 n41_Aux	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	19.0	22.0
Reported 1g SAR (W/kg)	0.983	1.000
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	79.43	79.24
Linearity SAR(W/kg)	0.98	
% deviation from Expected Linearity		1.97%

FR1 n77 (27Q)_Main	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	15.7	18.7
Reported 1g SAR (W/kg)	0.724	0.665
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	37.15	37.07
Linearity SAR(W/kg)	0.72	
% deviation from Expected Linearity		-7.95%

FR1 n77 (27Q)_MIMO2	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	15.2	18.2
Reported 1g SAR (W/kg)	0.132	0.137
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	33.11	33.03
Linearity SAR(W/kg)	0.13	
% deviation from Expected Linearity		4.04%

FR1 n77 (27Q)_MIMO1	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	19.0	22.0
Reported 1g SAR (W/kg)	0.355	0.354
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	79.43	79.24
Linearity SAR(W/kg)	0.35	
% deviation from Expected Linearity		-0.04%

FR1 n77 (27Q)_Aux	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	16.4	19.4
Reported 1g SAR (W/kg)	1.107	1.136
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	43.65	43.55
Linearity SAR(W/kg)	1.10	
% deviation from Expected Linearity		2.86%

FR1 n77 (27Q)_Main	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	15.7	18.7
Reported 1g SAR (W/kg)	0.332	0.329
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	37.15	37.07
Linearity SAR(W/kg)	0.33	
% deviation from Expected Linearity		-0.69%

FR1 n77 (270)_MIMO2	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	15.2	18.2
Reported 1g SAR (W/kg)	0.167	0.172
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	33.11	33.03
Linearity SAR(W/kg)	0.17	
% deviation from Expected Linearity		3.24%

FR1 n77 (270)_MIMO1	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	19.0	22.0
Reported 1g SAR (W/kg)	0.347	0.346
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	79.43	79.24
Linearity SAR(W/kg)	0.35	
% deviation from Expected Linearity		-0.05%

FR1 n77 (270)_Aux	Power Class 3	Power Class 2
Max Tune Up Power (dBm)	16.7	19.7
Reported 1g SAR (W/kg)	0.765	0.693
Duty Cycle (%)	100.00%	50.00%
Frame Averaged (mW)	46.77	46.66
Linearity SAR(W/kg)	0.76	
% deviation from Expected Linearity		-9.20%

15. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
1.	WWAN Main + WWAN MIMO2 + WLAN/BT Main	Yes
2.	WWAN Main + WWAN MIMO2 + WLAN/BT Aux	Yes
3.	WWAN MIMO1 + WLAN/BT Main	Yes
4.	WWAN MIMO1 + WLAN/BT Aux	Yes
5.	WWAN Aux + WLAN/BT Main	Yes
6.	WWAN Aux + WLAN/BT Aux	Yes

General Note:

- The WiFi/BT SAR of 1.59 W/kg was used conservatively for the purpose of simultaneous transmission analysis.
- This device is enabled with Qualcomm® Smart Transmit Gen2 with pre-defined antenna groups (AG0 and AG1). Simultaneous transmission analysis is performed per antenna groups. The AG0 as Main/MIMO1 antenna and AG1 as MIMO 2/Aux Antenna.
- WWAN MIMO1 and Aux antenna only support SRS operation.
- 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 < 1g 1.6W/kg or 10g 4.0W/kg.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - If $SPLSR \leq 0.04$ for 1g SAR, ≤ 0.1 for 10g SAR, simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg or 10g SAR < 4.0W/kg.
 - Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
 - The SPLSR calculated results please refer to section 15.2.

Qualcomm Smart Transmit Simultaneous Transmission Guidance

Based on Qualcomm Smart Transmit simultaneous transmission analysis guidance, If all radios are selected to be under Smart Transmit control, then RF exposure from radios are managed by Smart Transmit in the same way. No additional TER analysis is needed

Smart Transmit current implementation assumes hotspots from all active radios are collocated. Therefore, for a total of 100% exposure margin, if primary radio uses x%, then the exposure margin left for secondary radio(s) is capped to (100-x)%. Thus, the compliance equation for simultaneous active radios, such as follow,

$$x\% * A + (100-x)\% * B \leq 1.0$$

where, A is normalized time-averaged SAR exposure corresponding to “maximum of {minimum [EFS Plimit + device uncertainty; NV setting Pmax + device uncertainty]; EFS Plimit}” from primary radio, and $A \leq 1.0$; B for secondary radio(s) is

(for legacy radio or sub6 NR): normalized time-averaged SAR exposure corresponding to “maximum of {minimum [EFS Plimit + device uncertainty; NV setting Pmax + device uncertainty]; EFS Plimit } ”

and $B \leq 1.0$. As can be seen, A and B by definition is the exposure corresponding to “maximum of {minimum [EFS Plimit + device uncertainty; NV setting Pmax + device uncertainty]; EFS Plimit}”, and it is NOT defined as reported exposure

The total RF exposure in this simultaneous transmission scenario is controlled and managed within Smart Transmit operation, and the compliance is demonstrated in Part 2 test.

15.1 Body Exposure Conditions

WWAN Ant	WWAN Ant	Exposure Position	1	2	3	4	1+2+3+4 Summed 1g SAR (W/kg)	SPLSR	Case No
			WWAN	WWAN	WLAN/BT Main	WLAN/BT Aux			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
Main	MIMO2	Bottom Side at 0mm	1.189	1.191	1.590	1.590	5.560	0.040	Case 1

WWAN Ant	Exposure Position	1	2	3	1+2+3 Summed 1g SAR (W/kg)	SPLSR	Case No
		WWAN	WLAN/BT Main	WLAN/BT Aux			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
MIMO1	Bottom Side at 0mm	1.189	1.590	1.590	4.369	0.040	Case 2

WWAN Ant	Exposure Position	1	2	3	1+2+3 Summed 1g SAR (W/kg)	SPLSR	Case No
		WWAN	WLAN/BT Main	WLAN/BT Aux			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
Aux	Bottom Side at 0mm	1.174	1.590	1.590	4.354	0.040	Case 3

15.2 SPLSR Evaluation and Analysis

General Note:

- According to the antenna locations in Appendix D, the minimum distance between each transmit antenna is used for SPLSR analysis.
- $SPLSR = (SAR_1 + SAR_2)^{1.5} / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D/Min distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 1	WWAN Main	Bottom Side	1.189	0mm	-101.9	102.8	-177	253.5	2.38	0.01	Not required
	WWAN MIMO2		1.191	0mm	-77.2	-149.5	-177				
	WWAN Main	Bottom Side	1.189	0mm				191.0	2.78	0.02	Not required
	WLAN Main		1.59	0mm							
	WWAN Main	Bottom Side	1.189	0mm				230.0	2.78	0.02	Not required
	WLAN Aux		1.59	0mm							
	WWAN MIMO2	Bottom Side	1.191	0mm				255.0	2.78	0.02	Not required
	WLAN Main		1.59	0mm							
	WWAN MIMO2	Bottom Side	1.191	0mm				167.7	2.78	0.03	Not required
	WLAN Aux		1.59	0mm							
	WLAN Main	Bottom Side	1.59	0mm				134.0	3.18	0.04	Not required
	WLAN Aux		1.59	0mm							
Case 2	Band	Position	SAR (W/kg)	Gap (mm)				Min distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WWAN MIMO1	Bottom Side	1.189	0mm				167.7	2.78	0.03	Not required
	WLAN Main		1.59	0mm							
	WWAN MIMO1	Bottom Side	1.189	0mm				255.0	2.78	0.02	Not required
	WLAN Aux		1.59	0mm							
	WLAN Main	Bottom Side	1.59	0mm				134.0	3.18	0.04	Not required
	WLAN Aux		1.59	0mm							
Case 3	Band	Position	SAR (W/kg)	Gap (mm)				Min distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WWAN Aux	Bottom Side	1.174	0mm				230.0	2.76	0.02	Not required
	WLAN Main		1.59	0mm							
	WWAN Aux	Bottom Side	1.174	0mm				191.0	2.76	0.02	Not required
	WLAN Aux		1.59	0mm							
	WLAN Main	Bottom Side	1.59	0mm				134.0	3.18	0.04	Not required
	WLAN Aux		1.59	0mm							

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16. Uncertainty Assessment

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

Declaration of Conformity:

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

Comments and Explanations:

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

17. References

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