



FCC RF Test Report

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : Xiaomi
MODEL NAME : M1810E5GG
FCC ID : 2AFZZ-XMSE5GG
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jan. 16, 2019 and completely tested on Mar. 01, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

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

NVLAP[®]
TESTING
NVLAP LAB CODE 600155-0

Approved by: James Huang / Manager

Sportun International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone,
Jiangsu Province 215335, China



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REVISION HISTORY



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7) (Band 38) (Band 41)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5)	< 43+10log10(P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5)	< 43+10log10(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22H	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 25.18 dB at 10332.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		



1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.2 Manufacturer

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Xiaomi
Model Name	M1810E5GG
FCC ID	2AFZZ-XMSE5GG
EUT supports Radios application	CDMA/EVDO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+(16QAM uplink is not supported)/LTE WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE GNSS/NFC
IMEI Code	Conducted: 99001282001631/865578040025453 Radiation: 865578040026006 for Band 2 / 4 / 41 / 38CA 865578040025651 for Band 5 / 7 / 7CA
HW Version	P2.0
SW Version	MIUI 10
EUT Stage	Identical Prototype

Note: There are two types of EUT sample 1 and sample 2, the differences between two samples is for memory, sample 1 is 6+128GB capacity and sample 2 is 6+64GB capacity. According to the difference, we only choose sample 1 to perform full tests



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
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 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.23 dBm LTE Band 4 : 22.96 dBm LTE Band 5 : 22.65 dBm LTE Band 7 : 23.28 dBm; Band 7C_CCA: 23.98 dBm LTE Band 38 : 23.30 dBm; Band 38C_CCA: 23.98 dBm LTE Band 41 : 23.38 dBm
Antenna Gain	Top Antenna: LTE Band 2 : -1.52 dBi LTE Band 4 : -1.31 dBi LTE Band 5 : -5.51 dBi LTE Band 7 : 0.48 dBi LTE Band 38 : 0.84 dBi LTE Band 41 : 1.35 dBi Bottom Antenna: LTE Band 2 : -1.56 dBi LTE Band 4 : -1.21 dBi LTE Band 5 : -2.70 dBi LTE Band 7 : -0.07 dBi LTE Band 38 : 0.37 dBi LTE Band 41 : 0.37 dBi
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM(Downlink only)

Note: The Maximum ERP/EIRP is calculated from Max Output power and Max antenna gain.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 2		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1909.3	1M09G7D	-	0.1387	1M09W7D	-	0.1186
3	1851.5 ~ 1908.5	2M73G7D	-	0.1346	2M73W7D	-	0.1143
5	1852.5 ~ 1907.5	4M49G7D	-	0.1403	4M49W7D	-	0.1202
10	1855.0 ~ 1905.0	9M01G7D	0.0029	0.1396	9M07W7D	-	0.1194
15	1857.5 ~ 1902.5	13M5G7D	-	0.1416	13M5W7D	-	0.1208
20	1860.0 ~ 1900.0	18M5G7D	-	0.1483	18M5W7D	-	0.1256
LTE Band 2		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1850.7 ~ 1909.3	1M10W7D		-		0.1119	
3	1851.5 ~ 1908.5	2M75W7D		-		0.1084	
5	1852.5 ~ 1907.5	4M49W7D		-		0.1148	
10	1855.0 ~ 1905.0	9M05W7D		-		0.1140	
15	1857.5 ~ 1902.5	13M5W7D		-		0.1148	
20	1860.0 ~ 1900.0	18M5W7D		-		0.1199	
LTE Band 4		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1710.7 ~ 1754.3	1M09G7D	-	0.1472	1M10W7D	-	0.1262
3	1711.5 ~ 1753.5	2M73G7D	-	0.1496	2M75W7D	-	0.1279
5	1712.5 ~ 1752.5	4M51G7D	-	0.1466	4M49W7D	-	0.1259
10	1715.0 ~ 1750.0	9M07G7D	0.0031	0.1455	9M07W7D	-	0.1242
15	1717.5 ~ 1747.5	13M5G7D	-	0.1472	13M5W7D	-	0.1268
20	1720.0 ~ 1745.0	18M3G7D	-	0.1496	18M5W7D	-	0.1274
LTE Band 4		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1710.7 ~ 1754.3	1M09W7D		-		0.1194	
3	1711.5 ~ 1753.5	2M73W7D		-		0.1236	
5	1712.5 ~ 1752.5	4M50W7D		-		0.1183	



10	1715.0 ~ 1750.0	8M99W7D	-	0.1180			
15	1717.5 ~ 1747.5	13M5W7D	-	0.1202			
20	1720.0 ~ 1745.0	18M4W7D	-	0.1211			
LTE Band 5		QPSK		16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	824.7 ~ 848.3	1M09G7D	-	0.0583	1M10W7D	-	0.0502
3	825.5 ~ 847.5	2M72G7D	-	0.0598	2M72W7D	-	0.0515
5	826.5 ~ 846.5	4M50G7D	-	0.0585	4M49W7D	-	0.0506
10	829.0 ~ 844.0	9M07G7D	0.0085	0.0603	9M07W7D	-	0.0506
LTE Band 5		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)	
1.4	824.7 ~ 848.3	1M09W7D		-		0.0482	
3	825.5 ~ 847.5	2M73W7D		-		0.0493	
5	826.5 ~ 846.5	4M50W7D		-		0.0481	
10	829.0 ~ 844.0	9M03W7D		-		0.0483	
LTE Band 7		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2502.5 ~ 2567.5	4M50G7D	-	0.2280	4M52W7D	-	0.1959
10	2505.0 ~ 2565.0	9M03G7D	0.0027	0.2208	9M03W7D	-	0.1901
15	2507.5 ~ 2562.5	13M4G7D	-	0.2270	13M5W7D	-	0.1991
20	2510.0 ~ 2560.0	18M4G7D	-	0.2377	18M4W7D	-	0.1995
LTE Band 7		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2502.5 ~ 2567.5	4M51W7D		-		0.1888	
10	2505.0 ~ 2565.0	9M07W7D		-		0.1816	
15	2507.5 ~ 2562.5	13M5W7D		-		0.1879	
20	2510.0 ~ 2560.0	18M4W7D		-		0.2099	
LTE Band 38		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)



5	2572.5 ~ 2617.5	4M50G7D	-	0.2958	4M49W7D	-	0.2642
10	2575.0 ~ 2615.0	9M01G7D	0.0020	0.2917	9M09W7D	-	0.2432
15	2577.5 ~ 2612.5	13M5G7D	-	0.2965	13M5W7D	-	0.2506
20	2580.0 ~ 2610.0	18M4G7D	-	0.2972	18M4W7D	-	0.2344
LTE Band 38		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2572.5 ~ 2617.5	4M50W7D		-		0.2355	
10	2575.0 ~ 2615.0	9M05W7D		-		0.2291	
15	2577.5 ~ 2612.5	13M5W7D		-		0.2344	
20	2580.0 ~ 2610.0	18M4W7D		-		0.2178	
LTE Band 41		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2498.5 ~ 2687.5	4M50G7D	-	0.2958	4M49W7D	-	0.2642
10	2501.0 ~ 2685.0	9M01G7D	0.0020	0.2917	9M09W7D	-	0.2432
15	2503.5 ~ 2682.5	13M5G7D	-	0.2965	13M5W7D	-	0.2506
20	2506.0 ~ 2680.0	18M4G7D	-	0.2972	18M4W7D	-	0.2344
LTE Band 41		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2498.5 ~ 2687.5	4M50W7D		-		0.2355	
10	2501.0 ~ 2685.0	9M05W7D		-		0.2291	
15	2503.5 ~ 2682.5	13M5W7D		-		0.2344	
20	2506.0 ~ 2680.0	18M4W7D		-		0.2178	



LTE Band 7 CA	QPSK			16QAM		
BW (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
10MHz+20MHz	28M1G7D	-	0.2742	28M1W7D	-	0.2553
15MHz+15MHz	28M8G7D	-	0.2793	28M4W7D	-	0.2636
15MHz+20MHz	33M0G7D	-	0.2748	33M2W7D	-	0.2618
15MHz+10MHz	23M4G7D	-	0.2748	23M5W7D	-	0.2649
20MHz+10MHz	28M2G7D	-	0.2793	28M1W7D	-	0.2529
20MHz+15MHz	32M9G7D	-	0.2773	32M9W7D	-	0.2624
20MHz+20MHz	37M6G7D	-	0.2780	37M7W7D	-	0.2582
LTE Band 7C_CA	64QAM					
BW (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
10MHz+20MHz	28M1W7D		-		0.1687	
15MHz+15MHz	28M4W7D		-		0.1663	
15MHz+20MHz	32M7W7D		-		0.1742	
15MHz+10MHz	23M3W7D		-		0.1746	
20MHz+10MHz	27M9W7D		-		0.1706	
20MHz+15MHz	32M9W7D		-		0.1820	
20MHz+20MHz	37M7W7D		-		0.1977	
LTE Band 38 CA	QPSK			16QAM		
BW (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
15MHz+15MHz	28M7G7D	-	0.3020	28M9W7D	-	0.2576
20MHz+20MHz	37M8G7D	-	0.3034	37M7W7D	-	0.2661
LTE Band 38 CA	64QAM					
BW (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
15MHz+15MHz	28M7W7D		-		0.1706	
20MHz+20MHz	37M8W7D		-		0.1945	



1.7 Testing Location

Sportun International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0).

Test Site	Sportun International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958		
Test Site No.	Sportun Site No.	FCC designation No.	FCC Test Firm Registration No.
	TH01-KS 03CH04-KS 03CH05-KS 03CH06-KS	CN5013	630927

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2							v	v	v	v			v	v	v
	4							v	v	v	v			v	v	v
	5				v	-	-	v	v	v	v			v	v	v
	7	-	-					v	v	v	v			v	v	v
	41	-	-					v	v	v	v			v	v	v



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v	v				v	v	v
	4	v	v	v	v	v	v	v	v	v				v	v	v
	5	v	v	v	v	-	-	v	v	v				v	v	v
	7	-	-	v	v	v	v	v	v	v				v	v	v
	41	-	-	v	v	v	v	v	v	v				v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Frequency Stability	2				v			v						v	v	
	4				v			v						v	v	
	5				v	-	-	v						v	v	
	7	-	-	v			v	v						v	v	
	41	-	-	v			v	v						v	v	

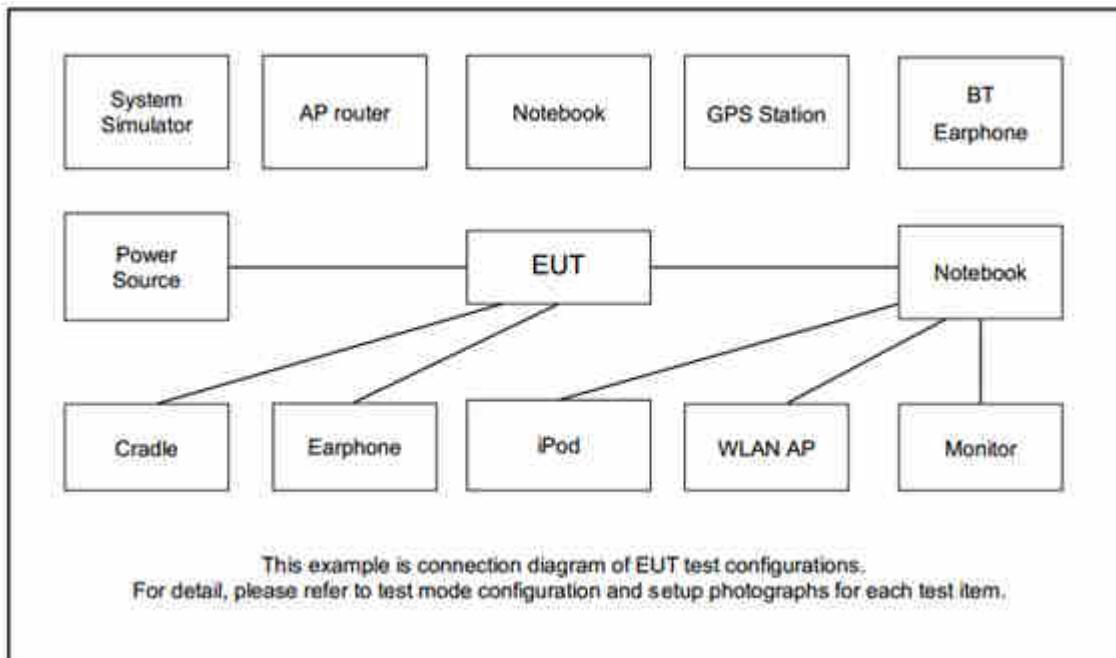


Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	2	Worst Case												v		
	4	Worst Case												v		
	5	Worst Case												v		
	7	Worst Case												v		
	41	Worst Case												v		
Note	<ol style="list-style-type: none">The mark "v" means that this configuration is chosen for testingThe mark "-" means that this bandwidth is not supported.The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.															



Test Items	Band	Bandwidth (MHz)												Modulation			RB #			Test Channel		
		20+20	20+15	15+20	20+10	10+20	20+5	5+20	15+15	15+10	10+15	QPSK	16QAM	64QAM	1	Half	Full	L	M	H		
Max. Output Power	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v	v	v	v		
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v	v	v	v	v		
26dB and 99% Bandwidth	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v			v	v	v	v		
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v			v	v	v	v		
Conducted Band Edge	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v	v	v	v		
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v	v	v	v	v		
Conducted Spurious Emission	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v		v	v	v		
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v		v	v	v		
E.I.R.P.	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v		v	v	v		
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v		v	v	v		
Radiated Spurious Emission	7C_CA	Worst Case																v				
	38C_CA	Worst Case																v				
Note		1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.																				

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

$\text{Offset} = \text{RF cable loss}$.

Following shows an offset computation example with cable loss 4.5 dB.

Example :

$$\text{Offset(dB)} = \text{RF cable loss(dB)}.$$

$$= 4.5 \text{ (dB)}$$



2.5 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3



LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5



LTE Band 38 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	37850	38000	38150
	Frequency	2580	2595	2610
15	Channel	37825	38000	38175
	Frequency	2577.5	2595	2612.5
10	Channel	37800	38000	38200
	Frequency	2575	2595	2615
5	Channel	37775	38000	38225
	Frequency	2572.5	2595	2617.5

LTE Band 41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5



LTE Band 7C_CA Channel and Frequency List					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	20850	21001	21152
		Frequency	2510.0	2525.1	2540.2
	SCC	Channel	21048	21199	21350
		Frequency	2529.8	2544.9	2560.0
20 + 15	PCC	Channel	20850	21026	21201
		Frequency	2510.0	2527.6	2545.1
	SCC	Channel	21021	21197	21372
		Frequency	2527.1	2544.7	2562.2
15 + 20	PCC	Channel	20828	21003	21179
		Frequency	2507.8	2525.3	2542.9
	SCC	Channel	20999	21174	21350
		Frequency	2524.9	2542.4	2560.0
20 + 10	PCC	Channel	20850	21051	21251
		Frequency	2510.0	2530.1	2550.1
	SCC	Channel	20994	21195	21395
		Frequency	2524.4	2544.5	2564.5
10 + 20	PCC	Channel	20805	21006	21206
		Frequency	2505.5	2525.6	2545.6
	SCC	Channel	20949	21150	21350
		Frequency	2519.9	2540.0	2560.0
15 + 15	PCC	Channel	20825	21025	21225
		Frequency	2507.5	2527.5	2547.5
	SCC	Channel	20975	21175	21375
		Frequency	2522.5	2542.5	2562.5
15 + 10	PCC	Channel	20825	21051	21277
		Frequency	2507.5	2530.1	2552.7
	SCC	Channel	20945	21171	21397
		Frequency	2519.5	2542.1	2564.7



LTE Band 38C_CA Channel and Frequency List					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	37850	37901	37952
		Frequency	2580.0	2585.1	2590.2
	SCC	Channel	38048	38099	38150
		Frequency	2599.8	2604.9	2610.0
15+ 15	PCC	Channel	37825	37925	38025
		Frequency	2577.5	2587.5	2597.5
	SCC	Channel	37975	38075	38175
		Frequency	2592.5	2602.5	2612.5

3 Conducted Test Items

3.1 Measuring Instruments

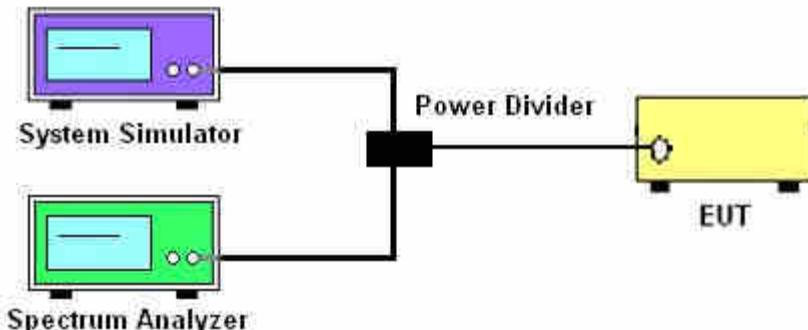
See list of measuring instruments of this test report.

3.2 Test Setup

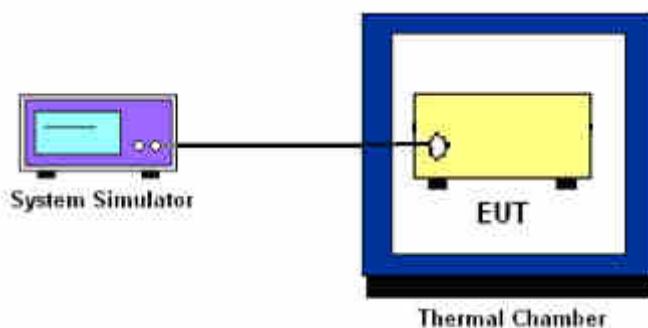
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.



3.4 Conducted Output Power and ERP/EIRP

3.4.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 7 and Band 38 and Band 41.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.



3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.



3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.



3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
6. Set spectrum analyzer with RMS detector.
7. Offset has included the duty factor for LTE Band 38/41. Duty factor = $10 \log(1/x)$, where x is the measured duty cycle
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$\begin{aligned} &= P(W) - [43 + 10\log(P)] \text{ (dB)} \\ &= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13 \text{ dBm}. \end{aligned}$$

10. For LTE Band 7, 38, 41, the other 40 dB, and 55 dB have additionally applied same calculation above.



3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log(P)$ dB.

For Band 7,38,41:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log(P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Offset has included the duty factor for LTE Band 38/41. Duty factor = $10 \log(1/x)$, where x is the measured duty cycle
9. Taking the record of maximum spurious emission.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.
12. For Band 7, 38, 41
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [55 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[55 + 10\log(P)]$ (dB)
 $= -25$ dBm.



3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at $20 \pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

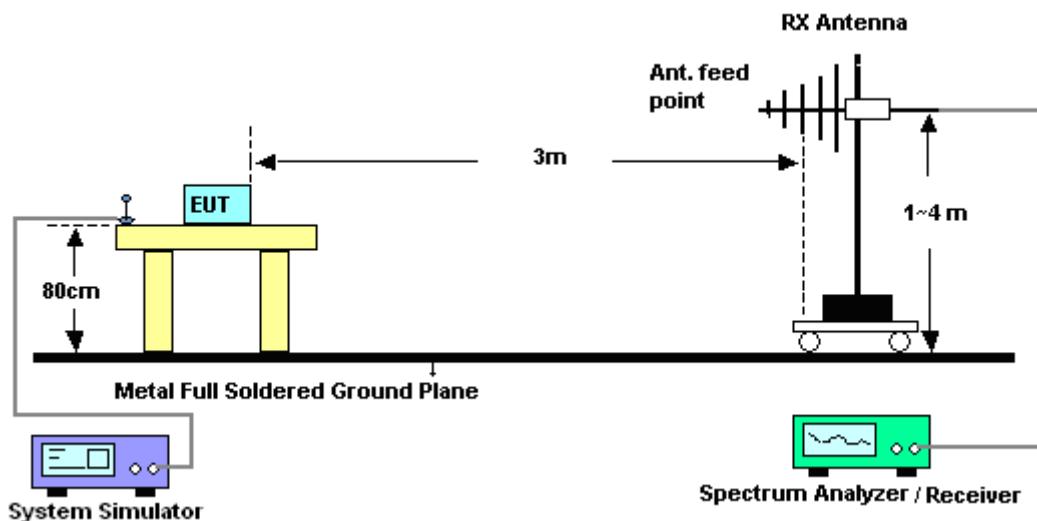
4 Radiated Test Items

4.1 Measuring Instruments

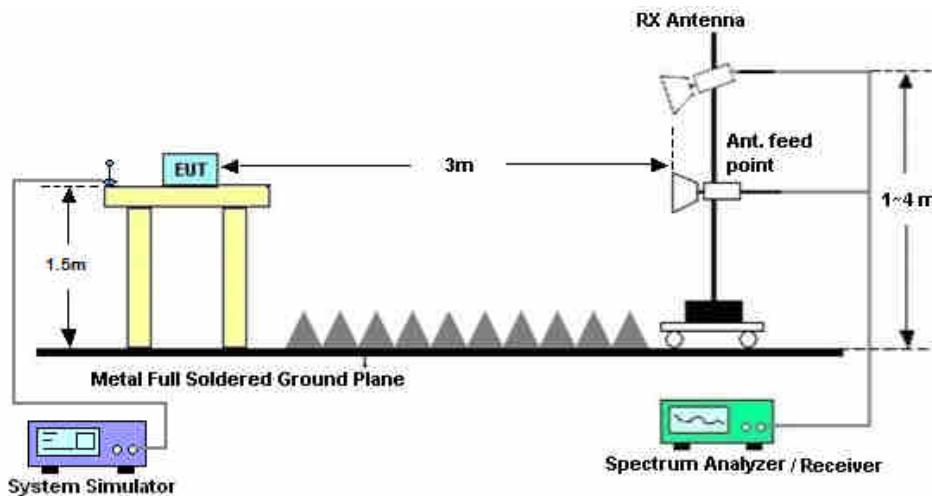
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.



4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log(P)$ dB.

For Band 7, 38, 41

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $55 + 10 \log(P)$ dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP (\text{dBm}) = S.G. \text{ Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
11. $ERP (\text{dBm}) = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(\text{W}) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13 \text{ dBm.}$$

13. For Band 7, 38, 41:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	Apr. 19, 2018	Feb. 05, 2019~Mar. 01, 2019	Apr. 18, 2019	Conducted (TH01-KS)
Thermal Chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jun. 27, 2018	Feb. 05, 2019~Mar. 01, 2019	Jun. 26, 2019	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471084	10Hz-44GHz	Jun. 25, 2018	Jan. 30, 2019	Jun. 24, 2019	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jun. 12, 2018	Jan. 30, 2019	Jun. 11, 2019	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 20, 2018	Jan. 30, 2019	Oct. 19, 2019	Radiation (03CH06-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 07, 2018	Jan. 30, 2019	Feb. 06, 2019	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHz	Aug. 06, 2018	Jan. 30, 2019	Aug. 05, 2019	Radiation (03CH06-KS)
Amplifier	MITEQ	TTA1840-35-HG	2014749	18~40GHz	Feb. 08, 2018	Jan. 30, 2019	Feb. 07, 2019	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-10P	2025788	1Ghz-18Ghz	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 18, 2018	Jan. 30, 2019	Apr. 17, 2019	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 30, 2019	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 30, 2019	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 30, 2019	NCR	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44GHz	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jun. 12, 2018	Jan. 30, 2019	Jun. 11, 2019	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1648	1GHz~18GHz	Jan. 31, 2018	Jan. 30, 2019	Jan. 30, 2019	Radiation (03CH04-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 07, 2018	Jan. 30, 2019	Feb. 06, 2019	Radiation (03CH04-KS)
Amplifier	Burgeon	BPA-530	102219	0.01MHz ~3000MHz	Nov. 19, 2018	Jan. 30, 2019	Nov. 18, 2019	Radiation (03CH04-KS)
Amplifier	MITEQ	TTA1840-35-HG	2014749	18~40GHz	Feb. 08, 2018	Jan. 30, 2019	Feb. 07, 2019	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-10P	2025788	1Ghz-18Ghz	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY53270319	500MHz~26.5GHz	Oct. 12, 2018	Jan. 30, 2019	Oct. 11, 2019	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 30, 2019	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 30, 2019	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 30, 2019	NCR	Radiation (03CH04-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44GHz	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jun. 12, 2018	Jan. 30, 2019	Jun. 11, 2019	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 20, 2018	Jan. 30, 2019	Oct. 19, 2019	Radiation (03CH05-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 07, 2018	Jan. 30, 2019	Feb. 06, 2019	Radiation (03CH05-KS)
Amplifier	com-power	PA-103A	161069	1MHz ~1000MHz / 32 dB	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-10P	2025788	1Ghz-18Ghz	Apr. 17, 2018	Jan. 30, 2019	Apr. 16, 2019	Radiation (03CH05-KS)



Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Apr. 18, 2018	Jan. 30, 2019	Apr. 17, 2019	Radiation (03CH05-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18~40GHz	Feb. 08, 2018	Jan. 30, 2019	Feb. 07, 2019	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 30, 2019	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 30, 2019	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 30, 2019	NCR	Radiation (03CH05-KS)

NCR: No Calibration Required



6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

03CH04-KS:

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	3.3 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.8 dB
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03CH05-KS:

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.5 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.0 dB
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03CH06-KS:

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.5 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.0 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.14	23.23	23.14
	1	49		22.94	23.09	23.04
	1	99		22.95	23.10	23.13
	50	0		22.19	22.32	22.27
	50	24		22.19	22.31	22.28
	50	50		22.19	22.31	22.31
	100	0		22.15	22.31	22.24
20	1	0	16-QAM	22.27	22.51	22.35
	1	49		22.19	22.42	22.28
	1	99		22.23	22.34	22.32
	50	0		21.17	21.27	21.24
	50	24		21.17	21.30	21.25
	50	50		21.17	21.29	21.30
	100	0		21.15	21.28	21.22
20	1	0	64-QAM	22.15	22.31	22.19
	1	49		22.07	22.20	22.17
	1	99		22.12	22.13	22.19
	50	0		21.08	21.29	21.22
	50	24		21.15	21.28	21.26
	50	50		21.16	21.27	21.27
	100	0		21.14	21.29	21.25
15	1	0	QPSK	22.98	23.03	22.98
	1	37		22.94	22.96	22.96
	1	74		22.98	22.93	22.96
	36	0		22.02	22.11	22.06
	36	20		22.06	22.13	22.07
	36	39		22.06	22.12	22.07
	75	0		22.06	22.10	22.07



15	1	0	16-QAM	22.17	22.34	22.19
15	1	37		22.17	22.30	22.26
15	1	74		22.18	22.19	22.24
15	36	0		20.87	21.08	21.03
15	36	20		20.96	21.12	21.05
15	36	39		20.91	21.09	21.06
15	75	0		21.03	21.07	21.05
15	1	0		21.96	22.11	22.02
15	1	37	64-QAM	21.86	22.12	22.06
15	1	74		21.94	22.02	22.01
15	36	0		20.80	21.05	21.00
15	36	20		20.90	21.08	21.06
15	36	39		20.90	21.07	21.03
15	75	0		20.92	21.10	21.04



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.69	22.87	22.97
	1	25		22.73	22.97	22.93
	1	49		22.69	22.92	22.89
	25	0		21.85	22.08	22.01
	25	12		21.85	22.11	22.05
	25	25		21.79	22.03	21.98
	50	0		21.83	22.04	22.03
10	1	0	16-QAM	21.91	22.29	22.26
	1	25		22.00	22.21	22.25
	1	49		21.92	22.20	22.17
	25	0		20.82	21.08	21.00
	25	12		20.84	21.10	21.02
	25	25		20.75	21.02	20.97
	50	0		20.75	21.04	20.98
10	1	0	64-QAM	21.71	22.04	22.07
	1	25		21.59	22.09	22.03
	1	49		21.71	21.97	21.92
	25	0		20.80	21.06	21.00
	25	12		20.94	21.09	21.04
	25	25		20.74	21.00	20.96
	50	0		20.70	21.04	20.98
5	1	0	QPSK	22.79	22.86	22.89
	1	12		22.81	22.96	22.90
	1	24		22.78	22.99	22.93
	12	0		21.88	22.04	22.00
	12	7		21.94	22.10	22.03
	12	13		21.94	22.13	22.03
	25	0		21.89	22.10	22.02
5	1	0	16-QAM	22.07	22.18	22.19
	1	12		22.06	22.32	22.19
	1	24		22.00	22.29	22.16
	12	0		20.92	21.07	20.97
	12	7		20.95	21.12	21.07



5	12	13	64-QAM	20.95	21.13	21.04
5	25	0		20.91	21.09	21.00
5	1	0		21.88	22.02	21.96
5	1	12		21.91	22.12	21.98
5	1	24		21.91	22.05	21.99
5	12	0		20.89	21.03	20.97
5	12	7		20.90	21.09	21.03
5	12	13		20.91	21.09	21.01
5	25	0		20.90	21.08	21.00



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.58	22.60	22.60
	1	8		22.68	22.81	22.75
	1	14		22.63	22.74	22.72
	8	0		21.65	21.78	21.70
	8	4		21.69	21.85	21.75
	8	7		21.65	21.83	21.79
	15	0		21.72	21.85	21.80
3	1	0	16-QAM	21.80	21.94	21.87
	1	8		21.92	22.10	22.00
	1	14		21.80	22.06	21.92
	8	0		20.66	20.81	20.77
	8	4		20.73	20.88	20.83
	8	7		20.73	20.88	20.80
	15	0		20.69	20.84	20.77
3	1	0	64-QAM	21.62	21.72	21.70
	1	8		21.67	21.87	21.78
	1	14		21.72	21.86	21.76
	8	0		20.59	20.77	20.68
	8	4		20.71	20.82	20.76
	8	7		20.66	20.81	20.73
	15	0		20.64	20.81	20.73
1.4	1	0	QPSK	22.56	22.84	22.76
	1	3		22.72	22.94	22.92
	1	5		22.79	22.85	22.81
	3	0		22.76	22.83	22.77
	3	1		22.79	22.90	22.84
	3	3		22.76	22.87	22.81
	6	0		21.76	21.94	21.88
1.4	1	0	16-QAM	21.84	22.16	21.97
	1	3		21.93	22.26	22.06
	1	5		21.88	22.15	22.02
	3	0		21.74	21.99	21.79
	3	1		21.78	22.04	21.89



1.4	3	3	64-QAM	21.73	21.99	21.86
1.4	6	0		20.83	20.98	20.92
1.4	1	0		21.78	21.92	21.86
1.4	1	3		21.90	22.01	21.92
1.4	1	5		21.80	21.98	21.87
1.4	3	0		21.78	21.91	21.79
1.4	3	1		21.82	21.98	21.86
1.4	3	3		21.78	21.94	21.81
1.4	6	0		20.77	20.94	20.84



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.80	22.87	22.96
	1	49		22.78	22.87	22.81
	1	99		22.82	22.77	22.79
	50	0		21.98	22.05	22.02
	50	24		21.97	22.05	22.01
	50	50		21.92	22.02	21.96
	100	0		21.91	22.03	21.98
20	1	0	16-QAM	22.02	22.24	22.26
	1	49		22.10	22.13	22.08
	1	99		22.10	22.07	22.07
	50	0		20.99	21.04	21.01
	50	24		20.97	21.03	21.02
	50	50		20.92	21.01	20.97
	100	0		20.89	21.00	20.97
20	1	0	64-QAM	21.93	21.99	22.00
	1	49		22.04	21.98	21.88
	1	99		22.03	21.89	21.88
	50	0		20.99	21.04	21.01
	50	24		20.96	21.05	20.98
	50	50		20.91	21.01	20.96
	100	0		20.93	21.01	20.96
15	1	0	QPSK	22.59	22.85	22.85
	1	37		22.85	22.89	22.85
	1	74		22.78	22.85	22.82
	36	0		21.97	22.04	21.97
	36	20		21.97	22.06	21.99
	36	39		21.94	21.98	21.95
	75	0		21.93	22.02	21.96
15	1	0	16-QAM	21.91	22.24	22.15
	1	37		22.17	22.17	22.18
	1	74		22.15	22.20	22.11
	36	0		20.97	21.04	20.96
	36	20		20.97	21.05	20.97



15	36	39	64-QAM	20.88	20.99	20.91
15	75	0		20.92	21.03	20.97
15	1	0		21.70	22.01	21.97
15	1	37		22.01	21.97	21.89
15	1	74		21.90	21.97	21.91
15	36	0		20.91	20.99	20.94
15	36	20		20.92	21.01	20.95
15	36	39		20.85	20.95	20.86
15	75	0		20.93	21.03	20.96



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.53	22.81	22.72
	1	25		22.73	22.84	22.78
	1	49		22.64	22.70	22.65
	25	0		21.85	21.93	21.88
	25	12		21.87	21.93	21.87
	25	25		21.77	21.84	21.79
	50	0		21.84	21.88	21.84
10	1	0	16-QAM	21.85	22.15	22.02
	1	25		22.11	22.05	22.09
	1	49		22.03	22.02	21.96
	25	0		20.86	20.91	20.87
	25	12		20.87	20.91	20.85
	25	25		20.76	20.85	20.79
	50	0		20.82	20.88	20.82
10	1	0	64-QAM	21.65	21.93	21.82
	1	25		21.89	21.80	21.75
	1	49		21.78	21.78	21.73
	25	0		20.87	20.92	20.87
	25	12		20.89	20.92	20.86
	25	25		20.78	20.84	20.78
	50	0		20.83	20.86	20.83
5	1	0	QPSK	22.49	22.76	22.79
	1	12		22.61	22.87	22.78
	1	24		22.70	22.77	22.73
	12	0		21.83	21.85	21.83
	12	7		21.88	21.97	21.86
	12	13		21.84	21.92	21.83
	25	0		21.84	21.93	21.83
5	1	0	16-QAM	21.85	22.11	22.13
	1	12		21.96	22.21	22.12
	1	24		22.01	22.11	21.95
	12	0		20.85	20.88	20.85
	12	7		20.90	20.97	20.89



5	12	13	64-QAM	20.88	20.95	20.82
5	25	0		20.83	20.92	20.80
5	1	0		21.66	21.93	21.89
5	1	12		21.78	21.94	21.83
5	1	24		21.84	21.85	21.75
5	12	0		20.84	20.84	20.79
5	12	7		20.86	20.94	20.82
5	12	13		20.84	20.88	20.80
5	25	0		20.83	20.90	20.81



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.73	22.79	22.74
	1	8		22.84	22.96	22.90
	1	14		22.75	22.87	22.78
	8	0		21.87	21.96	21.83
	8	4		21.94	22.02	21.90
	8	7		21.86	21.99	21.87
	15	0		21.89	22.01	21.91
3	1	0	16-QAM	21.88	22.11	21.97
	1	8		22.09	22.28	22.22
	1	14		22.01	22.17	22.07
	8	0		20.94	21.02	20.83
	8	4		20.98	21.08	20.97
	8	7		20.90	21.01	20.94
	15	0		20.90	20.98	20.90
3	1	0	64-QAM	21.85	21.92	21.80
	1	8		22.01	22.13	22.04
	1	14		21.93	21.94	21.86
	8	0		20.89	20.92	20.77
	8	4		20.94	21.02	20.92
	8	7		20.87	20.95	20.88
	15	0		20.87	20.97	20.86
1.4	1	0	QPSK	22.64	22.77	22.62
	1	3		22.71	22.89	22.81
	1	5		22.63	22.80	22.76
	3	0		22.60	22.81	22.65
	3	1		22.65	22.89	22.74
	3	3		22.61	22.86	22.74
	6	0		21.80	21.90	21.75
1.4	1	0	16-QAM	21.84	22.05	21.89
	1	3		21.93	22.22	22.06
	1	5		21.85	22.08	22.02
	3	0		21.67	21.91	21.74
	3	1		21.71	21.97	21.82



1.4	3	3	64-QAM	21.69	21.93	21.81
1.4	6	0		20.85	20.92	20.76
1.4	1	0		21.74	21.87	21.78
1.4	1	3		21.83	21.98	21.84
1.4	1	5		21.81	21.93	21.78
1.4	3	0		21.70	21.84	21.71
1.4	3	1		21.77	21.93	21.78
1.4	3	3		21.69	21.88	21.74
1.4	6	0		20.78	20.87	20.71



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.40	22.65	22.51
	1	25		22.45	22.49	22.42
	1	49		22.47	22.47	22.46
	25	0		21.59	21.68	21.63
	25	12		21.58	21.65	21.62
	25	25		21.55	21.61	21.53
	50	0		21.59	21.65	21.60
10	1	0	16-QAM	21.71	21.89	21.85
	1	25		21.69	21.80	21.78
	1	49		21.74	21.73	21.84
	25	0		20.61	20.67	20.61
	25	12		20.60	20.66	20.62
	25	25		20.56	20.61	20.56
	50	0		20.60	20.63	20.61
10	1	0	64-QAM	21.62	21.68	21.67
	1	25		21.59	21.63	21.56
	1	49		21.69	21.55	21.61
	25	0		20.60	20.66	20.59
	25	12		20.60	20.66	20.60
	25	25		20.56	20.61	20.56
	50	0		20.61	20.64	20.59
5	1	0	QPSK	22.35	22.44	22.37
	1	12		22.43	22.52	22.48
	1	24		22.52	22.49	22.45
	12	0		21.45	21.55	21.49
	12	7		21.58	21.61	21.57
	12	13		21.61	21.67	21.64
	25	0		21.56	21.60	21.55
5	1	0	16-QAM	21.68	21.76	21.74
	1	12		21.78	21.89	21.83
	1	24		21.79	21.84	21.77
	12	0		20.49	20.58	20.51
	12	7		20.60	20.66	20.60



5	12	13	64-QAM	20.65	20.73	20.64
5	25	0		20.57	20.61	20.55
5	1	0		21.51	21.60	21.53
5	1	12		21.61	21.67	21.65
5	1	24		21.61	21.64	21.55
5	12	0		20.44	20.53	20.47
5	12	7		20.59	20.60	20.55
5	12	13		20.61	20.69	20.62
5	25	0		20.58	20.60	20.53



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.43	22.34	22.36
	1	8		22.52	22.62	22.55
	1	14		22.46	22.52	22.47
	8	0		21.50	21.54	21.50
	8	4		21.60	21.70	21.62
	8	7		21.56	21.66	21.61
	15	0		21.57	21.61	21.58
3	1	0	16-QAM	21.72	21.73	21.71
	1	8		21.85	21.97	21.91
	1	14		21.78	21.85	21.84
	8	0		20.55	20.59	20.55
	8	4		20.62	20.74	20.69
	8	7		20.64	20.72	20.66
	15	0		20.59	20.61	20.56
3	1	0	64-QAM	21.51	21.53	21.45
	1	8		21.61	21.78	21.70
	1	14		21.58	21.66	21.66
	8	0		20.49	20.53	20.49
	8	4		20.59	20.68	20.65
	8	7		20.59	20.68	20.63
	15	0		20.54	20.57	20.51
1.4	1	0	QPSK	22.29	22.31	22.36
	1	3		22.42	22.51	22.48
	1	5		22.33	22.45	22.41
	3	0		22.36	22.39	22.39
	3	1		22.40	22.49	22.40
	3	3		22.42	22.49	22.43
	6	0		21.46	21.58	21.53
1.4	1	0	16-QAM	21.57	21.69	21.72
	1	3		21.68	21.86	21.83
	1	5		21.66	21.82	21.71
	3	0		21.42	21.51	21.50
	3	1		21.47	21.62	21.53



1.4	3	3	64-QAM	21.45	21.55	21.51
1.4	6	0		20.51	20.61	20.53
1.4	1	0		21.53	21.45	21.45
1.4	1	3		21.63	21.68	21.63
1.4	1	5		21.56	21.57	21.55
1.4	3	0		21.45	21.47	21.46
1.4	3	1		21.50	21.56	21.50
1.4	3	3		21.49	21.49	21.46
1.4	6	0		20.47	20.55	20.47



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.11	22.99	23.28
	1	49		23.07	23.06	23.15
	1	99		23.06	23.08	23.16
	50	0		22.18	22.32	22.06
	50	24		22.24	22.28	22.41
	50	50		22.26	22.25	22.61
	100	0		22.22	22.29	22.29
20	1	0	16-QAM	22.33	22.33	22.52
	1	49		22.25	22.39	22.26
	1	99		22.30	22.41	22.41
	50	0		21.19	21.27	21.06
	50	24		21.21	21.26	21.37
	50	50		21.24	21.25	21.68
	100	0		21.20	21.25	21.39
20	1	0	64-QAM	22.26	22.06	22.74
	1	49		22.13	22.17	22.43
	1	99		22.22	22.21	22.37
	50	0		21.19	21.27	21.20
	50	24		21.23	21.23	21.42
	50	50		21.23	21.24	21.60
	100	0		21.17	21.26	21.34
15	1	0	QPSK	23.04	23.05	22.76
	1	37		23.05	23.08	22.94
	1	74		23.07	23.08	22.73
	36	0		22.16	22.23	21.87
	36	20		22.24	22.25	21.97
	36	39		22.22	22.19	22.26
	75	0		22.21	22.23	21.83
15	1	0	16-QAM	22.41	22.39	22.21
	1	37		22.32	22.41	22.51
	1	74		22.31	22.46	22.33
	36	0		21.19	21.26	21.00
	36	20		21.23	21.26	21.03



15	36	39	64-QAM	21.20	21.21	21.32
15	75	0		21.20	21.23	20.87
15	1	0		22.20	22.14	22.00
15	1	37		22.16	22.20	22.24
15	1	74		22.16	22.26	22.09
15	36	0		21.16	21.24	21.00
15	36	20		21.20	21.24	20.97
15	36	39		21.16	21.19	21.31
15	75	0		21.19	21.23	21.23



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.85	22.96	22.52
	1	25		22.95	22.94	22.59
	1	49		22.96	22.92	22.58
	25	0		22.01	22.10	21.80
	25	12		22.12	22.10	21.91
	25	25		22.11	22.10	22.21
	50	0		22.13	22.10	21.82
10	1	0	16-QAM	22.22	22.31	22.04
	1	25		22.17	22.28	22.00
	1	49		22.19	22.28	21.91
	25	0		21.07	21.13	21.00
	25	12		21.09	21.15	21.06
	25	25		21.06	21.08	21.34
	50	0		21.08	21.12	21.34
10	1	0	64-QAM	21.99	22.07	21.79
	1	25		21.98	22.11	21.89
	1	49		22.01	22.10	21.98
	25	0		21.07	21.14	21.56
	25	12		21.08	21.12	21.21
	25	25		21.06	21.09	21.24
	50	0		21.07	21.11	20.85
5	1	0	QPSK	22.82	22.90	22.80
	1	12		23.04	23.08	22.88
	1	24		23.10	23.05	22.76
	12	0		22.03	22.04	22.23
	12	7		22.17	22.10	21.72
	12	13		22.18	22.15	21.82
	25	0		22.13	22.11	21.63
5	1	0	16-QAM	22.18	22.22	22.00
	1	12		22.37	22.39	22.44
	1	24		22.31	22.40	22.00
	12	0		21.11	21.11	21.00
	12	7		21.22	21.19	20.83



5	12	13	64-QAM	21.23	21.17	20.97
5	25	0		21.17	21.10	20.68
5	1	0		21.97	22.07	21.89
5	1	12		22.12	22.18	22.28
5	1	24		22.13	22.17	21.89
5	12	0		21.08	21.05	20.89
5	12	7		21.19	21.15	20.77
5	12	13		21.15	21.13	20.92
5	25	0		21.17	21.10	20.73



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.00	23.30	23.14
	1	49		23.02	23.16	23.10
	1	99		22.74	23.21	23.13
	50	0		22.07	22.31	22.23
	50	24		22.14	22.40	22.32
	50	50		21.98	22.38	22.32
	100	0		22.03	22.33	22.27
20	1	0	16-QAM	22.44	22.56	22.47
	1	49		22.45	22.51	22.43
	1	99		22.16	22.55	22.49
	50	0		21.17	21.37	21.28
	50	24		21.26	21.38	21.31
	50	50		21.10	21.37	21.31
	100	0		21.17	21.37	21.29
20	1	0	64-QAM	22.10	22.17	22.14
	1	49		22.15	22.15	22.08
	1	99		21.87	22.15	22.10
	50	0		21.20	21.36	21.30
	50	24		21.29	21.37	21.32
	50	50		21.13	21.37	21.30
	100	0		21.23	21.41	21.32
15	1	0	QPSK	22.94	23.29	23.20
	1	37		23.00	23.25	23.06
	1	74		22.85	23.23	23.18
	36	0		21.91	22.26	21.99
	36	20		22.02	22.38	22.24
	36	39		21.90	22.35	22.26
	75	0		21.91	22.30	22.26
15	1	0	16-QAM	22.26	22.54	22.42
	1	37		22.33	22.45	22.34
	1	74		22.20	22.52	22.40
	36	0		20.98	21.31	21.05
	36	20		21.09	21.41	21.26



15	36	39	64-QAM	20.97	21.34	21.24
15	75	0		20.99	21.36	21.26
15	1	0		21.96	22.21	22.09
15	1	37		22.01	22.13	21.98
15	1	74		21.86	22.17	22.06
15	36	0		21.01	21.35	21.09
15	36	20		21.13	21.42	21.29
15	36	39		21.02	21.38	21.29
15	75	0		21.00	21.33	21.24



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.80	22.97	22.86
	1	25		23.00	22.97	22.90
	1	49		22.91	23.02	22.94
	25	0		21.97	22.22	22.01
	25	12		22.09	22.24	22.12
	25	25		22.07	22.22	22.12
	50	0		22.03	22.25	22.17
10	1	0	16-QAM	22.21	22.28	22.23
	1	25		22.34	22.30	22.25
	1	49		22.27	22.31	22.25
	25	0		21.08	21.19	21.12
	25	12		21.21	21.22	21.14
	25	25		21.19	21.21	21.14
	50	0		21.12	21.19	21.15
10	1	0	64-QAM	21.87	21.93	21.84
	1	25		22.01	21.97	21.87
	1	49		21.92	21.94	21.91
	25	0		21.03	21.12	21.05
	25	12		21.15	21.16	21.07
	25	25		21.13	21.15	21.06
	50	0		21.13	21.19	21.15
5	1	0	QPSK	22.67	22.96	22.86
	1	12		22.70	23.09	23.04
	1	24		22.64	23.10	22.99
	12	0		21.76	22.15	22.00
	12	7		21.82	22.23	22.06
	12	13		21.79	22.24	22.16
	25	0		21.78	22.23	22.10
5	1	0	16-QAM	22.04	22.26	22.21
	1	12		22.10	22.40	22.39
	1	24		22.08	22.46	22.42
	12	0		20.79	21.10	21.00
	12	7		20.85	21.19	21.08



5	12	13	64-QAM	20.83	21.19	21.12
5	25	0		20.89	21.21	21.12
5	1	0		21.73	21.93	21.86
5	1	12		21.77	22.05	22.01
5	1	24		21.75	22.12	22.05
5	12	0		20.86	21.10	21.03
5	12	7		20.91	21.20	21.12
5	12	13		20.89	21.17	21.15
5	25	0		20.83	21.15	21.06



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.04	22.97	22.70
	1	49		22.95	23.38	22.81
	1	99		22.95	22.99	22.88
	50	0		22.15	22.19	21.91
	50	24		22.18	22.23	21.98
	50	50		22.18	22.23	22.02
	100	0		22.14	22.15	21.97
20	1	0	16-QAM	22.35	22.26	21.95
	1	49		22.25	22.34	21.98
	1	99		22.27	22.23	22.11
	50	0		21.15	21.18	20.90
	50	24		21.18	21.22	20.94
	50	50		21.18	21.20	20.96
	100	0		21.18	21.21	20.94
20	1	0	64-QAM	22.03	21.94	21.60
	1	49		21.94	22.01	21.67
	1	99		21.95	21.93	21.81
	50	0		21.16	21.14	20.90
	50	24		21.18	21.20	20.96
	50	50		21.18	21.20	20.98
	100	0		21.23	21.23	20.97
15	1	0	QPSK	23.25	23.10	22.77
	1	37		23.37	23.06	22.88
	1	74		23.20	23.12	22.93
	36	0		22.43	22.12	21.86
	36	20		22.48	22.23	21.92
	36	39		22.47	22.18	21.94
	75	0		22.46	22.19	21.92
15	1	0	16-QAM	22.64	22.35	21.97
	1	37		22.59	22.38	21.93
	1	74		22.62	22.35	22.10
	36	0		21.44	21.11	20.84
	36	20		21.48	21.17	20.87



15	36	39	64-QAM	21.47	21.17	20.89
15	75	0		21.49	21.19	20.89
15	1	0		22.35	22.01	21.66
15	1	37		22.27	21.96	21.61
15	1	74		22.25	22.03	21.77
15	36	0		21.45	21.14	20.82
15	36	20		21.49	21.19	20.90
15	36	39		21.49	21.20	20.90
15	75	0		21.47	21.18	20.87



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.30	22.86	22.70
	1	25		23.21	22.84	22.58
	1	49		23.27	22.95	22.66
	25	0		22.35	22.07	21.82
	25	12		22.36	22.09	21.82
	25	25		22.30	22.04	21.77
	50	0		22.35	22.11	21.83
10	1	0	16-QAM	22.51	22.29	21.97
	1	25		22.51	22.08	21.93
	1	49		22.43	22.20	21.84
	25	0		21.40	21.11	20.84
	25	12		21.41	21.13	20.84
	25	25		21.34	21.08	20.74
	50	0		21.35	21.08	20.79
10	1	0	64-QAM	22.25	21.92	21.66
	1	25		22.16	21.76	21.47
	1	49		22.16	21.86	21.58
	25	0		21.33	21.03	20.76
	25	12		21.34	21.04	20.76
	25	25		21.25	20.97	20.70
	50	0		21.36	21.09	20.80
5	1	0	QPSK	23.36	22.98	22.75
	1	12		23.35	23.02	22.76
	1	24		23.27	23.01	22.72
	12	0		22.39	22.08	21.73
	12	7		22.41	22.14	21.76
	12	13		22.37	22.07	21.80
	25	0		22.40	22.08	21.78
5	1	0	16-QAM	22.86	22.49	22.26
	1	12		22.87	22.47	22.20
	1	24		22.87	22.53	22.21
	12	0		21.39	21.04	20.72
	12	7		21.41	21.08	20.74



5	12	13	64-QAM	21.41	21.07	20.73
5	25	0		21.45	21.14	20.78
5	1	0		22.37	21.99	21.79
5	1	12		22.33	21.95	21.71
5	1	24		22.31	22.00	21.70
5	12	0		21.32	20.96	20.62
5	12	7		21.30	20.99	20.66
5	12	13		21.30	20.99	20.63
5	25	0		21.41	21.07	20.77

**CA Power**

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	0	0	1	99	1	23.92
			1	0	0	0	1	23.96
			100	0	0	0	100	23.12
			100	0	100	0	200	22.17
			1	0	1	99	2	16.3
			1	0	1	0	2	18.77
			1	99	1	0	2	23.85
			100	0	1	99	101	21.21
		16QAM	0	0	1	99	1	23.34
			1	0	0	0	1	23.34
			100	0	0	0	100	22.17
			100	0	100	0	200	21.34
			1	0	1	99	2	16.92
			1	0	1	0	2	19.3
			1	99	1	0	2	23.42
			100	0	1	99	101	21.27
		64QAM	0	0	1	99	1	22.48
			1	0	0	0	1	22.39
			100	0	0	0	100	21.19
			100	0	100	0	200	21.34
			1	0	1	99	2	16.68
			1	0	1	0	2	19.11
			1	99	1	0	2	21.67
			100	0	1	99	101	21.31



21001	21199	QPSK	0	0	1	99	1	23.65		
			1	0	0	0	1	23.95		
			100	0	0	0	100	23.3		
			100	0	100	0	200	22.62		
			1	0	1	99	2	16.36		
			1	0	1	0	2	18.98		
			1	99	1	0	2	23.9		
			100	0	1	99	101	21.11		
16QAM			0	0	1	99	1	23.14		
			1	0	0	0	1	23.42		
			100	0	0	0	100	22.11		
			100	0	100	0	200	21.24		
			1	0	1	99	2	16.94		
			1	0	1	0	2	19.4		
			1	99	1	0	2	23.64		
			100	0	1	99	101	21.04		
64QAM			0	0	1	99	1	22.12		
			1	0	0	0	1	22.21		
			100	0	0	0	100	21.15		
			100	0	100	0	200	21.23		
			1	0	1	99	2	16.65		
			1	0	1	0	2	19.32		
			1	99	1	0	2	21.83		
			100	0	1	99	101	21.1		



21152	21350	QPSK	0	0	1	99	1	22.65
			1	0	0	0	1	23.76
			100	0	0	0	100	22.33
			100	0	100	0	200	21.46
			1	0	1	99	2	16.26
			1	0	1	0	2	18.74
			1	99	1	0	2	23.4
			100	0	1	99	101	20.49
21152	21350	16QAM	0	0	1	99	1	22.53
			1	0	0	0	1	23.52
			100	0	0	0	100	21.74
			100	0	100	0	200	20.68
			1	0	1	99	2	16.74
			1	0	1	0	2	19.33
			1	99	1	0	2	23.03
			100	0	1	99	101	20.65
21152	21350	64QAM	0	0	1	99	1	21.62
			1	0	0	0	1	22.38
			100	0	0	0	100	20.78
			100	0	100	0	200	20.86
			1	0	1	99	2	16.73
			1	0	1	0	2	19.23
			1	99	1	0	2	21.24
			100	0	1	99	101	20.77



CA_7C								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21021	QPSK	100	0	75	0	175	22.63
		QPSK	1	0	1	74	2	16.26
		QPSK	1	99	1	0	2	23.86
		16QAM	100	0	75	0	175	21.61
		16QAM	1	0	1	74	2	16.67
		16QAM	1	99	1	0	2	23.54
		64QAM	100	0	75	0	175	21.6
		64QAM	1	0	1	74	2	16.52
		64QAM	1	99	1	0	2	21.85
21026	21197	QPSK	100	0	75	0	175	22.44
		QPSK	1	0	1	74	2	16.39
		QPSK	1	99	1	0	2	23.95
		16QAM	100	0	75	0	175	21.5
		16QAM	1	0	1	74	2	16.89
		16QAM	1	99	1	0	2	23.71
		64QAM	100	0	75	0	175	21.51
		64QAM	1	0	1	74	2	16.57
		64QAM	1	99	1	0	2	22.12
21201	21372	QPSK	100	0	75	0	175	21.86
		QPSK	1	0	1	74	2	16.51
		QPSK	1	99	1	0	2	23.64
		16QAM	100	0	75	0	175	20.91
		16QAM	1	0	1	74	2	17.12
		16QAM	1	99	1	0	2	22.92
		64QAM	100	0	75	0	175	20.93
		64QAM	1	0	1	74	2	16.83
		64QAM	1	99	1	0	2	21.1



Combination 15MHz+20MHz (75RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20828	20999	QPSK	75	0	100	0	175	22.6
		QPSK	1	0	1	99	2	16.2
		QPSK	1	74	1	0	2	23.89
		16QAM	75	0	100	0	175	21.53
		16QAM	1	0	1	99	2	16.73
		16QAM	1	74	1	0	2	23.25
		64QAM	75	0	100	0	175	21.48
		64QAM	1	0	1	99	2	16.59
		64QAM	1	74	1	0	2	21.62
21003	21174	QPSK	75	0	100	0	175	22.21
		QPSK	1	0	1	99	2	16.34
		QPSK	1	74	1	0	2	23.91
		16QAM	75	0	100	0	175	21.27
		16QAM	1	0	1	99	2	16.8
		16QAM	1	74	1	0	2	23.7
		64QAM	75	0	100	0	175	21.29
		64QAM	1	0	1	99	2	16.73
		64QAM	1	74	1	0	2	21.93
21179	21350	QPSK	75	0	100	0	175	21.73
		QPSK	1	0	1	99	2	16.54
		QPSK	1	74	1	0	2	23.6
		16QAM	75	0	100	0	175	20.79
		16QAM	1	0	1	99	2	16.89
		16QAM	1	74	1	0	2	23.05
		64QAM	75	0	100	0	175	20.81
		64QAM	1	0	1	99	2	16.9
		64QAM	1	74	1	0	2	21.18



Combination 20MHz+10MHz (100RB+50RB)								
PCC	SCC	Modulation	PCC		SCC		Measured Power (dBm)	
Channel	Channel		RB Size	RB offset	RB Size	RB offset		
20850	20994	QPSK	100	0	50	0	150	22.28
		QPSK	1	0	1	49	2	16.26
		QPSK	1	99	1	0	2	23.92
		16QAM	100	0	50	0	150	21.35
		16QAM	1	0	1	49	2	16.91
		16QAM	1	99	1	0	2	23.45
		64QAM	100	0	50	0	150	21.4
		64QAM	1	0	1	49	2	16.62
		64QAM	1	99	1	0	2	21.66
21051	21195	QPSK	100	0	50	0	150	22.36
		QPSK	1	0	1	49	2	16.32
		QPSK	1	99	1	0	2	23.98
		16QAM	100	0	50	0	150	21.43
		16QAM	1	0	1	49	2	16.79
		16QAM	1	99	1	0	2	23.55
		64QAM	100	0	50	0	150	21.46
		64QAM	1	0	1	49	2	16.67
		64QAM	1	99	1	0	2	21.84
21251	21395	QPSK	100	0	50	0	150	21.57
		QPSK	1	0	1	49	2	16.46
		QPSK	1	99	1	0	2	23.46
		16QAM	100	0	50	0	150	20.61
		16QAM	1	0	1	49	2	17.08
		16QAM	1	99	1	0	2	22.75
		64QAM	100	0	50	0	150	20.68
		64QAM	1	0	1	49	2	16.87
		64QAM	1	99	1	0	2	20.81



Combination 10MHz+20MHz (50RB+100RB)								
PCC	SCC	Modulation	PCC		SCC		Measured Power (dBm)	
Channel	Channel		RB Size	RB offset	RB Size	RB offset		
20805	20949	QPSK	50	0	100	0	150	22.15
		QPSK	1	0	1	99	2	16.13
		QPSK	1	49	1	0	2	23.76
		16QAM	50	0	100	0	150	21.26
		16QAM	1	0	1	99	2	16.64
		16QAM	1	49	1	0	2	23.06
		64QAM	50	0	100	0	150	21.29
		64QAM	1	0	1	99	2	16.53
		64QAM	1	49	1	0	2	21.31
21006	21150	QPSK	50	0	100	0	150	22.04
		QPSK	1	0	1	99	2	15.46
		QPSK	1	49	1	0	2	23.9
		16QAM	50	0	100	0	150	21.1
		16QAM	1	0	1	99	2	16.23
		16QAM	1	49	1	0	2	23.59
		64QAM	50	0	100	0	150	21.12
		64QAM	1	0	1	99	2	15.98
		64QAM	1	49	1	0	2	21.79
21206	21350	QPSK	50	0	100	0	150	21.29
		QPSK	1	0	1	99	2	14.48
		QPSK	1	49	1	0	2	23.25
		16QAM	50	0	100	0	150	20.37
		16QAM	1	0	1	99	2	15.03
		16QAM	1	49	1	0	2	22.65
		64QAM	50	0	100	0	150	20.39
		64QAM	1	0	1	99	2	14.83
		64QAM	1	49	1	0	2	20.57



Combination 15MHz+15MHz (75RB+75RB)								
PCC	SCC	Modulation	PCC		SCC		Measured Power (dBm)	
Channel	Channel		RB Size	RB offset	RB Size	RB offset		
20825	20975	QPSK	75	0	75	0	150	22.02
		QPSK	1	0	1	74	2	16.23
		QPSK	1	74	1	0	2	23.72
		16QAM	75	0	75	0	150	21.1
		16QAM	1	0	1	74	2	16.62
		16QAM	1	74	1	0	2	23.07
		64QAM	75	0	75	0	150	21.12
		64QAM	1	0	1	74	2	16.6
		64QAM	1	74	1	0	2	21.43
21025	21175	QPSK	75	0	75	0	150	22.75
		QPSK	1	0	1	74	2	16.29
		QPSK	1	74	1	0	2	23.98
		16QAM	75	0	75	0	150	21.61
		16QAM	1	0	1	74	2	16.87
		16QAM	1	74	1	0	2	23.73
		64QAM	75	0	75	0	150	21.55
		64QAM	1	0	1	74	2	16.69
		64QAM	1	74	1	0	2	21.73
21225	21375	QPSK	75	0	75	0	150	21.61
		QPSK	1	0	1	74	2	16.44
		QPSK	1	74	1	0	2	23.35
		16QAM	75	0	75	0	150	20.65
		16QAM	1	0	1	74	2	16.93
		16QAM	1	74	1	0	2	22.88
		64QAM	75	0	75	0	150	20.66
		64QAM	1	0	1	74	2	16.71
		64QAM	1	74	1	0	2	21.16



Combination 15MHz+10MHz (75RB+50RB)								
PCC	SCC	Modulation	PCC		SCC		Measured Power (dBm)	
Channel	Channel		RB Size	RB offset	RB Size	RB offset		
20825	20945	QPSK	75	0	50	0	125	22.12
		QPSK	1	0	1	49	2	16.26
		QPSK	1	74	1	0	2	23.79
		16QAM	75	0	50	0	125	21.25
		16QAM	1	0	1	49	2	16.87
		16QAM	1	74	1	0	2	23.32
		64QAM	75	0	50	0	125	21.27
		64QAM	1	0	1	49	2	16.64
		64QAM	1	74	1	0	2	21.6
21051	21171	QPSK	75	0	50	0	125	22.46
		QPSK	1	0	1	49	2	16.39
		QPSK	1	74	1	0	2	23.91
		16QAM	75	0	50	0	125	21.52
		16QAM	1	0	1	49	2	16.92
		16QAM	1	74	1	0	2	23.75
		64QAM	75	0	50	0	125	21.53
		64QAM	1	0	1	49	2	16.66
		64QAM	1	74	1	0	2	21.94
21277	21397	QPSK	75	0	50	0	125	21.53
		QPSK	1	0	1	49	2	16.43
		QPSK	1	74	1	0	2	23.37
		16QAM	75	0	50	0	125	20.54
		16QAM	1	0	1	49	2	16.89
		16QAM	1	74	1	0	2	22.71
		64QAM	75	0	50	0	125	20.56
		64QAM	1	0	1	49	2	16.82
		64QAM	1	74	1	0	2	20.78



CA_38C							
Combination 20MHz+20MHz (100RB+100RB)							
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset	
37850	38048	QPSK	0	0	1	99	1 23.21
			1	0	0	0	1 23.98
			100	0	0	0	100 23.07
			100	0	100	0	200 21.93
			1	0	1	99	2 16.1
			1	0	1	0	2 18.7
			1	99	1	0	2 23.47
			100	0	1	99	101 20.75
		16QAM	0	0	1	99	1 22.53
			1	0	0	0	1 23.11
			100	0	0	0	100 22.05
			100	0	100	0	200 20.99
			1	0	1	99	2 16.3
			1	0	1	0	2 18.91
			1	99	1	0	2 22.72
			100	0	1	99	101 20.98
		64QAM	0	0	1	99	1 21.54
			1	0	0	0	1 21.96
			100	0	0	0	100 21.21
			100	0	100	0	200 21.35
			1	0	1	99	2 16.05
			1	0	1	0	2 18.64
			1	99	1	0	2 21.16
			100	0	1	99	101 21.07



37901	38099	QPSK	0	0	1	99	1	23.46
			1	0	0	0	1	23.9
			100	0	0	0	100	23.17
			100	0	100	0	200	21.97
			1	0	1	99	2	16.07
			1	0	1	0	2	18.69
			1	99	1	0	2	23.54
			100	0	1	99	101	21.02
		16QAM	0	0	1	99	1	22.56
			1	0	0	0	1	23.19
			100	0	0	0	100	22.02
			100	0	100	0	200	21.09
			1	0	1	99	2	16.35
			1	0	1	0	2	18.98
			1	99	1	0	2	22.84
			100	0	1	99	101	21.07
		64QAM	0	0	1	99	1	21.43
			1	0	0	0	1	21.87
			100	0	0	0	100	21.03
			100	0	100	0	200	21.03
			1	0	1	99	2	15.94
			1	0	1	0	2	18.59
			1	99	1	0	2	20.84
			100	0	1	99	101	20.82



37952	38150	QPSK	0	0	1	99	1	23.57
			1	0	0	0	1	23.95
			100	0	0	0	100	23.21
			100	0	100	0	200	22.24
			1	0	1	99	2	16.13
			1	0	1	0	2	18.78
			1	99	1	0	2	23.79
			100	0	1	99	101	21.25
		16QAM	0	0	1	99	1	22.73
			1	0	0	0	1	23.41
			100	0	0	0	100	22.24
			100	0	100	0	200	21.33
			1	0	1	99	2	16.21
			1	0	1	0	2	21.26
			1	99	1	0	2	23.11
			100	0	1	99	101	21.59
		64QAM	0	0	1	99	1	21.45
			1	0	0	0	1	22.05
			100	0	0	0	100	21.21
			100	0	100	0	200	21.23
			1	0	1	99	2	15.97
			1	0	1	0	2	18.66
			1	99	1	0	2	21.3
			100	0	1	99	101	21.08



CA_38C								
Combination 15MHz+15MHz (75RB+75RB)								
PCC	SCC	Modulation	PCC		SCC		Measured Power (dBm)	
Channel	Channel		RB Size	RB offset	RB Size	RB offset		
37825	37975	QPSK	75	0	75	0	150	22.05
		QPSK	1	0	1	74	2	16.39
		QPSK	1	74	1	0	2	23.95
		16QAM	75	0	75	0	150	21.38
		16QAM	1	0	1	74	2	16.45
		16QAM	1	74	1	0	2	23.14
		64QAM	75	0	75	0	150	21.31
		64QAM	1	0	1	74	2	16.13
		64QAM	1	74	1	0	2	21.18
37925	38075	QPSK	75	0	75	0	150	22.37
		QPSK	1	0	1	74	2	16.35
		QPSK	1	74	1	0	2	23.86
		16QAM	75	0	75	0	150	21.49
		16QAM	1	0	1	74	2	16.55
		16QAM	1	74	1	0	2	23.19
		64QAM	75	0	75	0	150	21.48
		64QAM	1	0	1	74	2	16.15
		64QAM	1	74	1	0	2	21.37
38025	38175	QPSK	75	0	75	0	150	22.32
		QPSK	1	0	1	74	2	16.18
		QPSK	1	74	1	0	2	23.96
		16QAM	75	0	75	0	150	21.43
		16QAM	1	0	1	74	2	16.43
		16QAM	1	74	1	0	2	23.27
		64QAM	75	0	75	0	150	21.44
		64QAM	1	0	1	74	2	16.08
		64QAM	1	74	1	0	2	21.33

**ERP/EIRP****LTE Band 2 (GT - LC = -1.52 dB) QPSK**

Bandwidth	1.4M			3M			5M		
Channel	18607 (Low)	18900 (Mid)	19193 (High)	18615 (Low)	18900 (Mid)	19185 (High)	18625 (Low)	18900 (Mid)	19175 (High)
	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Frequency (MHz)	22.72	22.94	22.92	22.68	22.81	22.75	22.78	22.99	22.93
Conducted Power (dBm)	0.1871	0.1968	0.1959	0.1854	0.1910	0.1884	0.1897	0.1991	0.1963
EIRP(dBm)	21.20	21.42	21.40	21.16	21.29	21.23	21.26	21.47	21.41
EIRP(Watts)	0.1318	0.1387	0.1380	0.1306	0.1346	0.1327	0.1337	0.1403	0.1384

LTE Band 2 (GT - LC = -1.52 dB) QPSK

Bandwidth	10M			15M			20M		
Channel	18650 (Low)	18900 (Mid)	19150 (High)	18675 (Low)	18900 (Mid)	19125 (High)	18650 (Low)	18900 (Mid)	19100 (High)
	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Frequency (MHz)	22.73	22.97	22.93	22.98	23.03	22.98	23.14	23.23	23.14
Conducted Power (dBm)	0.1875	0.1982	0.1963	0.1986	0.2009	0.1986	0.2061	0.2104	0.2061
EIRP(dBm)	21.21	21.45	21.41	21.46	21.51	21.46	21.62	21.71	21.62
EIRP(Watts)	0.1321	0.1396	0.1384	0.1400	0.1416	0.1400	0.1452	0.1483	0.1452



LTE Band 2 (GT - LC = -1.52 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	21.93	22.26	22.06	21.92	22.10	22.00	22.06	22.32	22.19
Conducted Power (Watts)	0.1560	0.1683	0.1607	0.1556	0.1622	0.1585	0.1607	0.1706	0.1656
EIRP(dBm)	20.41	20.74	20.54	20.40	20.58	20.48	20.54	20.80	20.67
EIRP(Watts)	0.1099	0.1186	0.1132	0.1096	0.1143	0.1117	0.1132	0.1202	0.1167

LTE Band 2 (GT - LC = -1.52 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	21.91	22.29	22.26	22.17	22.34	22.19	22.27	22.51	22.35
Conducted Power (Watts)	0.1552	0.1694	0.1683	0.1648	0.1714	0.1656	0.1687	0.1782	0.1718
EIRP(dBm)	20.39	20.77	20.74	20.65	20.82	20.67	20.75	20.99	20.83
EIRP(Watts)	0.1094	0.1194	0.1186	0.1161	0.1208	0.1167	0.1189	0.1256	0.1211



LTE Band 2 (GT - LC = -1.52 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	21.90	22.01	21.92	21.67	21.87	21.78	21.91	22.12	21.98
Conducted Power (Watts)	0.1549	0.1589	0.1556	0.1469	0.1538	0.1507	0.1552	0.1629	0.1578
EIRP(dBm)	20.38	20.49	20.40	20.15	20.35	20.26	20.39	20.60	20.46
EIRP(Watts)	0.1091	0.1119	0.1096	0.1035	0.1084	0.1062	0.1094	0.1148	0.1112

LTE Band 2 (GT - LC = -1.52 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	21.59	22.09	22.03	21.86	22.12	22.06	22.15	22.31	22.19
Conducted Power (Watts)	0.1442	0.1618	0.1596	0.1535	0.1629	0.1607	0.1641	0.1702	0.1656
EIRP(dBm)	20.07	20.57	20.51	20.34	20.60	20.54	20.63	20.79	20.67
EIRP(Watts)	0.1016	0.1140	0.1125	0.1081	0.1148	0.1132	0.1156	0.1199	0.1167



LTE Band 4 (GT - LC = -1.21 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	19957 (Low)	20175 (Mid)	20393 (High)	19965 (Low)	20175 (Mid)	20385 (High)	19975 (Low)	20175 (Mid)	20375 (High)
	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
Conducted Power (dBm)	22.71	22.89	22.81	22.84	22.96	22.90	22.61	22.87	22.78
Conducted Power (Watts)	0.1866	0.1945	0.1910	0.1923	0.1977	0.1950	0.1824	0.1936	0.1897
EIRP(dBm)	21.50	21.68	21.60	21.63	21.75	21.69	21.40	21.66	21.57
EIRP(Watts)	0.1413	0.1472	0.1445	0.1455	0.1496	0.1476	0.1380	0.1466	0.1435

LTE Band 4 (GT - LC = -1.21 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20000 (Low)	20175 (Mid)	20350 (High)	20025 (Low)	20175 (Mid)	20325 (High)	20050 (Low)	20175 (Mid)	20300 (High)
	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
Conducted Power (dBm)	22.73	22.84	22.78	22.85	22.89	22.85	22.80	22.87	22.96
Conducted Power (Watts)	0.1875	0.1923	0.1897	0.1928	0.1945	0.1928	0.1905	0.1936	0.1977
EIRP(dBm)	21.52	21.63	21.57	21.64	21.68	21.64	21.59	21.66	21.75
EIRP(Watts)	0.1419	0.1455	0.1435	0.1459	0.1472	0.1459	0.1442	0.1466	0.1496



LTE Band 4 (GT - LC = -1.21 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
Conducted Power (dBm)	21.93	22.22	22.06	22.09	22.28	22.22	21.96	22.21	22.12
Conducted Power (Watts)	0.1560	0.1667	0.1607	0.1618	0.1690	0.1667	0.1570	0.1663	0.1629
EIRP(dBm)	20.72	21.01	20.85	20.88	21.07	21.01	20.75	21.00	20.91
EIRP(Watts)	0.1180	0.1262	0.1216	0.1225	0.1279	0.1262	0.1189	0.1259	0.1233

LTE Band 4 (GT - LC = -1.21 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
Conducted Power (dBm)	21.85	22.15	22.02	21.91	22.24	22.15	22.02	22.24	22.26
Conducted Power (Watts)	0.1531	0.1641	0.1592	0.1552	0.1675	0.1641	0.1592	0.1675	0.1683
EIRP(dBm)	20.64	20.94	20.81	20.70	21.03	20.94	20.81	21.03	21.05
EIRP(Watts)	0.1159	0.1242	0.1205	0.1175	0.1268	0.1242	0.1205	0.1268	0.1274



LTE Band 4 (GT - LC = -1.21 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957 (Low)	20175 (Mid)	20393 (High)	19965 (Low)	20175 (Mid)	20385 (High)	19975 (Low)	20175 (Mid)	20375 (High)
	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
Conducted Power (dBm)	21.83	21.98	21.84	22.01	22.13	22.04	21.78	21.94	21.83
Conducted Power (Watts)	0.1524	0.1578	0.1528	0.1589	0.1633	0.1600	0.1507	0.1563	0.1524
EIRP(dBm)	20.62	20.77	20.63	20.80	20.92	20.83	20.57	20.73	20.62
EIRP(Watts)	0.1153	0.1194	0.1156	0.1202	0.1236	0.1211	0.1140	0.1183	0.1153

LTE Band 4 (GT - LC = -1.21 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20000 (Low)	20175 (Mid)	20350 (High)	20025 (Low)	20175 (Mid)	20325 (High)	20050 (Low)	20175 (Mid)	20300 (High)
	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
Conducted Power (dBm)	21.65	21.93	21.82	21.70	22.01	21.97	22.04	21.98	21.88
Conducted Power (Watts)	0.1462	0.1560	0.1521	0.1479	0.1589	0.1574	0.1600	0.1578	0.1542
EIRP(dBm)	20.44	20.72	20.61	20.49	20.80	20.76	20.83	20.77	20.67
EIRP(Watts)	0.1107	0.1180	0.1151	0.1119	0.1202	0.1191	0.1211	0.1194	0.1167



LTE Band 5 (GT - LC = -2.70 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.42	22.51	22.48	22.52	22.62	22.55	22.43	22.52	22.48
Conducted Power (Watts)	0.1746	0.1782	0.1770	0.1786	0.1828	0.1799	0.1750	0.1786	0.1770
ERP(dBm)	17.57	17.66	17.63	17.67	17.77	17.70	17.58	17.67	17.63
ERP(Watts)	0.0571	0.0583	0.0579	0.0585	0.0598	0.0589	0.0573	0.0585	0.0579

LTE Band 5 (GT - LC = -2.70 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	22.40	22.65	22.51
Conducted Power (Watts)	0.1738	0.1841	0.1782
ERP(dBm)	17.55	17.80	17.66
ERP(Watts)	0.0569	0.0603	0.0583



LTE Band 5 (GT - LC = -2.70 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	21.68	21.86	21.83	21.85	21.97	21.91	21.78	21.89	21.83
Conducted Power (Watts)	0.1472	0.1535	0.1524	0.1531	0.1574	0.1552	0.1507	0.1545	0.1524
ERP(dBm)	16.83	17.01	16.98	17.00	17.12	17.06	16.93	17.04	16.98
ERP(Watts)	0.0482	0.0502	0.0499	0.0501	0.0515	0.0508	0.0493	0.0506	0.0499

LTE Band 5 (GT - LC = -2.70 dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	21.71	21.89	21.85
Conducted Power (Watts)	0.1483	0.1545	0.1531
ERP(dBm)	16.86	17.04	17.00
ERP(Watts)	0.0485	0.0506	0.0501



LTE Band 5 (GT - LC = -2.70 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	21.63	21.68	21.63	21.61	21.78	21.70	21.61	21.67	21.65
Conducted Power (Watts)	0.1455	0.1472	0.1455	0.1449	0.1507	0.1479	0.1449	0.1469	0.1462
ERP(dBm)	16.78	16.83	16.78	16.76	16.93	16.85	16.76	16.82	16.80
ERP(Watts)	0.0476	0.0482	0.0476	0.0474	0.0493	0.0484	0.0474	0.0481	0.0479

LTE Band 5 (GT - LC = -2.70 dB) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	21.69	21.55	21.61
Conducted Power (Watts)	0.1476	0.1429	0.1449
ERP(dBm)	16.84	16.70	16.76
ERP(Watts)	0.0483	0.0468	0.0474



LTE Band 7 (GT - LC = 0.48 dB) QPSK					
Bandwidth	5M				
Channel	20775 (Low)		21100 (Mid)		21425 (High)
	2502.5		2535		2567.5
Frequency (MHz)					
Conducted Power (dBm)	23.10		23.05		22.76
Conducted Power (Watts)	0.2042		0.2018		0.1888
EIRP(dBm)	23.58		23.53		23.24
EIRP(Watts)	0.2280		0.2254		0.2109

LTE Band 7 (GT - LC = 0.48 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20800 (Low)	21100 (Mid)	21400 (High)	20825 (Low)	21100 (Mid)	21375 (High)	20850 (Low)	21100 (Mid)	21350 (High)
	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
Frequency (MHz)									
Conducted Power (dBm)	22.85	22.96	22.52	23.07	23.08	22.73	23.11	22.99	23.28
Conducted Power (Watts)	0.1928	0.1977	0.1786	0.2028	0.2032	0.1875	0.2046	0.1991	0.2128
EIRP(dBm)	23.33	23.44	23.00	23.55	23.56	23.21	23.59	23.47	23.76
EIRP(Watts)	0.2153	0.2208	0.1995	0.2265	0.2270	0.2094	0.2286	0.2223	0.2377



LTE Band 7 (GT - LC = 0.48 dB) 16QAM			
Bandwidth	5M		
Channel	20775 (Low)	21100 (Mid)	21425 (High)
	2502.5	2535	2567.5
Frequency (MHz)	22.37	22.39	22.44
Conducted Power (dBm)	0.1726	0.1734	0.1754
EIRP(dBm)	22.85	22.87	22.92
EIRP(Watts)	0.1928	0.1936	0.1959

LTE Band 7 (GT - LC = 0.48 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20800 (Low)	21100 (Mid)	21400 (High)	20825 (Low)	21100 (Mid)	21375 (High)	20850 (Low)	21100 (Mid)	21350 (High)
	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
Frequency (MHz)	22.22	22.31	22.04	22.32	22.41	22.51	22.33	22.33	22.52
Conducted Power (dBm)	0.1667	0.1702	0.1600	0.1706	0.1742	0.1782	0.1710	0.1710	0.1786
EIRP(dBm)	22.70	22.79	22.52	22.80	22.89	22.99	22.81	22.81	23.00
EIRP(Watts)	0.1862	0.1901	0.1786	0.1905	0.1945	0.1991	0.1910	0.1910	0.1995



LTE Band 7 (GT - LC = 0.48 dB) 64QAM					
Bandwidth	5M				
Channel	20775		21100		21425
	(Low)		(Mid)		(High)
Frequency (MHz)	2502.5		2535		2567.5
	22.12		22.18		22.28
Conducted Power (dBm)	0.1629		0.1652		0.1690
EIRP(dBm)	22.60		22.66		22.76
EIRP(Watts)	0.1820		0.1845		0.1888

LTE Band 7 (GT - LC = 0.48 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
	21.98	22.11	21.89	22.16	22.26	22.09	22.26	22.06	22.74
Conducted Power (dBm)	0.1578	0.1626	0.1545	0.1644	0.1683	0.1618	0.1683	0.1607	0.1879
EIRP(dBm)	22.46	22.59	22.37	22.64	22.74	22.57	22.74	22.54	23.22
EIRP(Watts)	0.1762	0.1816	0.1726	0.1837	0.1879	0.1807	0.1879	0.1795	0.2099



LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) QPSK									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	23.36	22.98	22.75	23.30	22.86	22.70	23.37	23.06	22.88
Conducted Power (Watts)	0.2168	0.1986	0.1884	0.2138	0.1932	0.1862	0.2173	0.2023	0.1941
EIRP(dBm)	24.71	24.33	24.10	24.65	24.21	24.05	24.72	24.41	24.23
EIRP(Watts)	0.2958	0.2710	0.2570	0.2917	0.2636	0.2541	0.2965	0.2761	0.2649

LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	22.95	23.38	22.81
Conducted Power (Watts)	0.1972	0.2178	0.1910
EIRP(dBm)	24.30	24.73	24.16
EIRP(Watts)	0.2692	0.2972	0.2606



LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) 16QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	22.87	22.53	22.21	22.51	22.29	21.97	22.64	22.35	21.97
Conducted Power (Watts)	0.1936	0.1791	0.1663	0.1782	0.1694	0.1574	0.1837	0.1718	0.1574
EIRP(dBm)	24.22	23.88	23.56	23.86	23.64	23.32	23.99	23.70	23.32
EIRP(Watts)	0.2642	0.2443	0.2270	0.2432	0.2312	0.2148	0.2506	0.2344	0.2148

LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	22.35	22.26	21.95
Conducted Power (Watts)	0.1718	0.1683	0.1567
EIRP(dBm)	23.70	23.61	23.30
EIRP(Watts)	0.2344	0.2296	0.2138



LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) 64QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	22.37	21.99	21.79	22.25	21.92	21.66	22.35	22.01	21.66
Conducted Power (Watts)	0.1726	0.1581	0.1510	0.1679	0.1556	0.1466	0.1718	0.1589	0.1466
EIRP(dBm)	23.72	23.34	23.14	23.60	23.27	23.01	23.70	23.36	23.01
EIRP(Watts)	0.2355	0.2158	0.2061	0.2291	0.2123	0.2000	0.2344	0.2168	0.2000

LTE Band 41 ($G_T - L_C = 1.35 \text{ dB}$) 64QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	22.03	21.94	21.60
Conducted Power (Watts)	0.1596	0.1563	0.1445
EIRP(dBm)	23.38	23.29	22.95
EIRP(Watts)	0.2178	0.2133	0.1972

**CA EIRP**

LTE Band 7 CA (GT - LC = 0.48 dB) QPSK									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825 (Low)	21025 (Mid)	21225 (High)	20805 (Low)	21006 (Mid)	21206 (High)	20850 (Low)	21051 (Mid)	21251 (High)
	20975 (Low)	21175 (Mid)	21375 (High)	20949 (Low)	21150 (Mid)	21350 (High)	20994 (Low)	21195 (Mid)	21395 (High)
Conducted Power (dBm)	23.72	23.98	23.35	23.76	23.9	23.25	23.92	23.98	23.46
Conducted Power (Watts)	0.2355	0.2500	0.2163	0.2377	0.2455	0.2113	0.2466	0.2500	0.2218
EIRP(dBm)	24.20	24.46	23.83	24.24	24.38	23.73	24.40	24.46	23.94
EIRP(Watts)	0.2630	0.2793	0.2415	0.2655	0.2742	0.2360	0.2754	0.2793	0.2477

LTE Band 7 CA (GT - LC = 0.48 dB) QPSK									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828 (Low)	21003 (Mid)	21179 (High)	20850 (Low)	21026 (Mid)	21201 (High)	20850 (Low)	21001 (Mid)	21152 (High)
	20999 (Low)	21174 (Mid)	21350 (High)	21021 (Low)	21197 (Mid)	21372 (High)	21048 (Low)	21199 (Mid)	21350 (High)
Conducted Power (dBm)	23.89	23.91	23.6	23.86	23.95	23.64	23.96	23.95	23.76
Conducted Power (Watts)	0.2449	0.2460	0.2291	0.2432	0.2483	0.2312	0.2489	0.2483	0.2377
EIRP(dBm)	24.37	24.39	24.08	24.34	24.43	24.12	24.44	24.43	24.24
EIRP(Watts)	0.2735	0.2748	0.2559	0.2716	0.2773	0.2582	0.2780	0.2773	0.2655



LTE Band 7 CA (GT - LC = 0.48 dB) 16QAM									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825 (Low)	21025 (Mid)	21225 (High)	20805 (Low)	21006 (Mid)	21206 (High)	20850 (Low)	21051 (Mid)	21251 (High)
	20975 (Low)	21175 (Mid)	21375 (High)	20949 (Low)	21150 (Mid)	21350 (High)	20994 (Low)	21195 (Mid)	21395 (High)
Conducted Power (dBm)	23.07	23.73	22.88	23.06	23.59	22.65	23.45	23.55	22.75
Conducted Power (Watts)	0.2028	0.2360	0.1941	0.2023	0.2286	0.1841	0.2213	0.2265	0.1884
EIRP(dBm)	23.55	24.21	23.36	23.54	24.07	23.13	23.93	24.03	23.23
EIRP(Watts)	0.2265	0.2636	0.2168	0.2259	0.2553	0.2056	0.2472	0.2529	0.2104

LTE Band 7 CA (GT - LC = 0.48 dB) 16QAM									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828 (Low)	21003 (Mid)	21179 (High)	20850 (Low)	21026 (Mid)	21201 (High)	20850 (Low)	21001 (Mid)	21152 (High)
	20999 (Low)	21174 (Mid)	21350 (High)	21021 (Low)	21197 (Mid)	21372 (High)	21048 (Low)	21199 (Mid)	21350 (High)
Conducted Power (dBm)	23.25	23.7	23.05	23.54	23.71	22.92	23.42	23.64	23.52
Conducted Power (Watts)	0.2113	0.2344	0.2018	0.2259	0.2350	0.1959	0.2198	0.2312	0.2249
EIRP(dBm)	23.73	24.18	23.53	24.02	24.19	23.40	23.90	24.12	24.00
EIRP(Watts)	0.2360	0.2618	0.2254	0.2523	0.2624	0.2188	0.2455	0.2582	0.2512



LTE Band 7 CA (GT - LC = 0.48 dB) 64QAM									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825 (Low)	21025 (Mid)	21225 (High)	20805 (Low)	21006 (Mid)	21206 (High)	20850 (Low)	21051 (Mid)	21251 (High)
	20975 (Low)	21175 (Mid)	21375 (High)	20949 (Low)	21150 (Mid)	21350 (High)	20994 (Low)	21195 (Mid)	21395 (High)
Conducted Power (dBm)	21.43	21.73	21.16	21.31	21.79	20.57	21.66	21.84	20.81
Conducted Power (Watts)	0.1390	0.1489	0.1306	0.1352	0.1510	0.1140	0.1466	0.1528	0.1205
EIRP(dBm)	21.91	22.21	21.64	21.79	22.27	21.05	22.14	22.32	21.29
EIRP(Watts)	0.1552	0.1663	0.1459	0.1510	0.1687	0.1274	0.1637	0.1706	0.1346

LTE Band 7 CA (GT - LC = 0.48 dB) 64QAM									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828 (Low)	21003 (Mid)	21179 (High)	20850 (Low)	21026 (Mid)	21201 (High)	20850 (Low)	21001 (Mid)	21152 (High)
	20999 (Low)	21174 (Mid)	21350 (High)	21021 (Low)	21197 (Mid)	21372 (High)	21048 (Low)	21199 (Mid)	21350 (High)
Conducted Power (dBm)	21.62	21.93	21.18	21.85	22.12	21.1	22.48	22.21	22.38
Conducted Power (Watts)	0.1452	0.1560	0.1312	0.1531	0.1629	0.1288	0.1770	0.1663	0.1730
EIRP(dBm)	22.10	22.41	21.66	22.33	22.60	21.58	22.96	22.69	22.86
EIRP(Watts)	0.1622	0.1742	0.1466	0.1710	0.1820	0.1439	0.1977	0.1858	0.1932



LTE Band 7 CA (GT - LC = 0.48 dB) QPSK			
Bandwidth	15M + 10M		
Channel PCC	20825	21051	21277
	(Low)	(Mid)	(High)
Channel SCC	20945	21171	21397
	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.79	23.91	23.37
Conducted Power (Watts)	0.2393	0.2460	0.2173
EIRP(dBm)	24.27	24.39	23.85
EIRP(Watts)	0.2673	0.2748	0.2427

LTE Band 7 CA (GT - LC = 0.48 dB) 16QAM			
Bandwidth	15M + 10M		
Channel PCC	20825	21051	21277
	(Low)	(Mid)	(High)
Channel SCC	20945	21171	21397
	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.32	23.75	22.71
Conducted Power (Watts)	0.2148	0.2371	0.1866
EIRP(dBm)	23.80	24.23	23.19
EIRP(Watts)	0.2399	0.2649	0.2084

LTE Band 7 CA (GT - LC = 0.48 dB) 64QAM			
Bandwidth	15M + 10M		
Channel PCC	20825	21051	21277
	(Low)	(Mid)	(High)
Channel SCC	20945	21171	21397
	(Low)	(Mid)	(High)
Conducted Power (dBm)	21.60	21.94	20.78
Conducted Power (Watts)	0.1445	0.1563	0.1197
EIRP(dBm)	22.08	22.42	21.26
EIRP(Watts)	0.1614	0.1746	0.1337



LTE Band 38 CA (GT - LC = 0.84 dB) QPSK						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.95	23.86	23.96	23.98	23.9	23.95
Conducted Power (Watts)	0.2483	0.2432	0.2489	0.2500	0.2455	0.2483
EIRP(dBm)	24.79	24.70	24.80	24.82	24.74	24.79
EIRP(Watts)	0.3013	0.2951	0.3020	0.3034	0.2979	0.3013

LTE Band 38 CA (GT - LC = 0.84 dB) 16QAM						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.14	23.19	23.27	23.11	23.19	23.41
Conducted Power (Watts)	0.2061	0.2084	0.2123	0.2046	0.2084	0.2193
EIRP(dBm)	23.98	24.03	24.11	23.95	24.03	24.25
EIRP(Watts)	0.2500	0.2529	0.2576	0.2483	0.2529	0.2661

LTE Band 38 CA (GT - LC = 0.84 dB) 64QAM						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	21.31	21.48	21.44	21.96	21.87	22.05
Conducted Power (Watts)	0.1352	0.1406	0.1393	0.1570	0.1538	0.1603
EIRP(dBm)	22.15	22.32	22.28	22.80	22.71	22.89
EIRP(Watts)	0.1641	0.1706	0.1690	0.1905	0.1866	0.1945



Peak-to-Average Ratio

Mode	LTE Band 2 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.13	4.46	3.62	5.57	PASS
Middle CH	3.39	4.32	4.23	5.45	
Highest CH	3.1	4.61	3.54	5.62	
Mode	LTE Band 2 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	3.8	5.54			PASS
Middle CH	4.26	5.48			
Highest CH	4.03	5.59			

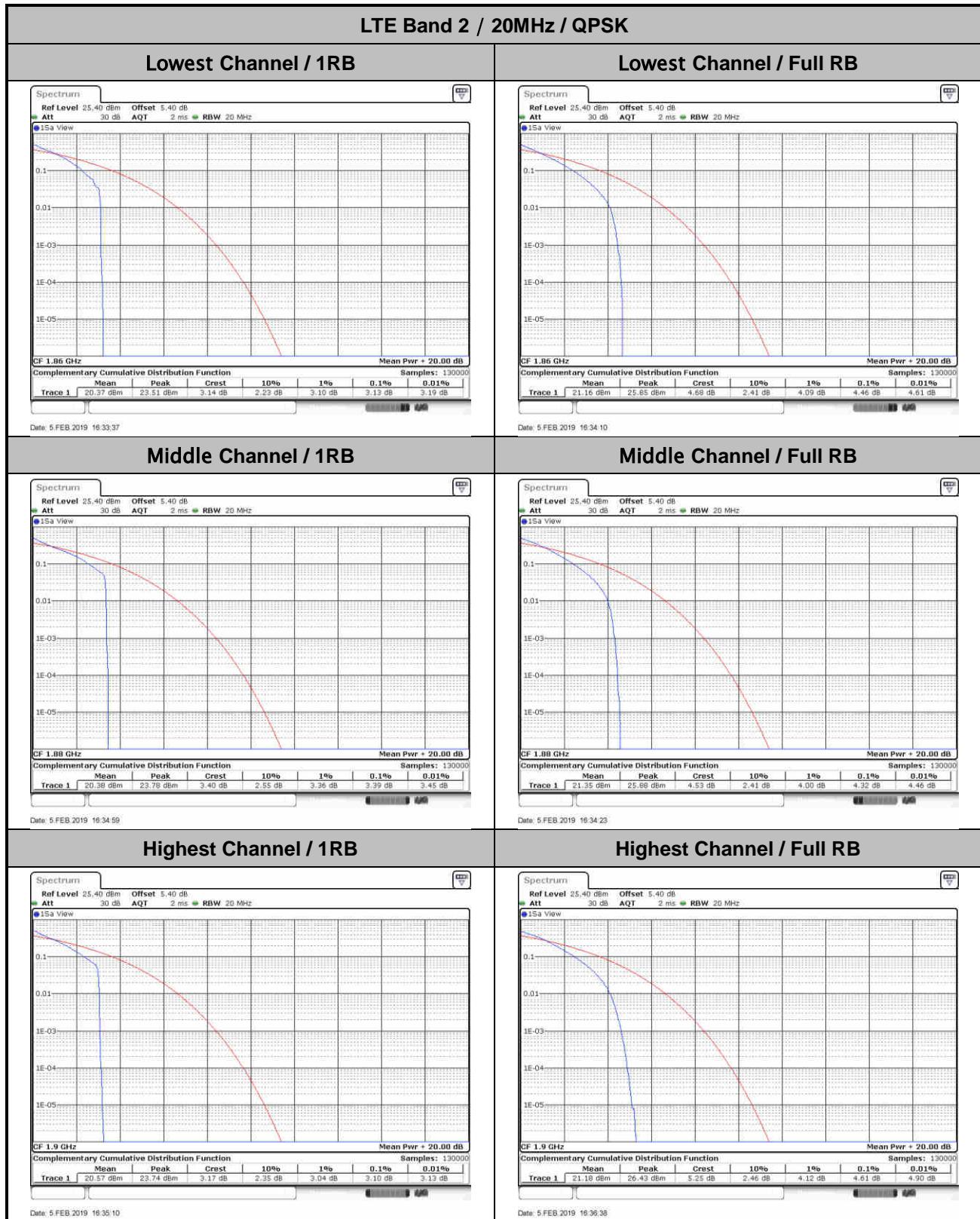
Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.45	4.38	4.17	5.48	PASS
Middle CH	3.57	4.38	4.58	5.45	
Highest CH	3.48	4.43	4.23	5.42	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.14	5.48			PASS
Middle CH	4.67	5.42			
Highest CH	4.29	5.4			

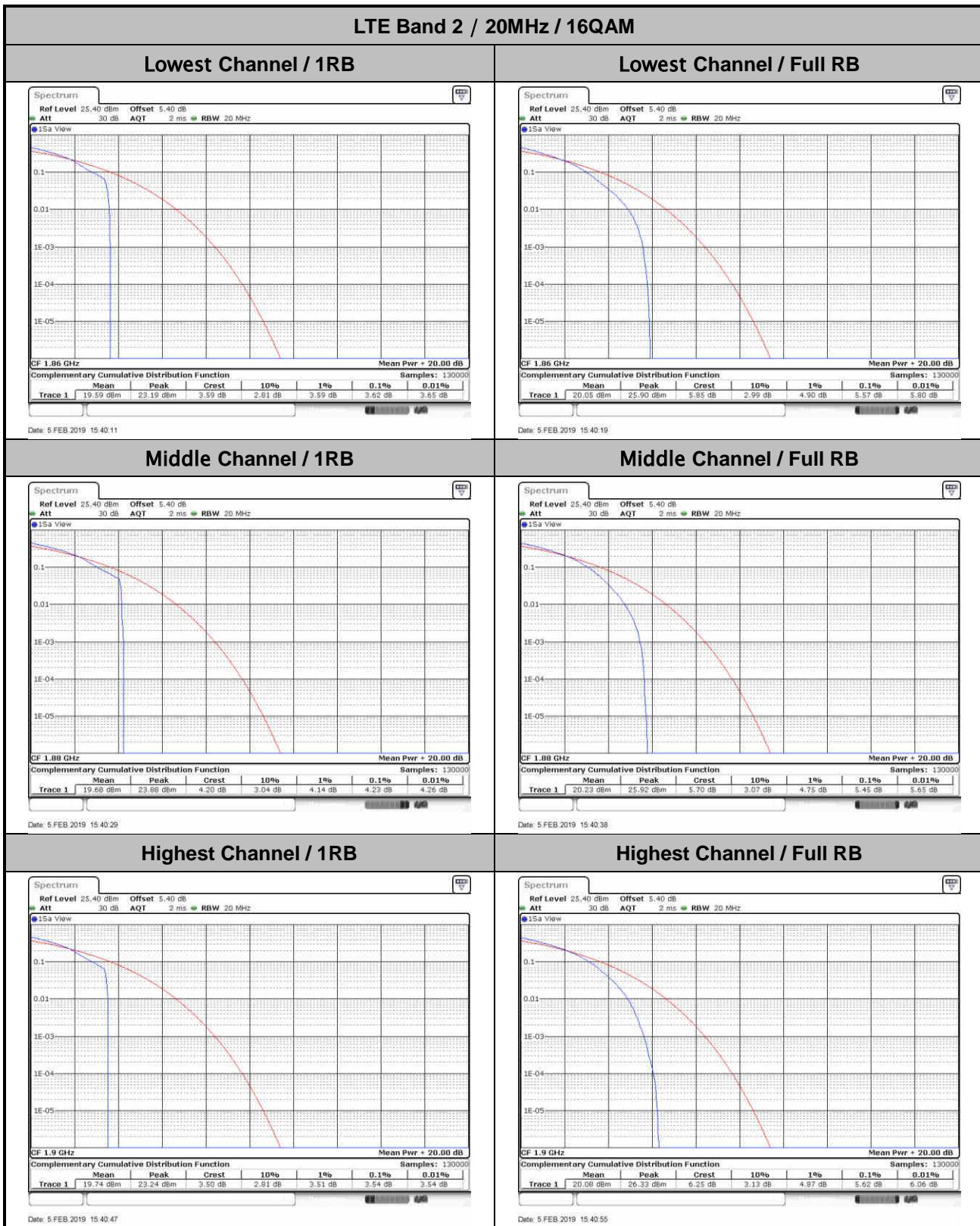


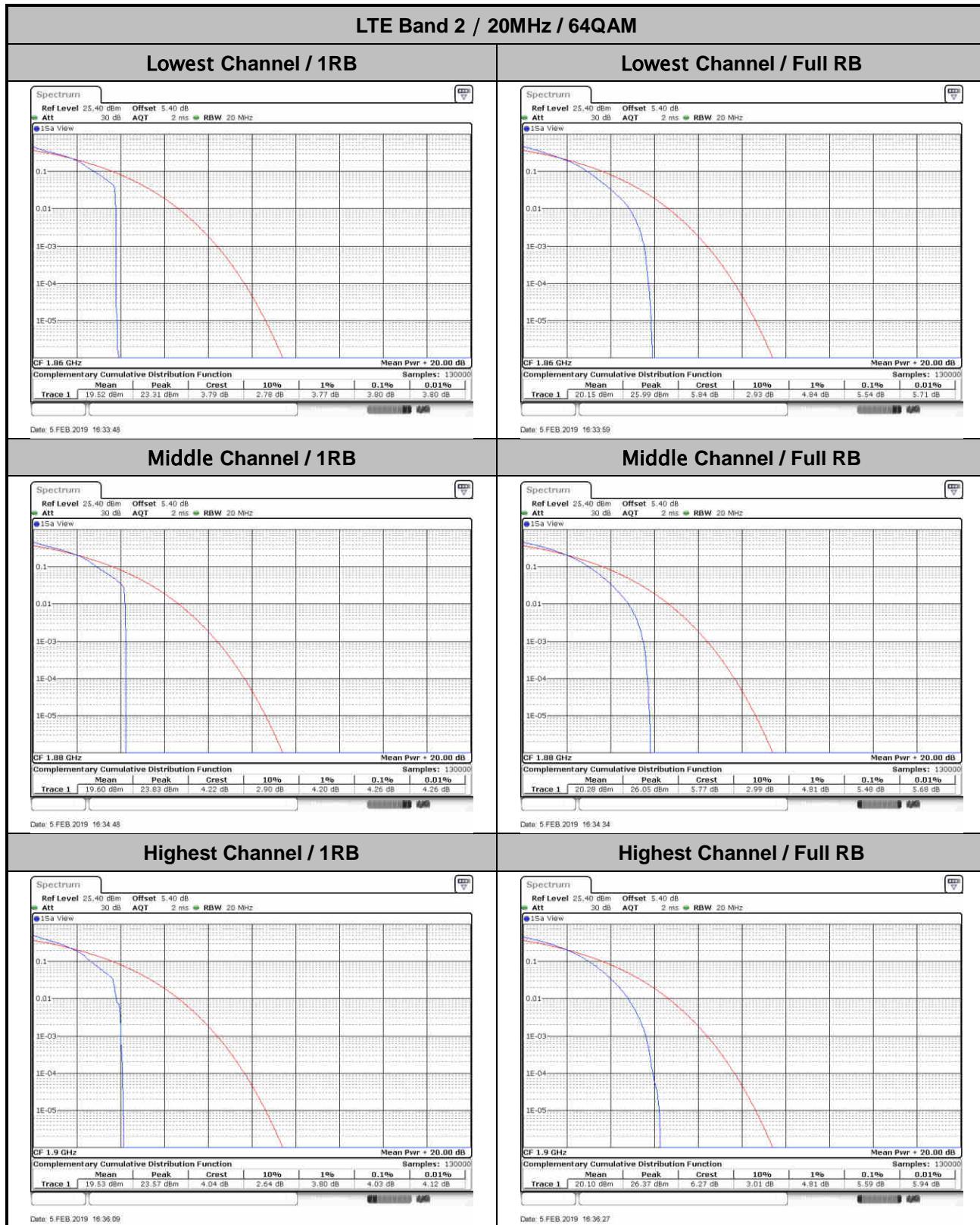
Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.48	4.55	4.09	5.48	PASS
Middle CH	3.48	4.49	4	5.54	
Highest CH	3.54	4.67	4.23	5.59	
Mode	LTE Band 5 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.16	6.14			PASS
Middle CH	5.33	6.14			
Highest CH	5.19	6.12			

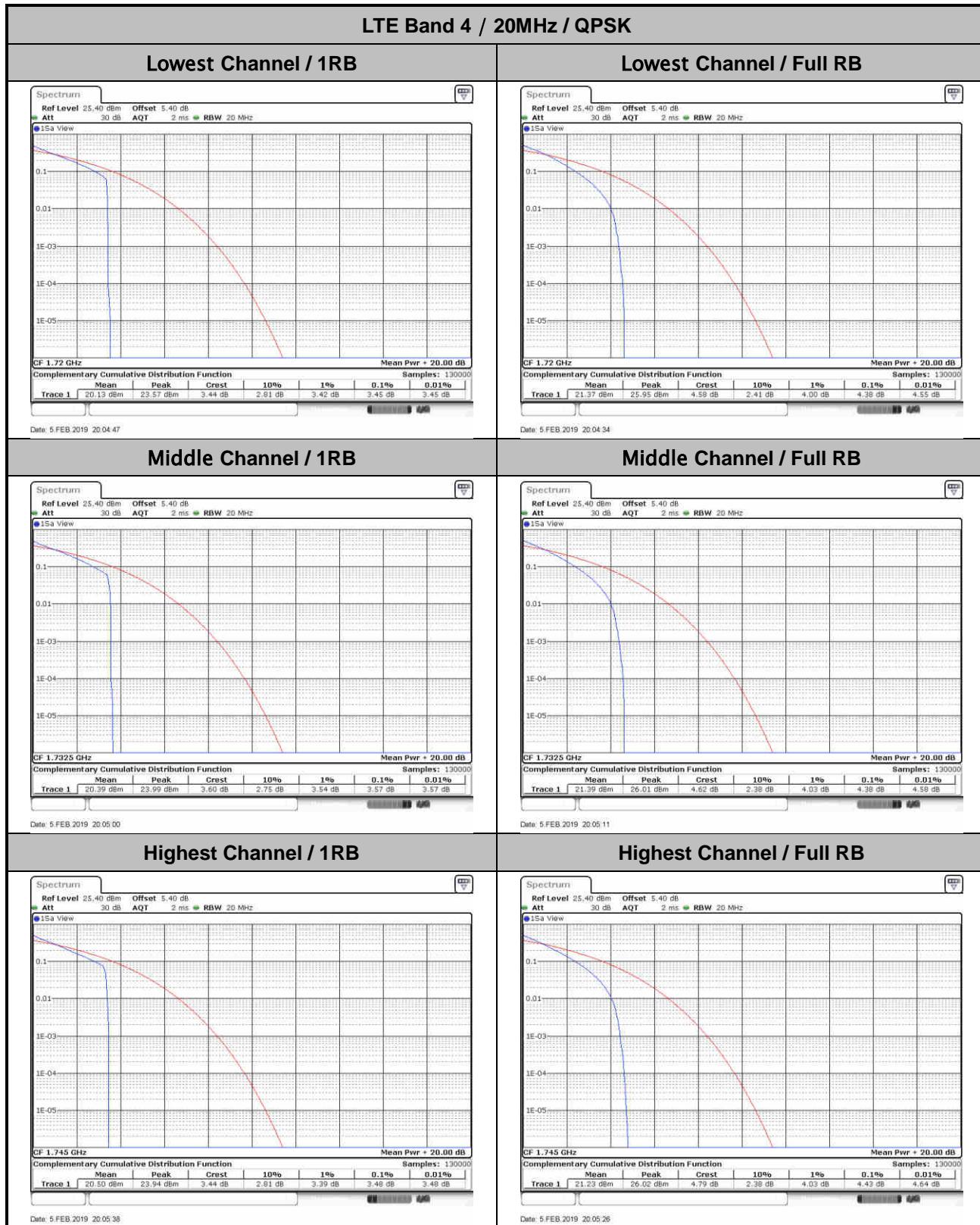
Mode	LTE Band 7 / 20MHz					
Mod.	QPSK		16QAM		Limit: 13dB	
RB Size	1RB	Full RB	1RB	Full RB	Result	
Lowest CH	2.87	4.09	4.03	5.1	PASS	
Middle CH	2.99	4.38	3.97	5.36		
Highest CH	3.3	4.72	4.49	5.71		
Mod.	64QAM		Limit: 13dB			
RB Size	1RB	Full RB	Result			
Lowest CH	5.19	5.8	PASS			
Middle CH	5.39	6.14				
Highest CH	5.42	6.35				

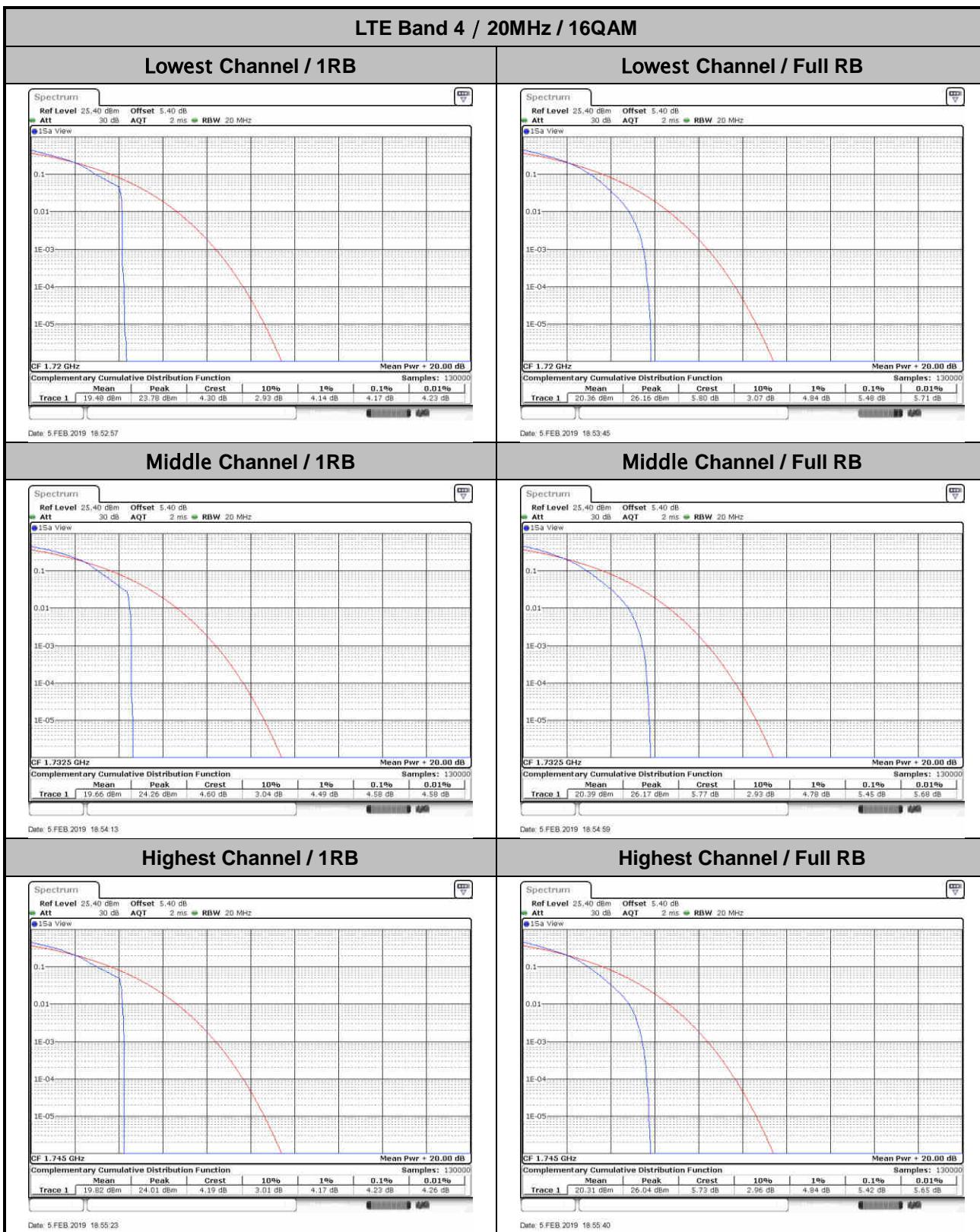
Mode	LTE Band 41 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.41	6.49	6.38	6.75	PASS
Middle CH	4.78	5.77	5.42	5.83	
Highest CH	4	4.49	4.99	6.78	
Mode	LTE Band 41 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.14	6.87			PASS
Middle CH	5.65	6.9			
Highest CH	6.64	6.84			

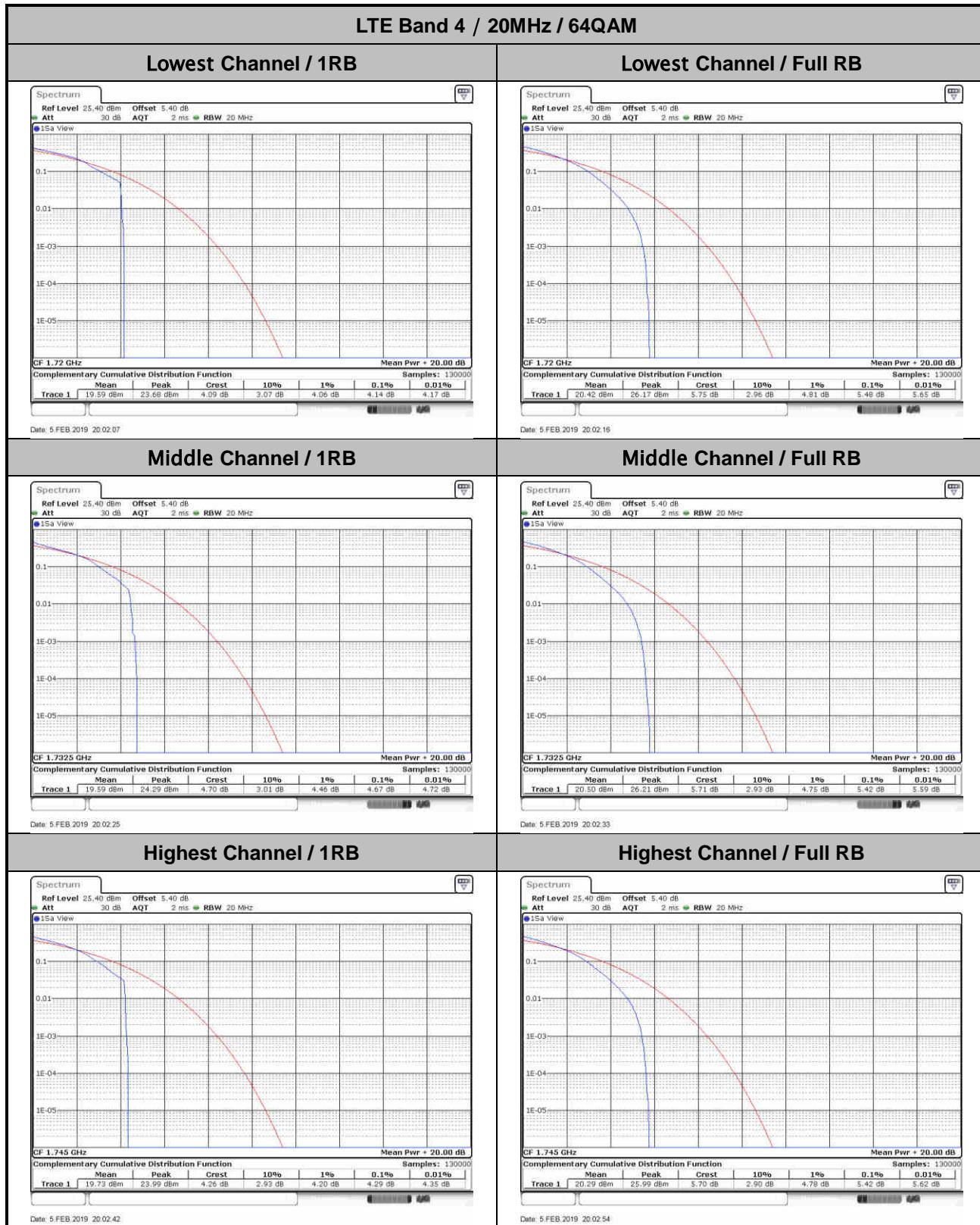








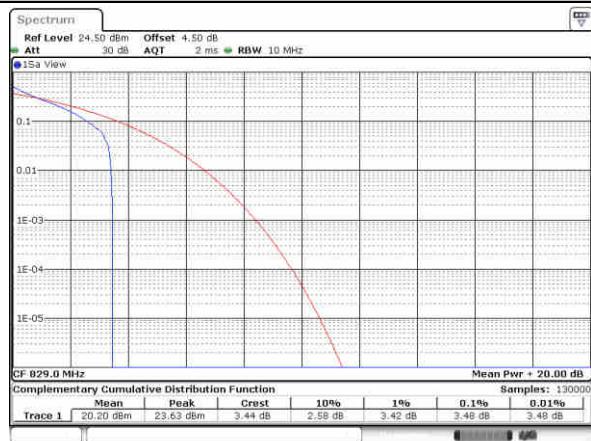






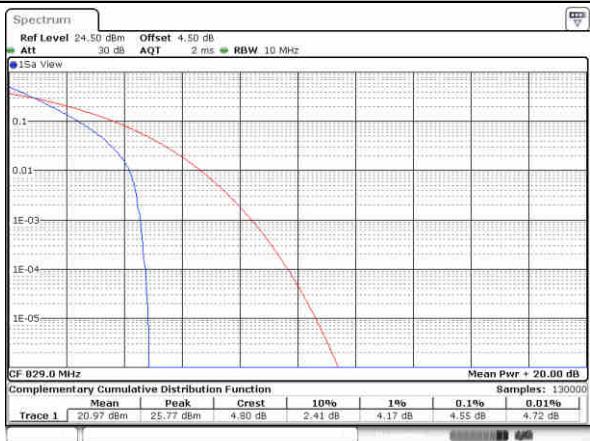
LTE Band 5 / 10MHz / QPSK

Lowest Channel / 1RB



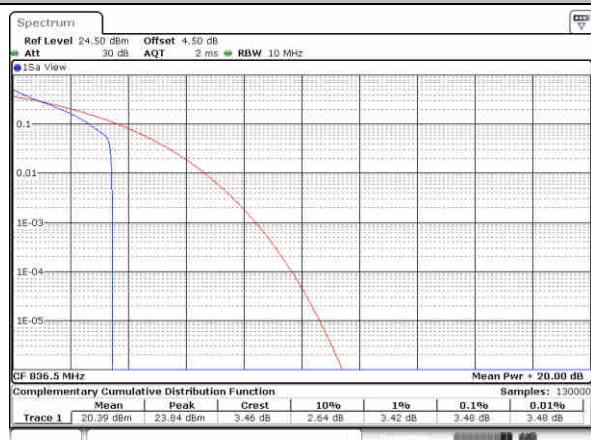
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Lowest Channel / Full RB



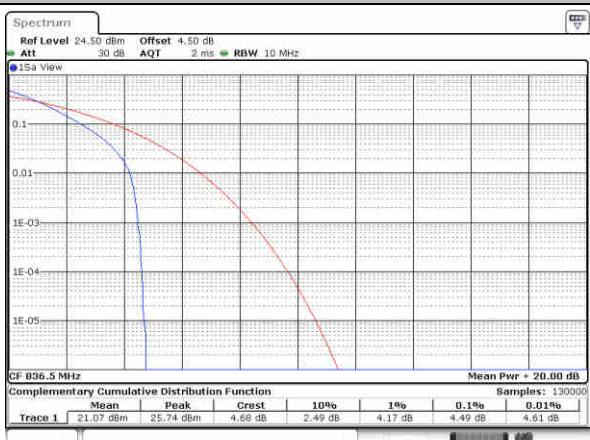
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Middle Channel / 1RB



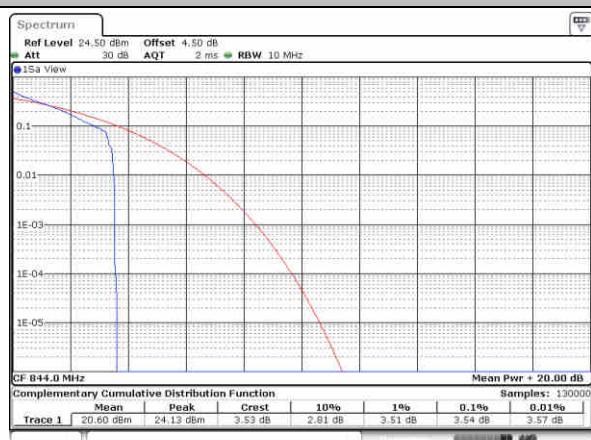
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Middle Channel / Full RB



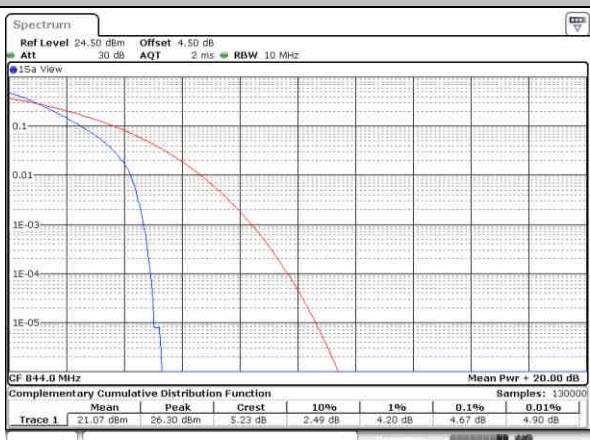
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Highest Channel / 1RB

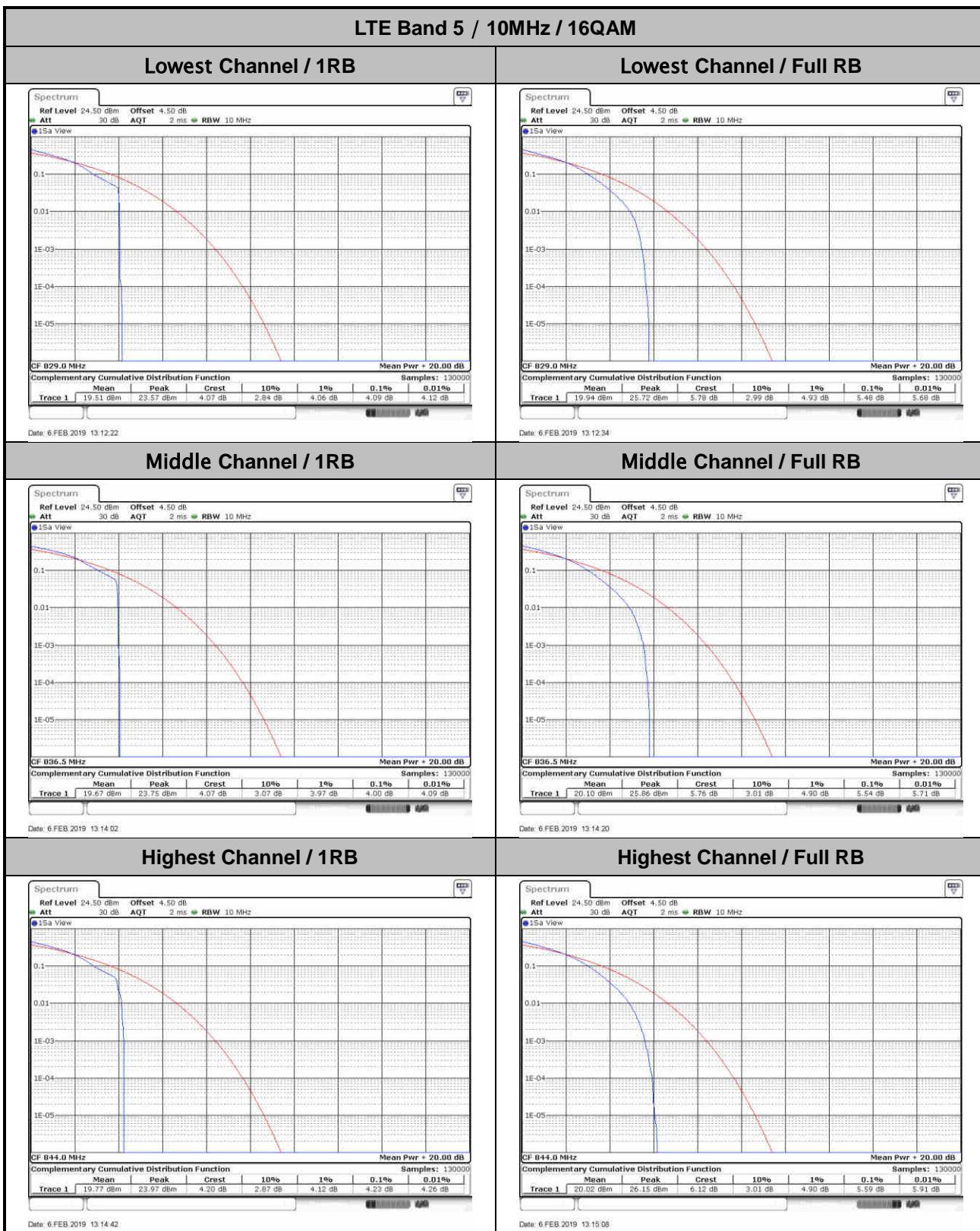


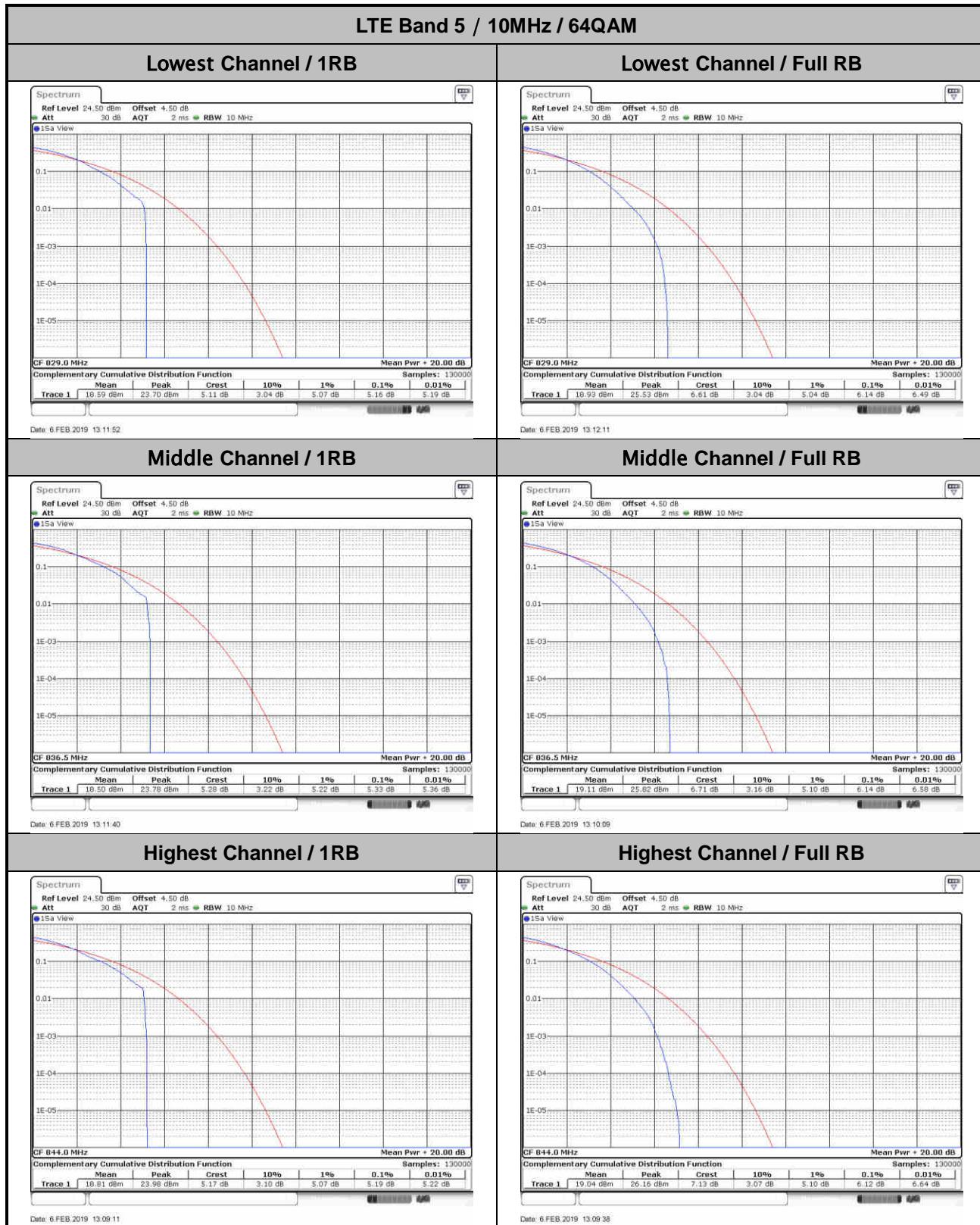
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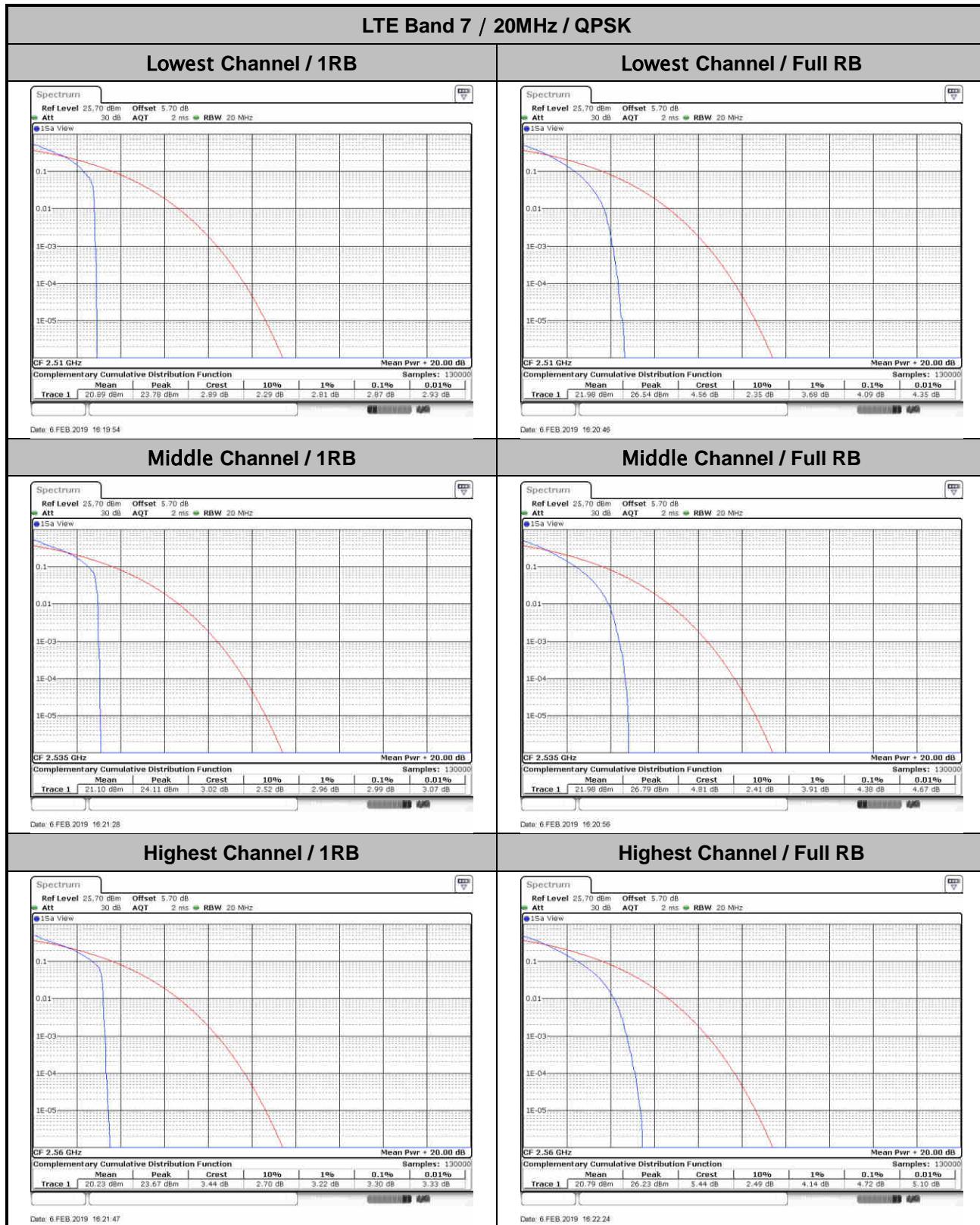
Highest Channel / Full RB

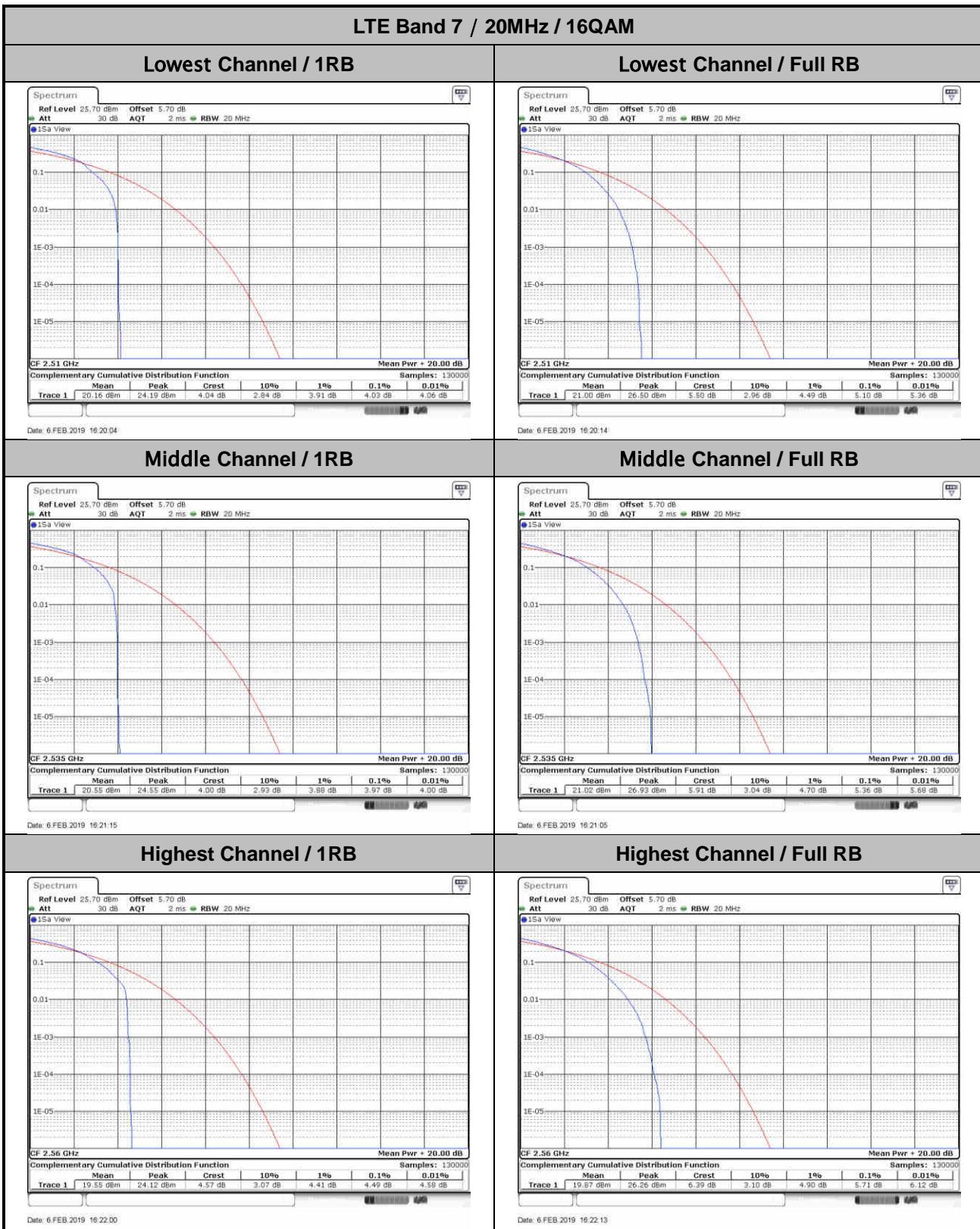


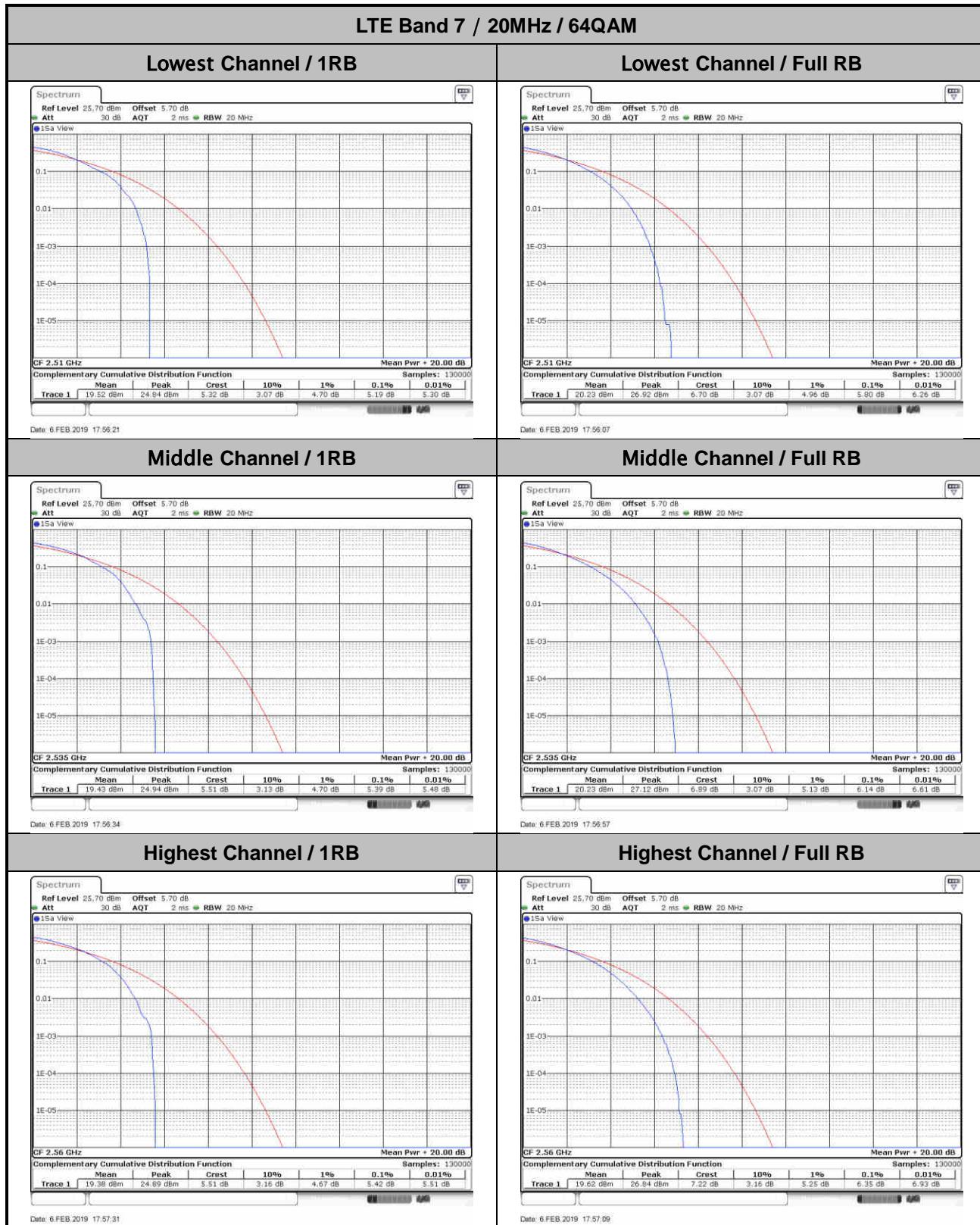
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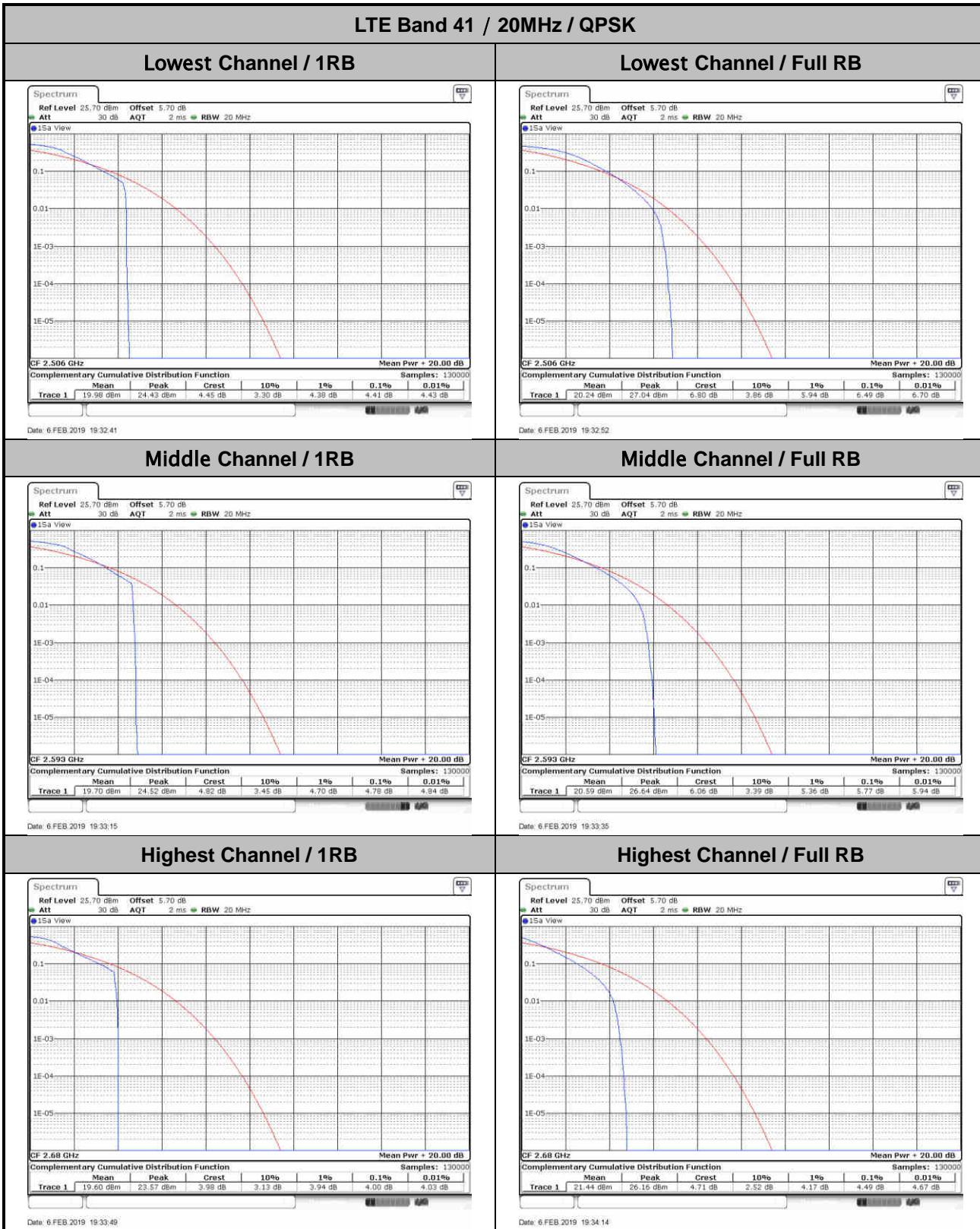


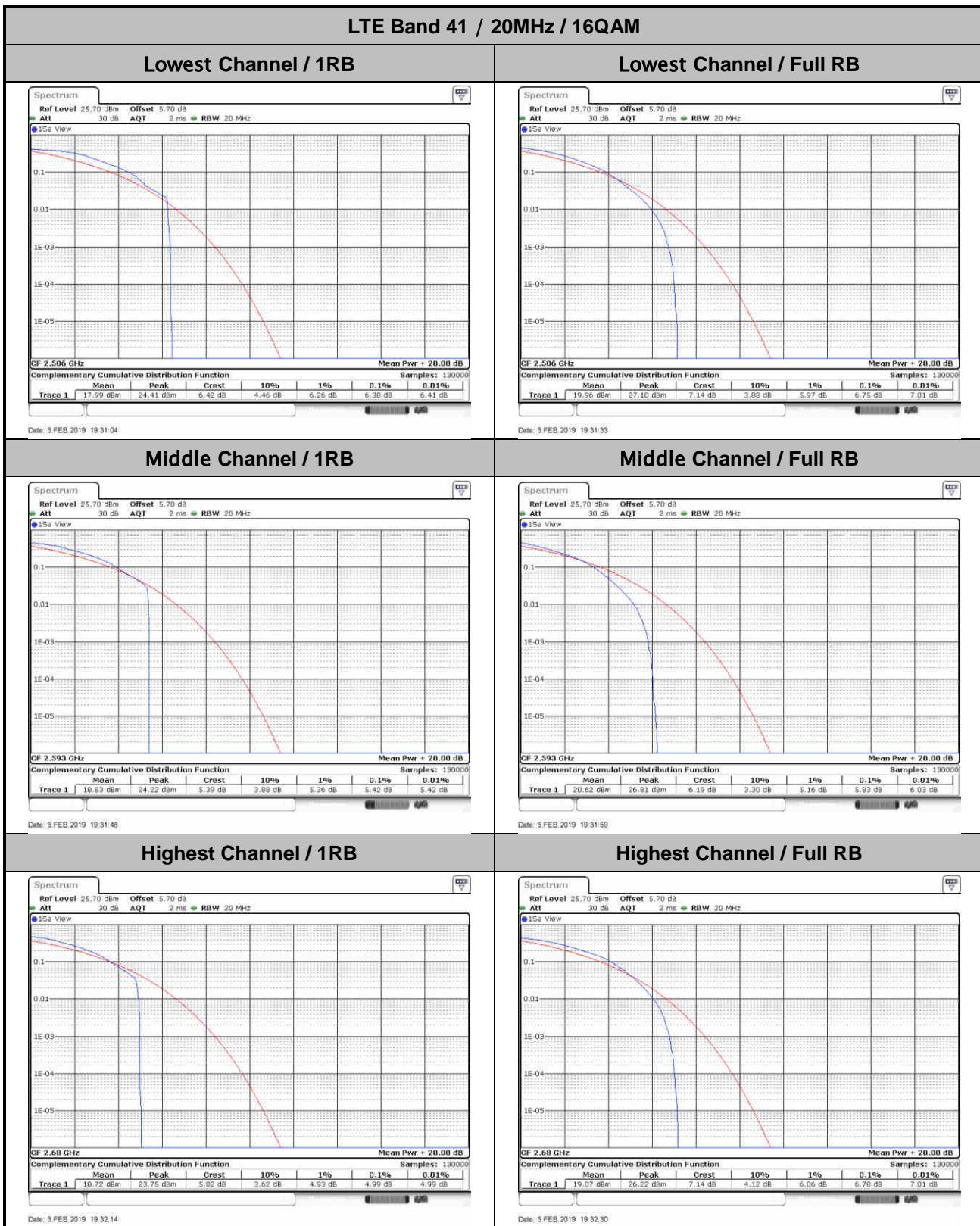


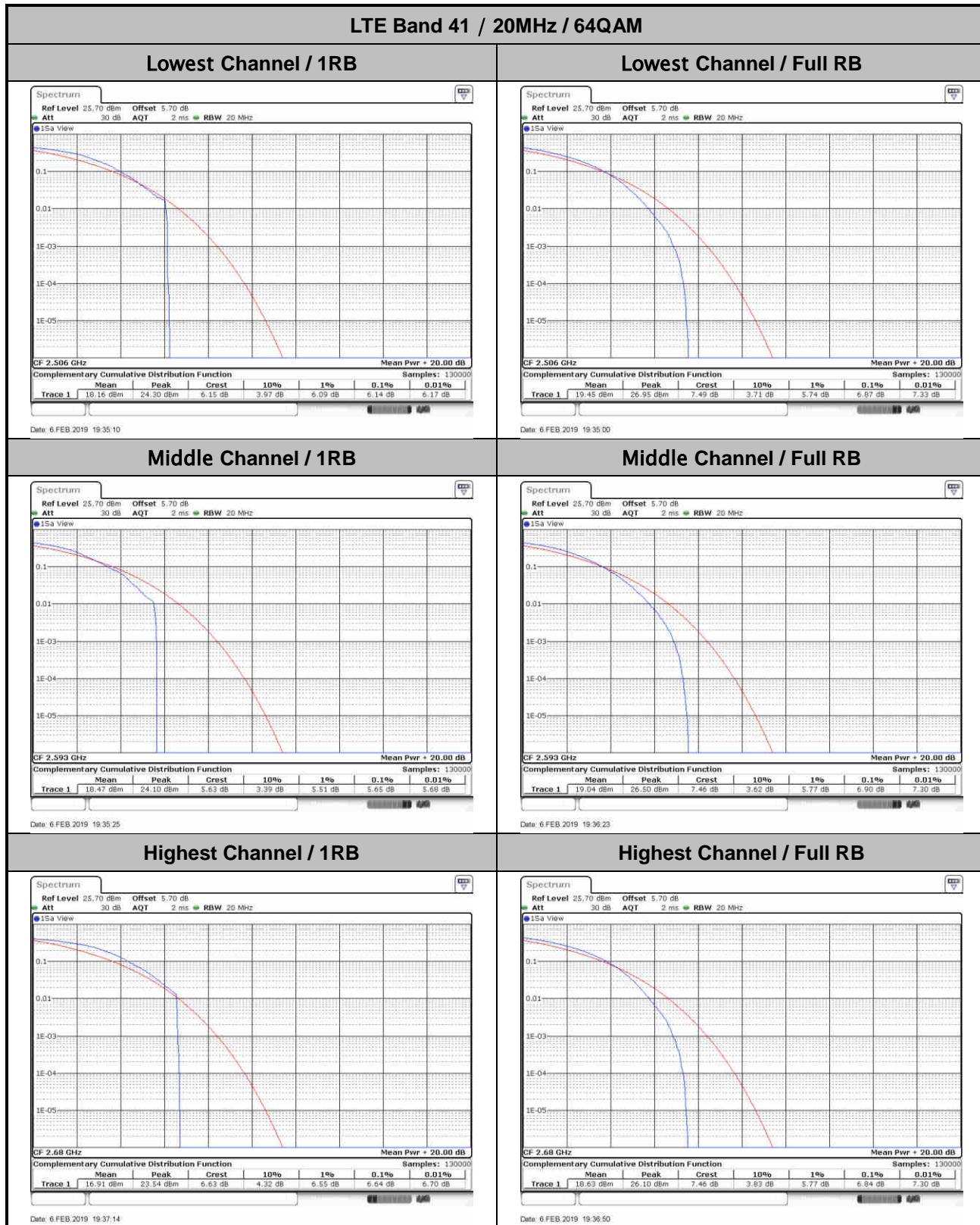














26dB Bandwidth

Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.245	1.225	3.075	3.057	4.965	4.955	9.69	9.91	14.476	14.416	20.3	20.26
Middle CH	1.234	1.222	2.991	3.039	4.955	4.995	9.83	9.79	14.266	14.446	20.42	20.06
Highest CH	1.236	1.256	3.027	3.075	4.925	4.875	9.77	9.99	14.505	14.386	20.22	20.26
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.208		2.979		4.905		9.89		14.446		20.22	
Middle CH	1.225		3.051		4.895		9.83		14.446		20.14	
Highest CH	1.216		2.991		4.845		9.79		14.236		20.26	

Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.225	1.222	2.967	3.003	4.965	4.835	9.75	9.77	14.476	14.655	20.22	20.34
Middle CH	1.222	1.225	3.051	3.039	4.835	4.885	9.79	9.79	14.326	14.266	20.14	20.14
Highest CH	1.222	1.228	3.045	3.027	4.915	4.805	9.81	9.93	14.386	14.625	20.22	20.26
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.22		2.991		4.925		9.79		14.446		20.14	
Middle CH	1.236		2.991		4.865		9.87		14.535		20.18	
Highest CH	1.228		2.973		4.875		9.77		14.476		20.18	



Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.231	1.228	3.033	3.051	4.855	4.835	9.75	9.73	-	-	-	-
Middle CH	1.222	1.236	2.997	3.033	4.905	4.935	9.75	9.77	-	-	-	-
Highest CH	1.228	1.225	3.009	3.009	4.875	4.875	9.95	9.71	-	-	-	-

Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz					
Mod.	64QAM		64QAM		64QAM		64QAM					
Lowest CH	1.222		3.039		4.995		9.91					
Middle CH	1.225		2.997		4.855		9.71					
Highest CH	1.228		3.015		4.965		9.69					

Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.845	4.905	9.67	9.77	14.416	14.326	20.18	20.14
Middle CH	-	-	-	-	4.925	4.795	9.65	9.83	14.386	14.505	20.18	20.26
Highest CH	-	-	-	-	4.995	4.875	9.81	9.75	14.386	14.296	20.14	20.14

Mode	LTE Band 7 : 26dB BW(MHz)											
BW	5MHz		10MHz		15MHz		20MHz					
Mod.	64QAM		64QAM		64QAM		64QAM					
Lowest CH	4.805		9.81		14.116		20.18					
Middle CH	4.855		9.81		14.416		20.18					
Highest CH	4.855		9.75		14.655		20.06					

Mode	LTE Band 41 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.835	4.865	9.81	9.71	14.326	14.535	20.18	20.1
Middle CH	-	-	-	-	4.935	4.865	9.73	9.63	14.446	14.326	20.02	20.1
Highest CH	-	-	-	-	4.855	4.905	9.61	9.73	14.266	14.176	20.1	19.94

BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH					4.885		9.71		14.296		19.94	
Middle CH					4.765		9.65		14.146		20.18	
Highest CH					4.835		9.61		14.176		20.14	



For CA

Mode	LTE Band 7 : 26dB BW(MHz)			
QPSK				
BW	10MHz+20MHz	15MHz+5MHz	15MHz+10MHz	15MHz+15MHz
Lowest CH	29.85		25.175	30.569
Middle CH	29.491		25.175	30.749
Highest CH	29.85		25.275	30.509
BW	15MHz+20MHz	20MHz+10MHz	20MHz+15MHz	20MHz+20MHz
Lowest CH	34.895	30.09	34.825	40.04
Middle CH	34.685	29.97	34.965	39.88
Highest CH	34.895	29.97	34.965	39.8

Mode	LTE Band 7 : 26dB BW(MHz)			
16QAM				
BW	10MHz+20MHz	15MHz+5MHz	15MHz+10MHz	15MHz+15MHz
Lowest CH	29.91		25.325	30.569
Middle CH	29.191		25.325	30.45
Highest CH	29.97		25.175	30.629
BW	15MHz+20MHz	20MHz+10MHz	20MHz+15MHz	20MHz+20MHz
Lowest CH	34.895	29.97	34.895	39.72
Middle CH	34.965	29.97	34.825	39.8
Highest CH	34.895	30.09	34.825	39.96

Mode	LTE Band 7 : 26dB BW(MHz)			
64QAM				
BW	10MHz+20MHz	15MHz+5MHz	15MHz+10MHz	15MHz+15MHz
Lowest CH	29.79		25.225	30.749
Middle CH	29.311		25.524	30.629
Highest CH	30.03		25.125	30.509
BW	15MHz+20MHz	20MHz+10MHz	20MHz+15MHz	20MHz+20MHz
Lowest CH	34.895	29.97	34.825	39.8
Middle CH	34.755	29.91	35.035	39.8
Highest CH	34.755	30.09	34.685	39.64



Mode	LTE Band 38 : 26dB BW(MHz)			
Mod.	QPSK		16QAM	
BW	15MHz+15MHz	20MHz+20MHz	15MHz+15MHz	20MHz+20MHz
Lowest CH	30.74	39.80	30.45	39.481
Middle CH	30.629	39.72	30.749	39.88
Highest CH	30.509	39.88	30.27	39.8

Mode	LTE Band 38 : 26dB BW(MHz)			
Mod.	64QAM		-	
BW	15MHz+15MHz	20MHz+20MHz	-	-
Lowest CH	30.39	39.96	-	-
Middle CH	30.569	39.96	-	-
Highest CH	30.509	39.88	-	-

