



FCC RF Test Report

APPLICANT : Republic Wireless, Inc.
EQUIPMENT : Cellular Voice Device
BRAND NAME : Relay
MODEL NAME : RW2265
FCC ID : 2AMBHRW2265
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(F), 27(H)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

The product was received on Jan. 12, 2018 and completely tested on Apr. 04, 2018. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and the testing has shown the tested sample to be in compliance with the applicable technical standards.

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

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG811212B	Rev. 01	Initial issue of report	Apr. 27, 2018

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)(2)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt		
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13)	ERP < 3 Watt		
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2)(Band 25)(Band 41)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt		
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(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 41)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		



Report Section	FCC Rule	Description	Limit	Result	Remark
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	Under limit 9.36 dB at 12933.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 41)	$< 55 + 10\log_{10}(P[\text{Watts}])$		



1 General Description

1.1 Applicant

Republic Wireless, Inc.

940 Main Campus Drive, Ste 300, Raleigh, NC 27606, United States

1.2 Manufacturer

Bluebank Communication Technology Co Ltd

No.16 Cuiping Road, Yubei District, Chongqing, P.R.China,401120

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Cellular Voice Device
Brand Name	Relay
Model Name	RW2265
FCC ID	2AMBHRW2265
EUT supports Radios application	CDMA/EV-DO/WCDMA/HSPA/HSPA+(16QAM uplink is not supported)/DC-HSDPA/LTE/NFC WLAN2.4GHz 802.11b/g/n HT20 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE/ Bluetooth v4.1 LE
IMEI	N/A
HW Version	B1
SW Version	msm8909_BLUEBANK-QC26A-000-01-15-01.20.2018_userd ebug
EUT Stage	Identical Prototype

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 12 : 699.7 MHz ~ 715.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 26 : 824.7MHz ~ 848.3 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 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 12 : 729.7 MHz ~ 745.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 26 : 869.7MHz ~ 893.3MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 2110.7 MHz~ 2179.3 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 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Antenna Gain	LTE Band 12 : -7.13 dBi LTE Band 13 : -7.45 dBi LTE Band 25 / 2 : 0.23 dBi LTE Band 26 / 5 : -2.18 dBi LTE Band 41 : 1.62 dBi LTE Band 66 / 4 : -0.02 dBi
Type of Modulation	QPSK / 16QAM / 64QAM (uplink is not supported)

1.5 Modification of EUT

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



1.6 Emission Designator

LTE Band 25 / 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 ~ 1914.3	1M10G7D	-	0.1786	1M09W7D	-	0.1517
3	1851.5 ~ 1913.5	2M74G7D	-	0.1754	2M73W7D	-	0.1507
5	1852.5 ~ 1912.5	4M51G7D	-	0.1758	4M51W7D	-	0.1445
10	1855.0 ~ 1910.0	9M01G7D	0.0016	0.1820	9M03W7D	-	0.1486
15	1857.5 ~ 1907.5	13M4G7D	-	0.1871	13M5W7D	-	0.1545
20	1860.0 ~ 1905.0	18M3G7D	-	0.1871	18M3W7D	-	0.1500
LTE Band 12		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	699.7 ~ 715.3	1M10G7D	-	0.0272	1M09W7D	-	0.0221
3	700.5 ~ 714.5	2M72G7D	-	0.0264	2M74W7D	-	0.0226
5	701.5 ~ 713.5	4M49G7D	-	0.0272	4M49W7D	-	0.0202
10	704.0 ~ 711.0	9M05G7D	0.0085	0.0283	9M05W7D	-	0.0228
LTE Band 13		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)
5	779.5 ~ 784.5	4M49G7D	-	0.0247	4M51W7D	-	0.0204
10	782.0	9M05G7D	0.0066	0.0247	8M95W7D	-	0.0169
LTE Band 26 / 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	1M10G7D	-	0.0871	1M09W7D	-	0.0682
3	825.5 ~ 847.5	2M73G7D	-	0.0845	2M74W7D	-	0.0697
5	826.5 ~ 846.5	4M50G7D	-	0.0855	4M51W7D	-	0.0676
10	829.0 ~ 844.0	9M03G7D	0.0117	0.0851	9M03W7D	-	0.0665
15	831.5 ~ 841.5	13M5G7D	-	0.0873	13M5W7D	-	0.0738
CH26765	821.5	13M4G7D	-	0.0841	13M3W7D	-	0.0687



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	4M54G7D	-	0.2512	4M51W7D	-	0.2004
10	2501.0 ~ 2685.0	9M05G7D	0.0022	0.2630	9M03W7D	-	0.1854
15	2503.5 ~ 2682.5	13M5G7D	-	0.2838	13M5W7D	-	0.2018
20	2506.0 ~ 2680.0	18M5G7D	-	0.2477	18M6W7D	-	0.1901
LTE Band 66 / 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 ~ 1779.3	1M09G7D	-	0.1710	1M09W7D	-	0.1352
3	1711.5 ~ 1778.5	2M72G7D	-	0.1687	2M73W7D	-	0.1334
5	1712.5 ~ 1777.5	4M54G7D	-	0.1652	4M50W7D	-	0.1442
10	1715.0 ~ 1775.0	9M09G7D	0.0034	0.1663	9M03W7D	-	0.1242
15	1717.5 ~ 1772.5	13M5G7D	-	0.1746	13M4W7D	-	0.1403
20	1720.0 ~ 1770.0	18M4G7D	-	0.1762	18M5W7D	-	0.1439

Note:

1. LTE Band 26 overlaps the entire frequency range of LTE Band 5. Therefore, the test results provided in this report covers Band 5 and the portion of Band 26 subject to Part 22.
2. LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.
3. LTE Band 25 overlaps the entire frequency range of LTE Band 2. Therefore, the test results provided in this report covers Band 25 as well as Band 2.



1.7 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No is CN5013.

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	TH01-KS	03CH03-KS	630927

Note: The test site complies with ANSI C63.4 2014 requirement.

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), 27(F), 27(H)
- ♦ ANSI / TIA-603-E
- ♦ 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, 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.

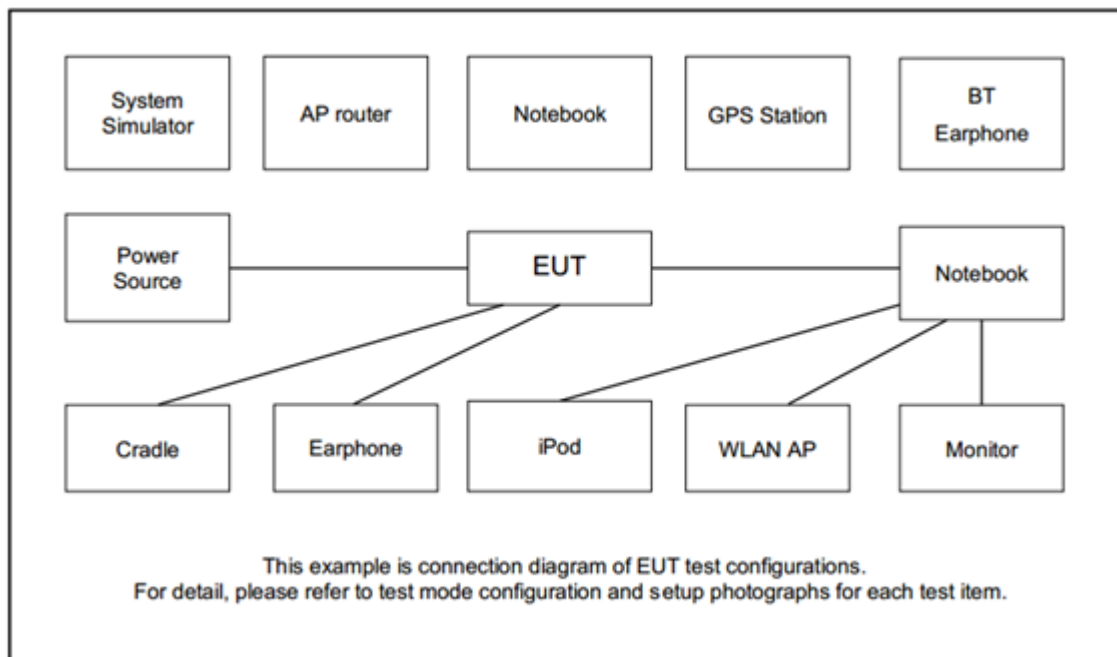
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	13	-	-	v		-	-	v	v	v	v	v	v	v	v
	13	-	-		v	-	-	v	v	v	v	v		v	
	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	26	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
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	12				v	-	-	v	v	v		v	v	v	v
	13	-	-		v	-	-	v	v	v		v	v	v	v
	25						v	v	v	v		v	v	v	v
	26				v		-	v	v	v		v	v	v	v
	41	-	-				v	v	v	v		v	v	v	v
	66						v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	12	v	v	v	v	-	-	v	v			v	v	v	v
	13	-	-	v		-	-	v	v			v	v	v	v
	13	-	-		v	-	-	v	v			v		v	
	25	v	v	v	v	v	v	v	v			v	v	v	v
	26	v	v	v	v	v	-	v	v			v	v	v	v
	41	-	-	v	v	v	v	v	v			v	v	v	v
	66	v	v	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	12	v	v	v	v	-	-	v	v	v		v	v		v
	13	-	-	v		-	-	v	v	v		v	v		v
	13	-	-		v	-	-	v	v	v		v		v	
	25	v	v	v	v	v	v	v	v	v		v	v		v
	26	v	v	v	v	v	-	v	v	v		v	v		v
	41	-	-	v	v	v	v	v	v	v		v	v		v
	66	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	1	Half	Full	L	M	H
Conducted Spurious Emission	12	v	v	v	v	-	-	v	v	v			v	v	v
	13	-	-	v		-	-	v	v	v			v	v	v
	13	-	-		v	-	-	v	v	v				v	
	25	v	v	v	v	v	v	v	v	v			v	v	v
	26	v	v	v	v	v	-	v	v	v			v	v	v
	41	-	-	v	v	v	v	v	v	v			v	v	v
	66	v	v	v	v	v	v	v	v	v			v	v	v
Frequency Stability	12				v	-	-	v				v		v	
	13	-	-		v	-	-	v				v		v	
	25				v			v				v		v	
	26				v		-	v				v		v	
	41	-	-		v			v				v		v	
	66				v			v				v		v	
E.R.P / E.I.R.P	12	v	v	v	v	-	-	v	v	v			v	v	v
	13	-	-	v		-	-	v	v	v			v	v	v
	13	-	-		v	-	-	v	v	v				v	
	25	v	v	v	v	v	v	v	v	v			v	v	v
	26	v	v	v	v	v	-	v	v	v			v	v	v
	41	-	-	v	v	v	v	v	v	v			v	v	v
	66	v	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	12	Worst Case												v	
	13	Worst Case												v	
	25	Worst Case												v	
	26	Worst Case												v	
	41	Worst Case												v	
	66	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. 4. The test results of LTE Band 25 cover Band 2, Band 26 cover Band 5, Band 66 cover Band 4.														

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.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW	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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 4.9 dB.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\
 &= 4.9 \text{ (dB)}
 \end{aligned}$$

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 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5



LTE Band 25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	26140	26340	26590
	Frequency	1860	1880	1905
15	Channel	26115	26340	26615
	Frequency	1857.5	1880	1907.5
10	Channel	26090	26340	26640
	Frequency	1855	1880	1910
5	Channel	26065	26340	26665
	Frequency	1852.5	1880	1912.5
3	Channel	26055	26340	26675
	Frequency	1851.5	1880	1913.5
1.4	Channel	26047	26340	26683
	Frequency	1850.7	1880	1914.3

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26865	26915	26965
	Frequency	831.5	836.5	841.5
10	Channel	26840	26915	26990
	Frequency	829	836.5	844
5	Channel	26815	26915	27015
	Frequency	826.5	836.5	846.5
3	Channel	26805	26915	27025
	Frequency	825.5	836.5	847.5
1.4	Channel	26797	26915	27033
	Frequency	824.7	836.5	848.3

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 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

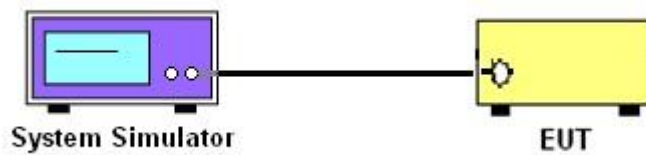
3 Conducted Test Items

3.1 Measuring Instruments

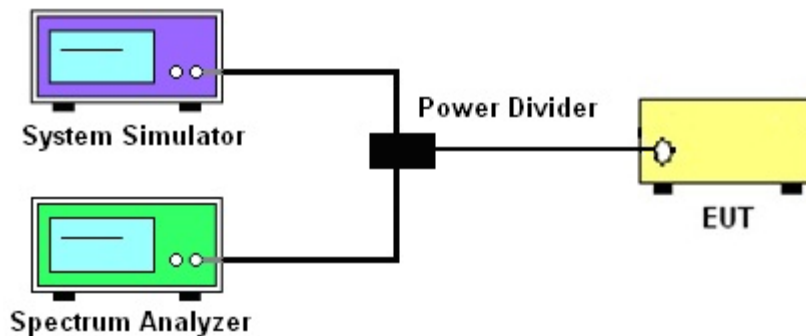
See list of measuring instruments of this test report.

3.2 Test Setup

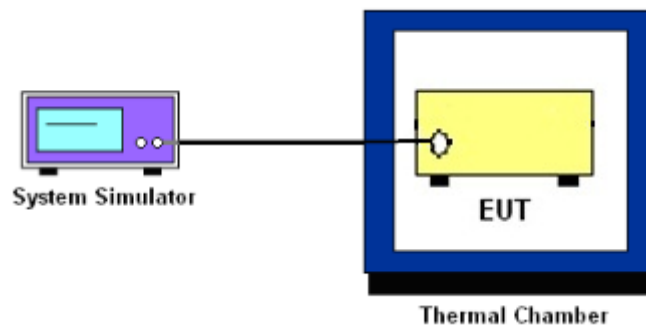
3.2.1 Conducted Output Power



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 and Band 26.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, and Band 13.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25 and Band 41.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4 and Band 66.

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 transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. 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

The testing follows FCC KDB 971168 v03r01 Section 5.7.1

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. 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

The testing follows FCC KDB 971168 v03r01 Section 4.2

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. 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)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. 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.
8. 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 $P(\text{Watts})$ 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 $P(\text{Watts})$ 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 (c)

For operations in the 776-788 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least $65 + 10 \log_{10} p(\text{watts})$, dB, for mobile and portable equipment.

27.53 (g)

For operations in the 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz 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 $P(\text{Watts})$ 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

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.
The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
8. For LTE Band 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 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

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
10. For Band 41

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

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

The testing follows FCC KDB 971168 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. 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.
3. 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

The testing follows FCC KDB 971168 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

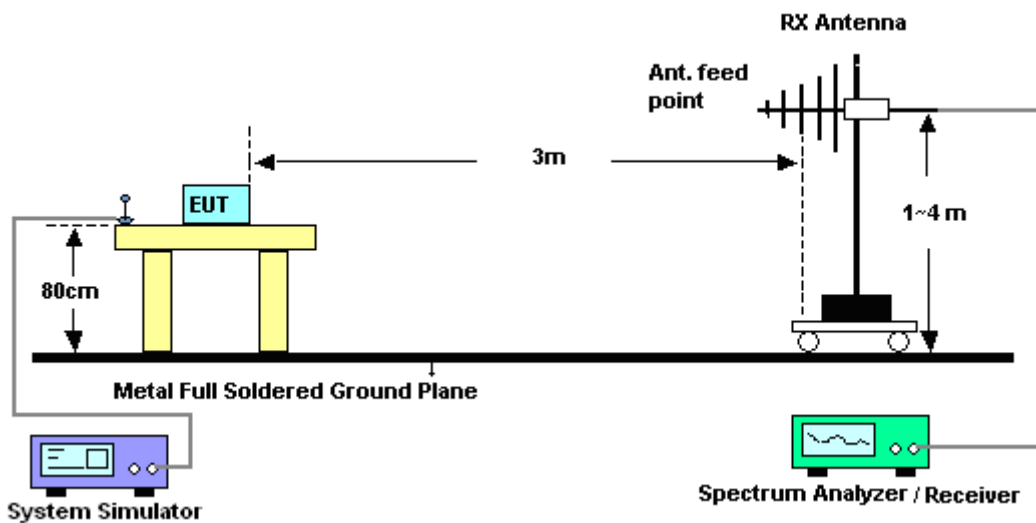
4 Radiated Test Items

4.1 Measuring Instruments

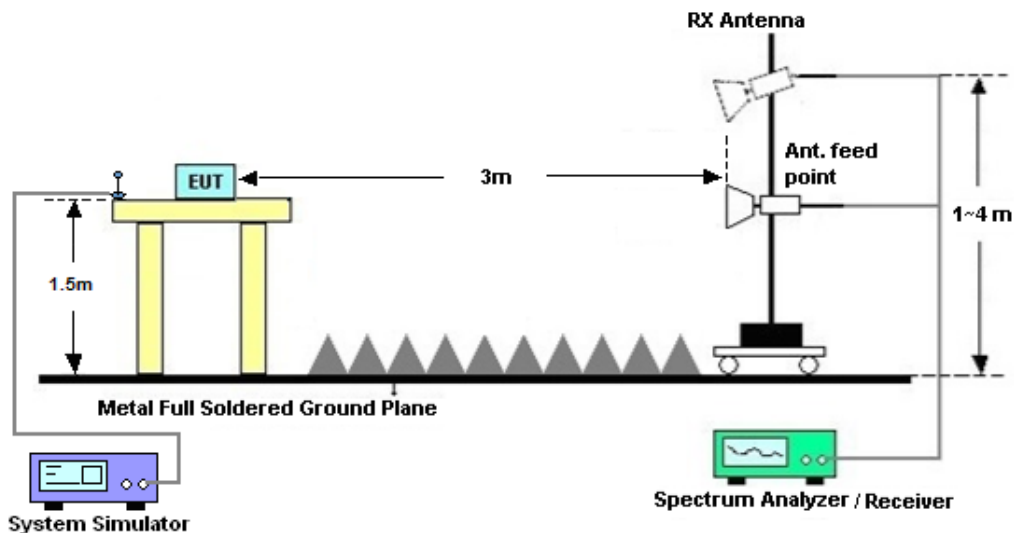
See list of measuring instruments of this test report.

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 / TIA-603-E. 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 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.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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

4.4.2 Test Procedures

The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI / TIA-603-E Section 2.2.12.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. 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)

11. For Band 41:

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

EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

ERP (dBm) = EIRP - 2.15



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 08, 2017	Feb. 10, 2018~ Mar. 04, 2018	Aug. 07, 2018	Conducted (TH01-KS)
Thermal Chamber	Hongzhan	LP-150U	HZ014011 440	-40~+150°C 20%~95%RH	Apr. 18, 2017	Feb. 10, 2018~ Mar. 04, 2018	Apr. 17, 2018	Conducted (TH01-KS)
Radio communication analyzer	Anritsu	MT8820C	620130065 2	2G/3G/LTE_ full band	Aug. 08, 2017	Feb. 10, 2018~ Mar. 04, 2018	Aug. 07, 2018	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY551502 44	10Hz~44GHz	Apr. 18, 2017	Mar. 07, 2018~ Apr. 04, 2018	Apr.17, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Mar. 07, 2018~ Apr. 04, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-135 6	1GHz~18GHz	Apr. 22, 2017	Mar. 07, 2018~ Apr. 04, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA1702 49	15GHz~40GHz	Feb. 07, 2018	Mar. 07, 2018~ Apr. 04, 2018	Feb. 06, 2019	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz ~1000MHz / 32 dB	Apr. 18, 2017	Mar. 07, 2018~ Apr. 04, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18~40GHz	Oct. 12, 2017	Mar. 07, 2018~ Apr. 04, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2025788	1Ghz~18Ghz	Apr. 18, 2017	Mar. 07, 2018~ Apr. 04, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A023 70	1GHz~26.5GHz	Oct. 12, 2017	Mar. 07, 2018~ Apr. 04, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F1040900 04	N/A	NCR	Mar. 07, 2018~ Apr. 04, 2018	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 07, 2018~ Apr. 04, 2018	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 07, 2018~ Apr. 04, 2018	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.3 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.0 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.38	23.24	23.12
10	1	25		23.50	23.17	23.80
10	1	49		23.22	23.08	23.05
10	25	0		22.50	22.46	22.43
10	25	12		22.62	22.38	22.49
10	25	25		22.40	22.40	22.36
10	50	0		22.43	22.43	22.44
10	1	0	16-QAM	22.03	22.51	21.90
10	1	25		22.85	22.19	22.18
10	1	49		21.90	22.03	21.92
10	25	0		21.61	21.28	21.45
10	25	12		21.65	21.20	21.70
10	25	25		21.43	21.50	21.45
10	50	0		21.45	21.33	21.55
5	1	0	QPSK	23.21	23.17	23.06
5	1	12		23.62	23.41	23.32
5	1	24		23.60	23.20	23.22
5	12	0		22.61	22.37	22.33
5	12	7		22.64	22.36	22.41
5	12	13		22.56	22.34	22.34
5	25	0		22.57	22.35	22.37
5	1	0	16-QAM	21.94	22.34	21.84
5	1	12		22.22	22.13	22.03
5	1	24		21.94	21.72	21.62
5	12	0		21.41	21.29	21.33
5	12	7		21.74	21.27	21.42
5	12	13		21.78	21.37	21.36
5	25	0		21.69	21.53	21.39



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.29	23.32	23.38
3	1	8		23.50	23.33	23.36
3	1	14		23.43	23.27	23.19
3	8	0		22.47	22.54	22.54
3	8	4		22.69	22.56	22.45
3	8	7		22.64	22.55	22.32
3	15	0		22.62	22.46	22.37
3	1	0	16-QAM	22.53	22.38	22.43
3	1	8		22.83	22.25	22.24
3	1	14		22.69	22.54	21.71
3	8	0		21.30	21.53	21.61
3	8	4		21.44	21.39	21.53
3	8	7		21.69	21.54	21.33
3	15	0		21.41	21.52	21.54
1.4	1	0	QPSK	23.46	23.45	23.37
1.4	1	3		23.50	23.47	23.36
1.4	1	5		23.56	23.52	23.20
1.4	3	0		23.45	23.43	23.30
1.4	3	1		23.62	23.47	23.39
1.4	3	3		23.61	23.49	23.34
1.4	6	0		22.45	22.44	22.35
1.4	1	0	16-QAM	22.21	22.00	21.90
1.4	1	3		22.18	22.25	22.03
1.4	1	5		22.73	22.10	21.89
1.4	3	0		22.40	22.33	22.24
1.4	3	1		22.48	22.44	22.31
1.4	3	3		22.47	22.45	22.27
1.4	6	0		21.44	21.30	21.27



LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK		23.18	
10	1	25			23.31	
10	1	49			23.53	
10	25	0			22.32	
10	25	12			22.26	
10	25	25			22.23	
10	50	0			22.32	
10	1	0	16-QAM		21.75	
10	1	25			21.87	
10	1	49			21.88	
10	25	0			21.56	
10	25	12			21.39	
10	25	25			21.39	
10	50	0			21.36	
5	1	0	QPSK	23.23	23.35	23.25
5	1	12		23.52	23.24	23.44
5	1	24		23.03	23.08	23.33
5	12	0		22.38	22.51	22.23
5	12	7		22.60	22.26	22.39
5	12	13		22.56	22.24	22.35
5	25	0		22.35	22.23	22.23
5	1	0	16-QAM	22.50	21.93	22.62
5	1	12		22.70	22.01	22.26
5	1	24		22.39	21.91	22.18
5	12	0		21.24	21.57	21.08
5	12	7		21.66	21.11	21.32
5	12	13		21.52	21.09	21.53
5	25	0		21.28	21.29	21.48



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.24	22.34	22.18
20	1	49		21.72	22.49	22.03
20	1	99		21.79	22.18	22.10
20	50	0		21.07	21.27	21.03
20	50	24		20.94	21.35	21.11
20	50	50		20.95	21.18	21.11
20	100	0		20.94	21.27	21.23
20	1	0	16-QAM	20.76	21.50	21.43
20	1	49		20.96	21.53	21.03
20	1	99		20.67	21.39	21.44
20	50	0		20.06	20.35	20.01
20	50	24		19.94	20.31	20.08
20	50	50		19.93	20.15	20.05
20	100	0		19.90	20.19	20.04
15	1	0	QPSK	22.00	22.28	22.01
15	1	37		21.83	22.49	21.97
15	1	74		21.96	21.98	22.28
15	36	0		21.17	21.23	21.16
15	36	20		20.95	21.20	21.17
15	36	39		20.91	21.18	21.15
15	75	0		20.99	21.21	21.16
15	1	0	16-QAM	21.66	20.99	20.81
15	1	37		20.79	20.96	20.91
15	1	74		20.70	20.82	20.84
15	36	0		20.21	20.21	20.13
15	36	20		20.01	20.18	20.15
15	36	39		19.98	20.18	20.17
15	75	0		19.99	20.10	20.16



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	21.90	22.34	22.23
10	1	25		21.95	22.37	22.04
10	1	49		21.59	22.11	22.13
10	25	0		21.13	21.21	21.12
10	25	12		20.99	21.27	21.20
10	25	25		20.73	21.23	21.18
10	50	0		20.95	21.21	21.11
10	1	0	16-QAM	21.24	20.72	20.76
10	1	25		20.99	20.87	21.30
10	1	49		20.53	20.41	21.49
10	25	0		20.11	20.27	20.06
10	25	12		19.98	20.37	20.24
10	25	25		19.71	20.32	20.33
10	50	0		20.03	20.24	20.25
5	1	0	QPSK	21.61	22.11	21.86
5	1	12		21.84	22.22	22.10
5	1	24		21.96	22.06	21.93
5	12	0		21.01	21.12	20.94
5	12	7		20.85	21.26	21.14
5	12	13		20.99	21.30	21.12
5	25	0		21.08	21.24	21.10
5	1	0	16-QAM	20.58	21.30	20.30
5	1	12		20.71	21.37	20.76
5	1	24		20.36	20.69	21.22
5	12	0		20.06	20.05	19.79
5	12	7		19.85	20.16	19.96
5	12	13		19.89	20.30	20.03
5	25	0		20.07	20.35	20.17



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	21.77	22.21	22.01
3	1	8		21.76	22.13	22.09
3	1	14		21.85	22.10	21.90
3	8	0		20.98	21.31	21.26
3	8	4		21.02	21.35	21.25
3	8	7		20.92	21.39	21.33
3	15	0		21.00	21.26	21.17
3	1	0	16-QAM	20.64	21.32	20.71
3	1	8		20.77	21.55	20.88
3	1	14		20.71	21.35	20.87
3	8	0		19.94	20.05	20.04
3	8	4		19.90	20.38	20.27
3	8	7		20.07	20.35	20.48
3	15	0		20.03	20.37	20.29
1.4	1	0	QPSK	21.86	22.02	22.15
1.4	1	3		22.03	22.11	21.94
1.4	1	5		22.06	21.96	21.98
1.4	3	0		21.96	22.19	22.12
1.4	3	1		22.00	22.29	22.08
1.4	3	3		21.90	22.21	22.12
1.4	6	0		20.89	21.27	21.08
1.4	1	0	16-QAM	21.10	20.90	20.48
1.4	1	3		21.12	21.14	20.55
1.4	1	5		21.13	20.90	20.80
1.4	3	0		20.92	21.03	21.01
1.4	3	1		20.88	21.42	21.32
1.4	3	3		20.91	21.58	20.81
1.4	6	0		19.92	20.09	19.89



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.54	23.50	23.47
15	1	37		23.51	23.66	23.74
15	1	74		23.37	23.57	22.93
15	36	0		22.38	22.65	22.62
15	36	20		22.34	22.58	22.61
15	36	39		22.50	22.59	22.52
15	75	0		22.51	22.58	22.50
15	1	0	16-QAM	22.09	22.27	22.25
15	1	37		22.33	22.77	23.01
15	1	74		22.09	22.68	22.15
15	36	0		21.44	21.61	21.66
15	36	20		21.40	21.66	21.72
15	36	39		21.55	21.65	21.51
15	75	0		21.59	21.63	21.64



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.30	23.40	23.36
10	1	25		23.30	23.48	23.63
10	1	49		23.32	23.23	22.91
10	25	0		22.53	22.54	22.58
10	25	12		22.45	22.62	22.49
10	25	25		22.39	22.47	22.56
10	50	0		22.55	22.40	22.46
10	1	0	16-QAM	22.56	22.10	22.39
10	1	25		22.12	21.95	22.20
10	1	49		21.70	22.06	22.09
10	25	0		21.59	21.61	21.55
10	25	12		21.52	21.68	21.66
10	25	25		21.46	21.64	21.51
10	50	0		21.44	21.70	21.71
5	1	0	QPSK	23.32	23.40	23.38
5	1	12		23.23	23.65	23.59
5	1	24		23.30	23.43	23.37
5	12	0		22.48	22.38	22.57
5	12	7		22.40	22.43	22.46
5	12	13		22.37	22.48	22.51
5	25	0		22.42	22.42	22.41
5	1	0	16-QAM	22.63	22.00	21.88
5	1	12		22.24	22.02	22.23
5	1	24		21.94	21.85	22.12
5	12	0		21.62	21.34	21.52
5	12	7		21.47	21.59	21.53
5	12	13		21.33	21.72	21.46
5	25	0		21.49	21.57	21.47



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.37	23.29	23.45
3	1	8		23.57	23.60	23.53
3	1	14		23.40	23.51	23.49
3	8	0		22.60	22.50	22.49
3	8	4		22.49	22.51	22.48
3	8	7		22.36	22.54	22.39
3	15	0		22.47	22.40	22.40
3	1	0	16-QAM	22.21	21.77	22.76
3	1	8		22.19	22.15	22.17
3	1	14		21.95	22.11	22.14
3	8	0		21.53	21.21	21.51
3	8	4		21.48	21.55	21.50
3	8	7		21.47	21.65	21.49
3	15	0		21.32	21.53	21.56
1.4	1	0	QPSK	23.44	23.31	23.33
1.4	1	3		23.45	23.41	23.47
1.4	1	5		23.45	23.29	23.15
1.4	3	0		23.42	23.42	23.45
1.4	3	1		23.73	23.51	23.52
1.4	3	3		23.52	23.41	23.51
1.4	6	0		22.43	22.39	22.40
1.4	1	0	16-QAM	22.45	21.99	22.57
1.4	1	3		22.44	21.94	22.67
1.4	1	5		22.42	21.97	22.65
1.4	3	0		22.33	22.24	22.43
1.4	3	1		22.44	22.31	22.46
1.4	3	3		22.33	22.41	22.41
1.4	6	0		21.34	21.22	21.32



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.00	22.21	22.20
20	1	49		22.04	22.31	22.16
20	1	99		22.09	22.32	22.09
20	50	0		21.15	21.63	21.28
20	50	24		21.06	21.67	21.15
20	50	50		21.07	21.59	21.28
20	100	0		21.08	21.62	21.45
20	1	0	16-QAM	20.65	20.75	21.13
20	1	49		20.63	21.17	21.11
20	1	99		20.45	20.88	20.62
20	50	0		20.08	20.41	20.23
20	50	24		20.10	20.52	20.21
20	50	50		19.92	20.44	20.03
20	100	0		20.00	20.49	20.08
15	1	0	QPSK	22.09	22.40	22.04
15	1	37		22.69	22.91	22.00
15	1	74		22.02	22.58	22.19
15	36	0		21.27	21.57	21.41
15	36	20		21.29	21.61	21.28
15	36	39		21.10	21.35	21.65
15	75	0		21.07	21.31	21.38
15	1	0	16-QAM	20.80	20.83	21.17
15	1	37		20.85	21.24	21.43
15	1	74		20.79	20.90	20.82
15	36	0		19.96	20.28	20.15
15	36	20		20.04	20.52	20.06
15	36	39		20.06	20.46	20.01
15	75	0		19.99	20.48	20.03



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.04	22.38	22.38
10	1	25		22.16	22.48	22.09
10	1	49		22.19	22.58	22.15
10	25	0		21.11	21.47	21.37
10	25	12		21.17	21.59	21.37
10	25	25		21.18	21.37	21.24
10	50	0		21.25	21.48	21.16
10	1	0	16-QAM	20.91	20.94	20.71
10	1	25		20.96	21.06	20.77
10	1	49		20.73	20.88	20.64
10	25	0		20.22	20.47	20.23
10	25	12		20.38	20.65	20.43
10	25	25		20.46	20.58	20.56
10	50	0		20.18	20.41	20.01
5	1	0	QPSK	22.09	22.09	22.03
5	1	12		21.92	22.38	22.14
5	1	24		21.94	22.24	21.86
5	12	0		20.99	21.50	21.51
5	12	7		21.03	21.58	21.15
5	12	13		21.02	21.62	21.33
5	25	0		21.04	21.61	21.68
5	1	0	16-QAM	21.40	20.88	20.56
5	1	12		20.66	21.07	20.92
5	1	24		20.55	20.99	20.65
5	12	0		19.92	20.38	20.10
5	12	7		19.98	20.40	20.17
5	12	13		20.07	20.34	20.13
5	25	0		19.96	20.49	20.34



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	21.94	22.30	21.88
20	1	49		22.28	22.21	22.48
20	1	99		22.03	22.00	21.72
20	50	0		21.38	21.26	21.48
20	50	24		21.43	21.44	21.13
20	50	50		21.46	21.29	20.90
20	100	0		21.30	21.29	21.37
20	1	0	16-QAM	21.00	21.07	20.90
20	1	49		21.60	20.99	21.38
20	1	99		21.18	20.80	20.50
20	50	0		20.33	20.67	20.23
20	50	24		20.41	20.51	20.31
20	50	50		20.40	20.46	20.03
20	100	0		20.31	20.46	20.05
15	1	0	QPSK	22.14	22.34	22.08
15	1	37		22.40	22.44	22.00
15	1	74		22.39	22.13	21.67
15	36	0		21.09	21.57	21.23
15	36	20		21.30	21.50	21.05
15	36	39		21.28	21.43	21.07
15	75	0		21.10	21.57	21.03
15	1	0	16-QAM	20.76	21.45	21.49
15	1	37		20.95	21.20	21.24
15	1	74		20.81	20.86	20.68
15	36	0		20.16	20.60	20.23
15	36	20		20.29	20.55	20.04
15	36	39		20.37	20.48	20.07
15	75	0		20.23	20.52	20.11



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	21.91	22.23	21.70
10	1	25		22.11	22.12	21.70
10	1	49		21.99	22.12	21.67
10	25	0		21.02	21.36	21.07
10	25	12		21.18	21.40	20.95
10	25	25		21.18	21.25	20.82
10	50	0		21.07	21.33	20.91
10	1	0	16-QAM	20.75	20.96	20.40
10	1	25		20.65	20.93	20.52
10	1	49		20.49	20.83	20.55
10	25	0		20.08	20.43	20.12
10	25	12		20.33	20.48	19.91
10	25	25		20.32	20.42	19.76
10	50	0		20.16	20.41	20.03
5	1	0	QPSK	21.70	22.11	21.76
5	1	12		21.80	22.20	21.96
5	1	24		21.81	22.13	21.53
5	12	0		20.94	21.41	20.94
5	12	7		20.93	21.36	21.01
5	12	13		20.89	21.40	20.93
5	25	0		20.93	21.33	20.90
5	1	0	16-QAM	20.65	21.61	20.33
5	1	12		20.88	21.10	20.60
5	1	24		20.59	20.77	20.11
5	12	0		19.96	20.40	19.85
5	12	7		19.99	20.44	19.84
5	12	13		19.85	20.39	19.83
5	25	0		20.00	20.42	19.85



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	21.88	22.24	21.61
3	1	8		22.05	22.29	22.12
3	1	14		21.93	22.24	22.03
3	8	0		21.01	21.29	20.96
3	8	4		20.98	21.35	20.82
3	8	7		20.98	21.40	20.90
3	15	0		20.97	21.33	20.94
3	1	0	16-QAM	20.44	20.87	20.94
3	1	8		20.75	21.16	20.86
3	1	14		20.75	21.27	20.88
3	8	0		19.85	20.50	20.11
3	8	4		20.04	20.58	19.78
3	8	7		20.18	20.53	19.73
3	15	0		19.85	20.43	19.84
1.4	1	0	QPSK	21.97	22.21	21.60
1.4	1	3		21.89	22.26	21.89
1.4	1	5		21.93	22.15	21.64
1.4	3	0		22.00	22.21	21.94
1.4	3	1		22.35	22.23	21.99
1.4	3	3		22.00	22.19	22.06
1.4	6	0		20.98	21.28	20.87
1.4	1	0	16-QAM	20.58	20.82	20.52
1.4	1	3		20.71	20.90	20.20
1.4	1	5		20.77	20.81	20.14
1.4	3	0		20.84	21.26	20.64
1.4	3	1		20.89	21.33	20.94
1.4	3	3		21.01	21.22	20.80
1.4	6	0		20.00	20.15	20.02

**ERP/EIRP**

LTE Band 12 ($G_T - L_C = -7.13$ dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	23.62	23.47	23.39	23.50	23.33	23.36	23.62	23.41	23.32
Conducted Power (Watts)	0.2301	0.2223	0.2183	0.2239	0.2153	0.2168	0.2301	0.2193	0.2148
ERP(dBm)	14.34	14.19	14.11	14.22	14.05	14.08	14.34	14.13	14.04
ERP(Watts)	0.0272	0.0262	0.0258	0.0264	0.0254	0.0256	0.0272	0.0259	0.0254

LTE Band 12 ($G_T - L_C = -7.13$ dB) QPSK			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	23.50	23.17	23.80
Conducted Power (Watts)	0.2239	0.2075	0.2399
ERP(dBm)	14.22	13.89	14.52
ERP(Watts)	0.0264	0.0245	0.0283



LTE Band 12 ($G_T - L_C = -7.13$ dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	22.73	22.10	21.89	22.83	22.25	22.24	21.94	22.34	21.84
Conducted Power (Watts)	0.1875	0.1622	0.1545	0.1919	0.1679	0.1675	0.1563	0.1714	0.1528
ERP(dBm)	13.45	12.82	12.61	13.55	12.97	12.96	12.66	13.06	12.56
ERP(Watts)	0.0221	0.0191	0.0182	0.0226	0.0198	0.0198	0.0185	0.0202	0.0180

LTE Band 12 ($G_T - L_C = -7.13$ dB) 16QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	22.85	22.19	22.18
Conducted Power (Watts)	0.1928	0.1656	0.1652
ERP(dBm)	13.57	12.91	12.90
ERP(Watts)	0.0228	0.0195	0.0195



LTE Band 13 ($G_T - L_C = -7.45$ dB) QPSK						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	23.52	23.24	23.44		23.53	
Conducted Power (Watts)	0.2249	0.2109	0.2208		0.2254	
ERP(dBm)	13.92	13.64	13.84		13.93	
ERP(Watts)	0.0247	0.0231	0.0242		0.0247	

LTE Band 13 ($G_T - L_C = -7.45$ dB) 16QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	22.70	22.01	22.26		21.88	
Conducted Power (Watts)	0.1862	0.1589	0.1683		0.1542	
ERP(dBm)	13.10	12.41	12.66		12.28	
ERP(Watts)	0.0204	0.0174	0.0185		0.0169	



LTE Band 25 ($G_T - L_C = 0.23$ dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	22.00	22.29	22.08	21.77	22.21	22.01	21.84	22.22	22.10
Conducted Power (Watts)	0.1585	0.1694	0.1614	0.1503	0.1663	0.1589	0.1528	0.1667	0.1622
EIRP(dBm)	22.23	22.52	22.31	22.00	22.44	22.24	22.07	22.45	22.33
EIRP(Watts)	0.1671	0.1786	0.1702	0.1585	0.1754	0.1675	0.1611	0.1758	0.1710

LTE Band 25 ($G_T - L_C = 0.23$ dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	21.95	22.37	22.04	21.83	22.49	21.97	21.72	22.49	22.03
Conducted Power (Watts)	0.1567	0.1726	0.1600	0.1524	0.1774	0.1574	0.1486	0.1774	0.1596
EIRP(dBm)	22.18	22.60	22.27	22.06	22.72	22.20	21.95	22.72	22.26
EIRP(Watts)	0.1652	0.1820	0.1687	0.1607	0.1871	0.1660	0.1567	0.1871	0.1683



LTE Band 25 ($G_T - L_C = 0.23$ dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	20.91	21.58	20.81	20.77	21.55	20.88	20.71	21.37	20.76
Conducted Power (Watts)	0.1233	0.1439	0.1205	0.1194	0.1429	0.1225	0.1178	0.1371	0.1191
EIRP(dBm)	21.14	21.81	21.04	21.00	21.78	21.11	20.94	21.60	20.99
EIRP(Watts)	0.1300	0.1517	0.1271	0.1259	0.1507	0.1291	0.1242	0.1445	0.1256

LTE Band 25 ($G_T - L_C = 0.23$ dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	20.53	20.41	21.49	21.66	20.99	20.81	20.96	21.53	21.03
Conducted Power (Watts)	0.1130	0.1099	0.1409	0.1466	0.1256	0.1205	0.1247	0.1422	0.1268
EIRP(dBm)	20.76	20.64	21.72	21.89	21.22	21.04	21.19	21.76	21.26
EIRP(Watts)	0.1191	0.1159	0.1486	0.1545	0.1324	0.1271	0.1315	0.1500	0.1337



LTE Band 26 ($G_T - L_C = -2.18$ dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.73	23.51	23.52	23.57	23.60	23.53	23.32	23.65	23.59
Conducted Power (Watts)	0.2360	0.2244	0.2249	0.2275	0.2291	0.2254	0.2148	0.2317	0.2286
ERP(dBm)	19.40	19.18	19.19	19.24	19.27	19.20	18.99	19.32	19.26
ERP(Watts)	0.0871	0.0828	0.0830	0.0839	0.0845	0.0832	0.0793	0.0855	0.0843

LTE Band 26 ($G_T - L_C = -2.18$ dB) QPSK							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency	829	836.5	844	831.5	836.5	841.5	821.5
(MHz)							
Conducted Power (dBm)	23.32	23.48	23.63	23.54	23.66	23.74	23.58
Conducted Power (Watts)	0.2148	0.2228	0.2307	0.2259	0.2323	0.2366	0.2280
ERP(dBm)	18.99	19.15	19.30	19.21	19.33	19.41	19.25
ERP(Watts)	0.0793	0.0822	0.0851	0.0834	0.0857	0.0873	0.0841



LTE Band 26 ($G_T - L_C = -2.18$ dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	22.45	22.41	22.67	22.21	22.15	22.76	22.63	22.02	22.23
Conducted Power (Watts)	0.1758	0.1742	0.1849	0.1663	0.1641	0.1888	0.1832	0.1592	0.1671
ERP(dBm)	18.12	18.08	18.34	17.88	17.82	18.43	18.30	17.69	17.90
ERP(Watts)	0.0649	0.0643	0.0682	0.0614	0.0605	0.0697	0.0676	0.0587	0.0617

LTE Band 26 ($G_T - L_C = -2.18$ dB) 16QAM							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency	829	836.5	844	831.5	836.5	841.5	821.5
(MHz)							
Conducted Power (dBm)	22.56	22.10	22.39	22.33	22.77	23.01	22.70
Conducted Power (Watts)	0.1803	0.1622	0.1734	0.1710	0.1892	0.2000	0.1862
ERP(dBm)	18.23	17.77	18.06	18.00	18.44	18.68	18.37
ERP(Watts)	0.0665	0.0598	0.0640	0.0631	0.0698	0.0738	0.0687

LTE Band 41 ($G_T - L_C = 1.62$ 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	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	21.92	22.38	22.14	22.19	22.58	22.15	22.69	22.91	22.00
Conducted Power (Watts)	0.1556	0.1730	0.1637	0.1656	0.1811	0.1641	0.1858	0.1954	0.1585
EIRP(dBm)	23.54	24.00	23.76	23.81	24.20	23.77	24.31	24.53	23.62
EIRP(Watts)	0.2259	0.2512	0.2377	0.2404	0.2630	0.2382	0.2698	0.2838	0.2301

LTE Band 41 ($G_T - L_C = 1.62$ dB) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	22.09	22.32	22.09
Conducted Power (Watts)	0.1618	0.1706	0.1618
EIRP(dBm)	23.71	23.94	23.71
EIRP(Watts)	0.2350	0.2477	0.2350



LTE Band 41 ($G_T - L_C = 1.62$ 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	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	21.40	20.88	20.56	20.96	21.06	20.77	20.85	21.24	21.43
Conducted Power (Watts)	0.1380	0.1225	0.1138	0.1247	0.1276	0.1194	0.1216	0.1330	0.1390
EIRP(dBm)	23.02	22.50	22.18	22.58	22.68	22.39	22.47	22.86	23.05
EIRP(Watts)	0.2004	0.1778	0.1652	0.1811	0.1854	0.1734	0.1766	0.1932	0.2018

LTE Band 41 ($G_T - L_C = 1.62$ dB) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	20.63	21.17	21.11
Conducted Power (Watts)	0.1156	0.1309	0.1291
EIRP(dBm)	22.25	22.79	22.73
EIRP(Watts)	0.1679	0.1901	0.1875



LTE Band 66 ($G_T - L_C = -0.02$ dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	22.35	22.23	21.99	22.05	22.29	22.12	21.80	22.20	21.96
Conducted Power (Watts)	0.1718	0.1671	0.1581	0.1603	0.1694	0.1629	0.1514	0.1660	0.1570
EIRP(dBm)	22.33	22.21	21.97	22.03	22.27	22.10	21.78	22.18	21.94
EIRP(Watts)	0.1710	0.1663	0.1574	0.1596	0.1687	0.1622	0.1507	0.1652	0.1563

LTE Band 66 ($G_T - L_C = -0.02$ dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	21.91	22.23	21.70	22.40	22.44	22.00	22.28	22.21	22.48
Conducted Power (Watts)	0.1552	0.1671	0.1479	0.1738	0.1754	0.1585	0.1690	0.1663	0.1770
EIRP(dBm)	21.89	22.21	21.68	22.38	22.42	21.98	22.26	22.19	22.46
EIRP(Watts)	0.1545	0.1663	0.1472	0.1730	0.1746	0.1578	0.1683	0.1656	0.1762



LTE Band 66 ($G_T - L_C = -0.02$ dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	20.89	21.33	20.94	20.75	21.27	20.88	20.65	21.61	20.33
Conducted Power (Watts)	0.1227	0.1358	0.1242	0.1189	0.1340	0.1225	0.1161	0.1449	0.1079
EIRP(dBm)	20.87	21.31	20.92	20.73	21.25	20.86	20.63	21.59	20.31
EIRP(Watts)	0.1222	0.1352	0.1236	0.1183	0.1334	0.1219	0.1156	0.1442	0.1074

LTE Band 66 ($G_T - L_C = -0.02$ dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	20.75	20.96	20.40	20.76	21.45	21.49	21.60	20.99	21.38
Conducted Power (Watts)	0.1189	0.1247	0.1096	0.1191	0.1396	0.1409	0.1445	0.1256	0.1374
EIRP(dBm)	20.73	20.94	20.38	20.74	21.43	21.47	21.58	20.97	21.36
EIRP(Watts)	0.1183	0.1242	0.1091	0.1186	0.1390	0.1403	0.1439	0.1250	0.1368

**Peak-to-Average Ratio**

Mode	LTE Band 12 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.32	4.70	5.48	5.83	PASS
Middle CH	4.46	5.04	5.68	6.03	
Highest CH	4.00	5.19	4.90	6.00	

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	4.17	4.70	5.25	5.65	
Highest CH	-	-	-	-	

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.32	4.64	5.25	5.59	PASS
Middle CH	4.00	4.38	4.93	5.36	
Highest CH	4.41	4.49	5.25	5.54	

Mode	LTE Band 26 / 15MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.59	4.99	4.38	5.86	PASS
Middle CH	3.57	4.75	4.26	5.68	
Highest CH	3.42	4.78	4.46	5.74	



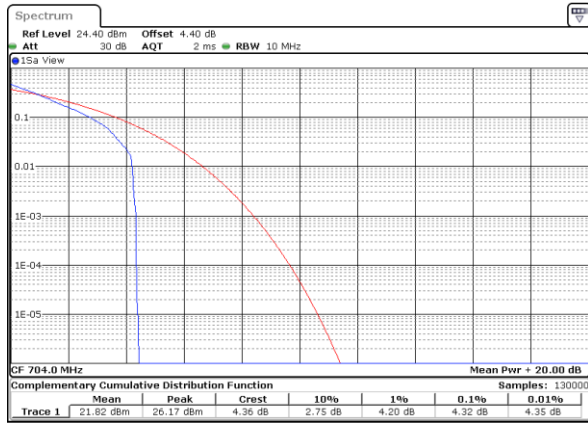
Mode	LTE Band 41 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.14	6.17	5.25	4.93	PASS
Middle CH	4.70	4.14	3.10	4.49	
Highest CH	4.03	4.49	5.48	5.74	

Mode	LTE Band 66 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.26	4.58	5.10	5.65	PASS
Middle CH	4.09	4.72	5.19	5.74	
Highest CH	4.23	4.64	5.33	5.77	



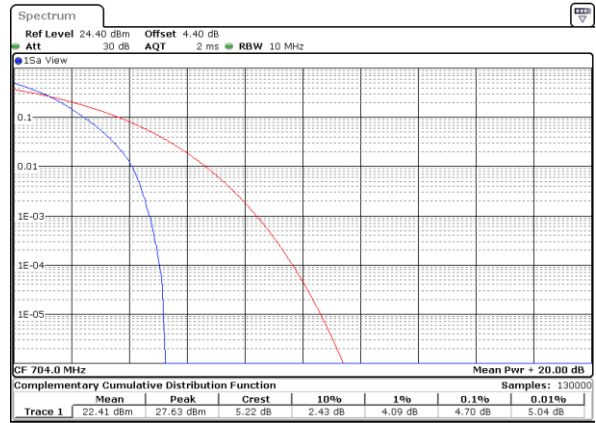
LTE Band 12 / 10MHz / QPSK

Lowest Channel / 1RB



Date: 14 FEB 2018 08:23:18

Lowest Channel / Full RB



Date: 14 FEB 2018 08:28:26

Middle Channel / 1RB



Date: 14 FEB 2018 08:23:32

Middle Channel / Full RB



Date: 14 FEB 2018 08:27:57

Highest Channel / 1RB

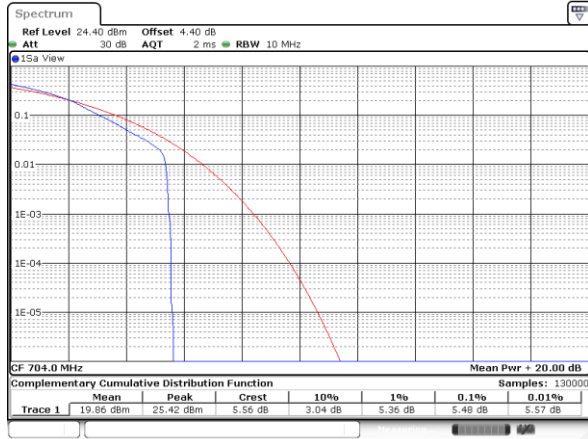
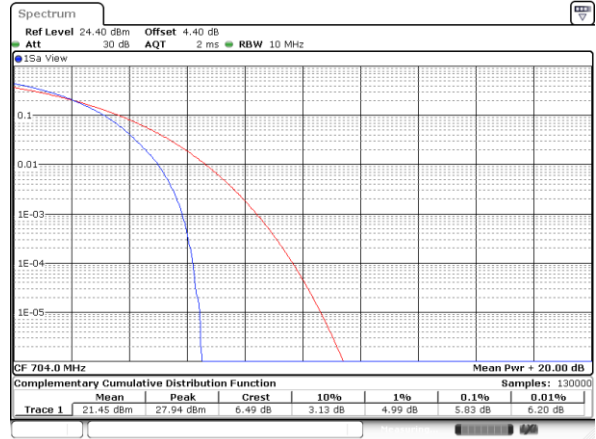
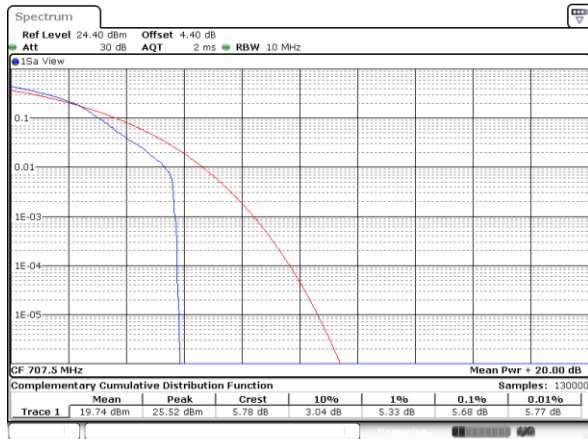
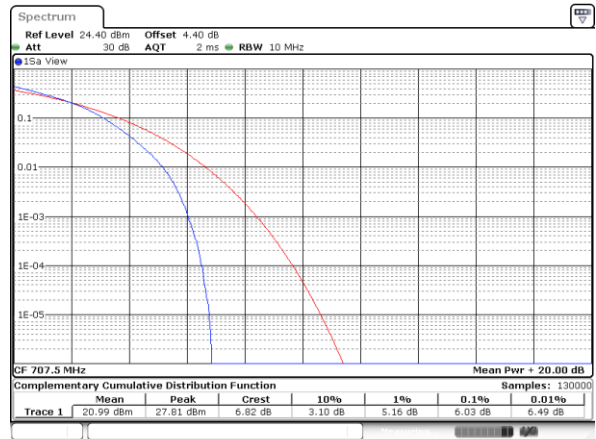


Date: 14 FEB 2018 08:23:45

Highest Channel / Full RB



Date: 14 FEB 2018 08:27:41

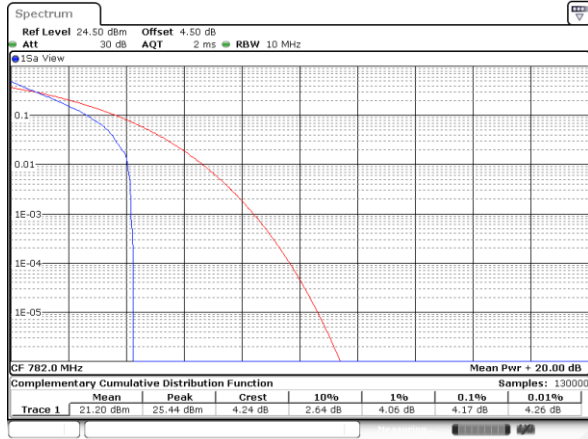
LTE Band 12 / 10MHz / 16QAM
Lowest Channel / 1RB

Lowest Channel / Full RB

Middle Channel / 1RB

Middle Channel / Full RB

Highest Channel / 1RB

Highest Channel / Full RB

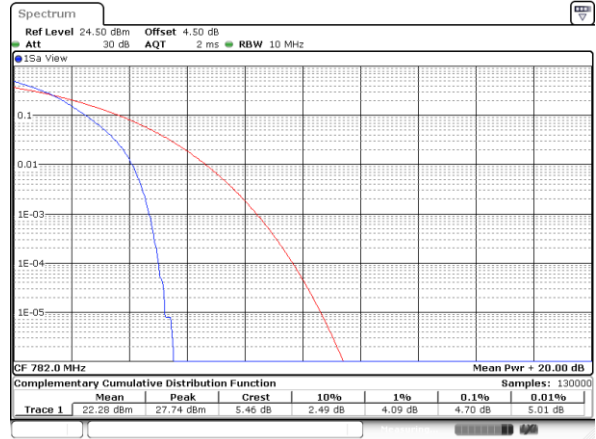



LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB

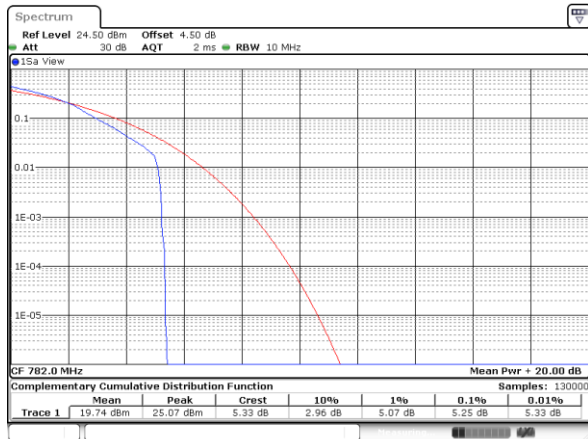


Middle Channel / Full RB

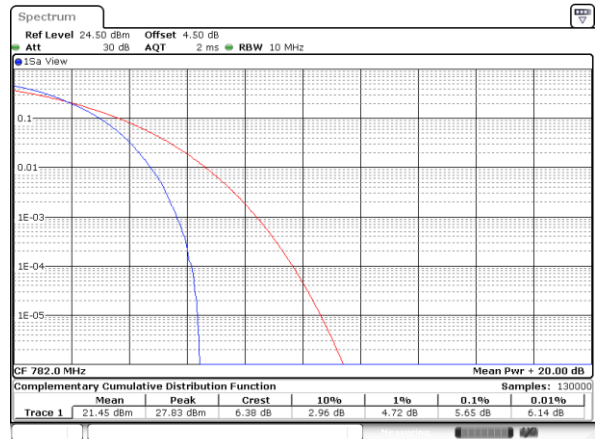


LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



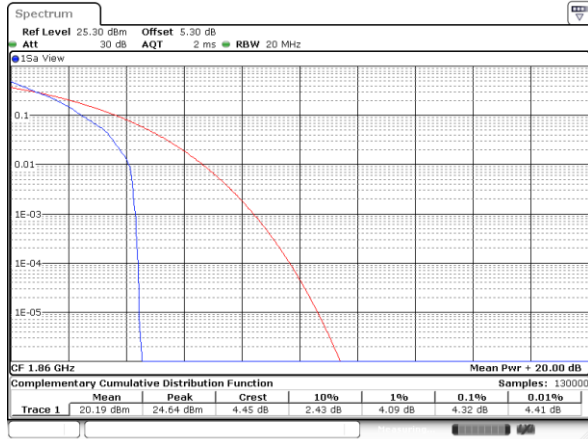
Middle Channel / Full RB



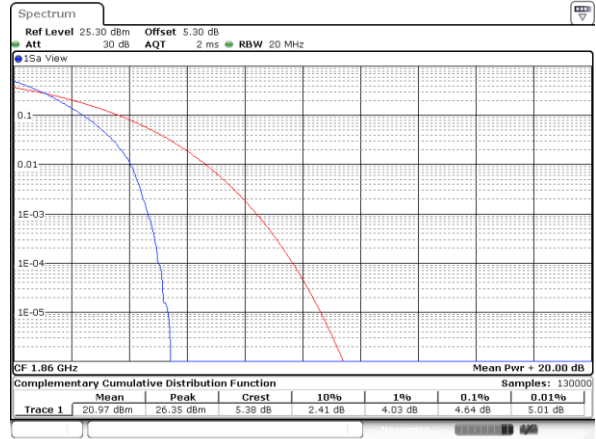


LTE Band 25 / 20MHz / QPSK

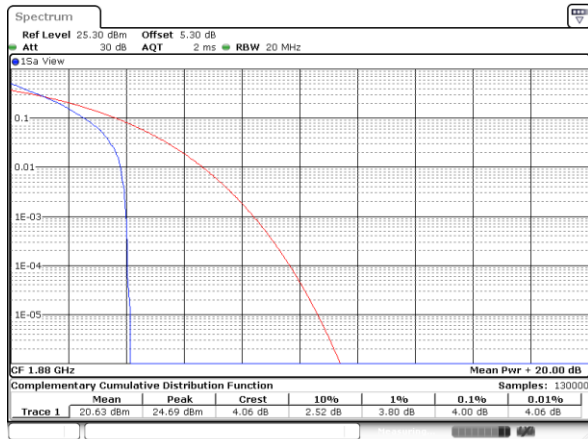
Lowest Channel / 1RB



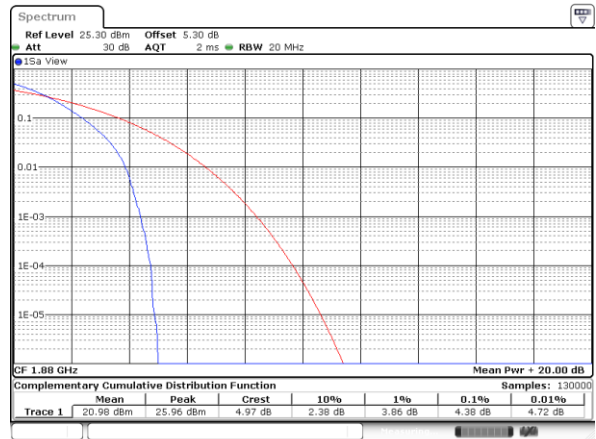
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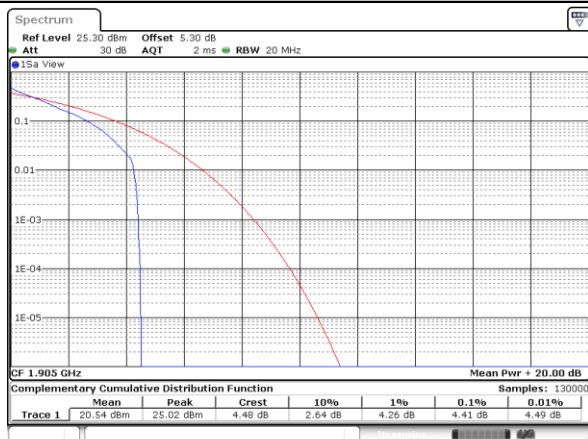
Middle Channel / 1RB



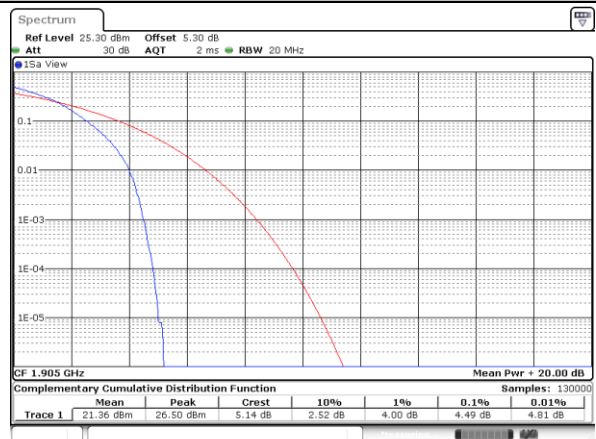
Middle Channel / Full RB



Highest Channel / 1RB



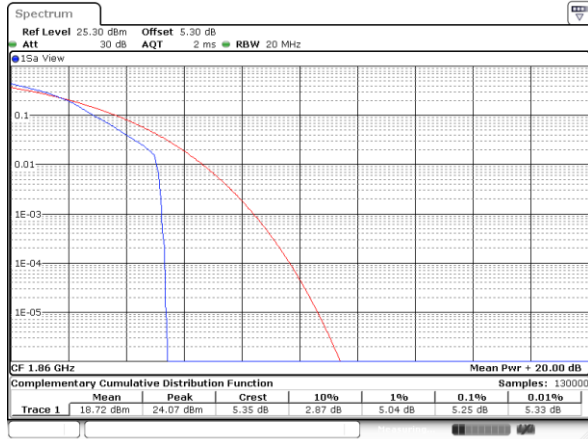
Highest Channel / Full RB



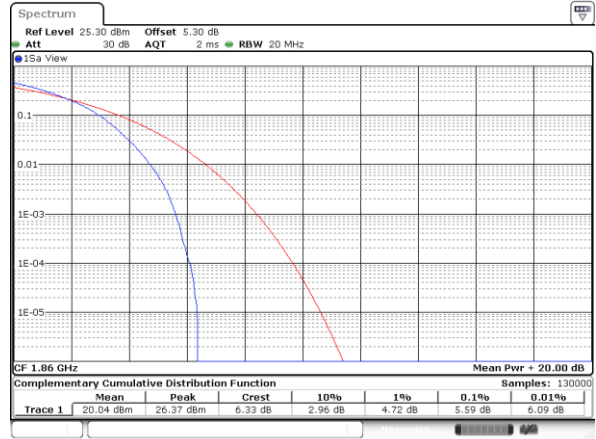


LTE Band 25 / 20MHz / 16QAM

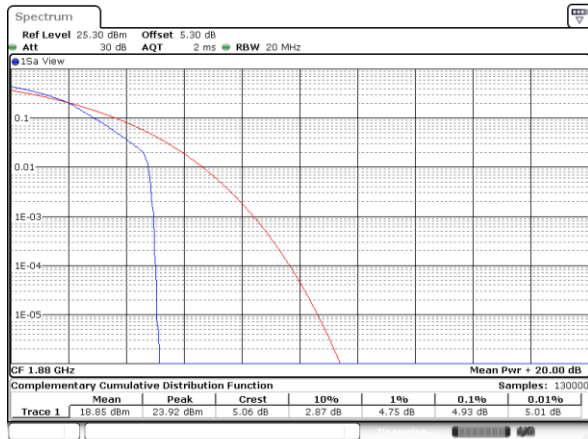
Lowest Channel / 1RB



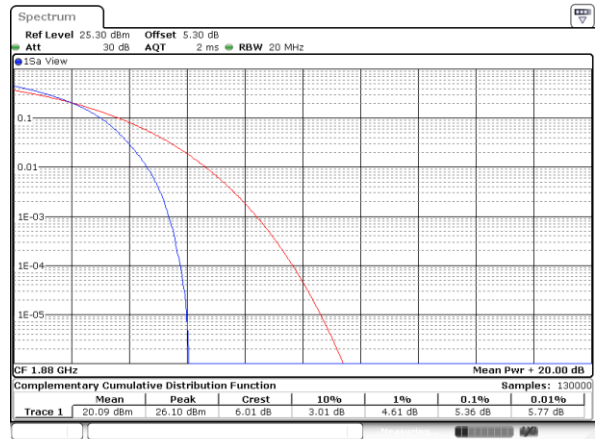
Lowest Channel / Full RB



Middle Channel / 1RB



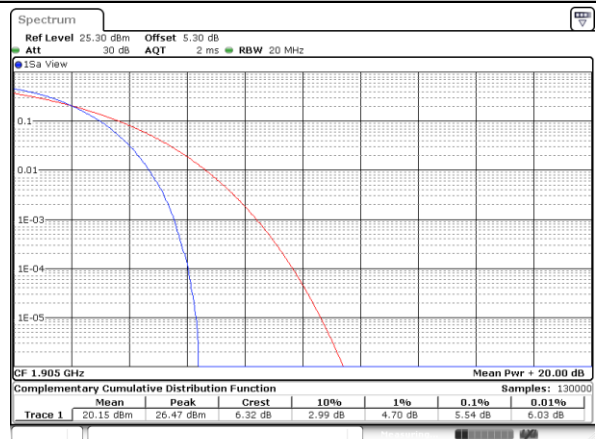
Middle Channel / Full RB

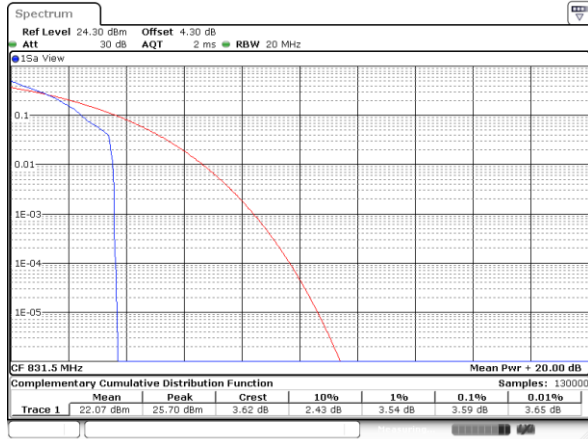


Highest Channel / 1RB

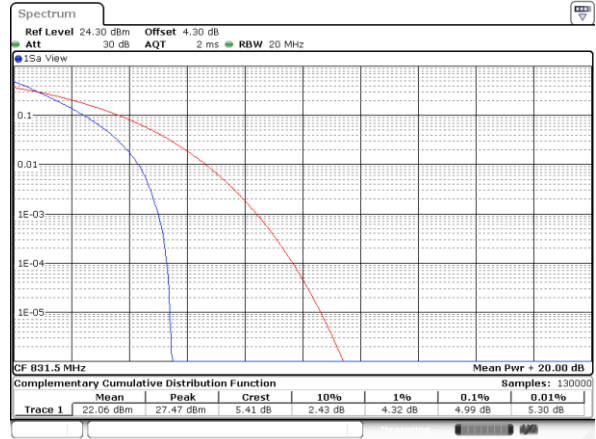


Highest Channel / Full RB

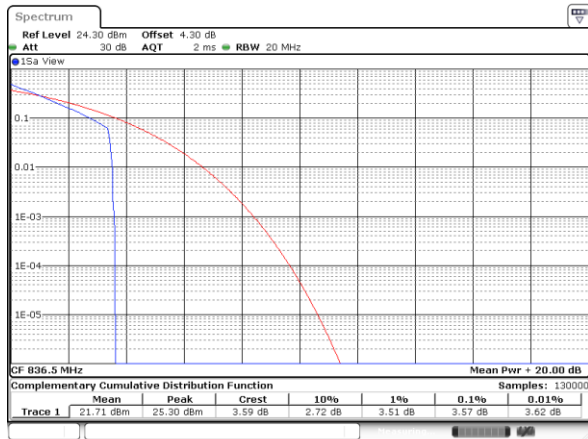


LTE Band 26 / 15MHz / QPSK
Lowest Channel / 1RB


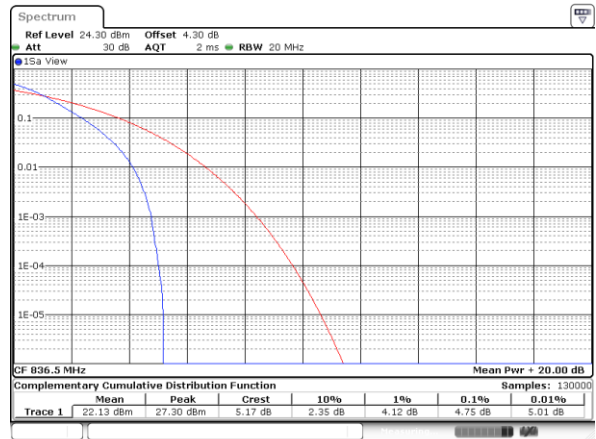
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Lowest Channel / Full RB


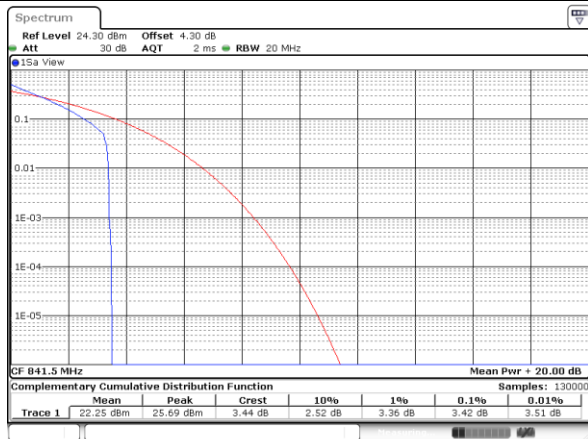
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Middle Channel / 1RB


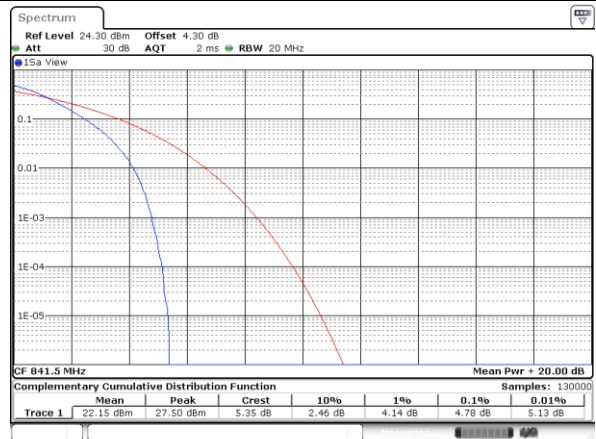
Date: 27 FEB 2018 07:07:06

Middle Channel / Full RB


Date: 27 FEB 2018 07:08:27

Highest Channel / 1RB


Date: 27 FEB 2018 07:12:22

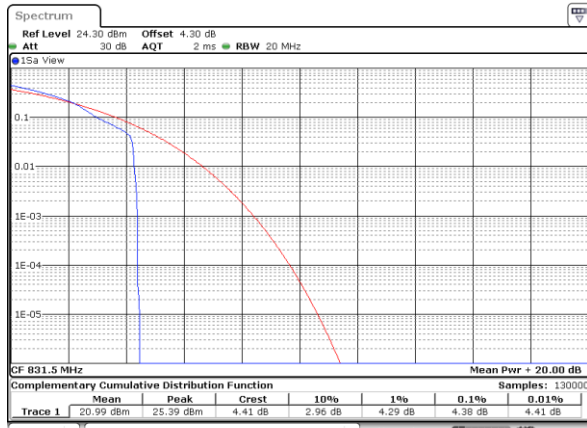
Highest Channel / Full RB


Date: 27 FEB 2018 07:09:39

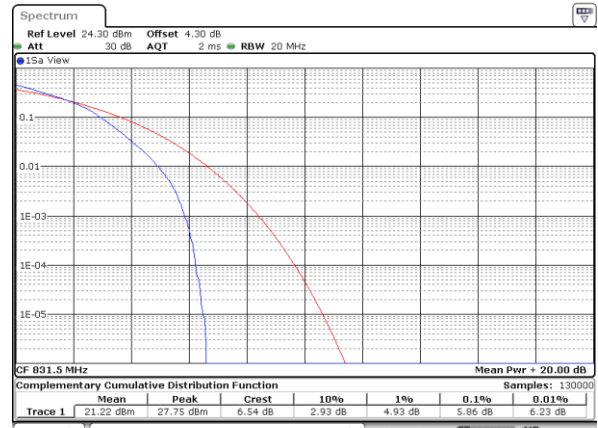


LTE Band 26 / 15MHz / 16QAM

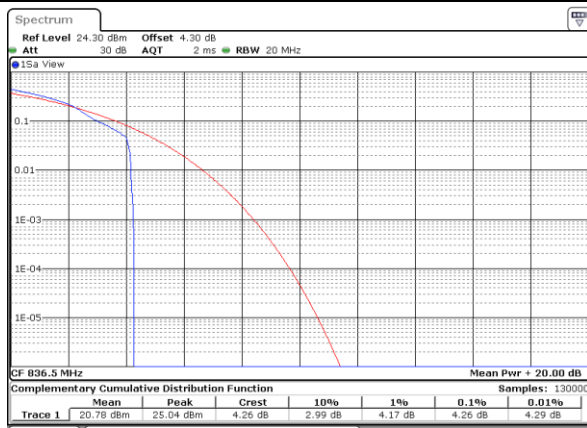
Lowest Channel / 1RB



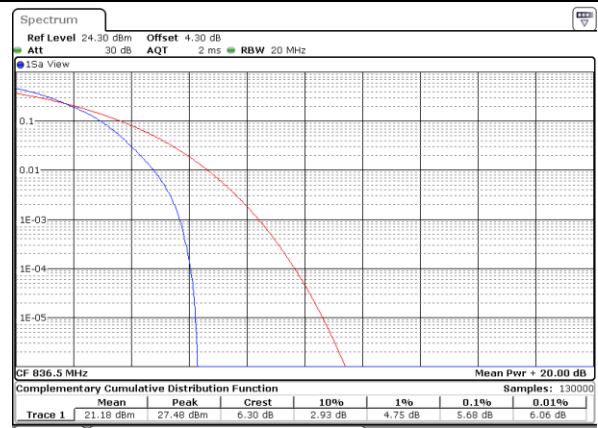
Lowest Channel / Full RB



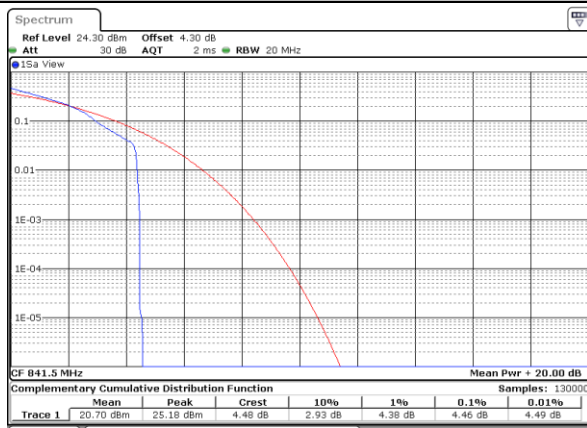
Middle Channel / 1RB



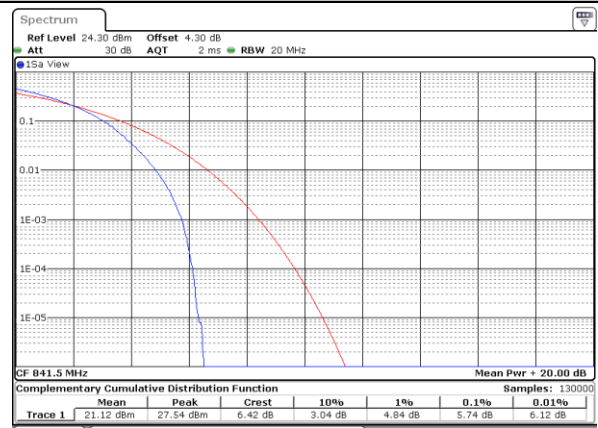
Middle Channel / Full RB



Highest Channel / 1RB



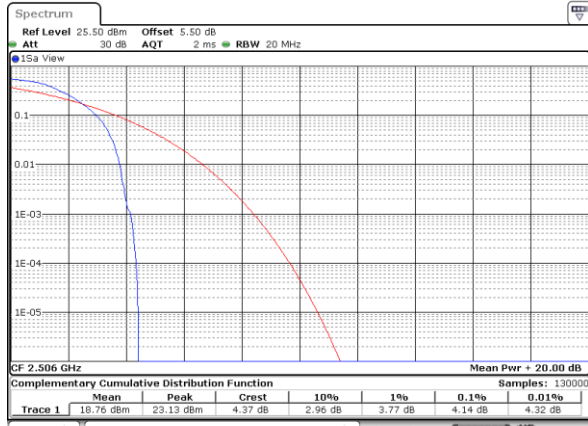
Highest Channel / Full RB



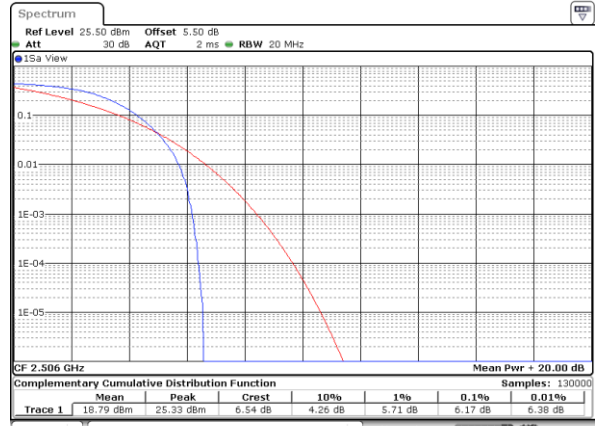


LTE Band 41 / 20MHz / QPSK

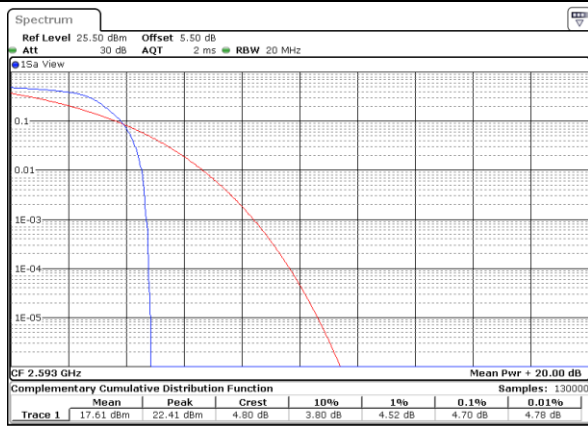
Lowest Channel / 1RB



Lowest Channel / Full RB



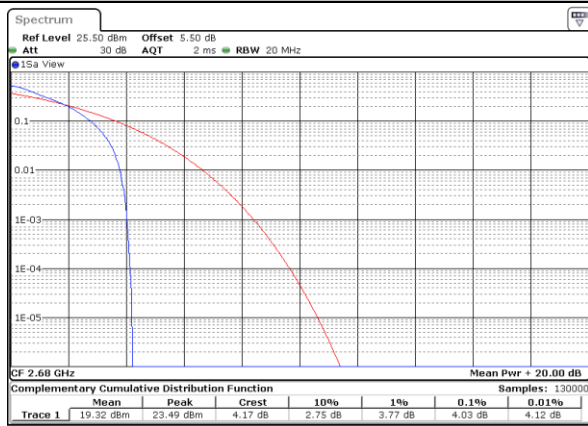
Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



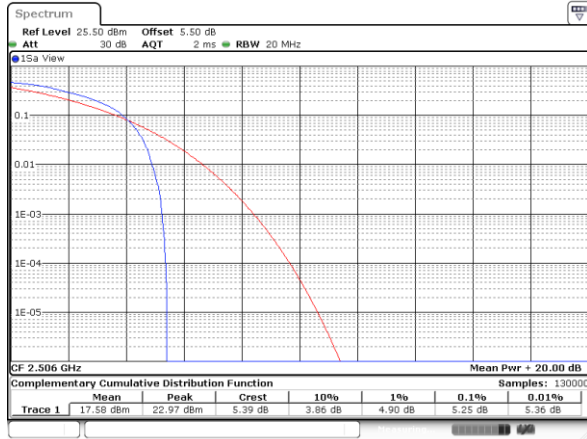
Highest Channel / Full RB



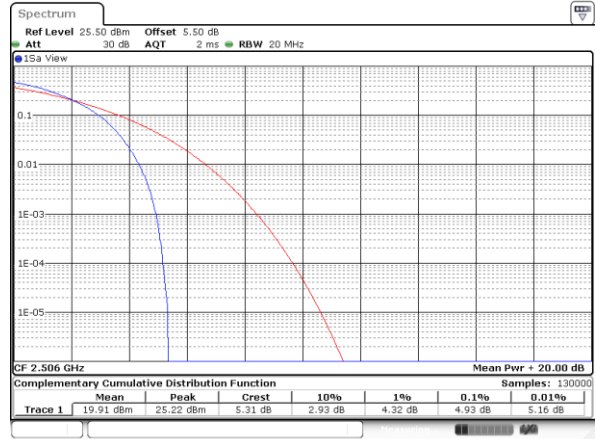


LTE Band 41 / 20MHz / 16QAM

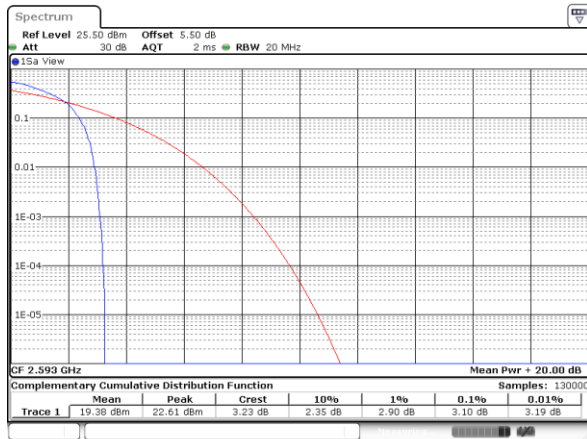
Lowest Channel / 1RB



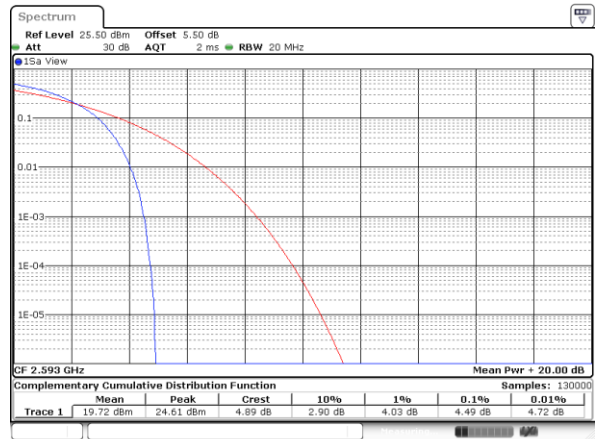
Lowest Channel / Full RB



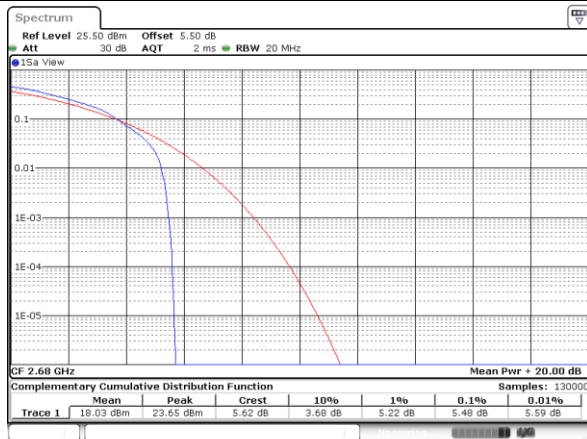
Middle Channel / 1RB



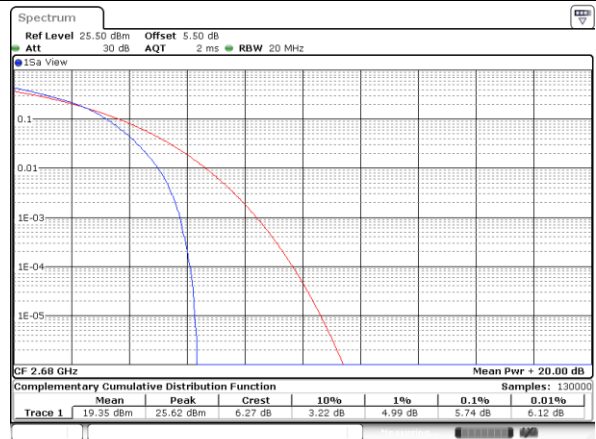
Middle Channel / Full RB



Highest Channel / 1RB



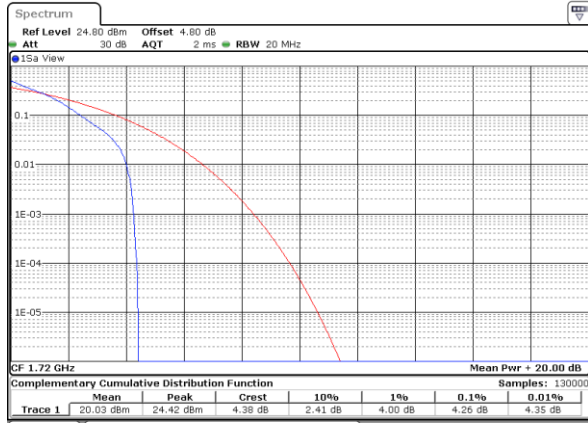
Highest Channel / Full RB



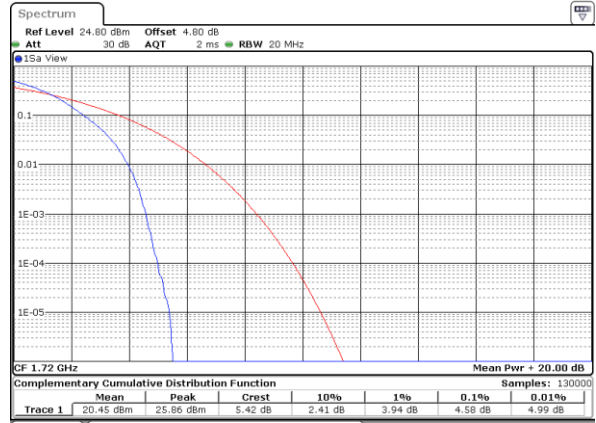


LTE Band 66 / 20MHz / QPSK

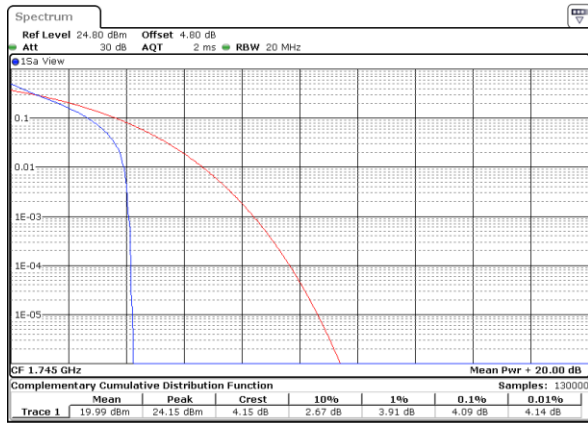
Lowest Channel / 1RB



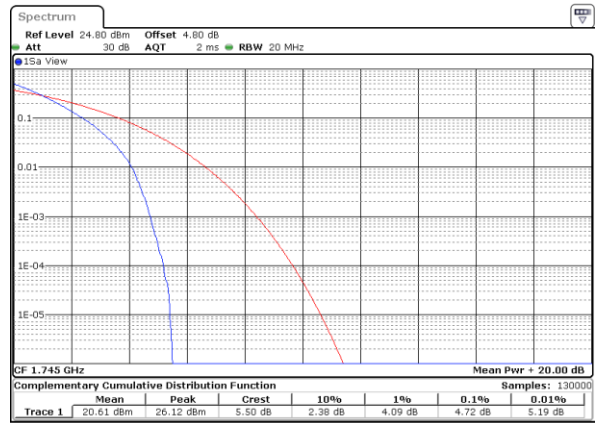
Lowest Channel / Full RB



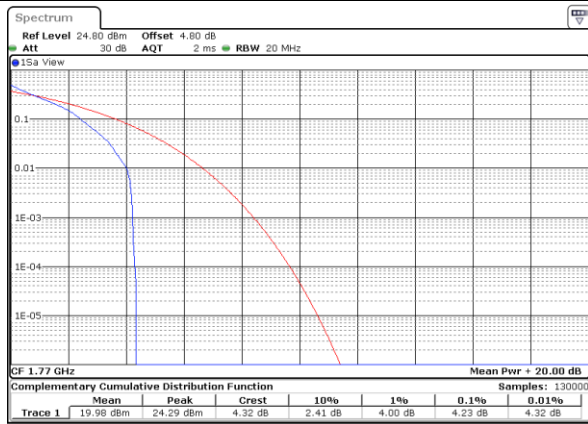
Middle Channel / 1RB



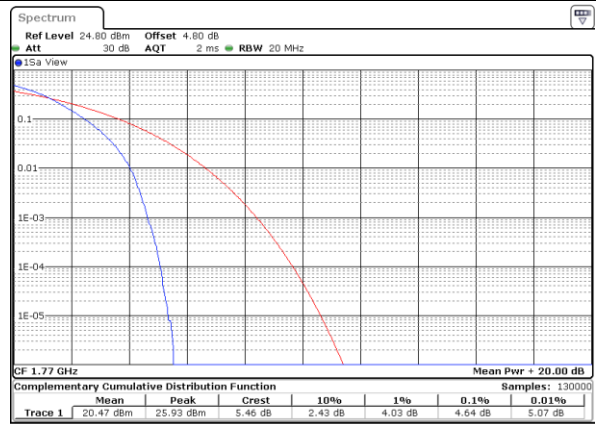
Middle Channel / Full RB



Highest Channel / 1RB



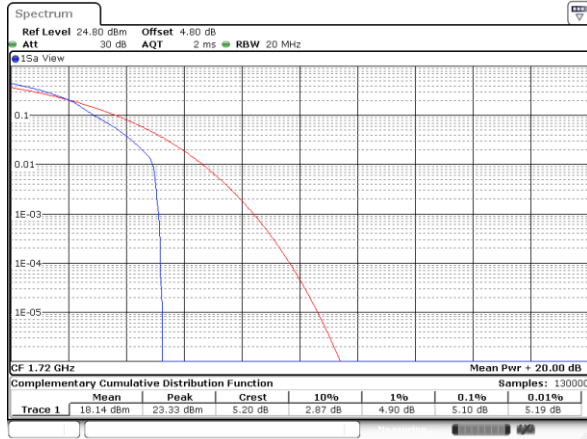
Highest Channel / Full RB



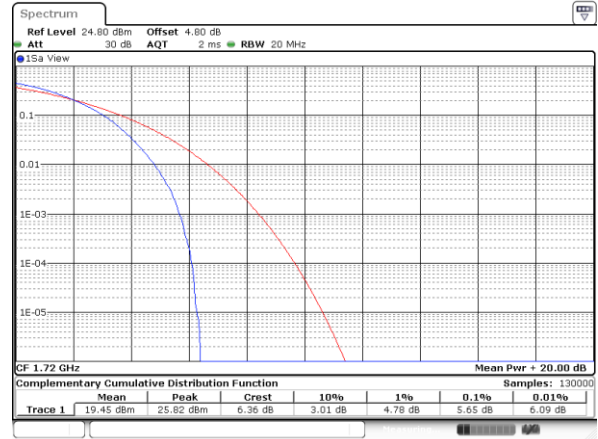


LTE Band 66 / 20MHz / 16QAM

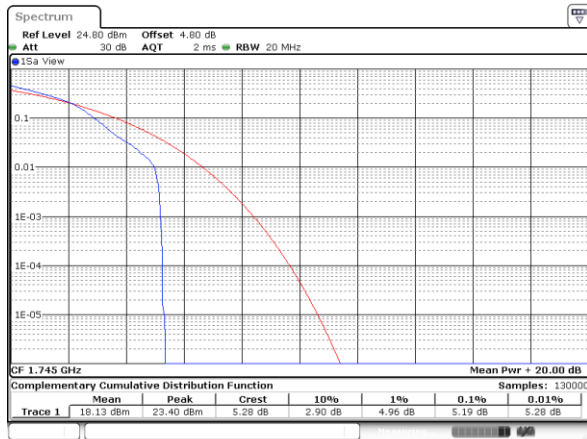
Lowest Channel / 1RB



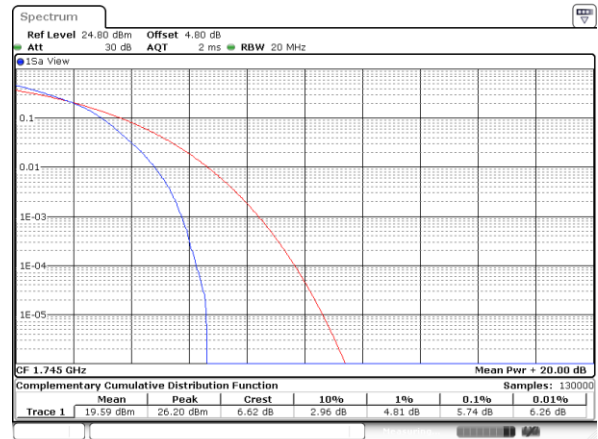
Lowest Channel / Full RB



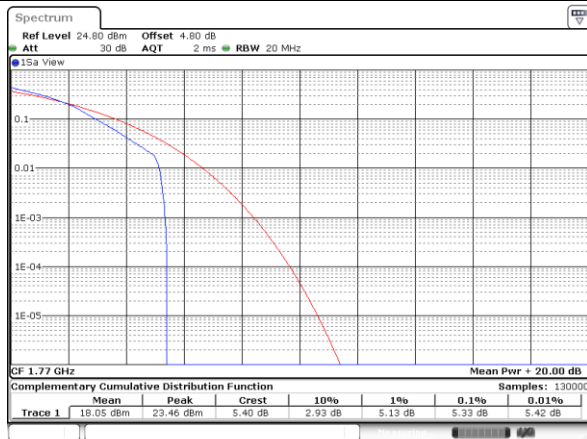
Middle Channel / 1RB



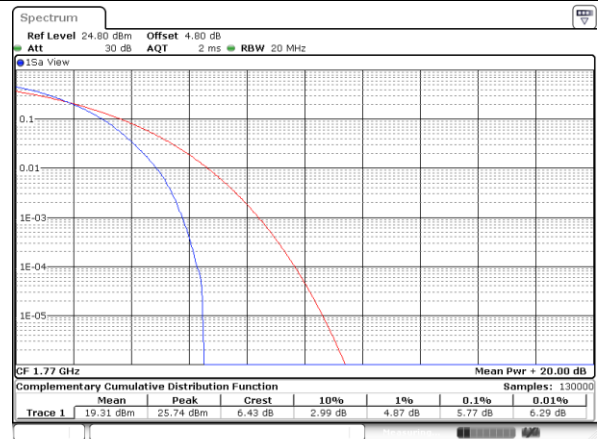
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



**26dB Bandwidth**

Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz					
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM				
Lowest CH	1.27	1.28	3.02	3.00	4.92	4.95	9.67	9.69				
Middle CH	1.30	1.28	2.96	2.99	4.95	5.08	9.67	9.77				
Highest CH	1.24	1.28	3.00	2.99	4.92	4.94	9.89	9.79				

Mode	LTE Band 13 : 26dB BW(MHz)											
BW	5MHz		10MHz									
Mod.	QPSK	16QAM	QPSK	16QAM								
Lowest CH	4.905	4.895	-	-								
Middle CH	4.925	4.885	9.83	9.59								
Highest CH	4.975	4.935	-	-								

Mode	LTE Band 25 : 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	1.276	1.301	3.021	3.021	4.975	4.975	9.79	9.75	14.565	14.446	20.34	20.14
Middle CH	1.301	1.323	2.985	3.021	4.905	5.025	9.79	9.87	14.386	14.236	20.14	20.18
Highest CH	1.281	1.253	3.009	2.979	4.925	5.035	9.67	9.81	14.146	14.296	19.98	20.02

Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		CH26765	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.276	1.270	3.009	2.961	4.835	4.925	9.81	9.85	14.386	14.685	14.476	14.086
Middle CH	1.256	1.287	2.997	3.039	4.905	4.975	9.81	9.83	14.296	14.236	-	-
Highest CH	1.267	1.267	3.003	3.003	4.915	4.915	9.73	9.97	14.236	14.356	-	-



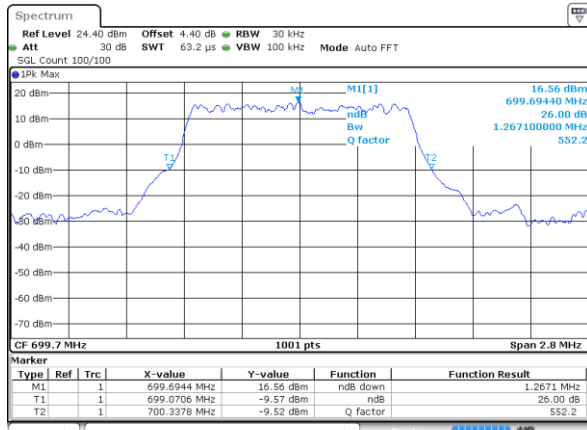
Mode	LTE Band 41 : 26dB BW(MHz)											
BW	5MHz		10MHz		15MHz		20MHz					
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM				
Lowest CH	4.975	4.955	9.93	9.69	14.625	14.505	20.06	20.10				
Middle CH	5.045	4.785	9.77	9.67	14.476	14.625	20.819	20.38				
Highest CH	4.945	4.815	9.71	9.71	14.386	14.266	20.26	20.10				

Mode	LTE Band 66 : 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	1.278	3.039	3.015	4.945	4.925	9.73	9.85	14.236	14.416	20.10	19.94
Middle CH	1.276	1.295	2.991	3.015	4.905	4.995	9.69	9.85	14.476	14.266	20.22	20.14
Highest CH	1.295	1.256	2.949	3.027	4.825	4.865	9.75	9.87	14.535	14.266	20.14	20.02



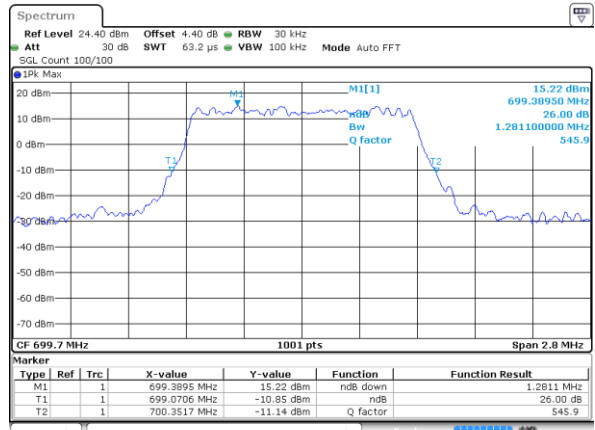
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



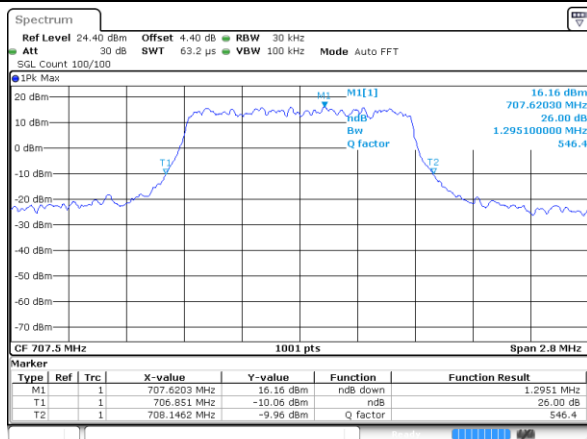
Date: 12 FEB 2018 15:28:50

Lowest Channel / 1.4MHz / 16QAM



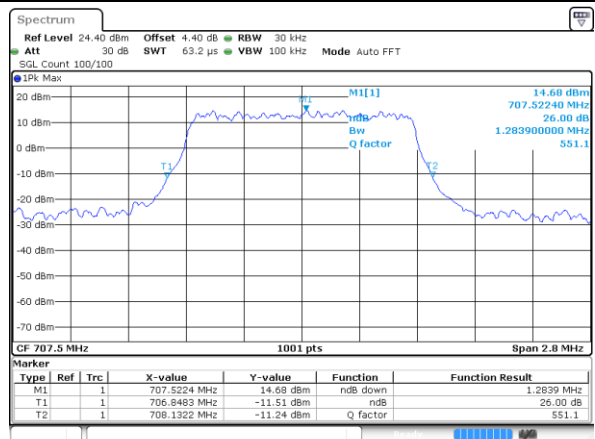
Date: 12 FEB 2018 15:28:09

Middle Channel / 1.4MHz / QPSK



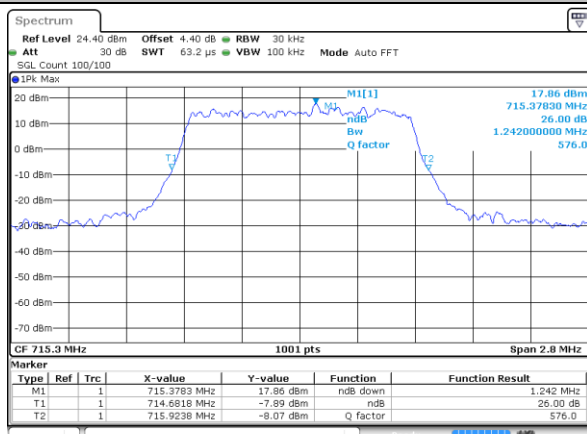
Date: 12 FEB 2018 15:32:27

Middle Channel / 1.4MHz / 16QAM



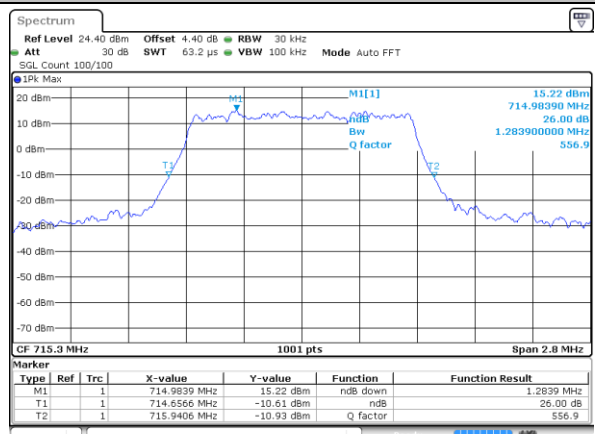
Date: 12 FEB 2018 15:32:03

Highest Channel / 1.4MHz / QPSK



Date: 12 FEB 2018 15:33:09

Highest Channel / 1.4MHz / 16QAM

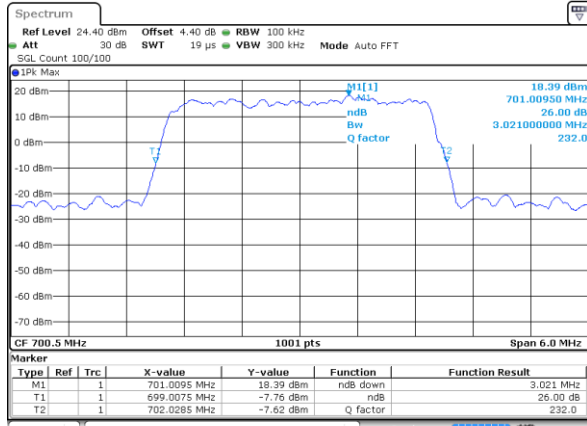


Date: 12 FEB 2018 15:33:35



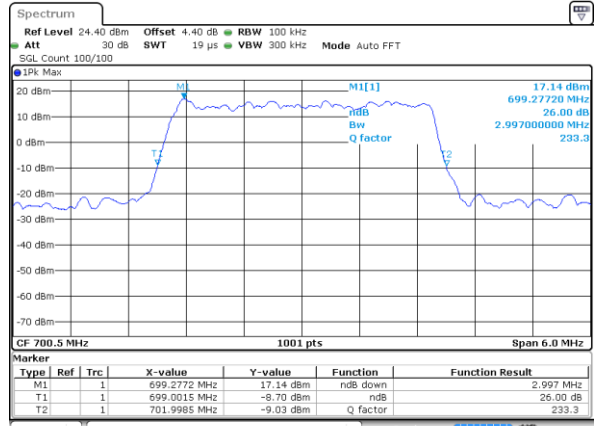
LTE Band 12

Lowest Channel / 3MHz / QPSK



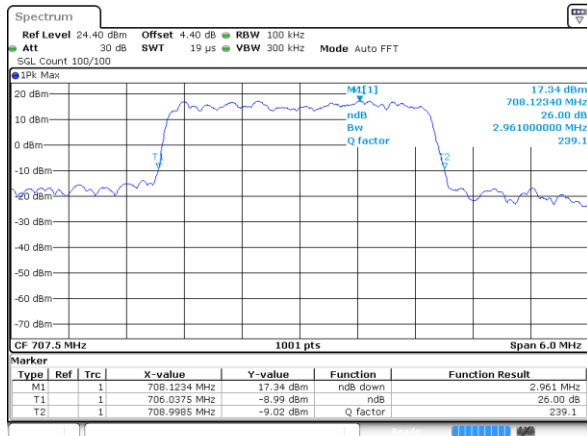
Date: 12 FEB 2018 15:37:49

Lowest Channel / 3MHz / 16QAM



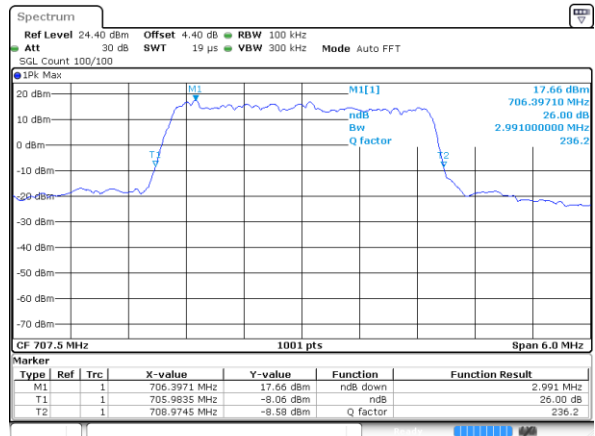
Date: 12 FEB 2018 15:37:38

Middle Channel / 3MHz / QPSK



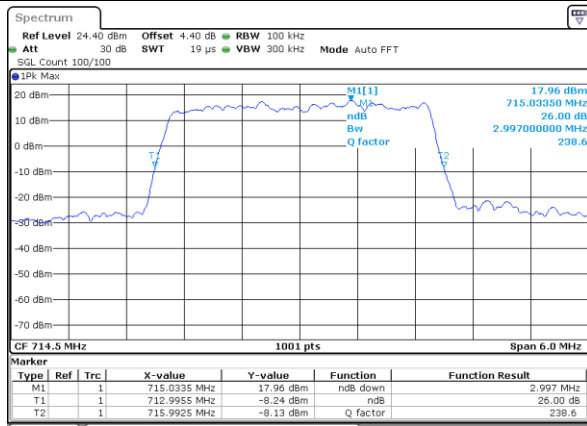
Date: 12 FEB 2018 15:37:17

Middle Channel / 3MHz / 16QAM



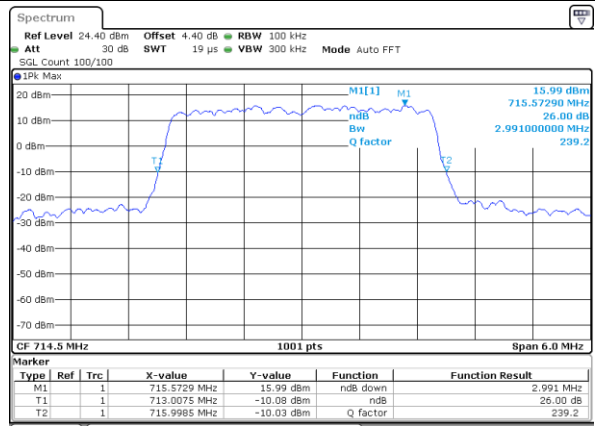
Date: 12 FEB 2018 15:37:28

Highest Channel / 3MHz / QPSK



Date: 12 FEB 2018 15:37:07

Highest Channel / 3MHz / 16QAM

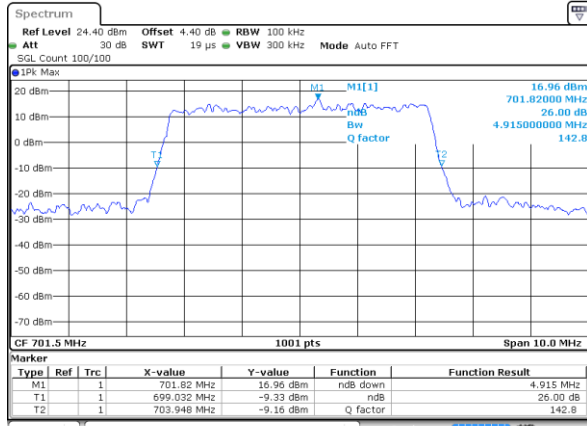


Date: 12 FEB 2018 15:36:56



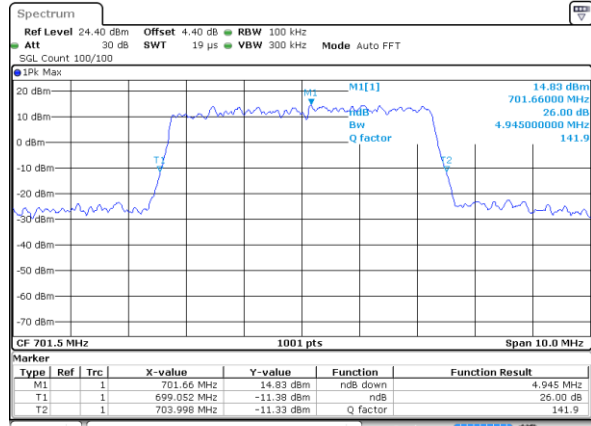
LTE Band 12

Lowest Channel / 5MHz / QPSK



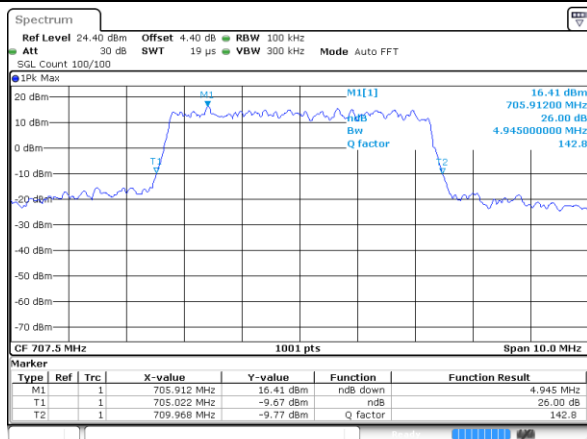
Date: 12 FEB 2018 15:42:19

Lowest Channel / 5MHz / 16QAM



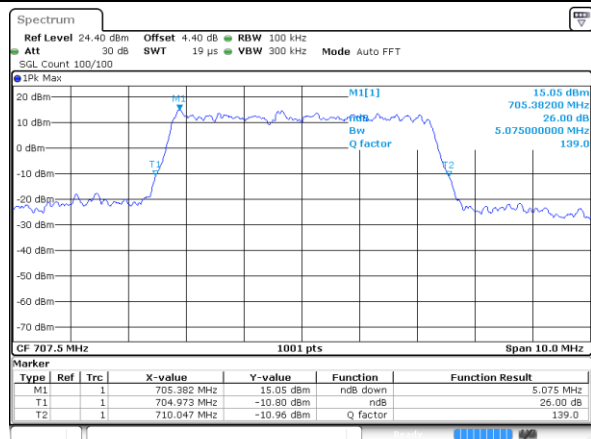
Date: 12 FEB 2018 15:42:09

Middle Channel / 5MHz / QPSK



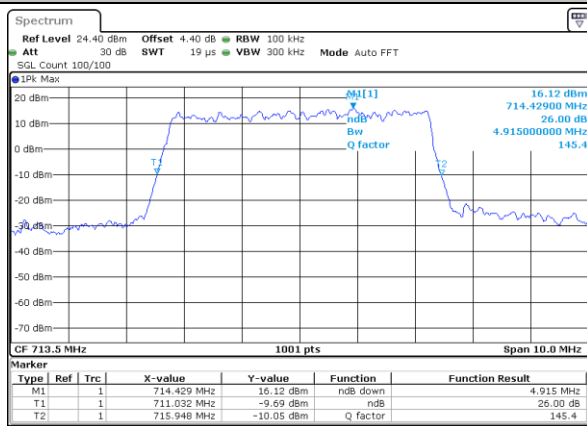
Date: 12 FEB 2018 15:41:47

Middle Channel / 5MHz / 16QAM



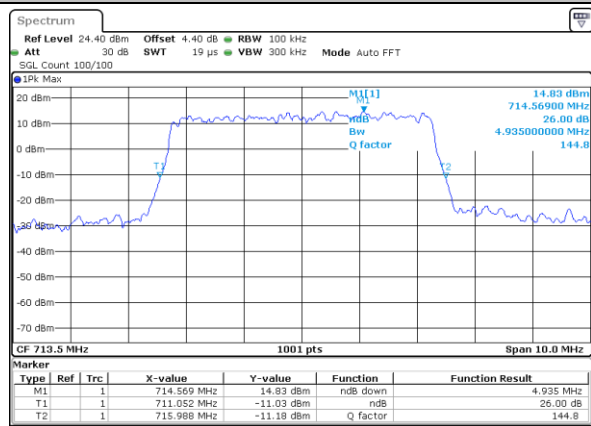
Date: 12 FEB 2018 15:41:58

Highest Channel / 5MHz / QPSK



Date: 12 FEB 2018 15:39:14

Highest Channel / 5MHz / 16QAM

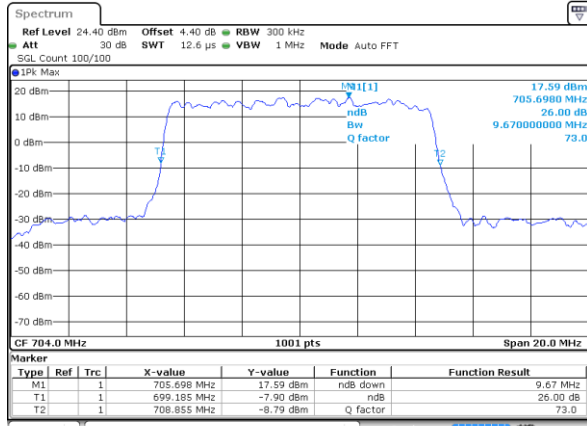


Date: 12 FEB 2018 15:39:04



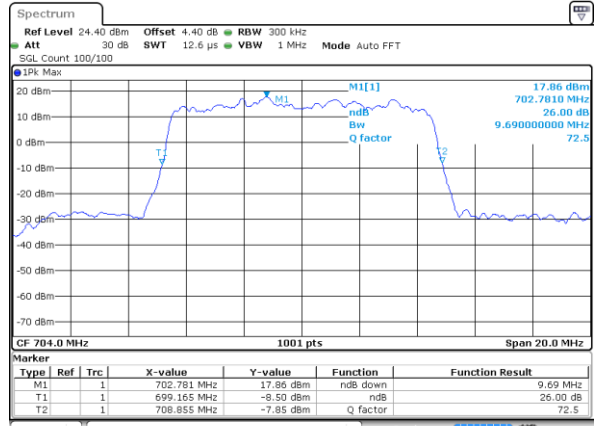
LTE Band 12

Lowest Channel / 10MHz / QPSK



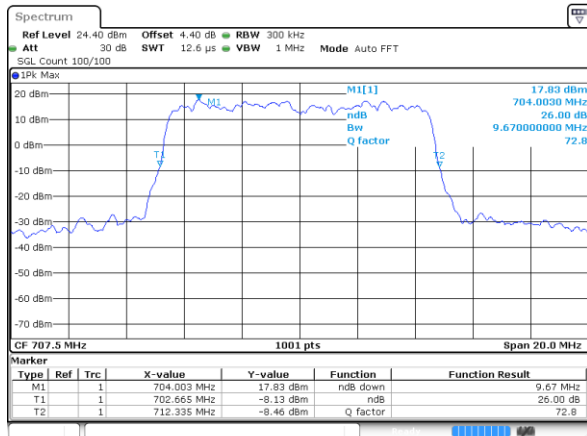
Date: 14 FEB 2018 08:20:54

Lowest Channel / 10MHz / 16QAM



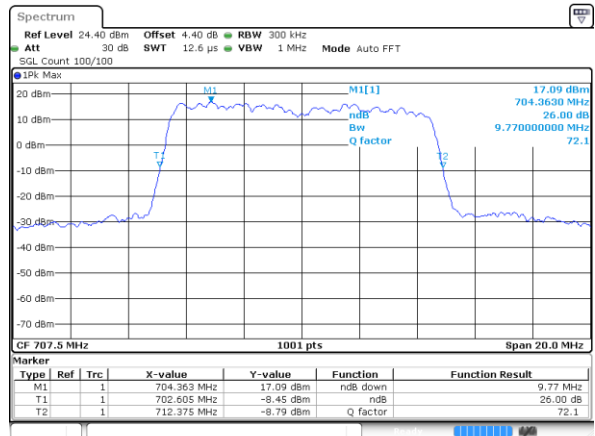
Date: 14 FEB 2018 08:21:07

Middle Channel / 10MHz / QPSK



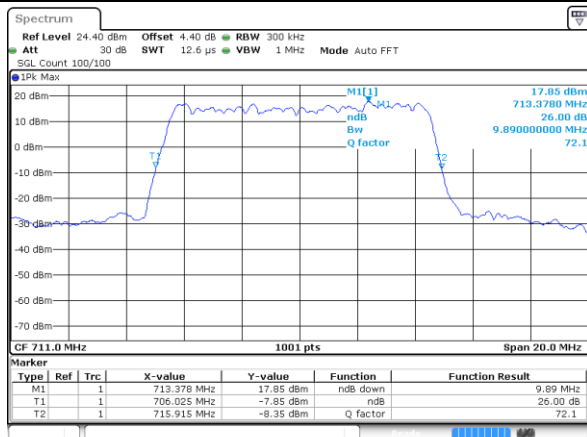
Date: 14 FEB 2018 08:20:39

Middle Channel / 10MHz / 16QAM



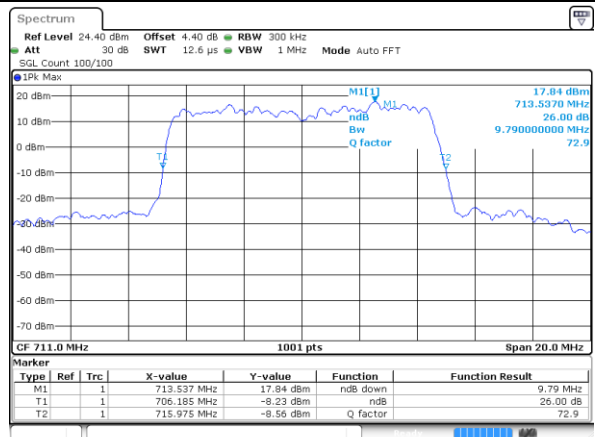
Date: 14 FEB 2018 08:20:05

Highest Channel / 10MHz / QPSK



Date: 14 FEB 2018 08:22:58

Highest Channel / 10MHz / 16QAM

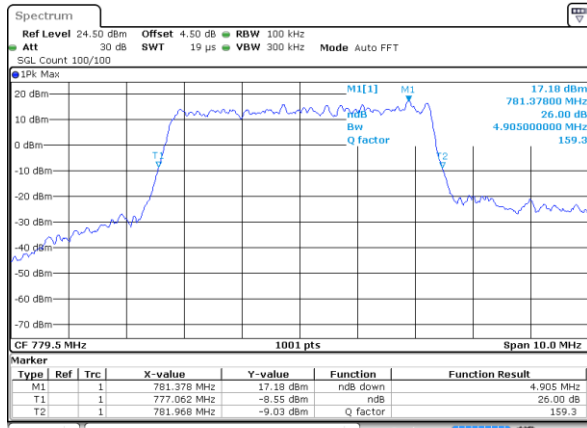


Date: 14 FEB 2018 08:22:42

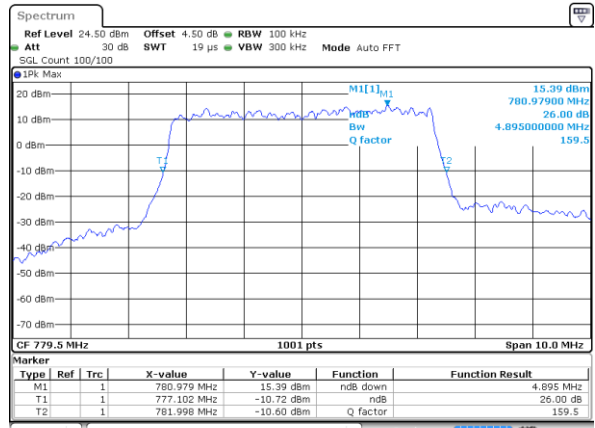


LTE Band 13

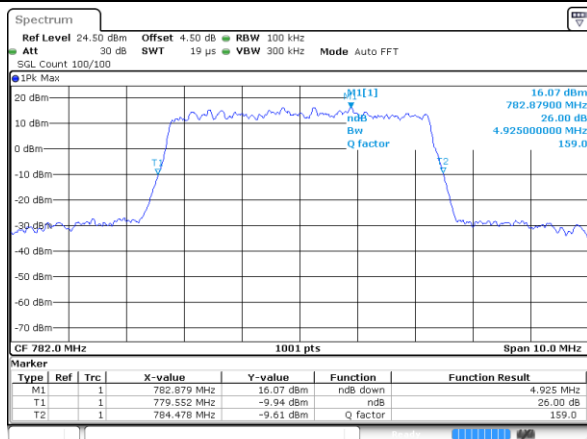
Lowest Channel / 5MHz / QPSK



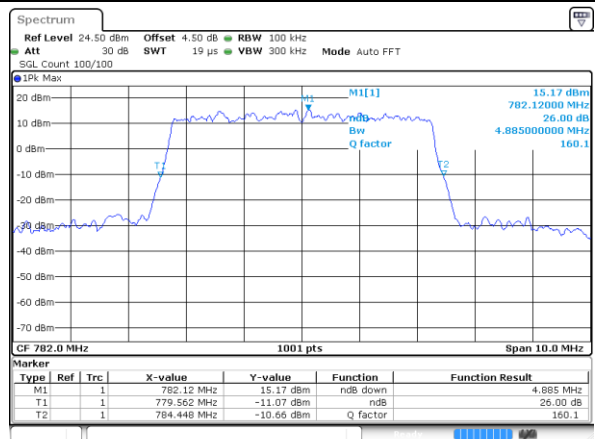
Lowest Channel / 5MHz / 16QAM



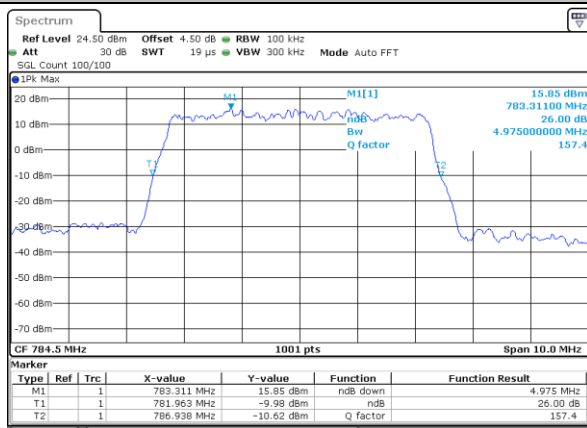
Middle Channel / 5MHz / QPSK



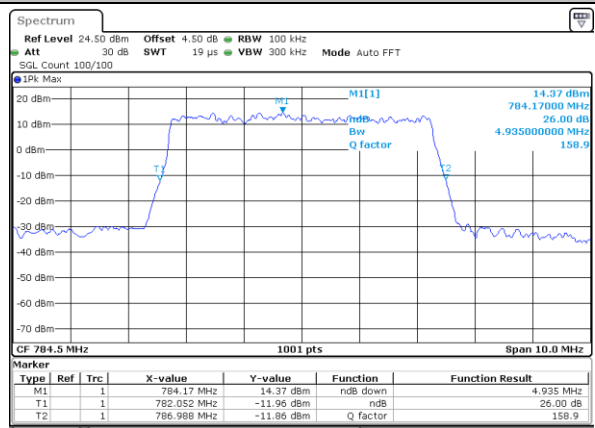
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



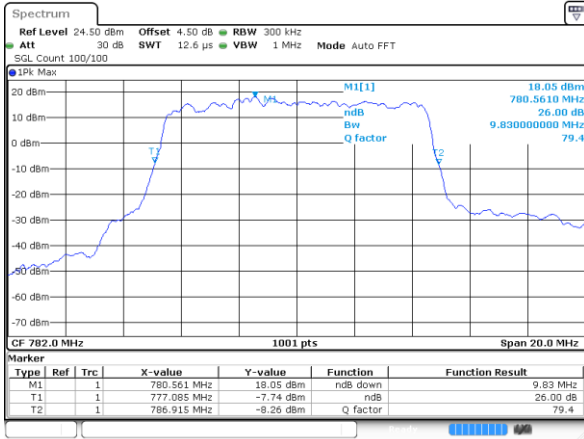
Highest Channel / 5MHz / 16QAM





LTE Band 13

Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM

