



# FCC RF Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Cellular Phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : 10012  
**FCC ID** : IHDT56WH1  
**STANDARD** : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(F), 27(H)  
**CLASSIFICATION** : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jun. 02, 2017 and completely tested on Jul. 11, 2017. 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 / EIA-603-D-2010 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.

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Approved by: Jones Tsai / Manager

**Sporton International (KunShan) INC.**  
**No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China**



TABLE OF CONTENTS

REVISION HISTORY.....3
SUMMARY OF TEST RESULT .....4
1 GENERAL DESCRIPTION .....6
1.1 Applicant .....6
1.2 Manufacturer.....6
1.3 Product Feature of Equipment Under Test.....6
1.4 Product Specification of Equipment Under Test.....7
1.5 Specification of Accessory.....9
1.6 Modification of EUT .....9
1.7 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator .....10
1.8 Testing Location .....13
1.9 Applicable Standards.....13
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST .....14
2.1 Test Mode.....14
2.2 Connection Diagram of Test System.....18
2.3 Support Unit used in test configuration and system .....19
2.4 Measurement Results Explanation Example.....19
2.5 Frequency List of Low/Middle/High Channels .....20
3 CONDUCTED TEST ITEMS .....26
3.1 Measuring Instruments .....26
3.2 Test Setup .....26
3.3 Test Result of Conducted Test .....26
3.4 Conducted Output Power and ERP/EIRP .....27
3.5 Peak-to-Average Ratio .....28
3.6 Occupied Bandwidth.....29
3.7 Conducted Band Edge .....30
3.8 Conducted Spurious Emission .....32
3.9 Frequency Stability .....33
4 RADIATED TEST ITEMS .....34
4.1 Measuring Instruments .....34
4.2 Test Setup .....34
4.3 Test Result of Radiated Test .....34
4.4 Radiated Spurious Emission .....35
5 LIST OF MEASURING EQUIPMENT .....37
6 UNCERTAINTY OF EVALUATION .....38
APPENDIX A. TEST RESULTS OF CONDUCTED TEST
APPENDIX B. TEST RESULTS OF RADIATED TEST
APPENDIX C. TEST SETUP PHOTOGRAPHS





**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	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)	ERP < 3 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2)(Band 25) (Band 7) (Band 38) (Band 41)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	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(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 26) (Band 12) (Band 13) (Band 17) (Band 25) (Band 66)	< 43+10log <sub>10</sub> (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(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66)	< 43+10log <sub>10</sub> (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38)(Band 41)	< 55+10log <sub>10</sub> (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		



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 17) (Band 25) (Band 26) (Band 66)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 21.50 dB at 1560.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38)(Band 41)	$< 55+10\log_{10}(P[\text{Watts}])$		



# 1 General Description

## 1.1 Applicant

Motorola Mobility LLC  
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.2 Manufacturer

Motorola Mobility LLC  
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	10012
FCC ID	IHDT56WH1
EUT supports Radios application	CDMA/EV-DO/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/ Bluetooth v3.0+EDR/ Bluetooth v4.0 LE / Bluetooth v4.1LE/ Bluetooth v4.2LE
IMEI Code	Conducted: 355666080016206(LTE B2/4/5/7/12/13/17/25/26/38) 355666080013575(LTE B41/66) Radiation: 355666080015026
HW Version	NA DVT2
SW Version	sanders_oem_userdebug_7.1.1_NPS26.116-26_47_intcfg-te st-keys_oem
EUT Stage	Identical Prototype



### 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	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 12 : 699.7 MHz ~ 715.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 26 : 824.7MHz ~ 848.3 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz
<b>Rx Frequency</b>	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 12 : 729.7 MHz ~ 745.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 26 : 869.7MHz ~ 893.3MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 2110.7 MHz~ 2179.3 MHz
<b>Bandwidth</b>	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 7 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz



<b>Maximum Output Power to Antenna</b>	LTE Band 2 : 24.21 dBm LTE Band 4 : 24.02 dBm LTE Band 5 : 24.02 dBm LTE Band 7 : 24.23 dBm LTE Band 12 : 24.44 dBm LTE Band 13 : 24.24 dBm LTE Band 17 : 24.10 dBm LTE Band 25 : 24.15 dBm LTE Band 26 : 23.52 dBm LTE Band 38 : 23.37 dBm LTE Band 41 : 24.01 dBm LTE Band 66 : 24.34 dBm
<b>Antenna Gain</b>	LTE Band 2 : -2.05 dBi LTE Band 4 : -1.75 dBi LTE Band 5 : -4.15 dBi LTE Band 7 : -0.43 dBi LTE Band 12 : -3.69 dBi LTE Band 13 : -3.69 dBi LTE Band 17 : -3.69 dBi LTE Band 25 : -2.05 dBi LTE Band 26 : -4.15 dBi LTE Band 38 : -0.43 dBi LTE Band 41 : 0.46 dBi LTE Band 66 : -1.75 dBi
<b>Type of Modulation</b>	QPSK / 16QAM

### 1.5 Specification of Accessory

Specification of Accessory			
AC Adapter 1	Brand Name	Motorola(Salom)	Model Name SC-22
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc or 9Vdc or 12Vdc, 3000mA or 1600mA or 1200mA	
AC Adapter 2	Brand Name	Motorola(chenyang)	Model Name SC-22
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc or 9Vdc or 12Vdc, 3000mA or 1600mA or 1200mA	
AC Adapter 3	Brand Name	Motorola(LiteOn)	Model Name SC-22
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc or 9Vdc or 12Vdc, 3000mA or 1600mA or 1200mA	
Battery	Brand Name	Motorola (ATL)	Model Name HG30
	Power Rating	3.8Vdc,3000mAh	Type Li-ion, Polymer
Earphone 1	Brand Name	Motorola(JuWei)	Model Name JWEP0998-W09R
	Signal Line Type	1.2 meter, non-shielded cable, without ferrite core	
Earphone 2	Brand Name	Motorola( Newleader)	Model Name NLD-EM307K-02SF
	Signal Line Type	1.2 meter, non-shielded cable, without ferrite core	
USB Cable	Brand Name	Motorola(Saibao)	Model Name SWT-A075A
	Signal Line Type	1.0meter, shielded cable, without core	

### 1.6 Modification of EUT

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



### 1.7 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	1M10G7D	-	0.1563	1M10W7D	-	0.1219
3	1851.5 ~ 1908.5	2M72G7D	-	0.1560	2M75W7D	-	0.1143
5	1852.5 ~ 1907.5	4M49G7D	-	0.1607	4M49W7D	-	0.1117
10	1855.0 ~ 1905.0	9M01G7D	0.0020	0.1600	8M99W7D	-	0.1164
15	1857.5 ~ 1902.5	13M4G7D	-	0.1607	13M4W7D	-	0.1143
20	1860.0 ~ 1900.0	18M4G7D	-	0.1644	18M4W7D	-	0.1178
LTE Band 25		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	-	0.1531	1M10W7D	-	0.1239
3	1851.5 ~ 1913.5	2M72G7D	-	0.1514	2M72W7D	-	0.1247
5	1852.5 ~ 1912.5	4M50G7D	-	0.1521	4M50W7D	-	0.1213
10	1855.0 ~ 1910.0	9M07G7D	0.0015	0.1496	9M03W7D	-	0.1183
15	1857.5 ~ 1907.5	13M5G7D	-	0.1607	13M5W7D	-	0.1175
20	1860.0 ~ 1905.0	18M5G7D	-	0.1622	18M4W7D	-	0.1140
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	-	0.1626	1M10W7D	-	0.1276
3	1711.5 ~ 1753.5	2M72G7D	-	0.1524	2M73W7D	-	0.1180
5	1712.5 ~ 1752.5	4M50G7D	-	0.1589	4M50W7D	-	0.1169
10	1715.0 ~ 1750.0	9M01G7D	0.0020	0.1679	9M03W7D	-	0.1186
15	1717.5 ~ 1747.5	13M4G7D	-	0.1614	13M5W7D	-	0.1183
20	1720.0 ~ 1745.0	18M4G7D	-	0.1687	18M3W7D	-	0.1197



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	-	0.0558	1M10W7D	-	0.0458
3	825.5 ~ 847.5	2M73G7D	-	0.0568	2M73W7D	-	0.0434
5	826.5 ~ 846.5	4M49G7D	-	0.0558	4M50W7D	-	0.0441
10	829.0 ~ 844.0	8M99G7D	0.0045	0.0592	9M03W7D	-	0.0408
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	-	0.2339	4M52W7D	-	0.1660
10	2505.0 ~ 2565.0	9M03G7D	0.0011	0.2355	9M01W7D	-	0.1690
15	2507.5 ~ 2562.5	13M5G7D	-	0.2344	13M5W7D	-	0.1694
20	2510.0 ~ 2560.0	18M4G7D	-	0.2399	18M3W7D	-	0.1690
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	1M09G7D	-	0.0668	1M09W7D	-	0.0545
3	700.5 ~ 714.5	2M72G7D	-	0.0671	2M73W7D	-	0.0531
5	701.5 ~ 713.5	4M49G7D	-	0.0695	4M49W7D	-	0.0525
10	704.0 ~ 711.0	9M05G7D	0.0044	0.0724	9M01W7D	-	0.0495
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	4M51G7D	-	0.0675	4M51W7D	-	0.0486
10	782.0	9M03G7D	0.0063	0.0692	8M99W7D	-	0.0479
LTE Band 17		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	706.5 ~ 713.5	4M49G7D	-	0.0668	4M49W7D	-	0.0458
10	709.0 ~ 711.0	9M13G7D	0.0061	0.0670	9M07W7D	-	0.0470



LTE Band 26		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	824.7 ~ 848.3	1M10G7D	-	0.0527	1M10W7D	-	0.0406
3	825.5 ~ 847.5	2M72G7D	-	0.0469	2M74W7D	-	0.0354
5	826.5 ~ 846.5	4M49G7D	-	0.0481	4M50W7D	-	0.0371
10	829.0 ~ 844.0	9M03G7D	0.0117	0.0504	9M03W7D	-	0.0356
15	831.5 ~ 841.5	13M4G7D	-	0.0492	13M4W7D	-	0.0492
CH26765	821.5	13M3G7D	-	0.0615	13M4W7D	-	0.0437
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	4M49G7D	-	0.1742	4M50W7D	-	0.1312
10	2575.0 ~ 2615.0	9M03G7D	0.0018	0.1968	9M03W7D	-	0.1334
15	2577.5 ~ 2612.5	13M5G7D	-	0.1786	13M4W7D	-	0.1349
20	2580.0 ~ 2610.0	18M3G7D	-	0.1738	18M3W7D	-	0.1384
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	-	0.2729	4M50W7D	-	0.2123
10	2501.0 ~ 2685.0	9M09G7D	0.0014	0.2799	9M03W7D	-	0.2218
15	2503.5 ~ 2682.5	13M5G7D	-	0.2735	13M4W7D	-	0.2089
20	2506.0 ~ 2680.0	18M3G7D	-	0.2704	18M3W7D	-	0.2104
LTE Band 66		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	1M10G7D	-	0.1706	1M10W7D	-	0.1365
3	1711.5 ~ 1778.5	2M72G7D	-	0.1596	2M72W7D	-	0.1312
5	1712.5 ~ 1777.5	4M50G7D	-	0.1714	4M50W7D	-	0.1202
10	1715.0 ~ 1775.0	9M03G7D	0.0231	0.1774	9M05W7D	-	0.1208
15	1717.5 ~ 1772.5	13M4G7D	-	0.1690	13M4W7D	-	0.1216
20	1720.0 ~ 1770.0	18M3G7D	-	0.1816	18M4W7D	-	0.1230



### 1.8 Testing Location

<b>Test Site</b>	Sporton International (KunShan) INC.		
<b>Test Site Location</b>	No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC Registration No.</b>
	TH01-KS	03CH03-KS	306251

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

### 1.9 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 / EIA-603-D-2010
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- ♦ 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 v02r02 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	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	5	Y	Y	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y	Y
	7	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	13	-	-	Y		-	-	Y	Y	Y	Y	Y	Y	Y	Y
	13	-	-		Y	-	-	Y	Y	Y	Y	Y		Y	
	38	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	12	Y	Y	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y	Y
	17	-	-	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y	Y
	25	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	26	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	Y
	41	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
66	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Peak-to-Average Ratio	2						Y	Y	Y	Y		Y	Y	Y	Y
	4						Y	Y	Y	Y		Y	Y	Y	Y
	5				Y	-	-	Y	Y	Y		Y	Y	Y	Y
	7	-	-				Y	Y	Y	Y		Y	Y	Y	Y
	13	-	-		Y	-	-	Y	Y	Y		Y		Y	
	38	-	-				Y	Y	Y	Y		Y	Y	Y	Y
	12				Y	-	-	Y	Y	Y		Y	Y	Y	Y
	17	-	-		Y	-	-	Y	Y	Y		Y	Y	Y	Y
	25						Y	Y	Y	Y		Y	Y	Y	Y
	26					Y	-	Y	Y	Y		Y	Y	Y	Y
	41	-	-				Y	Y	Y	Y		Y	Y	Y	Y
	66						Y	Y	Y	Y		Y	Y	Y	Y



Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	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
	13	-	-	v		-	-	v	v			v	v	v	v
	13	-	-		v	-	-	v	v			v		v	
	38	-	-	v	v	v	v	v	v			v	v	v	v
	12	v	v	v	v	-	-	v	v			v	v	v	v
	17	-	-	v	v	-	-	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
Conducted Band Edge	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
	13	-	-	v		-	-	v	v	v		v	v		v
	13	-	-		v	-	-	v	v	v		v	v		v
	38	-	-	v	v	v	v	v	v	v		v	v		v
	12	v	v	v	v	-	-	v	v	v		v	v		v
	17	-	-	v	v	-	-	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



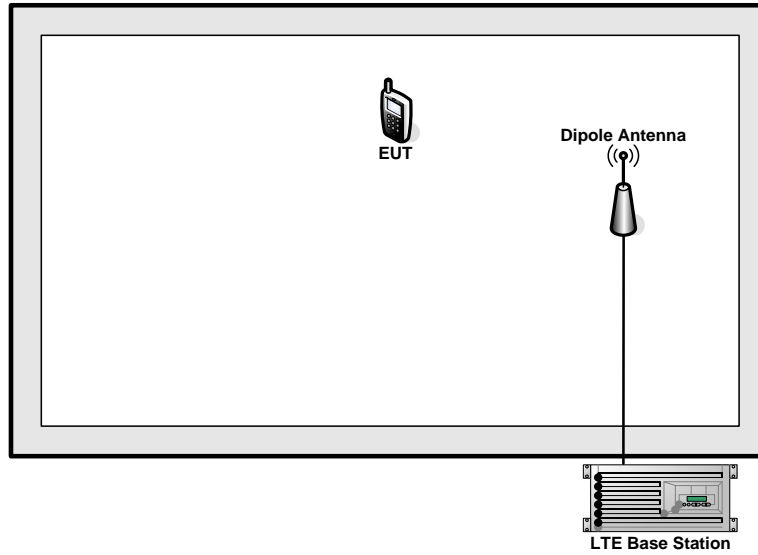
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v
	13	-	-	v		-	-	v	v	v			v	v	v
	13	-	-		v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



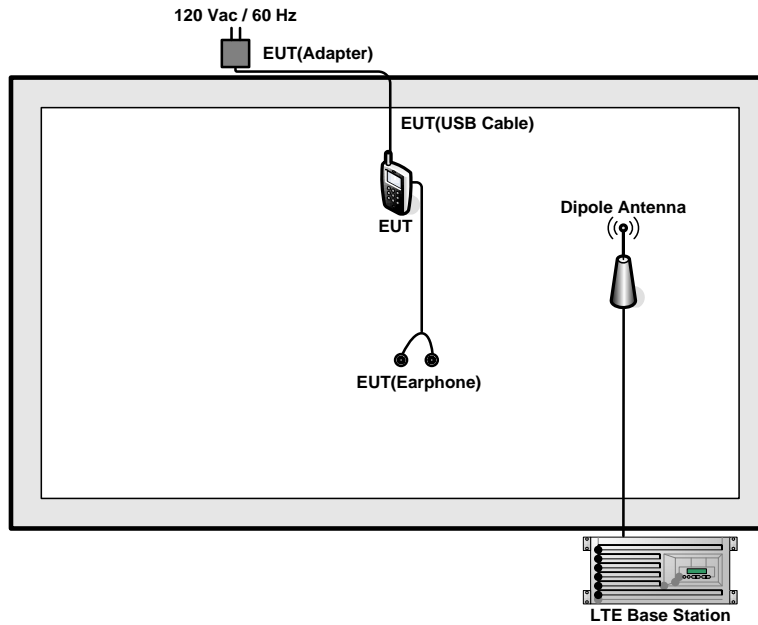
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
E.R.P./ E.I.R.P.	2	√	√	√	√	√	√	√	√	√			√	√	√
	4	√	√	√	√	√	√	√	√	√			√	√	√
	5	√	√	√	√	-	-	√	√	√			√	√	√
	7	-	-	√	√	√	√	√	√	√			√	√	√
	13	-	-	√		-	-	√	√	√			√	√	√
	13	-	-		√	-	-	√	√	√				√	
	38	-	-	√	√	√	√	√	√	√			√	√	√
	12	√	√	√	√	-	-	√	√	√			√	√	√
	17	-	-	√	√	-	-	√	√	√			√	√	√
	25	√	√	√	√	√	√	√	√	√			√	√	√
	26	√	√	√	√	√	-	√	√	√			√	√	√
	41	-	-	√	√	√	√	√	√	√			√	√	√
66	√	√	√	√	√	√	√	√	√			√	√	√	
Radiated Spurious Emission	2	√	√	√	√	√	√	√		√				√	
	4	√	√	√	√	√	√	√		√				√	
	5	√	√	√	√	-	-	√		√				√	
	7	-	-	√	√	√	√	√		√				√	
	13	-	-	√	√	-	-	√		√				√	
	38	-	-	√	√	√	√	√		√				√	
	12	√	√	√	√	-	-	√		√				√	
	17	-	-	√	√	-	-	√		√				√	
	25	√	√	√	√	√	√	√		√				√	
	26	√	√	√	√	√	-	√		√				√	
	41	-	-	√	√	√	√	√		√				√	
66	√	√	√	√	√	√	√		√				√		
Note	<p>1. The mark “√” means that this configuration is chosen for testing</p> <p>2. The mark “-” means that this bandwidth is not supported.</p> <p>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.</p>														

## 2.2 Connection Diagram of Test System

### LTE Band 41



### LTE Band 2 / 4 / 5 / 7 / 12 / 13 / 17 / 25 / 26 / 38 / 66





### 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 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.

*Offset = RF cable loss.*

Following shows an offset computation example with cable loss 5.3 dB.

Example :

$$\begin{aligned} \text{Offset}(dB) &= \text{RF cable loss}(dB). \\ &= 5.3 \text{ (dB)} \end{aligned}$$



### 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 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 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 17 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5



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 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 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

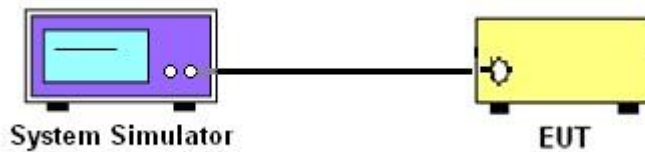
### 3 Conducted Test Items

#### 3.1 Measuring Instruments

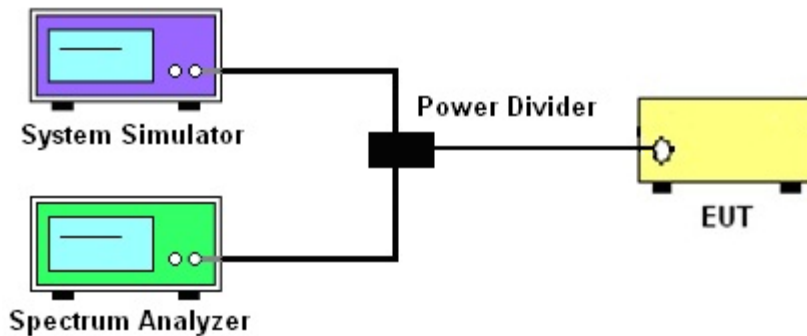
See list of measuring instruments of this test report.

#### 3.2 Test Setup

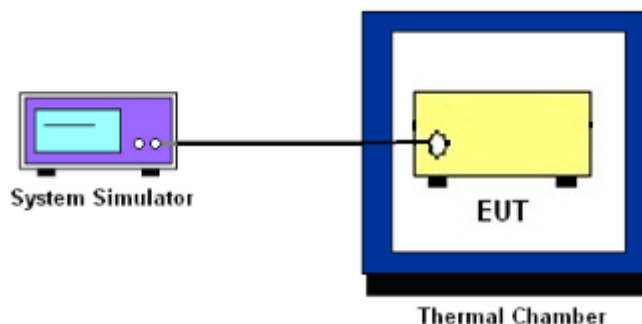
##### 3.2.1 Conducted Output Power



##### 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, Band 13 and Band 17.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25 and Band 7 and Band 38 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**

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
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 FCC KDB 971168 v02r02 Section 4.1 and 4.2.
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 (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(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(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 and 1710 – 1780 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 that  $43 + 10 \log (P)$  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 FCC KDB 971168 v02r02 Section 6.0.
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.
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:

$$\begin{aligned} & \text{The limit line is derived from } 43 + 10\log(P)\text{dB below the transmitter power } P(\text{Watts}) \\ & = P(\text{W}) - [43 + 10\log(P)] \text{ (dB)} \\ & = [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}. \end{aligned}$$

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 10<sup>th</sup> harmonic.

#### 3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
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)  
= -13dBm.
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)  
= -25dBm.



## 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 FCC KDB 971168 v02r02 Section 9.0.
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  $-30^{\circ}\text{C}$  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  $10^{\circ}\text{C}$  step up to  $50^{\circ}\text{C}$ . 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 FCC KDB 971168 v02r02 Section 9.0.
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 measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

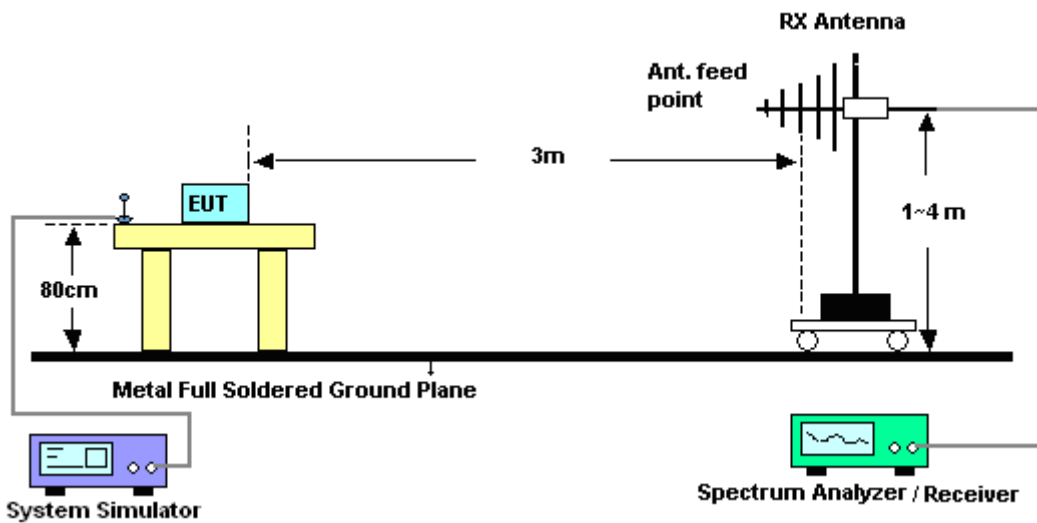
## 4 Radiated Test Items

### 4.1 Measuring Instruments

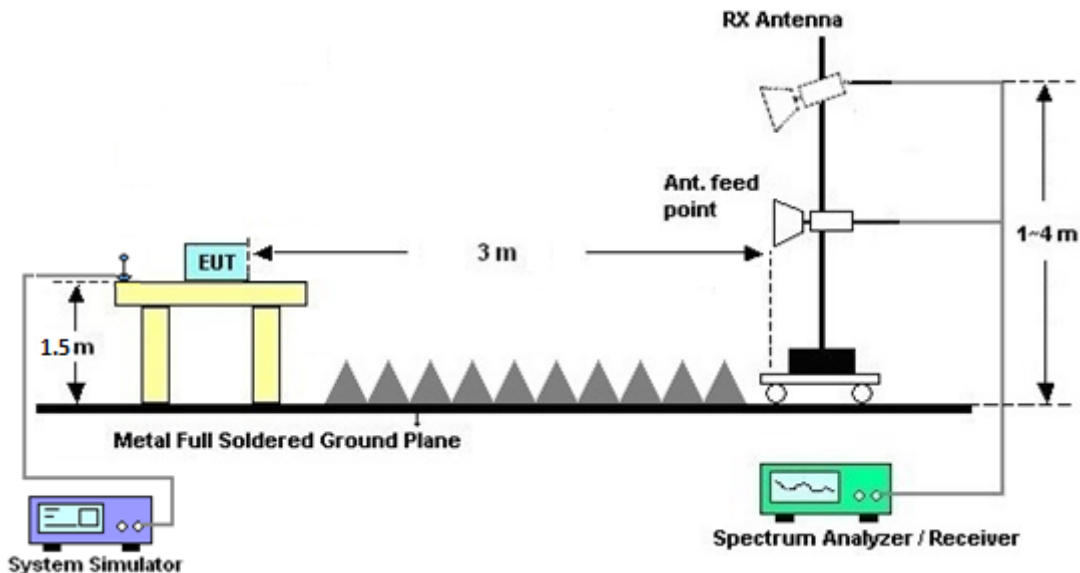
See list of measuring instruments of this test report.

### 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 / EIA-603-D-2010. 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.

For LTE Band 12,13,17

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

1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
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.  $EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$
11.  $ERP (dBm) = EIRP - 2.15$
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)  
 $= P(W) - [43 + 10\log(P)] (dB)$   
 $= [30 + 10\log(P)] (dBm) - [43 + 10\log(P)] (dB)$   
 $= -13dBm.$



13. For Band 7, 38, 41:

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

$EIRP \text{ (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$

$ERP \text{ (dBm)} = EIRP - 2.15$



## 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. 09, 2016	Jun. 07, 2017~ Jun. 23, 2017	Aug. 08, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 13, 2016	Jun. 07, 2017~ Jun. 23, 2017	Oct. 12, 2017	Conducted (TH01-KS)
Radio communication analyzer	Anritsu	MT8820C	6201300652	2G/3G/LTE Band	Aug. 08, 2016	Jun. 07, 2017~ Jun. 23, 2017	Aug. 07, 2017	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Jun. 20, 2017~ Jul. 11, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Jun. 20, 2017~ Jul. 11, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Jun. 20, 2017~ Jul. 11, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	com-power	AH-840	101070	18GHz ~40GHz	Oct. 19, 2016	Jun. 20, 2017~ Jul. 11, 2017	Oct. 18, 2017	Radiation (03CH03-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Aug. 09, 2016	Jun. 20, 2017~ Jul. 11, 2017	Aug. 08, 2017	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 13, 2016	Jun. 20, 2017~ Jul. 11, 2017	Oct. 12, 2017	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35 -HG	1887435	18GHz~40GHz	Oct. 13, 2016	Jun. 20, 2017~ Jul. 11, 2017	Oct. 12, 2017	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 20, 2017~ Jul. 11, 2017	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 20, 2017~ Jul. 11, 2017	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 20, 2017~ Jul. 11, 2017	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% ( $U = 2Uc(y)$ )	2.8dB
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.3dB
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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	23.78	23.61	23.53
20	1	49		23.79	24.21	24.10
20	1	99		23.36	23.43	23.62
20	50	0		22.77	22.78	22.74
20	50	24		22.75	22.70	22.64
20	50	50		22.75	22.71	22.62
20	100	0		22.72	22.74	22.65
20	1	0	16-QAM	22.47	22.60	22.76
20	1	49		22.59	22.60	22.66
20	1	99		22.52	22.49	22.52
20	50	0		21.77	21.76	21.89
20	50	24		21.87	21.85	21.70
20	50	50		21.94	21.84	21.71
20	100	0		21.70	21.84	21.57
15	1	0	QPSK	23.54	23.48	23.65
15	1	37		24.11	24.08	23.82
15	1	74		23.61	23.65	23.56
15	36	0		22.69	22.76	22.68
15	36	20		22.77	22.80	22.70
15	36	39		22.62	22.77	22.70
15	75	0		22.70	22.77	22.68
15	1	0	16-QAM	22.46	22.49	22.48
15	1	37		22.51	22.61	22.63
15	1	74		22.48	22.41	22.56
15	36	0		21.72	21.79	21.71
15	36	20		21.64	21.83	21.80
15	36	39		21.81	21.81	21.69
15	75	0		21.83	21.90	21.78



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.48	23.53	23.57
10	1	25		23.91	24.09	23.94
10	1	49		23.55	23.66	23.81
10	25	0		22.67	22.79	22.67
10	25	12		22.65	22.79	22.67
10	25	25		22.68	22.76	22.63
10	50	0		22.71	22.76	22.64
10	1	0	16-QAM	22.59	22.57	22.71
10	1	25		22.51	22.56	22.59
10	1	49		22.56	22.57	22.58
10	25	0		21.63	21.94	21.77
10	25	12		21.99	21.96	21.76
10	25	25		22.08	21.87	21.70
10	50	0		21.60	21.89	21.65
5	1	0	QPSK	23.60	23.67	23.67
5	1	12		24.11	24.02	23.70
5	1	24		23.53	23.44	23.45
5	12	0		22.60	22.82	22.67
5	12	7		22.60	22.73	22.65
5	12	13		22.68	22.76	22.67
5	25	0		22.62	22.72	22.59
5	1	0	16-QAM	22.47	22.44	22.53
5	1	12		22.43	22.52	22.53
5	1	24		22.44	22.52	22.38
5	12	0		21.57	21.51	21.58
5	12	7		21.82	21.79	21.63
5	12	13		21.91	21.81	21.68
5	25	0		21.77	21.62	21.73



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.46	23.69	23.64
3	1	8		23.75	23.98	23.65
3	1	14		23.66	23.81	23.55
3	8	0		22.72	22.90	22.58
3	8	4		22.74	22.86	22.67
3	8	7		22.69	22.76	22.71
3	15	0		22.62	22.78	22.66
3	1	0	16-QAM	22.55	22.61	22.63
3	1	8		22.45	22.56	22.45
3	1	14		22.53	22.57	22.53
3	8	0		21.73	21.86	21.77
3	8	4		21.69	21.86	21.95
3	8	7		21.73	21.90	21.77
3	15	0		21.64	21.54	21.47
1.4	1	0	QPSK	23.58	23.88	23.66
1.4	1	3		23.58	23.88	23.78
1.4	1	5		23.71	23.87	23.46
1.4	3	0		23.71	23.99	23.87
1.4	3	1		23.79	23.85	23.93
1.4	3	3		23.69	23.86	23.76
1.4	6	0		22.54	22.85	22.62
1.4	1	0	16-QAM	22.83	22.90	22.50
1.4	1	3		22.47	22.62	22.70
1.4	1	5		22.44	22.61	22.80
1.4	3	0		22.60	22.77	22.85
1.4	3	1		22.62	22.74	22.63
1.4	3	3		22.68	22.91	22.69
1.4	6	0		21.62	21.89	21.47



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.46	23.32	23.38
20	1	49		23.97	24.02	23.84
20	1	99		23.11	23.42	23.44
20	50	0		22.74	22.77	22.63
20	50	24		22.61	22.62	22.49
20	50	50		22.52	22.48	22.33
20	100	0		22.57	22.58	22.54
20	1	0	16-QAM	22.52	22.44	22.53
20	1	49		22.37	22.35	22.26
20	1	99		22.13	22.14	22.22
20	50	0		21.73	21.70	21.73
20	50	24		21.56	21.57	21.53
20	50	50		21.55	21.65	21.36
20	100	0		21.59	21.62	21.59
15	1	0	QPSK	23.71	23.46	23.60
15	1	37		23.78	23.83	23.46
15	1	74		23.47	23.45	23.37
15	36	0		22.72	22.68	22.60
15	36	20		22.64	22.55	22.51
15	36	39		22.61	22.53	22.36
15	75	0		22.58	22.63	22.51
15	1	0	16-QAM	22.42	22.32	22.48
15	1	37		22.38	22.28	22.13
15	1	74		22.32	22.22	22.31
15	36	0		21.77	21.66	21.54
15	36	20		21.54	21.62	21.46
15	36	39		21.61	21.60	21.36
15	75	0		21.65	21.71	21.46



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.51	23.15	22.98
10	1	25		24.00	23.88	23.67
10	1	49		23.21	23.15	23.19
10	25	0		22.76	22.53	22.45
10	25	12		22.68	22.54	22.39
10	25	25		22.57	22.54	22.37
10	50	0		22.71	22.54	22.42
10	1	0	16-QAM	22.49	22.23	22.00
10	1	25		22.29	22.23	22.23
10	1	49		22.27	22.01	22.00
10	25	0		21.74	21.54	21.50
10	25	12		21.75	21.47	21.45
10	25	25		21.54	21.44	21.34
10	50	0		21.68	21.62	21.57
5	1	0	QPSK	23.36	23.11	22.82
5	1	12		23.70	23.76	23.45
5	1	24		23.37	23.34	23.27
5	12	0		22.73	22.57	22.32
5	12	7		22.71	22.58	22.39
5	12	13		22.68	22.63	22.47
5	25	0		22.71	22.61	22.30
5	1	0	16-QAM	22.43	22.35	22.19
5	1	12		22.11	22.23	22.13
5	1	24		22.27	22.18	22.34
5	12	0		21.71	21.52	21.37
5	12	7		21.88	21.68	21.33
5	12	13		21.85	21.62	21.45
5	25	0		21.79	21.61	21.47



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.46	22.98	22.99
3	1	8		23.58	23.21	23.33
3	1	14		22.63	22.51	22.59
3	8	0		22.31	22.12	22.13
3	8	4		22.12	22.00	22.11
3	8	7		22.68	22.15	22.40
3	15	0		22.60	22.58	22.27
3	1	0	16-QAM	22.41	22.43	21.97
3	1	8		22.13	22.25	21.95
3	1	14		22.47	22.38	22.24
3	8	0		21.66	21.62	21.28
3	8	4		21.71	21.51	21.38
3	8	7		21.84	21.65	21.44
3	15	0		21.89	21.59	20.98
1.4	1	0	QPSK	23.59	23.47	23.22
1.4	1	3		23.66	23.63	23.42
1.4	1	5		23.54	23.46	23.44
1.4	3	0		23.66	23.65	23.43
1.4	3	1		23.86	23.69	23.45
1.4	3	3		23.65	23.63	23.44
1.4	6	0		22.64	22.56	22.35
1.4	1	0	16-QAM	22.43	22.37	22.17
1.4	1	3		22.40	22.62	22.18
1.4	1	5		22.49	22.34	22.31
1.4	3	0		22.79	22.55	22.04
1.4	3	1		22.66	22.63	21.96
1.4	3	3		22.73	22.81	22.34
1.4	6	0		21.67	21.51	21.28



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.56	23.58	23.34
10	1	25		23.80	23.89	24.02
10	1	49		23.21	23.35	23.36
10	25	0		22.69	22.65	22.68
10	25	12		22.62	22.58	22.65
10	25	25		22.59	22.55	22.58
10	50	0		22.58	22.64	22.66
10	1	0	16-QAM	22.28	22.38	22.38
10	1	25		22.36	22.41	22.38
10	1	49		22.38	22.33	22.38
10	25	0		21.56	21.75	21.57
10	25	12		21.59	21.68	21.58
10	25	25		21.84	21.83	21.63
10	50	0		21.56	21.55	21.57
5	1	0	QPSK	23.41	23.15	23.26
5	1	12		23.77	23.72	23.74
5	1	24		23.31	23.15	23.28
5	12	0		22.65	22.58	22.71
5	12	7		22.63	22.59	22.69
5	12	13		22.64	22.53	22.68
5	25	0		22.64	22.58	22.67
5	1	0	16-QAM	22.25	22.36	22.37
5	1	12		22.74	22.37	22.39
5	1	24		22.44	22.27	22.37
5	12	0		21.49	21.43	21.50
5	12	7		21.64	21.69	21.60
5	12	13		21.55	21.52	21.68
5	25	0		21.75	21.51	21.63



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.32	23.33	23.34
3	1	8		23.56	23.57	23.84
3	1	14		23.52	23.45	23.27
3	8	0		22.72	22.77	22.84
3	8	4		22.65	22.61	22.68
3	8	7		22.61	22.56	22.68
3	15	0		22.61	22.61	22.67
3	1	0	16-QAM	22.35	22.31	22.51
3	1	8		22.47	22.38	22.40
3	1	14		22.47	22.67	22.41
3	8	0		21.63	21.53	21.62
3	8	4		21.64	21.43	21.72
3	8	7		21.67	21.49	21.64
3	15	0		21.53	21.51	21.60
1.4	1	0	QPSK	23.35	23.58	23.65
1.4	1	3		23.46	23.62	23.69
1.4	1	5		23.62	23.62	23.54
1.4	3	0		23.66	23.64	23.68
1.4	3	1		23.59	23.77	23.75
1.4	3	3		23.48	23.63	23.74
1.4	6	0		22.50	22.52	22.69
1.4	1	0	16-QAM	22.25	22.36	22.38
1.4	1	3		22.36	22.42	22.48
1.4	1	5		22.47	22.21	22.34
1.4	3	0		22.38	22.52	22.68
1.4	3	1		22.41	22.51	22.62
1.4	3	3		22.51	22.44	22.91
1.4	6	0		21.50	21.42	21.66



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.39	23.46	23.58
20	1	49		23.68	24.23	24.05
20	1	99		23.48	23.86	23.44
20	50	0		22.81	22.93	22.83
20	50	24		22.77	22.84	22.77
20	50	50		22.72	22.83	22.79
20	100	0		22.85	22.87	22.79
20	1	0	16-QAM	22.61	22.68	22.71
20	1	49		22.55	22.64	22.52
20	1	99		22.52	22.54	22.35
20	50	0		21.82	21.81	21.74
20	50	24		21.77	21.82	21.64
20	50	50		21.76	21.78	21.61
20	100	0		21.81	21.82	21.71
15	1	0	QPSK	23.78	23.71	23.44
15	1	37		24.04	24.13	23.93
15	1	74		23.75	23.79	23.61
15	36	0		22.97	22.90	22.76
15	36	20		22.92	22.93	22.81
15	36	39		22.82	22.81	22.84
15	75	0		22.85	22.91	22.83
15	1	0	16-QAM	22.72	22.68	22.56
15	1	37		22.56	22.68	22.51
15	1	74		22.56	22.65	22.57
15	36	0		21.80	21.76	21.66
15	36	20		21.75	21.77	21.79
15	36	39		21.70	21.74	21.68
15	75	0		21.83	21.88	21.73



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.54	23.63	23.48
10	1	25		24.08	24.15	24.11
10	1	49		23.61	23.60	23.75
10	25	0		22.87	22.90	22.82
10	25	12		22.87	22.88	22.81
10	25	25		22.84	22.90	22.76
10	50	0		22.96	22.87	22.87
10	1	0	16-QAM	22.63	22.46	22.56
10	1	25		22.59	22.71	22.58
10	1	49		22.55	22.63	22.56
10	25	0		21.79	21.84	21.76
10	25	12		21.94	21.89	21.85
10	25	25		22.11	21.96	21.75
10	50	0		21.73	21.85	21.71
5	1	0	QPSK	23.69	23.43	23.36
5	1	12		24.12	24.10	23.94
5	1	24		23.59	23.54	23.34
5	12	0		22.79	22.96	22.79
5	12	7		22.97	22.97	22.78
5	12	13		22.95	22.89	22.77
5	25	0		22.89	22.89	22.76
5	1	0	16-QAM	22.53	22.63	22.44
5	1	12		22.54	22.59	22.49
5	1	24		22.58	22.55	22.40
5	12	0		21.96	21.76	21.62
5	12	7		21.94	21.91	21.88
5	12	13		21.82	21.78	21.91
5	25	0		21.96	21.86	21.80



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.49	23.50	23.68
10	1	25		23.83	23.85	24.44
10	1	49		23.58	23.71	23.64
10	25	0		22.97	22.96	23.02
10	25	12		22.85	22.96	22.96
10	25	25		22.81	22.98	23.01
10	50	0		22.93	22.94	23.01
10	1	0	16-QAM	22.51	22.51	22.68
10	1	25		22.68	22.72	22.79
10	1	49		22.66	22.71	22.70
10	25	0		21.97	21.94	21.96
10	25	12		21.80	21.94	22.19
10	25	25		22.22	21.96	21.89
10	50	0		21.88	21.90	21.92
5	1	0	QPSK	23.51	23.54	23.66
5	1	12		24.11	24.26	24.00
5	1	24		23.60	23.58	23.55
5	12	0		22.90	22.98	23.00
5	12	7		22.98	23.05	22.94
5	12	13		22.88	22.91	22.98
5	25	0		22.97	22.95	22.93
5	1	0	16-QAM	22.70	22.67	22.75
5	1	12		23.04	22.68	22.76
5	1	24		22.67	22.55	22.61
5	12	0		21.92	21.87	21.79
5	12	7		21.88	22.03	21.87
5	12	13		21.78	21.89	21.73
5	25	0		21.96	22.12	21.92



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.61	23.84	23.72
3	1	8		23.96	24.11	24.01
3	1	14		23.79	23.98	23.84
3	8	0		22.97	23.01	23.04
3	8	4		23.01	22.97	22.95
3	8	7		23.00	22.93	23.04
3	15	0		23.07	22.97	23.02
3	1	0	16-QAM	23.09	22.79	22.88
3	1	8		22.75	22.47	22.64
3	1	14		22.76	22.70	22.79
3	8	0		22.00	21.95	22.08
3	8	4		21.95	22.02	22.16
3	8	7		21.95	21.98	22.11
3	15	0		21.88	21.94	21.95
1.4	1	0	QPSK	23.89	23.95	23.87
1.4	1	3		23.96	24.02	23.89
1.4	1	5		23.99	23.87	23.88
1.4	3	0		24.00	23.96	23.93
1.4	3	1		24.09	24.01	24.05
1.4	3	3		23.98	23.99	24.07
1.4	6	0		22.96	23.00	22.99
1.4	1	0	16-QAM	22.85	22.81	22.97
1.4	1	3		22.73	23.20	22.65
1.4	1	5		22.78	22.75	22.72
1.4	3	0		22.96	22.92	22.76
1.4	3	1		22.98	22.99	22.97
1.4	3	3		23.01	23.00	23.18
1.4	6	0		21.86	21.89	21.93



LTE Band 13 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	
10	1	0	QPSK		23.69		
10	1	25			24.24		
10	1	49			23.53		
10	25	0			22.81		
10	25	12			22.77		
10	25	25			22.78		
10	50	0			22.76		
10	1	0	16-QAM		22.64		
10	1	25			22.60		
10	1	49			22.61		
10	25	0			21.71		
10	25	12			21.95		
10	25	25			21.69		
10	50	0			21.78		
5	1	0	QPSK	23.56	23.33	23.61	
5	1	12			23.61	24.13	23.86
5	1	24			23.58	23.59	23.61
5	12	0			22.79	22.80	22.77
5	12	7			22.85	22.83	22.76
5	12	13			22.80	22.77	22.88
5	25	0			22.82	22.84	22.74
5	1	0	16-QAM	22.62	22.57	22.61	
5	1	12			22.71	22.29	22.69
5	1	24			22.61	22.56	22.59
5	12	0			21.88	21.91	21.85
5	12	7			21.71	21.84	21.71
5	12	13			21.64	21.91	21.74
5	25	0			21.84	21.68	21.67



LTE Band 17 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.52	23.41	23.53
10	1	25		24.10	24.04	23.92
10	1	49		23.54	23.55	23.43
10	25	0		22.84	22.81	22.78
10	25	12		22.81	22.76	22.75
10	25	25		22.80	22.77	22.71
10	50	0		22.78	22.74	22.73
10	1	0	16-QAM	22.54	22.46	22.39
10	1	25		22.56	22.51	22.41
10	1	49		22.54	22.43	22.40
10	25	0		21.73	21.66	21.75
10	25	12		21.79	21.70	21.74
10	25	25		21.98	21.70	21.69
10	50	0		21.85	21.73	21.71
5	1	0	QPSK	23.34	23.56	23.45
5	1	12		24.09	24.09	24.00
5	1	24		23.51	23.36	23.36
5	12	0		22.77	22.74	22.69
5	12	7		22.75	22.78	22.76
5	12	13		22.76	22.76	22.67
5	25	0		22.80	22.72	22.69
5	1	0	16-QAM	22.37	22.40	22.33
5	1	12		22.45	22.41	22.15
5	1	24		22.37	22.39	22.41
5	12	0		21.64	21.84	21.59
5	12	7		21.90	21.77	21.69
5	12	13		21.68	21.83	21.76
5	25	0		21.86	21.91	21.71



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.42	23.44	23.47
20	1	49		24.15	23.94	23.63
20	1	99		23.49	23.36	22.80
20	50	0		22.87	22.72	22.64
20	50	24		22.65	22.74	22.67
20	50	50		22.63	22.71	22.62
20	100	0		22.78	22.71	22.63
20	1	0	16-QAM	22.54	22.56	22.34
20	1	49		22.40	22.62	22.50
20	1	99		22.35	22.54	22.13
20	50	0		21.82	21.97	21.70
20	50	24		21.79	21.83	21.65
20	50	50		21.67	21.65	21.63
20	100	0		21.65	21.84	21.61
15	1	0	QPSK	23.46	23.91	23.69
15	1	37		23.78	23.74	24.11
15	1	74		23.71	23.57	22.71
15	36	0		22.69	22.88	22.74
15	36	20		22.76	22.75	22.67
15	36	39		22.74	22.75	22.70
15	75	0		22.72	22.86	22.68
15	1	0	16-QAM	22.75	22.69	22.60
15	1	37		22.61	22.58	22.52
15	1	74		22.41	22.65	22.04
15	36	0		21.79	21.87	21.69
15	36	20		21.77	21.77	21.65
15	36	39		21.74	21.87	21.54
15	75	0		21.82	21.78	21.71



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.55	23.80	23.38
10	1	25		23.68	23.80	23.46
10	1	49		23.43	23.60	22.99
10	25	0		22.71	22.83	22.68
10	25	12		22.72	22.80	22.62
10	25	25		22.71	22.72	22.62
10	50	0		22.77	22.76	22.63
10	1	0	16-QAM	22.78	22.66	22.51
10	1	25		22.60	22.62	22.54
10	1	49		22.44	22.71	22.32
10	25	0		21.74	21.83	21.70
10	25	12		21.74	21.83	21.71
10	25	25		21.81	21.65	21.71
10	50	0		21.76	21.64	21.47
5	1	0	QPSK	23.66	23.51	23.46
5	1	12		23.87	23.69	23.60
5	1	24		23.34	23.54	23.24
5	12	0		22.76	22.64	22.63
5	12	7		22.80	22.74	22.63
5	12	13		22.74	22.72	22.64
5	25	0		22.68	22.78	22.63
5	1	0	16-QAM	22.65	22.89	22.72
5	1	12		22.53	22.62	22.46
5	1	24		22.49	22.50	22.49
5	12	0		21.60	21.74	21.65
5	12	7		21.56	21.83	21.80
5	12	13		21.59	21.72	21.83
5	25	0		21.69	21.69	21.57



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.72	23.60	23.67
3	1	8		23.81	23.85	23.78
3	1	14		23.31	23.52	23.45
3	8	0		22.96	22.82	23.01
3	8	4		22.89	22.77	22.58
3	8	7		22.65	22.71	22.64
3	15	0		22.65	22.72	22.60
3	1	0	16-QAM	22.45	22.57	22.63
3	1	8		22.47	23.01	22.50
3	1	14		22.55	22.55	22.41
3	8	0		21.79	21.81	21.76
3	8	4		21.70	21.84	21.64
3	8	7		21.78	21.84	21.73
3	15	0		21.78	21.75	21.37
1.4	1	0	QPSK	23.50	23.73	23.56
1.4	1	3		23.69	23.78	23.58
1.4	1	5		23.49	23.77	23.47
1.4	3	0		23.90	23.73	23.62
1.4	3	1		23.83	23.76	23.71
1.4	3	3		23.88	23.86	23.60
1.4	6	0		22.67	22.74	22.63
1.4	1	0	16-QAM	22.57	22.59	22.48
1.4	1	3		22.57	22.55	22.46
1.4	1	5		22.45	22.56	22.51
1.4	3	0		22.71	22.86	22.55
1.4	3	1		22.73	22.90	22.53
1.4	3	3		22.80	22.98	22.76
1.4	6	0		21.57	21.80	21.41



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.82	22.78	22.87
15	1	37		23.22	23.16	23.12
15	1	74		22.99	22.94	23.06
15	36	0		21.99	22.08	22.09
15	36	20		22.09	22.04	22.14
15	36	39		22.02	22.13	22.12
15	75	0		22.06	22.11	22.14
15	1	0	16-QAM	21.72	21.92	21.81
15	1	37		21.89	21.75	21.87
15	1	74		21.85	21.71	21.77
15	36	0		20.99	20.99	21.09
15	36	20		21.00	20.93	21.13
15	36	39		21.02	20.94	21.09
15	75	0		21.06	21.10	21.03
10	1	0	QPSK	22.62	22.63	22.81
10	1	25		23.07	23.32	23.13
10	1	49		22.61	22.74	22.63
10	25	0		21.94	21.94	22.01
10	25	12		21.95	21.90	22.05
10	25	25		21.95	21.99	21.96
10	50	0		21.90	21.96	22.04
10	1	0	16-QAM	21.79	21.72	21.81
10	1	25		21.66	21.69	21.61
10	1	49		21.69	21.72	21.70
10	25	0		20.86	21.12	21.03
10	25	12		21.05	21.19	20.95
10	25	25		21.25	20.97	20.92
10	50	0		20.90	20.77	21.05



LTE Band 26 Maximum Average Power [dBm]						
5	1	0	QPSK	22.40	22.51	22.53
5	1	12		22.87	23.12	22.91
5	1	24		22.48	22.53	22.54
5	12	0		21.90	21.86	22.05
5	12	7		21.97	21.85	22.04
5	12	13		21.88	21.89	21.96
5	25	0		21.88	21.84	21.94
5	1	0	16-QAM	21.63	21.51	21.53
5	1	12		21.61	21.57	21.99
5	1	24		21.57	21.59	21.56
5	12	0		20.83	20.79	21.06
5	12	7		20.99	20.77	21.10
5	12	13		20.89	20.80	20.87
5	25	0		20.80	20.87	21.06
3	1	0	QPSK	22.62	22.72	22.72
3	1	8		22.98	23.01	22.94
3	1	14		22.83	22.57	22.79
3	8	0		21.90	21.94	22.06
3	8	4		21.92	21.92	21.98
3	8	7		21.96	21.92	21.91
3	15	0		21.93	21.88	21.89
3	1	0	16-QAM	21.76	21.65	21.77
3	1	8		21.64	21.57	21.67
3	1	14		21.72	21.48	21.79
3	8	0		20.95	20.89	20.96
3	8	4		20.96	20.93	20.97
3	8	7		21.11	20.87	21.01
3	15	0		20.84	20.70	20.89



LTE Band 26 Maximum Average Power [dBm]						
1.4	1	0	QPSK	23.10	23.14	23.20
1.4	1	3		23.14	23.19	23.27
1.4	1	5		23.11	22.97	23.12
1.4	3	0		23.29	23.20	23.33
1.4	3	1		23.24	23.28	23.52
1.4	3	3		23.17	23.21	23.20
1.4	6	0		22.16	22.24	22.18
1.4	1	0	16-QAM	22.01	22.36	22.08
1.4	1	3		22.00	21.99	21.99
1.4	1	5		21.95	22.00	21.89
1.4	3	0		22.13	22.19	22.27
1.4	3	1		22.16	22.38	22.25
1.4	3	3		22.25	22.15	22.24
1.4	6	0		21.22	21.12	21.15



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.63	22.59	22.51
20	1	49		22.83	22.55	22.66
20	1	99		22.69	22.51	22.49
20	50	0		21.70	21.52	21.56
20	50	24		21.64	21.48	21.47
20	50	50		21.59	21.47	21.48
20	100	0		21.87	21.70	21.42
20	1	0	16-QAM	20.95	21.09	21.20
20	1	49		21.84	21.40	21.41
20	1	99		20.78	21.07	21.07
20	50	0		20.86	20.92	20.51
20	50	24		21.04	20.62	20.70
20	50	50		21.01	20.47	20.65
20	100	0		20.73	20.57	20.48
15	1	0	QPSK	22.65	22.59	22.45
15	1	37		22.95	22.70	22.68
15	1	74		22.57	22.53	22.36
15	36	0		21.85	21.52	21.71
15	36	20		21.83	21.44	21.48
15	36	39		21.58	21.46	21.70
15	75	0		21.65	21.47	21.52
15	1	0	16-QAM	21.63	21.45	21.14
15	1	37		21.73	21.67	21.63
15	1	74		21.11	20.73	20.98
15	36	0		20.91	20.68	20.64
15	36	20		20.86	20.67	20.85
15	36	39		20.73	20.59	20.61
15	75	0		21.00	20.59	20.56



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.65	22.55	22.61
10	1	25		23.37	23.22	22.64
10	1	49		22.70	22.44	22.49
10	25	0		21.84	21.49	21.55
10	25	12		21.64	21.52	21.47
10	25	25		21.62	21.47	21.44
10	50	0		21.62	21.50	21.44
10	1	0	16-QAM	21.39	21.35	20.83
10	1	25		21.28	21.63	21.68
10	1	49		21.08	21.30	20.92
10	25	0		20.97	20.55	20.86
10	25	12		21.00	21.09	20.84
10	25	25		20.93	20.94	20.76
10	50	0		21.00	20.45	20.49
5	1	0	QPSK	22.65	22.36	22.44
5	1	12		22.80	22.54	22.84
5	1	24		22.60	22.40	22.23
5	12	0		21.65	21.41	21.46
5	12	7		21.87	21.45	21.46
5	12	13		21.63	21.43	21.45
5	25	0		21.82	21.47	21.46
5	1	0	16-QAM	21.42	21.16	21.29
5	1	12		21.44	21.58	21.61
5	1	24		21.37	21.23	21.17
5	12	0		20.93	20.81	20.46
5	12	7		20.75	20.79	20.46
5	12	13		20.88	20.76	20.44
5	25	0		20.94	21.12	20.51



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.69	23.58	23.60
20	1	49		23.86	23.70	23.55
20	1	99		23.67	23.55	23.58
20	50	0		22.67	22.57	22.59
20	50	24		22.75	22.54	22.74
20	50	50		22.71	22.46	22.40
20	100	0		22.82	22.47	22.54
20	1	0	16-QAM	22.10	22.05	22.19
20	1	49		22.51	22.77	22.37
20	1	99		21.79	22.07	22.09
20	50	0		21.68	21.52	21.62
20	50	24		21.58	21.55	21.58
20	50	50		21.60	21.71	21.54
20	100	0		21.65	21.44	21.59
15	1	0	QPSK	23.49	23.64	23.52
15	1	37		23.91	23.72	23.90
15	1	74		23.76	23.49	23.60
15	36	0		22.66	22.50	22.50
15	36	20		22.83	22.53	22.58
15	36	39		22.70	22.46	22.54
15	75	0		22.74	22.45	22.67
15	1	0	16-QAM	22.21	22.12	22.10
15	1	37		22.74	22.11	22.29
15	1	74		22.26	21.91	22.14
15	36	0		21.58	21.58	21.58
15	36	20		21.58	21.61	21.67
15	36	39		21.75	21.57	21.64
15	75	0		21.74	21.58	21.64



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.74	23.62	23.77
10	1	25		23.97	23.76	24.01
10	1	49		23.85	23.55	23.88
10	25	0		22.69	22.54	22.69
10	25	12		22.80	22.51	22.59
10	25	25		22.74	22.45	22.70
10	50	0		22.76	22.49	22.55
10	1	0	16-QAM	22.26	22.27	22.47
10	1	25		23.00	22.27	22.33
10	1	49		22.03	22.13	22.39
10	25	0		21.87	21.76	21.92
10	25	12		21.97	21.64	21.89
10	25	25		21.92	21.67	21.63
10	50	0		21.66	21.64	21.53
5	1	0	QPSK	23.50	23.35	23.65
5	1	12		23.88	23.63	23.90
5	1	24		23.57	23.42	23.73
5	12	0		22.65	22.51	22.52
5	12	7		22.67	22.50	22.76
5	12	13		22.66	22.38	22.69
5	25	0		22.66	22.49	22.65
5	1	0	16-QAM	22.18	22.27	22.31
5	1	12		22.81	22.09	22.78
5	1	24		22.65	22.16	22.27
5	12	0		21.47	21.43	21.61
5	12	7		21.70	21.47	21.75
5	12	13		21.68	21.46	21.76
5	25	0		21.55	21.71	21.97



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.41	23.50	23.78
20	1	49		24.22	24.34	24.04
20	1	99		23.36	23.82	23.63
20	50	0		22.80	22.86	22.80
20	50	24		22.74	22.87	22.75
20	50	50		22.68	22.83	22.71
20	100	0		22.70	22.85	22.81
20	1	0	16-QAM	22.54	22.65	22.63
20	1	49		22.50	22.63	22.53
20	1	99		22.36	22.57	22.43
20	50	0		21.78	21.75	21.69
20	50	24		21.67	21.88	21.72
20	50	50		21.60	21.73	21.63
20	100	0		21.74	21.86	21.72
15	1	0	QPSK	23.62	23.44	23.69
15	1	37		24.01	24.03	23.89
15	1	74		23.66	23.90	23.65
15	36	0		22.63	22.82	22.82
15	36	20		22.65	22.81	22.75
15	36	39		22.69	22.81	22.71
15	75	0		22.65	22.77	22.78
15	1	0	16-QAM	22.55	22.60	22.49
15	1	37		22.44	22.52	22.42
15	1	74		22.36	22.52	22.43
15	36	0		21.52	21.65	21.73
15	36	20		21.56	21.74	21.69
15	36	39		21.54	21.74	21.78
15	75	0		21.69	21.75	21.74



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.39	23.44	23.53
10	1	25		23.92	24.24	23.58
10	1	49		23.30	23.77	23.36
10	25	0		22.69	22.72	22.75
10	25	12		22.69	22.88	22.74
10	25	25		22.66	22.81	22.71
10	50	0		22.69	22.84	22.75
10	1	0	16-QAM	22.43	22.27	22.53
10	1	25		22.42	22.57	22.46
10	1	49		22.32	22.56	22.34
10	25	0		21.87	21.80	21.76
10	25	12		21.79	21.99	21.69
10	25	25		21.67	21.56	21.68
10	50	0		21.72	21.85	21.70
5	1	0	QPSK	23.23	23.50	23.29
5	1	12		23.94	24.09	23.96
5	1	24		23.39	23.59	23.51
5	12	0		22.63	22.87	22.68
5	12	7		22.68	22.92	22.77
5	12	13		22.65	22.80	22.70
5	25	0		22.69	22.85	22.78
5	1	0	16-QAM	22.40	22.46	22.49
5	1	12		22.33	22.42	22.38
5	1	24		22.31	22.55	22.47
5	12	0		21.53	21.78	21.72
5	12	7		21.61	21.93	21.74
5	12	13		21.78	21.92	21.75
5	25	0		21.61	21.96	21.73



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.44	23.31	23.48
3	1	8		23.56	23.21	23.78
3	1	14		23.36	23.25	23.34
3	8	0		22.52	22.36	22.31
3	8	4		22.69	22.63	22.80
3	8	7		22.78	22.76	22.72
3	15	0		22.68	22.85	22.76
3	1	0	16-QAM	22.42	22.50	22.53
3	1	8		22.17	22.93	22.42
3	1	14		22.45	22.58	22.60
3	8	0		21.63	21.40	21.83
3	8	4		21.70	21.70	21.79
3	8	7		21.71	21.78	21.84
3	15	0		21.61	21.80	21.84
1.4	1	0	QPSK	23.50	23.82	23.79
1.4	1	3		23.67	23.95	23.92
1.4	1	5		23.68	23.78	23.80
1.4	3	0		23.87	23.88	23.81
1.4	3	1		23.81	24.07	24.01
1.4	3	3		23.72	23.77	23.90
1.4	6	0		22.73	22.78	22.88
1.4	1	0	16-QAM	22.53	22.65	22.43
1.4	1	3		22.42	22.40	22.49
1.4	1	5		22.53	22.50	22.37
1.4	3	0		22.59	22.87	23.08
1.4	3	1		22.98	23.10	23.06
1.4	3	3		22.92	23.08	23.02
1.4	6	0		21.45	21.60	21.52



**ERP/EIRP**

LTE Band 2 (G <sub>T</sub> - L <sub>C</sub> = -2.05 dB) QPSK									
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	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
(MHz)									
Conducted Power (dBm)	23.71	23.99	23.87	23.75	23.98	23.65	24.11	24.02	23.70
Conducted Power (Watts)	0.2350	0.2506	0.2438	0.2371	0.2500	0.2317	0.2576	0.2523	0.2344
EIRP(dBm)	21.66	21.94	21.82	21.70	21.93	21.60	22.06	21.97	21.65
EIRP(Watts)	0.1466	0.1563	0.1521	0.1479	0.1560	0.1445	0.1607	0.1574	0.1462

LTE Band 2 (G <sub>T</sub> - L <sub>C</sub> = -2.05 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
(MHz)									
Conducted Power (dBm)	23.91	24.09	23.94	24.11	24.08	23.82	23.79	24.21	24.10
Conducted Power (Watts)	0.2460	0.2564	0.2477	0.2576	0.2559	0.2410	0.2393	0.2636	0.2570
EIRP(dBm)	21.86	22.04	21.89	22.06	22.03	21.77	21.74	22.16	22.05
EIRP(Watts)	0.1535	0.1600	0.1545	0.1607	0.1596	0.1503	0.1493	0.1644	0.1603



LTE Band 2 (G <sub>T</sub> - L <sub>C</sub> = -2.05 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)	22.68	22.91	22.69	22.55	22.61	22.63	22.47	22.44	22.53
Conducted Power (Watts)	0.1854	0.1954	0.1858	0.1799	0.1824	0.1832	0.1766	0.1754	0.1791
EIRP(dBm)	20.63	20.86	20.64	20.50	20.56	20.58	20.42	20.39	20.48
EIRP(Watts)	0.1156	0.1219	0.1159	0.1122	0.1138	0.1143	0.1102	0.1094	0.1117

LTE Band 2 (G <sub>T</sub> - L <sub>C</sub> = -2.05 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)	22.59	22.57	22.71	22.51	22.61	22.63	22.47	22.60	22.76
Conducted Power (Watts)	0.1816	0.1807	0.1866	0.1782	0.1824	0.1832	0.1766	0.1820	0.1888
EIRP(dBm)	20.54	20.52	20.66	20.46	20.56	20.58	20.42	20.55	20.71
EIRP(Watts)	0.1132	0.1127	0.1164	0.1112	0.1138	0.1143	0.1102	0.1135	0.1178



LTE Band 4 (G <sub>T</sub> - L <sub>C</sub> = -1.75 dB) QPSK									
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)	23.86	23.69	23.45	23.58	23.21	23.33	23.70	23.76	23.45
Conducted Power (Watts)	0.2432	0.2339	0.2213	0.2280	0.2094	0.2153	0.2344	0.2377	0.2213
EIRP(dBm)	22.11	21.94	21.70	21.83	21.46	21.58	21.95	22.01	21.70
EIRP(Watts)	0.1626	0.1563	0.1479	0.1524	0.1400	0.1439	0.1567	0.1589	0.1479

LTE Band 4 (G <sub>T</sub> - L <sub>C</sub> = -1.75 dB) QPSK									
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)	24.00	23.88	23.67	23.78	23.83	23.46	23.97	24.02	23.84
Conducted Power (Watts)	0.2512	0.2443	0.2328	0.2388	0.2415	0.2218	0.2495	0.2523	0.2421
EIRP(dBm)	22.25	22.13	21.92	22.03	22.08	21.71	22.22	22.27	22.09
EIRP(Watts)	0.1679	0.1633	0.1556	0.1596	0.1614	0.1483	0.1667	0.1687	0.1618



LTE Band 4 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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)	22.73	22.81	22.34	22.47	22.38	22.24	22.43	22.35	22.19
Conducted Power (Watts)	0.1875	0.1910	0.1714	0.1766	0.1730	0.1675	0.1750	0.1718	0.1656
EIRP(dBm)	20.98	21.06	20.59	20.72	20.63	20.49	20.68	20.60	20.44
EIRP(Watts)	0.1253	0.1276	0.1146	0.1180	0.1156	0.1119	0.1169	0.1148	0.1107

LTE Band 4 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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)	22.49	22.23	22.00	22.42	22.32	22.48	22.52	22.44	22.53
Conducted Power (Watts)	0.1774	0.1671	0.1585	0.1746	0.1706	0.1770	0.1786	0.1754	0.1791
EIRP(dBm)	20.74	20.48	20.25	20.67	20.57	20.73	20.77	20.69	20.78
EIRP(Watts)	0.1186	0.1117	0.1059	0.1167	0.1140	0.1183	0.1194	0.1172	0.1197



LTE Band 5 (G <sub>T</sub> - L <sub>C</sub> = -4.15 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)	23.59	23.77	23.75	23.56	23.57	23.84	23.77	23.72	23.74
Conducted Power (Watts)	0.2286	0.2382	0.2371	0.2270	0.2275	0.2421	0.2382	0.2355	0.2366
ERP(dBm)	17.29	17.47	17.45	17.26	17.27	17.54	17.47	17.42	17.44
ERP(Watts)	0.0536	0.0558	0.0556	0.0532	0.0533	0.0568	0.0558	0.0552	0.0555

LTE Band 5 (G <sub>T</sub> - L <sub>C</sub> = -4.15 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	23.80	23.89	24.02
Conducted Power (Watts)	0.2399	0.2449	0.2523
ERP(dBm)	17.50	17.59	17.72
ERP(Watts)	0.0562	0.0574	0.0592



LTE Band 5 ( $G_T - L_C = -4.15$ 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)	22.51	22.44	22.91	22.47	22.67	22.41	22.74	22.37	22.39
Conducted Power (Watts)	0.1782	0.1754	0.1954	0.1766	0.1849	0.1742	0.1879	0.1726	0.1734
ERP(dBm)	16.21	16.14	16.61	16.17	16.37	16.11	16.44	16.07	16.09
ERP(Watts)	0.0418	0.0411	0.0458	0.0414	0.0434	0.0408	0.0441	0.0405	0.0406

LTE Band 5 ( $G_T - L_C = -4.15$ dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	22.36	22.41	22.38
Conducted Power (Watts)	0.1722	0.1742	0.1730
ERP(dBm)	16.06	16.11	16.08
ERP(Watts)	0.0404	0.0408	0.0406



LTE Band 7 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	24.12	24.10	23.94
Conducted Power (Watts)	0.2582	0.2570	0.2477
EIRP(dBm)	23.69	23.67	23.51
EIRP(Watts)	0.2339	0.2328	0.2244

LTE Band 7 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	24.08	24.15	24.11	24.04	24.13	23.93	23.68	24.23	24.05
Conducted Power (Watts)	0.2559	0.2600	0.2576	0.2535	0.2588	0.2472	0.2333	0.2649	0.2541
EIRP(dBm)	23.65	23.72	23.68	23.61	23.70	23.50	23.25	23.80	23.62
EIRP(Watts)	0.2317	0.2355	0.2333	0.2296	0.2344	0.2239	0.2113	0.2399	0.2301



LTE Band 7 ( $G_T - L_C = -0.43$ dB) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.53	22.63	22.44
Conducted Power (Watts)	0.1791	0.1832	0.1754
EIRP(dBm)	22.10	22.20	22.01
EIRP(Watts)	0.1622	0.1660	0.1589

LTE Band 7 ( $G_T - L_C = -0.43$ dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	22.59	22.71	22.58	22.72	22.68	22.56	22.61	22.68	22.71
Conducted Power (Watts)	0.1816	0.1866	0.1811	0.1871	0.1854	0.1803	0.1824	0.1854	0.1866
EIRP(dBm)	22.16	22.28	22.15	22.29	22.25	22.13	22.18	22.25	22.28
EIRP(Watts)	0.1644	0.1690	0.1641	0.1694	0.1679	0.1633	0.1652	0.1679	0.1690



LTE Band 12 ( $G_T - L_C = -3.69$ 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)	24.09	24.01	24.05	23.96	24.11	24.01	24.11	24.26	24.00
Conducted Power (Watts)	0.2564	0.2518	0.2541	0.2489	0.2576	0.2518	0.2576	0.2667	0.2512
ERP(dBm)	18.25	18.17	18.21	18.12	18.27	18.17	18.27	18.42	18.16
ERP(Watts)	0.0668	0.0656	0.0662	0.0649	0.0671	0.0656	0.0671	0.0695	0.0655

LTE Band 12 ( $G_T - L_C = -3.69$ dB) QPSK			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	23.83	23.85	24.44
Conducted Power (Watts)	0.2415	0.2427	0.2780
ERP(dBm)	17.99	18.01	18.60
ERP(Watts)	0.0630	0.0632	0.0724



LTE Band 12 (G <sub>T</sub> - L <sub>C</sub> = -3.69 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	23.20	22.65	23.09	22.79	22.88	23.04	22.68	22.76
Conducted Power (Watts)	0.1875	0.2089	0.1841	0.2037	0.1901	0.1941	0.2014	0.1854	0.1888
ERP(dBm)	16.89	17.36	16.81	17.25	16.95	17.04	17.20	16.84	16.92
ERP(Watts)	0.0489	0.0545	0.0480	0.0531	0.0495	0.0506	0.0525	0.0483	0.0492

LTE Band 12 (G <sub>T</sub> - L <sub>C</sub> = -3.69 dB) 16QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	22.68	22.72	22.79
Conducted Power (Watts)	0.1854	0.1871	0.1901
ERP(dBm)	16.84	16.88	16.95
ERP(Watts)	0.0483	0.0488	0.0495



LTE Band 13 (G <sub>T</sub> - L <sub>C</sub> = -3.69 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)	23.61	24.13	23.86	-	24.24	-
Conducted Power (Watts)	0.2296	0.2588	0.2432	-	0.2655	-
ERP(dBm)	17.77	18.29	18.02	-	18.40	-
ERP(Watts)	0.0598	0.0675	0.0634	-	0.0692	-

LTE Band 13 (G <sub>T</sub> - L <sub>C</sub> = -3.69 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)	22.71	22.29	22.69	-	22.64	-
Conducted Power (Watts)	0.1866	0.1694	0.1858	-	0.1837	-
ERP(dBm)	16.87	16.45	16.85	-	16.80	-
ERP(Watts)	0.0486	0.0442	0.0484	-	0.0479	-



LTE Band 17 ( $G_T - L_C = -3.69$ dB) QPSK						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	24.09	24.09	24.00	24.10	24.04	23.92
Conducted Power (Watts)	0.2564	0.2564	0.2512	0.2570	0.2535	0.2466
ERP(dBm)	18.25	18.25	18.16	18.26	18.20	18.08
ERP(Watts)	0.0668	0.0668	0.0655	0.0670	0.0661	0.0643

LTE Band 17 ( $G_T - L_C = -3.69$ dB) 16QAM						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	22.45	22.41	22.15	22.56	22.51	22.41
Conducted Power (Watts)	0.1758	0.1742	0.1641	0.1803	0.1782	0.1742
ERP(dBm)	16.61	16.57	16.31	16.72	16.67	16.57
ERP(Watts)	0.0458	0.0454	0.0428	0.0470	0.0465	0.0454



LTE Band 25 ( $G_T - L_C = -2.05$ 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 (MHz)	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
Conducted Power (dBm)	23.90	23.73	23.62	23.81	23.85	23.78	23.87	23.69	23.60
Conducted Power (Watts)	0.2455	0.2360	0.2301	0.2404	0.2427	0.2388	0.2438	0.2339	0.2291
EIRP(dBm)	21.85	21.68	21.57	21.76	21.80	21.73	21.82	21.64	21.55
EIRP(Watts)	0.1531	0.1472	0.1435	0.1500	0.1514	0.1489	0.1521	0.1459	0.1429

LTE Band 25 ( $G_T - L_C = -2.05$ 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 (MHz)	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
Conducted Power (dBm)	23.68	23.80	23.46	23.78	23.74	24.11	24.15	23.94	23.63
Conducted Power (Watts)	0.2333	0.2399	0.2218	0.2388	0.2366	0.2576	0.2600	0.2477	0.2307
EIRP(dBm)	21.63	21.75	21.41	21.73	21.69	22.06	22.10	21.89	21.58
EIRP(Watts)	0.1455	0.1496	0.1384	0.1489	0.1476	0.1607	0.1622	0.1545	0.1439



LTE Band 25 (G <sub>T</sub> - L <sub>C</sub> = -2.05 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 (MHz)	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
Conducted Power (dBm)	22.80	22.98	22.76	22.47	23.01	22.50	22.65	22.89	22.72
Conducted Power (Watts)	0.1905	0.1986	0.1888	0.1766	0.2000	0.1778	0.1841	0.1945	0.1871
EIRP(dBm)	20.75	20.93	20.71	20.42	20.96	20.45	20.60	20.84	20.67
EIRP(Watts)	0.1189	0.1239	0.1178	0.1102	0.1247	0.1109	0.1148	0.1213	0.1167

LTE Band 25 (G <sub>T</sub> - L <sub>C</sub> = -2.05 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 (MHz)	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
Conducted Power (dBm)	22.78	22.66	22.51	22.75	22.69	22.60	22.40	22.62	22.50
Conducted Power (Watts)	0.1897	0.1845	0.1782	0.1884	0.1858	0.1820	0.1738	0.1828	0.1778
EIRP(dBm)	20.73	20.61	20.46	20.70	20.64	20.55	20.35	20.57	20.45
EIRP(Watts)	0.1183	0.1151	0.1112	0.1175	0.1159	0.1135	0.1084	0.1140	0.1109



LTE Band 26 (G <sub>T</sub> - L <sub>C</sub> = -4.15 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)	23.24	23.28	23.52	22.98	23.01	22.94	22.87	23.12	22.91
Conducted Power (Watts)	0.2109	0.2128	0.2249	0.1986	0.2000	0.1968	0.1936	0.2051	0.1954
ERP(dBm)	16.94	16.98	17.22	16.68	16.71	16.64	16.57	16.82	16.61
ERP(Watts)	0.0494	0.0499	0.0527	0.0466	0.0469	0.0461	0.0454	0.0481	0.0458

LTE Band 26 (G <sub>T</sub> - L <sub>C</sub> = -4.15 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)	23.07	23.32	23.13	23.22	23.16	23.12	24.19
Conducted Power (Watts)	0.2028	0.2148	0.2056	0.2099	0.2070	0.2051	0.2624
ERP(dBm)	16.77	17.02	16.83	16.92	16.86	16.82	17.89
ERP(Watts)	0.0475	0.0504	0.0482	0.0492	0.0485	0.0481	0.0615



LTE Band 26 (G <sub>T</sub> - L <sub>C</sub> = -4.15 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)	22.16	22.38	22.25	21.72	21.48	21.79	21.61	21.57	21.99
Conducted Power (Watts)	0.1644	0.1730	0.1679	0.1486	0.1406	0.1510	0.1449	0.1435	0.1581
ERP(dBm)	15.86	16.08	15.95	15.42	15.18	15.49	15.31	15.27	15.69
ERP(Watts)	0.0385	0.0406	0.0394	0.0348	0.0330	0.0354	0.0340	0.0337	0.0371

LTE Band 26 (G <sub>T</sub> - L <sub>C</sub> = -4.15 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)	21.79	21.72	21.81	21.72	21.92	21.81	22.70
Conducted Power (Watts)	0.1510	0.1486	0.1517	0.1486	0.1556	0.1517	0.1862
ERP(dBm)	15.49	15.42	15.51	16.92	15.62	15.51	16.40
ERP(Watts)	0.0354	0.0348	0.0356	0.0492	0.0365	0.0356	0.0437



LTE Band 38 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) QPSK			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	22.80	22.54	22.84
Conducted Power (Watts)	0.1905	0.1795	0.1923
EIRP(dBm)	22.37	22.11	22.41
EIRP(Watts)	0.1726	0.1626	0.1742

LTE Band 38 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	23.37	23.22	22.64	22.95	22.70	22.68	22.83	22.55	22.66
Conducted Power (Watts)	0.2173	0.2099	0.1837	0.1972	0.1862	0.1854	0.1919	0.1799	0.1845
EIRP(dBm)	22.94	22.79	22.21	22.52	22.27	22.25	22.40	22.12	22.23
EIRP(Watts)	0.1968	0.1901	0.1663	0.1786	0.1687	0.1679	0.1738	0.1629	0.1671



LTE Band 38 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) 16QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	21.44	21.58	21.61
Conducted Power (Watts)	0.1393	0.1439	0.1449
EIRP(dBm)	21.01	21.15	21.18
EIRP(Watts)	0.1262	0.1303	0.1312

LTE Band 38 (G <sub>T</sub> - L <sub>C</sub> = -0.43 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	21.28	21.63	21.68	21.73	21.67	21.63	21.84	21.40	21.41
Conducted Power (Watts)	0.1343	0.1455	0.1472	0.1489	0.1469	0.1455	0.1528	0.1380	0.1384
EIRP(dBm)	20.85	21.20	21.25	21.30	21.24	21.20	21.41	20.97	20.98
EIRP(Watts)	0.1216	0.1318	0.1334	0.1349	0.1330	0.1318	0.1384	0.1250	0.1253



LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = 0.46 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)	23.88	23.63	23.90	23.97	23.76	24.01	23.91	23.72	23.90
Conducted Power (Watts)	0.2443	0.2307	0.2455	0.2495	0.2377	0.2518	0.2460	0.2355	0.2455
EIRP(dBm)	24.34	24.09	24.36	24.43	24.22	24.47	24.37	24.18	24.36
EIRP(Watts)	0.2716	0.2564	0.2729	0.2773	0.2642	0.2799	0.2735	0.2618	0.2729

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = 0.46 dB) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	23.86	23.70	23.55
Conducted Power (Watts)	0.2432	0.2344	0.2265
EIRP(dBm)	24.32	24.16	24.01
EIRP(Watts)	0.2704	0.2606	0.2518



LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = 0.46 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)	22.81	22.09	22.78	23.00	22.27	22.33	22.74	22.11	22.29
Conducted Power (Watts)	0.1910	0.1618	0.1897	0.1995	0.1687	0.1710	0.1879	0.1626	0.1694
EIRP(dBm)	23.27	22.55	23.24	23.46	22.73	22.79	23.20	22.57	22.75
EIRP(Watts)	0.2123	0.1799	0.2109	0.2218	0.1875	0.1901	0.2089	0.1807	0.1884

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = 0.46 dB) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	22.51	22.77	22.37
Conducted Power (Watts)	0.1782	0.1892	0.1726
EIRP(dBm)	22.97	23.23	22.83
EIRP(Watts)	0.1982	0.2104	0.1919



LTE Band 66 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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 (MHz)	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
Conducted Power (dBm)	23.81	24.07	24.01	23.56	23.21	23.78	23.94	24.09	23.96
Conducted Power (Watts)	0.2404	0.2553	0.2518	0.2270	0.2094	0.2388	0.2477	0.2564	0.2489
EIRP(dBm)	22.06	22.32	22.26	21.81	21.46	22.03	22.19	22.34	22.21
EIRP(Watts)	0.1607	0.1706	0.1683	0.1517	0.1400	0.1596	0.1656	0.1714	0.1663

LTE Band 66 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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 (MHz)	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
Conducted Power (dBm)	23.92	24.24	23.58	24.01	24.03	23.89	24.22	24.34	24.04
Conducted Power (Watts)	0.2466	0.2655	0.2280	0.2518	0.2529	0.2449	0.2642	0.2716	0.2535
EIRP(dBm)	22.17	22.49	21.83	22.26	22.28	22.14	22.47	22.59	22.29
EIRP(Watts)	0.1648	0.1774	0.1524	0.1683	0.1690	0.1637	0.1766	0.1816	0.1694



LTE Band 66 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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 (MHz)	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
Conducted Power (dBm)	22.98	23.10	23.06	22.17	22.93	22.42	22.31	22.55	22.47
Conducted Power (Watts)	0.1986	0.2042	0.2023	0.1648	0.1963	0.1746	0.1702	0.1799	0.1766
EIRP(dBm)	21.23	21.35	21.31	20.42	21.18	20.67	20.56	20.80	20.72
EIRP(Watts)	0.1327	0.1365	0.1352	0.1102	0.1312	0.1167	0.1138	0.1202	0.1180

LTE Band 66 (G <sub>T</sub> - L <sub>C</sub> = -1.75 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 (MHz)	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
Conducted Power (dBm)	22.42	22.57	22.46	22.55	22.60	22.49	22.54	22.65	22.63
Conducted Power (Watts)	0.1746	0.1807	0.1762	0.1799	0.1820	0.1774	0.1795	0.1841	0.1832
EIRP(dBm)	20.67	20.82	20.71	20.80	20.85	20.74	20.79	20.90	20.88
EIRP(Watts)	0.1167	0.1208	0.1178	0.1202	0.1216	0.1186	0.1199	0.1230	0.1225



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	4.20	3.97	5.28	PASS
Middle CH	3.07	4.38	3.77	5.42	
Highest CH	2.61	4.09	3.65	4.93	

Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.52	4.87	5.57	5.94	PASS
Middle CH	4.52	5.13	5.51	6.12	
Highest CH	4.72	4.93	5.48	6.09	

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.22	4.64	4.14	5.57	PASS
Middle CH	3.68	4.84	4.67	5.68	
Highest CH	3.57	4.93	4.43	5.80	

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.74	4.81	4.70	5.83	PASS
Middle CH	3.80	4.90	4.41	5.91	
Highest CH	3.65	4.75	4.43	5.86	

Mode	LTE Band 12 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.23	4.67	5.28	5.68	PASS
Middle CH	4.32	4.75	5.19	5.80	
Highest CH	4.49	4.93	5.13	6.03	



Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.22	4.35	4.20	5.33	
Highest CH	-	-	-	-	

Mode	LTE Band 17 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.32	4.90	5.51	5.88	PASS
Middle CH	4.43	4.84	5.59	5.80	
Highest CH	4.52	4.78	5.33	5.77	

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.62	4.81	4.32	5.83	PASS
Middle CH	4.17	4.67	5.39	5.62	
Highest CH	4.29	4.49	5.22	5.65	

Mode	LTE Band 26 / 15MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.74	4.90	4.55	5.86	PASS
Middle CH	3.97	4.87	4.96	5.88	
Highest CH	4.35	4.99	5.13	5.97	

Mode	LTE Band 38 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.87	6.14	5.39	6.38	PASS
Middle CH	5.19	6.23	5.68	6.03	
Highest CH	4.72	5.10	5.57	6.03	



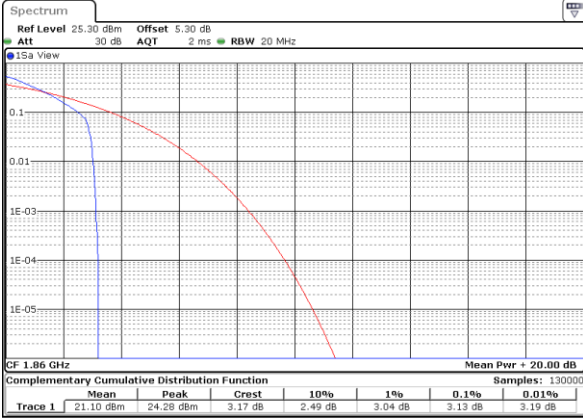
Mode	LTE Band 41 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	5.54	4.93	5.62	5.91	PASS
Middle CH	6.64	5.19	5.77	6.14	
Highest CH	6.87	6.20	5.71	6.87	

Mode	LTE Band 66 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.52	4.93	5.39	6.03	PASS
Middle CH	4.49	4.84	5.57	5.88	
Highest CH	3.97	4.93	5.13	5.94	



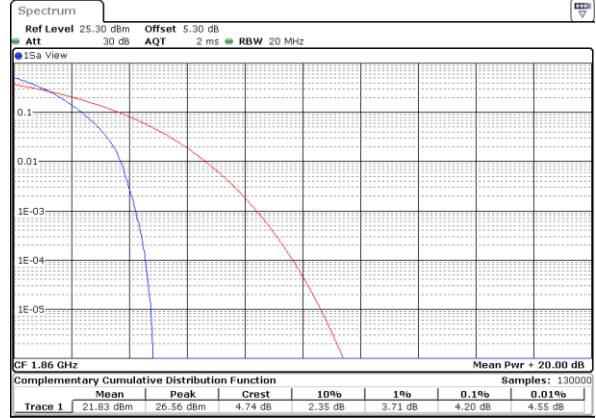
LTE Band 2 / 20MHz / QPSK

Lowest Channel / 1RB



Date: 7 JUN 2017 19:33:31

Lowest Channel / Full RB



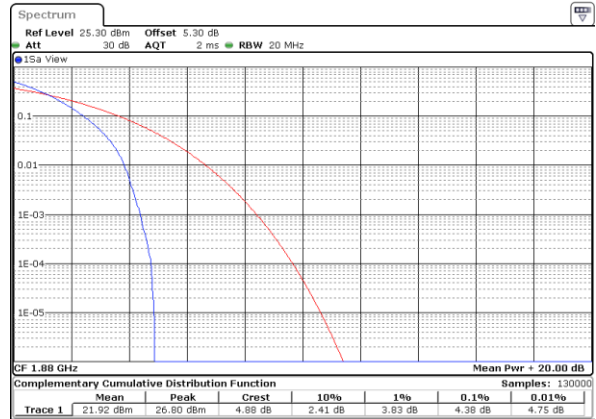
Date: 7 JUN 2017 19:33:40

Middle Channel / 1RB



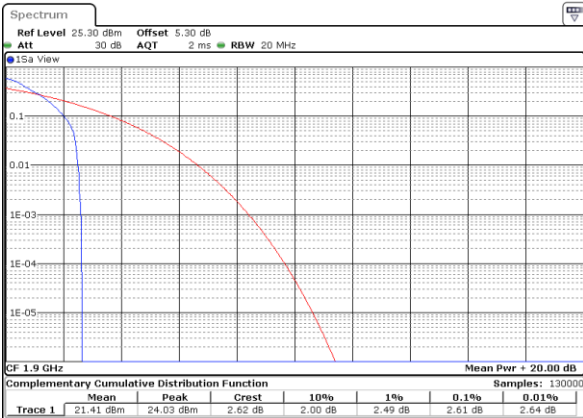
Date: 7 JUN 2017 19:33:50

Middle Channel / Full RB



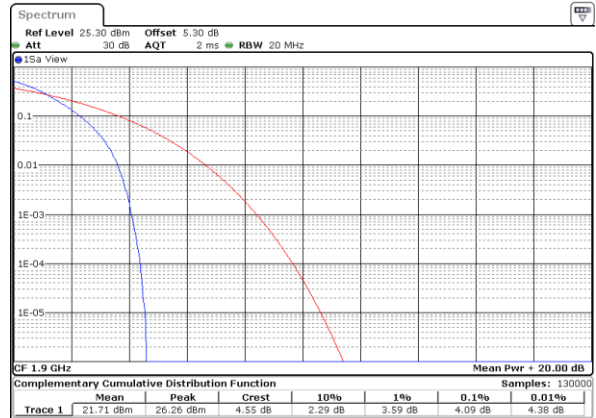
Date: 7 JUN 2017 19:33:59

Highest Channel / 1RB



Date: 7 JUN 2017 19:34:09

Highest Channel / Full RB

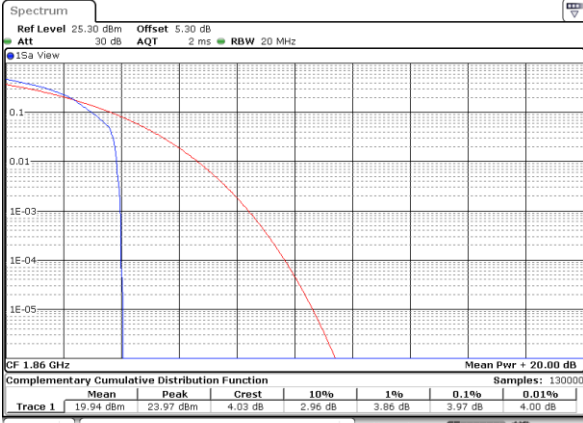


Date: 7 JUN 2017 19:34:18



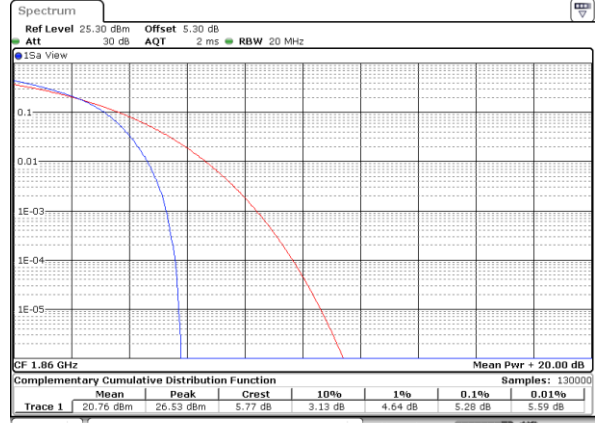
LTE Band 2 / 20MHz / 16QAM

Lowest Channel / 1RB



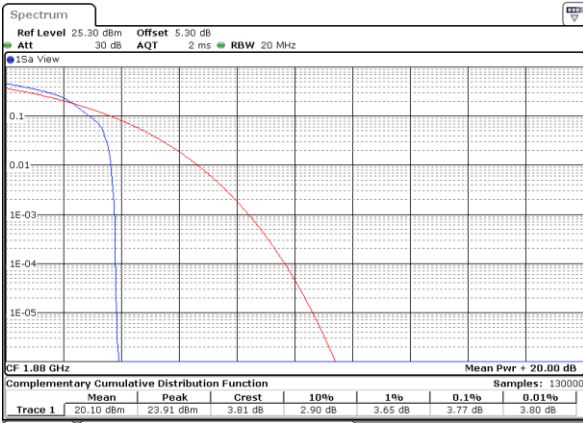
Date: 7 JUN 2017 19:32:33

Lowest Channel / Full RB



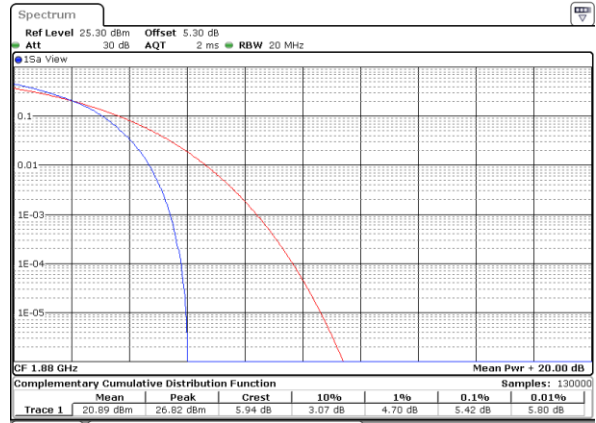
Date: 7 JUN 2017 19:32:43

Middle Channel / 1RB



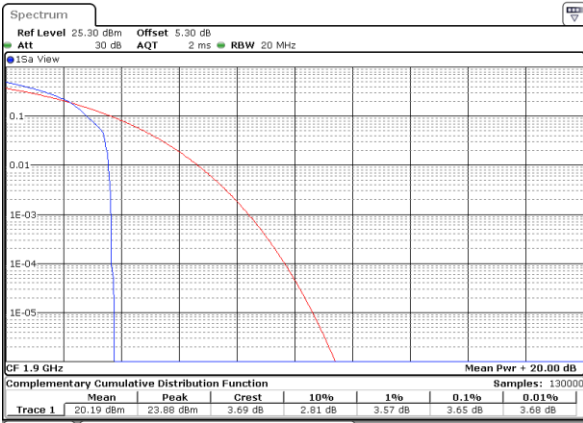
Date: 7 JUN 2017 19:32:53

Middle Channel / Full RB



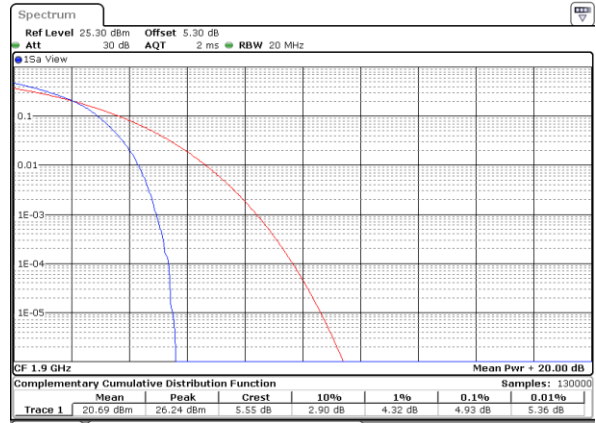
Date: 7 JUN 2017 19:33:02

Highest Channel / 1RB



Date: 7 JUN 2017 19:33:12

Highest Channel / Full RB

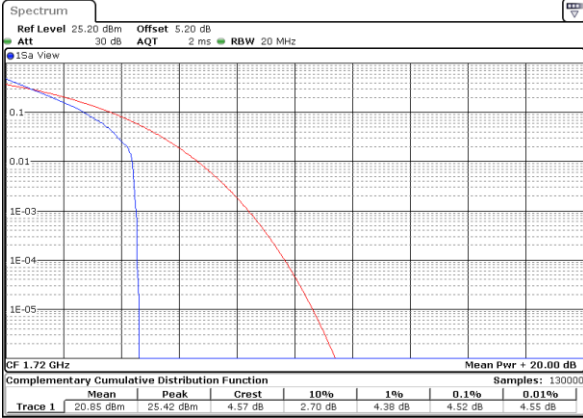


Date: 7 JUN 2017 19:33:21



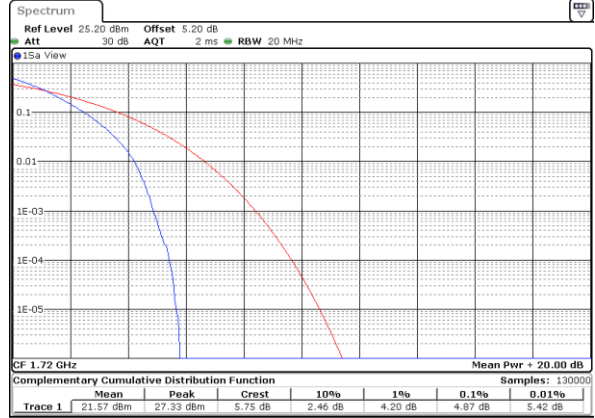
LTE Band 4 / 20MHz / QPSK

Lowest Channel / 1RB



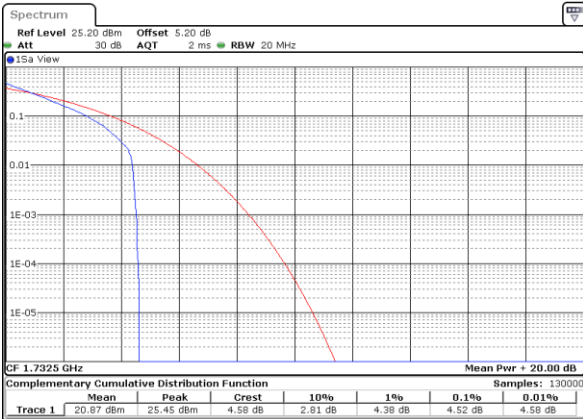
Date: 7 JUN 2017 21:26:41

Lowest Channel / Full RB



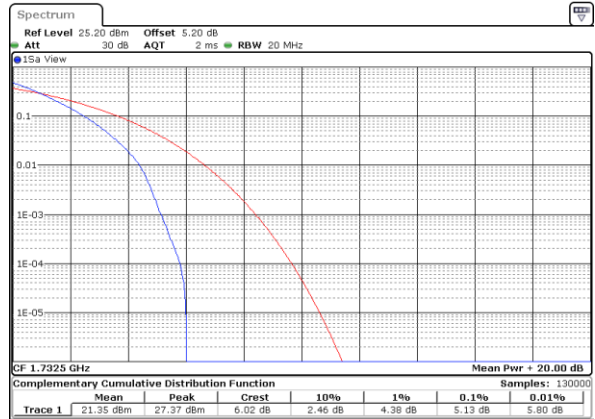
Date: 7 JUN 2017 21:26:24

Middle Channel / 1RB



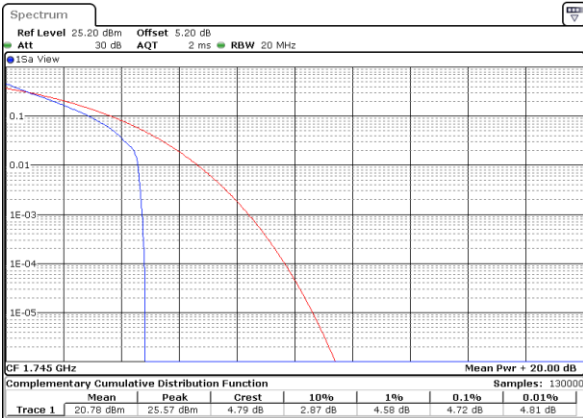
Date: 7 JUN 2017 21:25:52

Middle Channel / Full RB



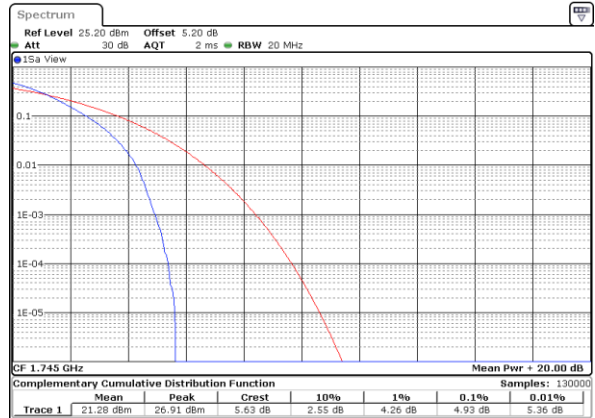
Date: 7 JUN 2017 21:26:07

Highest Channel / 1RB



Date: 7 JUN 2017 21:25:37

Highest Channel / Full RB

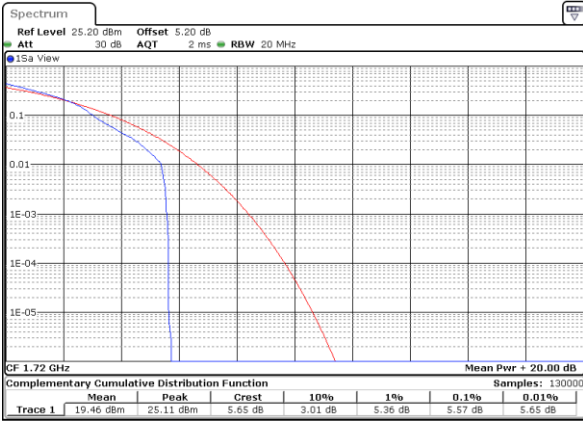


Date: 7 JUN 2017 21:25:23



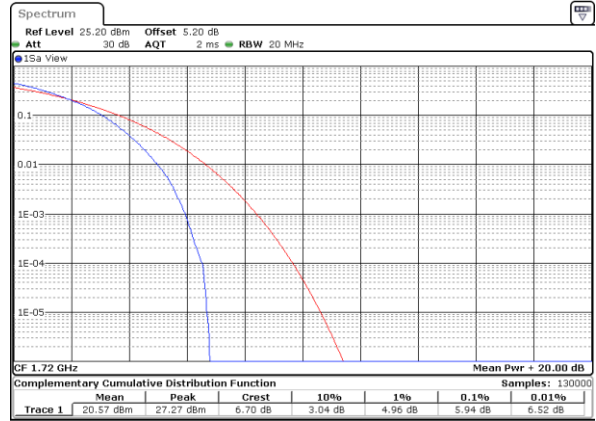
LTE Band 4 / 20MHz / 16QAM

Lowest Channel / 1RB



Date: 7 JUN 2017 21:23:55

Lowest Channel / Full RB



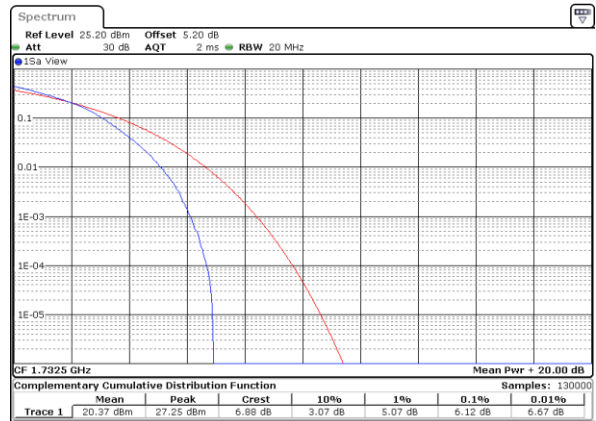
Date: 7 JUN 2017 21:24:06

Middle Channel / 1RB



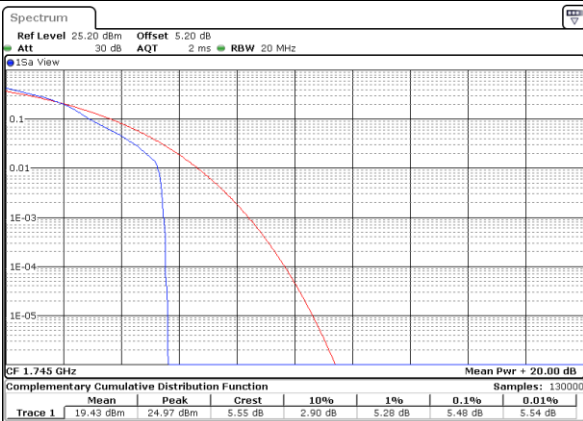
Date: 7 JUN 2017 21:24:18

Middle Channel / Full RB



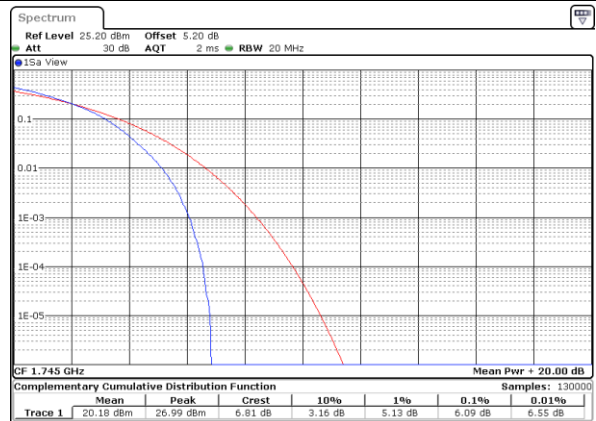
Date: 7 JUN 2017 21:24:28

Highest Channel / 1RB



Date: 7 JUN 2017 21:24:40

Highest Channel / Full RB

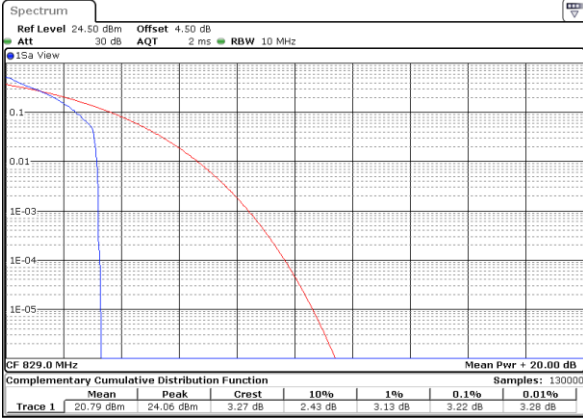


Date: 7 JUN 2017 21:24:52



LTE Band 5 / 10MHz / QPSK

Lowest Channel / 1RB



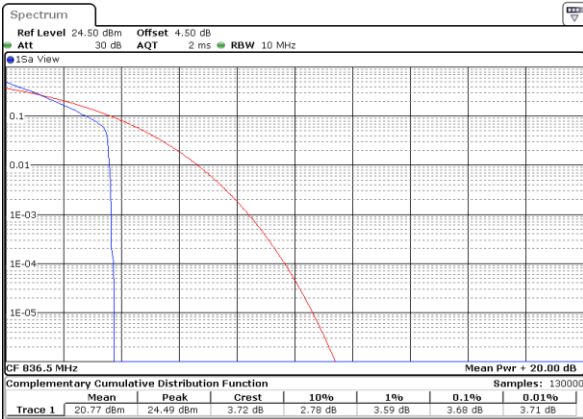
Date: 7 JUN 2017 23:43:44

Lowest Channel / Full RB



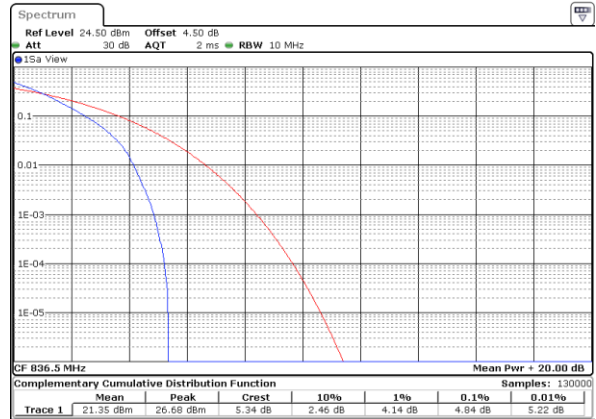
Date: 7 JUN 2017 23:43:29

Middle Channel / 1RB



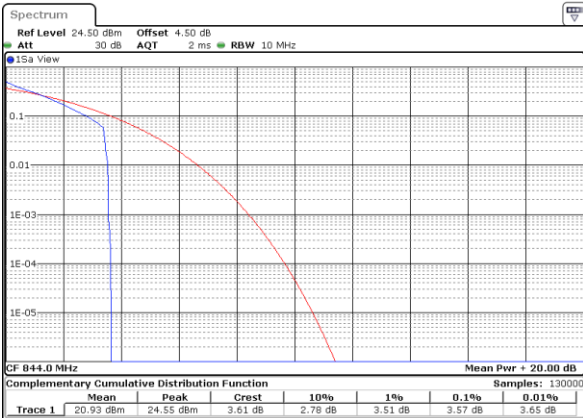
Date: 7 JUN 2017 23:43:01

Middle Channel / Full RB



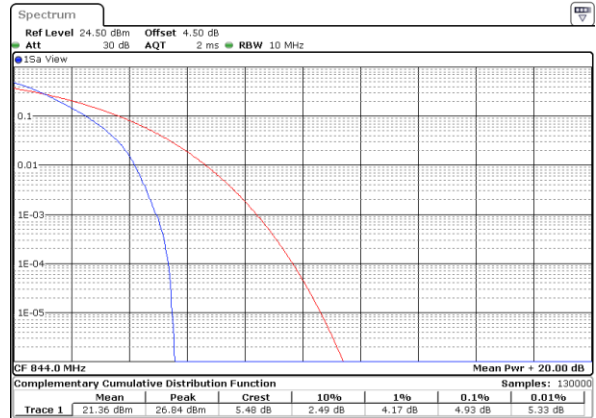
Date: 7 JUN 2017 23:43:15

Highest Channel / 1RB



Date: 7 JUN 2017 23:42:46

Highest Channel / Full RB

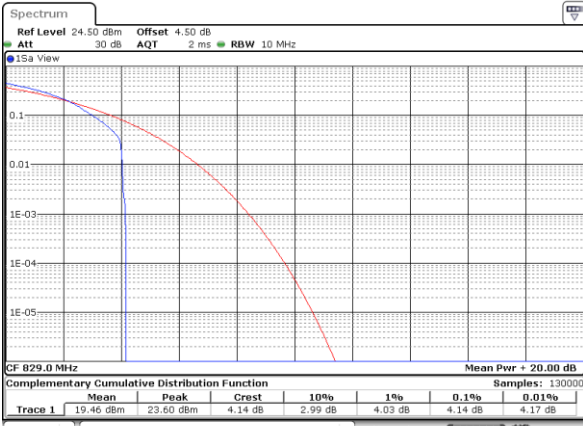


Date: 7 JUN 2017 23:42:31



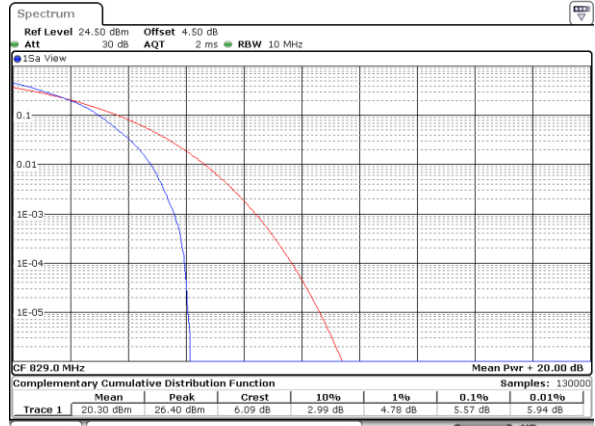
LTE Band 5 / 10MHz / 16QAM

Lowest Channel / 1RB



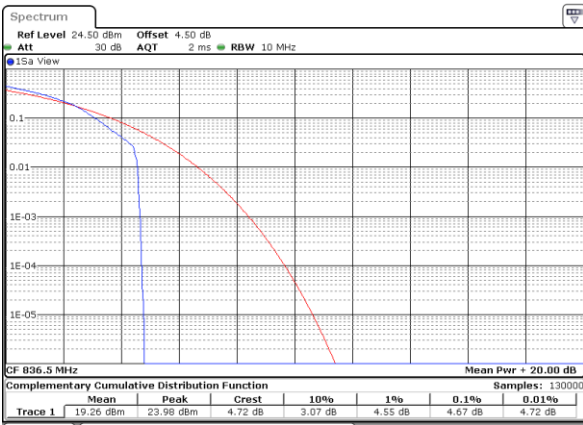
Date: 7 JUN 2017 23:41:00

Lowest Channel / Full RB



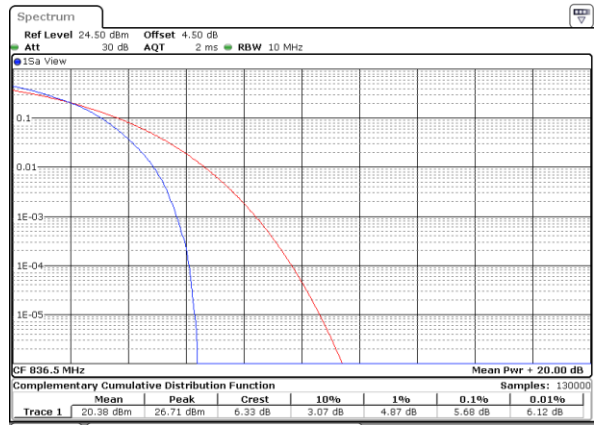
Date: 7 JUN 2017 23:41:10

Middle Channel / 1RB



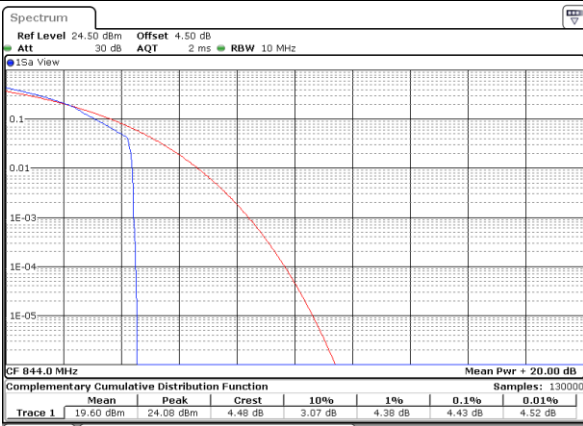
Date: 7 JUN 2017 23:41:20

Middle Channel / Full RB



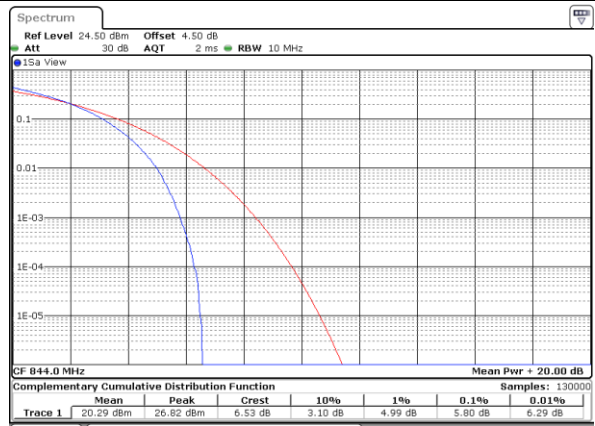
Date: 7 JUN 2017 23:41:30

Highest Channel / 1RB



Date: 7 JUN 2017 23:41:40

Highest Channel / Full RB



Date: 7 JUN 2017 23:41:50



LTE Band 7 / 20MHz / QPSK

Lowest Channel / 1RB



Date: 7 JUN 2017 16:01:44

Lowest Channel / Full RB



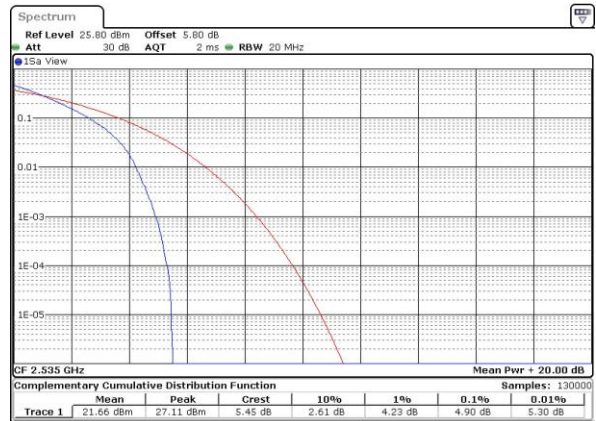
Date: 7 JUN 2017 16:01:55

Middle Channel / 1RB



Date: 7 JUN 2017 16:02:40

Middle Channel / Full RB



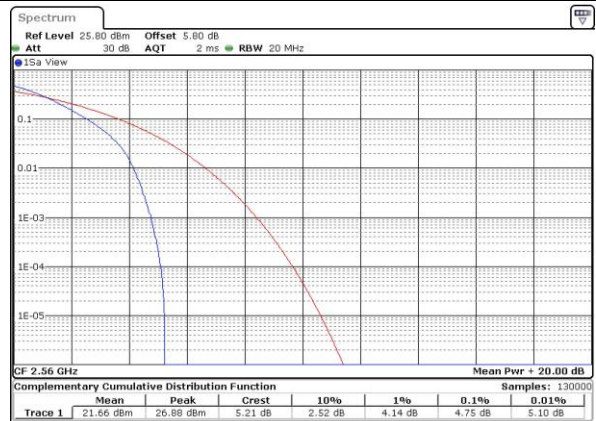
Date: 7 JUN 2017 16:02:28

Highest Channel / 1RB



Date: 7 JUN 2017 16:03:14

Highest Channel / Full RB



Date: 7 JUN 2017 16:03:26



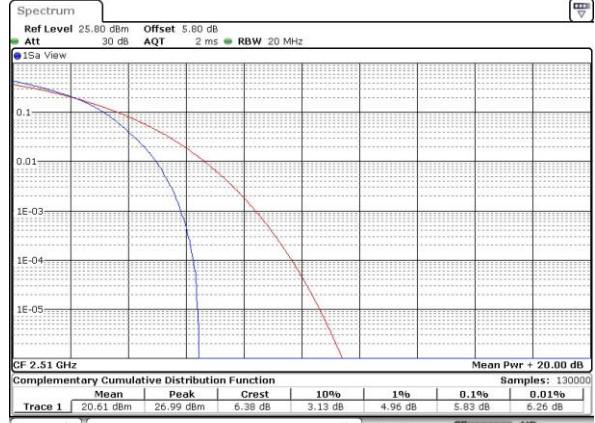
LTE Band 7 / 20MHz / 16QAM

Lowest Channel / 1RB



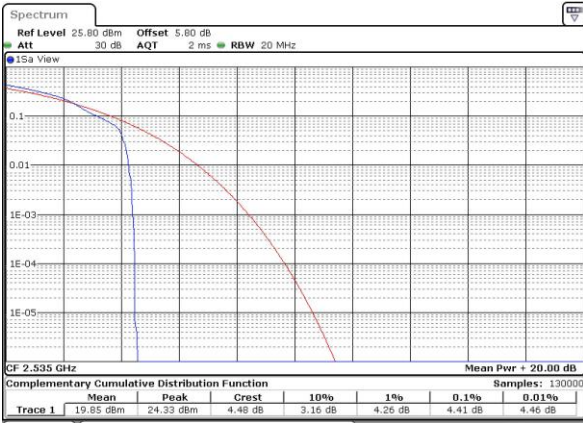
Date: 7 JUN 2017 16:01:33

Lowest Channel / Full RB



Date: 7 JUN 2017 16:02:06

Middle Channel / 1RB



Date: 7 JUN 2017 16:02:51

Middle Channel / Full RB



Date: 7 JUN 2017 16:02:17

Highest Channel / 1RB



Date: 7 JUN 2017 16:03:02

Highest Channel / Full RB



Date: 7 JUN 2017 16:03:37



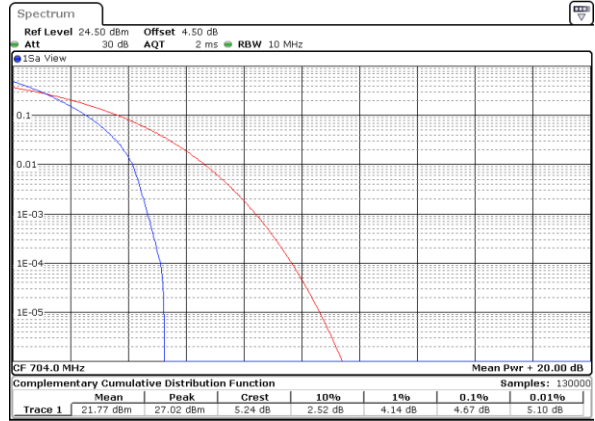
LTE Band 12 / 10MHz / QPSK

Lowest Channel / 1RB



Date: 8 JUN 2017 10:34:34

Lowest Channel / Full RB



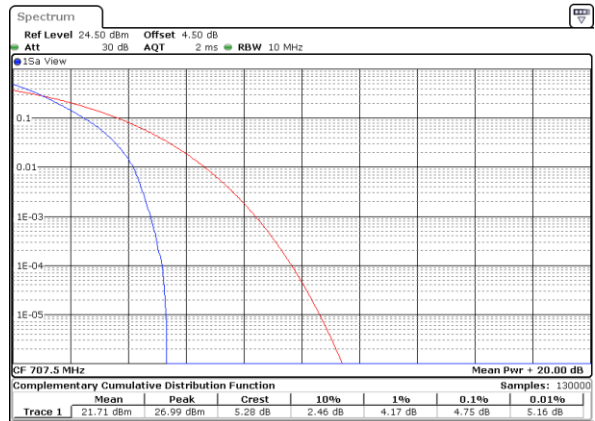
Date: 8 JUN 2017 10:34:51

Middle Channel / 1RB



Date: 8 JUN 2017 10:35:52

Middle Channel / Full RB



Date: 8 JUN 2017 10:35:39

Highest Channel / 1RB



Date: 8 JUN 2017 10:36:33

Highest Channel / Full RB

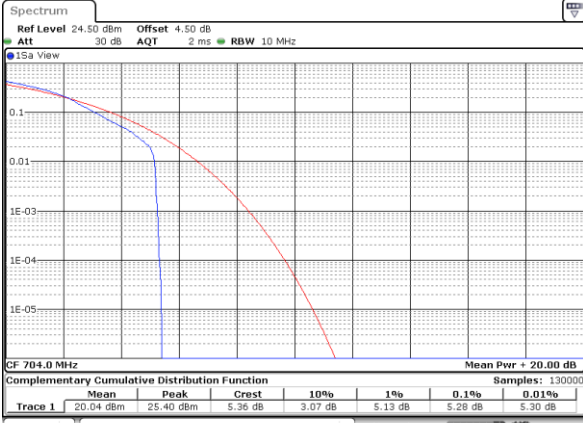


Date: 8 JUN 2017 10:36:51



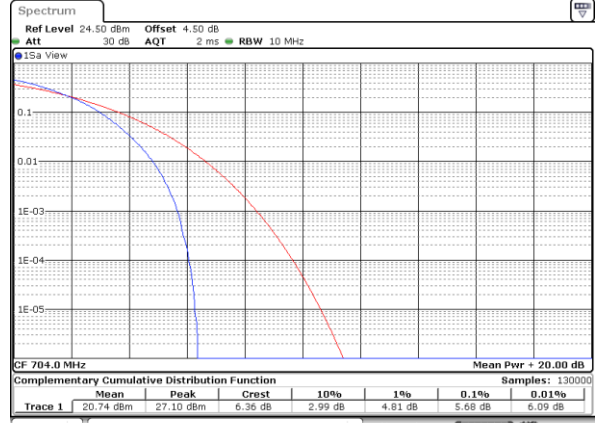
LTE Band 12 / 10MHz / 16QAM

Lowest Channel / 1RB



Date: 8 JUN 2017 10:34:21

Lowest Channel / Full RB



Date: 8 JUN 2017 10:35:02

Middle Channel / 1RB



Date: 8 JUN 2017 10:36:06

Middle Channel / Full RB



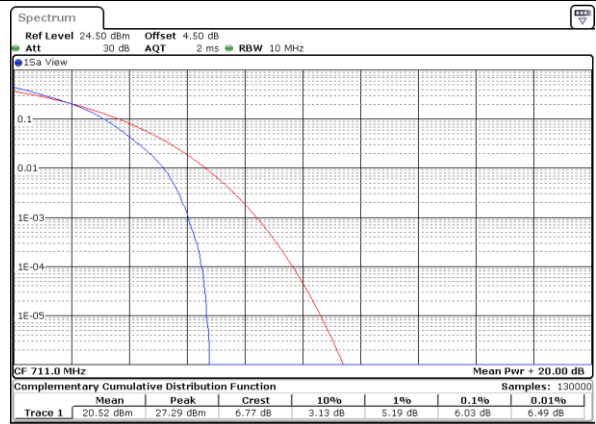
Date: 8 JUN 2017 10:35:20

Highest Channel / 1RB



Date: 8 JUN 2017 10:36:17

Highest Channel / Full RB

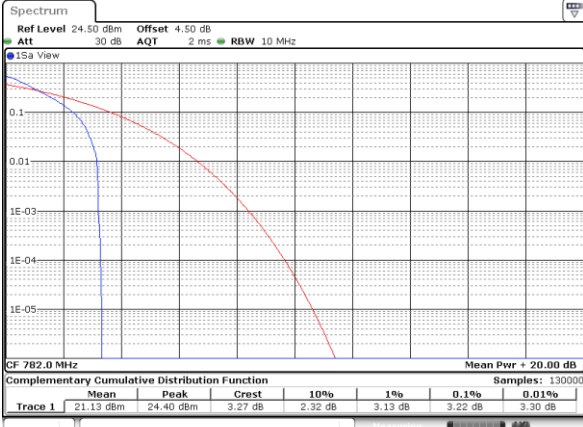


Date: 8 JUN 2017 10:37:08



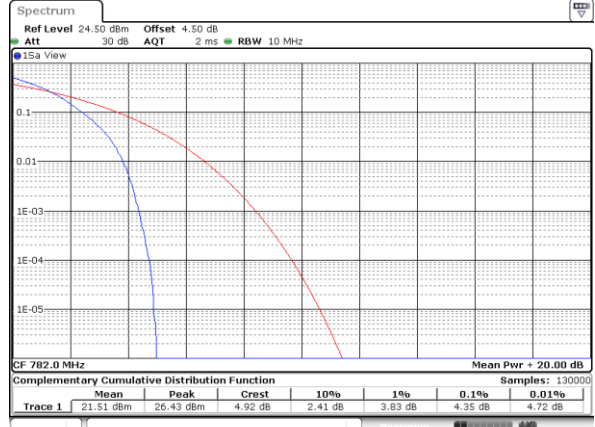
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 7 JUN 2017 17:40:47

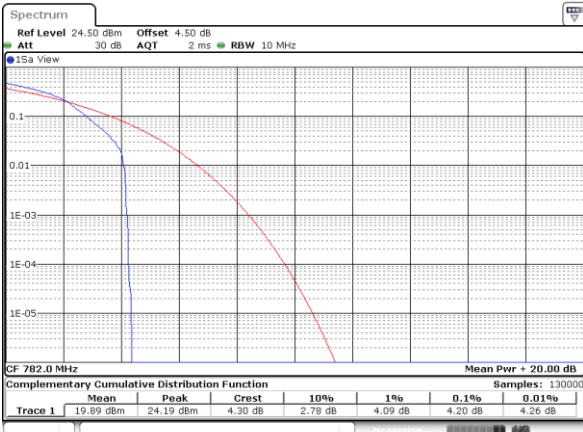
Middle Channel / Full RB



Date: 7 JUN 2017 17:41:31

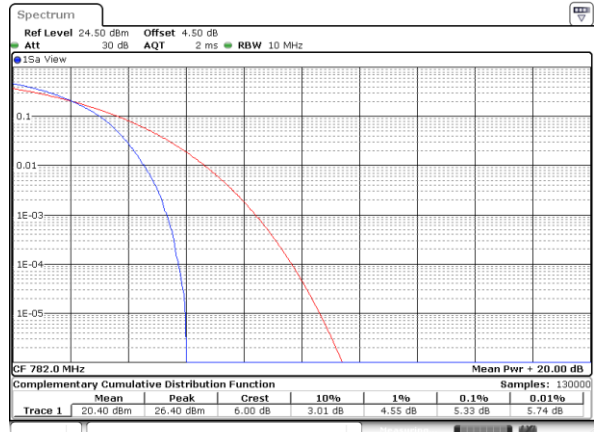
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 7 JUN 2017 17:41:01

Middle Channel / Full RB

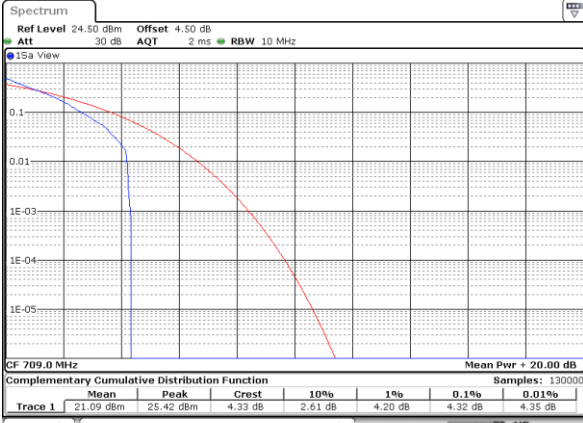


Date: 7 JUN 2017 17:41:18



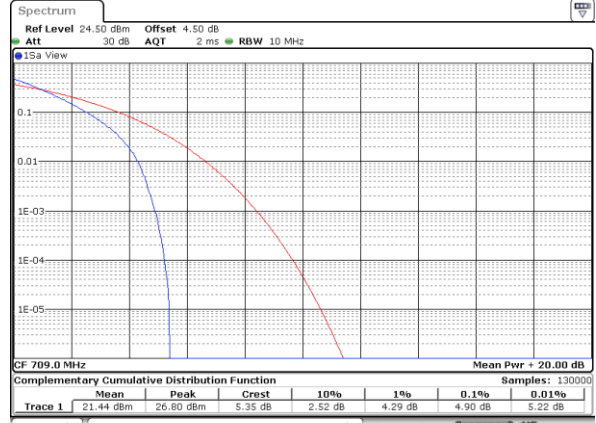
LTE Band 17 / 10MHz / QPSK

Lowest Channel / 1RB



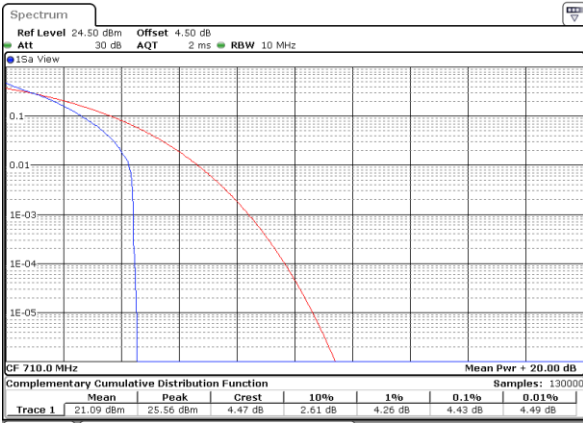
Date: 7 JUN 2017 17:34:05

Lowest Channel / Full RB



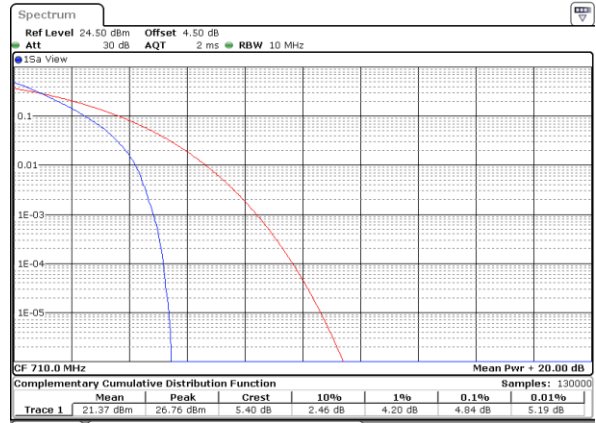
Date: 7 JUN 2017 17:33:23

Middle Channel / 1RB



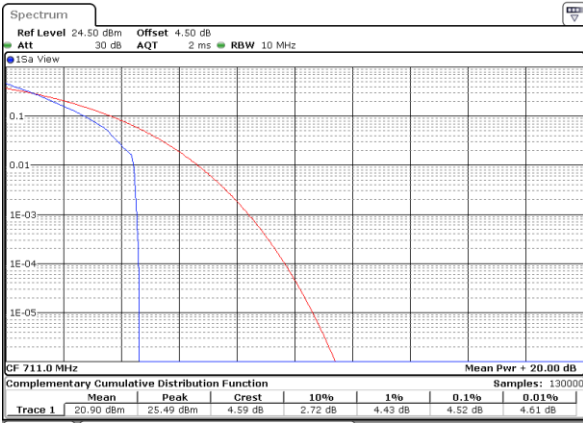
Date: 7 JUN 2017 17:34:48

Middle Channel / Full RB



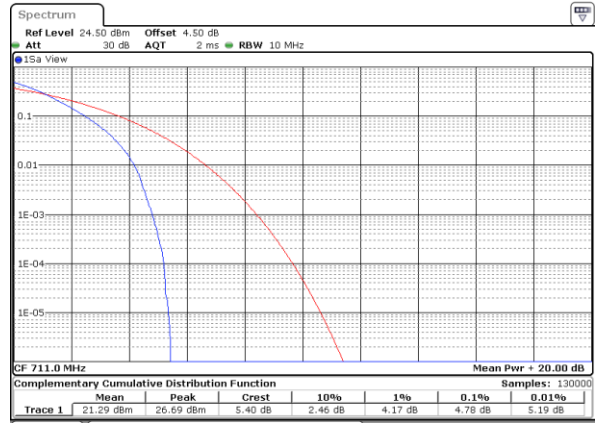
Date: 7 JUN 2017 17:35:34

Highest Channel / 1RB



Date: 7 JUN 2017 17:36:06

Highest Channel / Full RB



Date: 7 JUN 2017 17:35:50



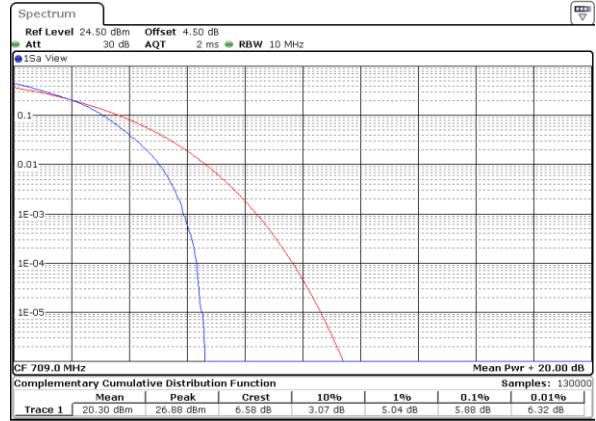
LTE Band 17 / 10MHz / 16QAM

Lowest Channel / 1RB



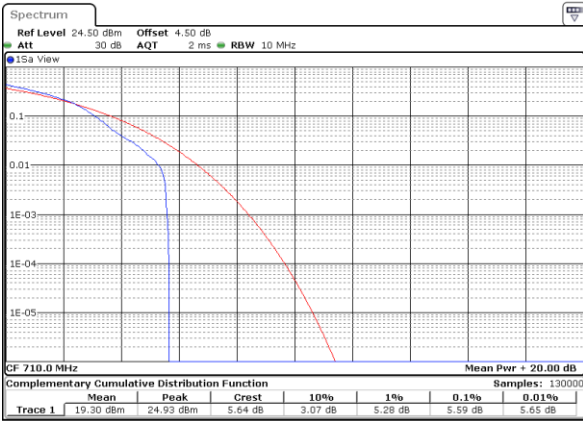
Date: 7 JUN 2017 17:31:33

Lowest Channel / Full RB



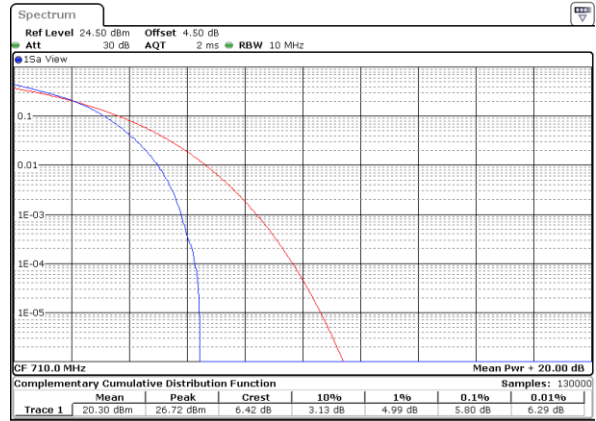
Date: 7 JUN 2017 17:31:48

Middle Channel / 1RB



Date: 7 JUN 2017 17:32:02

Middle Channel / Full RB



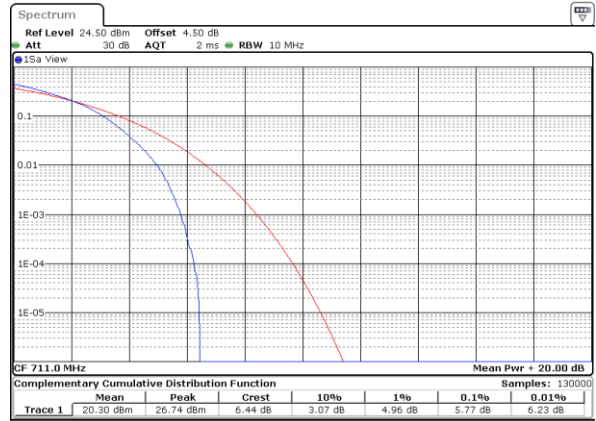
Date: 7 JUN 2017 17:32:14

Highest Channel / 1RB



Date: 7 JUN 2017 17:32:28

Highest Channel / Full RB



Date: 7 JUN 2017 17:32:39