



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
FCC ID : IHDT56XJ1
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(F)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 15, 2018 and completely tested on May 25, 2018. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

This report contains data that were produced under subcontract by Laboratory SPORTON INTERNATIONAL INC.

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

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG851503B	Rev. 01	Initial issue of report	May 31, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(b)(10)	Effective Radiated Power (Band 13)	ERP < 3 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7)	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(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 13) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 13) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22H	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 13) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 6.06 dB at 5052.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	< 55+10log ₁₀ (P[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
FCC ID	IHDT56XJ1
EUT supports Radios application	CDMA/EV-DO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+ (16QAM uplink is not supported)/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/ WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR/Bluetooth v4.2 LE/ Bluetooth v5.0 LE
IMEI Code	Conducted: 355550090015731 for LTE Band 2/5/13 355550090015699 for LTE Band 7/66 Radiation: 355550090016168
HW Version	DVT2
SW Version	fastboot_messi_verizon_oem_vzw_userdebug_8.1.0_ODX28.5 6_50ee_intcfg-test-keys_vzw
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1779.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2199.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz LTE Band 66 : 2110.7 MHz~ 2199.3 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 13 : 5MHz / 10MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.33 dBm LTE Band 4 : 23.23 dBm LTE Band 5 : 23.30 dBm LTE Band 7 : 22.95 dBm LTE Band 13 : 23.00 dBm LTE Band 66 : 23.10 dBm
Antenna Gain	LTE Band 2 : -0.5 dBi LTE Band 4 : 0 dBi LTE Band 5 : -1.8 dBi LTE Band 7 : 0 dBi LTE Band 13 : -1.5 dBi LTE Band 66 : 0 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

1.5 Modification of EUT

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



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

LTE Band 2		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1909.3	1M09G7D	-	0.1884	1M10W7D	-	0.1552
3	1851.5 ~ 1908.5	2M72G7D	-	0.1871	2M74W7D	-	0.1563
5	1852.5 ~ 1907.5	4M48G7D	-	0.1879	4M50W7D	-	0.1585
10	1855.0 ~ 1905.0	9M05G7D	0.0022	0.1901	9M07W7D	-	0.1581
15	1857.5 ~ 1902.5	13M4G7D	-	0.1910	13M4W7D	-	0.1603
20	1860.0 ~ 1900.0	18M3G7D	-	0.1919	18M5W7D	-	0.1702
LTE Band 2		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1850.7 ~ 1909.3	1M10W7D		-		0.1349	
3	1851.5 ~ 1908.5	2M74W7D		-		0.1400	
5	1852.5 ~ 1907.5	4M49W7D		-		0.1256	
10	1855.0 ~ 1905.0	9M03W7D		-		0.1247	
15	1857.5 ~ 1902.5	13M5W7D		-		0.1291	
20	1860.0 ~ 1900.0	18M3W7D		-		0.1312	
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	-	-	0.2028	-	-	0.1690
3	1711.5 ~ 1753.5	-	-	0.2061	-	-	0.1770
5	1712.5 ~ 1752.5	-	-	0.2051	-	-	0.1750
10	1715.0 ~ 1750.0	-	-	0.2056	-	-	0.1734
15	1717.5 ~ 1747.5	-	-	0.2099	-	-	0.1770
20	1720.0 ~ 1745.0	-	-	0.2104	-	-	0.1762



LTE Band 4		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1710.7 ~ 1754.3	-		-		0.1413	
3	1711.5 ~ 1753.5	-		-		0.1365	
5	1712.5 ~ 1752.5	-		-		0.1355	
10	1715.0 ~ 1750.0	-		-		0.1358	
15	1717.5 ~ 1747.5	-		-		0.1422	
20	1720.0 ~ 1745.0	-		-		0.1390	
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	-	0.0851	1M10W7D	-	0.0668
3	825.5 ~ 847.5	2M73G7D	-	0.0815	2M73W7D	-	0.0693
5	826.5 ~ 846.5	4M53G7D	-	0.0802	4M50W7D	-	0.0682
10	829.0 ~ 844.0	9M03G7D	0.0066	0.0861	9M03W7D	-	0.0695
LTE Band 5		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)	
1.4	824.7 ~ 848.3	1M09W7D		-		0.0574	
3	825.5 ~ 847.5	2M74W7D		-		0.0528	
5	826.5 ~ 846.5	4M50W7D		-		0.0530	
10	829.0 ~ 844.0	8M99W7D		-		0.0537	
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	4M52G7D	-	0.1914	4M51W7D	-	0.1607
10	2505.0 ~ 2565.0	9M01G7D	0.0025	0.1928	9M01W7D	-	0.1644
15	2507.5 ~ 2562.5	13M5G7D	-	0.1959	13M5W7D	-	0.1648
20	2510.0 ~ 2560.0	18M5G7D	-	0.1972	18M4W7D	-	0.1690



LTE Band 7		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2502.5 ~ 2567.5	4M49W7D		-		0.1262	
10	2505.0 ~ 2565.0	9M01W7D		-		0.1256	
15	2507.5 ~ 2562.5	13M5W7D		-		0.1285	
20	2510.0 ~ 2560.0	18M3W7D		-		0.1318	
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	4M50G7D	-	0.0855	4M49W7D	-	0.0724
10	782.0	9M05G7D	0.0072	0.0861	9M03W7D	-	0.0705
LTE Band 13		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)	
5	779.5 ~ 784.5	4M51W7D		-		0.0565	
10	782.0	9M03W7D		-		0.0564	
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	1M09G7D	-	0.1954	1M10W7D	-	0.1633
3	1711.5 ~ 1778.5	2M73G7D	-	0.1959	2M73W7D	-	0.1679
5	1712.5 ~ 1777.5	4M50G7D	-	0.1950	4M50W7D	-	0.1641
10	1715.0 ~ 1775.0	9M05G7D	0.0082	0.1986	9M01W7D	-	0.1694
15	1717.5 ~ 1772.5	13M5G7D	-	0.2014	13M5W7D	-	0.1718
20	1720.0 ~ 1770.0	18M4G7D	-	0.2042	18M4W7D	-	0.1774



LTE Band 66		64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1710.7 ~ 1779.3	1M09W7D	-	0.1343
3	1711.5 ~ 1778.5	2M73W7D	-	0.1288
5	1712.5 ~ 1777.5	4M50W7D	-	0.1300
10	1715.0 ~ 1775.0	9M09W7D	-	0.1288
15	1717.5 ~ 1772.5	13M5W7D	-	0.1358
20	1720.0 ~ 1770.0	18M4W7D	-	0.1343

Note: LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.

1.7 Specification of Accessory

Specification of Accessory				
AC Adapter 1	Brand Name	Motorola (Salom)	Model Name	SC-22
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2	Brand Name	Motorola (Chenyang)	Model Name	SC-22
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 3	Brand Name	Motorola (Salom)	Model Name	SC-51
	Power Rating	I/P: 100-240 Vac, 600mA, O/P: 5Vdc,3000mA or 9Vdc,2000mA or 12Vdc,1500mA		
AC Adapter 4	Brand Name	Motorola (Chenyang)	Model Name	SC-51
	Power Rating	I/P: 100-240 Vac, 600mA, O/P: 5Vdc,3000mA or 9Vdc,2000mA or 12Vdc,1500mA		
Battery	Brand Name	Motorola (Sunwoda)	Model Name	JS40
	Power Rating	3.8Vdc,3000mAh	Type	Li-ion
USB Cable 1	Brand Name	Motorola (Cabletech)	Model Name	SKN6473A
	Signal Line Type	1.0 meter, shielded cable, without ferrite core		
USB Cable 2	Brand Name	Motorola (Luxshare)	Model Name	SKN6473A
	Signal Line Type	1.0 meter, shielded cable, without ferrite core		
Audio Cable	Brand Name	Motorola (Luxshare)	Model Name	SC18C27844
	Signal Line Type	0.08 meter, shielded cable, without ferrite core		

1.8 Testing Location

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

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

SPORTON INTERNATIONAL INC. is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and under the FCC-recognized accredited testing laboratories by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist. Taoyuan City Taiwan Tel: 886-3-327-3456 FAX: +886-3-327-0978		
Test Site No.	Sporton Site No.	FCC designation No.	FCC Test Firm Registration No.
	03CH07-HY	TW1190	553509

Note:

1. The test site complies with ANSI C63.4 2014 requirement.
2. Test data subcontracted: radiated spurious emissions only in section 4.4 of this report.



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)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

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



2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

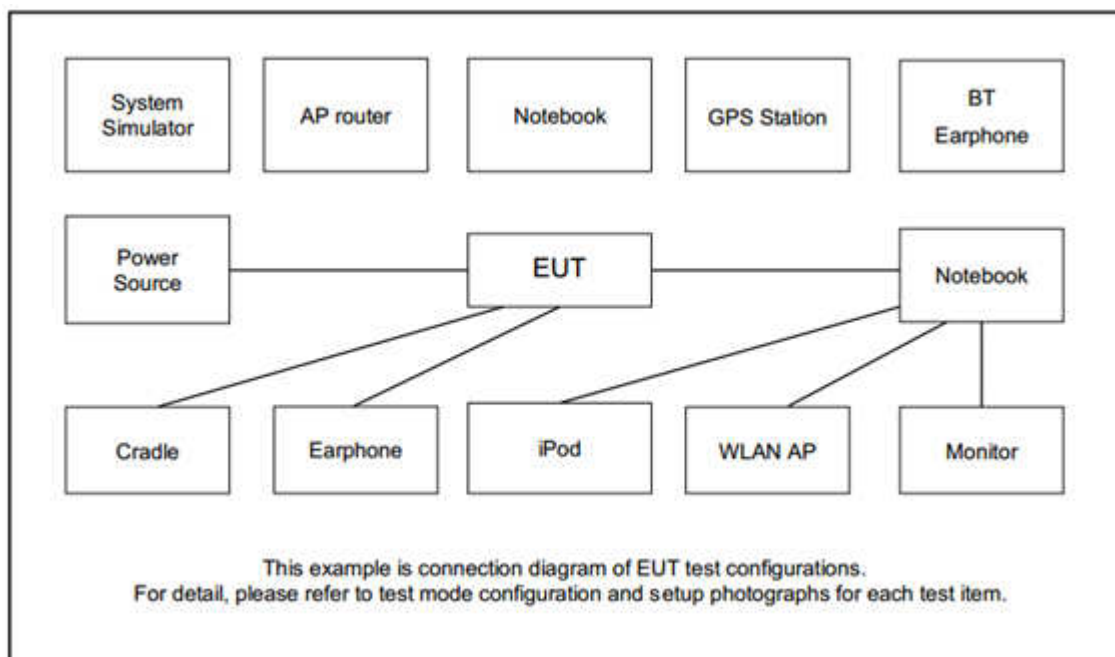
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	13	-	-	v		-	-	v	v	v	v	v	v	v	v	v
					v			v	v	v	v	v	v		v	
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2						v	v	v	v	v		v	v	v	v
	5				v	-	-	v	v	v	v		v	v	v	v
	7	-	-				v	v	v	v	v		v	v	v	v
	13	-	-		v	-	-	v	v	v	v		v		v	
	66						v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v	v			v	v	v	v
	5	v	v	v	v	-	-	v	v	v			v	v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v	v
	13	-	-	v		-	-	v	v	v			v	v	v	v
					v			v	v	v			v		v	
	66	v	v	v	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v	v	v	v		v	v		v
	5	v	v	v	v	-	-	v	v	v	v		v	v		v
	7	-	-	v	v	v	v	v	v	v	v		v	v		v
	13	-	-	v		-	-	v	v	v	v		v	v		v
					v			v	v	v	v		v		v	
	66	v	v	v	v	v	v	v	v	v	v		v	v		v



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v	v			v	v	v
	13	-	-	v		-	-	v	v	v	v			v	v	v
					v			v	v	v	v				v	
	66	v	v	v	v	v	v	v	v	v	v			v	v	v
Frequency Stability	2				v			v					v		v	
	5				v	-	-	v					v		v	
	7	-	-		v			v					v		v	
	13	-	-		v	-	-	v					v		v	
	66				v			v					v		v	
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v	v			v	v	v
	13	-	-	v	v	-	-	v	v	v	v			v	v	v
	66	v	v	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	2	Worst Case												v	v	v
	4	Worst Case												v	v	v
	5	Worst Case												v	v	v
	7	Worst Case												v	v	v
	13	Worst Case												v	v	v
	66	Worst Case												v	v	v
Note	1. The mark “v “ means that this configuration is chosen for testing 2. The mark “-“ means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GWINSTEK	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 5.2 dB.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\
 &= 5.2 \text{ (dB)}
 \end{aligned}$$



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 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 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

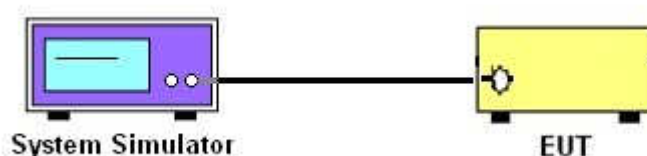
3 Conducted Test Items

3.1 Measuring Instruments

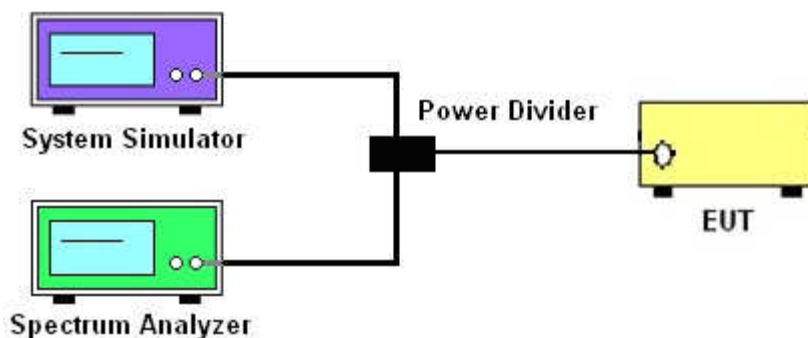
See list of measuring instruments of this test report.

3.2 Test Setup

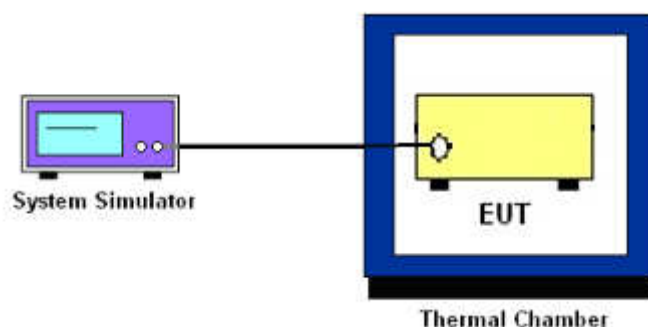
3.2.1 Conducted Output Power



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.

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

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

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

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

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

3.5.2 Test Procedures

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

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

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

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

3.6.2 Test Procedures

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

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

22.917(a)

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

24.238 (a)

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

27.53 (c)

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

27.53 (h)

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

27.53(m)(4)

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

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

Example:

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

9. For LTE Band 7, 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:

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

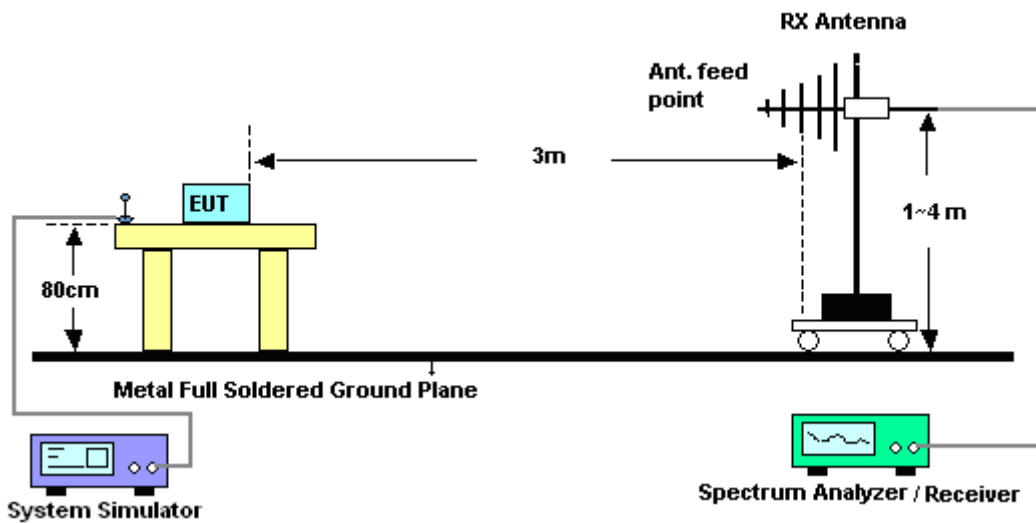
4 Radiated Test Items

4.1 Measuring Instruments

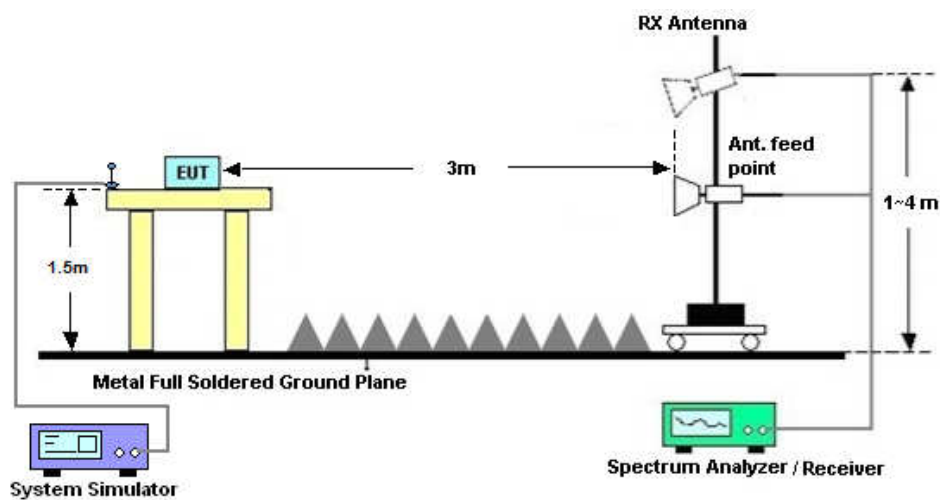
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.



4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7

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

For LTE Band 13

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

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



4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP\ (dBm) = S.G.\ Power - Tx\ Cable\ Loss + Tx\ Antenna\ Gain$
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:
The limit line is derived from $55 + 10\log(P)dB$ below the transmitter power $P(Watts)$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 08, 2017	May 21, 2018~ May 23, 2018	Aug. 07, 2018	Conducted (TH01-KS)
Radio communication analyzer	Anritsu	MT8820C	6201300652	2G/3G/LTE_ full band	Aug. 08, 2017	May 21, 2018~ May 23, 2018	Aug. 07, 2018	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 12, 2017	May 21, 2018~ May 23, 2018	Oct. 11, 2018	Conducted (TH01-KS)
Bilog Antenna	TESEQ	CBL 6111D&008	35419&03	30MHz to 1GHz	Dec. 18, 2017	May 24, 2018 ~ May 25, 2018	Dec. 17, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 23, 2017	May 24, 2018 ~ May 25, 2018	Aug. 22, 2018	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 30, 2017	May 24, 2018 ~ May 25, 2018	Oct. 29, 2018	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 17, 2018	May 24, 2018 ~ May 25, 2018	Apr. 16, 2019	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	NCR	May 24, 2018 ~ May 25, 2018	NCR	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	NCR	May 24, 2018 ~ May 25, 2018	NCR	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	NCR	May 24, 2018 ~ May 25, 2018	NCR	Radiation (03CH07-HY)
Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz,VS WR : 2.5:1 max	Jul. 18, 2017	May 24, 2018 ~ May 25, 2018	Jul. 17, 2018	Radiation (03CH07-HY)
Amplifier	SONOMA	310N	187231	9kHz~1GHz	Jan. 08, 2018	May 24, 2018 ~ May 25, 2018	Jan. 07, 2019	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 27, 2017	May 24, 2018 ~ May 25, 2018	Nov. 26, 2018	Radiation (03CH07-HY)

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% ($U = 2U_c(y)$)	3.1dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.4dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.0dB
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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	23.17	23.28	23.33
20	1	49		22.79	22.89	23.19
20	1	99		23.00	22.94	23.16
20	50	0		21.98	22.14	22.38
20	50	24		21.80	22.01	22.29
20	50	50		21.79	22.02	22.33
20	100	0		21.96	22.00	22.34
20	1	0	16-QAM	22.27	22.74	22.81
20	1	49		21.95	22.39	22.69
20	1	99		22.35	22.51	22.78
20	50	0		20.93	21.11	21.34
20	50	24		20.85	20.99	21.35
20	50	50		20.75	20.98	21.36
20	100	0		20.81	20.97	21.33
20	1	0	64QAM	21.20	21.68	21.11
20	1	49		21.16	21.22	21.13
20	1	99		21.19	21.29	21.02
20	50	0		19.90	20.08	20.45
20	50	24		19.93	20.05	20.41
20	50	50		19.82	19.93	20.43
20	100	0		19.87	20.02	20.41
15	1	0	QPSK	22.91	23.03	23.31
15	1	37		22.74	22.85	23.16
15	1	74		22.71	22.91	23.18
15	36	0		21.90	22.03	22.34
15	36	20		21.89	22.02	22.33
15	36	39		21.81	21.99	22.28
15	75	0		21.87	22.01	22.34
15	1	0	16-QAM	22.19	22.29	22.55



15	1	37		21.98	22.15	22.44
15	1	74		21.93	22.17	22.44
15	36	0		20.94	21.08	21.33
15	36	20		20.87	21.02	21.33
15	36	39		20.80	20.97	21.26
15	75	0		20.86	21.01	21.33
15	1	0	64QAM	21.24	21.30	21.61
15	1	37		20.97	21.20	21.43
15	1	74		20.93	21.14	21.44
15	36	0		19.93	20.07	20.40
15	36	20		19.90	20.06	20.34
15	36	39		19.84	20.02	20.32
15	75	0		19.89	20.02	20.32



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.09	23.18	23.29
10	1	25		22.74	22.89	23.19
10	1	49		22.90	23.08	23.21
10	25	0		21.87	22.02	22.32
10	25	12		21.83	21.96	22.30
10	25	25		21.83	21.98	22.29
10	50	0		21.85	21.99	22.31
10	1	0	16-QAM	22.26	22.40	22.49
10	1	25		21.98	22.16	22.43
10	1	49		22.07	22.31	22.42
10	25	0		20.93	21.04	21.32
10	25	12		20.85	21.05	21.32
10	25	25		20.83	20.98	21.28
10	50	0		20.89	21.01	21.30
10	1	0	64QAM	21.34	21.35	21.46
10	1	25		21.02	21.07	21.42
10	1	49		21.18	21.26	21.41
10	25	0		19.90	20.02	20.36
10	25	12		19.88	19.99	20.33
10	25	25		19.84	20.00	20.29
10	50	0		19.87	20.02	20.31
5	1	0	QPSK	22.83	22.95	23.24
5	1	12		22.73	22.85	23.23
5	1	24		22.75	22.91	23.20
5	12	0		21.85	21.95	22.28
5	12	7		21.85	21.97	22.31
5	12	13		21.80	21.96	22.28
5	25	0		21.77	21.94	22.29
5	1	0	16-QAM	22.06	22.24	22.50
5	1	12		22.00	22.18	22.46
5	1	24		22.03	22.22	22.43
5	12	0		20.86	21.02	21.29
5	12	7		20.85	21.02	21.33



5	12	13		20.80	20.96	21.29
5	25	0		20.83	20.95	21.29
5	1	0	64QAM	20.98	21.17	21.49
5	1	12		20.89	21.06	21.40
5	1	24		20.91	21.10	21.36
5	12	0		19.90	20.06	20.33
5	12	7		19.86	20.01	20.36
5	12	13		19.86	20.00	20.31
5	25	0		19.83	19.99	20.29



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.73	22.85	23.22
3	1	8		22.91	22.94	22.93
3	1	14		22.84	22.83	22.76
3	8	0		23.20	23.21	23.22
3	8	4		22.73	22.30	22.26
3	8	7		21.77	21.82	22.23
3	15	0		21.79	21.75	22.23
3	1	0	16-QAM	22.01	21.95	22.35
3	1	8		22.07	21.98	22.44
3	1	14		21.97	22.05	22.25
3	8	0		20.84	20.85	21.34
3	8	4		20.85	20.86	21.32
3	8	7		20.82	20.71	21.31
3	15	0		20.85	20.95	21.29
3	1	0	64QAM	21.38	21.34	21.81
3	1	8		21.40	21.34	21.96
3	1	14		21.30	21.57	21.82
3	8	0		20.42	20.34	20.67
3	8	4		20.40	20.40	20.70
3	8	7		20.39	20.34	20.68
3	15	0		20.45	20.80	20.40
1.4	1	0	QPSK	22.70	22.81	23.07
1.4	1	3		22.70	22.82	23.13
1.4	1	5		22.76	22.76	23.04
1.4	3	0		22.72	22.84	23.15
1.4	3	1		22.71	22.89	23.25
1.4	3	3		22.71	22.90	23.19
1.4	6	0		21.72	21.86	22.14
1.4	1	0	16-QAM	21.91	21.95	22.32
1.4	1	3		21.95	22.10	22.41
1.4	1	5		21.87	21.98	22.29
1.4	3	0		21.71	21.92	22.17
1.4	3	1		21.76	21.92	22.23



1.4	3	3		21.77	21.95	22.19
1.4	6	0		20.76	20.93	21.23
1.4	1	0	64QAM	21.80	21.42	21.75
1.4	1	3		21.30	21.49	21.78
1.4	1	5		21.45	21.37	21.71
1.4	3	0		21.45	21.38	21.66
1.4	3	1		21.80	21.41	21.78
1.4	3	3		21.44	21.39	21.74
1.4	6	0		20.36	20.32	20.58



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.17	23.23	23.21
20	1	49		22.90	22.92	23.02
20	1	99		22.98	22.93	23.05
20	50	0		21.96	22.12	22.22
20	50	24		21.95	22.05	22.08
20	50	50		22.03	21.95	22.17
20	100	0		21.98	22.07	22.10
20	1	0	16-QAM	22.36	22.46	22.45
20	1	49		22.13	22.17	22.29
20	1	99		22.11	22.21	22.34
20	50	0		21.10	21.17	21.22
20	50	24		21.02	21.02	21.13
20	50	50		21.02	20.99	21.16
20	100	0		21.01	21.04	21.14
20	1	0	64QAM	21.43	21.37	21.40
20	1	49		21.07	21.09	21.27
20	1	99		21.19	21.12	21.26
20	50	0		20.09	20.13	20.26
20	50	24		20.01	20.06	20.16
20	50	50		20.03	19.96	20.18
20	100	0		20.01	20.05	20.13
15	1	0	QPSK	23.10	23.12	23.22
15	1	37		22.89	22.90	22.99
15	1	74		22.93	22.94	23.06
15	36	0		22.04	22.13	22.13
15	36	20		21.99	22.07	22.12
15	36	39		22.02	21.99	22.16
15	75	0		21.98	22.03	22.07
15	1	0	16-QAM	22.38	22.48	22.44
15	1	37		22.21	22.18	22.31
15	1	74		22.21	22.30	22.40
15	36	0		21.04	21.10	21.16
15	36	20		20.95	21.04	21.07



15	36	39		21.00	20.99	21.14
15	75	0		20.97	21.06	21.11
15	1	0	64QAM	21.26	21.42	21.53
15	1	37		20.99	21.17	21.31
15	1	74		21.07	21.26	21.35
15	36	0		20.05	20.12	20.16
15	36	20		20.01	20.06	20.12
15	36	39		20.04	19.97	20.20
15	75	0		19.97	20.05	20.11



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.92	23.10	23.13
10	1	25		22.83	22.94	23.10
10	1	49		22.73	22.93	23.07
10	25	0		21.88	22.03	22.10
10	25	12		21.83	22.02	22.19
10	25	25		21.80	21.96	22.11
10	50	0		21.84	21.99	22.17
10	1	0	16-QAM	22.16	22.31	22.38
10	1	25		22.08	22.17	22.39
10	1	49		22.06	22.14	22.36
10	25	0		20.89	21.05	21.05
10	25	12		20.90	21.01	21.14
10	25	25		20.81	20.99	21.13
10	50	0		20.87	20.99	21.15
10	1	0	64QAM	21.09	21.19	21.33
10	1	25		20.94	21.03	21.33
10	1	49		20.89	20.99	21.23
10	25	0		19.93	20.08	20.09
10	25	12		19.89	20.03	20.18
10	25	25		19.91	19.97	20.13
10	50	0		19.94	20.02	20.17
5	1	0	QPSK	22.86	23.00	23.12
5	1	12		22.82	22.95	23.10
5	1	24		22.80	22.93	23.08
5	12	0		21.88	22.01	22.10
5	12	7		21.83	21.99	22.12
5	12	13		21.81	21.94	22.09
5	25	0		21.84	21.99	22.10
5	1	0	16-QAM	22.11	22.22	22.43
5	1	12		22.10	22.18	22.36
5	1	24		22.04	22.11	22.34
5	12	0		20.86	21.01	21.14
5	12	7		20.89	20.99	21.15



5	12	13		20.80	20.97	21.12
5	25	0		20.81	20.96	21.14
5	1	0	64QAM	21.06	21.20	21.32
5	1	12		21.00	21.13	21.22
5	1	24		20.98	21.07	21.24
5	12	0		19.91	20.03	20.17
5	12	7		19.91	20.04	20.20
5	12	13		19.96	20.02	20.16
5	25	0		19.89	19.99	20.16



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.90	22.93	23.09
3	1	8		22.80	22.97	23.14
3	1	14		23.01	23.00	23.02
3	8	0		22.05	22.13	22.10
3	8	4		22.05	22.15	22.08
3	8	7		21.88	21.94	22.03
3	15	0		21.91	21.95	22.11
3	1	0	16-QAM	22.22	22.18	22.32
3	1	8		22.28	22.27	22.48
3	1	14		22.13	22.15	22.33
3	8	0		20.99	20.99	21.17
3	8	4		20.97	21.03	21.17
3	8	7		20.94	20.97	21.12
3	15	0		20.92	20.94	21.11
3	1	0	64QAM	21.10	21.11	21.23
3	1	8		21.16	21.21	21.35
3	1	14		21.03	21.04	21.21
3	8	0		19.95	19.99	20.17
3	8	4		19.95	20.04	20.15
3	8	7		19.92	19.99	20.11
3	15	0		19.95	19.97	20.07
1.4	1	0	QPSK	22.81	22.83	22.97
1.4	1	3		22.79	22.89	23.03
1.4	1	5		22.77	22.81	22.97
1.4	3	0		22.83	22.87	23.04
1.4	3	1		22.89	22.92	23.07
1.4	3	3		22.83	22.93	23.07
1.4	6	0		21.80	21.89	22.03
1.4	1	0	16-QAM	22.04	22.03	22.28
1.4	1	3		22.09	22.10	22.23
1.4	1	5		22.04	21.99	22.15
1.4	3	0		21.89	21.85	22.07
1.4	3	1		21.89	21.90	22.12



1.4	3	3		21.88	21.90	22.11
1.4	6	0		20.86	20.96	21.09
1.4	1	0	64QAM	21.05	21.02	21.23
1.4	1	3		21.03	21.07	21.27
1.4	1	5		21.15	21.00	21.22
1.4	3	0		21.26	21.50	21.16
1.4	3	1		21.04	21.04	21.25
1.4	3	3		21.04	21.05	21.19
1.4	6	0		20.15	20.10	20.06



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.86	22.88	22.99
10	1	25		22.83	23.00	23.30
10	1	49		22.80	22.97	22.99
10	25	0		22.05	22.03	22.04
10	25	12		22.03	22.00	22.01
10	25	25		22.02	21.92	22.07
10	50	0		21.97	21.94	22.10
10	1	0	16-QAM	22.17	22.13	22.37
10	1	25		22.15	22.20	22.27
10	1	49		22.20	22.19	22.32
10	25	0		20.97	20.86	21.01
10	25	12		20.98	20.95	21.03
10	25	25		21.03	20.89	21.07
10	50	0		21.01	20.96	21.11
10	1	0	64QAM	21.11	21.07	21.25
10	1	25		21.04	21.11	21.14
10	1	49		21.10	21.11	21.19
10	25	0		20.02	19.93	20.02
10	25	12		20.01	19.96	20.06
10	25	25		20.01	19.93	20.07
10	50	0		19.98	19.94	20.12
5	1	0	QPSK	22.78	22.84	22.96
5	1	12		22.86	22.88	22.99
5	1	24		22.82	22.86	22.99
5	12	0		21.77	21.97	22.07
5	12	7		21.87	21.95	22.07
5	12	13		21.86	21.91	22.06
5	25	0		21.85	21.96	22.06
5	1	0	16-QAM	22.10	22.11	22.21
5	1	12		22.11	22.17	22.29
5	1	24		22.02	22.17	22.27
5	12	0		20.81	20.97	21.09
5	12	7		20.91	21.00	21.09



5	12	13		20.85	20.96	21.04
5	25	0		20.88	20.94	21.05
5	1	0	64QAM	20.96	20.99	21.16
5	1	12		21.02	21.05	21.18
5	1	24		21.00	21.02	21.19
5	12	0		19.84	20.05	20.13
5	12	7		19.96	19.99	20.12
5	12	13		19.94	19.95	20.13
5	25	0		19.92	19.99	20.07



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.75	22.97	23.03
3	1	8		22.85	22.96	23.06
3	1	14		22.81	22.86	22.94
3	8	0		21.76	21.88	21.93
3	8	4		21.78	21.91	21.98
3	8	7		21.89	21.89	21.94
3	15	0		21.74	21.93	21.98
3	1	0	16-QAM	22.04	22.27	22.28
3	1	8		22.09	22.29	22.36
3	1	14		22.02	22.23	22.27
3	8	0		20.83	20.99	21.00
3	8	4		20.85	21.00	21.02
3	8	7		20.95	20.97	20.98
3	15	0		20.79	20.94	20.93
3	1	0	64QAM	20.91	21.10	21.06
3	1	8		21.02	21.18	21.13
3	1	14		21.02	21.05	21.03
3	8	0		19.84	20.01	19.97
3	8	4		19.84	19.97	19.99
3	8	7		19.92	19.94	19.98
3	15	0		19.81	19.90	19.94
1.4	1	0	QPSK	23.25	22.83	22.91
1.4	1	3		22.72	22.92	22.98
1.4	1	5		22.80	22.85	22.91
1.4	3	0		22.73	22.84	22.95
1.4	3	1		22.77	22.92	23.01
1.4	3	3		22.76	22.90	23.05
1.4	6	0		21.74	21.85	21.95
1.4	1	0	16-QAM	21.92	22.16	22.19
1.4	1	3		22.01	22.20	22.19
1.4	1	5		21.87	22.16	22.12
1.4	3	0		21.77	21.86	21.94
1.4	3	1		21.82	21.94	21.99



1.4	3	3		21.76	21.91	21.95
1.4	6	0		20.76	20.94	20.96
1.4	1	0	64QAM	21.11	21.30	21.40
1.4	1	3		21.14	21.36	21.54
1.4	1	5		21.07	21.27	21.42
1.4	3	0		21.12	21.30	21.39
1.4	3	1		21.16	21.28	21.42
1.4	3	3		21.13	21.26	21.46
1.4	6	0		20.05	20.17	20.25



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.95	22.88	22.90
20	1	49		22.79	22.75	22.73
20	1	99		22.84	22.74	22.75
20	50	0		21.89	21.88	21.88
20	50	24		21.84	21.84	21.84
20	50	50		21.83	21.77	21.79
20	100	0		21.89	21.83	21.83
20	1	0	16-QAM	22.28	22.15	22.16
20	1	49		22.07	21.99	21.99
20	1	99		22.00	21.99	22.02
20	50	0		20.95	20.86	20.91
20	50	24		20.89	20.84	20.88
20	50	50		20.84	20.80	20.82
20	100	0		20.87	20.79	20.84
20	1	0	64QAM	21.10	21.19	21.20
20	1	49		21.07	20.99	21.02
20	1	99		20.95	20.98	20.90
20	50	0		19.94	19.88	19.91
20	50	24		19.92	19.86	19.86
20	50	50		19.85	19.78	19.83
20	100	0		19.87	19.82	19.88
15	1	0	QPSK	22.92	22.86	22.88
15	1	37		22.79	22.74	22.76
15	1	74		22.79	22.73	22.80
15	36	0		21.89	21.84	21.84
15	36	20		21.84	21.83	21.87
15	36	39		21.81	21.81	21.82
15	75	0		21.84	21.81	21.85
15	1	0	16-QAM	22.17	22.13	22.16
15	1	37		22.07	22.05	22.08
15	1	74		22.05	22.04	22.06
15	36	0		20.89	20.85	20.88
15	36	20		20.87	20.84	20.84



15	36	39		20.81	20.78	20.81
15	75	0		20.85	20.79	20.83
15	1	0	64QAM	21.09	21.00	21.01
15	1	37		20.99	20.82	20.91
15	1	74		20.94	20.89	20.92
15	36	0		19.88	19.88	19.89
15	36	20		19.91	19.85	19.88
15	36	39		19.83	19.80	19.83
15	75	0		19.85	19.79	19.84



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.85	22.80	22.84
10	1	25		22.76	22.76	22.79
10	1	49		22.75	22.72	22.78
10	25	0		21.85	21.82	21.83
10	25	12		21.84	21.81	21.84
10	25	25		21.79	21.77	21.81
10	50	0	16-QAM	21.83	21.78	21.86
10	1	0		22.16	22.11	22.13
10	1	25		22.12	22.08	22.11
10	1	49		22.09	22.02	22.08
10	25	0		20.87	20.81	20.87
10	25	12		20.86	20.81	20.89
10	25	25	64QAM	20.80	20.78	20.86
10	50	0		20.86	20.81	20.82
10	1	0		20.99	20.94	20.94
10	1	25		20.93	20.89	20.90
10	1	49		20.93	20.85	20.93
10	25	0		19.87	19.84	19.88
10	25	12	QPSK	19.91	19.89	19.89
10	25	25		19.82	19.83	19.85
10	50	0		19.87	19.82	19.85
5	1	0		22.79	22.79	22.78
5	1	12		22.82	22.73	22.76
5	1	24		22.78	22.73	22.81
5	12	0	16-QAM	21.82	21.80	21.85
5	12	7		21.89	21.83	21.88
5	12	13		21.84	21.79	21.85
5	25	0		21.83	21.78	21.86
5	1	0		22.05	22.06	22.04
5	1	12		22.04	22.04	22.05
5	1	24	16-QAM	22.01	21.96	22.03
5	12	0		20.83	20.81	20.84
5	12	7		20.89	20.81	20.86



5	12	13		20.87	20.78	20.87
5	25	0		20.85	20.78	20.81
5	1	0	64QAM	21.00	21.00	21.01
5	1	12		20.94	20.97	21.01
5	1	24		20.94	20.93	20.99
5	12	0		19.93	19.83	19.87
5	12	7		19.92	19.86	19.90
5	12	13		19.91	19.84	19.91
5	25	0		19.85	19.78	19.84



LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK		23.00	
10	1	25			22.85	
10	1	49			22.78	
10	25	0			21.92	
10	25	12			21.91	
10	25	25			21.86	
10	50	0			21.89	
10	1	0	16-QAM		22.13	
10	1	25			22.07	
10	1	49			21.97	
10	25	0			20.95	
10	25	12			20.91	
10	25	25			20.86	
10	50	0			20.90	
10	1	0	64QAM		21.16	
10	1	25			21.07	
10	1	49			20.97	
10	25	0			19.98	
10	25	12			19.94	
10	25	25			19.84	
10	50	0			19.90	
5	1	0	QPSK	22.93	22.88	22.97
5	1	12		22.88	22.80	22.90
5	1	24		22.86	22.82	22.72
5	12	0		21.94	21.91	21.99
5	12	7		21.92	21.92	21.93
5	12	13		21.92	21.86	21.92
5	25	0		21.89	21.84	21.91
5	1	0	16-QAM	22.25	22.16	22.25
5	1	12		22.11	22.11	22.16
5	1	24		22.16	22.09	22.14
5	12	0		20.96	20.92	21.00
5	12	7		20.92	20.92	21.00



5	12	13	64QAM	20.92	20.89	20.91
5	25	0		20.93	20.86	20.95
5	1	0		21.17	21.05	21.13
5	1	12		21.02	21.02	21.08
5	1	24		21.03	20.97	21.04
5	12	0		19.96	19.92	20.00
5	12	7		19.99	19.92	20.02
5	12	13		19.97	19.90	20.00
5	25	0		19.94	19.87	19.96



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.83	22.95	23.10
20	1	49		22.87	22.80	22.83
20	1	99		22.71	22.74	22.88
20	50	0		21.85	22.01	22.03
20	50	24		21.79	21.91	21.95
20	50	50		21.82	21.82	21.86
20	100	0		21.80	21.92	21.95
20	1	0	16-QAM	22.22	22.20	22.49
20	1	49		21.93	22.10	22.16
20	1	99		21.95	22.02	21.99
20	50	0		20.91	21.05	21.07
20	50	24		20.83	20.96	20.95
20	50	50		20.81	20.87	20.83
20	100	0		20.79	20.96	20.99
20	1	0	64QAM	21.20	21.20	21.28
20	1	49		20.93	21.08	20.98
20	1	99		20.92	20.95	20.86
20	50	0		19.91	20.08	20.08
20	50	24		19.83	19.96	19.96
20	50	50		19.82	19.88	19.87
20	100	0		19.81	19.93	19.98
15	1	0	QPSK	22.92	23.03	23.04
15	1	37		22.79	22.81	22.82
15	1	74		22.74	22.78	22.73
15	36	0		21.86	22.02	22.02
15	36	20		21.78	21.96	21.95
15	36	39		21.76	21.84	21.86
15	75	0		21.82	21.93	21.93
15	1	0	16-QAM	22.16	22.30	22.35
15	1	37		21.93	22.06	22.10
15	1	74		21.97	22.06	21.99
15	36	0		20.84	20.98	21.04
15	36	20		20.79	20.92	20.97



15	36	39		20.72	20.86	20.86
15	75	0		20.80	20.95	20.94
15	1	0	64QAM	21.17	21.25	21.33
15	1	37		20.89	21.04	21.04
15	1	74		20.96	20.96	20.98
15	36	0		19.89	20.06	20.04
15	36	20		19.85	20.00	19.94
15	36	39		19.78	19.88	19.89
15	75	0		19.79	19.89	19.96



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.85	22.98	22.97
10	1	25		22.74	22.86	22.88
10	1	49		22.75	22.81	22.78
10	25	0		21.83	21.95	21.95
10	25	12		21.82	21.88	21.93
10	25	25		21.72	21.89	21.87
10	50	0		21.80	21.89	21.92
10	1	0	16-QAM	22.08	22.29	22.20
10	1	25		21.99	22.12	22.05
10	1	49		21.98	22.11	21.97
10	25	0		20.80	20.95	20.94
10	25	12		20.80	20.93	20.92
10	25	25		20.78	20.86	20.86
10	50	0		20.81	20.91	20.92
10	1	0	64QAM	21.06	21.09	21.10
10	1	25		20.95	21.07	20.97
10	1	49		20.87	20.96	20.94
10	25	0		19.85	19.98	19.97
10	25	12		19.84	19.93	19.95
10	25	25		19.74	19.90	19.85
10	50	0		19.79	19.92	19.90
5	1	0	QPSK	22.79	22.90	22.90
5	1	12		22.73	22.86	22.83
5	1	24		22.72	22.84	22.80
5	12	0		21.83	21.91	21.94
5	12	7		21.77	21.94	21.89
5	12	13		21.74	21.84	21.83
5	25	0		21.77	21.89	21.88
5	1	0	16-QAM	21.99	22.15	22.09
5	1	12		21.98	22.13	22.06
5	1	24		21.98	22.10	22.00
5	12	0		20.80	20.90	20.93
5	12	7		20.84	20.94	20.91



5	12	13		20.81	20.90	20.85
5	25	0		20.80	20.92	20.88
5	1	0	64QAM	20.99	21.14	21.12
5	1	12		20.87	21.02	21.03
5	1	24		20.87	21.02	20.97
5	12	0		19.86	19.95	19.93
5	12	7		19.85	19.95	19.91
5	12	13		19.81	19.93	19.92
5	25	0		19.79	19.88	19.87



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.78	22.87	22.70
3	1	8		22.85	22.92	22.80
3	1	14		22.78	22.79	22.76
3	8	0		21.71	21.74	21.76
3	8	4		21.76	21.75	21.79
3	8	7		21.72	21.89	21.73
3	15	0		21.76	21.86	21.75
3	1	0	16-QAM	21.97	22.13	21.99
3	1	8		22.11	22.25	22.06
3	1	14		21.96	22.12	21.91
3	8	0		20.84	20.91	20.81
3	8	4		20.84	20.92	20.82
3	8	7		20.81	20.92	20.78
3	15	0		20.75	20.89	20.77
3	1	0	64QAM	20.93	21.01	20.89
3	1	8		20.93	21.10	20.97
3	1	14		20.85	20.99	20.90
3	8	0		19.82	19.93	19.81
3	8	4		19.83	19.93	19.80
3	8	7		19.80	19.91	19.78
3	15	0		19.75	19.90	19.76
1.4	1	0	QPSK	22.72	22.77	22.76
1.4	1	3		22.78	22.84	22.78
1.4	1	5		22.76	22.76	22.77
1.4	3	0		22.72	22.85	22.80
1.4	3	1		22.79	22.91	22.91
1.4	3	3		22.78	22.90	22.86
1.4	6	0		22.70	21.85	21.78
1.4	1	0	16-QAM	21.91	22.03	21.90
1.4	1	3		22.02	22.13	21.94
1.4	1	5		21.92	22.04	21.88
1.4	3	0		21.70	21.88	21.84
1.4	3	1		21.77	21.93	21.90



1.4	3	3		21.74	21.91	21.82
1.4	6	0		20.77	20.89	20.86
1.4	1	0	64QAM	21.03	21.28	21.24
1.4	1	3		21.10	21.24	21.24
1.4	1	5		21.07	21.19	21.19
1.4	3	0		21.00	21.12	21.13
1.4	3	1		21.10	21.16	21.19
1.4	3	3		21.11	21.17	21.18
1.4	6	0		20.19	20.04	20.08

**ERP/EIRP**

LTE Band 2 (GT - LC = -0.5 dBi) 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)	22.71	22.89	23.25	22.73	22.85	23.22	22.83	22.95	23.24
Conducted Power (Watts)	0.1866	0.1945	0.2113	0.1875	0.1928	0.2099	0.1919	0.1972	0.2109
EIRP(dBm)	22.21	22.39	22.75	22.23	22.35	22.72	22.33	22.45	22.74
EIRP(Watts)	0.1663	0.1734	0.1884	0.1671	0.1718	0.1871	0.1710	0.1758	0.1879

LTE Band 2 (GT - LC = -0.5 dBi) 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)	23.09	23.18	23.29	22.91	23.03	23.31	23.17	23.28	23.33
Conducted Power (Watts)	0.2037	0.2080	0.2133	0.1954	0.2009	0.2143	0.2075	0.2128	0.2153
EIRP(dBm)	22.59	22.68	22.79	22.41	22.53	22.81	22.67	22.78	22.83
EIRP(Watts)	0.1816	0.1854	0.1901	0.1742	0.1791	0.1910	0.1849	0.1897	0.1919



LTE Band 2 (GT - LC = -0.5 dBi) 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	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
(MHz)									
Conducted Power (dBm)	21.95	22.10	22.41	22.07	21.98	22.44	22.06	22.24	22.50
Conducted Power (Watts)	0.1567	0.1622	0.1742	0.1611	0.1578	0.1754	0.1607	0.1675	0.1778
EIRP(dBm)	21.45	21.60	21.91	21.57	21.48	21.94	21.56	21.74	22.00
EIRP(Watts)	0.1396	0.1445	0.1552	0.1435	0.1406	0.1563	0.1432	0.1493	0.1585

LTE Band 2 (GT - LC = -0.5 dBi) 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	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
(MHz)									
Conducted Power (dBm)	22.49	22.40	22.49	22.19	22.29	22.55	22.27	22.74	22.81
Conducted Power (Watts)	0.1774	0.1738	0.1774	0.1656	0.1694	0.1799	0.1687	0.1879	0.1910
EIRP(dBm)	21.99	21.90	21.99	21.69	21.79	22.05	21.77	22.24	22.31
EIRP(Watts)	0.1581	0.1549	0.1581	0.1476	0.1510	0.1603	0.1503	0.1675	0.1702



LTE Band 2 ($G_T - L_C = -0.5$ dBi) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
(MHz)									
Conducted Power (dBm)	21.80	21.42	21.75	21.40	21.34	21.96	20.98	21.17	21.49
Conducted Power (Watts)	0.1514	0.1387	0.1496	0.1380	0.1361	0.1570	0.1253	0.1309	0.1409
EIRP(dBm)	21.30	20.92	21.25	20.90	20.84	21.46	20.48	20.67	20.99
EIRP(Watts)	0.1349	0.1236	0.1334	0.1230	0.1213	0.1400	0.1117	0.1167	0.1256

LTE Band 2 ($G_T - L_C = -0.5$ dBi) 64QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
(MHz)									
Conducted Power (dBm)	21.34	21.35	21.46	21.24	21.30	21.61	21.20	21.68	21.11
Conducted Power (Watts)	0.1361	0.1365	0.1400	0.1330	0.1349	0.1449	0.1318	0.1472	0.1291
EIRP(dBm)	20.84	20.85	20.96	20.74	20.80	21.11	20.70	21.18	20.61
EIRP(Watts)	0.1213	0.1216	0.1247	0.1186	0.1202	0.1291	0.1175	0.1312	0.1151



LTE Band 4 (GT - LC = 0 dBi) 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	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	22.89	22.92	23.07	22.80	22.97	23.14	22.86	23.00	23.12
Conducted Power (Watts)	0.1945	0.1959	0.2028	0.1905	0.1982	0.2061	0.1932	0.1995	0.2051
EIRP(dBm)	22.89	22.92	23.07	22.80	22.97	23.14	22.86	23.00	23.12
EIRP(Watts)	0.1945	0.1959	0.2028	0.1905	0.1982	0.2061	0.1932	0.1995	0.2051

LTE Band 4 (GT - LC = 0 dBi) 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	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	22.92	23.10	23.13	23.10	23.12	23.22	23.17	23.23	23.21
Conducted Power (Watts)	0.1959	0.2042	0.2056	0.2042	0.2051	0.2099	0.2075	0.2104	0.2094
EIRP(dBm)	22.92	23.10	23.13	23.10	23.12	23.22	23.17	23.23	23.21
EIRP(Watts)	0.1959	0.2042	0.2056	0.2042	0.2051	0.2099	0.2075	0.2104	0.2094



LTE Band 4 (GT - LC = 0 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	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	22.04	22.03	22.28	22.28	22.27	22.48	22.11	22.22	22.43
Conducted Power (Watts)	0.1600	0.1596	0.1690	0.1690	0.1687	0.1770	0.1626	0.1667	0.1750
EIRP(dBm)	22.04	22.03	22.28	22.28	22.27	22.48	22.11	22.22	22.43
EIRP(Watts)	0.1600	0.1596	0.1690	0.1690	0.1687	0.1770	0.1626	0.1667	0.1750

LTE Band 4 (GT - LC = 0 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	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	22.08	22.17	22.39	22.38	22.48	22.44	22.36	22.46	22.45
Conducted Power (Watts)	0.1614	0.1648	0.1734	0.1730	0.1770	0.1754	0.1722	0.1762	0.1758
EIRP(dBm)	22.08	22.17	22.39	22.38	22.48	22.44	22.36	22.46	22.45
EIRP(Watts)	0.1614	0.1648	0.1734	0.1730	0.1770	0.1754	0.1722	0.1762	0.1758



LTE Band 4 ($G_T - L_C = 0$ dBi) 64QAM									
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	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	21.26	21.50	21.16	21.16	21.21	21.35	21.06	21.20	21.32
Conducted Power (Watts)	0.1337	0.1413	0.1306	0.1306	0.1321	0.1365	0.1276	0.1318	0.1355
EIRP(dBm)	21.26	21.50	21.16	21.16	21.21	21.35	21.06	21.20	21.32
EIRP(Watts)	0.1337	0.1413	0.1306	0.1306	0.1321	0.1365	0.1276	0.1318	0.1355

LTE Band 4 ($G_T - L_C = 0$ dBi) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	21.09	21.19	21.33	21.26	21.42	21.53	21.43	21.37	21.40
Conducted Power (Watts)	0.1285	0.1315	0.1358	0.1337	0.1387	0.1422	0.1390	0.1371	0.1380
EIRP(dBm)	21.09	21.19	21.33	21.26	21.42	21.53	21.43	21.37	21.40
EIRP(Watts)	0.1285	0.1315	0.1358	0.1337	0.1387	0.1422	0.1390	0.1371	0.1380



LTE Band 5 (GT - LC = -1.8 dBi) 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	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.25	22.83	22.91	22.85	22.96	23.06	22.86	22.88	22.99
Conducted Power (Watts)	0.2113	0.1919	0.1954	0.1928	0.1977	0.2023	0.1932	0.1941	0.1991
ERP(dBm)	19.30	18.88	18.96	18.90	19.01	19.11	18.91	18.93	19.04
ERP(Watts)	0.0851	0.0773	0.0787	0.0776	0.0796	0.0815	0.0778	0.0782	0.0802

LTE Band 5 (GT - LC = -1.8 dBi) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	22.83	23.00	23.30
Conducted Power (Watts)	0.1919	0.1995	0.2138
ERP(dBm)	18.88	19.05	19.35
ERP(Watts)	0.0773	0.0804	0.0861



LTE Band 5 (GT - LC = -1.8 dBi) 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	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	22.01	22.20	22.19	22.09	22.29	22.36	22.11	22.17	22.29
Conducted Power (Watts)	0.1589	0.1660	0.1656	0.1618	0.1694	0.1722	0.1626	0.1648	0.1694
ERP(dBm)	18.06	18.25	18.24	18.14	18.34	18.41	18.16	18.22	18.34
ERP(Watts)	0.0640	0.0668	0.0667	0.0652	0.0682	0.0693	0.0655	0.0664	0.0682

LTE Band 5 (GT - LC = -1.8 dBi) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	22.17	22.13	22.37
Conducted Power (Watts)	0.1648	0.1633	0.1726
ERP(dBm)	18.22	18.18	18.42
ERP(Watts)	0.0664	0.0658	0.0695

LTE Band 5 ($G_T - L_C = -1.8$ dBi) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	21.14	21.36	21.54	21.02	21.18	21.13	21.00	21.02	21.19
Conducted Power (Watts)	0.1300	0.1368	0.1426	0.1265	0.1312	0.1297	0.1259	0.1265	0.1315
ERP(dBm)	17.19	17.41	17.59	17.07	17.23	17.18	17.05	17.07	17.24
ERP(Watts)	0.0524	0.0551	0.0574	0.0509	0.0528	0.0522	0.0507	0.0509	0.0530

LTE Band 5 ($G_T - L_C = -1.8$ dBi) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	21.11	21.07	21.25
Conducted Power (Watts)	0.1291	0.1279	0.1334
ERP(dBm)	17.16	17.12	17.30
ERP(Watts)	0.0520	0.0515	0.0537



LTE Band 7 (GT - LC = 0 dBi) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.82	22.73	22.76
Conducted Power (Watts)	0.1914	0.1875	0.1888
EIRP(dBm)	22.82	22.73	22.76
EIRP(Watts)	0.1914	0.1875	0.1888

LTE Band 7 (GT - LC = 0 dBi) QPSK									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	22.85	22.80	22.84	22.92	22.86	22.88	22.95	22.88	22.90
Conducted Power (Watts)	0.1928	0.1905	0.1923	0.1959	0.1932	0.1941	0.1972	0.1941	0.1950
EIRP(dBm)	22.85	22.80	22.84	22.92	22.86	22.88	22.95	22.88	22.90
EIRP(Watts)	0.1928	0.1905	0.1923	0.1959	0.1932	0.1941	0.1972	0.1941	0.1950



LTE Band 7 (GT - LC = 0 dBi) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.05	22.06	22.04
Conducted Power (Watts)	0.1603	0.1607	0.1600
EIRP(dBm)	22.05	22.06	22.04
EIRP(Watts)	0.1603	0.1607	0.1600

LTE Band 7 (GT - LC = 0 dBi) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	22.16	22.11	22.13	22.17	22.13	22.16	22.28	22.15	22.16
Conducted Power (Watts)	0.1644	0.1626	0.1633	0.1648	0.1633	0.1644	0.1690	0.1641	0.1644
EIRP(dBm)	22.16	22.11	22.13	22.17	22.13	22.16	22.28	22.15	22.16
EIRP(Watts)	0.1644	0.1626	0.1633	0.1648	0.1633	0.1644	0.1690	0.1641	0.1644



LTE Band 7 ($G_T - L_C = 0$ dBi) 64QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	21.00	21.00	21.01
Conducted Power (Watts)	0.1259	0.1259	0.1262
EIRP(dBm)	21.00	21.00	21.01
EIRP(Watts)	0.1259	0.1259	0.1262

LTE Band 7 ($G_T - L_C = 0$ dBi) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	20.99	20.94	20.94	21.09	21.00	21.01	21.10	21.19	21.20
Conducted Power (Watts)	0.1256	0.1242	0.1242	0.1285	0.1259	0.1262	0.1288	0.1315	0.1318
EIRP(dBm)	20.99	20.94	20.94	21.09	21.00	21.01	21.10	21.19	21.20
EIRP(Watts)	0.1256	0.1242	0.1242	0.1285	0.1259	0.1262	0.1288	0.1315	0.1318



LTE Band 13 (GT - LC = -1.5 dBi) QPSK						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	22.93	22.88	22.97		23.00	-
Conducted Power (Watts)	0.1963	0.1941	0.1982		0.1995	-
ERP(dBm)	19.28	19.23	19.32		19.35	-
ERP(Watts)	0.0847	0.0838	0.0855		0.0861	-

LTE Band 13 (GT - LC = -1.5 dBi) 16QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	22.25	22.16	22.25		22.13	-
Conducted Power (Watts)	0.1679	0.1644	0.1679		0.1633	-
ERP(dBm)	18.60	18.51	18.60		18.48	-
ERP(Watts)	0.0724	0.0710	0.0724		0.0705	-

LTE Band 13 (G _T - L _C = -1.5 dBi) 64QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	21.17	21.05	21.13	-	21.16	-
Conducted Power (Watts)	0.1309	0.1274	0.1297	-	0.1306	-
ERP(dBm)	17.52	17.40	17.48	-	17.51	-
ERP(Watts)	0.0565	0.0550	0.0560	-	0.0564	-



LTE Band 66 (GT - LC = 0 dBi) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	22.79	22.91	22.91	22.85	22.92	22.80	22.79	22.90	22.90
Conducted Power (Watts)	0.1901	0.1954	0.1954	0.1928	0.1959	0.1905	0.1901	0.1950	0.1950
EIRP(dBm)	22.79	22.91	22.91	22.85	22.92	22.80	22.79	22.90	22.90
EIRP(Watts)	0.1901	0.1954	0.1954	0.1928	0.1959	0.1905	0.1901	0.1950	0.1950

LTE Band 66 (GT - LC = 0 dBi) QPSK									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	22.85	22.98	22.97	22.92	23.03	23.04	22.83	22.95	23.10
Conducted Power (Watts)	0.1928	0.1986	0.1982	0.1959	0.2009	0.2014	0.1919	0.1972	0.2042
EIRP(dBm)	22.85	22.98	22.97	22.92	23.03	23.04	22.83	22.95	23.10
EIRP(Watts)	0.1928	0.1986	0.1982	0.1959	0.2009	0.2014	0.1919	0.1972	0.2042



LTE Band 66 (GT - LC = 0 dBi) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	22.02	22.13	21.94	22.11	22.25	22.06	21.99	22.15	22.09
Conducted Power (Watts)	0.1592	0.1633	0.1563	0.1626	0.1679	0.1607	0.1581	0.1641	0.1618
EIRP(dBm)	22.02	22.13	21.94	22.11	22.25	22.06	21.99	22.15	22.09
EIRP(Watts)	0.1592	0.1633	0.1563	0.1626	0.1679	0.1607	0.1581	0.1641	0.1618

LTE Band 66 (GT - LC = 0 dBi) 16QAM									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	22.08	22.29	22.20	22.16	22.30	22.35	22.22	22.20	22.49
Conducted Power (Watts)	0.1614	0.1694	0.1660	0.1644	0.1698	0.1718	0.1667	0.1660	0.1774
EIRP(dBm)	22.08	22.29	22.20	22.16	22.30	22.35	22.22	22.20	22.49
EIRP(Watts)	0.1614	0.1694	0.1660	0.1644	0.1698	0.1718	0.1667	0.1660	0.1774



LTE Band 66 (GT - LC = 0 dBi) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	21.03	21.28	21.24	20.93	21.10	20.97	20.99	21.14	21.12
Conducted Power (Watts)	0.1268	0.1343	0.1330	0.1239	0.1288	0.1250	0.1256	0.1300	0.1294
EIRP(dBm)	21.03	21.28	21.24	20.93	21.10	20.97	20.99	21.14	21.12
EIRP(Watts)	0.1268	0.1343	0.1330	0.1239	0.1288	0.1250	0.1256	0.1300	0.1294

LTE Band 66 (GT - LC = 0 dBi) 64QAM									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	21.06	21.09	21.10	21.17	21.25	21.33	21.20	21.20	21.28
Conducted Power (Watts)	0.1276	0.1285	0.1288	0.1309	0.1334	0.1358	0.1318	0.1318	0.1343
EIRP(dBm)	21.06	21.09	21.10	21.17	21.25	21.33	21.20	21.20	21.28
EIRP(Watts)	0.1276	0.1285	0.1288	0.1309	0.1334	0.1358	0.1318	0.1318	0.1343

**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	4.12	4.87	4.99	6.00	PASS
Middle CH	4.32	5.13	4.93	6.17	
Highest CH	3.91	4.87	4.96	5.91	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH	4.93	6.00	PASS		
Middle CH	4.99	6.06			
Highest CH	4.55	5.80			

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.29	4.67	4.78	5.57	PASS
Middle CH	4.09	4.96	4.99	5.83	
Highest CH	4.49	4.90	5.28	5.74	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH	5.91	5.62	PASS		
Middle CH	5.65	6.20			
Highest CH	6.20	6.17			

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.72	4.96	5.65	5.88	PASS
Middle CH	4.75	5.07	5.39	6.03	
Highest CH	4.72	4.99	5.45	5.88	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH	5.65	5.91	PASS		
Middle CH	5.62	6.06			
Highest CH	5.71	6.00			

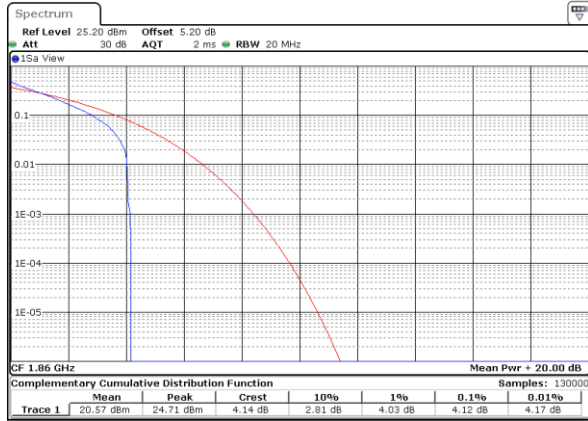
Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	4.38	4.99	5.22	5.86	
Highest CH	-	-	-	-	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH	-	-	PASS		
Middle CH	6.12	6.17			
Highest CH	-	-			

Mode	LTE Band 66 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.83	4.72	4.55	5.80	PASS
Middle CH	3.71	4.90	4.55	5.88	
Highest CH	4.32	4.87	4.93	5.80	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH	5.51	6.26	PASS		
Middle CH	5.39	6.49			
Highest CH	6.23	6.35			



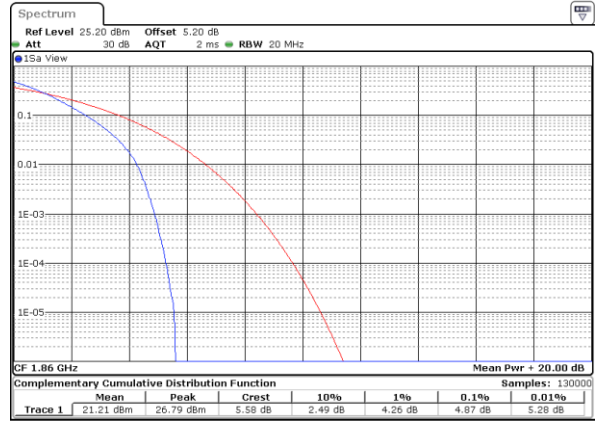
LTE Band 2 / 20MHz / QPSK

Lowest Channel / 1RB



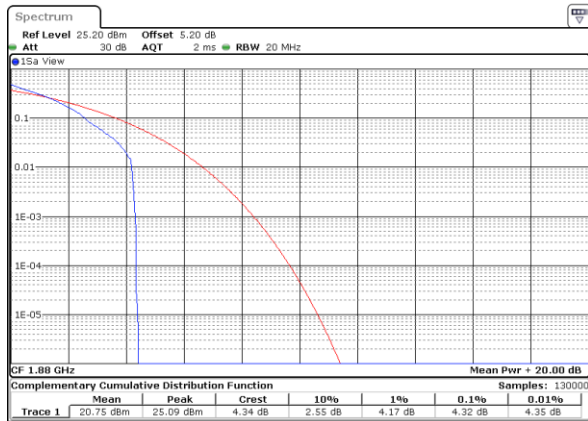
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Lowest Channel / Full RB



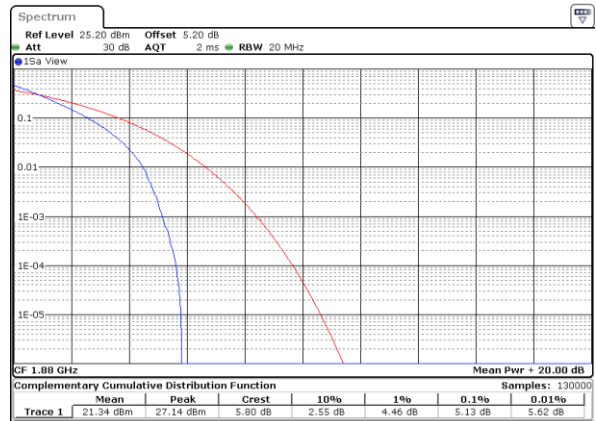
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Middle Channel / 1RB



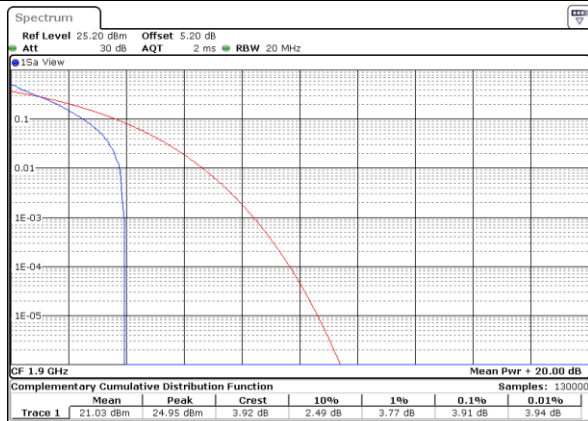
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Middle Channel / Full RB



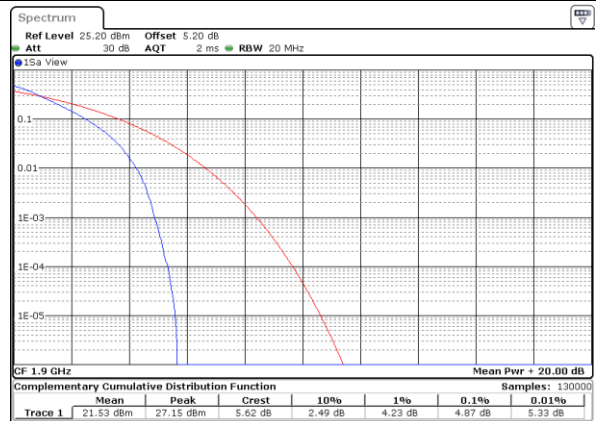
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Highest Channel / 1RB



Date: 22 MAY 2018 01:34:55

Highest Channel / Full RB

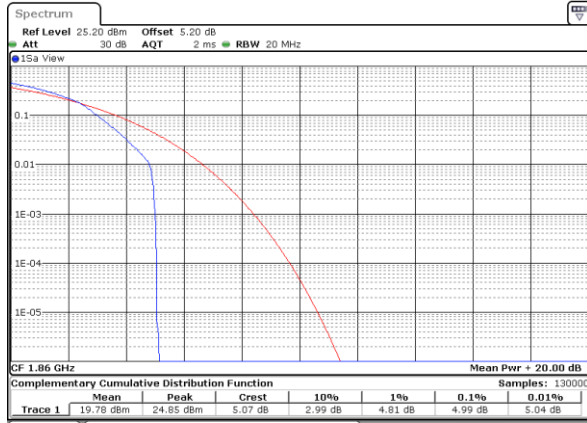


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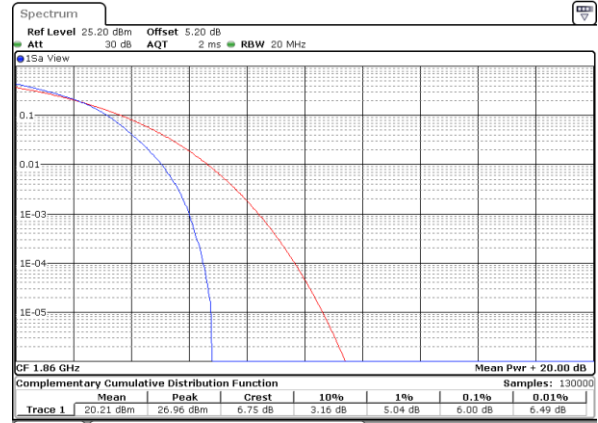


LTE Band 2 / 20MHz / 16QAM

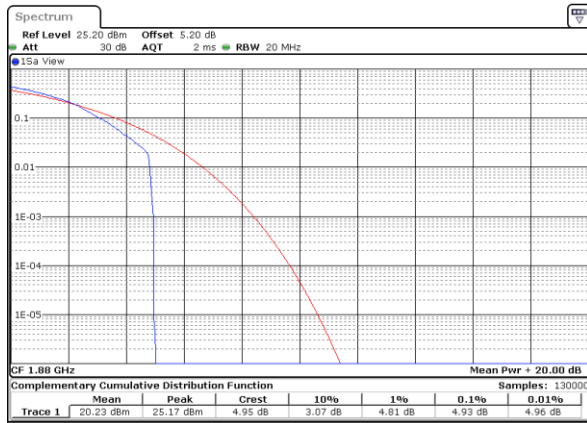
Lowest Channel / 1RB



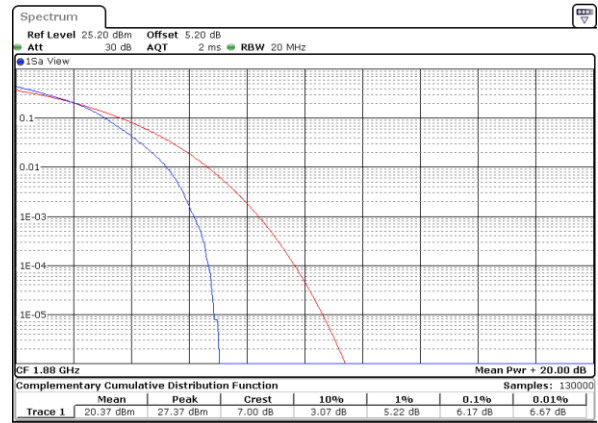
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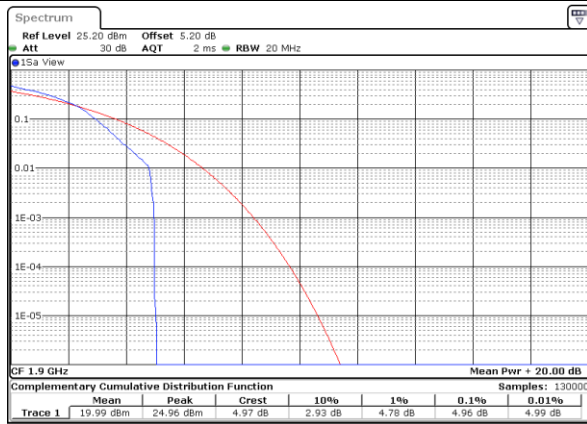
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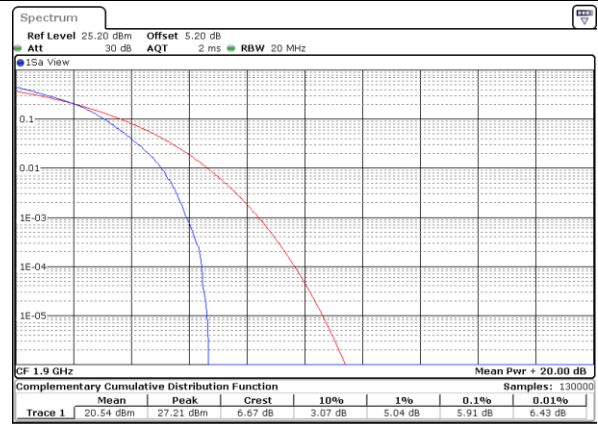
Middle Channel / Full RB



Highest Channel / 1RB



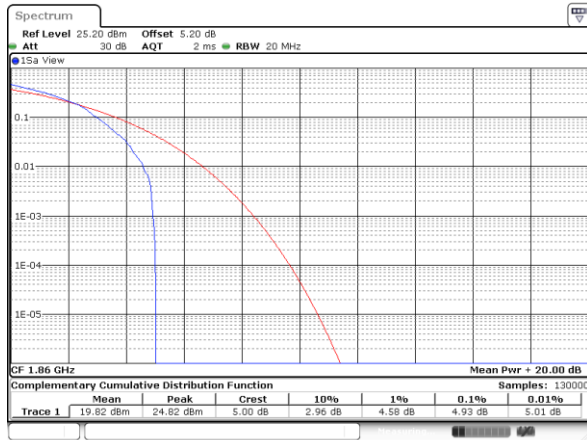
Highest Channel / Full RB



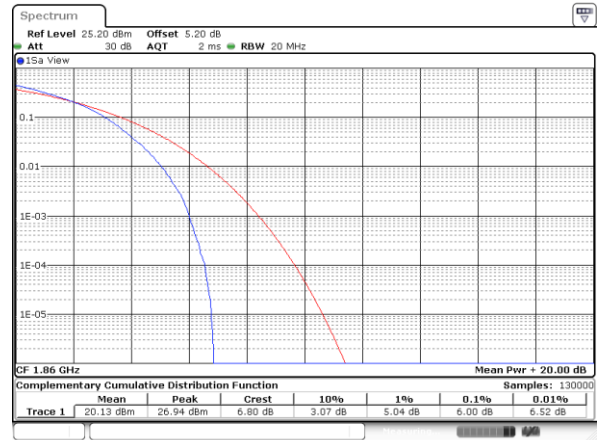


LTE Band 2 / 20MHz / 64QAM

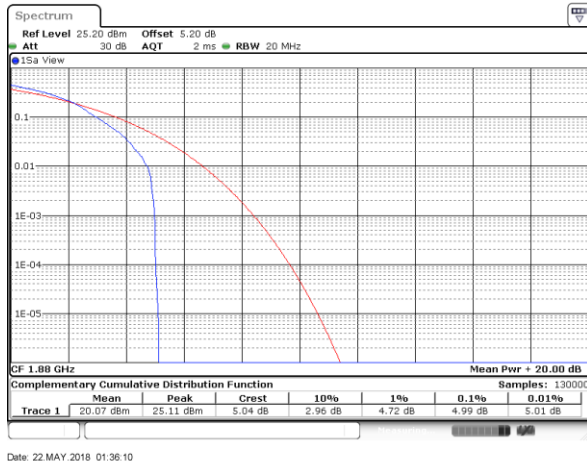
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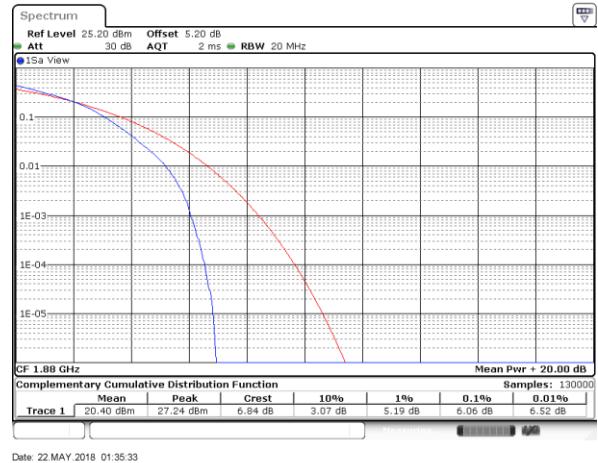
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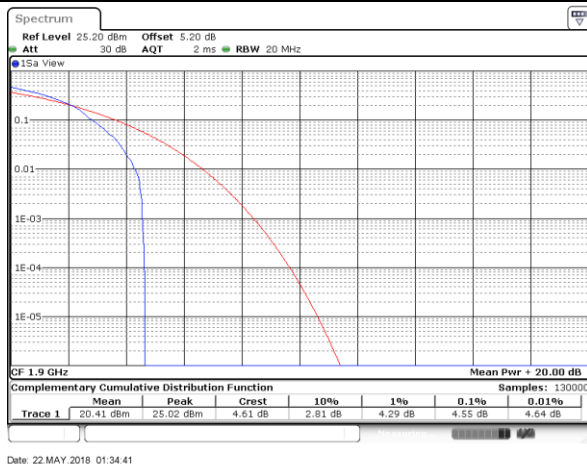
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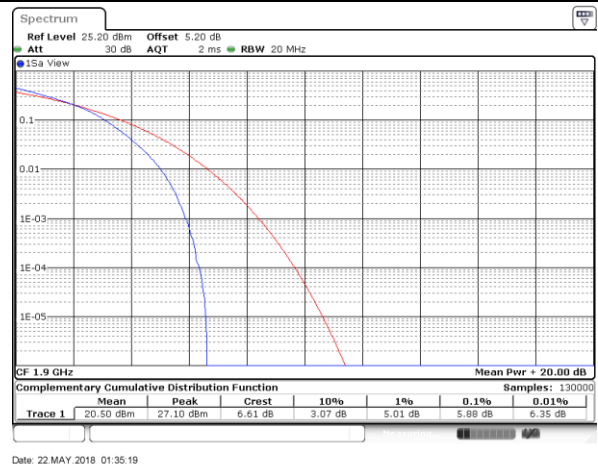
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Highest Channel / 1RB



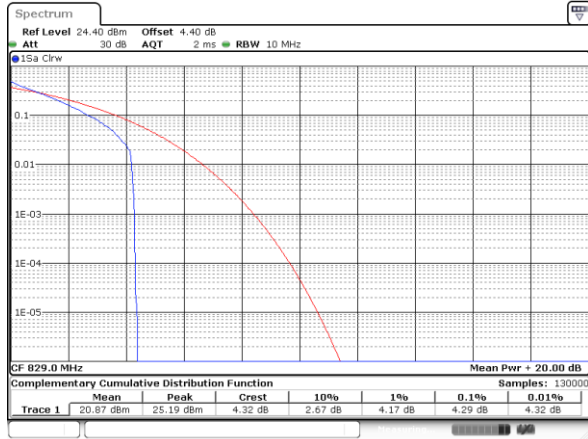
Highest Channel / Full RB



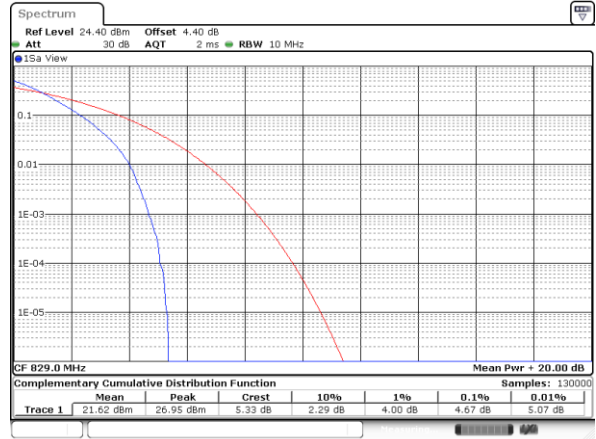


LTE Band 5 / 10MHz / QPSK

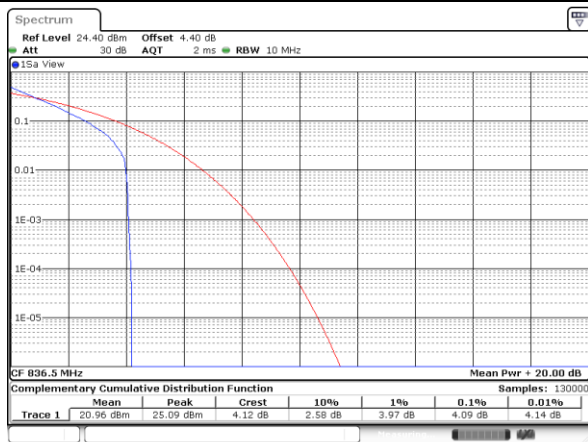
Lowest Channel / 1RB



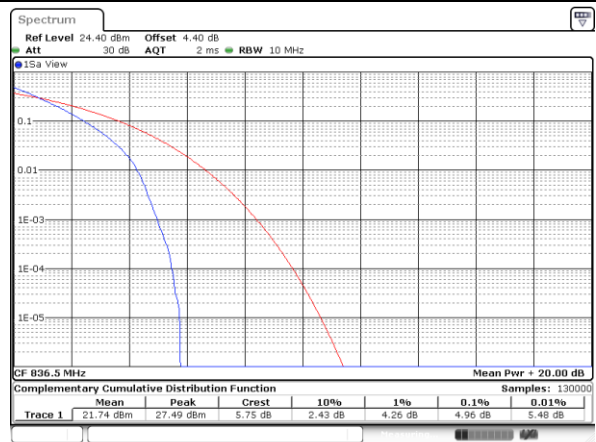
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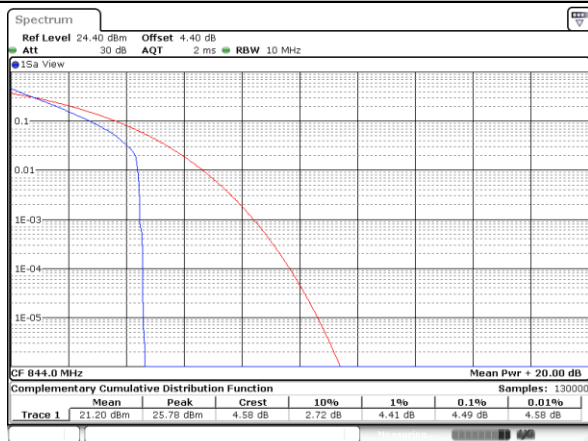
Middle Channel / 1RB



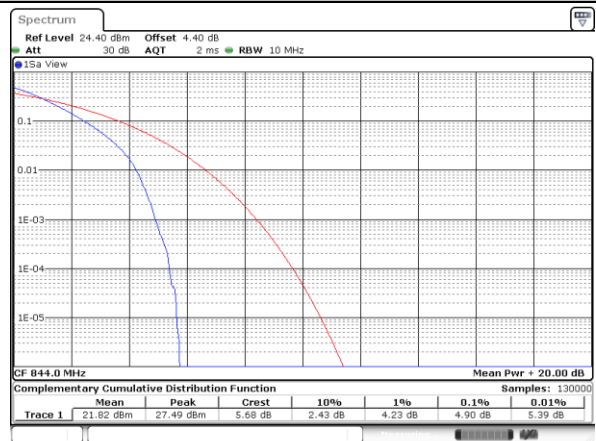
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Highest Channel / 1RB



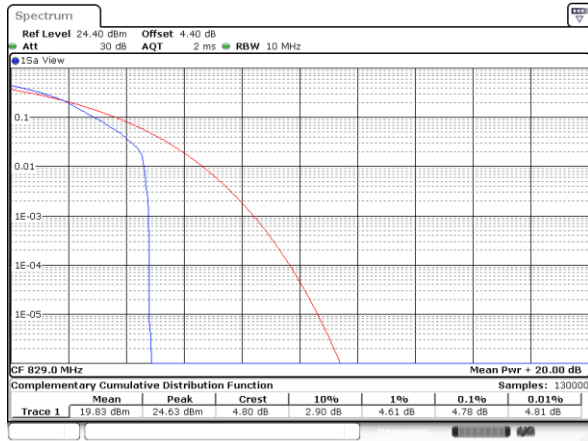
Highest Channel / Full RB



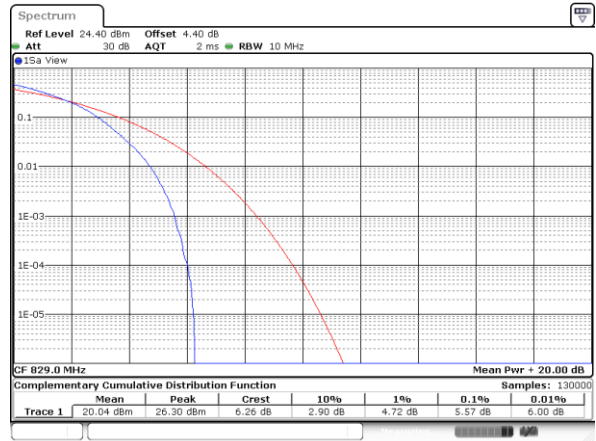


LTE Band 5 / 10MHz / 16QAM

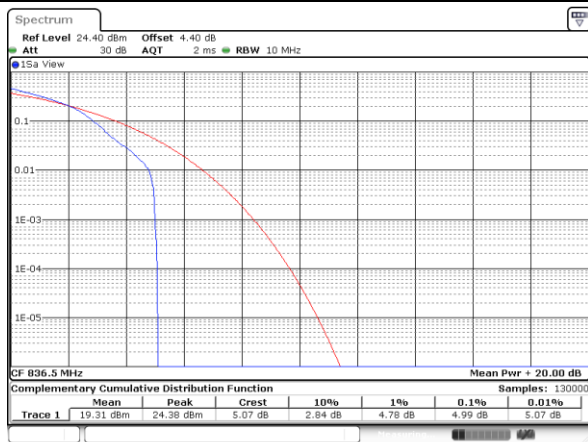
Lowest Channel / 1RB



Lowest Channel / Full RB



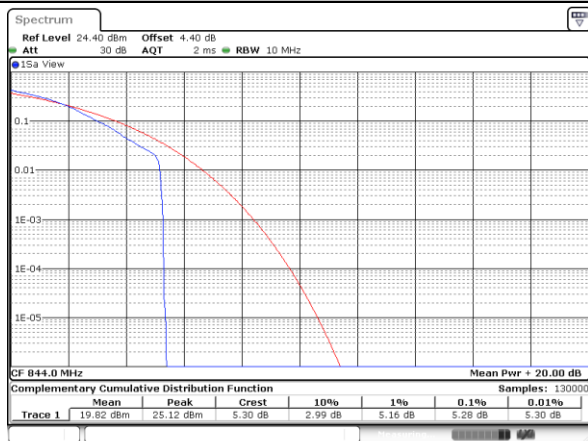
Middle Channel / 1RB



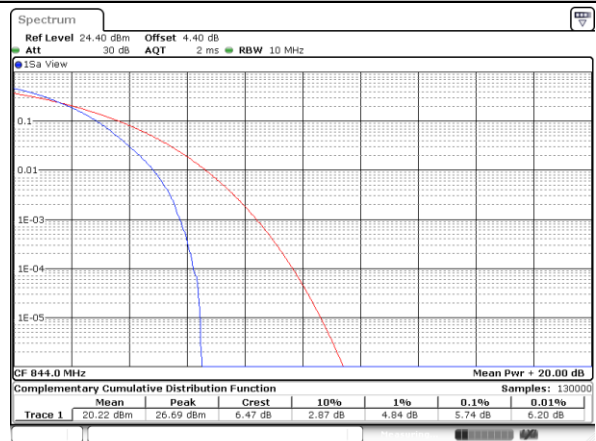
Middle Channel / Full RB



Highest Channel / 1RB



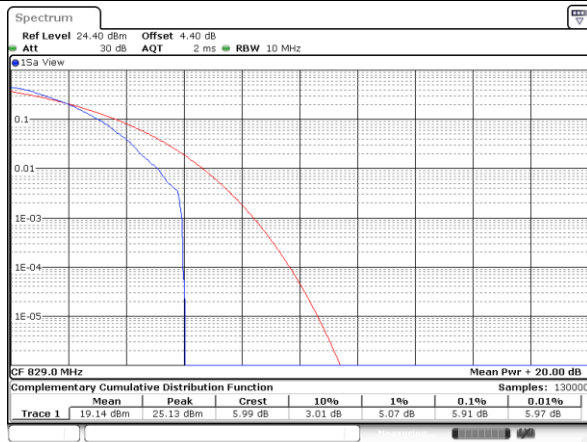
Highest Channel / Full RB



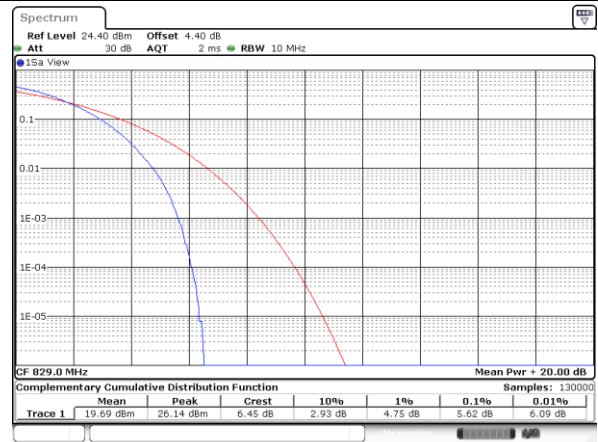


LTE Band 5 / 10MHz / 64QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



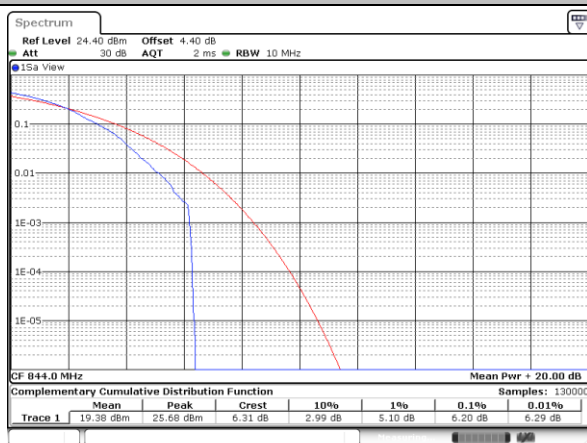
Middle Channel / 1RB



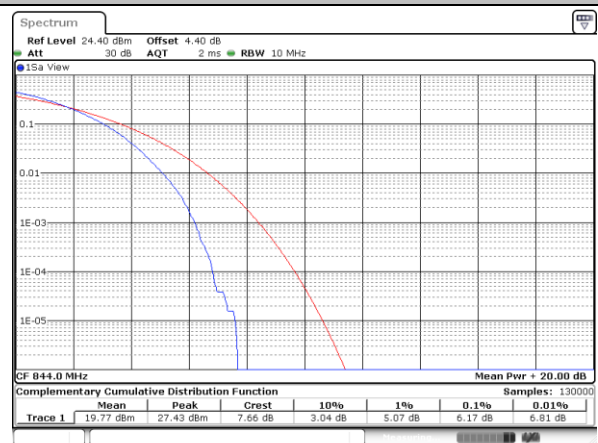
Middle Channel / Full RB



Highest Channel / 1RB



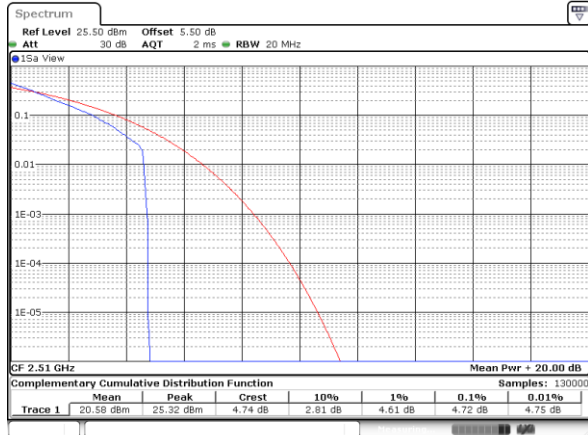
Highest Channel / Full RB





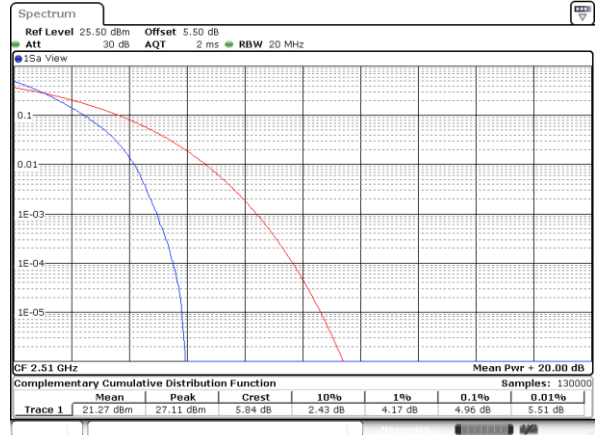
LTE Band 7 / 20MHz / QPSK

Lowest Channel / 1RB



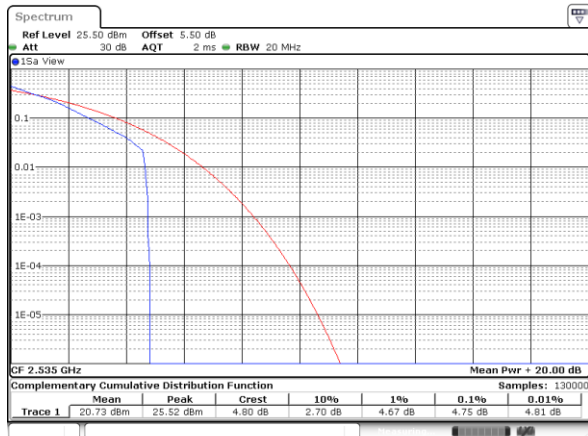
Date: 23 MAY 2018 11:08:43

Lowest Channel / Full RB



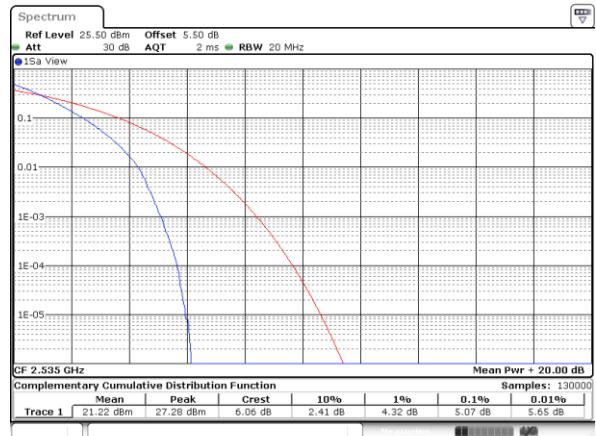
Date: 23 MAY 2018 11:09:56

Middle Channel / 1RB



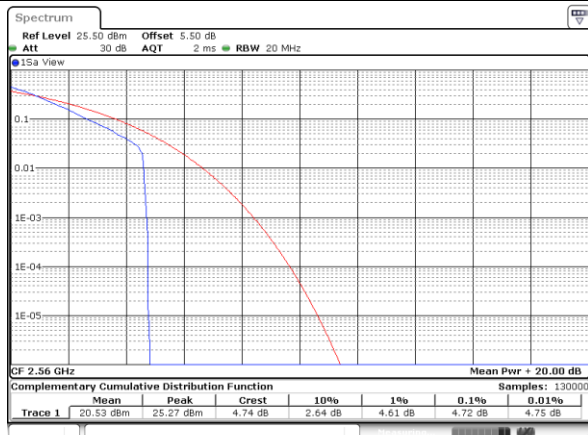
Date: 23 MAY 2018 11:11:29

Middle Channel / Full RB



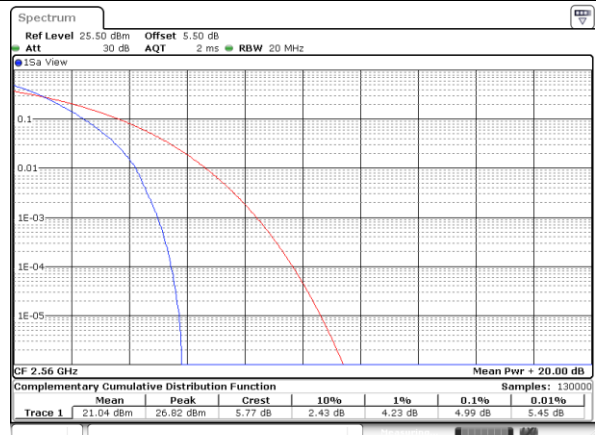
Date: 23 MAY 2018 11:10:22

Highest Channel / 1RB



Date: 23 MAY 2018 11:11:54

Highest Channel / Full RB

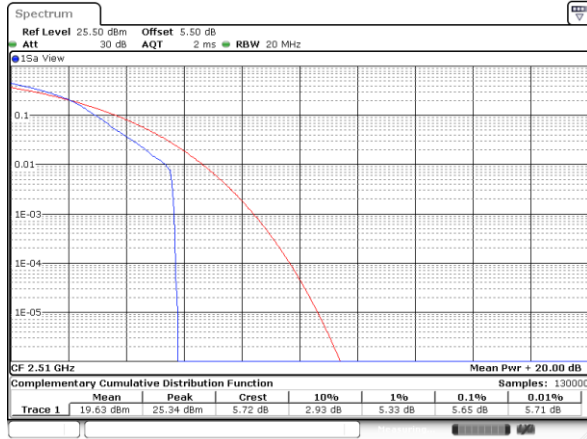


Date: 23 MAY 2018 11:13:02



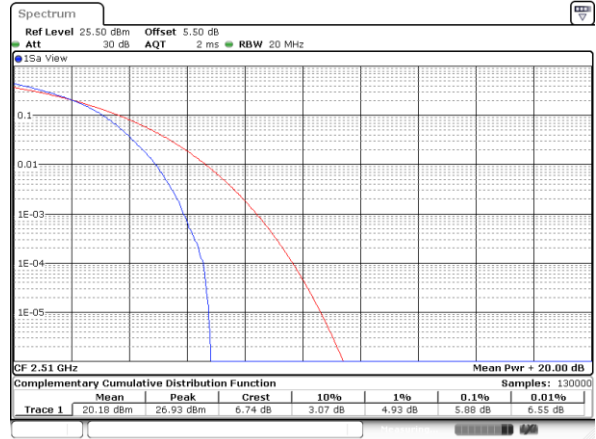
LTE Band 7 / 20MHz / 16QAM

Lowest Channel / 1RB



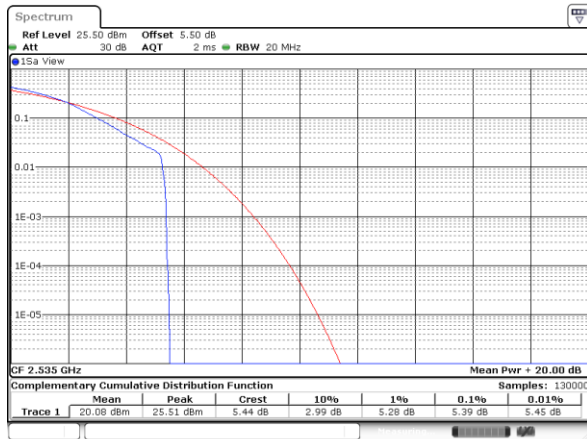
Date: 23 MAY 2018 11:09:13

Lowest Channel / Full RB



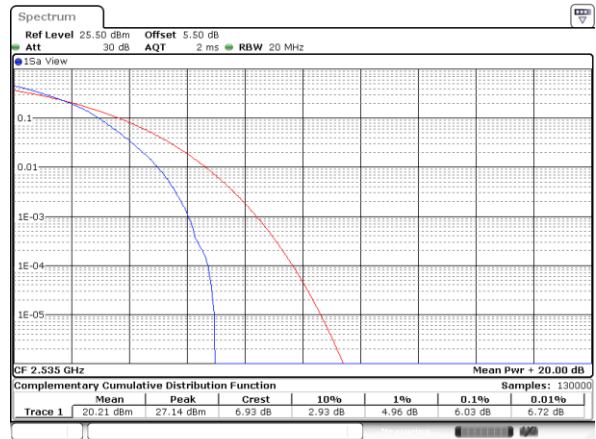
Date: 23 MAY 2018 11:09:45

Middle Channel / 1RB



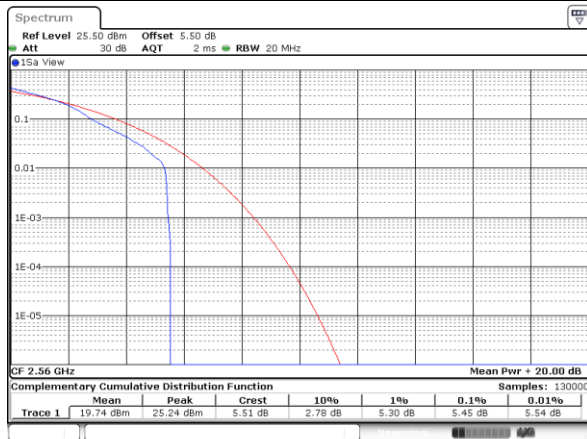
Date: 23 MAY 2018 11:11:20

Middle Channel / Full RB



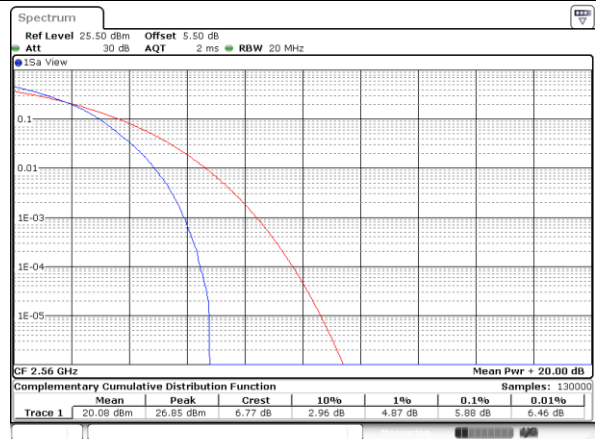
Date: 23 MAY 2018 11:10:34

Highest Channel / 1RB



Date: 23 MAY 2018 11:12:06

Highest Channel / Full RB

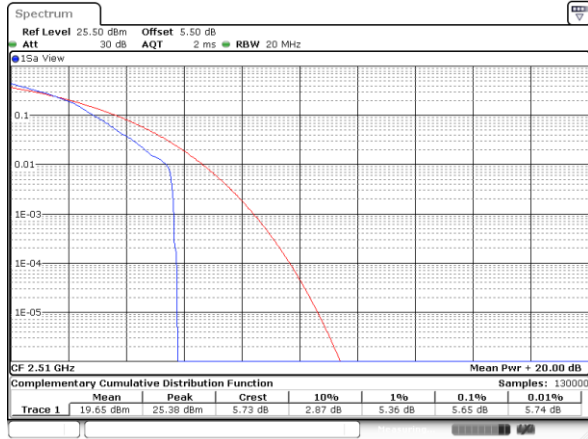


Date: 23 MAY 2018 11:12:49



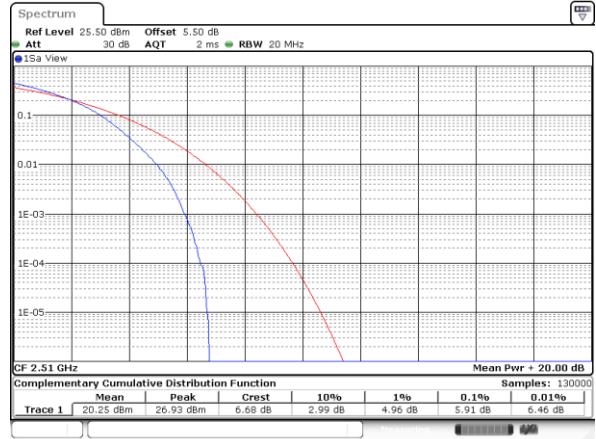
LTE Band 7 / 20MHz / 64QAM

Lowest Channel / 1RB



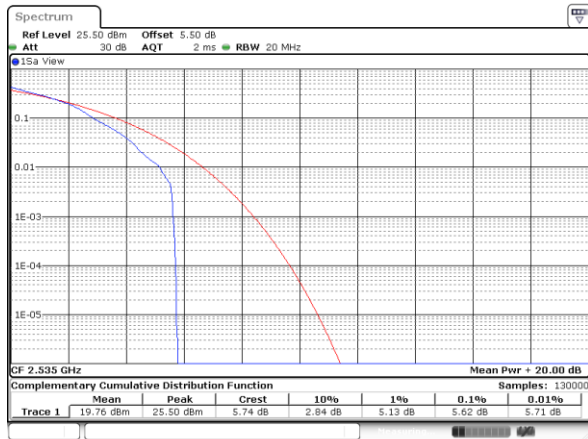
Date: 23 MAY 2018 11:09:23

Lowest Channel / Full RB



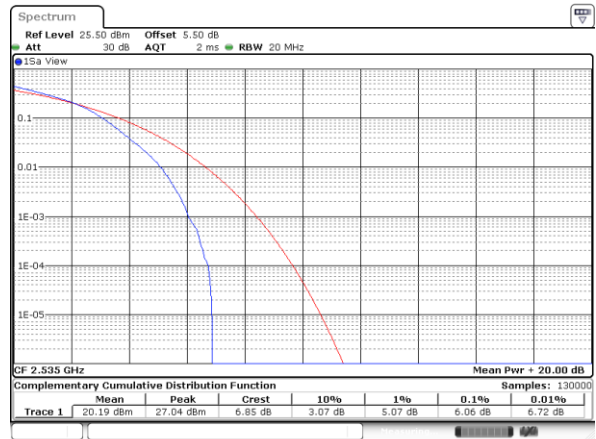
Date: 23 MAY 2018 11:09:35

Middle Channel / 1RB



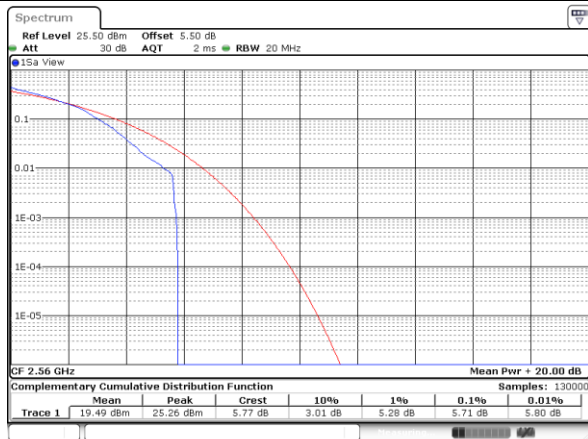
Date: 23 MAY 2018 11:11:06

Middle Channel / Full RB



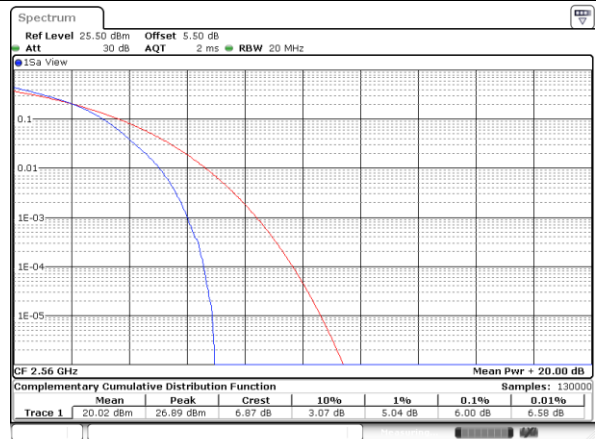
Date: 23 MAY 2018 11:10:49

Highest Channel / 1RB



Date: 23 MAY 2018 11:12:17

Highest Channel / Full RB

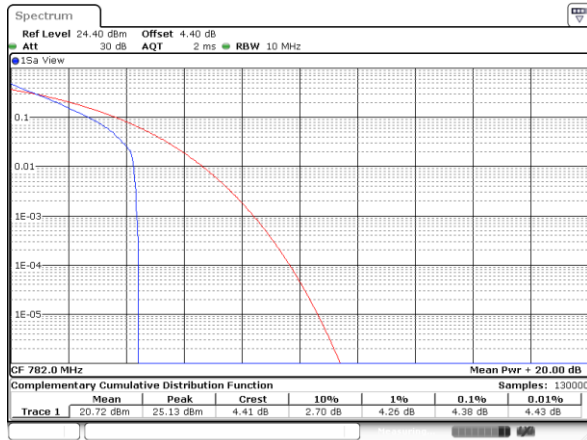


Date: 23 MAY 2018 11:12:39



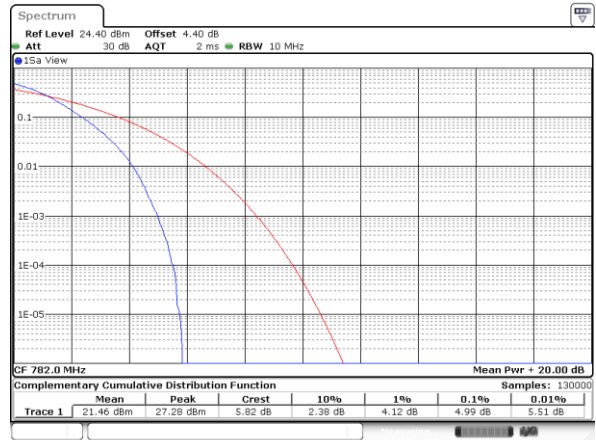
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 22 MAY 2018 14:21:25

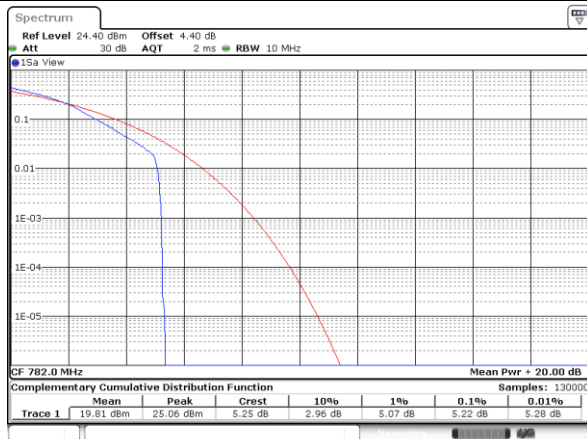
Middle Channel / Full RB



Date: 22 MAY 2018 14:22:22

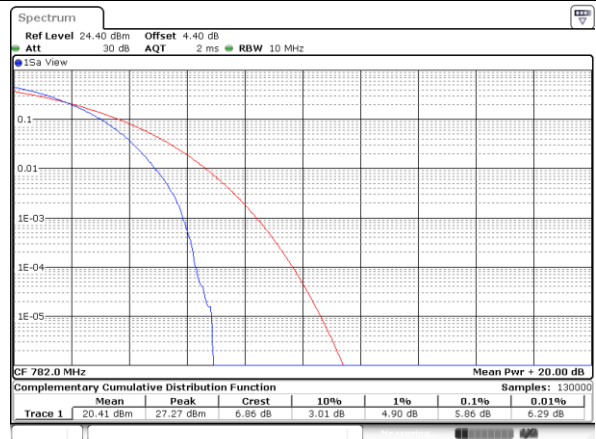
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 22 MAY 2018 14:21:38

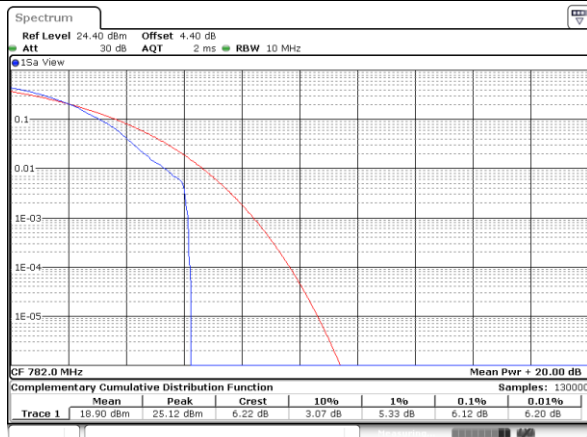
Middle Channel / Full RB



Date: 22 MAY 2018 14:21:55

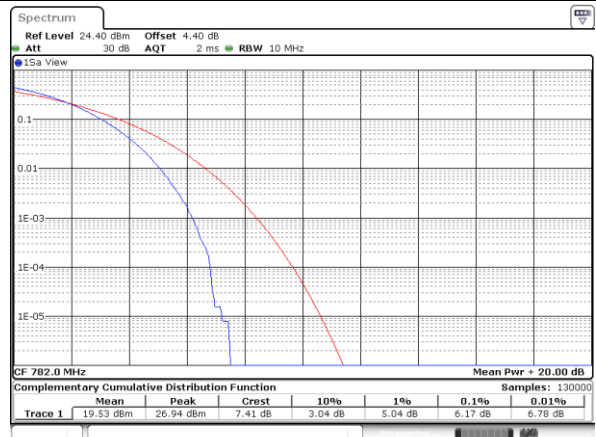
LTE Band 13 / 10MHz / 64QAM

Middle Channel/ 1RB



Date: 22 MAY 2018 15:58:51

Middle Channel / Full RB

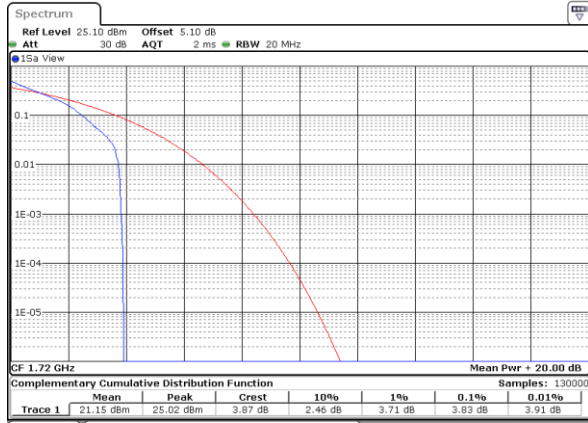


Date: 22 MAY 2018 15:59:15

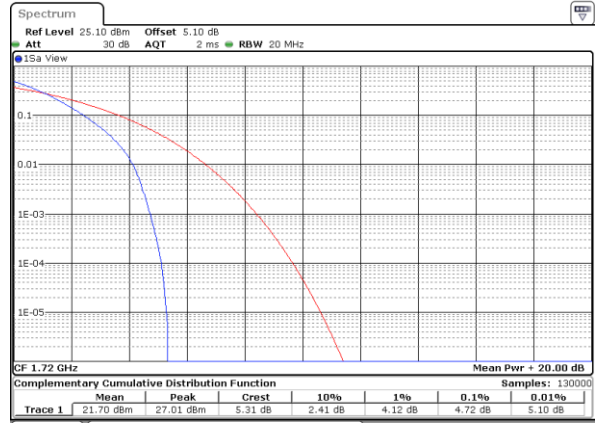


LTE Band 66 / 20MHz / QPSK

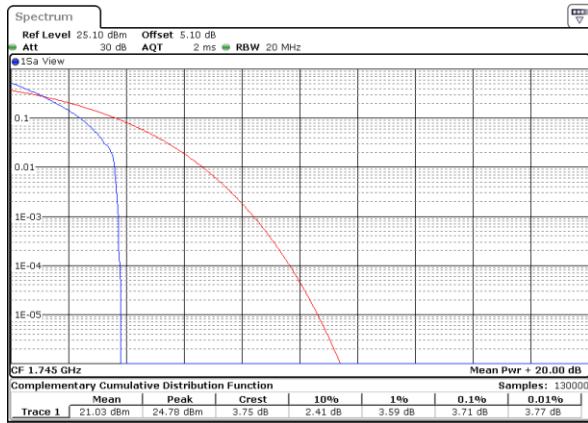
Lowest Channel / 1RB



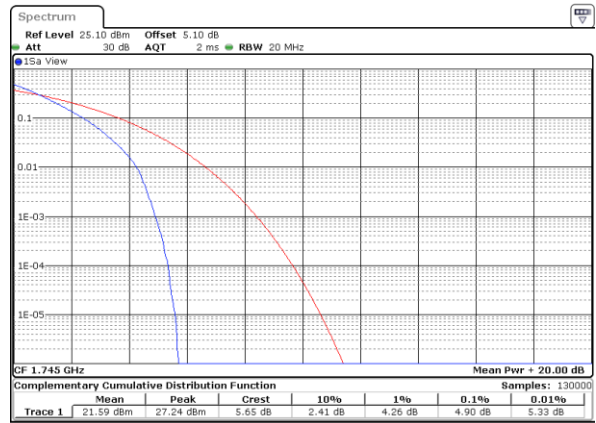
Lowest Channel / Full RB



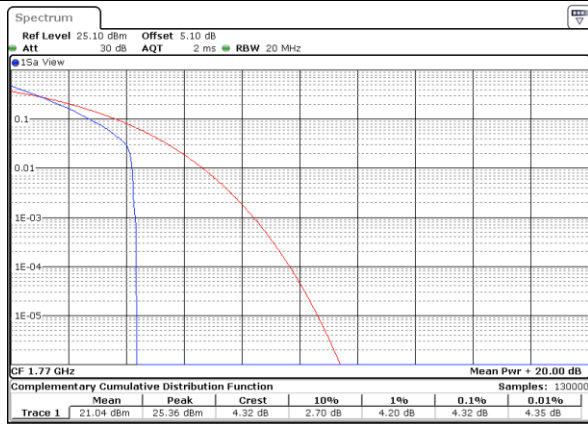
Middle Channel / 1RB



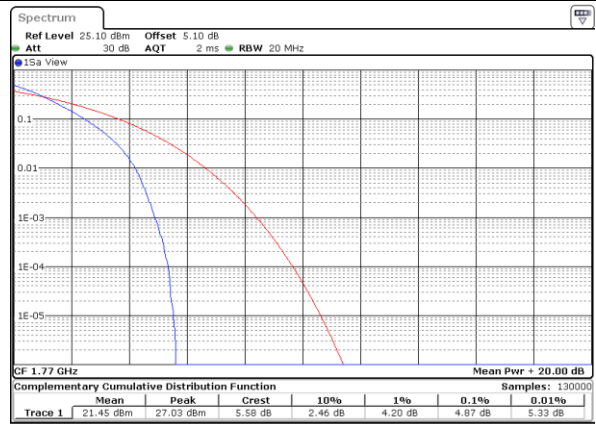
Middle Channel / Full RB



Highest Channel / 1RB



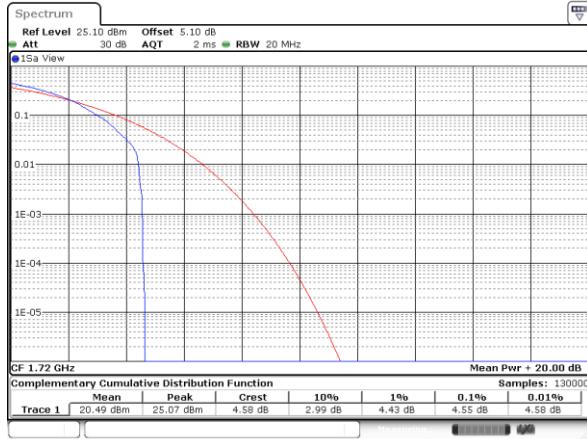
Highest Channel / Full RB



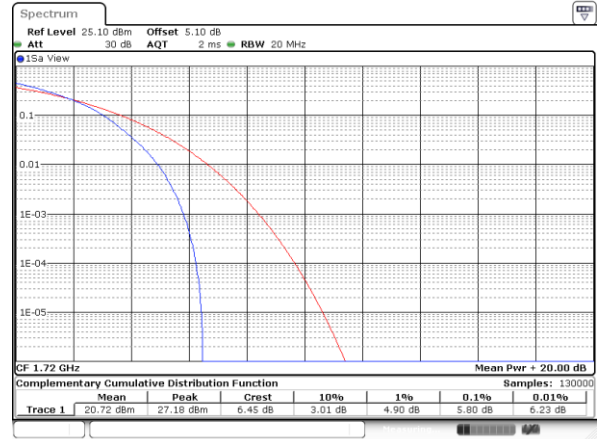


LTE Band 66 / 20MHz / 16QAM

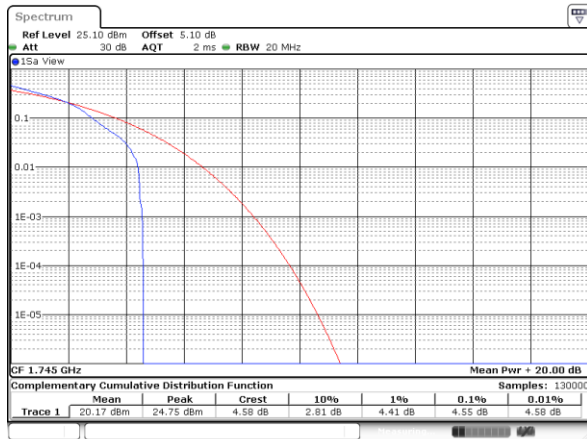
Lowest Channel / 1RB



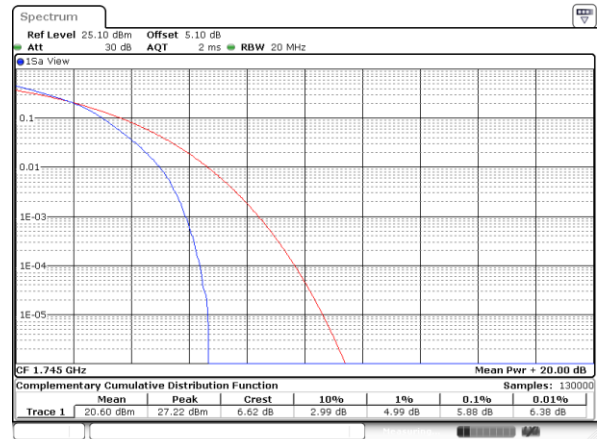
Lowest Channel / Full RB



Middle Channel / 1RB



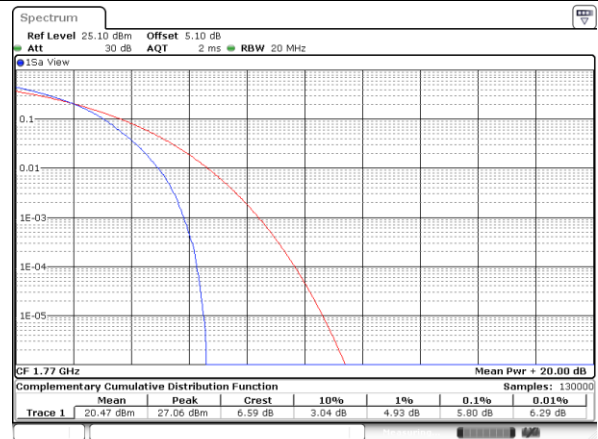
Middle Channel / Full RB



Highest Channel / 1RB



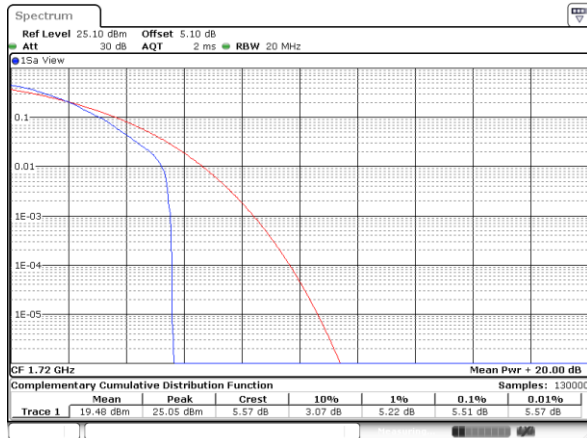
Highest Channel / Full RB



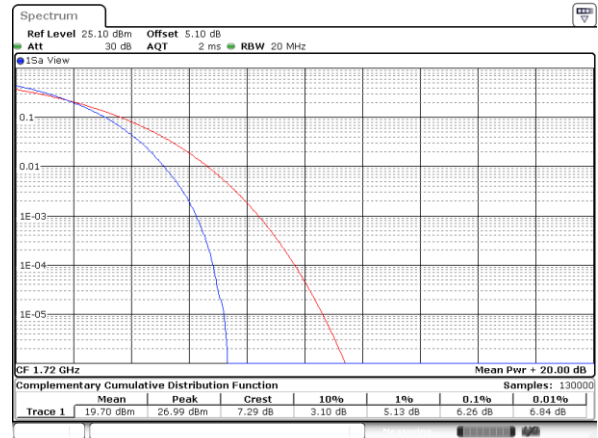


LTE Band 66 / 20MHz / 64QAM

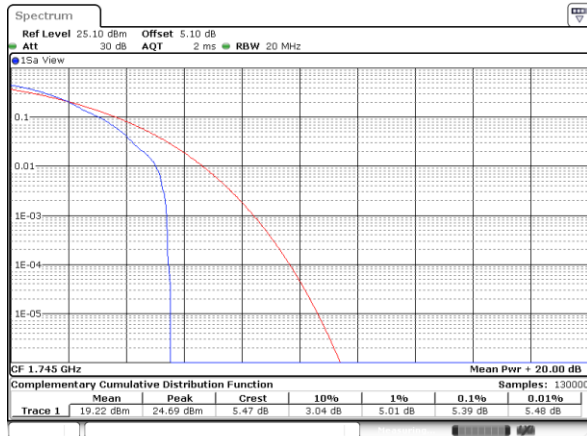
Lowest Channel / 1RB



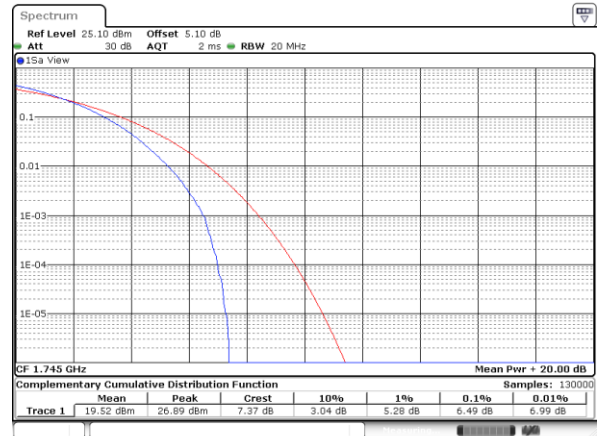
Lowest Channel / Full RB



Middle Channel / 1RB



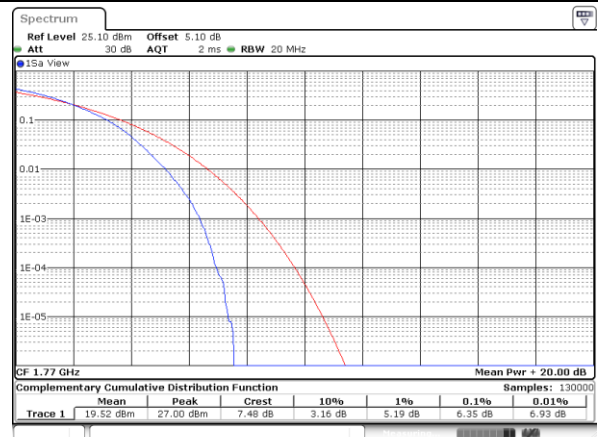
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



**26dB Bandwidth**

Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.236	1.228	3.003	3.033	4.875	4.905	9.77	9.87	14.146	14.625	20.18	20.18
Middle CH	1.231	1.239	3.009	3.015	4.885	4.805	9.75	9.87	14.505	14.446	20.3	20.22
Highest CH	1.234	1.217	3.051	3.015	4.955	4.835	9.83	9.77	14.236	14.266	20.18	20.22
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.22		3.027		4.835		9.75		14.535		20.14	
Middle CH	1.231		3.009		4.805		9.87		14.326		20.3	
Highest CH	1.222		3.015		4.785		9.85		14.416		20.38	

Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		1.4MHz	3MHz	5MHz	10MHz
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	64QAM	64QAM	64QAM	64QAM
Lowest CH	1.24	1.23	3.04	3.06	4.88	4.86	9.81	9.71	1.24	3.03	4.97	9.87
Middle CH	1.23	1.23	3.02	3.03	4.84	4.88	9.93	9.69	1.23	3.07	4.86	9.77
Highest CH	1.23	1.22	3.02	3.03	4.86	4.86	9.67	9.77	1.22	3.03	4.81	9.73

Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.905	4.965	9.83	9.97	14.386	14.296	20.14	20.10
Middle CH	-	-	-	-	4.995	4.875	9.83	9.79	14.206	14.386	20.42	20.10
Highest CH	-	-	-	-	4.875	4.905	9.73	9.73	14.386	14.446	20.26	20.22
BW	5MHz		10MHz		15MHz		20MHz					
Mod.	64QAM		64QAM		64QAM		64QAM					
Lowest CH	4.885		9.73		14.266		20.18					
Middle CH	4.875		9.83		14.326		20.18					
Highest CH	4.945		9.85		14.386		20.10					



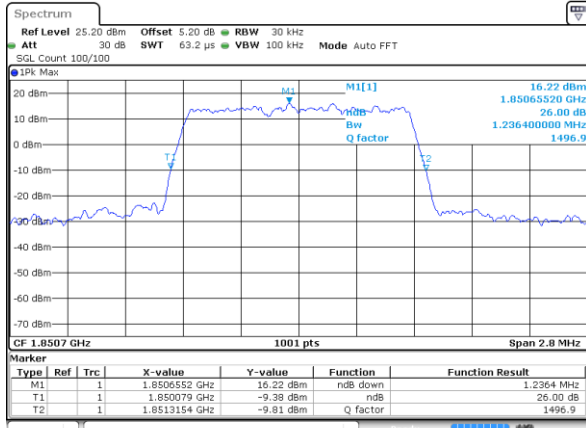
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	5MHz		10MHz		5MHz	10MHz						
Mod.	QPSK	16QAM	QPSK	16QAM	64QAM	64QAM						
Lowest CH	4.81	4.89	-	-	4.92	-						
Middle CH	4.91	4.89	9.73	9.73	4.93	9.83						
Highest CH	4.90	4.90	-	-	4.91	-						

Mode	LTE Band 66 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.22	1.214	3.027	3.009	4.885	4.855	9.67	9.85	14.416	14.356	20.34	20.18
Middle CH	1.234	1.225	2.979	3.051	4.935	4.895	9.93	9.73	14.505	14.476	20.18	20.18
Highest CH	1.225	1.228	3.051	2.997	4.855	4.755	9.67	10.01	14.326	14.386	20.18	20.06
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.222		2.991		4.905		9.73		14.146		20.18	
Middle CH	1.228		3.033		4.895		9.81		14.505		20.14	
Highest CH	1.214		3.033		4.915		9.77		14.296		20.14	



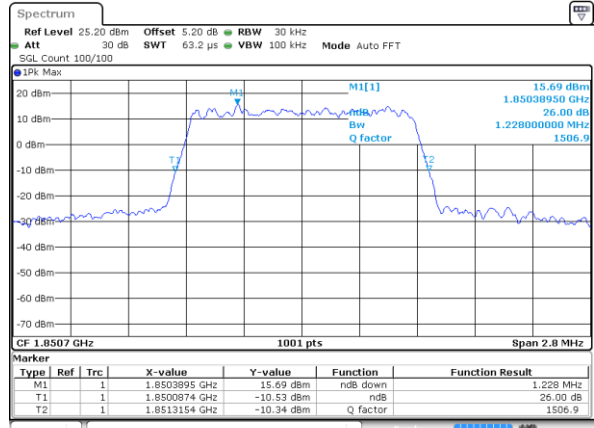
LTE Band 2

Lowest Channel / 1.4MHz / QPSK



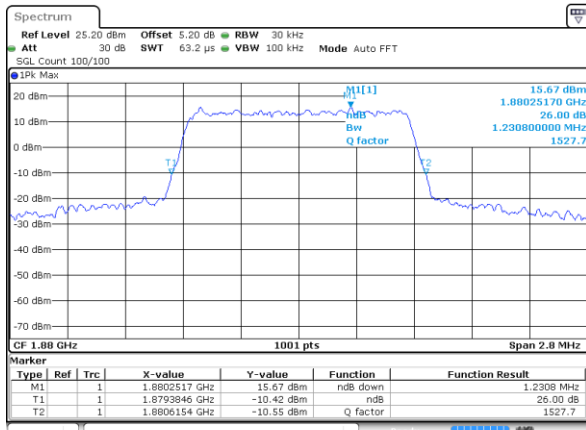
Date: 21 MAY 2018 22:42:19

Lowest Channel / 1.4MHz / 16QAM



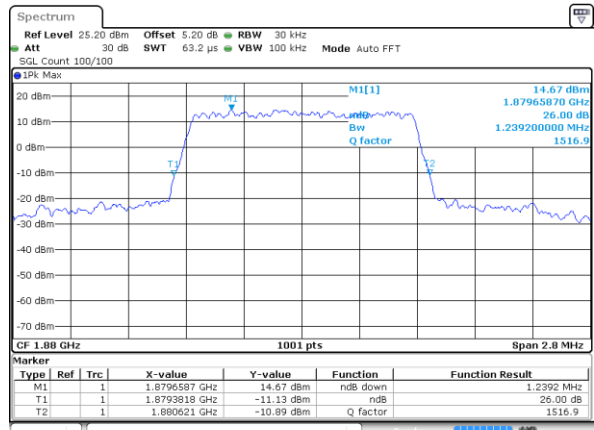
Date: 21 MAY 2018 22:42:30

Middle Channel / 1.4MHz / QPSK



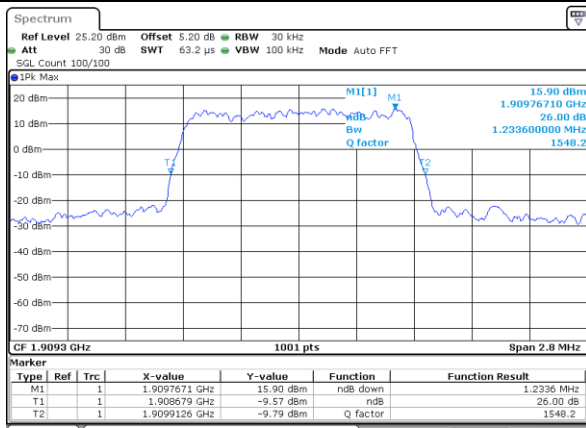
Date: 21 MAY 2018 22:49:25

Middle Channel / 1.4MHz / 16QAM



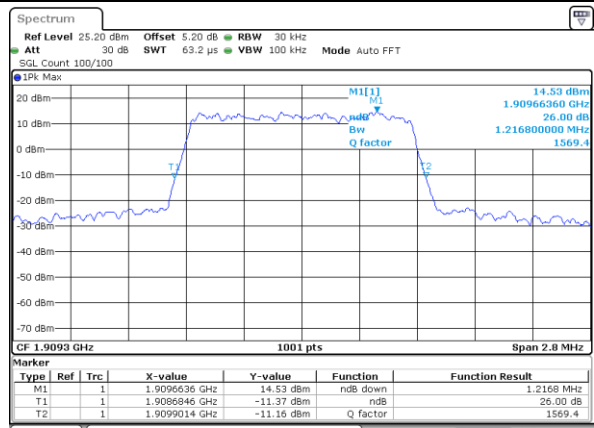
Date: 21 MAY 2018 22:49:36

Highest Channel / 1.4MHz / QPSK



Date: 21 MAY 2018 22:51:58

Highest Channel / 1.4MHz / 16QAM

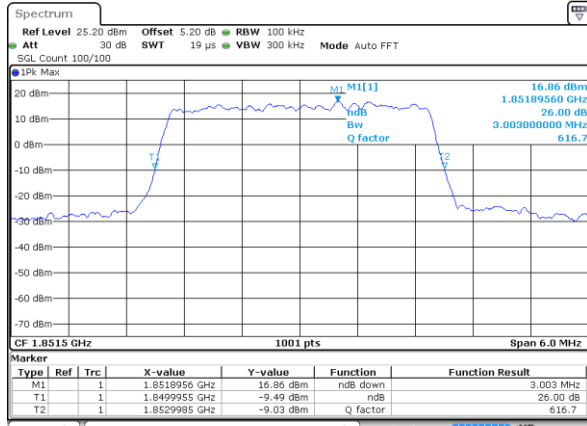


Date: 21 MAY 2018 22:52:08



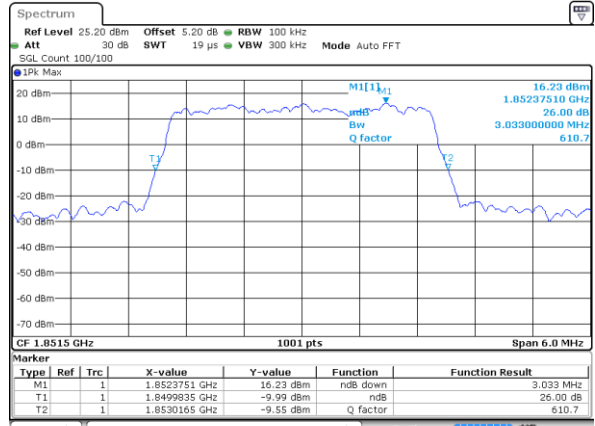
LTE Band 2

Lowest Channel / 3MHz / QPSK



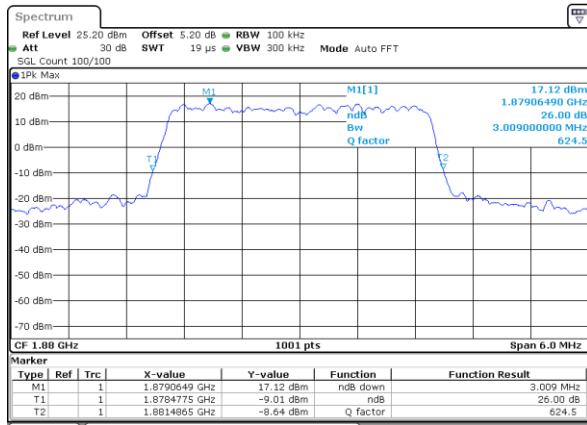
Date: 21 MAY 2018 22:59:03

Lowest Channel / 3MHz / 16QAM



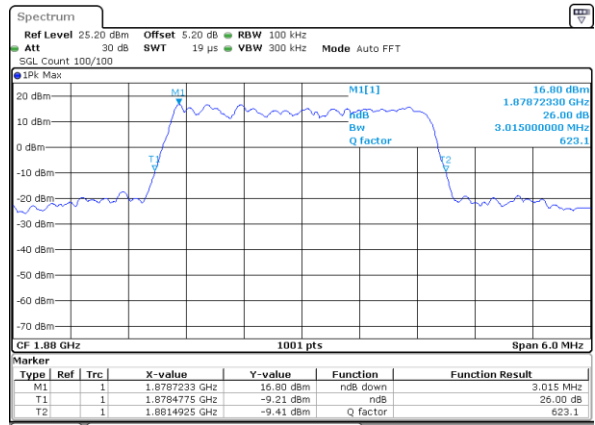
Date: 21 MAY 2018 22:59:13

Middle Channel / 3MHz / QPSK



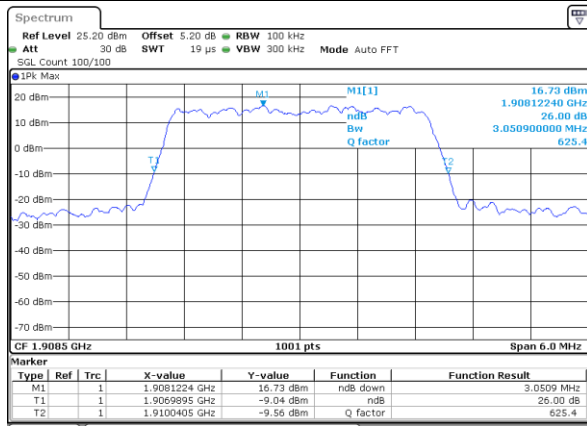
Date: 21 MAY 2018 23:06:08

Middle Channel / 3MHz / 16QAM



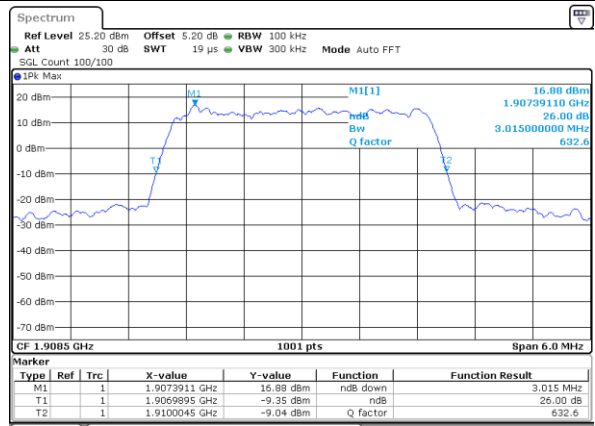
Date: 21 MAY 2018 23:06:19

Highest Channel / 3MHz / QPSK



Date: 21 MAY 2018 23:08:42

Highest Channel / 3MHz / 16QAM



Date: 21 MAY 2018 23:08:52