



# FCC RF Test Report

**APPLICANT** : Xiaomi Communications Co., Ltd.  
**EQUIPMENT** : Mobile Phone  
**BRAND NAME** : Xiaomi  
**MODEL NAME** : 23078PND5G  
**FCC ID** : 2AFZZND5G  
**STANDARD** : 47 CFR Part 2, 27(M), 27(H), 27(F)  
**CLASSIFICATION** : PCS Licensed Transmitter Held to Ear (PCE)  
**TEST DATE(S)** : May 23, 2023 ~ May 26, 2023

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

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

Jason Jia

Approved by: Jason Jia



**Sporton International Inc. (ShenZhen)**

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**People's Republic of China**



TABLE OF CONTENTS

REVISION HISTORY... 3
SUMMARY OF TEST RESULT ... 4
1 GENERAL DESCRIPTION ... 5
1.1 Applicant ... 5
1.2 Manufacturer ... 5
1.3 Product Feature of Equipment Under Test ... 5
1.4 Product Specification of Equipment Under Test ... 6
1.5 Modification of EUT ... 7
1.6 Maximum ERP/EIRP Power and Emission Designator ... 7
1.7 Testing Location ... 9
1.8 Test Software ... 9
1.9 Applicable Standards ... 9
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST ... 10
2.1 Test Mode ... 10
2.2 Connection Diagram of Test System ... 13
2.3 Support Unit used in test configuration and system ... 13
2.4 Measurement Results Explanation Example ... 13
2.5 Frequency List of Low/Middle/High Channels ... 14
3 CONDUCTED TEST ITEMS ... 18
3.1 Measuring Instruments ... 18
3.2 Test Setup ... 18
3.3 Test Result of Conducted Test ... 18
3.4 Conducted Output Power and ERP/EIRP ... 19
3.5 Peak-to-Average Ratio ... 20
3.6 Occupied Bandwidth ... 21
3.7 Conducted Band Edge ... 22
3.8 Conducted Spurious Emission ... 24
3.9 Frequency Stability ... 25
4 RADIATED TEST ITEMS ... 26
4.1 Measuring Instruments ... 26
4.2 Test Setup ... 26
4.3 Test Result of Radiated Test ... 27
4.4 Radiated Spurious Emission ... 28
5 LIST OF MEASURING EQUIPMENT ... 29
6 MEASUREMENT UNCERTAINTY ... 30
APPENDIX A. TEST RESULTS OF CONDUCTED TEST
APPENDIX B. TEST RESULTS OF RADIATED TEST
APPENDIX C. TEST SETUP PHOTOGRAPHS



### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG351205C	Rev. 01	Initial issue of report	Jun. 26, 2023



## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)	ERP < 3 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7) (Band 38) (Band 41)	EIRP < 2Watt		-
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §27.53(c)(2)(4) §27.53(g)	Conducted Band Edge Measurement (Band 12) (Band 13) (Band 17)	< 43+10log <sub>10</sub> (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §27.53(c)(2) §27.53(g)	Conducted Spurious Emission (Band 12) (Band 13) (Band 17)	< 43+10log <sub>10</sub> (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log <sub>10</sub> (P[Watts])		
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(c)(2) §27.53(f) §27.53(g)	Radiated Spurious Emission (Band 12) (Band 13) (Band 17)	< 43+10log <sub>10</sub> (P[Watts])	PASS	Under limit 13.42 dB at 1559.50 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log <sub>10</sub> (P[Watts])		

**Conformity Assessment Condition:**

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

**Disclaimer:**

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



# 1 General Description

## 1.1 Applicant

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

## 1.2 Manufacturer

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

## 1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Xiaomi
Model Name	23078PND5G
FCC ID	2AFZZND5G
IMEI Code	Conducted: 861585060038948/861585060038955/78 for LTE Band 12/17/7C/38C 861585060039540/861585060039557/78 for LTE Band 7/13/38/41 Radiation: 861585060042627/861585060042635
HW Version	P2.0
SW Version	MIUI 14
EUT Stage	Identical Prototype



### 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz
<b>Rx Frequency</b>	LTE Band 7 : 2620 MHz ~ 2690 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 17 : 734 MHz ~ 746 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz
<b>Bandwidth</b>	LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 38/41 : 5MHz / 10MHz / 15MHz / 20MHz
<b>CA</b>	CA_7C, CA_38C
<b>Maximum Output Power to Antenna</b>	<b>&lt;Ant. 0&gt;</b> LTE Band 12 : 24.56 dBm LTE Band 13 : 24.64 dBm LTE Band 17 : 24.51 dBm <b>&lt;Ant. 1&gt;</b> LTE Band 7 : 23.47 dBm LTE Band 12 : 23.74 dBm LTE Band 13 : 23.98 dBm LTE Band 17 : 23.70 dBm LTE Band 38 : 23.73 dBm LTE Band 41 : 23.81 dBm <b>&lt;Ant. 2&gt;</b> LTE Band 7 : 24.66 dBm LTE Band 38 : 25.26 dBm LTE Band 41 : 25.38 dBm <b>&lt;Ant. 3&gt;</b> LTE Band 7 : 22.66 dBm LTE Band 38 : 23.12 dBm LTE Band 41 : 23.25 dBm <b>&lt;Ant. 4&gt;</b> LTE Band 7 : 24.77 dBm; LTE Band 7C : 24.47 dBm LTE Band 38 : 25.27 dBm; LTE Band 38C : 24.93 dBm LTE Band 41 : 25.31 dBm
<b>Antenna Gain</b>	<b>&lt;Ant. 0&gt;</b> LTE Band 12/13/17 : -6.39 dBi <b>&lt;Ant. 1&gt;</b> LTE Band 12/13/17 : -7.80 dBi LTE Band 7/38/41 : -4.50 dBi <b>&lt;Ant. 2&gt;</b> LTE Band 7/38/41 : -4.70 dBi <b>&lt;Ant. 3&gt;</b> LTE Band 7/38/41 : -6.20 dBi <b>&lt;Ant. 4&gt;</b> LTE Band 7/38/41 : -1.50 dBi
<b>Type of Modulation</b>	QPSK / 16QAM / 64QAM / 256QAM



Remark:

1. WWAN Antenna 0/1/2/3/4 only support antenna switch, not support MIMO.
2. The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP of Ant.0 for LTE Band 12/13/17, and Ant.4 for LTE Band 7/38/41/7C/38C are shown in the report.

### 1.5 Modification of EUT

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

### 1.6 Maximum ERP/EIRP Power and Emission Designator

LTE Band 7		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2510.0 ~ 2560.0	0.2123	17M9G7D	0.1656	17M8W7D
LTE Band 12		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	704.0 ~ 711.0	0.0400	9M01G7D	0.0327	8M99W7D
LTE Band 13		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	782.0	0.0407	8M99G7D	0.0340	9M01W7D
LTE Band 17		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	709.0 ~ 711.0	0.0395	9M01G7D	0.0313	8M99W7D
LTE Band 38		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2580.0 ~ 2610.0	0.2382	17M9G7D	0.1910	17M9W7D
LTE Band 41		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2506.0 ~ 2680.0	0.2404	17M9G7D	0.2014	17M9W7D



LTE Band 7 CA	QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20MHz+20MHz	0.1633	37M6G7D	0.1496	37M5W7D
LTE Band 38 CA	QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20MHz+20MHz	0.2113	37M5G7D	0.1995	37M5W7D

Note:

1. LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results provided in this report covers Band 12 as well as Band 17.
2. LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.
3. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.





### 1.7 Testing Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

<b>Test Firm</b>	Sporton International Inc. (ShenZhen)		
<b>Test Site Location</b>	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People’s Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Designation No.</b>	<b>FCC Test Firm Registration No.</b>
	TH01-SZ	CN1256	421272

<b>Test Firm</b>	Sporton International Inc. (ShenZhen)		
<b>Test Site Location</b>	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Designation No.</b>	<b>FCC Test Firm Registration No.</b>
	03CH01-SZ	CN1256	421272

### 1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

### 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, 27(M), 27(H), 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. (X/Y/Z -Plane)

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel			
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H	
Max. Output Power	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	12	v	v	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
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	7	-	-				v	v	v	v				v		v		
	12				v	-	-	v	v	v				v		v		
	13	-	-		v	-	-	v	v	v				v		v		
	41	-	-				v	v	v	v				v		v		
26dB and 99% Bandwidth	7	-	-				v	v	v					v		v		
	12				v	-	-	v	v					v		v		
	13	-	-		v	-	-	v	v					v		v		
	41	-	-				v	v	v					v		v		
Conducted Band Edge	7	-	-	v	v	v	v	v	v	v		v		v	v		v	
	12	v	v	v	v	-	-	v	v	v		v		v	v		v	
	13	-	-	v	v	-	-	v	v	v		v		v	v		v	
	41	-	-	v	v	v	v	v	v	v		v		v	v		v	

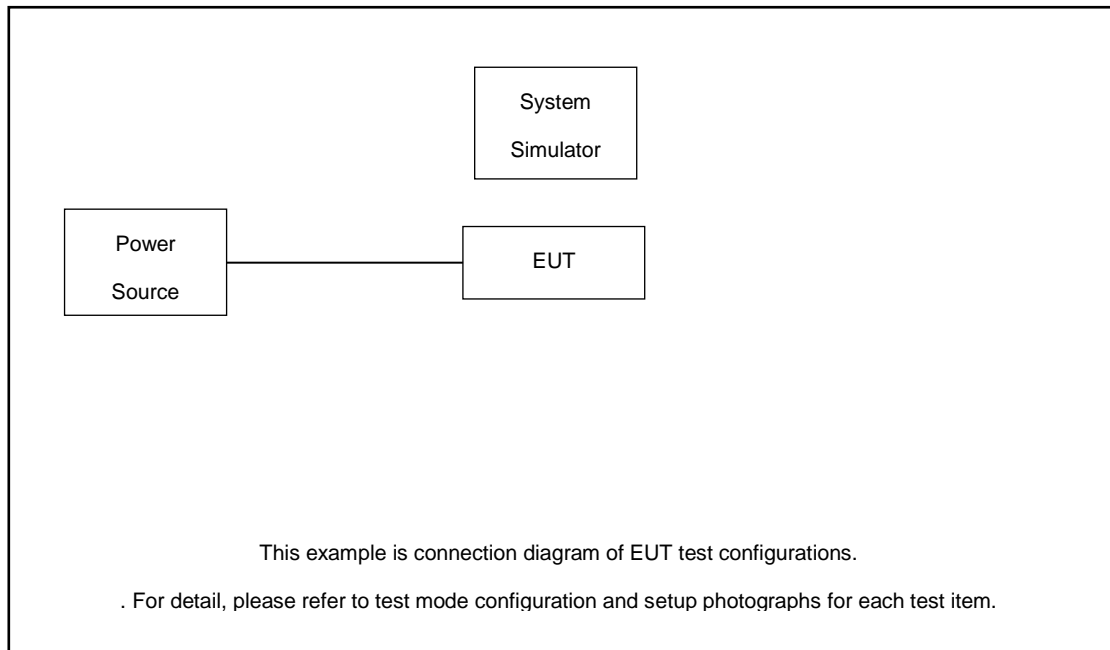


Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel			
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H	
Conducted Spurious Emission	7	-	-	v	v	v	v	v				v			v	v	v	
	12	v	v	v	v	-	-	v				v			v	v	v	
	13	-	-	v	v	-	-	v				v			v	v	v	
	41	-	-	v	v	v	v	v				v			v	v	v	
Frequency Stability	7	-	-		v			v						v		v		
	12				v	-	-	v						v		v		
	13	-	-		v	-	-	v						v		v		
	41	-	-		v			v						v		v		
E.R.P / E.I.R.P	7	-	-	v	v	v	v	v	v	v	v	v			v	v	v	
	12	v	v	v	v	-	-	v	v	v	v	v			v	v	v	
	13	-	-	v	v	-	-	v	v	v	v	v			v	v	v	
	17	-	-	v	v	-	-	v	v	v	v	v			v	v	v	
	38	-	-	v	v	v	v	v	v	v	v	v			v	v	v	
	41	-	-	v	v	v	v	v	v	v	v	v			v	v	v	
Radiated Spurious Emission	7	Worst Case															v	
	12	Worst Case															v	
	13	Worst Case															v	
	41	Worst Case															v	
Note	<ol style="list-style-type: none"> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>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.</li> <li>LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results provided in this report covers Band 12 as well as Band 17.</li> <li>LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.</li> </ol>																	



Test Items	Band	Bandwidth (MHz)										Modulation				RB #			Test Channel		
		20+20	20+15	15+20	20+10	10+20	20+5	5+20	15+15	15+10	10+15	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v		v	v	v	v
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	7C_CA	v					-	-			-	v	v					v		v	
	38C_CA	v	-	-	-	-	-	-		-	-	v	v					v		v	
Conducted Band Edge	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v		v		v	v		v
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v		v		v	v		v
Conducted Spurious Emission	7C_CA	v	v	v	v	v	-	-	v	v	-	v				v			v	v	v
	38C_CA	v	-	-	-	-	-	-	v	-	-	v				v			v	v	v
E.I.R.P.	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v	v			v	v	v
	38C_CA	v	-	-	-	-	-	-	v	-	-	v	v	v	v	v			v	v	v
Radiated Spurious Emission	7C_CA	Worst Case																		v	
	38C_CA	Worst Case																		v	
Note	1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.																				

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8821C	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 and attenuator factor 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 and attenuator factor.

$$\text{Offset} = \text{RF cable loss} + \text{attenuator factor}.$$

Following shows an offset computation example with cable loss 5.0 dB and 10dB attenuator.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 5.0 + 10 = 15.0 \text{ (dB)} \end{aligned}$$



### 2.5 Frequency List of Low/Middle/High Channels

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

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

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



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

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

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



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





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

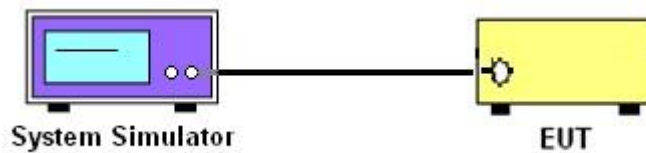
### 3 Conducted Test Items

#### 3.1 Measuring Instruments

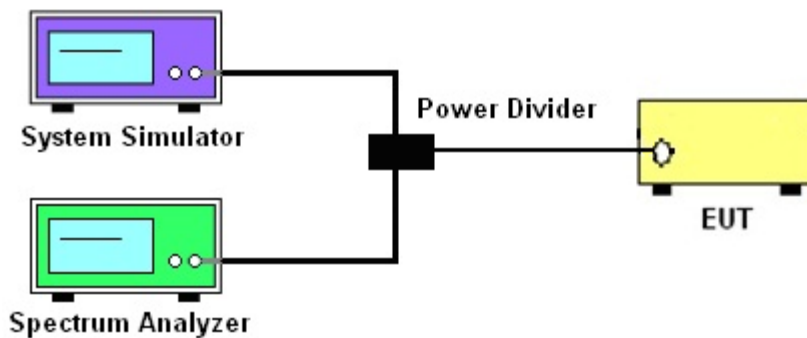
See list of measuring instruments of this test report.

#### 3.2 Test Setup

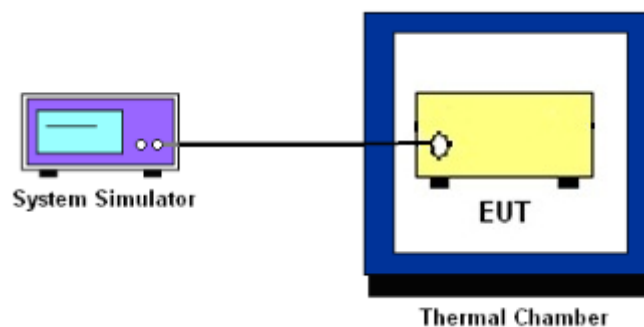
##### 3.2.1 Conducted Output Power



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



##### 3.2.3 Frequency Stability



### 3.3 Test Result of Conducted Test

Please refer to Appendix A.



### 3.4 Conducted Output Power and ERP/EIRP

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

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

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 17.

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

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

27.53 (c)

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

27.53 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53(m)(4)

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



### 3.7.2 Test Procedures

1. The testing follows 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 + 10log(P)] (dB)  
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

9. For LTE Band 7, 38, 41, the other 40 dB, and 55 dB have additionally applied same calculation above.
10. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.



### 3.8 Conducted Spurious Emission

#### 3.8.1 Description of Conducted Spurious Emission Measurement

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

For Band 7,38,41:

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

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

#### 3.8.2 Test Procedures

1. The testing follows 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, 38, 41  
The limit line is derived from  $55 + 10\log(P)$ dB below the transmitter power P(Watts)  
 $= P(W) - [55 + 10\log(P)]$  (dB)  
 $= [30 + 10\log(P)]$  (dBm) -  $[55 + 10\log(P)]$  (dB)  
 $= -25$ dBm.





## 3.9 Frequency Stability

### 3.9.1 Description of Frequency Stability Measurement

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

### 3.9.2 Test Procedures for Temperature Variation

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

### 3.9.3 Test Procedures for Voltage Variation

1. The testing follows 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.

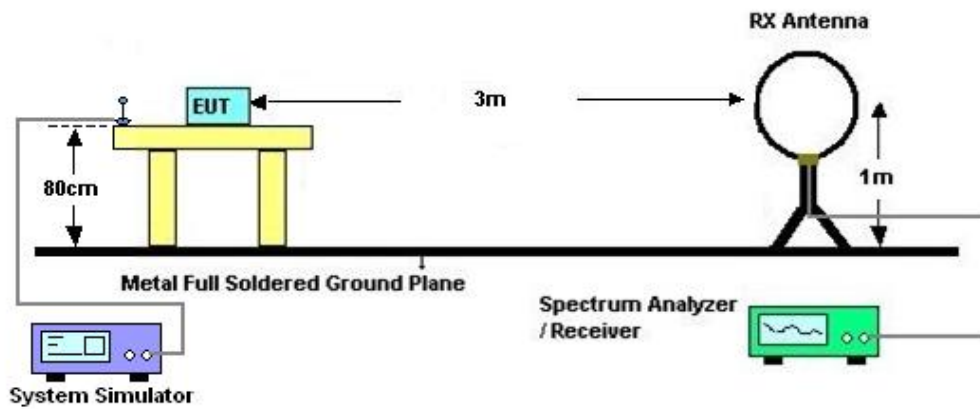
## 4 Radiated Test Items

### 4.1 Measuring Instruments

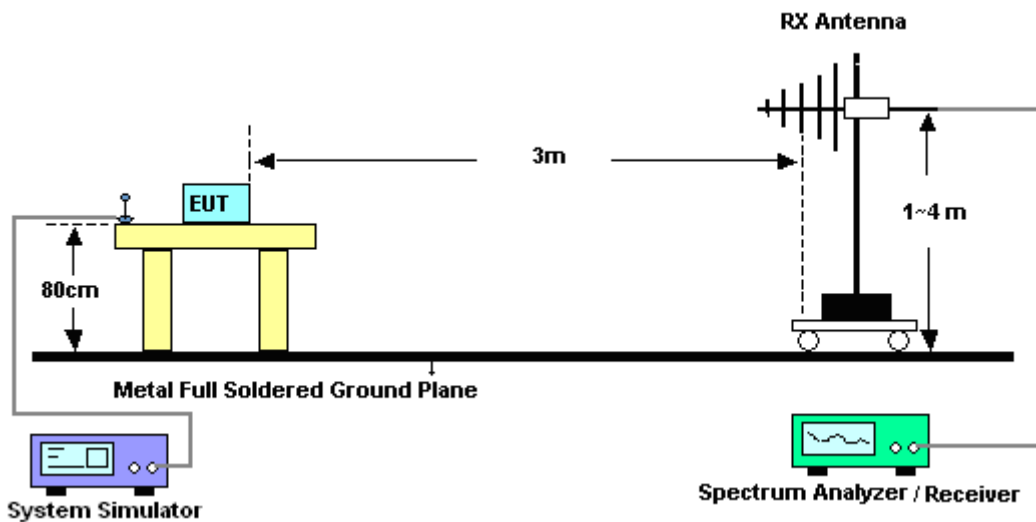
See list of measuring instruments of this test report.

### 4.2 Test Setup

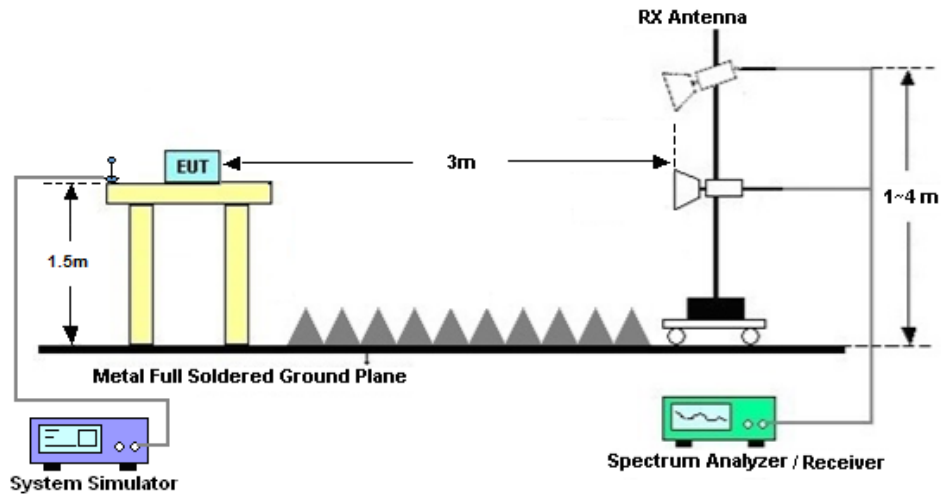
#### 4.2.1 For radiated test below 30MHz



#### 4.2.2 For radiated test from 30MHz to 1GHz



#### 4.2.3 For radiated test above 1GHz



#### 4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.



## 4.4 Radiated Spurious Emission

### 4.4.1 Description of Radiated Spurious Emission

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

For Band 7, 38, 41

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

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, 38, 41:  
The limit line is derived from  $55 + 10\log(P)$ dB below the transmitter power P(Watts)



## 5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 06, 2023	May 23, 2023~ May 26, 2023	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2022	May 23, 2023~ May 26, 2023	Dec. 24, 2023	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 07, 2022	May 23, 2023~ May 26, 2023	Jul. 06, 2023	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 26, 2022	May 23, 2023	Dec. 25, 2023	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	May 23, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	May 23, 2023	Jul. 27, 2024	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Sep. 28, 2022	May 23, 2023	Sep. 27, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	May 23, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz~40GHz	Apr. 08, 2023	May 23, 2023	Apr. 07, 2024	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 04, 2023	May 23, 2023	Apr. 03, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 19, 2022	May 23, 2023	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	May 23, 2023	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 06, 2022	May 23, 2023	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Nov. 10, 2022	May 23, 2023	Nov. 09, 2023	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 23, 2023	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 23, 2023	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required



## 6 Measurement Uncertainty

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

### Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±1.34 dB
Conducted Emissions	±1.34 dB
Occupied Channel Bandwidth	±0.13 %

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48dB
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53dB
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### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.02dB
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----- THE END -----



### Appendix A. Test Results of Conducted Test

Test Engineer :	Jason Zhang	Temperature :	24~26°C
		Relative Humidity :	50~53%

### Conducted Output Power(Average power)

#### LTE Band 7\_Ant.4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20850	21100	21350
Frequency (MHz)				2510	2535	2560
20	QPSK	1	0	24.72	24.77	24.68
20	QPSK	1	49	24.65	24.69	24.60
20	QPSK	1	99	24.61	24.64	24.51
20	QPSK	50	0	23.66	23.76	23.63
20	QPSK	50	24	23.61	23.70	23.62
20	QPSK	50	50	23.53	23.65	23.60
20	QPSK	100	0	23.64	23.71	23.65
20	16QAM	1	0	23.66	23.69	23.58
20	16QAM	1	49	23.54	23.63	23.57
20	16QAM	1	99	23.54	23.59	23.46
20	16QAM	50	0	22.75	22.85	22.73
20	16QAM	50	24	22.71	22.77	22.70
20	16QAM	50	50	22.77	22.81	22.74
20	16QAM	100	0	22.61	22.75	22.64
20	64QAM	1	0	22.84	22.91	22.85
20	64QAM	1	49	22.82	22.85	22.77
20	64QAM	1	99	22.76	22.81	22.75
20	64QAM	50	0	21.70	21.78	21.70
20	64QAM	50	24	21.62	21.69	21.62
20	64QAM	50	50	21.68	21.74	21.66
20	64QAM	100	0	21.60	21.66	21.52
20	256QAM	1	0	19.74	19.86	19.74
20	256QAM	1	49	19.69	19.83	19.68
20	256QAM	1	99	19.66	19.78	19.73
20	256QAM	50	0	19.80	19.83	19.78
20	256QAM	50	24	19.59	19.73	19.66
20	256QAM	50	50	19.65	19.79	19.69
20	256QAM	100	0	19.70	19.75	19.62
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535	2562.5
15	QPSK	1	0	24.65	24.72	24.60
15	QPSK	1	37	24.57	24.61	24.46
15	QPSK	1	74	24.51	24.50	24.39
15	QPSK	36	0	23.57	23.61	23.57
15	QPSK	36	20	23.57	23.61	23.55



15	QPSK	36	39	23.43	23.60	23.53
15	QPSK	75	0	23.60	23.66	23.58
15	16QAM	1	0	23.60	23.58	23.52
15	16QAM	1	37	23.48	23.51	23.48
15	16QAM	1	74	23.41	23.53	23.38
15	16QAM	36	0	22.71	22.73	22.66
15	16QAM	36	20	22.65	22.64	22.63
15	16QAM	36	39	22.70	22.70	22.68
15	16QAM	75	0	22.54	22.65	22.55
15	64QAM	1	0	22.71	22.83	22.72
15	64QAM	1	37	22.75	22.77	22.70
15	64QAM	1	74	22.71	22.67	22.69
15	64QAM	36	0	21.64	21.65	21.58
15	64QAM	36	20	21.54	21.65	21.51
15	64QAM	36	39	21.57	21.63	21.56
15	64QAM	75	0	21.49	21.58	21.41
15	256QAM	1	0	19.65	19.83	19.62
15	256QAM	1	37	19.65	19.76	19.63
15	256QAM	1	74	19.59	19.65	19.65
15	256QAM	36	0	19.67	19.77	19.67
15	256QAM	36	20	19.48	19.67	19.54
15	256QAM	36	39	19.50	19.75	19.57
15	256QAM	75	0	19.64	19.67	19.51
Channel				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	24.67	24.69	24.64
10	QPSK	1	25	24.54	24.59	24.46
10	QPSK	1	49	24.50	24.60	24.48
10	QPSK	25	0	23.59	23.64	23.57
10	QPSK	25	12	23.52	23.62	23.47
10	QPSK	25	25	23.49	23.51	23.47
10	QPSK	50	0	23.58	23.68	23.58
10	16QAM	1	0	23.56	23.58	23.53
10	16QAM	1	25	23.45	23.50	23.52
10	16QAM	1	49	23.43	23.49	23.36
10	16QAM	25	0	22.69	22.73	22.58
10	16QAM	25	12	22.59	22.66	22.58
10	16QAM	25	25	22.67	22.73	22.69
10	16QAM	50	0	22.52	22.70	22.57
10	64QAM	1	0	22.71	22.80	22.74
10	64QAM	1	25	22.69	22.71	22.71
10	64QAM	1	49	22.69	22.73	22.69
10	64QAM	25	0	21.64	21.74	21.57
10	64QAM	25	12	21.57	21.64	21.51
10	64QAM	25	25	21.57	21.67	21.58
10	64QAM	50	0	21.49	21.57	21.46
10	256QAM	1	0	19.69	19.77	19.69
10	256QAM	1	25	19.55	19.78	19.62
10	256QAM	1	49	19.53	19.72	19.65
10	256QAM	25	0	19.74	19.77	19.63





10	256QAM	25	12	19.56	19.59	19.61
10	256QAM	25	25	19.54	19.75	19.54
10	256QAM	50	0	19.66	19.70	19.55
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	24.69	24.68	24.60
5	QPSK	1	12	24.54	24.55	24.48
5	QPSK	1	24	24.58	24.60	24.45
5	QPSK	12	0	23.53	23.69	23.54
5	QPSK	12	7	23.57	23.59	23.50
5	QPSK	12	13	23.42	23.59	23.48
5	QPSK	25	0	23.53	23.61	23.57
5	16QAM	1	0	23.57	23.60	23.51
5	16QAM	1	12	23.45	23.59	23.46
5	16QAM	1	24	23.42	23.51	23.31
5	16QAM	12	0	22.66	22.77	22.66
5	16QAM	12	7	22.59	22.74	22.60
5	16QAM	12	13	22.72	22.68	22.60
5	16QAM	25	0	22.52	22.63	22.53
5	64QAM	1	0	22.78	22.77	22.78
5	64QAM	1	12	22.79	22.72	22.68
5	64QAM	1	24	22.66	22.70	22.68
5	64QAM	12	0	21.62	21.64	21.62
5	64QAM	12	7	21.53	21.56	21.53
5	64QAM	12	13	21.55	21.61	21.57
5	64QAM	25	0	21.53	21.52	21.37
5	256QAM	1	0	19.62	19.73	19.65
5	256QAM	1	12	19.57	19.75	19.56
5	256QAM	1	24	19.60	19.71	19.64
5	256QAM	12	0	19.67	19.69	19.74
5	256QAM	12	7	19.51	19.65	19.53
5	256QAM	12	13	19.54	19.74	19.58
5	256QAM	25	0	19.60	19.60	19.51



LTE Band 12\_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	QPSK	1	0	24.50	24.56	24.44
10	QPSK	1	25	24.37	24.44	24.40
10	QPSK	1	49	24.40	24.50	24.45
10	QPSK	25	0	23.70	23.74	23.63
10	QPSK	25	12	23.63	23.67	23.61
10	QPSK	25	25	23.49	23.64	23.58
10	QPSK	50	0	23.55	23.69	23.55
10	16QAM	1	0	23.47	23.62	23.56
10	16QAM	1	25	23.59	23.68	23.62
10	16QAM	1	49	23.54	23.57	23.48
10	16QAM	25	0	22.55	22.65	22.62
10	16QAM	25	12	22.61	22.66	22.52
10	16QAM	25	25	22.44	22.51	22.44
10	16QAM	50	0	22.84	22.91	22.86
10	64QAM	1	0	22.54	22.66	22.54
10	64QAM	1	25	22.60	22.68	22.54
10	64QAM	1	49	22.70	22.76	22.61
10	64QAM	25	0	21.48	21.59	21.55
10	64QAM	25	12	21.81	21.86	21.84
10	64QAM	25	25	21.60	21.75	21.65
10	64QAM	50	0	21.90	22.04	21.92
10	256QAM	1	0	20.00	20.13	19.99
10	256QAM	1	25	19.81	19.92	19.88
10	256QAM	1	49	20.05	20.17	20.05
10	256QAM	25	0	19.47	19.55	19.52
10	256QAM	25	12	19.80	19.84	19.70
10	256QAM	25	25	19.60	19.72	19.67
10	256QAM	50	0	19.85	19.89	19.85
Channel				23035	23095	23155
Frequency (MHz)				701.5	707.5	713.5
5	QPSK	1	0	24.42	24.45	24.36
5	QPSK	1	12	24.34	24.34	24.33
5	QPSK	1	24	24.27	24.38	24.37
5	QPSK	12	0	23.57	23.65	23.55
5	QPSK	12	7	23.51	23.63	23.54
5	QPSK	12	13	23.39	23.55	23.50
5	QPSK	25	0	23.44	23.56	23.40
5	16QAM	1	0	23.36	23.53	23.49
5	16QAM	1	12	23.47	23.61	23.58
5	16QAM	1	24	23.39	23.51	23.36
5	16QAM	12	0	22.48	22.54	22.55
5	16QAM	12	7	22.49	22.51	22.46
5	16QAM	12	13	22.31	22.48	22.41
5	16QAM	25	0	22.74	22.85	22.73



5	64QAM	1	0	22.45	22.62	22.41
5	64QAM	1	12	22.50	22.65	22.48
5	64QAM	1	24	22.60	22.63	22.54
5	64QAM	12	0	21.42	21.55	21.41
5	64QAM	12	7	21.71	21.80	21.79
5	64QAM	12	13	21.53	21.68	21.51
5	64QAM	25	0	21.85	21.97	21.77
5	256QAM	1	0	19.88	19.99	19.89
5	256QAM	1	12	19.76	19.81	19.75
5	256QAM	1	24	19.97	20.14	19.91
5	256QAM	12	0	19.41	19.42	19.39
5	256QAM	12	7	19.66	19.74	19.57
5	256QAM	12	13	19.45	19.59	19.61
5	256QAM	25	0	19.71	19.85	19.78
Channel				23025	23095	23165
Frequency (MHz)				700.5	707.5	714.5
3	QPSK	1	0	24.40	24.52	24.41
3	QPSK	1	8	24.34	24.34	24.34
3	QPSK	1	14	24.36	24.40	24.36
3	QPSK	8	0	23.66	23.65	23.49
3	QPSK	8	4	23.55	23.59	23.58
3	QPSK	8	7	23.39	23.52	23.53
3	QPSK	15	0	23.50	23.62	23.48
3	16QAM	1	0	23.38	23.49	23.49
3	16QAM	1	8	23.47	23.53	23.55
3	16QAM	1	14	23.45	23.43	23.35
3	16QAM	8	0	22.45	22.58	22.59
3	16QAM	8	4	22.47	22.59	22.48
3	16QAM	8	7	22.39	22.40	22.40
3	16QAM	15	0	22.77	22.77	22.79
3	64QAM	1	0	22.44	22.57	22.41
3	64QAM	1	8	22.56	22.58	22.39
3	64QAM	1	14	22.59	22.73	22.52
3	64QAM	8	0	21.44	21.55	21.43
3	64QAM	8	4	21.77	21.83	21.78
3	64QAM	8	7	21.49	21.61	21.52
3	64QAM	15	0	21.79	22.00	21.83
3	256QAM	1	0	19.86	20.01	19.89
3	256QAM	1	8	19.67	19.80	19.77
3	256QAM	1	14	19.96	20.04	19.92
3	256QAM	8	0	19.43	19.50	19.43
3	256QAM	8	4	19.72	19.70	19.59
3	256QAM	8	7	19.48	19.59	19.53
3	256QAM	15	0	19.81	19.81	19.81
Channel				23017	23095	23173
Frequency (MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	24.41	24.49	24.33
1.4	QPSK	1	3	24.34	24.38	24.25
1.4	QPSK	1	5	24.35	24.41	24.38
1.4	QPSK	3	0	24.40	24.44	24.36



1.4	QPSK	3	1	24.25	24.35	24.30
1.4	QPSK	3	3	24.30	24.41	24.32
1.4	QPSK	6	0	23.58	23.69	23.54
1.4	16QAM	1	0	23.51	23.54	23.53
1.4	16QAM	1	3	23.39	23.52	23.52
1.4	16QAM	1	5	23.46	23.59	23.47
1.4	16QAM	3	0	23.42	23.48	23.47
1.4	16QAM	3	1	23.50	23.59	23.56
1.4	16QAM	3	3	23.44	23.48	23.35
1.4	16QAM	6	0	22.51	22.61	22.47
1.4	64QAM	1	0	22.49	22.54	22.44
1.4	64QAM	1	3	22.40	22.43	22.36
1.4	64QAM	1	5	22.45	22.50	22.42
1.4	64QAM	3	0	22.47	22.59	22.47
1.4	64QAM	3	1	22.50	22.60	22.47
1.4	64QAM	3	3	22.59	22.62	22.55
1.4	64QAM	6	0	21.56	21.62	21.59
1.4	256QAM	1	0	19.89	19.98	19.85
1.4	256QAM	1	3	19.69	19.89	19.74
1.4	256QAM	1	5	19.91	20.03	19.93
1.4	256QAM	3	0	19.39	19.46	19.46
1.4	256QAM	3	1	19.70	19.73	19.57
1.4	256QAM	3	3	19.56	19.68	19.58
1.4	256QAM	6	0	19.79	19.76	19.73



LTE Band 13\_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23230		
Frequency (MHz)				782		
10	QPSK	1	0		24.64	
10	QPSK	1	25		24.59	
10	QPSK	1	49		24.52	
10	QPSK	25	0		23.98	
10	QPSK	25	12		23.91	
10	QPSK	25	25		23.77	
10	QPSK	50	0		23.90	
10	16QAM	1	0		23.86	
10	16QAM	1	25		23.81	
10	16QAM	1	49		23.78	
10	16QAM	25	0		22.77	
10	16QAM	25	12		22.92	
10	16QAM	25	25		22.71	
10	16QAM	50	0		22.88	
10	64QAM	1	0		23.08	
10	64QAM	1	25		22.99	
10	64QAM	1	49		22.94	
10	64QAM	25	0		21.60	
10	64QAM	25	12		21.89	
10	64QAM	25	25		21.61	
10	64QAM	50	0		21.80	
10	256QAM	1	0		19.95	
10	256QAM	1	25		20.02	
10	256QAM	1	49		19.93	
10	256QAM	25	0		19.69	
10	256QAM	25	12		19.91	
10	256QAM	25	25		19.72	
10	256QAM	50	0		19.82	
Channel				23205	23230	23255
Frequency (MHz)				779.5	782	784.5
5	QPSK	1	0	24.51	24.59	24.54
5	QPSK	1	12	24.31	24.45	24.40
5	QPSK	1	24	24.26	24.38	24.33
5	QPSK	12	0	23.74	23.87	23.79
5	QPSK	12	7	23.69	23.77	23.70
5	QPSK	12	13	23.56	23.68	23.64
5	QPSK	25	0	23.65	23.76	23.73
5	16QAM	1	0	23.70	23.82	23.69
5	16QAM	1	12	23.64	23.72	23.60
5	16QAM	1	24	23.58	23.72	23.63
5	16QAM	12	0	22.58	22.71	22.62
5	16QAM	12	7	22.73	22.82	22.76
5	16QAM	12	13	22.54	22.61	22.58
5	16QAM	25	0	22.70	22.82	22.76



5	64QAM	1	0	23.00	23.04	22.93
5	64QAM	1	12	22.82	22.92	22.82
5	64QAM	1	24	22.72	22.86	22.77
5	64QAM	12	0	21.42	21.47	21.34
5	64QAM	12	7	21.69	21.74	21.62
5	64QAM	12	13	21.45	21.54	21.43
5	64QAM	25	0	21.70	21.74	21.63
5	256QAM	1	0	19.76	19.83	19.69
5	256QAM	1	12	19.90	19.98	19.86
5	256QAM	1	24	19.70	19.81	19.74
5	256QAM	12	0	19.54	19.61	19.59
5	256QAM	12	7	19.69	19.80	19.68
5	256QAM	12	13	19.55	19.64	19.57
5	256QAM	25	0	19.60	19.74	19.63



LTE Band 17\_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	24.43	24.51	24.46
10	QPSK	1	25	24.31	24.40	24.36
10	QPSK	1	49	24.38	24.47	24.33
10	QPSK	25	0	23.64	23.68	23.57
10	QPSK	25	12	23.45	23.59	23.46
10	QPSK	25	25	23.34	23.46	23.34
10	QPSK	50	0	23.48	23.59	23.49
10	16QAM	1	0	23.46	23.50	23.42
10	16QAM	1	25	23.29	23.42	23.32
10	16QAM	1	49	23.21	23.34	23.26
10	16QAM	25	0	22.58	22.73	22.62
10	16QAM	25	12	22.69	22.72	22.58
10	16QAM	25	25	22.65	22.73	22.62
10	16QAM	50	0	22.67	22.79	22.73
10	64QAM	1	0	22.43	22.50	22.41
10	64QAM	1	25	22.50	22.54	22.48
10	64QAM	1	49	22.26	22.32	22.21
10	64QAM	25	0	21.59	21.66	21.59
10	64QAM	25	12	21.68	21.77	21.66
10	64QAM	25	25	21.50	21.56	21.49
10	64QAM	50	0	21.59	21.66	21.62
10	256QAM	1	0	19.82	19.92	19.81
10	256QAM	1	25	19.83	19.89	19.78
10	256QAM	1	49	19.59	19.70	19.66
10	256QAM	25	0	19.47	19.58	19.45
10	256QAM	25	12	19.52	19.60	19.56
10	256QAM	25	25	19.50	19.54	19.43
10	256QAM	50	0	19.60	19.67	19.56
Channel				23755	23790	23825
Frequency (MHz)				706.5	710	713.5
5	QPSK	1	0	24.39	24.45	24.43
5	QPSK	1	12	24.24	24.35	24.25
5	QPSK	1	24	24.35	24.35	24.22
5	QPSK	12	0	23.59	23.61	23.49
5	QPSK	12	7	23.40	23.47	23.39
5	QPSK	12	13	23.28	23.42	23.25
5	QPSK	25	0	23.44	23.55	23.39
5	16QAM	1	0	23.32	23.45	23.31
5	16QAM	1	12	23.20	23.32	23.26
5	16QAM	1	24	23.07	23.29	23.22
5	16QAM	12	0	22.54	22.61	22.51
5	16QAM	12	7	22.66	22.59	22.54
5	16QAM	12	13	22.58	22.59	22.51
5	16QAM	25	0	22.57	22.67	22.63



5	64QAM	1	0	22.38	22.37	22.37
5	64QAM	1	12	22.41	22.46	22.37
5	64QAM	1	24	22.22	22.27	22.16
5	64QAM	12	0	21.44	21.58	21.53
5	64QAM	12	7	21.60	21.70	21.54
5	64QAM	12	13	21.37	21.51	21.39
5	64QAM	25	0	21.44	21.57	21.49
5	256QAM	1	0	19.76	19.79	19.69
5	256QAM	1	12	19.72	19.75	19.66
5	256QAM	1	24	19.48	19.59	19.53
5	256QAM	12	0	19.37	19.48	19.32
5	256QAM	12	7	19.39	19.47	19.43
5	256QAM	12	13	19.44	19.48	19.33
5	256QAM	25	0	19.56	19.63	19.52





LTE Band 38\_Ant.4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				37850	38000	38150
Frequency (MHz)				2580	2595	2610
20	QPSK	1	0	25.21	25.27	25.12
20	QPSK	1	49	25.11	25.23	25.10
20	QPSK	1	99	25.05	25.16	25.02
20	QPSK	50	0	24.16	24.28	24.21
20	QPSK	50	24	24.19	24.22	24.15
20	QPSK	50	50	24.16	24.23	24.10
20	QPSK	100	0	24.16	24.24	24.13
20	16QAM	1	0	24.26	24.31	24.22
20	16QAM	1	49	24.08	24.22	24.08
20	16QAM	1	99	24.04	24.10	24.02
20	16QAM	50	0	23.21	23.28	23.20
20	16QAM	50	24	23.27	23.30	23.24
20	16QAM	50	50	23.20	23.34	23.29
20	16QAM	100	0	23.16	23.23	23.18
20	64QAM	1	0	23.18	23.31	23.18
20	64QAM	1	49	23.08	23.19	23.13
20	64QAM	1	99	23.05	23.17	23.05
20	64QAM	50	0	22.23	22.28	22.15
20	64QAM	50	24	22.18	22.25	22.12
20	64QAM	50	50	22.21	22.29	22.19
20	64QAM	100	0	22.13	22.17	22.13
20	256QAM	1	0	20.23	20.26	20.19
20	256QAM	1	49	20.11	20.16	20.09
20	256QAM	1	99	20.00	20.07	19.95
20	256QAM	50	0	20.05	20.12	20.02
20	256QAM	50	24	20.00	20.10	20.04
20	256QAM	50	50	20.14	20.18	20.08
20	256QAM	100	0	20.05	20.17	20.03
Channel				37825	38000	38175
Frequency (MHz)				2577.5	2595	2612.5
15	QPSK	1	0	25.17	25.21	25.06
15	QPSK	1	37	25.02	25.20	24.99
15	QPSK	1	74	24.94	25.05	24.94
15	QPSK	36	0	24.07	24.22	24.12
15	QPSK	36	20	24.08	24.12	24.11
15	QPSK	36	39	24.10	24.12	23.97
15	QPSK	75	0	24.10	24.14	24.08
15	16QAM	1	0	24.20	24.24	24.17
15	16QAM	1	37	23.97	24.09	24.01
15	16QAM	1	74	23.91	24.00	23.90
15	16QAM	36	0	23.07	23.22	23.05
15	16QAM	36	20	23.19	23.18	23.13
15	16QAM	36	39	23.10	23.21	23.18
15	16QAM	75	0	23.07	23.15	23.11



15	64QAM	1	0	23.04	23.18	23.10
15	64QAM	1	37	23.03	23.11	23.07
15	64QAM	1	74	22.92	23.04	22.93
15	64QAM	36	0	22.12	22.23	22.11
15	64QAM	36	20	22.08	22.10	22.03
15	64QAM	36	39	22.13	22.15	22.14
15	64QAM	75	0	22.06	22.10	22.04
15	256QAM	1	0	20.14	20.14	20.05
15	256QAM	1	37	19.98	20.13	19.96
15	256QAM	1	74	19.96	19.96	19.82
15	256QAM	36	0	19.99	20.02	19.97
15	256QAM	36	20	19.89	19.99	19.97
15	256QAM	36	39	20.01	20.05	19.99
15	256QAM	75	0	19.99	20.13	19.98
Channel				37800	38000	38200
Frequency (MHz)				2575	2595	2615
10	QPSK	1	0	25.16	25.18	24.98
10	QPSK	1	25	25.00	25.08	25.03
10	QPSK	1	49	24.93	25.04	24.93
10	QPSK	25	0	24.07	24.22	24.17
10	QPSK	25	12	24.12	24.09	24.02
10	QPSK	25	25	24.08	24.17	24.06
10	QPSK	50	0	24.07	24.21	24.02
10	16QAM	1	0	24.23	24.24	24.14
10	16QAM	1	25	23.93	24.17	24.05
10	16QAM	1	49	24.00	23.98	23.88
10	16QAM	25	0	23.16	23.21	23.10
10	16QAM	25	12	23.21	23.15	23.15
10	16QAM	25	25	23.15	23.22	23.17
10	16QAM	50	0	23.10	23.12	23.05
10	64QAM	1	0	23.12	23.22	23.05
10	64QAM	1	25	23.01	23.12	22.99
10	64QAM	1	49	22.92	23.06	22.92
10	64QAM	25	0	22.16	22.24	22.05
10	64QAM	25	12	22.06	22.15	22.04
10	64QAM	25	25	22.10	22.20	22.14
10	64QAM	50	0	22.00	22.03	22.06
10	256QAM	1	0	20.11	20.11	20.08
10	256QAM	1	25	19.98	20.02	19.95
10	256QAM	1	49	19.90	19.92	19.91
10	256QAM	25	0	19.95	19.99	19.88
10	256QAM	25	12	19.92	20.00	20.00
10	256QAM	25	25	20.09	20.14	20.03
10	256QAM	50	0	19.93	20.13	19.97
Channel				37775	38000	38225
Frequency (MHz)				2572.5	2595	2617.5
5	QPSK	1	0	25.17	25.19	25.02
5	QPSK	1	12	25.08	25.15	25.02
5	QPSK	1	24	24.99	25.06	24.91
5	QPSK	12	0	24.06	24.17	24.11



5	QPSK	12	7	24.13	24.11	24.00
5	QPSK	12	13	24.02	24.15	24.04
5	QPSK	25	0	24.09	24.13	24.03
5	16QAM	1	0	24.14	24.17	24.11
5	16QAM	1	12	23.99	24.13	23.93
5	16QAM	1	24	23.99	23.95	23.88
5	16QAM	12	0	23.18	23.18	23.11
5	16QAM	12	7	23.12	23.22	23.15
5	16QAM	12	13	23.09	23.28	23.20
5	16QAM	25	0	23.07	23.17	23.09
5	64QAM	1	0	23.07	23.20	23.12
5	64QAM	1	12	22.95	23.13	23.03
5	64QAM	1	24	22.99	23.02	22.91
5	64QAM	12	0	22.17	22.15	22.07
5	64QAM	12	7	22.06	22.13	22.02
5	64QAM	12	13	22.13	22.15	22.12
5	64QAM	25	0	22.10	22.04	22.09
5	256QAM	1	0	20.09	20.23	20.11
5	256QAM	1	12	19.97	20.12	20.01
5	256QAM	1	24	19.88	19.94	19.88
5	256QAM	12	0	19.98	19.99	19.98
5	256QAM	12	7	19.85	19.98	19.94
5	256QAM	12	13	20.06	20.09	19.96
5	256QAM	25	0	19.92	20.06	19.91



LTE Band 41\_Ant.4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				39750	40620	41490
Frequency (MHz)				2506	2593	2680
20	QPSK	1	0	25.16	25.31	25.20
20	QPSK	1	49	25.11	25.23	25.09
20	QPSK	1	99	25.05	25.18	25.05
20	QPSK	50	0	24.36	24.43	24.35
20	QPSK	50	24	24.32	24.37	24.31
20	QPSK	50	50	24.23	24.32	24.19
20	QPSK	100	0	24.29	24.33	24.21
20	16QAM	1	0	24.44	24.54	24.49
20	16QAM	1	49	24.37	24.48	24.42
20	16QAM	1	99	24.35	24.44	24.32
20	16QAM	50	0	23.27	23.35	23.31
20	16QAM	50	24	23.19	23.27	23.18
20	16QAM	50	50	23.22	23.31	23.18
20	16QAM	100	0	23.21	23.25	23.14
20	64QAM	1	0	22.89	23.01	22.90
20	64QAM	1	49	22.86	22.95	22.87
20	64QAM	1	99	22.83	22.91	22.78
20	64QAM	50	0	22.36	22.42	22.37
20	64QAM	50	24	22.25	22.33	22.27
20	64QAM	50	50	22.27	22.38	22.34
20	64QAM	100	0	22.15	22.30	22.16
20	256QAM	1	0	20.27	20.32	20.19
20	256QAM	1	49	20.23	20.29	20.19
20	256QAM	1	99	20.16	20.24	20.17
20	256QAM	50	0	20.19	20.23	20.15
20	256QAM	50	24	19.98	20.13	20.07
20	256QAM	50	50	20.14	20.19	20.14
20	256QAM	100	0	20.12	20.21	20.15
Channel				39725	40620	41515
Frequency (MHz)				2503.5	2593	2682.5
15	QPSK	1	0	25.13	25.26	25.09
15	QPSK	1	37	25.01	25.14	25.02
15	QPSK	1	74	24.95	25.06	24.91
15	QPSK	36	0	24.30	24.39	24.30
15	QPSK	36	20	24.22	24.26	24.18
15	QPSK	36	39	24.08	24.23	24.08
15	QPSK	75	0	24.24	24.18	24.11
15	16QAM	1	0	24.34	24.48	24.36
15	16QAM	1	37	24.30	24.33	24.38
15	16QAM	1	74	24.24	24.29	24.21
15	16QAM	36	0	23.19	23.27	23.18
15	16QAM	36	20	23.11	23.14	23.12
15	16QAM	36	39	23.17	23.17	23.11
15	16QAM	75	0	23.09	23.14	23.07



15	64QAM	1	0	22.76	22.87	22.80
15	64QAM	1	37	22.80	22.87	22.82
15	64QAM	1	74	22.79	22.79	22.66
15	64QAM	36	0	22.25	22.29	22.28
15	64QAM	36	20	22.18	22.29	22.18
15	64QAM	36	39	22.13	22.34	22.31
15	64QAM	75	0	22.07	22.15	22.03
15	256QAM	1	0	20.24	20.19	20.10
15	256QAM	1	37	20.12	20.25	20.10
15	256QAM	1	74	20.02	20.09	20.12
15	256QAM	36	0	20.06	20.09	20.10
15	256QAM	36	20	19.90	20.06	19.98
15	256QAM	36	39	20.07	20.12	19.99
15	256QAM	75	0	20.04	20.15	20.04
Channel				39700	40620	41540
Frequency (MHz)				2501	2593	2685
10	QPSK	1	0	25.09	25.21	25.15
10	QPSK	1	25	25.08	25.11	25.04
10	QPSK	1	49	24.96	25.14	24.91
10	QPSK	25	0	24.25	24.40	24.25
10	QPSK	25	12	24.22	24.26	24.24
10	QPSK	25	25	24.12	24.24	24.09
10	QPSK	50	0	24.22	24.24	24.11
10	16QAM	1	0	24.29	24.49	24.36
10	16QAM	1	25	24.27	24.34	24.35
10	16QAM	1	49	24.23	24.40	24.17
10	16QAM	25	0	23.21	23.22	23.27
10	16QAM	25	12	23.11	23.23	23.13
10	16QAM	25	25	23.08	23.23	23.09
10	16QAM	50	0	23.12	23.18	23.06
10	64QAM	1	0	22.81	22.88	22.81
10	64QAM	1	25	22.79	22.88	22.80
10	64QAM	1	49	22.68	22.81	22.66
10	64QAM	25	0	22.31	22.28	22.33
10	64QAM	25	12	22.20	22.29	22.15
10	64QAM	25	25	22.20	22.33	22.30
10	64QAM	50	0	22.02	22.19	22.07
10	256QAM	1	0	20.23	20.18	20.06
10	256QAM	1	25	20.16	20.26	20.06
10	256QAM	1	49	20.07	20.09	20.10
10	256QAM	25	0	20.12	20.09	20.10
10	256QAM	25	12	19.95	20.04	20.01
10	256QAM	25	25	20.01	20.10	20.02
10	256QAM	50	0	20.07	20.11	20.00
Channel				39675	40620	41565
Frequency (MHz)				2498.5	2593	2687.5
5	QPSK	1	0	25.01	25.23	25.09
5	QPSK	1	12	25.07	25.10	25.00
5	QPSK	1	24	24.93	25.04	24.90
5	QPSK	12	0	24.33	24.30	24.23



5	QPSK	12	7	24.25	24.29	24.26
5	QPSK	12	13	24.11	24.25	24.15
5	QPSK	25	0	24.22	24.26	24.09
5	16QAM	1	0	24.31	24.49	24.40
5	16QAM	1	12	24.26	24.40	24.39
5	16QAM	1	24	24.20	24.33	24.22
5	16QAM	12	0	23.19	23.22	23.27
5	16QAM	12	7	23.12	23.23	23.03
5	16QAM	12	13	23.18	23.18	23.05
5	16QAM	25	0	23.08	23.15	23.01
5	64QAM	1	0	22.82	22.87	22.86
5	64QAM	1	12	22.83	22.86	22.78
5	64QAM	1	24	22.76	22.84	22.65
5	64QAM	12	0	22.24	22.33	22.29
5	64QAM	12	7	22.16	22.25	22.13
5	64QAM	12	13	22.18	22.24	22.23
5	64QAM	25	0	22.07	22.18	22.10
5	256QAM	1	0	20.20	20.18	20.10
5	256QAM	1	12	20.18	20.22	20.14
5	256QAM	1	24	20.13	20.16	20.07
5	256QAM	12	0	20.06	20.18	20.08
5	256QAM	12	7	19.90	20.04	19.99
5	256QAM	12	13	20.11	20.15	20.00
5	256QAM	25	0	20.08	20.14	20.00



LTE Band 7C\_CA\_Ant.4:

Combination 20MHz+20MHz (100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset			
20850	21048	QPSK	100	0	100	0	200	≤2	21.87
			1	0	1	99	2	≤8.5	15.24
			1	99	1	0	2	≤0	23.63
		16QAM	100	0	100	0	200	≤3	21.5
			1	0	1	99	2	≤8.5	16.16
			1	99	1	0	2	≤1	23.25
		64QAM	100	0	100	0	200	≤3	20.79
			1	0	1	99	2	≤8.5	15.08
			1	99	1	0	2	≤3	20.7
		256QAM	100	0	100	0	200	≤3	18.92
			1	0	1	99	2	≤8.5	15.07
			1	99	1	0	2	≤3	18.9
21001	21199	QPSK	100	0	100	0	200	≤2	21.8
			1	0	1	99	2	≤8.5	15.21
			1	99	1	0	2	≤0	23.37
		16QAM	100	0	100	0	200	≤3	20.86
			1	0	1	99	2	≤8.5	15.61
			1	99	1	0	2	≤1	22.7
		64QAM	100	0	100	0	200	≤3	20.78
			1	0	1	99	2	≤8.5	15.49
			1	99	1	0	2	≤3	20.4
		256QAM	100	0	100	0	200	≤3	18.81
			1	0	1	99	2	≤8.5	15.35
			1	99	1	0	2	≤3	18.5
21152	21350	QPSK	100	0	100	0	200	≤2	21.57
			1	0	1	99	2	≤8.5	14.85
			1	99	1	0	2	≤0	23.11
		16QAM	100	0	100	0	200	≤3	20.56
			1	0	1	99	2	≤8.5	15.22
			1	99	1	0	2	≤1	22.67
		64QAM	100	0	100	0	200	≤3	20.67
			1	0	1	99	2	≤8.5	15.27
			1	99	1	0	2	≤3	20.38
		256QAM	100	0	100	0	200	≤3	18.63
			1	0	1	99	2	≤8.5	15.1
			1	99	1	0	2	≤3	18.3



Combination 20MHz+15MHz (100RB+75RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21021	QPSK	100	0	75	0	175	22.21
		QPSK	1	0	1	74	2	14.7
		QPSK	1	99	1	0	2	23.18
		16QAM	100	0	75	0	175	20.63
		16QAM	1	0	1	74	2	15.22
		16QAM	1	99	1	0	2	22.58
		64QAM	100	0	75	0	175	20.43
		64QAM	1	0	1	74	2	14.95
		64QAM	1	99	1	0	2	20.37
		256QAM	100	0	75	0	175	18.51
		256QAM	1	0	1	74	2	14.78
		256QAM	1	99	1	0	2	18.24
21026	21197	QPSK	100	0	75	0	175	21.6
		QPSK	1	0	1	74	2	14.84
		QPSK	1	99	1	0	2	23.11
		16QAM	100	0	75	0	175	20.63
		16QAM	1	0	1	74	2	15.21
		16QAM	1	99	1	0	2	22.67
		64QAM	100	0	75	0	175	20.65
		64QAM	1	0	1	74	2	15.05
		64QAM	1	99	1	0	2	20.43
		256QAM	100	0	75	0	175	18.68
		256QAM	1	0	1	74	2	14.97
		256QAM	1	99	1	0	2	18.34
21201	21372	QPSK	100	0	75	0	175	21.51
		QPSK	1	0	1	74	2	14.79
		QPSK	1	99	1	0	2	23.07
		16QAM	100	0	75	0	175	20.49
		16QAM	1	0	1	74	2	15.35
		16QAM	1	99	1	0	2	22.57
		64QAM	100	0	75	0	175	20.52
		64QAM	1	0	1	74	2	15.16
		64QAM	1	99	1	0	2	20.17
		256QAM	100	0	75	0	175	18.57
		256QAM	1	0	1	74	2	15.08
		256QAM	1	99	1	0	2	18.26





Combination 15MHz+20MHz (75RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20828	20999	QPSK	75	0	100	0	175	22.64
		QPSK	1	0	1	99	2	15.93
		QPSK	1	74	1	0	2	24.47
		16QAM	75	0	100	0	175	21.63
		16QAM	1	0	1	99	2	16.15
		16QAM	1	74	1	0	2	23.82
		64QAM	75	0	100	0	175	21.62
		64QAM	1	0	1	99	2	16.27
		64QAM	1	74	1	0	2	21.23
		256QAM	75	0	100	0	175	19.64
		256QAM	1	0	1	99	2	16.03
		256QAM	1	74	1	0	2	19.53
21003	21174	QPSK	75	0	100	0	175	22.31
		QPSK	1	0	1	99	2	15.85
		QPSK	1	74	1	0	2	23.61
		16QAM	75	0	100	0	175	21.23
		16QAM	1	0	1	99	2	16.33
		16QAM	1	74	1	0	2	22.8
		64QAM	75	0	100	0	175	21.41
		64QAM	1	0	1	99	2	16.37
		64QAM	1	74	1	0	2	21.37
		256QAM	75	0	100	0	175	19.33
		256QAM	1	0	1	99	2	16.22
		256QAM	1	74	1	0	2	19.08
21179	21350	QPSK	75	0	100	0	175	21.52
		QPSK	1	0	1	99	2	15.17
		QPSK	1	74	1	0	2	23.71
		16QAM	75	0	100	0	175	20.97
		16QAM	1	0	1	99	2	15.59
		16QAM	1	74	1	0	2	23.04
		64QAM	75	0	100	0	175	20.84
		64QAM	1	0	1	99	2	15.9
		64QAM	1	74	1	0	2	20.81
		256QAM	75	0	100	0	175	18.98
		256QAM	1	0	1	99	2	15.88
		256QAM	1	74	1	0	2	18.86



Combination 20MHz+10MHz (100RB+50RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	20994	QPSK	100	0	50	0	150	22.39
		QPSK	1	0	1	49	2	15.27
		QPSK	1	99	1	0	2	23.24
		16QAM	100	0	50	0	150	21.24
		16QAM	1	0	1	49	2	15.74
		16QAM	1	99	1	0	2	22.88
		64QAM	100	0	50	0	150	21.01
		64QAM	1	0	1	49	2	15.67
		64QAM	1	99	1	0	2	20.81
		256QAM	100	0	50	0	150	19.05
		256QAM	1	0	1	49	2	15.56
		256QAM	1	99	1	0	2	18.4
21051	21195	QPSK	100	0	50	0	150	21.73
		QPSK	1	0	1	49	2	15.21
		QPSK	1	99	1	0	2	23.23
		16QAM	100	0	50	0	150	20.78
		16QAM	1	0	1	49	2	15.37
		16QAM	1	99	1	0	2	22.54
		64QAM	100	0	50	0	150	20.76
		64QAM	1	0	1	49	2	15.5
		64QAM	1	99	1	0	2	20.4
		256QAM	100	0	50	0	150	18.73
		256QAM	1	0	1	49	2	15.42
		256QAM	1	99	1	0	2	18.54
21251	21395	QPSK	100	0	50	0	150	21.54
		QPSK	1	0	1	49	2	14.43
		QPSK	1	99	1	0	2	23.05
		16QAM	100	0	50	0	150	20.55
		16QAM	1	0	1	49	2	15.28
		16QAM	1	99	1	0	2	22.64
		64QAM	100	0	50	0	150	20.54
		64QAM	1	0	1	49	2	14.87
		64QAM	1	99	1	0	2	20.58
		256QAM	100	0	50	0	150	18.51
		256QAM	1	0	1	49	2	15.26
		256QAM	1	99	1	0	2	18.57



Combination 10MHz+20MHz (50RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20805	20949	QPSK	50	0	100	0	150	21.47
		QPSK	1	0	1	99	2	14.55
		QPSK	1	49	1	0	2	22.87
		16QAM	50	0	100	0	150	20.44
		16QAM	1	0	1	99	2	14.74
		16QAM	1	49	1	0	2	22.49
		64QAM	50	0	100	0	150	20.45
		64QAM	1	0	1	99	2	14.88
		64QAM	1	49	1	0	2	20.32
		256QAM	50	0	100	0	150	18.48
		256QAM	1	0	1	99	2	14.89
		256QAM	1	49	1	0	2	18.19
21006	21150	QPSK	50	0	100	0	150	21.73
		QPSK	1	0	1	99	2	14.82
		QPSK	1	49	1	0	2	22.96
		16QAM	50	0	100	0	150	20.65
		16QAM	1	0	1	99	2	15.27
		16QAM	1	49	1	0	2	22.45
		64QAM	50	0	100	0	150	20.71
		64QAM	1	0	1	99	2	15.02
		64QAM	1	49	1	0	2	20.29
		256QAM	50	0	100	0	150	18.65
		256QAM	1	0	1	99	2	15.25
		256QAM	1	49	1	0	2	18.14
21206	21350	QPSK	50	0	100	0	150	21.58
		QPSK	1	0	1	99	2	14.81
		QPSK	1	49	1	0	2	23.04
		16QAM	50	0	100	0	150	20.59
		16QAM	1	0	1	99	2	15.66
		16QAM	1	49	1	0	2	22.33
		64QAM	50	0	100	0	150	20.62
		64QAM	1	0	1	99	2	15.42
		64QAM	1	49	1	0	2	20.28
		256QAM	50	0	100	0	150	18.54
		256QAM	1	0	1	99	2	15.38
		256QAM	1	49	1	0	2	18.05



Combination 15MHz+15MHz (75RB+75RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20825	20975	QPSK	75	0	75	0	150	21.76
		QPSK	1	0	1	74	2	14.77
		QPSK	1	74	1	0	2	23.16
		16QAM	75	0	75	0	150	20.51
		16QAM	1	0	1	74	2	15.32
		16QAM	1	74	1	0	2	22.75
		64QAM	75	0	75	0	150	20.48
		64QAM	1	0	1	74	2	15.13
		64QAM	1	74	1	0	2	20.39
		256QAM	75	0	75	0	150	18.53
		256QAM	1	0	1	74	2	14.86
		256QAM	1	74	1	0	2	18.35
21025	21175	QPSK	75	0	75	0	150	21.75
		QPSK	1	0	1	74	2	15.08
		QPSK	1	74	1	0	2	23.4
		16QAM	75	0	75	0	150	20.74
		16QAM	1	0	1	74	2	15.54
		16QAM	1	74	1	0	2	23.04
		64QAM	75	0	75	0	150	20.81
		64QAM	1	0	1	74	2	15.75
		64QAM	1	74	1	0	2	20.57
		256QAM	75	0	75	0	150	18.73
		256QAM	1	0	1	74	2	15.16
		256QAM	1	74	1	0	2	18.34
21225	21375	QPSK	75	0	75	0	150	21.77
		QPSK	1	0	1	74	2	15.14
		QPSK	1	74	1	0	2	23.22
		16QAM	75	0	75	0	150	20.56
		16QAM	1	0	1	74	2	15.47
		16QAM	1	74	1	0	2	22.61
		64QAM	75	0	75	0	150	20.65
		64QAM	1	0	1	74	2	15.66
		64QAM	1	74	1	0	2	20.74
		256QAM	75	0	75	0	150	18.67
		256QAM	1	0	1	74	2	15.62
		256QAM	1	74	1	0	2	18.71



Combination 15MHz+10MHz (75RB+50RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20825	20945	QPSK	75	0	50	0	125	21.81
		QPSK	1	0	1	49	2	14.95
		QPSK	1	74	1	0	2	23.32
		16QAM	75	0	50	0	125	20.54
		16QAM	1	0	1	49	2	15.15
		16QAM	1	74	1	0	2	22.86
		64QAM	75	0	50	0	125	20.58
		64QAM	1	0	1	49	2	15.05
		64QAM	1	74	1	0	2	20.86
		256QAM	75	0	50	0	125	18.57
		256QAM	1	0	1	49	2	15.15
		256QAM	1	74	1	0	2	18.67
21051	21171	QPSK	75	0	50	0	125	21.72
		QPSK	1	0	1	49	2	15.16
		QPSK	1	74	1	0	2	23.43
		16QAM	75	0	50	0	125	20.71
		16QAM	1	0	1	49	2	15.31
		16QAM	1	74	1	0	2	22.74
		64QAM	75	0	50	0	125	20.65
		64QAM	1	0	1	49	2	15.46
		64QAM	1	74	1	0	2	20.64
		256QAM	75	0	50	0	125	18.69
		256QAM	1	0	1	49	2	15.35
		256QAM	1	74	1	0	2	18.74
21277	21397	QPSK	75	0	50	0	125	22.01
		QPSK	1	0	1	49	2	15.23
		QPSK	1	74	1	0	2	23.32
		16QAM	75	0	50	0	125	20.84
		16QAM	1	0	1	49	2	15.45
		16QAM	1	74	1	0	2	23.04
		64QAM	75	0	50	0	125	20.82
		64QAM	1	0	1	49	2	15.31
		64QAM	1	74	1	0	2	20.74
		256QAM	75	0	50	0	125	18.94
		256QAM	1	0	1	49	2	15.11
		256QAM	1	74	1	0	2	18.37



LTE Band 38C\_CA\_Ant.4:

Combination 20MHz+20MHz (100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset			
37850	38048	QPSK	100	0	100	0	200	≤2	23.09
			1	0	1	99	2	≤8.5	16.27
			1	99	1	0	2	≤0	24.72
		16QAM	100	0	100	0	200	≤3	22.13
			1	0	1	99	2	≤8.5	16.31
			1	99	1	0	2	≤1	23.54
		64QAM	100	0	100	0	200	≤3	22.14
			1	0	1	99	2	≤8.5	15.94
			1	99	1	0	2	≤3	21.58
		256QAM	100	0	100	0	200	≤3	20.11
			1	0	1	99	2	≤8.5	16.15
			1	99	1	0	2	≤3	19.67
37901	38099	QPSK	100	0	100	0	200	≤2	23.05
			1	0	1	99	2	≤8.5	16.31
			1	99	1	0	2	≤0	24.7
		16QAM	100	0	100	0	200	≤3	22.1
			1	0	1	99	2	≤8.5	16.26
			1	99	1	0	2	≤1	24.5
		64QAM	100	0	100	0	200	≤3	22.08
			1	0	1	99	2	≤8.5	15.99
			1	99	1	0	2	≤3	21.53
		256QAM	100	0	100	0	200	≤3	20.06
			1	0	1	99	2	≤8.5	16.12
			1	99	1	0	2	≤3	19.75
37952	38150	QPSK	100	0	100	0	200	≤2	23.05
			1	0	1	99	2	≤8.5	16.32
			1	99	1	0	2	≤0	24.75
		16QAM	100	0	100	0	200	≤3	22.13
			1	0	1	99	2	≤8.5	16.29
			1	99	1	0	2	≤1	24.48
		64QAM	100	0	100	0	200	≤3	22.11
			1	0	1	99	2	≤8.5	16.02
			1	99	1	0	2	≤3	21.53
		256QAM	100	0	100	0	200	≤3	20.15
			1	0	1	99	2	≤8.5	16.17
			1	99	1	0	2	≤3	19.74



Combination 15MHz+15MHz (75RB+75RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
37825	37975	QPSK	75	0	75	0	150	23.22
		QPSK	1	0	1	74	2	16.52
		QPSK	1	74	1	0	2	24.87
		16QAM	75	0	75	0	150	22.22
		16QAM	1	0	1	74	2	16.55
		16QAM	1	74	1	0	2	24.71
		64QAM	75	0	75	0	150	22.29
		64QAM	1	0	1	74	2	16.25
		64QAM	1	74	1	0	2	21.69
		256QAM	75	0	75	0	150	20.31
		256QAM	1	0	1	74	2	16.37
		256QAM	1	74	1	0	2	19.88
37925	38075	QPSK	75	0	75	0	150	23.28
		QPSK	1	0	1	74	2	16.55
		QPSK	1	74	1	0	2	24.93
		16QAM	75	0	75	0	150	22.25
		16QAM	1	0	1	74	2	16.53
		16QAM	1	74	1	0	2	23.77
		64QAM	75	0	75	0	150	22.28
		64QAM	1	0	1	74	2	16.29
		64QAM	1	74	1	0	2	21.94
		256QAM	75	0	75	0	150	20.28
		256QAM	1	0	1	74	2	16.47
		256QAM	1	74	1	0	2	20.03
38025	38175	QPSK	75	0	75	0	150	23.29
		QPSK	1	0	1	74	2	16.59
		QPSK	1	74	1	0	2	24.93
		16QAM	75	0	75	0	150	22.28
		16QAM	1	0	1	74	2	16.61
		16QAM	1	74	1	0	2	23.84
		64QAM	75	0	75	0	150	22.27
		64QAM	1	0	1	74	2	16.24
		64QAM	1	74	1	0	2	21.91
		256QAM	75	0	75	0	150	20.31
		256QAM	1	0	1	74	2	16.42
		256QAM	1	74	1	0	2	20.02



**ERP/EIRP**

LTE Band 7 (GT - LC = -1.50 dB) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency (MHz)	2502.5	2535	2567.5
	Conducted Power (dBm)	24.69	24.68
Conducted Power (Watts)	0.2944	0.2938	0.2884
EIRP(dBm)	23.19	23.18	23.10
EIRP(Watts)	0.2084	0.2080	0.2042

LTE Band 7 (GT - LC = -1.50 dB) 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 (MHz)	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
	Conducted Power (dBm)	24.67	24.69	24.64	24.65	24.72	24.60	24.72	24.77
Conducted Power (Watts)	0.2931	0.2944	0.2911	0.2917	0.2965	0.2884	0.2965	0.2999	0.2938
EIRP(dBm)	23.17	23.19	23.14	23.15	23.22	23.10	23.22	23.27	23.18
EIRP(Watts)	0.2075	0.2084	0.2061	0.2065	0.2099	0.2042	0.2099	0.2123	0.2080





LTE Band 7 (GT - LC = -1.50 dB) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	23.57	23.60	23.51
Conducted Power (Watts)	0.2275	0.2291	0.2244
EIRP(dBm)	22.07	22.10	22.01
EIRP(Watts)	0.1611	0.1622	0.1589

LTE Band 7 (GT - LC = -1.50 dB) 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)	23.56	23.58	23.53	23.60	23.58	23.52	23.66	23.69	23.58
Conducted Power (Watts)	0.2270	0.2280	0.2254	0.2291	0.2280	0.2249	0.2323	0.2339	0.2280
EIRP(dBm)	22.06	22.08	22.03	22.10	22.08	22.02	22.16	22.19	22.08
EIRP(Watts)	0.1607	0.1614	0.1596	0.1622	0.1614	0.1592	0.1644	0.1656	0.1614



LTE Band 7 (GT - LC = -1.50 dB) 64QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.79	22.72	22.68
Conducted Power (Watts)	0.1901	0.1871	0.1854
EIRP(dBm)	21.29	21.22	21.18
EIRP(Watts)	0.1346	0.1324	0.1312

LTE Band 7 (GT - LC = -1.50 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	22.71	22.80	22.74	22.71	22.83	22.72	22.84	22.91	22.85
Conducted Power (Watts)	0.1866	0.1905	0.1879	0.1866	0.1919	0.1871	0.1923	0.1954	0.1928
EIRP(dBm)	21.21	21.30	21.24	21.21	21.33	21.22	21.34	21.41	21.35
EIRP(Watts)	0.1321	0.1349	0.1330	0.1321	0.1358	0.1324	0.1361	0.1384	0.1365



LTE Band 7 (GT - LC = -1.50 dB) 256QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency (MHz)	2502.5	2535	2567.5
	Conducted Power (dBm)	19.57	19.75
Conducted Power (Watts)	0.0906	0.0944	0.0904
EIRP(dBm)	18.07	18.25	18.06
EIRP(Watts)	0.0641	0.0668	0.0640

LTE Band 7 (GT - LC = -1.50 dB) 256QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
	Conducted Power (dBm)	19.55	19.78	19.62	19.65	19.83	19.62	19.74	19.86
Conducted Power (Watts)	0.0902	0.0951	0.0916	0.0923	0.0962	0.0916	0.0942	0.0968	0.0942
EIRP(dBm)	18.05	18.28	18.12	18.15	18.33	18.12	18.24	18.36	18.24
EIRP(Watts)	0.0638	0.0673	0.0649	0.0653	0.0681	0.0649	0.0667	0.0685	0.0667



LTE Band 12 (GT - LC = -6.39 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	24.41	24.49	24.33	24.40	24.52	24.41	24.42	24.45	24.36
Conducted Power (Watts)	0.2761	0.2812	0.2710	0.2754	0.2831	0.2761	0.2767	0.2786	0.2729
ERP(dBm)	15.87	15.95	15.79	15.86	15.98	15.87	15.88	15.91	15.82
ERP(Watts)	0.0386	0.0394	0.0379	0.0385	0.0396	0.0386	0.0387	0.0390	0.0382

LTE Band 12 (GT - LC = -6.39 dB) QPSK			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	24.50	24.56	24.44
Conducted Power (Watts)	0.2818	0.2858	0.2780
ERP(dBm)	15.96	16.02	15.90
ERP(Watts)	0.0394	0.0400	0.0389



LTE Band 12 (GT - LC = -6.39 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	23.46	23.59	23.47	23.47	23.53	23.55	23.47	23.61	23.58
Conducted Power (Watts)	0.2218	0.2286	0.2223	0.2223	0.2254	0.2265	0.2223	0.2296	0.2280
ERP(dBm)	14.92	15.05	14.93	14.93	14.99	15.01	14.93	15.07	15.04
ERP(Watts)	0.0310	0.0320	0.0311	0.0311	0.0316	0.0317	0.0311	0.0321	0.0319

LTE Band 12 (GT - LC = -6.39 dB) 16QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	23.59	23.68	23.62
Conducted Power (Watts)	0.2286	0.2333	0.2301
ERP(dBm)	15.05	15.14	15.08
ERP(Watts)	0.0320	0.0327	0.0322



LTE Band 12 (GT - LC = -6.39 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	22.59	22.62	22.55	22.59	22.73	22.52	22.50	22.65	22.48
Conducted Power (Watts)	0.1816	0.1828	0.1799	0.1816	0.1875	0.1786	0.1778	0.1841	0.1770
ERP(dBm)	14.05	14.08	14.01	14.05	14.19	13.98	13.96	14.11	13.94
ERP(Watts)	0.0254	0.0256	0.0252	0.0254	0.0262	0.0250	0.0249	0.0258	0.0248

LTE Band 12 (GT - LC = -6.39 dB) 64QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	22.70	22.76	22.61
Conducted Power (Watts)	0.1862	0.1888	0.1824
ERP(dBm)	14.16	14.22	14.07
ERP(Watts)	0.0261	0.0264	0.0255



LTE Band 12 (GT - LC = -6.39 dB) 256QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	19.91	20.03	19.93	19.96	20.04	19.92	19.97	20.14	19.91
Conducted Power (Watts)	0.0979	0.1007	0.0984	0.0991	0.1009	0.0982	0.0993	0.1033	0.0979
ERP(dBm)	11.37	11.49	11.39	11.42	11.50	11.38	11.43	11.60	11.37
ERP(Watts)	0.0137	0.0141	0.0138	0.0139	0.0141	0.0137	0.0139	0.0145	0.0137

LTE Band 12 (GT - LC = -6.39 dB) 256QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	20.05	20.17	20.05
Conducted Power (Watts)	0.1012	0.1040	0.1012
ERP(dBm)	11.51	11.63	11.51
ERP(Watts)	0.0142	0.0146	0.0142



LTE Band 13 (GT - LC = -6.39 dB) QPSK						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	24.51	24.59	24.54	-	24.64	-
Conducted Power (Watts)	0.2825	0.2877	0.2844	-	0.2911	-
ERP(dBm)	15.97	16.05	16.00	-	16.10	-
ERP(Watts)	0.0395	0.0403	0.0398	-	0.0407	-

LTE Band 13 (GT - LC = -6.39 dB) 16QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	23.70	23.82	23.69	-	23.86	-
Conducted Power (Watts)	0.2344	0.2410	0.2339	-	0.2432	-
ERP(dBm)	15.16	15.28	15.15	-	15.32	-
ERP(Watts)	0.0328	0.0337	0.0327	-	0.0340	-





LTE Band 13 (GT - LC = -6.39 dB) 64QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	23.00	23.04	22.93	-	23.08	-
Conducted Power (Watts)	0.1995	0.2014	0.1963	-	0.2032	-
ERP(dBm)	14.46	14.50	14.39	-	14.54	-
ERP(Watts)	0.0279	0.0282	0.0275	-	0.0284	-

LTE Band 13 (GT - LC = -6.39 dB) 256QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	19.90	19.98	19.86	-	20.02	-
Conducted Power (Watts)	0.0977	0.0995	0.0968	-	0.1005	-
ERP(dBm)	11.36	11.44	11.32	-	11.48	-
ERP(Watts)	0.0137	0.0139	0.0136	-	0.0141	-



LTE Band 17 (GT - LC = -6.39 dB) QPSK						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	24.39	24.45	24.43	24.43	24.51	24.46
Conducted Power (Watts)	0.2748	0.2786	0.2773	0.2773	0.2825	0.2793
ERP(dBm)	15.85	15.91	15.89	15.89	15.97	15.92
ERP(Watts)	0.0385	0.0390	0.0388	0.0388	0.0395	0.0391

LTE Band 17 (GT - LC = -6.39 dB) 16QAM						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	23.32	23.45	23.31	23.46	23.50	23.42
Conducted Power (Watts)	0.2148	0.2213	0.2143	0.2218	0.2239	0.2198
ERP(dBm)	14.78	14.91	14.77	14.92	14.96	14.88
ERP(Watts)	0.0301	0.0310	0.0300	0.0310	0.0313	0.0308



LTE Band 17 (GT - LC = -6.39 dB) 64QAM						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	22.41	22.46	22.37	22.50	22.54	22.48
Conducted Power (Watts)	0.1742	0.1762	0.1726	0.1778	0.1795	0.1770
ERP(dBm)	13.87	13.92	13.83	13.96	14.00	13.94
ERP(Watts)	0.0244	0.0247	0.0242	0.0249	0.0251	0.0248

LTE Band 17 (GT - LC = -6.39 dB) 256QAM						
Bandwidth	5M			10M		
Channel	23755	23790	23825	23780	23790	23800
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	706.5	710	713.5	709	710	711
(MHz)						
Conducted Power (dBm)	19.76	19.79	19.69	19.82	19.92	19.81
Conducted Power (Watts)	0.0946	0.0953	0.0931	0.0959	0.0982	0.0957
ERP(dBm)	11.22	11.25	11.15	11.28	11.38	11.27
ERP(Watts)	0.0132	0.0133	0.0130	0.0134	0.0137	0.0134



LTE Band 38 (GT - LC = -1.50 dB) QPSK			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	25.17	25.19	25.02
Conducted Power (Watts)	0.3289	0.3304	0.3177
EIRP(dBm)	23.67	23.69	23.52
EIRP(Watts)	0.2328	0.2339	0.2249

LTE Band 38 (GT - LC = -1.50 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	25.16	25.18	24.98	25.17	25.21	25.06	25.21	25.27	25.12
Conducted Power (Watts)	0.3281	0.3296	0.3148	0.3289	0.3319	0.3206	0.3319	0.3365	0.3251
EIRP(dBm)	23.66	23.68	23.48	23.67	23.71	23.56	23.71	23.77	23.62
EIRP(Watts)	0.2323	0.2333	0.2228	0.2328	0.2350	0.2270	0.2350	0.2382	0.2301



LTE Band 38 (GT - LC = -1.50 dB) 16QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	24.14	24.17	24.11
Conducted Power (Watts)	0.2594	0.2612	0.2576
EIRP(dBm)	22.64	22.67	22.61
EIRP(Watts)	0.1837	0.1849	0.1824

LTE Band 38 (GT - LC = -1.50 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	24.23	24.24	24.14	24.20	24.24	24.17	24.26	24.31	24.22
Conducted Power (Watts)	0.2649	0.2655	0.2594	0.2630	0.2655	0.2612	0.2667	0.2698	0.2642
EIRP(dBm)	22.73	22.74	22.64	22.70	22.74	22.67	22.76	22.81	22.72
EIRP(Watts)	0.1875	0.1879	0.1837	0.1862	0.1879	0.1849	0.1888	0.1910	0.1871



LTE Band 38 (GT - LC = -1.50 dB) 64QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	23.07	23.20	23.12
Conducted Power (Watts)	0.2028	0.2089	0.2051
EIRP(dBm)	21.57	21.70	21.62
EIRP(Watts)	0.1435	0.1479	0.1452

LTE Band 38 (GT - LC = -1.50 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	23.12	23.22	23.05	23.04	23.18	23.10	23.18	23.31	23.18
Conducted Power (Watts)	0.2051	0.2099	0.2018	0.2014	0.2080	0.2042	0.2080	0.2143	0.2080
EIRP(dBm)	21.62	21.72	21.55	21.54	21.68	21.60	21.68	21.81	21.68
EIRP(Watts)	0.1452	0.1486	0.1429	0.1426	0.1472	0.1445	0.1472	0.1517	0.1472



LTE Band 38 (GT - LC = -1.50 dB) 256QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	20.09	20.23	20.11
Conducted Power (Watts)	0.1021	0.1054	0.1026
EIRP(dBm)	18.59	18.73	18.61
EIRP(Watts)	0.0723	0.0746	0.0726

LTE Band 38 (GT - LC = -1.50 dB) 256QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	20.09	20.14	20.03	20.14	20.14	20.05	20.23	20.26	20.19
Conducted Power (Watts)	0.1021	0.1033	0.1007	0.1033	0.1033	0.1012	0.1054	0.1062	0.1045
EIRP(dBm)	18.59	18.64	18.53	18.64	18.64	18.55	18.73	18.76	18.69
EIRP(Watts)	0.0723	0.0731	0.0713	0.0731	0.0731	0.0716	0.0746	0.0752	0.0740



LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) QPSK									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	25.01	25.23	25.09	25.09	25.21	25.15	25.13	25.26	25.09
Conducted Power (Watts)	0.3170	0.3334	0.3228	0.3228	0.3319	0.3273	0.3258	0.3357	0.3228
EIRP(dBm)	23.51	23.73	23.59	23.59	23.71	23.65	23.63	23.76	23.59
EIRP(Watts)	0.2244	0.2360	0.2286	0.2286	0.2350	0.2317	0.2307	0.2377	0.2286

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	25.16	25.31	25.20
Conducted Power (Watts)	0.3281	0.3396	0.3311
EIRP(dBm)	23.66	23.81	23.70
EIRP(Watts)	0.2323	0.2404	0.2344





LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 16QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	24.31	24.49	24.40	24.29	24.49	24.36	24.34	24.48	24.36
Conducted Power (Watts)	0.2698	0.2812	0.2754	0.2685	0.2812	0.2729	0.2716	0.2805	0.2729
EIRP(dBm)	22.81	22.99	22.90	22.79	22.99	22.86	22.84	22.98	22.86
EIRP(Watts)	0.1910	0.1991	0.1950	0.1901	0.1991	0.1932	0.1923	0.1986	0.1932

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	24.44	24.54	24.49
Conducted Power (Watts)	0.2780	0.2844	0.2812
EIRP(dBm)	22.94	23.04	22.99
EIRP(Watts)	0.1968	0.2014	0.1991



LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 64QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	22.82	22.87	22.86	22.81	22.88	22.81	22.80	22.87	22.82
Conducted Power (Watts)	0.1914	0.1936	0.1932	0.1910	0.1941	0.1910	0.1905	0.1936	0.1914
EIRP(dBm)	21.32	21.37	21.36	21.31	21.38	21.31	21.30	21.37	21.32
EIRP(Watts)	0.1355	0.1371	0.1368	0.1352	0.1374	0.1352	0.1349	0.1371	0.1355

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 64QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	22.89	23.01	22.90
Conducted Power (Watts)	0.1945	0.2000	0.1950
EIRP(dBm)	21.39	21.51	21.40
EIRP(Watts)	0.1377	0.1416	0.1380



LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 256QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	20.18	20.22	20.14	20.16	20.26	20.06	20.12	20.25	20.10
Conducted Power (Watts)	0.1042	0.1052	0.1033	0.1038	0.1062	0.1014	0.1028	0.1059	0.1023
EIRP(dBm)	18.68	18.72	18.64	18.66	18.76	18.56	18.62	18.75	18.60
EIRP(Watts)	0.0738	0.0745	0.0731	0.0735	0.0752	0.0718	0.0728	0.0750	0.0724

LTE Band 41 (G <sub>T</sub> - L <sub>C</sub> = -1.50 dB) 256QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	20.27	20.32	20.19
Conducted Power (Watts)	0.1064	0.1076	0.1045
EIRP(dBm)	18.77	18.82	18.69
EIRP(Watts)	0.0753	0.0762	0.0740



CA EIRP

LTE Band CA_7C (GT - LC = -1.50 dB) QPSK									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825	21025	21225	20805	21006	21206	20850	21051	21251
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375	20949	21150	21350	20994	21195	21395
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.16	23.40	23.22	22.87	22.96	23.04	23.24	23.23	23.05
Conducted Power (Watts)	0.2070	0.2188	0.2099	0.1936	0.1977	0.2014	0.2109	0.2104	0.2018
EIRP(dBm)	21.66	21.90	21.72	21.37	21.46	21.54	21.74	21.73	21.55
EIRP(Watts)	0.1466	0.1549	0.1486	0.1371	0.1400	0.1426	0.1493	0.1489	0.1429

LTE Band CA_7C (GT - LC = -1.50 dB) QPSK									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828	21003	21179	20850	21026	21201	20850	21001	21152
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20999	21174	21350	21021	21197	21372	21048	21199	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	24.47	23.61	23.71	23.18	23.11	23.07	23.63	23.37	23.11
Conducted Power (Watts)	0.2799	0.2296	0.2350	0.2080	0.2046	0.2028	0.2307	0.2173	0.2046
EIRP(dBm)	22.97	22.11	22.21	21.68	21.61	21.57	22.13	21.87	21.61
EIRP(Watts)	0.1982	0.1626	0.1663	0.1472	0.1449	0.1435	0.1633	0.1538	0.1449



LTE Band CA_7C (GT - LC = -1.50 dB) 16QAM									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825	21025	21225	20805	21006	21206	20850	21051	21251
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375	20949	21150	21350	20994	21195	21395
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	22.75	23.04	22.61	22.49	22.45	22.33	22.88	22.54	22.64
Conducted Power (Watts)	0.1884	0.2014	0.1824	0.1774	0.1758	0.1710	0.1941	0.1795	0.1837
EIRP(dBm)	21.25	21.54	21.11	20.99	20.95	20.83	21.38	21.04	21.14
EIRP(Watts)	0.1334	0.1426	0.1291	0.1256	0.1245	0.1211	0.1374	0.1271	0.1300

LTE Band CA_7C (GT - LC = -1.50 dB) 16QAM									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828	21003	21179	20850	21026	21201	20850	21001	21152
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20999	21174	21350	21021	21197	21372	21048	21199	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.82	22.80	23.04	22.58	22.67	22.57	23.25	22.70	22.67
Conducted Power (Watts)	0.2410	0.1905	0.2014	0.1811	0.1849	0.1807	0.2113	0.1862	0.1849
EIRP(dBm)	22.32	21.30	21.54	21.08	21.17	21.07	21.75	21.20	21.17
EIRP(Watts)	0.1706	0.1349	0.1426	0.1282	0.1309	0.1279	0.1496	0.1318	0.1309



LTE Band CA_7C (GT - LC = -1.50 dB) 64QAM									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825	21025	21225	20805	21006	21206	20850	21051	21251
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375	20949	21150	21350	20994	21195	21395
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	20.48	20.81	20.74	20.45	20.71	20.62	21.01	20.76	20.58
Conducted Power (Watts)	0.1117	0.1205	0.1186	0.1109	0.1178	0.1153	0.1262	0.1191	0.1143
EIRP(dBm)	18.98	19.31	19.24	18.95	19.21	19.12	19.51	19.26	19.08
EIRP(Watts)	0.0791	0.0853	0.0839	0.0785	0.0834	0.0817	0.0893	0.0843	0.0809

LTE Band CA_7C (GT - LC = -1.50 dB) 64QAM									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828	21003	21179	20850	21026	21201	20850	21001	21152
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20999	21174	21350	21021	21197	21372	21048	21199	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	21.62	21.41	20.84	20.43	20.65	20.52	20.79	20.78	20.67
Conducted Power (Watts)	0.1452	0.1384	0.1213	0.1104	0.1161	0.1127	0.1199	0.1197	0.1167
EIRP(dBm)	20.12	19.91	19.34	18.93	19.15	19.02	19.29	19.28	19.17
EIRP(Watts)	0.1028	0.0979	0.0859	0.0782	0.0822	0.0798	0.0849	0.0847	0.0826



LTE Band CA_7C (GT - LC = -1.50 dB) 256QAM									
Bandwidth	15M + 15M			10M + 20M			20M+10M		
Channel PCC	20825	21025	21225	20805	21006	21206	20850	21051	21251
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375	20949	21150	21350	20994	21195	21395
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	18.53	18.73	18.71	18.48	18.65	18.54	19.05	18.73	18.57
Conducted Power (Watts)	0.0713	0.0746	0.0743	0.0705	0.0733	0.0714	0.0804	0.0746	0.0719
EIRP(dBm)	17.03	17.23	17.21	16.98	17.15	17.04	17.55	17.23	17.07
EIRP(Watts)	0.0505	0.0528	0.0526	0.0499	0.0519	0.0506	0.0569	0.0528	0.0509

LTE Band CA_7C (GT - LC = -1.50 dB) 256QAM									
Bandwidth	15M+20M			20M+15M			20M + 20M		
Channel PCC	20828	21003	21179	20850	21026	21201	20850	21001	21152
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	20999	21174	21350	21021	21197	21372	21048	21199	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	19.64	19.33	18.98	18.51	18.68	18.57	18.92	18.81	18.63
Conducted Power (Watts)	0.0920	0.0857	0.0791	0.0710	0.0738	0.0719	0.0780	0.0760	0.0729
EIRP(dBm)	18.14	17.83	17.48	17.01	17.18	17.07	17.42	17.31	17.13
EIRP(Watts)	0.0652	0.0607	0.0560	0.0502	0.0522	0.0509	0.0552	0.0538	0.0516



LTE Band CA_7C (GT - LC = -1.50 dB) QPSK			
Bandwidth	15M + 10M		
Channel PCC	20825	21025	21225
	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375
	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.32	23.43	23.32
Conducted Power (Watts)	0.2148	0.2203	0.2148
EIRP(dBm)	21.82	21.93	21.82
EIRP(Watts)	0.1521	0.1560	0.1521

LTE Band CA_7C (GT - LC = -1.50 dB) 16QAM			
Bandwidth	15M + 10M		
Channel PCC	20825	21025	21225
	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375
	(Low)	(Mid)	(High)
Conducted Power (dBm)	22.86	22.74	23.04
Conducted Power (Watts)	0.1932	0.1879	0.2014
EIRP(dBm)	21.36	21.24	21.54
EIRP(Watts)	0.1368	0.1330	0.1426





LTE Band CA_7C (GT - LC = -1.50 dB) 64QAM			
Bandwidth	15M + 10M		
Channel PCC	20825	21025	21225
	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375
	(Low)	(Mid)	(High)
Conducted Power (dBm)	20.86	20.65	20.82
Conducted Power (Watts)	0.1219	0.1161	0.1208
EIRP(dBm)	19.36	19.15	19.32
EIRP(Watts)	0.0863	0.0822	0.0855

LTE Band CA_7C (GT - LC = -1.50 dB) 256QAM			
Bandwidth	15M + 10M		
Channel PCC	20825	21025	21225
	(Low)	(Mid)	(High)
Channel SCC	20975	21175	21375
	(Low)	(Mid)	(High)
Conducted Power (dBm)	18.67	18.74	18.94
Conducted Power (Watts)	0.0736	0.0748	0.0783
EIRP(dBm)	17.17	17.24	17.44
EIRP(Watts)	0.0521	0.0530	0.0555



LTE Band CA_38C (GT - LC = -1.50 dB) QPSK						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	24.87	24.93	24.93	24.72	24.70	24.75
Conducted Power (Watts)	0.3069	0.3112	0.3112	0.2965	0.2951	0.2985
EIRP(dBm)	23.37	23.43	23.43	23.22	23.20	23.25
EIRP(Watts)	0.2173	0.2203	0.2203	0.2099	0.2089	0.2113

LTE Band CA_38C (GT - LC = -1.50 dB) 16QAM						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	24.71	23.77	23.84	23.54	24.50	24.48
Conducted Power (Watts)	0.2958	0.2382	0.2421	0.2259	0.2818	0.2805
EIRP(dBm)	23.21	22.27	22.34	22.04	23.00	22.98
EIRP(Watts)	0.2094	0.1687	0.1714	0.1600	0.1995	0.1986



LTE Band CA_38C (GT - LC = -1.50 dB) 64QAM						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	22.29	22.28	22.27	22.14	22.08	22.11
Conducted Power (Watts)	0.1694	0.1690	0.1687	0.1637	0.1614	0.1626
EIRP(dBm)	20.79	20.78	20.77	20.64	20.58	20.61
EIRP(Watts)	0.1199	0.1197	0.1194	0.1159	0.1143	0.1151

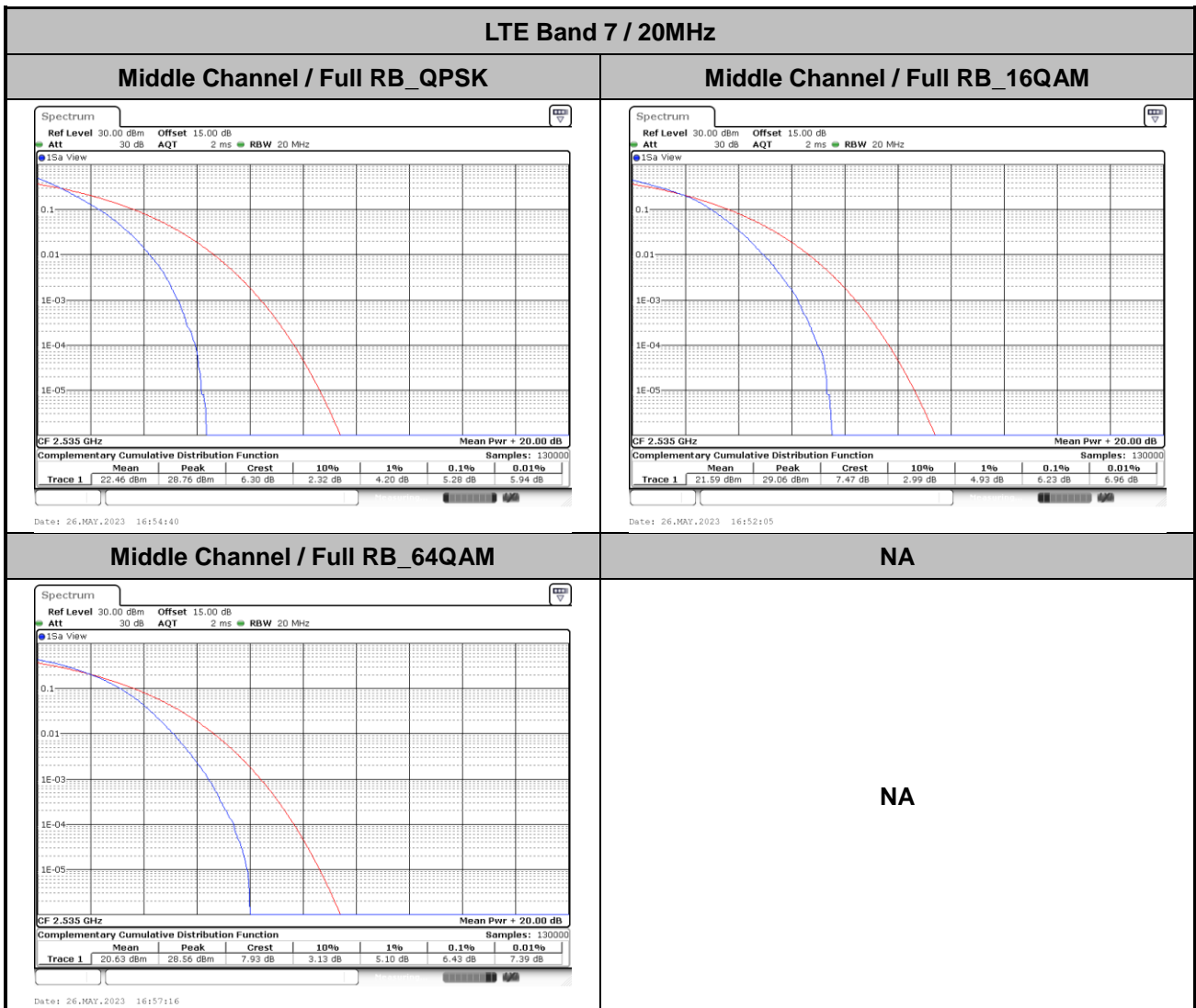
LTE Band CA_38C (GT - LC = -1.50 dB) 256QAM						
Bandwidth	15M + 15M			20M+20M		
Channel PCC	37825	37925	38025	37850	37901	37952
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Channel SCC	37975	38075	38175	38048	38099	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Conducted Power (dBm)	20.31	20.28	20.31	20.11	20.06	20.15
Conducted Power (Watts)	0.1074	0.1067	0.1074	0.1026	0.1014	0.1035
EIRP(dBm)	18.81	18.78	18.81	18.61	18.56	18.65
EIRP(Watts)	0.0760	0.0755	0.0760	0.0726	0.0718	0.0733



# LTE Band 7

## Peak-to-Average Ratio

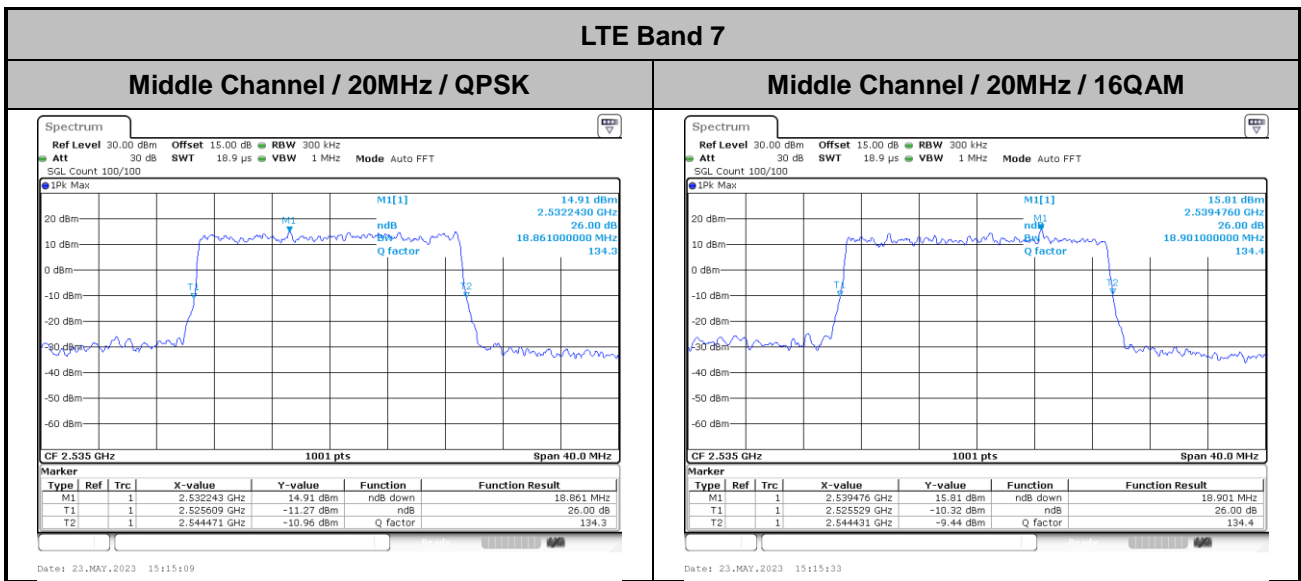
Mode	LTE Band 7 / 20MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.28	6.23	6.43	PASS





## 26dB Bandwidth

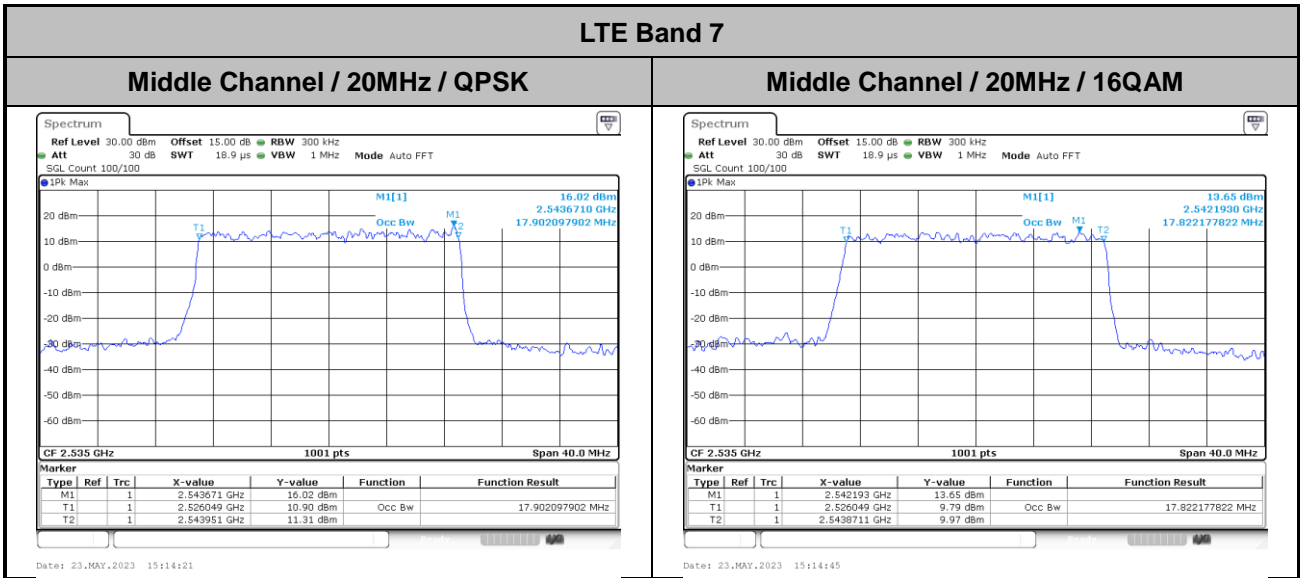
Mode	LTE Band 7 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.86	18.90





# Occupied Bandwidth

Mode	LTE Band 7 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.90	17.82

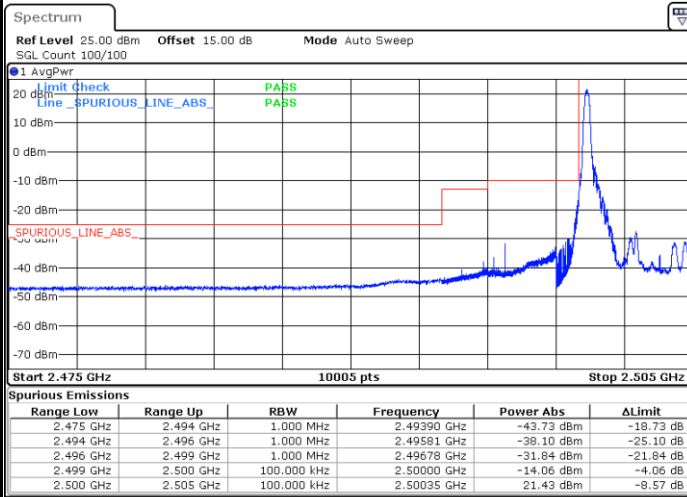




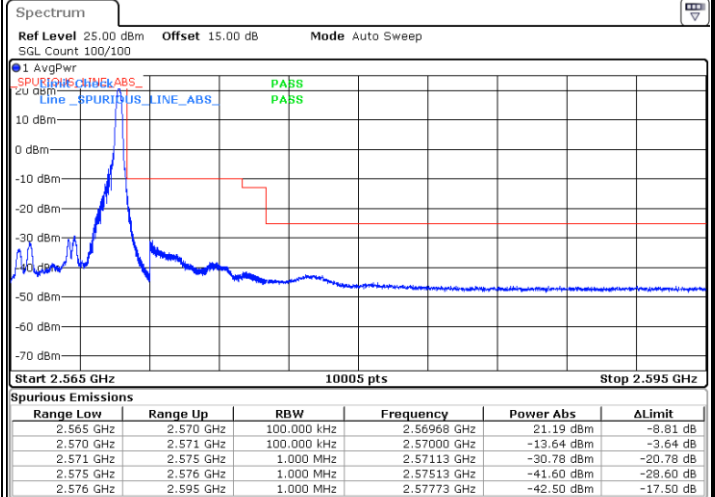
# Conducted Band Edge

## LTE Band 7 / 5MHz / QPSK

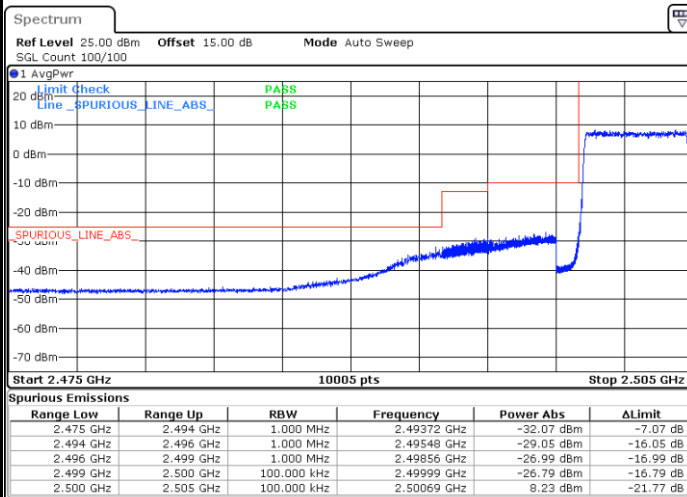
### Lowest Band Edge / 1 RB



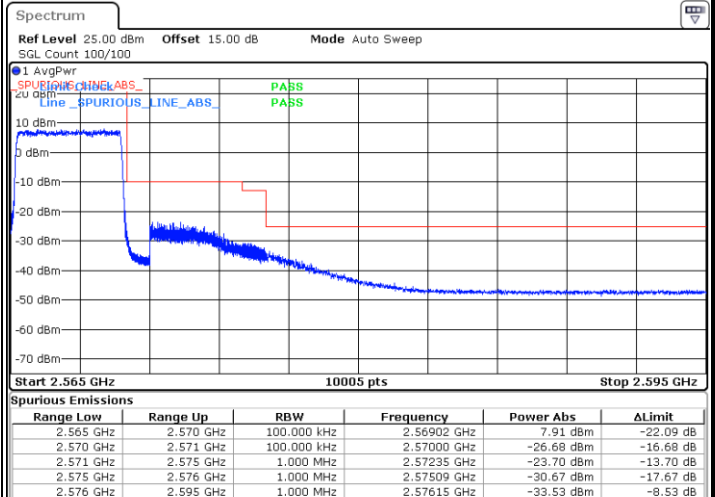
### Highest Band Edge / 1 RB



### Lowest Band Edge / Full RB



### Highest Band Edge / Full RB

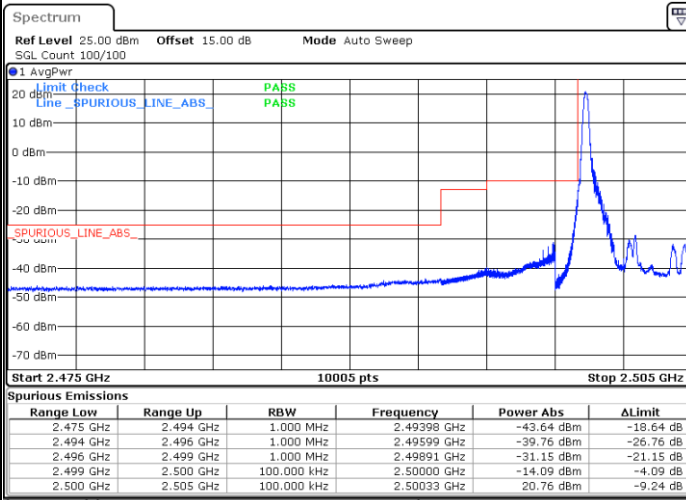




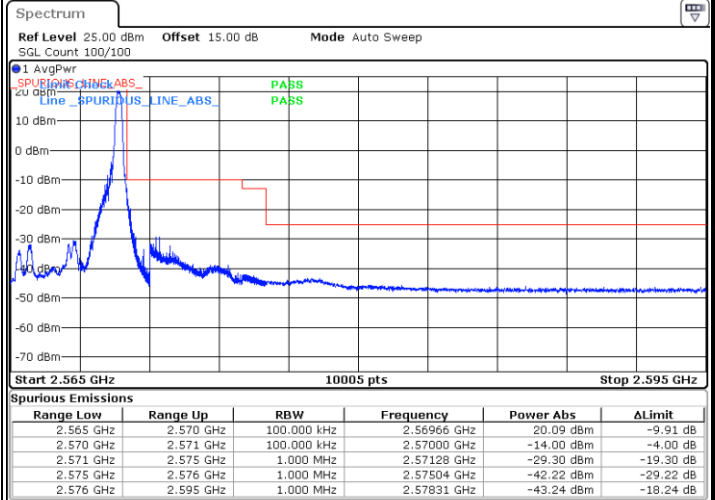
LTE Band 7 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



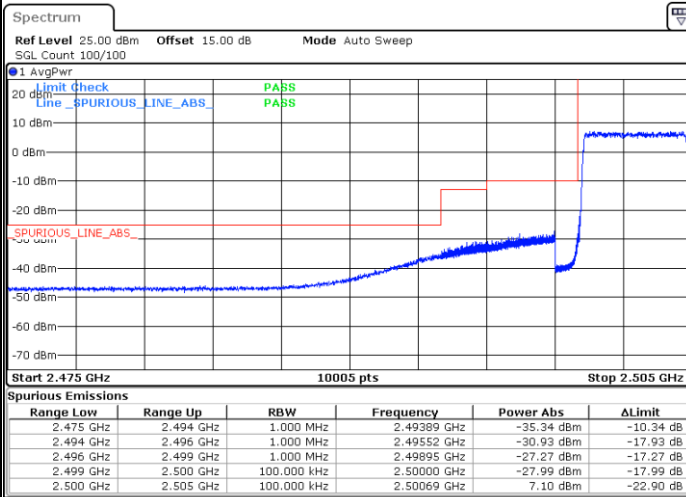
Date: 23.MAY.2023 13:47:41



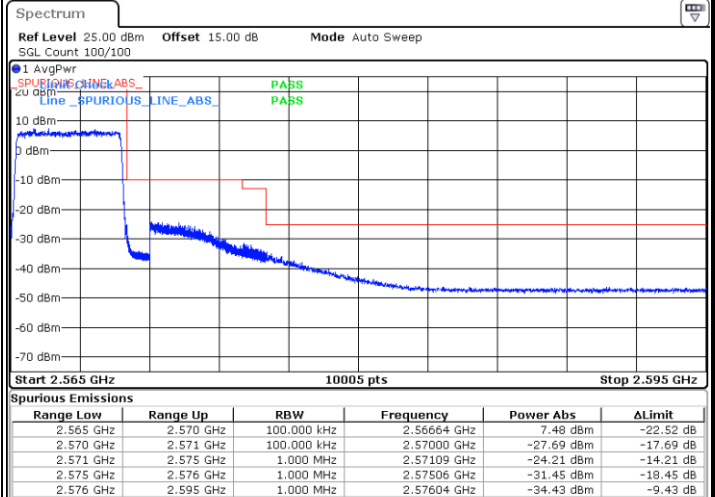
Date: 23.MAY.2023 14:01:17

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 23.MAY.2023 13:49:01



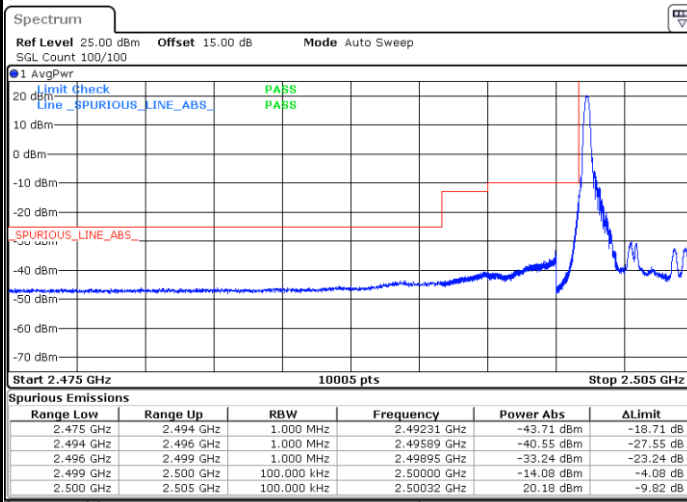
Date: 23.MAY.2023 14:02:37





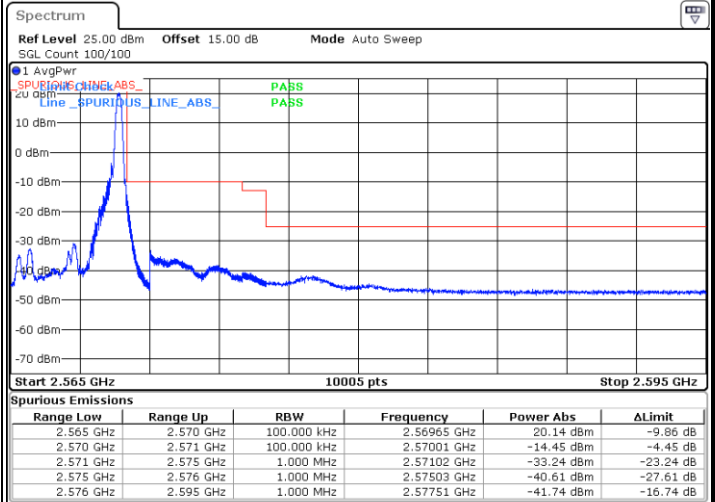
LTE Band 7 / 5MHz / 64QAM

Lowest Band Edge / 1RB



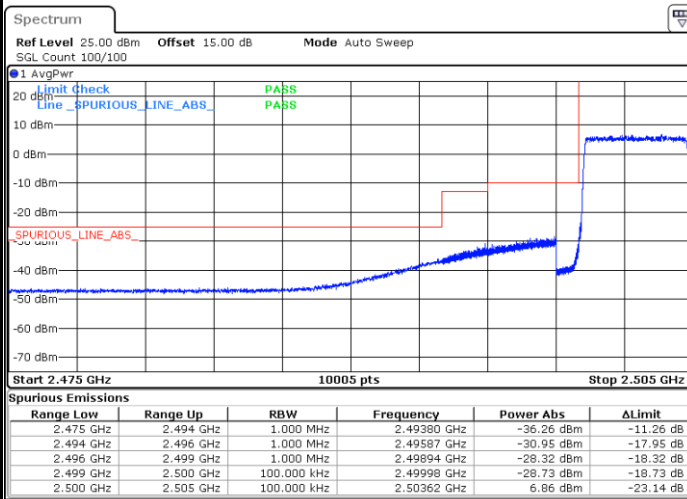
Date: 23.MAY.2023 14:06:34

Highest Band Edge / 1 RB



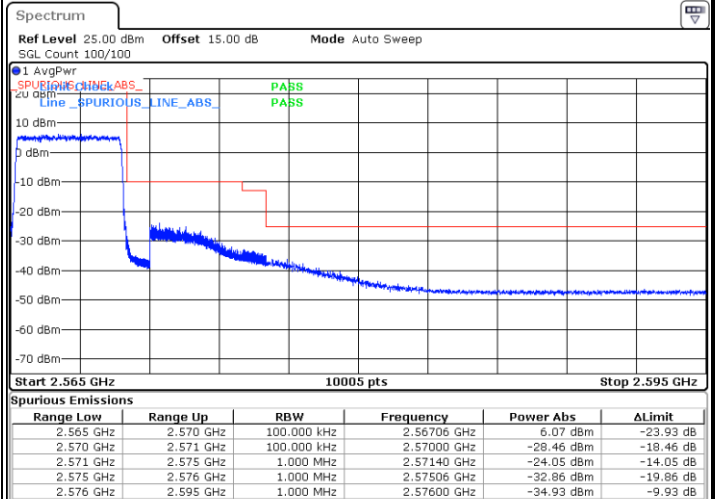
Date: 23.MAY.2023 14:11:49

Lowest Band Edge / Full RB



Date: 23.MAY.2023 14:07:14

Highest Band Edge / Full RB



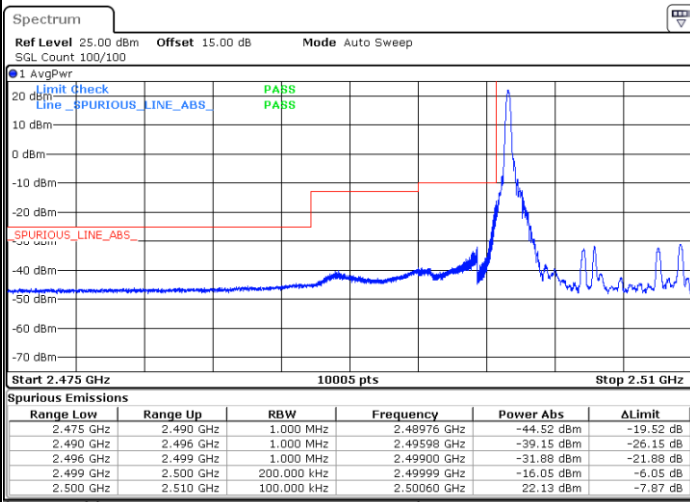
Date: 23.MAY.2023 14:12:29



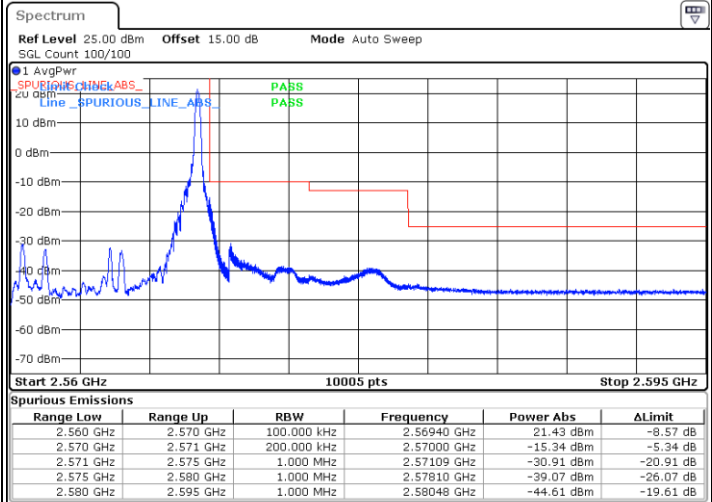
LTE Band 7 / 10MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



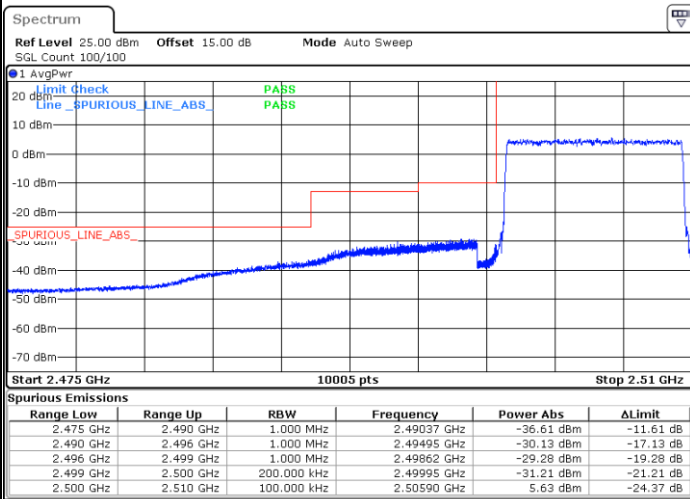
Date: 23.MAY.2023 14:16:06



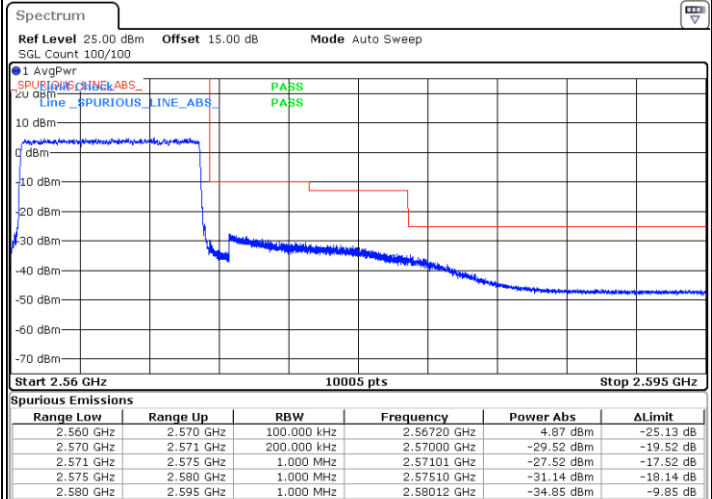
Date: 23.MAY.2023 14:27:14

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 23.MAY.2023 14:17:25

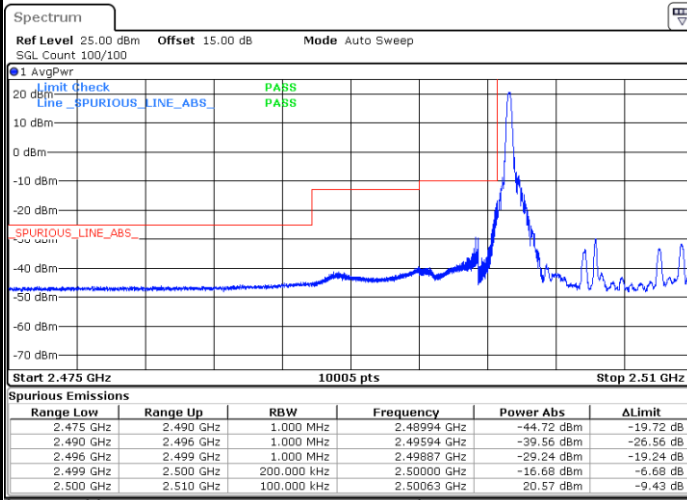


Date: 23.MAY.2023 14:28:34



LTE Band 7 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



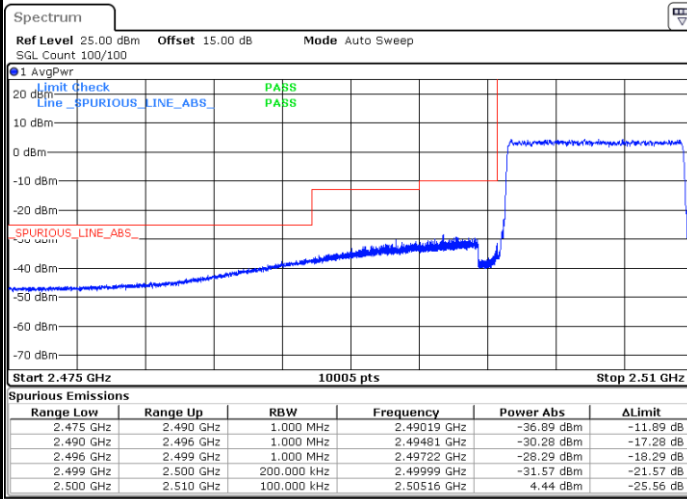
Date: 23.MAY.2023 14:16:46

Highest Band Edge / 1 RB



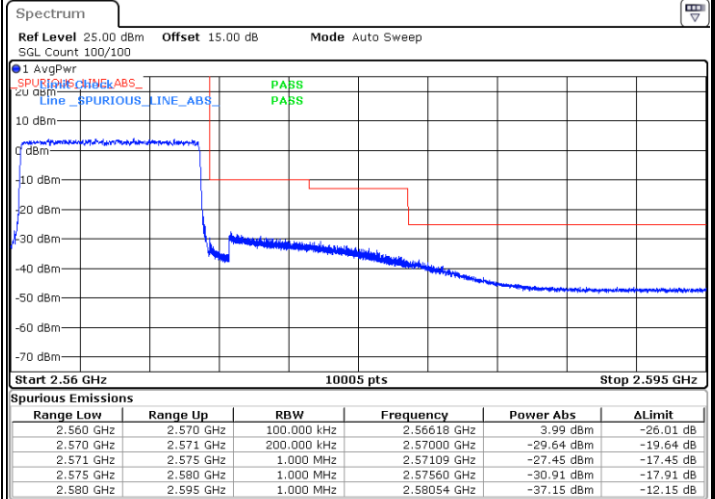
Date: 23.MAY.2023 14:27:54

Lowest Band Edge / Full RB



Date: 23.MAY.2023 14:18:05

Highest Band Edge / Full RB

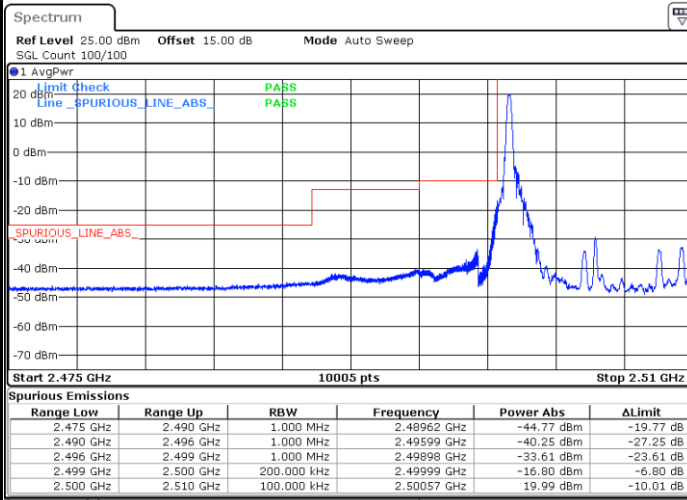


Date: 23.MAY.2023 14:29:13



LTE Band 7 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



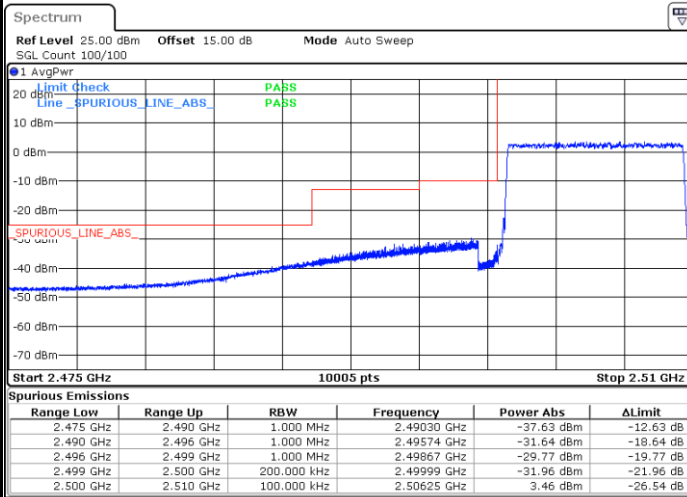
Date: 23.MAY.2023 14:33:09

Highest Band Edge / 1 RB



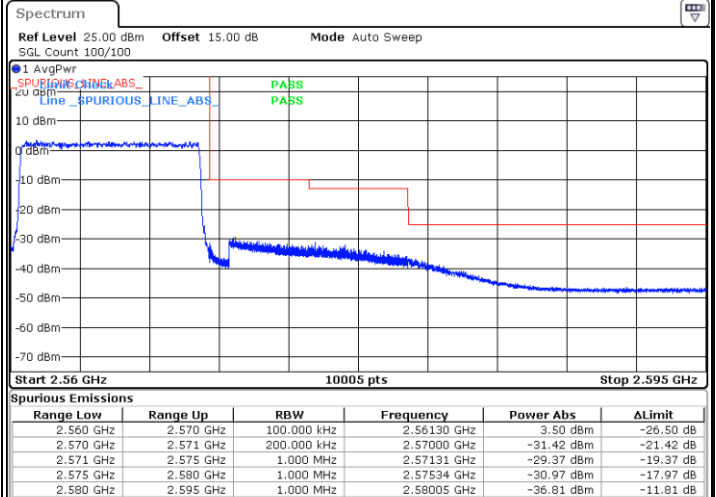
Date: 23.MAY.2023 14:38:25

Lowest Band Edge / Full RB



Date: 23.MAY.2023 14:33:19

Highest Band Edge / Full RB

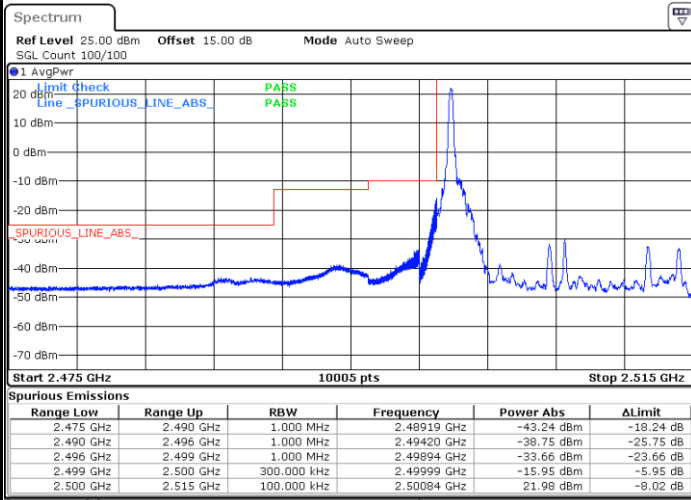


Date: 23.MAY.2023 14:33:05



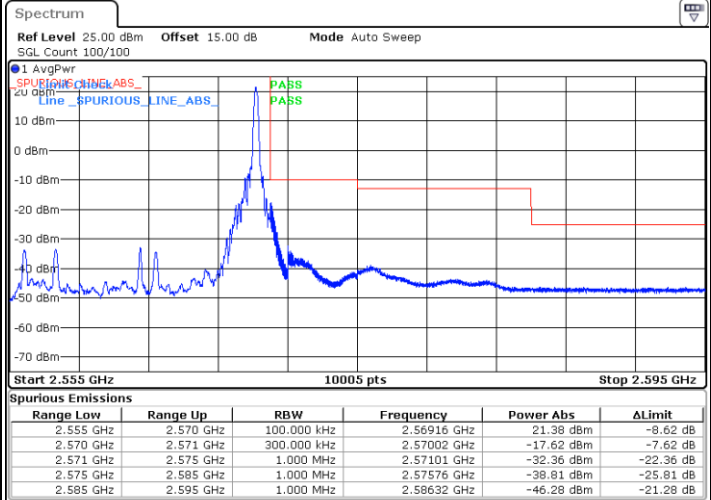
LTE Band 7 / 15MHz / QPSK

Lowest Band Edge / 1 RB



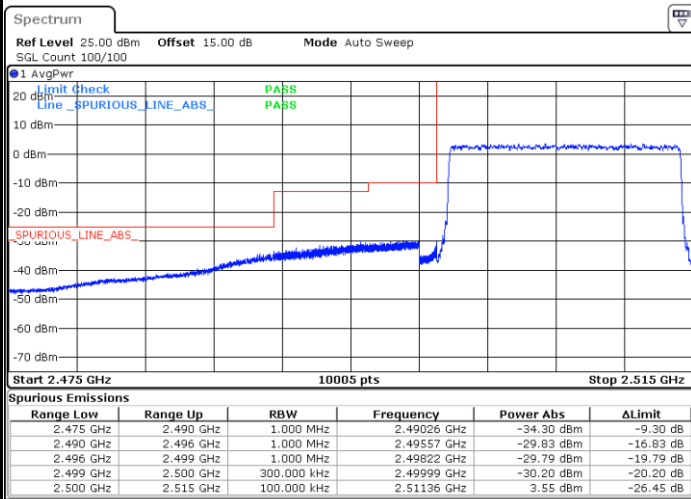
Date: 23.MAY.2023 14:42:42

Highest Band Edge / 1 RB



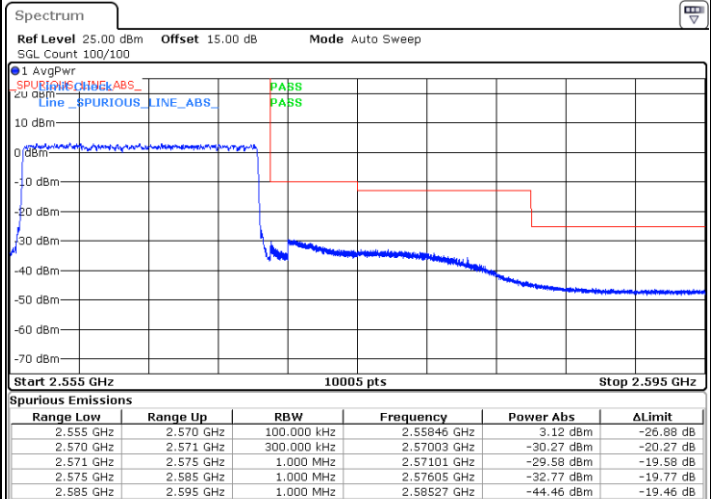
Date: 23.MAY.2023 14:53:51

Lowest Band Edge / Full RB



Date: 23.MAY.2023 14:44:02

Highest Band Edge / Full RB

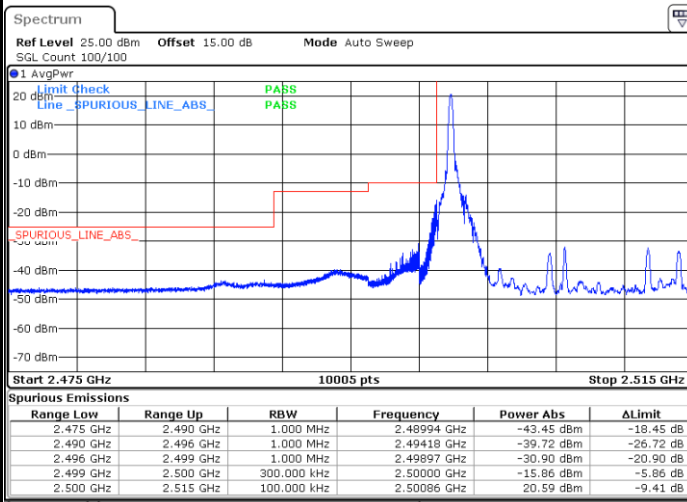


Date: 23.MAY.2023 14:55:10



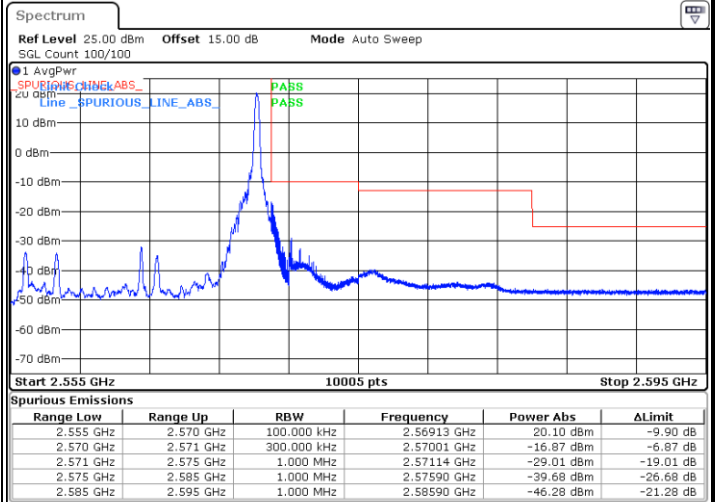
LTE Band 7 / 15MHz / 16QAM

Lowest Band Edge / 1 RB



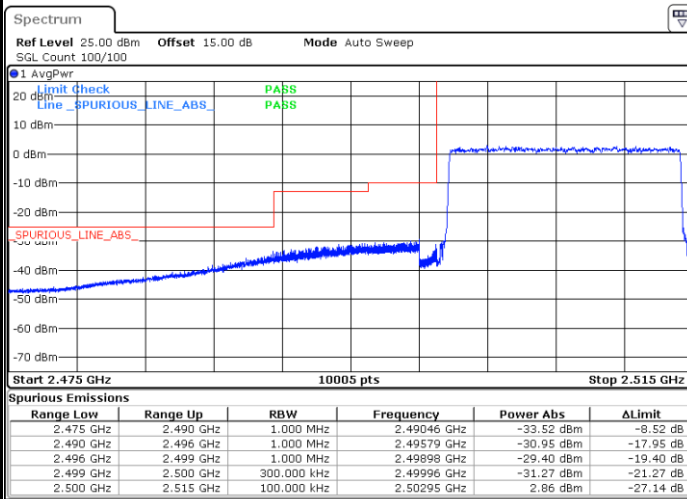
Date: 23.MAY.2023 14:43:22

Highest Band Edge / 1 RB



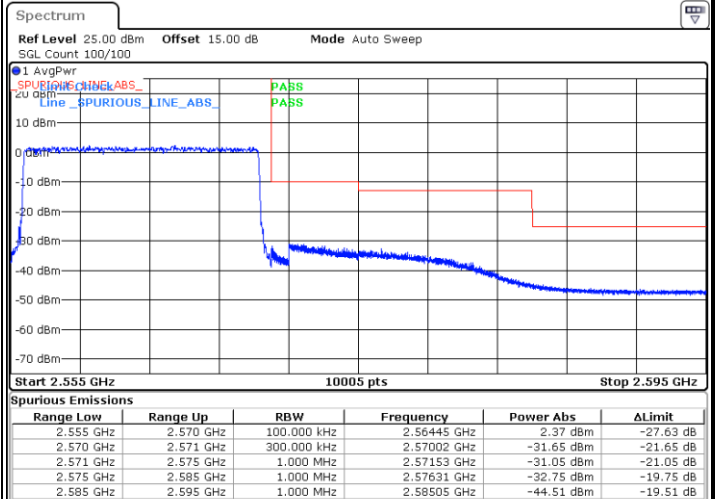
Date: 23.MAY.2023 14:54:31

Lowest Band Edge / Full RB



Date: 23.MAY.2023 14:44:42

Highest Band Edge / Full RB

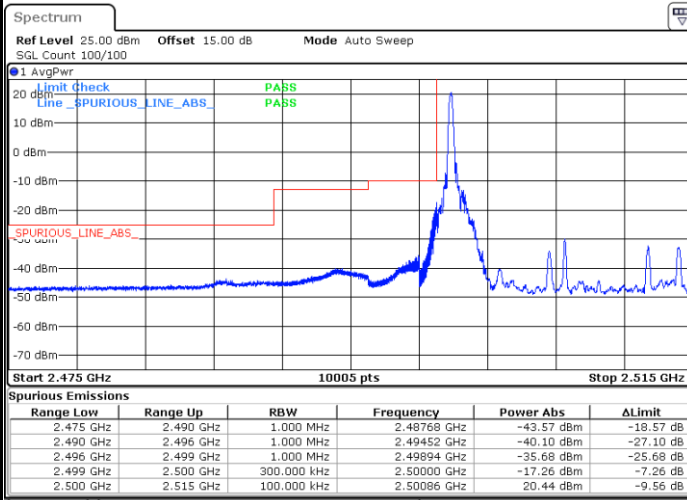


Date: 23.MAY.2023 14:55:50



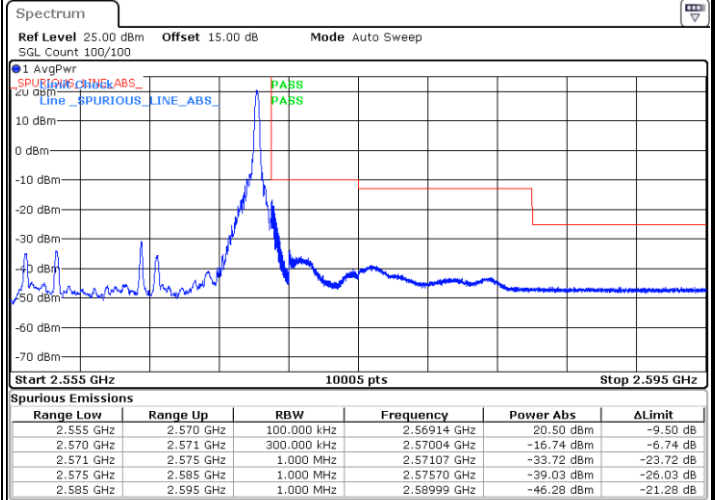
LTE Band 7 / 15MHz / 64QAM

Lowest Band Edge / 1 RB



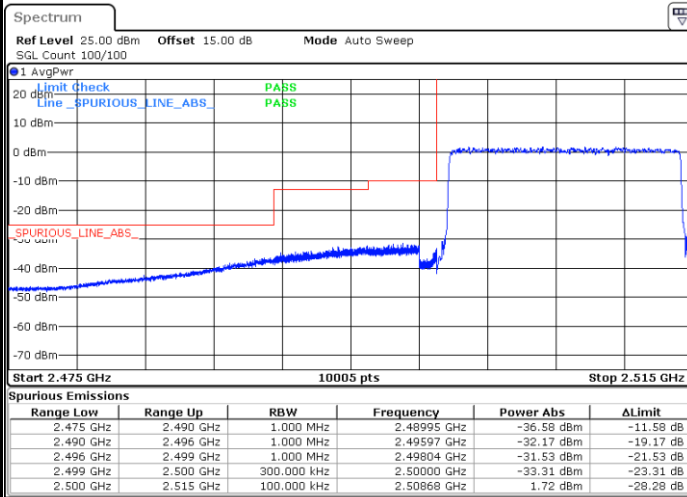
Date: 23.MAY.2023 14:59:47

Highest Band Edge / 1 RB



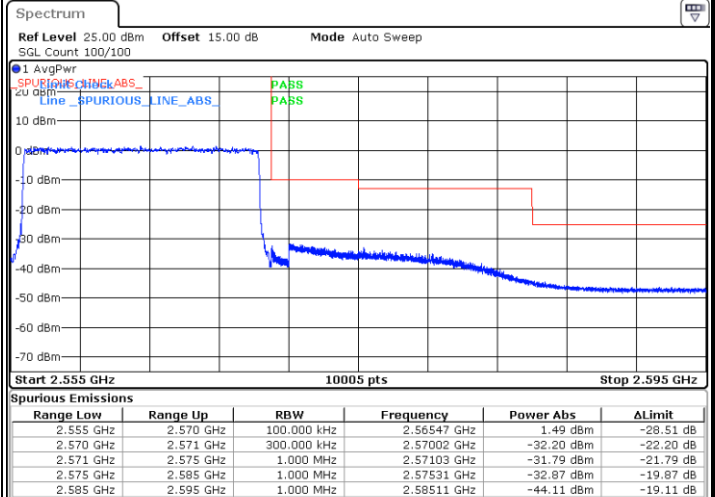
Date: 23.MAY.2023 15:05:02

Lowest Band Edge / Full RB



Date: 23.MAY.2023 15:00:27

Highest Band Edge / Full RB

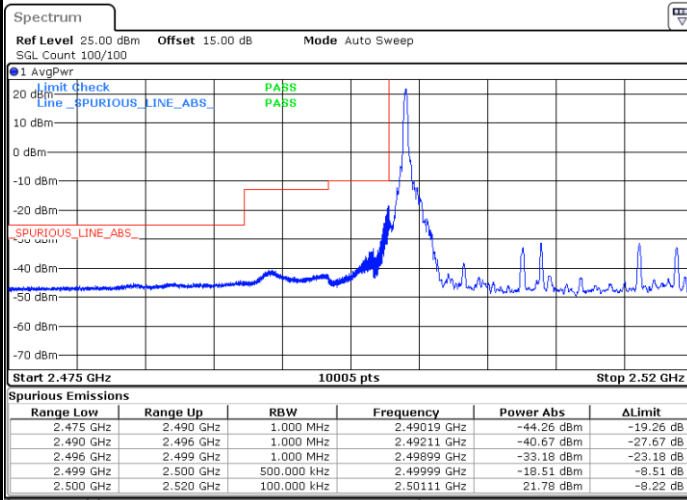


Date: 23.MAY.2023 15:05:42



LTE Band 7 / 20MHz / QPSK

Lowest Band Edge / 1 RB



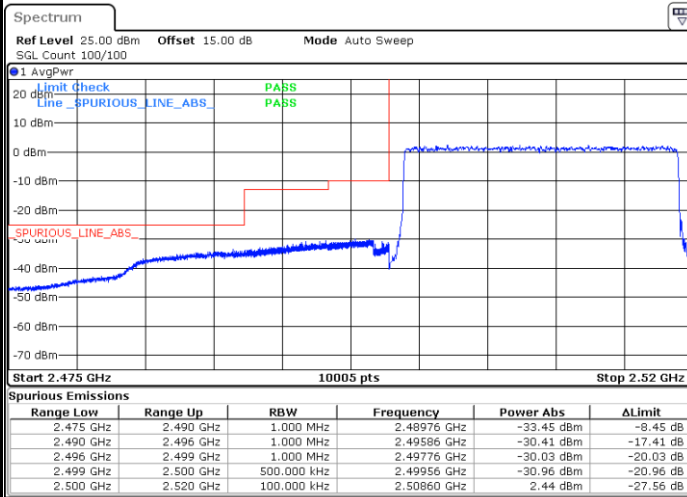
Date: 23.MAY.2023 15:09:19

Highest Band Edge / 1 RB



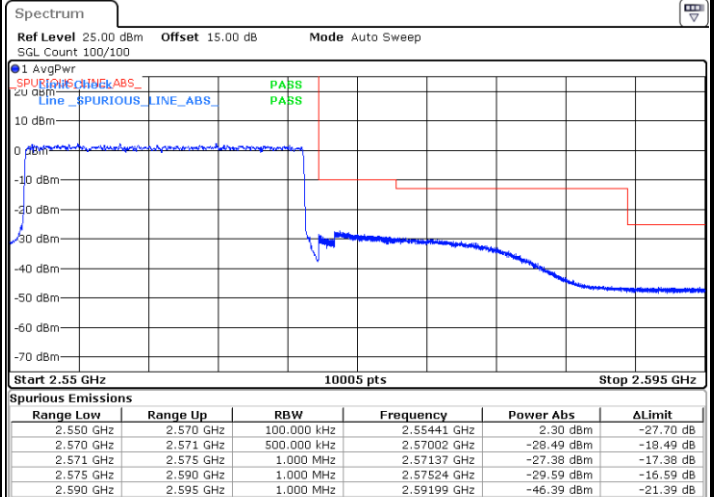
Date: 23.MAY.2023 15:20:28

Lowest Band Edge / Full RB



Date: 23.MAY.2023 15:10:39

Highest Band Edge / Full RB



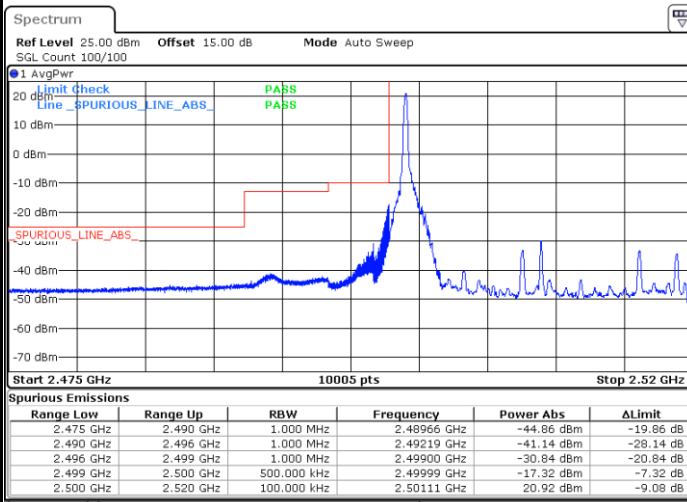
Date: 23.MAY.2023 15:22:27





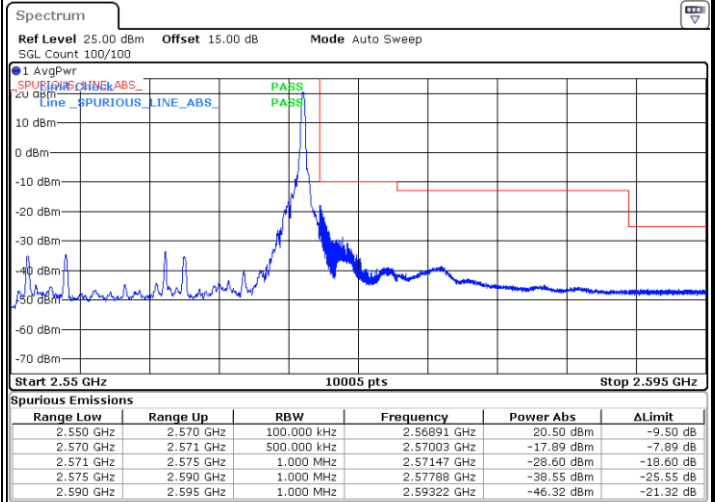
LTE Band 7 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



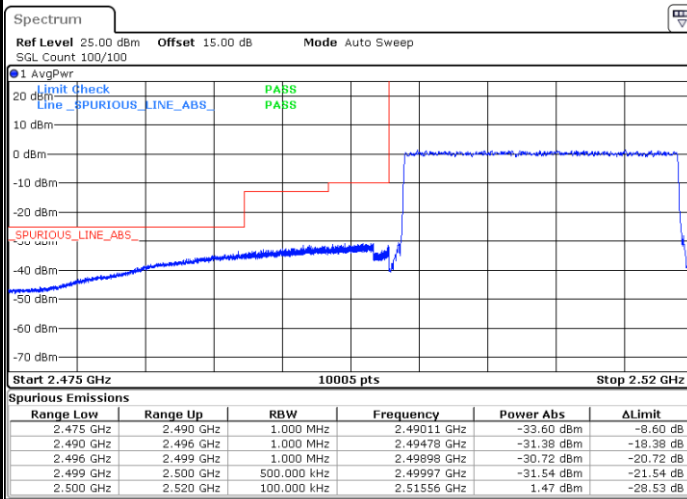
Date: 23.MAY.2023 15:09:59

Highest Band Edge / 1RB



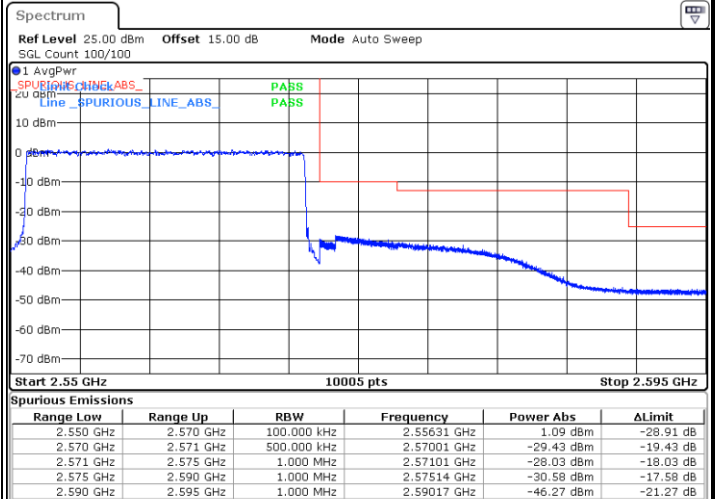
Date: 23.MAY.2023 15:21:07

Lowest Band Edge / Full RB



Date: 23.MAY.2023 15:11:19

Highest Band Edge / Full RB

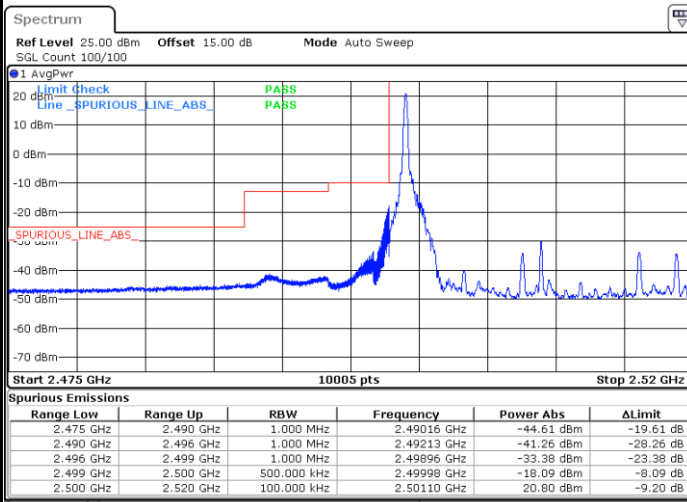


Date: 23.MAY.2023 15:21:47



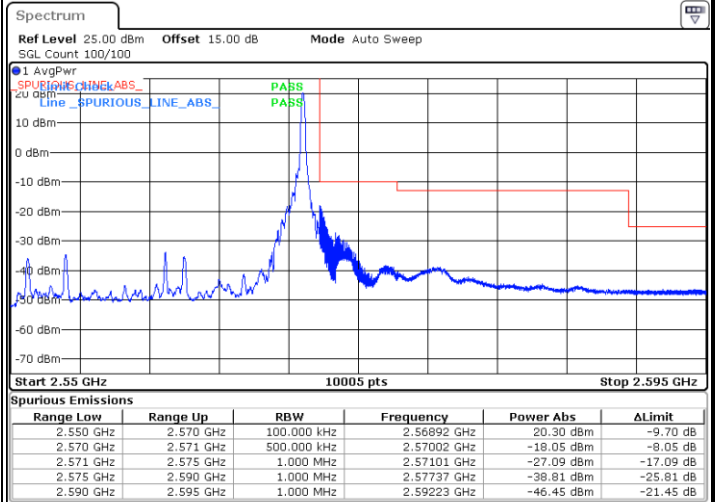
LTE Band 7 / 20MHz / 64QAM

Lowest Band Edge / 1 RB



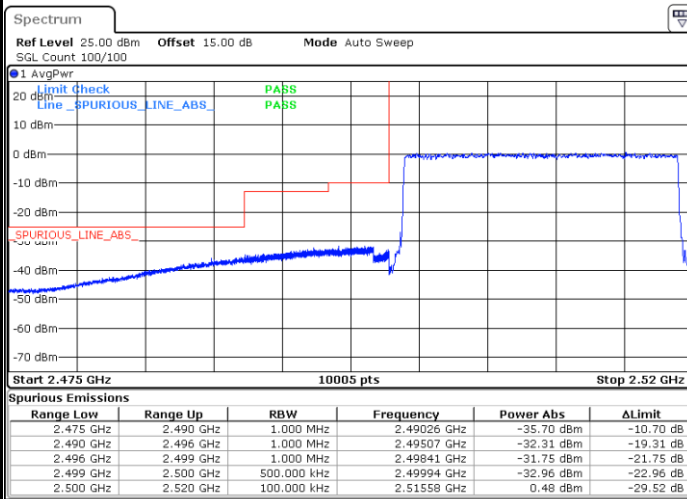
Date: 23.MAY.2023 15:26:24

Highest Band Edge / 1 RB



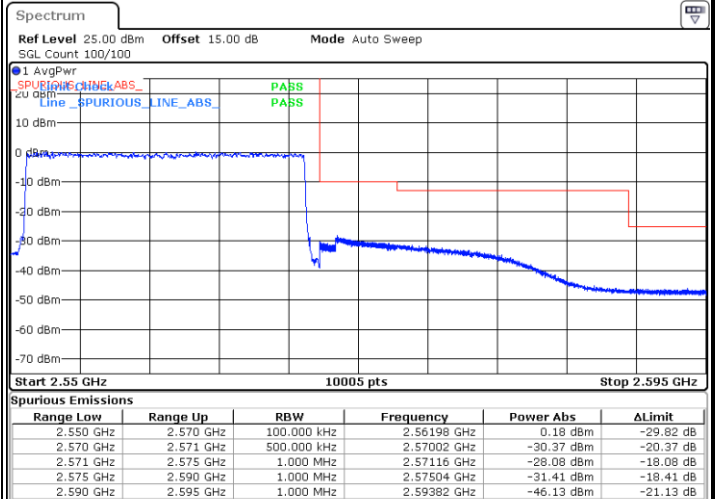
Date: 23.MAY.2023 15:31:39

Lowest Band Edge / Full RB



Date: 23.MAY.2023 15:27:04

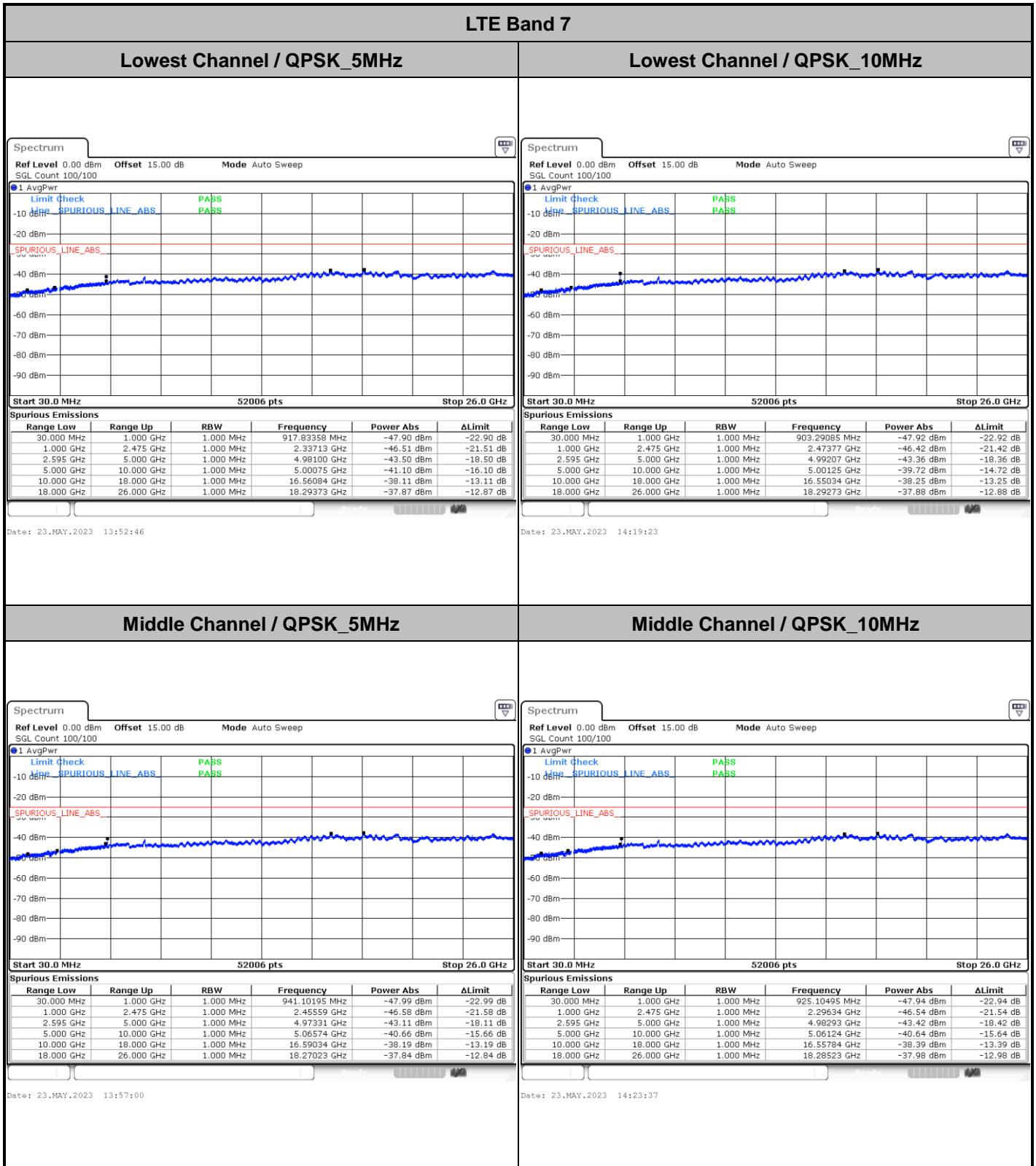
Highest Band Edge / Full RB

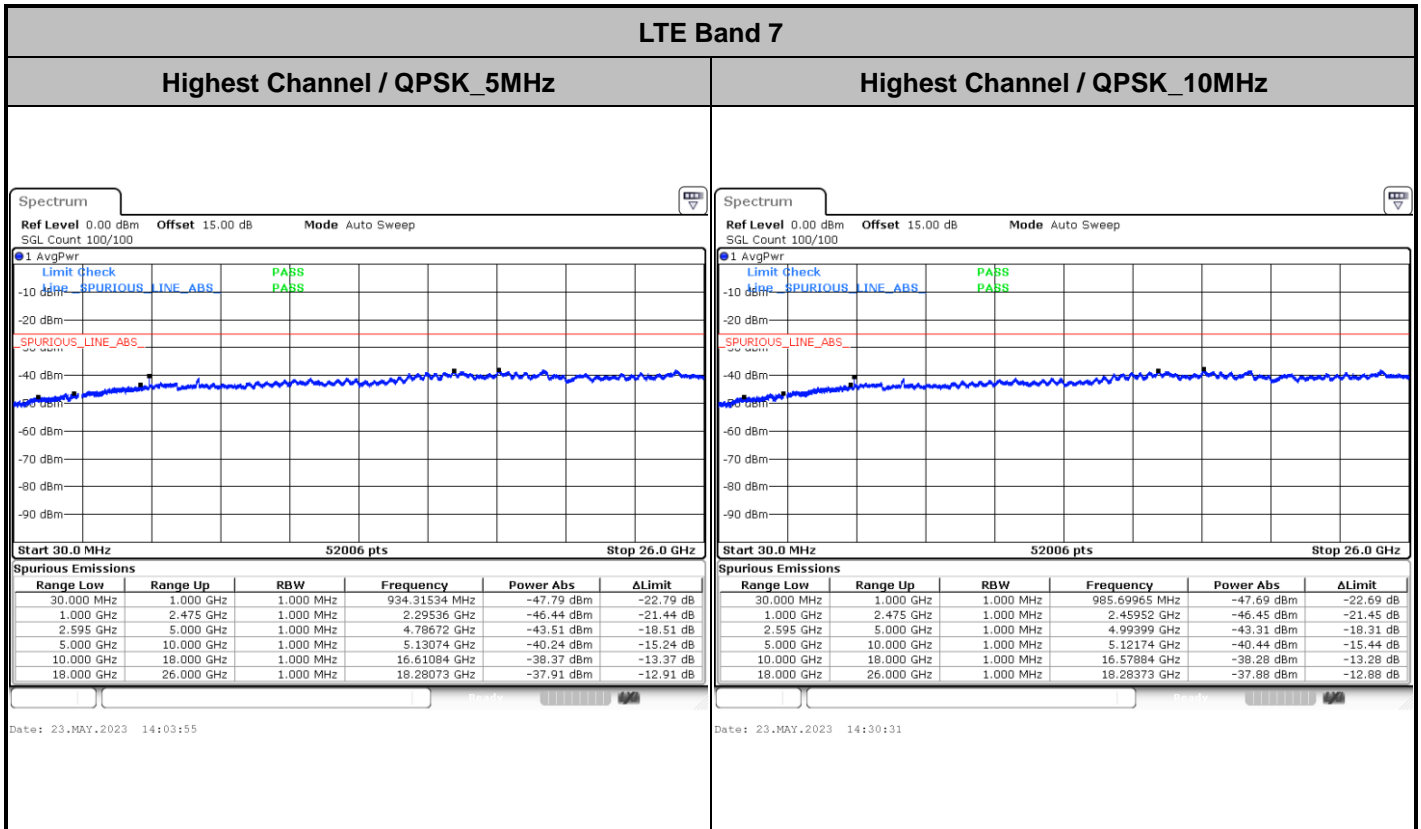


Date: 23.MAY.2023 15:32:18



# Conducted Spurious Emission



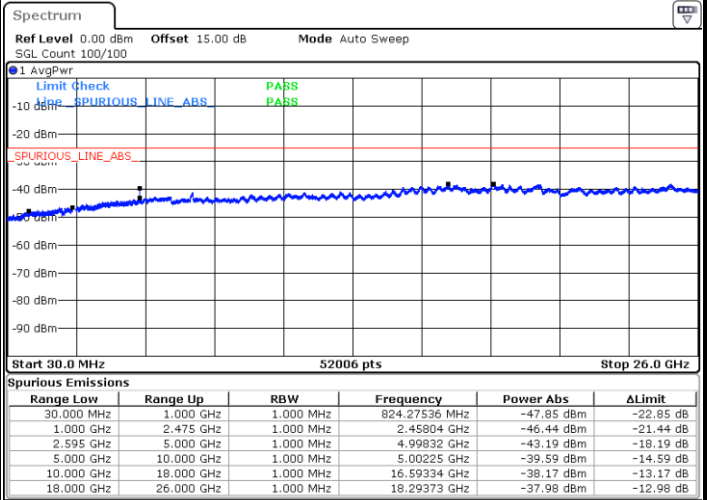
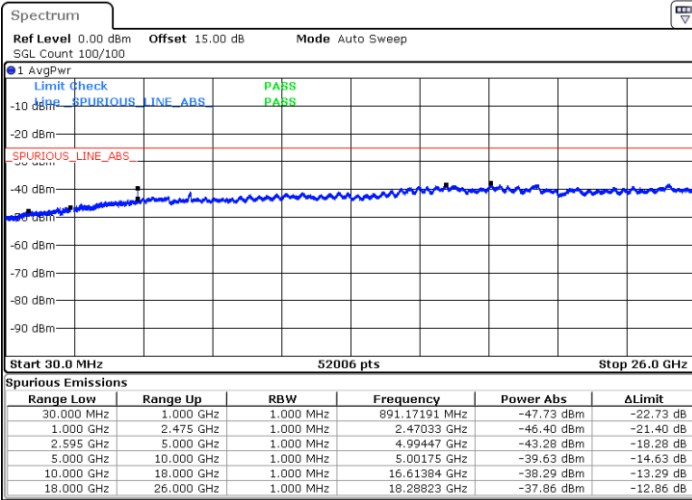




LTE Band 7

Lowest Channel / QPSK\_15MHz

Lowest Channel / QPSK\_20MHz

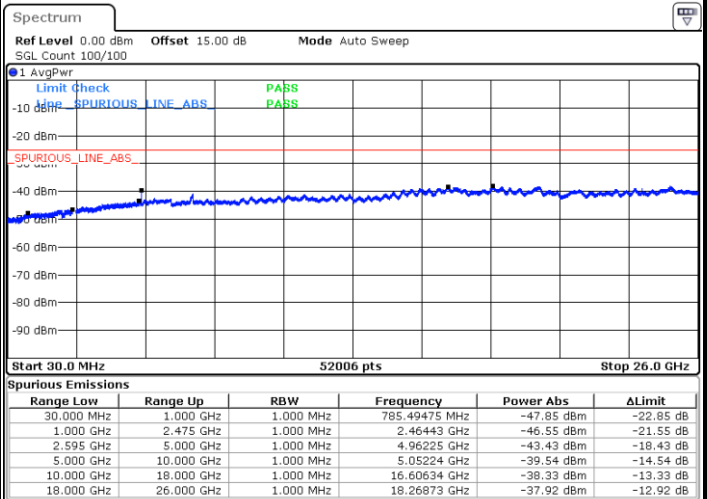
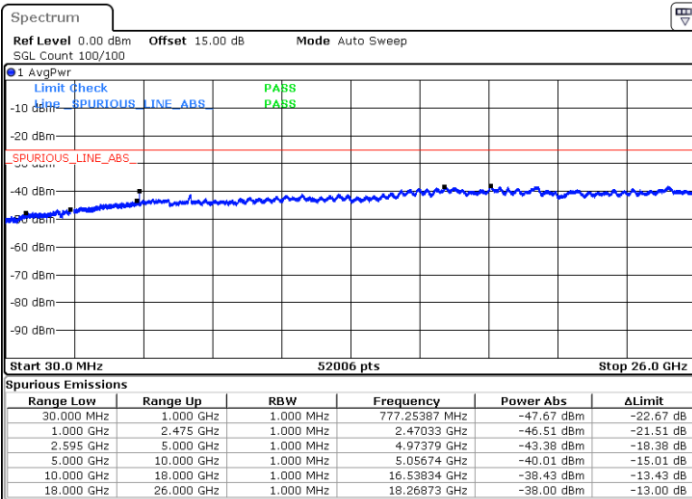


Date: 23.MAY.2023 14:46:00

Date: 23.MAY.2023 15:12:37

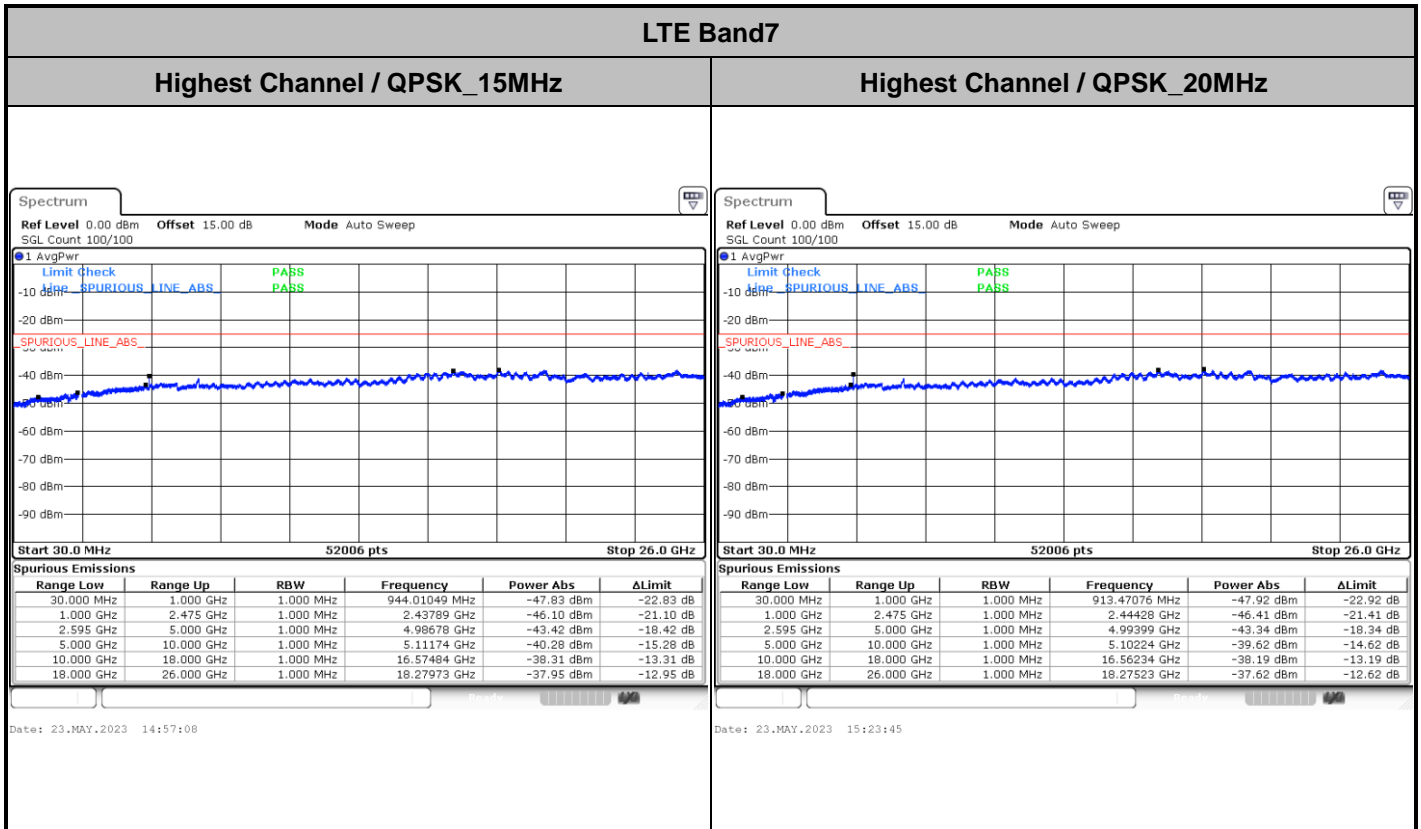
Middle Channel / QPSK\_15MHz

Middle Channel / QPSK\_20MHz



Date: 23.MAY.2023 14:50:14

Date: 23.MAY.2023 15:16:51





Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0003	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0008	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0008	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0005	
-20	Normal Voltage	0.0003	
-30	Normal Voltage	0.0002	
20	Maximum Voltage	0.0006	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0004	

Note:

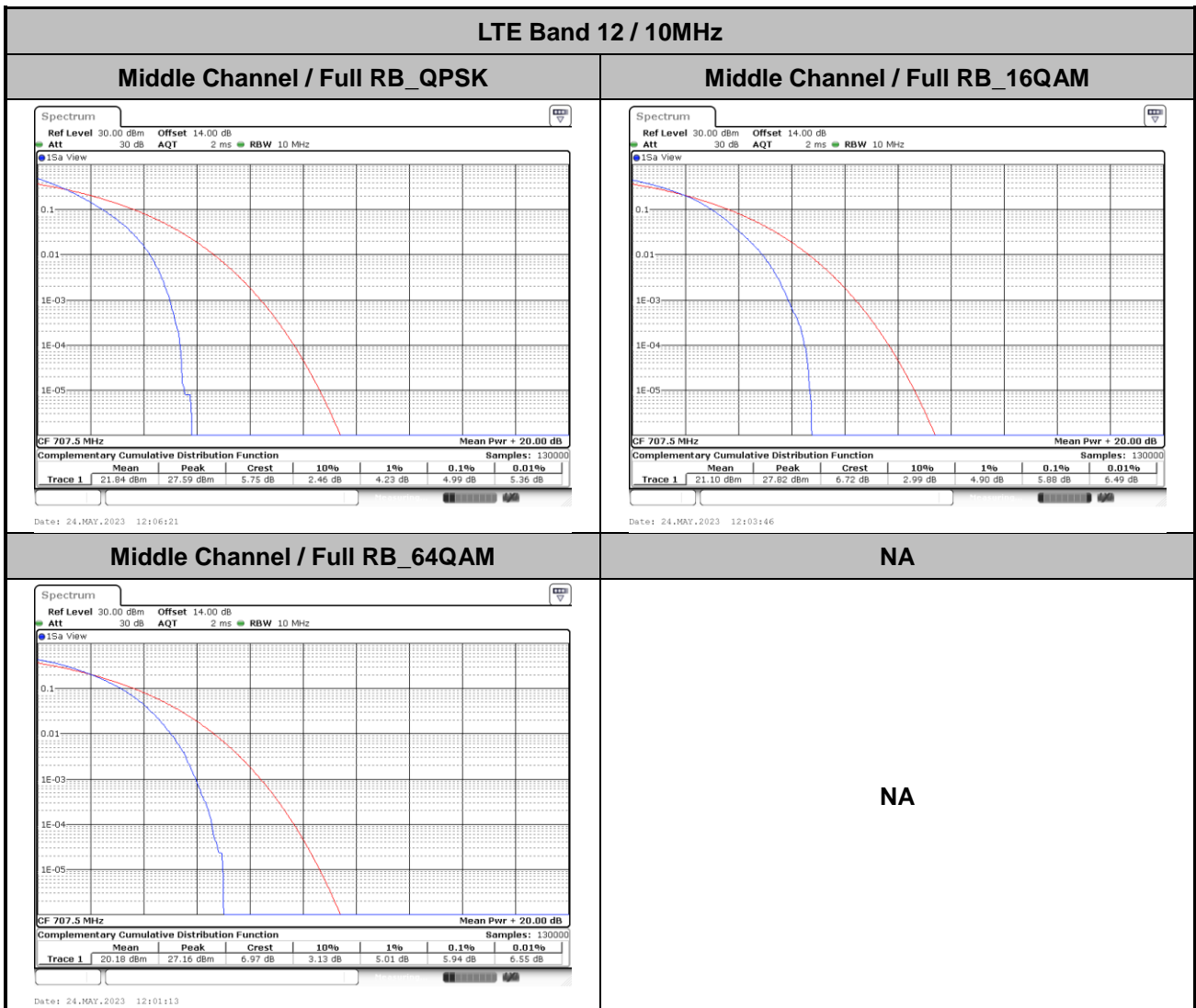
1. Normal Voltage =3.88 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.47 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 12

## Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.99	5.88	5.94	PASS

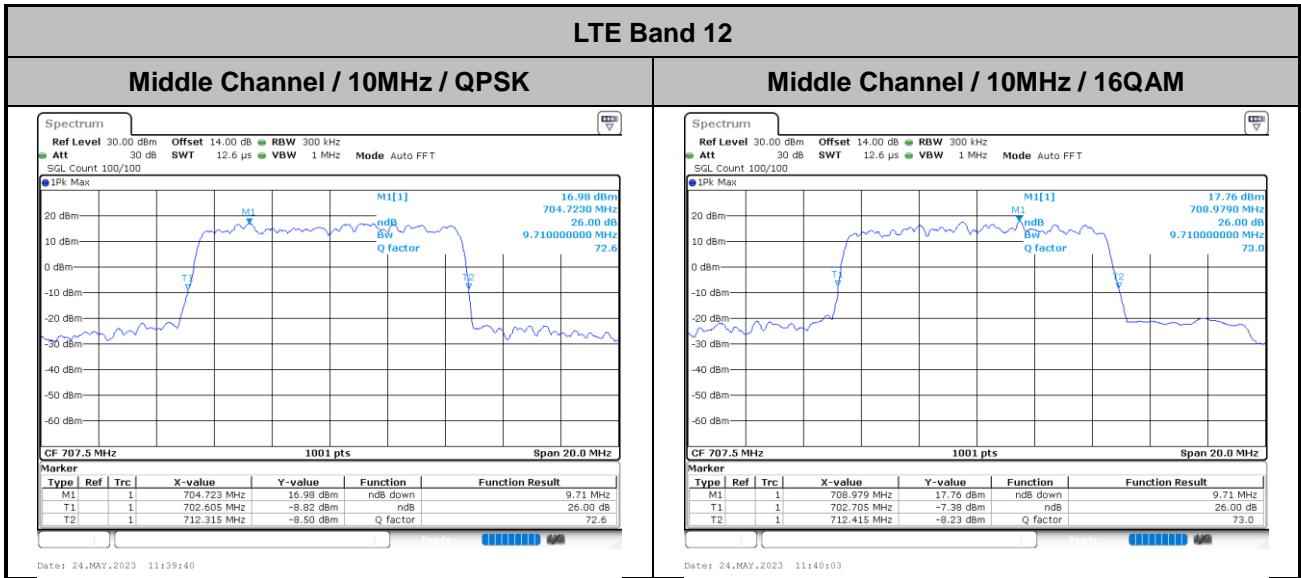






## 26dB Bandwidth

Mode	LTE Band 12 : 26dB BW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.71	9.71





# Occupied Bandwidth

Mode	LTE Band 12 : 99%OBW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.01	8.99

