



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2075-3
FCC ID : IHDT56ZC3
STANDARD : 47 CFR Part 2, 24(E), 27(H), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 11, 2020 and completely tested on Jun. 01, 2020. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

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

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Reviewed by: Jason Jia / Supervisor

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG051103C	Rev. 01	Initial issue of report	Jun. 09, 2020

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 17)	ERP < 3 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7) (Band 38) (Band 41)	EIRP < 2Watt	PASS	-
3.5	-	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(g)	Conducted Band Edge Measurement (Band 12) (Band 17)	< 43+10log ₁₀ (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(g)	Conducted Spurious Emission (Band 12) (Band 17)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 12) (Band 17)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 20.30 dB at 7548.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2075-3
FCC ID	IHDT56ZC3
EUT supports Radios application	CDMA/GSM/WCDMA/LTE/5G NR/NFC WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE GNSS/FM Receiver
IMEI Code	Conducted: 353617110019738/353617110019746 Radiation: 353617110020058/353617110020066
HW Version	DVT2
SW Version	QPN30.33-9
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
Uplink CA Bands	2A-7A, 7A-2A, 7C
Maximum Output Power to Antenna	LTE Band 7 : 23.54 dBm LTE Band 7C : 23.74 dBm LTE Band 12 : 23.08 dBm LTE Band 17 : 23.00 dBm LTE Band 38 : 23.33 dBm LTE Band 41 : 23.43 dBm
Antenna Gain	LTE Band 2 : -1.0 dBi LTE Band 7 : -2.0 dBi LTE Band 12 : -3.0 dBi LTE Band 17 : -3.0 dBi LTE Band 38 : -2.0 dBi LTE Band 41 : -2.0 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Note: The test items of inter band CA were cover by LTE single carrier due to the CA power is reduced according to 3GPP MPR, but except for RSE testing.

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola (Chenyang)	Model Name	MC-201
AC Adapter 1(EU)	Brand Name	Motorola (Chenyang)	Model Name	MC-202
AC Adapter 1(UK)	Brand Name	Motorola (Chenyang)	Model Name	MC-203
AC Adapter 1(AU)	Brand Name	Motorola (Chenyang)	Model Name	MC-205
AC Adapter 2(US)	Brand Name	Motorola (Acbel)	Model Name	MC-201
AC Adapter 2(EU)	Brand Name	Motorola (Acbel)	Model Name	MC-202
AC Adapter 2(UK)	Brand Name	Motorola (Acbel)	Model Name	MC-203
AC Adapter 2(AU)	Brand Name	Motorola (Acbel)	Model Name	MC-205
Battery	Brand Name	Motorola(AmpereX)	Model Name	LZ50
Earphone	Brand Name	Motorola(Lyand)	Model Name	MH191(SH38C81577)
USB Cable 1	Brand Name	Motorola (Luxshare)	Model Name	SC18C24368
USB Cable 2	Brand Name	Motorola (Saibao)	Model Name	SC18C24367

1.6 Modification of EUT

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



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

LTE Band 7		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2502.5 ~ 2567.5	4M50G7D	-	0.1422	4M50W7D	-	0.1216
10	2505.0 ~ 2565.0	9M03G7D	0.0032	0.1396	9M01W7D	-	0.1219
15	2507.5 ~ 2562.5	13M5G7D	-	0.1409	13M5W7D	-	0.1194
20	2510.0 ~ 2560.0	18M3G7D	-	0.1426	18M3W7D	-	0.1186
LTE Band 7		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2502.5 ~ 2567.5	4M53W7D		-		0.0948	
10	2505.0 ~ 2565.0	9M07W7D		-		0.0959	
15	2507.5 ~ 2562.5	13M5W7D		-		0.0923	
20	2510.0 ~ 2560.0	18M3W7D		-		0.0908	
LTE Band 12		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	699.7 ~ 715.3	1M09G7D	-	0.0610	1M09W7D	-	0.0526
3	700.5 ~ 714.5	2M72G7D	-	0.0619	2M72W7D	-	0.0537
5	701.5 ~ 713.5	4M50G7D	-	0.0610	4M50W7D	-	0.0526
10	704.0 ~ 711.0	9M01G7D	0.0107	0.0621	9M05W7D	-	0.0526
LTE Band 12		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)	
1.4	699.7 ~ 715.3	1M09W7D		-		0.0405	
3	700.5 ~ 714.5	2M73W7D		-		0.0416	
5	701.5 ~ 713.5	4M50W7D		-		0.0407	
10	704.0 ~ 711.0	9M01W7D		-		0.0422	



LTE Band 17		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	706.5 ~ 713.5	4M50G7D	-	0.0610	4M50W7D	-	0.0526
10	709.0 ~ 711.0	9M01G7D	0.0107	0.0621	9M05W7D	-	0.0526
LTE Band 17		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)	
5	706.5 ~ 713.5	4M50W7D		-		0.0407	
10	709.0 ~ 711.0	9M01W7D		-		0.0422	
LTE Band 38		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2572.5 ~ 2617.5	4M50G7D	-	0.1327	4M50W7D	-	0.1081
10	2575.0 ~ 2615.0	9M05G7D	0.0046	0.1327	9M07W7D	-	0.1086
15	2577.5 ~ 2612.5	13M5G7D	-	0.1387	13M5W7D	-	0.1076
20	2580.0 ~ 2610.0	18M4G7D	-	0.1390	18M3W7D	-	0.0991
LTE Band 38		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
5	2572.5 ~ 2617.5	4M50W7D		-		0.0859	
10	2575.0 ~ 2615.0	9M05W7D		-		0.0881	
15	2577.5 ~ 2612.5	13M5W7D		-		0.0871	
20	2580.0 ~ 2610.0	18M3W7D		-		0.0815	
LTE Band 41		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2498.5 ~ 2687.5	4M50G7D	-	0.1327	4M50W7D	-	0.1081
10	2501.0 ~ 2685.0	9M05G7D	0.0046	0.1327	9M07W7D	-	0.1086
15	2503.5 ~ 2682.5	13M5G7D	-	0.1387	13M5W7D	-	0.1076
20	2506.0 ~ 2680.0	18M4G7D	-	0.1390	18M3W7D	-	0.0991



LTE Band 41		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)	Maximum EIRP(W)		
5	2498.5 ~ 2687.5	4M50W7D		-	0.0859		
10	2501.0 ~ 2685.0	9M05W7D		-	0.0881		
15	2503.5 ~ 2682.5	13M5W7D		-	0.0871		
20	2506.0 ~ 2680.0	18M3W7D		-	0.0815		
LTE Band 7 CA		QPSK			16QAM		
BW (MHz)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
20MHz+20MHz		37M7G7D	-	0.1493	37M6W7D	-	0.1361
LTE Band 7 CA		64QAM					
BW (MHz)		Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
20MHz+20MHz		37M5W7D		-		0.0822	

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.

1.8 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH04-KS TH01-KS	CN1257	314309

1.9 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.10 Applicable Standards

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

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

Remark:

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



2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	7	-	-	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
	17	-	-	V	V	-	-	V	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V	V
Peak-to-Average Ratio	7	-	-				V	V	V	V	V		V	V	V	V
	12				V	-	-	V	V	V	V		V	V	V	V
	41	-	-				V	V	V	V	V		V	V	V	V
26dB and 99% Bandwidth	7	-	-	V	V	V	V	V	V	V			V	V	V	V
	12	V	V	V	V	-	-	V	V	V			V	V	V	V
	41	-	-	V	V	V	V	V	V	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
	41	-	-	V	V	V	V	V	V	V	V		V	V		V
Conducted Spurious Emission	7	-	-	V	V	V	V	V	V	V	V			V	V	V
	12	V	V	V	V	-	-	V	V	V	V			V	V	V
	41	-	-	V	V	V	V	V	V	V	V			V	V	V
Frequency Stability	7	-	-		V			V					V		V	
	12				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
	12	V	V	V	V	-	-	V	V	V	V			V	V	V
	41	-	-	V	V	V	V	V	V	V	V			V	V	V
Radiated Spurious Emission	7	Worst Case													V	
	12	Worst Case													V	
	41	Worst Case													V	

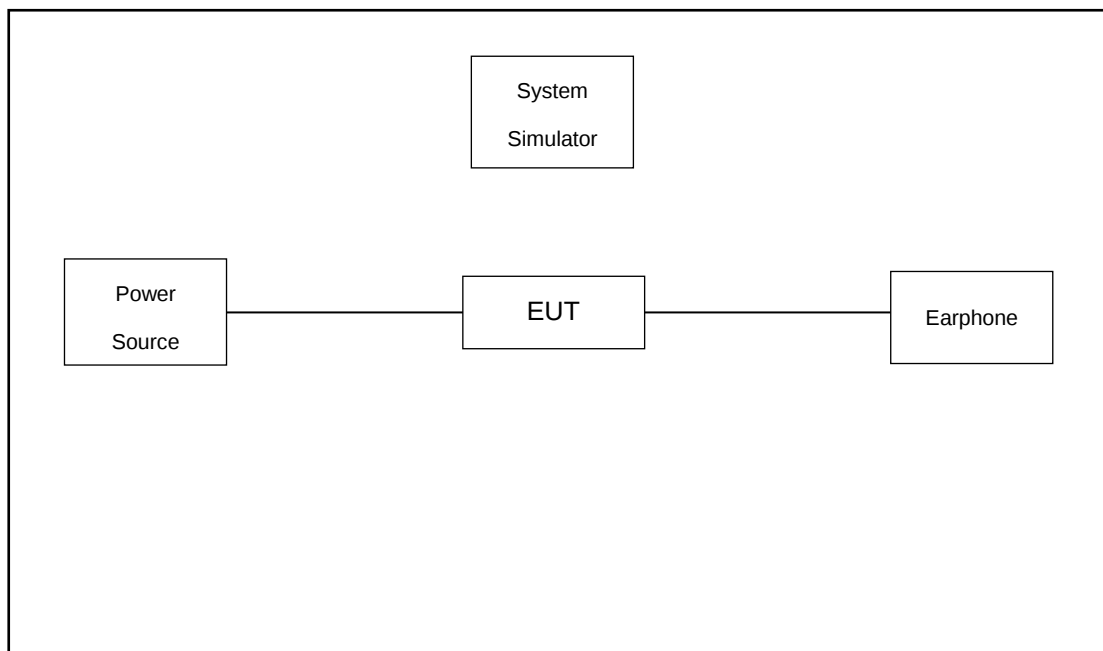


Note	1. The mark "v" means that this configuration is chosen for testing
	2. The mark "-" means that this bandwidth is not supported.
	3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
	4. 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.
	5. LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.

Test Items	Band	Bandwidth (MHz)										Modulation			RB #			Test Channel		
		20+20	20+15	15+20	20+10	10+20	20+5	5+20	15+15	15+10	10+15	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	7C_CA	v										v	v	v	v	v	v	v	v	v
26dB and 99% Bandwidth	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v			v	v	v	v
Conducted Band Edge	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v		v	v		v
Conducted Spurious Emission	7C_CA	v	v	v	v	v	-	-	v	v	-	v	v	v	v			v	v	v
E.I.R.P.	7C_CA	v										v	v	v	v			v	v	v
Radiated Spurious Emission	7C_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. 4. The Maximum Conudcted Power / EIRP are reported of CA combination.																			

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	2A-7A	Worst Case													v	
	7A-2A	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	MT8820C	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

Offset = RF cable loss

Following shows an offset computation example with cable loss 6.0 dB

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} \\
 &= 6.0(\text{dB})
 \end{aligned}$$

2.5 Frequency List of Low/Middle/High Channels

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

LTE Band 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 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

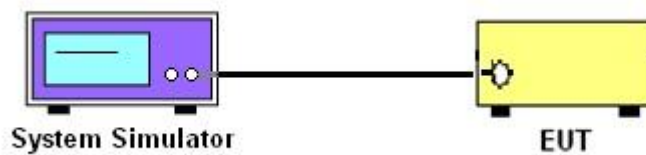
3 Conducted Test Items

3.1 Measuring Instruments

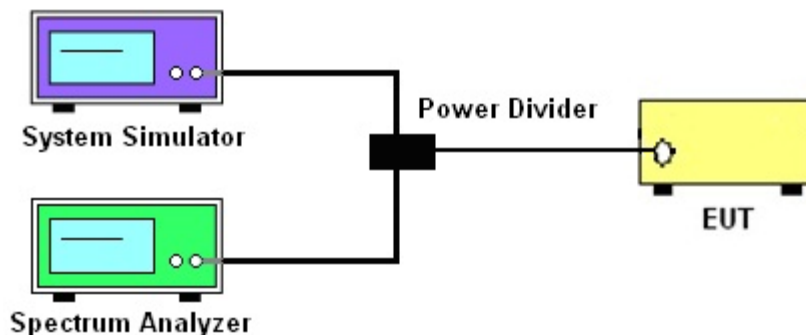
See list of measuring instruments of this test report.

3.2 Test Setup

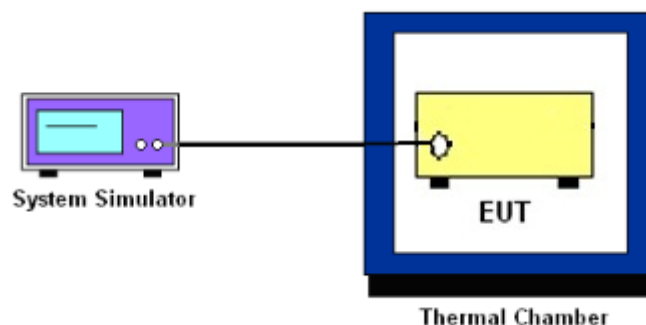
3.2.1 Conducted Output Power



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 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 (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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.7.2 Test Procedures

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

Example:

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

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

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

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

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

For Band 7,38,41:

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

4 Radiated Test Items

4.1 Measuring Instruments

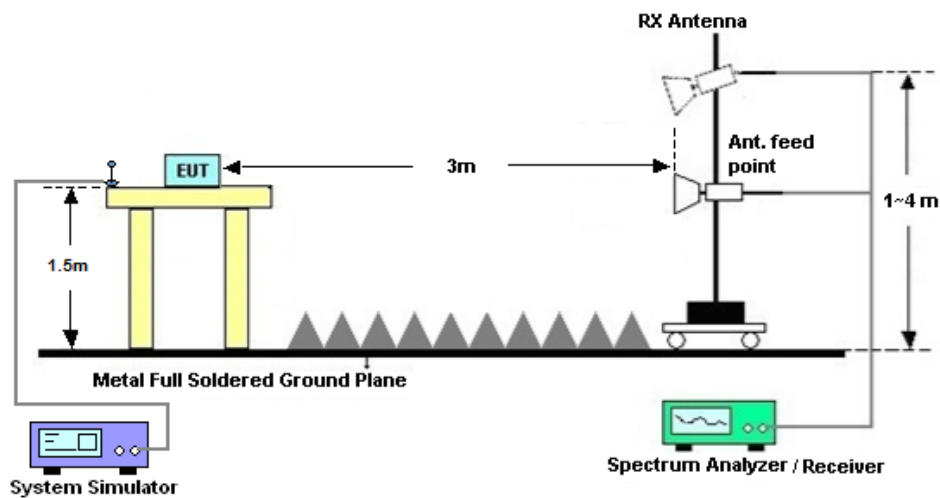
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

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

For Band 7, 38, 41

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

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

4.4.2 Test Procedures

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

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

13. For Band 7, 38, 41:

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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Nov. 02, 2019	May 20, 2020~Jun. 01, 2020	Nov. 01, 2020	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 28, 2019	May 20, 2020~Jun. 01, 2020	Oct. 27, 2020	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 15, 2020	May 21, 2020	Apr. 14, 2021	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2019	May 21, 2020	May 29, 2020	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 20, 2020	May 21, 2020	Apr. 19, 2021	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2019	May 21, 2020	Nov. 09, 2020	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Aug. 06, 2019	May 21, 2020	Aug. 05, 2020	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 08, 2020	May 21, 2020	Jan. 07, 2021	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P	2025788	1Ghz-18Ghz	Aug. 16, 2019	May 21, 2020	Aug. 15, 2020	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 15, 2019	May 21, 2020	Oct. 14, 2020	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	May 21, 2020	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	May 21, 2020	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	May 21, 2020	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.44	23.54	23.34
20	1	49		23.32	23.34	23.21
20	1	99		23.37	23.35	23.24
20	50	0		22.41	22.48	22.33
20	50	24		22.46	22.40	22.35
20	50	50		22.46	22.41	22.27
20	100	0		22.38	22.42	22.26
20	1	0	16-QAM	22.64	22.66	22.58
20	1	49		22.68	22.73	22.59
20	1	99		22.74	22.73	22.60
20	50	0		21.68	21.63	21.52
20	50	24		21.73	21.68	21.55
20	50	50		21.73	21.68	21.45
20	100	0		21.62	21.59	21.46
20	1	0	64-QAM	21.54	21.54	21.46
20	1	49		21.57	21.58	21.43
20	1	99		21.57	21.58	21.43
20	50	0		20.67	20.61	20.54
20	50	24		20.70	20.65	20.53
20	50	50		20.70	20.65	20.48
20	100	0		20.63	20.57	20.47
15	1	0	QPSK	23.34	23.33	23.23
15	1	37		23.38	23.39	23.23
15	1	74		23.49	23.45	23.29
15	36	0		22.49	22.43	22.36
15	36	20		22.53	22.47	22.40
15	36	39		22.51	22.44	22.31
15	75	0		22.47	22.41	22.36



15	1	0	16-QAM	22.70	22.68	22.60
15	1	37		22.74	22.77	22.56
15	1	74		22.77	22.74	22.58
15	36	0		21.75	21.69	21.56
15	36	20		21.77	21.70	21.58
15	36	39		21.77	21.70	21.49
15	75	0		21.71	21.66	21.54
15	1	0	64-QAM	21.54	21.56	21.50
15	1	37		21.59	21.61	21.48
15	1	74		21.59	21.65	21.43
15	36	0		20.74	20.69	20.58
15	36	20		20.78	20.71	20.57
15	36	39		20.78	20.71	20.51
15	75	0		20.71	20.65	20.55



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.37	23.44	23.26
10	1	25		23.38	23.45	23.22
10	1	49		23.44	23.43	23.29
10	25	0		22.55	22.46	22.37
10	25	12		22.55	22.53	22.38
10	25	25		22.57	22.52	22.37
10	50	0		22.49	22.44	22.34
10	1	0	16-QAM	22.77	22.76	22.61
10	1	25		22.77	22.86	22.62
10	1	49		22.83	22.83	22.66
10	25	0		21.71	21.69	21.57
10	25	12		21.77	21.73	21.59
10	25	25		21.74	21.68	21.58
10	50	0		21.68	21.62	21.54
10	1	0	64-QAM	21.73	21.78	21.60
10	1	25		21.78	21.79	21.58
10	1	49		21.78	21.82	21.72
10	25	0		20.72	20.72	20.58
10	25	12		20.78	20.75	20.62
10	25	25		20.76	20.69	20.56
10	50	0		20.67	20.61	20.53
5	1	0	QPSK	23.45	23.41	23.29
5	1	12		23.47	23.53	23.29
5	1	24		23.46	23.50	23.32
5	12	0		22.55	22.48	22.37
5	12	7		22.57	22.56	22.41
5	12	13		22.56	22.56	22.35
5	25	0		22.57	22.51	22.39



5	1	0	16-QAM	22.82	22.75	22.64
5	1	12		22.83	22.82	22.60
5	1	24		22.85	22.81	22.64
5	12	0		21.78	21.75	21.58
5	12	7		21.81	21.75	21.65
5	12	13		21.76	21.74	21.59
5	25	0		21.76	21.70	21.58
5	1	0	64-QAM	21.73	21.72	21.51
5	1	12		21.72	21.77	21.55
5	1	24		21.71	21.71	21.53
5	12	0		20.71	20.69	20.55
5	12	7		20.76	20.73	20.63
5	12	13		20.76	20.71	20.57
5	25	0		20.72	20.69	20.58



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.94	23.08	22.91
10	1	25		22.91	22.91	22.89
10	1	49		22.96	22.96	22.91
10	25	0		21.90	22.12	21.90
10	25	12		22.11	22.01	22.01
10	25	25		22.07	22.03	21.99
10	50	0		22.06	22.07	21.92
10	1	0	16-QAM	22.33	22.33	22.31
10	1	25		22.31	22.36	22.29
10	1	49		22.35	22.34	22.30
10	25	0		21.11	21.11	21.09
10	25	12		21.33	21.25	21.20
10	25	25		21.25	21.26	21.23
10	50	0		21.22	21.16	21.11
10	1	0	64-QAM	21.36	21.38	21.34
10	1	25		21.29	21.33	21.34
10	1	49		21.40	21.37	21.23
10	25	0		20.15	20.11	20.10
10	25	12		20.33	20.26	20.20
10	25	25		20.24	20.25	20.18
10	50	0		20.24	20.15	20.12
5	1	0	QPSK	22.95	22.94	22.91
5	1	12		23.00	23.00	22.94
5	1	24		22.99	22.97	22.91
5	12	0		22.09	22.00	21.94
5	12	7		22.12	22.06	21.99
5	12	13		22.10	22.05	22.00
5	25	0		22.08	22.03	21.93



5	1	0	16-QAM	22.31	22.25	22.27
5	1	12		22.36	22.34	22.29
5	1	24		22.36	22.32	22.26
5	12	0		21.34	21.25	21.18
5	12	7		21.35	21.26	21.19
5	12	13		21.29	21.28	21.21
5	25	0		21.30	21.24	21.14
5	1	0	64-QAM	21.22	21.21	21.13
5	1	12		21.25	21.22	21.15
5	1	24		21.25	21.24	21.15
5	12	0		20.30	20.23	20.16
5	12	7		20.33	20.25	20.17
5	12	13		20.29	20.29	20.19
5	25	0		20.32	20.23	20.17



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.07	22.98	22.93
3	1	8		23.06	23.07	22.94
3	1	14		23.01	23.02	22.91
3	8	0		22.11	22.02	22.00
3	8	4		22.13	22.06	22.01
3	8	7		22.06	22.08	21.99
3	15	0		22.10	22.03	21.97
3	1	0	16-QAM	22.41	22.34	22.30
3	1	8		22.45	22.41	22.29
3	1	14		22.35	22.33	22.20
3	8	0		21.37	21.31	21.24
3	8	4		21.38	21.30	21.25
3	8	7		21.34	21.35	21.25
3	15	0		21.36	21.24	21.23
3	1	0	64-QAM	21.30	21.22	21.19
3	1	8		21.34	21.32	21.22
3	1	14		21.26	21.26	21.15
3	8	0		20.33	20.26	20.24
3	8	4		20.33	20.27	20.24
3	8	7		20.30	20.31	20.23
3	15	0		20.32	20.25	20.20
1.4	1	0	QPSK	22.89	22.83	22.78
1.4	1	3		22.97	22.95	22.82
1.4	1	5		22.93	22.87	22.76
1.4	3	0		22.98	22.87	22.78
1.4	3	1		23.00	22.96	22.85
1.4	3	3		22.95	22.93	22.79
1.4	6	0		22.00	21.92	21.86



1.4	1	0	16-QAM	22.29	22.18	22.12
1.4	1	3		22.36	22.32	22.17
1.4	1	5		22.26	22.26	22.15
1.4	3	0		22.05	21.94	21.90
1.4	3	1		22.08	22.06	21.94
1.4	3	3		22.01	22.00	21.87
1.4	6	0		21.29	21.21	21.13
1.4	1	0	64-QAM	21.17	21.13	21.04
1.4	1	3		21.20	21.22	21.08
1.4	1	5		21.18	21.15	21.02
1.4	3	0		21.09	21.01	20.93
1.4	3	1		21.15	21.13	21.00
1.4	3	3		21.09	21.06	20.93
1.4	6	0		20.21	20.13	20.08



LTE Band 17 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.95	23.00	22.89
10	1	25		22.91	22.90	22.89
10	1	49		22.92	22.90	22.88
10	25	0		21.98	22.13	21.97
10	25	12		22.12	22.02	22.01
10	25	25		22.11	22.07	22.03
10	50	0		22.08	22.10	21.96
10	1	0	16-QAM	22.38	22.34	22.34
10	1	25		22.32	22.31	22.27
10	1	49		22.31	22.30	22.27
10	25	0		21.18	21.19	21.15
10	25	12		21.30	21.24	21.17
10	25	25		21.24	21.25	21.26
10	50	0		21.30	21.18	21.20
10	1	0	64-QAM	21.25	21.23	21.28
10	1	25		21.34	21.33	21.34
10	1	49		21.33	21.28	21.30
10	25	0		20.19	20.18	20.18
10	25	12		20.31	20.22	20.22
10	25	25		20.24	20.25	20.21
10	50	0		20.29	20.17	20.18
5	1	0	QPSK	22.90	22.86	22.83
5	1	12		22.99	22.99	22.92
5	1	24		22.95	22.95	22.87
5	12	0		22.00	22.00	21.96
5	12	7		22.08	22.01	22.01
5	12	13		22.06	22.03	21.97
5	25	0		22.08	21.99	21.94



5	1	0	16-QAM	22.20	22.14	22.18
5	1	12		22.26	22.26	22.22
5	1	24		22.25	22.24	22.17
5	12	0		21.24	21.20	21.18
5	12	7		21.28	21.23	21.22
5	12	13		21.27	21.25	21.17
5	25	0		21.29	21.22	21.15
5	1	0	64-QAM	21.17	21.12	21.07
5	1	12		21.21	21.19	21.19
5	1	24		21.20	21.16	21.14
5	12	0		20.18	20.18	20.13
5	12	7		20.30	20.21	20.20
5	12	13		20.26	20.24	20.16
5	25	0		20.26	20.21	20.13



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.28	23.33	23.28
20	1	49		23.14	23.28	23.31
20	1	99		23.13	23.32	23.20
20	50	0		22.26	22.37	22.19
20	50	24		22.20	22.36	22.32
20	50	50		22.32	22.29	22.32
20	100	0		22.25	22.27	22.22
20	1	0	16-QAM	22.09	22.06	22.03
20	1	49		22.06	22.04	22.03
20	1	99		22.10	22.08	22.11
20	50	0		21.15	21.12	21.06
20	50	24		21.25	21.25	21.17
20	50	50		21.19	21.17	21.17
20	100	0		21.13	21.13	21.07
20	1	0	64-QAM	21.08	21.17	21.18
20	1	49		21.04	21.05	21.14
20	1	99		21.06	21.13	21.17
20	50	0		20.29	20.27	20.20
20	50	24		20.38	20.39	20.34
20	50	50		20.33	20.33	20.33
20	100	0		20.40	20.38	20.34
15	1	0	QPSK	23.22	23.15	23.21
15	1	37		23.26	23.20	23.25
15	1	74		23.19	23.25	23.32
15	36	0		22.28	22.28	22.20
15	36	20		22.36	22.36	22.39
15	36	39		22.31	22.29	22.32
15	75	0		22.29	22.29	22.32



15	1	0	16-QAM	22.41	22.38	22.34
15	1	37		22.34	22.33	22.39
15	1	74		22.10	22.08	22.09
15	36	0		21.08	21.06	21.02
15	36	20		21.18	21.17	21.21
15	36	39		21.13	21.11	21.12
15	75	0		21.16	21.14	21.20
15	1	0	64-QAM	21.04	21.03	21.07
15	1	37		20.98	21.08	21.12
15	1	74		21.01	21.07	21.10
15	36	0		20.36	20.32	20.28
15	36	20		20.20	20.02	20.19
15	36	39		20.39	20.35	20.38
15	75	0		20.37	20.37	20.39



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.95	23.23	23.21
10	1	25		23.13	23.20	23.22
10	1	49		23.01	23.28	22.98
10	25	0		22.24	22.22	22.15
10	25	12		22.36	22.37	22.32
10	25	25		22.29	22.26	22.07
10	50	0		22.26	22.28	22.20
10	1	0	16-QAM	22.10	22.33	22.38
10	1	25		22.37	22.36	22.42
10	1	49		22.11	22.40	22.07
10	25	0		21.11	21.07	21.06
10	25	12		21.24	21.20	21.16
10	25	25		21.13	21.13	21.17
10	50	0		21.15	21.14	21.10
10	1	0	64-QAM	20.87	21.16	21.17
10	1	25		21.09	21.09	21.12
10	1	49		20.84	21.16	21.22
10	25	0		20.27	20.29	20.25
10	25	12		20.20	20.19	20.38
10	25	25		20.36	20.34	20.18
10	50	0		20.33	20.31	20.26
5	1	0	QPSK	23.20	23.13	23.18
5	1	12		23.24	23.20	23.25
5	1	24		23.19	23.18	23.23
5	12	0		22.33	22.27	22.31
5	12	7		22.38	22.34	22.40
5	12	13		22.36	22.32	22.35
5	25	0		22.33	22.31	22.33



5	1	0	16-QAM	21.93	21.92	21.99
5	1	12		22.11	22.05	22.16
5	1	24		22.04	22.01	22.04
5	12	0		21.15	21.12	21.15
5	12	7		21.20	21.18	21.22
5	12	13		21.19	21.14	21.20
5	25	0		21.22	21.16	21.25
5	1	0	64-QAM	20.97	20.95	20.98
5	1	12		21.03	20.97	21.00
5	1	24		21.01	20.99	21.01
5	12	0		20.37	20.32	20.35
5	12	7		20.41	20.40	20.18
5	12	13		20.38	20.35	20.41
5	25	0		20.38	20.34	20.38



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.40	23.43	23.25
20	1	49		23.13	23.04	23.12
20	1	99		23.14	23.05	23.04
20	50	0		22.22	22.42	22.36
20	50	24		22.26	22.15	22.41
20	50	50		22.17	22.11	22.12
20	100	0		22.15	22.29	22.16
20	1	0	16-QAM	21.96	21.53	21.50
20	1	49		21.91	21.80	21.86
20	1	99		21.89	21.57	21.78
20	50	0		21.45	21.15	21.30
20	50	24		21.47	21.37	21.47
20	50	50		21.47	21.33	21.40
20	100	0		21.38	21.26	21.38
20	1	0	64-QAM	21.08	20.76	20.72
20	1	49		21.01	21.11	20.86
20	1	99		20.94	20.73	20.76
20	50	0		20.37	20.11	20.27
20	50	24		20.42	20.34	20.41
20	50	50		20.36	20.28	20.33
20	100	0		20.42	20.30	20.43
15	1	0	QPSK	23.42	23.09	23.25
15	1	37		23.13	23.00	23.19
15	1	74		23.15	22.95	23.15
15	36	0		22.27	21.96	22.19
15	36	20		21.91	22.17	22.23
15	36	39		22.25	22.12	22.22
15	75	0		21.76	22.12	22.26



15	1	0	16-QAM	22.32	21.90	22.08
15	1	37		22.07	22.08	22.21
15	1	74		22.01	22.04	22.26
15	36	0		21.09	21.13	21.36
15	36	20		21.42	21.31	21.38
15	36	39		21.26	21.31	21.39
15	75	0		21.36	21.32	21.47
15	1	0	64-QAM	21.40	20.96	21.39
15	1	37		21.30	21.38	21.25
15	1	74		21.35	21.23	21.23
15	36	0		20.45	20.17	20.39
15	36	20		20.46	20.36	20.42
15	36	39		20.35	20.33	20.44
15	75	0		20.38	20.30	20.46



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.16	22.78	22.95
10	1	25		23.06	23.00	23.12
10	1	49		23.23	22.85	22.97
10	25	0		22.27	22.13	22.25
10	25	12		22.30	22.20	22.32
10	25	25		22.22	22.12	22.24
10	50	0		22.21	22.09	22.22
10	1	0	16-QAM	22.36	21.95	22.14
10	1	25		22.09	22.14	22.33
10	1	49		22.00	21.92	22.09
10	25	0		21.47	21.29	21.48
10	25	12		21.27	21.44	21.36
10	25	25		21.45	21.29	21.42
10	50	0		21.20	21.37	21.46
10	1	0	64-QAM	21.09	21.15	21.30
10	1	25		21.15	21.35	21.25
10	1	49		21.45	21.24	21.33
10	25	0		20.45	20.28	20.43
10	25	12		20.49	20.38	20.27
10	25	25		20.48	20.31	20.43
10	50	0		20.27	20.31	20.44
5	1	0	QPSK	23.19	23.02	23.23
5	1	12		23.22	23.10	23.23
5	1	24		23.17	23.09	23.23
5	12	0		22.29	22.18	22.34
5	12	7		22.30	22.23	22.35
5	12	13		22.27	22.18	22.30
5	25	0		22.27	22.17	22.31



5	1	0	16-QAM	22.34	22.09	22.34
5	1	12		22.34	22.15	22.28
5	1	24		22.33	22.11	22.27
5	12	0		21.17	21.09	21.19
5	12	7		21.19	21.11	21.25
5	12	13		21.13	21.06	21.22
5	25	0		21.18	21.07	21.21
5	1	0	64-QAM	21.12	20.99	21.19
5	1	12		21.06	21.13	21.34
5	1	24		21.10	21.04	21.28
5	12	0		20.14	20.09	20.21
5	12	7		20.18	20.12	20.25
5	12	13		20.14	20.10	20.18
5	25	0		20.11	20.08	20.21

**CA Power**

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	100	0	100	0	200	21.67
			1	0	1	99	2	17.15
			1	0	1	0	2	18.23
			1	99	1	0	2	23.74
			100	0	1	99	101	20.33
		16QAM	100	0	100	0	200	20.11
			1	0	1	99	2	18.00
			1	0	1	0	2	18.01
			1	99	1	0	2	23.34
			100	0	1	99	101	20.23
		64QAM	100	0	100	0	200	18.89
			1	0	1	99	2	17.51
			1	0	1	0	2	18.01
			1	99	1	0	2	21.15
			100	0	1	99	101	20.39
21001	21199	QPSK	100	0	100	0	200	21.54
			1	0	1	99	2	16.98
			1	0	1	0	2	18.12
			1	99	1	0	2	23.67
			100	0	1	99	101	20.12
		16QAM	100	0	100	0	200	20.00
			1	0	1	99	2	17.78
			1	0	1	0	2	18.00
			1	99	1	0	2	23.13
			100	0	1	99	101	20.12
		64QAM	100	0	100	0	200	19.05
			1	0	1	99	2	17.56
			1	0	1	0	2	17.80



21152	21350		1	99	1	0	2	20.87
			100	0	1	99	101	20.11
		QPSK	100	0	100	0	200	22.31
			1	0	1	99	2	17.45
			1	0	1	0	2	18.04
			1	99	1	0	2	22.75
			100	0	1	99	101	21.12
			100	0	100	0	200	20.13
		16QAM	1	0	1	99	2	17.56
			1	0	1	0	2	18.02
			1	99	1	0	2	23.30
			100	0	1	99	101	21.12
			100	0	100	0	200	19.35
		64QAM	1	0	1	99	2	17.40
			1	0	1	0	2	17.86
			1	99	1	0	2	21.10
			100	0	1	99	101	21.21

ERP/EIRP

LTE Band 7 (GT - LC = -2.0 dB) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	23.47	23.53	23.29
Conducted Power (Watts)	0.2223	0.2254	0.2133
EIRP(dBm)	21.47	21.53	21.29
EIRP(Watts)	0.1403	0.1422	0.1346

LTE Band 7 (GT - LC = -2.0 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	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	23.38	23.45	23.22	23.49	23.45	23.29	23.44	23.54	23.34
Conducted Power (Watts)	0.2178	0.2213	0.2099	0.2234	0.2213	0.2133	0.2208	0.2259	0.2158
EIRP(dBm)	21.38	21.45	21.22	21.49	21.45	21.29	21.44	21.54	21.34
EIRP(Watts)	0.1374	0.1396	0.1324	0.1409	0.1396	0.1346	0.1393	0.1426	0.1361



LTE Band 7 (GT - LC = -2.0 dB) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.85	22.81	22.64
Conducted Power (Watts)	0.1928	0.1910	0.1837
EIRP(dBm)	20.85	20.81	20.64
EIRP(Watts)	0.1216	0.1205	0.1159

LTE Band 7 (GT - LC = -2.0 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)	22.77	22.86	22.62	22.77	22.74	22.58	22.74	22.73	22.60
Conducted Power (Watts)	0.1892	0.1932	0.1828	0.1892	0.1879	0.1811	0.1879	0.1875	0.1820
EIRP(dBm)	20.77	20.86	20.62	20.77	20.74	20.58	20.74	20.73	20.60
EIRP(Watts)	0.1194	0.1219	0.1153	0.1194	0.1186	0.1143	0.1186	0.1183	0.1148



LTE Band 7 (GT - LC = -2.0 dB) 64QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	21.72	21.77	21.55
Conducted Power (Watts)	0.1486	0.1503	0.1429
EIRP(dBm)	19.72	19.77	19.55
EIRP(Watts)	0.0938	0.0948	0.0902

LTE Band 7 (GT - LC = -2.0 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)	21.78	21.82	21.72	21.59	21.65	21.43	21.57	21.58	21.43
Conducted Power (Watts)	0.1507	0.1521	0.1486	0.1442	0.1462	0.1390	0.1435	0.1439	0.1390
EIRP(dBm)	19.78	19.82	19.72	19.59	19.65	19.43	19.57	19.58	19.43
EIRP(Watts)	0.0951	0.0959	0.0938	0.0910	0.0923	0.0877	0.0906	0.0908	0.0877



LTE Band 12 (GT - LC = -3.0 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	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
(MHz)									
Conducted Power (dBm)	23.00	22.96	22.85	23.06	23.07	22.94	23.00	23.00	22.94
Conducted Power (Watts)	0.1995	0.1977	0.1928	0.2023	0.2028	0.1968	0.1995	0.1995	0.1968
ERP(dBm)	17.85	17.81	17.70	17.91	17.92	17.79	17.85	17.85	17.79
ERP(Watts)	0.0610	0.0604	0.0589	0.0618	0.0619	0.0601	0.0610	0.0610	0.0601

LTE Band 12 (GT - LC = -3.0 dB) QPSK			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency	704	707.5	711
(MHz)			
Conducted Power (dBm)	22.94	23.08	22.91
Conducted Power (Watts)	0.1968	0.2032	0.1954
ERP(dBm)	17.79	17.93	17.76
ERP(Watts)	0.0601	0.0621	0.0597

LTE Band 12 (GT - LC = -3.0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	22.36	22.32	22.17	22.45	22.41	22.29	22.36	22.34	22.29
Conducted Power (Watts)	0.1722	0.1706	0.1648	0.1758	0.1742	0.1694	0.1722	0.1714	0.1694
ERP(dBm)	17.21	17.17	17.02	17.30	17.26	17.14	17.21	17.19	17.14
ERP(Watts)	0.0526	0.0521	0.0504	0.0537	0.0532	0.0518	0.0526	0.0524	0.0518

LTE Band 12 (GT - LC = -3.0 dB) 16QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	22.31	22.36	22.29
Conducted Power (Watts)	0.1702	0.1722	0.1694
ERP(dBm)	17.16	17.21	17.14
ERP(Watts)	0.0520	0.0526	0.0518



LTE Band 12 (GT - LC = -3.0 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	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
(MHz)									
Conducted Power (dBm)	21.20	21.22	21.08	21.34	21.32	21.22	21.25	21.24	21.15
Conducted Power (Watts)	0.1318	0.1324	0.1282	0.1361	0.1355	0.1324	0.1334	0.1330	0.1303
ERP(dBm)	16.05	16.07	15.93	16.19	16.17	16.07	16.10	16.09	16.00
ERP(Watts)	0.0403	0.0405	0.0392	0.0416	0.0414	0.0405	0.0407	0.0406	0.0398

LTE Band 12 (GT - LC = -3.0 dB) 64QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency	704	707.5	711
(MHz)			
Conducted Power (dBm)	21.40	21.37	21.23
Conducted Power (Watts)	0.1380	0.1371	0.1327
ERP(dBm)	16.25	16.22	16.08
ERP(Watts)	0.0422	0.0419	0.0406

LTE Band 41 ($G_T - L_C = -2.0$ dB) QPSK									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
(MHz)									
Conducted Power (dBm)	23.22	23.10	23.23	23.23	22.85	22.97	23.42	23.09	23.25
Conducted Power (Watts)	0.2099	0.2042	0.2104	0.2104	0.1928	0.1982	0.2198	0.2037	0.2113
EIRP(dBm)	21.22	21.10	21.23	21.23	20.85	20.97	21.42	21.09	21.25
EIRP(Watts)	0.1324	0.1288	0.1327	0.1327	0.1216	0.1250	0.1387	0.1285	0.1334

LTE Band 41 ($G_T - L_C = -2.0$ dB) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	23.16	23.43	23.25
Conducted Power (Watts)	0.2070	0.2203	0.2113
EIRP(dBm)	21.16	21.43	21.25
EIRP(Watts)	0.1306	0.1390	0.1334



LTE Band 41 ($G_T - L_C = -2.0$ 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)	22.34	22.09	22.34	22.36	21.95	22.14	22.32	21.90	22.08
Conducted Power (Watts)	0.1714	0.1618	0.1714	0.1722	0.1567	0.1637	0.1706	0.1549	0.1614
EIRP(dBm)	20.34	20.09	20.34	20.36	19.95	20.14	20.32	19.90	20.08
EIRP(Watts)	0.1081	0.1021	0.1081	0.1086	0.0989	0.1033	0.1076	0.0977	0.1019

LTE Band 41 ($G_T - L_C = -2.0$ dB) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	21.96	21.53	21.50
Conducted Power (Watts)	0.1570	0.1422	0.1413
EIRP(dBm)	19.96	19.53	19.50
EIRP(Watts)	0.0991	0.0897	0.0891

LTE Band 41 ($G_T - L_C = -2.0$ 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)	21.06	21.13	21.34	21.45	21.24	21.33	21.40	20.96	21.39
Conducted Power (Watts)	0.1276	0.1297	0.1361	0.1396	0.1330	0.1358	0.1380	0.1247	0.1377
EIRP(dBm)	19.06	19.13	19.34	19.45	19.24	19.33	19.40	18.96	19.39
EIRP(Watts)	0.0805	0.0818	0.0859	0.0881	0.0839	0.0857	0.0871	0.0787	0.0869

LTE Band 41 ($G_T - L_C = -2.0$ dB) 64QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency	2506	2593	2680
(MHz)			
Conducted Power (dBm)	21.01	21.11	20.86
Conducted Power (Watts)	0.1262	0.1291	0.1219
EIRP(dBm)	19.01	19.11	18.86
EIRP(Watts)	0.0796	0.0815	0.0769

CA EIRP

LTE Band 7 CA (GT - LC = -2.0 dB) QPSK			
Bandwidth	20M + 20M		
Channel PCC	20850	21001	21152
	(Low)	(Mid)	(High)
Channel SCC	21048	21199	21350
	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.74	23.67	22.75
Conducted Power (Watts)	0.2366	0.2328	0.1884
EIRP(dBm)	21.74	21.67	20.75
EIRP(Watts)	0.1493	0.1469	0.1189

LTE Band 7 CA (GT - LC = -2.0 dB) 16QAM			
Bandwidth	20M + 20M		
Channel PCC	20850	21001	21152
	(Low)	(Mid)	(High)
Channel SCC	21048	21199	21350
	(Low)	(Mid)	(High)
Conducted Power (dBm)	23.34	23.13	23.3
Conducted Power (Watts)	0.2158	0.2056	0.2138
EIRP(dBm)	21.34	21.13	21.30
EIRP(Watts)	0.1361	0.1297	0.1349



LTE Band 7 CA (GT - LC = -2.0 dB) 64QAM			
Bandwidth	20M + 20M		
Channel PCC	20850	21001	21152
	(Low)	(Mid)	(High)
Channel SCC	21048	21199	21350
	(Low)	(Mid)	(High)
Conducted Power (dBm)	21.15	20.87	21.1
Conducted Power (Watts)	0.1303	0.1222	0.1288
EIRP(dBm)	19.15	18.87	19.10
EIRP(Watts)	0.0822	0.0771	0.0813



LTE Band 7

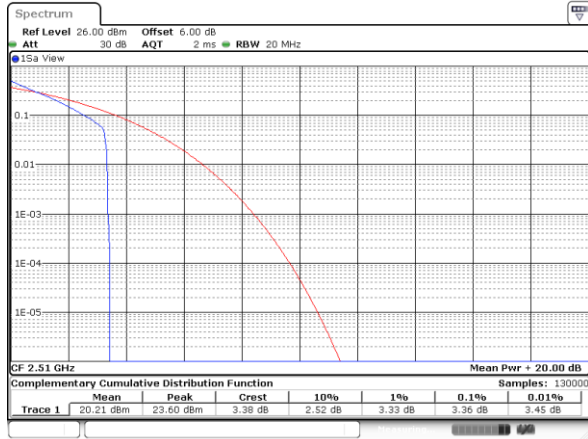
Peak-to-Average Ratio

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.36	5.07	5.19	5.91	PASS
Middle CH	3.51	4.90	5.28	5.74	
Highest CH	3.65	4.96	5.45	5.80	
Mode	LTE Band 7 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.23	6.32	-	-	PASS
Middle CH	6.12	6.38	-	-	
Highest CH	6.23	6.46	-	-	

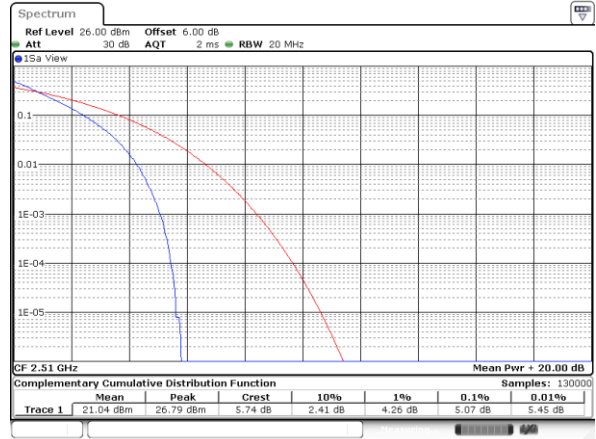


LTE Band 7 / 20MHz / QPSK

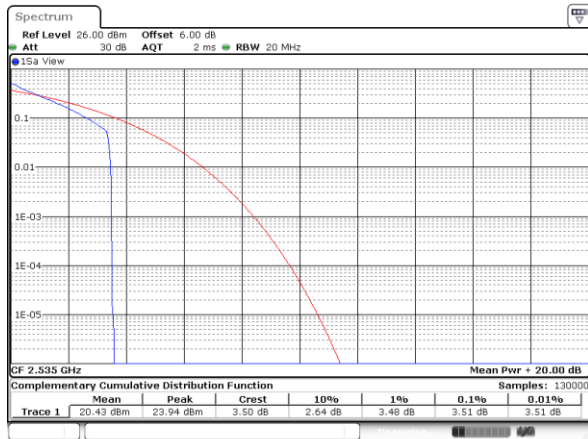
Lowest Channel / 1RB



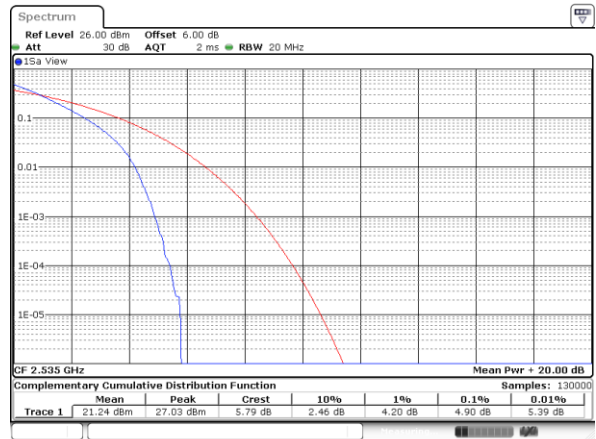
Lowest Channel / Full RB



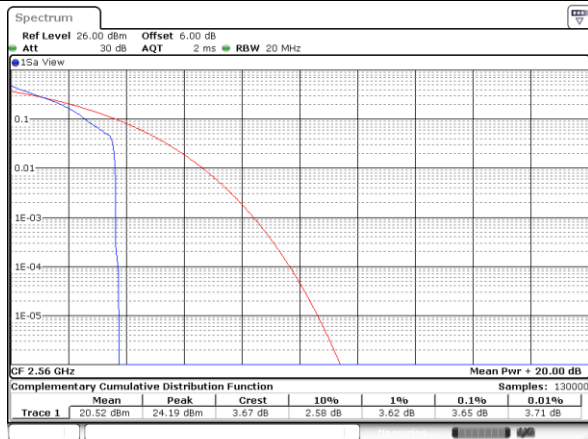
Middle Channel / 1RB



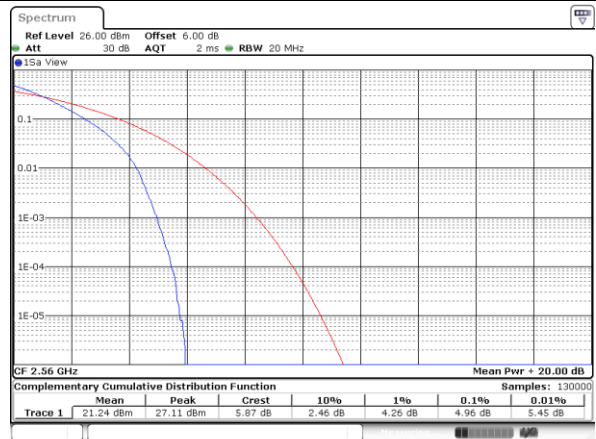
Middle Channel / Full RB



Highest Channel / 1RB

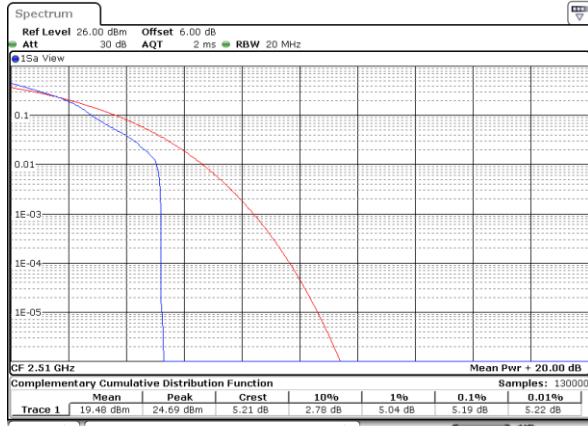


Highest Channel / Full RB



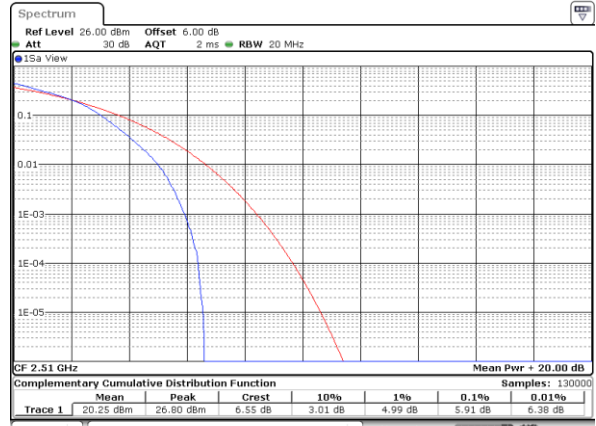
LTE Band 7 / 20MHz / 16QAM

Lowest Channel / 1RB



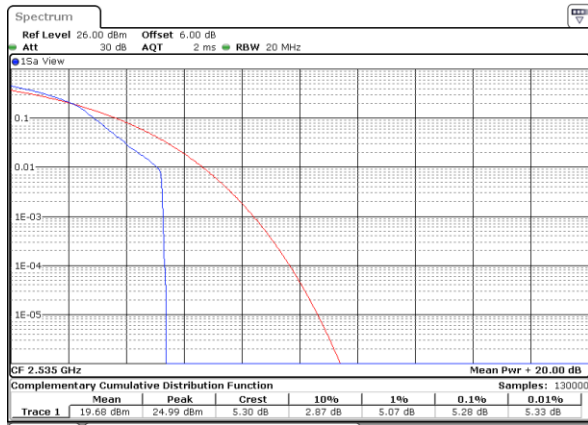
Date: 20 MAY 2020 12:04:20

Lowest Channel / Full RB



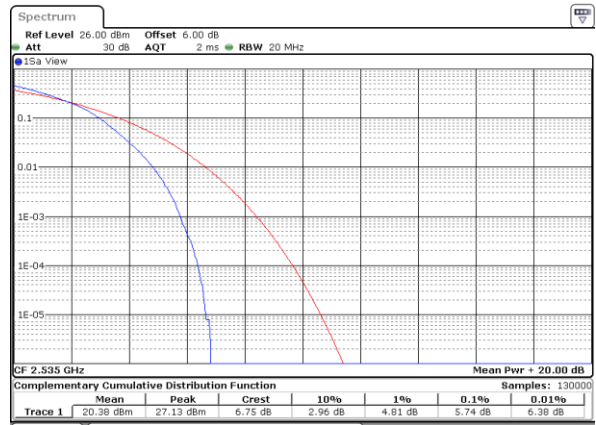
Date: 20 MAY 2020 12:04:52

Middle Channel / 1RB



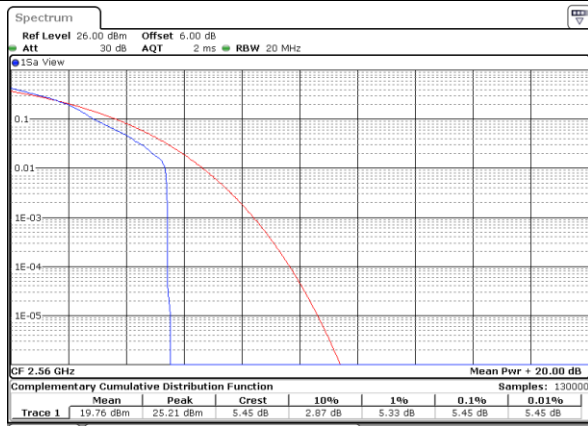
Date: 20 MAY 2020 12:05:44

Middle Channel / Full RB



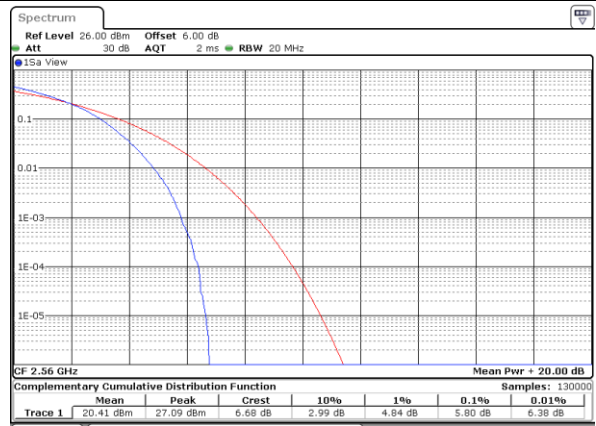
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Highest Channel / 1RB



Date: 20 MAY 2020 12:05:53

Highest Channel / Full RB

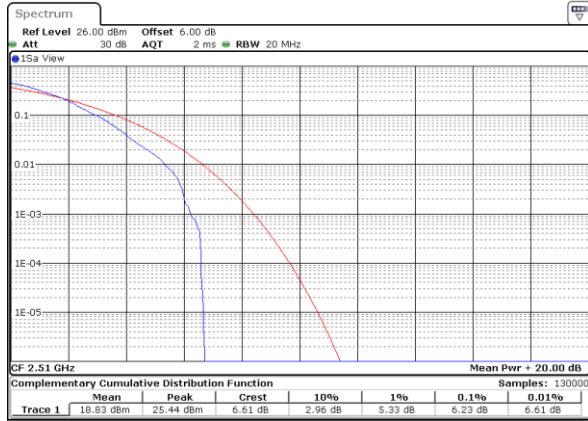


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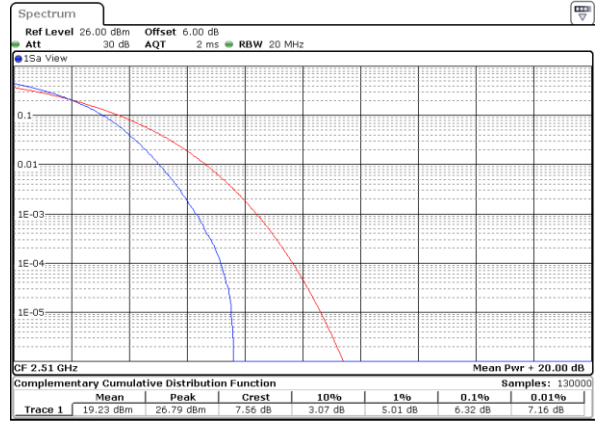


LTE Band 7 / 20MHz / 64QAM

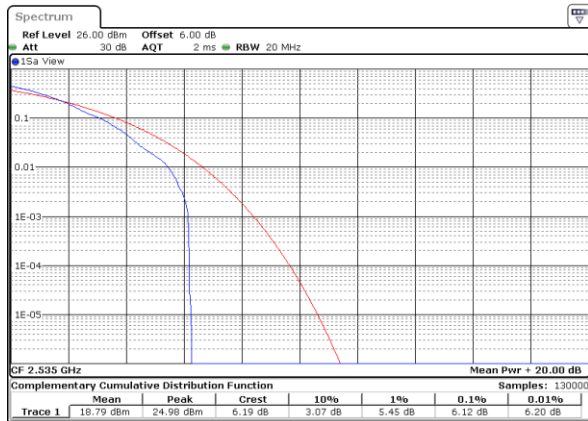
Lowest Channel / 1RB



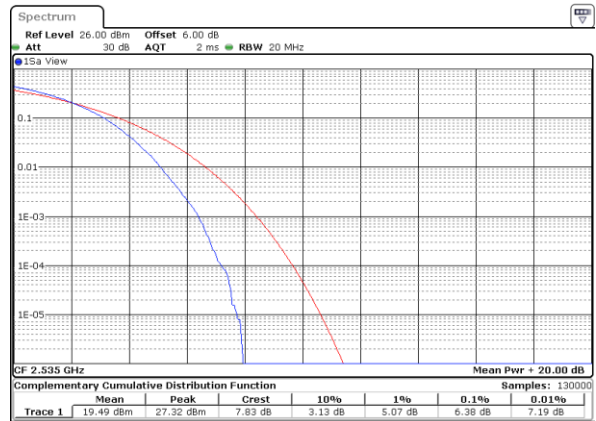
Lowest Channel / Full RB



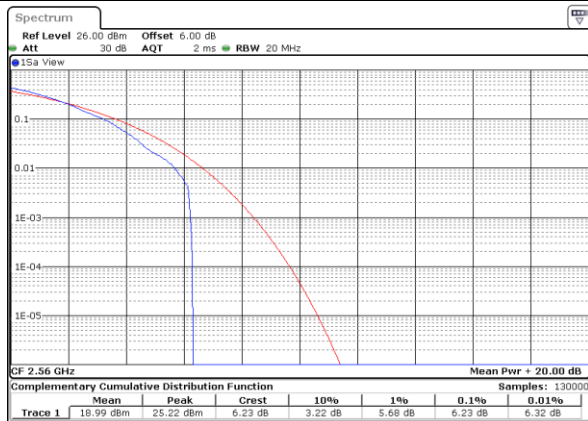
Middle Channel / 1RB



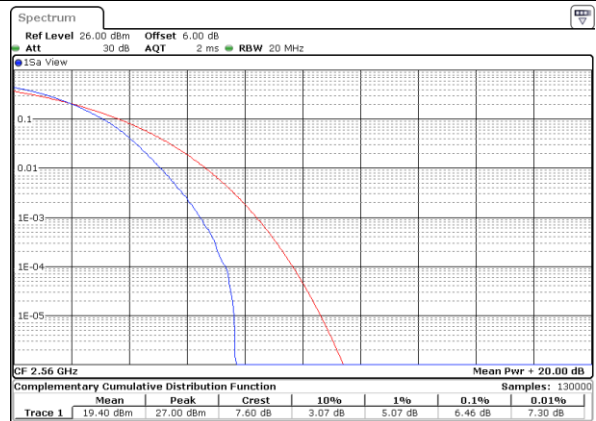
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



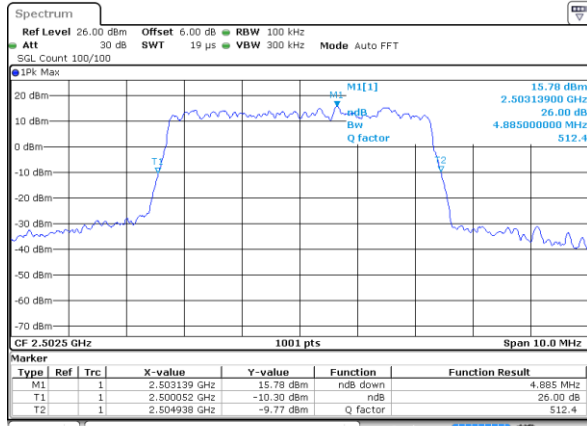
**26dB Bandwidth**

Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.89	4.90	9.65	9.79	14.51	14.45	20.22	20.14
Middle CH	-	-	-	-	4.87	4.89	9.83	9.93	14.27	14.39	20.06	20.22
Highest CH	-	-	-	-	4.95	4.92	9.77	9.69	14.33	14.27	20.22	20.06
Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.86	-	9.83	-	14.24	-	20.26	-
Middle CH	-	-	-	-	4.88	-	9.81	-	14.69	-	20.26	-
Highest CH	-	-	-	-	4.88	-	9.75	-	14.42	-	20.18	-



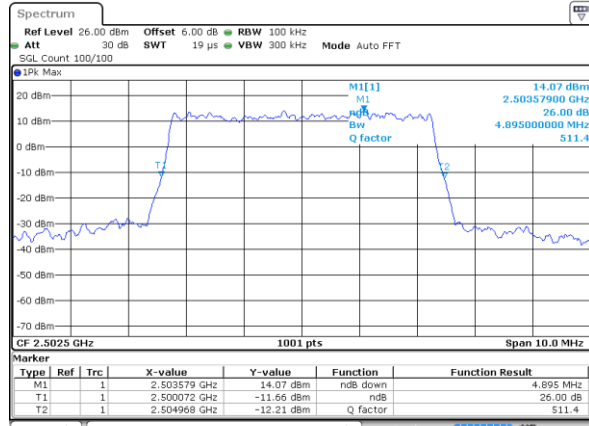
LTE Band 7

Lowest Channel / 5MHz / QPSK



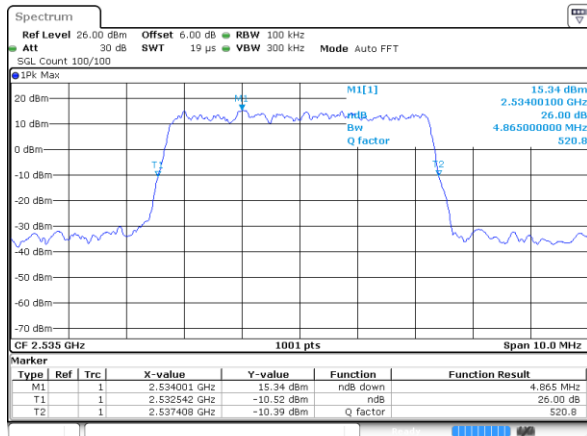
Date: 20 MAY 2020 10:24:22

Lowest Channel / 5MHz / 16QAM



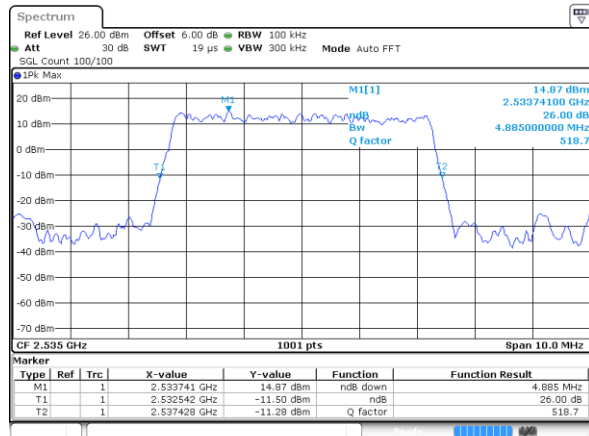
Date: 20 MAY 2020 10:24:42

Middle Channel / 5MHz / QPSK



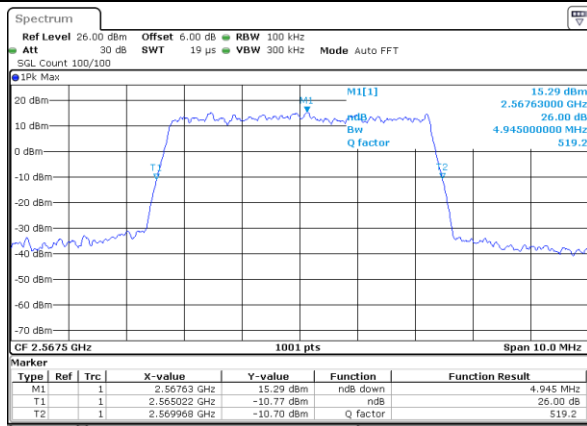
Date: 20 MAY 2020 10:25:22

Middle Channel / 5MHz / 16QAM



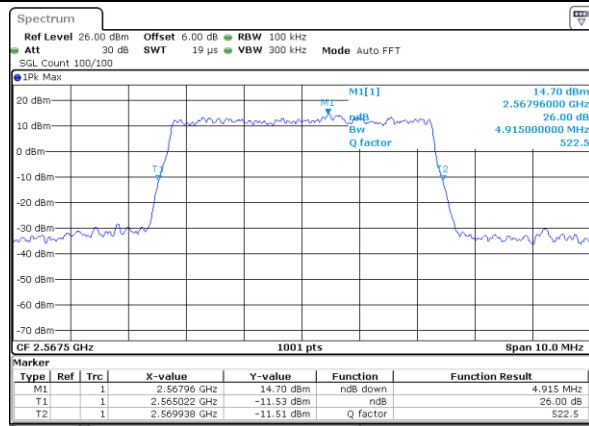
Date: 20 MAY 2020 10:25:02

Highest Channel / 5MHz / QPSK



Date: 20 MAY 2020 10:25:43

Highest Channel / 5MHz / 16QAM

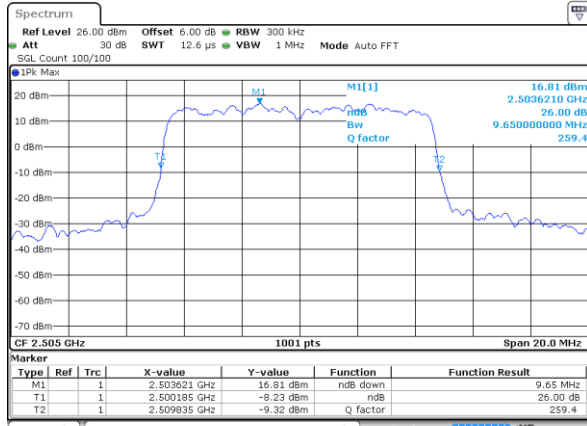


Date: 20 MAY 2020 10:26:03



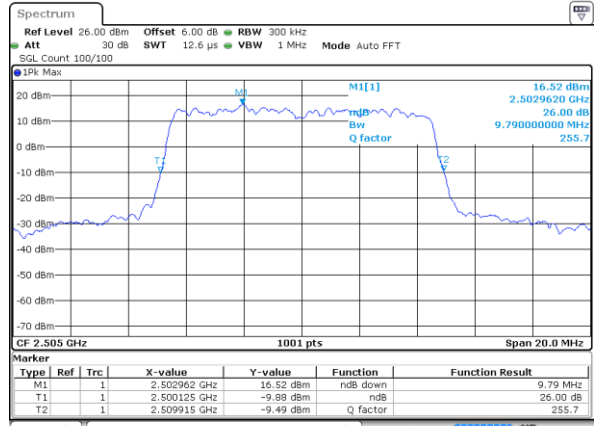
LTE Band 7

Lowest Channel / 10MHz / QPSK



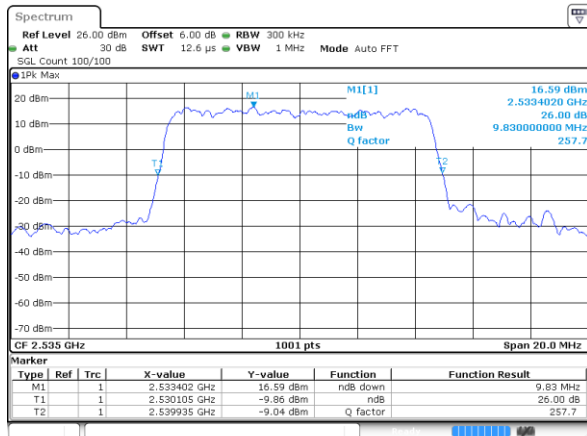
Date: 20 MAY 2020 10:40:54

Lowest Channel / 10MHz / 16QAM



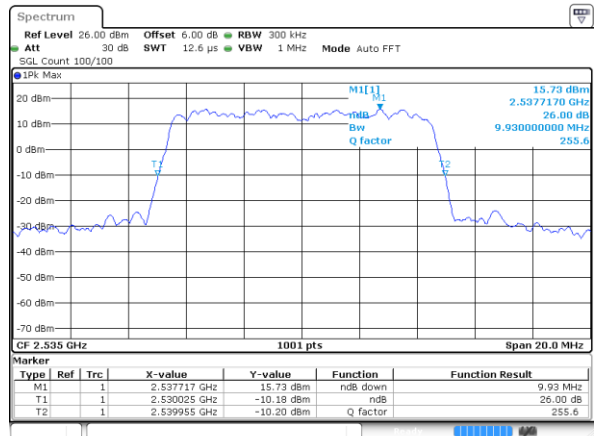
Date: 20 MAY 2020 10:41:14

Middle Channel / 10MHz / QPSK



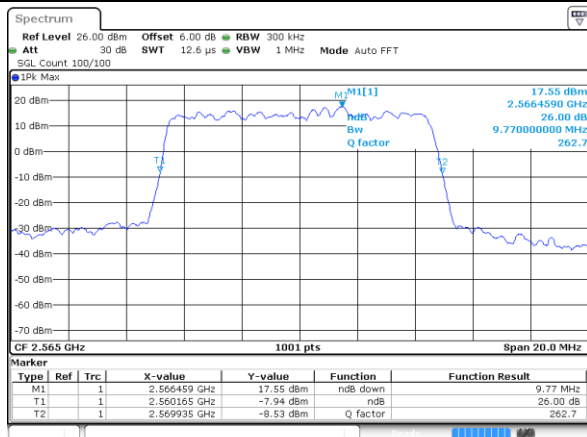
Date: 20 MAY 2020 10:41:55

Middle Channel / 10MHz / 16QAM



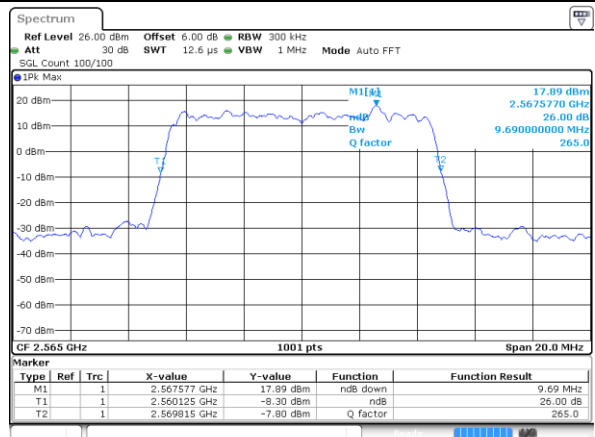
Date: 20 MAY 2020 10:41:35

Highest Channel / 10MHz / QPSK



Date: 20 MAY 2020 10:42:15

Highest Channel / 10MHz / 16QAM

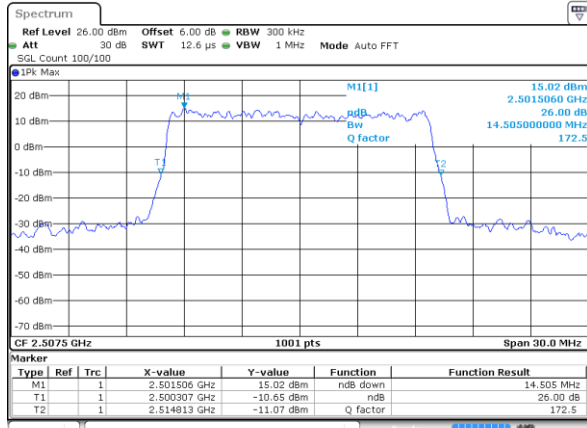


Date: 20 MAY 2020 10:42:35

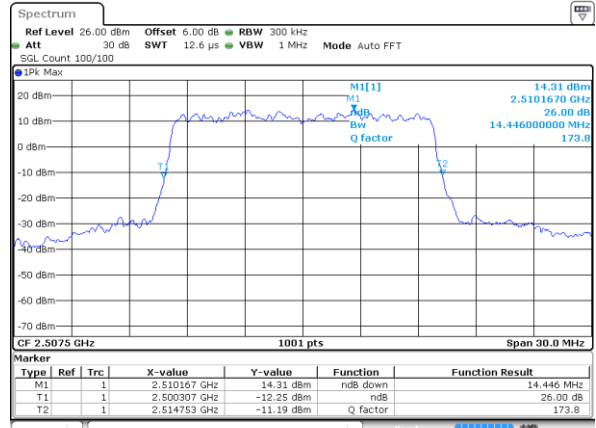


LTE Band 7

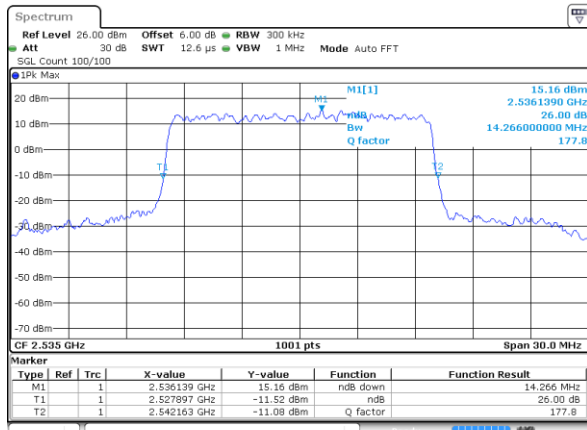
Lowest Channel / 15MHz / QPSK



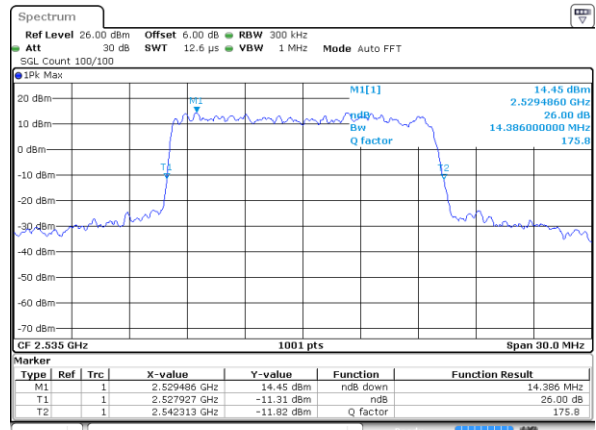
Lowest Channel / 15MHz / 16QAM



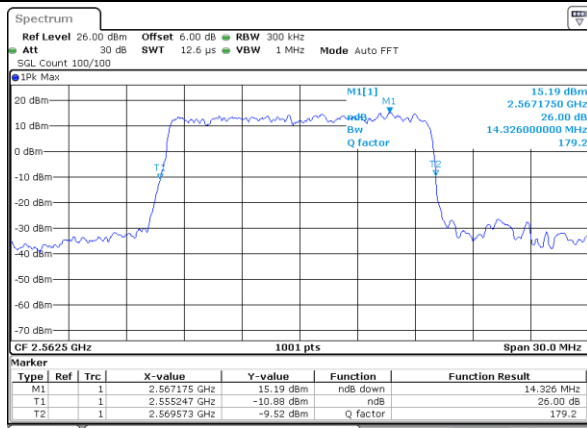
Middle Channel / 15MHz / QPSK



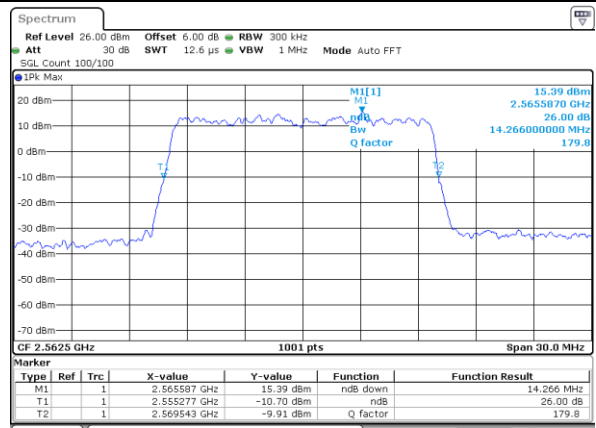
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK



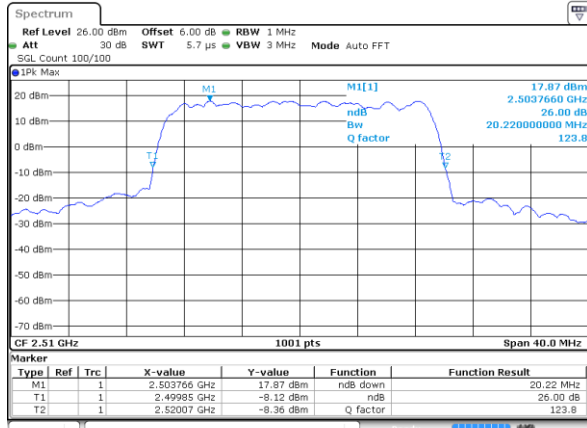
Highest Channel / 15MHz / 16QAM





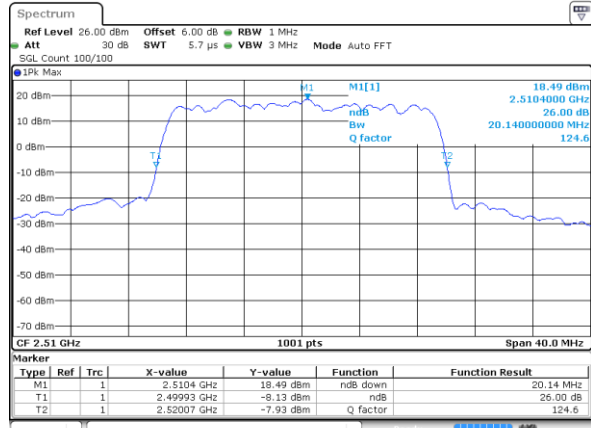
LTE Band 7

Lowest Channel / 20MHz / QPSK



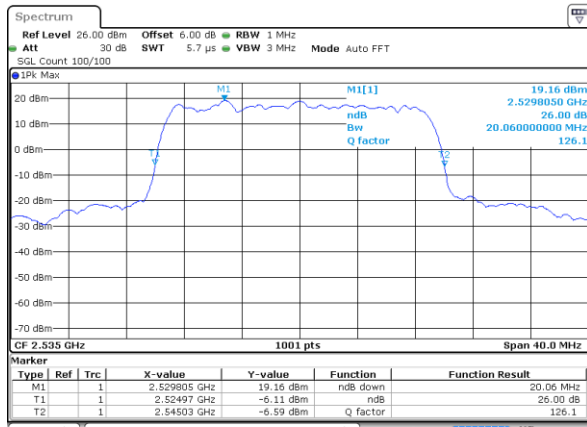
Date: 20 MAY 2020 11:14:17

Lowest Channel / 20MHz / 16QAM



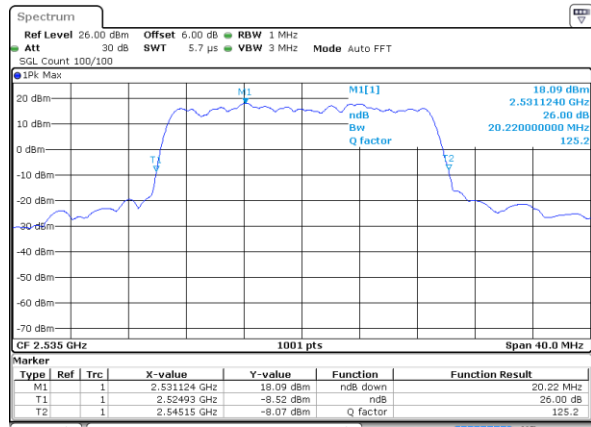
Date: 20 MAY 2020 11:13:57

Middle Channel / 20MHz / QPSK



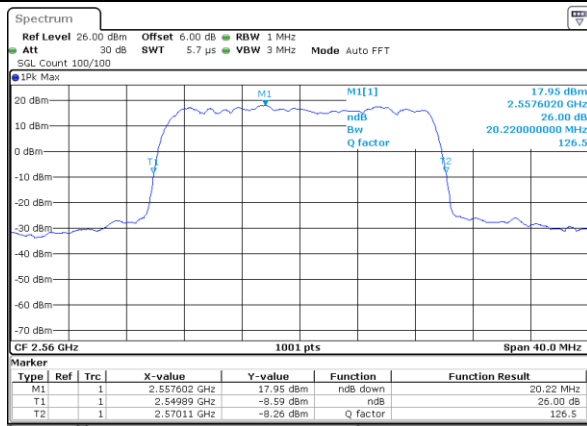
Date: 20 MAY 2020 11:14:37

Middle Channel / 20MHz / 16QAM



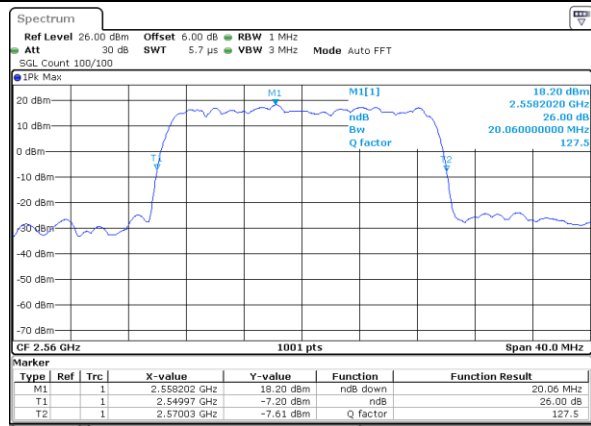
Date: 20 MAY 2020 11:14:58

Highest Channel / 20MHz / QPSK



Date: 20 MAY 2020 11:15:38

Highest Channel / 20MHz / 16QAM

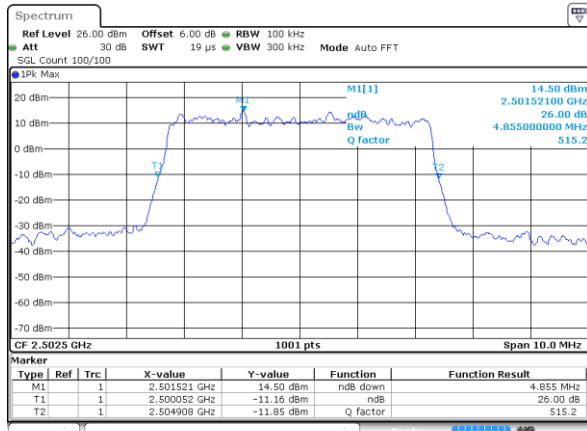


Date: 20 MAY 2020 11:15:18



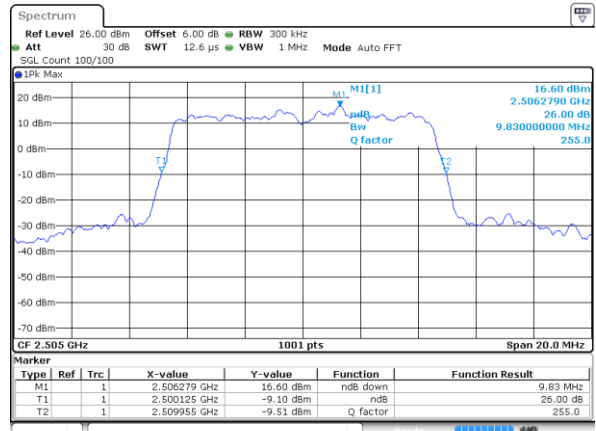
LTE Band 7

Lowest Channel / 5MHz / 64QAM



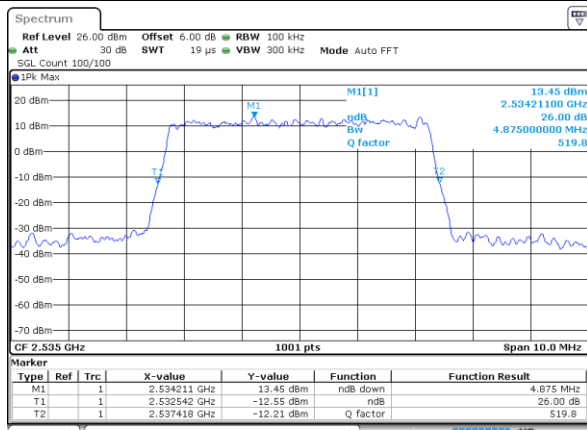
Date: 20 MAY 2020 11:30:50

Lowest Channel / 10MHz / 64QAM



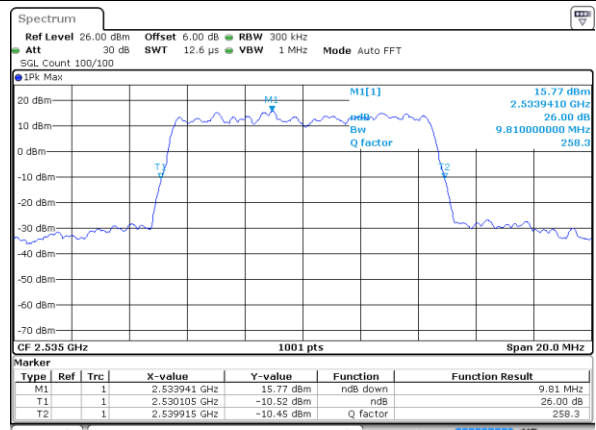
Date: 20 MAY 2020 11:39:06

Middle Channel / 5MHz / 64QAM



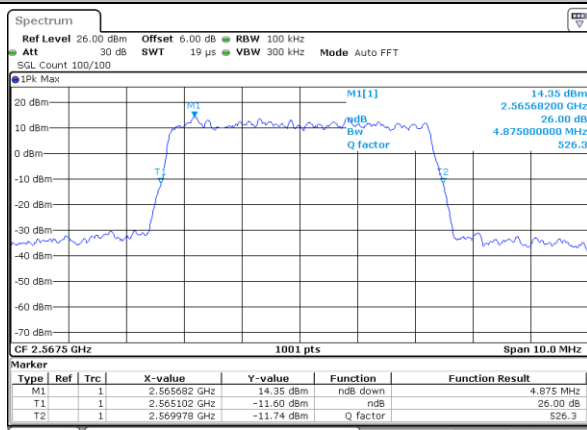
Date: 20 MAY 2020 11:31:00

Middle Channel / 10MHz / 64QAM



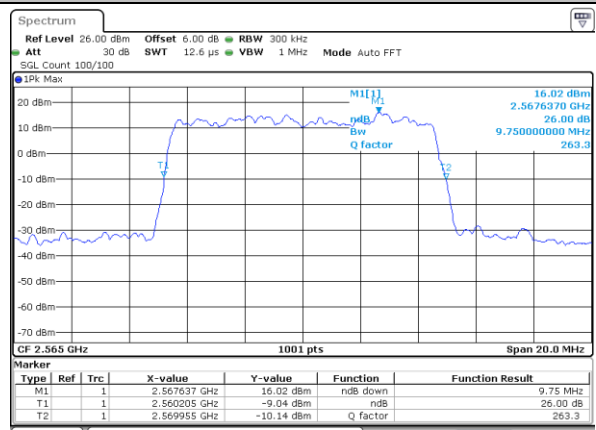
Date: 20 MAY 2020 11:39:16

Highest Channel / 5MHz / 64QAM



Date: 20 MAY 2020 11:31:10

Highest Channel / 10MHz / 64QAM

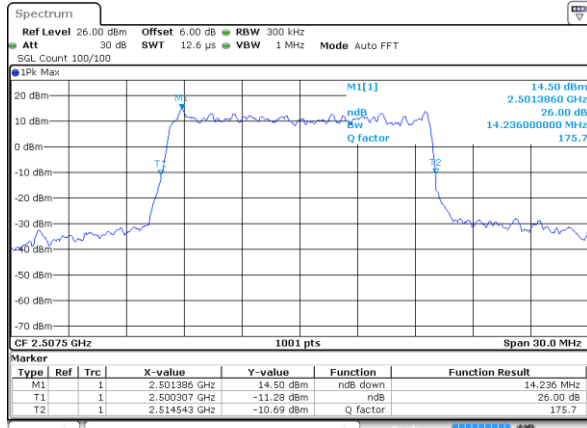


Date: 20 MAY 2020 11:39:26



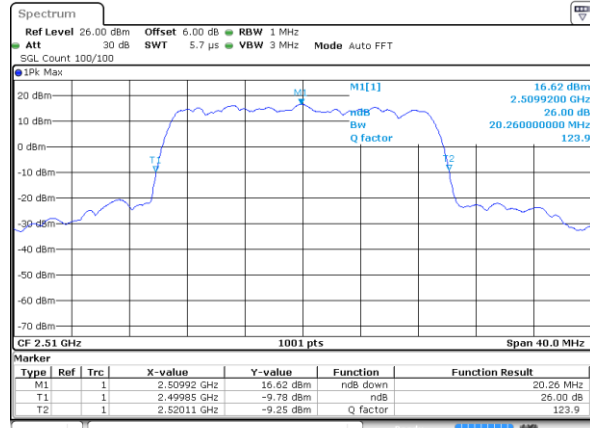
LTE Band 7

Lowest Channel / 15MHz / 64QAM



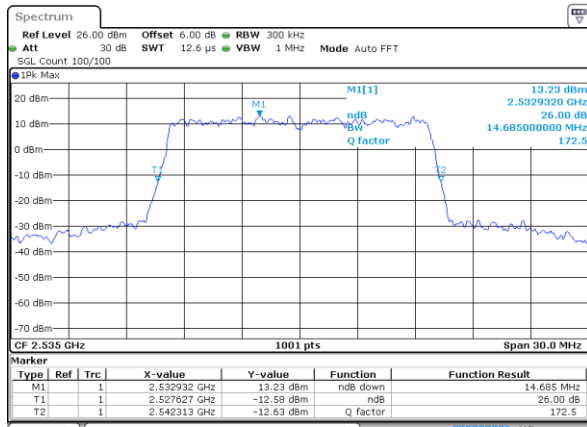
Date: 20 MAY 2020 11:47:21

Lowest Channel / 20MHz / 64QAM



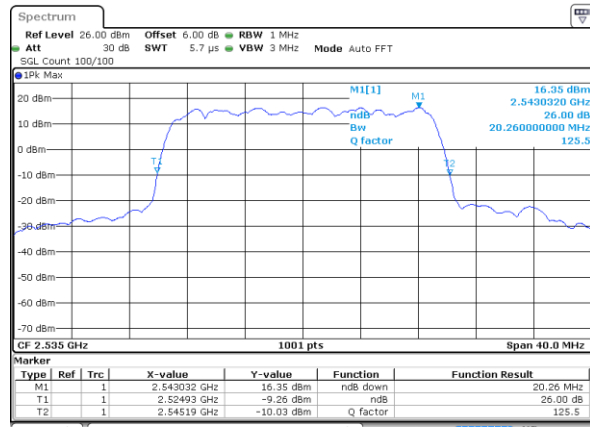
Date: 20 MAY 2020 11:55:37

Middle Channel / 15MHz / 64QAM



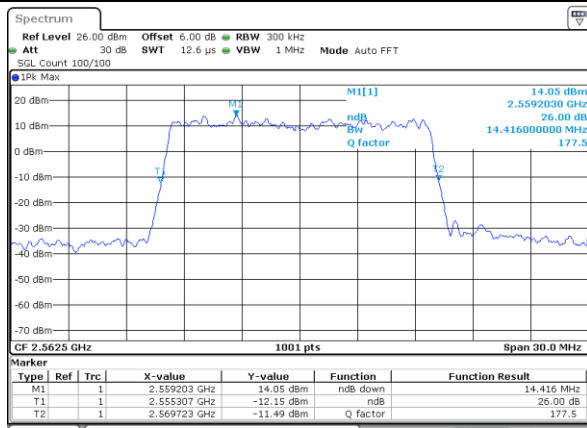
Date: 20 MAY 2020 11:47:31

Middle Channel / 20MHz / 64QAM



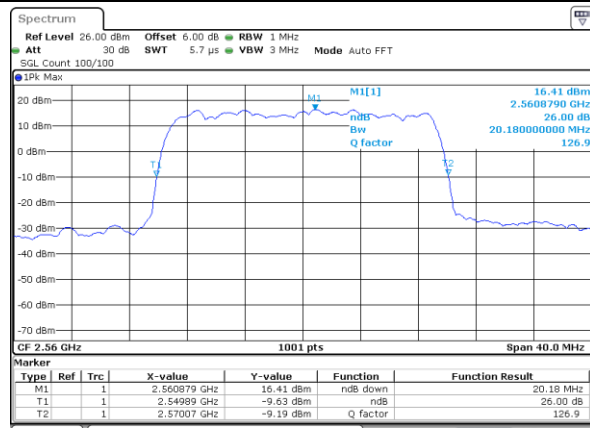
Date: 20 MAY 2020 11:55:48

Highest Channel / 15MHz / 64QAM



Date: 20 MAY 2020 11:47:41

Highest Channel / 20MHz / 64QAM



Date: 20 MAY 2020 11:55:58

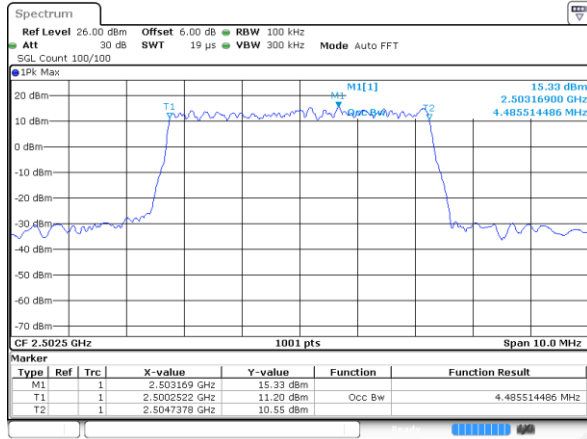
**Occupied Bandwidth**

Mode	LTE Band 7 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.49	4.50	8.99	9.01	13.46	13.46	18.30	18.30
Middle CH	-	-	-	-	4.49	4.50	9.03	8.99	13.37	13.49	18.34	18.14
Highest CH	-	-	-	-	4.50	4.48	9.03	9.01	13.49	13.46	18.26	18.18
Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.50	-	8.95	-	13.43	-	18.30	-
Middle CH	-	-	-	-	4.48	-	9.07	-	13.43	-	18.22	-
Highest CH	-	-	-	-	4.53	-	8.95	-	13.46	-	18.34	-

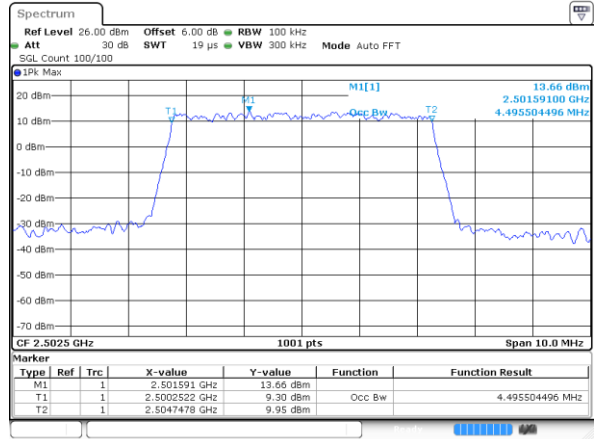


LTE Band 7

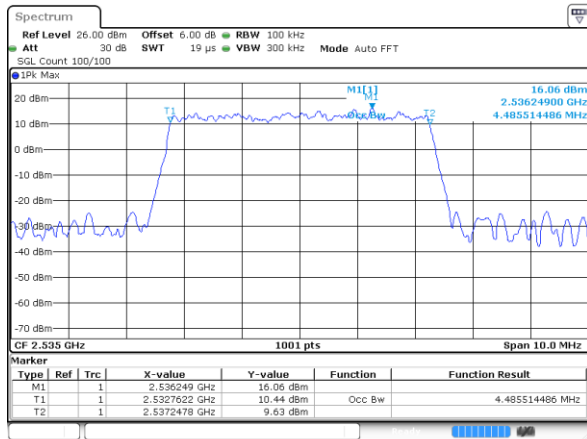
Lowest Channel / 5MHz / QPSK



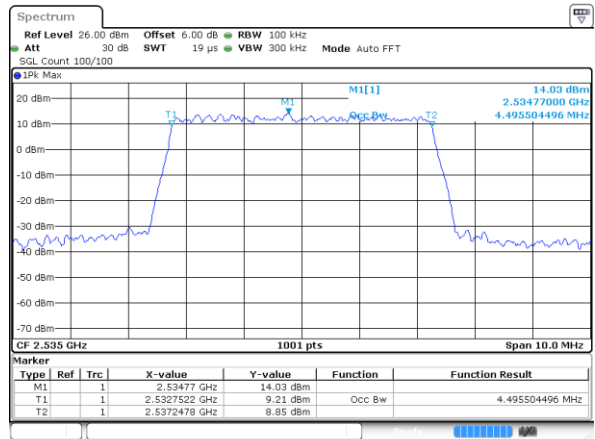
Lowest Channel / 5MHz / 16QAM



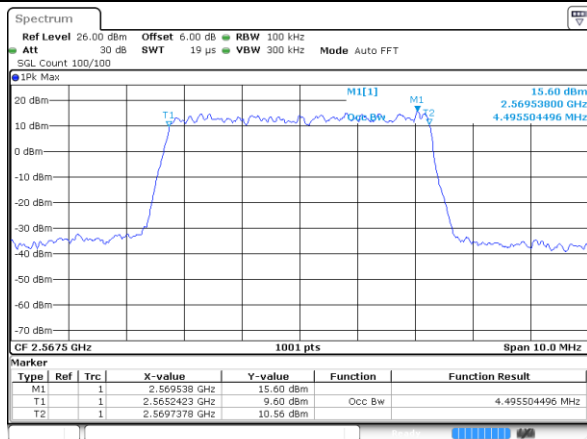
Middle Channel / 5MHz / QPSK



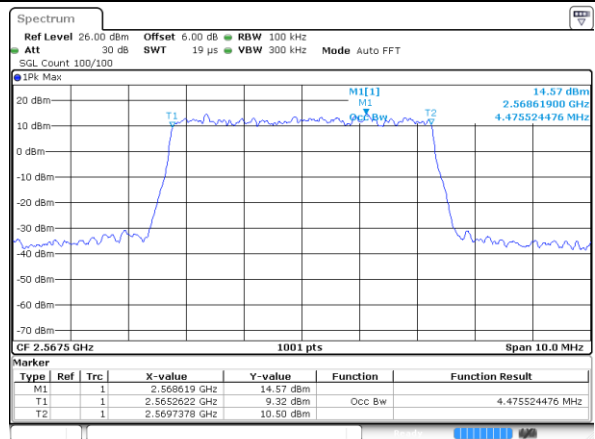
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



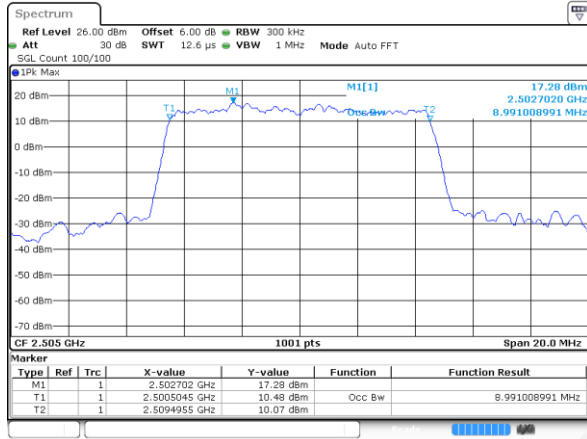
Highest Channel / 5MHz / 16QAM



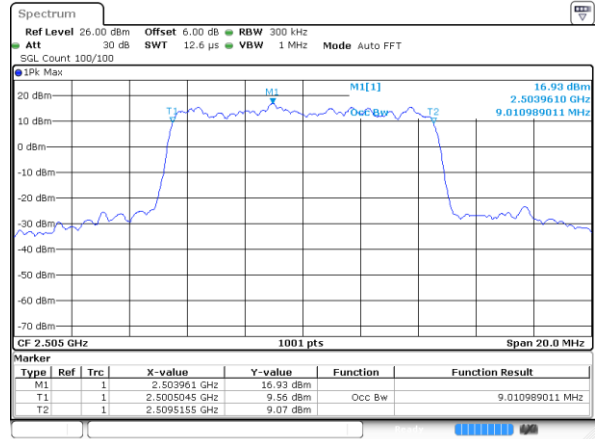


LTE Band 7

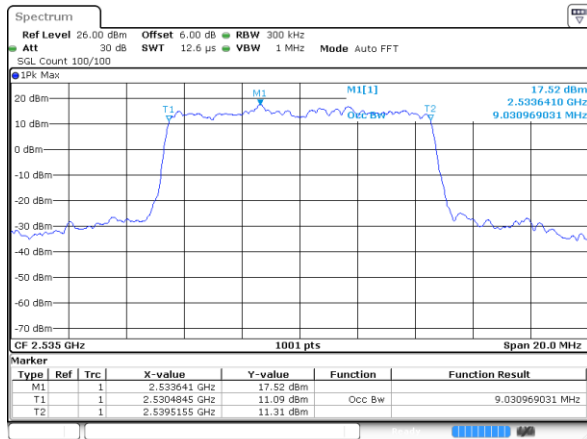
Lowest Channel / 10MHz / QPSK



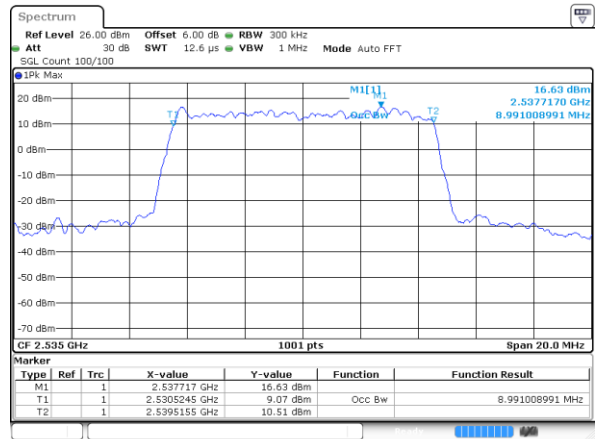
Lowest Channel / 10MHz / 16QAM



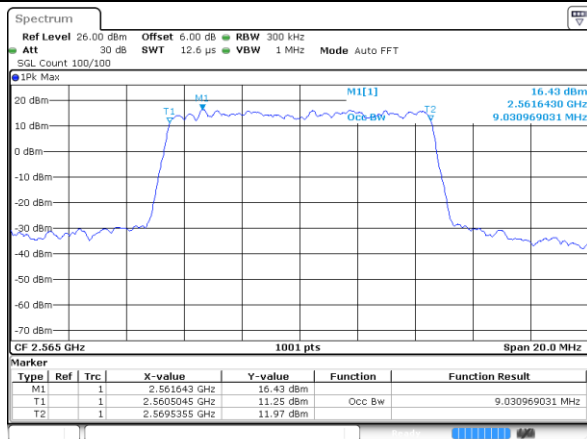
Middle Channel / 10MHz / QPSK



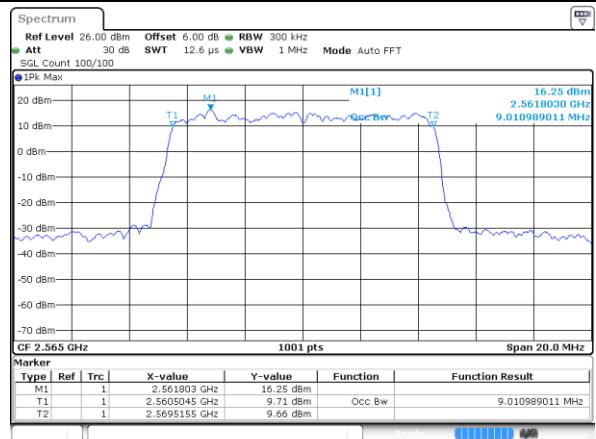
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



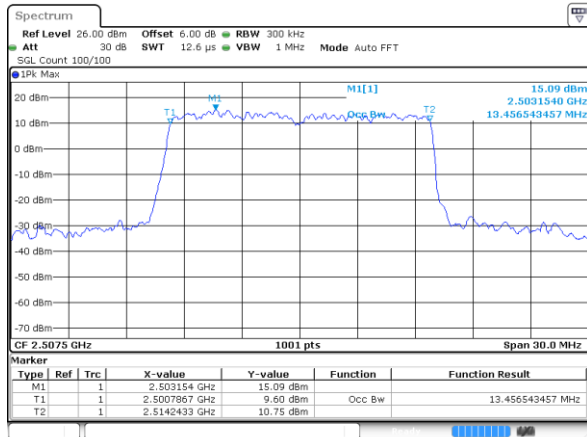
Highest Channel / 10MHz / 16QAM



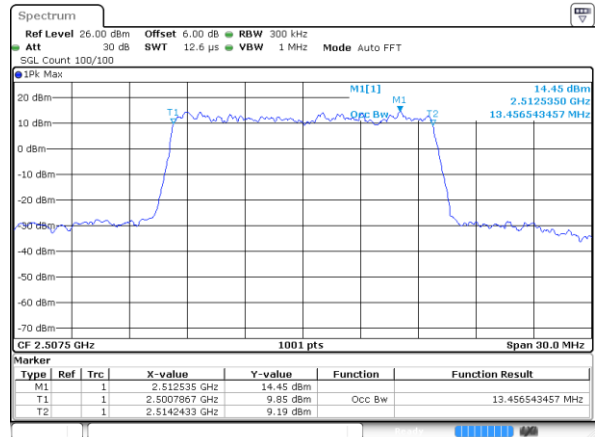


LTE Band 7

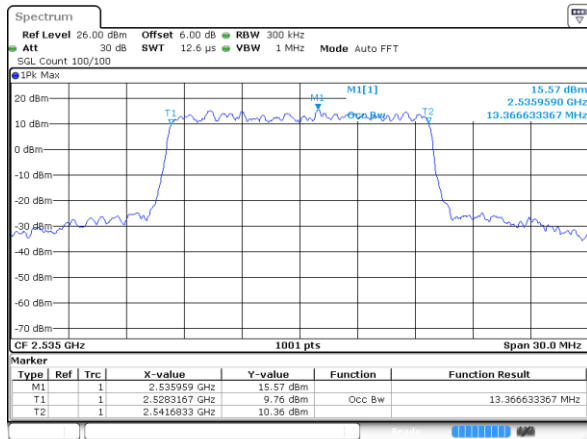
Lowest Channel / 15MHz / QPSK



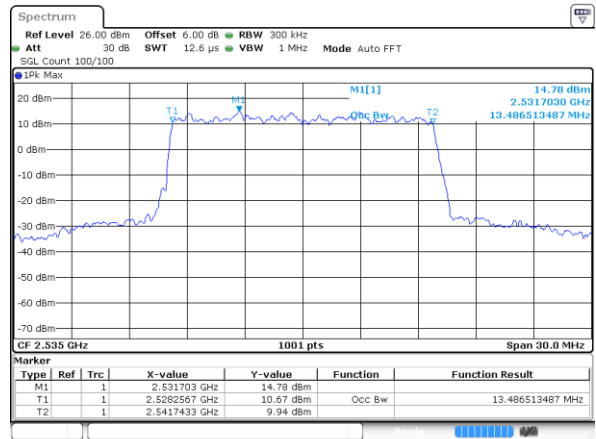
Lowest Channel / 15MHz / 16QAM



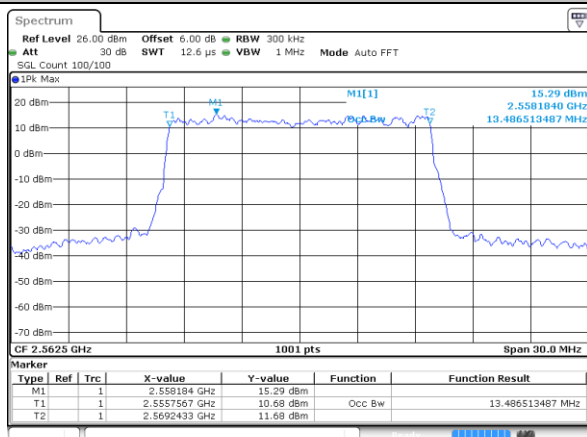
Middle Channel / 15MHz / QPSK



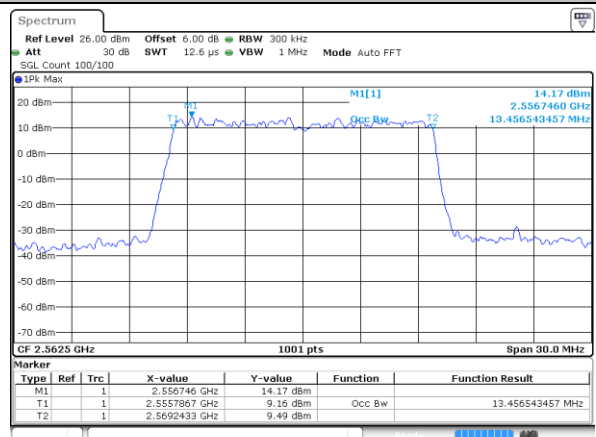
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK



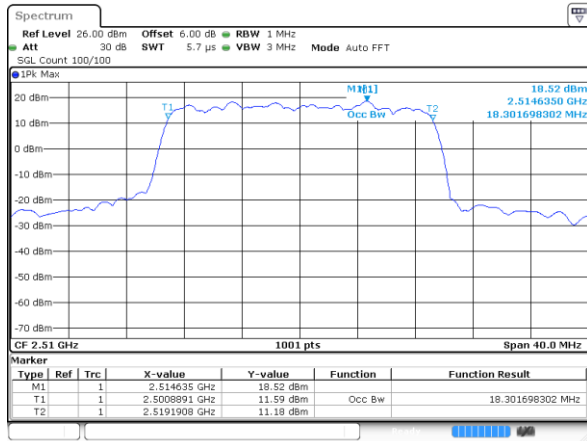
Highest Channel / 15MHz / 16QAM



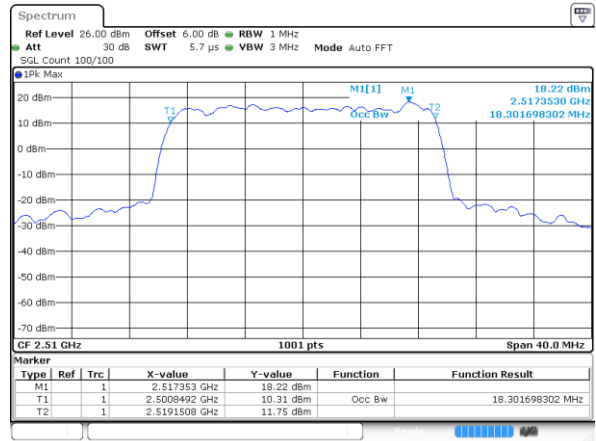


LTE Band 7

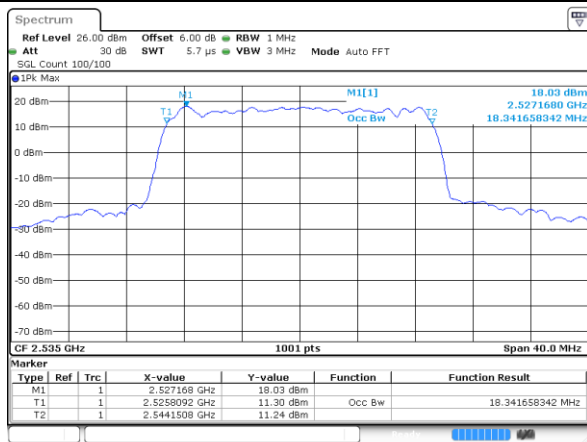
Lowest Channel / 20MHz / QPSK



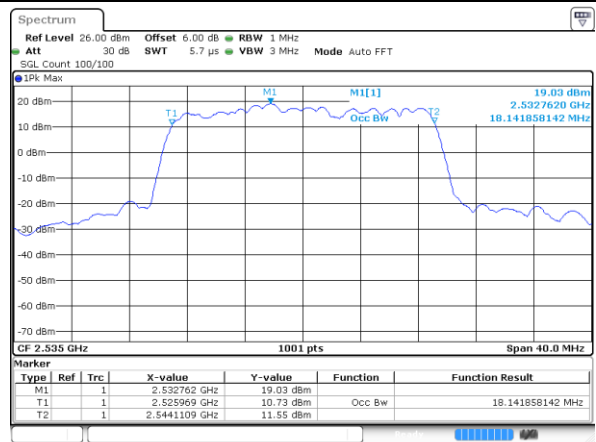
Lowest Channel / 20MHz / 16QAM



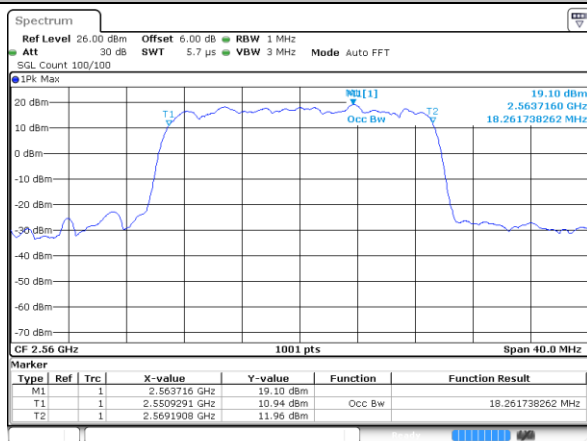
Middle Channel / 20MHz / QPSK



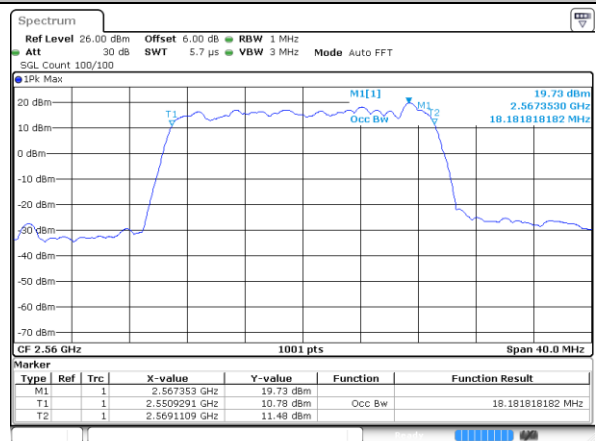
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



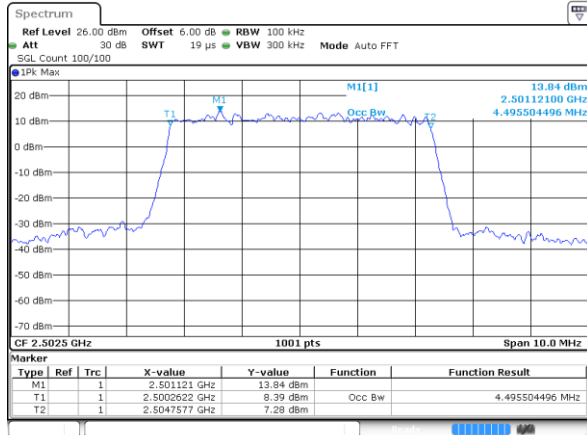
Highest Channel / 20MHz / 16QAM



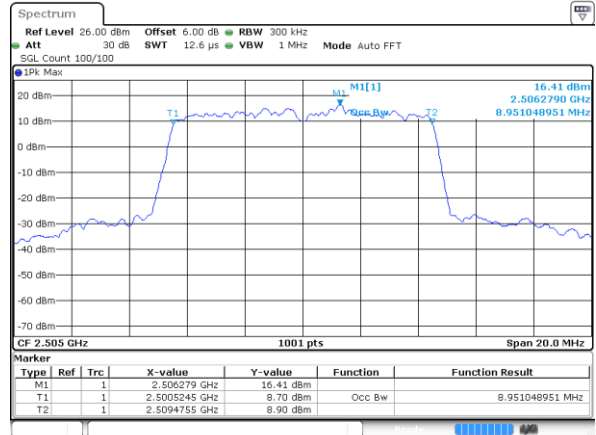


LTE Band 7

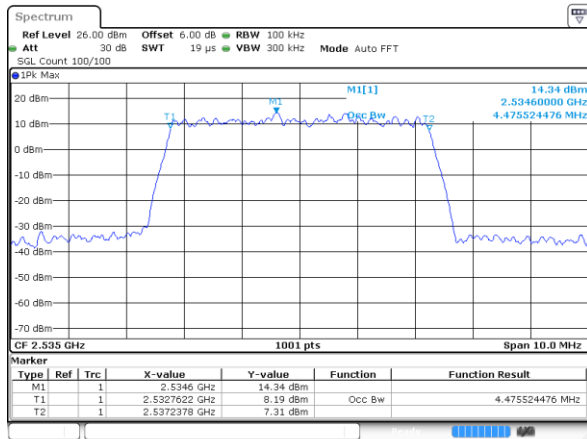
Lowest Channel / 5MHz / 64QAM



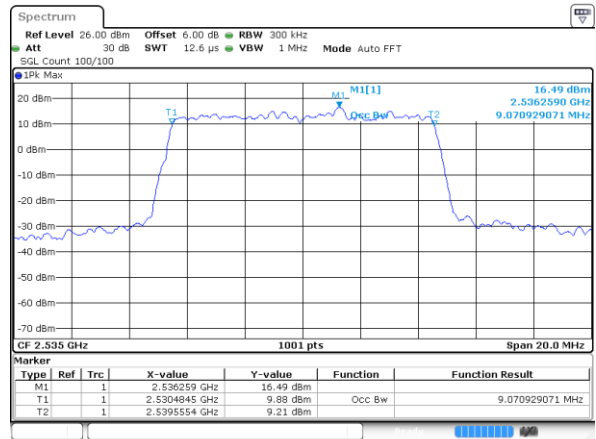
Lowest Channel / 10MHz / 64QAM



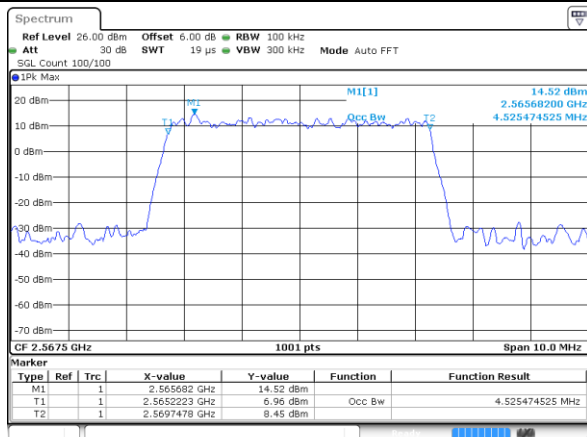
Middle Channel / 5MHz / 64QAM



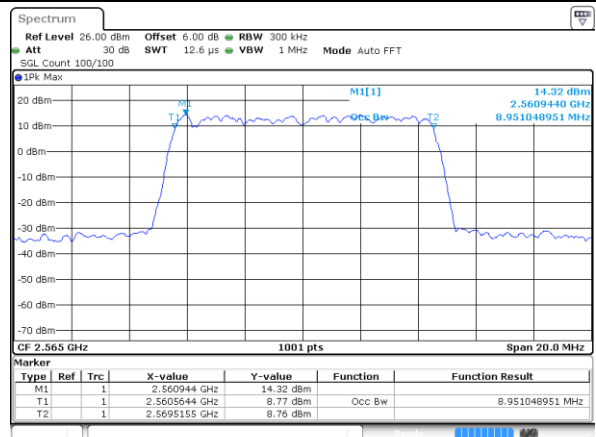
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



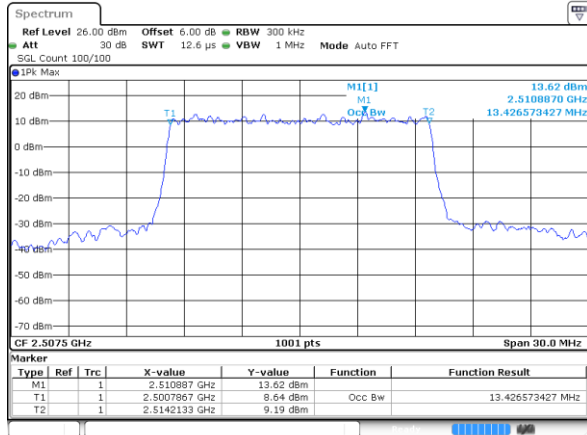
Highest Channel / 10MHz / 64QAM





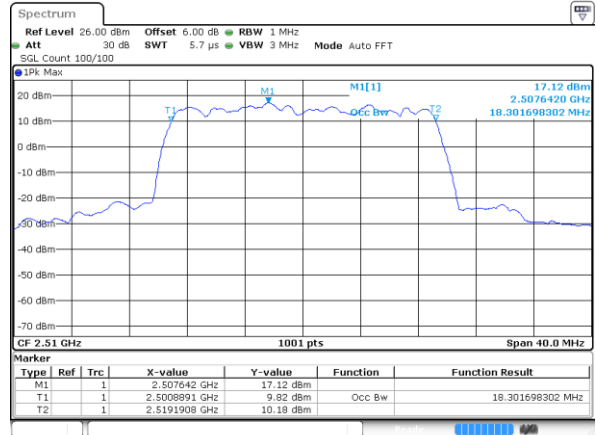
LTE Band 7

Lowest Channel / 15MHz / 64QAM



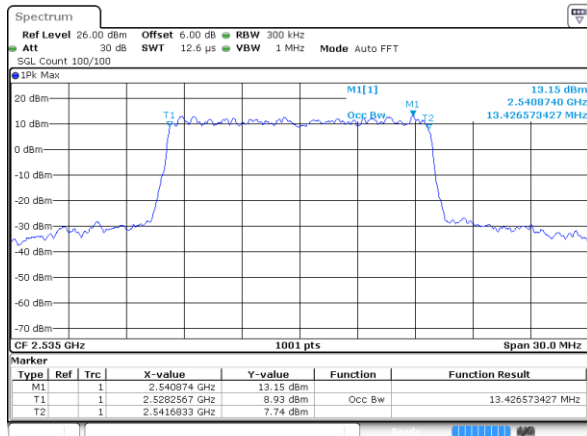
Date: 20 MAY 2020 11:46:51

Lowest Channel / 20MHz / 64QAM



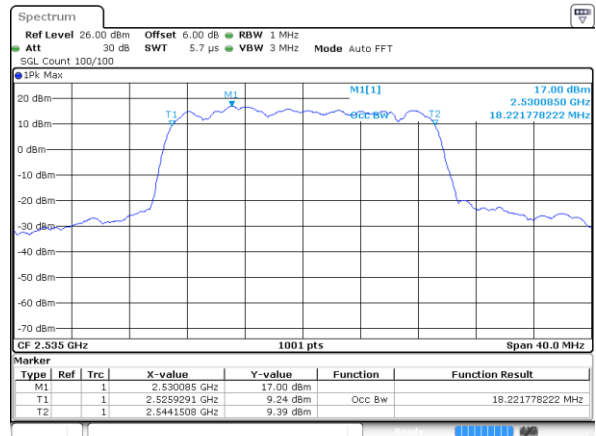
Date: 20 MAY 2020 11:55:07

Middle Channel / 15MHz / 64QAM



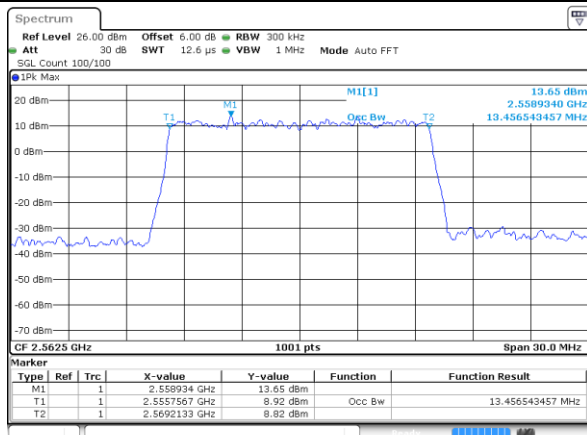
Date: 20 MAY 2020 11:47:01

Middle Channel / 20MHz / 64QAM



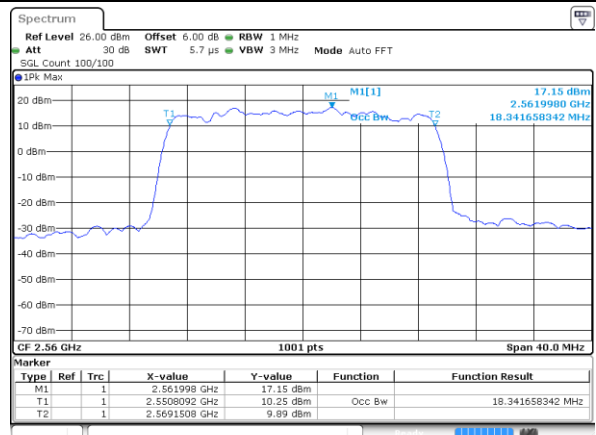
Date: 20 MAY 2020 11:55:17

Highest Channel / 15MHz / 64QAM



Date: 20 MAY 2020 11:47:11

Highest Channel / 20MHz / 64QAM



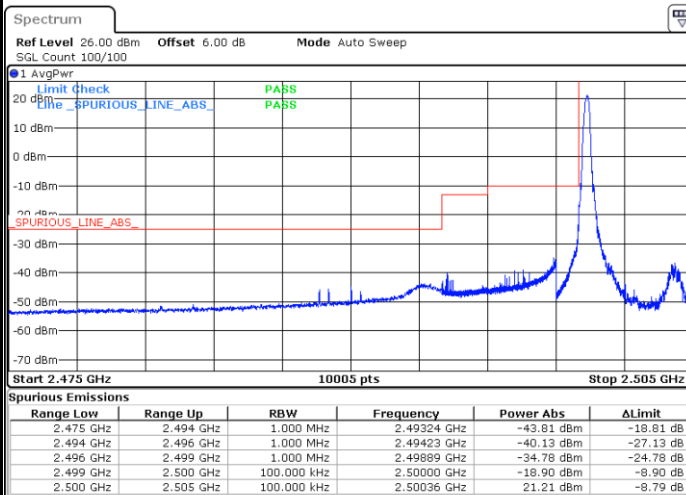
Date: 20 MAY 2020 11:55:27



Conducted Band Edge

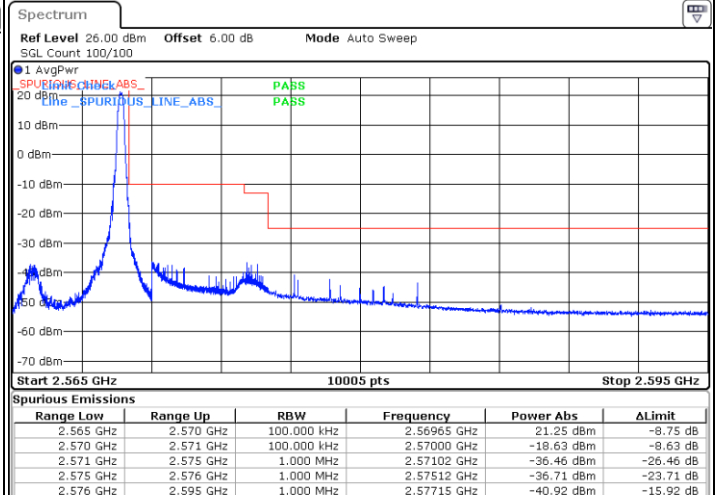
LTE Band 7 / 5MHz / QPSK

Lowest Band Edge / 1 RB



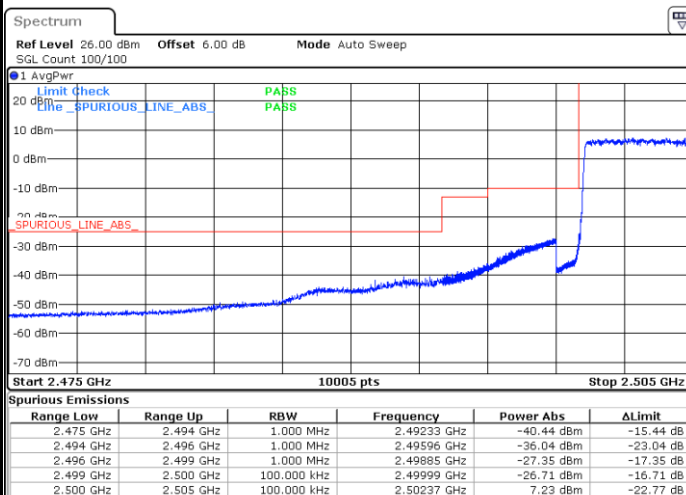
Date: 20 MAY 2020 10:27:12

Highest Band Edge / 1 RB



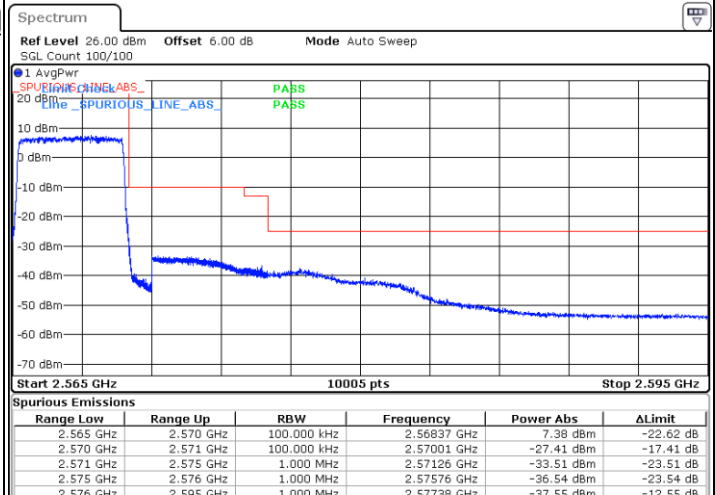
Date: 20 MAY 2020 10:35:10

Lowest Band Edge / Full RB



Date: 20 MAY 2020 10:30:38

Highest Band Edge / Full RB

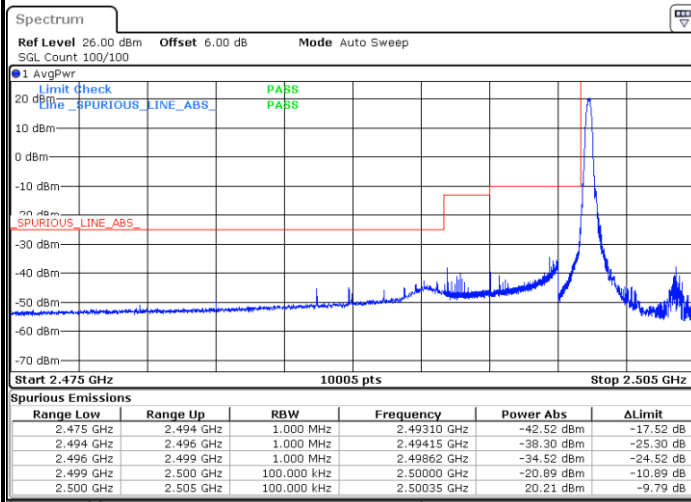


Date: 20 MAY 2020 10:31:46

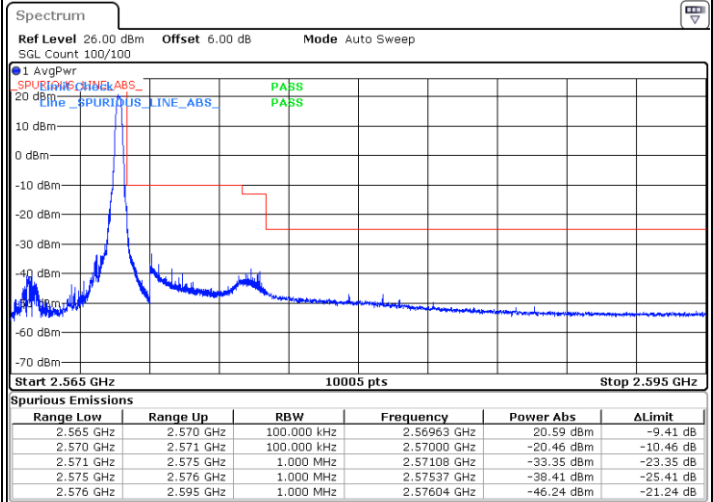


LTE Band 7 / 5MHz / 16QAM

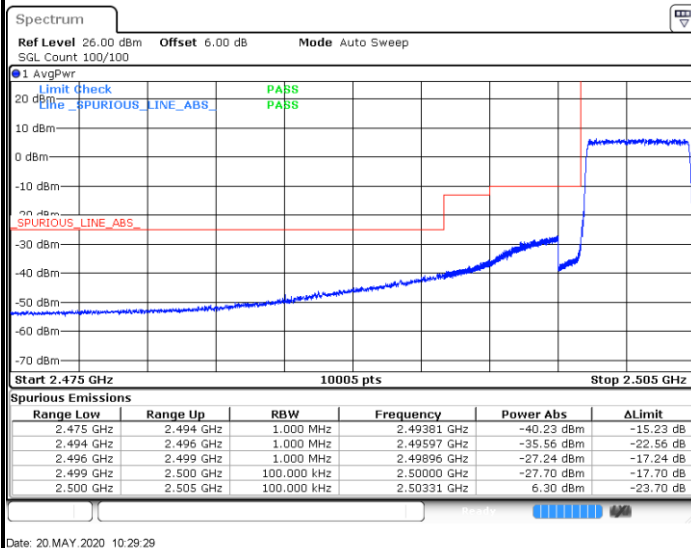
Lowest Band Edge / 1 RB



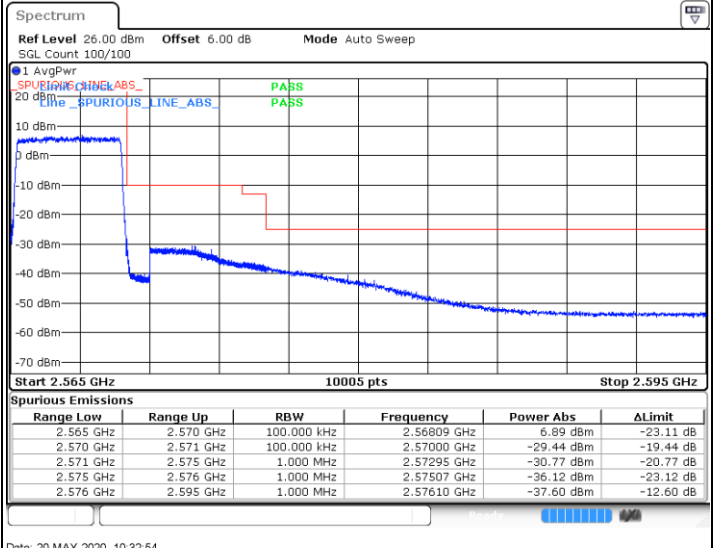
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



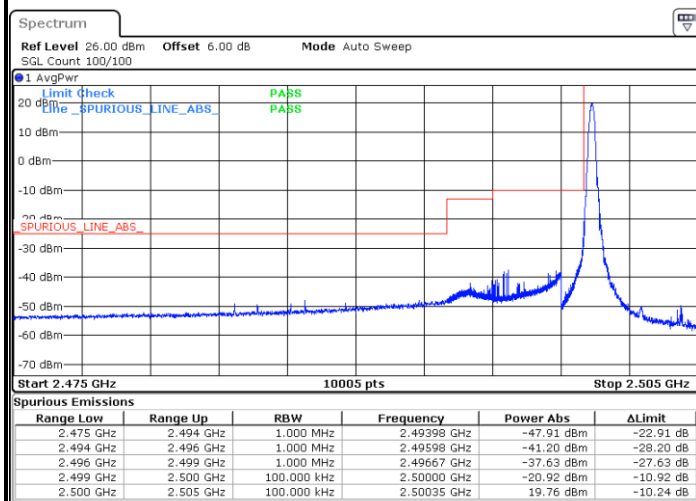
Highest Band Edge / Full RB



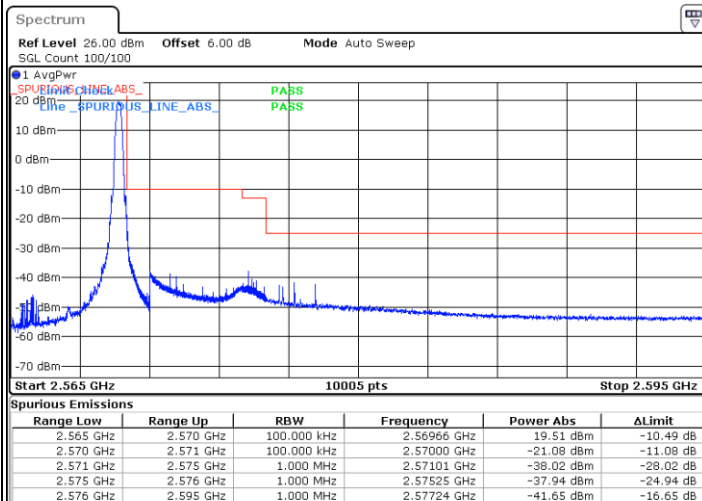


LTE Band 7 / 5MHz / 64QAM

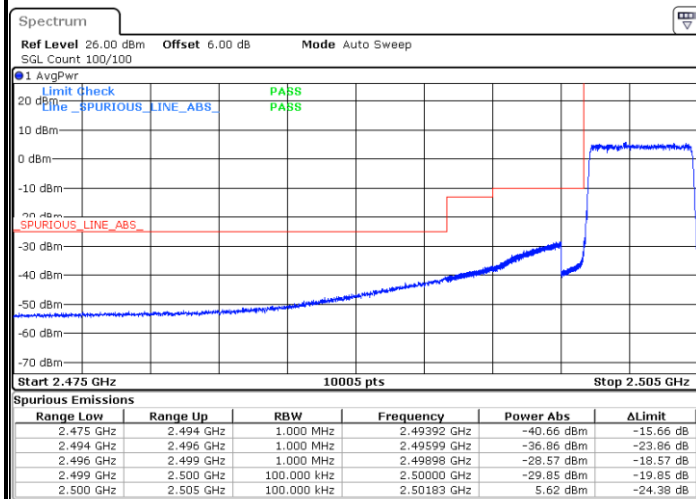
Lowest Band Edge / 1RB



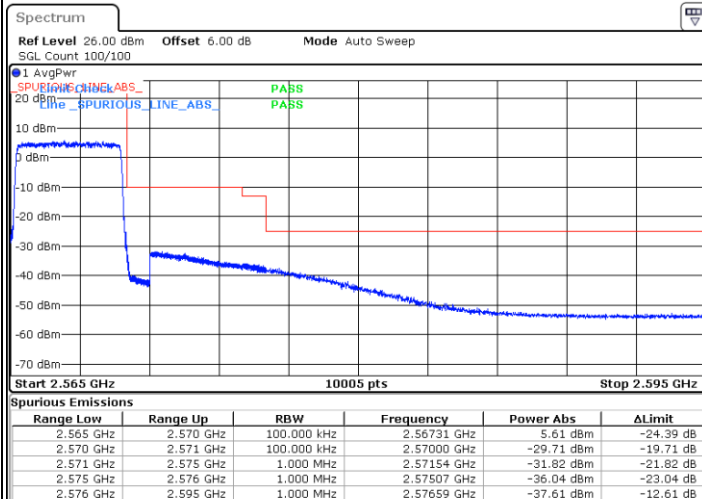
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



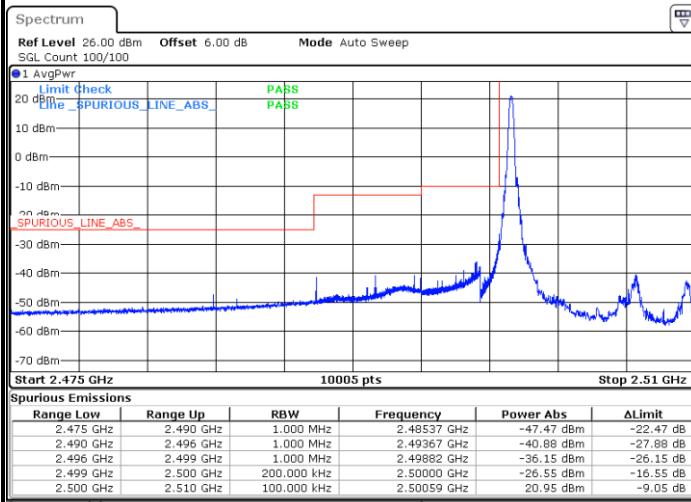
Highest Band Edge / Full RB



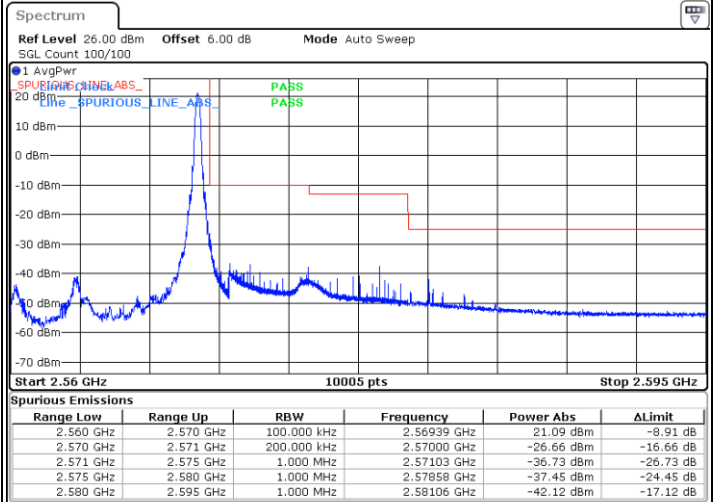


LTE Band 7 / 10MHz / QPSK

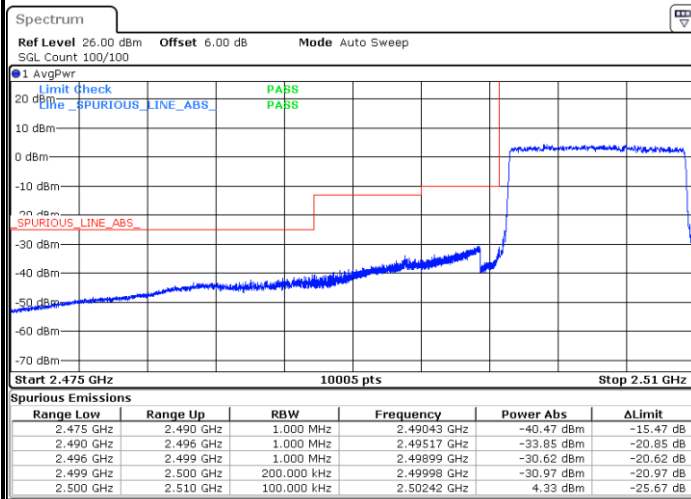
Lowest Band Edge / 1 RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

