



# TEST REPORT

No.I22N02450-RF LTE

for

**Realme Chongqing Mobile Telecommunications Corp., Ltd.**

**Mobile Phone**

**Model Name: RMX3710**

**FCC ID: 2AUYFRMX3710**

with

**Hardware Version: 11**

**Software Version: ColorOS 13.0**

**Issued Date: 2022-12-17**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

**Test Laboratory:**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I22N02450-RF LTE	Rev.0	1st edition	2022-12-17



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## 1. SUMMARY OF TEST REPORT

### 1.1. Test Items

Description	Mobile Phone
Model Name	RMX3710
Brand Name	realme
Applicant's name	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Manufacturer's Name	Realme Chongqing Mobile Telecommunications Corp., Ltd.

### 1.2. Test Standards

FCC Part 2/22/24/27	10-1-20 Edition
ANSI C63.26	2015
KDB971168 D01	v03r01

### 1.3. Test Result

All test items are passed. Please refer to "6 Summary of Test Results" for detail.

### 1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518000

### 1.5. Project Data

Testing Start Date: 2022-11-22

Testing End Date: 2022-12-12

### 1.6. Signature

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Wang Ping  
(Prepared this test report)

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Huang Qiuqin  
(Reviewed this test report)

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Zhang Hao  
(Approved this test report)



## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

Company Name: Realme Chongqing Mobile Telecommunications Corp., Ltd.  
Address /Post: No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China  
Contact: Yang LiangPing  
Email: (86)13798864426  
Telephone: ylp@realme.net  
Fax: /

### **2.2. Manufacturer Information**

Company Name: Realme Chongqing Mobile Telecommunications Corp., Ltd.  
Address /Post: No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China  
Contact: Yang LiangPing  
Email: (86)13798864426  
Telephone: ylp@realme.net  
Fax: /



### 3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT

#### (AE)

#### 3.1. About EUT

Description	Mobile Phone
Model Name	RMX3710
FCC ID	2AUYFRMX3710
Frequency Bands	LTE Bands 2/4/5/7/13/66/38/41(2535M Hz -2655M Hz)
Antenna	Integrated
Extreme vol. Limits	3.41V to 4.45V (nominal: 3.87V)
Condition of EUT as received	No abnormality in appearance

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of SAICT.

#### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT03aa	863851060019819	11	ColorOS 13.0	2022-11-22
UT01aa	863851060019934	11	ColorOS 13.0	2022-11-22
	863851060019926			

\*EUT ID: is used to identify the test sample in the lab internally.

UT03aa is used for conduction test, UT01aa is used for radiation test.

#### 3.3. Internal Identification of AE used during the test

AE ID*	Description
AE1	Battery
AE2	Charger
AE3	USB Cable
AE4	Headset
AE1	
Model	BLP875
Manufacturer	Sunwoda Electronic Co.Ltd.
Capacity	4880mAh
Nominal Voltage	3.87 V
AE2	
Model	VCB3HDUH
Manufacturer	Shenzhen Huntkey Chiyuan Electric Co., LTD
Specification	American Standard Charger
AE3	
Model	DL150
Manufacturer	/
AE4	
Model	MH156
Manufacturer	/

\*AE ID: is used to identify the test sample in the lab internally.

AE: ancillary equipment



### **3.4. General Description**

The Equipment Under Test (EUT) is a model Mobile Phone with integrated antenna. It consists of normal options: lithium battery, charger. Manual and specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the Client.



#### **4. REFERENCE DOCUMENTS**

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-20 Edition
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-20 Edition
FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	10-1-20 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-20 Edition
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB971168 D01	Power Meas License Digital Systems	v03r01





## 5. LABORATORY ENVIRONMENT

**Shielded room** did not exceed following limits along the RF testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz>60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 4 Ω

**Fully-anechoic chamber** did not exceed following limits along the EMC testing

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz



## 6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Verdict Column	P	Pass
	F	Fail
	NA	Not applicable
	NM	Not measured

### LTE Band 2

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/24.232	A.1	P
2	Field Strength of Spurious Radiation	2.1053/24.238	A.2	P
3	Frequency Stability	2.1055/24.235	A.3	P
4	Occupied Bandwidth	2.1049/24.238	A.4	P
5	Emission Bandwidth	2.1049/24.238	A.5	P
6	Band Edge Compliance	2.1051/24.238	A.6	P
7	Conducted Spurious Emission	2.1051/24.238	A.7	P
8	Peak-to-Average Power Ratio	24.232/ KDB971168 D01	A.8	P

### LTE Band 4

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(d)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(h)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(g)	A.4	P
5	Emission Bandwidth	2.1049/27.53(g)	A.5	P
6	Band Edge Compliance	2.1051/27.53(h)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(h)	A.7	P
8	Peak-to-Average Power Ratio	27.50(d)/ KDB971168 D01	A.8	P



## LTE band 5

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/22.913	A.1	P
2	Field Strength of Spurious Radiation	2.1053/22.917	A.2	P
3	Frequency Stability	2.1055/22.355	A.3	P
4	Occupied Bandwidth	2.1049/22.917	A.4	P
5	Emission Bandwidth	2.1049/22.917	A.5	P
6	Band Edge Compliance	2.1051/22.917	A.6	P
7	Conducted Spurious Emission	2.1051/22.917	A.7	P
8	Peak-to-Average Power Ratio	KDB971168 D01	A.8	P

## LTE Band 7

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(h)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(m)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(m)	A.4	P
5	Emission Bandwidth	2.1049/27.53(m)	A.5	P
6	Band Edge Compliance	2.1051/27.53(m)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(m)	A.7	P
8	Peak-to-Average Power Ratio	27.50(a)/ KDB971168 D01	A.8	P

## LTE Band 13

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(b)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(c)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(c)	A.4	P
5	Emission Bandwidth	2.1049/27.53(c)	A.5	P
6	Band Edge Compliance	2.1051/27.53(c)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(c)	A.7	P
8	Peak-to-Average Power Ratio	27.50(a)/ KDB971168 D01	A.8	P

**LTE Band 38**

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(h)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(m)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(m)	A.4	P
5	Emission Bandwidth	2.1049/27.53(m)	A.5	P
6	Band Edge Compliance	2.1051/27.53(m)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(m)	A.7	P
8	Peak-to-Average Power Ratio	27.50(a)/ KDB971168 D01	A.8	P

**LTE Band 41**

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(h)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(m)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(m)	A.4	P
5	Emission Bandwidth	2.1049/27.53(m)	A.5	P
6	Band Edge Compliance	2.1051/27.53(m)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(m)	A.7	P
8	Peak-to-Average Power Ratio	27.50(a)/ KDB971168 D01	A.8	P

**LTE Band 66**

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/27.50(d)	A.1	P
2	Field Strength of Spurious Radiation	2.1053/27.53(h)	A.2	P
3	Frequency Stability	2.1055/27.54	A.3	P
4	Occupied Bandwidth	2.1049/27.53(h)	A.4	P
5	Emission Bandwidth	2.1049/27.53(h)	A.5	P
6	Band Edge Compliance	2.1051/27.53(h)	A.6	P
7	Conducted Spurious Emission	2.1051/27.53(h)	A.7	P
8	Peak-to-Average Power Ratio	27.50(a)/ KDB971168 D01	A.8	P



## **7. STATEMENT**

Since the information of samples in this report is provided by the client, the laboratory is not responsible for the authenticity of sample information.

This report takes measured values as criterion of test conclusion. The test conclusion meets the limit requirements.

**8. TEST EQUIPMENTS UTILIZED**

NO.	Description	TYPE	Manufacture	series number	CAL DUE DATE
1	Test Receiver	ESR7	R&S	101676	2023-11-23
2	BiLog Antenna	3142E	ETS-Lindgren	0224831	2024-05-27
3	Horn Antenna	3117	ETS-Lindgren	00066585	2025-03-15
4	Horn Antenna	QSH-SL-18 -26-S-20	Q-par	17013	2023-01-06
5	Antenna	BBHA 9120D	Schwarzbeck	1593	2025-10-24
6	Antenna	VUBA 9117	Schwarzbeck	207	2023-07-15
7	Antenna	QWH-SL-18 -40-K-SG	Q-par	15979	2023-01-06
8	preamplifier	83017A	Agilent	MY39501110	/
9	Signal Generator	SMB100A	R&S	179725	2023-11-23
10	Fully Anechoic Chamber	FACT3-2.0	ETS-Lindgren	1285	2023-05-29
11	Spectrum Analyzer	FSV40	R&S	101192	2023-01-12
12	Universal Radio Communication Tester	CMU200	R&S	114545	2023-01-12
13	Spectrum Analyzer	FSW26	R&S	102197	2023-11-24
14	Universal Radio Communication Tester	CMW500	R&S	129146	2023-04-24
15	DC Power Supply	DC Power Supply	Agilent Technologies	MY50450012	2023-11-13
16	Temperature Chamber	SH-241	ESPEC	92007516	2023-10-15

**Test software**

Item	Name	Vesion
Radiated	EMC32	V10.50.40

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 OUTPUT POWER**

#### **Reference**

FCC: CFR Part 2.1046, 22.913, 24.232, 27.50.

#### **A.1.1 Summary**

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMW500) to ensure max power transmission and proper modulation.

This result contains peak output power and ERP/EIRP measurements for the EUT.

In all cases, output power is within the specified limits.

#### **A.1.2 Conducted**

##### **A.1.2.1 Method of Measurements**

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

##### **A.1.2.2 Measurement result**

#### **LTE band 2**

Bandwidth	RB size/offset	Frequency(MHz)	Power(dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1909.3	22.38	21.60
		1880.0	22.29	21.65
		1850.7	22.28	21.54
	1 RB low	1909.3	22.38	21.58
		1880.0	22.30	21.64
		1850.7	22.25	21.50
	50% RB mid	1909.3	22.49	21.43
		1880.0	22.52	21.45
		1850.7	22.45	21.40
	100% RB	1909.3	21.53	20.55
		1880.0	21.49	20.47
		1850.7	21.42	20.43
3MHz	1 RB high	1908.5	22.37	21.62
		1880.0	22.29	21.61
		1851.5	22.26	21.51
	1 RB low	1908.5	22.38	21.69
		1880.0	22.34	21.62
		1851.5	22.30	21.52
	50% RB mid	1908.5	21.46	20.54
		1880.0	21.46	20.43
		1851.5	21.39	20.43
	100% RB	1908.5	21.40	20.45



Bandwidth	RB size/offset	Frequency(MHz)	Power(dBm)	
			QPSK	16QAM
5MHz	1 RB high	1880.0	21.41	20.40
		1851.5	21.37	20.35
		1907.5	22.28	21.56
	1 RB low	1880.0	22.26	21.38
		1852.5	22.16	21.40
		1907.5	22.27	21.53
	50% RB mid	1880.0	22.23	21.48
		1852.5	22.18	21.48
		1907.5	21.48	20.51
	100% RB	1880.0	21.48	20.47
		1852.5	21.39	20.35
		1907.5	21.43	20.49
10MHz	1 RB high	1880.0	21.44	20.44
		1852.5	21.38	20.37
		1905.0	22.37	21.63
	1 RB low	1880.0	22.30	21.59
		1855.0	22.29	21.57
		1905.0	22.36	21.70
	50% RB mid	1880.0	22.34	21.69
		1855.0	22.25	21.56
		1905.0	21.52	20.51
	100% RB	1880.0	21.48	20.45
		1855.0	21.40	20.39
		1905.0	21.50	20.55
15MHz	1 RB high	1880.0	21.50	20.48
		1857.5	21.46	20.43
		1902.5	22.27	21.50
	1 RB low	1880.0	22.23	21.48
		1857.5	22.18	21.40
		1902.5	22.34	21.57
	50% RB mid	1880.0	22.24	21.44
		1857.5	22.22	21.46
		1902.5	21.47	20.47
	100% RB	1880.0	21.45	20.40
		1857.5	21.39	20.32
		1902.5	21.45	20.47
		1880.0	21.46	20.39
		1857.5	21.45	20.40





Bandwidth	RB size/offset	Frequency(MHz)	Power(dBm)	
			QPSK	16QAM
20MHz	1 RB high	1900.0	22.11	21.46
		1880.0	22.10	21.34
		1860.0	21.96	21.28
	1 RB low	1900.0	22.18	21.45
		1880.0	22.08	21.33
		1860.0	22.09	21.36
	50% RB mid	1900.0	21.46	20.48
		1880.0	21.47	20.47
		1860.0	21.46	20.41
	100% RB	1900.0	21.48	20.46
		1880.0	21.42	20.40
		1860.0	21.44	20.40

Note: Expanded measurement uncertainty is  $U = 0.49\text{dB}$ ,  $k = 1.96$



LTE band 4

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1754.3	22.33	21.76
		1732.5	22.31	21.70
		1710.7	22.41	21.71
	1 RB low	1754.3	22.35	21.74
		1732.5	22.28	21.61
		1710.7	22.41	21.70
	50% RB mid	1754.3	22.51	21.54
		1732.5	22.49	21.58
		1710.7	22.54	21.59
	100% RB	1754.3	21.43	20.53
		1732.5	21.46	20.59
		1710.7	21.53	20.64
3MHz	1 RB high	1753.5	22.40	21.64
		1732.5	22.37	21.67
		1711.5	22.47	21.74
	1 RB low	1753.5	22.39	21.68
		1732.5	22.39	21.64
		1711.5	22.45	21.78
	50% RB mid	1753.5	21.50	20.53
		1732.5	21.50	20.50
		1711.5	21.57	20.63
	100% RB	1753.5	21.44	20.47
		1732.5	21.45	20.45
		1711.5	21.56	20.56
5MHz	1 RB high	1752.5	22.28	21.51
		1732.5	22.24	21.56
		1712.5	22.35	21.61
	1 RB low	1752.5	22.30	21.66
		1732.5	22.26	21.52
		1712.5	22.35	21.63
	50% RB mid	1752.5	21.53	20.49
		1732.5	21.53	20.54
		1712.5	21.62	20.58
	100% RB	1752.5	21.49	20.50
		1732.5	21.41	20.45
		1712.5	21.56	20.58
10MHz	1 RB high	1750.0	22.40	21.74
		1732.5	22.40	21.72
		1715.0	22.41	21.80



Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
	1 RB low	1750.0	22.48	21.83
		1732.5	22.44	21.78
		1715.0	22.54	21.94
	50% RB mid	1750.0	21.57	20.59
		1732.5	21.53	20.53
		1715.0	21.59	20.59
	100% RB	1750.0	21.53	20.54
		1732.5	21.54	20.53
		1715.0	21.58	20.62
15MHz	1 RB high	1747.5	22.30	21.66
		1732.5	22.29	21.62
		1717.5	22.29	21.61
	1 RB low	1747.5	22.39	21.76
		1732.5	22.38	21.74
		1717.5	22.42	21.82
	50% RB mid	1747.5	21.58	20.54
		1732.5	21.55	20.49
		1717.5	21.59	20.59
100% RB	1747.5	21.54	20.55	
	1732.5	21.53	20.52	
	1717.5	21.57	20.57	
20MHz	1 RB high	1745.0	22.13	21.39
		1732.5	22.08	21.43
		1720.0	22.07	21.39
	1 RB low	1745.0	22.17	21.57
		1732.5	22.20	21.58
		1720.0	22.28	21.52
	50% RB mid	1745.0	21.54	20.56
		1732.5	21.55	20.51
		1720.0	21.60	20.60
100% RB	1745.0	21.55	20.58	
	1732.5	21.54	20.54	
	1720.0	21.51	20.49	

Note: Expanded measurement uncertainty is U = 0.49dB, k = 1.96



LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	848.3	23.07	22.44
		836.5	23.09	22.55
		824.7	23.06	22.40
	1 RB low	848.3	23.05	22.38
		836.5	23.10	22.53
		824.7	23.00	22.33
	50% RB mid	848.3	23.25	22.20
		836.5	23.29	22.24
		824.7	23.19	22.23
	100% RB	848.3	22.23	21.36
		836.5	22.17	21.38
		824.7	22.13	21.29
3MHz	1 RB high	847.5	23.18	22.41
		836.5	23.21	22.47
		825.5	23.18	22.46
	1 RB low	847.5	23.18	22.37
		836.5	23.15	22.45
		825.5	23.12	22.36
	50% RB mid	847.5	22.24	21.38
		836.5	22.27	21.38
		825.5	22.16	21.34
	100% RB	847.5	22.20	21.36
		836.5	22.24	21.31
		825.5	22.11	21.17
5MHz	1 RB high	846.5	23.09	22.43
		836.5	23.09	22.49
		826.5	23.10	22.52
	1 RB low	846.5	23.09	22.46
		836.5	23.12	22.49
		826.5	23.05	22.32
	50% RB mid	846.5	22.32	21.35
		836.5	22.32	21.37
		826.5	22.19	21.28
	100% RB	846.5	22.24	21.32
		836.5	22.28	21.34
		826.5	22.15	21.26
10MHz	1 RB high	844.0	23.22	22.52
		836.5	23.24	22.55
		829.0	23.23	22.59



Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
	1 RB low	844.0	23.14	22.62
		836.5	23.18	22.50
		829.0	23.12	22.44
	50% RB mid	844.0	22.26	21.38
		836.5	22.27	21.38
		829.0	22.21	21.29
	100% RB	844.0	22.24	21.31
		836.5	22.26	21.40
		829.0	22.20	21.25

Note: Expanded measurement uncertainty is  $U = 0.49\text{dB}$ ,  $k = 1.96$



LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
5MHz	1 RB high	2567.5	22.44	21.77
		2535.0	22.47	21.72
		2502.5	22.42	21.68
	1 RB low	2567.5	22.42	21.77
		2535.0	22.47	21.73
		2502.5	22.40	21.66
	50% RB mid	2567.5	21.61	20.60
		2535.0	21.62	20.63
		2502.5	21.59	20.54
	100% RB	2567.5	21.61	20.63
		2535.0	21.60	20.62
		2502.5	21.57	20.54
10MHz	1 RB high	2565.0	22.55	21.72
		2535.0	22.55	21.74
		2505.0	22.52	21.77
	1 RB low	2565.0	22.48	21.69
		2535.0	22.55	21.73
		2505.0	22.49	21.72
	50% RB mid	2565.0	21.64	20.65
		2535.0	21.67	20.64
		2505.0	21.61	20.56
	100% RB	2565.0	21.67	20.66
		2535.0	21.67	20.59
		2505.0	21.64	20.60
15MHz	1 RB high	2562.5	22.51	21.79
		2535.0	22.45	21.75
		2507.5	22.45	21.74
	1 RB low	2562.5	22.41	21.66
		2535.0	22.41	21.70
		2507.5	22.35	21.62
	50% RB mid	2562.5	21.63	20.62
		2535.0	21.62	20.61
		2507.5	21.57	20.63
	100% RB	2562.5	21.65	20.58
		2535.0	21.66	20.60
		2507.5	21.61	20.54
20MHz	1 RB high	2560.0	22.34	21.62



Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
		2535.0	22.29	21.54
		2510.0	22.33	21.66
		2560.0	22.16	21.51
	1 RB low	2535.0	22.21	21.43
		2510.0	22.18	21.47
		2560.0	21.61	20.61
	50% RB mid	2535.0	21.61	20.59
		2510.0	21.59	20.59
		2560.0	21.57	20.55
	100% RB	2535.0	21.59	20.57
		2510.0	21.52	20.53

Note: Expanded measurement uncertainty is U = 0.49 dB, k = 1.96

**LTE band 13**

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
5MHz	1 RB high	784.5	23.01	22.27
		782.0	23.15	22.41
		779.5	23.21	22.43
	1 RB low	784.5	23.22	22.42
		782.0	23.18	22.37
		779.5	23.03	22.38
	50% RB mid	784.5	22.33	21.41
		782.0	22.36	21.51
		779.5	22.30	21.43
	100% RB	784.5	22.27	21.34
		782.0	22.34	21.43
		779.5	22.22	21.31
10MHz	1 RB high	782.0	23.13	22.44
	1 RB low	782.0	23.18	22.57
	50% RB mid	782.0	22.36	21.38
	100% RB	782.0	22.35	21.41

Note: Expanded measurement uncertainty is U = 0.49 dB, k = 1.96



LTE band 38

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
5MHz	1 RB high	2617.5	22.45	21.48
		2595.0	22.48	21.51
		2572.5	22.51	21.50
	1 RB low	2617.5	22.48	21.48
		2595.0	22.53	21.55
		2572.5	22.53	21.48
	50% RB mid	2617.5	21.64	20.59
		2595.0	21.73	20.62
		2572.5	21.70	20.66
	100% RB	2617.5	21.60	20.59
		2595.0	21.65	20.62
		2572.5	21.61	20.68
10MHz	1 RB high	2615.0	22.55	21.60
		2595.0	22.62	21.64
		2575.0	22.66	21.71
	1 RB low	2615.0	22.59	21.64
		2595.0	22.64	21.69
		2575.0	22.66	21.68
	50% RB mid	2615.0	21.60	20.65
		2595.0	21.63	20.67
		2575.0	21.64	20.61
	100% RB	2615.0	21.55	20.55
		2595.0	21.53	20.62
		2575.0	21.60	20.62
15MHz	1 RB high	2612.5	22.44	21.46
		2595.0	22.49	21.48
		2577.5	22.52	21.54
	1 RB low	2612.5	22.51	21.45
		2595.0	22.52	21.53
		2577.5	22.55	21.59
	50% RB mid	2612.5	21.59	20.55
		2595.0	21.66	20.54
		2577.5	21.66	20.59
	100% RB	2612.5	21.52	20.55
		2595.0	21.59	20.51
		2577.5	21.57	20.52





Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
20MHz	1 RB high	2610.0	22.27	21.31
		2595.0	22.33	21.27
		2580.0	22.36	21.36
	1 RB low	2610.0	22.30	21.33
		2595.0	22.36	21.41
		2580.0	22.36	21.40
	50% RB mid	2610.0	21.49	20.54
		2595.0	21.54	20.52
		2580.0	21.52	20.54
	100% RB	2610.0	21.45	20.52
		2595.0	21.50	20.55
		2580.0	21.59	20.57

Note: Expanded measurement uncertainty is U = 0.49dB, k = 1.96



LTE band 41

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
5MHz	1 RB high	2537.5	22.29	21.30
		2595.0	22.43	21.48
		2652.5	22.33	21.38
	1 RB low	2537.5	22.37	21.39
		2595.0	22.46	21.50
		2652.5	22.37	21.36
	50% RB mid	2537.5	21.58	20.46
		2595.0	21.70	20.53
		2652.5	21.61	20.48
	100% RB	2537.5	21.50	20.45
		2595.0	21.63	20.56
		2652.5	21.49	20.52
10MHz	1 RB high	2540.0	22.32	21.43
		2595.0	22.56	21.59
		2650.0	22.46	21.49
	1 RB low	2540.0	22.49	21.54
		2595.0	22.61	21.62
		2650.0	22.52	21.48
	50% RB mid	2540.0	21.50	20.51
		2595.0	21.58	20.59
		2650.0	21.51	20.51
	100% RB	2540.0	21.39	20.49
		2595.0	21.48	20.57
		2650.0	21.37	20.45
15MHz	1 RB high	2542.5	22.30	21.32
		2595.0	22.42	21.45
		2647.5	22.37	21.44
	1 RB low	2542.5	22.39	21.43
		2595.0	22.50	21.49
		2647.5	22.35	21.45
	50% RB mid	2542.5	21.49	20.44
		2595.0	21.64	20.53
		2647.5	21.52	20.44



Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
	100% RB	2542.5	21.39	20.42
		2595.0	21.59	20.51
		2647.5	21.40	20.48
20MHz	1 RB high	2545.0	22.11	21.13
		2595.0	22.23	21.28
		2645.0	22.21	21.22
	1 RB low	2545.0	22.28	21.30
		2595.0	22.31	21.31
		2645.0	22.25	21.29
	50% RB mid	2545.0	21.37	20.48
		2595.0	21.48	20.47
		2645.0	21.40	20.41
	100% RB	2545.0	21.45	20.46
		2595.0	21.53	20.51
		2645.0	21.44	20.49

Note: Expanded measurement uncertainty is U = 0.49dB, k = 1.96



LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1779.3	22.65	21.95
		1745.0	22.62	22.03
		1710.7	22.74	22.03
	1 RB low	1779.3	22.64	21.96
		1745.0	22.62	21.99
		1710.7	22.75	22.01
	50% RB mid	1779.3	22.84	21.77
		1745.0	22.81	21.85
		1710.7	22.90	21.89
	100% RB	1779.3	21.76	20.82
		1745.0	21.74	20.88
		1710.7	21.86	20.92
3MHz	1 RB high	1778.5	22.67	21.93
		1745.0	22.68	21.98
		1711.5	22.77	22.08
	1 RB low	1778.5	22.69	21.93
		1745.0	22.70	21.99
		1711.5	22.80	22.06
	50% RB mid	1778.5	21.79	20.85
		1745.0	21.77	20.84
		1711.5	21.91	20.97
	100% RB	1778.5	21.75	20.80
		1745.0	21.76	20.77
		1711.5	21.85	20.89
5MHz	1 RB high	1777.5	22.56	21.87
		1745.0	22.53	21.88
		1712.5	22.66	21.96
	1 RB low	1777.5	22.59	21.87
		1745.0	22.61	21.89
		1712.5	22.68	21.99
	50% RB mid	1777.5	21.81	20.79
		1745.0	21.78	20.83
		1712.5	21.84	20.91
	100% RB	1777.5	21.78	20.75
		1745.0	21.79	20.77
		1712.5	21.84	20.86
10MHz	1 RB high	1775.0	22.66	21.96



Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	
		1745.0	22.68	22.04	
		1715.0	22.73	22.08	
		1775.0	22.68	22.03	
	1 RB low		1745.0	22.78	22.04
			1715.0	22.82	22.12
			1775.0	21.81	20.80
	50% RB mid		1745.0	21.80	20.78
			1715.0	21.87	20.88
			1775.0	21.79	20.76
	100% RB		1745.0	21.84	20.82
			1715.0	21.88	20.93
			1775.0	21.79	20.76
15MHz	1 RB high	1772.5	22.54	21.95	
		1745.0	22.53	21.93	
		1717.5	22.58	21.90	
	1 RB low		1772.5	22.63	22.06
			1745.0	22.66	22.01
			1717.5	22.71	22.02
	50% RB mid		1772.5	21.82	20.77
			1745.0	21.83	20.77
			1717.5	21.86	20.80
	100% RB		1772.5	21.78	20.77
			1745.0	21.80	20.86
			1717.5	21.83	20.81
20MHz	1 RB high	1770.0	22.31	21.67	
		1745.0	22.35	21.62	
		1720.0	22.32	21.66	
	1 RB low		1770.0	22.47	21.78
			1745.0	22.43	21.66
			1720.0	22.47	21.86
	50% RB mid		1770.0	21.82	20.79
			1745.0	21.84	20.82
			1720.0	21.85	20.85
	100% RB		1770.0	21.76	20.73
			1745.0	21.79	20.80
			1720.0	21.74	20.73

Note: Expanded measurement uncertainty is U = 0.49dB, k = 1.96

### A.1.3 Radiated

#### A.1.3.1 Description

This is the test for the maximum radiated power from the EUT.

Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

Rule Part 27.50(d) specifies "Fixed, mobile, and portable (handheld) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP".

Rule Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP".

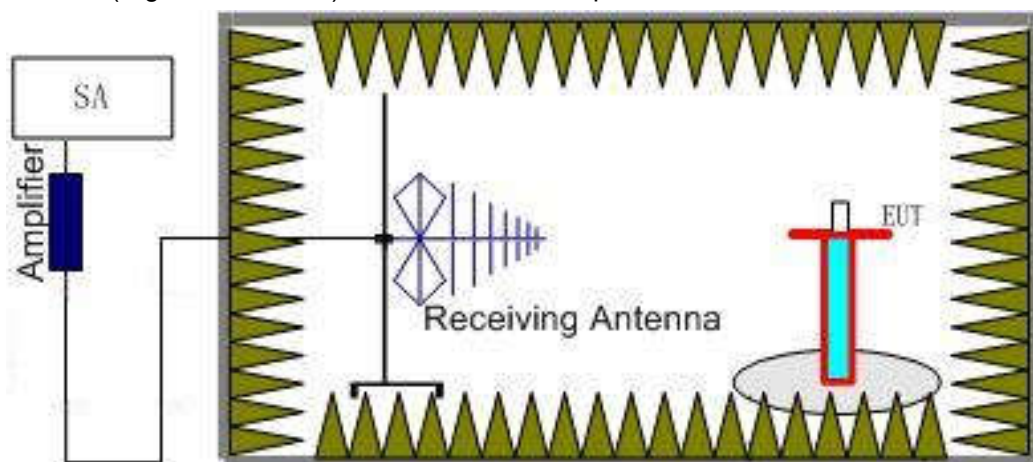
Rule Part 27.50(c) specifies "Portable stations (hand-held de-vices) are limited to 3 watts ERP".

Rule Part 27.50(a)(3) specifies "For mobile and portable stations transmitting in the 2305–2315 MHz band or the 2350–2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth."

Rule Part 22.913(a) specifies "The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

#### A.1.3.2 Method of Measurement

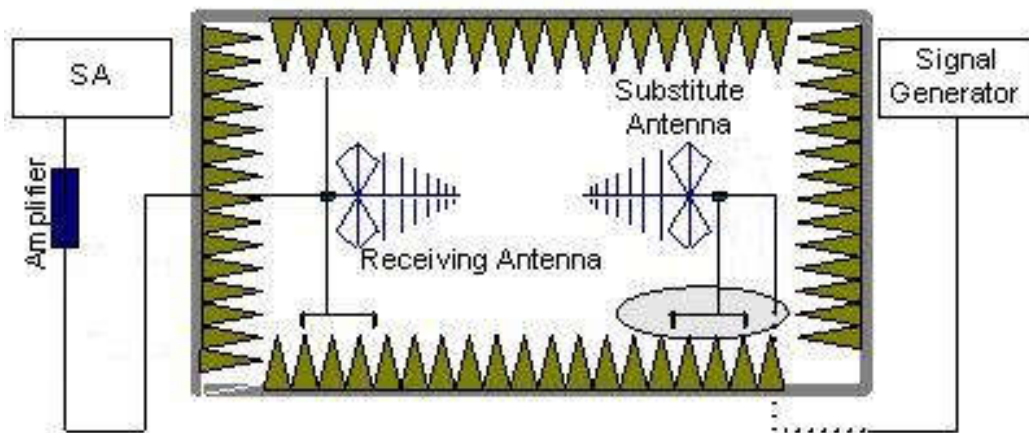
1. For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, EUT was placed on a 80 cm high non-conductive stand at a 3 meter test distance from the receive antenna. For radiated measurements performed at frequencies above 1 GHz, EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. Receiving antenna was placed on the antenna mast 3 meters from the EUT. For emission measurements. The receiving antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during

the test. And the maximum value of the receiver should be recorded as ( $P_r$ ).

- The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna and adjusts the level of the signal generator output until the value of the receiver reaches the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

- An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna.

The cable loss ( $P_{cl}$ ), the substitution Antenna Gain(dBi) ( $G_a$ ) and the amplifier Gain ( $P_{Ag}$ ) should be recorded after test.

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{Mea} - P_{Ag} - P_{cl} + G_a$$

- This value is EIRP since the measurement is calibrated using an antenna of known gain (unit dBi) and known input power.
- ERP can be calculated from EIRP by subtracting the gain of the dipole,  $ERP = EIRP - 2.15dB$ .

### A.1.3.3 Measurement result



**Upper antenna**

**LTE Band 2- EIRP Part 24. 232(c)**

Limits: ≤33dBm (2W)

**LTE Band 2\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1850.70	-16.86	-29.30	8.10	20.54	33.00	H
1880.00	-17.36	-29.40	8.10	20.14	33.00	H
1909.30	-17.69	-29.30	8.10	19.71	33.00	H

**LTE Band 2\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1851.50	-16.89	-29.30	8.10	20.51	33.00	H
1880.00	-17.40	-29.40	8.10	20.10	33.00	H
1908.50	-17.72	-29.30	8.10	19.68	33.00	H

**LTE Band 2\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1852.50	-16.93	-29.30	8.10	20.47	33.00	H
1880.00	-17.42	-29.40	8.10	20.08	33.00	H
1907.50	-17.76	-29.30	8.10	19.64	33.00	H

**LTE Band 2\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1855.00	-16.95	-29.30	8.10	20.45	33.00	H
1880.00	-17.46	-29.40	8.10	20.04	33.00	H
1905.00	-17.80	-29.30	8.10	19.60	33.00	H

**LTE Band 2\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1857.50	-16.99	-29.30	8.10	20.41	33.00	H
1880.00	-17.50	-29.40	8.10	20.00	33.00	H
1902.50	-17.82	-29.30	8.10	19.58	33.00	H

**LTE Band 2\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1860.00	-17.04	-29.30	8.10	20.36	33.00	H
1880.00	-17.52	-29.40	8.10	19.98	33.00	H
1900.00	-17.85	-29.30	8.10	19.55	33.00	H



**LTE Band 2\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1850.70	-17.97	-29.30	8.10	19.43	33.00	H
1880.00	-17.40	-29.40	8.10	20.10	33.00	H
1909.30	-17.73	-29.30	8.10	19.67	33.00	H

**LTE Band 2\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1851.50	-18.01	-29.30	8.10	19.39	33.00	H
1880.00	-17.44	-29.40	8.10	20.06	33.00	H
1908.50	-17.77	-29.30	8.10	19.63	33.00	H

**LTE Band 2\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1852.50	-18.05	-29.30	8.10	19.35	33.00	H
1880.00	-17.47	-29.40	8.10	20.03	33.00	H
1907.50	-17.79	-29.30	8.10	19.61	33.00	H

**LTE Band 2\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1855.00	-18.08	-29.30	8.10	19.32	33.00	H
1880.00	-17.50	-29.40	8.10	20.00	33.00	H
1905.00	-17.81	-29.30	8.10	19.59	33.00	H

**LTE Band 2\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1857.50	-18.11	-29.30	8.10	19.29	33.00	H
1880.00	-17.53	-29.40	8.10	19.97	33.00	H
1902.50	-17.84	-29.30	8.10	19.56	33.00	H

**LTE Band 2\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1860.00	-18.15	-29.30	8.10	19.25	33.00	H
1880.00	-17.57	-29.40	8.10	19.93	33.00	H
1900.00	-17.86	-29.30	8.10	19.54	33.00	H

**LTE Band 4- EIRP Part 27.50(d)(4)**

Limits: ≤30dBm (1W)

**LTE Band 4\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-17.58	-29.60	8.10	20.12	30.00	H
1732.50	-18.45	-29.60	8.10	19.25	30.00	H
1754.30	-17.95	-29.50	8.10	19.65	30.00	H

**LTE Band 4\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-17.61	-29.60	8.10	20.09	30.00	H
1732.50	-18.50	-29.60	8.10	19.20	30.00	H
1753.50	-17.94	-29.50	8.10	19.66	30.00	H

**LTE Band 4\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-17.65	-29.60	8.10	20.05	30.00	H
1732.50	-18.52	-29.60	8.10	19.18	30.00	H
1752.50	-17.98	-29.50	8.10	19.62	30.00	H

**LTE Band 4\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-17.68	-29.60	8.10	20.02	30.00	H
1732.50	-18.54	-29.60	8.10	19.16	30.00	H
1750.00	-18.01	-29.50	8.10	19.59	30.00	H

**LTE Band 4\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-17.70	-29.60	8.10	20.00	30.00	H
1732.50	-17.58	-29.60	8.10	20.12	30.00	H
1747.50	-15.05	-29.50	8.10	22.55	30.00	H

**LTE Band 4\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-17.73	-29.60	8.10	19.97	30.00	H
1732.50	-17.60	-29.60	8.10	20.10	30.00	H
1745.00	-18.07	-29.50	8.10	19.53	30.00	H

**LTE Band 4\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-18.59	-29.60	8.10	19.11	30.00	H
1732.50	-18.48	-29.60	8.10	19.22	30.00	H
1754.30	-17.97	-29.50	8.10	19.63	30.00	H

**LTE Band 4\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-18.64	-29.60	8.10	19.06	30.00	H
1732.50	-18.51	-29.60	8.10	19.19	30.00	H
1753.50	-18.01	-29.50	8.10	19.59	30.00	H

**LTE Band 4\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-18.68	-29.60	8.10	19.02	30.00	H
1732.50	-18.54	-29.60	8.10	19.16	30.00	H
1752.50	-18.05	-29.50	8.10	19.55	30.00	H

**LTE Band 4\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-18.71	-29.60	8.10	18.99	30.00	H
1732.50	-18.59	-29.60	8.10	19.11	30.00	H
1750.00	-18.08	-29.50	8.10	19.52	30.00	H

**LTE Band 4\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-18.74	-29.60	8.10	18.96	30.00	H
1732.50	-18.65	-29.60	8.10	19.05	30.00	H
1747.50	-18.11	-29.50	8.10	19.49	30.00	H

**LTE Band 4\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-18.78	-29.60	8.10	18.92	30.00	H
1732.50	-18.68	-29.60	8.10	19.02	30.00	H
1745.00	-18.14	-29.50	8.10	19.46	30.00	H

**LTE Band 5- ERP Part 22.913(a)****Limits:** ≤38.45dBm (7W)**LTE Band 5\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
824.70	-11.17	-33.60	-0.79	2.15	19.48	38.45	V
836.50	-11.76	-33.50	-0.74	2.15	18.85	38.45	V
848.30	-12.35	-33.50	-0.73	2.15	18.27	38.45	V

**LTE Band 5\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
825.50	-11.19	-33.60	-0.84	2.15	19.42	38.45	V
836.50	-11.80	-33.50	-0.74	2.15	18.81	38.45	V
847.50	-12.37	-33.50	-0.73	2.15	18.25	38.45	V

**LTE Band 5\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
826.50	-11.22	-33.60	-0.84	2.15	19.39	38.45	V
836.50	-11.84	-33.50	-0.74	2.15	18.77	38.45	V
846.50	-12.40	-33.50	-0.73	2.15	18.22	38.45	V

**LTE Band 5\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
829.00	-11.26	-33.60	-0.84	2.15	19.35	38.45	V
836.50	-11.86	-33.50	-0.74	2.15	18.75	38.45	V
844.00	-12.38	-33.50	-0.78	2.15	18.19	38.45	V

**LTE Band 5\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
824.70	-12.20	-33.60	-0.79	2.15	18.46	38.45	V
836.50	-11.77	-33.50	-0.74	2.15	18.84	38.45	V
848.30	-12.38	-33.50	-0.73	2.15	18.24	38.45	V

**LTE Band 5\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
825.50	-12.18	-33.60	-0.84	2.15	18.43	38.45	V
836.50	-11.81	-33.50	-0.74	2.15	18.80	38.45	V
847.50	-12.41	-33.50	-0.73	2.15	18.21	38.45	V

**LTE Band 5\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
826.50	-12.22	-33.60	-0.84	2.15	18.39	38.45	V
836.50	-11.85	-33.50	-0.74	2.15	18.76	38.45	V
846.50	-12.44	-33.50	-0.73	2.15	18.18	38.45	V

**LTE Band 5\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
829.00	-12.26	-33.60	-0.84	2.15	18.35	38.45	V
836.50	-11.87	-33.50	-0.74	2.15	18.74	38.45	V
844.00	-12.42	-33.50	-0.78	2.15	18.15	38.45	V

**LTE Band 7- EIRP Part 27.50(h)(2)**Limits:  $\leq 33$  dBm (2W)**LTE Band 7\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2502.50	-19.34	-28.70	10.70	20.06	33.00	H
2535.00	-18.79	-28.60	10.70	20.51	33.00	H
2567.50	-18.73	-28.60	10.70	20.57	33.00	H

**LTE Band 7\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2505.00	-19.35	-28.70	10.70	20.05	33.00	H
2535.00	-18.81	-28.60	10.70	20.49	33.00	H
2565.00	-18.76	-28.60	10.70	20.54	33.00	H

**LTE Band 7\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2507.50	-19.39	-28.70	10.70	20.01	33.00	H
2535.00	-18.84	-28.60	10.70	20.46	33.00	H
2562.50	-18.80	-28.60	10.70	20.50	33.00	H

**LTE Band 7\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2510.00	-19.43	-28.70	10.70	19.97	33.00	H
2535.00	-18.86	-28.60	10.70	20.44	33.00	H
2560.00	-18.83	-28.60	10.70	20.47	33.00	H

**LTE Band 7\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2502.50	-19.56	-28.70	10.70	19.84	33.00	H
2535.00	-19.80	-28.60	10.70	19.50	33.00	H
2567.50	-19.76	-28.60	10.70	19.54	33.00	H

**LTE Band 7\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2505.00	-19.60	-28.70	10.70	19.80	33.00	H
2535.00	-19.83	-28.60	10.70	19.47	33.00	H
2565.00	-19.78	-28.60	10.70	19.52	33.00	H

**LTE Band 7\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2507.50	-19.63	-28.70	10.70	19.77	33.00	H
2535.00	-19.87	-28.60	10.70	19.43	33.00	H
2562.50	-19.81	-28.60	10.70	19.49	33.00	H

**LTE Band 7\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2510.00	-19.66	-28.70	10.70	19.74	33.00	H
2535.00	-19.90	-28.60	10.70	19.40	33.00	H
2560.00	-19.84	-28.60	10.70	19.46	33.00	H

**LTE Band 13- ERP Part 27.50(b)(10)**Limits:  $\leq 34.77$ dBm (3W)**LTE Band 13\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
779.50	-12.21	-34.00	-0.08	2.15	19.56	34.77	V
782.00	-12.49	-34.00	-0.13	2.15	19.23	34.77	V
784.50	-12.72	-34.00	-0.13	2.15	19.00	34.77	V

**LTE Band 13\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
782.00	-12.38	-34.00	-0.13	2.15	19.34	34.77	V

**LTE Band 13\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
779.50	-13.27	-34.00	-0.08	2.15	18.50	34.77	V
782.00	-13.48	-34.00	-0.13	2.15	18.24	34.77	V
784.50	-13.60	-34.00	-0.13	2.15	18.12	34.77	V

**LTE Band 13\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
782.00	-13.41	-34.00	-0.13	2.15	18.31	34.77	V



**LTE Band 38 - EIRP Part 27.50(h)(2)**Limits:  $\leq 33\text{dBm}$  (2W)**LTE Band 38\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2572.50	-18.44	-28.60	10.70	20.86	33.00	H
2595.00	-18.43	-28.60	10.70	20.88	33.00	H
2617.50	-18.70	-28.60	10.70	20.60	33.00	H

**LTE Band 38\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2575.00	-18.48	-28.60	10.70	20.82	33.00	H
2595.00	-18.45	-28.60	10.70	20.85	33.00	H
2615.00	-18.73	-28.60	10.70	20.57	33.00	H

**LTE Band 38\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2577.50	-18.50	-28.60	10.70	20.80	33.00	H
2595.00	-18.48	-28.60	10.70	20.82	33.00	H
2612.50	-18.77	-28.60	10.70	20.53	33.00	H

**LTE Band 38\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2580.00	-18.54	-28.60	10.70	20.76	33.00	H
2595.00	-18.52	-28.60	10.70	20.78	33.00	H
2610.00	-18.80	-28.60	10.70	20.50	33.00	H

**LTE Band 38\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2572.50	-19.46	-28.60	10.70	19.84	33.00	H
2595.00	-19.43	-28.60	10.70	19.87	33.00	H
2617.50	-19.74	-28.60	10.70	19.56	33.00	H

**LTE Band 38\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2575.00	-19.51	-28.60	10.70	19.79	33.00	H
2595.00	-19.47	-28.60	10.70	19.83	33.00	H
2615.00	-19.78	-28.60	10.70	19.52	33.00	H

**LTE Band 38\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2577.50	-19.54	-28.60	10.70	19.76	33.00	H
2595.00	-19.51	-28.60	10.70	19.79	33.00	H
2612.50	-19.82	-28.60	10.70	19.48	33.00	H

**LTE Band 38\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2580.00	-19.58	-28.60	10.70	19.72	33.00	H
2595.00	-19.53	-28.60	10.70	19.77	33.00	H
2610.00	-19.85	-28.60	10.70	19.45	33.00	H

**LTE Band 41- EIRP Part 27.50(d)(2)**Limits:  $\leq 33\text{dBm}$  (2W)**LTE Band 41\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2537.50	-19.26	-28.70	10.70	20.14	33.00	H
2595.00	-18.62	-28.60	10.70	20.68	33.00	H
2652.50	-19.47	-28.60	10.70	19.83	33.00	H

**LTE Band 41\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2540.00	-19.30	-28.70	10.70	20.10	33.00	H
2595.00	-18.67	-28.60	10.70	20.63	33.00	H
2650.00	-18.50	-28.60	10.70	20.80	33.00	H

**LTE Band 41\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2542.50	-19.33	-28.70	10.70	20.07	33.00	H
2595.00	-18.70	-28.60	10.70	20.60	33.00	H
2647.50	-18.53	-28.60	10.70	20.77	33.00	H

**LTE Band 41\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2545.00	-19.36	-28.70	10.70	20.04	33.00	H
2595.00	-18.74	-28.60	10.70	20.56	33.00	H
2645.00	-18.58	-28.60	10.70	20.72	33.00	H

**LTE Band 41\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2537.50	-19.88	-28.70	10.70	19.52	33.00	H
2595.00	-19.65	-28.60	10.70	19.65	33.00	H
2652.50	-19.50	-28.60	10.70	19.80	33.00	H

**LTE Band 41\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2540.00	-19.93	-28.70	10.70	19.47	33.00	H
2595.00	-19.69	-28.60	10.70	19.61	33.00	H
2650.00	-19.53	-28.60	10.70	19.77	33.00	H

**LTE Band 41\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2542.50	-19.38	-28.70	10.70	20.02	33.00	H
2595.00	-19.73	-28.60	10.70	19.57	33.00	H
2647.50	-19.58	-28.60	10.70	19.72	33.00	H

**LTE Band 41\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2545.00	-19.42	-28.70	10.70	19.98	33.00	H
2595.00	-19.78	-28.60	10.70	19.52	33.00	H
2645.00	-19.61	-28.60	10.70	19.69	33.00	H

**LTE Band 66- EIRP Part 27.50(d)(4)**

Limits: ≤30dBm (1W)

**LTE Band 66\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-17.32	-29.60	8.10	20.38	30.00	H
1745.00	-17.24	-29.50	8.10	20.36	30.00	H
1779.30	-17.48	-29.50	8.10	20.12	30.00	H

**LTE Band 66\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-17.35	-29.60	8.10	20.35	30.00	H
1745.00	-17.28	-29.50	8.10	20.32	30.00	H
1778.50	-17.51	-29.50	8.10	20.09	30.00	H

**LTE Band 66\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-17.37	-29.60	8.10	20.33	30.00	H
1745.00	-17.31	-29.50	8.10	20.29	30.00	H
1777.50	-17.55	-29.50	8.10	20.05	30.00	H

**LTE Band 66\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-17.39	-29.60	8.10	20.31	30.00	H
1745.00	-17.35	-29.50	8.10	20.25	30.00	H
1775.00	-17.58	-29.50	8.10	20.02	30.00	H

**LTE Band 66\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-17.42	-29.60	8.10	20.28	30.00	H
1745.00	-17.37	-29.50	8.10	20.23	30.00	H
1772.53	-17.61	-29.50	8.10	19.99	30.00	H

**LTE Band 66\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-17.45	-29.60	8.10	20.25	30.00	H
1745.00	-17.41	-29.50	8.10	20.19	30.00	H
1770.00	-17.64	-29.50	8.10	19.96	30.00	H

**LTE Band 66\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-18.36	-29.60	8.10	19.34	30.00	H
1745.00	-18.27	-29.50	8.10	19.33	30.00	H
1779.30	-18.11	-29.50	8.10	19.49	30.00	H

**LTE Band 66\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-18.39	-29.60	8.10	19.31	30.00	H
1745.00	-18.31	-29.50	8.10	19.29	30.00	H
1778.50	-18.13	-29.50	8.10	19.47	30.00	H

**LTE Band 66\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-18.43	-29.60	8.10	19.27	30.00	H
1745.00	-18.35	-29.50	8.10	19.25	30.00	H
1777.50	-18.06	-29.50	8.10	19.54	30.00	H

**LTE Band 66\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-18.46	-29.60	8.10	19.24	30.00	H
1745.00	-18.37	-29.50	8.10	19.23	30.00	H
1775.00	-17.59	-29.50	8.10	20.01	30.00	H

**LTE Band 66\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-18.51	-29.60	8.10	19.19	30.00	H
1745.00	-18.38	-29.50	8.10	19.22	30.00	H
1772.53	-17.62	-29.50	8.10	19.98	30.00	H

**LTE Band 66\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-18.54	-29.60	8.10	19.16	30.00	H
1745.00	-18.43	-29.50	8.10	19.17	30.00	H
1770.00	-17.65	-29.50	8.10	19.95	30.00	H

**Lower antenna****LTE Band 2- EIRP Part 24. 232(c)**

Limits: ≤33dBm (2W)

**LTE Band 2\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1850.70	-17.31	-29.30	8.10	20.09	33.00	H
1880.00	-17.50	-29.40	8.10	20.00	33.00	H
1909.30	-16.58	-29.30	8.10	20.82	33.00	H

**LTE Band 2\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1851.50	-17.35	-29.30	8.10	20.05	33.00	H
1880.00	-16.55	-29.40	8.10	20.95	33.00	H
1908.50	-16.63	-29.30	8.10	20.77	33.00	H

**LTE Band 2\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1852.50	-17.37	-29.30	8.10	20.03	33.00	H
1880.00	-17.57	-29.40	8.10	19.93	33.00	H
1907.50	-16.69	-29.30	8.10	20.71	33.00	H

**LTE Band 2\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1855.00	-17.40	-29.30	8.10	20.00	33.00	H
1880.00	-17.61	-29.40	8.10	19.89	33.00	H
1905.00	-16.72	-29.30	8.10	20.68	33.00	H

**LTE Band 2\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1857.50	-17.43	-29.30	8.10	19.97	33.00	H
1880.00	-17.64	-29.40	8.10	19.86	33.00	H
1902.50	-16.77	-29.30	8.10	20.63	33.00	H

**LTE Band 2\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1860.00	-17.47	-29.30	8.10	19.93	33.00	H
1880.00	-17.68	-29.40	8.10	19.82	33.00	H
1900.00	-16.83	-29.30	8.10	20.57	33.00	H

**LTE Band 2\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1850.70	-17.35	-29.30	8.10	20.05	33.00	H
1880.00	-17.51	-29.40	8.10	19.99	33.00	H
1909.30	-17.65	-29.30	8.10	19.75	33.00	H

**LTE Band 2\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1851.50	-17.38	-29.30	8.10	20.02	33.00	H
1880.00	-17.55	-29.40	8.10	19.95	33.00	H
1908.50	-17.69	-29.30	8.10	19.71	33.00	H

**LTE Band 2\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1852.50	-17.42	-29.30	8.10	19.98	33.00	H
1880.00	-17.58	-29.40	8.10	19.92	33.00	H
1907.50	-17.73	-29.30	8.10	19.67	33.00	H

**LTE Band 2\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1855.00	-17.46	-29.30	8.10	19.94	33.00	H
1880.00	-17.60	-29.40	8.10	19.90	33.00	H
1905.00	-17.77	-29.30	8.10	19.63	33.00	H

**LTE Band 2\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1857.50	-17.50	-29.30	8.10	19.90	33.00	H
1880.00	-17.67	-29.40	8.10	19.83	33.00	H
1902.50	-17.83	-29.30	8.10	19.57	33.00	H

**LTE Band 2\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1860.00	-17.55	-29.30	8.10	19.85	33.00	H
1880.00	-17.69	-29.40	8.10	19.81	33.00	H
1900.00	-17.91	-29.30	8.10	19.49	33.00	H



**LTE Band 4- EIRP Part 27.50(d)(4)**

Limits: ≤30dBm (1W)

**LTE Band 4\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-16.99	-29.60	8.10	20.71	30.00	H
1732.50	-16.83	-29.60	8.10	20.87	30.00	H
1754.30	-16.65	-29.50	8.10	20.95	30.00	H

**LTE Band 4\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-17.02	-29.60	8.10	20.68	30.00	H
1732.50	-16.87	-29.60	8.10	20.83	30.00	H
1753.50	-16.69	-29.50	8.10	20.91	30.00	H

**LTE Band 4\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-17.05	-29.60	8.10	20.65	30.00	H
1732.50	-16.92	-29.60	8.10	20.78	30.00	H
1752.50	-16.73	-29.50	8.10	20.87	30.00	H

**LTE Band 4\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-17.08	-29.60	8.10	20.62	30.00	H
1732.50	-16.97	-29.60	8.10	20.73	30.00	H
1750.00	-16.78	-29.50	8.10	20.82	30.00	H

**LTE Band 4\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-17.11	-29.60	8.10	20.59	30.00	H
1732.50	-17.02	-29.60	8.10	20.68	30.00	H
1747.50	-16.80	-29.50	8.10	20.80	30.00	H

**LTE Band 4\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-17.14	-29.60	8.10	20.56	30.00	H
1732.50	-17.05	-29.60	8.10	20.65	30.00	H
1745.00	-16.83	-29.50	8.10	20.77	30.00	H

**LTE Band 4\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-18.03	-29.60	8.10	19.67	30.00	H
1732.50	-17.87	-29.60	8.10	19.83	30.00	H
1754.30	-17.69	-29.50	8.10	19.91	30.00	H

**LTE Band 4\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-18.07	-29.60	8.10	19.63	30.00	H
1732.50	-17.92	-29.60	8.10	19.78	30.00	H
1753.50	-17.71	-29.50	8.10	19.89	30.00	H

**LTE Band 4\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-18.12	-29.60	8.10	19.58	30.00	H
1732.50	-17.95	-29.60	8.10	19.75	30.00	H
1752.50	-17.74	-29.50	8.10	19.86	30.00	H

**LTE Band 4\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-18.16	-29.60	8.10	19.54	30.00	H
1732.50	-17.98	-29.60	8.10	19.72	30.00	H
1750.00	-17.78	-29.50	8.10	19.82	30.00	H

**LTE Band 4\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-18.22	-29.60	8.10	19.48	30.00	H
1732.50	-18.02	-29.60	8.10	19.68	30.00	H
1747.50	-17.81	-29.50	8.10	19.79	30.00	H

**LTE Band 4\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-18.25	-29.60	8.10	19.45	30.00	H
1732.50	-18.07	-29.60	8.10	19.63	30.00	H
1745.00	-17.85	-29.50	8.10	19.75	30.00	H

**LTE Band 5- ERP Part 22.913(a)****Limits:** ≤38.45dBm (7W)**LTE Band 5\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
824.70	-11.53	-33.60	-0.79	2.15	19.13	38.45	V
836.50	-11.71	-33.50	-0.74	2.15	18.90	38.45	V
848.30	-11.78	-33.50	-0.73	2.15	18.84	38.45	V

**LTE Band 5\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
825.50	-11.51	-33.60	-0.84	2.15	19.10	38.45	V
836.50	-11.74	-33.50	-0.74	2.15	18.87	38.45	V
847.50	-11.81	-33.50	-0.73	2.15	18.81	38.45	V

**LTE Band 5\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
826.50	-11.55	-33.60	-0.84	2.15	19.06	38.45	V
836.50	-11.77	-33.50	-0.74	2.15	18.84	38.45	V
846.50	-11.84	-33.50	-0.73	2.15	18.78	38.45	V

**LTE Band 5\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
829.00	-11.59	-33.60	-0.84	2.15	19.02	38.45	V
836.50	-11.81	-33.50	-0.74	2.15	18.80	38.45	V
844.00	-11.83	-33.50	-0.78	2.15	18.74	38.45	V

**LTE Band 5\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
824.70	-12.57	-33.60	-0.79	2.15	18.09	38.45	V
836.50	-11.76	-33.50	-0.74	2.15	18.85	38.45	V
848.30	-11.83	-33.50	-0.73	2.15	18.79	38.45	V

**LTE Band 5\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
825.50	-12.57	-33.60	-0.84	2.15	18.04	38.45	V
836.50	-11.80	-33.50	-0.74	2.15	18.81	38.45	V
847.50	-11.87	-33.50	-0.73	2.15	18.75	38.45	V

**LTE Band 5\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
826.50	-12.60	-33.60	-0.84	2.15	18.01	38.45	V
836.50	-11.84	-33.50	-0.74	2.15	18.77	38.45	V
846.50	-11.90	-33.50	-0.73	2.15	18.72	38.45	V

**LTE Band 5\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
829.00	-11.63	-33.60	-0.84	2.15	18.98	38.45	V
836.50	-11.87	-33.50	-0.74	2.15	18.74	38.45	V
844.00	-11.88	-33.50	-0.78	2.15	18.69	38.45	V

**LTE Band 7- EIRP Part 27.50(h)(2)**Limits:  $\leq 33$  dBm (2W)**LTE Band 7\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2502.50	-18.66	-28.70	10.70	20.74	33.00	H
2535.00	-18.47	-28.60	10.70	20.83	33.00	H
2567.50	-18.94	-28.60	10.70	20.36	33.00	H

**LTE Band 7\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2505.00	-18.72	-28.70	10.70	20.68	33.00	H
2535.00	-18.53	-28.60	10.70	20.77	33.00	H
2565.00	-18.97	-28.60	10.70	20.33	33.00	H

**LTE Band 7\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2507.50	-18.75	-28.70	10.70	20.65	33.00	H
2535.00	-18.58	-28.60	10.70	20.72	33.00	H
2562.50	-19.01	-28.60	10.70	20.29	33.00	H

**LTE Band 7\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2510.00	-18.78	-28.70	10.70	20.62	33.00	H
2535.00	-18.61	-28.60	10.70	20.69	33.00	H
2560.00	-19.05	-28.60	10.70	20.25	33.00	H

**LTE Band 7\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2502.50	-19.73	-28.70	10.70	19.67	33.00	H
2535.00	-19.53	-28.60	10.70	19.77	33.00	H
2567.50	-19.97	-28.60	10.70	19.33	33.00	H

**LTE Band 7\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2505.00	-19.76	-28.70	10.70	19.64	33.00	H
2535.00	-19.57	-28.60	10.70	19.73	33.00	H
2565.00	-20.01	-28.60	10.70	19.29	33.00	H

**LTE Band 7\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2507.50	-19.78	-28.70	10.70	19.62	33.00	H
2535.00	-19.63	-28.60	10.70	19.67	33.00	H
2562.50	-20.05	-28.60	10.70	19.25	33.00	H

**LTE Band 7\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2510.00	-19.84	-28.70	10.70	19.56	33.00	H
2535.00	-19.67	-28.60	10.70	19.63	33.00	H
2560.00	-20.11	-28.60	10.70	19.19	33.00	H

**LTE Band 13- ERP Part 27.50(b)(10)**Limits:  $\leq 34.77$ dBm (3W)**LTE Band 13\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
779.50	-12.57	-34.00	-0.08	2.15	19.20	34.77	V
782.00	-12.45	-34.00	-0.13	2.15	19.27	34.77	V
784.50	-12.48	-34.00	-0.13	2.15	19.24	34.77	V

**LTE Band 13\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
782.00	-12.47	-34.00	-0.13	2.15	19.25	34.77	V

**LTE Band 13\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
779.50	-13.59	-34.00	-0.08	2.15	18.18	34.77	V
782.00	-13.49	-34.00	-0.13	2.15	18.23	34.77	V
784.50	-13.53	-34.00	-0.13	2.15	18.19	34.77	V

**LTE Band 13\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Polarization
782.00	-13.51	-34.00	-0.13	2.15	18.21	34.77	V

**LTE Band 38 - EIRP Part 27.50(h)(2)**Limits:  $\leq 33\text{dBm}$  (2W)**LTE Band 38\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2572.50	-19.04	-28.60	10.70	20.26	33.00	H
2595.00	-18.52	-28.60	10.70	20.78	33.00	H
2617.50	-18.76	-28.60	10.70	20.54	33.00	H

**LTE Band 38\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2575.00	-19.06	-28.60	10.70	20.24	33.00	H
2595.00	-18.55	-28.60	10.70	20.75	33.00	H
2615.00	-18.78	-28.60	10.70	20.52	33.00	H

**LTE Band 38\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2577.50	-19.12	-28.60	10.70	20.18	33.00	H
2595.00	-18.58	-28.60	10.70	20.72	33.00	H
2612.50	-18.82	-28.60	10.70	20.48	33.00	H

**LTE Band 38\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2580.00	-19.14	-28.60	10.70	20.16	33.00	H
2595.00	-18.61	-28.60	10.70	20.69	33.00	H
2610.00	-18.85	-28.60	10.70	20.45	33.00	H



**LTE Band 38\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2572.50	-20.07	-28.60	10.70	19.23	33.00	H
2595.00	-19.53	-28.60	10.70	19.77	33.00	H
2617.50	-19.78	-28.60	10.70	19.52	33.00	H

**LTE Band 38\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2575.00	-20.11	-28.60	10.70	19.19	33.00	H
2595.00	-19.57	-28.60	10.70	19.73	33.00	H
2615.00	-19.81	-28.60	10.70	19.49	33.00	H

**LTE Band 38\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2577.50	-20.15	-28.60	10.70	19.15	33.00	H
2595.00	-19.62	-28.60	10.70	19.68	33.00	H
2612.50	-19.85	-28.60	10.70	19.45	33.00	H

**LTE Band 38\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2580.00	-19.68	-28.60	10.70	19.62	33.00	H
2595.00	-19.65	-28.60	10.70	19.65	33.00	H
2610.00	-19.91	-28.60	10.70	19.39	33.00	H

**LTE Band 41- EIRP Part 27.50(d)(2)**Limits:  $\leq 33\text{dBm}$  (2W)**LTE Band 41\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2537.50	-19.13	-28.70	10.70	20.27	33.00	H
2595.00	-18.39	-28.60	10.70	20.91	33.00	H
2652.50	-18.49	-28.60	10.70	20.81	33.00	H

**LTE Band 41\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2540.00	-19.16	-28.70	10.70	20.24	33.00	H
2595.00	-18.43	-28.60	10.70	20.87	33.00	H
2650.00	-18.52	-28.60	10.70	20.78	33.00	H

**LTE Band 41\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2542.50	-19.19	-28.70	10.70	20.21	33.00	H
2595.00	-18.47	-28.60	10.70	20.83	33.00	H
2647.50	-18.54	-28.60	10.70	20.76	33.00	H

**LTE Band 41\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2545.00	-19.23	-28.70	10.70	20.17	33.00	H
2595.00	-18.49	-28.60	10.70	20.81	33.00	H
2645.00	-18.58	-28.60	10.70	20.72	33.00	H

**LTE Band 41\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2537.50	-20.15	-28.70	10.70	19.25	33.00	H
2595.00	-19.43	-28.60	10.70	19.87	33.00	H
2652.50	-19.52	-28.60	10.70	19.78	33.00	H

**LTE Band 41\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2540.00	-20.18	-28.70	10.70	19.22	33.00	H
2595.00	-19.46	-28.60	10.70	19.84	33.00	H
2650.00	-19.57	-28.60	10.70	19.73	33.00	H

**LTE Band 41\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2542.50	-20.22	-28.70	10.70	19.18	33.00	H
2595.00	-19.50	-28.60	10.70	19.80	33.00	H
2647.50	-19.59	-28.60	10.70	19.71	33.00	H

**LTE Band 41\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
2545.00	-19.27	-28.70	10.70	20.13	33.00	H
2595.00	-19.54	-28.60	10.70	19.76	33.00	H
2645.00	-19.63	-28.60	10.70	19.67	33.00	H

**LTE Band 66- EIRP Part 27.50(d)(4)**

Limits: ≤30dBm (1W)

**LTE Band 66\_1.4MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-16.81	-29.60	8.10	20.89	30.00	H
1745.00	-16.99	-29.50	8.10	20.61	30.00	H
1779.30	-16.88	-29.50	8.10	20.72	30.00	H

**LTE Band 66\_3MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-16.85	-29.60	8.10	20.85	30.00	H
1745.00	-17.22	-29.50	8.10	20.38	30.00	H
1778.50	-16.61	-29.50	8.10	20.99	30.00	H

**LTE Band 66\_5MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-16.88	-29.60	8.10	20.82	30.00	H
1745.00	-17.05	-29.50	8.10	20.55	30.00	H
1777.50	-16.64	-29.50	8.10	20.96	30.00	H

**LTE Band 66\_10MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-16.91	-29.60	8.10	20.79	30.00	H
1745.00	-16.68	-29.50	8.10	20.92	30.00	H
1775.00	-16.64	-29.50	8.10	20.96	30.00	H

**LTE Band 66\_15MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-16.94	-29.60	8.10	20.76	30.00	H
1745.00	-17.00	-29.50	8.10	20.60	30.00	H
1772.53	-16.67	-29.50	8.10	20.93	30.00	H

**LTE Band 66\_20MHz\_QPSK**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-16.97	-29.60	8.10	20.73	30.00	H
1745.00	-16.62	-29.50	8.10	20.98	30.00	H
1770.00	-16.69	-29.50	8.10	20.91	30.00	H

**LTE Band 66\_1.4MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1710.70	-17.84	-29.60	8.10	19.86	30.00	H
1745.00	-17.52	-29.50	8.10	20.08	30.00	H
1779.30	-17.61	-29.50	8.10	19.99	30.00	H

**LTE Band 66\_3MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1711.50	-17.87	-29.60	8.10	19.83	30.00	H
1745.00	-17.56	-29.50	8.10	20.04	30.00	H
1778.50	-17.65	-29.50	8.10	19.95	30.00	H

**LTE Band 66\_5MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1712.50	-17.90	-29.60	8.10	19.80	30.00	H
1745.00	-17.59	-29.50	8.10	20.01	30.00	H
1777.50	-17.70	-29.50	8.10	19.90	30.00	H

**LTE Band 66\_10MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1715.00	-17.93	-29.60	8.10	19.77	30.00	H
1745.00	-17.63	-29.50	8.10	19.97	30.00	H
1775.00	-17.71	-29.50	8.10	19.89	30.00	H

**LTE Band 66\_15MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1717.50	-17.97	-29.60	8.10	19.73	30.00	H
1745.00	-17.67	-29.50	8.10	19.93	30.00	H
1772.53	-17.75	-29.50	8.10	19.85	30.00	H

**LTE Band 66\_20MHz\_16QAM**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	P <sub>ci</sub> (dB)+ P <sub>Ag</sub> (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Polarization
1720.00	-18.02	-29.60	8.10	19.68	30.00	H
1745.00	-17.69	-29.50	8.10	19.91	30.00	H
1770.00	-17.78	-29.50	8.10	19.82	30.00	H

**ANALYZER SETTINGS:**

RBW = VBW = 8MHz for occupied bandwidths equal to or less than 5MHz.

RBW = VBW = 20MHz for occupied bandwidths equal to or greater than 10MHz.

Note: The maximum value of expanded measurement uncertainty for this test item is U = 2.87dB(30MHz-3GHz)/3.35dB(3GHz-18GHz)/2.68dB(18GHz-40GHz), k = 2

**Note: Both of Vertical and Horizontal polarizations are evaluated, but only the worst case is recorded in this report.**

## **A.2 FIELD STRENGTH OF SPURIOUS RADIATION**

### **Reference**

FCC: CFR 2.1053, 22.917, 24.238, 27.53.

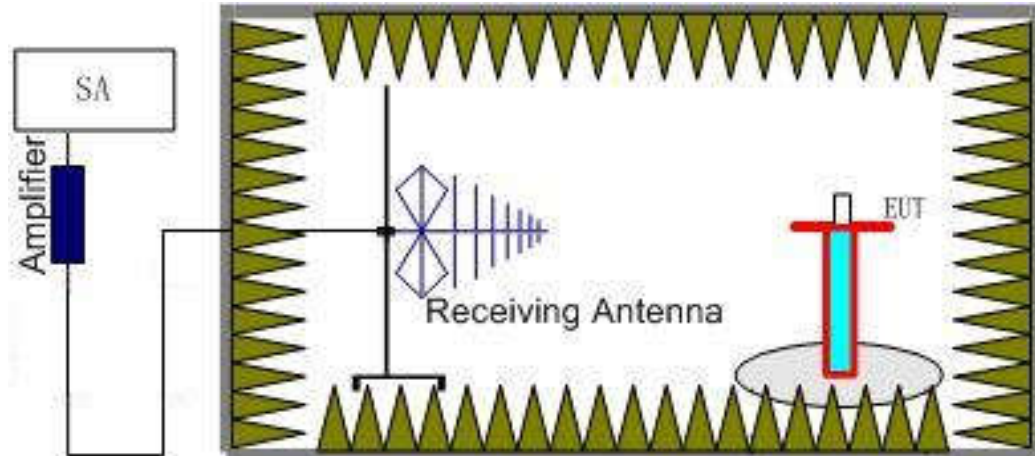
### **A.2.1 Measurement Method**

This measurement is carried out in fully-anechoic chamber FAC-3.

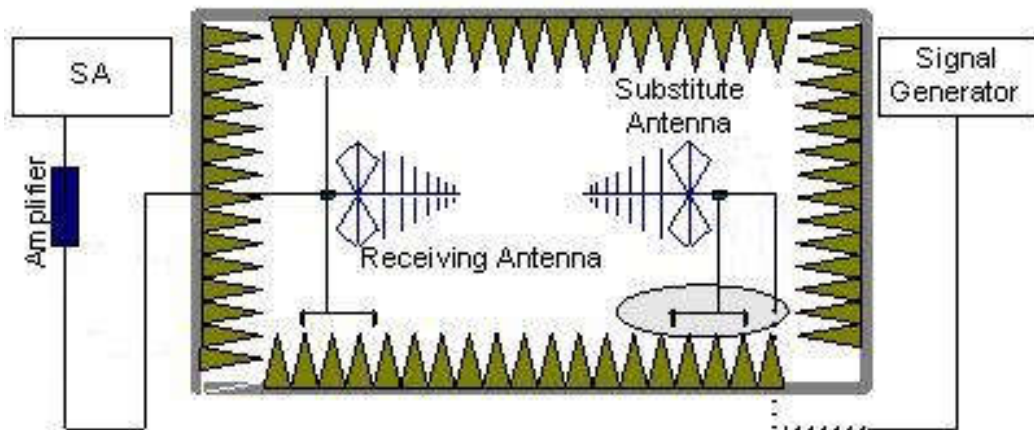
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz as outlined in Part 22.917, 24.238 and 27.53(h). The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the all LTE Bands

### **The procedure of radiated spurious emissions is as follows:**

1. For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, EUT was placed on a 80 cm high non-conductive stand at a 3 meter test distance from the receive antenna. For radiated measurements performed at frequencies above 1 GHz, EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. Receiving antenna was placed on the antenna mast 3 meters from the EUT. For emission measurements. The receiving antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna and adjusts the level of the signal generator output until the value of the receiver reaches the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss ( $P_{pl}$ ) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain(dBi) ( $G_a$ ) should be recorded after test.  
An amplifier should be connected in for the test.  
The Path loss ( $P_{pl}$ ) is the summation of the cable loss and the gain of the amplifier.  
The measurement results are obtained as described below:  
Power (EIRP)= $P_{Mea} - P_{pl} + G_a$
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit: dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole,  $ERP = EIRP - 2.15dB$ .

### A.2.2 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the test LTE Bands. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the test LTE Bands. into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

Only worst case result is given below.

**Upper antenna****LTE Band 2, 1.4MHz, QPSK, Channel 18607**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16940.00	-45.13	2.90	16.50	-31.53	-13.00	H
17183.75	-44.02	2.90	14.50	-32.42	-13.00	H
17295.62	-42.74	3.20	14.50	-31.44	-13.00	H
17509.38	-40.98	2.90	12.80	-31.08	-13.00	H
17556.25	-40.90	2.90	12.80	-31.00	-13.00	H
17826.88	-40.29	3.60	12.80	-31.09	-13.00	H

**LTE Band 2, 1.4MHz, QPSK, Channel 18900**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16996.88	-45.54	2.90	16.50	-31.94	-13.00	H
17185.00	-43.75	2.90	14.50	-32.15	-13.00	H
17236.25	-42.97	3.20	14.50	-31.67	-13.00	H
17518.75	-40.87	2.90	12.80	-30.97	-13.00	H
17620.62	-40.38	3.30	12.80	-30.88	-13.00	H
17840.00	-40.44	3.60	12.80	-31.24	-13.00	H

**LTE Band 2, 1.4MHz, QPSK, Channel 19193**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
17001.25	-43.02	2.90	14.50	-31.42	-13.00	H
17179.38	-43.90	2.90	14.50	-32.30	-13.00	H
17219.38	-42.98	3.20	14.50	-31.68	-13.00	H
17462.50	-41.68	2.90	14.50	-30.08	-13.00	H
17589.38	-39.66	3.30	12.80	-30.16	-13.00	H
17775.00	-40.31	3.60	12.80	-31.11	-13.00	H



**LTE Band 2, 1.4MHz, 16QAM, Channel 18607**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16973.75	-45.52	2.90	16.50	-31.92	-13.00	H
17214.38	-43.56	2.90	14.50	-31.96	-13.00	H
17365.00	-43.41	3.20	14.50	-32.11	-13.00	H
17447.50	-41.86	2.90	14.50	-30.26	-13.00	H
17623.75	-40.05	3.30	12.80	-30.55	-13.00	H
17835.62	-40.02	3.60	12.80	-30.82	-13.00	H

**LTE Band 2, 1.4MHz, 16QAM, Channel 18900**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16995.00	-45.42	2.90	16.50	-31.82	-13.00	H
17118.75	-44.26	2.90	14.50	-32.66	-13.00	H
17294.38	-43.94	3.20	14.50	-32.64	-13.00	H
17510.00	-40.83	2.90	12.80	-30.93	-13.00	H
17530.62	-40.38	2.90	12.80	-30.48	-13.00	H
17792.50	-40.58	3.60	12.80	-31.38	-13.00	H

**LTE Band 2, 1.4MHz, 16QAM, Channel 19193**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16965.62	-45.65	2.90	16.50	-32.05	-13.00	H
17128.12	-43.67	2.90	14.50	-32.07	-13.00	H
17231.88	-43.53	3.20	14.50	-32.23	-13.00	H
17459.38	-42.19	2.90	14.50	-30.59	-13.00	H
17606.25	-40.01	3.30	12.80	-30.51	-13.00	H
17768.75	-40.11	3.60	12.80	-30.91	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 19957**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16950.62	-45.43	2.90	16.50	-31.83	-13.00	H
17123.75	-43.93	2.90	14.50	-32.33	-13.00	H
17237.50	-43.42	3.20	14.50	-32.12	-13.00	H
17520.62	-40.93	2.90	12.80	-31.03	-13.00	H
17531.88	-40.75	2.90	12.80	-30.85	-13.00	H
17758.12	-40.16	3.60	12.80	-30.96	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 20175**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16963.75	-44.70	2.90	16.50	-31.10	-13.00	H
17210.00	-43.53	2.90	14.50	-31.93	-13.00	H
17307.50	-43.43	3.20	14.50	-32.13	-13.00	H
17433.75	-41.43	2.90	14.50	-29.83	-13.00	H
17562.50	-39.75	3.30	12.80	-30.25	-13.00	H
17837.50	-40.46	3.60	12.80	-31.26	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 20393**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16958.12	-45.64	2.90	16.50	-32.04	-13.00	H
17212.50	-43.94	2.90	14.50	-32.34	-13.00	H
17281.25	-43.47	3.20	14.50	-32.17	-13.00	H
17500.00	-39.85	2.90	12.80	-29.95	-13.00	H
17564.38	-39.54	3.30	12.80	-30.04	-13.00	H
17836.25	-40.51	3.60	12.80	-31.31	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 19957**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16956.25	-45.86	2.90	16.50	-32.26	-13.00	H
17173.12	-44.25	2.90	14.50	-32.65	-13.00	H
17292.50	-43.26	3.20	14.50	-31.96	-13.00	H
17450.00	-42.91	2.90	14.50	-31.31	-13.00	H
17575.62	-40.00	3.30	12.80	-30.50	-13.00	H
17831.25	-40.53	3.60	12.80	-31.33	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 20175**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16973.12	-45.50	2.90	16.50	-31.90	-13.00	H
17168.75	-44.18	2.90	14.50	-32.58	-13.00	H
17304.38	-43.86	3.20	14.50	-32.56	-13.00	H
17460.62	-42.75	2.90	14.50	-31.15	-13.00	H
17592.50	-40.15	3.30	12.80	-30.65	-13.00	H
17831.25	-39.17	3.60	12.80	-29.97	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 20393**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16949.38	-45.53	2.90	16.50	-31.93	-13.00	H
17186.25	-44.00	2.90	14.50	-32.40	-13.00	H
17296.25	-43.47	3.20	14.50	-32.17	-13.00	H
17491.88	-42.54	2.90	14.50	-30.94	-13.00	H
17595.00	-40.61	3.30	12.80	-31.11	-13.00	H
17833.12	-40.55	3.60	12.80	-31.35	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20407**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7381.88	-52.67	1.70	12.00	-44.52	-13.00	H
9092.50	-51.57	2.20	11.60	-44.32	-13.00	H
9222.88	-50.31	2.10	11.60	-42.96	-13.00	H
9475.12	-51.23	2.10	11.60	-43.88	-13.00	V
9727.50	-50.81	2.20	11.20	-43.96	-13.00	H
9804.62	-51.49	2.30	11.20	-44.74	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20525**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7325.25	-52.93	1.70	12.00	-44.78	-13.00	H
8655.00	-52.52	2.00	12.00	-44.67	-13.00	H
9099.50	-50.81	2.20	11.60	-43.56	-13.00	H
9219.88	-50.47	2.10	11.60	-43.12	-13.00	H
9472.00	-50.89	2.10	11.60	-43.54	-13.00	V
9737.75	-51.27	2.20	11.20	-44.42	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20643**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7189.12	-52.23	1.80	12.00	-44.18	-13.00	V
9097.75	-51.98	2.20	11.60	-44.73	-13.00	H
9300.75	-50.05	2.00	11.60	-42.60	-13.00	H
9480.25	-51.29	2.10	11.60	-43.94	-13.00	V
9729.88	-51.39	2.20	11.20	-44.54	-13.00	H
9802.00	-51.47	2.30	11.20	-44.72	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20407**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7305.00	-53.01	1.90	12.00	-45.06	-13.00	H
8423.25	-52.22	1.80	11.30	-44.87	-13.00	H
9103.62	-51.44	2.20	11.60	-44.19	-13.00	H
9302.50	-50.56	2.00	11.60	-43.11	-13.00	H
9476.50	-51.27	2.10	11.60	-43.92	-13.00	V
9738.12	-51.08	2.20	11.20	-44.23	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20525**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7196.62	-53.22	1.80	12.00	-45.17	-13.00	V
9102.12	-52.22	2.20	11.60	-44.97	-13.00	H
9305.62	-51.02	2.00	11.60	-43.57	-13.00	H
9473.25	-50.91	2.10	11.60	-43.56	-13.00	V
9729.38	-50.87	2.20	11.20	-44.02	-13.00	H
9800.75	-50.99	2.30	11.20	-44.24	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20643**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7327.50	-52.90	1.70	12.00	-44.75	-13.00	H
9097.12	-52.19	2.20	11.60	-44.94	-13.00	H
9298.62	-50.79	2.00	11.60	-43.34	-13.00	H
9472.88	-50.88	2.10	11.60	-43.53	-13.00	V
9731.62	-51.15	2.20	11.20	-44.30	-13.00	H
9788.62	-51.34	2.30	11.20	-44.59	-13.00	H

**LTE Band 7, 5MHz, QPSK, Channel 20775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
17007.50	-46.80	2.90	14.50	-35.20	-25.00	H
17072.50	-45.72	2.90	14.50	-34.12	-25.00	H
17368.75	-45.28	3.20	14.50	-33.98	-25.00	H
17521.25	-44.77	2.90	12.80	-34.87	-25.00	H
17603.75	-44.16	3.30	12.80	-34.66	-25.00	H
17823.75	-43.99	3.60	12.80	-34.79	-25.00	H

**LTE Band 7, 5MHz, QPSK, Channel 21100**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16938.75	-48.47	2.90	16.50	-34.87	-25.00	H
17107.50	-46.66	2.90	14.50	-35.06	-25.00	H
17290.00	-46.00	3.20	14.50	-34.70	-25.00	H
17453.12	-45.65	2.90	14.50	-34.05	-25.00	H
17535.62	-44.66	2.90	12.80	-34.76	-25.00	H
17773.12	-43.93	3.60	12.80	-34.73	-25.00	H

**LTE Band 7, 5MHz, QPSK, Channel 21425**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16896.88	-48.13	2.90	16.50	-34.53	-25.00	H
16958.75	-48.39	2.90	16.50	-34.79	-25.00	H
17220.62	-45.48	3.20	14.50	-34.18	-25.00	H
17422.50	-46.43	2.90	14.50	-34.83	-25.00	H
17526.88	-44.46	2.90	12.80	-34.56	-25.00	H
17840.00	-43.89	3.60	12.80	-34.69	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 20775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16994.38	-48.40	2.90	16.50	-34.80	-25.00	H
17142.50	-46.49	2.90	14.50	-34.89	-25.00	H
17255.00	-45.51	3.20	14.50	-34.21	-25.00	H
17501.25	-43.93	2.90	12.80	-34.03	-25.00	H
17623.75	-43.88	3.30	12.80	-34.38	-25.00	H
17832.50	-44.11	3.60	12.80	-34.91	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 21100**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16984.38	-48.39	2.90	16.50	-34.79	-25.00	H
17204.38	-46.48	2.90	14.50	-34.88	-25.00	H
17292.50	-46.15	3.20	14.50	-34.85	-25.00	H
17503.75	-44.30	2.90	12.80	-34.40	-25.00	H
17566.25	-43.87	3.30	12.80	-34.37	-25.00	H
17779.38	-43.77	3.60	12.80	-34.57	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 21425**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16998.75	-48.54	2.90	16.50	-34.94	-25.00	H
17127.50	-46.05	2.90	14.50	-34.45	-25.00	H
17235.00	-45.37	3.20	14.50	-34.07	-25.00	H
17472.50	-46.20	2.90	14.50	-34.60	-25.00	H
17599.38	-44.28	3.30	12.80	-34.78	-25.00	H
17831.25	-43.21	3.60	12.80	-34.01	-25.00	H



**LTE Band 13, 5MHz, QPSK, Channel 23205**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1566.00	-59.82	0.70	8.10	-54.57	-40.00	V
9101.00	-51.44	2.20	11.60	-44.19	-13.00	H
9307.12	-50.18	2.00	11.60	-42.73	-13.00	H
9424.50	-50.98	2.10	11.60	-43.63	-13.00	H
9732.12	-50.61	2.20	11.20	-43.76	-13.00	H
9785.62	-50.95	2.30	11.20	-44.20	-13.00	H

**LTE Band 13, 5MHz, QPSK, Channel 23230**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1561.50	-59.40	0.70	8.10	-54.15	-40.00	V
8427.00	-51.72	1.80	11.30	-44.37	-13.00	H
9296.00	-50.34	2.00	11.60	-42.89	-13.00	H
9474.50	-51.08	2.10	11.60	-43.73	-13.00	V
9738.88	-50.74	2.20	11.20	-43.89	-13.00	H
9803.62	-51.05	2.30	11.20	-44.30	-13.00	H

**LTE Band 13, 5MHz, QPSK, Channel 23255**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1566.50	-59.27	0.70	8.10	-54.02	-40.00	V
9098.38	-51.38	2.20	11.60	-44.13	-13.00	H
9299.00	-49.61	2.00	11.60	-42.16	-13.00	H
9476.12	-51.38	2.10	11.60	-44.03	-13.00	V
9763.75	-51.31	2.30	11.20	-44.56	-13.00	V
9794.75	-50.93	2.30	11.20	-44.18	-13.00	H



**LTE Band 13, 5MHz, 16QAM, Channel 23205**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1564.50	-59.89	0.70	8.10	-54.64	-40.00	V
9093.75	-51.92	2.20	11.60	-44.67	-13.00	H
9228.88	-50.77	2.10	11.60	-43.42	-13.00	H
9425.62	-51.43	2.10	11.60	-44.08	-13.00	H
9745.00	-50.34	2.20	11.20	-43.49	-13.00	H
9801.88	-51.20	2.30	11.20	-44.45	-13.00	H

**LTE Band 13, 5MHz, 16QAM, Channel 23230**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1569.50	-59.89	0.70	8.10	-54.64	-40.00	V
9097.12	-51.71	2.20	11.60	-44.46	-13.00	H
9305.00	-50.38	2.00	11.60	-42.93	-13.00	H
9472.75	-50.99	2.10	11.60	-43.64	-13.00	V
9735.62	-51.05	2.20	11.20	-44.20	-13.00	H
9792.62	-51.55	2.30	11.20	-44.80	-13.00	H

**LTE Band 13, 5MHz, 16QAM, Channel 23255**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1566.50	-58.63	0.70	8.10	-53.38	-40.00	V
9108.12	-52.49	2.10	11.60	-45.14	-13.00	H
9224.38	-50.67	2.10	11.60	-43.32	-13.00	H
9472.88	-51.08	2.10	11.60	-43.73	-13.00	V
9733.00	-50.00	2.20	11.20	-43.15	-13.00	H
9875.50	-52.03	2.20	11.20	-45.18	-13.00	H

**LTE Band 38, 5MHz, QPSK, Channel 37775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5140.87	-45.53	1.30	12.50	-34.33	-25.00	H
17201.88	-46.53	2.90	14.50	-34.93	-25.00	H
17267.50	-45.37	3.20	14.50	-34.07	-25.00	H
17421.88	-45.93	2.90	14.50	-34.33	-25.00	H
17585.62	-43.56	3.30	12.80	-34.06	-25.00	H
17768.12	-44.12	3.60	12.80	-34.92	-25.00	H

**LTE Band 38, 5MHz, QPSK, Channel 38000**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5185.87	-44.63	1.60	12.50	-33.73	-25.00	H
17172.50	-46.04	2.90	14.50	-34.44	-25.00	H
17276.88	-45.97	3.20	14.50	-34.67	-25.00	H
17500.62	-44.32	2.90	12.80	-34.42	-25.00	H
17578.75	-43.41	3.30	12.80	-33.91	-25.00	H
17781.88	-43.30	3.60	12.80	-34.10	-25.00	H

**LTE Band 38, 5MHz, QPSK, Channel 38225**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5230.50	-45.55	1.80	12.50	-34.85	-25.00	H
17147.50	-46.16	2.90	14.50	-34.56	-25.00	H
17332.50	-45.68	3.20	14.50	-34.38	-25.00	H
17505.62	-44.39	2.90	12.80	-34.49	-25.00	H
17627.50	-44.27	3.30	12.80	-34.77	-25.00	H
17839.38	-44.13	3.60	12.80	-34.93	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 37775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5140.87	-45.13	1.30	12.50	-33.93	-25.00	H
17203.12	-46.64	2.90	14.50	-35.04	-25.00	H
17276.88	-45.86	3.20	14.50	-34.56	-25.00	H
17516.25	-43.82	2.90	12.80	-33.92	-25.00	H
17628.12	-44.25	3.30	12.80	-34.75	-25.00	H
17809.38	-43.67	3.60	12.80	-34.47	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 38000**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5185.50	-45.22	1.60	12.50	-34.32	-25.00	H
17206.25	-46.03	2.90	14.50	-34.43	-25.00	H
17288.75	-45.85	3.20	14.50	-34.55	-25.00	H
17433.75	-46.03	2.90	14.50	-34.43	-25.00	H
17621.25	-43.69	3.30	12.80	-34.19	-25.00	H
17835.00	-43.09	3.60	12.80	-33.89	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 38225**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5230.50	-45.46	1.80	12.50	-34.76	-25.00	H
17126.25	-46.06	2.90	14.50	-34.46	-25.00	H
17275.62	-45.78	3.20	14.50	-34.48	-25.00	H
17473.12	-45.94	2.90	14.50	-34.34	-25.00	H
17599.38	-43.95	3.30	12.80	-34.45	-25.00	H
17822.50	-43.60	3.60	12.80	-34.40	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 40065**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16996.88	-48.43	2.90	16.50	-34.83	-25.00	H
17092.50	-46.11	2.90	14.50	-34.51	-25.00	H
17235.62	-45.39	3.20	14.50	-34.09	-25.00	H
17406.25	-45.93	2.90	14.50	-34.33	-25.00	H
17590.62	-44.29	3.30	12.80	-34.79	-25.00	H
17769.38	-44.05	3.60	12.80	-34.85	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 40640**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5185.80	-45.06	1.60	12.50	-34.16	-25.00	H
16977.50	-48.63	2.90	16.50	-35.03	-25.00	H
17237.50	-45.42	3.20	14.50	-34.12	-25.00	H
17508.12	-43.94	2.90	12.80	-34.04	-25.00	H
17622.50	-43.60	3.30	12.80	-34.10	-25.00	H
17840.00	-43.33	3.60	12.80	-34.13	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 41215**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16998.75	-48.16	2.90	16.50	-34.56	-25.00	H
17209.38	-46.11	2.90	14.50	-34.51	-25.00	H
17317.50	-45.40	3.20	14.50	-34.10	-25.00	H
17410.62	-45.76	2.90	14.50	-34.16	-25.00	H
17528.12	-44.18	2.90	12.80	-34.28	-25.00	H
17820.62	-43.58	3.60	12.80	-34.38	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 40065**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16959.38	-47.88	2.90	16.50	-34.28	-25.00	H
17166.88	-46.29	2.90	14.50	-34.69	-25.00	H
17291.25	-45.61	3.20	14.50	-34.31	-25.00	H
17420.62	-45.72	2.90	14.50	-34.12	-25.00	H
17526.88	-44.65	2.90	12.80	-34.75	-25.00	H
17743.75	-43.75	3.60	12.80	-34.55	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 40640**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
5185.50	-45.82	1.60	12.50	-34.92	-25.00	H
17198.75	-46.36	2.90	14.50	-34.76	-25.00	H
17275.62	-45.54	3.20	14.50	-34.24	-25.00	H
17460.62	-46.10	2.90	14.50	-34.50	-25.00	H
17573.75	-44.13	3.30	12.80	-34.63	-25.00	H
17683.75	-44.12	3.30	12.80	-34.62	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 41215**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16992.50	-48.62	2.90	16.50	-35.02	-25.00	H
17190.62	-46.18	2.90	14.50	-34.58	-25.00	H
17245.00	-45.26	3.20	14.50	-33.96	-25.00	H
17511.25	-44.10	2.90	12.80	-34.20	-25.00	H
17596.25	-44.19	3.30	12.80	-34.69	-25.00	H
17830.62	-43.84	3.60	12.80	-34.64	-25.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 131979**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16995.00	-45.89	2.90	16.50	-32.29	-13.00	H
17209.38	-44.03	2.90	14.50	-32.43	-13.00	H
17368.75	-43.49	3.20	14.50	-32.19	-13.00	H
17448.75	-42.05	2.90	14.50	-30.45	-13.00	H
17580.00	-40.52	3.30	12.80	-31.02	-13.00	H
17780.00	-40.85	3.60	12.80	-31.65	-13.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 132322**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16960.62	-45.43	2.90	16.50	-31.83	-13.00	H
17211.25	-43.54	2.90	14.50	-31.94	-13.00	H
17350.62	-42.83	3.20	14.50	-31.53	-13.00	H
17450.62	-42.12	2.90	14.50	-30.52	-13.00	H
17596.25	-39.42	3.30	12.80	-29.92	-13.00	H
17773.12	-40.43	3.60	12.80	-31.23	-13.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 132665**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16941.25	-45.76	2.90	16.50	-32.16	-13.00	H
17126.25	-43.83	2.90	14.50	-32.23	-13.00	H
17223.75	-43.73	3.20	14.50	-32.43	-13.00	H
17516.88	-40.45	2.90	12.80	-30.55	-13.00	H
17616.25	-39.76	3.30	12.80	-30.26	-13.00	H
17834.38	-40.62	3.60	12.80	-31.42	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 131979**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16960.00	-45.43	2.90	16.50	-31.83	-13.00	H
17118.75	-44.19	2.90	14.50	-32.59	-13.00	H
17295.62	-43.40	3.20	14.50	-32.10	-13.00	H
17448.75	-42.57	2.90	14.50	-30.97	-13.00	H
17586.88	-39.23	3.30	12.80	-29.73	-13.00	H
17821.25	-40.57	3.60	12.80	-31.37	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 132322**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16984.38	-47.93	2.90	16.50	-34.33	-13.00	H
17140.62	-46.48	2.90	14.50	-34.88	-13.00	H
17300.62	-45.39	3.20	14.50	-34.09	-13.00	H
17515.62	-44.64	2.90	12.80	-34.74	-13.00	H
17600.00	-44.29	3.30	12.80	-34.79	-13.00	H
17833.75	-43.83	3.60	12.80	-34.63	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 132665**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16945.00	-45.91	2.90	16.50	-32.31	-13.00	H
17111.25	-43.85	2.90	14.50	-32.25	-13.00	H
17356.25	-43.53	3.20	14.50	-32.23	-13.00	H
17470.00	-42.22	2.90	14.50	-30.62	-13.00	H
17598.75	-40.21	3.30	12.80	-30.71	-13.00	H
17839.38	-40.70	3.60	12.80	-31.50	-13.00	H

**Lower antenna****LTE Band 2, 1.4MHz, QPSK, Channel 18607**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16937.50	-45.43	2.90	16.50	-31.83	-13.00	H
17198.75	-44.14	2.90	14.50	-32.54	-13.00	H
17251.88	-42.97	3.20	14.50	-31.67	-13.00	H
17444.38	-42.57	2.90	14.50	-30.97	-13.00	H
17544.38	-40.95	2.90	12.80	-31.05	-13.00	H
17838.12	-40.32	3.60	12.80	-31.12	-13.00	H

**LTE Band 2, 1.4MHz, QPSK, Channel 18900**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16934.38	-45.76	2.90	16.50	-32.16	-13.00	H
17200.00	-44.21	2.90	14.50	-32.61	-13.00	H
17276.88	-43.10	3.20	14.50	-31.80	-13.00	H
17515.00	-40.75	2.90	12.80	-30.85	-13.00	H
17622.50	-39.76	3.30	12.80	-30.26	-13.00	H
17823.12	-39.90	3.60	12.80	-30.70	-13.00	H

**LTE Band 2, 1.4MHz, QPSK, Channel 19193**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16945.00	-44.98	2.90	16.50	-31.38	-13.00	H
17128.75	-44.06	2.90	14.50	-32.46	-13.00	H
17298.12	-43.32	3.20	14.50	-32.02	-13.00	H
17506.88	-40.98	2.90	12.80	-31.08	-13.00	H
17613.75	-40.29	3.30	12.80	-30.79	-13.00	H
17771.88	-40.60	3.60	12.80	-31.40	-13.00	H



**LTE Band 2, 1.4MHz, 16QAM, Channel 18607**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16958.75	-45.72	2.90	16.50	-32.12	-13.00	H
17195.00	-44.31	2.90	14.50	-32.71	-13.00	H
17282.50	-43.15	3.20	14.50	-31.85	-13.00	H
17443.12	-42.55	2.90	14.50	-30.95	-13.00	H
17630.62	-39.08	3.30	12.80	-29.58	-13.00	H
17786.88	-40.80	3.60	12.80	-31.60	-13.00	H

**LTE Band 2, 1.4MHz, 16QAM, Channel 18900**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16960.62	-45.78	2.90	16.50	-32.18	-13.00	H
17208.12	-43.67	2.90	14.50	-32.07	-13.00	H
17355.00	-43.83	3.20	14.50	-32.53	-13.00	H
17446.25	-42.46	2.90	14.50	-30.86	-13.00	H
17636.88	-40.23	3.30	12.80	-30.73	-13.00	H
17803.12	-40.80	3.60	12.80	-31.60	-13.00	H

**LTE Band 2, 1.4MHz, 16QAM, Channel 19193**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16996.25	-45.34	2.90	16.50	-31.74	-13.00	H
17175.62	-44.14	2.90	14.50	-32.54	-13.00	H
17354.38	-43.29	3.20	14.50	-31.99	-13.00	H
17518.75	-40.69	2.90	12.80	-30.79	-13.00	H
17624.38	-40.38	3.30	12.80	-30.88	-13.00	H
17833.12	-39.80	3.60	12.80	-30.60	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 19957**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16955.00	-45.50	2.90	16.50	-31.90	-13.00	H
17195.62	-43.98	2.90	14.50	-32.38	-13.00	H
17305.62	-43.70	3.20	14.50	-32.40	-13.00	H
17516.88	-39.50	2.90	12.80	-29.60	-13.00	H
17609.38	-40.23	3.30	12.80	-30.73	-13.00	H
17836.88	-40.17	3.60	12.80	-30.97	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 20175**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16991.25	-45.29	2.90	16.50	-31.69	-13.00	H
17072.50	-43.83	2.90	14.50	-32.23	-13.00	H
17369.38	-42.13	3.20	14.50	-30.83	-13.00	H
17445.00	-42.27	2.90	14.50	-30.67	-13.00	H
17571.88	-39.84	3.30	12.80	-30.34	-13.00	H
17789.38	-40.81	3.60	12.80	-31.61	-13.00	H

**LTE Band 4, 1.4MHz, QPSK, Channel 20393**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16934.38	-45.81	2.90	16.50	-32.21	-13.00	H
17192.50	-43.84	2.90	14.50	-32.24	-13.00	H
17293.12	-43.54	3.20	14.50	-32.24	-13.00	H
17396.88	-42.35	2.90	14.50	-30.75	-13.00	H
17625.00	-39.93	3.30	12.80	-30.43	-13.00	H
17826.88	-40.43	3.60	12.80	-31.23	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 19957**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16963.12	-45.78	2.90	16.50	-32.18	-13.00	H
17196.25	-43.75	2.90	14.50	-32.15	-13.00	H
17353.75	-43.51	3.20	14.50	-32.21	-13.00	H
17413.12	-42.03	2.90	14.50	-30.43	-13.00	H
17586.25	-40.45	3.30	12.80	-30.95	-13.00	H
17788.75	-40.92	3.60	12.80	-31.72	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 20175**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16929.38	-45.01	2.90	16.50	-31.41	-13.00	H
17193.12	-44.08	2.90	14.50	-32.48	-13.00	H
17344.38	-42.70	3.20	14.50	-31.40	-13.00	H
17446.25	-41.91	2.90	14.50	-30.31	-13.00	H
17595.00	-40.31	3.30	12.80	-30.81	-13.00	H
17783.75	-39.26	3.60	12.80	-30.06	-13.00	H

**LTE Band 4, 1.4MHz, 16QAM, Channel 20393**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16977.50	-45.18	2.90	16.50	-31.58	-13.00	H
17186.25	-43.92	2.90	14.50	-32.32	-13.00	H
17368.75	-42.67	3.20	14.50	-31.37	-13.00	H
17467.50	-42.06	2.90	14.50	-30.46	-13.00	H
17576.25	-39.96	3.30	12.80	-30.46	-13.00	H
17838.75	-40.67	3.60	12.80	-31.47	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20407**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
8356.88	-52.30	1.80	11.30	-44.95	-13.00	H
8517.75	-51.56	2.10	12.00	-43.81	-13.00	H
9101.50	-51.38	2.20	11.60	-44.13	-13.00	H
9302.00	-50.92	2.00	11.60	-43.47	-13.00	H
9476.88	-51.58	2.10	11.60	-44.23	-13.00	V
9761.50	-51.28	2.20	11.20	-44.43	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20525**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
8469.38	-51.81	1.80	11.30	-44.46	-13.00	H
8647.50	-52.83	2.00	12.00	-44.98	-13.00	H
9098.12	-51.89	2.20	11.60	-44.64	-13.00	H
9300.00	-50.22	2.00	11.60	-42.77	-13.00	H
9475.62	-51.32	2.10	11.60	-43.97	-13.00	V
9737.88	-50.75	2.20	11.20	-43.90	-13.00	H

**LTE Band 5, 1.4MHz, QPSK, Channel 20643**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
8437.50	-52.86	1.80	11.30	-45.51	-13.00	H
8840.25	-52.91	1.90	12.00	-44.96	-13.00	H
9097.12	-51.97	2.20	11.60	-44.72	-13.00	H
9301.75	-50.36	2.00	11.60	-42.91	-13.00	H
9424.75	-50.87	2.10	11.60	-43.52	-13.00	H
9731.75	-50.53	2.20	11.20	-43.68	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20407**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
8378.62	-52.35	1.80	11.30	-45.00	-13.00	V
8743.50	-53.03	2.00	12.00	-45.18	-13.00	H
9100.62	-51.75	2.20	11.60	-44.50	-13.00	H
9225.38	-50.44	2.10	11.60	-43.09	-13.00	H
9474.25	-51.02	2.10	11.60	-43.67	-13.00	V
9722.62	-50.91	2.20	11.20	-44.06	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20525**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
7269.38	-53.26	1.90	12.00	-45.31	-13.00	H
8112.75	-52.72	1.80	11.30	-45.37	-13.00	H
9098.00	-51.33	2.20	11.60	-44.08	-13.00	H
9300.88	-49.98	2.00	11.60	-42.53	-13.00	H
9475.00	-50.85	2.10	11.60	-43.50	-13.00	V
9746.75	-51.23	2.20	11.20	-44.38	-13.00	H

**LTE Band 5, 1.4MHz, 16QAM, Channel 20643**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
8361.00	-52.12	1.80	11.30	-44.77	-13.00	H
9096.12	-51.72	2.20	11.60	-44.47	-13.00	H
9307.50	-50.90	2.00	11.60	-43.45	-13.00	H
9477.75	-50.99	2.10	11.60	-43.64	-13.00	V
9743.38	-50.66	2.20	11.20	-43.81	-13.00	H
9965.75	-52.10	2.20	11.20	-45.25	-13.00	H

**LTE Band 7, 5MHz, QPSK, Channel 20775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16931.88	-48.18	2.90	16.50	-34.58	-25.00	H
17183.12	-46.42	2.90	14.50	-34.82	-25.00	H
17278.75	-45.36	3.20	14.50	-34.06	-25.00	H
17525.00	-43.97	2.90	12.80	-34.07	-25.00	H
17631.25	-44.23	3.30	12.80	-34.73	-25.00	H
17815.62	-43.79	3.60	12.80	-34.59	-25.00	H

**LTE Band 7, 5MHz, QPSK, Channel 21100**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16977.50	-48.20	2.90	16.50	-34.60	-25.00	H
17210.00	-46.67	2.90	14.50	-35.07	-25.00	H
17297.50	-45.35	3.20	14.50	-34.05	-25.00	H
17522.50	-44.46	2.90	12.80	-34.56	-25.00	H
17628.12	-44.31	3.30	12.80	-34.81	-25.00	H
17827.50	-43.98	3.60	12.80	-34.78	-25.00	H

**LTE Band 7, 5MHz, QPSK, Channel 21425**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16977.50	-49.32	2.90	16.50	-35.72	-25.00	H
17088.75	-45.85	2.90	14.50	-34.25	-25.00	H
17361.25	-45.82	3.20	14.50	-34.52	-25.00	H
17450.00	-45.85	2.90	14.50	-34.25	-25.00	H
17608.75	-43.82	3.30	12.80	-34.32	-25.00	H
17840.00	-43.15	3.60	12.80	-33.95	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 20775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16965.62	-48.34	2.90	16.50	-34.74	-25.00	H
17145.62	-46.07	2.90	14.50	-34.47	-25.00	H
17221.25	-45.81	3.20	14.50	-34.51	-25.00	H
17445.62	-45.97	2.90	14.50	-34.37	-25.00	H
17580.00	-43.91	3.30	12.80	-34.41	-25.00	H
17826.88	-43.65	3.60	12.80	-34.45	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 21100**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16936.25	-48.71	2.90	16.50	-35.11	-25.00	H
17143.12	-46.30	2.90	14.50	-34.70	-25.00	H
17290.62	-46.24	3.20	14.50	-34.94	-25.00	H
17510.00	-44.60	2.90	12.80	-34.70	-25.00	H
17628.12	-43.92	3.30	12.80	-34.42	-25.00	H
17837.50	-43.60	3.60	12.80	-34.40	-25.00	H

**LTE Band 7, 5MHz, 16QAM, Channel 21425**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16935.62	-48.97	2.90	16.50	-35.37	-25.00	H
17110.00	-46.07	2.90	14.50	-34.47	-25.00	H
17285.00	-45.69	3.20	14.50	-34.39	-25.00	H
17502.50	-43.90	2.90	12.80	-34.00	-25.00	H
17608.75	-44.34	3.30	12.80	-34.84	-25.00	H
17776.25	-43.18	3.60	12.80	-33.98	-25.00	H

**LTE Band 13, 5MHz, QPSK, Channel 23205**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1566.00	-59.77	0.70	8.10	-54.52	-40.00	V
9101.25	-52.05	2.20	11.60	-44.80	-13.00	H
9221.38	-50.66	2.10	11.60	-43.31	-13.00	H
9473.25	-51.02	2.10	11.60	-43.67	-13.00	V
9719.88	-51.39	2.20	11.20	-44.54	-13.00	H
9787.12	-51.54	2.30	11.20	-44.79	-13.00	H

**LTE Band 13, 5MHz, QPSK, Channel 23230**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1568.50	-59.94	0.70	8.10	-54.69	-40.00	V
9101.88	-51.96	2.20	11.60	-44.71	-13.00	H
9302.38	-51.11	2.00	11.60	-43.66	-13.00	H
9475.75	-50.64	2.10	11.60	-43.29	-13.00	V
9731.38	-51.61	2.20	11.20	-44.76	-13.00	H
9797.12	-51.61	2.30	11.20	-44.86	-13.00	H

**LTE Band 13, 5MHz, QPSK, Channel 23255**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1571.50	-59.74	0.70	8.10	-54.49	-40.00	V
9101.88	-51.77	2.20	11.60	-44.52	-13.00	H
9301.38	-50.68	2.00	11.60	-43.23	-13.00	H
9477.12	-50.85	2.10	11.60	-43.50	-13.00	V
9726.25	-51.53	2.20	11.20	-44.68	-13.00	H
9793.75	-51.17	2.30	11.20	-44.42	-13.00	H



**LTE Band 13, 5MHz, 16QAM, Channel 23205**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1569.00	-58.95	0.70	8.10	-53.70	-40.00	V
9091.38	-51.49	2.20	11.60	-44.24	-13.00	H
9302.12	-50.55	2.00	11.60	-43.10	-13.00	H
9475.38	-51.34	2.10	11.60	-43.99	-13.00	V
9755.25	-51.42	2.20	11.20	-44.57	-13.00	H
9806.50	-51.47	2.30	11.20	-44.72	-13.00	H

**LTE Band 13, 5MHz, 16QAM, Channel 23230**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1562.00	-59.95	0.70	8.10	-54.70	-40.00	V
9098.88	-51.77	2.20	11.60	-44.52	-13.00	H
9300.75	-50.53	2.00	11.60	-43.08	-13.00	H
9475.75	-51.21	2.10	11.60	-43.86	-13.00	V
9727.25	-51.52	2.20	11.20	-44.67	-13.00	H
9801.88	-51.07	2.30	11.20	-44.32	-13.00	H

**LTE Band 13, 5MHz, 16QAM, Channel 23255**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak ERP(dBm)	Limit (dBm)	Polarization
1575.50	-59.80	0.70	8.10	-54.55	-40.00	V
7202.62	-52.96	1.80	12.00	-44.91	-13.00	H
9097.12	-51.84	2.20	11.60	-44.59	-13.00	H
9221.50	-50.75	2.10	11.60	-43.40	-13.00	H
9473.25	-51.61	2.10	11.60	-44.26	-13.00	V
9746.88	-51.56	2.20	11.20	-44.71	-13.00	H

**LTE Band 38, 5MHz, QPSK, Channel 37775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16980.00	-48.38	2.90	16.50	-34.78	-25.00	H
17212.50	-46.25	2.90	14.50	-34.65	-25.00	H
17262.50	-46.10	3.20	14.50	-34.80	-25.00	H
17451.88	-46.10	2.90	14.50	-34.50	-25.00	H
17597.50	-44.32	3.30	12.80	-34.82	-25.00	H
17836.25	-43.28	3.60	12.80	-34.08	-25.00	H

**LTE Band 38, 5MHz, QPSK, Channel 38000**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16935.62	-48.81	2.90	16.50	-35.21	-25.00	H
17126.88	-46.45	2.90	14.50	-34.85	-25.00	H
17350.62	-45.37	3.20	14.50	-34.07	-25.00	H
17515.00	-44.66	2.90	12.80	-34.76	-25.00	H
17591.25	-43.89	3.30	12.80	-34.39	-25.00	H
17812.50	-43.49	3.60	12.80	-34.29	-25.00	H

**LTE Band 38, 5MHz, QPSK, Channel 38225**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16969.38	-48.92	2.90	16.50	-35.32	-25.00	H
17100.62	-46.27	2.90	14.50	-34.67	-25.00	H
17299.38	-45.41	3.20	14.50	-34.11	-25.00	H
17521.88	-44.04	2.90	12.80	-34.14	-25.00	H
17568.75	-43.89	3.30	12.80	-34.39	-25.00	H
17828.12	-43.64	3.60	12.80	-34.44	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 37775**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16979.38	-48.82	2.90	16.50	-35.22	-25.00	H
17118.12	-45.62	2.90	14.50	-34.02	-25.00	H
17233.12	-378.28	3.20	14.50	-366.98	-25.00	H
17454.38	-46.24	2.90	14.50	-34.64	-25.00	H
17580.00	-44.24	3.30	12.80	-34.74	-25.00	H
17831.88	-43.96	3.60	12.80	-34.76	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 38000**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16950.62	-48.82	2.90	16.50	-35.22	-25.00	H
17171.25	-46.12	2.90	14.50	-34.52	-25.00	H
17310.62	-45.41	3.20	14.50	-34.11	-25.00	H
17458.12	-46.16	2.90	14.50	-34.56	-25.00	H
17525.62	-44.65	2.90	12.80	-34.75	-25.00	H
17816.88	-43.40	3.60	12.80	-34.20	-25.00	H

**LTE Band 38, 5MHz, 16QAM, Channel 38225**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16942.50	-48.60	2.90	16.50	-35.00	-25.00	H
17187.50	-46.44	2.90	14.50	-34.84	-25.00	H
17324.38	-45.69	3.20	14.50	-34.39	-25.00	H
17495.62	-46.25	2.90	14.50	-34.65	-25.00	H
17569.38	-44.38	3.30	12.80	-34.88	-25.00	H
17786.88	-43.73	3.60	12.80	-34.53	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 40065**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
17044.38	-46.82	2.90	14.50	-35.22	-25.00	H
17187.50	-46.15	2.90	14.50	-34.55	-25.00	H
17286.88	-45.43	3.20	14.50	-34.13	-25.00	H
17523.75	-43.95	2.90	12.80	-34.05	-25.00	H
17526.88	-44.77	2.90	12.80	-34.87	-25.00	H
17836.88	-44.00	3.60	12.80	-34.80	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 40640**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16978.12	-48.12	2.90	16.50	-34.52	-25.00	H
17130.00	-46.20	2.90	14.50	-34.60	-25.00	H
17280.00	-45.64	3.20	14.50	-34.34	-25.00	H
17484.38	-46.37	2.90	14.50	-34.77	-25.00	H
17605.00	-44.09	3.30	12.80	-34.59	-25.00	H
17833.12	-43.98	3.60	12.80	-34.78	-25.00	H

**LTE Band 41, 5MHz, QPSK, Channel 41215**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16959.38	-49.04	2.90	16.50	-35.44	-25.00	H
17200.00	-46.27	2.90	14.50	-34.67	-25.00	H
17226.88	-45.45	3.20	14.50	-34.15	-25.00	H
17506.25	-44.43	2.90	12.80	-34.53	-25.00	H
17578.75	-43.43	3.30	12.80	-33.93	-25.00	H
17838.75	-43.97	3.60	12.80	-34.77	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 40065**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16966.25	-48.64	2.90	16.50	-35.04	-25.00	H
17182.50	-46.02	2.90	14.50	-34.42	-25.00	H
17293.12	-45.65	3.20	14.50	-34.35	-25.00	H
17445.00	-46.53	2.90	14.50	-34.93	-25.00	H
17578.12	-43.88	3.30	12.80	-34.38	-25.00	H
17839.38	-43.14	3.60	12.80	-33.94	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 40640**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16988.75	-48.62	2.90	16.50	-35.02	-25.00	H
17201.25	-46.39	2.90	14.50	-34.79	-25.00	H
17355.62	-45.36	3.20	14.50	-34.06	-25.00	H
17451.25	-46.09	2.90	14.50	-34.49	-25.00	H
17573.12	-43.74	3.30	12.80	-34.24	-25.00	H
17836.25	-43.29	3.60	12.80	-34.09	-25.00	H

**LTE Band 41, 5MHz, 16QAM, Channel 41215**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16944.38	-48.16	2.90	16.50	-34.56	-25.00	H
17131.88	-46.38	2.90	14.50	-34.78	-25.00	H
17272.50	-46.04	3.20	14.50	-34.74	-25.00	H
17500.62	-44.59	2.90	12.80	-34.69	-25.00	H
17572.50	-44.07	3.30	12.80	-34.57	-25.00	H
17778.75	-43.61	3.60	12.80	-34.41	-25.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 131979**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16956.88	-44.95	2.90	16.50	-31.35	-13.00	H
17119.38	-43.98	2.90	14.50	-32.38	-13.00	H
17289.38	-43.43	3.20	14.50	-32.13	-13.00	H
17511.88	-40.12	2.90	12.80	-30.22	-13.00	H
17626.88	-39.46	3.30	12.80	-29.96	-13.00	H
17838.75	-40.67	3.60	12.80	-31.47	-13.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 132322**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16950.62	-45.76	2.90	16.50	-32.16	-13.00	H
17170.62	-44.16	2.90	14.50	-32.56	-13.00	H
17292.50	-43.66	3.20	14.50	-32.36	-13.00	H
17416.25	-42.53	2.90	14.50	-30.93	-13.00	H
17603.75	-40.16	3.30	12.80	-30.66	-13.00	H
17823.75	-39.96	3.60	12.80	-30.76	-13.00	H

**LTE Band 66, 1.4MHz, QPSK, Channel 132665**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
17003.12	-43.64	2.90	14.50	-32.04	-13.00	H
17201.88	-43.19	2.90	14.50	-31.59	-13.00	H
17235.00	-43.56	3.20	14.50	-32.26	-13.00	H
17505.62	-40.21	2.90	12.80	-30.31	-13.00	H
17527.50	-39.24	2.90	12.80	-29.34	-13.00	H
17806.25	-40.17	3.60	12.80	-30.97	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 131979**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16984.38	-45.88	2.90	16.50	-32.28	-13.00	H
17215.00	-44.19	2.90	14.50	-32.59	-13.00	H
17365.00	-43.70	3.20	14.50	-32.40	-13.00	H
17457.50	-42.23	2.90	14.50	-30.63	-13.00	H
17588.12	-39.57	3.30	12.80	-30.07	-13.00	H
17836.88	-40.09	3.60	12.80	-30.89	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 132322**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16991.25	-45.43	2.90	16.50	-31.83	-13.00	H
17208.12	-44.23	2.90	14.50	-32.63	-13.00	H
17245.00	-43.91	3.20	14.50	-32.61	-13.00	H
17463.12	-42.26	2.90	14.50	-30.66	-13.00	H
17628.12	-40.26	3.30	12.80	-30.76	-13.00	H
17836.88	-40.66	3.60	12.80	-31.46	-13.00	H

**LTE Band 66, 1.4MHz, 16QAM, Channel 132665**

Frequency(MHz)	P <sub>Mea</sub> (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
16943.75	-45.55	2.90	16.50	-31.95	-13.00	H
17111.25	-44.26	2.90	14.50	-32.66	-13.00	H
17363.75	-41.97	3.20	14.50	-30.67	-13.00	H
17420.00	-42.30	2.90	14.50	-30.70	-13.00	H
17608.12	-39.99	3.30	12.80	-30.49	-13.00	H
17837.50	-40.33	3.60	12.80	-31.13	-13.00	H

Note: The maximum value of expanded measurement uncertainty for this test item is  $U = 2.87\text{dB}(30\text{MHz}-3\text{GHz})/3.35\text{dB}(3\text{GHz}-18\text{GHz})/2.68\text{dB}(18\text{GHz}-40\text{GHz})$ ,  $k = 2$



### **A.3 FREQUENCY STABILITY**

#### **Reference**

FCC: CFR Part 2.1055, 22.355, 24.235, 27.54.

#### **A.3.1 Method of Measurement**

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on mid channel of all bands, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Remeasure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments remeasuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of the lower, higher and nominal voltage. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress.





**A.3.2 Measurement results**

**LTE Band 2, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	1850.790	1909.210		
50				-0.70	0.0004
40				-4.34	0.0023
30				-2.61	0.0014
10				0.19	0.0001
0				0.51	0.0003
-10				-0.91	0.0005
-20				0.30	0.0002
-30				0.92	0.0005

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	1850.790	1909.210	0.21	0.0001
4.45				-2.33	0.0012

Expanded measurement uncertainty is 10 Hz,  $k = 2$

**LTE Band 4, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
50	3.87	1710.790	1754.210		
40				-1.06	0.0006
30				-0.89	0.0005
20				-0.84	0.0005
10				-2.81	0.0016
0				-4.08	0.0024
-10				-4.37	0.0025
-20				-1.04	0.0006
-30				-2.32	0.0013

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	1710.790	1754.210	-1.51	0.0009
4.45				-1.62	0.0009

panded measurement uncertainty is 10Hz,  $k = 2$



**LTE Band 5, 10MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
50	3.87	824.360	848.620		
40				2.63	0.0031
30				0.57	0.0007
20				2.43	0.0029
10				-0.52	0.0006
0				-2.44	0.0029
-10				-0.75	0.0009
-20				2.17	0.0026
-30				0.35	0.0004

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	824.360	848.620	-2.52	0.0030
4.45				-0.97	0.0012

Expanded measurement uncertainty is 10 Hz,  $k = 2$

**LTE Band 7, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2500.520	2569.500		
50				0.69	0.0003
40				-7.30	0.0029
30				-0.79	0.0003
10				-2.12	0.0008
0				-2.45	0.0010
-10				-5.92	0.0023
-20				-4.97	0.0020
-30				-4.47	0.0018

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	2500.520	2569.500	-1.71	0.0007
4.45				-0.15	0.0001

Expanded measurement uncertainty is 10 Hz,  $k = 2$



**LTE Band 13, 10MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	777.455	786.535		
50				-1.74	0.0022
40				-3.83	0.0049
30				-2.06	0.0026
10				-2.03	0.0026
0				-2.14	0.0027
-10				-6.49	0.0083
-20				-3.74	0.0048
-30				-5.63	0.0072

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	777.455	786.535	-4.67	0.0060
4.45				-5.41	0.0069

Expanded measurement uncertainty is 10Hz, k = 2

**LTE Band 38, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2570.620	2619.360		
50				-5.40	0.0021
40				-4.85	0.0019
30				-1.78	0.0007
10				0.81	0.0003
0				-6.39	0.0025
-10				-3.77	0.0015
-20				-3.70	0.0014
-30				-2.82	0.0011

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	2570.620	2619.360	-1.78	0.0007
4.45				-4.03	0.0016

Expanded measurement uncertainty is 10 Hz, k = 2



**LTE Band 41, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2535.540	2654.340		
50				-2.61	0.0010
40				-2.91	0.0011
30				-2.10	0.0008
10				-0.35	0.0001
0				-2.98	0.0012
-10				-3.29	0.0013
-20				-2.93	0.0011
-30				-2.97	0.0011

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	2535.540	2654.340	-2.23	0.0009
4.45				-2.34	0.0009

Expanded measurement uncertainty is 10Hz, k = 2

**LTE Band 66, 20MHz bandwidth (worst case of all bandwidths)**

**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	1710.750	1779.220		
50				0.85	0.0005
40				-3.41	0.0020
30				-0.99	0.0006
10				-1.80	0.0010
0				-3.80	0.0022
-10				0.23	0.0001
-20				-0.49	0.0003
-30				-1.60	0.0009

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.41	20	1710.750	1779.220	-0.88	0.0005
4.45				-2.02	0.0012

Expanded measurement uncertainty is 10Hz, k = 2



**A.4 OCCUPIED BANDWIDTH**

**Reference**

FCC: CFR Part 2.1049, 22.917, 24.238, 27.53.

**A.4.1 Occupied Bandwidth Results**

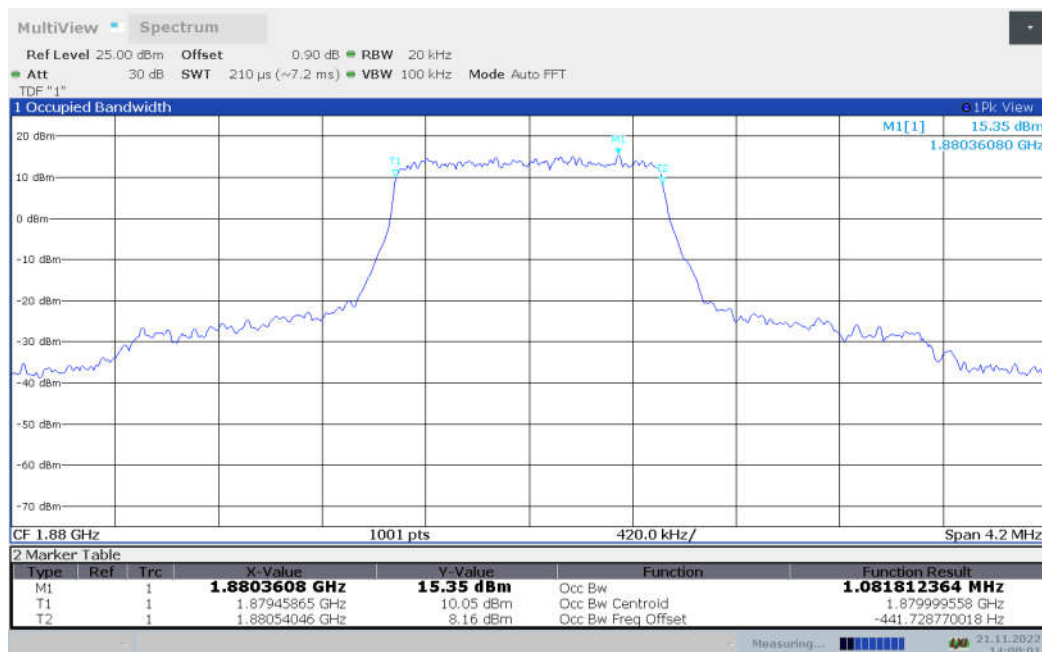
Occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of the US Cellular/PCS frequency bands. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB 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.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least 10log (OBW / RBW) below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

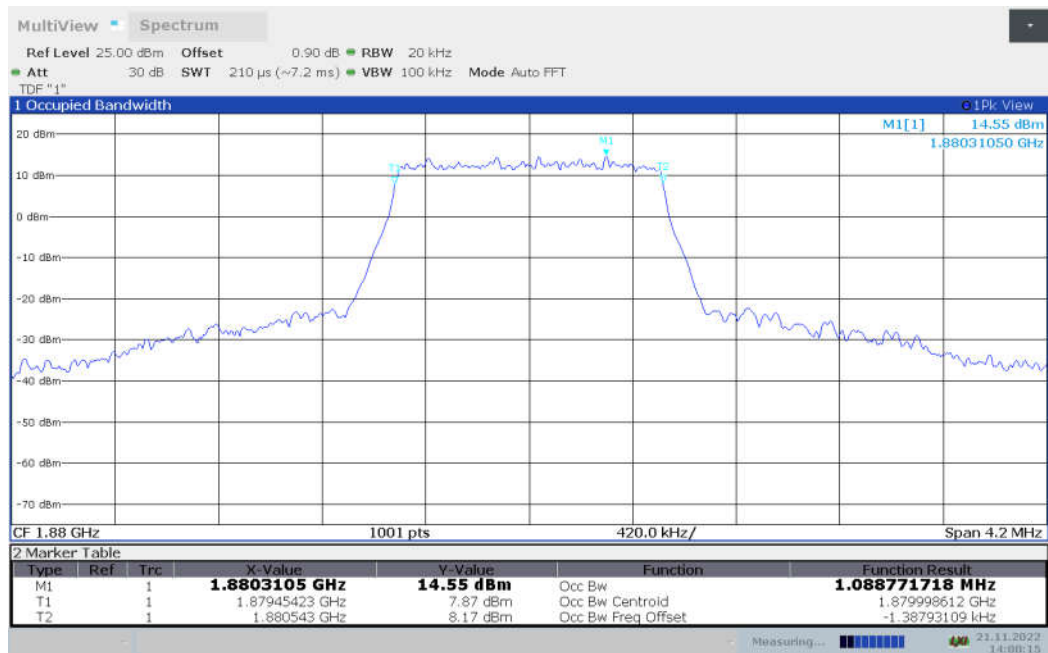
**LTE band 2,1.4MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	1.082	1.089

**LTE band 2 , 1.4MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 1.4MHz Bandwidth,16QAM (99% BW)**

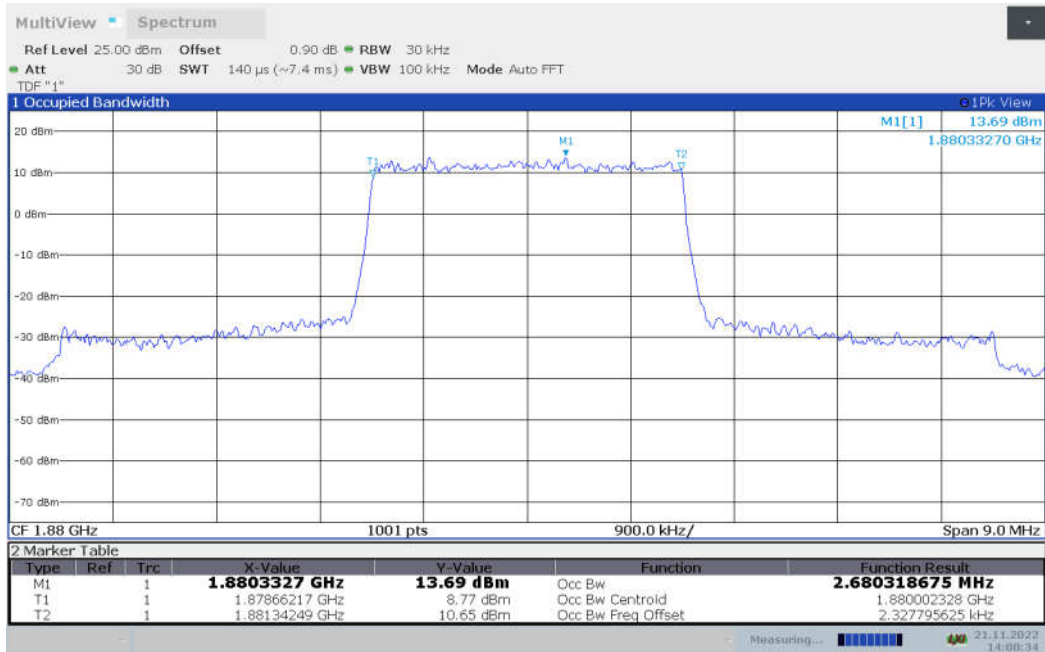




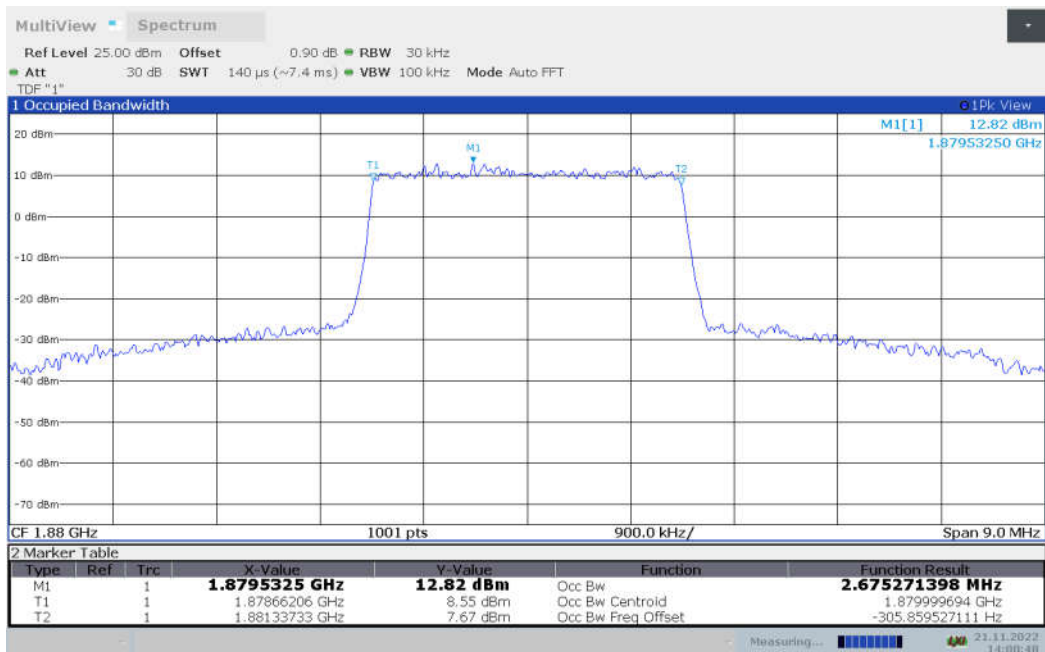
**LTE band 2,3MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	2.680	2.675

**LTE band 2 , 3MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 3MHz Bandwidth,16QAM (99% BW)**

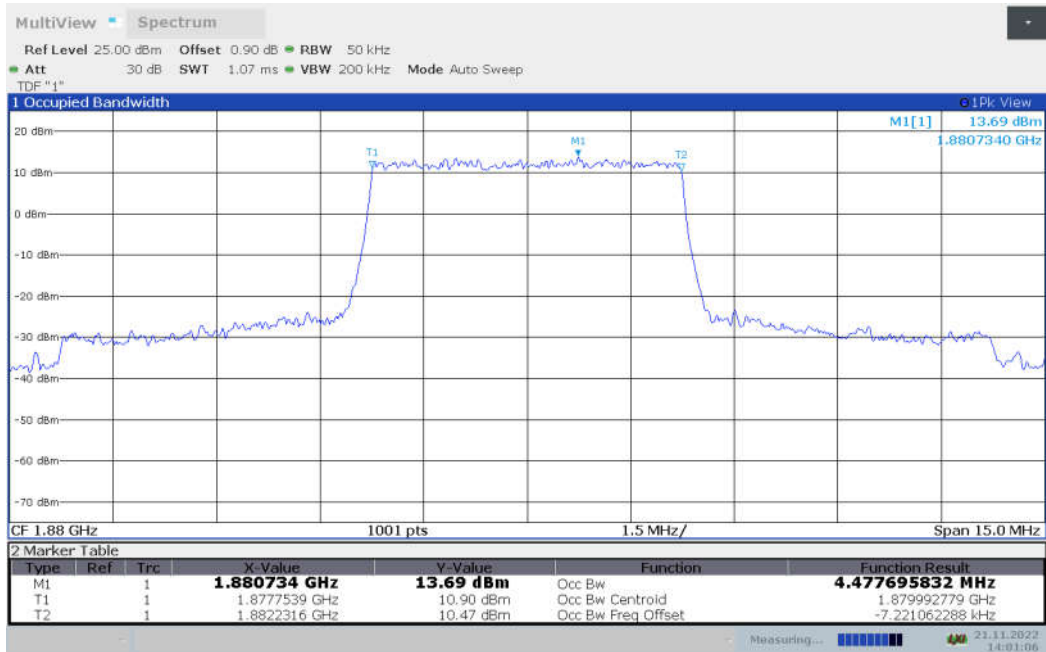




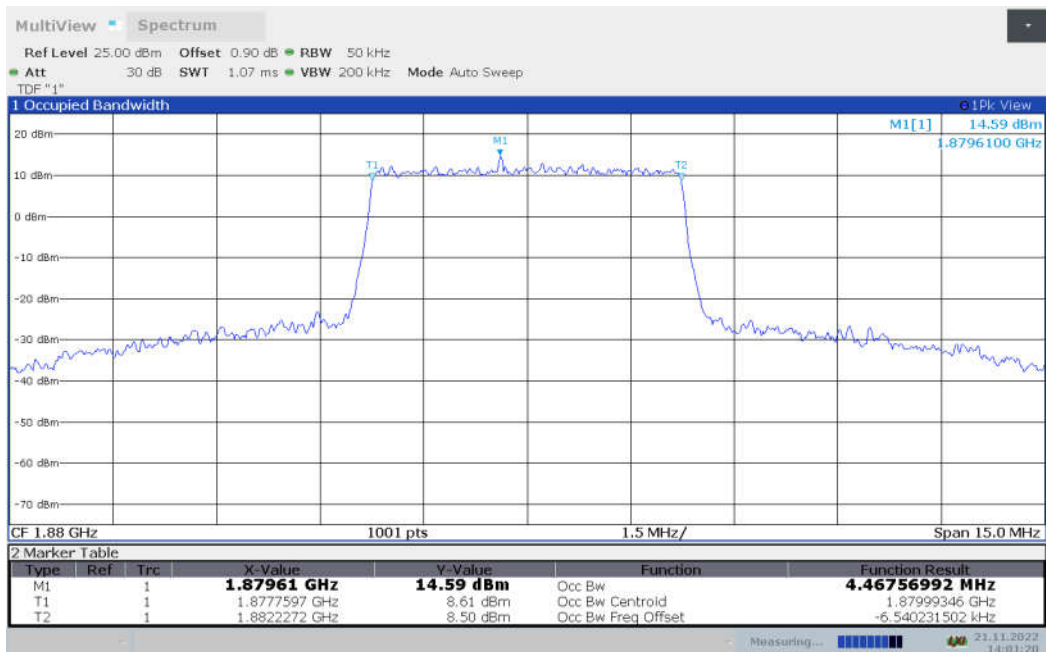
**LTE band 2,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	4.478	4.468

**LTE band 2 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 5MHz Bandwidth,16QAM (99% BW)**



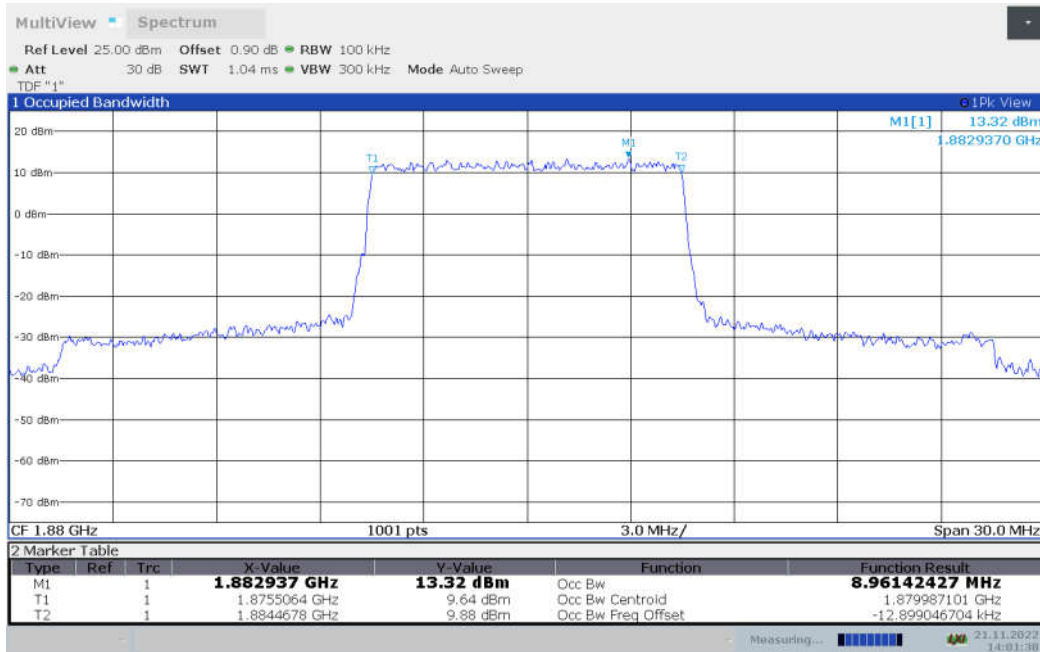




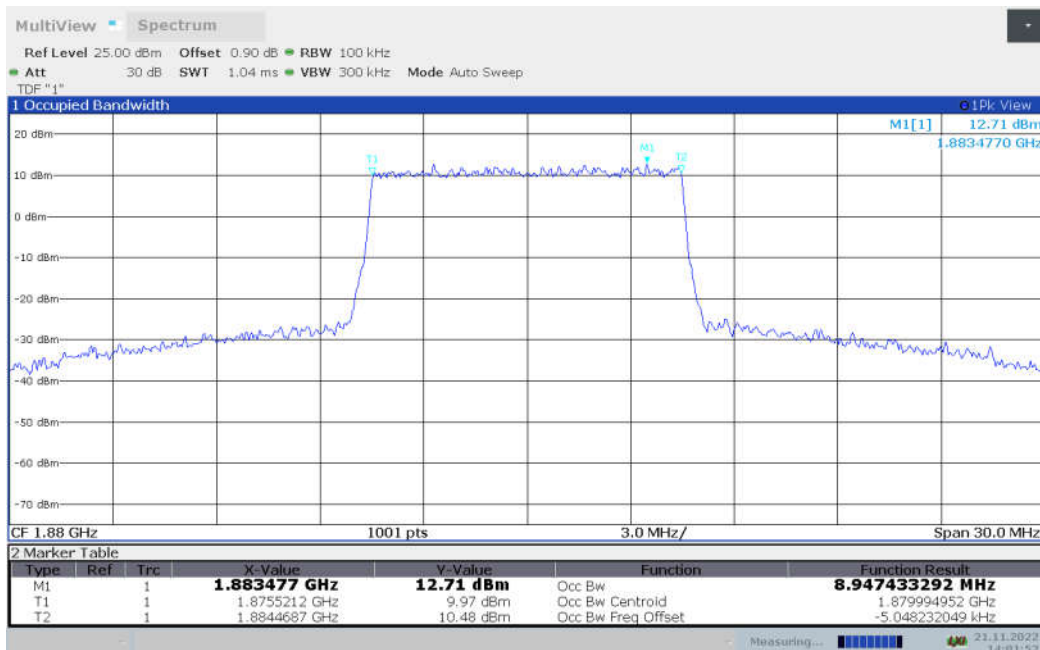
**LTE band 2,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	8.961	8.947

**LTE band 2 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 10MHz Bandwidth,16QAM (99% BW)**

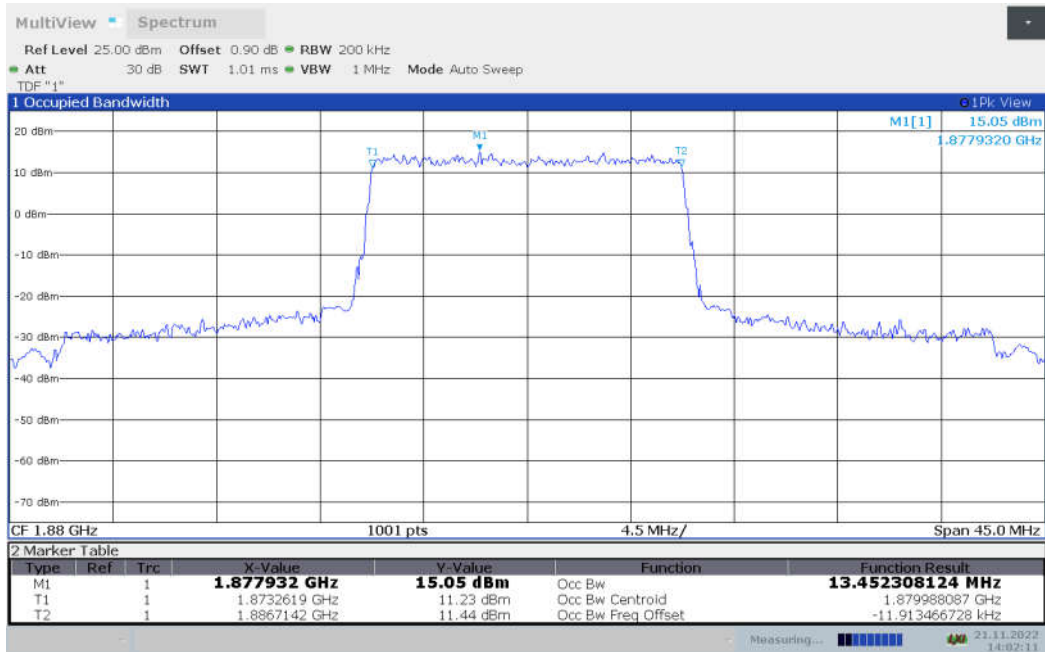




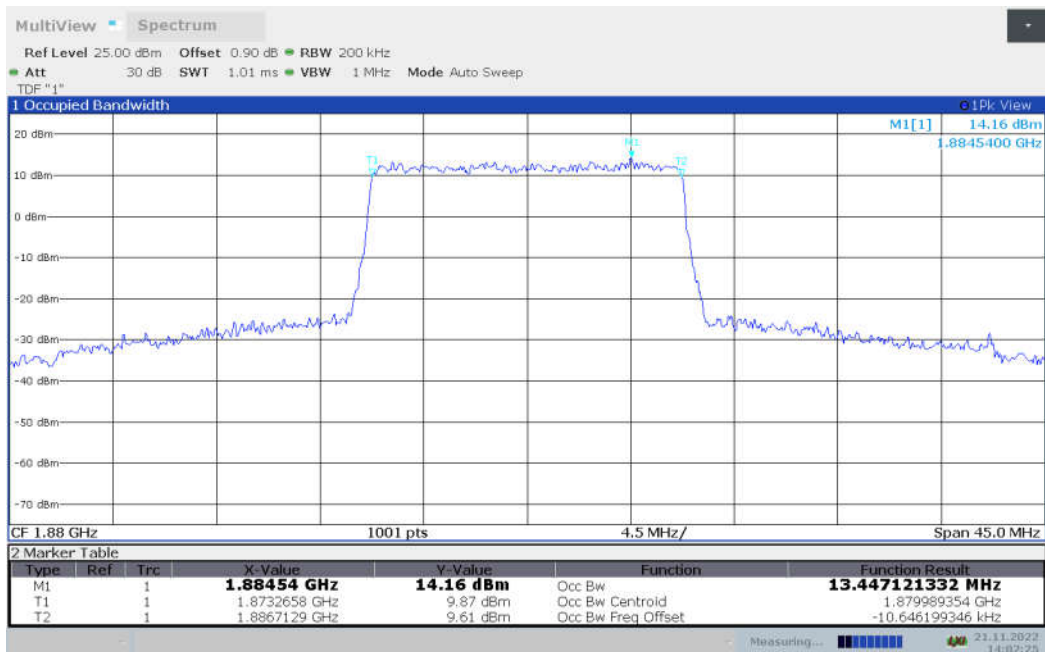
**LTE band 2,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	13.452	13.447

**LTE band 2 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 15MHz Bandwidth,16QAM (99% BW)**

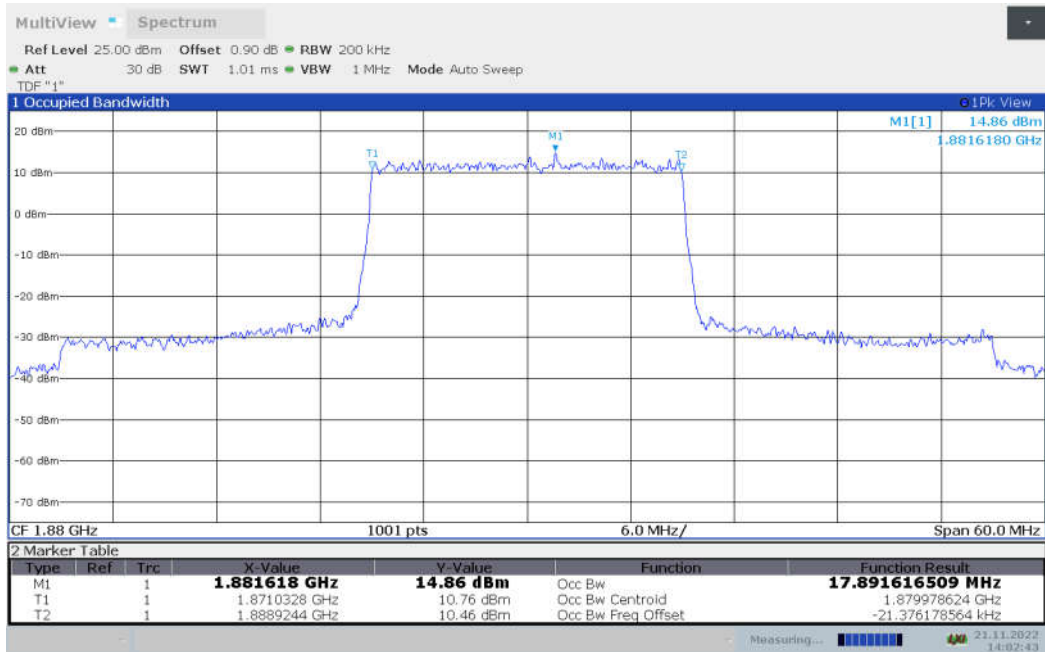




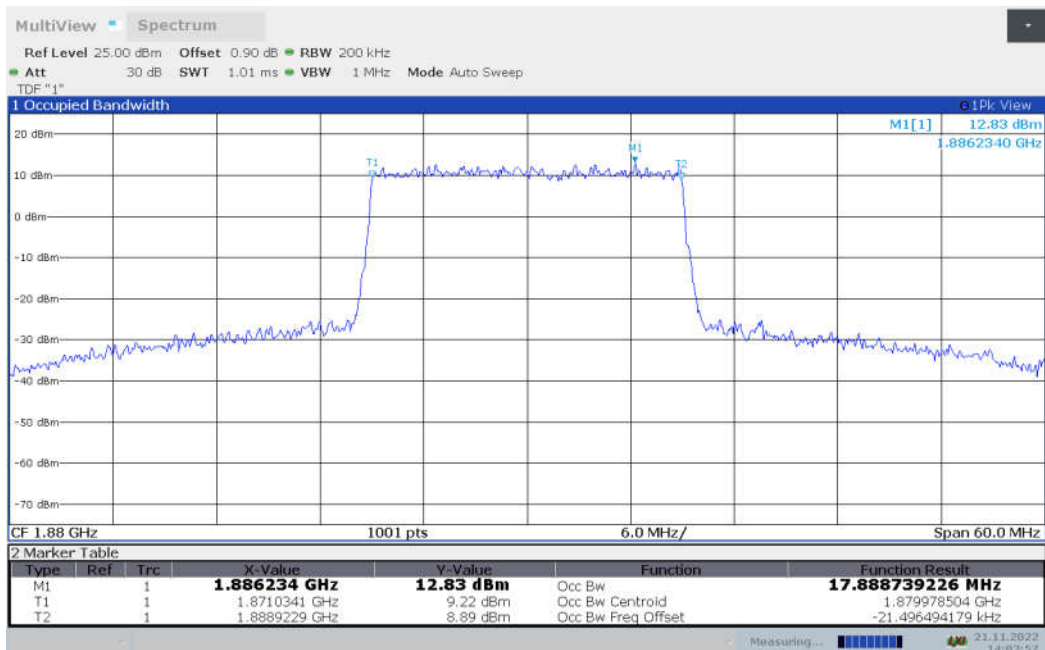
**LTE band 2,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1880	17.892	17.889

**LTE band 2 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 2 , 20MHz Bandwidth,16QAM (99% BW)**

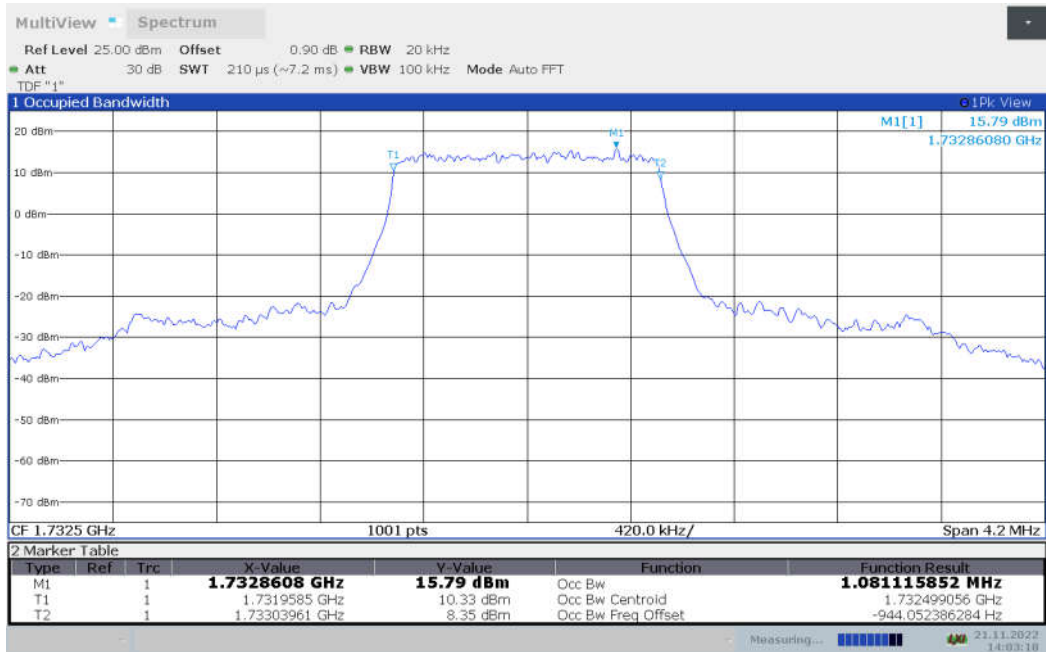




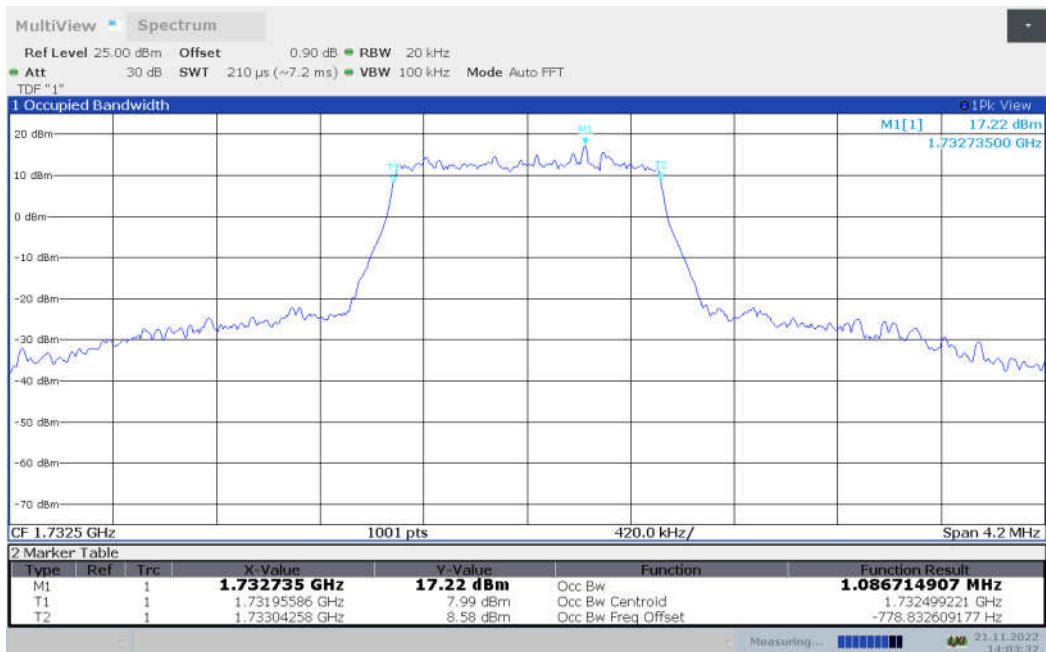
**LTE band 4,1.4MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	1.081	1.087

**LTE band 4 , 1.4MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 1.4MHz Bandwidth,16QAM (99% BW)**

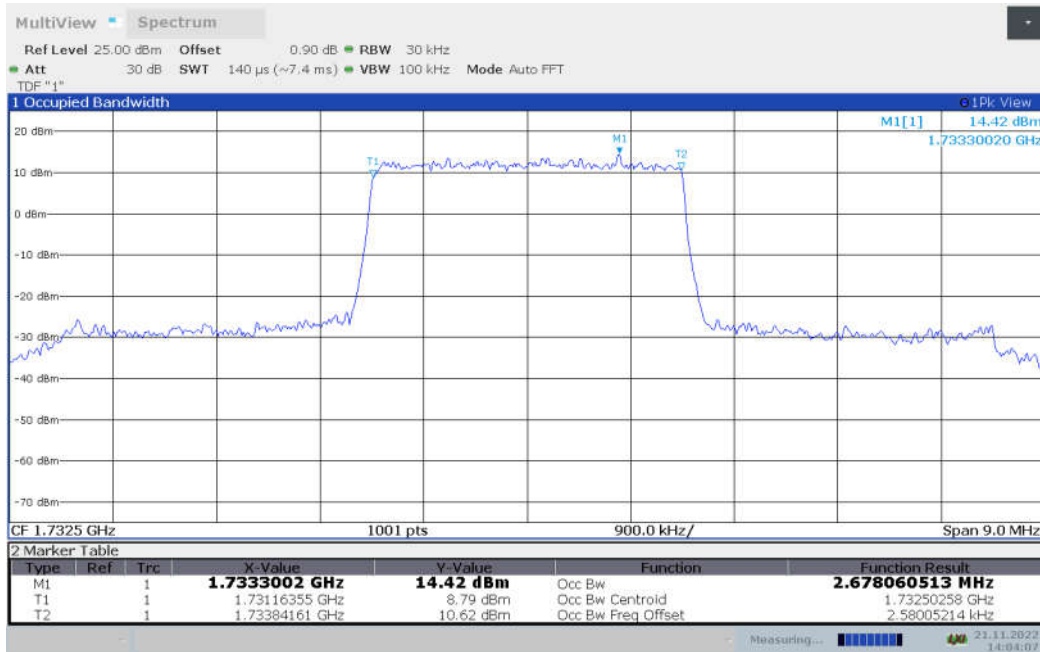




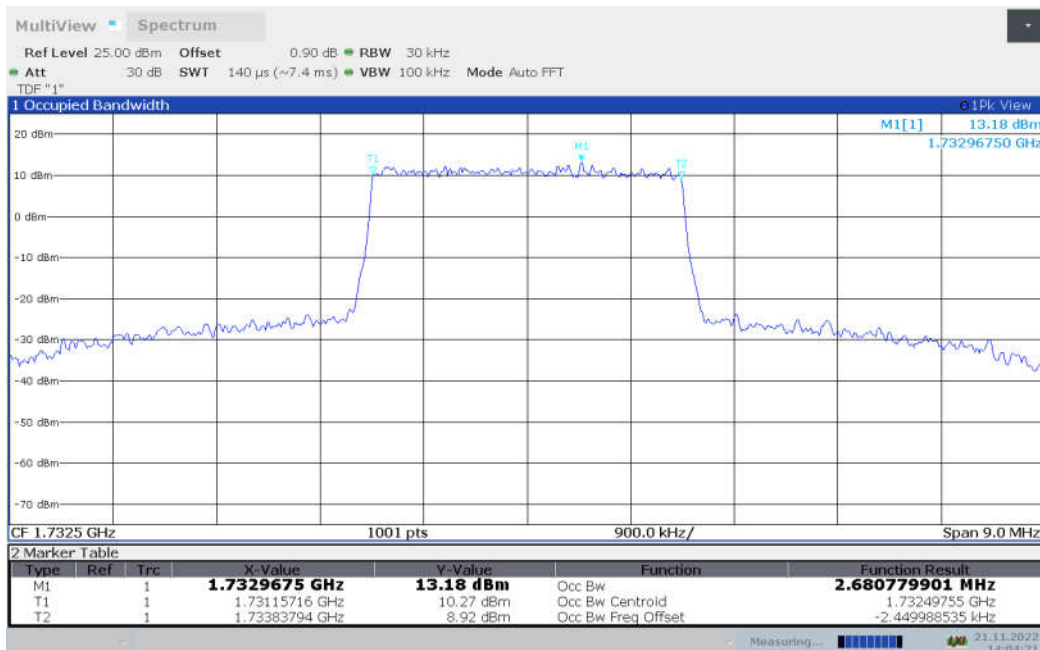
**LTE band 4,3MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	2.678	2.681

**LTE band 4 , 3MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 3MHz Bandwidth,16QAM (99% BW)**

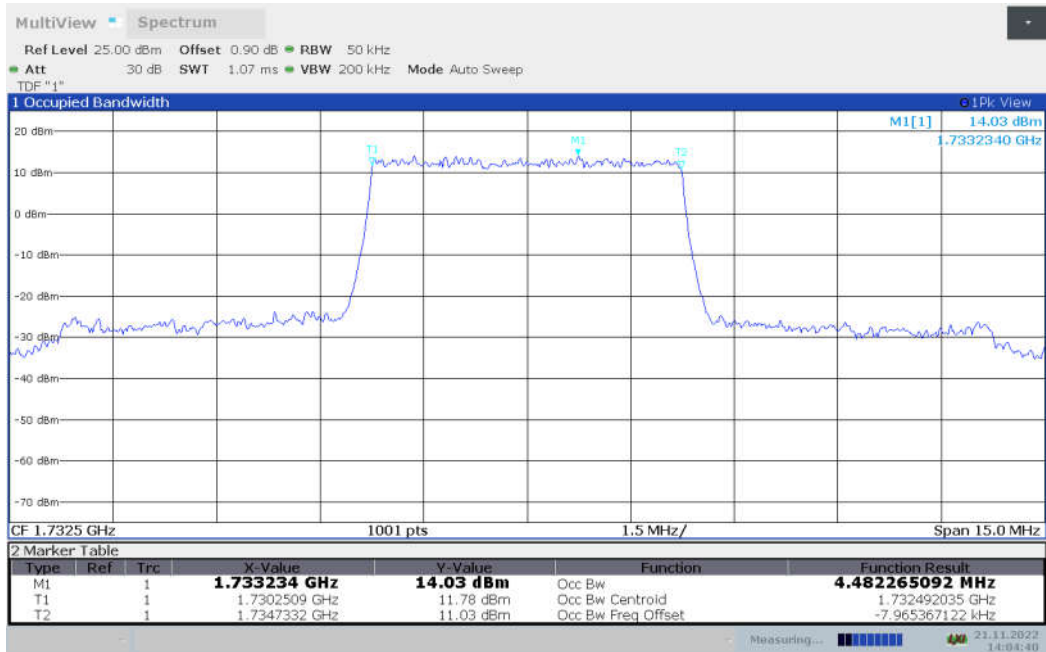




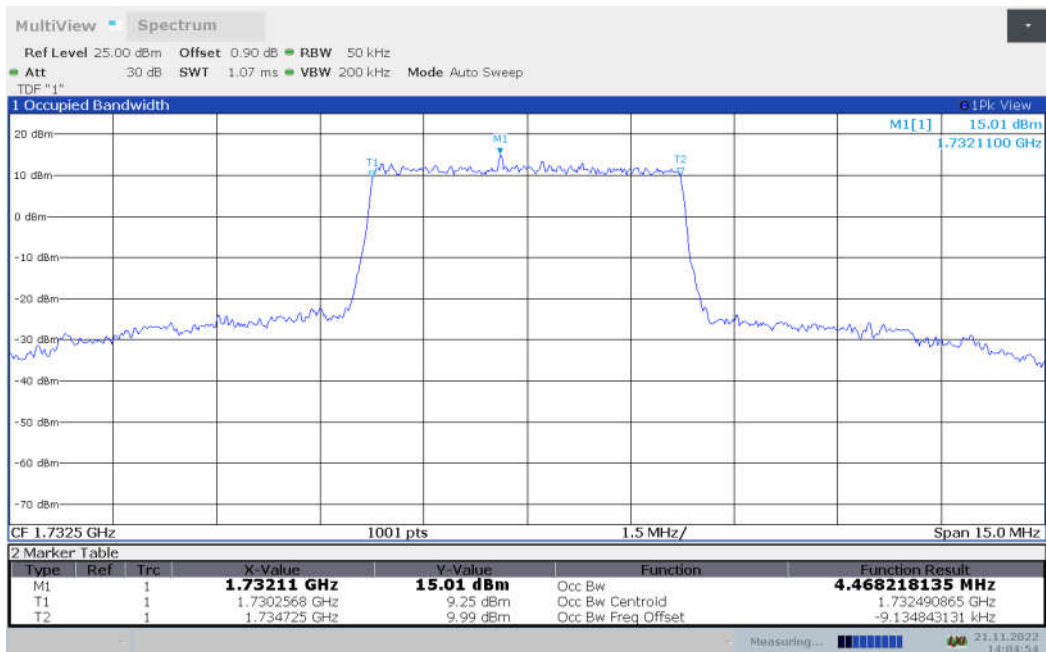
**LTE band 4,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	4.482	4.468

**LTE band 4 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 5MHz Bandwidth,16QAM (99% BW)**

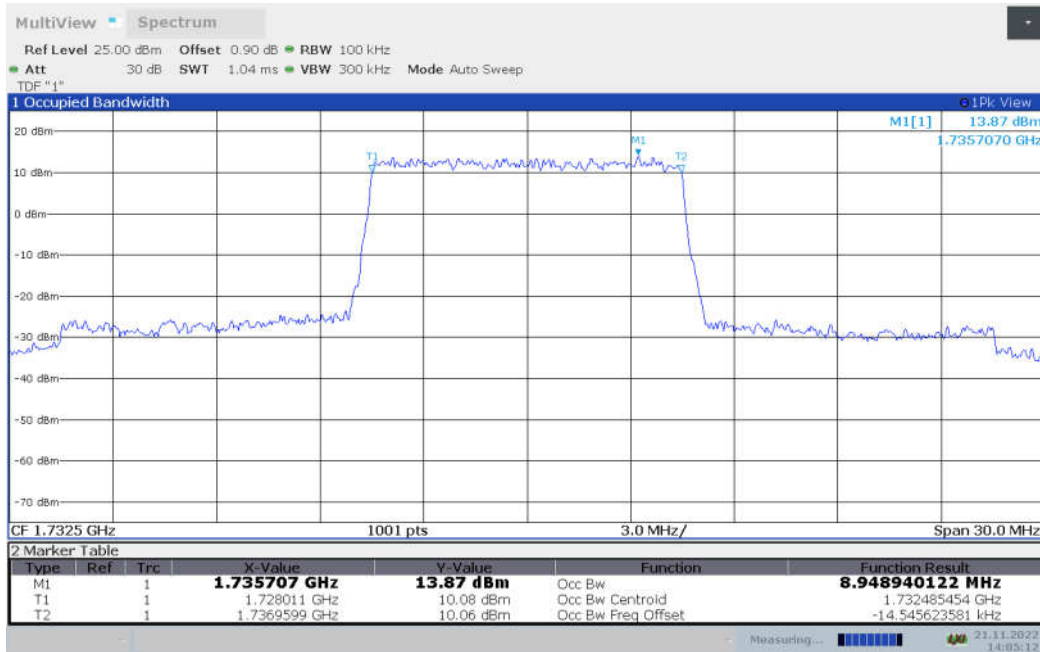




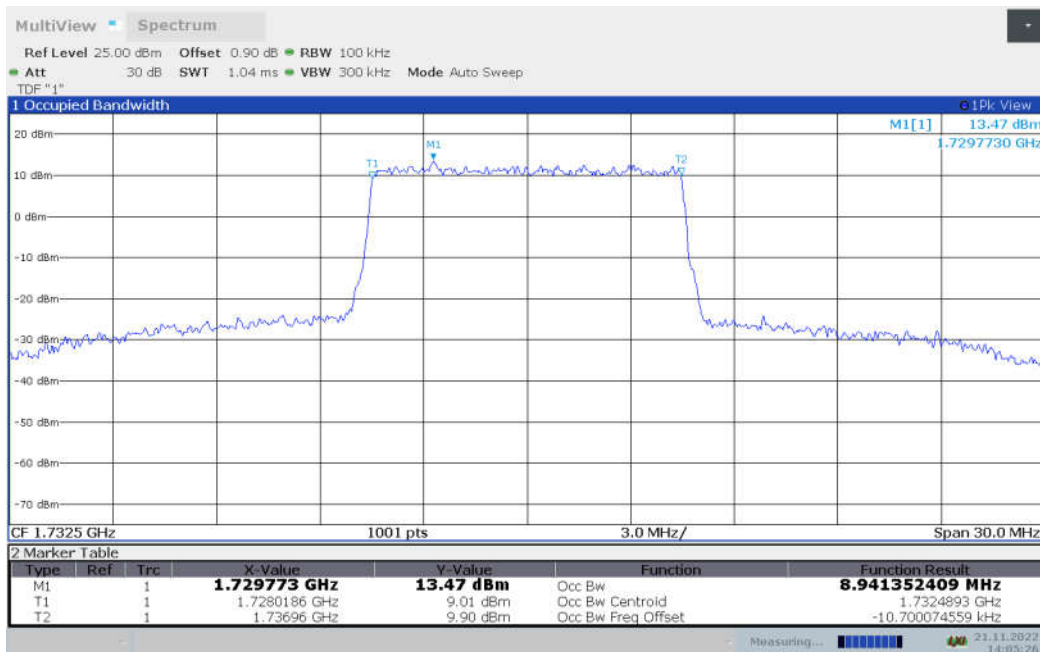
**LTE band 4,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	8.949	8.941

**LTE band 4 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 10MHz Bandwidth,16QAM (99% BW)**

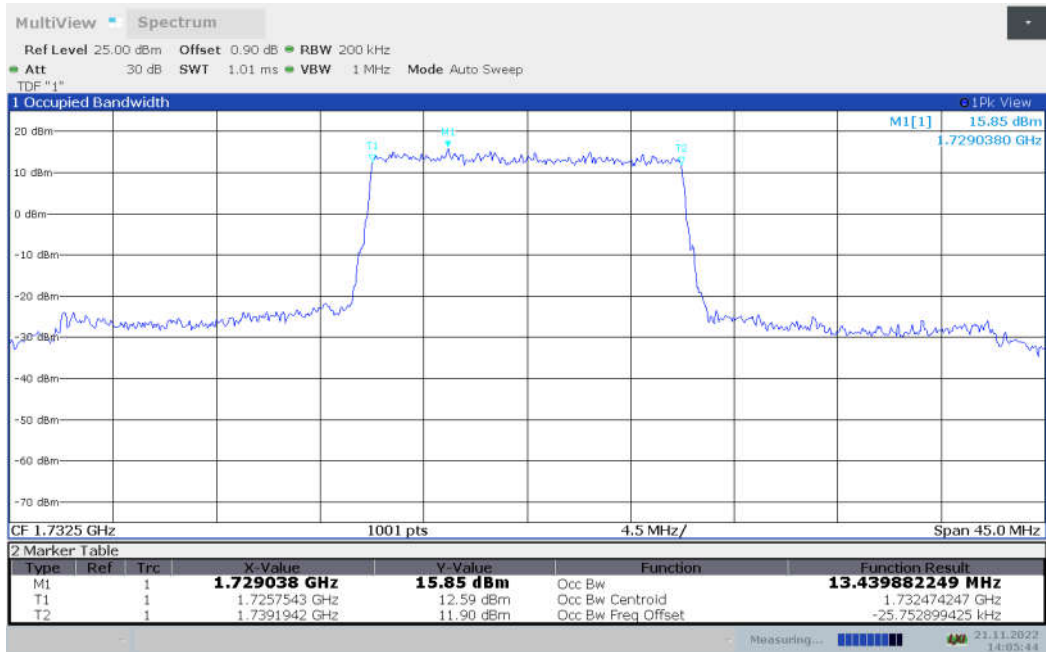




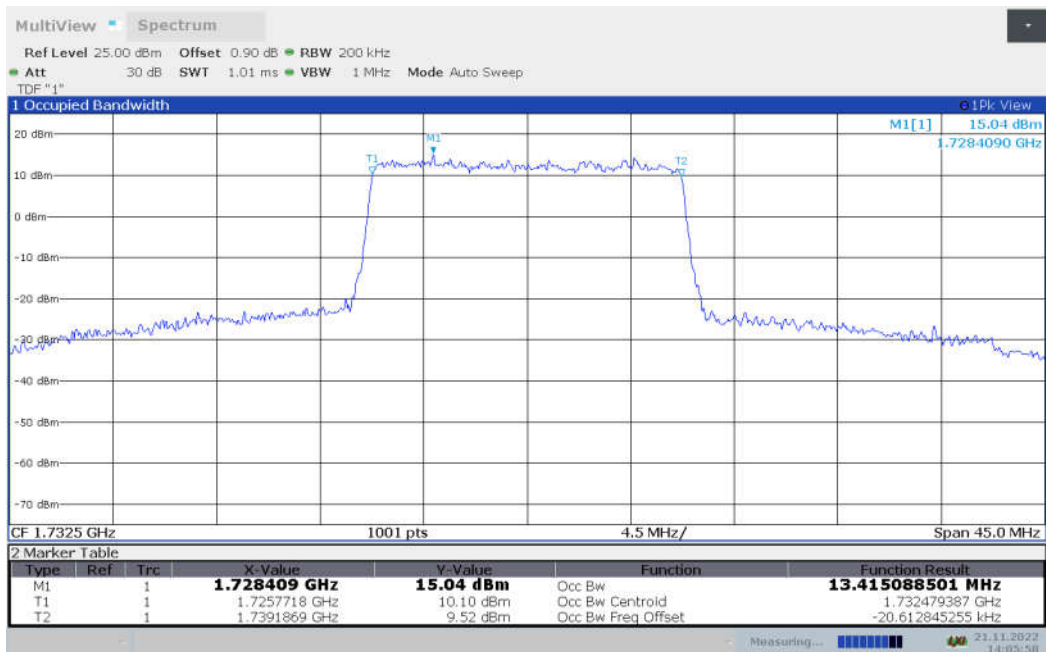
**LTE band 4,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	13.440	13.415

**LTE band 4 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 15MHz Bandwidth,16QAM (99% BW)**



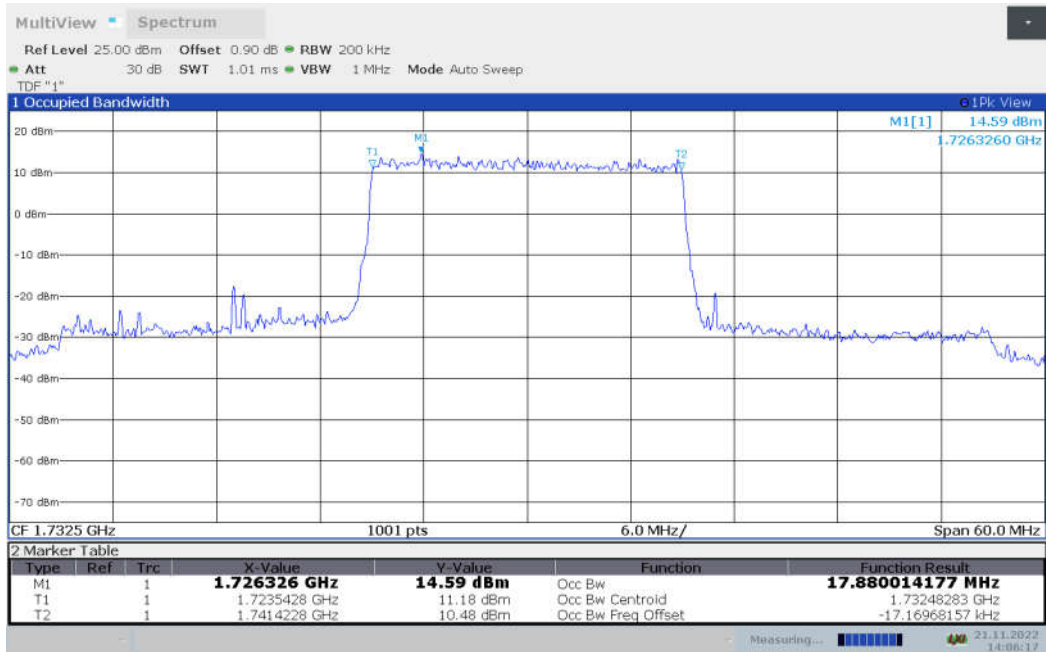




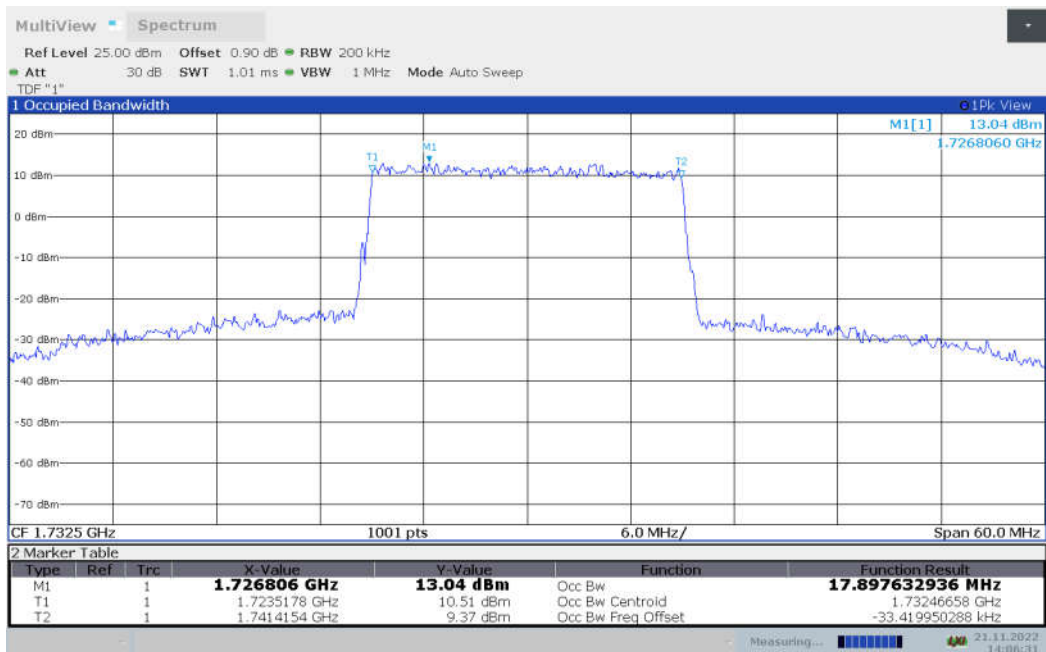
**LTE band 4,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1732.5	17.880	17.898

**LTE band 4 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 4 , 20MHz Bandwidth,16QAM (99% BW)**

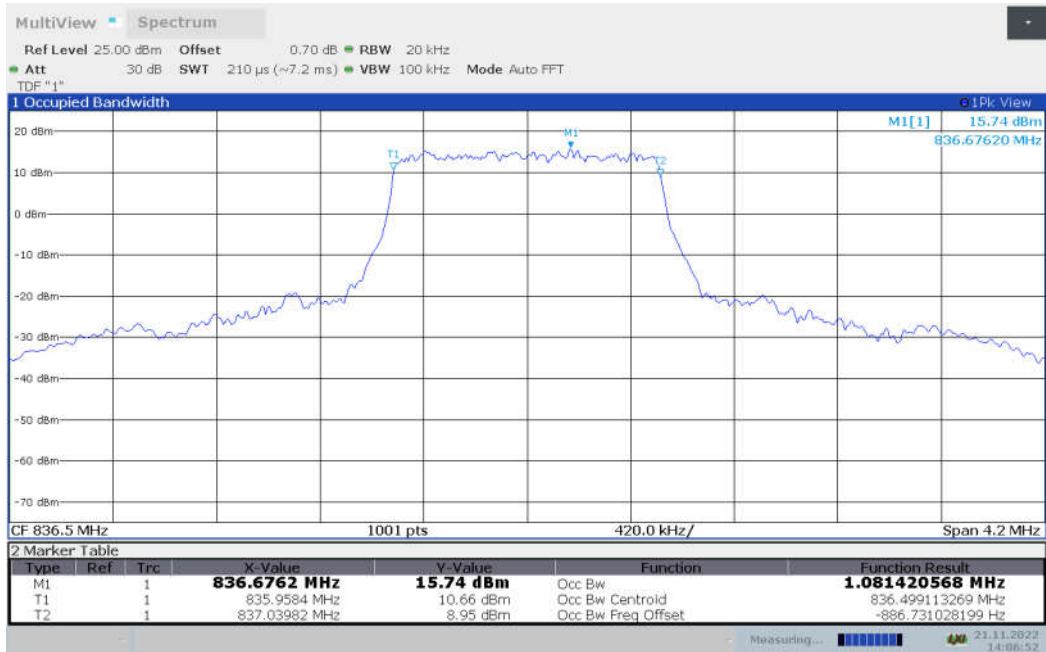




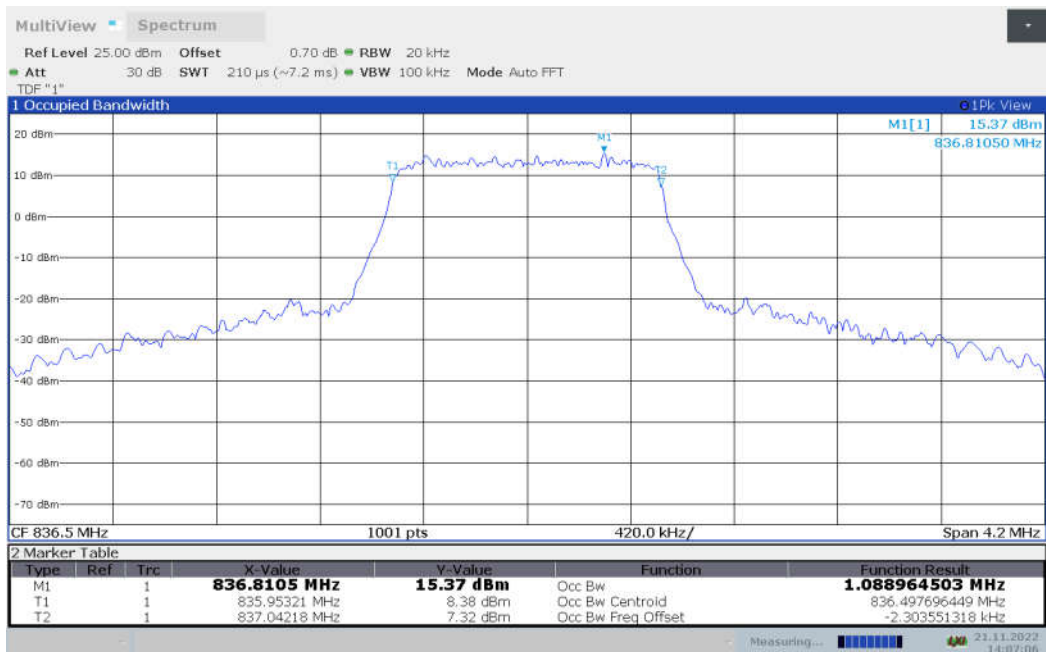
**LTE band 5,1.4MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
836.5	1.081	1.089

**LTE band 5 , 1.4MHz Bandwidth,QPSK (99% BW)**



**LTE band 5 , 1.4MHz Bandwidth,16QAM (99% BW)**

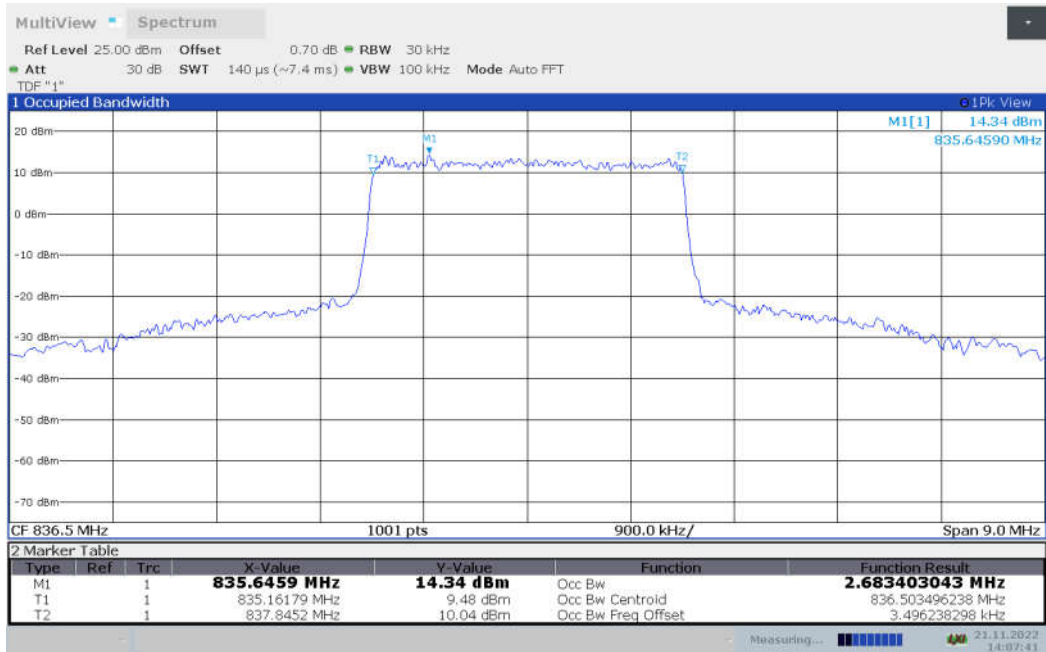




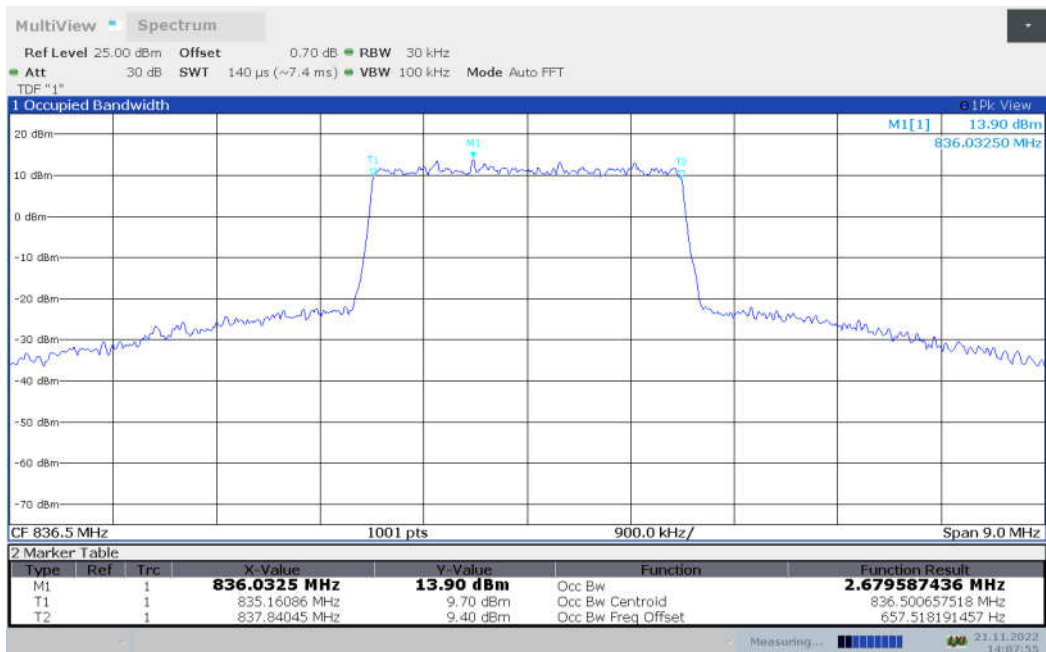
**LTE band 5,3MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
836.5	2.683	2.680

**LTE band 5 , 3MHz Bandwidth,QPSK (99% BW)**



**LTE band 5 , 3MHz Bandwidth,16QAM (99% BW)**

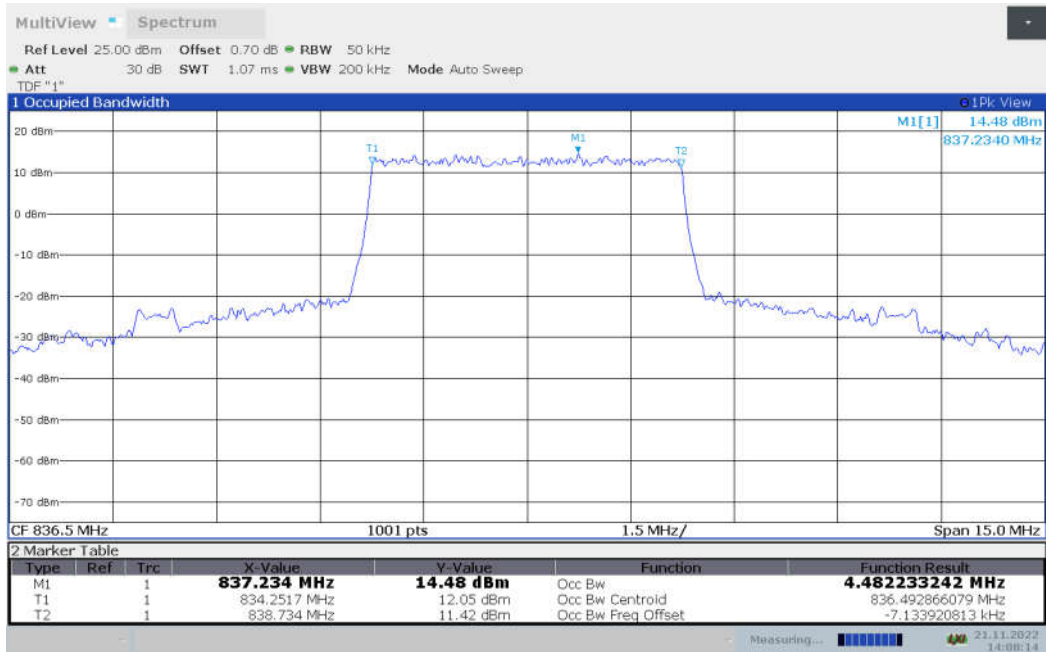




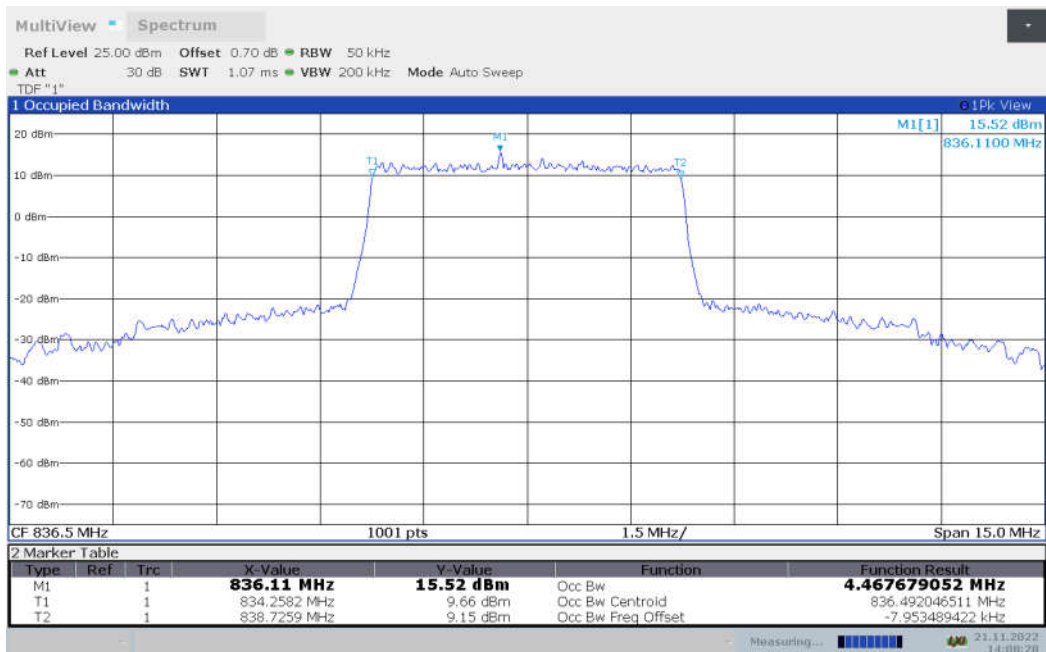
**LTE band 5,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
836.5	4.482	4.468

**LTE band 5 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 5 , 5MHz Bandwidth,16QAM (99% BW)**

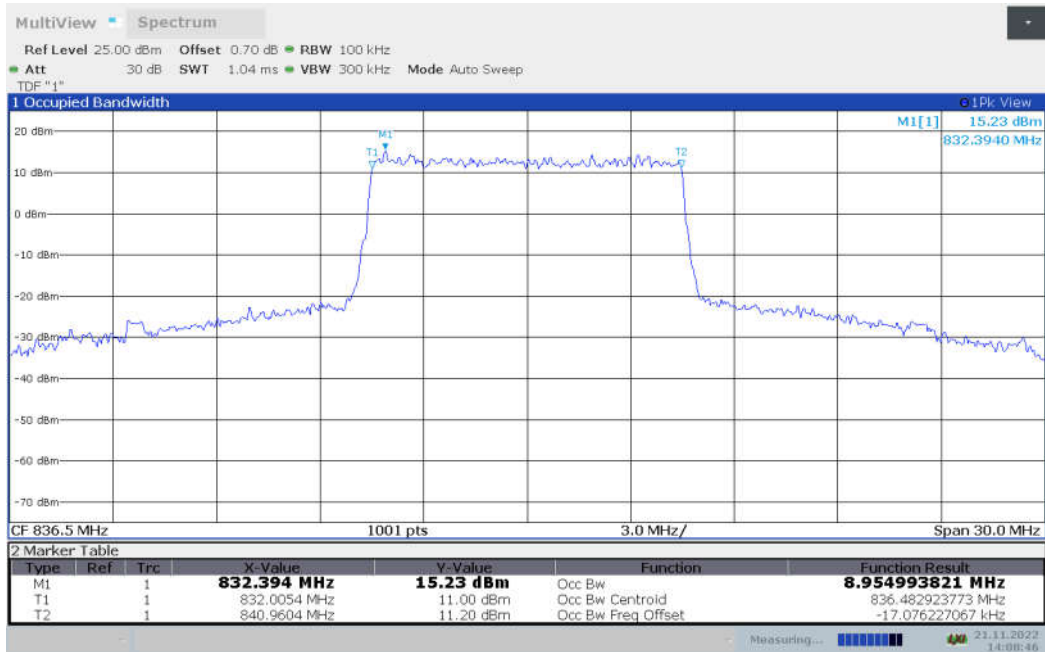




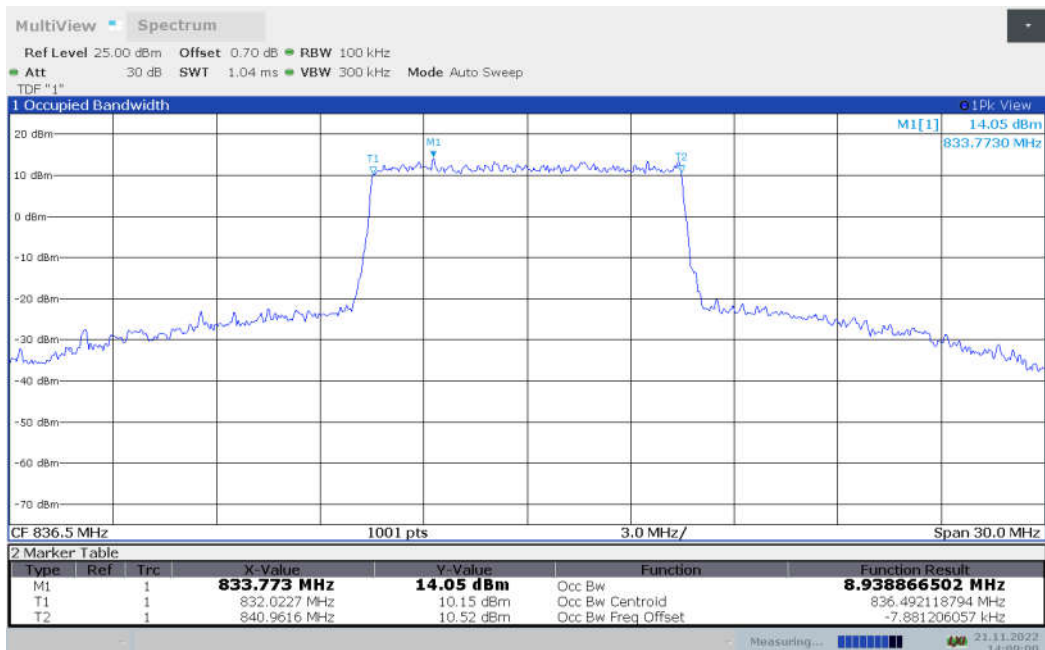
**LTE band 5,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
836.5	8.955	8.939

**LTE band 5 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 5 , 10MHz Bandwidth,16QAM (99% BW)**

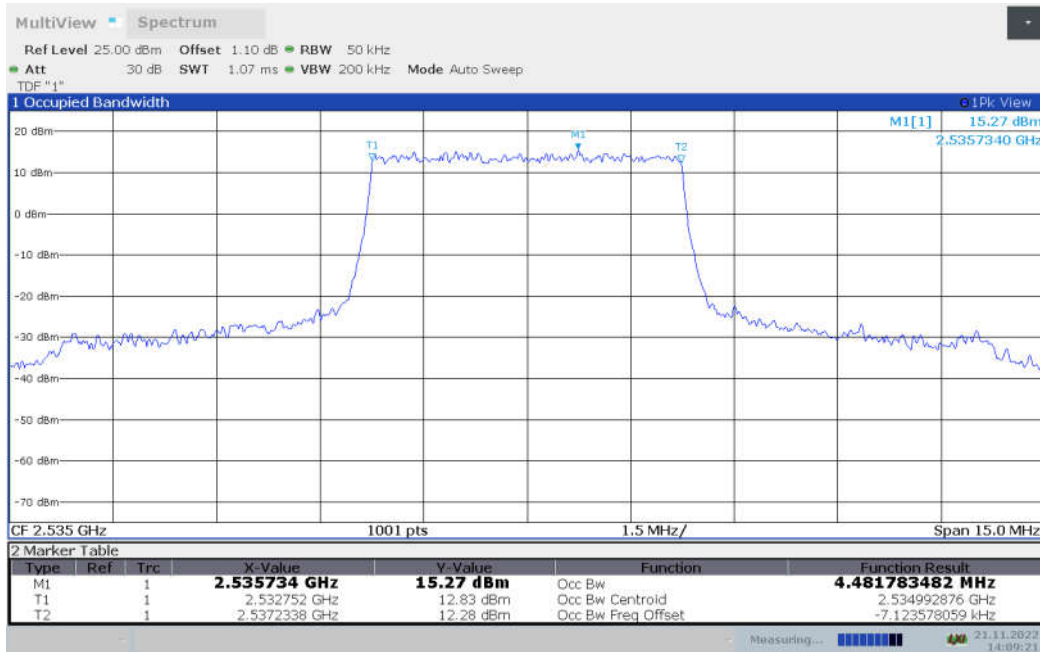




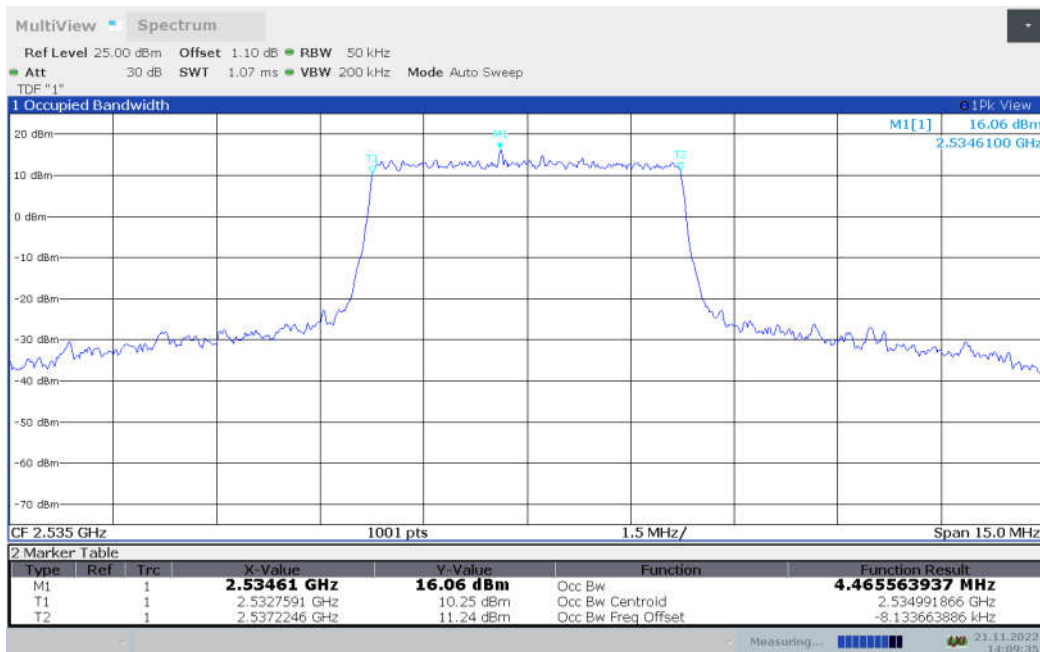
**LTE band 7,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2535	4.482	4.466

**LTE band 7 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 7 , 5MHz Bandwidth,16QAM (99% BW)**

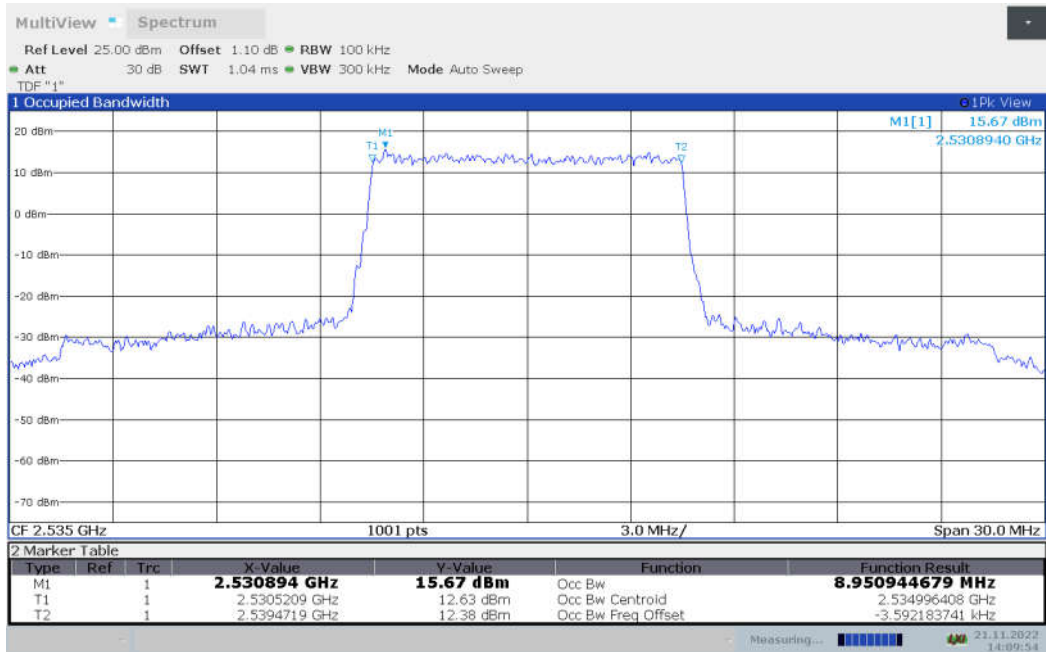




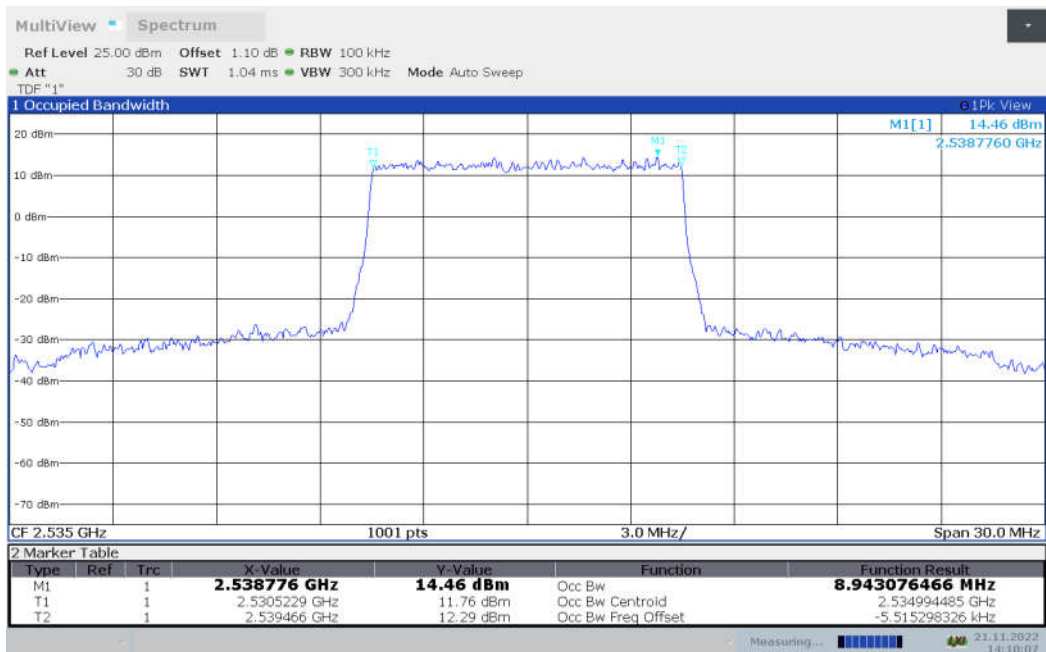
**LTE band 7,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2535	8.951	8.943

**LTE band 7 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 7 , 10MHz Bandwidth,16QAM (99% BW)**

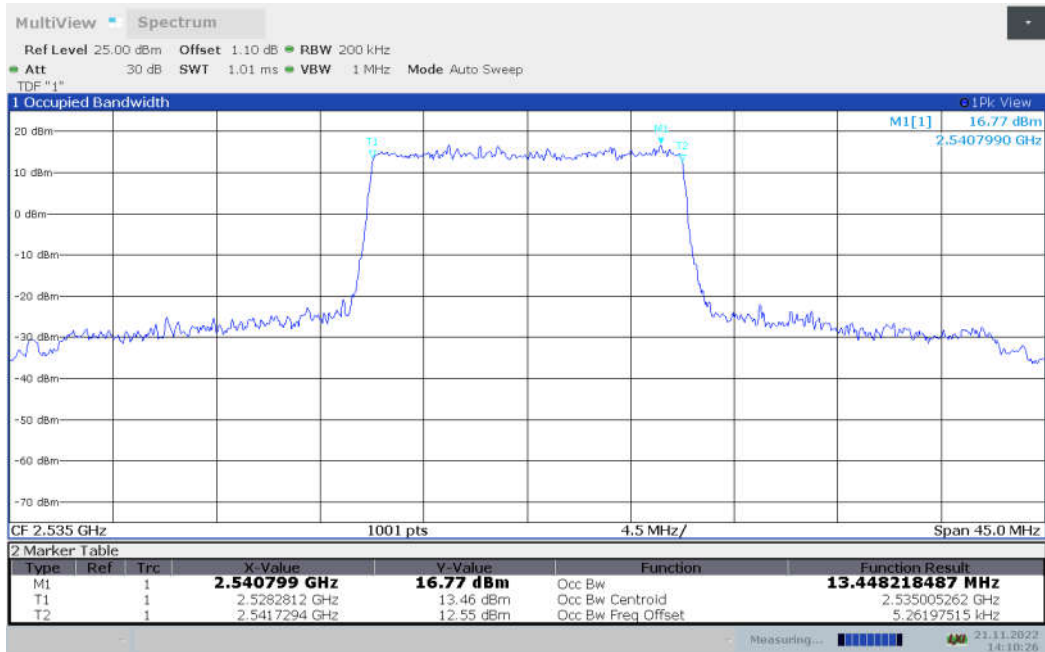




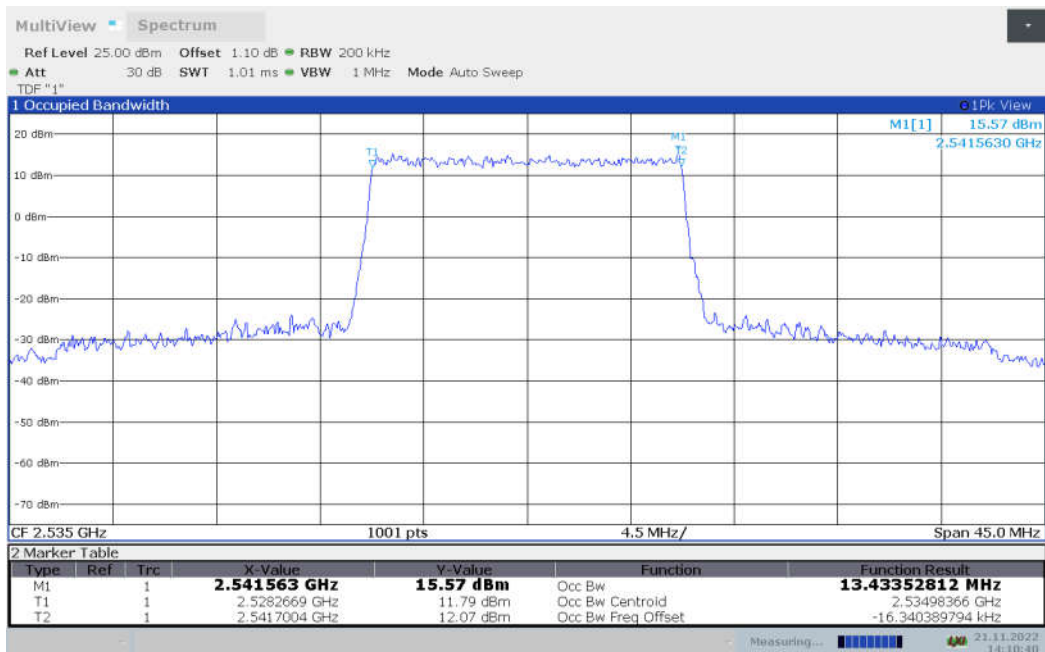
**LTE band 7,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2535	13.448	13.434

**LTE band 7 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 7 , 15MHz Bandwidth,16QAM (99% BW)**



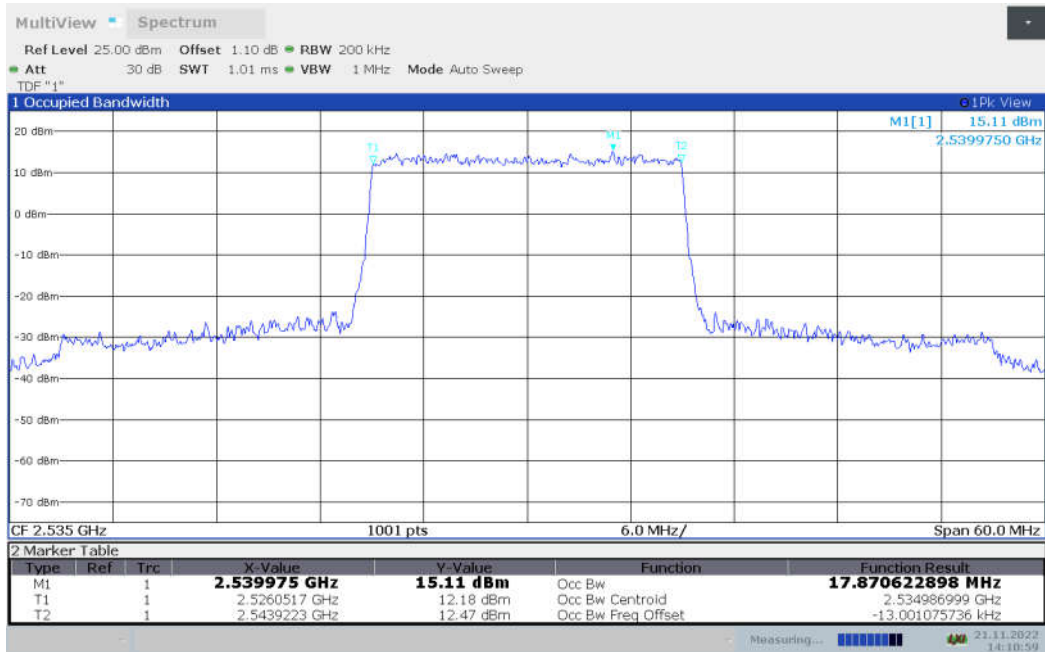




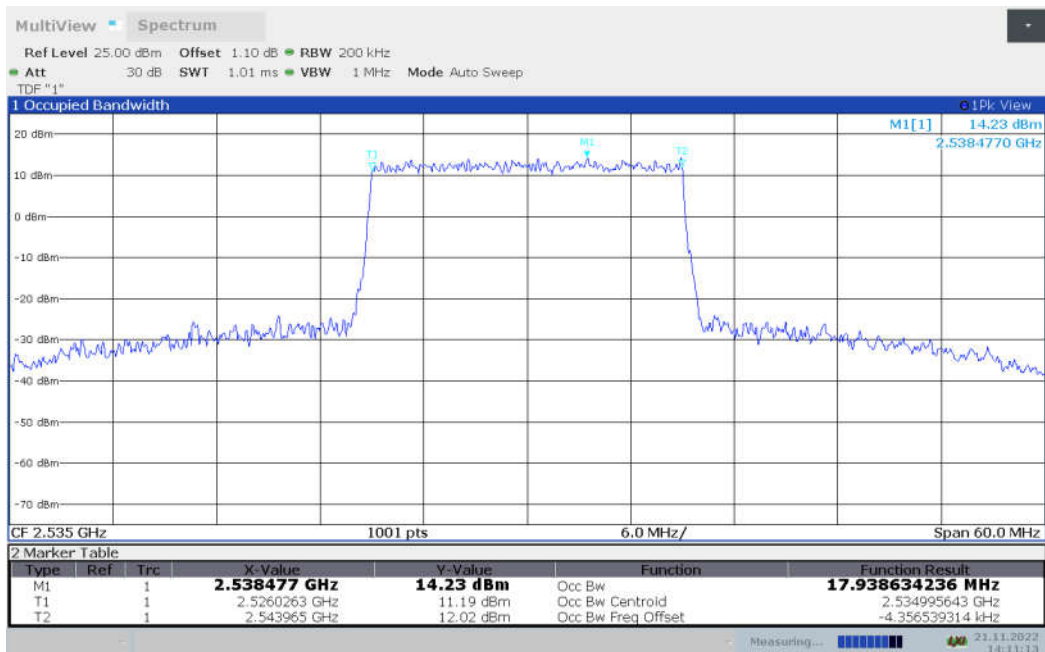
**LTE band 7,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2535	17.871	17.939

**LTE band 7 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 7 , 20MHz Bandwidth,16QAM (99% BW)**

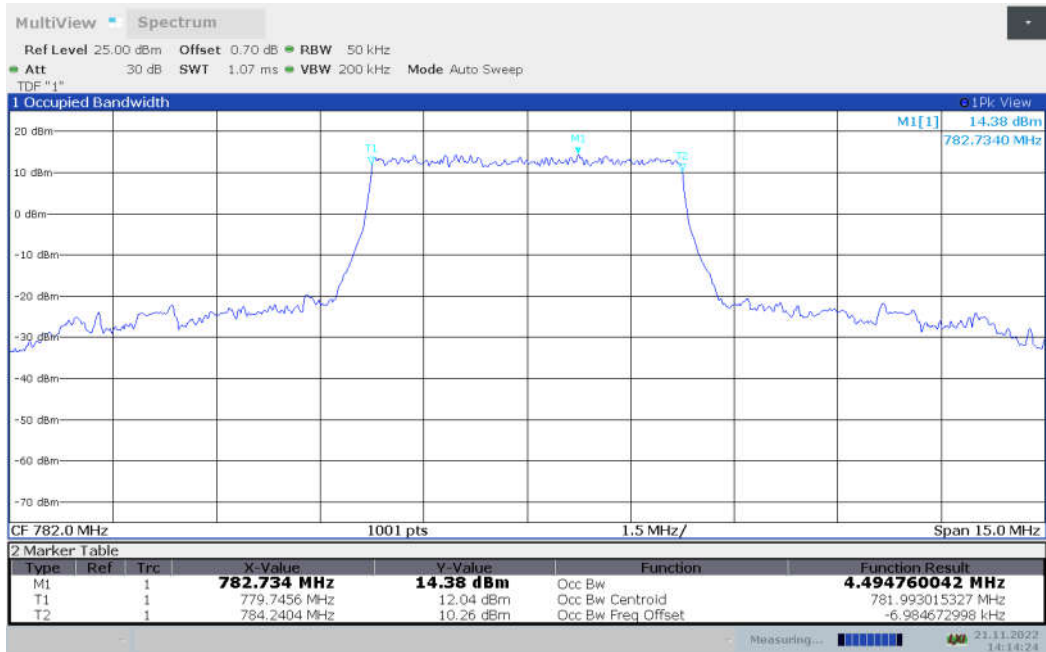




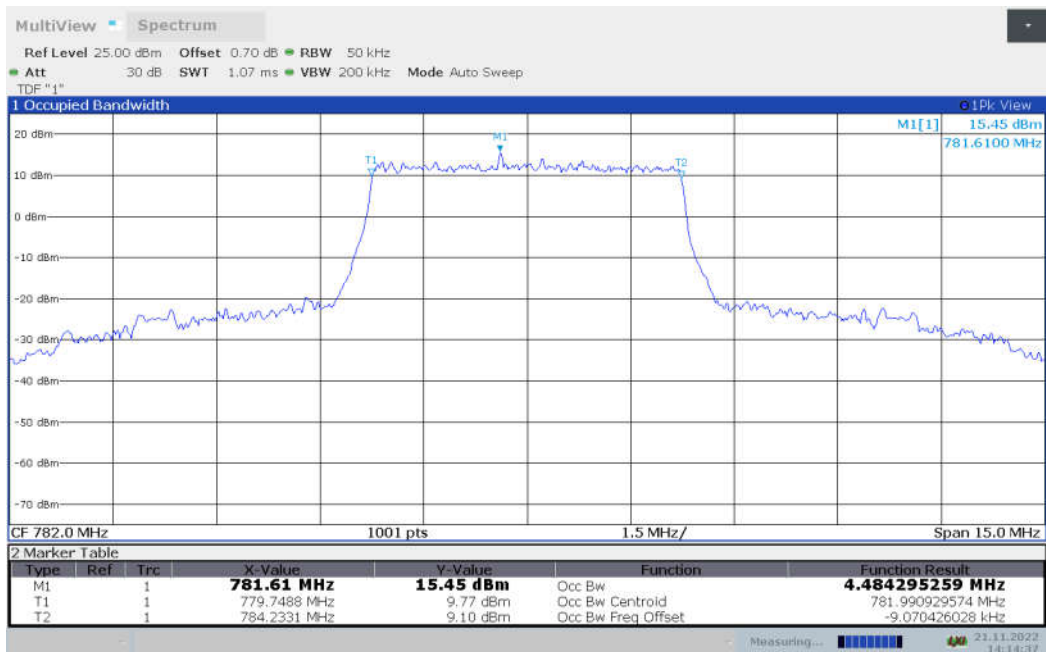
**LTE band 13,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
782	4.495	4.484

**LTE band 13 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 13 , 5MHz Bandwidth,16QAM (99% BW)**

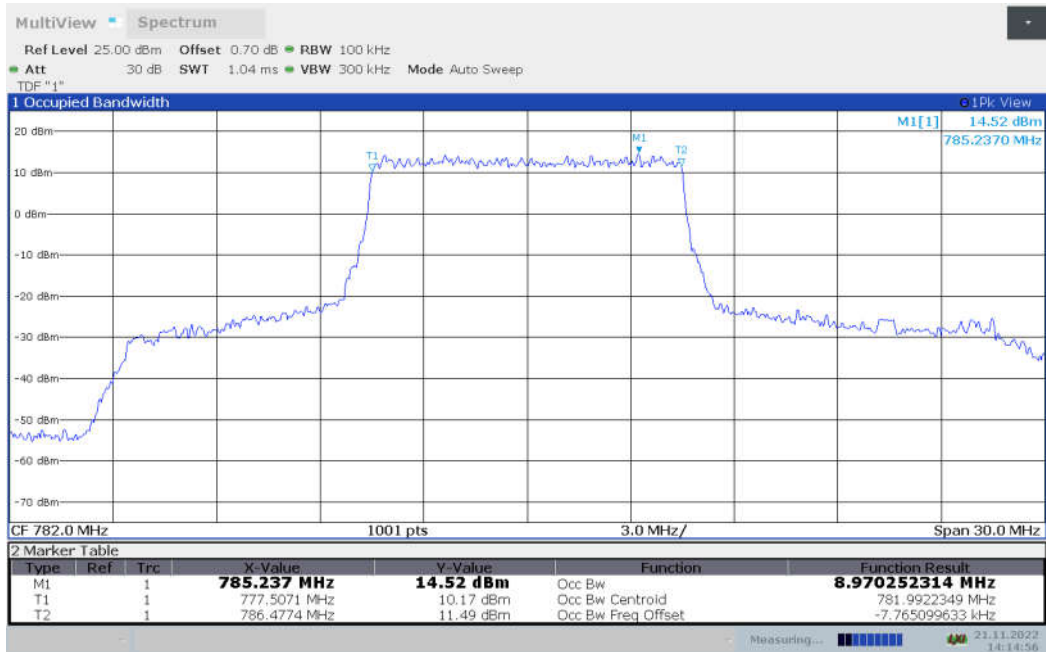




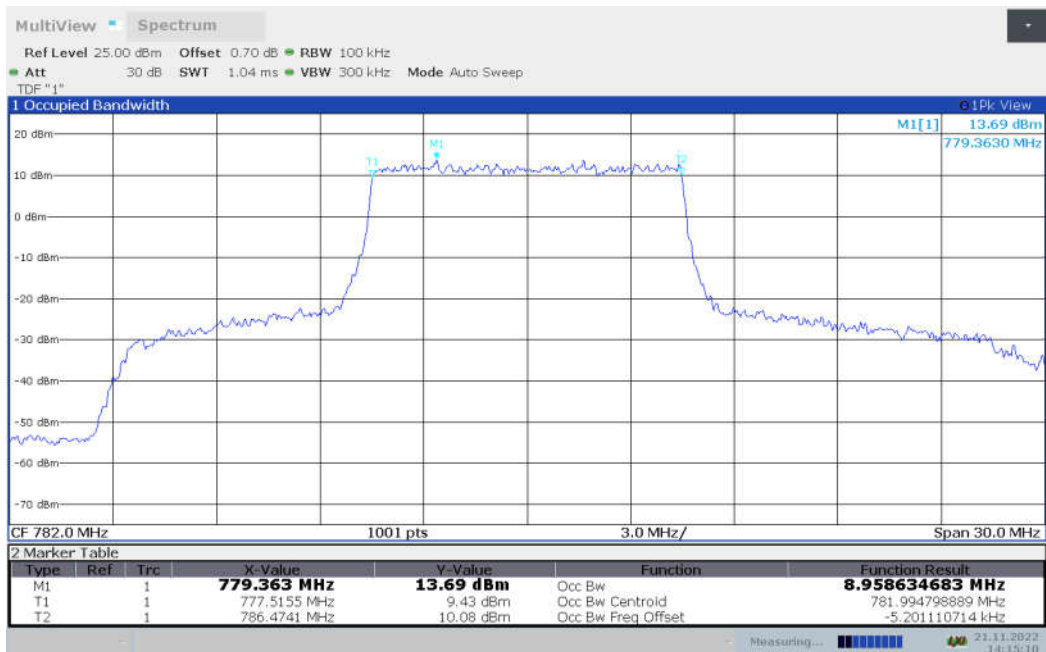
**LTE band 13,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
782	8.970	8.959

**LTE band 13 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 13 , 10MHz Bandwidth,16QAM (99% BW)**

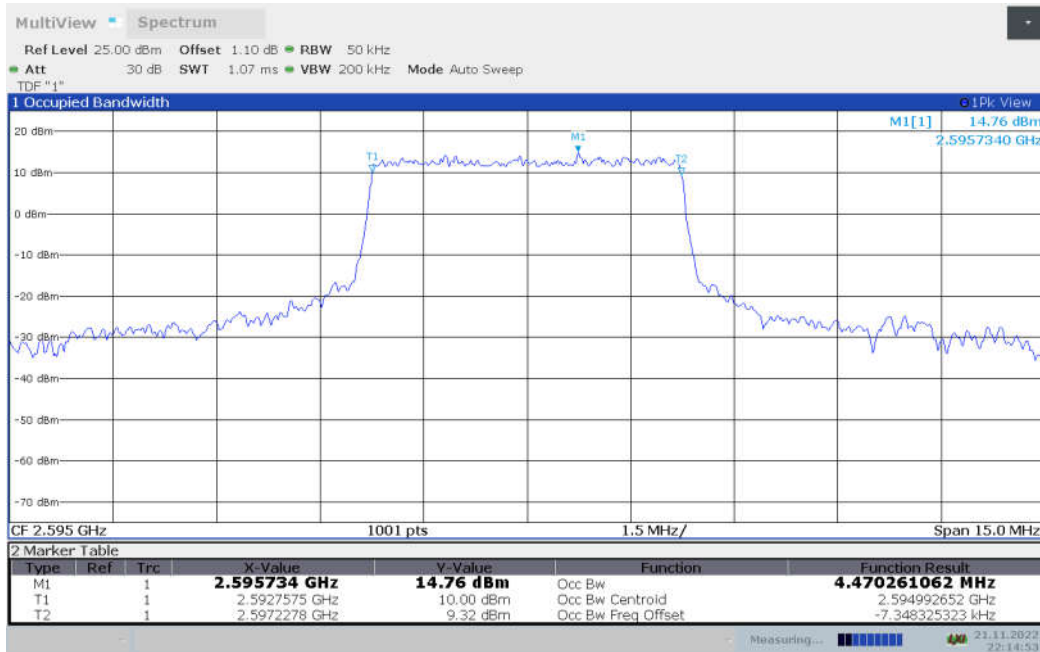




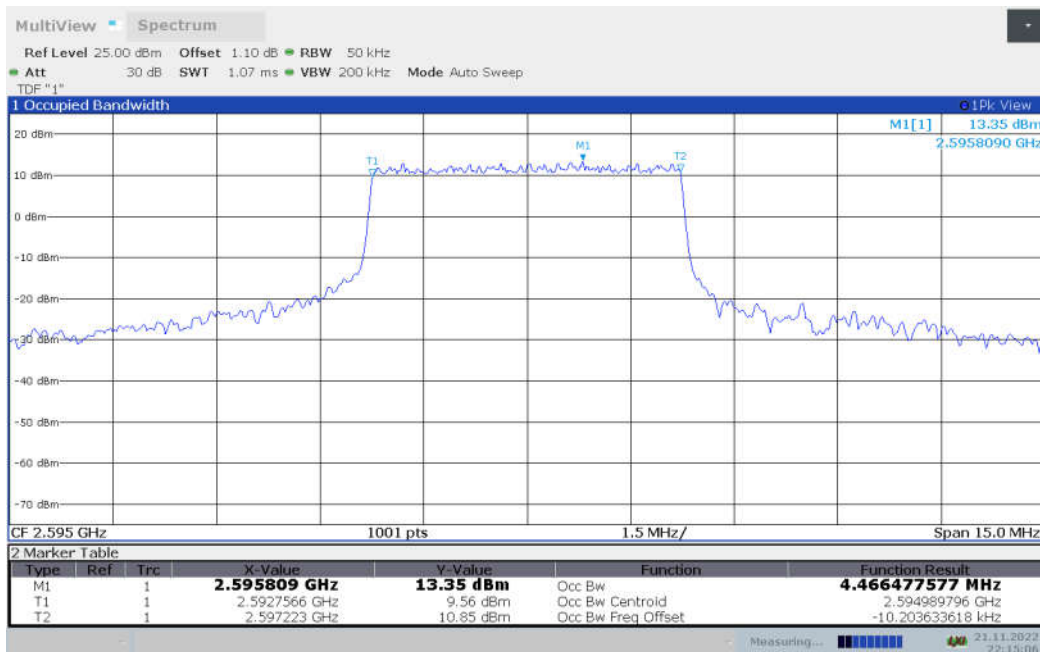
**LTE band 38,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	4.470	4.466

**LTE band 38 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 38 , 5MHz Bandwidth,16QAM (99% BW)**

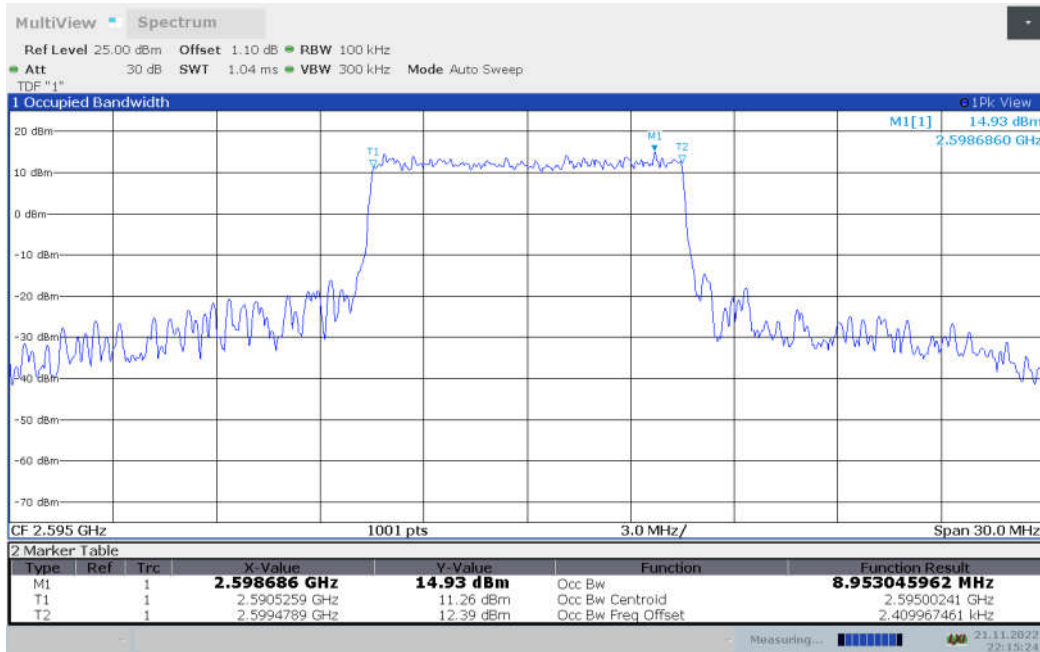




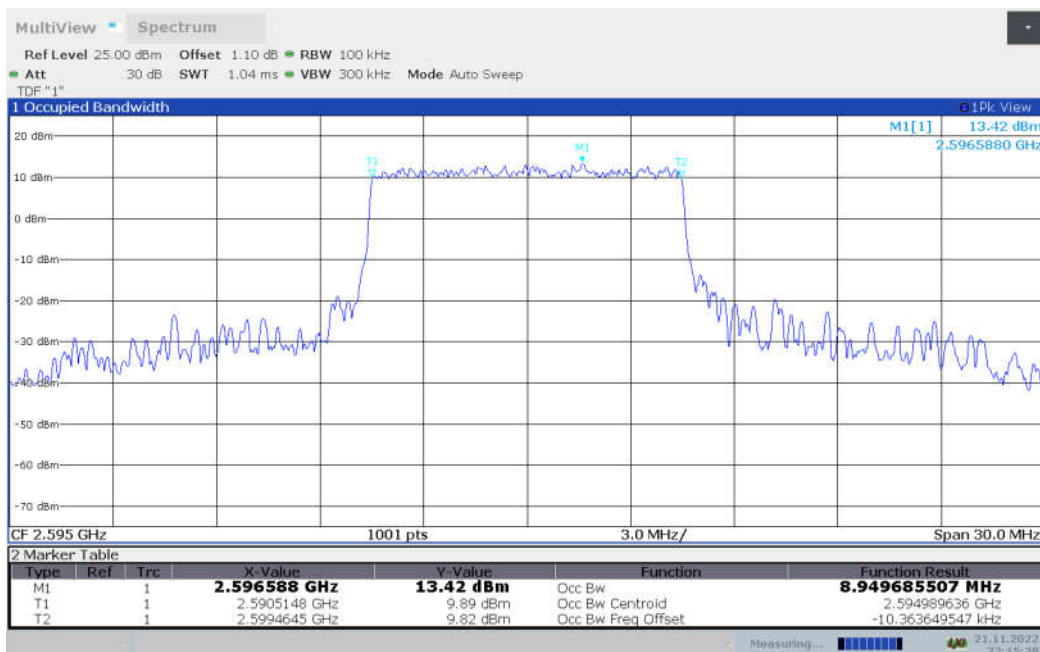
**LTE band 38,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	8.953	8.950

**LTE band 38 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 38 , 10MHz Bandwidth,16QAM (99% BW)**

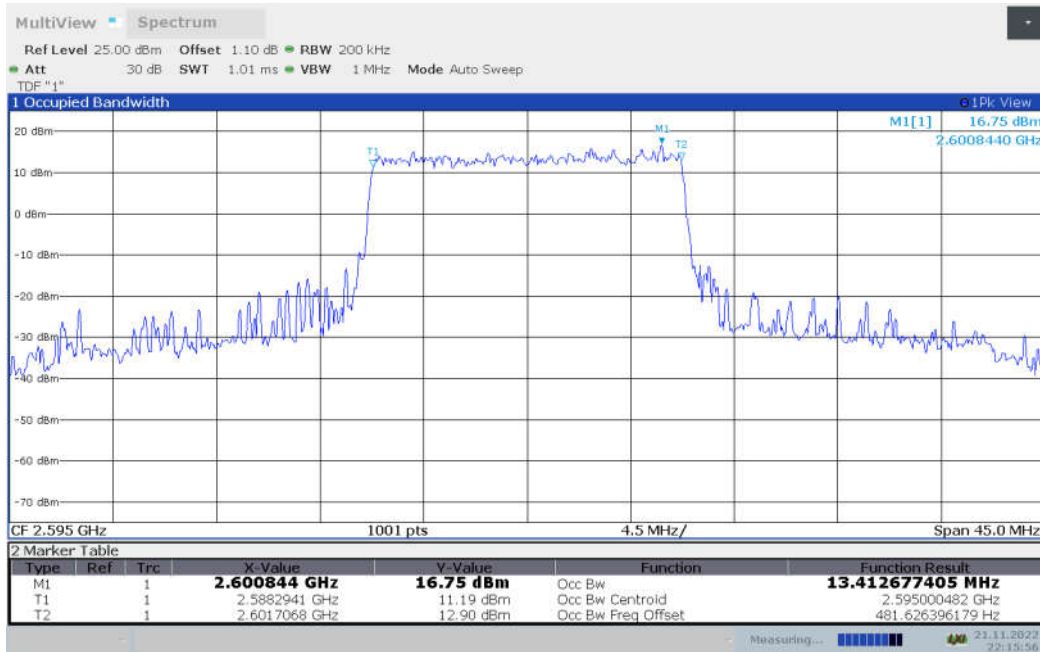




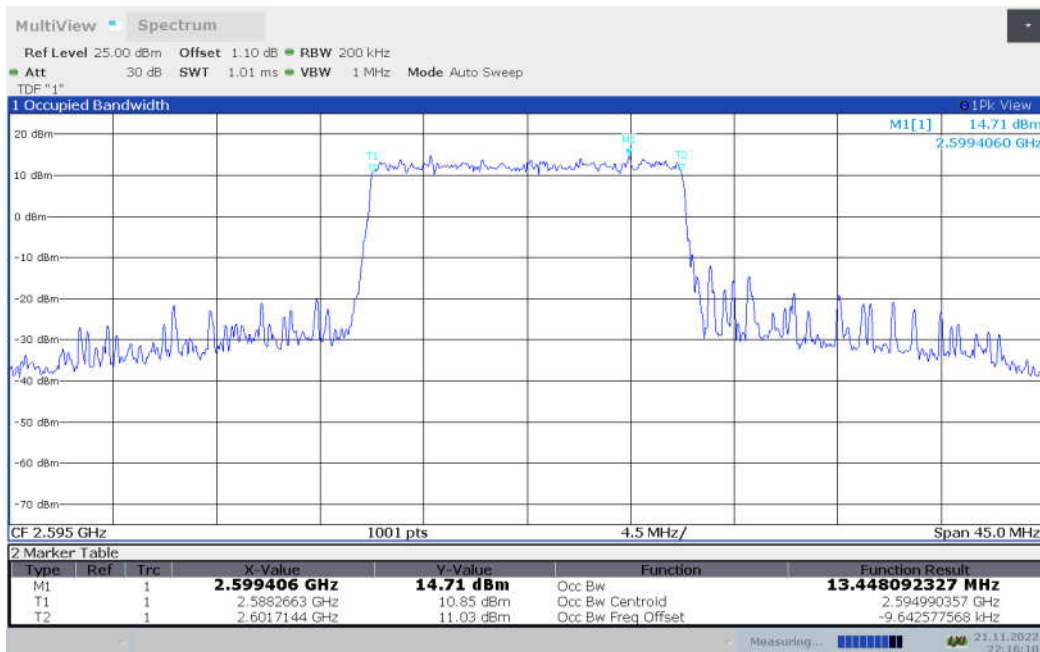
**LTE band 38,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	13.413	13.448

**LTE band 38 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 38 , 15MHz Bandwidth,16QAM (99% BW)**

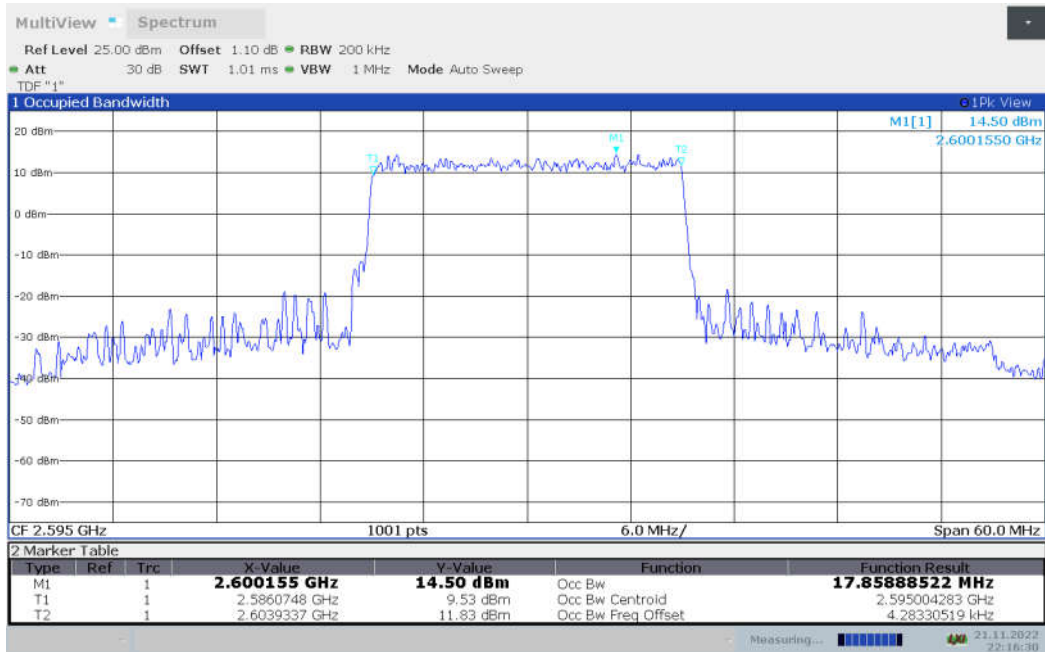




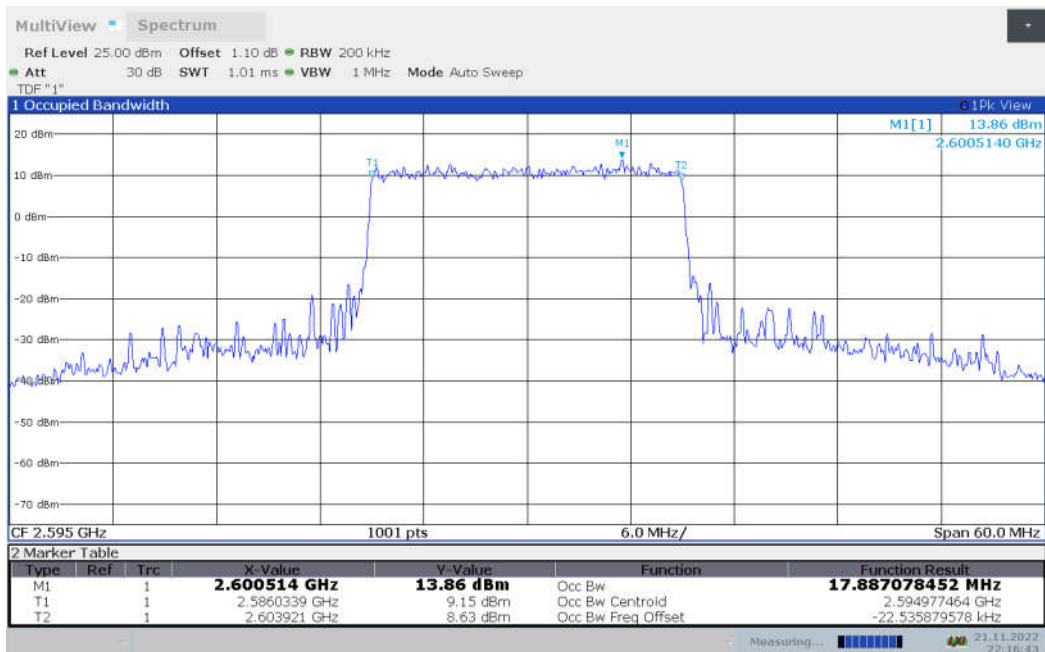
**LTE band 38,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	17.859	17.887

**LTE band 38 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 38 , 20MHz Bandwidth,16QAM (99% BW)**

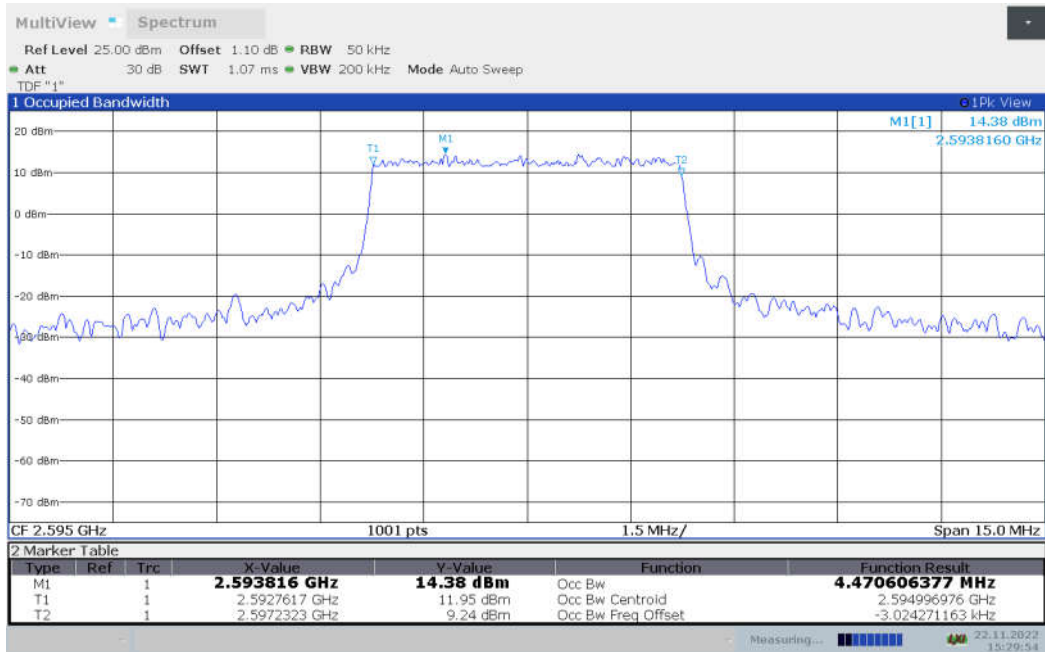




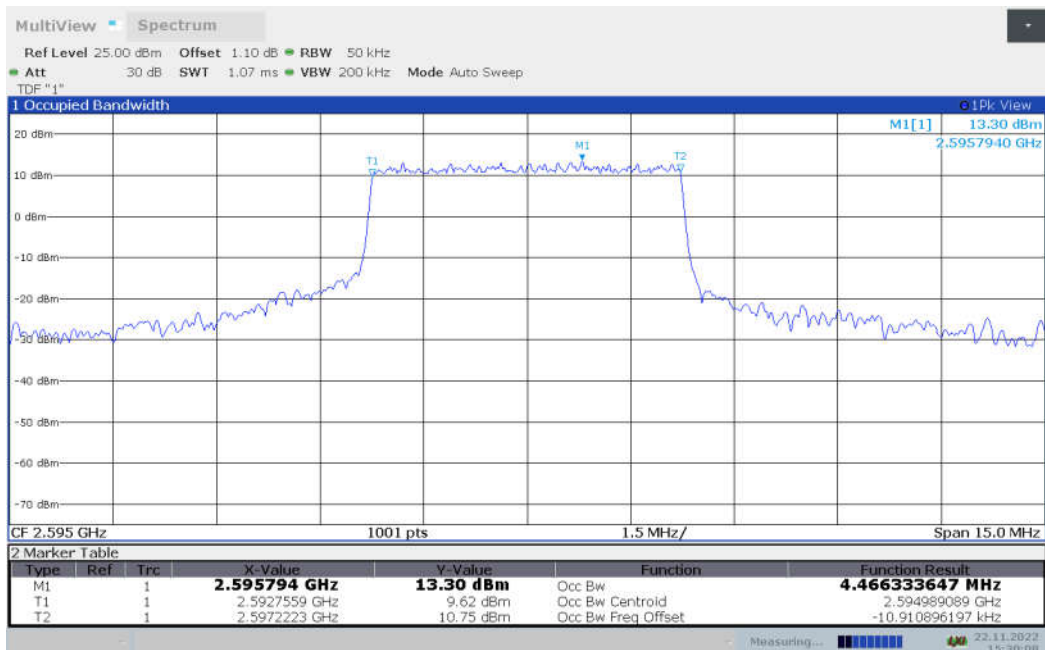
**LTE band 41,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	4.471	4.466

**LTE band 41 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 41 , 5MHz Bandwidth,16QAM (99% BW)**



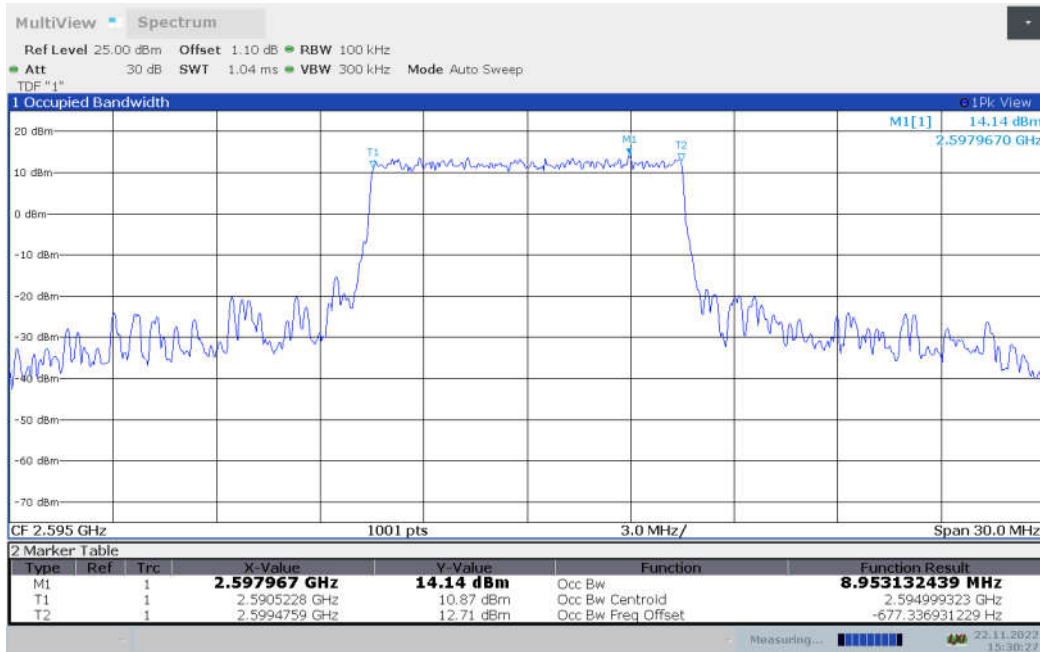




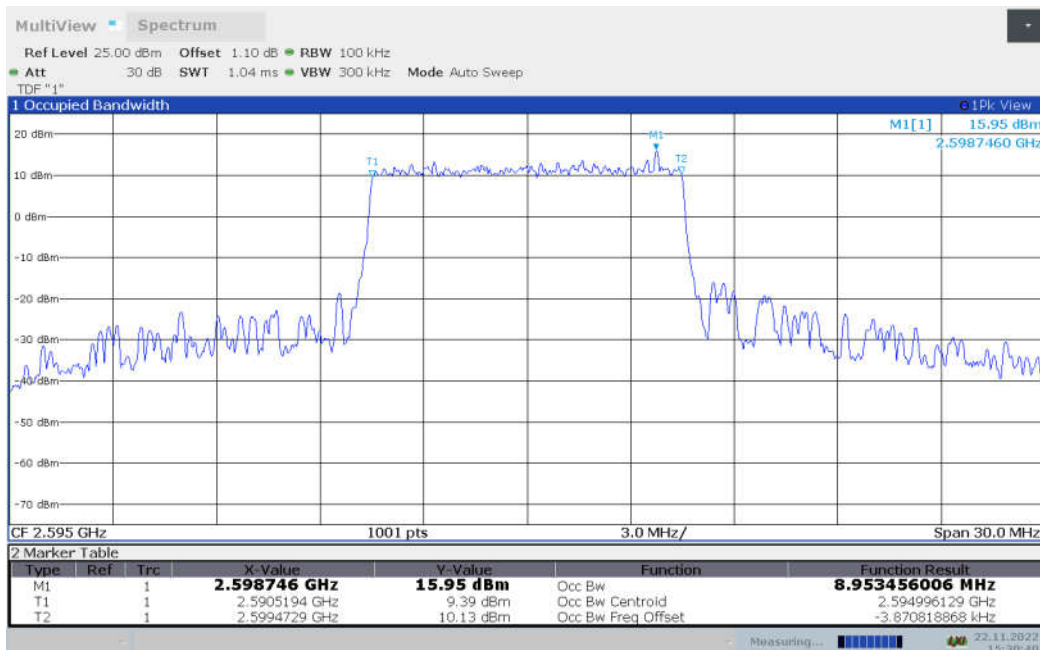
**LTE band 41,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	8.953	8.953

**LTE band 41 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 41 , 10MHz Bandwidth,16QAM (99% BW)**

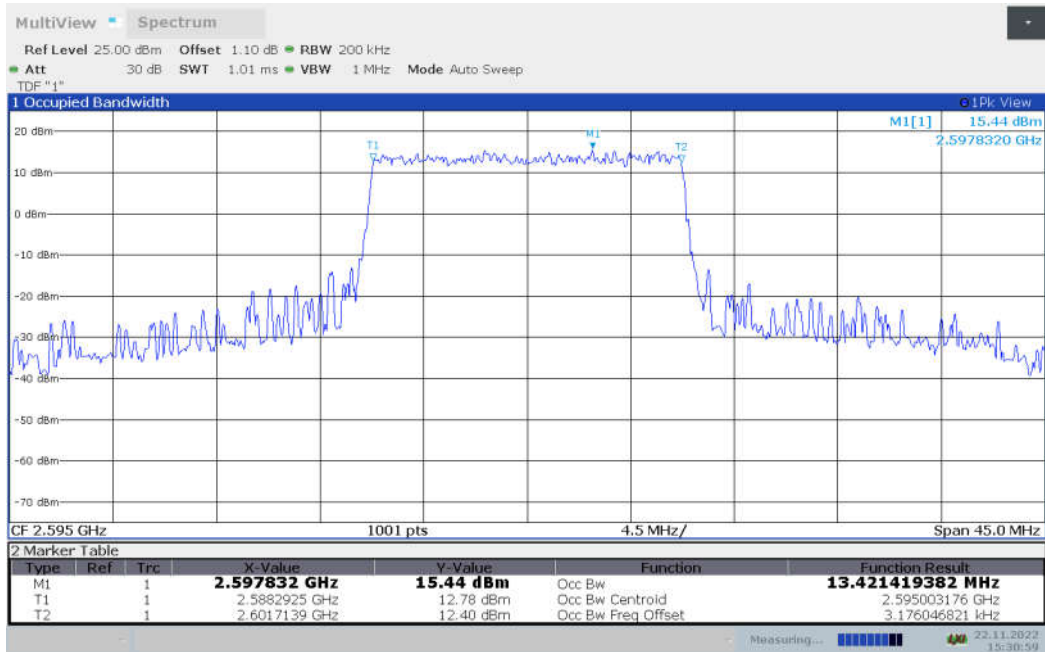




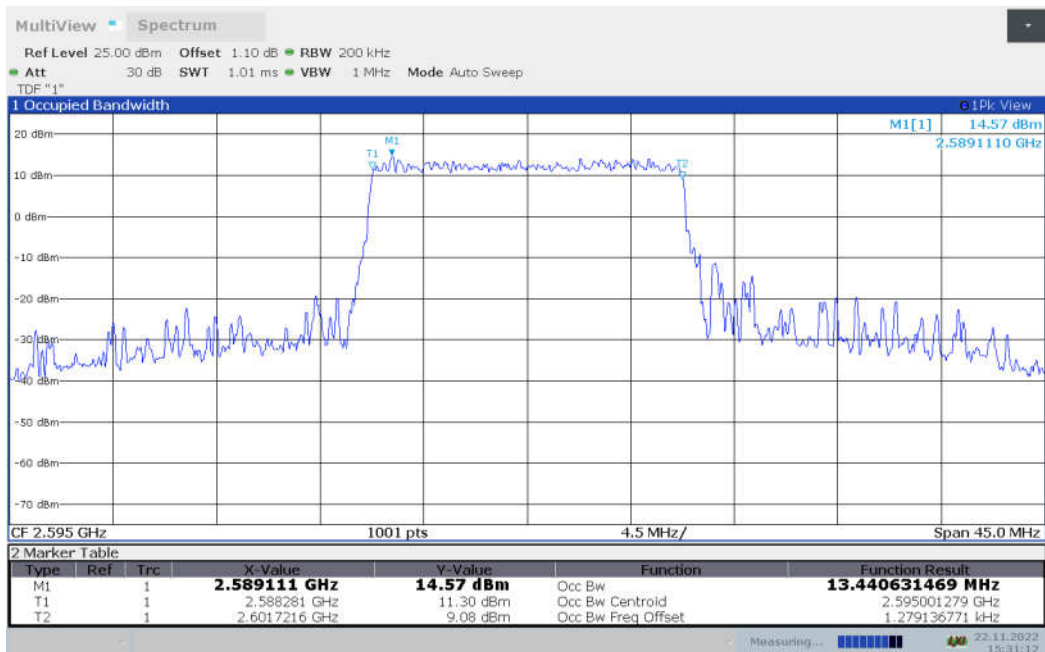
**LTE band 41,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	13.421	13.441

**LTE band 41 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 41 , 15MHz Bandwidth,16QAM (99% BW)**

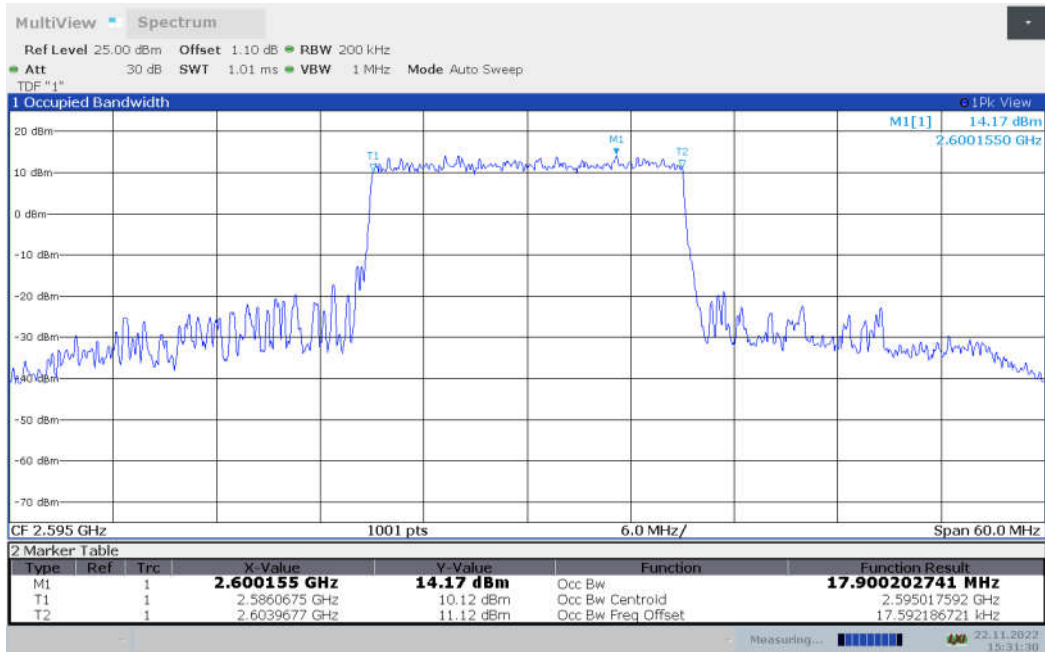




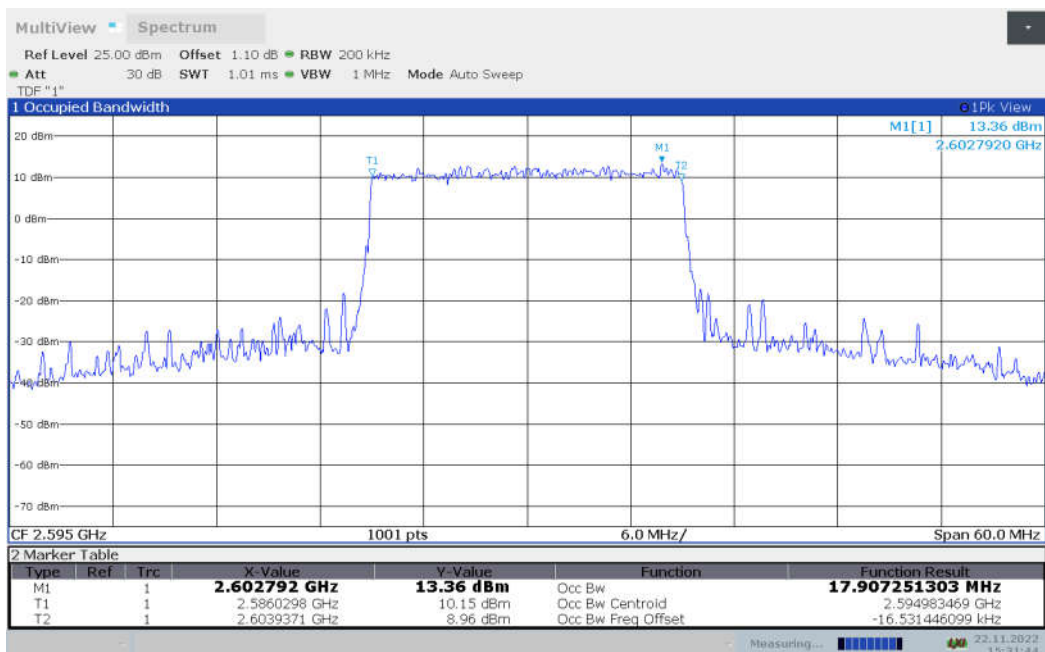
**LTE band 41,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
2595	17.900	17.907

**LTE band 41 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 41 , 20MHz Bandwidth,16QAM (99% BW)**

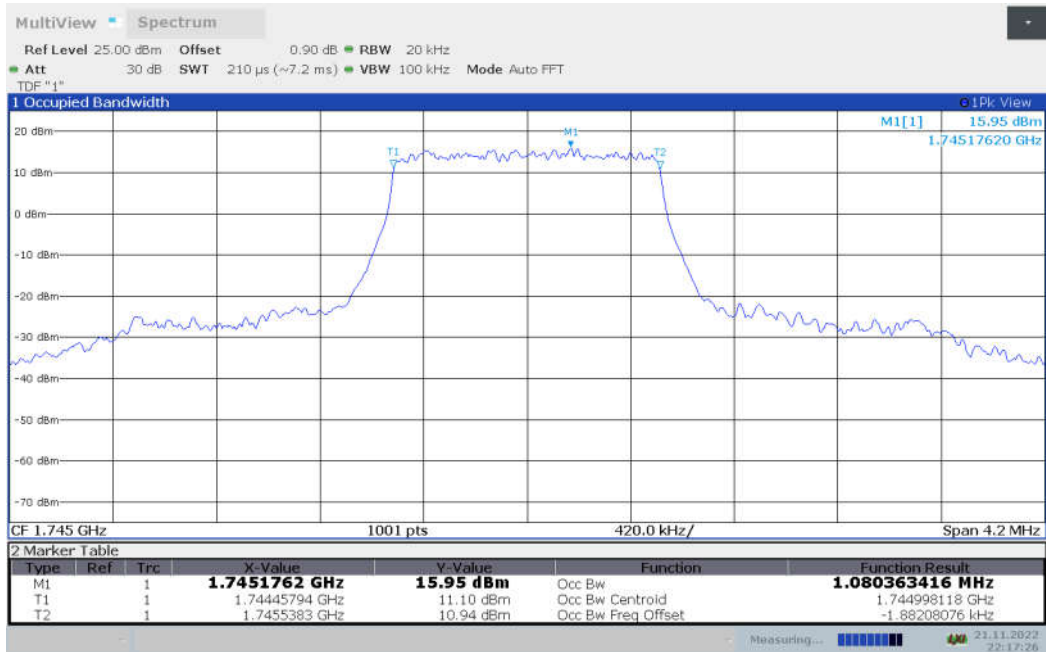




**LTE band 66,1.4MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	1.080	1.087

**LTE band 66 , 1.4MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 1.4MHz Bandwidth,16QAM (99% BW)**

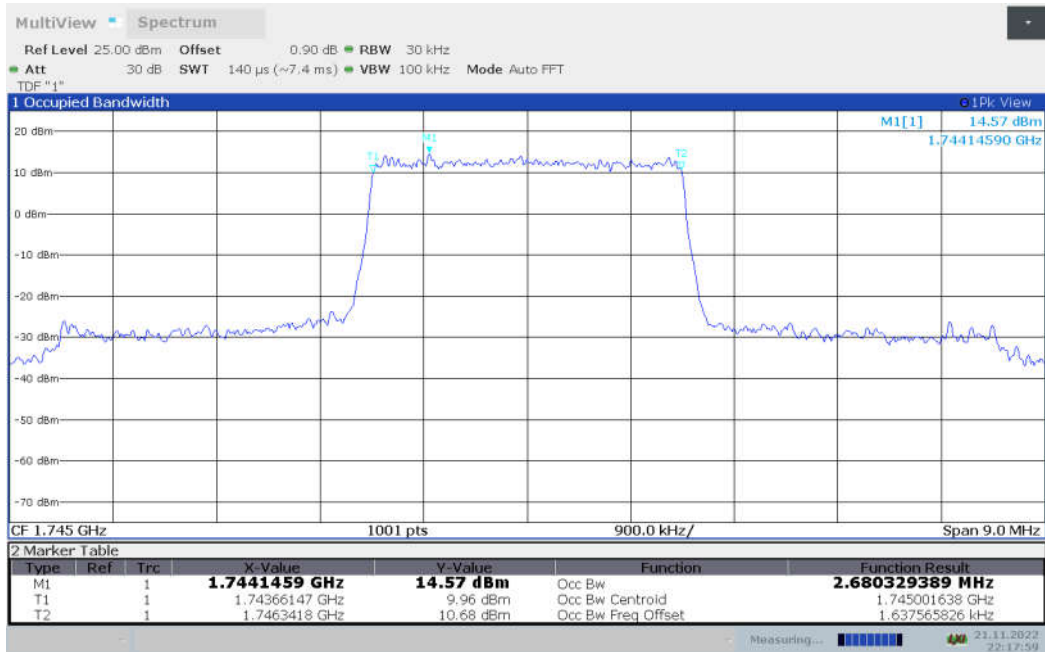




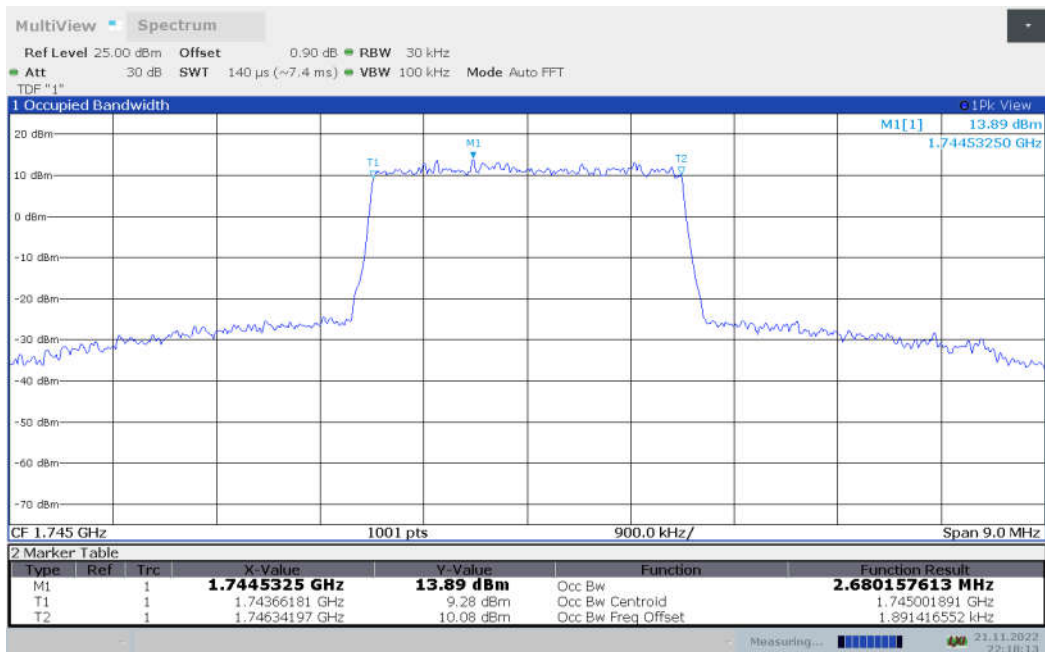
**LTE band 66,3MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	2.680	2.680

**LTE band 66 , 3MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 3MHz Bandwidth,16QAM (99% BW)**

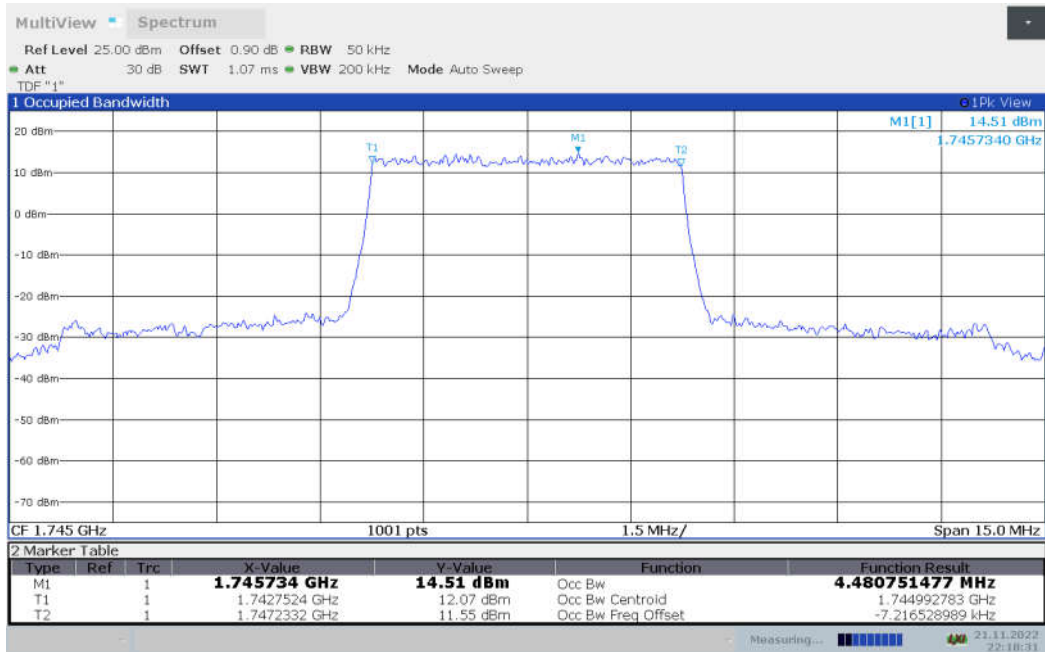




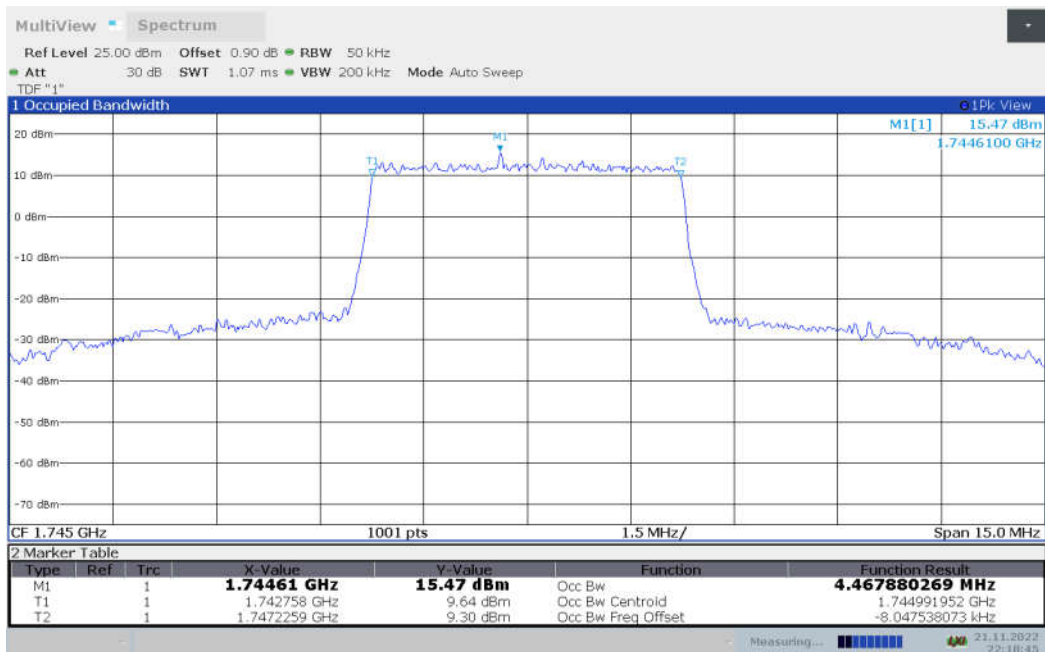
**LTE band 66,5MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	4.481	4.468

**LTE band 66 , 5MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 5MHz Bandwidth,16QAM (99% BW)**

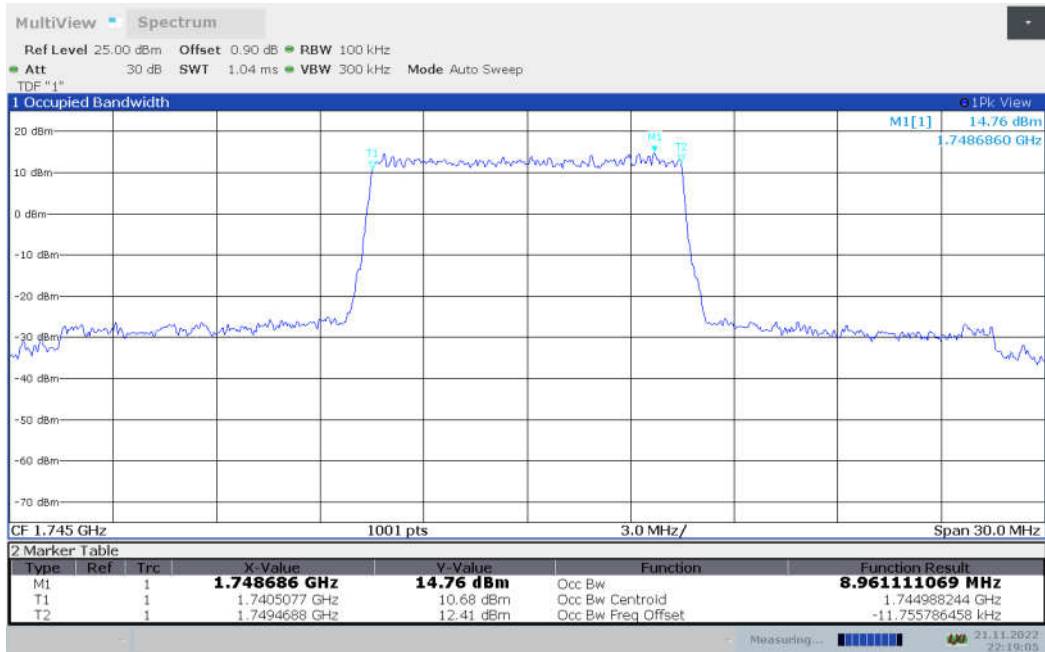




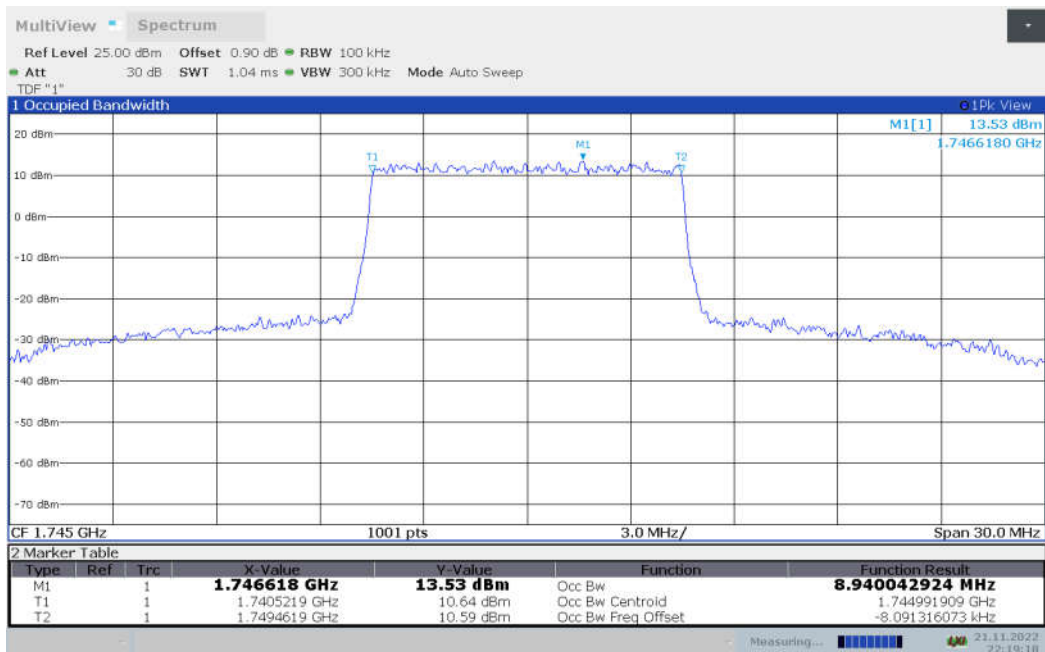
**LTE band 66,10MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	8.961	8.940

**LTE band 66 , 10MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 10MHz Bandwidth,16QAM (99% BW)**

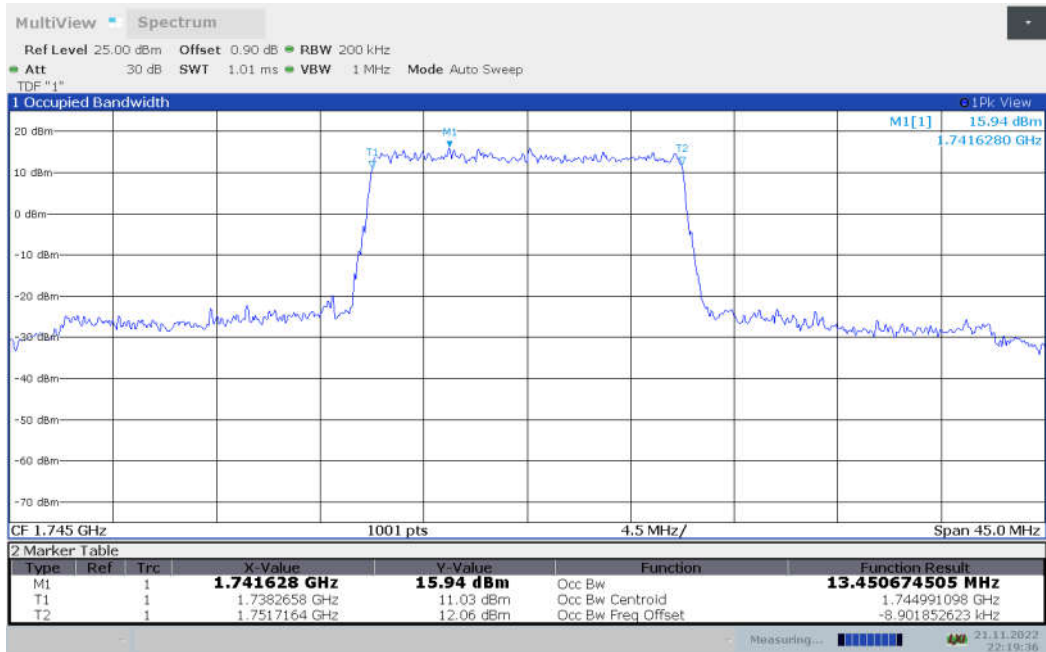




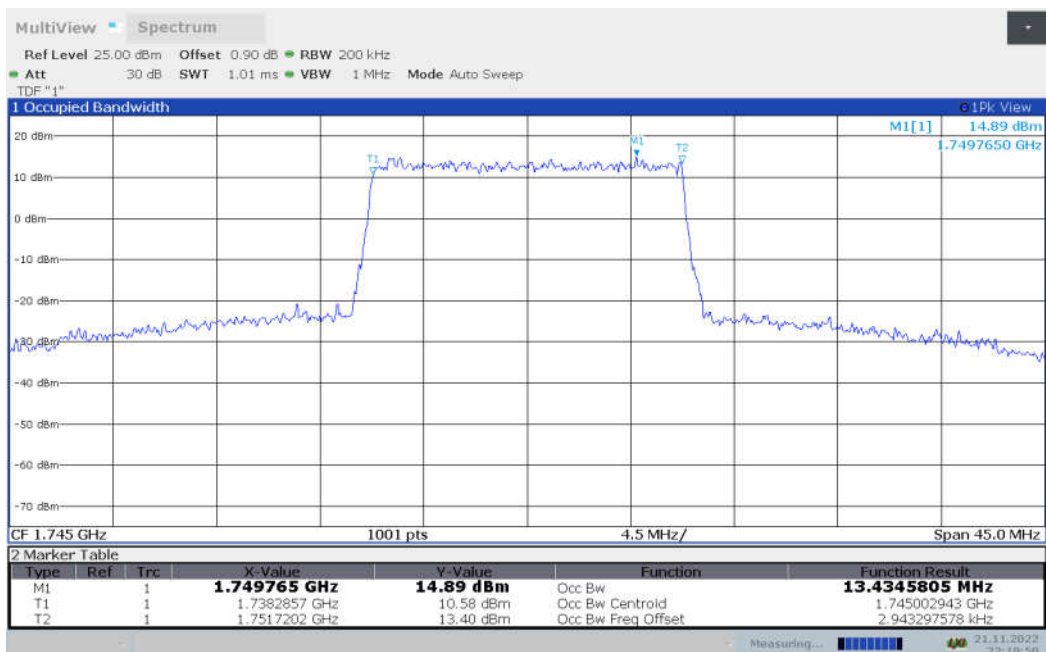
**LTE band 66,15MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	13.451	13.435

**LTE band 66 , 15MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 15MHz Bandwidth,16QAM (99% BW)**



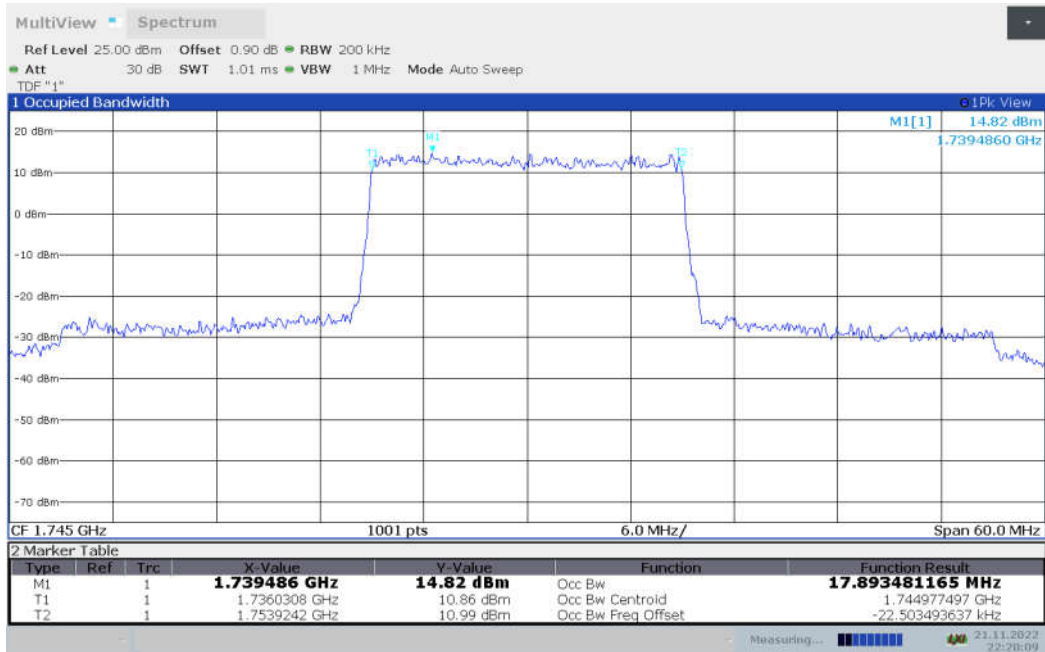




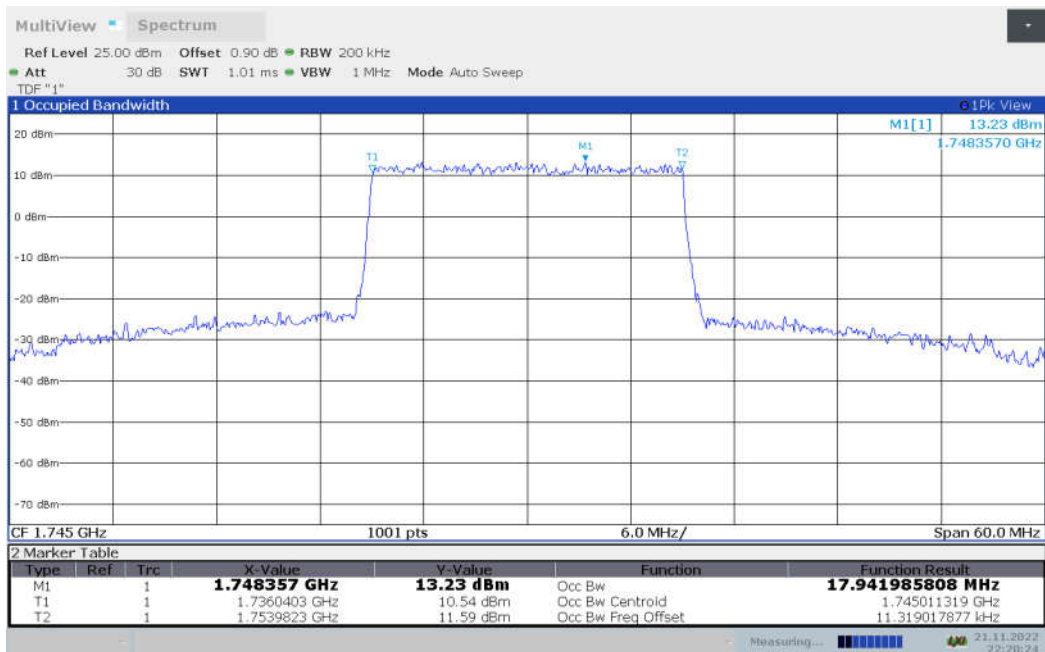
**LTE band 66,20MHz(99% BW)**

Frequency (MHz)	Occupied Bandwidth (99% BW)(MHz)	
	QPSK	16QAM
1745	17.893	17.942

**LTE band 66 , 20MHz Bandwidth,QPSK (99% BW)**



**LTE band 66 , 20MHz Bandwidth,16QAM (99% BW)**



Note: Expanded measurement uncertainty is  $U = 3428$  Hz,  $k = 2$



## **A.5 EMISSION BANDWIDTH**

### **Reference**

FCC: CFR Part 2.1049, 22.917, 24.238, 27.53.

### **A.5.1 Measurement Procedure**

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB 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.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least  $10\log(\text{OBW} / \text{RBW})$  below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 26dB bandwidth function of the spectrum analyzer and report the measured bandwidth.

### **A.5.2 Emission Bandwidth Results**

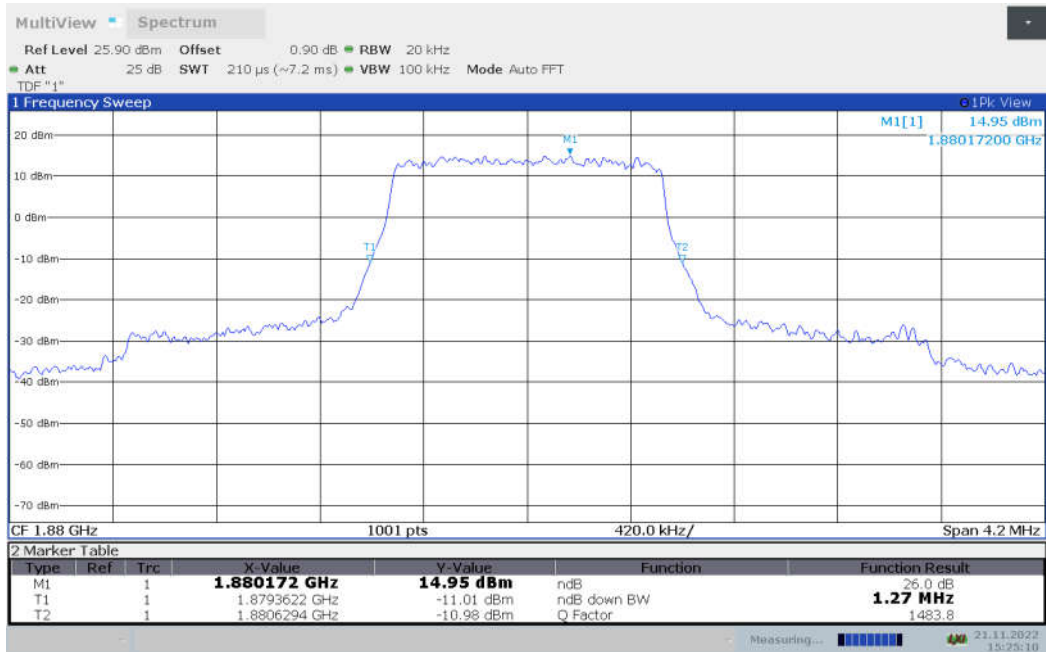
Similar to conducted emissions; Emission bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.



**LTE band 2,1.4MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)	
	QPSK	16QAM
1880	1.267	1.259

**LTE band 2 , 1.4MHz Bandwidth,QPSK (-26dBc BW)**



**LTE band 2 , 1.4MHz Bandwidth,16QAM (-26dBc BW)**

