



# TEST REPORT

## No. 24T03Z100164-008

for

**TCL Communication Ltd.**

**GSM/UMTS/LTE/NR Mobile phone**

**Model Name: T614J**

**FCC ID: 2ACCJH179**

with

**Hardware Version: 06**

**Software Version: 8HS1**

**Issued Date: 2024-02-28**

**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 CTTL.

**Test Laboratory:**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
24T03Z100164-008	Rev.0	1 <sup>st</sup> edition	2024-02-28

Note: the latest revision of the test report supersedes all previous version.

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## 1. Test Laboratory

### 1.1. Introduction & Accreditation

**Telecommunication Technology Labs, CAICT** is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

### 1.2. Testing Location

Location 1: CTTL (huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,  
P. R. China 100191

Location : CTTL(BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology  
Development Area, Beijing, P. R. China 100176

### 1.3. Testing Environment

Normal Temperature: 15-35°C


Relative Humidity: 20-75%

### 1.4. Project Data

Testing Start Date: 2024-01-26

Testing End Date: 2024-02-23

### 1.5. Signature



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Wang Xing

(Prepared this test report)



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Zhou Yu

(Reviewed this test report)



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Zhao Hui Lin

(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd.  
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### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
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### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

Description	GSM/UMTS/LTE/NR Mobile phone
Model Name	T614J
FCC ID	2ACCJH179
Antenna	Embedded
Output power	25.64dBm maximum EIRP measured for LTE Band 41
Extreme vol. Limits	3.6VDC to 4.4VDC (nominal: 3.85VDC)
Extreme temp. Tolerance	-10°C to +55°C

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

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

<b>EUT ID*</b>	<b>IMEI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
UT27a	016534000000562	06	8HS1	2024-01-29
UT08a	016534000302291	06	8HS1	2024-01-26

UT08a was used for emission limit test and UT27a was used for other testing cases.

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

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

<b>AE ID*</b>	<b>Description</b>
AE1	Battery
AE1	
Model	TLp049FA
Manufacturer	TIANMAO
Capacitance	5010mAh

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

## **4. Reference Documents**

### **4.1. Documents supplied by applicant**

EUT parameters are supplied by the customer, which are the bases of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

### **4.2. Reference Documents for testing**

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	10-1-22 Edition
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-22 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-22 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-22 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01

## 5. Summary Of Test Result

### LTE Band 2

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	BR
2	Emission Limit	2.1051/24.238	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	24.238	BR
6	Band Edge Compliance	24.238	BR
7	Conducted Spurious Emission	24.238	BR
8	Peak-to-Average Power Ratio	24.232	BR

### LTE Band 5

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	22.913	BR
2	Emission Limit	2.1051/22.917	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	22.917	BR
6	Band Edge Compliance	22.917	BR
7	Conducted Spurious Emission	22.917	BR

### LTE Band 7

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance	27.53	BR
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR



**LTE Band 12(17)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance of LTE Band 12	27.53	BR
6	Band Edge Compliance of LTE Band 17	27.53	P
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR

**LTE Band 13**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance	27.53	BR
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR

**LTE Band 25**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	BR
2	Emission Limit	2.1051/24.238	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	24.238	BR
6	Band Edge Compliance	24.238	BR
7	Conducted Spurious Emission	24.238	BR
8	Peak-to-Average Power Ratio	24.232	BR

**LTE Band 26(814MHz~824MHz)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	90.635	BR
2	Emission Limit	2.1051/90.691	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	2.1049	BR
6	Band Edge Compliance	90.691	BR
7	Conducted Spurious Emission	90.691	BR

**LTE Band 26(824MHz~849MHz)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	22.913	BR
2	Emission Limit	2.1051/22.917	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	22.917	BR
6	Band Edge Compliance	22.917	BR
7	Conducted Spurious Emission	22.917	BR

**LTE Band 41 (38)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance	27.53	BR
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR

**LTE Band 66 (4)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance	27.53	BR
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR

**LTE Band 71**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	BR
2	Emission Limit	2.1051/27.53	BR
3	Frequency Stability	2.1055	BR
4	Occupied Bandwidth	2.1049	BR
5	Emission Bandwidth	27.53	BR
6	Band Edge Compliance	27.53	BR
7	Conducted Spurious Emission	27.53	BR
8	Peak-to-Average Power Ratio	27.50	BR

## Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable. The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.

All the test results are based on normal power.

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

LTE Band12, Band 66 and Band 41 overlaps the entire frequency range of LTE Band 17, Band 4 and Band 38. Therefore, test data provided in this report covers Band 4, Band 17 Band 38 as well as Band 66, Band12, Band 41.

LTE Band 41 is tested by power class 2.

## Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the conducted output power measurement investigation results. Output power was measured on QPSK, 16QAM, 64QAM and 256QAM modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in



the following sections represent the worst case emission.

The Equipment Under Test (EUT) model T614J (FCCID:2ACCJH179) is a variant product of T614D (FCCID:2ACCJH179), according to the declaration of changes provided by the applicant and FCC KDB publication 178919 D01, the Band Edge of LTE Band 17, CA\_2A-7A, CA\_2A-12A, CA\_2A-71A, CA\_4A-7A, CA\_4A-12A, CA\_4A-17A, CA\_4A-71A, CA\_5A-7A, CA\_7A-66A, CA\_7A-12A, CA\_12A-66A and Emission Limit of LTE Band CA 2A-12A, CA 2A-71A, CA 4A-7A, CA 4A-17A, CA 4A-71A, CA 5A-7A, CA 12A-66A have been tested. The other test results are derived from test report No.23T04Z80421-21.

For detail differences between two models please refer the Declaration of Changes document.

## 6. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2024-12-28	1 year
Spectrum Analyzer	FSU	200030	R&S	2024-05-25	1 year
Climate chamber	SH-241	92004642	ESPEC	2024-10-15	1 year
Test Receiver	FSV30	101525	R&S	2024-02-18	1 Year
Test Receiver	FSV30	101525	R&S	2025-02-18	1 Year
EMI Antenna	VULB 9163	9163-235	Schwarzbeck	2024-06-10	1 Year
EMI Antenna	9117	167	Schwarzbeck	2024-11-15	1 Year
EMI Antenna	LB-7180-NF	J203001300005	A-INFO	2024-05-25	1 Year
EMI Antenna	3115	00167252	ETS-Lindgren	2024-02-28	1 Year
Signal Generator	N5183A	MY49060052	Agilent	2024-10-14	1 Year
Universal Radio Communication Tester	MT8000A	6272466183	Anritsu	2024-05-15	1 Year
Universal Radio Communication Tester	MT8821C	62724459649	Anritsu	2024-05-15	1 Year

## Annex A: Measurement Results

### A.1 Output Power

#### A.1.1 Summary

During the process of testing, the EUT was controlled via communication tester to ensure max power transmission and proper modulation.

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.

The results below include a correction factor for cable loss that is provided by the customer.

##### A.1.2.2 Measurement Result

###### LTE band 2

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1909.3	23.06	23.40	22.30	18.38
		1880.0	22.98	23.28	22.11	18.64
		1850.7	22.93	23.09	21.90	18.23
	1 RB low	1909.3	23.10	23.32	22.21	18.43
		1880.0	22.82	23.16	21.97	18.50
		1850.7	22.84	22.98	22.03	18.45
	50% RB mid	1909.3	23.16	21.98	20.90	18.53
		1880.0	23.18	21.86	20.86	18.83
		1850.7	22.81	21.93	20.88	18.54
	100% RB	1909.3	23.10	21.90	20.95	18.73
		1880.0	22.94	21.96	20.84	18.58
		1850.7	22.89	21.96	20.92	18.50
3MHz	1 RB high	1908.5	23.24	23.33	22.19	18.72
		1880.0	22.96	23.23	22.13	18.46
		1851.5	22.91	22.99	21.92	18.44
	1 RB low	1908.5	23.01	23.38	22.23	18.39
		1880.0	22.95	23.12	22.08	18.33
		1851.5	22.99	23.11	22.11	18.63
	50% RB mid	1908.5	23.11	22.00	21.01	18.73
		1880.0	23.16	21.96	20.79	18.55
		1851.5	22.82	22.01	20.76	18.32
	100% RB	1908.5	23.13	22.00	20.87	18.89
		1880.0	22.89	21.86	20.90	18.65

		1851.5	22.82	21.78	20.84	18.29
5MHz	1 RB high	1907.5	23.15	23.39	22.26	18.51
		1880.0	23.03	23.18	22.11	18.78
		1852.5	22.83	23.02	21.99	18.55
	1 RB low	1907.5	23.04	23.31	22.18	18.65
		1880.0	22.89	23.12	21.98	18.49
		1852.5	22.91	23.06	22.01	18.56
	50% RB mid	1907.5	23.09	22.04	20.99	18.59
		1880.0	23.14	21.91	20.85	18.51
		1852.5	22.86	21.92	20.85	18.60
	100% RB	1907.5	23.04	21.98	20.95	18.70
		1880.0	22.91	21.95	20.92	18.30
		1852.5	22.83	21.87	20.90	18.61
10MHz	1 RB high	1905.0	23.20	23.39	22.25	18.98
		1880.0	23.07	23.14	22.11	18.82
		1855.0	22.90	23.00	22.04	18.51
	1 RB low	1905.0	22.99	23.31	22.13	18.38
		1880.0	22.89	23.11	21.91	18.44
		1855.0	22.84	23.10	21.98	18.35
	50% RB mid	1905.0	23.06	22.07	20.99	18.52
		1880.0	23.12	21.95	20.90	18.83
		1855.0	22.85	21.86	20.86	18.23
	100% RB	1905.0	22.98	21.95	21.03	18.59
		1880.0	22.96	21.97	20.91	18.47
		1855.0	22.84	21.88	20.83	18.26
15MHz	1 RB high	1902.5	23.20	23.38	22.28	18.81
		1880.0	23.00	23.11	22.09	18.30
		1857.5	22.92	23.05	22.06	18.40
	1 RB low	1902.5	23.00	23.27	22.10	18.62
		1880.0	22.91	23.10	21.98	18.51
		1857.5	22.89	23.12	21.97	18.48
	50% RB mid	1902.5	23.07	21.99	21.02	18.45
		1880.0	23.12	21.97	20.89	18.63
		1857.5	22.87	21.87	20.82	18.44
	100% RB	1902.5	22.96	21.99	21.03	18.53
		1880.0	22.94	21.97	20.92	18.24
		1857.5	22.86	21.91	20.87	18.32
20MHz	1 RB high	1900.0	23.23	23.44	22.34	18.53
		1880.0	23.09	23.19	22.18	18.65
		1860.0	22.93	23.07	22.09	18.22
	1 RB low	1900.0	23.06	23.33	22.20	18.39
		1880.0	22.93	23.14	22.01	18.61
		1860.0	22.93	23.14	22.04	18.40



	50% RB mid	1900.0	23.12	22.09	21.08	18.57
		1880.0	23.16	21.98	20.93	18.59
		1860.0	22.94	21.94	20.92	18.21
	100% RB	1900.0	23.06	22.05	21.05	18.49
		1880.0	22.97	21.98	20.99	18.55
		1860.0	22.90	21.92	20.91	18.25



**LTE band 5**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	24.34	23.22	22.35	19.74
		836.5	24.33	23.40	22.44	19.90
		824.7	24.32	23.40	22.40	19.98
	1 RB low	848.3	24.31	23.34	22.37	20.02
		836.5	24.26	23.40	22.43	19.73
		824.7	24.24	23.34	22.45	19.51
	50% RB mid	848.3	23.24	22.27	21.39	18.54
		836.5	23.44	22.33	21.39	18.93
		824.7	23.25	22.27	21.41	18.59
	100% RB	848.3	23.25	22.36	21.35	19.02
		836.5	23.25	22.29	21.35	18.73
		824.7	23.24	22.29	21.37	18.54
3MHz	1 RB high	847.5	24.31	23.26	22.29	19.97
		836.5	24.33	23.35	22.43	19.64
		825.5	24.29	23.39	22.39	19.69
	1 RB low	847.5	24.32	23.31	22.41	20.01
		836.5	24.26	23.43	22.45	19.73
		825.5	24.25	23.34	22.49	19.76
	50% RB mid	847.5	23.23	22.21	21.32	18.62
		836.5	23.40	22.26	21.39	18.82
		825.5	23.26	22.25	21.46	18.55
	100% RB	847.5	23.24	22.28	21.33	18.84
		836.5	23.34	22.26	21.34	18.83
		825.5	23.31	22.29	21.38	18.58
5MHz	1 RB high	846.5	24.29	23.29	22.27	19.93
		836.5	24.32	23.40	22.48	19.83
		826.5	24.30	23.44	22.37	19.76
	1 RB low	846.5	24.32	23.39	22.40	19.66
		836.5	24.28	23.45	22.41	20.06
		826.5	24.26	23.39	22.42	19.67
	50% RB mid	846.5	23.24	22.23	21.38	18.93
		836.5	23.38	22.34	21.33	18.66
		826.5	23.26	22.25	21.45	18.80
	100% RB	846.5	23.22	22.32	21.31	18.99
		836.5	23.31	22.29	21.40	18.59
		826.5	23.30	22.27	21.37	18.70
10MHz	1 RB high	844.0	24.35	23.31	22.37	19.66
		836.5	24.36	23.45	22.50	20.01
		829.0	24.35	23.47	22.46	20.06
	1 RB low	844.0	24.36	23.41	22.45	20.14



		836.5	24.36	23.46	22.47	19.89
		829.0	24.34	23.40	22.50	19.91
	50% RB mid	844.0	23.30	22.30	21.41	18.61
		836.5	23.47	22.36	21.41	18.86
		829.0	23.32	22.35	21.49	18.62
	100% RB	844.0	23.30	22.37	21.40	18.60
		836.5	23.35	22.35	21.42	18.92
		829.0	23.33	22.34	21.45	18.67

**LTE band 7**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2567.5	22.82	22.05	21.03	18.10
		2535.0	22.33	21.77	20.64	17.76
		2502.5	21.94	21.42	20.30	17.34
	1 RB low	2567.5	22.61	21.92	20.69	17.99
		2535.0	22.03	21.50	20.42	17.42
		2502.5	21.83	20.94	19.88	17.21
	50% RB mid	2567.5	21.69	20.62	19.59	17.09
		2535.0	21.83	20.35	19.32	17.23
		2502.5	20.97	20.00	19.00	16.33
	100% RB	2567.5	21.62	20.60	19.57	17.05
		2535.0	21.46	20.43	19.38	16.75
		2502.5	20.97	19.93	18.94	16.36
10MHz	1 RB high	2565.0	22.86	22.06	21.05	18.19
		2535.0	22.32	21.76	20.58	17.73
		2505.0	21.98	21.42	20.33	17.37
	1 RB low	2565.0	22.55	21.84	20.70	17.89
		2535.0	22.03	21.50	20.38	17.31
		2505.0	21.81	20.94	19.86	17.08
	50% RB mid	2565.0	21.69	20.62	19.65	17.05
		2535.0	21.81	20.37	19.29	17.17
		2505.0	21.01	20.00	19.00	16.34
	100% RB	2565.0	21.69	20.68	19.54	17.04
		2535.0	21.41	20.34	19.35	16.76
		2505.0	20.92	19.90	18.91	16.28
15MHz	1 RB high	2562.5	22.77	22.06	21.11	18.20
		2535.0	22.28	21.75	20.63	17.71
		2507.5	21.94	21.49	20.25	17.25
	1 RB low	2562.5	22.61	21.92	20.76	18.01
		2535.0	22.06	21.41	20.37	17.46
		2507.5	21.86	20.96	19.93	17.18
	50% RB mid	2562.5	21.72	20.64	19.61	17.01
		2535.0	21.78	20.40	19.31	17.09
		2507.5	21.00	19.97	18.98	16.33
	100% RB	2562.5	21.62	20.67	19.58	17.05
		2535.0	21.43	20.38	19.33	16.70
		2507.5	20.96	19.88	18.89	16.38
20MHz	1 RB high	2560.0	22.87	22.14	21.12	18.19
		2535.0	22.38	21.78	20.67	17.79
		2510.0	22.01	21.51	20.34	17.33
	1 RB low	2560.0	22.64	21.94	20.77	18.05

		2535.0	22.09	21.51	20.47	17.54
		2510.0	21.91	21.03	19.96	17.30
	50% RB mid	2560.0	21.76	20.69	19.67	17.21
		2535.0	21.86	20.42	19.38	17.17
		2510.0	21.06	20.07	19.02	16.46
	100% RB	2560.0	21.72	20.69	19.64	17.15
		2535.0	21.47	20.44	19.40	16.74
		2510.0	21.02	19.97	18.95	16.44

**LTE band 12**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	715.3	24.35	23.33	22.36	19.75
		707.5	24.41	23.34	22.28	19.79
		699.7	24.42	23.39	22.35	19.69
	1 RB low	715.3	24.40	23.28	22.31	19.69
		707.5	24.34	23.40	22.33	19.72
		699.7	24.35	23.31	22.36	19.67
	50% RB mid	715.3	23.44	22.37	21.39	18.80
		707.5	23.39	22.46	21.41	18.82
		699.7	23.32	22.39	21.46	18.75
	100% RB	715.3	23.39	22.39	21.48	18.81
		707.5	23.44	22.41	21.42	18.80
		699.7	23.43	22.39	21.37	18.88
3MHz	1 RB high	714.5	24.37	23.31	22.36	19.71
		707.5	24.41	23.36	22.34	19.80
		700.5	24.41	23.36	22.43	19.72
	1 RB low	714.5	24.39	23.32	22.24	19.84
		707.5	24.36	23.44	22.27	19.67
		700.5	24.39	23.34	22.35	19.74
	50% RB mid	714.5	23.45	22.43	21.42	18.84
		707.5	23.43	22.48	21.49	18.82
		700.5	23.37	22.31	21.48	18.65
	100% RB	714.5	23.35	22.37	21.43	18.78
		707.5	23.44	22.43	21.42	18.84
		700.5	23.37	22.40	21.38	18.78
5MHz	1 RB high	713.5	24.30	23.39	22.31	19.70
		707.5	24.40	23.34	22.28	19.67
		701.5	24.38	23.36	22.41	19.76
	1 RB low	713.5	24.34	23.28	22.32	19.73
		707.5	24.38	23.42	22.36	19.69
		701.5	24.34	23.34	22.35	19.75
	50% RB mid	713.5	23.42	22.39	21.39	18.71
		707.5	23.47	22.47	21.47	18.84
		701.5	23.35	22.40	21.46	18.63
	100% RB	713.5	23.37	22.36	21.44	18.64
		707.5	23.43	22.42	21.45	18.71
		701.5	23.39	22.35	21.40	18.82
10MHz	1 RB high	711.0	24.39	23.41	22.41	19.77
		707.5	24.42	23.42	22.37	19.76
		704.0	24.44	23.45	22.45	19.77
	1 RB low	711.0	24.43	23.35	22.34	19.86



		707.5	24.42	23.47	22.37	19.86
		704.0	24.41	23.41	22.39	19.69
	50% RB mid	711.0	23.48	22.45	21.45	18.75
		707.5	23.49	22.50	21.50	18.78
		704.0	23.42	22.41	21.49	18.77
	100% RB	711.0	23.45	22.41	21.49	18.86
		707.5	23.45	22.50	21.47	18.84
		704.0	23.46	22.43	21.43	18.79

**LTE band 13**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	784.5	23.96	23.26	22.12	19.32
		782.0	24.10	23.27	22.27	19.49
		779.5	24.02	23.22	22.23	19.43
	1 RB low	784.5	22.97	22.02	20.99	18.26
		782.0	23.88	23.27	22.19	19.28
		779.5	24.06	23.33	22.28	19.39
	50% RB mid	784.5	22.98	21.99	20.96	18.39
		782.0	22.96	22.01	21.04	18.40
		779.5	22.89	22.26	21.15	18.26
	100% RB	784.5	23.05	22.01	21.02	18.32
		782.0	22.97	21.99	20.99	18.31
		779.5	22.96	22.03	21.05	18.36
10MHz	1 RB high	782.0	23.98	23.35	22.21	19.38
	1 RB low	782.0	24.07	23.25	22.26	19.42
	50% RB mid	782.0	23.07	22.09	21.11	18.42
	100% RB	782.0	23.06	22.08	21.07	18.49

**LTE band 25**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1914.3	23.11	23.39	22.34	18.47
		1882.5	22.89	23.16	22.08	18.31
		1850.7	22.88	23.07	21.98	18.20
	1 RB low	1914.3	22.88	23.23	22.06	18.18
		1882.5	22.85	23.07	22.11	18.23
		1850.7	22.96	23.04	22.04	18.24
	50% RB mid	1914.3	23.04	22.05	20.97	18.38
		1882.5	23.19	21.94	20.88	18.61
		1850.7	22.87	21.83	20.85	18.22
	100% RB	1914.3	23.04	22.01	21.06	18.47
		1882.5	22.95	21.96	20.96	18.40
		1850.7	22.85	21.83	20.86	18.18
3MHz	1 RB high	1913.5	23.09	23.38	22.37	18.40
		1882.5	22.94	23.14	22.09	18.27
		1851.5	22.83	23.15	21.96	18.13
	1 RB low	1913.5	22.88	23.23	22.08	18.23
		1882.5	22.87	23.04	22.13	18.27
		1851.5	22.90	23.01	22.01	18.27
	50% RB mid	1913.5	23.06	22.07	20.96	18.46
		1882.5	23.15	21.89	20.88	18.57
		1851.5	22.84	21.81	20.79	18.18
	100% RB	1913.5	22.96	22.02	21.01	18.39
		1882.5	22.94	21.92	20.95	18.29
		1851.5	22.84	21.79	20.78	18.20
5MHz	1 RB high	1912.5	23.13	23.42	22.40	18.46
		1882.5	22.89	23.23	22.11	18.28
		1852.5	22.84	23.15	21.97	18.16
	1 RB low	1912.5	22.88	23.29	22.06	18.28
		1882.5	22.85	23.01	22.04	18.26
		1852.5	22.90	23.07	21.99	18.32
	50% RB mid	1912.5	23.02	22.03	21.01	18.46
		1882.5	23.20	21.98	20.96	18.51
		1852.5	22.84	21.83	20.83	18.27
	100% RB	1912.5	23.01	21.99	20.98	18.41
		1882.5	22.86	21.90	20.91	18.24
		1852.5	22.84	21.84	20.82	18.26
10MHz	1 RB high	1910.0	23.07	23.42	22.36	18.42
		1882.5	22.88	23.15	22.09	18.25
		1855.0	22.90	23.15	22.02	18.33
	1 RB low	1910.0	22.88	23.26	22.04	18.25



		1882.5	22.88	23.04	22.11	18.25	
		1855.0	22.96	23.09	21.95	18.39	
		1910.0	23.01	22.08	21.05	18.32	
	50% RB mid	1882.5	23.14	21.89	20.88	18.42	
		1855.0	22.90	21.89	20.86	18.28	
		1910.0	23.02	22.06	21.01	18.31	
	100% RB	1882.5	22.93	21.91	20.96	18.31	
		1855.0	22.82	21.83	20.82	18.16	
		1910.0	23.02	22.06	21.01	18.31	
15MHz	1 RB high	1907.5	23.12	23.41	22.37	18.46	
		1882.5	22.96	23.15	22.17	18.37	
		1857.5	22.85	23.10	21.98	18.22	
	1 RB low	1907.5	22.88	23.29	22.08	18.18	
		1882.5	22.85	23.03	22.05	18.13	
		1857.5	22.93	23.09	22.01	18.32	
	50% RB mid	1907.5	23.03	22.08	20.99	18.30	
		1882.5	23.12	21.91	20.93	18.51	
		1857.5	22.84	21.89	20.81	18.21	
	100% RB	1907.5	23.01	22.02	21.04	18.42	
		1882.5	22.88	21.94	20.93	18.16	
		1857.5	22.80	21.79	20.79	18.07	
	20MHz	1 RB high	1905.0	23.16	23.46	22.42	18.61
			1882.5	22.98	23.24	22.18	18.37
			1860.0	22.91	23.17	22.06	18.19
1 RB low		1905.0	22.96	23.32	22.12	18.32	
		1882.5	22.90	23.09	22.14	18.19	
		1860.0	22.99	23.11	22.05	18.34	
50% RB mid		1905.0	23.07	22.12	21.06	18.37	
		1882.5	23.21	21.99	20.97	18.63	
		1860.0	22.93	21.91	20.87	18.38	
100% RB		1905.0	23.06	22.08	21.07	18.47	
		1882.5	22.96	21.97	21.01	18.36	
		1860.0	22.87	21.88	20.88	18.14	

**LTE band 26(814MHz~824MHz)**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	823.3	23.98	23.23	21.85	19.28
		819.0	24.02	23.18	21.91	19.21
		814.7	24.04	23.13	22.58	19.31
	1 RB low	823.3	23.98	23.24	21.88	19.24
		819.0	24.03	23.06	21.72	19.20
		814.7	24.11	23.19	22.46	19.36
	50% RB mid	823.3	24.09	23.15	21.95	19.31
		819.0	24.17	23.24	21.95	19.22
		814.7	24.34	23.32	22.10	19.28
	100% RB	823.3	23.02	22.24	21.26	19.29
		819.0	23.09	22.33	21.19	19.32
		814.7	23.18	22.37	21.26	19.30
3MHz	1 RB high	822.5	23.95	23.03	21.78	19.26
		819.0	23.98	23.16	21.84	19.19
		815.5	24.07	23.25	21.95	19.19
	1 RB low	822.5	24.00	23.19	21.88	19.12
		819.0	24.03	23.21	21.68	19.19
		815.5	24.17	23.32	21.98	19.25
	50% RB mid	822.5	23.00	22.12	21.34	19.33
		819.0	23.03	22.16	21.23	19.25
		815.5	23.09	22.21	21.16	19.24
	100% RB	822.5	23.09	22.06	21.30	19.29
		819.0	23.13	22.08	21.27	19.24
		815.5	23.17	22.17	21.26	19.25
5MHz	1 RB high	821.5	24.14	23.19	22.28	19.41
		819.0	24.19	23.25	22.52	19.41
		816.5	24.18	23.26	22.53	19.40
	1 RB low	821.5	24.10	23.20	22.39	19.35
		819.0	24.26	23.31	22.51	19.35
		816.5	24.35	23.42	22.49	19.47
	50% RB mid	821.5	23.10	22.24	21.46	19.38
		819.0	23.11	22.25	21.46	19.38
		816.5	23.16	22.28	21.35	19.35
	100% RB	821.5	23.18	22.18	21.41	19.37
		819.0	23.21	22.18	21.37	19.35
		816.5	23.28	22.24	21.38	19.34
10MHz	1 RB high	819.0	24.14	23.28	22.06	19.49
	1 RB low	819.0	24.26	23.40	21.90	19.40
	50% RB mid	819.0	23.21	22.31	21.42	19.39
	100% RB	819.0	23.25	22.28	21.32	19.29

**LTE band 26(824MHz~849MHz)**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	23.82	22.90	21.66	19.14
		836.5	24.05	23.20	21.94	19.20
		824.7	23.83	23.02	22.38	19.28
	1 RB low	848.3	23.83	22.91	21.76	19.10
		836.5	24.05	23.18	21.83	19.18
		824.7	23.84	22.91	22.19	19.28
	50% RB mid	848.3	24.03	23.10	21.82	19.21
		836.5	24.17	23.22	22.03	19.17
		824.7	24.13	23.17	21.90	19.26
	100% RB	848.3	22.95	22.18	21.31	19.25
		836.5	23.10	22.30	21.16	19.24
		824.7	22.98	22.18	21.21	19.29
3MHz	1 RB high	847.5	23.81	23.02	21.57	19.09
		836.5	24.02	23.17	21.94	19.18
		825.5	23.95	23.12	21.89	19.26
	1 RB low	847.5	23.87	23.07	21.71	19.03
		836.5	24.07	23.21	21.74	19.15
		825.5	23.95	23.13	21.70	19.17
	50% RB mid	847.5	22.86	22.05	21.17	19.16
		836.5	23.07	22.15	21.25	19.25
		825.5	23.01	22.10	21.18	19.30
	100% RB	847.5	22.98	21.99	21.17	19.16
		836.5	23.09	22.07	21.23	19.22
		825.5	23.04	22.00	21.29	19.26
5MHz	1 RB high	846.5	24.05	22.98	22.09	19.32
		836.5	24.23	23.28	22.33	19.35
		826.5	24.18	23.28	22.44	19.48
	1 RB low	846.5	24.11	23.08	22.30	19.29
		836.5	24.27	23.34	22.41	19.39
		826.5	24.18	23.20	22.38	19.37
	50% RB mid	846.5	22.96	22.11	21.33	19.24
		836.5	23.21	22.23	21.42	19.36
		826.5	23.11	22.19	21.40	19.42
	100% RB	846.5	23.09	22.03	21.28	19.24
		836.5	23.22	22.16	21.33	19.30
		826.5	23.16	22.11	21.39	19.38
10MHz	1 RB high	844.0	23.99	23.20	21.79	19.34
		836.5	24.15	23.26	22.03	19.31
		829.0	24.29	23.30	22.19	19.47
	1 RB low	844.0	24.17	23.22	21.94	19.33

		836.5	24.22	23.30	22.03	19.45
		829.0	24.13	23.21	21.99	19.40
		844.0	23.08	22.21	21.21	19.25
	50% RB mid	836.5	23.23	22.30	21.36	19.36
		829.0	23.19	22.26	21.44	19.42
		844.0	23.14	22.16	21.18	19.15
	100% RB	836.5	23.23	22.25	21.29	19.28
		829.0	23.20	22.22	21.36	19.34
		841.5	24.03	23.35	22.68	19.60
15MHz	1 RB high	836.5	24.23	23.54	22.67	19.55
		831.5	24.21	23.59	22.64	19.62
		841.5	24.27	23.62	22.47	19.69
	1 RB low	836.5	24.26	23.56	22.56	19.72
		831.5	24.09	23.47	22.60	19.66
		841.5	23.13	22.17	21.19	19.23
	50% RB mid	836.5	23.23	22.16	21.24	19.31
		831.5	23.27	22.16	21.34	19.35
		841.5	23.17	22.23	21.27	19.29
	100% RB	836.5	23.22	22.26	21.35	19.34
		831.5	23.19	22.22	21.36	19.37

**LTE band 41**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2687.5	26.69	25.76	24.49	21.90
		2593.0	26.24	25.73	24.62	21.41
		2498.5	26.76	25.90	24.67	22.00
	1 RB low	2687.5	26.79	25.37	24.58	22.24
		2593.0	26.57	25.71	24.37	21.74
		2498.5	26.80	25.91	24.70	22.15
	50% RB mid	2687.5	25.90	24.76	23.87	21.11
		2593.0	25.66	24.31	23.50	21.04
		2498.5	25.71	24.73	23.70	21.11
	100% RB	2687.5	25.97	24.72	23.97	21.18
		2593.0	25.61	24.55	23.35	20.90
		2498.5	25.66	24.77	23.70	21.00
10MHz	1 RB high	2685.0	26.62	25.77	24.50	21.95
		2593.0	26.31	25.76	24.68	21.74
		2501.0	26.77	25.93	24.64	22.21
	1 RB low	2685.0	26.73	25.39	24.66	22.15
		2593.0	26.53	25.70	24.42	21.77
		2501.0	26.79	25.86	24.63	22.02
	50% RB mid	2685.0	25.97	24.75	23.93	21.29
		2593.0	25.62	24.32	23.42	21.06
		2501.0	25.69	24.68	23.67	20.89
	100% RB	2685.0	25.97	24.77	23.92	21.21
		2593.0	25.62	24.51	23.42	21.07
		2501.0	25.67	24.77	23.74	21.04
15MHz	1 RB high	2682.5	26.70	25.73	24.50	22.07
		2593.0	26.29	25.75	24.65	21.53
		2503.5	26.82	25.95	24.67	22.14
	1 RB low	2682.5	26.76	25.33	24.60	22.19
		2593.0	26.51	25.72	24.36	21.82
		2503.5	26.81	25.86	24.70	21.99
	50% RB mid	2682.5	25.90	24.75	23.87	21.25
		2593.0	25.66	24.28	23.48	20.91
		2503.5	25.69	24.65	23.69	20.92
	100% RB	2682.5	25.92	24.80	23.92	21.08
		2593.0	25.59	24.50	23.38	20.99
		2503.5	25.66	24.69	23.68	21.10
20MHz	1 RB high	2680.0	26.72	25.80	24.56	21.95
		2593.0	26.33	25.83	24.69	21.61
		2506.0	26.85	25.99	24.72	22.14
	1 RB low	2680.0	26.81	25.43	24.68	22.14

		2593.0	26.59	25.78	24.45	21.85
		2506.0	26.83	25.96	24.72	22.10
	50% RB mid	2680.0	25.99	24.81	23.97	21.40
		2593.0	25.67	24.36	23.51	20.90
		2506.0	25.76	24.75	23.74	20.94
	100% RB	2680.0	26.00	24.82	23.98	21.27
		2593.0	25.68	24.57	23.45	20.94
		2506.0	25.75	24.78	23.77	21.10

**LTE band 66**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1779.3	22.86	23.05	22.11	18.23
		1745.0	22.77	22.96	21.95	18.18
		1710.7	22.88	23.04	22.07	18.29
	1 RB low	1779.3	22.93	23.14	22.09	18.37
		1745.0	22.86	23.13	21.98	18.20
		1710.7	23.06	23.39	22.18	18.36
	50% RB mid	1779.3	23.01	22.01	20.97	18.40
		1745.0	23.20	21.80	20.78	18.52
		1710.7	23.02	21.99	20.95	18.19
	100% RB	1779.3	23.01	21.97	21.04	18.42
		1745.0	22.78	21.82	20.88	18.22
		1710.7	23.01	22.03	20.97	18.29
3MHz	1 RB high	1778.5	22.86	22.96	22.12	18.22
		1745.0	22.84	22.89	21.95	18.27
		1711.5	22.85	23.11	22.00	18.03
	1 RB low	1778.5	22.90	23.13	22.11	18.30
		1745.0	22.90	23.13	21.99	18.21
		1711.5	23.07	23.39	22.18	18.37
	50% RB mid	1778.5	22.96	22.00	20.92	18.15
		1745.0	23.18	21.78	20.78	18.47
		1711.5	23.02	21.95	20.96	18.19
	100% RB	1778.5	23.05	22.04	21.04	18.39
		1745.0	22.83	21.78	20.85	18.16
		1711.5	22.97	21.98	21.04	18.35
5MHz	1 RB high	1777.5	22.90	23.00	22.18	18.27
		1745.0	22.75	22.97	22.00	18.13
		1712.5	22.85	23.05	21.99	18.17
	1 RB low	1777.5	22.92	23.20	22.13	18.30
		1745.0	22.90	23.15	22.05	18.10
		1712.5	23.09	23.33	22.17	18.40
	50% RB mid	1777.5	22.96	22.01	20.95	18.38
		1745.0	23.24	21.80	20.85	18.46
		1712.5	23.02	22.00	21.01	18.35
	100% RB	1777.5	22.99	22.03	20.99	18.39
		1745.0	22.86	21.77	20.85	18.13
		1712.5	23.02	22.02	21.03	18.31
10MHz	1 RB high	1775.0	22.87	23.00	22.17	18.32
		1745.0	22.79	22.93	21.95	18.02
		1715.0	22.91	23.09	22.06	18.34
	1 RB low	1775.0	22.89	23.17	22.09	18.21

		1745.0	22.85	23.20	21.98	18.30	
		1715.0	23.09	23.40	22.17	18.31	
		1775.0	23.03	22.00	21.01	18.43	
	50% RB mid	1745.0	23.24	21.79	20.77	18.66	
		1715.0	22.98	21.95	20.98	18.35	
		1775.0	22.97	21.99	21.01	18.20	
	100% RB	1745.0	22.77	21.81	20.82	17.94	
		1715.0	22.94	21.98	21.03	18.35	
		1775.0	22.97	21.99	21.01	18.20	
15MHz	1 RB high	1772.5	22.85	22.99	22.17	18.26	
		1745.0	22.79	22.93	21.91	18.18	
		1717.5	22.93	23.05	22.07	18.27	
	1 RB low	1772.5	22.89	23.19	22.06	18.20	
		1745.0	22.83	23.19	22.06	18.12	
		1717.5	23.11	23.37	22.20	18.49	
	50% RB mid	1772.5	22.99	21.97	21.00	18.36	
		1745.0	23.26	21.83	20.78	18.61	
		1717.5	22.98	22.01	20.93	18.16	
	100% RB	1772.5	23.04	21.98	20.99	18.47	
		1745.0	22.86	21.81	20.86	18.19	
		1717.5	23.03	22.04	21.06	18.43	
	20MHz	1 RB high	1770.0	22.94	23.06	22.20	18.22
			1745.0	22.85	22.98	22.01	18.16
			1720.0	22.94	23.14	22.08	18.11
		1 RB low	1770.0	22.94	23.21	22.15	18.18
			1745.0	22.91	23.21	22.07	18.36
			1720.0	23.15	23.41	22.27	18.43
50% RB mid		1770.0	23.06	22.05	21.02	18.49	
		1745.0	23.27	21.88	20.87	18.50	
		1720.0	23.06	22.03	21.03	18.40	
100% RB		1770.0	23.06	22.07	21.06	18.51	
		1745.0	22.87	21.85	20.90	18.09	
		1720.0	23.04	22.06	21.07	18.27	



**LTE band 71**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	695.5	23.29	22.58	21.51	18.66
		680.5	23.08	22.38	21.14	18.52
		665.5	23.03	22.31	21.24	18.43
	1 RB low	695.5	23.22	22.45	21.35	18.42
		680.5	23.44	22.62	21.55	18.71
		665.5	23.24	22.42	21.30	18.56
	50% RB mid	695.5	22.11	21.09	20.05	17.43
		680.5	22.47	21.06	20.09	17.84
		665.5	22.43	21.41	20.36	17.82
	100% RB	695.5	22.10	21.14	20.11	17.48
		680.5	22.14	21.11	20.15	17.53
		665.5	22.26	21.32	20.26	17.55
10MHz	1 RB high	693.0	23.31	22.52	21.45	18.54
		680.5	23.13	22.38	21.16	18.43
		668.0	23.04	22.24	21.18	18.22
	1 RB low	693.0	23.16	22.50	21.36	18.40
		680.5	23.43	22.65	21.50	18.74
		668.0	23.16	22.51	21.28	18.38
	50% RB mid	693.0	22.11	21.13	20.09	17.44
		680.5	22.45	21.08	20.08	17.77
		668.0	22.41	21.41	20.35	17.66
	100% RB	693.0	22.17	21.15	20.10	17.56
		680.5	22.19	21.14	20.19	17.60
		668.0	22.23	21.25	20.32	17.52
15MHz	1 RB high	690.5	23.36	22.55	21.44	18.53
		680.5	23.06	22.37	21.18	18.24
		670.5	23.11	22.30	21.18	18.46
	1 RB low	690.5	23.20	22.44	21.39	18.51
		680.5	23.42	22.57	21.49	18.59
		670.5	23.19	22.51	21.29	18.61
	50% RB mid	690.5	22.16	21.07	20.06	17.38
		680.5	22.44	21.05	20.12	17.70
		670.5	22.44	21.38	20.35	17.75
	100% RB	690.5	22.15	21.16	20.10	17.44
		680.5	22.12	21.10	20.10	17.35
		670.5	22.26	21.32	20.24	17.60
20MHz	1 RB high	688.0	23.38	22.59	21.53	18.68
		680.5	23.16	22.40	21.20	18.49
		673.0	23.13	22.33	21.25	18.48
	1 RB low	688.0	23.26	22.52	21.40	18.45



		680.5	23.52	22.66	21.58	18.75
		673.0	23.25	22.52	21.32	18.58
	50% RB mid	688.0	22.18	21.15	20.15	17.48
		680.5	22.48	21.13	20.16	17.83
		673.0	22.45	21.47	20.38	17.81
	100% RB	688.0	22.20	21.17	20.17	17.50
		680.5	22.21	21.20	20.20	17.44
		673.0	22.33	21.33	20.34	17.70

**LTE CA Band 66B**

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)
				Size	Offset	Size	Offset	
5MHz/ 5MHz	1752.6	1757.4	QPSK	1	24	1	0	23.82
				25	0	25	0	21.89
			16QAM	1	24	1	0	22.83
				25	0	25	0	20.91
			64QAM	1	24	1	0	20.81
				25	0	25	0	20.92
256QAM	1	24	1	0	19.01			
	25	0	25	0	19.00			
5MHz/ 10MHz	1750.3	1757.5	QPSK	1	24	1	0	23.93
				25	0	50	0	21.97
			16QAM	1	24	1	0	22.97
				25	0	50	0	21.00
			64QAM	1	24	1	0	20.90
				25	0	50	0	21.05
256QAM	1	24	1	0	19.12			
	25	0	50	0	19.05			
5MHz/ 15MHz	1748.1	1757.4	QPSK	1	24	1	0	23.96
				25	0	75	0	21.98
			16QAM	1	24	1	0	23.00
				25	0	75	0	21.00
			64QAM	1	24	1	0	21.00
				25	0	75	0	21.01
256QAM	1	24	1	0	19.18			
	25	0	75	0	19.06			
10MHz/ 5MHz	1752.5	1759.7	QPSK	1	49	1	0	23.98
				50	0	25	0	21.99
			16QAM	1	49	1	0	23.06
				50	0	25	0	21.00
			64QAM	1	49	1	0	20.69
				50	0	25	0	20.99
256QAM	1	49	1	0	19.03			
	50	0	25	0	19.12			
10MHz/ 10MHz	1750.1	1760	QPSK	1	49	1	0	23.98
				50	0	50	0	21.97
			16QAM	1	49	1	0	23.07
				50	0	50	0	20.98
			64QAM	1	49	1	0	20.73
				50	0	50	0	20.96
256QAM	1	49	1	0	19.08			
	50	0	50	0	19.07			

15MHz/ 5MHz	1752.6	1761.9	QPSK	1	74	1	0	23.96
				75	0	25	0	21.96
			16QAM	1	74	1	0	22.91
				75	0	25	0	20.90
			64QAM	1	74	1	0	20.71
				75	0	25	0	20.95
			256QAM	1	74	1	0	19.04
				75	0	25	0	19.08

**LTE CA Band 66C**

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)
				Size	Offset	Size	Offset	
5MHz/ 20MHz	1745.8	1757.5	QPSK	1	24	1	0	23.98
				25	0	100	0	22.00
			16QAM	1	24	1	0	23.05
				25	0	100	0	21.02
			64QAM	1	24	1	0	21.00
				25	0	100	0	21.01
256QAM	1	24	1	0	19.23			
	25	0	100	0	19.11			
10MHz/ 15MHz	1747.9	1757.9	QPSK	1	49	1	0	24.05
				50	0	75	0	22.02
			16QAM	1	49	1	0	23.03
				50	0	75	0	21.02
			64QAM	1	49	1	0	20.83
				50	0	75	0	21.00
256QAM	1	49	1	0	19.11			
	50	0	75	0	19.09			
10MHz/ 20MHz	1745.6	1760.0	QPSK	1	49	1	0	24.02
				50	0	100	0	22.06
			16QAM	1	49	1	0	23.20
				50	0	100	0	21.05
			64QAM	1	49	1	0	20.84
				50	0	100	0	21.06
256QAM	1	49	1	0	19.13			
	50	0	100	0	19.10			
15MHz/ 10MHz	1750.1	1762.1	QPSK	1	74	1	0	24.03
				75	0	50	0	22.00
			16QAM	1	74	1	0	22.98
				75	0	50	0	20.93
			64QAM	1	74	1	0	20.72
				75	0	50	0	20.97
256QAM	1	74	1	0	19.07			
	75	0	50	0	19.06			
15MHz/ 15MHz	1747.5	1762.5	QPSK	1	74	1	0	23.94
				75	0	75	0	22.04
			16QAM	1	74	1	0	23.13
				75	0	75	0	20.97
			64QAM	1	74	1	0	20.78
				75	0	75	0	21.00
256QAM	1	74	1	0	19.03			
	75	0	75	0	19.05			

15MHz/ 20MHz	1745.3	1762.4	QPSK	1	74	1	0	24.05			
				75	0	100	0	22.02			
			16QAM	1	74	1	0	22.82			
				75	0	100	0	21.00			
			64QAM	1	74	1	0	21.04			
				75	0	100	0	21.03			
			256QAM	1	74	1	0	19.06			
				75	0	100	0	19.04			
20MHz/ 5MHz	1752.5	1764.2	QPSK	1	99	1	0	24.00			
				100	0	25	0	21.95			
			16QAM	1	99	1	0	23.01			
				100	0	25	0	20.97			
			64QAM	1	99	1	0	21.10			
				100	0	25	0	20.96			
			256QAM	1	99	1	0	18.95			
				100	0	25	0	18.98			
			20MHz/ 10MHz	1750.1	1764.5	QPSK	1	99	1	0	24.03
							100	0	50	0	22.00
16QAM	1	99				1	0	22.98			
	100	0				50	0	21.00			
64QAM	1	99				1	0	21.10			
	100	0				50	0	21.03			
256QAM	1	99				1	0	18.92			
	100	0				50	0	19.02			
20MHz/ 15MHz	1747.6	1764.7	QPSK	1	99	1	0	23.99			
				100	0	75	0	22.01			
			16QAM	1	99	1	0	23.00			
				100	0	75	0	20.96			
			64QAM	1	99	1	0	21.16			
				100	0	75	0	21.02			
			256QAM	1	99	1	0	18.92			
				100	0	75	0	19.03			
20MHz/ 20MHz	1745.1	1764.9	QPSK	1	99	1	0	24.05			
				100	0	100	0	21.99			
			16QAM	1	99	1	0	23.04			
				100	0	100	0	21.00			
			64QAM	1	99	1	0	21.16			
				100	0	100	0	21.04			
			256QAM	1	99	1	0	19.05			
				100	0	100	0	19.00			

### A.1.3 Radiated

#### A.1.3.1 Description

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

FDD Band 2/25: Part 24.232(c) specifies "Mobile and portable stations are limited to 2 watts EIRP".

FDD Band 5/26(824MHz~849MHz): Part 22.913(a) specifies "The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts".

FDD Band 7/TDD Band 38/41: Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP".

FDD Band 12/71: Part 27.50(c)(10) specifies "Portable stations(hand-held devices) in the 600 MHz uplink band and the 698–746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP".

FDD Band 13: Part 27.50(b) specifies "Portable stations(hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP".

LTE Band 26(814MHz~824MHz): Part 90.635(b) specifies "The maximum output power of the transmitter for mobile stations is 100 watts".

FDD Band 4/66: Part 27.50(d)(4) specifies "Fixed, mobile, and portable(handheld) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695–1710 MHz and 1755–1780 MHz bands are limited to 1 watt EIRP".

#### A.1.3.2 Method of Measurement

According to KDB 412172 D01 and ANSI C63.26 the relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{ERP or EIRP} = P_T + G_T - L_C$$

where;

- **ERP or EIRP** = effective radiated power or equivalent isotropically radiated power(expressed in the same units as  $P_T$ ).
- $P_T$  = transmitter output power, in this report the unit express as dBm;
- $G_T$  = gain of the transmitting antenna, in dBd(ERP) or dBi(EIRP);
- $L_C$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

Alternatively, the EIRP can be determined from Equation above and then converted to ERP based on the maximum antenna gain relationship by applying the following equation:

$$\text{ERP} = \text{EIRP} - 2.15\text{dB}$$

Note: The antenna gain information was provided by the client. The laboratory is not responsible for identifying its authenticity during the test.

### A.1.3.3 Limits and Measurement Results

#### LTE Band 2-EIRP

Limits:  $\leq 33\text{dBm}(2\text{W})$

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				EIRP(dBm)(Gt-Lc = -0.15)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1909.3	23.06	23.40	22.30	18.38	22.91	23.25	22.15	18.23
		1880.0	22.98	23.28	22.11	18.64	22.83	23.13	21.96	18.49
		1850.7	22.93	23.09	21.90	18.23	22.78	22.94	21.75	18.08
	1 RB low	1909.3	23.10	23.32	22.21	18.43	22.95	23.17	22.06	18.28
		1880.0	22.82	23.16	21.97	18.50	22.67	23.01	21.82	18.35
		1850.7	22.84	22.98	22.03	18.45	22.69	22.83	21.88	18.30
	50% RB mid	1909.3	23.16	21.98	20.90	18.53	23.01	21.83	20.75	18.38
		1880.0	23.18	21.86	20.86	18.83	23.03	21.71	20.71	18.68
		1850.7	22.81	21.93	20.88	18.54	22.66	21.78	20.73	18.39
	100% RB	1909.3	23.10	21.90	20.95	18.73	22.95	21.75	20.80	18.58
		1880.0	22.94	21.96	20.84	18.58	22.79	21.81	20.69	18.43
		1850.7	22.89	21.96	20.92	18.50	22.74	21.81	20.77	18.35
3MHz	1 RB high	1908.5	23.24	23.33	22.19	18.72	23.09	23.18	22.04	18.57
		1880.0	22.96	23.23	22.13	18.46	22.81	23.08	21.98	18.31
		1851.5	22.91	22.99	21.92	18.44	22.76	22.84	21.77	18.29
	1 RB low	1908.5	23.01	23.38	22.23	18.39	22.86	23.23	22.08	18.24
		1880.0	22.95	23.12	22.08	18.33	22.80	22.97	21.93	18.18
		1851.5	22.99	23.11	22.11	18.63	22.84	22.96	21.96	18.48
	50% RB mid	1908.5	23.11	22.00	21.01	18.73	22.96	21.85	20.86	18.58
		1880.0	23.16	21.96	20.79	18.55	23.01	21.81	20.64	18.40
		1851.5	22.82	22.01	20.76	18.32	22.67	21.86	20.61	18.17
	100% RB	1908.5	23.13	22.00	20.87	18.89	22.98	21.85	20.72	18.74
		1880.0	22.89	21.86	20.90	18.65	22.74	21.71	20.75	18.50
		1851.5	22.82	21.78	20.84	18.29	22.67	21.63	20.69	18.14
5MHz	1 RB high	1907.5	23.15	23.39	22.26	18.51	23.00	23.24	22.11	18.36
		1880.0	23.03	23.18	22.11	18.78	22.88	23.03	21.96	18.63
		1852.5	22.83	23.02	21.99	18.55	22.68	22.87	21.84	18.40
	1 RB low	1907.5	23.04	23.31	22.18	18.65	22.89	23.16	22.03	18.50
		1880.0	22.89	23.12	21.98	18.49	22.74	22.97	21.83	18.34
		1852.5	22.91	23.06	22.01	18.56	22.76	22.91	21.86	18.41
	50% RB mid	1907.5	23.09	22.04	20.99	18.59	22.94	21.89	20.84	18.44
		1880.0	23.14	21.91	20.85	18.51	22.99	21.76	20.70	18.36
		1852.5	22.86	21.92	20.85	18.60	22.71	21.77	20.70	18.45
	100% RB	1907.5	23.04	21.98	20.95	18.70	22.89	21.83	20.80	18.55
		1880.0	22.91	21.95	20.92	18.30	22.76	21.80	20.77	18.15
		1852.5	22.83	21.87	20.90	18.61	22.68	21.72	20.75	18.46
10MHz	1 RB high	1905.0	23.20	23.39	22.25	18.98	23.05	23.24	22.10	18.83
		1880.0	23.07	23.14	22.11	18.82	22.92	22.99	21.96	18.67



	1 RB low	1855.0	22.90	23.00	22.04	18.51	22.75	22.85	21.89	18.36	
		1905.0	22.99	23.31	22.13	18.38	22.84	23.16	21.98	18.23	
		1880.0	22.89	23.11	21.91	18.44	22.74	22.96	21.76	18.29	
		1855.0	22.84	23.10	21.98	18.35	22.69	22.95	21.83	18.20	
	50% RB mid	1905.0	23.06	22.07	20.99	18.52	22.91	21.92	20.84	18.37	
		1880.0	23.12	21.95	20.90	18.83	22.97	21.80	20.75	18.68	
		1855.0	22.85	21.86	20.86	18.23	22.70	21.71	20.71	18.08	
	100% RB	1905.0	22.98	21.95	21.03	18.59	22.83	21.80	20.88	18.44	
		1880.0	22.96	21.97	20.91	18.47	22.81	21.82	20.76	18.32	
		1855.0	22.84	21.88	20.83	18.26	22.69	21.73	20.68	18.11	
	15MHz	1 RB high	1902.5	23.20	23.38	22.28	18.81	23.05	23.23	22.13	18.66
			1880.0	23.00	23.11	22.09	18.30	22.85	22.96	21.94	18.15
1857.5			22.92	23.05	22.06	18.40	22.77	22.90	21.91	18.25	
1 RB low		1902.5	23.00	23.27	22.10	18.62	22.85	23.12	21.95	18.47	
		1880.0	22.91	23.10	21.98	18.51	22.76	22.95	21.83	18.36	
		1857.5	22.89	23.12	21.97	18.48	22.74	22.97	21.82	18.33	
50% RB mid		1902.5	23.07	21.99	21.02	18.45	22.92	21.84	20.87	18.30	
		1880.0	23.12	21.97	20.89	18.63	22.97	21.82	20.74	18.48	
		1857.5	22.87	21.87	20.82	18.44	22.72	21.72	20.67	18.29	
100% RB		1902.5	22.96	21.99	21.03	18.53	22.81	21.84	20.88	18.38	
		1880.0	22.94	21.97	20.92	18.24	22.79	21.82	20.77	18.09	
		1857.5	22.86	21.91	20.87	18.32	22.71	21.76	20.72	18.17	
20MHz	1 RB high	1900.0	23.23	23.44	22.34	18.53	23.08	23.29	22.19	18.38	
		1880.0	23.09	23.19	22.18	18.65	22.94	23.04	22.03	18.50	
		1860.0	22.93	23.07	22.09	18.22	22.78	22.92	21.94	18.07	
	1 RB low	1900.0	23.06	23.33	22.20	18.39	22.91	23.18	22.05	18.24	
		1880.0	22.93	23.14	22.01	18.61	22.78	22.99	21.86	18.46	
		1860.0	22.93	23.14	22.04	18.40	22.78	22.99	21.89	18.25	
	50% RB mid	1900.0	23.12	22.09	21.08	18.57	22.97	21.94	20.93	18.42	
		1880.0	23.16	21.98	20.93	18.59	23.01	21.83	20.78	18.44	
		1860.0	22.94	21.94	20.92	18.21	22.79	21.79	20.77	18.06	
	100% RB	1900.0	23.06	22.05	21.05	18.49	22.91	21.90	20.90	18.34	
		1880.0	22.97	21.98	20.99	18.55	22.82	21.83	20.84	18.40	
		1860.0	22.90	21.92	20.91	18.25	22.75	21.77	20.76	18.10	

**LTE Band 5-ERP**
**Limits:  $\leq 38.45\text{dBm}(7\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-2.32)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	24.34	23.22	22.35	19.74	19.87	18.75	17.88	17.88
		836.5	24.33	23.40	22.44	19.90	19.86	18.93	17.97	17.97
		824.7	24.32	23.40	22.40	19.98	19.85	18.93	17.93	17.93
	1 RB low	848.3	24.31	23.34	22.37	20.02	19.84	18.87	17.90	17.90
		836.5	24.26	23.40	22.43	19.73	19.79	18.93	17.96	17.96
		824.7	24.24	23.34	22.45	19.51	19.77	18.87	17.98	17.98
	50% RB mid	848.3	23.24	22.27	21.39	18.54	18.77	17.80	16.92	16.92
		836.5	23.44	22.33	21.39	18.93	18.97	17.86	16.92	16.92
		824.7	23.25	22.27	21.41	18.59	18.78	17.80	16.94	16.94
	100% RB	848.3	23.25	22.36	21.35	19.02	18.78	17.89	16.88	16.88
		836.5	23.25	22.29	21.35	18.73	18.78	17.82	16.88	16.88
		824.7	23.24	22.29	21.37	18.54	18.77	17.82	16.90	16.90
3MHz	1 RB high	847.5	24.31	23.26	22.29	19.97	19.84	18.79	17.82	17.82
		836.5	24.33	23.35	22.43	19.64	19.86	18.88	17.96	17.96
		825.5	24.29	23.39	22.39	19.69	19.82	18.92	17.92	17.92
	1 RB low	847.5	24.32	23.31	22.41	20.01	19.85	18.84	17.94	17.94
		836.5	24.26	23.43	22.45	19.73	19.79	18.96	17.98	17.98
		825.5	24.25	23.34	22.49	19.76	19.78	18.87	18.02	18.02
	50% RB mid	847.5	23.23	22.21	21.32	18.62	18.76	17.74	16.85	16.85
		836.5	23.40	22.26	21.39	18.82	18.93	17.79	16.92	16.92
		825.5	23.26	22.25	21.46	18.55	18.79	17.78	16.99	16.99
	100% RB	847.5	23.24	22.28	21.33	18.84	18.77	17.81	16.86	16.86
		836.5	23.34	22.26	21.34	18.83	18.87	17.79	16.87	16.87
		825.5	23.31	22.29	21.38	18.58	18.84	17.82	16.91	16.91
5MHz	1 RB high	846.5	24.29	23.29	22.27	19.93	19.82	18.82	17.80	17.80
		836.5	24.32	23.40	22.48	19.83	19.85	18.93	18.01	18.01
		826.5	24.30	23.44	22.37	19.76	19.83	18.97	17.90	17.90
	1 RB low	846.5	24.32	23.39	22.40	19.66	19.85	18.92	17.93	17.93
		836.5	24.28	23.45	22.41	20.06	19.81	18.98	17.94	17.94
		826.5	24.26	23.39	22.42	19.67	19.79	18.92	17.95	17.95
	50% RB mid	846.5	23.24	22.23	21.38	18.93	18.77	17.76	16.91	16.91
		836.5	23.38	22.34	21.33	18.66	18.91	17.87	16.86	16.86
		826.5	23.26	22.25	21.45	18.80	18.79	17.78	16.98	16.98
	100% RB	846.5	23.22	22.32	21.31	18.99	18.75	17.85	16.84	16.84
		836.5	23.31	22.29	21.40	18.59	18.84	17.82	16.93	16.93
		826.5	23.30	22.27	21.37	18.70	18.83	17.80	16.90	16.90
10MHz	1 RB high	844.0	24.35	23.31	22.37	19.66	19.88	18.84	17.90	17.90
		836.5	24.36	23.45	22.50	20.01	19.89	18.98	18.03	18.03
		829.0	24.35	23.47	22.46	20.06	19.88	19.00	17.99	17.99

	1 RB low	844.0	24.36	23.41	22.45	20.14	19.89	18.94	17.98	17.98
		836.5	24.36	23.46	22.47	19.89	19.89	18.99	18.00	18.00
		829.0	24.34	23.40	22.50	19.91	19.87	18.93	18.03	18.03
	50% RB mid	844.0	23.30	22.30	21.41	18.61	18.83	17.83	16.94	16.94
		836.5	23.47	22.36	21.41	18.86	19.00	17.89	16.94	16.94
		829.0	23.32	22.35	21.49	18.62	18.85	17.88	17.02	17.02
	100% RB	844.0	23.30	22.37	21.40	18.60	18.83	17.90	16.93	16.93
		836.5	23.35	22.35	21.42	18.92	18.88	17.88	16.95	16.95
		829.0	23.33	22.34	21.45	18.67	18.86	17.87	16.98	16.98

**LTE Band 7-EIRP**
**Limits:  $\leq 33\text{dBm}(2\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				EIRP(dBm)(Gt-Lc =-0.35)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2567.5	22.82	22.05	21.03	18.10	22.47	21.70	20.68	17.75
		2535.0	22.33	21.77	20.64	17.76	21.98	21.42	20.29	17.41
		2502.5	21.94	21.42	20.30	17.34	21.59	21.07	19.95	16.99
	1 RB low	2567.5	22.61	21.92	20.69	17.99	22.26	21.57	20.34	17.64
		2535.0	22.03	21.50	20.42	17.42	21.68	21.15	20.07	17.07
		2502.5	21.83	20.94	19.88	17.21	21.48	20.59	19.53	16.86
	50% RB mid	2567.5	21.69	20.62	19.59	17.09	21.34	20.27	19.24	16.74
		2535.0	21.83	20.35	19.32	17.23	21.48	20.00	18.97	16.88
		2502.5	20.97	20.00	19.00	16.33	20.62	19.65	18.65	15.98
	100% RB	2567.5	21.62	20.60	19.57	17.05	21.27	20.25	19.22	16.70
		2535.0	21.46	20.43	19.38	16.75	21.11	20.08	19.03	16.40
		2502.5	20.97	19.93	18.94	16.36	20.62	19.58	18.59	16.01
10MHz	1 RB high	2565.0	22.86	22.06	21.05	18.19	22.51	21.71	20.70	17.84
		2535.0	22.32	21.76	20.58	17.73	21.97	21.41	20.23	17.38
		2505.0	21.98	21.42	20.33	17.37	21.63	21.07	19.98	17.02
	1 RB low	2565.0	22.55	21.84	20.70	17.89	22.20	21.49	20.35	17.54
		2535.0	22.03	21.50	20.38	17.31	21.68	21.15	20.03	16.96
		2505.0	21.81	20.94	19.86	17.08	21.46	20.59	19.51	16.73
	50% RB mid	2565.0	21.69	20.62	19.65	17.05	21.34	20.27	19.30	16.70
		2535.0	21.81	20.37	19.29	17.17	21.46	20.02	18.94	16.82
		2505.0	21.01	20.00	19.00	16.34	20.66	19.65	18.65	15.99
	100% RB	2565.0	21.69	20.68	19.54	17.04	21.34	20.33	19.19	16.69
		2535.0	21.41	20.34	19.35	16.76	21.06	19.99	19.00	16.41
		2505.0	20.92	19.90	18.91	16.28	20.57	19.55	18.56	15.93
15MHz	1 RB high	2562.5	22.77	22.06	21.11	18.20	22.42	21.71	20.76	17.85
		2535.0	22.28	21.75	20.63	17.71	21.93	21.40	20.28	17.36
		2507.5	21.94	21.49	20.25	17.25	21.59	21.14	19.90	16.90
	1 RB low	2562.5	22.61	21.92	20.76	18.01	22.26	21.57	20.41	17.66
		2535.0	22.06	21.41	20.37	17.46	21.71	21.06	20.02	17.11
		2507.5	21.86	20.96	19.93	17.18	21.51	20.61	19.58	16.83
	50% RB mid	2562.5	21.72	20.64	19.61	17.01	21.37	20.29	19.26	16.66
		2535.0	21.78	20.40	19.31	17.09	21.43	20.05	18.96	16.74
		2507.5	21.00	19.97	18.98	16.33	20.65	19.62	18.63	15.98
	100% RB	2562.5	21.62	20.67	19.58	17.05	21.27	20.32	19.23	16.70
		2535.0	21.43	20.38	19.33	16.70	21.08	20.03	18.98	16.35
		2507.5	20.96	19.88	18.89	16.38	20.61	19.53	18.54	16.03
20MHz	1 RB high	2560.0	22.87	22.14	21.12	18.19	22.52	21.79	20.77	17.84
		2535.0	22.38	21.78	20.67	17.79	22.03	21.43	20.32	17.44
		2510.0	22.01	21.51	20.34	17.33	21.66	21.16	19.99	16.98

	1 RB low	2560.0	22.64	21.94	20.77	18.05	22.29	21.59	20.42	17.70
		2535.0	22.09	21.51	20.47	17.54	21.74	21.16	20.12	17.19
		2510.0	21.91	21.03	19.96	17.30	21.56	20.68	19.61	16.95
	50% RB mid	2560.0	21.76	20.69	19.67	17.21	21.41	20.34	19.32	16.86
		2535.0	21.86	20.42	19.38	17.17	21.51	20.07	19.03	16.82
		2510.0	21.06	20.07	19.02	16.46	20.71	19.72	18.67	16.11
	100% RB	2560.0	21.72	20.69	19.64	17.15	21.37	20.34	19.29	16.80
		2535.0	21.47	20.44	19.40	16.74	21.12	20.09	19.05	16.39
		2510.0	21.02	19.97	18.95	16.44	20.67	19.62	18.60	16.09

**LTE Band 12-ERP**
**Limits:  $\leq 34.77\text{dBm}(3\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-1.72)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	715.3	24.35	23.33	22.36	19.75	20.48	19.46	18.49	18.49
		707.5	24.41	23.34	22.28	19.79	20.54	19.47	18.41	18.41
		699.7	24.42	23.39	22.35	19.69	20.55	19.52	18.48	18.48
	1 RB low	715.3	24.40	23.28	22.31	19.69	20.53	19.41	18.44	18.44
		707.5	24.34	23.40	22.33	19.72	20.47	19.53	18.46	18.46
		699.7	24.35	23.31	22.36	19.67	20.48	19.44	18.49	18.49
	50% RB mid	715.3	23.44	22.37	21.39	18.80	19.57	18.50	17.52	17.52
		707.5	23.39	22.46	21.41	18.82	19.52	18.59	17.54	17.54
		699.7	23.32	22.39	21.46	18.75	19.45	18.52	17.59	17.59
	100% RB	715.3	23.39	22.39	21.48	18.81	19.52	18.52	17.61	17.61
		707.5	23.44	22.41	21.42	18.80	19.57	18.54	17.55	17.55
		699.7	23.43	22.39	21.37	18.88	19.56	18.52	17.50	17.50
3MHz	1 RB high	714.5	24.37	23.31	22.36	19.71	20.50	19.44	18.49	18.49
		707.5	24.41	23.36	22.34	19.80	20.54	19.49	18.47	18.47
		700.5	24.41	23.36	22.43	19.72	20.54	19.49	18.56	18.56
	1 RB low	714.5	24.39	23.32	22.24	19.84	20.52	19.45	18.37	18.37
		707.5	24.36	23.44	22.27	19.67	20.49	19.57	18.40	18.40
		700.5	24.39	23.34	22.35	19.74	20.52	19.47	18.48	18.48
	50% RB mid	714.5	23.45	22.43	21.42	18.84	19.58	18.56	17.55	17.55
		707.5	23.43	22.48	21.49	18.82	19.56	18.61	17.62	17.62
		700.5	23.37	22.31	21.48	18.65	19.50	18.44	17.61	17.61
	100% RB	714.5	23.35	22.37	21.43	18.78	19.48	18.50	17.56	17.56
		707.5	23.44	22.43	21.42	18.84	19.57	18.56	17.55	17.55
		700.5	23.37	22.40	21.38	18.78	19.50	18.53	17.51	17.51
5MHz	1 RB high	713.5	24.30	23.39	22.31	19.70	20.43	19.52	18.44	18.44
		707.5	24.40	23.34	22.28	19.67	20.53	19.47	18.41	18.41
		701.5	24.38	23.36	22.41	19.76	20.51	19.49	18.54	18.54
	1 RB low	713.5	24.34	23.28	22.32	19.73	20.47	19.41	18.45	18.45
		707.5	24.38	23.42	22.36	19.69	20.51	19.55	18.49	18.49
		701.5	24.34	23.34	22.35	19.75	20.47	19.47	18.48	18.48
	50% RB mid	713.5	23.42	22.39	21.39	18.71	19.55	18.52	17.52	17.52
		707.5	23.47	22.47	21.47	18.84	19.60	18.60	17.60	17.60
		701.5	23.35	22.40	21.46	18.63	19.48	18.53	17.59	17.59
	100% RB	713.5	23.37	22.36	21.44	18.64	19.50	18.49	17.57	17.57
		707.5	23.43	22.42	21.45	18.71	19.56	18.55	17.58	17.58
		701.5	23.39	22.35	21.40	18.82	19.52	18.48	17.53	17.53
10MHz	1 RB high	711.0	24.39	23.41	22.41	19.77	20.52	19.54	18.54	18.54
		707.5	24.42	23.42	22.37	19.76	20.55	19.55	18.50	18.50
		704.0	24.44	23.45	22.45	19.77	20.57	19.58	18.58	18.58



	1 RB low	711.0	24.43	23.35	22.34	19.86	20.56	19.48	18.47	18.47
		707.5	24.42	23.47	22.37	19.86	20.55	19.60	18.50	18.50
		704.0	24.41	23.41	22.39	19.69	20.54	19.54	18.52	18.52
	50% RB mid	711.0	23.48	22.45	21.45	18.75	19.61	18.58	17.58	17.58
		707.5	23.49	22.50	21.50	18.78	19.62	18.63	17.63	17.63
		704.0	23.42	22.41	21.49	18.77	19.55	18.54	17.62	17.62
	100% RB	711.0	23.45	22.41	21.49	18.86	19.58	18.54	17.62	17.62
		707.5	23.45	22.50	21.47	18.84	19.58	18.63	17.60	17.60
		704.0	23.46	22.43	21.43	18.79	19.59	18.56	17.56	17.56

**LTE Band 13-ERP**
**Limits:  $\leq 34.77\text{dBm}(3\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-1.32)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	784.5	23.96	23.26	22.12	19.32	20.49	19.79	18.65	18.65
		782.0	24.10	23.27	22.27	19.49	20.63	19.80	18.80	18.80
		779.5	24.02	23.22	22.23	19.43	20.55	19.75	18.76	18.76
	1 RB low	784.5	22.97	22.02	20.99	18.26	19.50	18.55	17.52	17.52
		782.0	23.88	23.27	22.19	19.28	20.41	19.80	18.72	18.72
		779.5	24.06	23.33	22.28	19.39	20.59	19.86	18.81	18.81
	50% RB mid	784.5	22.98	21.99	20.96	18.39	19.51	18.52	17.49	17.49
		782.0	22.96	22.01	21.04	18.40	19.49	18.54	17.57	17.57
		779.5	22.89	22.26	21.15	18.26	19.42	18.79	17.68	17.68
	100% RB	784.5	23.05	22.01	21.02	18.32	19.58	18.54	17.55	17.55
		782.0	22.97	21.99	20.99	18.31	19.50	18.52	17.52	17.52
		779.5	22.96	22.03	21.05	18.36	19.49	18.56	17.58	17.58
10MHz	1 RB high	782.0	23.98	23.35	22.21	19.38	20.51	19.88	18.74	18.74
	1 RB low	782.0	24.07	23.25	22.26	19.42	20.60	19.78	18.79	18.79
	50% RB mid	782.0	23.07	22.09	21.11	18.42	19.60	18.62	17.64	17.64
	100% RB	782.0	23.06	22.08	21.07	18.49	19.59	18.61	17.60	17.60



**LTE Band 25-EIRP**
**Limits:  $\leq 33\text{dBm}(2\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				EIRP(dBm)(Gt-Lc =0.17)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1914.3	23.11	23.39	22.34	18.47	23.28	23.56	22.51	18.64
		1882.5	22.89	23.16	22.08	18.31	23.06	23.33	22.25	18.48
		1850.7	22.88	23.07	21.98	18.20	23.05	23.24	22.15	18.37
	1 RB low	1914.3	22.88	23.23	22.06	18.18	23.05	23.40	22.23	18.35
		1882.5	22.85	23.07	22.11	18.23	23.02	23.24	22.28	18.40
		1850.7	22.96	23.04	22.04	18.24	23.13	23.21	22.21	18.41
	50% RB mid	1914.3	23.04	22.05	20.97	18.38	23.21	22.22	21.14	18.55
		1882.5	23.19	21.94	20.88	18.61	23.36	22.11	21.05	18.78
		1850.7	22.87	21.83	20.85	18.22	23.04	22.00	21.02	18.39
	100% RB	1914.3	23.04	22.01	21.06	18.47	23.21	22.18	21.23	18.64
		1882.5	22.95	21.96	20.96	18.40	23.12	22.13	21.13	18.57
		1850.7	22.85	21.83	20.86	18.18	23.02	22.00	21.03	18.35
3MHz	1 RB high	1913.5	23.09	23.38	22.37	18.40	23.26	23.55	22.54	18.57
		1882.5	22.94	23.14	22.09	18.27	23.11	23.31	22.26	18.44
		1851.5	22.83	23.15	21.96	18.13	23.00	23.32	22.13	18.30
	1 RB low	1913.5	22.88	23.23	22.08	18.23	23.05	23.40	22.25	18.40
		1882.5	22.87	23.04	22.13	18.27	23.04	23.21	22.30	18.44
		1851.5	22.90	23.01	22.01	18.27	23.07	23.18	22.18	18.44
	50% RB mid	1913.5	23.06	22.07	20.96	18.46	23.23	22.24	21.13	18.63
		1882.5	23.15	21.89	20.88	18.57	23.32	22.06	21.05	18.74
		1851.5	22.84	21.81	20.79	18.18	23.01	21.98	20.96	18.35
	100% RB	1913.5	22.96	22.02	21.01	18.39	23.13	22.19	21.18	18.56
		1882.5	22.94	21.92	20.95	18.29	23.11	22.09	21.12	18.46
		1851.5	22.84	21.79	20.78	18.20	23.01	21.96	20.95	18.37
5MHz	1 RB high	1912.5	23.13	23.42	22.40	18.46	23.30	23.59	22.57	18.63
		1882.5	22.89	23.23	22.11	18.28	23.06	23.40	22.28	18.45
		1852.5	22.84	23.15	21.97	18.16	23.01	23.32	22.14	18.33
	1 RB low	1912.5	22.88	23.29	22.06	18.28	23.05	23.46	22.23	18.45
		1882.5	22.85	23.01	22.04	18.26	23.02	23.18	22.21	18.43
		1852.5	22.90	23.07	21.99	18.32	23.07	23.24	22.16	18.49
	50% RB mid	1912.5	23.02	22.03	21.01	18.46	23.19	22.20	21.18	18.63
		1882.5	23.20	21.98	20.96	18.51	23.37	22.15	21.13	18.68
		1852.5	22.84	21.83	20.83	18.27	23.01	22.00	21.00	18.44
	100% RB	1912.5	23.01	21.99	20.98	18.41	23.18	22.16	21.15	18.58
		1882.5	22.86	21.90	20.91	18.24	23.03	22.07	21.08	18.41
		1852.5	22.84	21.84	20.82	18.26	23.01	22.01	20.99	18.43
10MHz	1 RB high	1910.0	23.07	23.42	22.36	18.42	23.24	23.59	22.53	18.59
		1882.5	22.88	23.15	22.09	18.25	23.05	23.32	22.26	18.42
		1855.0	22.90	23.15	22.02	18.33	23.07	23.32	22.19	18.50

	1 RB low	1910.0	22.88	23.26	22.04	18.25	23.05	23.43	22.21	18.42
		1882.5	22.88	23.04	22.11	18.25	23.05	23.21	22.28	18.42
		1855.0	22.96	23.09	21.95	18.39	23.13	23.26	22.12	18.56
	50% RB mid	1910.0	23.01	22.08	21.05	18.32	23.18	22.25	21.22	18.49
		1882.5	23.14	21.89	20.88	18.42	23.31	22.06	21.05	18.59
		1855.0	22.90	21.89	20.86	18.28	23.07	22.06	21.03	18.45
	100% RB	1910.0	23.02	22.06	21.01	18.31	23.19	22.23	21.18	18.48
		1882.5	22.93	21.91	20.96	18.31	23.10	22.08	21.13	18.48
		1855.0	22.82	21.83	20.82	18.16	22.99	22.00	20.99	18.33
15MHz	1 RB high	1907.5	23.12	23.41	22.37	18.46	23.29	23.58	22.54	18.63
		1882.5	22.96	23.15	22.17	18.37	23.13	23.32	22.34	18.54
		1857.5	22.85	23.10	21.98	18.22	23.02	23.27	22.15	18.39
	1 RB low	1907.5	22.88	23.29	22.08	18.18	23.05	23.46	22.25	18.35
		1882.5	22.85	23.03	22.05	18.13	23.02	23.20	22.22	18.30
		1857.5	22.93	23.09	22.01	18.32	23.10	23.26	22.18	18.49
	50% RB mid	1907.5	23.03	22.08	20.99	18.30	23.20	22.25	21.16	18.47
		1882.5	23.12	21.91	20.93	18.51	23.29	22.08	21.10	18.68
		1857.5	22.84	21.89	20.81	18.21	23.01	22.06	20.98	18.38
	100% RB	1907.5	23.01	22.02	21.04	18.42	23.18	22.19	21.21	18.59
		1882.5	22.88	21.94	20.93	18.16	23.05	22.11	21.10	18.33
		1857.5	22.80	21.79	20.79	18.07	22.97	21.96	20.96	18.24
20MHz	1 RB high	1905.0	23.16	23.46	22.42	18.61	23.33	23.63	22.59	18.78
		1882.5	22.98	23.24	22.18	18.37	23.15	23.41	22.35	18.54
		1860.0	22.91	23.17	22.06	18.19	23.08	23.34	22.23	18.36
	1 RB low	1905.0	22.96	23.32	22.12	18.32	23.13	23.49	22.29	18.49
		1882.5	22.90	23.09	22.14	18.19	23.07	23.26	22.31	18.36
		1860.0	22.99	23.11	22.05	18.34	23.16	23.28	22.22	18.51
	50% RB mid	1905.0	23.07	22.12	21.06	18.37	23.24	22.29	21.23	18.54
		1882.5	23.21	21.99	20.97	18.63	23.38	22.16	21.14	18.80
		1860.0	22.93	21.91	20.87	18.38	23.10	22.08	21.04	18.55
	100% RB	1905.0	23.06	22.08	21.07	18.47	23.23	22.25	21.24	18.64
		1882.5	22.96	21.97	21.01	18.36	23.13	22.14	21.18	18.53
		1860.0	22.87	21.88	20.88	18.14	23.04	22.05	21.05	18.31

**LTE Band 26(814MHz~824MHz)-ERP**
**Limits: ≤50dBm(100W)**

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-2.44)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	823.3	23.98	23.23	21.85	19.28	19.39	18.64	17.26	17.26
		819.0	24.02	23.18	21.91	19.21	19.43	18.59	17.32	17.32
		814.7	24.04	23.13	22.58	19.31	19.45	18.54	17.99	17.99
	1 RB low	823.3	23.98	23.24	21.88	19.24	19.39	18.65	17.29	17.29
		819.0	24.03	23.06	21.72	19.20	19.44	18.47	17.13	17.13
		814.7	24.11	23.19	22.46	19.36	19.52	18.60	17.87	17.87
	50% RB mid	823.3	24.09	23.15	21.95	19.31	19.50	18.56	17.36	17.36
		819.0	24.17	23.24	21.95	19.22	19.58	18.65	17.36	17.36
		814.7	24.34	23.32	22.10	19.28	19.75	18.73	17.51	17.51
	100% RB	823.3	23.02	22.24	21.26	19.29	18.43	17.65	16.67	16.67
		819.0	23.09	22.33	21.19	19.32	18.50	17.74	16.60	16.60
		814.7	23.18	22.37	21.26	19.30	18.59	17.78	16.67	16.67
3MHz	1 RB high	822.5	23.95	23.03	21.78	19.26	19.36	18.44	17.19	17.19
		819.0	23.98	23.16	21.84	19.19	19.39	18.57	17.25	17.25
		815.5	24.07	23.25	21.95	19.19	19.48	18.66	17.36	17.36
	1 RB low	822.5	24.00	23.19	21.88	19.12	19.41	18.60	17.29	17.29
		819.0	24.03	23.21	21.68	19.19	19.44	18.62	17.09	17.09
		815.5	24.17	23.32	21.98	19.25	19.58	18.73	17.39	17.39
	50% RB mid	822.5	23.00	22.12	21.34	19.33	18.41	17.53	16.75	16.75
		819.0	23.03	22.16	21.23	19.25	18.44	17.57	16.64	16.64
		815.5	23.09	22.21	21.16	19.24	18.50	17.62	16.57	16.57
	100% RB	822.5	23.09	22.06	21.30	19.29	18.50	17.47	16.71	16.71
		819.0	23.13	22.08	21.27	19.24	18.54	17.49	16.68	16.68
		815.5	23.17	22.17	21.26	19.25	18.58	17.58	16.67	16.67
5MHz	1 RB high	821.5	24.14	23.19	22.28	19.41	19.55	18.60	17.69	17.69
		819.0	24.19	23.25	22.52	19.41	19.60	18.66	17.93	17.93
		816.5	24.18	23.26	22.53	19.40	19.59	18.67	17.94	17.94
	1 RB low	821.5	24.10	23.20	22.39	19.35	19.51	18.61	17.80	17.80
		819.0	24.26	23.31	22.51	19.35	19.67	18.72	17.92	17.92
		816.5	24.35	23.42	22.49	19.47	19.76	18.83	17.90	17.90
	50% RB mid	821.5	23.10	22.24	21.46	19.38	18.51	17.65	16.87	16.87
		819.0	23.11	22.25	21.46	19.38	18.52	17.66	16.87	16.87
		816.5	23.16	22.28	21.35	19.35	18.57	17.69	16.76	16.76
	100% RB	821.5	23.18	22.18	21.41	19.37	18.59	17.59	16.82	16.82
		819.0	23.21	22.18	21.37	19.35	18.62	17.59	16.78	16.78
		816.5	23.28	22.24	21.38	19.34	18.69	17.65	16.79	16.79
10MHz	1 RB high	819.0	24.14	23.28	22.06	19.49	19.55	18.69	17.47	17.47
	1 RB low	819.0	24.26	23.40	21.90	19.40	19.67	18.81	17.31	17.31
	50% RB	819.0	23.21	22.31	21.42	19.39	18.62	17.72	16.83	16.83



	mid									
	100% RB	819.0	23.25	22.28	21.32	19.29	18.66	17.69	16.73	16.73

**LTE Band 26(824MHz-849MHz)-ERP**
**Limits:  $\leq 38.45\text{dBm}(7\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-2.44)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	23.82	22.90	21.66	19.14	19.23	18.31	17.07	14.55
		836.5	24.05	23.20	21.94	19.20	19.46	18.61	17.35	14.61
		824.7	23.83	23.02	22.38	19.28	19.24	18.43	17.79	14.69
	1 RB low	848.3	23.83	22.91	21.76	19.10	19.24	18.32	17.17	14.51
		836.5	24.05	23.18	21.83	19.18	19.46	18.59	17.24	14.59
		824.7	23.84	22.91	22.19	19.28	19.25	18.32	17.60	14.69
	50% RB mid	848.3	24.03	23.10	21.82	19.21	19.44	18.51	17.23	14.62
		836.5	24.17	23.22	22.03	19.17	19.58	18.63	17.44	14.58
		824.7	24.13	23.17	21.90	19.26	19.54	18.58	17.31	14.67
	100% RB	848.3	22.95	22.18	21.31	19.25	18.36	17.59	16.72	14.66
		836.5	23.10	22.30	21.16	19.24	18.51	17.71	16.57	14.65
		824.7	22.98	22.18	21.21	19.29	18.39	17.59	16.62	14.70
3MHz	1 RB high	847.5	23.81	23.02	21.57	19.09	19.22	18.43	16.98	14.50
		836.5	24.02	23.17	21.94	19.18	19.43	18.58	17.35	14.59
		825.5	23.95	23.12	21.89	19.26	19.36	18.53	17.30	14.67
	1 RB low	847.5	23.87	23.07	21.71	19.03	19.28	18.48	17.12	14.44
		836.5	24.07	23.21	21.74	19.15	19.48	18.62	17.15	14.56
		825.5	23.95	23.13	21.70	19.17	19.36	18.54	17.11	14.58
	50% RB mid	847.5	22.86	22.05	21.17	19.16	18.27	17.46	16.58	14.57
		836.5	23.07	22.15	21.25	19.25	18.48	17.56	16.66	14.66
		825.5	23.01	22.10	21.18	19.30	18.42	17.51	16.59	14.71
	100% RB	847.5	22.98	21.99	21.17	19.16	18.39	17.40	16.58	14.57
		836.5	23.09	22.07	21.23	19.22	18.50	17.48	16.64	14.63
		825.5	23.04	22.00	21.29	19.26	18.45	17.41	16.70	14.67
5MHz	1 RB high	846.5	24.05	22.98	22.09	19.32	19.46	18.39	17.50	14.73
		836.5	24.23	23.28	22.33	19.35	19.64	18.69	17.74	14.76
		826.5	24.18	23.28	22.44	19.48	19.59	18.69	17.85	14.89
	1 RB low	846.5	24.11	23.08	22.30	19.29	19.52	18.49	17.71	14.70
		836.5	24.27	23.34	22.41	19.39	19.68	18.75	17.82	14.80
		826.5	24.18	23.20	22.38	19.37	19.59	18.61	17.79	14.78
	50% RB mid	846.5	22.96	22.11	21.33	19.24	18.37	17.52	16.74	14.65
		836.5	23.21	22.23	21.42	19.36	18.62	17.64	16.83	14.77
		826.5	23.11	22.19	21.40	19.42	18.52	17.60	16.81	14.83
	100% RB	846.5	23.09	22.03	21.28	19.24	18.50	17.44	16.69	14.65
		836.5	23.22	22.16	21.33	19.30	18.63	17.57	16.74	14.71
		826.5	23.16	22.11	21.39	19.38	18.57	17.52	16.80	14.79
10MHz	1 RB high	844.0	23.99	23.20	21.79	19.34	19.40	18.61	17.20	14.75
		836.5	24.15	23.26	22.03	19.31	19.56	18.67	17.44	14.72
		829.0	24.29	23.30	22.19	19.47	19.70	18.71	17.60	14.88

	1 RB low	844.0	24.17	23.22	21.94	19.33	19.58	18.63	17.35	14.74
		836.5	24.22	23.30	22.03	19.45	19.63	18.71	17.44	14.86
		829.0	24.13	23.21	21.99	19.40	19.54	18.62	17.40	14.81
	50% RB mid	844.0	23.08	22.21	21.21	19.25	18.49	17.62	16.62	14.66
		836.5	23.23	22.30	21.36	19.36	18.64	17.71	16.77	14.77
		829.0	23.19	22.26	21.44	19.42	18.60	17.67	16.85	14.83
	100% RB	844.0	23.14	22.16	21.18	19.15	18.55	17.57	16.59	14.56
		836.5	23.23	22.25	21.29	19.28	18.64	17.66	16.70	14.69
		829.0	23.20	22.22	21.36	19.34	18.61	17.63	16.77	14.75
15MHz	1 RB high	841.5	24.03	23.35	22.68	19.60	19.44	18.76	18.09	15.01
		836.5	24.23	23.54	22.67	19.55	19.64	18.95	18.08	14.96
		831.5	24.21	23.59	22.64	19.62	19.62	19.00	18.05	15.03
	1 RB low	841.5	24.27	23.62	22.47	19.69	19.68	19.03	17.88	15.10
		836.5	24.26	23.56	22.56	19.72	19.67	18.97	17.97	15.13
		831.5	24.09	23.47	22.60	19.66	19.50	18.88	18.01	15.07
	50% RB mid	841.5	23.13	22.17	21.19	19.23	18.54	17.58	16.60	14.64
		836.5	23.23	22.16	21.24	19.31	18.64	17.57	16.65	14.72
		831.5	23.27	22.16	21.34	19.35	18.68	17.57	16.75	14.76
	100% RB	841.5	23.17	22.23	21.27	19.29	18.58	17.64	16.68	14.70
		836.5	23.22	22.26	21.35	19.34	18.63	17.67	16.76	14.75
		831.5	23.19	22.22	21.36	19.37	18.60	17.63	16.77	14.78

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				EIRP(dBm)(Gt-Lc =-1.21)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2687.5	26.69	25.76	24.49	21.90	25.48	24.55	23.28	20.69
		2593.0	26.24	25.73	24.62	21.41	25.03	24.52	23.41	20.20
		2498.5	26.76	25.90	24.67	22.00	25.55	24.69	23.46	20.79
	1 RB low	2687.5	26.79	25.37	24.58	22.24	25.58	24.16	23.37	21.03
		2593.0	26.57	25.71	24.37	21.74	25.36	24.50	23.16	20.53
		2498.5	26.80	25.91	24.70	22.15	25.59	24.70	23.49	20.94
	50% RB mid	2687.5	25.90	24.76	23.87	21.11	24.69	23.55	22.66	19.90
		2593.0	25.66	24.31	23.50	21.04	24.45	23.10	22.29	19.83
		2498.5	25.71	24.73	23.70	21.11	24.50	23.52	22.49	19.90
	100% RB	2687.5	25.97	24.72	23.97	21.18	24.76	23.51	22.76	19.97
		2593.0	25.61	24.55	23.35	20.90	24.40	23.34	22.14	19.69
		2498.5	25.66	24.77	23.70	21.00	24.45	23.56	22.49	19.79
10MHz	1 RB high	2685.0	26.62	25.77	24.50	21.95	25.41	24.56	23.29	20.74
		2593.0	26.31	25.76	24.68	21.74	25.10	24.55	23.47	20.53
		2501.0	26.77	25.93	24.64	22.21	25.56	24.72	23.43	21.00
	1 RB low	2685.0	26.73	25.39	24.66	22.15	25.52	24.18	23.45	20.94
		2593.0	26.53	25.70	24.42	21.77	25.32	24.49	23.21	20.56
		2501.0	26.79	25.86	24.63	22.02	25.58	24.65	23.42	20.81
	50% RB mid	2685.0	25.97	24.75	23.93	21.29	24.76	23.54	22.72	20.08
		2593.0	25.62	24.32	23.42	21.06	24.41	23.11	22.21	19.85
		2501.0	25.69	24.68	23.67	20.89	24.48	23.47	22.46	19.68
	100% RB	2685.0	25.97	24.77	23.92	21.21	24.76	23.56	22.71	20.00
		2593.0	25.62	24.51	23.42	21.07	24.41	23.30	22.21	19.86
		2501.0	25.67	24.77	23.74	21.04	24.46	23.56	22.53	19.83
15MHz	1 RB high	2682.5	26.70	25.73	24.50	22.07	25.49	24.52	23.29	20.86
		2593.0	26.29	25.75	24.65	21.53	25.08	24.54	23.44	20.32
		2503.5	26.82	25.95	24.67	22.14	25.61	24.74	23.46	20.93
	1 RB low	2682.5	26.76	25.33	24.60	22.19	25.55	24.12	23.39	20.98
		2593.0	26.51	25.72	24.36	21.82	25.30	24.51	23.15	20.61
		2503.5	26.81	25.86	24.70	21.99	25.60	24.65	23.49	20.78
	50% RB mid	2682.5	25.90	24.75	23.87	21.25	24.69	23.54	22.66	20.04
		2593.0	25.66	24.28	23.48	20.91	24.45	23.07	22.27	19.70
		2503.5	25.69	24.65	23.69	20.92	24.48	23.44	22.48	19.71
	100% RB	2682.5	25.92	24.80	23.92	21.08	24.71	23.59	22.71	19.87
		2593.0	25.59	24.50	23.38	20.99	24.38	23.29	22.17	19.78
		2503.5	25.66	24.69	23.68	21.10	24.45	23.48	22.47	19.89
20MHz	1 RB high	2680.0	26.72	25.80	24.56	21.95	25.51	24.59	23.35	20.74
		2593.0	26.33	25.83	24.69	21.61	25.12	24.62	23.48	20.40
		2506.0	26.85	25.99	24.72	22.14	25.64	24.78	23.51	20.93

	1 RB low	2680.0	26.81	25.43	24.68	22.14	25.60	24.22	23.47	20.93
		2593.0	26.59	25.78	24.45	21.85	25.38	24.57	23.24	20.64
		2506.0	26.83	25.96	24.72	22.10	25.62	24.75	23.51	20.89
	50% RB mid	2680.0	25.99	24.81	23.97	21.40	24.78	23.60	22.76	20.19
		2593.0	25.67	24.36	23.51	20.90	24.46	23.15	22.30	19.69
		2506.0	25.76	24.75	23.74	20.94	24.55	23.54	22.53	19.73
	100% RB	2680.0	26.00	24.82	23.98	21.27	24.79	23.61	22.77	20.06
		2593.0	25.68	24.57	23.45	20.94	24.47	23.36	22.24	19.73
		2506.0	25.75	24.78	23.77	21.10	24.54	23.57	22.56	19.89



**LTE Band 66-EIRP**
**Limits:  $\leq 30\text{dBm}(1\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				EIRP(dBm)(Gt-Lc =-0.27)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1779.3	22.86	23.05	22.11	18.23	22.59	22.78	21.84	17.96
		1745.0	22.77	22.96	21.95	18.18	22.50	22.69	21.68	17.91
		1710.7	22.88	23.04	22.07	18.29	22.61	22.77	21.80	18.02
	1 RB low	1779.3	22.93	23.14	22.09	18.37	22.66	22.87	21.82	18.10
		1745.0	22.86	23.13	21.98	18.20	22.59	22.86	21.71	17.93
		1710.7	23.06	23.39	22.18	18.36	22.79	23.12	21.91	18.09
	50% RB mid	1779.3	23.01	22.01	20.97	18.40	22.74	21.74	20.70	18.13
		1745.0	23.20	21.80	20.78	18.52	22.93	21.53	20.51	18.25
		1710.7	23.02	21.99	20.95	18.19	22.75	21.72	20.68	17.92
	100% RB	1779.3	23.01	21.97	21.04	18.42	22.74	21.70	20.77	18.15
		1745.0	22.78	21.82	20.88	18.22	22.51	21.55	20.61	17.95
		1710.7	23.01	22.03	20.97	18.29	22.74	21.76	20.70	18.02
3MHz	1 RB high	1778.5	22.86	22.96	22.12	18.22	22.59	22.69	21.85	17.95
		1745.0	22.84	22.89	21.95	18.27	22.57	22.62	21.68	18.00
		1711.5	22.85	23.11	22.00	18.03	22.58	22.84	21.73	17.76
	1 RB low	1778.5	22.90	23.13	22.11	18.30	22.63	22.86	21.84	18.03
		1745.0	22.90	23.13	21.99	18.21	22.63	22.86	21.72	17.94
		1711.5	23.07	23.39	22.18	18.37	22.80	23.12	21.91	18.10
	50% RB mid	1778.5	22.96	22.00	20.92	18.15	22.69	21.73	20.65	17.88
		1745.0	23.18	21.78	20.78	18.47	22.91	21.51	20.51	18.20
		1711.5	23.02	21.95	20.96	18.19	22.75	21.68	20.69	17.92
	100% RB	1778.5	23.05	22.04	21.04	18.39	22.78	21.77	20.77	18.12
		1745.0	22.83	21.78	20.85	18.16	22.56	21.51	20.58	17.89
		1711.5	22.97	21.98	21.04	18.35	22.70	21.71	20.77	18.08
5MHz	1 RB high	1777.5	22.90	23.00	22.18	18.27	22.63	22.73	21.91	18.00
		1745.0	22.75	22.97	22.00	18.13	22.48	22.70	21.73	17.86
		1712.5	22.85	23.05	21.99	18.17	22.58	22.78	21.72	17.90
	1 RB low	1777.5	22.92	23.20	22.13	18.30	22.65	22.93	21.86	18.03
		1745.0	22.90	23.15	22.05	18.10	22.63	22.88	21.78	17.83
		1712.5	23.09	23.33	22.17	18.40	22.82	23.06	21.90	18.13
	50% RB mid	1777.5	22.96	22.01	20.95	18.38	22.69	21.74	20.68	18.11
		1745.0	23.24	21.80	20.85	18.46	22.97	21.53	20.58	18.19
		1712.5	23.02	22.00	21.01	18.35	22.75	21.73	20.74	18.08
	100% RB	1777.5	22.99	22.03	20.99	18.39	22.72	21.76	20.72	18.12
		1745.0	22.86	21.77	20.85	18.13	22.59	21.50	20.58	17.86
		1712.5	23.02	22.02	21.03	18.31	22.75	21.75	20.76	18.04
10MHz	1 RB high	1775.0	22.87	23.00	22.17	18.32	22.60	22.73	21.90	18.05
		1745.0	22.79	22.93	21.95	18.02	22.52	22.66	21.68	17.75
		1715.0	22.91	23.09	22.06	18.34	22.64	22.82	21.79	18.07

	1 RB low	1775.0	22.89	23.17	22.09	18.21	22.62	22.90	21.82	17.94
		1745.0	22.85	23.20	21.98	18.30	22.58	22.93	21.71	18.03
		1715.0	23.09	23.40	22.17	18.31	22.82	23.13	21.90	18.04
	50% RB mid	1775.0	23.03	22.00	21.01	18.43	22.76	21.73	20.74	18.16
		1745.0	23.24	21.79	20.77	18.66	22.97	21.52	20.50	18.39
		1715.0	22.98	21.95	20.98	18.35	22.71	21.68	20.71	18.08
	100% RB	1775.0	22.97	21.99	21.01	18.20	22.70	21.72	20.74	17.93
		1745.0	22.77	21.81	20.82	17.94	22.50	21.54	20.55	17.67
		1715.0	22.94	21.98	21.03	18.35	22.67	21.71	20.76	18.08
15MHz	1 RB high	1772.5	22.85	22.99	22.17	18.26	22.58	22.72	21.90	17.99
		1745.0	22.79	22.93	21.91	18.18	22.52	22.66	21.64	17.91
		1717.5	22.93	23.05	22.07	18.27	22.66	22.78	21.80	18.00
	1 RB low	1772.5	22.89	23.19	22.06	18.20	22.62	22.92	21.79	17.93
		1745.0	22.83	23.19	22.06	18.12	22.56	22.92	21.79	17.85
		1717.5	23.11	23.37	22.20	18.49	22.84	23.10	21.93	18.22
	50% RB mid	1772.5	22.99	21.97	21.00	18.36	22.72	21.70	20.73	18.09
		1745.0	23.26	21.83	20.78	18.61	22.99	21.56	20.51	18.34
		1717.5	22.98	22.01	20.93	18.16	22.71	21.74	20.66	17.89
	100% RB	1772.5	23.04	21.98	20.99	18.47	22.77	21.71	20.72	18.20
		1745.0	22.86	21.81	20.86	18.19	22.59	21.54	20.59	17.92
		1717.5	23.03	22.04	21.06	18.43	22.76	21.77	20.79	18.16
20MHz	1 RB high	1770.0	22.94	23.06	22.20	18.22	22.67	22.79	21.93	17.95
		1745.0	22.85	22.98	22.01	18.16	22.58	22.71	21.74	17.89
		1720.0	22.94	23.14	22.08	18.11	22.67	22.87	21.81	17.84
	1 RB low	1770.0	22.94	23.21	22.15	18.18	22.67	22.94	21.88	17.91
		1745.0	22.91	23.21	22.07	18.36	22.64	22.94	21.80	18.09
		1720.0	23.15	23.41	22.27	18.43	22.88	23.14	22.00	18.16
	50% RB mid	1770.0	23.06	22.05	21.02	18.49	22.79	21.78	20.75	18.22
		1745.0	23.27	21.88	20.87	18.50	23.00	21.61	20.60	18.23
		1720.0	23.06	22.03	21.03	18.40	22.79	21.76	20.76	18.13
	100% RB	1770.0	23.06	22.07	21.06	18.51	22.79	21.80	20.79	18.24
		1745.0	22.87	21.85	20.90	18.09	22.60	21.58	20.63	17.82
		1720.0	23.04	22.06	21.07	18.27	22.77	21.79	20.80	18.00

**LTE Band 71-ERP**
**Limits:  $\leq 34.77\text{dBm}(3\text{W})$** 

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)				ERP(dBm)(Gt-Lc =-2.58)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	695.5	23.29	22.58	21.51	18.66	18.56	17.85	16.78	16.78
		680.5	23.08	22.38	21.14	18.52	18.35	17.65	16.41	16.41
		665.5	23.03	22.31	21.24	18.43	18.30	17.58	16.51	16.51
	1 RB low	695.5	23.22	22.45	21.35	18.42	18.49	17.72	16.62	16.62
		680.5	23.44	22.62	21.55	18.71	18.71	17.89	16.82	16.82
		665.5	23.24	22.42	21.30	18.56	18.51	17.69	16.57	16.57
	50% RB mid	695.5	22.11	21.09	20.05	17.43	17.38	16.36	15.32	15.32
		680.5	22.47	21.06	20.09	17.84	17.74	16.33	15.36	15.36
		665.5	22.43	21.41	20.36	17.82	17.70	16.68	15.63	15.63
	100% RB	695.5	22.10	21.14	20.11	17.48	17.37	16.41	15.38	15.38
		680.5	22.14	21.11	20.15	17.53	17.41	16.38	15.42	15.42
		665.5	22.26	21.32	20.26	17.55	17.53	16.59	15.53	15.53
10MHz	1 RB high	693.0	23.31	22.52	21.45	18.54	18.58	17.79	16.72	16.72
		680.5	23.13	22.38	21.16	18.43	18.40	17.65	16.43	16.43
		668.0	23.04	22.24	21.18	18.22	18.31	17.51	16.45	16.45
	1 RB low	693.0	23.16	22.50	21.36	18.40	18.43	17.77	16.63	16.63
		680.5	23.43	22.65	21.50	18.74	18.70	17.92	16.77	16.77
		668.0	23.16	22.51	21.28	18.38	18.43	17.78	16.55	16.55
	50% RB mid	693.0	22.11	21.13	20.09	17.44	17.38	16.40	15.36	15.36
		680.5	22.45	21.08	20.08	17.77	17.72	16.35	15.35	15.35
		668.0	22.41	21.41	20.35	17.66	17.68	16.68	15.62	15.62
	100% RB	693.0	22.17	21.15	20.10	17.56	17.44	16.42	15.37	15.37
		680.5	22.19	21.14	20.19	17.60	17.46	16.41	15.46	15.46
		668.0	22.23	21.25	20.32	17.52	17.50	16.52	15.59	15.59
15MHz	1 RB high	690.5	23.36	22.55	21.44	18.53	18.63	17.82	16.71	16.71
		680.5	23.06	22.37	21.18	18.24	18.33	17.64	16.45	16.45
		670.5	23.11	22.30	21.18	18.46	18.38	17.57	16.45	16.45
	1 RB low	690.5	23.20	22.44	21.39	18.51	18.47	17.71	16.66	16.66
		680.5	23.42	22.57	21.49	18.59	18.69	17.84	16.76	16.76
		670.5	23.19	22.51	21.29	18.61	18.46	17.78	16.56	16.56
	50% RB mid	690.5	22.16	21.07	20.06	17.38	17.43	16.34	15.33	15.33
		680.5	22.44	21.05	20.12	17.70	17.71	16.32	15.39	15.39
		670.5	22.44	21.38	20.35	17.75	17.71	16.65	15.62	15.62
	100% RB	690.5	22.15	21.16	20.10	17.44	17.42	16.43	15.37	15.37
		680.5	22.12	21.10	20.10	17.35	17.39	16.37	15.37	15.37
		670.5	22.26	21.32	20.24	17.60	17.53	16.59	15.51	15.51
20MHz	1 RB high	688.0	23.38	22.59	21.53	18.68	18.65	17.86	16.80	16.80
		680.5	23.16	22.40	21.20	18.49	18.43	17.67	16.47	16.47
		673.0	23.13	22.33	21.25	18.48	18.40	17.60	16.52	16.52

	1 RB low	688.0	23.26	22.52	21.40	18.45	18.53	17.79	16.67	16.67
		680.5	23.52	22.66	21.58	18.75	18.79	17.93	16.85	16.85
		673.0	23.25	22.52	21.32	18.58	18.52	17.79	16.59	16.59
	50% RB mid	688.0	22.18	21.15	20.15	17.48	17.45	16.42	15.42	15.42
		680.5	22.48	21.13	20.16	17.83	17.75	16.40	15.43	15.43
		673.0	22.45	21.47	20.38	17.81	17.72	16.74	15.65	15.65
	100% RB	688.0	22.20	21.17	20.17	17.50	17.47	16.44	15.44	15.44
		680.5	22.21	21.20	20.20	17.44	17.48	16.47	15.47	15.47
		673.0	22.33	21.33	20.34	17.70	17.60	16.60	15.61	15.61

**LTE CA Band 66B**
**Limits:  $\leq 30\text{dBm}(1\text{W})$** 

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)	EIRP(dBm)(Gt-Lc =-0.27)
				Size	Offset	Size	Offset		
5MHz/ 5MHz	1752.6	1757.4	QPSK	1	24	1	0	23.82	23.55
				25	0	25	0	21.89	21.62
			16QAM	1	24	1	0	22.83	22.56
				25	0	25	0	20.91	20.64
			64QAM	1	24	1	0	20.81	20.54
				25	0	25	0	20.92	20.65
256QAM	1	24	1	0	19.01	18.74			
	25	0	25	0	19.00	18.73			
5MHz/ 10MHz	1750.3	1757.5	QPSK	1	24	1	0	23.93	23.66
				25	0	50	0	21.97	21.70
			16QAM	1	24	1	0	22.97	22.70
				25	0	50	0	21.00	20.73
			64QAM	1	24	1	0	20.90	20.63
				25	0	50	0	21.05	20.78
256QAM	1	24	1	0	19.12	18.85			
	25	0	50	0	19.05	18.78			
5MHz/ 15MHz	1748.1	1757.4	QPSK	1	24	1	0	23.96	23.69
				25	0	75	0	21.98	21.71
			16QAM	1	24	1	0	23.00	22.73
				25	0	75	0	21.00	20.73
			64QAM	1	24	1	0	21.00	20.73
				25	0	75	0	21.01	20.74
256QAM	1	24	1	0	19.18	18.91			
	25	0	75	0	19.06	18.79			
10MHz/ 5MHz	1752.5	1759.7	QPSK	1	49	1	0	23.98	23.71
				50	0	25	0	21.99	21.72
			16QAM	1	49	1	0	23.06	22.79
				50	0	25	0	21.00	20.73
			64QAM	1	49	1	0	20.69	20.42
				50	0	25	0	20.99	20.72
256QAM	1	49	1	0	19.03	18.76			
	50	0	25	0	19.12	18.85			
10MHz/ 10MHz	1750.1	1760	QPSK	1	49	1	0	23.98	23.71
				50	0	50	0	21.97	21.70
			16QAM	1	49	1	0	23.07	22.80
				50	0	50	0	20.98	20.71
64QAM	1	49	1	0	20.73	20.46			

				50	0	50	0	20.96	20.69
			256QAM	1	49	1	0	19.08	18.81
				50	0	50	0	19.07	18.80
15MHz/ 5MHz	1752.6	1761.9	QPSK	1	74	1	0	23.96	23.69
				75	0	25	0	21.96	21.69
			16QAM	1	74	1	0	22.91	22.64
				75	0	25	0	20.90	20.63
			64QAM	1	74	1	0	20.71	20.44
				75	0	25	0	20.95	20.68
			256QAM	1	74	1	0	19.04	18.77
				75	0	25	0	19.08	18.81

**LTE CA Band 66C**
**Limits: ≤ 30dBm(1W)**

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)	EIRP(dBm)(Gt-Lc =-0.27)
				Size	Offset	Size	Offset		
5MHz/ 20MHz	1745.8	1757.5	QPSK	1	24	1	0	23.98	23.71
				25	0	100	0	22.00	21.73
			16QAM	1	24	1	0	23.05	22.78
				25	0	100	0	21.02	20.75
			64QAM	1	24	1	0	21.00	20.73
				25	0	100	0	21.01	20.74
256QAM	1	24	1	0	19.23	18.96			
	25	0	100	0	19.11	18.84			
10MHz/ 15MHz	1747.9	1757.9	QPSK	1	49	1	0	24.05	23.78
				50	0	75	0	22.02	21.75
			16QAM	1	49	1	0	23.03	22.76
				50	0	75	0	21.02	20.75
			64QAM	1	49	1	0	20.83	20.56
				50	0	75	0	21.00	20.73
256QAM	1	49	1	0	19.11	18.84			
	50	0	75	0	19.09	18.82			
10MHz/ 20MHz	1745.6	1760	QPSK	1	49	1	0	24.02	23.75
				50	0	100	0	22.06	21.79
			16QAM	1	49	1	0	23.20	22.93
				50	0	100	0	21.05	20.78
			64QAM	1	49	1	0	20.84	20.57
				50	0	100	0	21.06	20.79
256QAM	1	49	1	0	19.13	18.86			
	50	0	100	0	19.10	18.83			
15MHz/ 10MHz	1750.1	1762.1	QPSK	1	74	1	0	24.03	23.76
				75	0	50	0	22.00	21.73
			16QAM	1	74	1	0	22.98	22.71
				75	0	50	0	20.93	20.66
			64QAM	1	74	1	0	20.72	20.45
				75	0	50	0	20.97	20.70
256QAM	1	74	1	0	19.07	18.80			
	75	0	50	0	19.06	18.79			
15MHz/ 15MHz	1747.5	1762.5	QPSK	1	74	1	0	23.94	23.67
				75	0	75	0	22.04	21.77
			16QAM	1	74	1	0	23.13	22.86
				75	0	75	0	20.97	20.70
			64QAM	1	74	1	0	20.78	20.51
				75	0	75	0	21.00	20.73
256QAM	1	74	1	0	19.03	18.76			

				75	0	75	0	19.05	18.78
15MHz/ 20MHz	1745.3	1762.4	QPSK	1	74	1	0	24.05	23.78
				75	0	100	0	22.02	21.75
			16QAM	1	74	1	0	22.82	22.55
				75	0	100	0	21.00	20.73
			64QAM	1	74	1	0	21.04	20.77
				75	0	100	0	21.03	20.76
256QAM	1	74	1	0	19.06	18.79			
	75	0	100	0	19.04	18.77			
20MHz/ 5MHz	1752.5	1764.2	QPSK	1	99	1	0	24.00	23.73
				100	0	25	0	21.95	21.68
			16QAM	1	99	1	0	23.01	22.74
				100	0	25	0	20.97	20.70
			64QAM	1	99	1	0	21.10	20.83
				100	0	25	0	20.96	20.69
256QAM	1	99	1	0	18.95	18.68			
	100	0	25	0	18.98	18.71			
20MHz/ 10MHz	1750.1	1764.5	QPSK	1	99	1	0	24.03	23.76
				100	0	50	0	22.00	21.73
			16QAM	1	99	1	0	22.98	22.71
				100	0	50	0	21.00	20.73
			64QAM	1	99	1	0	21.10	20.83
				100	0	50	0	21.03	20.76
256QAM	1	99	1	0	18.92	18.65			
	100	0	50	0	19.02	18.75			
20MHz/ 15MHz	1747.6	1764.7	QPSK	1	99	1	0	23.99	23.72
				100	0	75	0	22.01	21.74
			16QAM	1	99	1	0	23.00	22.73
				100	0	75	0	20.96	20.69
			64QAM	1	99	1	0	21.16	20.89
				100	0	75	0	21.02	20.75
256QAM	1	99	1	0	18.92	18.65			
	100	0	75	0	19.03	18.76			
20MHz/ 20MHz	1745.1	1764.9	QPSK	1	99	1	0	24.05	23.78
				100	0	100	0	21.99	21.72
			16QAM	1	99	1	0	23.04	22.77
				100	0	100	0	21.00	20.73
			64QAM	1	99	1	0	21.16	20.89
				100	0	100	0	21.04	20.77
256QAM	1	99	1	0	19.05	18.78			
	100	0	100	0	19.00	18.73			

Note: Expanded measurement uncertainty is  $U = 0.578$  dB,  $k = 2$ .



## **A.2 Emission Limit**

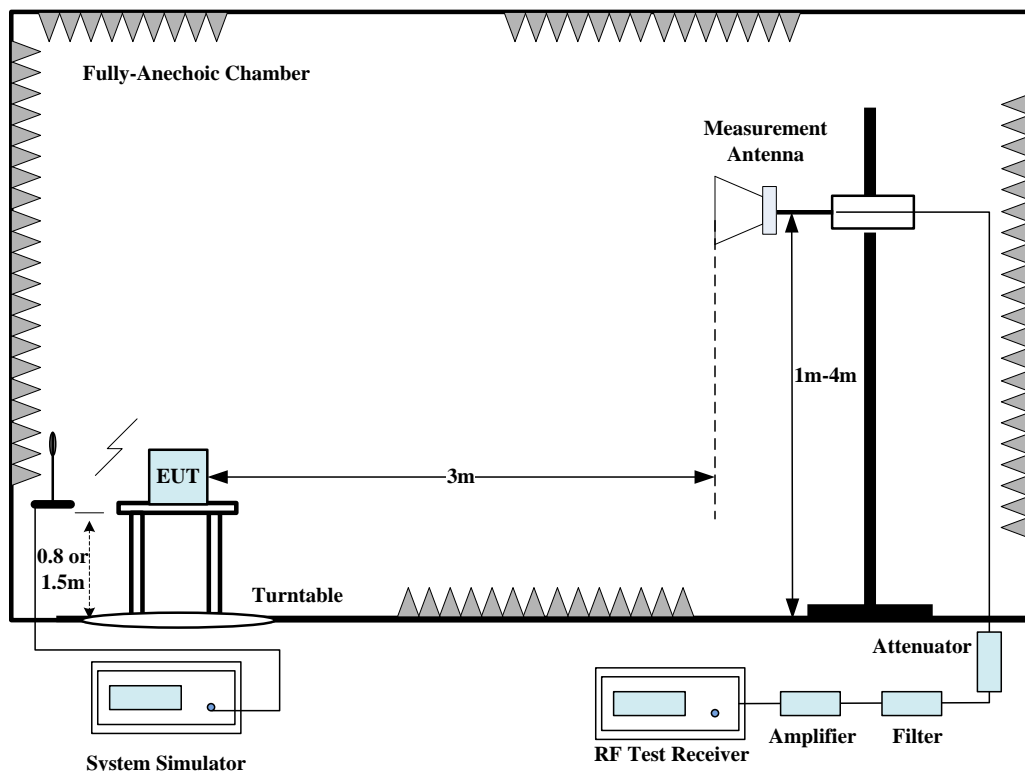
### **A.2.1 Measurement Method**

The measurement procedures in TIA-603E-2016 are used.

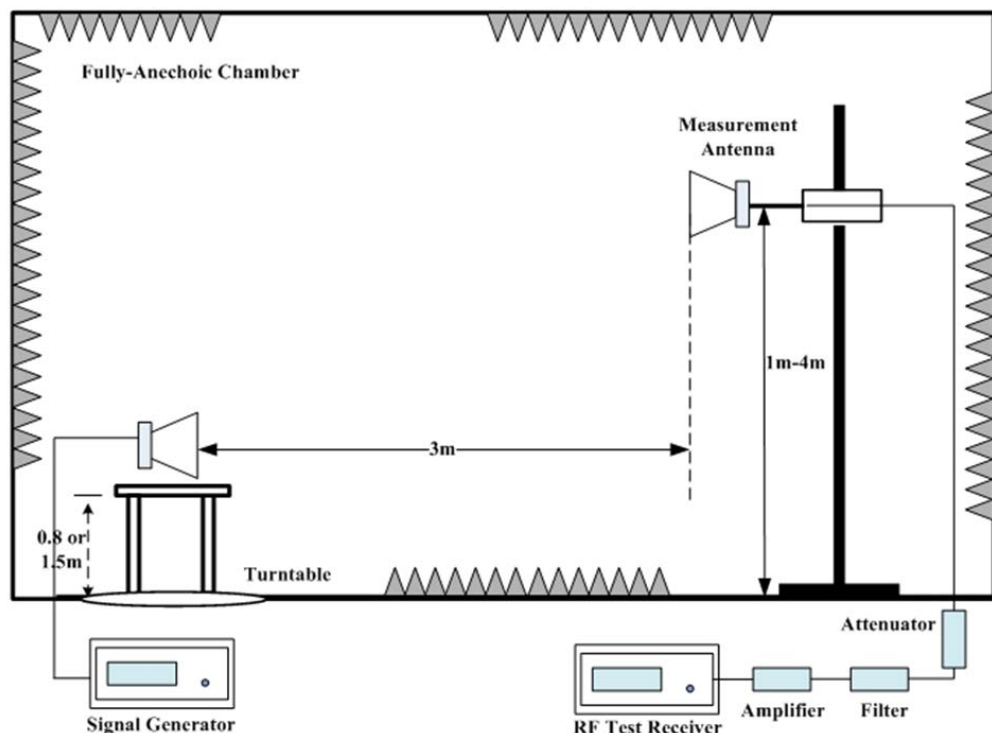
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of each LTE Band.

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

For measurements performed at frequencies less than or equal to 1 GHz, the EUT was placed on a 80cm-high non-conductive support; For measurements performed at frequencies above 1GHz,EUT was placed on a 1.5-meter-high non-conductive support. A measurement antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. In the initial test, the height of the measurement antenna was varied from 1 m to 4 m 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 non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



1. 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).
2. 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. The height of measurement antenna varied between 1 m to 4 m to maximize the received signal amplitude for each emission that was detected and measured in the initial test. 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 reach the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test was performed with the measurement antenna in both vertical and horizontal polarization.

3. The Path loss ( $P_{pl}$ ) between the Signal Source and the Substitution Antenna and the Substitution Antenna Gain ( $G_a$ ) were recorded after test. A amplifier was connected in for the test. The Path loss ( $P_{pl}$ ) is the summation of the cable loss and the gain of the amplifier.
4. The measurement results are obtained as described below:

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

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

### A.2.2 Measurement Limit

FDD Band 2/25: Part 24.238 specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power ( $P$ ) by a factor of at least  $43 + 10 \log(P)$  dB.

FDD Band 5/26(824MHz~849MHz): Part 22.917 specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power ( $P$ ) by a factor of at least  $43 + 10 \log(P)$  dB.

FDD Band 7/TDD Band 38/41: Part 27.53(m) specifies for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

FDD Band 12/13/71: Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE Band 26(814MHz~824MHz): Part 90.691 states that out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows: For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz. For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

FDD Band 4/66: Part 27.53(h) specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of each LTE Band. 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 each LTE Band 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. The range of evaluated frequency is from 30MHz to 26GHz.

Note 1: All CA UL combination bands have been tested, only the worst cases are reported.

Note 2: Both of Vertical and Horizontal polarizations are evaluated, but only the worst case is recorded in this report.

Note3: LTE Band 25 overlaps the entire frequency range of Band 2, LTE Band 26(824MHz~849MHz) overlaps the entire frequency range of Band 5, Therefore, test data of emission limit provided in this report covers all the bands described above.

### A.2.4 Measurement Results Table

Frequency	Channel	Frequency Range	Result
LTE Bands	Low	9kHz-26GHz	Pass
	Middle	9kHz-26GHz	Pass
	High	9kHz-26GHz	Pass

### A.2.5 Sweep Table

Subrange	RBW	VBW
9~150 kHz	0.2kHz	0.6kHz
150kHz~30MHz	9kHz	27kHz
30MHz~1 GHz	100KHz	300KHz
1~20 GHz	1 MHz	3 MHz

### A.2.6 Measurement Result

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5005.50	-57.93	6.59	9.91	-54.61	-25.00	29.61	V
7511.00	-52.87	8.35	12.21	-49.01	-25.00	24.01	V
10019.50	-51.35	9.24	12.91	-47.68	-25.00	22.68	H
12512.50	-48.62	10.21	13.21	-45.62	-25.00	20.62	V
15022.00	-49.73	11.24	13.99	-46.98	-25.00	21.98	H
17529.50	-44.00	12.84	14.94	-41.90	-25.00	16.90	V

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070.00	-55.51	6.69	10.00	-52.20	-25.00	27.20	V
7605.50	-53.56	8.00	12.28	-49.28	-25.00	24.28	V
10136.50	-52.20	9.40	12.95	-48.65	-25.00	23.65	H
12678.00	-49.13	10.34	13.31	-46.16	-25.00	21.16	H
15203.00	-49.92	11.40	13.88	-47.44	-25.00	22.44	H
17726.00	-44.91	12.33	15.22	-42.02	-25.00	17.02	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5135.50	-51.55	6.86	10.09	-48.32	-25.00	23.32	H
7703.00	-47.93	8.42	12.36	-43.99	-25.00	18.99	H
10270.50	-48.54	9.54	13.01	-45.07	-25.00	20.07	V
12851.50	-49.36	10.63	13.41	-46.58	-25.00	21.58	V
15419.00	-48.35	11.42	13.75	-46.02	-25.00	21.02	H
17977.50	-43.99	12.90	15.57	-41.32	-25.00	16.32	H

**LTE Band 12, 1.4MHz, QPSK, Channel 23017**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1339.00	-46.56	3.16	4.66	2.15	-47.21	-13.00	34.21	H
2001.50	-41.25	4.06	4.60	2.15	-42.86	-13.00	29.86	V
2686.00	-36.68	4.77	6.43	2.15	-37.17	-13.00	24.17	H
8026.00	-51.10	8.32	12.62	2.15	-48.95	-13.00	35.95	H
8704.50	-51.98	8.37	13.04	2.15	-49.46	-13.00	36.46	V
9384.50	-49.91	9.05	13.33	2.15	-47.78	-13.00	34.78	H

**LTE Band 12, 1.4MHz, QPSK, Channel 23095**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1417.50	-46.57	3.26	5.07	2.15	-46.91	-13.00	33.91	H
2119.00	-40.26	4.21	4.96	2.15	-41.66	-13.00	28.66	V
2821.00	-35.70	4.94	6.68	2.15	-36.11	-13.00	23.11	H
7783.50	-49.74	8.31	12.43	2.15	-47.77	-13.00	34.77	H
8491.50	-46.88	8.67	12.99	2.15	-44.71	-13.00	31.71	H
9199.00	-48.84	8.93	13.22	2.15	-46.70	-13.00	33.70	V

**LTE Band 12, 1.4MHz, QPSK, Channel 23173**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1430.50	-46.63	3.28	5.14	2.15	-46.92	-13.00	33.92	H
2146.50	-37.61	4.24	5.04	2.15	-38.96	-13.00	25.96	H
2853.50	-35.85	4.96	6.74	2.15	-36.22	-13.00	23.22	V
3576.50	-44.26	6.10	8.31	2.15	-44.20	-13.00	31.20	V
5723.00	-44.64	7.30	10.56	2.15	-43.53	-13.00	30.53	H
8585.00	-42.81	8.52	13.02	2.15	-40.46	-13.00	27.46	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.36	-56.55	3.48	5.38	0.00	-56.80	-40.00	16.80	H
2346.20	-38.67	4.45	5.64	2.15	-39.63	-13.00	26.63	V
3127.50	-49.08	5.40	7.31	2.15	-49.32	-13.00	36.32	V
3910.00	-55.37	6.12	8.77	2.15	-54.87	-13.00	41.87	V
4692.50	-52.19	6.50	9.59	2.15	-51.25	-13.00	38.25	H
7037.50	-53.77	8.24	11.65	2.15	-52.51	-13.00	39.51	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1558.53	-46.14	3.47	5.39	2.15	-46.37	-13.00	33.37	V
2338.76	-39.33	4.44	5.62	2.15	-40.30	-13.00	27.30	H
3117.50	-47.51	5.38	7.28	2.15	-47.76	-13.00	34.76	V
3897.50	-56.13	6.11	8.76	2.15	-55.63	-13.00	42.63	H
4677.50	-52.83	6.49	9.58	2.15	-51.89	-13.00	38.89	H
7015.00	-53.25	8.28	11.62	2.15	-52.06	-13.00	39.06	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.20	-57.36	3.48	5.38	0.00	-57.61	-40.00	17.61	H
2354.15	-38.40	4.46	5.66	2.15	-39.35	-13.00	26.35	V
3137.50	-51.25	5.39	7.33	2.15	-51.46	-13.00	38.46	H
3922.50	-54.47	6.12	8.79	2.15	-53.95	-13.00	40.95	V
4707.50	-48.30	6.51	9.61	2.15	-47.35	-13.00	34.35	V
5492.50	-55.89	7.03	10.59	2.15	-54.48	-13.00	41.48	V

**LTE Band 25, 1.4MHz, QPSK, Channel 26047**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5552.50	-44.56	7.18	10.59	-41.15	-13.00	28.15	H
7403.00	-41.94	8.13	12.08	-37.99	-13.00	24.99	V
9254.00	-43.32	9.05	13.25	-39.12	-13.00	26.12	V
13592.00	-47.61	10.83	14.26	-44.18	-13.00	31.18	H
15466.00	-47.76	11.49	13.72	-45.53	-13.00	32.53	V
16874.00	-43.23	12.03	13.75	-41.51	-13.00	28.51	H

**LTE Band 25, 1.4MHz, QPSK, Channel 26365**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5647.50	-44.48	7.27	10.57	-41.18	-13.00	28.18	H
7530.50	-40.99	8.27	12.22	-37.04	-13.00	24.04	V
9412.50	-43.57	9.10	13.35	-39.32	-13.00	26.32	H
13178.50	-44.87	10.59	13.75	-41.71	-13.00	28.71	H
15097.50	-48.44	11.35	13.94	-45.85	-13.00	32.85	H
16898.00	-43.05	12.00	13.76	-41.29	-13.00	28.29	H

**LTE Band 25, 1.4MHz, QPSK, Channel 26683**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3828.50	-49.86	6.06	8.66	-47.26	-13.00	34.26	H
5743.00	-36.08	7.27	10.55	-32.80	-13.00	19.80	H
7657.50	-35.07	8.23	12.33	-30.97	-13.00	17.97	H
9572.00	-44.79	9.28	13.33	-40.74	-13.00	27.74	V
13401.00	-43.04	10.57	14.06	-39.55	-13.00	26.55	H
15315.00	-42.93	11.30	13.81	-40.42	-13.00	27.42	H



**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26797**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1649.50	-37.57	3.56	5.23	2.15	-38.05	-13.00	25.05	H
2474.50	-36.66	4.60	6.02	2.15	-37.39	-13.00	24.39	H
3299.00	-46.15	5.29	7.72	2.15	-45.87	-13.00	32.87	H
8248.50	-47.00	8.59	12.80	2.15	-44.94	-13.00	31.94	V
9073.00	-42.23	9.01	13.14	2.15	-40.25	-13.00	27.25	H
9890.00	-49.58	9.08	13.01	2.15	-47.80	-13.00	34.80	H

**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26915**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-38.04	3.58	5.19	2.15	-38.58	-13.00	25.58	V
2510.00	-37.35	4.63	6.12	2.15	-38.01	-13.00	25.01	V
3346.00	-45.65	5.31	7.83	2.15	-45.28	-13.00	32.28	H
7529.50	-49.57	8.27	12.22	2.15	-47.77	-13.00	34.77	V
8366.00	-46.01	8.65	12.89	2.15	-43.92	-13.00	30.92	V
9202.50	-43.03	8.93	13.22	2.15	-40.89	-13.00	27.89	H

**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 27033**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1696.50	-38.59	3.60	5.15	2.15	-39.19	-13.00	26.19	V
2545.00	-34.94	4.66	6.18	2.15	-35.57	-13.00	22.57	H
3393.00	-42.73	5.36	7.94	2.15	-42.30	-13.00	29.30	V
7635.00	-51.03	8.13	12.31	2.15	-49.00	-13.00	36.00	H
8484.50	-48.29	8.67	12.99	2.15	-46.12	-13.00	33.12	V
9332.50	-47.02	9.11	13.30	2.15	-44.98	-13.00	31.98	V

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26697**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1629.00	-38.08	3.55	5.27	2.15	-38.51	-13.00	25.51	V
2444.50	-33.49	4.57	5.93	2.15	-34.28	-13.00	21.28	H
3259.00	-41.62	5.28	7.62	2.15	-41.43	-13.00	28.43	V
8147.50	-47.73	8.41	12.72	2.15	-45.57	-13.00	32.57	V
8963.00	-40.18	9.07	13.09	2.15	-38.31	-13.00	25.31	V
9769.50	-49.46	8.97	13.13	2.15	-47.45	-13.00	34.45	H

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26740**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638.00	-39.93	3.56	5.25	2.15	-40.39	-13.00	27.39	V
2465.50	-35.09	4.59	6.00	2.15	-35.83	-13.00	22.83	V
3276.00	-42.85	5.28	7.66	2.15	-42.62	-13.00	29.62	V
8191.00	-45.77	8.50	12.75	2.15	-43.67	-13.00	30.67	H
9010.50	-40.24	9.17	13.11	2.15	-38.45	-13.00	25.45	V
9825.00	-49.58	9.05	13.08	2.15	-47.70	-13.00	34.70	V

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26783**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1646.50	-37.96	3.56	5.24	2.15	-38.43	-13.00	25.43	H
2470.50	-35.98	4.59	6.01	2.15	-36.71	-13.00	23.71	V
3293.50	-47.44	5.29	7.70	2.15	-47.18	-13.00	34.18	H
8234.00	-47.26	8.57	12.79	2.15	-45.19	-13.00	32.19	H
9057.50	-44.97	9.05	13.13	2.15	-43.04	-13.00	30.04	V
9751.00	-48.82	8.93	13.15	2.15	-46.75	-13.00	33.75	V

**LTE Band 41, 5MHz, QPSK, Channel 39675**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4997.00	-49.63	6.61	9.90	-46.34	-25.00	21.34	H
7496.00	-42.07	8.38	12.20	-38.25	-25.00	13.25	V
9995.00	-41.02	9.18	12.91	-37.29	-25.00	12.29	V
12494.00	-38.77	10.19	13.20	-35.76	-25.00	10.76	V
14992.00	-48.16	11.21	14.01	-45.36	-25.00	20.36	V
17486.00	-44.85	12.69	14.87	-42.67	-25.00	17.67	V

**LTE Band 41, 5MHz, QPSK, Channel 40620**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5186.00	-50.93	6.94	10.16	-47.71	-25.00	22.71	H
7780.00	-39.09	8.32	12.42	-34.99	-25.00	9.99	V
10373.00	-37.37	9.76	13.05	-34.08	-25.00	9.08	H
12966.00	-39.22	10.48	13.48	-36.22	-25.00	11.22	V
15559.00	-47.01	11.50	13.70	-44.81	-25.00	19.81	V
16856.00	-43.66	12.05	13.74	-41.97	-25.00	16.97	V

**LTE Band 41, 5MHz, QPSK, Channel 41565**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5375.00	-43.77	6.88	10.43	-40.22	-25.00	15.22	H
8063.00	-35.87	8.32	12.65	-31.54	-25.00	6.54	V
10751.00	-51.93	9.43	13.15	-48.21	-25.00	23.21	H
13413.00	-50.08	10.58	14.08	-46.58	-25.00	21.58	V
16106.00	-47.22	11.85	13.68	-45.39	-25.00	20.39	H
17449.50	-44.95	12.61	14.79	-42.77	-25.00	17.77	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.50	-56.64	5.38	8.01	-54.01	-13.00	41.01	V
5132.00	-58.53	6.85	10.08	-55.30	-13.00	42.30	V
6843.00	-55.83	7.83	11.41	-52.25	-13.00	39.25	H
8554.00	-48.62	8.58	13.01	-44.19	-13.00	31.19	V
11975.50	-56.68	10.17	13.00	-53.85	-13.00	40.85	V
13686.50	-45.49	10.63	14.31	-41.81	-13.00	28.81	V

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.00	-57.27	5.50	8.18	-54.59	-13.00	41.59	H
5235.00	-56.14	7.00	10.23	-52.91	-13.00	39.91	V
6980.00	-54.14	8.14	11.58	-50.70	-13.00	37.70	V
8725.50	-45.21	8.44	13.05	-40.60	-13.00	27.60	V
12215.50	-52.58	10.05	13.09	-49.54	-13.00	36.54	H
13961.00	-44.79	10.83	14.48	-41.14	-13.00	28.14	H

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

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3558.50	-60.92	5.91	8.28	-58.55	-13.00	45.55	V
5338.00	-57.64	6.96	10.37	-54.23	-13.00	41.23	V
7117.50	-52.76	8.16	11.74	-49.18	-13.00	36.18	H
8897.00	-43.34	8.84	13.08	-39.10	-13.00	26.10	V
12455.50	-50.80	10.29	13.18	-47.91	-13.00	34.91	V
14235.50	-53.39	10.91	14.45	-49.85	-13.00	36.85	H

**LTE Band 71, 5MHz, QPSK, Channel 133147**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3328.00	-46.16	5.30	7.79	2.15	-45.82	-13.00	32.82	H
5991.00	-48.13	7.47	10.50	2.15	-47.25	-13.00	34.25	V
7317.50	-52.60	8.10	11.98	2.15	-50.87	-13.00	37.87	V
7988.50	-47.95	8.34	12.59	2.15	-45.85	-13.00	32.85	H
8654.00	-50.01	8.42	13.03	2.15	-47.55	-13.00	34.55	V
9319.50	-46.31	9.13	13.29	2.15	-44.30	-13.00	31.30	H

**LTE Band 71, 5MHz, QPSK, Channel 133297**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3403.50	-46.54	5.37	7.97	2.15	-46.09	-13.00	33.09	V
6126.00	-48.22	7.45	10.63	2.15	-47.19	-13.00	34.19	V
6795.50	-53.77	7.90	11.35	2.15	-52.47	-13.00	39.47	H
7487.00	-48.87	8.36	12.18	2.15	-47.20	-13.00	34.20	V
8168.00	-44.48	8.45	12.73	2.15	-42.35	-13.00	29.35	H
8848.50	-45.60	8.75	13.07	2.15	-43.43	-13.00	30.43	V

**LTE Band 71, 5MHz, QPSK, Channel 133447**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3478.00	-47.37	5.48	8.15	2.15	-46.85	-13.00	33.85	H
5565.00	-52.90	7.20	10.59	2.15	-51.66	-13.00	38.66	V
6260.50	-50.01	7.46	10.76	2.15	-48.86	-13.00	35.86	V
7652.50	-46.47	8.21	12.32	2.15	-44.51	-13.00	31.51	H
8348.50	-44.49	8.65	12.88	2.15	-42.41	-13.00	29.41	V
9044.00	-42.85	9.08	13.13	2.15	-40.95	-13.00	27.95	H

**CA 2A\_4A, 5M+5M, CH18625+19975, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3705.00	-59.96	6.42	8.49	-57.89	-13.00	44.89	H
5557.97	-55.62	7.19	10.59	-52.22	-13.00	39.22	H
7410.47	-53.22	8.15	12.09	-49.28	-13.00	36.28	V
9263.44	-49.46	9.07	13.26	-45.27	-13.00	32.27	H
11109.38	-60.40	9.80	13.18	-57.02	-13.00	44.02	V
12968.91	-57.44	10.48	13.48	-54.44	-13.00	41.44	V

**CA 2A\_4A, 5M+5M, CH18900+20175, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.31	-57.59	6.26	8.56	-55.29	-13.00	42.29	V
5640.47	-55.32	7.27	10.57	-52.02	-13.00	39.02	V
7520.63	-51.00	8.31	12.22	-47.09	-13.00	34.09	V
9400.78	-52.58	9.04	13.34	-48.28	-13.00	35.28	H
11287.97	-60.19	9.92	13.14	-56.97	-13.00	43.97	V
12128.44	-55.28	10.27	13.05	-52.50	-13.00	39.50	H

**CA 2A\_4A, 5M+5M, CH19175+20375, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.16	-52.37	6.09	8.64	-49.82	-13.00	36.82	V
5722.97	-48.51	7.30	10.56	-45.25	-13.00	32.25	V
7630.78	-46.46	8.11	12.30	-42.27	-13.00	29.27	H
9538.13	-49.68	9.40	13.36	-45.72	-13.00	32.72	H
11420.16	-58.69	10.01	13.12	-55.58	-13.00	42.58	H
13353.75	-47.30	10.57	14.00	-43.87	-13.00	30.87	V

**CA 2A\_5A, 5M+10M, CH18625+20450, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3705.00	-52.34	6.42	8.49	-50.27	-13.00	37.27	V
5557.97	-46.06	7.19	10.59	-42.66	-13.00	29.66	V
7410.47	-43.10	8.15	12.09	-39.16	-13.00	26.16	H
9263.44	-39.27	9.07	13.26	-35.08	-13.00	22.08	V
3325.78	-60.43	5.30	7.78	-57.95	-13.00	44.95	H
4144.69	-56.35	6.08	9.04	-53.39	-13.00	40.39	V

**CA 2A\_5A, 5M+10M, CH18900+20525, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.31	-51.45	6.26	8.56	-49.15	-13.00	36.15	V
5640.47	-49.78	7.27	10.57	-46.48	-13.00	33.48	H
7520.63	-45.64	8.31	12.22	-41.73	-13.00	28.73	H
9400.78	-45.40	9.04	13.34	-41.10	-13.00	28.10	H
5019.38	-53.61	6.57	9.93	-50.25	-13.00	37.25	V
7520.63	-45.64	8.31	12.22	-41.73	-13.00	28.73	H

**CA 2A\_5A, 5M+10M, CH19175+20600, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.16	-47.84	6.09	8.64	-45.29	-13.00	32.29	V
5722.97	-37.65	7.30	10.56	-34.39	-13.00	21.39	H
7630.31	-39.31	8.11	12.30	-35.12	-13.00	22.12	H
9538.13	-43.90	9.40	13.36	-39.94	-13.00	26.94	V
13354.22	-40.52	10.57	14.00	-37.09	-13.00	24.09	V
17202.66	-42.98	12.35	14.25	-41.08	-13.00	28.08	V

**CA 2A\_12A, 5M+5M, CH18625+23035,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3704.53	-60.49	3.48	8.36	0.00	-55.61	-13.00	42.61	V
5557.50	-58.64	5.35	11.00	0.00	-52.99	-13.00	39.99	V
7410.94	-49.05	8.03	12.16	0.00	-44.92	-13.00	31.92	H
9263.44	-48.34	8.85	13.70	0.00	-43.49	-13.00	30.49	H
11124.84	-50.87	9.91	13.50	0.00	-47.28	-13.00	34.28	V
12968.91	-46.63	12.54	13.71	0.00	-45.46	-13.00	32.46	H
1409.00	-45.35	1.93	4.91	2.15	-44.52	-13.00	31.52	V
2106.50	-38.57	3.71	5.13	2.15	-39.30	-13.00	26.30	V
2801.50	-32.64	5.26	7.25	2.15	-32.80	-13.00	19.80	V
5597.34	-56.33	5.66	11.00	2.15	-53.14	-13.00	40.14	H
6312.66	-56.44	5.87	11.26	2.15	-53.20	-13.00	40.20	V
7025.16	-53.06	7.45	11.68	2.15	-50.98	-13.00	37.98	V

**CA 2A\_12A, 5M+5M, CH18900+23085,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3759.84	-58.70	3.82	8.62	0.00	-53.90	-13.00	40.90	H
5652.66	-59.43	5.59	11.05	0.00	-53.97	-13.00	40.97	H
7520.62	-52.03	7.71	12.37	0.00	-47.37	-13.00	34.37	H
9400.78	-45.58	9.10	13.60	0.00	-41.08	-13.00	28.08	V
11284.22	-50.00	10.63	13.58	0.00	-47.05	-13.00	34.05	H
13161.56	-46.48	13.21	14.18	0.00	-45.51	-13.00	32.51	H
1405.00	-44.68	1.93	4.86	2.15	-43.90	-13.00	30.90	V
2131.00	-37.22	3.70	5.22	2.15	-37.85	-13.00	24.85	V
2839.00	-32.75	5.04	7.29	2.15	-32.65	-13.00	19.65	V
5658.75	-56.50	5.73	11.06	2.15	-53.32	-13.00	40.32	H
6371.72	-56.53	5.77	11.30	2.15	-53.15	-13.00	40.15	H
7061.72	-53.84	6.82	11.70	2.15	-51.11	-13.00	38.11	V

**CA 2A\_12A, 5M+5M, CH19175+23155,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.16	-53.55	3.94	8.63	0.00	-48.86	-13.00	35.86	H
5723.44	-48.04	5.90	10.95	0.00	-42.99	-13.00	29.99	V
7630.78	-42.24	6.72	12.30	0.00	-36.66	-13.00	23.66	V
9538.12	-38.15	9.12	13.32	0.00	-33.95	-13.00	20.95	V
11450.62	-47.79	12.39	13.55	0.00	-46.63	-13.00	33.63	V
13353.75	-40.82	13.11	14.36	0.00	-39.57	-13.00	26.57	H
1433.00	-45.57	1.92	5.20	2.15	-44.44	-13.00	31.44	V
2153.00	-38.46	3.70	5.62	2.15	-38.69	-13.00	25.69	V
2858.50	-32.87	5.55	7.12	2.15	-33.45	-13.00	20.45	V





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5722.50	-50.31	5.90	10.96	2.15	-47.40	-13.00	34.40	V
6433.12	-55.50	6.91	11.30	2.15	-53.26	-13.00	40.26	H
7138.59	-54.66	6.64	11.70	2.15	-51.75	-13.00	38.75	V

**CA 2A\_66A, 5M+10M, CH18625+132022, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3705.00	-54.08	6.42	8.49	-52.01	-13.00	39.01	V
5557.97	-52.63	7.19	10.59	-49.23	-13.00	36.23	V
11116.41	-48.21	9.76	13.18	-44.79	-13.00	31.79	V
3430.78	-58.91	5.39	8.03	-56.27	-13.00	43.27	H
8574.38	-50.49	8.54	13.01	-46.02	-13.00	33.02	V
13720.31	-45.38	10.60	14.33	-41.65	-13.00	28.65	H

**CA 2A\_66A, 5M+10M, CH18900+132322, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5235.00	-51.84	7.00	10.23	-48.61	-13.00	35.61	H
5640.47	-49.92	7.27	10.57	-46.62	-13.00	33.62	V
6980.63	-46.22	8.15	11.58	-42.79	-13.00	29.79	V
8726.25	-41.07	8.44	13.05	-36.46	-13.00	23.46	H
12216.09	-45.54	10.05	13.09	-42.50	-13.00	29.50	V
13961.72	-36.01	10.83	14.48	-32.36	-13.00	19.36	V

**CA 2A\_66A, 5M+10M, CH19175+132622, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5722.97	-44.20	7.30	10.56	-40.94	-13.00	27.94	H
9510.94	-52.35	9.50	13.39	-48.46	-13.00	35.46	V
11445.94	-38.98	9.95	13.11	-35.82	-13.00	22.82	V
13328.91	-47.65	10.58	13.96	-44.27	-13.00	31.27	V
15226.88	-48.15	11.37	13.86	-45.66	-13.00	32.66	H
17172.19	-42.61	12.44	14.18	-40.87	-13.00	27.87	H

**CA 2A\_71A, 5M+5M, CH18625+133147,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3704.06	-61.36	3.48	8.36	0.00	-56.48	-13.00	43.48	H
5570.16	-59.29	5.40	11.00	0.00	-53.69	-13.00	40.69	V
7410.94	-53.22	8.03	12.16	0.00	-49.09	-13.00	36.09	V
9267.66	-51.97	8.85	13.70	0.00	-47.12	-13.00	34.12	V
11117.34	-49.88	9.85	13.50	0.00	-46.23	-13.00	33.23	V
12968.91	-46.95	12.54	13.71	0.00	-45.78	-13.00	32.78	H
1333.50	-43.69	2.05	3.93	2.15	-43.96	-13.00	30.96	V
1993.50	-38.75	3.39	4.59	2.15	-39.70	-13.00	26.70	H
2671.50	-34.54	4.96	6.50	2.15	-35.15	-13.00	22.15	H
3327.66	-52.43	3.09	7.86	2.15	-49.81	-13.00	36.81	V
5979.38	-56.21	5.61	10.84	2.15	-53.13	-13.00	40.13	V
6650.16	-55.16	6.16	11.45	2.15	-52.02	-13.00	39.02	V

**CA 2A\_71A, 5M+5M, CH18900+133297,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.31	-59.11	3.81	8.62	0.00	-54.30	-13.00	41.30	V
5640.47	-58.52	5.61	11.00	0.00	-53.13	-13.00	40.13	H
7521.09	-54.87	7.71	12.37	0.00	-50.21	-13.00	37.21	V
9413.91	-53.22	9.06	13.60	0.00	-48.68	-13.00	35.68	H
11292.19	-49.42	10.62	13.59	0.00	-46.45	-13.00	33.45	V
13161.09	-36.49	13.21	14.18	0.00	-35.52	-13.00	22.52	H
1359.00	-44.97	1.85	4.08	2.15	-44.89	-13.00	31.89	V
2027.00	-39.03	3.45	4.75	2.15	-39.88	-13.00	26.88	V
2731.50	-33.96	4.88	6.74	2.15	-34.25	-13.00	21.25	H
3403.12	-55.77	3.49	8.25	2.15	-53.16	-13.00	40.16	V
6125.16	-54.46	6.13	11.10	2.15	-51.64	-13.00	38.64	V
6794.06	-54.97	6.39	11.59	2.15	-51.92	-13.00	38.92	V

**CA 2A\_71A, 5M+5M, CH19175+133447,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.16	-58.57	3.94	8.63	0.00	-53.88	-13.00	40.88	V
5722.97	-53.10	5.90	10.95	0.00	-48.05	-13.00	35.05	V
7629.84	-55.67	6.72	12.30	0.00	-50.09	-13.00	37.09	V
9537.19	-52.12	9.12	13.33	0.00	-47.91	-13.00	34.91	H
11445.94	-46.22	12.40	13.56	0.00	-45.06	-13.00	32.06	V
13354.22	-42.84	13.11	14.36	0.00	-41.59	-13.00	28.59	V
1390.00	-44.91	1.86	4.17	2.15	-44.75	-13.00	31.75	V
2093.50	-38.19	3.52	4.89	2.15	-38.97	-13.00	25.97	H
2777.50	-33.95	4.89	7.11	2.15	-33.88	-13.00	20.88	H



3478.12	-53.36	3.69	8.22	2.15	-50.98	-13.00	37.98	H
4173.75	-55.08	4.01	9.33	2.15	-51.91	-13.00	38.91	H
6956.72	-54.02	6.47	11.60	2.15	-51.04	-13.00	38.04	V

**CA 4A\_7A, 5M+5M, CH 19975+20775,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
6850.78	-61.29	6.52	11.55	-56.26	-13.00	43.26	H
10281.56	-60.01	10.67	13.30	-57.38	-13.00	44.38	V
11988.28	-51.44	12.21	13.00	-50.65	-13.00	37.65	H
13702.03	-55.81	13.06	14.70	-54.17	-13.00	41.17	V
15412.50	-54.80	14.91	13.78	-55.93	-13.00	42.93	H
17128.59	-46.42	18.44	14.03	-50.83	-13.00	37.83	H
5005.31	-67.14	5.15	10.51	-61.78	-25.00	36.78	H
7522.03	-64.11	7.71	12.37	-59.45	-25.00	34.45	V
10010.62	-43.15	9.35	13.38	-39.12	-25.00	14.12	H
12507.19	-57.10	12.36	13.60	-55.86	-25.00	30.86	V
15009.38	-53.86	14.75	14.10	-54.51	-25.00	29.51	H
17516.25	-44.77	19.70	14.42	-50.05	-25.00	25.05	H

**CA 4A\_7A, 5M+5M, CH 20175+21100,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-61.12	3.82	8.24	-56.70	-13.00	43.70	V
6930.47	-61.88	6.47	11.60	-56.75	-13.00	43.75	V
12128.44	-47.91	12.23	13.13	-47.01	-13.00	34.01	H
13861.88	-53.33	13.10	14.70	-51.73	-13.00	38.73	H
15601.88	-52.84	16.45	13.60	-55.69	-13.00	42.69	H
17316.56	-44.98	19.25	14.22	-50.01	-13.00	37.01	H
5070.00	-65.43	5.30	10.53	-60.20	-25.00	35.20	H
7605.47	-63.98	7.58	12.30	-59.26	-25.00	34.26	H
10140.94	-46.37	9.74	13.24	-42.87	-25.00	17.87	H
12675.94	-57.94	11.70	13.52	-56.12	-25.00	31.12	H
15213.75	-54.61	15.70	13.99	-56.32	-25.00	31.32	H
17742.19	-45.60	19.56	14.64	-50.52	-25.00	25.52	H

**CA 4A\_7A, 5M+5M, CH20375+21425,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
7010.62	-59.36	7.65	11.66	-55.35	-13.00	42.35	H
10500.94	-59.45	10.38	13.20	-56.63	-13.00	43.63	H
12268.59	-50.57	11.56	13.34	-48.79	-13.00	35.79	H
14021.25	-54.20	14.24	14.58	-53.86	-13.00	40.86	H
15768.75	-51.88	16.51	13.33	-55.06	-13.00	42.06	H
17529.38	-44.56	19.68	14.43	-49.81	-13.00	36.81	H
5135.16	-60.46	5.55	10.59	-55.42	-25.00	30.42	H
7702.97	-58.00	6.72	12.40	-52.32	-25.00	27.32	V
10270.78	-40.63	10.75	13.30	-38.08	-25.00	13.08	H



12838.59	-51.08	13.04	13.50	-50.62	-25.00	25.62	H
15417.66	-54.37	14.92	13.76	-55.53	-25.00	30.53	H
17982.66	-44.04	19.97	14.80	-49.21	-25.00	24.21	H

**CA 4A\_13A, 5M+5M, CH19975+23205, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.16	-54.49	5.38	8.02	-51.85	-13.00	38.85	V
5137.97	-49.13	6.86	10.09	-45.90	-13.00	32.90	V
6850.78	-48.43	7.82	11.42	-44.83	-13.00	31.83	V
8563.59	-45.83	8.56	13.01	-41.38	-13.00	28.38	H
12002.81	-49.38	10.06	13.00	-46.44	-13.00	33.44	V
13702.03	-38.95	10.60	14.32	-35.23	-13.00	22.23	H

**CA 4A\_13A, 5M+5M, CH20175+23230, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.47	-54.56	5.46	8.12	-51.90	-13.00	38.90	H
5197.97	-46.81	6.96	10.18	-43.59	-13.00	30.59	H
6930.00	-46.41	7.76	11.52	-42.65	-13.00	29.65	H
8663.44	-45.09	8.41	13.03	-40.47	-13.00	27.47	V
12128.91	-48.34	10.26	13.05	-45.55	-13.00	32.55	H
13861.41	-34.11	10.73	14.42	-30.42	-13.00	17.42	H

**CA 4A\_13A, 5M+5M, CH20375+23255, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.31	-57.56	5.53	8.21	-54.88	-13.00	41.88	V
5257.97	-52.90	7.00	10.26	-49.64	-13.00	36.64	V
7010.63	-47.84	8.28	11.61	-44.51	-13.00	31.51	H
8763.28	-45.55	8.55	13.05	-41.05	-13.00	28.05	V
12268.59	-49.15	10.02	13.11	-46.06	-13.00	33.06	H
14021.25	-41.04	10.90	14.50	-37.44	-13.00	24.44	H

**CA 4A\_17A, 5M+5M, CH 19975+23755,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1428.00	-56.19	3.27	5.13	2.15	-56.48	-13.00	43.48	H
2111.50	-31.73	4.20	4.93	2.15	-33.15	-13.00	20.15	H
2811.50	-45.16	4.93	6.66	2.15	-45.58	-13.00	32.58	H
4239.84	-64.72	6.25	9.14	2.15	-63.98	-13.00	50.98	V
5662.50	-64.98	7.28	10.57	2.15	-63.84	-13.00	50.84	H
6350.16	-63.74	7.56	10.85	2.15	-62.60	-13.00	49.60	H
3425.16	-51.22	5.38	8.02	2.15	-50.73	-13.00	37.73	V
5137.97	-58.06	6.86	10.09	2.15	-56.98	-13.00	43.98	V
5987.34	-64.36	7.47	10.50	2.15	-63.48	-13.00	50.48	V
6850.31	-49.97	7.82	11.42	2.15	-48.52	-13.00	35.52	H
7701.56	-62.36	8.42	12.36	2.15	-60.57	-13.00	47.57	H
8563.13	-53.04	8.56	13.01	2.15	-50.74	-13.00	37.74	V

**CA 4A\_17A, 5M+5M, CH 20175+23790,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1429.50	-56.14	3.27	5.13	2.15	-56.43	-13.00	43.43	H
2131.50	-32.78	4.22	4.99	2.15	-34.16	-13.00	21.16	V
2854.50	-45.36	4.96	6.74	2.15	-45.73	-13.00	32.73	V
4274.53	-65.78	6.22	9.17	2.15	-64.98	-13.00	51.98	V
5674.22	-64.72	7.28	10.57	2.15	-63.58	-13.00	50.58	V
6392.81	-64.59	7.56	10.89	2.15	-63.41	-13.00	50.41	H
3465.00	-54.13	5.46	8.12	2.15	-53.62	-13.00	40.62	V
4314.84	-66.50	6.18	9.21	2.15	-65.62	-13.00	52.62	V
5197.97	-60.51	6.96	10.18	2.15	-59.44	-13.00	46.44	V
6046.88	-64.49	7.46	10.55	2.15	-63.55	-13.00	50.55	V
6930.94	-47.86	7.77	11.52	2.15	-46.26	-13.00	33.26	H
8663.44	-54.56	8.41	13.03	2.15	-52.09	-13.00	39.09	V

**CA 4A\_17A, 5M+5M, CH 20375+23825,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1427.50	-56.08	3.27	5.12	2.15	-56.38	-13.00	43.38	V
2153.50	-32.20	4.25	5.06	2.15	-33.54	-13.00	20.54	V
2863.50	-45.35	4.96	6.75	2.15	-45.71	-13.00	32.71	H
4282.03	-64.35	6.21	9.18	2.15	-63.53	-13.00	50.53	H
5700.00	-64.69	7.29	10.56	2.15	-63.57	-13.00	50.57	V
6425.16	-64.83	7.56	10.93	2.15	-63.61	-13.00	50.61	H
3505.31	-55.76	5.53	8.21	2.15	-55.23	-13.00	42.23	V
4387.50	-66.08	6.39	9.29	2.15	-65.33	-13.00	52.33	V
5257.97	-58.60	7.00	10.26	2.15	-57.49	-13.00	44.49	V





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6120.94	-63.32	7.45	10.62	2.15	-62.30	-13.00	49.30	H
7892.81	-62.01	8.42	12.51	2.15	-60.07	-13.00	47.07	V
8763.28	-54.01	8.55	13.05	2.15	-51.66	-13.00	38.66	V

**CA 4A\_71A, 5M+5M, CH 19975+133147,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1306.50	-54.91	3.12	4.49	2.15	-55.69	-13.00	42.69	V
1991.50	-50.26	4.03	4.62	2.15	-51.82	-13.00	38.82	H
2687.00	-46.59	4.77	6.44	2.15	-47.07	-13.00	34.07	V
3328.13	-60.60	5.30	7.79	2.15	-60.26	-13.00	47.26	H
6633.75	-62.06	7.91	11.16	2.15	-60.96	-13.00	47.96	V
7347.66	-62.59	8.11	12.02	2.15	-60.83	-13.00	47.83	H
3425.16	-60.28	5.38	8.02	2.15	-59.79	-13.00	46.79	V
4281.56	-66.07	6.21	9.18	2.15	-65.25	-13.00	52.25	V
5137.97	-64.88	6.86	10.09	2.15	-63.80	-13.00	50.80	H
6850.78	-60.81	7.82	11.42	2.15	-59.36	-13.00	46.36	V
7688.91	-62.81	8.38	12.35	2.15	-60.99	-13.00	47.99	V
8562.19	-61.49	8.56	13.01	2.15	-59.19	-13.00	46.19	V

**CA 4A\_71A, 5M+5M, CH 20175+133297,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1347.00	-56.09	3.17	4.70	2.15	-56.71	-13.00	43.71	H
2056.50	-50.24	4.15	4.77	2.15	-51.77	-13.00	38.77	V
2732.00	-45.83	4.82	6.52	2.15	-46.28	-13.00	33.28	V
4083.75	-65.08	6.04	8.98	2.15	-64.29	-13.00	51.29	V
6121.41	-63.05	7.45	10.62	2.15	-62.03	-13.00	49.03	V
6808.13	-62.98	7.88	11.37	2.15	-61.64	-13.00	48.64	H
3465.00	-61.93	5.46	8.12	2.15	-61.42	-13.00	48.42	V
4317.66	-66.56	6.18	9.22	2.15	-65.67	-13.00	52.67	H
5197.97	-62.21	6.96	10.18	2.15	-61.14	-13.00	48.14	H
6078.28	-64.58	7.46	10.58	2.15	-63.61	-13.00	50.61	V
6930.47	-57.08	7.76	11.52	2.15	-55.47	-13.00	42.47	V
7796.72	-62.35	8.29	12.44	2.15	-60.35	-13.00	47.35	V

**CA 4A\_71A, 5M+5M, CH 20375+133447,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1410.00	-55.96	3.25	5.03	2.15	-56.33	-13.00	43.33	V
2112.50	-49.70	4.20	4.94	2.15	-51.11	-13.00	38.11	V
2810.50	-45.33	4.93	6.66	2.15	-45.75	-13.00	32.75	V
3478.13	-59.00	5.48	8.15	2.15	-58.48	-13.00	45.48	H
4173.28	-63.74	6.15	9.07	2.15	-62.97	-13.00	49.97	V
6282.66	-64.34	7.49	10.78	2.15	-63.20	-13.00	50.20	V
3478.13	-59.00	5.48	8.15	2.15	-58.48	-13.00	45.48	V
4386.56	-66.13	6.39	9.29	2.15	-65.38	-13.00	52.38	H
5257.97	-63.78	7.00	10.26	2.15	-62.67	-13.00	49.67	H



6122.34	-62.50	7.45	10.62	2.15	-61.48	-13.00	48.48	H
7010.63	-58.64	8.28	11.61	2.15	-57.46	-13.00	44.46	H
7913.91	-62.14	8.41	12.53	2.15	-60.17	-13.00	47.17	V

**CA 5A\_7A, 10M+10M, CH 20450+20800,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1668.00	-42.91	2.86	6.33	2.15	-41.59	-13.00	28.59
5809.22	-56.48	5.72	10.90	2.15	-53.45	-13.00	40.45
6624.84	-54.84	5.99	11.40	2.15	-51.58	-13.00	38.58
7447.03	-52.41	7.82	12.20	2.15	-50.18	-13.00	37.18
8271.56	-53.59	7.60	12.87	2.15	-50.47	-13.00	37.47
5010.00	-60.30	5.13	10.52	2.15	-54.91	-25.00	29.91
7535.16	-55.16	7.46	12.39	2.15	-50.23	-25.00	25.23
10020.47	-47.96	9.34	13.36	2.15	-43.94	-25.00	18.94
12511.88	-46.75	12.37	13.60	2.15	-45.52	-25.00	20.52
15021.09	-45.25	14.74	14.10	2.15	-45.89	-25.00	20.89
17546.25	-35.15	19.66	14.45	2.15	-40.36	-25.00	15.36
1668.00	-42.91	2.86	6.33	2.15	-41.59	-13.00	28.59

**CA 5A\_7A, 10M+10M, CH 20525+21100,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1654.00	-43.10	2.56	6.35	2.15	-41.46	-13.00	28.46
5844.38	-57.21	5.59	10.90	2.15	-54.05	-13.00	41.05
6704.06	-54.90	6.22	11.45	2.15	-51.82	-13.00	38.82
7523.44	-53.58	7.71	12.37	2.15	-51.07	-13.00	38.07
8348.91	-53.13	8.29	13.00	2.15	-50.57	-13.00	37.57
5070.00	-60.54	5.30	10.53	2.15	-55.31	-25.00	30.31
7602.66	-55.57	7.58	12.30	2.15	-50.85	-25.00	25.85
10140.00	-49.90	9.75	13.24	2.15	-46.41	-25.00	21.41
12665.16	-50.01	11.65	13.53	2.15	-48.13	-25.00	23.13
15220.78	-44.44	15.68	13.98	2.15	-46.14	-25.00	21.14
17724.84	-35.92	19.56	14.62	2.15	-40.86	-25.00	15.86
1654.00	-43.10	2.56	6.35	2.15	-41.46	-13.00	28.46

**CA 5A\_7A, 10M+10M, CH 20600+21400,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1701.00	-41.70	2.89	5.94	2.15	-40.80	-13.00	27.80
2523.00	-34.67	4.32	5.80	2.15	-35.34	-13.00	22.34
5924.53	-56.27	6.08	10.95	2.15	-53.55	-13.00	40.55
6734.06	-54.92	6.27	11.42	2.15	-51.92	-13.00	38.92
7584.84	-52.29	7.55	12.32	2.15	-49.67	-13.00	36.67
8436.56	-53.04	8.02	13.09	2.15	-50.12	-13.00	37.12
5129.53	-55.16	5.57	10.58	2.15	-50.15	-25.00	25.15
7695.00	-54.40	6.70	12.40	2.15	-48.70	-25.00	23.70
10260.00	-44.21	10.84	13.30	2.15	-41.75	-25.00	16.75

12825.47	-45.98	13.14	13.50	2.15	-45.62	-25.00	20.62
15391.41	-44.29	14.87	13.81	2.15	-45.35	-25.00	20.35
17958.28	-34.34	20.03	14.80	2.15	-39.57	-25.00	14.57

**CA 5A\_66A, 5M+10M, CH20425+132022, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3307.03	-51.51	5.29	10.41	2.15	-48.54	-13.00	35.54	V
4132.03	-56.87	6.05	10.40	2.15	-54.67	-13.00	41.67	V
4959.84	-54.77	6.67	11.22	2.15	-52.37	-13.00	39.37	H
3430.31	-59.00	5.39	10.44	2.15	-56.10	-13.00	43.10	V
8587.03	-48.02	8.52	11.37	2.15	-47.32	-13.00	34.32	H
13720.31	-43.64	10.60	12.74	2.15	-43.65	-13.00	30.65	V

**CA 5A\_66A, 5M+10M, CH20525+132322, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.31	-57.71	5.50	10.56	2.15	-54.80	-13.00	41.80	V
8728.59	-48.19	8.45	11.30	2.15	-47.49	-13.00	34.49	H
13960.31	-41.49	10.83	12.46	2.15	-42.01	-13.00	29.01	H
3346.88	-54.67	5.32	10.49	2.15	-51.65	-13.00	38.65	H
4183.59	-55.43	6.17	10.47	2.15	-53.28	-13.00	40.28	V
5019.84	-54.73	6.57	11.34	2.15	-52.11	-13.00	39.11	H

**CA 5A\_66A, 5M+10M, CH20625+132622, QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
7099.69	-48.74	8.16	10.50	2.15	-48.55	-13.00	35.55	H
8879.06	-47.35	8.81	11.46	2.15	-46.85	-13.00	33.85	H
2540.00	-37.49	4.66	10.12	2.15	-34.18	-13.00	21.18	H
3386.25	-58.74	5.35	10.50	2.15	-55.74	-13.00	42.74	V
4233.28	-55.60	6.26	10.57	2.15	-53.44	-13.00	40.44	H
5079.38	-56.27	6.71	11.46	2.15	-53.67	-13.00	40.67	H

**CA 12A\_66A, 5M+10M, CH 23035+132022,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3438.75	-64.86	5.41	8.05	-62.22	-13.00	49.22	V
5158.13	-64.61	6.89	10.12	-61.38	-13.00	48.38	V
6877.50	-61.75	7.79	11.45	-58.09	-13.00	45.09	H
8596.88	-59.86	8.50	13.02	-55.34	-13.00	42.34	H
10316.25	-56.98	9.67	13.03	-53.62	-13.00	40.62	H
12000.00	-59.06	10.05	13.00	-56.11	-13.00	43.11	H
1403.00	-57.53	3.24	5.00	-55.77	-13.00	42.77	H
2112.00	-36.91	4.20	4.94	-36.17	-13.00	23.17	H
2811.50	-47.39	4.93	6.66	-45.66	-13.00	32.66	H
6354.38	-66.44	7.56	10.85	-63.15	-13.00	50.15	H
7066.41	-64.62	8.20	11.68	-61.14	-13.00	48.14	H
7713.75	-64.60	8.41	12.37	-60.64	-13.00	47.64	H

**CA 12A\_66A, 5M+10M, CH 23095+132322,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3489.84	-61.83	5.50	8.18	-59.15	-13.00	46.15	H
5235.00	-63.66	7.00	10.23	-60.43	-13.00	47.43	V
6980.16	-55.50	8.15	11.58	-52.07	-13.00	39.07	H
8725.78	-59.79	8.44	13.05	-55.18	-13.00	42.18	V
10470.47	-58.41	9.70	13.09	-55.02	-13.00	42.02	H
12163.13	-59.20	10.17	13.07	-56.30	-13.00	43.30	H
1467.00	-57.31	3.34	5.33	-55.32	-13.00	42.32	H
2146.00	-36.65	4.24	5.04	-35.85	-13.00	22.85	V
2882.00	-47.26	4.97	6.79	-45.44	-13.00	32.44	H
3489.84	-61.83	5.50	8.18	-59.15	-13.00	46.15	V
7024.22	-64.43	8.26	11.63	-61.06	-13.00	48.06	H
7827.19	-64.84	8.33	12.46	-60.71	-13.00	47.71	H

**CA 12A\_66A, 5M+10M, CH 23155+132622,QPSK**

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3549.84	-65.33	5.82	8.27	-62.88	-13.00	49.88	H
5325.00	-61.24	6.99	10.36	-57.87	-13.00	44.87	H
7100.16	-55.92	8.16	11.72	-52.36	-13.00	39.36	H
8875.31	-59.18	8.80	13.08	-54.90	-13.00	41.90	H
10650.47	-61.09	9.29	13.13	-57.25	-13.00	44.25	H
12496.88	-59.05	10.18	13.20	-56.03	-13.00	43.03	H
1476.00	-56.88	3.35	5.38	-54.85	-13.00	41.85	H
2173.50	-36.83	4.28	5.12	-35.99	-13.00	22.99	V
2893.50	-46.49	4.98	6.81	-44.66	-13.00	31.66	H



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3549.84	-65.33	5.82	8.27	-62.88	-13.00	49.88	H
4282.03	-64.89	6.21	9.18	-61.92	-13.00	48.92	H
7100.16	-55.92	8.16	11.72	-52.36	-13.00	39.36	H

Note: Peak EIRP (dBm) = P<sub>Mea</sub>(dBm) - Path Loss(dB) + Antenna Gain(dBi)

Note: Expanded measurement uncertainty is U = 5.64 dB, k = 2.

## **A.3 Frequency Stability**

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

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage. Two reference points are established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and highest channel of operation shall be identified as  $F_L$  and  $F_H$  respectively.

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 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 middle channel for each LTE band, 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. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring 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 center 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 decrements from +50°C to -30°C. Allow at least 1.5 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 QPSK (worst case of all bandwidths)

##### Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1850.833	1909.231		
50				25.61	0.0136
40				3.48	0.0019
30				0.20	0.0001
10				-0.49	0.0003
0				25.13	0.0134
-10				26.35	0.0140
-20				5.49	0.0029
-30				25.41	0.0135

##### Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.833	1909.231	28.32	0.0151
4.4				2.98	0.0016

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

##### Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	824.417	848.583		
50				-0.36	0.0004
40				-0.07	0.0001
30				-0.89	0.0011
10				-2.65	0.0032
0				-6.48	0.0077
-10				-1.85	0.0022
-20				-2.96	0.0035
-30				-3.32	0.0040

##### Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.417	848.583	-0.29	0.0003
4.4				-3.53	0.0042

**LTE Band 7, 20MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2500.641	2569.327		
50				-0.66	0.0003
40				2.65	0.0010
30				4.02	0.0016
10				3.39	0.0013
0				1.52	0.0006
-10				42.86	0.0169
-20				3.02	0.0012
-30				-1.36	0.0005

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2500.641	2569.327	1.97	0.0008
4.4				-1.36	0.0005

**LTE Band 12, 10MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	699.465	715.519		
50				13.39	0.0189
40				13.63	0.0193
30				-0.24	0.0003
10				-0.33	0.0005
0				0.44	0.0006
-10				-0.01	0.0000
-20				0.93	0.0013
-30				-11.94	0.0169

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	699.465	715.519	-0.19	0.0003
4.4				13.80	0.0195

**LTE Band 13, 10MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	777.465	786.535		
50				-13.70	0.0175
40				-13.32	0.0170
30				-13.68	0.0175
10				-12.99	0.0166
0				-14.12	0.0181
-10				-11.89	0.0152
-20				-12.15	0.0155
-30				-16.88	0.0216

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	777.465	786.535	-0.39	0.0005
4.4				-12.85	0.0164

**LTE Band 25, 20MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1850.833	1914.199		
50				3.29	0.0017
40				54.82	0.0291
30				11.77	0.0063
10				3.13	0.0017
0				13.22	0.0070
-10				-1.40	0.0007
-20				28.75	0.0153
-30				1.97	0.0010

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.833	1914.199	24.19	0.0128
4.4				10.19	0.0054

**LTE Band 26(814MHz~824MHz), 10MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	814.370	823.620		
50				-1.69	0.0021
40				-1.82	0.0022
30				-2.32	0.0028
10				-3.95	0.0048
0				12.20	0.0149
-10				0.43	0.0005
-20				-2.29	0.0028
-30				0.06	0.0001

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	814.370	823.620	-3.82	0.0047
4.4				-3.13	0.0038

**LTE Band 26(824MHz~849MHz), 15MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	824.553	848.471		
50				-1.20	0.0014
40				-2.16	0.0026
30				-2.42	0.0029
10				-1.07	0.0013
0				-2.07	0.0025
-10				-2.35	0.0028
-20				-3.26	0.0039
-30				-2.12	0.0025

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.553	848.471	-0.80	0.0010
4.4				-1.22	0.0015

**LTE Band 41, 20MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2496.385	2689.551		
50				0.82	0.0003
40				-3.28	0.0013
30				1.56	0.0006
10				-4.02	0.0016
0				-1.56	0.0006
-10				1.93	0.0007
-20				1.42	0.0005
-30				3.00	0.0012

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2496.385	2689.551	0.64	0.0002
4.4				1.56	0.0006

**LTE Band 66, 20MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.833	1779.199		
50				12.06	0.0069
40				-38.47	0.0220
30				-37.12	0.0213
10				15.03	0.0086
0				26.52	0.0152
-10				-36.49	0.0209
-20				-0.34	0.0002
-30				-35.91	0.0206

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.833	1779.199	-19.68	0.0113
4.4				-3.46	0.0020

**LTE Band 71, 20MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	663.994	697.006		
50				-0.76	0.0011
40				-5.18	0.0076
30				-0.27	0.0004
10				-0.92	0.0014
0				-1.04	0.0015
-10				-2.45	0.0036
-20				-0.04	0.0001
-30				-0.60	0.0009

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	663.994	697.006	-0.57	0.0008
4.4				-0.49	0.0007

**LTE CA band 66B, 10MHz+10MHz bandwidth QPSK(worst case of all bandwidths)**
**Frequency Error vs Voltage**

Temperature(°C)	Voltage(V)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.320	1779.680		
50				1.67	0.0010
40				4.62	0.0026
30				2.16	0.0012
10				3.52	0.0020
0				5.25	0.0030
-10				-1.77	0.0010
-20				2.55	0.0015
-30				-4.23	0.0024

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.320	1779.680	4.62	0.0026
4.4				0.99	0.0006

**LTE CA band 66C, 20MHz+20MHz bandwidth QPSK(worst case of all bandwidths)**
**Frequency Error vs Voltage**

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.500	1779.480		
50				-0.69	0.0004
40				0.49	0.0003
30				1.76	0.0010
10				1.20	0.0007
0				-4.15	0.0024
-10				-4.21	0.0024
-20				-1.27	0.0007
-30				-0.34	0.0002

**Frequency Error vs Voltage**

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.500	1779.480	-1.50	0.0009
4.4				-5.05	0.0029

Note: Expanded measurement uncertainty is  $U = 0.01 \text{ PPM}$ ,  $k = 2$ .

#### **A.4 Occupied Bandwidth**

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

The measurement method is from ANSI C63.26:

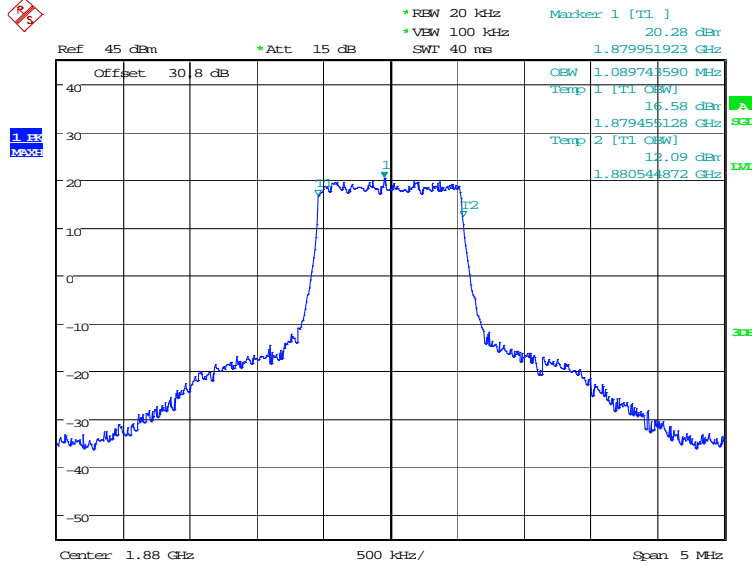
- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts.
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times$  RBW.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation.
- d) Set the detection mode to peak, and the trace mode to max-hold.



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

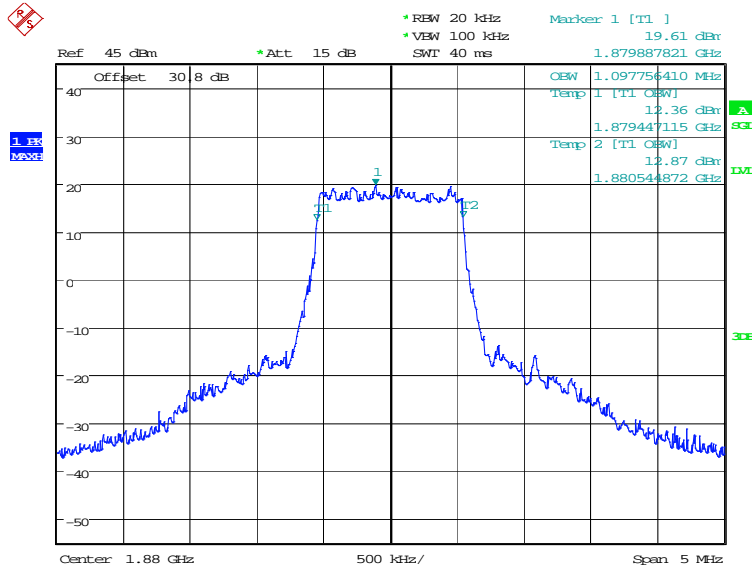
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	1089.74	1097.76

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



Date: 22.DEC.2023 07:09:22

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

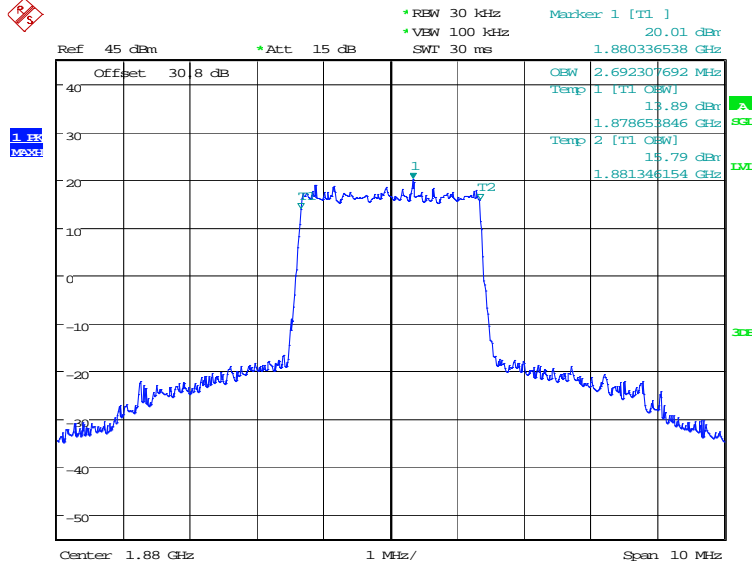


Date: 22.DEC.2023 07:10:01

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

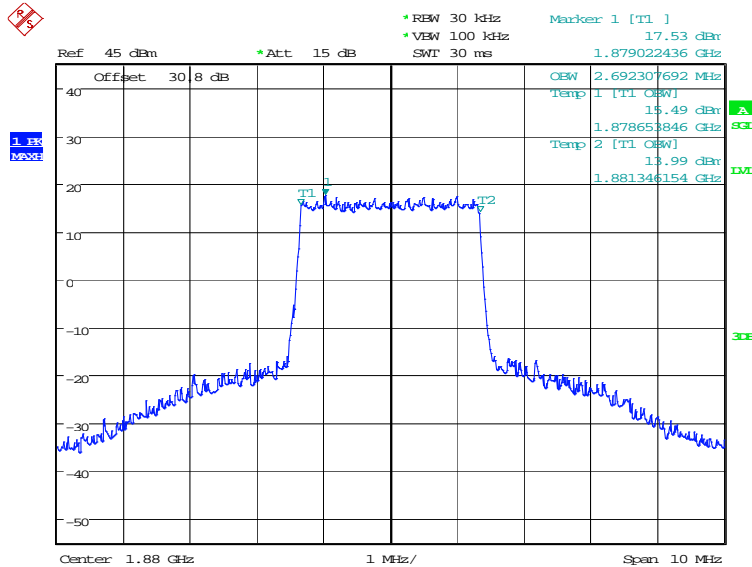
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 22.DEC.2023 07:10:43

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

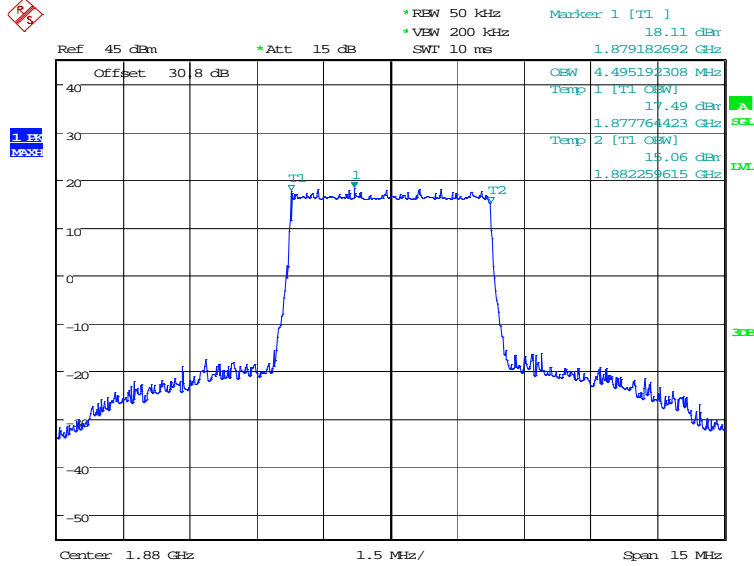


Date: 22.DEC.2023 07:11:23

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

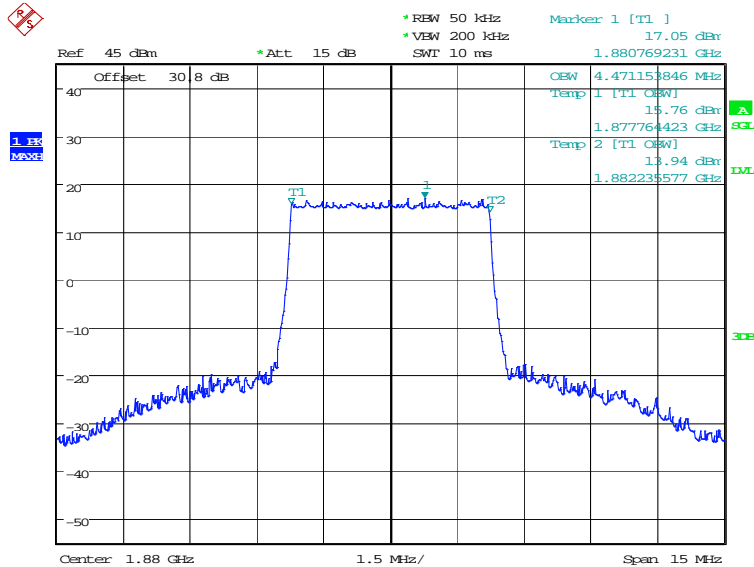
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	4495.19	4471.15

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



Date: 22.DEC.2023 07:12:05

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

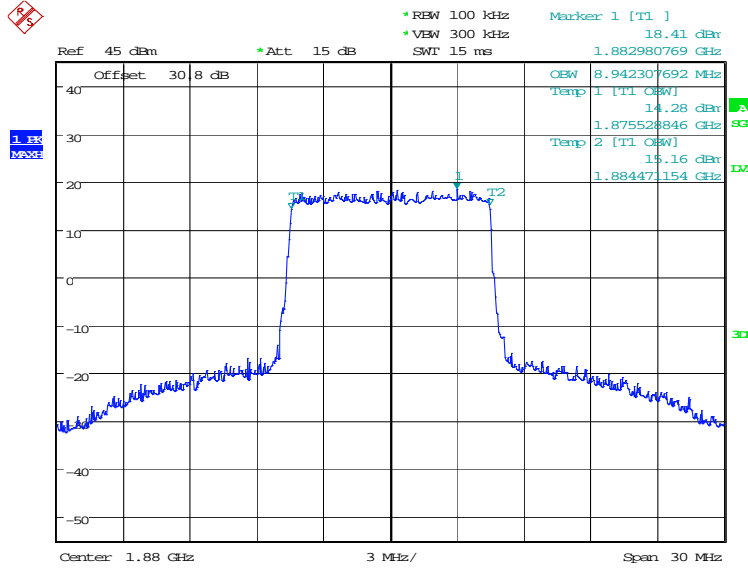


Date: 22.DEC.2023 07:12:45

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

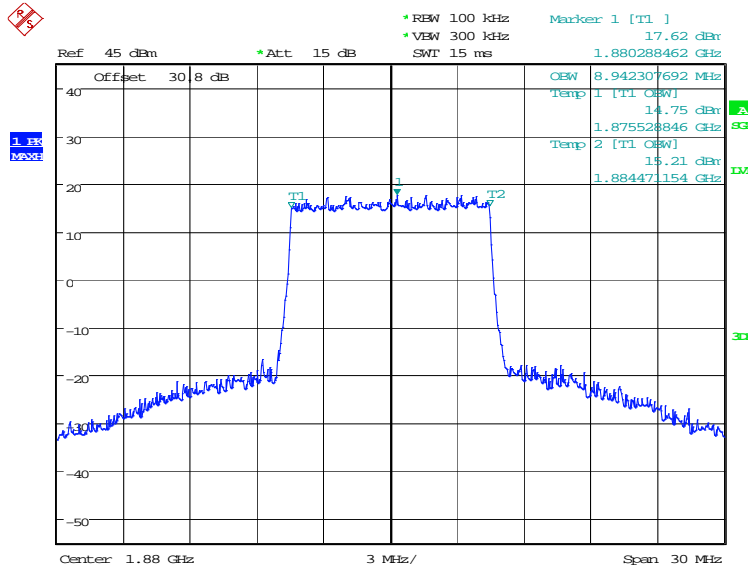
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	8942.31	8942.31

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



Date: 22.DEC.2023 07:13:27

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

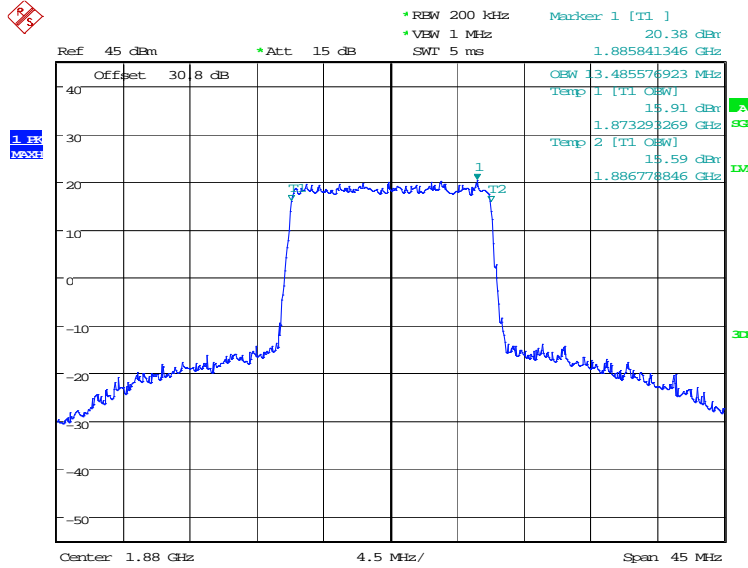


Date: 22.DEC.2023 07:14:06

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

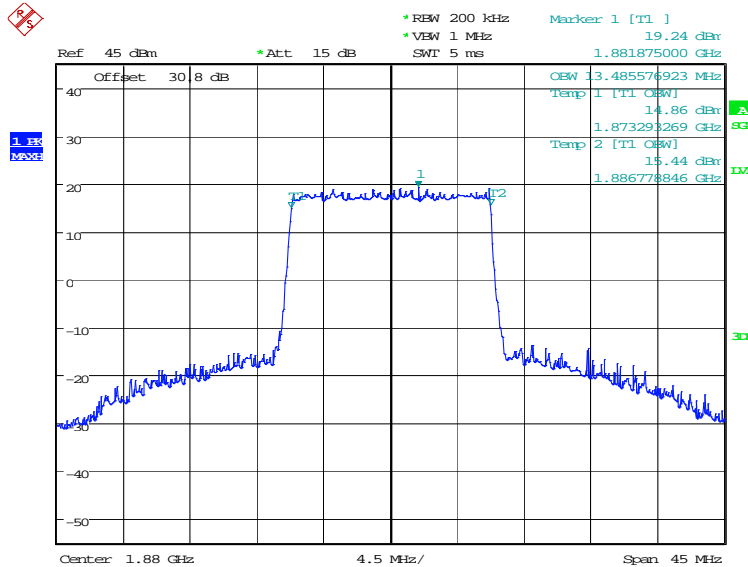
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 22.DEC.2023 07:14:48

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

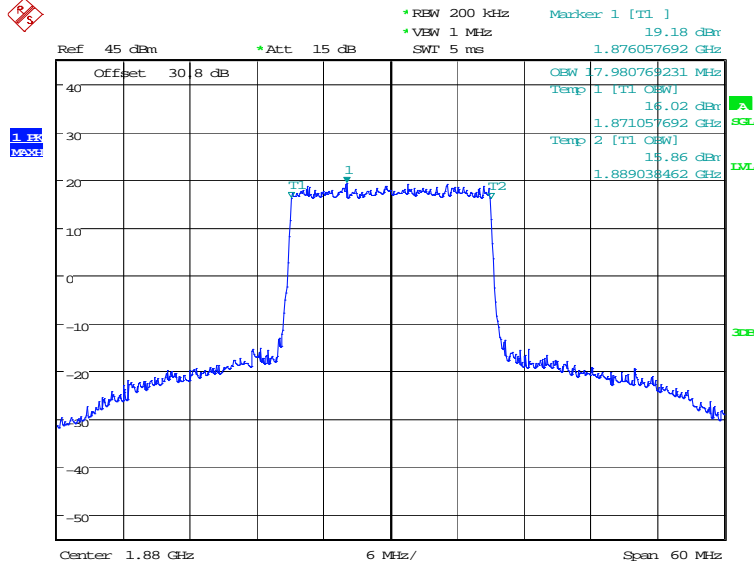


Date: 22.DEC.2023 07:15:28

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

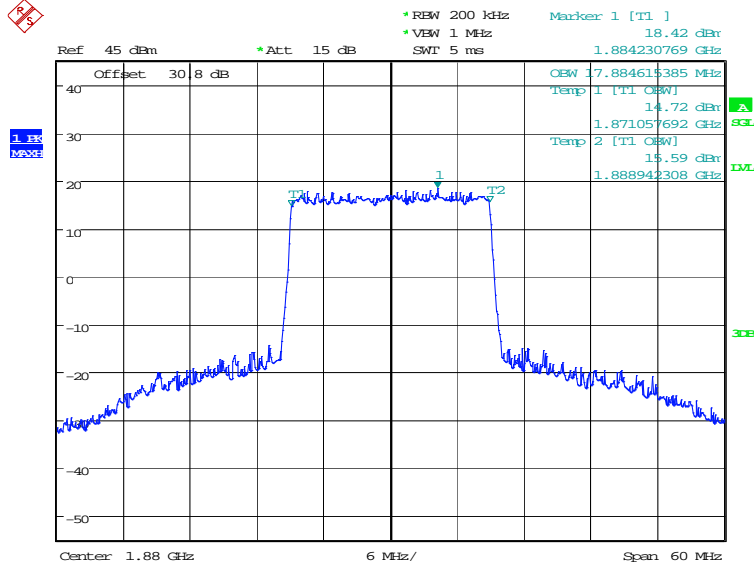
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	17980.77	17884.62

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



Date: 22.DEC.2023 07:16:10

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

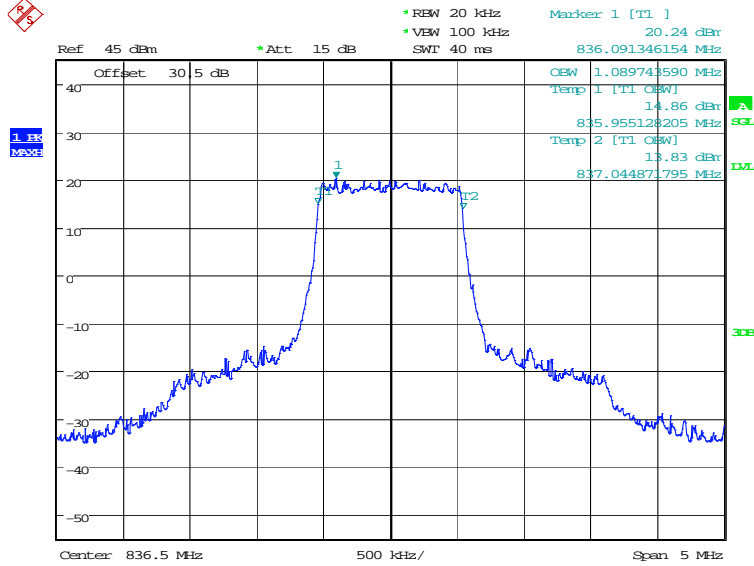


Date: 22.DEC.2023 07:16:50

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

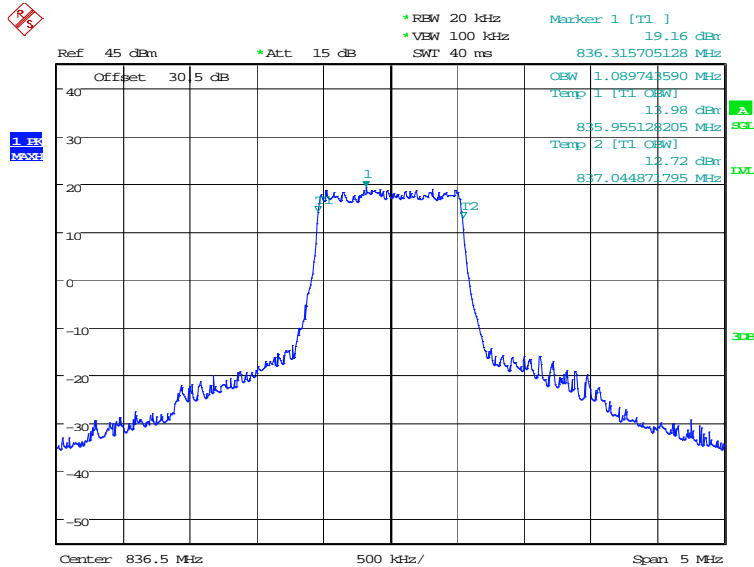
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	1089.74	1089.74

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



Date: 22.DEC.2023 08:23:26

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

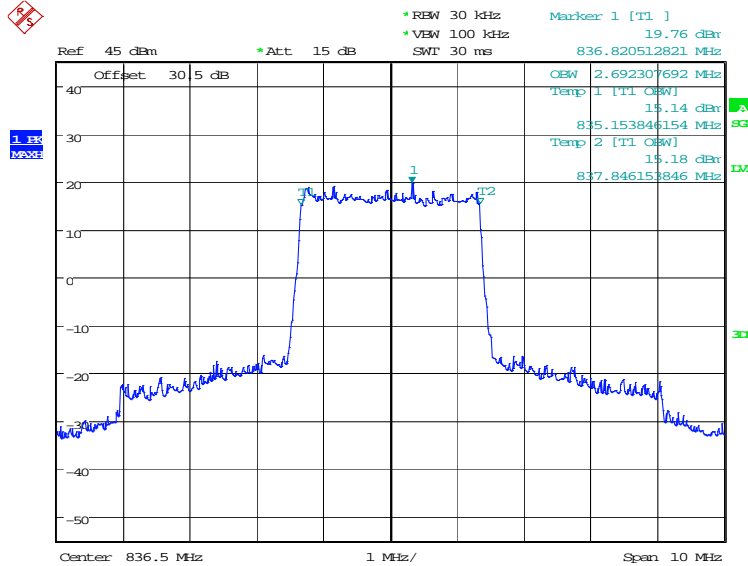


Date: 22.DEC.2023 08:24:06

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

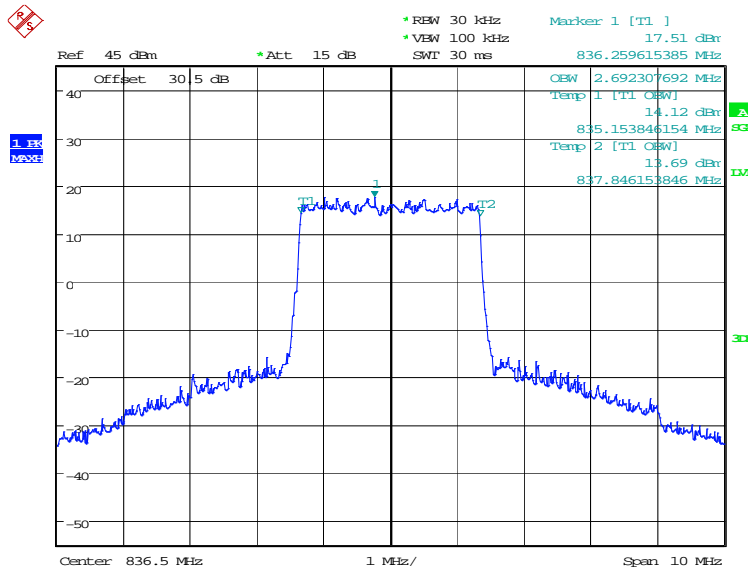
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	2692.31	2692.31

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



Date: 22.DEC.2023 08:24:48

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



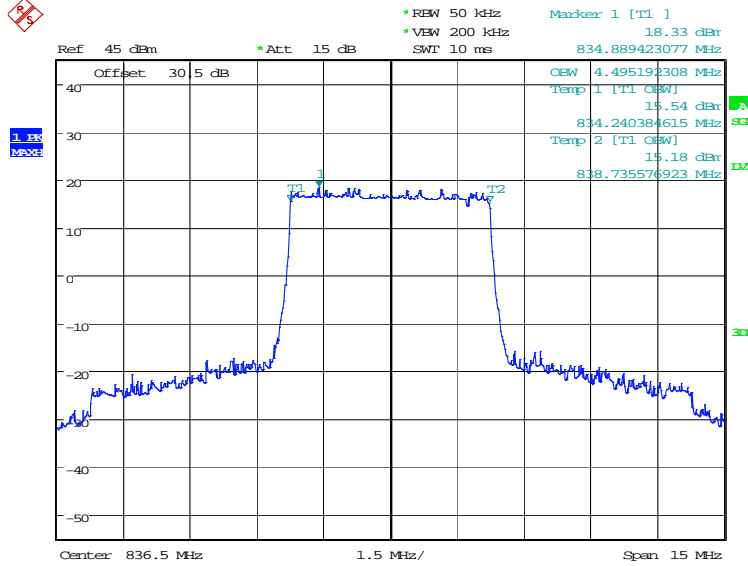
Date: 22.DEC.2023 08:25:27



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

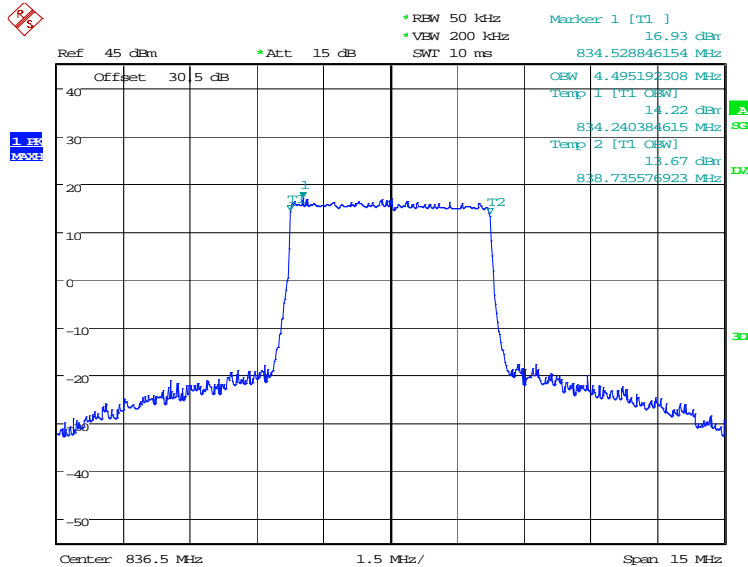
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	4495.19	4495.19

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



Date: 22.DEC.2023 08:26:09

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

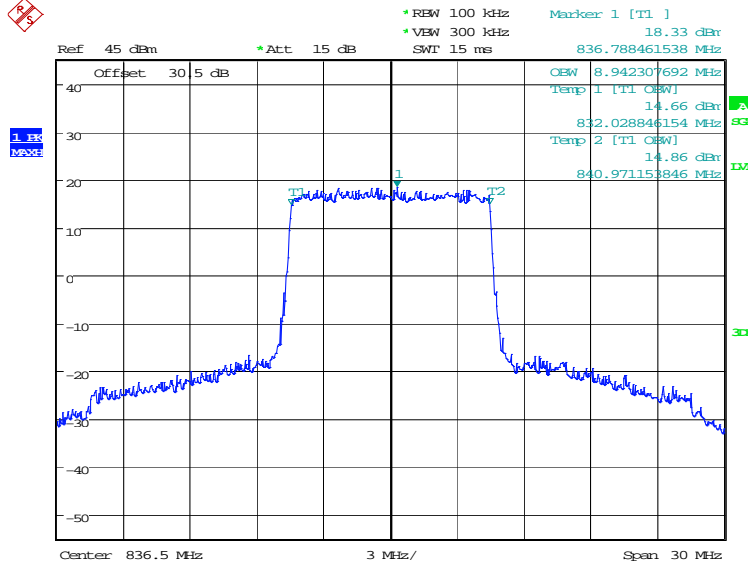


Date: 22.DEC.2023 08:26:49

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

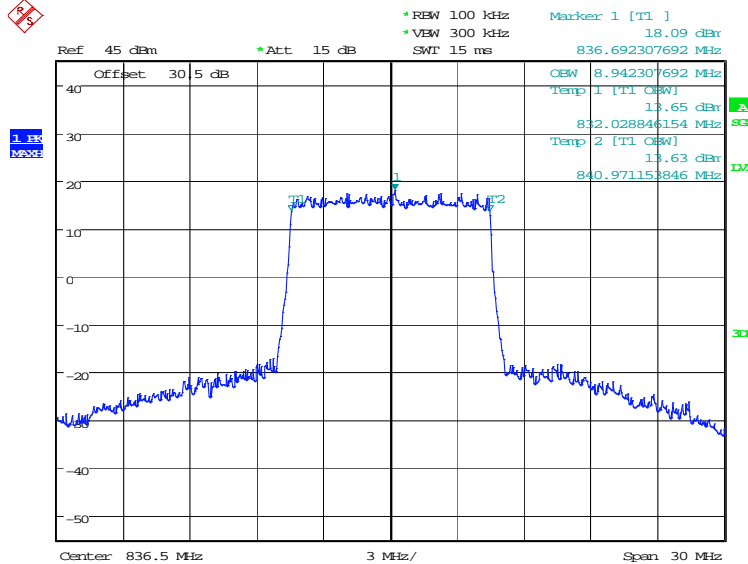
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	8942.31	8942.31

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



Date: 22.DEC.2023 08:27:31

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

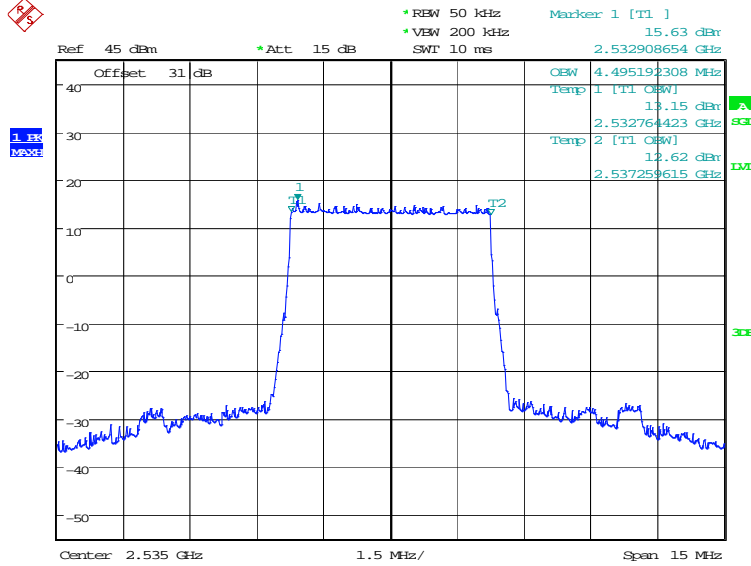


Date: 22.DEC.2023 08:28:11

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

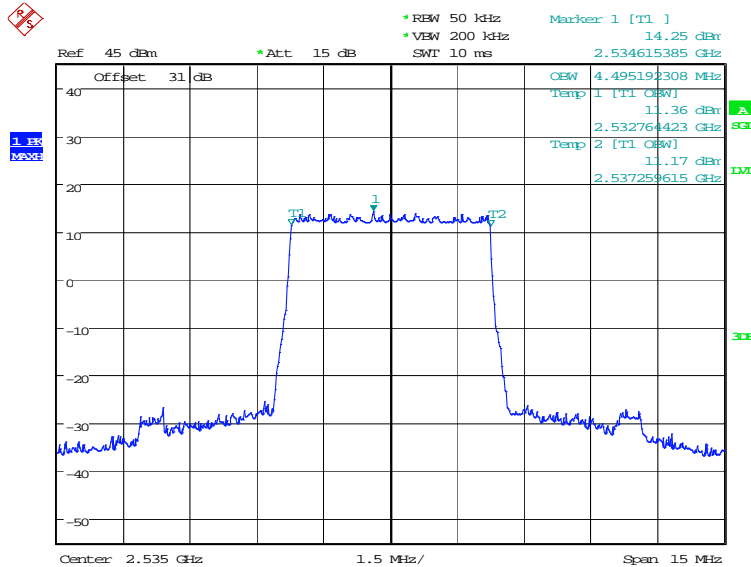
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 5.DEC.2023 13:25:19

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

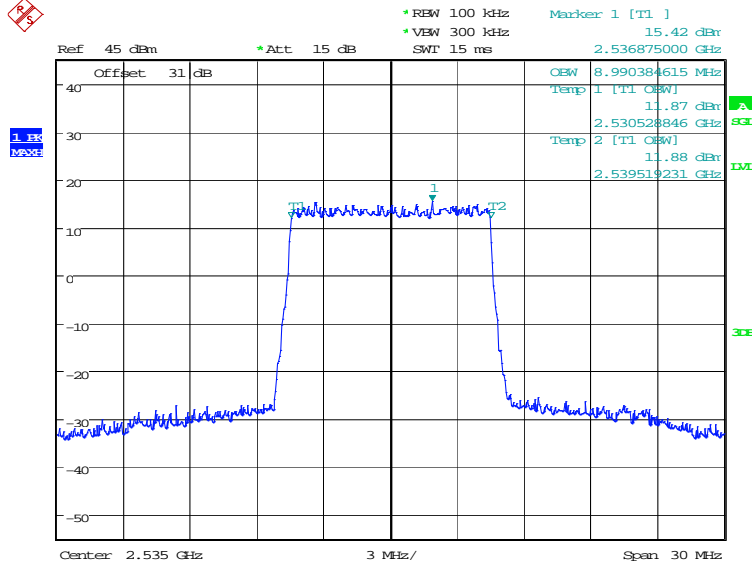


Date: 5.DEC.2023 13:25:59

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

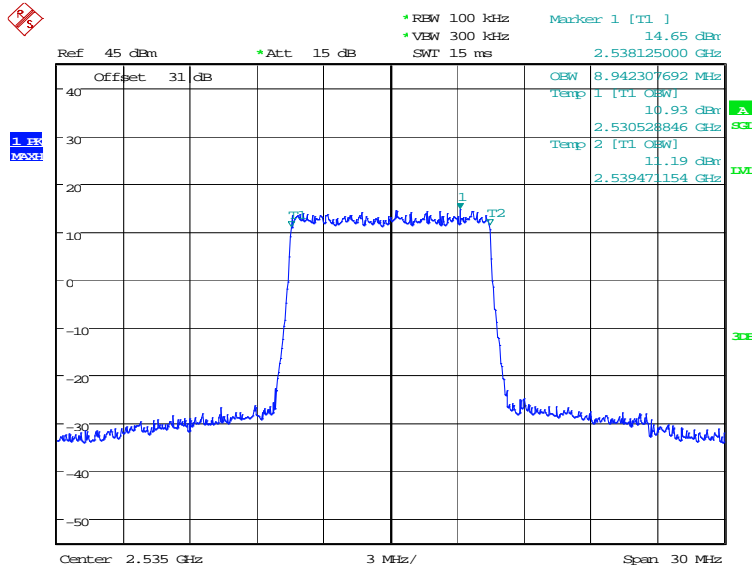
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	8990.38	8942.31

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



Date: 5.DEC.2023 13:26:41

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

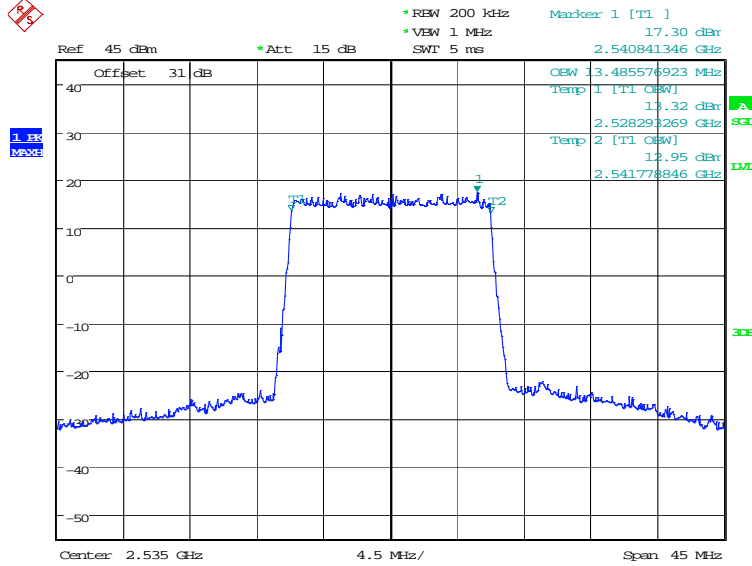


Date: 5.DEC.2023 13:27:21

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

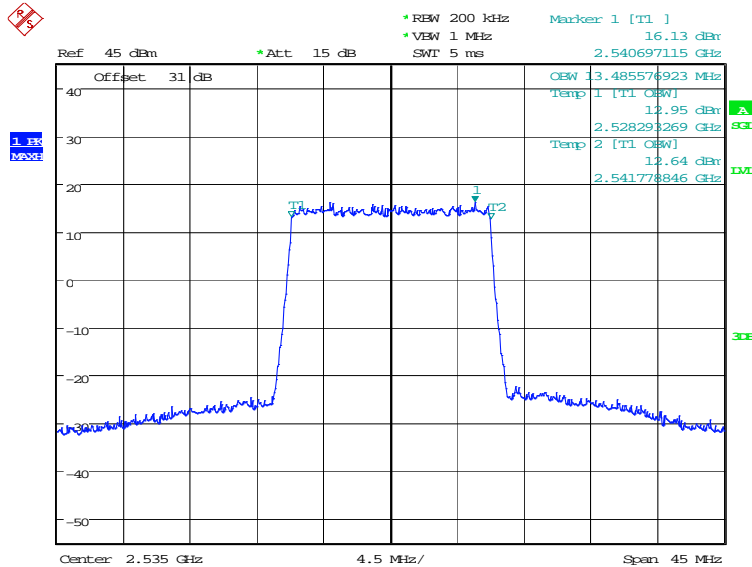
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 5.DEC.2023 13:28:03

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

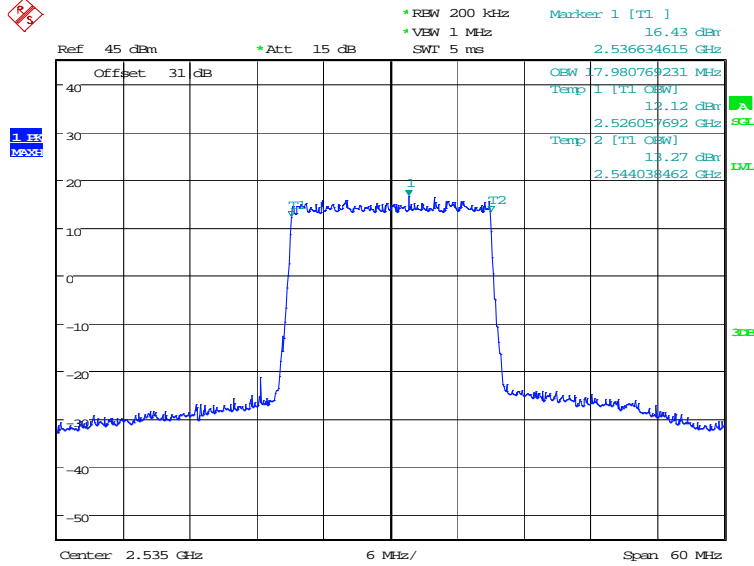


Date: 5.DEC.2023 13:28:43

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

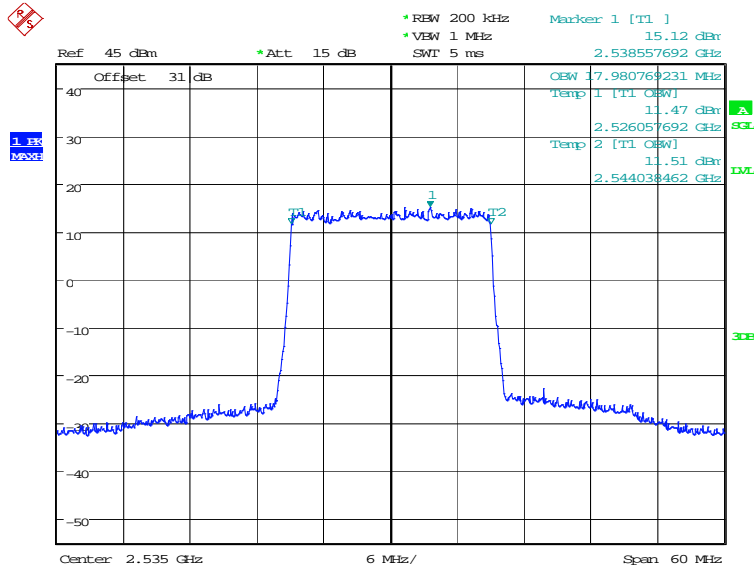
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 5.DEC.2023 13:29:25

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

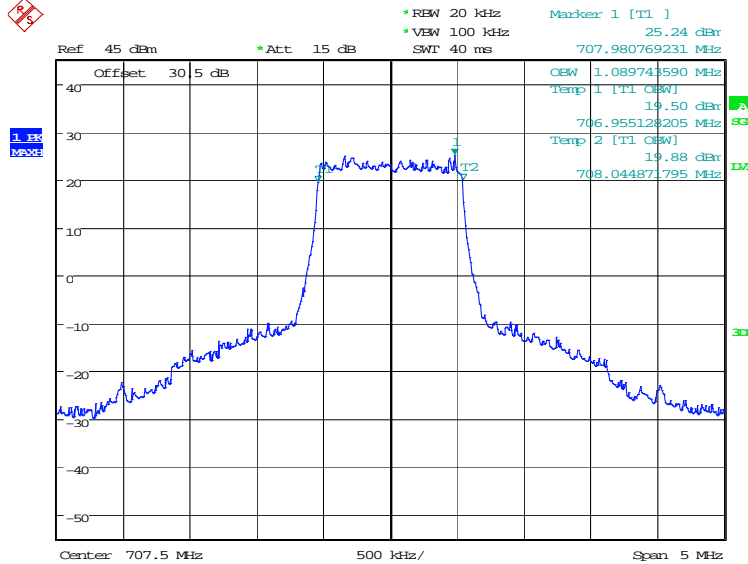


Date: 5.DEC.2023 13:30:05

**LTE band 12, 1.4MHz (99%)**

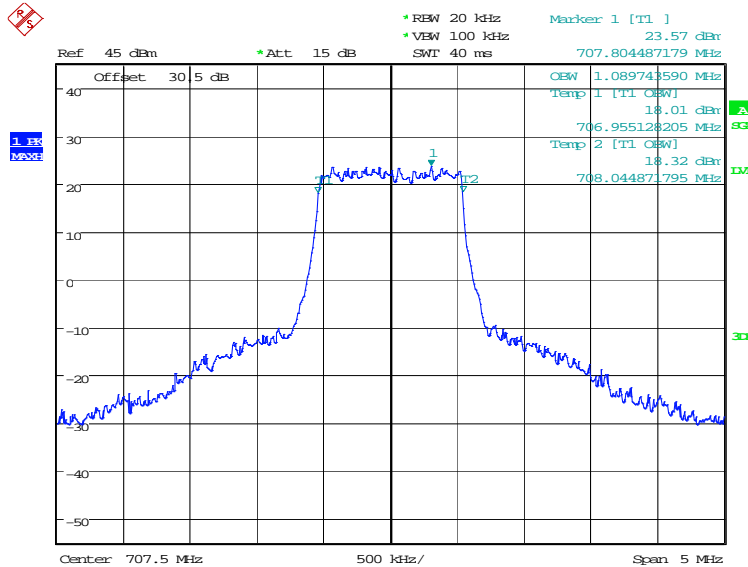
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	1089.74	1089.74

**LTE band 12, 1.4MHz Bandwidth, QPSK (99% BW)**



Date: 5.DEC.2023 12:28:05

**LTE band 12, 1.4MHz Bandwidth, 16QAM (99% BW)**

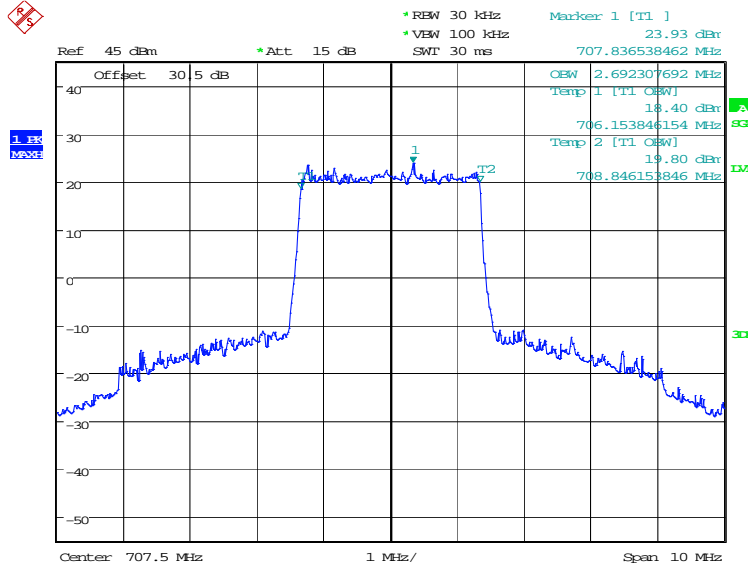


Date: 5.DEC.2023 12:28:44

**LTE band 12, 3MHz (99%)**

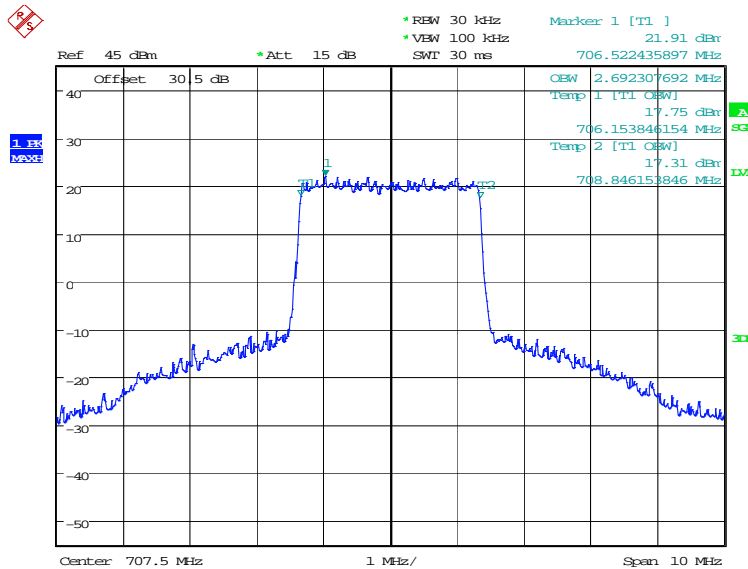
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	2692.31	2692.31

**LTE band 12, 3MHz Bandwidth, QPSK (99% BW)**



Date: 5.DEC.2023 12:29:26

**LTE band 12, 3MHz Bandwidth, 16QAM (99% BW)**



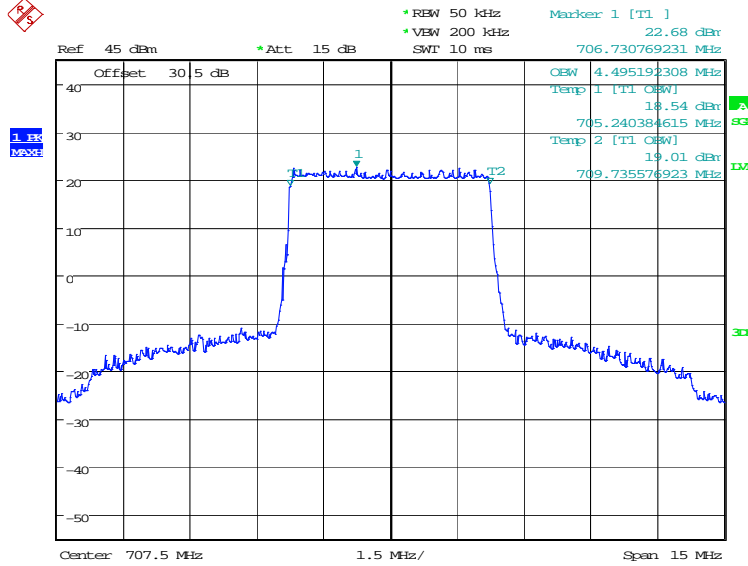
Date: 5.DEC.2023 12:30:06



**LTE band 12, 5MHz (99%)**

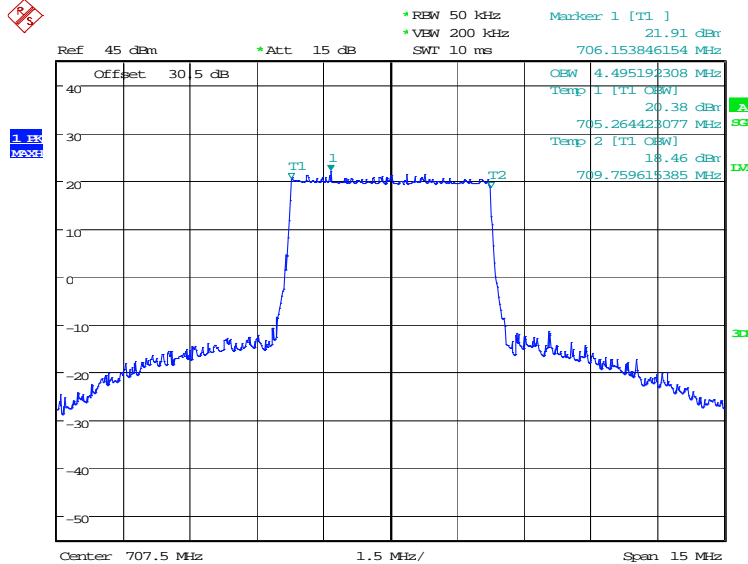
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	4495.19	4495.19

**LTE band 12, 5MHz Bandwidth, QPSK (99% BW)**



Date: 5.DEC.2023 12:30:48

**LTE band 12, 5MHz Bandwidth, 16QAM (99% BW)**

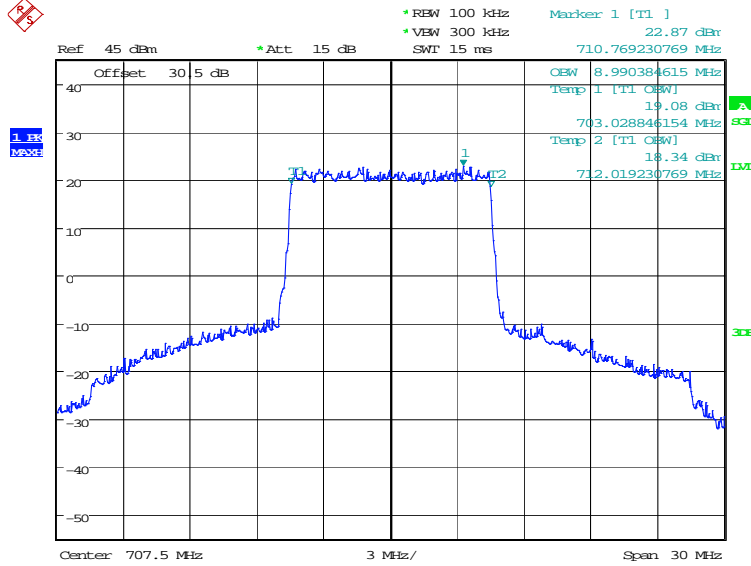


Date: 5.DEC.2023 12:31:28

**LTE band 12, 10MHz (99%)**

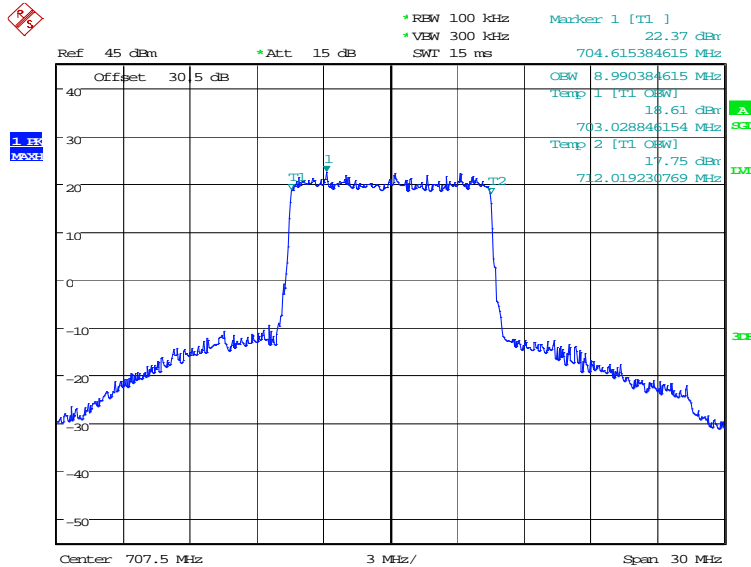
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	8990.38	8990.38

**LTE band 12, 10MHz Bandwidth, QPSK (99% BW)**



Date: 5.DEC.2023 12:32:09

**LTE band 12, 10MHz Bandwidth, 16QAM (99% BW)**

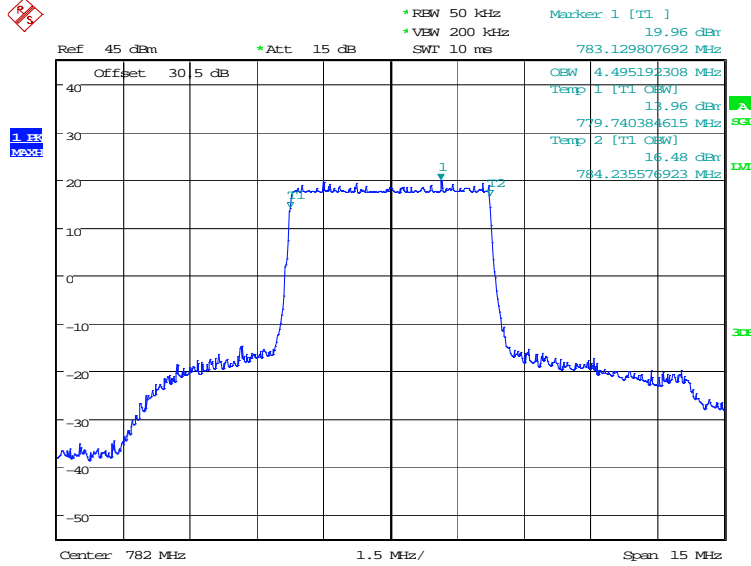


Date: 5.DEC.2023 12:32:49

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

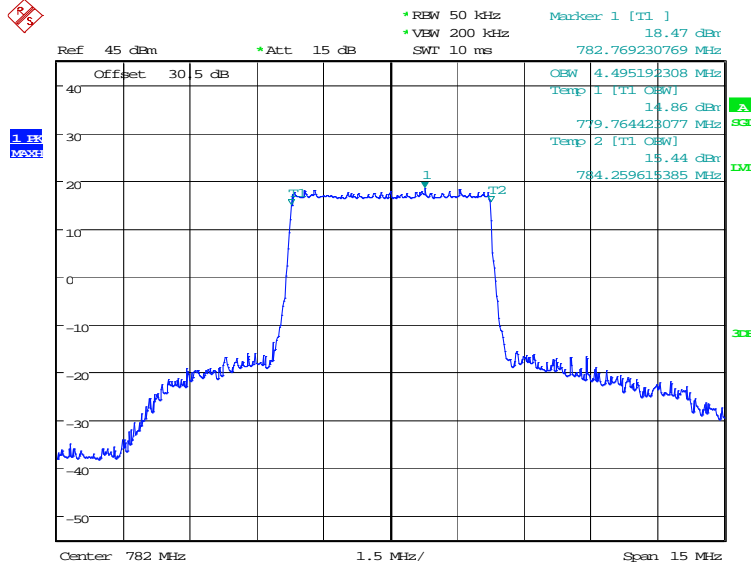
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
782.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 5.DEC.2023 12:33:33

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



Date: 5.DEC.2023 12:34:13