



TEST REPORT

No. I21Z60861-WMD03

for

TCL Communication Ltd.

Tablet PC

Model Name: 9198S

FCC ID: 2ACCJB155

with

Hardware Version: 03

Software Version: 2C61

Issued Date: 2021-09-09

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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

Tel: +86(0)10-62304633-2512, Fax: +86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z60861-WMD03	Rev.0	1 st edition	2021-07-20
I21Z60861-WMD03	Rev.1	2nd edition Revise the information of the Spectrum Analyzer on page 14.	2021-09-09

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

CONTENTS

1. TEST LABORATORY.....	4
1.1. INTRODUCTION & ACCREDITATION.....	4
1.2. TESTING LOCATION.....	4
1.3. TESTING ENVIRONMENT.....	5
1.4. PROJECT DATA.....	5
1.5. SIGNATURE.....	5
2. CLIENT INFORMATION.....	6
2.1. APPLICANT INFORMATION.....	6
2.2. MANUFACTURER INFORMATION.....	6
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE).....	7
3.1. ABOUT EUT.....	7
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	8
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	8
4. REFERENCE DOCUMENTS.....	9
4.1. DOCUMENTS SUPPLIED BY APPLICANT.....	9
4.2. REFERENCE DOCUMENTS FOR TESTING.....	9
5. LABORATORY ENVIRONMENT.....	10
6. SUMMARY OF TEST RESULT.....	11
7. TEST EQUIPMENT UTILIZED.....	14
ANNEX A: MEASUREMENT RESULTS.....	15
A.1 OUTPUT POWER.....	15
A.2 EMISSION LIMIT.....	53
A.3 FREQUENCY STABILITY.....	65
A.4 OCCUPIED BANDWIDTH.....	71
A.5 EMISSION BANDWIDTH.....	120
A.6 BAND EDGE COMPLIANCE.....	169
A.7 CONDUCTED SPURIOUS EMISSION.....	212
A.8 PEAK-TO-AVERAGE POWER RATIO.....	220
A.9 END USER DEVICE ADDITIONAL REQUIREMENT (CBSD PROTOCOL).....	222
ANNEX B: ACCREDITATION CERTIFICATE.....	225

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP 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 2: CTTL(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road,
Haidian District, Beijing, P. R. China 100191

1.3. Testing Environment

Normal Temperature: 15-35℃
Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2021-05-12
Testing End Date: 2021-07-16

1.5. Signature



Dong Yuan
(Prepared this test report)



Zhou Yu
(Reviewed this test report)



Zhao Hui Lin
Deputy Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd
Address /Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Park, Shatin, NT, Hong Kong
Contact: Gong Zhizhou
Email: zhizhou.gong@tcl.com
Telephone: 0086-755-36611722

2.2. Manufacturer Information

Company Name: TCL Communication Ltd
Address /Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Park, Shatin, NT, Hong Kong
Contact: Gong Zhizhou
Email: zhizhou.gong@tcl.com
Telephone: 0086-755-36611722
Fax: 0086-755-36612000-81722

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Tablet PC
Model Name	9198S
FCC ID	2ACCJB155
Antenna	Embedded
Output power	25.42dBm maximum EIRP measured for CA 48C
Extreme vol. Limits	3.6VDC to 4.4VDC (nominal: 3.85VDC)
Extreme temp. Tolerance	-10°C to +55°C
LTE Frequency Band	FDD2/FDD3/FDD4/FDD5/FDD7/FDD12/FDD13/FDD20/FDD28/ TDD46/TDD48/FDD66
LTE DL 2CA Frequency Band(PCC and SCC can be interchanged.)	CA_4A-13A,CA_13A-66A,CA_2A-13A,CA_2A-2A,CA_2A-4A, CA_2A-66A, CA_2A-5A,CA_4A-5A,CA_5A-66A,CA_4A-4A,CA_5B, CA_5A-5A,CA_66A-66A,CA_66B,CA_66C,CA_2A-46A,CA_4A-46A, CA_13A-46A,CA_5A-46A,CA_46A-66A,CA_2A-48A,CA_4A-48A, CA_13A-48A,CA_48A-66A, CA_48C
LTE DL 3CA Frequency Band(PCC and SCC can be interchanged.)	CA_2A-2A-4A,CA_2A-2A-5A,CA_2A-2A-13A,CA_2A-2A-66A, CA_2A-4A-4A,CA_2A-4A-5A,CA_2A-4A-13A,CA_2A-5A-66A, CA_2A-5B,CA_2A-13A-66A,CA_2A-66A-66A,CA_2A-66B, CA_2A-66C,CA_4A_4A_5A,CA_4A-4A-13A,CA_4A-5B, CA_5A-5A-66A,CA_5A-66A-66A,CA_5A-66B,CA_5A-66C, CA_5B-66A,CA_13A-66A-66A,CA_13A-66B,CA_13A-66C, CA_66A-66C,CA_66A-66A-66A,CA_2A-46A-46A, CA_2A-46C,CA_4A-46A-46A,CA_4A-46C,CA_5A-46C, CA_13A-46C,CA_2A_5A_46A,CA_2A-13A-46A,CA_2A-46A-66A, CA_5A-46A-66A,CA_5B-46A,CA_13A-46A-66A,CA_2A-48A-48A, CA_2A-48C,CA_4A-48C,CA_13A-48A-48A,CA_13A-48A-66A, CA_13A-48C,CA_48A-48A-66A,CA_48A-66A-66A,CA_48A-66B, CA_48A-66C,CA_48C-66A,CA_48D, CA_2A-13A-48A
LTE DL 4CA Frequency Band(PCC and SCC can be interchanged.)	CA_2A-2A-66B,CA_2A-2A-66C,CA_2A-4A-5B,CA_2A-5A-66B, CA_2A-13A-66B,CA_2A-5A-66C,CA_2A-5B-66A,CA_2A-13A-66C, CA_4A-4A-5B,CA_5A-5A-66B,CA_5A-5A-66C,CA_5B-66A-66A, CA_5B-66B,CA_5B-66C,CA_2A_46A_46C,CA_2A-2A-46C, CA_5B-46C,CA_2A-46D,CA_4A-46A-46C,CA_4A-46D, CA_5A-46D,CA_13A-46D,CA_46A-46C-66A,CA_46D-66A, CA_2A-5A-46C,CA_2A-13A-46C,CA_2A-46C-66A,CA_5A-46C-66A, CA_13A-46C-66A,CA_2A-13A-48C,CA_2A-48A-48C,CA_4A-48D CA_2A-48D,CA_13A-48C-66A,CA_13A-48A-66B,CA_13A-48A-66C, CA_13A-48A-48C,CA_13A-48D,CA_48A-48A-66B, CA_48A-48A-66C,CA_48A-48C-66A,CA_48A-66A-66A, CA_48D-66A,CA_48E,CA_48C-66B,CA_48C-66C

LTE UL 2CA Frequency
Band(PCC and SCC can CA_5B, CA_66B, CA_48C
be interchanged.)

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

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT20a	358861400001197	03	2C61	2021-05-07
UT57a	358864100001767	03	2C61	2021-06-15

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

3.3. Internal Identification of AE used during the test

AE ID*	Description
AE1	Battery

AE1

Model	TLp078B1
Manufacturer	BYD
Capacitance	7800mAh

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

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to Annex A for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

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

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-20 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-20 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-20 Edition
FCC Part 96	CITIZENS BROADBAND RADIO SERVICE	10-1-20 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. Laboratory Environment

Control room / conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 M
Ground system resistance	< 0.5

Semi-anechoic chamber SAC-1 (23 meters × 17meters × 10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz

Fully-anechoic chamber FAC-3 (8.6 meters × 6.1 meters × 3.85 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 M
Ground system resistance	< 1
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz

6. Summary Of Test Result

LTE Band 2

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

LTE Band 5

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

LTE Band 7

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

LTE Band 12

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

LTE Band 13

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

LTE Band 48

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	96.41	P
2	Emission Limit	96.41	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	96.41	P
6	Band Edge Compliance	96.41	P
7	Conducted Spurious Emission	96.41	P
8	Peak-to-Average Power Ratio	96.41	P
9	End User Device Additional Requirements (CBSD Protocol)	96.47	P

LTE Band 66

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

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.

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

CA_5B, CA_66B, CA_48C of LTE UL 2CA mode are tested.

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 and 64QAM 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.

7. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2021-12-17	1 year
Spectrum Analyzer	FSU	200030	R&S	2021-06-01	1 year
Spectrum Analyzer	FSU	200030	R&S	2022-06-02	1 year
Radio Communication Analyzer	MT8821C	6201763159	Anritsu	2021-08-12	1 year
Signal&Spectrum Analyzer	FSW	104038	R&S	2022-06-24	1 year
Climate Chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
Universal Radio Communication Tester	CMW500	R&S	143008	2022-01-01	3 years
Test Receiver	E4440A	Agilent	MY48250642	2022-03-04	1 year
EMI Antenna	VULB9163	Schwarzbeck	9163-301	2021-08-04	1 year
EMI Antenna	3117	ETS-Lindgren	00119021	2022-02-02	1 year
EMI Antenna	3117	ETS-Lindgren	00058889	2021-10-11	1 year
EMI Antenna	9117	Schwarzbeck	167	2021-08-19	1 year
Signal Generator	N5183A	Agilent	MY49060065	2021-07-29	1 year
Power Amplifier	5S1G4	AR	0341863	/	/

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.

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	24.00	22.76	21.12	19.35
		1880.0	24.47	23.83	21.89	20.12
		1850.7	24.51	23.90	21.86	20.09
	1 RB low	1909.3	23.95	22.95	21.18	19.41
		1880.0	24.53	23.89	21.99	20.22
		1850.7	24.44	23.87	21.83	20.06
	50% RB mid	1909.3	23.81	23.03	21.31	19.54
		1880.0	24.52	23.75	21.96	20.19
		1850.7	24.47	23.70	21.90	20.13
	100% RB	1909.3	22.88	22.08	20.08	19.45
		1880.0	23.61	22.82	20.78	20.15
		1850.7	23.59	22.75	20.76	20.13
3MHz	1 RB high	1908.5	23.95	22.95	21.24	19.31
		1880.0	24.49	23.87	21.98	20.05
		1851.5	24.59	23.84	22.13	20.20
	1 RB low	1908.5	24.32	23.35	21.48	19.55
		1880.0	24.56	23.96	22.00	20.07
		1851.5	24.45	23.83	21.99	20.06
	50% RB mid	1908.5	23.16	22.26	20.32	19.66
		1880.0	23.69	22.87	20.87	20.21
		1851.5	23.66	22.85	20.87	20.21

	100% RB	1908.5	23.10	22.21	20.31	19.65
		1880.0	23.67	22.76	20.78	20.12
		1851.5	23.63	22.76	20.76	20.10
5MHz	1 RB high	1907.5	24.10	23.03	21.28	19.35
		1880.0	24.44	23.86	22.02	20.09
		1852.5	24.61	23.86	22.10	20.17
	1 RB low	1907.5	24.60	23.57	21.74	19.81
		1880.0	24.49	23.96	22.03	20.10
		1852.5	24.42	23.97	21.85	19.92
	50% RB mid	1907.5	23.29	22.42	20.48	19.82
		1880.0	23.62	22.82	20.85	20.19
		1852.5	23.57	22.83	20.90	20.24
	100% RB	1907.5	23.20	22.32	20.30	19.64
		1880.0	23.59	22.70	20.71	20.05
		1852.5	23.56	22.80	20.80	20.14
10MHz	1 RB high	1905.0	24.43	22.99	21.44	19.51
		1880.0	24.57	23.95	22.14	20.21
		1855.0	24.31	23.67	21.61	19.68
	1 RB low	1905.0	24.47	23.36	21.62	19.69
		1880.0	24.55	24.00	22.10	20.17
		1855.0	24.43	23.81	21.76	19.83
	50% RB mid	1905.0	23.54	22.61	20.64	19.98
		1880.0	23.65	22.82	20.87	20.21
		1855.0	23.63	22.71	20.74	20.08
	100% RB	1905.0	23.28	22.45	20.40	19.74
		1880.0	23.57	22.75	20.75	20.09
		1855.0	23.49	22.72	20.64	19.98
15MHz	1 RB high	1902.5	24.21	23.16	21.43	19.50
		1880.0	24.51	24.00	22.08	20.15
		1857.5	24.23	23.54	21.40	19.47
	1 RB low	1902.5	24.48	23.30	21.55	19.62
		1880.0	24.42	23.94	21.92	19.99
		1857.5	24.62	23.87	21.90	19.97
	50% RB mid	1902.5	23.54	22.68	20.66	20.00
		1880.0	23.67	22.86	20.96	20.30
		1857.5	23.63	22.72	20.87	20.21
	100% RB	1902.5	23.36	22.58	20.47	19.81
		1880.0	23.70	22.82	20.88	20.22
		1857.5	23.57	22.67	20.65	19.99

20MHz	1 RB high	1900.0	24.27	23.34	21.59	19.66
		1880.0	24.70	23.91	22.17	20.24
		1860.0	24.58	23.84	21.62	19.69
	1 RB low	1900.0	24.54	23.58	21.80	19.87
		1880.0	24.58	23.98	22.09	20.16
		1860.0	24.80	23.86	22.10	20.17
	50% RB mid	1900.0	23.70	22.76	20.64	19.98
		1880.0	23.91	22.94	20.93	20.27
		1860.0	23.74	22.83	20.86	20.20
	100% RB	1900.0	23.56	22.61	20.53	19.87
		1880.0	23.89	22.93	20.82	20.16
		1860.0	23.75	22.74	20.79	20.13

LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	23.65	22.98	21.23	18.51
		836.5	23.73	23.00	21.54	18.82
		824.7	23.65	22.99	21.40	18.68
	1 RB low	848.3	23.78	22.98	21.68	18.96
		836.5	23.66	23.06	21.53	18.81
		824.7	23.66	22.98	21.37	18.65
	50% RB mid	848.3	23.73	22.80	21.65	18.93
		836.5	23.81	22.81	21.43	18.71
		824.7	23.78	22.87	21.26	18.54
	100% RB	848.3	22.80	21.81	20.50	18.58
		836.5	22.71	21.93	20.39	18.57
		824.7	22.75	21.98	20.30	18.51
3MHz	1 RB high	847.5	23.71	23.07	21.42	18.70
		836.5	23.81	23.15	21.64	18.92
		825.5	23.77	23.11	21.84	19.12
	1 RB low	847.5	23.85	23.17	21.90	19.18
		836.5	23.79	23.16	21.79	19.07
		825.5	23.77	23.07	21.47	18.75
	50% RB mid	847.5	22.88	21.82	20.79	18.87
		836.5	22.87	21.86	20.59	18.67
		825.5	22.91	21.92	20.65	18.73
	100% RB	847.5	22.80	21.92	20.67	18.75
		836.5	22.85	21.86	20.46	18.54
		825.5	22.90	21.84	20.58	18.66
5MHz	1 RB high	846.5	23.97	23.08	21.48	18.76
		836.5	23.94	23.05	21.41	18.69
		826.5	23.82	23.11	21.66	18.94
	1 RB low	846.5	23.86	23.07	21.94	19.22
		836.5	23.86	23.25	21.85	19.13
		826.5	23.87	23.18	21.43	18.71
	50% RB mid	846.5	22.81	21.81	20.82	18.90
		836.5	22.86	21.89	20.60	18.68
		826.5	22.98	21.97	20.77	18.85
	100% RB	846.5	22.69	21.78	20.65	18.73
		836.5	22.82	21.87	20.45	18.53
		826.5	22.97	21.87	20.72	18.80
10MHz	1 RB high	844.0	23.74	22.96	21.47	18.75
		836.5	23.74	23.14	21.44	18.72

		829.0	23.66	23.04	22.01	19.29
	1 RB low	844.0	23.91	23.06	21.55	18.83
		836.5	23.68	23.09	21.87	19.15
		829.0	23.79	23.08	21.51	18.79
	50% RB mid	844.0	22.74	21.80	20.86	18.94
		836.5	22.80	21.79	20.61	18.69
		829.0	22.86	21.93	20.93	19.01
	100% RB	844.0	22.79	21.79	20.36	18.54
		836.5	22.69	21.79	20.58	18.66
		829.0	22.81	21.86	20.78	18.86

LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	24.30	23.64	22.42
		2535.0	24.36	23.70	22.54
		2502.5	24.31	23.64	22.56
	1 RB low	2567.5	24.25	23.57	22.34
		2535.0	24.44	23.71	22.59
		2502.5	24.20	23.55	22.21
	50% RB mid	2567.5	23.48	22.43	21.24
		2535.0	23.44	22.47	21.46
		2502.5	23.42	22.48	21.35
	100% RB	2567.5	23.32	22.34	21.23
		2535.0	23.43	22.49	21.40
		2502.5	23.47	22.45	21.20
10MHz	1 RB high	2565.0	24.27	23.80	22.47
		2535.0	24.34	23.74	22.48
		2505.0	24.45	23.80	22.60
	1 RB low	2565.0	24.35	23.70	22.49
		2535.0	24.35	23.79	22.53
		2505.0	24.28	23.79	22.18
	50% RB mid	2565.0	23.39	22.39	21.34
		2535.0	23.51	22.48	21.42
		2505.0	23.45	22.54	21.50
	100% RB	2565.0	23.37	22.41	21.34
		2535.0	23.39	22.43	21.40
		2505.0	23.37	22.44	21.42
15MHz	1 RB high	2562.5	24.07	23.37	22.11
		2535.0	24.15	23.55	22.22
		2507.5	24.17	23.43	22.37
	1 RB low	2562.5	24.07	23.60	22.29
		2535.0	24.06	23.57	22.25
		2507.5	24.15	23.45	22.10
	50% RB mid	2562.5	23.31	22.32	21.24
		2535.0	23.30	22.33	21.28
		2507.5	23.26	22.32	21.26
	100% RB	2562.5	23.31	22.37	21.21
		2535.0	23.25	22.38	21.29
		2507.5	23.29	22.21	21.28
20MHz	1 RB high	2560.0	23.94	23.29	22.13
		2535.0	24.06	23.36	22.24
		2510.0	24.13	23.35	22.20
	1 RB low	2560.0	24.05	23.42	22.35

		2535.0	24.09	23.36	22.93
		2510.0	24.05	23.37	22.20
	50% RB mid	2560.0	23.21	22.23	21.31
		2535.0	23.18	22.27	21.33
		2510.0	23.37	22.31	21.32
	100% RB	2560.0	23.22	22.21	21.29
		2535.0	23.13	22.20	21.29
		2510.0	23.26	22.29	21.37

LTE band 12

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	23.49	22.72	21.70
		707.5	23.61	22.95	21.70
		699.7	23.54	22.79	21.84
	1 RB low	715.3	23.48	22.96	21.78
		707.5	23.64	23.00	21.89
		699.7	23.75	22.80	22.00
	50% RB mid	715.3	23.67	22.62	21.74
		707.5	23.68	22.65	21.55
		699.7	23.71	22.79	21.96
	100% RB	715.3	22.61	21.57	20.30
		707.5	22.66	21.75	19.80
		699.7	22.71	21.93	20.81
3MHz	1 RB high	714.5	23.65	22.93	21.21
		707.5	23.67	23.01	21.74
		700.5	23.68	23.10	21.76
	1 RB low	714.5	23.79	22.90	21.62
		707.5	23.65	22.98	21.59
		700.5	23.56	23.12	22.08
	50% RB mid	714.5	22.86	21.85	20.20
		707.5	22.72	21.78	20.71
		700.5	22.84	21.80	20.94
	100% RB	714.5	22.62	21.82	20.75
		707.5	22.65	21.75	20.75
		700.5	22.90	21.86	20.89
5MHz	1 RB high	713.5	23.54	22.91	21.85
		707.5	23.77	22.83	21.98
		701.5	23.66	22.96	20.71
	1 RB low	713.5	23.34	22.98	21.78
		707.5	23.72	23.11	21.78
		701.5	23.88	23.10	21.92
	50% RB mid	713.5	22.63	21.79	19.51
		707.5	22.72	21.82	20.72
		701.5	22.86	21.70	20.74
	100% RB	713.5	22.53	21.66	20.63
		707.5	22.75	21.76	20.68
		701.5	22.80	21.62	20.47
10MHz	1 RB high	711.0	23.51	23.10	21.59
		707.5	23.62	22.98	21.77
		704.0	23.63	23.01	21.74
	1 RB low	711.0	23.66	23.16	21.88

		707.5	23.84	22.98	21.90
		704.0	23.84	22.96	22.33
	50% RB mid	711.0	22.61	21.66	20.73
		707.5	22.65	21.66	20.82
		704.0	22.86	21.86	19.85
	100% RB	711.0	22.68	21.69	20.76
		707.5	22.66	21.57	19.78
		704.0	22.81	21.71	20.11

LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	784.5	24.08	23.37	22.46	19.66
		782.0	24.13	23.49	22.33	19.53
		779.5	24.18	23.41	22.43	19.63
	1 RB low	784.5	24.24	23.51	22.46	19.66
		782.0	24.04	23.64	22.32	19.52
		779.5	24.10	23.56	22.32	19.52
	50% RB mid	784.5	23.17	22.27	21.38	19.54
		782.0	23.13	22.19	21.34	19.50
		779.5	23.29	22.26	21.21	19.37
	100% RB	784.5	23.19	22.25	21.29	19.45
		782.0	23.08	22.17	21.22	19.38
		779.5	23.22	22.27	21.25	19.41
10MHz	1 RB high	782.0	24.06	23.39	22.31	19.57
	1 RB low	782.0	24.06	23.49	22.41	19.59
	50% RB mid	782.0	23.18	22.11	21.34	19.55
	100% RB	782.0	23.26	22.10	21.26	19.41

LTE band 48

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	3697.5	23.49	22.78	21.29	18.73
		3625.0	23.71	22.79	21.38	18.82
		3552.5	23.24	22.36	21.07	18.51
	1 RB low	3697.5	23.48	22.51	21.07	18.51
		3625.0	23.58	22.68	21.25	18.69
		3552.5	23.24	22.33	20.90	18.54
	50% RB mid	3697.5	22.52	21.48	20.56	18.56
		3625.0	22.72	21.70	20.79	18.79
		3552.5	22.30	21.30	20.36	18.56
	100% RB	3697.5	22.50	21.53	20.57	18.57
		3625.0	22.63	21.63	20.68	18.68
		3552.5	22.28	21.31	20.36	18.56
10MHz	1 RB high	3695.0	23.49	22.48	21.29	18.73
		3625.0	23.69	22.76	21.41	18.85
		3555.0	23.28	22.31	21.03	18.57
	1 RB low	3695.0	23.55	22.55	21.23	18.67
		3625.0	23.75	22.79	21.44	18.88
		3555.0	23.37	22.41	21.05	18.59
	50% RB mid	3695.0	22.53	21.57	20.59	18.59
		3625.0	22.68	21.70	20.76	18.76
		3555.0	22.32	21.32	20.40	18.51
	100% RB	3695.0	22.55	21.59	20.56	18.56
		3625.0	22.64	21.67	20.70	18.70
		3555.0	22.32	21.35	20.36	18.56
15MHz	1 RB high	3692.5	23.45	22.46	21.15	18.59
		3625.0	23.49	22.65	21.20	18.64
		3557.5	23.02	22.17	20.74	18.51
	1 RB low	3692.5	23.37	22.43	21.08	18.52
		3625.0	23.52	22.63	21.22	18.66
		3557.5	23.14	22.25	20.86	18.56
	50% RB mid	3692.5	22.47	21.42	20.39	18.96
		3625.0	22.54	21.54	20.55	19.12
		3557.5	22.20	21.18	20.21	18.78
	100% RB	3692.5	22.46	21.46	20.43	19.00
		3625.0	22.55	21.55	20.52	19.09
		3557.5	22.06	21.18	20.15	18.72
20MHz	1 RB high	3690.0	23.40	22.44	22.36	18.55
		3625.0	23.57	22.62	22.41	18.72

		3560.0	23.12	22.29	22.00	18.53
	1 RB low	3690.0	23.37	22.46	22.32	18.51
		3625.0	23.60	22.65	22.41	18.70
		3560.0	23.22	22.38	22.12	18.57
	50% RB mid	3690.0	22.46	21.45	21.36	19.14
		3625.0	22.60	21.62	21.42	19.22
		3560.0	22.24	21.28	21.13	19.27
	100% RB	3690.0	22.50	21.46	21.47	19.12
		3625.0	22.63	21.63	21.46	19.11
		3560.0	22.25	21.29	21.13	19.70

LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1779.3	24.59	23.92	22.70	19.50
		1745.0	24.51	23.72	22.78	19.58
		1710.7	24.20	23.54	22.46	19.26
	1 RB low	1779.3	24.62	23.99	22.93	19.73
		1745.0	24.45	23.82	22.71	19.51
		1710.7	24.28	23.60	22.64	19.44
	50% RB mid	1779.3	24.66	23.71	22.94	19.74
		1745.0	24.55	23.49	22.66	19.46
		1710.7	24.26	23.40	22.44	19.24
	100% RB	1779.3	23.70	22.85	21.68	19.63
		1745.0	23.59	22.69	21.63	19.58
		1710.7	23.36	22.30	21.27	19.22
3MHz	1 RB high	1778.5	24.58	23.92	22.85	19.65
		1745.0	24.63	23.92	22.84	19.64
		1711.5	24.26	23.75	22.51	19.31
	1 RB low	1778.5	24.83	23.94	22.81	19.61
		1745.0	24.66	23.79	22.63	19.43
		1711.5	24.49	23.72	22.52	19.32
	50% RB mid	1778.5	23.85	22.93	21.76	19.71
		1745.0	23.62	22.66	21.63	19.58
		1711.5	23.50	22.55	21.58	19.53
	100% RB	1778.5	23.89	22.85	21.90	19.85
		1745.0	23.58	22.59	21.66	19.61
		1711.5	23.43	22.47	21.57	19.52
5MHz	1 RB high	1777.5	24.78	23.83	22.82	19.62
		1745.0	24.61	23.87	22.92	19.72
		1712.5	24.32	23.76	22.60	19.40
	1 RB low	1777.5	24.74	23.95	22.91	19.71
		1745.0	24.54	23.80	22.59	19.39
		1712.5	24.41	23.76	22.69	19.49
	50% RB mid	1777.5	23.88	22.96	21.87	19.82
		1745.0	23.66	22.60	21.70	19.65
		1712.5	23.44	22.54	21.43	19.38
	100% RB	1777.5	23.85	22.89	21.93	19.88
		1745.0	23.57	22.66	21.59	19.54
		1712.5	23.50	22.52	21.43	19.38
10MHz	1 RB high	1775.0	24.73	23.96	22.90	19.70
		1745.0	24.62	23.86	22.91	19.71

	1 RB low	1715.0	24.37	23.67	22.74	19.54
		1775.0	24.75	23.93	22.82	19.62
		1745.0	24.47	23.91	22.62	19.42
		1715.0	24.40	23.65	22.59	19.39
	50% RB mid	1775.0	23.83	22.90	21.84	19.79
		1745.0	23.58	22.64	21.61	19.56
		1715.0	23.50	22.47	21.47	19.42
	100% RB	1775.0	23.80	22.84	21.89	19.84
		1745.0	23.60	22.56	21.70	19.65
		1715.0	23.42	22.42	21.43	19.38
15MHz	1 RB high	1772.5	24.68	23.92	22.99	19.79
		1745.0	24.57	23.94	22.60	19.40
		1717.5	24.36	23.67	22.65	19.45
	1 RB low	1772.5	24.61	23.93	22.84	19.64
		1745.0	24.37	23.83	22.69	19.49
		1717.5	24.28	23.59	22.59	19.39
	50% RB mid	1772.5	23.74	22.67	21.74	19.69
		1745.0	23.53	22.50	21.60	19.55
		1717.5	23.37	22.39	21.41	19.36
	100% RB	1772.5	23.67	22.73	21.74	19.69
		1745.0	23.50	22.40	21.56	19.51
		1717.5	23.37	22.35	21.38	19.33
20MHz	1 RB high	1770.0	24.57	23.98	22.86	19.66
		1745.0	24.50	23.73	22.99	19.79
		1720.0	24.30	23.77	22.54	19.34
	1 RB low	1770.0	24.68	23.89	22.91	19.71
		1745.0	24.35	23.61	22.64	19.44
		1720.0	24.22	23.54	22.52	19.32
	50% RB mid	1770.0	23.62	22.61	21.70	19.65
		1745.0	23.54	22.56	21.55	19.50
		1720.0	23.32	22.36	21.42	19.37
	100% RB	1770.0	23.62	22.59	21.68	19.63
		1745.0	23.43	22.44	21.58	19.53
		1720.0	23.39	22.40	21.43	19.38

CA_5B

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)
				Size	Offset	Size	Offset	
3MHz/ 5MHz	834.1	838.0	QPSK	1	14	1	0	24.19
				15	0	25	0	24.13
			16QAM	1	14	1	0	23.55
				15	0	25	0	23.33
			64QAM	1	14	1	0	22.49
				15	0	25	0	22.37
			256QAM	1	14	1	0	21.35
				15	0	25	0	21.32
5MHz/ 3MHz	835.0	838.9	QPSK	1	24	1	0	24.19
				25	0	15	0	24.07
			16QAM	1	24	1	0	23.35
				25	0	15	0	23.19
			64QAM	1	24	1	0	22.32
				25	0	15	0	22.24
			256QAM	1	24	1	0	21.31
				25	0	15	0	21.29
5MHz/ 10MHz	831.8	839.0	QPSK	1	24	1	0	24.51
				25	0	50	0	22.68
			16QAM	1	24	1	0	24.06
				25	0	50	0	21.70
			64QAM	1	24	1	0	22.55
				25	0	50	0	21.67
			256QAM	1	24	1	0	19.71
				25	0	50	0	19.70
10MHz/ 5MHz	834.0	841.2	QPSK	1	49	1	0	24.53
				50	0	25	0	22.67
			16QAM	1	49	1	0	24.13
				50	0	25	0	21.66
			64QAM	1	49	1	0	22.24
				50	0	25	0	21.68
			256QAM	1	49	1	0	19.90
				50	0	25	0	19.69
10MHz/ 10MHz	831.6	841.5	QPSK	1	49	1	0	25.06
				50	0	50	0	23.22
			16QAM	1	49	1	0	24.56
				50	0	50	0	22.21
			64QAM	1	49	1	0	23.33
				50	0	50	0	22.18
			256QAM	1	49	1	0	20.34
				50	0	50	0	20.22

B48C

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)
				Size	Offset	Size	Offset	
5MHz/ 20MHz	3615.8	3627.5	QPSK	1	24	1	0	24.81
				25	0	100	0	22.70
			16QAM	1	24	1	0	24.11
				25	0	100	0	21.76
			64QAM	1	24	1	0	22.97
				25	0	100	0	21.69
20MHz/ 5MHz	3622.5	3634.2	QPSK	1	24	1	0	19.92
				25	0	100	0	19.77
			16QAM	1	99	1	0	24.69
				100	0	25	0	22.72
			64QAM	1	99	1	0	24.06
				100	0	25	0	21.68
10MHz/ 20MHz	3615.6	3630.0	QPSK	1	99	1	0	23.04
				100	0	25	0	21.37
			16QAM	1	99	1	0	19.86
				100	0	25	0	19.72
			64QAM	1	49	1	0	24.78
				50	0	100	0	22.70
20MHz/ 10MHz	3620.1	3634.5	QPSK	1	49	1	0	24.12
				50	0	100	0	21.68
			16QAM	1	49	1	0	23.23
				50	0	100	0	21.72
			256QAM	1	49	1	0	19.85
				50	0	100	0	19.78
15MHz/ 20MHz	3615.3	3632.4	QPSK	1	99	1	0	24.61
				100	0	50	0	22.67
			16QAM	1	99	1	0	24.15
				100	0	50	0	21.75
			64QAM	1	99	1	0	23.26
				100	0	50	0	21.78
15MHz/ 20MHz	3615.3	3632.4	256QAM	1	99	1	0	19.82
				100	0	50	0	19.77
			QPSK	1	74	1	0	24.54
				75	0	100	0	22.79
			16QAM	1	74	1	0	24.22
				75	0	100	0	21.77
15MHz/ 20MHz	3615.3	3632.4	64QAM	1	74	1	0	23.03
				75	0	100	0	21.79
			256QAM	1	74	1	0	19.93
				75	0	100	0	19.82

20MHz/ 15MHz	3617.6	3634.7	QPSK	1	99	1	0	24.74
				100	0	75	0	22.79
			16QAM	1	99	1	0	24.31
				100	0	75	0	21.78
			64QAM	1	99	1	0	23.14
				100	0	75	0	21.77
20MHz/ 20MHz	3615.1	3634.9	QPSK	1	99	1	0	24.98
				100	0	100	0	23.38
			16QAM	1	99	1	0	24.45
				100	0	100	0	22.38
			64QAM	1	99	1	0	23.32
				100	0	100	0	22.35
			256QAM	1	99	1	0	20.32
				100	0	100	0	20.34

CA66B

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	24.65
				25	0	25	0	22.73
			16QAM	1	24	1	0	24.02
				25	0	25	0	21.82
			64QAM	1	24	1	0	21.68
				25	0	25	0	21.07
5MHz/ 10MHz	1750.3	1757.5	QPSK	1	24	1	0	24.59
				25	0	50	0	22.65
			16QAM	1	24	1	0	23.82
				25	0	50	0	21.61
			64QAM	1	24	1	0	21.12
				25	0	50	0	20.72
10MHz/ 5MHz	1752.5	1759.7	QPSK	1	49	1	0	24.59
				50	0	25	0	22.60
			16QAM	1	49	1	0	24.04
				50	0	25	0	21.58
			64QAM	1	49	1	0	21.88
				50	0	25	0	21.17
5MHz/ 15MHz	1748.1	1757.4	QPSK	1	24	1	0	24.46
				25	0	75	0	22.54
			16QAM	1	24	1	0	23.79
				25	0	75	0	21.59
			64QAM	1	24	1	0	20.85
				25	0	75	0	20.62
15MHz/ 5MHz	1752.6	1761.9	QPSK	1	24	1	0	19.77
				25	0	75	0	19.58
			16QAM	1	74	1	0	24.66
				75	0	25	0	22.63
			64QAM	1	74	1	0	24.21
				75	0	25	0	21.61
15MHz/ 5MHz	1752.6	1761.9	64QAM	1	74	1	0	22.30
				75	0	25	0	21.27
			256QAM	1	74	1	0	19.89
				75	0	25	0	19.63

10MHz/ 10MHz	1750.1	1760.0	QPSK	1	49	1	0	24.72
				50	0	50	0	22.75
			16QAM	1	49	1	0	24.18
				50	0	50	0	21.77
			64QAM	1	49	1	0	23.01
				50	0	50	0	21.77
			256QAM	1	49	1	0	19.84
				50	0	50	0	19.78



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

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

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

FDD Band 13: Part 27.50 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.

FDD Band 66: Part 27.50(d) 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

ERP or EIRP = $P_T + G_T - L_C$, ERP = EIRP -2.15, where

ERP or EIRP effective radiated power or equivalent isotropically radiated power,
respectively
(expressed in the same units as P_{Mea} , e.g., dBm or dBW)

P_T = transmitter output power in 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.

Disclaimer: The antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

LTE band 2

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)				EIRP(dBm)(Gt-Lc =-0.26)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1909.3	24.00	22.76	21.12	19.35	23.74	22.50	20.86	19.09
		1880	24.47	23.83	21.89	20.12	24.21	23.57	21.63	19.86
		1850.7	24.51	23.90	21.86	20.09	24.25	23.64	21.60	19.83
	1 RB low	1909.3	23.95	22.95	21.18	19.41	23.69	22.69	20.92	19.15
		1880	24.53	23.89	21.99	20.22	24.27	23.63	21.73	19.96
		1850.7	24.44	23.87	21.83	20.06	24.18	23.61	21.57	19.80
	50% RB mid	1909.3	23.81	23.03	21.31	19.54	23.55	22.77	21.05	19.28
		1880	24.52	23.75	21.96	20.19	24.26	23.49	21.70	19.93
		1850.7	24.47	23.70	21.90	20.13	24.21	23.44	21.64	19.87
	100% RB	1909.3	22.88	22.08	20.08	19.45	22.62	21.82	19.82	19.19
		1880	23.61	22.82	20.78	20.15	23.35	22.56	20.52	19.89
		1850.7	23.59	22.75	20.76	20.13	23.33	22.49	20.50	19.87
3MHz	1 RB high	1908.5	23.95	22.95	21.24	19.31	23.69	22.69	20.98	19.05
		1880	24.49	23.87	21.98	20.05	24.23	23.61	21.72	19.79
		1851.5	24.59	23.84	22.13	20.20	24.33	23.58	21.87	19.94
	1 RB low	1908.5	24.32	23.35	21.48	19.55	24.06	23.09	21.22	19.29
		1880	24.56	23.96	22.00	20.07	24.30	23.70	21.74	19.81
		1851.5	24.45	23.83	21.99	20.06	24.19	23.57	21.73	19.80
	50% RB mid	1908.5	23.16	22.26	20.32	19.66	22.90	22.00	20.06	19.40
		1880	23.69	22.87	20.87	20.21	23.43	22.61	20.61	19.95
		1851.5	23.66	22.85	20.87	20.21	23.40	22.59	20.61	19.95
	100% RB	1908.5	23.10	22.21	20.31	19.65	22.84	21.95	20.05	19.39
		1880	23.67	22.76	20.78	20.12	23.41	22.50	20.52	19.86
		1851.5	23.63	22.76	20.76	20.10	23.37	22.50	20.50	19.84
5MHz	1 RB high	1907.5	24.10	23.03	21.28	19.35	23.84	22.77	21.02	19.09
		1880	24.44	23.86	22.02	20.09	24.18	23.60	21.76	19.83
		1852.5	24.61	23.86	22.10	20.17	24.35	23.60	21.84	19.91
	1 RB low	1907.5	24.60	23.57	21.74	19.81	24.34	23.31	21.48	19.55
		1880	24.49	23.96	22.03	20.10	24.23	23.70	21.77	19.84
		1852.5	24.42	23.97	21.85	19.92	24.16	23.71	21.59	19.66
	50% RB mid	1907.5	23.29	22.42	20.48	19.82	23.03	22.16	20.22	19.56
		1880	23.62	22.82	20.85	20.19	23.36	22.56	20.59	19.93
		1852.5	23.57	22.83	20.90	20.24	23.31	22.57	20.64	19.98
	100% RB	1907.5	23.20	22.32	20.30	19.64	22.94	22.06	20.04	19.38
		1880	23.59	22.70	20.71	20.05	23.33	22.44	20.45	19.79
		1852.5	23.56	22.80	20.80	20.14	23.30	22.54	20.54	19.88
	1 RB high	1905	24.43	22.99	21.44	19.51	24.17	22.73	21.18	19.25

10MHz		1880	24.57	23.95	22.14	20.21	24.31	23.69	21.88	19.95
		1855	24.31	23.67	21.61	19.68	24.05	23.41	21.35	19.42
	1 RB low	1905	24.47	23.36	21.62	19.69	24.21	23.10	21.36	19.43
		1880	24.55	24.00	22.10	20.17	24.29	23.74	21.84	19.91
		1855	24.43	23.81	21.76	19.83	24.17	23.55	21.50	19.57
	50% RB mid	1905	23.54	22.61	20.64	19.98	23.28	22.35	20.38	19.72
		1880	23.65	22.82	20.87	20.21	23.39	22.56	20.61	19.95
		1855	23.63	22.71	20.74	20.08	23.37	22.45	20.48	19.82
	100% RB	1905	23.28	22.45	20.40	19.74	23.02	22.19	20.14	19.48
		1880	23.57	22.75	20.75	20.09	23.31	22.49	20.49	19.83
		1855	23.49	22.72	20.64	19.98	23.23	22.46	20.38	19.72
15MHz	1 RB high	1902.5	24.21	23.16	21.43	19.50	23.95	22.90	21.17	19.24
		1880	24.51	24.00	22.08	20.15	24.25	23.74	21.82	19.89
		1857.5	24.23	23.54	21.40	19.47	23.97	23.28	21.14	19.21
	1 RB low	1902.5	24.48	23.30	21.55	19.62	24.22	23.04	21.29	19.36
		1880	24.42	23.94	21.92	19.99	24.16	23.68	21.66	19.73
		1857.5	24.62	23.87	21.90	19.97	24.36	23.61	21.64	19.71
	50% RB mid	1902.5	23.54	22.68	20.66	20.00	23.28	22.42	20.40	19.74
		1880	23.67	22.86	20.96	20.30	23.41	22.60	20.70	20.04
		1857.5	23.63	22.72	20.87	20.21	23.37	22.46	20.61	19.95
	100% RB	1902.5	23.36	22.58	20.47	19.81	23.10	22.32	20.21	19.55
		1880	23.70	22.82	20.88	20.22	23.44	22.56	20.62	19.96
		1857.5	23.57	22.67	20.65	19.99	23.31	22.41	20.39	19.73
20MHz	1 RB high	1900	24.27	23.34	21.59	19.66	24.01	23.08	21.33	19.40
		1880	24.70	23.91	22.17	20.24	24.44	23.65	21.91	19.98
		1860	24.58	23.84	21.62	19.69	24.32	23.58	21.36	19.43
	1 RB low	1900	24.54	23.58	21.80	19.87	24.28	23.32	21.54	19.61
		1880	24.58	23.98	22.09	20.16	24.32	23.72	21.83	19.90
		1860	24.80	23.86	22.10	20.17	24.54	23.60	21.84	19.91
	50% RB mid	1900	23.70	22.76	20.64	19.98	23.44	22.50	20.38	19.72
		1880	23.91	22.94	20.93	20.27	23.65	22.68	20.67	20.01
		1860	23.74	22.83	20.86	20.20	23.48	22.57	20.60	19.94
	100% RB	1900	23.56	22.61	20.53	19.87	23.30	22.35	20.27	19.61
		1880	23.89	22.93	20.82	20.16	23.63	22.67	20.56	19.90
		1860	23.75	22.74	20.79	20.13	23.49	22.48	20.53	19.87

LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)				ERP(dBm) (GT – LC = -1.93)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	23.65	22.98	21.23	18.51	19.57	18.90	17.15	14.43
		836.5	23.73	23.00	21.54	18.82	19.65	18.92	17.46	14.74
		824.7	23.65	22.99	21.40	18.68	19.57	18.91	17.32	14.60
	1 RB low	848.3	23.78	22.98	21.68	18.96	19.70	18.90	17.60	14.88
		836.5	23.66	23.06	21.53	18.81	19.58	18.98	17.45	14.73
		824.7	23.66	22.98	21.37	18.65	19.58	18.90	17.29	14.57
	50% RB mid	848.3	23.73	22.80	21.65	18.93	19.65	18.72	17.57	14.85
		836.5	23.81	22.81	21.43	18.71	19.73	18.73	17.35	14.63
		824.7	23.78	22.87	21.26	18.54	19.70	18.79	17.18	14.46
	100% RB	848.3	22.80	21.81	20.50	18.58	18.72	17.73	16.42	14.50
		836.5	22.71	21.93	20.39	18.57	18.63	17.85	16.31	14.49
		824.7	22.75	21.98	20.30	18.51	18.67	17.90	16.22	14.43
3MHz	1 RB high	847.5	23.71	23.07	21.42	18.70	19.63	18.99	17.34	14.62
		836.5	23.81	23.15	21.64	18.92	19.73	19.07	17.56	14.84
		825.5	23.77	23.11	21.84	19.12	19.69	19.03	17.76	15.04
	1 RB low	847.5	23.85	23.17	21.90	19.18	19.77	19.09	17.82	15.10
		836.5	23.79	23.16	21.79	19.07	19.71	19.08	17.71	14.99
		825.5	23.77	23.07	21.47	18.75	19.69	18.99	17.39	14.67
	50% RB mid	847.5	22.88	21.82	20.79	18.87	18.80	17.74	16.71	14.79
		836.5	22.87	21.86	20.59	18.67	18.79	17.78	16.51	14.59
		825.5	22.91	21.92	20.65	18.73	18.83	17.84	16.57	14.65
	100% RB	847.5	22.80	21.92	20.67	18.75	18.72	17.84	16.59	14.67
		836.5	22.85	21.86	20.46	18.54	18.77	17.78	16.38	14.46
		825.5	22.90	21.84	20.58	18.66	18.82	17.76	16.50	14.58
5MHz	1 RB high	846.5	23.97	23.08	21.48	18.76	19.89	19.00	17.40	14.68
		836.5	23.94	23.05	21.41	18.69	19.86	18.97	17.33	14.61
		826.5	23.82	23.11	21.66	18.94	19.74	19.03	17.58	14.86
	1 RB low	846.5	23.86	23.07	21.94	19.22	19.78	18.99	17.86	15.14
		836.5	23.86	23.25	21.85	19.13	19.78	19.17	17.77	15.05
		826.5	23.87	23.18	21.43	18.71	19.79	19.10	17.35	14.63
	50% RB mid	846.5	22.81	21.81	20.82	18.90	18.73	17.73	16.74	14.82
		836.5	22.86	21.89	20.60	18.68	18.78	17.81	16.52	14.60
		826.5	22.98	21.97	20.77	18.85	18.90	17.89	16.69	14.77
	100% RB	846.5	22.69	21.78	20.65	18.73	18.61	17.70	16.57	14.65
		836.5	22.82	21.87	20.45	18.53	18.74	17.79	16.37	14.45
		826.5	22.97	21.87	20.72	18.80	18.89	17.79	16.64	14.72
10MHz	1 RB high	844	23.74	22.96	21.47	18.75	19.66	18.88	17.39	14.67

		836.5	23.74	23.14	21.44	18.72	19.66	19.06	17.36	14.64
		829	23.66	23.04	22.01	19.29	19.58	18.96	17.93	15.21
	1 RB low	844	23.91	23.06	21.55	18.83	19.83	18.98	17.47	14.75
		836.5	23.68	23.09	21.87	19.15	19.60	19.01	17.79	15.07
		829	23.79	23.08	21.51	18.79	19.71	19.00	17.43	14.71
	50% RB mid	844	22.74	21.80	20.86	18.94	18.66	17.72	16.78	14.86
		836.5	22.80	21.79	20.61	18.69	18.72	17.71	16.53	14.61
		829	22.86	21.93	20.93	19.01	18.78	17.85	16.85	14.93
	100% RB	844	22.79	21.79	20.36	18.54	18.71	17.71	16.28	14.46
		836.5	22.69	21.79	20.58	18.66	18.61	17.71	16.50	14.58
		829	22.81	21.86	20.78	18.86	18.73	17.78	16.70	14.78

LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			EIRP(dBm) (GT – LC = -0.02)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	24.30	23.64	22.42	24.28	23.62	22.40
		2535	24.36	23.70	22.54	24.34	23.68	22.52
		2502.5	24.31	23.64	22.56	24.29	23.62	22.54
	1 RB low	2567.5	24.25	23.57	22.34	24.23	23.55	22.32
		2535	24.44	23.71	22.59	24.42	23.69	22.57
		2502.5	24.20	23.55	22.21	24.18	23.53	22.19
	50% RB mid	2567.5	23.48	22.43	21.24	23.46	22.41	21.22
		2535	23.44	22.47	21.46	23.42	22.45	21.44
		2502.5	23.42	22.48	21.35	23.40	22.46	21.33
	100% RB	2567.5	23.32	22.34	21.23	23.30	22.32	21.21
		2535	23.43	22.49	21.40	23.41	22.47	21.38
		2502.5	23.47	22.45	21.20	23.45	22.43	21.18
10MHz	1 RB high	2565	24.27	23.80	22.47	24.25	23.78	22.45
		2535	24.34	23.74	22.48	24.32	23.72	22.46
		2505	24.45	23.80	22.60	24.43	23.78	22.58
	1 RB low	2565	24.35	23.70	22.49	24.33	23.68	22.47
		2535	24.35	23.79	22.53	24.33	23.77	22.51
		2505	24.28	23.79	22.18	24.26	23.77	22.16
	50% RB mid	2565	23.39	22.39	21.34	23.37	22.37	21.32
		2535	23.51	22.48	21.42	23.49	22.46	21.40
		2505	23.45	22.54	21.50	23.43	22.52	21.48
	100% RB	2565	23.37	22.41	21.34	23.35	22.39	21.32
		2535	23.39	22.43	21.40	23.37	22.41	21.38
		2505	23.37	22.44	21.42	23.35	22.42	21.40
15MHz	1 RB high	2562.5	24.07	23.37	22.11	24.05	23.35	22.09
		2535	24.15	23.55	22.22	24.13	23.53	22.20
		2507.5	24.17	23.43	22.37	24.15	23.41	22.35
	1 RB low	2562.5	24.07	23.60	22.29	24.05	23.58	22.27
		2535	24.06	23.57	22.25	24.04	23.55	22.23
		2507.5	24.15	23.45	22.10	24.13	23.43	22.08
	50% RB mid	2562.5	23.31	22.32	21.24	23.29	22.30	21.22
		2535	23.30	22.33	21.28	23.28	22.31	21.26
		2507.5	23.26	22.32	21.26	23.24	22.30	21.24
	100% RB	2562.5	23.31	22.37	21.21	23.29	22.35	21.19
		2535	23.25	22.38	21.29	23.23	22.36	21.27
		2507.5	23.29	22.21	21.28	23.27	22.19	21.26
20MHz	1 RB high	2560	23.94	23.29	22.13	23.92	23.27	22.11

		2535	24.06	23.36	22.24	24.04	23.34	22.22
		2510	24.13	23.35	22.20	24.11	23.33	22.18
	1 RB low	2560	24.05	23.42	22.35	24.03	23.40	22.33
		2535	24.09	23.36	22.93	24.07	23.34	22.91
		2510	24.05	23.37	22.20	24.03	23.35	22.18
	50% RB mid	2560	23.21	22.23	21.31	23.19	22.21	21.29
		2535	23.18	22.27	21.33	23.16	22.25	21.31
		2510	23.37	22.31	21.32	23.35	22.29	21.30
	100% RB	2560	23.22	22.21	21.29	23.20	22.19	21.27
		2535	23.13	22.20	21.29	23.11	22.18	21.27
		2510	23.26	22.29	21.37	23.24	22.27	21.35

LTE BAND 12

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			ERP(dBm) (GT – LC = -2.8)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	23.49	22.72	21.7	18.5	17.8	16.8
		707.5	23.61	22.95	21.7	18.7	18.0	16.8
		699.7	23.54	22.79	21.84	18.6	17.8	16.9
	1 RB low	715.3	23.48	22.96	21.78	18.5	18.0	16.8
		707.5	23.64	23	21.89	18.7	18.1	16.9
		699.7	23.75	22.8	22	18.8	17.9	17.1
	50% RB mid	715.3	23.67	22.62	21.74	18.7	17.7	16.8
		707.5	23.68	22.65	21.55	18.7	17.7	16.6
		699.7	23.71	22.79	21.96	18.8	17.8	17.0
	100% RB	715.3	22.61	21.57	20.3	17.7	16.6	15.4
		707.5	22.66	21.75	19.8	17.7	16.8	14.9
		699.7	22.71	21.93	20.81	17.8	17.0	15.9
3MHz	1 RB high	714.5	23.65	22.93	21.21	18.7	18.0	16.3
		707.5	23.67	23.01	21.74	18.7	18.1	16.8
		700.5	23.68	23.1	21.76	18.7	18.2	16.8
	1 RB low	714.5	23.79	22.9	21.62	18.8	18.0	16.7
		707.5	23.65	22.98	21.59	18.7	18.0	16.6
		700.5	23.56	23.12	22.08	18.6	18.2	17.1
	50% RB mid	714.5	22.86	21.85	20.2	17.9	16.9	15.3
		707.5	22.72	21.78	20.71	17.8	16.8	15.8
		700.5	22.84	21.8	20.94	17.9	16.9	16.0
	100% RB	714.5	22.62	21.82	20.75	17.7	16.9	15.8
		707.5	22.65	21.75	20.75	17.7	16.8	15.8
		700.5	22.9	21.86	20.89	18.0	16.9	15.9
5MHz	1 RB high	713.5	23.54	22.91	21.85	18.6	18.0	16.9
		707.5	23.77	22.83	21.98	18.8	17.9	17.0
		701.5	23.66	22.96	20.71	18.7	18.0	15.8
	1 RB low	713.5	23.34	22.98	21.78	18.4	18.0	16.8
		707.5	23.72	23.11	21.78	18.8	18.2	16.8
		701.5	23.88	23.1	21.92	18.9	18.2	17.0
	50% RB mid	713.5	22.63	21.79	19.51	17.7	16.8	14.6
		707.5	22.72	21.82	20.72	17.8	16.9	15.8
		701.5	22.86	21.7	20.74	17.9	16.8	15.8
	100% RB	713.5	22.53	21.66	20.63	17.6	16.7	15.7
		707.5	22.75	21.76	20.68	17.8	16.8	15.7
		701.5	22.8	21.62	20.47	17.9	16.7	15.5
10MHz	1 RB high	711	23.51	23.1	21.59	18.6	18.2	16.6

		707.5	23.62	22.98	21.77	18.7	18.0	16.8
		704	23.63	23.01	21.74	18.7	18.1	16.8
	1 RB low	711	23.66	23.16	21.88	18.7	18.2	16.9
		707.5	23.84	22.98	21.9	18.9	18.0	17.0
		704	23.84	22.96	22.33	18.9	18.0	17.4
	50% RB mid	711	22.61	21.66	20.73	17.7	16.7	15.8
		707.5	22.65	21.66	20.82	17.7	16.7	15.9
		704	22.86	21.86	19.85	17.9	16.9	14.9
	100% RB	711	22.68	21.69	20.76	17.7	16.7	15.8
		707.5	22.66	21.57	19.78	17.7	16.6	14.8
		704	22.81	21.71	20.11	17.9	16.8	15.2

LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			ERP(dBm) (GT – LC = -1.8)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	784.5	24.08	23.37	22.46	20.1	19.4	18.5
		782	24.13	23.49	22.33	20.2	19.5	18.4
		779.5	24.18	23.41	22.43	20.2	19.5	18.5
	1 RB low	784.5	24.24	23.51	22.46	20.3	19.6	18.5
		782	24.04	23.64	22.32	20.1	19.7	18.4
		779.5	24.1	23.56	22.32	20.2	19.6	18.4
	50% RB mid	784.5	23.17	22.27	21.38	19.2	18.3	17.4
		782	23.13	22.19	21.34	19.2	18.2	17.4
		779.5	23.29	22.26	21.21	19.3	18.3	17.3
	100% RB	784.5	23.19	22.25	21.29	19.2	18.3	17.3
		782	23.08	22.17	21.22	19.1	18.2	17.3
		779.5	23.22	22.27	21.25	19.3	18.3	17.3
10MHz	1 RB high	782	24.06	23.39	22.31	20.1	19.4	18.4
	1 RB low	782	24.06	23.49	22.41	20.1	19.5	18.5
	50% RB mid	782	23.18	22.11	21.34	19.2	18.2	17.4
	100% RB	782	23.26	22.1	21.26	19.3	18.2	17.3

LTE BAND 48

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			EIRP(dBm) (GT – LC = 0.44)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	3697.5	23.49	22.78	21.29	23.93	23.22	21.73
		3625	23.71	22.79	21.38	24.15	23.23	21.82
		3552.5	23.24	22.36	21.07	23.68	22.80	21.51
	1 RB low	3697.5	23.48	22.51	21.07	23.92	22.95	21.51
		3625	23.58	22.68	21.25	24.02	23.12	21.69
		3552.5	23.24	22.33	20.90	23.68	22.77	21.34
	50% RB mid	3697.5	22.52	21.48	20.56	22.96	21.92	21.00
		3625	22.72	21.70	20.79	23.16	22.14	21.23
		3552.5	22.30	21.30	20.36	22.74	21.74	20.80
	100% RB	3697.5	22.50	21.53	20.57	22.94	21.97	21.01
		3625	22.63	21.63	20.68	23.07	22.07	21.12
		3552.5	22.28	21.31	20.36	22.72	21.75	20.80
10MHz	1 RB high	3695	23.49	22.48	21.29	23.93	22.92	21.73
		3625	23.69	22.76	21.41	24.13	23.20	21.85
		3555	23.28	22.31	21.03	23.72	22.75	21.47
	1 RB low	3695	23.55	22.55	21.23	23.99	22.99	21.67
		3625	23.75	22.79	21.44	24.19	23.23	21.88
		3555	23.37	22.41	21.05	23.81	22.85	21.49
	50% RB mid	3695	22.53	21.57	20.59	22.97	22.01	21.03
		3625	22.68	21.70	20.76	23.12	22.14	21.20
		3555	22.32	21.32	20.40	22.76	21.76	20.84
	100% RB	3695	22.55	21.59	20.56	22.99	22.03	21.00
		3625	22.64	21.67	20.70	23.08	22.11	21.14
		3555	22.32	21.35	20.36	22.76	21.79	20.80
15MHz	1 RB high	3692.5	23.45	22.46	21.15	23.89	22.90	21.59
		3625	23.49	22.65	21.20	23.93	23.09	21.64
		3557.5	23.02	22.17	20.74	23.46	22.61	21.18
	1 RB low	3692.5	23.37	22.43	21.08	23.81	22.87	21.52
		3625	23.52	22.63	21.22	23.96	23.07	21.66
		3557.5	23.14	22.25	20.86	23.58	22.69	21.30
	50% RB mid	3692.5	22.47	21.42	20.39	22.91	21.86	20.83
		3625	22.54	21.54	20.55	22.98	21.98	20.99
		3557.5	22.20	21.18	20.21	22.64	21.62	20.65
	100% RB	3692.5	22.46	21.46	20.43	22.90	21.90	20.87
		3625	22.55	21.55	20.52	22.99	21.99	20.96
		3557.5	22.06	21.18	20.15	22.50	21.62	20.59
20MHz	1 RB high	3690	23.40	22.44	22.36	23.84	22.88	22.80

		3625	23.57	22.62	22.41	24.01	23.06	22.85
		3560	23.12	22.29	22.00	23.56	22.73	22.44
	1 RB low	3690	23.37	22.46	22.32	23.81	22.90	22.76
		3625	23.60	22.65	22.41	24.04	23.09	22.85
		3560	23.22	22.38	22.12	23.66	22.82	22.56
	50% RB mid	3690	22.46	21.45	21.36	22.90	21.89	21.80
		3625	22.60	21.62	21.42	23.04	22.06	21.86
		3560	22.24	21.28	21.13	22.68	21.72	21.57
	100% RB	3690	22.50	21.46	21.47	22.94	21.90	21.91
		3625	22.63	21.63	21.46	23.07	22.07	21.90
		3560	22.25	21.29	21.13	22.69	21.73	21.57

LTE BAND 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			EIRP(dBm) (GT – LC = -1.13)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	24.59	23.92	22.70	23.46	22.79	21.57
		1745	24.51	23.72	22.78	23.38	22.59	21.65
		1710.7	24.20	23.54	22.46	23.07	22.41	21.33
	1 RB low	1779.3	24.62	23.99	22.93	23.49	22.86	21.80
		1745	24.45	23.82	22.71	23.32	22.69	21.58
		1710.7	24.28	23.60	22.64	23.15	22.47	21.51
	50% RB mid	1779.3	24.66	23.71	22.94	23.53	22.58	21.81
		1745	24.55	23.49	22.66	23.42	22.36	21.53
		1710.7	24.26	23.40	22.44	23.13	22.27	21.31
	100% RB	1779.3	23.70	22.85	21.68	22.57	21.72	20.55
		1745	23.59	22.69	21.63	22.46	21.56	20.50
		1710.7	23.36	22.30	21.27	22.23	21.17	20.14
3MHz	1 RB high	1778.5	24.58	23.92	22.85	23.45	22.79	21.72
		1745	24.63	23.92	22.84	23.50	22.79	21.71
		1711.5	24.26	23.75	22.51	23.13	22.62	21.38
	1 RB low	1778.5	24.83	23.94	22.81	23.70	22.81	21.68
		1745	24.66	23.79	22.63	23.53	22.66	21.50
		1711.5	24.49	23.72	22.52	23.36	22.59	21.39
	50% RB mid	1778.5	23.85	22.93	21.76	22.72	21.80	20.63
		1745	23.62	22.66	21.63	22.49	21.53	20.50
		1711.5	23.50	22.55	21.58	22.37	21.42	20.45
	100% RB	1778.5	23.89	22.85	21.90	22.76	21.72	20.77
		1745	23.58	22.59	21.66	22.45	21.46	20.53
		1711.5	23.43	22.47	21.57	22.30	21.34	20.44
5MHz	1 RB high	1777.5	24.78	23.83	22.82	23.65	22.70	21.69
		1745	24.61	23.87	22.92	23.48	22.74	21.79
		1712.5	24.32	23.76	22.60	23.19	22.63	21.47
	1 RB low	1777.5	24.74	23.95	22.91	23.61	22.82	21.78
		1745	24.54	23.80	22.59	23.41	22.67	21.46
		1712.5	24.41	23.76	22.69	23.28	22.63	21.56
	50% RB mid	1777.5	23.88	22.96	21.87	22.75	21.83	20.74
		1745	23.66	22.60	21.70	22.53	21.47	20.57
		1712.5	23.44	22.54	21.43	22.31	21.41	20.30
	100% RB	1777.5	23.85	22.89	21.93	22.72	21.76	20.80
		1745	23.57	22.66	21.59	22.44	21.53	20.46
		1712.5	23.50	22.52	21.43	22.37	21.39	20.30
10MHz	1 RB high	1775	24.73	23.96	22.90	23.60	22.83	21.77

		1745	24.62	23.86	22.91	23.49	22.73	21.78
		1715	24.37	23.67	22.74	23.24	22.54	21.61
	1 RB low	1775	24.75	23.93	22.82	23.62	22.80	21.69
		1745	24.47	23.91	22.62	23.34	22.78	21.49
		1715	24.40	23.65	22.59	23.27	22.52	21.46
	50% RB mid	1775	23.83	22.90	21.84	22.70	21.77	20.71
		1745	23.58	22.64	21.61	22.45	21.51	20.48
		1715	23.50	22.47	21.47	22.37	21.34	20.34
	100% RB	1775	23.80	22.84	21.89	22.67	21.71	20.76
		1745	23.60	22.56	21.70	22.47	21.43	20.57
		1715	23.42	22.42	21.43	22.29	21.29	20.30
15MHz	1 RB high	1772.5	24.68	23.92	22.99	23.55	22.79	21.86
		1745	24.57	23.94	22.60	23.44	22.81	21.47
		1717.5	24.36	23.67	22.65	23.23	22.54	21.52
	1 RB low	1772.5	24.61	23.93	22.84	23.48	22.80	21.71
		1745	24.37	23.83	22.69	23.24	22.70	21.56
		1717.5	24.28	23.59	22.59	23.15	22.46	21.46
	50% RB mid	1772.5	23.74	22.67	21.74	22.61	21.54	20.61
		1745	23.53	22.50	21.60	22.40	21.37	20.47
		1717.5	23.37	22.39	21.41	22.24	21.26	20.28
	100% RB	1772.5	23.67	22.73	21.74	22.54	21.60	20.61
		1745	23.50	22.40	21.56	22.37	21.27	20.43
		1717.5	23.37	22.35	21.38	22.24	21.22	20.25
20MHz	1 RB high	1770	24.57	23.98	22.86	23.44	22.85	21.73
		1745	24.50	23.73	22.99	23.37	22.60	21.86
		1720	24.30	23.77	22.54	23.17	22.64	21.41
	1 RB low	1770	24.68	23.89	22.91	23.55	22.76	21.78
		1745	24.35	23.61	22.64	23.22	22.48	21.51
		1720	24.22	23.54	22.52	23.09	22.41	21.39
	50% RB mid	1770	23.62	22.61	21.70	22.49	21.48	20.57
		1745	23.54	22.56	21.55	22.41	21.43	20.42
		1720	23.32	22.36	21.42	22.19	21.23	20.29
	100% RB	1770	23.62	22.59	21.68	22.49	21.46	20.55
		1745	23.43	22.44	21.58	22.30	21.31	20.45
		1720	23.39	22.40	21.43	22.26	21.27	20.30

CA_5B

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power (dBm)	ERP(dBm) (GT – LC = -1.93)
				Size	Offset	Size	Offset		
3MHz/ 5MHz	834.1	838	QPSK	1	14	1	0	24.19	20.11
				15	0	25	0	24.13	20.05
			16QAM	1	14	1	0	23.55	19.47
				15	0	25	0	23.33	19.25
			64QAM	1	14	1	0	22.49	18.41
				15	0	25	0	22.37	18.29
			256QAM	1	14	1	0	21.35	17.27
				15	0	25	0	21.32	17.24
5MHz/ 3MHz	835	838.9	QPSK	1	24	1	0	24.19	20.11
				25	0	15	0	24.07	19.99
			16QAM	1	24	1	0	23.35	19.27
				25	0	15	0	23.19	19.11
			64QAM	1	24	1	0	22.32	18.24
				25	0	15	0	22.24	18.16
			256QAM	1	24	1	0	21.31	17.23
				25	0	15	0	21.29	17.21
5MHz/ 10MHz	831.8	839	QPSK	1	24	1	0	24.51	20.43
				25	0	50	0	22.68	18.60
			16QAM	1	24	1	0	24.06	19.98
				25	0	50	0	21.70	17.62
			64QAM	1	24	1	0	22.55	18.47
				25	0	50	0	21.67	17.59
			256QAM	1	24	1	0	19.71	15.63
				25	0	50	0	19.70	15.62
10MHz/ 5MHz	834	841.2	QPSK	1	49	1	0	24.53	20.45
				50	0	25	0	22.67	18.59
			16QAM	1	49	1	0	24.13	20.05
				50	0	25	0	21.66	17.58
			64QAM	1	49	1	0	22.24	18.16
				50	0	25	0	21.68	17.60
			256QAM	1	49	1	0	19.90	15.82
				50	0	25	0	19.69	15.61
10MHz/ 10MHz	831.6	841.5	QPSK	1	49	1	0	25.06	20.98
				50	0	50	0	23.22	19.14
			16QAM	1	49	1	0	24.56	20.48
				50	0	50	0	22.21	18.13

			64QAM	1	49	1	0	23.33	19.25
				50	0	50	0	22.18	18.10
			256QAM	1	49	1	0	20.34	16.26
				50	0	50	0	20.22	16.14

B48C

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)	EIRP(dBm) (GT – LC = 0.44)
				Size	Offset	Size	Offset		
5MHz/ 20MHz	3615.8	3627.5	QPSK	1	24	1	0	24.81	25.25
				25	0	100	0	22.70	23.14
			16QAM	1	24	1	0	24.11	24.55
				25	0	100	0	21.76	22.20
			64QAM	1	24	1	0	22.97	23.41
				25	0	100	0	21.69	22.13
			256QAM	1	24	1	0	19.92	20.36
				25	0	100	0	19.77	20.21
20MHz/ 5MHz	3622.5	3634.2	QPSK	1	99	1	0	24.69	25.13
				100	0	25	0	22.72	23.16
			16QAM	1	99	1	0	24.06	24.50
				100	0	25	0	21.68	22.12
			64QAM	1	99	1	0	23.04	23.48
				100	0	25	0	21.37	21.81
			256QAM	1	99	1	0	19.86	20.30
				100	0	25	0	19.72	20.16
10MHz/ 20MHz	3615.6	3630	QPSK	1	49	1	0	24.78	25.22
				50	0	100	0	22.70	23.14
			16QAM	1	49	1	0	24.12	24.56
				50	0	100	0	21.68	22.12
			64QAM	1	49	1	0	23.23	23.67
				50	0	100	0	21.72	22.16
			256QAM	1	49	1	0	19.85	20.29
				50	0	100	0	19.78	20.22
20MHz/ 10MHz	3620.1	3634.5	QPSK	1	99	1	0	24.61	25.05
				100	0	50	0	22.67	23.11
			16QAM	1	99	1	0	24.15	24.59
				100	0	50	0	21.75	22.19
			64QAM	1	99	1	0	23.26	23.70
				100	0	50	0	21.78	22.22
			256QAM	1	99	1	0	19.82	20.26
				100	0	50	0	19.77	20.21
15MHz/ 20MHz	3615.3	3632.4	QPSK	1	74	1	0	24.54	24.98
				75	0	100	0	22.79	23.23
			16QAM	1	74	1	0	24.22	24.66
				75	0	100	0	21.77	22.21
			64QAM	1	74	1	0	23.03	23.47

				75	0	100	0	21.79	22.23
			256QAM	1	74	1	0	19.93	20.37
			M	75	0	100	0	19.82	20.26
20MHz/ 15MHz	3617. 6	3634.7	QPSK	1	99	1	0	24.74	25.18
				100	0	75	0	22.79	23.23
			16QAM	1	99	1	0	24.31	24.75
				100	0	75	0	21.78	22.22
			64QAM	1	99	1	0	23.14	23.58
				100	0	75	0	21.77	22.21
			256QAM	1	99	1	0	19.92	20.36
				100	0	75	0	19.84	20.28
20MHz/ 20MHz	3615. 1	3634.9	QPSK	1	99	1	0	24.98	25.42
				100	0	100	0	23.38	23.82
			16QAM	1	99	1	0	24.45	24.89
				100	0	100	0	22.38	22.82
			64QAM	1	99	1	0	23.32	23.76
				100	0	100	0	22.35	22.79
			256QAM	1	99	1	0	20.32	20.76
				100	0	100	0	20.34	20.78

CA66B

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)	EIRP(dBm) (GT – LC = -1.13)
				Size	Offset	Size	Offset		
5MHz/5MHz	1752.6	1757.4	QPSK	1	24	1	0	24.65	23.52
				25	0	25	0	22.73	21.60
			16QAM	1	24	1	0	24.02	22.89
				25	0	25	0	21.82	20.69
			64QAM	1	24	1	0	21.68	20.55
				25	0	25	0	21.07	19.94
			256QAM	1	24	1	0	19.92	18.79
				25	0	25	0	19.82	18.69
5MHz/10MHz	1750.3	1757.5	QPSK	1	24	1	0	24.59	23.46
				25	0	50	0	22.65	21.52
			16QAM	1	24	1	0	23.82	22.69
				25	0	50	0	21.61	20.48
			64QAM	1	24	1	0	21.12	19.99
				25	0	50	0	20.72	19.59
			256QAM	1	24	1	0	19.80	18.67
				25	0	50	0	19.66	18.53
10MHz/5MHz	1752.5	1759.7	QPSK	1	49	1	0	24.59	23.46
				50	0	25	0	22.6	21.47
			16QAM	1	49	1	0	24.04	22.91
				50	0	25	0	21.58	20.45
			64QAM	1	49	1	0	21.88	20.75
				50	0	25	0	21.17	20.04
			256QAM	1	49	1	0	19.74	18.61
				50	0	25	0	19.64	18.51
5MHz/15MHz	1748.1	1757.4	QPSK	1	24	1	0	24.46	23.33
				25	0	75	0	22.54	21.41
			16QAM	1	24	1	0	23.79	22.66
				25	0	75	0	21.59	20.46
			64QAM	1	24	1	0	20.85	19.72
				25	0	75	0	20.62	19.49
			256QAM	1	24	1	0	19.77	18.64
				25	0	75	0	19.58	18.45
15MHz/5MHz	1752.6	1761.9	QPSK	1	74	1	0	24.66	23.53
				75	0	25	0	22.63	21.50
			16QAM	1	74	1	0	24.21	23.08
				75	0	25	0	21.61	20.48
			64QAM	1	74	1	0	22.30	21.17

				75	0	25	0	21.27	20.14
			256QAM	1	74	1	0	19.89	18.76
			M	75	0	25	0	19.63	18.50
10MHz/ 10MHz	1750.1	1760	QPSK	1	49	1	0	24.72	23.59
				50	0	50	0	22.75	21.62
			16QAM	1	49	1	0	24.18	23.05
				50	0	50	0	21.77	20.64
			64QAM	1	49	1	0	23.01	21.88
				50	0	50	0	21.77	20.64
			256QAM	1	49	1	0	19.84	18.71
				50	0	50	0	19.78	18.65
			M						

A.2 Emission Limit

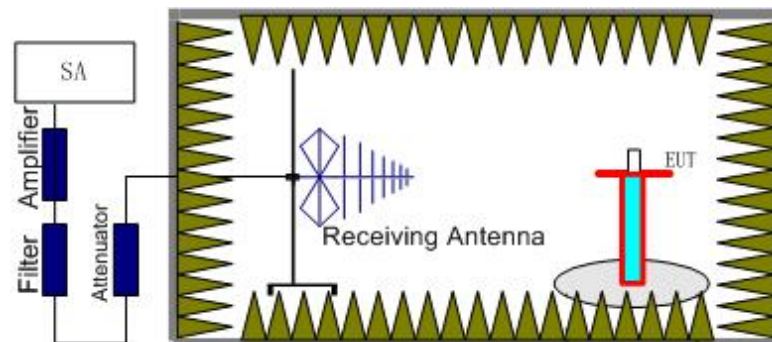
A.2.1 Measurement Method

The measurements procedures in TIA-603E-2016 are used. This measurement is carried out in fully anechoic chamber FAC-3.

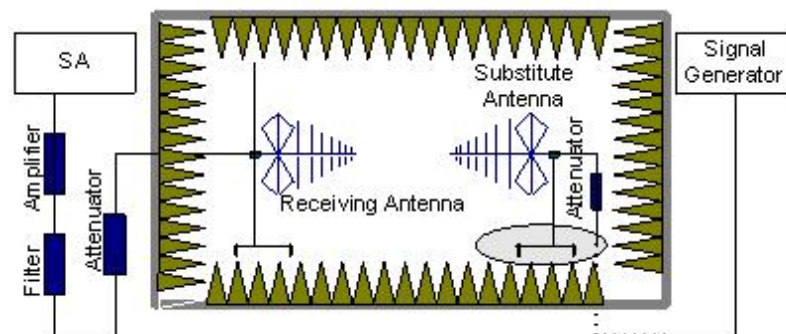
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and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

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5-meter-high non-conductive stand at a 3-meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. 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.



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



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere

with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (P_{pl}) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (G_a) should be recorded after test.

An amplifier should be connected in for the test.

The Path loss (P_{pl}) is the summation of the cable loss and the gain of the amplifier.

The measurement results are obtained as described below:

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

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

A.2.2 Measurement Limit

Part 22.917, Part 24.238, Part 27.53(h), Part 96.41 specify 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.

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.

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.

LTE BAND 2, CH18607

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3748.02	-56.10	6.30	8.55	-53.85	-13.00	40.85	V
5559.02	-54.84	7.19	10.59	-51.44	-13.00	38.44	H
7396.01	-54.24	8.12	12.08	-50.28	-13.00	37.28	H
9262.01	-51.25	9.07	13.26	-47.06	-13.00	34.06	H
11117.01	-49.55	9.76	13.18	-46.13	-13.00	33.13	V
12925.01	-48.56	10.50	13.46	-45.60	-13.00	32.60	H

LTE BAND 2, CH18900

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3745.02	-54.37	6.31	8.54	-52.14	-13.00	39.14	V
5641.02	-54.52	7.27	10.57	-51.22	-13.00	38.22	H
7566.01	-53.70	8.12	12.25	-49.57	-13.00	36.57	V
9407.01	-50.70	9.07	13.34	-46.43	-13.00	33.43	H
11285.01	-49.45	9.91	13.14	-46.22	-13.00	33.22	V
13134.01	-48.07	10.79	13.69	-45.17	-13.00	32.17	H

LTE BAND 2, CH19193

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3782.02	-55.64	6.19	8.59	-53.24	-13.00	40.24	H
5732.02	-54.67	7.29	10.55	-51.41	-13.00	38.41	V
7643.01	-53.37	8.17	12.31	-49.23	-13.00	36.23	V
9553.01	-43.53	9.35	13.35	-39.53	-13.00	26.53	V
11476.01	-48.56	9.87	13.10	-45.33	-13.00	32.33	V
13415.01	-47.67	10.58	14.08	-44.17	-13.00	31.17	H

LTE BAND 5, CH20407

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correc tion	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1650.01	-57.27	3.57	5.23	2.15	-57.76	-13	44.76	H
2474.00	-45.09	4.60	6.02	2.15	-45.82	-13	32.82	H
3300.02	-55.75	5.29	7.72	2.15	-55.47	-13	42.47	V
4116.02	-55.51	6.04	9.02	2.15	-54.68	-13	41.68	V
4955.01	-54.31	6.68	9.86	2.15	-53.28	-13	40.28	V
5776.01	-53.66	7.23	10.54	2.15	-52.50	-13	39.50	H

LTE BAND 5, CH20525

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correc tion	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1673.01	-56.09	3.58	5.19	2.15	-56.63	-13	43.63	H
2510.00	-42.78	4.63	6.12	2.15	-43.44	-13	30.44	H
3354.02	-53.90	5.32	7.85	2.15	-53.52	-13	40.52	V
4176.02	-54.20	6.15	9.08	2.15	-53.42	-13	40.42	V
5014.01	-53.98	6.58	9.92	2.15	-52.79	-13	39.79	V
5852.01	-52.90	7.24	10.53	2.15	-51.76	-13	38.76	H

LTE BAND 5, CH20643

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correc tion	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1697.01	-54.92	3.60	5.15	2.15	-55.52	-13	42.52	H
2545.00	-44.91	4.66	6.18	2.15	-45.54	-13	32.54	V
3408.02	-55.31	5.37	7.98	2.15	-54.85	-13	41.85	V
4245.02	-54.72	6.24	9.15	2.15	-53.96	-13	40.96	V
5084.01	-54.17	6.73	10.02	2.15	-53.03	-13	40.03	H
5927.01	-53.05	7.47	10.51	2.15	-52.16	-13	39.16	V

CA_5B, CH20450+CH20549

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correcti on	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1646.01	-51.26	3.56	5.24	2.15	-51.73	-13	38.73	H
2491.00	-53.97	4.61	6.07	2.15	-54.66	-13	41.66	V
3318.02	-49.06	5.29	7.76	2.15	-48.74	-13	35.74	V
4141.02	-55.40	6.07	9.04	2.15	-54.58	-13	41.58	V
4985.01	-54.38	6.63	9.89	2.15	-53.27	-13	40.27	H
5799.01	-53.23	7.19	10.54	2.15	-52.03	-13	39.03	V

CA_5B, CH20476+CH20575

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correcti on	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1656.01	-53.00	3.57	5.22	2.15	-53.50	-13	40.50	H
2495.00	-35.88	4.62	6.09	2.15	-36.56	-13	23.56	V
3340.02	-53.36	5.31	7.82	2.15	-53.00	-13	40.00	H
4167.02	-54.69	6.13	9.07	2.15	-53.90	-13	40.90	H
4995.01	-54.52	6.61	9.90	2.15	-53.38	-13	40.38	H
5815.01	-53.87	7.17	10.54	2.15	-52.65	-13	39.65	V

表 TRSE

CA_5B, CH204501+CH20600

Frequency (MHz)	SG (dBm)	Cable Loss (dB)	AntennaGain (dBi)	Correcti on	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polorization
1662.01	-59.91	3.57	5.21	2.15	-60.42	-13	47.42	V
2503.00	-35.01	4.63	6.11	2.15	-35.68	-13	22.68	V
3330.02	-54.55	5.30	7.79	2.15	-54.21	-13	41.21	H
4181.02	-54.70	6.16	9.08	2.15	-53.93	-13	40.93	V
5009.01	-53.89	6.59	9.91	2.15	-52.72	-13	39.72	H
5837.01	-53.72	7.19	10.53	2.15	-52.53	-13	39.53	H

LTE Band 7, Channel 20775

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5009.02	-55.77	6.59	9.91	-52.45	-25.00	27.45	V
7493.01	-53.99	8.37	12.19	-50.17	-25.00	25.17	V
10023.01	-52.22	9.25	12.91	-48.56	-25.00	23.56	H
12519.01	-49.14	10.23	13.21	-46.16	-25.00	21.16	V
15017.00	-45.04	11.24	13.99	-42.29	-25.00	17.29	H
17514.00	-44.22	12.78	14.92	-42.08	-25.00	17.08	H

LTE Band 7, Channel 21100

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5071.02	-55.94	6.69	10.00	-52.63	-25.00	27.63	V
7592.01	-53.76	8.01	12.27	-49.50	-25.00	24.50	H
10149.01	-52.42	9.38	12.96	-48.84	-25.00	23.84	V
12661.01	-48.29	10.36	13.30	-45.35	-25.00	20.35	H
15205.00	-45.90	11.39	13.88	-43.41	-25.00	18.41	H
17761.00	-44.86	12.52	15.27	-42.11	-25.00	17.11	V

LTE Band 7, Channel 21425

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5137.02	-54.29	6.86	10.09	-51.06	-25.00	26.06	V
7683.01	-54.30	8.35	12.35	-50.30	-25.00	25.30	V
10260.01	-51.02	9.51	13.00	-47.53	-25.00	22.53	V
12840.01	-48.46	10.66	13.40	-45.72	-25.00	20.72	V
15393.00	-44.72	11.38	13.76	-42.34	-25.00	17.34	V
17987.00	-44.37	12.90	15.58	-41.69	-25.00	16.69	V

LTE Band 12, Channel 23017

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1400.01	-58.22	3.24	4.98	2.15	-58.63	-13.00	45.63	V
2099.00	-35.05	4.19	4.90	2.15	-36.49	-13.00	23.49	H
2801.00	-52.96	4.91	6.64	2.15	-53.38	-13.00	40.38	V
3499.02	-53.43	5.52	8.20	2.15	-52.90	-13.00	39.90	H
4195.02	-54.49	6.19	9.10	2.15	-53.73	-13.00	40.73	V
4903.01	-54.05	6.73	9.80	2.15	-53.13	-13.00	40.13	V

LTE Band 12, Channel 23095

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.01	-53.00	3.25	5.06	2.15	-53.34	-13.00	40.34	H
2123.00	-30.12	4.21	4.97	2.15	-31.51	-13.00	18.51	H
2821.00	-52.74	4.94	6.68	2.15	-53.15	-13.00	40.15	H
3538.02	-51.20	5.70	8.25	2.15	-50.80	-13.00	37.80	V
4244.02	-51.41	6.25	9.14	2.15	-50.67	-13.00	37.67	H
4942.01	-54.78	6.70	9.84	2.15	-53.79	-13.00	40.79	V

LTE Band 12, Channel 23173

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1431.01	-52.22	3.28	5.14	2.15	-52.51	-13.00	39.51	V
2146.00	-34.23	4.24	5.04	2.15	-35.58	-13.00	22.58	V
2851.00	-52.76	4.96	6.73	2.15	-53.14	-13.00	40.14	H
3577.02	-51.99	6.10	8.31	2.15	-51.93	-13.00	38.93	H
4280.02	-54.83	6.21	9.18	2.15	-54.01	-13.00	41.01	V
5017.01	-54.34	6.57	9.92	2.15	-53.14	-13.00	40.14	V

LTE Band 13, Channel 23205

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1559.01	-54.30	3.47	5.39	2.15	-54.53	-13.00	41.53	H
2339.00	-43.85	4.44	5.62	2.15	-44.82	-13.00	31.82	H
3122.02	-51.89	5.39	7.29	2.15	-52.14	-13.00	39.14	V
3895.02	-54.59	6.11	8.75	2.15	-54.10	-13.00	41.10	V
4687.02	-53.45	6.49	9.59	2.15	-52.50	-13.00	39.50	V
5462.01	-54.36	6.92	10.55	2.15	-52.88	-13.00	39.88	V

LTE Band 13, Channel 23230

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1565.01	-56.58	3.48	5.38	2.15	-56.83	-13.00	43.83	H
2347.00	-43.82	4.45	5.64	2.15	-44.78	-13.00	31.78	V
3135.02	-52.86	5.39	7.32	2.15	-53.08	-13.00	40.08	H
3915.02	-54.01	6.12	8.78	2.15	-53.50	-13.00	40.50	V
4678.02	-54.44	6.49	9.58	2.15	-53.50	-13.00	40.50	V
5476.01	-54.81	6.97	10.57	2.15	-53.36	-13.00	40.36	V

LTE Band 13, Channel 23255

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.01	-50.15	3.48	5.38	2.15	-50.40	-13.00	37.40	H
2354.00	-38.03	4.46	5.66	2.15	-38.98	-13.00	25.98	V
3138.02	-52.56	5.39	7.33	2.15	-52.77	-13.00	39.77	H
3910.02	-54.96	6.12	8.77	2.15	-54.46	-13.00	41.46	V
4712.02	-53.90	6.51	9.61	2.15	-52.95	-13.00	39.95	V
5485.01	-54.81	7.00	10.58	2.15	-53.38	-13.00	40.38	H

LTE BAND 48, CH55265

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7106.00	-64.95	8.16	11.73	-61.38	-40.00	21.38	V
8892.00	-64.64	8.83	13.08	-60.39	-40.00	20.39	V
10658.00	-60.99	9.29	13.13	-57.15	-40.00	17.15	H
12454.00	-59.84	10.30	13.18	-56.96	-40.00	16.96	V
14211.00	-57.09	10.89	14.46	-53.52	-40.00	13.52	V
15977.00	-54.14	11.77	13.70	-52.21	-40.00	12.21	H

LTE BAND 48, CH55990

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7269.00	-65.05	8.13	11.92	-61.26	-40.00	21.26	V
9052.00	-64.06	9.06	13.13	-59.99	-40.00	19.99	V
10887.00	-61.59	9.62	13.18	-58.03	-40.00	18.03	V
12668.00	-59.19	10.35	13.30	-56.24	-40.00	16.24	V
14501.00	-54.68	10.93	14.40	-51.21	-40.00	11.21	H
16320.00	-54.17	11.82	13.64	-52.35	-40.00	12.35	H

LTE BAND 48, CH56715

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7387.00	-65.38	8.11	12.06	-61.43	-40.00	21.43	V
9249.00	-63.95	9.04	13.25	-59.74	-40.00	19.74	V
11094.00	-61.60	9.85	13.18	-58.27	-40.00	18.27	V
12939.00	-59.57	10.49	13.46	-56.60	-40.00	16.60	H
14791.00	-55.08	11.13	14.17	-52.04	-40.00	12.04	V
16621.00	-53.43	11.96	13.65	-51.74	-40.00	11.74	H

CA 48C, CH55340+CH55538

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7250.00	-65.32	8.15	11.90	-61.57	-40	21.57	V
9054.00	-64.10	9.06	13.13	-60.03	-40	20.03	V
10833.00	-61.91	9.58	13.17	-58.32	-40	18.32	V
12639.00	-59.00	10.40	13.28	-56.12	-40	16.12	V
14446.00	-57.02	10.99	14.41	-53.60	-40	13.60	H
16257.00	-53.41	11.79	13.65	-51.55	-40	11.55	H

CA_48C, CH55891+CH56089

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7249.00	-65.22	8.15	11.90	-61.47	-40.00	21.47	V
9043.00	-63.93	9.09	13.13	-59.89	-40.00	19.89	V
10846.00	-58.83	9.58	13.17	-55.24	-40.00	15.24	V
12643.00	-58.97	10.39	13.29	-56.07	-40.00	16.07	V
14461.00	-54.12	10.97	14.41	-50.68	-40.00	10.68	V
16249.00	-53.35	11.78	13.65	-51.48	-40.00	11.48	H

CA 48C, CH56442+CH56640

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
7344.00	-65.14	8.11	12.01	-61.24	-40.00	21.24	V
9156.00	-64.53	8.93	13.19	-60.27	-40.00	20.27	V
11011.00	-60.86	10.00	13.20	-57.66	-40.00	17.66	V
12830.00	-59.19	10.69	13.40	-56.48	-40.00	16.48	V
14682.00	-54.29	11.20	14.25	-51.24	-40.00	11.24	V
16535.00	-53.48	12.00	13.61	-51.87	-40.00	11.87	H

LTE BAND 66, CH131979

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3422.02	-57.83	5.38	8.01	-55.20	-13.00	42.20	V
5133.02	-63.91	6.86	10.09	-60.68	-13.00	47.68	V
6845.01	-63.23	7.83	11.41	-59.65	-13.00	46.65	H
8554.01	-61.57	8.58	13.01	-57.14	-13.00	44.14	V
10314.01	-62.06	9.67	13.03	-58.70	-13.00	45.70	V
11978.01	-59.75	10.15	13.00	-56.90	-13.00	43.90	V

LTE BAND 66, CH132322

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3490.02	-61.02	5.50	8.18	-58.34	-13.00	45.34	H
5235.02	-61.88	7.00	10.23	-58.65	-13.00	45.65	H
6984.01	-64.30	8.17	11.58	-60.89	-13.00	47.89	H
8729.01	-63.02	8.45	13.05	-58.42	-13.00	45.42	V
10497.01	-61.73	9.66	13.10	-58.29	-13.00	45.29	V
12181.01	-59.71	10.11	13.07	-56.75	-13.00	43.75	V

LTE BAND 66, CH132665

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3559.02	-65.74	5.92	8.28	-63.38	-13.00	50.38	V
5341.02	-60.29	6.95	10.38	-56.86	-13.00	43.86	V
7154.01	-64.79	8.18	11.78	-61.19	-13.00	48.19	V
8900.01	-64.19	8.85	13.08	-59.96	-13.00	46.96	V
10695.01	-61.64	9.30	13.14	-57.80	-13.00	44.80	V
12465.01	-59.61	10.27	13.19	-56.69	-13.00	43.69	V

CA_66B, CH132022+CH132121

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3430.02	-65.52	5.39	8.03	-62.88	-13.00	49.88	V
5158.02	-66.39	6.89	10.12	-63.16	-13.00	50.16	V
6871.01	-64.89	7.80	11.45	-61.24	-13.00	48.24	V
8572.01	-64.81	8.54	13.01	-60.34	-13.00	47.34	V
10275.01	-62.18	9.56	13.01	-58.73	-13.00	45.73	V
11991.01	-60.36	10.09	13.00	-57.45	-13.00	44.45	V

CA_66B, CH132373+CH132472

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3510.02	-66.57	5.54	8.21	-63.90	-13.00	50.90	V
5270.02	-66.61	6.99	10.28	-63.32	-13.00	50.32	H
6987.01	-64.67	8.20	11.58	-61.29	-13.00	48.29	V
8751.01	-64.76	8.51	13.05	-60.22	-13.00	47.22	V
10494.01	-61.89	9.66	13.10	-58.45	-13.00	45.45	V
12241.01	-60.03	10.03	13.10	-56.96	-13.00	43.96	V

CA_66B_CH132523+CH132622

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polorization
3530.02	-63.83	5.62	8.24	-61.21	-13.00	48.21	V
5282.02	-63.73	6.99	10.29	-60.43	-13.00	47.43	V
7049.01	-59.40	8.23	11.66	-55.97	-13.00	42.97	V
8838.01	-59.83	8.73	13.07	-55.49	-13.00	42.49	V
10602.01	-56.46	9.28	13.12	-52.62	-13.00	39.62	V
12351.01	-53.08	10.22	13.14	-50.16	-13.00	37.16	V

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 increments from -30°C to +50°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 _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1850.833	1909.199		
50				10.96	0.0058
40				-0.84	0.0004
30				9.27	0.0049
10				-0.31	0.0002
0				9.28	0.0049
-10				-0.80	0.0004
-20				0.53	0.0003
-30				-1.00	0.0005

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	1850.833	1909.199	10.56	0.0056
4.40				11.16	0.0059

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	824.417	848.583		
50				0.49	0.0006
40				-0.30	0.0004
30				6.65	0.0079
10				-0.34	0.0004
0				7.11	0.0085
-10				0.92	0.0011
-20				6.35	0.0076
-30				1.16	0.0014

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	824.417	848.583	-0.16	0.0002
4.40				6.32	0.0076

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2500.897	2569.135		
50				-5.01	0.0020
40				-4.73	0.0019
30				-4.46	0.0018
10				-4.61	0.0018
0				-2.26	0.0009
-10				-3.76	0.0015
-20				-1.33	0.0005
-30				-6.11	0.0024

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	2500.897	2569.135	-4.76	0.0019
4.40				-3.22	0.0013

LTE Band 12, 10MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	699.481	715.519		
50				0.97	0.0014
40				-0.39	0.0006
30				6.72	0.0095
10				0.79	0.0011
0				1.60	0.0023
-10				7.04	0.0100
-20				0.86	0.0012
-30				1.12	0.0016

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	699.481	715.519	1.50	0.0021
4.40				0.14	0.0002

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

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	777.465	786.535		
50				-1.47	0.0019
40				4.92	0.0063
30				-1.50	0.0019
10				-1.03	0.0013
0				-2.00	0.0026
-10				-1.19	0.0015
-20				-1.53	0.0020
-30				-1.24	0.0016

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	777.465	786.535	5.21	0.0067
4.40				5.18	0.0066

LTE Band 48, 20MHz bandwidth QPSK (worst case of all bandwidths)
Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	3550.795	3699.209		
50				-0.80	0.0002
40				-0.38	0.0001
30				-0.10	0.0000
10				0.50	0.0001
0				0.60	0.0002
-10				1.50	0.0004
-20				-2.40	0.0007
-30				0.20	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	3550.582	3699.275	-1.30	0.0004
4.40				-2.50	0.0007

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

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.801	1779.199		
50				1.04	0.0006
40				2.00	0.0011
30				1.27	0.0007
10				0.62	0.0004
0				11.34	0.0065
-10				1.10	0.0006
-20				1.19	0.0007
-30				1.10	0.0006

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	1710.801	1779.199	1.19	0.0007
4.40				10.00	0.0057

LTE band 5_CA, 10MHz+10MHz bandwidth QPSK(worst case of all bandwidths)
Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	824.29	848.62		
50				1.9	0.0023
40				3.0	0.0036
30				-1.9	0.0023
10				1.5	0.0018
0				-0.2	0.0002
-10				0.9	0.0011
-20				-2.0	0.0024
-30				0.4	0.0005

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	824.29	848.62	1.7	0.0020
4.40				-1.7	0.0020

LTE band 48_CA, 20MHz+20MHz bandwidth QPSK(worst case of all bandwidths)
Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	3550.49	3699.35		
50				-2.4	0.0007
40				0.8	0.0002
30				1.1	0.0003
10				-1.4	0.0004
0				-5.2	0.0014
-10				2.2	0.0006
-20				0.5	0.0001
-30				-3.1	0.0009

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	3550.49	3699.35	-0.8	0.0002
4.40				-1.8	0.0005

LTE band 66_CA, 10MHz+10MHz bandwidth QPSK(worst case of all bandwidths)
Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.30	1779.62		
50				-0.6	0.0003
40				-1.4	0.0008
30				-1.1	0.0006
10				-0.4	0.0002
0				0.9	0.0005
-10				-3.2	0.0018
-20				-1.9	0.0011
-30				-0.5	0.0003

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.60	20	1710.30	1779.62	1.4	0.0008
4.40				0.1	0.0001

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.

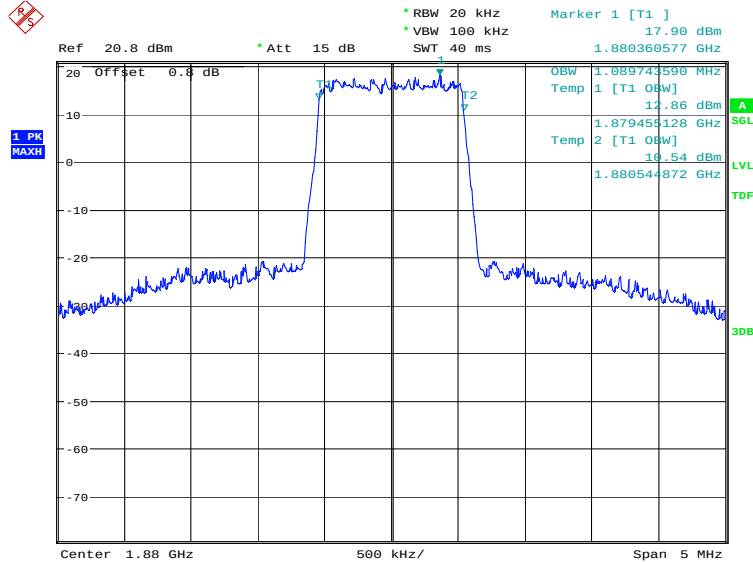
The measurement method is from ANSI C63.26:

- 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 $\geq 3 \times \text{RBW}$.
- 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%)

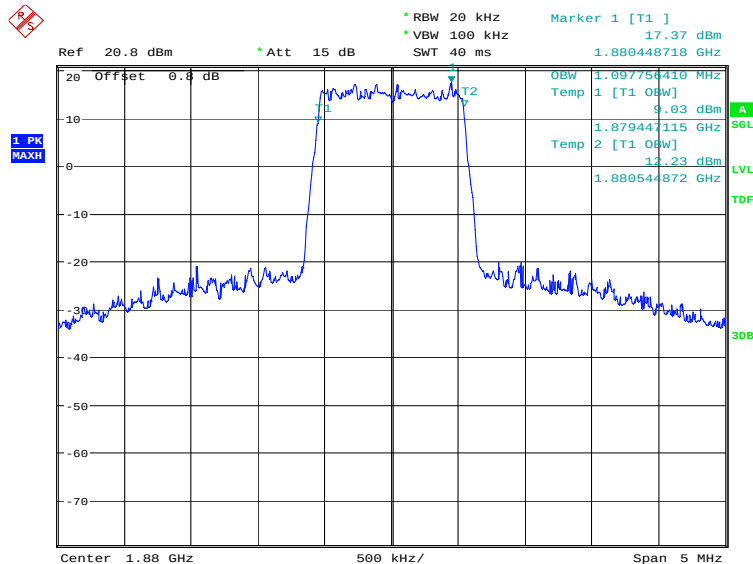
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	1089.74	1097.76

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



Date: 14.MAY.2021 09:17:13

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

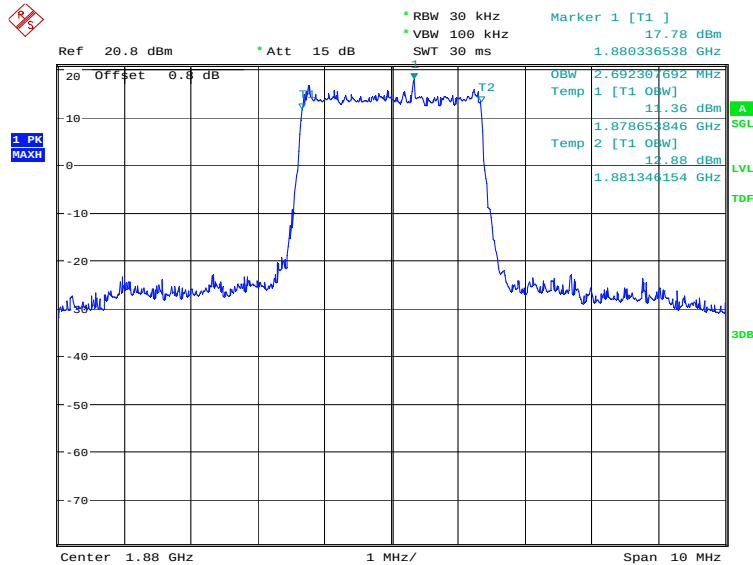


Date: 14.MAY.2021 09:17:53

LTE band 2, 3MHz (99%)

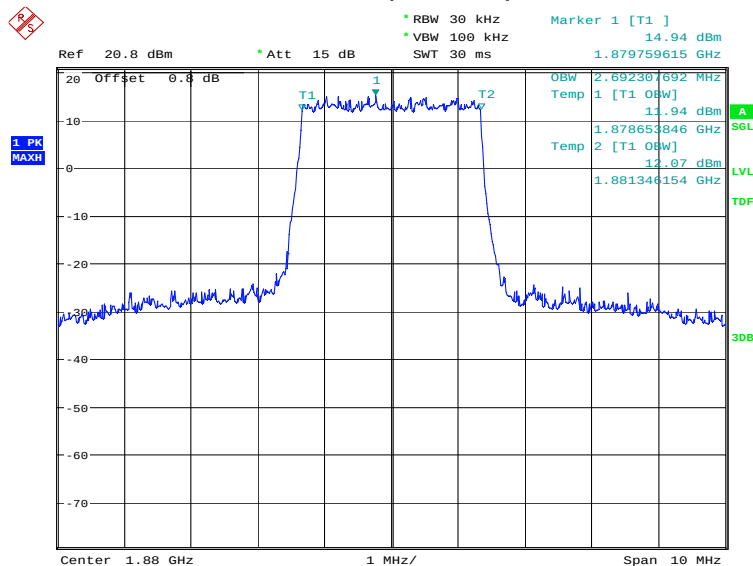
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 14.MAY.2021 09:18:34

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

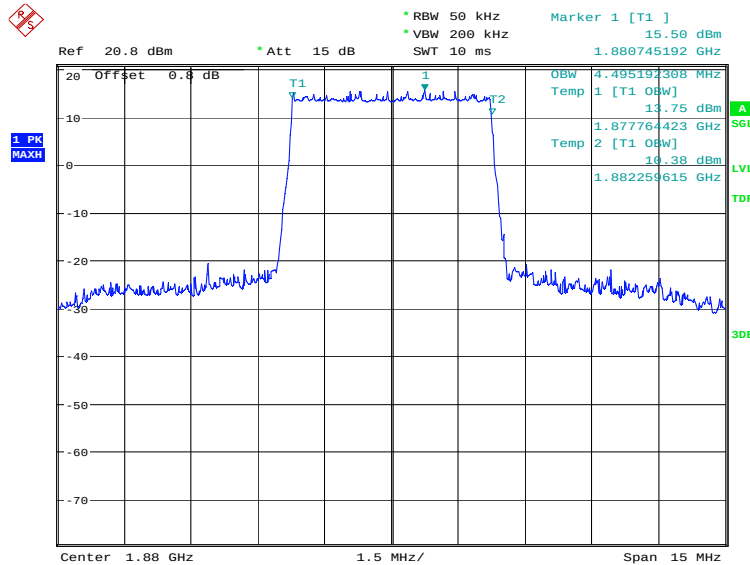


Date: 14.MAY.2021 09:19:13

LTE band 2, 5MHz (99%)

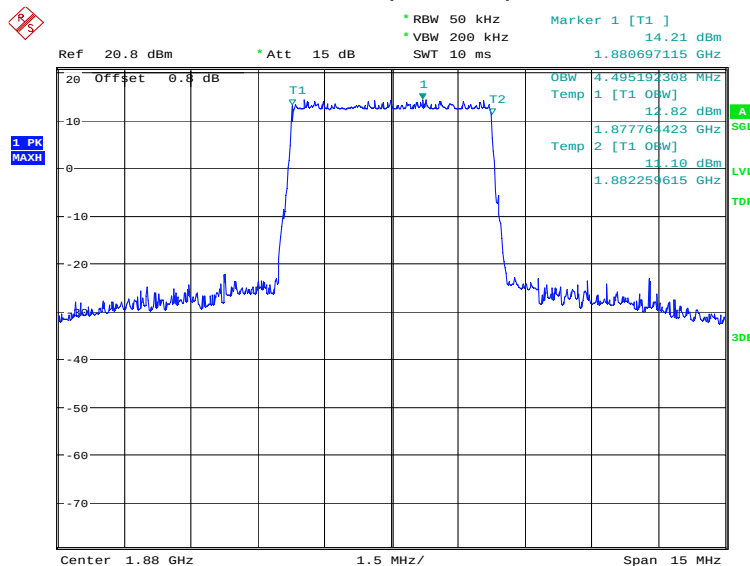
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 14.MAY.2021 09:19:55

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

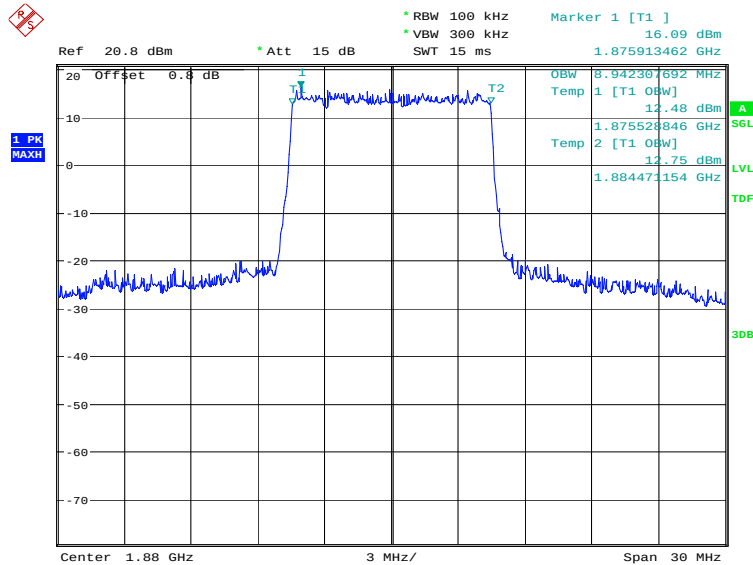


Date: 14.MAY.2021 09:20:34

LTE band 2, 10MHz (99%)

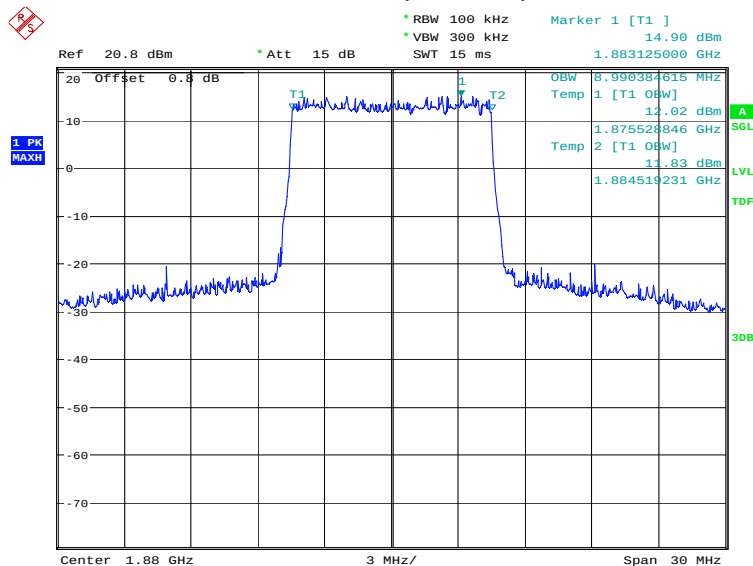
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 14.MAY.2021 09:21:16

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

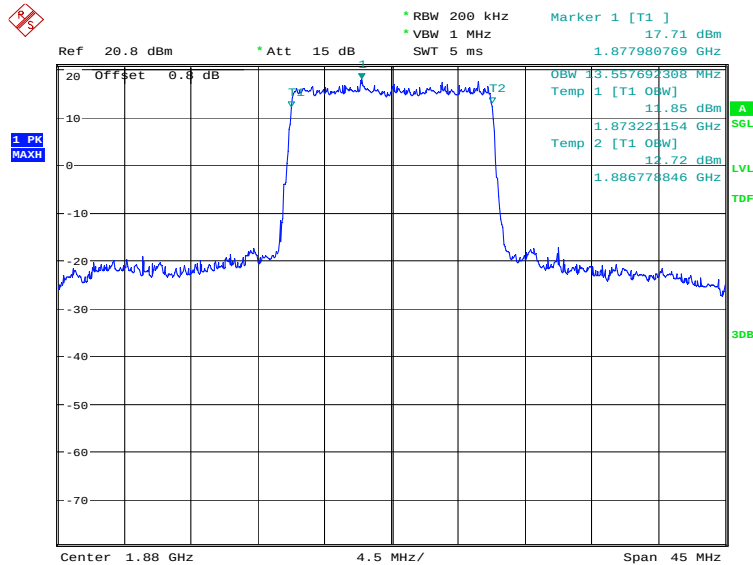


Date: 14.MAY.2021 09:21:55

LTE band 2, 15MHz (99%)

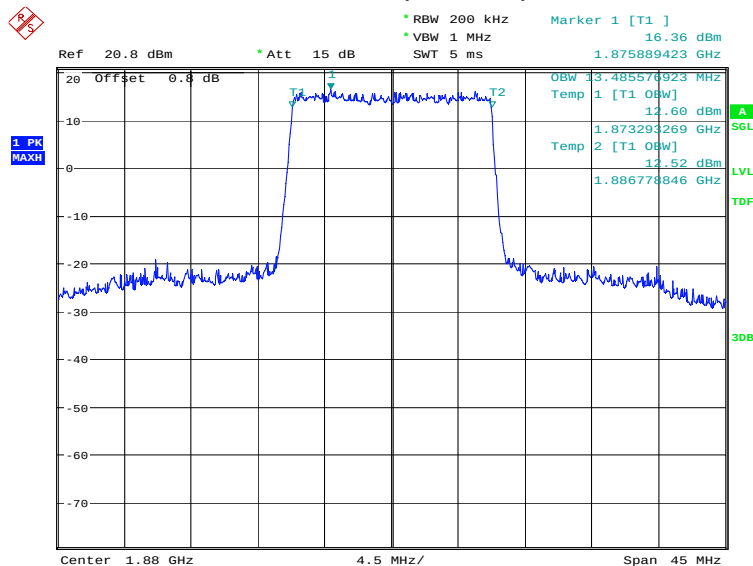
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	13557.69	13485.58

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



Date: 14.MAY.2021 09:22:37

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

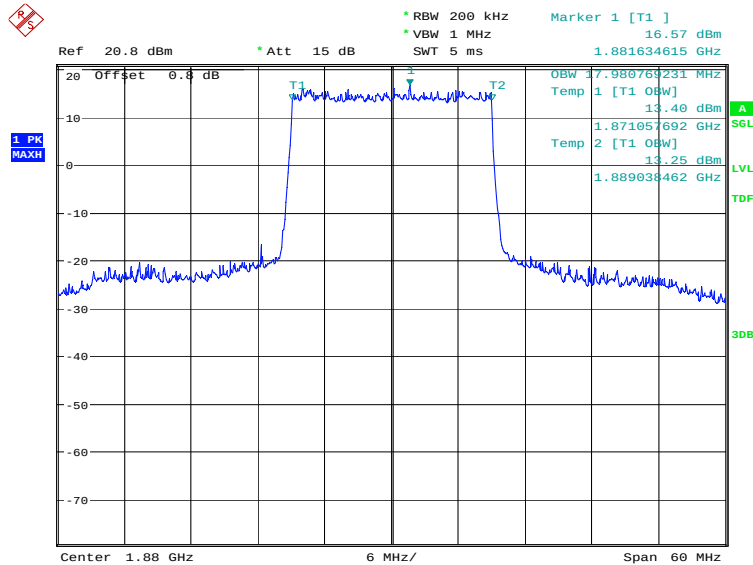


Date: 14.MAY.2021 09:23:16

LTE band 2, 20MHz (99%)

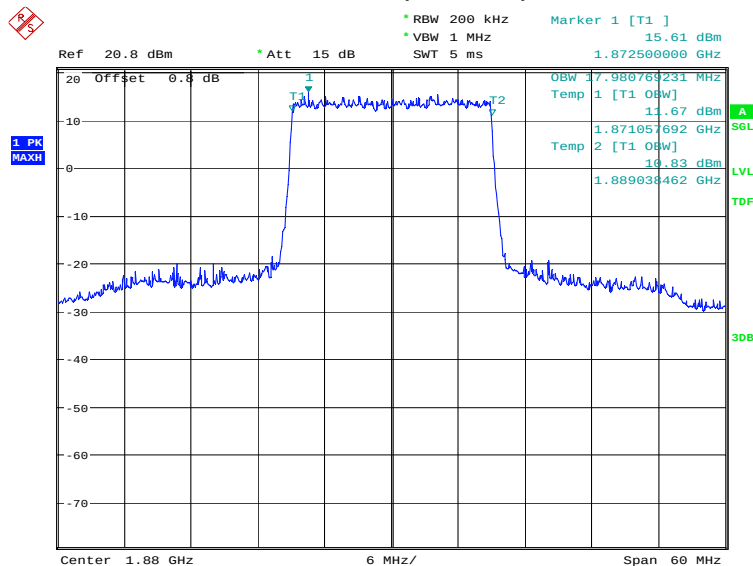
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 14.MAY.2021 09:23:58

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

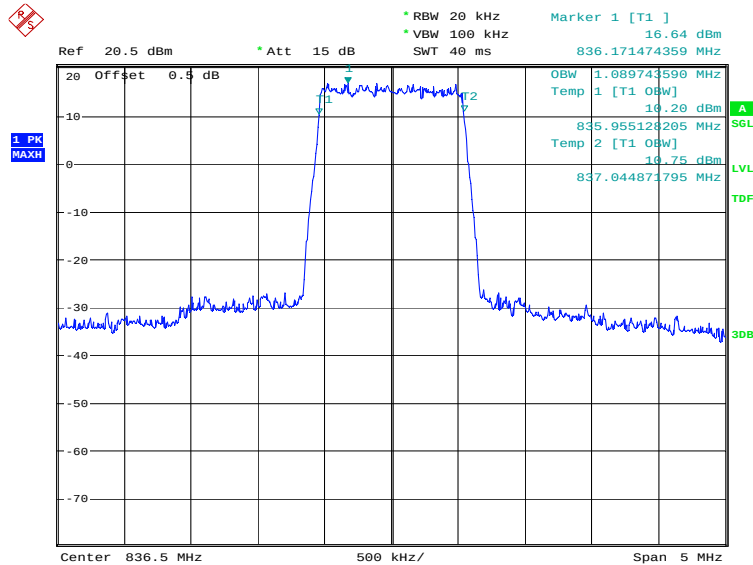


Date: 14.MAY.2021 09:24:37

LTE band 5, 1.4MHz (99%)

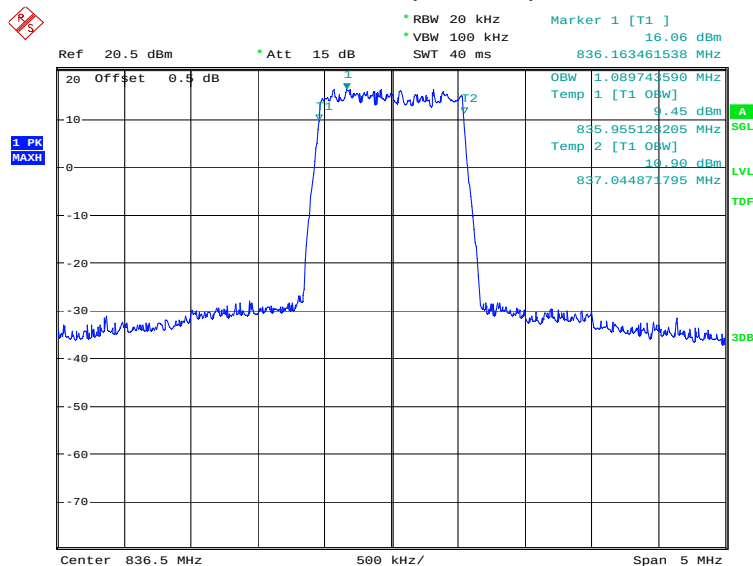
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	1089.74	1089.74

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



Date: 14.MAY.2021 09:26:06

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

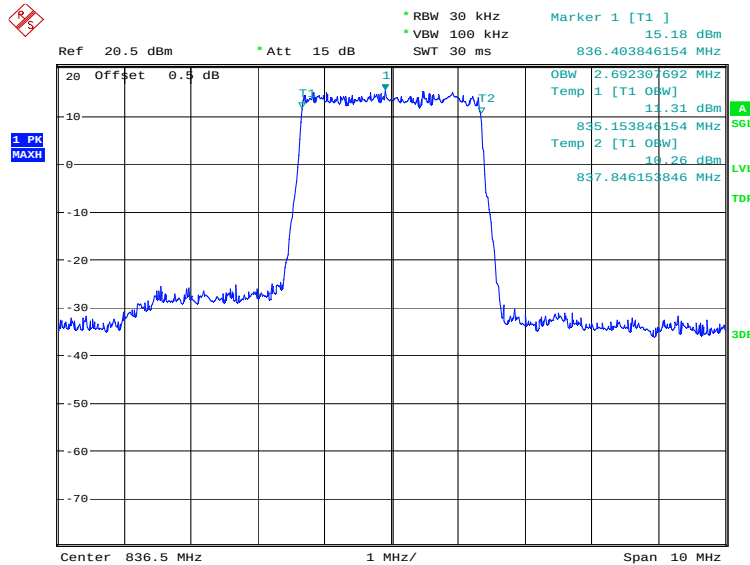


Date: 14.MAY.2021 09:26:45

LTE band 5, 3MHz (99%)

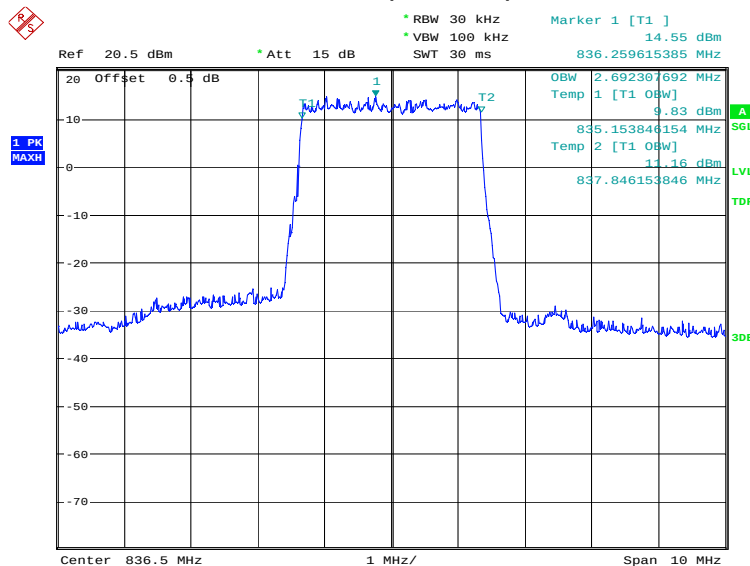
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	2692.31	2692.31

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



Date: 14.MAY.2021 09:27:27

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

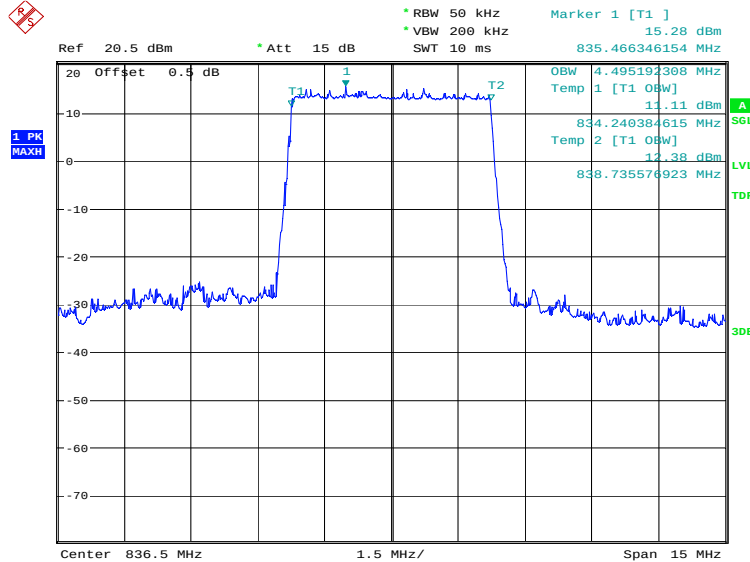


Date: 14.MAY.2021 09:28:06

LTE band 5, 5MHz (99%)

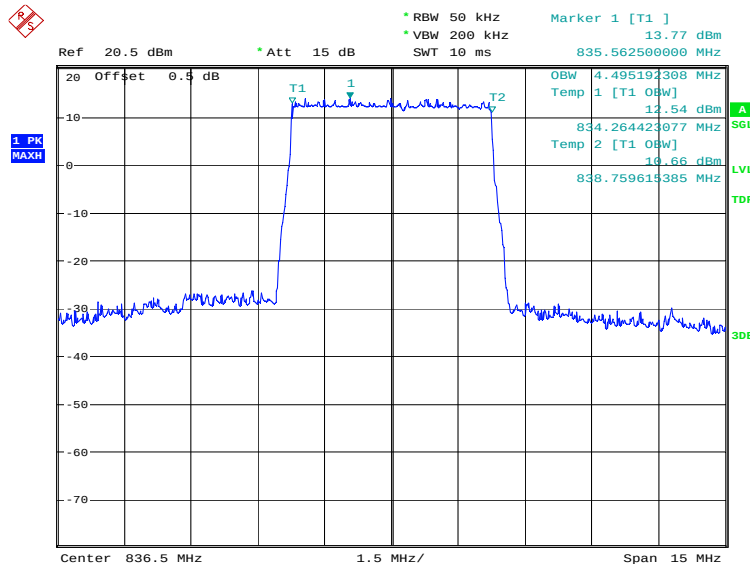
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	4495.19	4495.19

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



Date: 14.MAY.2021 09:28:48

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

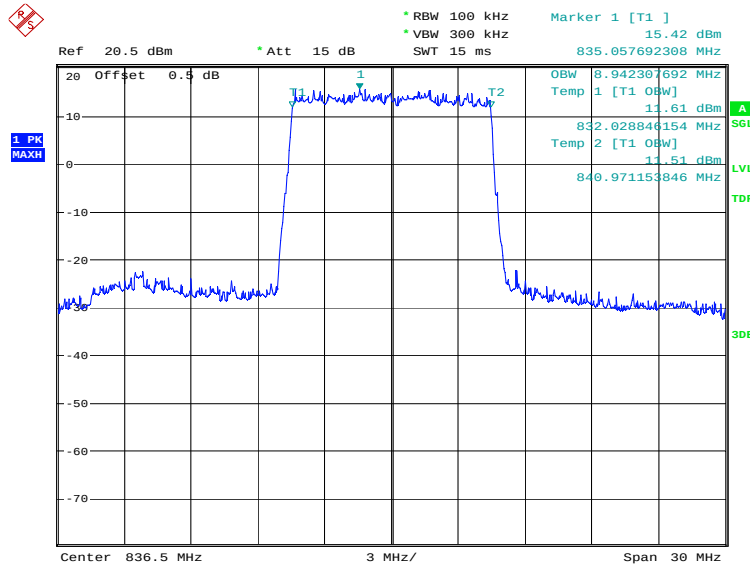


Date: 14.MAY.2021 09:29:27

LTE band 5, 10MHz (99%)

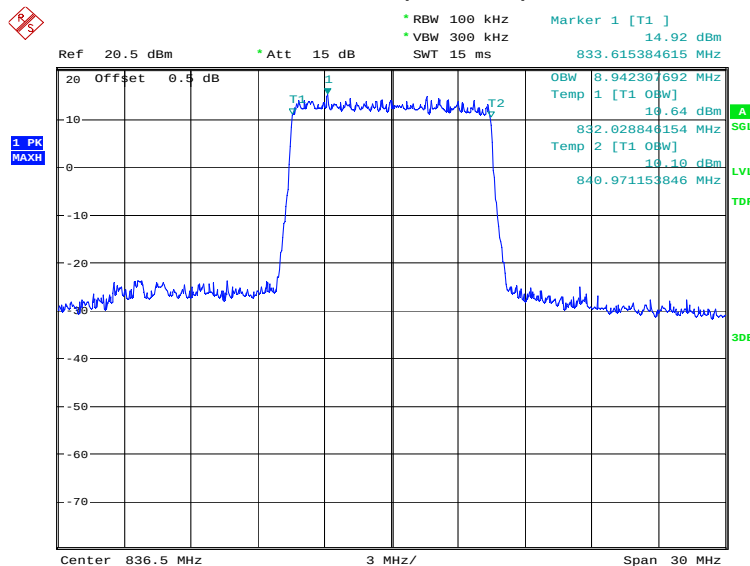
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	8942.31	8942.31

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



Date: 14.MAY.2021 09:30:09

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

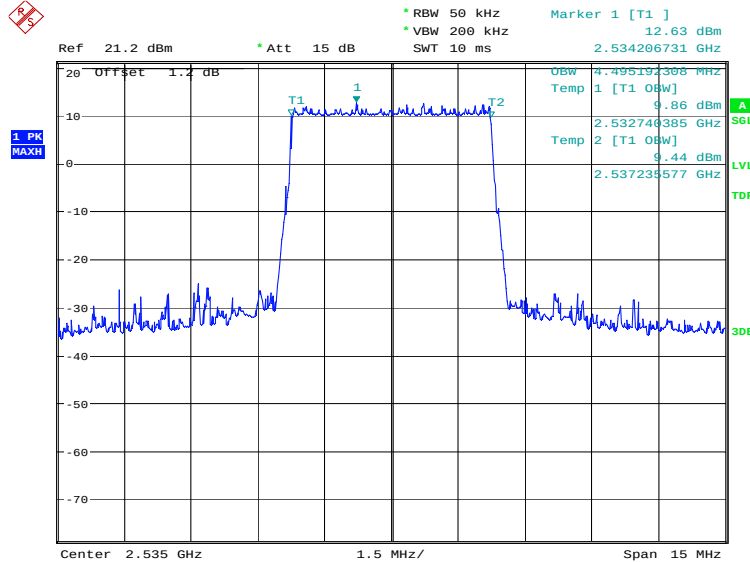


Date: 14.MAY.2021 09:30:48

LTE band 7, 5MHz (99%)

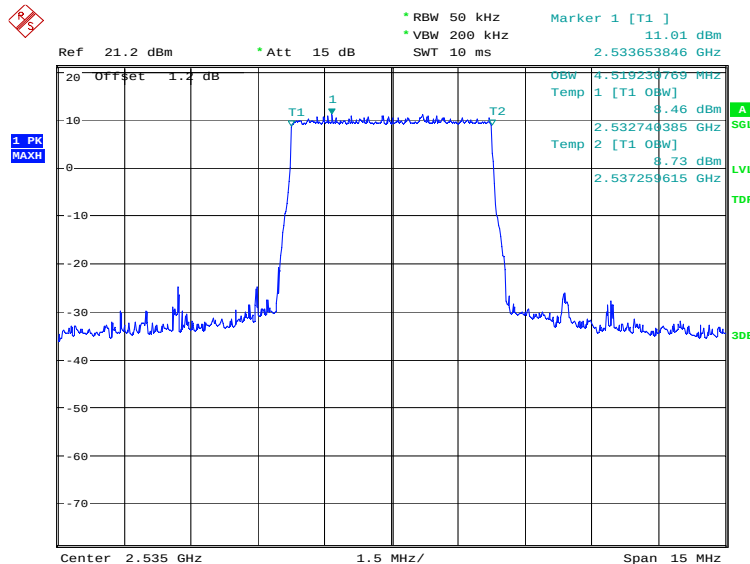
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	4495.19	4519.23

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



Date: 14.MAY.2021 09:31:31

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

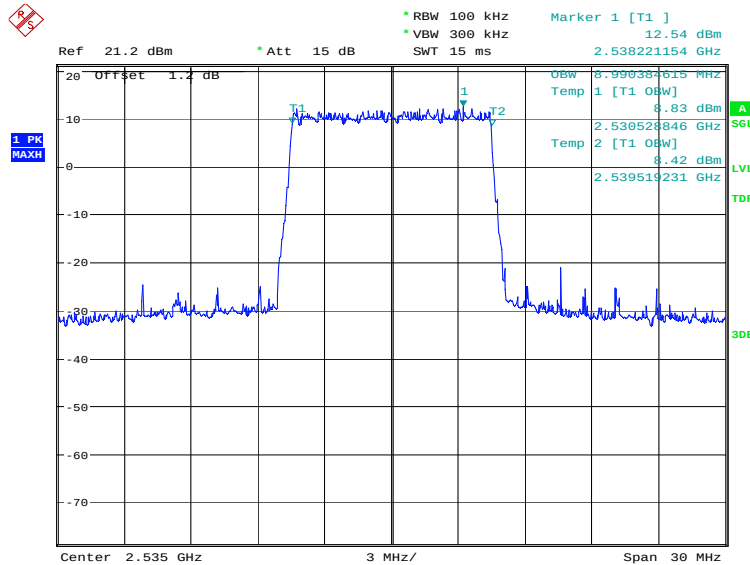


Date: 14.MAY.2021 09:32:11

LTE band 7, 10MHz (99%)

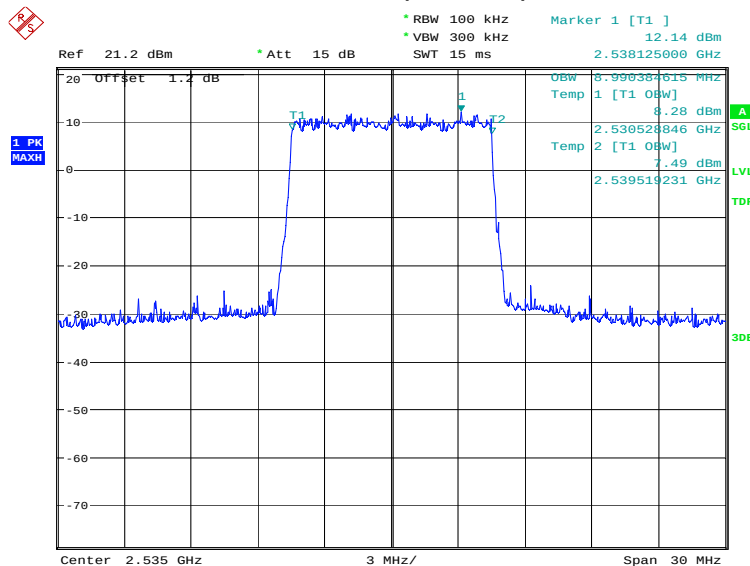
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	8990.38	8990.38

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



Date: 14.MAY.2021 09:32:52

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

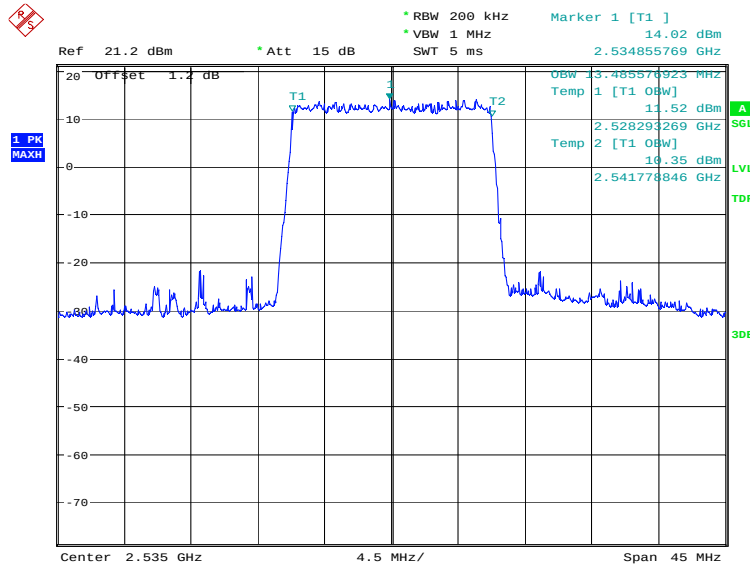


Date: 14.MAY.2021 09:33:32

LTE band 7, 15MHz (99%)

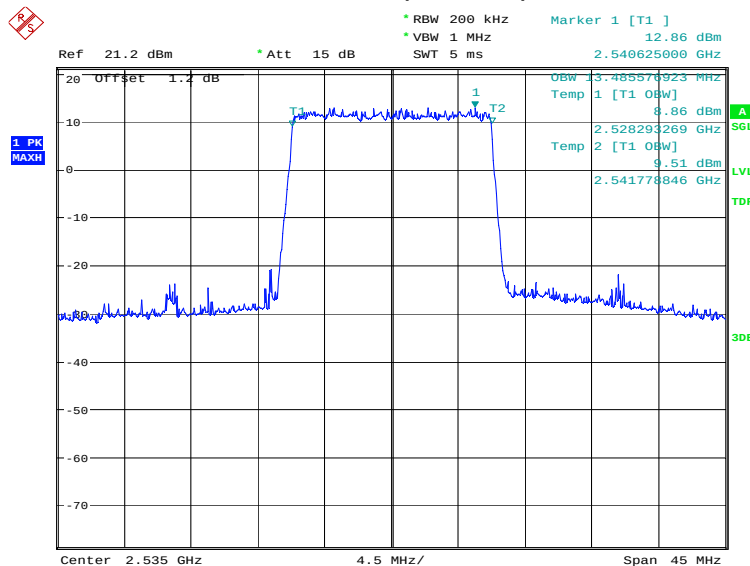
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 14.MAY.2021 09:34:13

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

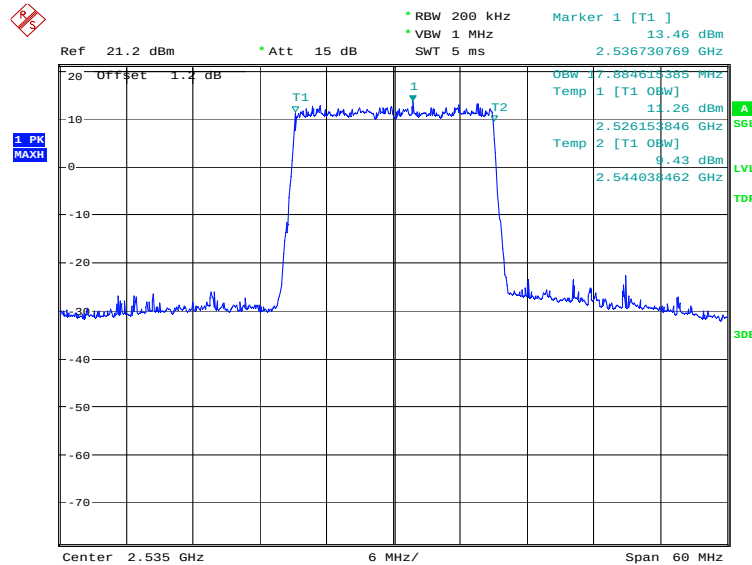


Date: 14.MAY.2021 09:34:53

LTE band 7, 20MHz (99%)

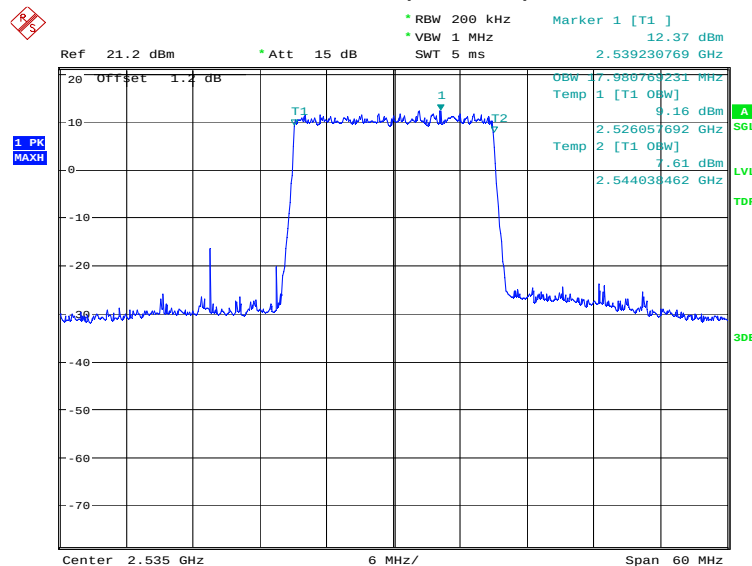
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	17884.62	17980.77

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



Date: 14.MAY.2021 09:35:34

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

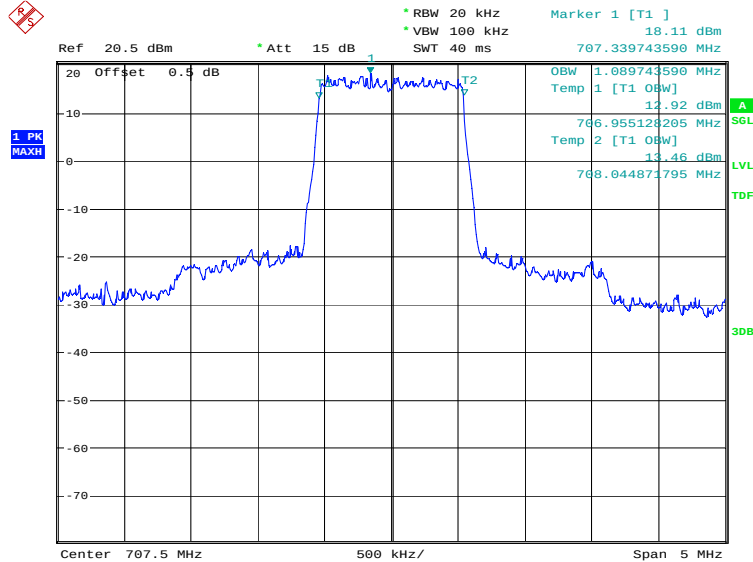


Date: 14.MAY.2021 09:36:14

LTE band 12, 1.4MHz (99%)

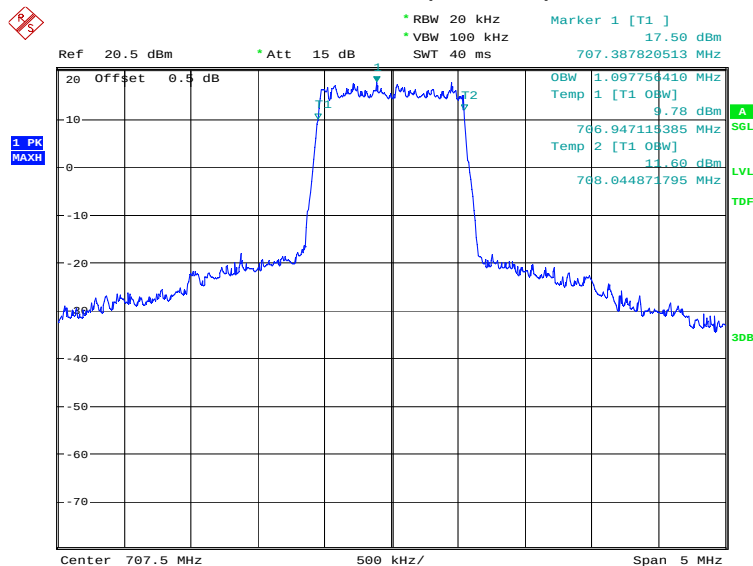
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	1089.74	1097.76

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



Date: 14.MAY.2021 09:37:43

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

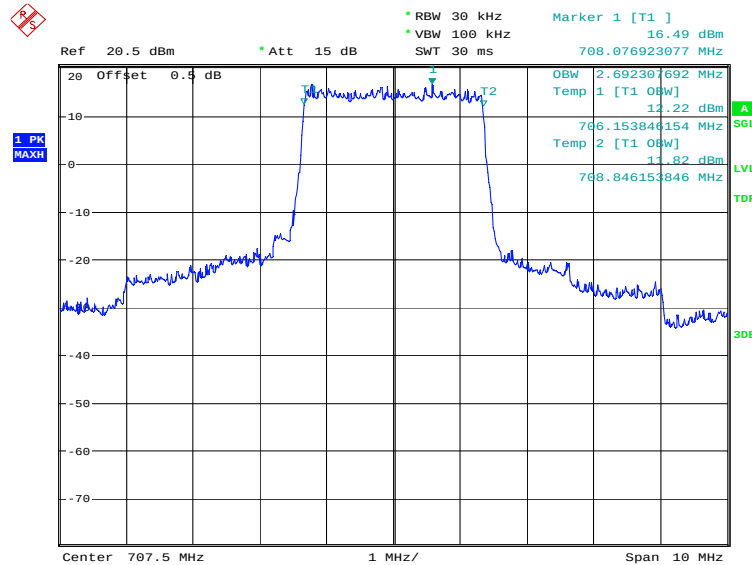


Date: 14.MAY.2021 09:38:22

LTE band 12, 3MHz (99%)

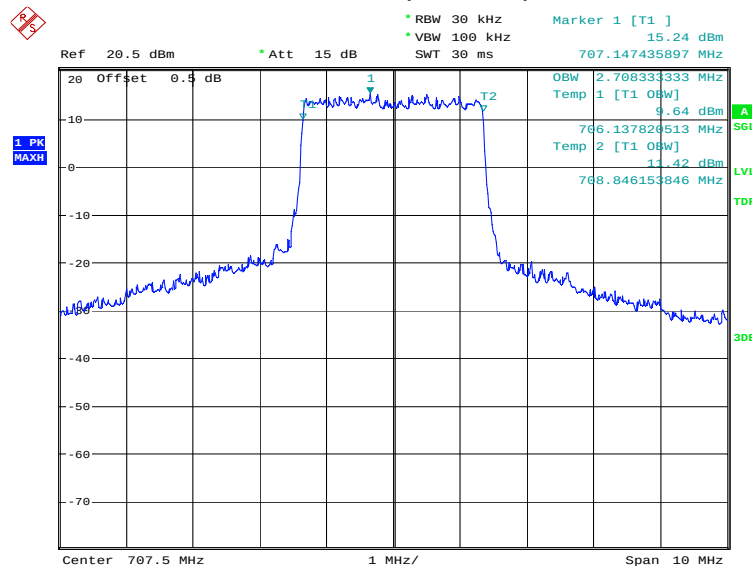
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	2692.31	2708.33

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



Date: 14.MAY.2021 09:39:04

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

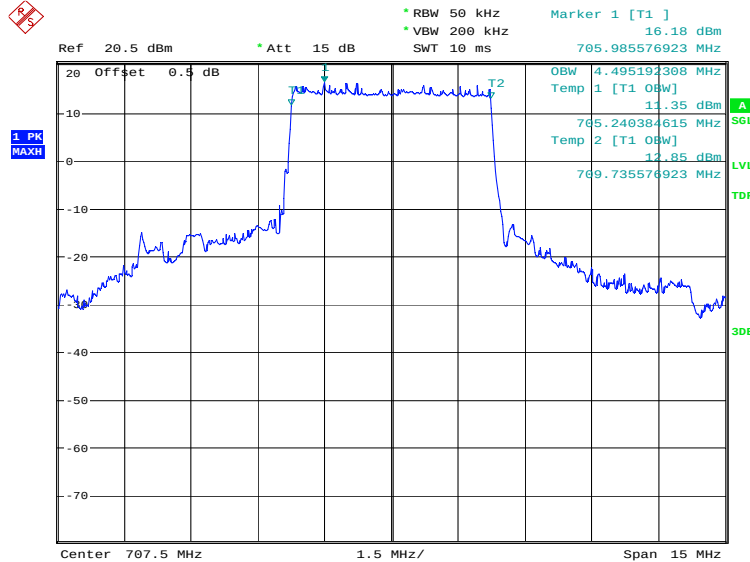


Date: 14.MAY.2021 09:39:43

LTE band 12, 5MHz (99%)

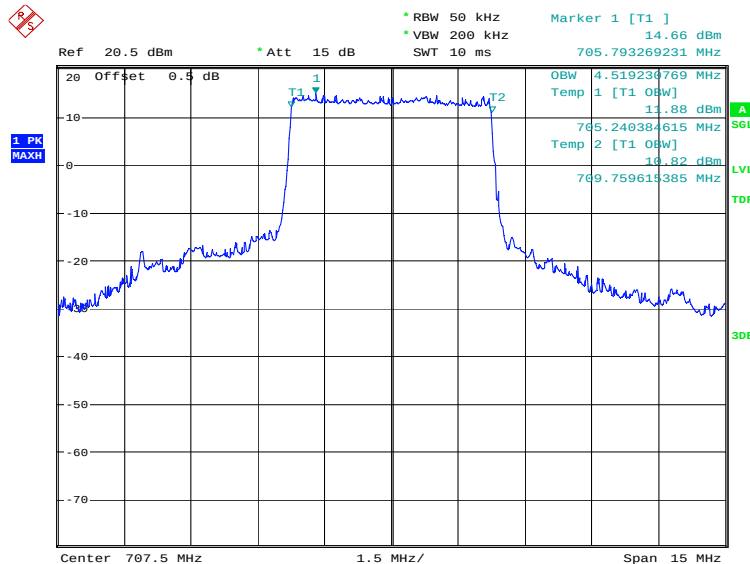
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	4495.19	4519.23

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



Date: 14.MAY.2021 09:40:24

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

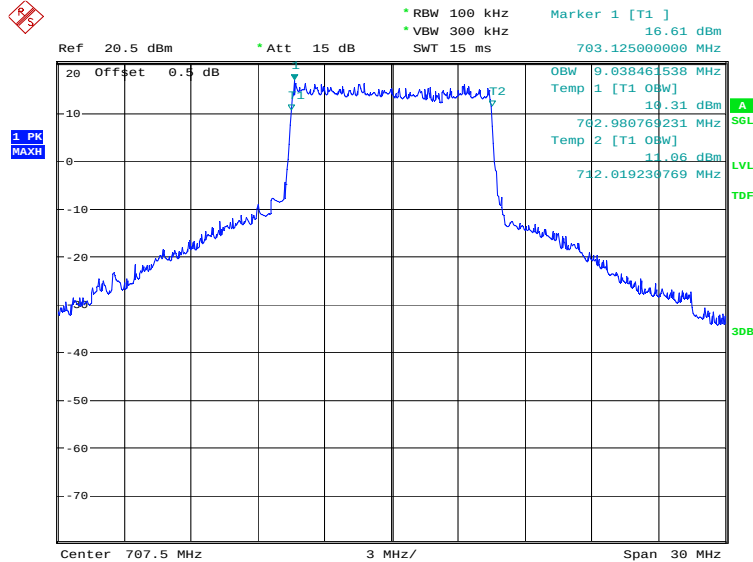


Date: 14.MAY.2021 09:41:04

LTE band 12, 10MHz (99%)

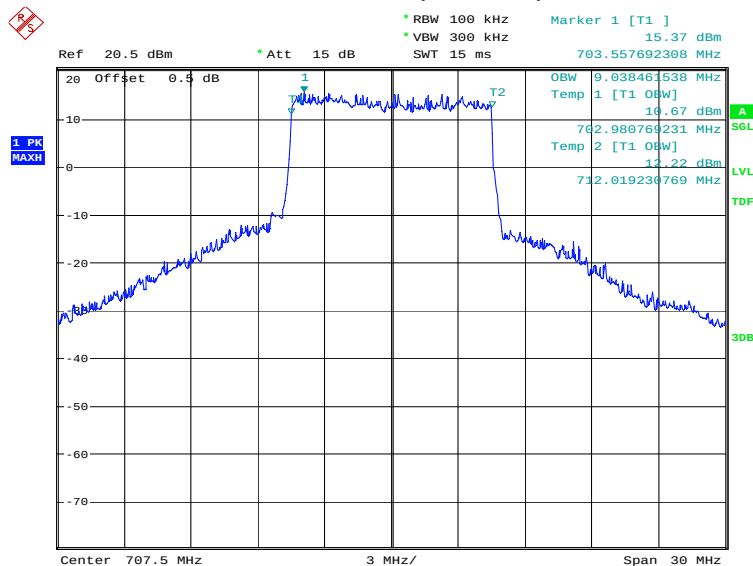
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	9038.46	9038.46

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



Date: 14.MAY.2021 09:41:45

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

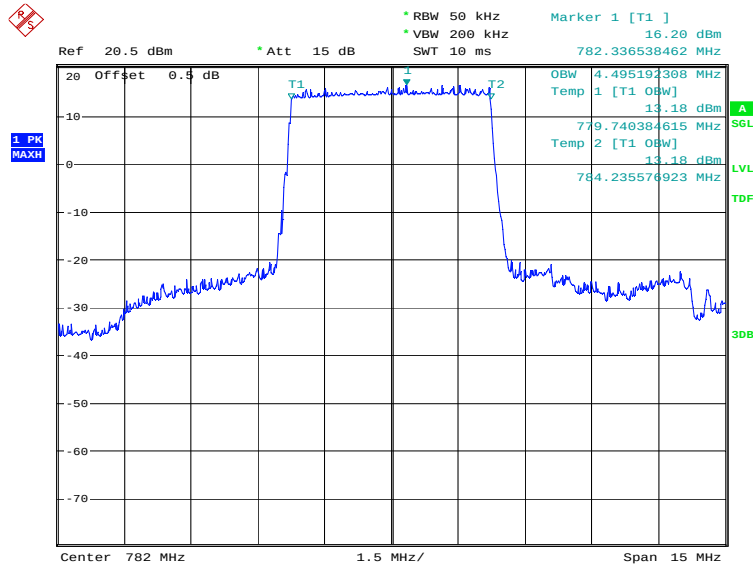


Date: 14.MAY.2021 09:42:24

LTE band 13, 5MHz (99%)

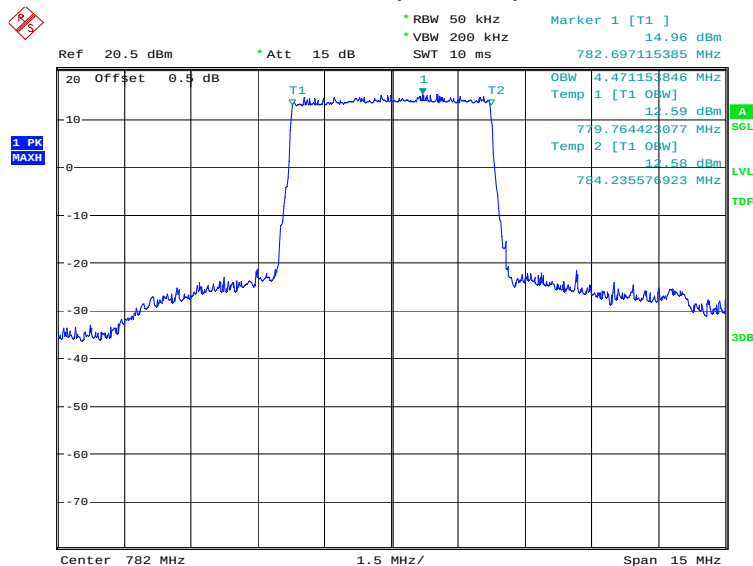
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
782.0	QPSK	16QAM
	4495.19	4471.15

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



Date: 14.MAY.2021 09:43:07

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

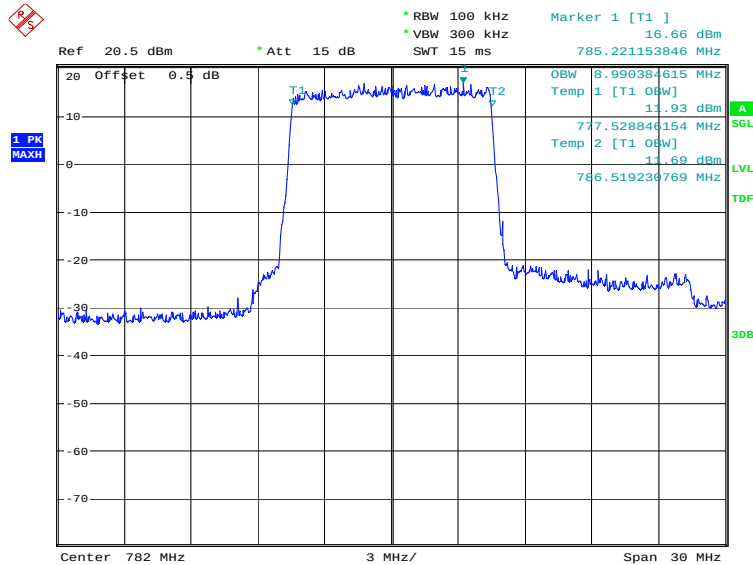


Date: 14.MAY.2021 09:43:46

LTE band 13, 10MHz (99%)

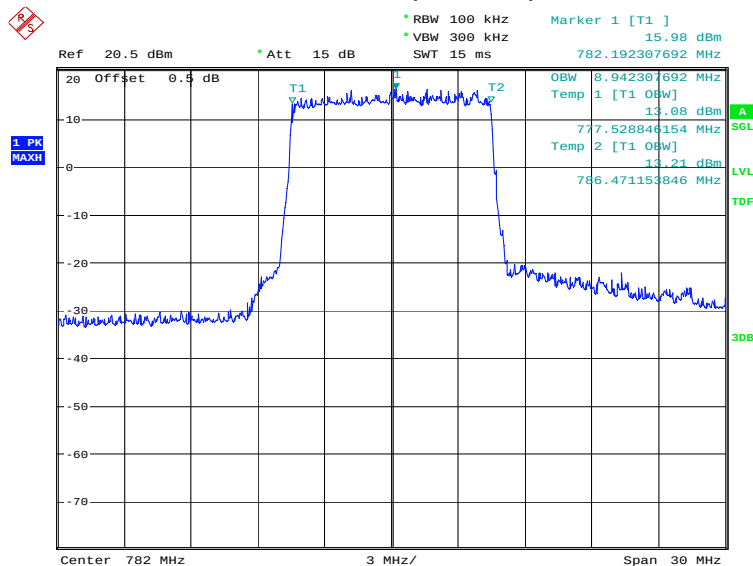
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
782.0	QPSK	16QAM
	8990.38	8942.31

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



Date: 14.MAY.2021 09:44:28

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

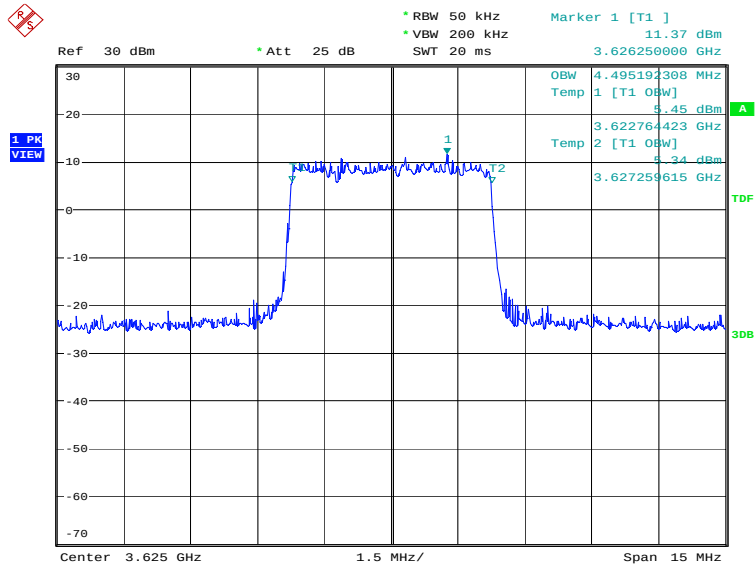


Date: 14.MAY.2021 09:45:07

LTE band 48, 5MHz (99%)

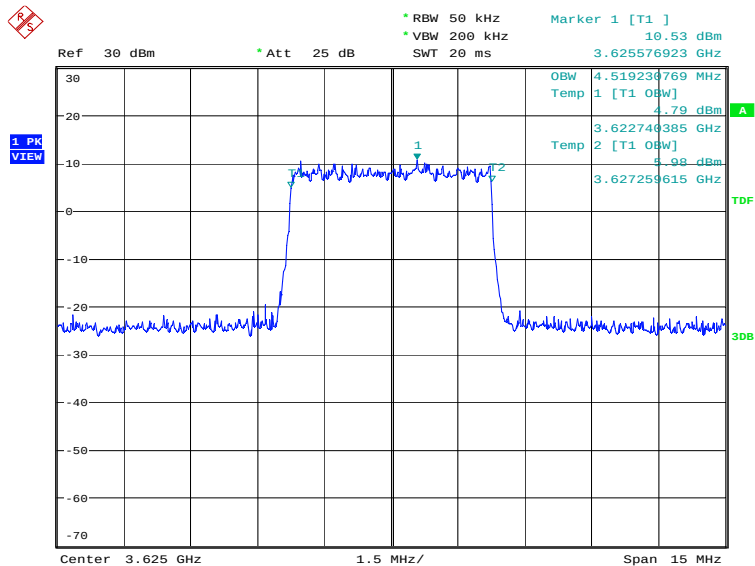
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
3625.0	QPSK	16QAM
	4495.192	4519.231

LTE band 48, 5MHz Bandwidth, QPSK (99% BW)



Date: 18.MAY.2021 14:27:13

LTE band 48, 5MHz Bandwidth, 16QAM (99% BW)

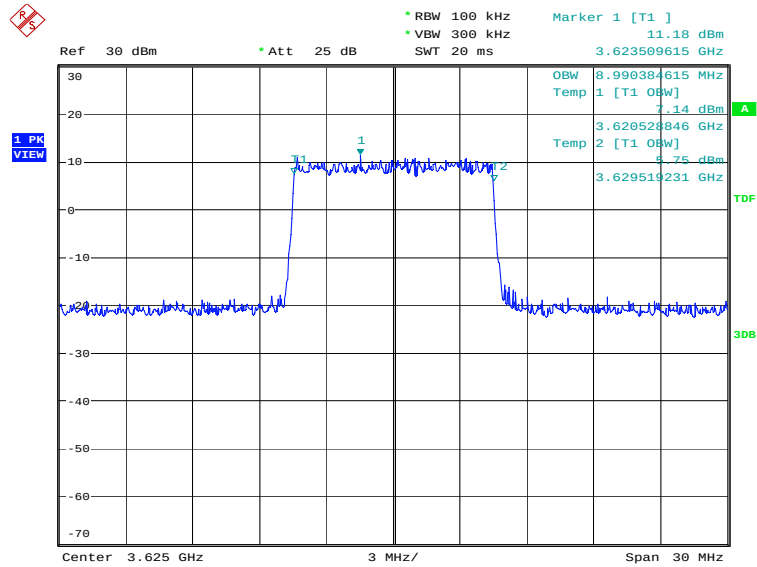


Date: 18.MAY.2021 14:31:54

LTE band 48, 10MHz (99%)

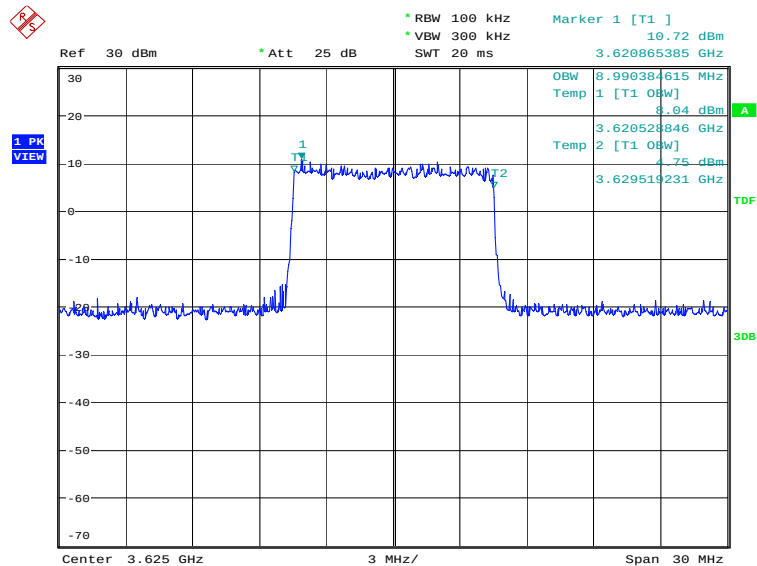
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
3625.0	QPSK	16QAM
	8990.385	8990.385

LTE band 48, 10MHz Bandwidth, QPSK (99% BW)



Date: 18.MAY.2021 14:27:53

LTE band 48, 10MHz Bandwidth, 16QAM (99% BW)

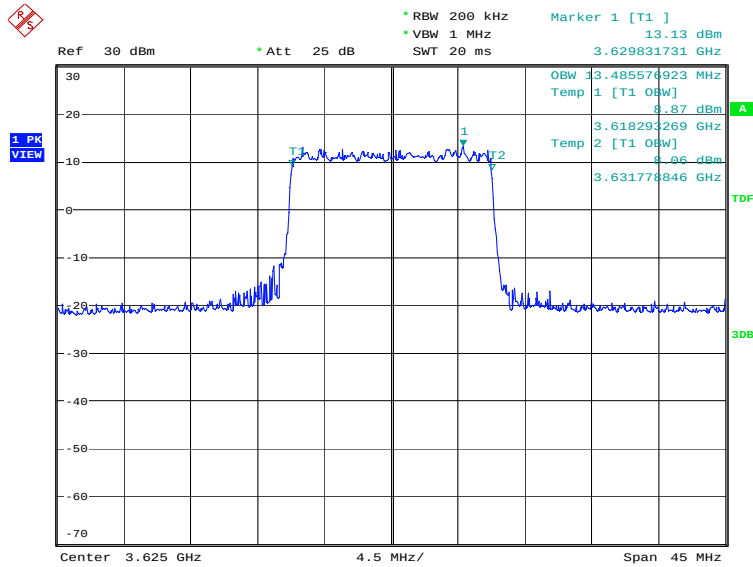


Date: 18.MAY.2021 14:32:34

LTE band 48, 15MHz (99%)

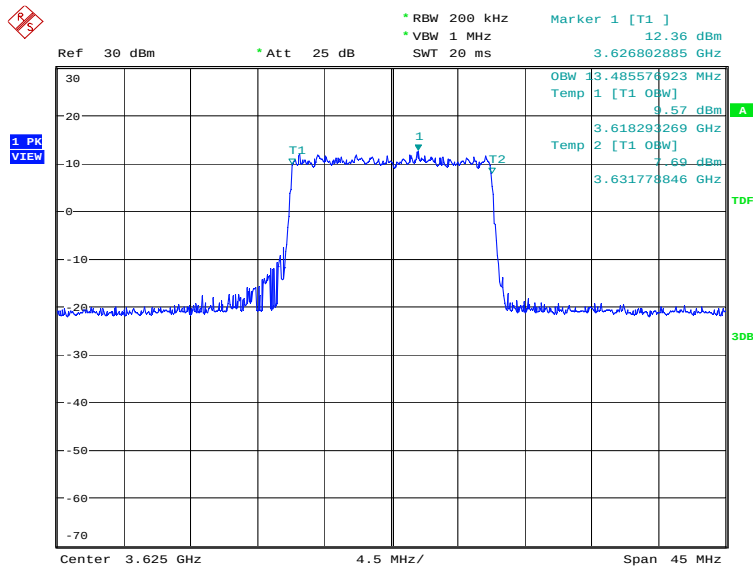
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
3625.0	QPSK	16QAM
	13485.58	13485.58

LTE band 48, 15MHz Bandwidth, QPSK (99% BW)



Date: 18.MAY.2021 14:28:39

LTE band 48, 15MHz Bandwidth, 16QAM (99% BW)

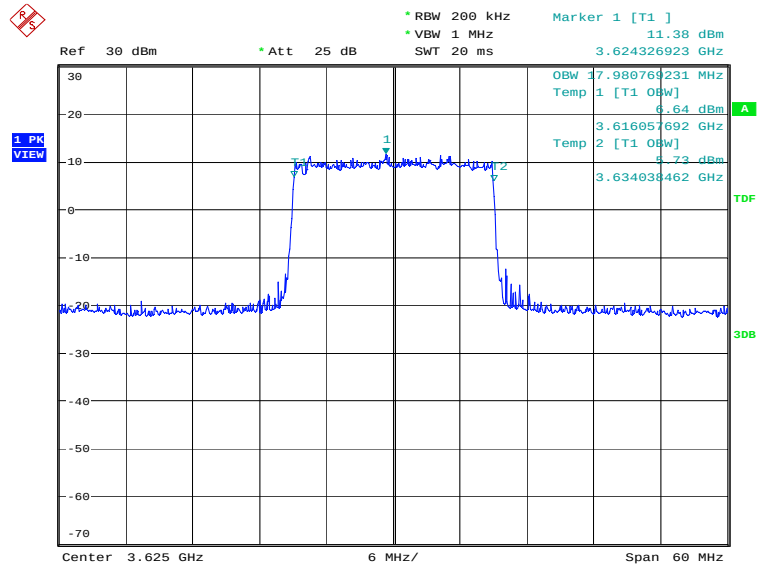


Date: 18.MAY.2021 14:33:11

LTE band 48, 20MHz (99%)

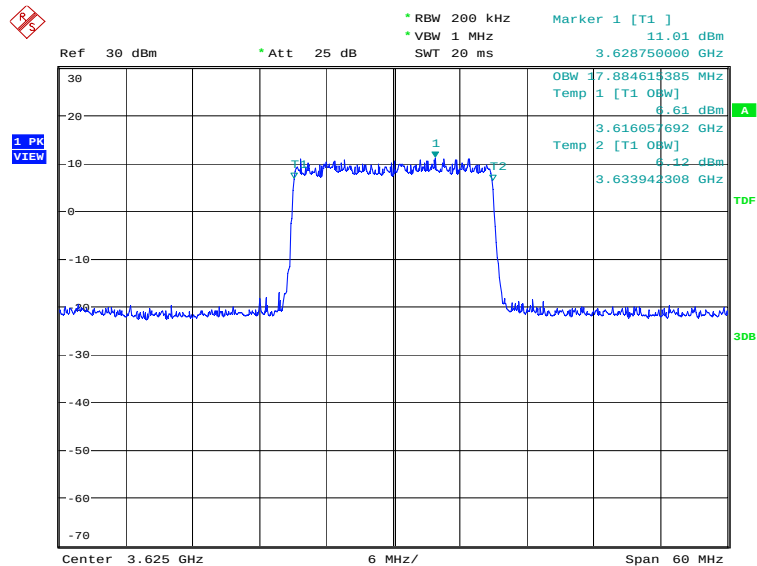
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
3625.0	QPSK	16QAM
	17980.77	17884.62

LTE band 48, 20MHz Bandwidth, QPSK (99% BW)



Date: 18.MAY.2021 14:29:51

LTE band 48, 20MHz Bandwidth, 16QAM (99% BW)

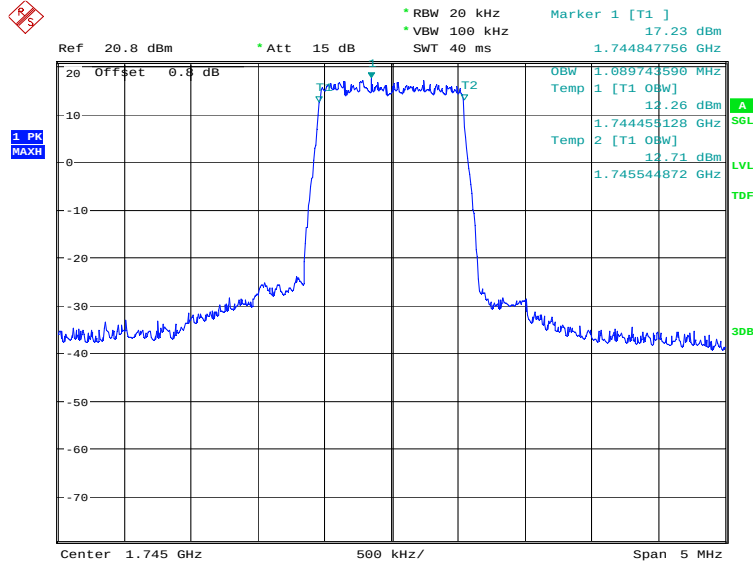


Date: 18.MAY.2021 14:33:59

LTE band 66, 1.4MHz (99%)

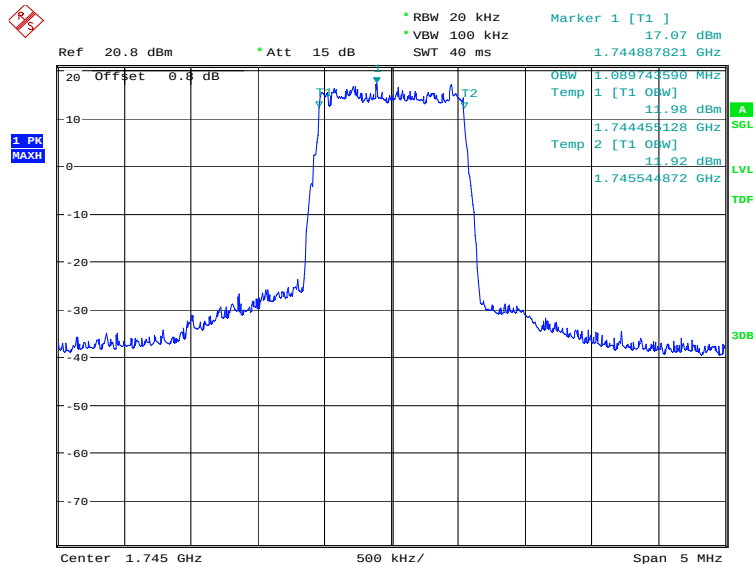
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	1089.74	1089.74

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



Date: 14.MAY.2021 09:45:52

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

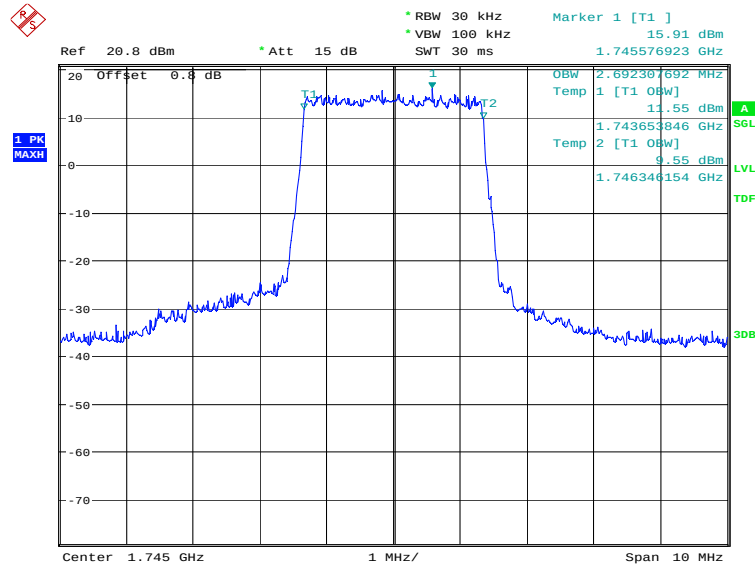


Date: 14.MAY.2021 09:46:31

LTE band 66, 3MHz (99%)

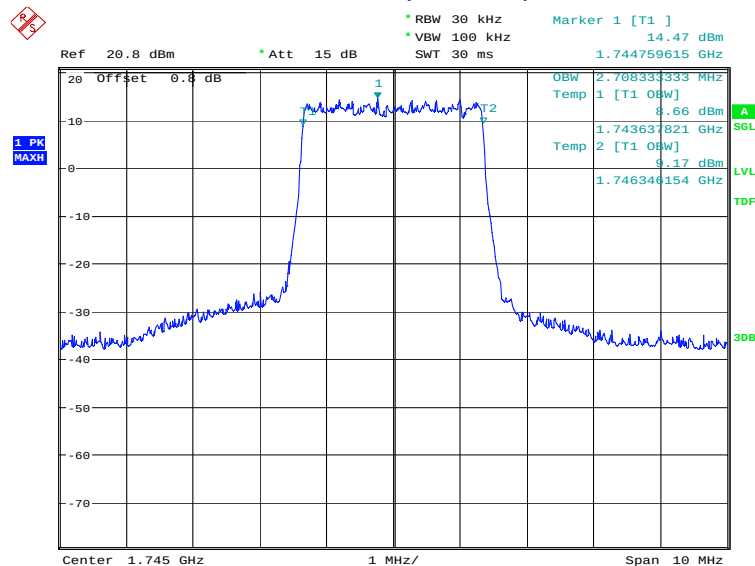
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	2692.31	2708.33

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



Date: 14.MAY.2021 09:47:12

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

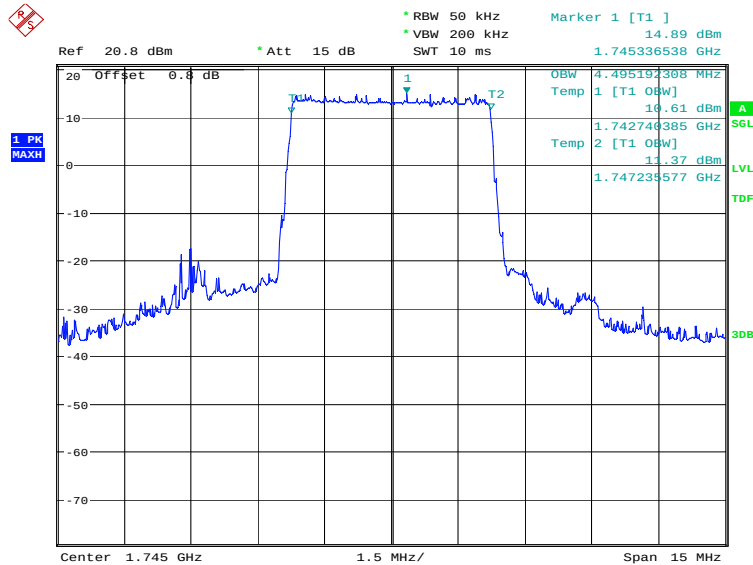


Date: 14.MAY.2021 09:47:52

LTE band 66, 5MHz (99%)

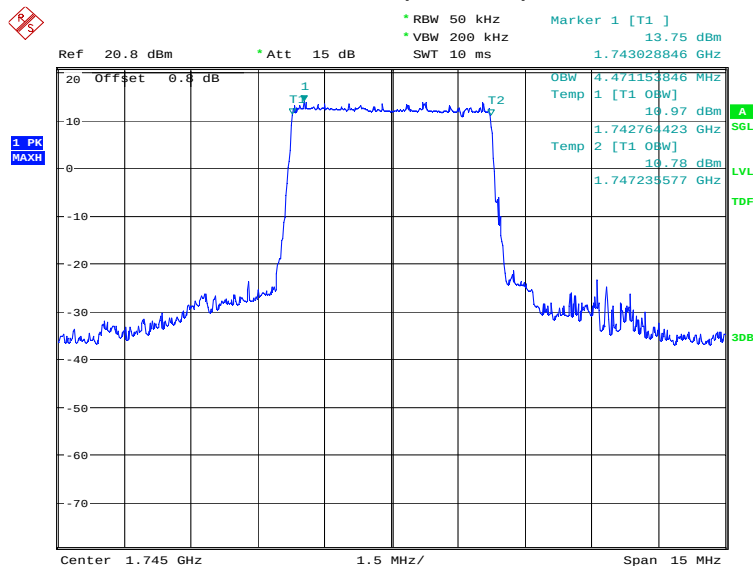
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	4495.19	4471.15

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



Date: 14.MAY.2021 09:48:33

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

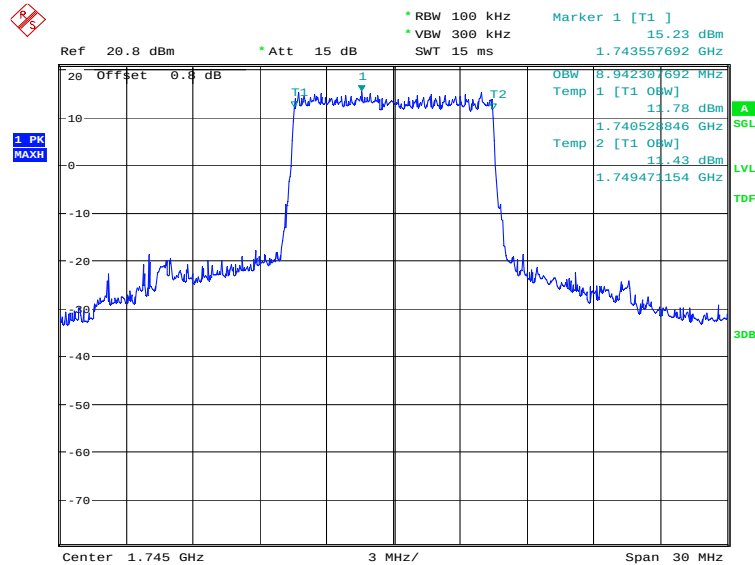


Date: 14.MAY.2021 09:49:13

LTE band 66, 10MHz (99%)

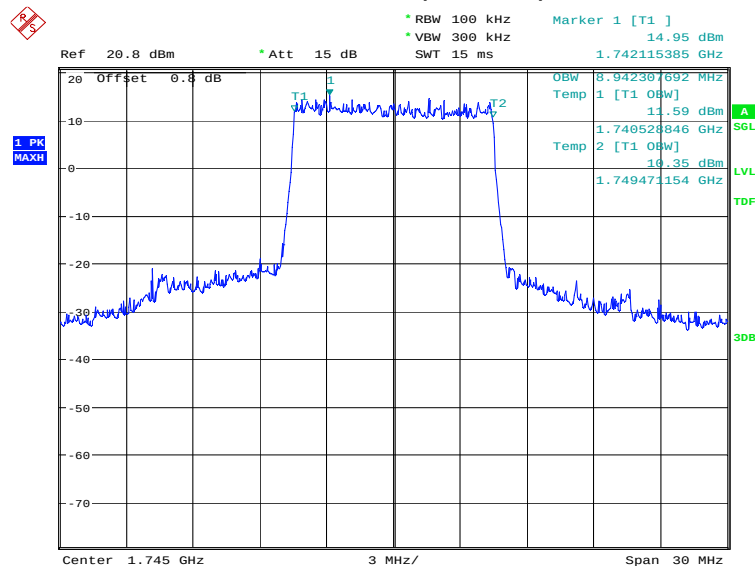
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	8942.31	8942.31

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



Date: 14.MAY.2021 09:49:54

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

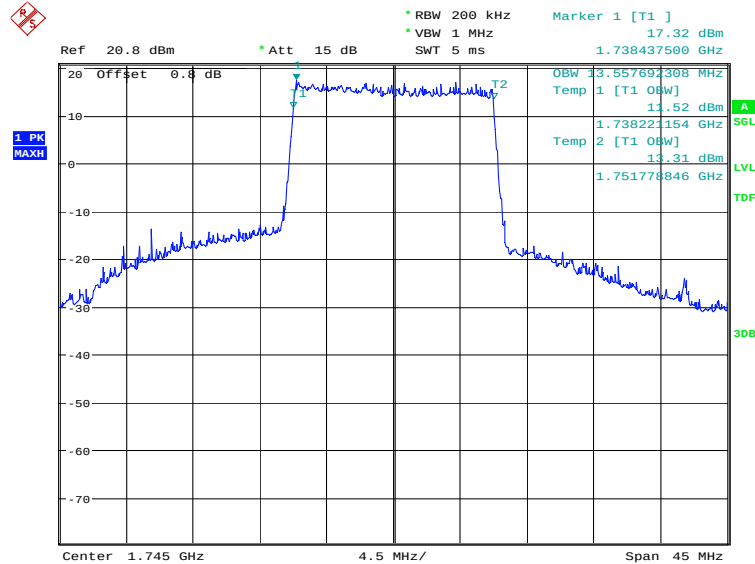


Date: 14.MAY.2021 09:50:34

LTE band 66, 15MHz (99%)

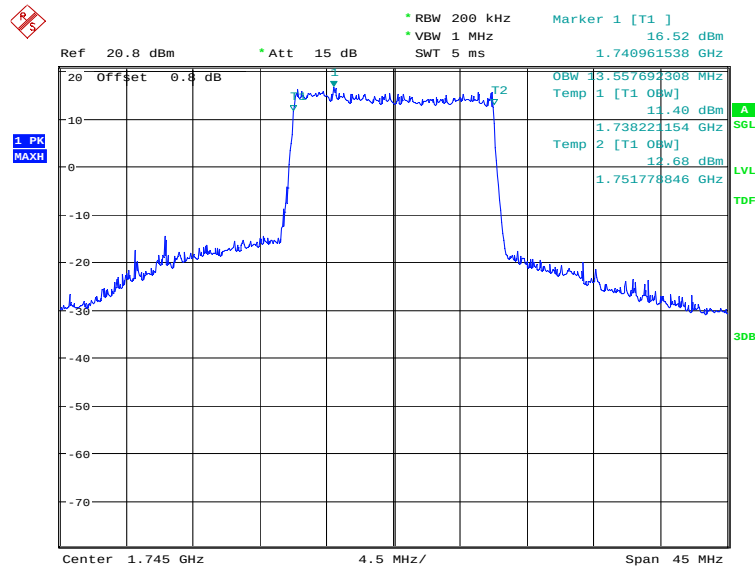
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	13557.69	13557.69

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



Date: 14.MAY.2021 09:51:15

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

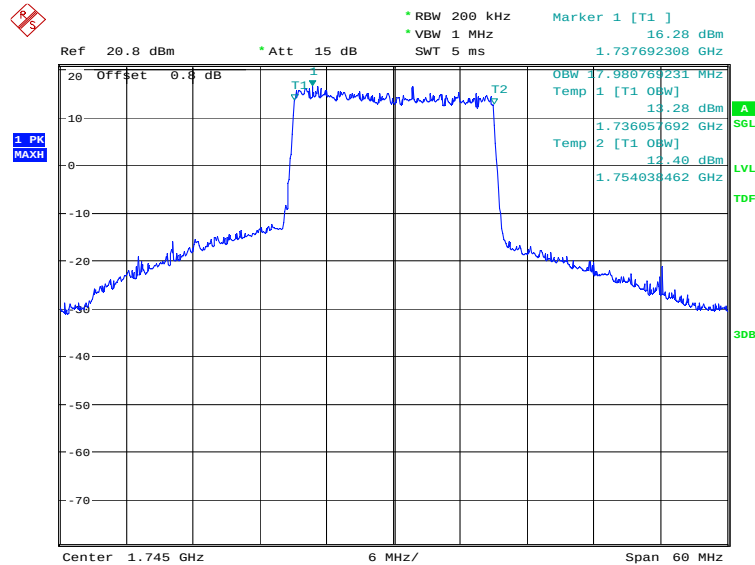


Date: 14.MAY.2021 09:51:55

LTE band 66, 20MHz (99%)

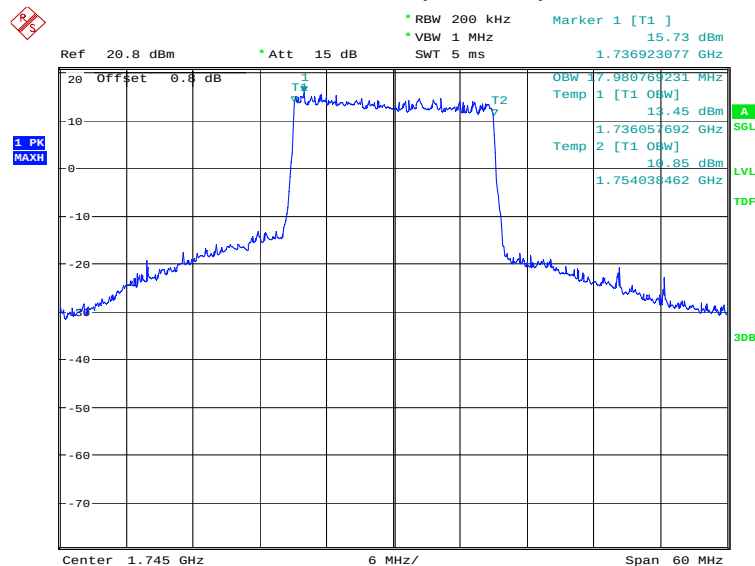
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 14.MAY.2021 09:52:37

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

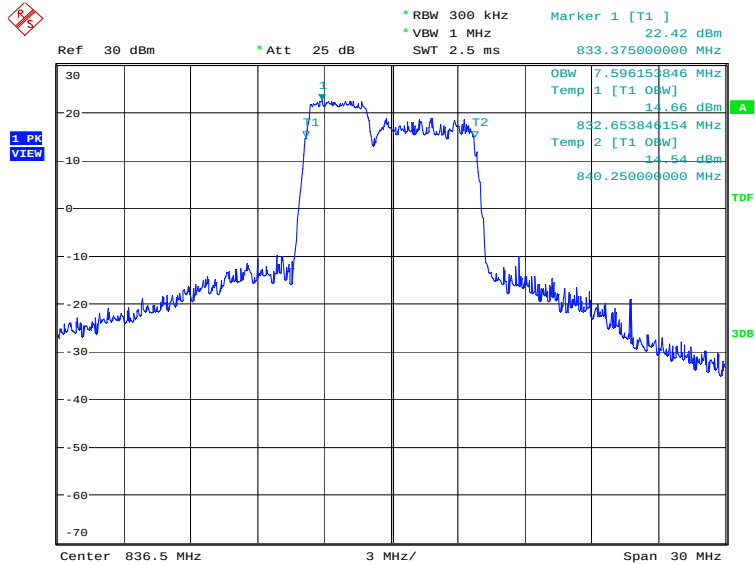


Date: 14.MAY.2021 09:53:16

LTE CA band 5 , 3MHz+5MHz (99%)

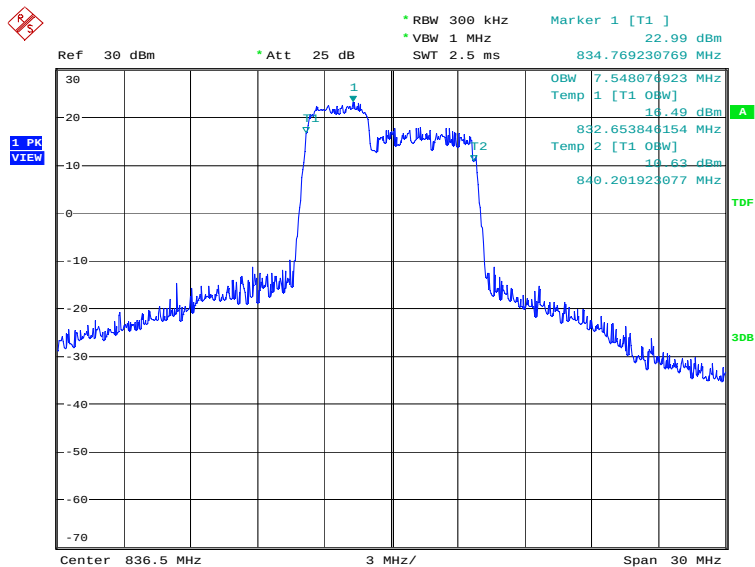
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
836.5	QPSK	16QAM
	7596.15	7548.08

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



Date: 21.MAY.2021 16:39:15

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

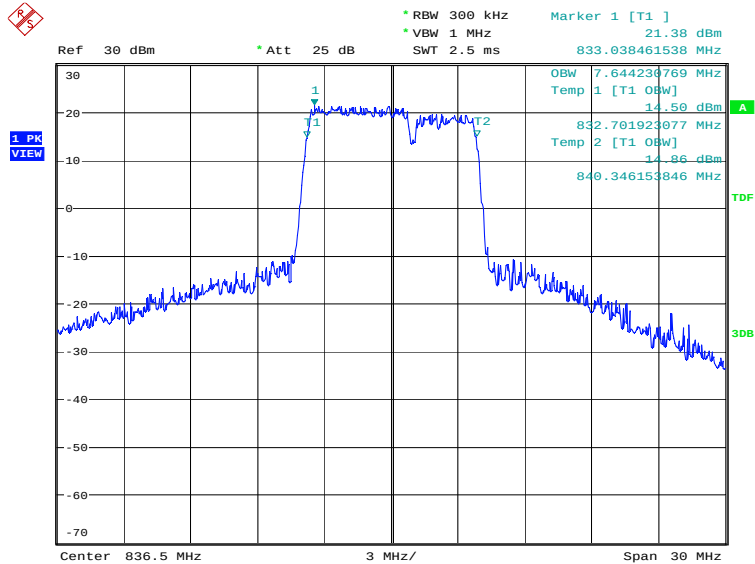


Date: 21.MAY.2021 16:38:20

LTE CA band 5 , 5MHz+3MHz (99%)

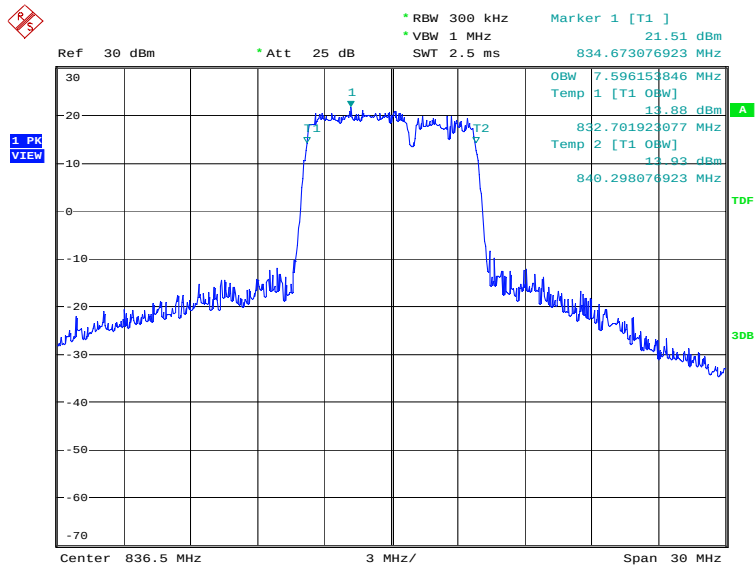
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
836.5	QPSK	16QAM
	7644.23	7596.15

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



Date: 21.MAY.2021 16:34:28

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

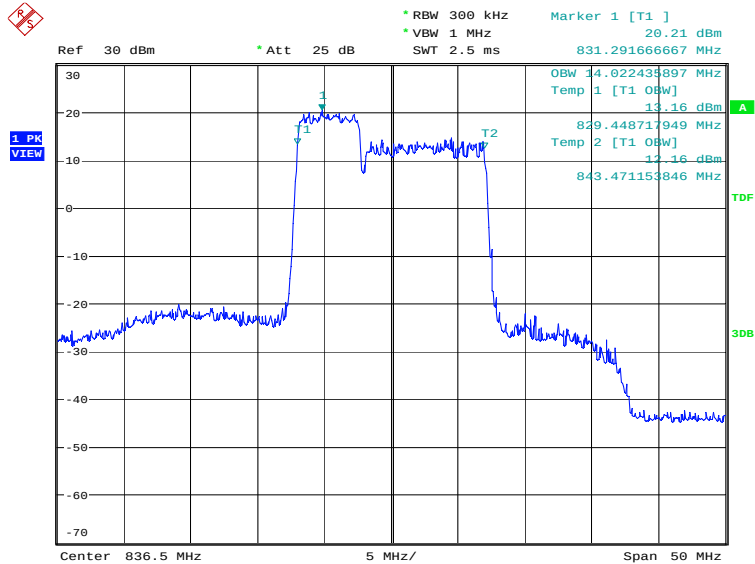


Date: 21.MAY.2021 16:35:32

LTE CA band 5 , 5MHz+10MHz (99%)

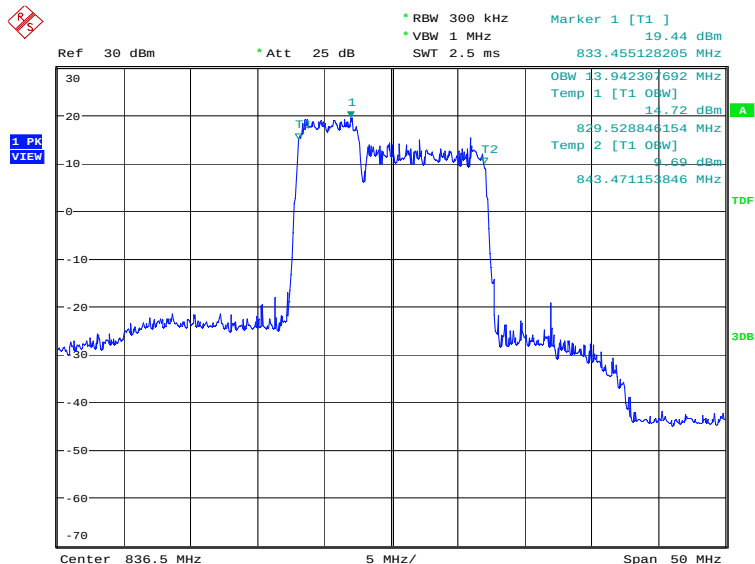
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
836.5	QPSK	16QAM
	14022.44	13942.31

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



Date: 21.MAY.2021 13:54:51

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

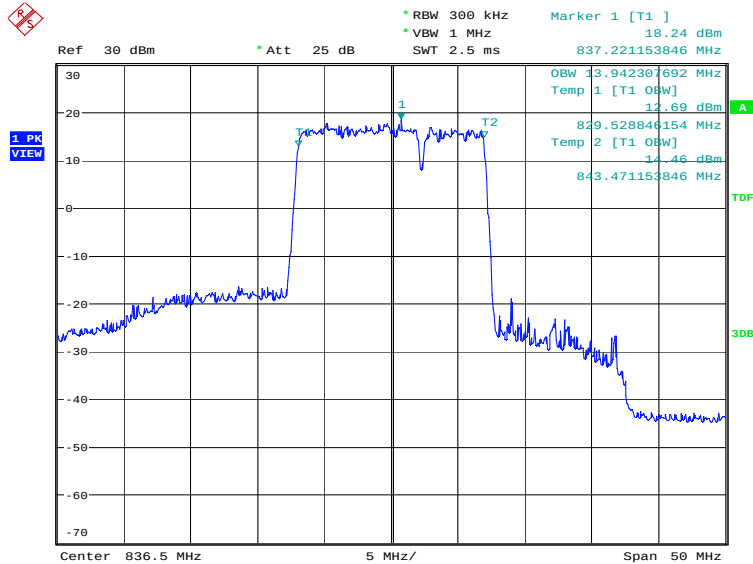


Date: 21.MAY.2021 13:56:06

LTE CA band 5 , 10MHz+5MHz (99%)

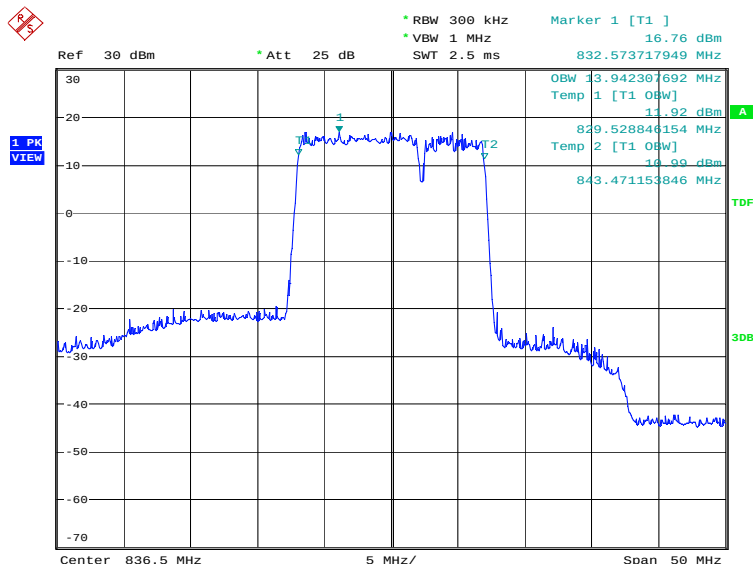
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
836.5	QPSK	16QAM
	13942.31	13942.31

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



Date: 21.MAY.2021 13:58:31

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

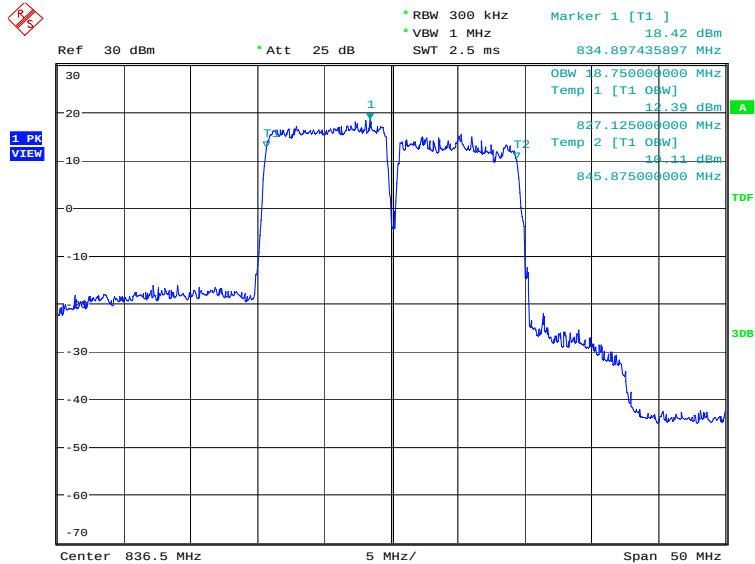


Date: 21.MAY.2021 13:59:32

LTE CA band 5 , 10MHz+10MHz (99%)

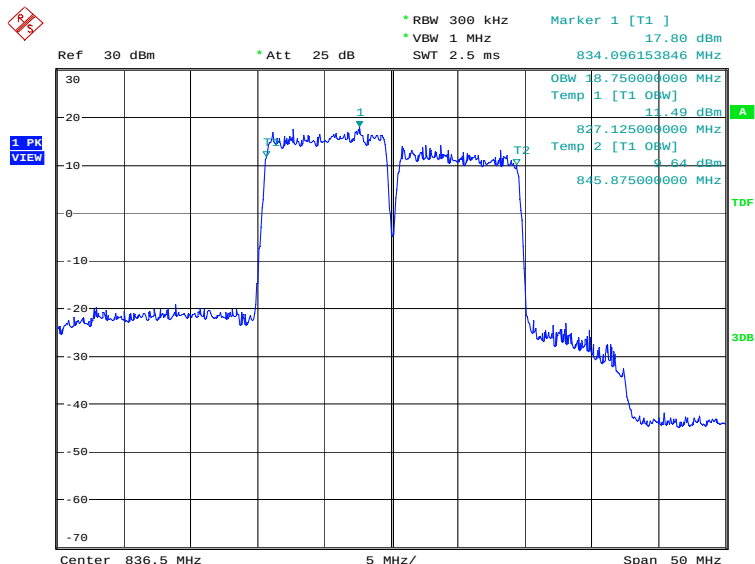
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
836.5	QPSK	16QAM
	23798.08	23717.95

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



Date: 21.MAY.2021 14:03:30

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

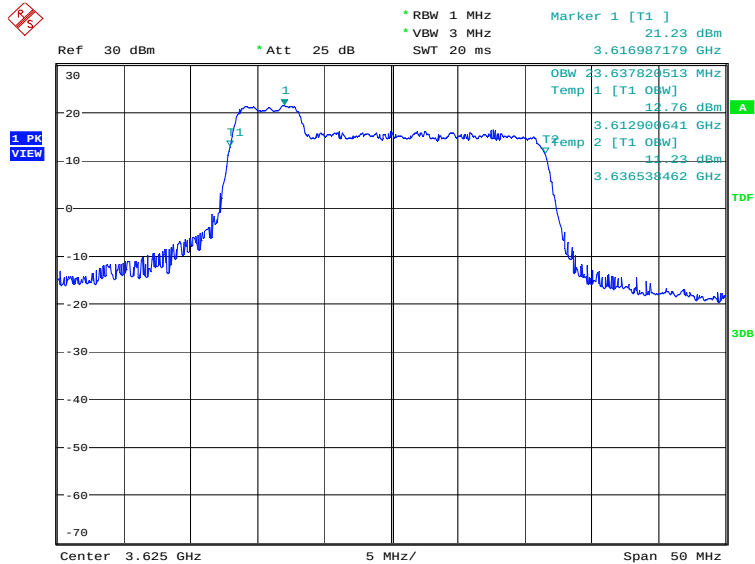


Date: 21.MAY.2021 14:04:54

LTE CA band 48 , 5MHz+20MHz (99%)

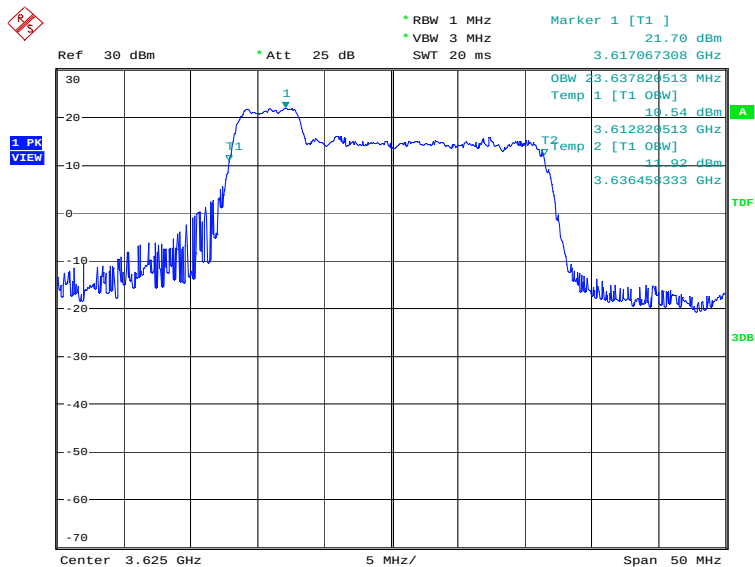
Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
3625.0	QPSK	16QAM
	23367.82	23367.82

LTE CA band 48 , 5MHz+20MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:08:38

LTE CA band 48 , 5MHz+20MHz Bandwidth,16QAM (99% BW)

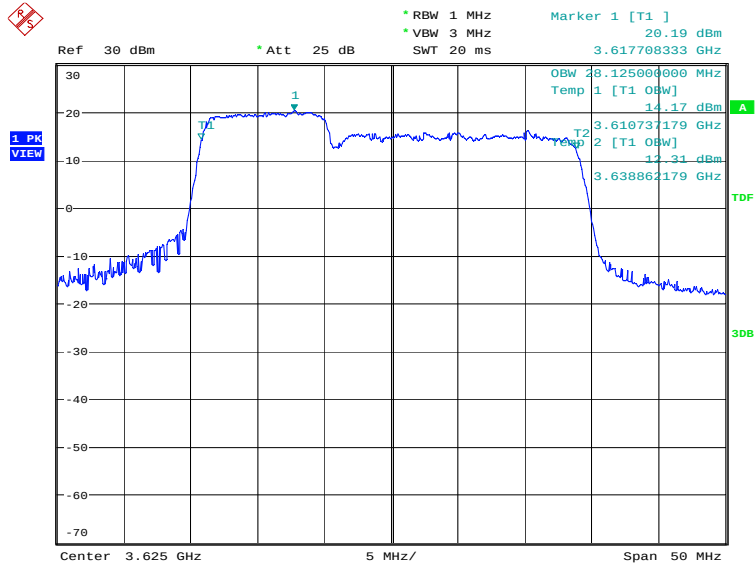


Date: 21.MAY.2021 14:10:01

LTE CA band 48 , 10MHz+20MHz (99%)

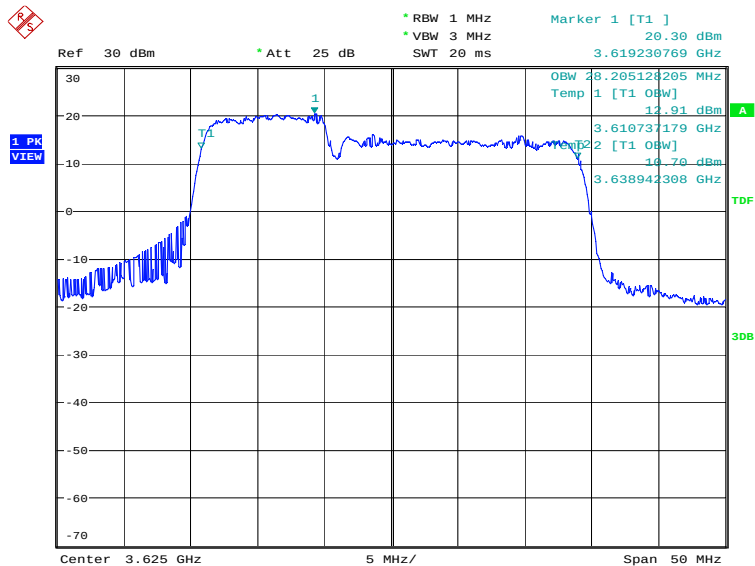
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	28125.00	28205.13

LTE CA band 48 , 10MHz+20MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:29:16

LTE CA band 48 , 10MHz+20MHz Bandwidth,16QAM (99% BW)

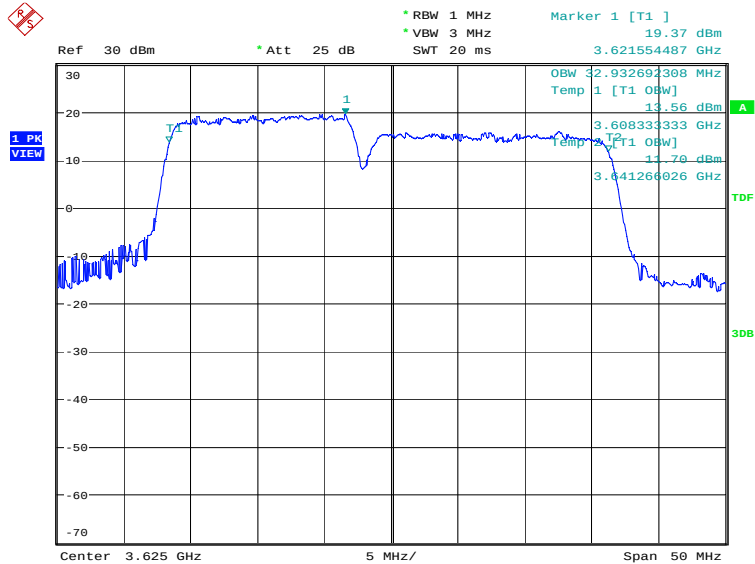


Date: 21.MAY.2021 14:30:12

LTE CA band 48 , 15MHz+20MHz (99%)

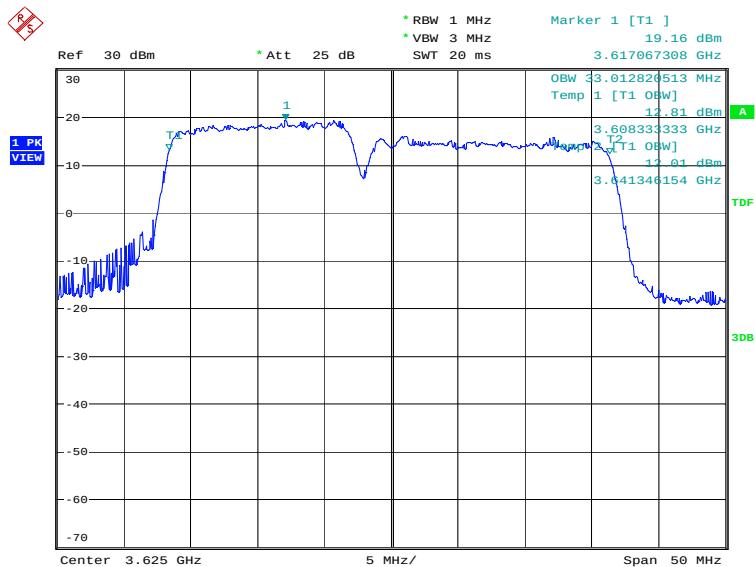
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	32932.69	33012.82

LTE CA band 48 , 15MHz+20MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:37:08

LTE CA band 48 , 15MHz+20MHz Bandwidth,16QAM (99% BW)

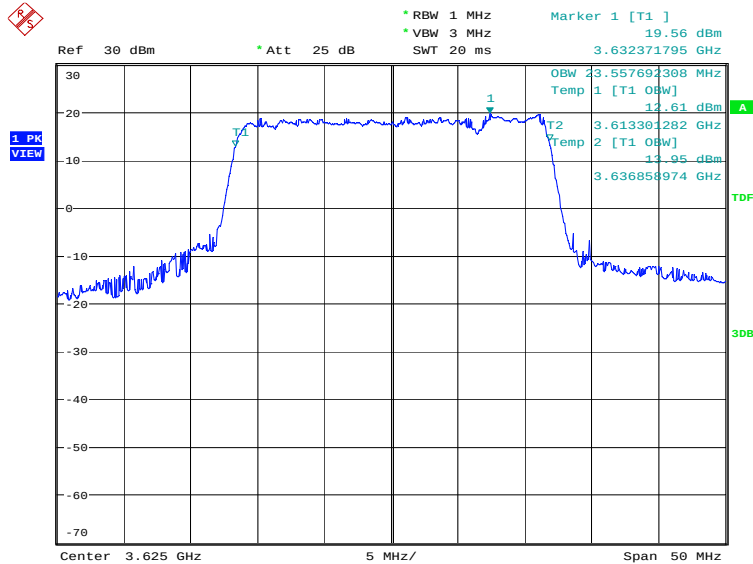


Date: 21.MAY.2021 14:41:38

LTE CA band 48 , 20MHz+5MHz (99%)

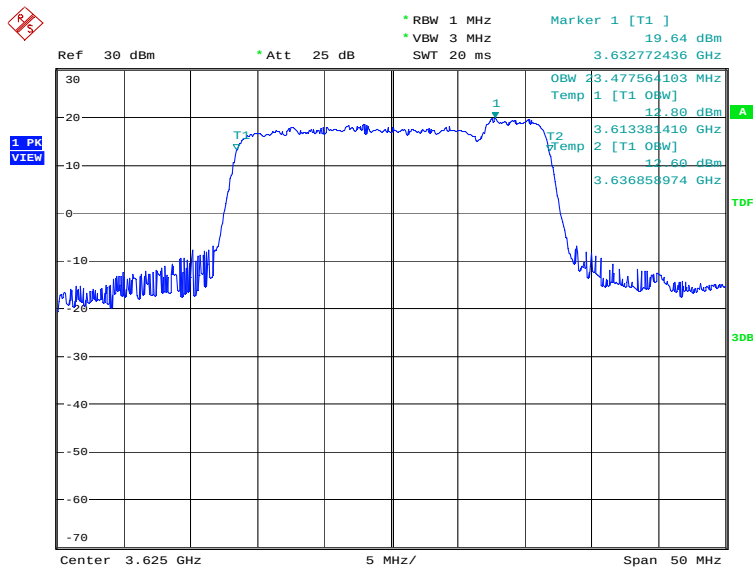
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	23557.69	23477.56

LTE CA band 48 , 20MHz+5MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:12:56

LTE CA band 48 , 20MHz+5MHz Bandwidth,16QAM (99% BW)

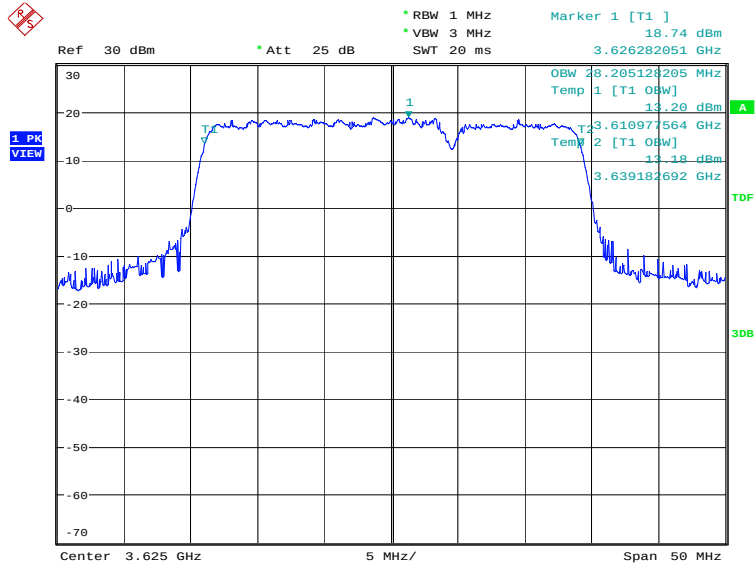


Date: 21.MAY.2021 14:11:55

LTE CA band 48 , 20MHz+10MHz (99%)

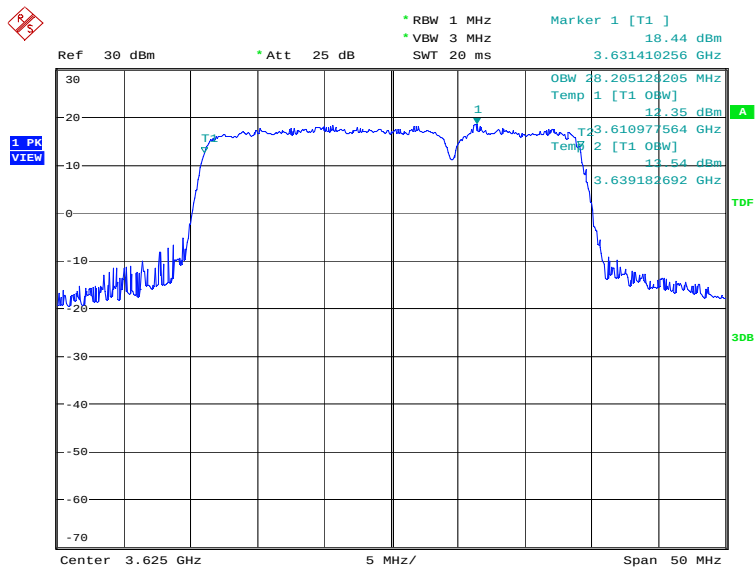
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	28205.13	28205.13

LTE CA band 48 , 20MHz+10MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:33:14

LTE CA band 48 , 20MHz+10MHz Bandwidth,16QAM (99% BW)

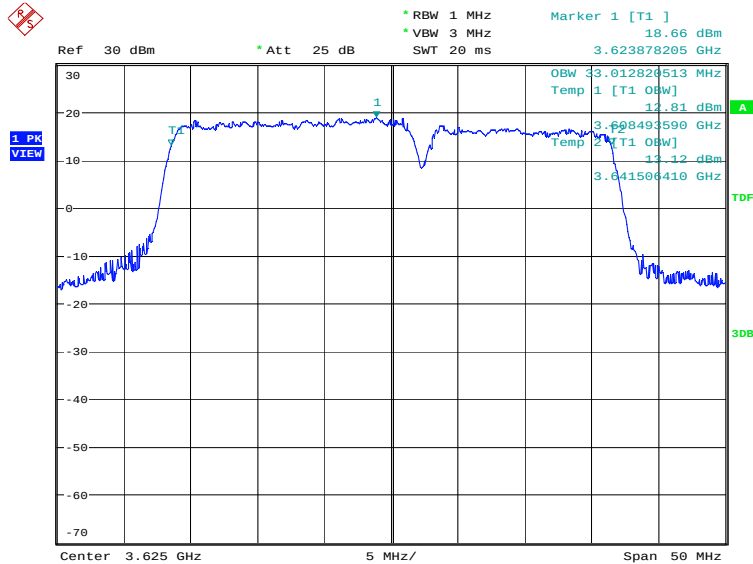


Date: 21.MAY.2021 14:32:14

LTE CA band 48 , 20MHz+15MHz (99%)

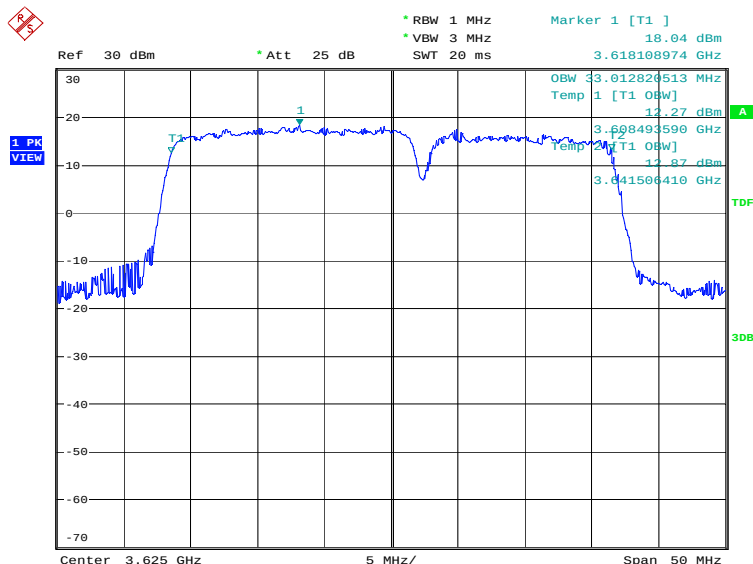
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	33012.82	33012.82

LTE CA band 48 , 20MHz+15MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:44:17

LTE CA band 48 , 20MHz+15MHz Bandwidth,16QAM (99% BW)

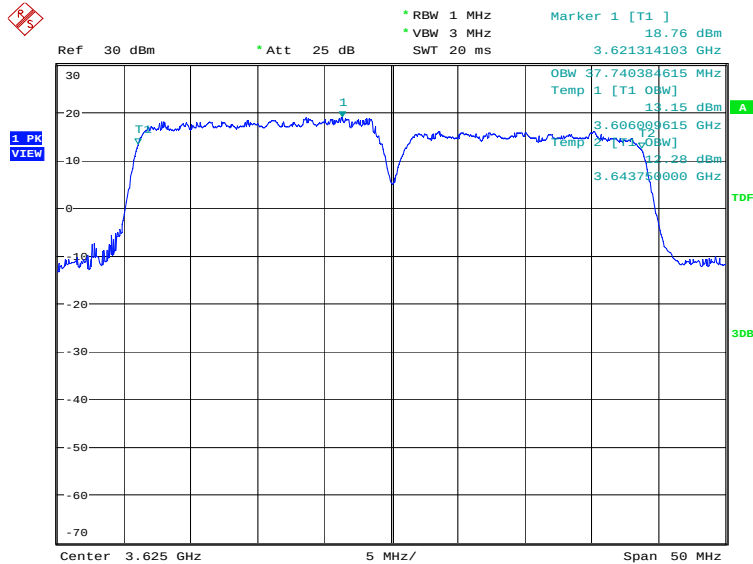


Date: 21.MAY.2021 14:45:53

LTE CA band 48 , 20MHz+20MHz (99%)

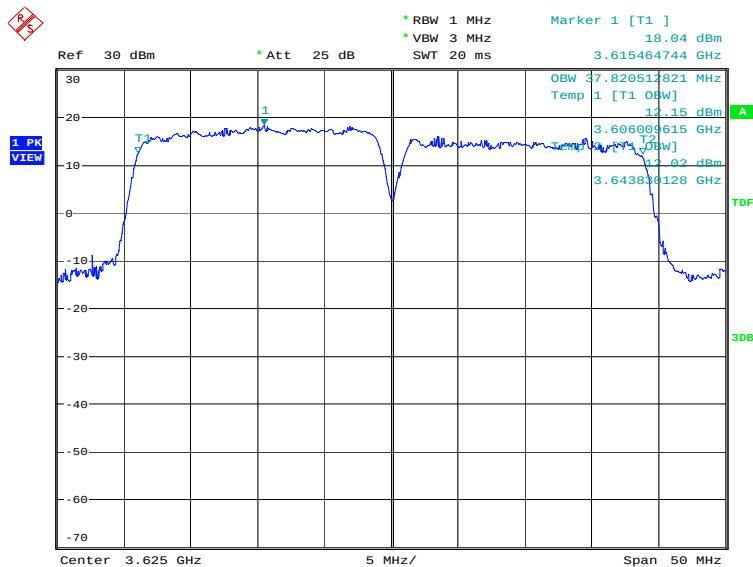
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
3625.0	QPSK	16QAM
	37740.38	37820.51

LTE CA band 48 , 20MHz+20MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:50:58

LTE CA band 48 , 20MHz+20MHz Bandwidth,16QAM (99% BW)

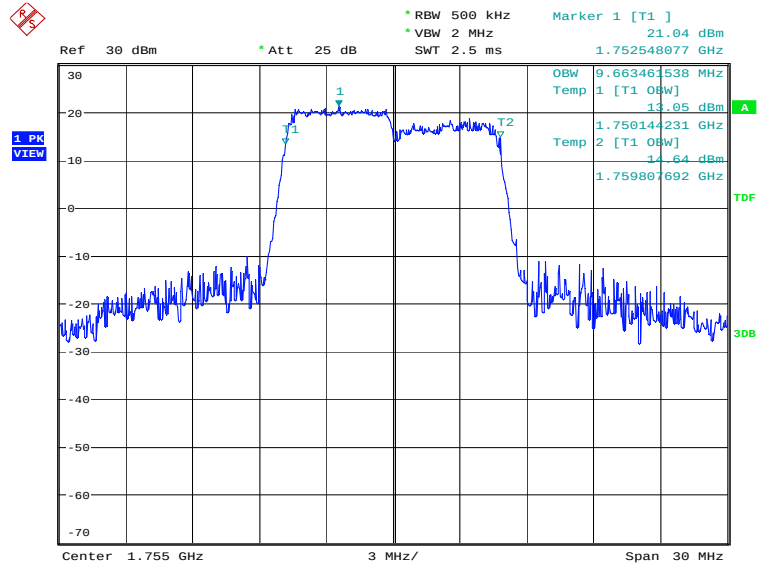


Date: 21.MAY.2021 14:49:13

LTE CA band 66 , 5MHz+5MHz (99%)

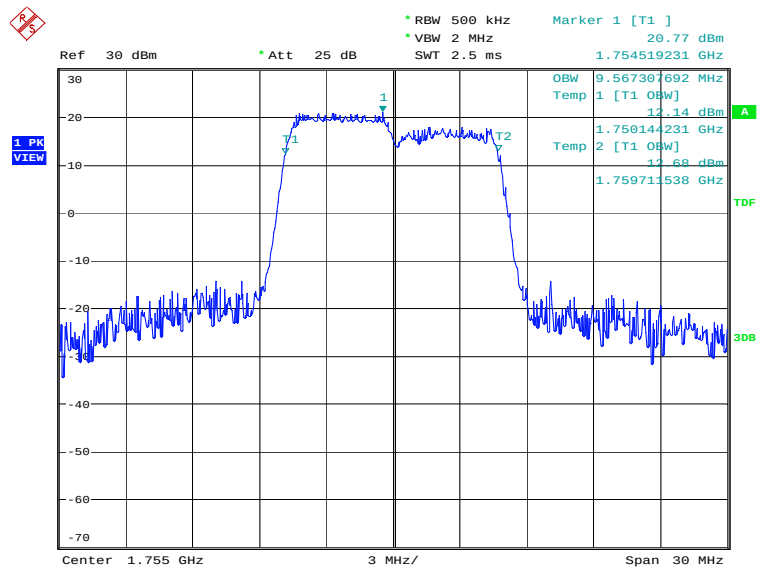
Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
1755.0	QPSK	16QAM
	9663.46	9567.31

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



Date: 21.MAY.2021 16:42:04

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

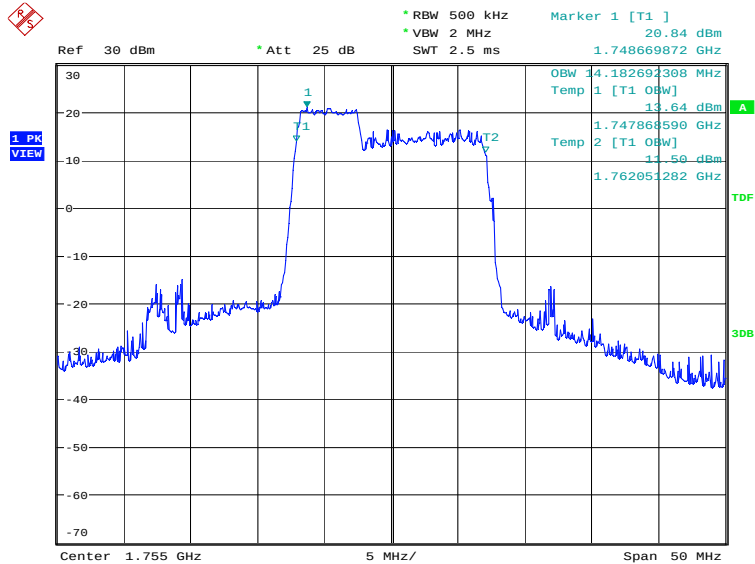


Date: 21.MAY.2021 16:42:53

LTE CA band 66 , 5MHz+10MHz (99%)

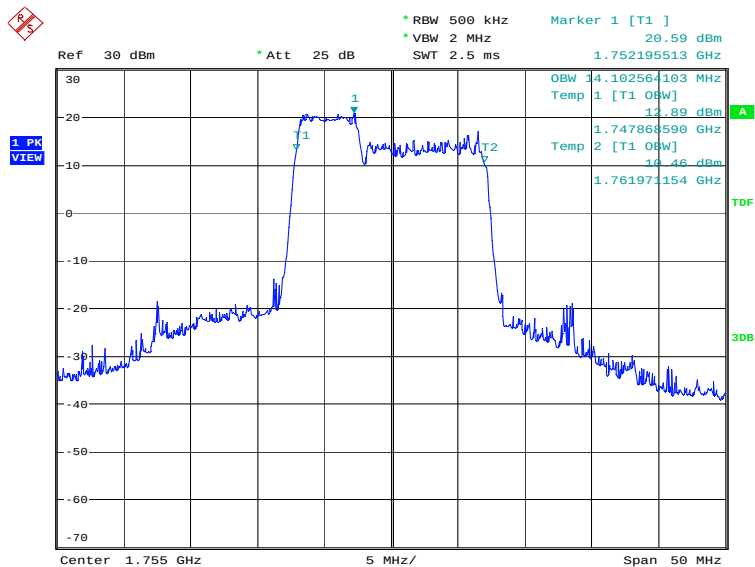
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
1755.0	QPSK	16QAM
	14182.69	14102.56

LTE CA band 66 , 5MHz+10MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 14:56:43

LTE CA band 66 , 5MHz+10MHz Bandwidth,16QAM (99% BW)

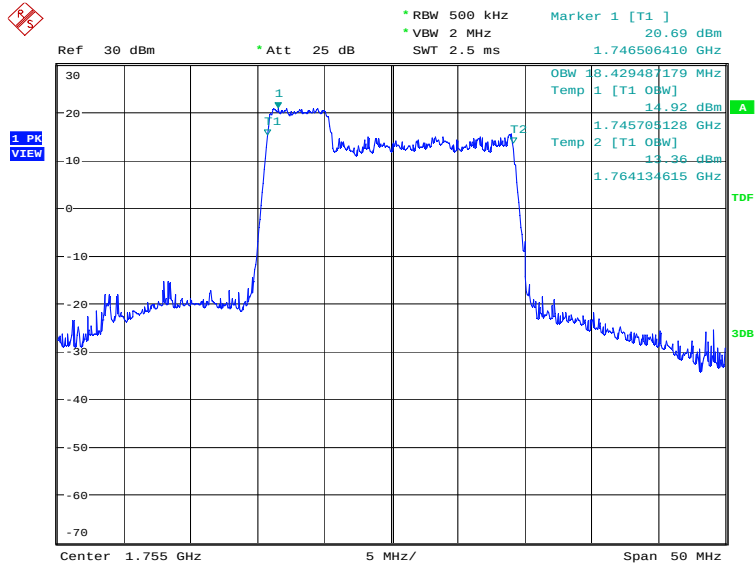


Date: 21.MAY.2021 14:58:25

LTE CA band 66 , 5MHz+15MHz (99%)

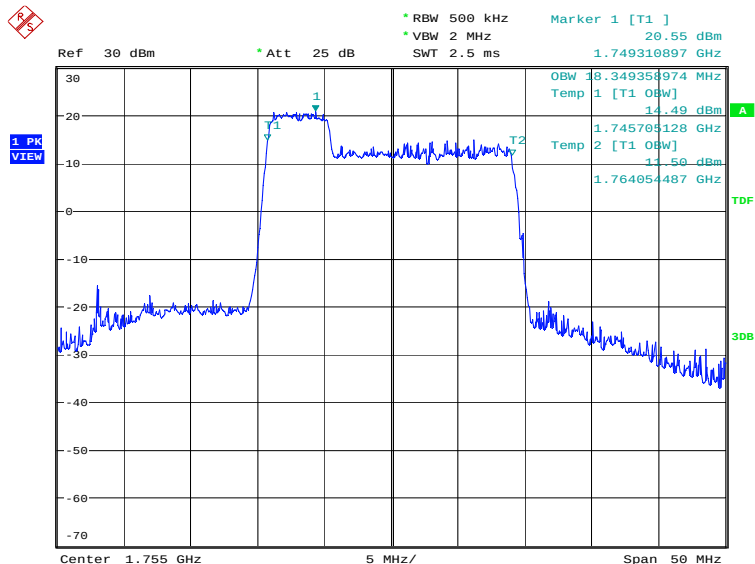
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
1755.0	QPSK	16QAM
	18429.49	18349.36

LTE CA band 66 , 5MHz+15MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 15:02:57

LTE CA band 66 , 5MHz+15MHz Bandwidth,16QAM (99% BW)

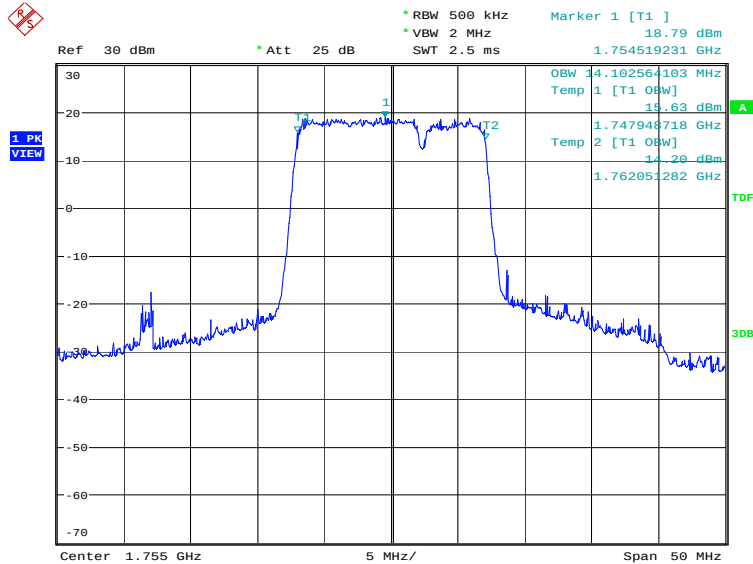


Date: 21.MAY.2021 15:04:26

LTE CA band 66 , 10MHz+5MHz (99%)

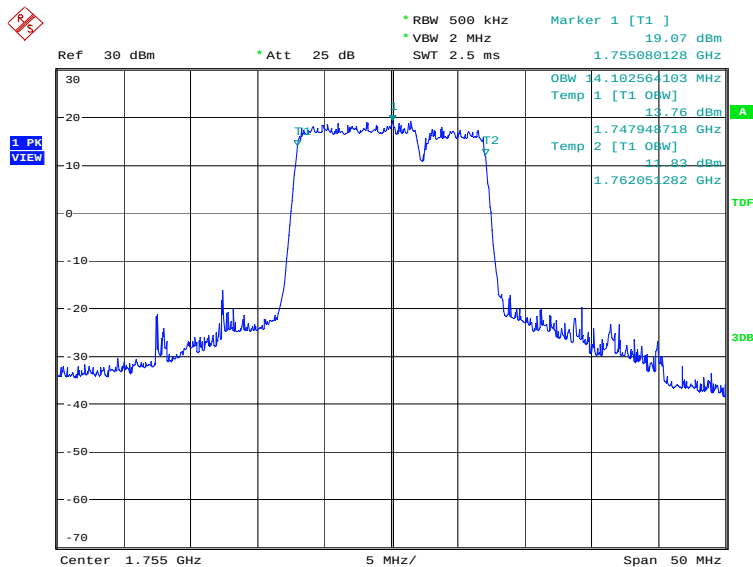
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
1755.0	QPSK	16QAM
	14102.56	14102.56

LTE CA band 66 , 10MHz+5MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 15:00:57

LTE CA band 66 , 10MHz+5MHz Bandwidth,16QAM (99% BW)

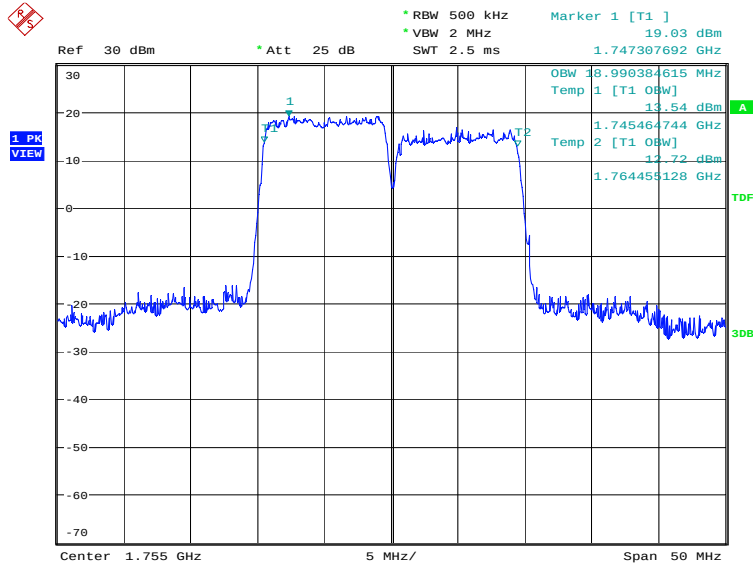


Date: 21.MAY.2021 14:59:53

LTE CA band 66 , 10MHz+10MHz (99%)

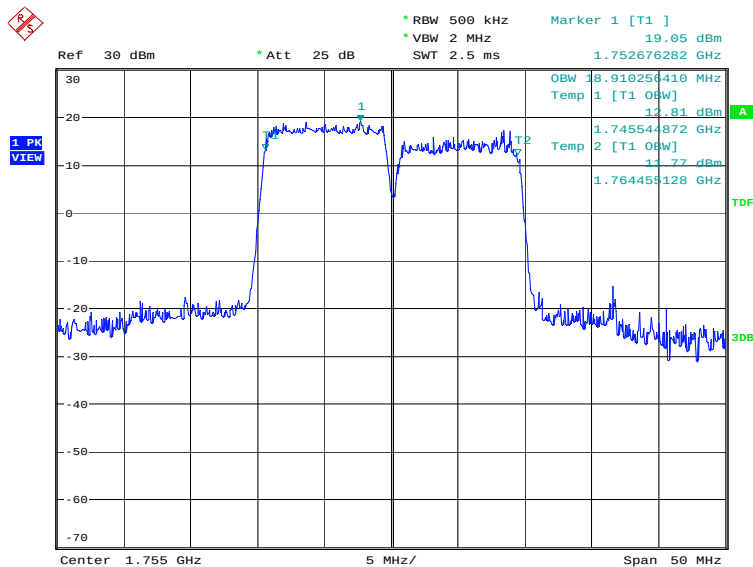
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
1755.0	QPSK	16QAM
	18990.38	18910.26

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



Date: 21.MAY.2021 15:09:24

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

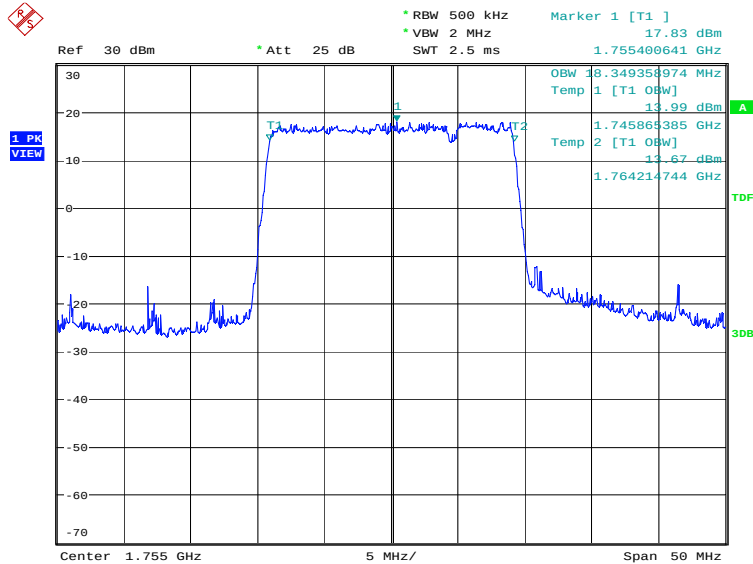


Date: 21.MAY.2021 15:10:20

LTE CA band 66 , 15MHz+5MHz (99%)

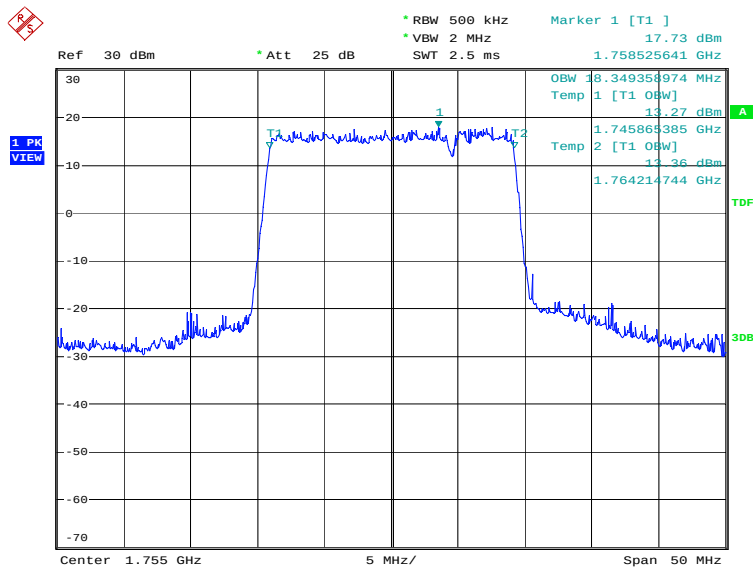
Frequency(MHz)	Occupied Bandwidth (99%)(KHz)	
1755.0	QPSK	16QAM
	18349.36	18349.36

LTE CA band 66 , 15MHz+5MHz Bandwidth, QPSK (99% BW)



Date: 21.MAY.2021 15:07:36

LTE CA band 66 , 15MHz+5MHz Bandwidth,16QAM (99% BW)



Date: 21.MAY.2021 15:06:28

A.5 Emission Bandwidth

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.

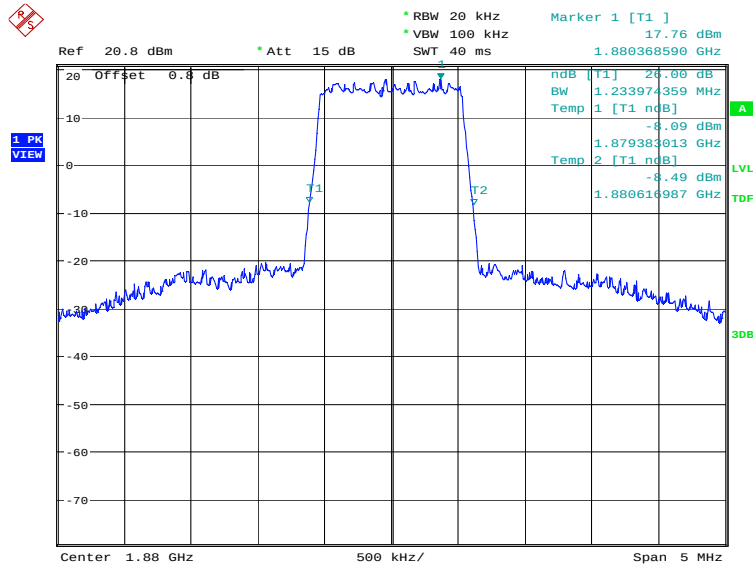
The measurement method is from ANSI C63.26:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- 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) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

LTE band 2, 1.4MHz (-26dBc)

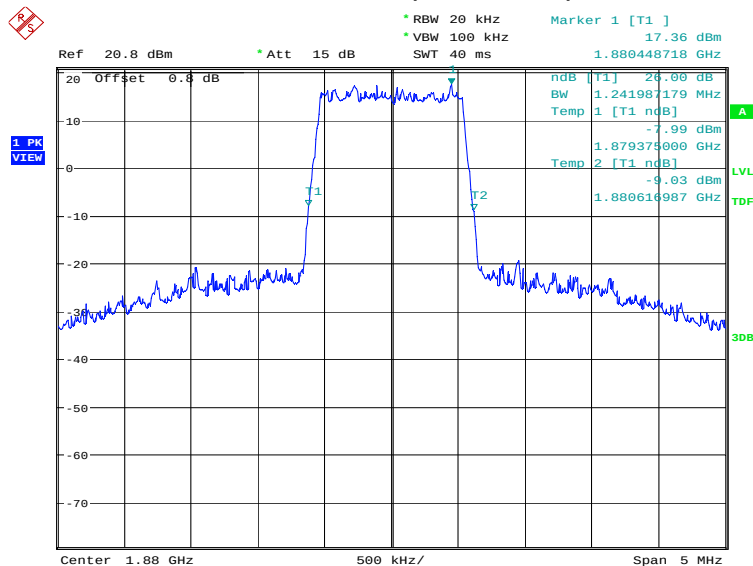
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	1233.97	1241.99

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



Date: 14.MAY.2021 09:54:31

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

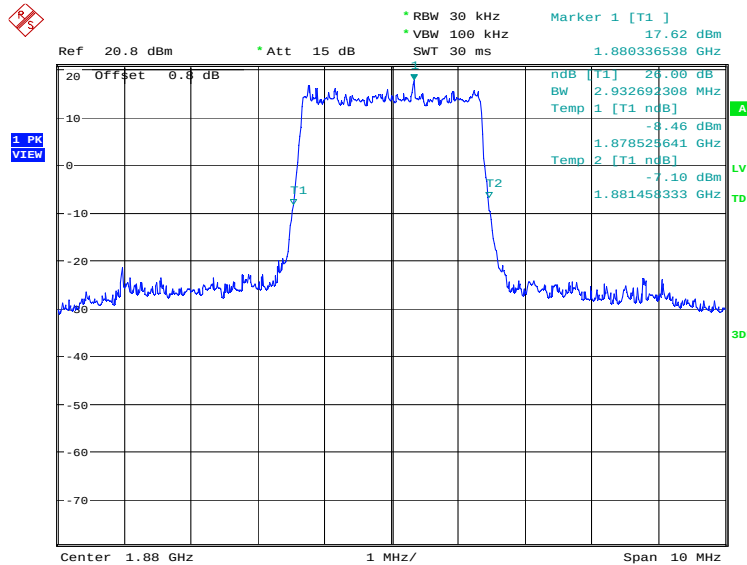


Date: 14.MAY.2021 09:55:11

LTE band 2, 3MHz (-26dBc)

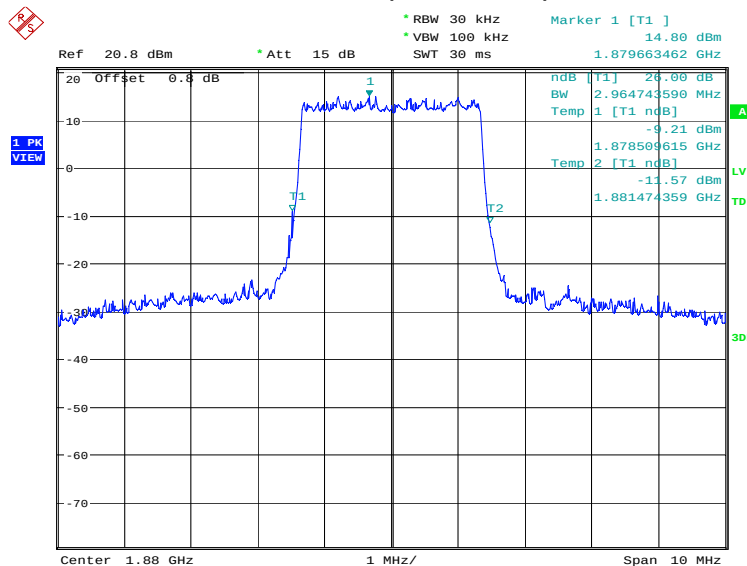
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	2932.69	2964.74

LTE band 2, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 09:55:53

LTE band 2, 3MHz Bandwidth, 16QAM (-26dBc BW)

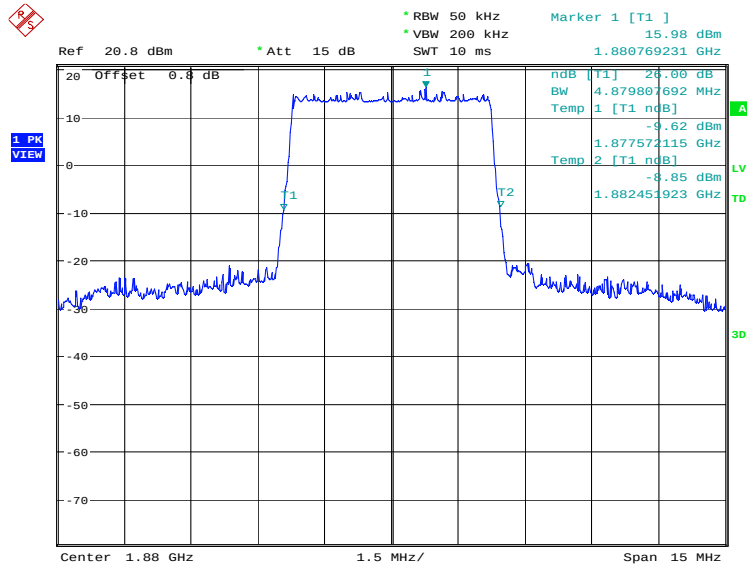


Date: 14.MAY.2021 09:56:32

LTE band 2, 5MHz (-26dBc)

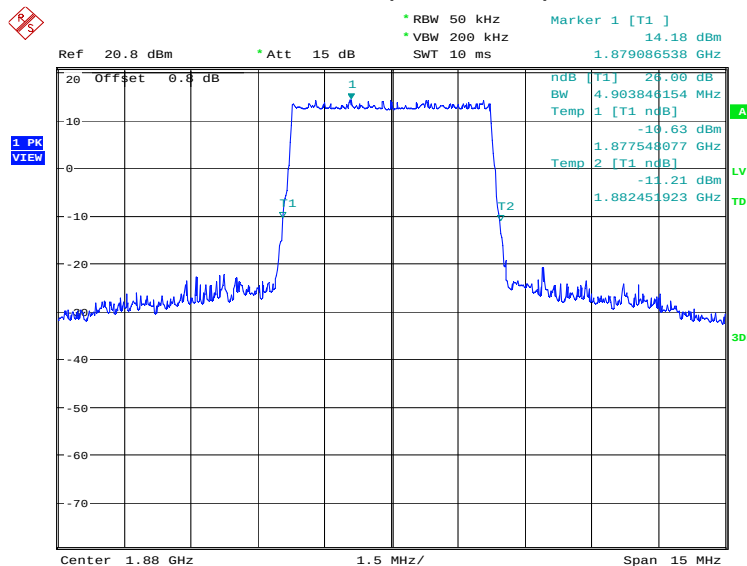
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	4879.81	4903.85

LTE band 2, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 09:57:14

LTE band 2, 5MHz Bandwidth, 16QAM (-26dBc BW)

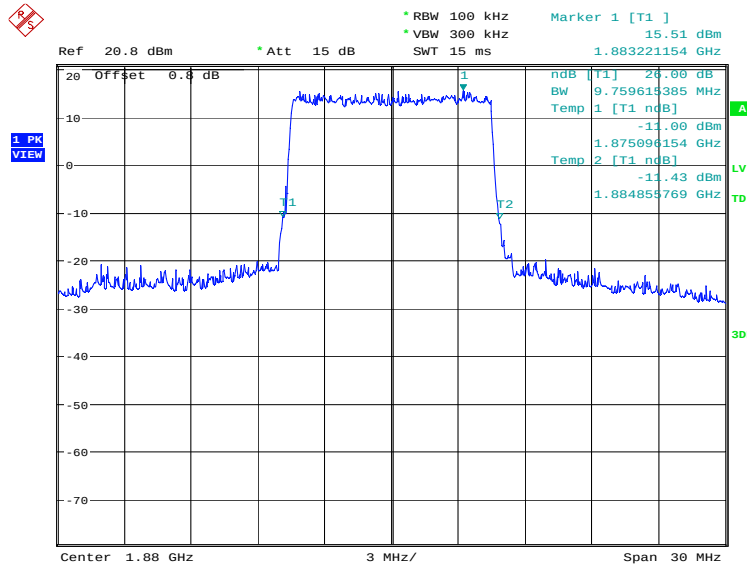


Date: 14.MAY.2021 09:57:54

LTE band 2, 10MHz (-26dBc)

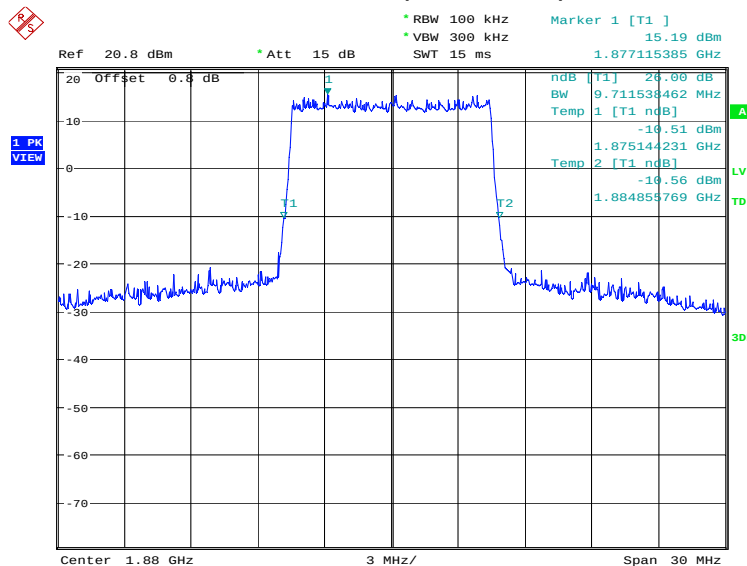
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	9759.62	9711.54

LTE band 2, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 09:58:35

LTE band 2, 10MHz Bandwidth, 16QAM (-26dBc BW)

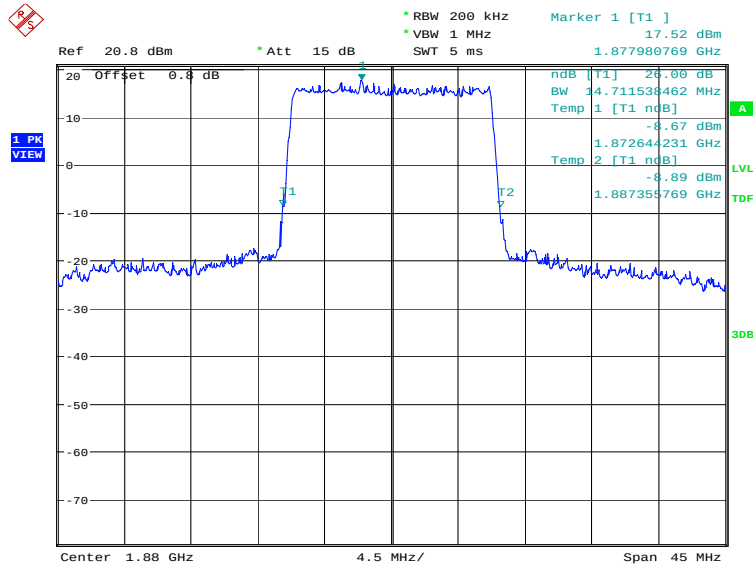


Date: 14.MAY.2021 09:59:15

LTE band 2, 15MHz (-26dBc)

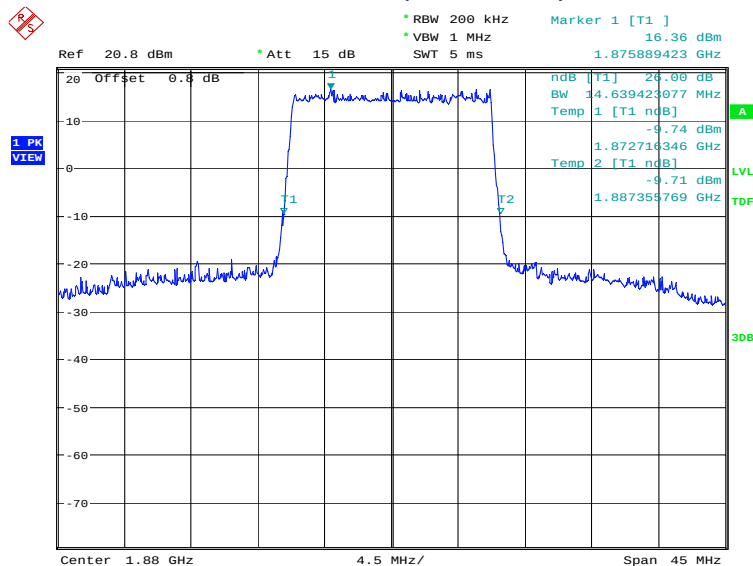
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	14711.54	14639.42

LTE band 2, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 09:59:57

LTE band 2, 15MHz Bandwidth, 16QAM (-26dBc BW)

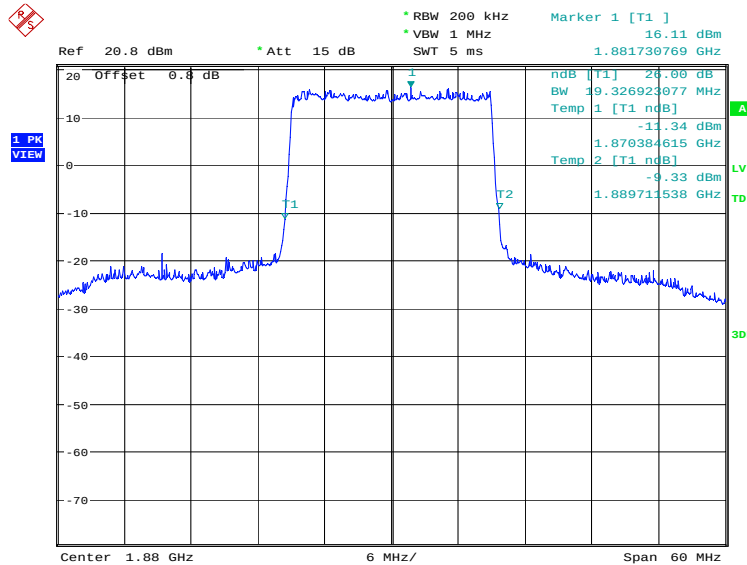


Date: 14.MAY.2021 10:00:37

LTE band 2, 20MHz (-26dBc)

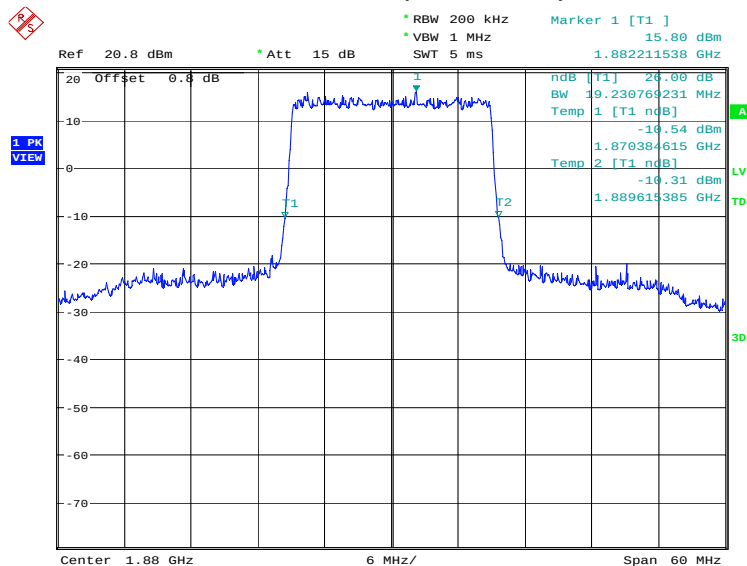
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	19326.92	19230.77

LTE band 2, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:01:19

LTE band 2, 20MHz Bandwidth, 16QAM (-26dBc BW)

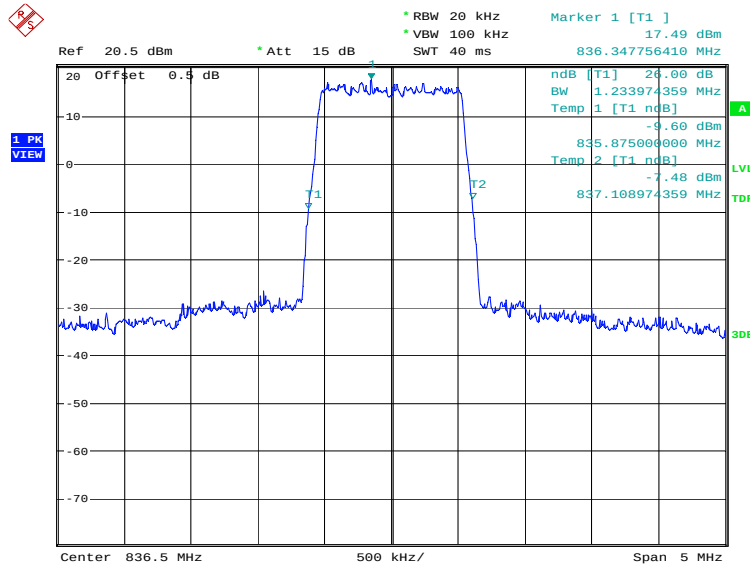


Date: 14.MAY.2021 10:01:58

LTE band 5, 1.4MHz (-26dBc)

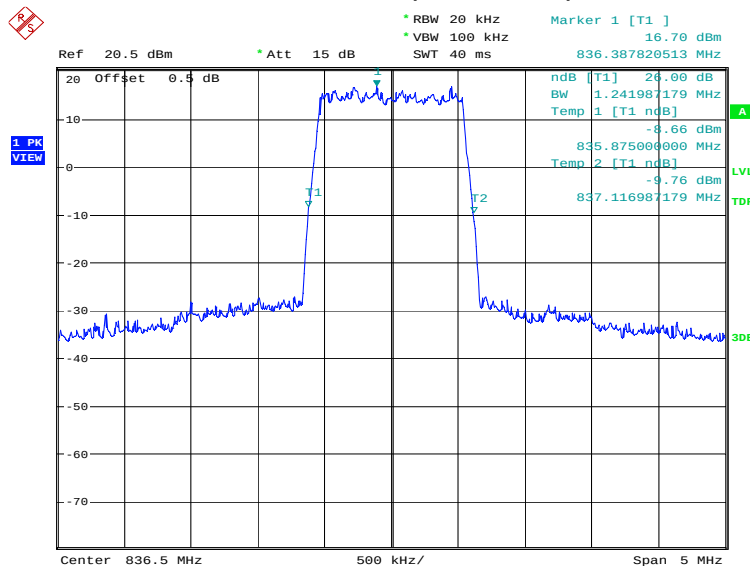
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	1233.97	1241.99

LTE band 5, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:03:28

LTE band 5, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

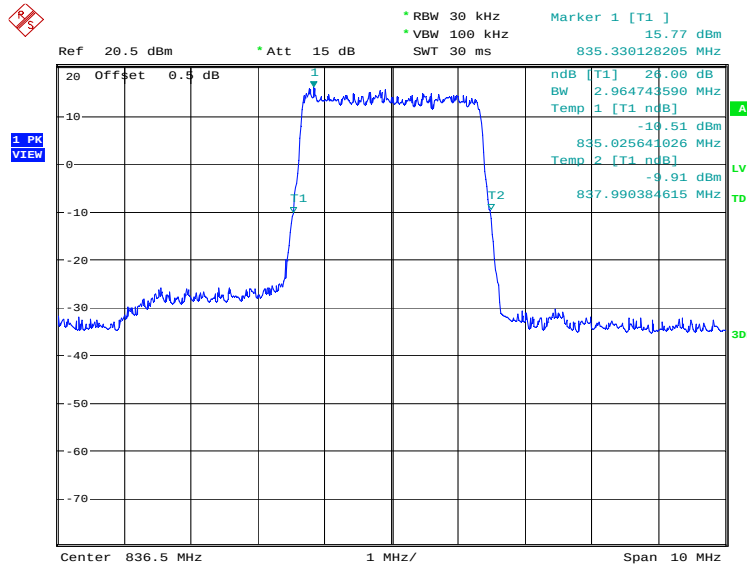


Date: 14.MAY.2021 10:04:08

LTE band 5, 3MHz (-26dBc)

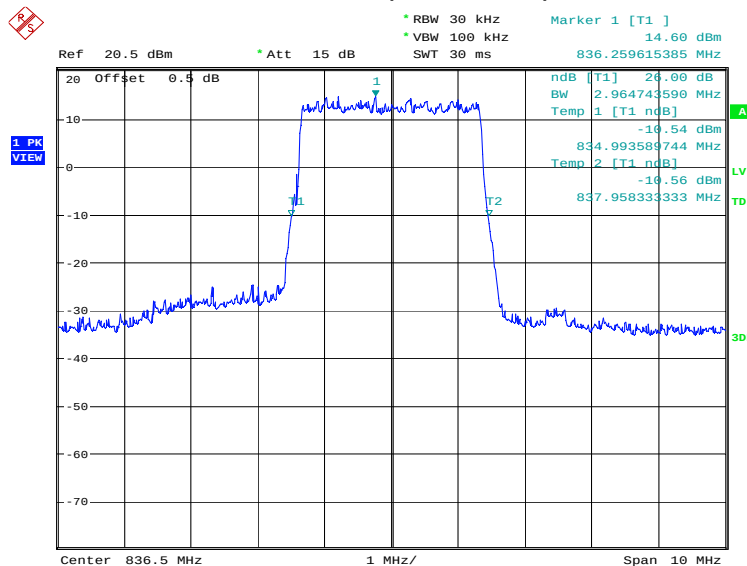
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	2964.74	2964.74

LTE band 5, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:04:50

LTE band 5, 3MHz Bandwidth, 16QAM (-26dBc BW)

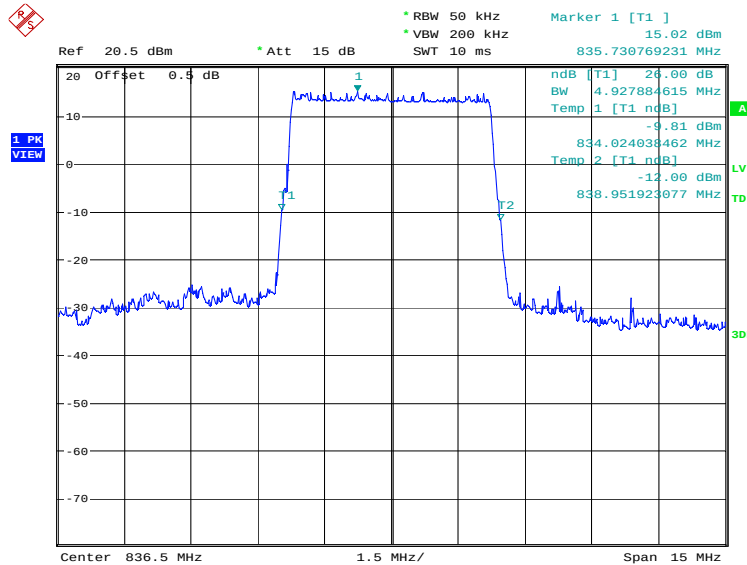


Date: 14.MAY.2021 10:05:29

LTE band 5, 5MHz (-26dBc)

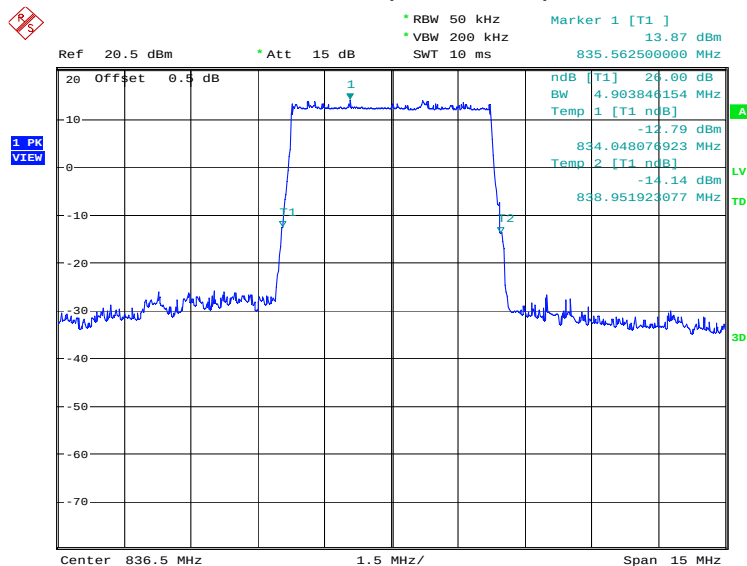
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	4927.88	4903.85

LTE band 5, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:06:11

LTE band 5, 5MHz Bandwidth, 16QAM (-26dBc BW)

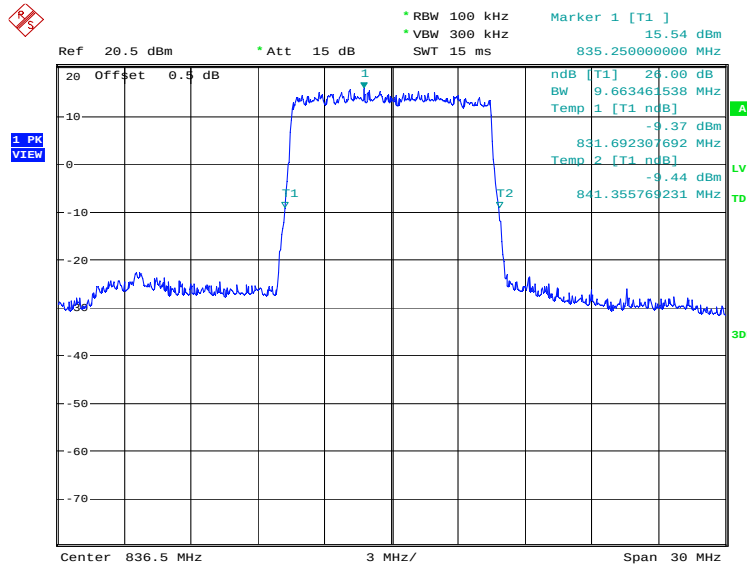


Date: 14.MAY.2021 10:06:51

LTE band 5, 10MHz (-26dBc)

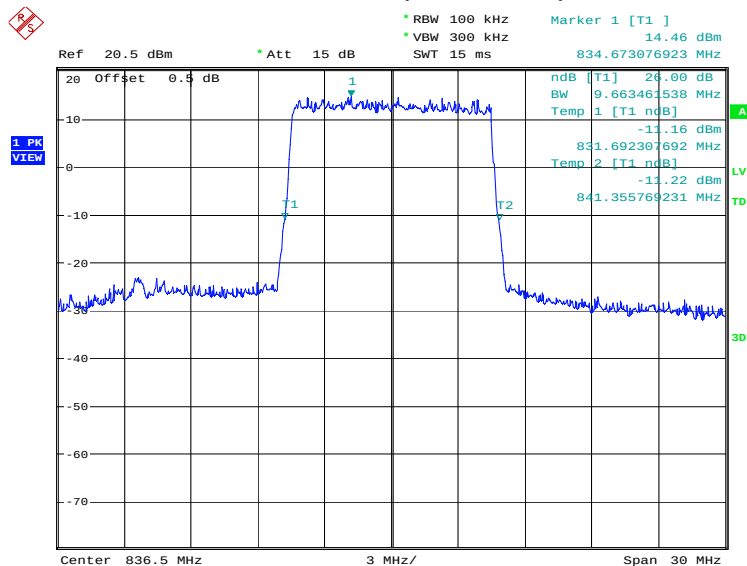
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	9663.46	9663.46

LTE band 5, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:07:33

LTE band 5, 10MHz Bandwidth, 16QAM (-26dBc BW)

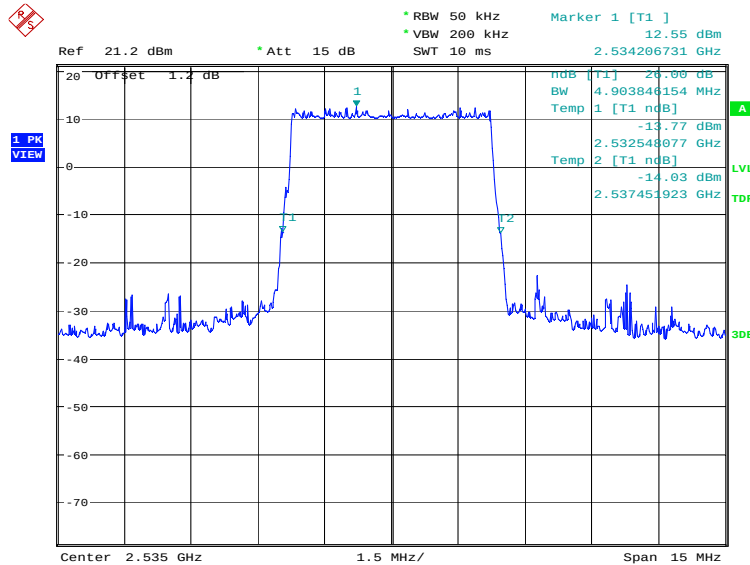


Date: 14.MAY.2021 10:08:12

LTE band 7, 5MHz (-26dBc)

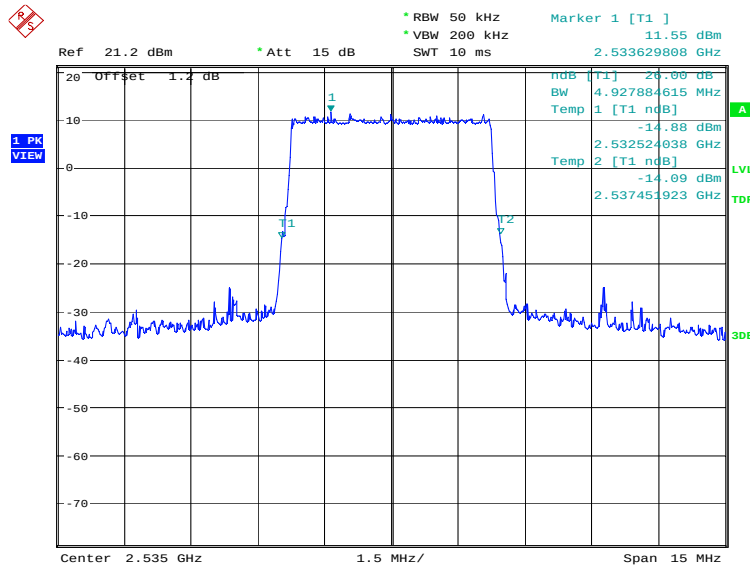
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	4903.85	4927.88

LTE band 7, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:08:56

LTE band 7, 5MHz Bandwidth,16QAM (-26dBc BW)

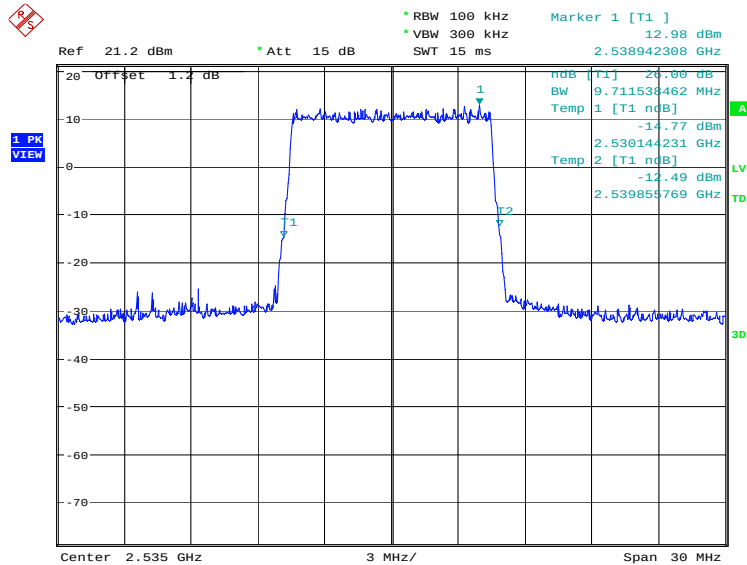


Date: 14.MAY.2021 10:09:36

LTE band 7, 10MHz (-26dBc)

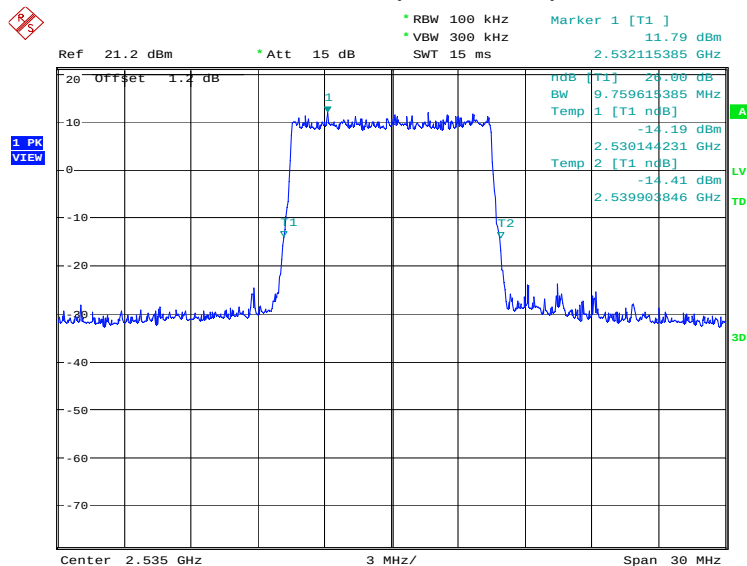
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	9711.54	9759.62

LTE band 7, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:10:18

LTE band 7, 10MHz Bandwidth, 16QAM (-26dBc BW)

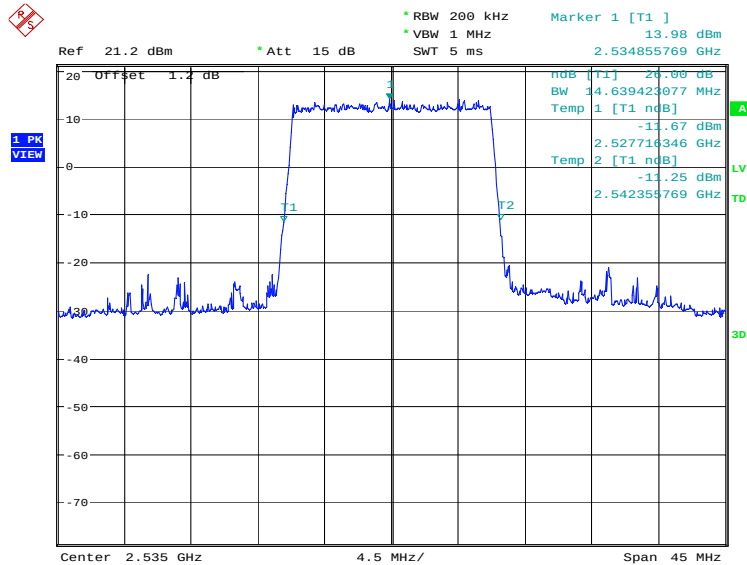


Date: 14.MAY.2021 10:10:58

LTE band 7, 15MHz (-26dBc)

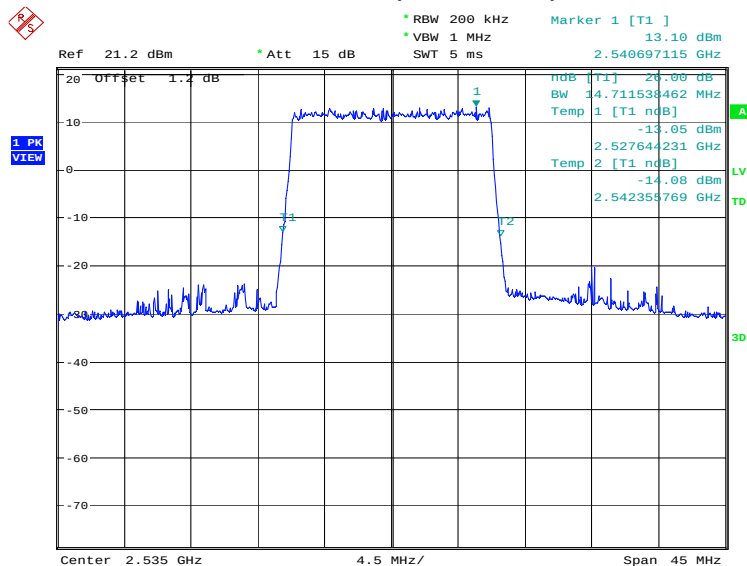
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	14639.42	14711.54

LTE band 7, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:11:39

LTE band 7, 15MHz Bandwidth,16QAM (-26dBc BW)

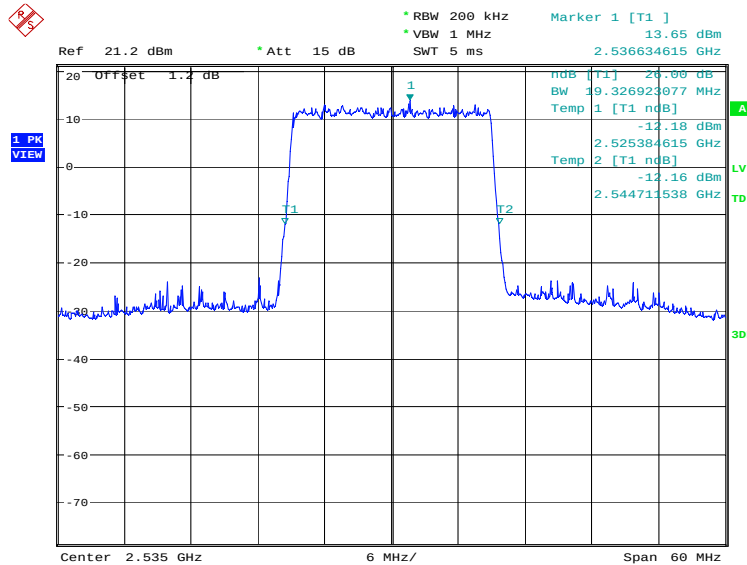


Date: 14.MAY.2021 10:12:19

LTE band 7, 20MHz (-26dBc)

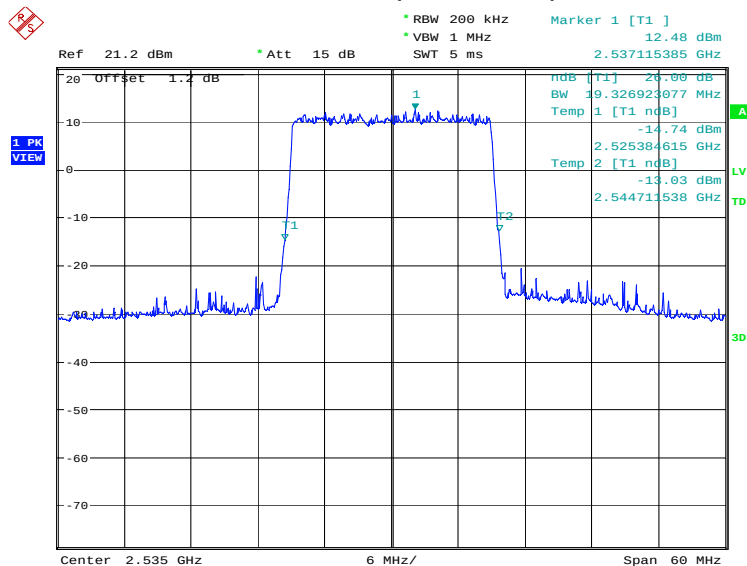
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	19326.92	19326.92

LTE band 7, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:13:01

LTE band 7, 20MHz Bandwidth, 16QAM (-26dBc BW)

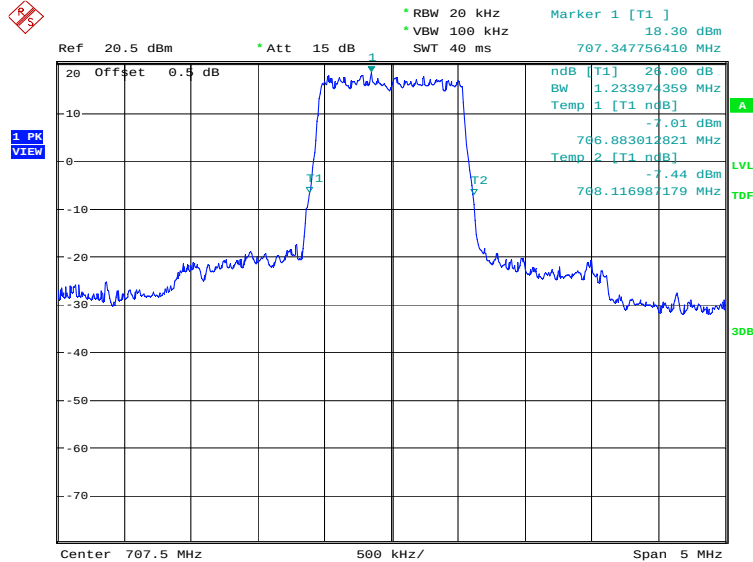


Date: 14.MAY.2021 10:13:41

LTE band 12, 1.4MHz (-26dBc)

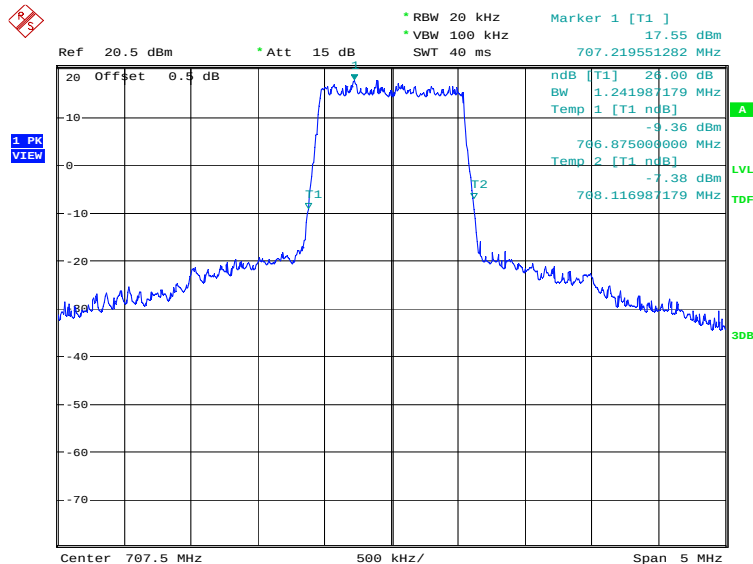
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	1233.97	1241.99

LTE band 12, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:15:10

LTE band 12, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

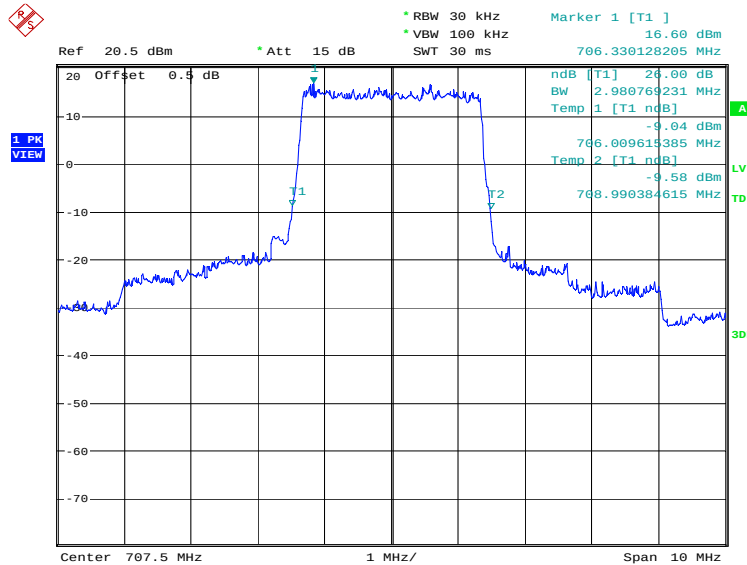


Date: 14.MAY.2021 10:15:50

LTE band 12, 3MHz (-26dBc)

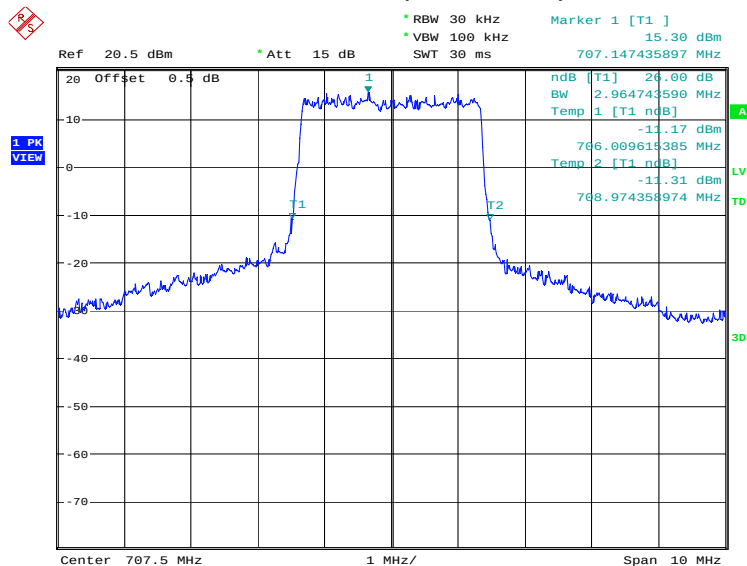
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	2980.77	2964.74

LTE band 12, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:16:32

LTE band 12, 3MHz Bandwidth, 16QAM (-26dBc BW)

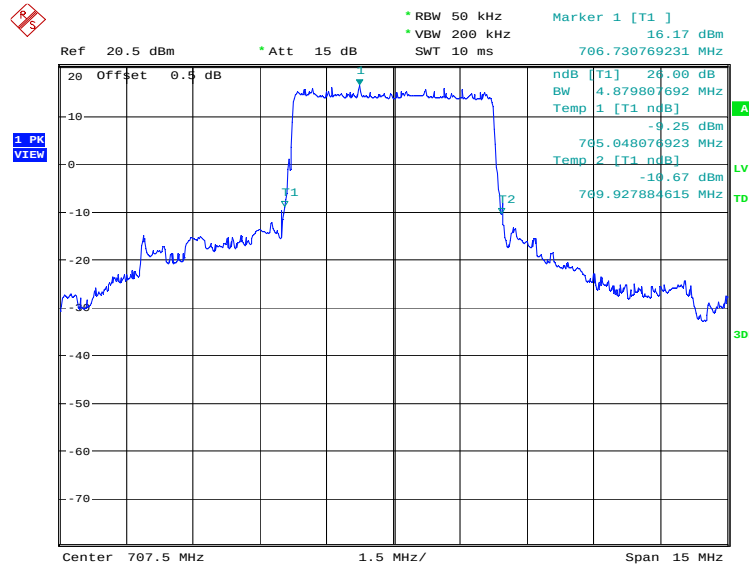


Date: 14.MAY.2021 10:17:12

LTE band 12, 5MHz (-26dBc)

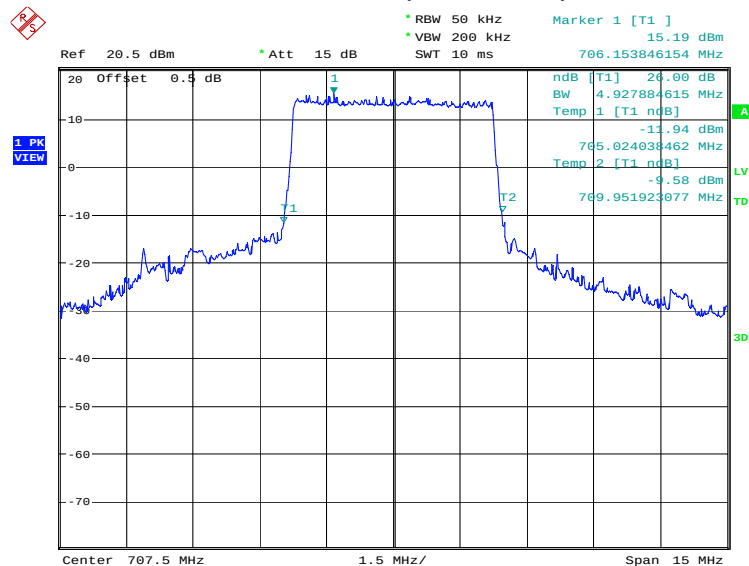
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	4879.81	4927.88

LTE band 12, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:17:54

LTE band 12, 5MHz Bandwidth, 16QAM (-26dBc BW)

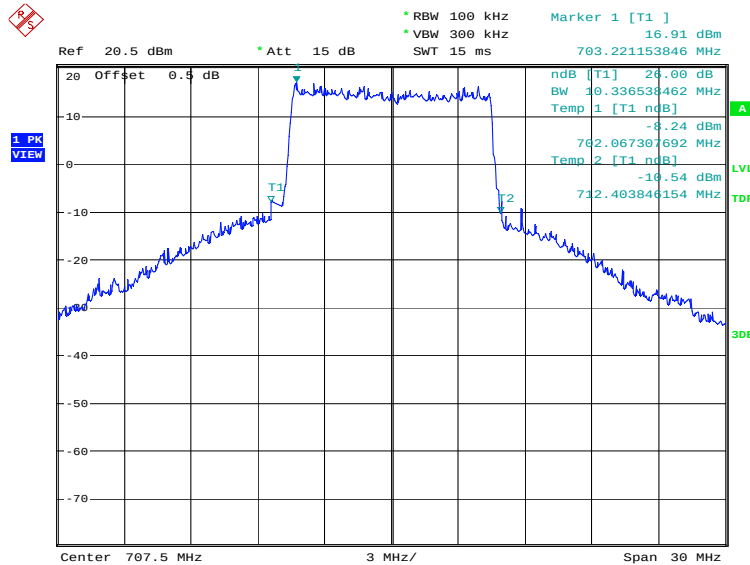


Date: 14.MAY.2021 10:18:34

LTE band 12, 10MHz (-26dBc)

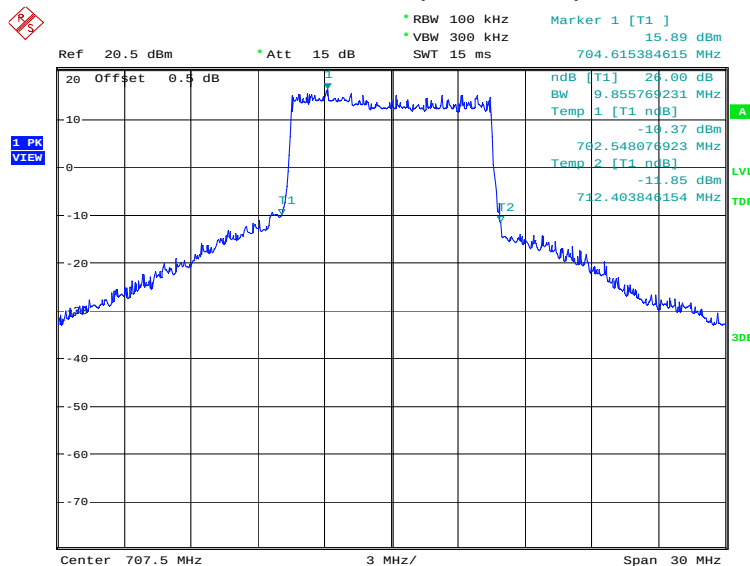
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	10336.54	9855.77

LTE band 12, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:19:16

LTE band 12, 10MHz Bandwidth, 16QAM (-26dBc BW)

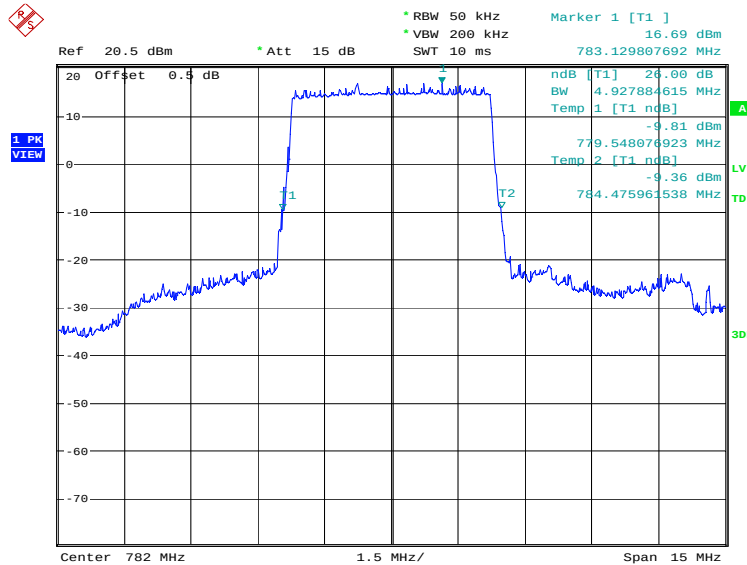


Date: 14.MAY.2021 10:19:55

LTE band 13, 5MHz (-26dBc)

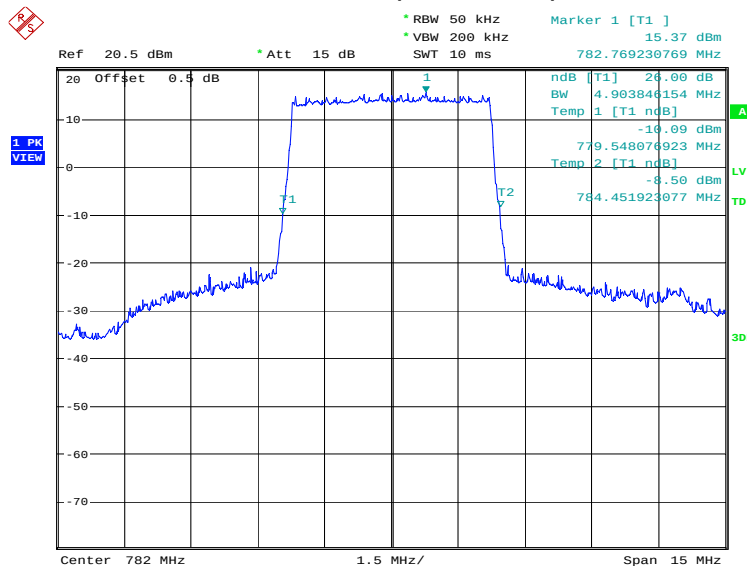
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
782.0	QPSK	16QAM
	4927.88	4903.85

LTE band 13, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:20:39

LTE band 13, 5MHz Bandwidth, 16QAM (-26dBc BW)

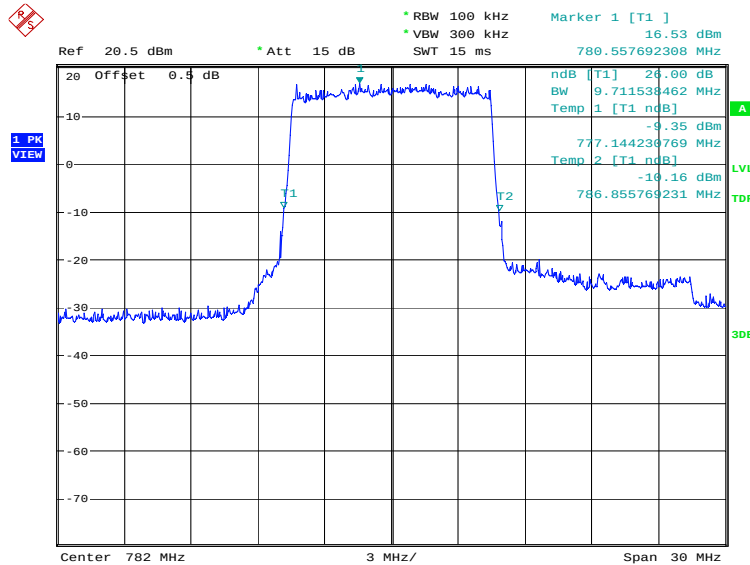


Date: 14.MAY.2021 10:21:19

LTE band 13, 10MHz (-26dBc)

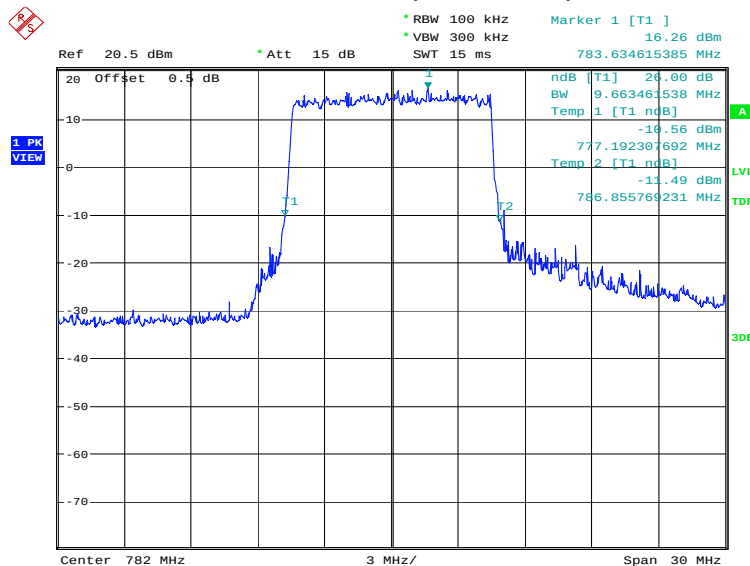
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
782.0	QPSK	16QAM
	9711.54	9663.46

LTE band 13, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:22:01

LTE band 13, 10MHz Bandwidth,16QAM (-26dBc BW)

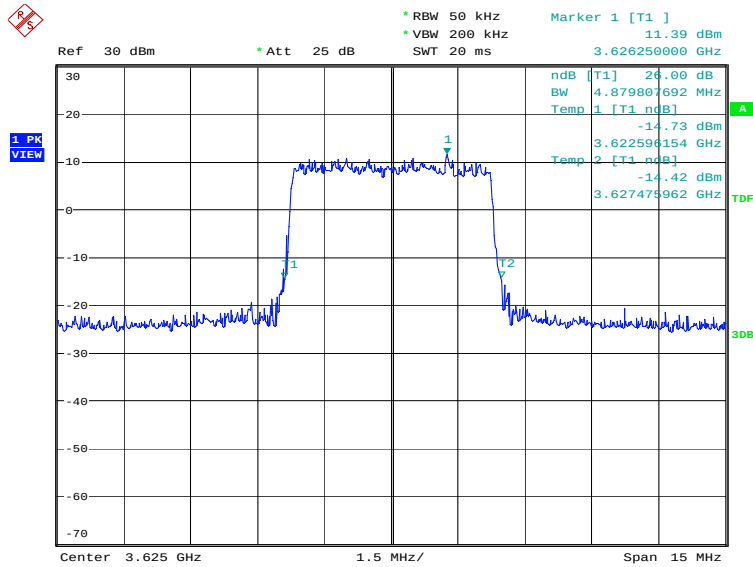


Date: 14.MAY.2021 10:22:41

LTE band 48, 5MHz (-26dBc)

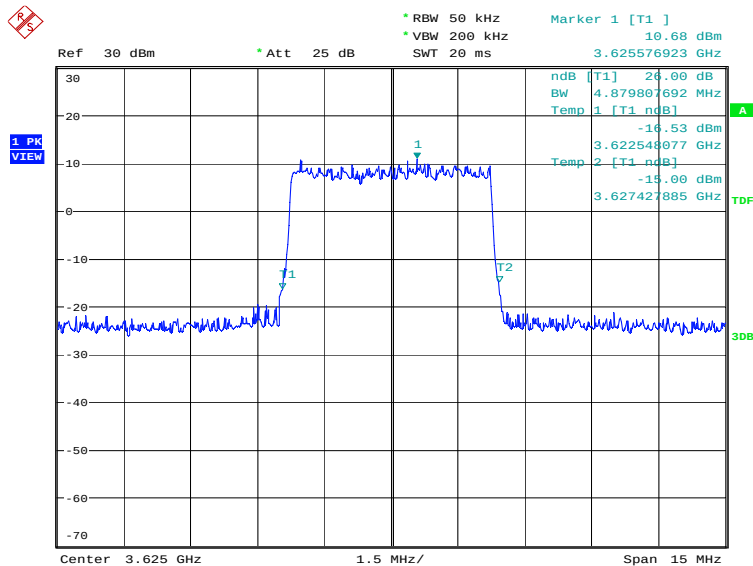
Frequency(MHz)	Occupied Bandwidth (-26dBc) (kHz)	
3625.0	QPSK	16QAM
	4879.808	4879.808

LTE band 48, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 18.MAY.2021 14:27:32

LTE band 48, 5MHz Bandwidth, 16QAM (-26dBc BW)

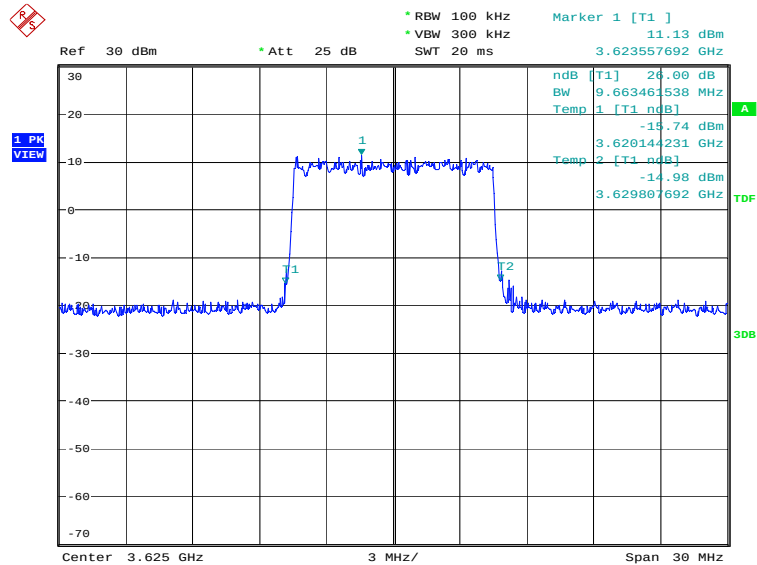


Date: 18.MAY.2021 14:34:47

LTE band 48, 10MHz (-26dBc)

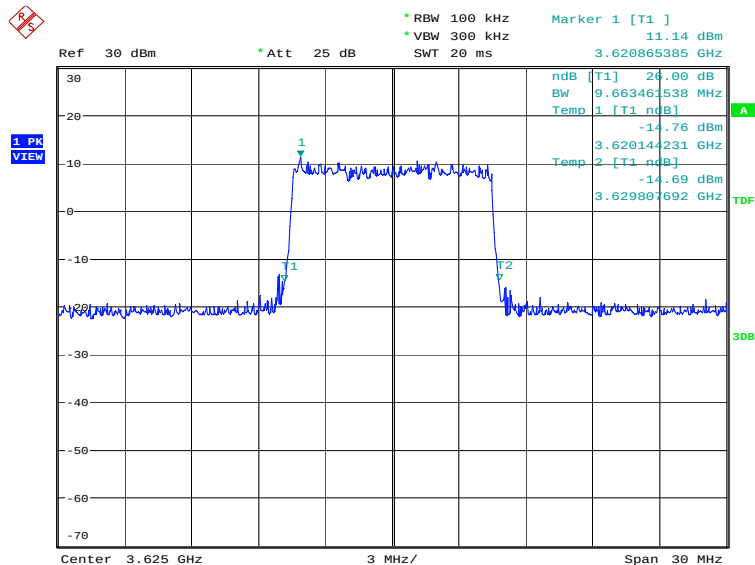
Frequency(MHz)	Occupied Bandwidth (-26dBc) (kHz)	
3625.0	QPSK	16QAM
	9663.462	9663.462

LTE band 48, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 18.MAY.2021 14:28:16

LTE band 48, 10MHz Bandwidth, 16QAM (-26dBc BW)

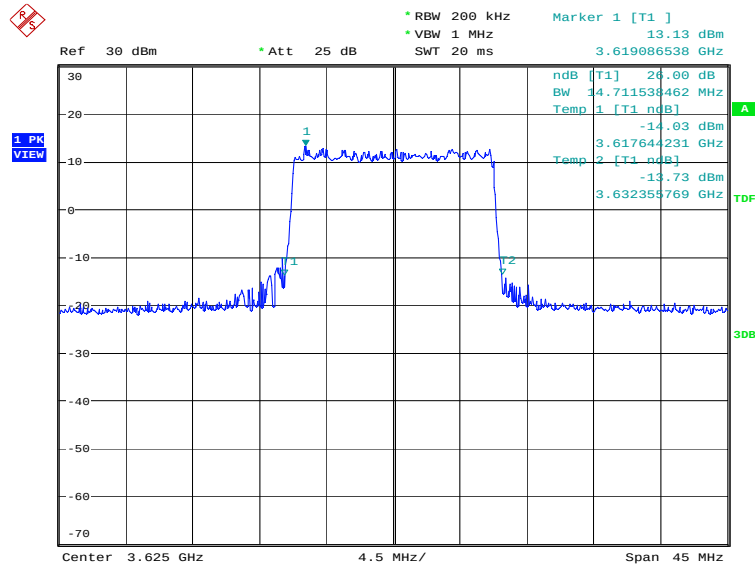


Date: 18.MAY.2021 14:32:52

LTE band 48, 15MHz (-26dBc)

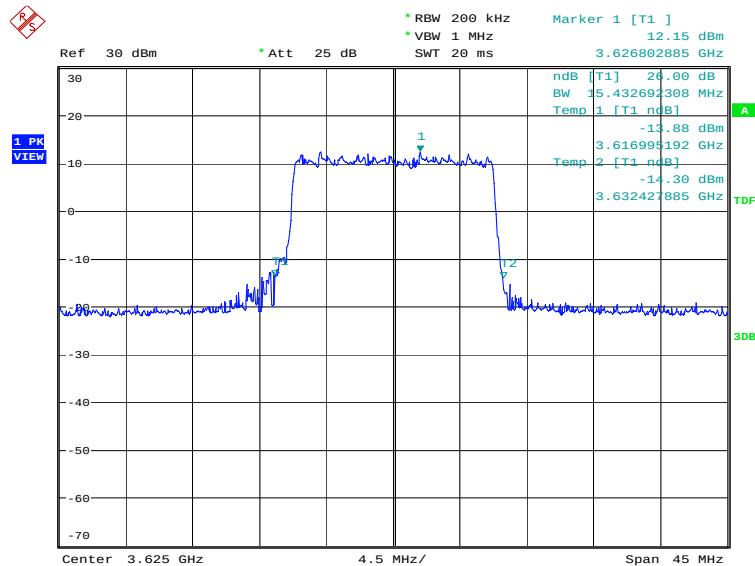
Frequency(MHz)	Occupied Bandwidth (-26dBc) (kHz)	
3625.0	QPSK	16QAM
	14711.54	15432.69

LTE band 48, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 18.MAY.2021 14:29:09

LTE band 48, 15MHz Bandwidth, 16QAM (-26dBc BW)

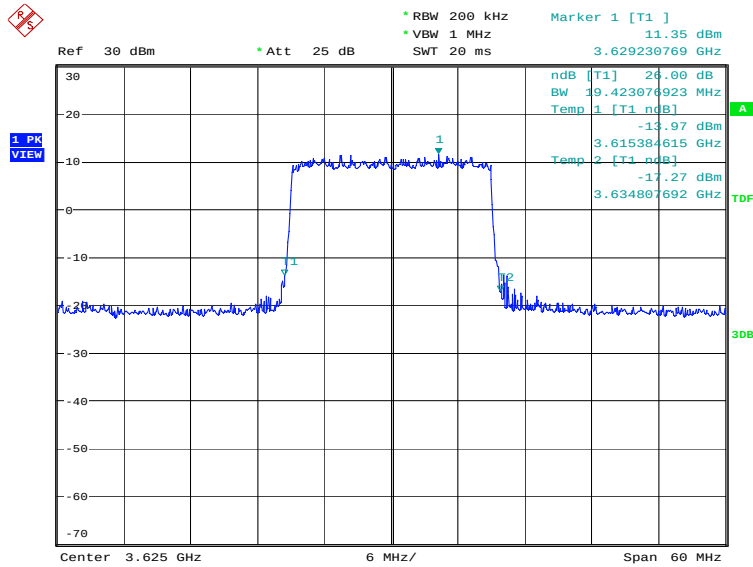


Date: 18.MAY.2021 14:33:35

LTE band 48, 20MHz (-26dBc)

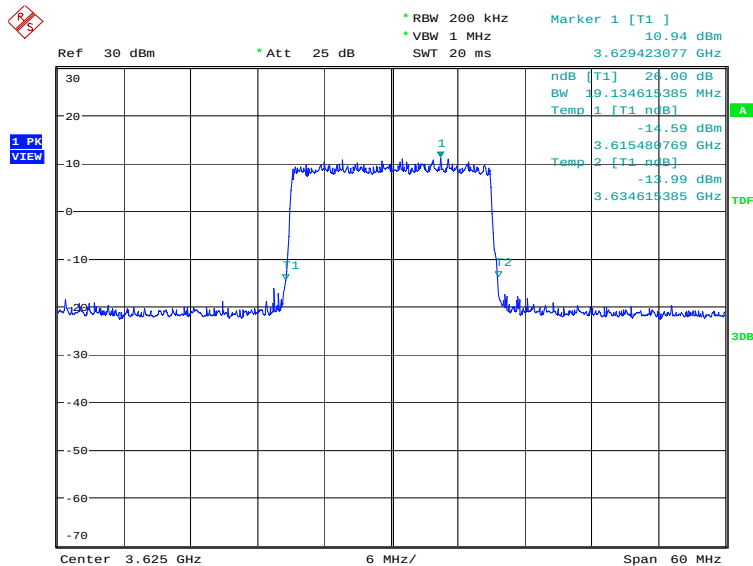
Frequency(MHz)	Occupied Bandwidth (-26dBc) (kHz)	
3625.0	QPSK	16QAM
	19423.08	19134.62

LTE band 48, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 18.MAY.2021 14:30:19

LTE band 48, 20MHz Bandwidth, 16QAM (-26dBc BW)

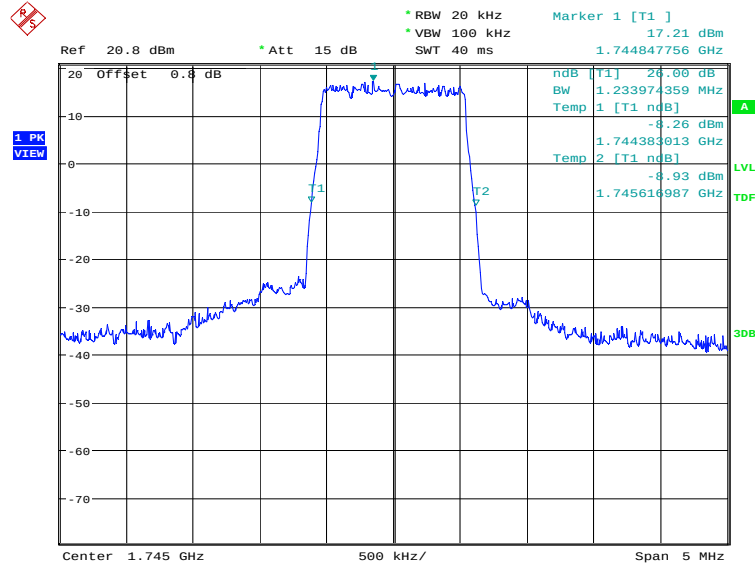


Date: 18.MAY.2021 14:34:17

LTE band 66, 1.4MHz (-26dBc)

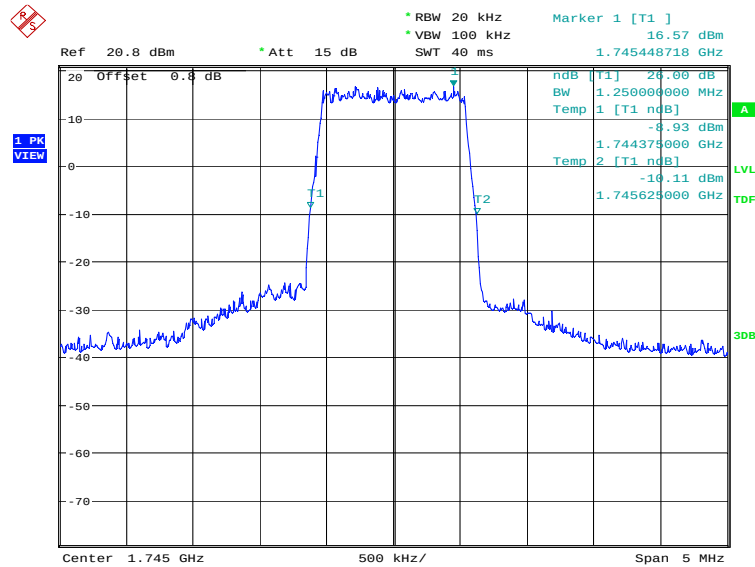
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	1233.97	1250.00

LTE band 66, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:23:29

LTE band 66, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

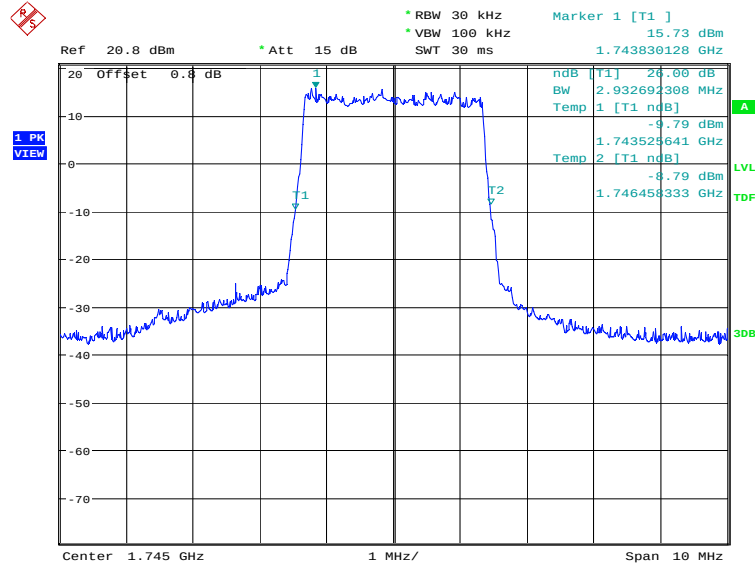


Date: 14.MAY.2021 10:24:09

LTE band 66, 3MHz (-26dBc)

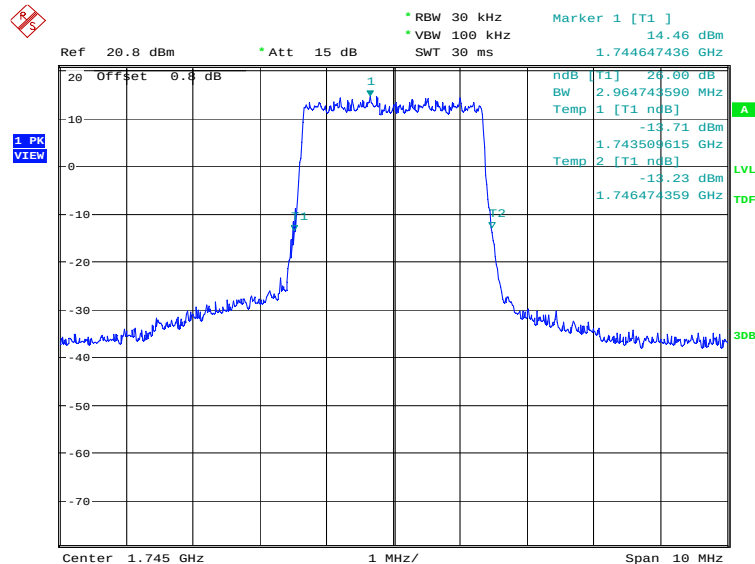
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	2932.69	2964.74

LTE band 66, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:24:51

LTE band 66, 3MHz Bandwidth, 16QAM (-26dBc BW)

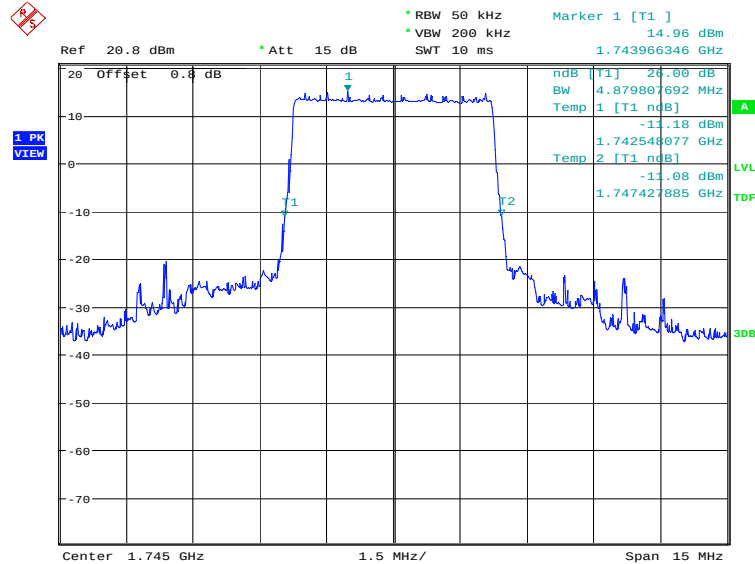


Date: 14.MAY.2021 10:25:31

LTE band 66, 5MHz (-26dBc)

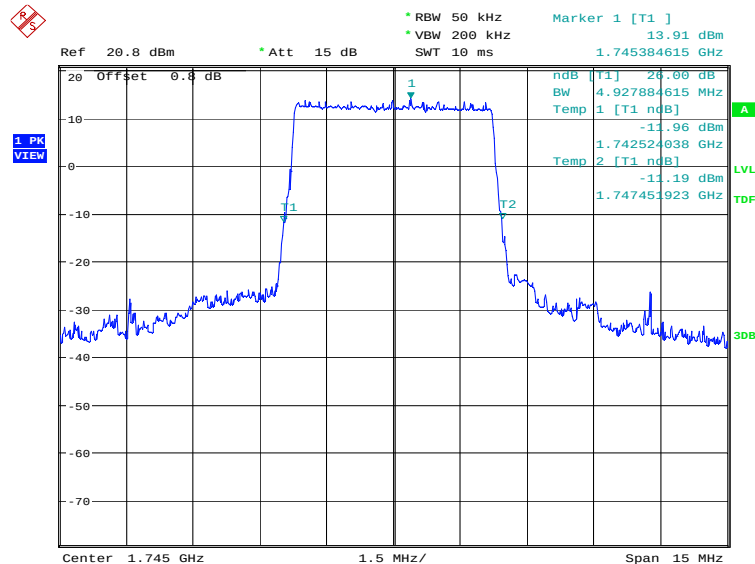
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	4879.81	4927.88

LTE band 66, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:26:13

LTE band 66, 5MHz Bandwidth, 16QAM (-26dBc BW)

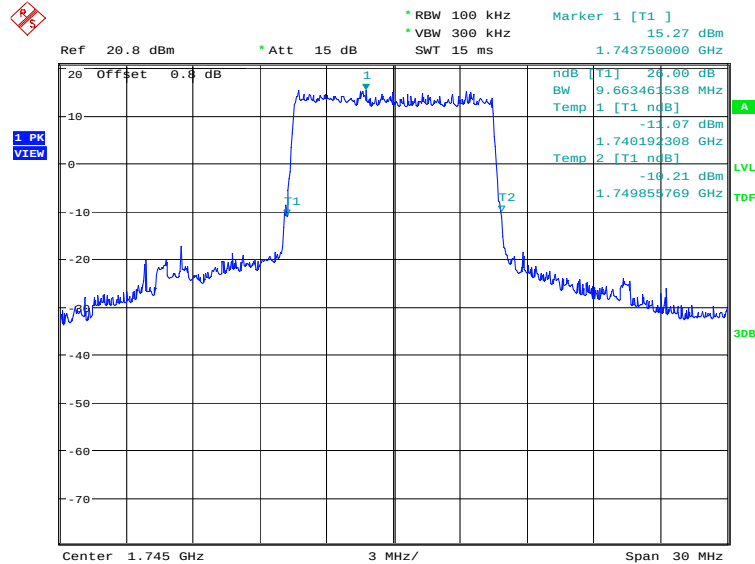


Date: 14.MAY.2021 10:26:53

LTE band 66, 10MHz (-26dBc)

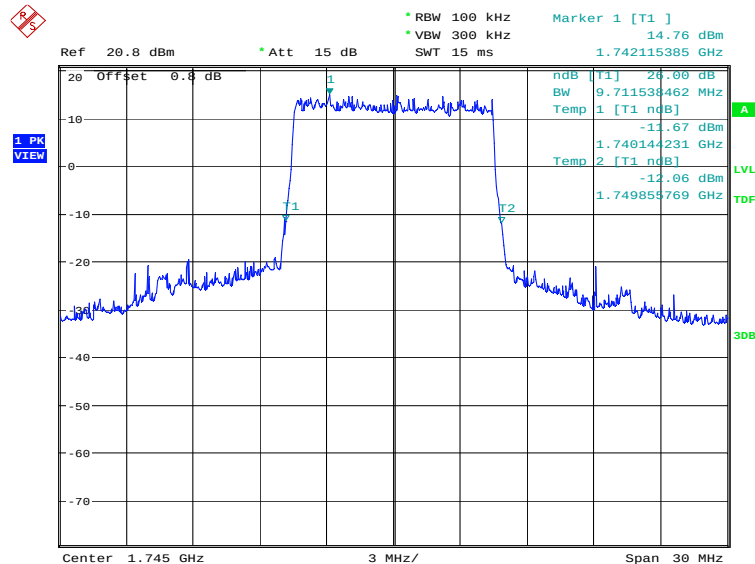
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	9663.46	9711.54

LTE band 66, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:27:34

LTE band 66, 10MHz Bandwidth, 16QAM (-26dBc BW)

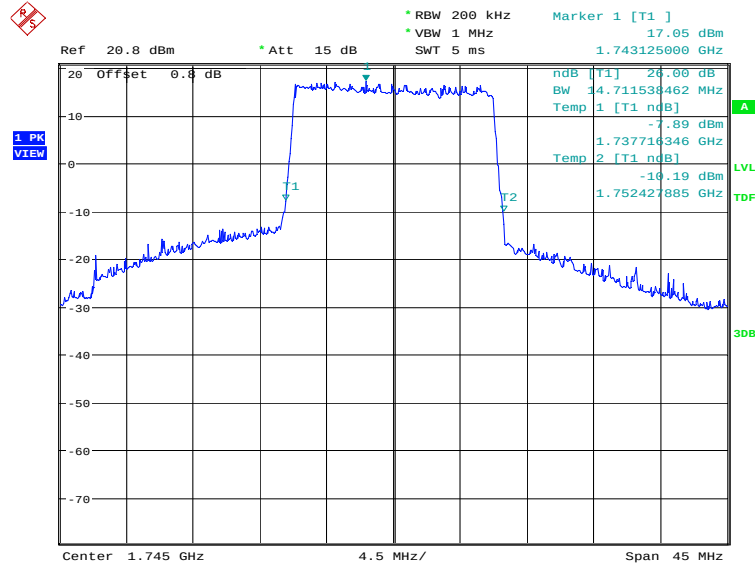


Date: 14.MAY.2021 10:28:14

LTE band 66, 15MHz (-26dBc)

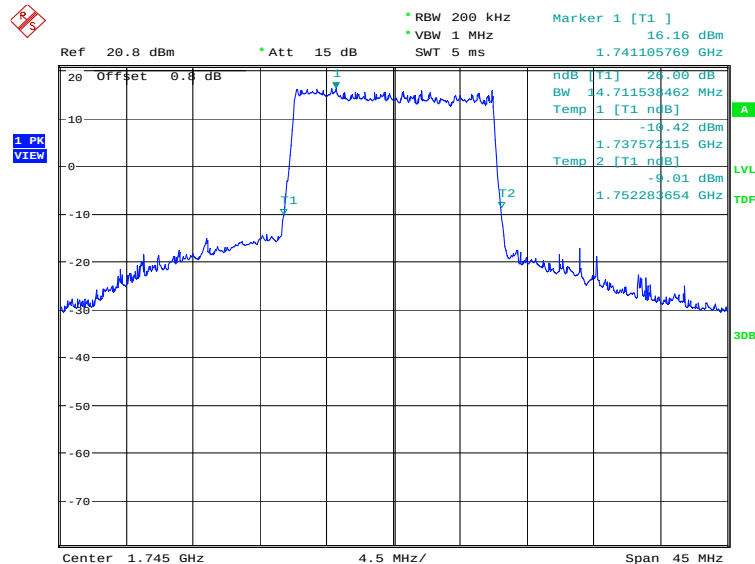
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	14711.54	14711.54

LTE band 66, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:28:56

LTE band 66, 15MHz Bandwidth, 16QAM (-26dBc BW)

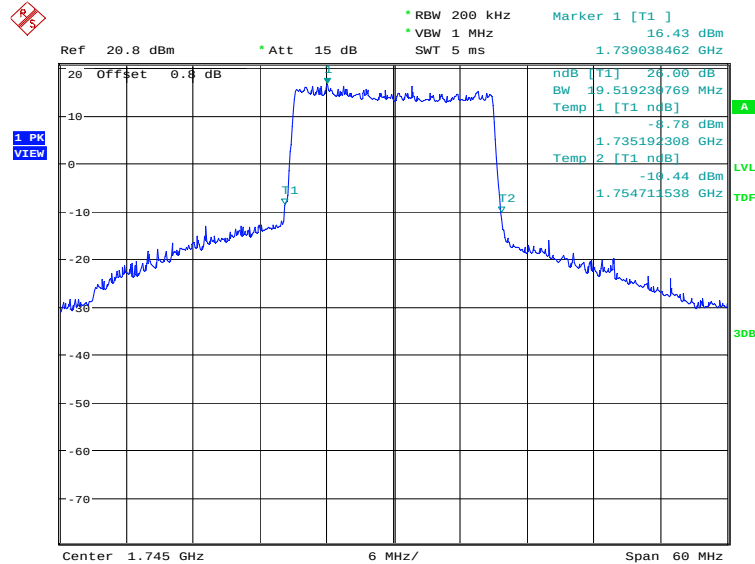


Date: 14.MAY.2021 10:29:35

LTE band 66, 20MHz (-26dBc)

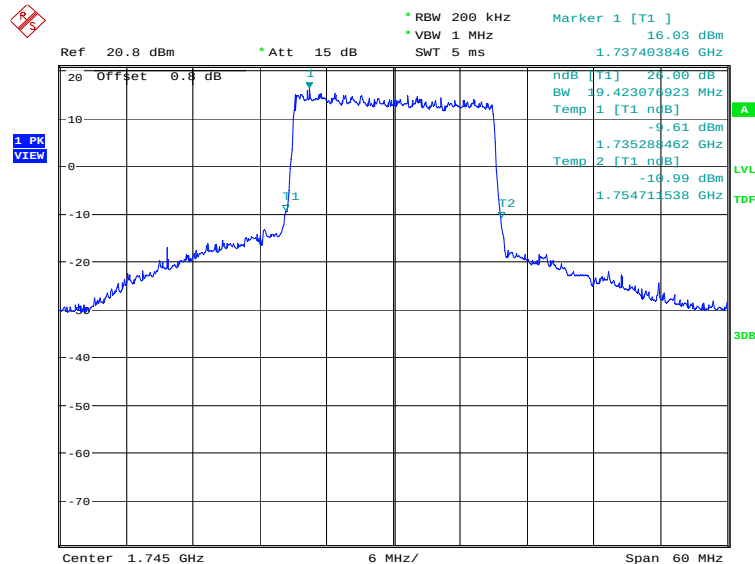
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	19519.23	19423.08

LTE band 66, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 14.MAY.2021 10:30:17

LTE band 66, 20MHz Bandwidth, 16QAM (-26dBc BW)

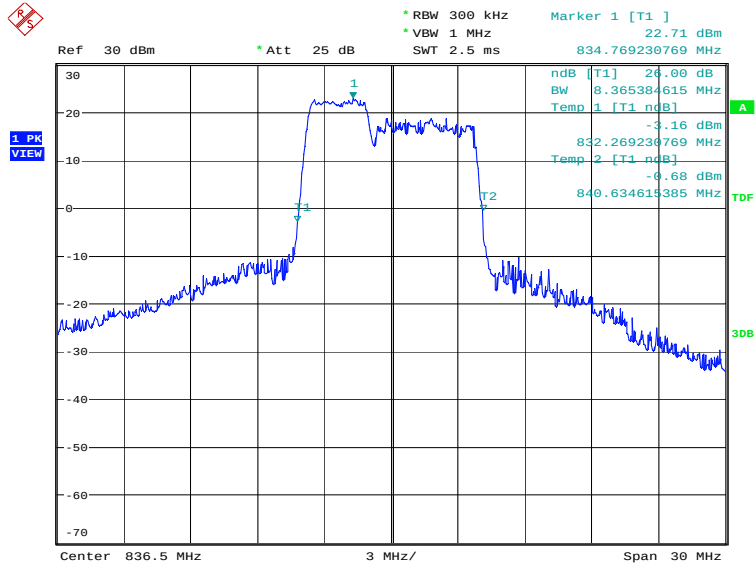


Date: 14.MAY.2021 10:30:56

LTE CA band 5 , 3MHz+5MHz (-26dBc)

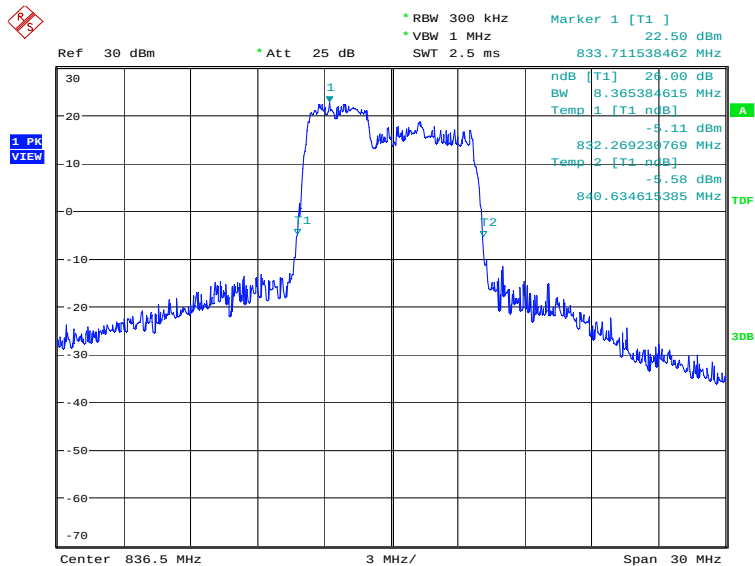
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	8365.38	8365.38

LTE CA band 5 , 3MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 16:39:34

LTE CA band 5, 3MHz+5MHz Bandwidth,16QAM (-26dBc BW)

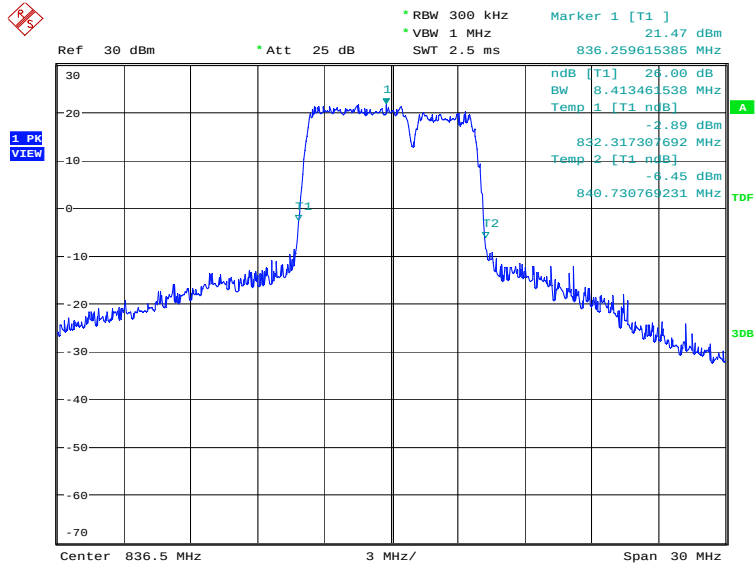


Date: 21.MAY.2021 16:38:41

LTE CA band 5 , 5MHz+3MHz (-26dBc)

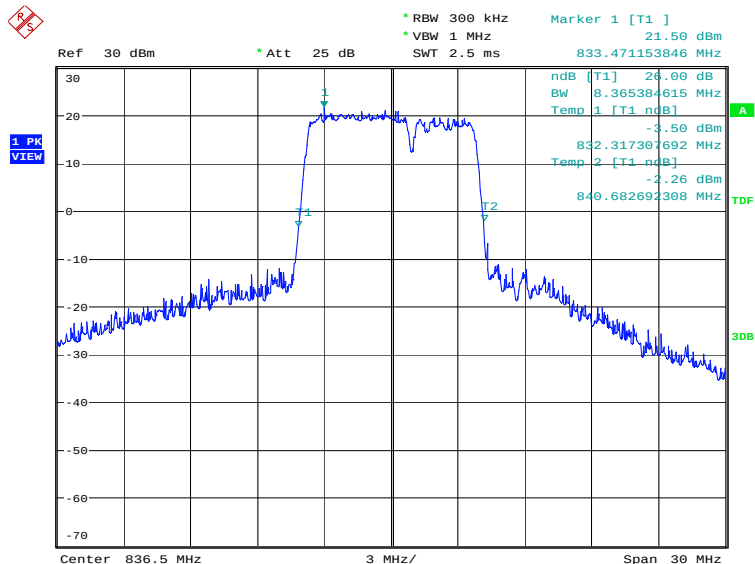
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	8413.46	8365.38

LTE CA band 5 , 5MHz+3MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 16:34:45

LTE CA band 5 , 5MHz+3MHz Bandwidth,16QAM (-26dBc BW)

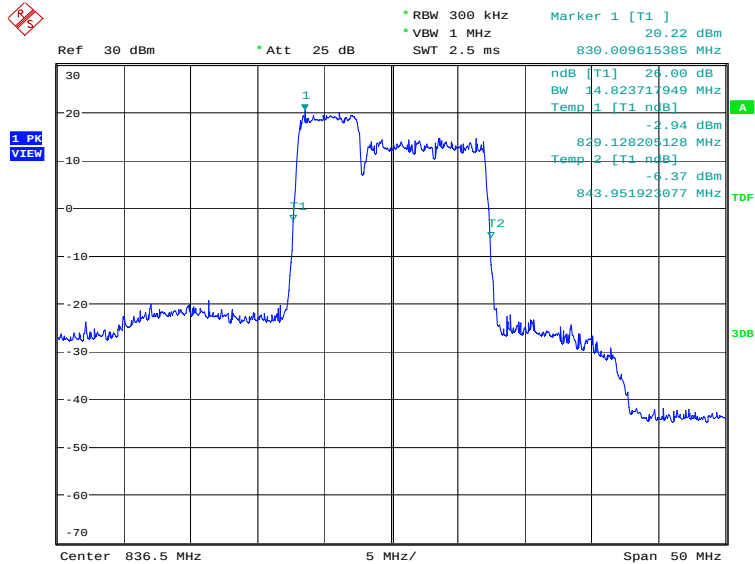


Date: 21.MAY.2021 16:35:50

LTE CA band 5 , 5MHz+10MHz (-26dBc)

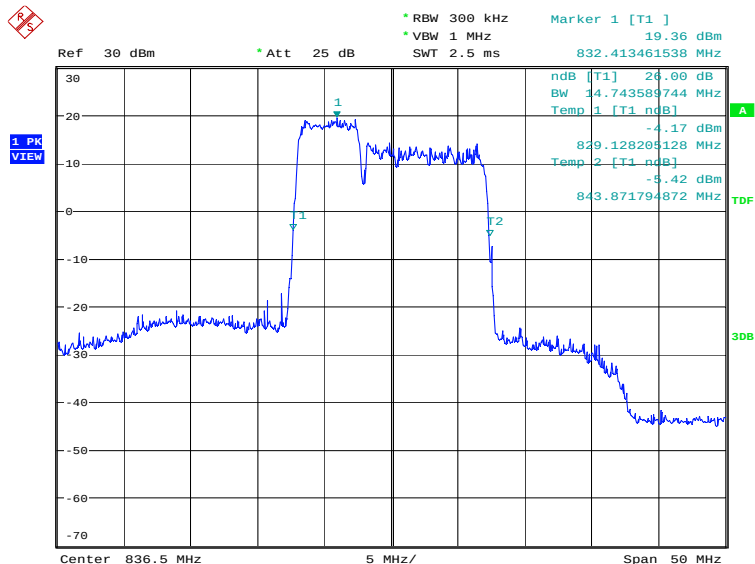
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	14823.72	14743.59

LTE CA band 5 , 5MHz+10MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 13:55:09

LTE CA band 5 , 5MHz+10MHz Bandwidth,16QAM (-26dBc BW)

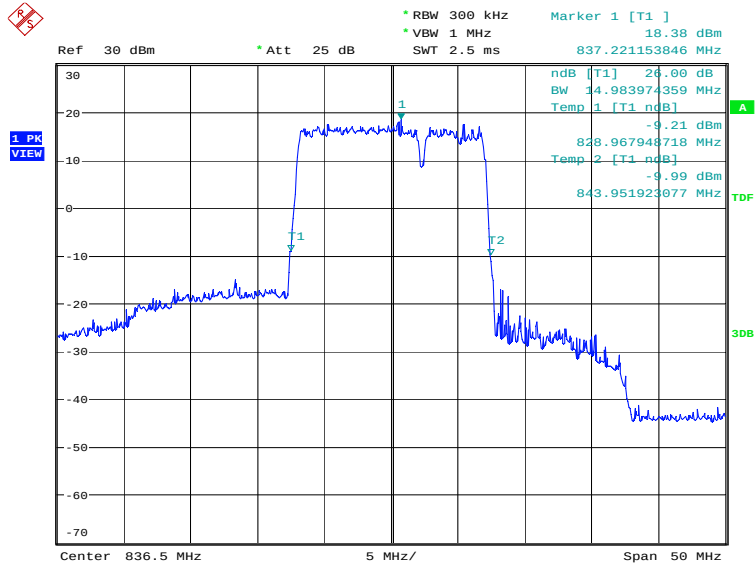


Date: 21.MAY.2021 13:57:00

LTE CA band 5 , 10MHz+5MHz (-26dBc)

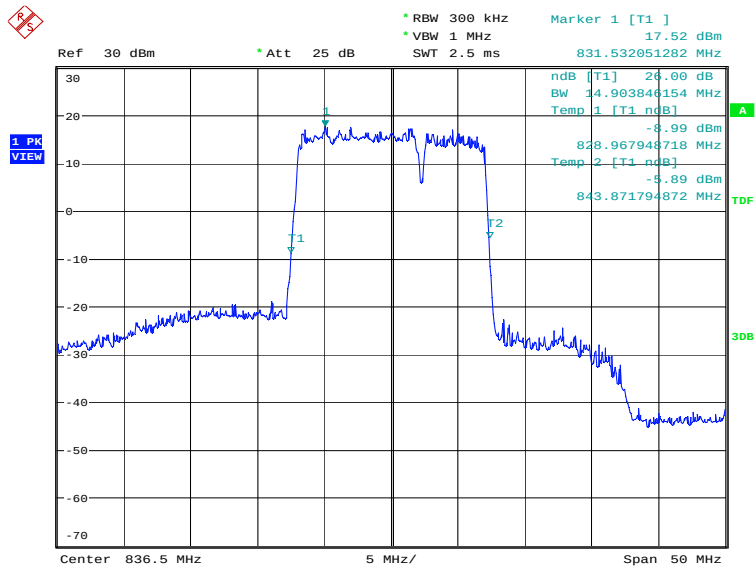
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	14983.97	14903.85

LTE CA band 5 , 10MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 13:58:50

LTE CA band 5 , 10MHz+5MHz Bandwidth,16QAM (-26dBc BW)

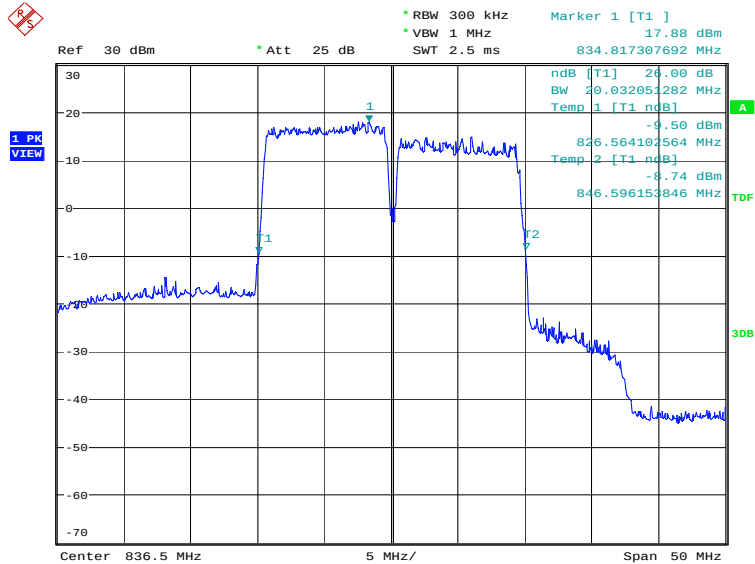


Date: 21.MAY.2021 14:00:17

LTE CA band 5 , 10MHz+10MHz (-26dBc)

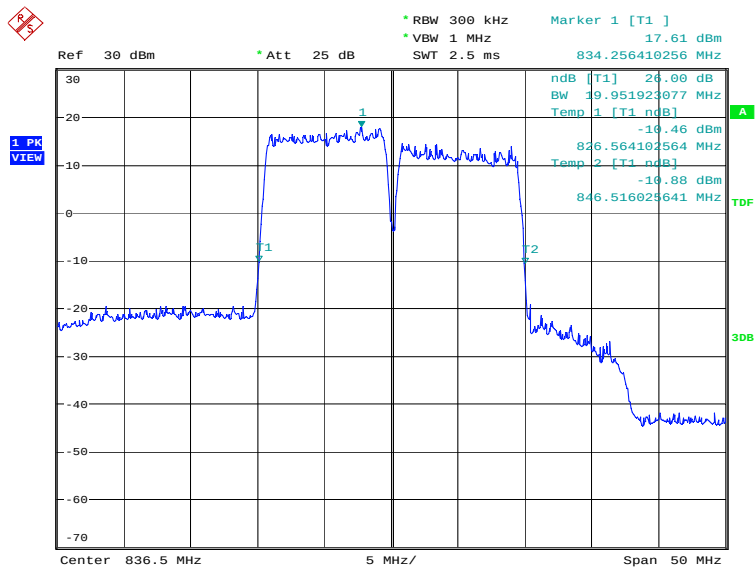
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	20032.05	19951.92

LTE CA band 5 , 10MHz+10MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:03:47

LTE CA band 5 , 10MHz+10MHz Bandwidth,16QAM (-26dBc BW)

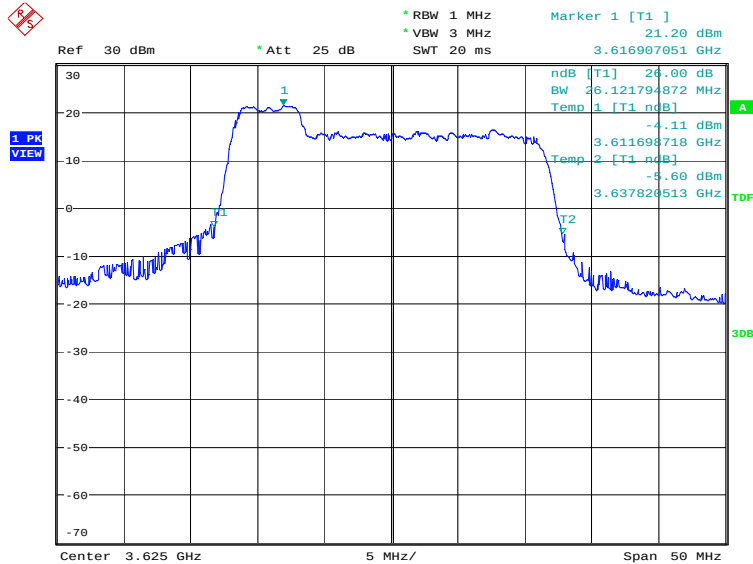


Date: 21.MAY.2021 14:05:10

LTE CA band 48 , 5MHz+20MHz (-26dBc)

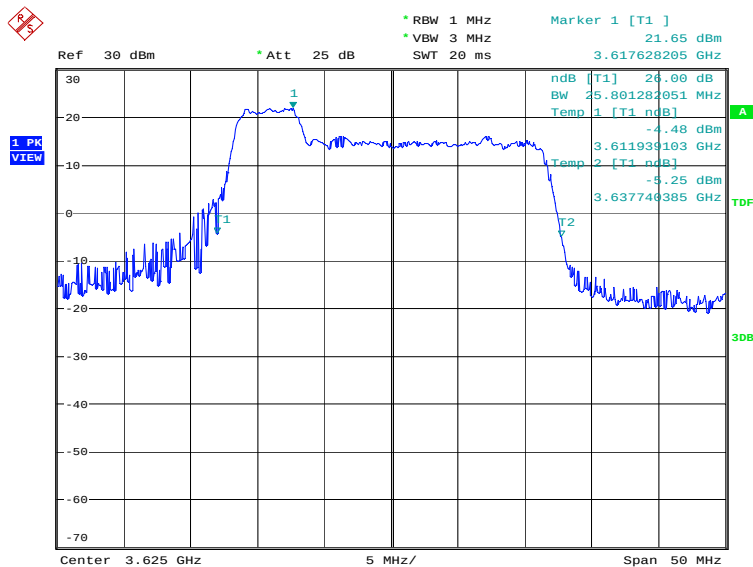
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	26121.79	25801.28

LTE CA band 48 , 5MHz+20MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:09:20

LTE CA band 48 , 5MHz+20MHz Bandwidth,16QAM (-26dBc BW)

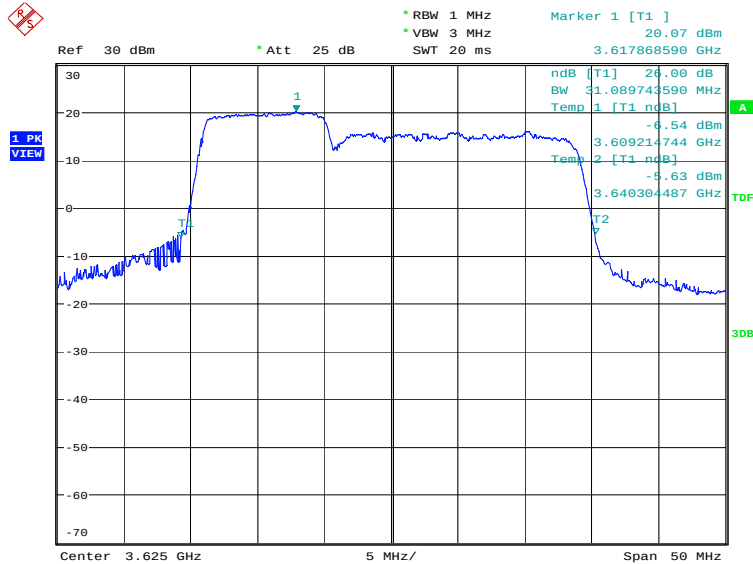


Date: 21.MAY.2021 14:10:24

LTE CA band 48 , 10MHz+20MHz (-26dBc)

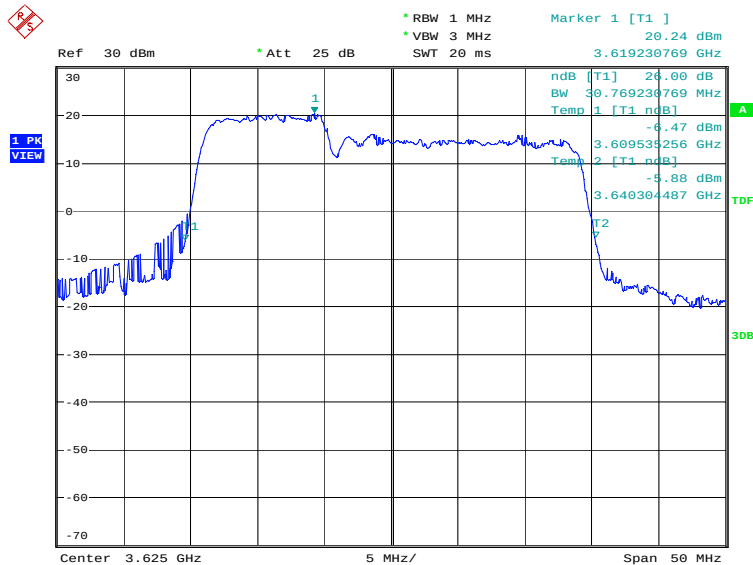
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	31089.74	30769.23

LTE CA band 48 , 10MHz+20MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:29:36

LTE CA band 48 , 10MHz+20MHz Bandwidth,16QAM (-26dBc BW)

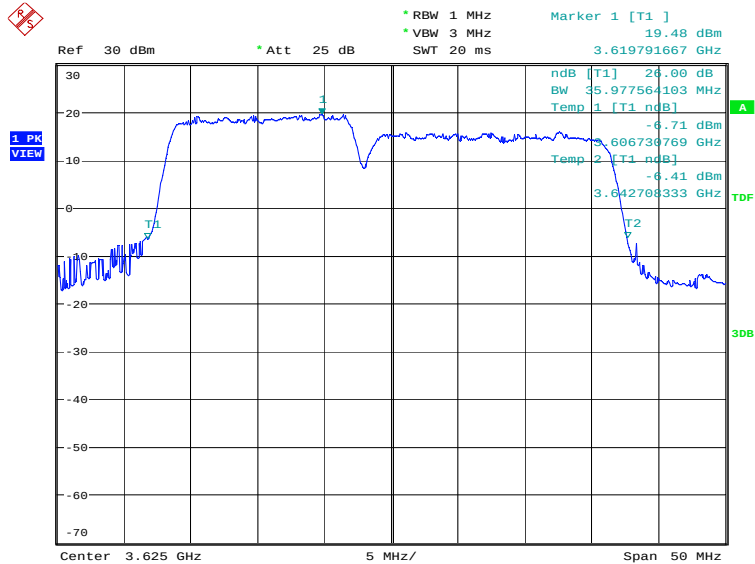


Date: 21.MAY.2021 14:30:28

LTE CA band 48 , 15MHz+20MHz (-26dBc)

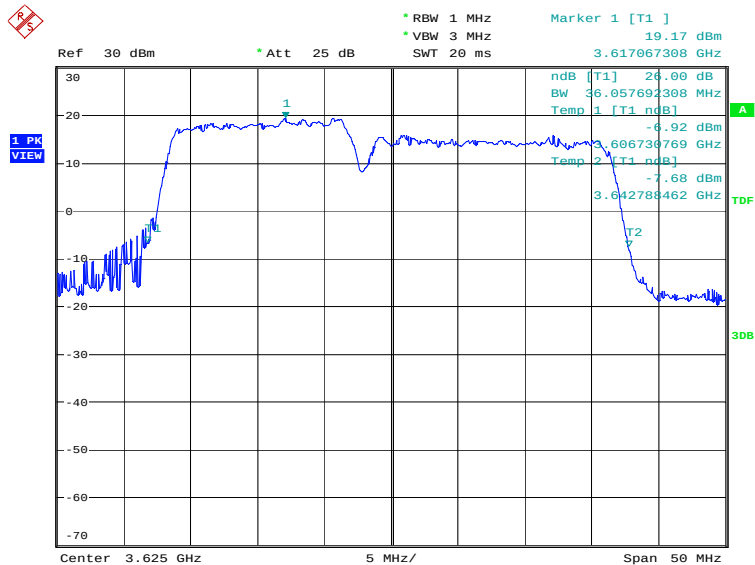
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	35977.56	36057.69

LTE CA band 48 , 15MHz+20MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:40:49

LTE CA band 48 , 15MHz+20MHz Bandwidth,16QAM (-26dBc BW)

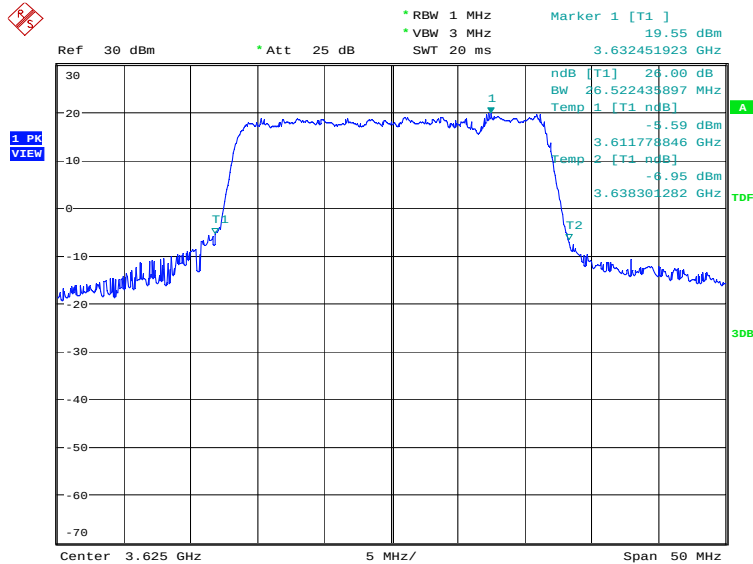


Date: 21.MAY.2021 14:42:07

LTE CA band 48 , 20MHz+5MHz (-26dBc)

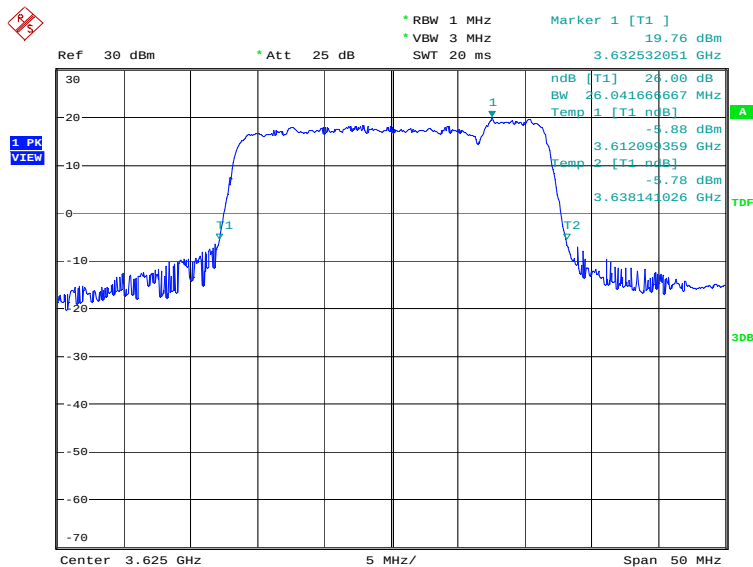
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	26522.44	26041.67

LTE CA band 48 , 20MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:13:15

LTE CA band 48 , 20MHz+5MHz Bandwidth,16QAM (-26dBc BW)

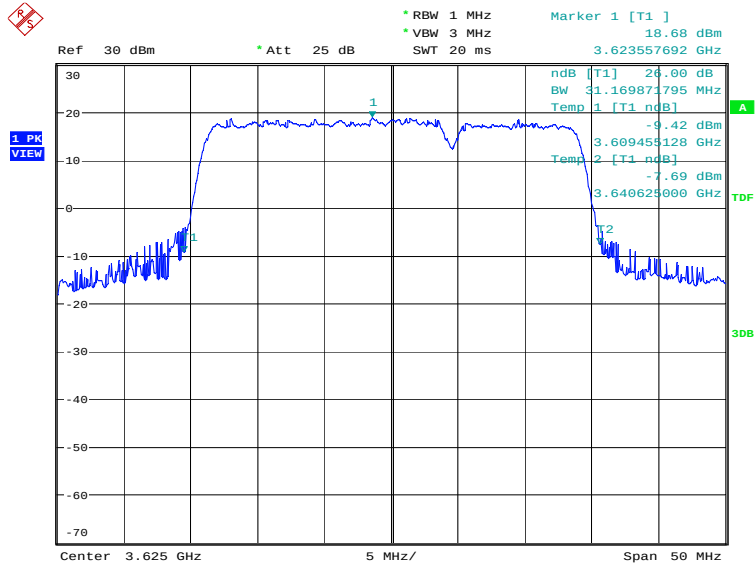


Date: 21.MAY.2021 14:12:10

LTE CA band 48 , 20MHz+10MHz (-26dBc)

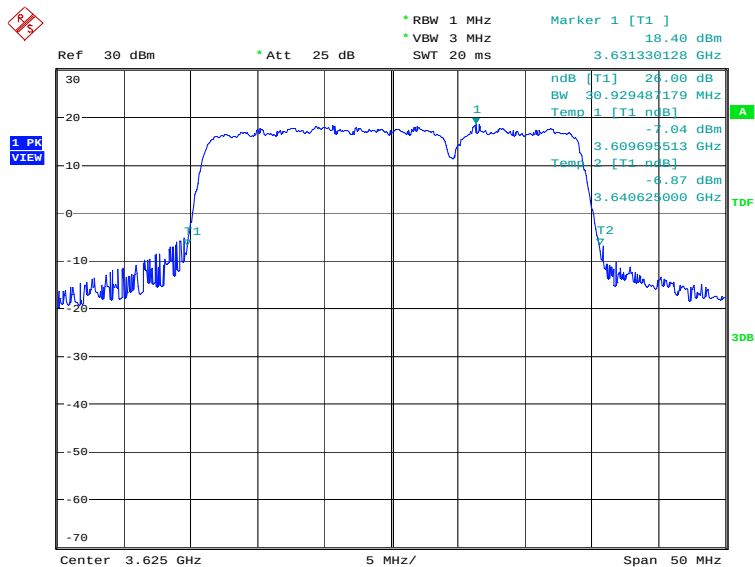
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	31169.87	30929.49

LTE CA band 48 , 20MHz+10MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:35:29

LTE CA band 48 , 20MHz+10MHz Bandwidth,16QAM (-26dBc BW)

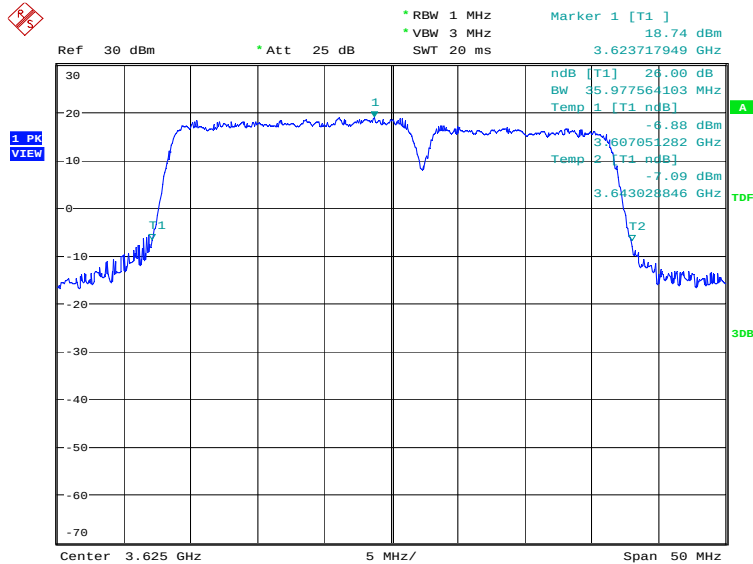


Date: 21.MAY.2021 14:32:30

LTE CA band 48 , 20MHz+15MHz (-26dBc)

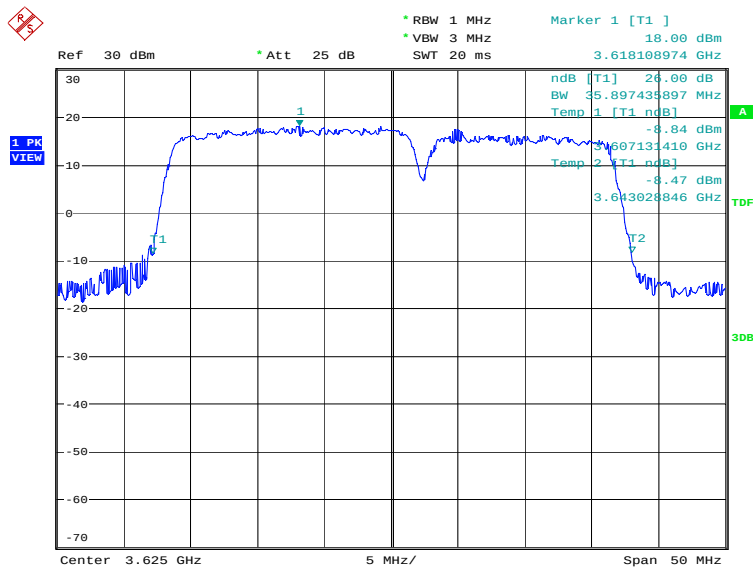
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	35977.56	35897.44

LTE CA band 48 , 20MHz+15MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:45:14

LTE CA band 48 , 20MHz+15MHz Bandwidth,16QAM (-26dBc BW)

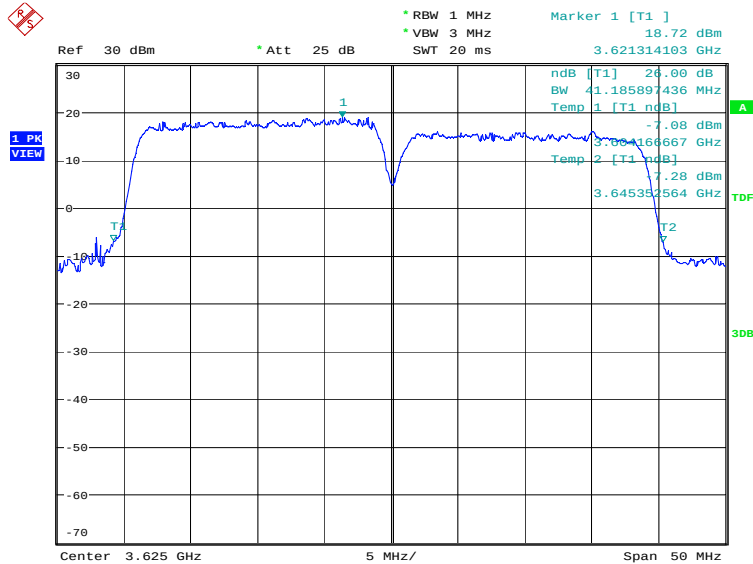


Date: 21.MAY.2021 14:46:11

LTE CA band 48 , 20MHz+20MHz (-26dBc)

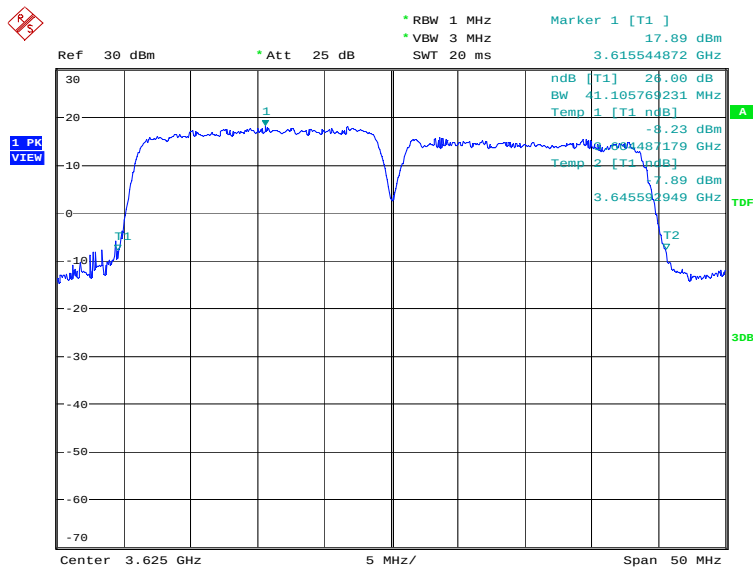
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
3625.0	QPSK	16QAM
	41185.90	41105.77

LTE CA band 48 , 20MHz+20MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:52:11

LTE CA band 48 , 20MHz+20MHz Bandwidth,16QAM (-26dBc BW)

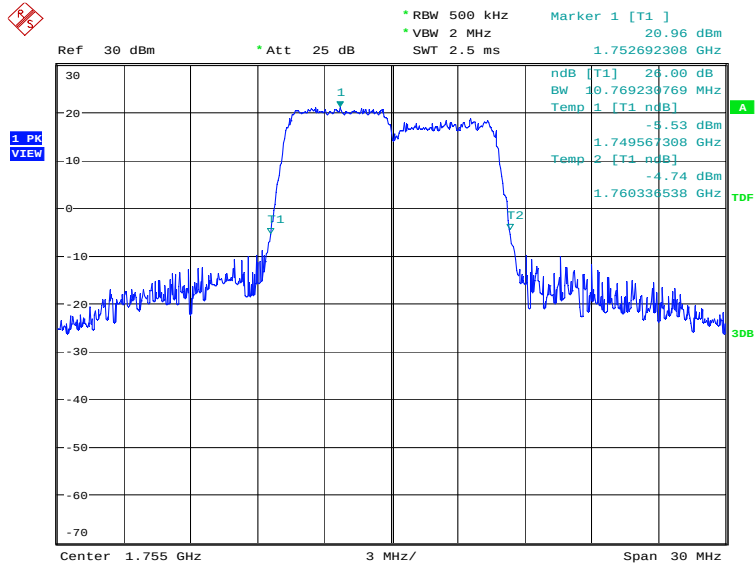


Date: 21.MAY.2021 14:49:28

LTE CA band 66 , 5MHz+5MHz (-26dBc)

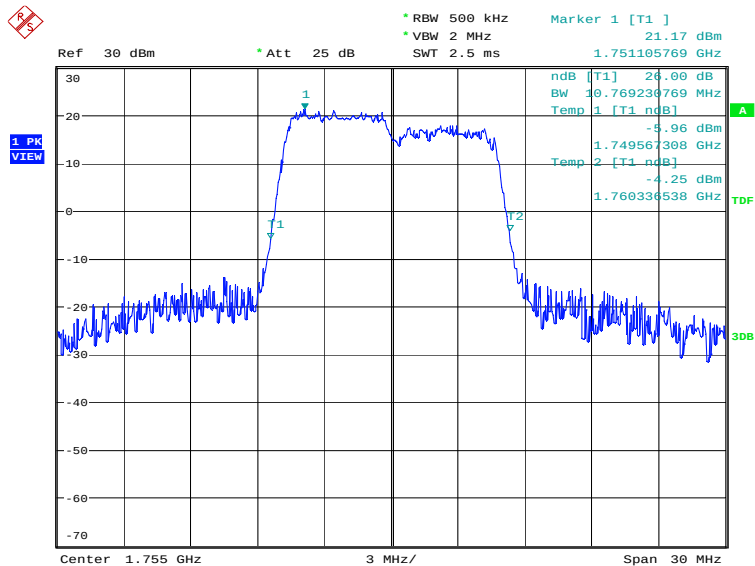
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	10769.23	10769.23

LTE CA band 66 , 5MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 16:42:21

LTE CA band 66 , 5MHz+5MHz Bandwidth,16QAM (-26dBc BW)

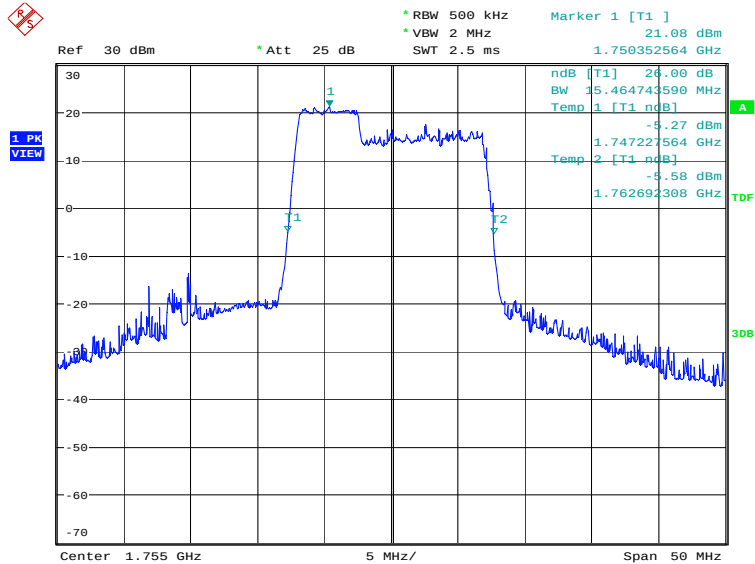


Date: 21.MAY.2021 16:43:11

LTE CA band 66 , 5MHz+10MHz (-26dBc)

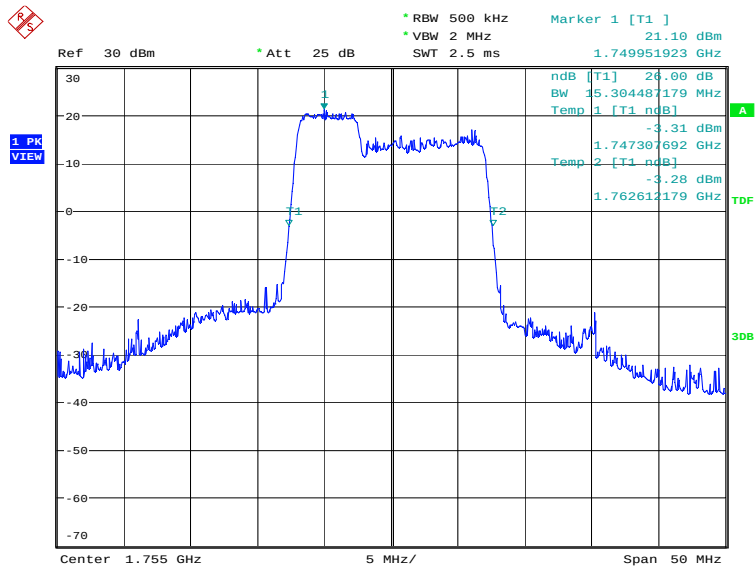
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	15464.74	15304.49

LTE CA band 66 , 5MHz+10MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 14:57:05

LTE CA band 66 , 5MHz+10MHz Bandwidth,16QAM (-26dBc BW)

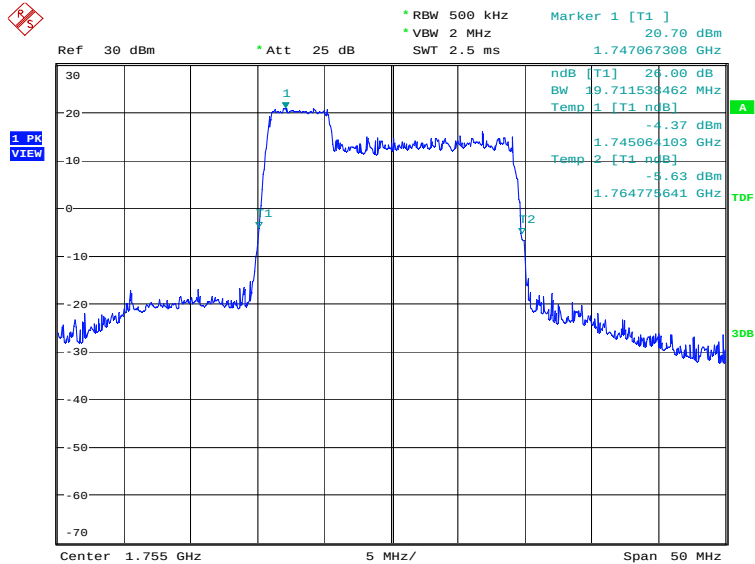


Date: 21.MAY.2021 14:58:46

LTE CA band 66 , 5MHz+15MHz (-26dBc)

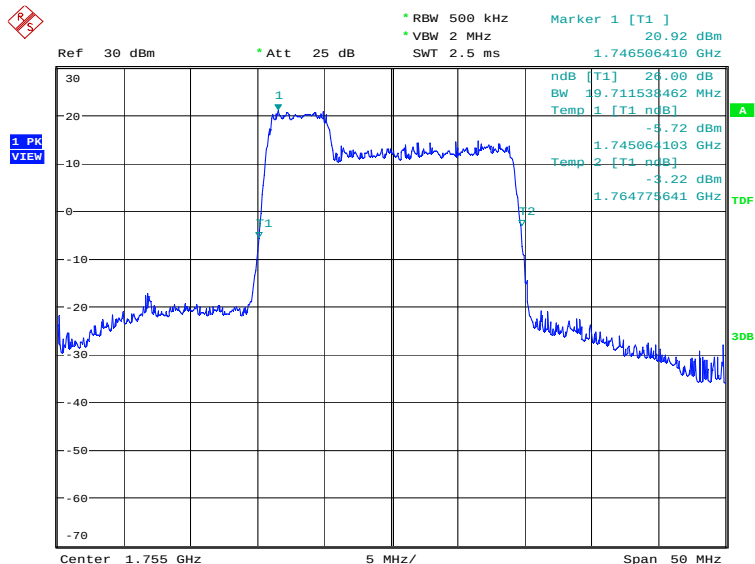
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	19711.54	19711.54

LTE CA band 66 , 5MHz+15MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 15:03:12

LTE CA band 66 , 5MHz+15MHz Bandwidth,16QAM (-26dBc BW)

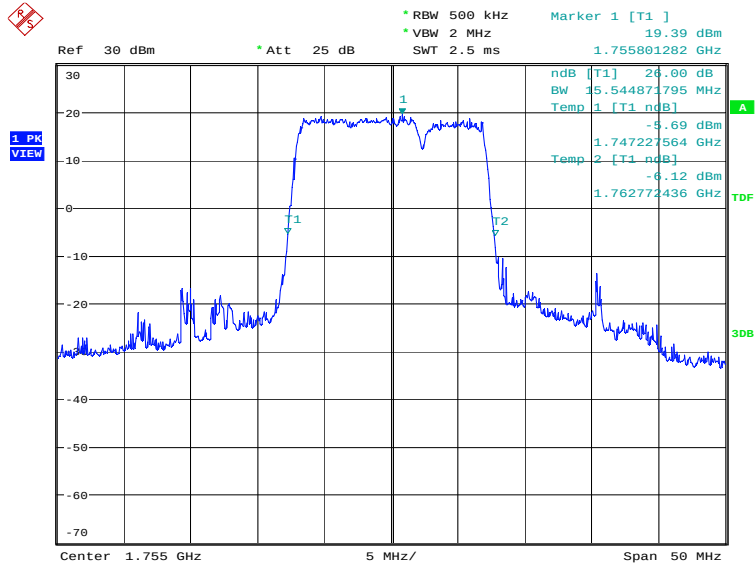


Date: 21.MAY.2021 15:04:47

LTE CA band 66 , 10MHz+5MHz (-26dBc)

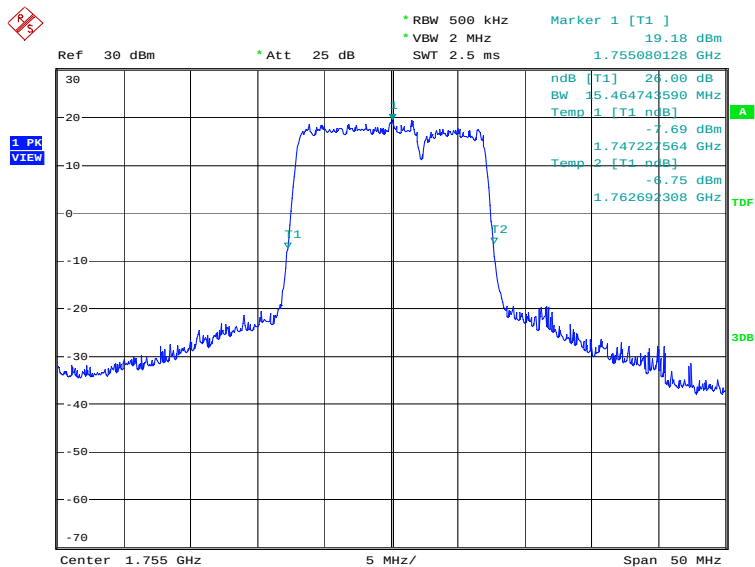
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	15544.87	15464.74

LTE CA band 66 , 10MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 15:01:15

LTE CA band 66 , 10MHz+5MHz Bandwidth,16QAM (-26dBc BW)

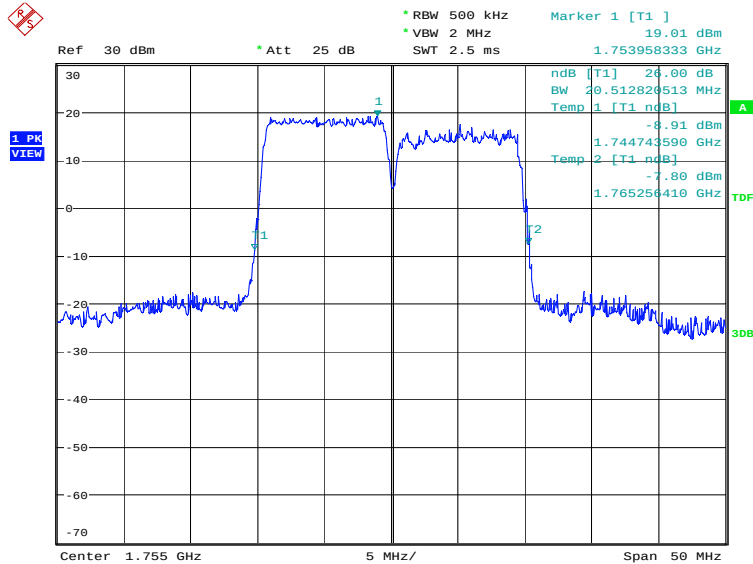


Date: 21.MAY.2021 15:00:14

LTE CA band 66 , 10MHz+10MHz (-26dBc)

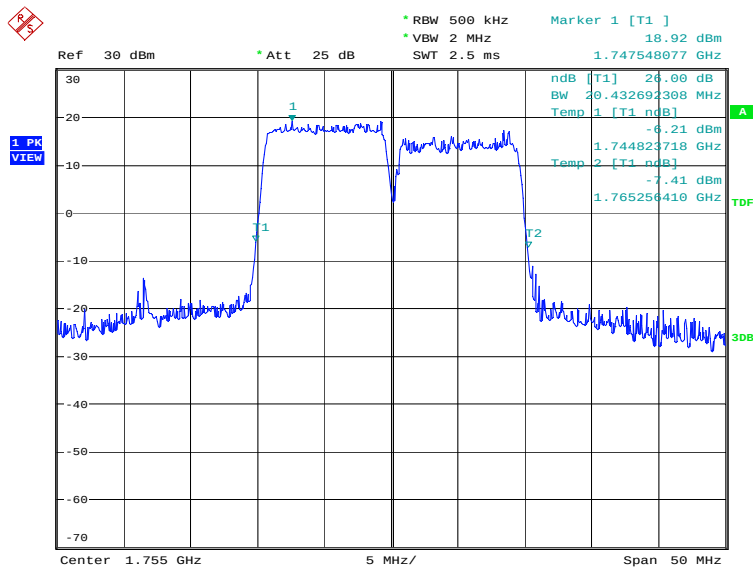
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	20512.82	20432.69

LTE CA band 66 , 10MHz+10MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 15:09:48

LTE CA band 66 , 10MHz+10MHz Bandwidth,16QAM (-26dBc BW)

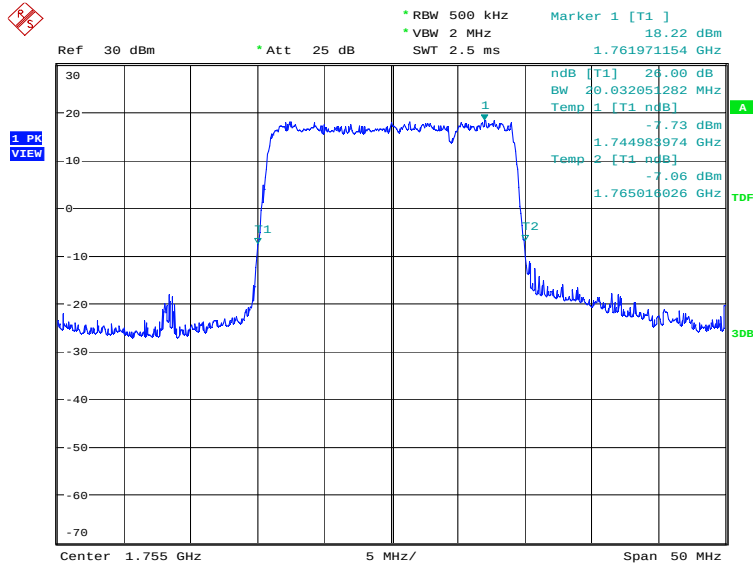


Date: 21.MAY.2021 15:10:54

LTE CA band 66 , 15MHz+5MHz (-26dBc)

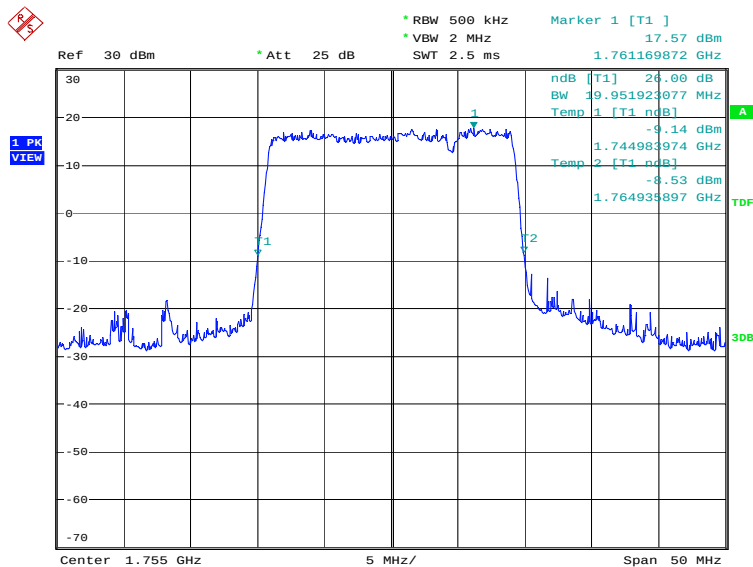
Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
1755.0	QPSK	16QAM
	20032.05	19951.92

LTE CA band 66 , 15MHz+5MHz Bandwidth, QPSK (-26dBc BW)



Date: 21.MAY.2021 15:08:02

LTE CA band 66 , 15MHz+5MHz Bandwidth,16QAM (-26dBc BW)



Date: 21.MAY.2021 15:06:46

A.6 Band Edge Compliance

A.6.1 Measurement limit

Part 22.917, Part 24.238 and Part 27.53(h) specify 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.

Part 27.53(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following: (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB; (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB; (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

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.

Part 96.41(e) states that the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B MHz (where B is the bandwidth in MHz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B MHz below the lower CBSD-assigned channel edge. At all frequencies greater than B MHz above the upper CBSD assigned channel edge and less than B MHz below the lower CBSD-assigned channel edge, the conducted power of any end user device emission shall not exceed -25 dBm/MHz. the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed.

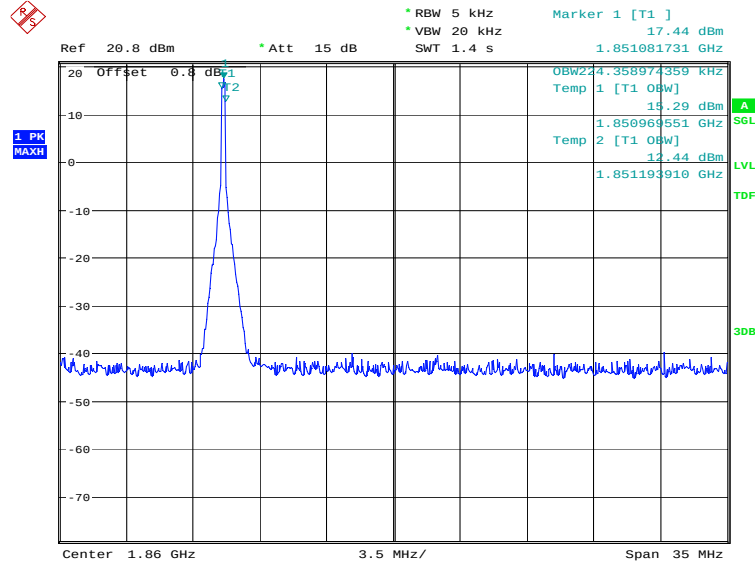
The spectrum analyzer readings are corrected by $[10 \log (1/\text{duty cycle})]$ for the non-continuous transmitting scenario.

A.6.2 Measurement result

Only the worst case result is given below

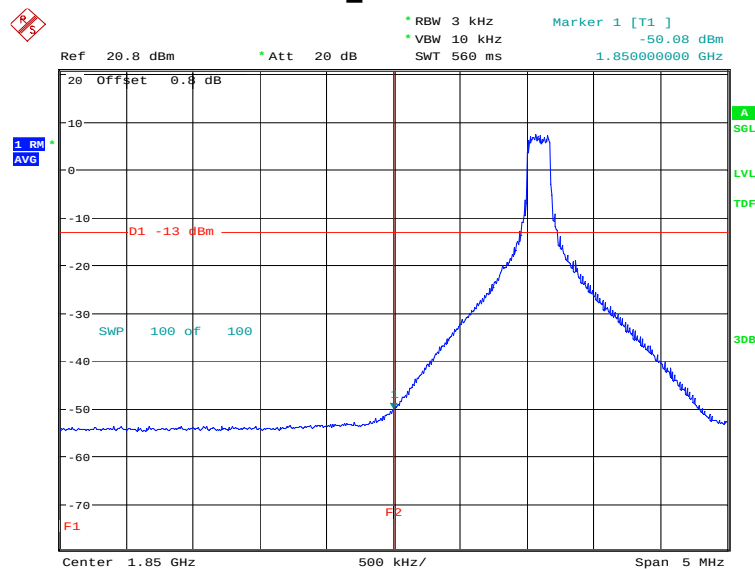
LTE band 2

OBW: 1RB-low_offset



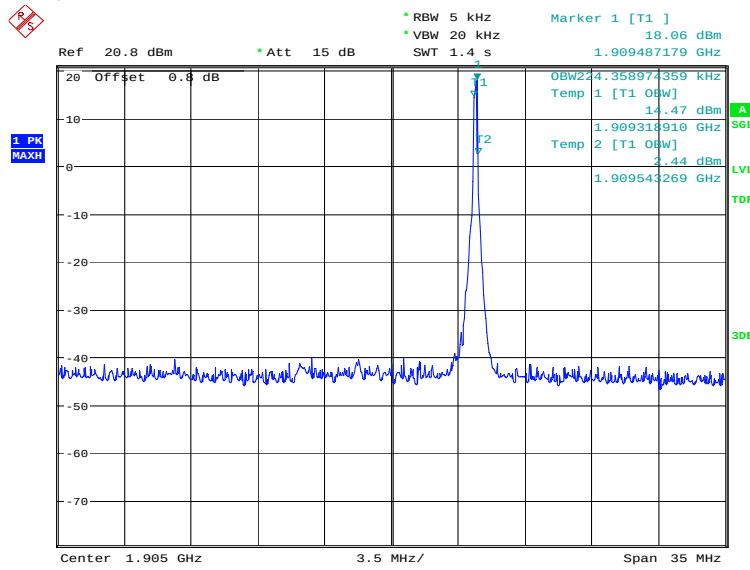
Date: 13.JUL.2021 13:41:06

LOW BAND EDGE BLOCK-1RB-low_offset



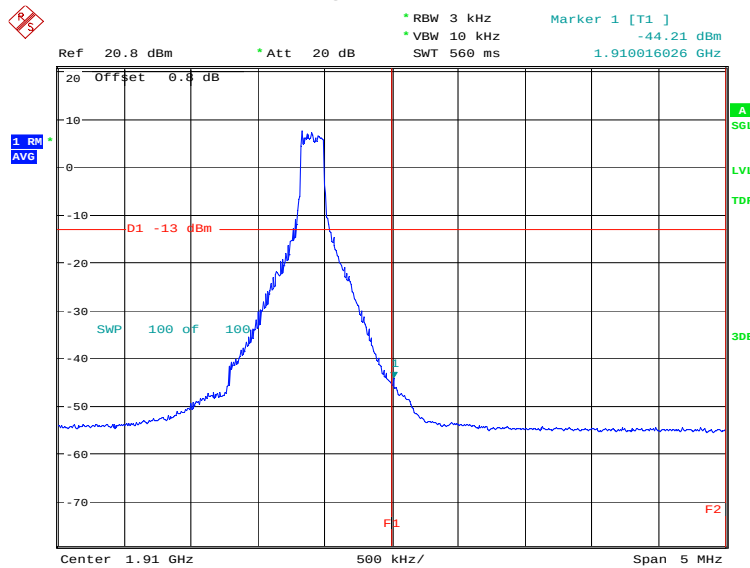
Date: 13.JUL.2021 13:42:19

OBW: 1RB-high_offset



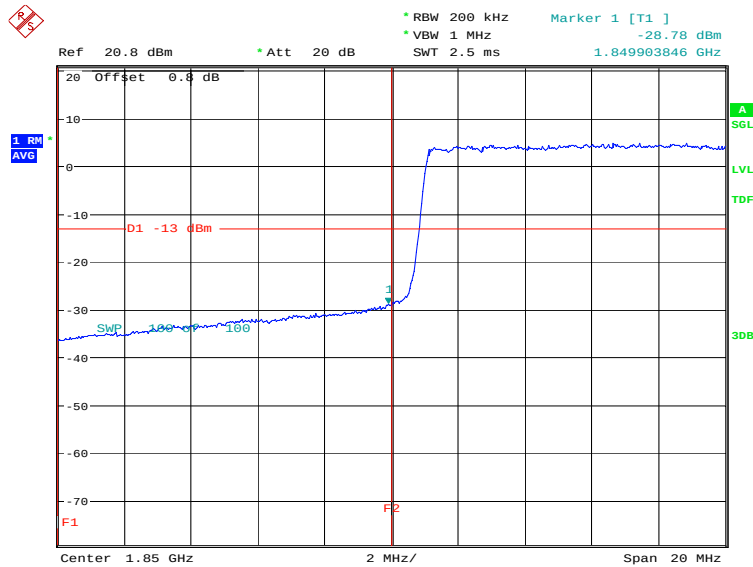
Date: 13.JUL.2021 13:43:34

HIGH BAND EDGE BLOCK-1RB-high_offset



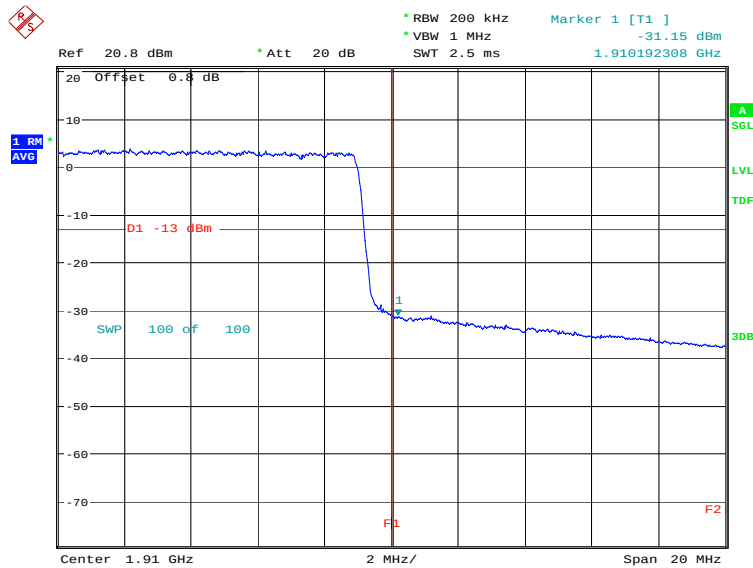
Date: 13.JUL.2021 13:44:48

LOW BAND EDGE BLOCK-20MHz-100%RB



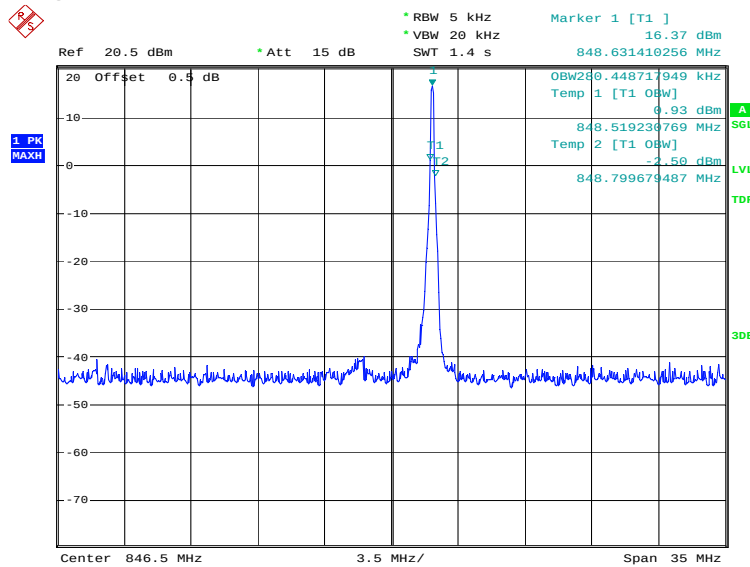
Date: 14.MAY.2021 10:32:03

HIGH BAND EDGE BLOCK-20MHz-100%RB



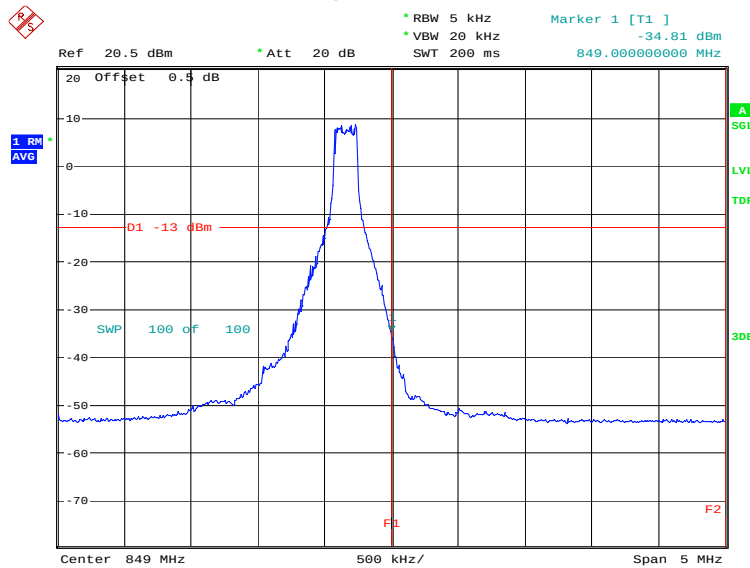
Date: 14.MAY.2021 10:33:33

OBW: 1RB-high_offset



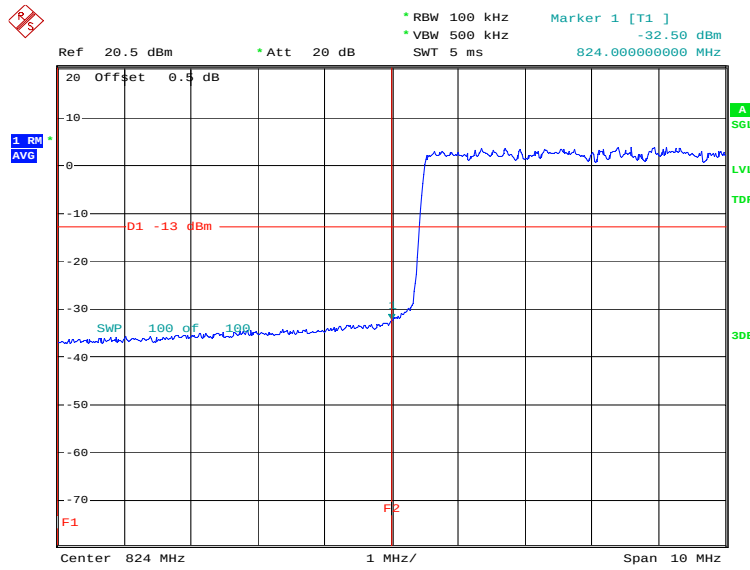
Date: 13.JUL.2021 13:49:44

HIGH BAND EDGE BLOCK-1RB-high_offset



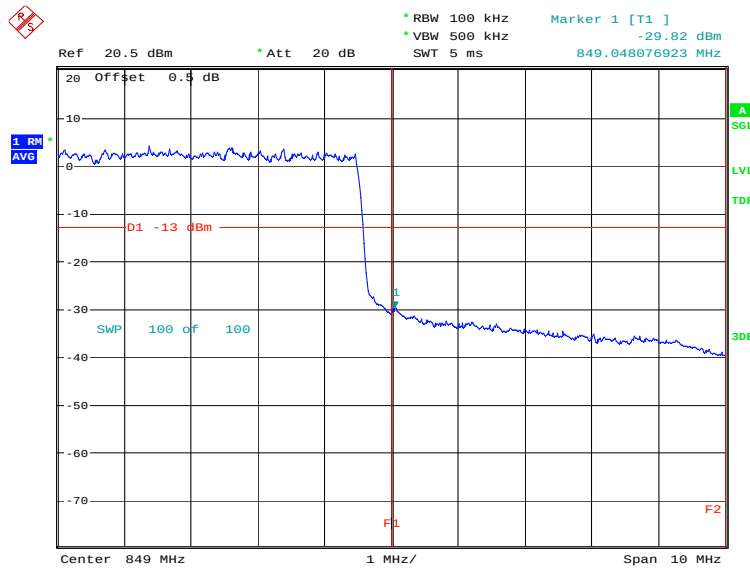
Date: 13.JUL.2021 13:50:57

LOW BAND EDGE BLOCK-10MHz-100%RB



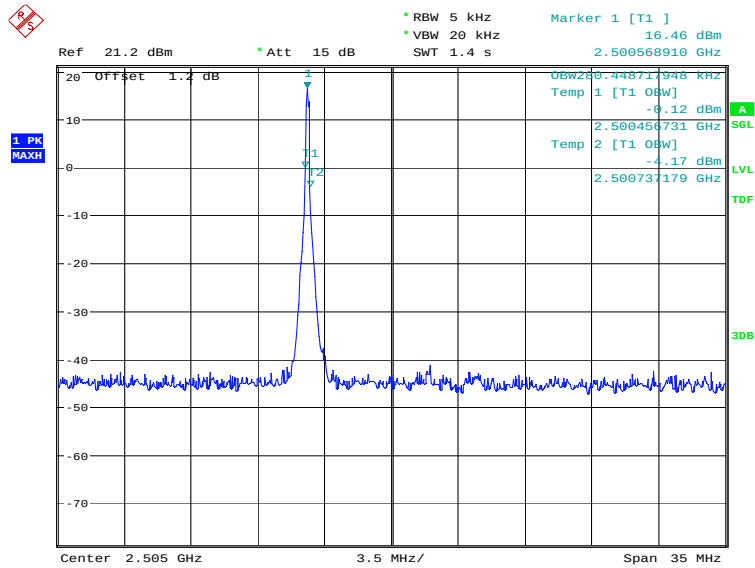
Date: 14.MAY.2021 10:35:52

HIGH BAND EDGE BLOCK-10MHz-100%RB



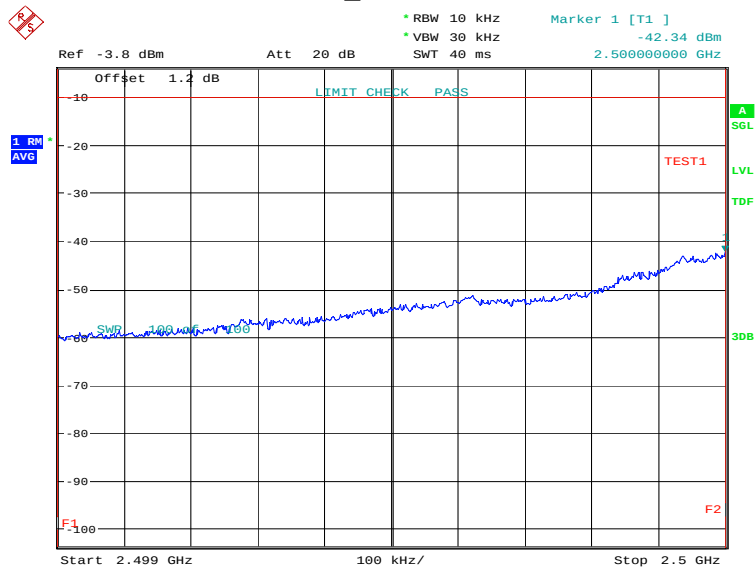
Date: 14.MAY.2021 10:37:21

LTE band 7 OBW: 1RB-low_offset

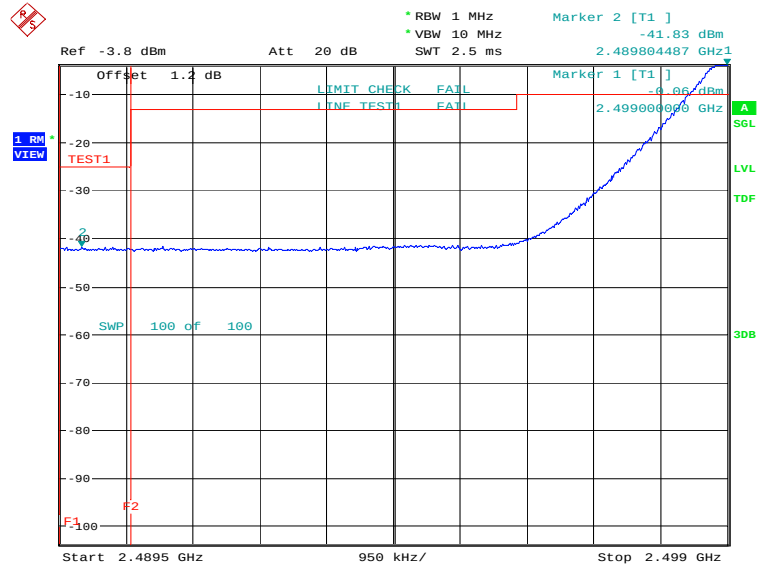


Date: 13.JUL.2021 13:51:37

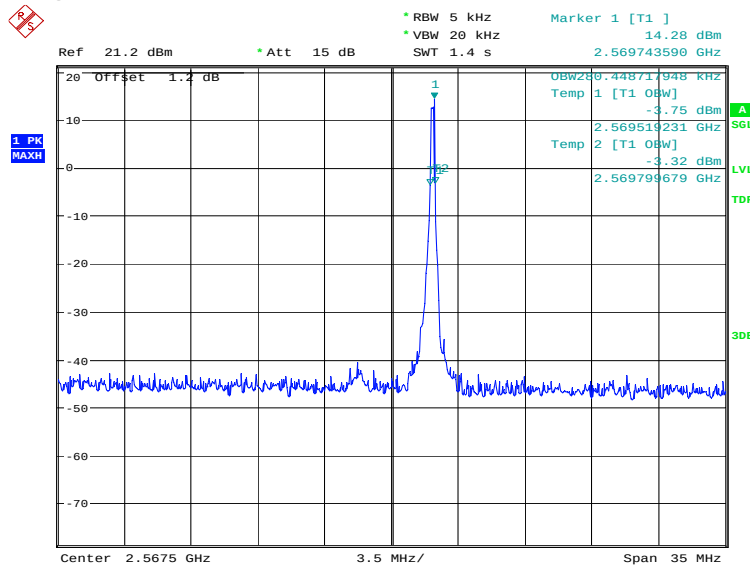
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 13.JUL.2021 13:52:58

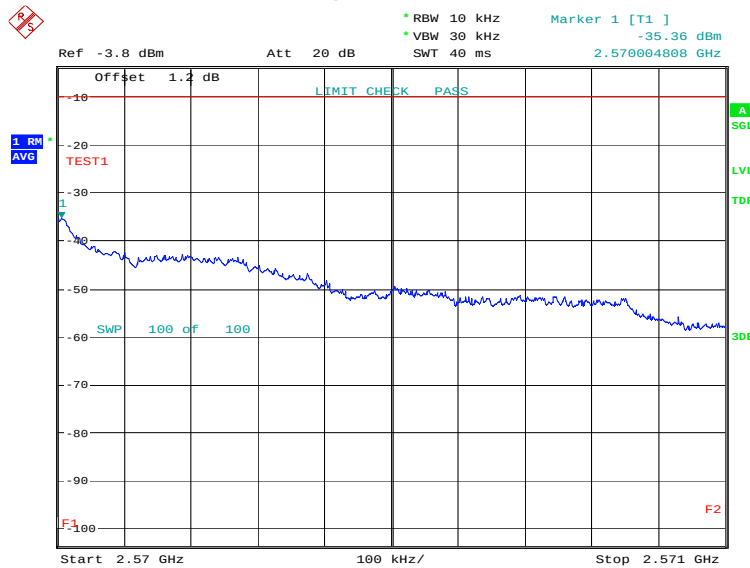


OBW: 1RB-high_offset

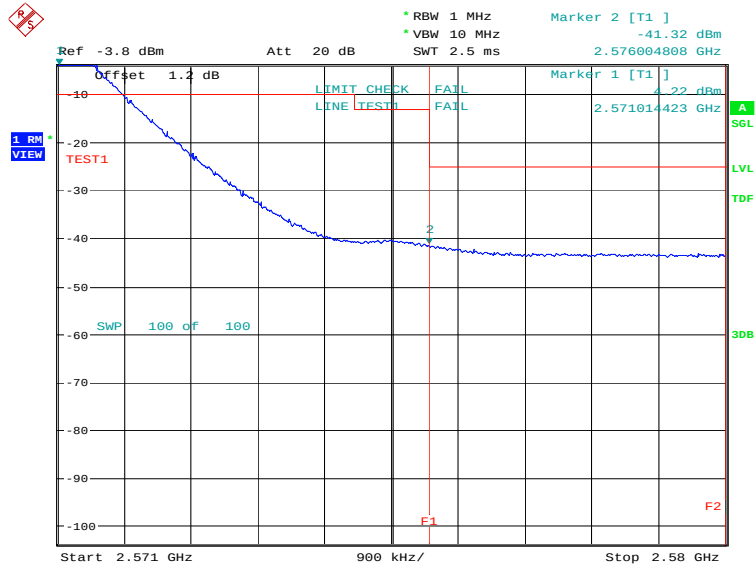


Date: 13.JUL.2021 13:56:27

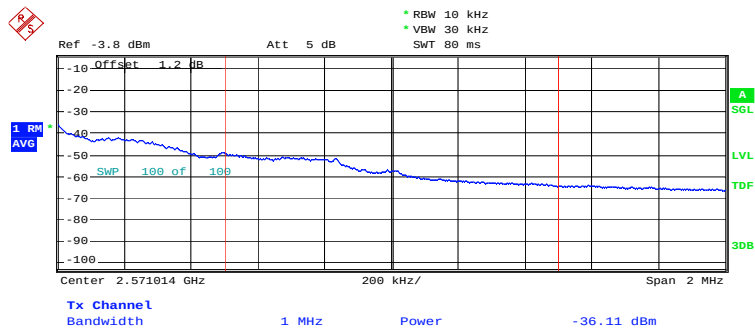
HIGH BAND EDGE BLOCK-1RB-high_offset



Date: 13.JUL.2021 13:57:47

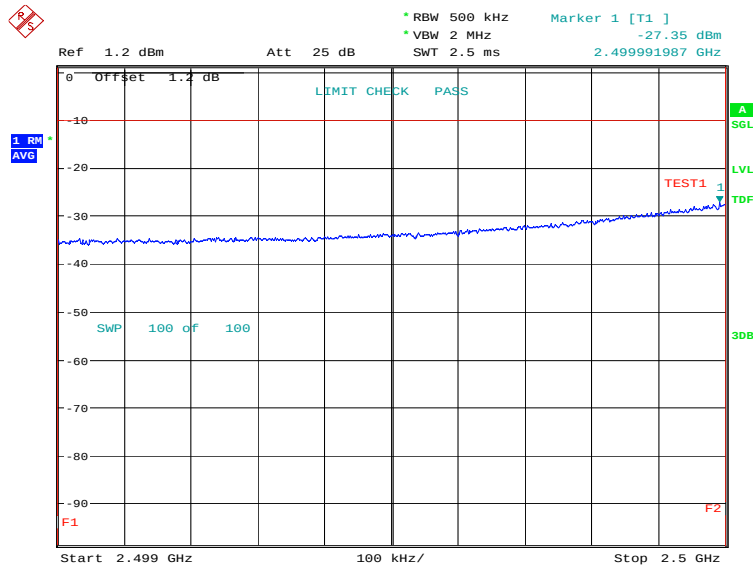


Date: 13.JUL.2021 13:59:35

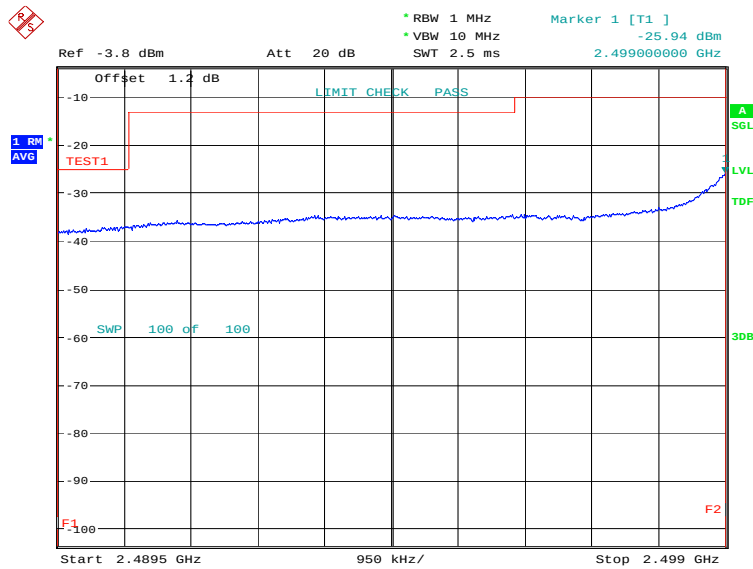


Date: 13.JUL.2021 14:00:02

LOW BAND EDGE BLOCK-20MHz-100%RB

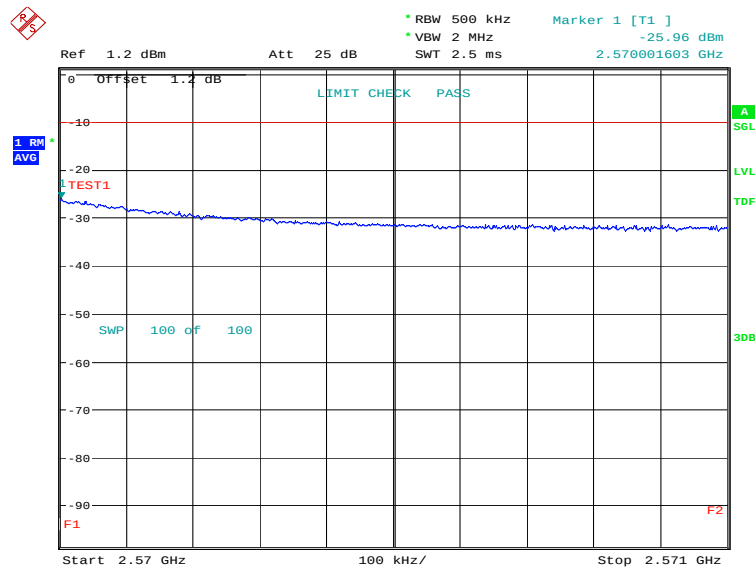


Date: 14.MAY.2021 10:40:18

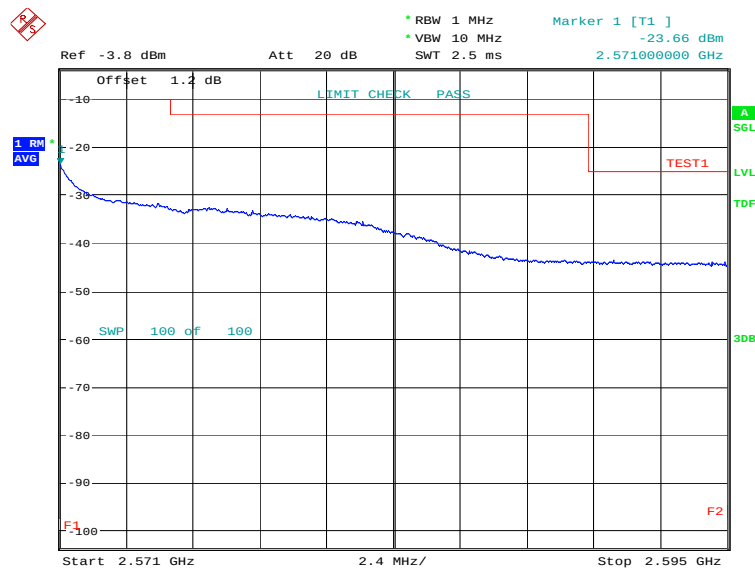


Date: 14.MAY.2021 10:41:57

HIGH BAND EDGE BLOCK-20MHz-100%RB



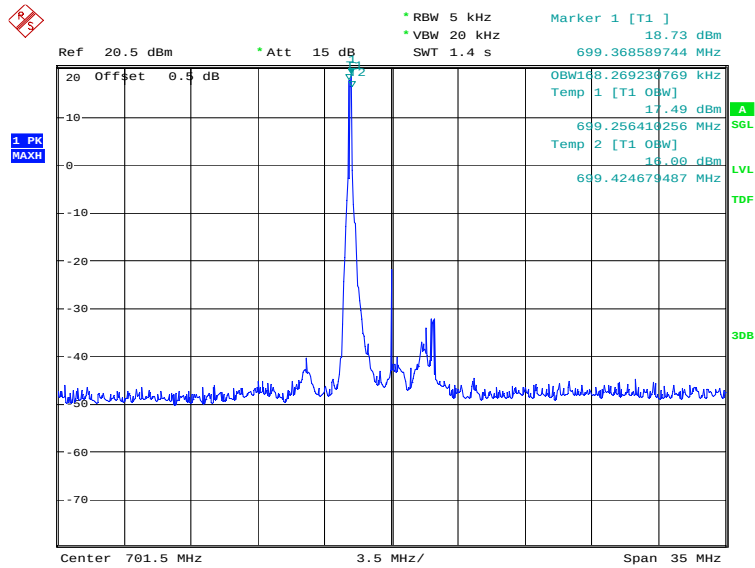
Date: 14.MAY.2021 10:44:52



Date: 14.MAY.2021 10:46:32

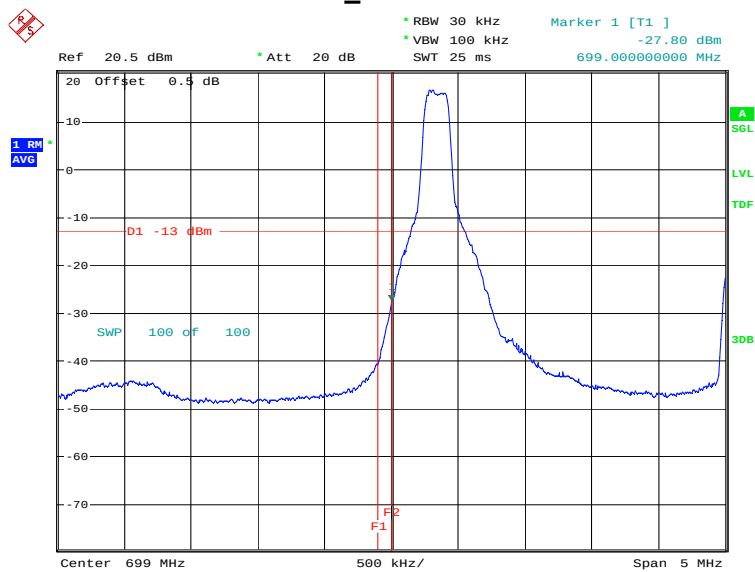
LTE band 12

OBW: 1RB-low_offset



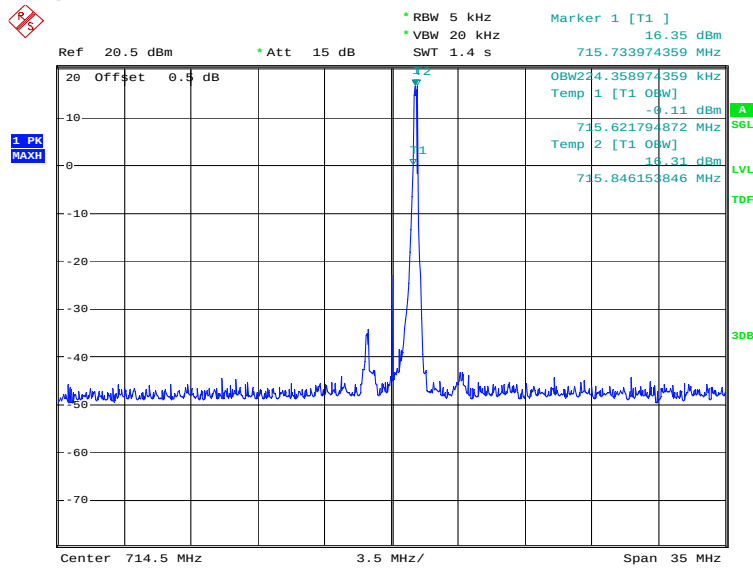
Date: 13.JUL.2021 14:00:39

LOW BAND EDGE BLOCK-1RB-low_offset



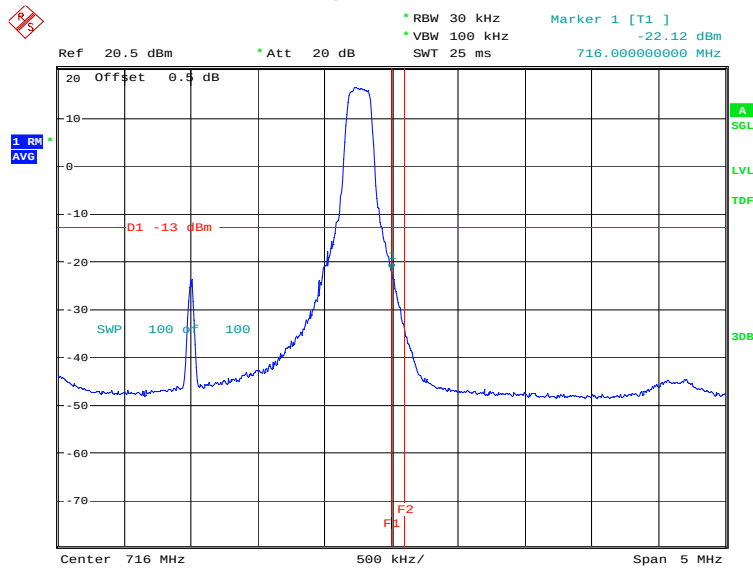
Date: 13.JUL.2021 14:00:58

OBW: 1RB-high_offset



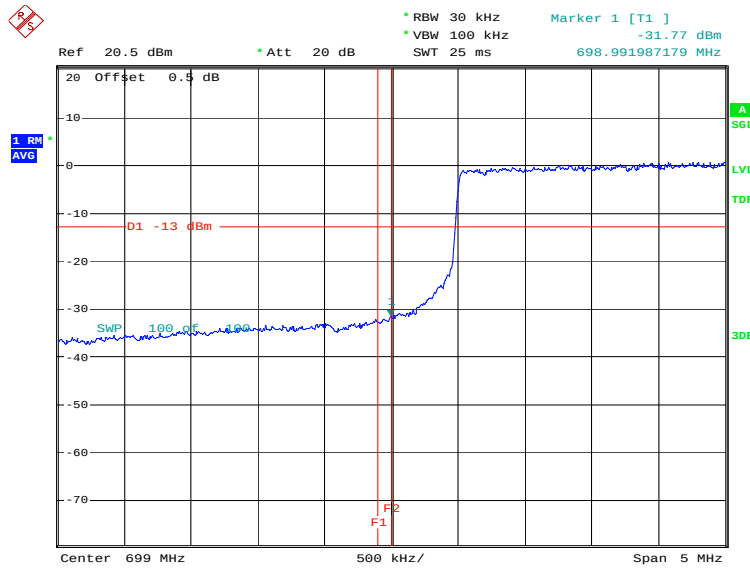
Date: 13.JUL.2021 14:02:13

HIGH BAND EDGE BLOCK-1RB-high_offset



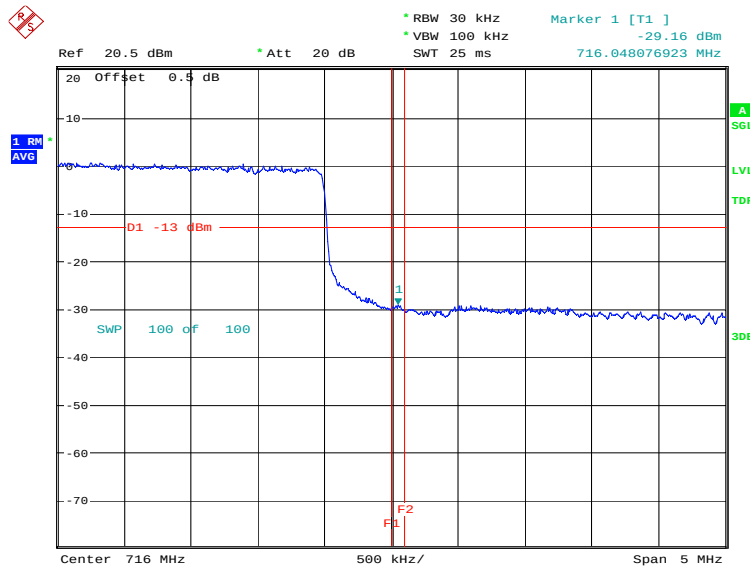
Date: 13.JUL.2021 14:02:31

LOW BAND EDGE BLOCK-10MHz-100%RB



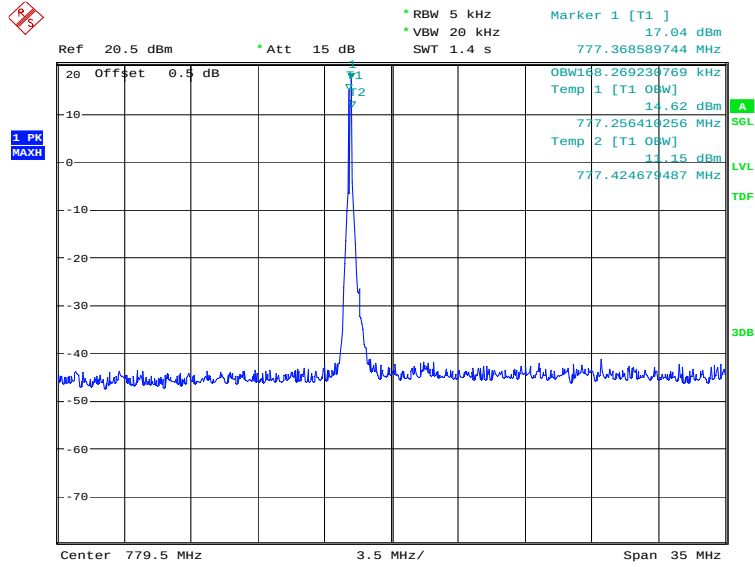
Date: 14.MAY.2021 10:48:53

HIGH BAND EDGE BLOCK-10MHz-100%RB



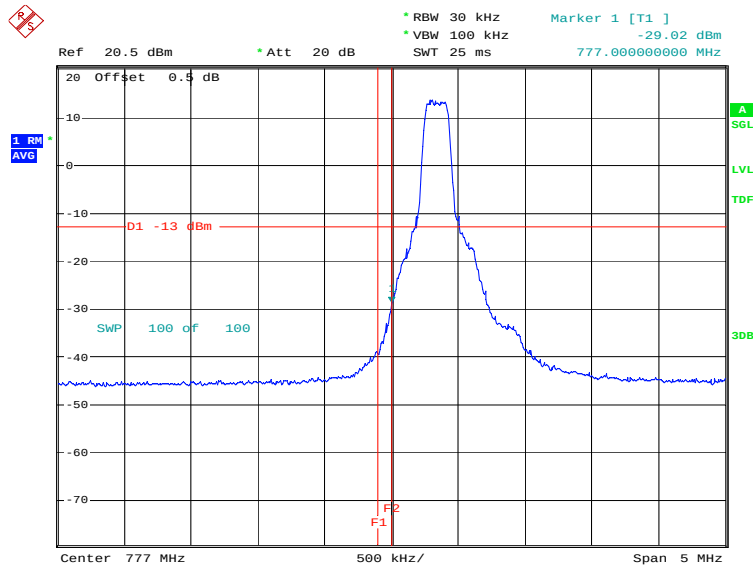
Date: 14.MAY.2021 10:50:22

LTE band 13
OBW: 1RB-low_offset

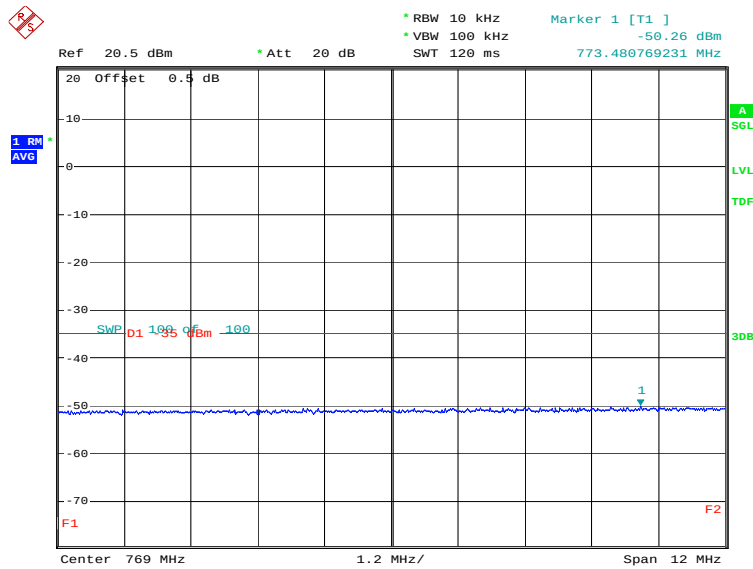


Date: 13.JUL.2021 14:03:59

LOW BAND EDGE BLOCK-1RB-low_offset

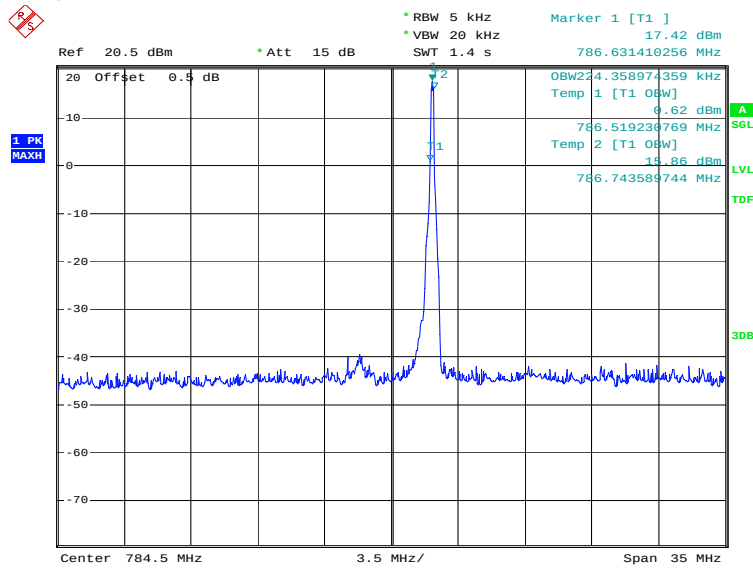


Date: 13.JUL.2021 14:04:17



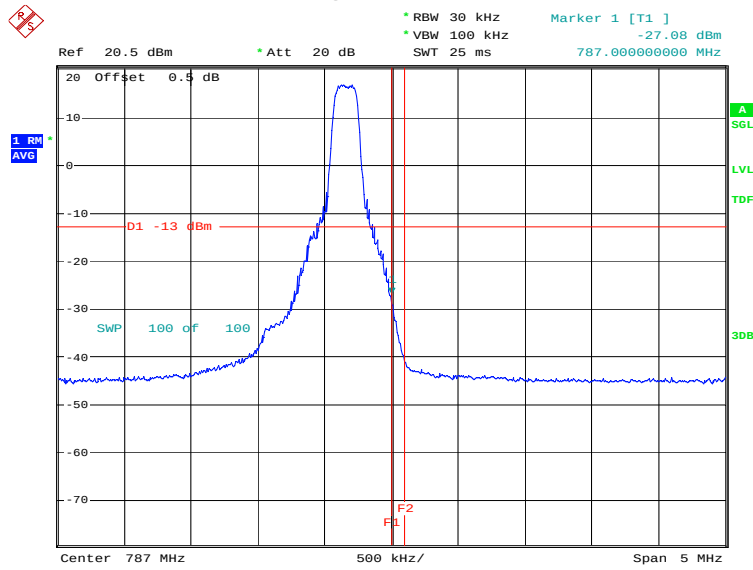
Date: 13.JUL.2021 14:04:54

OBW: 1RB-high_offset

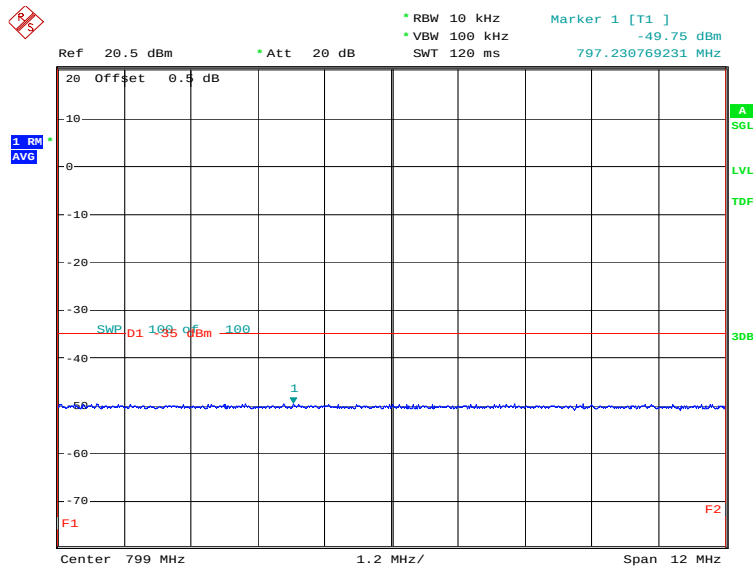


Date: 13.JUL.2021 14:05:29

HIGH BAND EDGE BLOCK-1RB-high_offset

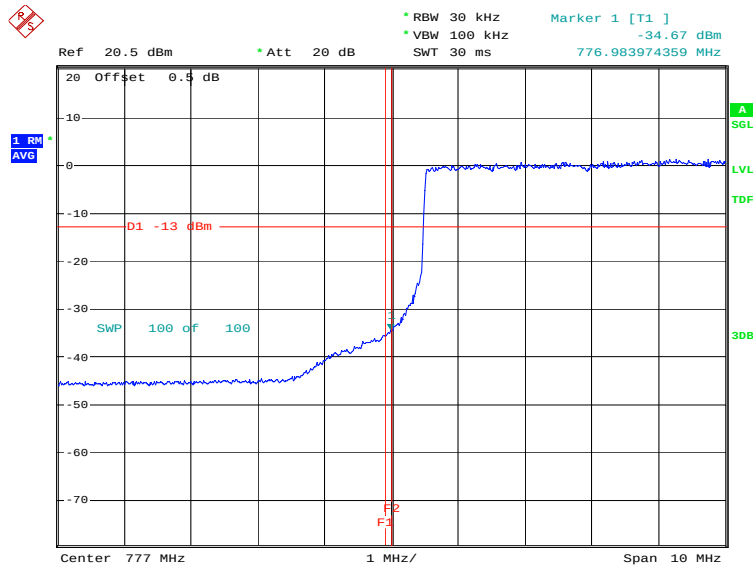


Date: 13.JUL.2021 14:06:23

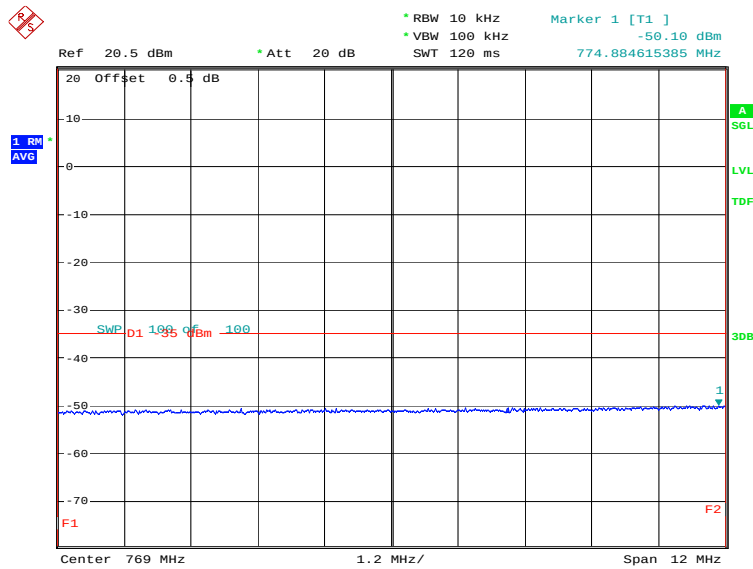


Date: 13.JUL.2021 14:06:57

LOW BAND EDGE BLOCK-10MHz-100%RB

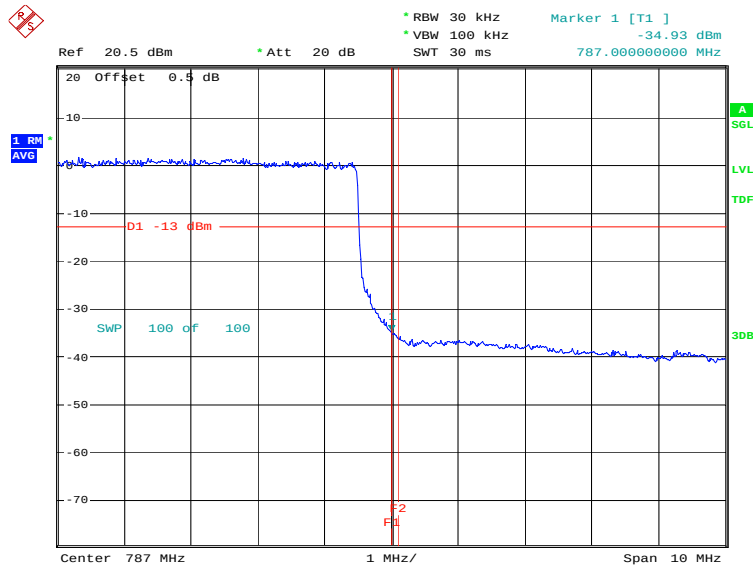


Date: 14.MAY.2021 13:45:30

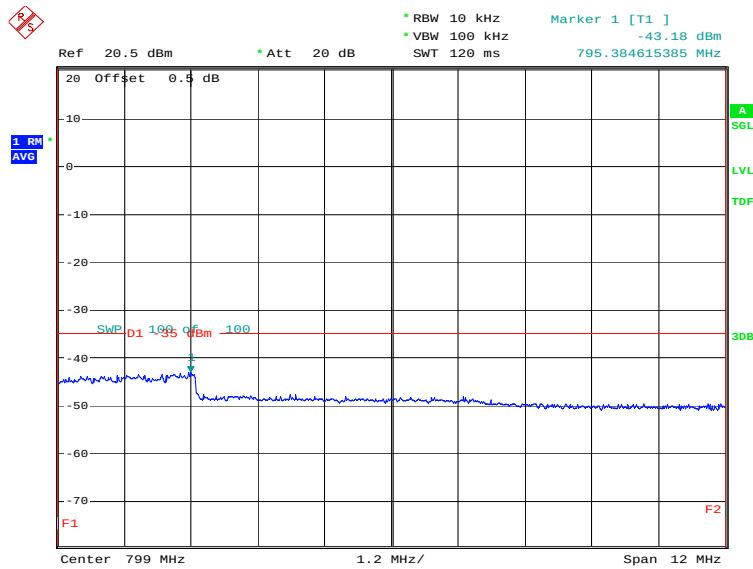


Date: 14.MAY.2021 13:46:24

HIGH BAND EDGE BLOCK-10MHz-100%RB



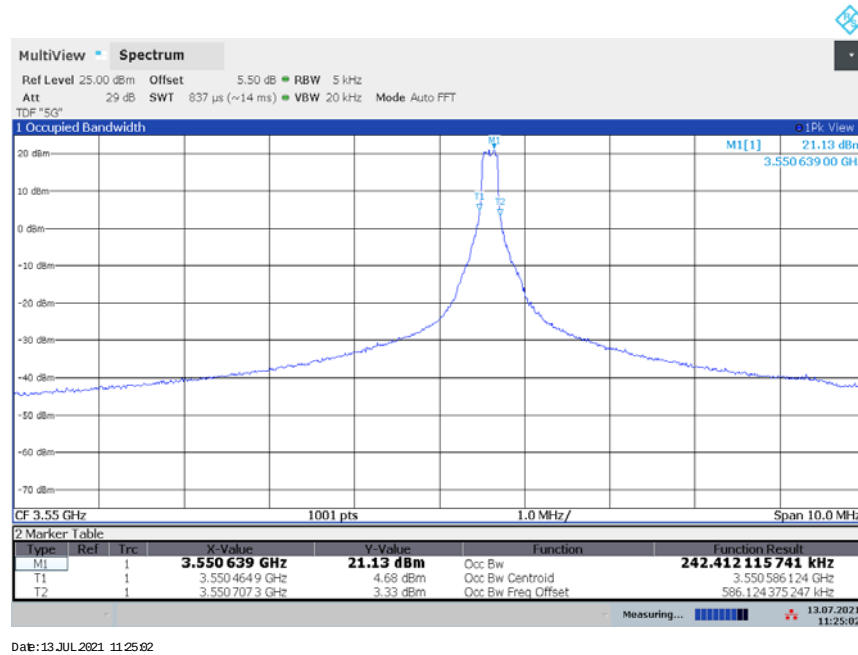
Date: 14.MAY.2021 13:48:41



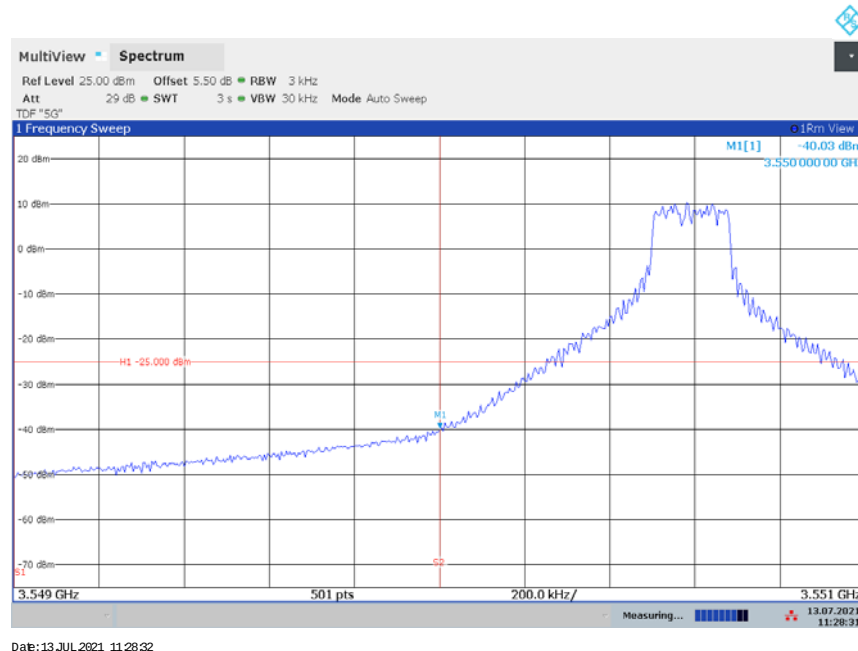
Date: 14.MAY.2021 13:49:07

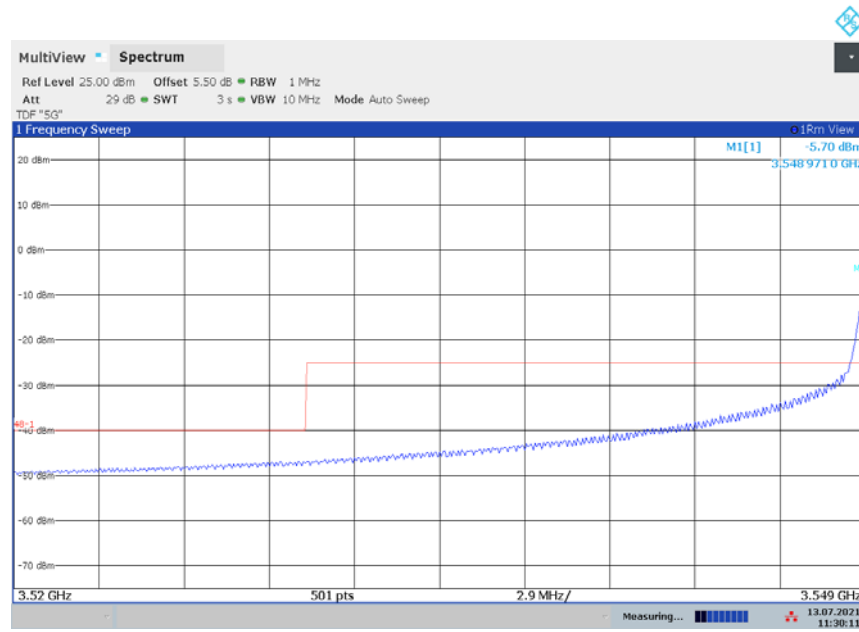
LTE band 48

OBW: 1RB-low_offset

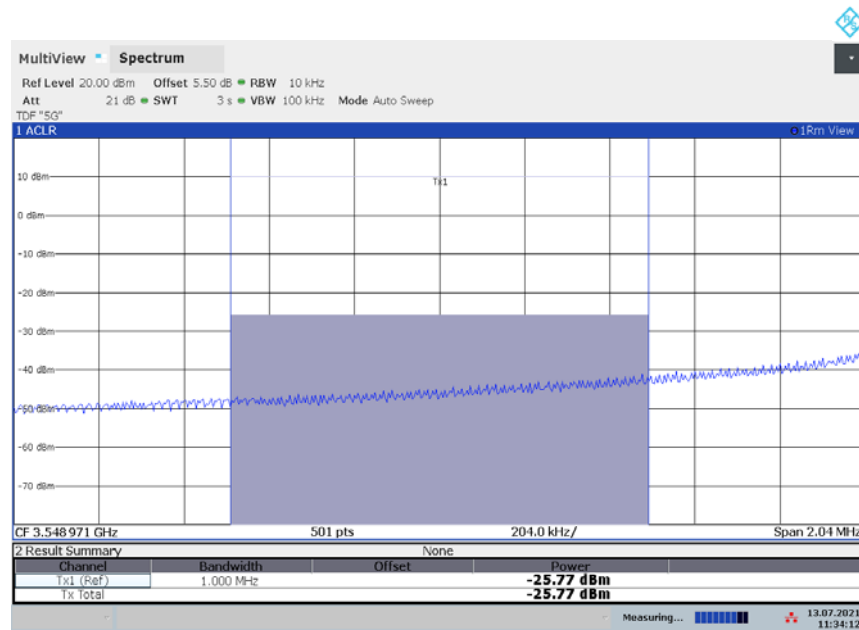


LOW BAND EDGE BLOCK-1RB-low_offset



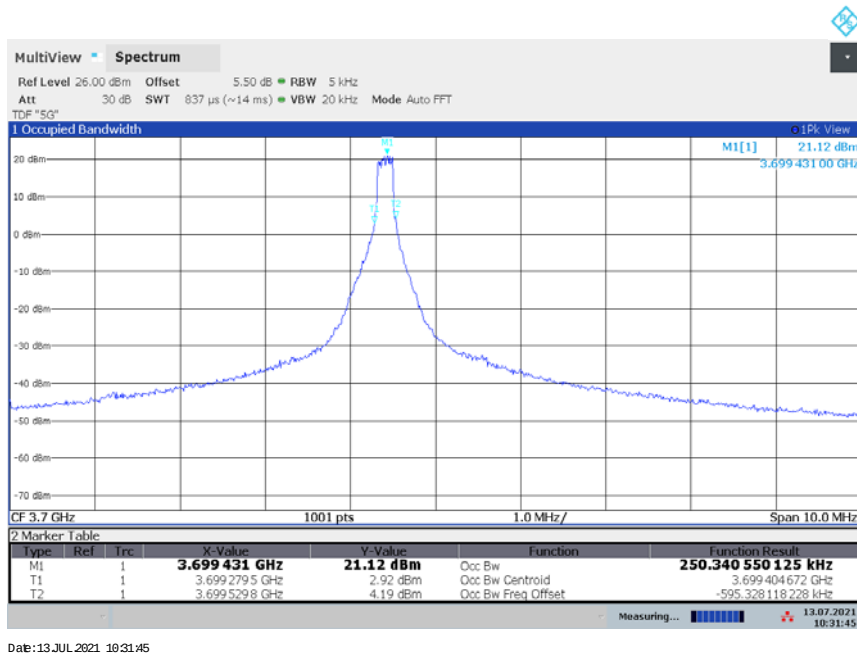


Date: 13 JUL 2021 11:30:12

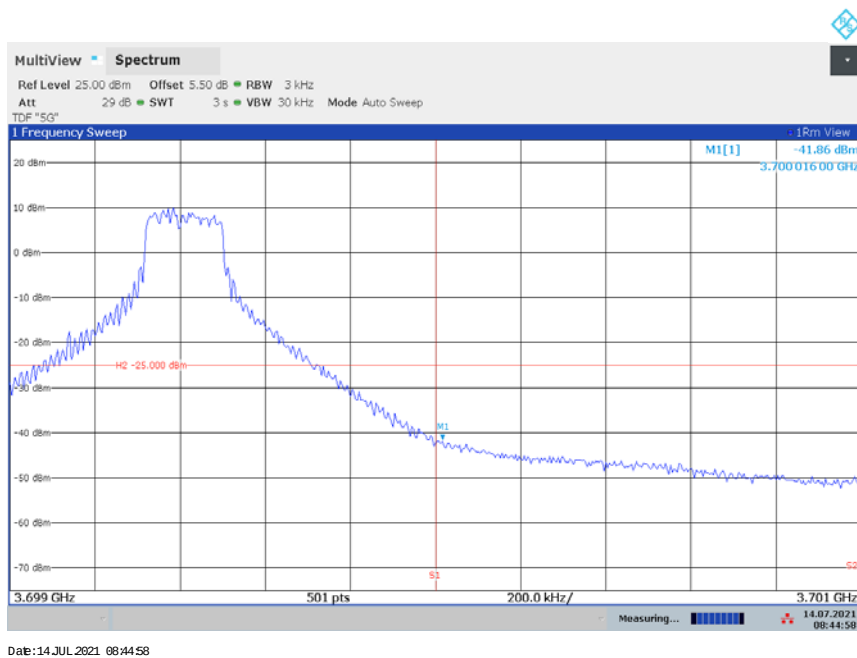


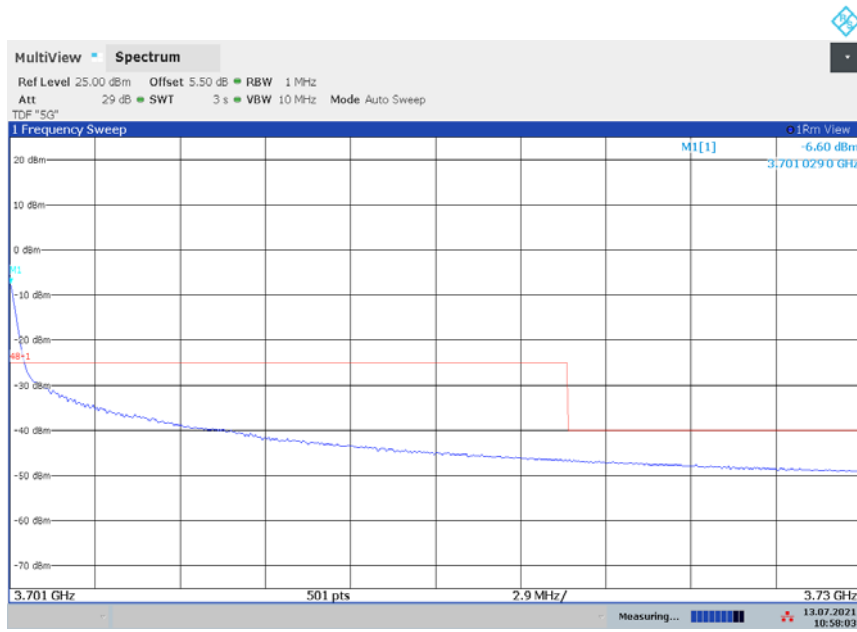
Date: 13 JUL 2021 11:34:11

OBW: 1RB-high_offset

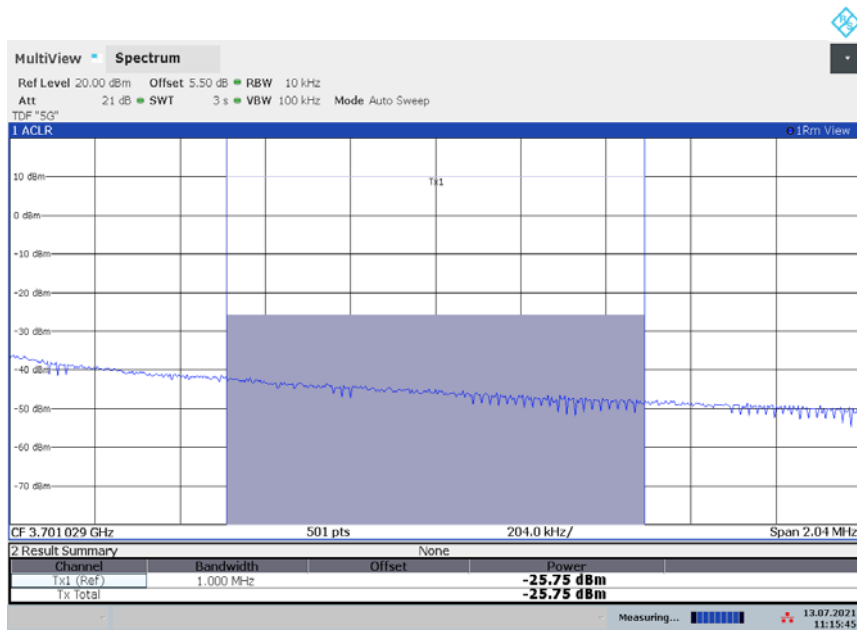


HIGH BAND EDGE BLOCK-1RB-high_offset



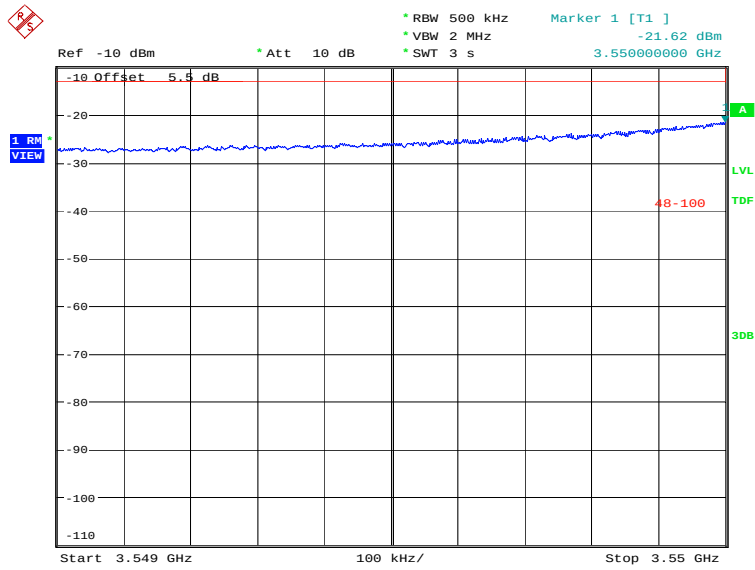


Date:13 JUL 2021 10:58:03

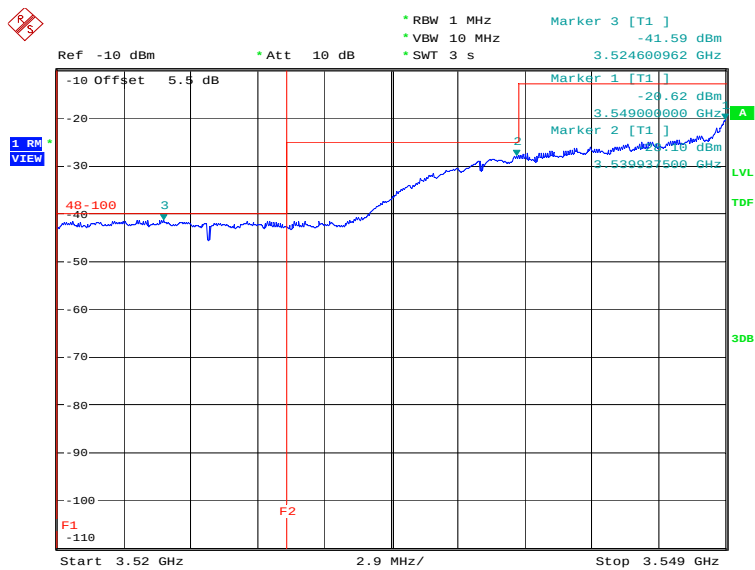


Date:13 JUL 2021 11:15:45

LOW BAND EDGE BLOCK-20MHz-100%RB

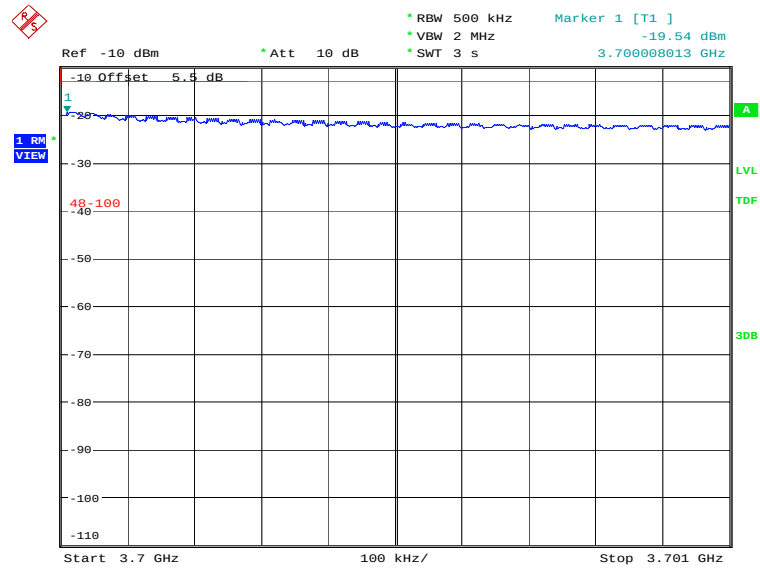


Date: 22.JUN.2021 09:59:31

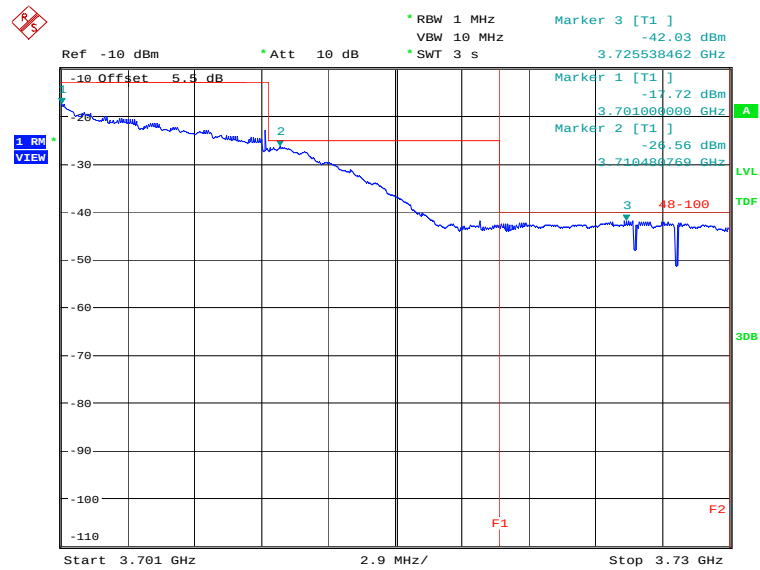


Date: 22.JUN.2021 10:03:28

HIGH BAND EDGE BLOCK-20MHz-100%RB



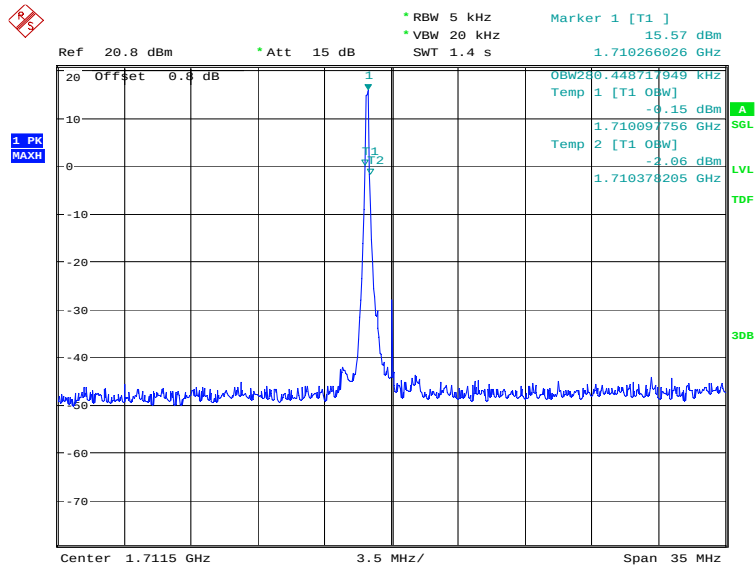
Date: 22.JUN.2021 09:58:15



Date: 22.JUN.2021 09:56:59

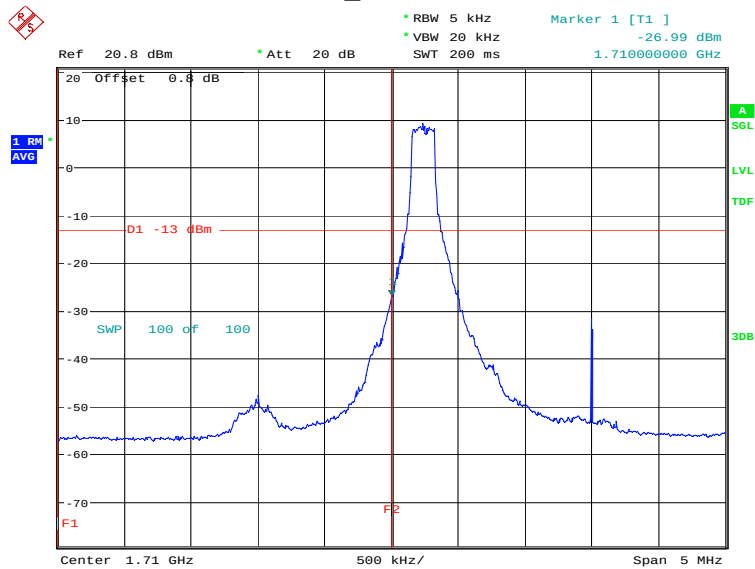
LTE band 66

OBW: 1RB-low_offset



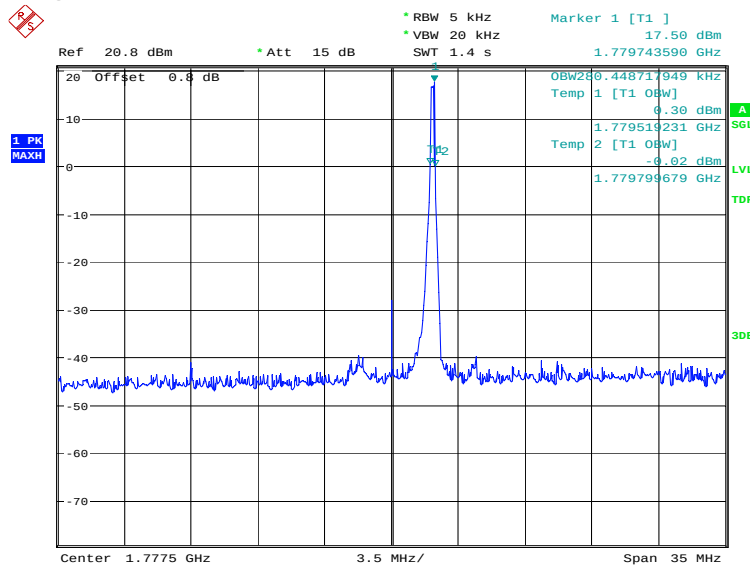
Date: 13.JUL.2021 14:08:13

LOW BAND EDGE BLOCK-1RB-low_offset



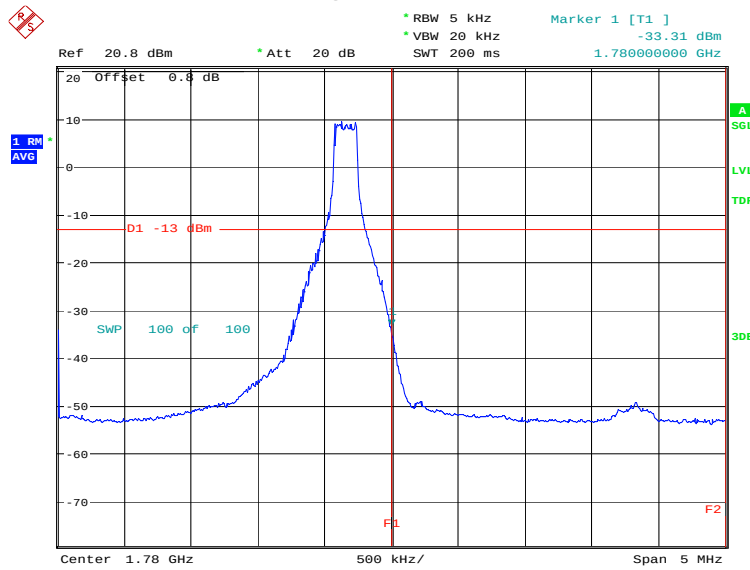
Date: 13.JUL.2021 14:09:27

OBW: 1RB-high_offset



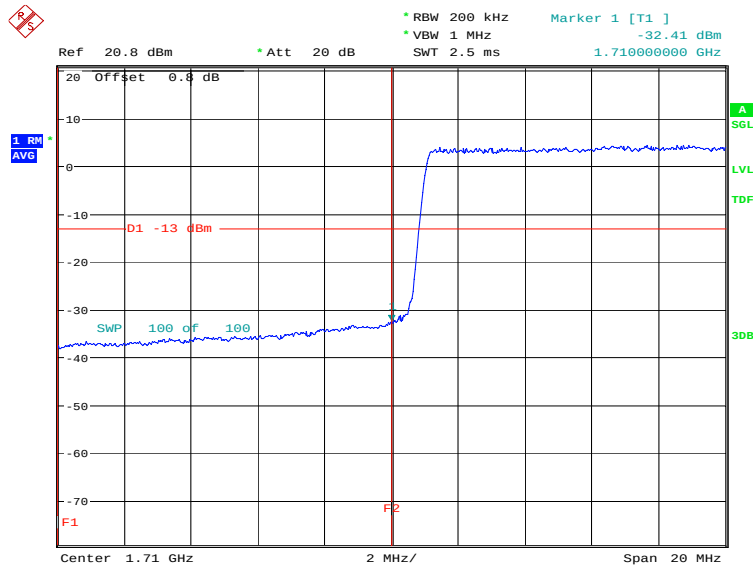
Date: 13.JUL.2021 14:10:04

HIGH BAND EDGE BLOCK-1RB-high_offset



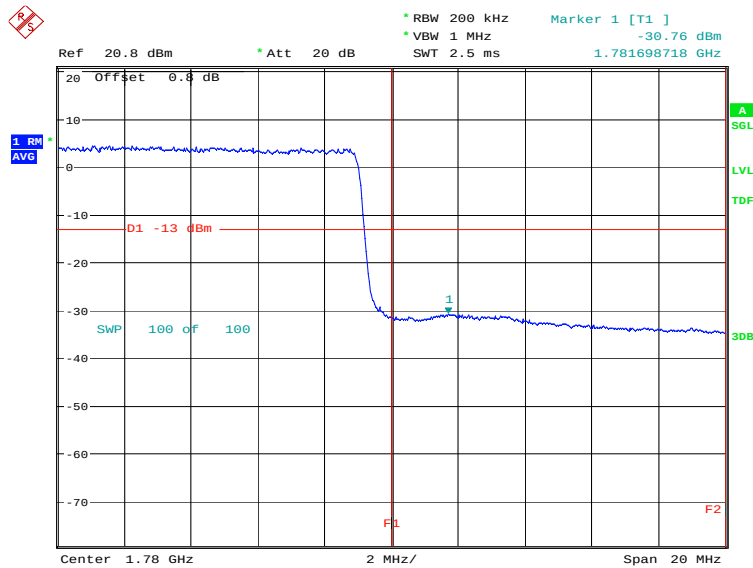
Date: 13.JUL.2021 14:11:18

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 14.MAY.2021 10:55:32

HIGH BAND EDGE BLOCK-20MHz-100%RB

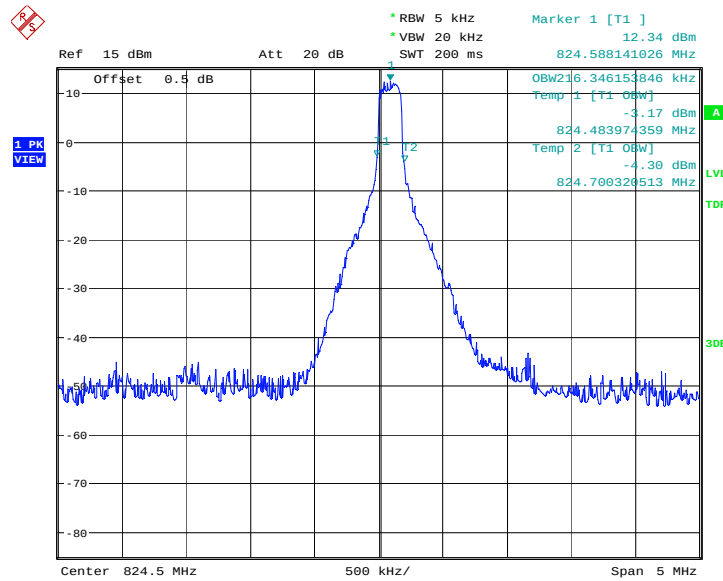


Date: 14.MAY.2021 10:57:02

LTE band 5_CA

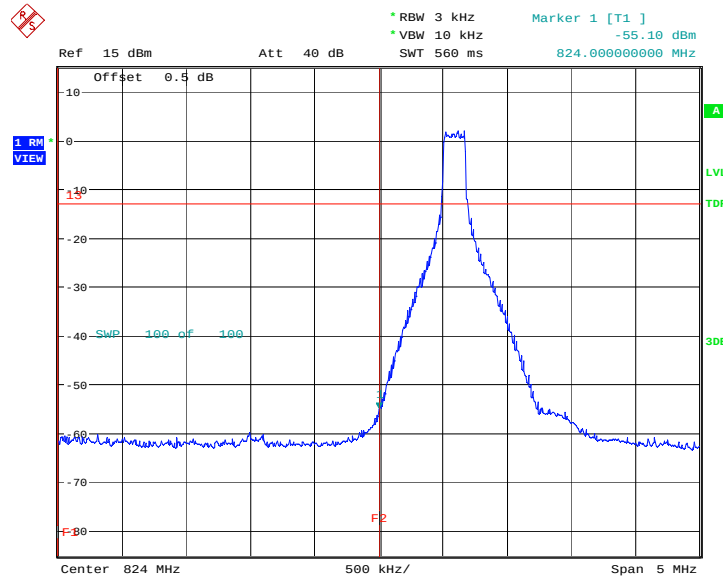
Only the worst case result is given below

OBW: 1RB-low_offset



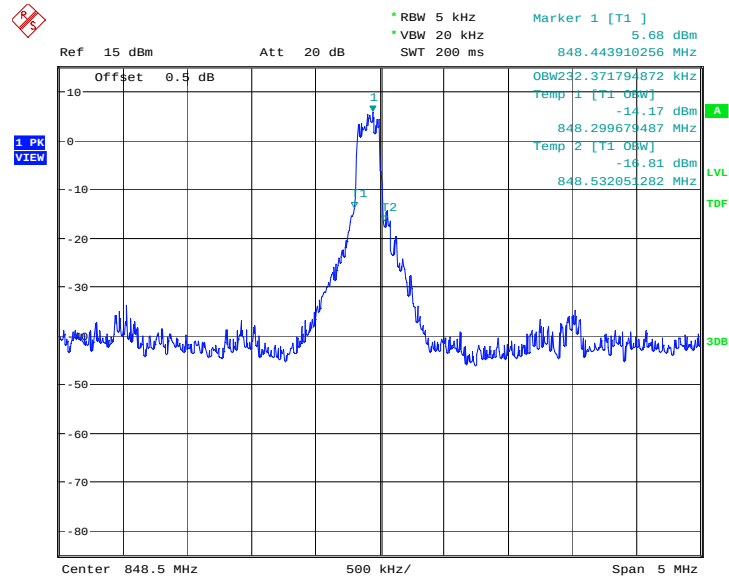
Date: 19.JUN.2021 18:03:53

LOW BAND EDGE BLOCK-1RB-low_offset



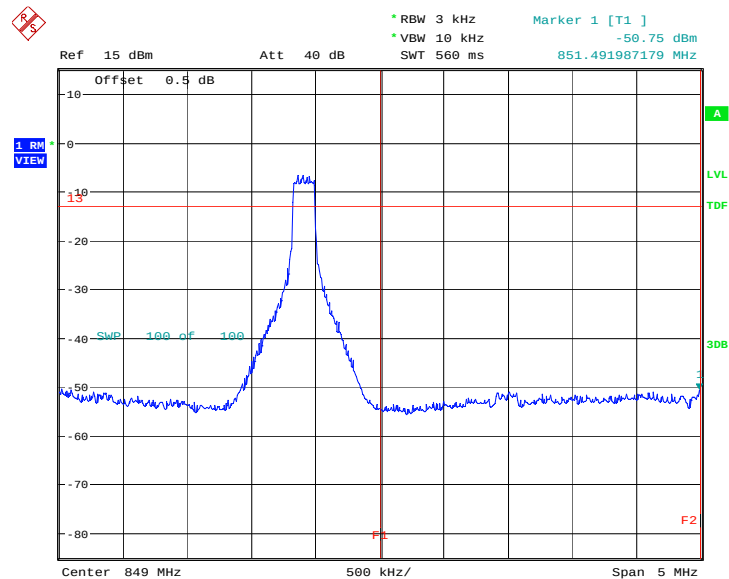
Date: 19.JUN.2021 18:04:56

OBW: 1RB-high_offset



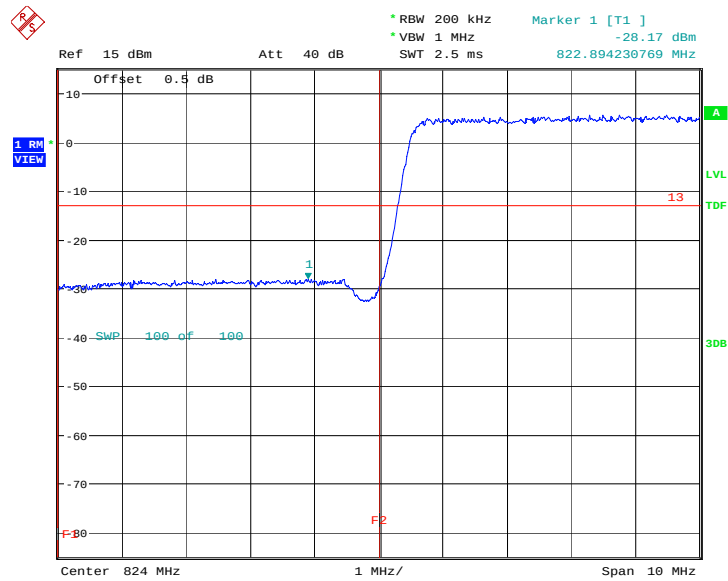
Date: 19.JUN.2021 18:19:26

HIGH BAND EDGE BLOCK-1RB-high_offset



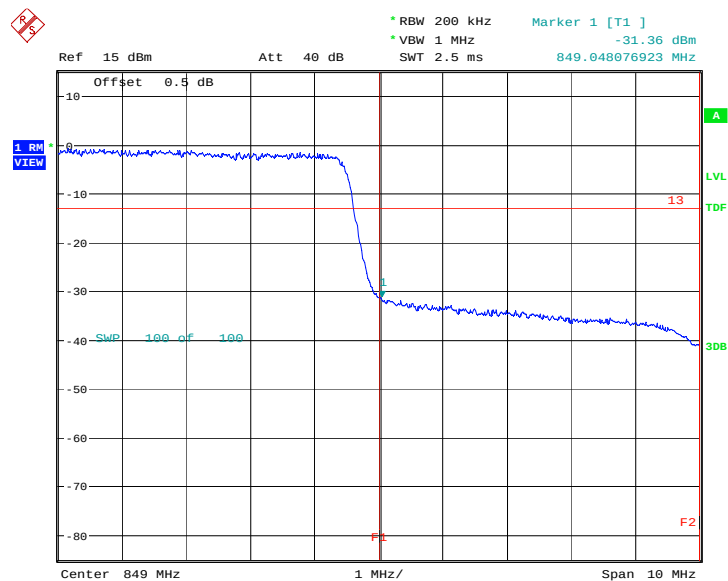
Date: 19.JUN.2021 18:20:29

LOW BAND EDGE BLOCK-10MHz+10MHz-100%RB



Date: 19.JUN.2021 18:15:36

HIGH BAND EDGE BLOCK-10MHz+10MHz-100%RB

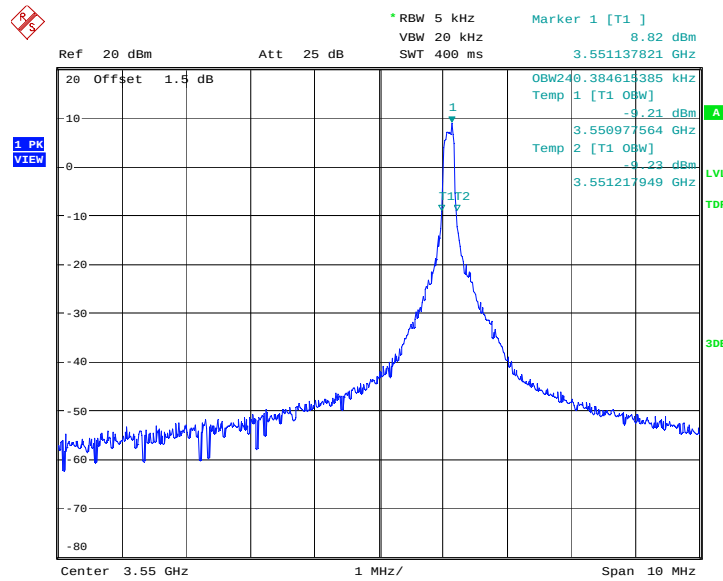


Date: 19.JUN.2021 18:18:05

LTE band 48_CA

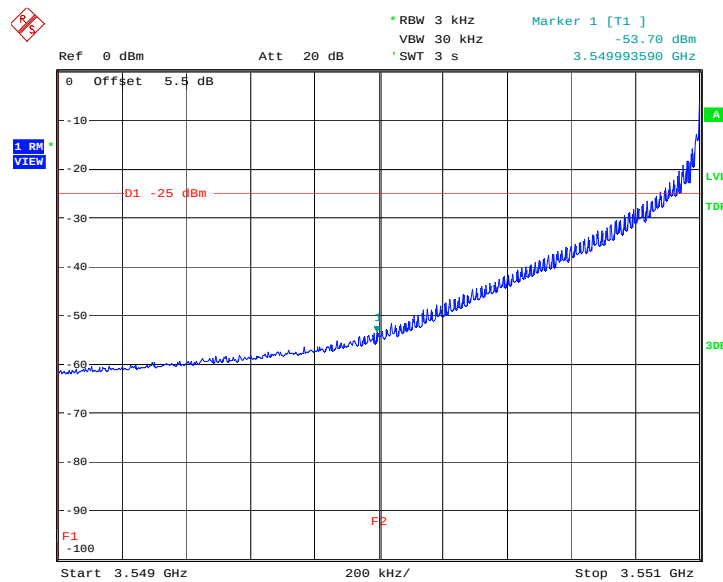
Only the worst case result is given below

OBW: 1RB-low_offset

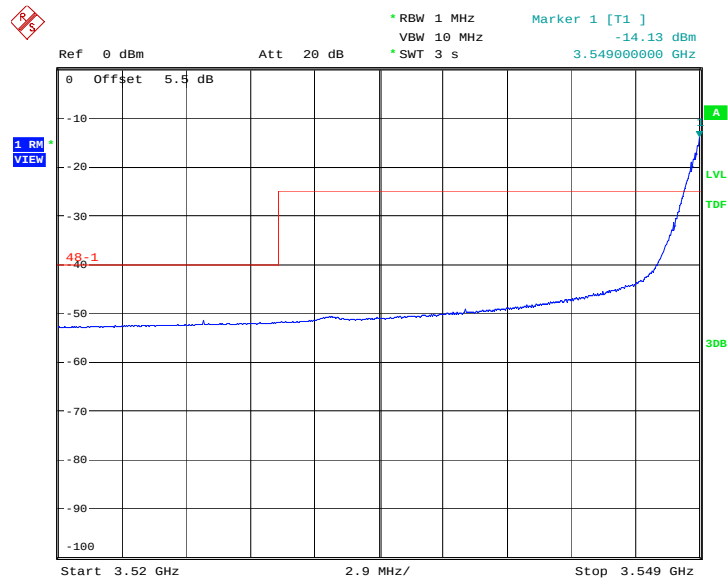


Date: 28.JUN.2021 10:02:17

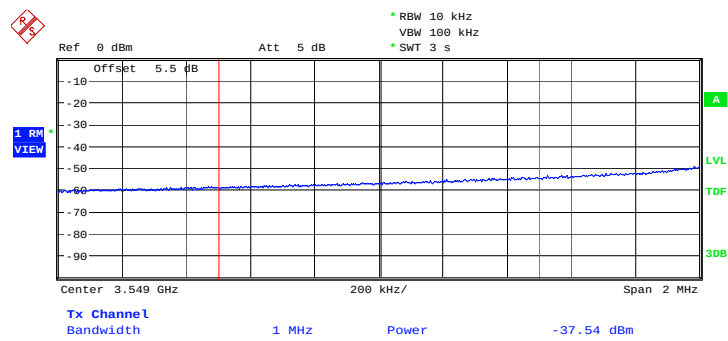
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 28.JUN.2021 10:29:14

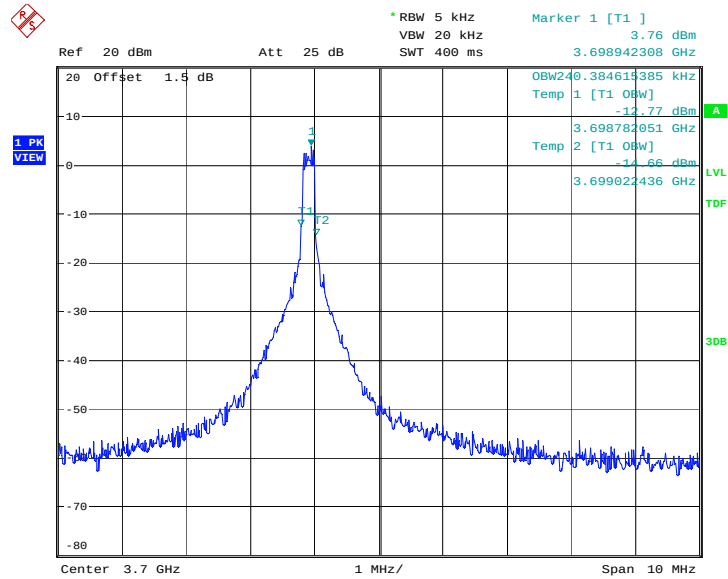


Date: 28.JUN.2021 10:30:58



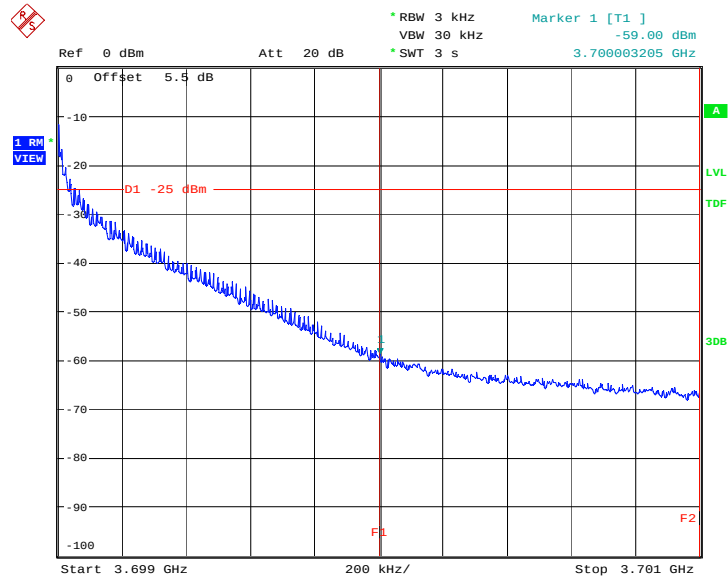
Date: 28.JUN.2021 10:32:13

OBW: 1RB-high_offset

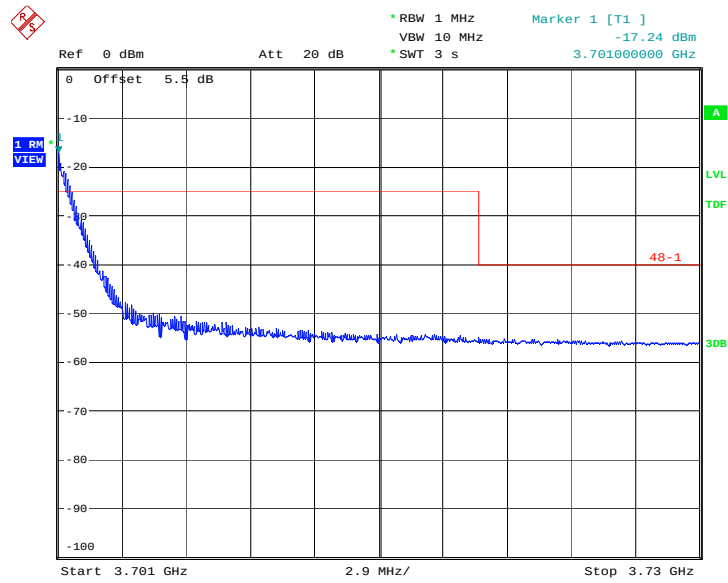


Date: 28.JUN.2021 10:04:32

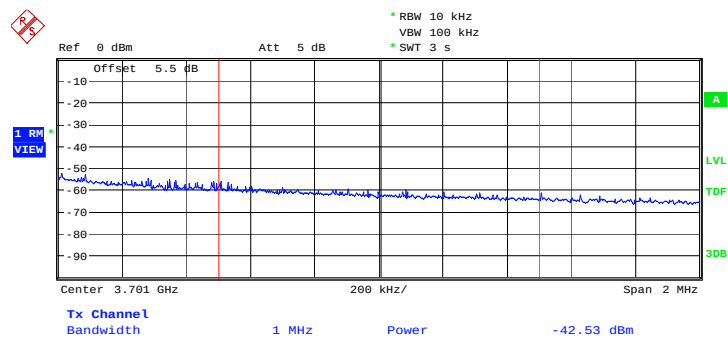
HIGH BAND EDGE BLOCK-1RB-high_offset



Date: 28.JUN.2021 10:09:50

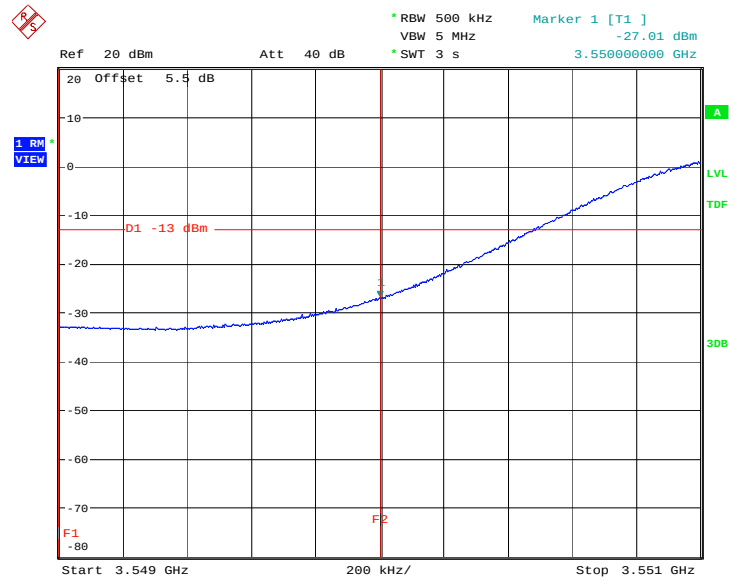


Date: 28.JUN.2021 10:12:32

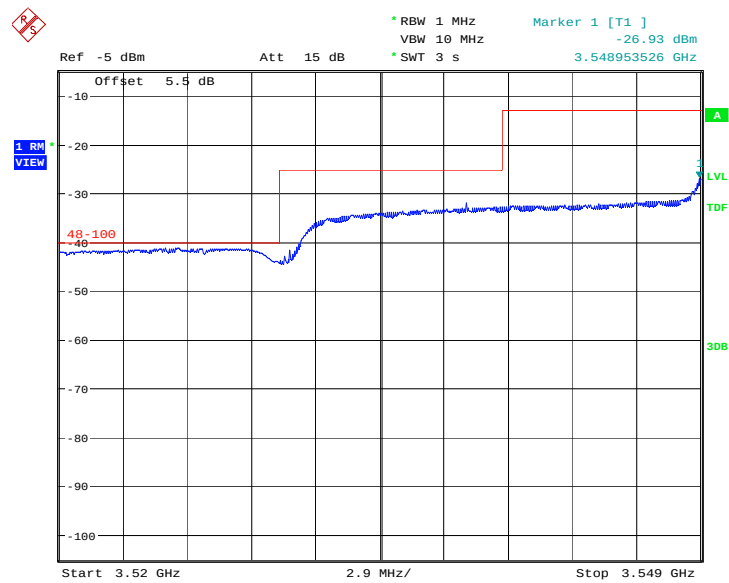


Date: 28.JUN.2021 10:14:26

LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB

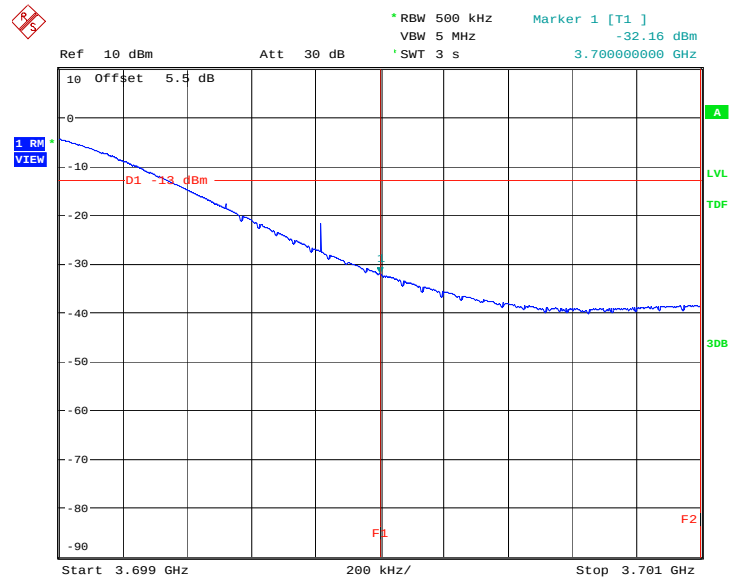


Date: 28.JUN.2021 09:50:25

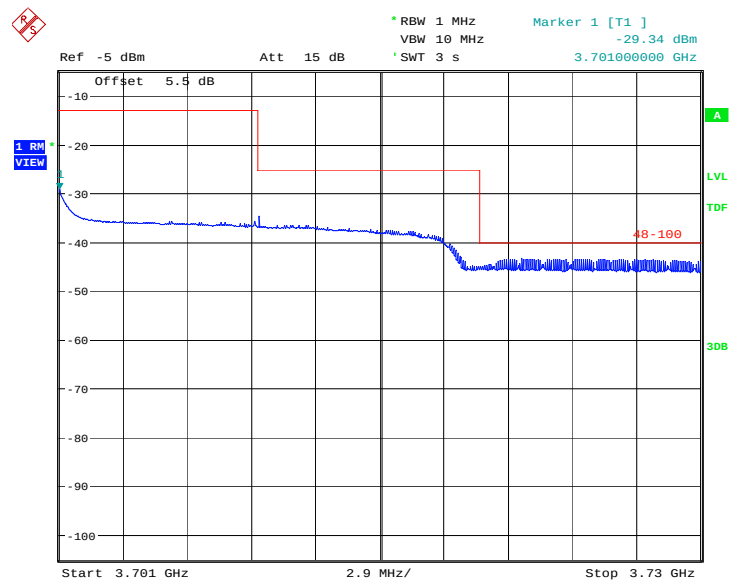


Date: 28.JUN.2021 10:26:08

HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 28.JUN.2021 10:19:00

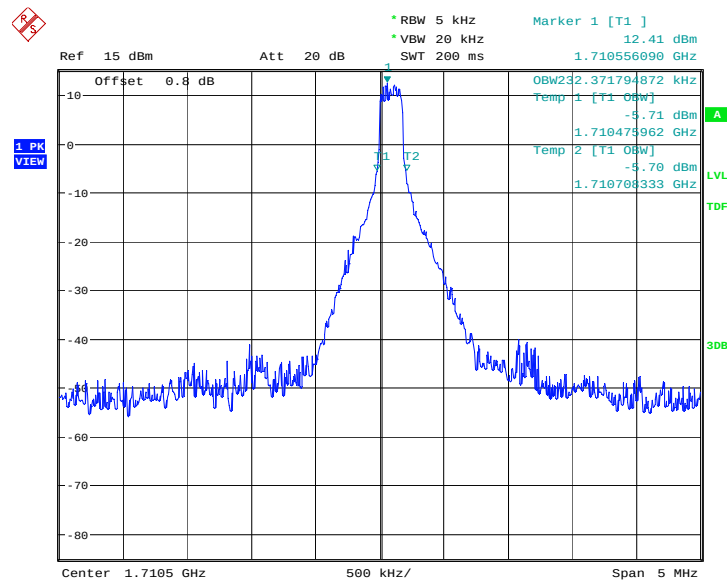


Date: 28.JUN.2021 10:22:12

LTE band 66_CA

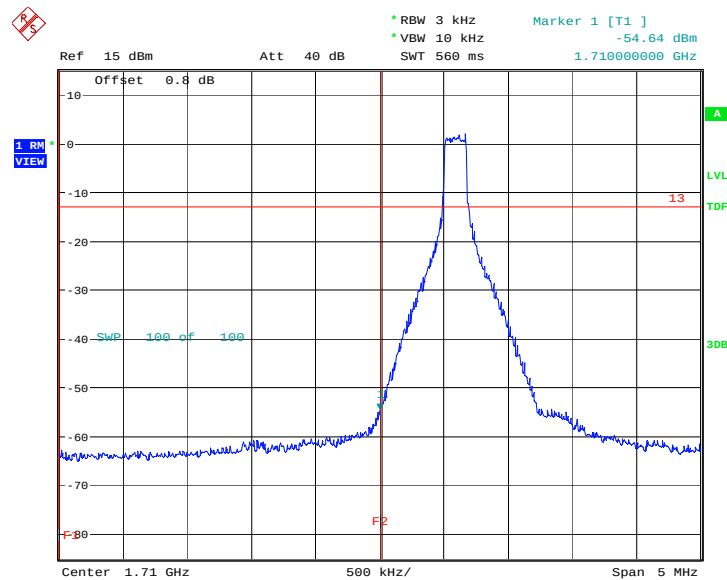
Only the worst case result is given below

OBW: 1RB-low_offset



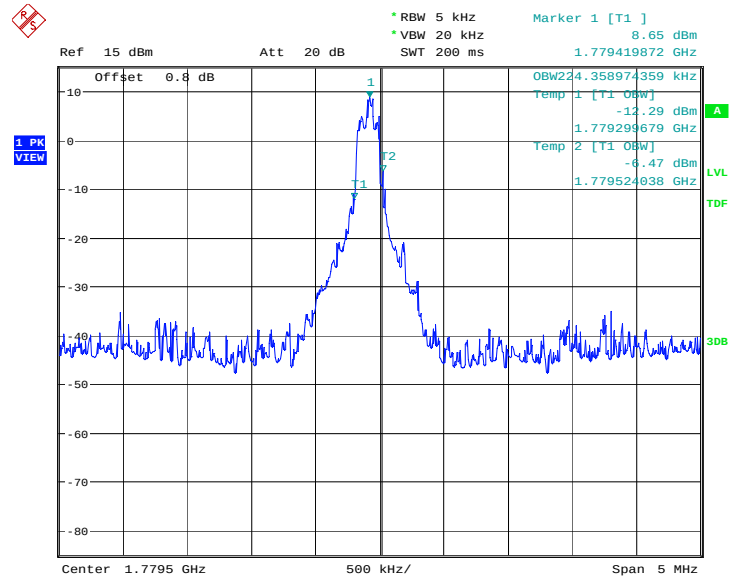
Date: 19.JUN.2021 20:10:01

LOW BAND EDGE BLOCK-1RB-low_offset



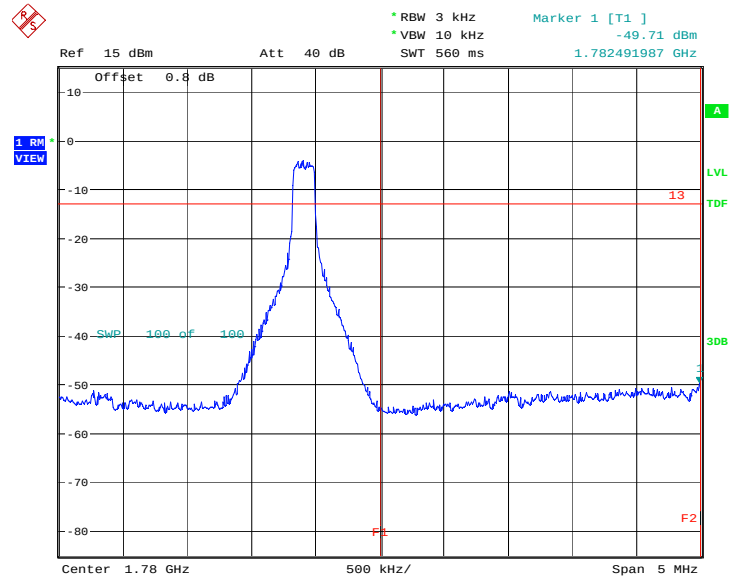
Date: 19.JUN.2021 20:11:03

OBW: 1RB-high_offset



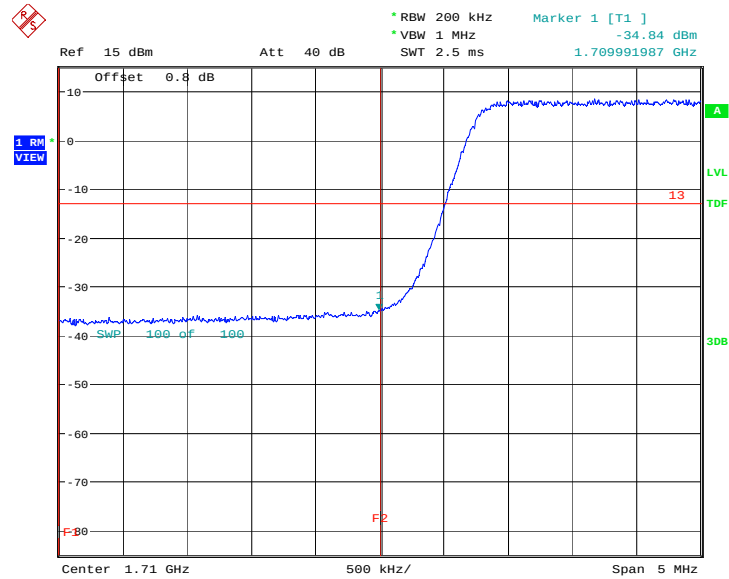
Date: 19. JUN. 2021 20:12:10

HIGH BAND EDGE BLOCK-1RB-high_offset



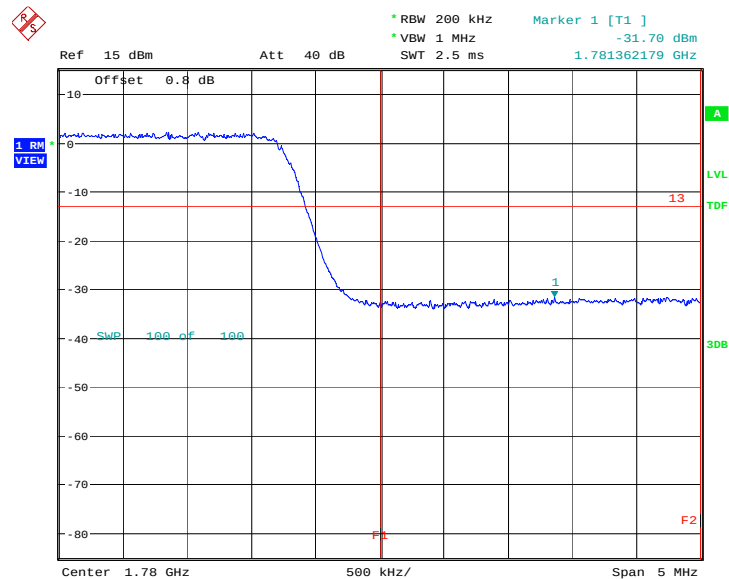
Date: 19. JUN. 2021 20:13:12

LOW BAND EDGE BLOCK-15MHz+5MHz-100%RB



Date: 19.JUN.2021 20:16:50

HIGH BAND EDGE BLOCK-5MHz+15MHz-100%RB



Date: 19.JUN.2021 20:18:30

A.7 Conducted Spurious Emission

A.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
 - (a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
 - (b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is greater than $2 \times \text{span/RBW}$.

A. 7.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) specify 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.

Part 27.53(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

Part 27.53(f) states for operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals.

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.

Part 96.41(e) states that the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B MHz (where B is the bandwidth in MHz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B MHz below the

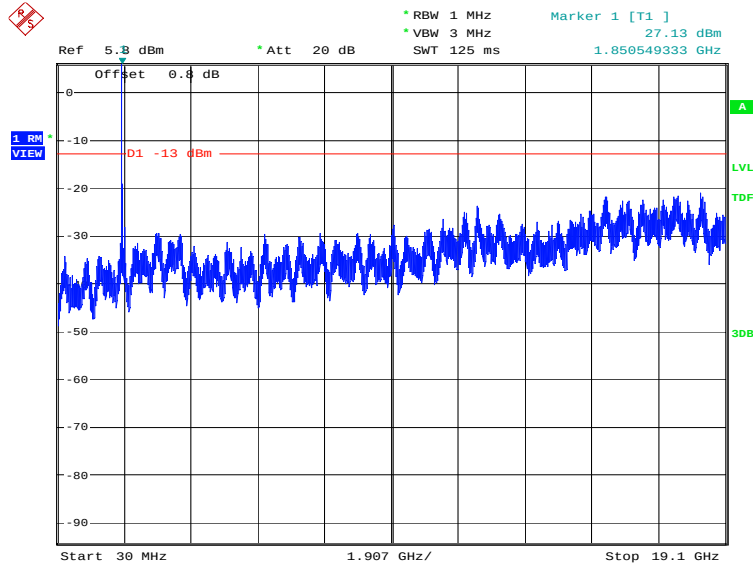
lower CBSD-assigned channel edge. At all frequencies greater than B MHz above the upper CBSD assigned channel edge and less than B MHz below the lower CBSD-assigned channel edge, the conducted power of any end user device emission shall not exceed -25 dBm/MHz. the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed.

A. 7.3 Measurement result

Only the worst case result is given below

LTE band 2: 30MHz – 19.1GHz

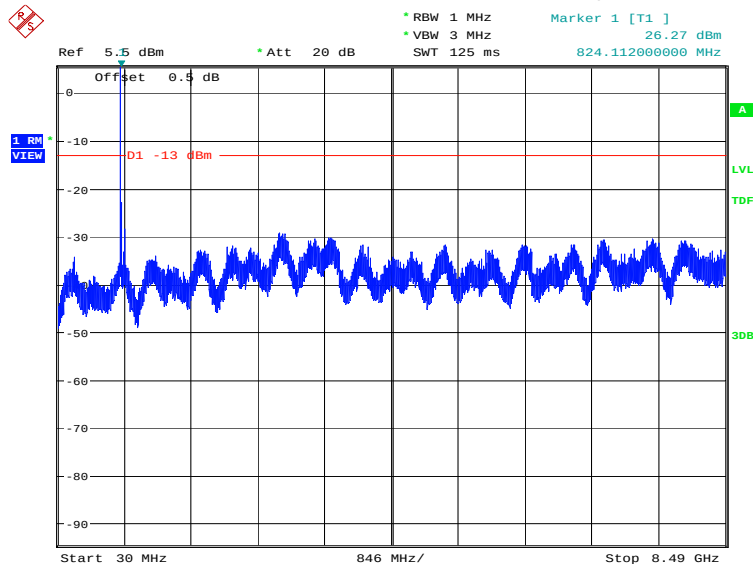
NOTE: peak above the limit line is the carrier frequency.



Date: 13.JUL.2021 14:12:33

LTE band 5: 30MHz – 8.49GHz

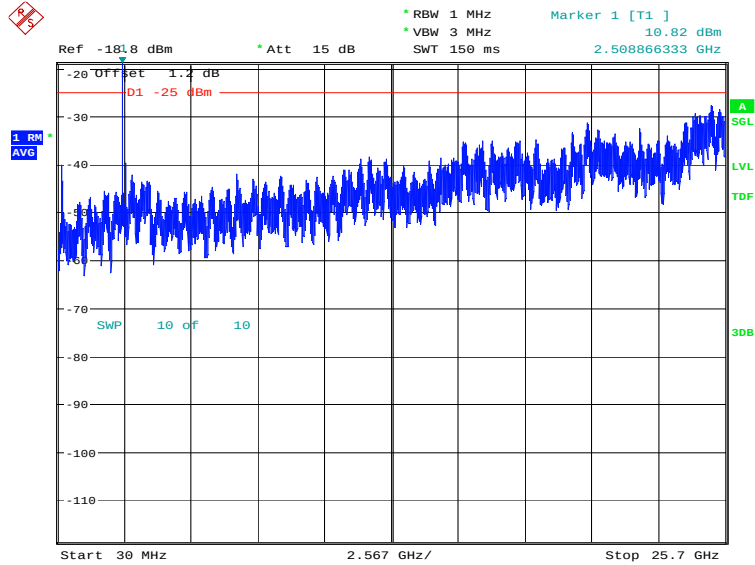
NOTE: peak above the limit line is the carrier frequency.



Date: 13.JUL.2021 14:25:51

LTE band 7: 30MHz – 25.7GHz

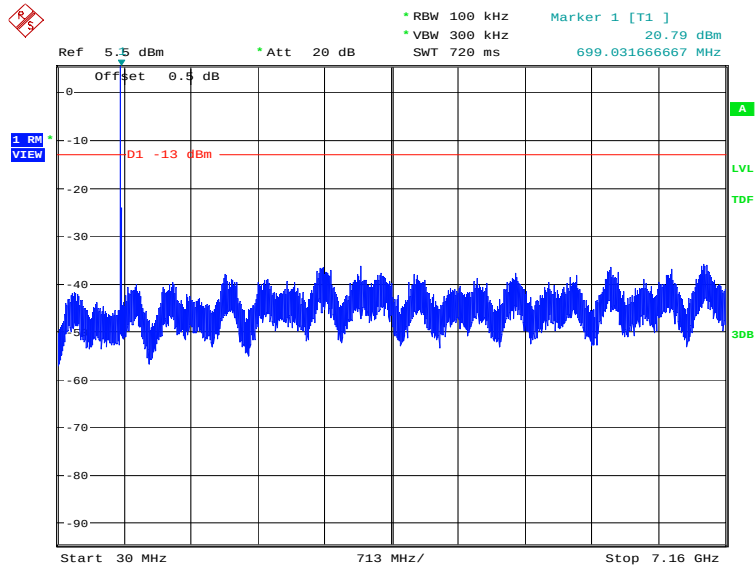
NOTE: peak above the limit line is the carrier frequency.



Date: 13.JUL.2021 14:17:28

LTE band 12: 30MHz – 7.16GHz

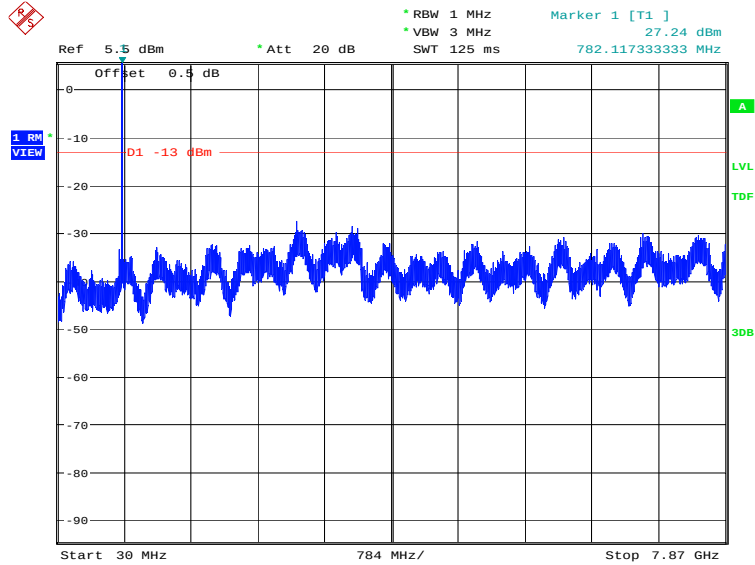
NOTE: peak above the limit line is the carrier frequency.



Date: 13.JUL.2021 14:18:50

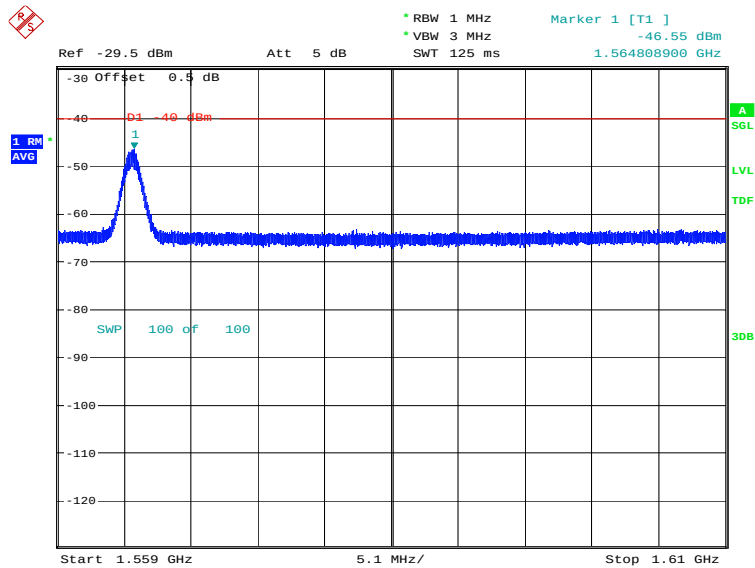
LTE band 13: 30MHz – 7.87GHz

NOTE: peak above the limit line is the carrier frequency.



Date: 13.JUL.2021 14:19:32

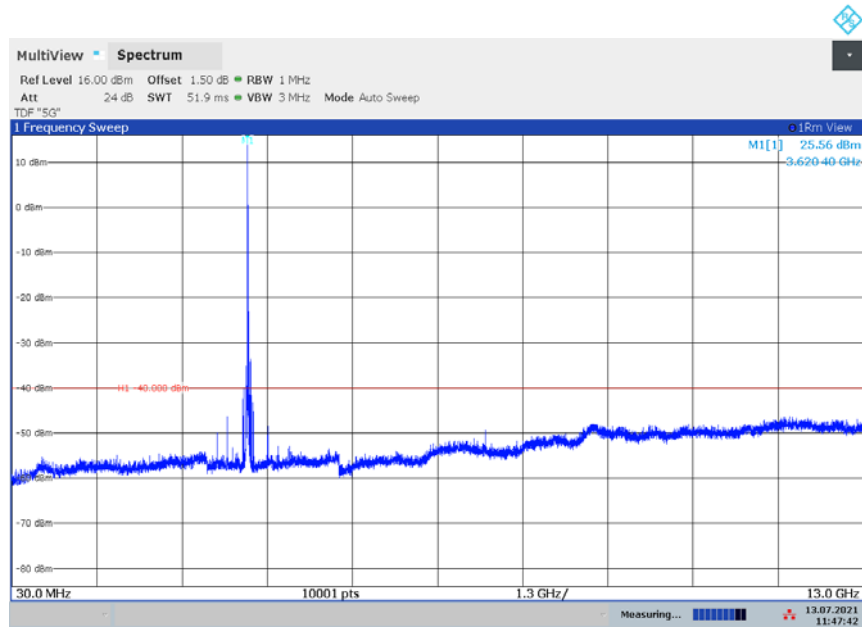
LTE band 13: 1559MHz – 1610MHz



Date: 13.JUL.2021 14:20:06

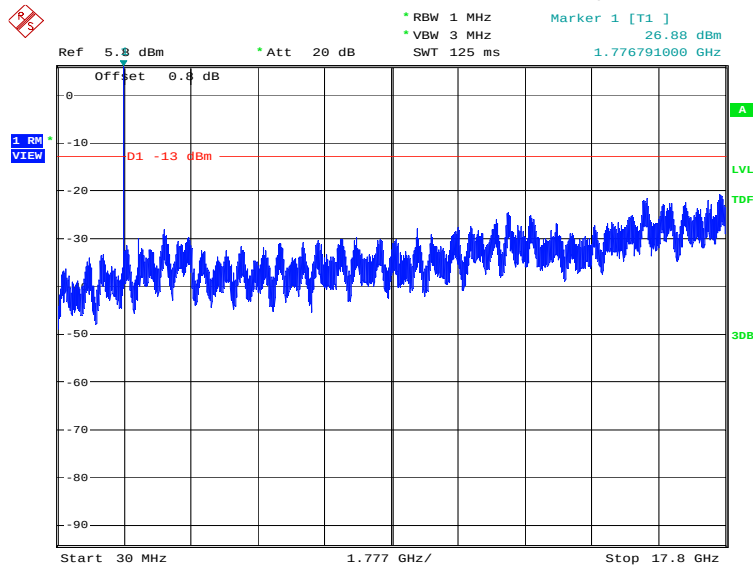
LTE band 48: 10GHz –37GHz

NOTE: peak above the limit line is the carrier frequency.



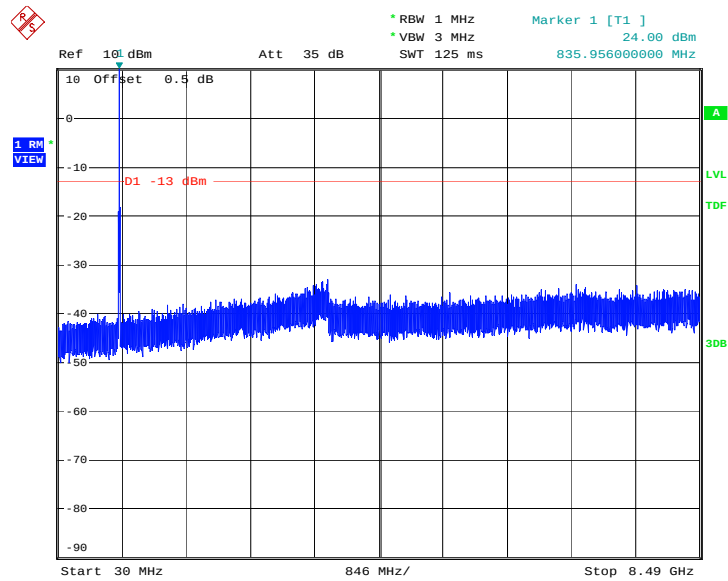
LTE band 66: 30MHz – 17.8GHz

NOTE: peak above the limit line is the carrier frequency.



LTE band 5_CA: 30MHz – 8.49GHz

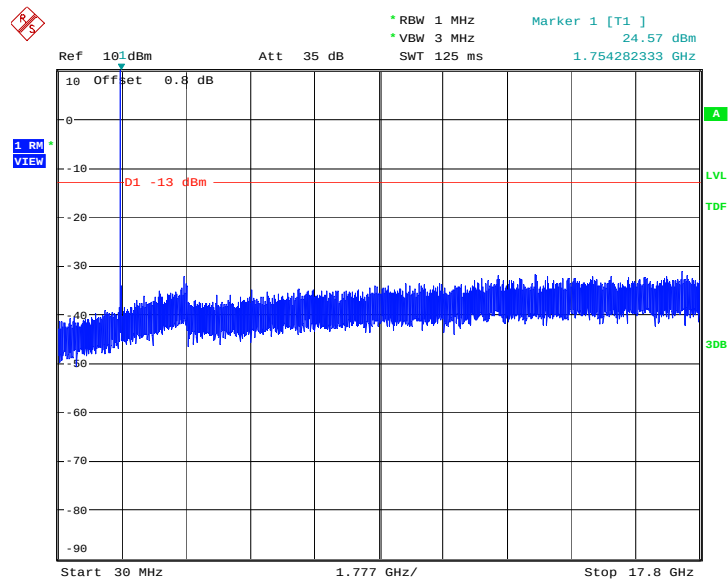
NOTE: peak above the limit line is the carrier frequency.



Date: 19.JUN.2021 17:56:37

LTE band 66_CA: 30MHz – 17.8GHz

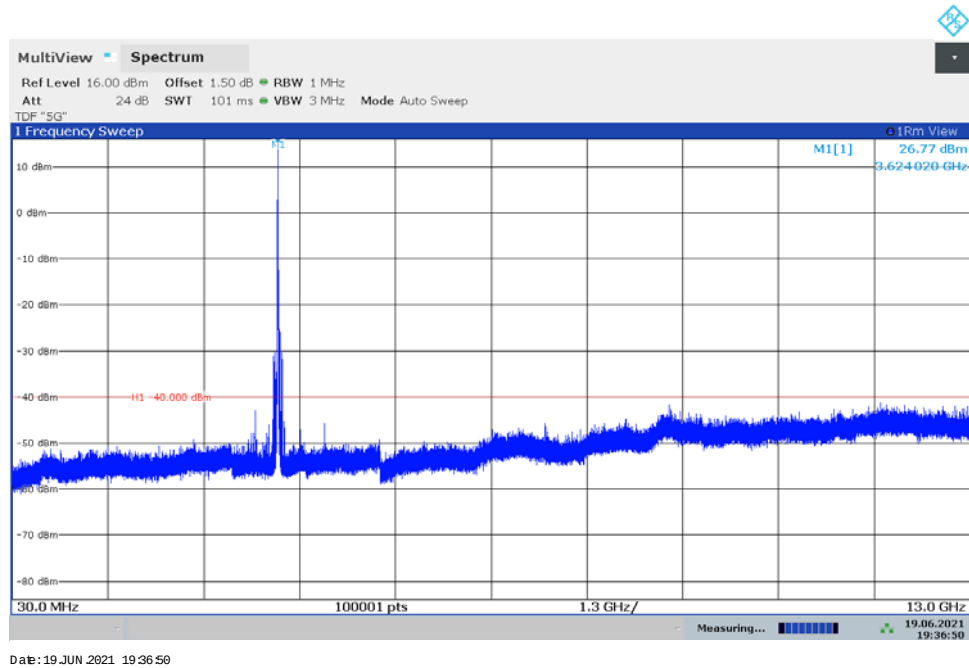
NOTE: peak above the limit line is the carrier frequency.



Date: 19.JUN.2021 20:04:26

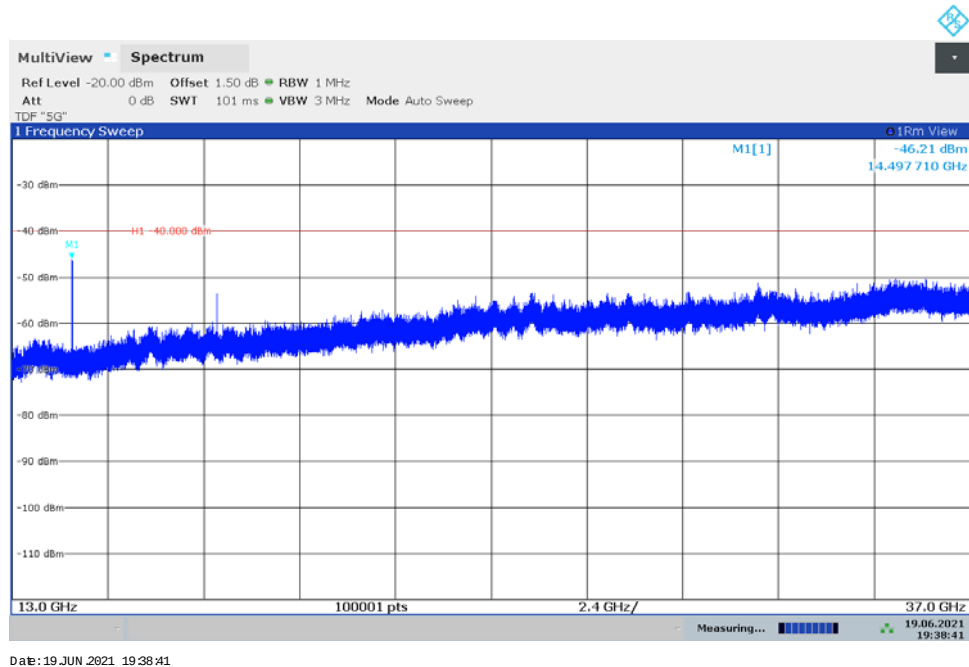
LTE band 48_CA: 30MHz – 13GHz

NOTE: peak above the limit line is the carrier frequency.



LTE band 48_CA: 13GHz – 37GHz

NOTE: peak above the limit line is the carrier frequency.



A.8 Peak-to-Average Power Ratio

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Record the maximum PAPR level associated with a probability of 0.1%.

LTE band 2, 20MHz

Frequency (MHz)	PAPR (dB)			
1880.0	QPSK	16QAM	64QAM	256QAM
	6.79	7.37	7.44	7.50

LTE band 7, 20MHz

Frequency (MHz)	PAPR (dB)		
2535.0	QPSK	16QAM	64QAM
	6.92	7.44	7.53

LTE band 12, 10MHz

Frequency (MHz)	PAPR (dB)		
707.5	QPSK	16QAM	64QAM
	5.74	6.60	6.83

LTE band 13, 10MHz

Frequency (MHz)	PAPR (dB)			
782.0	QPSK	16QAM	64QAM	256QAM
	5.35	6.09	6.70	6.89

LTE band 48, 20MHz

Frequency (MHz)	PAPR (dB)			
3625.0	QPSK	16QAM	64QAM	256QAM
	8.33	9.42	10.32	10.59

LTE band 66, 20MHz

Frequency (MHz)	PAPR (dB)			
1745.0	QPSK	16QAM	64QAM	256QAM
	6.51	7.24	7.66	7.72

LTE band 48_CA, 20MHz+20MHz

Frequency (MHz)	PAPR (dB)			
3625.0	QPSK	16QAM	64QAM	256QAM
	7.96	8.58	8.80	9.32

LTE band 66_CA, 10MHz+10MHz

Frequency (MHz)	PAPR (dB)			
1755.0	QPSK	16QAM	64QAM	256QAM
	7.20	7.44	8.06	8.32

A.9 End User Device Additional Requirement (CBSD Protocol)

A.9.1 Measurement Limit

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (Baiacells pBS2120 FCC ID: 2AG32PBS212096) as a companion device to show compliance with Part 96.47.

End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

A.9.2 Measurement Method

The EUT was connected via an RF cable to a certified CBSD and spectrum analyzer.

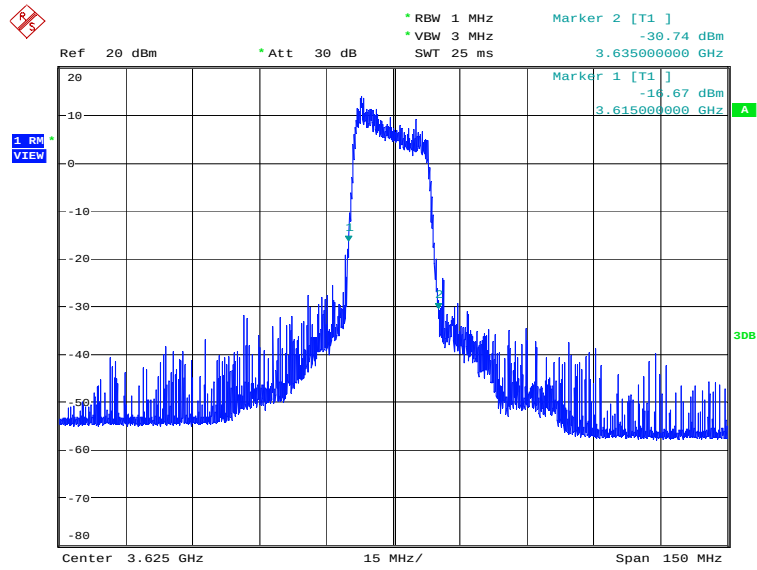
1. Run#1:

- a. Setup frequency with 3600MHz – 3620MHz.
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s.

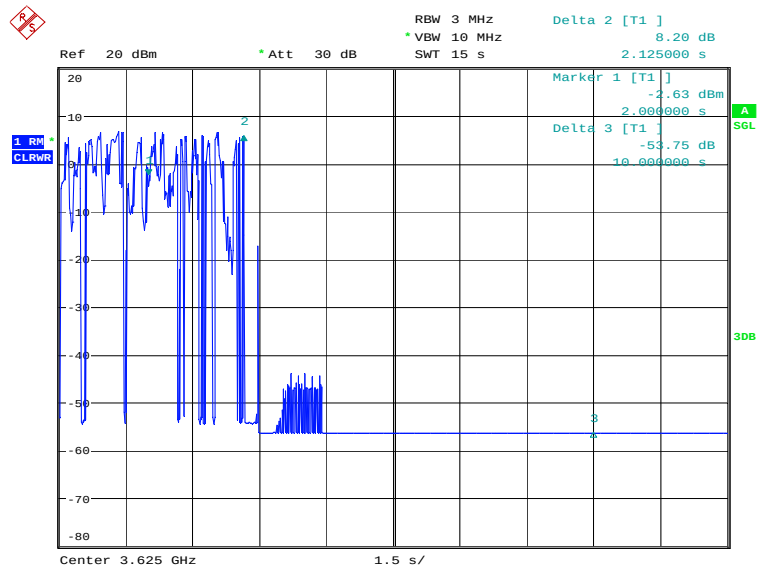
2. Run#2:

- a. Setup frequency with 3665MHz – 3685MHz.
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s.

RUN#1:



Date: 19.MAY.2021 10:15:37



Date: 19.MAY.2021 10:28:14

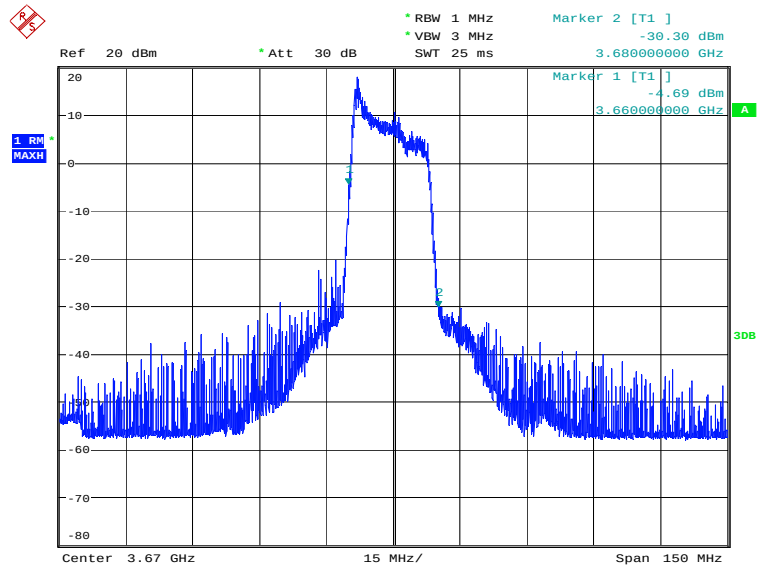
Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.

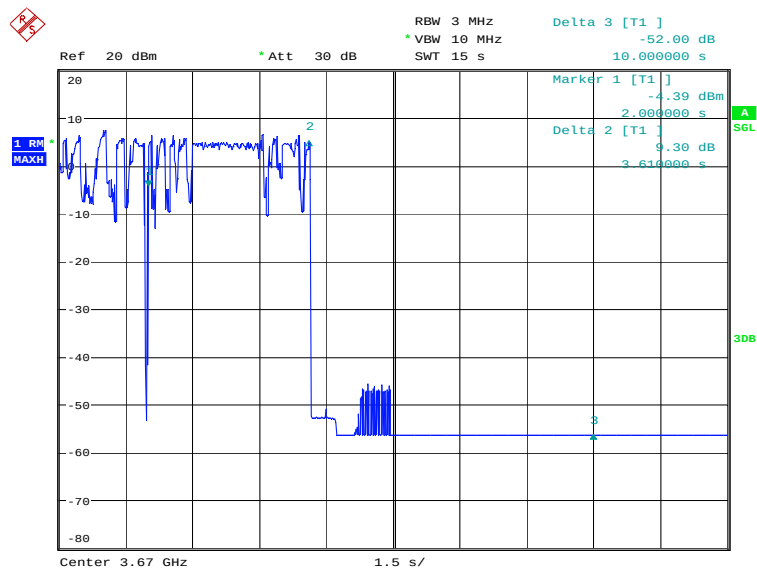
Marker 2: EUT discontinues operation.

Marker 3: 10 seconds elapsed time from CBSD sending instructions to EUT.

RUN#2:



Date: 19.MAY.2021 10:40:26



Date: 19.MAY.2021 10:44:24

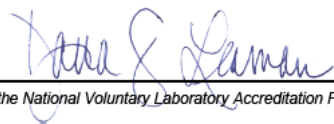
Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.

Marker 2: EUT discontinues operation.

Marker 3: 10 seconds elapsed time from CBSD sending instructions to EUT

Annex B: Accreditation Certificate

United States Department of Commerce National Institute of Standards and Technology NVLAP[®]  ilac-MRA Certificate of Accreditation to ISO/IEC 17025:2017	
NVLAP LAB CODE: 600118-0	
Telecommunication Technology Labs, CAICT Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
Electromagnetic Compatibility & Telecommunications	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i>	
2020-09-29 through 2021-09-30 <i>Effective Dates</i>	 DEPARTMENT OF COMMERCE UNITED STATES OF AMERICA  For the National Voluntary Laboratory Accreditation Program

END OF REPORT