



TEST REPORT

No. I23Z61525-WMD01

for

TCL Communication Ltd.

LTE Mobile phone

Model Name: T434W

FCC ID: 2ACCJH177

with

Hardware Version: 03

Software Version: 6VS7

Issued Date: 2023-09-04

Note:

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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.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z61525-WMD01	Rev.0	1 st edition	2023-09-04

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

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

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

Location 2: CTTL (BDA)

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

1.3. Testing Environment

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

1.4. Project Data

Testing Start Date: 2023-08-11
Testing End Date: 2023-09-01

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.
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2.2. Manufacturer Information

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

3.1. About EUT

Description	LTE Mobile phone
Model Name	T434W
FCC ID	2ACCJH177
Antenna	Embedded
Output power	24.76dBm maximum EIRP measured for LTE B41
Extreme Voltage	3.6VDC to 4.4VDC (nominal: 3.85VDC)
Extreme Temperature	-10°C to +55°C

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

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT37a	016459000201020	03	6VS7	2023-08-08
UT38a	016459000201350	03	6VS7	2023-08-09

*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	TLp038F7
Manufacturer	VEKEN
Capacitance	4000mAh

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

4. Reference Documents

4.1. Documents supplied by applicant

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

4.2. Reference Documents for testing

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

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

5. Summary Of Test Result

LTE Band 12

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	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 25 (2)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	P
2	Emission Limit	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 26(814MHz~824MHz)

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

LTE Band 26(824MHz~849MHz) (5)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	22.913	P
2	Emission Limit	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 41

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	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 66 (4)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	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 71

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	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.

All the test results are based on normal power.

LTE Band 25, Band 66, and Band 26 overlaps the entire frequency range of LTE Band 2, Band 4 and Band 5. Therefore, test data provided in this report covers Band 2, Band 4, Band 5 as well as Band 25, Band 66, Band 26.

LTE Band 41 is tested by power class 2.

Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the conducted output power measurement investigation results. Output power was measured on QPSK, 16QAM 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.

6. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2024-01-09	1 year
Spectrum Analyzer	FSU	200030	R&S	2024-05-25	1 year
Climate Chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
Test Receiver	FSV40	101047	R&S	2024-07-25	1 Year
EMI Antenna	VULB9163	9163-482	Schwarzbeck	2023-11-28	1 Year
EMI Antenna	LB-7180-NF	J203001300005	A-INFO	2024-05-25	1 Year
EMI Antenna	3115	00167252	ETS-Lindgren	2024-01-28	1 Year
Signal Generator	SMF100A	101295	R&S	2024-02-08	1 Year
Universal Radio Communication Tester	MT8821C	62724459649	Anritsu	2024-08-12	1 Year

※Note : The MT8821C with series number of 62724459649 has been calibrated during the test, and the calibration validity date filled in the above table is the latest one.

Annex A: Measurement Results

A.1 Output Power

A.1.1 Summary

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

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

A.1.2 Conducted

A.1.2.1 Method of Measurements

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

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

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

A.1.2.2 Measurement Result

LTE band 12

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.12	22.77	21.76
		707.5	23.61	22.81	21.86
		699.7	23.66	22.86	21.87
	1 RB low	715.3	24.14	22.73	21.78
		707.5	23.64	22.74	21.83
		699.7	23.62	22.93	21.86
	50% RB mid	715.3	23.81	22.78	21.84
		707.5	23.81	22.75	21.86
		699.7	23.79	22.72	21.87
	100% RB	715.3	22.74	21.84	20.77
		707.5	22.76	21.87	20.76
		699.7	22.76	21.87	20.75
3MHz	1 RB high	714.5	24.16	22.85	21.82
		707.5	23.66	22.80	21.89
		700.5	23.70	22.98	22.34
	1 RB low	714.5	24.16	22.89	21.84
		707.5	23.67	22.93	21.92
		700.5	23.69	22.88	22.17
	50% RB mid	714.5	23.24	21.80	20.84
		707.5	23.04	21.80	21.30
		700.5	22.78	21.88	21.28
	100% RB	714.5	22.86	21.69	20.75
		707.5	23.22	21.95	21.23

		700.5	22.73	21.81	21.26
5MHz	1 RB high	713.5	24.06	23.03	22.08
		707.5	24.08	22.79	22.13
		701.5	24.07	23.21	22.20
	1 RB low	713.5	24.07	22.79	21.89
		707.5	24.08	22.82	22.24
		701.5	24.11	23.20	22.27
	50% RB mid	713.5	23.23	21.78	21.27
		707.5	23.21	22.20	21.17
		701.5	23.20	22.17	21.32
	100% RB	713.5	23.21	21.76	21.17
		707.5	23.20	22.17	21.22
		701.5	23.07	22.15	21.24
10MHz	1 RB high	711.0	24.15	23.37	22.34
		707.5	24.10	23.25	22.26
		704.0	24.11	23.29	22.27
	1 RB low	711.0	24.18	23.32	22.27
		707.5	24.16	23.29	22.35
		704.0	24.20	23.41	22.36
	50% RB mid	711.0	23.25	22.24	21.26
		707.5	23.28	22.24	21.29
		704.0	23.29	22.22	21.28
	100% RB	711.0	23.28	22.25	21.29
		707.5	23.24	22.20	21.22
		704.0	23.21	22.16	21.22

LTE band 25

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1914.3	23.81	22.62	21.84
		1882.5	23.46	22.67	21.59
		1850.7	23.56	22.89	22.25
	1 RB low	1914.3	23.85	22.63	21.55
		1882.5	23.44	22.67	21.71
		1850.7	23.56	22.80	22.21
	50% RB mid	1914.3	23.66	22.49	21.61
		1882.5	23.60	22.54	21.86
		1850.7	23.72	22.68	22.27
	100% RB	1914.3	22.53	21.51	20.47
		1882.5	22.58	21.69	20.99
		1850.7	22.70	21.79	21.15
3MHz	1 RB high	1913.5	23.83	22.74	21.94
		1882.5	23.66	22.68	21.87
		1851.5	23.86	23.01	22.19
	1 RB low	1913.5	23.88	22.62	21.58
		1882.5	23.64	22.69	22.09
		1851.5	23.71	23.10	22.27
	50% RB mid	1913.5	23.01	21.54	20.61
		1882.5	22.58	21.60	21.05
		1851.5	22.94	22.14	21.17
	100% RB	1913.5	22.74	21.48	20.57
		1882.5	22.61	21.63	21.03
		1851.5	23.05	22.12	21.13
5MHz	1 RB high	1912.5	23.72	22.60	21.91
		1882.5	23.58	22.67	22.00
		1852.5	23.49	22.98	22.11
	1 RB low	1912.5	23.79	22.65	21.66
		1882.5	23.43	22.63	21.97
		1852.5	23.55	23.05	22.16
	50% RB mid	1912.5	23.04	21.49	20.59
		1882.5	22.69	21.64	21.09
		1852.5	22.85	22.12	21.14
	100% RB	1912.5	22.79	21.45	20.70
		1882.5	22.56	21.89	21.02
		1852.5	22.85	22.13	21.09
10MHz	1 RB high	1910.0	23.82	22.72	21.98
		1882.5	23.83	22.63	22.09
		1855.0	23.87	23.04	22.13
	1 RB low	1910.0	23.87	22.67	21.92

		1882.5	23.67	22.66	22.02
		1855.0	23.85	23.10	22.15
	50% RB mid	1910.0	23.06	21.56	20.92
		1882.5	22.88	21.59	21.07
		1855.0	23.10	22.13	21.11
	100% RB	1910.0	23.03	21.51	20.86
		1882.5	22.77	21.95	21.09
		1855.0	22.97	22.12	21.09
15MHz	1 RB high	1907.5	23.78	22.83	21.91
		1882.5	23.78	22.85	22.06
		1857.5	23.76	23.06	22.08
	1 RB low	1907.5	23.86	22.81	21.89
		1882.5	23.72	22.80	22.05
		1857.5	23.77	23.33	22.27
	50% RB mid	1907.5	23.08	21.74	20.96
		1882.5	23.01	21.95	21.06
		1857.5	23.03	22.09	21.11
	100% RB	1907.5	23.05	21.78	20.93
		1882.5	22.99	22.08	21.04
		1857.5	23.04	22.07	21.08
20MHz	1 RB high	1905.0	23.63	22.66	21.91
		1882.5	23.53	22.58	21.97
		1860.0	23.41	22.94	21.97
	1 RB low	1905.0	23.37	22.75	21.87
		1882.5	23.41	22.78	22.06
		1860.0	23.60	23.04	22.06
	50% RB mid	1905.0	22.65	21.60	21.07
		1882.5	22.75	21.93	21.07
		1860.0	22.85	22.10	21.11
	100% RB	1905.0	22.59	21.66	20.99
		1882.5	22.69	21.92	21.05
		1860.0	22.78	22.03	21.03

LTE band 26(814MHz~824MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	823.3	23.74	22.85	21.81
		819.0	23.76	22.72	21.66
		814.7	23.80	22.75	21.61
	1 RB low	823.3	23.75	22.83	21.85
		819.0	23.76	22.69	21.65
		814.7	23.82	22.72	21.61
	50% RB mid	823.3	23.76	22.95	21.92
		819.0	23.80	22.92	21.95
		814.7	23.71	22.87	21.88
	100% RB	823.3	22.78	21.72	21.10
		819.0	22.81	21.73	21.11
		814.7	22.86	21.71	21.04
3MHz	1 RB high	822.5	23.78	22.74	21.63
		819.0	23.80	22.71	21.62
		815.5	23.82	22.75	21.61
	1 RB low	822.5	23.84	22.80	21.71
		819.0	23.84	22.74	21.68
		815.5	23.87	22.78	21.67
	50% RB mid	822.5	22.77	21.90	20.74
		819.0	22.76	21.85	20.71
		815.5	22.85	21.84	20.72
	100% RB	822.5	22.77	21.79	20.86
		819.0	22.74	21.75	20.81
		815.5	22.75	21.70	20.77
5MHz	1 RB high	821.5	23.68	22.76	21.89
		819.0	23.74	22.81	21.88
		816.5	23.72	22.76	21.85
	1 RB low	821.5	23.70	22.71	21.86
		819.0	23.69	22.74	21.84
		816.5	23.74	22.76	21.81
	50% RB mid	821.5	22.79	21.94	20.90
		819.0	22.77	21.90	20.90
		816.5	22.81	21.86	20.83
	100% RB	821.5	22.82	21.86	20.89
		819.0	22.79	21.82	20.85
		816.5	22.79	21.75	20.80
10MHz	1 RB high	819.0	23.86	22.80	21.69
	1 RB low	819.0	23.88	22.77	21.63
	50% RB mid	819.0	22.87	21.99	20.97
	100% RB	819.0	22.87	21.97	20.94

LTE band 26(824MHz~849MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	23.70	22.61	21.53
		836.5	23.67	22.72	21.73
		824.7	23.72	22.72	21.64
	1 RB low	848.3	23.67	22.61	21.55
		836.5	23.67	22.72	21.73
		824.7	23.72	22.71	21.66
	50% RB mid	848.3	23.68	22.82	21.65
		836.5	23.68	22.83	21.66
		824.7	23.77	22.95	21.93
	100% RB	848.3	22.73	21.83	20.80
		836.5	22.74	21.84	20.83
		824.7	22.77	21.71	21.10
3MHz	1 RB high	847.5	23.71	22.59	21.50
		836.5	23.75	22.63	21.52
		825.5	23.78	22.73	21.60
	1 RB low	847.5	23.75	22.66	21.60
		836.5	23.74	22.68	21.59
		825.5	23.79	22.76	21.70
	50% RB mid	847.5	22.64	21.75	20.62
		836.5	22.74	21.76	20.65
		825.5	22.76	21.83	20.73
	100% RB	847.5	22.65	21.62	20.71
		836.5	22.68	21.67	20.73
		825.5	22.70	21.72	20.79
5MHz	1 RB high	846.5	23.63	22.60	21.73
		836.5	23.63	22.66	21.75
		826.5	23.70	22.73	21.85
	1 RB low	846.5	23.58	22.59	21.72
		836.5	23.61	22.63	21.73
		826.5	23.68	22.71	21.83
	50% RB mid	846.5	22.64	21.80	20.69
		836.5	22.71	21.84	20.78
		826.5	22.74	21.87	20.85
	100% RB	846.5	22.68	21.65	20.72
		836.5	22.70	21.70	20.78
		826.5	22.68	21.70	20.78
10MHz	1 RB high	844.0	23.78	22.68	21.60
		836.5	23.78	22.71	21.62
		829.0	23.77	22.67	21.58
	1 RB low	844.0	23.74	22.67	21.57

		836.5	23.78	22.69	21.60
		829.0	23.79	22.72	21.65
		844.0	22.58	21.86	20.70
	50% RB mid	836.5	22.70	21.91	20.83
		829.0	22.82	21.95	20.94
		844.0	22.67	21.76	20.74
	100% RB	836.5	22.76	21.82	20.80
		829.0	22.81	21.87	20.86
		841.5	23.70	22.94	21.97
15MHz	1 RB high	836.5	23.71	22.94	21.97
		831.5	23.68	22.89	21.93
		841.5	23.69	22.95	21.95
	1 RB low	836.5	23.74	23.01	22.07
		831.5	23.72	23.02	22.05
		841.5	22.80	21.80	20.71
	50% RB mid	836.5	22.87	21.80	20.81
		831.5	22.88	21.81	20.79
		841.5	22.83	21.82	20.85
	100% RB	836.5	22.85	21.82	20.85
		831.5	22.84	21.82	20.84

LTE band 41

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2687.5	26.43	25.47	24.82
		2593.0	25.97	25.02	24.33
		2498.5	25.70	25.29	24.16
	1 RB low	2687.5	26.46	25.48	24.77
		2593.0	26.02	25.06	24.39
		2498.5	25.74	25.32	24.18
	50% RB mid	2687.5	25.66	24.59	23.72
		2593.0	25.22	24.17	23.68
		2498.5	24.91	24.39	23.42
	100% RB	2687.5	25.58	24.58	23.68
		2593.0	25.11	24.27	23.63
		2498.5	24.87	24.34	23.38
10MHz	1 RB high	2685.0	26.90	25.56	24.44
		2593.0	26.07	25.15	24.01
		2501.0	25.78	24.93	23.77
	1 RB low	2685.0	26.88	25.65	24.52
		2593.0	26.13	25.22	24.10
		2501.0	25.82	25.01	23.96
	50% RB mid	2685.0	25.64	24.66	23.69
		2593.0	25.19	24.20	23.25
		2501.0	24.87	23.91	23.11
	100% RB	2685.0	25.68	24.70	23.68
		2593.0	25.24	24.26	23.35
		2501.0	24.91	24.38	23.42
15MHz	1 RB high	2682.5	26.75	25.42	24.32
		2593.0	25.94	25.01	23.90
		2503.5	25.65	24.75	24.05
	1 RB low	2682.5	26.92	25.53	24.43
		2593.0	26.05	25.15	24.09
		2503.5	25.73	24.83	23.94
	50% RB mid	2682.5	25.59	24.55	23.56
		2593.0	25.12	24.09	23.61
		2503.5	25.18	24.27	23.29
	100% RB	2682.5	25.55	24.60	23.57
		2593.0	25.17	24.25	23.64
		2503.5	25.25	24.28	23.28
20MHz	1 RB high	2680.0	26.53	25.82	24.72
		2593.0	26.32	25.20	24.08
		2506.0	26.07	25.16	24.07
	1 RB low	2680.0	26.77	25.93	24.68

		2593.0	26.49	25.33	24.19
		2506.0	26.16	25.25	24.18
	50% RB mid	2680.0	25.96	24.93	23.94
		2593.0	25.66	24.68	23.69
		2506.0	25.30	24.35	23.31
	100% RB	2680.0	25.97	24.97	23.93
		2593.0	25.68	24.68	23.65
		2506.0	25.32	24.31	23.30

LTE CA band 41C

Bandwidth	Frequency (MHz)	Frequency (MHz)	Modulation	PCC RB		SCC RB		Conducted Power(dBm)
				Size	Offset	Size	Offset	
5MHz/20MHz	2583.8	2595.5	QPSK	1	24	1	0	22.25
			QPSK	25	0	100	0	20.36
			16QAM	1	24	1	0	21.39
			16QAM	25	0	100	0	19.34
			64QAM	1	24	1	0	19.19
			64QAM	25	0	100	0	19.32
10MHz/15MHz	2585.9	2597.9	QPSK	1	49	1	0	22.23
			QPSK	50	0	75	0	22.26
			16QAM	1	49	1	0	22.22
			16QAM	50	0	75	0	22.21
			64QAM	1	49	1	0	22.01
			64QAM	50	0	75	0	22.21
10MHz/20MHz	2583.6	2598.0	QPSK	1	49	1	0	22.22
			QPSK	50	0	100	0	20.31
			16QAM	1	49	1	0	21.32
			16QAM	50	0	100	0	19.28
			64QAM	1	49	1	0	19.02
			64QAM	50	0	100	0	19.27
15MHz/10MHz	2588.1	2600.1	QPSK	1	74	1	0	22.18
			QPSK	75	0	50	0	22.18
			16QAM	1	74	1	0	22.18
			16QAM	75	0	50	0	22.14
			64QAM	1	74	1	0	21.96
			64QAM	75	0	50	0	22.15
15MHz/15MHz	2585.5	2600.5	QPSK	1	74	1	0	22.19
			QPSK	75	0	75	0	20.25
			16QAM	1	74	1	0	21.04
			16QAM	75	0	75	0	19.20
			64QAM	1	74	1	0	19.23
			64QAM	75	0	75	0	19.22
15MHz/20MHz	2583.3	2600.4	QPSK	1	74	1	0	22.15
			QPSK	75	0	100	0	20.23
			16QAM	1	74	1	0	21.02
			16QAM	75	0	100	0	19.18
			64QAM	1	74	1	0	19.23
			64QAM	75	0	100	0	19.23
20MHz/5MHz	2590.5	2602.2	QPSK	1	99	1	0	22.15
			QPSK	100	0	25	0	20.18
			16QAM	1	99	1	0	21.34
			16QAM	100	0	25	0	19.15

			64QAM	1	99	1	0	19.24
			64QAM	100	0	25	0	19.19
20MHz/10MHz	2588.1	2602.5	QPSK	1	99	1	0	22.14
			QPSK	100	0	50	0	20.15
			16QAM	1	99	1	0	21.31
			16QAM	100	0	50	0	19.16
			64QAM	1	99	1	0	19.25
			64QAM	100	0	50	0	19.19
20MHz/15MHz	2585.6	2602.7	QPSK	1	99	1	0	22.18
			QPSK	100	0	75	0	20.15
			16QAM	1	99	1	0	21.36
			16QAM	100	0	75	0	19.17
			64QAM	1	99	1	0	19.29
			64QAM	100	0	75	0	19.18
20MHz/20MHz	2583.1	2602.9	QPSK	1	99	1	0	22.21
			QPSK	100	0	100	0	20.18
			16QAM	1	99	1	0	21.27
			16QAM	100	0	100	0	19.16
			64QAM	1	99	1	0	19.39
			64QAM	100	0	100	0	19.18

LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	23.57	22.54	21.85
		1745.0	23.02	22.32	21.39
		1710.7	23.36	22.66	21.52
	1 RB low	1779.3	23.59	22.37	21.74
		1745.0	23.07	22.35	21.48
		1710.7	23.03	22.69	21.56
	50% RB mid	1779.3	23.63	22.22	21.76
		1745.0	23.20	22.16	21.51
		1710.7	23.09	22.45	21.65
	100% RB	1779.3	22.67	21.61	20.69
		1745.0	22.37	21.44	20.40
		1710.7	22.49	21.60	20.54
3MHz	1 RB high	1778.5	23.62	22.69	21.81
		1745.0	23.34	22.57	21.51
		1711.5	23.43	22.67	21.57
	1 RB low	1778.5	23.64	22.55	21.77
		1745.0	23.24	22.47	21.44
		1711.5	23.39	22.64	21.58
	50% RB mid	1778.5	22.77	21.61	20.80
		1745.0	22.37	21.45	20.45
		1711.5	22.55	21.56	20.59
	100% RB	1778.5	22.65	21.69	20.68
		1745.0	22.39	21.37	20.41
		1711.5	22.47	21.45	20.49
5MHz	1 RB high	1777.5	23.51	22.70	21.74
		1745.0	23.23	22.46	21.42
		1712.5	23.31	22.56	21.38
	1 RB low	1777.5	23.51	22.60	21.67
		1745.0	23.19	22.46	21.36
		1712.5	23.31	22.62	21.51
	50% RB mid	1777.5	22.77	21.47	20.80
		1745.0	22.42	21.38	20.47
		1712.5	22.52	21.48	20.54
	100% RB	1777.5	22.71	21.68	20.73
		1745.0	22.42	21.37	20.41
		1712.5	22.35	21.45	20.49
10MHz	1 RB high	1775.0	23.57	22.78	21.76
		1745.0	23.35	22.47	21.46
		1715.0	23.36	22.55	21.41
	1 RB low	1775.0	23.55	22.55	21.67

		1745.0	23.08	22.59	21.38
		1715.0	23.40	22.74	21.56
	50% RB mid	1775.0	22.70	21.63	20.70
		1745.0	22.41	21.39	20.44
		1715.0	22.52	21.48	20.52
	100% RB	1775.0	22.71	21.68	20.72
		1745.0	22.44	21.42	20.44
		1715.0	22.50	21.46	20.52
15MHz	1 RB high	1772.5	23.53	22.80	21.75
		1745.0	23.25	22.48	21.48
		1717.5	23.23	22.35	21.34
	1 RB low	1772.5	23.42	22.64	21.59
		1745.0	23.28	22.55	21.42
		1717.5	23.42	22.62	21.55
	50% RB mid	1772.5	22.65	21.61	20.68
		1745.0	22.38	21.30	20.42
		1717.5	22.43	21.39	20.46
	100% RB	1772.5	22.64	21.61	20.69
		1745.0	22.36	21.32	20.36
		1717.5	22.41	21.37	20.42
20MHz	1 RB high	1770.0	23.38	22.74	21.69
		1745.0	23.23	22.55	21.42
		1720.0	23.15	22.26	21.25
	1 RB low	1770.0	23.28	22.50	21.43
		1745.0	23.18	22.36	21.28
		1720.0	23.35	22.49	21.42
	50% RB mid	1770.0	22.61	21.60	20.64
		1745.0	22.34	21.34	20.42
		1720.0	22.41	21.39	20.42
	100% RB	1770.0	22.58	21.60	20.63
		1745.0	22.31	21.31	20.36
		1720.0	22.34	21.29	20.36

LTE band 71

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	695.5	23.42	22.72	21.65
		680.5	23.56	22.59	21.76
		665.5	23.61	22.56	21.59
	1 RB low	695.5	23.08	22.40	21.75
		680.5	23.06	22.51	21.76
		665.5	23.07	22.07	21.48
	50% RB mid	695.5	22.24	21.27	20.52
		680.5	22.31	21.29	20.78
		665.5	22.29	21.26	20.42
	100% RB	695.5	22.25	21.26	20.61
		680.5	22.30	21.28	20.79
		665.5	22.22	21.23	20.21
10MHz	1 RB high	693.0	23.10	22.29	21.09
		680.5	23.49	23.15	21.86
		668.0	23.21	23.49	21.68
	1 RB low	693.0	23.22	22.45	21.22
		680.5	23.20	23.20	21.55
		668.0	23.19	23.21	21.20
	50% RB mid	693.0	22.28	21.29	20.26
		680.5	22.37	21.34	20.32
		668.0	22.36	21.33	20.33
	100% RB	693.0	22.20	21.23	20.21
		680.5	22.38	21.34	20.33
		668.0	22.52	21.48	20.45
15MHz	1 RB high	690.5	23.07	22.16	21.26
		680.5	23.12	23.22	21.40
		670.5	23.10	23.17	21.61
	1 RB low	690.5	23.17	22.47	21.32
		680.5	23.21	23.22	21.37
		670.5	23.17	23.17	21.18
	50% RB mid	690.5	22.31	21.30	20.33
		680.5	22.33	21.31	20.32
		670.5	22.39	21.33	20.37
	100% RB	690.5	22.23	21.25	20.23
		680.5	22.33	21.30	20.28
		670.5	22.41	21.40	20.38
20MHz	1 RB high	688.0	22.99	22.27	21.17
		680.5	23.02	23.13	21.03
		673.0	23.00	23.12	21.13
	1 RB low	688.0	23.11	22.35	21.28

		680.5	23.13	23.12	21.13
		673.0	23.12	23.10	21.10
	50% RB mid	688.0	22.31	21.31	20.29
		680.5	22.36	21.33	20.33
		673.0	22.32	21.29	20.29
	100% RB	688.0	22.31	21.28	20.27
		680.5	22.41	21.40	20.38
		673.0	22.22	21.18	20.20

A.1.3 Radiated

A.1.3.1 Description

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

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

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

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

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

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

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

A.1.3.2 Method of Measurement

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

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

where;

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

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

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

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

A.1.3.3 Limits and Measurement Results

LTE Band 12-ERP

Limits: $\leq 34.77\text{dBm}(3\text{W})$

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-2.92)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.12	22.77	21.76	19.05	17.70	16.69
		707.5	23.61	22.81	21.86	18.54	17.74	16.79
		699.7	23.66	22.86	21.87	18.59	17.79	16.80
	1 RB low	715.3	24.14	22.73	21.78	19.07	17.66	16.71
		707.5	23.64	22.74	21.83	18.57	17.67	16.76
		699.7	23.62	22.93	21.86	18.55	17.86	16.79
	50% RB mid	715.3	23.81	22.78	21.84	18.74	17.71	16.77
		707.5	23.81	22.75	21.86	18.74	17.68	16.79
		699.7	23.79	22.72	21.87	18.72	17.65	16.80
	100% RB	715.3	22.74	21.84	20.77	17.67	16.77	15.70
		707.5	22.76	21.87	20.76	17.69	16.80	15.69
		699.7	22.76	21.87	20.75	17.69	16.80	15.68
3MHz	1 RB high	714.5	24.16	22.85	21.82	19.09	17.78	16.75
		707.5	23.66	22.80	21.89	18.59	17.73	16.82
		700.5	23.70	22.98	22.34	18.63	17.91	17.27
	1 RB low	714.5	24.16	22.89	21.84	19.09	17.82	16.77
		707.5	23.67	22.93	21.92	18.60	17.86	16.85
		700.5	23.69	22.88	22.17	18.62	17.81	17.10
	50% RB mid	714.5	23.24	21.80	20.84	18.17	16.73	15.77
		707.5	23.04	21.80	21.30	17.97	16.73	16.23
		700.5	22.78	21.88	21.28	17.71	16.81	16.21
	100% RB	714.5	22.86	21.69	20.75	17.79	16.62	15.68
		707.5	23.22	21.95	21.23	18.15	16.88	16.16
		700.5	22.73	21.81	21.26	17.66	16.74	16.19
5MHz	1 RB high	713.5	24.06	23.03	22.08	18.99	17.96	17.01
		707.5	24.08	22.79	22.13	19.01	17.72	17.06
		701.5	24.07	23.21	22.20	19.00	18.14	17.13
	1 RB low	713.5	24.07	22.79	21.89	19.00	17.72	16.82
		707.5	24.08	22.82	22.24	19.01	17.75	17.17
		701.5	24.11	23.20	22.27	19.04	18.13	17.20
	50% RB mid	713.5	23.23	21.78	21.27	18.16	16.71	16.20
		707.5	23.21	22.20	21.17	18.14	17.13	16.10
		701.5	23.20	22.17	21.32	18.13	17.10	16.25
	100% RB	713.5	23.21	21.76	21.17	18.14	16.69	16.10
		707.5	23.20	22.17	21.22	18.13	17.10	16.15
		701.5	23.07	22.15	21.24	18.00	17.08	16.17
10MHz	1 RB high	711.0	24.15	23.37	22.34	19.08	18.30	17.27

		707.5	24.10	23.25	22.26	19.03	18.18	17.19
		704.0	24.11	23.29	22.27	19.04	18.22	17.20
	1 RB low	711.0	24.18	23.32	22.27	19.11	18.25	17.20
		707.5	24.16	23.29	22.35	19.09	18.22	17.28
		704.0	24.20	23.41	22.36	19.13	18.34	17.29
	50% RB mid	711.0	23.25	22.24	21.26	18.18	17.17	16.19
		707.5	23.28	22.24	21.29	18.21	17.17	16.22
		704.0	23.29	22.22	21.28	18.22	17.15	16.21
	100% RB	711.0	23.28	22.25	21.29	18.21	17.18	16.22
		707.5	23.24	22.20	21.22	18.17	17.13	16.15
		704.0	23.21	22.16	21.22	18.14	17.09	16.15

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-0.2)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1914.3	23.81	22.62	21.84	23.61	22.42	21.64
		1882.5	23.46	22.67	21.59	23.26	22.47	21.39
		1850.7	23.56	22.89	22.25	23.36	22.69	22.05
	1 RB low	1914.3	23.85	22.63	21.55	23.65	22.43	21.35
		1882.5	23.44	22.67	21.71	23.24	22.47	21.51
		1850.7	23.56	22.80	22.21	23.36	22.60	22.01
	50% RB mid	1914.3	23.66	22.49	21.61	23.46	22.29	21.41
		1882.5	23.60	22.54	21.86	23.40	22.34	21.66
		1850.7	23.72	22.68	22.27	23.52	22.48	22.07
	100% RB	1914.3	22.53	21.51	20.47	22.33	21.31	20.27
		1882.5	22.58	21.69	20.99	22.38	21.49	20.79
		1850.7	22.70	21.79	21.15	22.50	21.59	20.95
3MHz	1 RB high	1913.5	23.83	22.74	21.94	23.63	22.54	21.74
		1882.5	23.66	22.68	21.87	23.46	22.48	21.67
		1851.5	23.86	23.01	22.19	23.66	22.81	21.99
	1 RB low	1913.5	23.88	22.62	21.58	23.68	22.42	21.38
		1882.5	23.64	22.69	22.09	23.44	22.49	21.89
		1851.5	23.71	23.10	22.27	23.51	22.90	22.07
	50% RB mid	1913.5	23.01	21.54	20.61	22.81	21.34	20.41
		1882.5	22.58	21.60	21.05	22.38	21.40	20.85
		1851.5	22.94	22.14	21.17	22.74	21.94	20.97
	100% RB	1913.5	22.74	21.48	20.57	22.54	21.28	20.37
		1882.5	22.61	21.63	21.03	22.41	21.43	20.83
		1851.5	23.05	22.12	21.13	22.85	21.92	20.93
5MHz	1 RB high	1912.5	23.72	22.60	21.91	23.52	22.40	21.71
		1882.5	23.58	22.67	22.00	23.38	22.47	21.80
		1852.5	23.49	22.98	22.11	23.29	22.78	21.91
	1 RB low	1912.5	23.79	22.65	21.66	23.59	22.45	21.46
		1882.5	23.43	22.63	21.97	23.23	22.43	21.77
		1852.5	23.55	23.05	22.16	23.35	22.85	21.96
	50% RB mid	1912.5	23.04	21.49	20.59	22.84	21.29	20.39
		1882.5	22.69	21.64	21.09	22.49	21.44	20.89
		1852.5	22.85	22.12	21.14	22.65	21.92	20.94
	100% RB	1912.5	22.79	21.45	20.70	22.59	21.25	20.50
		1882.5	22.56	21.89	21.02	22.36	21.69	20.82
		1852.5	22.85	22.13	21.09	22.65	21.93	20.89
10MHz	1 RB high	1910.0	23.82	22.72	21.98	23.62	22.52	21.78
		1882.5	23.83	22.63	22.09	23.63	22.43	21.89

		1855.0	23.87	23.04	22.13	23.67	22.84	21.93
		1910.0	23.87	22.67	21.92	23.67	22.47	21.72
	1 RB low	1882.5	23.67	22.66	22.02	23.47	22.46	21.82
		1855.0	23.85	23.10	22.15	23.65	22.90	21.95
		1910.0	23.06	21.56	20.92	22.86	21.36	20.72
	50% RB mid	1882.5	22.88	21.59	21.07	22.68	21.39	20.87
		1855.0	23.10	22.13	21.11	22.90	21.93	20.91
		1910.0	23.03	21.51	20.86	22.83	21.31	20.66
	100% RB	1882.5	22.77	21.95	21.09	22.57	21.75	20.89
		1855.0	22.97	22.12	21.09	22.77	21.92	20.89
		1907.5	23.78	22.83	21.91	23.58	22.63	21.71
		1882.5	23.78	22.85	22.06	23.58	22.65	21.86
15MHz	1 RB high	1857.5	23.76	23.06	22.08	23.56	22.86	21.88
		1907.5	23.86	22.81	21.89	23.66	22.61	21.69
		1882.5	23.72	22.80	22.05	23.52	22.60	21.85
	1 RB low	1857.5	23.77	23.33	22.27	23.57	23.13	22.07
		1907.5	23.08	21.74	20.96	22.88	21.54	20.76
		1882.5	23.01	21.95	21.06	22.81	21.75	20.86
	50% RB mid	1857.5	23.03	22.09	21.11	22.83	21.89	20.91
		1907.5	23.05	21.78	20.93	22.85	21.58	20.73
		1882.5	22.99	22.08	21.04	22.79	21.88	20.84
	100% RB	1857.5	23.04	22.07	21.08	22.84	21.87	20.88
		1905.0	23.63	22.66	21.91	23.43	22.46	21.71
		1882.5	23.53	22.58	21.97	23.33	22.38	21.77
20MHz	1 RB high	1860.0	23.41	22.94	21.97	23.21	22.74	21.77
		1905.0	23.37	22.75	21.87	23.17	22.55	21.67
		1882.5	23.41	22.78	22.06	23.21	22.58	21.86
	1 RB low	1860.0	23.60	23.04	22.06	23.40	22.84	21.86
		1905.0	22.65	21.60	21.07	22.45	21.40	20.87
		1882.5	22.75	21.93	21.07	22.55	21.73	20.87
	50% RB mid	1860.0	22.85	22.10	21.11	22.65	21.90	20.91
		1905.0	22.59	21.66	20.99	22.39	21.46	20.79
		1882.5	22.69	21.92	21.05	22.49	21.72	20.85
	100% RB	1860.0	22.78	22.03	21.03	22.58	21.83	20.83

LTE Band 26(814MHz~824MHz)-ERP
Limits: $\leq 50\text{dBm}(100\text{W})$

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-4.41)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	823.3	23.74	22.85	21.81	17.18	16.29	15.25
		819.0	23.76	22.72	21.66	17.20	16.16	15.10
		814.7	23.80	22.75	21.61	17.24	16.19	15.05
	1 RB low	823.3	23.75	22.83	21.85	17.19	16.27	15.29
		819.0	23.76	22.69	21.65	17.20	16.13	15.09
		814.7	23.82	22.72	21.61	17.26	16.16	15.05
	50% RB mid	823.3	23.76	22.95	21.92	17.20	16.39	15.36
		819.0	23.80	22.92	21.95	17.24	16.36	15.39
		814.7	23.71	22.87	21.88	17.15	16.31	15.32
	100% RB	823.3	22.78	21.72	21.10	16.22	15.16	14.54
		819.0	22.81	21.73	21.11	16.25	15.17	14.55
		814.7	22.86	21.71	21.04	16.30	15.15	14.48
3MHz	1 RB high	822.5	23.78	22.74	21.63	17.22	16.18	15.07
		819.0	23.80	22.71	21.62	17.24	16.15	15.06
		815.5	23.82	22.75	21.61	17.26	16.19	15.05
	1 RB low	822.5	23.84	22.80	21.71	17.28	16.24	15.15
		819.0	23.84	22.74	21.68	17.28	16.18	15.12
		815.5	23.87	22.78	21.67	17.31	16.22	15.11
	50% RB mid	822.5	22.77	21.90	20.74	16.21	15.34	14.18
		819.0	22.76	21.85	20.71	16.20	15.29	14.15
		815.5	22.85	21.84	20.72	16.29	15.28	14.16
	100% RB	822.5	22.77	21.79	20.86	16.21	15.23	14.30
		819.0	22.74	21.75	20.81	16.18	15.19	14.25
		815.5	22.75	21.70	20.77	16.19	15.14	14.21
5MHz	1 RB high	821.5	23.68	22.76	21.89	17.12	16.20	15.33
		819.0	23.74	22.81	21.88	17.18	16.25	15.32
		816.5	23.72	22.76	21.85	17.16	16.20	15.29
	1 RB low	821.5	23.70	22.71	21.86	17.14	16.15	15.30
		819.0	23.69	22.74	21.84	17.13	16.18	15.28
		816.5	23.74	22.76	21.81	17.18	16.20	15.25
	50% RB mid	821.5	22.79	21.94	20.90	16.23	15.38	14.34
		819.0	22.77	21.90	20.90	16.21	15.34	14.34
		816.5	22.81	21.86	20.83	16.25	15.30	14.27
	100% RB	821.5	22.82	21.86	20.89	16.26	15.30	14.33
		819.0	22.79	21.82	20.85	16.23	15.26	14.29
		816.5	22.79	21.75	20.80	16.23	15.19	14.24
10MHz	1 RB high	819.0	23.86	22.80	21.69	17.30	16.24	15.13
	1 RB low	819.0	23.88	22.77	21.63	17.32	16.21	15.07

	50% RB mid	819.0	22.87	21.99	20.97	16.31	15.43	14.41
	100% RB	819.0	22.87	21.97	20.94	16.31	15.41	14.38

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-4.41)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	23.70	22.61	21.53	17.14	16.05	14.97
		836.5	23.67	22.72	21.73	17.11	16.16	15.17
		824.7	23.72	22.72	21.64	17.16	16.16	15.08
	1 RB low	848.3	23.67	22.61	21.55	17.11	16.05	14.99
		836.5	23.67	22.72	21.73	17.11	16.16	15.17
		824.7	23.72	22.71	21.66	17.16	16.15	15.10
	50% RB mid	848.3	23.68	22.82	21.65	17.12	16.26	15.09
		836.5	23.68	22.83	21.66	17.12	16.27	15.10
		824.7	23.77	22.95	21.93	17.21	16.39	15.37
	100% RB	848.3	22.73	21.83	20.80	16.17	15.27	14.24
		836.5	22.74	21.84	20.83	16.18	15.28	14.27
		824.7	22.77	21.71	21.10	16.21	15.15	14.54
3MHz	1 RB high	847.5	23.71	22.59	21.50	17.15	16.03	14.94
		836.5	23.75	22.63	21.52	17.19	16.07	14.96
		825.5	23.78	22.73	21.60	17.22	16.17	15.04
	1 RB low	847.5	23.75	22.66	21.60	17.19	16.10	15.04
		836.5	23.74	22.68	21.59	17.18	16.12	15.03
		825.5	23.79	22.76	21.70	17.23	16.20	15.14
	50% RB mid	847.5	22.64	21.75	20.62	16.08	15.19	14.06
		836.5	22.74	21.76	20.65	16.18	15.20	14.09
		825.5	22.76	21.83	20.73	16.20	15.27	14.17
	100% RB	847.5	22.65	21.62	20.71	16.09	15.06	14.15
		836.5	22.68	21.67	20.73	16.12	15.11	14.17
		825.5	22.70	21.72	20.79	16.14	15.16	14.23
5MHz	1 RB high	846.5	23.63	22.60	21.73	17.07	16.04	15.17
		836.5	23.63	22.66	21.75	17.07	16.10	15.19
		826.5	23.70	22.73	21.85	17.14	16.17	15.29
	1 RB low	846.5	23.58	22.59	21.72	17.02	16.03	15.16
		836.5	23.61	22.63	21.73	17.05	16.07	15.17
		826.5	23.68	22.71	21.83	17.12	16.15	15.27
	50% RB mid	846.5	22.64	21.80	20.69	16.08	15.24	14.13
		836.5	22.71	21.84	20.78	16.15	15.28	14.22
		826.5	22.74	21.87	20.85	16.18	15.31	14.29
	100% RB	846.5	22.68	21.65	20.72	16.12	15.09	14.16
		836.5	22.70	21.70	20.78	16.14	15.14	14.22
		826.5	22.68	21.70	20.78	16.12	15.14	14.22
10MHz	1 RB high	844.0	23.78	22.68	21.60	17.22	16.12	15.04
		836.5	23.78	22.71	21.62	17.22	16.15	15.06

	1 RB low	829.0	23.77	22.67	21.58	17.21	16.11	15.02
		844.0	23.74	22.67	21.57	17.18	16.11	15.01
		836.5	23.78	22.69	21.60	17.22	16.13	15.04
		829.0	23.79	22.72	21.65	17.23	16.16	15.09
	50% RB mid	844.0	22.58	21.86	20.70	16.02	15.30	14.14
		836.5	22.70	21.91	20.83	16.14	15.35	14.27
		829.0	22.82	21.95	20.94	16.26	15.39	14.38
	100% RB	844.0	22.67	21.76	20.74	16.11	15.20	14.18
		836.5	22.76	21.82	20.80	16.20	15.26	14.24
		829.0	22.81	21.87	20.86	16.25	15.31	14.30
15MHz	1 RB high	841.5	23.70	22.94	21.97	17.14	16.38	15.41
		836.5	23.71	22.94	21.97	17.15	16.38	15.41
		831.5	23.68	22.89	21.93	17.12	16.33	15.37
	1 RB low	841.5	23.69	22.95	21.95	17.13	16.39	15.39
		836.5	23.74	23.01	22.07	17.18	16.45	15.51
		831.5	23.72	23.02	22.05	17.16	16.46	15.49
	50% RB mid	841.5	22.80	21.80	20.71	16.24	15.24	14.15
		836.5	22.87	21.80	20.81	16.31	15.24	14.25
		831.5	22.88	21.81	20.79	16.32	15.25	14.23
	100% RB	841.5	22.83	21.82	20.85	16.27	15.26	14.29
		836.5	22.85	21.82	20.85	16.29	15.26	14.29
		831.5	22.84	21.82	20.84	16.28	15.26	14.28

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-2.16)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	2687.5	26.43	25.47	24.82	24.27	23.31	22.66
		2593.0	25.97	25.02	24.33	23.81	22.86	22.17
		2498.5	25.70	25.29	24.16	23.54	23.13	22.00
	1 RB low	2687.5	26.46	25.48	24.77	24.30	23.32	22.61
		2593.0	26.02	25.06	24.39	23.86	22.90	22.23
		2498.5	25.74	25.32	24.18	23.58	23.16	22.02
	50% RB mid	2687.5	25.66	24.59	23.72	23.50	22.43	21.56
		2593.0	25.22	24.17	23.68	23.06	22.01	21.52
		2498.5	24.91	24.39	23.42	22.75	22.23	21.26
	100% RB	2687.5	25.58	24.58	23.68	23.42	22.42	21.52
		2593.0	25.11	24.27	23.63	22.95	22.11	21.47
		2498.5	24.87	24.34	23.38	22.71	22.18	21.22
10MHz	1 RB high	2685.0	26.90	25.56	24.44	24.74	23.40	22.28
		2593.0	26.07	25.15	24.01	23.91	22.99	21.85
		2501.0	25.78	24.93	23.77	23.62	22.77	21.61
	1 RB low	2685.0	26.88	25.65	24.52	24.72	23.49	22.36
		2593.0	26.13	25.22	24.10	23.97	23.06	21.94
		2501.0	25.82	25.01	23.96	23.66	22.85	21.80
	50% RB mid	2685.0	25.64	24.66	23.69	23.48	22.50	21.53
		2593.0	25.19	24.20	23.25	23.03	22.04	21.09
		2501.0	24.87	23.91	23.11	22.71	21.75	20.95
	100% RB	2685.0	25.68	24.70	23.68	23.52	22.54	21.52
		2593.0	25.24	24.26	23.35	23.08	22.10	21.19
		2501.0	24.91	24.38	23.42	22.75	22.22	21.26
15MHz	1 RB high	2682.5	26.75	25.42	24.32	24.59	23.26	22.16
		2593.0	25.94	25.01	23.90	23.78	22.85	21.74
		2503.5	25.65	24.75	24.05	23.49	22.59	21.89
	1 RB low	2682.5	26.92	25.53	24.43	24.76	23.37	22.27
		2593.0	26.05	25.15	24.09	23.89	22.99	21.93
		2503.5	25.73	24.83	23.94	23.57	22.67	21.78
	50% RB mid	2682.5	25.59	24.55	23.56	23.43	22.39	21.40
		2593.0	25.12	24.09	23.61	22.96	21.93	21.45
		2503.5	25.18	24.27	23.29	23.02	22.11	21.13
	100% RB	2682.5	25.55	24.60	23.57	23.39	22.44	21.41
		2593.0	25.17	24.25	23.64	23.01	22.09	21.48
		2503.5	25.25	24.28	23.28	23.09	22.12	21.12
20MHz	1 RB high	2680.0	26.53	25.82	24.72	24.37	23.66	22.56
		2593.0	26.32	25.20	24.08	24.16	23.04	21.92

		2506.0	26.07	25.16	24.07	23.91	23.00	21.91
	1 RB low	2680.0	26.77	25.93	24.68	24.61	23.77	22.52
		2593.0	26.49	25.33	24.19	24.33	23.17	22.03
		2506.0	26.16	25.25	24.18	24.00	23.09	22.02
	50% RB mid	2680.0	25.96	24.93	23.94	23.80	22.77	21.78
		2593.0	25.66	24.68	23.69	23.50	22.52	21.53
		2506.0	25.30	24.35	23.31	23.14	22.19	21.15
	100% RB	2680.0	25.97	24.97	23.93	23.81	22.81	21.77
		2593.0	25.68	24.68	23.65	23.52	22.52	21.49
		2506.0	25.32	24.31	23.30	23.16	22.15	21.14

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

Bandwidth	Frequen cy	Frequen cy	Modulatio n	PCC RB		SCC RB		Conducted Power(dB m)	EIRP(dBm)(Gt- Lc ≈ -2.16)
	(MHz)	(MHz)		Siz e	Offs et	Siz e	Offs et		
5MHz/20MHz	2583.8	2595.5	QPSK	1	24	1	0	22.25	20.09
			QPSK	25	0	100	0	20.36	18.2
			16QAM	1	24	1	0	21.39	19.23
			16QAM	25	0	100	0	19.34	17.18
			64QAM	1	24	1	0	19.19	17.03
			64QAM	25	0	100	0	19.32	17.16
10MHz/15MHz	2585.9	2597.9	QPSK	1	49	1	0	22.23	20.07
			QPSK	50	0	75	0	22.26	20.1
			16QAM	1	49	1	0	22.22	20.06
			16QAM	50	0	75	0	22.21	20.05
			64QAM	1	49	1	0	22.01	19.85
			64QAM	50	0	75	0	22.21	20.05
10MHz/20MHz	2583.6	2598	QPSK	1	49	1	0	22.22	20.06
			QPSK	50	0	100	0	20.31	18.15
			16QAM	1	49	1	0	21.32	19.16
			16QAM	50	0	100	0	19.28	17.12
			64QAM	1	49	1	0	19.02	16.86
			64QAM	50	0	100	0	19.27	17.11
15MHz/10MHz	2588.1	2600.1	QPSK	1	74	1	0	22.18	20.02
			QPSK	75	0	50	0	22.18	20.02
			16QAM	1	74	1	0	22.18	20.02
			16QAM	75	0	50	0	22.14	19.98
			64QAM	1	74	1	0	21.96	19.8
			64QAM	75	0	50	0	22.15	19.99
15MHz/15MHz	2585.5	2600.5	QPSK	1	74	1	0	22.19	20.03
			QPSK	75	0	75	0	20.25	18.09
			16QAM	1	74	1	0	21.04	18.88
			16QAM	75	0	75	0	19.2	17.04
			64QAM	1	74	1	0	19.23	17.07
			64QAM	75	0	75	0	19.22	17.06
15MHz/20MHz	2583.3	2600.4	QPSK	1	74	1	0	22.15	19.99
			QPSK	75	0	100	0	20.23	18.07
			16QAM	1	74	1	0	21.02	18.86
			16QAM	75	0	100	0	19.18	17.02
			64QAM	1	74	1	0	19.23	17.07
			64QAM	75	0	100	0	19.23	17.07

20MHz/5MHz	2590.5	2602.2	QPSK	1	99	1	0	22.15	19.99
			QPSK	100	0	25	0	20.18	18.02
			16QAM	1	99	1	0	21.34	19.18
			16QAM	100	0	25	0	19.15	16.99
			64QAM	1	99	1	0	19.24	17.08
			64QAM	100	0	25	0	19.19	17.03
20MHz/10MHz	2588.1	2602.5	QPSK	1	99	1	0	22.14	19.98
			QPSK	100	0	50	0	20.15	17.99
			16QAM	1	99	1	0	21.31	19.15
			16QAM	100	0	50	0	19.16	17
			64QAM	1	99	1	0	19.25	17.09
			64QAM	100	0	50	0	19.19	17.03
20MHz/15MHz	2585.6	2602.7	QPSK	1	99	1	0	22.18	20.02
			QPSK	100	0	75	0	20.15	17.99
			16QAM	1	99	1	0	21.36	19.2
			16QAM	100	0	75	0	19.17	17.01
			64QAM	1	99	1	0	19.29	17.13
			64QAM	100	0	75	0	19.18	17.02
20MHz/20MHz	2583.1	2602.9	QPSK	1	99	1	0	22.21	20.05
			QPSK	100	0	100	0	20.18	18.02
			16QAM	1	99	1	0	21.27	19.11
			16QAM	100	0	100	0	19.16	17
			64QAM	1	99	1	0	19.39	17.23
			64QAM	100	0	100	0	19.18	17.02

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc = -0.76)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	23.57	22.54	21.85	22.81	21.78	21.09
		1745.0	23.02	22.32	21.39	22.26	21.56	20.63
		1710.7	23.36	22.66	21.52	22.60	21.90	20.76
	1 RB low	1779.3	23.59	22.37	21.74	22.83	21.61	20.98
		1745.0	23.07	22.35	21.48	22.31	21.59	20.72
		1710.7	23.03	22.69	21.56	22.27	21.93	20.80
	50% RB mid	1779.3	23.63	22.22	21.76	22.87	21.46	21.00
		1745.0	23.20	22.16	21.51	22.44	21.40	20.75
		1710.7	23.09	22.45	21.65	22.33	21.69	20.89
	100% RB	1779.3	22.67	21.61	20.69	21.91	20.85	19.93
		1745.0	22.37	21.44	20.40	21.61	20.68	19.64
		1710.7	22.49	21.60	20.54	21.73	20.84	19.78
3MHz	1 RB high	1778.5	23.62	22.69	21.81	22.86	21.93	21.05
		1745.0	23.34	22.57	21.51	22.58	21.81	20.75
		1711.5	23.43	22.67	21.57	22.67	21.91	20.81
	1 RB low	1778.5	23.64	22.55	21.77	22.88	21.79	21.01
		1745.0	23.24	22.47	21.44	22.48	21.71	20.68
		1711.5	23.39	22.64	21.58	22.63	21.88	20.82
	50% RB mid	1778.5	22.77	21.61	20.80	22.01	20.85	20.04
		1745.0	22.37	21.45	20.45	21.61	20.69	19.69
		1711.5	22.55	21.56	20.59	21.79	20.80	19.83
	100% RB	1778.5	22.65	21.69	20.68	21.89	20.93	19.92
		1745.0	22.39	21.37	20.41	21.63	20.61	19.65
		1711.5	22.47	21.45	20.49	21.71	20.69	19.73
5MHz	1 RB high	1777.5	23.51	22.70	21.74	22.75	21.94	20.98
		1745.0	23.23	22.46	21.42	22.47	21.70	20.66
		1712.5	23.31	22.56	21.38	22.55	21.80	20.62
	1 RB low	1777.5	23.51	22.60	21.67	22.75	21.84	20.91
		1745.0	23.19	22.46	21.36	22.43	21.70	20.60
		1712.5	23.31	22.62	21.51	22.55	21.86	20.75
	50% RB mid	1777.5	22.77	21.47	20.80	22.01	20.71	20.04
		1745.0	22.42	21.38	20.47	21.66	20.62	19.71
		1712.5	22.52	21.48	20.54	21.76	20.72	19.78
	100% RB	1777.5	22.71	21.68	20.73	21.95	20.92	19.97
		1745.0	22.42	21.37	20.41	21.66	20.61	19.65
		1712.5	22.35	21.45	20.49	21.59	20.69	19.73
10MHz	1 RB high	1775.0	23.57	22.78	21.76	22.81	22.02	21.00
		1745.0	23.35	22.47	21.46	22.59	21.71	20.70

	1 RB low	1715.0	23.36	22.55	21.41	22.60	21.79	20.65
		1775.0	23.55	22.55	21.67	22.79	21.79	20.91
		1745.0	23.08	22.59	21.38	22.32	21.83	20.62
		1715.0	23.40	22.74	21.56	22.64	21.98	20.80
	50% RB mid	1775.0	22.70	21.63	20.70	21.94	20.87	19.94
		1745.0	22.41	21.39	20.44	21.65	20.63	19.68
		1715.0	22.52	21.48	20.52	21.76	20.72	19.76
	100% RB	1775.0	22.71	21.68	20.72	21.95	20.92	19.96
		1745.0	22.44	21.42	20.44	21.68	20.66	19.68
		1715.0	22.50	21.46	20.52	21.74	20.70	19.76
15MHz	1 RB high	1772.5	23.53	22.80	21.75	22.77	22.04	20.99
		1745.0	23.25	22.48	21.48	22.49	21.72	20.72
		1717.5	23.23	22.35	21.34	22.47	21.59	20.58
	1 RB low	1772.5	23.42	22.64	21.59	22.66	21.88	20.83
		1745.0	23.28	22.55	21.42	22.52	21.79	20.66
		1717.5	23.42	22.62	21.55	22.66	21.86	20.79
	50% RB mid	1772.5	22.65	21.61	20.68	21.89	20.85	19.92
		1745.0	22.38	21.30	20.42	21.62	20.54	19.66
		1717.5	22.43	21.39	20.46	21.67	20.63	19.70
	100% RB	1772.5	22.64	21.61	20.69	21.88	20.85	19.93
		1745.0	22.36	21.32	20.36	21.60	20.56	19.60
		1717.5	22.41	21.37	20.42	21.65	20.61	19.66
20MHz	1 RB high	1770.0	23.38	22.74	21.69	22.62	21.98	20.93
		1745.0	23.23	22.55	21.42	22.47	21.79	20.66
		1720.0	23.15	22.26	21.25	22.39	21.50	20.49
	1 RB low	1770.0	23.28	22.50	21.43	22.52	21.74	20.67
		1745.0	23.18	22.36	21.28	22.42	21.60	20.52
		1720.0	23.35	22.49	21.42	22.59	21.73	20.66
	50% RB mid	1770.0	22.61	21.60	20.64	21.85	20.84	19.88
		1745.0	22.34	21.34	20.42	21.58	20.58	19.66
		1720.0	22.41	21.39	20.42	21.65	20.63	19.66
	100% RB	1770.0	22.58	21.60	20.63	21.82	20.84	19.87
		1745.0	22.31	21.31	20.36	21.55	20.55	19.60
		1720.0	22.34	21.29	20.36	21.58	20.53	19.60

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

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-5.53)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	695.5	23.42	22.72	21.65	15.74	15.04	13.97
		680.5	23.56	22.59	21.76	15.88	14.91	14.08
		665.5	23.61	22.56	21.59	15.93	14.88	13.91
	1 RB low	695.5	23.08	22.40	21.75	15.40	14.72	14.07
		680.5	23.06	22.51	21.76	15.38	14.83	14.08
		665.5	23.07	22.07	21.48	15.39	14.39	13.80
	50% RB mid	695.5	22.24	21.27	20.52	14.56	13.59	12.84
		680.5	22.31	21.29	20.78	14.63	13.61	13.10
		665.5	22.29	21.26	20.42	14.61	13.58	12.74
	100% RB	695.5	22.25	21.26	20.61	14.57	13.58	12.93
		680.5	22.30	21.28	20.79	14.62	13.60	13.11
		665.5	22.22	21.23	20.21	14.54	13.55	12.53
10MHz	1 RB high	693.0	23.10	22.29	21.09	15.42	14.61	13.41
		680.5	23.49	23.15	21.86	15.81	15.47	14.18
		668.0	23.21	23.49	21.68	15.53	15.81	14.00
	1 RB low	693.0	23.22	22.45	21.22	15.54	14.77	13.54
		680.5	23.20	23.20	21.55	15.52	15.52	13.87
		668.0	23.19	23.21	21.20	15.51	15.53	13.52
	50% RB mid	693.0	22.28	21.29	20.26	14.60	13.61	12.58
		680.5	22.37	21.34	20.32	14.69	13.66	12.64
		668.0	22.36	21.33	20.33	14.68	13.65	12.65
	100% RB	693.0	22.20	21.23	20.21	14.52	13.55	12.53
		680.5	22.38	21.34	20.33	14.70	13.66	12.65
		668.0	22.52	21.48	20.45	14.84	13.80	12.77
15MHz	1 RB high	690.5	23.07	22.16	21.26	15.39	14.48	13.58
		680.5	23.12	23.22	21.40	15.44	15.54	13.72
		670.5	23.10	23.17	21.61	15.42	15.49	13.93
	1 RB low	690.5	23.17	22.47	21.32	15.49	14.79	13.64
		680.5	23.21	23.22	21.37	15.53	15.54	13.69
		670.5	23.17	23.17	21.18	15.49	15.49	13.50
	50% RB mid	690.5	22.31	21.30	20.33	14.63	13.62	12.65
		680.5	22.33	21.31	20.32	14.65	13.63	12.64
		670.5	22.39	21.33	20.37	14.71	13.65	12.69
	100% RB	690.5	22.23	21.25	20.23	14.55	13.57	12.55
		680.5	22.33	21.30	20.28	14.65	13.62	12.60
		670.5	22.41	21.40	20.38	14.73	13.72	12.70
20MHz	1 RB high	688.0	22.99	22.27	21.17	15.31	14.59	13.49
		680.5	23.02	23.13	21.03	15.34	15.45	13.35

		673.0	23.00	23.12	21.13	15.32	15.44	13.45
	1 RB low	688.0	23.11	22.35	21.28	15.43	14.67	13.60
		680.5	23.13	23.12	21.13	15.45	15.44	13.45
		673.0	23.12	23.10	21.10	15.44	15.42	13.42
	50% RB mid	688.0	22.31	21.31	20.29	14.63	13.63	12.61
		680.5	22.36	21.33	20.33	14.68	13.65	12.65
		673.0	22.32	21.29	20.29	14.64	13.61	12.61
	100% RB	688.0	22.31	21.28	20.27	14.63	13.60	12.59
		680.5	22.41	21.40	20.38	14.73	13.72	12.70
		673.0	22.22	21.18	20.20	14.54	13.50	12.52

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

A.2 Emission Limit

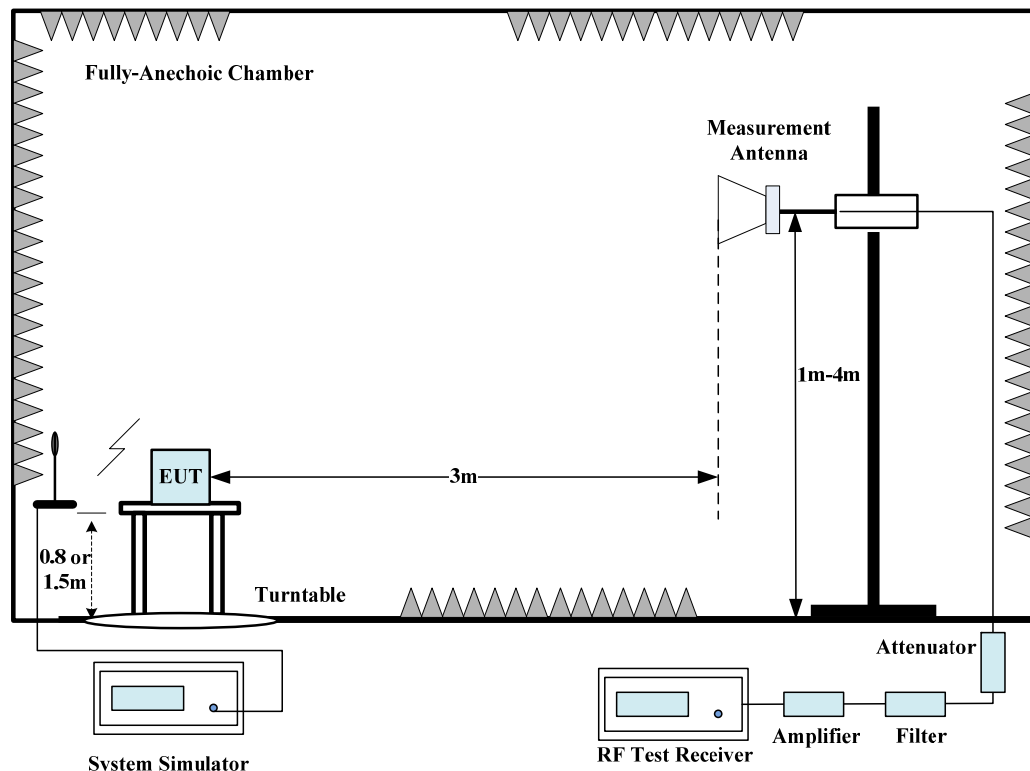
A.2.1 Measurement Method

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

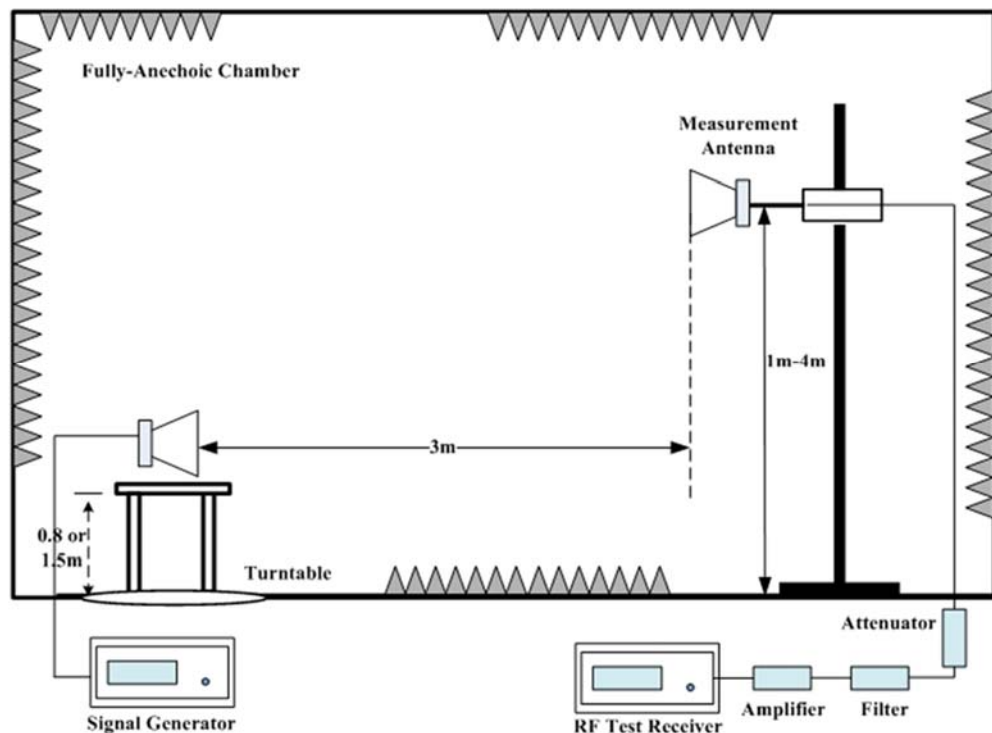
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and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

The procedure of radiated spurious emissions is as follows:

For measurements performed at frequencies less than or equal to 1 GHz, the EUT was placed on a 80cm-high non-conductive support; For measurements performed at frequencies above 1GHz,EUT was placed on a 1.5-meter-high non-conductive support. A measurement antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. In the initial test, the height of the measurement antenna was varied from 1 m to 4 m for the relative positioning that produces the maximum radiated signal level. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



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



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. The height of measurement antenna varied between 1 m to 4 m to maximize the received signal amplitude for each emission that was detected and measured in the initial test. A power (P_{Mea}) is applied to the input of the substitution antenna and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test was performed with the measurement antenna in both vertical and horizontal polarization.

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

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

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

A.2.2 Measurement Limit

FDD Band 12/17/71: Part 27.53(g) states for operations in the 600 MHz Band and the 698–746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency

block, a resolution Bandwidth of at least 30 kHz may be employed.

FDD Band 2/25: Part 24.238 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.

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

FDD Band 5/26(824MHz~849MHz): Part 22.917 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.

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

FDD Band 4/66: 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.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of each LTE Band. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of each LTE Band into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this. The range of evaluated frequency is from 30MHz to 26GHz.

Note 1: Both of Vertical and Horizontal polarizations are evaluated, but only the worst case is recorded in this report.

A.2.4 Measurement Results Table

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

A.2.5 Sweep Table

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

A.2.6 Measurement Result

LTE Band 12 1.4MHz CH23017 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1329.01	-58.85	3.15	7.17	2.15	-56.98	-13.00	43.98	H
2005.00	-52.90	4.07	7.57	2.15	-51.55	-13.00	38.55	H
2688.00	-48.74	4.78	9.80	2.15	-45.87	-13.00	32.87	H
3363.02	-64.57	5.33	10.50	2.15	-61.55	-13.00	48.55	V
4029.02	-60.76	6.05	10.40	2.15	-58.56	-13.00	45.56	V
4699.02	-61.80	6.50	11.20	2.15	-59.25	-13.00	46.25	V

LTE Band 12 1.4MHz CH 23095 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.01	-54.47	3.25	7.83	2.15	-52.04	-13.00	39.04	H
2111.00	-53.40	4.20	8.05	2.15	-51.70	-13.00	38.70	V
2843.00	-49.47	4.96	10.67	2.15	-45.91	-13.00	32.91	H
3538.02	-62.62	5.70	10.60	2.15	-59.87	-13.00	46.87	H
4252.02	-60.59	6.24	10.61	2.15	-58.37	-13.00	45.37	V
4947.01	-59.33	6.69	11.21	2.15	-56.96	-13.00	43.96	H

LTE Band 12 1.4MHz CH 23173 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1431.01	-52.62	3.28	7.86	2.15	-50.19	-13.00	37.19	H
2146.00	-50.89	4.24	8.54	2.15	-48.74	-13.00	35.74	H
2862.00	-48.91	4.96	10.72	2.15	-45.30	-13.00	32.30	H
3577.02	-62.28	6.10	10.60	2.15	-59.93	-13.00	46.93	H
4301.02	-60.37	6.19	10.81	2.15	-57.90	-13.00	44.90	V
5018.01	-59.70	6.57	11.34	2.15	-57.08	-13.00	44.08	V

LTE Band 25 1.4MHz CH26047 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3702.02	-44.99	6.42	10.49	-40.92	-13.00	27.92	H
5553.02	-31.74	7.18	11.20	-27.72	-13.00	14.72	H
7405.01	-51.17	8.13	10.11	-49.19	-13.00	36.19	H
9254.01	-49.49	9.05	11.69	-46.85	-13.00	33.85	H
12955.01	-49.71	10.48	12.74	-47.45	-13.00	34.45	H
17377.00	-47.36	12.47	13.49	-46.34	-13.00	33.34	H

LTE Band 25 1.4MHz CH26365 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3765.02	-43.57	6.25	10.30	-39.52	-13.00	26.52	H
5649.02	-36.64	7.27	11.20	-32.71	-13.00	19.71	V
7530.01	-47.78	8.27	10.30	-45.75	-13.00	32.75	H
9413.01	-49.29	9.10	11.63	-46.76	-13.00	33.76	H
13178.01	-48.79	10.59	12.62	-46.76	-13.00	33.76	H
16977.00	-49.93	12.29	13.95	-48.27	-13.00	35.27	V

LTE Band 25 1.4MHz CH26683 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3829.02	-47.99	6.06	10.36	-43.69	-13.00	30.69	H
5744.02	-33.85	7.27	11.11	-30.01	-13.00	17.01	V
7659.01	-43.84	8.24	10.54	-41.54	-13.00	28.54	V
9572.01	-50.62	9.28	11.90	-48.00	-13.00	35.00	H
13401.01	-41.35	10.57	12.40	-39.52	-13.00	26.52	V
17250.00	-47.94	12.36	13.70	-46.60	-13.00	33.60	H

LTE Band 26(824MHz~849MHz) 1.4MHz CH26797 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1650.01	-56.75	3.57	9.50	2.15	-52.97	-13.00	39.97	H
2474.00	-51.27	4.60	10.30	2.15	-47.72	-13.00	34.72	V
3299.02	-61.31	5.29	10.40	2.15	-58.35	-13.00	45.35	H
4132.02	-61.56	6.05	10.40	2.15	-59.36	-13.00	46.36	H
4947.01	-60.27	6.69	11.21	2.15	-57.90	-13.00	44.90	V
5786.01	-59.21	7.21	11.03	2.15	-57.54	-13.00	44.54	V

LTE Band 26(824MHz~849MHz) 1.4MHz CH26915 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.01	-57.84	3.58	9.55	2.15	-54.02	-13.00	41.02	H
2528.00	-48.49	4.65	10.14	2.15	-45.15	-13.00	32.15	H
3346.02	-57.41	5.31	10.49	2.15	-54.38	-13.00	41.38	H
4194.02	-60.49	6.19	10.49	2.15	-58.34	-13.00	45.34	H
5015.01	-60.45	6.58	11.33	2.15	-57.85	-13.00	44.85	V
5846.01	-59.67	7.22	10.82	2.15	-58.22	-13.00	45.22	H

LTE Band 26(824MHz~849MHz) 1.4MHz CH27033 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.01	-59.67	3.60	9.59	2.15	-55.83	-13.00	42.83	V
2526.00	-48.36	4.65	10.15	2.15	-45.01	-13.00	32.01	V
3394.02	-57.46	5.36	10.50	2.15	-54.47	-13.00	41.47	V
4244.02	-60.70	6.25	10.59	2.15	-58.51	-13.00	45.51	V
5087.01	-60.40	6.74	11.47	2.15	-57.82	-13.00	44.82	H
5940.01	-58.61	7.47	10.50	2.15	-57.73	-13.00	44.73	H

LTE Band 26(814MHz~824MHz) 1.4MHz CH26697 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1630.01	-55.94	3.55	9.50	2.15	-52.14	-13.00	39.14	H
2463.00	-52.14	4.59	10.35	2.15	-48.53	-13.00	35.53	V
7320.01	-53.67	8.10	9.94	2.15	-53.98	-13.00	40.98	H
8132.01	-53.84	8.38	11.26	2.15	-53.11	-13.00	40.11	V
8957.00	-53.23	9.05	11.61	2.15	-52.82	-13.00	39.82	V
9796.00	-53.38	9.02	12.00	2.15	-52.55	-13.00	39.55	V

LTE Band 26(814MHz~824MHz) 1.4MHz CH26740 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638.01	-55.81	3.56	9.50	2.15	-52.02	-13.00	39.02	H
2472.00	-52.43	4.59	10.31	2.15	-48.86	-13.00	35.86	V
3276.02	-56.39	5.28	10.35	2.15	-53.47	-13.00	40.47	V
4097.02	-59.62	6.04	10.40	2.15	-57.41	-13.00	44.41	V
4914.01	-61.08	6.73	11.34	2.15	-58.62	-13.00	45.62	H
5746.01	-58.72	7.27	11.11	2.15	-57.03	-13.00	44.03	H

LTE Band 26(814MHz~824MHz) 1.4MHz CH26783 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1825.01	-56.72	3.80	9.55	2.15	-53.12	-13.00	40.12	V
2656.00	-48.19	4.75	9.80	2.15	-45.29	-13.00	32.29	H
7538.01	-51.64	8.23	10.30	2.15	-51.72	-13.00	38.72	H
8371.00	-52.57	8.65	11.40	2.15	-51.97	-13.00	38.97	V
8908.00	-51.97	8.87	11.52	2.15	-51.47	-13.00	38.47	H
9750.00	-51.97	8.92	12.00	2.15	-51.04	-13.00	38.04	H

LTE Band 41 5MHz CH39675 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4997.02	-51.00	6.61	11.29	-46.32	-25.00	21.32	H
7498.01	-32.15	8.39	10.30	-30.24	-25.00	5.24	H
9998.01	-55.06	9.18	11.90	-52.34	-25.00	27.34	H
12493.01	-40.98	10.19	13.31	-37.86	-25.00	12.86	H
14991.00	-52.35	11.21	14.46	-49.10	-25.00	24.10	H
17493.00	-46.27	12.71	13.03	-45.95	-25.00	20.95	V

LTE Band 41 5MHz CH40620 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5188.02	-47.68	6.94	11.68	-42.94	-25.00	17.94	V
7779.01	-31.23	8.32	10.82	-28.73	-25.00	3.73	H
10375.01	-45.36	9.76	12.08	-43.04	-25.00	18.04	H
12975.01	-43.25	10.48	12.72	-41.01	-25.00	16.01	V
15560.00	-44.18	11.50	15.36	-40.32	-25.00	15.32	H
16879.00	-51.95	12.02	14.08	-49.89	-25.00	24.89	V

LTE Band 41 5MHz CH41565 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5375.02	-43.40	6.88	11.45	-38.83	-25.00	13.83	H
8062.01	-29.89	8.32	11.28	-26.93	-25.00	1.93	H
10752.01	-40.39	9.43	12.15	-37.67	-25.00	12.67	V
13438.01	-31.19	10.60	12.44	-29.35	-25.00	4.35	H
16125.00	-51.66	11.82	15.32	-48.16	-25.00	23.16	H
17483.00	-45.85	12.69	13.07	-45.47	-25.00	20.47	V

LTE Band 66 1.4MHz CH131979 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3422.02	-58.67	5.38	10.46	-53.59	-13.00	40.59	V
5132.02	-53.84	6.85	11.56	-49.13	-13.00	36.13	H
6843.01	-62.25	7.83	10.40	-59.68	-13.00	46.68	H
8554.01	-59.37	8.58	11.31	-56.64	-13.00	43.64	H
11976.01	-63.79	10.16	13.18	-60.77	-13.00	47.77	V
13686.01	-56.05	10.63	12.76	-53.92	-13.00	40.92	H

LTE Band 66 1.4MHz CH132322 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.02	-58.50	5.50	10.56	-53.44	-13.00	40.44	V
5235.02	-60.98	7.00	11.70	-56.28	-13.00	43.28	H
6981.01	-59.74	8.15	10.40	-57.49	-13.00	44.49	H
8725.01	-61.35	8.43	11.30	-58.48	-13.00	45.48	H
12216.01	-62.00	10.05	13.45	-58.60	-13.00	45.60	H
13967.01	-56.59	10.84	12.47	-54.96	-13.00	41.96	H

LTE Band 66 1.4MHz CH132665 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3559.02	-60.35	5.92	10.60	-55.67	-13.00	42.67	V
5338.02	-54.14	6.96	11.52	-49.58	-13.00	36.58	H
7118.01	-62.65	8.16	10.50	-60.31	-13.00	47.31	H
8897.01	-58.49	8.84	11.49	-55.84	-13.00	42.84	H
12456.01	-55.27	10.29	13.34	-52.22	-13.00	39.22	H
14236.01	-58.47	10.91	12.74	-56.64	-13.00	43.64	V

LTE Band 71 5MHz CH133147 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1311.01	-56.96	3.13	7.07	2.15	-55.17	-13.00	42.17	H
1995.01	-53.08	4.04	7.66	2.15	-51.61	-13.00	38.61	V
2662.00	-47.22	4.75	9.80	2.15	-44.32	-13.00	31.32	H
3328.02	-62.87	5.30	10.46	2.15	-59.86	-13.00	46.86	V
4011.02	-61.34	6.06	10.40	2.15	-59.15	-13.00	46.15	V
4634.02	-61.00	6.45	11.16	2.15	-58.44	-13.00	45.44	H

LTE Band 71 5MHz CH133297 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1361.01	-57.57	3.19	7.41	2.15	-55.50	-13.00	42.50	H
2033.00	-53.11	4.13	7.40	2.15	-51.99	-13.00	38.99	H
2726.00	-49.07	4.81	9.96	2.15	-46.07	-13.00	33.07	H
3403.02	-62.75	5.36	10.49	2.15	-59.77	-13.00	46.77	H
4084.02	-60.99	6.04	10.40	2.15	-58.78	-13.00	45.78	V
4776.01	-61.22	6.62	11.40	2.15	-58.59	-13.00	45.59	H

LTE Band 71 5MHz CH133447 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1391.01	-58.39	3.22	7.71	2.15	-56.05	-13.00	43.05	H
2114.00	-52.47	4.20	8.10	2.15	-50.72	-13.00	37.72	H
2783.00	-49.52	4.89	10.36	2.15	-46.20	-13.00	33.20	V
3478.02	-61.51	5.48	10.51	2.15	-58.63	-13.00	45.63	V
4187.02	-60.41	6.18	10.47	2.15	-58.27	-13.00	45.27	H
4878.01	-61.15	6.72	11.40	2.15	-58.62	-13.00	45.62	H

LTE band CA 41C 5M+20M CH39683+39800 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5004.38	-61.11	6.60	11.31	-56.40	-25.00	31.40	H
7521.57	-49.31	8.30	10.30	-47.31	-25.00	22.31	H
10025.63	-55.31	9.25	11.93	-52.63	-25.00	27.63	H
12517.03	-53.62	10.22	13.30	-50.54	-25.00	25.54	V
15016.41	-53.35	11.24	14.52	-50.07	-25.00	25.07	H
17524.69	-46.09	12.82	13.07	-45.84	-25.00	20.84	H

LTE band CA 41C 5M+20M CH40528+40645 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5179.23	-59.85	6.93	11.66	-55.12	-25.00	30.12	H
7763.44	-49.12	8.34	10.75	-46.71	-25.00	21.71	H
10362.19	-53.27	9.74	12.06	-50.95	-25.00	25.95	V
12945.00	-53.48	10.49	12.75	-51.22	-25.00	26.22	H
15495.47	-54.70	11.53	15.29	-50.94	-25.00	25.94	V
16807.03	-52.72	12.11	14.01	-50.82	-25.00	25.82	V

LTE band CA 41C 5M+20M CH41373+41490 QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5348.45	-53.59	6.94	11.50	-49.03	-25.00	24.03	H
8028.29	-47.49	8.32	11.26	-44.55	-25.00	19.55	H
10697.35	-51.09	9.30	12.10	-48.29	-25.00	23.29	V
13330.78	-52.40	10.58	12.54	-50.44	-25.00	25.44	H
15984.38	-54.58	11.79	15.57	-50.80	-25.00	25.80	H
17353.59	-47.98	12.44	13.59	-46.83	-25.00	21.83	H

Note: Peak EIRP (dBm) = P_{Mea}(dBm) - Path Loss(dB) + Antenna Gain(dBi)

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

A.3 Frequency Stability

A.3.1 Method of Measurement

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

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

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

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

A.3.2 Measurement results

LTE Band 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				-37.34	0.0528
40				-33.76	0.0477
30				-36.51	0.0516
10				-37.19	0.0526
0				-37.29	0.0527
-10				-36.38	0.0514
-20				-37.15	0.0525
-30				-35.55	0.0502

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	699.481	715.519	-32.96	0.0466
4.4				-33.75	0.0477

LTE Band 25, 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	1850.801	1914.199		
50				-0.06	0.0000
40				-4.03	0.0021
30				0.49	0.0003
10				-3.26	0.0017
0				-0.56	0.0003
-10				-1.63	0.0009
-20				-0.69	0.0004
-30				-2.32	0.0012

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.801	1914.199	-4.13	0.0022
4.4				-3.59	0.0019

LTE Band 26(814MHz~824MHz), 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	814.385	823.615		
50				-0.49	0.0006
40				-1.33	0.0016
30				-2.20	0.0027
10				-2.26	0.0028
0				-2.72	0.0033
-10				-0.01	0.0000
-20				-2.06	0.0025
-30				25.25	0.0308

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	814.385	823.615	-1.24	0.0015
4.4				-1.07	0.0013

LTE Band 26(824MHz~849MHz), 15MHz 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	824.577	848.471		
50				-0.33	0.0004
40				-1.06	0.0013
30				0.34	0.0004
10				-2.13	0.0025
0				-1.33	0.0016
-10				-1.39	0.0017
-20				-3.53	0.0042
-30				-0.63	0.0008

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.577	848.471	-0.63	0.0008
4.4				-0.21	0.0003

LTE Band 41, 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	2496.385	2689.519		
50				-82.65	0.0319
40				-79.91	0.0308
30				-81.37	0.0314
10				-81.21	0.0313
0				-76.26	0.0294
-10				-75.47	0.0291
-20				-78.55	0.0303
-30				-80.09	0.0309

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2496.385	2689.519	-78.75	0.0304
4.4				-77.76	0.0300

LTE CA band 41C, 20MHz+20MHz bandwidth QPSK(worst case of all bandwidths)
Frequency Error vs Voltage

Temperature(□)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2496.880	2689.080		
50				-0.62	0.0002
40				-5.94	0.0023
30				-4.06	0.0016
10				-4.61	0.0018
0				-4.14	0.0016
-10				-3.66	0.0014
-20				-1.95	0.0008
-30				-4.86	0.0019

Frequency Error vs Voltage

Voltage(V)	Temperature(□)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2496.880	2689.080	-4.09	0.0016
4.4				-5.06	0.0020

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	1710.833	1779.231		
50				-23.36	0.0134
40				-2.55	0.0015
30				-3.36	0.0019
10				-3.22	0.0018
0				-2.76	0.0016
-10				0.63	0.0004
-20				-1.32	0.0008
-30				-0.33	0.0002

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.833	1779.231	-2.35	0.0013
4.4				-0.76	0.0004

LTE Band 71, 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	663.994	697.006		
50				-0.96	0.0014
40				1.27	0.0019
30				-0.36	0.0005
10				0.74	0.0011
0				-0.36	0.0005
-10				-0.10	0.0001
-20				1.46	0.0021
-30				-0.20	0.0003

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	663.994	697.006	-27.98	0.0411
4.4				-0.17	0.0002

Note: Expanded measurement uncertainty is U = 0.01 PPM, k = 2.

A.4 Occupied Bandwidth

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

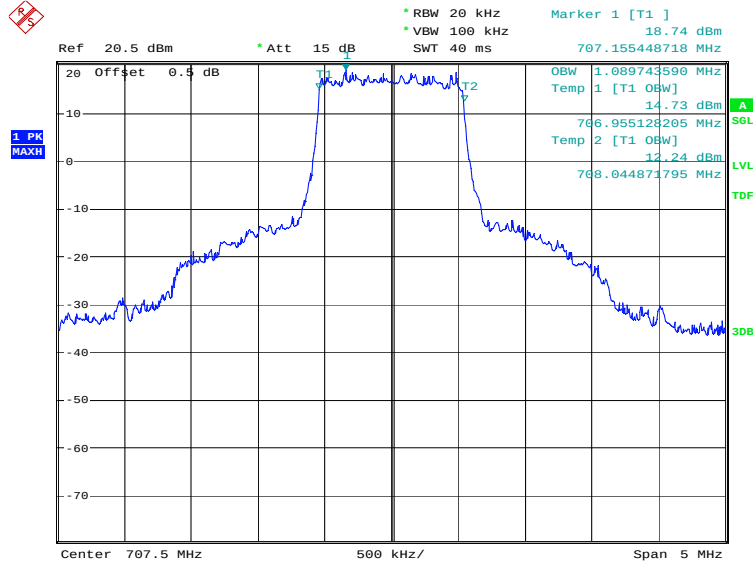
The measurement method is from ANSI C63.26:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts.
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- 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 12, 1.4MHz (99%)

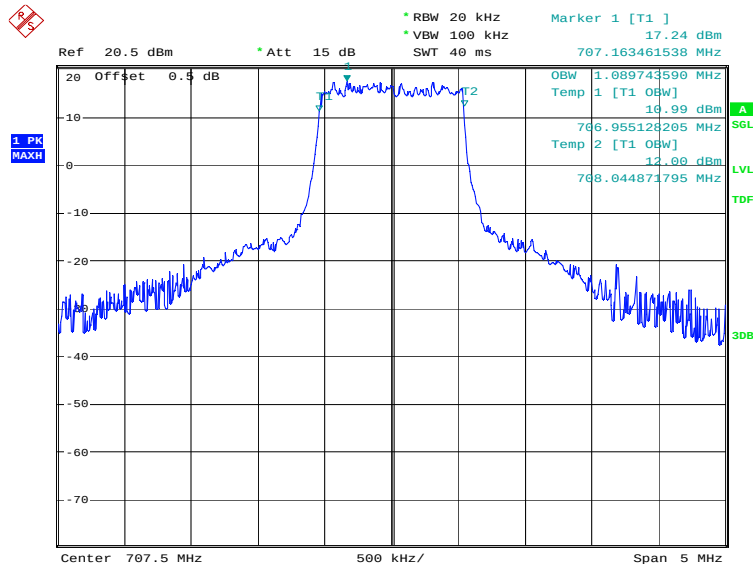
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	1089.74	1089.74

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



Date: 11.AUG.2023 11:51:05

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

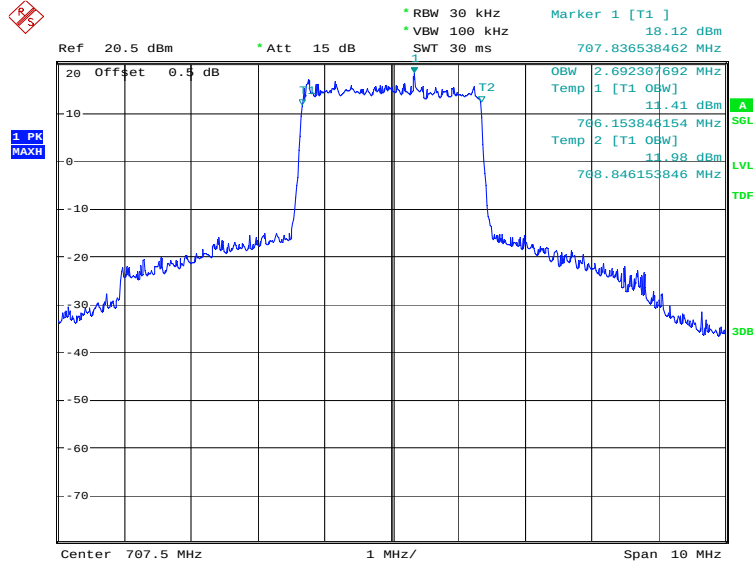


Date: 11.AUG.2023 11:51:45

LTE band 12, 3MHz (99%)

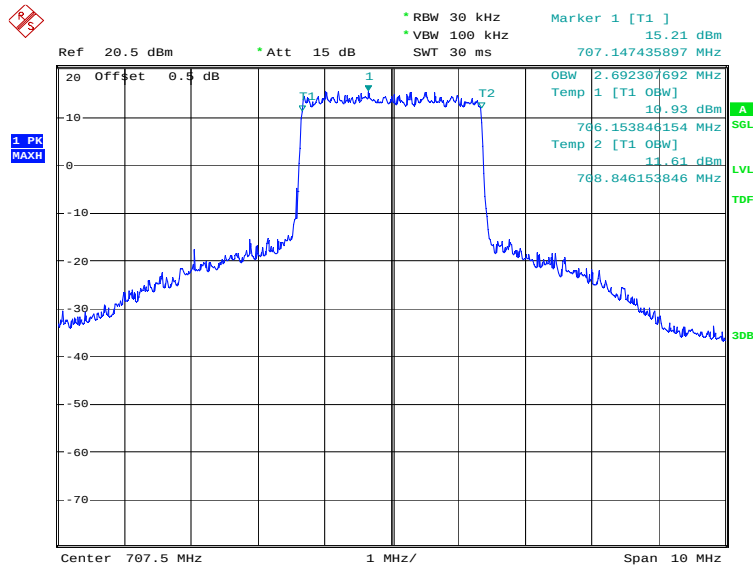
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	2692.31	2692.31

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



Date: 11.AUG.2023 11:52:27

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

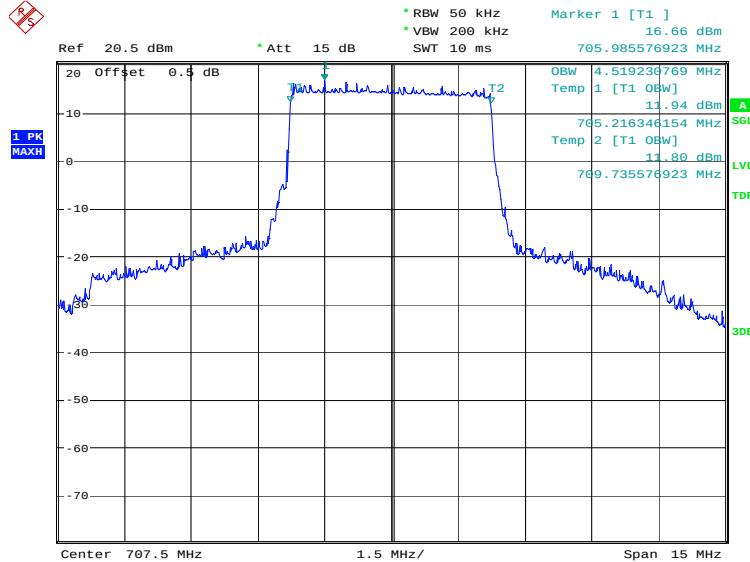


Date: 11.AUG.2023 11:53:07

LTE band 12, 5MHz (99%)

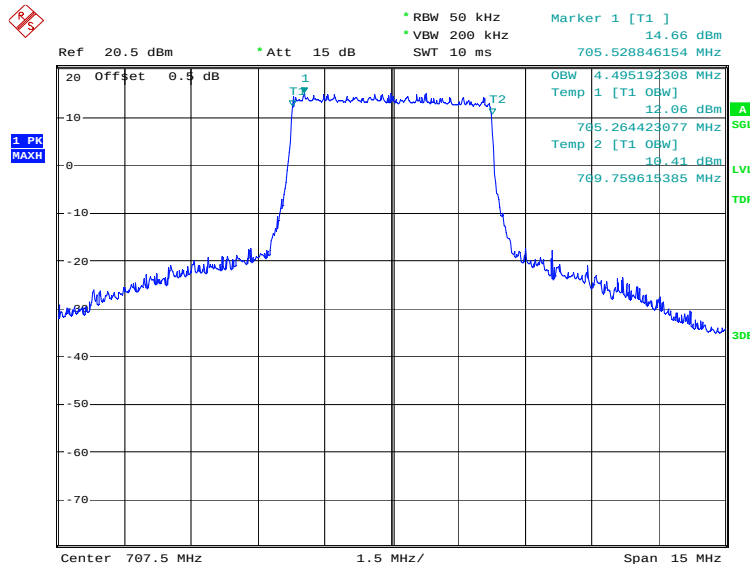
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	4519.23	4495.19

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



Date: 11.AUG.2023 11:53:48

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

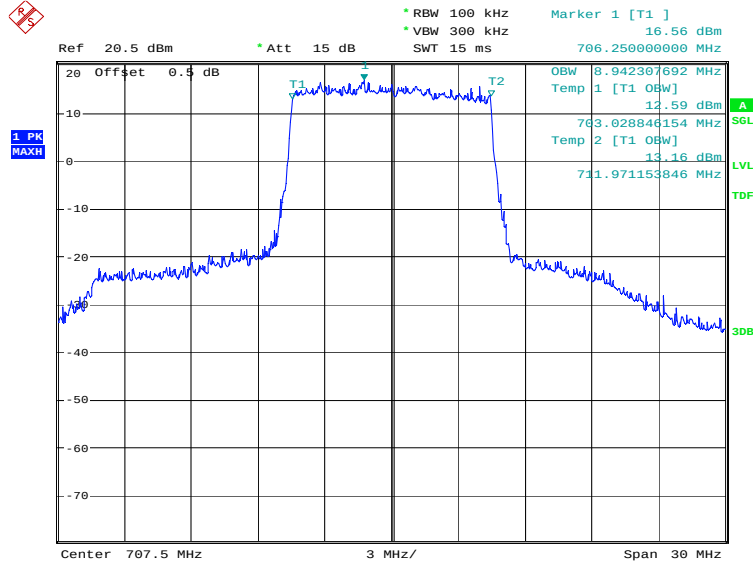


Date: 11.AUG.2023 11:54:29

LTE band 12, 10MHz (99%)

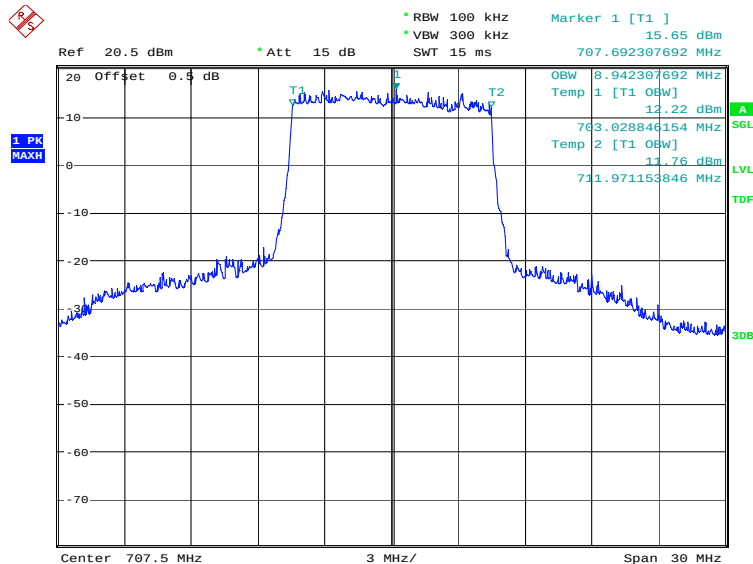
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
707.5	QPSK	16QAM
	8942.31	8942.31

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



Date: 11.AUG.2023 11:55:10

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

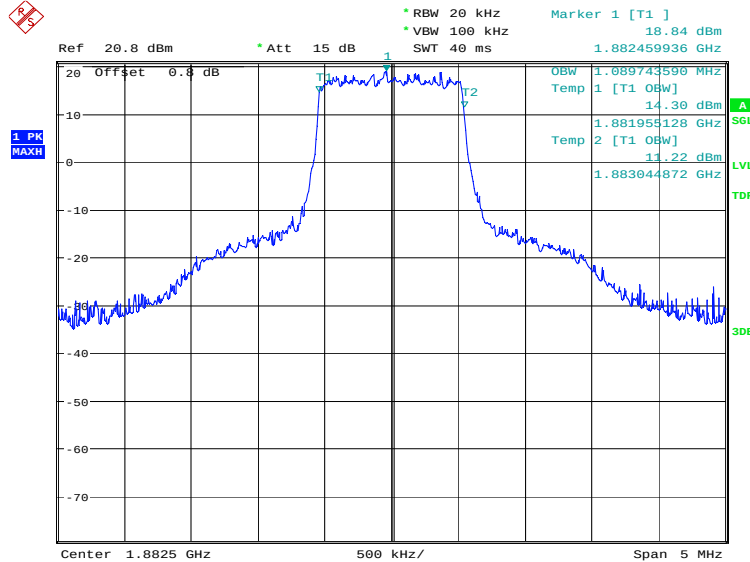


Date: 11.AUG.2023 11:55:51

LTE band 25, 1.4MHz (99%)

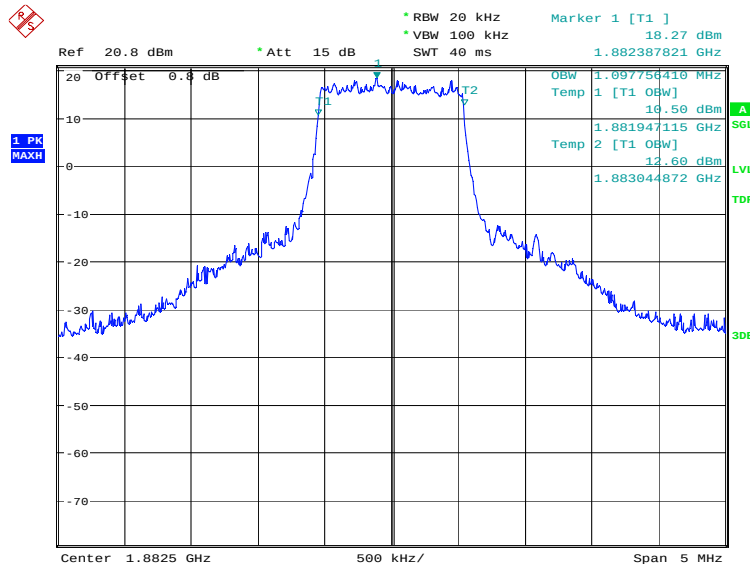
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	1089.74	1097.76

LTE band 25, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:25:23

LTE band 25, 1.4MHz Bandwidth, 16QAM (99% BW)

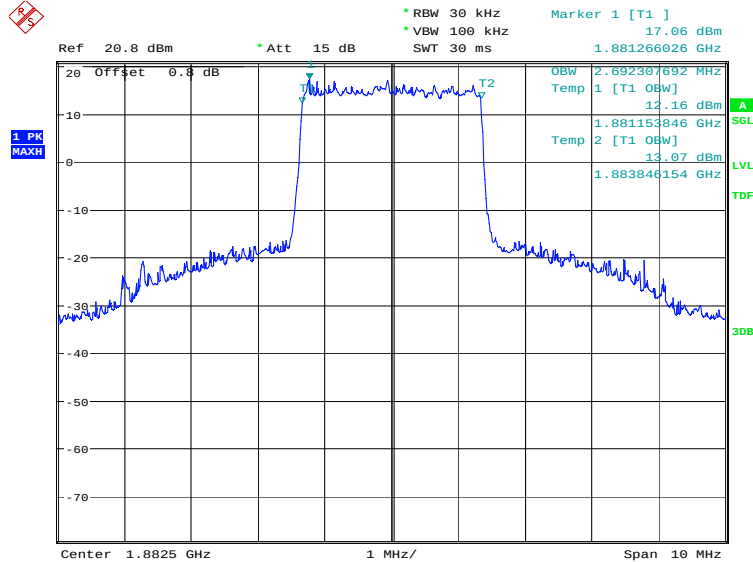


Date: 11.AUG.2023 14:26:04

LTE band 25, 3MHz (99%)

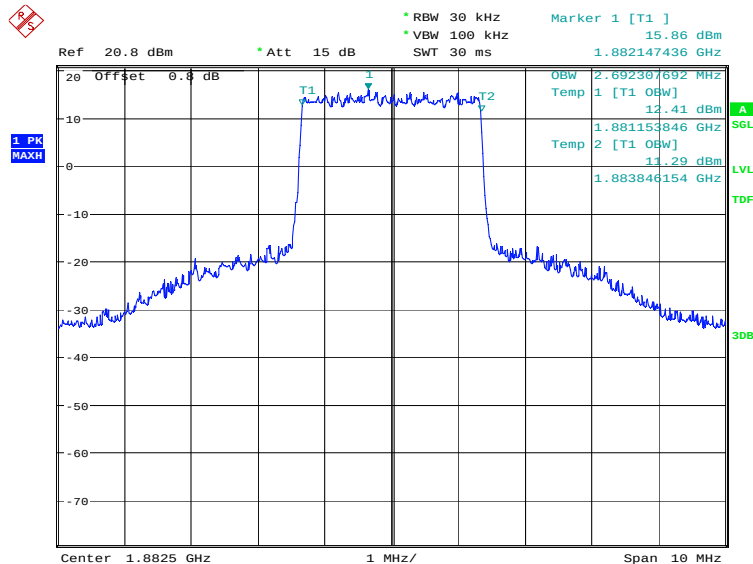
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	2692.31	2692.31

LTE band 25, 3MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:26:45

LTE band 25, 3MHz Bandwidth, 16QAM (99% BW)

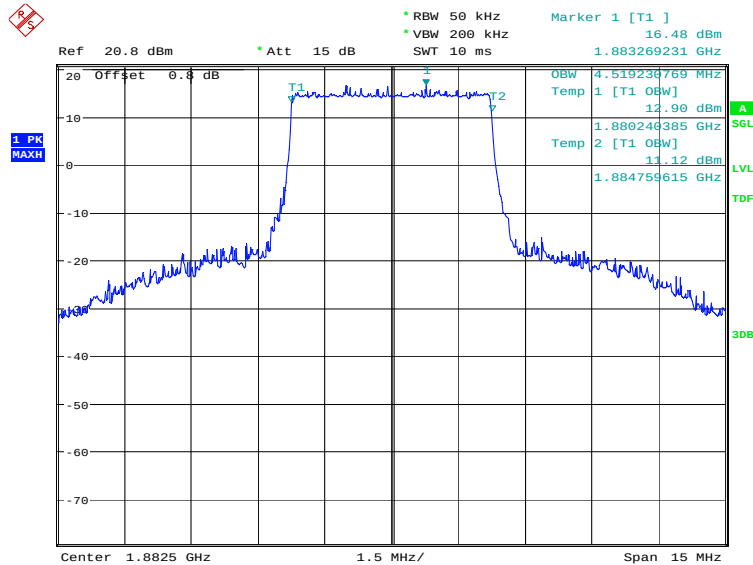


Date: 11.AUG.2023 14:27:26

LTE band 25, 5MHz (99%)

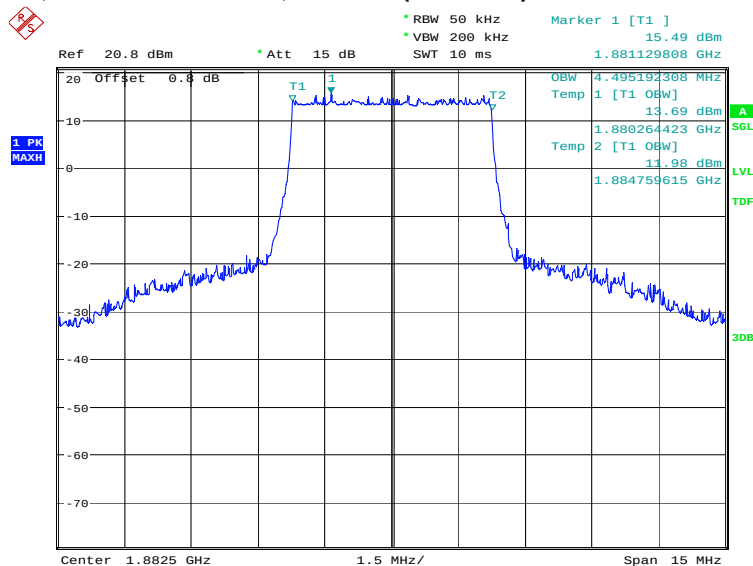
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	4519.23	4495.19

LTE band 25, 5MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:28:08

LTE band 25, 5MHz Bandwidth, 16QAM (99% BW)

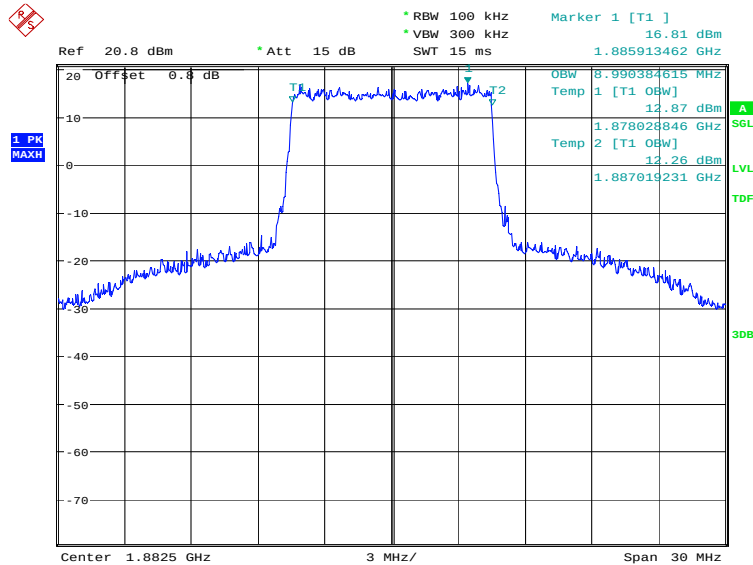


Date: 11.AUG.2023 14:28:48

LTE band 25, 10MHz (99%)

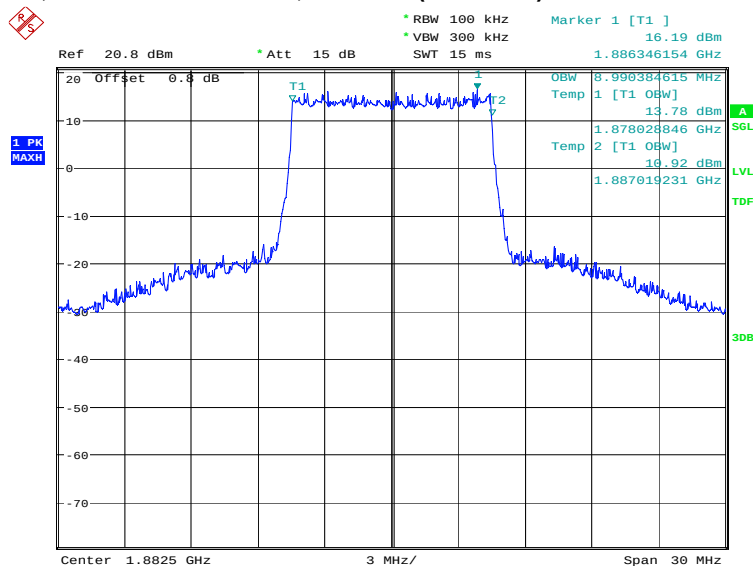
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	8990.38	8990.38

LTE band 25, 10MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:29:29

LTE band 25, 10MHz Bandwidth, 16QAM (99% BW)

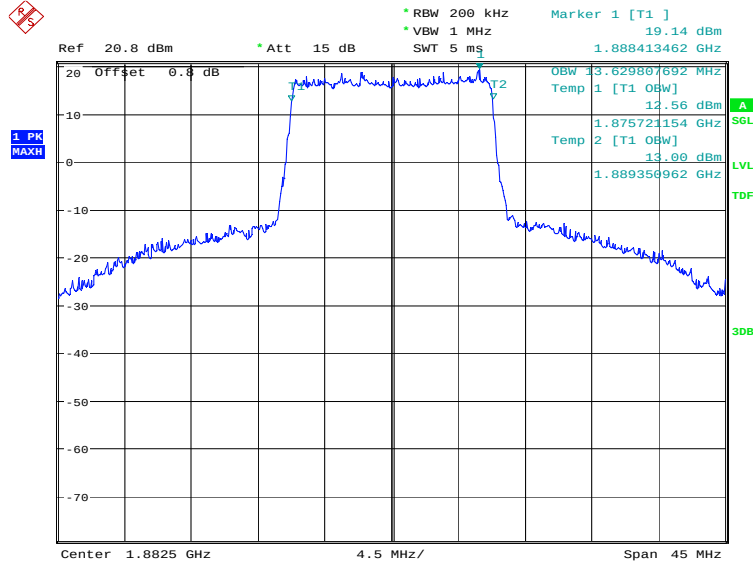


Date: 11.AUG.2023 14:30:10

LTE band 25, 15MHz (99%)

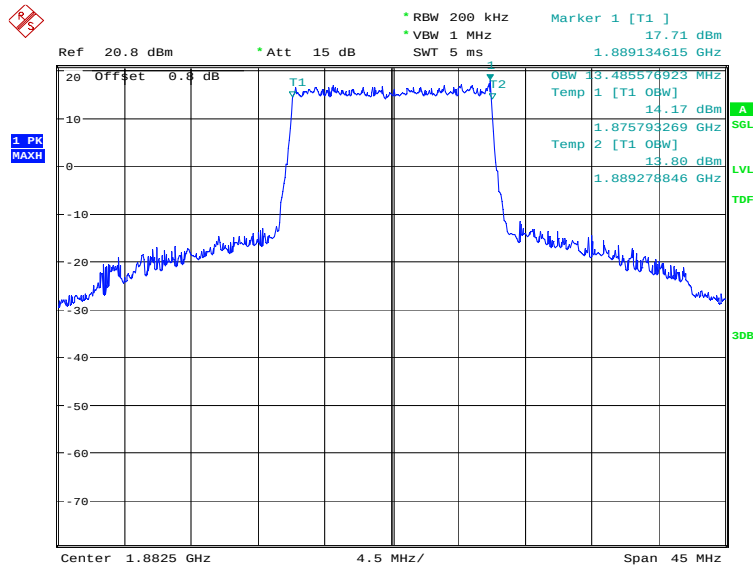
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	13629.81	13485.58

LTE band 25, 15MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:30:51

LTE band 25, 15MHz Bandwidth, 16QAM (99% BW)

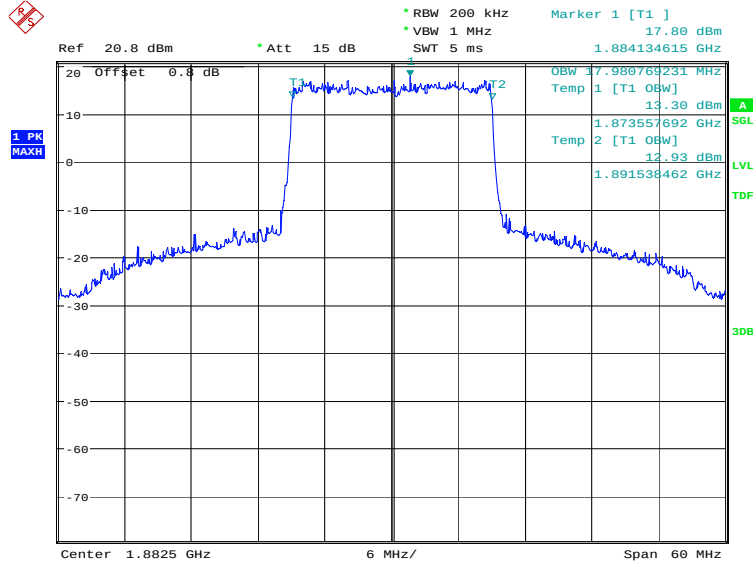


Date: 11.AUG.2023 14:31:32

LTE band 25, 20MHz (99%)

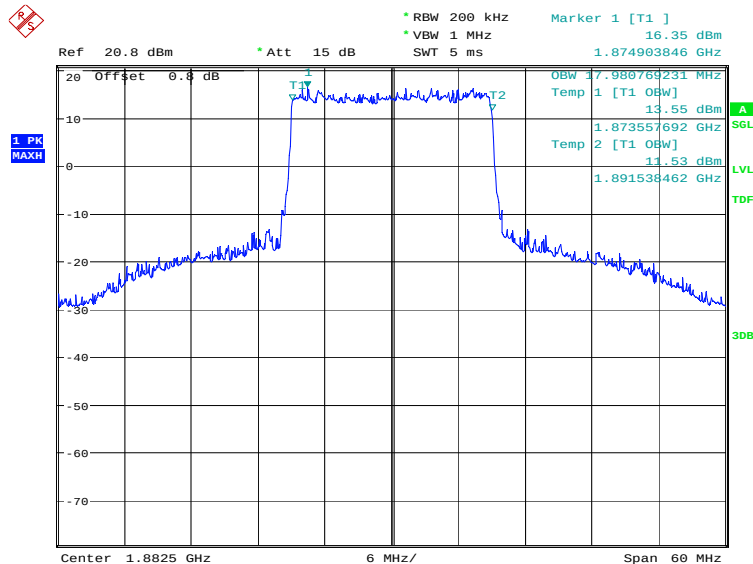
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1882.5	QPSK	16QAM
	17980.77	17980.77

LTE band 25, 20MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 14:32:14

LTE band 25, 20MHz Bandwidth, 16QAM (99% BW)

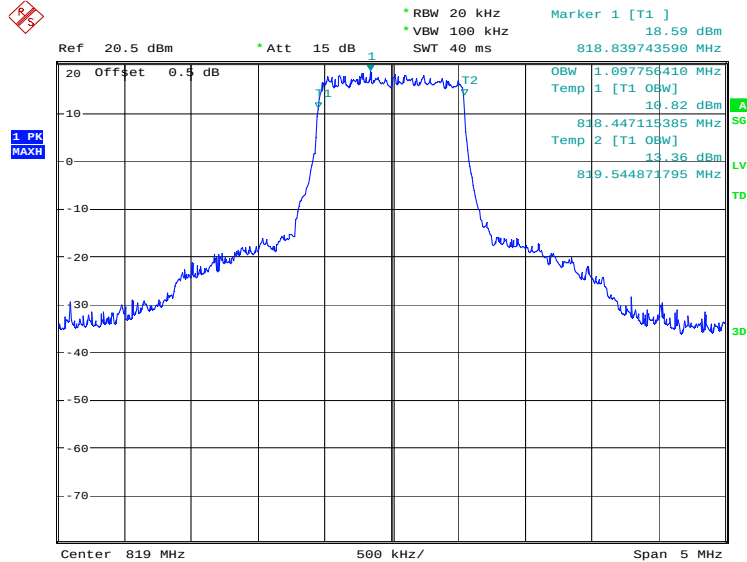


Date: 11.AUG.2023 14:32:54

LTE band 26(814MHz~824MHz), 1.4MHz (99%)

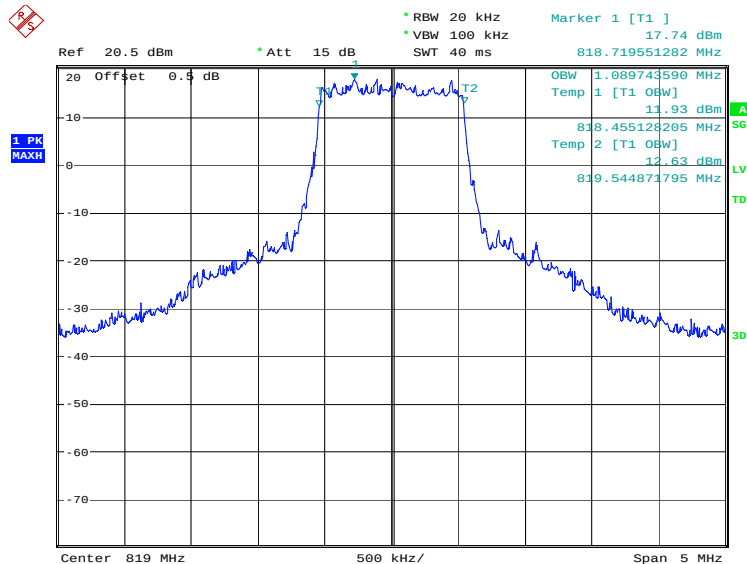
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	1097.76	1089.74

LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:04:06

LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, 16QAM (99% BW)

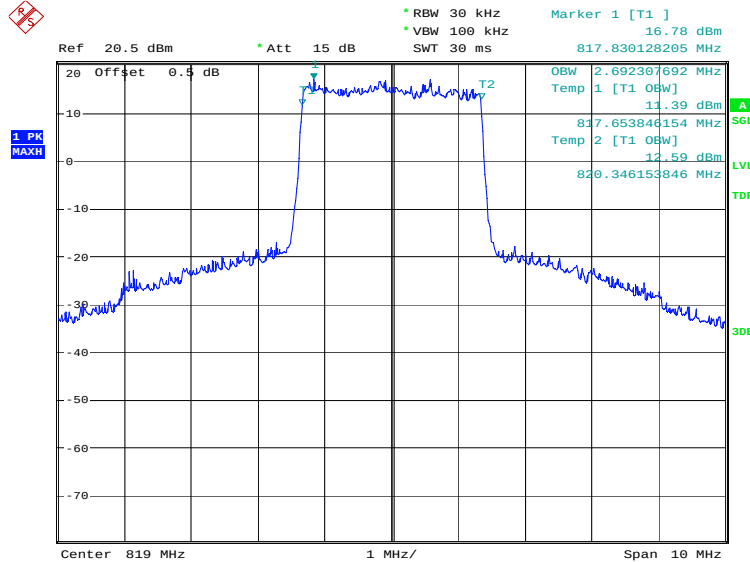


Date: 11.AUG.2023 12:04:46

LTE band 26(814MHz~824MHz), 3MHz (99%)

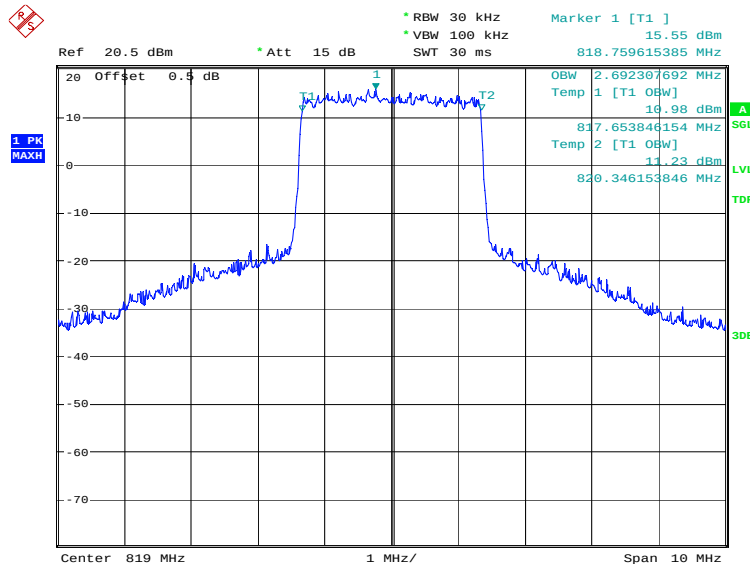
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	2692.31	2692.31

LTE band 26(814MHz~824MHz), 3MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:05:29

LTE band 26(814MHz~824MHz), 3MHz Bandwidth, 16QAM (99% BW)

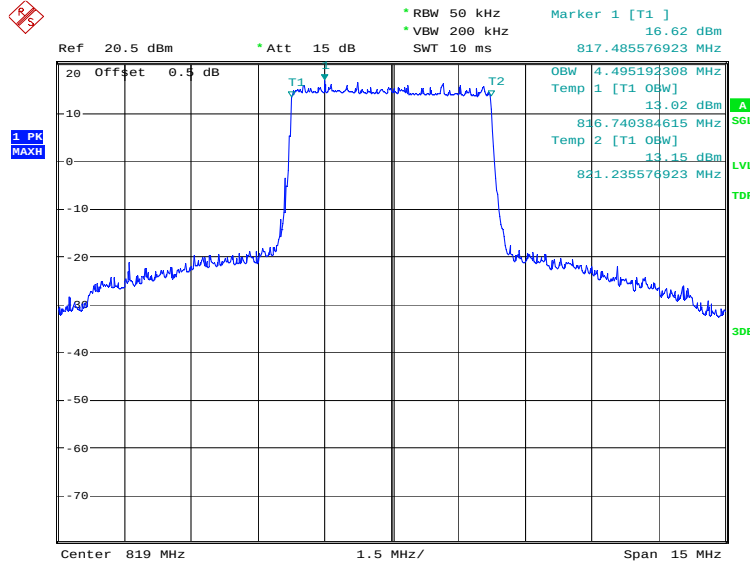


Date: 11.AUG.2023 12:06:09

LTE band 26(814MHz~824MHz), 5MHz (99%)

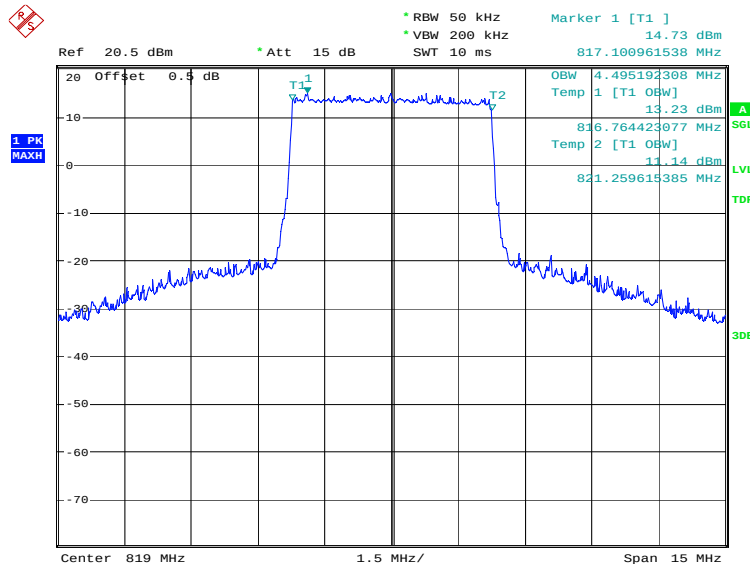
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	4495.19	4495.19

LTE band 26(814MHz~824MHz), 5MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:06:51

LTE band 26(814MHz~824MHz), 5MHz Bandwidth, 16QAM (99% BW)

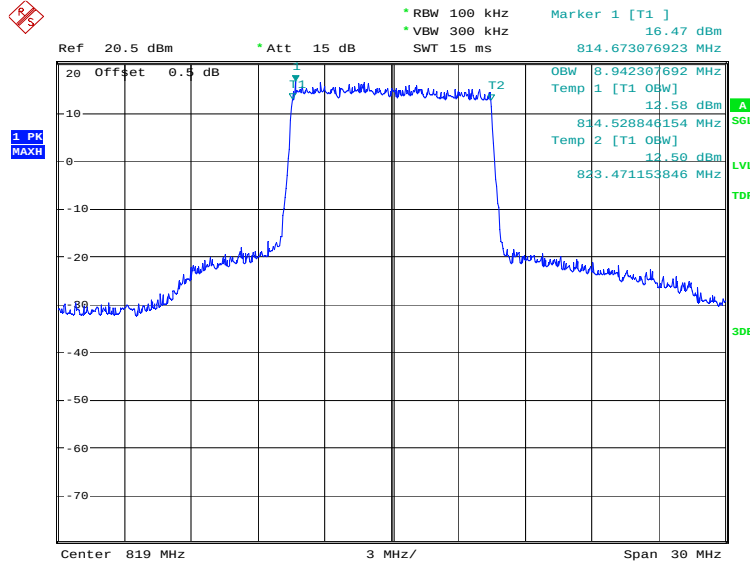


Date: 11.AUG.2023 12:07:31

LTE band 26(814MHz~824MHz), 10MHz (99%)

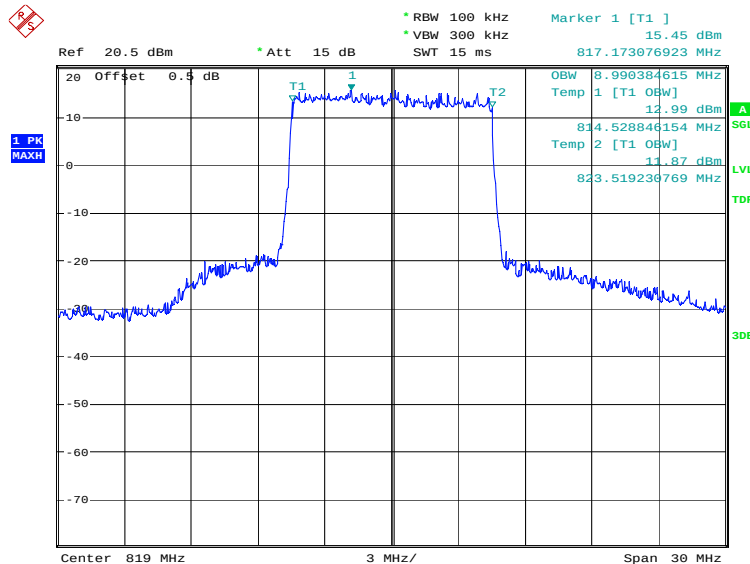
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	8942.31	8990.38

LTE band 26(814MHz~824MHz), 10MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:08:13

LTE band 26(814MHz~824MHz), 10MHz Bandwidth, 16QAM (99% BW)

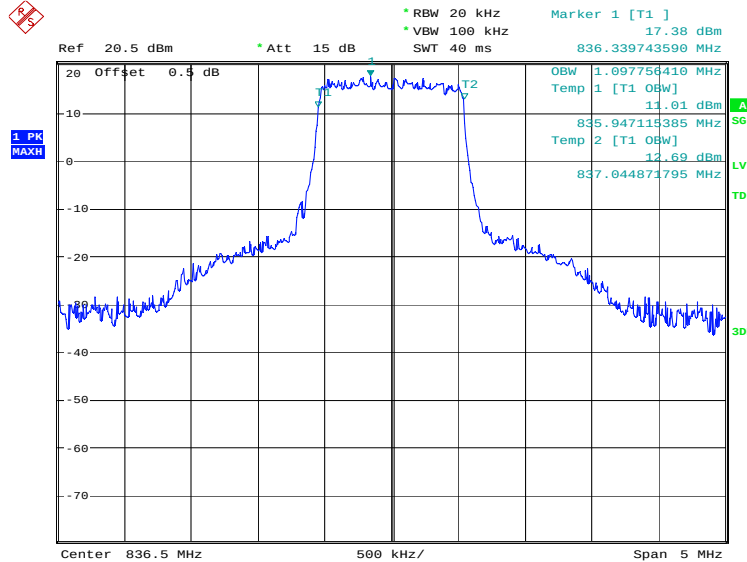


Date: 11.AUG.2023 12:08:53

LTE band 26(824MHz~849MHz), 1.4MHz (99%)

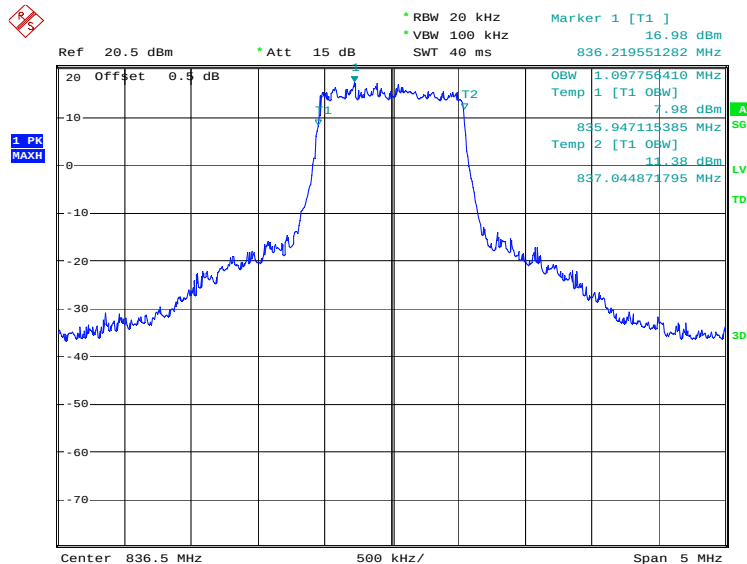
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	1097.76	1097.76

LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:56:34

LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, 16QAM (99% BW)

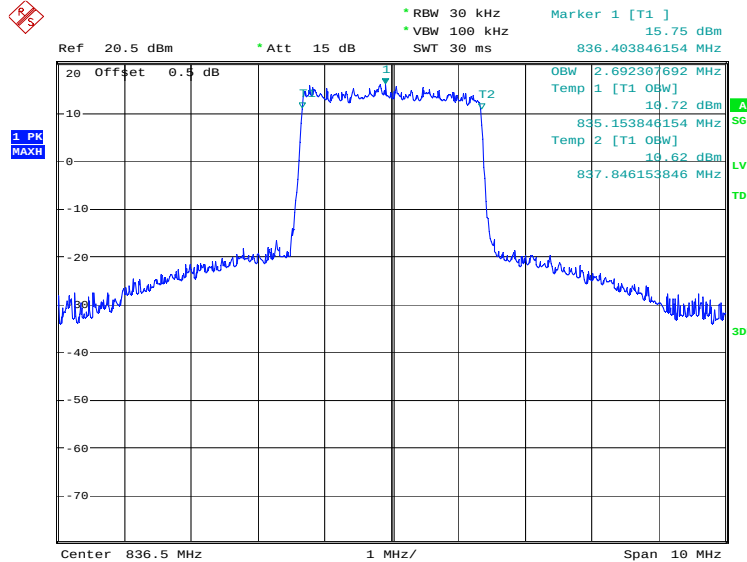


Date: 11.AUG.2023 11:57:14

LTE band 26(824MHz~849MHz), 3MHz (99%)

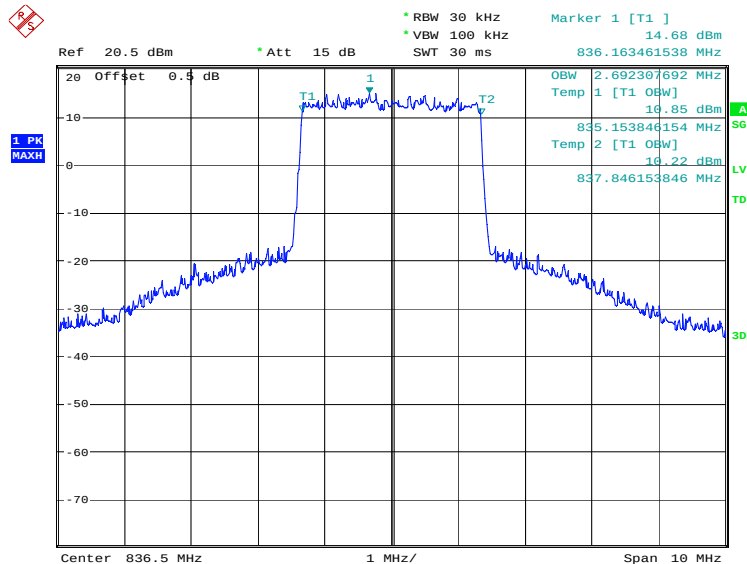
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	2692.31	2692.31

LTE band 26(824MHz~849MHz), 3MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:57:56

LTE band 26(824MHz~849MHz), 3MHz Bandwidth, 16QAM (99% BW)

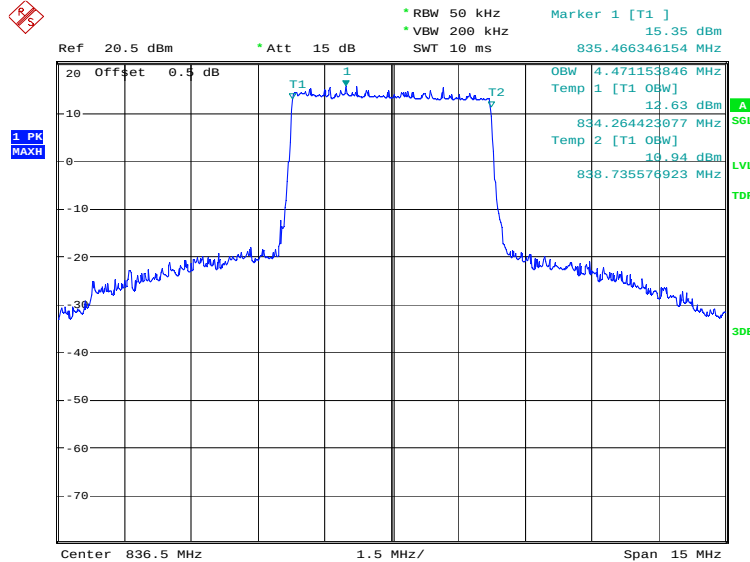


Date: 11.AUG.2023 11:58:37

LTE band 26(824MHz~849MHz), 5MHz (99%)

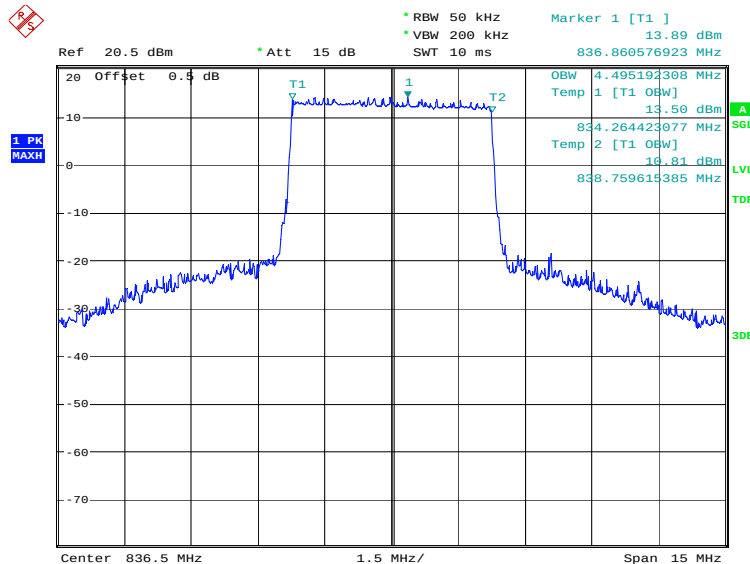
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	4471.15	4495.19

LTE band 26(824MHz~849MHz), 5MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:59:19

LTE band 26(824MHz~849MHz), 5MHz Bandwidth, 16QAM (99% BW)

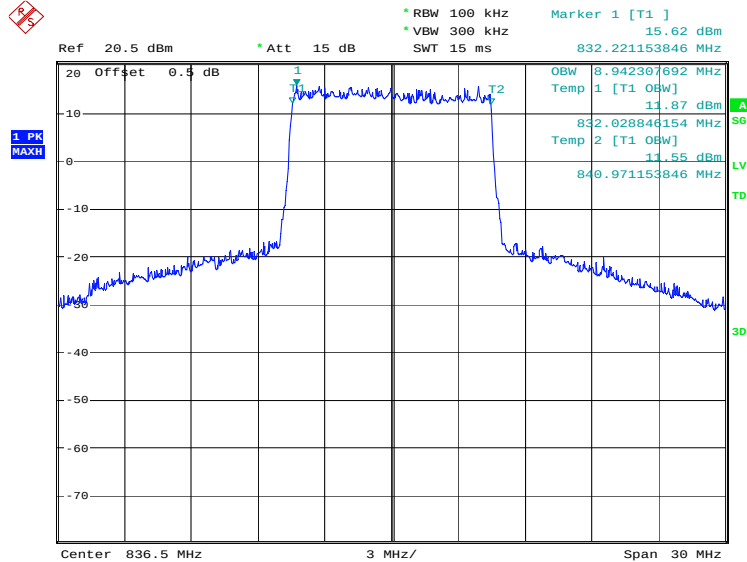


Date: 11.AUG.2023 11:59:59

LTE band 26(824MHz~849MHz), 10MHz (99%)

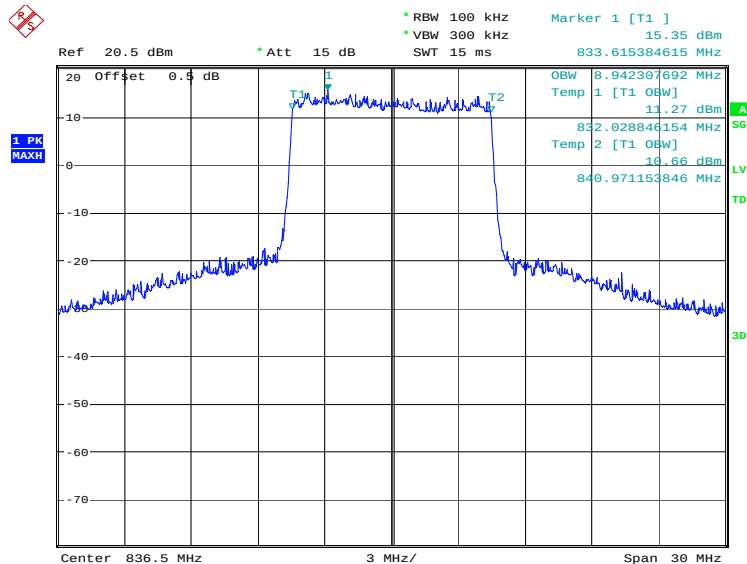
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	8942.31	8942.31

LTE band 26(824MHz~849MHz), 10MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:00:41

LTE band 26(824MHz~849MHz), 10MHz Bandwidth, 16QAM (99% BW)

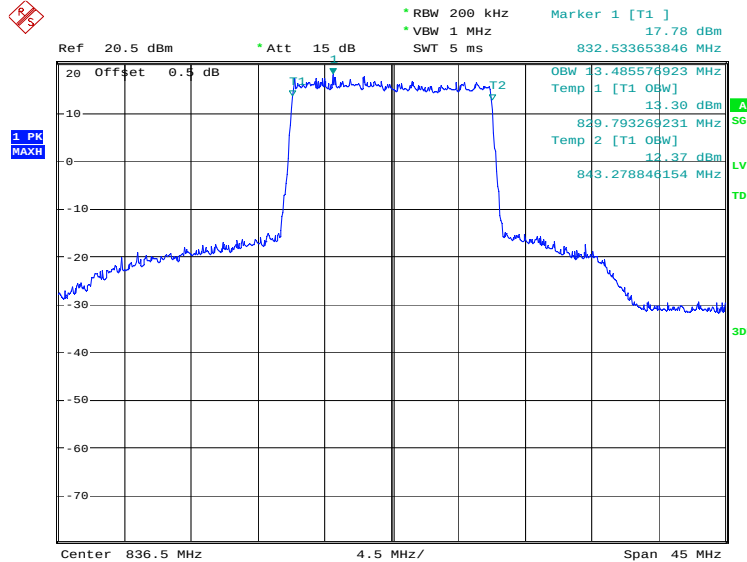


Date: 11.AUG.2023 12:01:21

LTE band 26(824MHz~849MHz), 15MHz (99%)

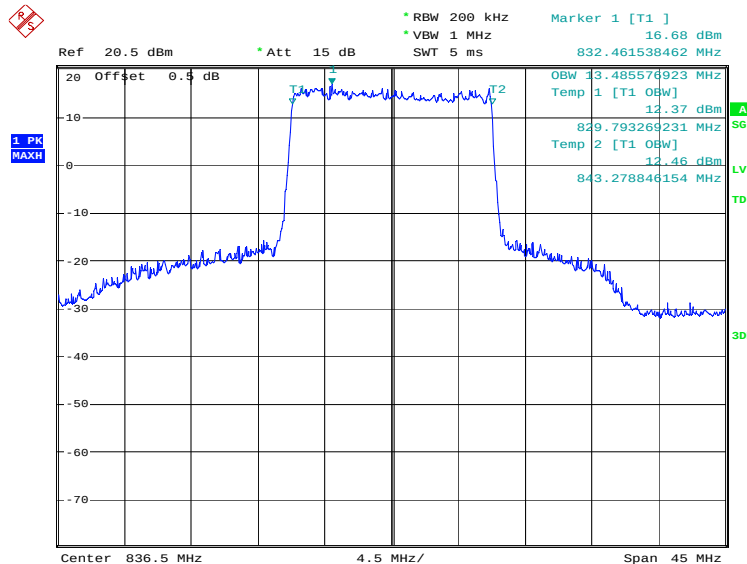
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	13485.58	13485.58

LTE band 26(824MHz~849MHz), 15MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 12:02:03

LTE band 26(824MHz~849MHz), 15MHz Bandwidth, 16QAM (99% BW)

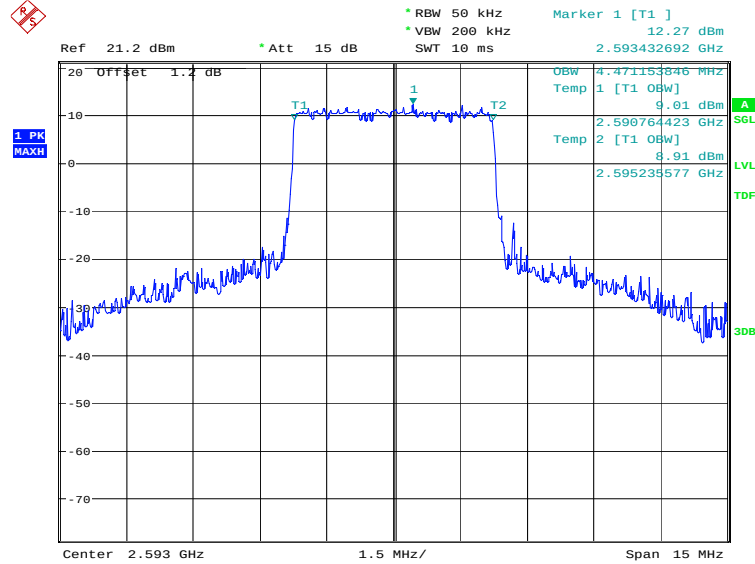


Date: 11.AUG.2023 12:02:43

LTE band 41, 5MHz (99%)

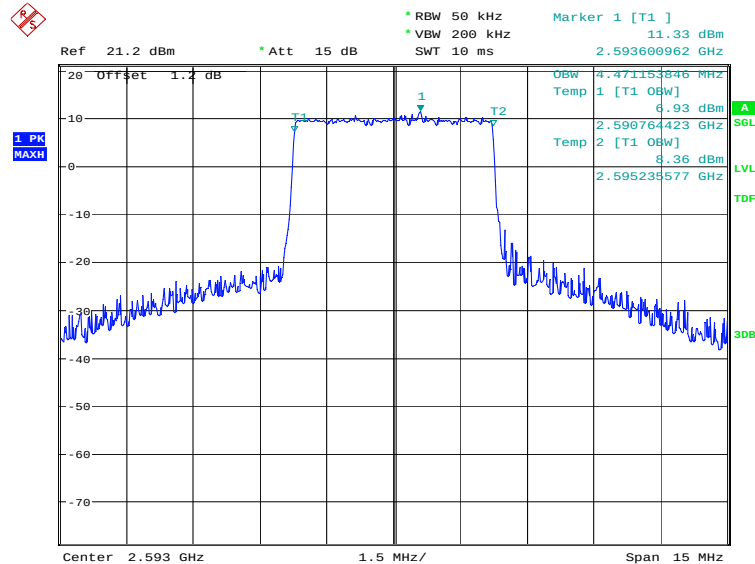
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2593.0	QPSK	16QAM
	4471.15	4471.15

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



Date: 11.AUG.2023 14:42:36

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

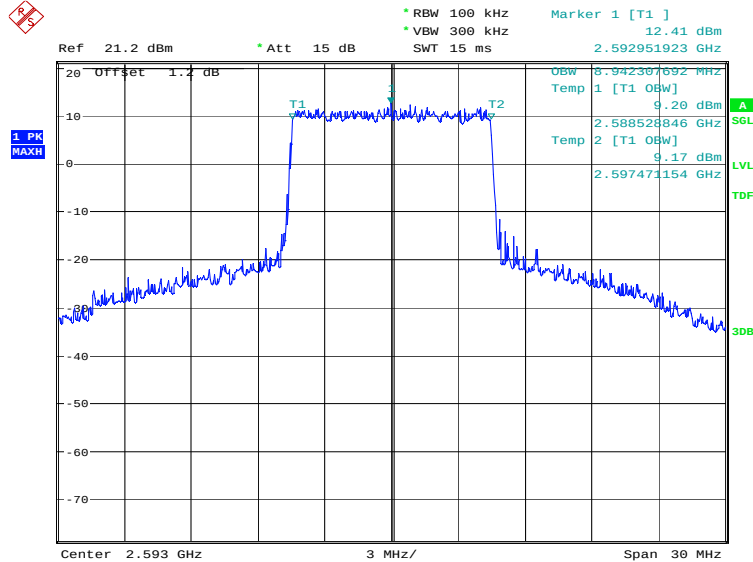


Date: 11.AUG.2023 14:43:17

LTE band 41, 10MHz (99%)

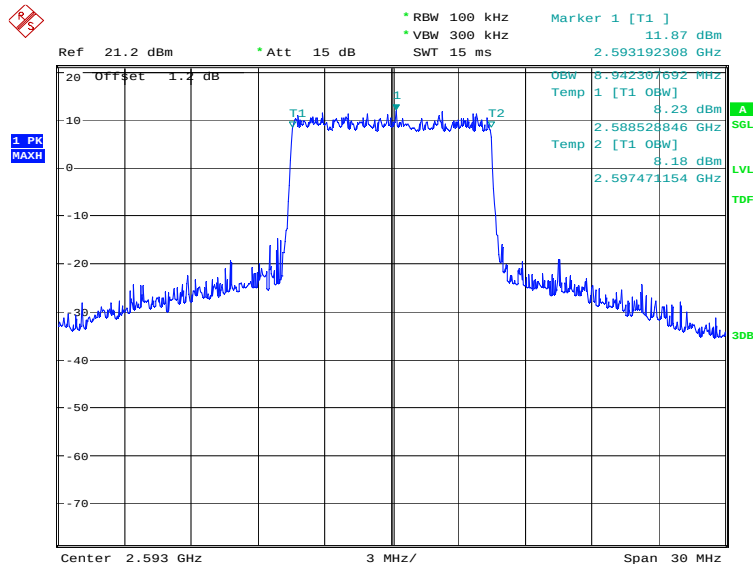
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2593.0	QPSK	16QAM
	8942.31	8942.31

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



Date: 11.AUG.2023 14:43:59

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

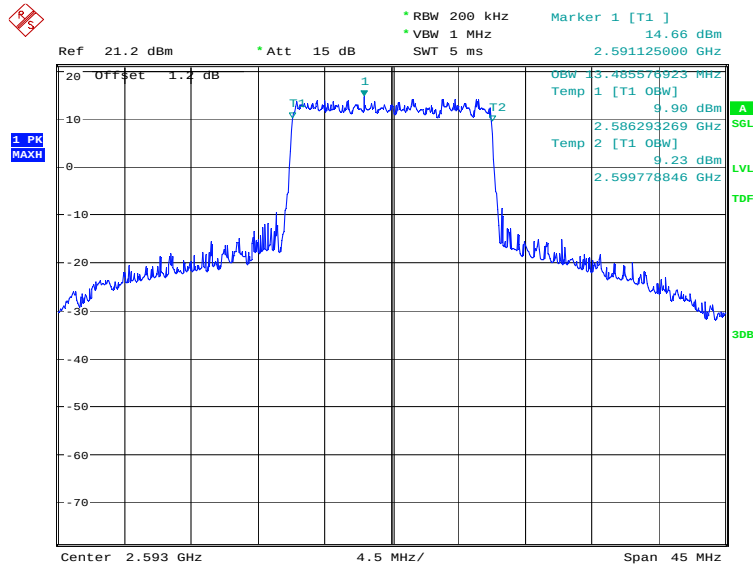


Date: 11.AUG.2023 14:44:39

LTE band 41, 15MHz (99%)

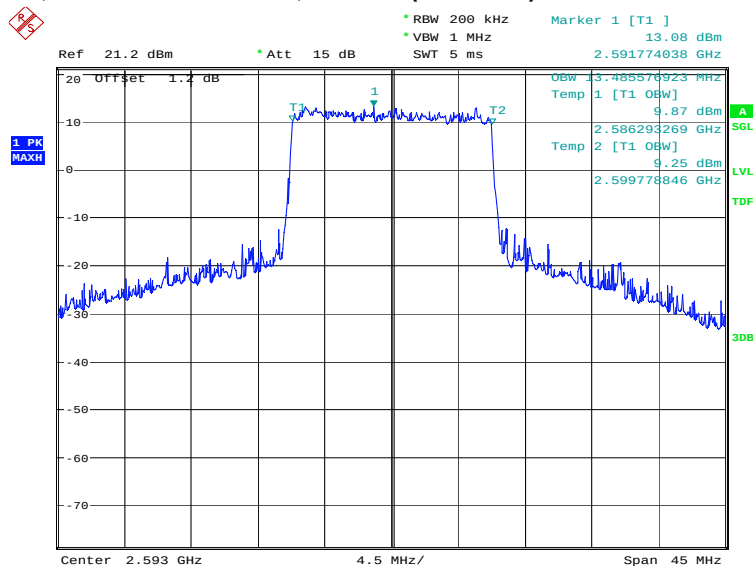
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2593.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 11.AUG.2023 14:45:21

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

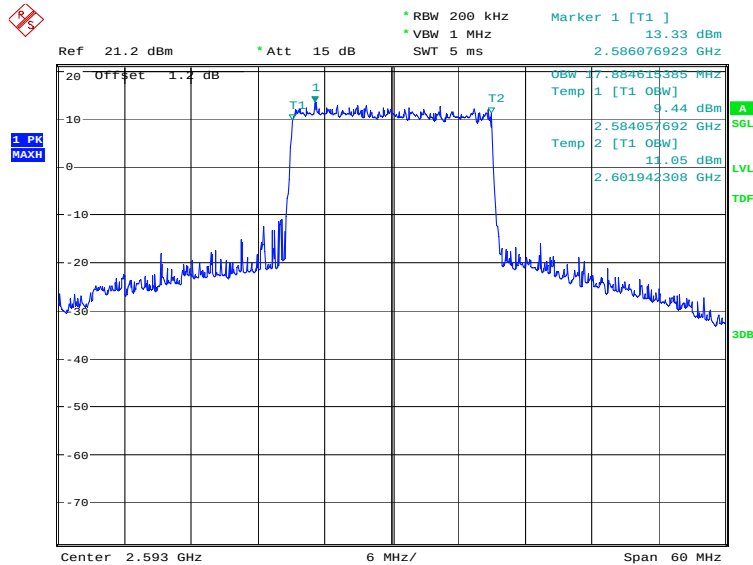


Date: 11.AUG.2023 14:46:02

LTE band 41, 20MHz (99%)

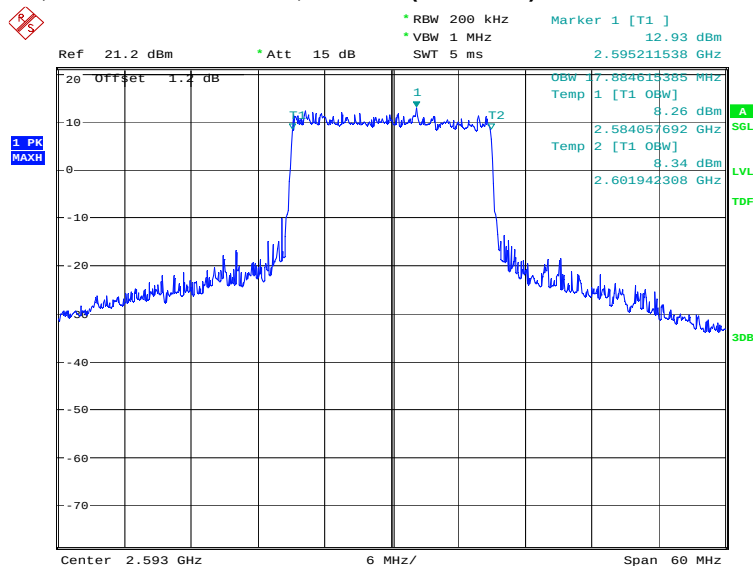
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2593.0	QPSK	16QAM
	17884.62	17884.62

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



Date: 11.AUG.2023 14:46:44

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

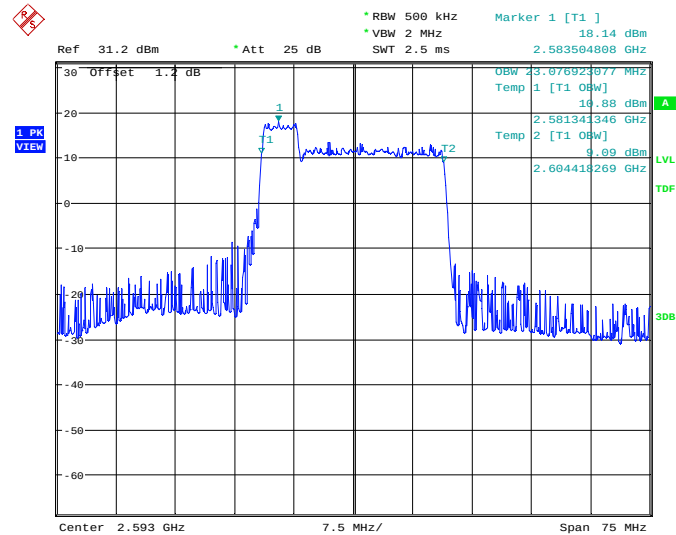


Date: 11.AUG.2023 14:47:24

LTE CA band 41C, 5MHz+20MHz(99%)

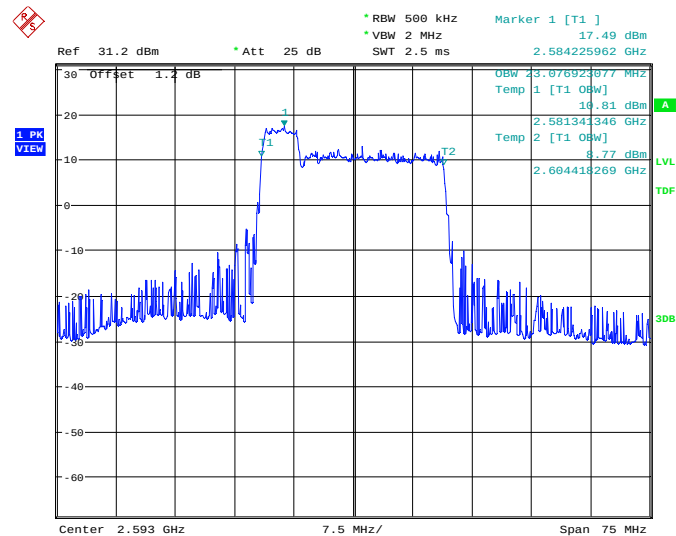
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	23.077	23.077

LTE CA band 41C , 5MHz+20MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:05:33

LTE CA band 41C , 5MHz+20MHz Bandwidth,16QAM (99% BW)

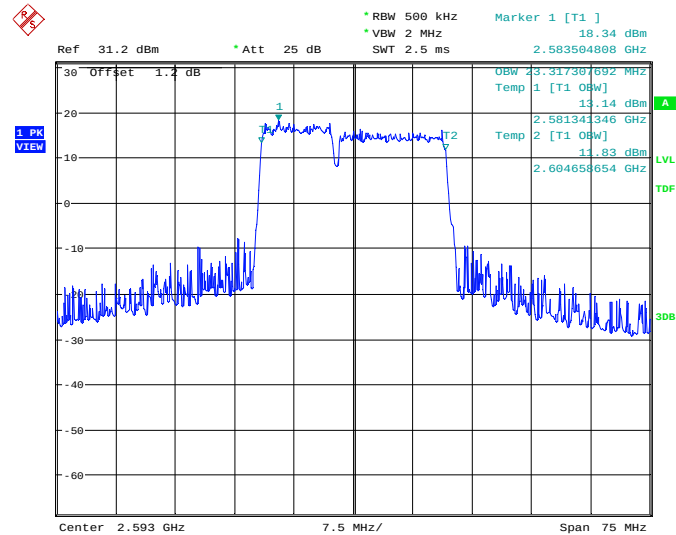


Date: 11.AUG.2023 09:05:56

LTE CA band 41C, 10MHz+15MHz(99%)

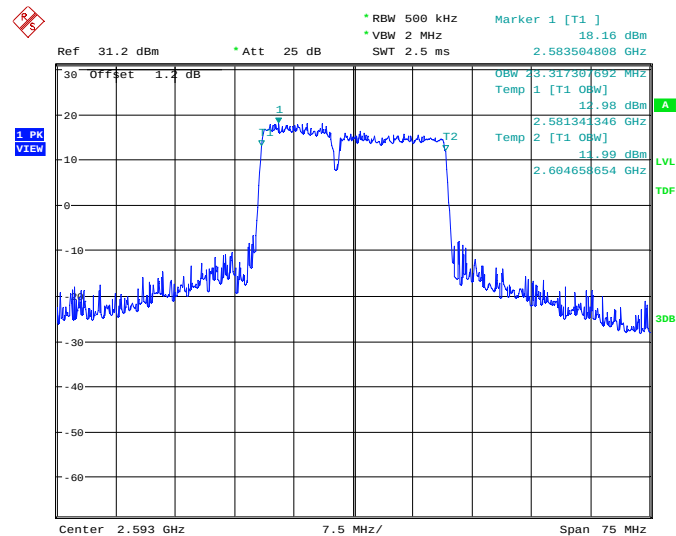
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	23.317	23.317

LTE CA band 41C , 10MHz+15MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:07:17

LTE CA band 41C , 10MHz+15MHz Bandwidth,16QAM (99% BW)

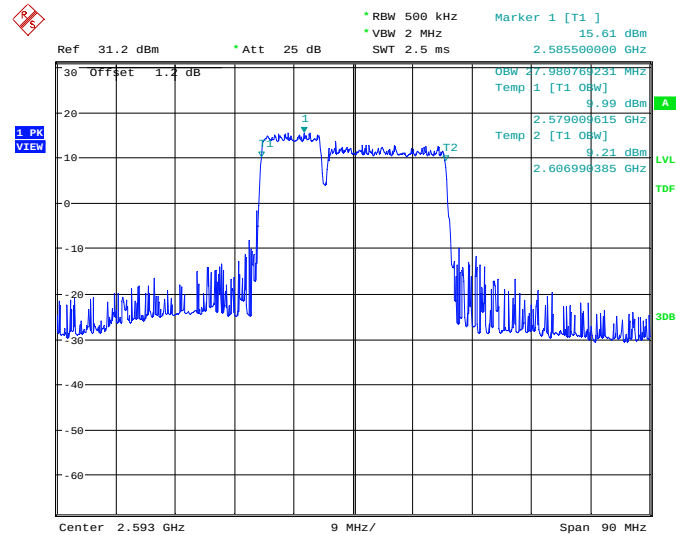


Date: 11.AUG.2023 09:07:41

LTE CA band 41C, 10MHz+20MHz(99%)

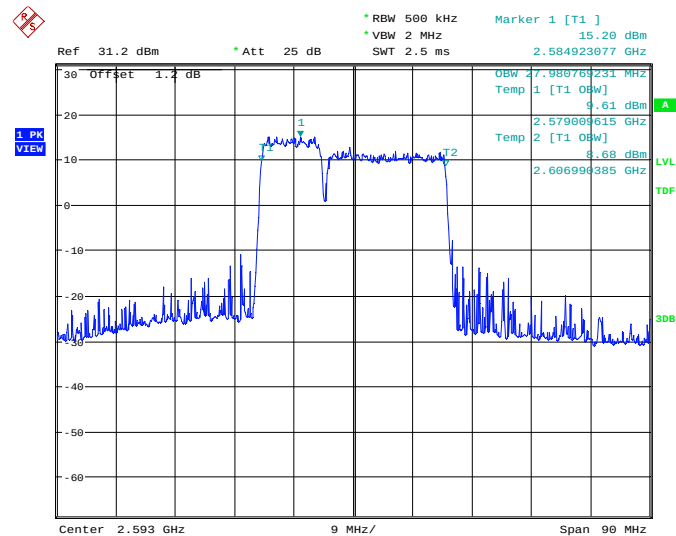
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	27.981	27.981

LTE CA band 41C , 10MHz+20MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:09:00

LTE CA band 41C , 10MHz+20MHz Bandwidth,16QAM (99% BW)

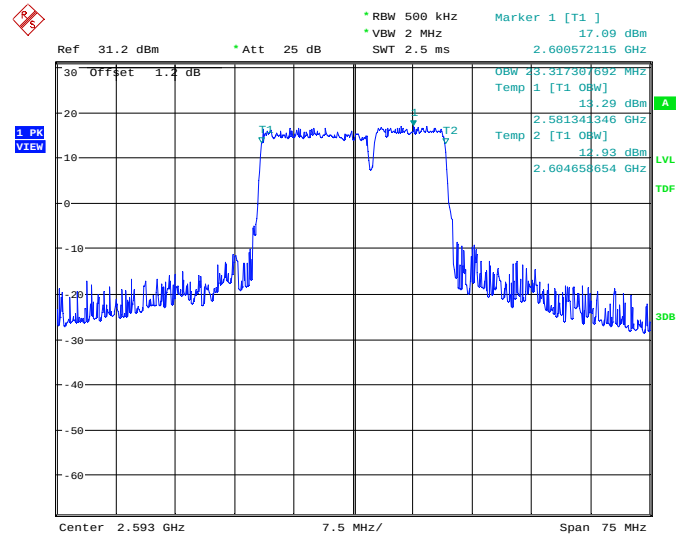


Date: 11.AUG.2023 09:09:23

LTE CA band 41C, 15MHz+10MHz(99%)

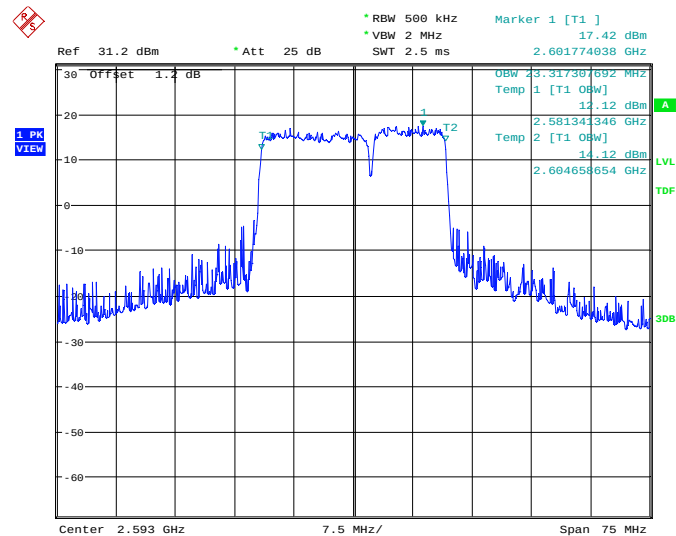
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	23.317	23.317

LTE CA band 41C , 15MHz+10MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:10:17

LTE CA band 41C , 15MHz+10MHz Bandwidth,16QAM (99% BW)

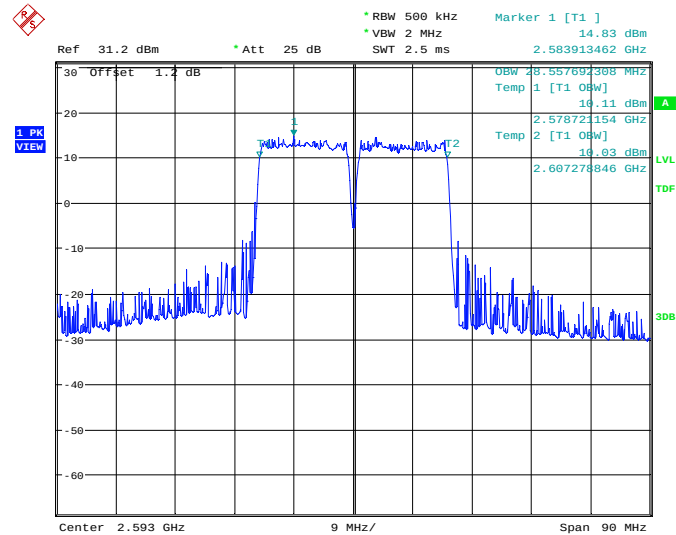


Date: 11.AUG.2023 09:10:41

LTE CA band 41C, 15MHz+15MHz(99%)

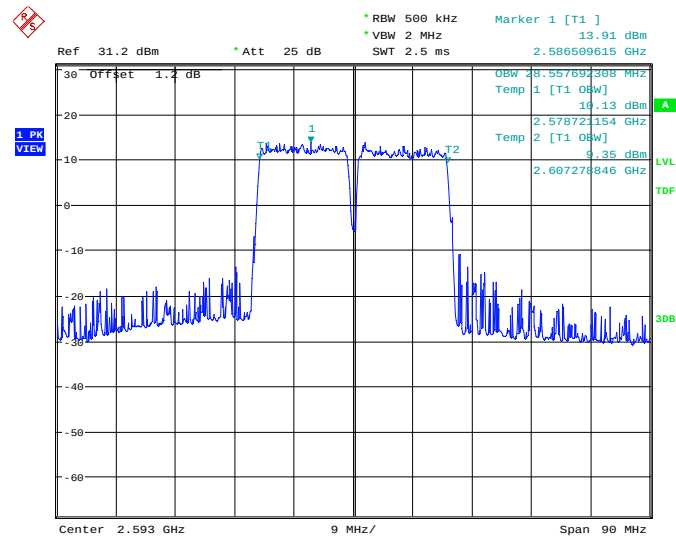
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	28.558	28.558

LTE CA band 41C , 15MHz+15MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:12:00

LTE CA band 41C , 15MHz+15MHz Bandwidth,16QAM (99% BW)

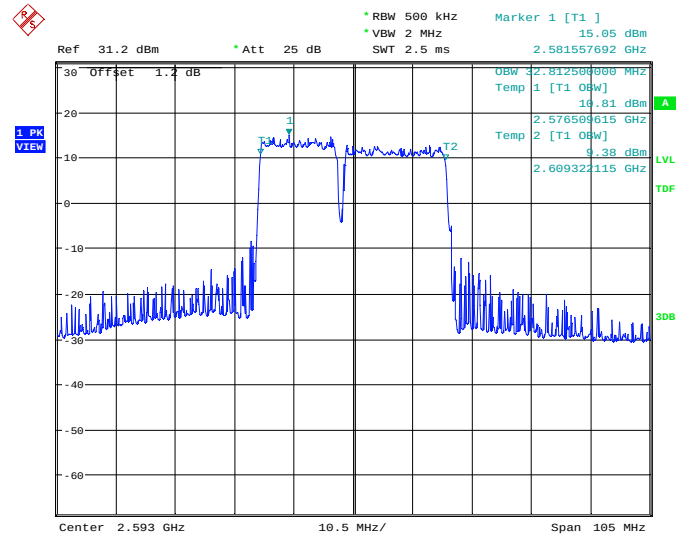


Date: 11.AUG.2023 09:12:24

LTE CA band 41C, 15MHz+20MHz(99%)

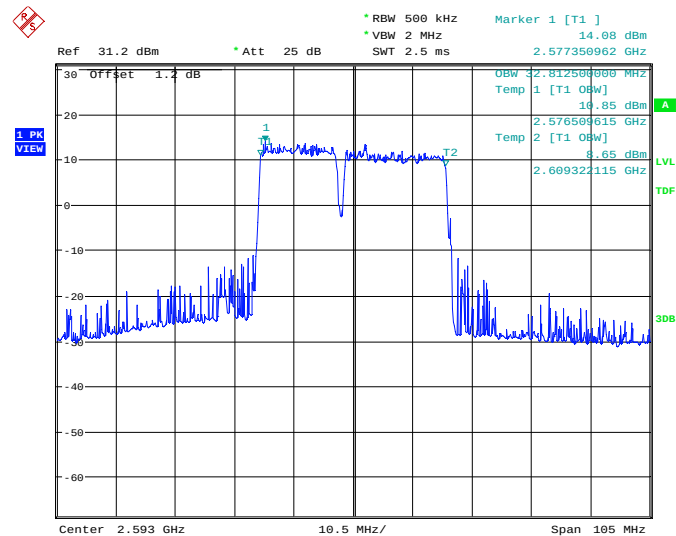
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	32.812	32.812

LTE CA band 41C , 15MHz+20MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:13:43

LTE CA band 41C , 15MHz+20MHz Bandwidth,16QAM (99% BW)

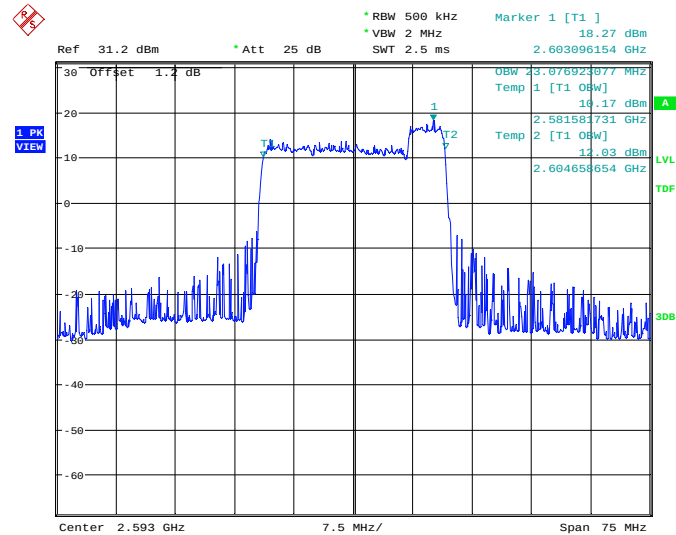


Date: 11.AUG.2023 09:14:07

LTE CA band 41C, 20MHz+5MHz(99%)

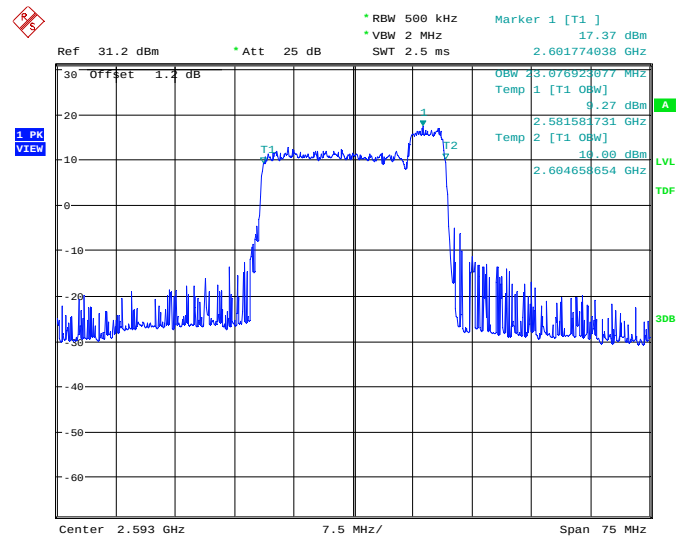
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	23.077	23.077

LTE CA band 41C , 20MHz+5MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:15:01

LTE CA band 41C , 20MHz+5MHz Bandwidth,16QAM (99% BW)

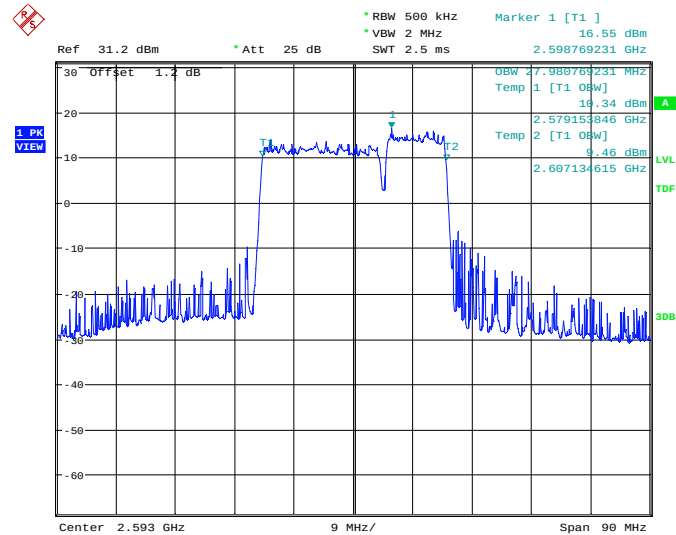


Date: 11.AUG.2023 09:15:24

LTE CA band 41C, 20MHz+10MHz(99%)

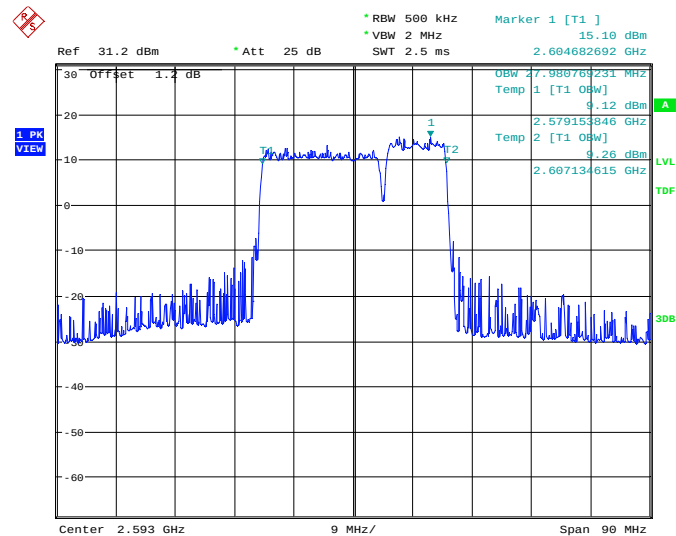
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	27.981	27.981

LTE CA band 41C , 20MHz+10MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:16:44

LTE CA band 41C , 20MHz+10MHz Bandwidth,16QAM (99% BW)

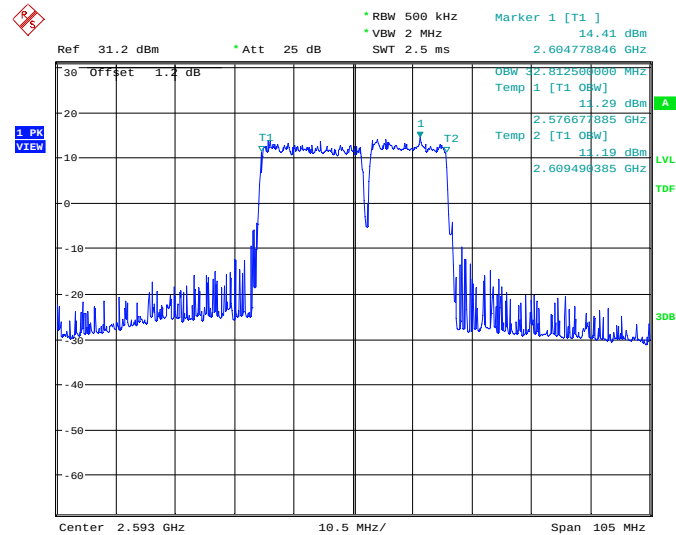


Date: 11.AUG.2023 09:17:07

LTE CA band 41C, 20MHz+15MHz(99%)

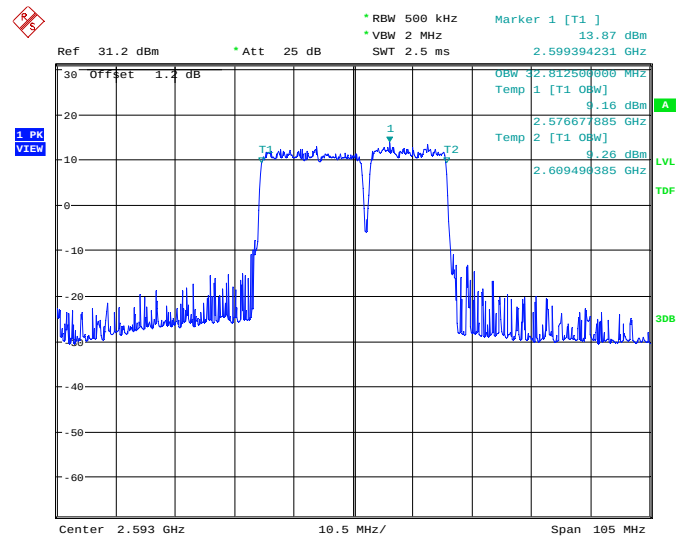
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	32.812	32.812

LTE CA band 41C , 20MHz+15MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:18:26

LTE CA band 41C , 20MHz+15MHz Bandwidth,16QAM (99% BW)

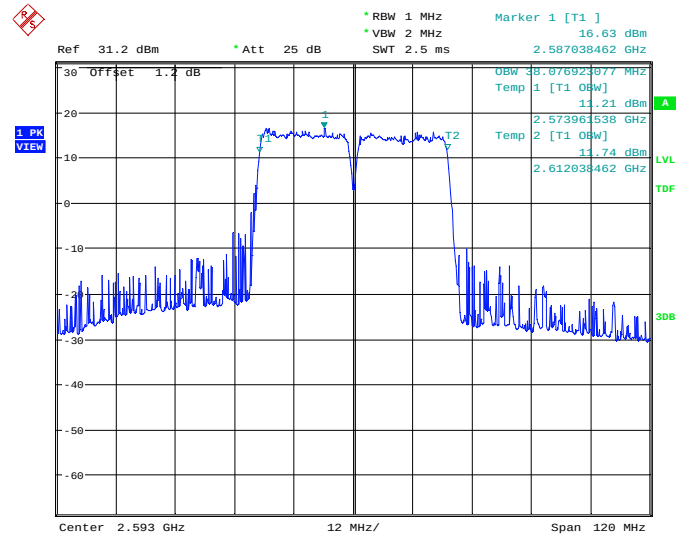


Date: 11.AUG.2023 09:18:50

LTE CA band 41C, 20MHz+20MHz(99%)

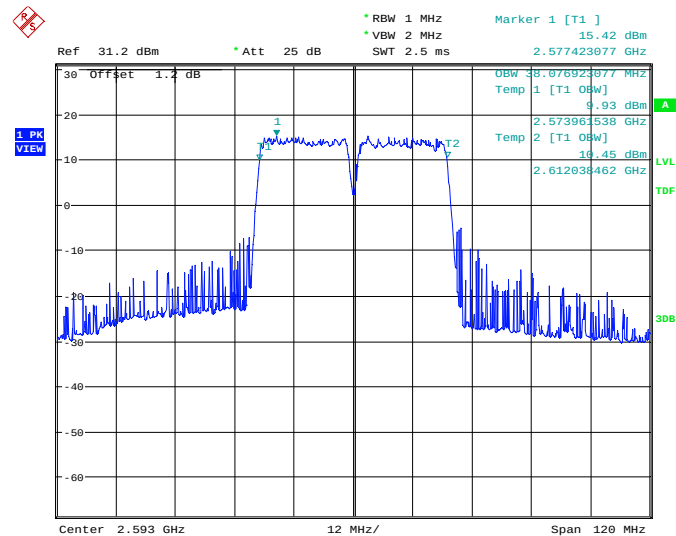
Frequency (MHz)	Occupied Bandwidth (99%) (MHz)	
	QPSK	16QAM
2593.0	38.077	38.077

LTE CA band 41C , 20MHz+20MHz Bandwidth,QPSK (99% BW)



Date: 11.AUG.2023 09:20:09

LTE CA band 41C , 20MHz+20MHz Bandwidth,16QAM (99% BW)

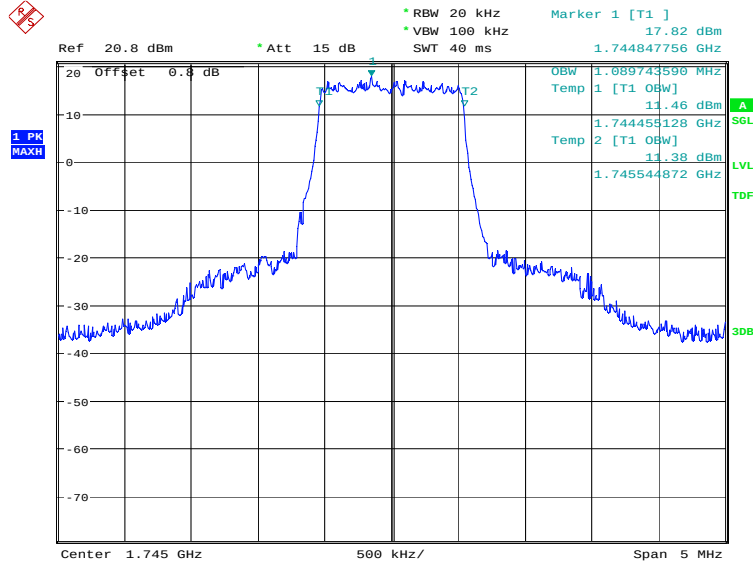


Date: 11.AUG.2023 09:20:32

LTE band 66, 1.4MHz (99%)

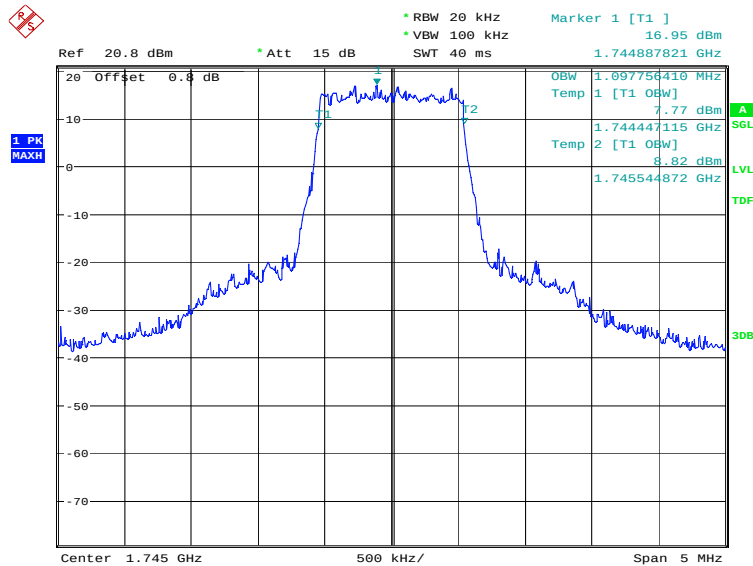
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	1089.74	1097.76

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



Date: 11.AUG.2023 14:33:37

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

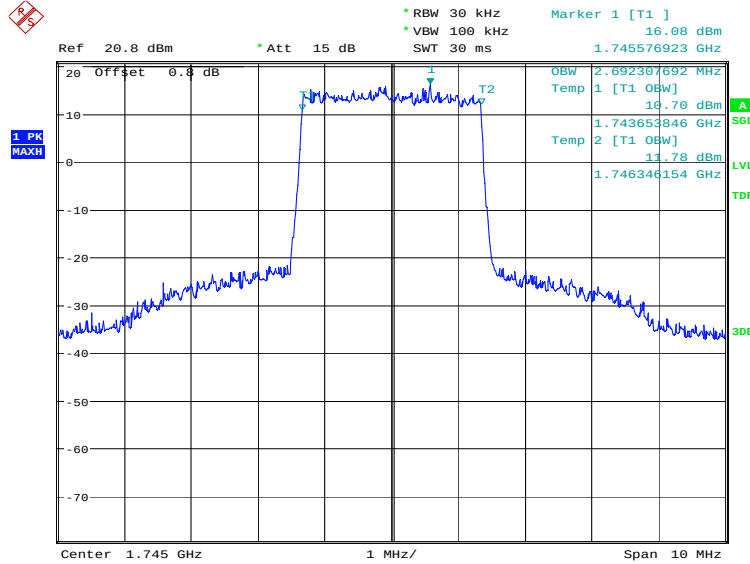


Date: 11.AUG.2023 14:34:17

LTE band 66, 3MHz (99%)

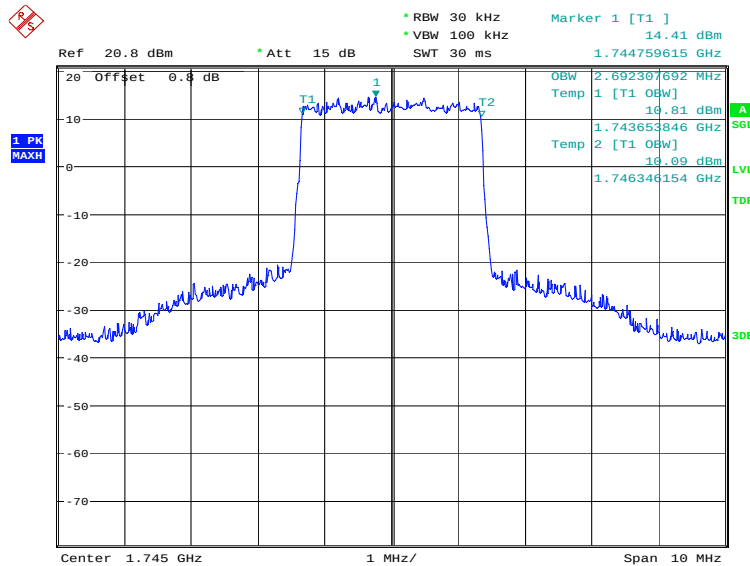
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 11.AUG.2023 14:34:59

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

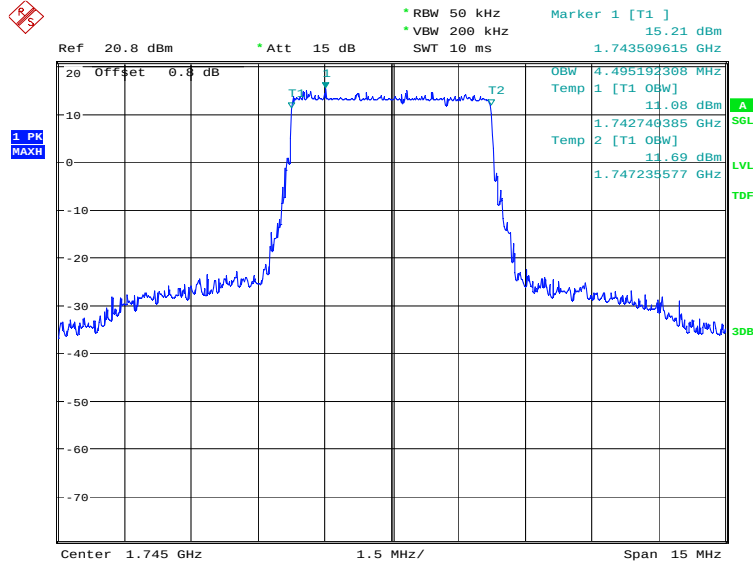


Date: 11.AUG.2023 14:35:40

LTE band 66, 5MHz (99%)

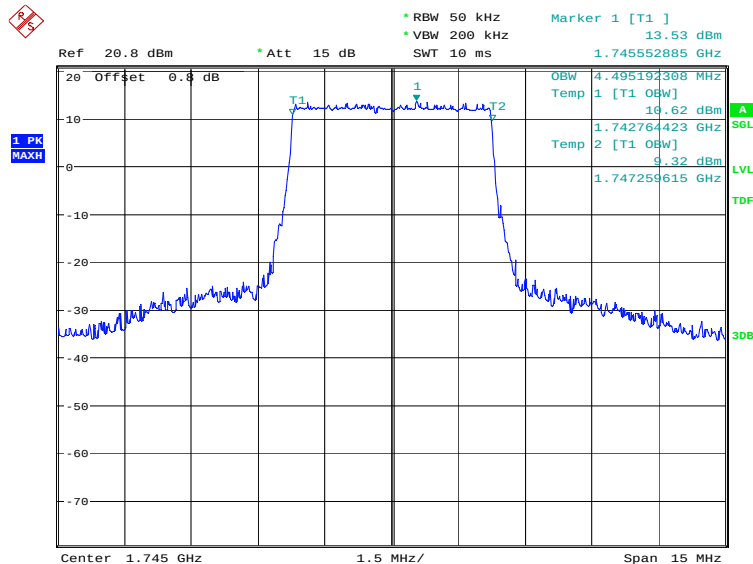
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 11.AUG.2023 14:36:21

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

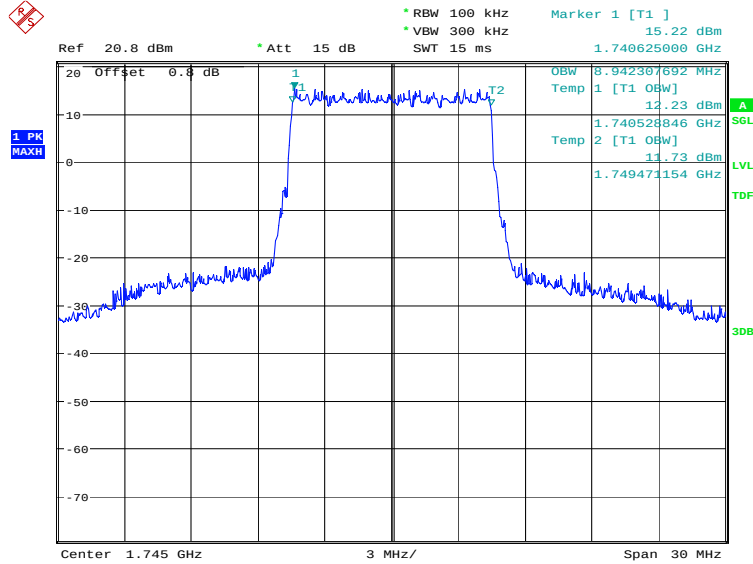


Date: 11.AUG.2023 14:37:01

LTE band 66, 10MHz (99%)

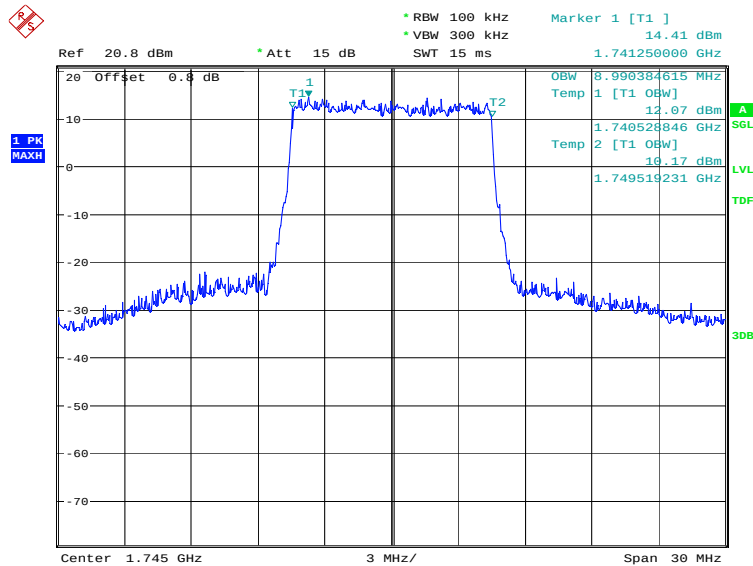
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 11.AUG.2023 14:37:43

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

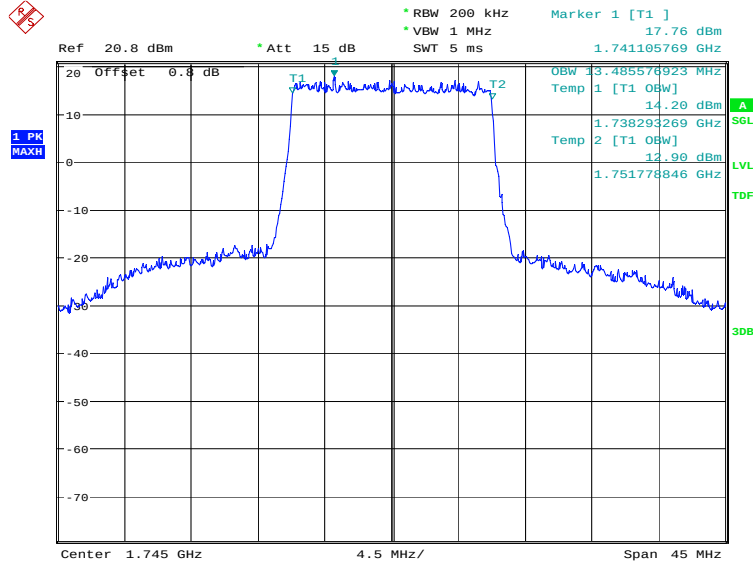


Date: 11.AUG.2023 14:38:24

LTE band 66, 15MHz (99%)

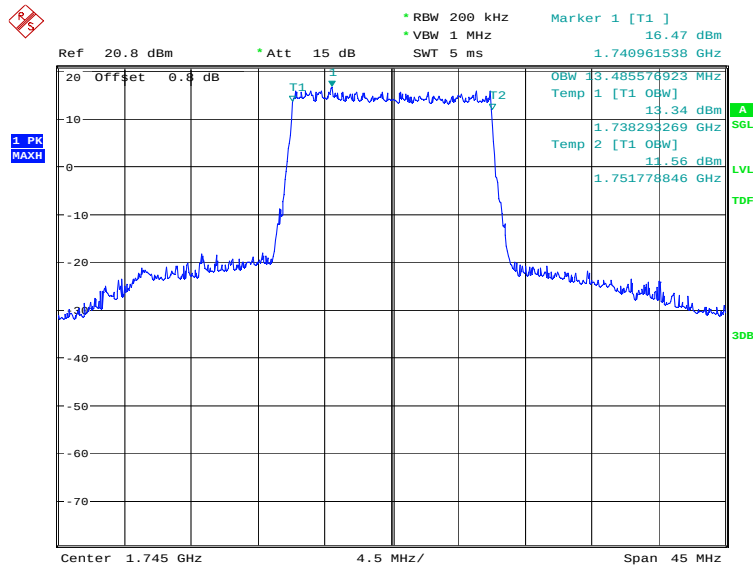
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 11.AUG.2023 14:39:06

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

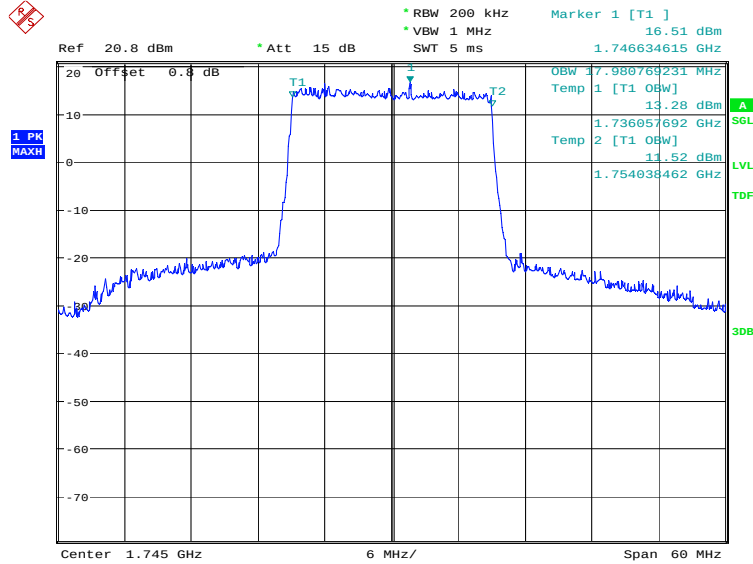


Date: 11.AUG.2023 14:39:46

LTE band 66, 20MHz (99%)

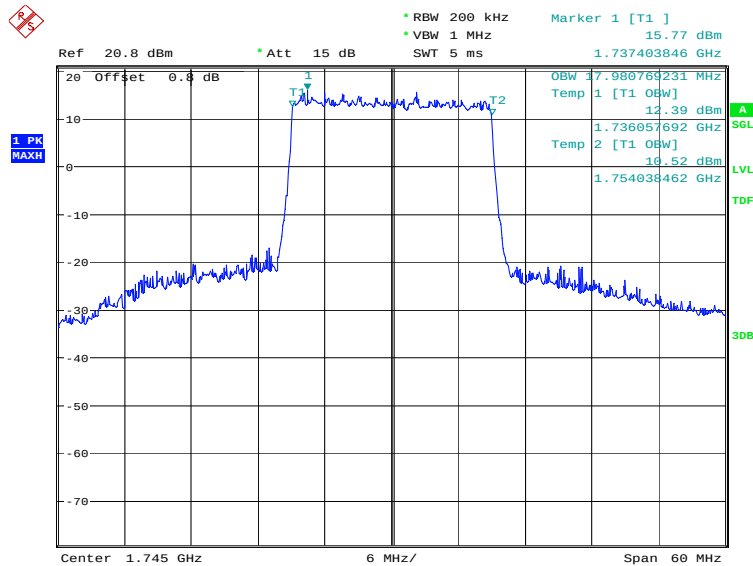
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 11.AUG.2023 14:40:28

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

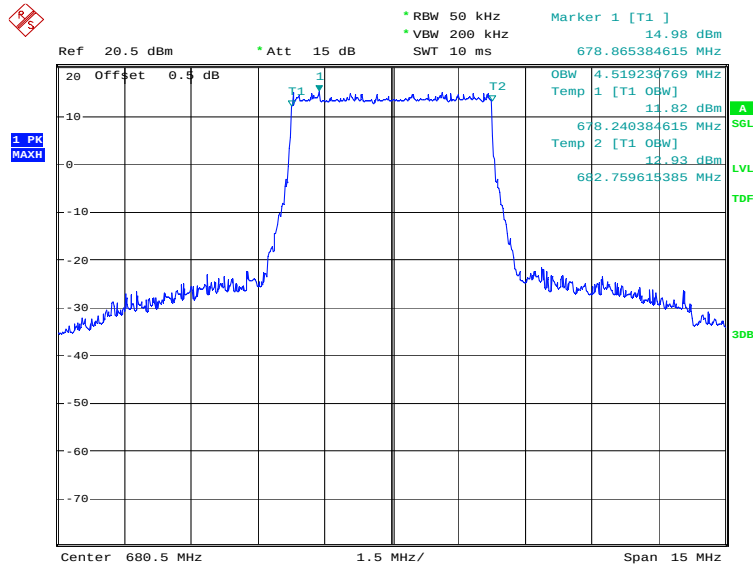


Date: 11.AUG.2023 14:41:08

LTE band 71, 5MHz (99%)

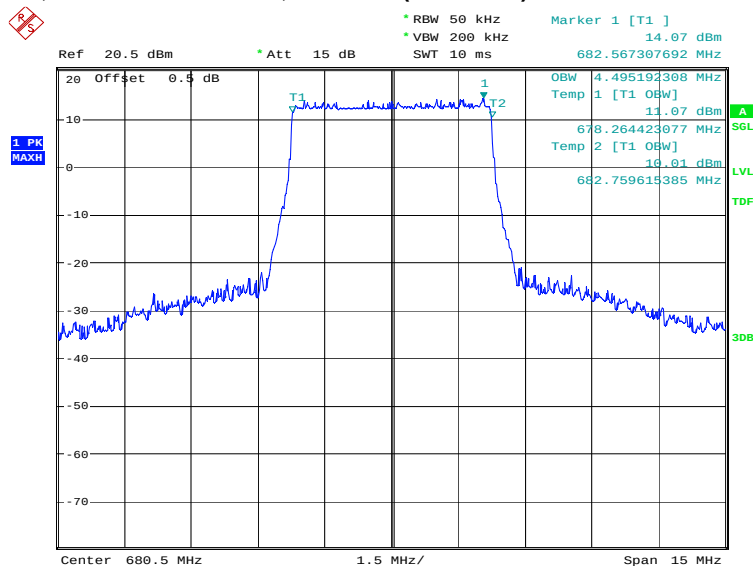
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
680.5	QPSK	16QAM
	4519.23	4495.19

LTE band 71, 5MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:44:31

LTE band 71, 5MHz Bandwidth, 16QAM (99% BW)

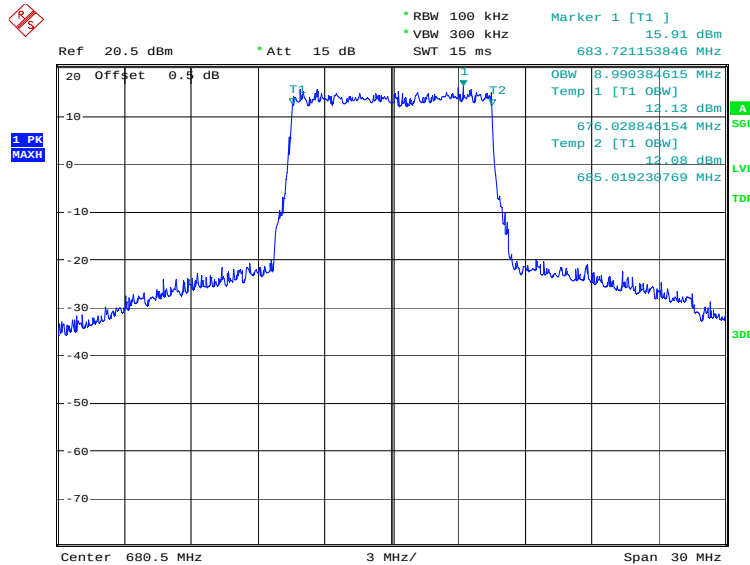


Date: 11.AUG.2023 11:45:11

LTE band 71, 10MHz (99%)

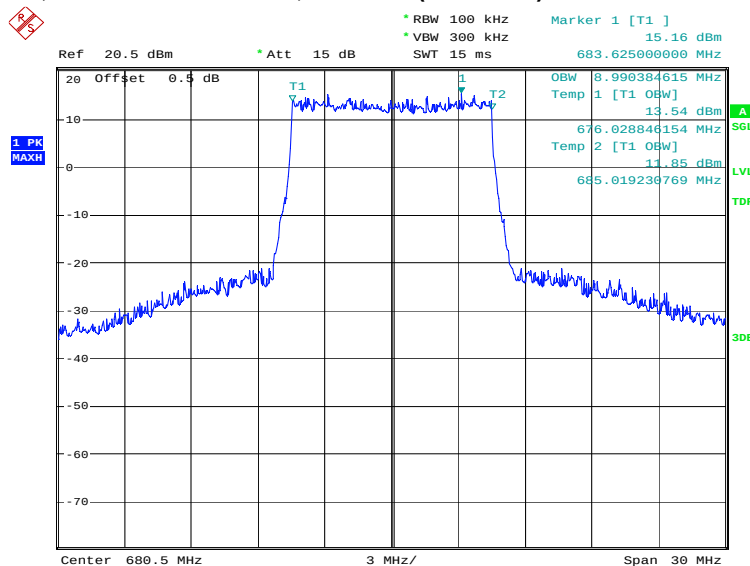
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
680.5	QPSK	16QAM
	8990.38	8990.38

LTE band 71, 10MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:45:52

LTE band 71, 10MHz Bandwidth, 16QAM (99% BW)

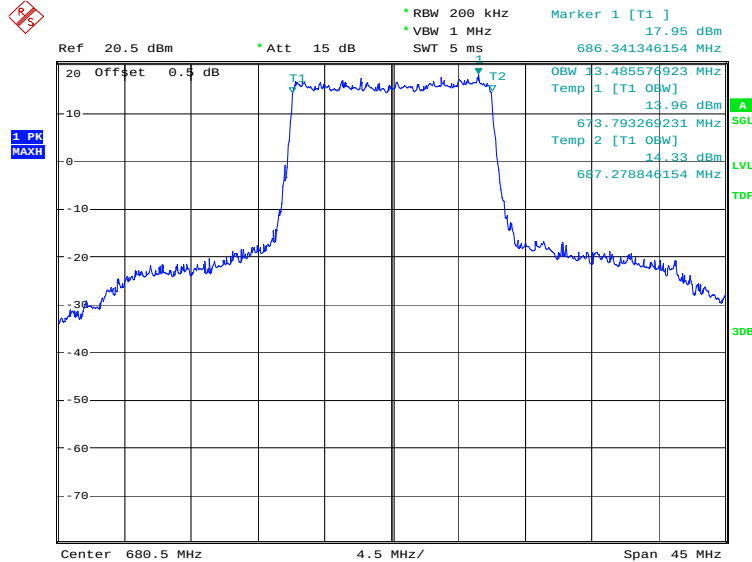


Date: 11.AUG.2023 11:46:33

LTE band 71, 15MHz (99%)

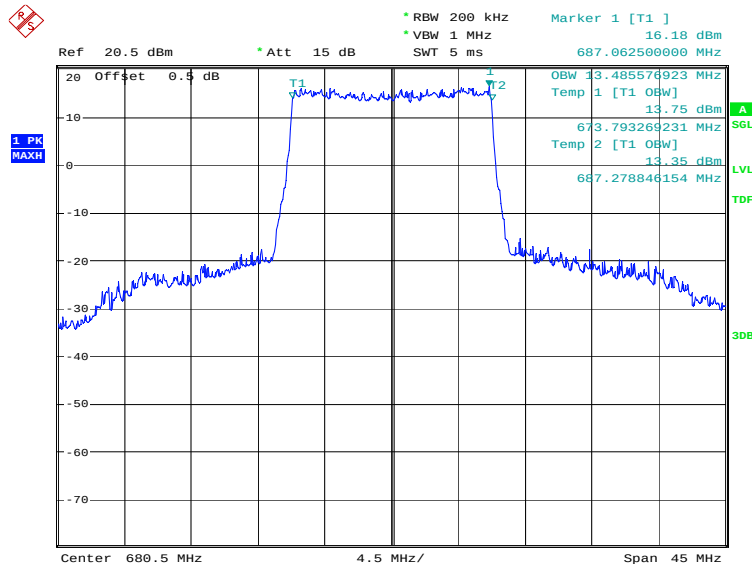
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
680.5	QPSK	16QAM
	13485.58	13485.58

LTE band 71, 15MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:47:14

LTE band 71, 15MHz Bandwidth, 16QAM (99% BW)

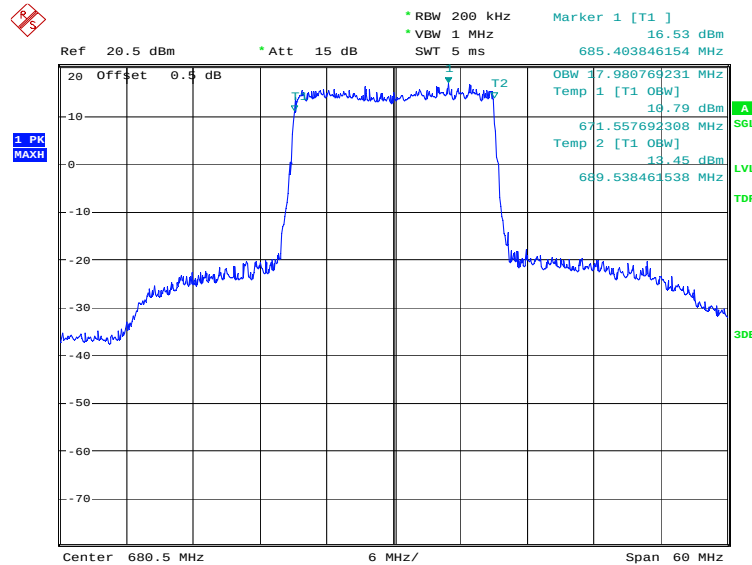


Date: 11.AUG.2023 11:47:54

LTE band 71, 20MHz (99%)

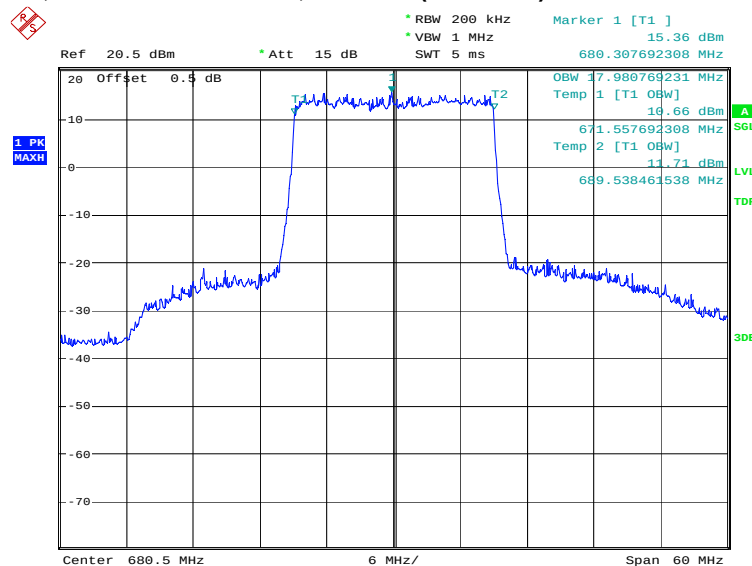
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
680.5	QPSK	16QAM
	17980.77	17980.77

LTE band 71, 20MHz Bandwidth, QPSK (99% BW)



Date: 11.AUG.2023 11:48:37

LTE band 71, 20MHz Bandwidth, 16QAM (99% BW)



Date: 11.AUG.2023 11:49:17

Note: Expanded measurement uncertainty is $U = 3428 \text{ Hz}$, $k = 2$.

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.

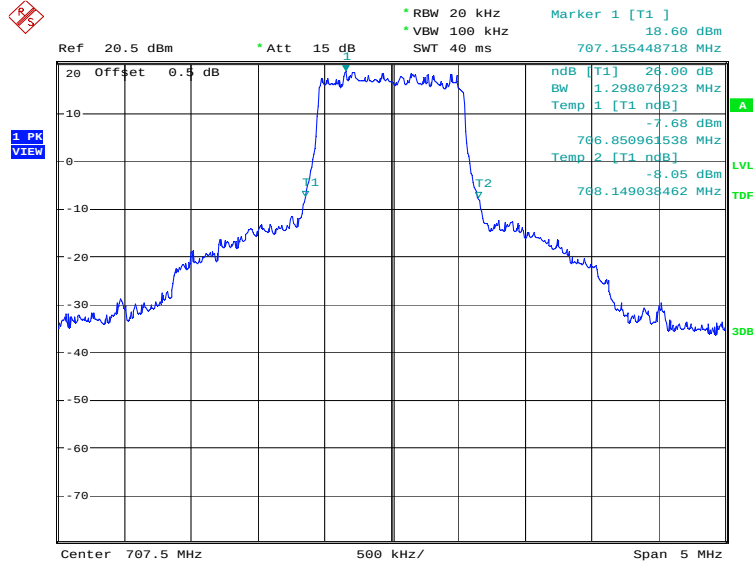
The measurement method is from ANSI C63.26:

- 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 12, 1.4MHz (-26dBc)

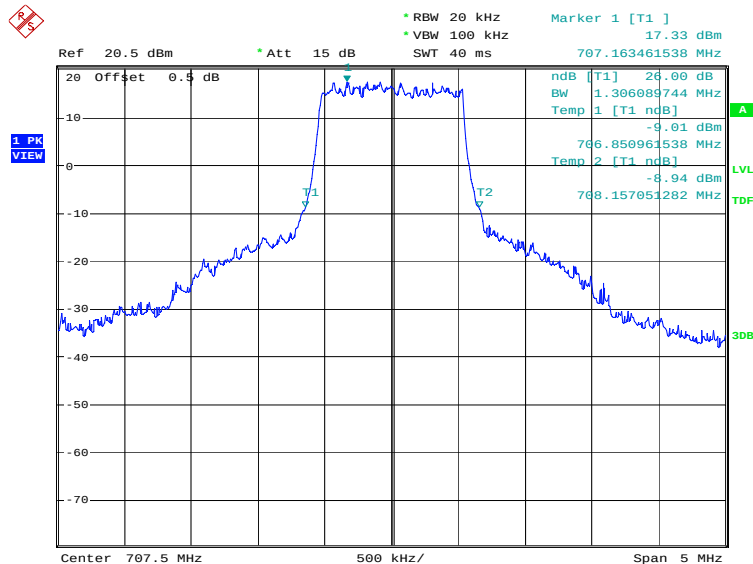
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	1298.08	1306.09

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



Date: 11.AUG.2023 12:17:08

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

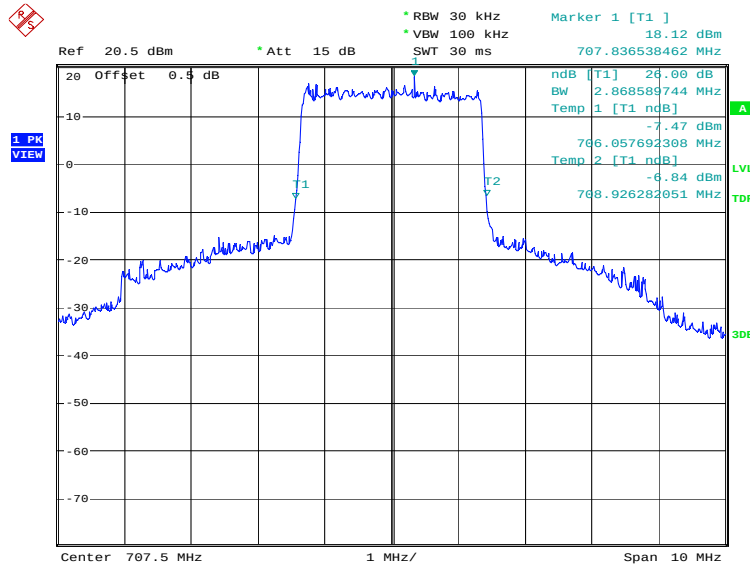


Date: 11.AUG.2023 12:17:49

LTE band 12, 3MHz (-26dBc)

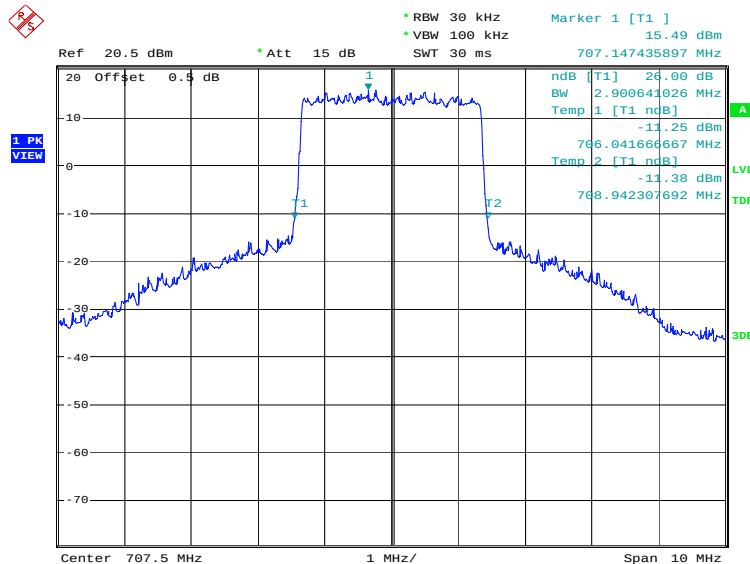
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	2868.59	2900.64

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



Date: 11.AUG.2023 12:18:31

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

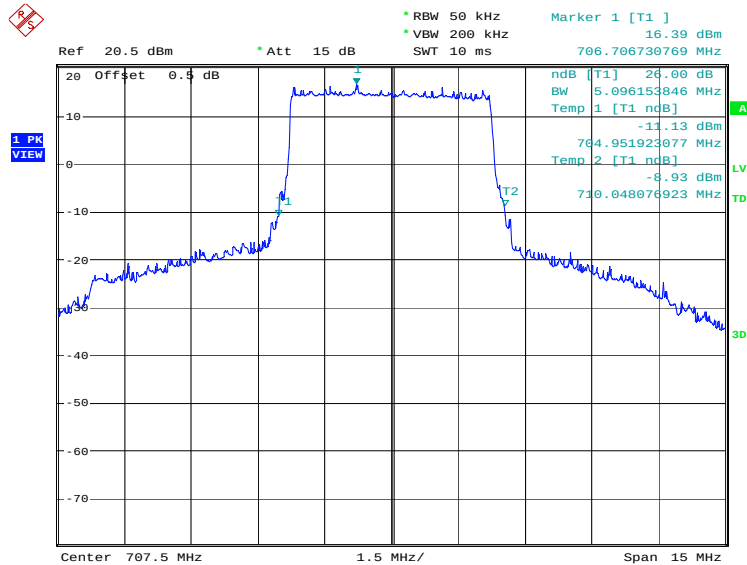


Date: 11.AUG.2023 12:19:11

LTE band 12, 5MHz (-26dBc)

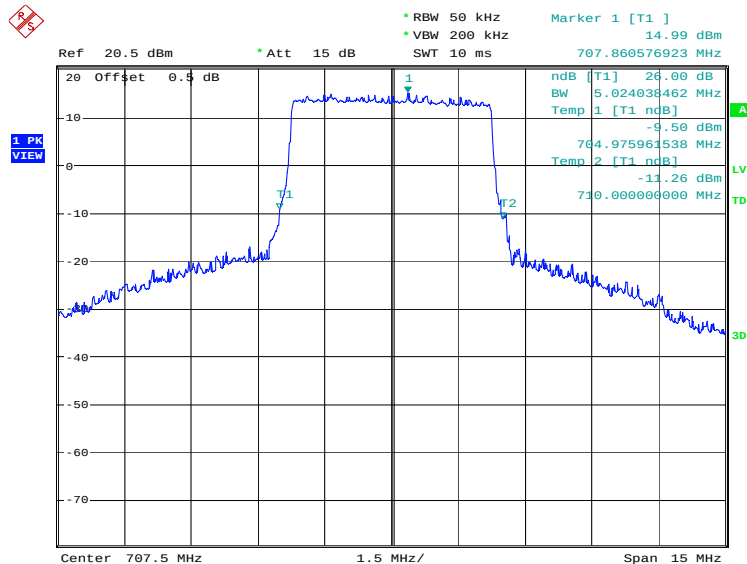
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	5096.15	5024.04

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



Date: 11.AUG.2023 12:19:54

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

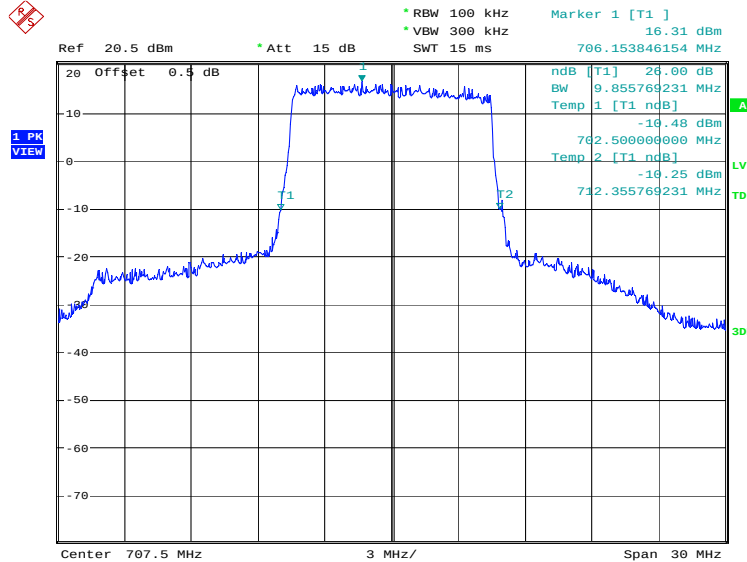


Date: 11.AUG.2023 12:20:34

LTE band 12, 10MHz (-26dBc)

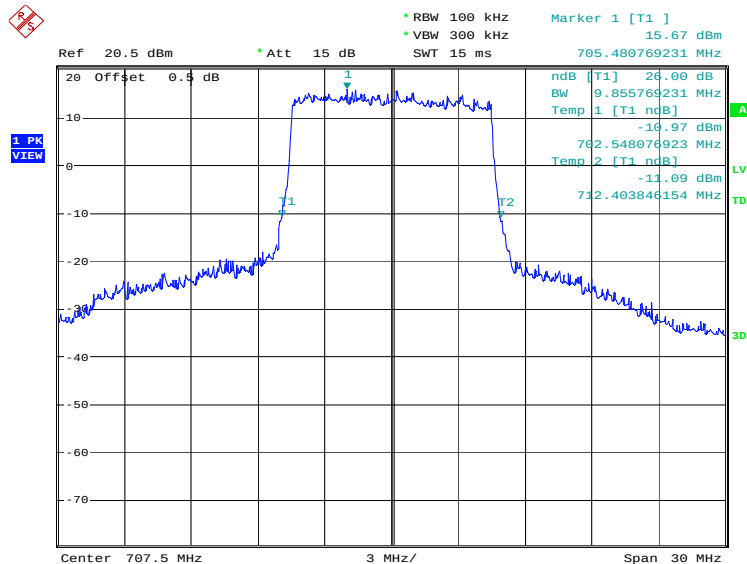
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
707.5	QPSK	16QAM
	9855.77	9855.77

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



Date: 11.AUG.2023 12:21:17

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

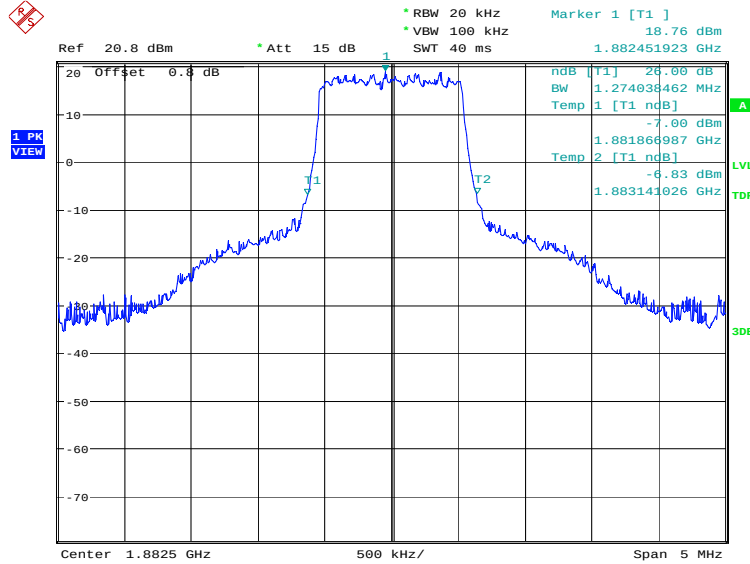


Date: 11.AUG.2023 12:21:57

LTE band 25, 1.4MHz (-26dBc)

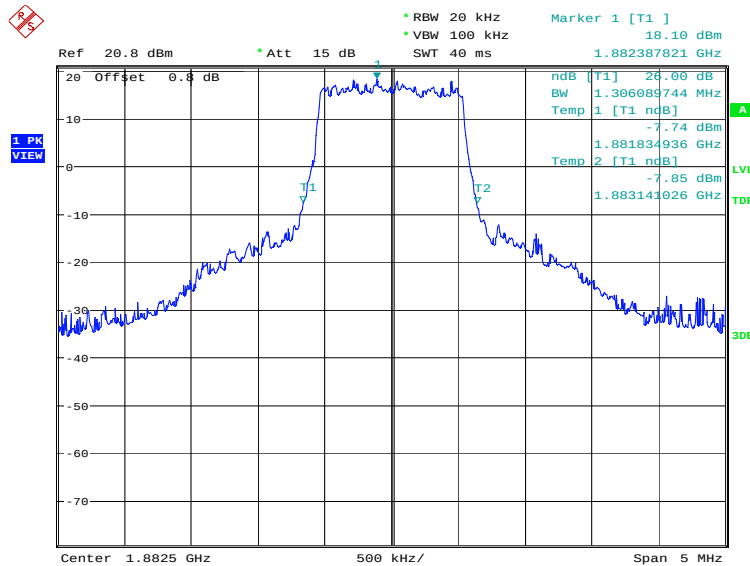
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	1274.04	1306.09

LTE band 25, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:49:15

LTE band 25, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

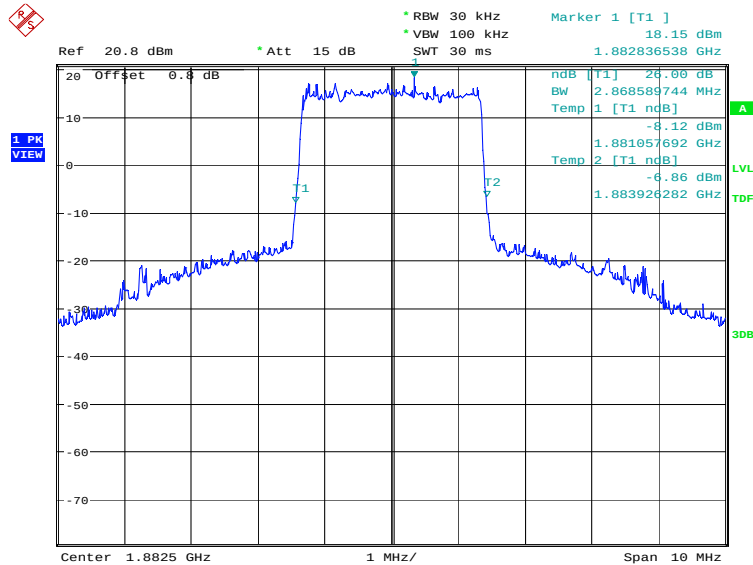


Date: 11.AUG.2023 14:49:55

LTE band 25, 3MHz (-26dBc)

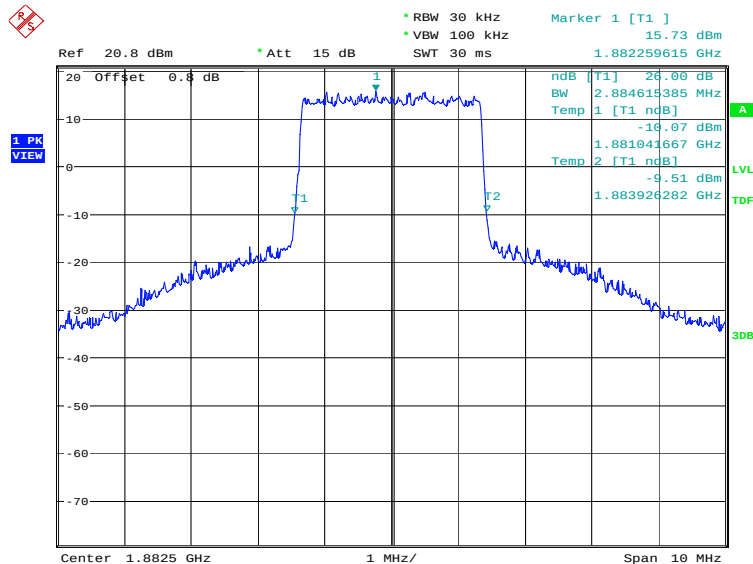
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	2868.59	2884.62

LTE band 25, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:50:37

LTE band 25, 3MHz Bandwidth, 16QAM (-26dBc BW)

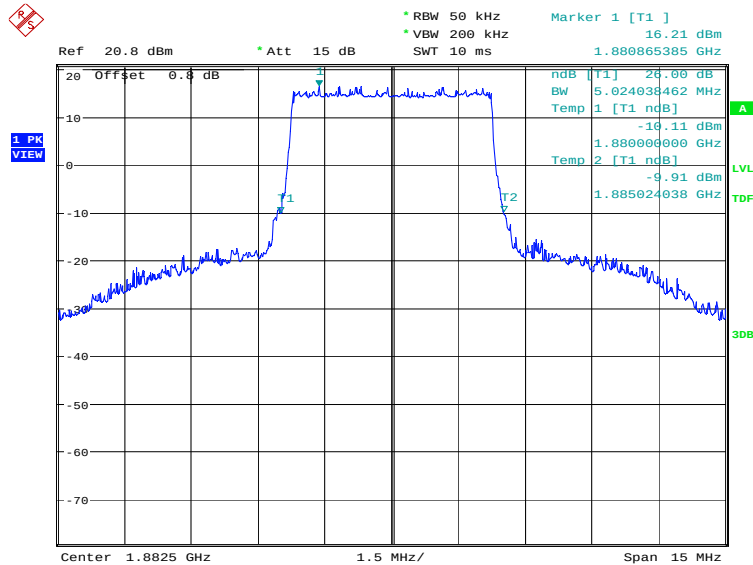


Date: 11.AUG.2023 14:51:18

LTE band 25, 5MHz (-26dBc)

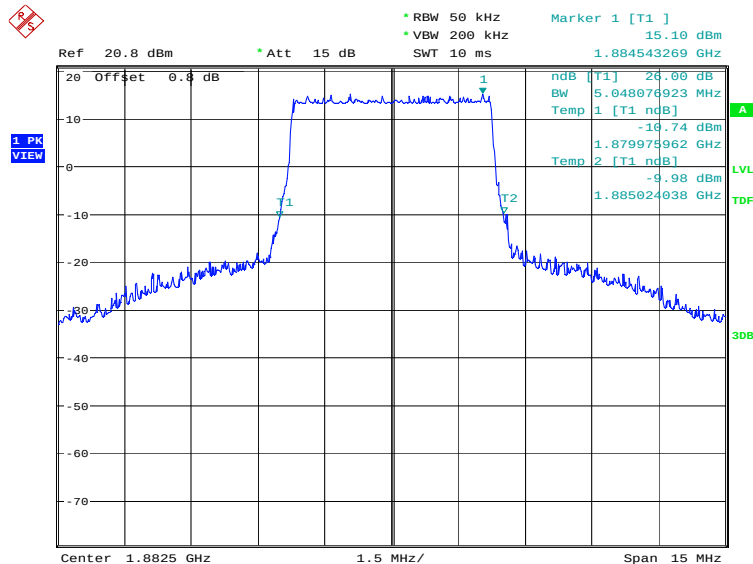
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	5024.04	5048.08

LTE band 25, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:52:00

LTE band 25, 5MHz Bandwidth, 16QAM (-26dBc BW)

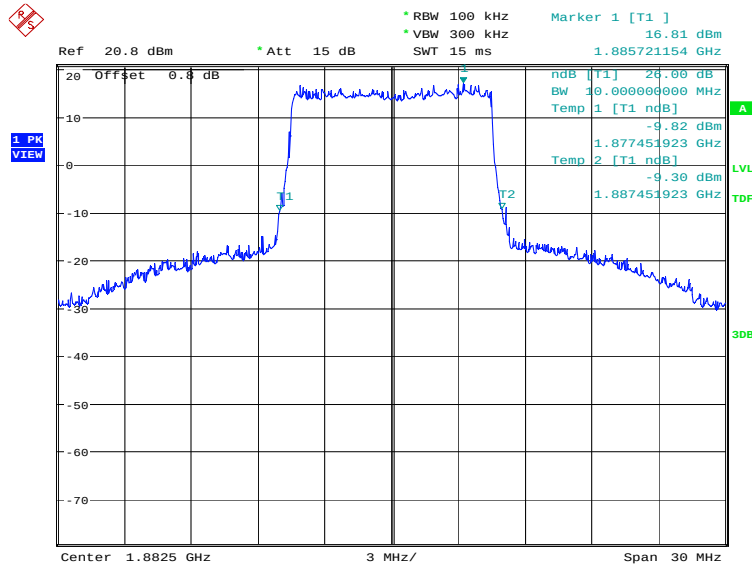


Date: 11.AUG.2023 14:52:41

LTE band 25, 10MHz (-26dBc)

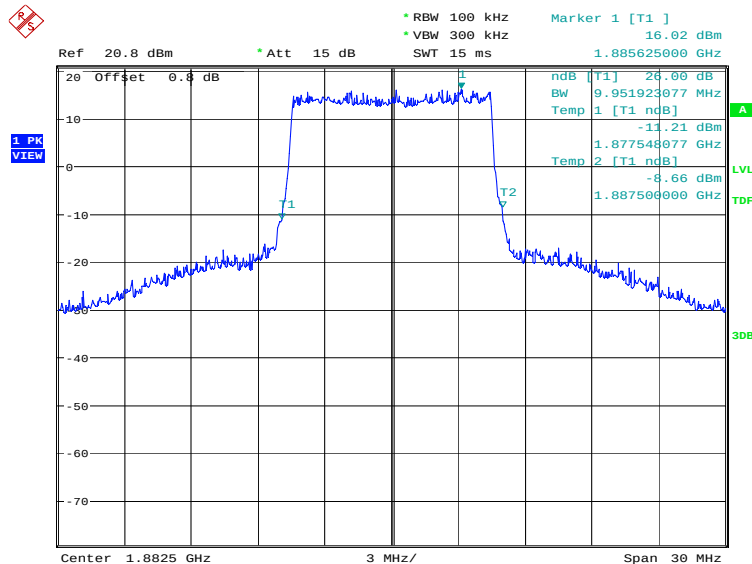
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	10000.00	9951.92

LTE band 25, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:53:23

LTE band 25, 10MHz Bandwidth, 16QAM (-26dBc BW)

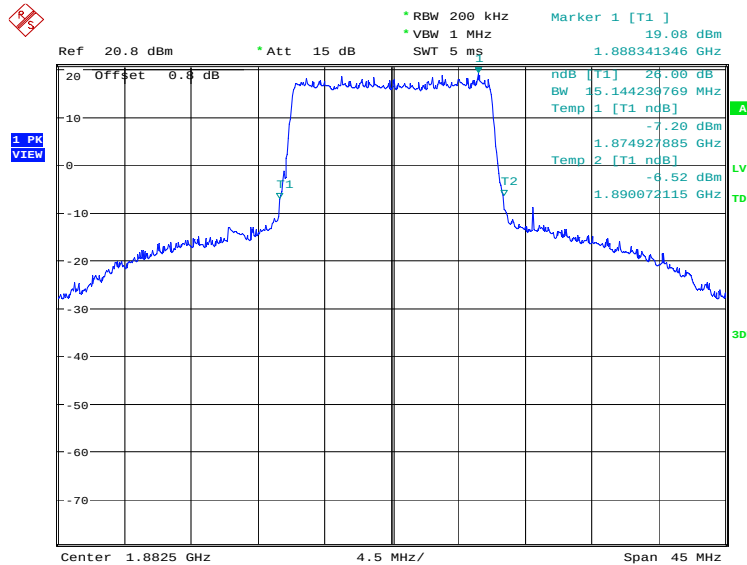


Date: 11.AUG.2023 14:54:04

LTE band 25, 15MHz (-26dBc)

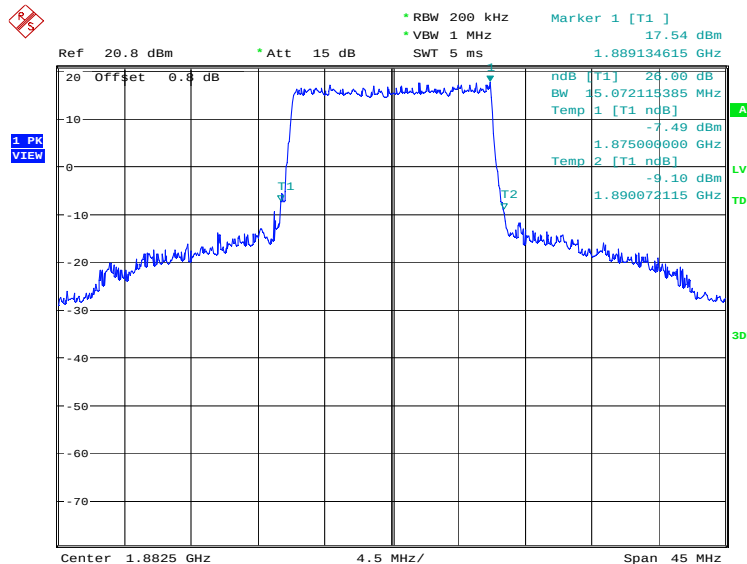
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	15144.23	15072.12

LTE band 25, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:54:46

LTE band 25, 15MHz Bandwidth, 16QAM (-26dBc BW)

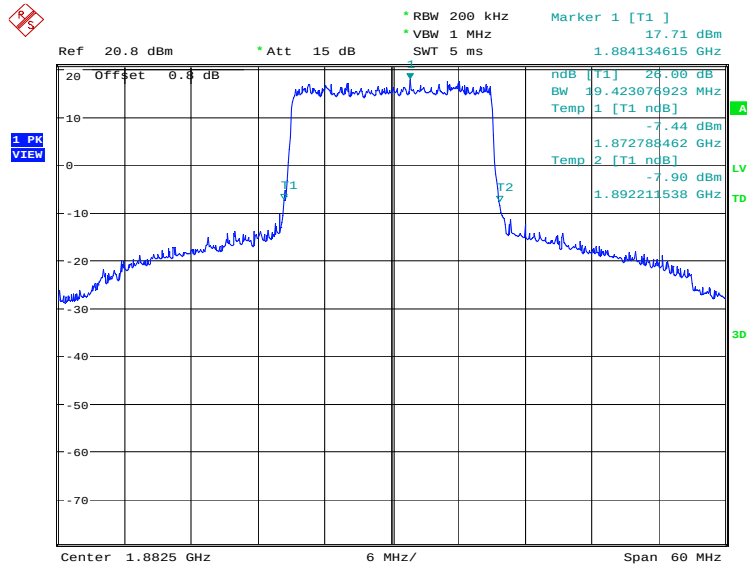


Date: 11.AUG.2023 14:55:27

LTE band 25, 20MHz (-26dBc)

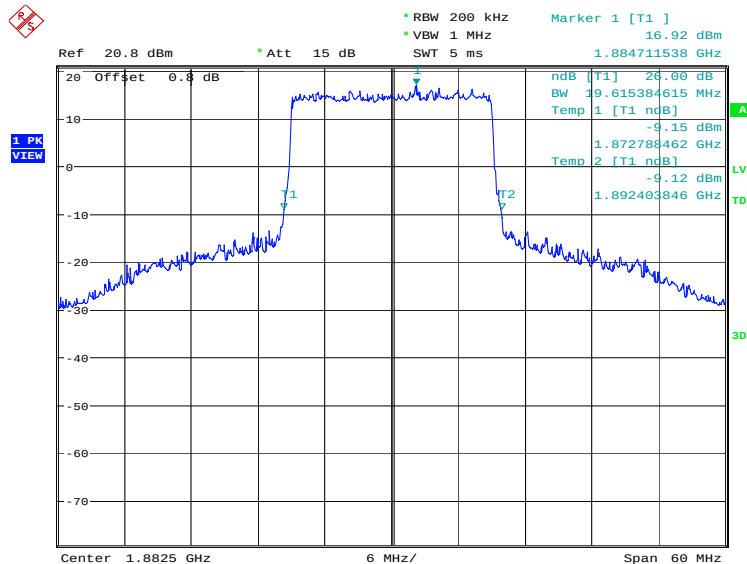
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	19423.08	19615.38

LTE band 25, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 14:56:09

LTE band 25, 20MHz Bandwidth, 16QAM (-26dBc BW)

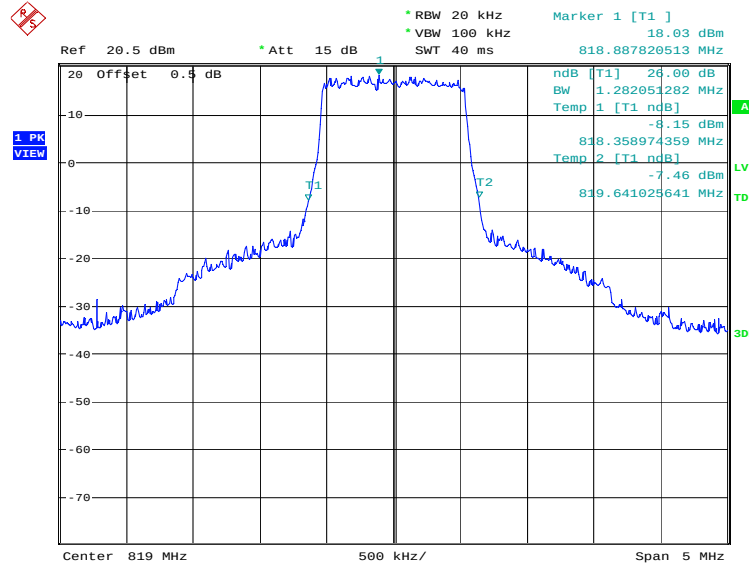


Date: 11.AUG.2023 14:56:49

LTE band 26(814MHz~824MHz), 1.4MHz (-26dBc)

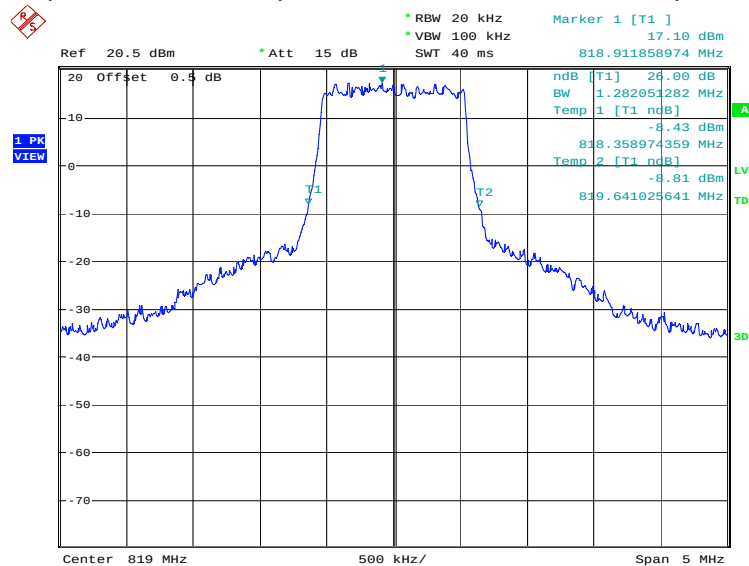
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	1282.05	1282.05

LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, QPSK (-26dB BW)



Date: 11.AUG.2023 12:30:18

LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, 16QAM (-26dB BW)

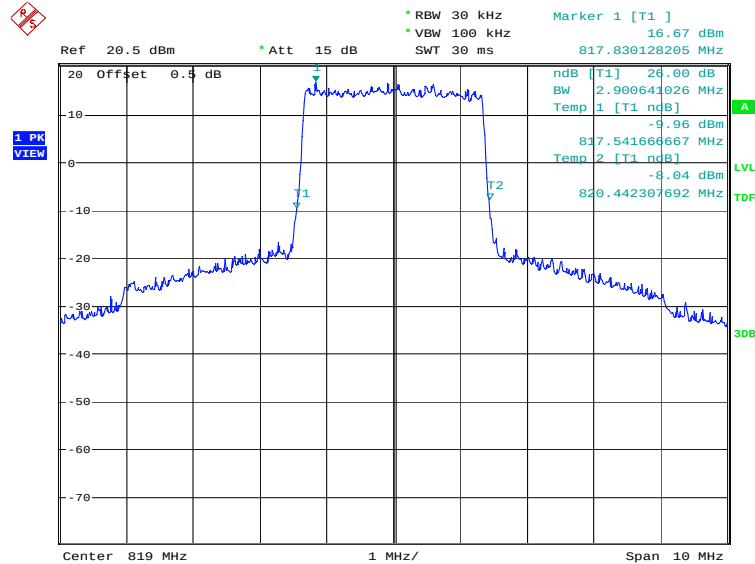


Date: 11.AUG.2023 12:30:59

LTE band 26(814MHz~824MHz), 3MHz (-26dBc)

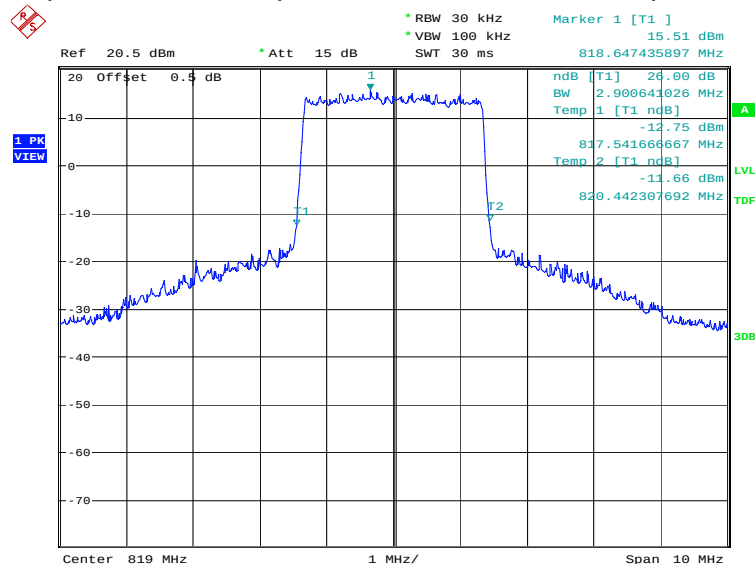
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	2900.64	2900.64

LTE band 26(814MHz~824MHz), 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:31:41

LTE band 26(814MHz~824MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)

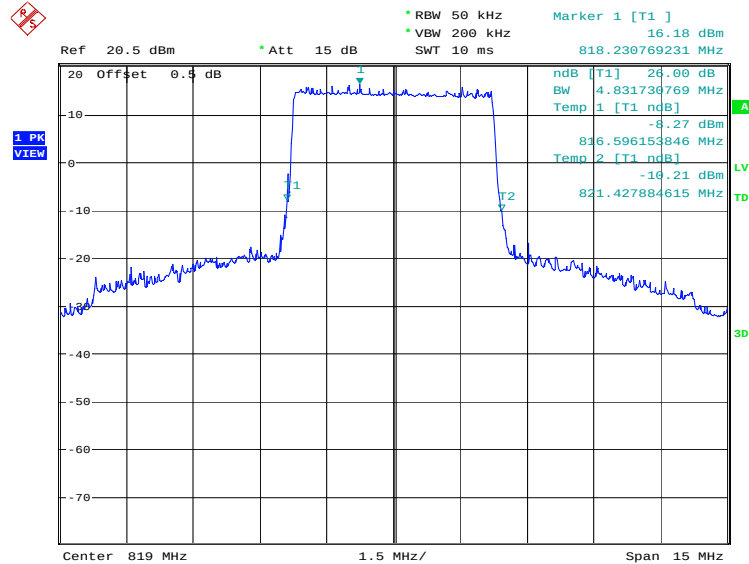


Date: 11.AUG.2023 12:32:21

LTE band 26(814MHz~824MHz), 5MHz (-26dBc)

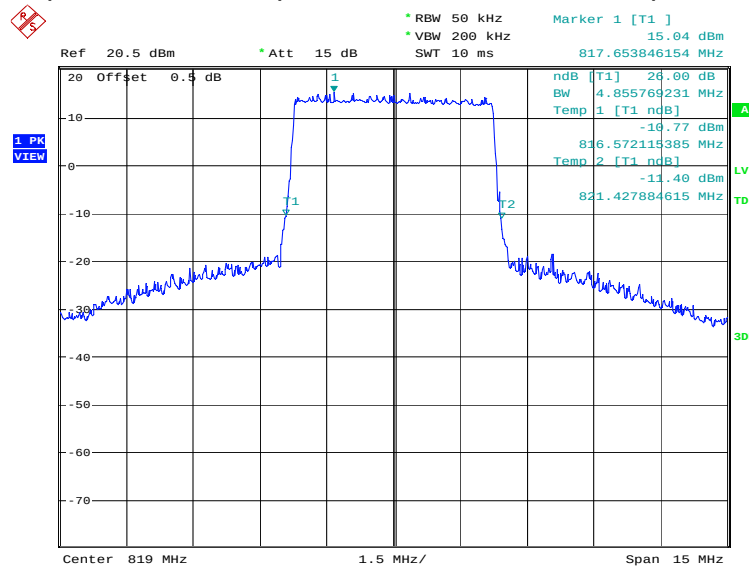
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	4831.73	4855.77

LTE band 26(814MHz~824MHz), 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:33:04

LTE band 26(814MHz~824MHz), 5MHz Bandwidth, 16QAM (-26dBc BW)

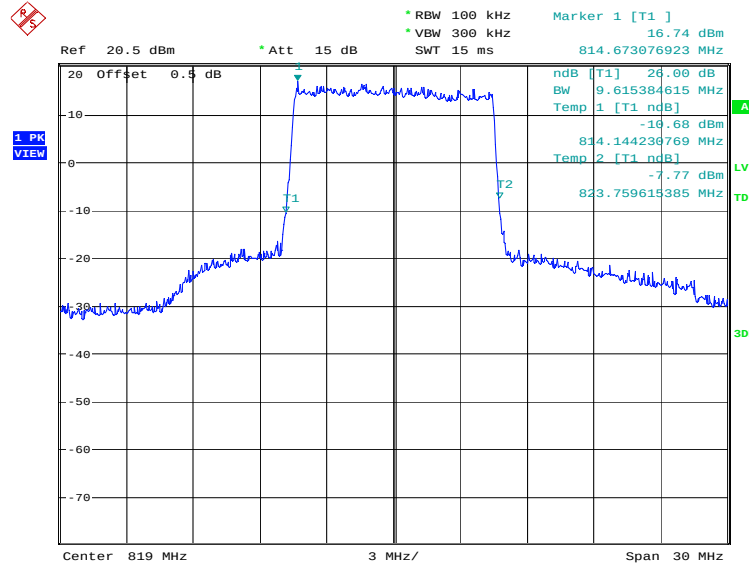


Date: 11.AUG.2023 12:33:44

LTE band 26(814MHz~824MHz), 10MHz (-26dBc)

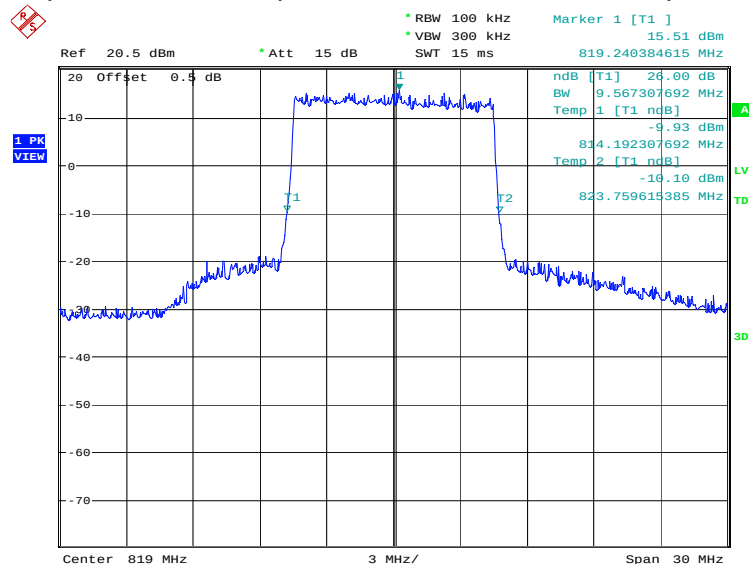
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	9615.38	9567.31

LTE band 26(814MHz~824MHz), 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:34:26

LTE band 26(814MHz~824MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)

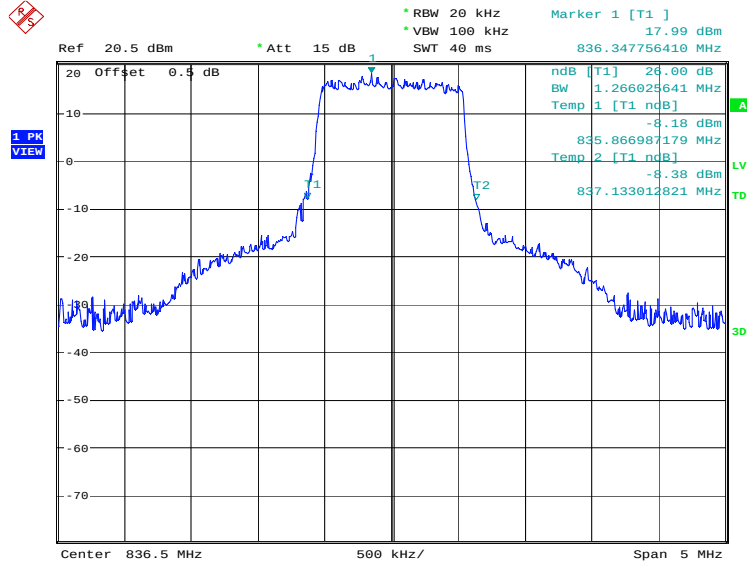


Date: 11.AUG.2023 12:35:07

LTE band 26(824MHz~849MHz), 1.4MHz (-26dBc)

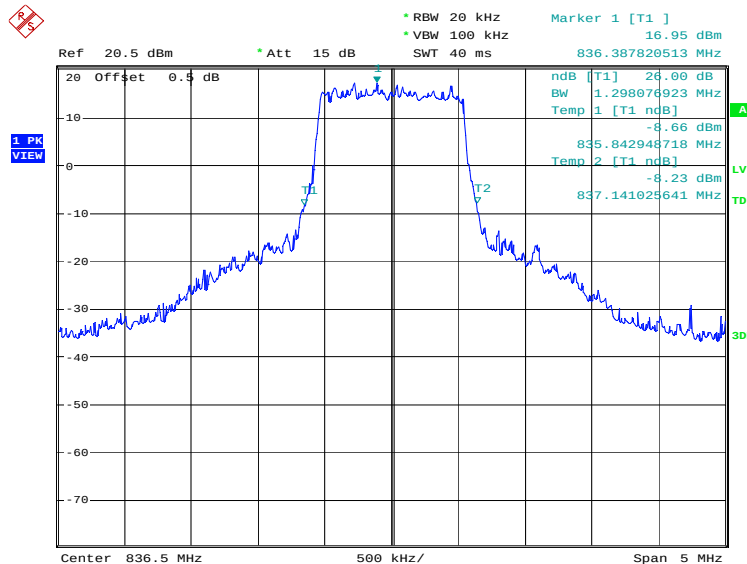
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	1266.03	1298.08

LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:22:41

LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, 16QAM (-26dBc BW)

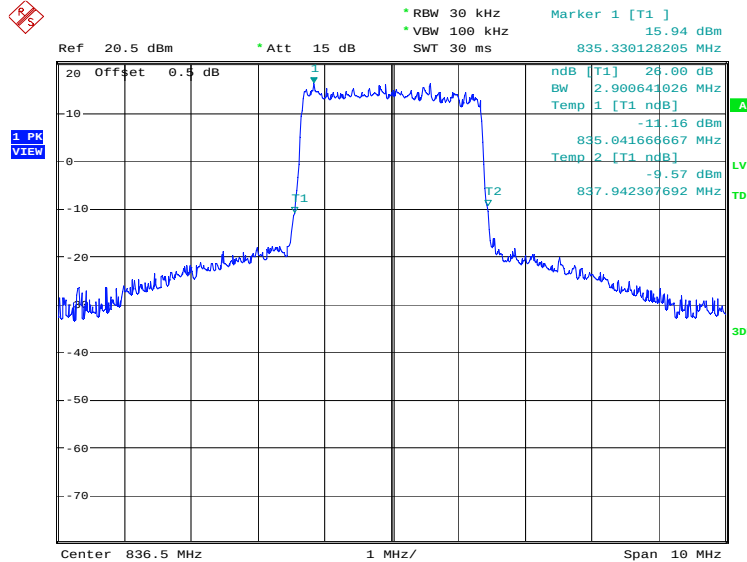


Date: 11.AUG.2023 12:23:22

LTE band 26(824MHz~849MHz), 3MHz (-26dBc)

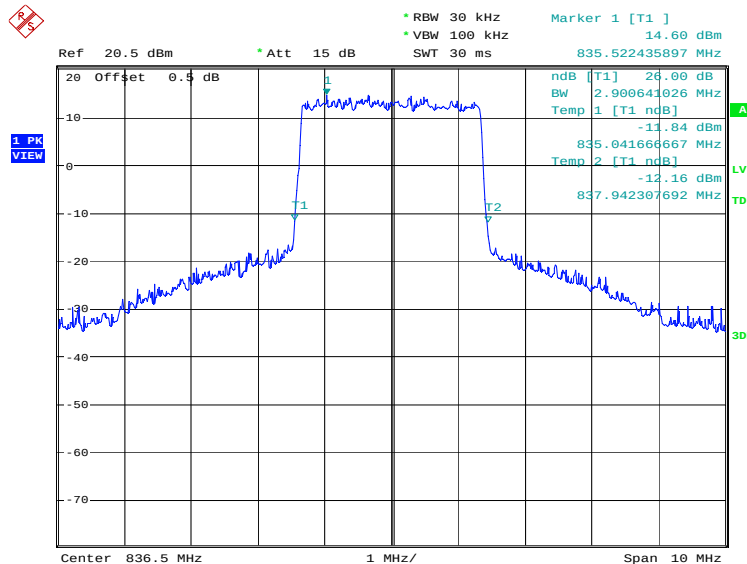
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	2900.64	2900.64

LTE band 26(824MHz~849MHz), 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:24:04

LTE band 26(824MHz~849MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)

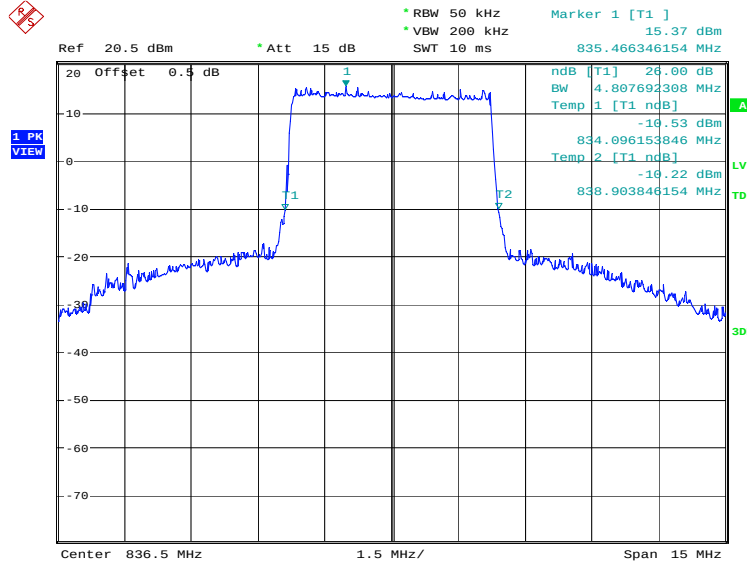


Date: 11.AUG.2023 12:24:45

LTE band 26(824MHz~849MHz), 5MHz (-26dBc)

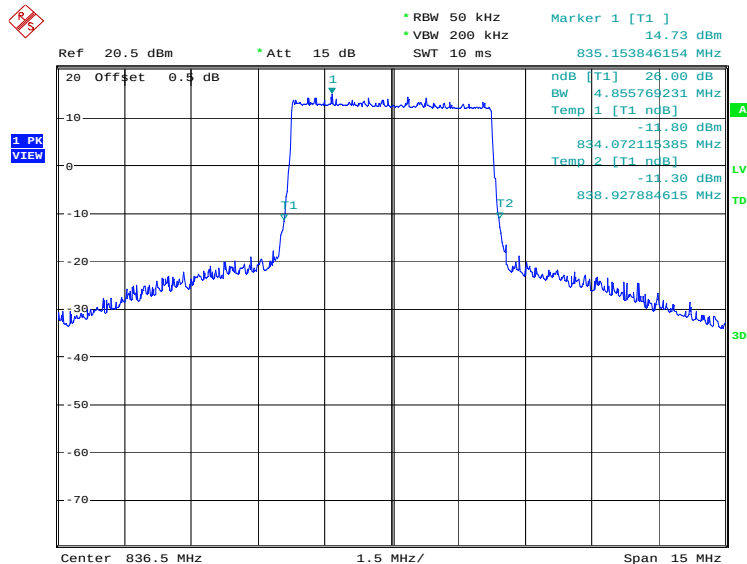
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	4807.69	4855.77

LTE band 26(824MHz~849MHz), 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:25:27

LTE band 26(824MHz~849MHz), 5MHz Bandwidth, 16QAM (-26dBc BW)

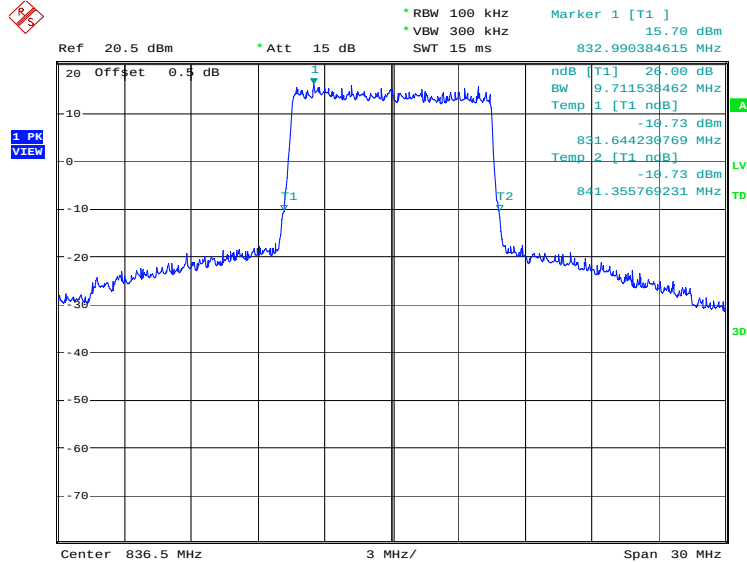


Date: 11.AUG.2023 12:26:08

LTE band 26(824MHz~849MHz), 10MHz (-26dBc)

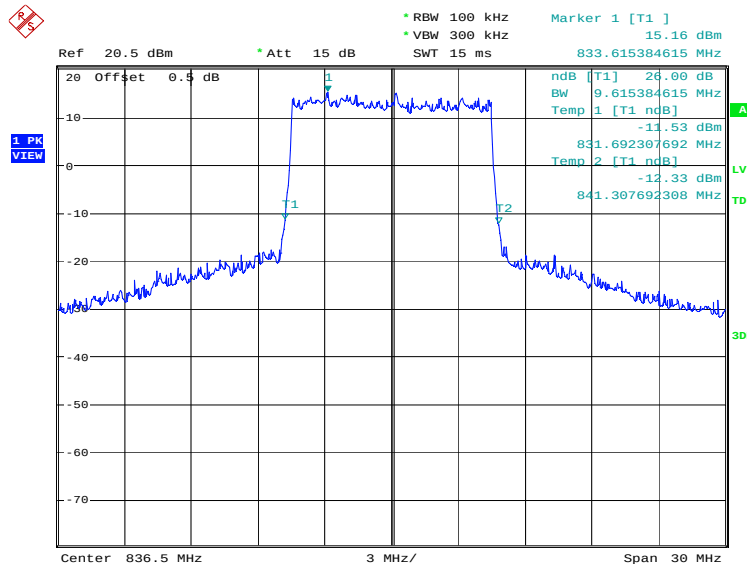
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	9711.54	9615.38

LTE band 26(824MHz~849MHz), 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:26:50

LTE band 26(824MHz~849MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)

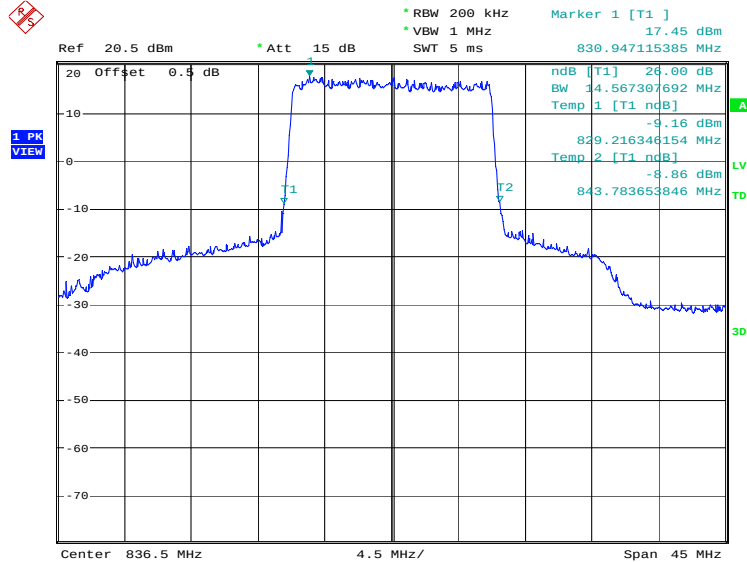


Date: 11.AUG.2023 12:27:31

LTE band 26(824MHz~849MHz), 15MHz (-26dBc)

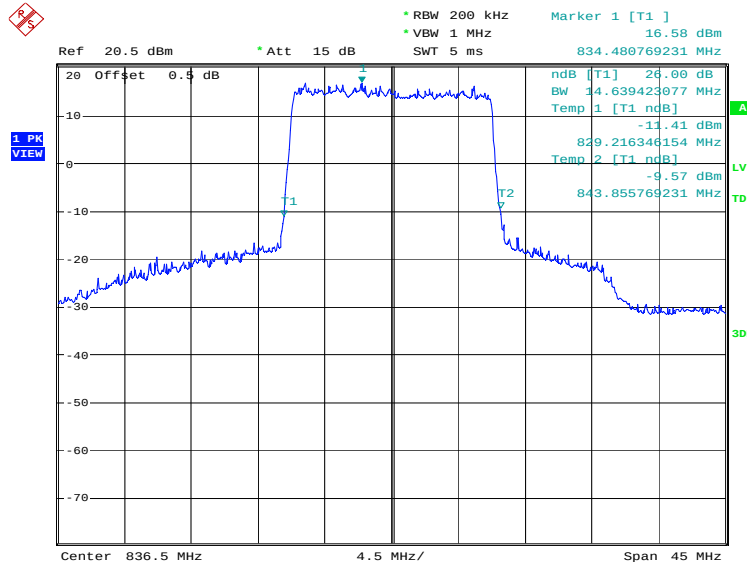
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	14567.31	14639.42

LTE band 26(824MHz~849MHz), 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:28:14

LTE band 26(824MHz~849MHz), 15MHz Bandwidth, 16QAM (-26dBc BW)

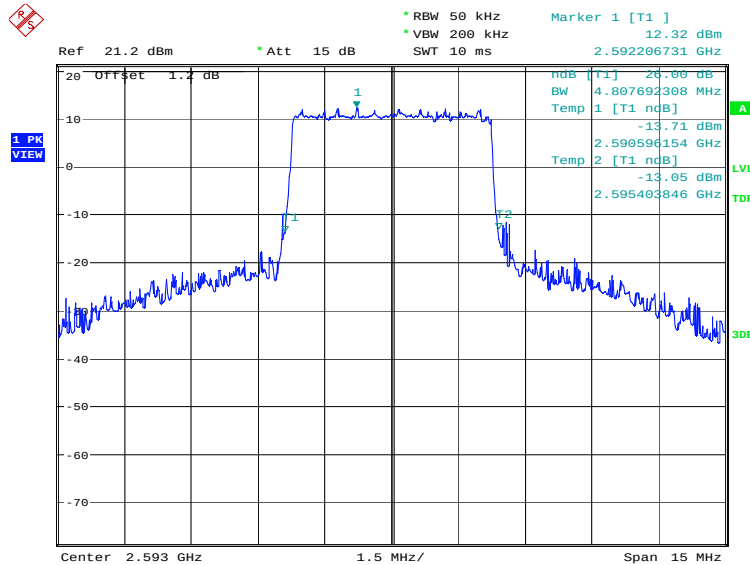


Date: 11.AUG.2023 12:28:54

LTE band 41, 5MHz (-26dBc)

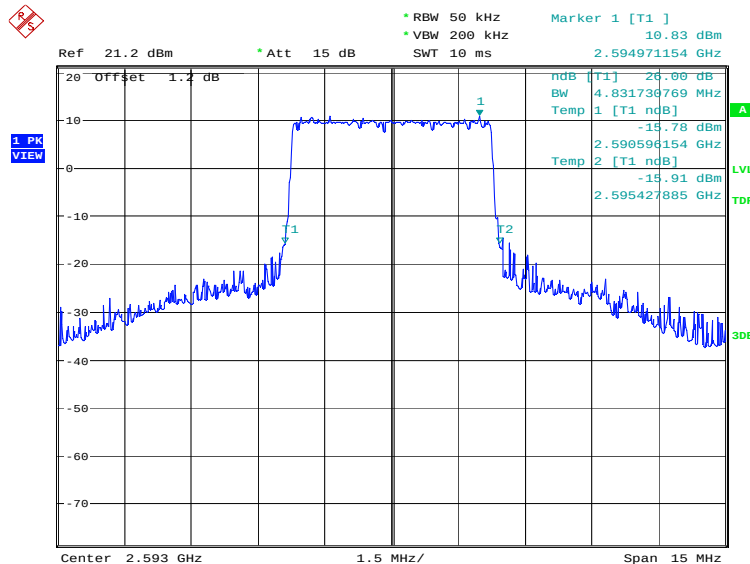
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2593.0	QPSK	16QAM
	4807.69	4831.73

LTE band 41, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 15:06:39

LTE band 41, 5MHz Bandwidth, 16QAM (-26dBc BW)

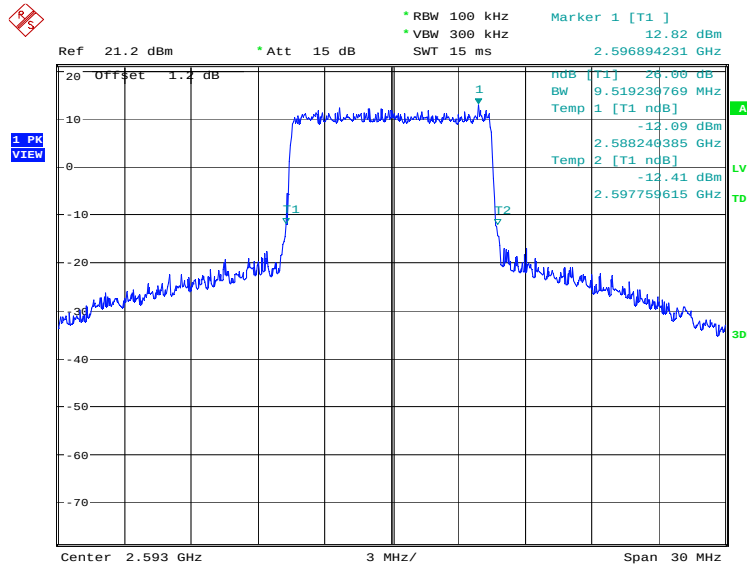


Date: 11.AUG.2023 15:07:19

LTE band 41, 10MHz (-26dBc)

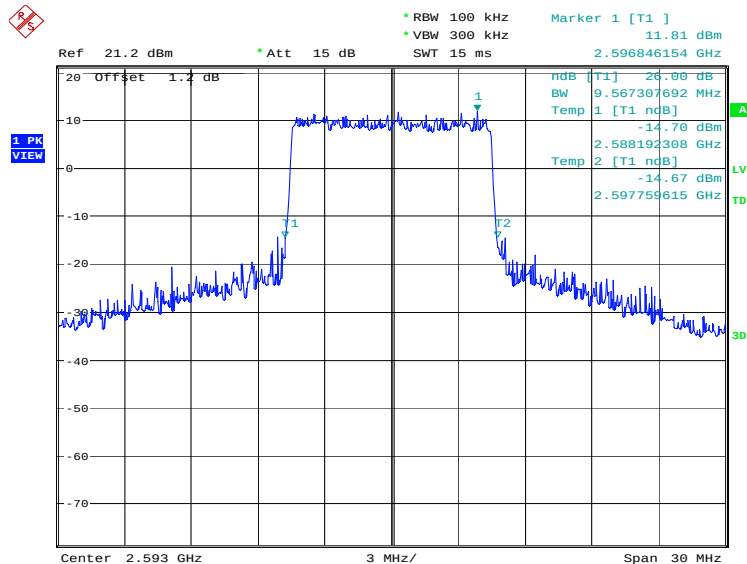
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2593.0	QPSK	16QAM
	9519.23	9567.31

LTE band 41, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 15:08:02

LTE band 41, 10MHz Bandwidth, 16QAM (-26dBc BW)

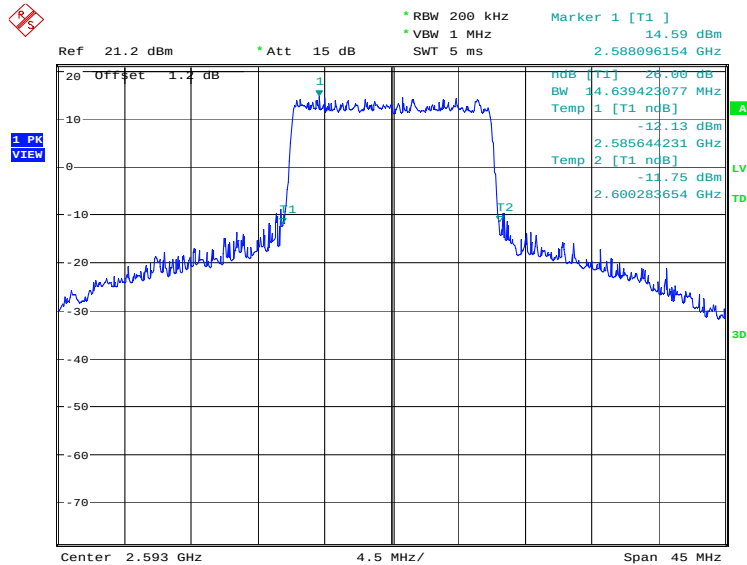


Date: 11.AUG.2023 15:08:43

LTE band 41, 15MHz (-26dBc)

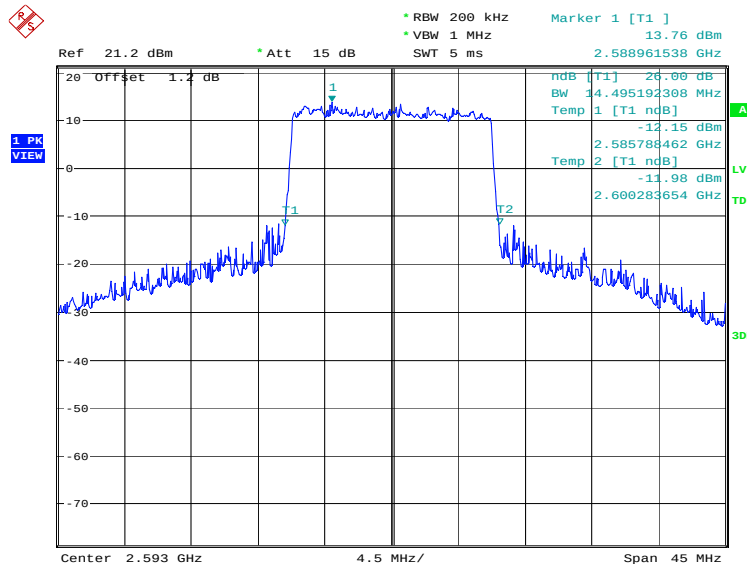
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2593.0	QPSK	16QAM
	14639.42	14495.19

LTE band 41, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 15:09:25

LTE band 41, 15MHz Bandwidth, 16QAM (-26dBc BW)

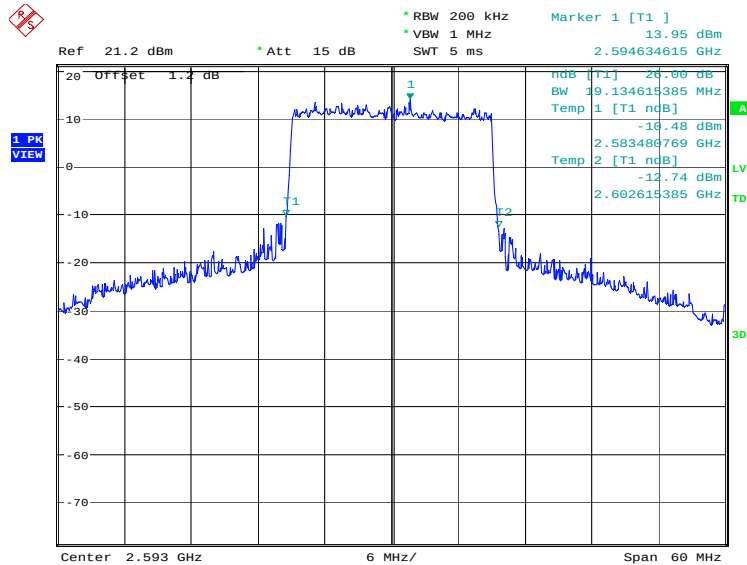


Date: 11.AUG.2023 15:10:06

LTE band 41, 20MHz (-26dBc)

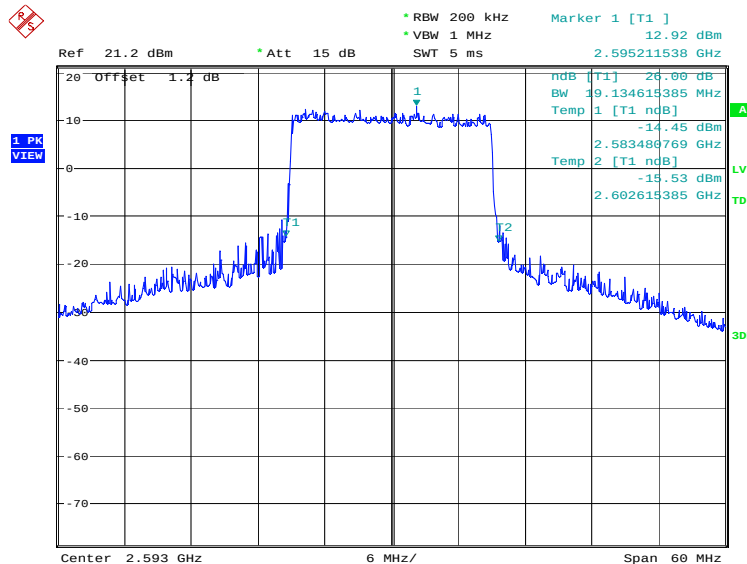
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2593.0	QPSK	16QAM
	19134.62	19134.62

LTE band 41, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 15:10:48

LTE band 41, 20MHz Bandwidth, 16QAM (-26dBc BW)

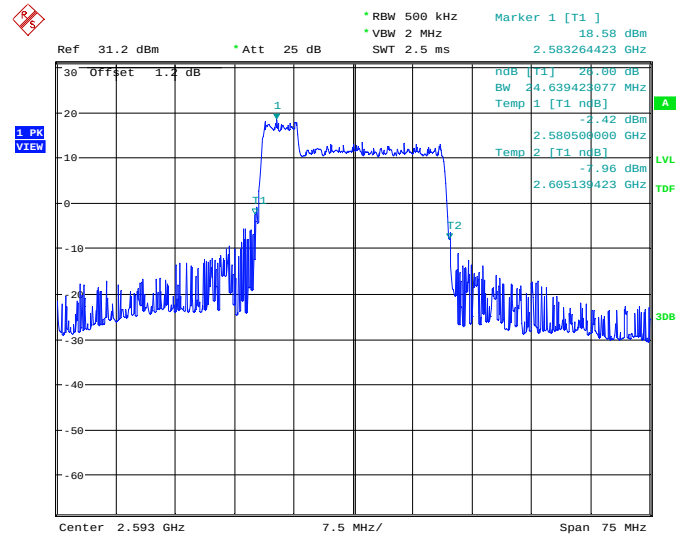


Date: 11.AUG.2023 15:11:29

LTE CA band 41C, 5MHz+20MHz(-26dBc)

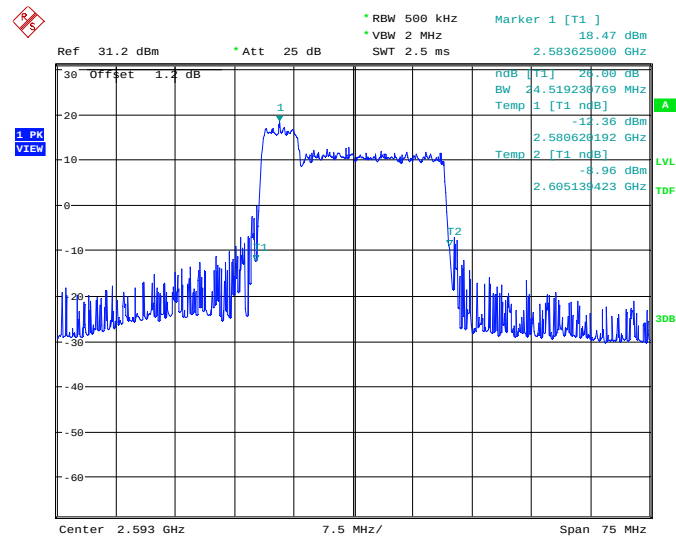
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	24.639	24.519

LTE CA band 41C , 5MHz+20MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:22:02

LTE CA band 41C , 5MHz+20MHz Bandwidth,16QAM (-26dBc BW)

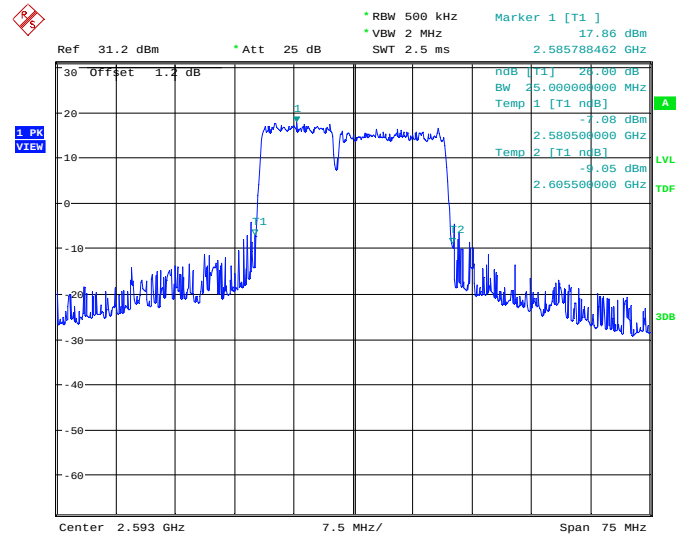


Date: 11.AUG.2023 09:22:25

LTE CA band 41C, 10MHz+15MHz(-26dBc)

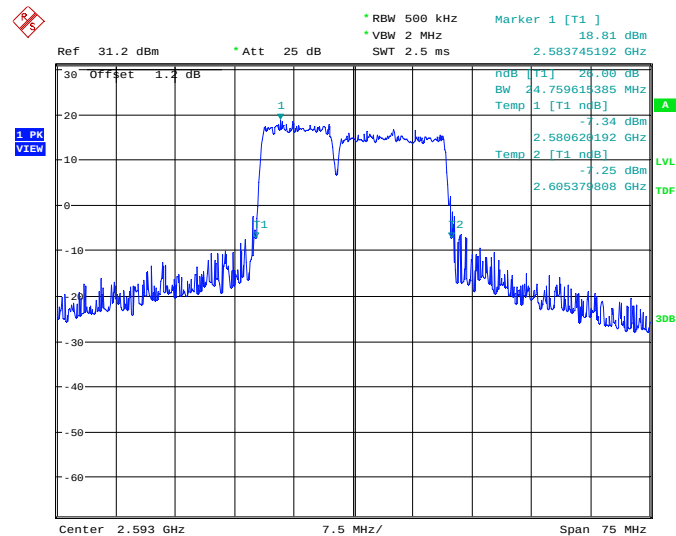
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	25.000	24.760

LTE CA band 41C , 10MHz+15MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:23:19

LTE CA band 41C , 10MHz+15MHz Bandwidth,16QAM (-26dBc BW)

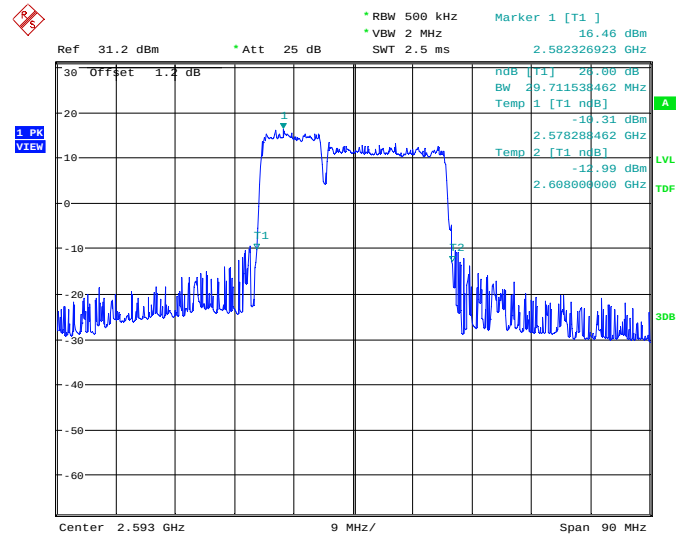


Date: 11.AUG.2023 09:23:43

LTE CA band 41C, 10MHz+20MHz(-26dBc)

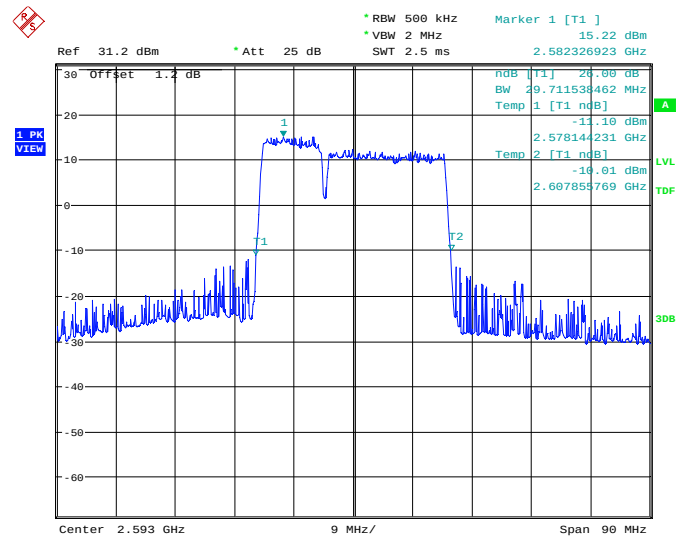
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	29.712	29.712

LTE CA band 41C , 10MHz+20MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:25:02

LTE CA band 41C , 10MHz+20MHz Bandwidth,16QAM (-26dBc BW)

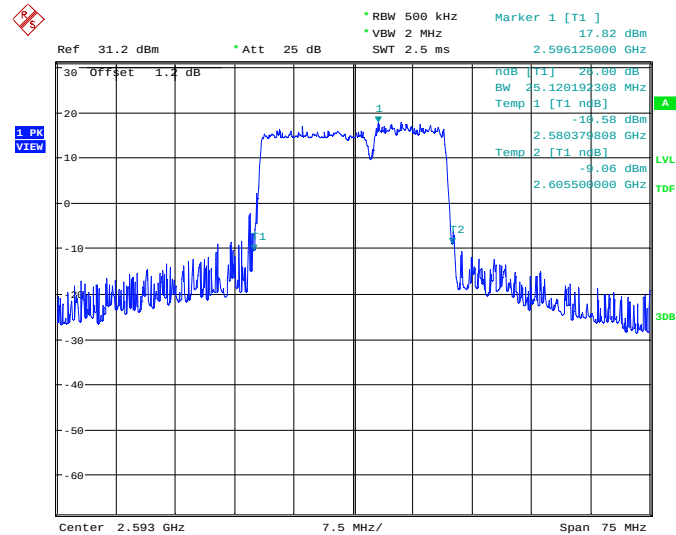


Date: 11.AUG.2023 09:25:25

LTE CA band 41C, 15MHz+10MHz(-26dBc)

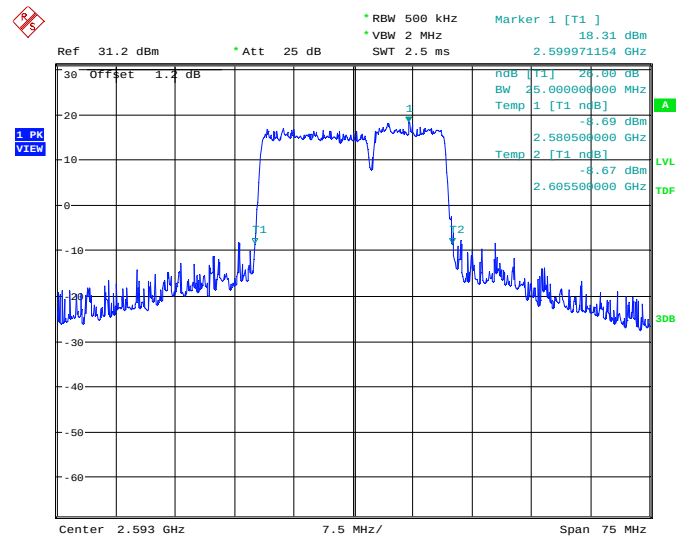
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	25.120	25.000

LTE CA band 41C , 15MHz+10MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:26:19

LTE CA band 41C , 15MHz+10MHz Bandwidth,16QAM (-26dBc BW)

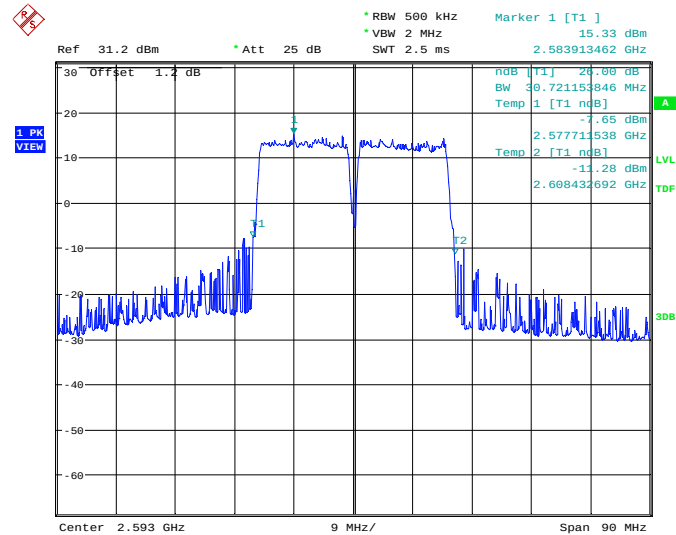


Date: 11.AUG.2023 09:26:42

LTE CA band 41C, 15MHz+15MHz(-26dBc)

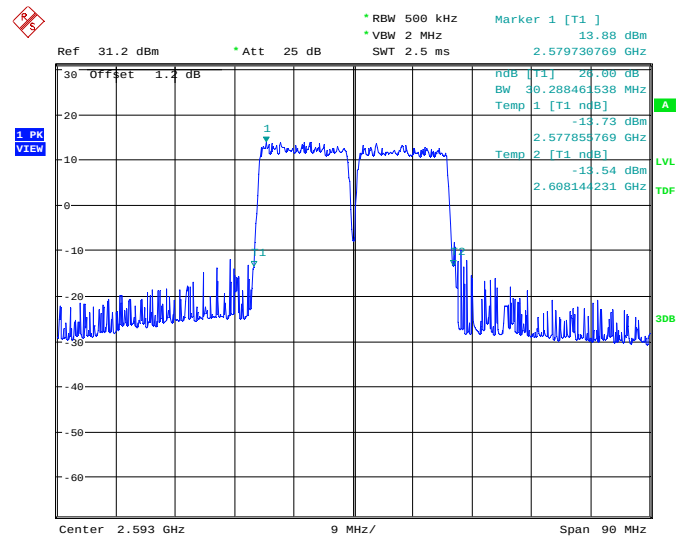
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	30.721	30.288

LTE CA band 41C , 15MHz+15MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:28:01

LTE CA band 41C , 15MHz+15MHz Bandwidth,16QAM (-26dBc BW)

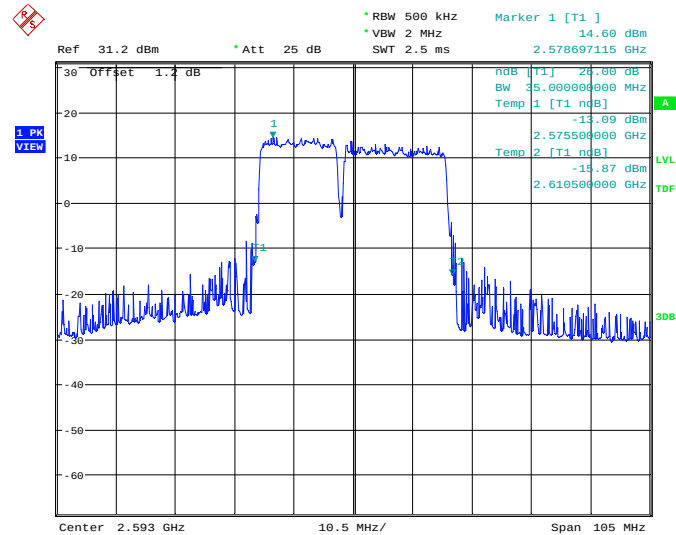


Date: 11.AUG.2023 09:28:24

LTE CA band 41C, 15MHz+20MHz(-26dBc)

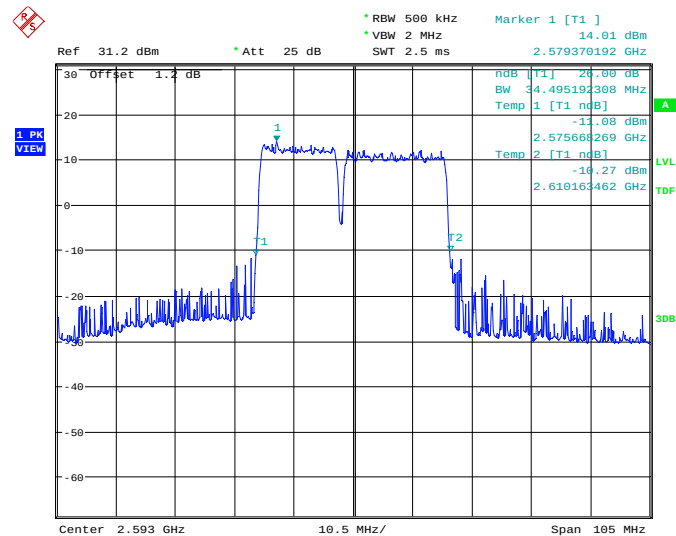
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	35.000	34.495

LTE CA band 41C , 15MHz+20MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:29:43

LTE CA band 41C , 15MHz+20MHz Bandwidth,16QAM (-26dBc BW)

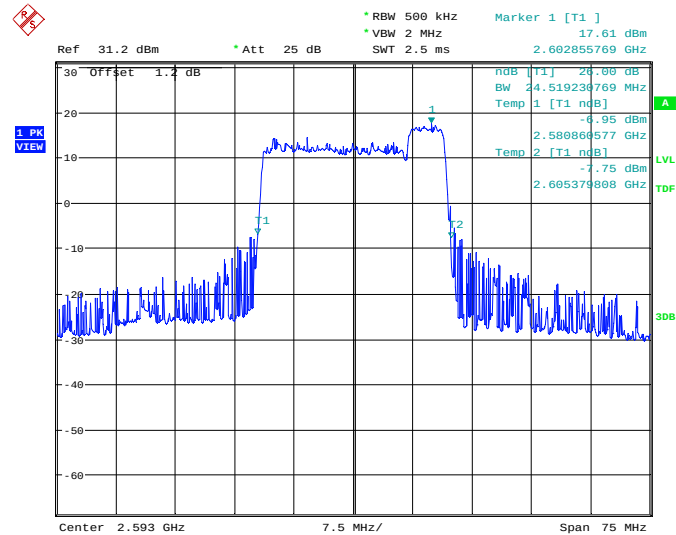


Date: 11.AUG.2023 09:30:06

LTE CA band 41C, 20MHz+5MHz(-26dBc)

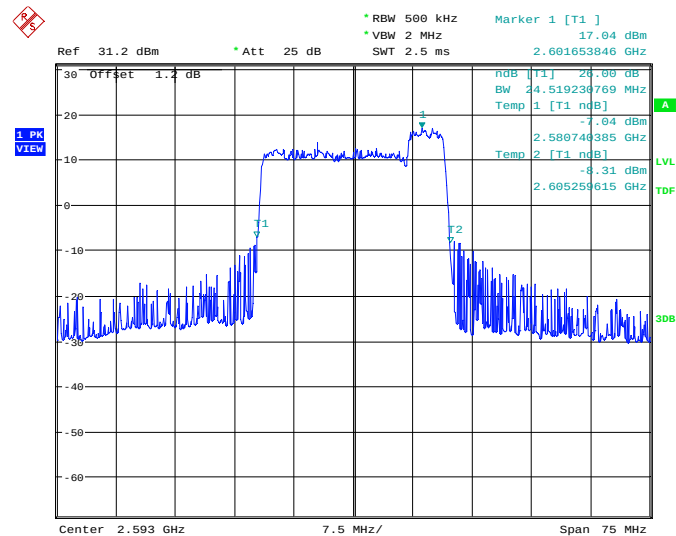
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	24.519	24.519

LTE CA band 41C , 20MHz+5MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:31:00

LTE CA band 41C , 20MHz+5MHz Bandwidth,16QAM (-26dBc BW)

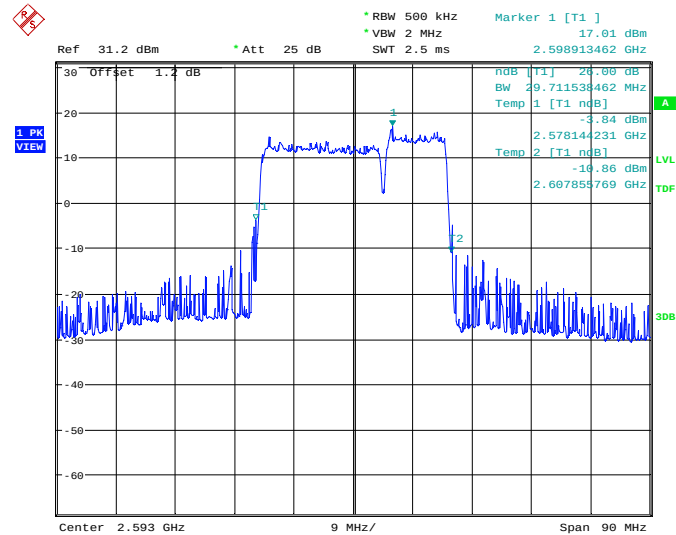


Date: 11.AUG.2023 09:31:23

LTE CA band 41C, 20MHz+10MHz(-26dBc)

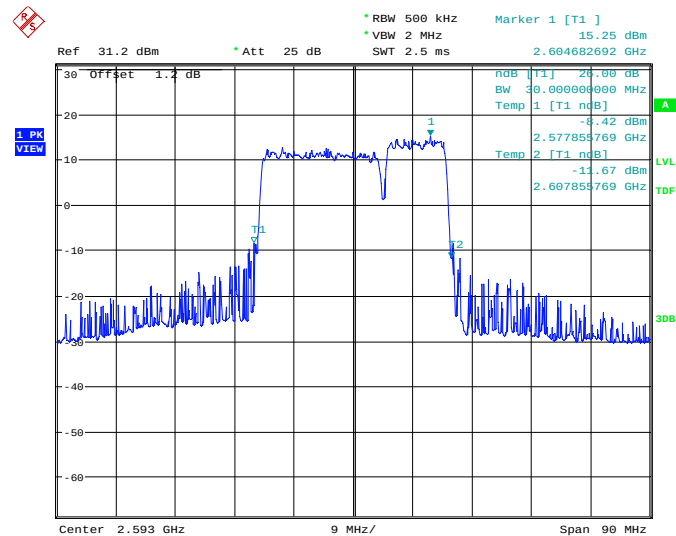
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	29.712	30.000

LTE CA band 41C , 20MHz+10MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:32:42

LTE CA band 41C , 20MHz+10MHz Bandwidth,16QAM (-26dBc BW)

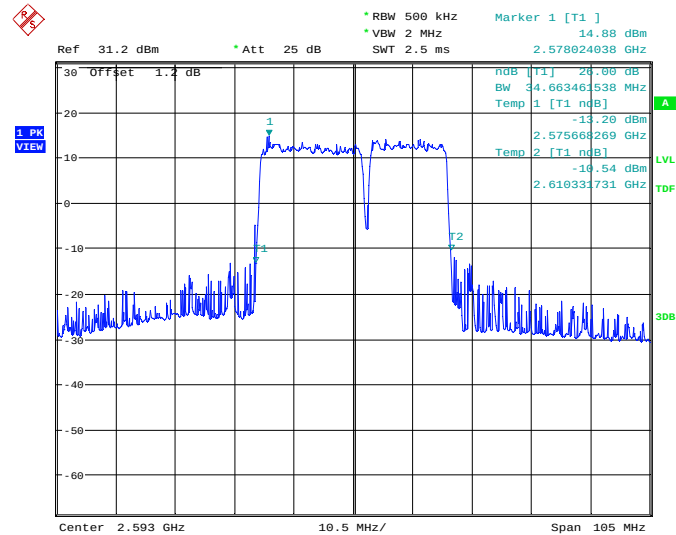


Date: 11.AUG.2023 09:33:05

LTE CA band 41C, 20MHz+15MHz(-26dBc)

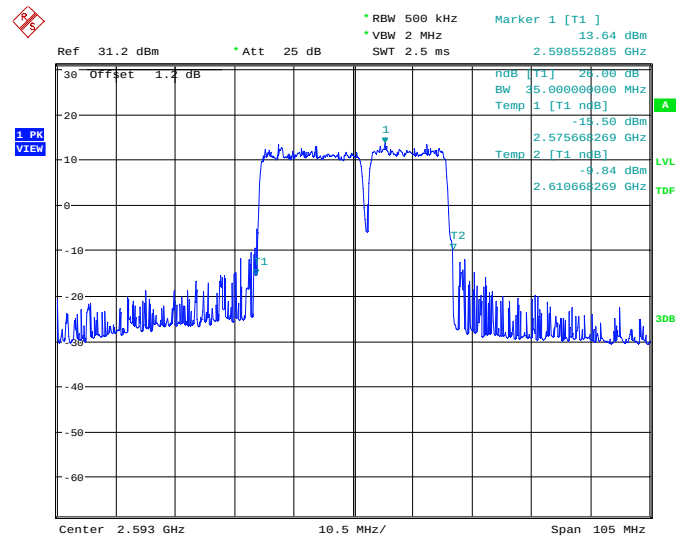
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	34.663	35.000

LTE CA band 41C , 20MHz+15MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:34:24

LTE CA band 41C , 20MHz+15MHz Bandwidth,16QAM (-26dBc BW)

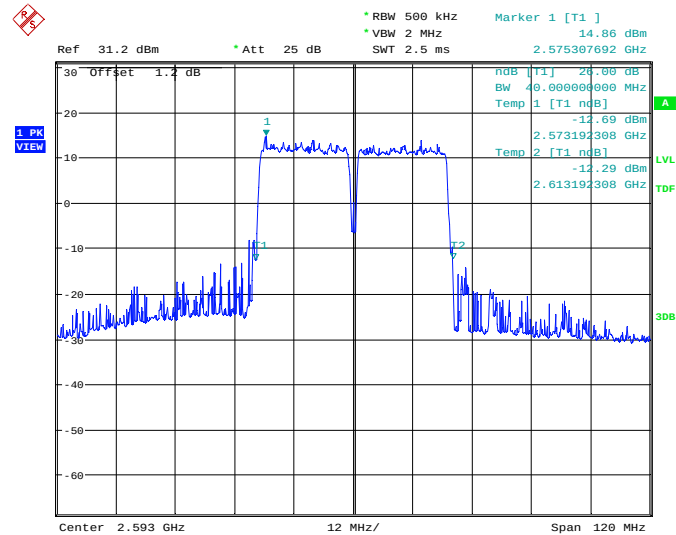


Date: 11.AUG.2023 09:34:48

LTE CA band 41C, 20MHz+20MHz(-26dBc)

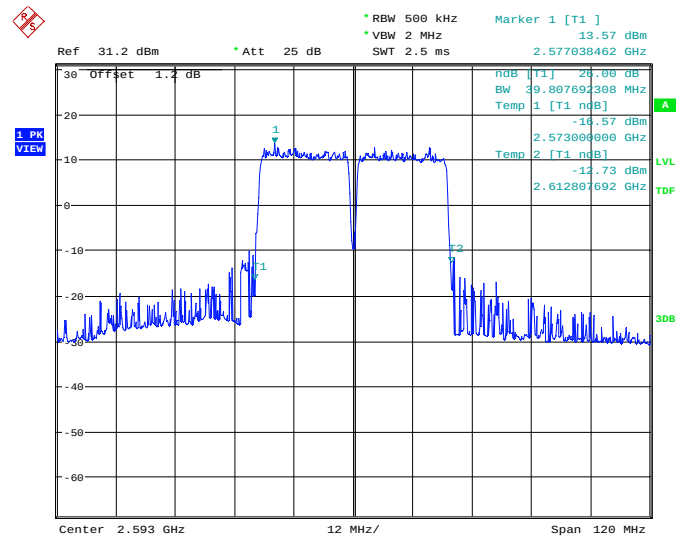
Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
2593.0	40.000	39.808

LTE CA band 41C , 20MHz+20MHz Bandwidth,QPSK (-26dBc BW)



Date: 11.AUG.2023 09:36:06

LTE CA band 41C , 20MHz+20MHz Bandwidth,16QAM (-26dBc BW)

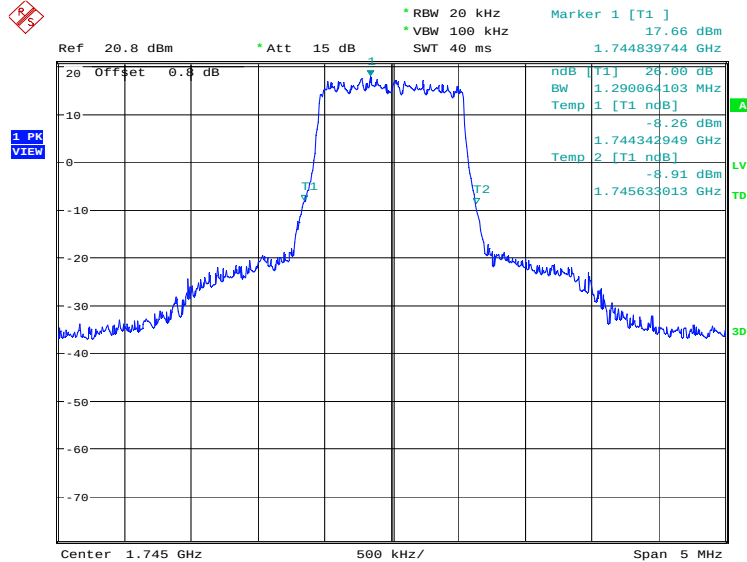


Date: 11.AUG.2023 09:36:30

LTE band 66, 1.4MHz (-26dBc)

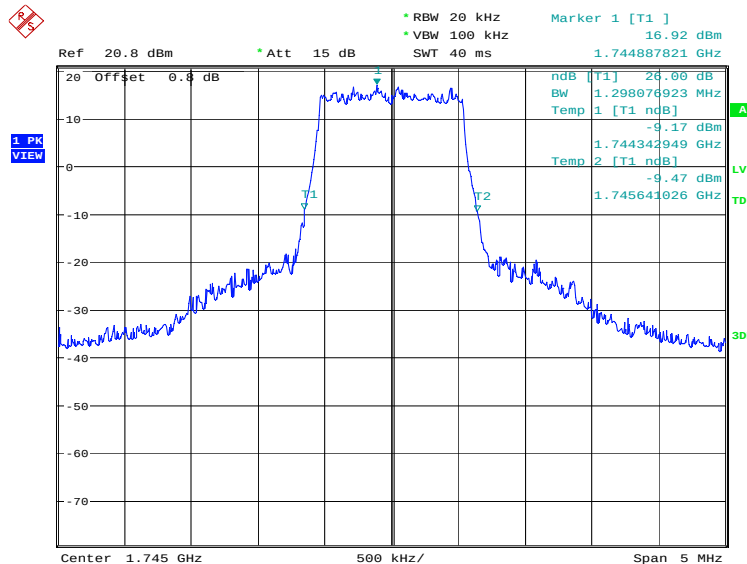
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	1290.06	1298.08

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



Date: 11.AUG.2023 14:57:33

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

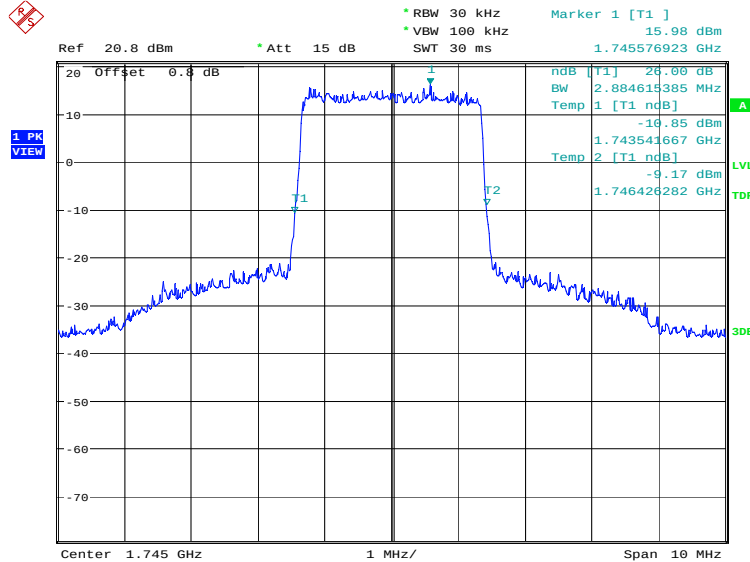


Date: 11.AUG.2023 14:58:14

LTE band 66, 3MHz (-26dBc)

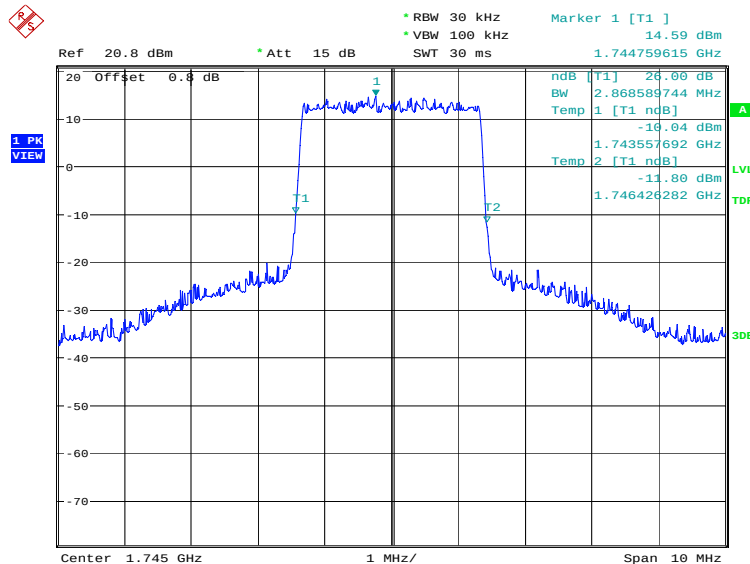
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	2884.62	2868.59

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



Date: 11.AUG.2023 14:58:56

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

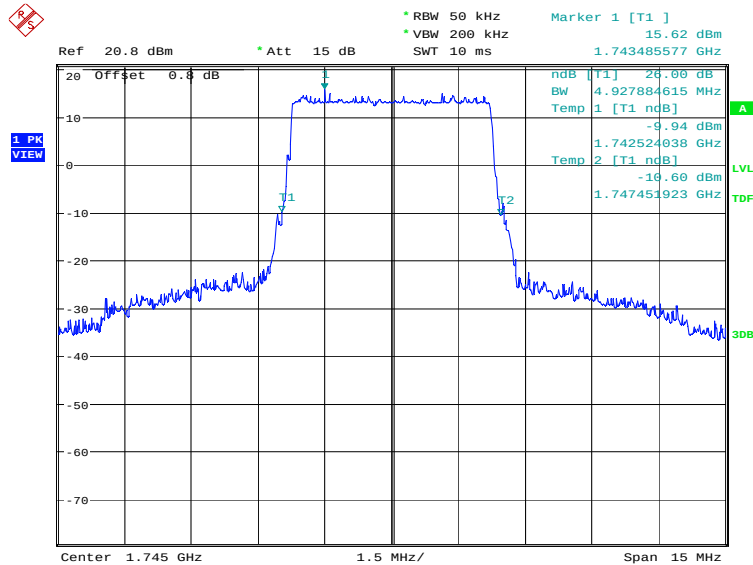


Date: 11.AUG.2023 14:59:36

LTE band 66, 5MHz (-26dBc)

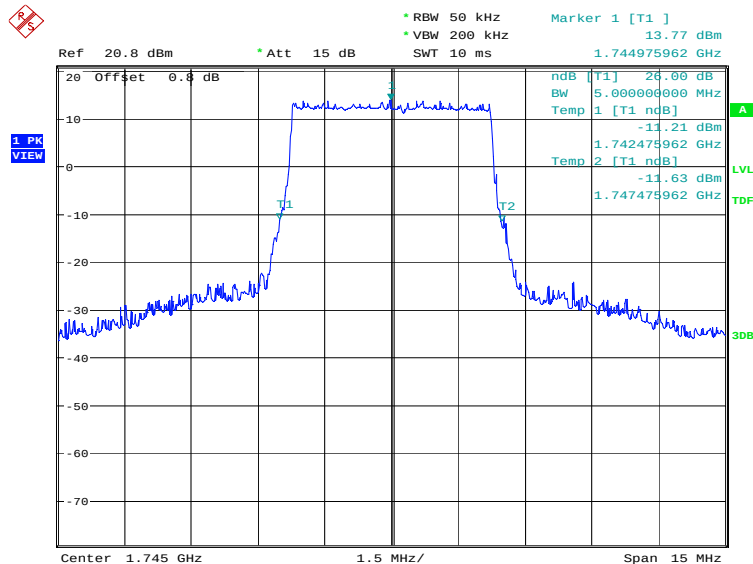
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	4927.88	5000.00

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



Date: 11.AUG.2023 15:00:19

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

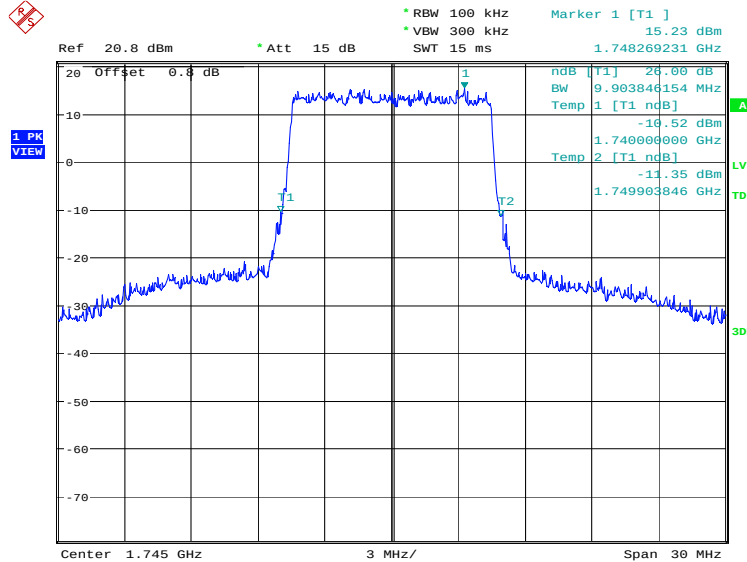


Date: 11.AUG.2023 15:00:59

LTE band 66, 10MHz (-26dBc)

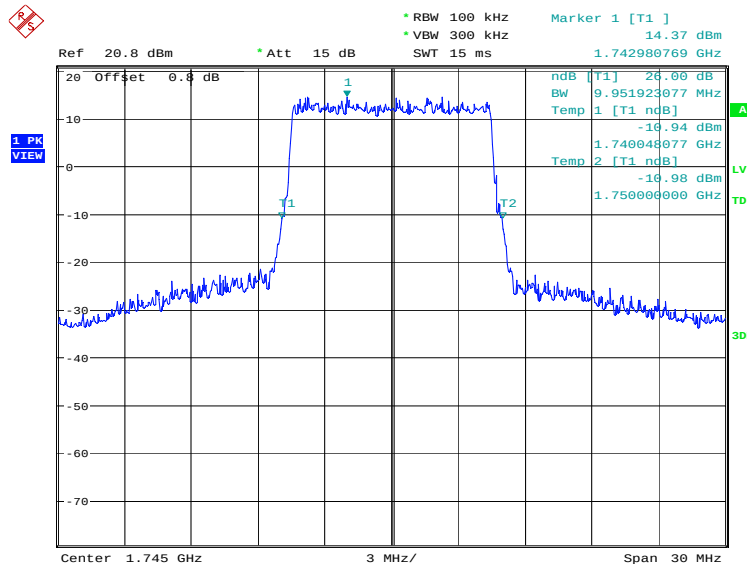
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	9903.85	9951.92

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



Date: 11.AUG.2023 15:01:42

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

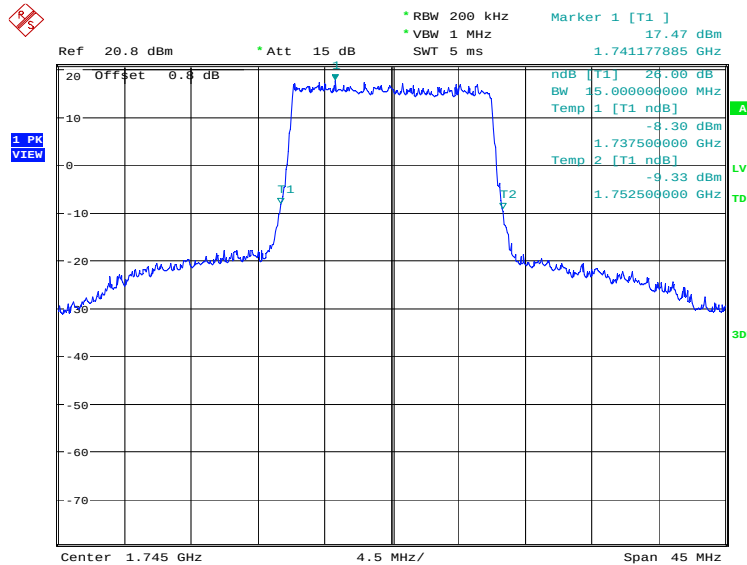


Date: 11.AUG.2023 15:02:24

LTE band 66, 15MHz (-26dBc)

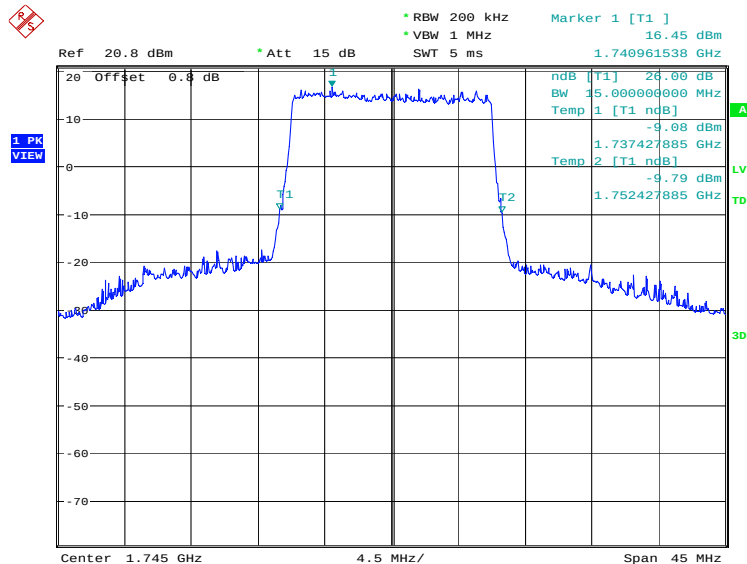
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	15000.00	15000.00

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



Date: 11.AUG.2023 15:03:06

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

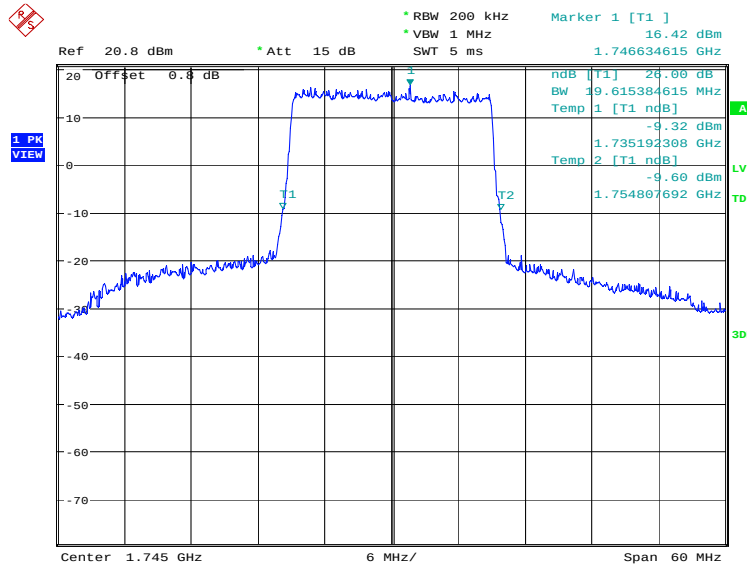


Date: 11.AUG.2023 15:03:47

LTE band 66, 20MHz (-26dBc)

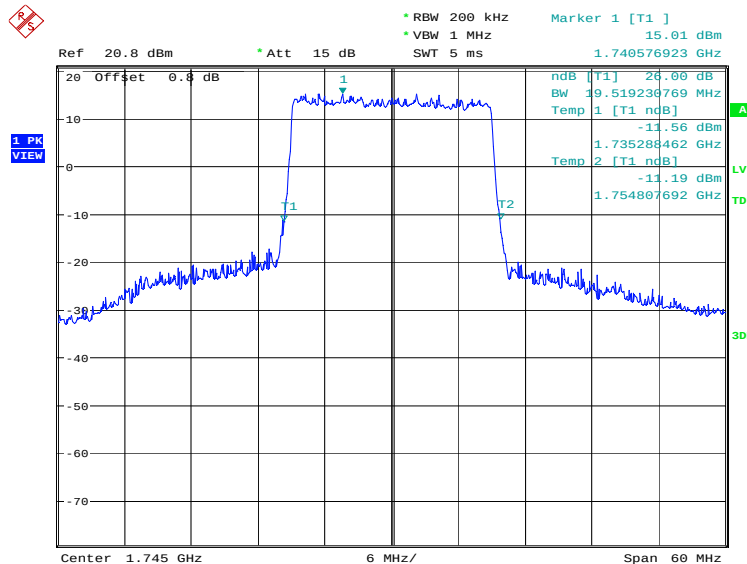
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	19615.38	19519.23

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



Date: 11.AUG.2023 15:04:30

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

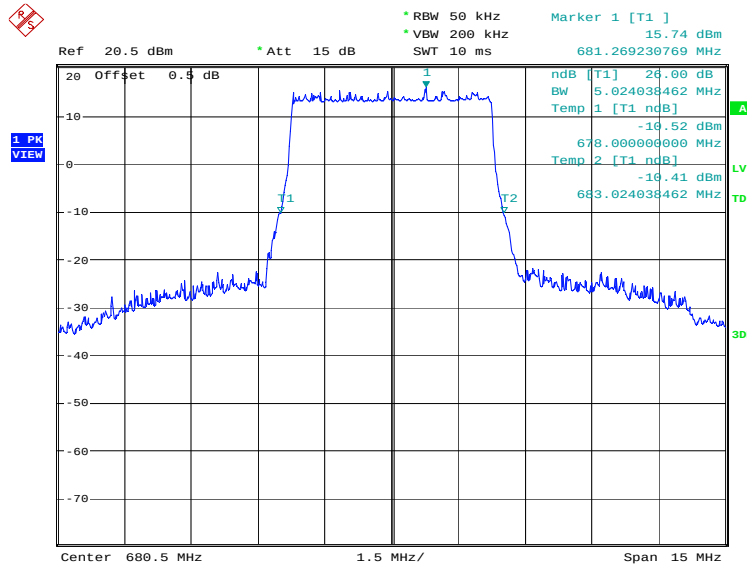


Date: 11.AUG.2023 15:05:10

LTE band 71, 5MHz (-26dBc)

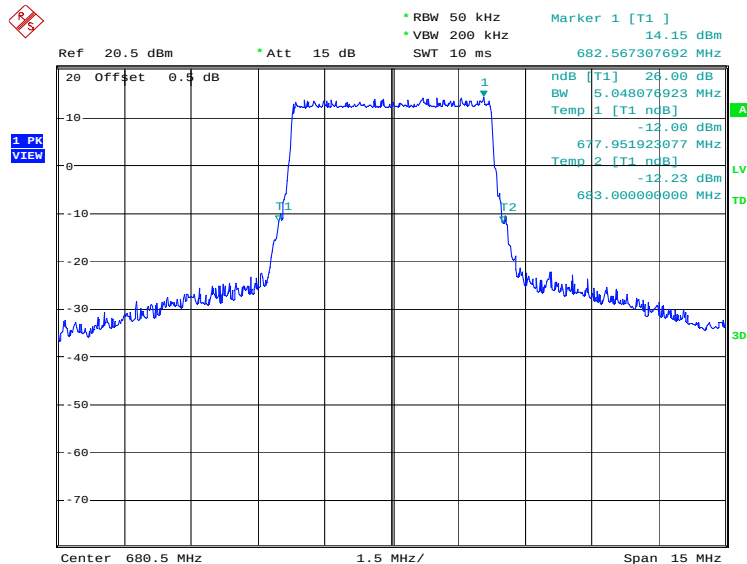
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
680.5	QPSK	16QAM
	5024.04	5048.08

LTE band 71, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:10:31

LTE band 71, 5MHz Bandwidth, 16QAM (-26dBc BW)

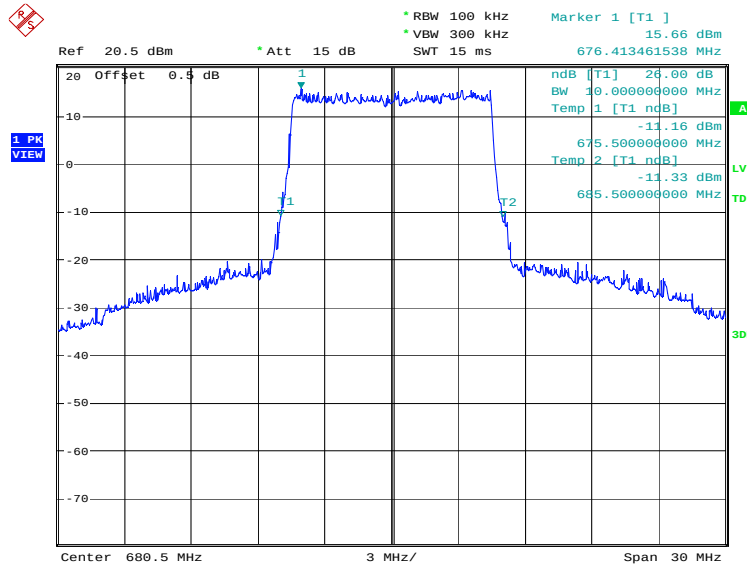


Date: 11.AUG.2023 12:11:12

LTE band 71, 10MHz (-26dBc)

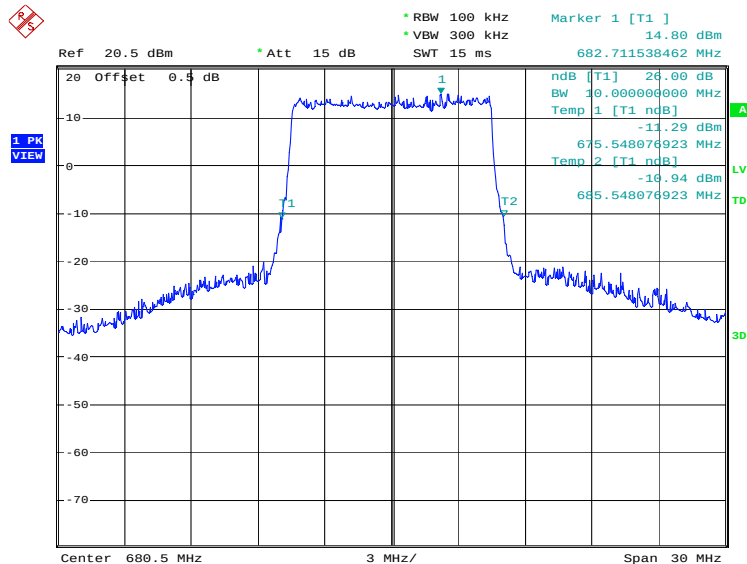
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
680.5	QPSK	16QAM
	10000.00	10000.00

LTE band 71, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:11:54

LTE band 71, 10MHz Bandwidth, 16QAM (-26dBc BW)

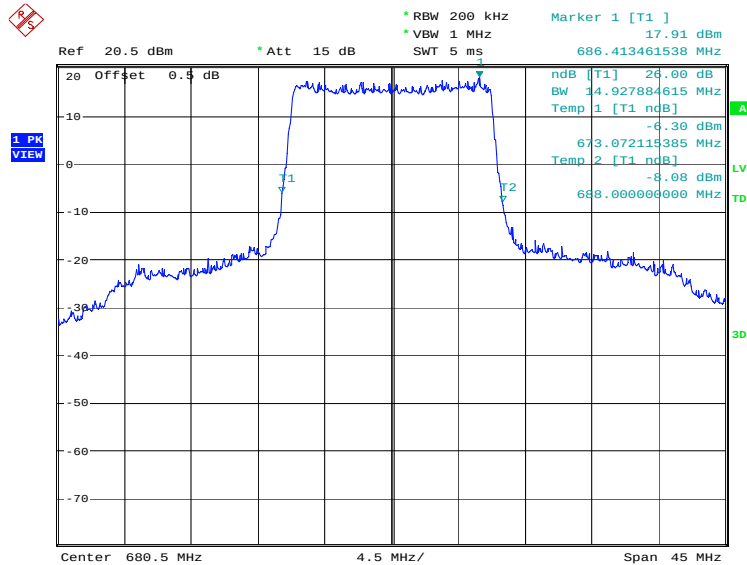


Date: 11.AUG.2023 12:12:34

LTE band 71, 15MHz (-26dBc)

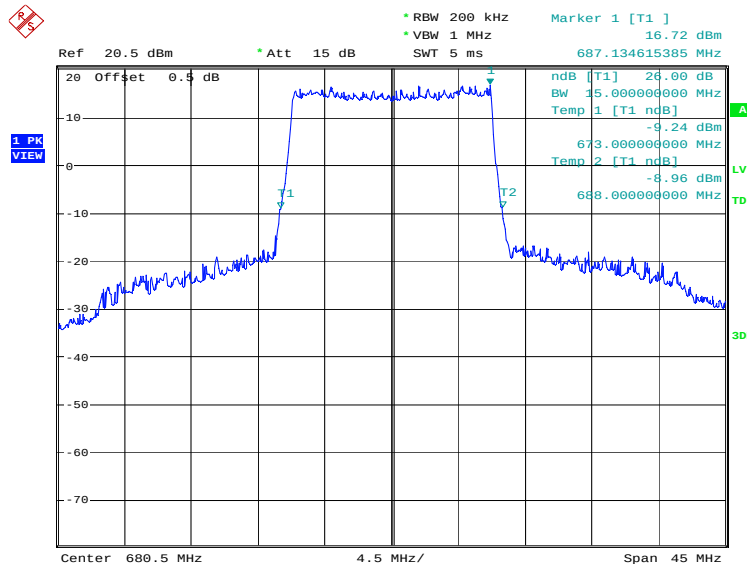
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
680.5	QPSK	16QAM
	14927.88	15000.00

LTE band 71, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:13:17

LTE band 71, 15MHz Bandwidth, 16QAM (-26dBc BW)

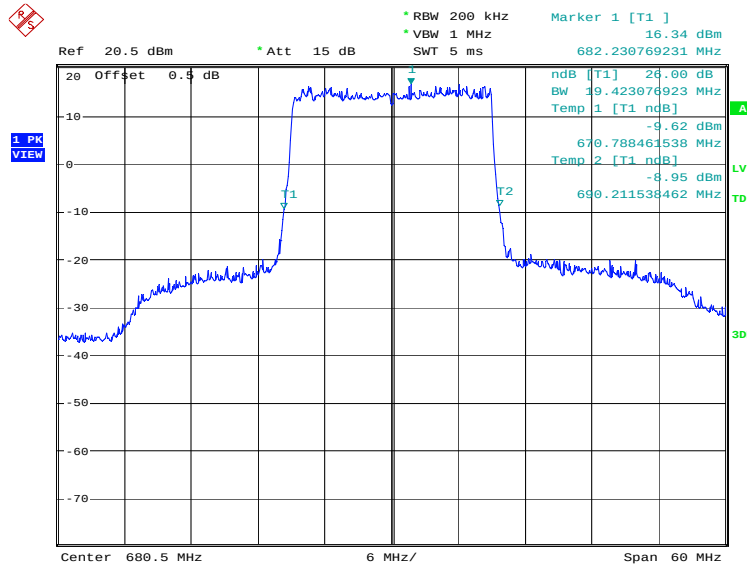


Date: 11.AUG.2023 12:13:57

LTE band 71, 20MHz (-26dBc)

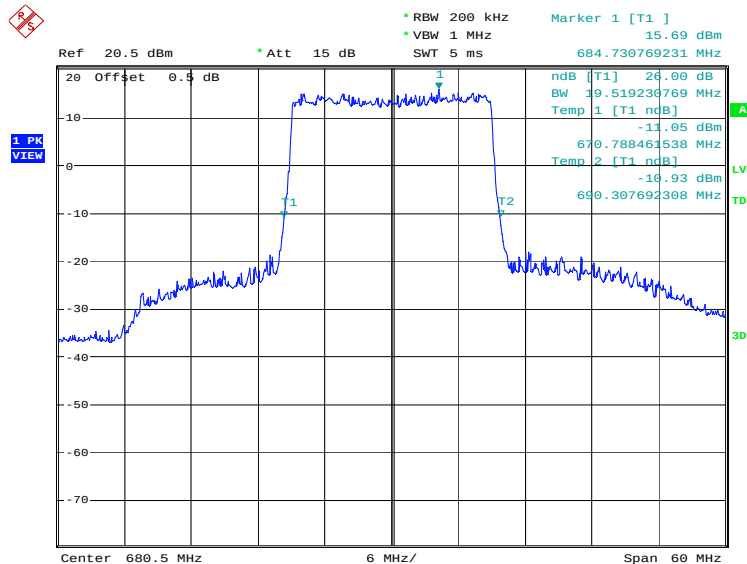
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
680.5	QPSK	16QAM
	19423.08	19519.23

LTE band 71, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.AUG.2023 12:14:39

LTE band 71, 20MHz Bandwidth, 16QAM (-26dBc BW)



Date: 11.AUG.2023 12:15:20

Note: Expanded measurement uncertainty is $U = 3428 \text{ Hz}$, $k = 2$.

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

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

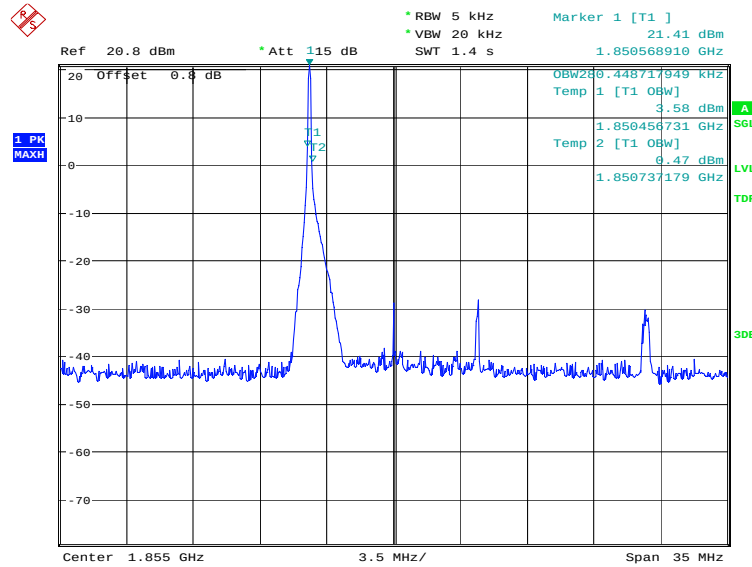
The spectrum analyzer readings are corrected by $[10 \log(1/\text{duty cycle})]$ for the non-continuous transmitting scenario.

A.6.2 Measurement result

Only the worst case result is given below

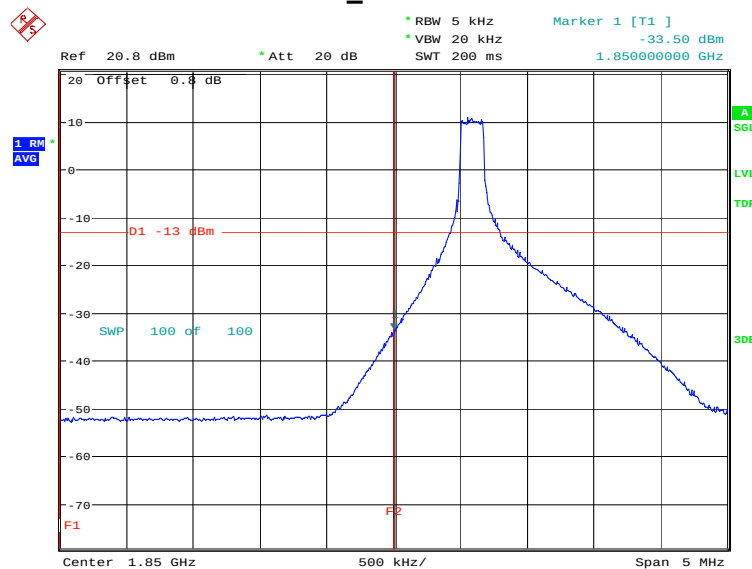
LTE band 2

OBW: 1RB-low_offset



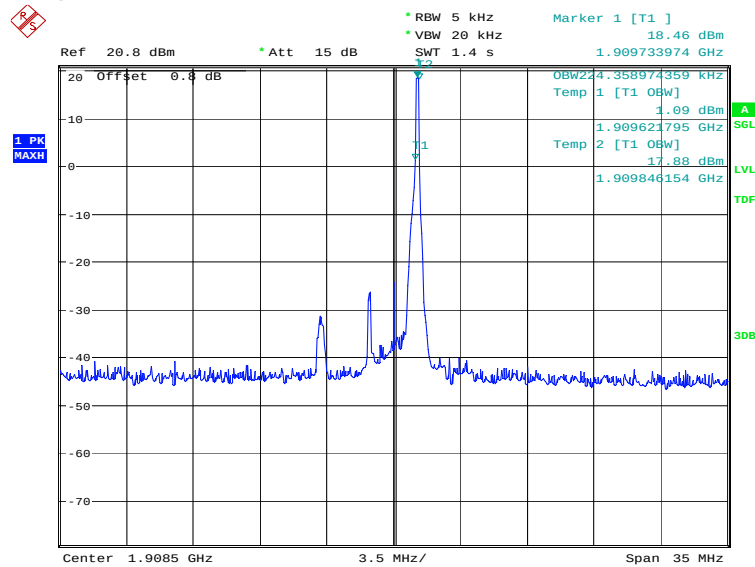
Date: 16.AUG.2023 08:59:21

LOW BAND EDGE BLOCK-1RB-low_offset



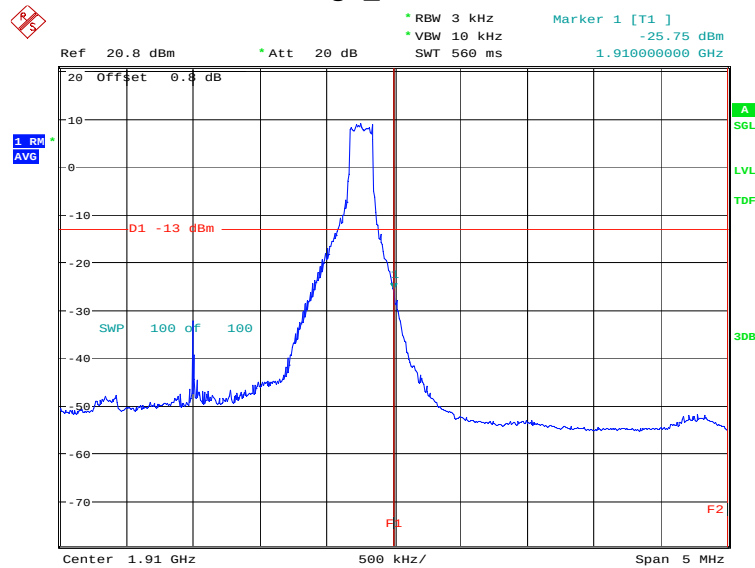
Date: 16.AUG.2023 09:00:36

OBW: 1RB-high_offset



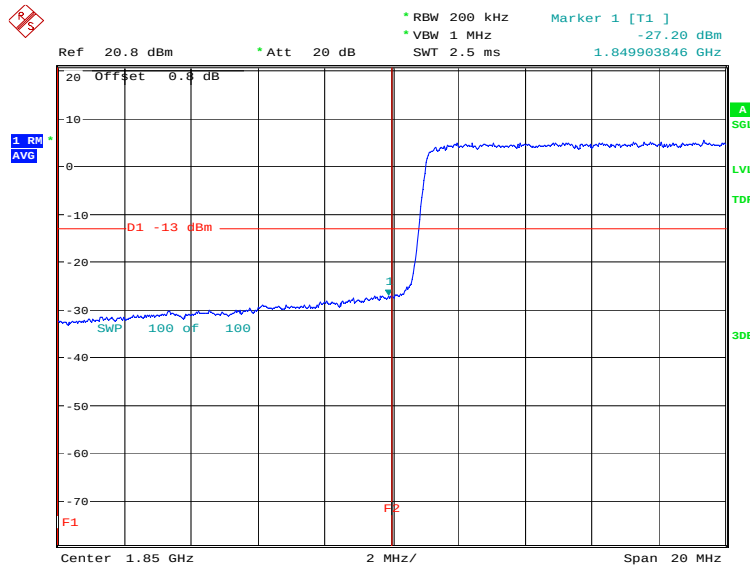
Date: 16.AUG.2023 09:03:28

HIGH BAND EDGE BLOCK-1RB-high_offset



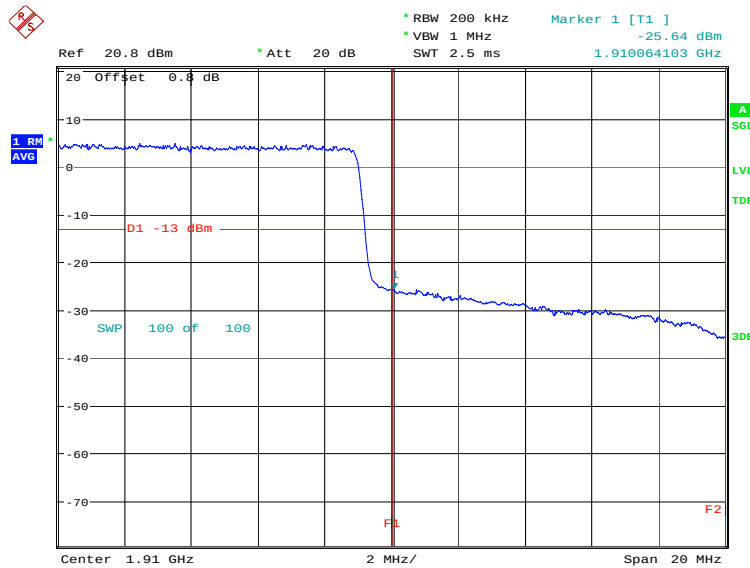
Date: 16.AUG.2023 09:04:42

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 16.AUG.2023 09:01:12

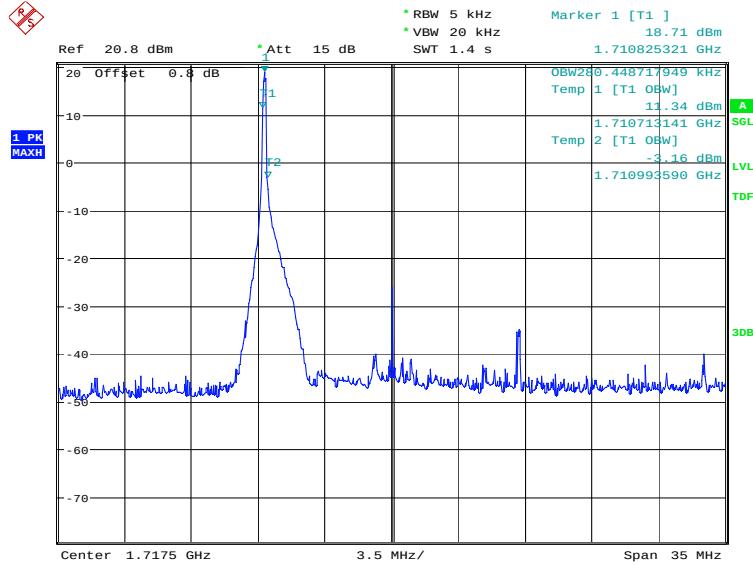
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 16.AUG.2023 09:05:18

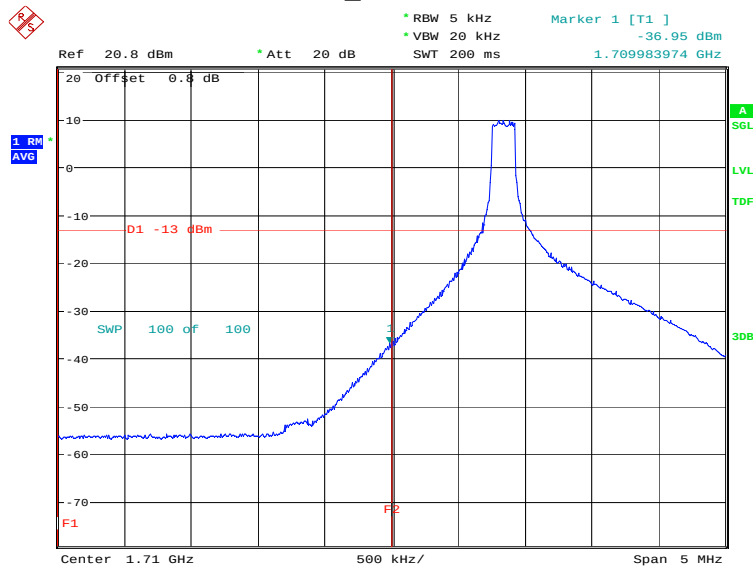
LTE band 4

OBW: 1RB-low_offset



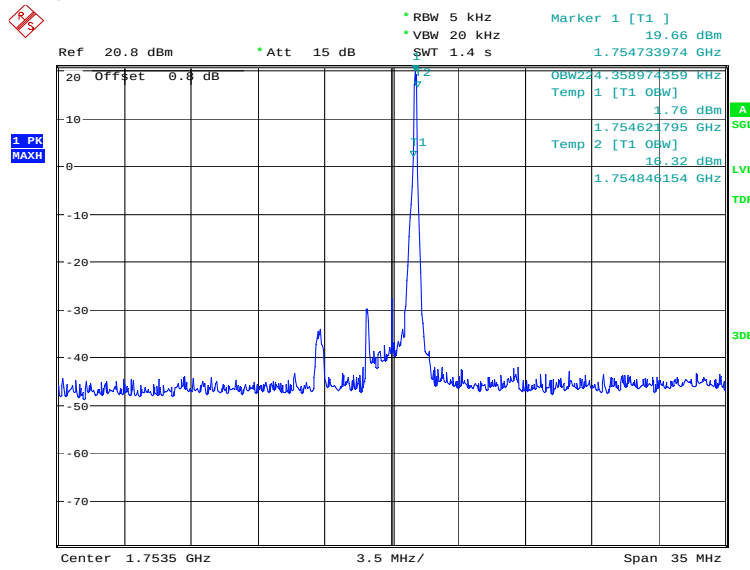
Date: 16.AUG.2023 09:07:35

LOW BAND EDGE BLOCK-1RB-low_offset



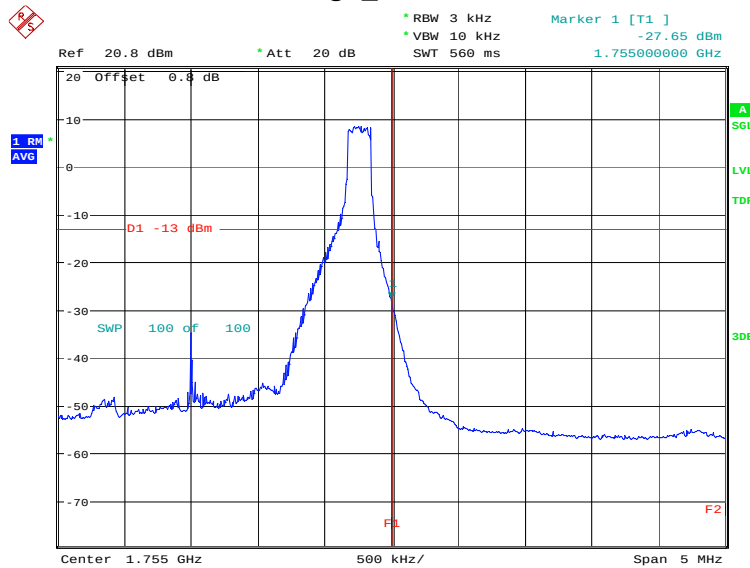
Date: 16.AUG.2023 09:08:50

OBW: 1RB-high_offset



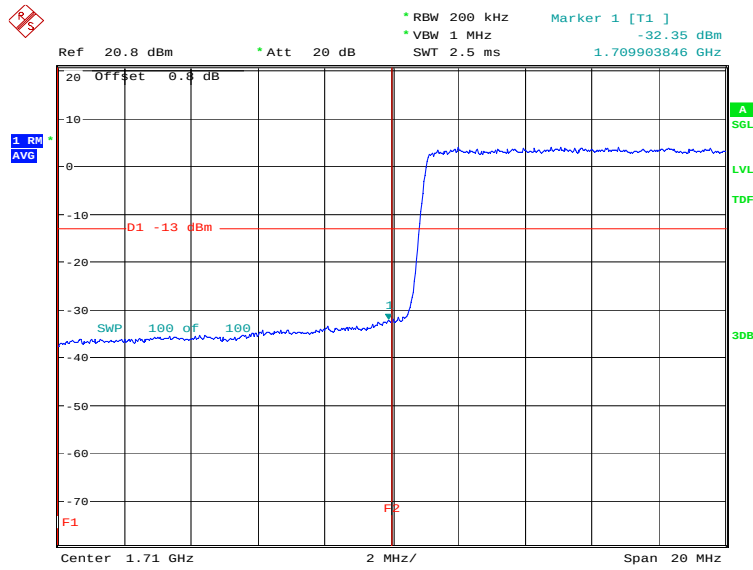
Date: 16.AUG.2023 09:11:41

HIGH BAND EDGE BLOCK-1RB-high_offset



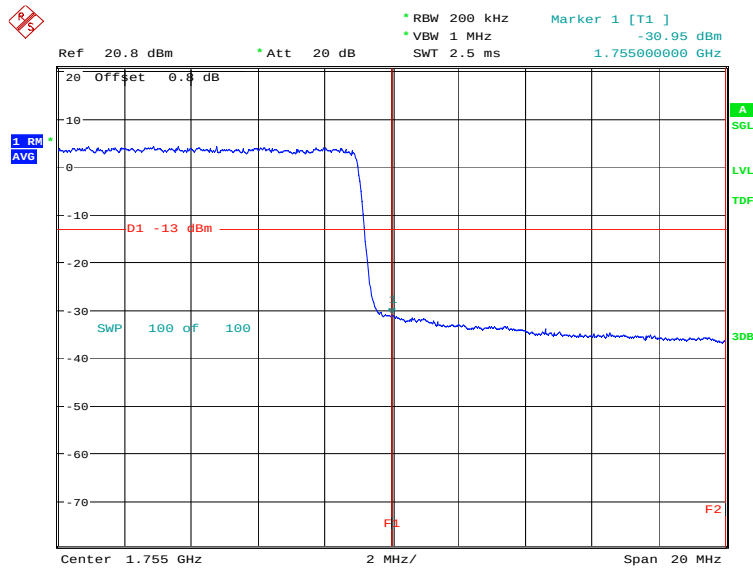
Date: 16.AUG.2023 09:12:55

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 16.AUG.2023 09:09:26

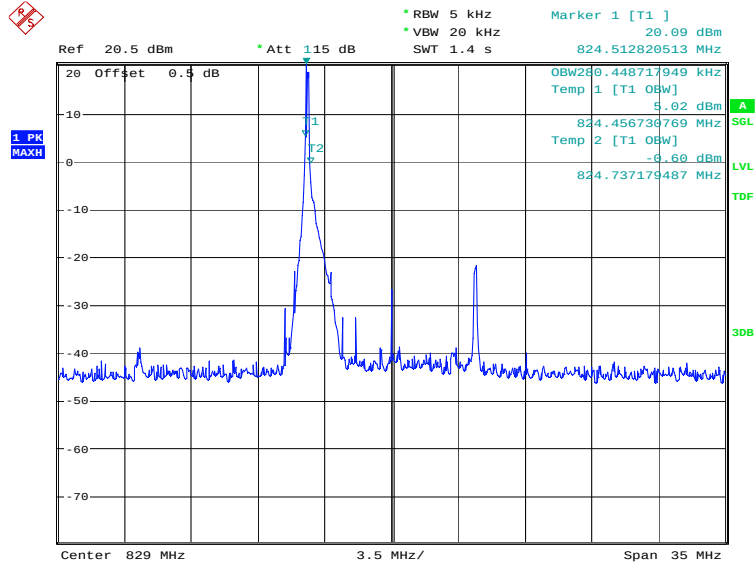
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 16.AUG.2023 09:13:32

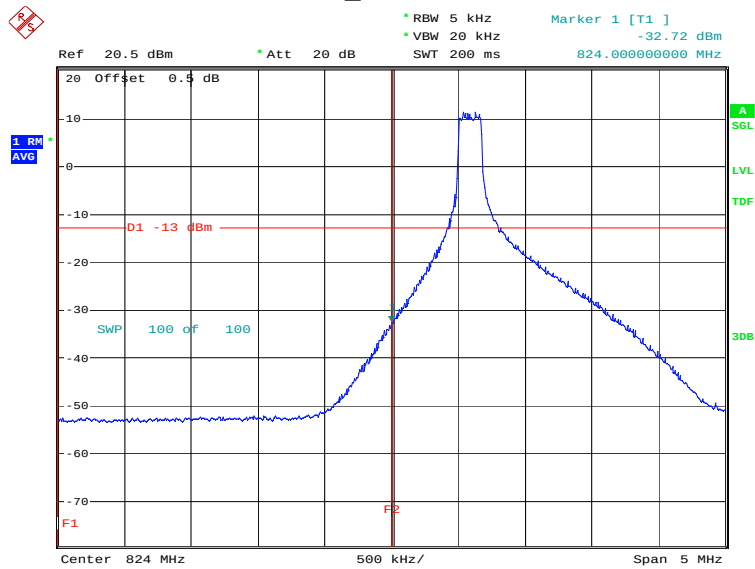
LTE band 5

OBW: 1RB-low_offset



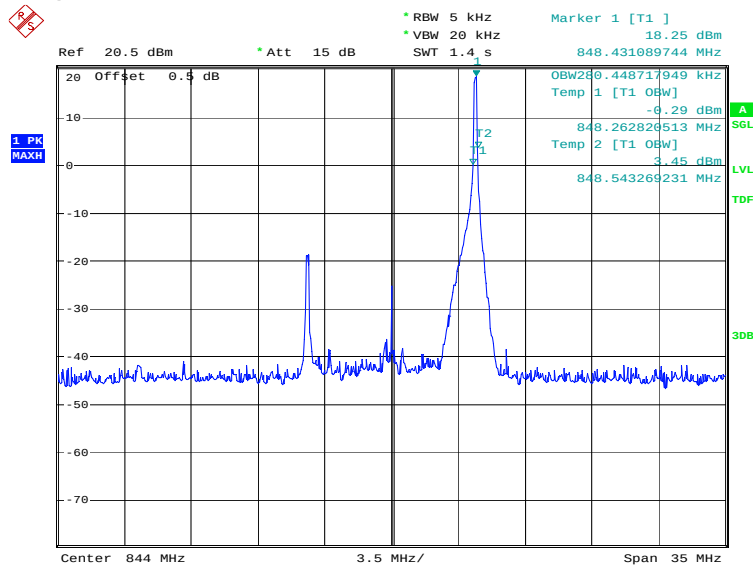
Date: 16.AUG.2023 08:38:51

LOW BAND EDGE BLOCK-1RB-low_offset



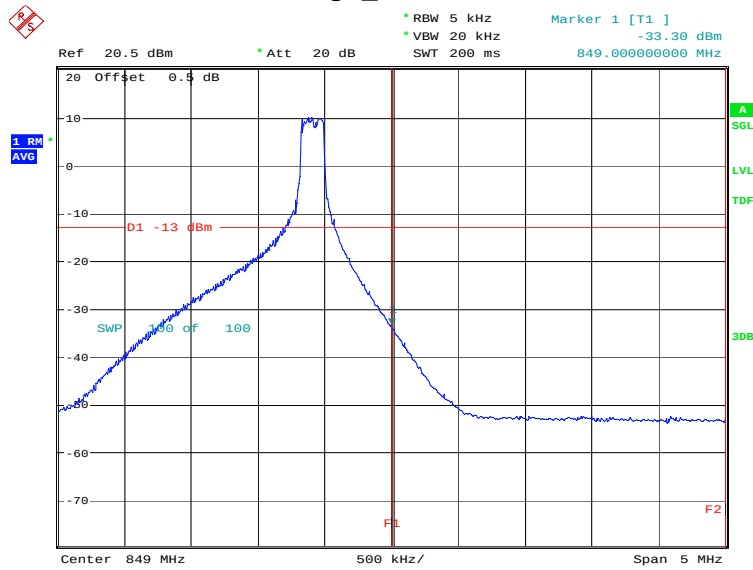
Date: 16.AUG.2023 08:40:05

OBW: 1RB-high_offset



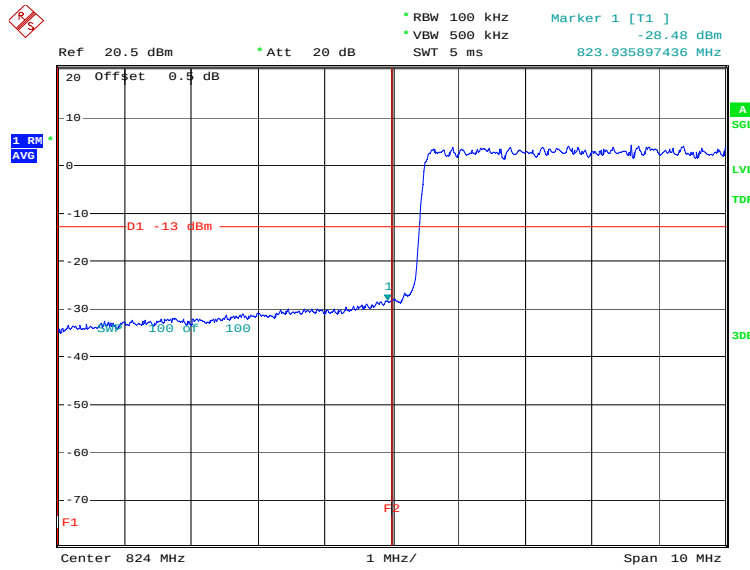
Date: 16.AUG.2023 08:42:13

HIGH BAND EDGE BLOCK-1RB-high_offset



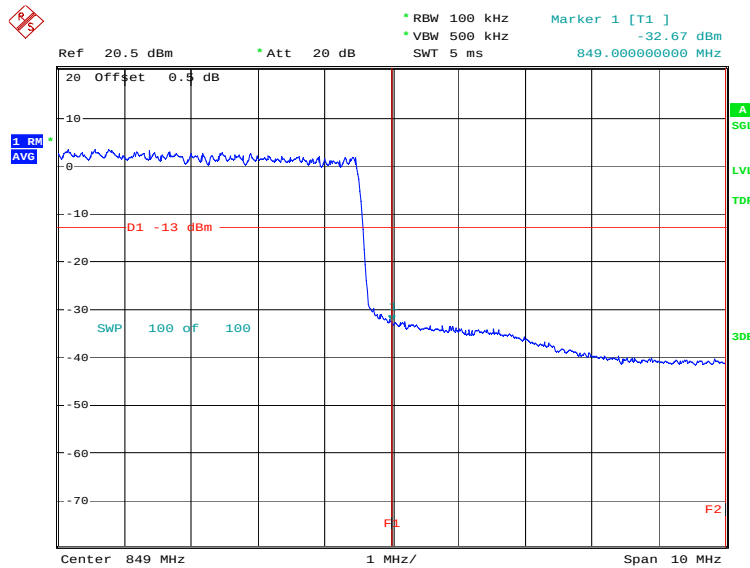
Date: 16.AUG.2023 08:43:27

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 16.AUG.2023 08:40:39

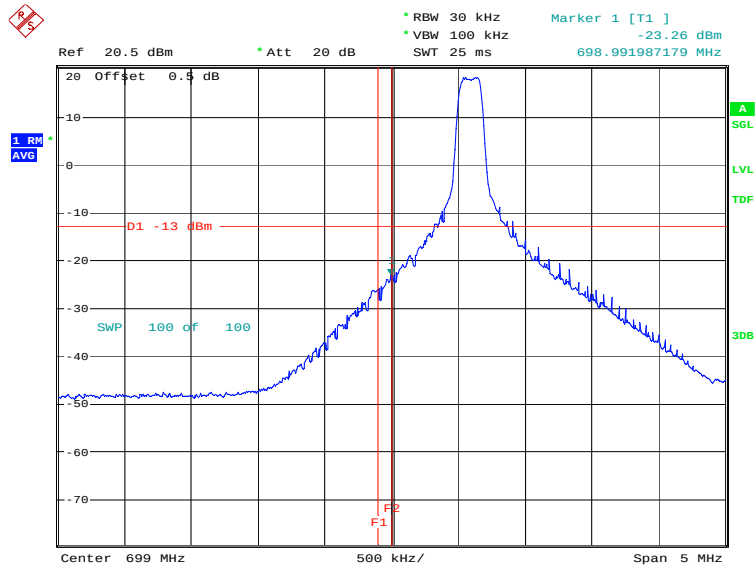
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 16.AUG.2023 08:44:01

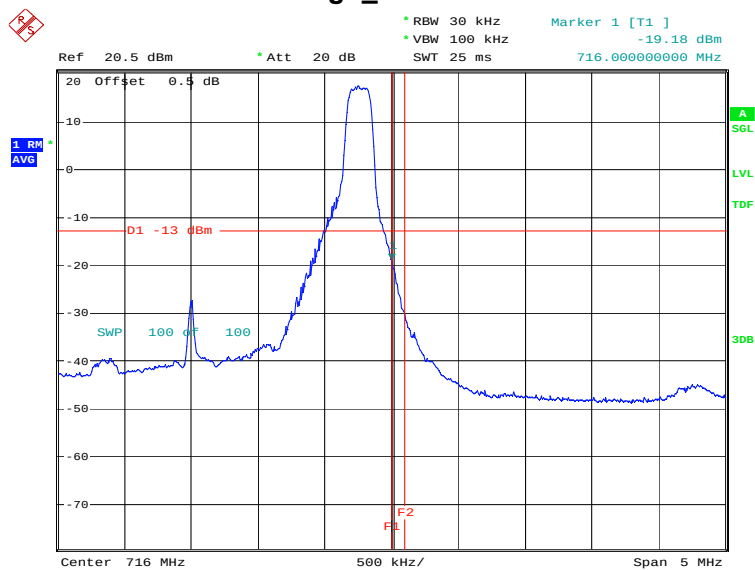
LTE band 12

LOW BAND EDGE BLOCK-1RB-low_offset



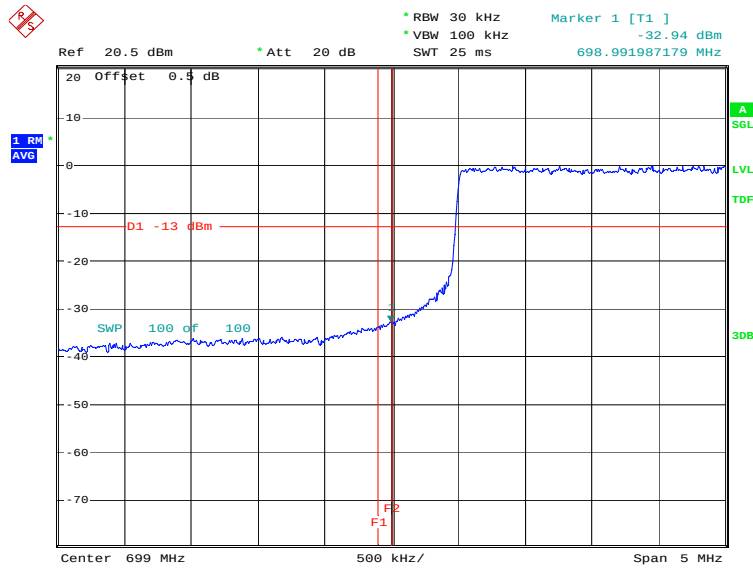
Date: 16.AUG.2023 08:45:55

HIGH BAND EDGE BLOCK-1RB-high_offset



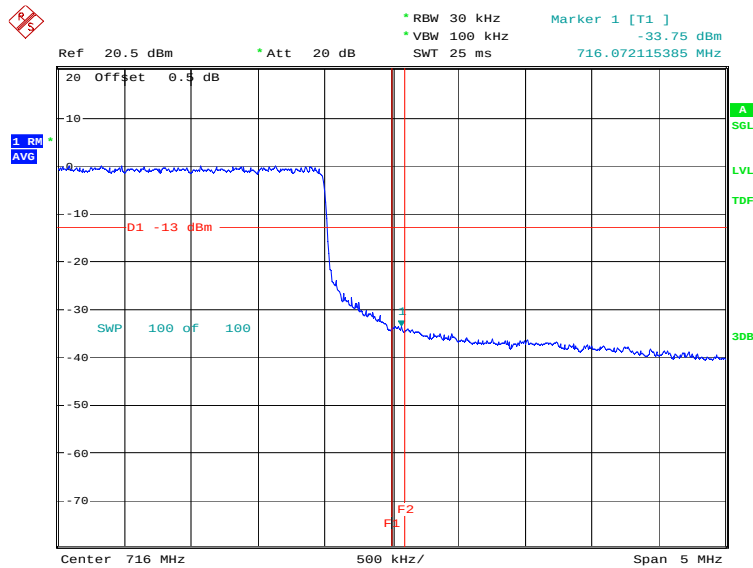
Date: 16.AUG.2023 08:47:33

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 11.AUG.2023 12:41:07

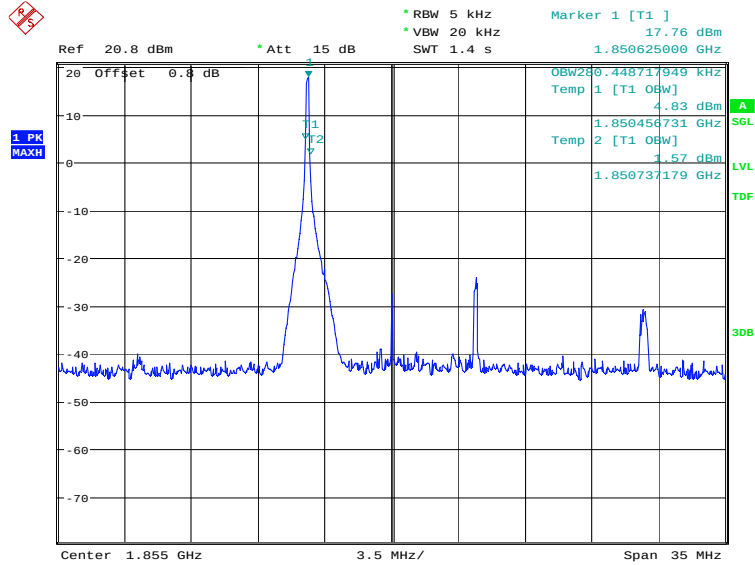
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 11.AUG.2023 12:42:40

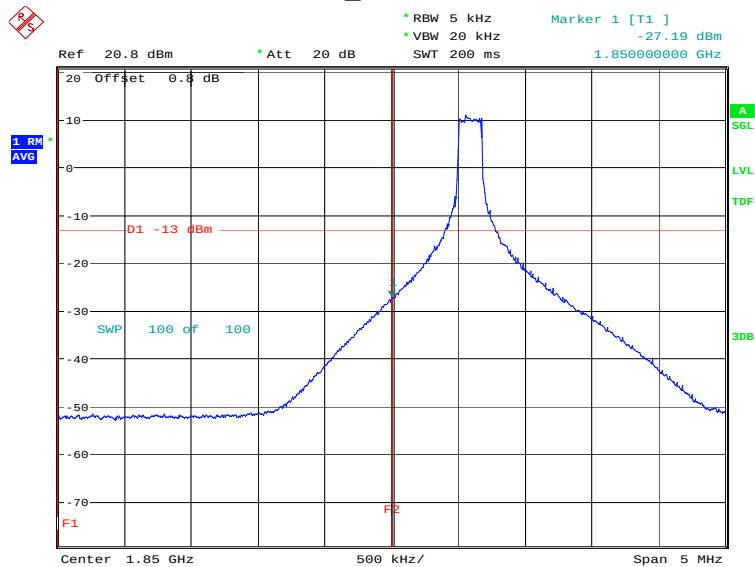
LTE band 25

OBW: 1RB-low_offset



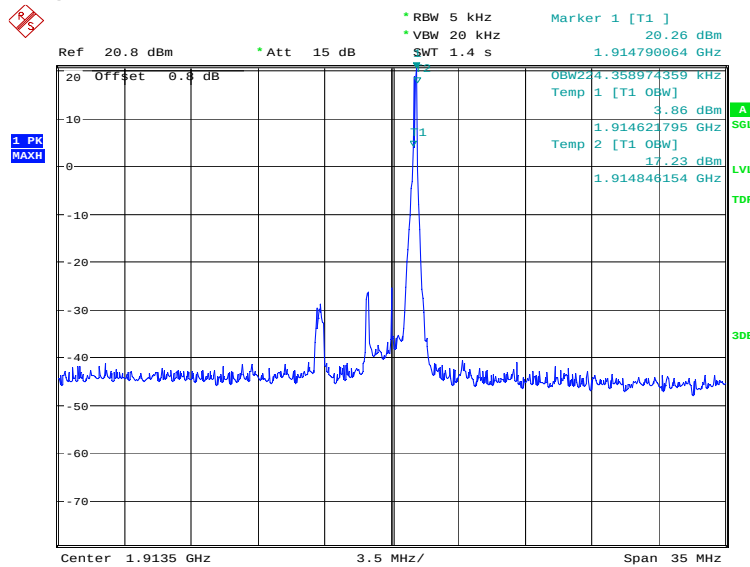
Date: 16.AUG.2023 09:15:50

LOW BAND EDGE BLOCK-1RB-low_offset



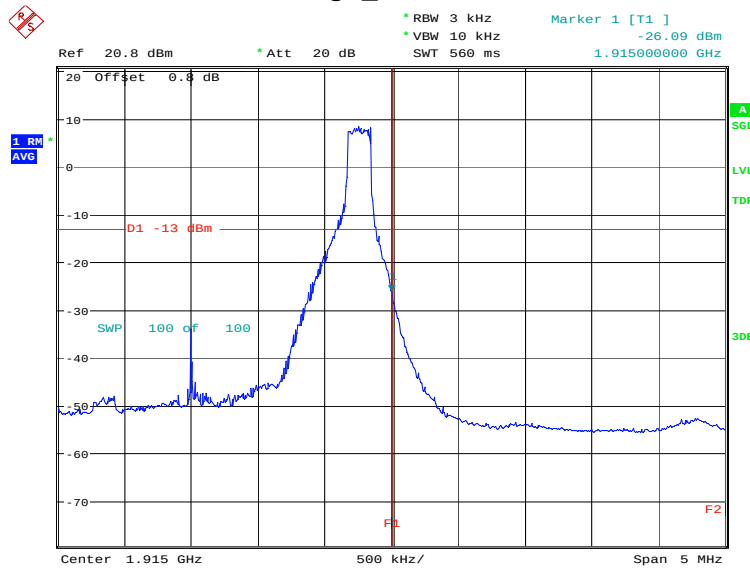
Date: 16.AUG.2023 09:17:04

OBW: 1RB-high_offset



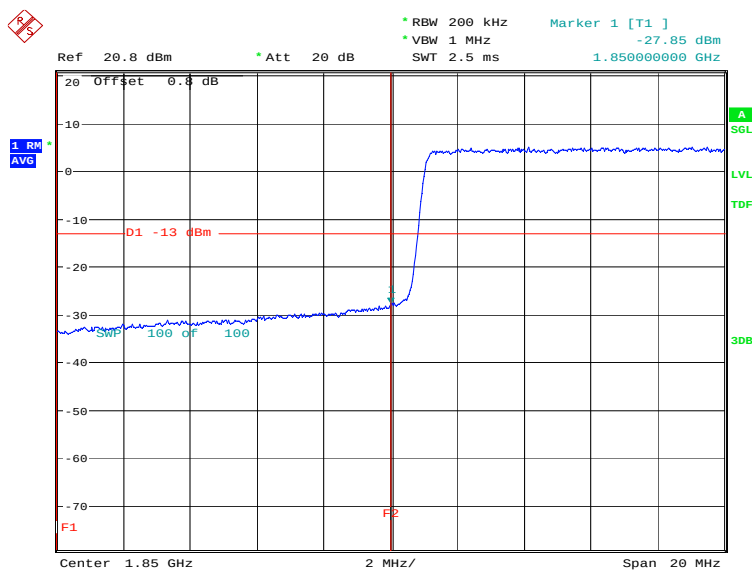
Date: 16.AUG.2023 09:18:28

HIGH BAND EDGE BLOCK-1RB-high_offset



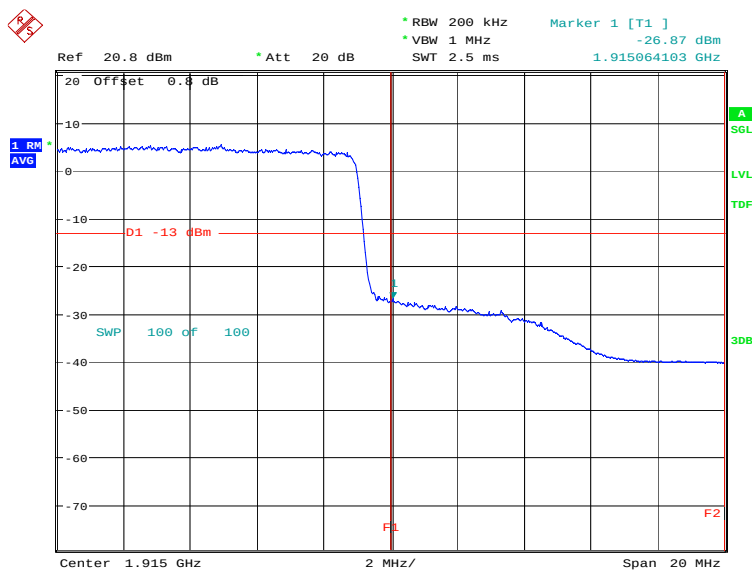
Date: 16.AUG.2023 09:19:43

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 15:12:42

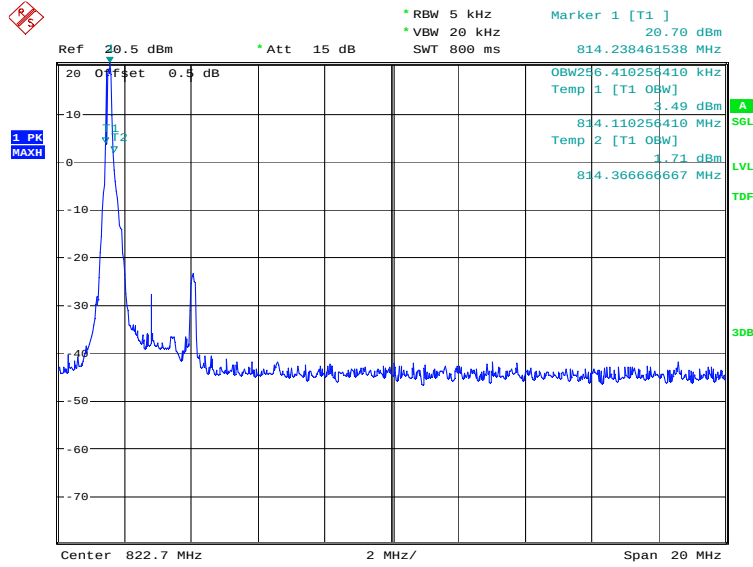
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 15:14:18

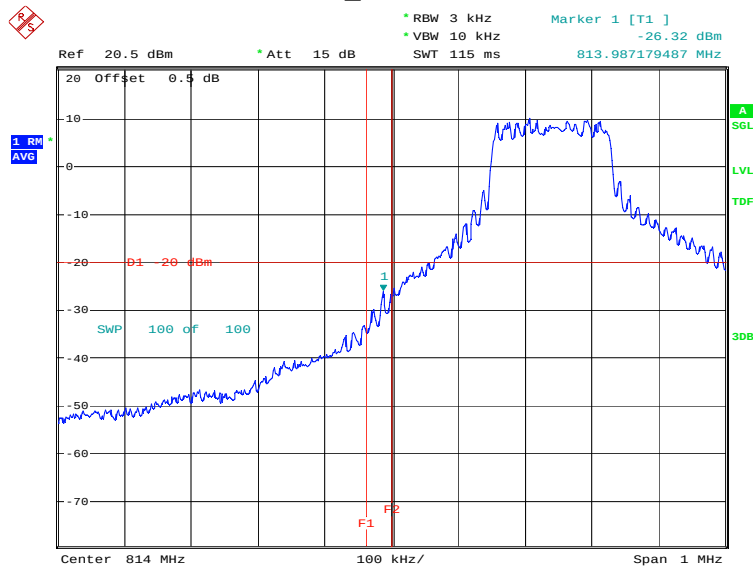
LTE band 26(814MHz~824MHz)

OBW: 1RB-low_offset



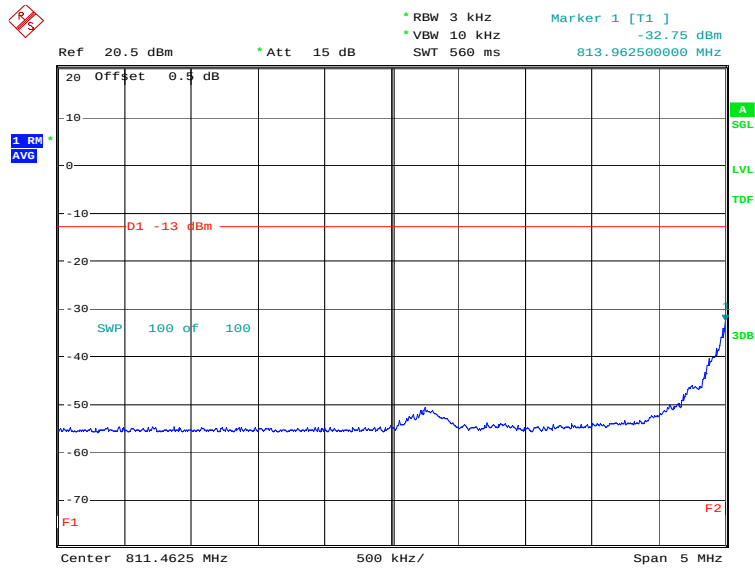
Date: 16.AUG.2023 14:12:22

LOW BAND EDGE BLOCK-1RB-low_offset



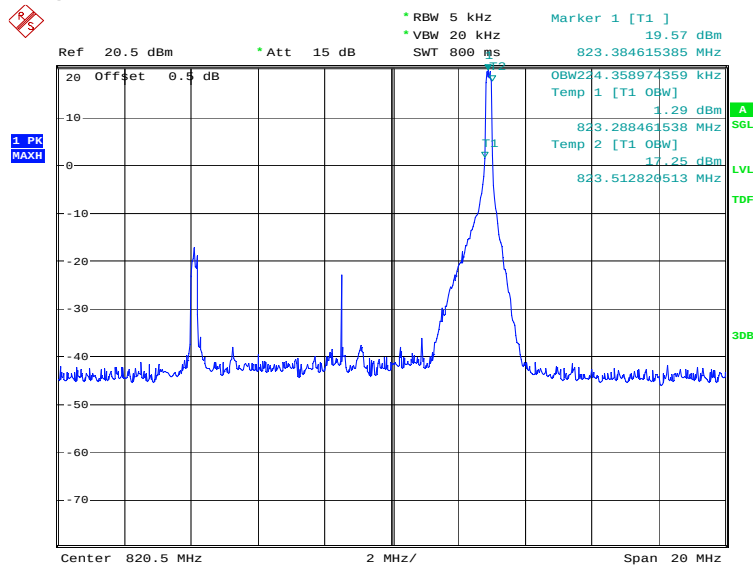
Date: 16.AUG.2023 14:13:54

LOW Emission Mask -1RB-low_offset



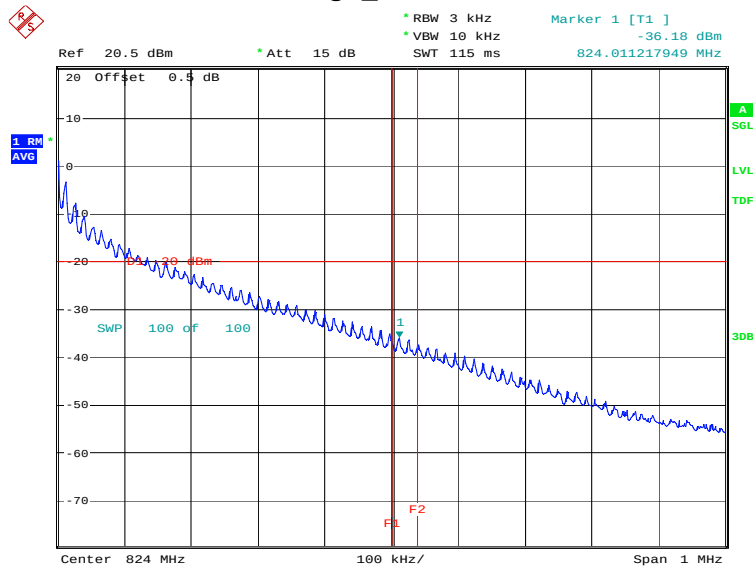
Date: 16.AUG.2023 14:16:12

OBW: 1RB-high_offset



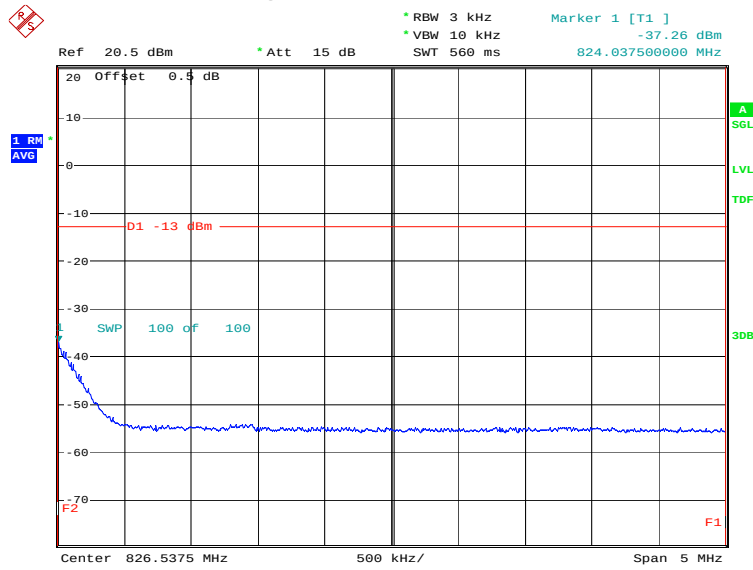
Date: 16.AUG.2023 14:18:47

HIGH BAND EDGE BLOCK-1RB-high_offset



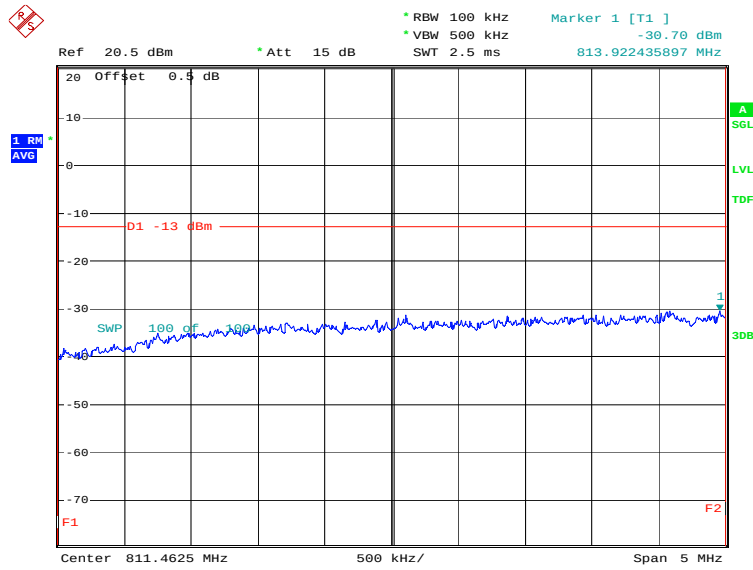
Date: 16.AUG.2023 14:20:19

HIGH Emission Mask -1RB-high_offset



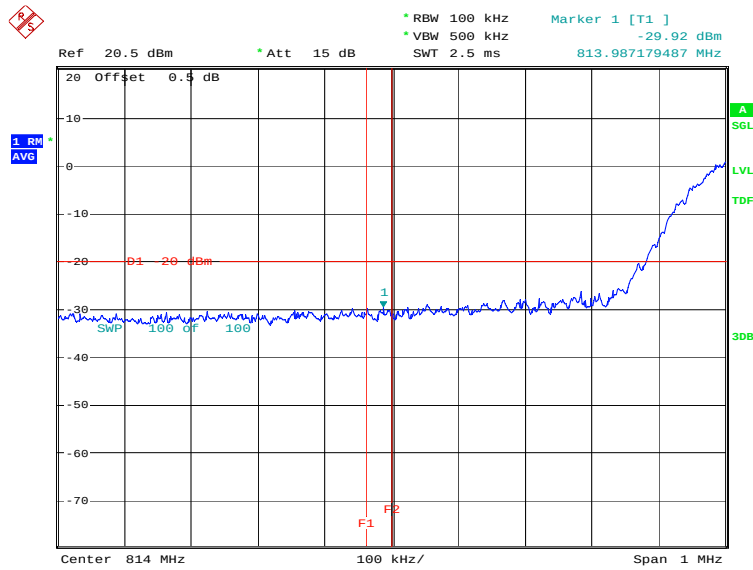
Date: 16.AUG.2023 14:22:37

LOW Emission Mask -10MHz-100%RB



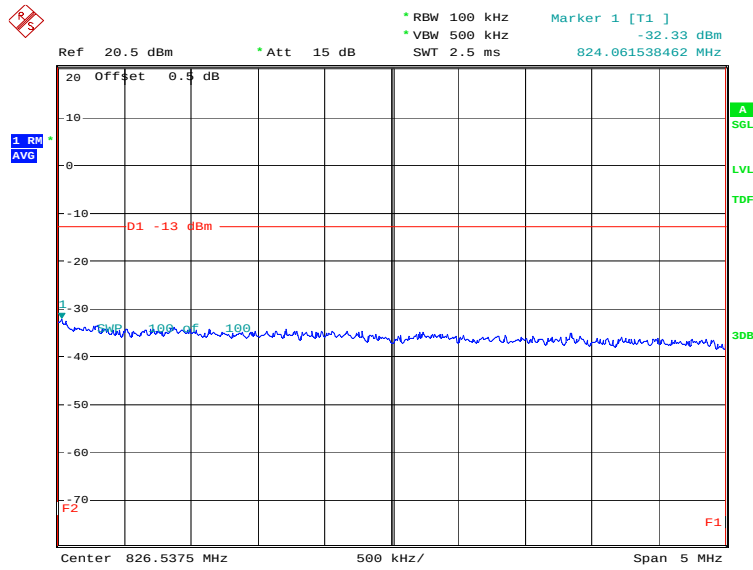
Date: 16.AUG.2023 14:17:14

LOW BAND EDGE BLOCK-10MHz-100%RB



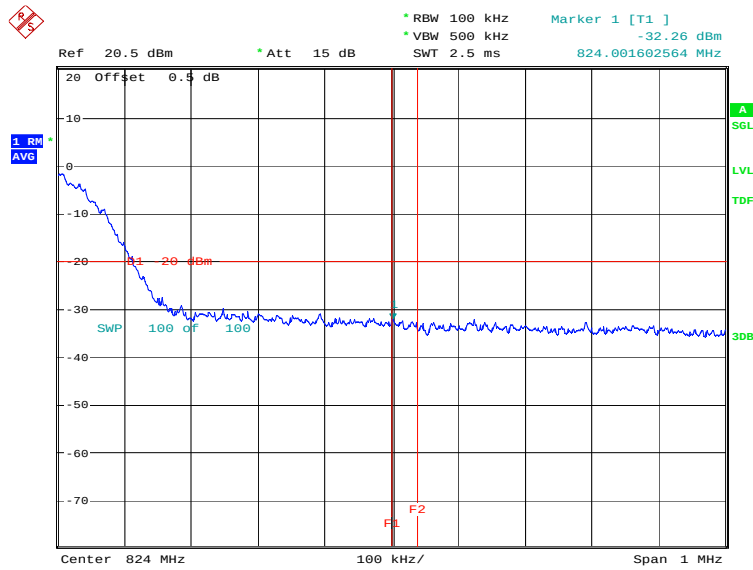
Date: 16.AUG.2023 14:16:51

HIGH Emission Mask -10MHz-100%RB



Date: 16.AUG.2023 14:23:36

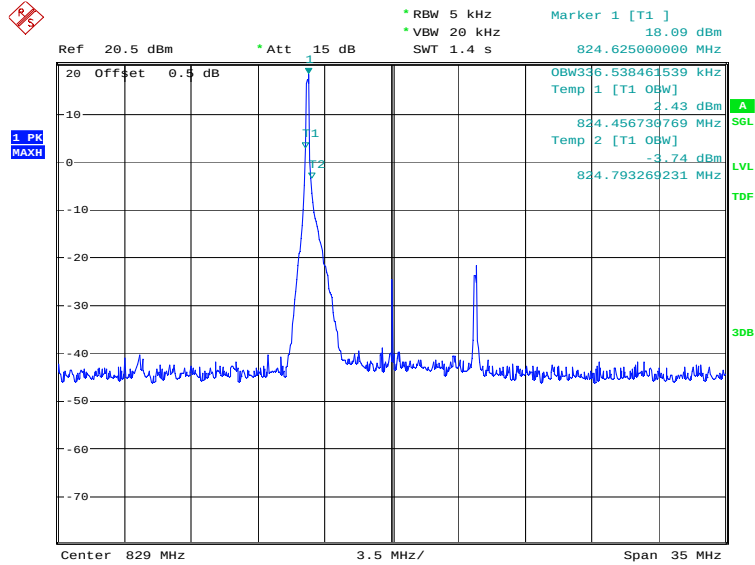
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 16.AUG.2023 14:23:14

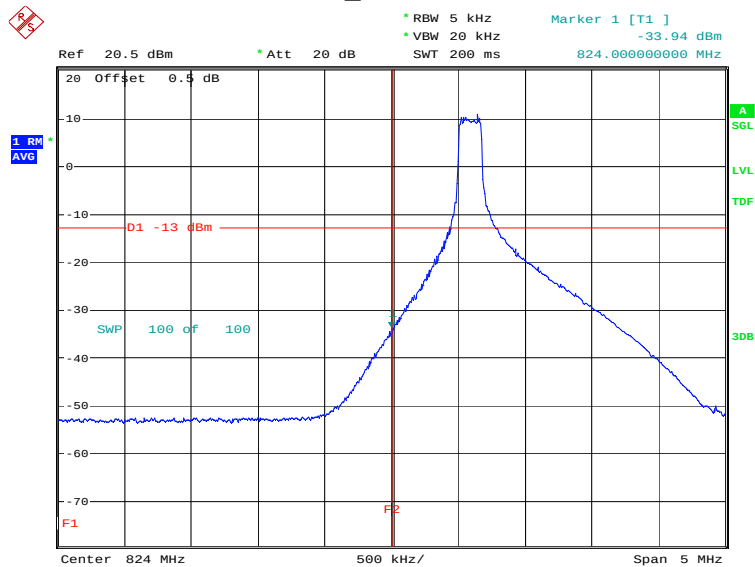
LTE band 26(824MHz~849MHz)

OBW: 1RB-low_offset



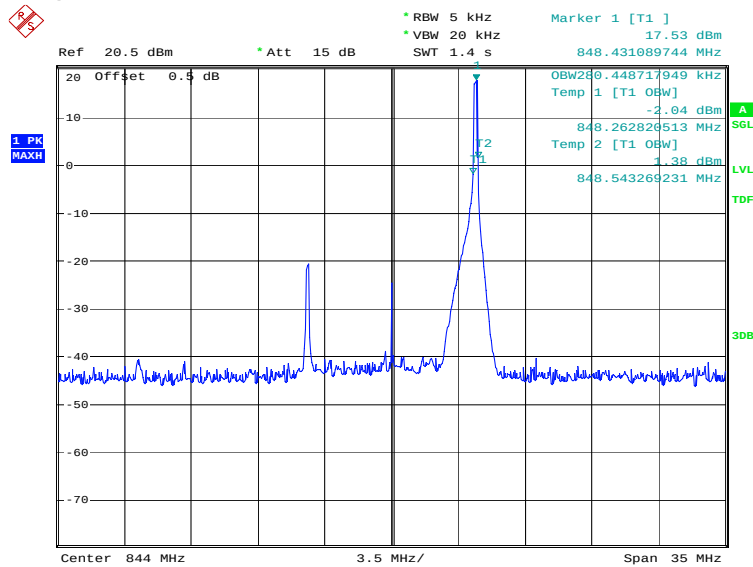
Date: 16.AUG.2023 08:49:07

LOW BAND EDGE BLOCK-1RB-low_offset



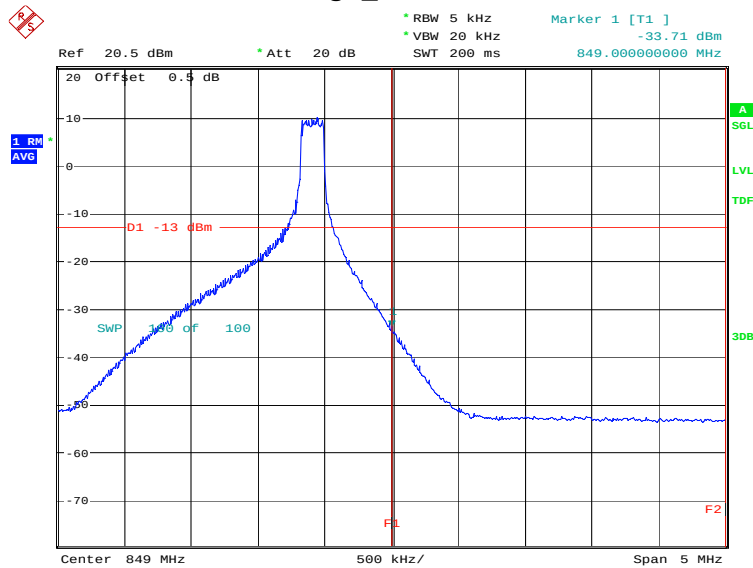
Date: 16.AUG.2023 08:50:21

OBW: 1RB-high_offset



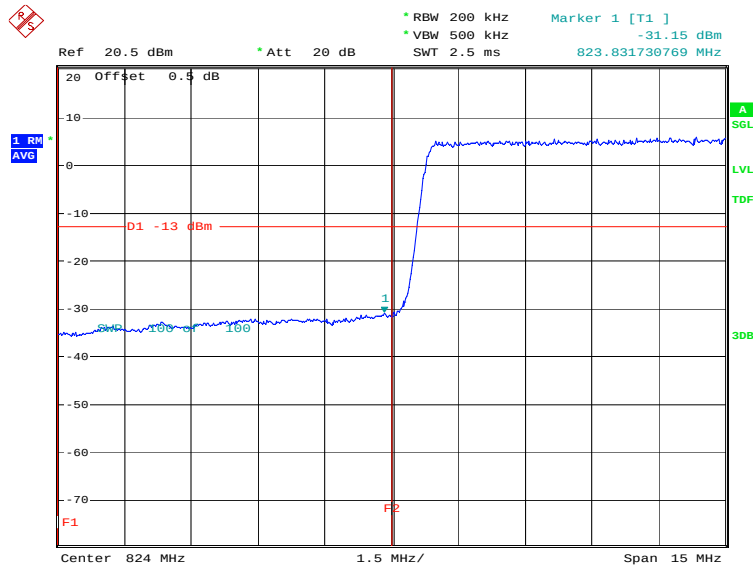
Date: 16.AUG.2023 08:50:57

HIGH BAND EDGE BLOCK-1RB-high_offset



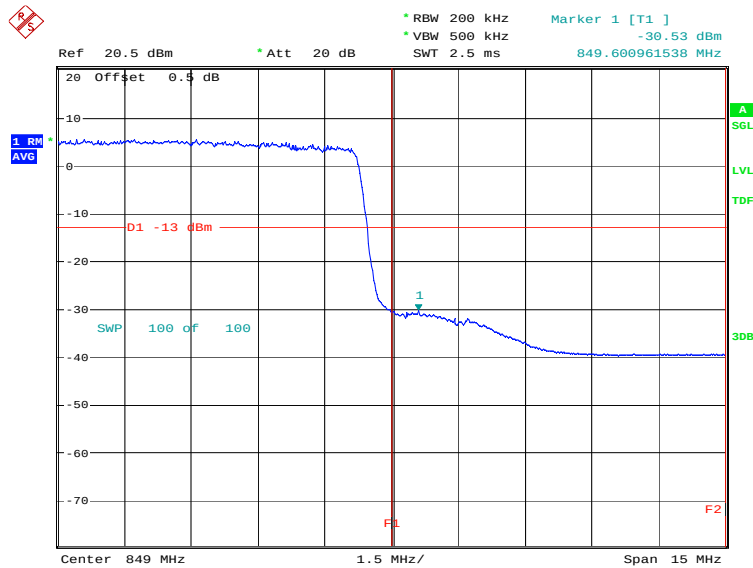
Date: 16.AUG.2023 08:52:12

LOW BAND EDGE BLOCK-15MHz-100%RB



Date: 11.AUG.2023 12:44:14

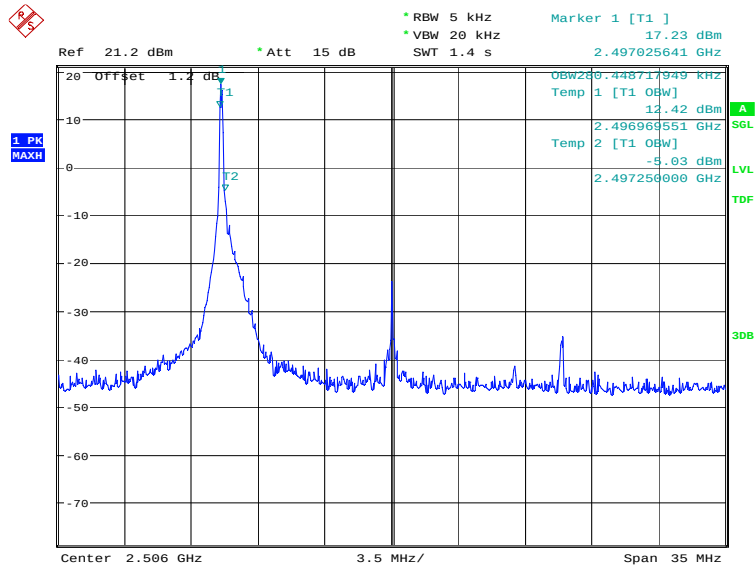
HIGH BAND EDGE BLOCK-15MHz-100%RB



Date: 11.AUG.2023 12:45:47

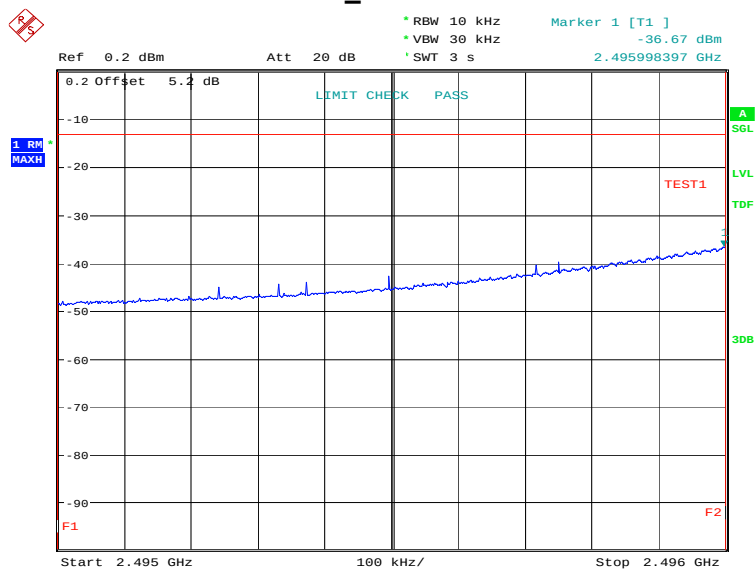
LTE band 41

OBW: 1RB-low_offset

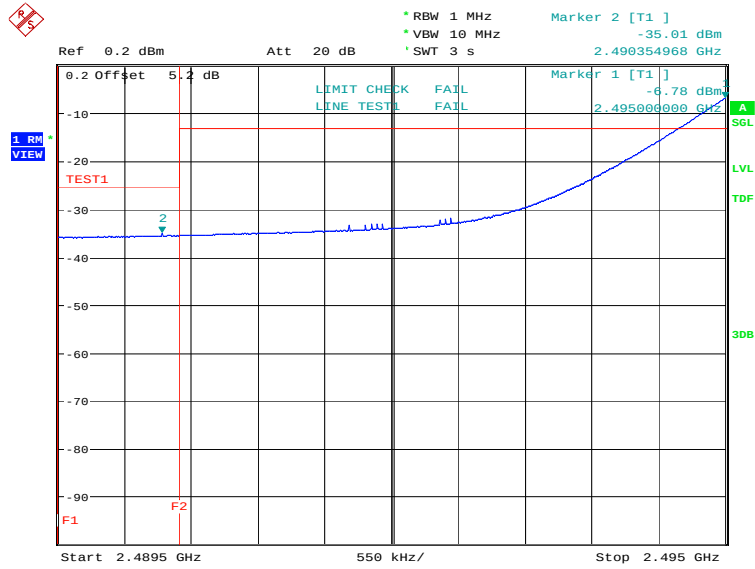


Date: 16.AUG.2023 13:31:22

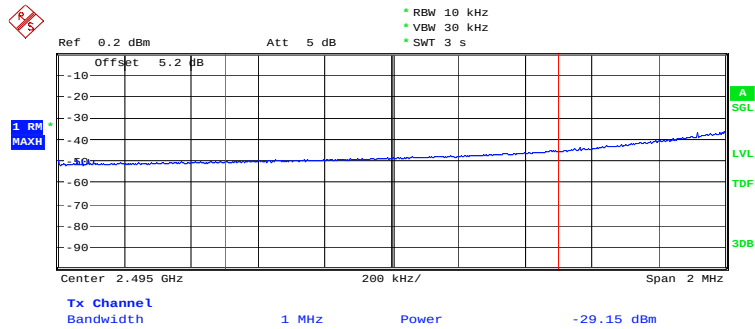
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 16.AUG.2023 13:32:04

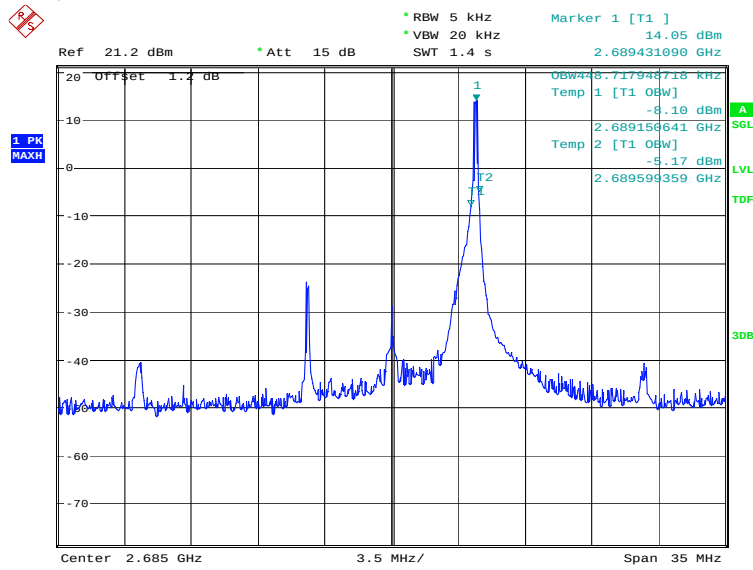


Date: 16.AUG.2023 13:32:48



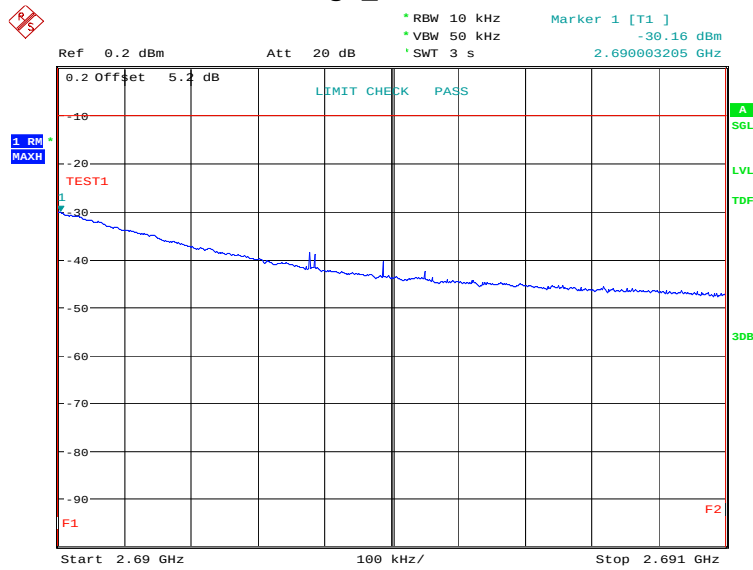
Date: 16.AUG.2023 13:33:06

OBW: 1RB-high_offset

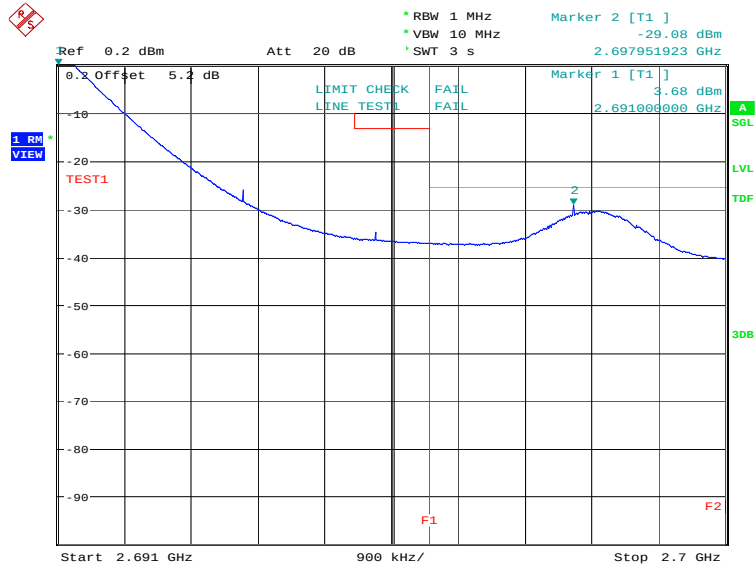


Date: 16.AUG.2023 13:37:20

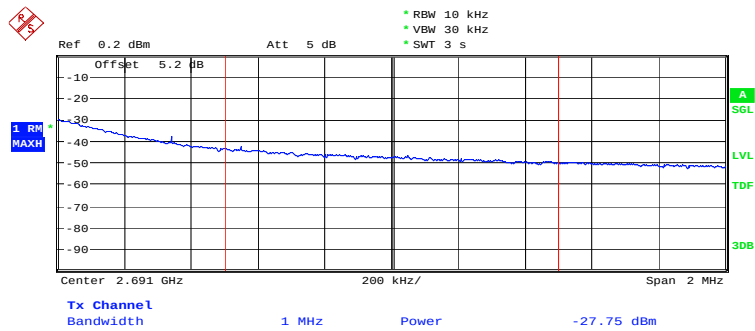
HIGH BAND EDGE BLOCK-1RB-high_offset



Date: 16.AUG.2023 13:38:01

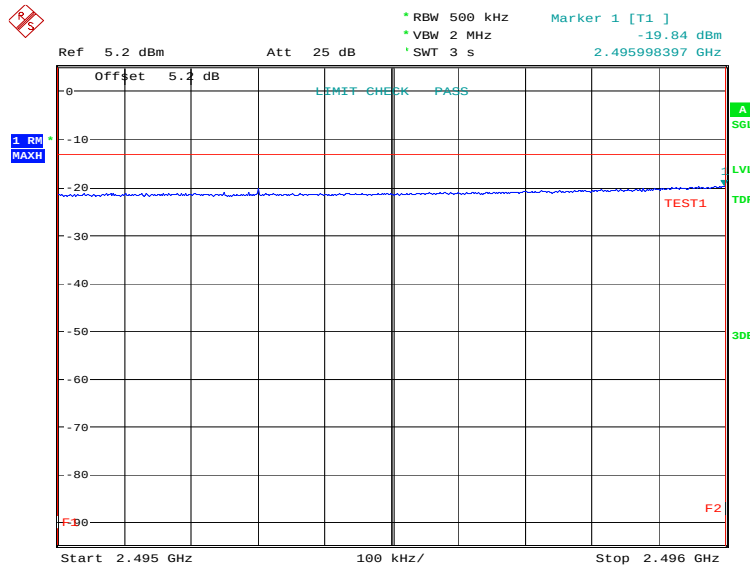


Date: 16.AUG.2023 13:38:48

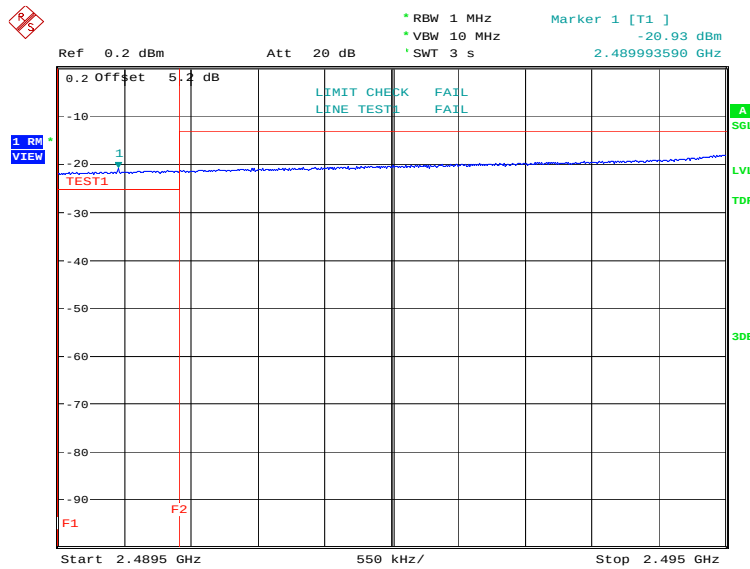


Date: 16.AUG.2023 13:39:06

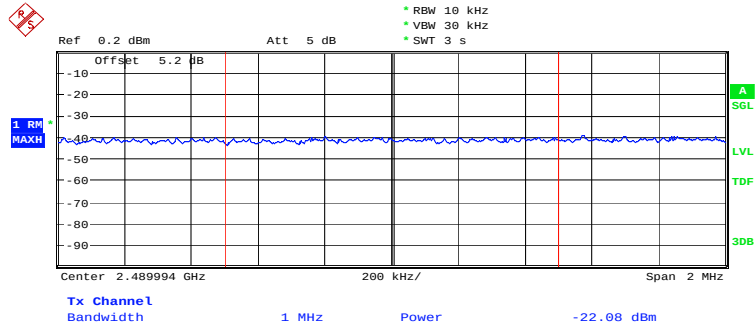
LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 16.AUG.2023 13:34:02

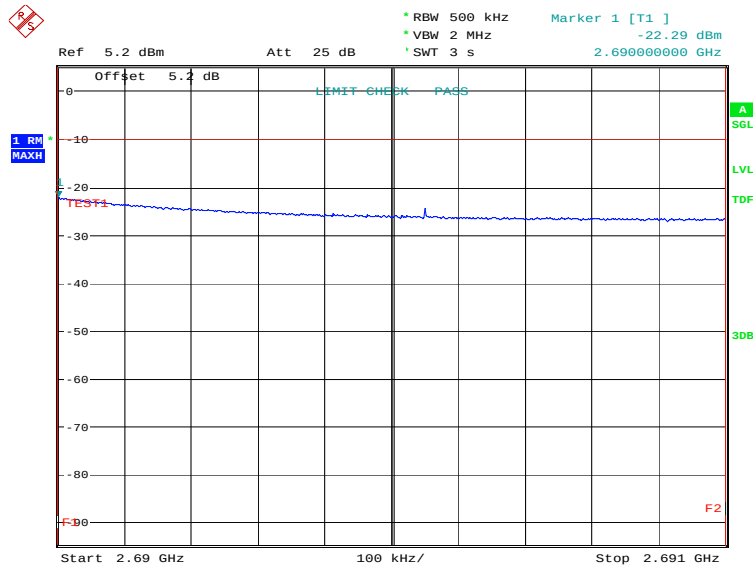


Date: 16.AUG.2023 13:34:46

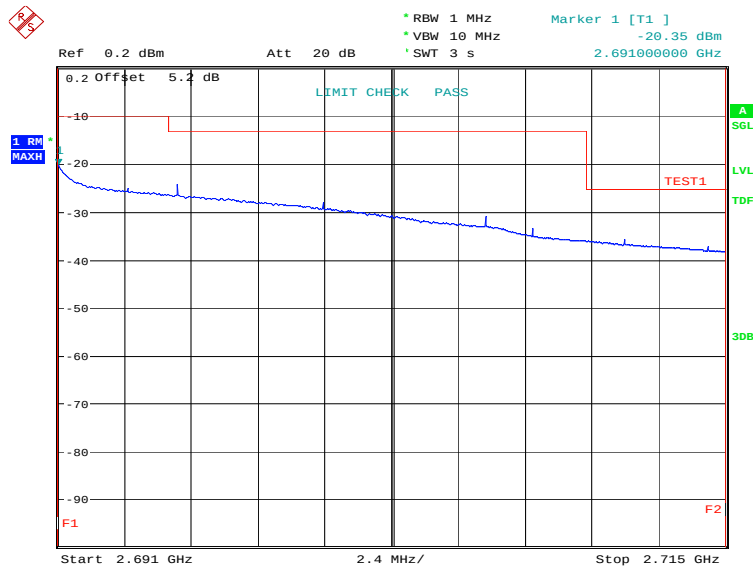


Date: 16.AUG.2023 13:35:04

HIGH BAND EDGE BLOCK-20MHz-100%RB



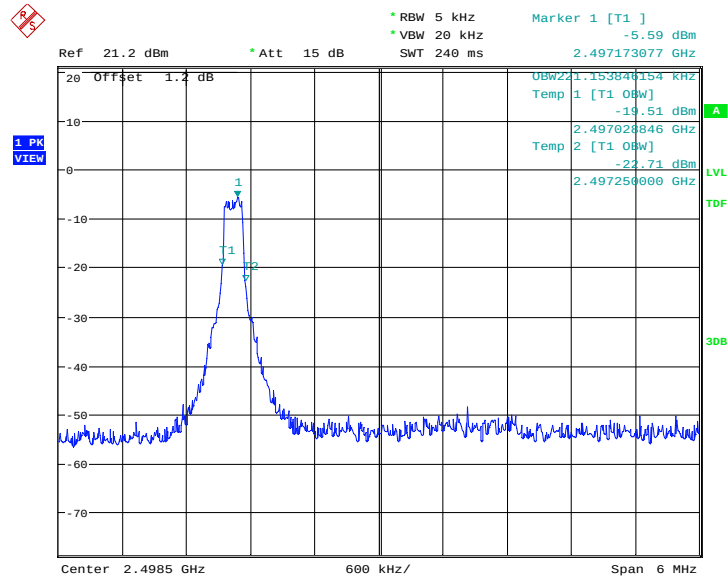
Date: 16.AUG.2023 13:40:06



Date: 16.AUG.2023 13:40:45

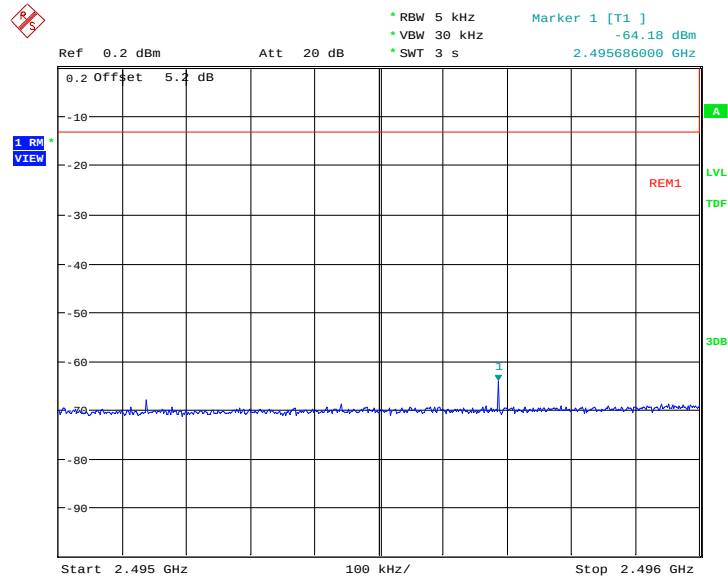
LTE CA band 41C

OBW: 1RB-low_offset

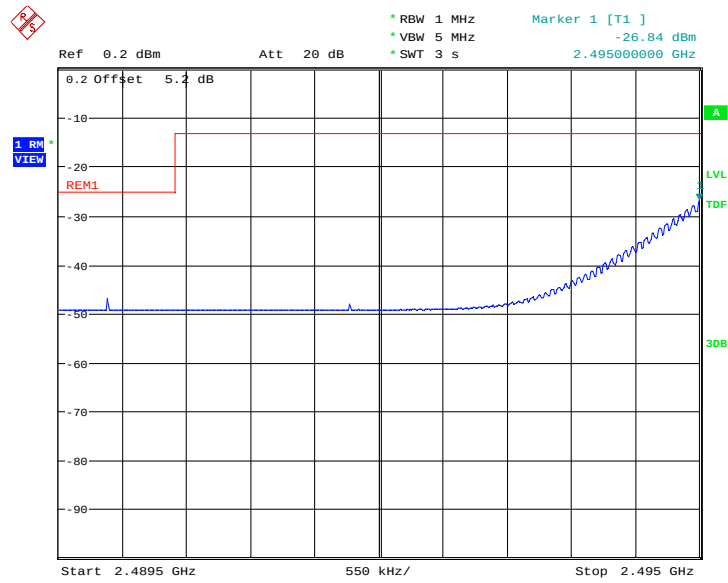


Date: 15.AUG.2023 16:39:00

LOW BAND EDGE BLOCK-1RB-low_offset

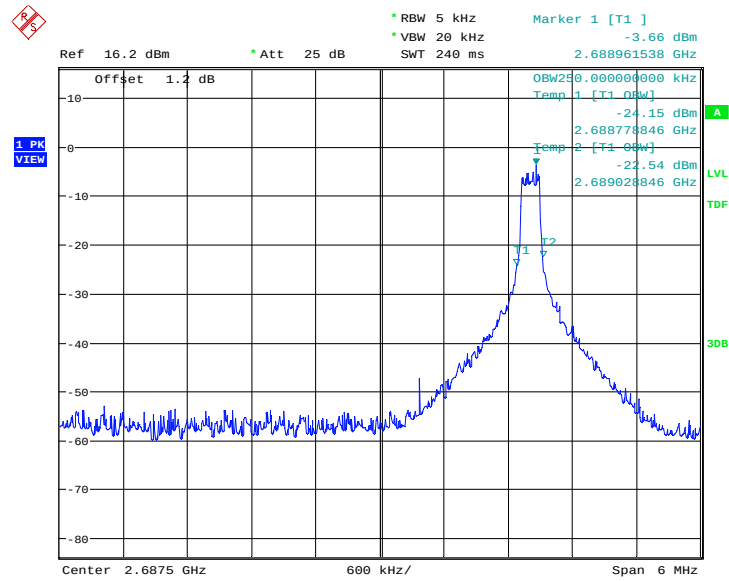


Date: 15.AUG.2023 16:39:43



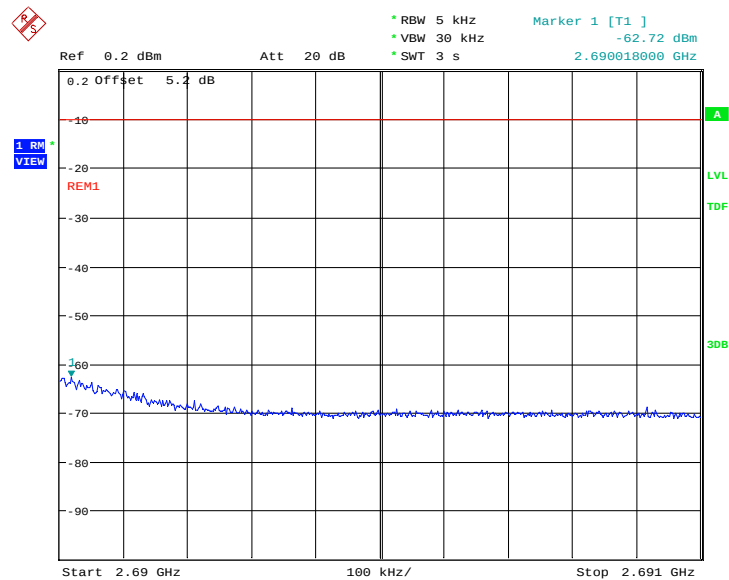
Date: 15.AUG.2023 16:40:26

OBW: 1RB-high_offset

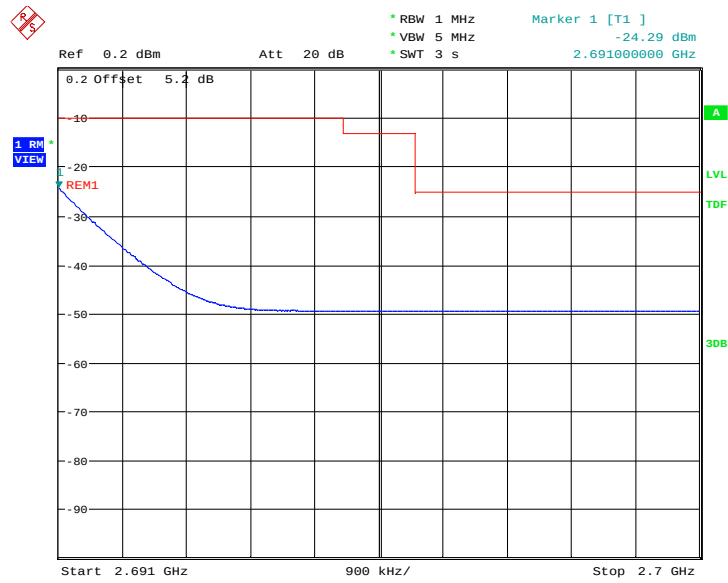


Date: 15.AUG.2023 16:41:21

HIGH BAND EDGE BLOCK-1RB-high_offset

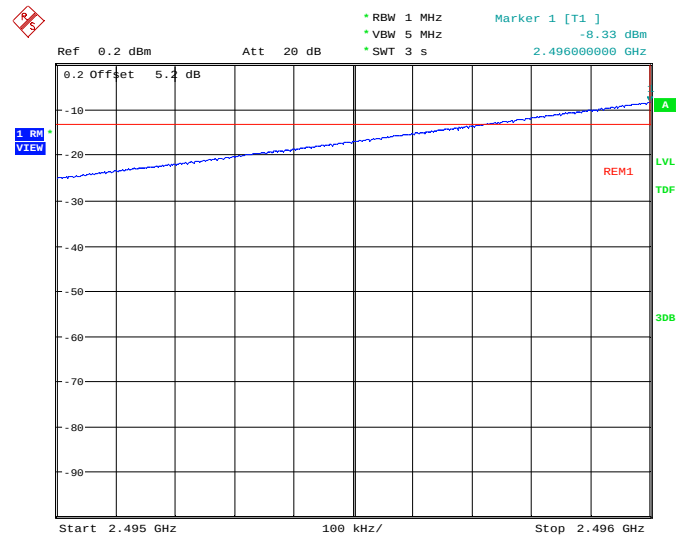


Date: 15.AUG.2023 16:42:05



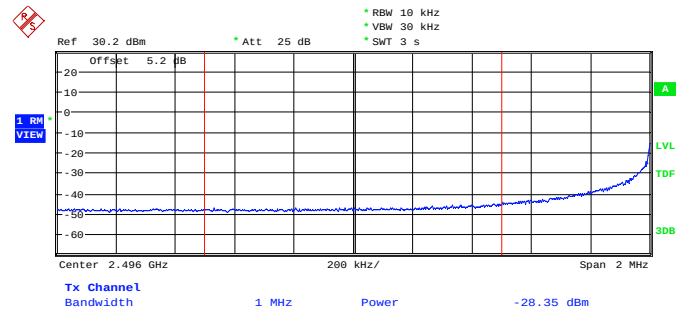
Date: 15.AUG.2023 16:42:48

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



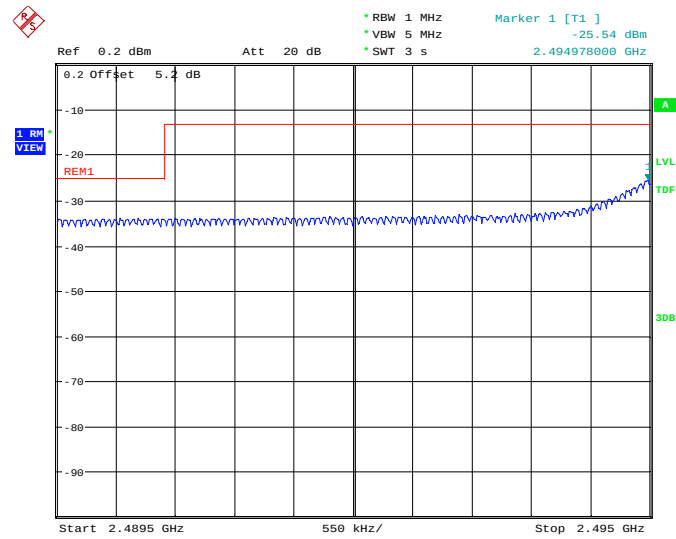
Date: 11.AUG.2023 09:38:30

Channel power



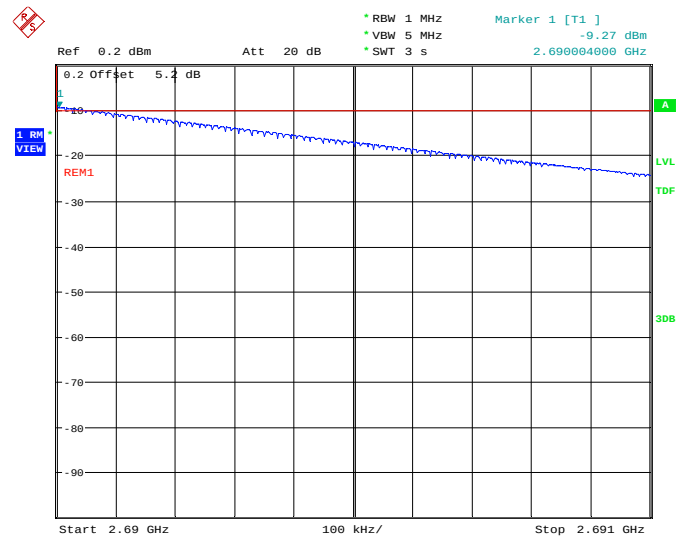
Date: 11.AUG.2023 09:38:56

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



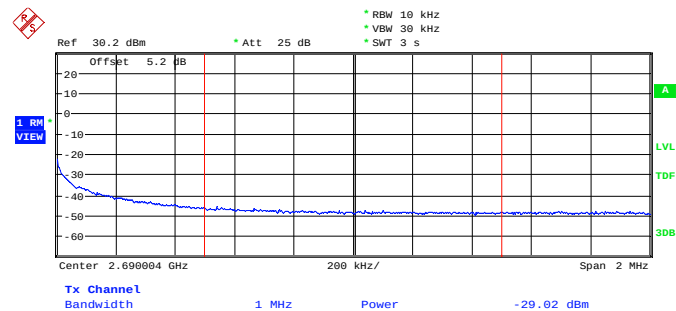
Date: 11.AUG.2023 09:39:39

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



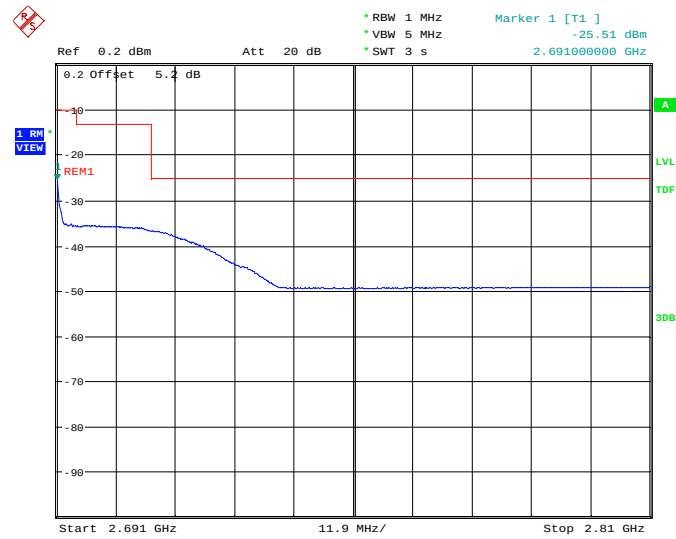
Date: 11.AUG.2023 09:41:40

Channel power



Date: 11.AUG.2023 09:42:07

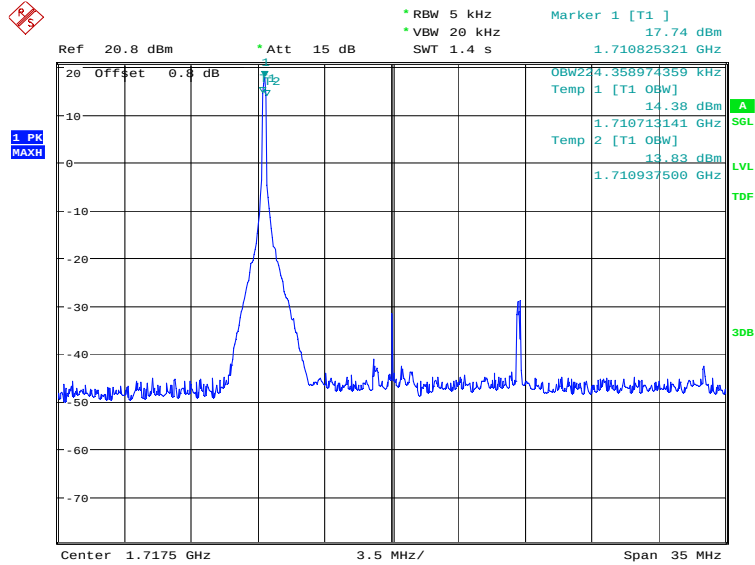
HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 11.AUG.2023 09:42:50

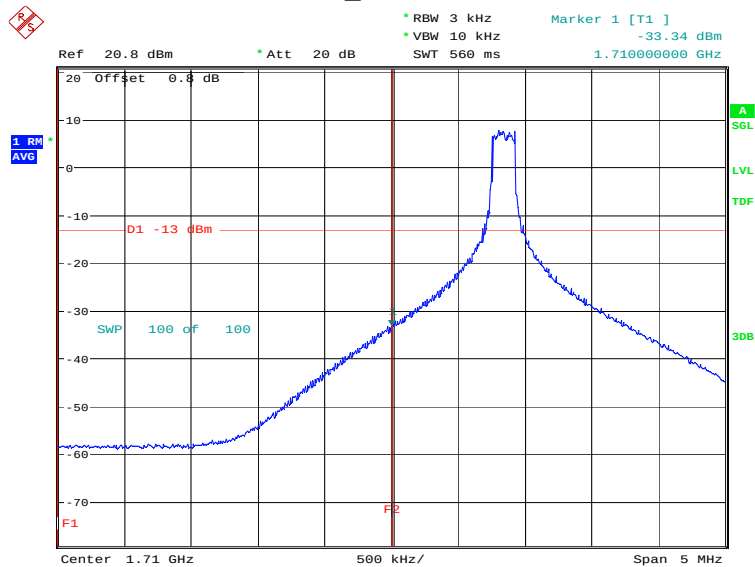
LTE band 66

OBW: 1RB-low_offset



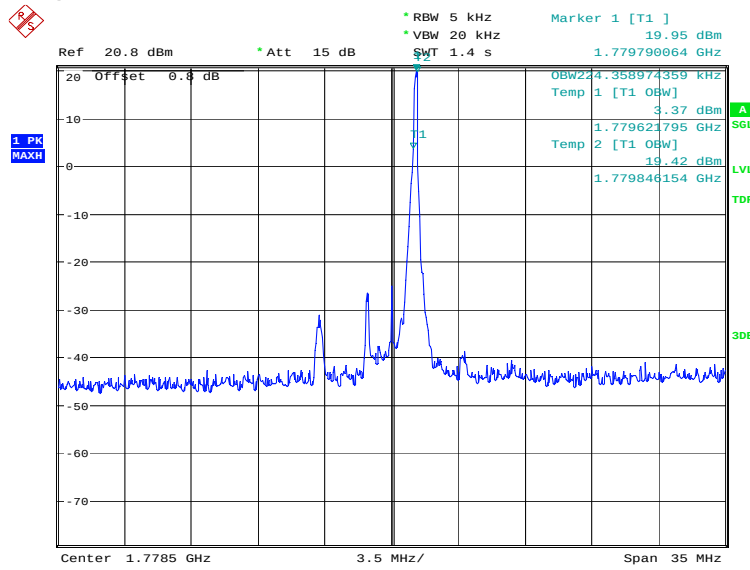
Date: 16.AUG.2023 09:20:22

LOW BAND EDGE BLOCK-1RB-low_offset



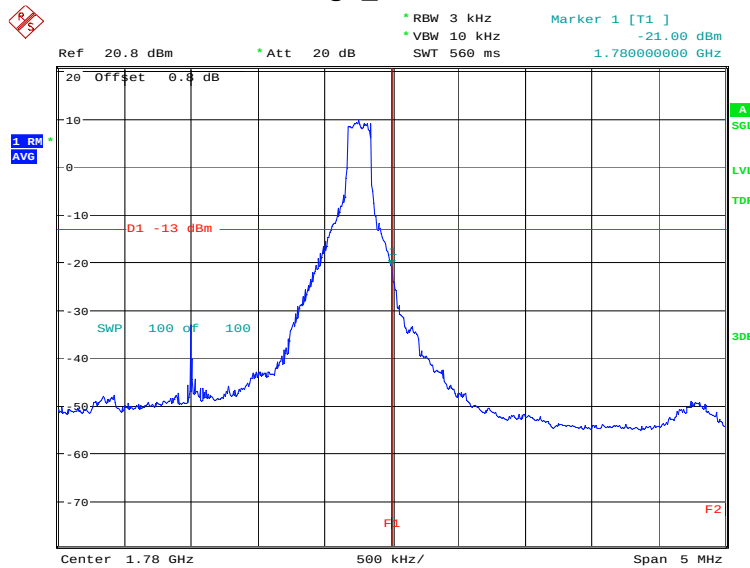
Date: 16.AUG.2023 09:21:37

OBW: 1RB-high_offset



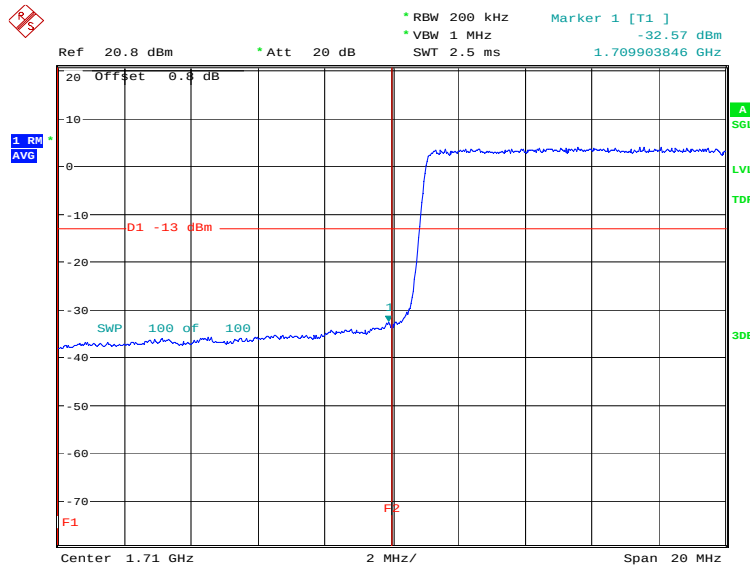
Date: 16.AUG.2023 09:22:15

HIGH BAND EDGE BLOCK-1RB-high_offset



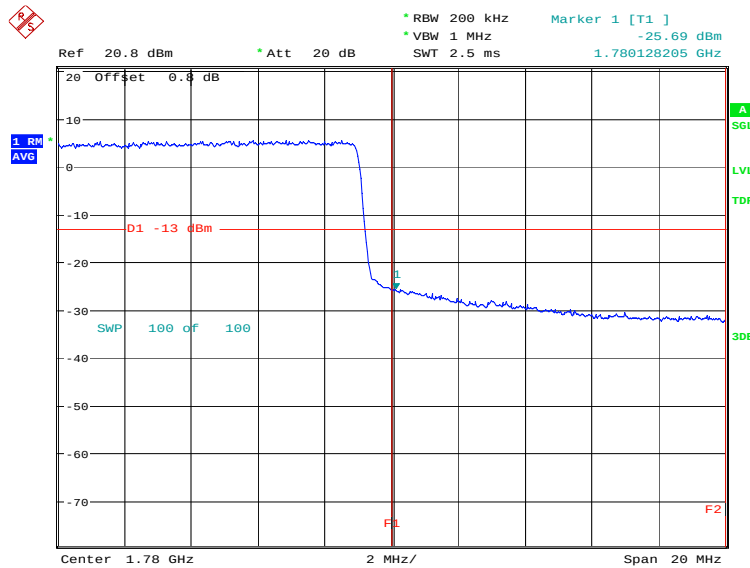
Date: 16.AUG.2023 09:23:29

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 15:15:53

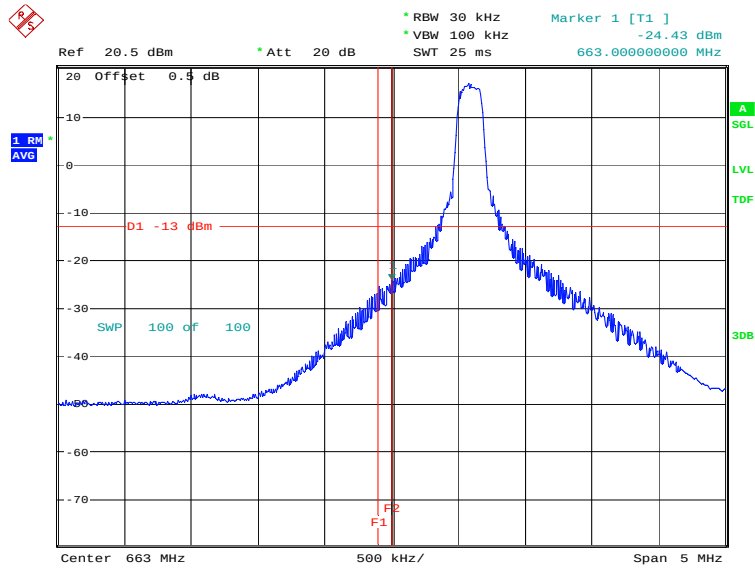
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 15:17:28

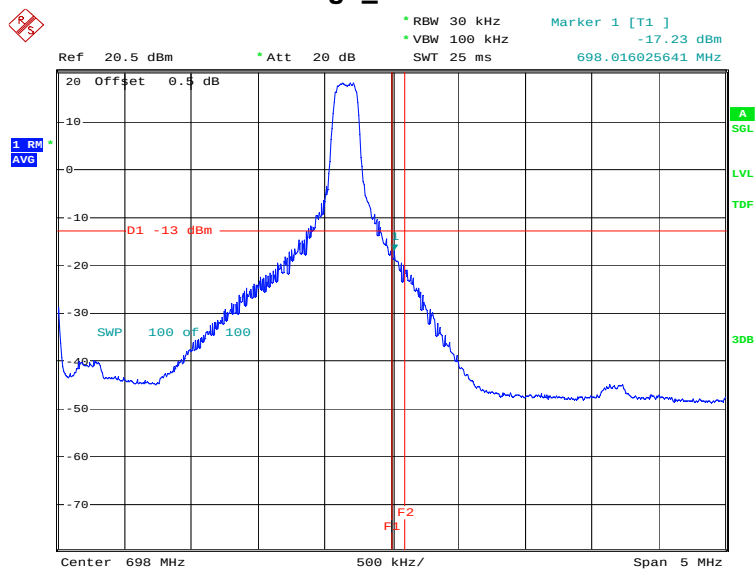
LTE band 71

LOW BAND EDGE BLOCK-1RB-low_offset



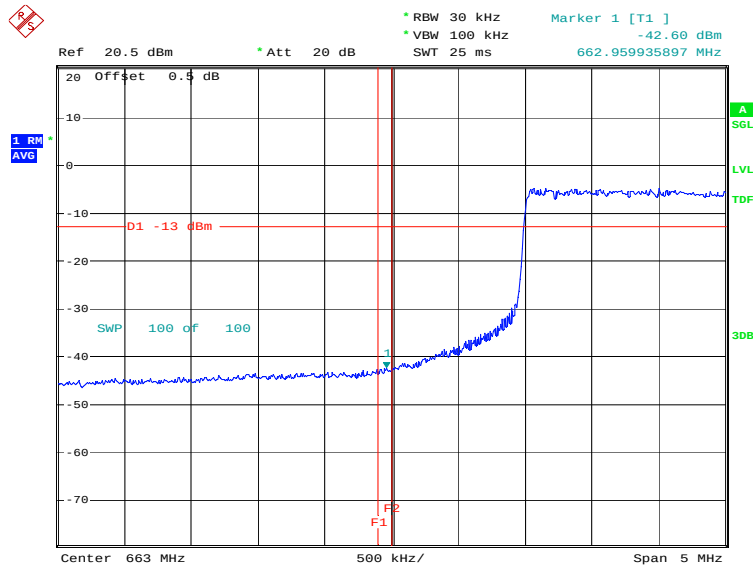
Date: 16.AUG.2023 14:37:48

HIGH BAND EDGE BLOCK-1RB-high_offset



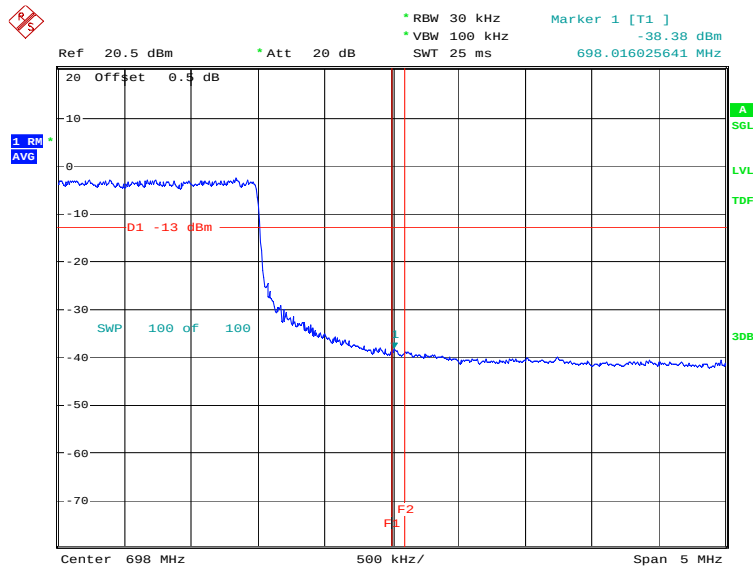
Date: 16.AUG.2023 14:39:26

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 12:36:55

HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 11.AUG.2023 12:38:27

Note: Expanded measurement uncertainty is $U = 0.622$ dB, $k = 2$.

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

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



No. I23Z61525-WMD01

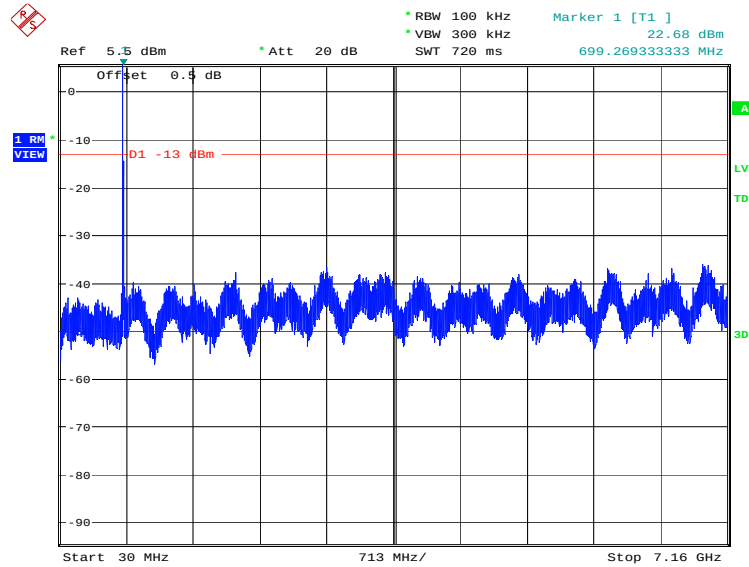
For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

A. 7.3 Measurement result

Only the worst case result is given below

LTE band 12: 30MHz – 7.16GHz

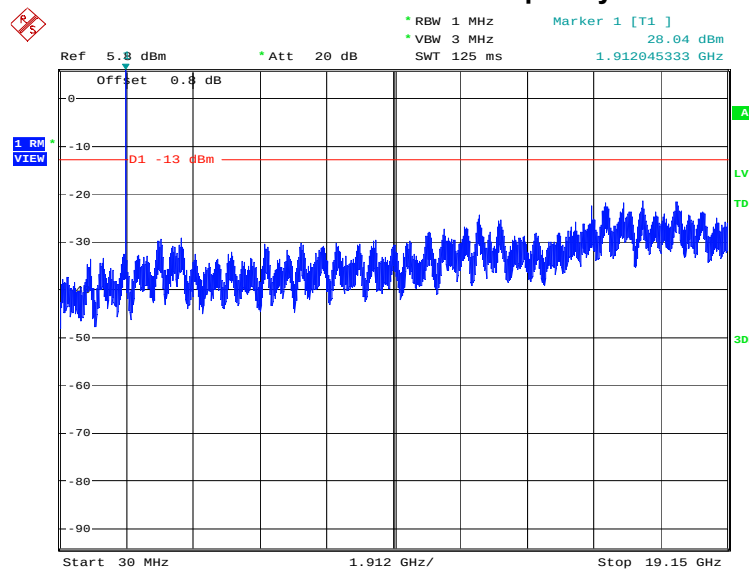
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 08:53:31

LTE band 25: 30MHz – 19.15GHz

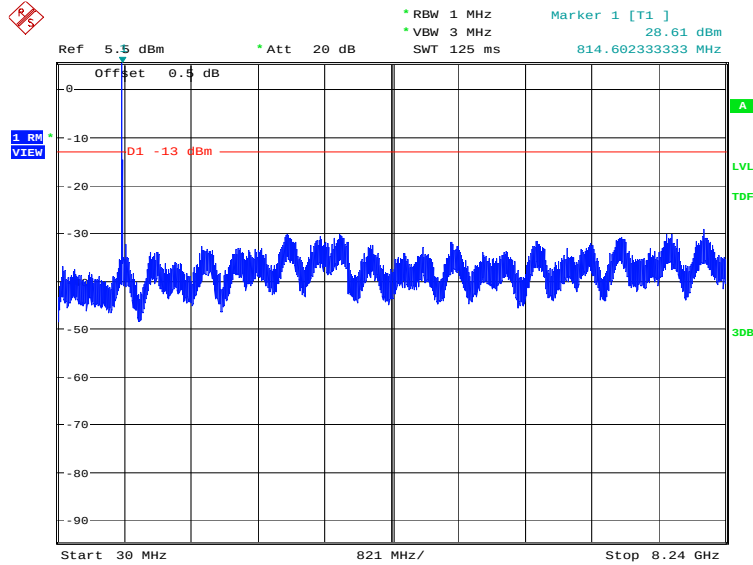
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 09:31:14

LTE band 26(814MHz~824MHz): 30MHz – 8.24GHz

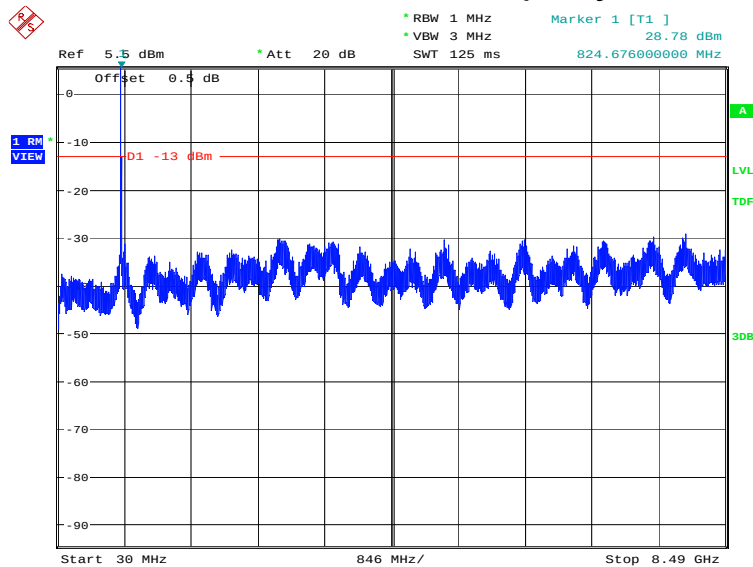
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 08:54:55

LTE band 26(824MHz~849MHz): 30MHz – 8.49GHz

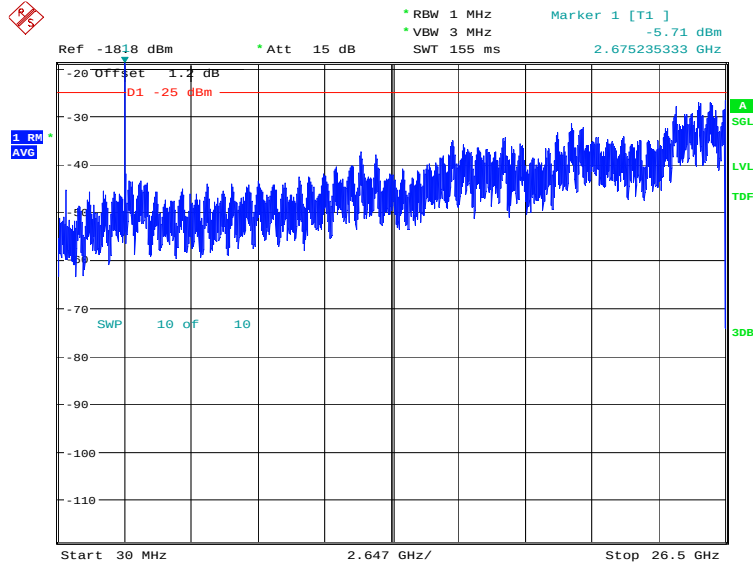
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 08:54:13

LTE band 41: 30MHz – 26.5GHz

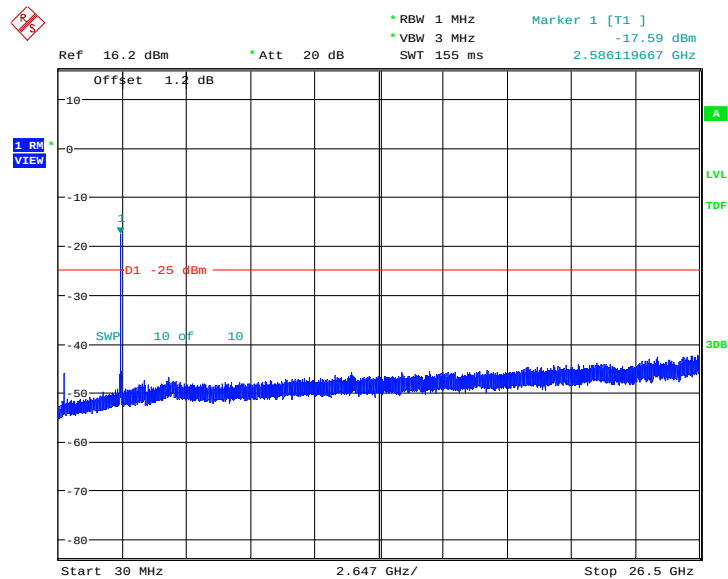
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 13:51:04

LTE CA band 41C: 30MHz – 26.5GHz

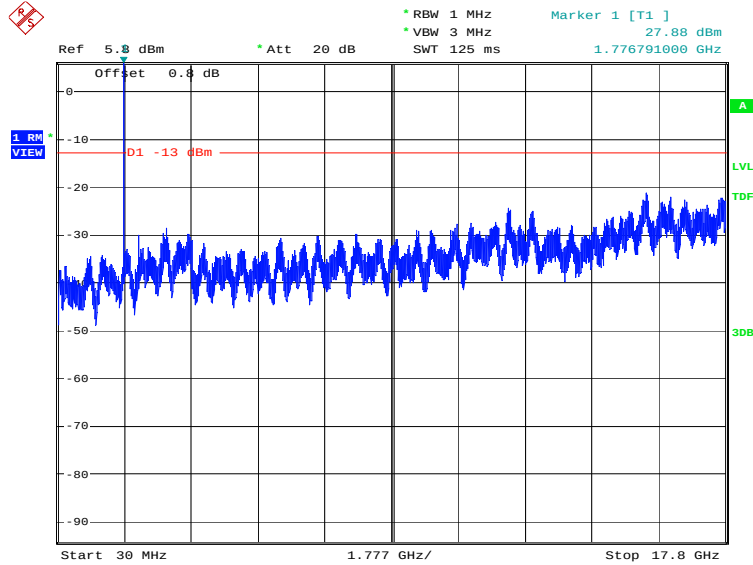
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 16:03:51

LTE band 66: 30MHz – 17.8GHz

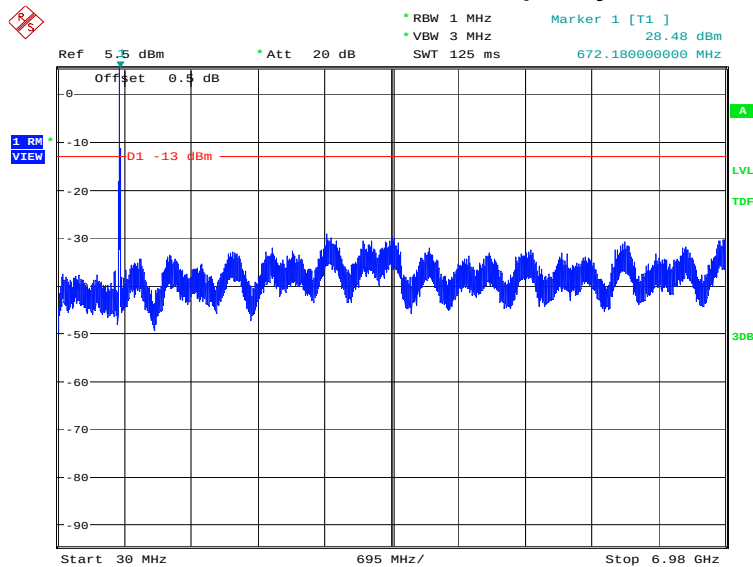
NOTE: peak above the limit line is the carrier frequency.



Date: 16.AUG.2023 09:31:56

LTE band 71: 30MHz – 6.98GHz

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



Date: 16.AUG.2023 14:41:02

Note: Expanded measurement uncertainty is $U = 0.622$ dB, $k = 2$.

A.8 Peak-to-Average Power Ratio

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

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

LTE band 12, 10MHz

Frequency(MHz)	PAPR(dB)		
707.5	QPSK	16QAM	64QAM
	5.35	6.09	6.44

LTE band 25, 20MHz

Frequency(MHz)	PAPR(dB)		
1882.5	QPSK	16QAM	64QAM
	6.70	7.31	7.47

LTE band 41, 20MHz

Frequency (MHz)	PAPR (dB)		
2593.0	QPSK	16QAM	64QAM
	8.27	8.78	8.97

LTE CA band 41C, 20MHz+20MHz

Frequency (MHz)	PAPR (dB)		
	QPSK	16QAM	64QAM
2593.0	9.84	9.94	9.94

LTE band 66, 20MHz

Frequency(MHz)	PAPR(dB)		
1745.0	QPSK	16QAM	64QAM
	6.60	7.21	7.34

LTE band 71, 20MHz

Frequency(MHz)	PAPR(dB)		
680.5	QPSK	16QAM	64QAM
	6.60	7.24	7.37

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

Annex B: Accreditation Certificate



Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

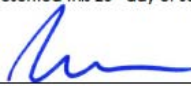
for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 26th day of June 2023.



Mr. Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

END OF REPORT