



TEST REPORT

No. I22Z61923-WMD03

for

Honor Device Co., Ltd.

Smart Phone

Model Name: VNA-LX3

FCC ID: 2AYGCVNA-LX3

with

Hardware Version: HL2VNEM

Software Version: VNA-LX3 6.1.0.29(C605E1R1P1)

Issued Date: 2022-11-08

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
I22Z61923-WMD03	Rev.0	1 st edition	2022-11-08

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 NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

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

Location 2: CTTL (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: 2022-10-08
Testing End Date: 2022-10-28

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: Honor Device Co., Ltd.
Address /Post: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China

2.2. Manufacturer Information

Company Name: Honor Device Co., Ltd.
Address /Post: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China

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

3.1. About EUT

Description	Smart Phone
Model Name	VNA-LX3
FCC ID	2AYGCVNA-LX3
Antenna	Internal
Output power	25.55dBm maximum EIRP measured for LTE Band 38
Extreme vol. Limits	3.6VDC to 4.45VDC (nominal: 3.87VDC)
Extreme temp. Tolerance	0°C to +35°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
UT07a	868254060006339/	HL2VNEM	VNA-LX3	2022-10-08
	868254060021734		6.1.0.29(C605E1R1P1)	
UT20a	868254060006966/	HL2VNEM	VNA-LX3	2022-10-17
	868254060022369		6.1.0.29(C605E1R1P1)	
UT16a	868254060009093/	HL2VNEM	VNA-LX3	2022-10-17
	868254060002449		6.1.0.29(C605E1R1P1)	

*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*	Name	Model	Manufacturer
AE1	Charger	HW-050200B02	Huntkey
AE2	Charger	HW-050200U02	Huntkey
AE3	Charger	HW-050200B02	BYD
AE4	Charger	HW-050200U02	BYD
AE5	Charger	HW-050200E02	Huntkey
AE6	Charger	HW-050200E02	BYD
AE7	Charger	HW-050100E01	Huntkey
AE8	Charger	HW-050100B01	Huntkey
AE9	Charger	HN-050100U01	Huntkey
AE10	Charger	HW-050100E01	BYD
AE11	Charger	HW-050100B01	BYD
AE12	Charger	HN-050100U01	BYD
AE13	Battery	HB496590EFW	SCUD
AE14	Battery	HB496590EFW	NVT
AE15	Battery	HB496590EFW-F	SCUD
AE16	Battery	HB496590EFW-F	NVT
AE17	Headset	MEND1532B528C00	Hongsheng
AE18	Headset	1293-3283-3.5MM-339	QUANCHENG
AE19	USB	04072297(NB)	/

*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	10-1-21 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-21 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-21 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-21 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01

5. Laboratory Environment

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

Shielded room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω

6. Summary Of Test Result

LTE Band 2

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

LTE Band 4

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

LTE Band 7

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

LTE Band 13

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

LTE Band 26(814MHz~824MHz)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	90.635	P
2	Emission Limit	2.1051/90.691	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	2.1051/22.917	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	22.917	P
6	Band Edge Compliance	22.917	P
7	Conducted Spurious Emission	22.917	P

LTE Band 38

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

LTE Band 66

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

Terms used in Verdict column

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

All the test results are based on normal power.

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

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 modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in the following sections represent the worst case emission.

7. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2023-01-17	25 months
Spectrum Analyzer	FSU	200030	R&S	2023-05-25	1 year
Climate Chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
EMI Antenna	VULB9163	9163-482	Schwarzbeck	2022-11-16	1 year
EMI Antenna	3117	00058889	ETS-Lindgren	2022-11-07	1 year
EMI Antenna	9117	LB-7180-NF	A-INFO	2023-02-23	1 year
Signal Generator	SMF100A	101295	Agilent	2022-12-23	1 year
Test Receiver	E4440A	MY48250642	Agilent	2023-03-10	1 year
Universal Radio Communication Tester	CMW500	143008	R&S	2022-12-23	1 year
Power Amplifier	5S1G4	0341863	AR	/	/

Annex A: Measurement Results

A.1 Output Power

A.1.1 Summary

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

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

A.1.2 Conducted

A.1.2.1 Method of Measurements

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

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

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

A.1.2.2 Measurement Result

LTE band 2

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1909.3	23.32	22.40
		1880.0	23.30	22.56
		1850.7	23.26	22.54
	1 RB low	1909.3	23.27	22.45
		1880.0	23.29	22.57
		1850.7	23.26	22.60
	50% RB mid	1909.3	23.41	22.36
		1880.0	23.47	22.40
		1850.7	23.43	22.40
	100% RB	1909.3	22.35	21.45
		1880.0	22.40	21.50
		1850.7	22.39	21.43
3MHz	1 RB high	1908.5	23.40	22.51
		1880.0	23.38	22.63
		1851.5	23.31	22.63
	1 RB low	1908.5	23.43	22.58
		1880.0	23.39	22.61
		1851.5	23.35	22.61
	50% RB mid	1908.5	22.47	21.44
		1880.0	22.44	21.50
		1851.5	22.39	21.46

	100% RB	1908.5	22.39	21.37
		1880.0	22.43	21.42
		1851.5	22.34	21.36
5MHz	1 RB high	1907.5	23.30	22.49
		1880.0	23.25	22.45
		1852.5	23.26	22.44
	1 RB low	1907.5	23.30	22.55
		1880.0	23.27	22.51
		1852.5	23.25	22.46
	50% RB mid	1907.5	22.46	21.43
		1880.0	22.48	21.46
		1852.5	22.38	21.40
	100% RB	1907.5	22.43	21.41
		1880.0	22.48	21.45
		1852.5	22.35	21.34
10MHz	1 RB high	1905.0	23.38	22.55
		1880.0	23.36	22.67
		1855.0	23.31	22.69
	1 RB low	1905.0	23.41	22.58
		1880.0	23.36	22.60
		1855.0	23.35	22.65
	50% RB mid	1905.0	22.53	21.45
		1880.0	22.50	21.46
		1855.0	22.41	21.40
	100% RB	1905.0	22.47	21.43
		1880.0	22.47	21.45
		1855.0	22.38	21.38
15MHz	1 RB high	1902.5	23.25	22.39
		1880.0	23.36	22.52
		1857.5	23.29	22.61
	1 RB low	1902.5	23.33	22.58
		1880.0	23.25	22.53
		1857.5	23.31	22.65
	50% RB mid	1902.5	22.47	21.41
		1880.0	22.46	21.40
		1857.5	22.39	21.38
	100% RB	1902.5	22.45	21.42
		1880.0	22.49	21.47
		1857.5	22.36	21.39

20MHz	1 RB high	1900.0	23.10	22.31
		1880.0	23.16	22.39
		1860.0	23.08	22.39
	1 RB low	1900.0	23.22	22.48
		1880.0	23.13	22.50
		1860.0	23.14	22.41
	50% RB mid	1900.0	22.46	21.47
		1880.0	22.44	21.42
		1860.0	22.39	21.41
	100% RB	1900.0	22.40	21.43
		1880.0	22.40	21.39
		1860.0	22.39	21.37

LTE band 4

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1754.3	23.24	22.47
		1732.5	23.24	22.43
		1710.7	23.27	22.45
	1 RB low	1754.3	23.20	22.39
		1732.5	23.22	22.48
		1710.7	23.27	22.59
	50% RB mid	1754.3	23.39	22.31
		1732.5	23.39	22.30
		1710.7	23.42	22.45
	100% RB	1754.3	22.34	21.47
		1732.5	22.31	21.42
		1710.7	22.38	21.49
3MHz	1 RB high	1753.5	23.24	22.47
		1732.5	23.26	22.50
		1711.5	23.28	22.53
	1 RB low	1753.5	23.24	22.48
		1732.5	23.29	22.57
		1711.5	23.31	22.46
	50% RB mid	1753.5	22.27	21.32
		1732.5	22.32	21.40
		1711.5	22.37	21.38
	100% RB	1753.5	22.26	21.25
		1732.5	22.29	21.29
		1711.5	22.32	21.30
5MHz	1 RB high	1752.5	23.16	22.46
		1732.5	23.19	22.39
		1712.5	23.24	22.40
	1 RB low	1752.5	23.17	22.39
		1732.5	23.22	22.47
		1712.5	23.22	22.47
	50% RB mid	1752.5	22.30	21.28
		1732.5	22.36	21.30
		1712.5	22.37	21.34
	100% RB	1752.5	22.27	21.27
		1732.5	22.30	21.30
		1712.5	22.34	21.33
10MHz	1 RB high	1750.0	23.27	22.53
		1732.5	23.26	22.56
		1715.0	23.33	22.59
	1 RB low	1750.0	23.27	22.43

		1732.5	23.34	22.62
		1715.0	23.33	22.60
	50% RB mid	1750.0	22.32	21.32
		1732.5	22.38	21.41
		1715.0	22.39	21.40
	100% RB	1750.0	22.34	21.31
		1732.5	22.40	21.41
		1715.0	22.39	21.38
15MHz	1 RB high	1747.5	23.15	22.45
		1732.5	23.16	22.47
		1717.5	23.24	22.47
	1 RB low	1747.5	23.21	22.49
		1732.5	23.26	22.49
		1717.5	23.26	22.48
	50% RB mid	1747.5	22.34	21.29
		1732.5	22.38	21.36
		1717.5	22.43	21.40
	100% RB	1747.5	22.33	21.29
		1732.5	22.37	21.35
		1717.5	22.38	21.38
20MHz	1 RB high	1745.0	23.07	22.20
		1732.5	23.08	22.32
		1720.0	23.05	22.36
	1 RB low	1745.0	23.07	22.27
		1732.5	23.09	22.40
		1720.0	23.05	22.36
	50% RB mid	1745.0	22.41	21.39
		1732.5	22.39	21.36
		1720.0	22.39	21.40
	100% RB	1745.0	22.33	21.30
		1732.5	22.34	21.32
		1720.0	22.34	21.33

LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
5MHz	1 RB high	2567.5	23.03	22.27
		2535.0	23.07	22.34
		2502.5	22.99	22.31
	1 RB low	2567.5	23.04	22.30
		2535.0	23.13	22.38
		2502.5	22.91	22.30
	50% RB mid	2567.5	22.22	21.25
		2535.0	22.29	21.28
		2502.5	22.17	21.10
	100% RB	2567.5	22.23	21.22
		2535.0	22.31	21.28
		2502.5	22.12	21.14
10MHz	1 RB high	2565.0	23.08	22.23
		2535.0	23.16	22.49
		2505.0	23.08	22.45
	1 RB low	2565.0	23.21	22.33
		2535.0	23.22	22.40
		2505.0	23.00	22.24
	50% RB mid	2565.0	22.28	21.26
		2535.0	22.31	21.30
		2505.0	22.19	21.18
	100% RB	2565.0	22.28	21.29
		2535.0	22.38	21.33
		2505.0	22.19	21.18
15MHz	1 RB high	2562.5	23.00	22.21
		2535.0	23.08	22.33
		2507.5	23.10	22.43
	1 RB low	2562.5	23.08	22.36
		2535.0	23.16	22.40
		2507.5	22.98	22.23
	50% RB mid	2562.5	22.27	21.21
		2535.0	22.33	21.31
		2507.5	22.20	21.15
	100% RB	2562.5	22.28	21.22
		2535.0	22.32	21.27
		2507.5	22.18	21.17
20MHz	1 RB high	2560.0	22.75	22.03
		2535.0	22.69	21.89
		2510.0	22.65	21.96
	1 RB low	2560.0	22.84	22.15

		2535.0	22.71	21.97
		2510.0	22.79	21.99
	50% RB mid	2560.0	22.17	21.18
		2535.0	22.06	21.06
		2510.0	22.05	21.06
	100% RB	2560.0	22.11	21.11
		2535.0	21.98	20.99
		2510.0	21.97	20.99

LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
5MHz	1 RB high	784.5	23.59	22.81
		782.0	23.49	22.76
		779.5	23.47	22.71
	1 RB low	784.5	23.49	22.83
		782.0	23.48	22.80
		779.5	23.53	22.83
	50% RB mid	784.5	22.71	21.75
		782.0	22.63	21.65
		779.5	22.64	21.65
	100% RB	784.5	22.66	21.67
		782.0	22.60	21.61
		779.5	22.59	21.63
10MHz	1 RB high	782.0	23.65	22.99
	1 RB low	782.0	23.62	22.94
	50% RB mid	782.0	22.77	21.70
	100% RB	782.0	22.71	21.72

LTE band 26(814MHz~824MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	823.3	23.55	22.59
		819.0	23.56	22.61
		814.7	23.61	22.59
	1 RB low	823.3	23.55	22.55
		819.0	23.59	22.57
		814.7	23.61	22.58
	50% RB mid	823.3	23.65	22.85
		819.0	23.70	22.89
		814.7	23.71	22.84
	100% RB	823.3	22.60	21.58
		819.0	22.69	21.87
		814.7	22.66	21.86
3MHz	1 RB high	822.5	23.61	22.60
		819.0	23.63	22.62
		815.5	23.68	22.64
	1 RB low	822.5	23.64	22.69
		819.0	23.64	22.65
		815.5	23.71	22.68
	50% RB mid	822.5	22.62	21.74
		819.0	22.61	21.74
		815.5	22.59	21.73
	100% RB	822.5	22.63	21.64
		819.0	22.61	21.65
		815.5	22.61	21.62
5MHz	1 RB high	821.5	23.57	22.63
		819.0	23.58	22.66
		816.5	23.62	22.68
	1 RB low	821.5	23.56	22.62
		819.0	23.56	22.65
		816.5	23.63	22.68
	50% RB mid	821.5	22.67	21.80
		819.0	22.69	21.76
		816.5	22.70	21.78
	100% RB	821.5	22.65	21.69
		819.0	22.67	21.71
		816.5	22.64	21.65
10MHz	1 RB high	819.0	23.70	22.69
	1 RB low	819.0	23.73	22.69



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	50% RB mid	819.0	22.76	21.87
	100% RB	819.0	22.71	21.83

LTE band 26(824MHz~849MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	848.3	23.65	22.64
		836.5	23.71	22.72
		824.7	23.71	22.71
	1 RB low	848.3	23.62	22.62
		836.5	23.70	22.71
		824.7	23.68	22.71
	50% RB mid	848.3	23.72	22.87
		836.5	23.76	22.94
		824.7	23.80	22.99
	100% RB	848.3	22.66	21.83
		836.5	22.71	21.94
		824.7	22.72	21.69
3MHz	1 RB high	847.5	23.64	22.61
		836.5	23.72	22.69
		825.5	23.72	22.69
	1 RB low	847.5	23.69	22.65
		836.5	23.72	22.72
		825.5	23.71	22.73
	50% RB mid	847.5	22.58	21.68
		836.5	22.65	21.78
		825.5	22.62	21.77
	100% RB	847.5	22.59	21.56
		836.5	22.63	21.68
		825.5	22.62	21.69
5MHz	1 RB high	846.5	23.57	22.60
		836.5	23.62	22.71
		826.5	23.58	22.68
	1 RB low	846.5	23.55	22.63
		836.5	23.58	22.65
		826.5	23.60	22.69
	50% RB mid	846.5	22.60	21.70
		836.5	22.68	21.80
		826.5	22.66	21.81
	100% RB	846.5	22.61	21.58
		836.5	22.65	21.67
		826.5	22.65	21.68
10MHz	1 RB high	844.0	23.69	22.64
		836.5	23.69	22.67

	1 RB low	829.0	23.71	22.67
		844.0	23.70	22.70
		836.5	23.73	22.69
		829.0	23.67	22.67
	50% RB mid	844.0	22.62	21.82
		836.5	22.66	21.87
		829.0	22.71	21.88
	100% RB	844.0	22.68	21.70
		836.5	22.67	21.79
		829.0	22.70	21.81
15MHz	1 RB high	841.5	23.54	22.88
		836.5	23.55	22.92
		831.5	23.61	22.96
	1 RB low	841.5	23.60	22.96
		836.5	23.59	22.93
		831.5	23.57	22.95
	50% RB mid	841.5	22.69	21.76
		836.5	22.72	21.73
		831.5	22.76	21.77
	100% RB	841.5	22.76	21.77
		836.5	22.77	21.79
		831.5	22.76	21.76

LTE band 38

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
5MHz	1 RB high	2617.5	23.29	22.37
		2595.0	23.26	22.32
		2572.5	23.21	22.23
	1 RB low	2617.5	23.34	22.42
		2595.0	23.29	22.38
		2572.5	23.23	22.28
	50% RB mid	2617.5	22.51	21.44
		2595.0	22.47	21.39
		2572.5	22.42	21.32
	100% RB	2617.5	22.37	21.46
		2595.0	22.38	21.40
		2572.5	22.31	21.34
10MHz	1 RB high	2615.0	23.33	22.40
		2595.0	23.37	22.39
		2575.0	23.30	22.34
	1 RB low	2615.0	23.45	22.47
		2595.0	23.42	22.40
		2575.0	23.38	22.43
	50% RB mid	2615.0	22.45	21.50
		2595.0	22.46	21.39
		2575.0	22.45	21.40
	100% RB	2615.0	22.40	21.38
		2595.0	22.35	21.40
		2575.0	22.30	21.35
15MHz	1 RB high	2612.5	23.20	22.30
		2595.0	23.25	22.29
		2577.5	23.21	22.28
	1 RB low	2612.5	23.36	22.39
		2595.0	23.30	22.37
		2577.5	23.29	22.35
	50% RB mid	2612.5	22.46	21.35
		2595.0	22.47	21.33
		2577.5	22.44	21.35
	100% RB	2612.5	22.38	21.41
		2595.0	22.32	21.33
		2577.5	22.31	21.33

20MHz	1 RB high	2610.0	23.16	22.18
		2595.0	23.18	22.23
		2580.0	23.23	22.28
	1 RB low	2610.0	23.32	22.34
		2595.0	23.40	22.39
		2580.0	23.43	22.45
	50% RB mid	2610.0	22.40	21.45
		2595.0	22.38	21.51
		2580.0	22.49	21.58
	100% RB	2610.0	22.44	21.53
		2595.0	22.51	21.54
		2580.0	22.55	21.56

LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1779.3	23.24	22.45
		1745.0	23.21	22.41
		1710.7	23.32	22.50
	1 RB low	1779.3	23.25	22.55
		1745.0	23.18	22.38
		1710.7	23.33	22.51
	50% RB mid	1779.3	23.43	22.40
		1745.0	23.33	22.25
		1710.7	23.45	22.39
	100% RB	1779.3	22.34	21.44
		1745.0	22.31	21.40
		1710.7	22.42	21.52
3MHz	1 RB high	1778.5	23.30	22.46
		1745.0	23.23	22.38
		1711.5	23.33	22.60
	1 RB low	1778.5	23.31	22.53
		1745.0	23.23	22.40
		1711.5	23.35	22.66
	50% RB mid	1778.5	22.36	21.39
		1745.0	22.27	21.35
		1711.5	22.40	21.46
	100% RB	1778.5	22.34	21.33
		1745.0	22.26	21.25
		1711.5	22.38	21.40
5MHz	1 RB high	1777.5	23.21	22.53
		1745.0	23.13	22.44
		1712.5	23.23	22.44
	1 RB low	1777.5	23.22	22.53
		1745.0	23.15	22.31
		1712.5	23.26	22.46
	50% RB mid	1777.5	22.41	21.39
		1745.0	22.32	21.31
		1712.5	22.43	21.39
	100% RB	1777.5	22.36	21.35
		1745.0	22.28	21.27
		1712.5	22.40	21.39
10MHz	1 RB high	1775.0	23.28	22.59
		1745.0	23.22	22.42

	1 RB low	1715.0	23.31	22.65
		1775.0	23.25	22.53
		1745.0	23.30	22.45
	50% RB mid	1715.0	23.33	22.65
		1775.0	22.42	21.38
		1745.0	22.35	21.34
	100% RB	1715.0	22.43	21.42
		1775.0	22.38	21.38
		1745.0	22.36	21.35
15MHz	1 RB high	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	1 RB low	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	50% RB mid	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	100% RB	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
20MHz	1 RB high	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	1 RB low	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	50% RB mid	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35
	100% RB	1715.0	22.44	21.44
		1775.0	22.38	21.38
		1745.0	22.36	21.35

A.1.3 Radiated

A.1.3.1 Description

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

LTE Band 2: 24.232(c) specifies "Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications."

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

LTE Band 7: Rule Part 27.50(h)(2) specifies, " Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power."

LTE Band 13: 27.50(b)(10) specifies " Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP."

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

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

FDD Band 38: 27.50(h)(2) specifies " *Mobile and other user stations.* Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power".

A.1.3.2 Method of Measurement

NASI C63.26 chapter 5.2.5.5: when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

$$\text{ERP or EIRP} = P_{\text{Mea}} + G_T$$

Where

ERP or EIRP effective radiated power or equivalent isotropically radiated power,
respectively

(expressed in the same units as P_{Mea} , e.g., dBm or dBW)

P_{Mea} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

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

LTE band 2-EIRP
Limits: ≤33dBm (2W)

Max EIRP: 22.37dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -1.1(dBi)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	1909.3	23.32	22.4	22.22	21.30
		1880	23.3	22.56	22.20	21.46
		1850.7	23.26	22.54	22.16	21.44
	1 RB low	1909.3	23.27	22.45	22.17	21.35
		1880	23.29	22.57	22.19	21.47
		1850.7	23.26	22.6	22.16	21.50
	50% RB mid	1909.3	23.41	22.36	22.31	21.26
		1880	23.47	22.4	22.37	21.30
		1850.7	23.43	22.4	22.33	21.30
	100% RB	1909.3	22.35	21.45	21.25	20.35
		1880	22.4	21.5	21.30	20.40
		1850.7	22.39	21.43	21.29	20.33
3MHz	1 RB high	1908.5	23.4	22.51	22.30	21.41
		1880	23.38	22.63	22.28	21.53
		1851.5	23.31	22.63	22.21	21.53
	1 RB low	1908.5	23.43	22.58	22.33	21.48
		1880	23.39	22.61	22.29	21.51
		1851.5	23.35	22.61	22.25	21.51
	50% RB mid	1908.5	22.47	21.44	21.37	20.34
		1880	22.44	21.5	21.34	20.40
		1851.5	22.39	21.46	21.29	20.36
	100% RB	1908.5	22.39	21.37	21.29	20.27
		1880	22.43	21.42	21.33	20.32
		1851.5	22.34	21.36	21.24	20.26
5MHz	1 RB high	1907.5	23.3	22.49	22.20	21.39
		1880	23.25	22.45	22.15	21.35
		1852.5	23.26	22.44	22.16	21.34
	1 RB low	1907.5	23.3	22.55	22.20	21.45
		1880	23.27	22.51	22.17	21.41
		1852.5	23.25	22.46	22.15	21.36
	50% RB mid	1907.5	22.46	21.43	21.36	20.33
		1880	22.48	21.46	21.38	20.36
		1852.5	22.38	21.4	21.28	20.30
	100% RB	1907.5	22.43	21.41	21.33	20.31
		1880	22.48	21.45	21.38	20.35

		1852.5	22.35	21.34	21.25	20.24
10MHz	1 RB high	1905	23.38	22.55	22.28	21.45
		1880	23.36	22.67	22.26	21.57
		1855	23.31	22.69	22.21	21.59
	1 RB low	1905	23.41	22.58	22.31	21.48
		1880	23.36	22.6	22.26	21.50
		1855	23.35	22.65	22.25	21.55
	50% RB mid	1905	22.53	21.45	21.43	20.35
		1880	22.5	21.46	21.40	20.36
		1855	22.41	21.4	21.31	20.30
	100% RB	1905	22.47	21.43	21.37	20.33
		1880	22.47	21.45	21.37	20.35
		1855	22.38	21.38	21.28	20.28
15MHz	1 RB high	1902.5	23.25	22.39	22.15	21.29
		1880	23.36	22.52	22.26	21.42
		1857.5	23.29	22.61	22.19	21.51
	1 RB low	1902.5	23.33	22.58	22.23	21.48
		1880	23.25	22.53	22.15	21.43
		1857.5	23.31	22.65	22.21	21.55
	50% RB mid	1902.5	22.47	21.41	21.37	20.31
		1880	22.46	21.4	21.36	20.30
		1857.5	22.39	21.38	21.29	20.28
	100% RB	1902.5	22.45	21.42	21.35	20.32
		1880	22.49	21.47	21.39	20.37
		1857.5	22.36	21.39	21.26	20.29
20MHz	1 RB high	1900	23.1	22.31	22.00	21.21
		1880	23.16	22.39	22.06	21.29
		1860	23.08	22.39	21.98	21.29
	1 RB low	1900	23.22	22.48	22.12	21.38
		1880	23.13	22.5	22.03	21.40
		1860	23.14	22.41	22.04	21.31
	50% RB mid	1900	22.46	21.47	21.36	20.37
		1880	22.44	21.42	21.34	20.32
		1860	22.39	21.41	21.29	20.31
	100% RB	1900	22.4	21.43	21.30	20.33
		1880	22.4	21.39	21.30	20.29
		1860	22.39	21.37	21.29	20.27

LTE band 4-EIRP
Limits: ≤30dBm (1W)

Max EIRP: 21.32dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -2.1(dBi)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	1754.3	23.24	22.47	21.14	20.37
		1732.5	23.24	22.43	21.14	20.33
		1710.7	23.27	22.45	21.17	20.35
	1 RB low	1754.3	23.2	22.39	21.10	20.29
		1732.5	23.22	22.48	21.12	20.38
		1710.7	23.27	22.59	21.17	20.49
	50% RB mid	1754.3	23.39	22.31	21.29	20.21
		1732.5	23.39	22.3	21.29	20.20
		1710.7	23.42	22.45	21.32	20.35
	100% RB	1754.3	22.34	21.47	20.24	19.37
		1732.5	22.31	21.42	20.21	19.32
		1710.7	22.38	21.49	20.28	19.39
3MHz	1 RB high	1753.5	23.24	22.47	21.14	20.37
		1732.5	23.26	22.5	21.16	20.40
		1711.5	23.28	22.53	21.18	20.43
	1 RB low	1753.5	23.24	22.48	21.14	20.38
		1732.5	23.29	22.57	21.19	20.47
		1711.5	23.31	22.46	21.21	20.36
	50% RB mid	1753.5	22.27	21.32	20.17	19.22
		1732.5	22.32	21.4	20.22	19.30
		1711.5	22.37	21.38	20.27	19.28
	100% RB	1753.5	22.26	21.25	20.16	19.15
		1732.5	22.29	21.29	20.19	19.19
		1711.5	22.32	21.3	20.22	19.20
5MHz	1 RB high	1752.5	23.16	22.46	21.06	20.36
		1732.5	23.19	22.39	21.09	20.29
		1712.5	23.24	22.4	21.14	20.30
	1 RB low	1752.5	23.17	22.39	21.07	20.29
		1732.5	23.22	22.47	21.12	20.37
		1712.5	23.22	22.47	21.12	20.37
	50% RB mid	1752.5	22.3	21.28	20.20	19.18
		1732.5	22.36	21.3	20.26	19.20
		1712.5	22.37	21.34	20.27	19.24
	100% RB	1752.5	22.27	21.27	20.17	19.17
		1732.5	22.3	21.3	20.20	19.20

		1712.5	22.34	21.33	20.24	19.23
10MHz	1 RB high	1750	23.27	22.53	21.17	20.43
		1732.5	23.26	22.56	21.16	20.46
		1715	23.33	22.59	21.23	20.49
	1 RB low	1750	23.27	22.43	21.17	20.33
		1732.5	23.34	22.62	21.24	20.52
		1715	23.33	22.6	21.23	20.50
	50% RB mid	1750	22.32	21.32	20.22	19.22
		1732.5	22.38	21.41	20.28	19.31
		1715	22.39	21.4	20.29	19.30
	100% RB	1750	22.34	21.31	20.24	19.21
		1732.5	22.4	21.41	20.30	19.31
		1715	22.39	21.38	20.29	19.28
15MHz	1 RB high	1747.5	23.15	22.45	21.05	20.35
		1732.5	23.16	22.47	21.06	20.37
		1717.5	23.24	22.47	21.14	20.37
	1 RB low	1747.5	23.21	22.49	21.11	20.39
		1732.5	23.26	22.49	21.16	20.39
		1717.5	23.26	22.48	21.16	20.38
	50% RB mid	1747.5	22.34	21.29	20.24	19.19
		1732.5	22.38	21.36	20.28	19.26
		1717.5	22.43	21.4	20.33	19.30
	100% RB	1747.5	22.33	21.29	20.23	19.19
		1732.5	22.37	21.35	20.27	19.25
		1717.5	22.38	21.38	20.28	19.28
20MHz	1 RB high	1745	23.07	22.2	20.97	20.10
		1732.5	23.08	22.32	20.98	20.22
		1720	23.05	22.36	20.95	20.26
	1 RB low	1745	23.07	22.27	20.97	20.17
		1732.5	23.09	22.4	20.99	20.30
		1720	23.05	22.36	20.95	20.26
	50% RB mid	1745	22.41	21.39	20.31	19.29
		1732.5	22.39	21.36	20.29	19.26
		1720	22.39	21.4	20.29	19.30
	100% RB	1745	22.33	21.3	20.23	19.20
		1732.5	22.34	21.32	20.24	19.22
		1720	22.34	21.33	20.24	19.23

LTE band 7-EIRP
Limits: ≤33dBm (2W)

Max EIRP: 24.92dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT =1.7dBi	
			QPSK	16QAM	QPSK	16QAM
5MHz	1 RB high	2567.5	23.03	22.27	24.73	23.97
		2535	23.07	22.34	24.77	24.04
		2502.5	22.99	22.31	24.69	24.01
	1 RB low	2567.5	23.04	22.3	24.74	24.00
		2535	23.13	22.38	24.83	24.08
		2502.5	22.91	22.3	24.61	24.00
	50% RB mid	2567.5	22.22	21.25	23.92	22.95
		2535	22.29	21.28	23.99	22.98
		2502.5	22.17	21.1	23.87	22.80
	100% RB	2567.5	22.23	21.22	23.93	22.92
		2535	22.31	21.28	24.01	22.98
		2502.5	22.12	21.14	23.82	22.84
10MHz	1 RB high	2565	23.08	22.23	24.78	23.93
		2535	23.16	22.49	24.86	24.19
		2505	23.08	22.45	24.78	24.15
	1 RB low	2565	23.21	22.33	24.91	24.03
		2535	23.22	22.4	24.92	24.10
		2505	23	22.24	24.70	23.94
	50% RB mid	2565	22.28	21.26	23.98	22.96
		2535	22.31	21.3	24.01	23.00
		2505	22.19	21.18	23.89	22.88
	100% RB	2565	22.28	21.29	23.98	22.99
		2535	22.38	21.33	24.08	23.03
		2505	22.19	21.18	23.89	22.88
15MHz	1 RB high	2562.5	23	22.21	24.70	23.91
		2535	23.08	22.33	24.78	24.03
		2507.5	23.1	22.43	24.80	24.13
	1 RB low	2562.5	23.08	22.36	24.78	24.06
		2535	23.16	22.4	24.86	24.10
		2507.5	22.98	22.23	24.68	23.93
	50% RB mid	2562.5	22.27	21.21	23.97	22.91
		2535	22.33	21.31	24.03	23.01
		2507.5	22.2	21.15	23.90	22.85
	100% RB	2562.5	22.28	21.22	23.98	22.92
		2535	22.32	21.27	24.02	22.97

		2507.5	22.18	21.17	23.88	22.87
20MHz	1 RB high	2560	22.75	22.03	24.45	23.73
		2535	22.69	21.89	24.39	23.59
		2510	22.65	21.96	24.35	23.66
	1 RB low	2560	22.84	22.15	24.54	23.85
		2535	22.71	21.97	24.41	23.67
		2510	22.79	21.99	24.49	23.69
	50% RB mid	2560	22.17	21.18	23.87	22.88
		2535	22.06	21.06	23.76	22.76
		2510	22.05	21.06	23.75	22.76
	100% RB	2560	22.11	21.11	23.81	22.81
		2535	21.98	20.99	23.68	22.69
		2510	21.97	20.99	23.67	22.69

LTE band 13- ERP
Limits: ≤ 34.77 dBm (3W)

Max ERP: 16.20dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -5.3dBi	
			QPSK	16QAM	QPSK	16QAM
5MHz	1 RB high	784.5	23.59	22.81	16.14	15.36
		782	23.49	22.76	16.04	15.31
		779.5	23.47	22.71	16.02	15.26
	1 RB low	784.5	23.49	22.83	16.04	15.38
		782	23.48	22.8	16.03	15.35
		779.5	23.53	22.83	16.08	15.38
	50% RB mid	784.5	22.71	21.75	15.26	14.30
		782	22.63	21.65	15.18	14.20
		779.5	22.64	21.65	15.19	14.20
	100% RB	784.5	22.66	21.67	15.21	14.22
		782	22.6	21.61	15.15	14.16
		779.5	22.59	21.63	15.14	14.18
10MHz	1 RB high	782	23.65	22.99	16.20	15.54
	1 RB low	782	23.62	22.94	16.17	15.49
	50% RB mid	782	22.77	21.7	15.32	14.25
	100% RB	782	22.71	21.72	15.26	14.27

LTE band 26(814MHz~824MHz)- ERP
Limits: ≤38.45dBm (100W)

Max ERP: 17.48dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -4.1dBi	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	823.3	23.55	22.59	17.30	16.34
		819	23.56	22.61	17.31	16.36
		814.7	23.61	22.59	17.36	16.34
	1 RB low	823.3	23.55	22.55	17.30	16.30
		819	23.59	22.57	17.34	16.32
		814.7	23.61	22.58	17.36	16.33
	50% RB mid	823.3	23.65	22.85	17.40	16.60
		819	23.7	22.89	17.45	16.64
		814.7	23.71	22.84	17.46	16.59
	100% RB	823.3	22.6	21.58	16.35	15.33
		819	22.69	21.87	16.44	15.62
		814.7	22.66	21.86	16.41	15.61
3MHz	1 RB high	822.5	23.61	22.6	17.36	16.35
		819	23.63	22.62	17.38	16.37
		815.5	23.68	22.64	17.43	16.39
	1 RB low	822.5	23.64	22.69	17.39	16.44
		819	23.64	22.65	17.39	16.40
		815.5	23.71	22.68	17.46	16.43
	50% RB mid	822.5	22.62	21.74	16.37	15.49
		819	22.61	21.74	16.36	15.49
		815.5	22.59	21.73	16.34	15.48
	100% RB	822.5	22.63	21.64	16.38	15.39
		819	22.61	21.65	16.36	15.40
		815.5	22.61	21.62	16.36	15.37
5MHz	1 RB high	821.5	23.57	22.63	17.32	16.38
		819	23.58	22.66	17.33	16.41
		816.5	23.62	22.68	17.37	16.43
	1 RB low	821.5	23.56	22.62	17.31	16.37
		819	23.56	22.65	17.31	16.40
		816.5	23.63	22.68	17.38	16.43
	50% RB mid	821.5	22.67	21.8	16.42	15.55
		819	22.69	21.76	16.44	15.51
		816.5	22.7	21.78	16.45	15.53
	100% RB	821.5	22.65	21.69	16.40	15.44
		819	22.67	21.71	16.42	15.46

		816.5	22.64	21.65	16.39	15.40
10MHz	1 RB high	819	23.7	22.69	17.45	16.44
	1 RB low	819	23.73	22.69	17.48	16.44
	50% RB mid	819	22.76	21.87	16.51	15.62
	100% RB	819	22.71	21.83	16.46	15.58

LTE band 26(824MHz~849MHz)-ERP
Limits: ≤38.45dBm (7W)

Max ERP: 17.55dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -4.1dBi	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	848.3	23.65	22.64	17.40	16.39
		836.5	23.71	22.72	17.46	16.47
		824.7	23.71	22.71	17.46	16.46
	1 RB low	848.3	23.62	22.62	17.37	16.37
		836.5	23.7	22.71	17.45	16.46
		824.7	23.68	22.71	17.43	16.46
	50% RB mid	848.3	23.72	22.87	17.47	16.62
		836.5	23.76	22.94	17.51	16.69
		824.7	23.8	22.99	17.55	16.74
	100% RB	848.3	22.66	21.83	16.41	15.58
		836.5	22.71	21.94	16.46	15.69
		824.7	22.72	21.69	16.47	15.44
3MHz	1 RB high	847.5	23.64	22.61	17.39	16.36
		836.5	23.72	22.69	17.47	16.44
		825.5	23.72	22.69	17.47	16.44
	1 RB low	847.5	23.69	22.65	17.44	16.40
		836.5	23.72	22.72	17.47	16.47
		825.5	23.71	22.73	17.46	16.48
	50% RB mid	847.5	22.58	21.68	16.33	15.43
		836.5	22.65	21.78	16.40	15.53
		825.5	22.62	21.77	16.37	15.52
	100% RB	847.5	22.59	21.56	16.34	15.31
		836.5	22.63	21.68	16.38	15.43
		825.5	22.62	21.69	16.37	15.44
5MHz	1 RB high	846.5	23.57	22.6	17.32	16.35
		836.5	23.62	22.71	17.37	16.46
		826.5	23.58	22.68	17.33	16.43
	1 RB low	846.5	23.55	22.63	17.30	16.38
		836.5	23.58	22.65	17.33	16.40
		826.5	23.6	22.69	17.35	16.44
	50% RB mid	846.5	22.6	21.7	16.35	15.45
		836.5	22.68	21.8	16.43	15.55
		826.5	22.66	21.81	16.41	15.56
	100% RB	846.5	22.61	21.58	16.36	15.33
		836.5	22.65	21.67	16.40	15.42

		826.5	22.65	21.68	16.40	15.43
10MHz	1 RB high	844	23.69	22.64	17.44	16.39
		836.5	23.69	22.67	17.44	16.42
		829	23.71	22.67	17.46	16.42
	1 RB low	844	23.7	22.7	17.45	16.45
		836.5	23.73	22.69	17.48	16.44
		829	23.67	22.67	17.42	16.42
	50% RB mid	844	22.62	21.82	16.37	15.57
		836.5	22.66	21.87	16.41	15.62
		829	22.71	21.88	16.46	15.63
	100% RB	844	22.68	21.7	16.43	15.45
		836.5	22.67	21.79	16.42	15.54
		829	22.7	21.81	16.45	15.56
15MHz	1 RB high	841.5	23.54	22.88	17.29	16.63
		836.5	23.55	22.92	17.30	16.67
		831.5	23.61	22.96	17.36	16.71
	1 RB low	841.5	23.6	22.96	17.35	16.71
		836.5	23.59	22.93	17.34	16.68
		831.5	23.57	22.95	17.32	16.70
	50% RB mid	841.5	22.69	21.76	16.44	15.51
		836.5	22.72	21.73	16.47	15.48
		831.5	22.76	21.77	16.51	15.52
	100% RB	841.5	22.76	21.77	16.51	15.52
		836.5	22.77	21.79	16.52	15.54
		831.5	22.76	21.76	16.51	15.51

LTE band 38- EIRP
Limits: ≤33.00dBm (2W)

Max ERP: 25.55dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = 2.1dBi	
			QPSK	16QAM	QPSK	16QAM
5MHz	1 RB high	2617.5	23.29	22.37	25.39	24.47
		2595	23.26	22.32	25.36	24.42
		2572.5	23.21	22.23	25.31	24.33
	1 RB low	2617.5	23.34	22.42	25.44	24.52
		2595	23.29	22.38	25.39	24.48
		2572.5	23.23	22.28	25.33	24.38
	50% RB mid	2617.5	22.51	21.44	24.61	23.54
		2595	22.47	21.39	24.57	23.49
		2572.5	22.42	21.32	24.52	23.42
	100% RB	2617.5	22.37	21.46	24.47	23.56
		2595	22.38	21.4	24.48	23.50
		2572.5	22.31	21.34	24.41	23.44
10MHz	1 RB high	2615	23.33	22.4	25.43	24.50
		2595	23.37	22.39	25.47	24.49
		2575	23.3	22.34	25.40	24.44
	1 RB low	2615	23.45	22.47	25.55	24.57
		2595	23.42	22.4	25.52	24.50
		2575	23.38	22.43	25.48	24.53
	50% RB mid	2615	22.45	21.5	24.55	23.60
		2595	22.46	21.39	24.56	23.49
		2575	22.45	21.4	24.55	23.50
	100% RB	2615	22.4	21.38	24.50	23.48
		2595	22.35	21.4	24.45	23.50
		2575	22.3	21.35	24.40	23.45
15MHz	1 RB high	2612.5	23.2	22.3	25.30	24.40
		2595	23.25	22.29	25.35	24.39
		2577.5	23.21	22.28	25.31	24.38
	1 RB low	2612.5	23.36	22.39	25.46	24.49
		2595	23.3	22.37	25.40	24.47
		2577.5	23.29	22.35	25.39	24.45
	50% RB mid	2612.5	22.46	21.35	24.56	23.45
		2595	22.47	21.33	24.57	23.43
		2577.5	22.44	21.35	24.54	23.45
	100% RB	2612.5	22.38	21.41	24.48	23.51
		2595	22.32	21.33	24.42	23.43

		2577.5	22.31	21.33	24.41	23.43
20MHz	1 RB high	2610	23.16	22.18	25.26	24.28
		2595	23.18	22.23	25.28	24.33
		2580	23.23	22.28	25.33	24.38
	1 RB low	2610	23.32	22.34	25.42	24.44
		2595	23.4	22.39	25.50	24.49
		2580	23.43	22.45	25.53	24.55
	50% RB mid	2610	22.4	21.45	24.50	23.55
		2595	22.38	21.51	24.48	23.61
		2580	22.49	21.58	24.59	23.68
	100% RB	2610	22.44	21.53	24.54	23.63
		2595	22.51	21.54	24.61	23.64
		2580	22.55	21.56	24.65	23.66

LTE band 66- EIRP
Limits: ≤30dBm (1W)

Max EIRP: 21.65dBm

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm) GT = -1.8dBi	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	1779.3	23.24	22.45	21.44	20.65
		1745	23.21	22.41	21.41	20.61
		1710.7	23.32	22.5	21.52	20.70
	1 RB low	1779.3	23.25	22.55	21.45	20.75
		1745	23.18	22.38	21.38	20.58
		1710.7	23.33	22.51	21.53	20.71
	50% RB mid	1779.3	23.43	22.4	21.63	20.60
		1745	23.33	22.25	21.53	20.45
		1710.7	23.45	22.39	21.65	20.59
	100% RB	1779.3	22.34	21.44	20.54	19.64
		1745	22.31	21.4	20.51	19.60
		1710.7	22.42	21.52	20.62	19.72
3MHz	1 RB high	1778.5	23.3	22.46	21.50	20.66
		1745	23.23	22.38	21.43	20.58
		1711.5	23.33	22.6	21.53	20.80
	1 RB low	1778.5	23.31	22.53	21.51	20.73
		1745	23.23	22.4	21.43	20.60
		1711.5	23.35	22.66	21.55	20.86
	50% RB mid	1778.5	22.36	21.39	20.56	19.59
		1745	22.27	21.35	20.47	19.55
		1711.5	22.4	21.46	20.60	19.66
	100% RB	1778.5	22.34	21.33	20.54	19.53
		1745	22.26	21.25	20.46	19.45
		1711.5	22.38	21.4	20.58	19.60
5MHz	1 RB high	1777.5	23.21	22.53	21.41	20.73
		1745	23.13	22.44	21.33	20.64
		1712.5	23.23	22.44	21.43	20.64
	1 RB low	1777.5	23.22	22.53	21.42	20.73
		1745	23.15	22.31	21.35	20.51
		1712.5	23.26	22.46	21.46	20.66
	50% RB mid	1777.5	22.41	21.39	20.61	19.59
		1745	22.32	21.31	20.52	19.51
		1712.5	22.43	21.39	20.63	19.59
	100% RB	1777.5	22.36	21.35	20.56	19.55
		1745	22.28	21.27	20.48	19.47

		1712.5	22.4	21.39	20.60	19.59
10MHz	1 RB high	1775	23.28	22.59	21.48	20.79
		1745	23.22	22.42	21.42	20.62
		1715	23.31	22.65	21.51	20.85
	1 RB low	1775	23.25	22.53	21.45	20.73
		1745	23.3	22.45	21.50	20.65
		1715	23.33	22.65	21.53	20.85
	50% RB mid	1775	22.42	21.38	20.62	19.58
		1745	22.35	21.34	20.55	19.54
		1715	22.43	21.42	20.63	19.62
	100% RB	1775	22.38	21.38	20.58	19.58
		1745	22.36	21.35	20.56	19.55
		1715	22.44	21.44	20.64	19.64
15MHz	1 RB high	1772.5	23.25	22.41	21.45	20.61
		1745	23.14	22.4	21.34	20.60
		1717.5	23.26	22.57	21.46	20.77
	1 RB low	1772.5	23.25	22.57	21.45	20.77
		1745	23.28	22.52	21.48	20.72
		1717.5	23.32	22.52	21.52	20.72
	50% RB mid	1772.5	22.37	21.36	20.57	19.56
		1745	22.37	21.36	20.57	19.56
		1717.5	22.45	21.4	20.65	19.60
	100% RB	1772.5	22.34	21.34	20.54	19.54
		1745	22.33	21.3	20.53	19.50
		1717.5	22.42	21.42	20.62	19.62
20MHz	1 RB high	1770	23.16	22.38	21.36	20.58
		1745	23.04	22.29	21.24	20.49
		1720	23.14	22.51	21.34	20.71
	1 RB low	1770	23.16	22.43	21.36	20.63
		1745	23.16	22.41	21.36	20.61
		1720	23.1	22.4	21.30	20.60
	50% RB mid	1770	22.49	21.47	20.69	19.67
		1745	22.47	21.43	20.67	19.63
		1720	22.41	21.41	20.61	19.61
	100% RB	1770	22.39	21.39	20.59	19.59
		1745	22.38	21.35	20.58	19.55
		1720	22.35	21.38	20.55	19.58

Note: Expanded measurement uncertainty is $U = 0.578 \text{ dB}$, $k = 2$.

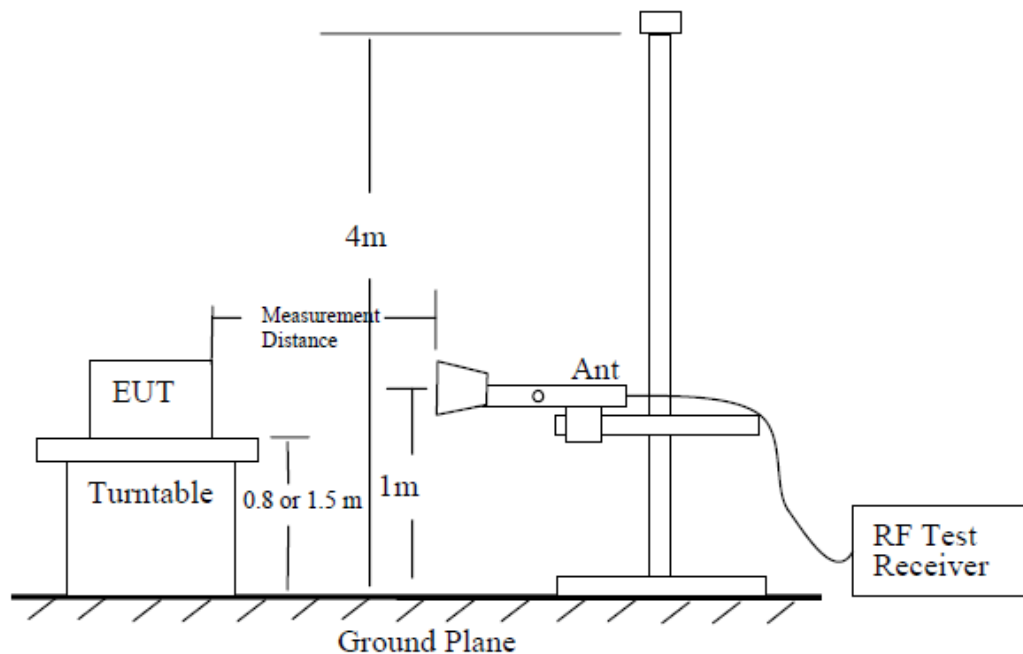
A.2 Emission Limit

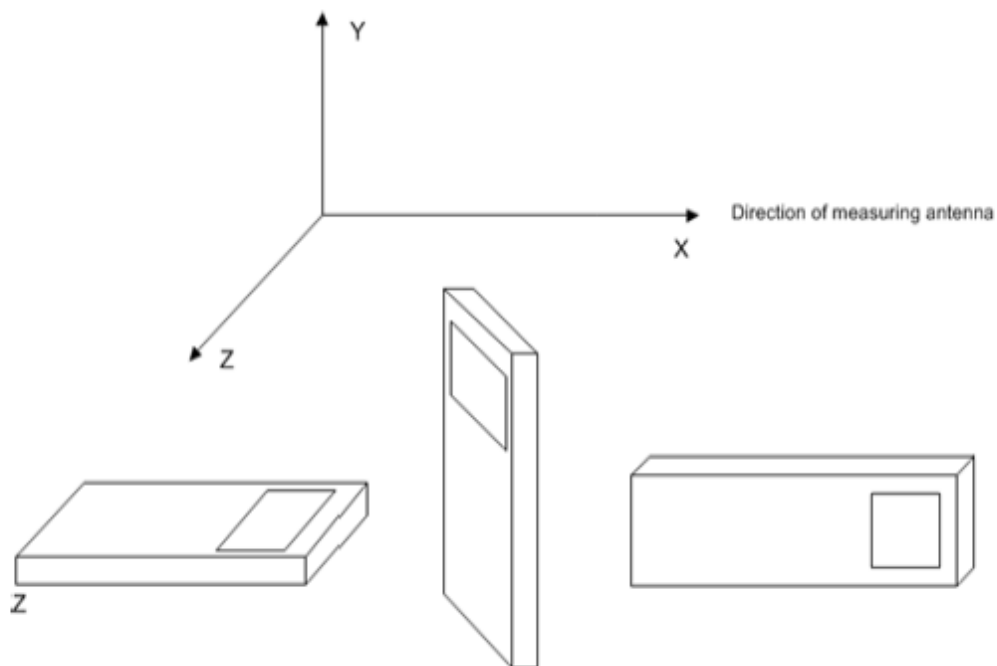
The measurements procedures in C63.26 are used.

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 the LTE Bands 2/4/7/13/26/38/66.

The procedure of radiated spurious emissions is as follows:

Using the test configuration as follow, measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits.





The emission characteristics of the EUT can be identified from the pre-scan measurement information.

Exploratory radiated measurements (pre-scans) may be performed to determine the general EUT radiated emissions characteristics and, when necessary, the EUT-to-measurement antenna orientation that produces the maximum emission amplitude. Pre-scans shall only be used to determine the emission frequencies (i.e., not amplitude levels). The information garnered from a pre-scan can then be used to perform final compliance measurements using either the substitution or direct field strength method.

For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80 cm above the reference ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25 cm.

The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.

For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table or support at a nominal height of 1.5 m above the ground plane. When maximizing the emissions from the EUT for measurement, the EUT and its transmitting antenna(s) shall be rotated through 360°. For each mode of operation to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored. Final measurements shall be performed for the worst case combination(s) of variable technical parameters that result in the maximum measured emission amplitude, record the frequency and amplitude of the highest fundamental emission (if applicable), and the frequency and amplitude data for the six highest-amplitude spurious emissions.

A.2.2 Measurement Limit

FDD Band 7/38: 27.53(m) (4) 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 13: 27.53(f) specifies " For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation. "

FDD Band 2: 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.

FDD Band 4: Part 27.53(h) specify" General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB ",

FDD Band 26(814MHz-824MHz) Part 90.691 specifies " 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 26(824MHz-849MHz)/5 Part 22.917 specifies " Out of band emissions. 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 66: 27.53(h) specifies "AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB"

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the LTE Bands 2/4/7/13/26/38/66 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.

Measurement Results:
UT20a + AE2 + AE17 + AE14
LTE Band 2, 1.4MHz, QPSK, Channel 18607, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3701.02	-57.67	6.42	8.48	-55.61	-13.00	42.61	H
5582.02	-58.07	7.22	10.58	-54.71	-13.00	41.71	V
7430.01	-53.58	8.20	12.12	-49.66	-13.00	36.66	V
9303.01	-51.95	9.15	13.28	-47.82	-13.00	34.82	V
11075.01	-49.68	9.88	13.18	-46.38	-13.00	33.38	V
13004.01	-46.60	10.48	13.51	-43.57	-13.00	30.57	V

LTE Band 2, 1.4MHz, QPSK, Channel 18900, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3778.02	-60.26	6.21	8.59	-57.88	-13.00	44.88	V
5660.02	-58.08	7.28	10.57	-54.79	-13.00	41.79	V
7474.01	-53.92	8.32	12.17	-50.07	-13.00	37.07	H
9366.01	-52.98	9.07	13.32	-48.73	-13.00	35.73	V
11269.01	-49.40	9.81	13.15	-46.06	-13.00	33.06	H
13152.01	-43.49	10.71	13.71	-40.49	-13.00	27.49	V

LTE Band 2, 1.4MHz, QPSK, Channel 19193, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3818.02	-59.60	6.08	8.65	-57.03	-13.00	44.03	H
5774.02	-58.77	7.23	10.55	-55.45	-13.00	42.45	H
7595.01	-54.32	7.99	12.28	-50.03	-13.00	37.03	V
9575.01	-53.73	9.27	13.32	-49.68	-13.00	36.68	V
11420.01	-48.19	10.01	13.12	-45.08	-13.00	32.08	V
13398.01	-43.69	10.57	14.06	-40.20	-13.00	27.20	H

UT20a + AE2 + AE17 + AE14
LTE Band 4, 1.4MHz, QPSK, Channel 19957, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3468.02	-72.26	5.46	8.12	-69.60	-13.00	56.60	H
5095.02	-69.43	6.76	10.03	-66.16	-13.00	53.16	V
6852.01	-64.65	7.82	11.42	-61.05	-13.00	48.05	V
8598.01	-63.95	8.50	13.02	-59.43	-13.00	46.43	V
10313.01	-61.19	9.66	13.03	-57.82	-13.00	44.82	V
12004.01	-58.48	10.06	13.00	-55.54	-13.00	42.54	V

LTE Band 4, 1.4MHz, QPSK, Channel 20175 Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3487.02	-72.09	5.50	8.17	-69.42	-13.00	56.42	H
5156.02	-69.96	6.89	10.12	-66.73	-13.00	53.73	H
6880.01	-65.18	7.78	11.46	-61.50	-13.00	48.50	V
8618.01	-64.06	8.47	13.02	-59.51	-13.00	46.51	V
10442.01	-60.71	9.74	13.08	-57.37	-13.00	44.37	V
12146.01	-59.15	10.21	13.06	-56.30	-13.00	43.30	V

LTE Band 4, 1.4MHz, QPSK, Channel 120393, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3551.02	-70.63	5.83	8.27	-68.19	-13.00	55.19	V
5219.02	-70.49	6.99	10.21	-67.27	-13.00	54.27	H
6993.01	-64.57	8.24	11.59	-61.22	-13.00	48.22	V
8747.01	-63.58	8.50	13.05	-59.03	-13.00	46.03	V
10478.01	-60.89	9.68	13.09	-57.48	-13.00	44.48	V
12246.01	-58.71	10.03	13.10	-55.64	-13.00	42.64	V

UT20a + AE2 + AE17 + AE14
LTE Band 7, 20MHz, QPSK, Channel 20850, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5010.02	-59.85	6.59	9.91	-56.53	-25.00	31.53	H
7491.01	-53.81	8.37	12.19	-49.99	-25.00	24.99	V
10027.01	-53.35	9.26	12.91	-49.70	-25.00	24.70	V
12513.01	-47.80	10.21	13.21	-44.80	-25.00	19.80	H
15024.00	-43.93	11.25	13.99	-41.19	-25.00	16.19	H
17517.00	-39.35	12.79	14.92	-37.22	-25.00	12.22	H

LTE Band 7, 20MHz, QPSK, Channel 21100, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5064.02	-59.12	6.67	9.99	-55.80	-25.00	30.80	H
7616.01	-54.43	8.05	12.29	-50.19	-25.00	25.19	V
10123.01	-53.24	9.42	12.95	-49.71	-25.00	24.71	V
12668.01	-47.82	10.35	13.30	-44.87	-25.00	19.87	H
15219.00	-44.53	11.38	13.87	-42.04	-25.00	17.04	V
17742.00	-41.46	12.41	15.24	-38.63	-25.00	13.63	H

LTE Band 7, 20MHz, QPSK, Channel 21350, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5135.02	-58.96	6.86	10.09	-55.73	-25.00	30.73	H
7702.01	-55.45	8.42	12.36	-51.51	-25.00	26.51	V
10273.01	-51.53	9.55	13.01	-48.07	-25.00	23.07	V
12843.01	-47.61	10.66	13.41	-44.86	-25.00	19.86	V
15406.00	-43.99	11.40	13.76	-41.63	-25.00	16.63	H
17982.00	-40.87	12.90	15.57	-38.20	-25.00	13.20	V

UT16a + AE2 + AE17 + AE14
LTE Band 13, 5MHz, QPSK, Channel 23205, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1554.56	-64.10	3.47	5.40	2.15	-64.32	-13.00	51.32	H
2337.60	-48.74	4.44	5.61	2.15	-49.72	-13.00	36.72	H
3119.02	-58.81	5.38	7.29	2.15	-59.05	-13.00	46.05	V
3893.02	-59.62	6.10	8.75	2.15	-59.12	-13.00	46.12	H
4680.52	-59.08	6.49	9.58	2.15	-58.14	-13.00	45.14	H
5456.51	-58.22	6.89	10.54	2.15	-56.72	-13.00	43.72	V

LTE Band 13, 5MHz, QPSK, Channel 23230, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1559.46	-66.78	3.47	5.39	0.00	-67.01	-40.00	27.01	H
2350.18	-49.27	4.46	5.65	2.15	-50.23	-13.00	37.23	V
3128.52	-59.03	5.40	7.31	2.15	-59.27	-13.00	46.27	H
3911.02	-59.10	6.12	8.78	2.15	-58.59	-13.00	45.59	V
4694.02	-59.09	6.50	9.59	2.15	-58.15	-13.00	45.15	V
5478.51	-57.84	6.98	10.57	2.15	-56.40	-13.00	43.40	V

LTE Band 13, 5MHz, QPSK, Channel 23255, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.78	-62.68	3.48	5.38	0.00	-62.93	-40.00	22.93	H
2361.06	-48.18	4.47	5.68	2.15	-49.12	-13.00	36.12	H
3126.02	-58.64	5.40	7.30	2.15	-58.89	-13.00	45.89	H
3925.52	-58.23	6.12	8.80	2.15	-57.70	-13.00	44.70	V
4714.52	-57.03	6.52	9.61	2.15	-56.09	-13.00	43.09	V
5503.51	-57.96	7.07	10.60	2.15	-56.58	-13.00	43.58	V

UT20a + AE2 + AE17 + AE14
LTE Band 26(814-824MHz), 1.4MHz, QPSK, Channel 26797, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1656.01	-55.37	3.57	5.22	2.15	-55.87	-13.00	42.87	H
2486.00	-46.95	4.61	6.06	2.15	-47.65	-13.00	34.65	H
3314.02	-61.16	5.29	7.75	2.15	-60.85	-13.00	47.85	V
4146.02	-56.79	6.08	9.05	2.15	-55.97	-13.00	42.97	V
4982.01	-57.85	6.63	9.88	2.15	-56.75	-13.00	43.75	H
5807.01	-56.40	7.18	10.54	2.15	-55.19	-13.00	42.19	H

LTE Band 26(814-824MHz), 1.4MHz, QPSK, Channel 26915, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1672.01	-54.09	3.58	5.19	2.15	-54.63	-13.00	41.63	H
2510.00	-46.70	4.63	6.12	2.15	-47.36	-13.00	34.36	H
3342.02	-61.03	5.31	7.82	2.15	-60.67	-13.00	47.67	V
4173.02	-56.09	6.14	9.07	2.15	-55.31	-13.00	42.31	V
5018.01	-56.97	6.57	9.93	2.15	-55.76	-13.00	42.76	H
5852.01	-56.19	7.24	10.53	2.15	-55.05	-13.00	42.05	V

LTE Band 26(814-824MHz), 1.4MHz, QPSK, Channel 27033, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1704.01	-54.43	3.60	5.13	2.15	-55.05	-13.00	42.05	V
2531.00	-46.03	4.65	6.16	2.15	-46.67	-13.00	33.67	H
3391.02	-61.00	5.35	7.94	2.15	-60.56	-13.00	47.56	V
4229.02	-57.21	6.26	9.13	2.15	-56.49	-13.00	43.49	V
5090.01	-56.15	6.74	10.03	2.15	-55.01	-13.00	42.01	H
5943.01	-56.46	7.47	10.51	2.15	-55.57	-13.00	42.57	V

UT20a + AE2 + AE17 + AE14
LTE Band 26(824-849MHz), 5MHz, QPSK, Channel 26715, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1635.01	-53.25	3.55	5.26	2.15	-53.69	-13.00	40.69	H
2440.00	-47.18	4.56	5.92	2.15	-47.97	-13.00	34.97	V
3263.02	-61.03	5.28	7.63	2.15	-60.83	-13.00	47.83	H
4085.02	-57.66	6.04	8.99	2.15	-56.86	-13.00	43.86	V
4900.01	-56.98	6.73	9.80	2.15	-56.06	-13.00	43.06	V
5694.01	-56.12	7.29	10.56	2.15	-55.00	-13.00	42.00	H

LTE Band 26(824-849MHz), 5MHz, QPSK, Channel 26740, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1634.01	-52.49	3.55	5.26	2.15	-52.93	-13.00	39.93	H
2455.00	-47.25	4.58	5.97	2.15	-48.01	-13.00	35.01	V
3263.02	-60.63	5.28	7.63	2.15	-60.43	-13.00	47.43	H
4091.02	-56.98	6.04	8.99	2.15	-56.18	-13.00	43.18	V
4893.01	-57.49	6.73	9.79	2.15	-56.58	-13.00	43.58	V
5711.01	-56.76	7.29	10.56	2.15	-55.64	-13.00	42.64	H

LTE Band 26(824-849MHz), 5MHz, QPSK, Channel 26765, Main antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1637.01	-54.01	3.56	5.25	2.15	-54.47	-13.00	41.47	H
2480.00	-47.35	4.60	6.04	2.15	-48.06	-13.00	35.06	H
3292.02	-61.05	5.29	7.70	2.15	-60.79	-13.00	47.79	H
4143.02	-56.78	6.08	9.04	2.15	-55.97	-13.00	42.97	V
4933.01	-56.75	6.72	9.83	2.15	-55.79	-13.00	42.79	V
5778.01	-56.01	7.22	10.54	2.15	-54.84	-13.00	41.84	V

UT16a + AE2 + AE17 + AE14
LTE Band 38, 5MHz, QPSK, Channel 37775, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5131.02	-58.20	6.85	10.08	-54.97	-25.00	29.97	V
7691.01	-55.17	8.39	12.35	-51.21	-25.00	26.21	V
10308.01	-50.58	9.66	13.02	-47.22	-25.00	22.22	V
12865.01	-47.77	10.60	13.42	-44.95	-25.00	19.95	H
15401.00	-43.67	11.39	13.76	-41.30	-25.00	16.30	H
17979.00	-40.68	12.90	15.57	-38.01	-25.00	13.01	V

LTE Band 38, 5MHz, QPSK, Channel 38000, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5191.02	-59.19	6.95	10.17	-55.97	-25.00	30.97	H
7778.01	-55.27	8.32	12.42	-51.17	-25.00	26.17	H
10414.01	-50.83	9.78	13.07	-47.54	-25.00	22.54	V
13005.01	-46.99	10.49	13.51	-43.97	-25.00	18.97	H
15576.00	-44.09	11.50	13.70	-41.89	-25.00	16.89	H
16861.00	-40.20	12.04	13.74	-38.50	-25.00	13.50	H

LTE Band 38, 5MHz, QPSK, Channel 38225, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5217.02	-59.15	6.99	10.20	-55.94	-25.00	30.94	H
7879.01	-55.01	8.40	12.50	-50.91	-25.00	25.91	V
10474.01	-49.79	9.69	13.09	-46.39	-25.00	21.39	V
13107.01	-44.49	10.91	13.65	-41.75	-25.00	16.75	V
15705.00	-43.90	11.61	13.70	-41.81	-25.00	16.81	H
17014.00	-40.31	12.42	13.83	-38.90	-25.00	13.90	H

UT16a + AE2 + AE17 + AE14
LTE Band 66, 10MHz, QPSK, Channel 132072, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3431.02	-71.65	5.39	8.03	-69.01	-13.00	56.01	H
5148.02	-54.99	6.88	10.11	-51.76	-13.00	38.76	H
6846.01	-64.60	7.83	11.42	-61.01	-13.00	48.01	V
8594.01	-63.97	8.50	13.02	-59.45	-13.00	46.45	V
10301.01	-61.12	9.64	13.02	-57.74	-13.00	44.74	V
12004.01	-58.48	10.06	13.00	-55.54	-13.00	42.54	V

LTE Band 66, 10MHz, QPSK, Channel 132322, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3543.02	-70.98	5.75	8.26	-68.47	-13.00	55.47	V
5222.02	-64.69	6.99	10.21	-61.47	-13.00	48.47	H
6996.01	-64.38	8.27	11.60	-61.05	-13.00	48.05	V
8746.01	-63.53	8.50	13.05	-58.98	-13.00	45.98	V
10460.01	-60.54	9.71	13.08	-57.17	-13.00	44.17	V
12252.01	-58.69	10.03	13.10	-55.62	-13.00	42.62	V

LTE Band 66, 10MHz, QPSK, Channel 132572, Second antenna

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3531.02	-69.00	5.63	8.24	-66.39	-13.00	53.39	H
5298.02	-53.64	6.99	10.32	-50.31	-13.00	37.31	H
7170.01	-65.30	8.18	11.80	-61.68	-13.00	48.68	V
8948.01	-63.24	9.02	13.09	-59.17	-13.00	46.17	V
10720.01	-61.07	9.35	13.14	-57.28	-13.00	44.28	V
12402.01	-58.40	10.43	13.16	-55.67	-13.00	42.67	V

Sample: 3531.02MHz

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

$$\text{Power (-66.39dBm)} = P_{\text{Mea}} (-69.00\text{dBm}) - P_{\text{pl}} (5.63\text{dB}) + G_{\text{a}} (8.24\text{dBi})$$

Note: Expanded measurement uncertainty

Frequency range	Expanded measurement uncertainty
30MHz-1GHz	5.76dB, k=2
1GHz-18GHz	4.69dB, k=2
18GHz-40GHz	3.37dB, k=2

Note: The measurement results showed here are worst cases

A.3 Frequency Stability

A.3.1 Method of Measurement

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

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

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

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

A.3.2 Measurement results

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	1850.449	1909.647		
50				-2.42	0.0013
40				-1.32	0.0007
30				-3.03	0.0016
10				-2.25	0.0012
0				-1.04	0.0006
-10				-1.66	0.0009
-20				35.25	0.0188
-30				-2.95	0.0016

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.449	1909.647	-3.48	0.0019
4.45				-1.75	0.0009

LTE Band 4, 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	3.87	1710.545	1754.519		
50				0.37	0.0002
40				1.72	0.0010
30				1.03	0.0006
10				-3.36	0.0019
0				-1.07	0.0006
-10				-1.43	0.0008
-20				-0.51	0.0003
-30				-1.76	0.0010

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.545	1754.519	-6.42	0.0037
4.45				0.64	0.0004

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2500.417	2569.647		
50				0.07	0.0000
40				-9.04	0.0036
30				3.30	0.0013
10				2.45	0.0010
0				-1.10	0.0004
-10				2.16	0.0009
-20				4.41	0.0017
-30				-1.85	0.0007

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2500.417	2569.647	-0.53	0.0002
4.45				-6.81	0.0027

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	777.465	786.535		
50				-0.89	0.0011
40				-4.41	0.0056
30				-0.86	0.0011
10				1.20	0.0015
0				-1.70	0.0022
-10				-2.85	0.0036
-20				-1.34	0.0017
-30				-0.04	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	777.465	786.535	0.49	0.0006
4.45				0.19	0.0002

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	3.87	814.284	823.692		
50				0.46	0.0006
40				0.70	0.0009
30				0.66	0.0008
10				-1.40	0.0017
0				-4.26	0.0052
-10				-0.96	0.0012
-20				-3.52	0.0043
-30				-1.54	0.0019

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	814.284	823.692	-2.10	0.0026
4.45				-0.76	0.0009

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	3.87	824.288	848.712		
50				-2.55	0.0030
40				-2.86	0.0034
30				-0.46	0.0005
10				-2.32	0.0028
0				-1.16	0.0014
-10				-4.42	0.0053
-20				-1.34	0.0016
-30				-0.87	0.0010

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.288	848.712	-2.12	0.0025
4.45				-1.73	0.0021

LTE Band 38, 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	3.87	2570.545	2619.455		
50				-2.62	0.0010
40				-0.90	0.0003
30				1.12	0.0004
10				-3.55	0.0014
0				-3.00	0.0012
-10				0.01	0.0000
-20				-1.20	0.0005
-30				0.19	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2570.545	2619.455	-4.48	0.0017
4.45				-1.19	0.0005

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	3.87	1710.417	1779.583		
50				-1.54	0.0009
40				-6.79	0.0039
30				-1.17	0.0007
10				-3.36	0.0019
0				-0.99	0.0006
-10				-1.66	0.0010
-20				-0.23	0.0001
-30				-1.60	0.0009

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	F _L (MHz)	F _H (MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.417	1779.583	-0.29	0.0002
4.45				1.39	0.0008

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.

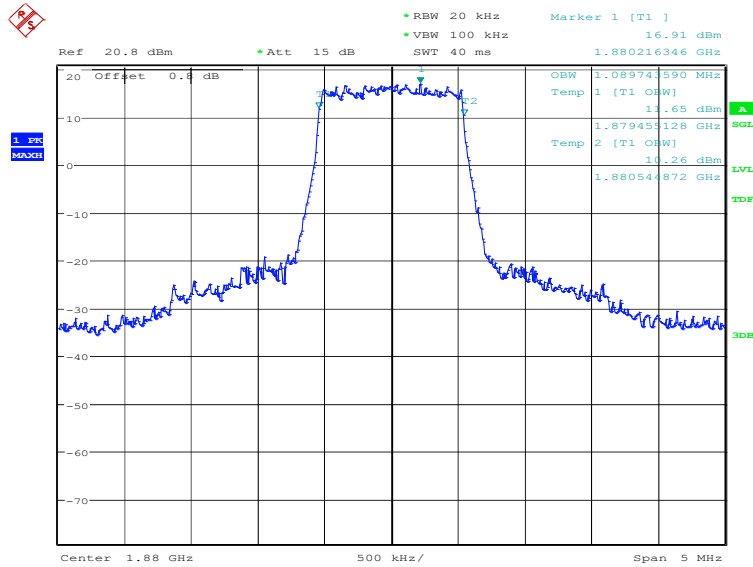
The measurement method is from ANSI C63.26:

- 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 2, 1.4MHz (99%)

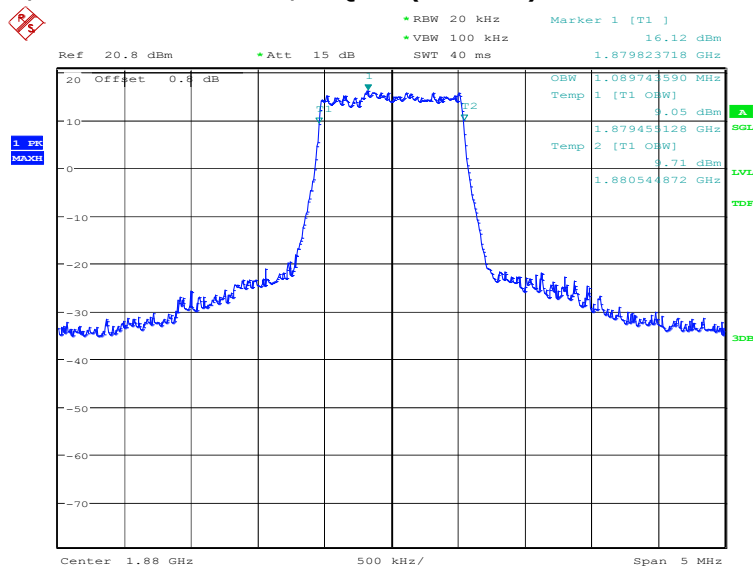
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	1089.74	1089.74

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



Date: 12.OCT.2022 14:20:06

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

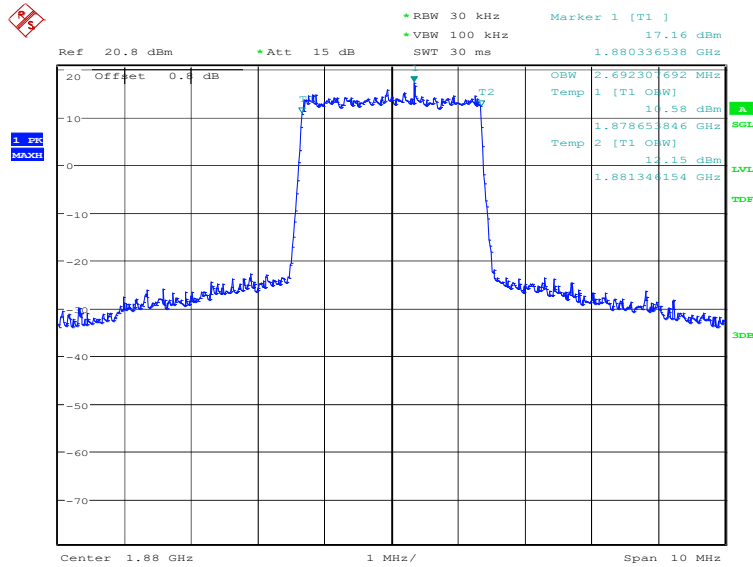


Date: 12.OCT.2022 14:20:46

LTE band 2, 3MHz (99%)

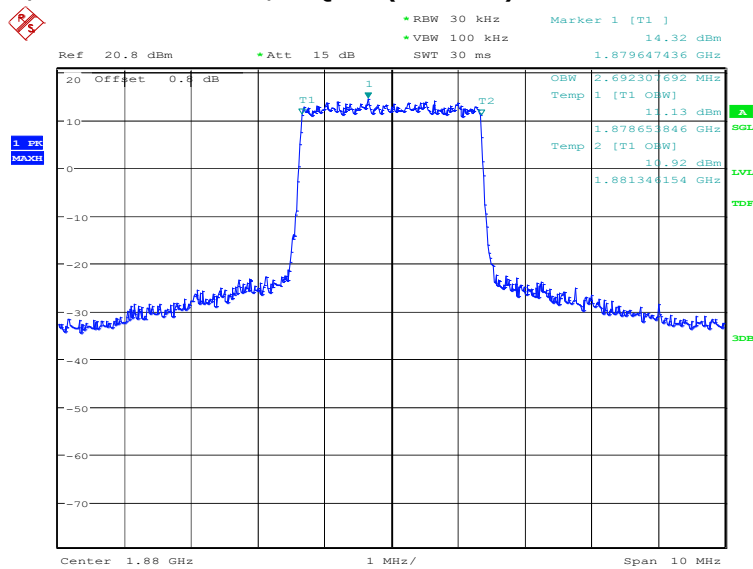
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 12.OCT.2022 14:21:27

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

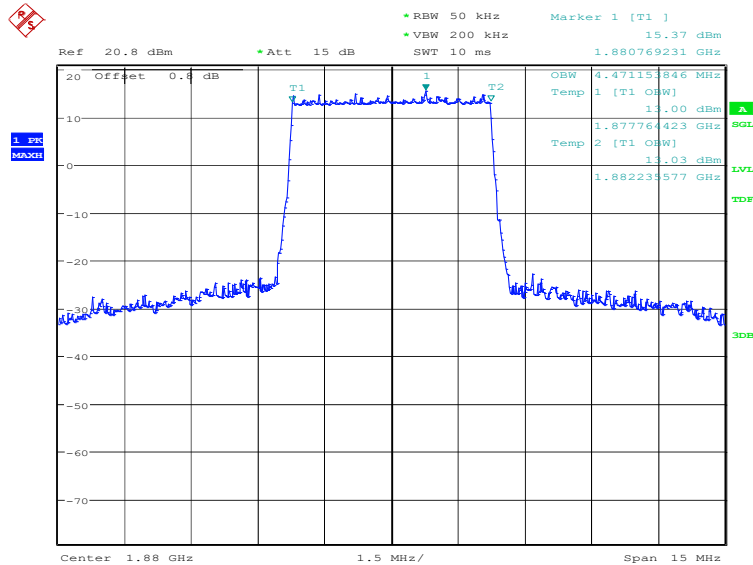


Date: 12.OCT.2022 14:22:07

LTE band 2, 5MHz (99%)

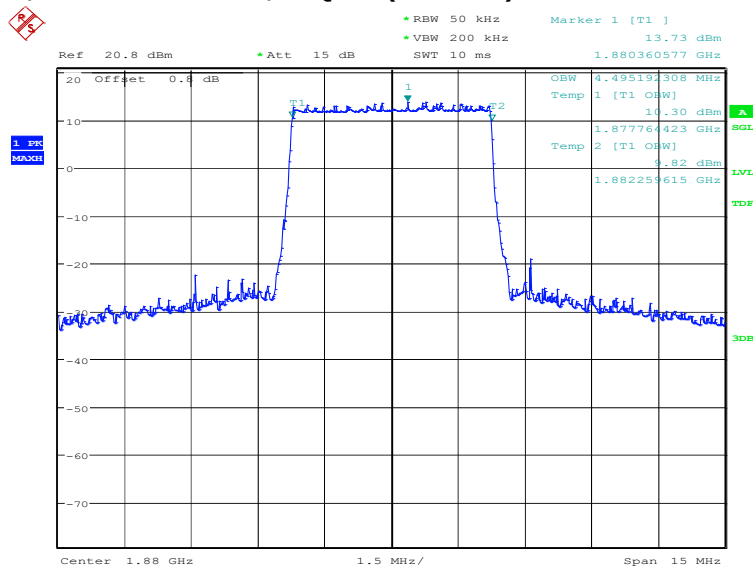
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	4471.15	4495.19

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



Date: 12.OCT.2022 14:22:48

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

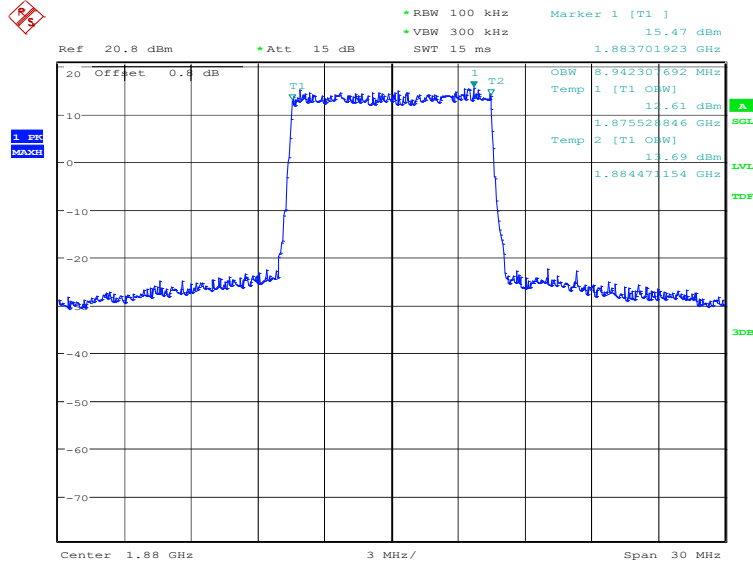


Date: 12.OCT.2022 14:23:28

LTE band 2, 10MHz (99%)

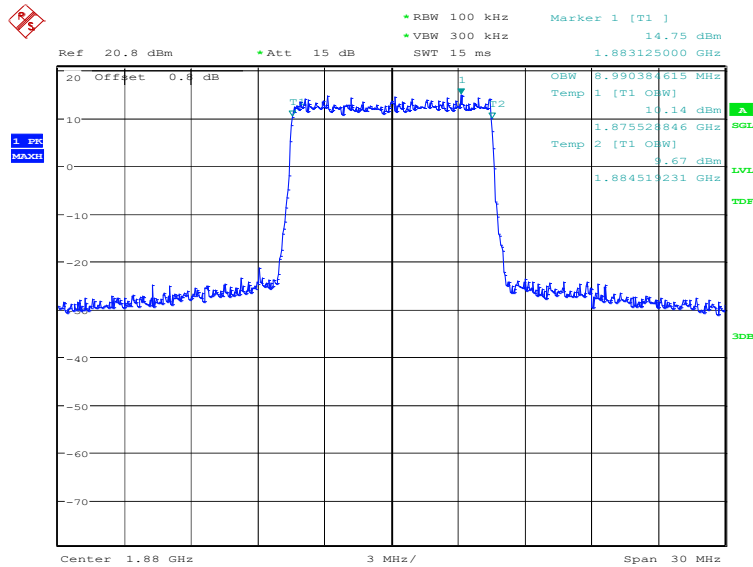
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 12.OCT.2022 14:24:09

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

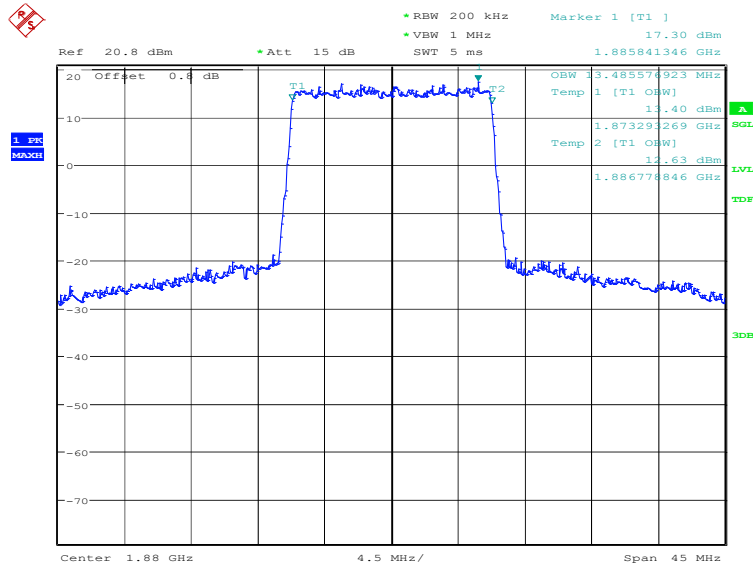


Date: 12.OCT.2022 14:24:49

LTE band 2, 15MHz (99%)

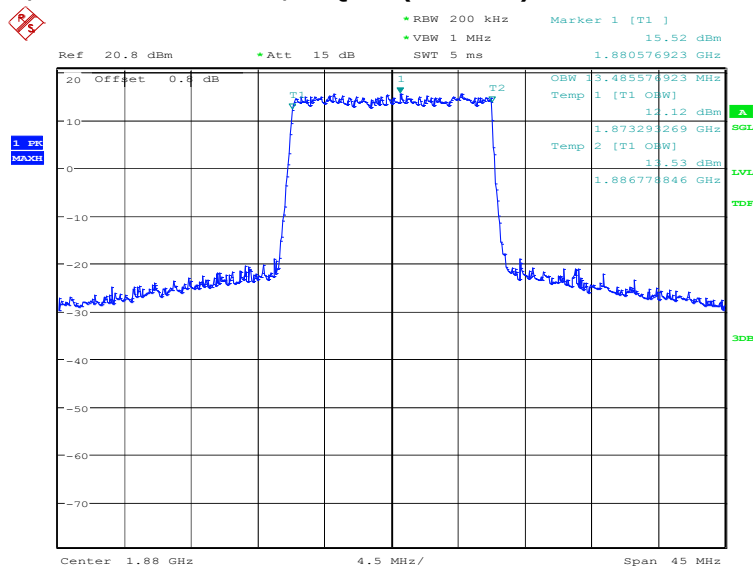
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 14:25:31

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

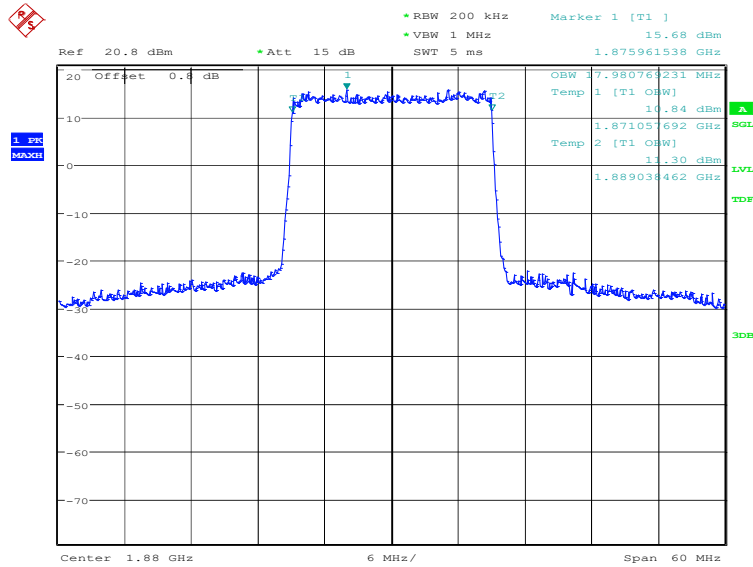


Date: 12.OCT.2022 14:26:11

LTE band 2, 20MHz (99%)

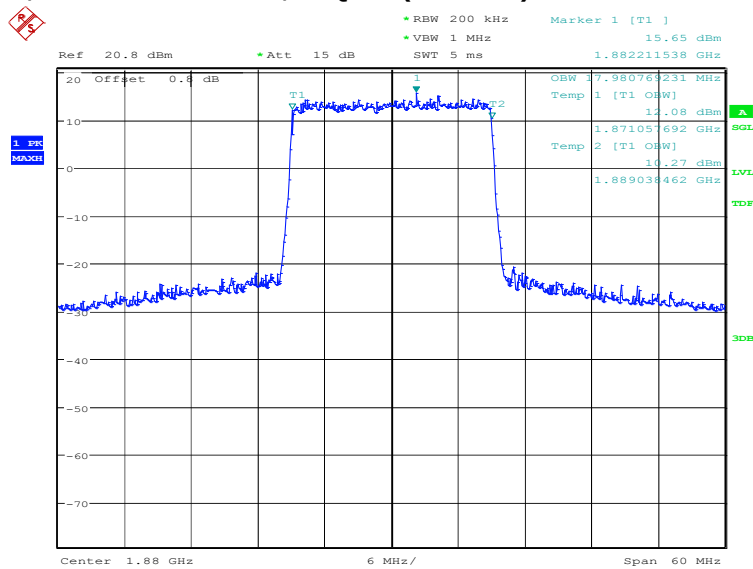
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1880.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 12.OCT.2022 14:26:52

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

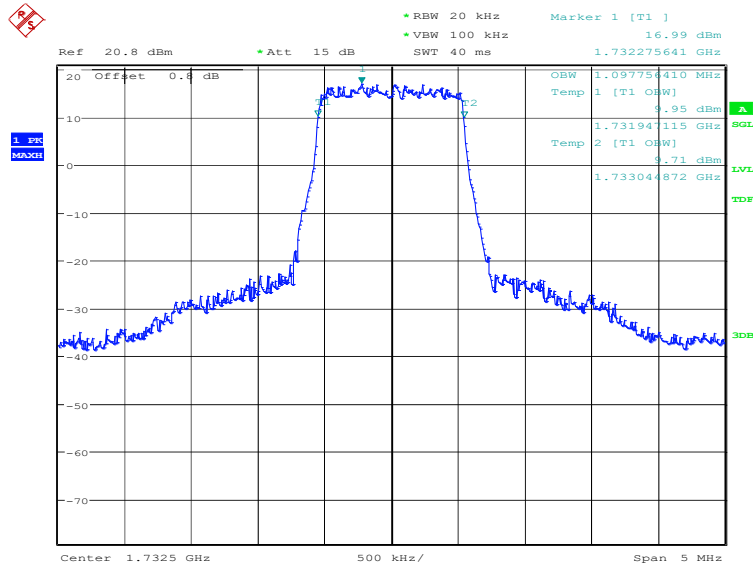


Date: 12.OCT.2022 14:27:32

LTE band 4, 1.4MHz (99%)

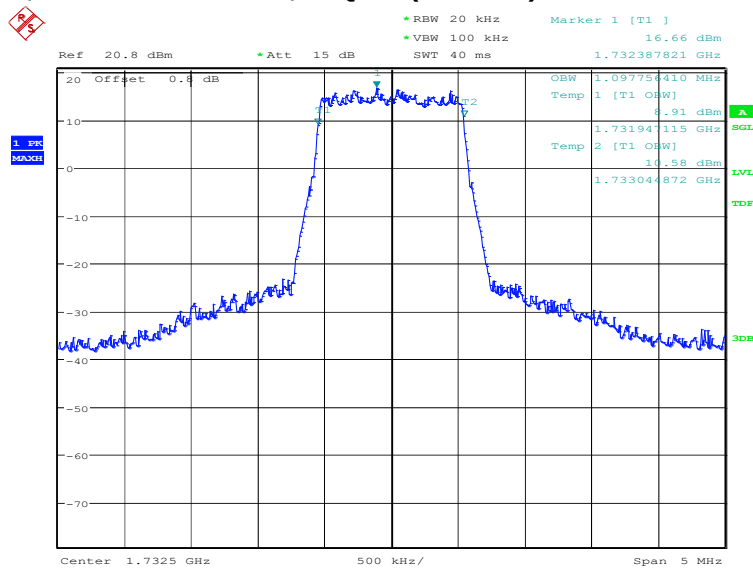
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	1097.76	1097.76

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



Date: 12.OCT.2022 14:28:15

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

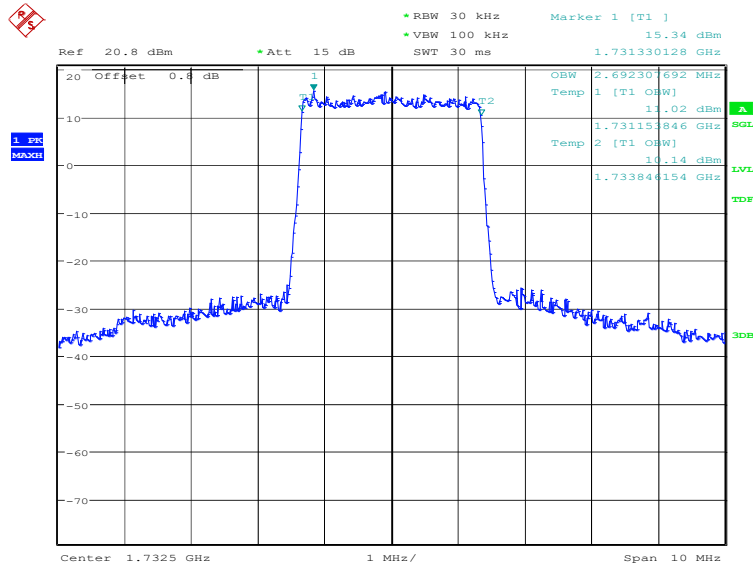


Date: 12.OCT.2022 14:28:55

LTE band 4, 3MHz (99%)

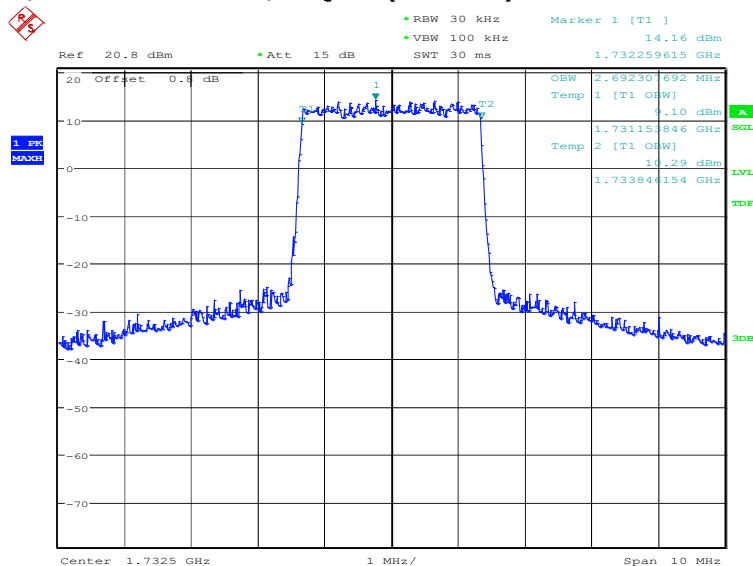
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	2692.31	2692.31

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



Date: 12.OCT.2022 14:29:36

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

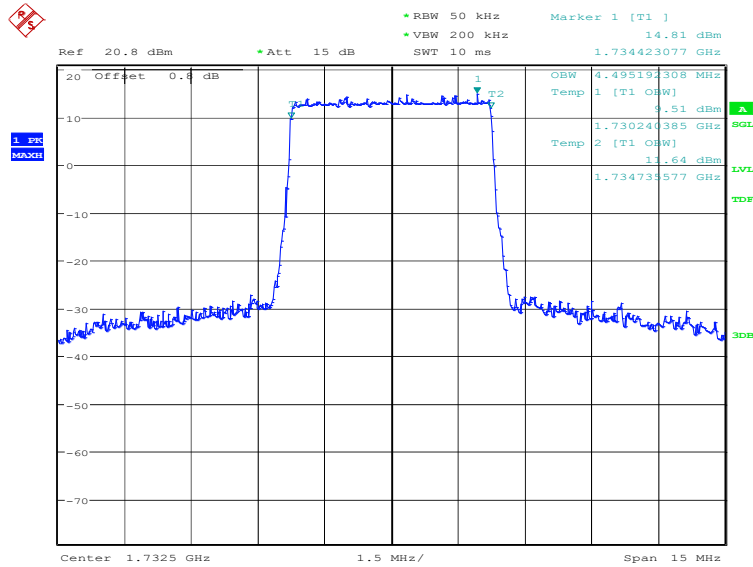


Date: 12.OCT.2022 14:30:16

LTE band 4, 5MHz (99%)

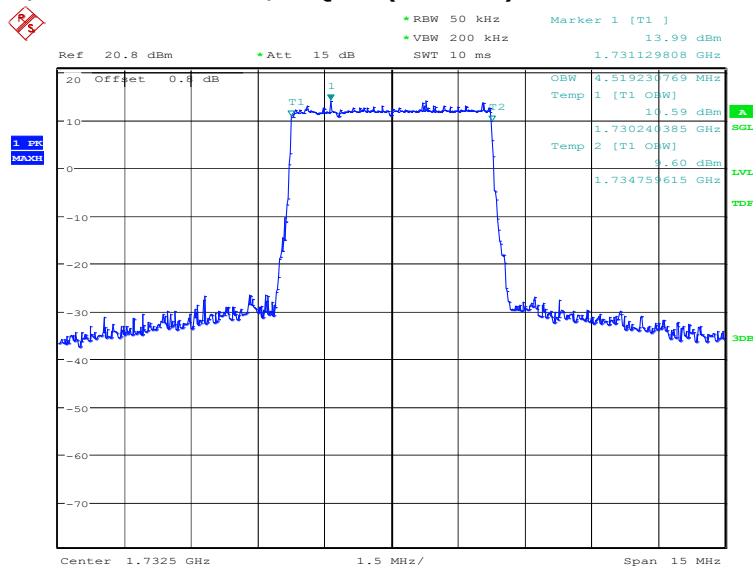
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	4495.19	4519.23

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



Date: 12.OCT.2022 14:30:58

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

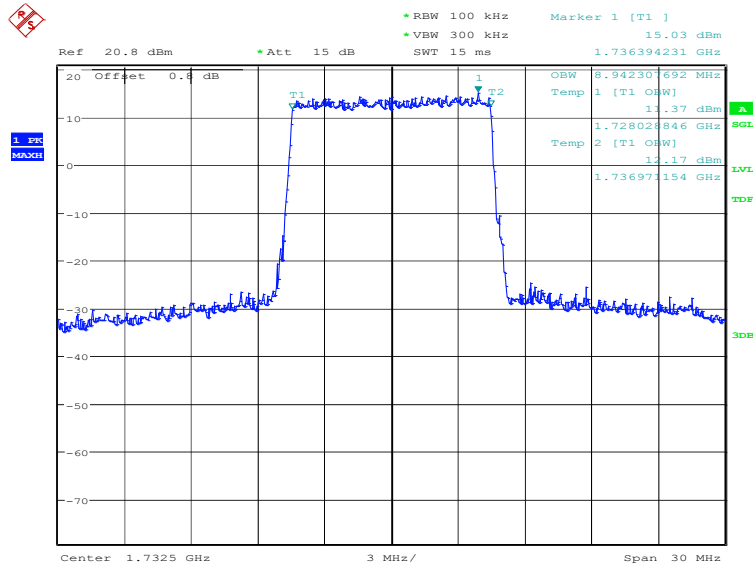


Date: 12.OCT.2022 14:31:38

LTE band 4, 10MHz (99%)

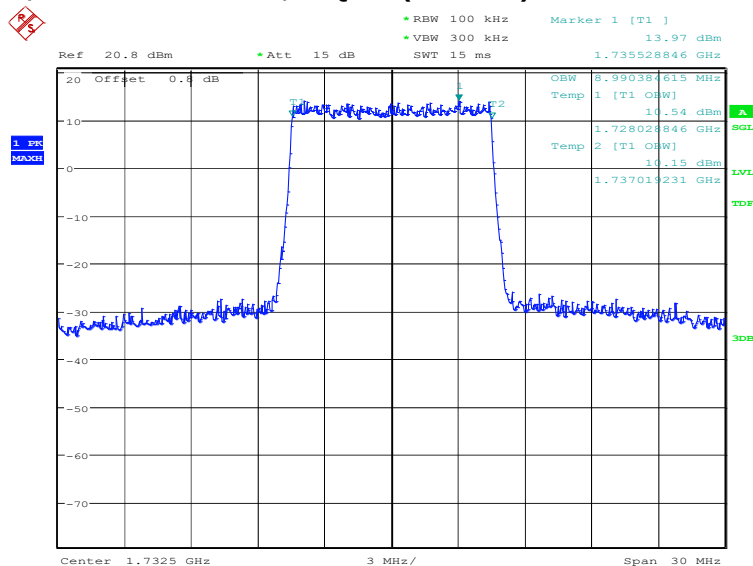
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	8942.31	8990.38

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



Date: 12.OCT.2022 14:32:19

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

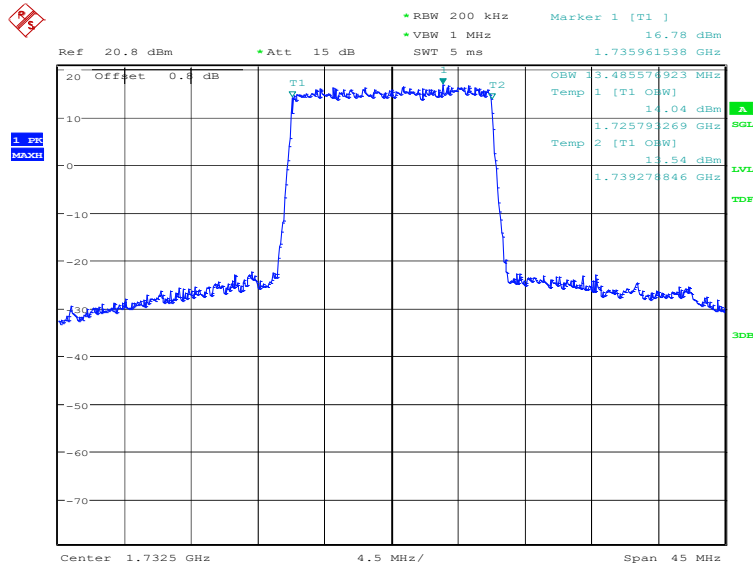


Date: 12.OCT.2022 14:32:59

LTE band 4, 15MHz (99%)

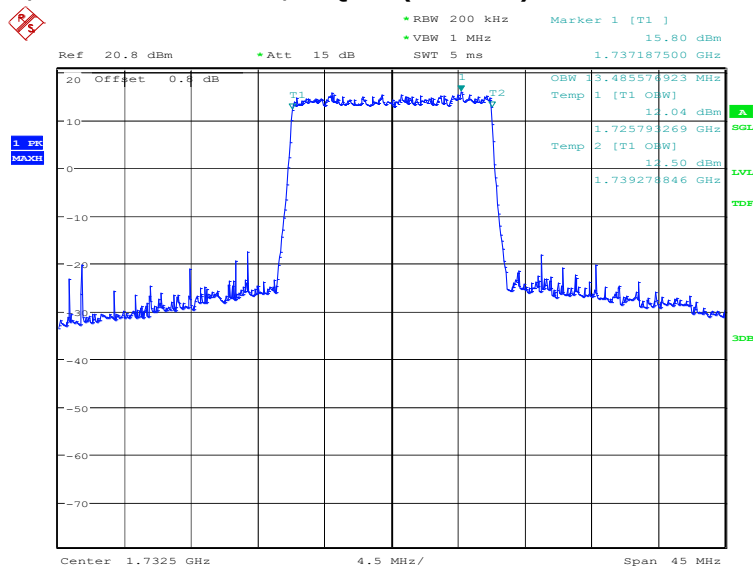
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 14:33:41

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

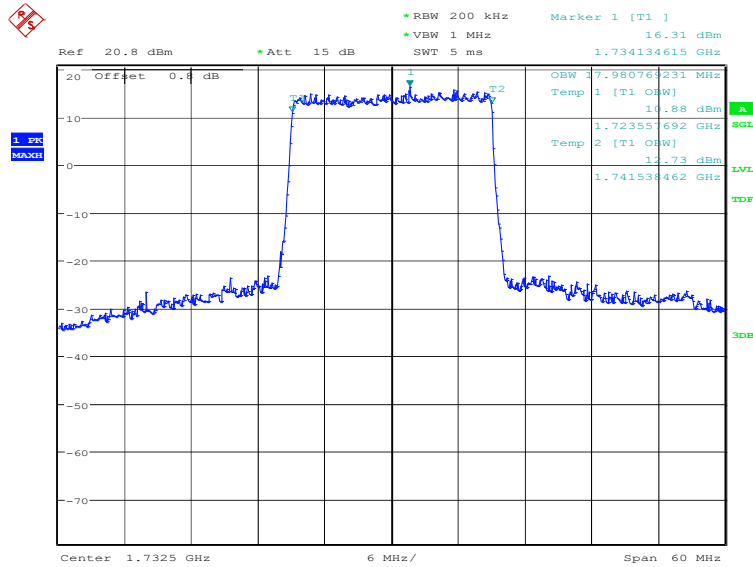


Date: 12.OCT.2022 14:34:21

LTE band 4, 20MHz (99%)

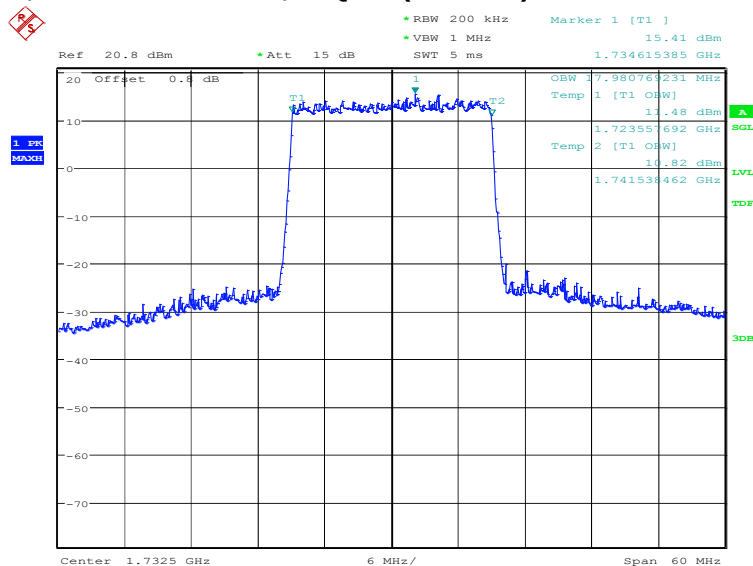
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1732.5	QPSK	16QAM
	17980.77	17980.77

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



Date: 12.OCT.2022 14:35:02

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

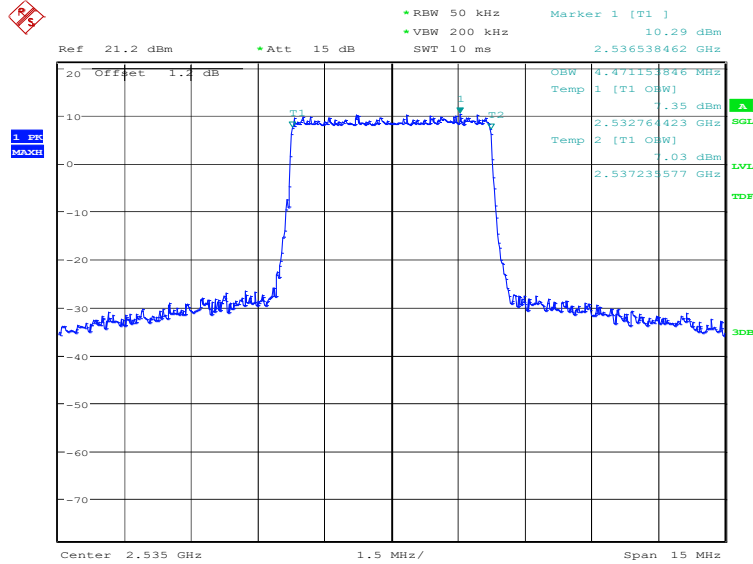


Date: 12.OCT.2022 14:35:42

LTE band 7, 5MHz (99%)

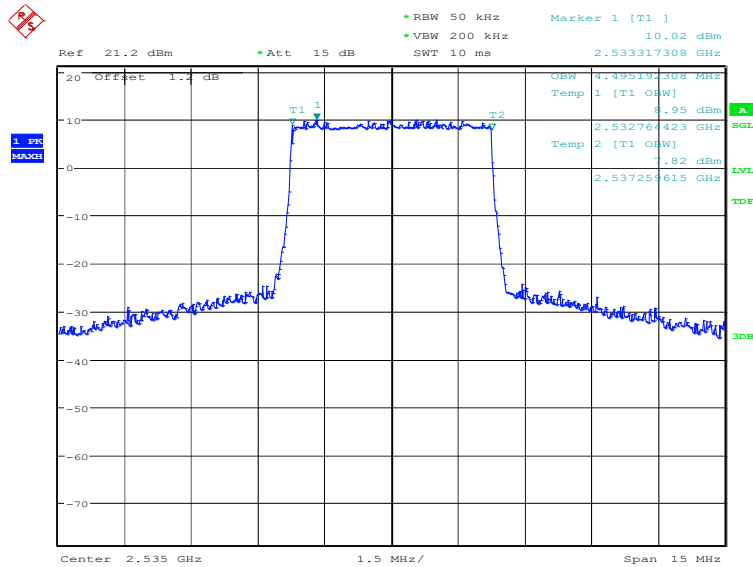
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	4471.15	4495.19

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



Date: 12.OCT.2022 14:41:51

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

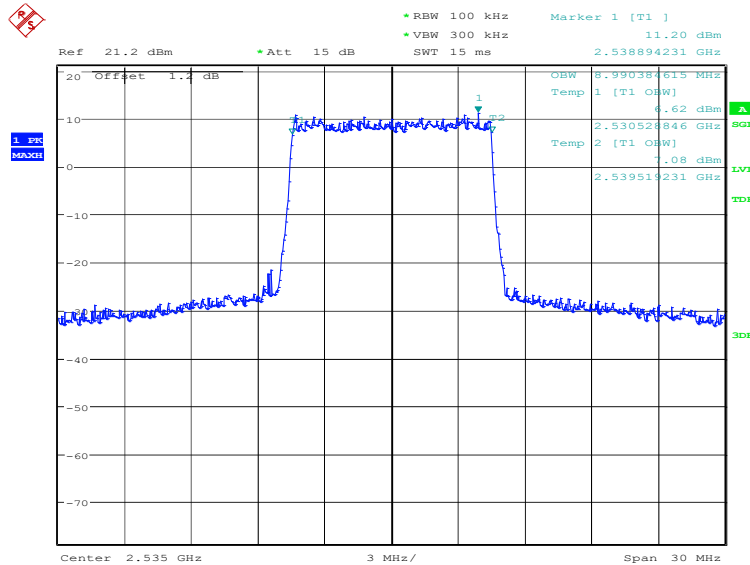


Date: 12.OCT.2022 14:42:31

LTE band 7, 10MHz (99%)

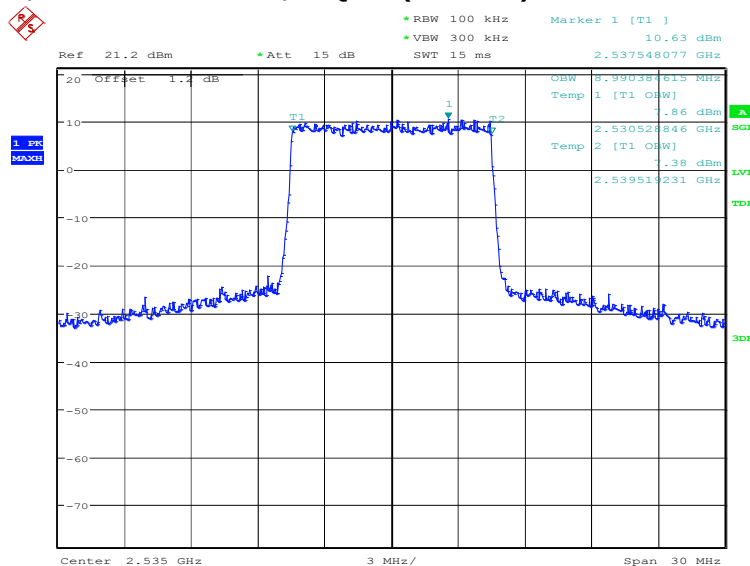
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	8990.38	8990.38

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



Date: 12.OCT.2022 14:43:13

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

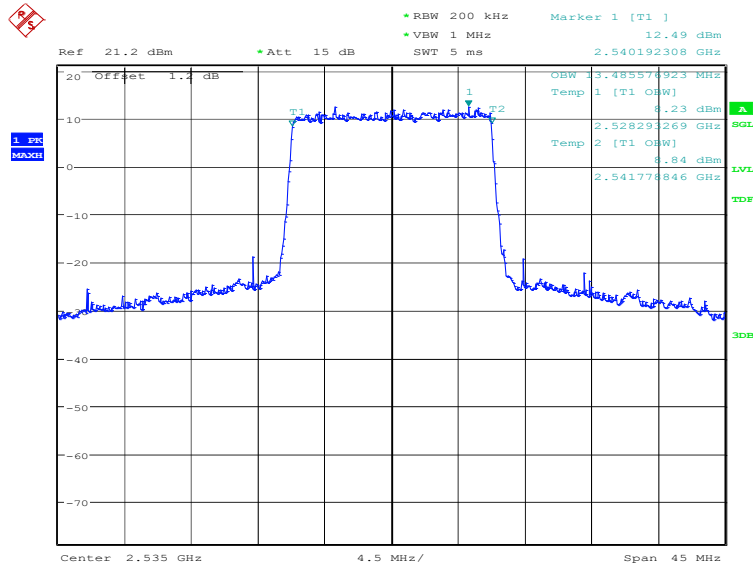


Date: 12.OCT.2022 14:43:52

LTE band 7, 15MHz (99%)

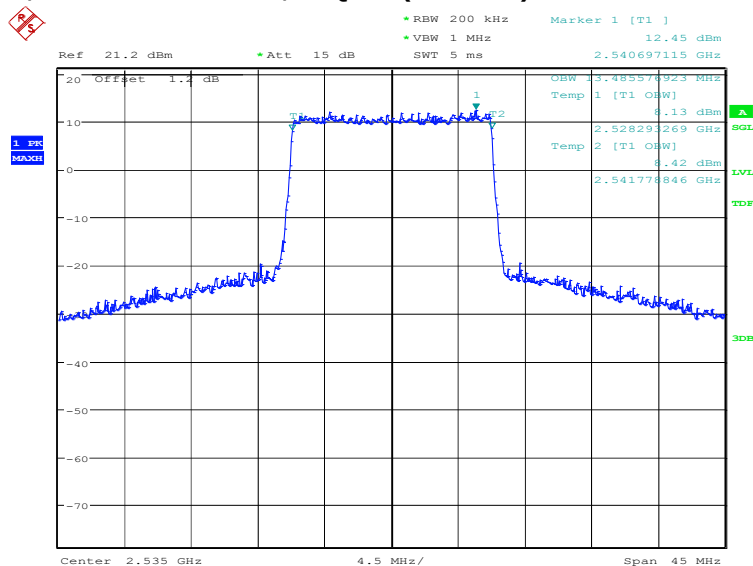
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 14:44:34

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

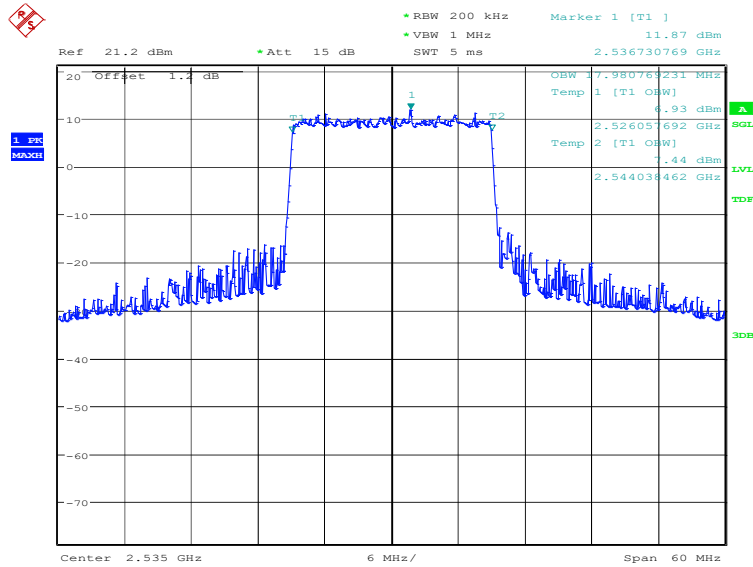


Date: 12.OCT.2022 14:45:14

LTE band 7, 20MHz (99%)

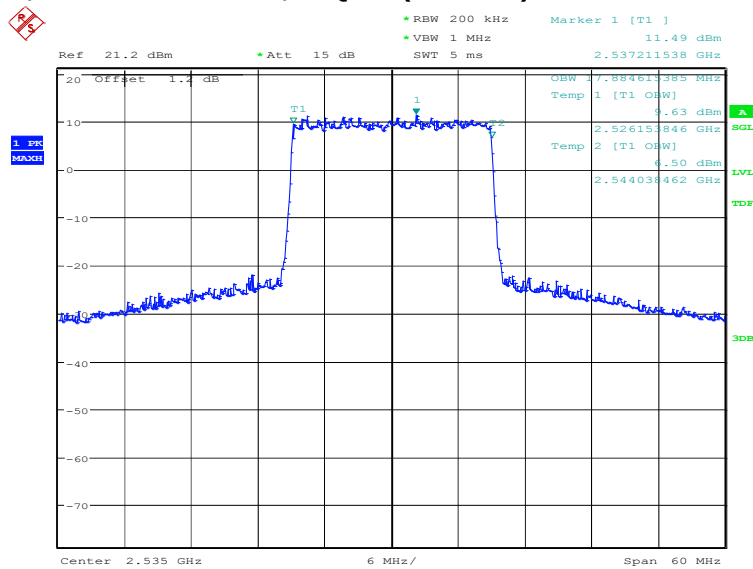
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2535.0	QPSK	16QAM
	17980.77	17884.62

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



Date: 12.OCT.2022 14:45:55

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

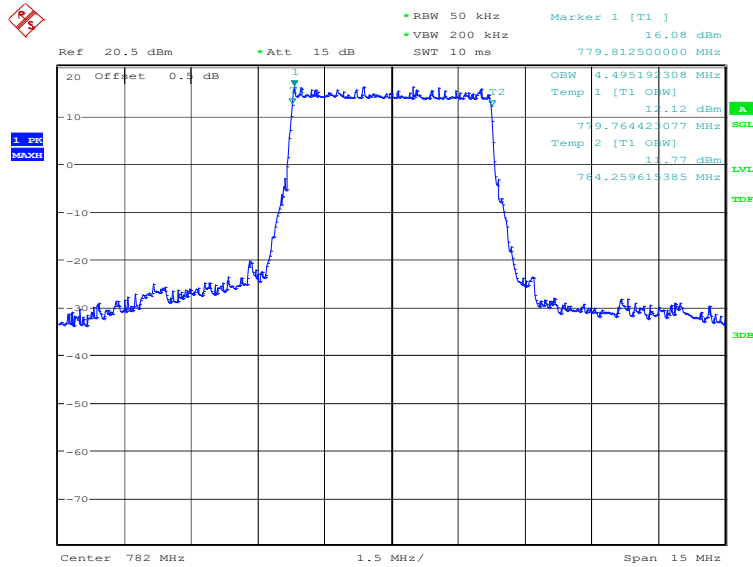


Date: 12.OCT.2022 14:46:35

LTE band 13, 5MHz (99%)

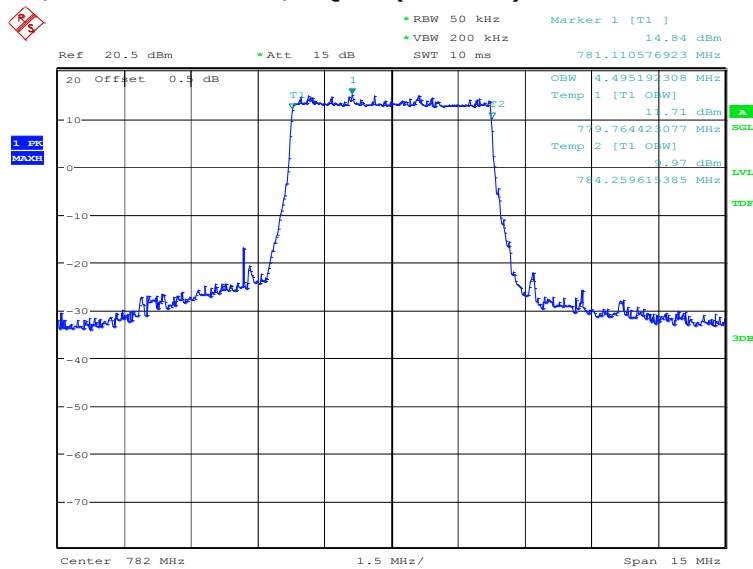
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
782.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 12.OCT.2022 14:48:13

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

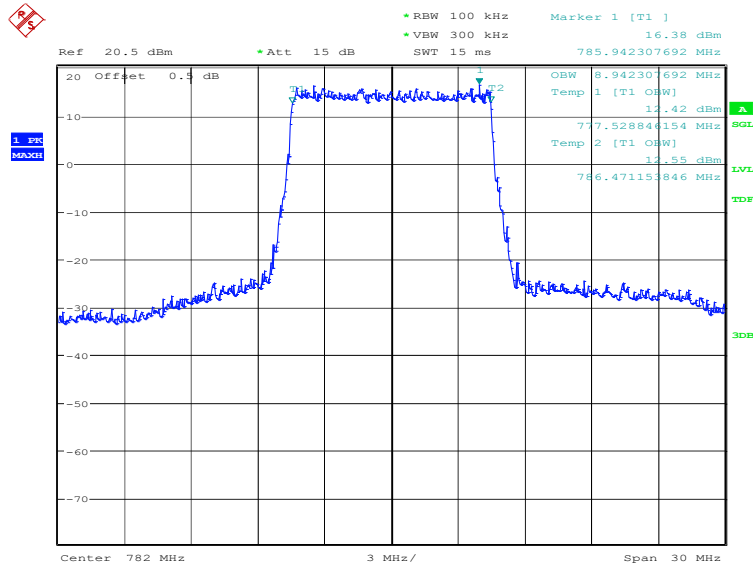


Date: 12.OCT.2022 14:48:53

LTE band 13, 10MHz (99%)

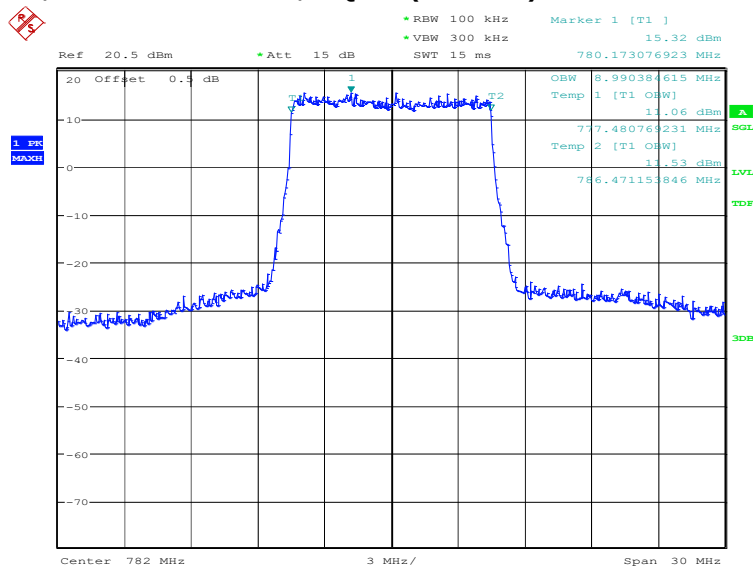
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
782.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 12.OCT.2022 14:49:34

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

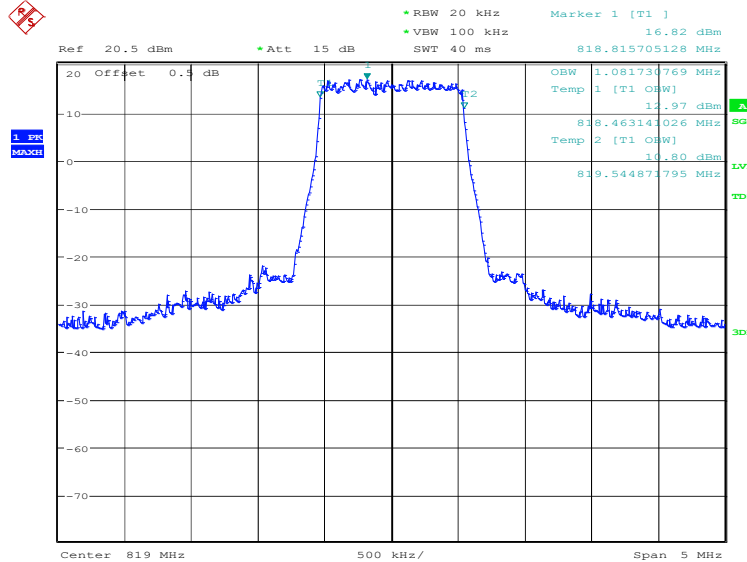


Date: 12.OCT.2022 14:50:14

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

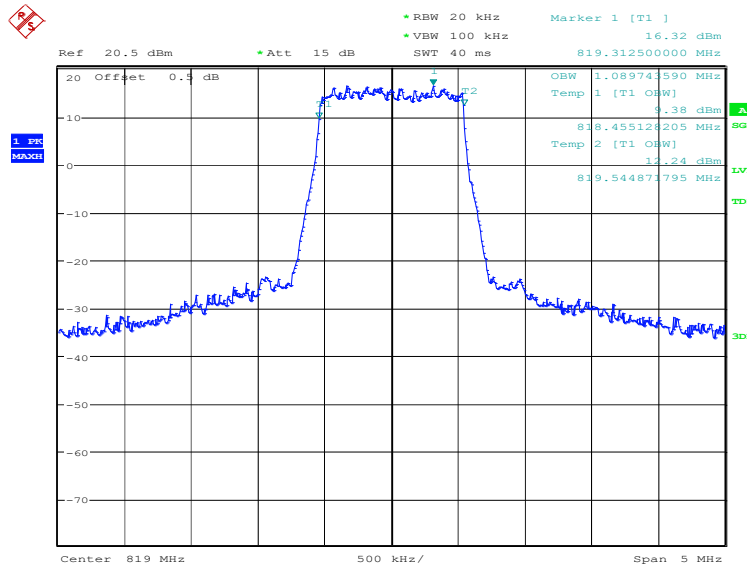
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	1081.73	1089.74

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



Date: 12.OCT.2022 14:58:26

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

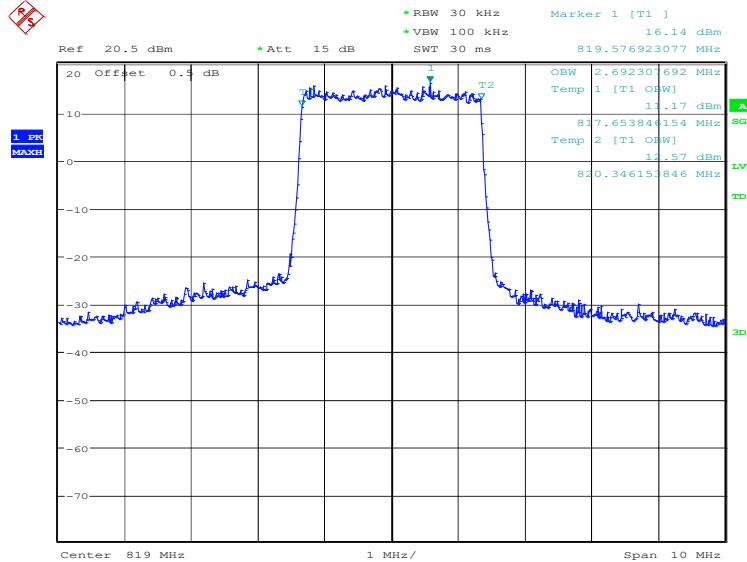


Date: 12.OCT.2022 14:59:06

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

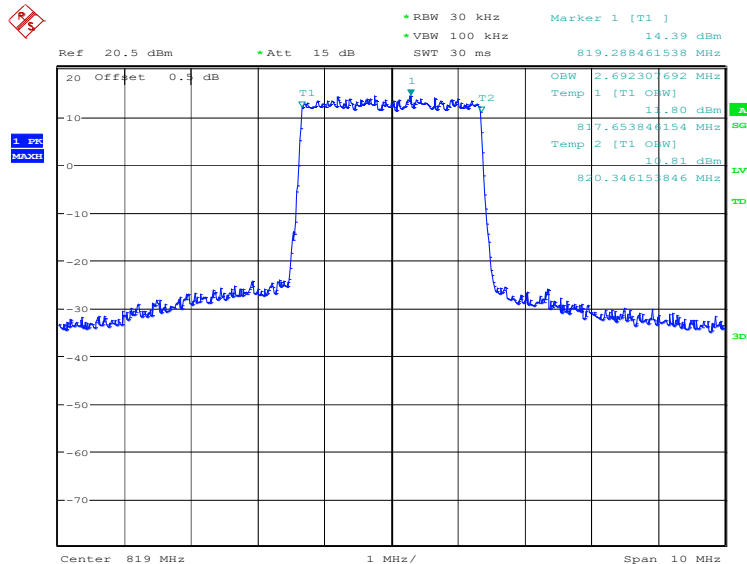
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 12.OCT.2022 14:59:47

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

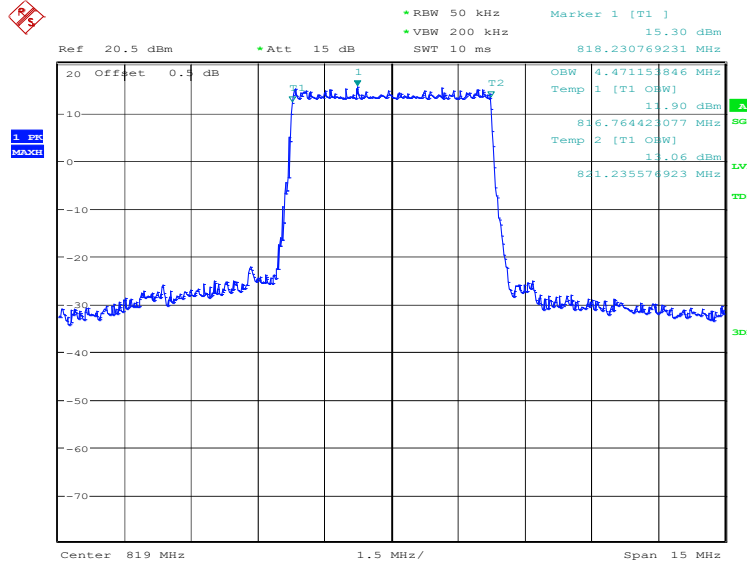


Date: 12.OCT.2022 15:00:27

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

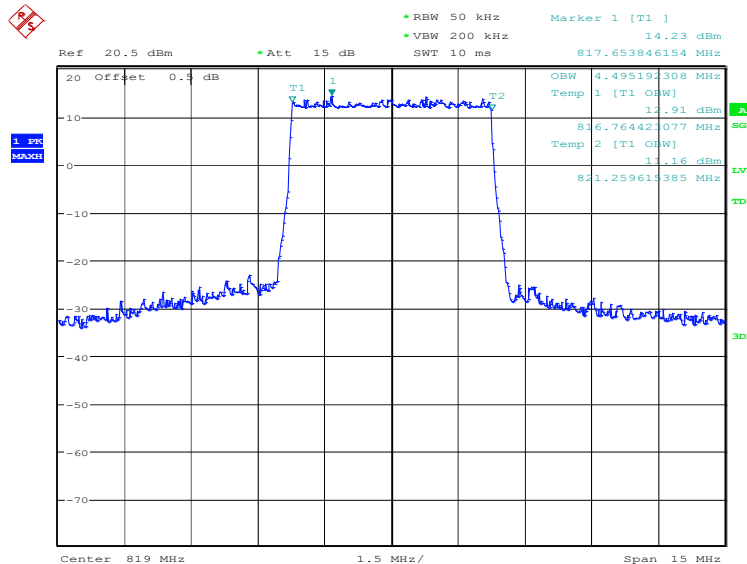
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	4471.15	4495.19

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



Date: 12.OCT.2022 15:01:09

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

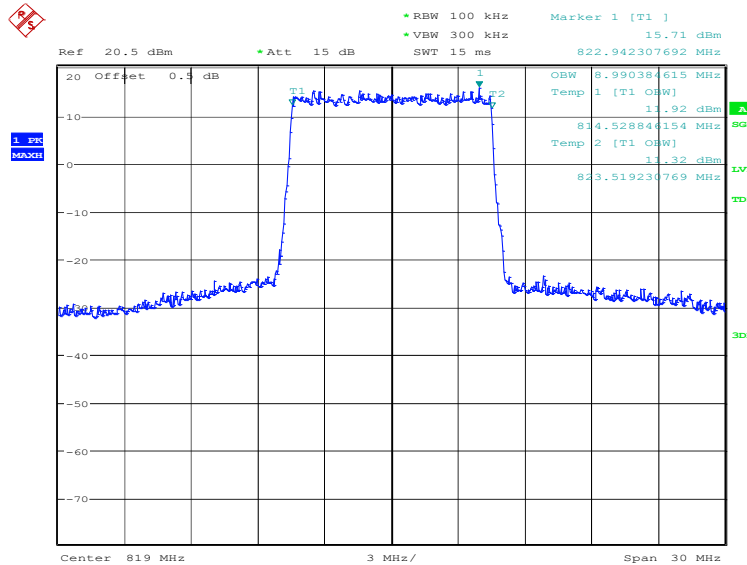


Date: 12.OCT.2022 15:01:49

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

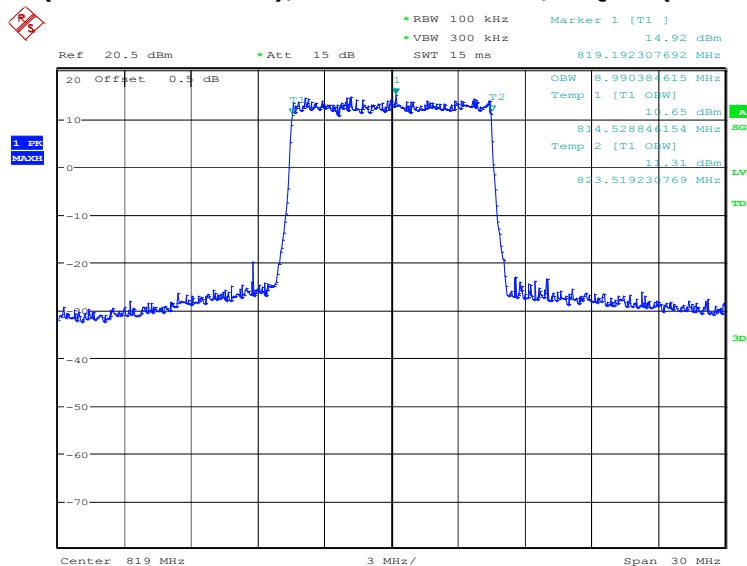
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
819.0	QPSK	16QAM
	8990.38	8990.38

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



Date: 12.OCT.2022 15:02:30

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

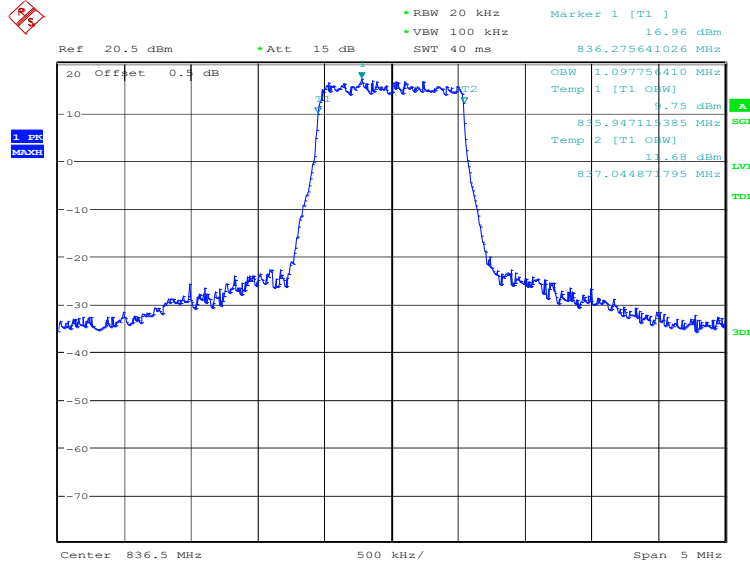


Date: 12.OCT.2022 15:03:10

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

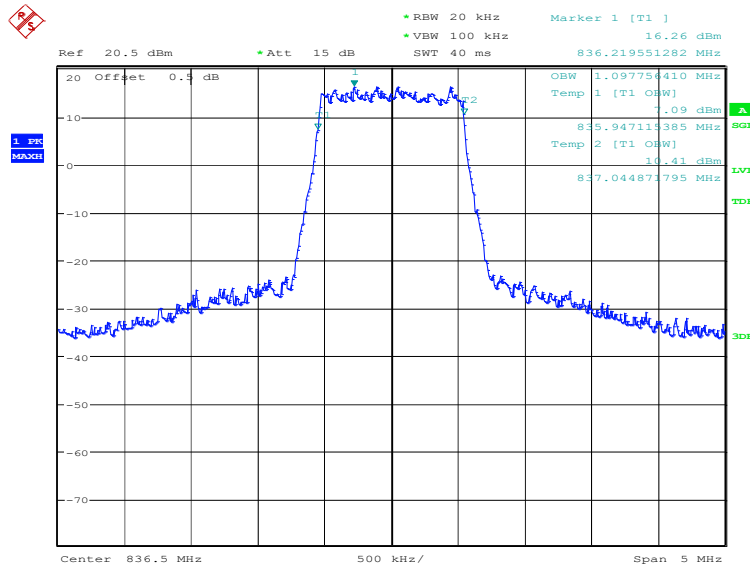
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	1097.76	1097.76

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



Date: 12.OCT.2022 14:50:57

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

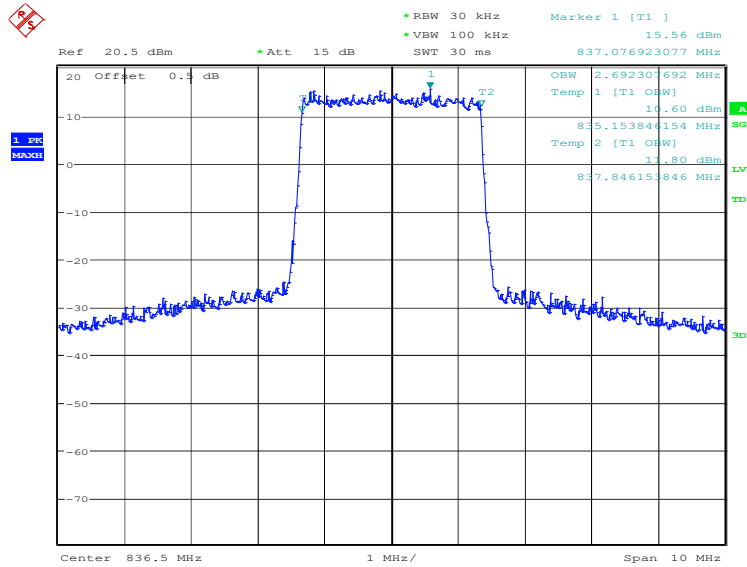


Date: 12.OCT.2022 14:51:37

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

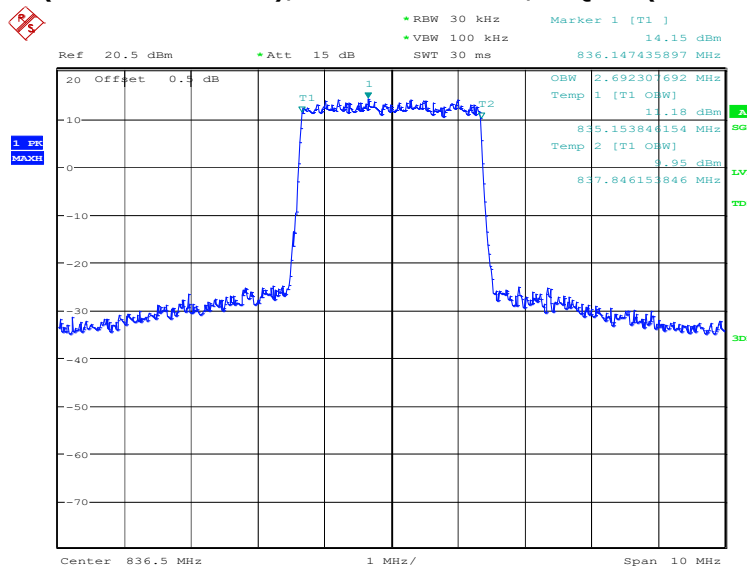
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	2692.31	2692.31

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



Date: 12.OCT.2022 14:52:18

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

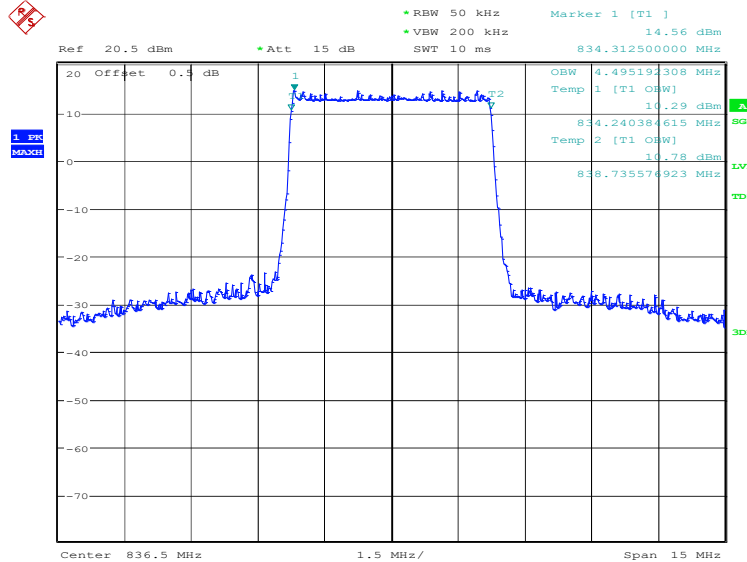


Date: 12.OCT.2022 14:52:58

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

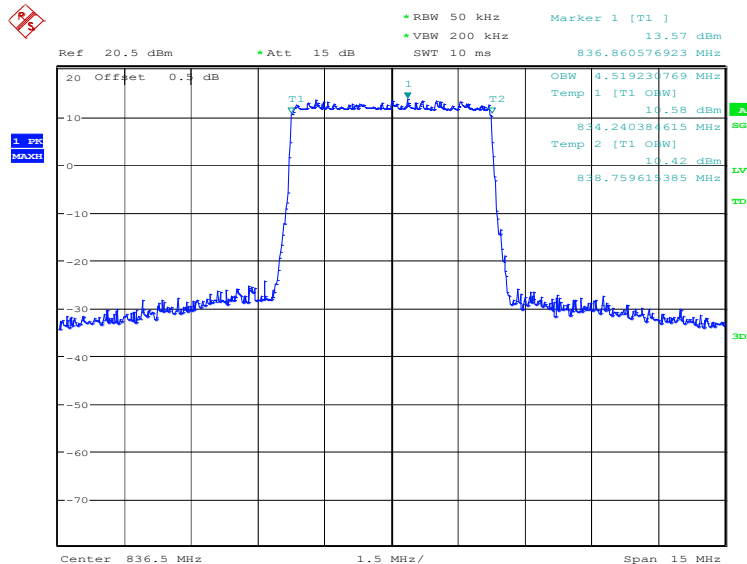
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	4495.19	4519.23

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



Date: 12.OCT.2022 14:53:40

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

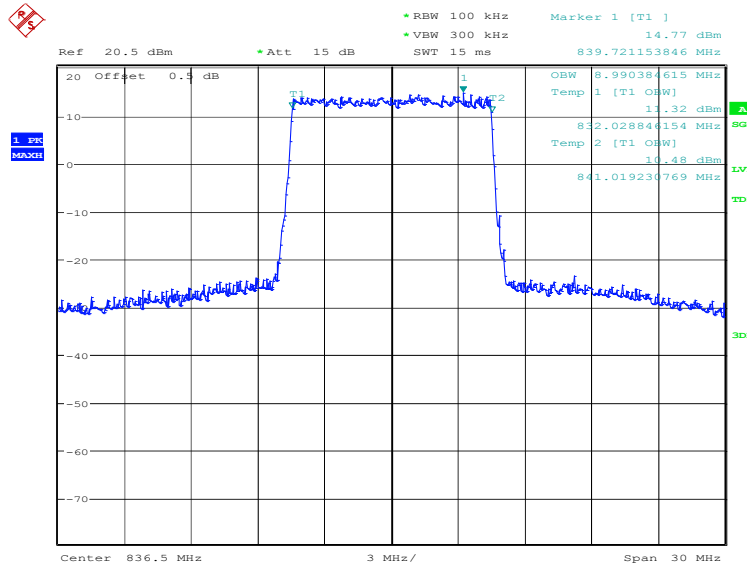


Date: 12.OCT.2022 14:54:20

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

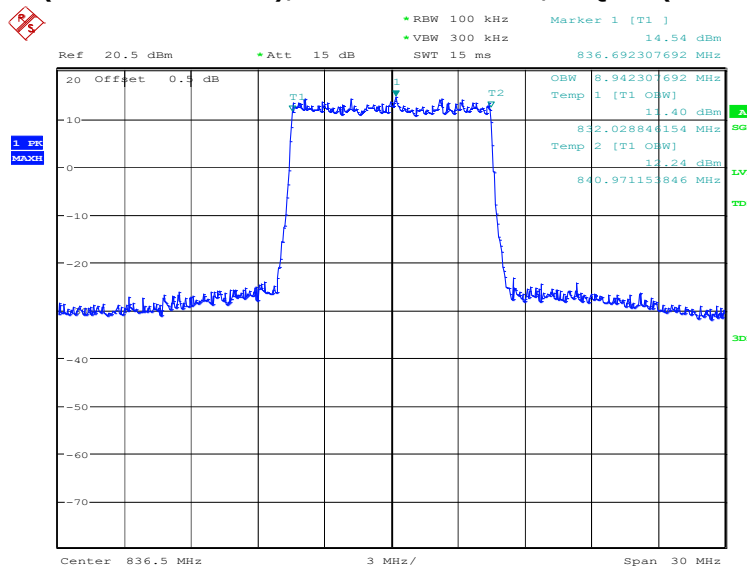
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	8990.38	8942.31

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



Date: 12.OCT.2022 14:55:01

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

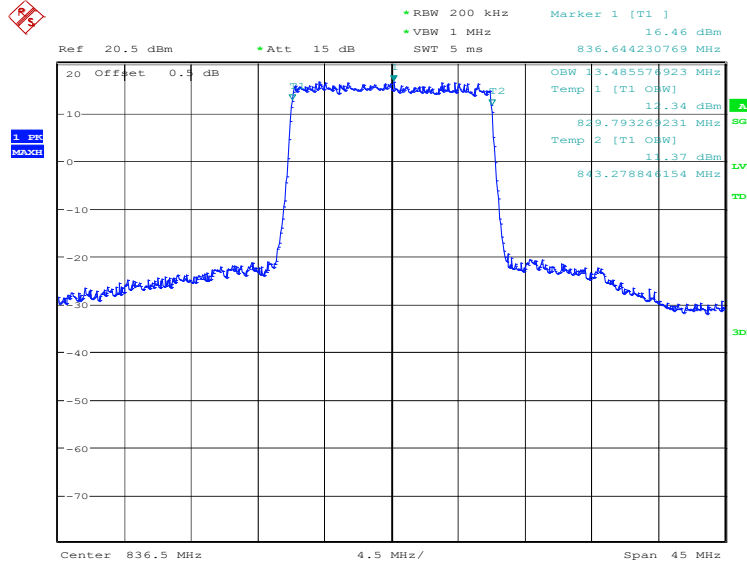


Date: 12.OCT.2022 14:55:41

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

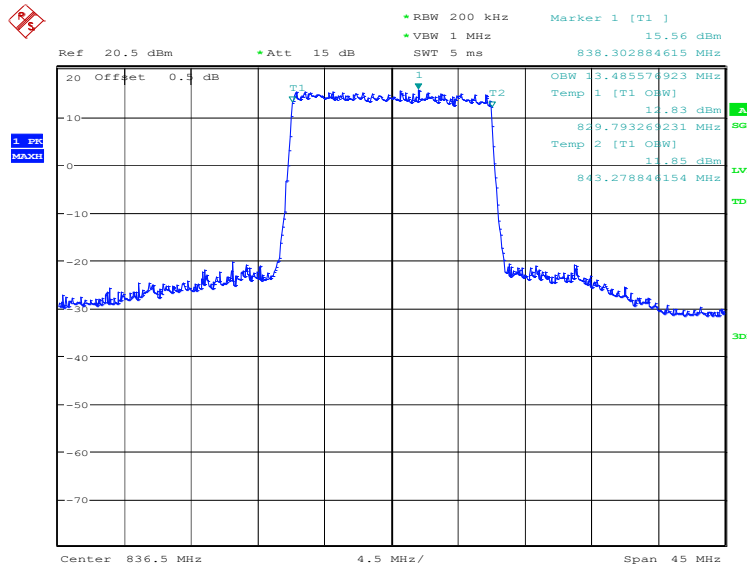
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
836.5	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 14:56:23

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

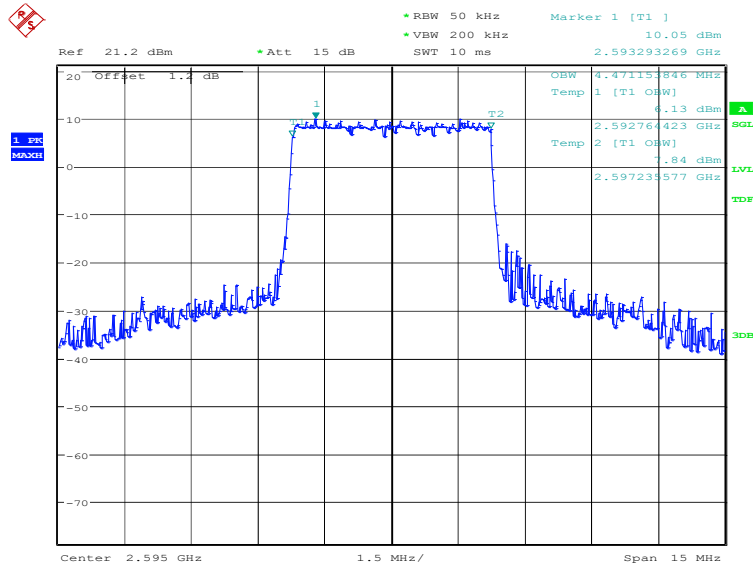


Date: 12.OCT.2022 14:57:03

LTE band 38, 5MHz (99%)

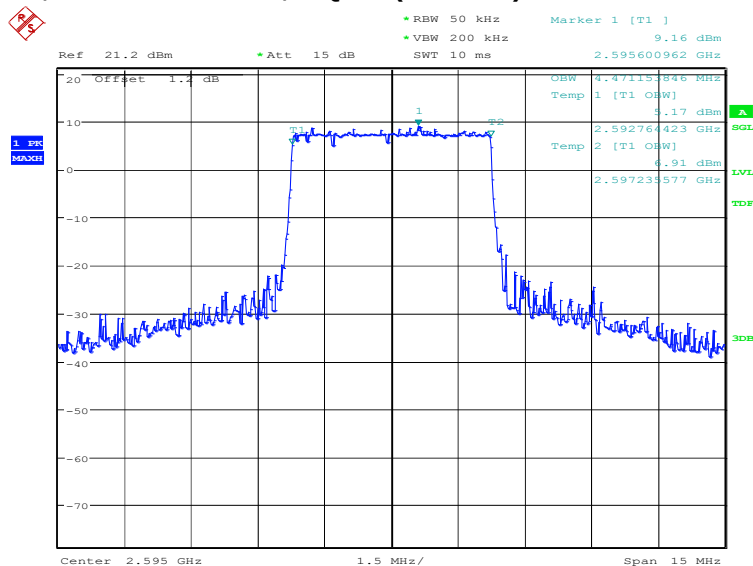
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2595.0	QPSK	16QAM
	4471.15	4471.15

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



Date: 12.OCT.2022 15:12:49

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

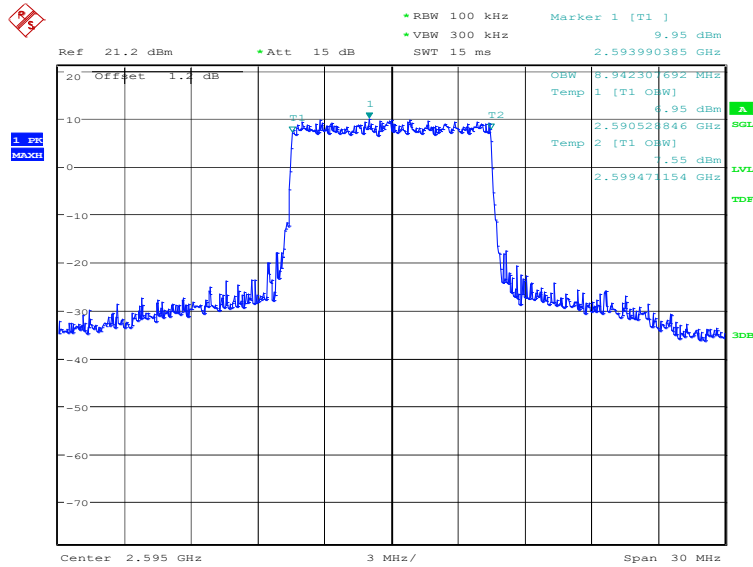


Date: 12.OCT.2022 15:13:29

LTE band 38, 10MHz (99%)

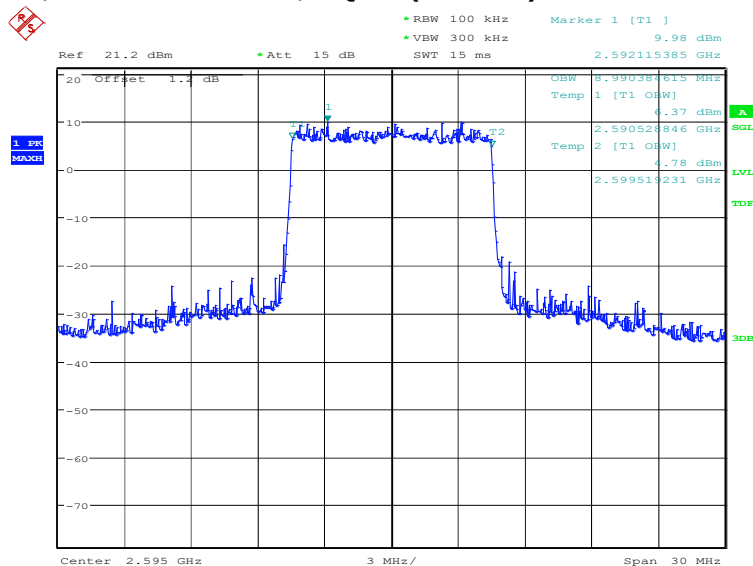
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2595.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 12.OCT.2022 15:14:11

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

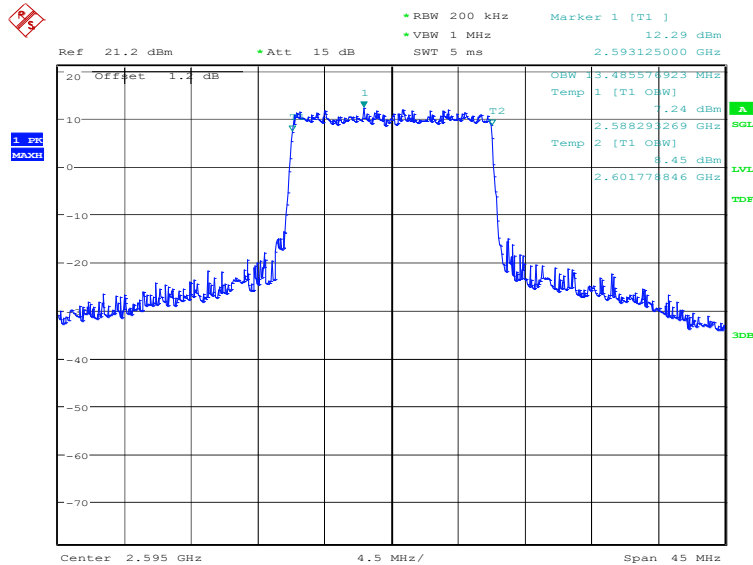


Date: 12.OCT.2022 15:14:51

LTE band 38,15MHz (99%)

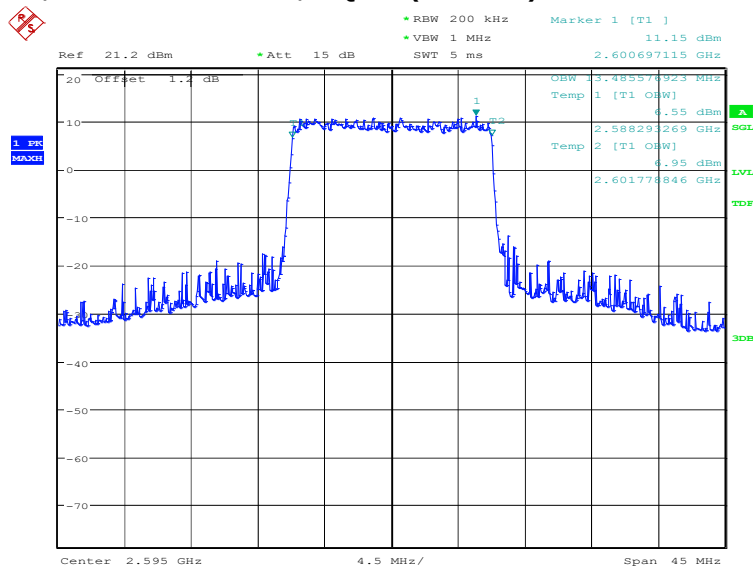
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2595.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 15:15:33

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

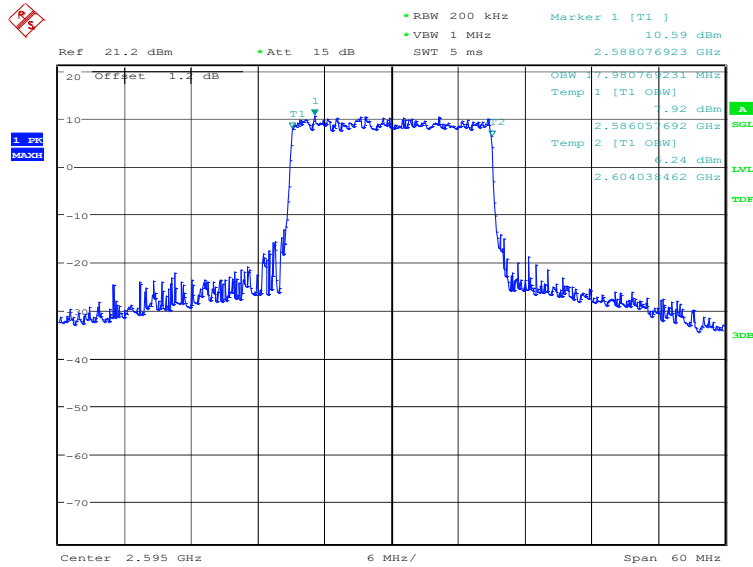


Date: 12.OCT.2022 15:16:13

LTE band 38, 20MHz (99%)

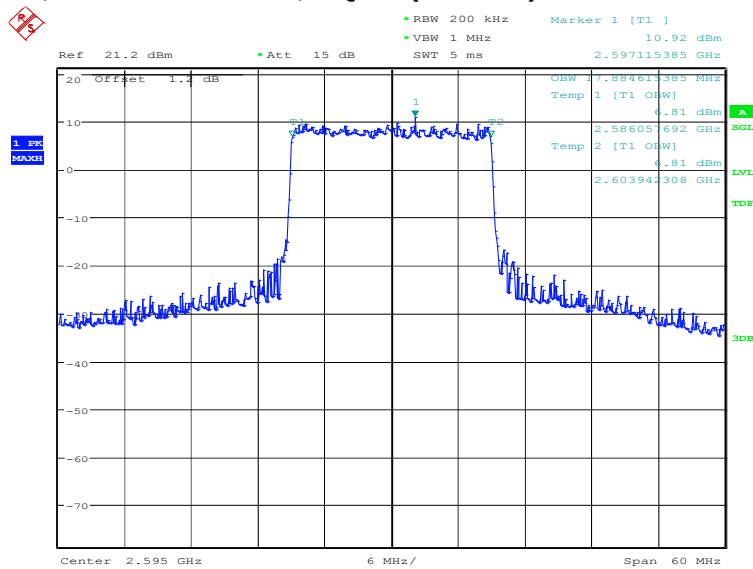
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
2595.0	QPSK	16QAM
	17980.77	17884.62

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



Date: 12.OCT.2022 15:16:55

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

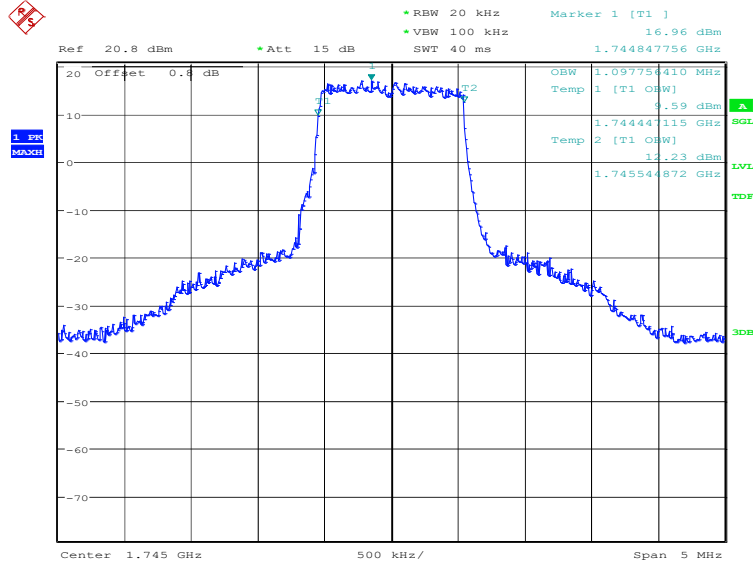


Date: 12.OCT.2022 15:17:35

LTE band 66, 1.4MHz (99%)

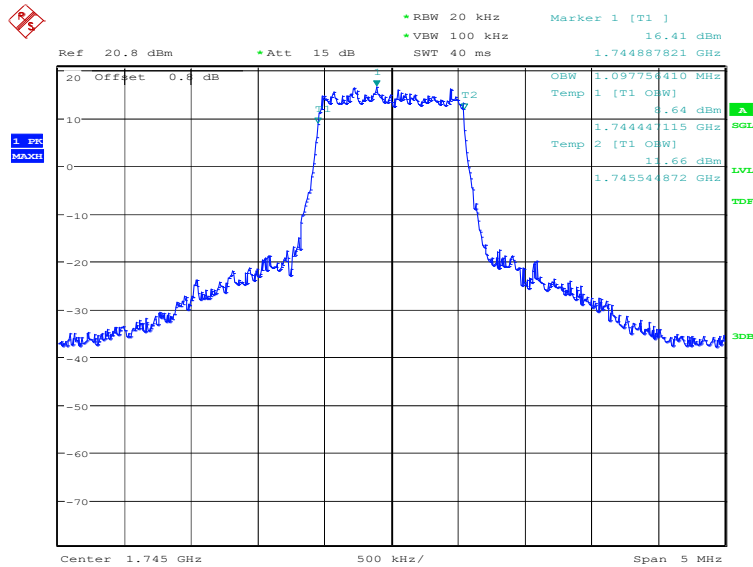
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	1097.76	1097.76

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



Date: 12.OCT.2022 15:03:53

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

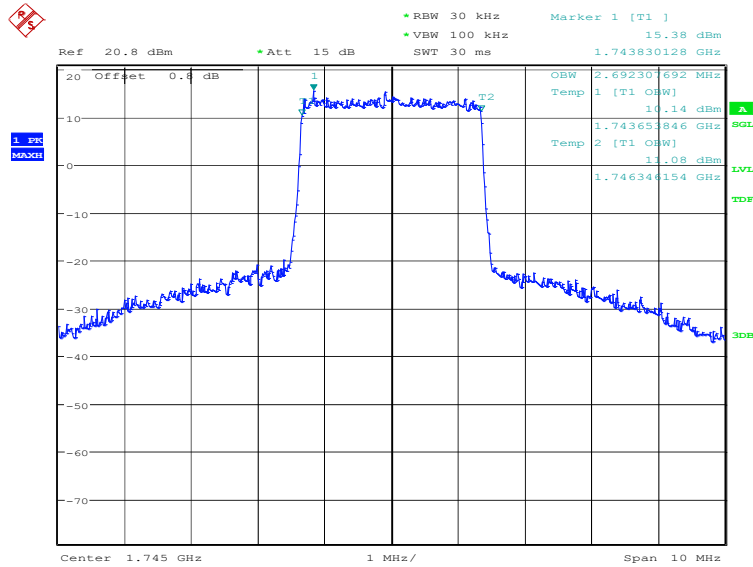


Date: 12.OCT.2022 15:04:33

LTE band 66, 3MHz (99%)

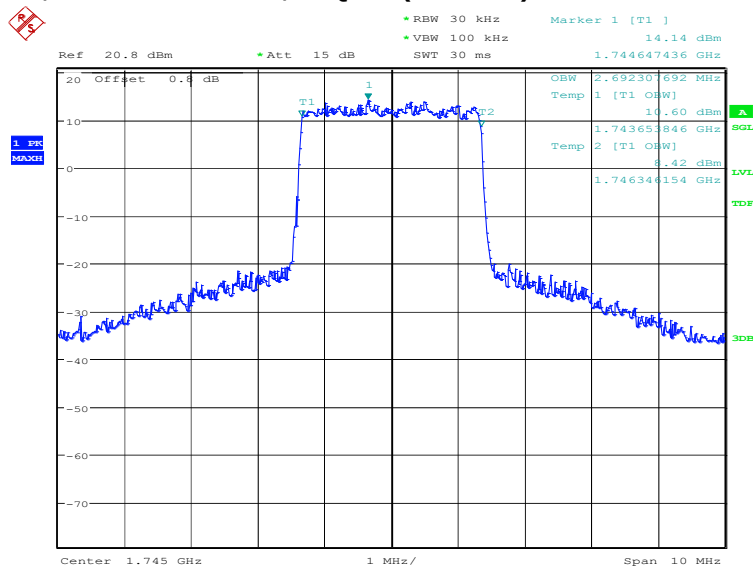
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	2692.31	2692.31

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



Date: 12.OCT.2022 15:05:15

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

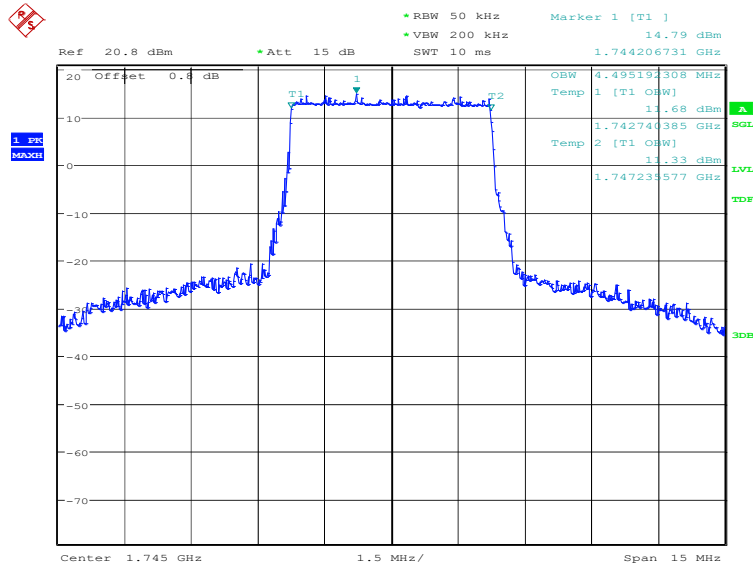


Date: 12.OCT.2022 15:05:55

LTE band 66, 5MHz (99%)

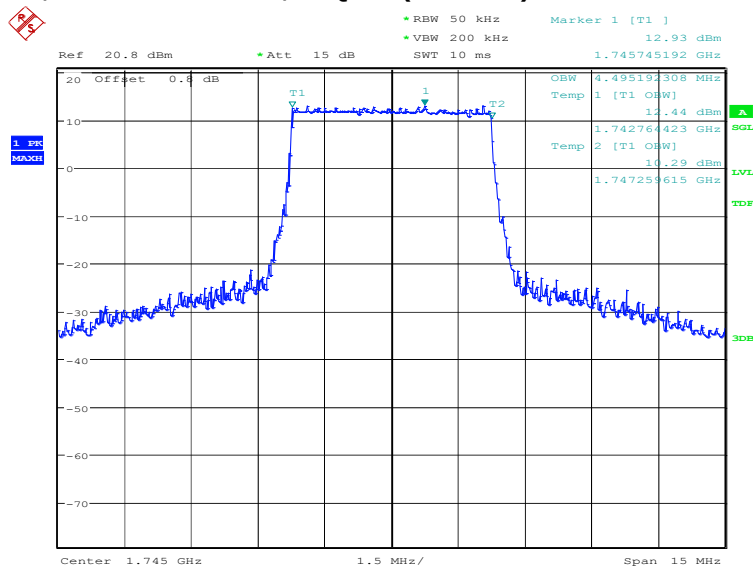
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	4495.19	4495.19

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



Date: 12.OCT.2022 15:06:36

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

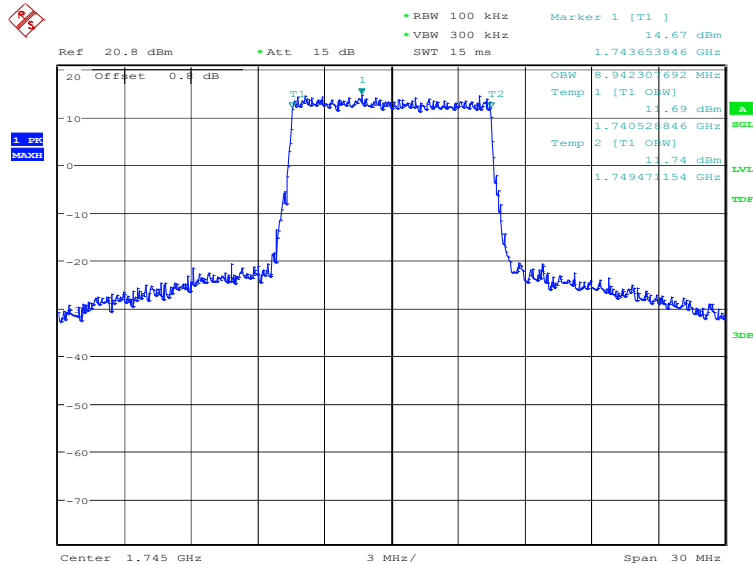


Date: 12.OCT.2022 15:07:16

LTE band 66, 10MHz (99%)

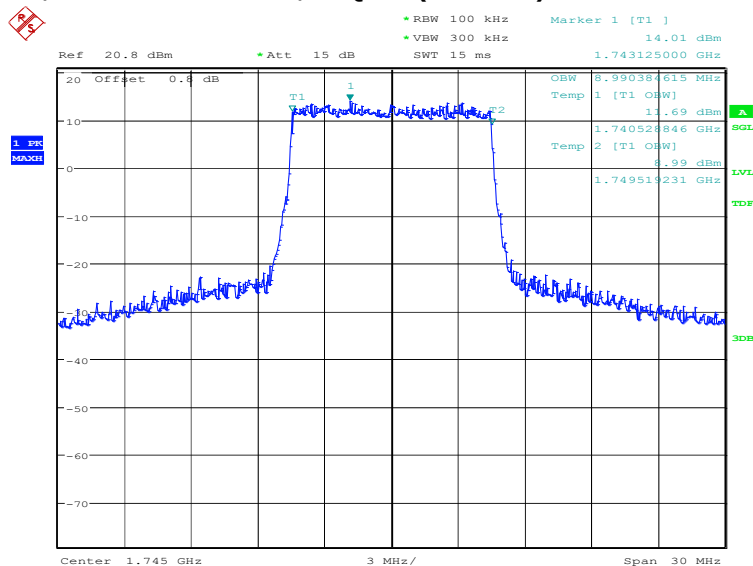
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	8942.31	8990.38

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



Date: 12.OCT.2022 15:07:58

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

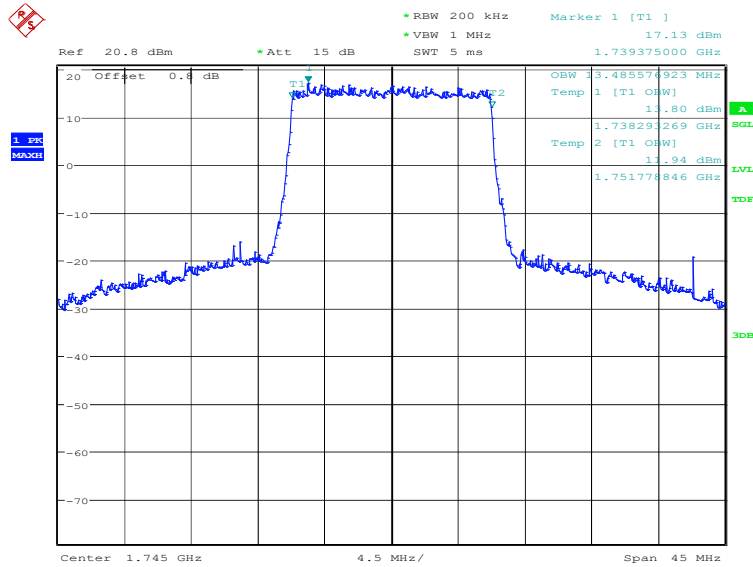


Date: 12.OCT.2022 15:08:38

LTE band 66, 15MHz (99%)

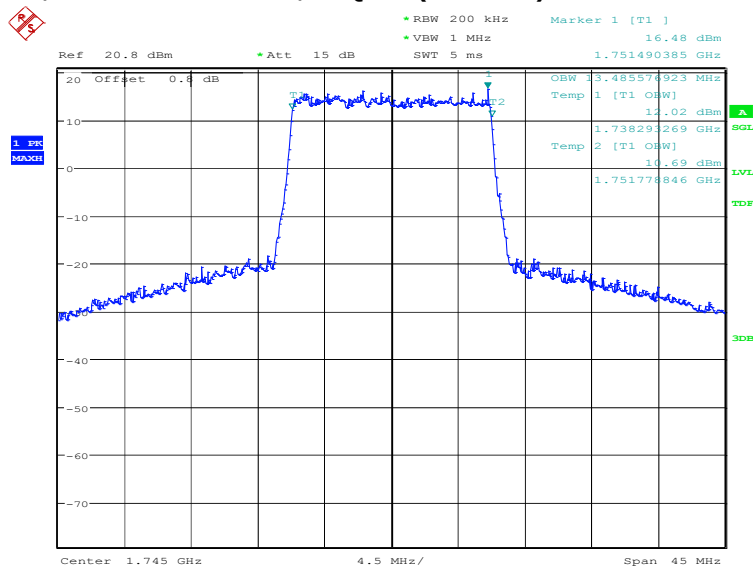
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	13485.58	13485.58

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



Date: 12.OCT.2022 15:09:20

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

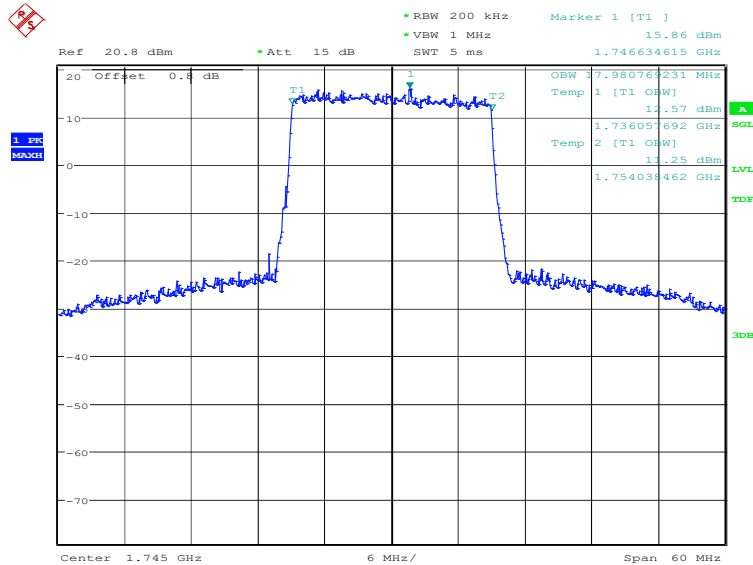


Date: 12.OCT.2022 15:10:00

LTE band 66, 20MHz (99%)

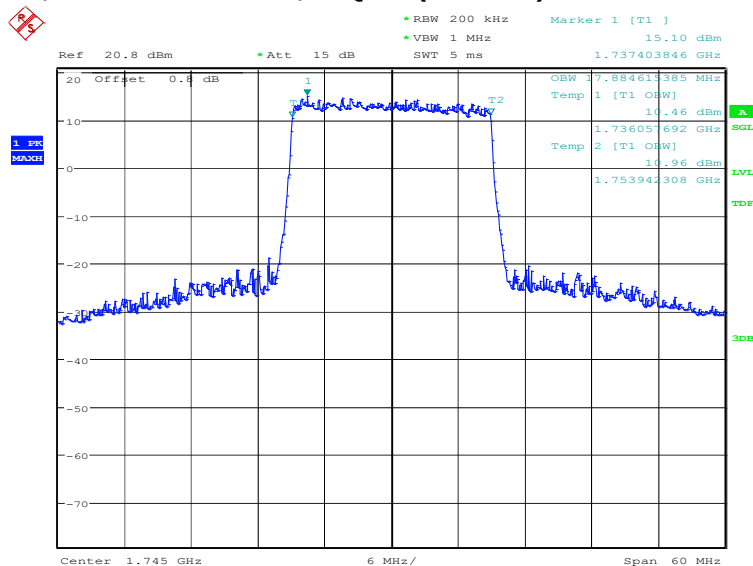
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)	
1745.0	QPSK	16QAM
	17980.77	17884.62

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



Date: 12.OCT.2022 15:10:42

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



Date: 12.OCT.2022 15:11:22

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.

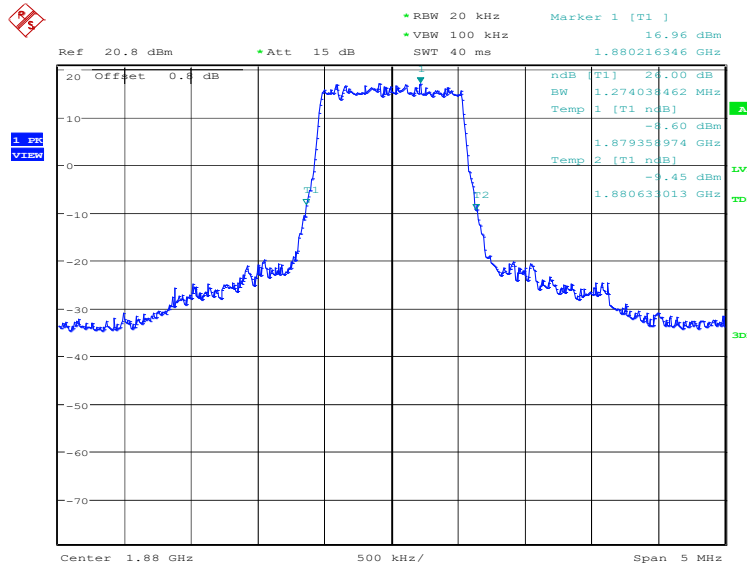
The measurement method is from ANSI C63.26:

- 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 2, 1.4MHz (-26dBc)

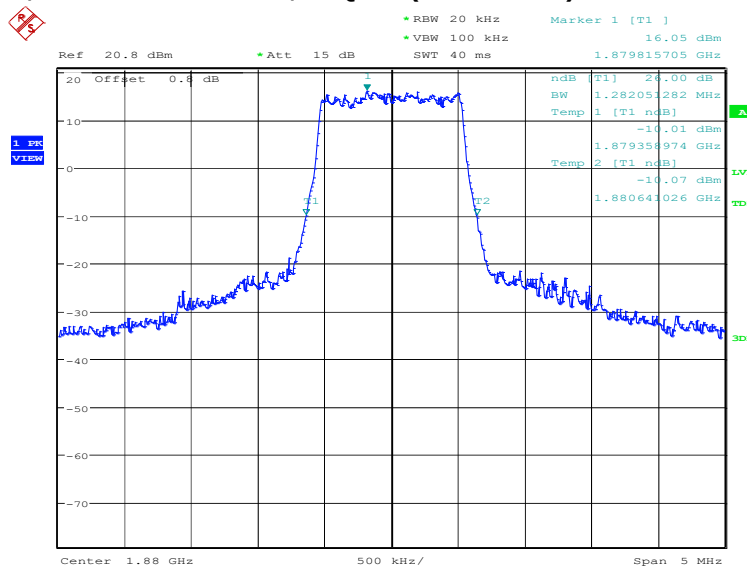
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	1274.04	1282.05

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



Date: 12.OCT.2022 15:19:04

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

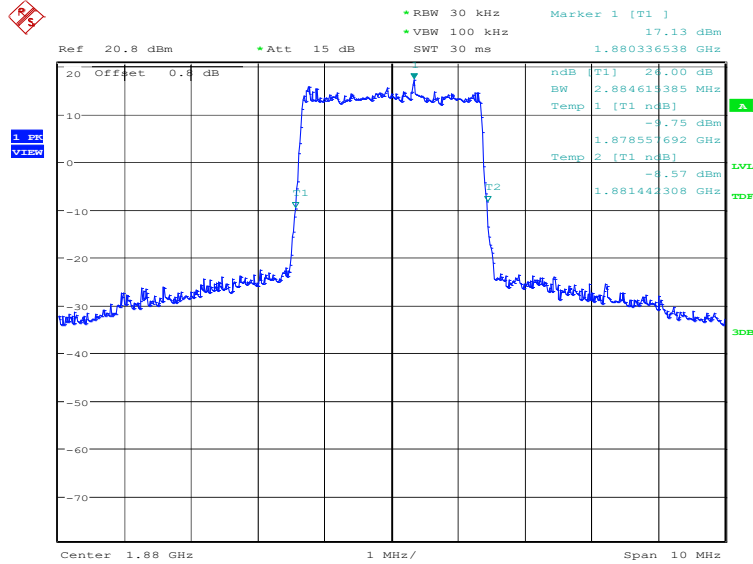


Date: 12.OCT.2022 15:19:44

LTE band 2, 3MHz (-26dBc)

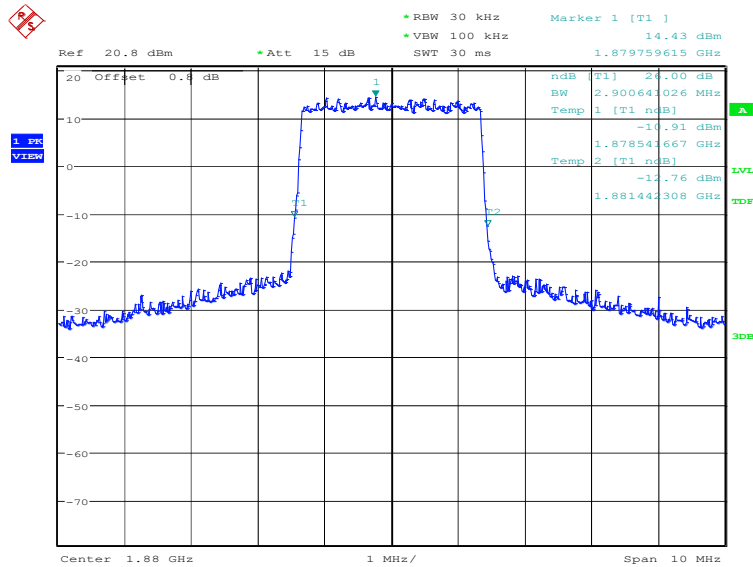
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	2884.62	2900.64

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



Date: 12.OCT.2022 15:20:26

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

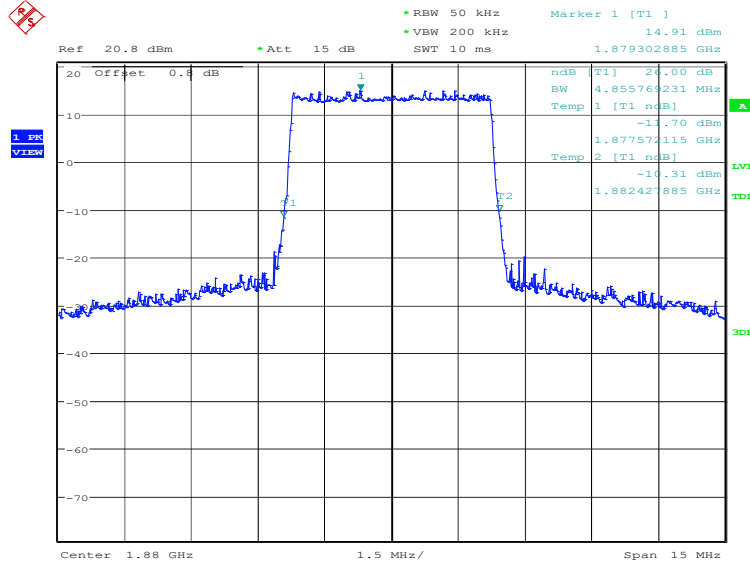


Date: 12.OCT.2022 15:21:06

LTE band 2, 5MHz (-26dBc)

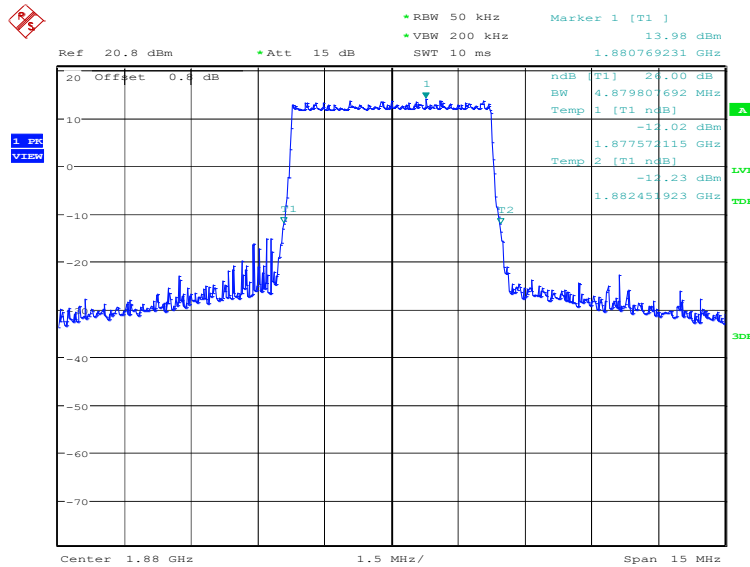
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	4855.77	4879.81

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



Date: 12.OCT.2022 15:21:48

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

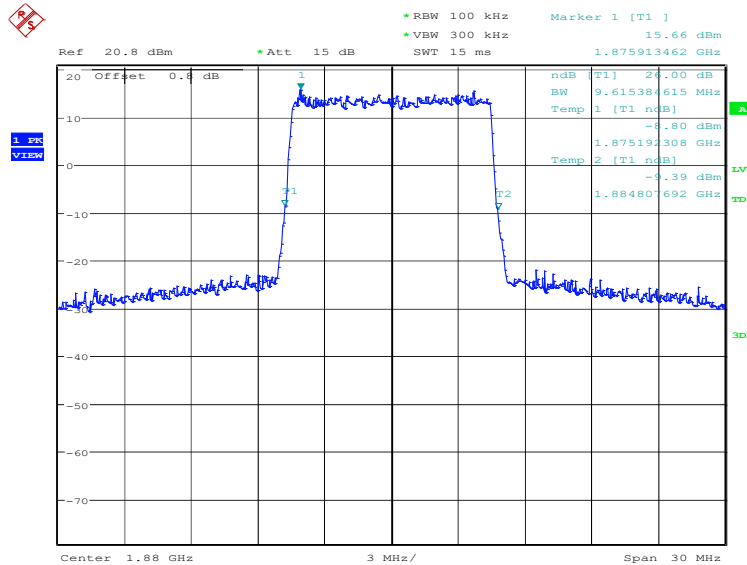


Date: 12.OCT.2022 15:22:29

LTE band 2, 10MHz (-26dBc)

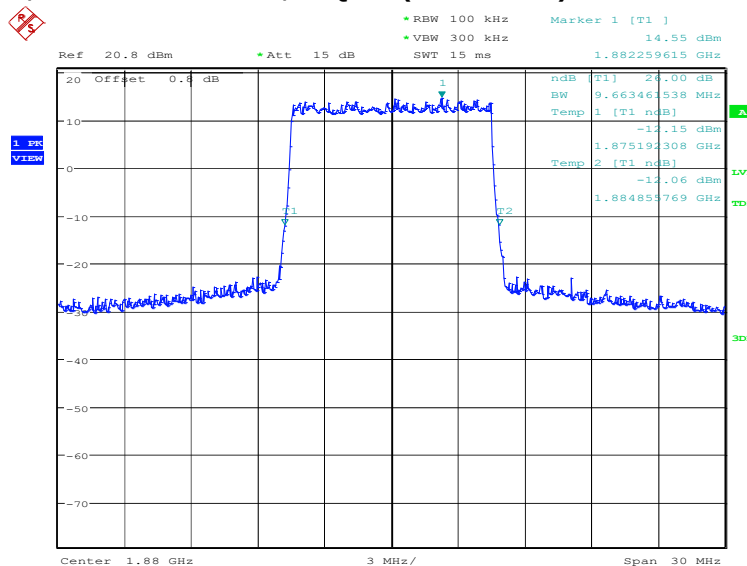
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	9615.38	9663.46

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



Date: 12.OCT.2022 15:23:11

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

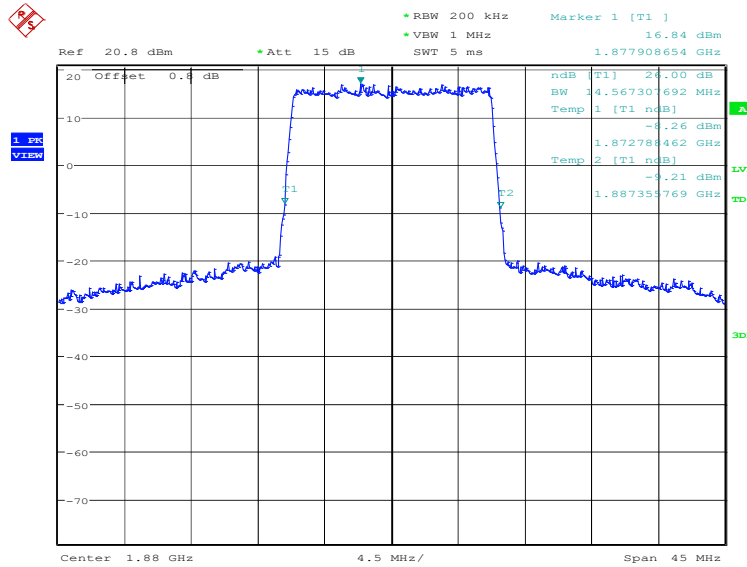


Date: 12.OCT.2022 15:23:51

LTE band 2, 15MHz (-26dBc)

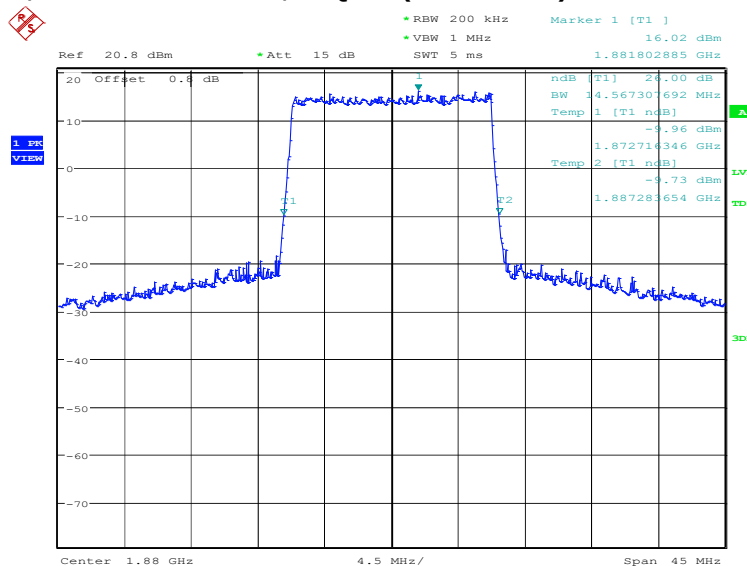
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	14567.31	14567.31

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



Date: 12.OCT.2022 15:24:33

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

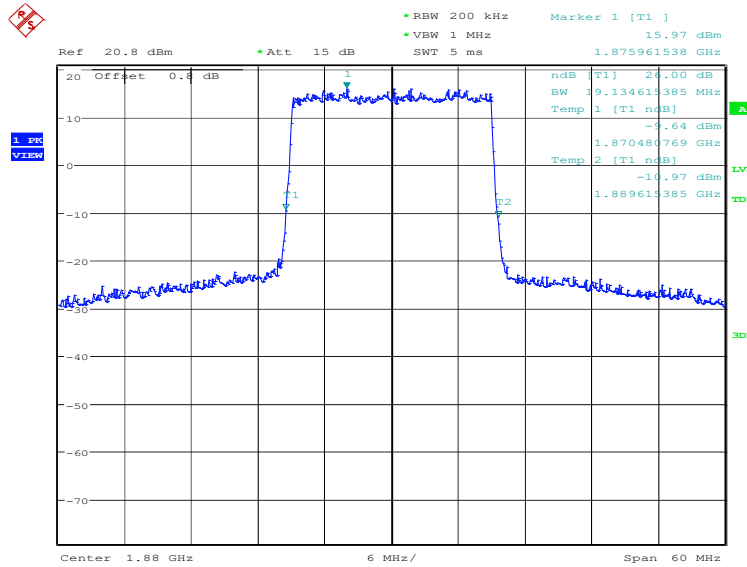


Date: 12.OCT.2022 15:25:14

LTE band 2, 20MHz (-26dBc)

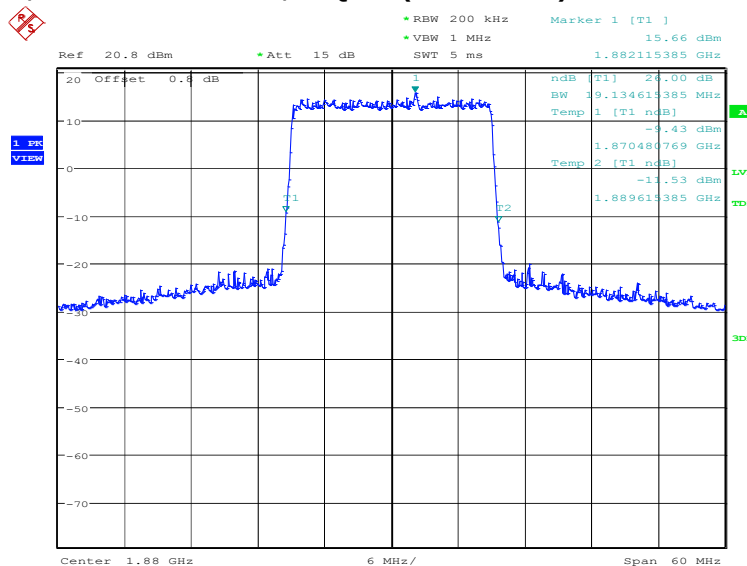
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1880.0	QPSK	16QAM
	19134.62	19134.62

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



Date: 12.OCT.2022 15:25:55

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

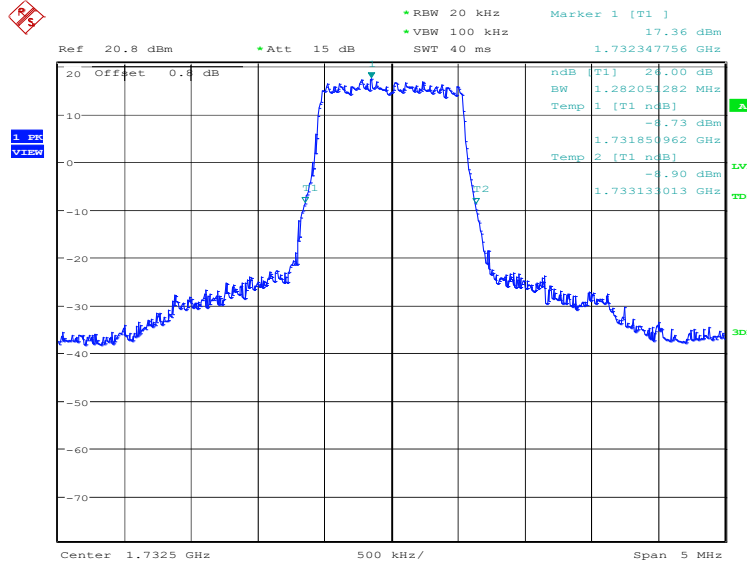


Date: 12.OCT.2022 15:26:36

LTE band 4, 1.4MHz (-26dBc)

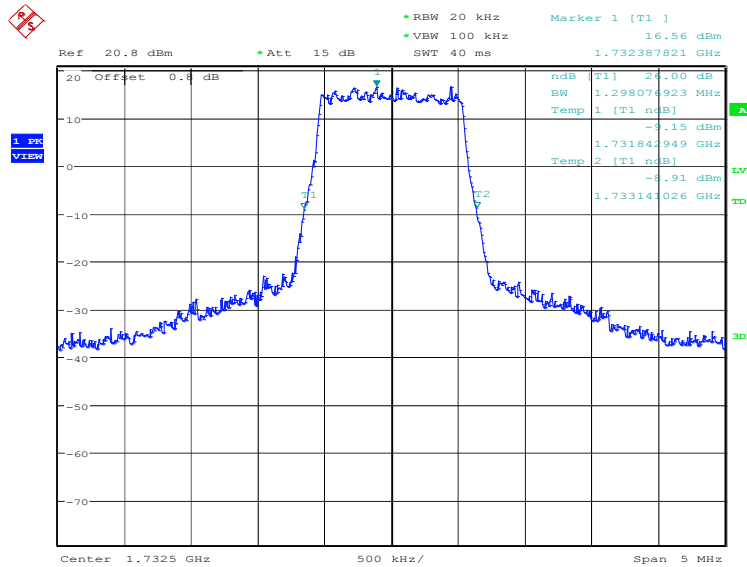
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	1282.05	1298.08

LTE band 4, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 15:27:19

LTE band 4, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

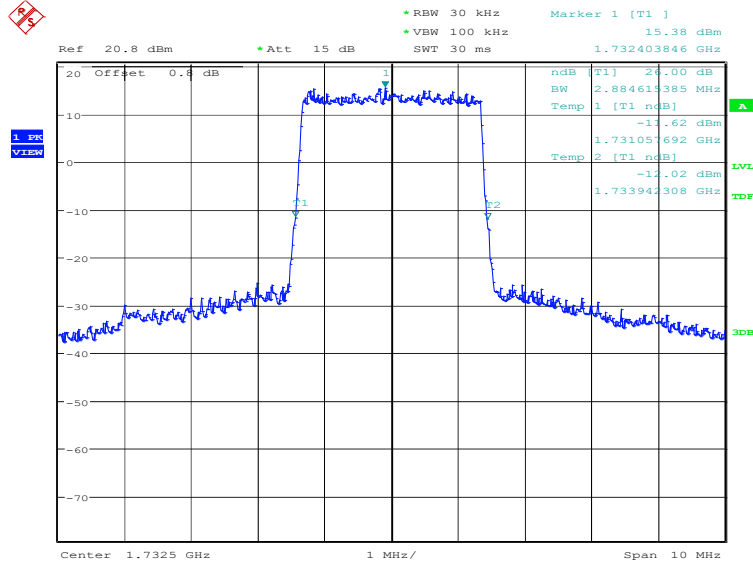


Date: 12.OCT.2022 15:28:00

LTE band 4, 3MHz (-26dBc)

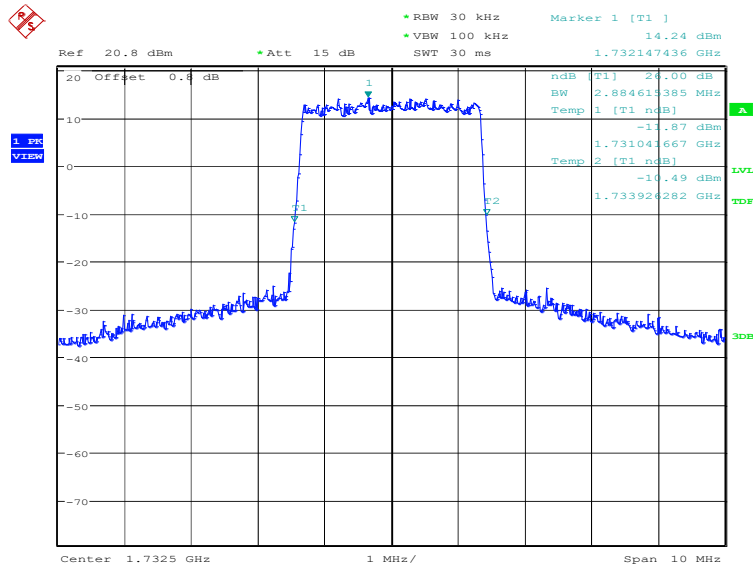
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	2884.62	2884.62

LTE band 4, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 15:28:41

LTE band 4, 3MHz Bandwidth, 16QAM (-26dBc BW)

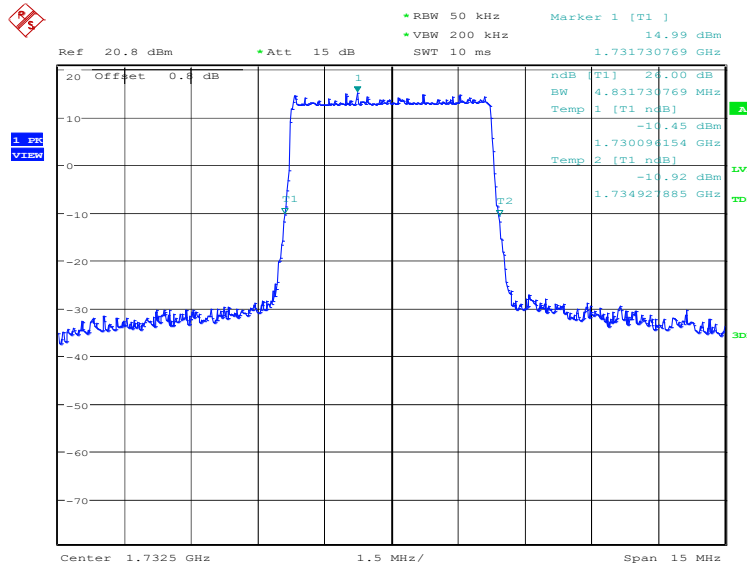


Date: 12.OCT.2022 15:29:22

LTE band 4, 5MHz (-26dBc)

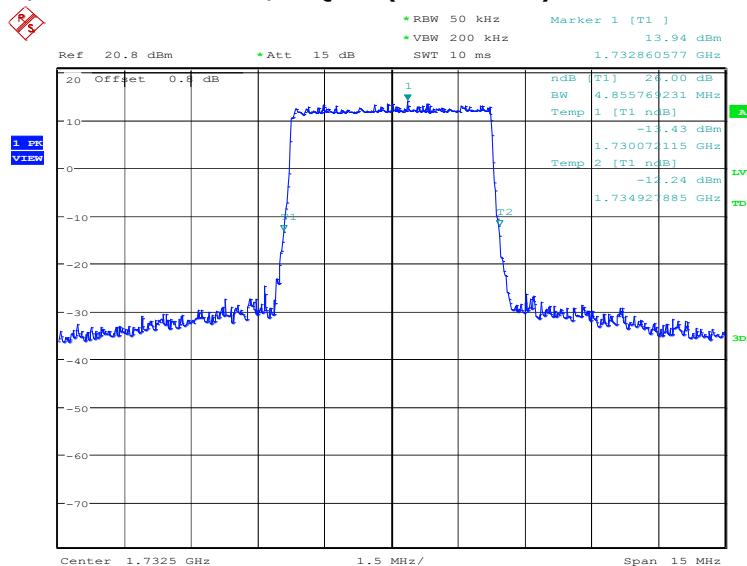
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	4831.73	4855.77

LTE band 4, 5MHz Bandwidth, QPSK (-26dB BW)



Date: 12.OCT.2022 15:30:04

LTE band 4, 5MHz Bandwidth, 16QAM (-26dB BW)

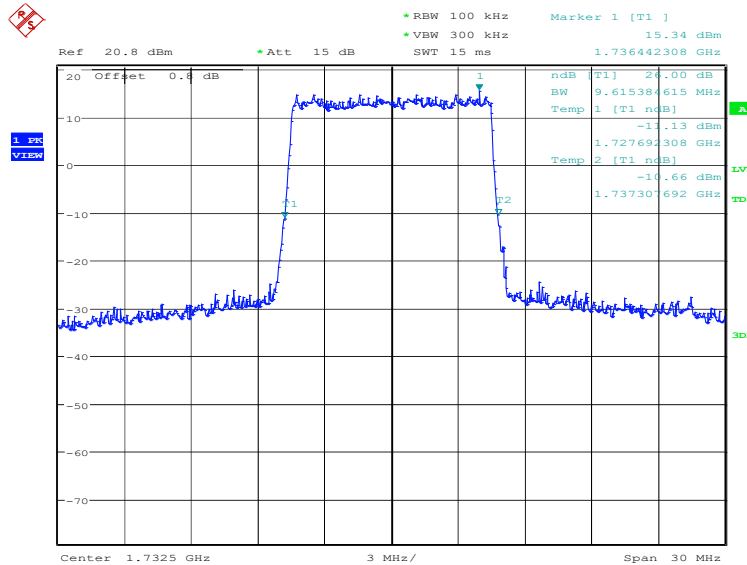


Date: 12.OCT.2022 15:30:44

LTE band 4, 10MHz (-26dBc)

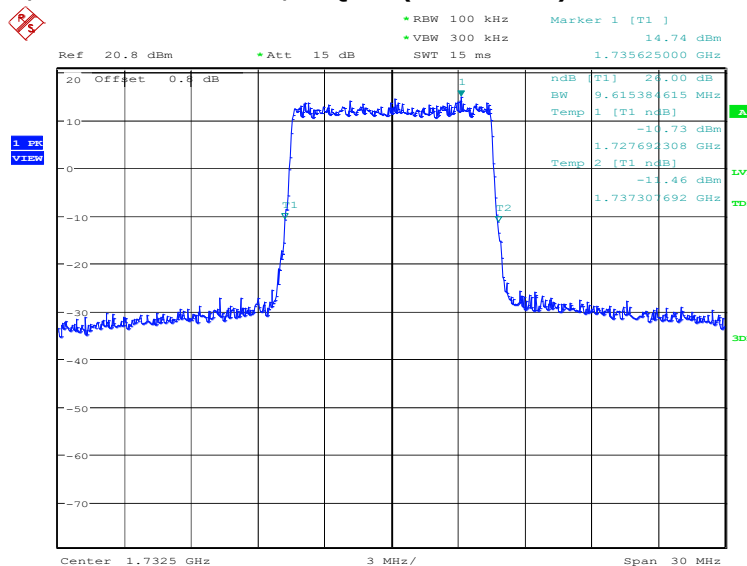
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	9615.38	9615.38

LTE band 4, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 15:31:26

LTE band 4, 10MHz Bandwidth, 16QAM (-26dBc BW)

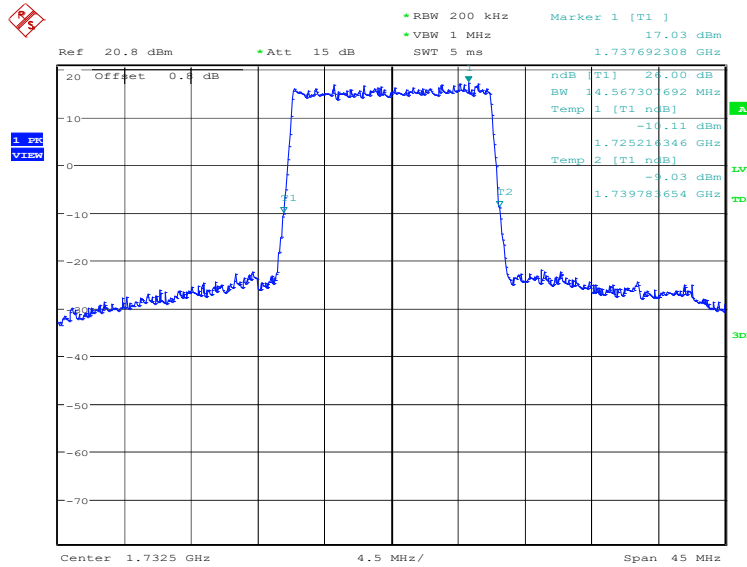


Date: 12.OCT.2022 15:32:06

LTE band 4, 15MHz (-26dBc)

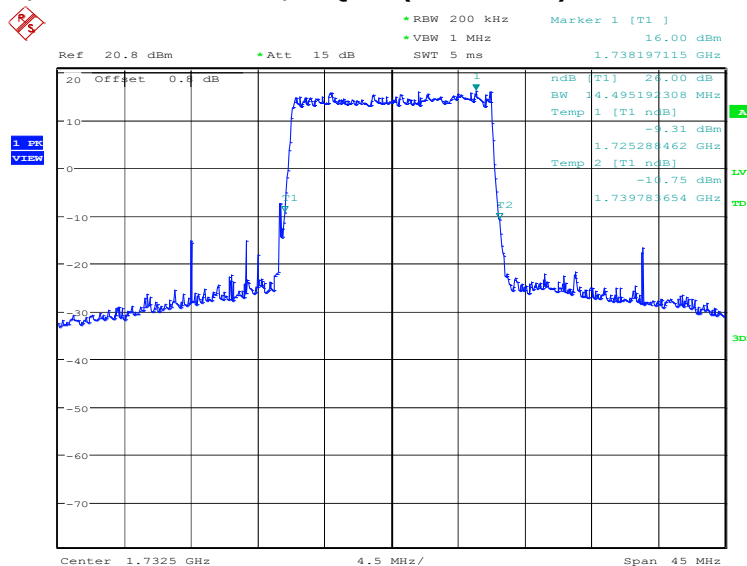
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	14567.31	14495.19

LTE band 4, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 15:32:48

LTE band 4, 15MHz Bandwidth, 16QAM (-26dBc BW)

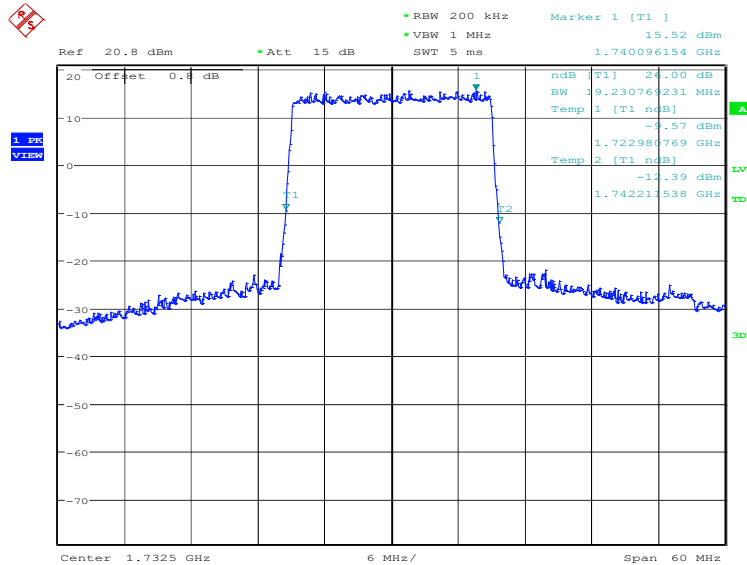


Date: 12.OCT.2022 15:33:29

LTE band 4, 20MHz (-26dBc)

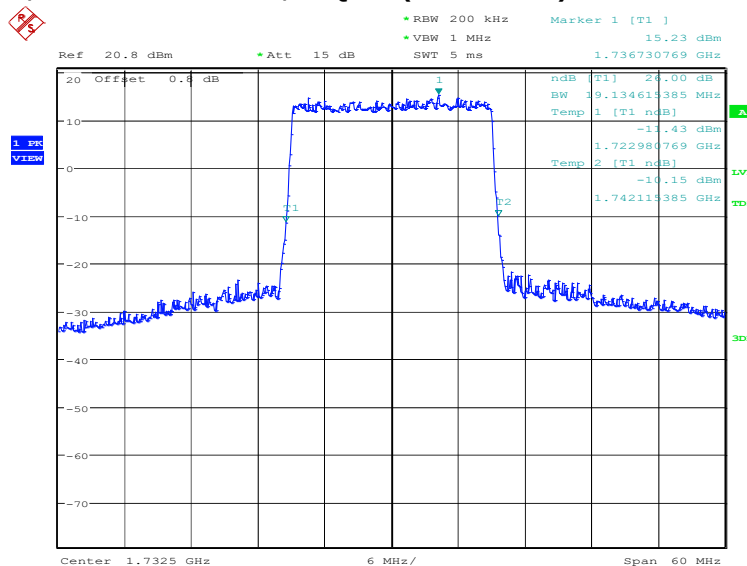
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1732.5	QPSK	16QAM
	19230.77	19134.62

LTE band 4, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 15:34:11

LTE band 4, 20MHz Bandwidth, 16QAM (-26dBc BW)

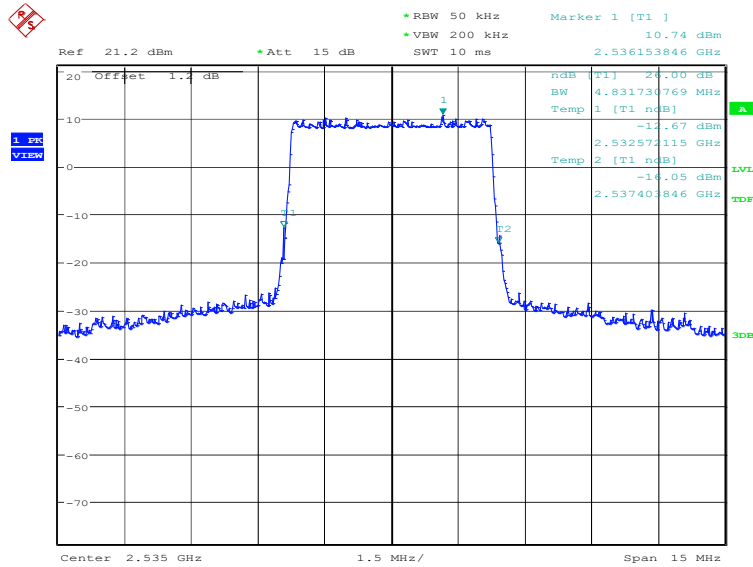


Date: 12.OCT.2022 15:34:52

LTE band 7, 5MHz (-26dBc)

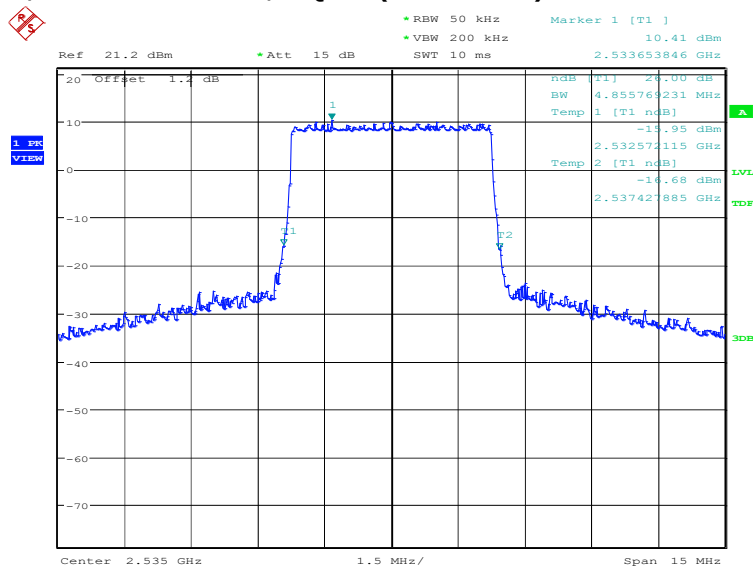
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	4831.73	4855.77

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



Date: 12.OCT.2022 15:41:06

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

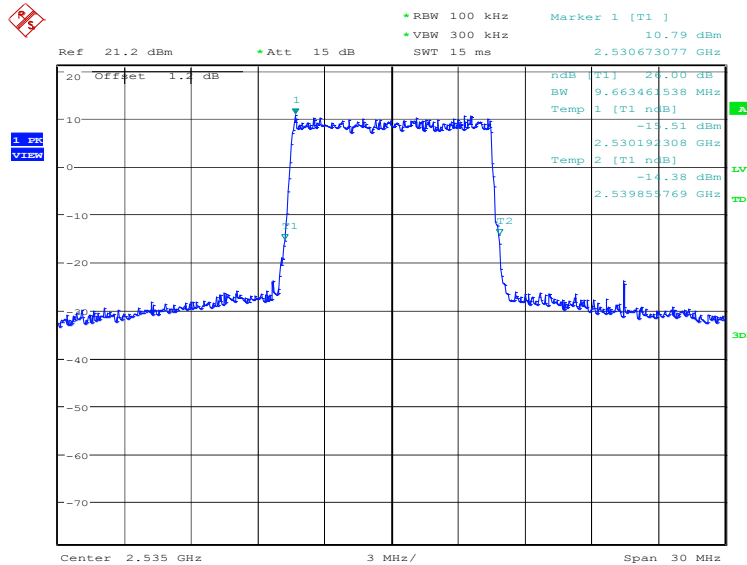


Date: 12.OCT.2022 15:41:46

LTE band 7, 10MHz (-26dBc)

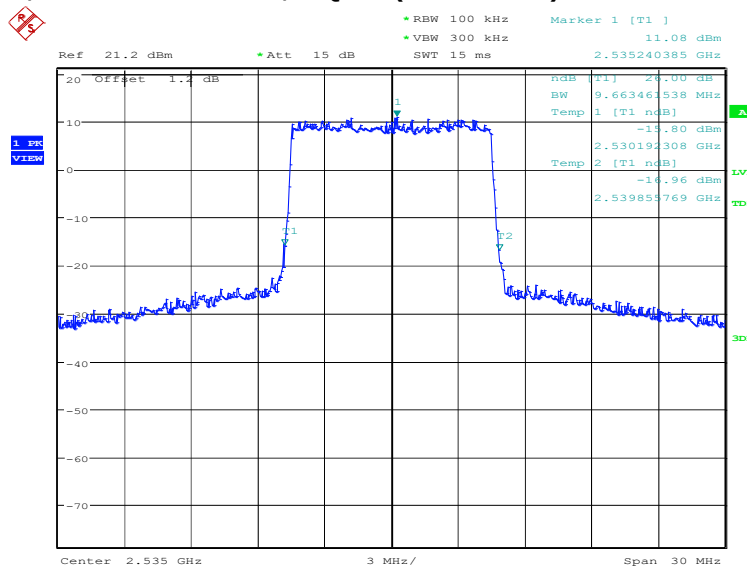
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	9663.46	9663.46

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



Date: 12.OCT.2022 15:42:29

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

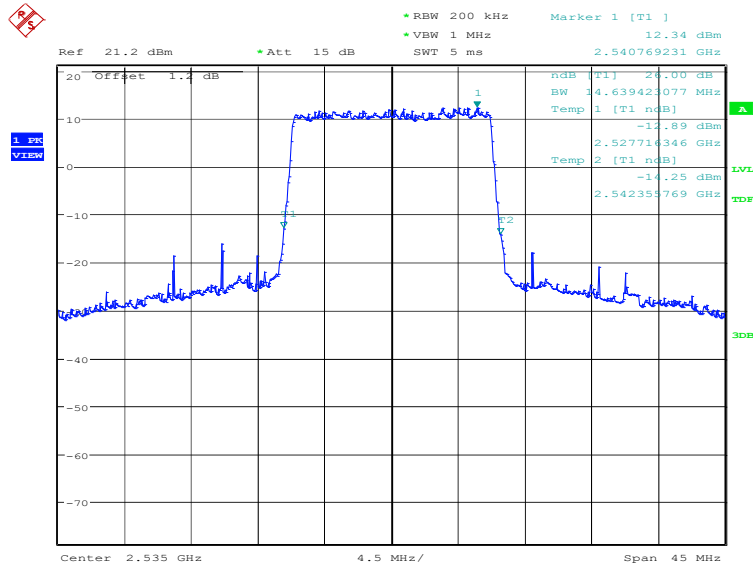


Date: 12.OCT.2022 15:43:09

LTE band 7, 15MHz (-26dBc)

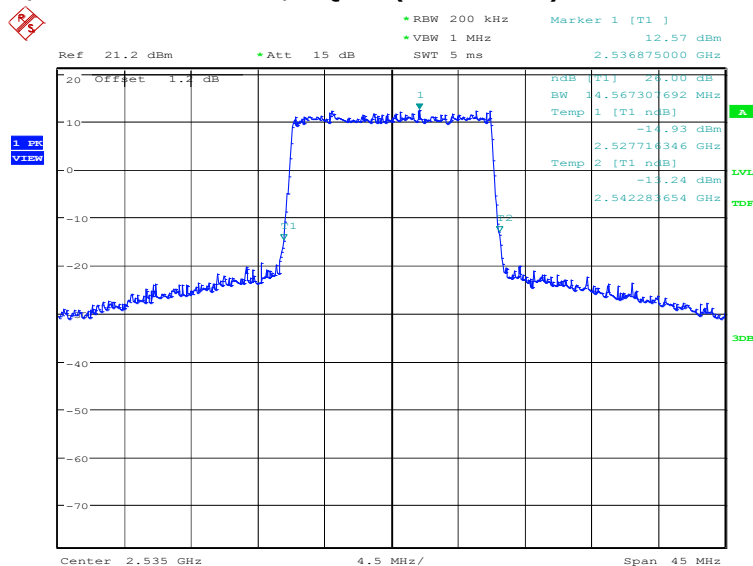
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	14639.42	14567.31

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



Date: 12.OCT.2022 15:43:51

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

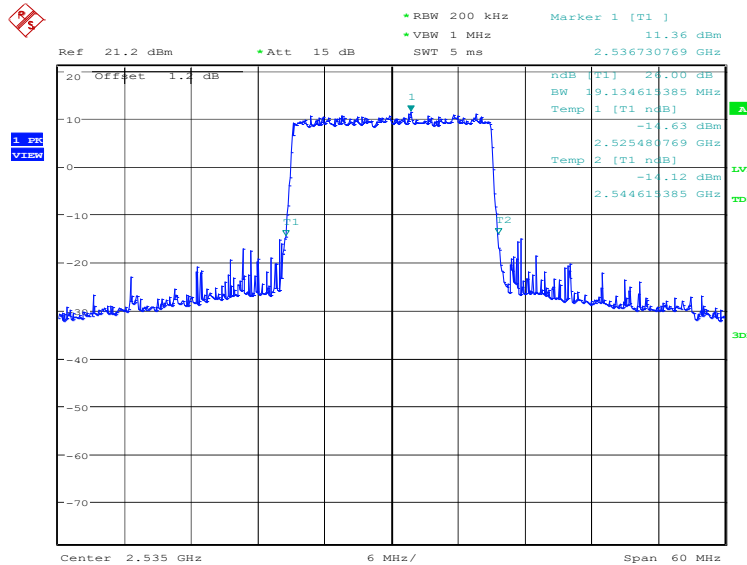


Date: 12.OCT.2022 15:44:32

LTE band 7, 20MHz (-26dBc)

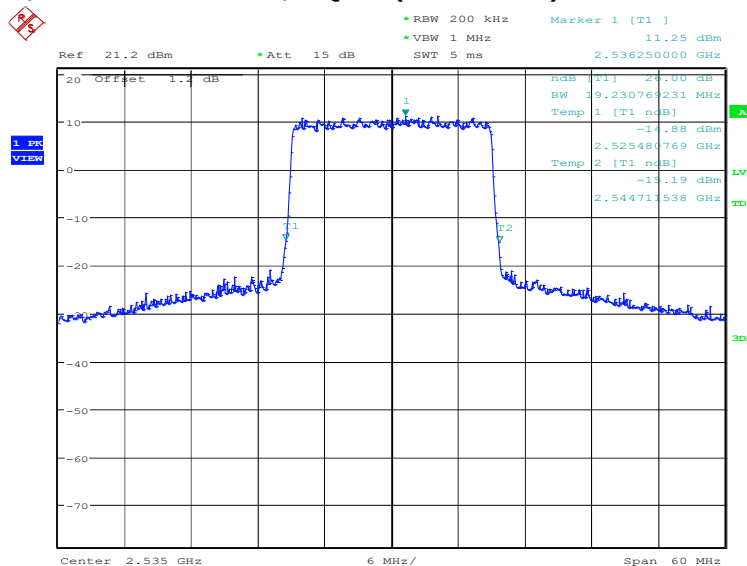
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2535.0	QPSK	16QAM
	19134.62	19230.77

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



Date: 12.OCT.2022 15:45:14

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

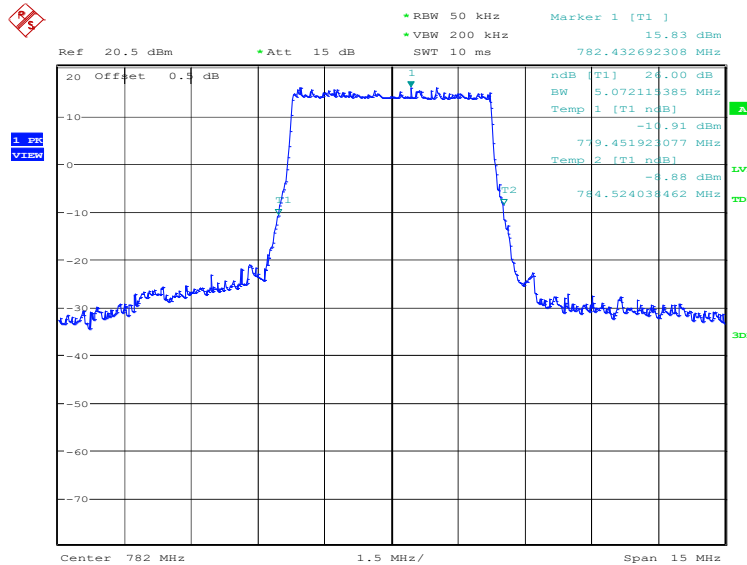


Date: 12.OCT.2022 15:45:55

LTE band 13, 5MHz (-26dBc)

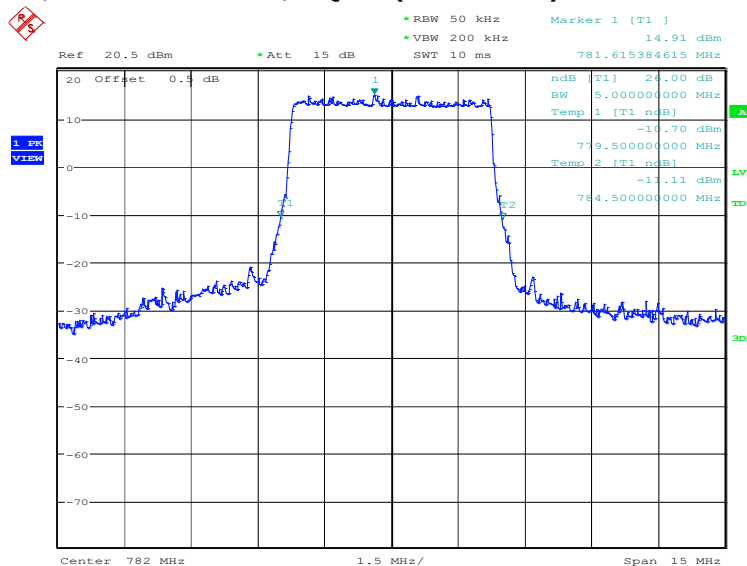
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
782.0	QPSK	16QAM
	5072.12	5000.00

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



Date: 12.OCT.2022 15:47:33

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

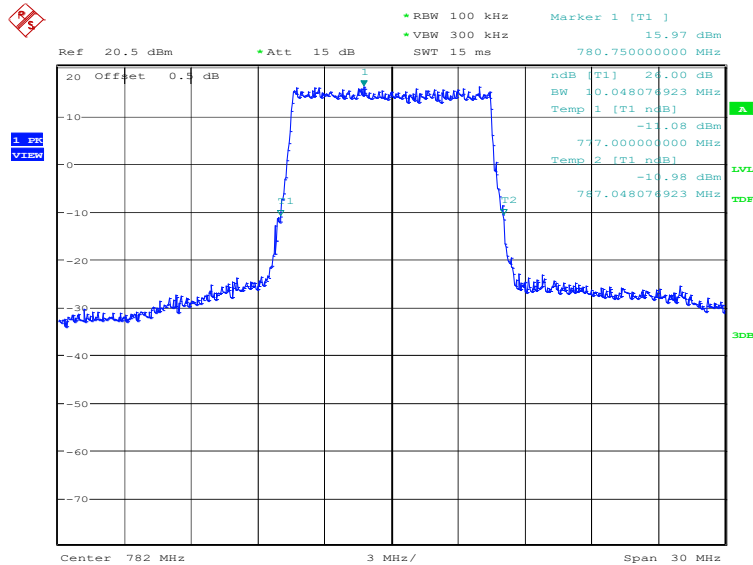


Date: 12.OCT.2022 15:48:13

LTE band 13, 10MHz (-26dBc)

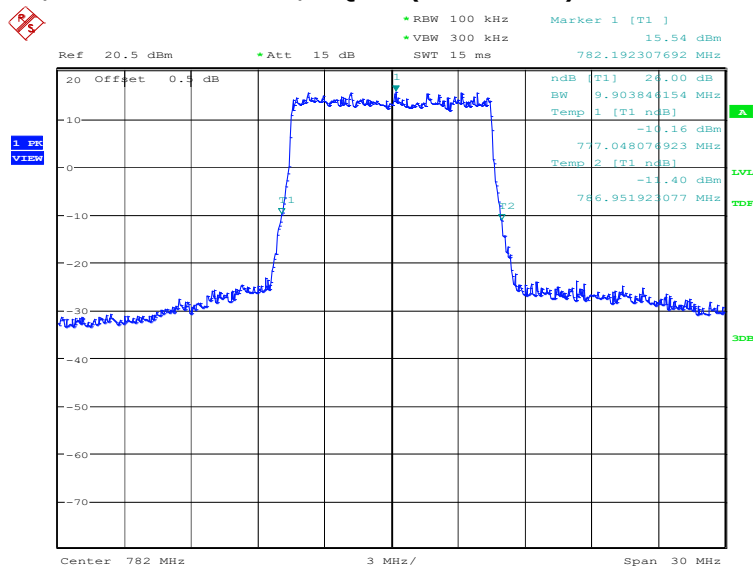
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
782.0	QPSK	16QAM
	10048.08	9903.85

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



Date: 12.OCT.2022 15:48:55

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

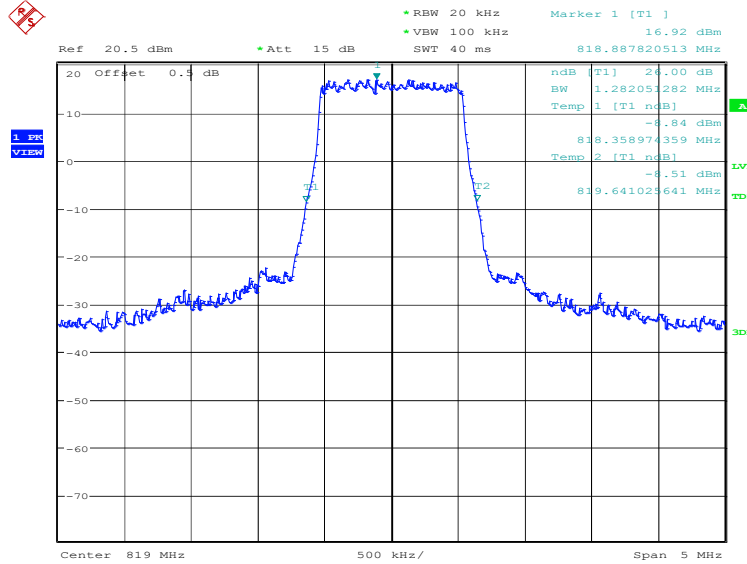


Date: 12.OCT.2022 15:49:36

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

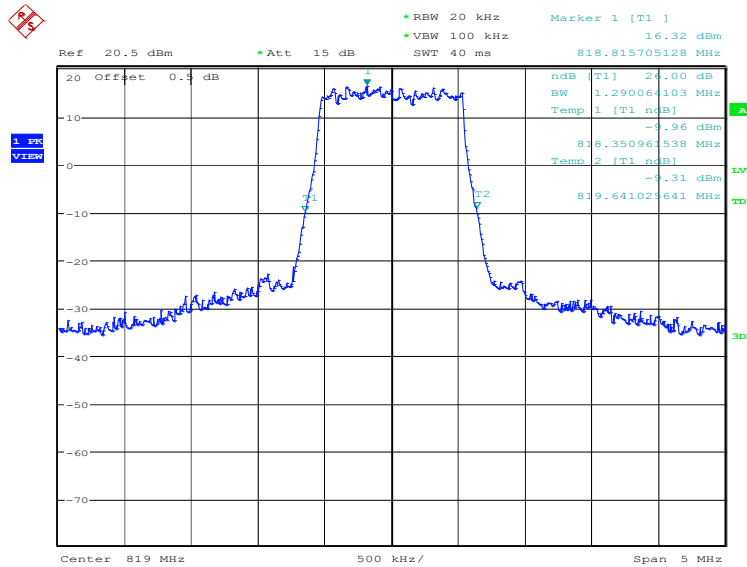
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	1282.05	1290.06

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



Date: 12.OCT.2022 15:57:55

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

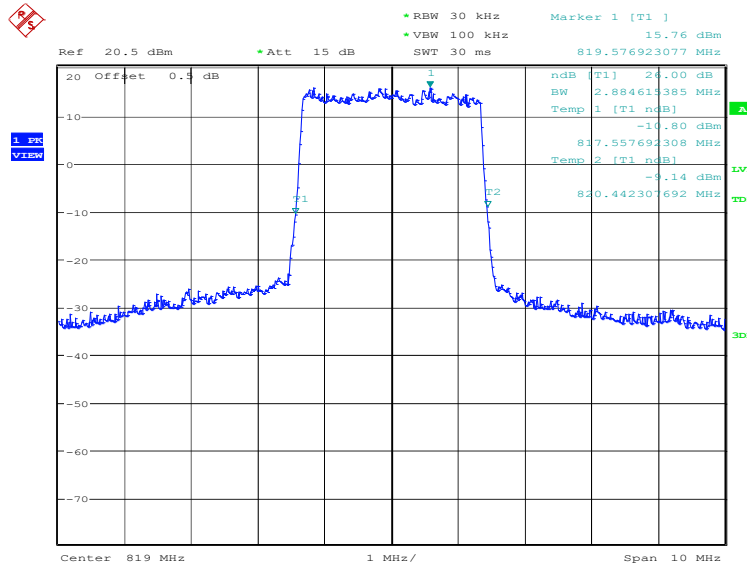


Date: 12.OCT.2022 15:58:36

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

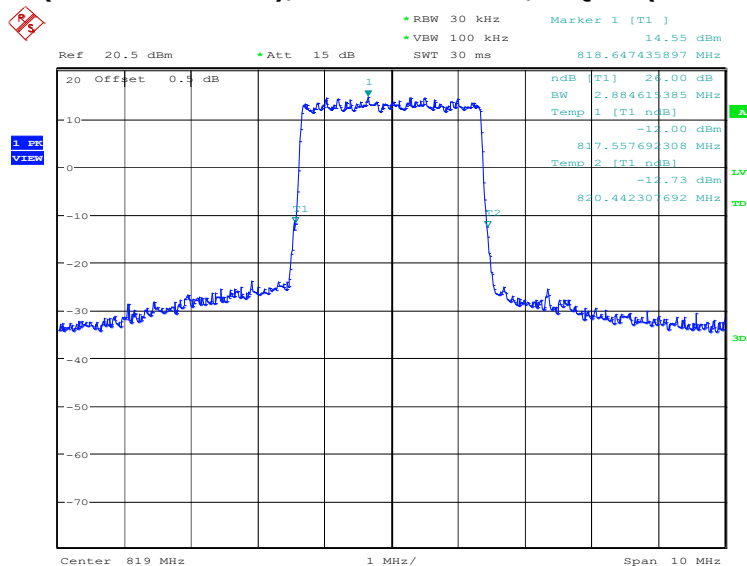
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	2884.62	2884.62

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



Date: 12.OCT.2022 15:59:18

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

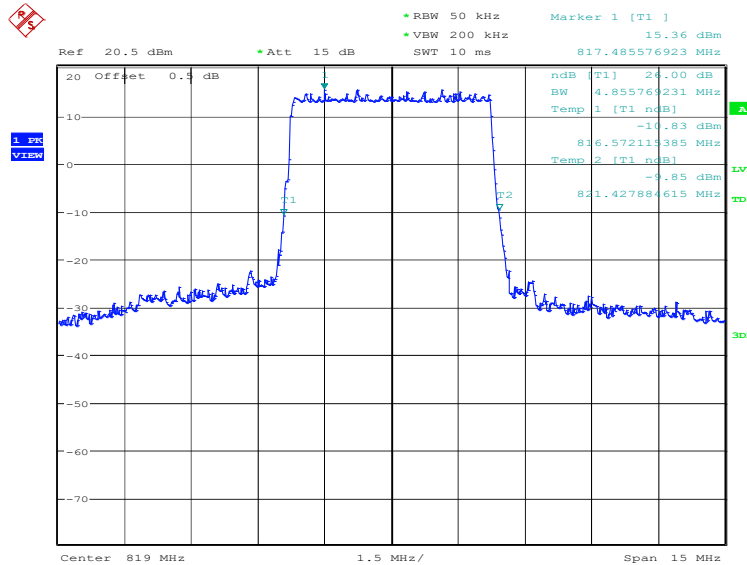


Date: 12.OCT.2022 15:59:59

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

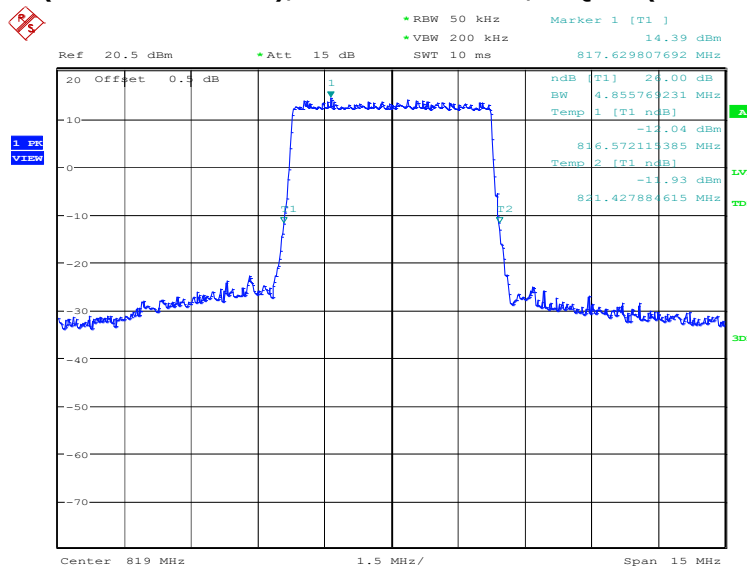
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	4855.77	4855.77

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



Date: 12.OCT.2022 16:00:41

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

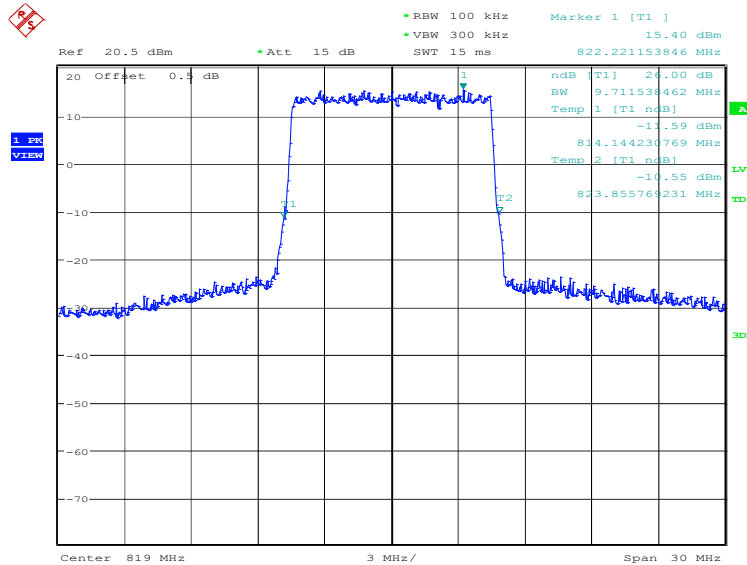


Date: 12.OCT.2022 16:01:22

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

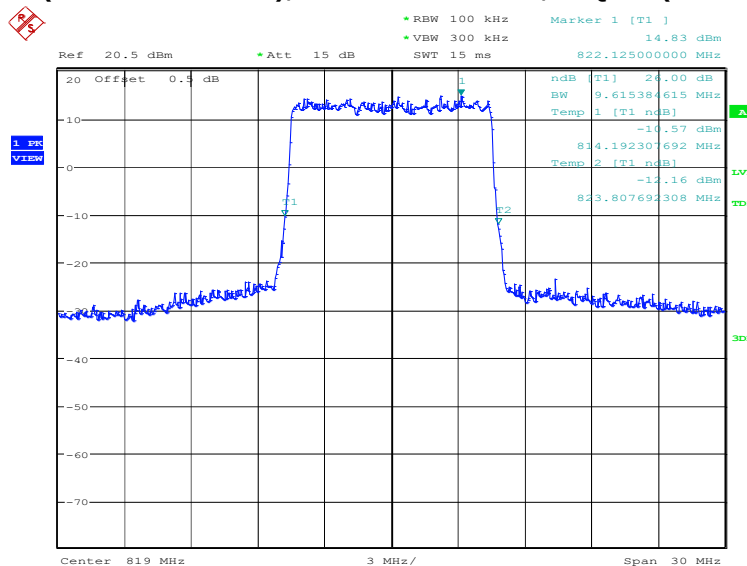
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
819.0	QPSK	16QAM
	9711.54	9615.38

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



Date: 12.OCT.2022 16:02:04

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

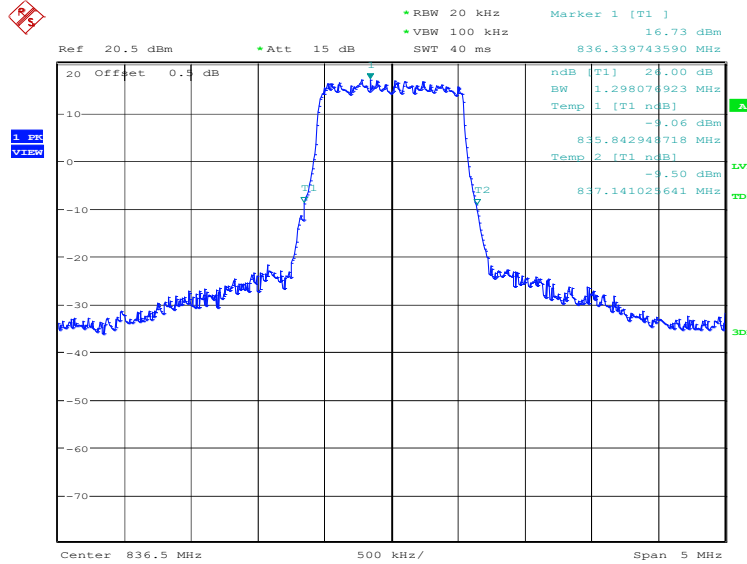


Date: 12.OCT.2022 16:02:44

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

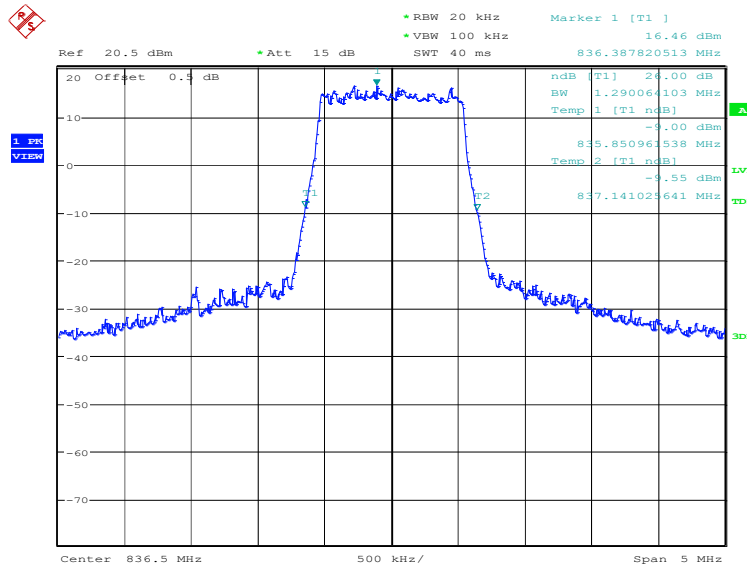
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	1298.08	1290.06

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



Date: 12.OCT.2022 15:50:20

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

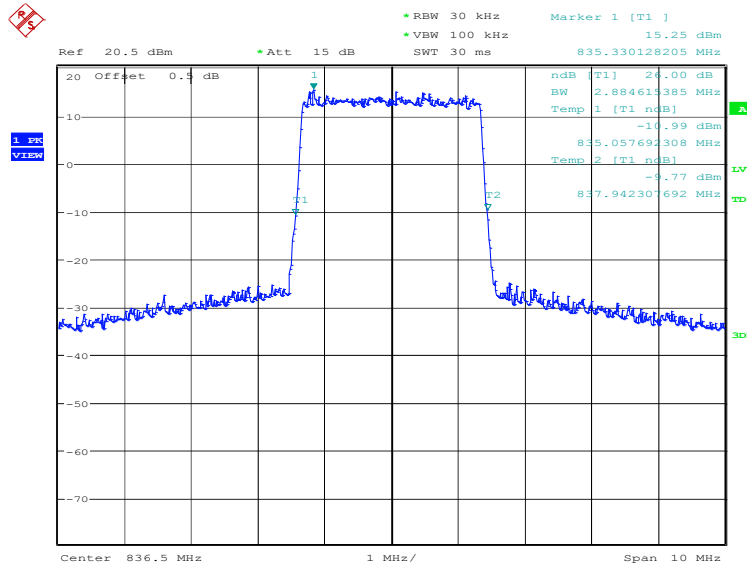


Date: 12.OCT.2022 15:51:00

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

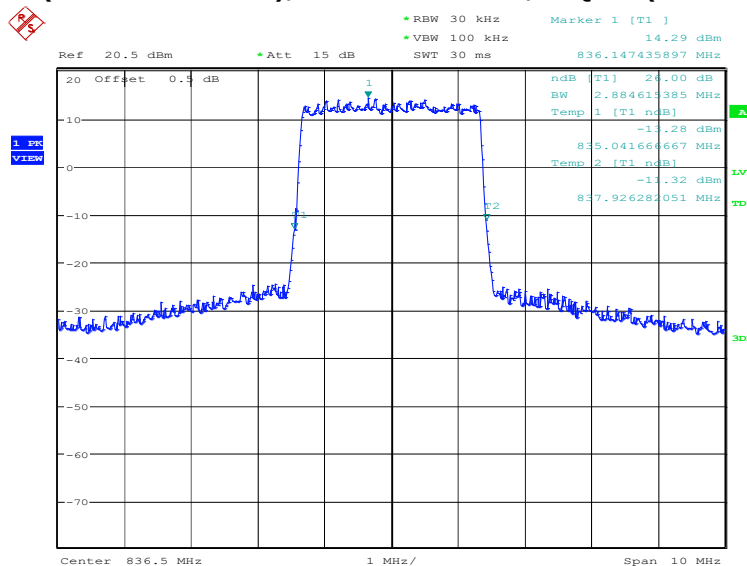
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	2884.62	2884.62

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



Date: 12.OCT.2022 15:51:42

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

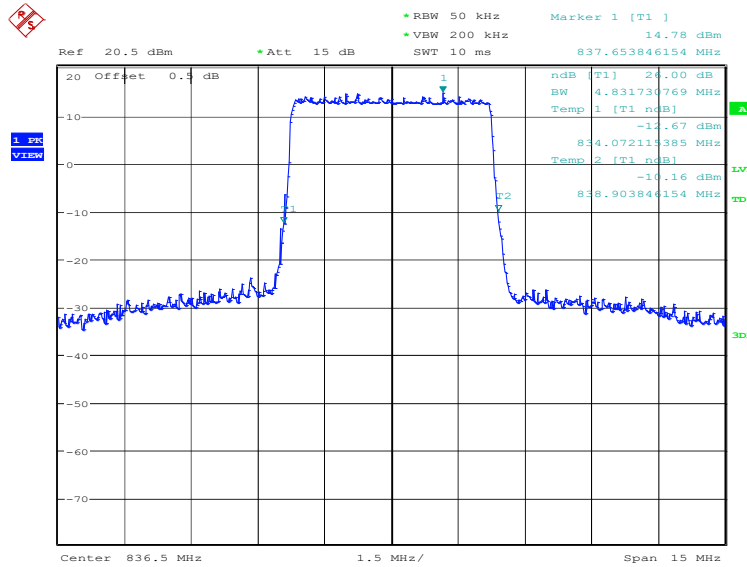


Date: 12.OCT.2022 15:52:23

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

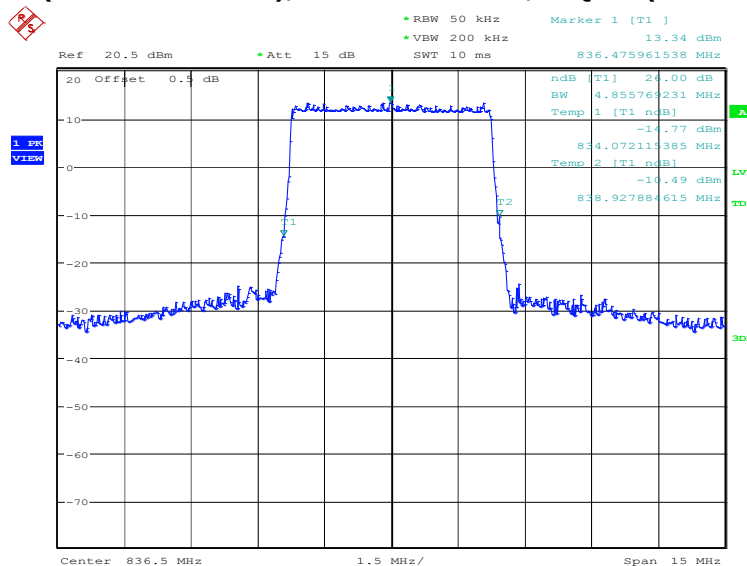
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	4831.73	4855.77

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



Date: 12.OCT.2022 15:53:05

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

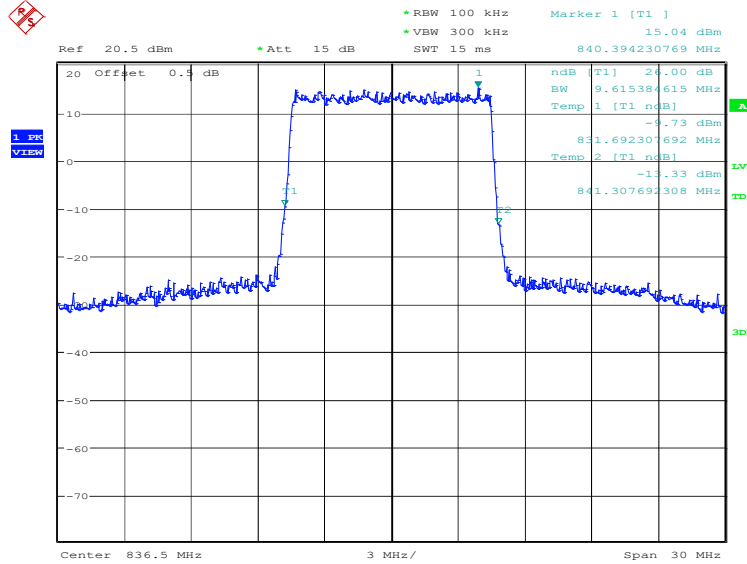


Date: 12.OCT.2022 15:53:46

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

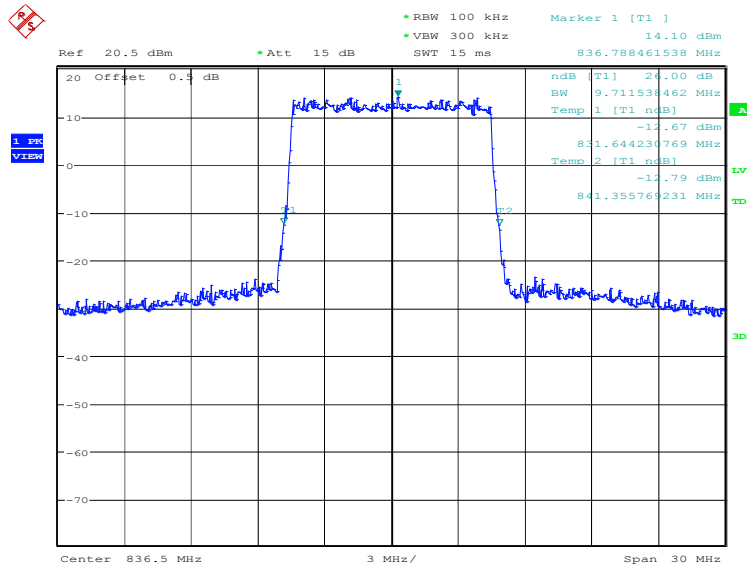
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	9615.38	9711.54

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



Date: 12.OCT.2022 15:54:28

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

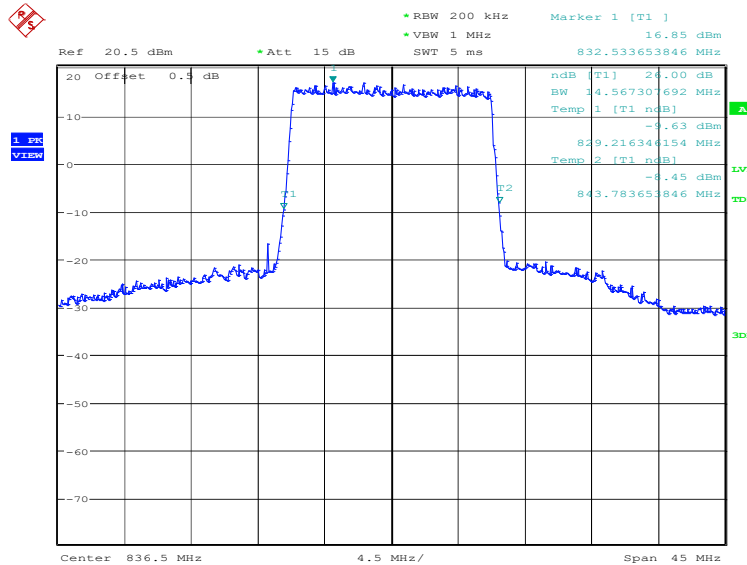


Date: 12.OCT.2022 15:55:09

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

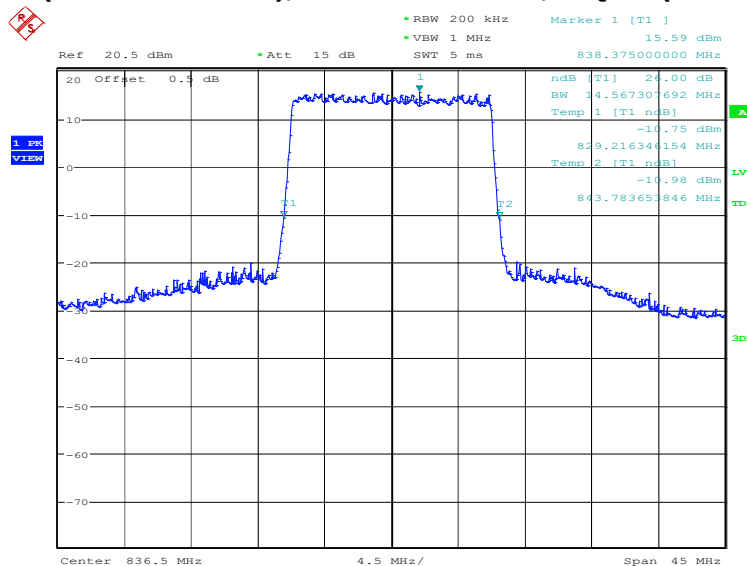
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
836.5	QPSK	16QAM
	14567.31	14567.31

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



Date: 12.OCT.2022 15:55:51

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

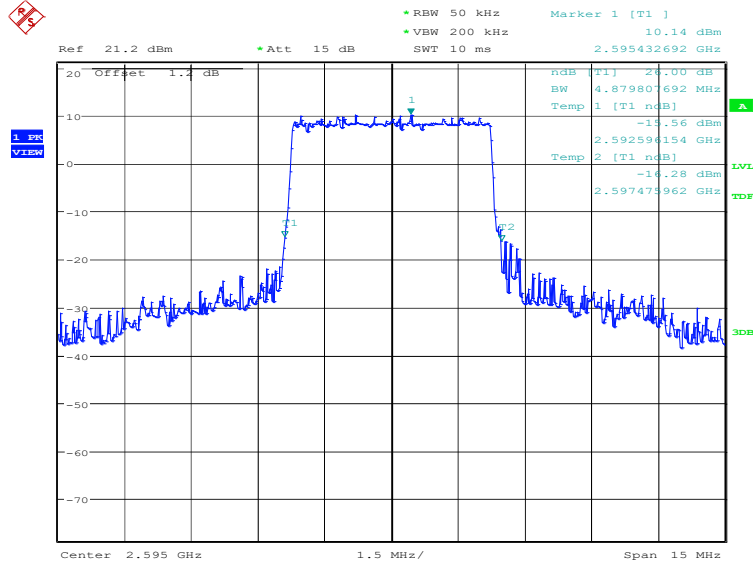


Date: 12.OCT.2022 15:56:32

LTE band 38, 5MHz (-26dBc)

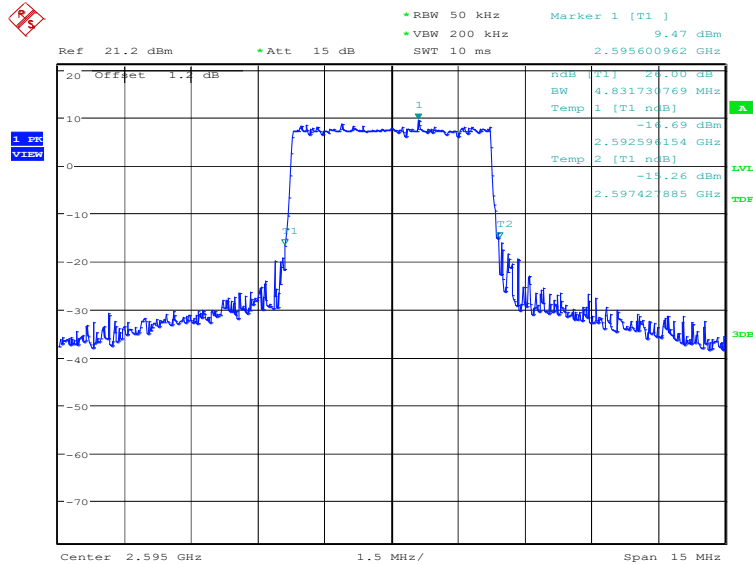
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	4879.81	4831.73

LTE band 38, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 16:12:33

LTE band 38, 5MHz Bandwidth,16QAM (-26dBc BW)

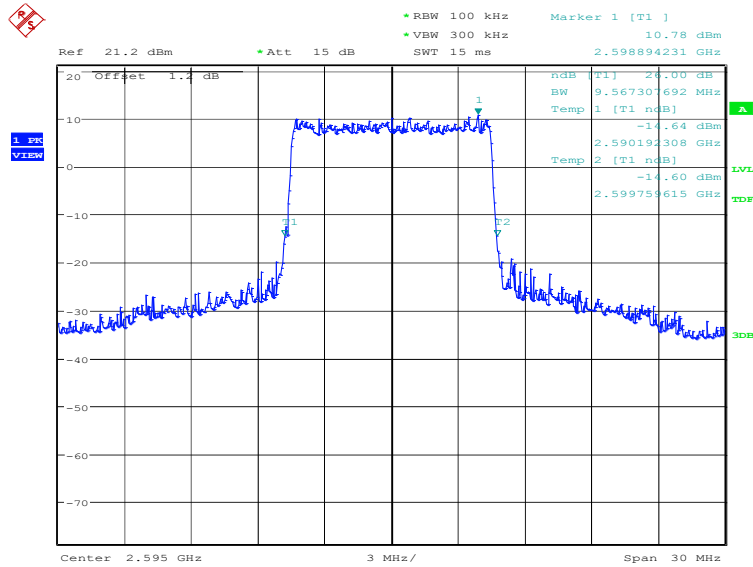


Date: 12.OCT.2022 16:13:14

LTE band 38, 10MHz (-26dBc)

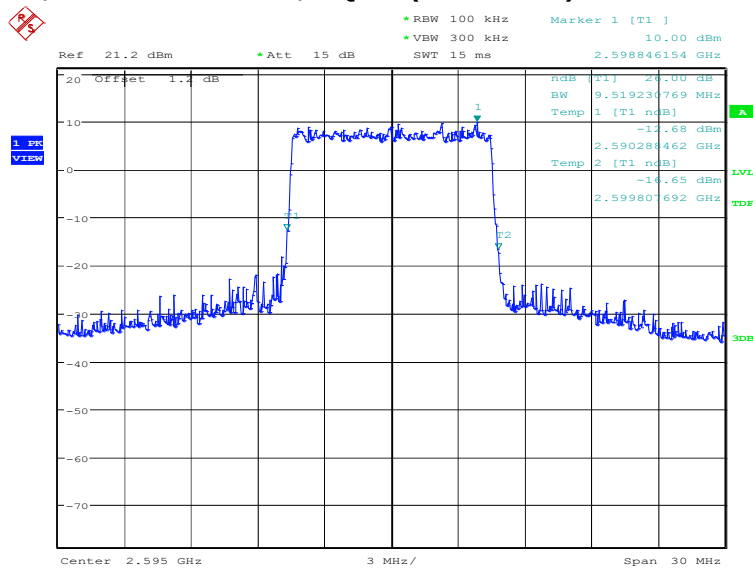
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	9567.31	9519.23

LTE band 38, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 16:13:56

LTE band 38, 10MHz Bandwidth, 16QAM (-26dBc BW)

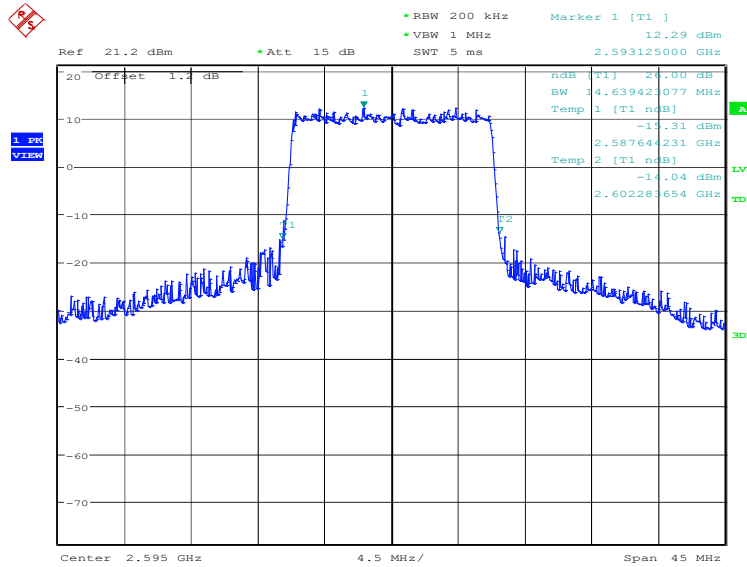


Date: 12.OCT.2022 16:14:37

LTE band 38, 15MHz (-26dBc)

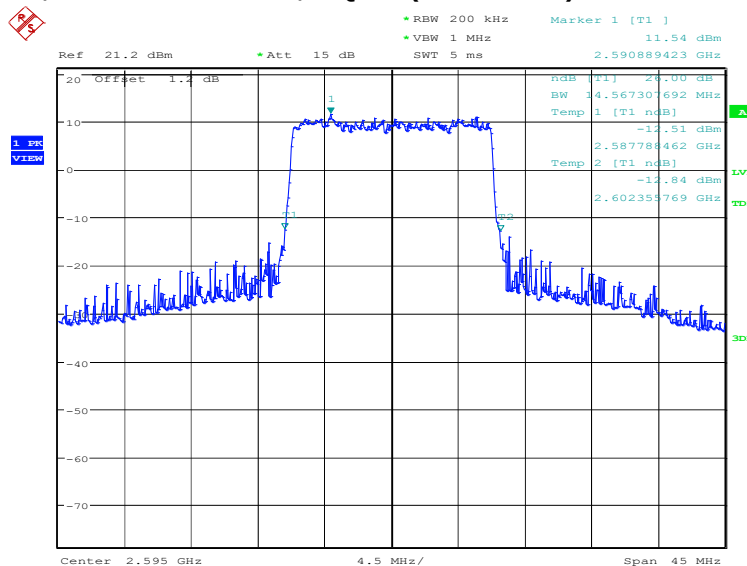
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	14639.42	14567.31

LTE band 38, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 16:15:20

LTE band 38, 15MHz Bandwidth, 16QAM (-26dBc BW)

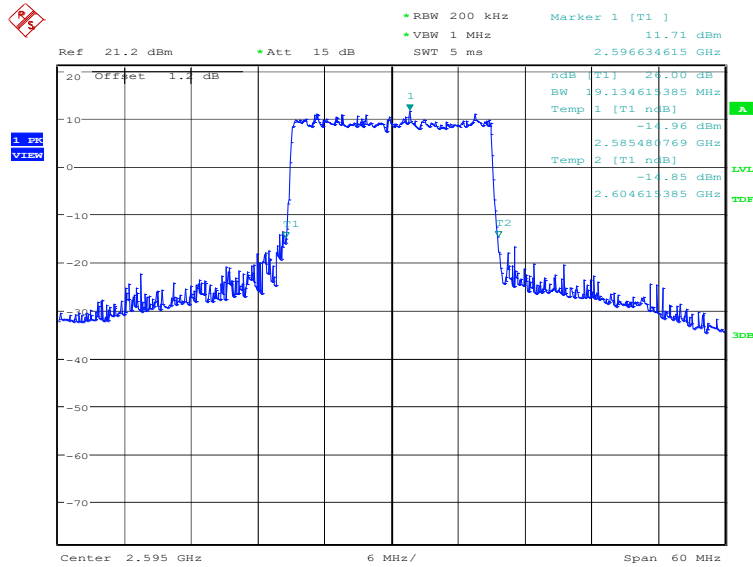


Date: 12.OCT.2022 16:16:01

LTE band 38, 20MHz (-26dBc)

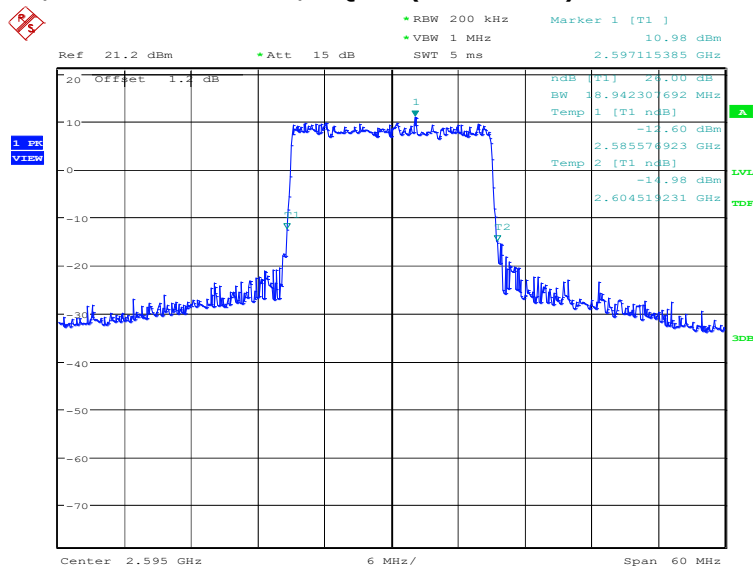
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	19134.62	18942.31

LTE band 38, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 12.OCT.2022 16:16:43

LTE band 38, 20MHz Bandwidth, 16QAM (-26dBc BW)

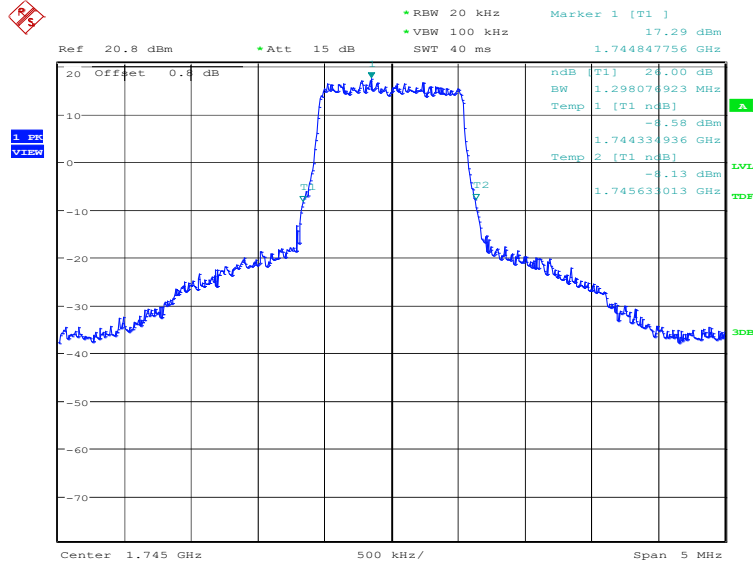


Date: 12.OCT.2022 16:17:24

LTE band 66, 1.4MHz (-26dBc)

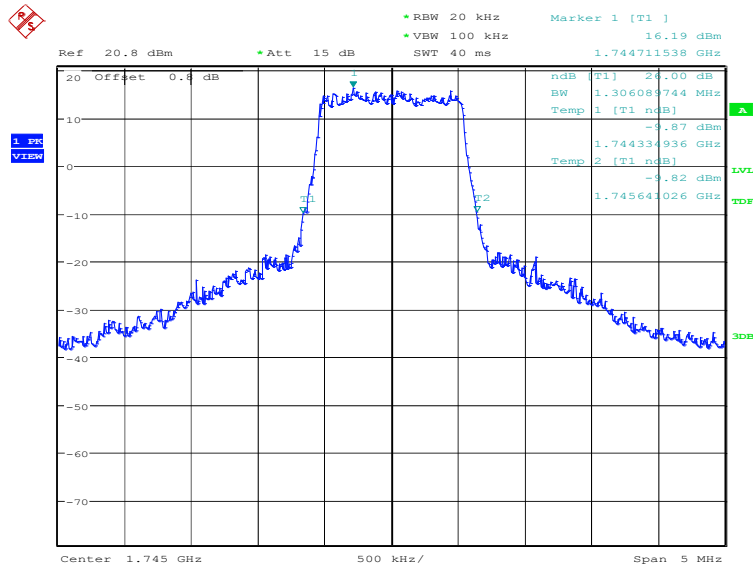
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	1298.08	1306.09

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



Date: 12.OCT.2022 16:03:28

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

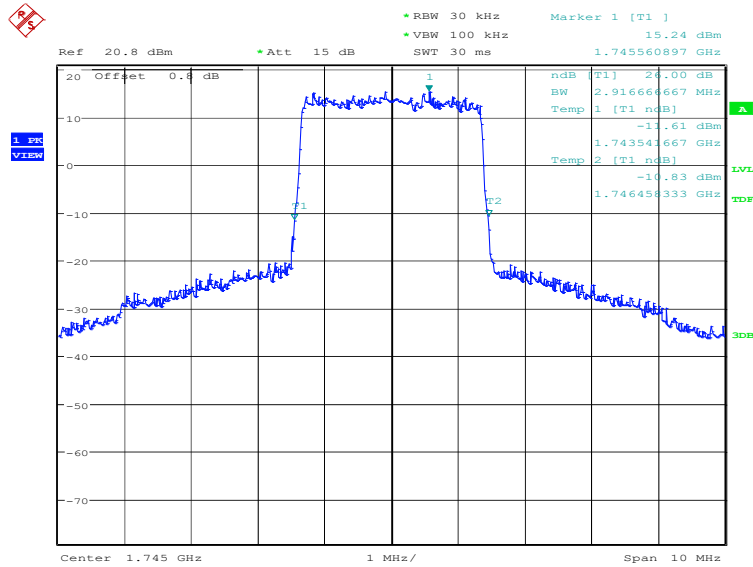


Date: 12.OCT.2022 16:04:09

LTE band 66, 3MHz (-26dBc)

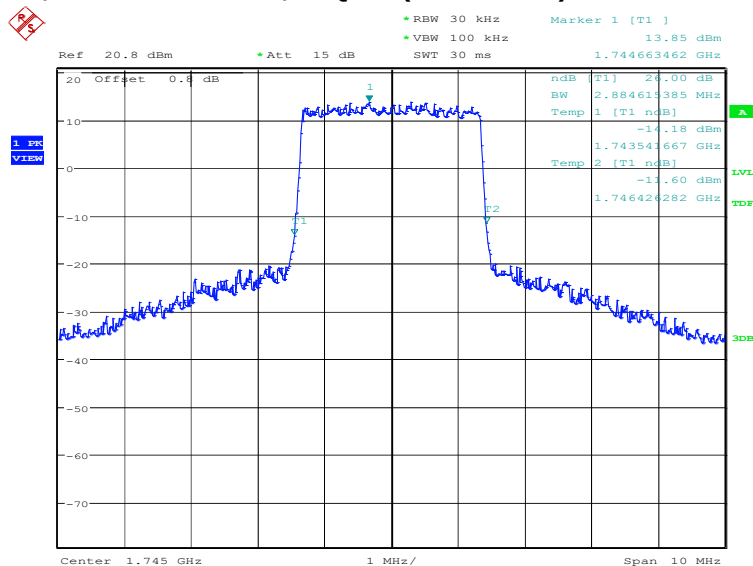
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	2916.67	2884.62

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



Date: 12.OCT.2022 16:04:51

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

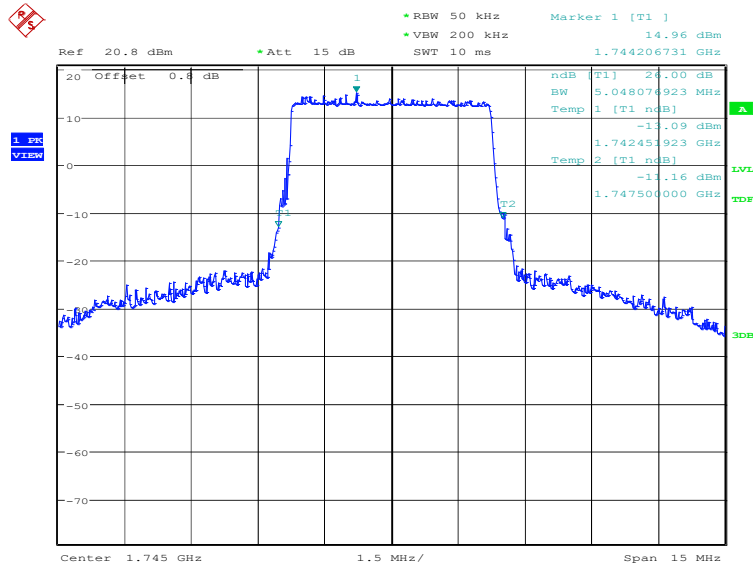


Date: 12.OCT.2022 16:05:32

LTE band 66, 5MHz (-26dBc)

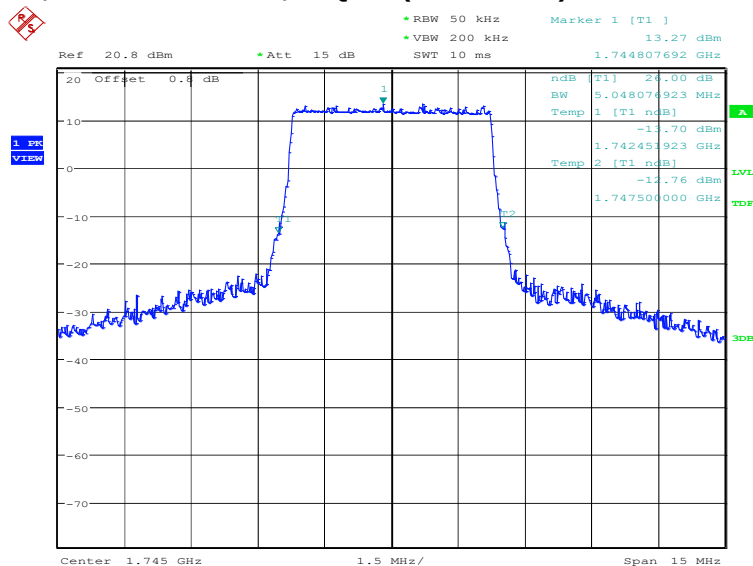
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	5048.08	5048.08

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



Date: 12.OCT.2022 16:06:15

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

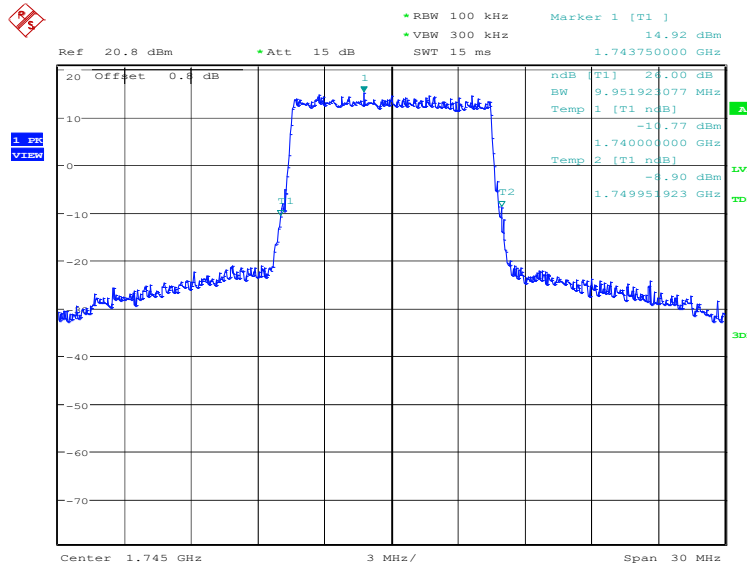


Date: 12.OCT.2022 16:06:55

LTE band 66, 10MHz (-26dBc)

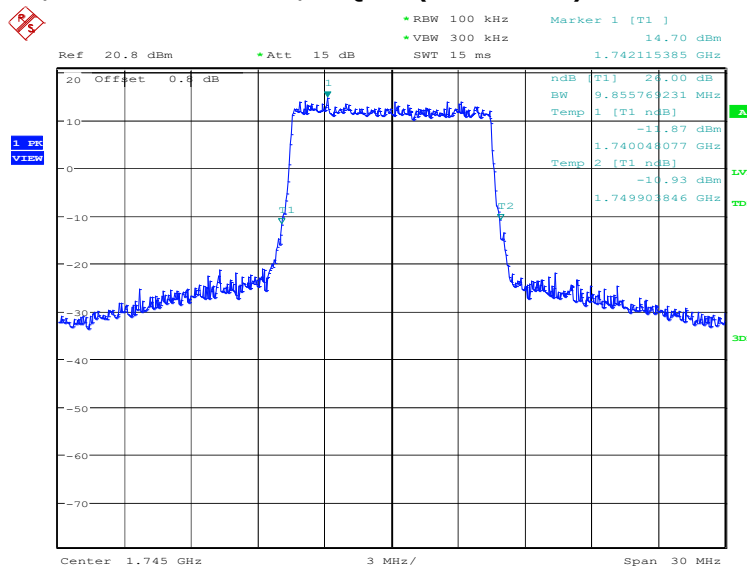
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	9951.92	9855.77

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



Date: 12.OCT.2022 16:07:38

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

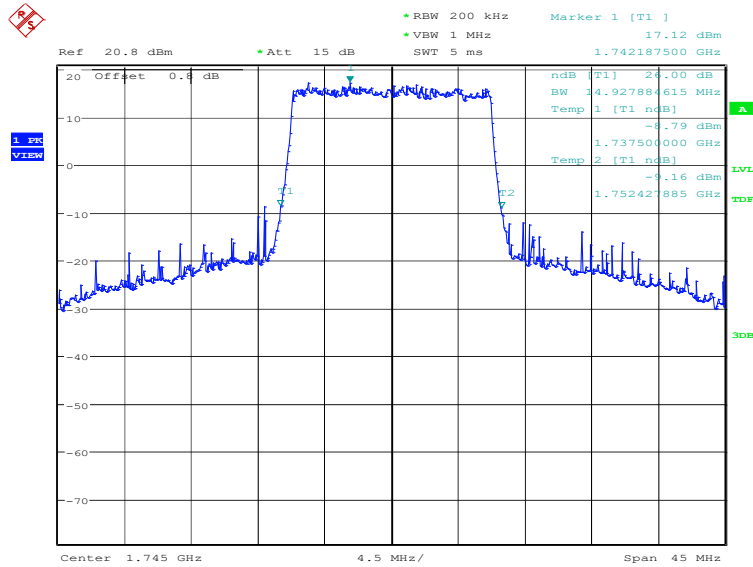


Date: 12.OCT.2022 16:08:19

LTE band 66, 15MHz (-26dBc)

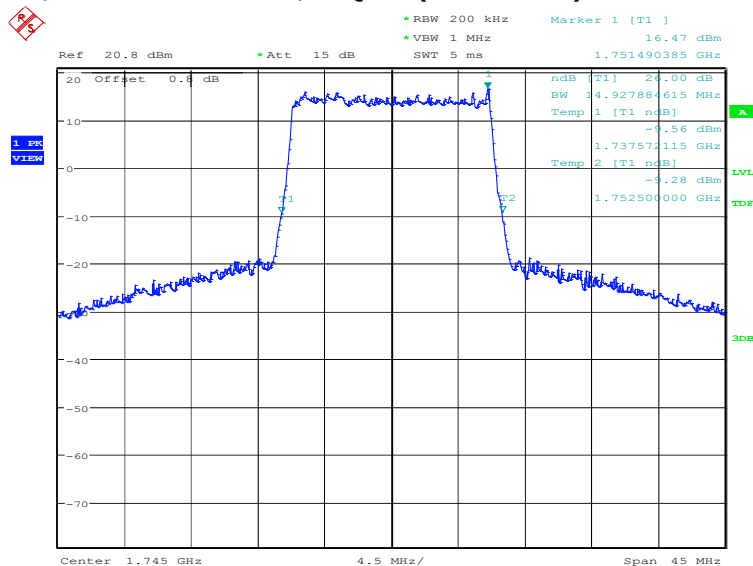
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	14927.88	14927.88

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



Date: 12.OCT.2022 16:09:02

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

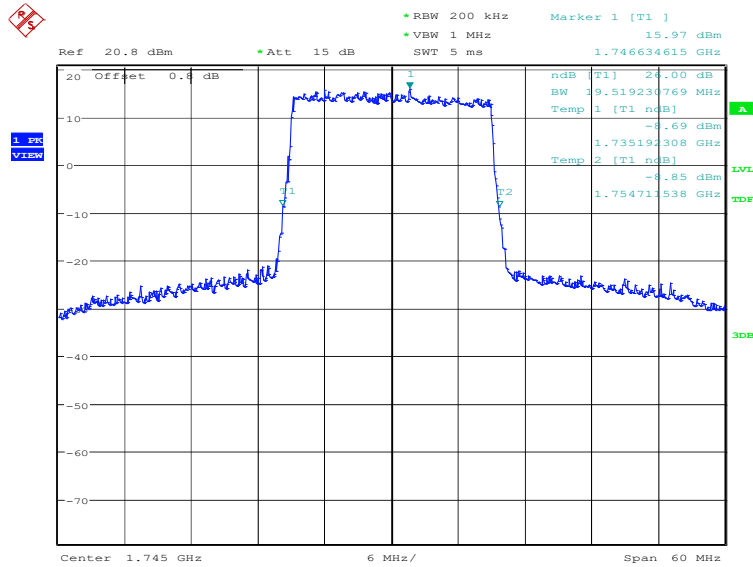


Date: 12.OCT.2022 16:09:42

LTE band 66, 20MHz (-26dBc)

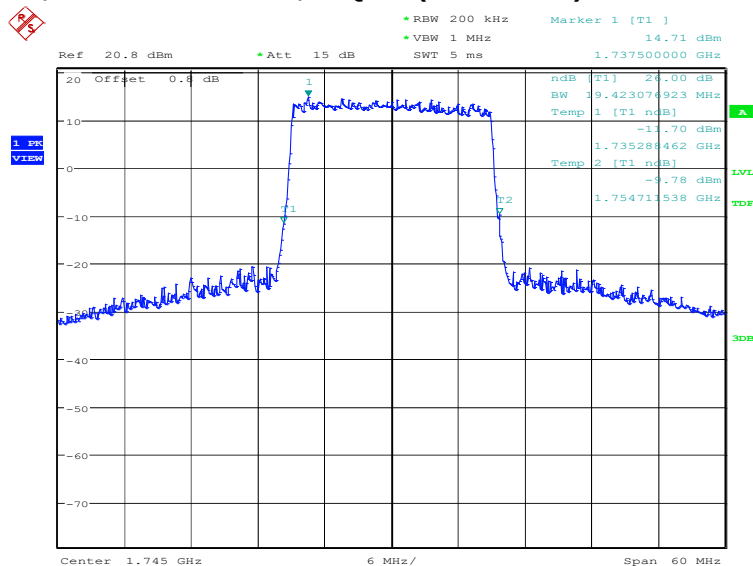
Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)	
1745.0	QPSK	16QAM
	19519.23	19423.08

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



Date: 12.OCT.2022 16:10:25

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



Date: 12.OCT.2022 16:11:06

Note: Expanded measurement uncertainty is U = 3428 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(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB; (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB; (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

Part 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.

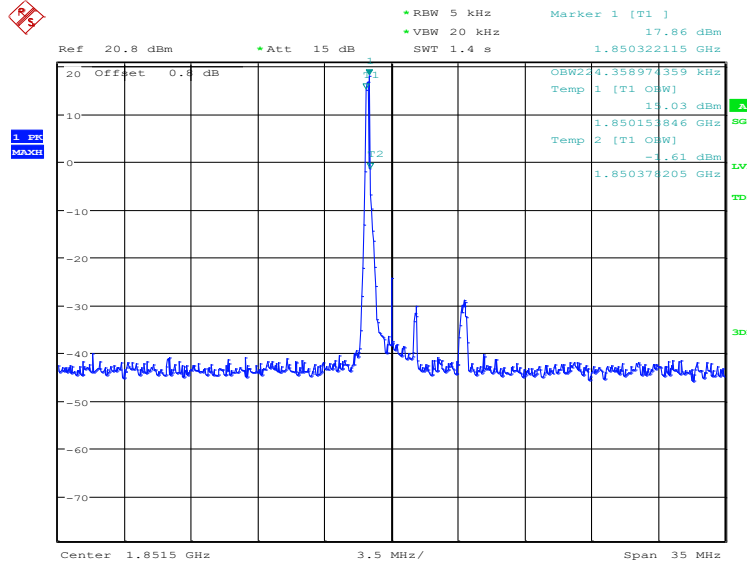
The spectrum analyzer readings are corrected by $[10 \log(1/\text{duty cycle})]$ for the non-continuous transmitting scenario.

A.6.2 Measurement result

Only the worst case result is given below

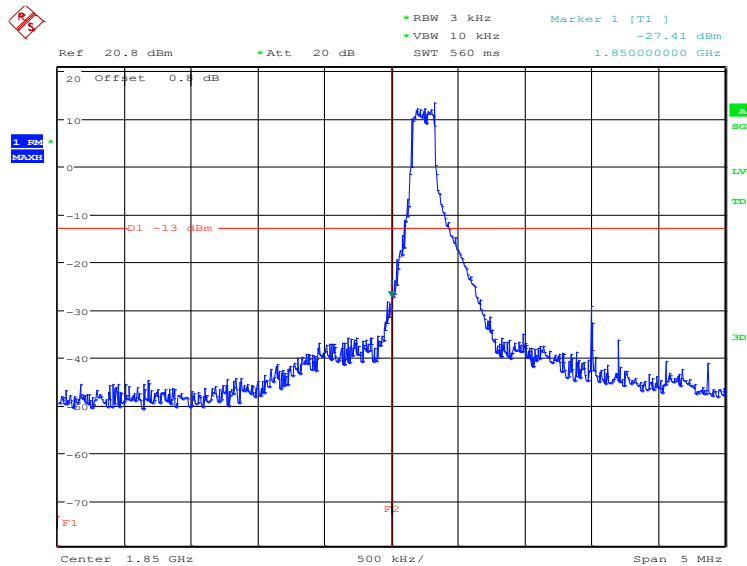
LTE band 2

OBW: 1RB-low_offset



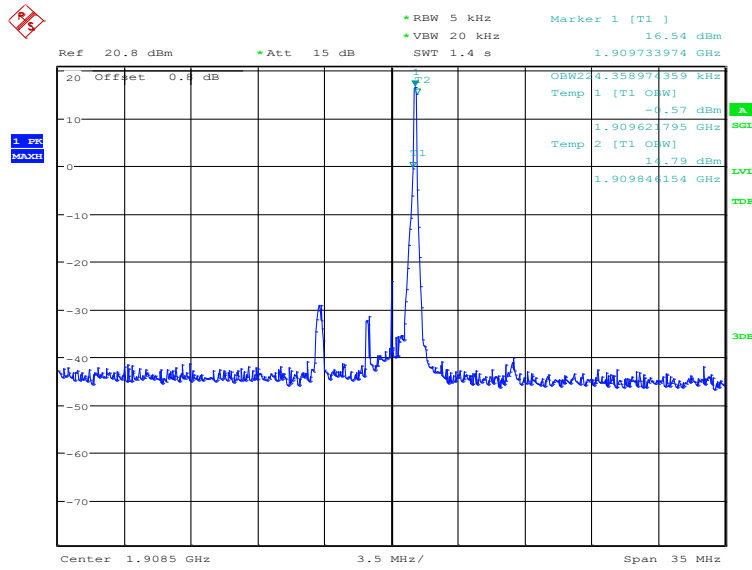
Date: 25.OCT.2022 08:57:19

LOW BAND EDGE BLOCK-1RB-low_offset



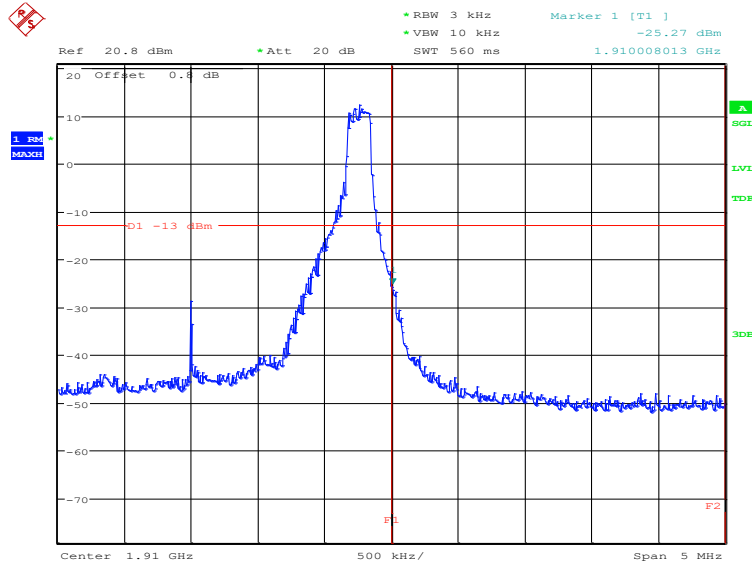
Date: 25.OCT.2022 08:58:33

OBW: 1RB-high_offset



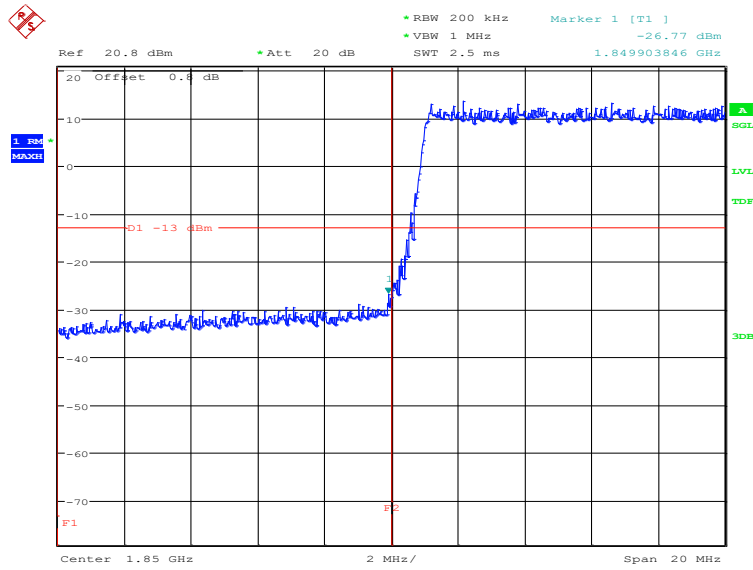
Date: 25.OCT.2022 08:59:09

HIGH BAND EDGE BLOCK-1RB-high_offset



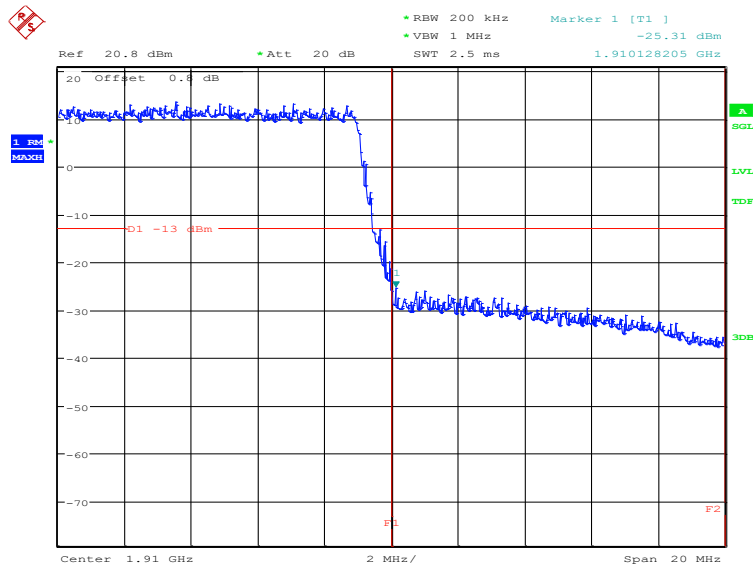
Date: 25.OCT.2022 09:00:24

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 17:31:04

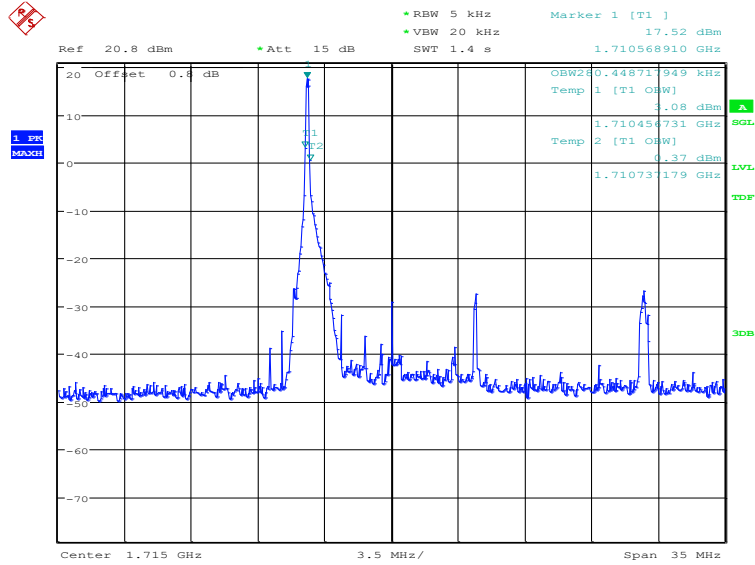
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 17:34:19

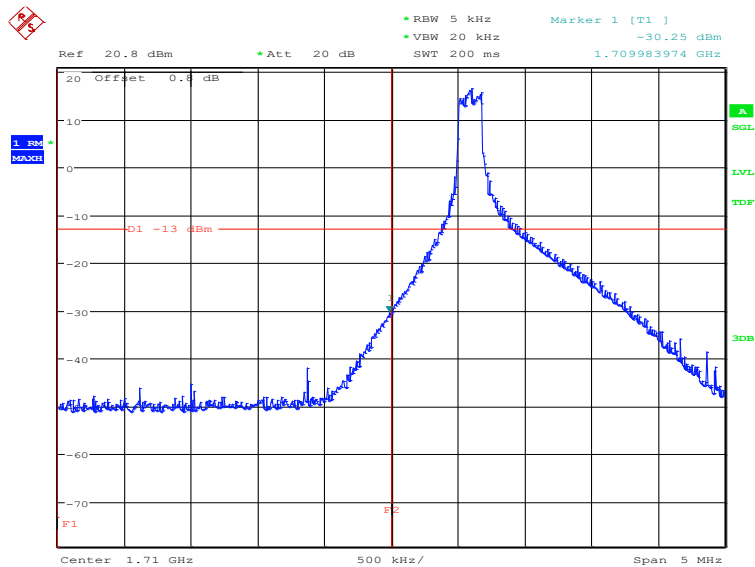
LTE band 4

OBW: 1RB-low_offset



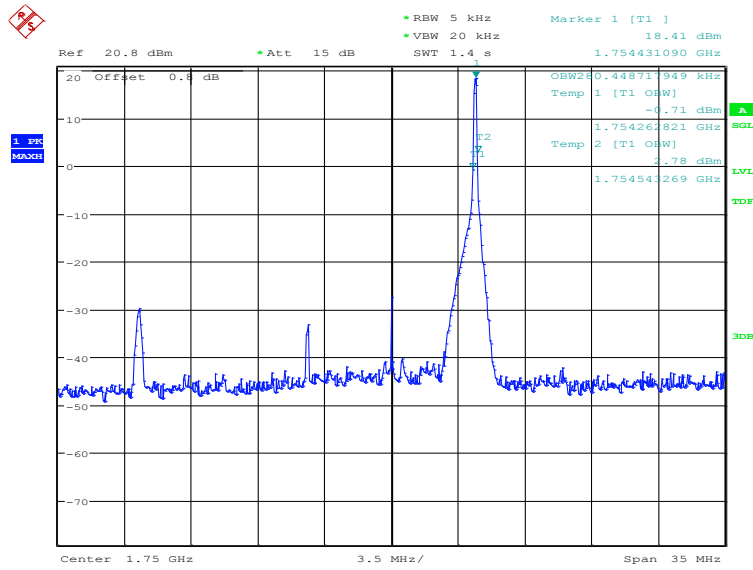
Date: 25.OCT.2022 09:01:02

LOW BAND EDGE BLOCK-1RB-low_offset



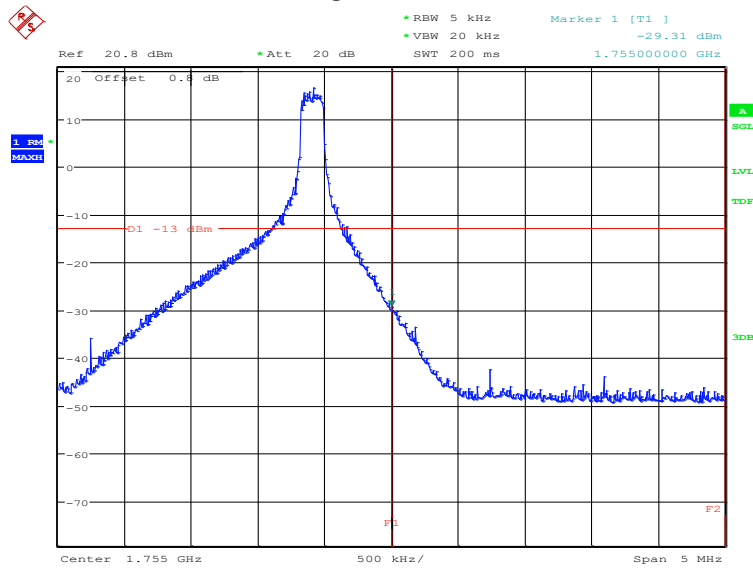
Date: 25.OCT.2022 09:02:17

OBW: 1RB-high_offset



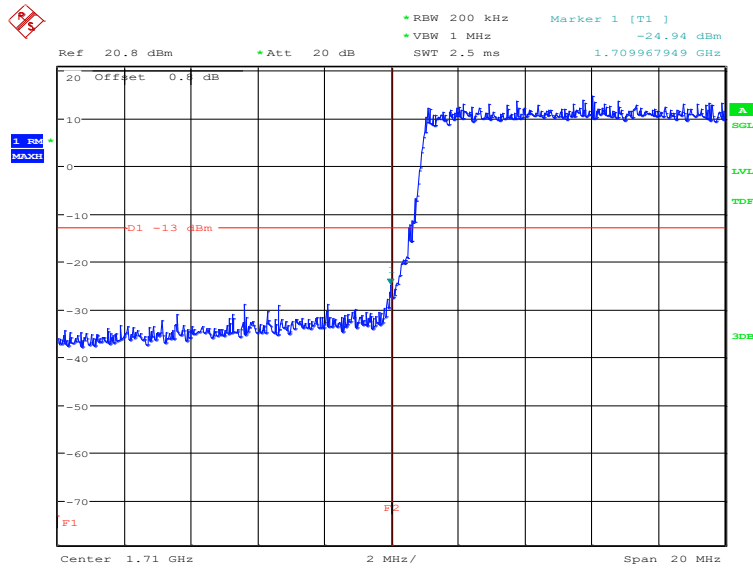
Date: 25.OCT.2022 09:02:53

HIGH BAND EDGE BLOCK-1RB-high_offset



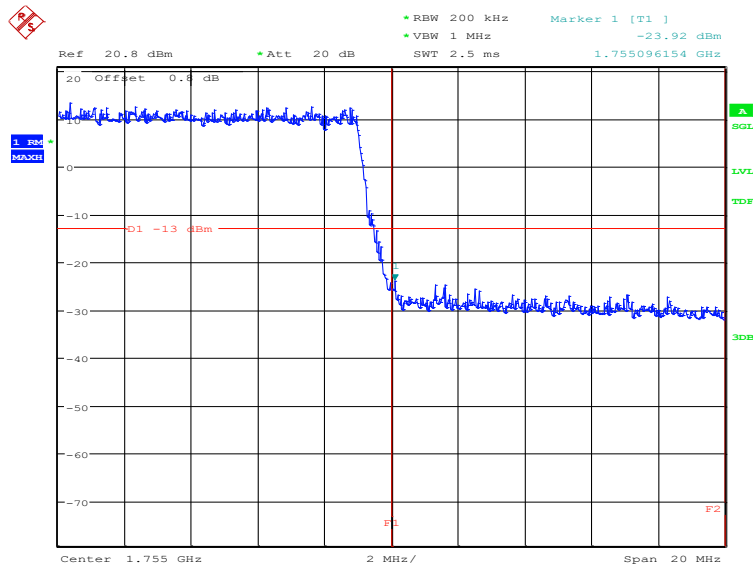
Date: 25.OCT.2022 09:04:07

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 18:00:22

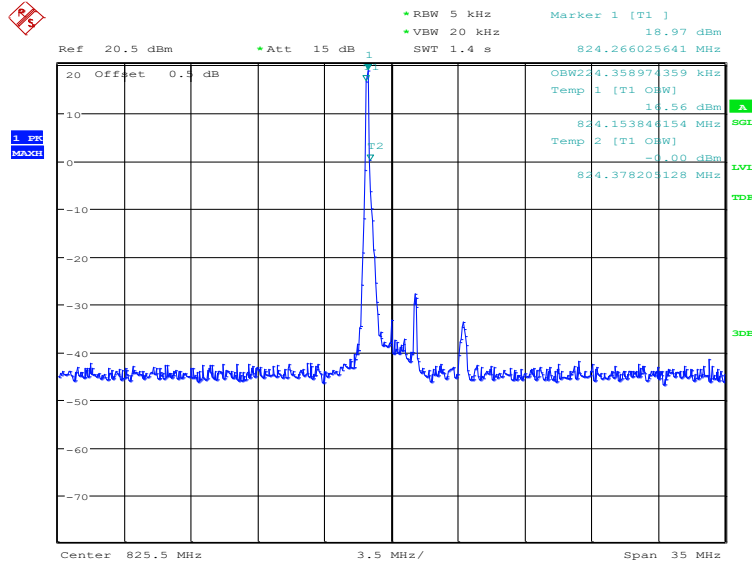
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 18:02:21

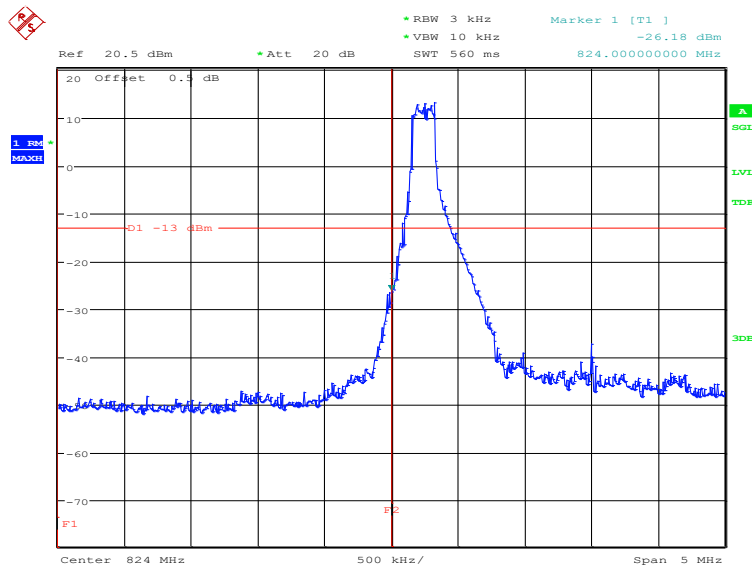
LTE band 5

OBW: 1RB-low_offset



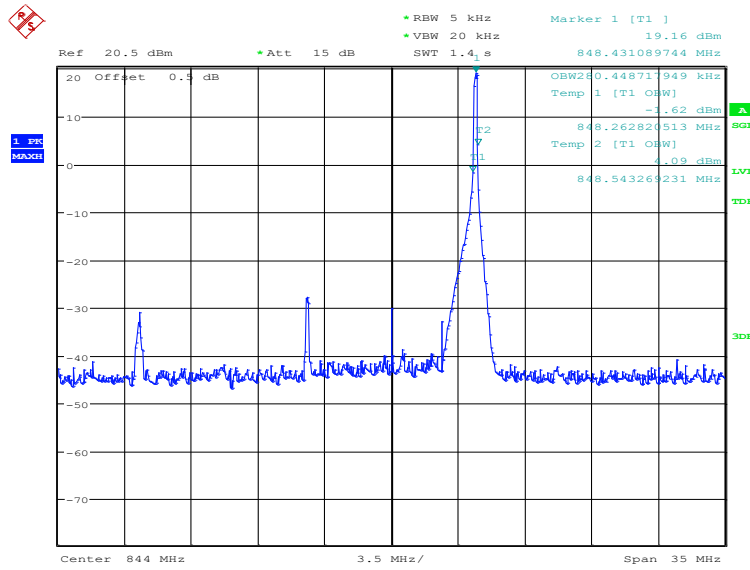
Date: 25.OCT.2022 15:23:23

LOW BAND EDGE BLOCK-1RB-low_offset



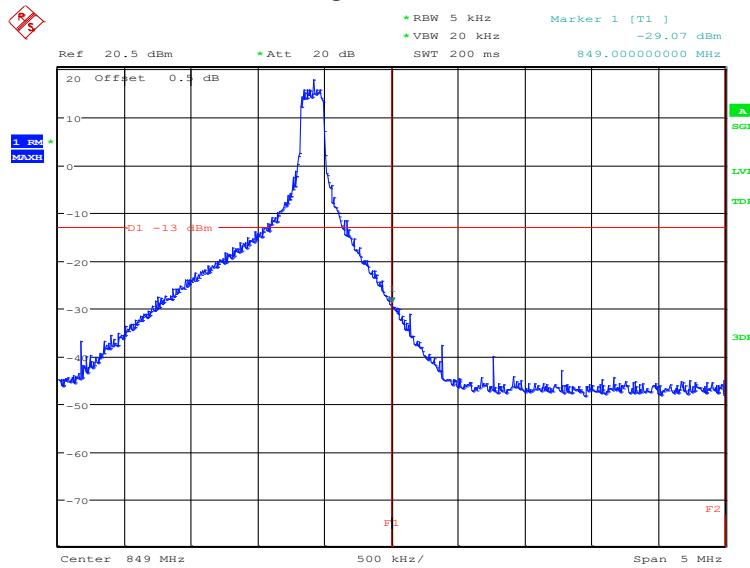
Date: 25.OCT.2022 15:24:37

OBW: 1RB-high_offset



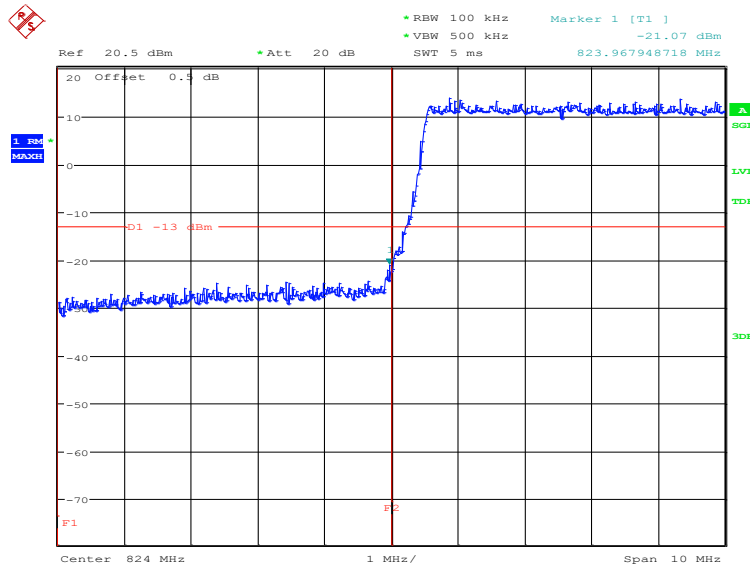
Date: 25.OCT.2022 15:27:00

HIGH BAND EDGE BLOCK-1RB-high_offset



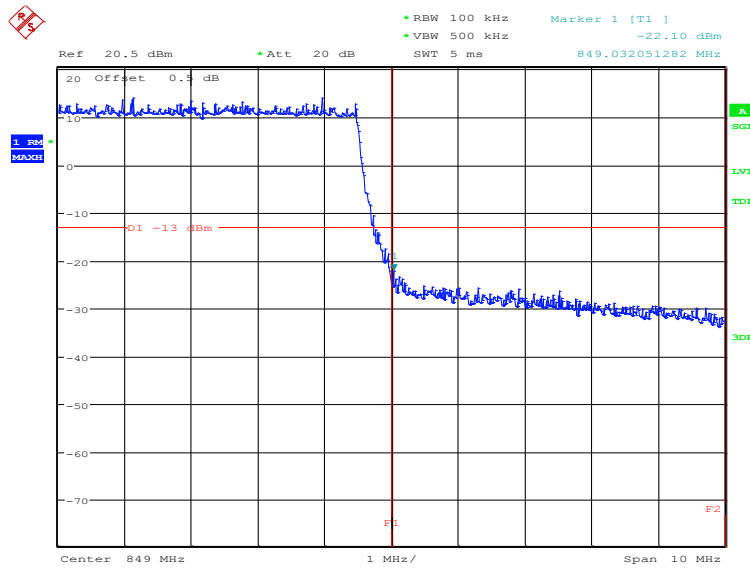
Date: 25.OCT.2022 15:28:15

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 25.OCT.2022 15:25:16

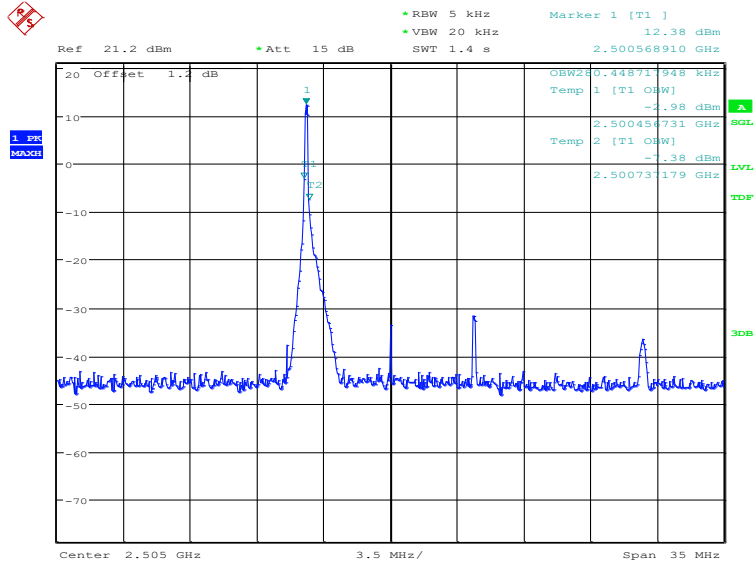
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 25.OCT.2022 15:28:54

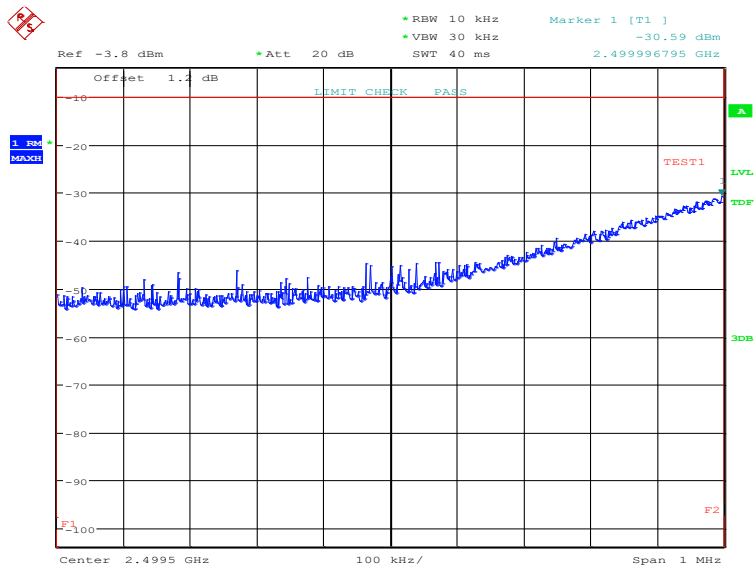
LTE band 7

OBW: 1RB-low_offset



Date: 25.OCT.2022 09:57:23

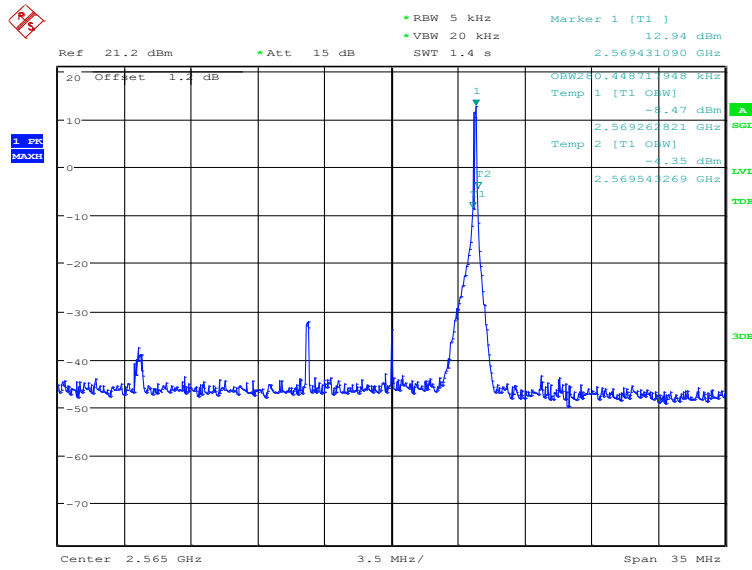
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 25.OCT.2022 09:59:10

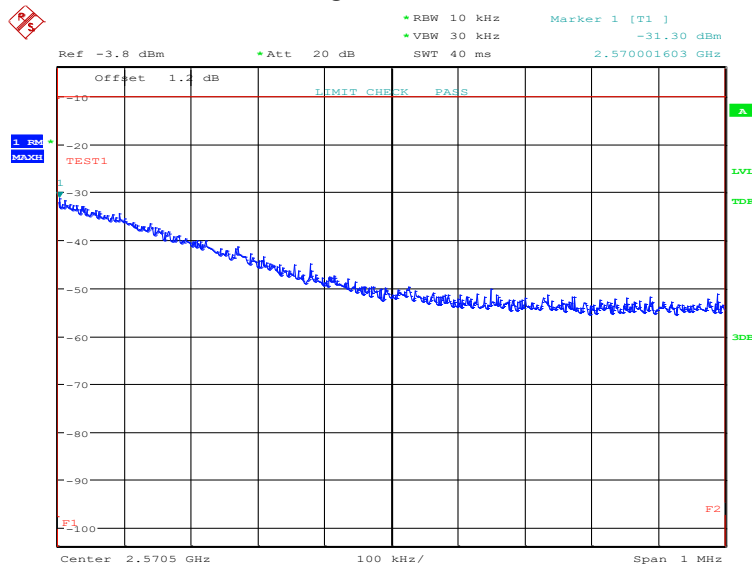


OBW: 1RB-high_offset

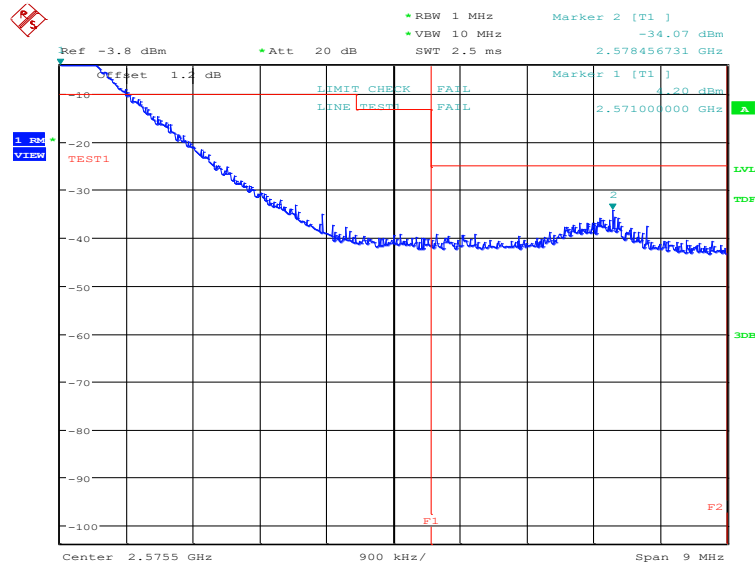


Date: 25.OCT.2022 09:08:51

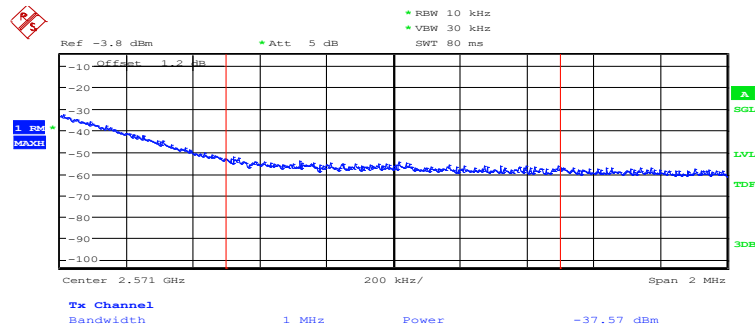
HIGH BAND EDGE BLOCK-1RB-high_offset



Date: 25.OCT.2022 09:10:55

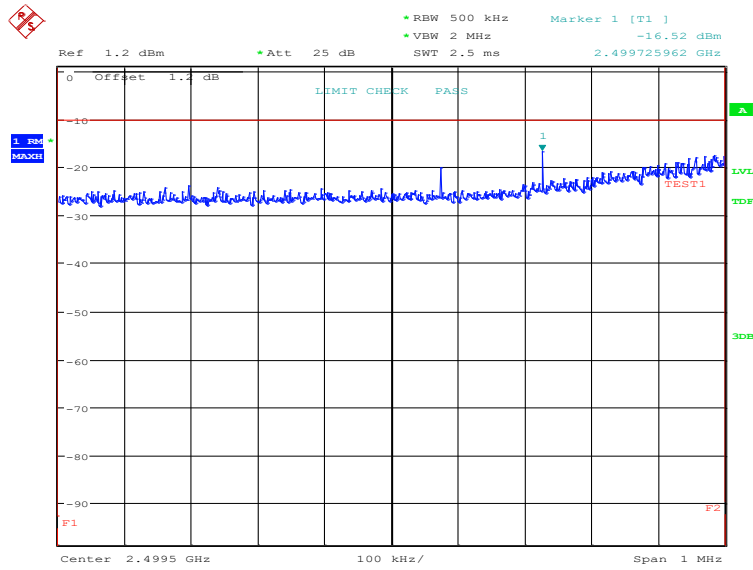


Date: 25.OCT.2022 09:13:05

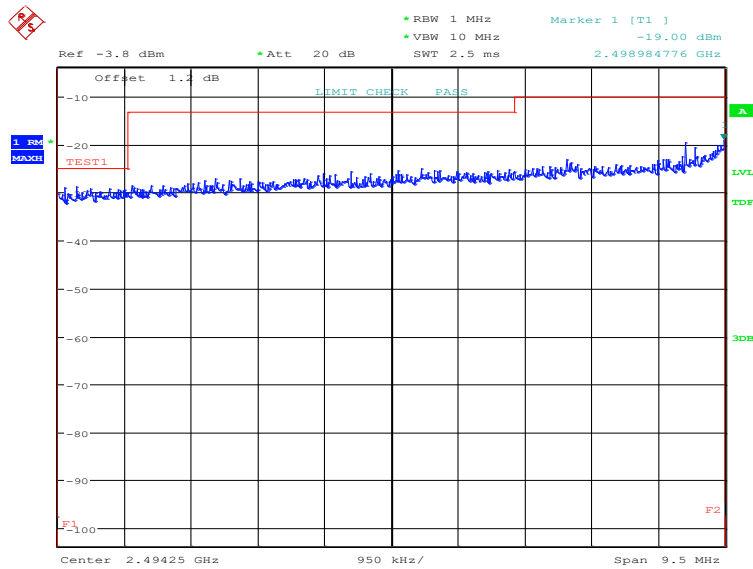


Date: 25.OCT.2022 09:13:36

LOW BAND EDGE BLOCK-20MHz-100%RB

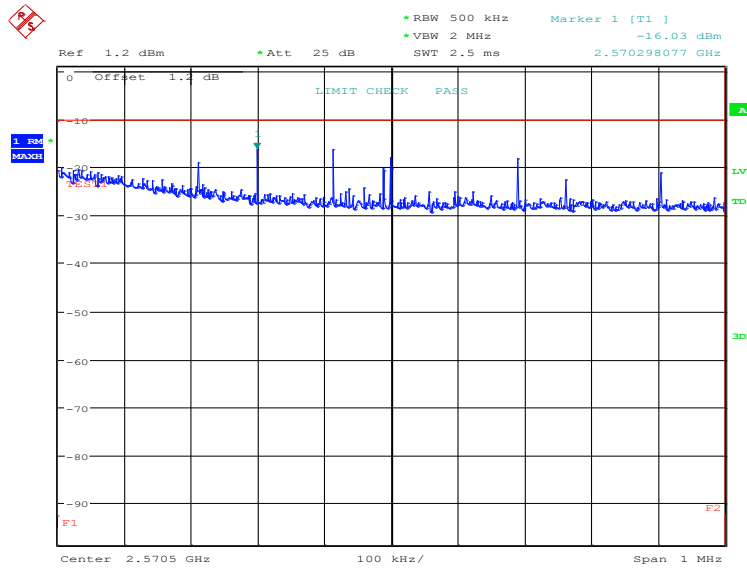


Date: 14.OCT.2022 18:46:47

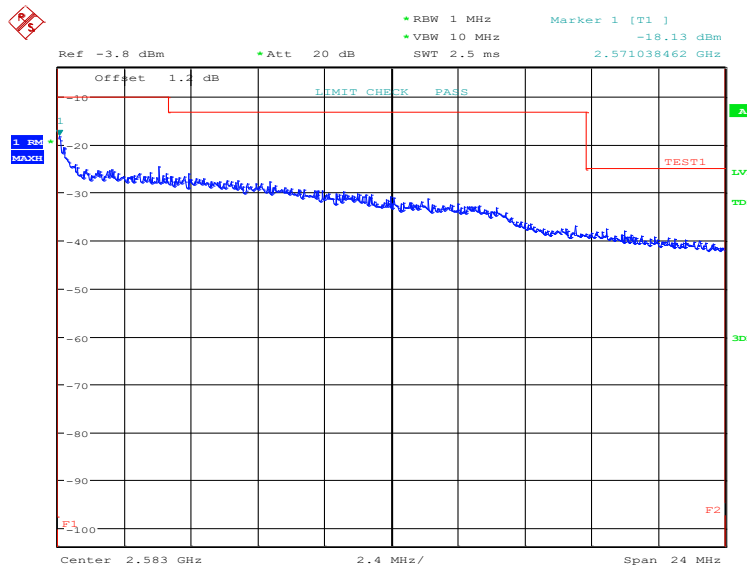


Date: 14.OCT.2022 18:48:53

HIGH BAND EDGE BLOCK-20MHz-100%RB



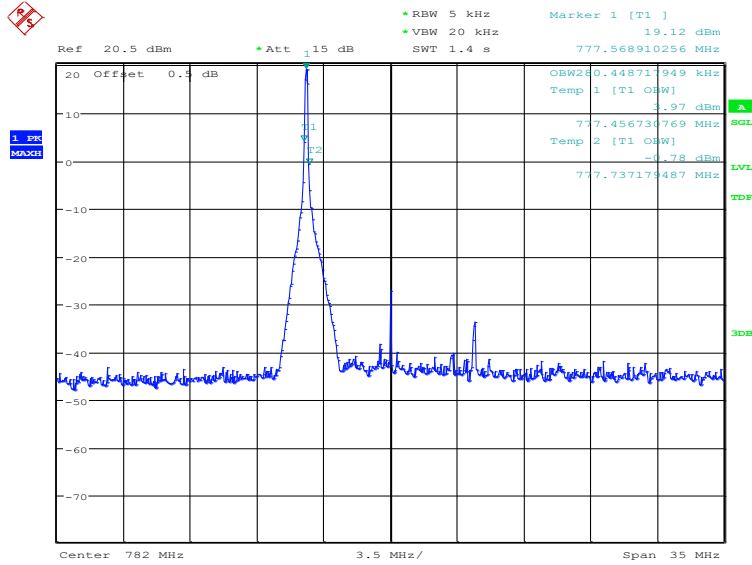
Date: 14.OCT.2022 18:52:11



Date: 14.OCT.2022 18:54:12

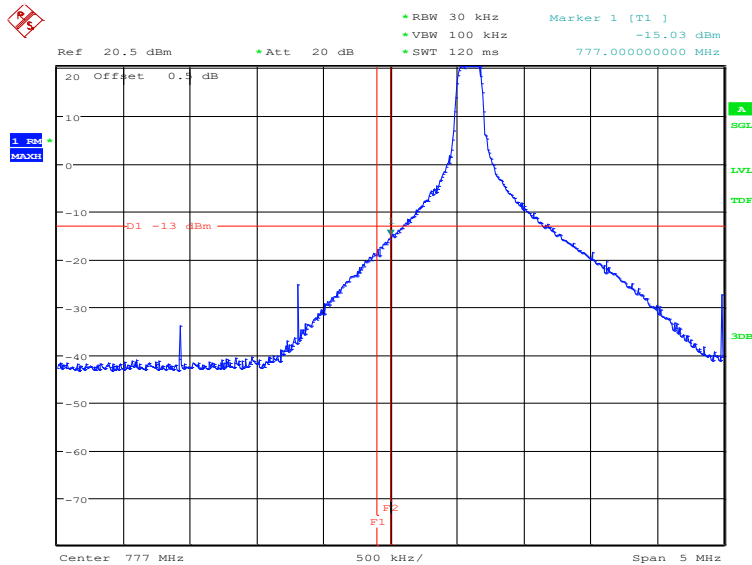
LTE band 13

OBW: 1RB-low_offset

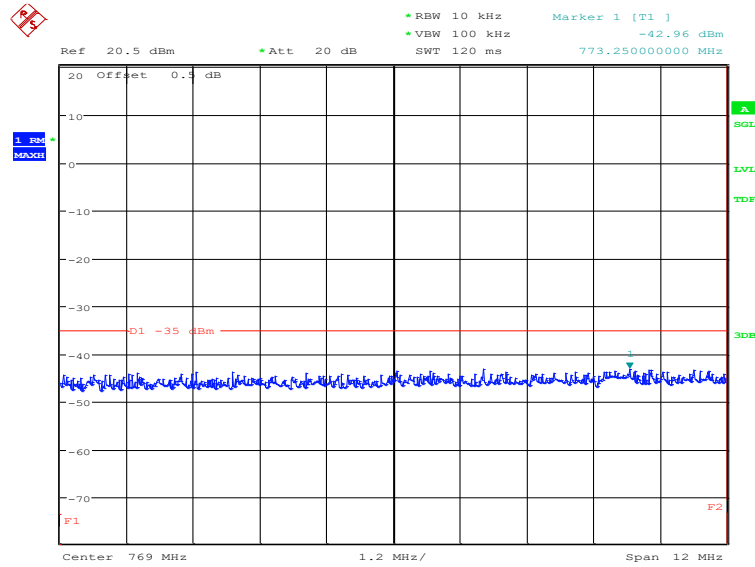


Date: 25.OCT.2022 10:06:44

LOW BAND EDGE BLOCK-1RB-low_offset

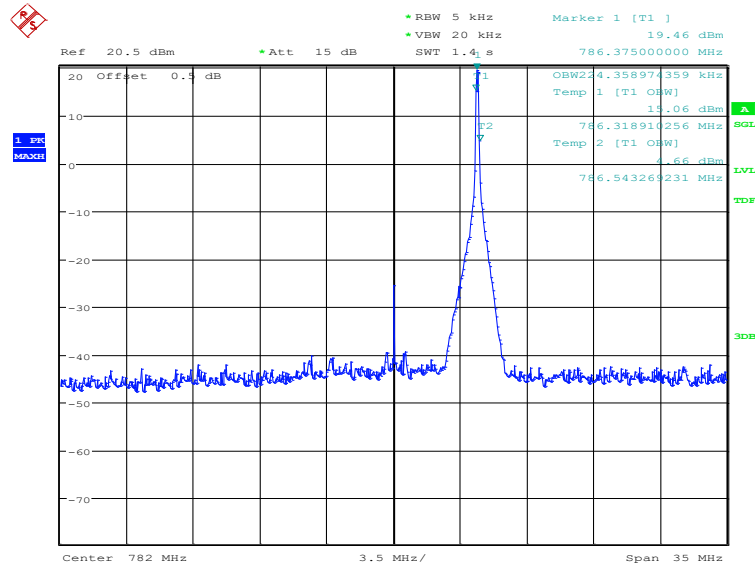


Date: 25.OCT.2022 10:07:11



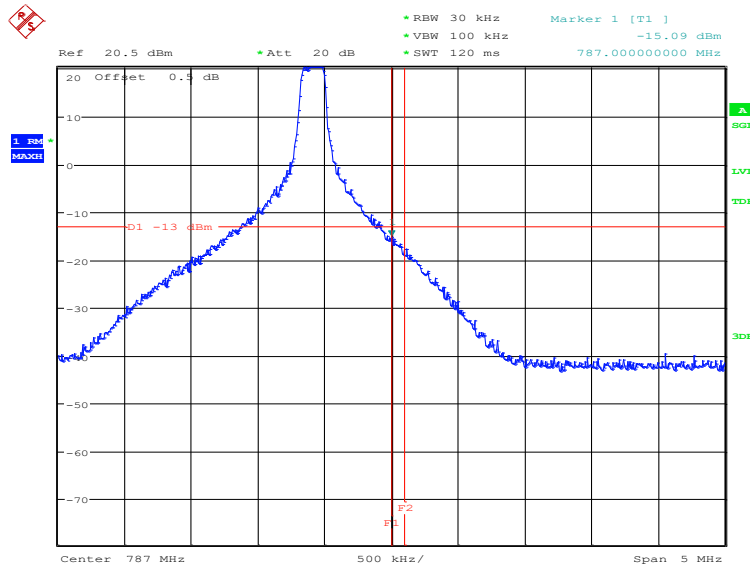
Date: 25.OCT.2022 10:07:52

OBW: 1RB-high_offset

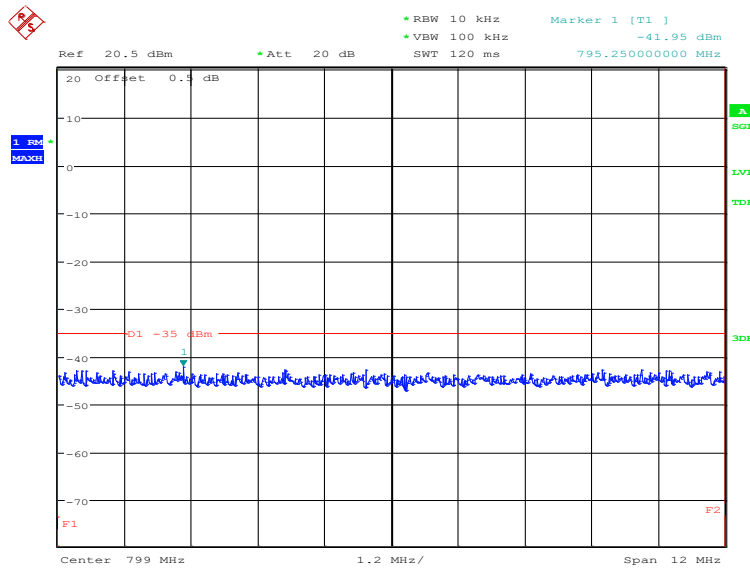


Date: 25.OCT.2022 10:08:27

HIGH BAND EDGE BLOCK-1RB-high_offset

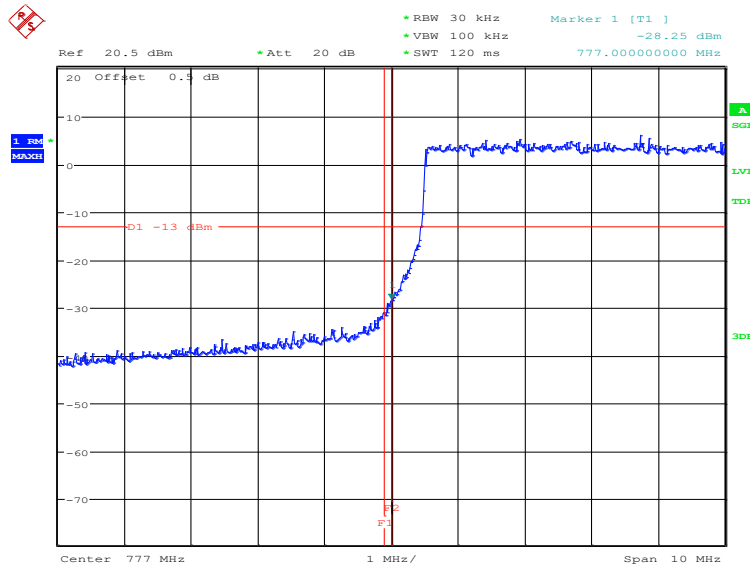


Date: 25.OCT.2022 10:08:54

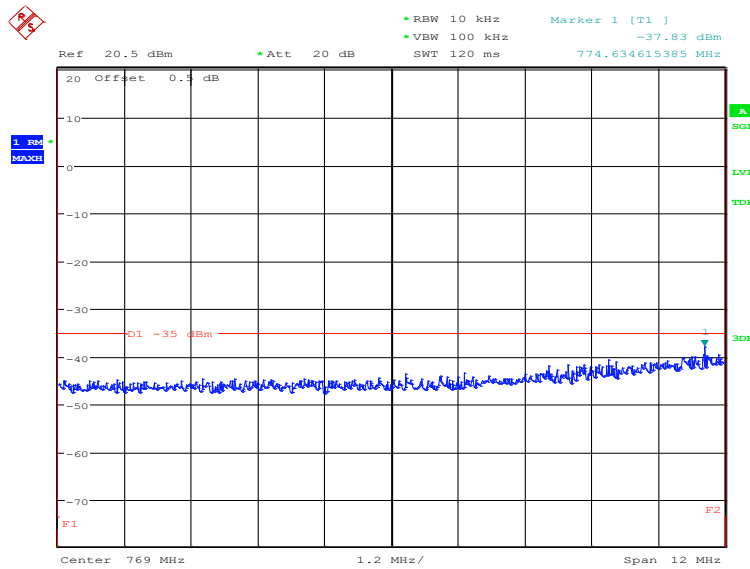


Date: 25.OCT.2022 10:09:35

LOW BAND EDGE BLOCK-10MHz-100%RB

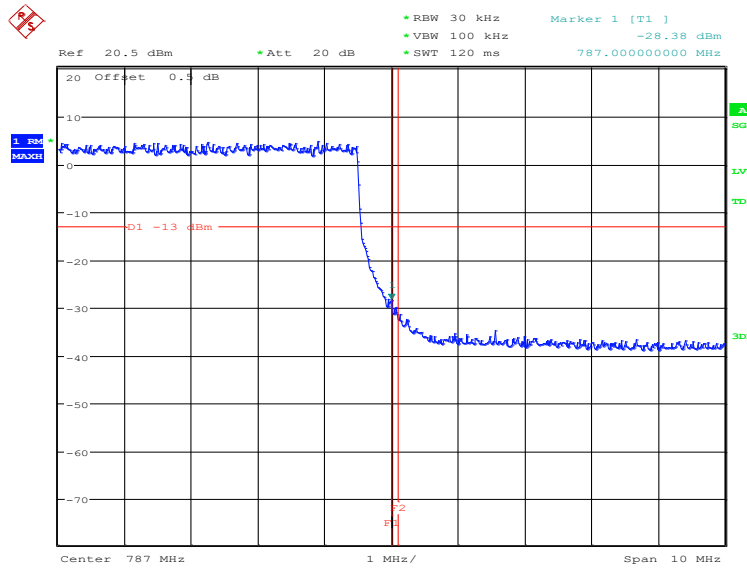


Date: 25.OCT.2022 10:42:45

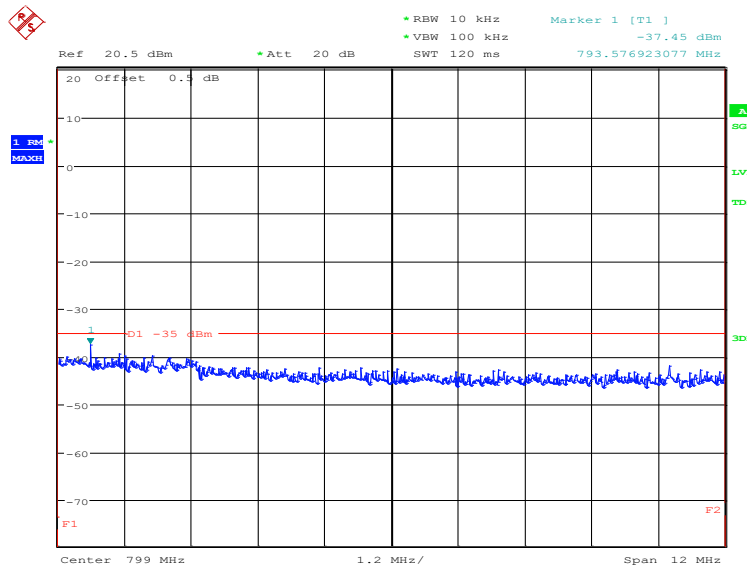


Date: 25.OCT.2022 10:43:24

HIGH BAND EDGE BLOCK-10MHz-100%RB



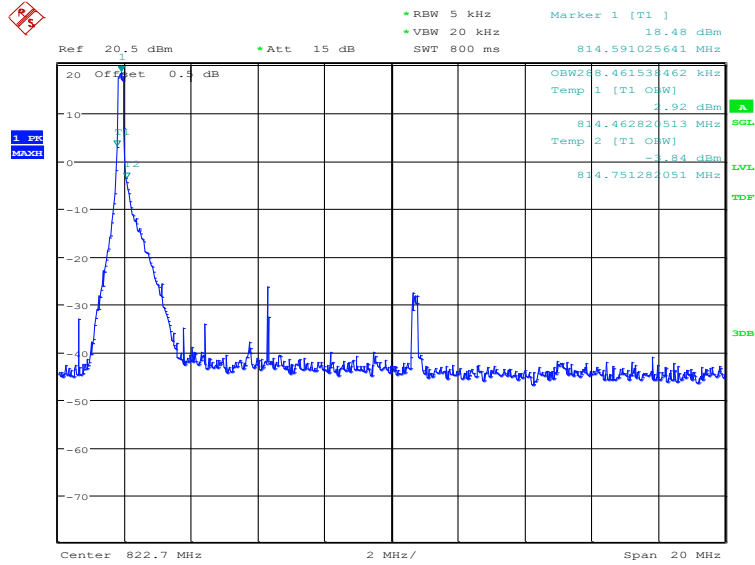
Date: 25.OCT.2022 10:45:12



Date: 25.OCT.2022 10:45:55

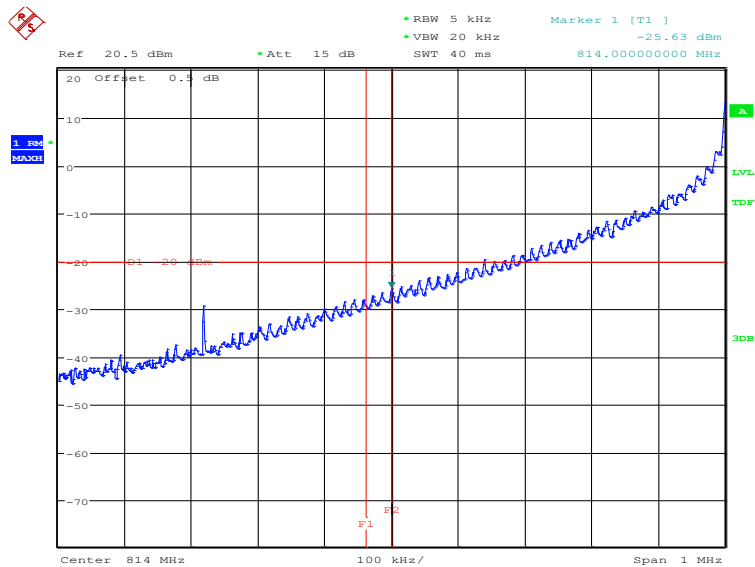
LTE band 26(814MHz~824MHz)

OBW: 1RB-low_offset



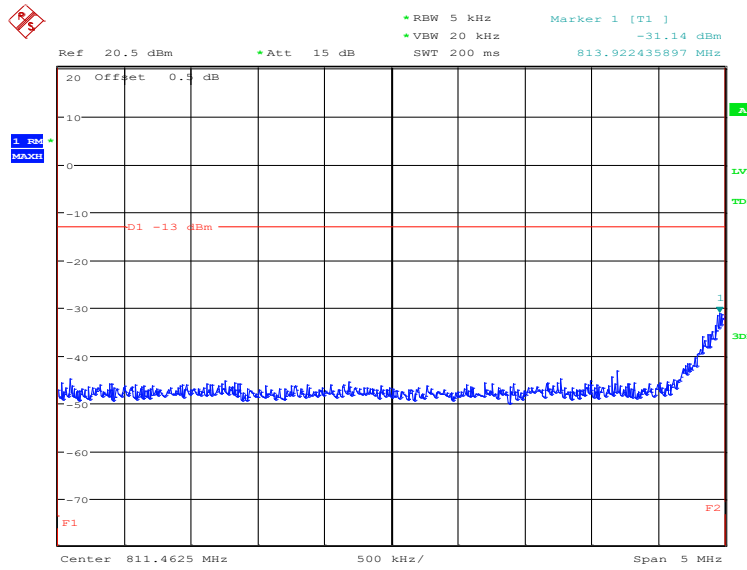
Date: 25.OCT.2022 10:50:58

LOW BAND EDGE BLOCK-1RB-low_offset



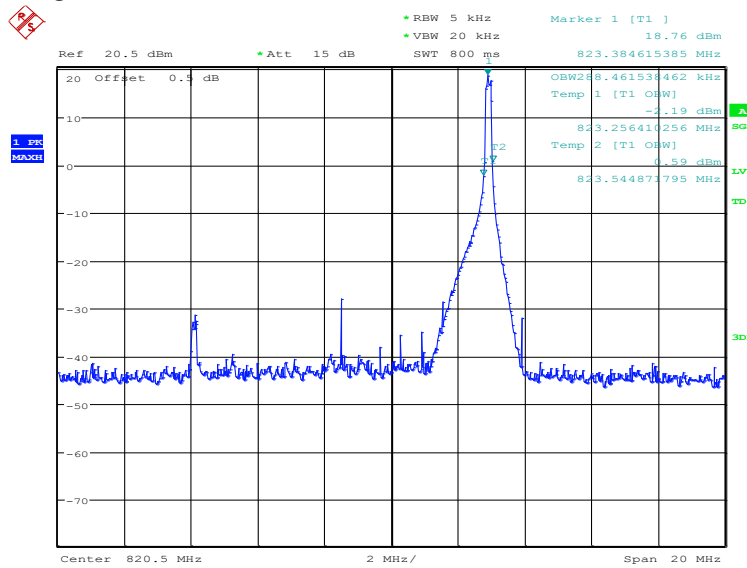
Date: 25.OCT.2022 10:52:44

LOW Emission Mask -1RB-low_offset



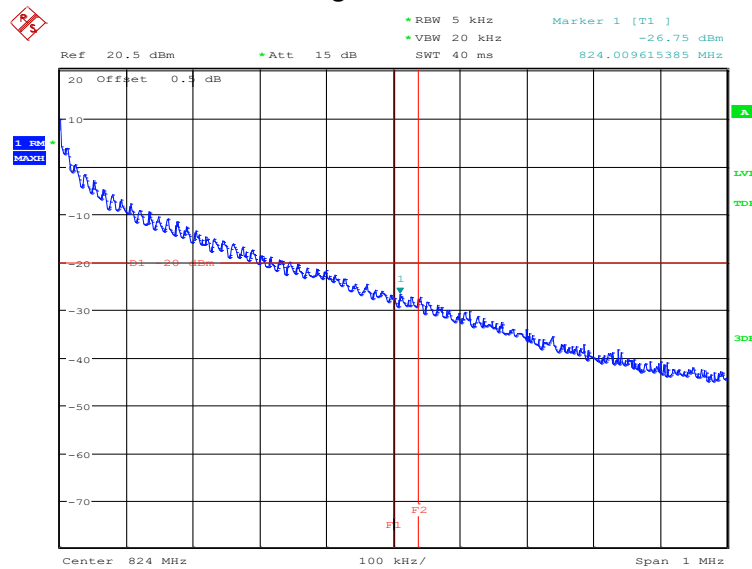
Date: 25.OCT.2022 10:54:29

OBW: 1RB-high_offset



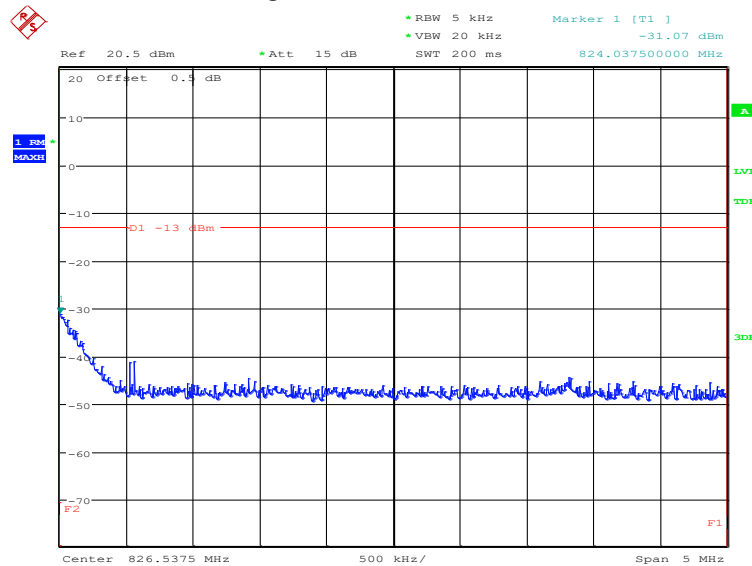
Date: 25.OCT.2022 10:55:05

HIGH BAND EDGE BLOCK-1RB-high_offset



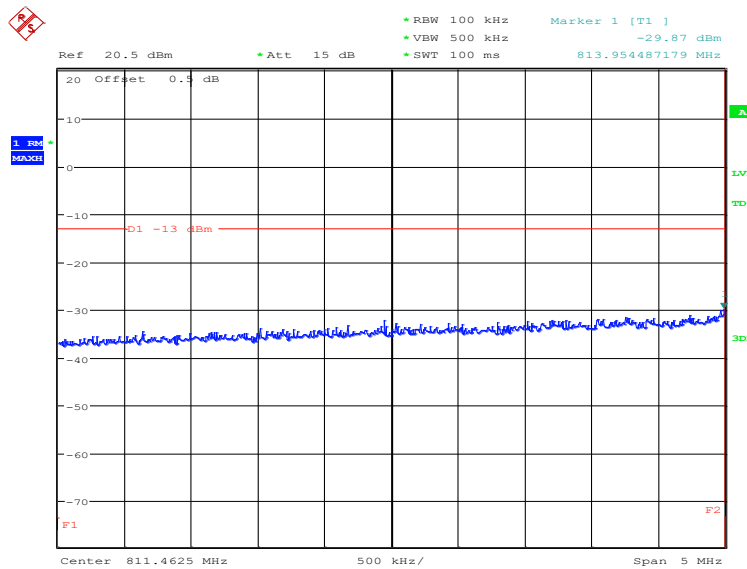
Date: 25.OCT.2022 10:56:43

HIGH Emission Mask -1RB-high_offset



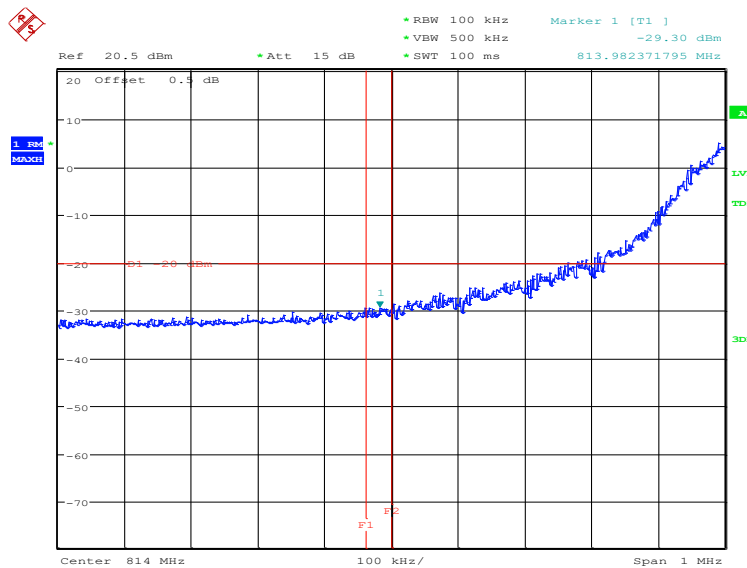
Date: 25.OCT.2022 10:58:29

LOW Emission Mask -10MHz-100%RB



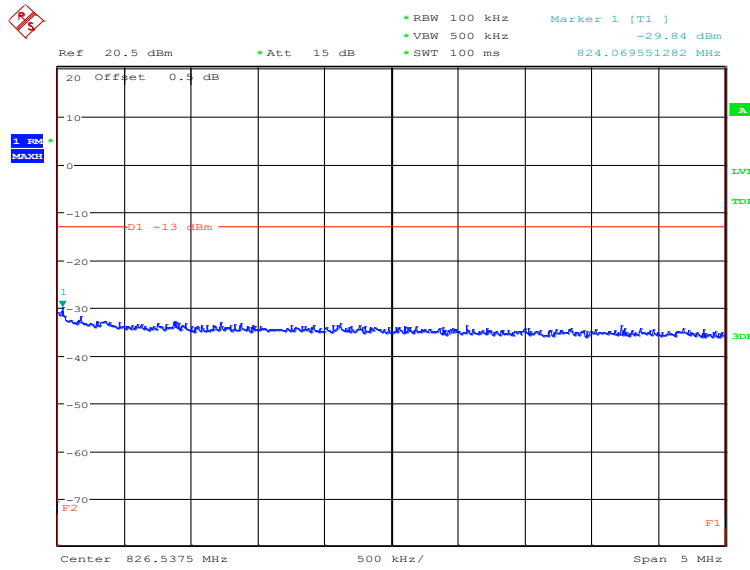
Date: 14.OCT.2022 18:39:06

LOW BAND EDGE BLOCK-10MHz-100%RB



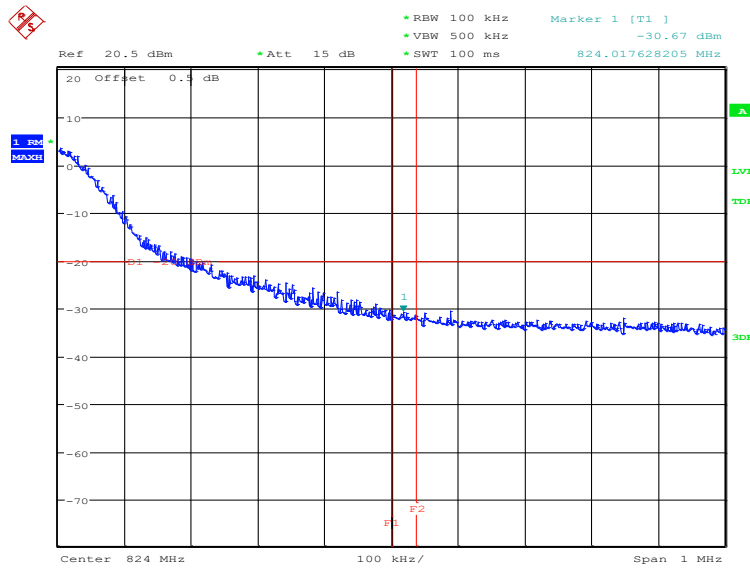
Date: 14.OCT.2022 18:38:25

HIGH Emission Mask -10MHz-100%RB



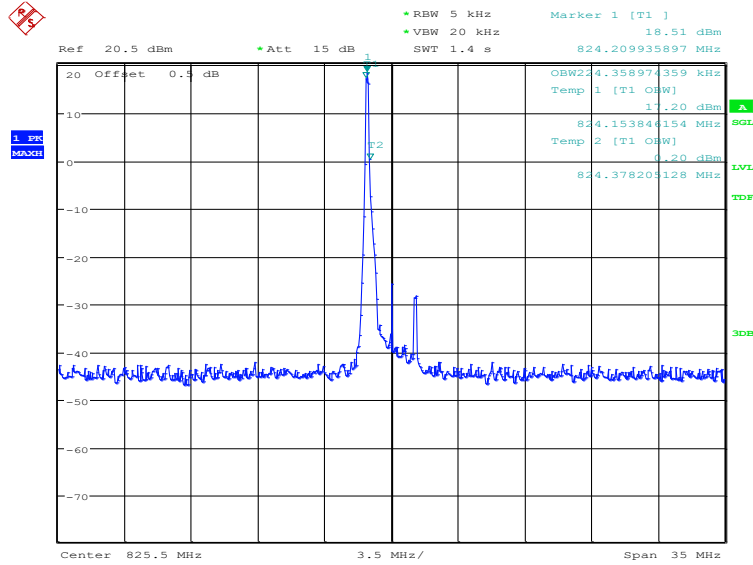
Date: 14.OCT.2022 18:42:03

HIGH BAND EDGE BLOCK-10MHz-100%RB



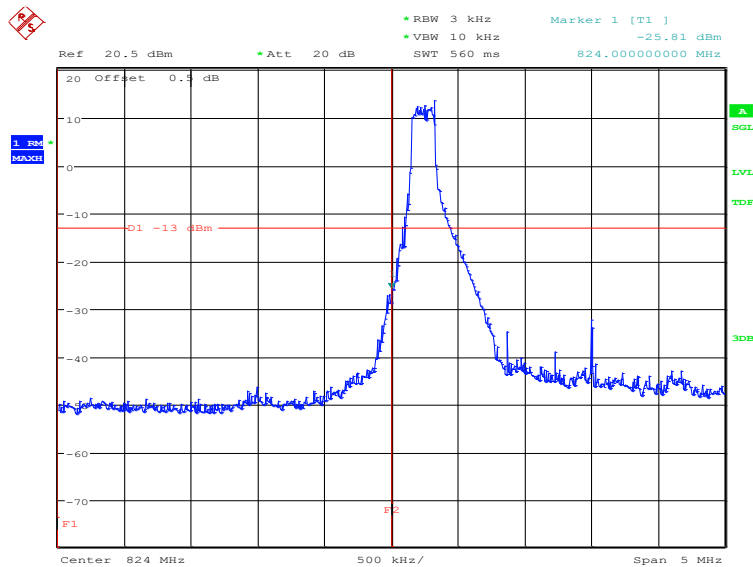
Date: 14.OCT.2022 18:41:13

LTE band 26(824MHz~849MHz) OBW: 1RB-low_offset



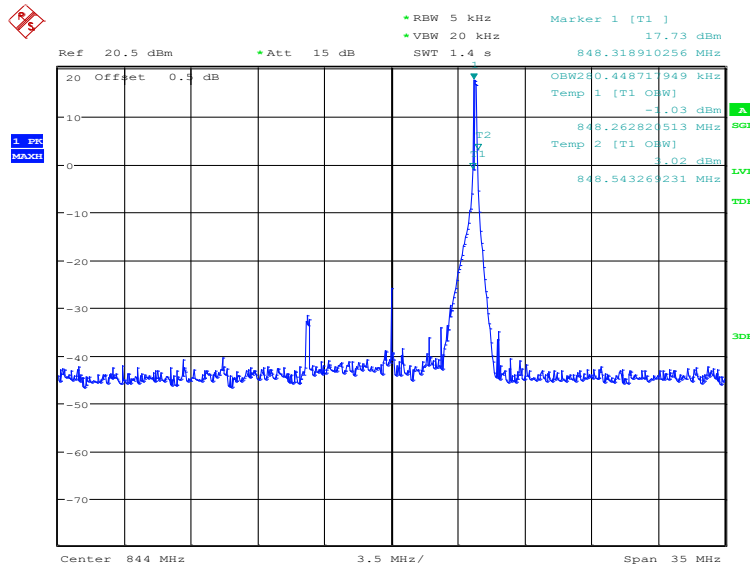
Date: 25.OCT.2022 09:19:44

LOW BAND EDGE BLOCK-1RB-low_offset



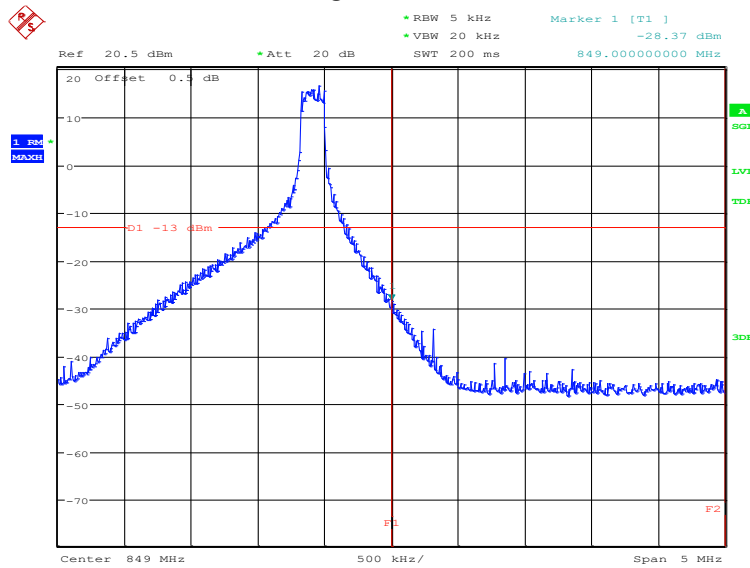
Date: 25.OCT.2022 09:20:59

OBW: 1RB-high_offset



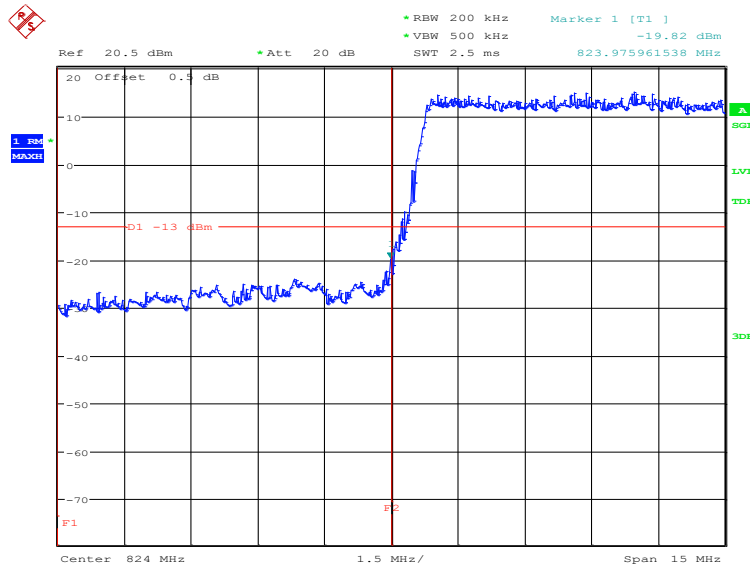
Date: 25.OCT.2022 09:21:36

HIGH BAND EDGE BLOCK-1RB-high_offset



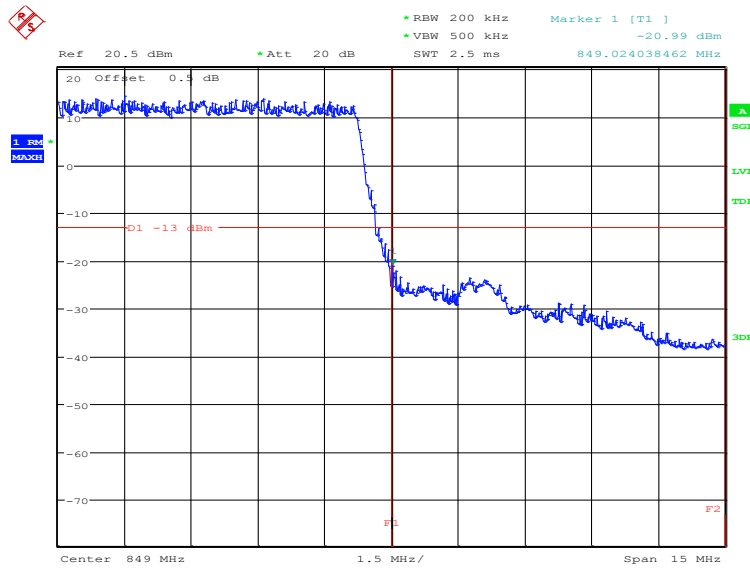
Date: 25.OCT.2022 09:22:51

LOW BAND EDGE BLOCK-15MHz-100%RB



Date: 14.OCT.2022 18:17:17

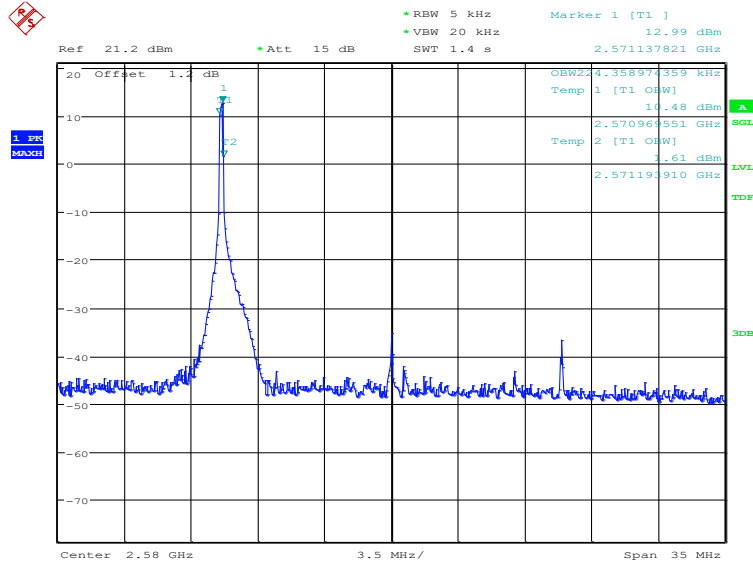
HIGH BAND EDGE BLOCK-15MHz-100%RB



Date: 14.OCT.2022 18:19:04

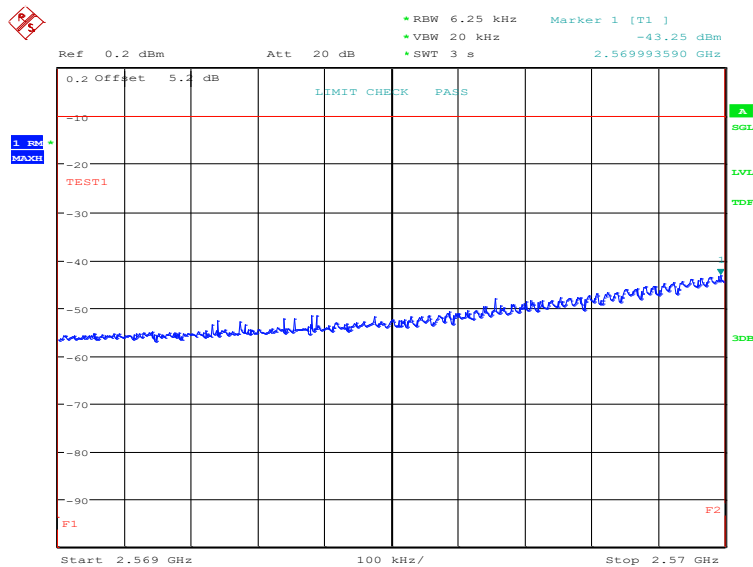
LTE band 38

OBW: 1RB-low_offset

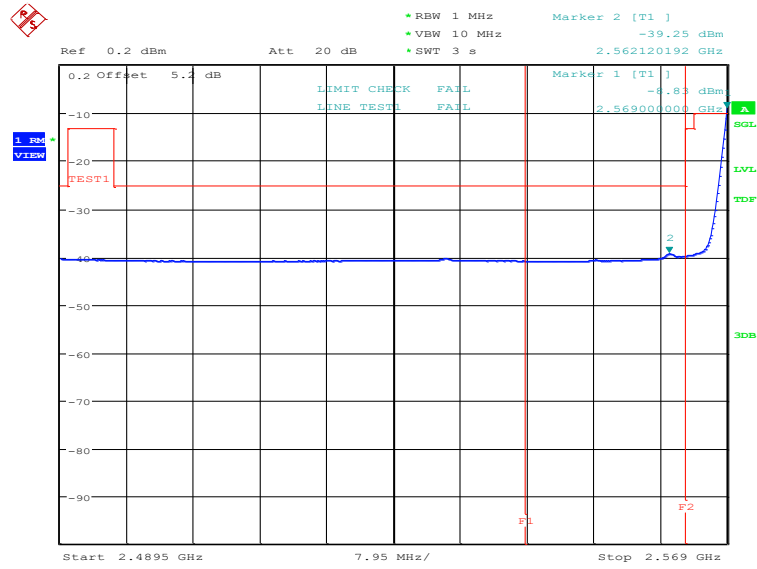


Date: 25.OCT.2022 09:28:37

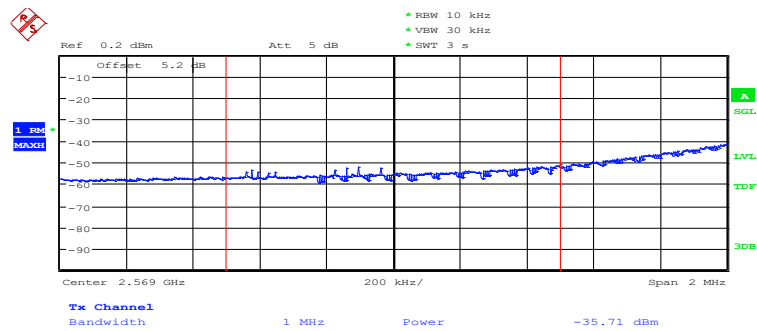
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 25.OCT.2022 09:29:18

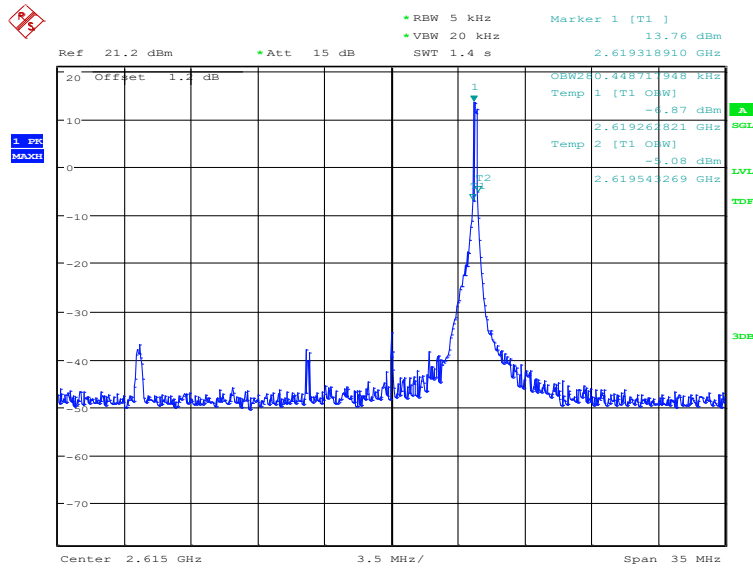


Date: 25.OCT.2022 09:30:04



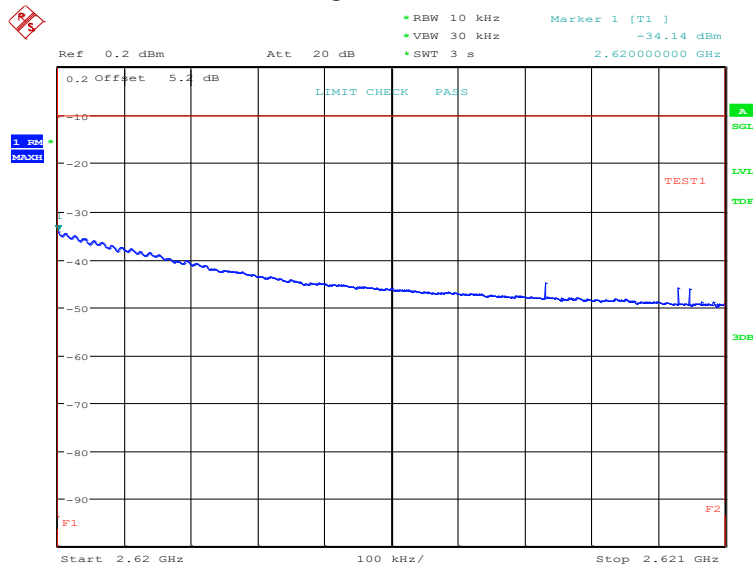
Date: 25.OCT.2022 09:30:22

OBW: 1RB-high_offset

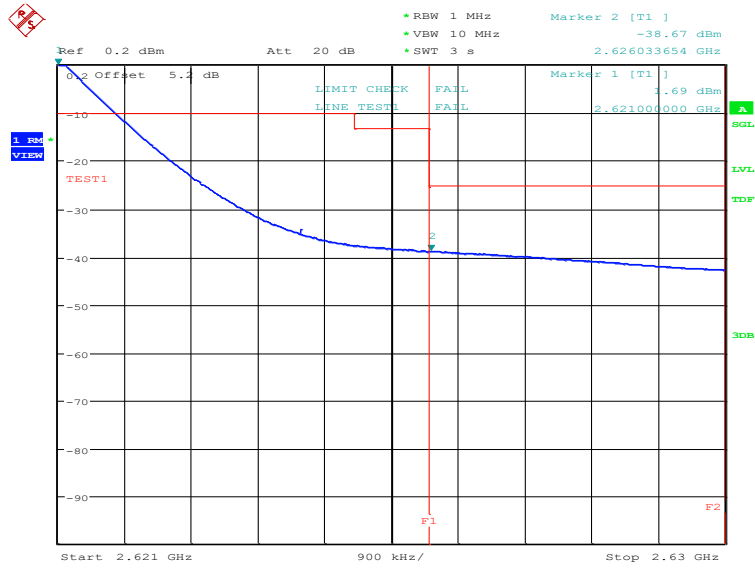


Date: 25.OCT.2022 09:31:39

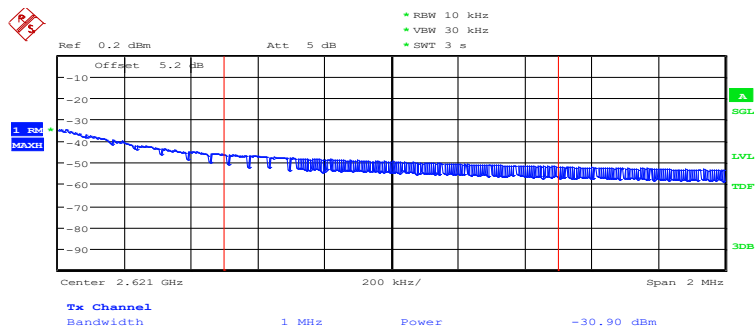
HIGH BAND EDGE BLOCK-1RB-high_offset



Date: 25.OCT.2022 09:32:21

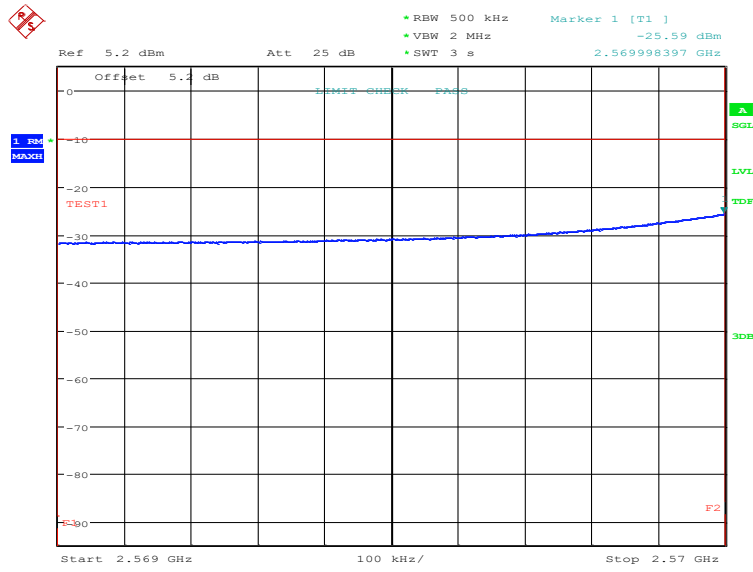


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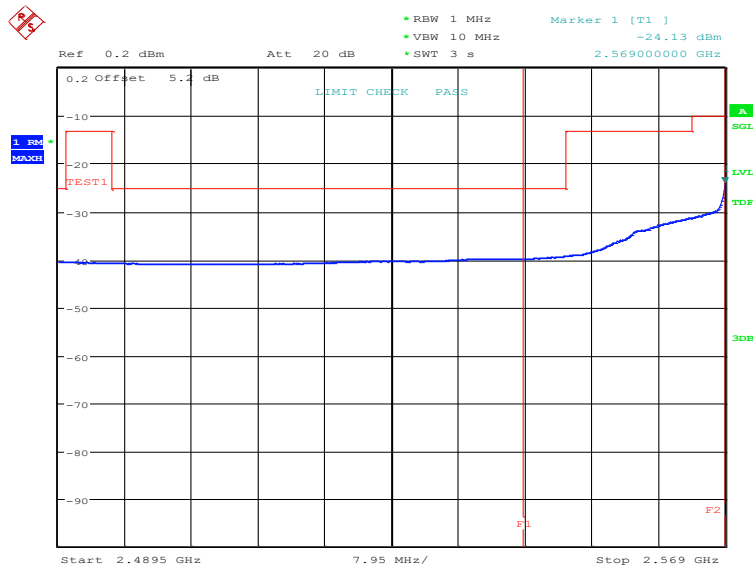


Date: 25.OCT.2022 09:33:25

LOW BAND EDGE BLOCK-20MHz-100%RB

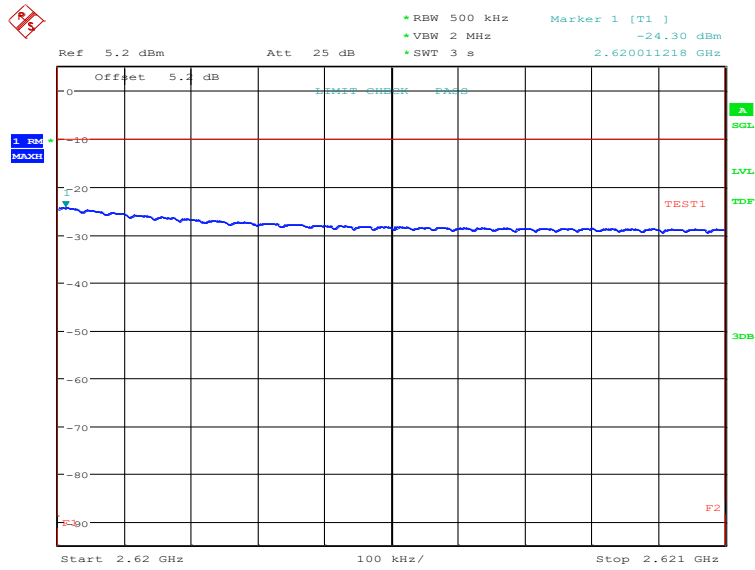


Date: 14.OCT.2022 18:27:22

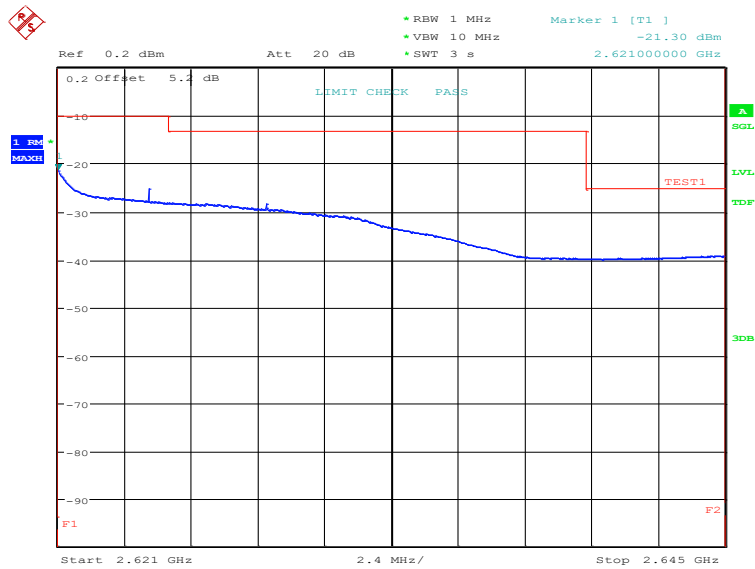


Date: 14.OCT.2022 18:28:00

HIGH BAND EDGE BLOCK-20MHz-100%RB



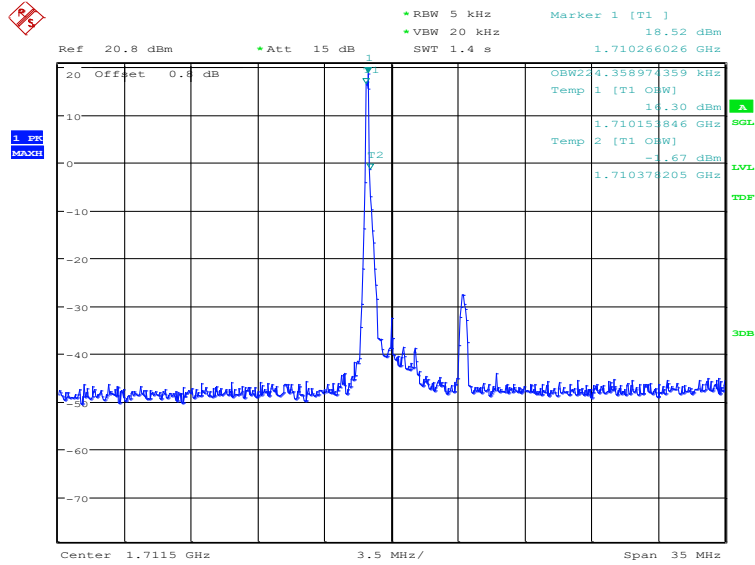
Date: 14.OCT.2022 18:29:55



Date: 14.OCT.2022 18:30:34

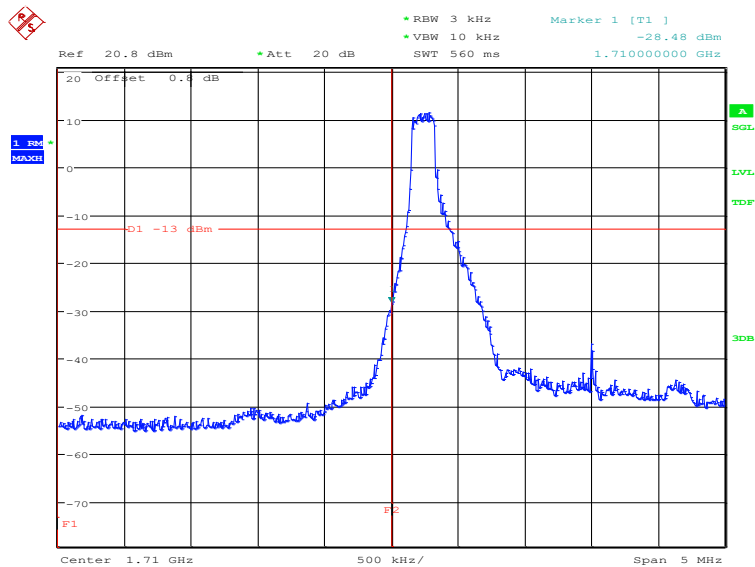
LTE band 66

OBW: 1RB-low_offset



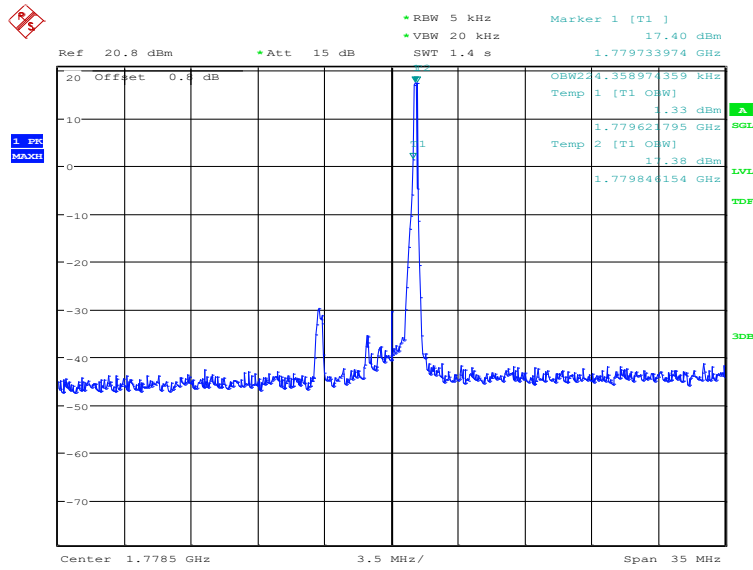
Date: 25.OCT.2022 09:24:10

LOW BAND EDGE BLOCK-1RB-low_offset



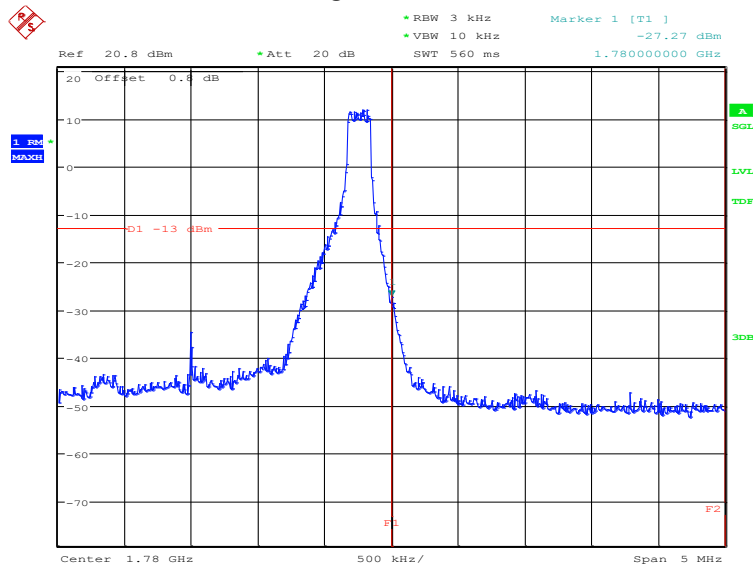
Date: 25.OCT.2022 09:25:24

OBW: 1RB-high_offset



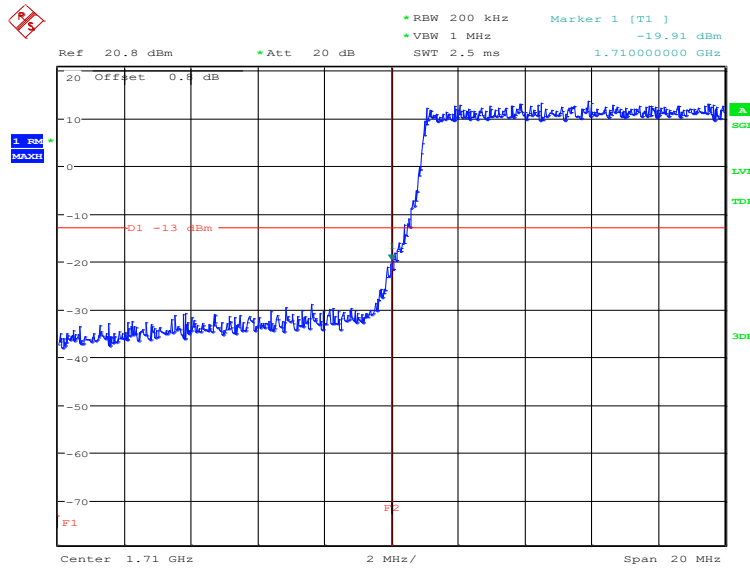
Date: 25.OCT.2022 09:26:00

HIGH BAND EDGE BLOCK-1RB-high_offset



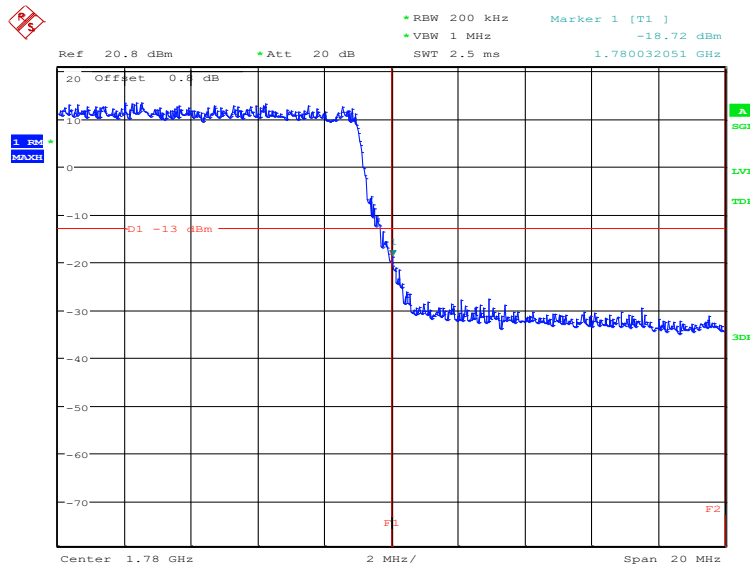
Date: 25.OCT.2022 09:27:15

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 18:22:05

HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 14.OCT.2022 18:24:30

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

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

Part 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

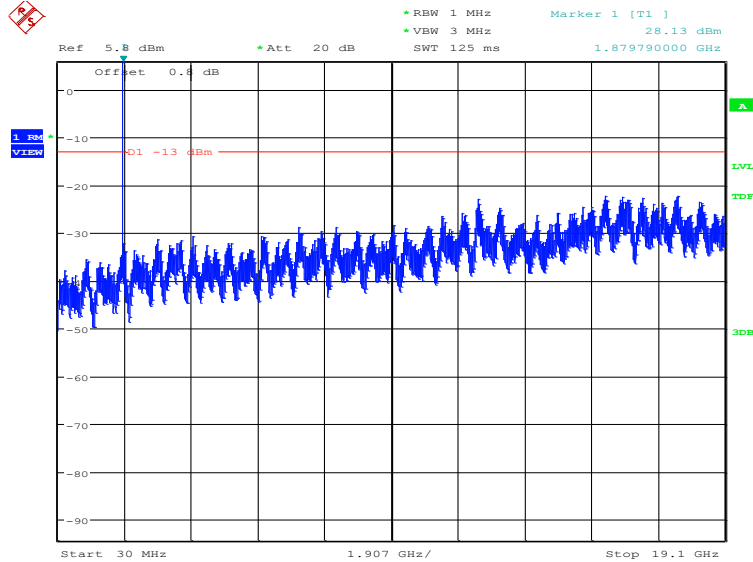
licensees. The emission limits are as follows: For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116\log_{10}(f/6.1)$ decibels or $50 + 10\log_{10}(P)$ decibels 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.

A. 7.3 Measurement result

Only the worst case result is given below

LTE band 2: 30MHz – 19.1GHz

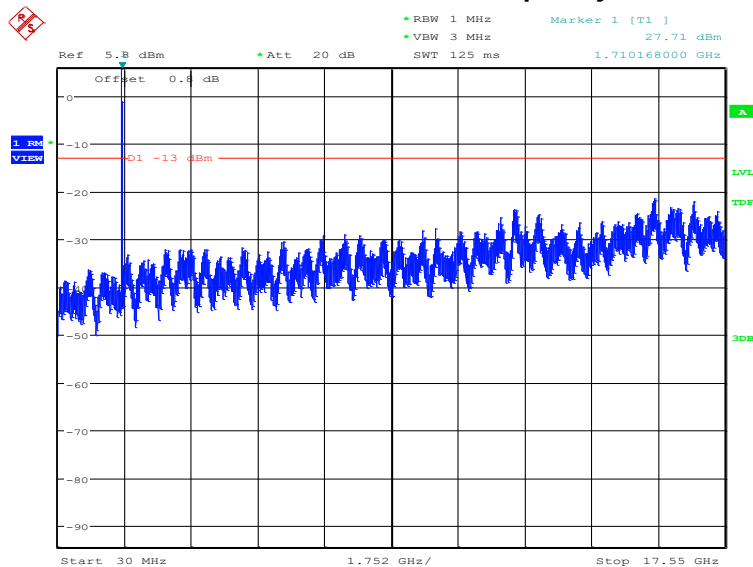
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 09:34:56

LTE band 4: 30MHz – 17.55GHz

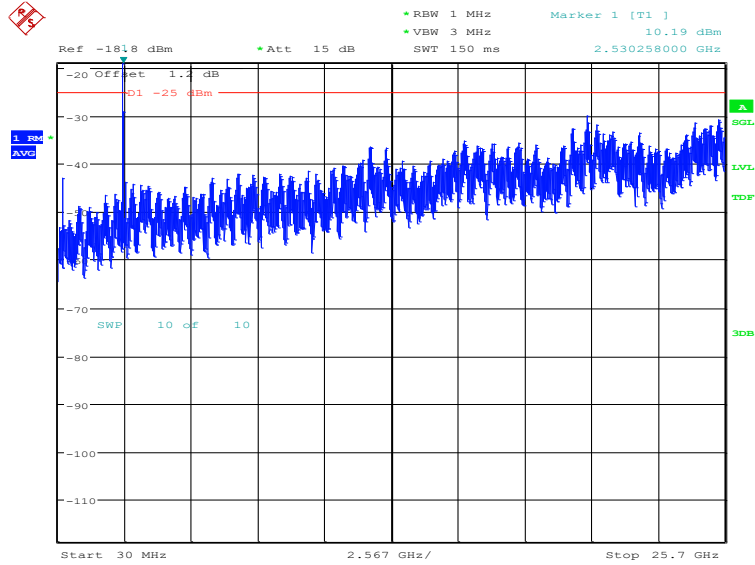
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 09:35:39

LTE band 7: 30MHz – 25.7GHz

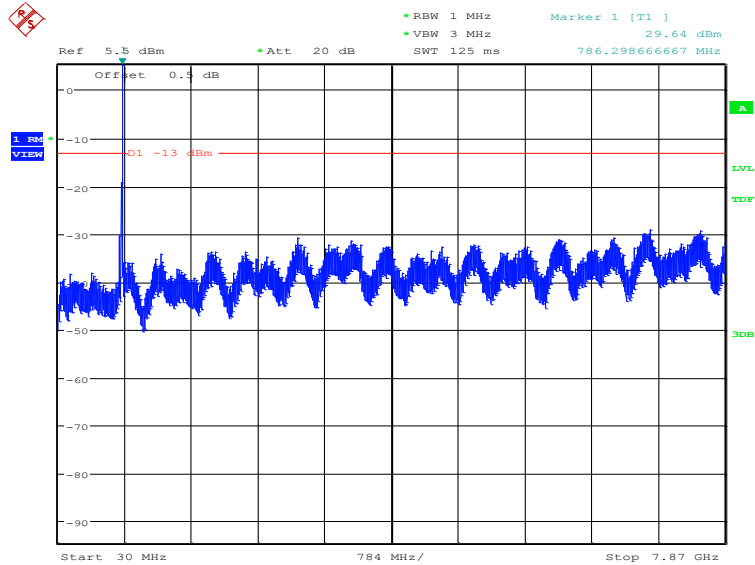
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 09:36:07

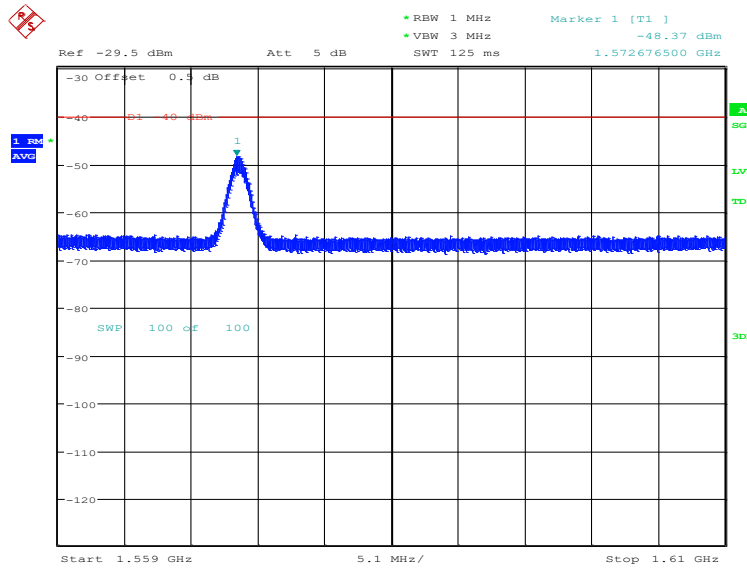
LTE band 13: 30MHz – 7.87GHz

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



Date: 25.OCT.2022 09:37:37

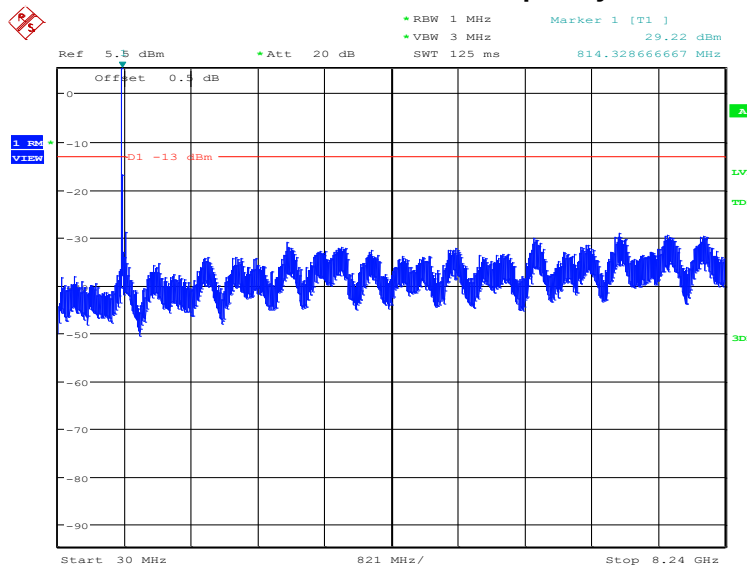
LTE band 13: 1559MHz – 1610MHz



Date: 25.OCT.2022 09:38:12

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

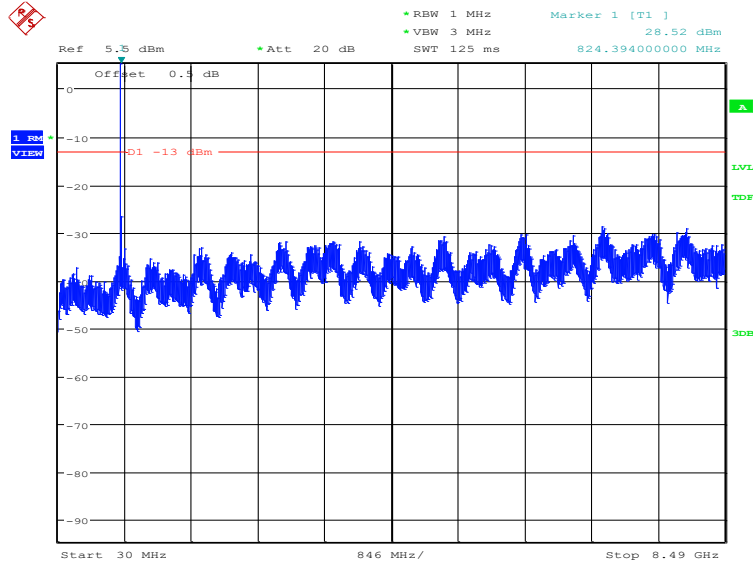
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 09:39:38

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

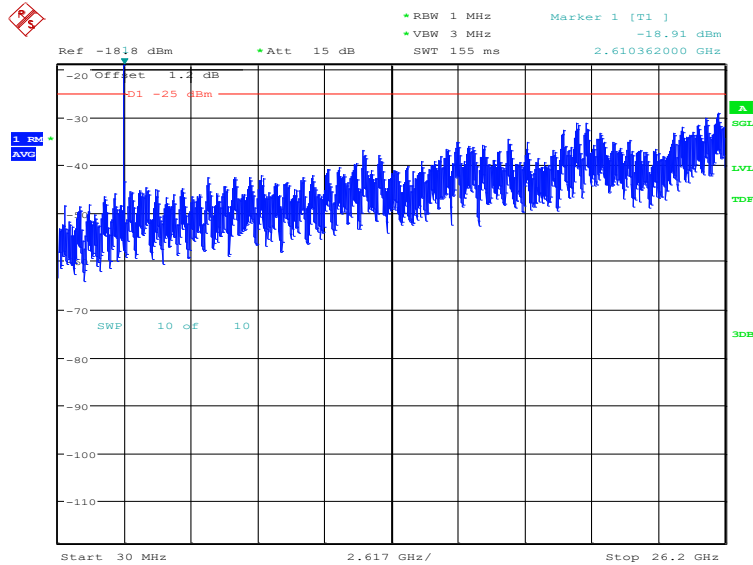
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 09:38:56

LTE band 38: 30MHz – 26.2GHz

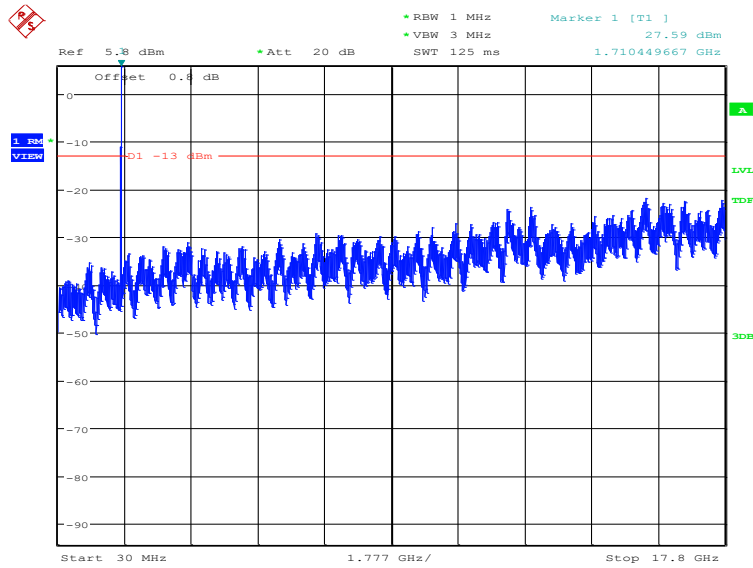
NOTE: peak above the limit line is the carrier frequency.



Date: 25.OCT.2022 10:10:57

LTE band 66: 30MHz – 17.8GHz

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



Date: 25.OCT,2022 09:40:56

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 2, 20MHz

Frequency(MHz)	PAPR(dB)	
1880.0	QPSK	16QAM
	6.79	7.28

LTE band 4, 20MHz

Frequency(MHz)	PAPR(dB)	
1732.5	QPSK	16QAM
	6.67	7.37

LTE band 7, 20MHz

Frequency(MHz)	PAPR(dB)	
2535.0	QPSK	16QAM
	6.99	7.56

LTE band 13,10MHz

Frequency(MHz)	PAPR(dB)	
782.0	QPSK	16QAM
	5.80	6.60

LTE band 38, 20MHz

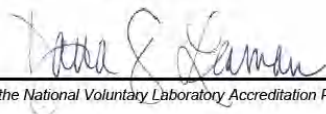
Frequency(MHz)	PAPR(dB)	
2595.0	QPSK	16QAM
	8.21	8.81

LTE band 66, 20MHz

Frequency(MHz)	PAPR(dB)	
1745.0	QPSK	16QAM
	6.44	7.15

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

Annex B: Accreditation Certificate

United States Department of Commerce National Institute of Standards and Technology NVLAP[®]  ilac-MRA Certificate of Accreditation to ISO/IEC 17025:2017	
NVLAP LAB CODE: 600118-0	
Telecommunication Technology Labs, CAICT Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
Electromagnetic Compatibility & Telecommunications	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).</i>	
2022-10-01 through 2023-09-30 <i>Effective Dates</i>	 DEPARTMENT OF COMMERCE UNITED STATES OF AMERICA  _____ <i>For the National Voluntary Laboratory Accreditation Program</i>

END OF REPORT