



TEST REPORT

No. I18Z60848-WMD01

for

Wiko SAS

smart phone

Model Name: C210AE

FCC ID: 2AM86WC210

with

Hardware Version: V0.3

Software Version: C210AE-V02

Issued Date: 2018-08-07



Note:

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

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

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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

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

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

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I18Z60848-WMD01	Rev.0	1 st edition	2018-06-26
I18Z60848-WMD01	Rev.1	2 nd edition 64QAM results increased	2018-08-07



CONTENTS

1. TEST LABORATORY	4
1.1. TESTING LOCATION	4
1.2. TESTING ENVIRONMENT	4
1.3. PROJECT DATA	4
1.4. SIGNATURE.....	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION.....	5
2.2. MANUFACTURER INFORMATION.....	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	6
3.1. ABOUT EUT.....	6
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	6
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	6
3.4. GENERAL DESCRIPTION	6
4. REFERENCE DOCUMENTS.....	7
4.1. REFERENCE DOCUMENTS FOR TESTING.....	7
5. LABORATORY ENVIRONMENT.....	8
6. SUMMARY OF TEST RESULTS.....	9
6.1. SUMMARY OF TEST RESULTS	9
6.2. STATEMENTS.....	10
7. TEST EQUIPMENTS UTILIZED.....	11
ANNEX A: MEASUREMENT RESULTS	12
A.1 OUTPUT POWER	12
A.2 EMISSION LIMIT	36
A.3 FREQUENCY STABILITY	53
A.4 OCCUPIED BANDWIDTH.....	57
A.5 EMISSION BANDWIDTH	100
A.6 BAND EDGE COMPLIANCE.....	143
A.7 CONDUCTED SPURIOUS EMISSION	165
A.8 PEAK-TO-AVERAGE POWER RATIO	169
ANNEX B: ACCREDITATION CERTIFICATE	170

1. Test Laboratory

1.1. Testing Location

Location 1: CTTL(huayuan North Road)

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

Location 2: CTTL(Shouxiang)

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

1.2. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2018-05-29

Testing End Date: 2018-08-06

1.4. 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: Wiko SAS
Address /Post: 1, rue Capitaine Dessemond 13007 - Marseille - France.
Contact: Laurent Dahan
Email: ldahan@wikomobile.com
Telephone: 33488089515
Fax: 33488089520

2.2. Manufacturer Information

Company Name: Shenzhen Tinno Mobile Technology Corp.
Address /Post: 4/F, H-3 Building, OCT Eastern industrial Park, No.1 XiangShan East Road., Nan Shan District, Shenzhen, P.R. China
Contact: Jingwen.Guo
Email: jingwen.guo@tinno.com
Telephone: 0755-86095550
Fax: 0755-86095551

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

3.1. About EUT

Description	smart phone
Model Name	C210AE
FCC ID	2AM86WC210
Antenna	Embedded
Output power	24.68dBm maximum EIRP measured for Band 25
Extreme vol. Limits	3.55VDC to 4.35VDC (nominal: 3.8VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT05a	357960090005731	V0.3	C210AE-V02	2018-05-16
UT06a	357960090021951	V0.3	C210AE-V02	2018-05-16

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

3.3. Internal Identification of AE used during the test

AE ID*	Description
AE1	Battery
AE2	Charger

AE1

Model	C210AEBATT
Manufacturer	Ningbo Veken Battery Co., Ltd
Capacitance	2500mAh

AE2

Model	TN-050100U4A
Manufacturer	Shenzhen BMT Electronics Co.,Ltd

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

3.4. General Description

The Equipment Under Test (EUT) is a model of smart phone with embedded antenna. Manual and specifications of the EUT were provided to fulfil the test.

4. Reference Documents

4.1. Reference Documents for testing

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

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-17 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-17 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-17 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-17 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
TIA-102.CAAA-E	DIGITAL C4FMCQPSK TRANSCEIVER MEASUREMENT METHODS	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	v03

5. LABORATORY ENVIRONMENT

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

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

Fully-anechoic chamber 2 (8.6 meters X 6.1 meters X 3.85 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 1 Ω
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 4000 MHz

Semi-anechoic chamber 2 / Fully-anechoic chamber 3 (10 meters X 6.7 meters X 6.15 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance
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 3000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of test results

Abbreviations used in this clause:		
Verdict Column	P	Pass
	F	Fail
	NA	Not applicable
	NM	Not measured
Location Column	A/B/C/D	The test is performed in test location A, B, C or D which are described in section 1.1 of this report

LTE Band 13

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(b)(10)	A.1	P
2	Emission Limit	27.53(c), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(c)	A.5	P
6	Band Edge Compliance	27.53(c)	A.6	P
7	Conducted Spurious Emission	27.53(c), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 25

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	24.232(c)	A.1	P
2	Emission Limit	24.238(a), 2.1051	A.2	P
3	Frequency Stability	24.235, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	24.238(a)	A.5	P
6	Band Edge Compliance	24.238(a)	A.6	P
7	Conducted Spurious Emission	24.238, 2.1057	A.7	P
8	Peak to Average Power Ratio	24.232 (d)	A.8	P

LTE Band 26(814MHz~824MHz)

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	90.635	A.1	P
2	Emission Limit	2.1053/90.691	A.2	P
3	Frequency Stability	2.1055/90.213	A.3	P
4	Occupied Bandwidth	2.1049	A.4	P
5	Emission Bandwidth	2.1049	A.5	P
6	Conducted Spurious Emission	2.1051/90.691	A.6	P

LTE Band 26(824MHz~849MHz)

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	§2.1046(a), 22.913(a)	A.1	P
2	Emission Limit	22.917, 2.1051	A.2	P
3	Frequency Stability	22.235, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	22.917(b)	A.5	P
6	Band Edge Compliance	22.917(b)	A.6	P
7	Conducted Spurious Emission	22.917, 2.1057	A.7	P

LTE Band 41

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(h)(2)	A.1	P
2	Emission Limit	27.53(m), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(m)	A.5	P
6	Band Edge Compliance	27.53(m)	A.6	P
7	Conducted Spurious Emission	27.53(m), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

6.2. Statements

The test cases listed in section 6.1 of this report for the EUT specified in section 3 were performed by CTTL according to the standards or reference documents in section 4.1

The EUT met all applicable requirements of the standards or reference documents in section 4.1. This report only deals with the LTE functions among the features described in section 3.

7. Test Equipments Utilized

NO.	Description	TYPE	series number	MANUFACTURE	CAL DUE DATE	Calibration interval
1	Test Receiver	ESU26	100235	R&S	2019-03-31	1 year
2	Test Receiver	ESU26	100376	R&S	2018-12-27	1 year
3	EMI Antenna	3117	00058889	ETS-Lindgren	2020-05-27	3 year
4	Universal Radio Communication Tester	CMW500	159082	R&S	2019-01-05	1 year
5	Spectrum Analyzer	FSU26	200030	R&S	2019-06-04	1 year
6	Radio Communication Analyzer	MT8821C	6201763159	Anritsu	2019-07-18	1 year
7	EMI Antenna	VULB9163	9163-235	Schwarzbeck	2019-05-10	3 year
8	Signal Generator	SMF100A	101295	R&S	2018-12-23	1 year
9	Climate chamber	SH-242	93008556	ESPEC	2019-12-21	2 year
10	Loop Antenna	HFH2-Z2	829324/007	R&S	2018-12-14	3 year

ANNEX A: MEASUREMENT RESULTS

A.1 OUTPUT POWER

A.1.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMW500) to ensure max power transmission and proper modulation. In all cases, output power is within the specified limits.

A.1.2 Conducted

A.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation. These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

A.1.2.2 Measurement result

LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	784.5	22.67	21.81	20.56
		782	22.66	21.80	20.44
		779.5	22.61	22.07	20.28
	1 RB low	784.5	22.63	21.67	20.42
		782	22.69	21.75	20.35
		779.5	22.67	22.13	20.61
	50% RB mid	784.5	21.82	20.82	19.54
		782	21.74	20.78	19.51
		779.5	21.80	20.87	19.49
	100% RB	784.5	21.76	20.71	19.52
		782	21.67	20.67	19.38
		779.5	21.67	20.71	19.38
10MHz	1 RB high	782.0	22.68	21.72	20.55
	1 RB low	782.0	22.66	21.60	20.42
	50% RB mid	782.0	21.72	20.71	19.39
	100% RB	782.0	21.71	20.66	19.40

LTE band 25

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1914.3	22.93	22.27	20.68
		1882.5	22.88	21.98	20.81
		1850.7	22.85	22.05	20.81
	1 RB low	1914.3	22.92	22.27	20.66
		1882.5	22.91	22.01	20.61
		1850.7	22.89	22.03	20.68
	50% RB mid	1914.3	22.99	22.19	20.72
		1882.5	23.02	22.20	20.63
		1850.7	23.00	22.11	20.66
	100% RB	1914.3	22.08	20.93	19.70
		1882.5	22.04	21.21	19.80
		1850.7	21.97	21.09	19.71
3MHz	1 RB high	1913.5	23.06	21.92	20.57
		1882.5	22.99	21.94	20.98
		1851.5	22.95	22.40	20.96
	1 RB low	1913.5	23.06	22.07	20.88
		1882.5	23.02	21.96	20.62
		1851.5	22.98	22.36	21.01
	50% RB mid	1913.5	22.08	21.17	19.91
		1882.5	22.04	21.14	19.87
		1851.5	22.01	21.12	19.92
	100% RB	1913.5	22.03	21.09	19.70
		1882.5	22.01	20.96	19.75
		1851.5	22.01	21.06	19.85
5MHz	1 RB high	1912.5	22.90	22.00	20.54
		1882.5	22.94	22.09	20.90
		1852.5	22.94	22.49	20.96
	1 RB low	1912.5	22.94	22.04	20.99
		1882.5	22.97	22.08	20.75
		1852.5	22.88	22.42	20.81
	50% RB mid	1912.5	22.06	21.09	19.81
		1882.5	22.05	21.12	19.80
		1852.5	22.08	21.22	19.85
	100% RB	1912.5	21.98	20.94	19.90
		1882.5	21.99	21.01	19.79
		1852.5	22.00	21.11	19.77
10MHz	1 RB high	1910.0	22.89	21.96	20.80
		1882.5	22.88	21.86	20.91



	1 RB low	1855.0	22.96	22.38	20.69
		1910.0	22.87	21.98	20.83
		1882.5	22.89	21.87	20.86
	50% RB mid	1855.0	22.91	22.31	20.78
		1910.0	22.06	21.20	19.85
		1882.5	22.06	21.10	19.68
	100% RB	1855.0	22.09	21.16	19.77
		1910.0	21.98	21.03	19.77
		1882.5	22.01	21.02	19.73
15MHz	1 RB high	1855.0	22.07	21.12	19.79
		1910.0	21.98	21.03	19.77
		1882.5	22.01	21.02	19.73
	1 RB low	1907.5	22.85	22.20	20.96
		1882.5	22.80	21.92	20.89
		1857.5	22.95	22.24	20.84
	50% RB mid	1907.5	22.91	22.26	20.68
		1882.5	22.83	21.83	20.97
		1857.5	22.84	22.27	20.77
	100% RB	1907.5	22.16	21.03	19.64
		1882.5	22.07	20.99	19.78
		1857.5	22.07	21.07	19.80
20MHz	1 RB high	1907.5	22.08	20.99	19.51
		1882.5	22.04	21.01	19.73
		1857.5	22.10	21.09	19.78
	1 RB low	1905.0	22.65	22.20	20.35
		1882.5	22.66	22.23	20.52
		1860.0	22.63	22.06	20.28
	50% RB mid	1905.0	22.67	22.24	20.45
		1882.5	22.66	22.17	20.44
		1860.0	22.62	22.05	20.69
	100% RB	1905.0	22.01	21.01	19.60
		1882.5	22.03	21.06	19.59
		1860.0	22.03	21.00	19.65
1 RB high	1905.0	21.87	20.95	19.35	
	1882.5	21.97	21.00	19.47	
	1860.0	22.03	21.03	19.67	

LTE band 26(814MHz-824MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	823.3	22.78	21.68	21.26
		819.0	22.71	21.79	21.32
		814.7	22.70	21.91	21.29
	1 RB low	823.3	22.70	21.67	21.16
		819.0	22.63	21.83	21.23
		814.7	22.62	21.89	21.13
	50% RB mid	823.3	22.87	21.89	21.36
		819.0	22.81	21.91	21.19
		814.7	22.81	22.07	20.80
	100% RB	823.3	21.74	20.97	20.02
		819.0	21.71	20.94	20.12
		814.7	21.75	20.78	19.97
3MHz	1 RB high	822.5	22.79	22.12	21.05
		819.0	22.74	21.90	21.10
		815.5	22.63	21.88	21.09
	1 RB low	822.5	22.67	21.83	21.17
		819.0	22.57	21.64	21.16
		815.5	22.65	22.20	21.24
	50% RB mid	822.5	21.74	20.86	20.11
		819.0	21.77	20.90	20.02
		815.5	21.75	20.74	20.04
	100% RB	822.5	21.76	20.81	19.92
		819.0	21.75	20.82	19.97
		815.5	21.70	20.69	19.93
5MHz	1 RB high	821.5	22.65	21.95	21.09
		819.0	22.66	22.01	20.98
		816.5	22.67	22.21	21.00
	1 RB low	821.5	22.51	21.94	21.04
		819.0	22.51	21.88	20.94
		816.5	22.57	21.84	21.05
	50% RB mid	821.5	21.78	20.85	20.00
		819.0	21.78	20.84	19.97
		816.5	21.74	20.85	19.93
	100% RB	821.5	21.75	20.80	19.93
		819.0	21.77	20.78	19.92
		816.5	21.71	20.92	19.90
10MHz	1 RB high	819.0	22.71	21.93	21.09
	1 RB low	819.0	22.63	21.83	21.08



	50% RB mid	819.0	21.76	20.84	19.96
	100% RB	819.0	21.82	20.85	19.95

LTE band 26(824MHz-849MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	22.68	21.79	21.05
		836.5	22.66	21.88	21.11
		824.7	22.70	21.69	21.15
	1 RB low	848.3	22.66	21.77	21.14
		836.5	22.72	21.69	21.11
		824.7	22.59	21.76	21.14
	50% RB mid	848.3	22.76	21.92	21.05
		836.5	22.81	22.02	21.11
		824.7	22.85	22.00	21.13
	100% RB	848.3	21.72	20.91	20.02
		836.5	21.72	20.92	19.96
		824.7	21.81	20.97	19.98
3MHz	1 RB high	847.5	22.78	21.63	21.11
		836.5	22.74	21.89	21.16
		825.5	22.73	21.78	21.12
	1 RB low	847.5	22.77	21.73	21.18
		836.5	22.71	21.98	21.10
		825.5	22.69	22.00	21.08
	50% RB mid	847.5	21.73	20.81	20.08
		836.5	21.73	20.93	20.00
		825.5	21.80	20.72	20.01
	100% RB	847.5	21.68	20.67	20.03
		836.5	21.71	20.70	19.95
		825.5	21.72	20.82	19.93
5MHz	1 RB high	846.5	22.67	21.81	20.78
		836.5	22.68	22.00	21.05
		826.5	22.73	21.77	20.94
	1 RB low	846.5	22.66	21.94	21.08
		836.5	22.64	21.85	21.01
		826.5	22.70	21.98	21.07
	50% RB mid	846.5	21.53	20.78	20.07
		836.5	21.82	20.82	20.03
		826.5	21.80	20.82	20.00
	100% RB	846.5	21.74	20.89	20.07
		836.5	21.78	20.80	19.98
		826.5	21.73	20.81	19.94
10MHz	1 RB high	844.0	22.68	21.65	20.74
		836.5	22.67	21.86	21.12



	1 RB low	829.0	22.64	22.32	20.93
		844.0	22.60	21.67	21.16
		836.5	22.65	21.85	21.13
	50% RB mid	829.0	22.65	22.34	21.14
		844.0	21.81	20.89	20.03
		836.5	21.79	20.81	20.01
	100% RB	829.0	21.77	20.84	19.97
		844.0	21.78	20.75	20.05
		836.5	21.80	20.80	20.03
15MHz	1 RB high	829.0	21.80	20.81	20.01
		841.5	22.63	21.76	20.73
		836.5	22.60	22.23	21.09
	1 RB low	831.5	22.58	21.82	20.71
		841.5	22.57	21.78	20.72
		836.5	22.57	22.24	21.03
	50% RB mid	831.5	22.62	21.87	20.83
		841.5	21.80	20.81	20.04
		836.5	21.78	20.78	20.00
	100% RB	831.5	21.78	20.83	20.02
		841.5	21.78	20.76	19.99
		836.5	21.81	20.80	20.01
		831.5	21.87	20.79	20.01

LTE band 41

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2687.5	26.00	25.25	23.42
		2593.0	26.12	25.26	23.30
		2498.5	26.01	25.33	23.40
	1 RB low	2687.5	26.08	25.25	23.54
		2593.0	26.16	25.27	23.43
		2498.5	25.94	25.32	23.52
	50% RB mid	2687.5	25.07	24.08	23.45
		2593.0	25.15	24.16	23.32
		2498.5	25.03	24.08	23.42
	100% RB	2687.5	25.03	24.12	22.56
		2593.0	25.16	24.14	22.43
		2498.5	24.98	24.00	22.58
10MHz	1 RB high	2685.0	25.99	25.29	22.62
		2593.0	26.17	25.50	22.49
		2501.0	25.97	25.42	22.57
	1 RB low	2685.0	26.20	25.28	22.60
		2593.0	26.25	25.45	22.45
		2501.0	25.98	25.37	22.55
	50% RB mid	2685.0	25.05	24.09	22.61
		2593.0	25.11	24.17	22.49
		2501.0	25.09	24.05	22.60
	100% RB	2685.0	25.03	24.07	23.50
		2593.0	25.16	24.21	23.40
		2501.0	25.11	24.05	23.50
15MHz	1 RB high	2682.5	25.84	25.31	23.59
		2593.0	26.06	25.23	23.46
		2503.5	25.85	25.25	23.57
	1 RB low	2682.5	25.89	25.30	23.55
		2593.0	26.07	25.25	23.42
		2503.5	25.84	25.16	23.51
	50% RB mid	2682.5	25.11	23.95	22.61
		2593.0	25.18	24.09	22.55
		2503.5	25.01	23.96	22.60
	100% RB	2682.5	25.03	24.01	22.67
		2593.0	25.22	24.15	22.54
		2503.5	24.99	23.99	22.61
20MHz	1 RB high	2680.0	25.79	24.99	22.68



		2593.0	25.91	25.23	22.53
		2506.0	25.90	24.91	22.64
	1 RB low	2680.0	25.82	24.99	22.60
		2593.0	25.88	25.16	22.50
		2506.0	25.85	24.83	22.58
	50% RB mid	2680.0	25.04	24.03	23.37
		2593.0	25.15	24.15	23.26
		2506.0	25.01	24.00	23.35
	100% RB	2680.0	24.96	23.92	23.50
		2593.0	25.08	24.05	23.37
		2506.0	24.95	23.94	23.47

A.1.3 Radiated

A.1.3.1 Description

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

Rule Part 22.913(a) specifies "Mobile stations are limited to 2.0 watts EIRP."

Rule 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

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

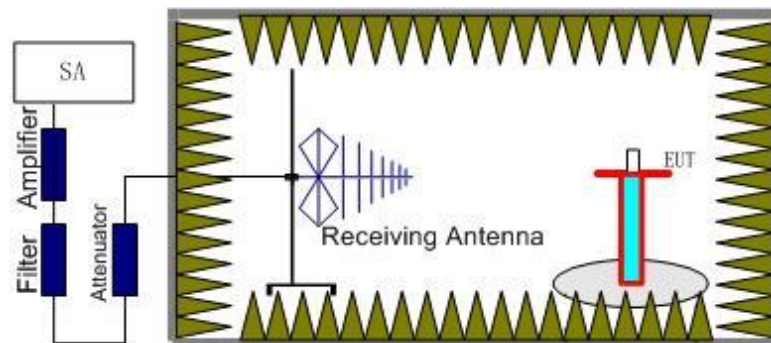
Rule Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP."

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

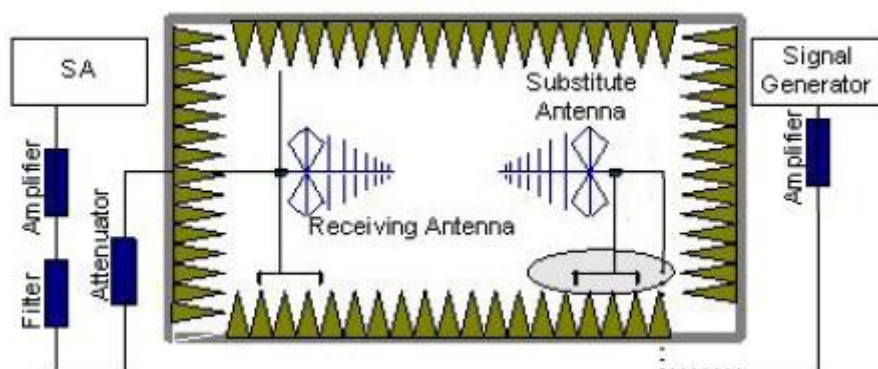
A.1.3.2 Method of Measurement

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

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



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



In the chamber, a substitution antenna for the frequency band of interest is placed at the

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

4. An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna. The cable loss (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be recorded after test.

The measurement results are obtained as described below:

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

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

A.1.3.3 Measurement result

LTE Band 13- ERP 27.50(b)(10)

Limits: ≤ 34.77 dBm (3W)

LTE Band 13_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
779.50	-23.35	2.01	45.64	0.04	2.15	18.17	34.77	16.60	V
782.00	-23.41	2.01	45.65	0.09	2.15	18.17	34.77	16.60	V
784.50	-23.52	2.01	45.67	0.16	2.15	18.15	34.77	16.62	V

LTE Band 13_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
782.00	-23.46	2.01	45.65	0.09	2.15	18.12	34.77	16.65	V

LTE Band 13_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
779.50	-24.14	2.01	45.64	0.04	2.15	17.38	34.77	17.39	V
782.00	-24.44	2.01	45.65	0.09	2.15	17.14	34.77	17.63	V
784.50	-24.31	2.01	45.67	0.16	2.15	17.36	34.77	17.41	V

LTE Band 13_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
782.00	-24.45	2.01	45.65	0.09	2.15	17.13	34.77	17.64	V

LTE Band 13_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
779.50	-24.97	2.01	45.64	0.04	2.15	16.55	34.77	18.22	V
782.00	-25.07	2.01	45.65	0.09	2.15	16.51	34.77	18.26	V
784.50	-25.04	2.01	45.67	0.16	2.15	16.63	34.77	18.14	V

LTE Band 13_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
782.00	-25.02	2.01	45.65	0.09	2.15	16.56	34.77	18.21	V



LTE Band 25- EIRP 24. 232(b)

Limits: ≤30dBm (1W)

LTE Band 25_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-22.84	2.92	43.75	4.87	22.86	33.00	10.14	H
1882.50	-21.36	3.13	43.75	4.81	24.07	33.00	8.93	H
1914.30	-20.96	2.89	43.78	4.75	24.68	33.00	8.32	H

LTE Band 25_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-23.03	2.87	43.75	4.87	22.72	33.00	10.28	H
1882.50	-21.53	3.13	43.75	4.81	23.90	33.00	9.10	H
1913.50	-21.25	2.88	43.78	4.76	24.41	33.00	8.59	H

LTE Band 25_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-22.75	2.87	43.75	4.87	23.00	33.00	10.00	H
1882.50	-21.56	3.13	43.75	4.81	23.87	33.00	9.13	H
1912.50	-21.27	2.86	43.77	4.76	24.40	33.00	8.60	H

LTE Band 25_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-23.13	2.88	43.74	4.86	22.59	33.00	10.41	H
1882.50	-21.35	3.13	43.75	4.81	24.08	33.00	8.92	H
1910.00	-21.15	2.88	43.77	4.76	24.50	33.00	8.50	H

LTE Band 25_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-23.07	2.87	43.75	4.86	22.67	33.00	10.33	H
1882.50	-21.57	3.13	43.75	4.81	23.86	33.00	9.14	H
1907.50	-21.50	2.84	43.77	4.77	24.20	33.00	8.80	H

LTE Band 25_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-22.78	2.86	43.75	4.85	22.96	33.00	10.04	H
1882.50	-22.49	3.13	43.75	4.81	22.94	33.00	10.06	H
1905.00	-21.46	2.87	43.77	4.77	24.21	33.00	8.79	H

LTE Band 25_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-23.70	2.92	43.75	4.87	22.00	33.00	11.00	H
1882.50	-22.36	3.13	43.75	4.81	23.07	33.00	9.93	H
1914.30	-21.92	2.89	43.78	4.75	23.72	33.00	9.28	H

LTE Band 25_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-23.91	2.87	43.75	4.87	21.84	33.00	11.16	H
1882.50	-22.53	3.13	43.75	4.81	22.90	33.00	10.10	H
1913.50	-22.12	2.88	43.78	4.76	23.54	33.00	9.46	H

LTE Band 25_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-23.98	2.87	43.75	4.87	21.77	33.00	11.23	H
1882.50	-22.48	3.13	43.75	4.81	22.95	33.00	10.05	H
1912.50	-22.08	2.86	43.77	4.76	23.59	33.00	9.41	H

LTE Band 25_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-24.00	2.88	43.74	4.86	21.72	33.00	11.28	H
1882.50	-22.29	3.13	43.75	4.81	23.14	33.00	9.86	H
1910.00	-22.12	2.88	43.77	4.76	23.53	33.00	9.47	H

LTE Band 25_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-23.93	2.87	43.75	4.86	21.81	33.00	11.19	H
1882.50	-22.40	3.13	43.75	4.81	23.03	33.00	9.97	H
1907.50	-22.45	2.84	43.77	4.77	23.25	33.00	9.75	H

LTE Band 25_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-23.77	2.86	43.75	4.85	21.97	33.00	11.03	H
1882.50	-22.31	3.13	43.75	4.81	23.12	33.00	9.88	H
1905.00	-22.53	2.87	43.77	4.77	23.14	33.00	9.86	H

LTE Band 25_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-24.83	2.92	43.75	4.87	20.87	33.00	12.13	H
1882.50	-23.34	3.13	43.75	4.81	22.09	33.00	10.91	H
1914.30	-23.20	2.89	43.78	4.75	22.44	33.00	10.56	H

LTE Band 25_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-25.02	2.87	43.75	4.87	20.73	33.00	12.27	H
1882.50	-23.45	3.13	43.75	4.81	21.98	33.00	11.02	H
1913.50	-23.32	2.88	43.78	4.76	22.34	33.00	10.66	H

LTE Band 25_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-25.07	2.87	43.75	4.87	20.68	33.00	12.32	H
1882.50	-23.43	3.13	43.75	4.81	22.00	33.00	11.00	H
1912.50	-23.21	2.86	43.77	4.76	22.46	33.00	10.54	H

LTE Band 25_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-25.13	2.88	43.74	4.86	20.59	33.00	12.41	H
1882.50	-23.39	3.13	43.75	4.81	22.04	33.00	10.96	H
1910.00	-23.14	2.88	43.77	4.76	22.51	33.00	10.49	H

LTE Band 25_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-25.16	2.87	43.75	4.86	20.58	33.00	12.42	H
1882.50	-23.48	3.13	43.75	4.81	21.95	33.00	11.05	H
1907.50	-23.45	2.84	43.77	4.77	22.25	33.00	10.75	H

LTE Band 25_20MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-25.16	2.86	43.75	4.85	20.58	33.00	12.42	H
1882.50	-23.40	3.13	43.75	4.81	22.03	33.00	10.97	H
1905.00	-23.53	2.87	43.77	4.77	22.14	33.00	10.86	H



LTE Band 26(814MHz~824MHz)- ERP 90.635(b)

Limits: ≤50dBm (100W)

LTE Band 26_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-23.42	2.13	45.86	0.89	2.15	19.05	50.00	30.95	H
819.00	-23.31	2.19	45.84	1.05	2.15	19.24	50.00	30.76	H
823.30	-22.45	2.24	45.79	0.55	2.15	19.50	50.00	30.50	H

LTE Band 26_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-23.52	2.14	45.87	0.93	2.15	18.99	50.00	31.01	H
819.00	-23.42	2.19	45.84	1.05	2.15	19.13	50.00	30.87	H
822.50	-22.36	2.23	45.81	0.33	2.15	19.40	50.00	30.60	H

LTE Band 26_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-23.56	2.16	45.88	0.98	2.15	18.99	50.00	31.01	H
819.00	-23.44	2.19	45.84	1.05	2.15	19.11	50.00	30.89	H
821.50	-22.85	2.22	45.82	0.71	2.15	19.31	50.00	30.69	H

LTE Band 26_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-23.30	2.19	45.84	1.05	2.15	19.25	50.00	30.75	H



LTE Band 26_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-24.40	2.13	45.86	0.89	2.15	18.07	50.00	31.93	H
819.00	-24.23	2.19	45.84	1.05	2.15	18.32	50.00	31.68	H
823.30	-23.28	2.24	45.79	0.55	2.15	18.67	50.00	31.33	H

LTE Band 26_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-24.46	2.14	45.87	0.93	2.15	18.05	50.00	31.95	H
819.00	-24.24	2.19	45.84	1.05	2.15	18.31	50.00	31.69	H
822.50	-23.23	2.23	45.81	0.33	2.15	18.53	50.00	31.47	H

LTE Band 26_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-24.37	2.16	45.88	0.98	2.15	18.18	50.00	31.82	H
819.00	-24.31	2.19	45.84	1.05	2.15	18.24	50.00	31.76	H
821.50	-23.59	2.22	45.82	0.71	2.15	18.57	50.00	31.43	H

LTE Band 26_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-24.13	2.19	45.84	1.05	2.15	18.42	50.00	31.58	H



LTE Band 26_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-25.17	2.13	45.86	0.89	2.15	17.30	50.00	32.70	H
819.00	-25.06	2.19	45.84	1.05	2.15	17.49	50.00	32.51	H
823.30	-23.97	2.24	45.79	0.55	2.15	17.98	50.00	32.02	H

LTE Band 26_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-25.28	2.14	45.87	0.93	2.15	17.23	50.00	32.77	H
819.00	-25.11	2.19	45.84	1.05	2.15	17.44	50.00	32.56	H
822.50	-23.95	2.23	45.81	0.33	2.15	17.81	50.00	32.19	H

LTE Band 26_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-25.32	2.16	45.88	0.98	2.15	17.23	50.00	32.77	H
819.00	-25.13	2.19	45.84	1.05	2.15	17.42	50.00	32.58	H
821.50	-24.52	2.22	45.82	0.71	2.15	17.64	50.00	32.36	H

LTE Band 26_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-25.09	2.19	45.84	1.05	2.15	17.46	50.00	32.54	H



LTE Band 26(824MHz~849MHz)- ERP 22.913(a)

Limits: ≤38.45dBm (7W)

LTE Band 26_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-22.97	2.26	45.79	0.95	2.15	19.36	38.45	19.09	H
836.50	-22.80	2.26	45.66	0.82	2.15	19.27	38.45	19.18	H
848.30	-23.00	2.27	45.55	0.80	2.15	18.93	38.45	19.52	V

LTE Band 26_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-23.07	2.26	45.79	0.94	2.15	19.25	38.45	19.20	H
836.50	-22.90	2.26	45.66	0.82	2.15	19.17	38.45	19.28	H
847.50	-23.15	2.27	45.56	0.81	2.15	18.80	38.45	19.65	V

LTE Band 26_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-23.06	2.25	45.77	0.93	2.15	19.24	38.45	19.21	H
836.50	-22.92	2.26	45.66	0.82	2.15	19.15	38.45	19.30	H
846.50	-23.23	2.26	45.56	0.82	2.15	18.74	38.45	19.71	V

LTE Band 26_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-23.06	2.13	45.74	0.90	2.15	19.30	38.45	19.15	H
836.50	-22.81	2.26	45.66	0.82	2.15	19.26	38.45	19.19	H
844.00	-23.12	2.26	45.59	0.82	2.15	18.88	38.45	19.57	V

LTE Band 26_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-23.06	2.12	45.71	0.87	2.15	19.25	38.45	19.20	H
836.50	-22.91	2.26	45.66	0.82	2.15	19.16	38.45	19.29	H
841.50	-23.06	2.26	45.61	0.82	2.15	18.96	38.45	19.49	V



LTE Band 26_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-23.70	2.26	45.79	0.95	2.15	18.63	38.45	19.82	H
836.50	-23.74	2.26	45.66	0.82	2.15	18.33	38.45	20.12	H
848.30	-24.02	2.27	45.55	0.80	2.15	17.91	38.45	20.54	V

LTE Band 26_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-23.89	2.26	45.79	0.94	2.15	18.43	38.45	20.02	H
836.50	-23.72	2.26	45.66	0.82	2.15	18.35	38.45	20.10	H
847.50	-24.20	2.27	45.56	0.81	2.15	17.75	38.45	20.70	V

LTE Band 26_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-23.75	2.25	45.77	0.93	2.15	18.55	38.45	19.90	H
836.50	-23.80	2.26	45.66	0.82	2.15	18.27	38.45	20.18	H
846.50	-24.13	2.26	45.56	0.82	2.15	17.84	38.45	20.61	V

LTE Band 26_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-23.88	2.13	45.74	0.90	2.15	18.48	38.45	19.97	H
836.50	-23.55	2.26	45.66	0.82	2.15	18.52	38.45	19.93	H
844.00	-24.03	2.26	45.59	0.82	2.15	17.97	38.45	20.48	V

LTE Band 26_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-24.02	2.12	45.71	0.87	2.15	18.29	38.45	20.16	H
836.50	-23.69	2.26	45.66	0.82	2.15	18.38	38.45	20.07	H
841.50	-23.94	2.26	45.61	0.82	2.15	18.08	38.45	20.37	V



LTE Band 26_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-24.33	2.26	45.79	0.95	2.15	18.00	38.45	20.45	H
836.50	-24.24	2.26	45.66	0.82	2.15	17.83	38.45	20.62	H
848.30	-24.54	2.27	45.55	0.80	2.15	17.39	38.45	21.06	H

LTE Band 26_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-24.39	2.26	45.79	0.94	2.15	17.93	38.45	20.52	H
836.50	-24.29	2.26	45.66	0.82	2.15	17.78	38.45	20.67	H
847.50	-24.71	2.27	45.56	0.81	2.15	17.24	38.45	21.21	H

LTE Band 26_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-24.39	2.25	45.77	0.93	2.15	17.91	38.45	20.54	H
836.50	-24.30	2.26	45.66	0.82	2.15	17.77	38.45	20.68	H
846.50	-24.89	2.26	45.56	0.82	2.15	17.08	38.45	21.37	H

LTE Band 26_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-24.58	2.13	45.74	0.90	2.15	17.78	38.45	20.67	H
836.50	-24.24	2.26	45.66	0.82	2.15	17.83	38.45	20.62	H
844.00	-24.94	2.26	45.59	0.82	2.15	17.06	38.45	21.39	H

LTE Band 26_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-24.63	2.12	45.71	0.87	2.15	17.68	38.45	20.77	H
836.50	-24.31	2.26	45.66	0.82	2.15	17.76	38.45	20.69	H
841.50	-24.71	2.26	45.61	0.82	2.15	17.31	38.45	21.14	H



LTE Band 41- EIRP Part 27.50(h)(2)

Limits: ≤33dBm (2W)

LTE Band 41_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-28.52	3.58	45.59	6.10	19.59	33.00	13.41	H
2593.00	-27.62	3.68	44.93	6.27	19.90	33.00	13.10	H
2687.50	-26.25	3.73	44.98	6.44	21.44	33.00	11.56	H

LTE Band 41_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-28.49	3.58	45.65	6.10	19.68	33.00	13.32	H
2593.00	-27.38	3.68	44.93	6.27	20.14	33.00	12.86	H
2685.00	-26.09	3.73	44.98	6.43	21.59	33.00	11.41	H

LTE Band 41_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-28.72	3.58	45.65	6.11	19.46	33.00	13.54	H
2593.00	-27.56	3.68	44.93	6.27	19.96	33.00	13.04	H
2682.50	-26.32	3.73	44.98	6.43	21.36	33.00	11.64	H

LTE Band 41_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-28.17	3.59	45.15	6.11	19.50	33.00	13.50	H
2593.00	-27.34	3.68	44.93	6.27	20.18	33.00	12.82	H
2680.00	-26.13	3.73	44.97	6.42	21.53	33.00	11.47	H



LTE Band 41_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-28.30	3.58	45.59	6.10	19.81	33.00	13.19	H
2593.00	-27.47	3.68	44.93	6.27	20.05	33.00	12.95	H
2687.50	-26.06	3.73	44.98	6.44	21.63	33.00	11.37	H

LTE Band 41_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-28.34	3.58	45.65	6.10	19.83	33.00	13.17	H
2593.00	-27.29	3.68	44.93	6.27	20.23	33.00	12.77	H
2685.00	-26.11	3.73	44.98	6.43	21.57	33.00	11.43	H

LTE Band 41_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-28.58	3.58	45.65	6.11	19.60	33.00	13.40	H
2593.00	-27.49	3.68	44.93	6.27	20.03	33.00	12.97	H
2682.50	-26.31	3.73	44.98	6.43	21.37	33.00	11.63	H

LTE Band 41_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-27.96	3.59	45.15	6.11	19.71	33.00	13.29	H
2593.00	-27.31	3.68	44.93	6.27	20.21	33.00	12.79	H
2680.00	-26.11	3.73	44.97	6.42	21.55	33.00	11.45	H



LTE Band 41_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-30.92	3.58	45.59	6.10	17.19	33.00	15.81	H
2593.00	-30.91	3.68	44.93	6.27	16.61	33.00	16.39	H
2687.50	-29.19	3.73	44.98	6.44	18.50	33.00	14.50	H

LTE Band 41_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-31.06	3.58	45.65	6.10	17.11	33.00	15.89	H
2593.00	-30.80	3.68	44.93	6.27	16.72	33.00	16.28	H
2685.00	-29.08	3.73	44.98	6.43	18.60	33.00	14.40	H

LTE Band 41_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-31.37	3.58	45.65	6.11	16.81	33.00	16.19	H
2593.00	-30.11	3.68	44.93	6.27	17.41	33.00	15.59	H
2682.50	-29.30	3.73	44.98	6.43	18.38	33.00	14.62	H

LTE Band 41_20MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	Ga Antenna Gain(dBi)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-30.95	3.59	45.15	6.11	16.72	33.00	16.28	H
2593.00	-30.25	3.68	44.93	6.27	17.27	33.00	15.73	H
2680.00	-29.01	3.73	44.97	6.42	18.65	33.00	14.35	H

Peak EIRP(dBm) = P_{Mea}(-20.96dBm) - G_a (-4.75dBi) - P_{Ag} (-43.78dB) - P_{cl} (2.89dB) = 24.68dBm

ANALYZER SETTINGS:

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

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

Note: Expanded measurement uncertainty is $U = 0.96 \text{ dB}$, $k = 2$.

A.2 EMISSION LIMIT

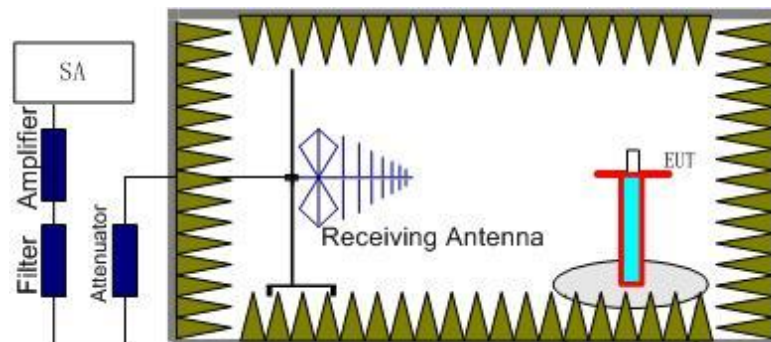
A.2.1 Measurement Method

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

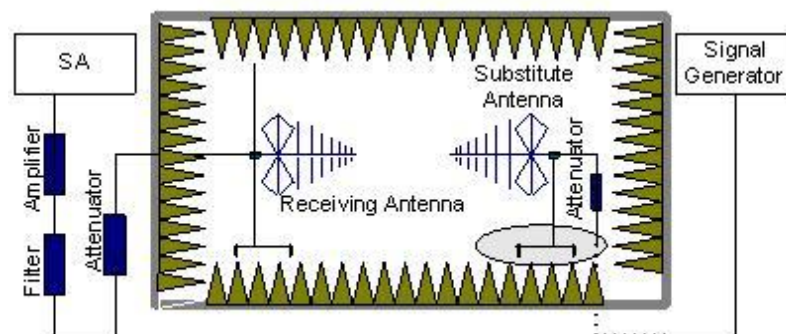
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the LTE Bands 13 25 26 41.

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



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



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

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

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

An amplifier should be connected in for the test.

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

The measurement results are obtained as described below:

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

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

A.2.2 Measurement Limit

Part 22.917, Part 24.238 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.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands 13 25 26 41. 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 13 25 26 41 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 evaluated frequency range is from 30MHz to 26GHz.



LTE Band 13, 5MHz, QPSK, Channel 23205

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1563.01	-60.72	3.48	5.39	2.15	-60.96	-13.00	47.96	H
2341.00	-54.63	4.45	5.62	2.15	-55.61	-13.00	42.61	H
3103.02	-54.81	5.33	7.25	2.15	-55.04	-13.00	42.04	V
3887.02	-55.67	6.10	8.74	2.15	-55.18	-13.00	42.18	V
4665.02	-54.68	6.48	9.57	2.15	-53.74	-13.00	40.74	V
5462.01	-55.45	6.92	10.55	2.15	-53.97	-13.00	40.97	H

LTE Band 13, 5MHz, QPSK, Channel 23230

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1577.01	-60.41	3.49	5.36	2.15	-60.69	-13.00	47.69	V
2359.00	-54.11	4.47	5.68	2.15	-55.05	-13.00	42.05	V
3125.02	-53.87	5.40	7.30	2.15	-54.12	-13.00	41.12	H
3896.02	-55.73	6.11	8.75	2.15	-55.24	-13.00	42.24	V
4686.02	-55.10	6.49	9.59	2.15	-54.15	-13.00	41.15	V
5479.01	-55.66	6.98	10.57	2.15	-54.22	-13.00	41.22	H

LTE Band 13, 5MHz, QPSK, Channel 23255

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1564.01	-60.91	3.48	5.38	2.15	-61.16	-13.00	48.16	V
2356.00	-54.73	4.46	5.67	2.15	-55.67	-13.00	42.67	V
3129.02	-54.71	5.40	7.31	2.15	-54.95	-13.00	41.95	H
3933.02	-55.90	6.12	8.81	2.15	-55.36	-13.00	42.36	H
4713.02	-55.88	6.52	9.61	2.15	-54.94	-13.00	41.94	H
5482.01	-55.15	6.99	10.57	2.15	-53.72	-13.00	40.72	H



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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1550.01	-60.77	3.46	5.41	2.15	-60.97	-13.00	47.97	H
2342.00	-55.27	4.45	5.63	2.15	-56.24	-13.00	43.24	V
3122.02	-54.20	5.39	7.29	2.15	-54.45	-13.00	41.45	H
3900.02	-55.10	6.11	8.76	2.15	-54.60	-13.00	41.60	V
4675.02	-54.78	6.48	9.58	2.15	-53.83	-13.00	40.83	H
5444.01	-55.45	6.85	10.52	2.15	-53.93	-13.00	40.93	V

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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1554.01	-61.04	3.47	5.40	2.15	-61.26	-13.00	48.26	H
2358.00	-54.83	4.47	5.67	2.15	-55.78	-13.00	42.78	V
3115.02	-54.34	5.37	7.28	2.15	-54.58	-13.00	41.58	V
3921.02	-55.91	6.12	8.79	2.15	-55.39	-13.00	42.39	H
4700.02	-54.13	6.50	9.60	2.15	-53.18	-13.00	40.18	V
5459.01	-56.01	6.90	10.54	2.15	-54.52	-13.00	41.52	H

LTE Band13, 5MHz, 16QAM, Channel 23255

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1569.01	-55.62	3.48	5.38	2.15	-55.87	-13.00	42.87	V
2354.00	-42.84	4.46	5.66	2.15	-43.79	-13.00	30.79	V
3139.02	-54.17	5.38	7.33	2.15	-54.37	-13.00	41.37	H
3923.02	-55.13	6.12	8.79	2.15	-54.61	-13.00	41.61	H
4701.02	-55.34	6.51	9.60	2.15	-54.40	-13.00	41.40	V
5491.01	-55.18	7.03	10.59	2.15	-53.77	-13.00	40.77	V



LTE Band 13, 5MHz, 64QAM, Channel 23205

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1568.01	-60.83	3.48	5.38	2.15	-61.08	-13.00	48.08	H
2344.00	-54.48	4.45	5.63	2.15	-55.45	-13.00	42.45	V
3126.02	-54.22	5.40	7.30	2.15	-54.47	-13.00	41.47	H
3903.02	-54.56	6.11	8.76	2.15	-54.06	-13.00	41.06	H
4662.02	-54.93	6.47	9.56	2.15	-53.99	-13.00	40.99	H
5453.01	-55.24	6.88	10.53	2.15	-53.74	-13.00	40.74	H

LTE Band 13, 5 MHz, 64QAM, Channel 23230

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1571.01	-60.68	3.49	5.37	2.15	-60.95	-13.00	47.95	V
2343.00	-54.57	4.45	5.63	2.15	-55.54	-13.00	42.54	V
3123.02	-53.71	5.40	7.30	2.15	-53.96	-13.00	40.96	H
3923.02	-54.62	6.12	8.79	2.15	-54.10	-13.00	41.10	V
4696.02	-54.63	6.50	9.60	2.15	-53.68	-13.00	40.68	V
5470.01	-54.89	6.95	10.56	2.15	-53.43	-13.00	40.43	H

LTE Band13, 5MHz, 64QAM, Channel 23255

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1571.01	-60.70	3.49	5.37	2.15	-60.97	-13.00	47.97	V
2344.00	-54.19	4.45	5.63	2.15	-55.16	-13.00	42.16	V
3148.02	-54.42	5.37	7.36	2.15	-54.58	-13.00	41.58	H
3909.02	-55.59	6.11	8.77	2.15	-55.08	-13.00	42.08	V
4701.02	-54.60	6.51	9.60	2.15	-53.66	-13.00	40.66	V
5494.01	-55.03	7.04	10.59	2.15	-53.63	-13.00	40.63	H



LTE Band 25, 1.4MHz, QPSK, Channel 26047

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5553.02	-46.43	7.18	10.59	-43.02	-13.00	30.02	H
7409.01	-51.32	8.14	12.09	-47.37	-13.00	34.37	V
11125.01	-41.85	9.73	13.17	-38.41	-13.00	25.41	V
12956.01	-44.16	10.48	13.47	-41.17	-13.00	28.17	V
14820.00	-42.91	11.14	14.14	-39.91	-13.00	26.91	V
16681.00	-35.42	11.78	13.67	-33.53	-13.00	20.53	H

LTE Band 25, 1.4MHz, QPSK, Channel 26365

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5653.02	-46.74	7.27	10.57	-43.44	-13.00	30.44	H
7536.01	-52.91	8.24	12.23	-48.92	-13.00	35.92	V
11313.01	-45.05	10.00	13.14	-41.91	-13.00	28.91	V
13177.01	-46.21	10.60	13.75	-43.06	-13.00	30.06	V
15073.00	-43.74	11.31	13.96	-41.09	-13.00	28.09	V
16956.00	-41.56	12.21	13.78	-39.99	-13.00	26.99	H

LTE Band 25, 1.4MHz, QPSK, Channel 26683

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5748.02	-43.64	7.27	10.55	-40.36	-13.00	27.36	H
7664.01	-50.40	8.26	12.33	-46.33	-13.00	33.33	V
11497.01	-41.33	9.82	13.10	-38.05	-13.00	25.05	V
13402.01	-43.51	10.57	14.06	-40.02	-13.00	27.02	V
15332.00	-40.75	11.31	13.80	-38.26	-13.00	25.26	V
17273.00	-42.92	12.37	14.40	-40.89	-13.00	27.89	H



LTE Band 25, 1.4MHz, 16QAM, Channel 26047

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5552.02	-46.30	7.18	10.59	-42.89	-13.00	29.89	H
7408.01	-50.40	8.14	12.09	-46.45	-13.00	33.45	V
11128.01	-41.85	9.71	13.17	-38.39	-13.00	25.39	V
12956.01	-43.53	10.48	13.47	-40.54	-13.00	27.54	V
14820.00	-42.98	11.14	14.14	-39.98	-13.00	26.98	V
16681.00	-35.87	11.78	13.67	-33.98	-13.00	20.98	H

LTE Band 25, 1.4MHz, 16QAM, Channel 26365

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5653.02	-47.45	7.27	10.57	-44.15	-13.00	31.15	H
7536.01	-52.66	8.24	12.23	-48.67	-13.00	35.67	V
11304.01	-44.70	10.00	13.14	-41.56	-13.00	28.56	V
13180.01	-47.51	10.58	13.75	-44.34	-13.00	31.34	V
15077.00	-45.44	11.32	13.95	-42.81	-13.00	29.81	V
16981.00	-41.91	12.30	13.79	-40.42	-13.00	27.42	H

LTE Band 25, 1.4MHz, 16QAM, Channel 26683

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5748.02	-44.50	7.27	10.55	-41.22	-13.00	28.22	H
7663.01	-51.29	8.26	12.33	-47.22	-13.00	34.22	V
11507.01	-41.86	9.81	13.10	-38.57	-13.00	25.57	V
13401.01	-44.97	10.57	14.06	-41.48	-13.00	28.48	V
15329.00	-42.57	11.31	13.80	-40.08	-13.00	27.08	V
17263.00	-43.14	12.36	14.38	-41.12	-13.00	28.12	H



LTE Band 25, 1.4MHz, 64QAM, Channel 26047

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5553.02	-45.33	7.18	10.59	-41.92	-13.00	28.92	H
7406.01	-51.46	8.13	12.09	-47.50	-13.00	34.50	V
11117.01	-42.90	9.76	13.18	-39.48	-13.00	26.48	V
12979.01	-43.50	10.47	13.49	-40.48	-13.00	27.48	V
14818.00	-43.78	11.14	14.15	-40.77	-13.00	27.77	V
16681.00	-36.01	11.78	13.67	-34.12	-13.00	21.12	H

LTE Band 25, 1.4MHz, 64QAM, Channel 26365

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5653.02	-48.44	7.27	10.57	-45.14	-13.00	32.14	H
7491.01	-53.68	8.37	12.19	-49.86	-13.00	36.86	H
11303.01	-44.55	10.00	13.14	-41.41	-13.00	28.41	V
13177.01	-47.12	10.60	13.75	-43.97	-13.00	30.97	V
15060.00	-45.31	11.30	13.96	-42.65	-13.00	29.65	V
16991.00	-42.42	12.34	13.80	-40.96	-13.00	27.96	V

LTE Band 25, 1.4MHz, 64QAM, Channel 26683

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5748.02	-44.28	7.27	10.55	-41.00	-13.00	28.00	H
7663.01	-52.33	8.26	12.33	-48.26	-13.00	35.26	V
11509.01	-41.64	9.81	13.10	-38.35	-13.00	25.35	V
13401.01	-45.32	10.57	14.06	-41.83	-13.00	28.83	V
15322.00	-44.16	11.30	13.81	-41.65	-13.00	28.65	H
17276.00	-43.37	12.37	14.41	-41.33	-13.00	28.33	H



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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3260.02	-52.58	5.28	7.62	2.15	-52.39	-13.00	39.39	H
6522.01	-54.15	7.50	11.03	2.15	-52.77	-13.00	39.77	H
7343.01	-53.01	8.11	12.01	2.15	-51.26	-13.00	38.26	H
8154.01	-52.74	8.42	12.72	2.15	-50.59	-13.00	37.59	H
8956.00	-51.80	9.04	13.09	2.15	-49.90	-13.00	36.90	H
9774.00	-50.87	8.98	13.13	2.15	-48.87	-13.00	35.87	H

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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1621.01	-60.33	3.54	5.28	2.15	-60.74	-13.00	47.74	V
2455.00	-52.80	4.58	5.97	2.15	-53.56	-13.00	40.56	V
3276.02	-54.36	5.28	7.66	2.15	-54.13	-13.00	41.13	H
4078.02	-55.92	6.04	8.98	2.15	-55.13	-13.00	42.13	H
4922.01	-55.39	6.73	9.82	2.15	-54.45	-13.00	41.45	H
5738.01	-54.57	7.28	10.55	2.15	-53.45	-13.00	40.45	H

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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5849.01	-52.86	7.23	10.53	2.15	-51.71	-13.00	38.71	H
6770.01	-52.61	7.93	11.32	2.15	-51.37	-13.00	38.37	H
7347.01	-52.52	8.11	12.02	2.15	-50.76	-13.00	37.76	H
8064.01	-51.66	8.32	12.65	2.15	-49.48	-13.00	36.48	H
8868.00	-51.45	8.79	13.07	2.15	-49.32	-13.00	36.32	H
9736.00	-51.54	8.89	13.16	2.15	-49.42	-13.00	36.42	H



LTE Band 26(814MHz~824MHz), 1.4MHz, 16QAM, Channel 26697

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3259.02	-52.96	5.28	7.62	2.15	-52.77	-13.00	39.77	H
6499.01	-53.87	7.52	11.00	2.15	-52.54	-13.00	39.54	H
7322.01	-52.87	8.10	11.99	2.15	-51.13	-13.00	38.13	H
8132.01	-52.58	8.38	12.71	2.15	-50.40	-13.00	37.40	H
8949.00	-51.73	9.02	13.09	2.15	-49.81	-13.00	36.81	H
9763.00	-52.33	8.95	13.14	2.15	-50.29	-13.00	37.29	H

LTE Band 26(814MHz~824MHz), 1.4MHz, 16QAM, Channel 26740

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1620.01	-60.53	3.54	5.28	2.15	-60.94	-13.00	47.94	V
2454.00	-52.24	4.58	5.96	2.15	-53.01	-13.00	40.01	V
3276.02	-54.71	5.28	7.66	2.15	-54.48	-13.00	41.48	H
4100.02	-55.72	6.04	9.00	2.15	-54.91	-13.00	41.91	H
4926.01	-55.19	6.73	9.83	2.15	-54.24	-13.00	41.24	H
5735.01	-54.77	7.29	10.55	2.15	-53.66	-13.00	40.66	V

LTE Band 26(814MHz~824MHz), 1.4MHz, 16QAM, Channel 26783

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
2470.00	-45.60	4.59	6.01	2.15	-46.33	-13.00	33.33	H
3293.02	-50.27	5.29	7.70	2.15	-50.01	-13.00	37.01	H
7577.01	-52.95	8.07	12.26	2.15	-50.91	-13.00	37.91	H
8157.01	-52.02	8.43	12.73	2.15	-49.87	-13.00	36.87	H
8948.00	-51.13	9.02	13.09	2.15	-49.21	-13.00	36.21	H
9747.00	-51.12	8.92	13.15	2.15	-49.04	-13.00	36.04	H



LTE Band 26(814MHz~824MHz), 1.4MHz, 64QAM, Channel 26697

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3259.02	-51.91	5.28	7.62	2.15	-51.72	-13.00	38.72	H
6534.01	-53.73	7.54	11.04	2.15	-52.38	-13.00	39.38	H
7323.01	-52.78	8.10	11.99	2.15	-51.04	-13.00	38.04	H
8135.01	-52.76	8.39	12.71	2.15	-50.59	-13.00	37.59	V
8973.00	-51.00	9.10	13.09	2.15	-49.16	-13.00	36.16	H
9780.00	-51.59	8.99	13.12	2.15	-49.61	-13.00	36.61	H

LTE Band 26(814MHz~824MHz), 1.4MHz, 64QAM, Channel 26740

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1640.01	-59.73	3.56	5.25	2.15	-60.19	-13.00	47.19	H
2455.00	-52.04	4.58	5.97	2.15	-52.80	-13.00	39.80	V
3276.02	-53.97	5.28	7.66	2.15	-53.74	-13.00	40.74	H
4097.02	-55.63	6.04	9.00	2.15	-54.82	-13.00	41.82	H
4932.01	-55.05	6.72	9.83	2.15	-54.09	-13.00	41.09	H
5747.01	-53.63	7.27	10.55	2.15	-52.50	-13.00	39.50	H

LTE Band 26(814MHz~824MHz), 1.4MHz, 64QAM, Channel 26783

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
2459.00	-40.31	4.58	5.98	2.15	-41.06	-13.00	28.06	H
6741.01	-52.01	7.97	11.29	2.15	-50.84	-13.00	37.84	H
7595.01	-51.83	7.99	12.28	2.15	-49.69	-13.00	36.69	H
8154.01	-51.96	8.42	12.72	2.15	-49.81	-13.00	36.81	H
9237.00	-51.34	9.01	13.24	2.15	-49.26	-13.00	36.26	V
9981.00	-50.81	9.16	12.92	2.15	-49.20	-13.00	36.20	V



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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1650.01	-60.12	3.57	5.23	2.15	-60.61	-13.00	47.61	H
2474.00	-45.50	4.60	6.02	2.15	-46.23	-13.00	33.23	H
3299.02	-51.13	5.29	7.72	2.15	-50.85	-13.00	37.85	H
4116.02	-56.42	6.04	9.02	2.15	-55.59	-13.00	42.59	H
4953.01	-55.18	6.68	9.85	2.15	-54.16	-13.00	41.16	H
5761.01	-52.86	7.25	10.55	2.15	-51.71	-13.00	38.71	H

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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1673.01	-58.28	3.58	5.19	2.15	-58.82	-13.00	45.82	H
2510.00	-46.51	4.63	6.12	2.15	-47.17	-13.00	34.17	H
3346.02	-52.94	5.31	7.83	2.15	-52.57	-13.00	39.57	H
4166.02	-55.38	6.13	9.07	2.15	-54.59	-13.00	41.59	H
5005.01	-55.01	6.59	9.91	2.15	-53.84	-13.00	40.84	V
5846.01	-54.01	7.22	10.53	2.15	-52.85	-13.00	39.85	H

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

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1697.01	-59.54	3.60	5.15	2.15	-60.14	-13.00	47.14	V
2545.00	-43.86	4.66	6.18	2.15	-44.49	-13.00	31.49	H
3393.02	-51.75	5.36	7.94	2.15	-51.32	-13.00	38.32	H
4247.02	-55.11	6.24	9.15	2.15	-54.35	-13.00	41.35	H
5095.01	-55.16	6.76	10.03	2.15	-54.04	-13.00	41.04	V
5955.01	-52.02	7.47	10.51	2.15	-51.13	-13.00	38.13	H



LTE Band 26(824MHz~849MHz), 1.4MHz, 16QAM, Channel 26797

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1664.01	-59.69	3.57	5.20	2.15	-60.21	-13.00	47.21	H
2475.00	-44.96	4.60	6.03	2.15	-45.68	-13.00	32.68	H
3299.02	-48.96	5.29	7.72	2.15	-48.68	-13.00	35.68	H
4108.02	-55.64	6.04	9.01	2.15	-54.82	-13.00	41.82	V
4948.01	-55.88	6.69	9.85	2.15	-54.87	-13.00	41.87	H
5785.01	-54.44	7.21	10.54	2.15	-53.26	-13.00	40.26	V

LTE Band 26(824MHz~849MHz), 1.4MHz, 16QAM, Channel 26915

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1673.01	-57.17	3.58	5.19	2.15	-57.71	-13.00	44.71	H
2510.00	-46.26	4.63	6.12	2.15	-46.92	-13.00	33.92	H
3346.02	-52.78	5.31	7.83	2.15	-52.41	-13.00	39.41	H
4192.02	-54.83	6.19	9.09	2.15	-54.08	-13.00	41.08	V
5030.01	-55.05	6.57	9.94	2.15	-53.83	-13.00	40.83	H
5861.01	-53.15	7.27	10.53	2.15	-52.04	-13.00	39.04	V

LTE Band 26(824MHz~849MHz), 1.4MHz, 16QAM, Channel 27033

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1707.01	-60.01	3.60	5.13	2.15	-60.63	-13.00	47.63	V
2545.00	-45.95	4.66	6.18	2.15	-46.58	-13.00	33.58	H
3394.02	-52.51	5.36	7.95	2.15	-52.07	-13.00	39.07	H
4256.02	-55.13	6.23	9.16	2.15	-54.35	-13.00	41.35	H
5107.01	-55.61	6.79	10.05	2.15	-54.50	-13.00	41.50	H
5941.01	-53.49	7.47	10.51	2.15	-52.60	-13.00	39.60	H



LTE Band 26(824MHz~849MHz), 1.4MHz, 64QAM, Channel 26797

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1649.01	-58.88	3.56	5.23	2.15	-59.36	-13.00	46.36	H
2455.00	-52.10	4.58	5.97	2.15	-52.86	-13.00	39.86	V
3299.02	-51.33	5.29	7.72	2.15	-51.05	-13.00	38.05	H
4119.02	-55.77	6.04	9.02	2.15	-54.94	-13.00	41.94	H
4933.01	-55.54	6.72	9.83	2.15	-54.58	-13.00	41.58	H
5765.01	-54.06	7.24	10.55	2.15	-52.90	-13.00	39.90	H

LTE Band 26(824MHz~849MHz), 1.4MHz, 64QAM, Channel 26915

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1661.01	-59.82	3.57	5.21	2.15	-60.33	-13.00	47.33	H
2521.00	-52.99	4.65	6.14	2.15	-53.65	-13.00	40.65	H
3347.02	-53.07	5.32	7.83	2.15	-52.71	-13.00	39.71	H
4175.02	-54.38	6.15	9.08	2.15	-53.60	-13.00	40.60	V
5031.01	-55.71	6.58	9.94	2.15	-54.50	-13.00	41.50	H
5852.01	-53.29	7.24	10.53	2.15	-52.15	-13.00	39.15	H

LTE Band 26(824MHz~849MHz), 1.4MHz, 64QAM, Channel 27033

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Margin(dB)	Polarization
1702.01	-59.84	3.60	5.14	2.15	-60.45	-13.00	47.45	V
2528.00	-52.10	4.65	6.15	2.15	-52.75	-13.00	39.75	H
3394.02	-52.19	5.36	7.95	2.15	-51.75	-13.00	38.75	H
4242.02	-55.06	6.25	9.14	2.15	-54.32	-13.00	41.32	H
5108.01	-54.94	6.79	10.05	2.15	-53.83	-13.00	40.83	H
5958.01	-53.33	7.47	10.51	2.15	-52.44	-13.00	39.44	H

LTE Band 41, 5MHz, QPSK, Channel 39675

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
4998.02	-53.53	6.61	9.90	-50.24	-13.00	37.24	V
7499.01	-52.88	8.39	12.20	-49.07	-13.00	36.07	V
9997.01	-50.12	9.18	12.90	-46.40	-13.00	33.40	V
12493.01	-38.02	10.19	13.20	-35.01	-13.00	22.01	V
14988.00	-46.03	11.21	14.01	-43.23	-13.00	30.23	H
17493.00	-43.53	12.71	14.88	-41.36	-13.00	28.36	H

LTE Band 41, 5MHz, QPSK, Channel 40620

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
6455.02	-55.68	7.55	10.96	-52.27	-13.00	39.27	V
7785.01	-51.45	8.31	12.43	-47.33	-13.00	34.33	H
9068.01	-53.58	9.02	13.14	-49.46	-13.00	36.46	H
10389.01	-50.07	9.78	13.06	-46.79	-13.00	33.79	V
11644.01	-51.03	9.72	13.07	-47.68	-13.00	34.68	V
12987.01	-36.90	10.47	13.49	-33.88	-13.00	20.88	V

LTE Band 41, 5MHz, QPSK, Channel 41565

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
4031.02	-56.81	6.05	8.93	-53.93	-13.00	40.93	V
5377.02	-54.80	6.88	10.43	-51.25	-13.00	38.25	H
6734.02	-54.47	7.98	11.28	-51.17	-13.00	38.17	V
8068.01	-51.80	8.32	12.65	-47.47	-13.00	34.47	V
9394.01	-54.88	9.04	13.34	-50.58	-13.00	37.58	H
10756.01	-50.73	9.44	13.15	-47.02	-13.00	34.02	V



LTE Band 41 5MHz, 16QAM, Channel 39675

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5001.02	-53.23	6.60	9.90	-49.93	-13.00	36.93	V
7500.01	-50.37	8.39	12.20	-46.56	-13.00	33.56	V
9997.01	-50.24	9.18	12.90	-46.52	-13.00	33.52	V
12493.01	-36.76	10.19	13.20	-33.75	-13.00	20.75	V
14990.00	-46.98	11.21	14.01	-44.18	-13.00	31.18	H
17489.00	-43.10	12.70	14.88	-40.92	-13.00	27.92	H

LTE Band 41, 5MHz, 16QAM, Channel 40620

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
2593.00	9.21	4.70	6.27	10.78	-13.00	-23.78	V
6509.02	-55.78	7.51	11.01	-52.28	-13.00	39.28	V
7782.01	-52.48	8.31	12.43	-48.36	-13.00	35.36	H
9099.01	-54.14	8.94	13.16	-49.92	-13.00	36.92	H
10362.01	-51.23	9.74	13.04	-47.93	-13.00	34.93	H
11689.01	-50.16	9.63	13.06	-46.73	-13.00	33.73	H

LTE Band 41, 5MHz, 16QAM, Channel 41565

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
4030.02	-57.47	6.05	8.93	-54.59	-13.00	41.59	V
5377.02	-54.73	6.88	10.43	-51.18	-13.00	38.18	H
6700.02	-54.65	7.97	11.24	-51.38	-13.00	38.38	H
8063.01	-52.89	8.32	12.65	-48.56	-13.00	35.56	V
9411.01	-54.21	9.09	13.35	-49.95	-13.00	36.95	V
10755.01	-50.15	9.44	13.15	-46.44	-13.00	33.44	V

LTE Band 41 5MHz, 64QAM, Channel 39675

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
4997.02	-57.18	6.61	9.90	-53.89	-13.00	40.89	H
7500.01	-54.75	8.39	12.20	-50.94	-13.00	37.94	V
9990.01	-52.83	9.17	12.91	-49.09	-13.00	36.09	H
12493.01	-38.54	10.19	13.20	-35.53	-13.00	22.53	V
14990.00	-46.21	11.21	14.01	-43.41	-13.00	30.41	V
17492.00	-43.17	12.71	14.88	-41.00	-13.00	28.00	H

LTE Band 41, 5MHz, 64QAM, Channel 40620

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5186.02	-52.24	6.94	10.16	-49.02	-13.00	36.02	H
7808.01	-54.52	8.30	12.45	-50.37	-13.00	37.37	H
9078.01	-53.58	8.99	13.15	-49.42	-13.00	36.42	H
10385.01	-46.48	9.78	13.05	-43.21	-13.00	30.21	V
11685.01	-50.80	9.64	13.06	-47.38	-13.00	34.38	H
12966.01	-43.82	10.48	13.48	-40.82	-13.00	27.82	H

LTE Band 41, 5MHz, 64QAM, Channel 41565

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
4021.02	-57.07	6.05	8.92	-54.20	-13.00	41.20	H
5380.02	-54.38	6.87	10.43	-50.82	-13.00	37.82	H
6704.02	-54.96	7.97	11.24	-51.69	-13.00	38.69	H
8087.01	-54.69	8.32	12.67	-50.34	-13.00	37.34	H
9420.01	-54.65	9.14	13.35	-50.44	-13.00	37.44	H
10754.01	-51.38	9.44	13.15	-47.67	-13.00	34.67	H

Note: The maximum value of expanded measurement uncertainty for this test item is $U = 4.2$ dB, $k = 2$.

A.3 FREQUENCY STABILITY

A.3.1 Method of Measurement

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

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -10°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel for LTE band 13 25 26 41, 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 -10°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 centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C increments from -10°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

A.3.2 Measurement Limit

A.3.2.1 For Hand carried battery powered equipment

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 between 3.55VDC and 4.35VDC, with a nominal voltage of 3.8VDC.

A.3.2.2 For equipment powered by primary supply voltage

The frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

A.3.3 Measurement results

LTE Band 13, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.55	-8.93	-7.18	-10.21	0.011	0.009	0.013
3.8	-2.06	-6.09	-9.12	0.003	0.008	0.012
4.35	-8.25	-5.51	-5.95	0.011	0.007	0.008

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-24.22	-2.99	-11.32	0.031	0.004	0.014
40	-6.49	-0.37	-7.19	0.008	0.000	0.009
30	-9.66	-2.70	-4.56	0.012	0.003	0.006
20	-7.71	-3.09	-8.69	0.010	0.004	0.011
10	-10.03	-7.40	-7.84	0.013	0.009	0.010
0	-4.98	-2.75	-3.53	0.006	0.004	0.005
- 10	-7.58	-5.49	-7.66	0.010	0.007	0.010

LTE Band 25, 3MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.55	-14.49	-0.19	-5.42	0.020	0.000	0.003
3.8	-5.55	-11.90	-12.18	0.008	0.017	0.006
4.35	-5.06	-0.93	-9.15	0.007	0.001	0.005

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	0.57	-11.36	-1.97	0.001	0.016	0.001
40	-12.56	-10.61	-14.75	0.018	0.015	0.008
30	-7.57	1.44	-16.63	0.011	0.002	0.009
20	-2.25	-10.77	-13.29	0.003	0.015	0.007
10	-14.08	-2.12	-8.25	0.020	0.003	0.004
0	-0.20	-11.26	-15.52	0.000	0.016	0.008
- 10	-6.72	-3.71	-6.37	0.009	0.005	0.003



LTE Band 26(814MHz~824MHz), 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.55	-7.97	16.24	-8.73	0.010	0.020	0.011
3.8	-8.91	15.98	-7.25	0.011	0.020	0.009
4.35	-8.61	15.32	-9.28	0.011	0.019	0.011

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-6.27	10.23	-9.62	0.008	0.012	0.012
40	-6.44	12.66	-13.29	0.008	0.015	0.016
30	-6.02	8.45	-7.34	0.007	0.010	0.009
20	-7.60	14.45	-11.68	0.009	0.018	0.014
10	-4.88	18.97	-10.93	0.006	0.023	0.013
0	-3.46	13.62	-5.18	0.004	0.017	0.006
- 10	1.09	15.28	-8.25	0.001	0.019	0.010

LTE Band 26(824MHz~849MHz), 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.55	-1.66	16.89	-12.83	0.002	0.020	0.015
3.8	-5.05	16.91	-11.36	0.006	0.020	0.014
4.35	-3.26	16.41	-7.72	0.004	0.020	0.009

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-4.46	19.41	-13.87	0.005	0.023	0.009
40	-1.73	10.20	-10.26	0.002	0.012	0.017
30	-7.75	16.51	-9.95	0.009	0.020	0.012
20	-2.40	19.34	-7.26	0.003	0.023	0.012
10	-6.39	14.08	-9.61	0.008	0.017	0.009
0	-7.90	17.71	-11.62	0.009	0.021	0.011
- 10	-5.41	14.73	-6.48	0.006	0.018	0.014

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

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.55	-2.27	-16.75	-16.73	0.001	0.006	0.006
3.8	-12.95	-18.00	-15.85	0.005	0.007	0.006
4.35	-12.99	-23.13	-27.65	0.005	0.009	0.011

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	1.99	-23.73	-13.49	0.001	0.009	0.005
40	-15.94	2.45	-17.36	0.006	0.001	0.007
30	-3.28	-5.26	-12.92	0.001	0.002	0.005
20	3.03	-9.96	-11.36	0.001	0.004	0.004
10	-11.13	-4.89	-21.29	0.004	0.002	0.008
0	-17.09	-11.60	-16.57	0.007	0.004	0.006
- 10	-6.47	-26.48	-26.38	0.002	0.010	0.010

Expanded measurement uncertainty for this test item is 10 Hz, $k = 2$.



A.4 OCCUPIED BANDWIDTH

A.4.1 Occupied Bandwidth Results

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

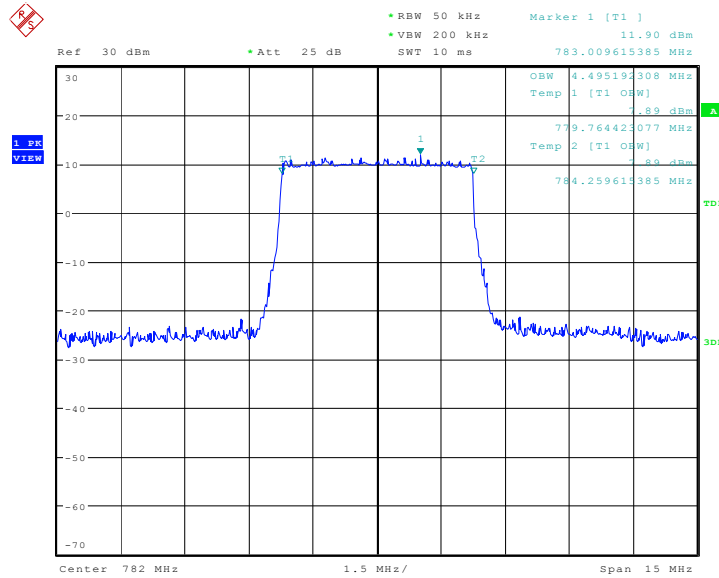
The measurement method is from KDB 971168 4.2:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

LTE band 13, 5MHz (99%)

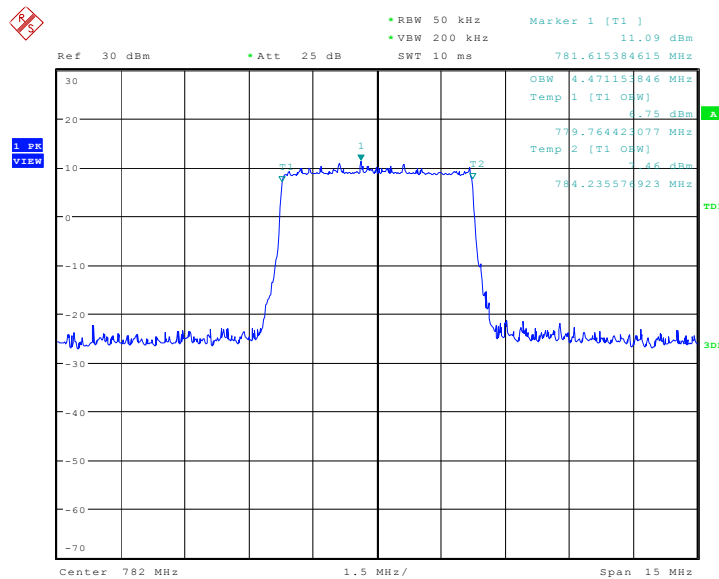
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
782.0	4495.192	4471.154	4495.192

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



Date: 22.MAY.2018 16:44:24

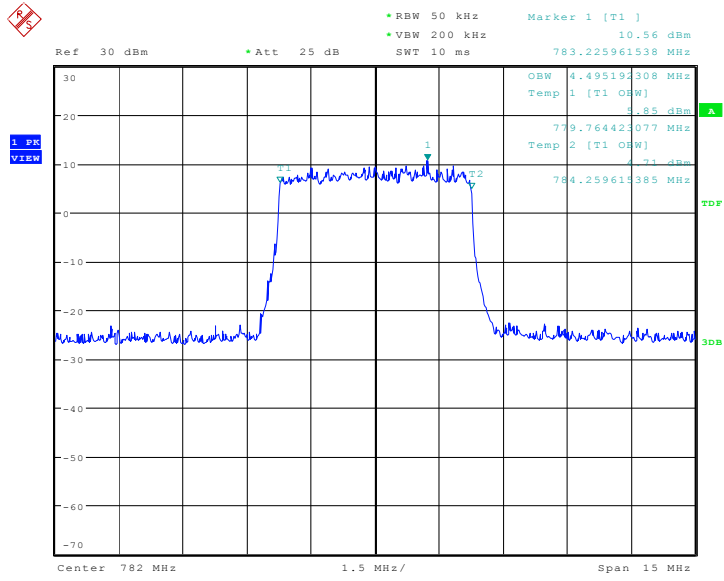
LTE band 13, 5MHz Bandwidth,16QAM (99% BW)



Date: 22.MAY.2018 16:44:39



LTE band 13, 5MHz Bandwidth, 64QAM (99% BW)

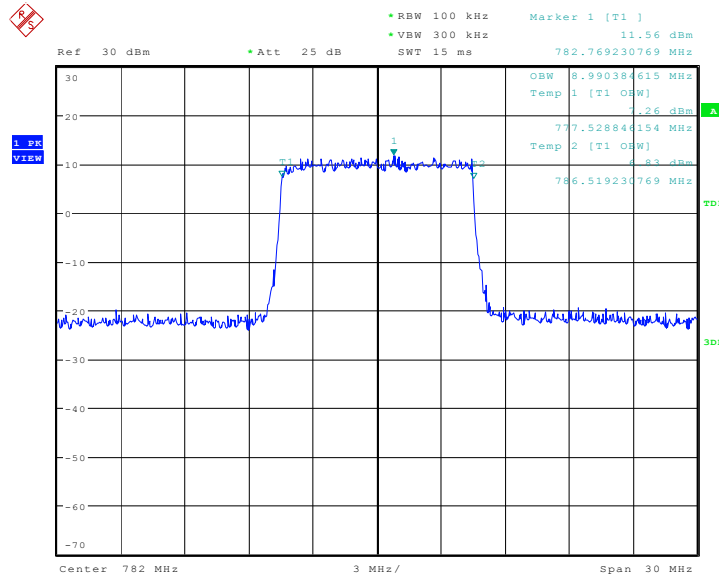


Date: 3.AUG.2018 15:02:53

LTE band 13, 10MHz (99%)

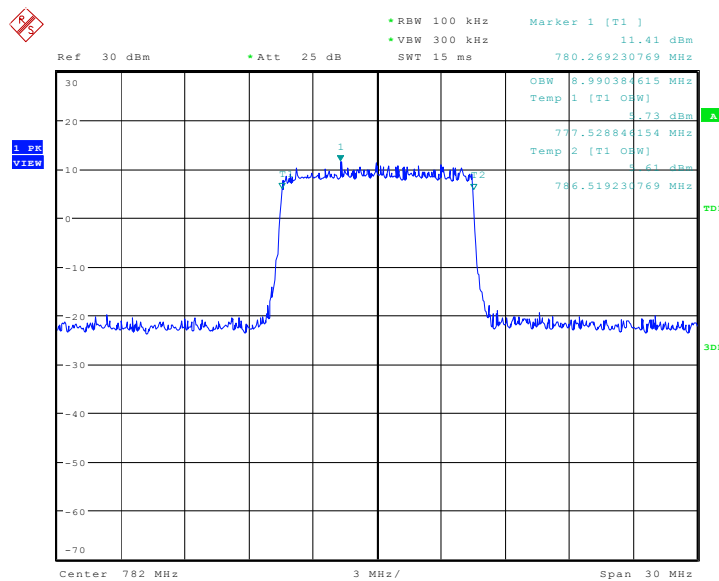
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
782.0	8990.385	8990.385	8990.385

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



Date: 22.MAY.2018 16:51:21

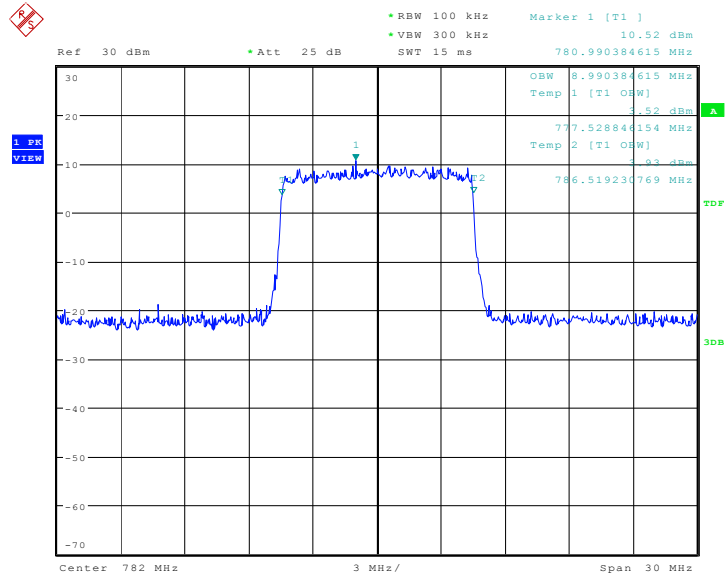
LTE band 13, 10MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 16:51:36



LTE band 13, 10MHz Bandwidth, 64QAM (99% BW)

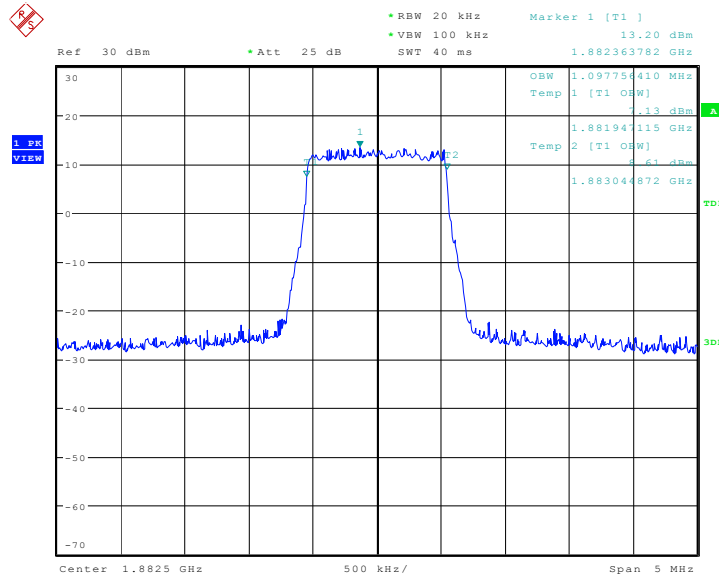


Date: 3.AUG.2018 15:10:06

LTE band 25, 1.4MHz (99%)

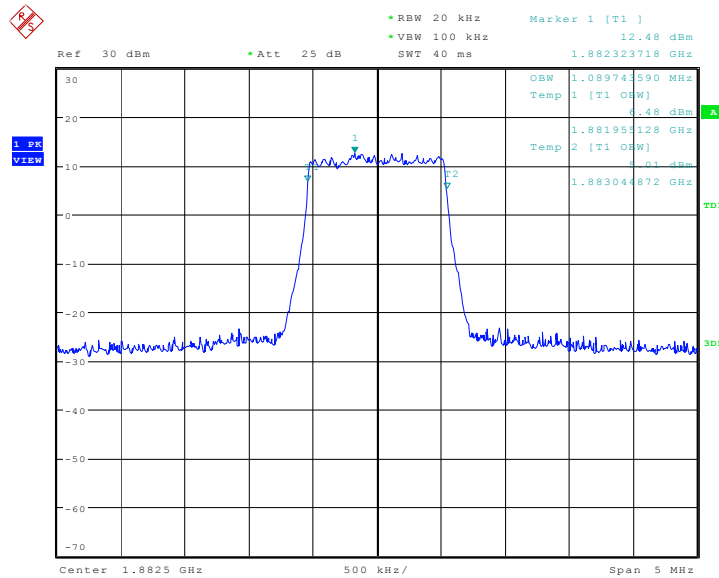
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	1097.756	1089.744	1089.744

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



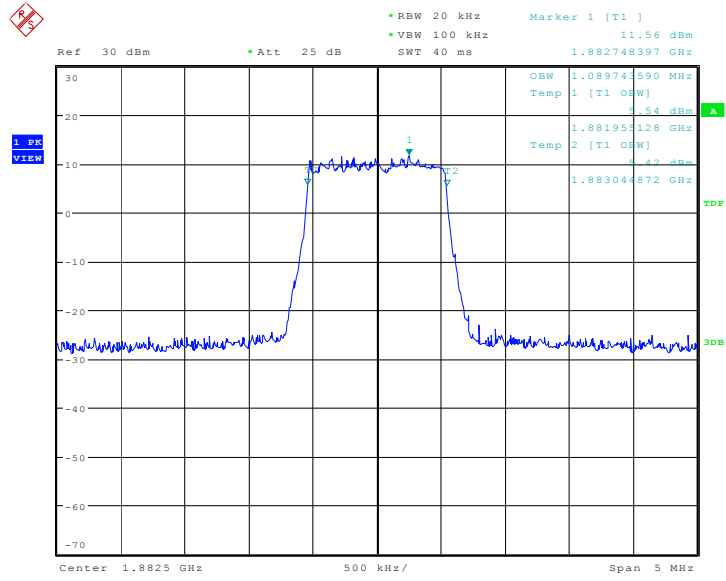
Date: 22.MAY.2018 16:58:23

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



Date: 22.MAY.2018 16:58:38

LTE band 25, 1.4MHz Bandwidth, 64QAM (99% BW)

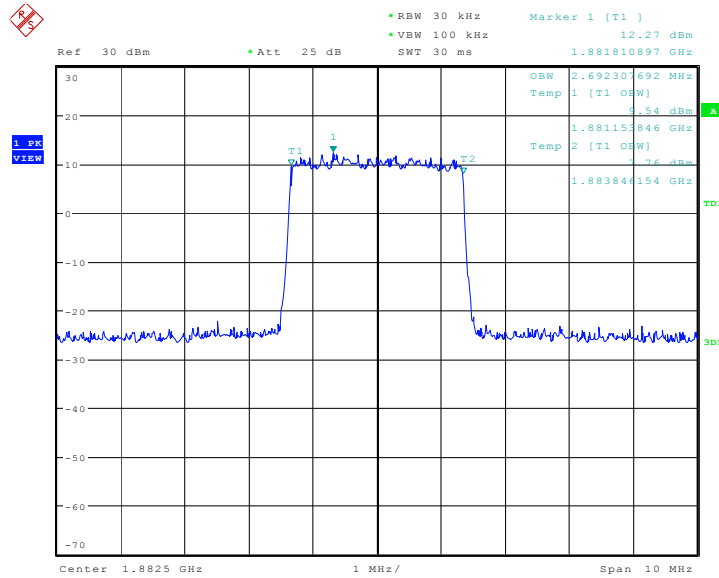


Date: 3.AUG.2018 15:30:37

LTE band 25, 3MHz (99%)

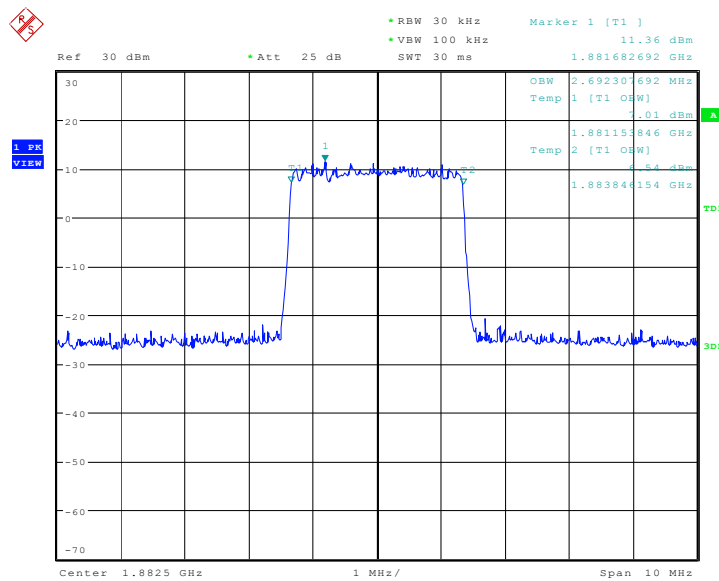
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	2692.308	2692.308	2692.231

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



Date: 22.MAY.2018 17:05:19

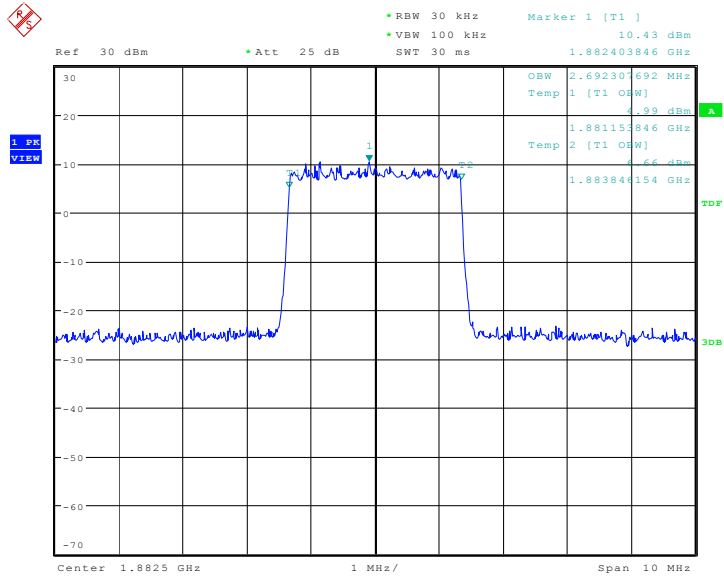
LTE band 25, 3MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 17:05:34



LTE band 25, 3MHz Bandwidth, 64QAM (99% BW)

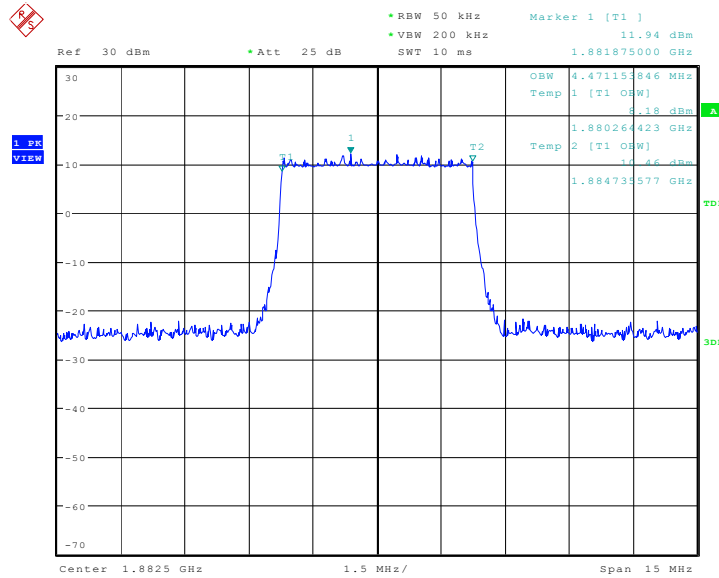


Date: 3.AUG.2018 15:31:56

LTE band 25, 5MHz (99%)

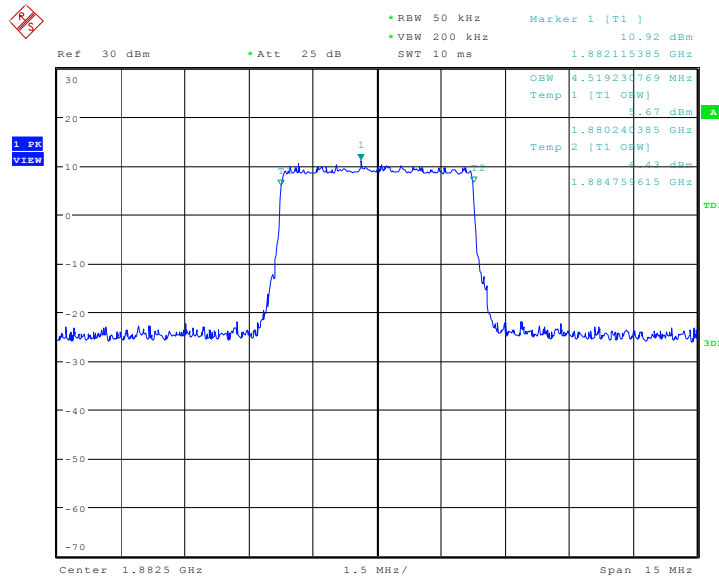
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	4471.154	4519.231	4495.192

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



Date: 22.MAY.2018 17:12:13

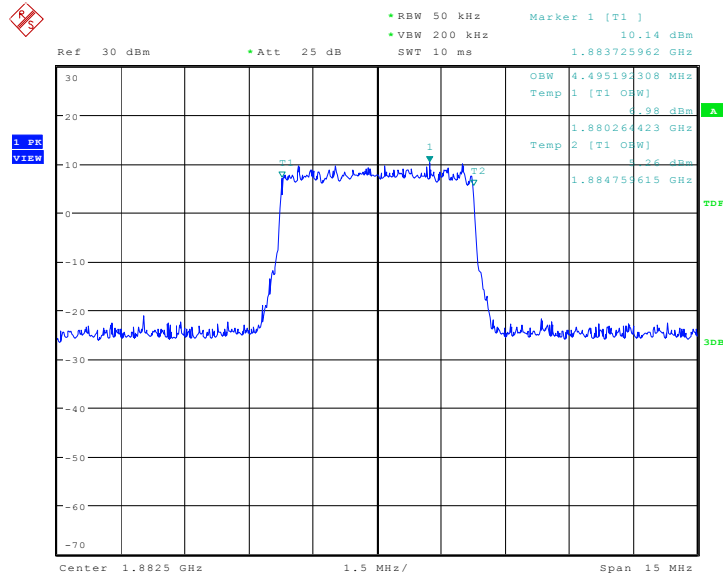
LTE band 25, 5MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 17:12:28



LTE band 25, 5MHz Bandwidth,64QAM (99% BW)

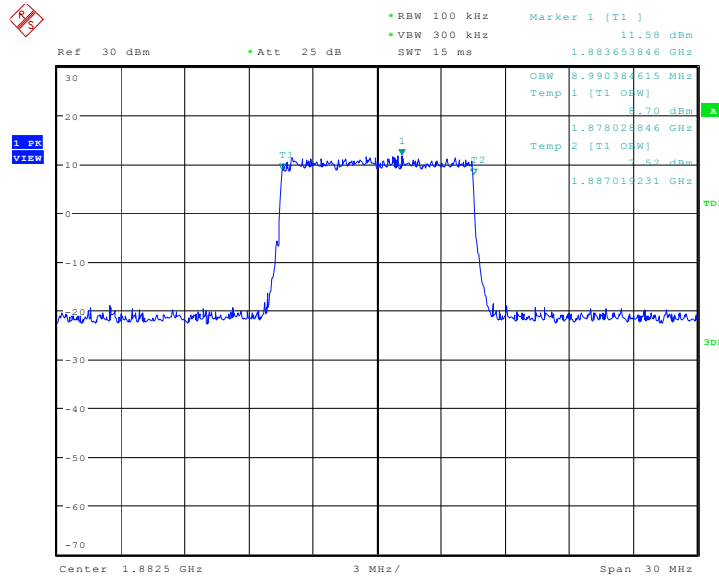


Date: 3.AUG.2018 15:35:26

LTE band 25, 10MHz (99%)

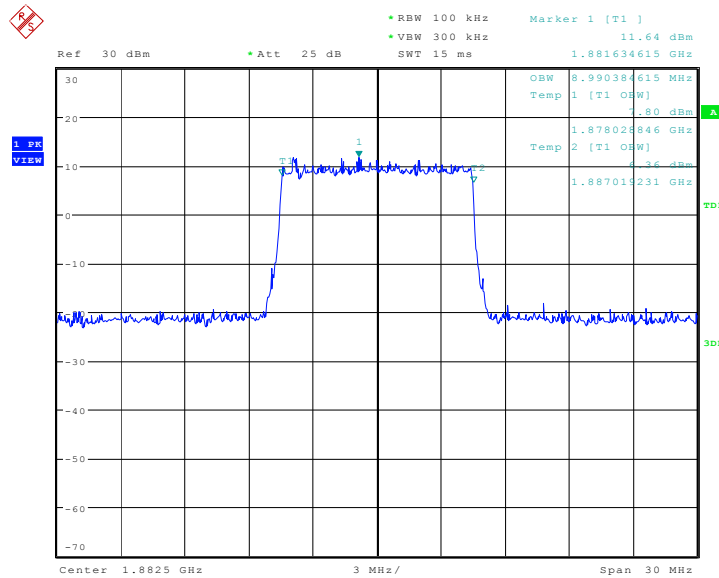
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	8990.385	8990.385	9038.462

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



Date: 22.MAY.2018 17:19:12

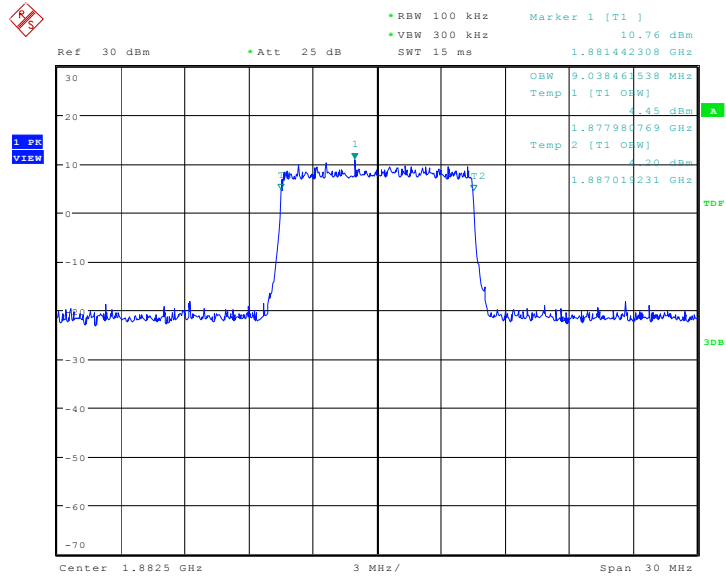
LTE band 25, 10MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 17:19:27



LTE band 25, 10MHz Bandwidth, 64QAM (99% BW)

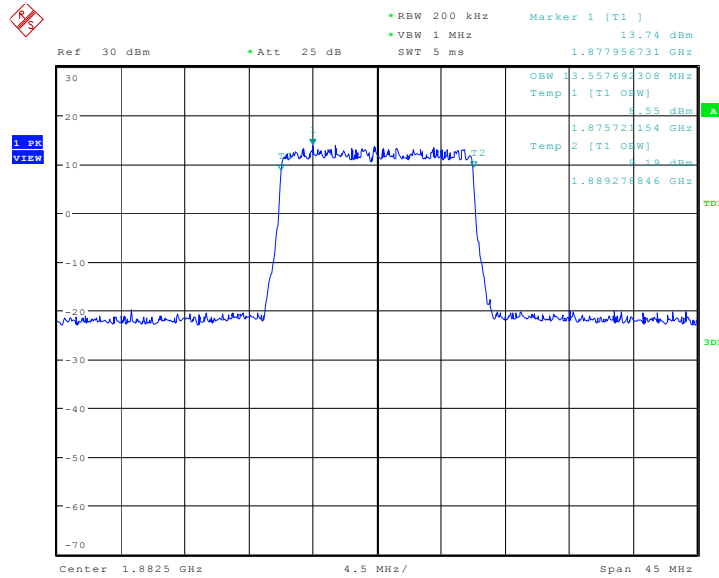


Date: 3.AUG.2018 15:39:08

LTE band 25, 15MHz (99%)

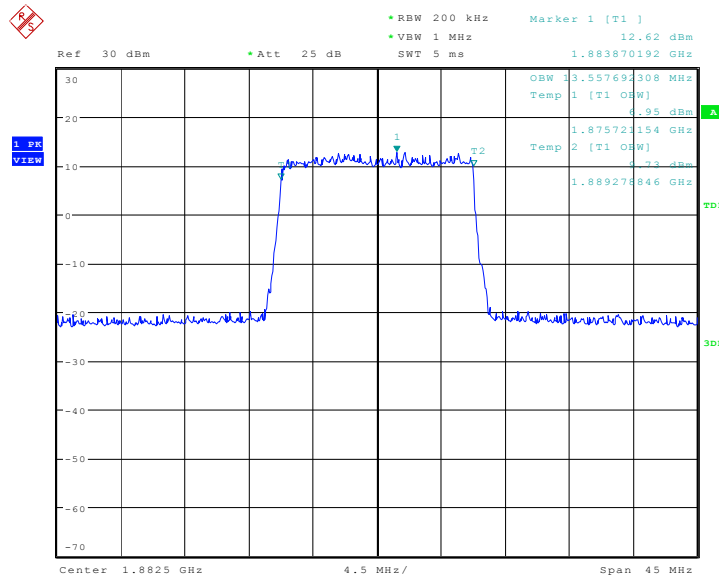
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	13557.69	13557.69	13557.69

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



Date: 22.MAY.2018 17:26:50

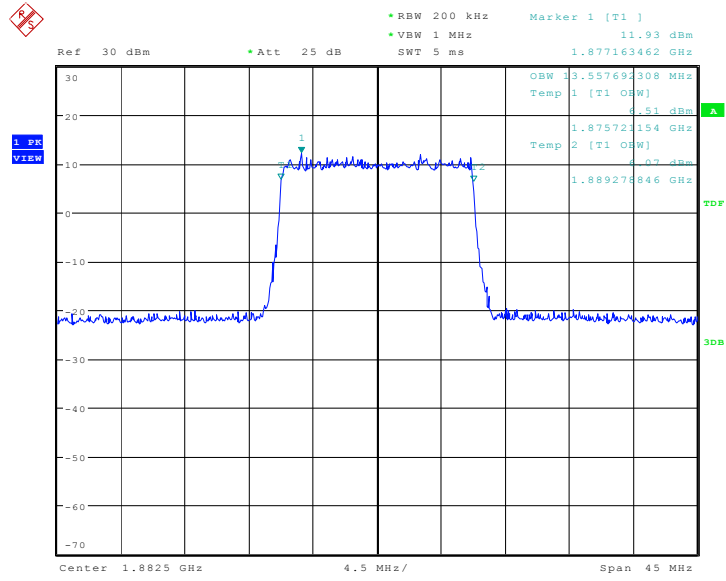
LTE band 25, 15MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 17:27:05



LTE band 25, 15MHz Bandwidth, 64QAM (99% BW)

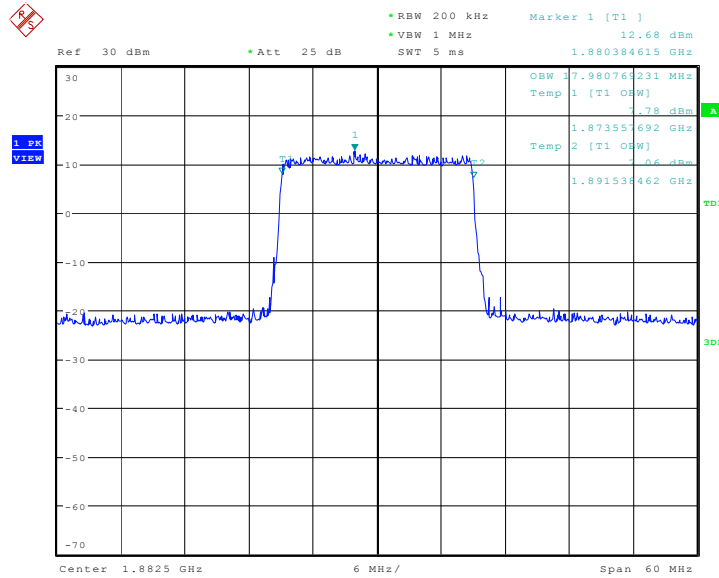


Date: 3.AUG.2018 15:41:46

LTE band 25, 20MHz (99%)

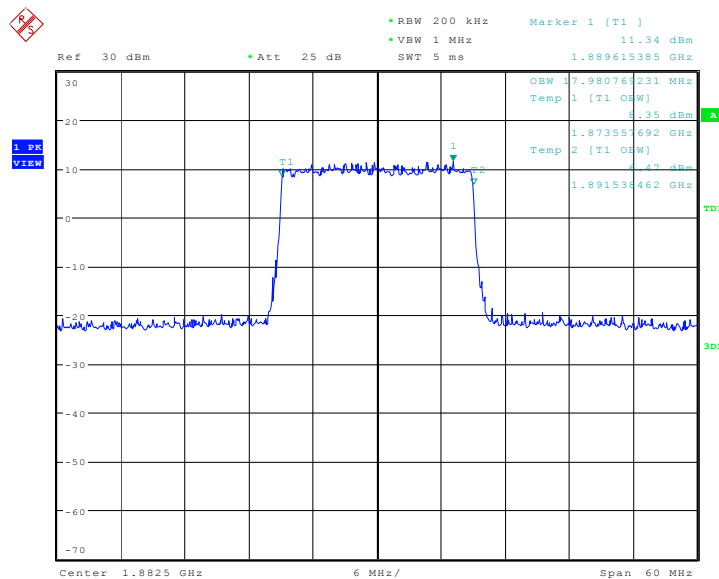
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
1882.5	17980.77	17980.77	17980.77

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



Date: 22.MAY.2018 18:12:12

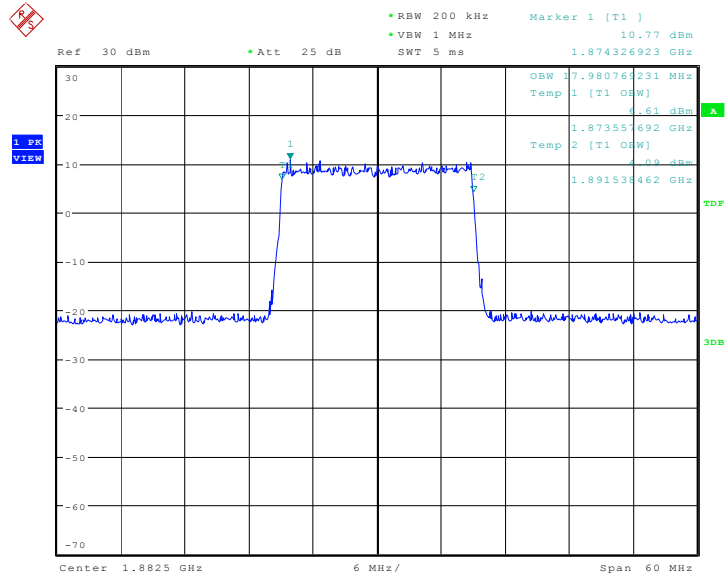
LTE band 25, 20MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 18:12:28



LTE band 25, 20MHz Bandwidth, 64QAM (99% BW)

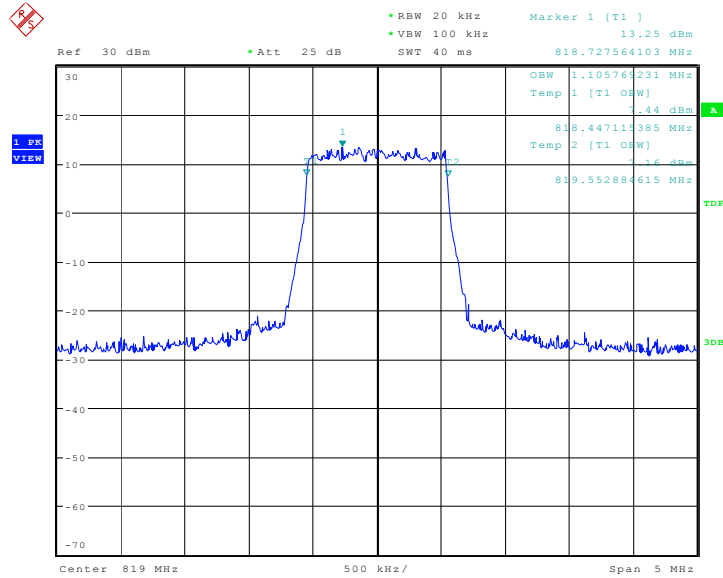


Date: 3.AUG.2018 15:42:55

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

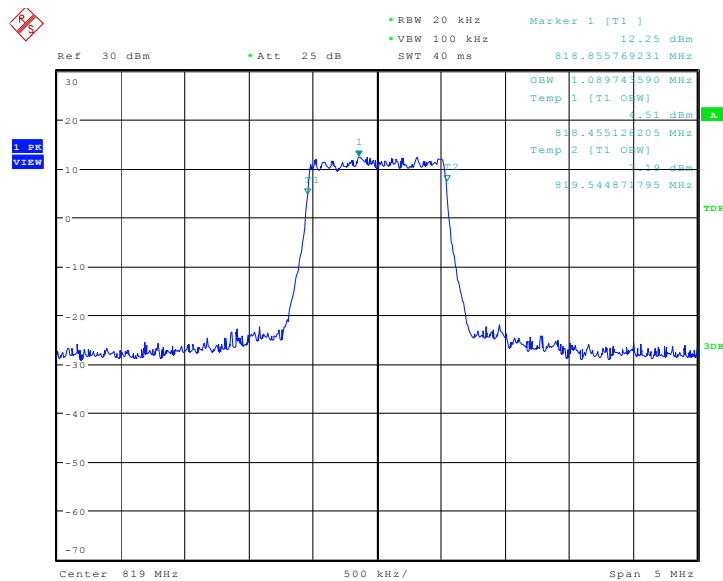
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
819.0	1105.769	1089.744	1089.744

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



Date: 22.MAY.2018 19:35:56

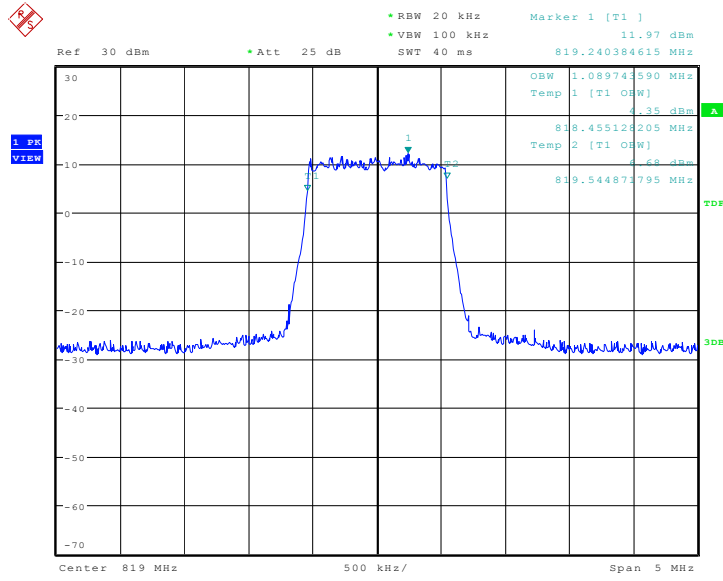
LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:36:11



LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, 64QAM (99% BW)

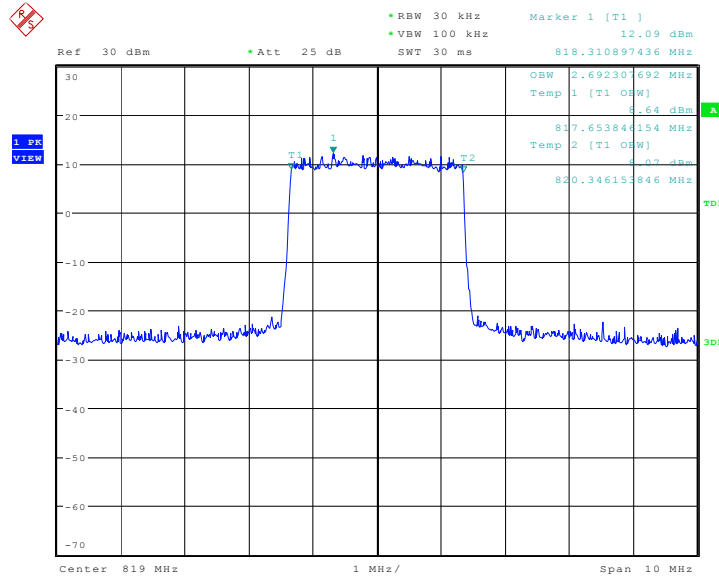


Date: 3.AUG.2018 16:07:30

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

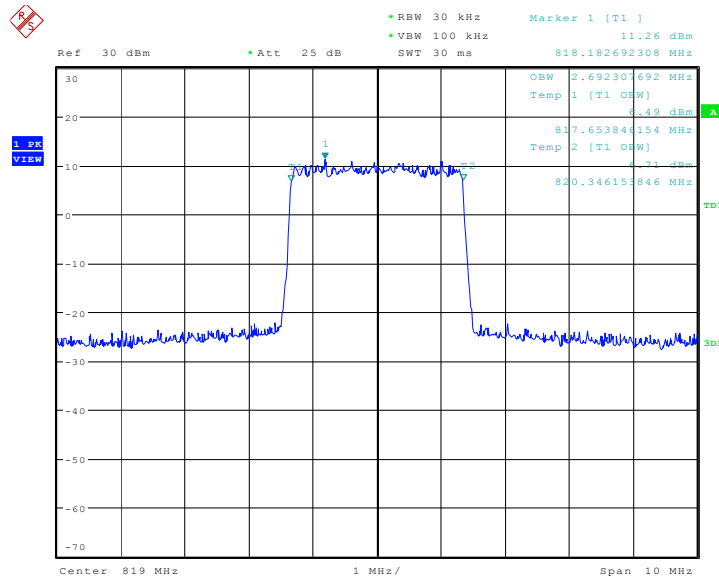
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
819.0	QPSK	16QAM	64QAM
	2692.308	2692.308	2692.308

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



Date: 22.MAY.2018 19:42:49

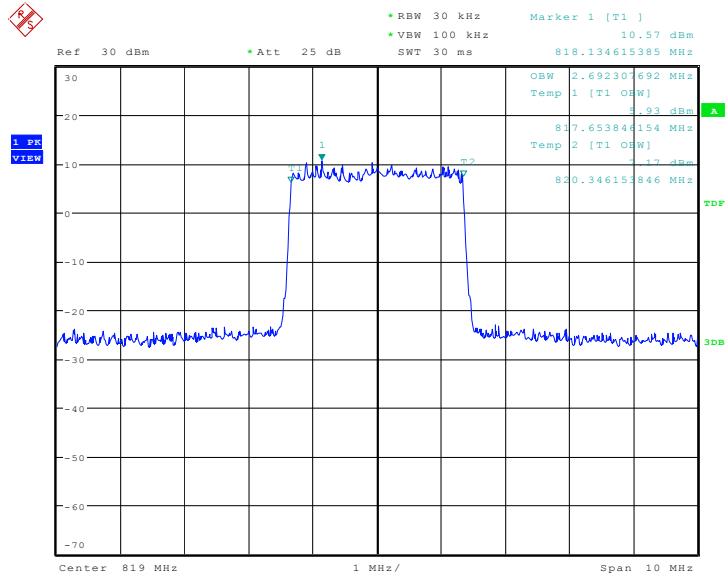
LTE band 26(814MHz-824MHz), 3MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:43:04



LTE band 26(814MHz-824MHz), 3MHz Bandwidth, 64QAM (99% BW)

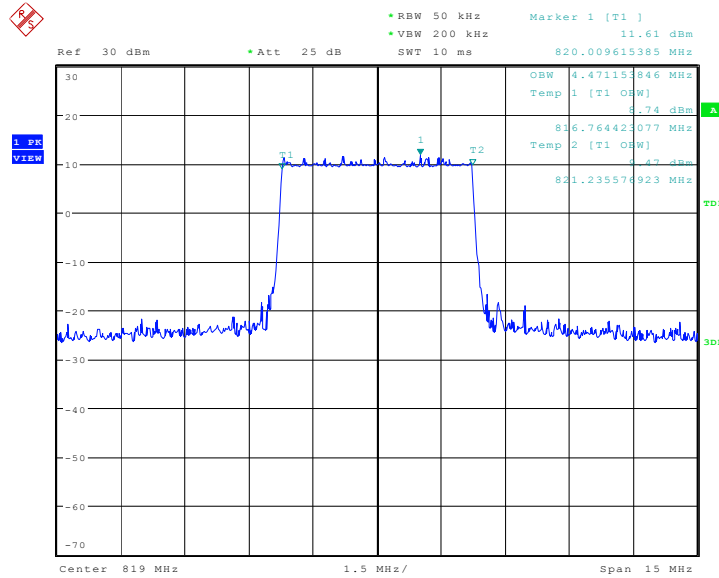


Date: 3.AUG.2018 16:13:42

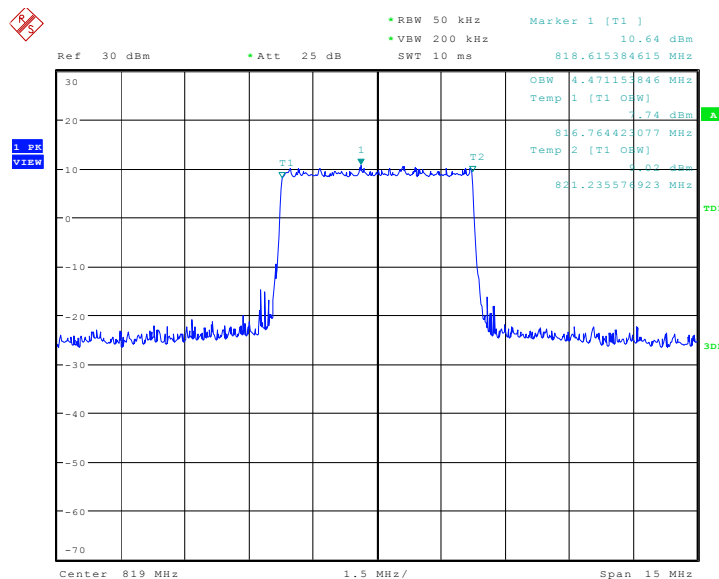
LTE band 26(814MHz-824MHz), 5MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
819.0	QPSK	16QAM	64QAM
	4471.154	4471.154	4471.154

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

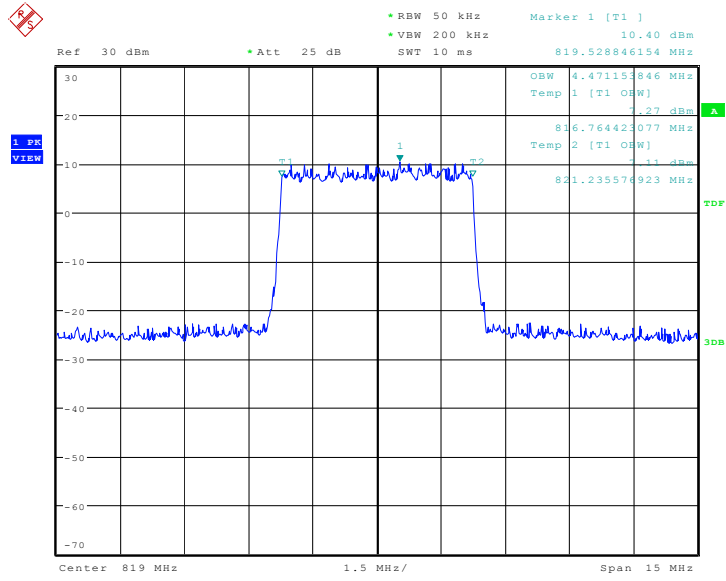


LTE band 26(814MHz-824MHz), 5MHz Bandwidth,16QAM (99% BW)





LTE band 26(814MHz-824MHz), 5MHz Bandwidth,64QAM (99% BW)

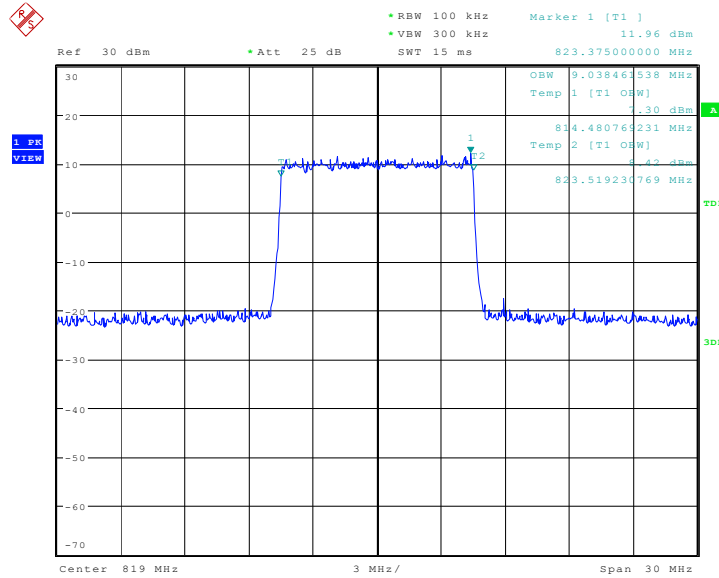


Date: 3.AUG.2018 16:15:45

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

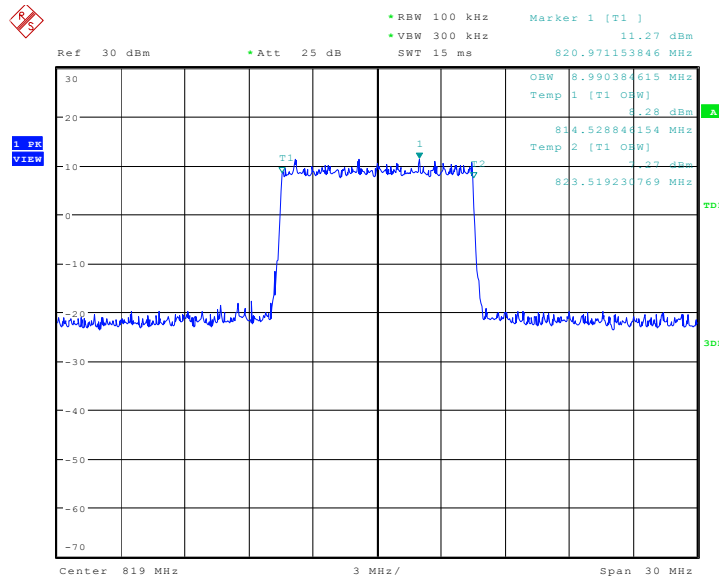
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
819.0	QPSK	16QAM	64QAM
	9038.462	8990.385	8990.385

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



Date: 22.MAY.2018 19:56:39

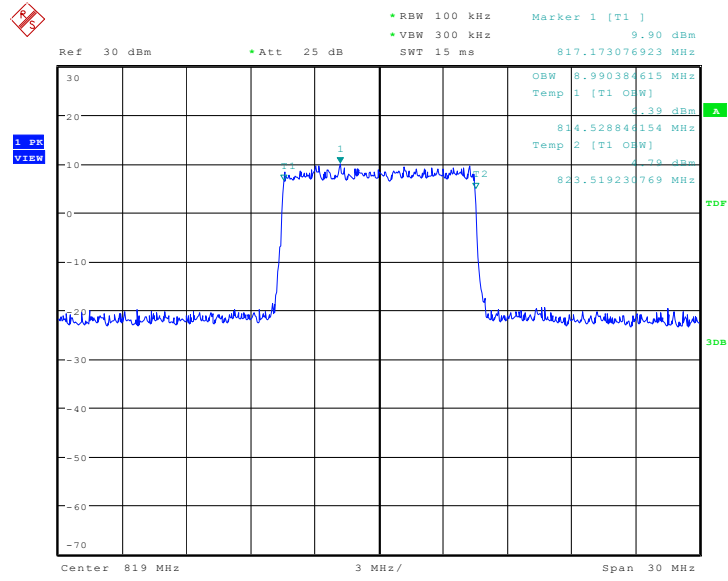
LTE band 26(814MHz-824MHz), 10MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:56:54



LTE band 26(814MHz-824MHz), 10MHz Bandwidth, 64QAM (99% BW)

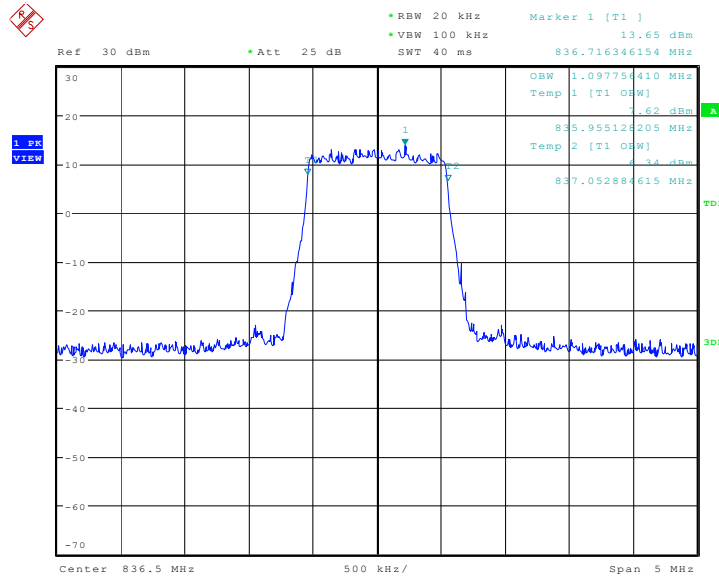


Date: 3.AUG.2018 16:17:11

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

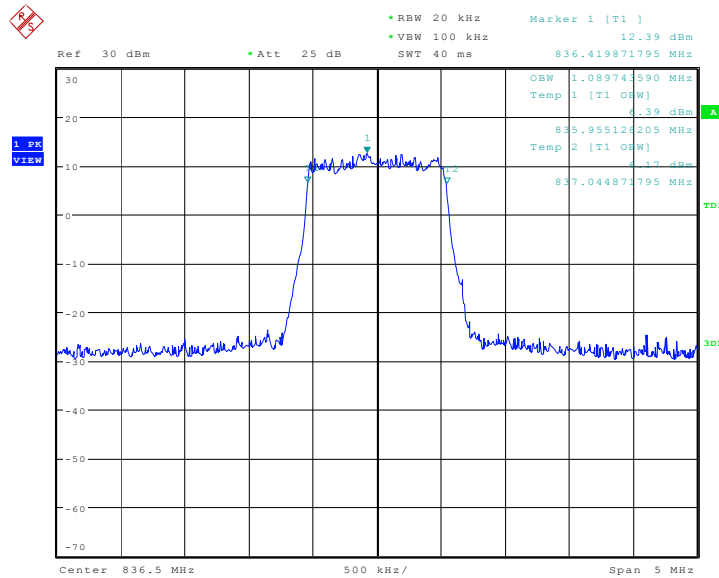
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
836.5	1097.756	1089.744	1089.744

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



Date: 22.MAY.2018 19:00:33

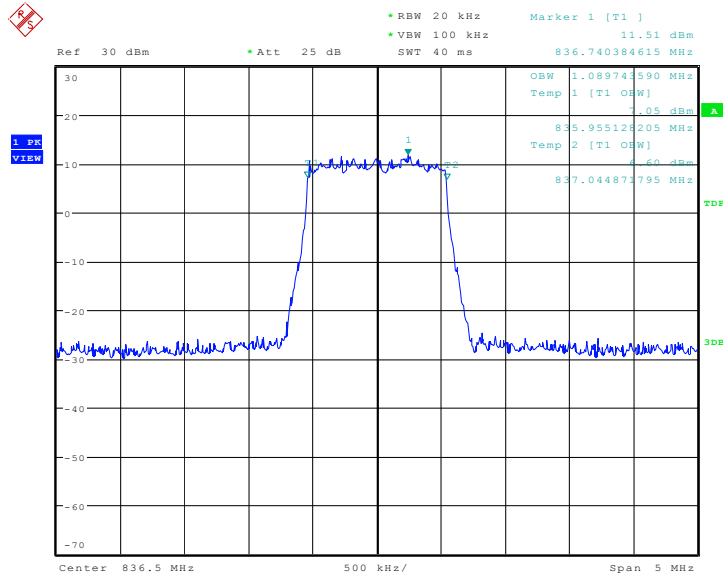
LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:00:48



LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, 64QAM (99% BW)

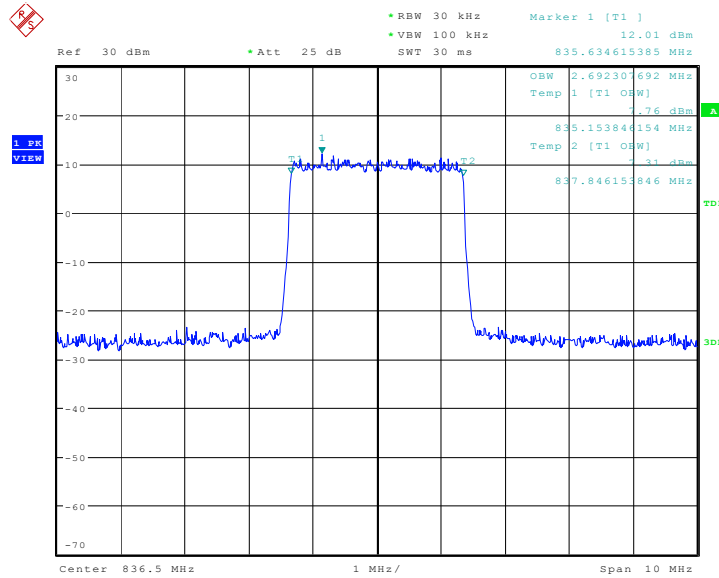


Date: 3.AUG.2018 16:20:21

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

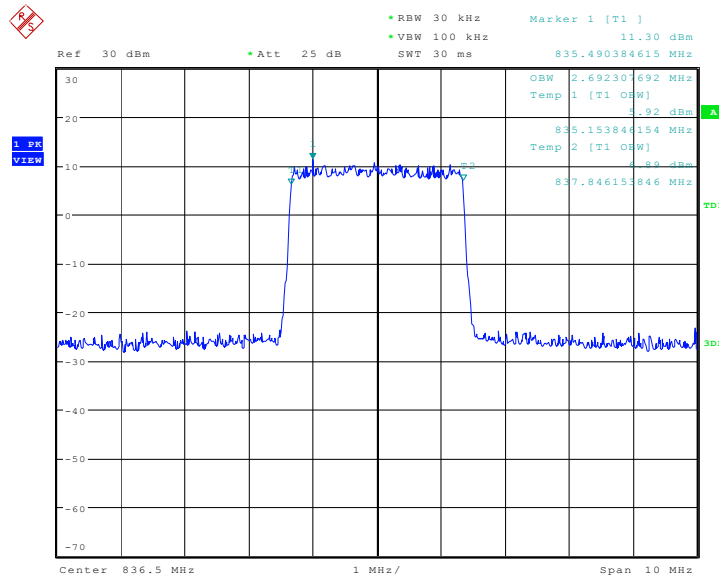
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
836.5	2692.308	2692.308	2692.308

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



Date: 22.MAY.2018 19:07:28

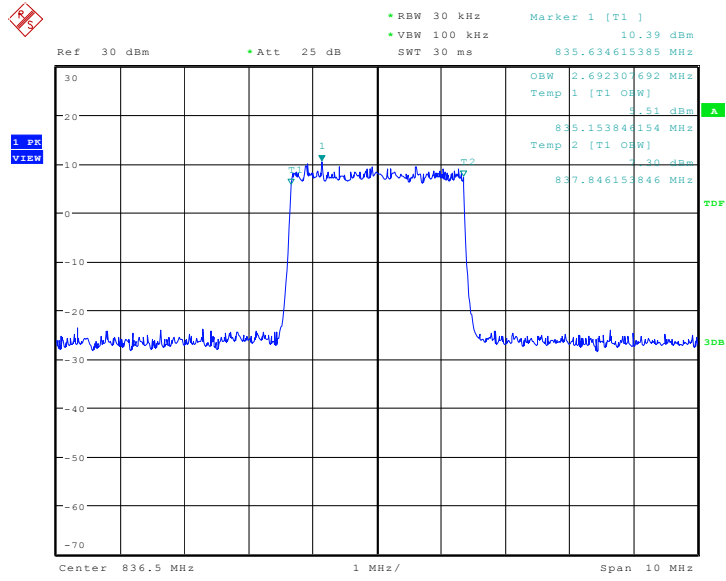
LTE band 26(824MHz-849MHz), 3MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:07:43



LTE band 26(824MHz-849MHz), 3MHz Bandwidth, 64QAM (99% BW)

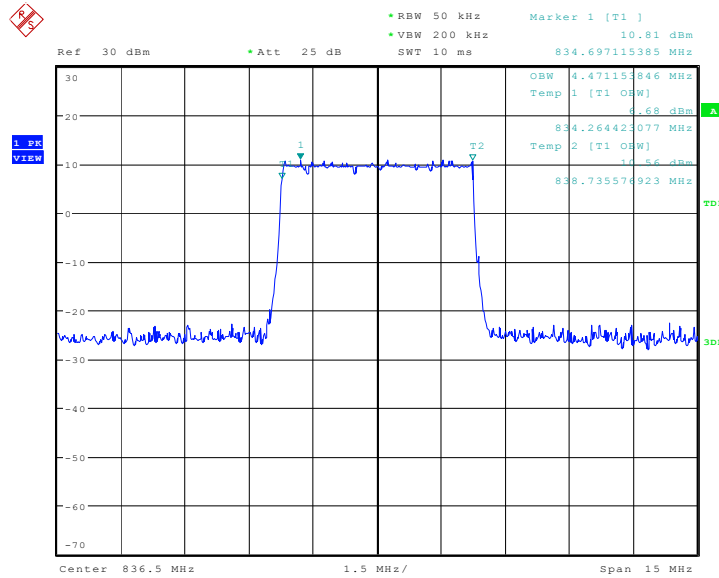


Date: 3.AUG.2018 16:23:57

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

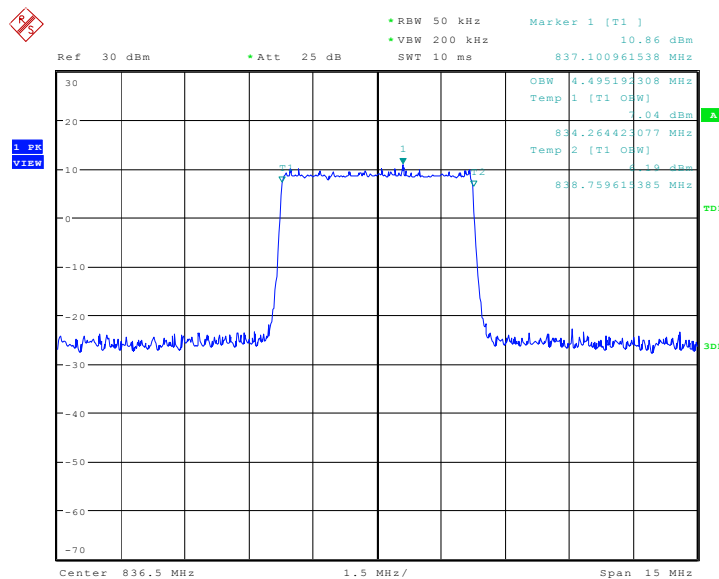
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
836.5	QPSK	16QAM	64QAM
	4471.154	4495.192	4495.192

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



Date: 22.MAY.2018 19:14:27

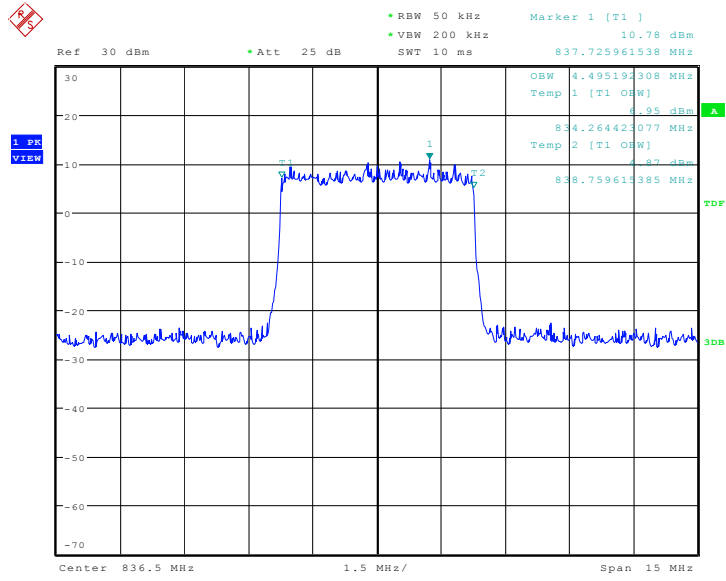
LTE band 26(824MHz-849MHz), 5MHz Bandwidth,16QAM (99% BW)



Date: 22.MAY.2018 19:14:42



LTE band 26(824MHz-849MHz), 5MHz Bandwidth,64QAM (99% BW)

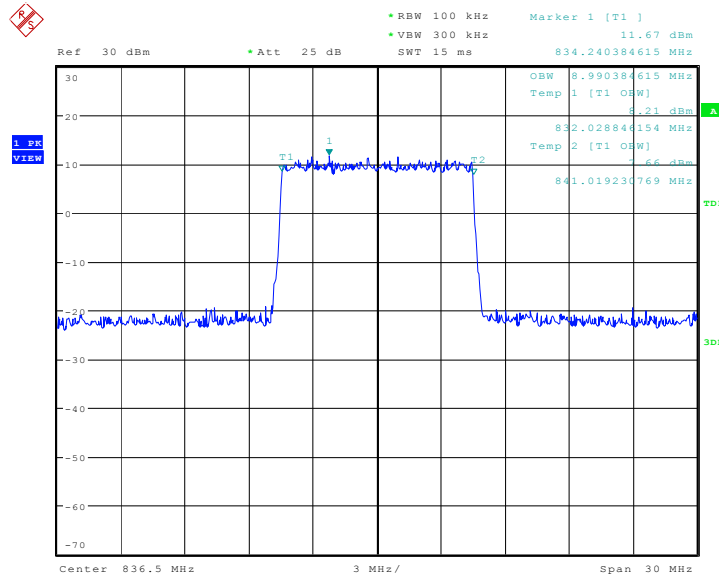


Date: 3.AUG.2018 16:25:50

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

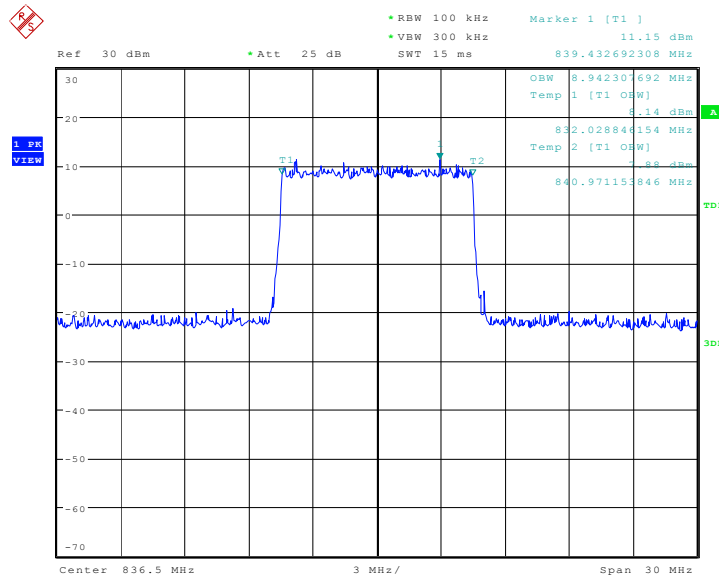
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
836.5	QPSK	16QAM	64QAM
	8990.385	8942.308	8942.308

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



Date: 22.MAY.2018 19:21:20

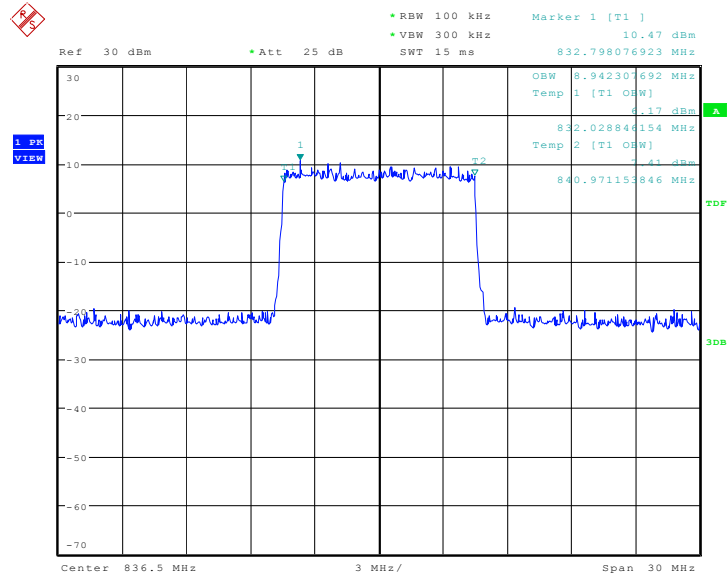
LTE band 26(824MHz-849MHz), 10MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:21:35



LTE band 26(824MHz-849MHz), 10MHz Bandwidth, 64QAM (99% BW)

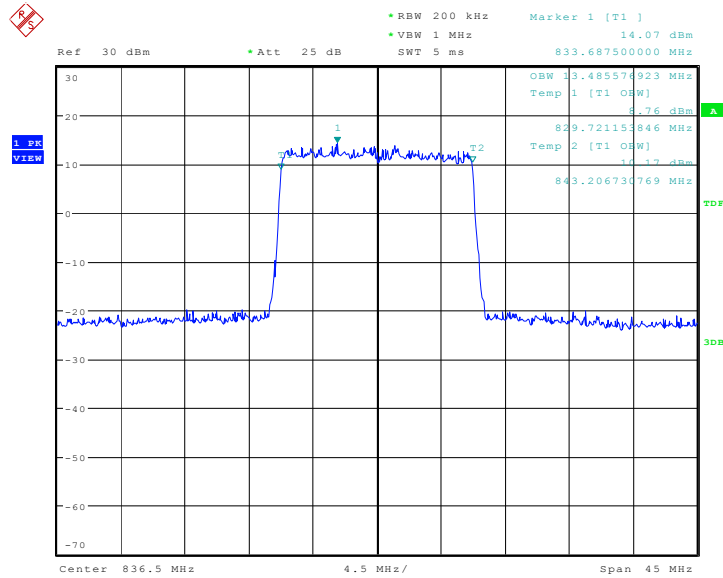


Date: 3.AUG.2018 16:27:10

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

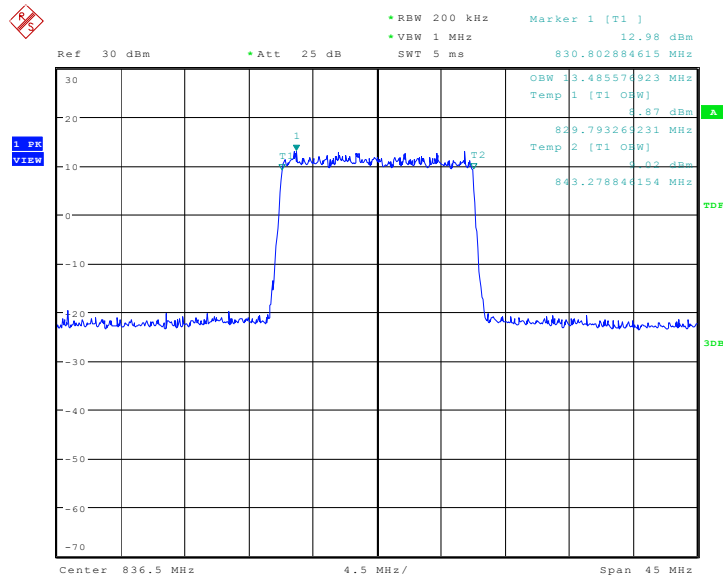
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
836.5	QPSK	16QAM	64QAM
	13485.58	13485.58	13413.46

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



Date: 22.MAY.2018 19:28:56

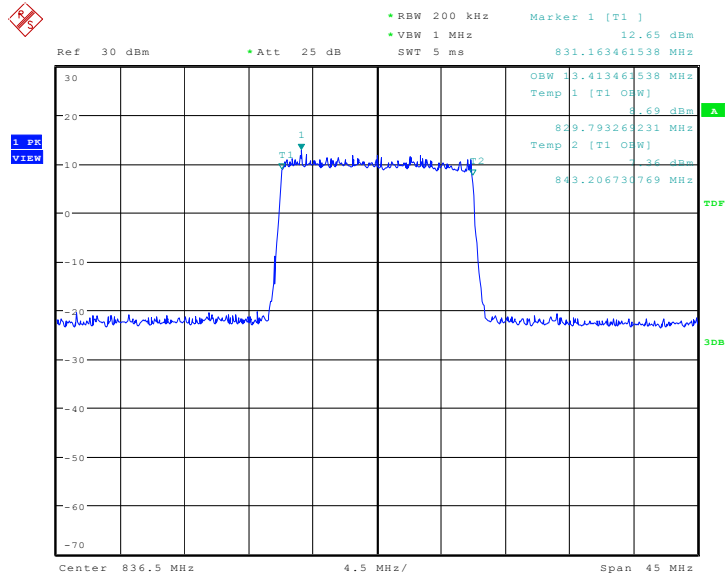
LTE band 26(824MHz-849MHz), 15MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 19:29:12



LTE band 26(824MHz-849MHz), 15MHz Bandwidth, 64QAM (99% BW)

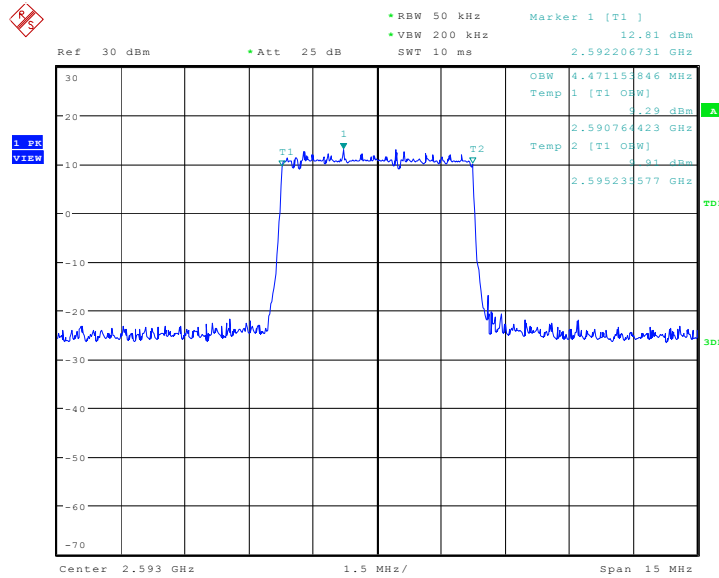


Date: 3.AUG.2018 16:29:33

LTE band 41, 5MHz (99%)

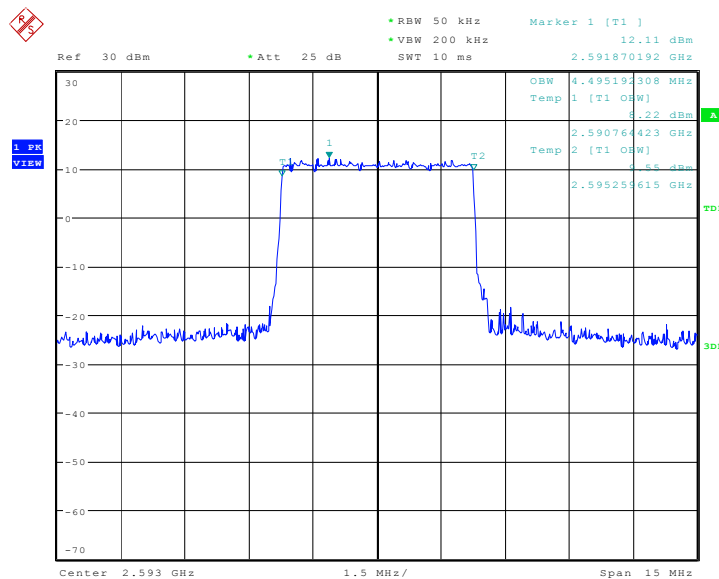
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
2593.0	4471.154	4495.192	4495.192

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



Date: 22.MAY.2018 18:31:26

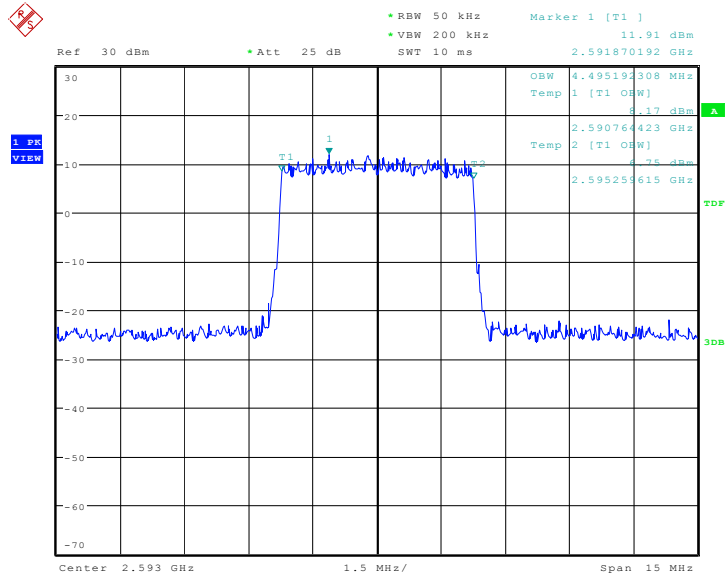
LTE band 41, 5MHz Bandwidth,16QAM (99% BW)



Date: 22.MAY.2018 18:31:41



LTE band 41, 5MHz Bandwidth,64QAM (99% BW)

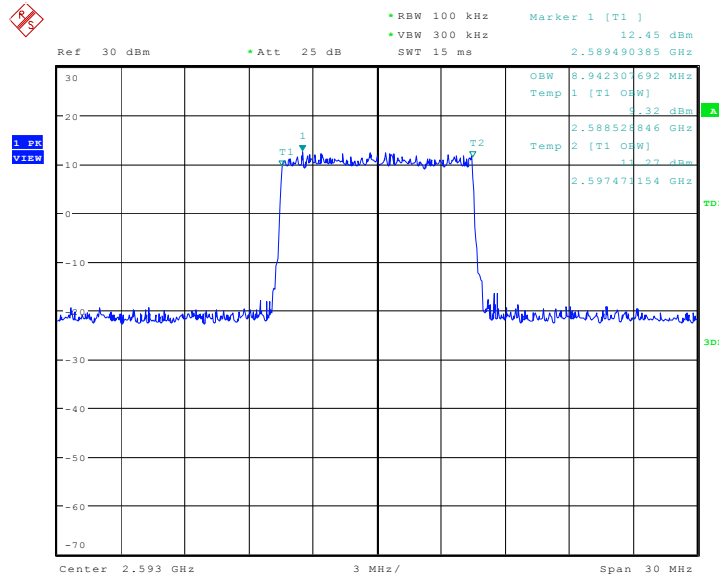


Date: 3.AUG.2018 16:51:53

LTE band 41, 10MHz (99%)

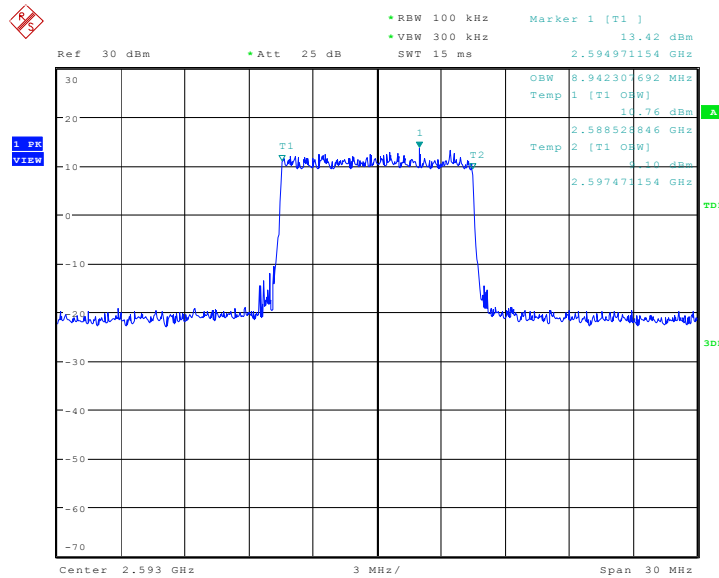
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
2593.0	8942.308	8942.308	8990.385

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



Date: 22.MAY.2018 18:38:23

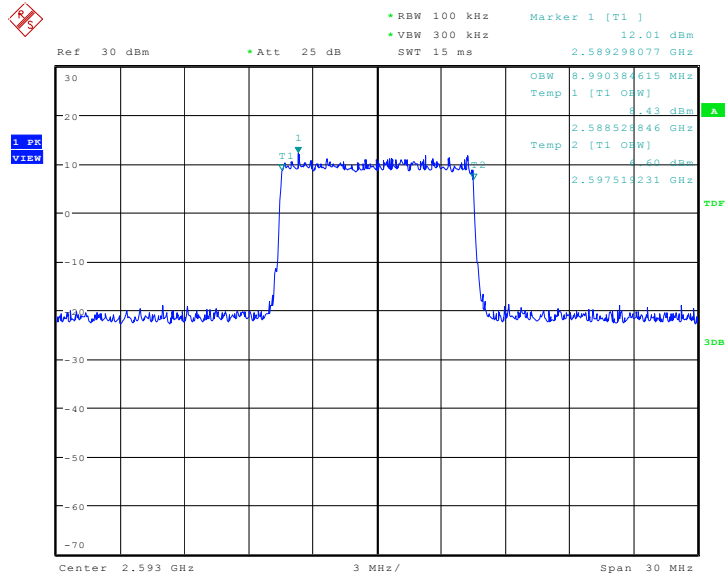
LTE band 41, 10MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 18:38:38



LTE band 41, 10MHz Bandwidth, 64QAM (99% BW)

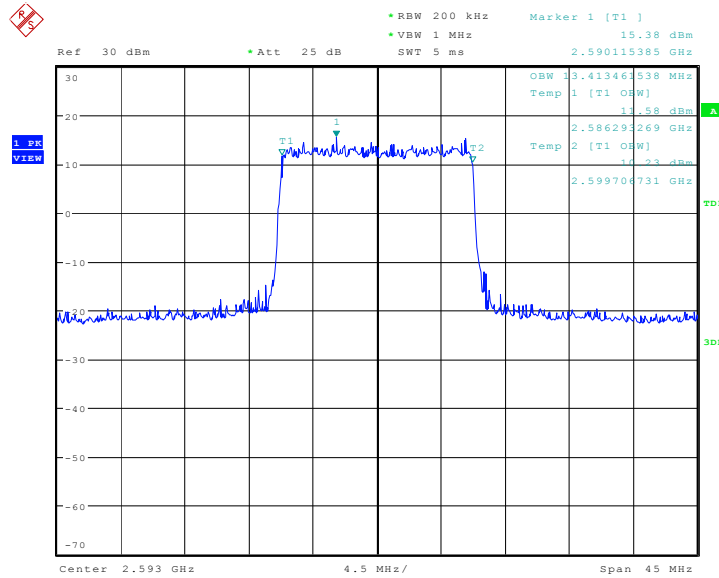


Date: 3.AUG.2018 16:38:06

LTE band 41, 15MHz (99%)

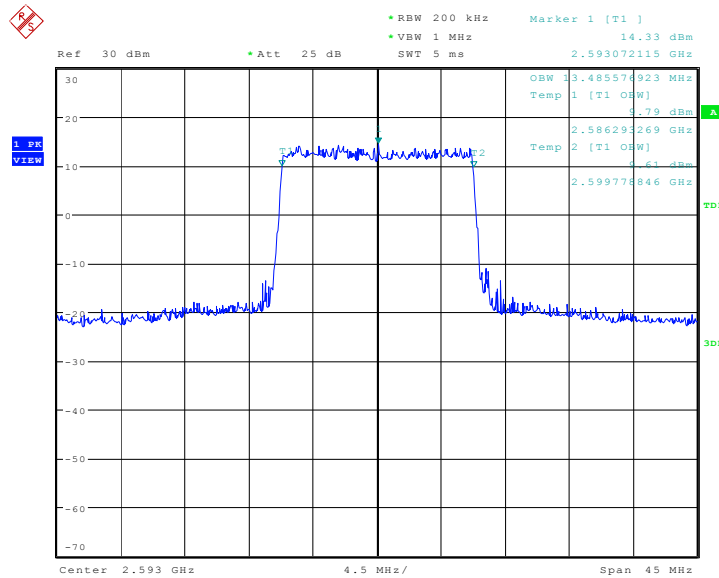
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
2593.0	13413.46	13485.58	13413.46

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



Date: 22.MAY.2018 18:45:56

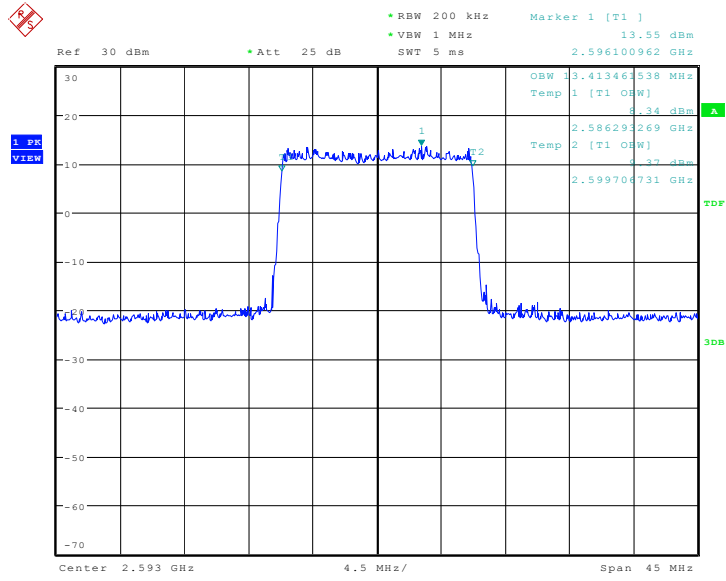
LTE band 41, 15MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 18:46:11



LTE band 41, 15MHz Bandwidth, 64QAM (99% BW)

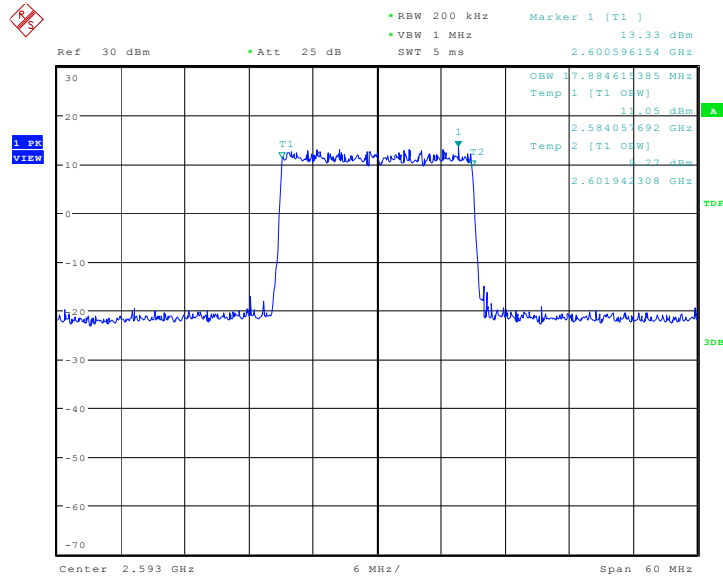


Date: 3.AUG.2018 16:39:27

LTE band 41, 20MHz (99%)

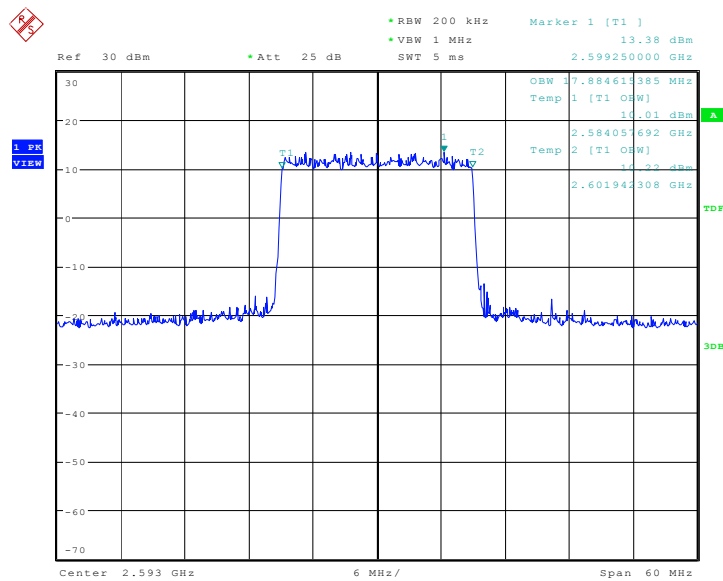
Frequency(MHz)	Occupied Bandwidth (99%)(kHz)		
	QPSK	16QAM	64QAM
2593.0	17884.62	17884.62	17884.62

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



Date: 22.MAY.2018 18:53:33

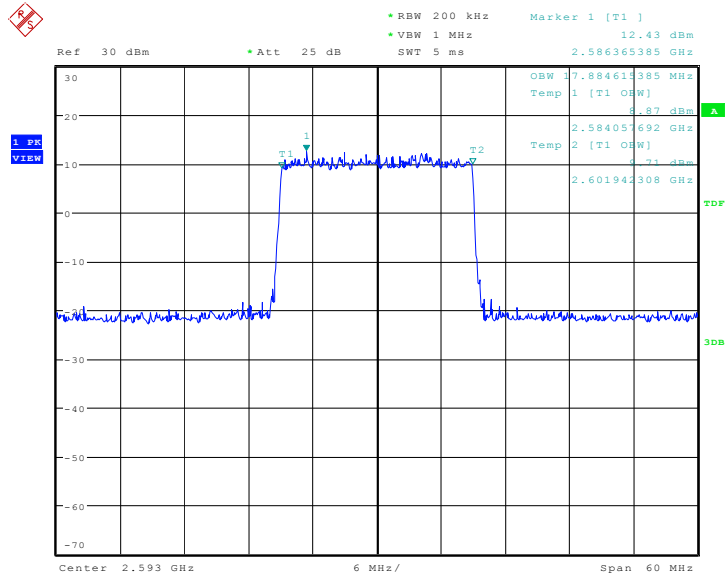
LTE band 41, 20MHz Bandwidth, 16QAM (99% BW)



Date: 22.MAY.2018 18:53:48



LTE band 41, 20MHz Bandwidth, 64QAM (99% BW)



Date: 3.AUG.2018 16:41:43



A.5 EMISSION BANDWIDTH

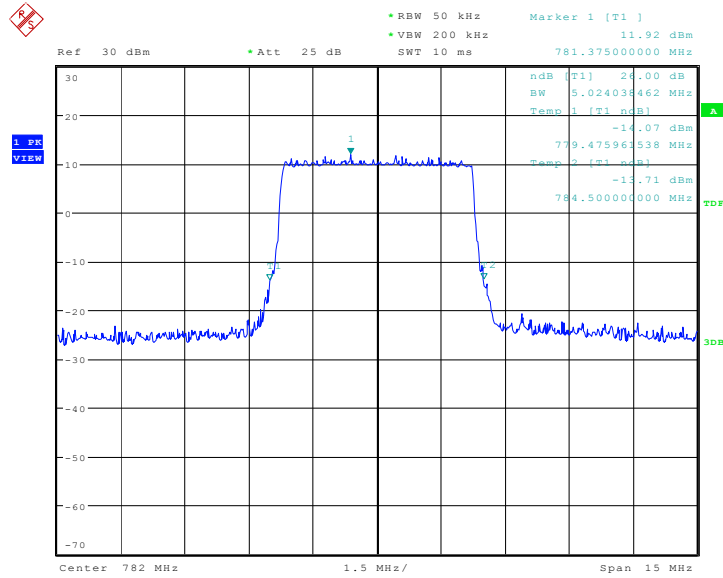
A.5.1 Emission Bandwidth Results

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.

LTE band 13, 5MHz (-26dBc)

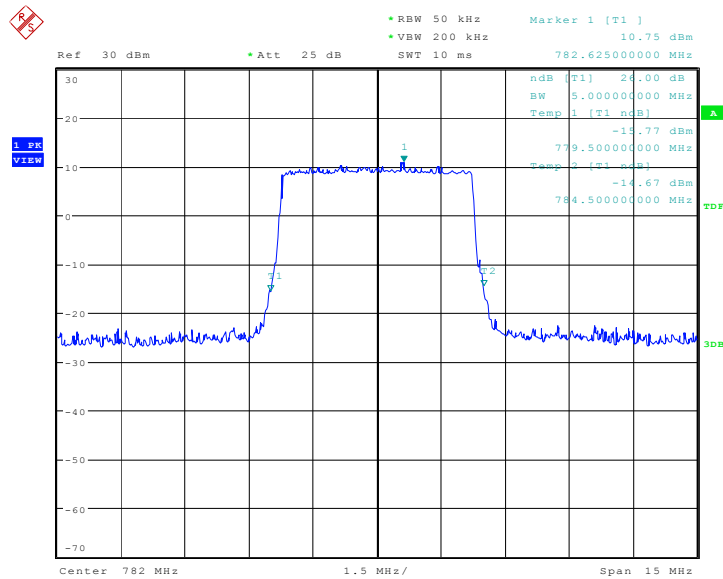
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
782.0	QPSK	16QAM	64QAM
	5024.038	5000	4975.962

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



Date: 22.MAY.2018 16:45:32

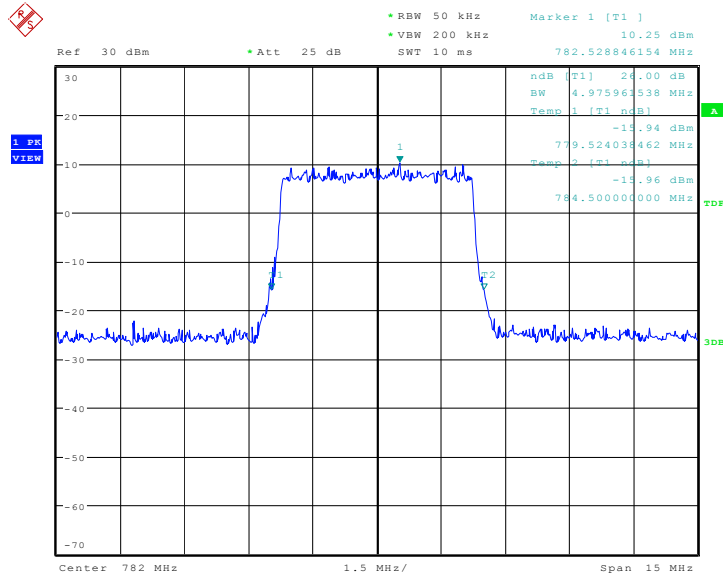
LTE band 13, 5MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 16:45:49



LTE band 13, 5MHz Bandwidth,64QAM (-26dBc BW)

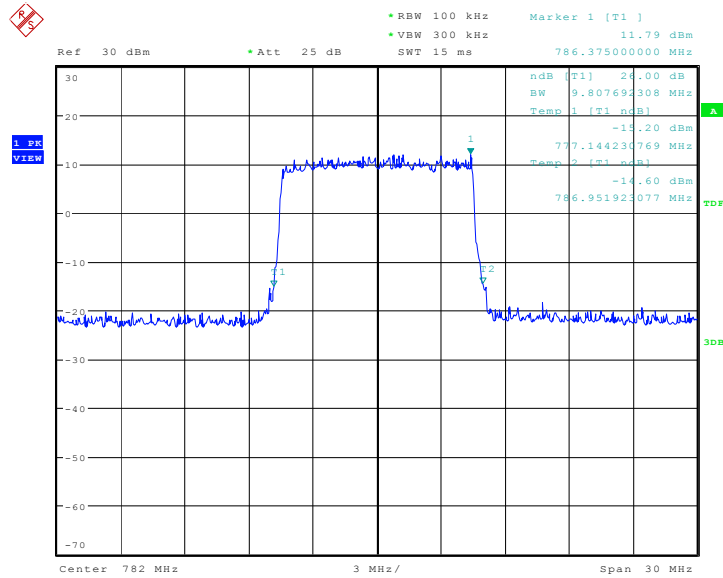


Date: 3.AUG.2018 15:04:17

LTE band 13, 10MHz (-26dBc)

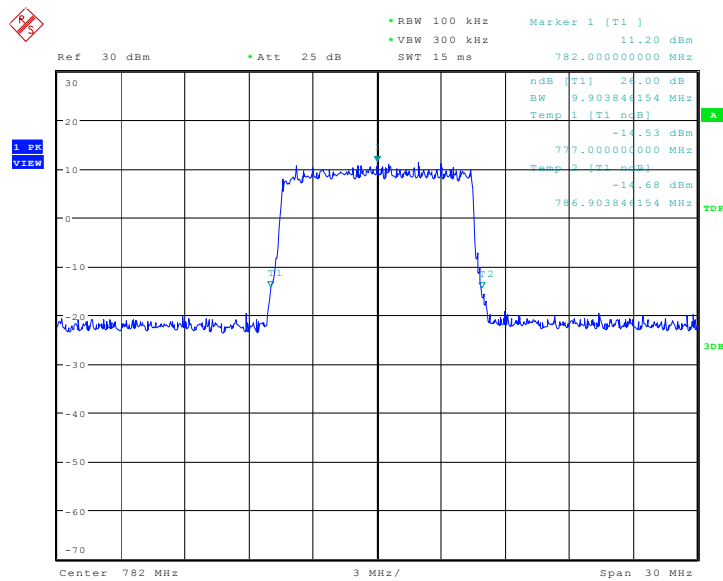
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
782.0	9807.692	9903.846	9807.692

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



Date: 22.MAY.2018 16:52:31

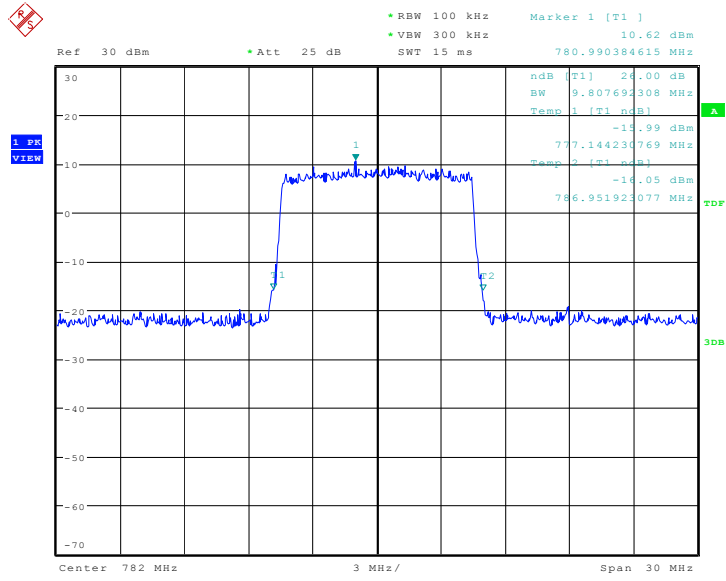
LTE band 13, 10MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 16:52:48



LTE band 13, 10MHz Bandwidth, 64QAM (-26dBc BW)

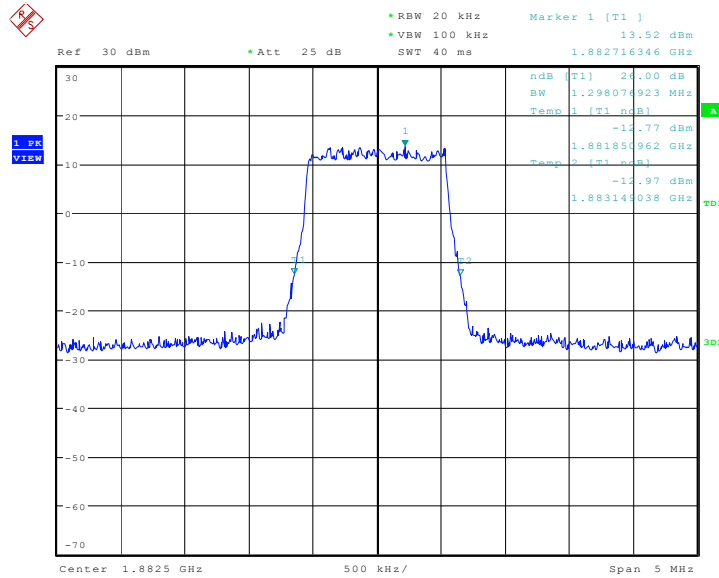


Date: 3.AUG.2018 15:10:29

LTE band 25, 1.4MHz (-26dBc)

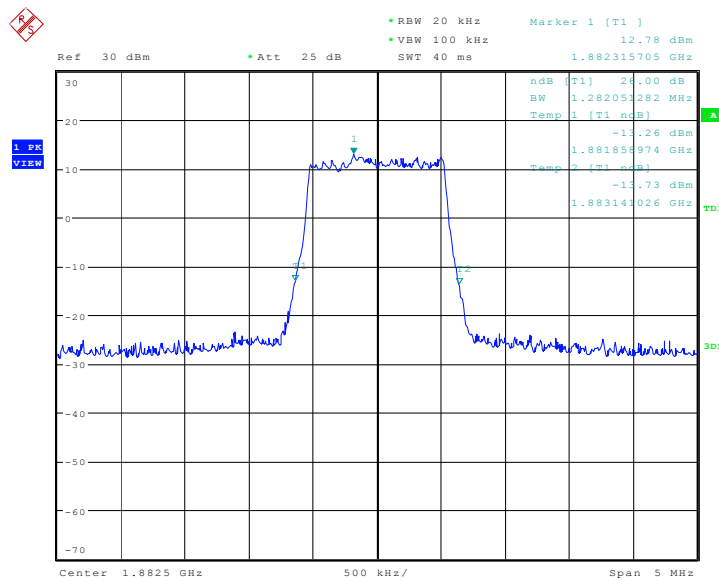
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	1298.077	1282.051	1282.051

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



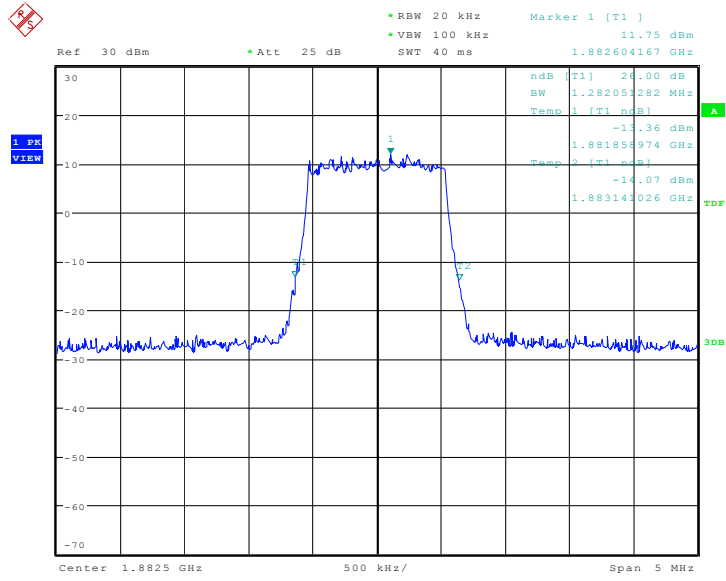
Date: 22.MAY.2018 16:59:33

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



Date: 22.MAY.2018 16:59:50

LTE band 25, 1.4MHz Bandwidth, 64QAM (-26dBc BW)

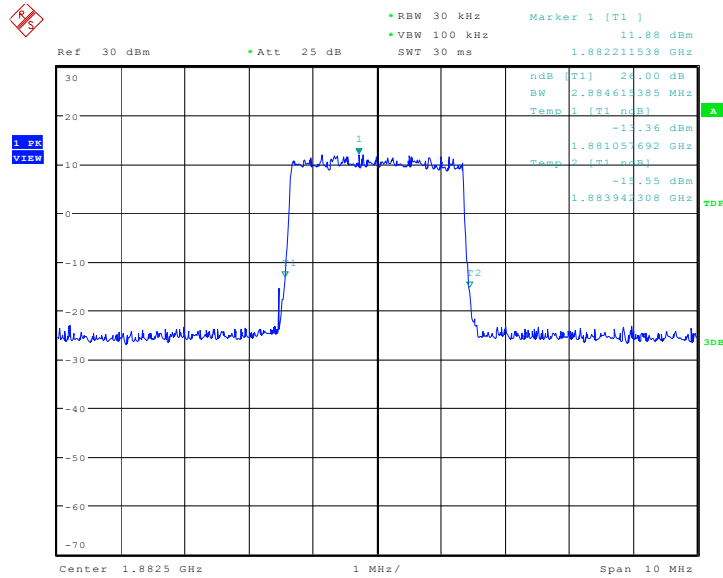


Date: 3.AUG.2018 15:30:59

LTE band 25, 3MHz (-26dBc)

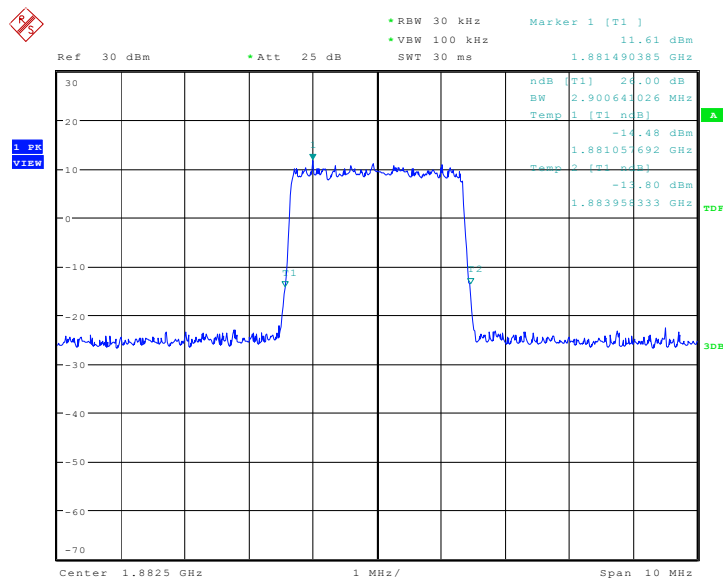
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	2884.615	2900.641	2868.590

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



Date: 22.MAY.2018 17:06:28

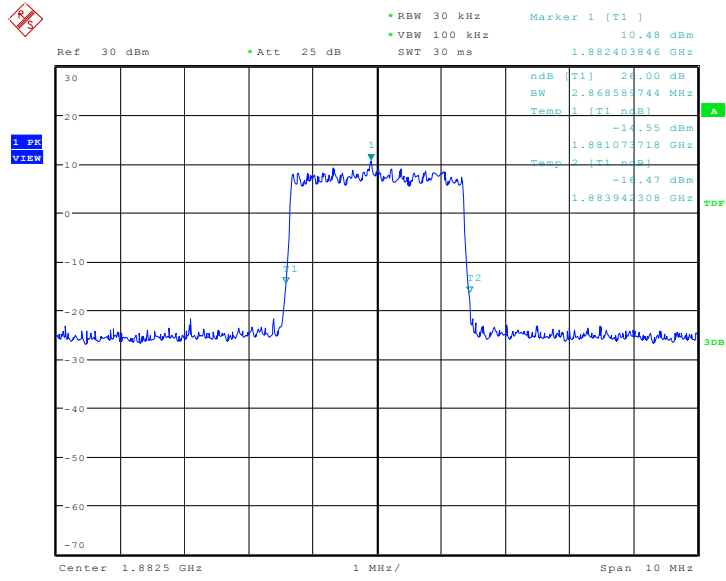
LTE band 25, 3MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 17:06:45



LTE band 25, 3MHz Bandwidth, 64QAM (-26dBc BW)

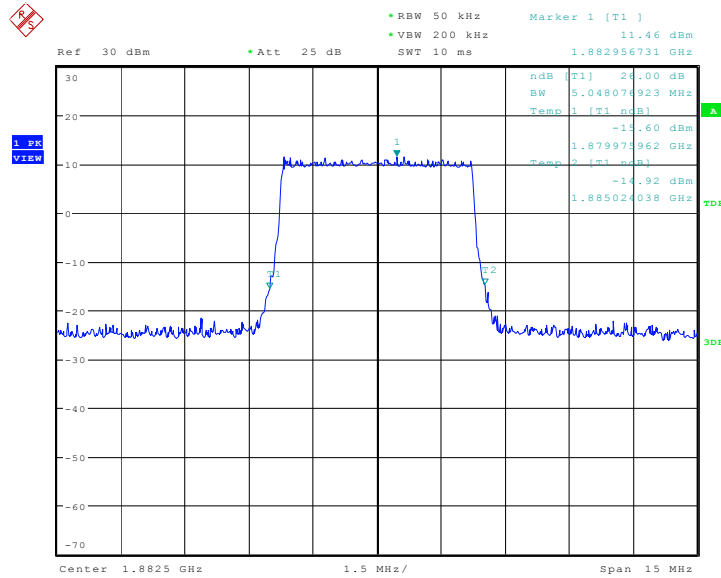


Date: 3.AUG.2018 15:34:28

LTE band 25, 5MHz (-26dBc)

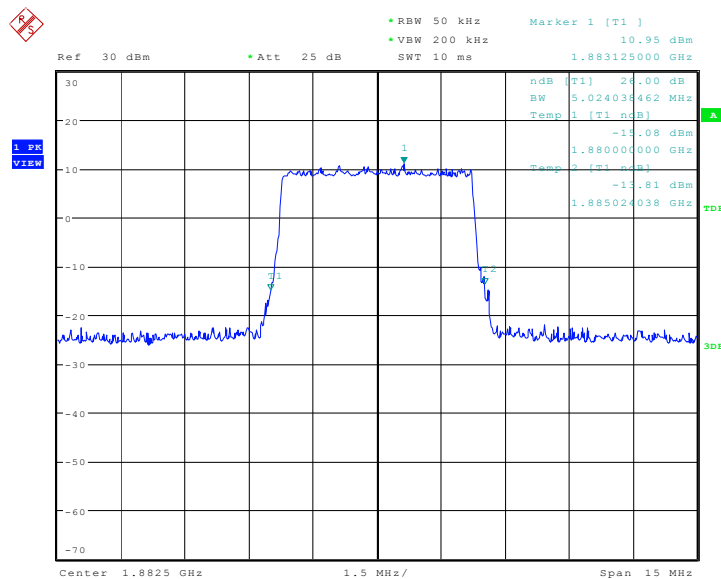
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	5048.077	5024.038	5048.077

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



Date: 22.MAY.2018 17:13:23

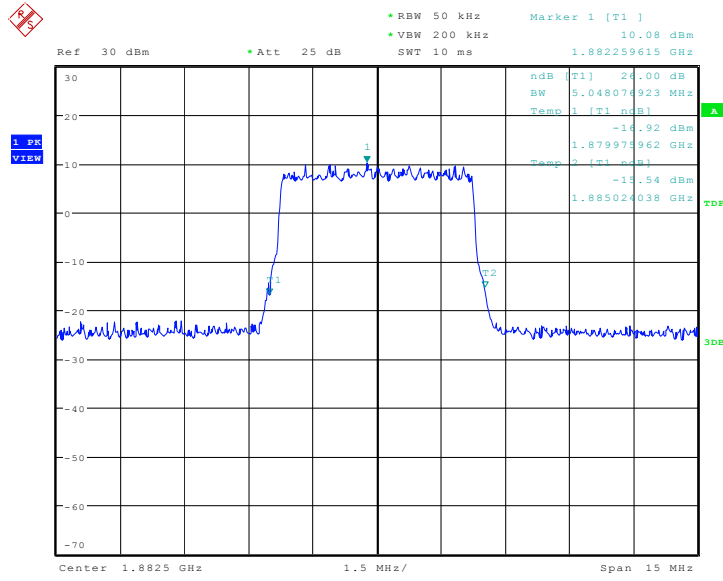
LTE band 25, 5MHz Bandwidth,16QAM (-26dBc BW)



Date: 22.MAY.2018 17:13:40



LTE band 25, 5MHz Bandwidth,64QAM (-26dBc BW)

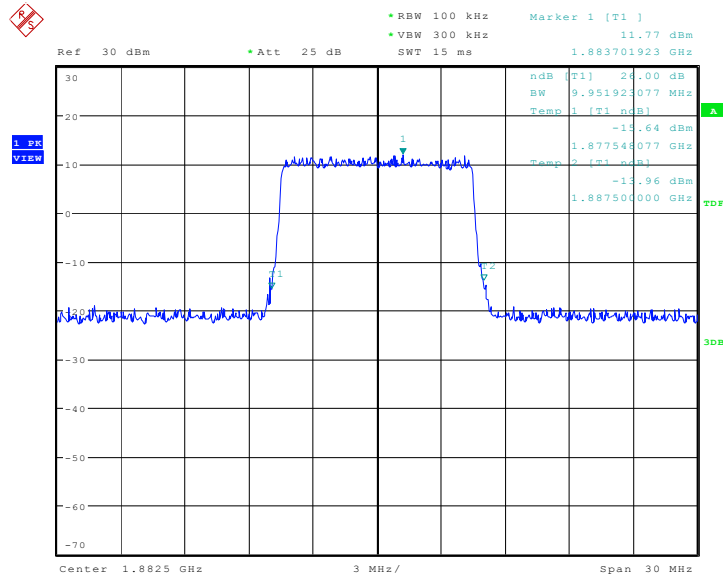


Date: 3.AUG.2018 15:36:57

LTE band 25, 10MHz (-26dBc)

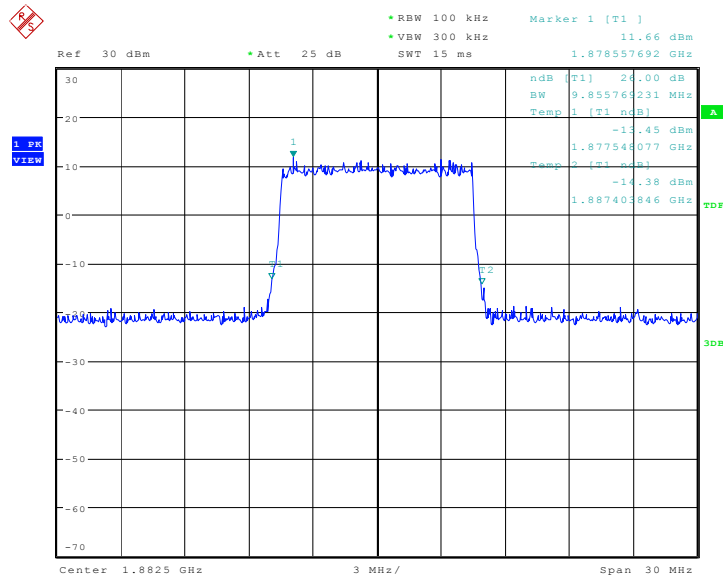
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	9951.923	9855.769	9951.923

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



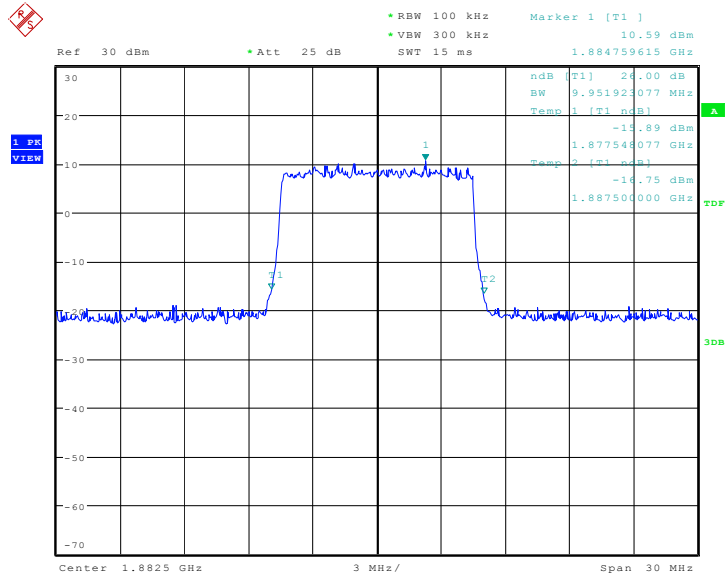
Date: 22.MAY.2018 17:20:22

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



Date: 22.MAY.2018 17:20:39

LTE band 25, 10MHz Bandwidth, 64QAM (-26dBc BW)

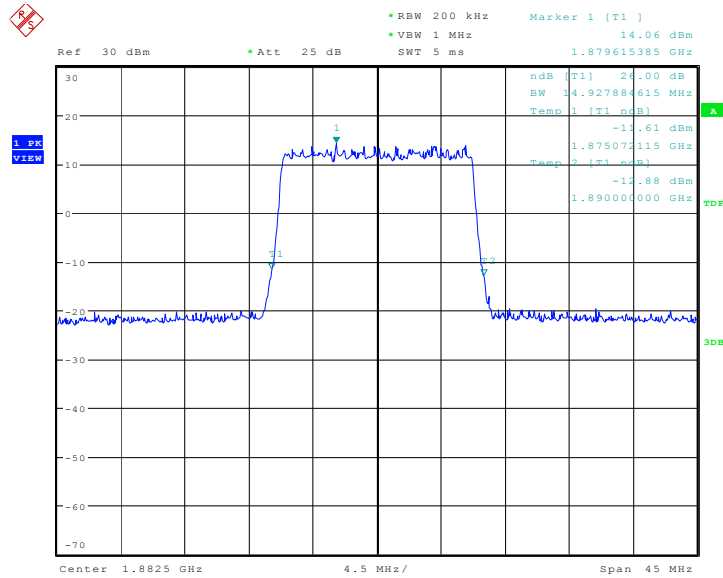


Date: 3.AUG.2018 15:40:02

LTE band 25, 15MHz (-26dBc)

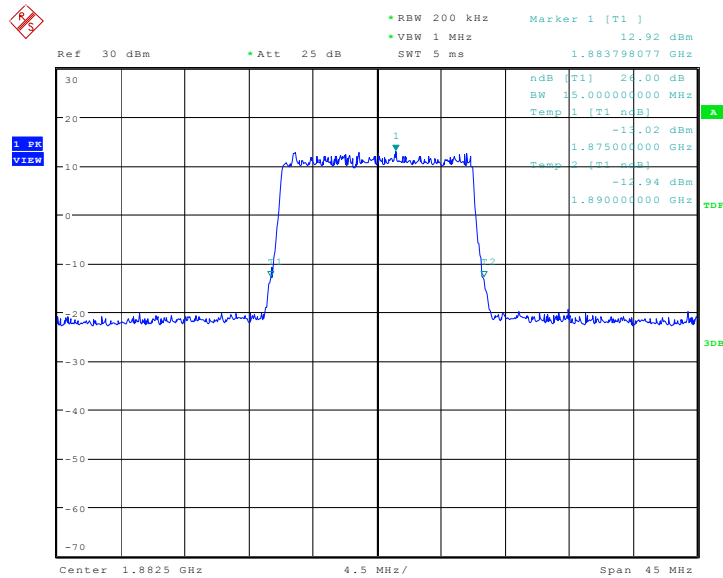
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	14927.88	15000	15072.12

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



Date: 22.MAY.2018 17:28:01

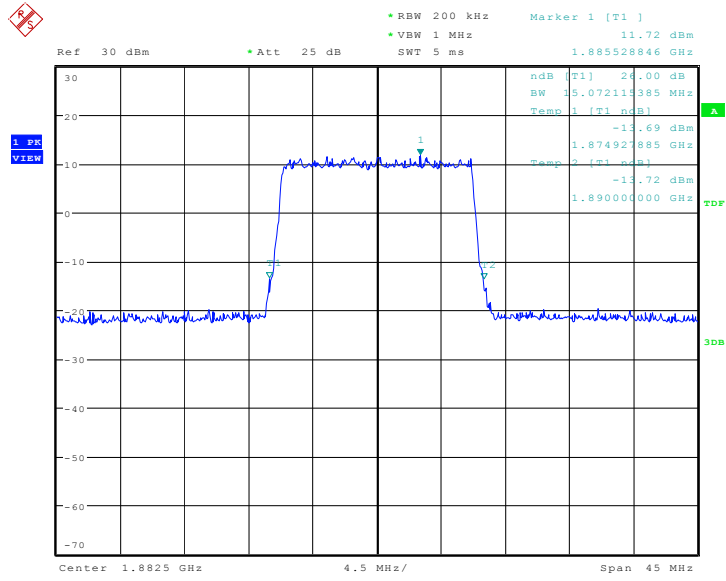
LTE band 25, 15MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 17:28:18



LTE band 25, 15MHz Bandwidth, 64QAM (-26dBc BW)

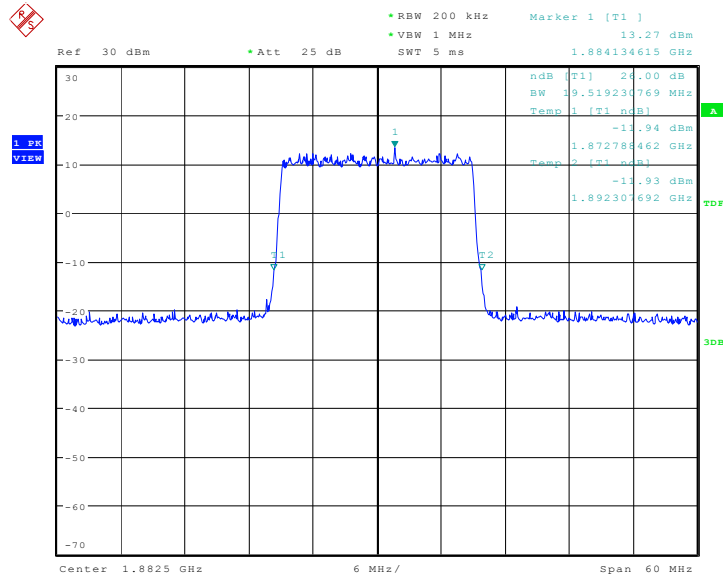


Date: 3.AUG.2018 15:42:05

LTE band 25, 20MHz (-26dBc)

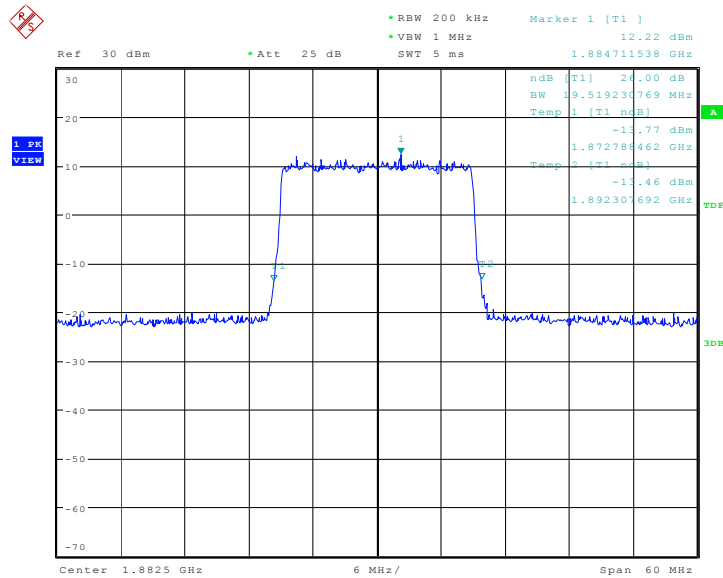
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
1882.5	19519.23	19519.23	19615.38

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



Date: 22.MAY.2018 18:25:37

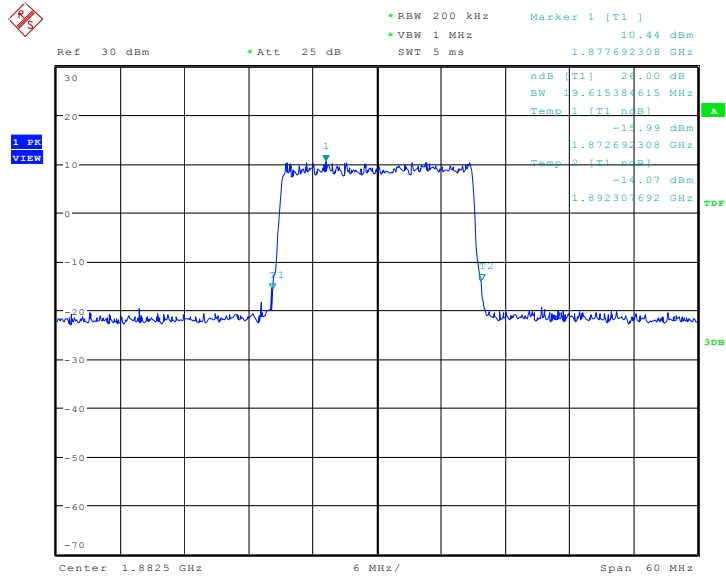
LTE band 25, 20MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 18:25:54



LTE band 25, 20MHz Bandwidth, 64QAM (-26dBc BW)

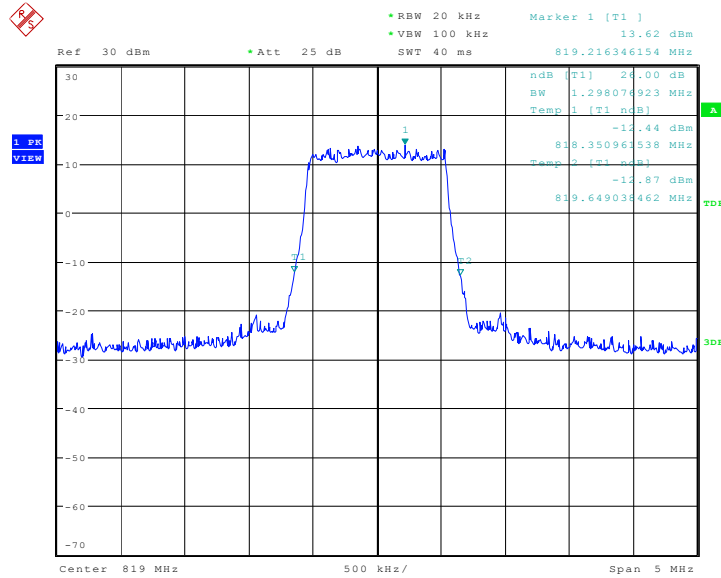


Date: 3.AUG.2018 15:43:14

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

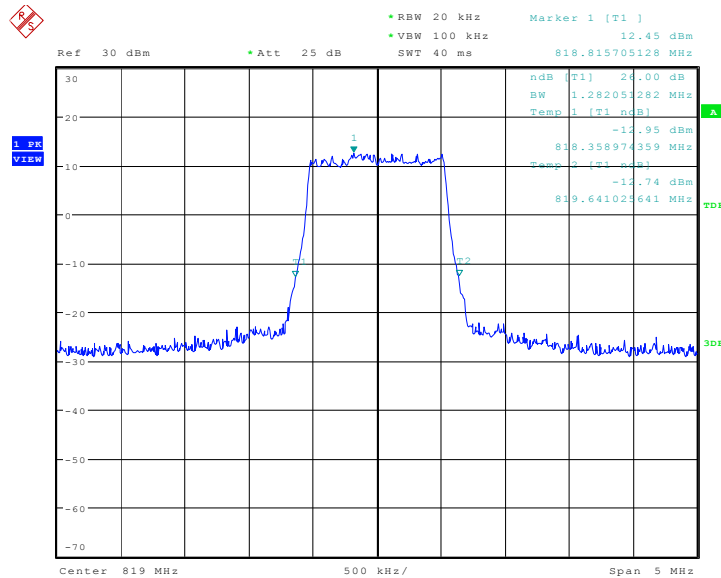
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
819.0	QPSK	16QAM	64QAM
	1298.077	1282.051	1282.051

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



Date: 22.MAY.2018 19:37:04

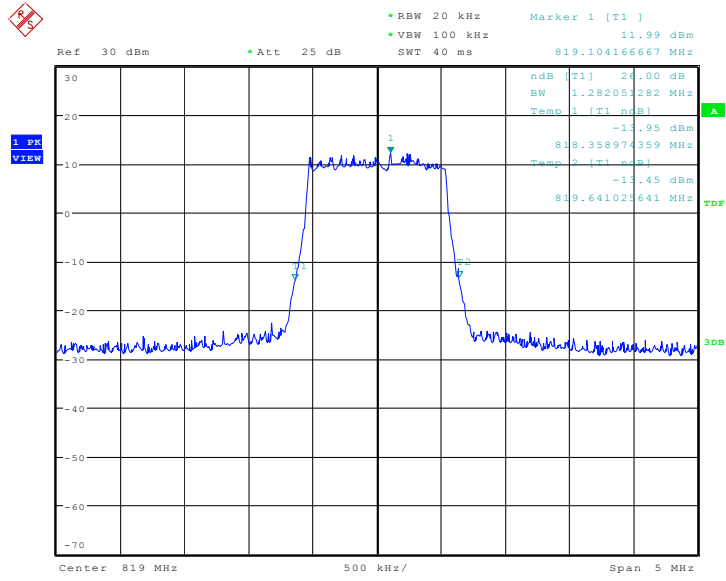
LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:37:21



LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, 64QAM (-26dBc BW)

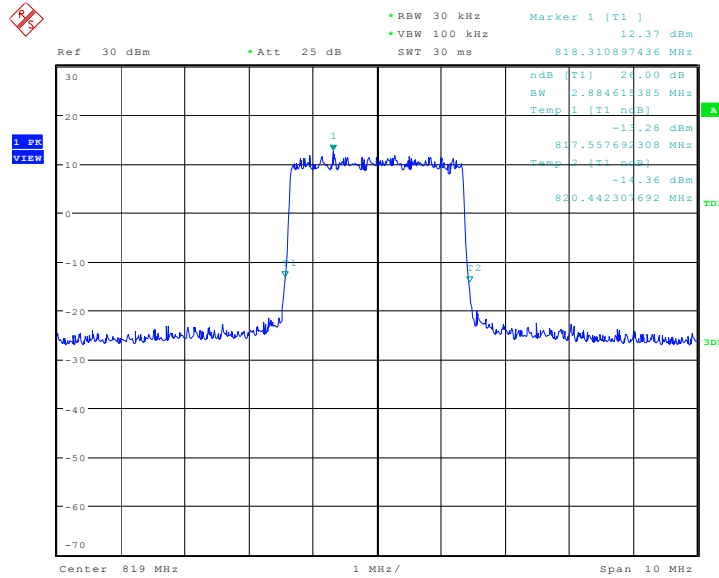


Date: 3.AUG.2018 16:08:26

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

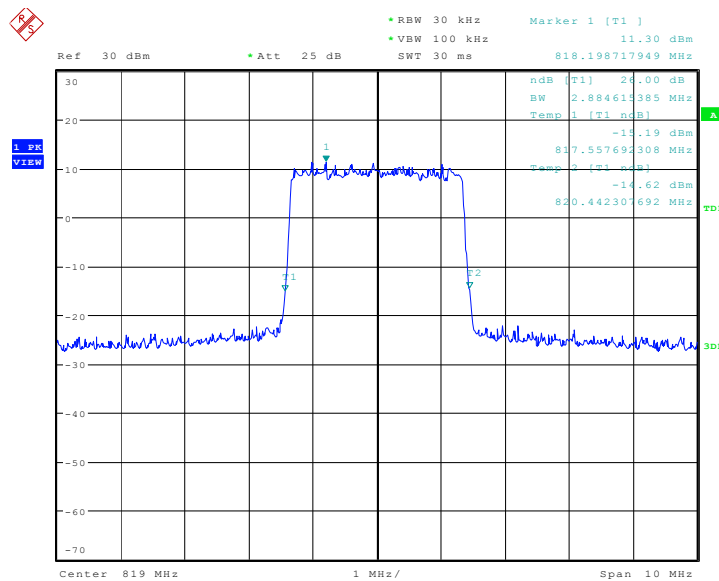
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
819.0	QPSK	16QAM	64QAM
	2884.615	2884.615	2884.615

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



Date: 22.MAY.2018 19:43:57

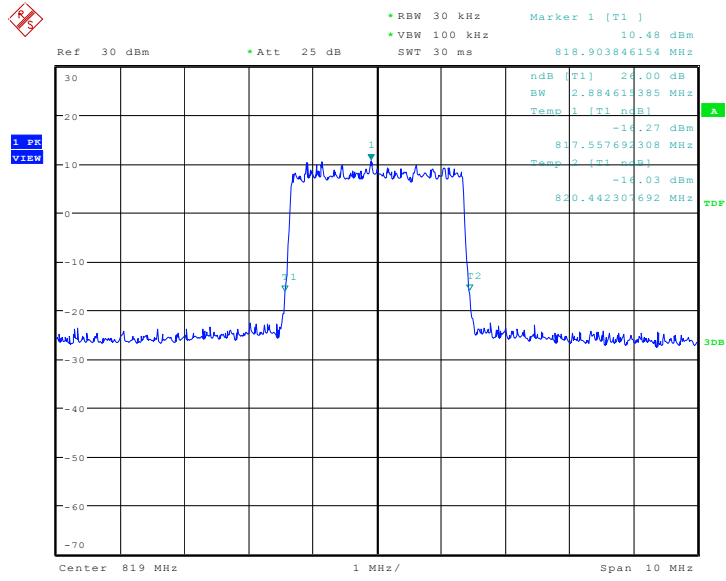
LTE band 26(814MHz-824MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:44:14



LTE band 26(814MHz-824MHz), 3MHz Bandwidth, 64QAM (-26dBc BW)

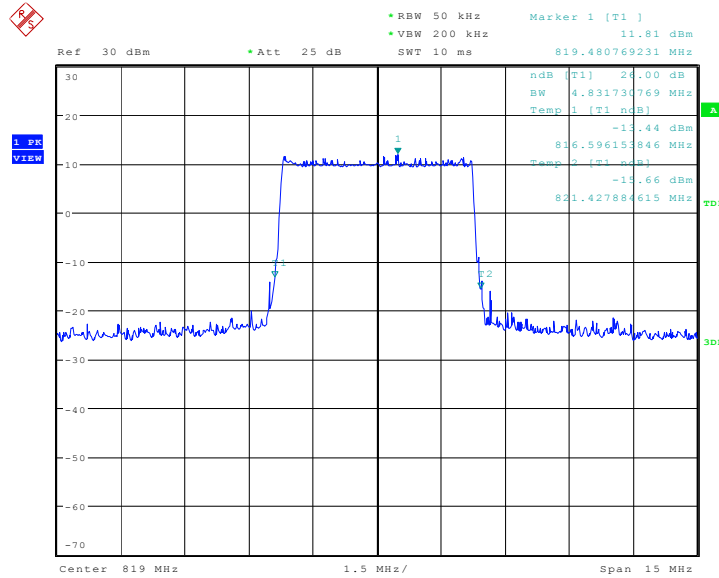


Date: 3.AUG.2018 16:14:28

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

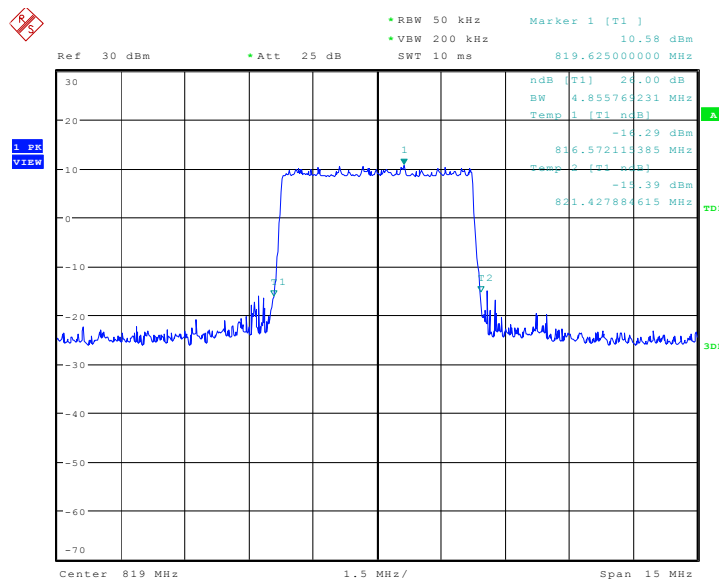
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
819.0	QPSK	16QAM	64QAM
	4831.731	4855.769	4855.769

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



Date: 22.MAY.2018 19:50:52

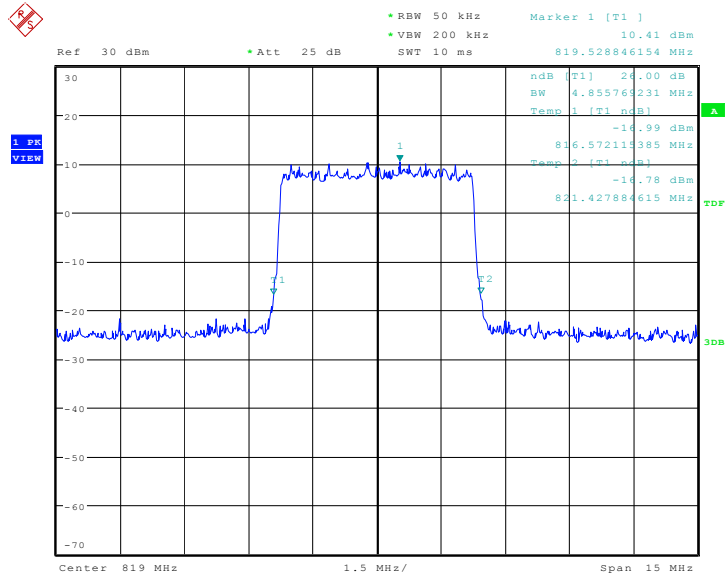
LTE band 26(814MHz-824MHz), 5MHz Bandwidth,16QAM (-26dBc BW)



Date: 22.MAY.2018 19:51:09



LTE band 26(814MHz-824MHz), 5MHz Bandwidth,64QAM (-26dBc BW)

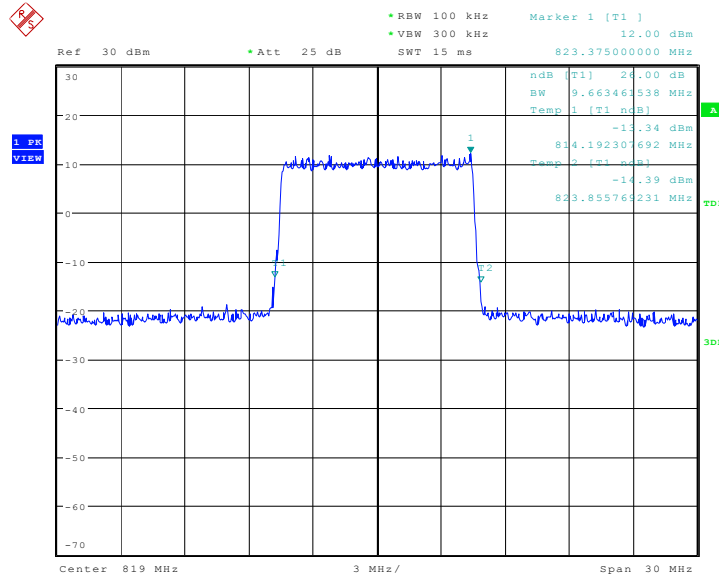


Date: 3.AUG.2018 16:16:22

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

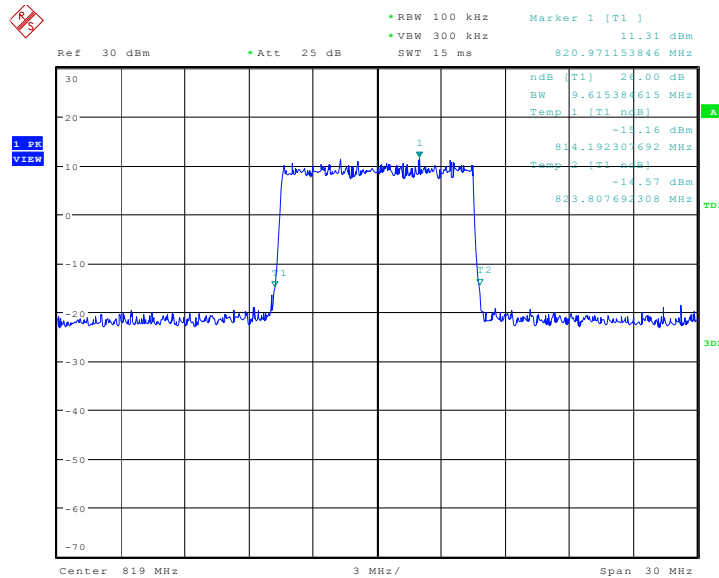
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
819.0	QPSK	16QAM	64QAM
	9663.462	9615.385	9615.385

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



Date: 22.MAY.2018 19:57:47

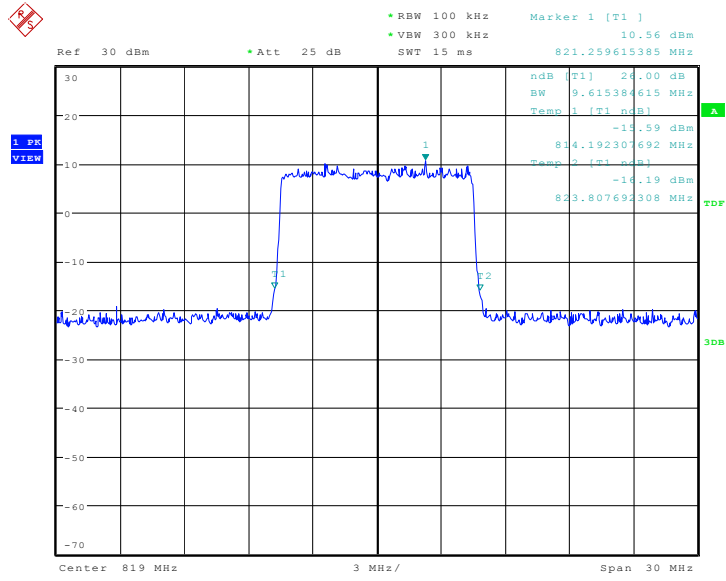
LTE band 26(814MHz-824MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:58:04



LTE band 26(814MHz-824MHz), 10MHz Bandwidth, 64QAM (-26dBc BW)

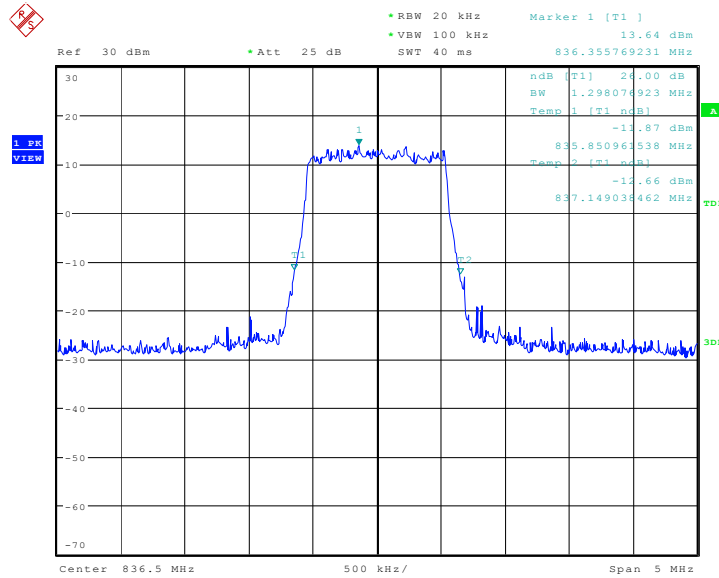


Date: 3.AUG.2018 16:18:26

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

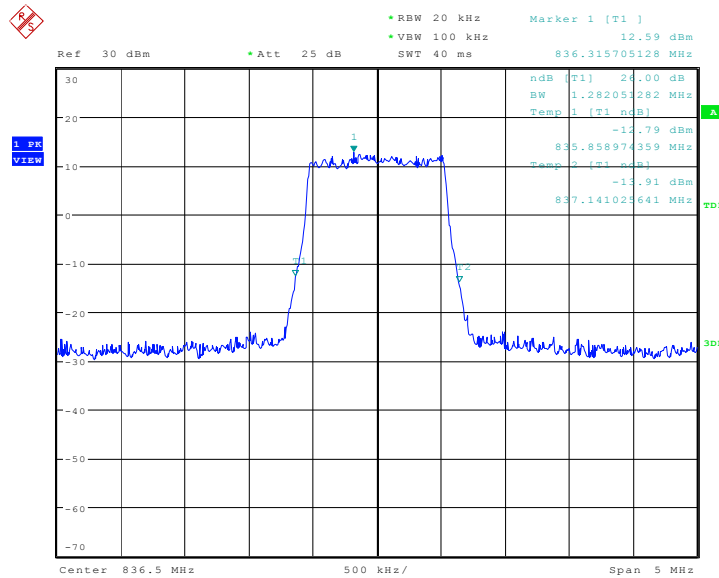
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
836.5	QPSK	16QAM	64QAM
	1298.077	1282.051	1290.641

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



Date: 22.MAY.2018 19:01:41

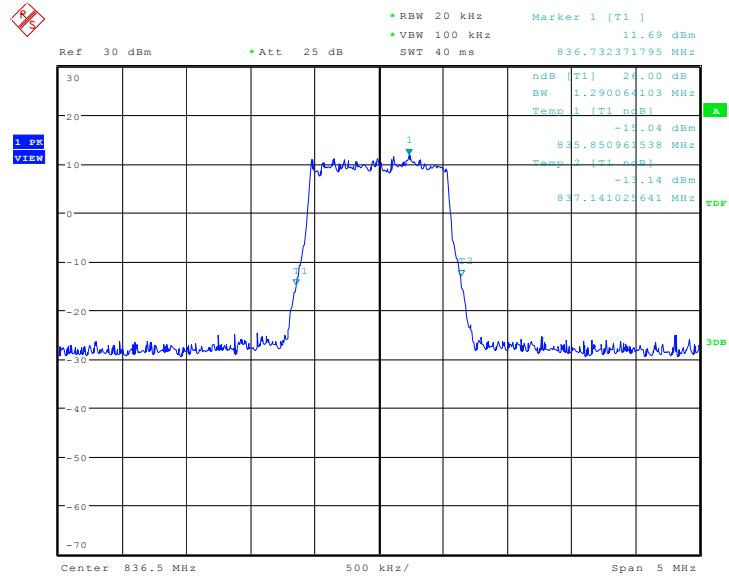
LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:01:58



LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, 64QAM (-26dBc BW)

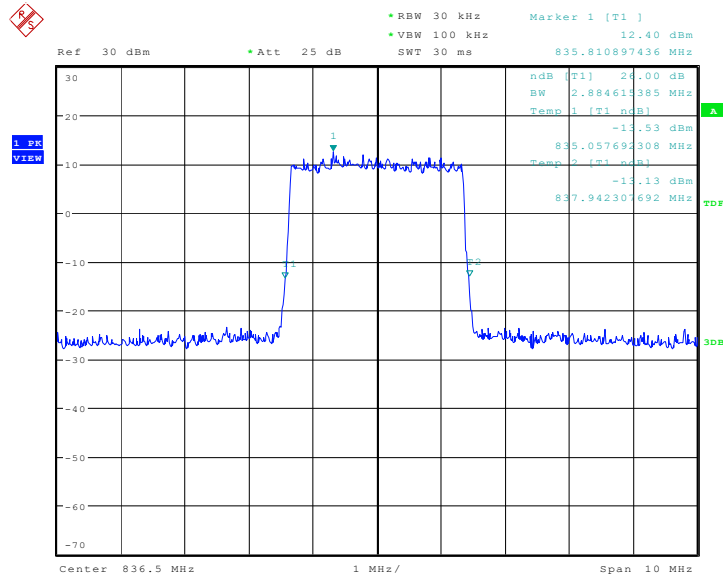


Date: 3.AUG.2018 16:22:12

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

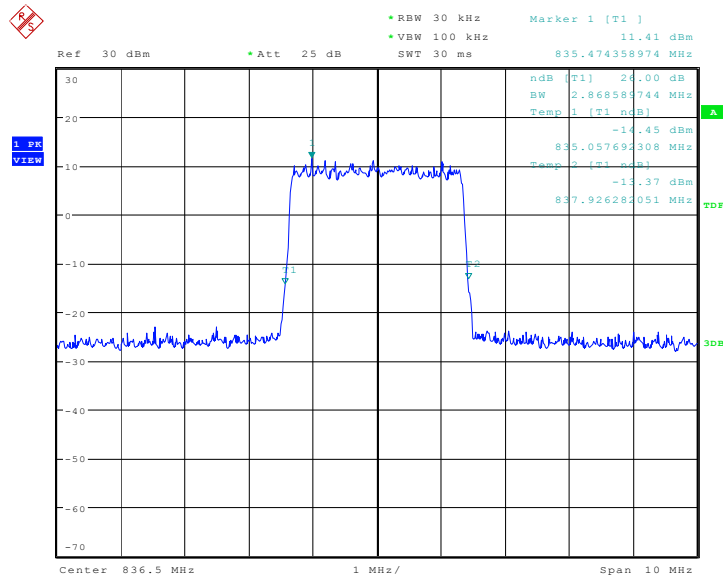
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
836.5	2884.615	2868.590	2868.590

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



Date: 22.MAY.2018 19:08:38

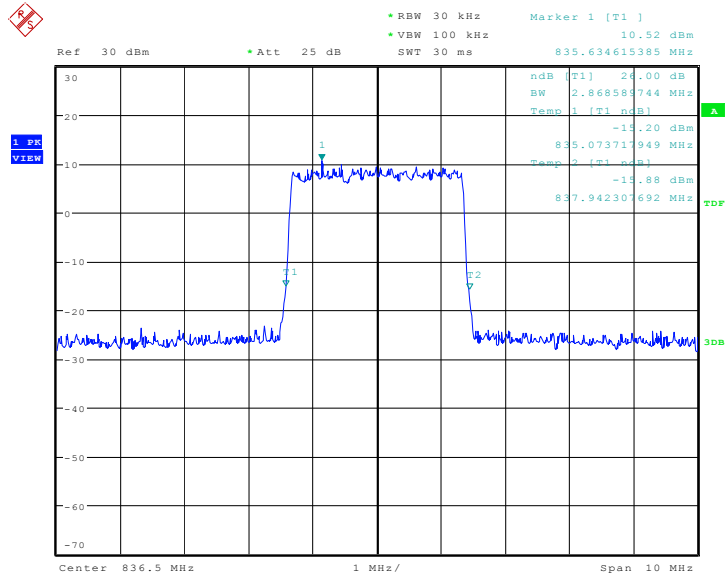
LTE band 26(824MHz-849MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:08:55



LTE band 26(824MHz-849MHz), 3MHz Bandwidth, 64QAM (-26dBc BW)

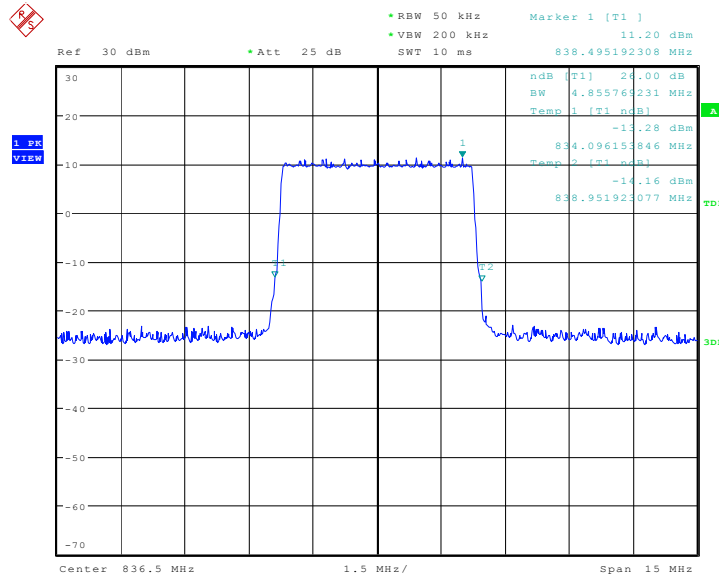


Date: 3.AUG.2018 16:24:50

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

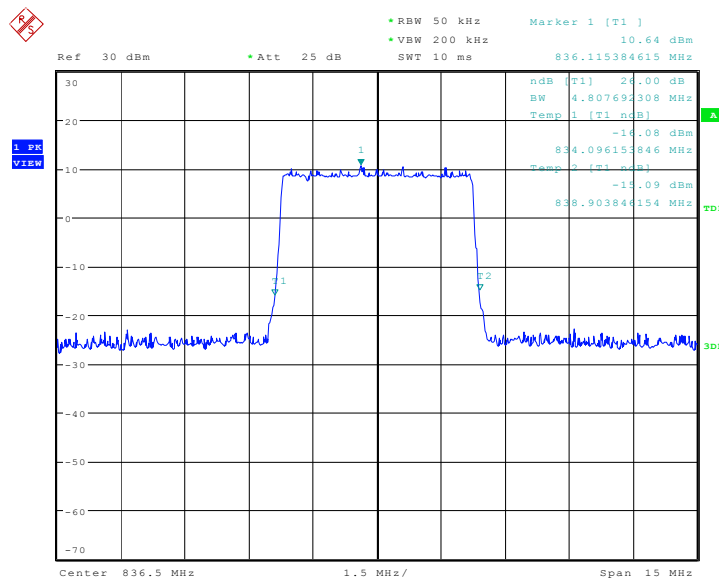
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
836.5	QPSK	16QAM	64QAM
	4855.769	4807.692	4807.692

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



Date: 22.MAY.2018 19:15:35

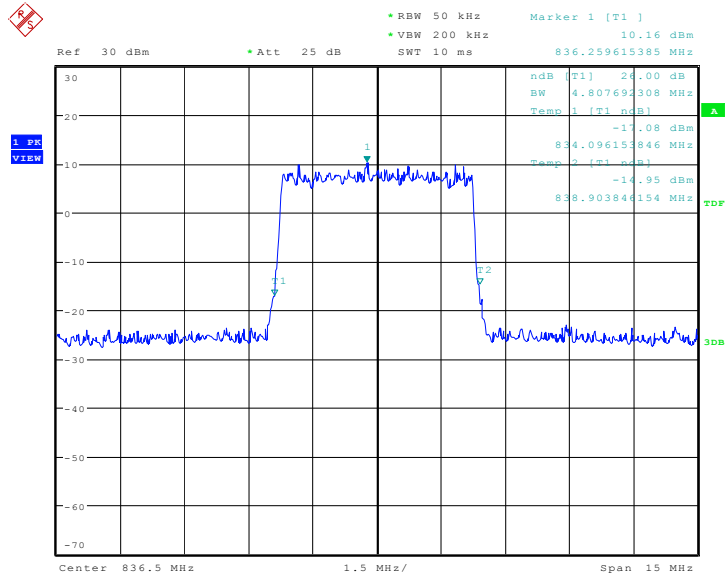
LTE band 26(824MHz-849MHz), 5MHz Bandwidth,16QAM (-26dBc BW)



Date: 22.MAY.2018 19:15:52



LTE band 26(824MHz-849MHz), 5MHz Bandwidth,64QAM (-26dBc BW)

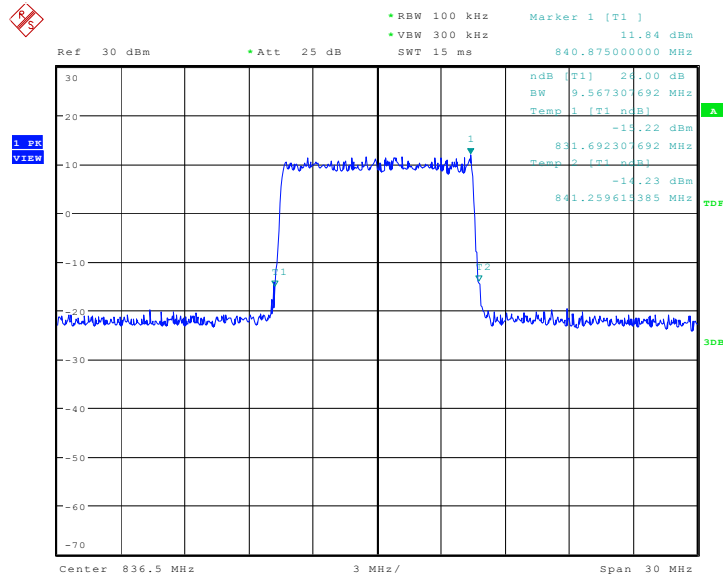


Date: 3.AUG.2018 16:26:13

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

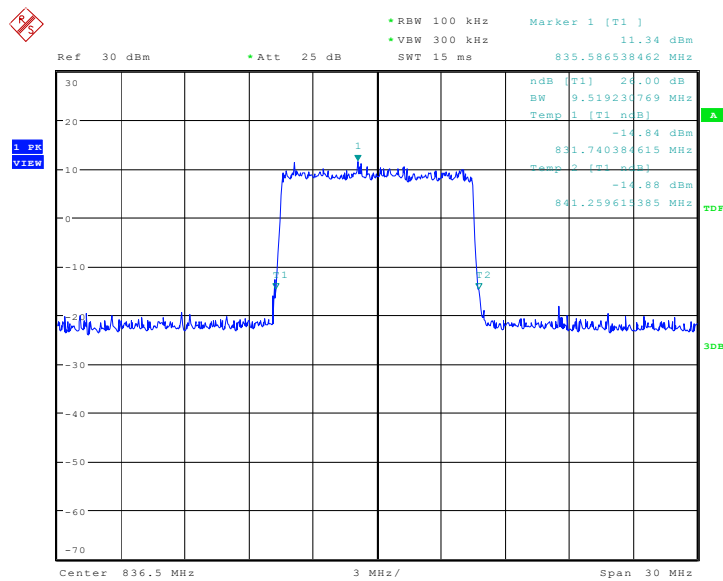
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
836.5	9567.308	9519.231	9615.385

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



Date: 22.MAY.2018 19:22:30

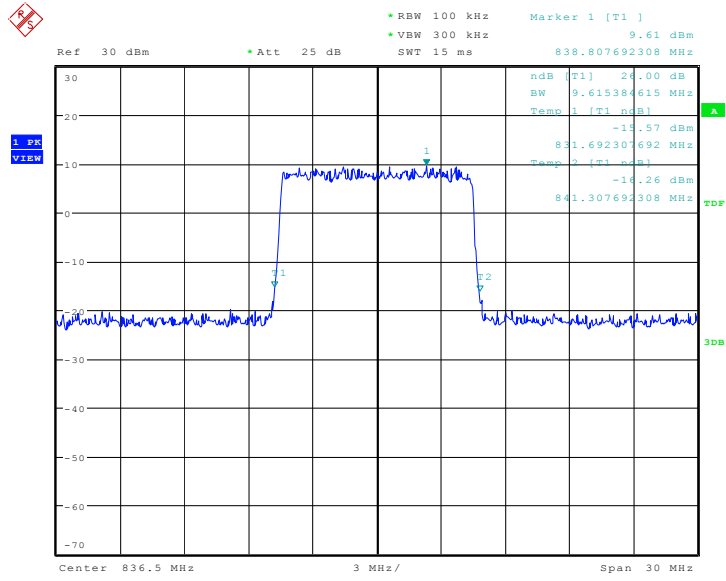
LTE band 26(824MHz-849MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:22:47



LTE band 26(824MHz-849MHz), 10MHz Bandwidth, 64QAM (-26dBc BW)

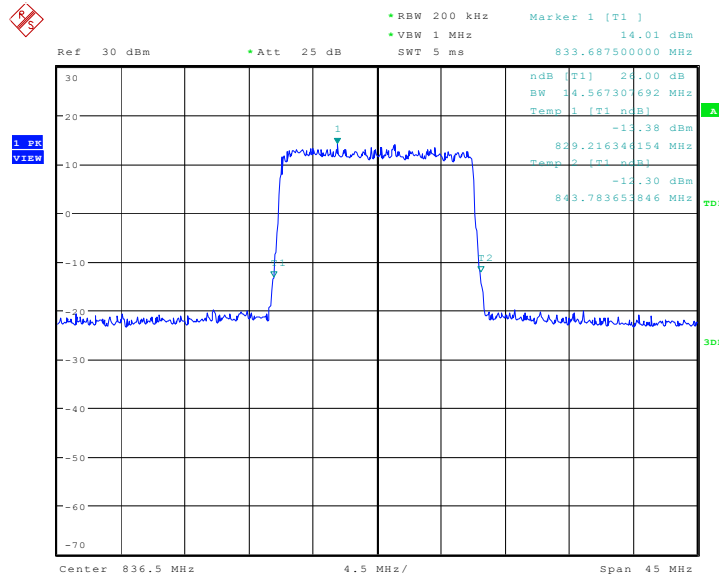


Date: 3.AUG.2018 16:27:40

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

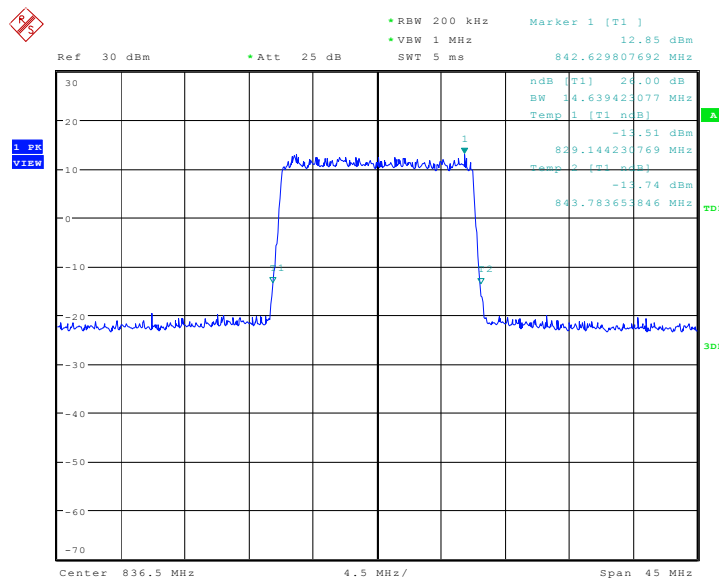
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
836.5	14567.31	14639.42	14567.31

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



Date: 22.MAY.2018 19:30:05

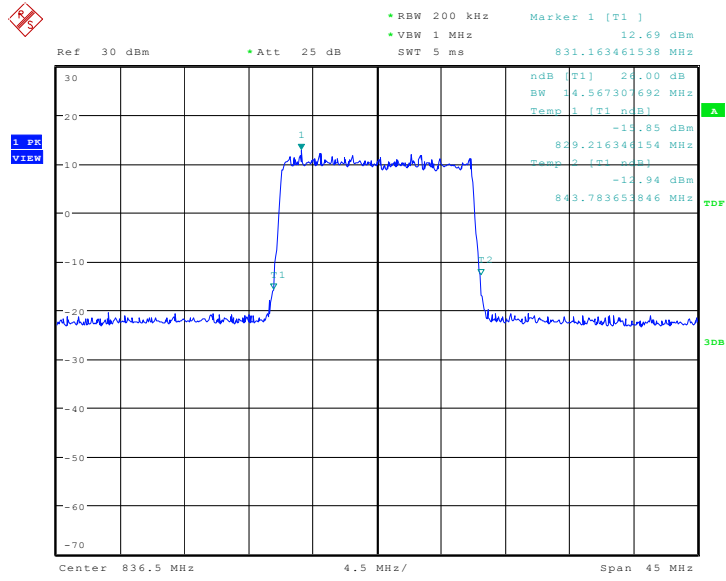
LTE band 26(824MHz-849MHz), 15MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 19:30:22



LTE band 26(824MHz-849MHz), 15MHz Bandwidth, 64QAM (-26dBc BW)

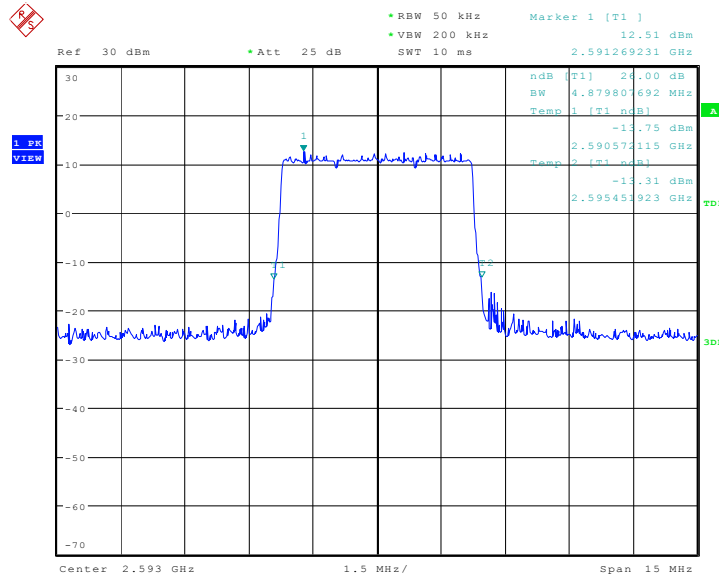


Date: 3.AUG.2018 16:29:59

LTE band 41, 5MHz (-26dBc)

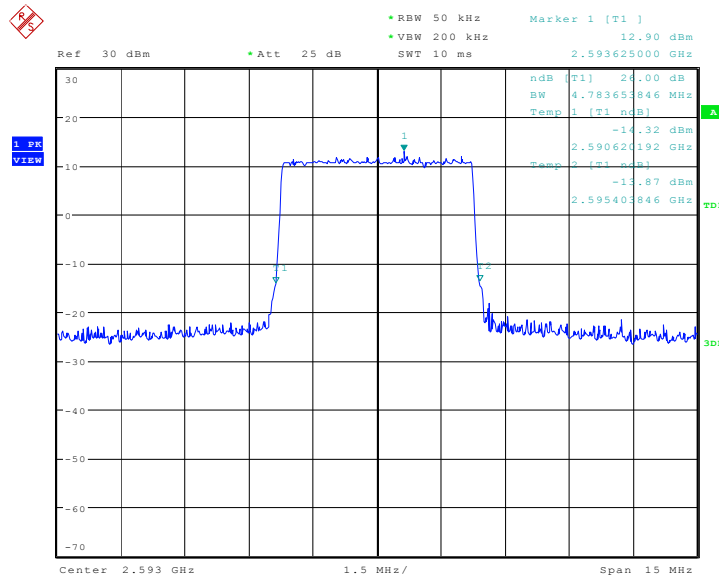
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
2593.0	4879.808	4783.654	4783.654

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



Date: 22.MAY.2018 18:32:34

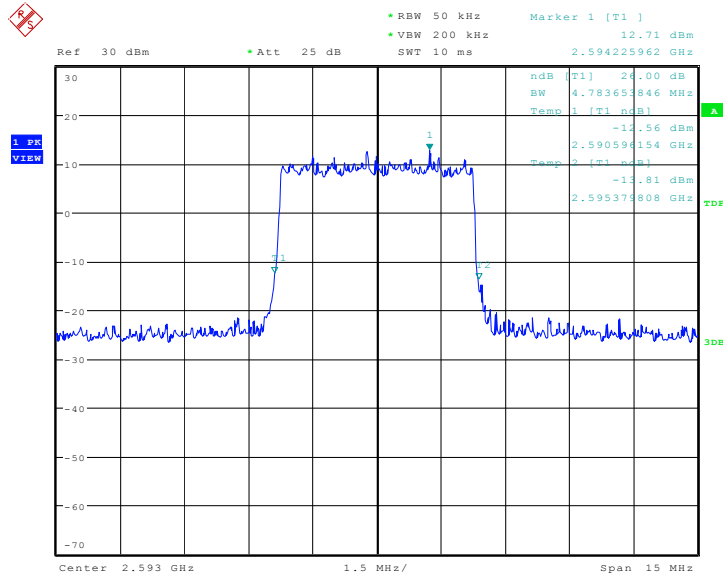
LTE band 41, 5MHz Bandwidth,16QAM (-26dBc BW)



Date: 22.MAY.2018 18:32:51



LTE band 41, 5MHz Bandwidth,64QAM (-26dBc BW)

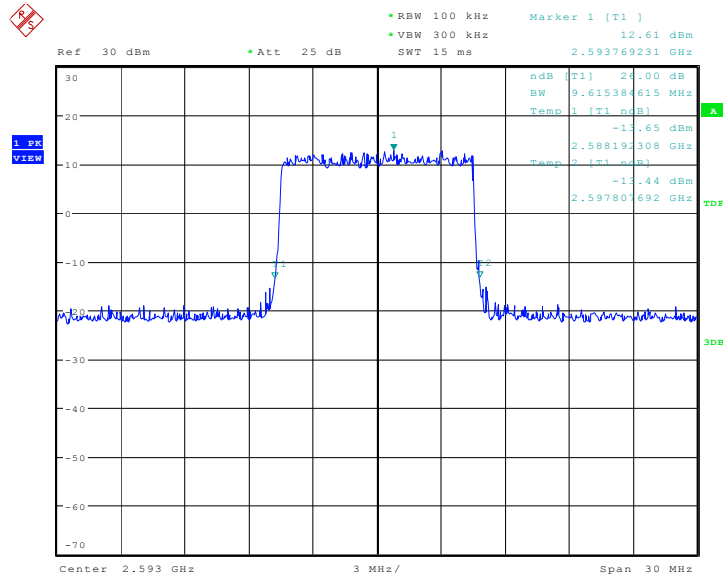


Date: 3.AUG.2018 16:52:19

LTE band 41, 10MHz (-26dBc)

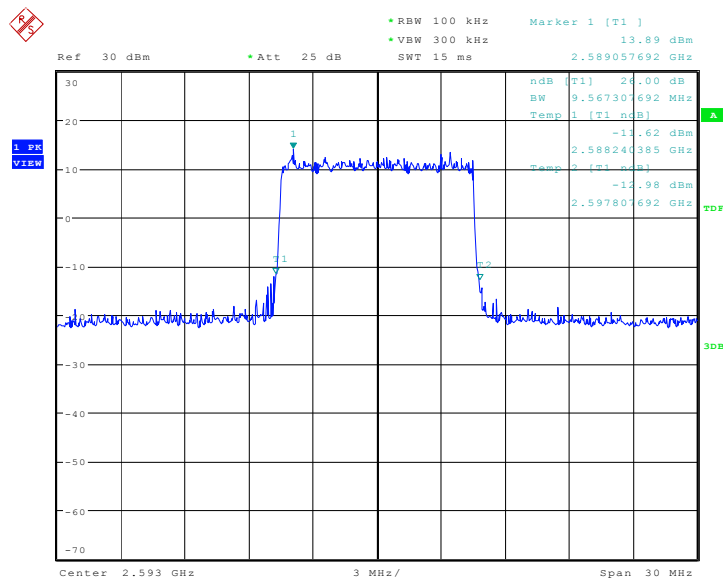
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
2593.0	9615.385	9567.308	9663.462

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



Date: 22.MAY.2018 18:39:33

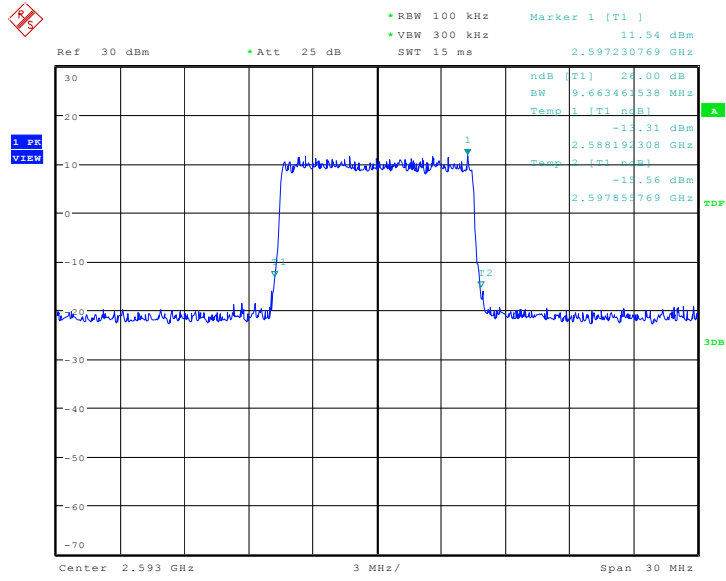
LTE band 41, 10MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 18:39:50



LTE band 41, 10MHz Bandwidth, 64QAM (-26dBc BW)

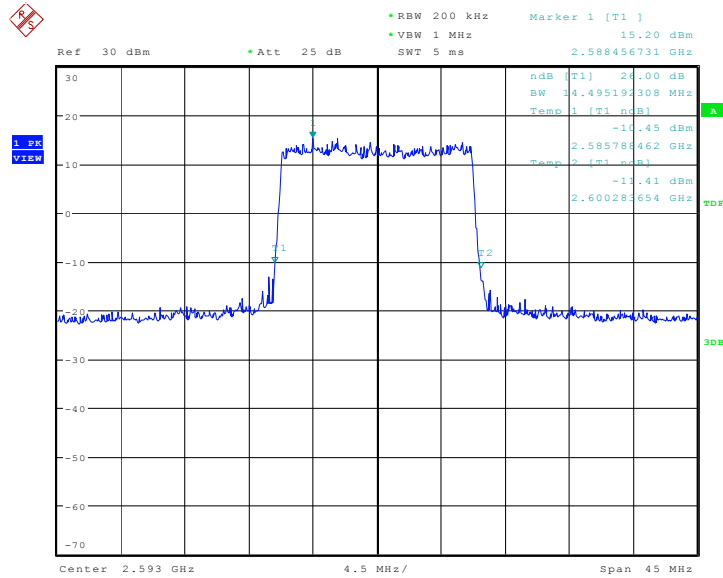


Date: 3.AUG.2018 16:38:27

LTE band 41, 15MHz (-26dBc)

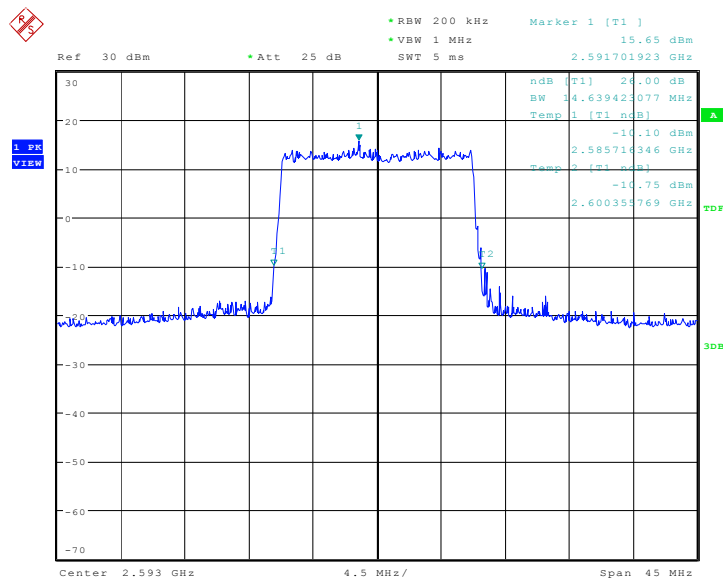
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
2593.0	14495.19	14639.42	14495.19

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



Date: 22.MAY.2018 18:47:07

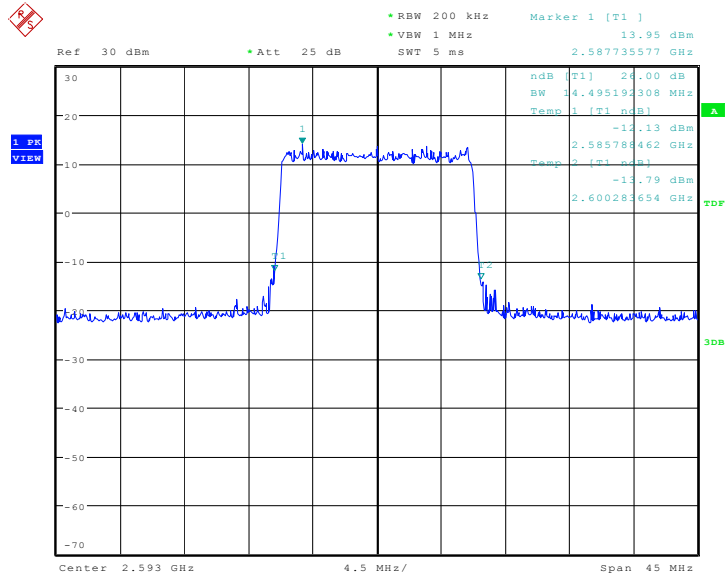
LTE band 41, 15MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 18:47:24



LTE band 41, 15MHz Bandwidth, 64QAM (-26dBc BW)

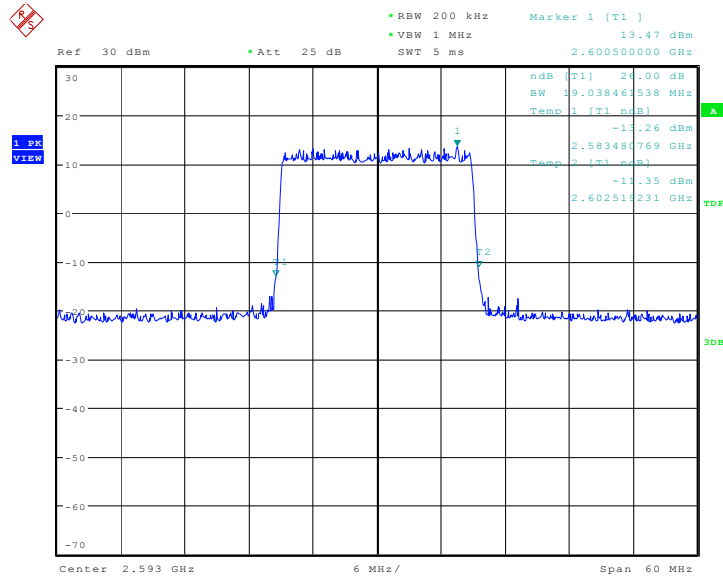


Date: 3.AUG.2018 16:40:27

LTE band 41, 20MHz (-26dBc)

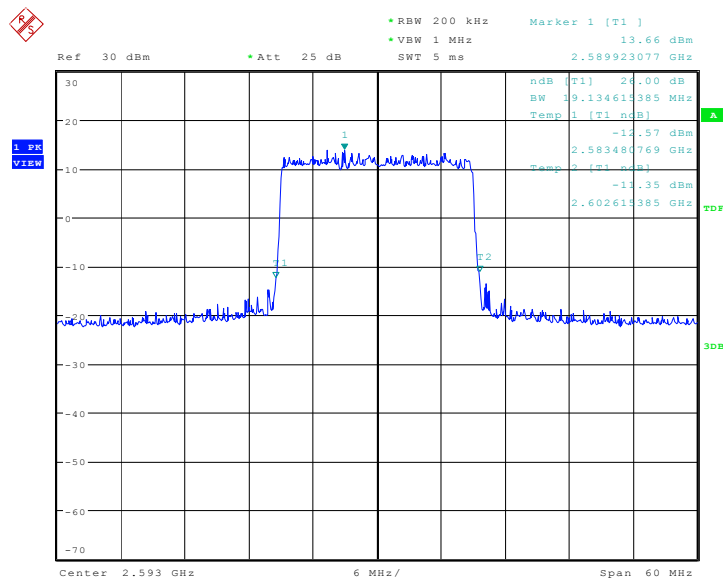
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)		
	QPSK	16QAM	64QAM
2593.0	19038.46	19134.62	19038.46

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



Date: 22.MAY.2018 18:54:41

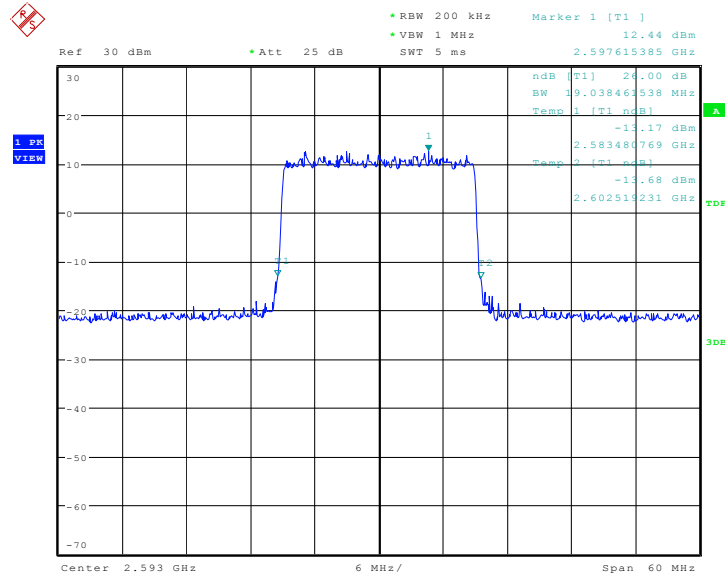
LTE band 41, 20MHz Bandwidth, 16QAM (-26dBc BW)



Date: 22.MAY.2018 18:54:58



LTE band 41, 20MHz Bandwidth, 64QAM (-26dBc BW)



Date: 3.AUG.2018 16:42:12

A.6 BAND EDGE COMPLIANCE

A.6.1 Measurement limit

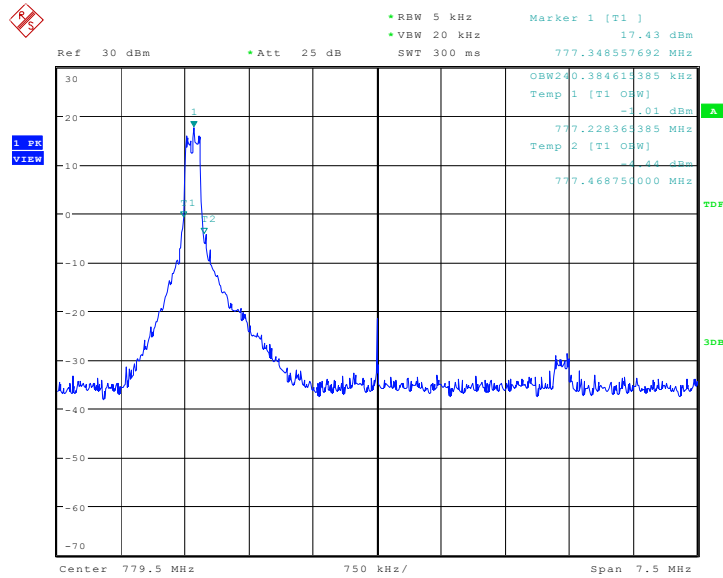
Part 22.917(b), 24.238(a), 27.53(h) state that on any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least $43+10\log(P)$ dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

According to KDB 971168 6.0, a relaxation of the reference bandwidth is often provided for measurements within a specified frequency range at the edge of the authorized frequency block/band. This is often implemented by permitting the use of a narrower RBW (typically limited to a minimum RBW of 1% of the OBW) for measuring the out-of-band emissions without a requirement to integrate the result over the full reference bandwidth.

Part 27.53(m) states that 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.

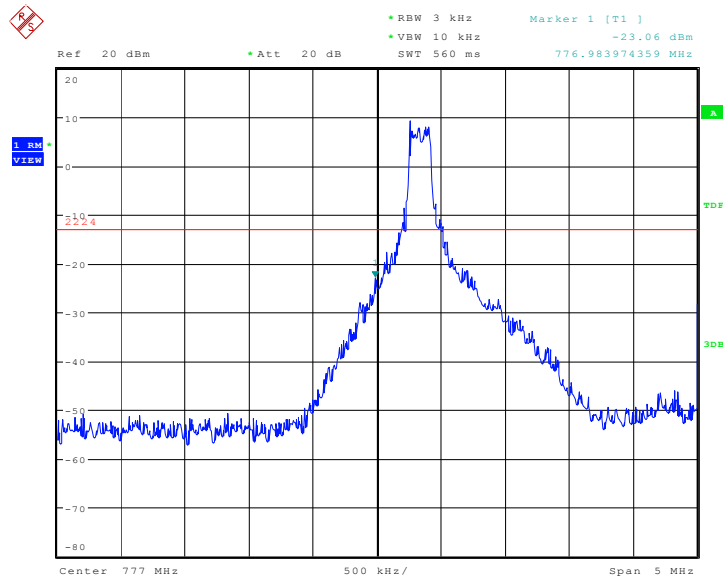
Part 27.53(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the 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

A.6.2 Measurement result
Only worst case result is given below
LTE band 13
OBW: 1RB-low_offset

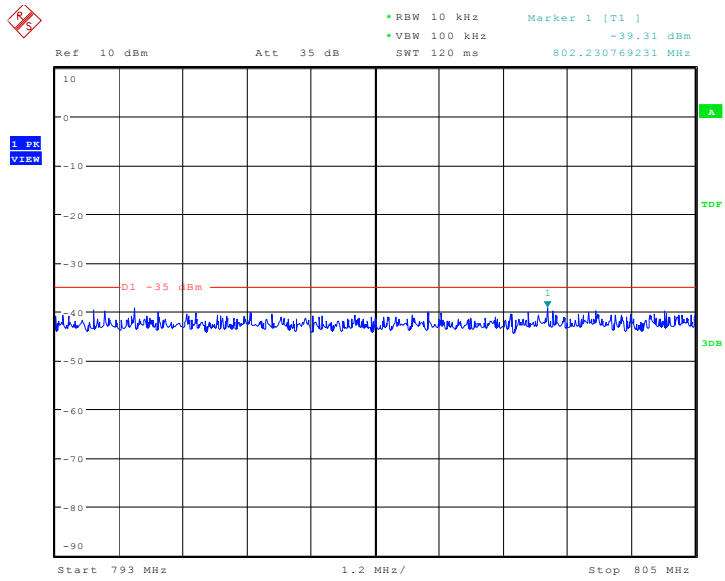


Date: 21 JUN 2018 09:18:04

LOW BAND EDGE BLOCK-1RB-low_offset

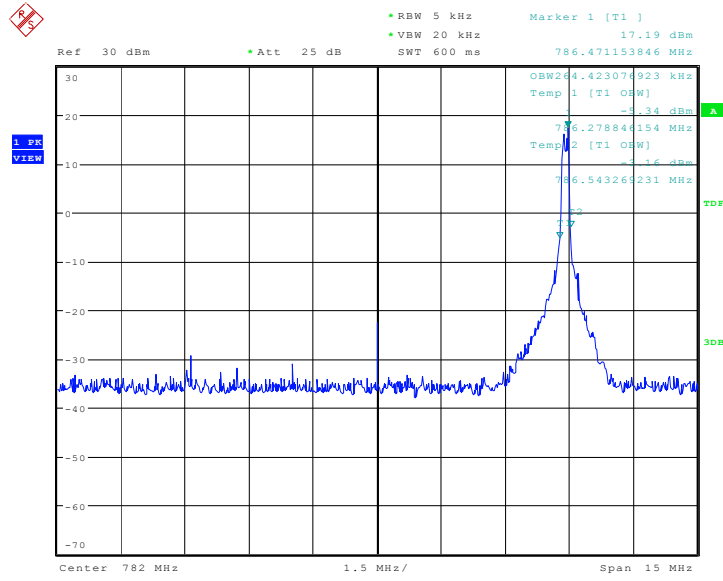


Date: 21 JUN 2018 09:18:52



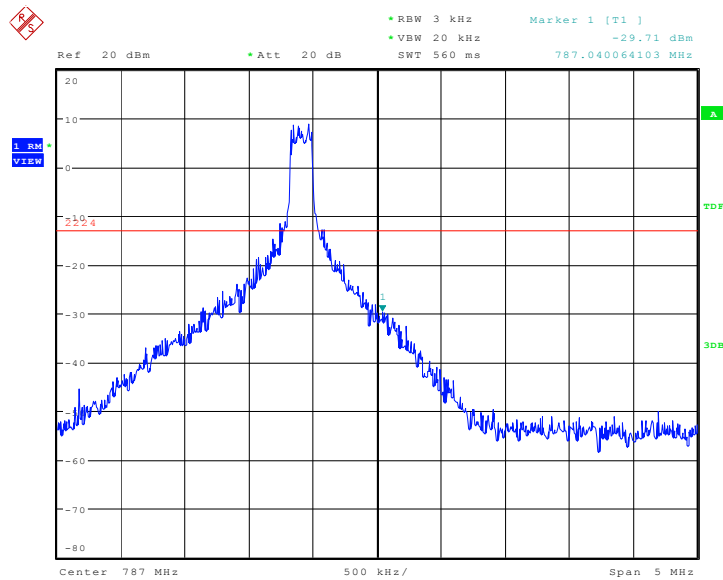
Date: 21.JUN.2018 09:36:39

OBW: 1RB-high_offset

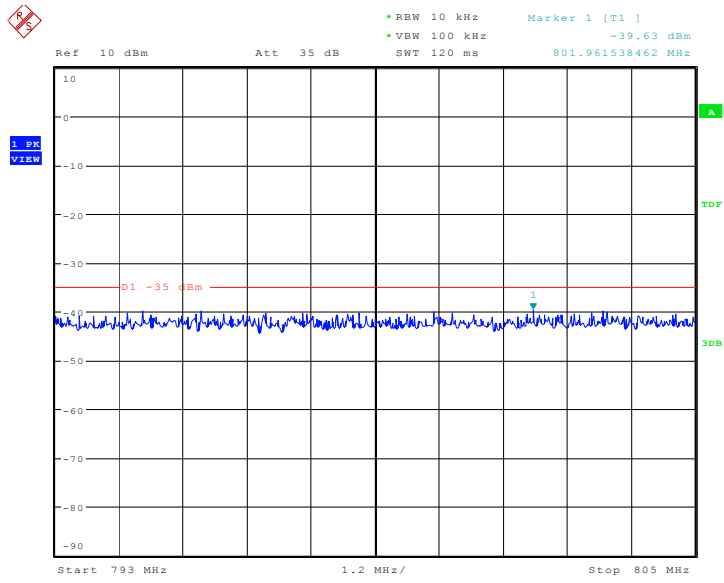


Date: 21.JUN.2018 09:07:42

HIGH BAND EDGE BLOCK-1RB-high_offset



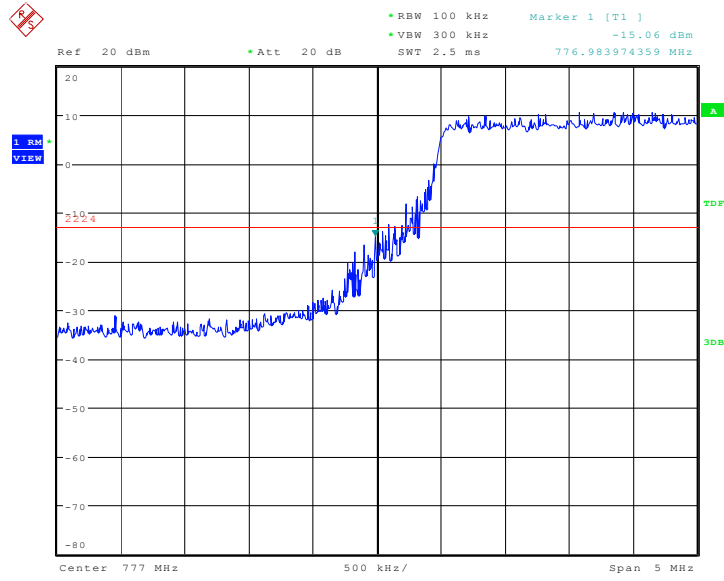
Date: 21.JUN.2018 09:08:30



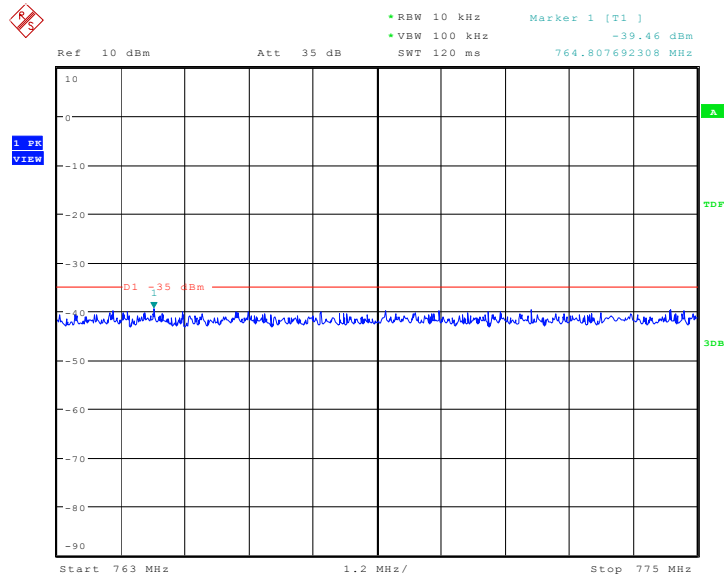
Date: 21.JUN.2018 09:34:15



LOW BAND EDGE BLOCK-10MHz-100%RB



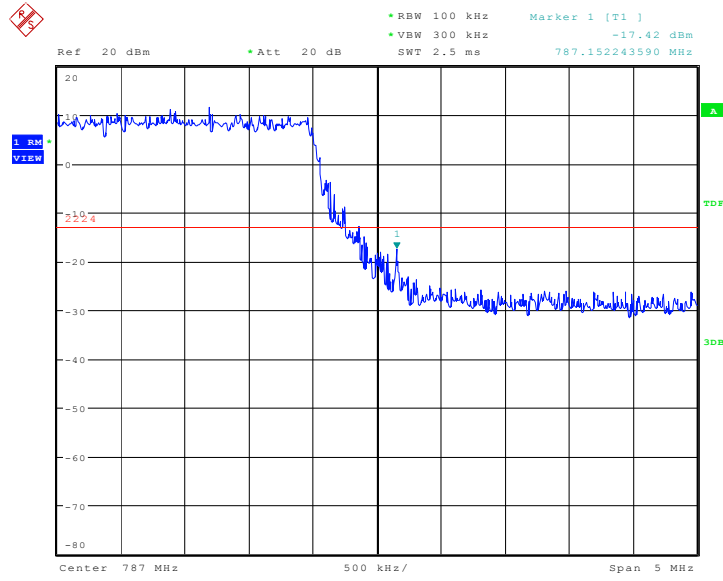
Date: 21..JUN.2018 09:23:08



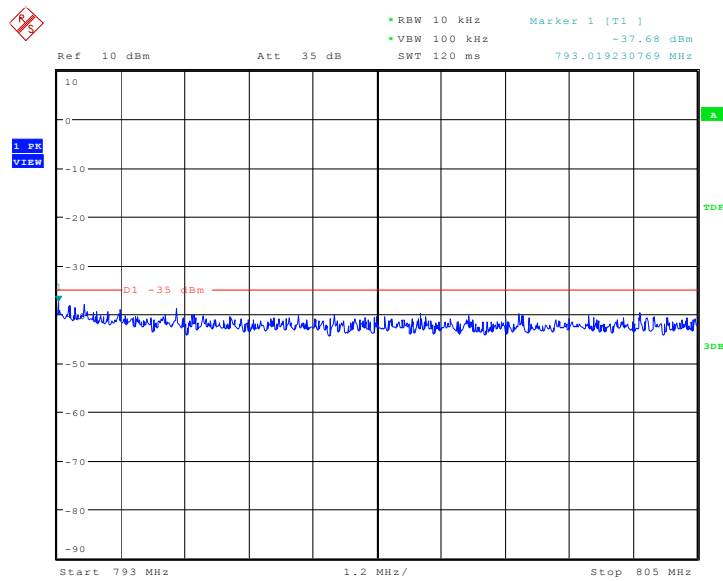
Date: 21..JUN.2018 09:26:33



HIGH BAND EDGE BLOCK-10MHz-100%RB

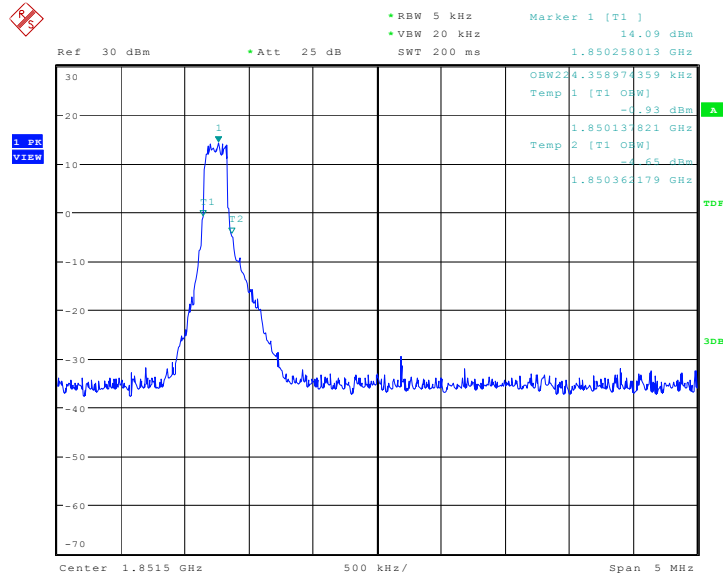


Date: 21..JUN.2018 09:28:07



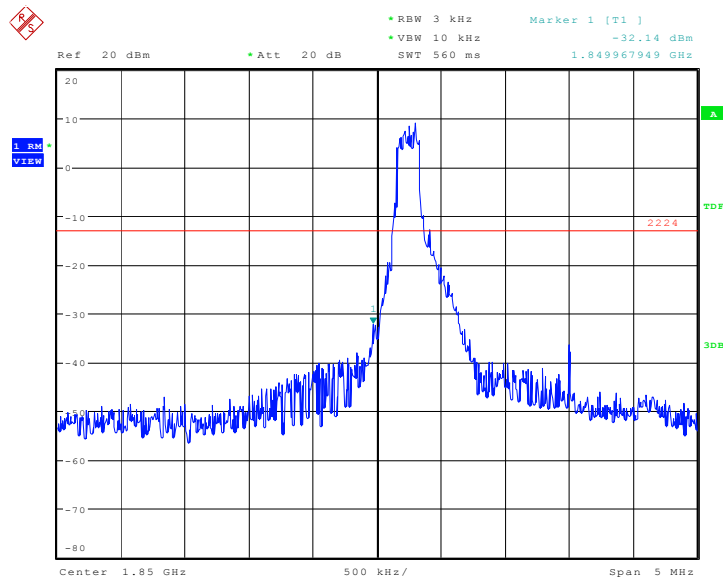
Date: 21..JUN.2018 09:31:57

LTE band 25
OBW: 1RB-low_offset



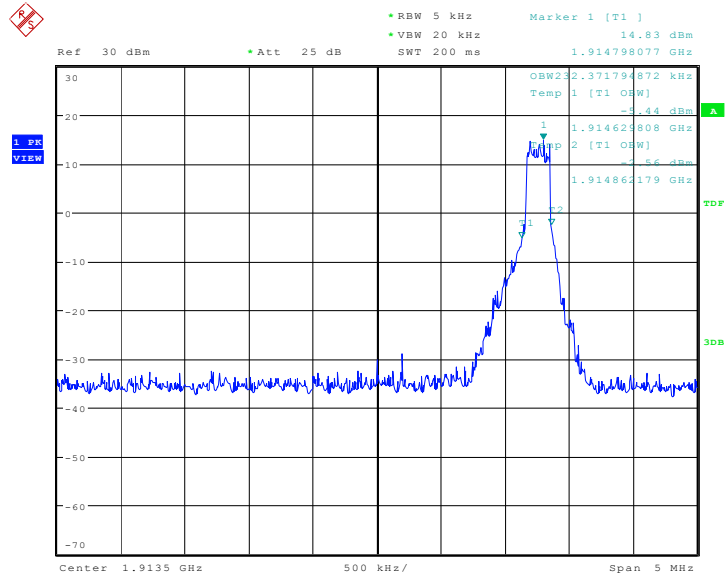
Date: 21.JUN.2018 08:00:02

LOW BAND EDGE BLOCK-1RB-low_offset



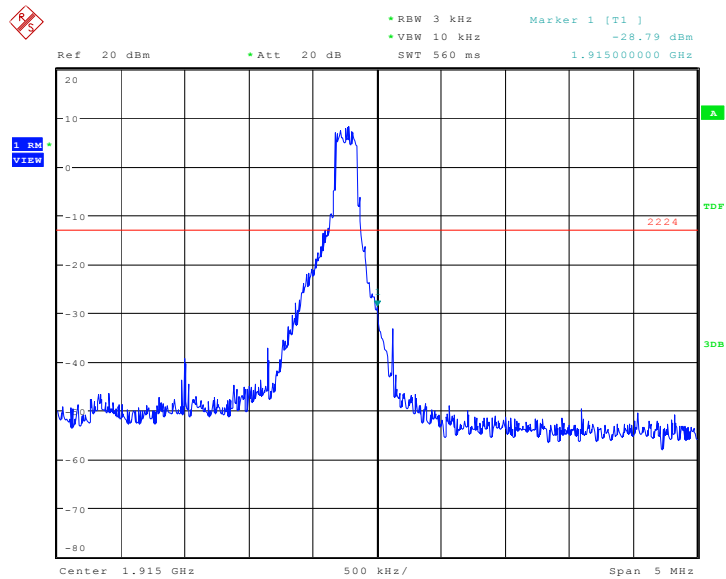
Date: 21.JUN.2018 08:00:51

OBW: 1RB-high_offset



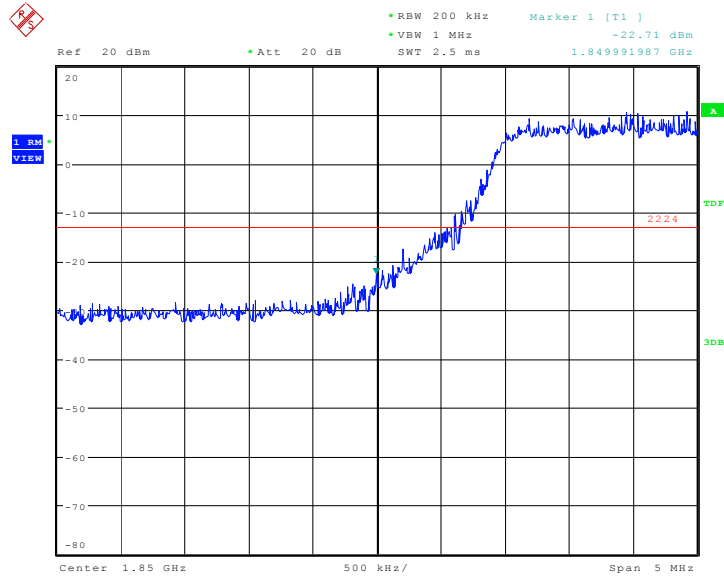
Date: 21..JUN.2018 11:05:12

HIGH BAND EDGE BLOCK-1RB-high_offset



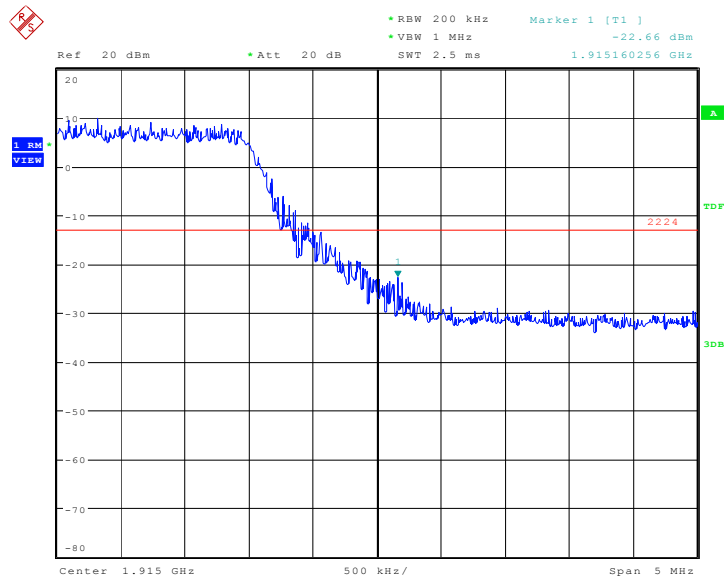
Date: 21..JUN.2018 11:06:00

LOW BAND EDGE BLOCK-20MHz-100%RB



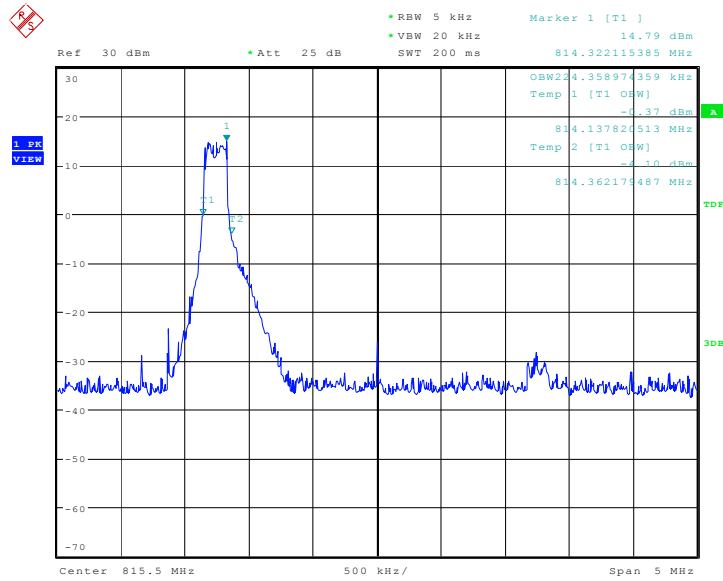
Date: 21..JUN.2018 11:15:03

HIGH BAND EDGE BLOCK-20MHz-100%RB



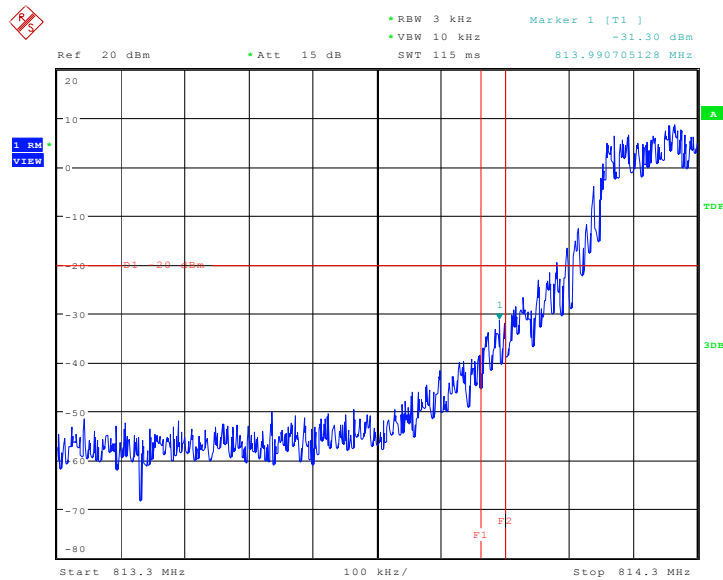
Date: 21..JUN.2018 11:15:51

LTE band 26(814MHz-824MHz)
OBW: 1RB-low_offset



Date: 21.JUN.2018 10:38:14

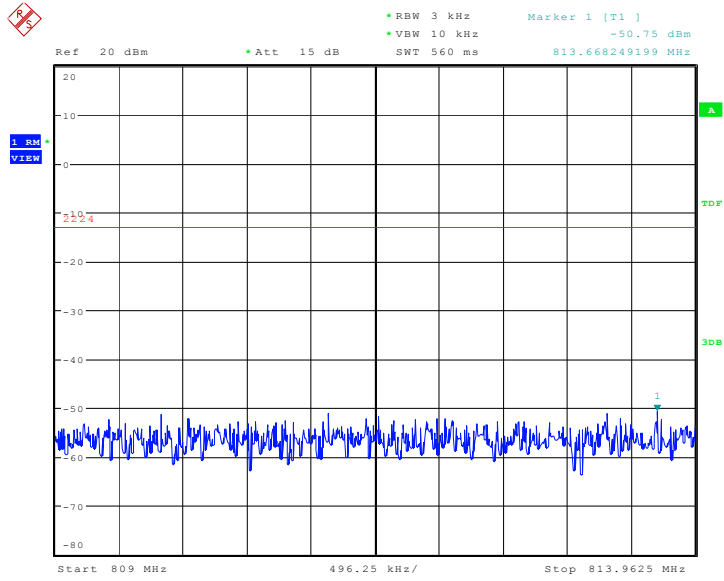
LOW Emission Mask -1RB-low_offset



Date: 21.JUN.2018 10:39:00

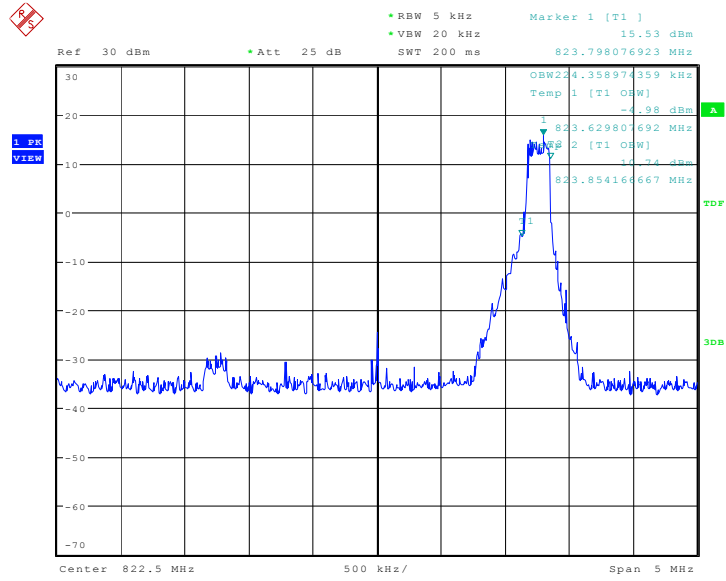


LOW BAND EDGE BLOCK-1RB-low_offset



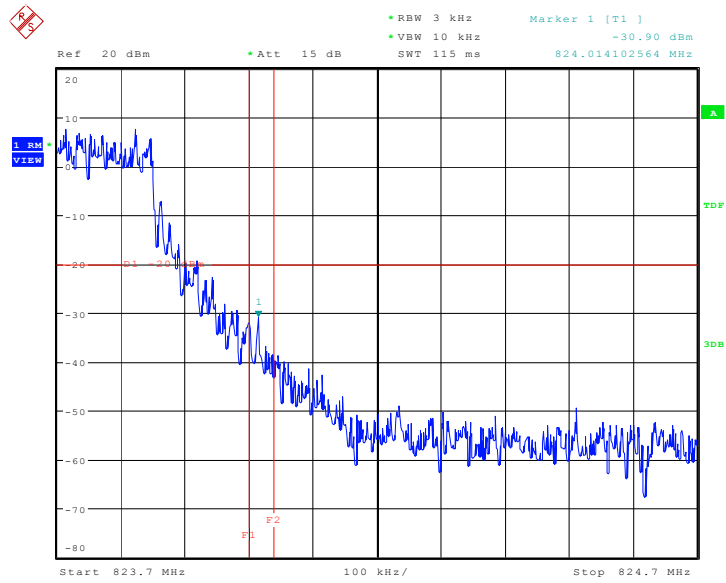
Date: 21.JUN.2018 10:39:04

OBW: 1RB-high_offset



Date: 21.JUN.2018 10:28:59

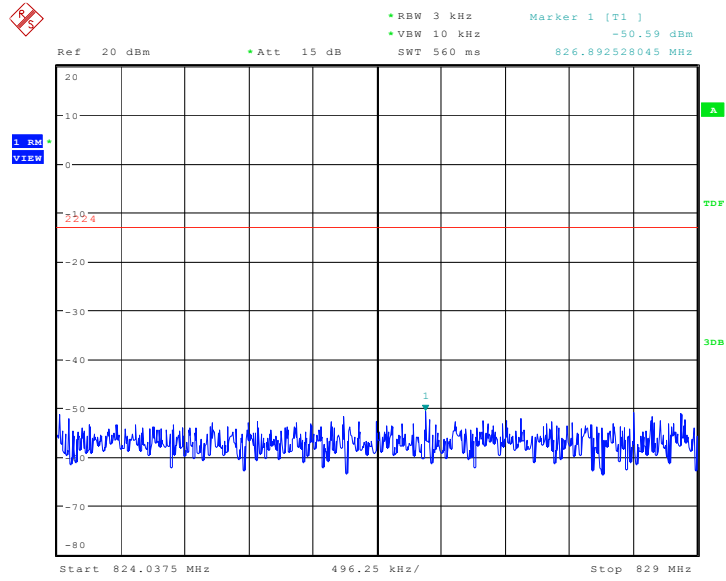
HIGH Emission Mask -1RB-high_offset



Date: 21.JUN.2018 10:29:43

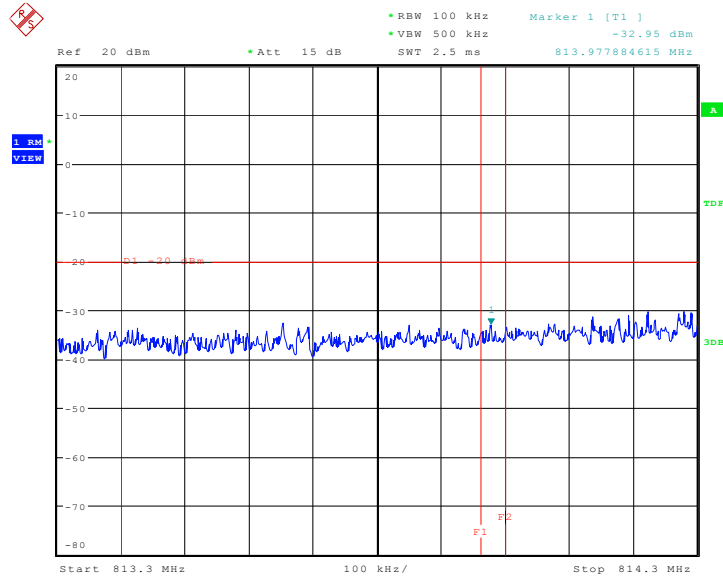


HIGH BAND EDGE BLOCK-1RB-high_offset



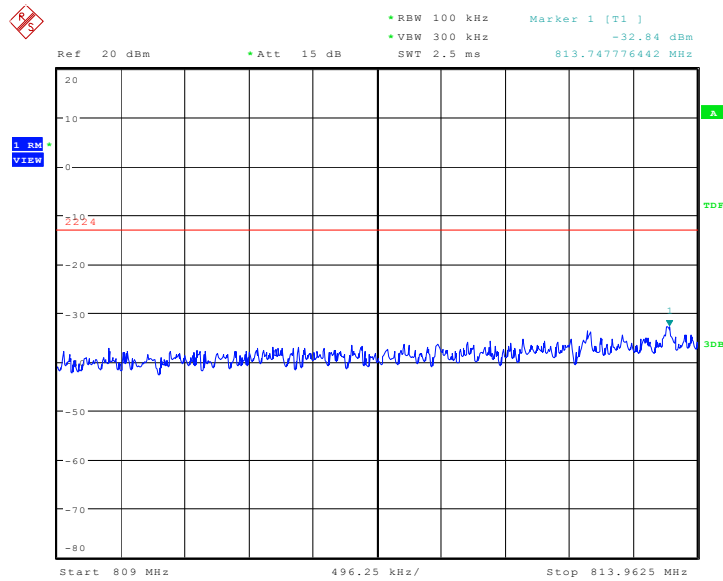
Date: 21.JUN.2018 10:29:47

LOW Emission Mask -10MHz-100%RB



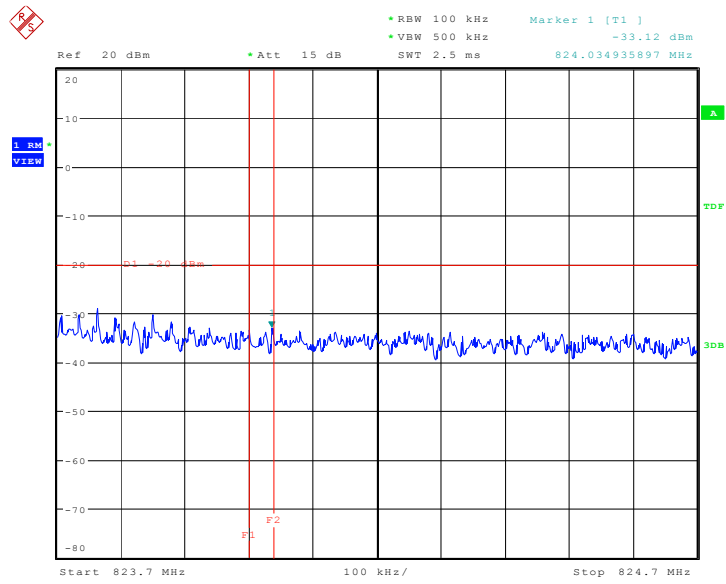
Date: 21.JUN.2018 10:45:50

LOW BAND EDGE BLOCK-10MHz-100%RB



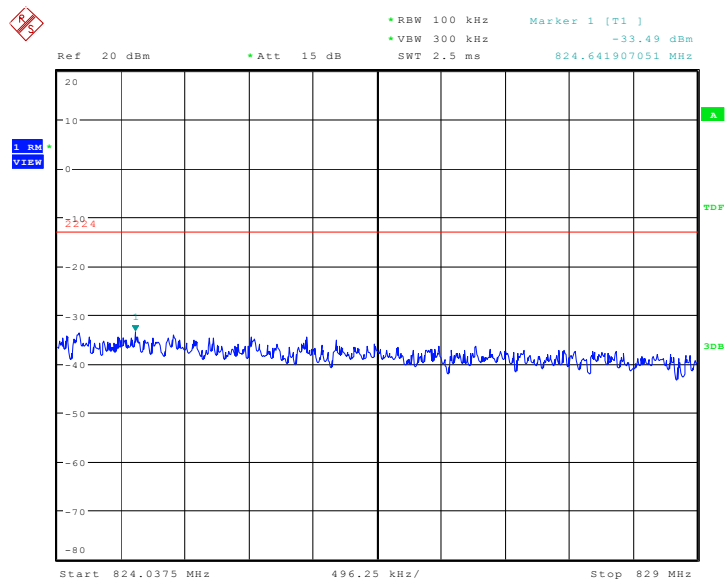
Date: 21.JUN.2018 10:45:54

HIGH Emission Mask -10MHz-100%RB



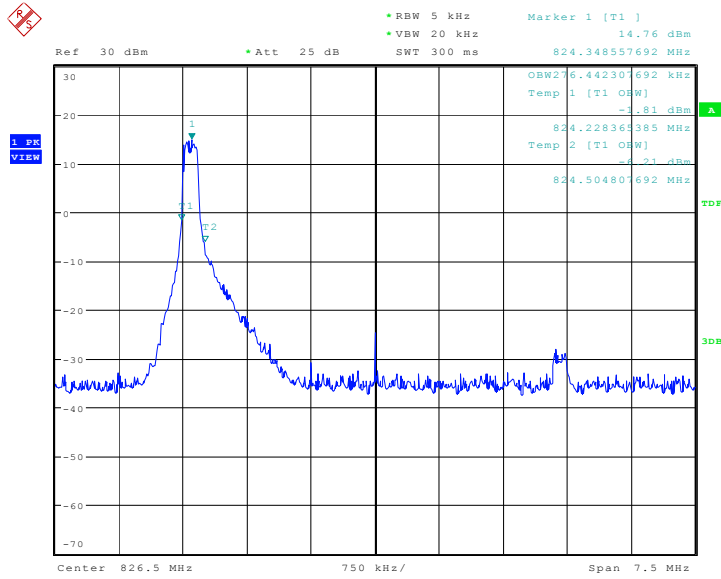
Date: 21.JUN.2018 10:46:40

HIGH BAND EDGE BLOCK-10MHz-100%RB



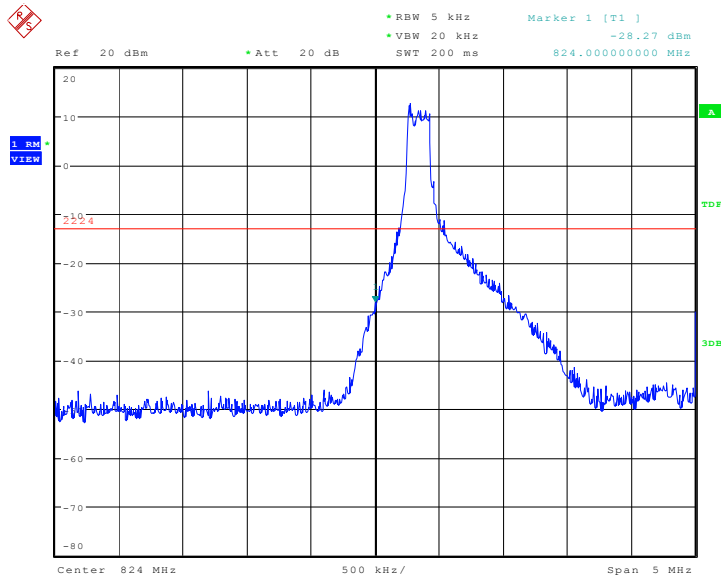
Date: 21.JUN.2018 10:46:44

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



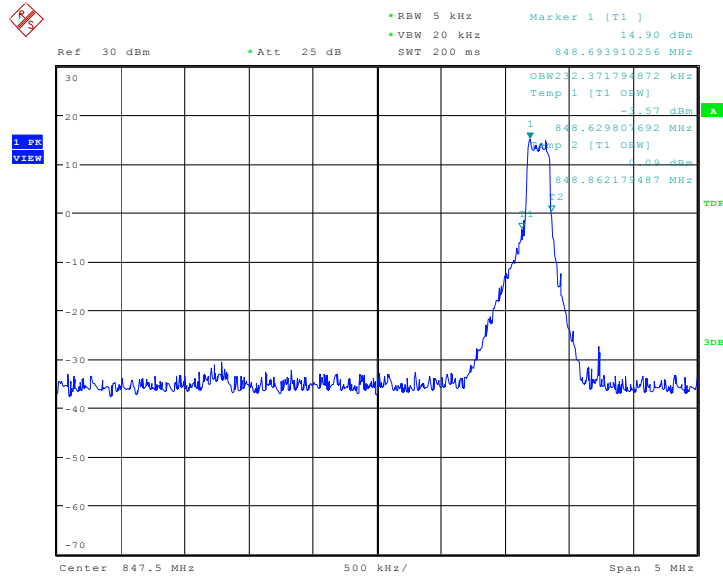
Date: 20.JUN.2018 17:09:48

LOW BAND EDGE BLOCK-1RB-low_offset



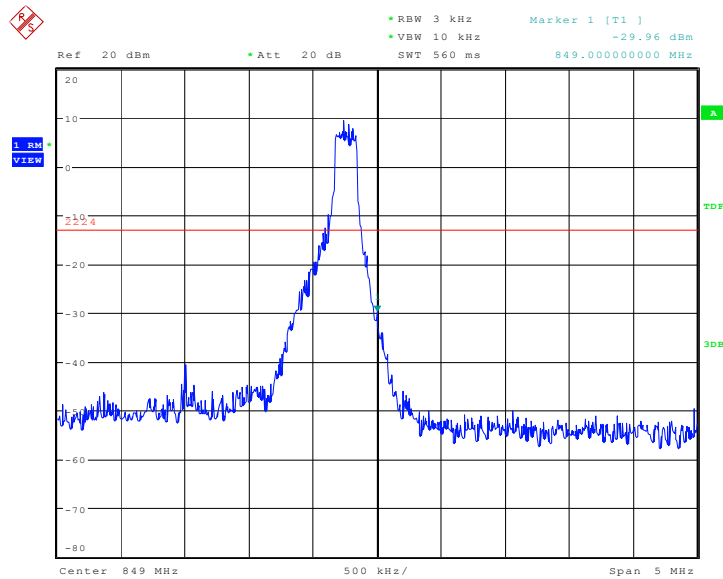
Date: 20.JUN.2018 17:10:35

OBW: 1RB-high_offset



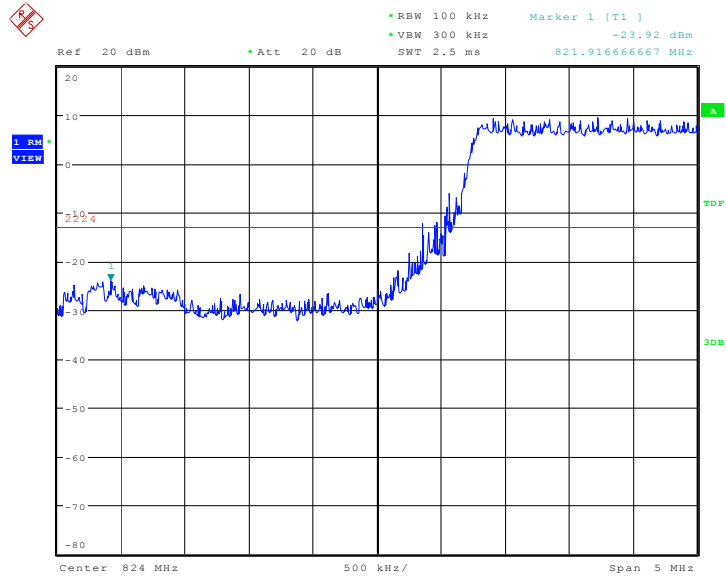
Date: 20..JUN.2018 17:07:56

HIGH BAND EDGE BLOCK-1RB-high_offset



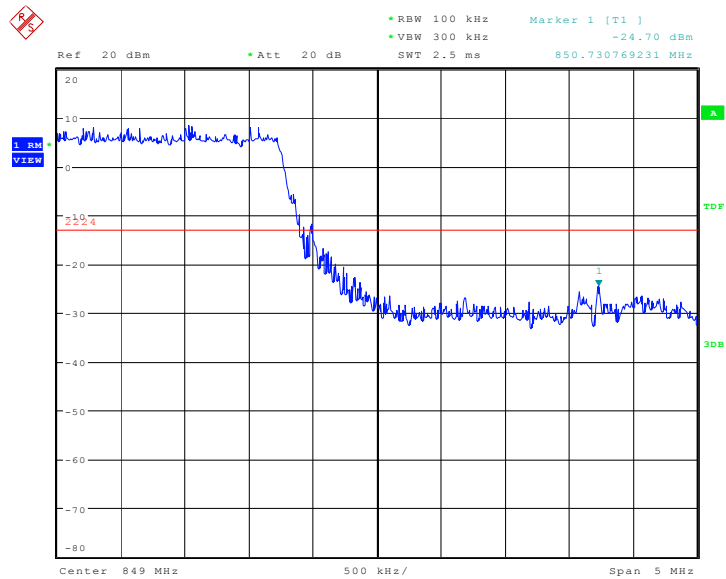
Date: 20..JUN.2018 17:08:44

LOW BAND EDGE BLOCK-15MHz-100%RB



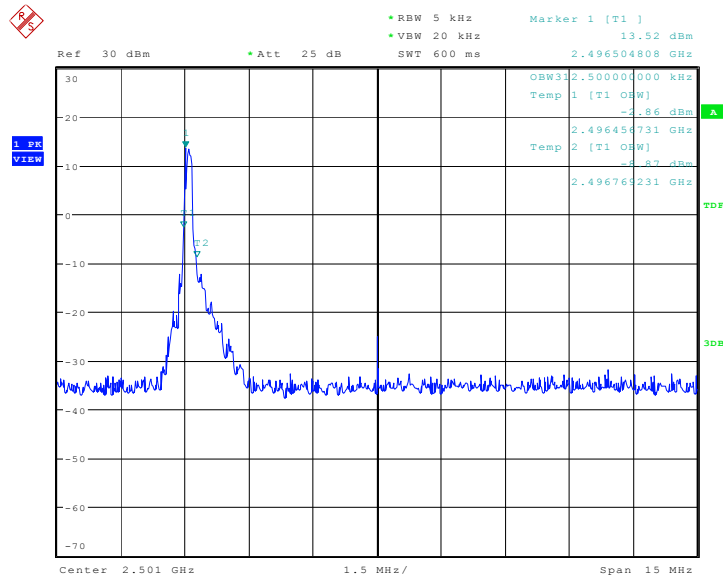
Date: 20..JUN.2018 17:05:50

HIGH BAND EDGE BLOCK-15MHz-100%RB



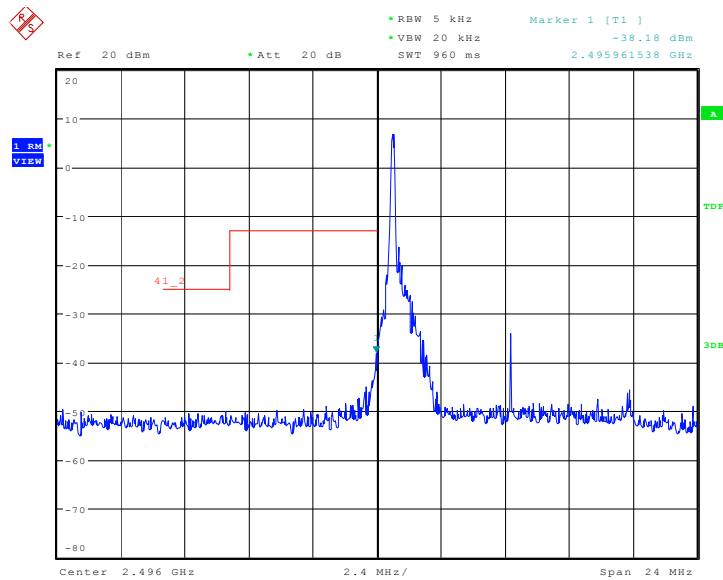
Date: 20..JUN.2018 17:06:39

LTE band 41
OBW: 1RB-low_offset



Date: 21.JUN.2018 11:46:32

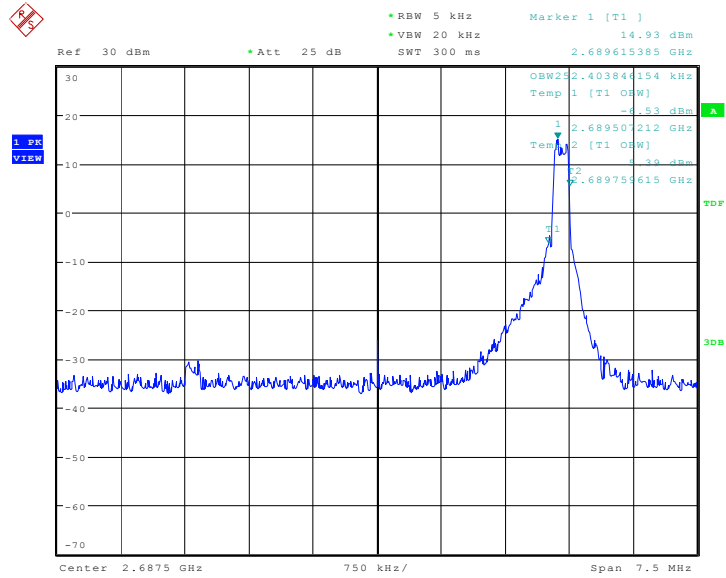
LOW BAND EDGE BLOCK-1RB-low_offset



Date: 21.JUN.2018 11:47:20

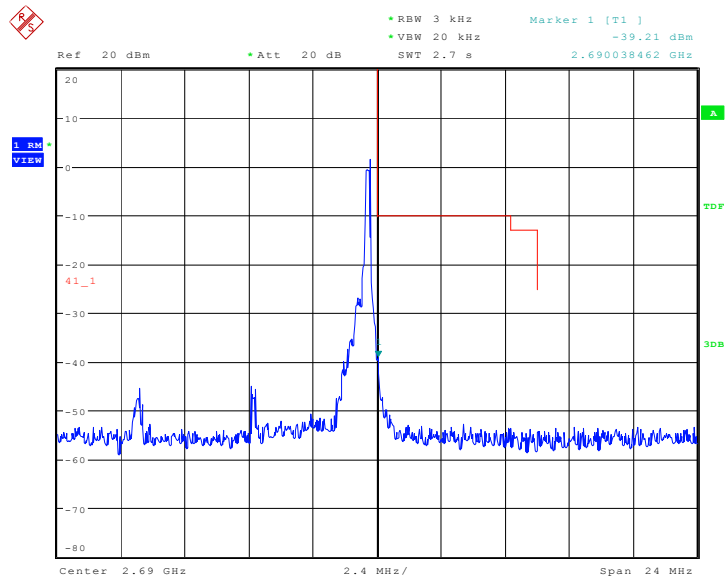


OBW: 1RB-high_offset



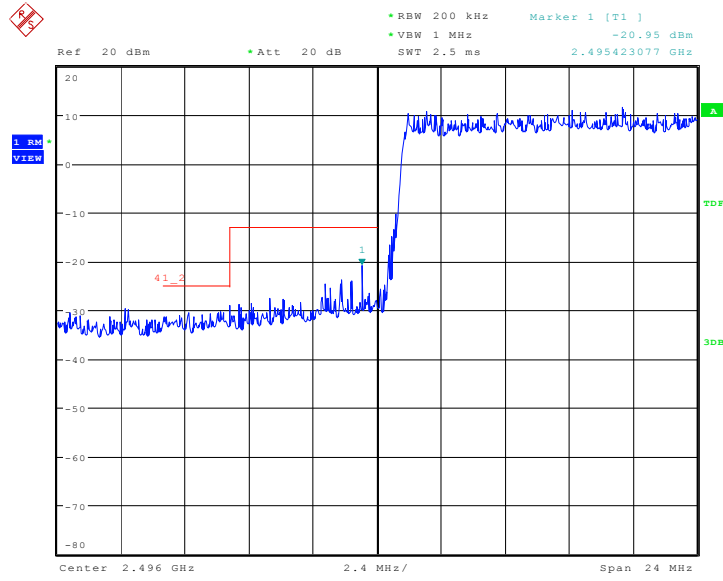
Date: 21..JUN.2018 11:24:10

HIGH BAND EDGE BLOCK-1RB-high_offset



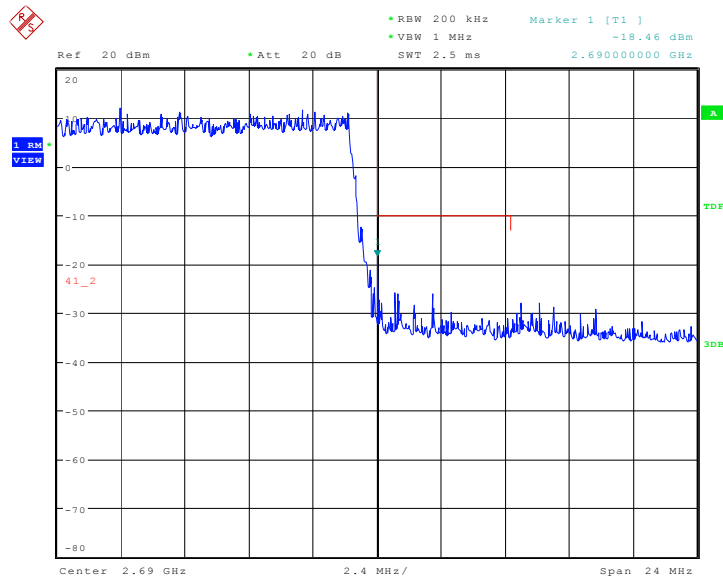
Date: 21..JUN.2018 11:24:58

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 21..JUN.2018 11:19:29

HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 21..JUN.2018 11:20:16

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. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
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 set to 30001 which is greater than 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.

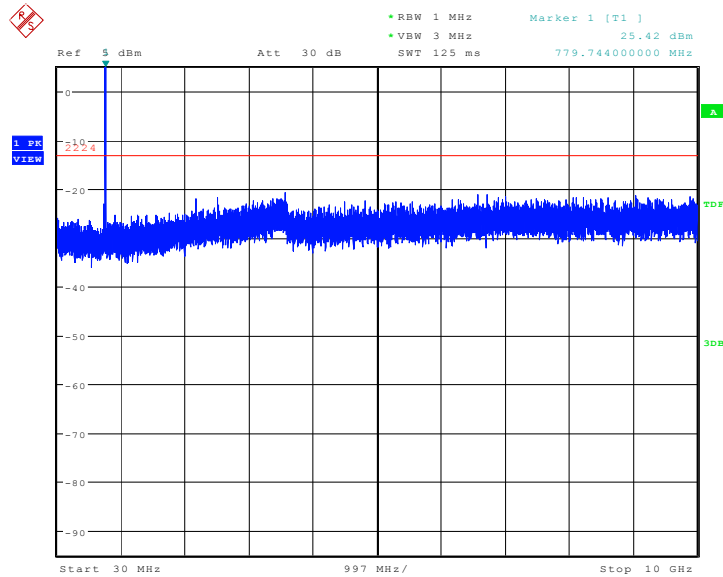
The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A. 7.3 Measurement result

Only worst case result is given below

LTE band 13: 30MHz – 10GHz

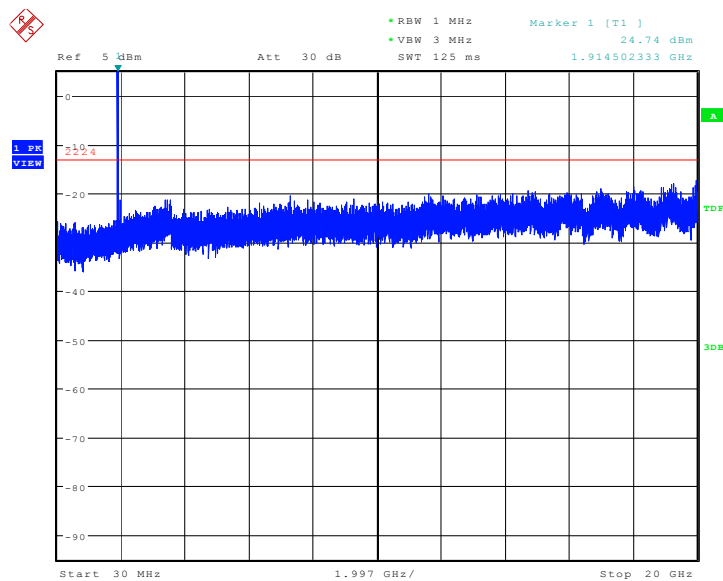
Spurious emission limit –13dBm.



Date: 21.JUN.2018 08:36:42

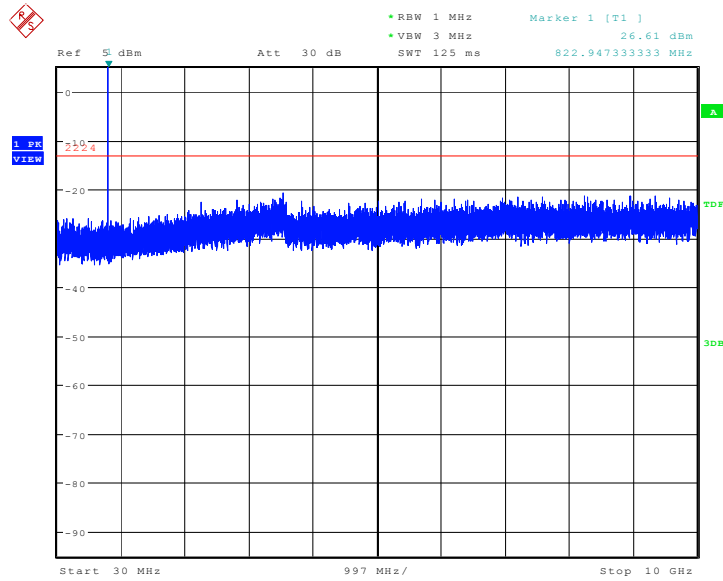
LTE band 25: 30MHz – 20GHz

Spurious emission limit –13dBm.



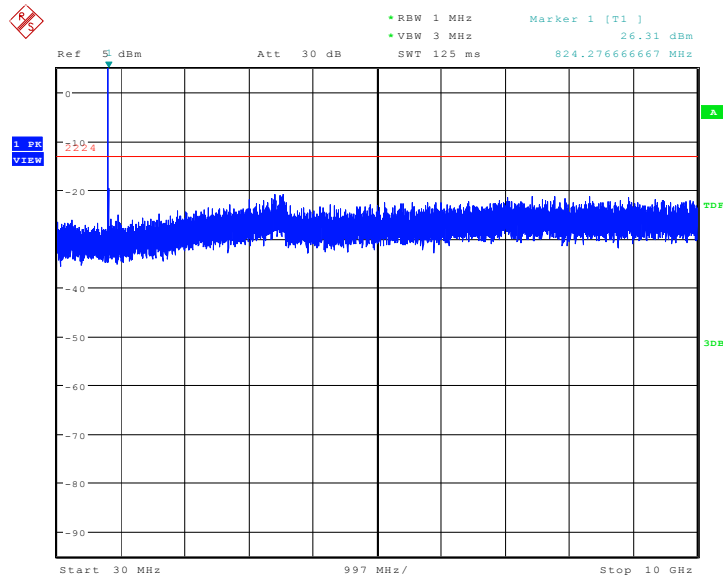
Date: 21.JUN.2018 08:08:51

LTE band 26(814MHz-824MHz): 30MHz – 10GHz
Spurious emission limit –13dBm.



Date: 20.JUN.2018 16:49:11

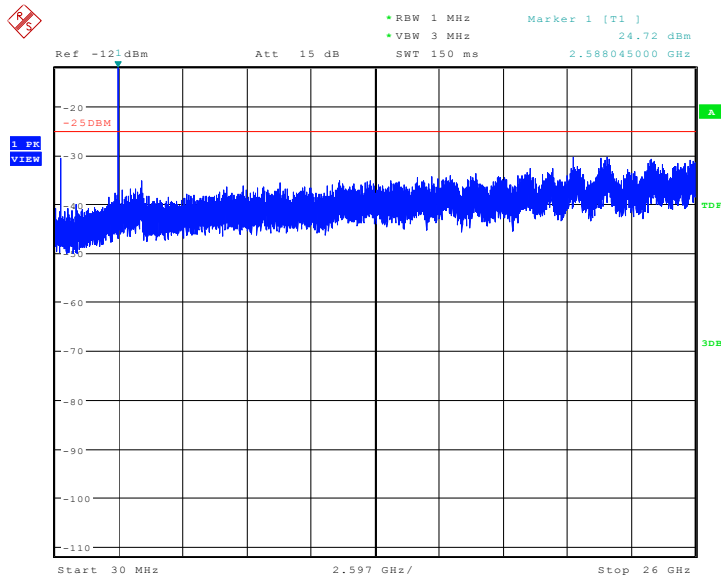
LTE band 26(824MHz-849MHz): 30MHz – 10GHz
Spurious emission limit –13dBm.



Date: 20.JUN.2018 17:11:52



LTE band 41: 30MHz – 26GHz
Spurious emission limit –13dBm.



Date: 21.JUN.2018 07:47:19

A.8 PEAK-TO-AVERAGE POWER RATIO

Reference

FCC: CFR Part 24.232 (d), 27.50(a)

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

According to KDB 971168 5.7.1:

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Set the measurement interval to 1 ms
- e) Record the maximum PAPR level associated with a probability of 0.1%

A.8.1 Measurement limit

not exceed 13 dB

A.8.2 Measurement results

LTE band 13,10MHz

Frequency(MHz)	PAPR(dB)		
707.5	QPSK	16QAM	64QAM
	5.45	6.35	6.41

LTE band 25,20MHz

Frequency(MHz)	PAPR(dB)		
782.0	QPSK	16QAM	64QAM
	6.89	7.47	7.37

LTE band 41, 20MHz

Frequency(MHz)	PAPR(dB)		
2593.0	QPSK	16QAM	64QAM
	7.24	8.07	9.84

ANNEX B: Accreditation Certificate

United States Department of Commerce National Institute of Standards and Technology	
	
<hr/> Certificate of Accreditation to ISO/IEC 17025:2005 <hr/>	
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 17025:2005. 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>	
<hr/> 2017-08-22 through 2018-09-30 <i>Effective Dates</i>	 For the National Voluntary Laboratory Accreditation Program

END OF REPORT