TEST REPORT

REPORT NUMBER: I22W00025-LTE RF_Rev2

ON

Type of Equipment:	LTE /HSPA/GSM/GNSS MODULE
Type of Designation:	SIM7600SA-H/SIM7600SA-H miniPCIE
Brand Name:	SIMCom
Manufacturer:	SIMCom Wireless Solutions Limited
FCC ID:	2AJYU-8PYA002

ACCORDING TO

FCC CFR Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS，e-CFR, 2019
PART 22, PUBLIC MOBILE SERVICES，e-CFR, 2019
PART 24, PERSONAL COMMUNICATIONS SERVICES，e-CFR, 2019
PART 27,MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES，e-CFR, 2019
ANSI C63.26-2015

Chongqing Academy of Information and Communications Technology

Month date, year
May, 05, 2022
Signature

Xiang Luoyong
Director

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 Chongqing Academy of Information and Communications Technology.

Revision Version

Report Number	Revision	Date	Memo
I22W00025-LTE RF	00	2022-03-30	Initial creation of test report
I22W00025-LTE RF_Rev1	01	2022-04-25	the second time creation of test report
I22W00025-LTE RF_Rev2	02	2022-05-05	the third time creation of test report

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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
FCC Registration number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
	No.19 East Road, Xiantao Big-data Valley, Yubei District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	30-60%

1.3. Project data

Testing Start Date:	2022-03-25
Testing End Date:	2022-03-30

1.4. Signature

董俊鑫	2022-05-05
Dong Junxin **(Prepared this test report)**	**Date**
李旭	2022-05-05
Li Xu **(Reviewed this test report)**	**Date**
向罗勇	2022-05-05
Xiang Luoyong **Director of the laboratory** **(Approved this test report)**	**Date**

2. Client Information

2.1. Applicant Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	Building 3,No. 289, Linhong Road, Changning District, Shanghai, P.R.China
City:	Shanghai
Country:	China
Telephone:	15902149520
Fax:	--
Email:	yue.hai@simcom.com
Contact Person:	Haiyue

2.2. Manufacturer Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	Building 3,No. 289, Linhong Road, Changning District, Shanghai, P.R.China
City:	Shanghai
Country:	China
Telephone:	15902149520
Fax:	--
Email:	yue.hai@simcom.com
Contact Person:	Haiyue

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

3.1. About EUT

EUT Description	LTE /HSPA/GSM/GNSS MODULE
Model name	SIM7600SA-H/SIM7600SA-H miniPCIE
Brand name	SIMCom
LTE Frequency Band	2/4/5/28/66
WCDMA Frequency Band	2/5
GSM Frequency Band	2/5
Type of modulation	GMSK/8PSK/QPSK/16QAM
Extreme Temperature	-10/+55℃
Nominal Voltage	3.8
Extreme High Voltage	4.2
Extreme Low Voltage	3.3

Note: Photographs of EUT are shown in ANNEX A of this test report.
Note: High and low voltage values in extreme condition test are given by manufacturer.

3.2. Internal Identification of EUT used during the test

EUT ID	SN or IMEI	HW Version	SW Version	Date of receipt
S1	863427042013020	V1.01	SIM7600M11_A_V2.0.1	2022-03-25
S2	863427042010166	V1.01	SIM7600M11_A_V2.0.1	2022-03-25

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

3.3. Outline of Equipment under Test

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
GSM	B2	1850.2-1909.8	1930.2-1989.8	--
	B5	824.2-848.8	869.2-893.8	--
WCDMA	B2	1852.4-1907.6	1932.4-1987.6	--
	B5	826.4-846.6	871.4-891.6	--
LTE	B2	1850-1910	1930-1990	--
	B4	1710 – 1755	2110 – 2155	--
	B5	824-849	869-894	--
	B28	703-748	758-803	--
	B66	1710-1780	2110-2200	--

3.4. Internal Identification of AE used during the test

AE ID*	Description	dB*
AE1	--	--

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

4. Reference Documents

4.1. Documents supplied by applicant

PICS/PIXIT, referring to Annex B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

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

Reference	Title	Version
FCC CFR Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS，e-CFR	2019
PART 22	PUBLIC MOBILE SERVICES	2019
PART 24 , 2019	PERSONAL COMMUNICATIONS SERVICES，e-CFR	2019
PART 27, 2019	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES，e-CFR	2019
ANSI C63.26-2015	--	2015
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016

5. Test Equipments Utilized

5.1. RF Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	spectrum analyzer	FSQ 26	201137/026	--	--	R&S	2022-06-11
2	DC Power Supply	N6705B	MY50000919	--	--	Agilent	2022-06-11
3	Universal Radio Communication Tester	CMW500	152395	--	--	R&S	2022-06-11

5.2. RSE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESU26	100367	--	5.1-24-3	R&S	2022-06-11
2	Ultra-wideband Log Periodic Antenna	VULB 9163	01392	--	--	Schwarzbeck	2023-03-04
3	Double Ridged Guide Antenna	HF907	100357	--	--	R&S	2023-02-10
4	Universal Radio Communication Tester	CMW500	152395	--	--	R&S	2021-05-12
5	Generator	SMU 200A	104517	--	--	R&S	2022-06-11
6	Ultra-wideband Log Periodic Antenna	VULB 9163	00995	--	--	R&S	2023-04-03
7	Double Ridged Guide Antenna	HF907	100356	--	--	R&S	2022-07-22

5.3. Climate Chamber

No.	Name	Type	SN	Manufacture	Cal.Due Date
1	Climate chamber	SH-241	92010759	ESPEC	2022-07-25
2	Fully-Anechoic Chamber	FACT3-2	--	ETS	2023-06-25

5.4. Vibration table

No.	Name	Type	SN	Manufacture	Cal.Due Date
--	--	--	--	--	--

Anechoic chamber

Fully anechoic chamber by ETS-LINDGREN.

5.5. Test software

No.	Name	version	SN	Manufacture
1	EMC32	V 8.51.00	--	R&S
2	T-RFS500	V2.0	--	Manufacturer:Beijing Zhiwang Xince Technology Co., Ltd.

6. Test Results

6.1. Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
2.1046,22.913(a),24.232(c),27.50,	Conducted RF Power Output	Pass
2.1046,22.913(a),24.232 (c),27.50	ERP and EIRP	Pass
2.1049,22.917(b), 24.238(b)	Occupied Bandwidth	*Note 1
2.1051,24.238,2.1053,22.917, 27.53	Conducted spurious emissions	Pass
2.1051,24.238,2.1053,22.917, 27.53	Radiated Spurious Emission	Pass
2.1051,24.238, 2.1053, 22.917, 27.53	Band Edge	Pass
2.1055, 22.355, 24.235, 27.54	Frequency Stability	Pass
24.232, 27.50	Peak to Average Ratio	Pass

Note 1: No applicable performance criteria.
Note 2：Explanation of worst-case configuration The worst-case scenario for all measurements is based on the conducted output power. Output power was measured on QPSK,16QAM modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in the following sections represent the worst case emission.

6.2. Conducted RF Power Output

Specifications:	FCC Part 2.1046, 22.913(a), 24.232(c), 27.50
DUT Serial Number:	863427042010166
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.913(a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to Part24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to Part 27.50(c), portable stations (hand-held devices) in the 600 MHz uplink Band and the 698-746 MHz Band, and fixed and mobile stations in the 600 MHz uplink Band are limited to 3 watts ERP.

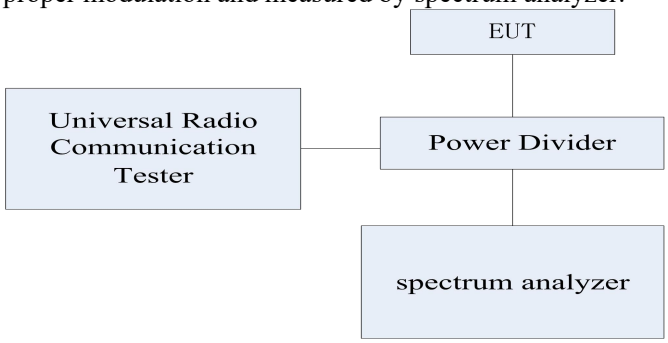
According to Part 27.50(d), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz Band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz Bands are limited to 1 watt EIRP.

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	0.62 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Telecommunications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

1) The EUT was coupled to the spectrum analyzer and the Wireless Telecommunications Test Set through

a power divider. The loss of the RF cables of the test system is calibrated to correct the readings.

2) For RMS power test, the spectrum analyzer was set to RMS Detector function and Maximum hold mode.

3) For Peak power test, the spectrum analyzer was set to Maxpeak Detector function and Maximum hold mode.

4) The resolution Bandwidth of the spectrum analyzer was comparable to the emission Bandwidth.

Note: --

6.2.1 Conducted RF Power Output Results

LTE Band 2

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Peak Power (dBm)
1.4MHz	1 RB low	1850.7	QPSK	23.40	27.90
1.4MHz	1 RB mid	1850.7	QPSK	23.53	27.94
1.4MHz	1 RB high	1850.7	QPSK	23.51	27.96
1.4MHz	100% RB	1850.7	QPSK	22.52	27.87
1.4MHz	1 RB low	1850.7	16QAM	22.87	28.06
1.4MHz	1 RB mid	1850.7	16QAM	22.98	28.03
1.4MHz	1 RB high	1850.7	16QAM	22.71	27.97
1.4MHz	100% RB	1850.7	16QAM	21.59	27.91
1.4MHz	1 RB low	1880	QPSK	24.23	28.57
1.4MHz	1 RB mid	1880	QPSK	24.21	28.47
1.4MHz	1 RB high	1880	QPSK	24.05	28.40
1.4MHz	100% RB	1880	QPSK	22.96	28.55
1.4MHz	1 RB low	1880	16QAM	23.43	28.70
1.4MHz	1 RB mid	1880	16QAM	23.27	28.55
1.4MHz	1 RB high	1880	16QAM	23.02	28.44
1.4MHz	100% RB	1880	16QAM	21.89	28.01
1.4MHz	1 RB low	1909.3	QPSK	23.39	27.05
1.4MHz	1 RB mid	1909.3	QPSK	23.24	26.80
1.4MHz	1 RB high	1909.3	QPSK	23.13	26.66
1.4MHz	100% RB	1909.3	QPSK	22.95	27.51
1.4MHz	1 RB low	1909.3	16QAM	22.53	27.05
1.4MHz	1 RB mid	1909.3	16QAM	22.54	26.81
1.4MHz	1 RB high	1909.3	16QAM	22.39	26.73
1.4MHz	100% RB	1909.3	16QAM	21.92	27.50
3MHz	1 RB low	1851.5	QPSK	23.61	28.05
3MHz	1 RB mid	1851.5	QPSK	23.63	27.92
3MHz	1 RB high	1851.5	QPSK	23.63	27.96
3MHz	100% RB	1851.5	QPSK	22.54	28.11
3MHz	1 RB low	1851.5	16QAM	22.46	27.74
3MHz	1 RB mid	1851.5	16QAM	22.31	27.54
3MHz	1 RB high	1851.5	16QAM	22.41	27.68
3MHz	100% RB	1851.5	16QAM	21.24	27.56
3MHz	1 RB low	1880	QPSK	23.92	28.35

3MHz	1 RB mid	1880	QPSK	23.72	28.13
3MHz	1 RB high	1880	QPSK	24.03	28.36
3MHz	100% RB	1880	QPSK	22.96	28.27
3MHz	1 RB low	1880	16QAM	23.47	28.69
3MHz	1 RB mid	1880	16QAM	23.29	28.52
3MHz	1 RB high	1880	16QAM	23.27	28.54
3MHz	100% RB	1880	16QAM	21.95	28.59
3MHz	1 RB low	1908.5	QPSK	23.56	27.41
3MHz	1 RB mid	1908.5	QPSK	23.29	26.93
3MHz	1 RB high	1908.5	QPSK	23.00	26.57
3MHz	100% RB	1908.5	QPSK	22.92	27.73
3MHz	1 RB low	1908.5	16QAM	22.72	27.36
3MHz	1 RB mid	1908.5	16QAM	22.56	26.97
3MHz	1 RB high	1908.5	16QAM	22.23	26.63
3MHz	100% RB	1908.5	16QAM	21.84	27.65
5MHz	1 RB low	1852.5	QPSK	23.48	27.86
5MHz	1 RB mid	1852.5	QPSK	23.35	27.69
5MHz	1 RB high	1852.5	QPSK	23.54	27.87
5MHz	100% RB	1852.5	QPSK	22.35	27.83
5MHz	1 RB low	1852.5	16QAM	22.18	27.68
5MHz	1 RB mid	1852.5	16QAM	22.20	27.55
5MHz	1 RB high	1852.5	16QAM	22.28	27.68
5MHz	100% RB	1852.5	16QAM	21.18	27.52
5MHz	1 RB low	1880	QPSK	23.75	28.22
5MHz	1 RB mid	1880	QPSK	23.76	28.13
5MHz	1 RB high	1880	QPSK	23.95	28.25
5MHz	100% RB	1880	QPSK	23.10	28.50
5MHz	1 RB low	1880	16QAM	23.14	28.45
5MHz	1 RB mid	1880	16QAM	23.39	28.48
5MHz	1 RB high	1880	16QAM	23.17	28.38
5MHz	100% RB	1880	16QAM	22.23	28.33
5MHz	1 RB low	1907.5	QPSK	23.68	27.64
5MHz	1 RB mid	1907.5	QPSK	23.53	27.21
5MHz	1 RB high	1907.5	QPSK	22.94	26.55
5MHz	100% RB	1907.5	QPSK	22.86	27.93
5MHz	1 RB low	1907.5	16QAM	22.82	27.52
5MHz	1 RB mid	1907.5	16QAM	22.81	27.22
5MHz	1 RB high	1907.5	16QAM	22.24	26.56

5MHz	100% RB	1907.5	16QAM	21.88	27.80
10MHz	1 RB low	1855	QPSK	23.65	28.11
10MHz	1 RB mid	1855	QPSK	23.74	28.03
10MHz	1 RB high	1855	QPSK	23.59	28.05
10MHz	100% RB	1855	QPSK	22.52	28.59
10MHz	1 RB low	1855	16QAM	22.64	27.88
10MHz	1 RB mid	1855	16QAM	22.66	27.78
10MHz	1 RB high	1855	16QAM	22.69	27.94
10MHz	100% RB	1855	16QAM	21.59	28.13
10MHz	1 RB low	1880	QPSK	23.88	28.41
10MHz	1 RB mid	1880	QPSK	24.07	28.40
10MHz	1 RB high	1880	QPSK	24.06	28.32
10MHz	100% RB	1880	QPSK	23.19	28.76
10MHz	1 RB low	1880	16QAM	22.87	28.45
10MHz	1 RB mid	1880	16QAM	23.40	28.63
10MHz	1 RB high	1880	16QAM	23.10	28.36
10MHz	100% RB	1880	16QAM	22.23	28.64
10MHz	1 RB low	1905	QPSK	23.83	27.85
10MHz	1 RB mid	1905	QPSK	23.84	27.75
10MHz	1 RB high	1905	QPSK	22.26	26.36
10MHz	100% RB	1905	QPSK	23.11	28.13
10MHz	1 RB low	1905	16QAM	23.02	27.79
10MHz	1 RB mid	1905	16QAM	23.13	27.75
10MHz	1 RB high	1905	16QAM	21.55	26.44
10MHz	100% RB	1905	16QAM	21.99	27.87
15MHz	1 RB low	1857.5	QPSK	23.60	28.09
15MHz	1 RB mid	1857.5	QPSK	23.51	27.95
15MHz	1 RB high	1857.5	QPSK	23.77	28.29
15MHz	100% RB	1857.5	QPSK	22.70	28.20
15MHz	1 RB low	1857.5	16QAM	22.53	27.84
15MHz	1 RB mid	1857.5	16QAM	22.77	27.92
15MHz	1 RB high	1857.5	16QAM	22.51	27.96
15MHz	100% RB	1857.5	16QAM	21.71	28.07
15MHz	1 RB low	1880	QPSK	23.89	28.40
15MHz	1 RB mid	1880	QPSK	24.22	28.49
15MHz	1 RB high	1880	QPSK	23.87	28.06
15MHz	100% RB	1880	QPSK	23.11	28.64
15MHz	1 RB low	1880	16QAM	22.67	28.33

15MHz	1 RB mid	1880	16QAM	23.36	28.57
15MHz	1 RB high	1880	16QAM	22.87	28.11
15MHz	100% RB	1880	16QAM	22.03	28.37
15MHz	1 RB low	1902.5	QPSK	23.99	27.86
15MHz	1 RB mid	1902.5	QPSK	23.65	27.63
15MHz	1 RB high	1902.5	QPSK	21.90	26.13
15MHz	100% RB	1902.5	QPSK	22.93	28.21
15MHz	1 RB low	1902.5	16QAM	23.24	27.83
15MHz	1 RB mid	1902.5	16QAM	22.99	27.68
15MHz	1 RB high	1902.5	16QAM	21.31	26.21
15MHz	100% RB	1902.5	16QAM	21.97	28.02
20MHz	1 RB low	1860	QPSK	23.48	27.94
20MHz	1 RB mid	1860	QPSK	24.00	28.27
20MHz	1 RB high	1860	QPSK	23.69	28.21
20MHz	100% RB	1860	QPSK	22.74	28.16
20MHz	1 RB low	1860	16QAM	23.15	28.28
20MHz	1 RB mid	1860	16QAM	23.44	28.38
20MHz	1 RB high	1860	16QAM	23.04	28.40
20MHz	100% RB	1860	16QAM	21.75	27.93
20MHz	1 RB low	1880	QPSK	23.55	28.22
20MHz	1 RB mid	1880	QPSK	24.30	28.56
20MHz	1 RB high	1880	QPSK	23.70	27.94
20MHz	100% RB	1880	QPSK	23.09	28.62
20MHz	1 RB low	1880	16QAM	22.56	27.87
20MHz	1 RB mid	1880	16QAM	23.03	28.05
20MHz	1 RB high	1880	16QAM	22.78	27.67
20MHz	100% RB	1880	16QAM	22.06	28.22
20MHz	1 RB low	1900	QPSK	23.95	27.92
20MHz	1 RB mid	1900	QPSK	24.26	27.87
20MHz	1 RB high	1900	QPSK	21.72	26.00
20MHz	100% RB	1900	QPSK	23.09	28.31
20MHz	1 RB low	1900	16QAM	23.15	27.94
20MHz	1 RB mid	1900	16QAM	23.58	27.97
20MHz	1 RB high	1900	16QAM	21.02	26.12
20MHz	100% RB	1900	16QAM	22.00	28.27

LTE band 4

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Peak Power (dBm)
1.4MHz	1 RB low	1710.7	QPSK	22.56	27.06
1.4MHz	1 RB mid	1710.7	QPSK	22.59	27.05
1.4MHz	1 RB high	1710.7	QPSK	22.48	27.06
1.4MHz	100% RB	1710.7	QPSK	21.63	27.16
1.4MHz	1 RB low	1710.7	16QAM	21.59	27.15
1.4MHz	1 RB mid	1710.7	16QAM	21.57	27.10
1.4MHz	1 RB high	1710.7	16QAM	21.44	27.12
1.4MHz	100% RB	1710.7	16QAM	20.89	27.02
1.4MHz	1 RB low	1732.5	QPSK	22.28	27.11
1.4MHz	1 RB mid	1732.5	QPSK	22.40	27.12
1.4MHz	1 RB high	1732.5	QPSK	22.30	27.04
1.4MHz	100% RB	1732.5	QPSK	21.19	26.75
1.4MHz	1 RB low	1732.5	16QAM	21.29	27.05
1.4MHz	1 RB mid	1732.5	16QAM	21.52	27.05
1.4MHz	1 RB high	1732.5	16QAM	21.36	27.02
1.4MHz	100% RB	1732.5	16QAM	20.09	26.64
1.4MHz	1 RB low	1754.3	QPSK	22.40	26.46
1.4MHz	1 RB mid	1754.3	QPSK	22.32	26.42
1.4MHz	1 RB high	1754.3	QPSK	22.49	26.56
1.4MHz	100% RB	1754.3	QPSK	21.16	26.37
1.4MHz	1 RB low	1754.3	16QAM	21.26	26.31
1.4MHz	1 RB mid	1754.3	16QAM	21.59	26.45
1.4MHz	1 RB high	1754.3	16QAM	21.43	26.45
1.4MHz	100% RB	1754.3	16QAM	20.39	26.55
3MHz	1 RB low	1711.5	QPSK	22.75	27.27
3MHz	1 RB mid	1711.5	QPSK	22.55	27.12
3MHz	1 RB high	1711.5	QPSK	22.75	27.41
3MHz	100% RB	1711.5	QPSK	21.50	27.03
3MHz	1 RB low	1711.5	16QAM	21.62	27.04
3MHz	1 RB mid	1711.5	16QAM	21.53	26.94
3MHz	1 RB high	1711.5	16QAM	21.51	27.09
3MHz	100% RB	1711.5	16QAM	20.45	26.95
3MHz	1 RB low	1732.5	QPSK	22.51	27.40
3MHz	1 RB mid	1732.5	QPSK	22.24	26.95
3MHz	1 RB high	1732.5	QPSK	22.39	27.19
3MHz	100% RB	1732.5	QPSK	21.24	26.79

3MHz	1 RB low	1732.5	16QAM	21.31	27.34
3MHz	1 RB mid	1732.5	16QAM	21.44	27.23
3MHz	1 RB high	1732.5	16QAM	21.55	27.43
3MHz	100% RB	1732.5	16QAM	20.51	27.35
3MHz	1 RB low	1753.5	QPSK	22.05	26.24
3MHz	1 RB mid	1753.5	QPSK	22.15	26.29
3MHz	1 RB high	1753.5	QPSK	22.30	26.51
3MHz	100% RB	1753.5	QPSK	21.14	26.29
3MHz	1 RB low	1753.5	16QAM	21.40	26.30
3MHz	1 RB mid	1753.5	16QAM	20.99	26.10
3MHz	1 RB high	1753.5	16QAM	21.46	26.52
3MHz	100% RB	1753.5	16QAM	20.16	26.42
5MHz	1 RB low	1712.5	QPSK	22.85	27.26
5MHz	1 RB mid	1712.5	QPSK	22.65	27.23
5MHz	1 RB high	1712.5	QPSK	22.61	27.34
5MHz	100% RB	1712.5	QPSK	21.77	27.41
5MHz	1 RB low	1712.5	16QAM	21.29	26.91
5MHz	1 RB mid	1712.5	16QAM	20.94	26.67
5MHz	1 RB high	1712.5	16QAM	21.42	27.20
5MHz	100% RB	1712.5	16QAM	20.74	27.24
5MHz	1 RB low	1732.5	QPSK	22.58	27.38
5MHz	1 RB mid	1732.5	QPSK	22.49	27.17
5MHz	1 RB high	1732.5	QPSK	22.52	27.21
5MHz	100% RB	1732.5	QPSK	21.28	27.03
5MHz	1 RB low	1732.5	16QAM	21.85	27.69
5MHz	1 RB mid	1732.5	16QAM	21.60	27.20
5MHz	1 RB high	1732.5	16QAM	21.64	27.32
5MHz	100% RB	1732.5	16QAM	20.43	26.79
5MHz	1 RB low	1752.5	QPSK	22.13	26.22
5MHz	1 RB mid	1752.5	QPSK	22.05	26.15
5MHz	1 RB high	1752.5	QPSK	22.12	26.36
5MHz	100% RB	1752.5	QPSK	21.10	26.41
5MHz	1 RB low	1752.5	16QAM	21.46	26.23
5MHz	1 RB mid	1752.5	16QAM	21.13	26.04
5MHz	1 RB high	1752.5	16QAM	21.32	26.31
5MHz	100% RB	1752.5	16QAM	20.15	26.41
10MHz	1 RB low	1715	QPSK	22.68	27.26
10MHz	1 RB mid	1715	QPSK	22.74	27.47

10MHz	1 RB high	1715	QPSK	21.73	26.75
10MHz	100% RB	1715	QPSK	21.95	28.39
10MHz	1 RB low	1715	16QAM	21.65	27.05
10MHz	1 RB mid	1715	16QAM	21.70	27.24
10MHz	1 RB high	1715	16QAM	20.84	26.63
10MHz	100% RB	1715	16QAM	20.78	27.21
10MHz	1 RB low	1732.5	QPSK	22.49	27.41
10MHz	1 RB mid	1732.5	QPSK	22.60	27.39
10MHz	1 RB high	1732.5	QPSK	22.39	27.05
10MHz	100% RB	1732.5	QPSK	21.40	27.51
10MHz	1 RB low	1732.5	16QAM	21.64	27.74
10MHz	1 RB mid	1732.5	16QAM	21.55	27.45
10MHz	1 RB high	1732.5	16QAM	21.47	27.19
10MHz	100% RB	1732.5	16QAM	20.40	27.13
10MHz	1 RB low	1750	QPSK	22.30	26.44
10MHz	1 RB mid	1750	QPSK	21.97	26.14
10MHz	1 RB high	1750	QPSK	22.17	26.46
10MHz	100% RB	1750	QPSK	21.17	26.62
10MHz	1 RB low	1750	16QAM	21.30	26.36
10MHz	1 RB mid	1750	16QAM	21.21	26.14
10MHz	1 RB high	1750	16QAM	21.45	26.51
10MHz	100% RB	1750	16QAM	20.41	26.58
15MHz	1 RB low	1717.5	QPSK	22.54	27.19
15MHz	1 RB mid	1717.5	QPSK	22.52	27.42
15MHz	1 RB high	1717.5	QPSK	22.32	27.32
15MHz	100% RB	1717.5	QPSK	21.63	27.68
15MHz	1 RB low	1717.5	16QAM	21.28	26.84
15MHz	1 RB mid	1717.5	16QAM	21.39	27.08
15MHz	1 RB high	1717.5	16QAM	21.39	27.13
15MHz	100% RB	1717.5	16QAM	20.42	27.35
15MHz	1 RB low	1732.5	QPSK	22.39	27.35
15MHz	1 RB mid	1732.5	QPSK	22.14	26.94
15MHz	1 RB high	1732.5	QPSK	22.21	26.75
15MHz	100% RB	1732.5	QPSK	21.22	26.97
15MHz	1 RB low	1732.5	16QAM	21.35	27.50
15MHz	1 RB mid	1732.5	16QAM	21.50	27.36
15MHz	1 RB high	1732.5	16QAM	21.51	27.02
15MHz	100% RB	1732.5	16QAM	20.33	26.93

15MHz	1 RB low	1747.5	QPSK	22.18	26.63
15MHz	1 RB mid	1747.5	QPSK	21.75	26.04
15MHz	1 RB high	1747.5	QPSK	21.99	26.35
15MHz	100% RB	1747.5	QPSK	21.18	26.56
15MHz	1 RB low	1747.5	16QAM	21.09	26.42
15MHz	1 RB mid	1747.5	16QAM	20.90	25.98
15MHz	1 RB high	1747.5	16QAM	20.31	25.72
15MHz	100% RB	1747.5	16QAM	20.12	26.53
20MHz	1 RB low	1720	QPSK	22.22	26.94
20MHz	1 RB mid	1720	QPSK	22.74	27.63
20MHz	1 RB high	1720	QPSK	22.74	27.54
20MHz	100% RB	1720	QPSK	21.42	27.25
20MHz	1 RB low	1720	16QAM	20.91	26.67
20MHz	1 RB mid	1720	16QAM	21.59	27.37
20MHz	1 RB high	1720	16QAM	22.06	27.89
20MHz	100% RB	1720	16QAM	20.53	27.53
20MHz	1 RB low	1732.5	QPSK	21.51	26.64
20MHz	1 RB mid	1732.5	QPSK	22.56	27.48
20MHz	1 RB high	1732.5	QPSK	22.35	26.76
20MHz	100% RB	1732.5	QPSK	21.35	26.77
20MHz	1 RB low	1732.5	16QAM	20.63	26.24
20MHz	1 RB mid	1732.5	16QAM	21.20	26.57
20MHz	1 RB high	1732.5	16QAM	21.14	26.31
20MHz	100% RB	1732.5	16QAM	20.36	27.58
20MHz	1 RB low	1745	QPSK	22.26	26.92
20MHz	1 RB mid	1745	QPSK	22.32	26.38
20MHz	1 RB high	1745	QPSK	22.19	26.43
20MHz	100% RB	1745	QPSK	21.19	26.33
20MHz	1 RB low	1745	16QAM	21.76	27.22
20MHz	1 RB mid	1745	16QAM	21.59	26.46
20MHz	1 RB high	1745	16QAM	21.92	26.70
20MHz	100% RB	1745	16QAM	20.27	26.56

LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Peak Power (dBm)
1.4MHz	1 RB low	824.7	QPSK	24.88	28.41
1.4MHz	1 RB mid	824.7	QPSK	24.96	28.45
1.4MHz	1 RB high	824.7	QPSK	25.02	28.55
1.4MHz	100% RB	824.7	QPSK	23.92	28.62
1.4MHz	1 RB low	824.7	16QAM	24.17	28.45
1.4MHz	1 RB mid	824.7	16QAM	24.23	28.49
1.4MHz	1 RB high	824.7	16QAM	24.00	28.46
1.4MHz	100% RB	824.7	16QAM	22.92	28.62
1.4MHz	1 RB low	836.5	QPSK	24.59	28.69
1.4MHz	1 RB mid	836.5	QPSK	24.80	28.71
1.4MHz	1 RB high	836.5	QPSK	24.84	28.76
1.4MHz	100% RB	836.5	QPSK	23.85	29.14
1.4MHz	1 RB low	836.5	16QAM	24.26	29.11
1.4MHz	1 RB mid	836.5	16QAM	24.14	28.92
1.4MHz	1 RB high	836.5	16QAM	23.89	28.81
1.4MHz	100% RB	836.5	16QAM	23.09	28.81
1.4MHz	1 RB low	848.3	QPSK	25.07	28.91
1.4MHz	1 RB mid	848.3	QPSK	24.89	28.86
1.4MHz	1 RB high	848.3	QPSK	24.95	28.92
1.4MHz	100% RB	848.3	QPSK	23.98	29.13
1.4MHz	1 RB low	848.3	16QAM	24.01	28.80
1.4MHz	1 RB mid	848.3	16QAM	24.15	28.84
1.4MHz	1 RB high	848.3	16QAM	23.97	28.83
1.4MHz	100% RB	848.3	16QAM	22.81	28.92
3MHz	1 RB low	825.5	QPSK	24.83	28.46
3MHz	1 RB mid	825.5	QPSK	24.62	28.43
3MHz	1 RB high	825.5	QPSK	24.69	28.68
3MHz	100% RB	825.5	QPSK	23.94	28.81
3MHz	1 RB low	825.5	16QAM	23.87	28.28
3MHz	1 RB mid	825.5	16QAM	23.84	28.38
3MHz	1 RB high	825.5	16QAM	23.81	28.58
3MHz	100% RB	825.5	16QAM	22.81	28.60
3MHz	1 RB low	836.5	QPSK	24.78	28.90
3MHz	1 RB mid	836.5	QPSK	24.70	28.61
3MHz	1 RB high	836.5	QPSK	24.65	28.58
3MHz	100% RB	836.5	QPSK	23.80	28.83

3MHz	1 RB low	836.5	16QAM	23.97	29.06
3MHz	1 RB mid	836.5	16QAM	24.03	28.84
3MHz	1 RB high	836.5	16QAM	23.99	28.80
3MHz	100% RB	836.5	16QAM	22.64	29.05
3MHz	1 RB low	847.5	QPSK	25.08	28.78
3MHz	1 RB mid	847.5	QPSK	24.87	28.74
3MHz	1 RB high	847.5	QPSK	25.09	29.03
3MHz	100% RB	847.5	QPSK	24.08	29.03
3MHz	1 RB low	847.5	16QAM	24.32	28.76
3MHz	1 RB mid	847.5	16QAM	23.92	28.64
3MHz	1 RB high	847.5	16QAM	23.83	28.78
3MHz	100% RB	847.5	16QAM	22.82	28.71
5MHz	1 RB low	826.5	QPSK	24.76	28.38
5MHz	1 RB mid	826.5	QPSK	24.68	28.55
5MHz	1 RB high	826.5	QPSK	24.54	28.76
5MHz	100% RB	826.5	QPSK	23.88	28.99
5MHz	1 RB low	826.5	16QAM	23.39	28.14
5MHz	1 RB mid	826.5	16QAM	23.27	28.25
5MHz	1 RB high	826.5	16QAM	23.05	28.35
5MHz	100% RB	826.5	16QAM	22.73	28.83
5MHz	1 RB low	836.5	QPSK	24.58	28.75
5MHz	1 RB mid	836.5	QPSK	24.77	28.63
5MHz	1 RB high	836.5	QPSK	24.71	28.53
5MHz	100% RB	836.5	QPSK	23.79	29.05
5MHz	1 RB low	836.5	16QAM	23.87	28.93
5MHz	1 RB mid	836.5	16QAM	24.12	28.81
5MHz	1 RB high	836.5	16QAM	24.23	28.78
5MHz	100% RB	836.5	16QAM	22.91	28.74
5MHz	1 RB low	846.5	QPSK	25.04	28.61
5MHz	1 RB mid	846.5	QPSK	24.97	28.66
5MHz	1 RB high	846.5	QPSK	24.97	28.92
5MHz	100% RB	846.5	QPSK	24.00	29.17
5MHz	1 RB low	846.5	16QAM	24.05	28.42
5MHz	1 RB mid	846.5	16QAM	23.79	28.37
5MHz	1 RB high	846.5	16QAM	23.92	28.66
5MHz	100% RB	846.5	16QAM	22.78	28.76
10MHz	1 RB low	829	QPSK	24.78	28.50
10MHz	1 RB mid	829	QPSK	24.63	28.88

10MHz	1 RB high	829	QPSK	24.39	28.76
10MHz	100% RB	829	QPSK	23.92	29.45
10MHz	1 RB low	829	16QAM	24.66	28.71
10MHz	1 RB mid	829	16QAM	23.33	28.42
10MHz	1 RB high	829	16QAM	23.51	28.60
10MHz	100% RB	829	16QAM	22.66	29.16
10MHz	1 RB low	836.5	QPSK	24.67	28.99
10MHz	1 RB mid	836.5	QPSK	25.06	28.92
10MHz	1 RB high	836.5	QPSK	24.94	28.64
10MHz	100% RB	836.5	QPSK	23.79	28.66
10MHz	1 RB low	836.5	16QAM	24.14	29.39
10MHz	1 RB mid	836.5	16QAM	24.05	28.90
10MHz	1 RB high	836.5	16QAM	24.07	28.69
10MHz	100% RB	836.5	16QAM	22.77	28.53
10MHz	1 RB low	844	QPSK	24.92	28.69
10MHz	1 RB mid	844	QPSK	24.83	28.49
10MHz	1 RB high	844	QPSK	25.10	29.01
10MHz	100% RB	844	QPSK	23.94	29.21
10MHz	1 RB low	844	16QAM	24.41	28.81
10MHz	1 RB mid	844	16QAM	23.99	28.43
10MHz	1 RB high	844	16QAM	23.82	28.73
10MHz	100% RB	844	16QAM	22.77	28.59

LTE band 28

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Peak Power (dBm)
3MHz	1 RB low	704.5	QPSK	22.94	27.26
3MHz	1 RB mid	704.5	QPSK	23.04	27.29
3MHz	1 RB high	704.5	QPSK	22.96	27.38
3MHz	100% RB	704.5	QPSK	21.89	27.12
3MHz	1 RB low	704.5	16QAM	22.04	27.36
3MHz	1 RB mid	704.5	16QAM	22.36	27.59
3MHz	1 RB high	704.5	16QAM	22.93	28.12
3MHz	100% RB	704.5	16QAM	21.08	27.42
3MHz	1 RB low	719.5	QPSK	23.34	27.54
3MHz	1 RB mid	719.5	QPSK	22.87	27.17
3MHz	1 RB high	719.5	QPSK	23.34	27.63
3MHz	100% RB	719.5	QPSK	22.00	27.10
3MHz	1 RB low	719.5	16QAM	22.26	27.32
3MHz	1 RB mid	719.5	16QAM	21.77	26.94
3MHz	1 RB high	719.5	16QAM	21.72	27.02
3MHz	100% RB	719.5	16QAM	20.85	27.27
3MHz	1 RB low	746.5	QPSK	23.37	27.15
3MHz	1 RB mid	746.5	QPSK	23.25	27.10
3MHz	1 RB high	746.5	QPSK	23.31	27.40
3MHz	100% RB	746.5	QPSK	22.18	27.32
3MHz	1 RB low	746.5	16QAM	22.32	26.92
3MHz	1 RB mid	746.5	16QAM	22.31	26.94
3MHz	1 RB high	746.5	16QAM	22.27	27.15
3MHz	100% RB	746.5	16QAM	21.20	27.07
5MHz	1 RB low	705.5	QPSK	23.02	27.27
5MHz	1 RB mid	705.5	QPSK	22.96	27.24
5MHz	1 RB high	705.5	QPSK	23.00	27.37
5MHz	100% RB	705.5	QPSK	21.97	27.31
5MHz	1 RB low	705.5	16QAM	21.76	27.02
5MHz	1 RB mid	705.5	16QAM	21.74	27.00
5MHz	1 RB high	705.5	16QAM	21.69	27.06
5MHz	100% RB	705.5	16QAM	20.84	26.88
5MHz	1 RB low	720.5	QPSK	22.93	27.18
5MHz	1 RB mid	720.5	QPSK	22.87	27.10
5MHz	1 RB high	720.5	QPSK	22.89	27.14
5MHz	100% RB	720.5	QPSK	21.92	27.21

5MHz	1 RB low	720.5	16QAM	22.32	27.44
5MHz	1 RB mid	720.5	16QAM	22.09	27.26
5MHz	1 RB high	720.5	16QAM	22.03	27.20
5MHz	100% RB	720.5	16QAM	21.03	27.31
5MHz	1 RB low	745.5	QPSK	22.91	26.94
5MHz	1 RB mid	745.5	QPSK	23.41	27.05
5MHz	1 RB high	745.5	QPSK	23.27	27.27
5MHz	100% RB	745.5	QPSK	22.31	27.47
5MHz	1 RB low	745.5	16QAM	22.36	26.99
5MHz	1 RB mid	745.5	16QAM	22.51	26.89
5MHz	1 RB high	745.5	16QAM	22.43	27.12
5MHz	100% RB	745.5	16QAM	21.12	27.09
10MHz	1 RB low	708	QPSK	22.98	27.38
10MHz	1 RB mid	708	QPSK	23.18	27.55
10MHz	1 RB high	708	QPSK	22.82	27.24
10MHz	100% RB	708	QPSK	21.97	26.94
10MHz	1 RB low	708	16QAM	21.98	27.13
10MHz	1 RB mid	708	16QAM	22.03	27.16
10MHz	1 RB high	708	16QAM	21.64	26.79
10MHz	100% RB	708	16QAM	20.71	27.31
10MHz	1 RB low	723	QPSK	22.93	27.28
10MHz	1 RB mid	723	QPSK	22.84	27.07
10MHz	1 RB high	723	QPSK	23.08	26.92
10MHz	100% RB	723	QPSK	21.91	27.67
10MHz	1 RB low	723	16QAM	22.87	28.01
10MHz	1 RB mid	723	16QAM	22.77	27.71
10MHz	1 RB high	723	16QAM	22.30	27.04
10MHz	100% RB	723	16QAM	20.83	27.08
10MHz	1 RB low	743	QPSK	23.00	27.47
10MHz	1 RB mid	743	QPSK	23.11	27.09
10MHz	1 RB high	743	QPSK	23.28	27.30
10MHz	100% RB	743	QPSK	22.13	27.19
10MHz	1 RB low	743	16QAM	22.08	27.35
10MHz	1 RB mid	743	16QAM	22.38	27.11
10MHz	1 RB high	743	16QAM	22.58	27.33
10MHz	100% RB	743	16QAM	20.89	27.03
15MHz	1 RB low	710.5	QPSK	23.18	27.53
15MHz	1 RB mid	710.5	QPSK	22.91	27.31

15MHz	1 RB high	710.5	QPSK	22.60	27.09
15MHz	100% RB	710.5	QPSK	21.87	27.33
15MHz	1 RB low	710.5	16QAM	22.04	27.21
15MHz	1 RB mid	710.5	16QAM	21.90	27.01
15MHz	1 RB high	710.5	16QAM	21.82	27.00
15MHz	100% RB	710.5	16QAM	20.72	27.23
15MHz	1 RB low	725.5	QPSK	23.14	27.50
15MHz	1 RB mid	725.5	QPSK	22.83	26.84
15MHz	1 RB high	725.5	QPSK	23.03	26.96
15MHz	100% RB	725.5	QPSK	22.00	27.59
15MHz	1 RB low	725.5	16QAM	22.41	27.70
15MHz	1 RB mid	725.5	16QAM	22.07	27.01
15MHz	1 RB high	725.5	16QAM	22.14	27.03
15MHz	100% RB	725.5	16QAM	20.82	27.17
15MHz	1 RB low	740.5	QPSK	23.19	27.38
15MHz	1 RB mid	740.5	QPSK	22.84	27.15
15MHz	1 RB high	740.5	QPSK	22.99	27.05
15MHz	100% RB	740.5	QPSK	22.12	27.82
15MHz	1 RB low	740.5	16QAM	22.45	27.34
15MHz	1 RB mid	740.5	16QAM	21.17	26.34
15MHz	1 RB high	740.5	16QAM	21.66	26.60
15MHz	100% RB	740.5	16QAM	20.99	27.33
20MHz	1 RB low	713	QPSK	22.74	27.11
20MHz	1 RB mid	713	QPSK	22.98	27.23
20MHz	1 RB high	713	QPSK	22.90	27.27
20MHz	100% RB	713	QPSK	21.80	27.62
20MHz	1 RB low	713	16QAM	21.82	27.10
20MHz	1 RB mid	713	16QAM	22.07	27.24
20MHz	1 RB high	713	16QAM	22.16	27.43
20MHz	100% RB	713	16QAM	20.73	27.45
20MHz	1 RB low	728	QPSK	22.89	27.37
20MHz	1 RB mid	728	QPSK	23.13	26.96
20MHz	1 RB high	728	QPSK	22.77	27.31
20MHz	100% RB	728	QPSK	21.98	27.17
20MHz	1 RB low	728	16QAM	21.34	26.45
20MHz	1 RB mid	728	16QAM	21.87	26.43
20MHz	1 RB high	728	16QAM	21.24	26.38
20MHz	100% RB	728	16QAM	21.00	27.63

20MHz	1 RB low	738	QPSK	23.02	26.86
20MHz	1 RB mid	738	QPSK	22.93	27.32
20MHz	1 RB high	738	QPSK	23.05	27.01
20MHz	100% RB	738	QPSK	22.03	27.40
20MHz	1 RB low	738	16QAM	22.66	27.12
20MHz	1 RB mid	738	16QAM	22.58	27.69
20MHz	1 RB high	738	16QAM	22.44	27.11
20MHz	100% RB	738	16QAM	21.02	27.18

LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Peak Power (dBm)
1.4MHz	1 RB low	1710.7	QPSK	23.23	27.59
1.4MHz	1 RB mid	1710.7	QPSK	23.19	27.55
1.4MHz	1 RB high	1710.7	QPSK	23.08	27.56
1.4MHz	100% RB	1710.7	QPSK	23.03	28.39
1.4MHz	1 RB low	1710.7	16QAM	22.17	27.62
1.4MHz	1 RB mid	1710.7	16QAM	22.18	27.60
1.4MHz	1 RB high	1710.7	16QAM	22.06	27.61
1.4MHz	100% RB	1710.7	16QAM	22.22	28.06
1.4MHz	1 RB low	1745	QPSK	24.53	27.50
1.4MHz	1 RB mid	1745	QPSK	24.58	27.50
1.4MHz	1 RB high	1745	QPSK	24.52	27.47
1.4MHz	100% RB	1745	QPSK	23.42	27.87
1.4MHz	1 RB low	1745	16QAM	23.32	27.34
1.4MHz	1 RB mid	1745	16QAM	23.49	27.32
1.4MHz	1 RB high	1745	16QAM	23.27	27.29
1.4MHz	100% RB	1745	16QAM	22.24	27.81
1.4MHz	1 RB low	1779.3	QPSK	24.81	28.86
1.4MHz	1 RB mid	1779.3	QPSK	24.91	28.76
1.4MHz	1 RB high	1779.3	QPSK	24.96	28.76
1.4MHz	100% RB	1779.3	QPSK	23.79	28.81
1.4MHz	1 RB low	1779.3	16QAM	23.91	28.83
1.4MHz	1 RB mid	1779.3	16QAM	24.10	28.77
1.4MHz	1 RB high	1779.3	16QAM	24.07	28.79
1.4MHz	100% RB	1779.3	16QAM	22.74	28.85
3MHz	1 RB low	1711.5	QPSK	23.59	27.85
3MHz	1 RB mid	1711.5	QPSK	23.42	27.78
3MHz	1 RB high	1711.5	QPSK	23.15	27.77
3MHz	100% RB	1711.5	QPSK	23.29	28.44
3MHz	1 RB low	1711.5	16QAM	22.73	27.79
3MHz	1 RB mid	1711.5	16QAM	22.57	27.72
3MHz	1 RB high	1711.5	16QAM	22.28	27.71
3MHz	100% RB	1711.5	16QAM	22.35	28.37
3MHz	1 RB low	1745	QPSK	24.42	27.57
3MHz	1 RB mid	1745	QPSK	24.21	27.38
3MHz	1 RB high	1745	QPSK	24.10	27.34
3MHz	100% RB	1745	QPSK	23.37	28.00

3MHz	1 RB low	1745	16QAM	23.61	27.63
3MHz	1 RB mid	1745	16QAM	23.53	27.47
3MHz	1 RB high	1745	16QAM	23.93	27.66
3MHz	100% RB	1745	16QAM	22.42	28.16
3MHz	1 RB low	1778.5	QPSK	24.41	28.85
3MHz	1 RB mid	1778.5	QPSK	24.90	28.92
3MHz	1 RB high	1778.5	QPSK	25.06	28.86
3MHz	100% RB	1778.5	QPSK	24.01	29.06
3MHz	1 RB low	1778.5	16QAM	23.45	28.76
3MHz	1 RB mid	1778.5	16QAM	24.04	28.90
3MHz	1 RB high	1778.5	16QAM	24.16	28.82
3MHz	100% RB	1778.5	16QAM	22.59	29.11
5MHz	1 RB low	1712.5	QPSK	23.60	27.80
5MHz	1 RB mid	1712.5	QPSK	23.36	27.79
5MHz	1 RB high	1712.5	QPSK	22.91	27.66
5MHz	100% RB	1712.5	QPSK	23.12	28.43
5MHz	1 RB low	1712.5	16QAM	22.53	27.76
5MHz	1 RB mid	1712.5	16QAM	22.34	27.76
5MHz	1 RB high	1712.5	16QAM	21.91	27.65
5MHz	100% RB	1712.5	16QAM	22.18	28.49
5MHz	1 RB low	1745	QPSK	24.54	27.67
5MHz	1 RB mid	1745	QPSK	24.25	27.38
5MHz	1 RB high	1745	QPSK	24.60	27.51
5MHz	100% RB	1745	QPSK	23.37	28.06
5MHz	1 RB low	1745	16QAM	23.78	27.75
5MHz	1 RB mid	1745	16QAM	23.53	27.43
5MHz	1 RB high	1745	16QAM	23.86	27.56
5MHz	100% RB	1745	16QAM	22.44	28.11
5MHz	1 RB low	1777.5	QPSK	23.83	28.52
5MHz	1 RB mid	1777.5	QPSK	24.65	28.80
5MHz	1 RB high	1777.5	QPSK	25.01	28.82
5MHz	100% RB	1777.5	QPSK	23.61	29.18
5MHz	1 RB low	1777.5	16QAM	22.90	28.29
5MHz	1 RB mid	1777.5	16QAM	23.68	28.65
5MHz	1 RB high	1777.5	16QAM	24.08	28.72
5MHz	100% RB	1777.5	16QAM	22.92	29.11
10MHz	1 RB low	1715	QPSK	22.74	27.39
10MHz	1 RB mid	1715	QPSK	22.90	27.67

10MHz	1 RB high	1715	QPSK	21.98	26.98
10MHz	100% RB	1715	QPSK	22.62	28.55
10MHz	1 RB low	1715	16QAM	21.85	27.29
10MHz	1 RB mid	1715	16QAM	22.07	27.57
10MHz	1 RB high	1715	16QAM	21.13	26.92
10MHz	100% RB	1715	16QAM	21.62	28.09
10MHz	1 RB low	1745	QPSK	24.58	27.97
10MHz	1 RB mid	1745	QPSK	24.26	27.47
10MHz	1 RB high	1745	QPSK	24.40	27.51
10MHz	100% RB	1745	QPSK	23.48	27.88
10MHz	1 RB low	1745	16QAM	23.80	28.06
10MHz	1 RB mid	1745	16QAM	24.48	27.91
10MHz	1 RB high	1745	16QAM	23.83	27.58
10MHz	100% RB	1745	16QAM	22.50	28.31
10MHz	1 RB low	1775	QPSK	21.90	26.87
10MHz	1 RB mid	1775	QPSK	23.83	28.58
10MHz	1 RB high	1775	QPSK	24.22	28.62
10MHz	100% RB	1775	QPSK	23.49	28.98
10MHz	1 RB low	1775	16QAM	21.15	23.80
10MHz	1 RB mid	1775	16QAM	23.07	28.60
10MHz	1 RB high	1775	16QAM	23.45	28.66
10MHz	100% RB	1775	16QAM	22.59	29.01
15MHz	1 RB low	1717.5	QPSK	22.72	27.41
15MHz	1 RB mid	1717.5	QPSK	22.78	27.69
15MHz	1 RB high	1717.5	QPSK	22.61	27.61
15MHz	100% RB	1717.5	QPSK	22.64	28.60
15MHz	1 RB low	1717.5	16QAM	21.70	27.24
15MHz	1 RB mid	1717.5	16QAM	21.85	27.53
15MHz	1 RB high	1717.5	16QAM	21.74	27.48
15MHz	100% RB	1717.5	16QAM	21.57	28.31
15MHz	1 RB low	1745	QPSK	24.23	28.07
15MHz	1 RB mid	1745	QPSK	24.29	27.48
15MHz	1 RB high	1745	QPSK	23.92	27.30
15MHz	100% RB	1745	QPSK	23.58	28.30
15MHz	1 RB low	1745	16QAM	24.08	28.46
15MHz	1 RB mid	1745	16QAM	23.42	27.50
15MHz	1 RB high	1745	16QAM	23.07	27.34
15MHz	100% RB	1745	16QAM	22.33	28.03

15MHz	1 RB low	1772.5	QPSK	21.56	26.57
15MHz	1 RB mid	1772.5	QPSK	23.10	27.99
15MHz	1 RB high	1772.5	QPSK	23.96	28.45
15MHz	100% RB	1772.5	QPSK	22.91	28.84
15MHz	1 RB low	1772.5	16QAM	20.77	26.47
15MHz	1 RB mid	1772.5	16QAM	22.38	27.97
15MHz	1 RB high	1772.5	16QAM	23.24	28.43
15MHz	100% RB	1772.5	16QAM	21.94	28.64
20MHz	1 RB low	1720	QPSK	22.36	27.10
20MHz	1 RB mid	1720	QPSK	22.97	27.83
20MHz	1 RB high	1720	QPSK	23.83	28.60
20MHz	100% RB	1720	QPSK	22.78	28.90
20MHz	1 RB low	1720	16QAM	21.24	26.99
20MHz	1 RB mid	1720	16QAM	21.92	27.70
20MHz	1 RB high	1720	16QAM	22.76	28.55
20MHz	100% RB	1720	16QAM	21.75	28.73
20MHz	1 RB low	1745	QPSK	24.76	28.63
20MHz	1 RB mid	1745	QPSK	24.77	27.70
20MHz	1 RB high	1745	QPSK	23.04	27.09
20MHz	100% RB	1745	QPSK	23.63	28.09
20MHz	1 RB low	1745	16QAM	23.66	28.35
20MHz	1 RB mid	1745	16QAM	23.36	27.28
20MHz	1 RB high	1745	16QAM	22.30	26.94
20MHz	100% RB	1745	16QAM	22.60	28.19
20MHz	1 RB low	1770	QPSK	21.85	26.67
20MHz	1 RB mid	1770	QPSK	22.61	27.47
20MHz	1 RB high	1770	QPSK	23.71	28.25
20MHz	100% RB	1770	QPSK	22.54	28.51
20MHz	1 RB low	1770	16QAM	21.01	26.65
20MHz	1 RB mid	1770	16QAM	21.83	27.55
20MHz	1 RB high	1770	16QAM	22.94	28.30
20MHz	100% RB	1770	16QAM	21.61	28.66

6.3. ERP and EIRP

Limit Level Construction:

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

According to Part 24.232(c),"Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power"and 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."

According to 22.913(a), The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

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

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

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

Conducted RF Power+Antenna Gain=ERIP

Conducted RF Power+Antenna Gain=ERP

Frequency Band	AntennaGain (dBi)	AntennaGain (dBd)
GSM 850	0.91	-1.24
GSM 1900	1.87	--
GPRS 850 4TS	0.91	-1.24
GPRS 1900 4TS	1.87	--
WCDMA Band2	1.87	--
WCDMA Band5	0.91	-1.24
LTE Band2	1.87	--
LTE Band4	3.12	--
LTE Band5	0.91	-1.24
LTE Band28	0.95	-1.28
LTE Band66	3.12	--

6.3.1 LTE Band 2 result

LTE Band 2
Limits 33dBm(2w)
Max EIRP:26.17dBm

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Radiated Power(dBm) G_T= 1.87 dBi
1.4MHz	1 RB low	1850.7	QPSK	23.40	25.27
1.4MHz	1 RB mid	1850.7	QPSK	23.53	25.40
1.4MHz	1 RB high	1850.7	QPSK	23.51	25.38
1.4MHz	100% RB	1850.7	QPSK	22.52	24.39
1.4MHz	1 RB low	1850.7	16QAM	22.87	24.74
1.4MHz	1 RB mid	1850.7	16QAM	22.98	24.85
1.4MHz	1 RB high	1850.7	16QAM	22.71	24.58
1.4MHz	100% RB	1850.7	16QAM	21.59	23.46
1.4MHz	1 RB low	1880	QPSK	24.23	26.10
1.4MHz	1 RB mid	1880	QPSK	24.21	26.08
1.4MHz	1 RB high	1880	QPSK	24.05	25.92
1.4MHz	100% RB	1880	QPSK	22.96	24.83
1.4MHz	1 RB low	1880	16QAM	23.43	25.30
1.4MHz	1 RB mid	1880	16QAM	23.27	25.14
1.4MHz	1 RB high	1880	16QAM	23.02	24.89
1.4MHz	100% RB	1880	16QAM	21.89	23.76
1.4MHz	1 RB low	1909.3	QPSK	23.39	25.26
1.4MHz	1 RB mid	1909.3	QPSK	23.24	25.11
1.4MHz	1 RB high	1909.3	QPSK	23.13	25.00
1.4MHz	100% RB	1909.3	QPSK	22.95	24.82
1.4MHz	1 RB low	1909.3	16QAM	22.53	24.40
1.4MHz	1 RB mid	1909.3	16QAM	22.54	24.41
1.4MHz	1 RB high	1909.3	16QAM	22.39	24.26
1.4MHz	100% RB	1909.3	16QAM	21.92	23.79
3MHz	1 RB low	1851.5	QPSK	23.61	25.48
3MHz	1 RB mid	1851.5	QPSK	23.63	25.50
3MHz	1 RB high	1851.5	QPSK	23.63	25.50

3MHz	100% RB	1851.5	QPSK	22.54	24.41
3MHz	1 RB low	1851.5	16QAM	22.46	24.33
3MHz	1 RB mid	1851.5	16QAM	22.31	24.18
3MHz	1 RB high	1851.5	16QAM	22.41	24.28
3MHz	100% RB	1851.5	16QAM	21.24	23.11
3MHz	1 RB low	1880	QPSK	23.92	25.79
3MHz	1 RB mid	1880	QPSK	23.72	25.59
3MHz	1 RB high	1880	QPSK	24.03	25.90
3MHz	100% RB	1880	QPSK	22.96	24.83
3MHz	1 RB low	1880	16QAM	23.47	25.34
3MHz	1 RB mid	1880	16QAM	23.29	25.16
3MHz	1 RB high	1880	16QAM	23.27	25.14
3MHz	100% RB	1880	16QAM	21.95	23.82
3MHz	1 RB low	1908.5	QPSK	23.56	25.43
3MHz	1 RB mid	1908.5	QPSK	23.29	25.16
3MHz	1 RB high	1908.5	QPSK	23.00	24.87
3MHz	100% RB	1908.5	QPSK	22.92	24.79
3MHz	1 RB low	1908.5	16QAM	22.72	24.59
3MHz	1 RB mid	1908.5	16QAM	22.56	24.43
3MHz	1 RB high	1908.5	16QAM	22.23	24.10
3MHz	100% RB	1908.5	16QAM	21.84	23.71
5MHz	1 RB low	1852.5	QPSK	23.48	25.35
5MHz	1 RB mid	1852.5	QPSK	23.35	25.22
5MHz	1 RB high	1852.5	QPSK	23.54	25.41
5MHz	100% RB	1852.5	QPSK	22.35	24.22
5MHz	1 RB low	1852.5	16QAM	22.18	24.05
5MHz	1 RB mid	1852.5	16QAM	22.20	24.07
5MHz	1 RB high	1852.5	16QAM	22.28	24.15
5MHz	100% RB	1852.5	16QAM	21.18	23.05
5MHz	1 RB low	1880	QPSK	23.75	25.62
5MHz	1 RB mid	1880	QPSK	23.76	25.63
5MHz	1 RB high	1880	QPSK	23.95	25.82
5MHz	100% RB	1880	QPSK	23.10	24.97
5MHz	1 RB low	1880	16QAM	23.14	25.01
5MHz	1 RB mid	1880	16QAM	23.39	25.26
5MHz	1 RB high	1880	16QAM	23.17	25.04
5MHz	100% RB	1880	16QAM	22.23	24.10
5MHz	1 RB low	1907.5	QPSK	23.68	25.55

5MHz	1 RB mid	1907.5	QPSK	23.53	25.40
5MHz	1 RB high	1907.5	QPSK	22.94	24.81
5MHz	100% RB	1907.5	QPSK	22.86	24.73
5MHz	1 RB low	1907.5	16QAM	22.82	24.69
5MHz	1 RB mid	1907.5	16QAM	22.81	24.68
5MHz	1 RB high	1907.5	16QAM	22.24	24.11
5MHz	100% RB	1907.5	16QAM	21.88	23.75
10MHz	1 RB low	1855	QPSK	23.65	25.52
10MHz	1 RB mid	1855	QPSK	23.74	25.61
10MHz	1 RB high	1855	QPSK	23.59	25.46
10MHz	100% RB	1855	QPSK	22.52	24.39
10MHz	1 RB low	1855	16QAM	22.64	24.51
10MHz	1 RB mid	1855	16QAM	22.66	24.53
10MHz	1 RB high	1855	16QAM	22.69	24.56
10MHz	100% RB	1855	16QAM	21.59	23.46
10MHz	1 RB low	1880	QPSK	23.88	25.75
10MHz	1 RB mid	1880	QPSK	24.07	25.94
10MHz	1 RB high	1880	QPSK	24.06	25.93
10MHz	100% RB	1880	QPSK	23.19	25.06
10MHz	1 RB low	1880	16QAM	22.87	24.74
10MHz	1 RB mid	1880	16QAM	23.40	25.27
10MHz	1 RB high	1880	16QAM	23.10	24.97
10MHz	100% RB	1880	16QAM	22.23	24.10
10MHz	1 RB low	1905	QPSK	23.83	25.70
10MHz	1 RB mid	1905	QPSK	23.84	25.71
10MHz	1 RB high	1905	QPSK	22.26	24.13
10MHz	100% RB	1905	QPSK	23.11	24.98
10MHz	1 RB low	1905	16QAM	23.02	24.89
10MHz	1 RB mid	1905	16QAM	23.13	25.00
10MHz	1 RB high	1905	16QAM	21.55	23.42
10MHz	100% RB	1905	16QAM	21.99	23.86
15MHz	1 RB low	1857.5	QPSK	23.60	25.47
15MHz	1 RB mid	1857.5	QPSK	23.51	25.38
15MHz	1 RB high	1857.5	QPSK	23.77	25.64
15MHz	100% RB	1857.5	QPSK	22.70	24.57
15MHz	1 RB low	1857.5	16QAM	22.53	24.40
15MHz	1 RB mid	1857.5	16QAM	22.77	24.64
15MHz	1 RB high	1857.5	16QAM	22.51	24.38

15MHz	100% RB	1857.5	16QAM	21.71	23.58
15MHz	1 RB low	1880	QPSK	23.89	25.76
15MHz	1 RB mid	1880	QPSK	24.22	26.09
15MHz	1 RB high	1880	QPSK	23.87	25.74
15MHz	100% RB	1880	QPSK	23.11	24.98
15MHz	1 RB low	1880	16QAM	22.67	24.54
15MHz	1 RB mid	1880	16QAM	23.36	25.23
15MHz	1 RB high	1880	16QAM	22.87	24.74
15MHz	100% RB	1880	16QAM	22.03	23.90
15MHz	1 RB low	1902.5	QPSK	23.99	25.86
15MHz	1 RB mid	1902.5	QPSK	23.65	25.52
15MHz	1 RB high	1902.5	QPSK	21.90	23.77
15MHz	100% RB	1902.5	QPSK	22.93	24.80
15MHz	1 RB low	1902.5	16QAM	23.24	25.11
15MHz	1 RB mid	1902.5	16QAM	22.99	24.86
15MHz	1 RB high	1902.5	16QAM	21.31	23.18
15MHz	100% RB	1902.5	16QAM	21.97	23.84
20MHz	1 RB low	1860	QPSK	23.48	25.35
20MHz	1 RB mid	1860	QPSK	24.00	25.87
20MHz	1 RB high	1860	QPSK	23.69	25.56
20MHz	100% RB	1860	QPSK	22.74	24.61
20MHz	1 RB low	1860	16QAM	23.15	25.02
20MHz	1 RB mid	1860	16QAM	23.44	25.31
20MHz	1 RB high	1860	16QAM	23.04	24.91
20MHz	100% RB	1860	16QAM	21.75	23.62
20MHz	1 RB low	1880	QPSK	23.55	25.42
20MHz	1 RB mid	1880	QPSK	24.30	26.17
20MHz	1 RB high	1880	QPSK	23.70	25.57
20MHz	100% RB	1880	QPSK	23.09	24.96
20MHz	1 RB low	1880	16QAM	22.56	24.43
20MHz	1 RB mid	1880	16QAM	23.03	24.90
20MHz	1 RB high	1880	16QAM	22.78	24.65
20MHz	100% RB	1880	16QAM	22.06	23.93
20MHz	1 RB low	1900	QPSK	23.95	25.82
20MHz	1 RB mid	1900	QPSK	24.26	26.13
20MHz	1 RB high	1900	QPSK	21.72	23.59
20MHz	100% RB	1900	QPSK	23.09	24.96
20MHz	1 RB low	1900	16QAM	23.15	25.02

20MHz	1 RB mid	1900	16QAM	23.58	25.45
20MHz	1 RB high	1900	16QAM	21.02	22.89
20MHz	100% RB	1900	16QAM	22.00	23.87

6.3.2 LTE Band 4 result

LTE Band 4
Limits 30dBm(1w)
Max EIRP:25.97dBm

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Radiated Power(dBm) G_T= 3.12 dBi
1.4MHz	1 RB low	1710.7	QPSK	22.56	25.68
1.4MHz	1 RB mid	1710.7	QPSK	22.59	25.71
1.4MHz	1 RB high	1710.7	QPSK	22.48	25.60
1.4MHz	100% RB	1710.7	QPSK	21.63	24.75
1.4MHz	1 RB low	1710.7	16QAM	21.59	24.71
1.4MHz	1 RB mid	1710.7	16QAM	21.57	24.69
1.4MHz	1 RB high	1710.7	16QAM	21.44	24.56
1.4MHz	100% RB	1710.7	16QAM	20.89	24.01
1.4MHz	1 RB low	1732.5	QPSK	22.28	25.40
1.4MHz	1 RB mid	1732.5	QPSK	22.40	25.52
1.4MHz	1 RB high	1732.5	QPSK	22.30	25.42
1.4MHz	100% RB	1732.5	QPSK	21.19	24.31
1.4MHz	1 RB low	1732.5	16QAM	21.29	24.41
1.4MHz	1 RB mid	1732.5	16QAM	21.52	24.64
1.4MHz	1 RB high	1732.5	16QAM	21.36	24.48
1.4MHz	100% RB	1732.5	16QAM	20.09	23.21
1.4MHz	1 RB low	1754.3	QPSK	22.40	25.52
1.4MHz	1 RB mid	1754.3	QPSK	22.32	25.44
1.4MHz	1 RB high	1754.3	QPSK	22.49	25.61
1.4MHz	100% RB	1754.3	QPSK	21.16	24.28
1.4MHz	1 RB low	1754.3	16QAM	21.26	24.38
1.4MHz	1 RB mid	1754.3	16QAM	21.59	24.71
1.4MHz	1 RB high	1754.3	16QAM	21.43	24.55
1.4MHz	100% RB	1754.3	16QAM	20.39	23.51

3MHz	1 RB low	1711.5	QPSK	22.75	25.87
3MHz	1 RB mid	1711.5	QPSK	22.55	25.67
3MHz	1 RB high	1711.5	QPSK	22.75	25.87
3MHz	100% RB	1711.5	QPSK	21.50	24.62
3MHz	1 RB low	1711.5	16QAM	21.62	24.74
3MHz	1 RB mid	1711.5	16QAM	21.53	24.65
3MHz	1 RB high	1711.5	16QAM	21.51	24.63
3MHz	100% RB	1711.5	16QAM	20.45	23.57
3MHz	1 RB low	1732.5	QPSK	22.51	25.63
3MHz	1 RB mid	1732.5	QPSK	22.24	25.36
3MHz	1 RB high	1732.5	QPSK	22.39	25.51
3MHz	100% RB	1732.5	QPSK	21.24	24.36
3MHz	1 RB low	1732.5	16QAM	21.31	24.43
3MHz	1 RB mid	1732.5	16QAM	21.44	24.56
3MHz	1 RB high	1732.5	16QAM	21.55	24.67
3MHz	100% RB	1732.5	16QAM	20.51	23.63
3MHz	1 RB low	1753.5	QPSK	22.05	25.17
3MHz	1 RB mid	1753.5	QPSK	22.15	25.27
3MHz	1 RB high	1753.5	QPSK	22.30	25.42
3MHz	100% RB	1753.5	QPSK	21.14	24.26
3MHz	1 RB low	1753.5	16QAM	21.40	24.52
3MHz	1 RB mid	1753.5	16QAM	20.99	24.11
3MHz	1 RB high	1753.5	16QAM	21.46	24.58
3MHz	100% RB	1753.5	16QAM	20.16	23.28
5MHz	1 RB low	1712.5	QPSK	22.85	25.97
5MHz	1 RB mid	1712.5	QPSK	22.65	25.77
5MHz	1 RB high	1712.5	QPSK	22.61	25.73
5MHz	100% RB	1712.5	QPSK	21.77	24.89
5MHz	1 RB low	1712.5	16QAM	21.29	24.41
5MHz	1 RB mid	1712.5	16QAM	20.94	24.06
5MHz	1 RB high	1712.5	16QAM	21.42	24.54
5MHz	100% RB	1712.5	16QAM	20.74	23.86
5MHz	1 RB low	1732.5	QPSK	22.58	25.70
5MHz	1 RB mid	1732.5	QPSK	22.49	25.61
5MHz	1 RB high	1732.5	QPSK	22.52	25.64
5MHz	100% RB	1732.5	QPSK	21.28	24.40
5MHz	1 RB low	1732.5	16QAM	21.85	24.97
5MHz	1 RB mid	1732.5	16QAM	21.60	24.72

5MHz	1 RB high	1732.5	16QAM	21.64	24.76
5MHz	100% RB	1732.5	16QAM	20.43	23.55
5MHz	1 RB low	1752.5	QPSK	22.13	25.25
5MHz	1 RB mid	1752.5	QPSK	22.05	25.17
5MHz	1 RB high	1752.5	QPSK	22.12	25.24
5MHz	100% RB	1752.5	QPSK	21.10	24.22
5MHz	1 RB low	1752.5	16QAM	21.46	24.58
5MHz	1 RB mid	1752.5	16QAM	21.13	24.25
5MHz	1 RB high	1752.5	16QAM	21.32	24.44
5MHz	100% RB	1752.5	16QAM	20.15	23.27
10MHz	1 RB low	1715	QPSK	22.68	25.80
10MHz	1 RB mid	1715	QPSK	22.74	25.86
10MHz	1 RB high	1715	QPSK	21.73	24.85
10MHz	100% RB	1715	QPSK	21.95	25.07
10MHz	1 RB low	1715	16QAM	21.65	24.77
10MHz	1 RB mid	1715	16QAM	21.70	24.82
10MHz	1 RB high	1715	16QAM	20.84	23.96
10MHz	100% RB	1715	16QAM	20.78	23.90
10MHz	1 RB low	1732.5	QPSK	22.49	25.61
10MHz	1 RB mid	1732.5	QPSK	22.60	25.72
10MHz	1 RB high	1732.5	QPSK	22.39	25.51
10MHz	100% RB	1732.5	QPSK	21.40	24.52
10MHz	1 RB low	1732.5	16QAM	21.64	24.76
10MHz	1 RB mid	1732.5	16QAM	21.55	24.67
10MHz	1 RB high	1732.5	16QAM	21.47	24.59
10MHz	100% RB	1732.5	16QAM	20.40	23.52
10MHz	1 RB low	1750	QPSK	22.30	25.42
10MHz	1 RB mid	1750	QPSK	21.97	25.09
10MHz	1 RB high	1750	QPSK	22.17	25.29
10MHz	100% RB	1750	QPSK	21.17	24.29
10MHz	1 RB low	1750	16QAM	21.30	24.42
10MHz	1 RB mid	1750	16QAM	21.21	24.33
10MHz	1 RB high	1750	16QAM	21.45	24.57
10MHz	100% RB	1750	16QAM	20.41	23.53
15MHz	1 RB low	1717.5	QPSK	22.54	25.66
15MHz	1 RB mid	1717.5	QPSK	22.52	25.64
15MHz	1 RB high	1717.5	QPSK	22.32	25.44
15MHz	100% RB	1717.5	QPSK	21.63	24.75

15MHz	1 RB low	1717.5	16QAM	21.28	24.40
15MHz	1 RB mid	1717.5	16QAM	21.39	24.51
15MHz	1 RB high	1717.5	16QAM	21.39	24.51
15MHz	100% RB	1717.5	16QAM	20.42	23.54
15MHz	1 RB low	1732.5	QPSK	22.39	25.51
15MHz	1 RB mid	1732.5	QPSK	22.14	25.26
15MHz	1 RB high	1732.5	QPSK	22.21	25.33
15MHz	100% RB	1732.5	QPSK	21.22	24.34
15MHz	1 RB low	1732.5	16QAM	21.35	24.47
15MHz	1 RB mid	1732.5	16QAM	21.50	24.62
15MHz	1 RB high	1732.5	16QAM	21.51	24.63
15MHz	100% RB	1732.5	16QAM	20.33	23.45
15MHz	1 RB low	1747.5	QPSK	22.18	25.30
15MHz	1 RB mid	1747.5	QPSK	21.75	24.87
15MHz	1 RB high	1747.5	QPSK	21.99	25.11
15MHz	100% RB	1747.5	QPSK	21.18	24.30
15MHz	1 RB low	1747.5	16QAM	21.09	24.21
15MHz	1 RB mid	1747.5	16QAM	20.90	24.02
15MHz	1 RB high	1747.5	16QAM	20.31	23.43
15MHz	100% RB	1747.5	16QAM	20.12	23.24
20MHz	1 RB low	1720	QPSK	22.22	25.34
20MHz	1 RB mid	1720	QPSK	22.74	25.86
20MHz	1 RB high	1720	QPSK	22.74	25.86
20MHz	100% RB	1720	QPSK	21.42	24.54
20MHz	1 RB low	1720	16QAM	20.91	24.03
20MHz	1 RB mid	1720	16QAM	21.59	24.71
20MHz	1 RB high	1720	16QAM	22.06	25.18
20MHz	100% RB	1720	16QAM	20.53	23.65
20MHz	1 RB low	1732.5	QPSK	21.51	24.63
20MHz	1 RB mid	1732.5	QPSK	22.56	25.68
20MHz	1 RB high	1732.5	QPSK	22.35	25.47
20MHz	100% RB	1732.5	QPSK	21.35	24.47
20MHz	1 RB low	1732.5	16QAM	20.63	23.75
20MHz	1 RB mid	1732.5	16QAM	21.20	24.32
20MHz	1 RB high	1732.5	16QAM	21.14	24.26
20MHz	100% RB	1732.5	16QAM	20.36	23.48
20MHz	1 RB low	1745	QPSK	22.26	25.38
20MHz	1 RB mid	1745	QPSK	22.32	25.44

20MHz	1 RB high	1745	QPSK	22.19	25.31
20MHz	100% RB	1745	QPSK	21.19	24.31
20MHz	1 RB low	1745	16QAM	21.76	24.88
20MHz	1 RB mid	1745	16QAM	21.59	24.71
20MHz	1 RB high	1745	16QAM	21.92	25.04
20MHz	100% RB	1745	16QAM	20.27	23.39

6.3.3 LTE Band 5 result

LTE Band 5
Limits 38.5dBm(7w)
Max ERP:23.86dBm

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Radiated Power(dBm) G_T= -1.24dBd
1.4MHz	1 RB low	824.7	QPSK	24.88	23.64
1.4MHz	1 RB mid	824.7	QPSK	24.96	23.72
1.4MHz	1 RB high	824.7	QPSK	25.02	23.78
1.4MHz	100% RB	824.7	QPSK	23.92	22.68
1.4MHz	1 RB low	824.7	16QAM	24.17	22.93
1.4MHz	1 RB mid	824.7	16QAM	24.23	22.99
1.4MHz	1 RB high	824.7	16QAM	24.00	22.76
1.4MHz	100% RB	824.7	16QAM	22.92	21.68
1.4MHz	1 RB low	836.5	QPSK	24.59	23.35
1.4MHz	1 RB mid	836.5	QPSK	24.80	23.56
1.4MHz	1 RB high	836.5	QPSK	24.84	23.60
1.4MHz	100% RB	836.5	QPSK	23.85	22.61
1.4MHz	1 RB low	836.5	16QAM	24.26	23.02
1.4MHz	1 RB mid	836.5	16QAM	24.14	22.90
1.4MHz	1 RB high	836.5	16QAM	23.89	22.65
1.4MHz	100% RB	836.5	16QAM	23.09	21.85
1.4MHz	1 RB low	848.3	QPSK	25.07	23.83
1.4MHz	1 RB mid	848.3	QPSK	24.89	23.65
1.4MHz	1 RB high	848.3	QPSK	24.95	23.71
1.4MHz	100% RB	848.3	QPSK	23.98	22.74
1.4MHz	1 RB low	848.3	16QAM	24.01	22.77

1.4MHz	1 RB mid	848.3	16QAM	24.15	22.91
1.4MHz	1 RB high	848.3	16QAM	23.97	22.73
1.4MHz	100% RB	848.3	16QAM	22.81	21.57
3MHz	1 RB low	825.5	QPSK	24.83	23.59
3MHz	1 RB mid	825.5	QPSK	24.62	23.38
3MHz	1 RB high	825.5	QPSK	24.69	23.45
3MHz	100% RB	825.5	QPSK	23.94	22.70
3MHz	1 RB low	825.5	16QAM	23.87	22.63
3MHz	1 RB mid	825.5	16QAM	23.84	22.60
3MHz	1 RB high	825.5	16QAM	23.81	22.57
3MHz	100% RB	825.5	16QAM	22.81	21.57
3MHz	1 RB low	836.5	QPSK	24.78	23.54
3MHz	1 RB mid	836.5	QPSK	24.70	23.46
3MHz	1 RB high	836.5	QPSK	24.65	23.41
3MHz	100% RB	836.5	QPSK	23.80	22.56
3MHz	1 RB low	836.5	16QAM	23.97	22.73
3MHz	1 RB mid	836.5	16QAM	24.03	22.79
3MHz	1 RB high	836.5	16QAM	23.99	22.75
3MHz	100% RB	836.5	16QAM	22.64	21.40
3MHz	1 RB low	847.5	QPSK	25.08	23.84
3MHz	1 RB mid	847.5	QPSK	24.87	23.63
3MHz	1 RB high	847.5	QPSK	25.09	23.85
3MHz	100% RB	847.5	QPSK	24.08	22.84
3MHz	1 RB low	847.5	16QAM	24.32	23.08
3MHz	1 RB mid	847.5	16QAM	23.92	22.68
3MHz	1 RB high	847.5	16QAM	23.83	22.59
3MHz	100% RB	847.5	16QAM	22.82	21.58
5MHz	1 RB low	826.5	QPSK	24.76	23.52
5MHz	1 RB mid	826.5	QPSK	24.68	23.44
5MHz	1 RB high	826.5	QPSK	24.54	23.30
5MHz	100% RB	826.5	QPSK	23.88	22.64
5MHz	1 RB low	826.5	16QAM	23.39	22.15
5MHz	1 RB mid	826.5	16QAM	23.27	22.03
5MHz	1 RB high	826.5	16QAM	23.05	21.81
5MHz	100% RB	826.5	16QAM	22.73	21.49
5MHz	1 RB low	836.5	QPSK	24.58	23.34
5MHz	1 RB mid	836.5	QPSK	24.77	23.53
5MHz	1 RB high	836.5	QPSK	24.71	23.47

5MHz	100% RB	836.5	QPSK	23.79	22.55
5MHz	1 RB low	836.5	16QAM	23.87	22.63
5MHz	1 RB mid	836.5	16QAM	24.12	22.88
5MHz	1 RB high	836.5	16QAM	24.23	22.99
5MHz	100% RB	836.5	16QAM	22.91	21.67
5MHz	1 RB low	846.5	QPSK	25.04	23.80
5MHz	1 RB mid	846.5	QPSK	24.97	23.73
5MHz	1 RB high	846.5	QPSK	24.97	23.73
5MHz	100% RB	846.5	QPSK	24.00	22.76
5MHz	1 RB low	846.5	16QAM	24.05	22.81
5MHz	1 RB mid	846.5	16QAM	23.79	22.55
5MHz	1 RB high	846.5	16QAM	23.92	22.68
5MHz	100% RB	846.5	16QAM	22.78	21.54
10MHz	1 RB low	829	QPSK	24.78	23.54
10MHz	1 RB mid	829	QPSK	24.63	23.39
10MHz	1 RB high	829	QPSK	24.39	23.15
10MHz	100% RB	829	QPSK	23.92	22.68
10MHz	1 RB low	829	16QAM	24.66	23.42
10MHz	1 RB mid	829	16QAM	23.33	22.09
10MHz	1 RB high	829	16QAM	23.51	22.27
10MHz	100% RB	829	16QAM	22.66	21.42
10MHz	1 RB low	836.5	QPSK	24.67	23.43
10MHz	1 RB mid	836.5	QPSK	25.06	23.82
10MHz	1 RB high	836.5	QPSK	24.94	23.70
10MHz	100% RB	836.5	QPSK	23.79	22.55
10MHz	1 RB low	836.5	16QAM	24.14	22.90
10MHz	1 RB mid	836.5	16QAM	24.05	22.81
10MHz	1 RB high	836.5	16QAM	24.07	22.83
10MHz	100% RB	836.5	16QAM	22.77	21.53
10MHz	1 RB low	844	QPSK	24.92	23.68
10MHz	1 RB mid	844	QPSK	24.83	23.59
10MHz	1 RB high	844	QPSK	25.10	23.86
10MHz	100% RB	844	QPSK	23.94	22.70
10MHz	1 RB low	844	16QAM	24.41	23.17
10MHz	1 RB mid	844	16QAM	23.99	22.75
10MHz	1 RB high	844	16QAM	23.82	22.58
10MHz	100% RB	844	16QAM	22.77	21.53

6.3.4 LTE Band 28 result

LTE band 28
Limits 34.8dBm(3w)
Max ERP:22.21dBm

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Radiated Power(dBm) G_T= -1.20 dBd
3MHz	1 RB low	704.5	QPSK	22.94	21.74
3MHz	1 RB mid	704.5	QPSK	23.04	21.84
3MHz	1 RB high	704.5	QPSK	22.96	21.76
3MHz	100% RB	704.5	QPSK	21.89	20.69
3MHz	1 RB low	704.5	16QAM	22.04	20.84
3MHz	1 RB mid	704.5	16QAM	22.36	21.16
3MHz	1 RB high	704.5	16QAM	22.93	21.73
3MHz	100% RB	704.5	16QAM	21.08	19.88
3MHz	1 RB low	719.5	QPSK	23.34	22.14
3MHz	1 RB mid	719.5	QPSK	22.87	21.67
3MHz	1 RB high	719.5	QPSK	23.34	22.14
3MHz	100% RB	719.5	QPSK	22.00	20.80
3MHz	1 RB low	719.5	16QAM	22.26	21.06
3MHz	1 RB mid	719.5	16QAM	21.77	20.57
3MHz	1 RB high	719.5	16QAM	21.72	20.52
3MHz	100% RB	719.5	16QAM	20.85	19.65
3MHz	1 RB low	746.5	QPSK	23.37	22.17
3MHz	1 RB mid	746.5	QPSK	23.25	22.05
3MHz	1 RB high	746.5	QPSK	23.31	22.11
3MHz	100% RB	746.5	QPSK	22.18	20.98
3MHz	1 RB low	746.5	16QAM	22.32	21.12
3MHz	1 RB mid	746.5	16QAM	22.31	21.11
3MHz	1 RB high	746.5	16QAM	22.27	21.07
3MHz	100% RB	746.5	16QAM	21.20	20.00
5MHz	1 RB low	705.5	QPSK	23.02	21.82
5MHz	1 RB mid	705.5	QPSK	22.96	21.76
5MHz	1 RB high	705.5	QPSK	23.00	21.80
5MHz	100% RB	705.5	QPSK	21.97	20.77
5MHz	1 RB low	705.5	16QAM	21.76	20.56

5MHz	1 RB mid	705.5	16QAM	21.74	20.54
5MHz	1 RB high	705.5	16QAM	21.69	20.49
5MHz	100% RB	705.5	16QAM	20.84	19.64
5MHz	1 RB low	720.5	QPSK	22.93	21.73
5MHz	1 RB mid	720.5	QPSK	22.87	21.67
5MHz	1 RB high	720.5	QPSK	22.89	21.69
5MHz	100% RB	720.5	QPSK	21.92	20.72
5MHz	1 RB low	720.5	16QAM	22.32	21.12
5MHz	1 RB mid	720.5	16QAM	22.09	20.89
5MHz	1 RB high	720.5	16QAM	22.03	20.83
5MHz	100% RB	720.5	16QAM	21.03	19.83
5MHz	1 RB low	745.5	QPSK	22.91	21.71
5MHz	1 RB mid	745.5	QPSK	23.41	22.21
5MHz	1 RB high	745.5	QPSK	23.27	22.07
5MHz	100% RB	745.5	QPSK	22.31	21.11
5MHz	1 RB low	745.5	16QAM	22.36	21.16
5MHz	1 RB mid	745.5	16QAM	22.51	21.31
5MHz	1 RB high	745.5	16QAM	22.43	21.23
5MHz	100% RB	745.5	16QAM	21.12	19.92
10MHz	1 RB low	708	QPSK	22.98	21.78
10MHz	1 RB mid	708	QPSK	23.18	21.98
10MHz	1 RB high	708	QPSK	22.82	21.62
10MHz	100% RB	708	QPSK	21.97	20.77
10MHz	1 RB low	708	16QAM	21.98	20.78
10MHz	1 RB mid	708	16QAM	22.03	20.83
10MHz	1 RB high	708	16QAM	21.64	20.44
10MHz	100% RB	708	16QAM	20.71	19.51
10MHz	1 RB low	723	QPSK	22.93	21.73
10MHz	1 RB mid	723	QPSK	22.84	21.64
10MHz	1 RB high	723	QPSK	23.08	21.88
10MHz	100% RB	723	QPSK	21.91	20.71
10MHz	1 RB low	723	16QAM	22.87	21.67
10MHz	1 RB mid	723	16QAM	22.77	21.57
10MHz	1 RB high	723	16QAM	22.30	21.10
10MHz	100% RB	723	16QAM	20.83	19.63
10MHz	1 RB low	743	QPSK	23.00	21.80
10MHz	1 RB mid	743	QPSK	23.11	21.91
10MHz	1 RB high	743	QPSK	23.28	22.08

10MHz	100% RB	743	QPSK	22.13	20.93
10MHz	1 RB low	743	16QAM	22.08	20.88
10MHz	1 RB mid	743	16QAM	22.38	21.18
10MHz	1 RB high	743	16QAM	22.58	21.38
10MHz	100% RB	743	16QAM	20.89	19.69
15MHz	1 RB low	710.5	QPSK	23.18	21.98
15MHz	1 RB mid	710.5	QPSK	22.91	21.71
15MHz	1 RB high	710.5	QPSK	22.60	21.40
15MHz	100% RB	710.5	QPSK	21.87	20.67
15MHz	1 RB low	710.5	16QAM	22.04	20.84
15MHz	1 RB mid	710.5	16QAM	21.90	20.70
15MHz	1 RB high	710.5	16QAM	21.82	20.62
15MHz	100% RB	710.5	16QAM	20.72	19.52
15MHz	1 RB low	725.5	QPSK	23.14	21.94
15MHz	1 RB mid	725.5	QPSK	22.83	21.63
15MHz	1 RB high	725.5	QPSK	23.03	21.83
15MHz	100% RB	725.5	QPSK	22.00	20.80
15MHz	1 RB low	725.5	16QAM	22.41	21.21
15MHz	1 RB mid	725.5	16QAM	22.07	20.87
15MHz	1 RB high	725.5	16QAM	22.14	20.94
15MHz	100% RB	725.5	16QAM	20.82	19.62
15MHz	1 RB low	740.5	QPSK	23.19	21.99
15MHz	1 RB mid	740.5	QPSK	22.84	21.64
15MHz	1 RB high	740.5	QPSK	22.99	21.79
15MHz	100% RB	740.5	QPSK	22.12	20.92
15MHz	1 RB low	740.5	16QAM	22.45	21.25
15MHz	1 RB mid	740.5	16QAM	21.17	19.97
15MHz	1 RB high	740.5	16QAM	21.66	20.46
15MHz	100% RB	740.5	16QAM	20.99	19.79
20MHz	1 RB low	713	QPSK	22.74	21.54
20MHz	1 RB mid	713	QPSK	22.98	21.78
20MHz	1 RB high	713	QPSK	22.90	21.70
20MHz	100% RB	713	QPSK	21.80	20.60
20MHz	1 RB low	713	16QAM	21.82	20.62
20MHz	1 RB mid	713	16QAM	22.07	20.87
20MHz	1 RB high	713	16QAM	22.16	20.96
20MHz	100% RB	713	16QAM	20.73	19.53
20MHz	1 RB low	728	QPSK	22.89	21.69

20MHz	1 RB mid	728	QPSK	23.13	21.93
20MHz	1 RB high	728	QPSK	22.77	21.57
20MHz	100% RB	728	QPSK	21.98	20.78
20MHz	1 RB low	728	16QAM	21.34	20.14
20MHz	1 RB mid	728	16QAM	21.87	20.67
20MHz	1 RB high	728	16QAM	21.24	20.04
20MHz	100% RB	728	16QAM	21.00	19.80
20MHz	1 RB low	738	QPSK	23.02	21.82
20MHz	1 RB mid	738	QPSK	22.93	21.73
20MHz	1 RB high	738	QPSK	23.05	21.85
20MHz	100% RB	738	QPSK	22.03	20.83
20MHz	1 RB low	738	16QAM	22.66	21.46
20MHz	1 RB mid	738	16QAM	22.58	21.38
20MHz	1 RB high	738	16QAM	22.44	21.24
20MHz	100% RB	738	16QAM	21.02	19.82

6.3.5 LTE Band 66 Measurement result

LTE Band 66
Limits 30dBm(1w)
Max EIRP:28.18dBm

Bandwidth	RB size/offset	Frequency (MHz)	Modulation	Power (dBm)	Radiated Power(dBm) G_T= 3.12dBi
1.4MHz	1 RB low	1710.7	QPSK	23.23	26.35
1.4MHz	1 RB mid	1710.7	QPSK	23.19	26.31
1.4MHz	1 RB high	1710.7	QPSK	23.08	26.20
1.4MHz	100% RB	1710.7	QPSK	23.03	26.15
1.4MHz	1 RB low	1710.7	16QAM	22.17	25.29
1.4MHz	1 RB mid	1710.7	16QAM	22.18	25.30
1.4MHz	1 RB high	1710.7	16QAM	22.06	25.18
1.4MHz	100% RB	1710.7	16QAM	22.22	25.34
1.4MHz	1 RB low	1745	QPSK	24.53	27.65
1.4MHz	1 RB mid	1745	QPSK	24.58	27.70
1.4MHz	1 RB high	1745	QPSK	24.52	27.64
1.4MHz	100% RB	1745	QPSK	23.42	26.54

1.4MHz	1 RB low	1745	16QAM	23.32	26.44
1.4MHz	1 RB mid	1745	16QAM	23.49	26.61
1.4MHz	1 RB high	1745	16QAM	23.27	26.39
1.4MHz	100% RB	1745	16QAM	22.24	25.36
1.4MHz	1 RB low	1779.3	QPSK	24.81	27.93
1.4MHz	1 RB mid	1779.3	QPSK	24.91	28.03
1.4MHz	1 RB high	1779.3	QPSK	24.96	28.08
1.4MHz	100% RB	1779.3	QPSK	23.79	26.91
1.4MHz	1 RB low	1779.3	16QAM	23.91	27.03
1.4MHz	1 RB mid	1779.3	16QAM	24.10	27.22
1.4MHz	1 RB high	1779.3	16QAM	24.07	27.19
1.4MHz	100% RB	1779.3	16QAM	22.74	25.86
3MHz	1 RB low	1711.5	QPSK	23.59	26.71
3MHz	1 RB mid	1711.5	QPSK	23.42	26.54
3MHz	1 RB high	1711.5	QPSK	23.15	26.27
3MHz	100% RB	1711.5	QPSK	23.29	26.41
3MHz	1 RB low	1711.5	16QAM	22.73	25.85
3MHz	1 RB mid	1711.5	16QAM	22.57	25.69
3MHz	1 RB high	1711.5	16QAM	22.28	25.40
3MHz	100% RB	1711.5	16QAM	22.35	25.47
3MHz	1 RB low	1745	QPSK	24.42	27.54
3MHz	1 RB mid	1745	QPSK	24.21	27.33
3MHz	1 RB high	1745	QPSK	24.10	27.22
3MHz	100% RB	1745	QPSK	23.37	26.49
3MHz	1 RB low	1745	16QAM	23.61	26.73
3MHz	1 RB mid	1745	16QAM	23.53	26.65
3MHz	1 RB high	1745	16QAM	23.93	27.05
3MHz	100% RB	1745	16QAM	22.42	25.54
3MHz	1 RB low	1778.5	QPSK	24.41	27.53
3MHz	1 RB mid	1778.5	QPSK	24.90	28.02
3MHz	1 RB high	1778.5	QPSK	25.06	28.18
3MHz	100% RB	1778.5	QPSK	24.01	27.13
3MHz	1 RB low	1778.5	16QAM	23.45	26.57
3MHz	1 RB mid	1778.5	16QAM	24.04	27.16
3MHz	1 RB high	1778.5	16QAM	24.16	27.28
3MHz	100% RB	1778.5	16QAM	22.59	25.71
5MHz	1 RB low	1712.5	QPSK	23.60	26.72
5MHz	1 RB mid	1712.5	QPSK	23.36	26.48

5MHz	1 RB high	1712.5	QPSK	22.91	26.03
5MHz	100% RB	1712.5	QPSK	23.12	26.24
5MHz	1 RB low	1712.5	16QAM	22.53	25.65
5MHz	1 RB mid	1712.5	16QAM	22.34	25.46
5MHz	1 RB high	1712.5	16QAM	21.91	25.03
5MHz	100% RB	1712.5	16QAM	22.18	25.30
5MHz	1 RB low	1745	QPSK	24.54	27.66
5MHz	1 RB mid	1745	QPSK	24.25	27.37
5MHz	1 RB high	1745	QPSK	24.60	27.72
5MHz	100% RB	1745	QPSK	23.37	26.49
5MHz	1 RB low	1745	16QAM	23.78	26.90
5MHz	1 RB mid	1745	16QAM	23.53	26.65
5MHz	1 RB high	1745	16QAM	23.86	26.98
5MHz	100% RB	1745	16QAM	22.44	25.56
5MHz	1 RB low	1777.5	QPSK	23.83	26.95
5MHz	1 RB mid	1777.5	QPSK	24.65	27.77
5MHz	1 RB high	1777.5	QPSK	25.01	28.13
5MHz	100% RB	1777.5	QPSK	23.61	26.73
5MHz	1 RB low	1777.5	16QAM	22.90	26.02
5MHz	1 RB mid	1777.5	16QAM	23.68	26.80
5MHz	1 RB high	1777.5	16QAM	24.08	27.20
5MHz	100% RB	1777.5	16QAM	22.92	26.04
10MHz	1 RB low	1715	QPSK	22.74	25.86
10MHz	1 RB mid	1715	QPSK	22.90	26.02
10MHz	1 RB high	1715	QPSK	21.98	25.10
10MHz	100% RB	1715	QPSK	22.62	25.74
10MHz	1 RB low	1715	16QAM	21.85	24.97
10MHz	1 RB mid	1715	16QAM	22.07	25.19
10MHz	1 RB high	1715	16QAM	21.13	24.25
10MHz	100% RB	1715	16QAM	21.62	24.74
10MHz	1 RB low	1745	QPSK	24.58	27.70
10MHz	1 RB mid	1745	QPSK	24.26	27.38
10MHz	1 RB high	1745	QPSK	24.40	27.52
10MHz	100% RB	1745	QPSK	23.48	26.60
10MHz	1 RB low	1745	16QAM	23.80	26.92
10MHz	1 RB mid	1745	16QAM	24.48	27.60
10MHz	1 RB high	1745	16QAM	23.83	26.95
10MHz	100% RB	1745	16QAM	22.50	25.62

10MHz	1 RB low	1775	QPSK	21.90	25.02
10MHz	1 RB mid	1775	QPSK	23.83	26.95
10MHz	1 RB high	1775	QPSK	24.22	27.34
10MHz	100% RB	1775	QPSK	23.49	26.61
10MHz	1 RB low	1775	16QAM	21.15	24.27
10MHz	1 RB mid	1775	16QAM	23.07	26.19
10MHz	1 RB high	1775	16QAM	23.45	26.57
10MHz	100% RB	1775	16QAM	22.59	25.71
15MHz	1 RB low	1717.5	QPSK	22.72	25.84
15MHz	1 RB mid	1717.5	QPSK	22.78	25.90
15MHz	1 RB high	1717.5	QPSK	22.61	25.73
15MHz	100% RB	1717.5	QPSK	22.64	25.76
15MHz	1 RB low	1717.5	16QAM	21.70	24.82
15MHz	1 RB mid	1717.5	16QAM	21.85	24.97
15MHz	1 RB high	1717.5	16QAM	21.74	24.86
15MHz	100% RB	1717.5	16QAM	21.57	24.69
15MHz	1 RB low	1745	QPSK	24.23	27.35
15MHz	1 RB mid	1745	QPSK	24.29	27.41
15MHz	1 RB high	1745	QPSK	23.92	27.04
15MHz	100% RB	1745	QPSK	23.58	26.70
15MHz	1 RB low	1745	16QAM	24.08	27.20
15MHz	1 RB mid	1745	16QAM	23.42	26.54
15MHz	1 RB high	1745	16QAM	23.07	26.19
15MHz	100% RB	1745	16QAM	22.33	25.45
15MHz	1 RB low	1772.5	QPSK	21.56	24.68
15MHz	1 RB mid	1772.5	QPSK	23.10	26.22
15MHz	1 RB high	1772.5	QPSK	23.96	27.08
15MHz	100% RB	1772.5	QPSK	22.91	26.03
15MHz	1 RB low	1772.5	16QAM	20.77	23.89
15MHz	1 RB mid	1772.5	16QAM	22.38	25.50
15MHz	1 RB high	1772.5	16QAM	23.24	26.36
15MHz	100% RB	1772.5	16QAM	21.94	25.06
20MHz	1 RB low	1720	QPSK	22.36	25.48
20MHz	1 RB mid	1720	QPSK	22.97	26.09
20MHz	1 RB high	1720	QPSK	23.83	26.95
20MHz	100% RB	1720	QPSK	22.78	25.90
20MHz	1 RB low	1720	16QAM	21.24	24.36
20MHz	1 RB mid	1720	16QAM	21.92	25.04

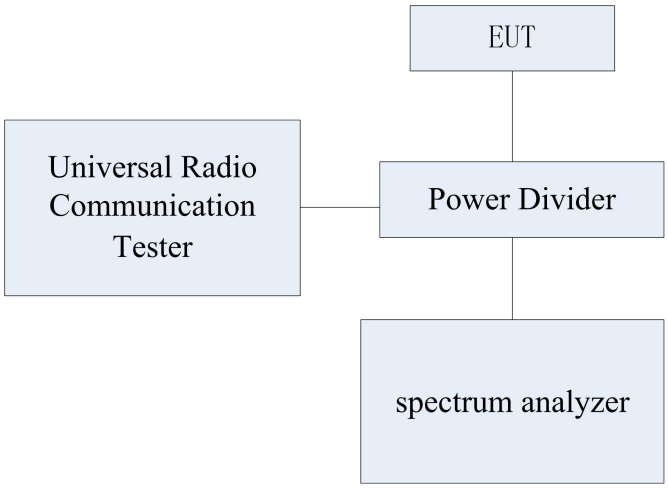
20MHz	1 RB high	1720	16QAM	22.76	25.88
20MHz	100% RB	1720	16QAM	21.75	24.87
20MHz	1 RB low	1745	QPSK	24.76	27.88
20MHz	1 RB mid	1745	QPSK	24.77	27.89
20MHz	1 RB high	1745	QPSK	23.04	26.16
20MHz	100% RB	1745	QPSK	23.63	26.75
20MHz	1 RB low	1745	16QAM	23.66	26.78
20MHz	1 RB mid	1745	16QAM	23.36	26.48
20MHz	1 RB high	1745	16QAM	22.30	25.42
20MHz	100% RB	1745	16QAM	22.60	25.72
20MHz	1 RB low	1770	QPSK	21.85	24.97
20MHz	1 RB mid	1770	QPSK	22.61	25.73
20MHz	1 RB high	1770	QPSK	23.71	26.83
20MHz	100% RB	1770	QPSK	22.54	25.66
20MHz	1 RB low	1770	16QAM	21.01	24.13
20MHz	1 RB mid	1770	16QAM	21.83	24.95
20MHz	1 RB high	1770	16QAM	22.94	26.06
20MHz	100% RB	1770	16QAM	21.61	24.73

6.4. Occupied Bandwidth

Specifications:	FCC Part 2.1049, 22.917(b), 24.238(b)
DUT Serial Number:	863427042013020
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Test Setup

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	500 kHz (k=2)

Test Method

The 99% occupied Bandwidth was calculated from the spectrum analyzer. Markers in the spectrum analyzer were then placed between the calculated frequencies to show the calculated 99% power Band. The 26dB Bandwidth was also measured and recorded.

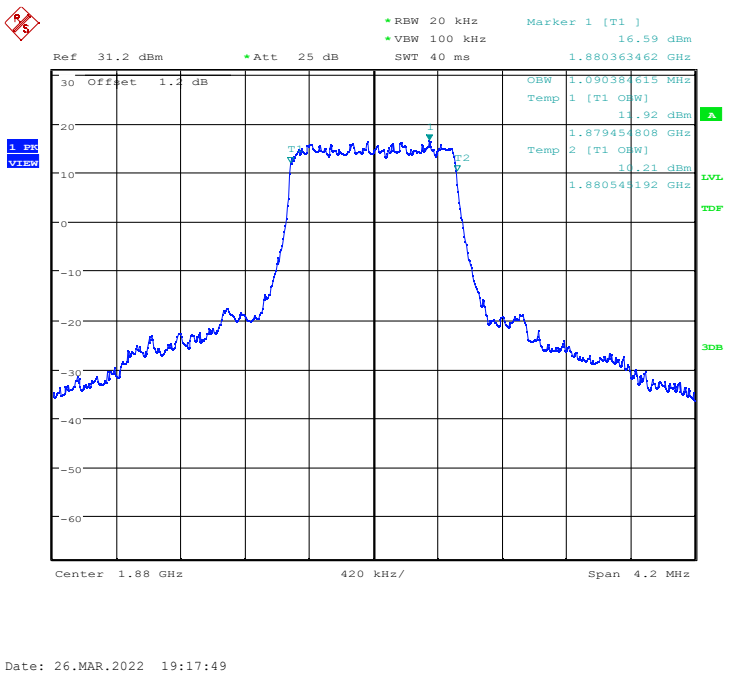
Note: --

6.4.1 occupied bandwidth Results

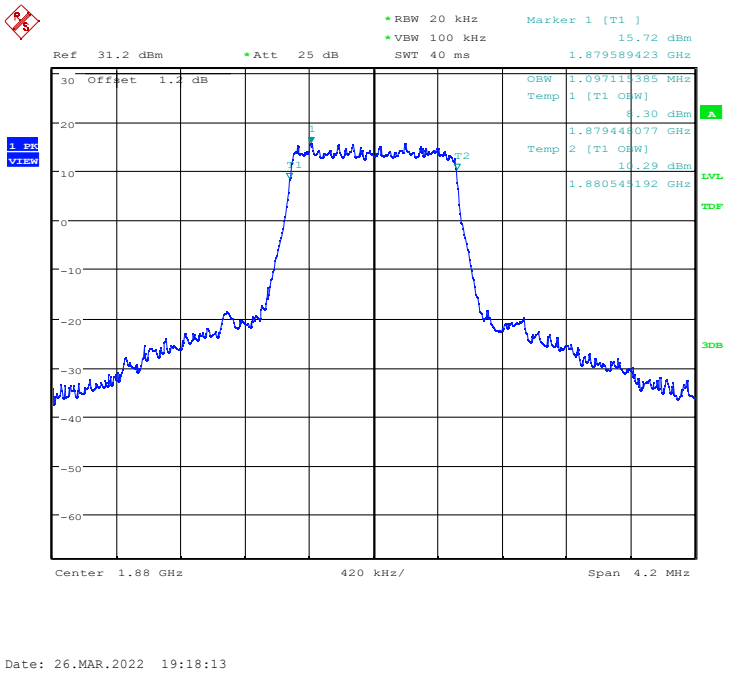
LTE band 2,1.4MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	1.090	1.097

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



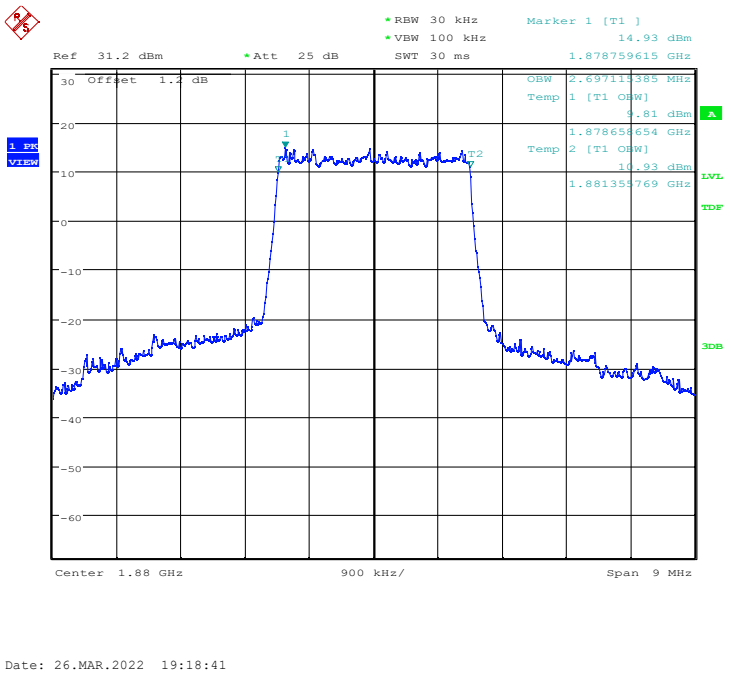
LTE band 2 , 1.4MHz Bandwidth,16QAM (99% BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
15.72 dBm
1.879589423 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 1.097111385 MHz
Temp 1 [T1 OBW]
8.30 dBm
1.879448077 GHz
Temp 2 [T1 OBW]
10.29 dBm
1.880545192 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.88 GHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 19:18:13

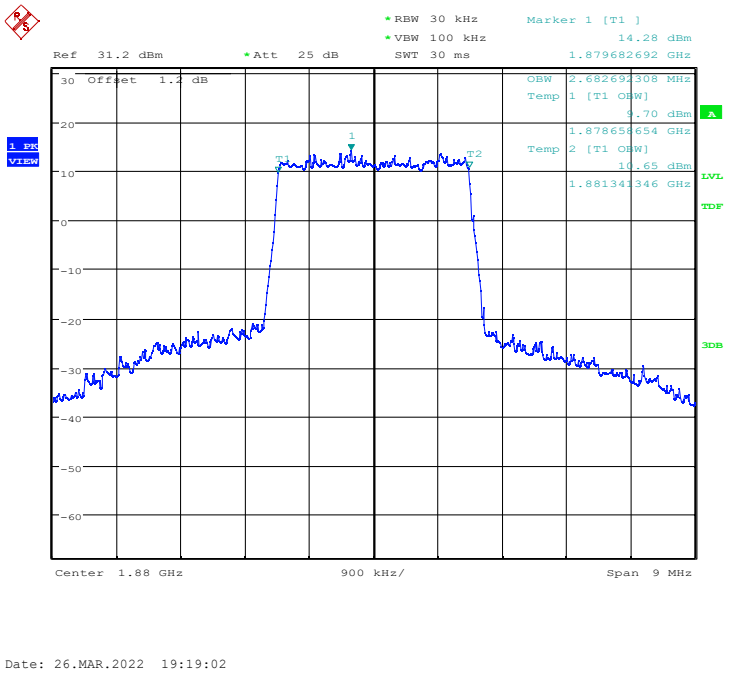
LTE band 2,3MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	2.697	2.683

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



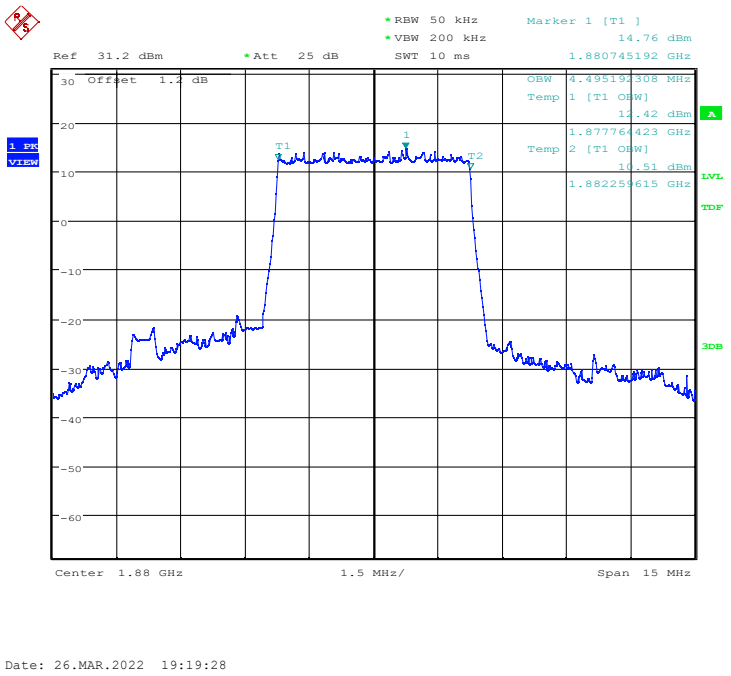
LTE band 2 , 3MHz Bandwidth,16QAM (99% BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.28 dBm
1.879682692 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 2.682692308 MHz
Temp 1 [T1 OBW]
9.70 dBm
1.878658654 GHz
Temp 2 [T1 OBW]
10.65 dBm
1.881341346 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:19:02

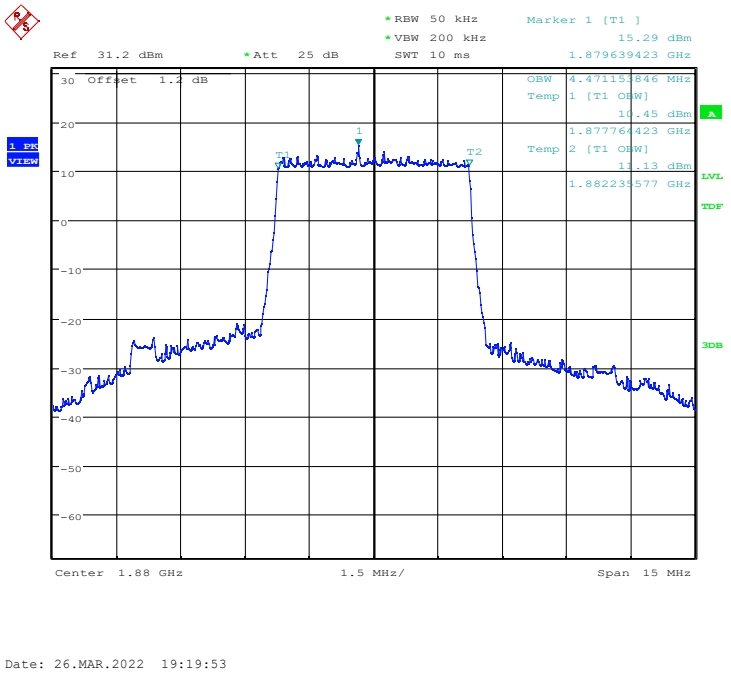
LTE band 2,5MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	4.495	4.471

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



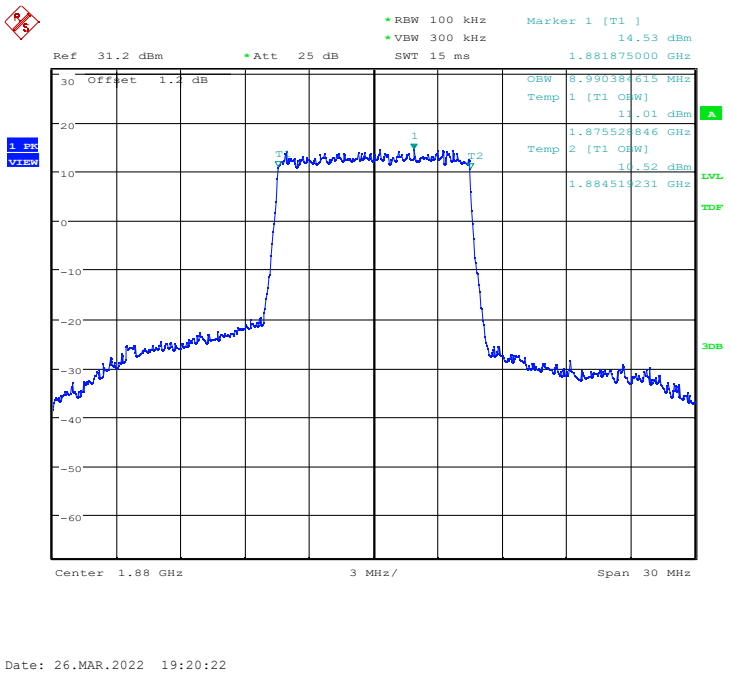
LTE band 2 , 5MHz Bandwidth,16QAM (99% BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
15.29 dBm
1.879639423 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 4.471153846 MHz
Temp 1 [T1 OBW]
10.45 dBm
1.877764423 GHz
Temp 2 [T1 OBW]
11.13 dBm
1.882235577 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:19:53

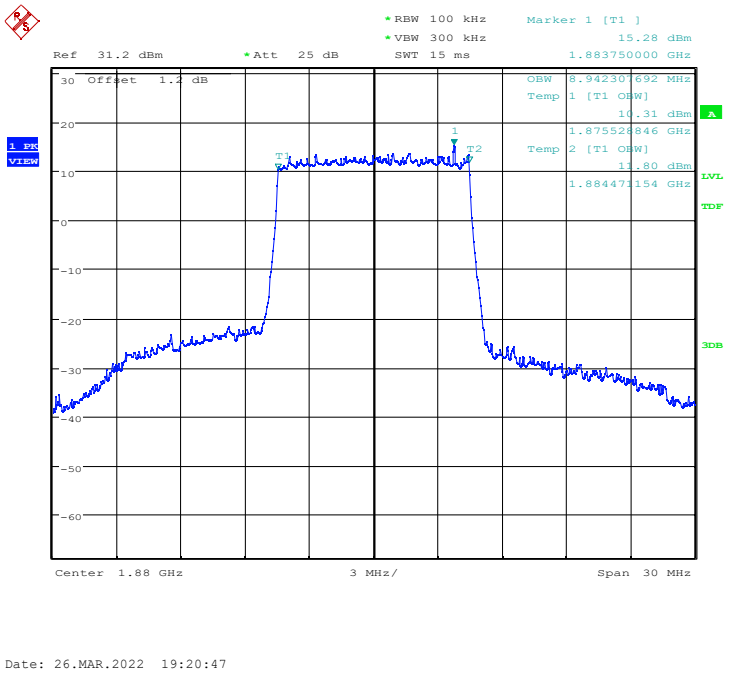
LTE band 2,10MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	8.990	8.942

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



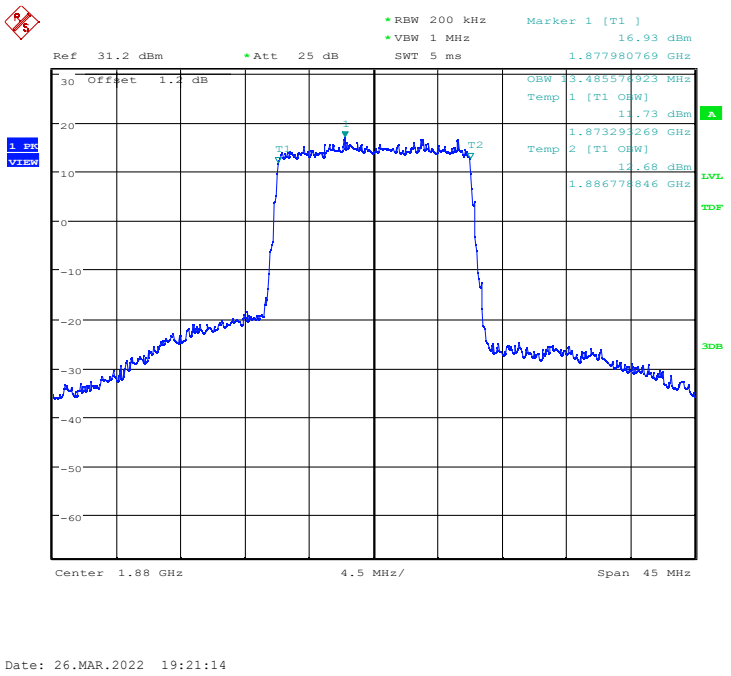
LTE band 2 , 10MHz Bandwidth,16QAM (99% BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
15.28 dBm
1.883750000 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 8.942307692 MHz
Temp 1 [T1 OBW]
10.31 dBm
1.875528846 GHz
Temp 2 [T1 OBW]
11.80 dBm
1.884471154 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:20:47

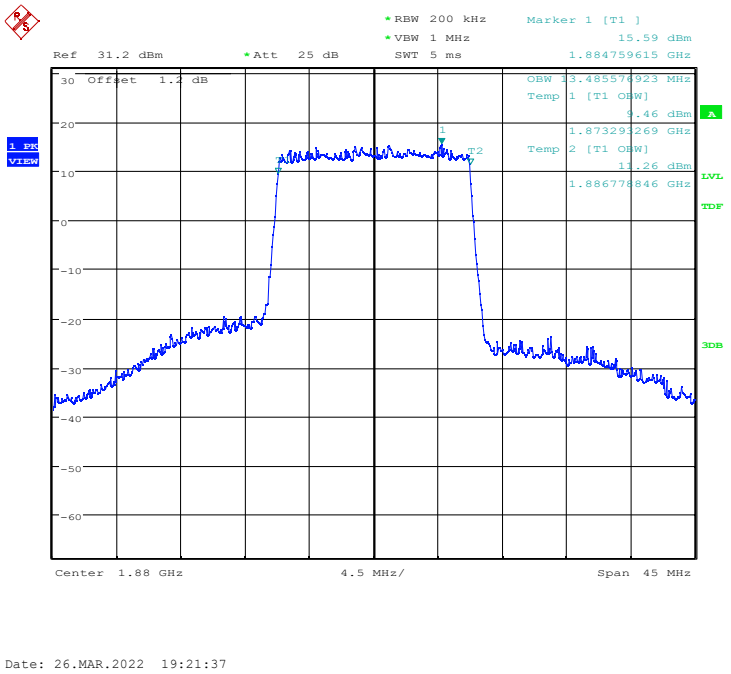
LTE band 2,15MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	13.486	13.486

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



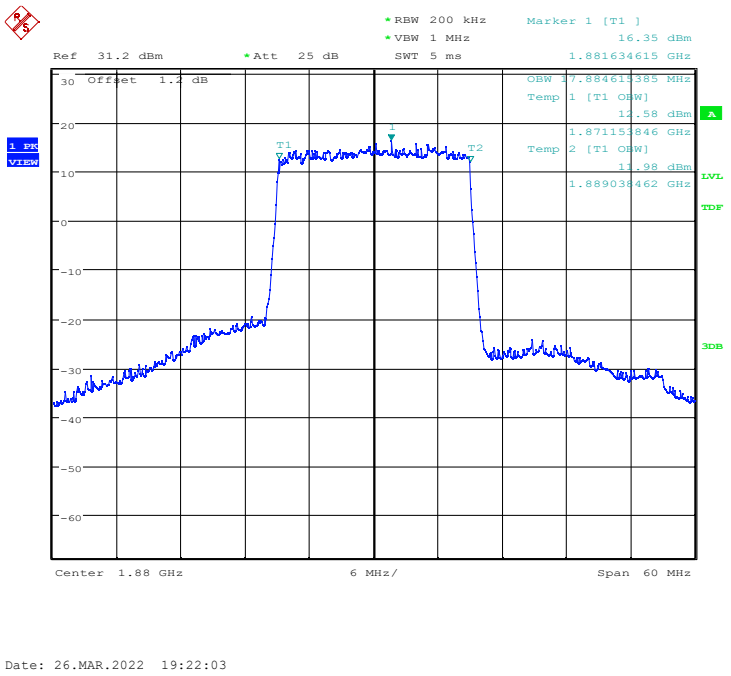
LTE band 2 , 15MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
15.59 dBm
1.884759615 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 13.485576923 MHz
Temp 1 [T1 OBW]
9.46 dBm
1.873293269 GHz
Temp 2 [T1 OBW]
11.26 dBm
1.886778846 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T2
30
20
10
0
-10
-20
-30
-40
-50
-60
Center 1.88 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:21:37

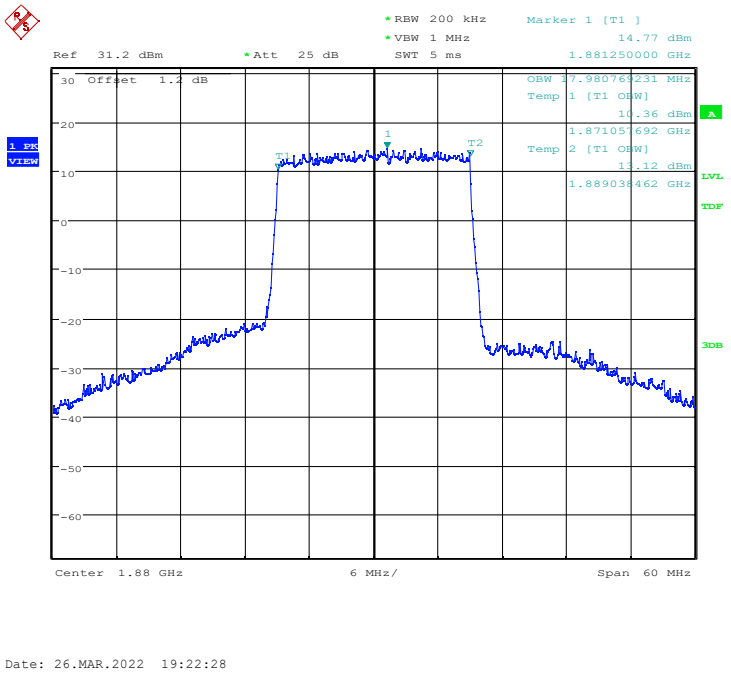
LTE band 2,20MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	17.885	17.981

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



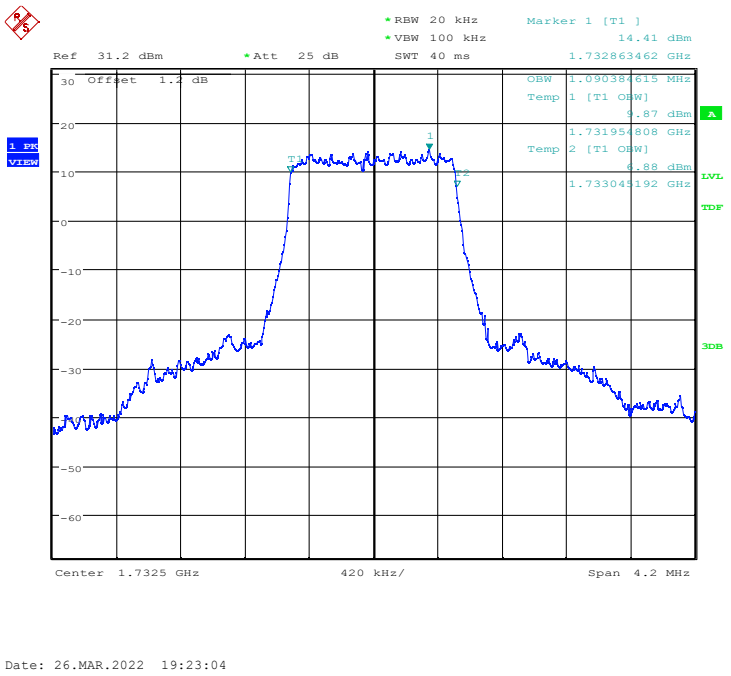
LTE band 2 , 20MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.77 dBm
1.881250000 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 17.980769231 MHz
Temp 1 [T1 OBW]
10.36 dBm
1.871057692 GHz
Temp 2 [T1 OBW]
13.12 dBm
1.889038462 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:22:28

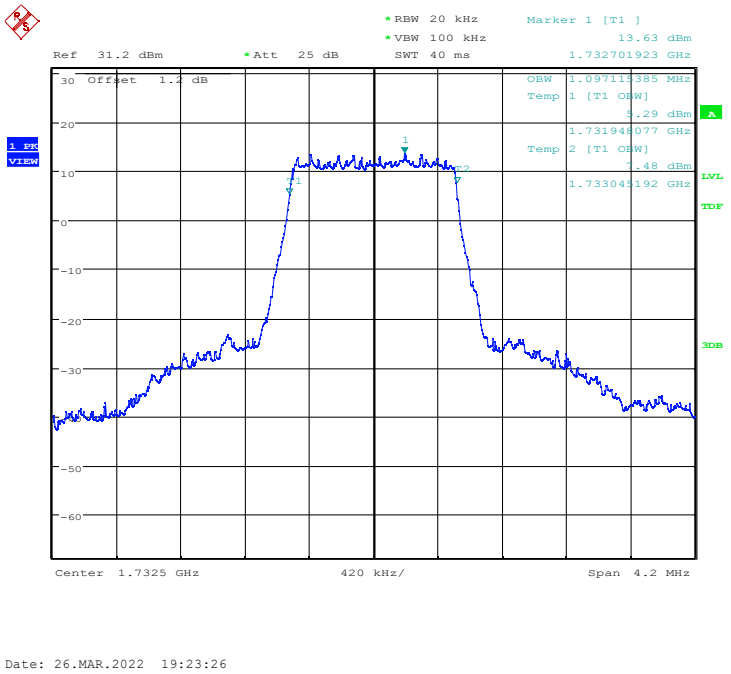
LTE band 4,1.4MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	1.090	1.097

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



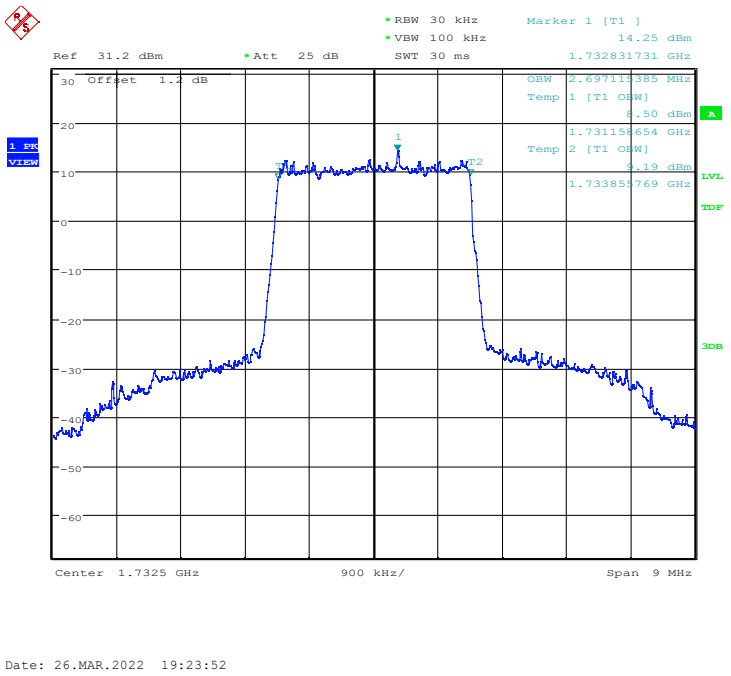
LTE band 4 , 1.4MHz Bandwidth,16QAM (99% BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
13.63 dBm
1.732701923 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 1.097115385 MHz
Temp 1 [T1 OBW]
5.29 dBm
1.731948077 GHz
Temp 2 [T1 OBW]
7.48 dBm
1.733045192 GHz
1 PK
VIEW
A
LVL
TDF
3DB
30
20
10
0
-10
-20
-30
-50
-60
Center 1.7325 GHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 19:23:26

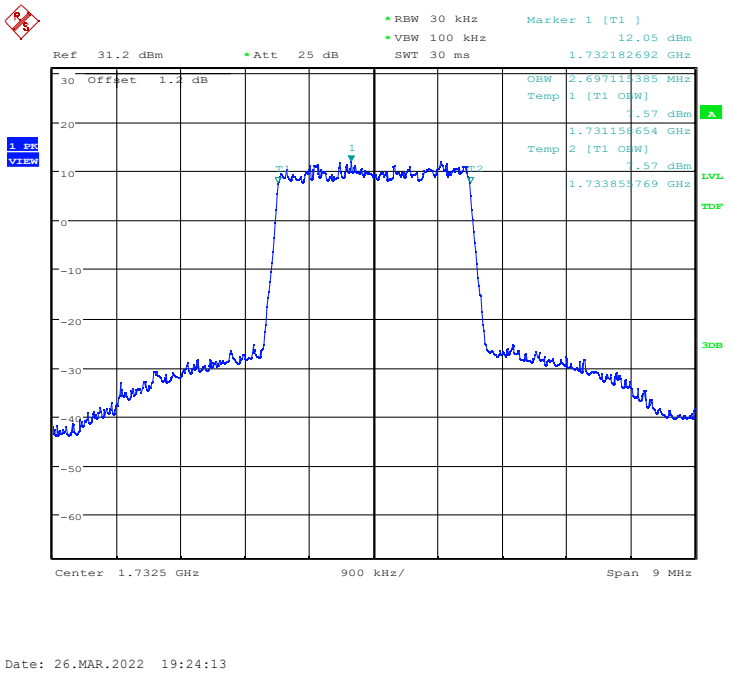
LTE band 4,3MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	2.697	2.697

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



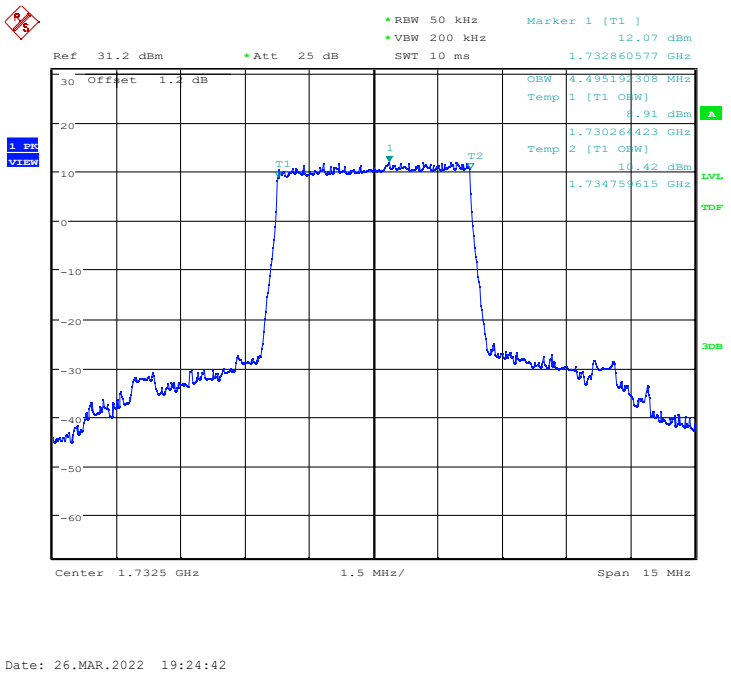
LTE band 4 , 3MHz Bandwidth,16QAM (99% BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
12.05 dBm
1.732182692 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 2.697115385 MHz
Temp 1 [T1 OBW]
7.57 dBm
1.731158654 GHz
Temp 2 [T1 OBW]
7.57 dBm
1.733855769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:24:13

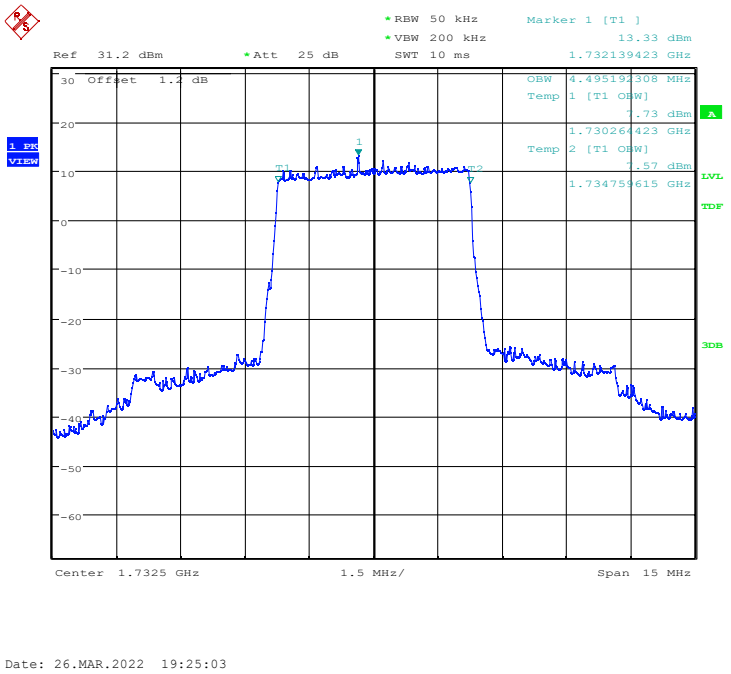
LTE band 4,5MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	4.495	4.495

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



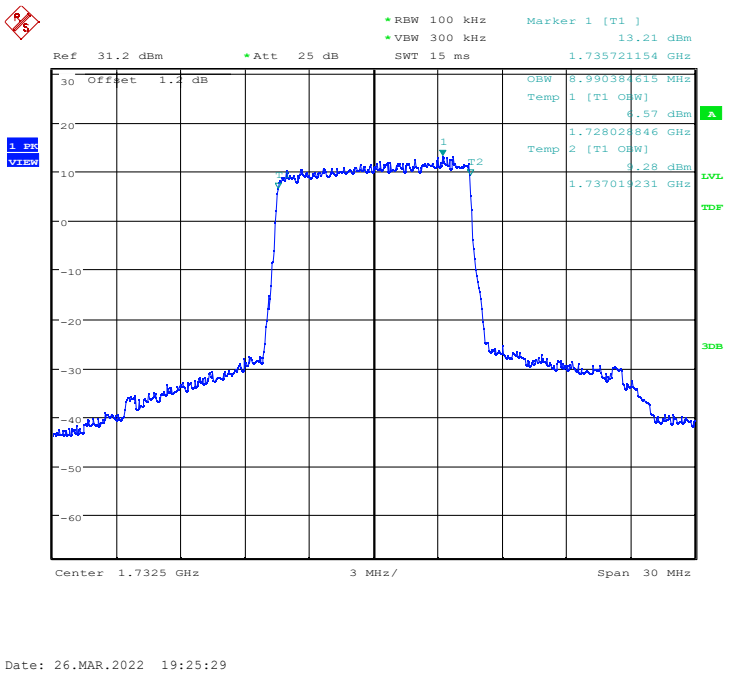
LTE band 4 , 5MHz Bandwidth,16QAM (99% BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
13.33 dBm
1.732139423 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 4.495192308 MHz
Temp 1 [T1 OBW]
7.73 dBm
1.730264423 GHz
Temp 2 [T1 OBW]
7.57 dBm
1.734759615 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:25:03

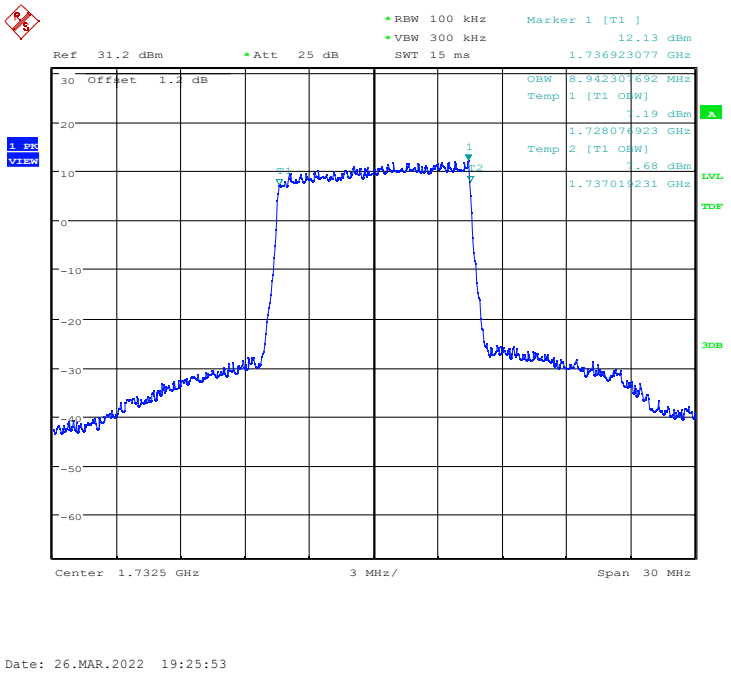
LTE band 4,10MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	8.990	8.942

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



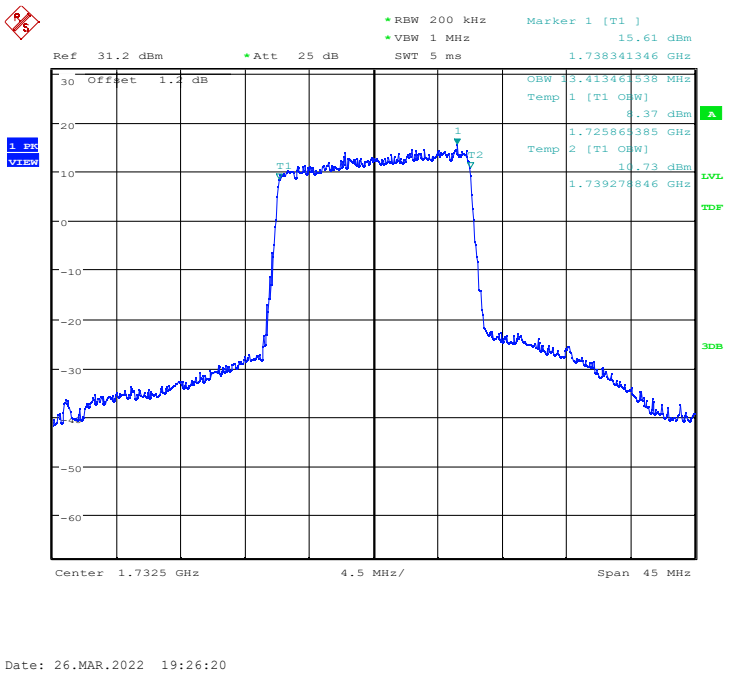
LTE band 4 , 10MHz Bandwidth,16QAM (99% BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
12.13 dBm
1.736923077 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 8.942307692 MHz
Temp 1 [T1 OBW]
7.19 dBm
1.728076923 GHz
Temp 2 [T1 OBW]
7.68 dBm
1.737019231 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:25:53

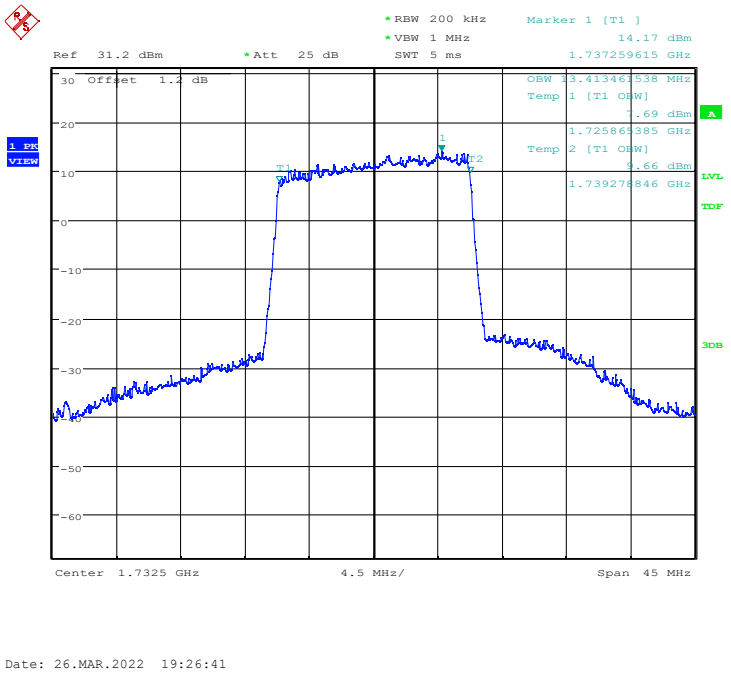
LTE band 4,15MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	13.413	13.413

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



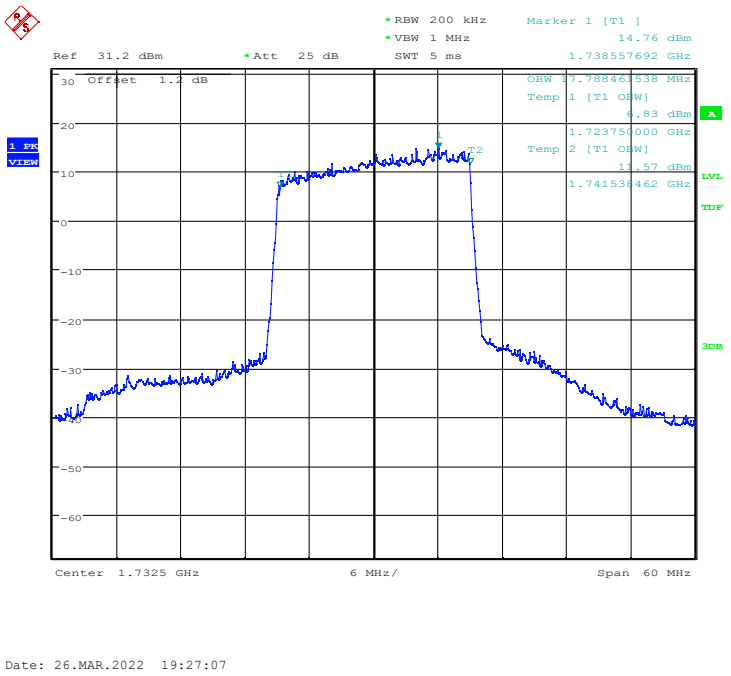
LTE band 4 , 15MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.17 dBm
1.737259615 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 13.413461538 MHz
Temp 1 [T1 OBW]
7.69 dBm
1.725865385 GHz
Temp 2 [T1 OBW]
9.66 dBm
1.739278846 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:26:41

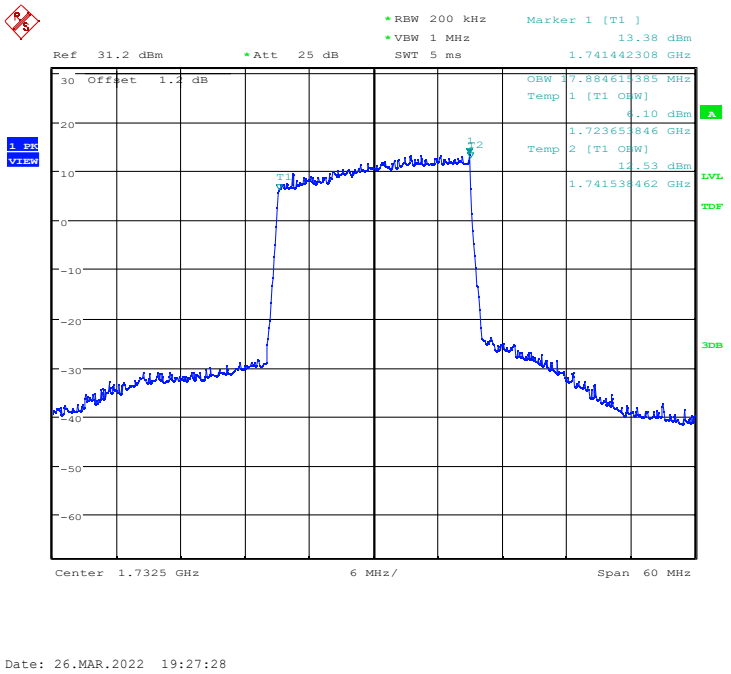
LTE band 4,20MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1732.5	17.788	17.885

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



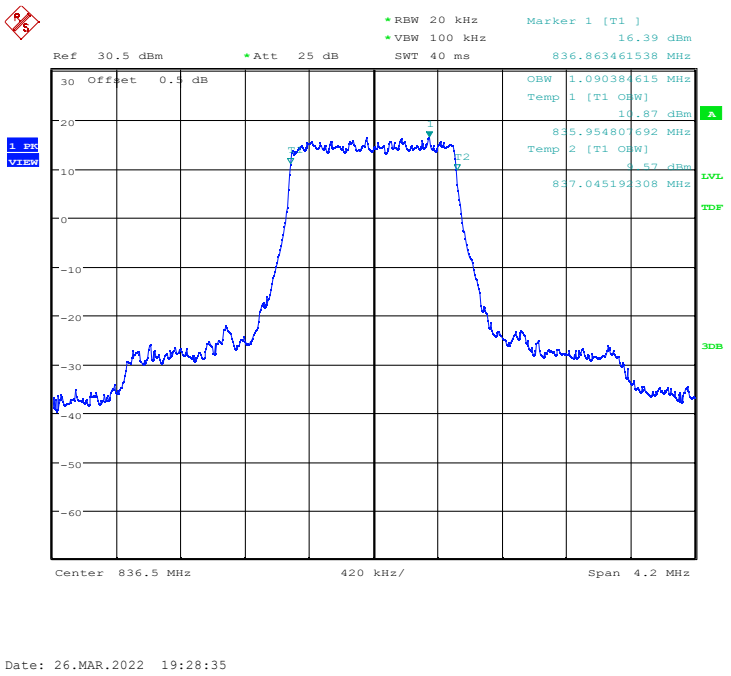
LTE band 4 , 20MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
13.38 dBm
1.741442308 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
OBW 17.884615385 MHz
Temp 1 [T1 OBW]
6.10 dBm
1.723653846 GHz
Temp 2 [T1 OBW]
12.53 dBm
1.741538462 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:27:28

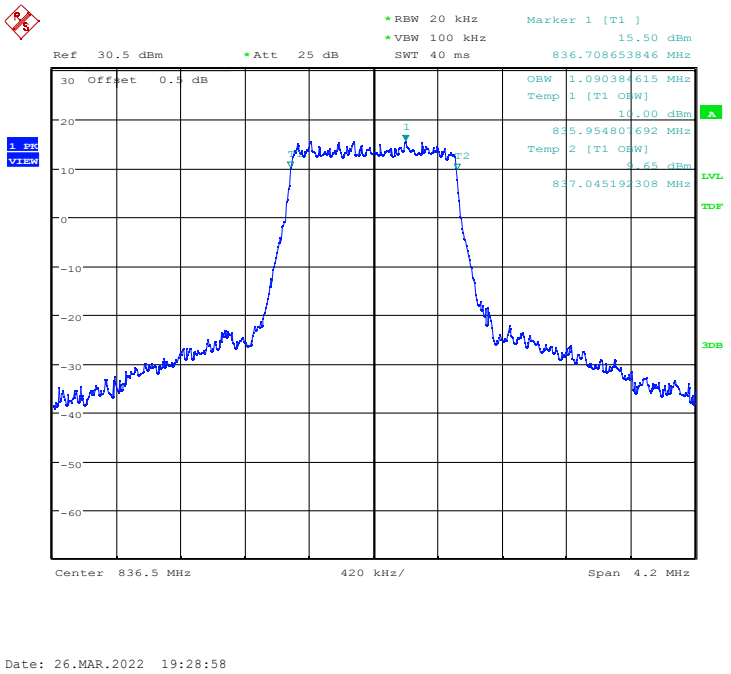
LTE band 5,1.4MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
836.5	1.090	1.090

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



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

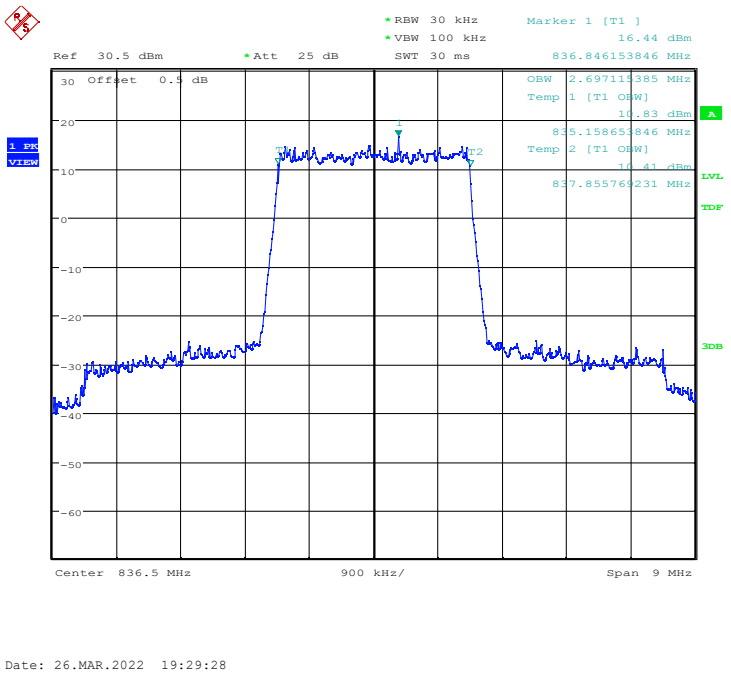


Date: 26.MAR.2022 19:28:58

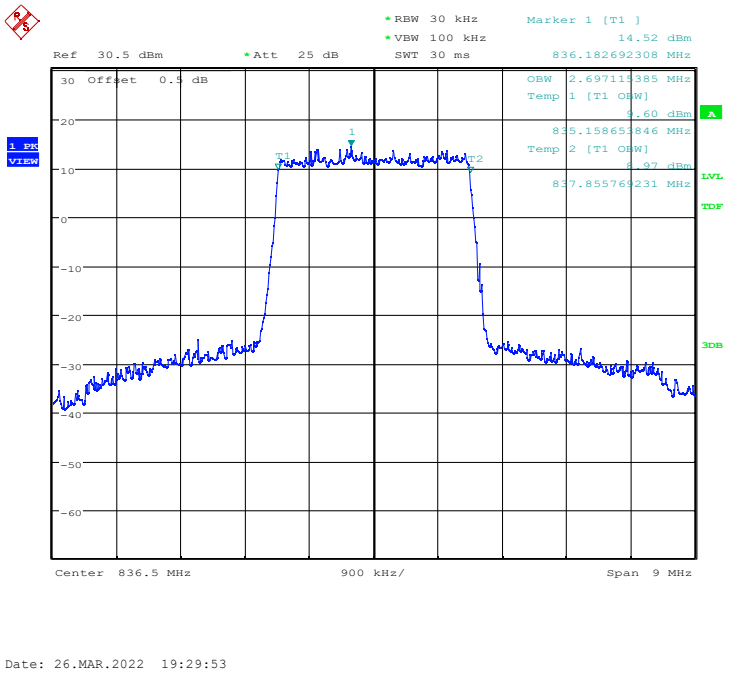
LTE band 5,3MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
836.5	2.697	2.697

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



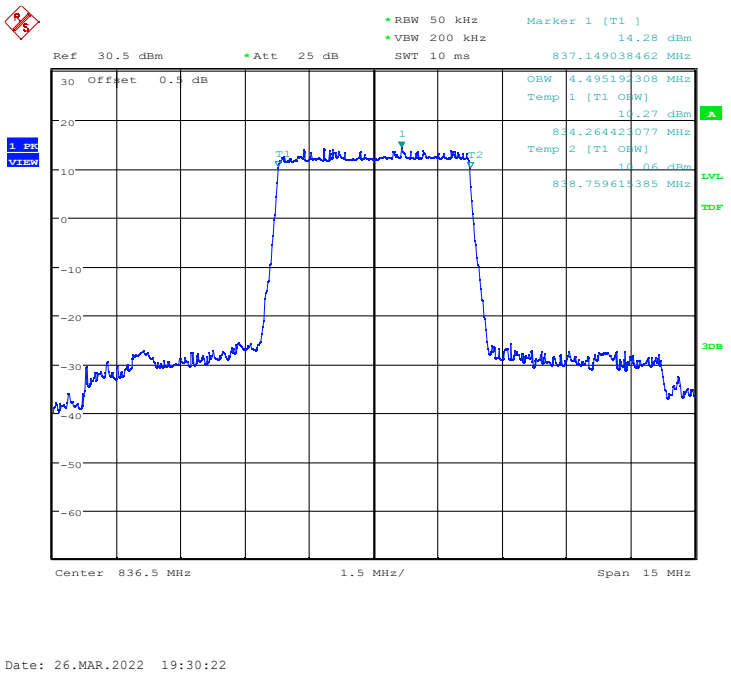
LTE band 5 , 3MHz Bandwidth,16QAM (99% BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.52 dBm
836.182692308 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 2.697115385 MHz
Temp 1 [T1 OBW]
9.60 dBm
835.158653846 MHz
Temp 2 [T1 OBW]
8.97 dBm
837.855769231 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 836.5 MHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:29:53

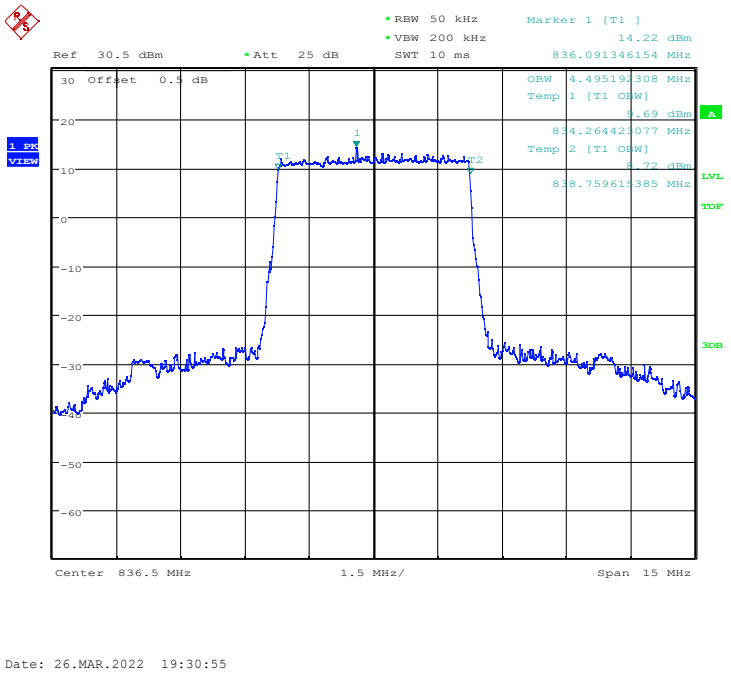
LTE band 5,5MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
836.5	4.495	4.495

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



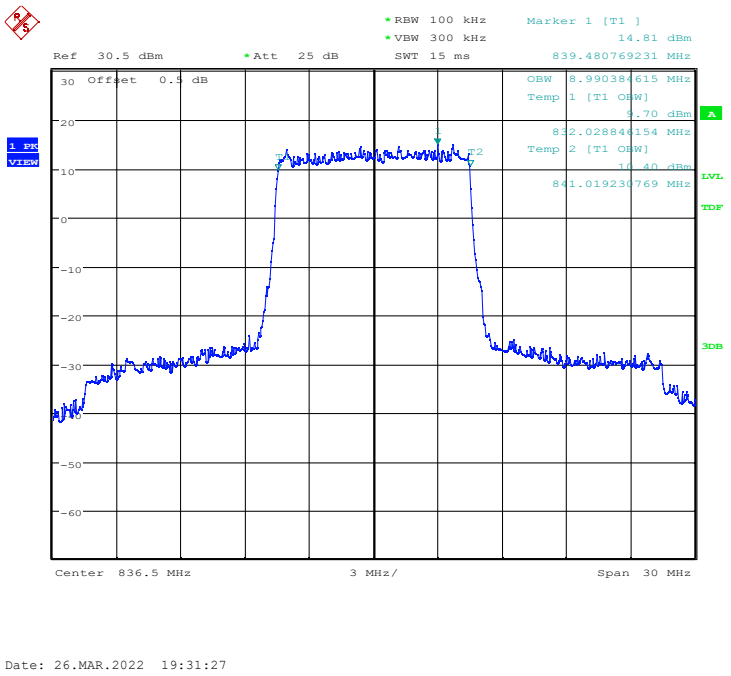
LTE band 5 , 5MHz Bandwidth,16QAM (99% BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
14.22 dBm
836.091346154 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 4.495192308 MHz
Temp 1 [T1 OBW]
9.69 dBm
834.264423077 MHz
Temp 2 [T1 OBW]
8.72 dBm
838.759615385 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 836.5 MHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:30:55

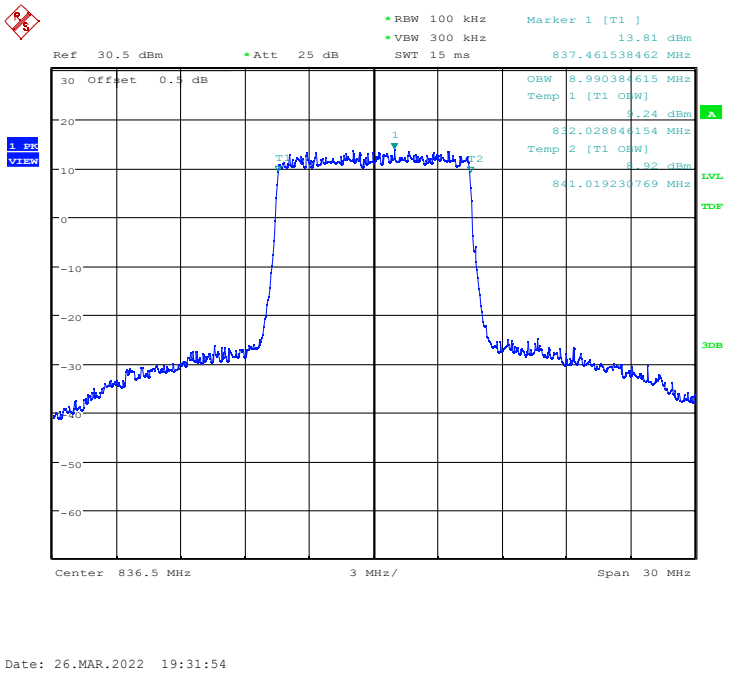
LTE band 5,10MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
836.5	8.990	8.990

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



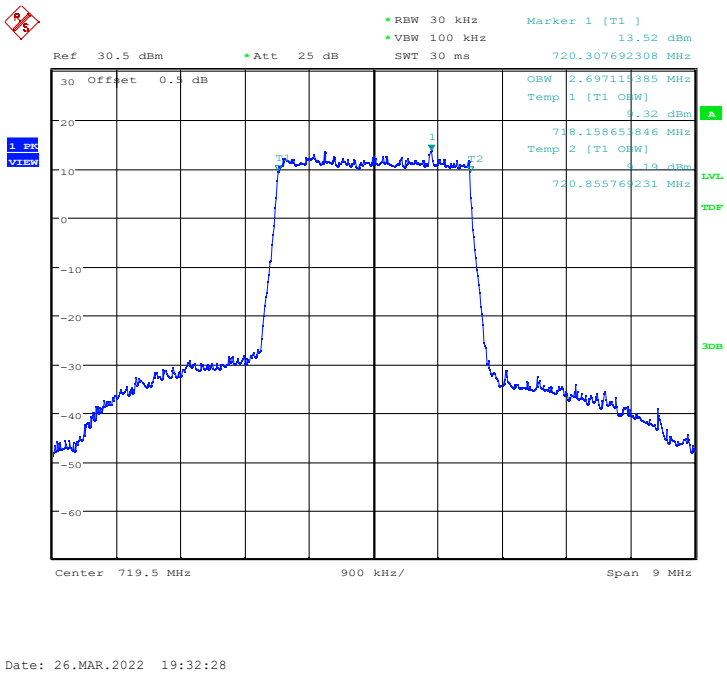
LTE band 5 , 10MHz Bandwidth,16QAM (99% BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
13.81 dBm
837.461538462 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 8.990384615 MHz
Temp 1 [T1 OBW]
9.24 dBm
832.028846154 MHz
Temp 2 [T1 OBW]
8.92 dBm
841.019230769 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 836.5 MHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:31:54

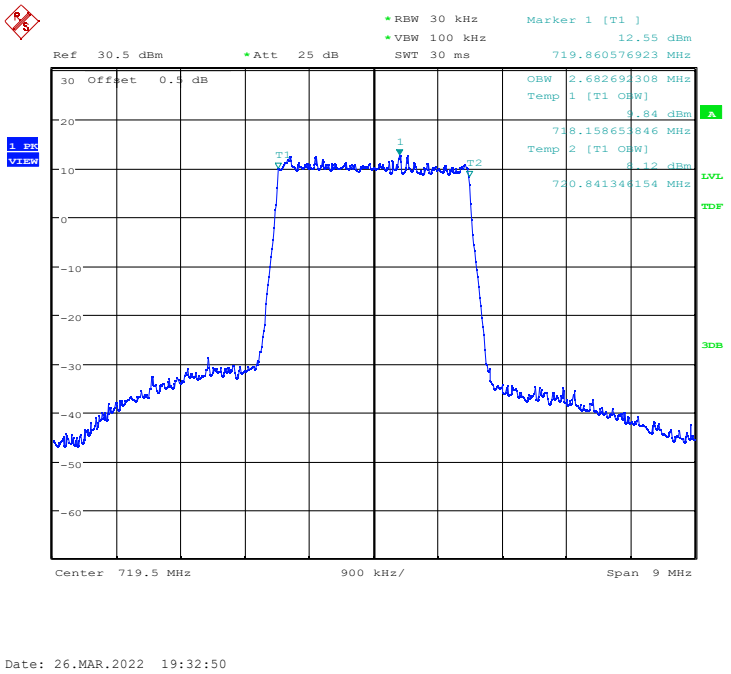
LTE band 28,3MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
719.5	2.697	2.683

LTE band 28 , 3MHz Bandwidth,QPSK (99% BW)



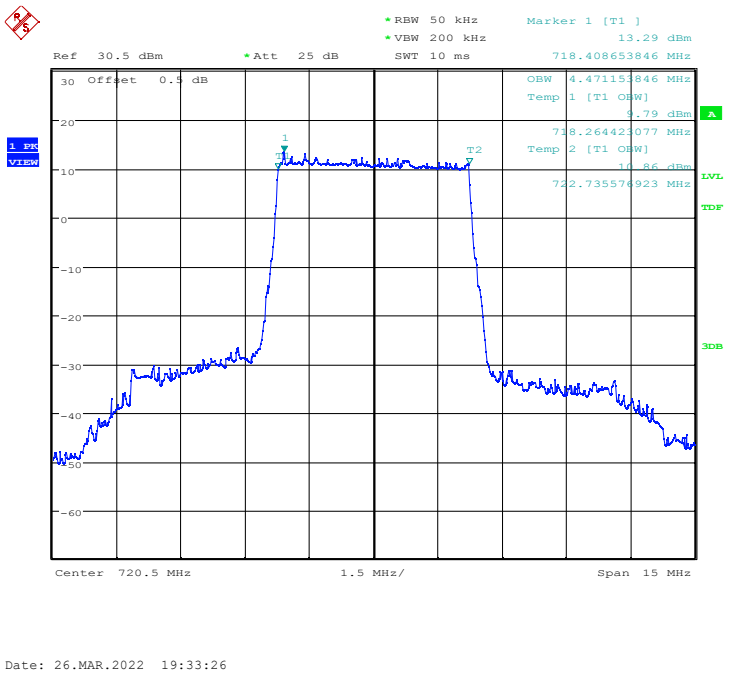
LTE band 28 , 3MHz Bandwidth,16QAM (99% BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
12.55 dBm
719.860576923 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 2.682692308 MHz
Temp 1 [T1 OBW]
9.84 dBm
718.158653846 MHz
Temp 2 [T1 OBW]
8.12 dBm
720.841346154 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 719.5 MHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:32:50

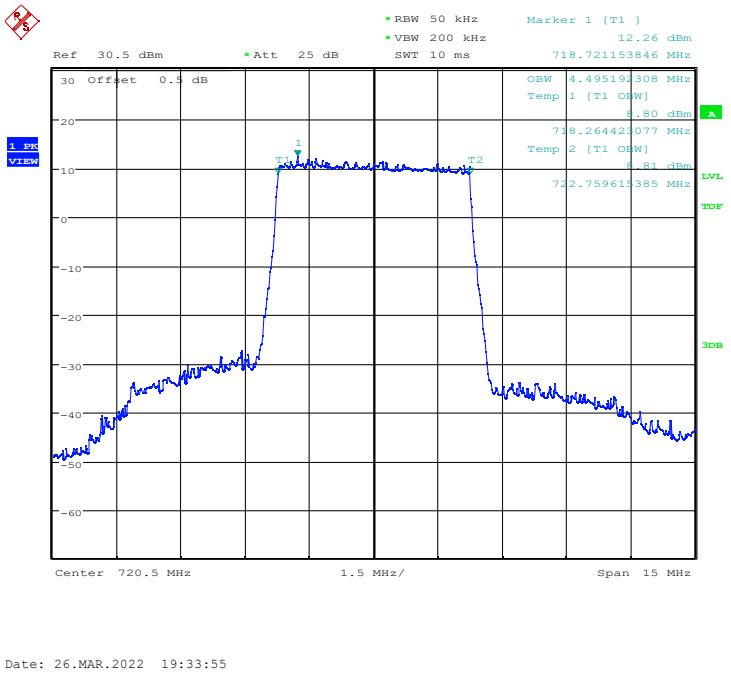
LTE band 28,5MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
720.5	4.471	4.495

LTE band 28 , 5MHz Bandwidth,QPSK (99% BW)



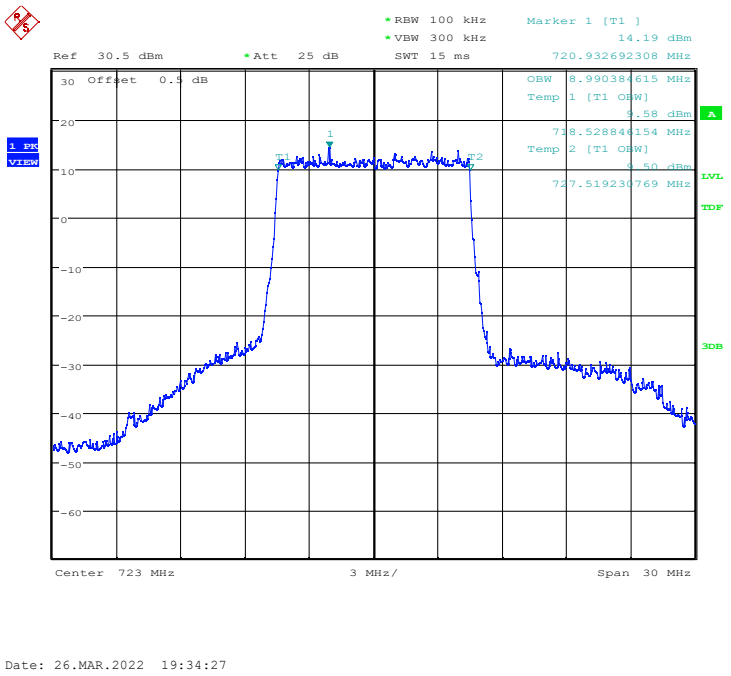
LTE band 28 , 5MHz Bandwidth,16QAM (99% BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
12.26 dBm
718.721153846 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 4.495192308 MHz
Temp 1 [T1 OBW]
8.80 dBm
718.264423077 MHz
Temp 2 [T1 OBW]
8.81 dBm
722.759615385 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 720.5 MHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:33:55

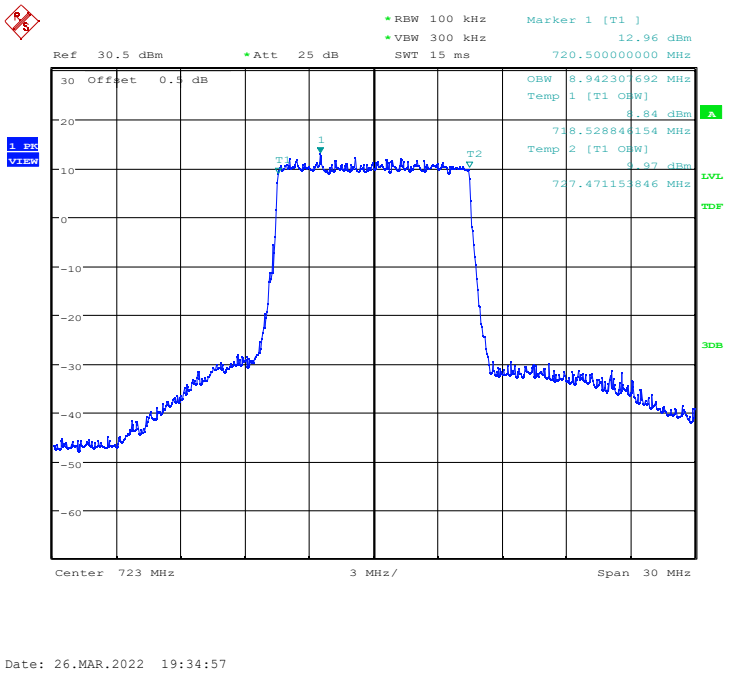
LTE band 28,10MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
723	8.990	8.942

LTE band 28 , 10MHz Bandwidth,QPSK (99% BW)



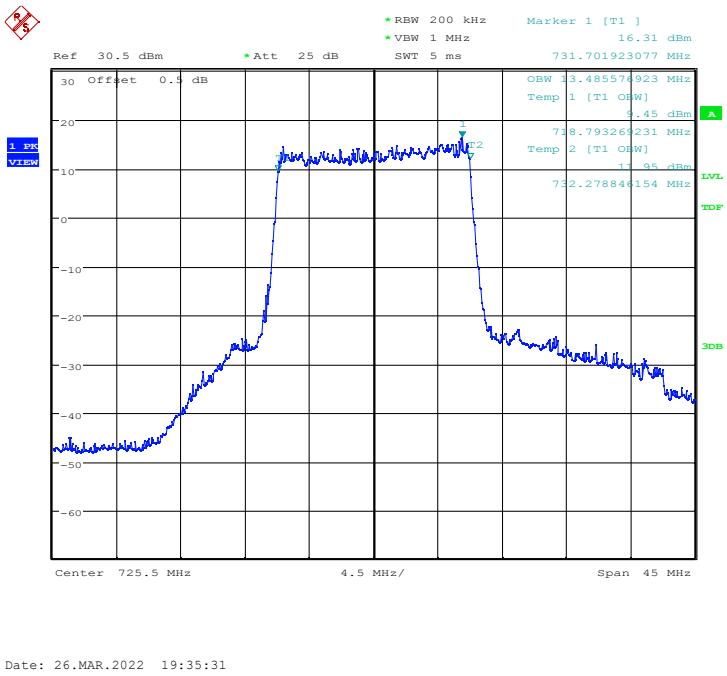
LTE band 28 , 10MHz Bandwidth,16QAM (99% BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
12.96 dBm
720.500000000 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 8.942307692 MHz
Temp 1 [T1 OBW]
8.84 dBm
718.528846154 MHz
Temp 2 [T1 OBW]
8.97 dBm
727.471153846 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 723 MHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:34:57

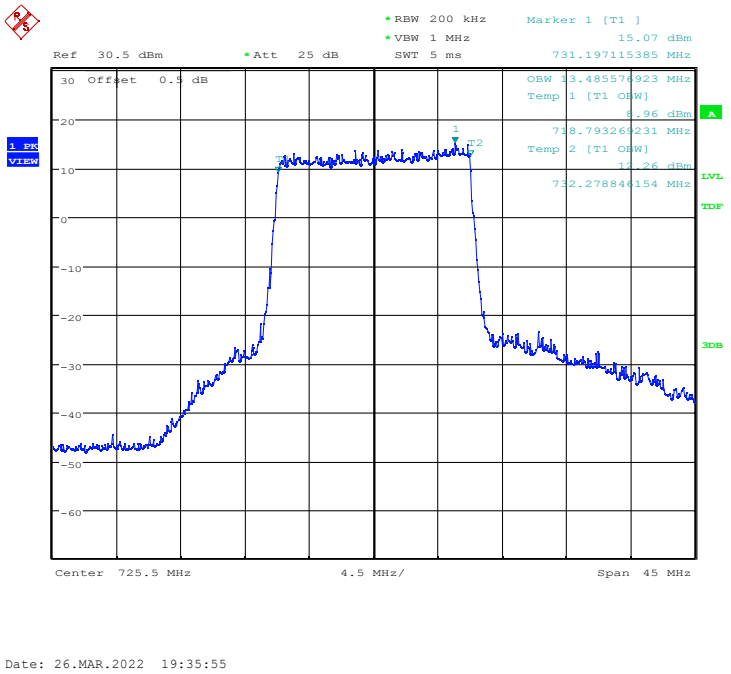
LTE band 28,15MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
725.5	13.486	13.486

LTE band 28 , 15MHz Bandwidth,QPSK (99% BW)



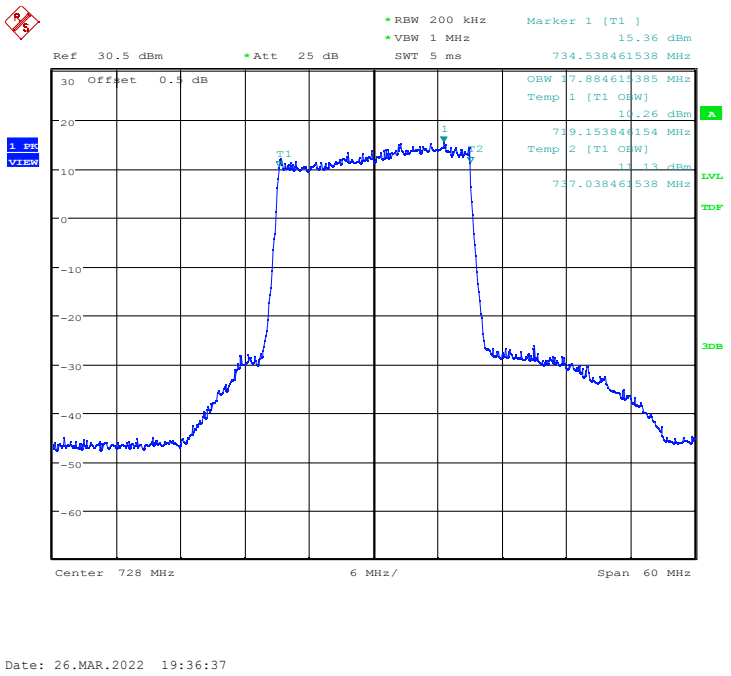
LTE band 28 , 15MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
15.07 dBm
731.197115385 MHz
Ref 30.5 dBm
Att 25 dB
30 Offset 0.5 dB
OBW 13.485576923 MHz
Temp 1 [T1 OBW]
8.96 dBm
718.793269231 MHz
Temp 2 [T1 OBW]
12.26 dBm
732.278846154 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 725.5 MHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:35:55

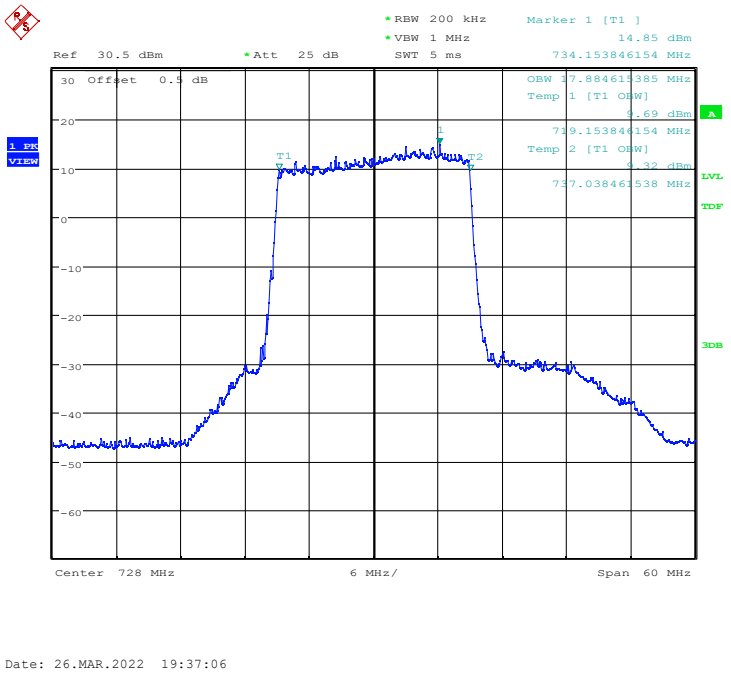
LTE band 28,20MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
728	17.885	17.885

LTE band 28 , 20MHz Bandwidth,QPSK (99% BW)



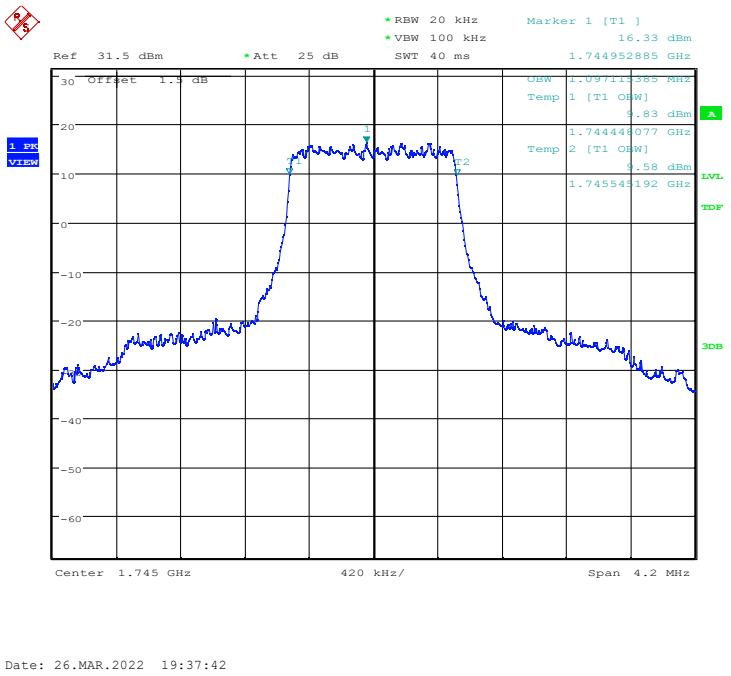
LTE band 28 , 20MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.85 dBm
734.153846154 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
OBW 17.884615385 MHz
Temp 1 [T1 OBW]
9.69 dBm
719.153846154 MHz
Temp 2 [T1 OBW]
9.32 dBm
737.038461538 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 728 MHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:37:06

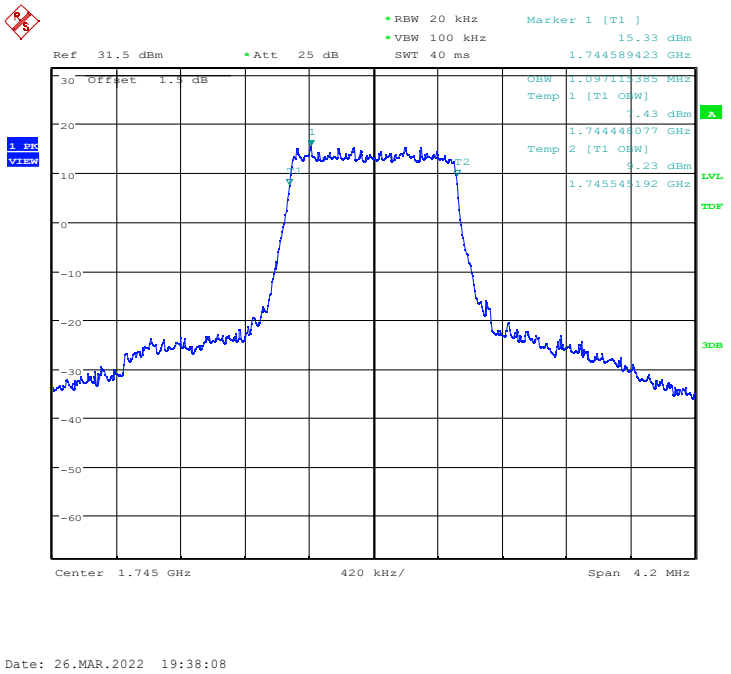
LTE band 66,1.4MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	1.097	1.097

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



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

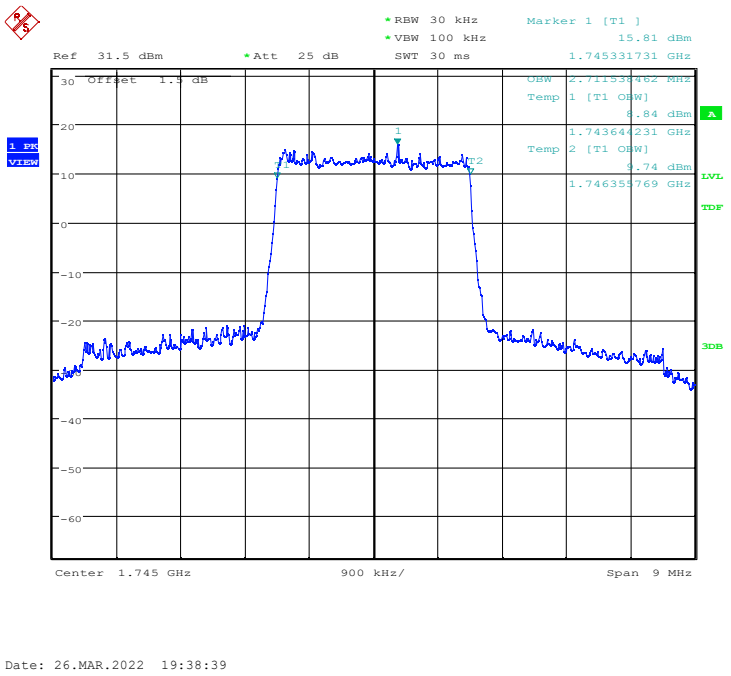


Date: 26.MAR.2022 19:38:08

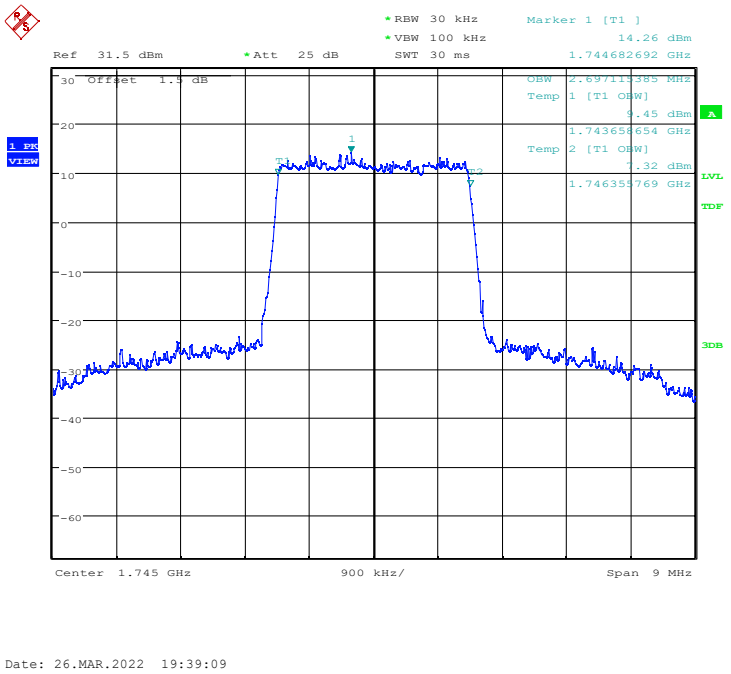
LTE band 66,3MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	2.712	2.697

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



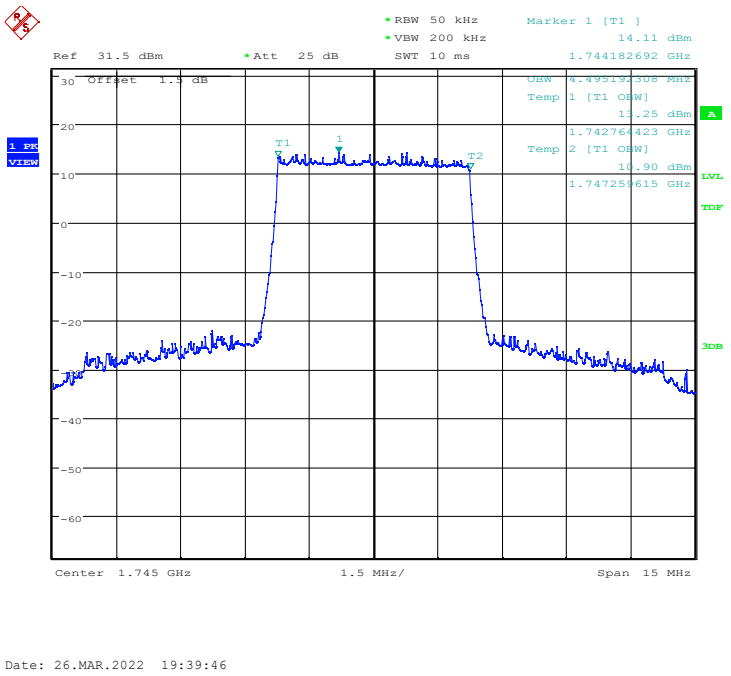
LTE band 66 , 3MHz Bandwidth,16QAM (99% BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.26 dBm
1.744682692 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
OBW 2.697115385 MHz
Temp 1 [T1 OBW]
9.45 dBm
1.743658654 GHz
Temp 2 [T1 OBW]
7.32 dBm
1.746355769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.745 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:39:09

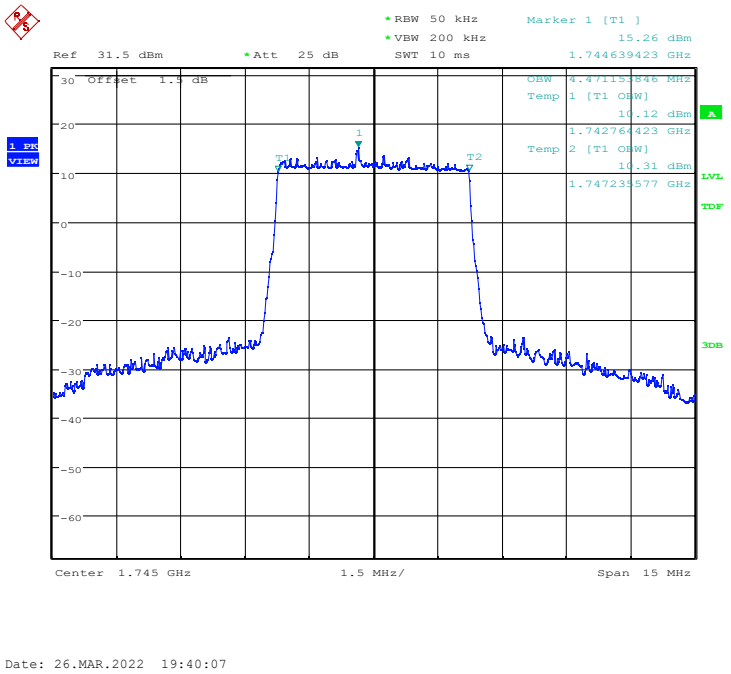
LTE band 66,5MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	4.495	4.471

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



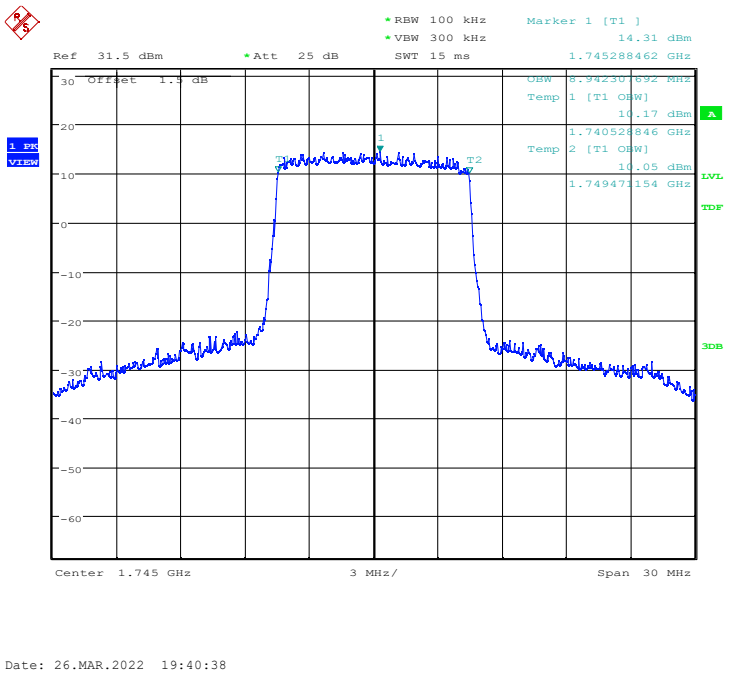
LTE band 66 , 5MHz Bandwidth,16QAM (99% BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
15.26 dBm
1.744639423 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
OBW 4.471153846 MHz
Temp 1 [T1 OBW]
10.12 dBm
1.742764423 GHz
Temp 2 [T1 OBW]
10.31 dBm
1.747235577 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:40:07

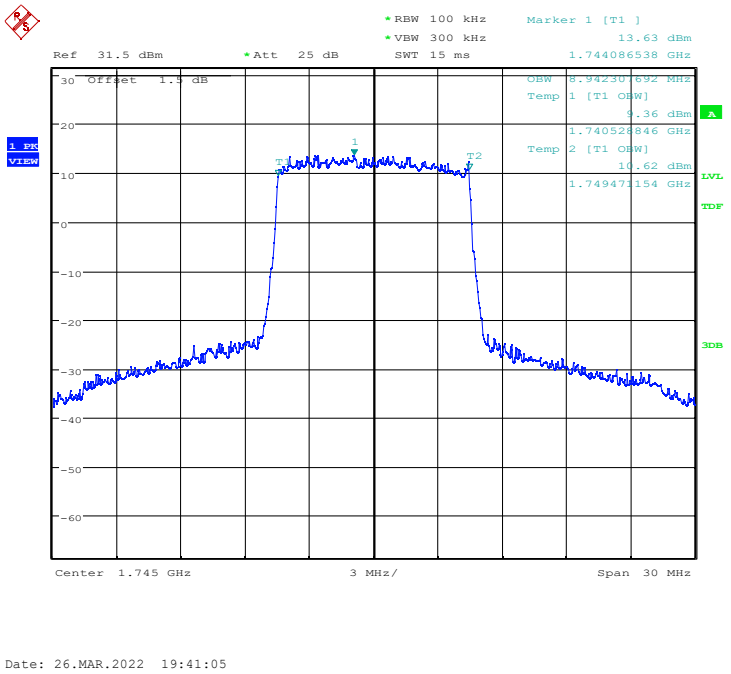
LTE band 66,10MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	8.942	8.942

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



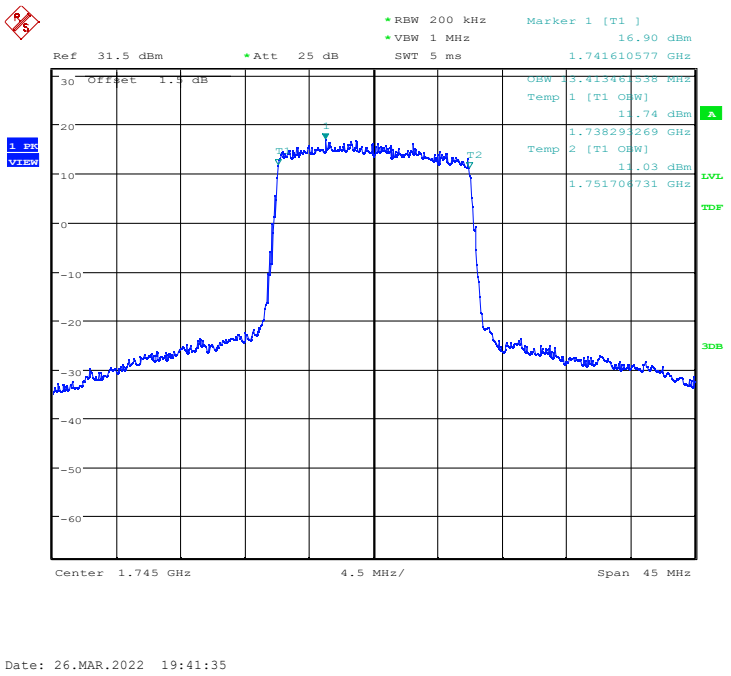
LTE band 66 , 10MHz Bandwidth,16QAM (99% BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
13.63 dBm
1.744086538 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
OBW 8.942307692 MHz
Temp 1 [T1 OBW]
9.36 dBm
1.740528846 GHz
Temp 2 [T1 OBW]
10.62 dBm
1.749471154 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:41:05

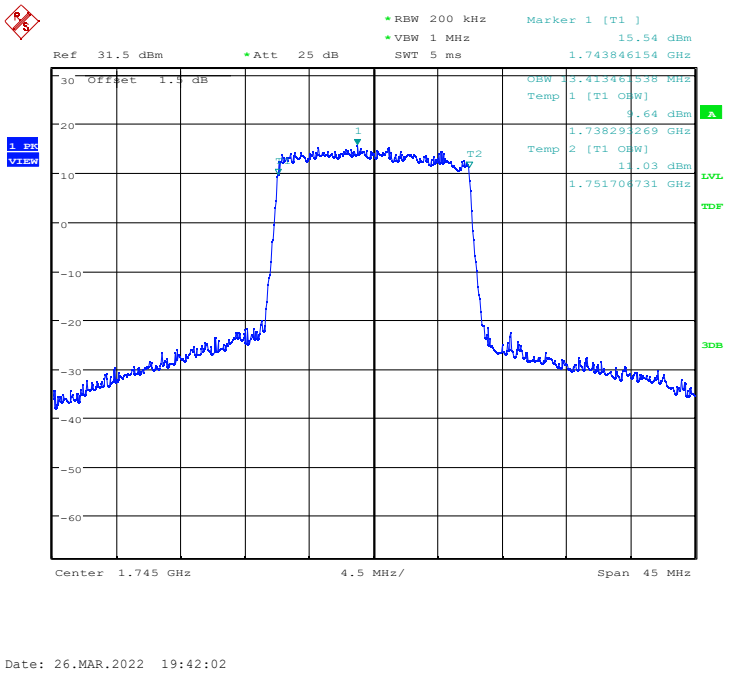
LTE band 66,15MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	13.413	13.413

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



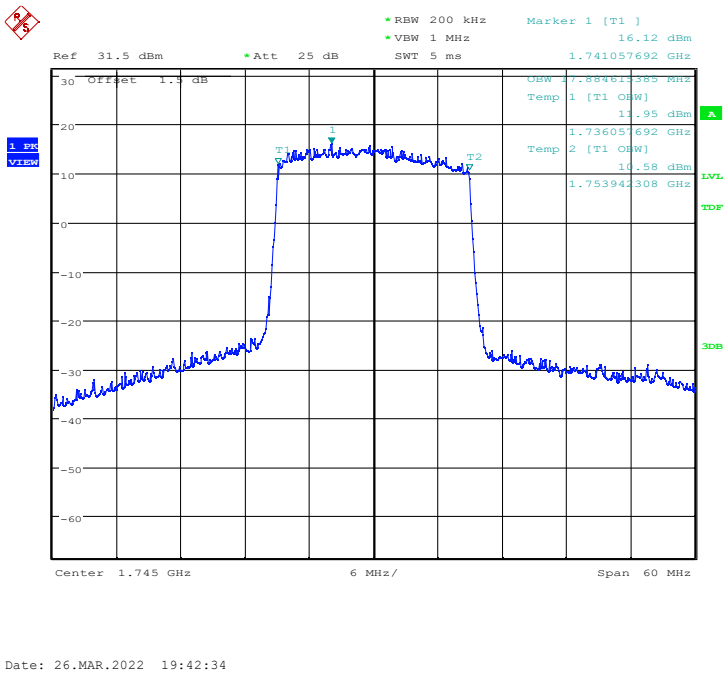
LTE band 66 , 15MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
15.54 dBm
1.743846154 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
OBW 13.413461538 MHz
Temp 1 [T1 OBW]
9.64 dBm
1.738293269 GHz
Temp 2 [T1 OBW]
11.03 dBm
1.751706731 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T2
Center 1.745 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:42:02

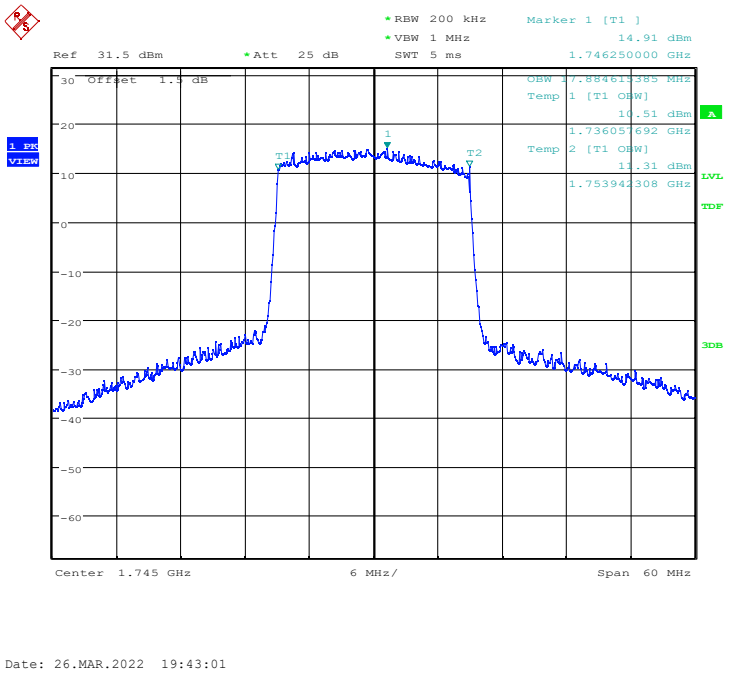
LTE band 66,20MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1745	17.885	17.885

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



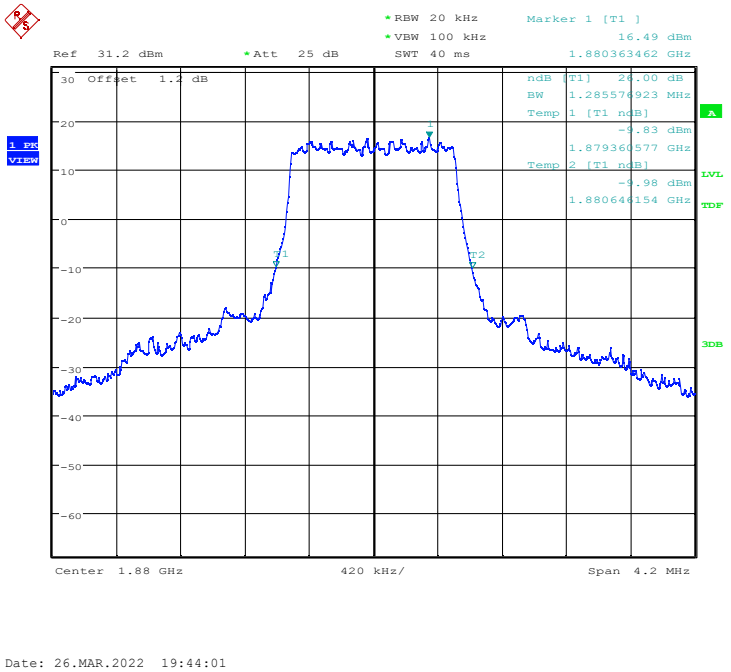
LTE band 66 , 20MHz Bandwidth,16QAM (99% BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.91 dBm
1.746250000 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
OBW 17.884615385 MHz
Temp 1 [T1 OBW]
10.51 dBm
1.736057692 GHz
Temp 2 [T1 OBW]
11.31 dBm
1.753942308 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:43:01

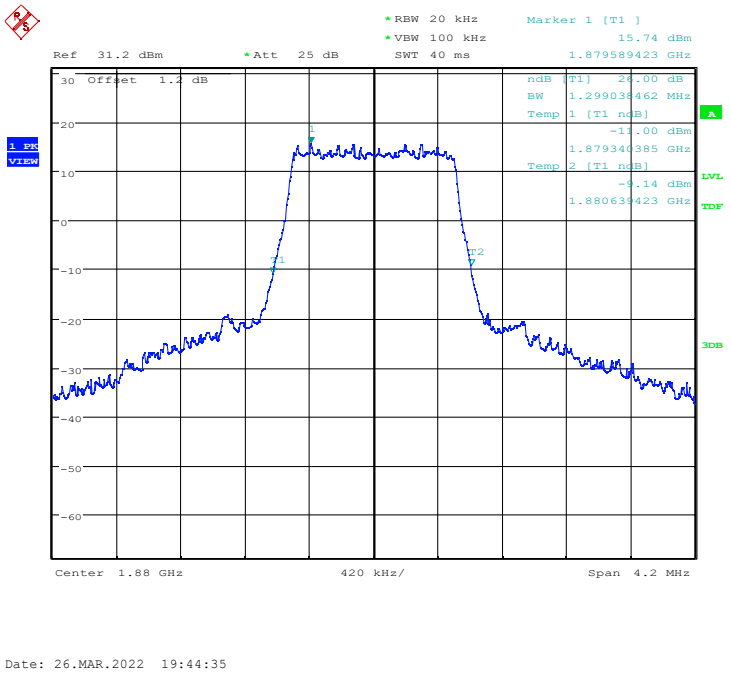
LTE band 2,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	1.286	1.299

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



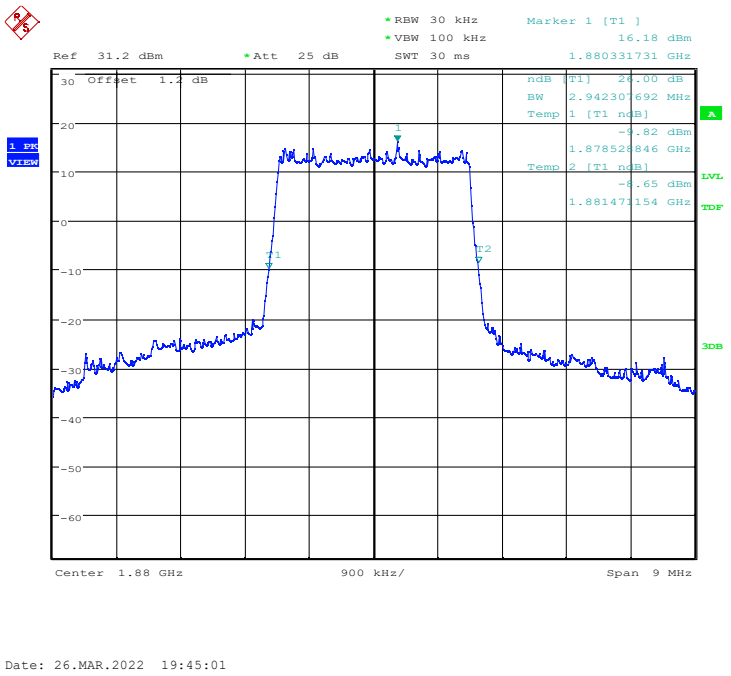
LTE band 2 , 1.4MHz Bandwidth,16QAM (-26dBc BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
15.74 dBm
1.879589423 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 1.299038462 MHz
Temp 1 [T1 ndB]
-11.00 dBm
1.879340385 GHz
Temp 2 [T1 ndB]
-9.14 dBm
1.880639423 GHz
1 PK VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 19:44:35

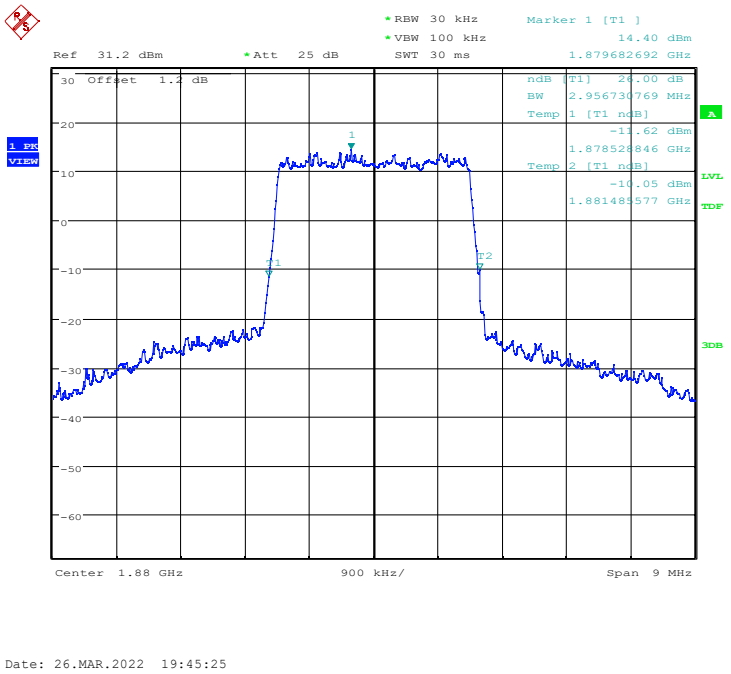
LTE band 2,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	2.942	2.957

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



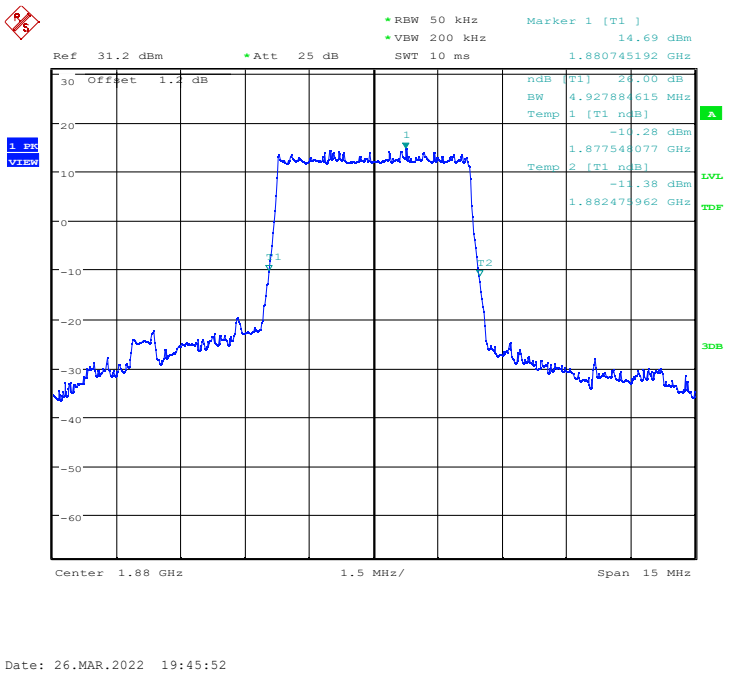
LTE band 2 , 3MHz Bandwidth,16QAM (-26dBc BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.40 dBm
1.879682692 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 2.956730769 MHz
Temp 1 [T1 ndB]
-11.62 dBm
1.878528846 GHz
Temp 2 [T1 ndB]
-10.05 dBm
1.881485577 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:45:25

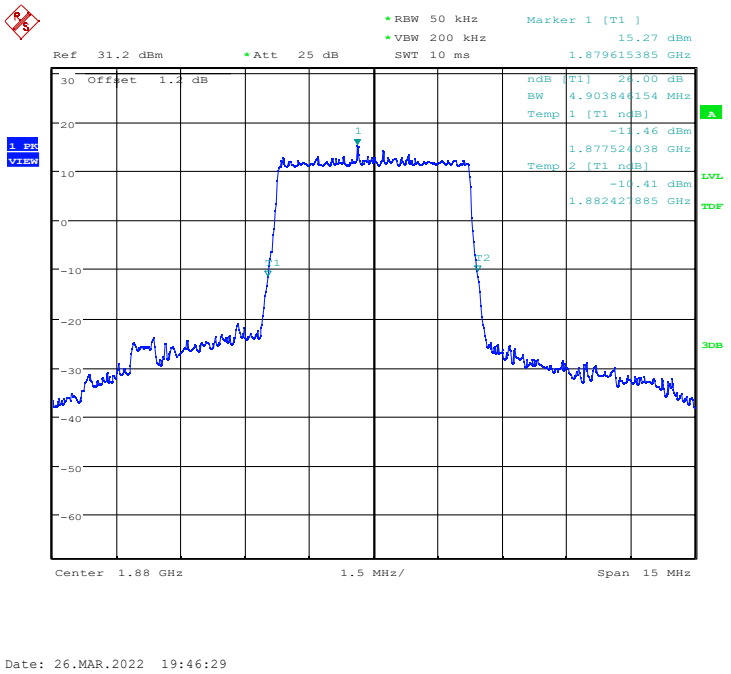
LTE band 2,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	4.928	4.904

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



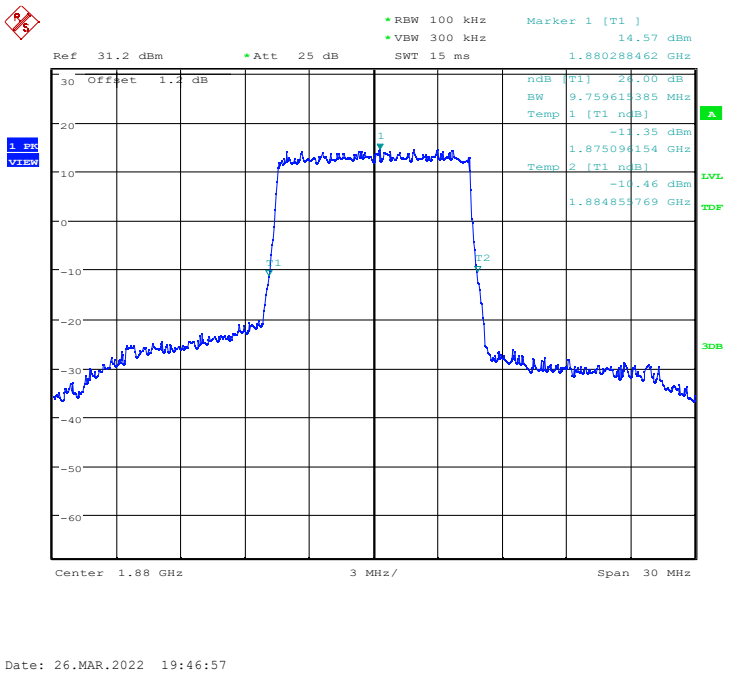
LTE band 2 , 5MHz Bandwidth,16QAM (-26dBc BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
15.27 dBm
1.879615385 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 4.903846154 MHz
Temp 1 [T1 ndB]
-11.46 dBm
1.877524038 GHz
Temp 2 [T1 ndB]
-10.41 dBm
1.882427885 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.88 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:46:29

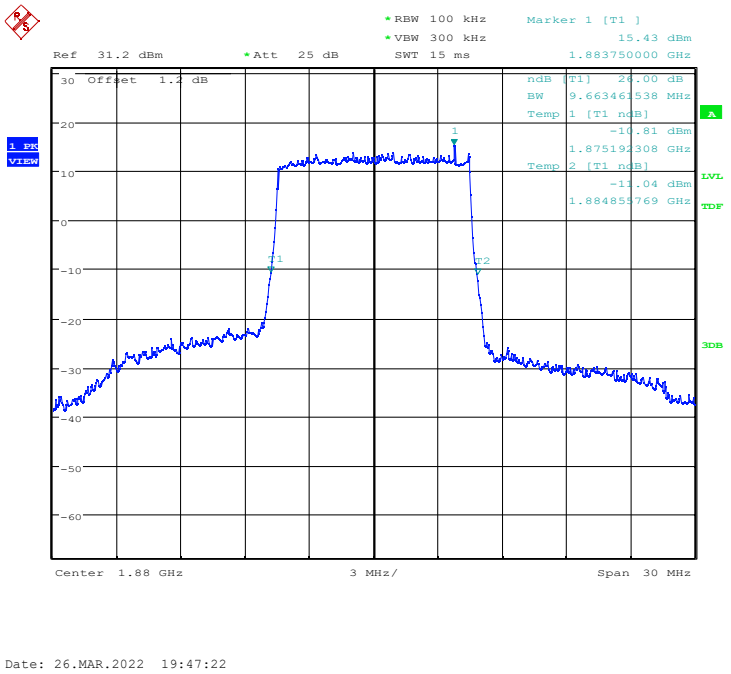
LTE band 2,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	9.760	9.663

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



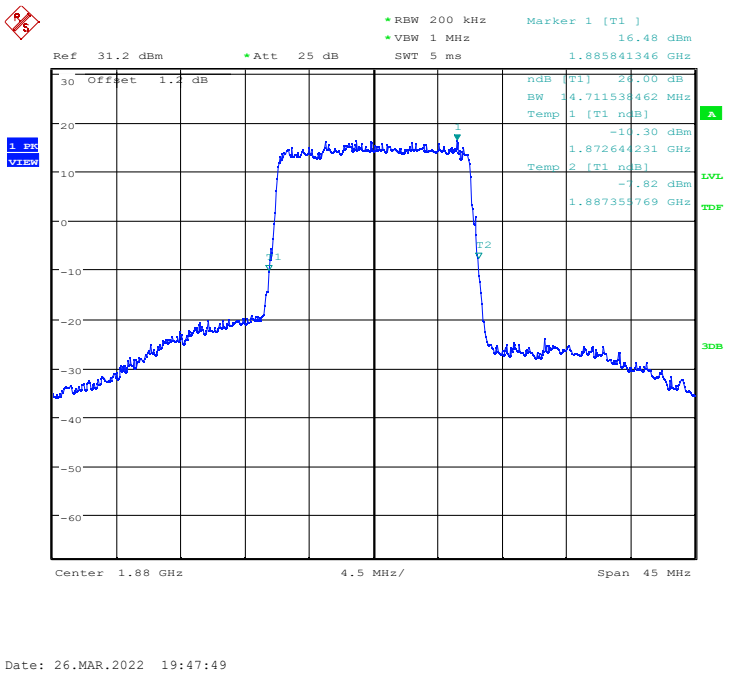
LTE band 2 , 10MHz Bandwidth,16QAM (-26dBc BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
15.43 dBm
1.883750000 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 9.663461538 MHz
Temp 1 [T1 ndB]
-10.81 dBm
1.875192308 GHz
Temp 2 [T1 ndB]
-11.04 dBm
1.884855769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:47:22

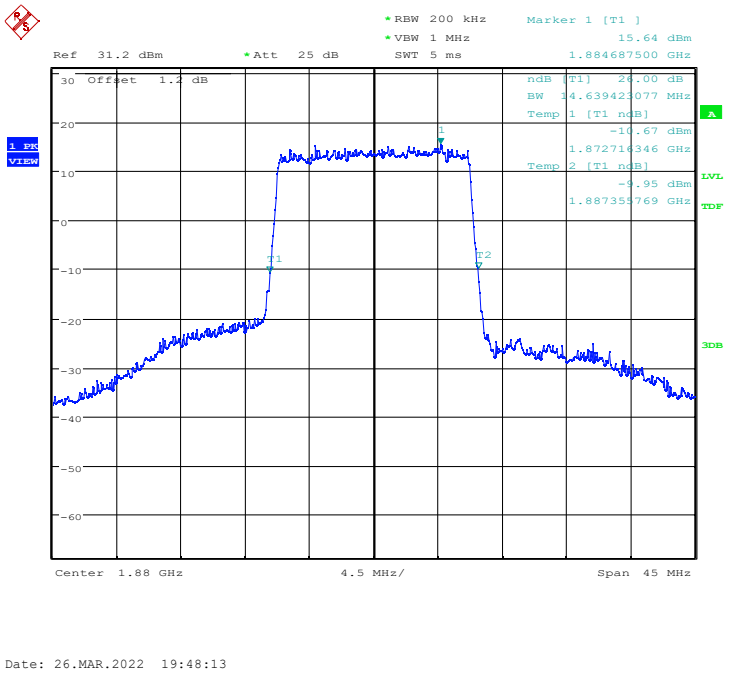
LTE band 2,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	14.712	14.639

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



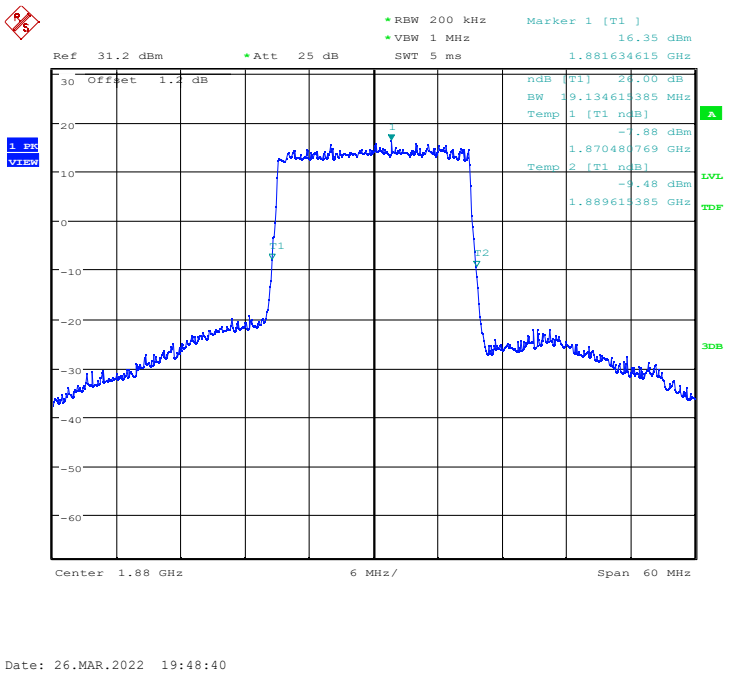
LTE band 2 , 15MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
15.64 dBm
1.884687500 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 14.639423077 MHz
Temp 1 [T1 ndB]
-10.67 dBm
1.872716346 GHz
Temp 2 [T1 ndB]
-9.95 dBm
1.887355769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.88 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:48:13

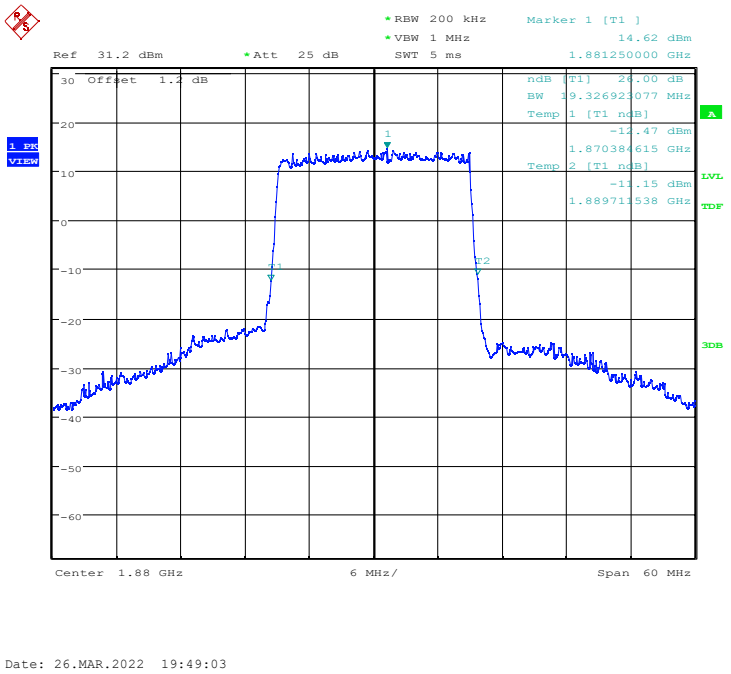
LTE band 2,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	19.135	19.327

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



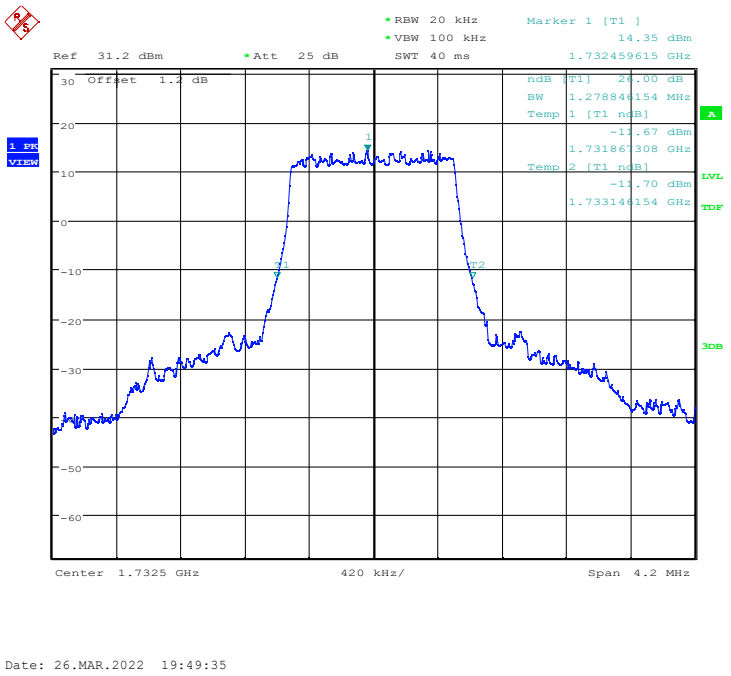
LTE band 2 , 20MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.62 dBm
1.881250000 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 19.326923077 MHz
Temp 1 [T1 ndB]
-12.47 dBm
1.870384615 GHz
Temp 2 [T1 ndB]
-11.15 dBm
1.889711538 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.88 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:49:03

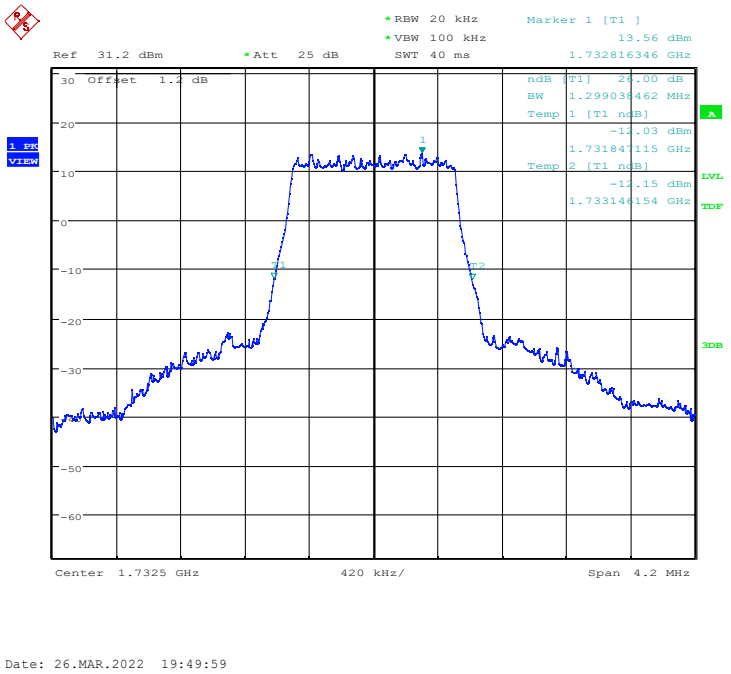
LTE band 4,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	1.279	1.299

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



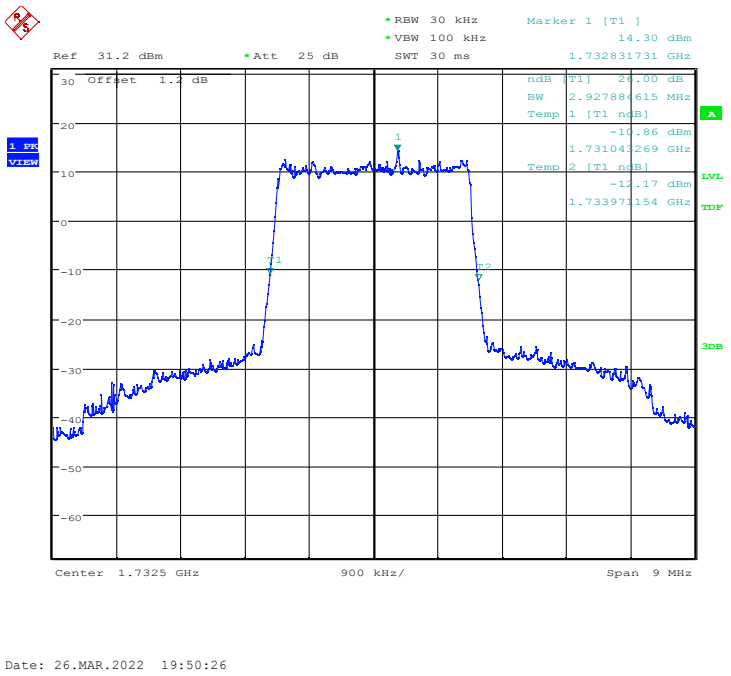
LTE band 4 , 1.4MHz Bandwidth,16QAM (-26dBc BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
13.56 dBm
1.732816346 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 1.299038462 MHz
Temp 1 [T1 ndB]
-12.03 dBm
1.731847115 GHz
Temp 2 [T1 ndB]
-12.15 dBm
1.733146154 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 19:49:59

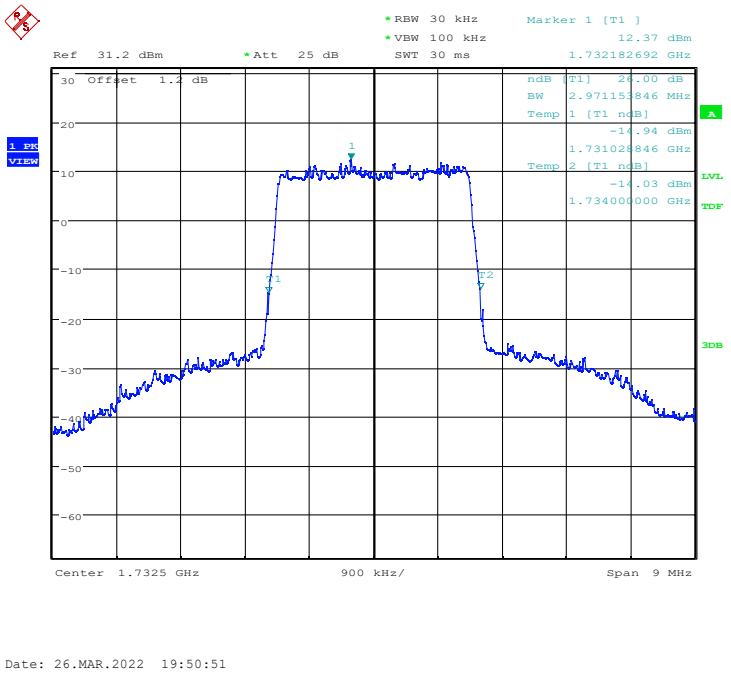
LTE band 4,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	2.928	2.971

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



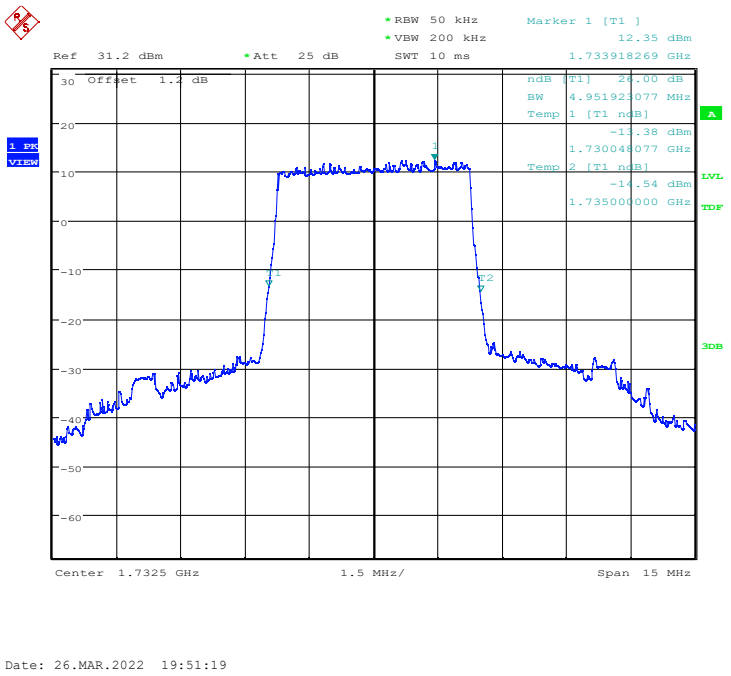
LTE band 4 , 3MHz Bandwidth,16QAM (-26dBc BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
12.37 dBm
1.732182692 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 2.971153846 MHz
Temp 1 [T1 ndB]
-14.94 dBm
1.731028846 GHz
Temp 2 [T1 ndB]
-14.03 dBm
1.734000000 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.7325 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:50:51

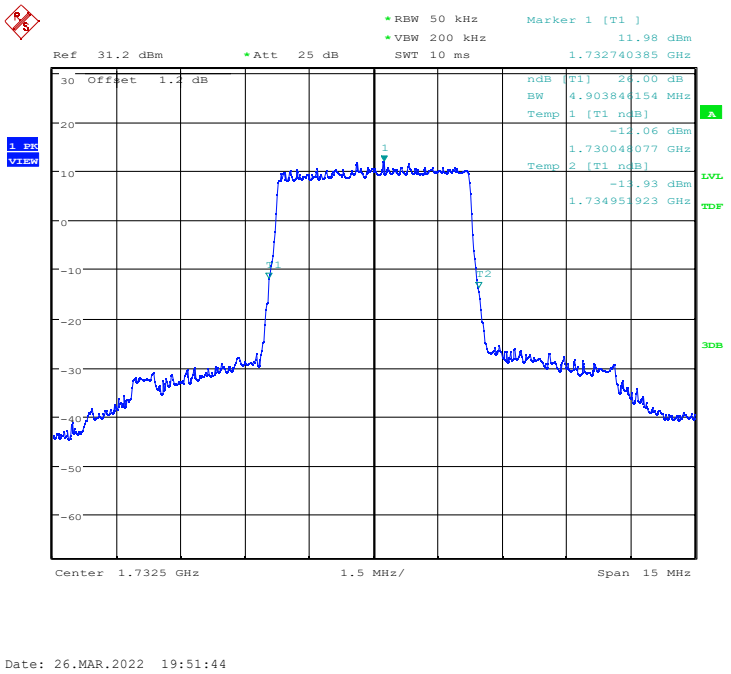
LTE band 4,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	4.952	4.904

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



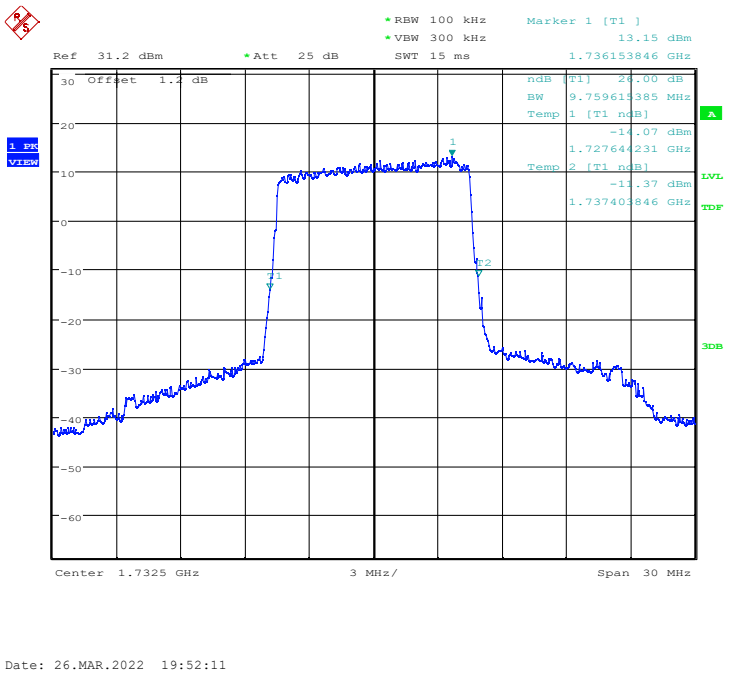
LTE band 4 , 5MHz Bandwidth,16QAM (-26dBc BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
11.98 dBm
1.732740385 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 4.903846154 MHz
Temp 1 [T1 ndB]
-12.06 dBm
1.730048077 GHz
Temp 2 [T1 ndB]
-13.93 dBm
1.734951923 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:51:44

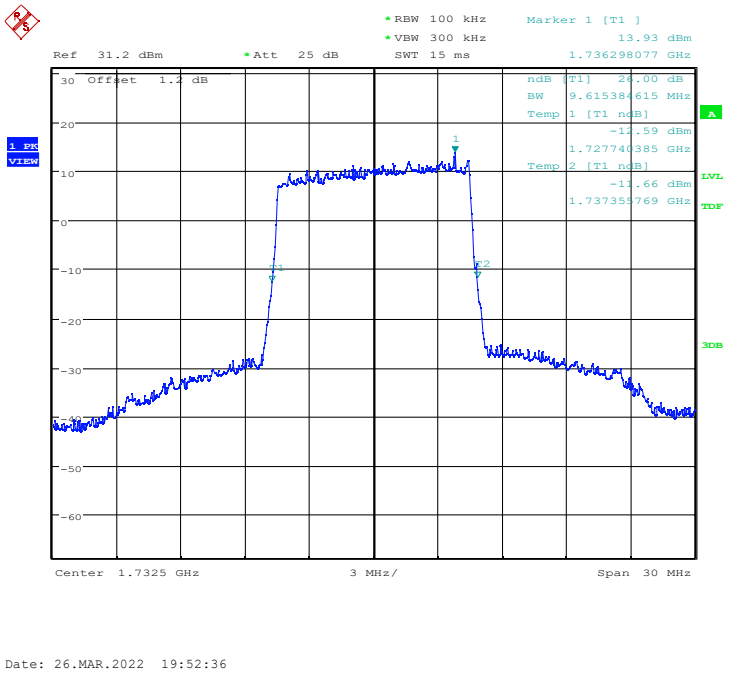
LTE band 4,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	9.760	9.615

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



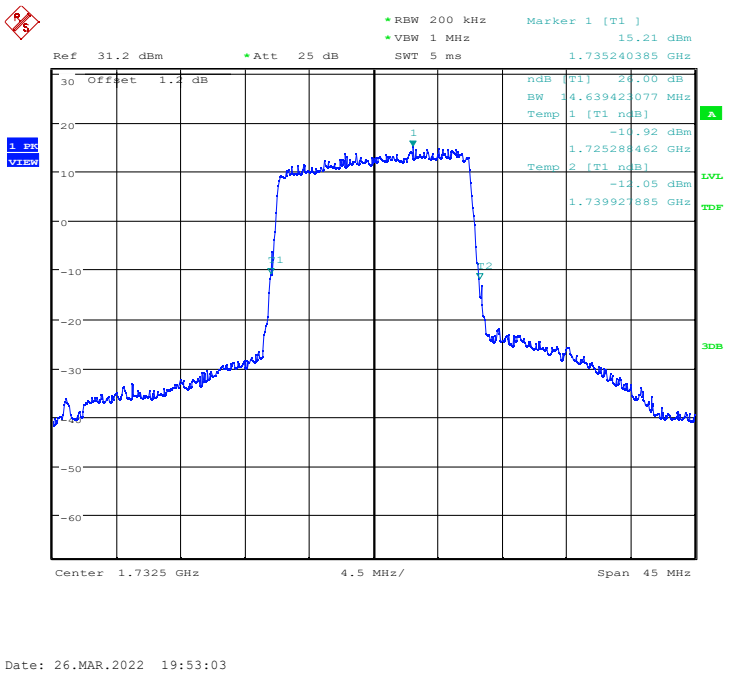
LTE band 4 , 10MHz Bandwidth,16QAM (-26dBc BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
13.93 dBm
1.736298077 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 9.615384615 MHz
Temp 1 [T1 ndB]
-12.59 dBm
1.727740385 GHz
Temp 2 [T1 ndB]
-11.66 dBm
1.737355769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:52:36

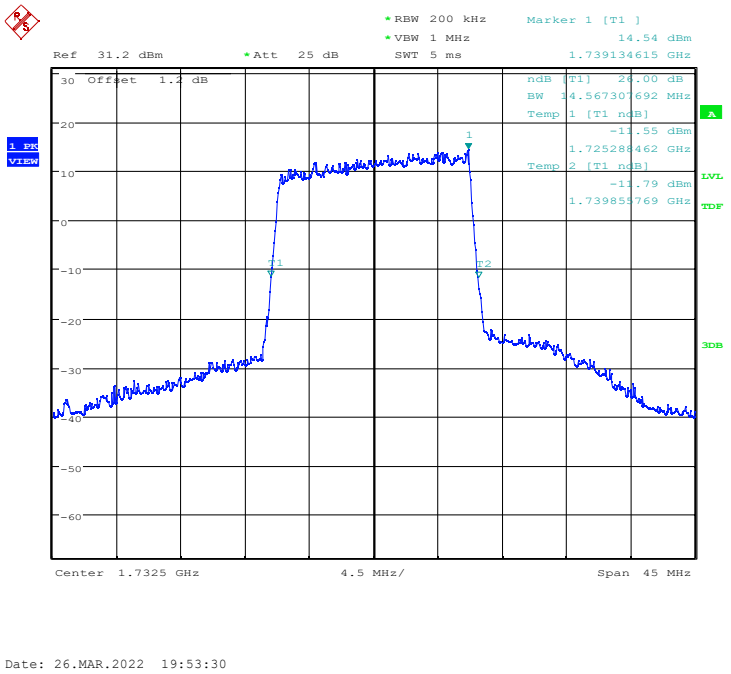
LTE band 4,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	14.639	14.567

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



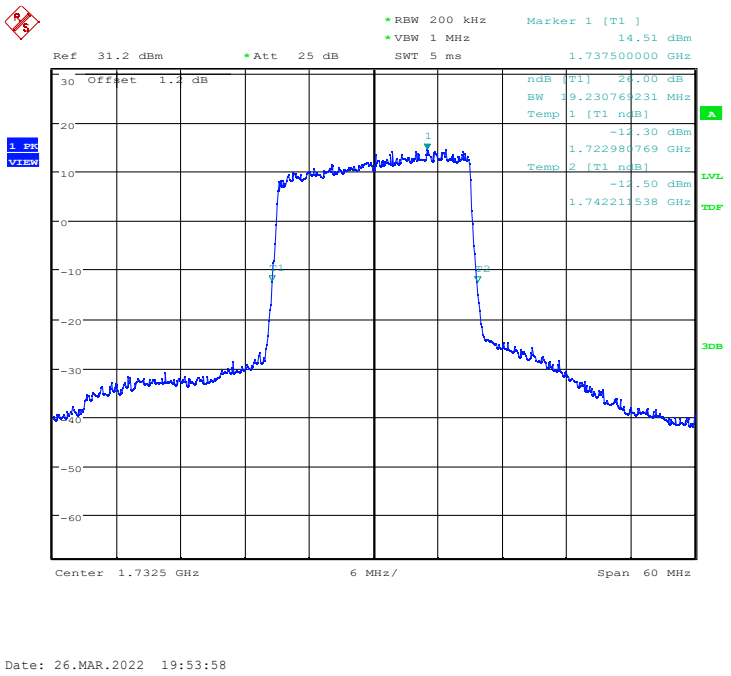
LTE band 4 , 15MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.54 dBm
1.739134615 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 14.567307692 MHz
Temp 1 [T1 ndB]
-11.55 dBm
1.725288462 GHz
Temp 2 [T1 ndB]
-11.79 dBm
1.739855769 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.7325 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 19:53:30

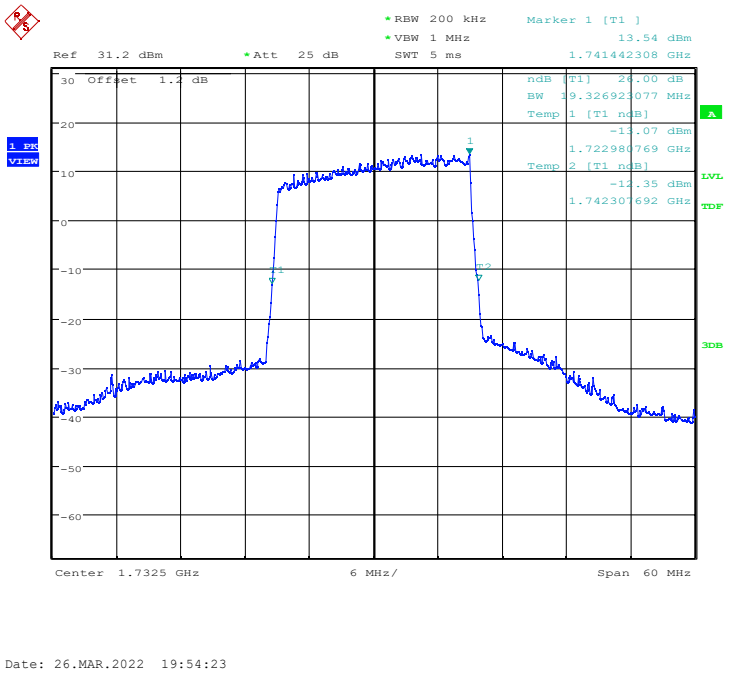
LTE band 4,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1732.5	19.231	19.327

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



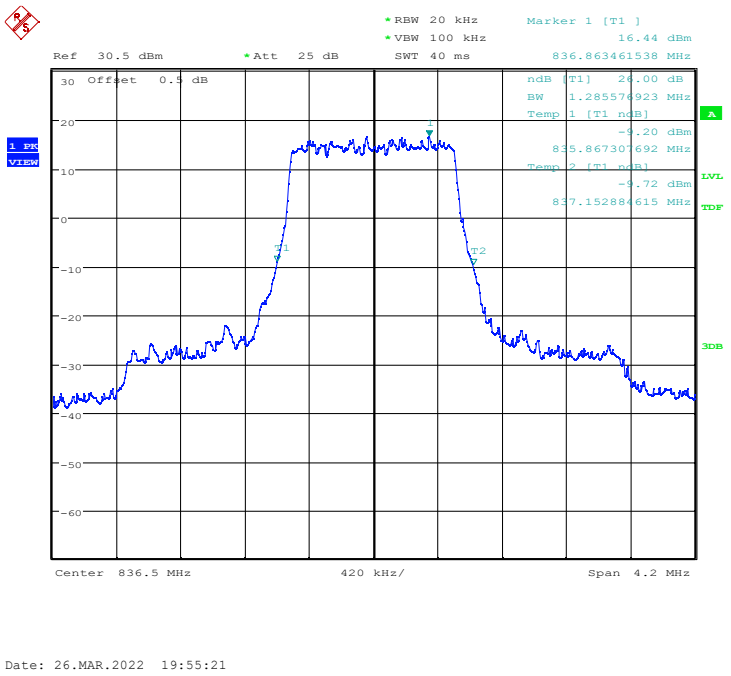
LTE band 4 , 20MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
13.54 dBm
1.741442308 GHz
Ref 31.2 dBm
Att 25 dB
Offset 1.2 dB
ndB [T1] 26.00 dB
BW 19.326923077 MHz
Temp 1 [T1 ndB]
-13.07 dBm
1.722980769 GHz
Temp 2 [T1 ndB]
-12.35 dBm
1.742307692 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.7325 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 19:54:23

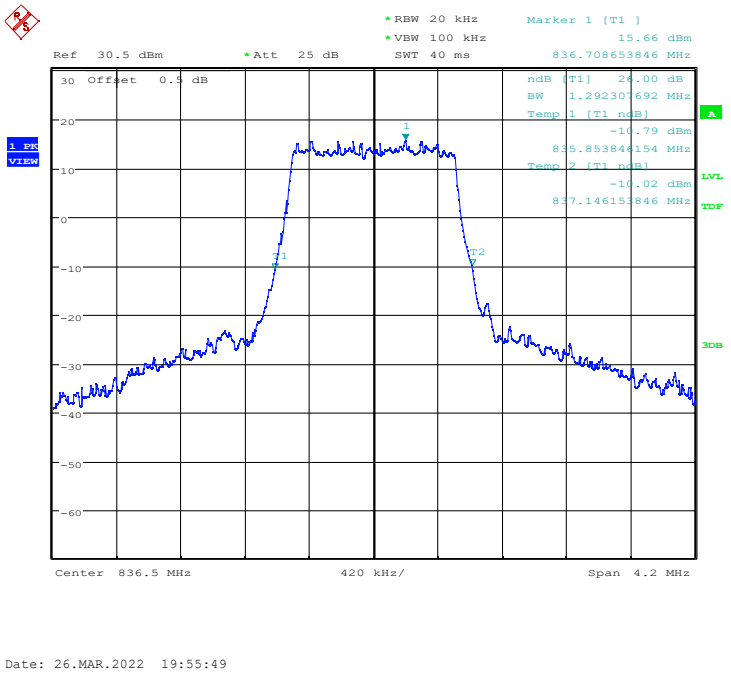
LTE band 5,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	1.286	1.292

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



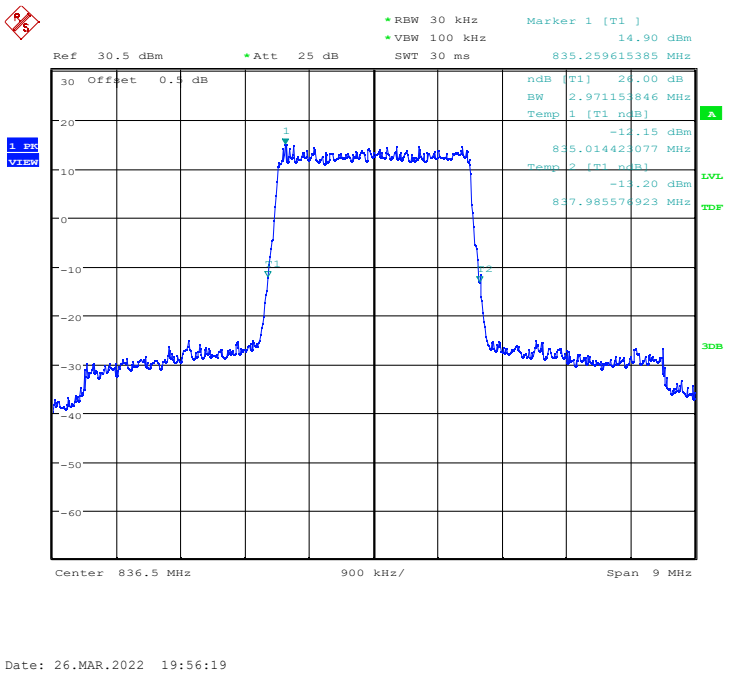
LTE band 5 , 1.4MHz Bandwidth,16QAM (-26dBc BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
15.66 dBm
836.708653846 MHz
Ref 30.5 dBm
Att 25 dB
30 Offset 0.5 dB
ndB [T1] 26.00 dB
BW 1.292307692 MHz
Temp 1 [T1 ndB]
-10.79 dBm
835.853846154 MHz
Temp 2 [T1 ndB]
-10.02 dBm
837.146153846 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 836.5 MHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 19:55:49

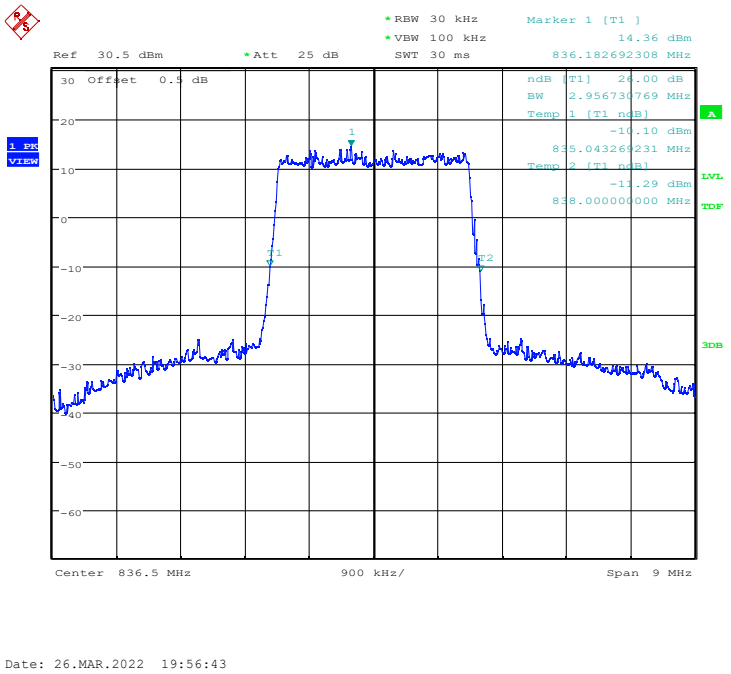
LTE band 5,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	2.971	2.957

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



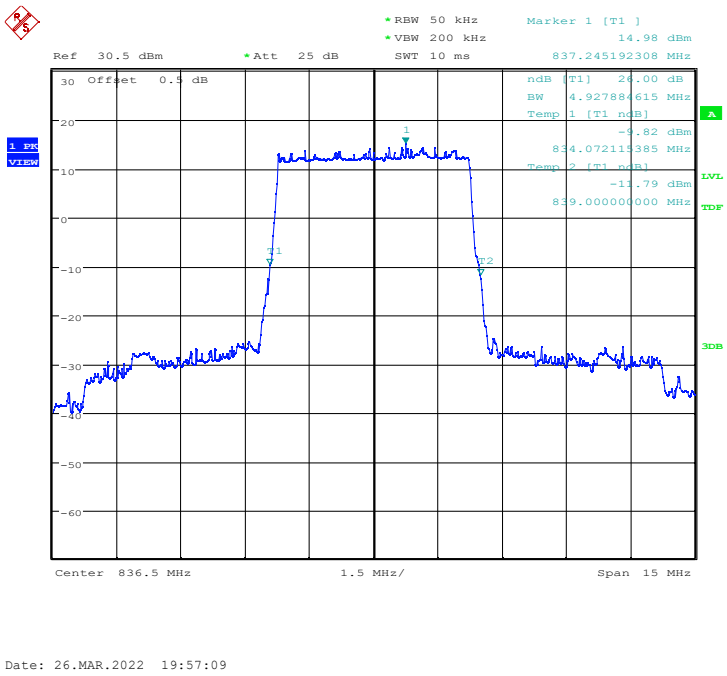
LTE band 5 , 3MHz Bandwidth,16QAM (-26dBc BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.36 dBm
836.182692308 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 2.956730769 MHz
Temp 1 [T1 ndB]
-10.10 dBm
835.043269231 MHz
Temp 2 [T1 ndB]
-11.29 dBm
838.000000000 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 836.5 MHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:56:43

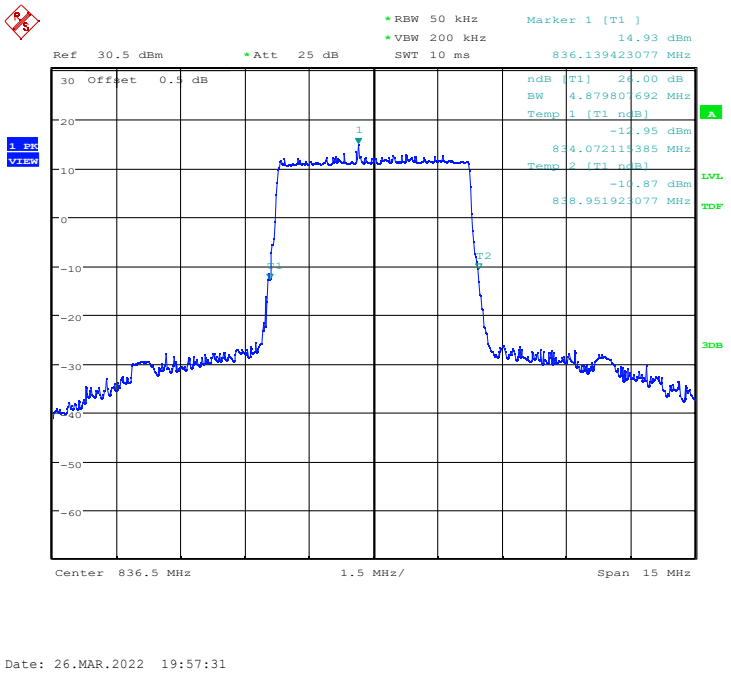
LTE band 5,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	4.928	4.880

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



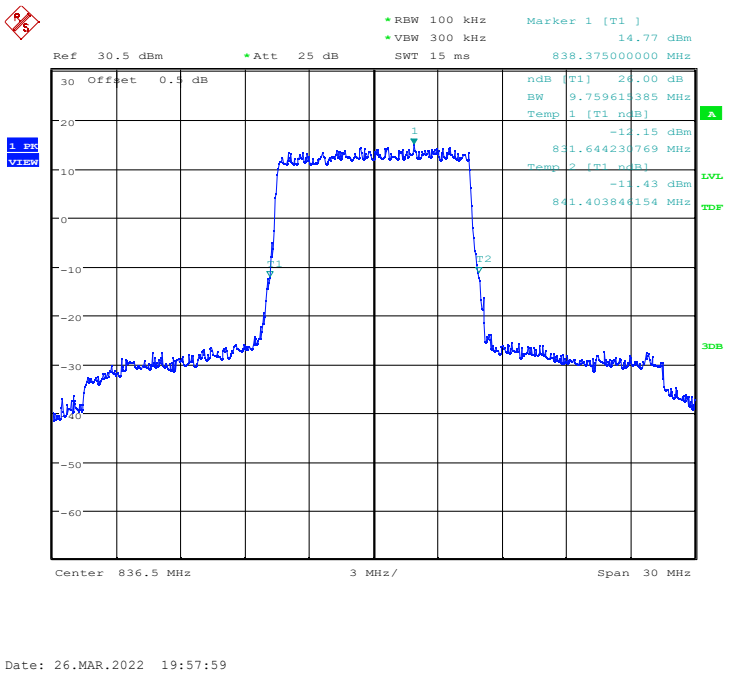
LTE band 5 , 5MHz Bandwidth,16QAM (-26dBc BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
14.93 dBm
836.139423077 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 4.879807692 MHz
Temp 1 [T1 ndB]
-12.95 dBm
834.072115385 MHz
Temp 2 [T1 ndB]
-10.87 dBm
838.951923077 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 836.5 MHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 19:57:31

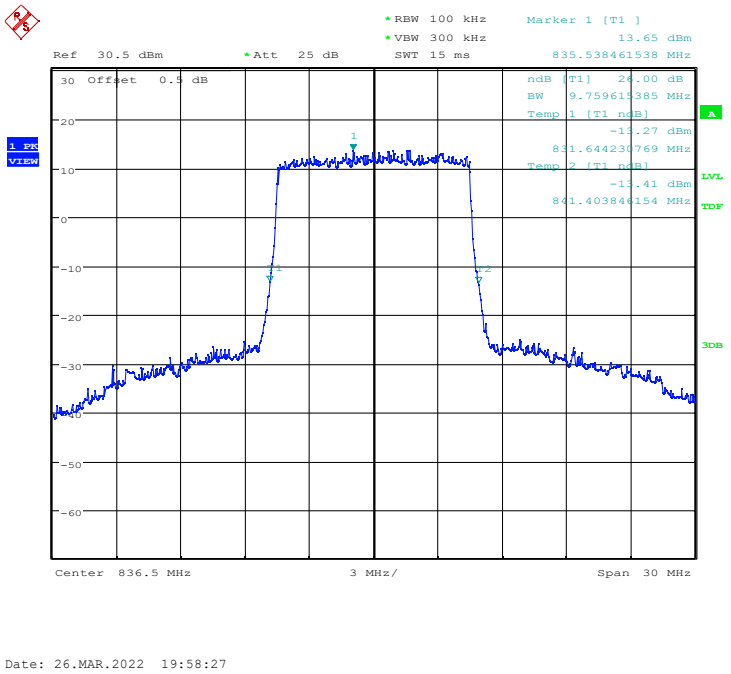
LTE band 5,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	9.760	9.760

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



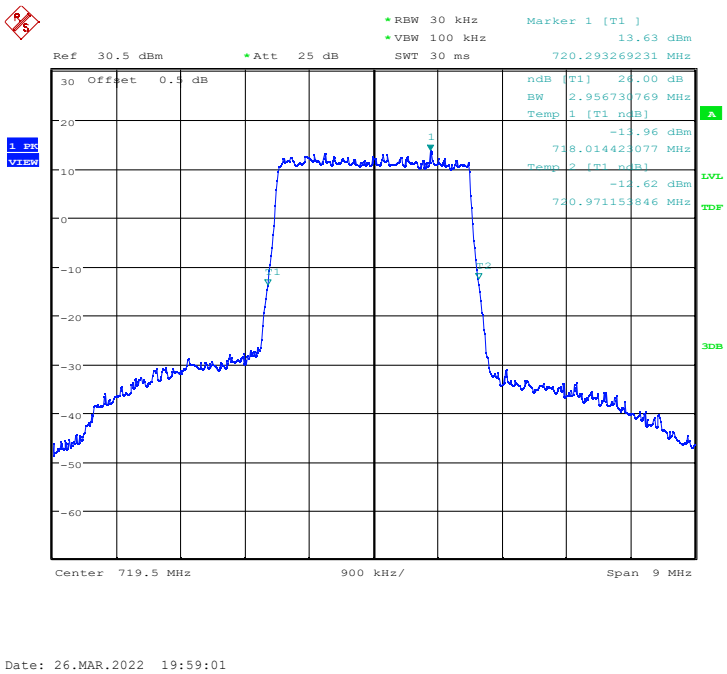
LTE band 5 , 10MHz Bandwidth,16QAM (-26dBc BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
13.65 dBm
835.538461538 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 9.759615385 MHz
Temp 1 [T1 ndB]
-13.27 dBm
831.644230769 MHz
Temp 2 [T1 ndB]
-13.41 dBm
841.403846154 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 836.5 MHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 19:58:27

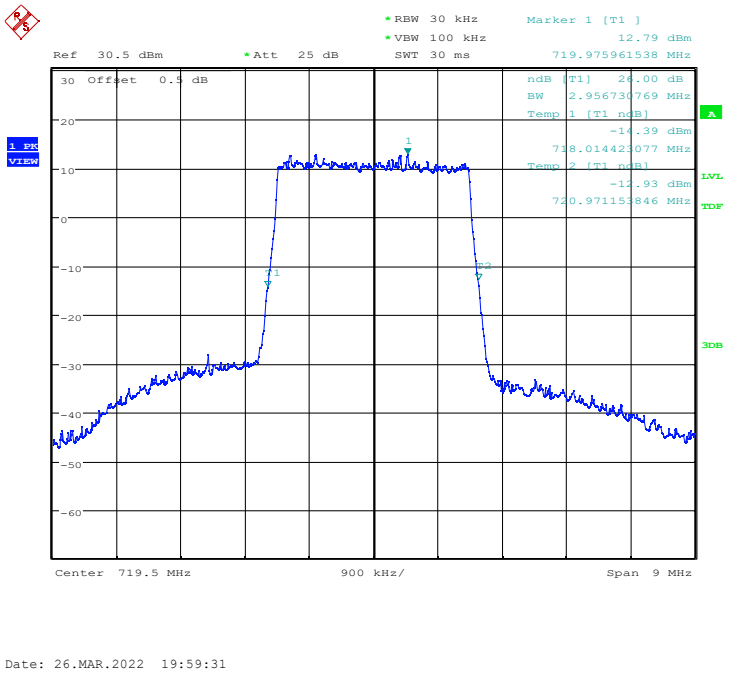
LTE band 28,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
719.5	2.957	2.957

LTE band 28 , 3MHz Bandwidth,QPSK (-26dBc BW)



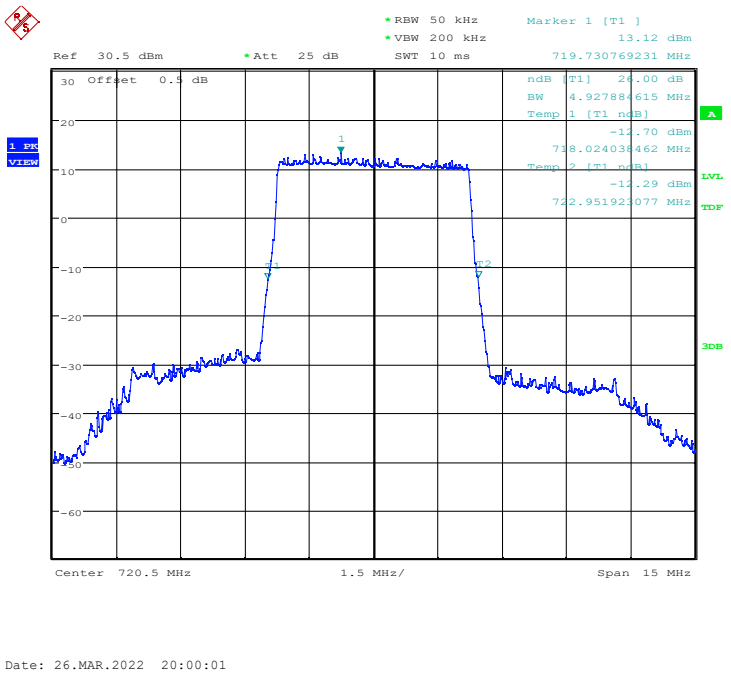
LTE band 28 , 3MHz Bandwidth,16QAM (-26dBc BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
12.79 dBm
719.975961538 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 2.956730769 MHz
Temp 1 [T1 ndB]
-14.39 dBm
718.014423077 MHz
Temp 2 [T1 ndB]
-12.93 dBm
720.971153846 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 719.5 MHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 19:59:31

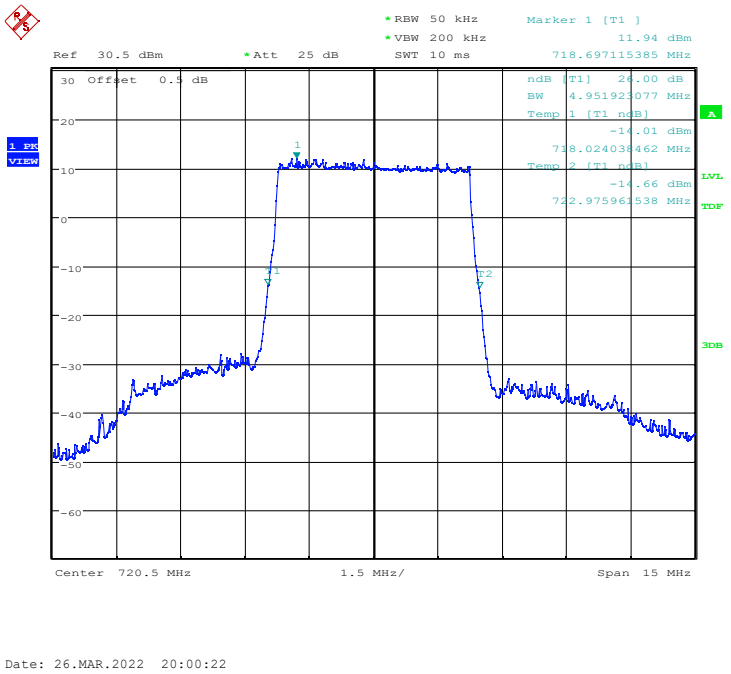
LTE band 28,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
720.5	4.928	4.952

LTE band 28 , 5MHz Bandwidth,QPSK (-26dBc BW)



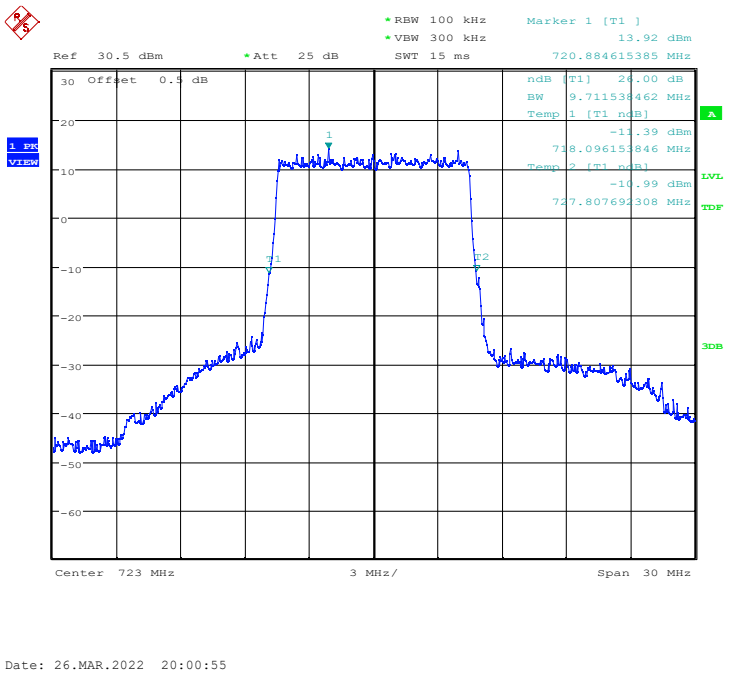
LTE band 28 , 5MHz Bandwidth,16QAM (-26dBc BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
11.94 dBm
718.697115385 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 4.951923077 MHz
Temp 1 [T1 ndB]
-14.01 dBm
718.024038462 MHz
Temp 2 [T1 ndB]
-14.66 dBm
722.975961538 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 720.5 MHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 20:00:22

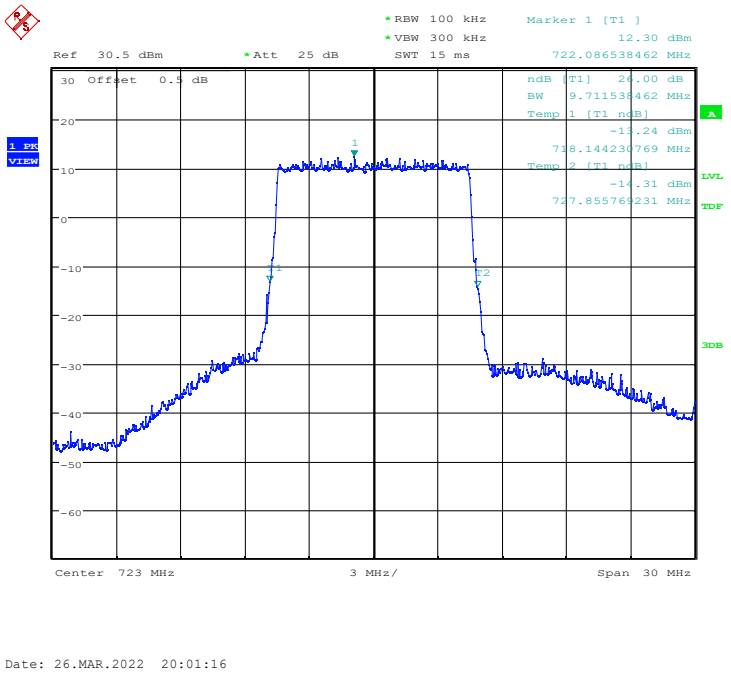
LTE band 28,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
723	9.712	9.712

LTE band 28 , 10MHz Bandwidth,QPSK (-26dBc BW)



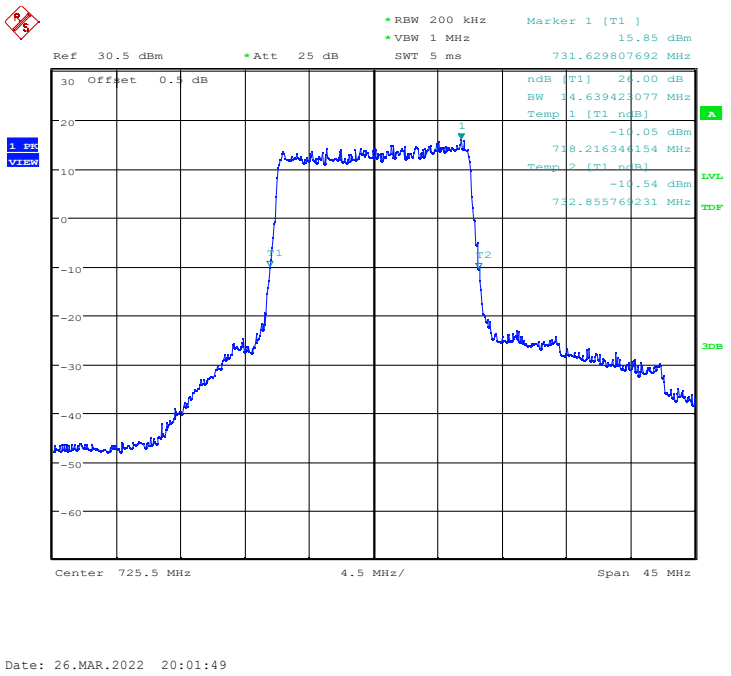
LTE band 28 , 10MHz Bandwidth,16QAM (-26dBc BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
12.30 dBm
722.086538462 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 9.711538462 MHz
Temp 1 [T1 ndB]
-13.24 dBm
718.144230769 MHz
Temp 2 [T1 ndB]
-14.31 dBm
727.855769231 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 723 MHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 20:01:16

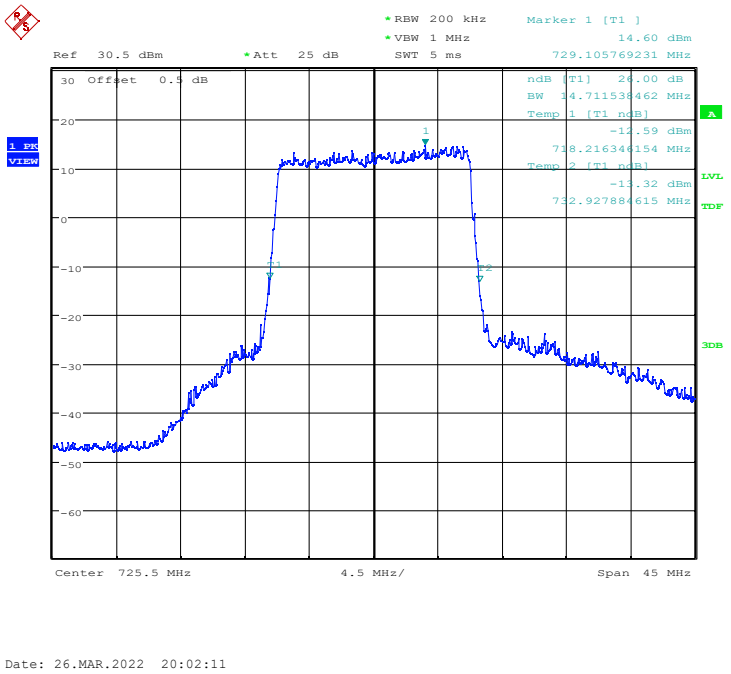
LTE band 28,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
725.5	14.639	14.712

LTE band 28 , 15MHz Bandwidth,QPSK (-26dBc BW)



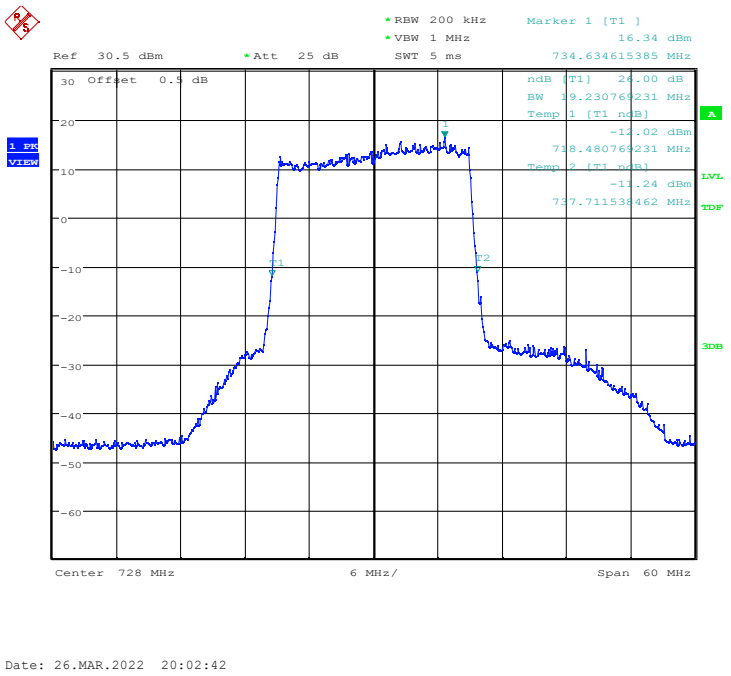
LTE band 28 , 15MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.60 dBm
729.105769231 MHz
Ref 30.5 dBm
Att 25 dB
30 Offset 0.5 dB
ndB [T1] 26.00 dB
BW 14.711538462 MHz
Temp 1 [T1 ndB]
-12.59 dBm
718.216346154 MHz
Temp 2 [T1 ndB]
-13.32 dBm
732.927884615 MHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 725.5 MHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 20:02:11

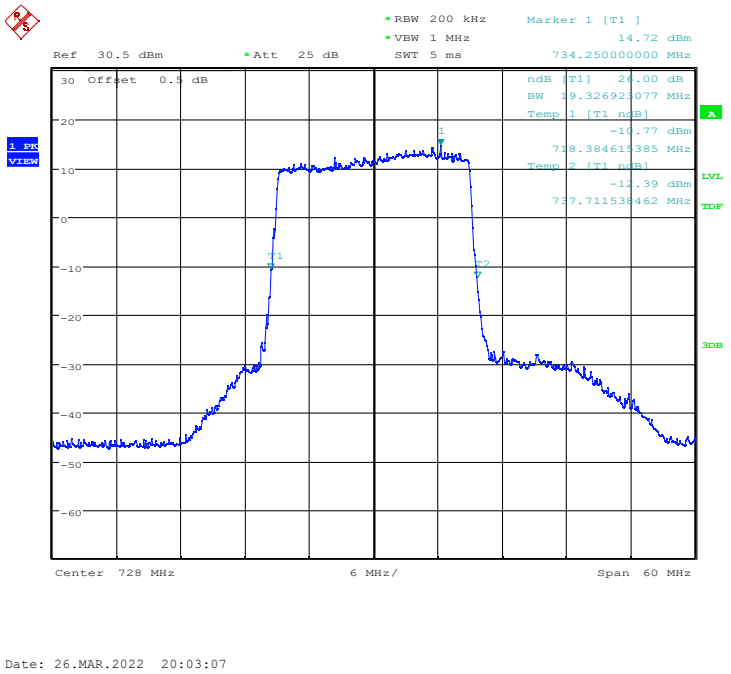
LTE band 28,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
728	19.231	19.327

LTE band 28 , 20MHz Bandwidth,QPSK (-26dBc BW)



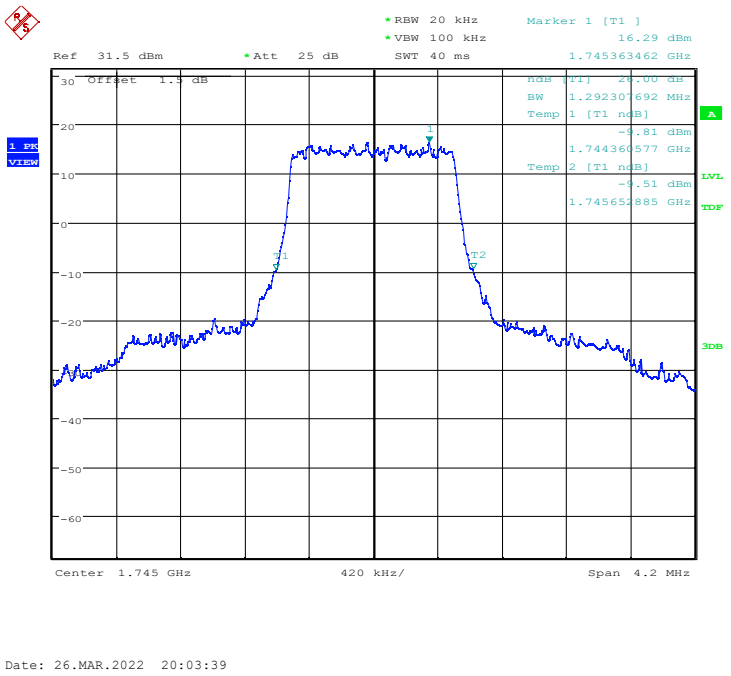
LTE band 28 , 20MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.72 dBm
734.250000000 MHz
Ref 30.5 dBm
Att 25 dB
Offset 0.5 dB
ndB [T1] 26.00 dB
BW 19.326923077 MHz
Temp 1 [T1 ndB]
-10.77 dBm
718.384615385 MHz
Temp 2 [T1 ndB]
-12.39 dBm
737.711538462 MHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 728 MHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 20:03:07

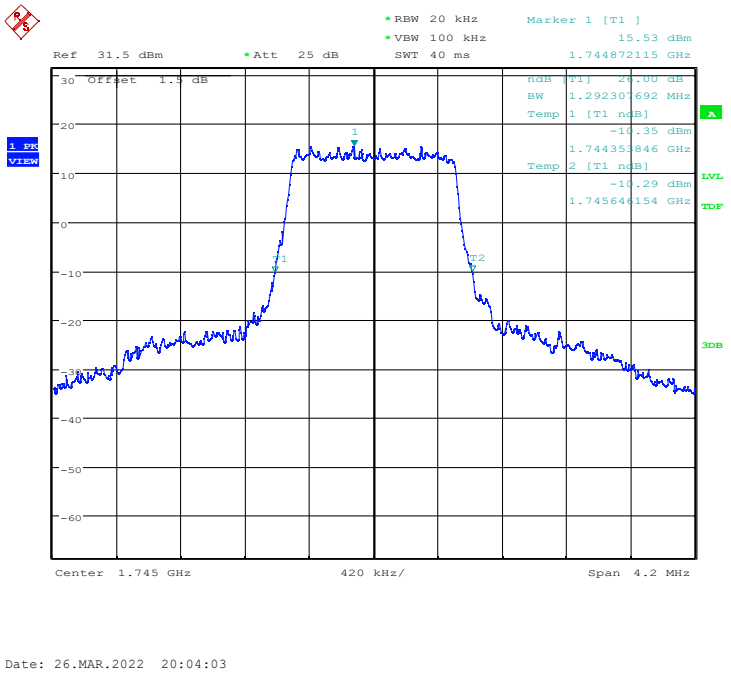
LTE band 66,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	1.292	1.292

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



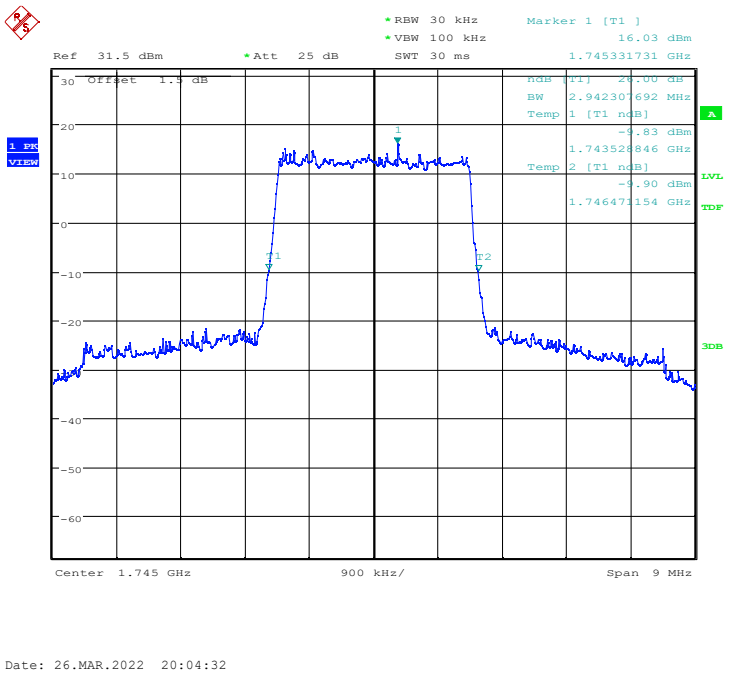
LTE band 66 , 1.4MHz Bandwidth,16QAM (-26dBc BW)


RBW 20 kHz
VBW 100 kHz
SWT 40 ms
Marker 1 [T1]
15.53 dBm
1.744872115 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 1.292307692 MHz
Temp 1 [T1 ndB]
-10.35 dBm
1.744353846 GHz
Temp 2 [T1 ndB]
-10.29 dBm
1.745646154 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
420 kHz/
Span 4.2 MHz
Date: 26.MAR.2022 20:04:03

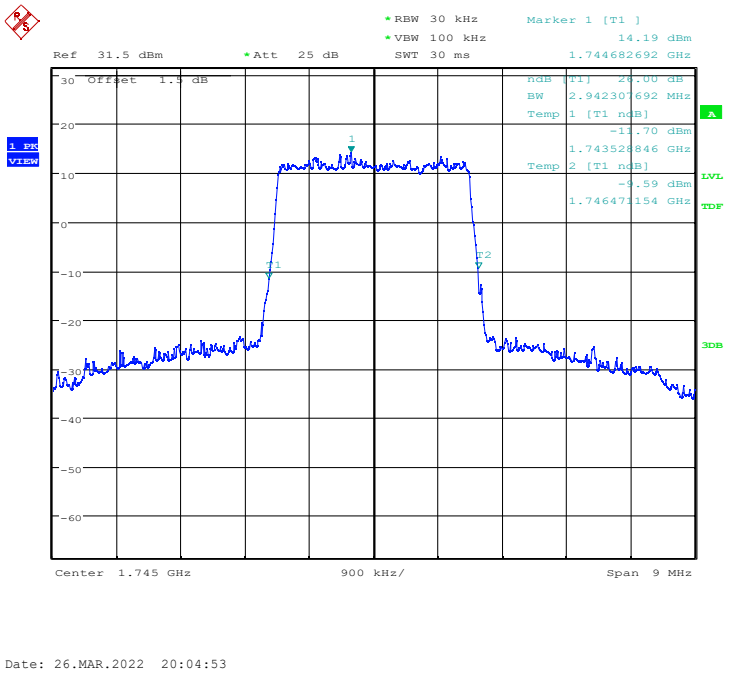
LTE band 66,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	2.942	2.942

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



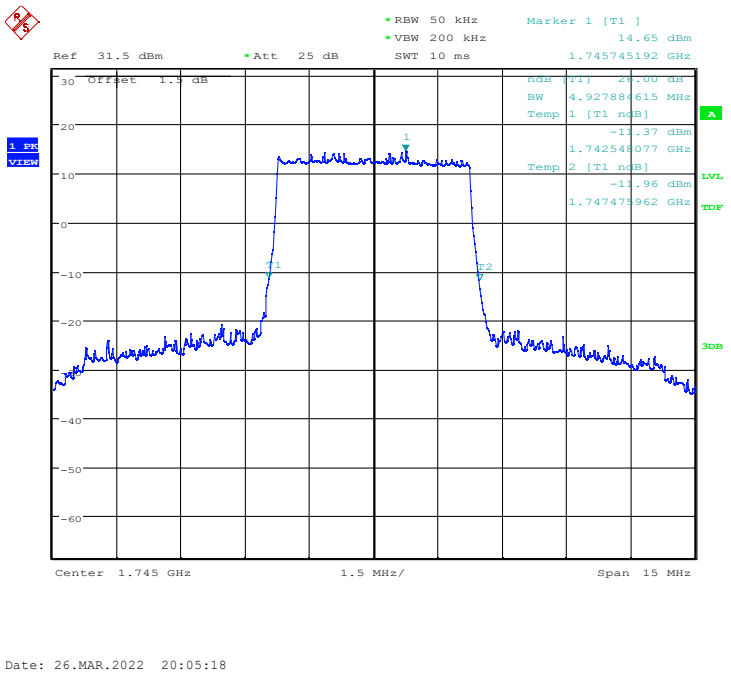
LTE band 66 , 3MHz Bandwidth,16QAM (-26dBc BW)


RBW 30 kHz
VBW 100 kHz
SWT 30 ms
Marker 1 [T1]
14.19 dBm
1.744682692 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 2.942307692 MHz
Temp 1 [T1 ndB]
-11.70 dBm
1.743528846 GHz
Temp 2 [T1 ndB]
-9.59 dBm
1.746471154 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
900 kHz/
Span 9 MHz
Date: 26.MAR.2022 20:04:53

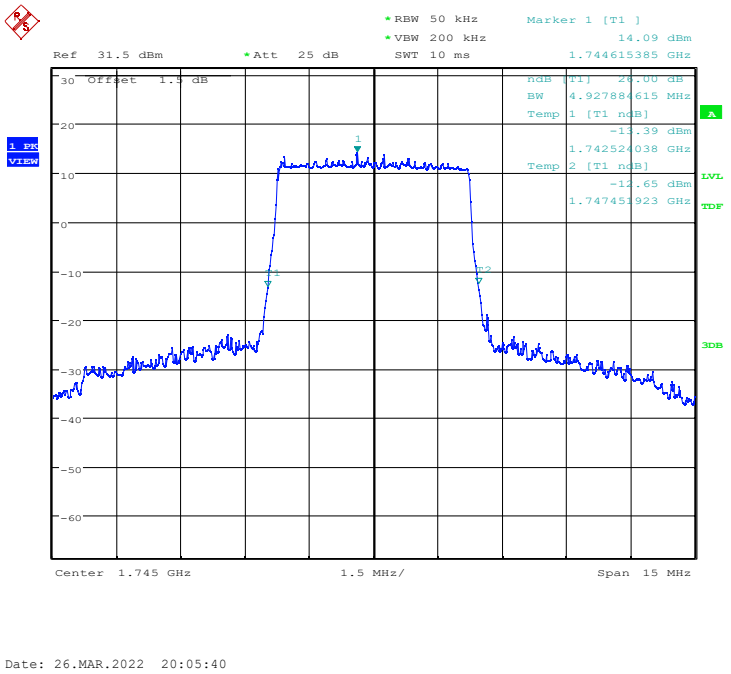
LTE band 66,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	4.928	4.928

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



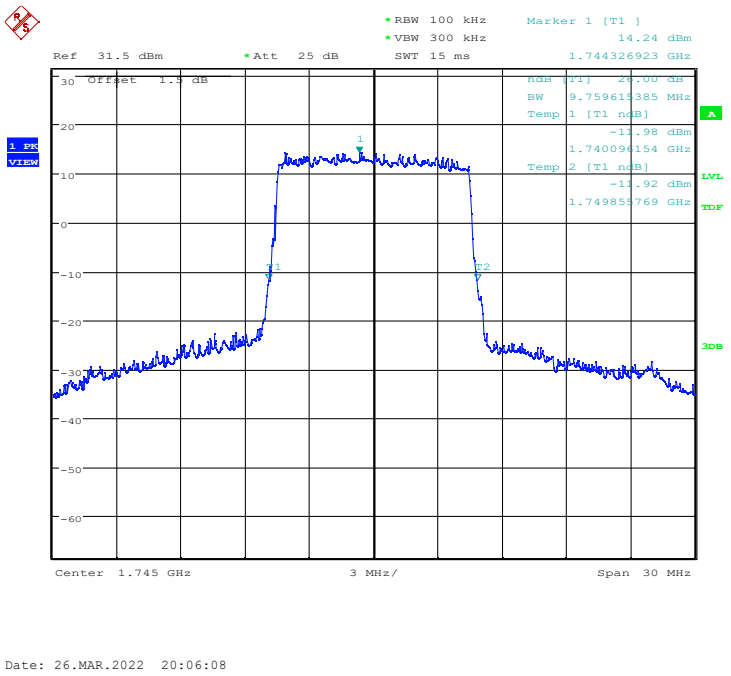
LTE band 66 , 5MHz Bandwidth,16QAM (-26dBc BW)


RBW 50 kHz
VBW 200 kHz
SWT 10 ms
Marker 1 [T1]
14.09 dBm
1.744615385 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 4.927884615 MHz
Temp 1 [T1 ndB]
-13.39 dBm
1.742524038 GHz
Temp 2 [T1 ndB]
-12.65 dBm
1.747451923 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.745 GHz
1.5 MHz/
Span 15 MHz
Date: 26.MAR.2022 20:05:40

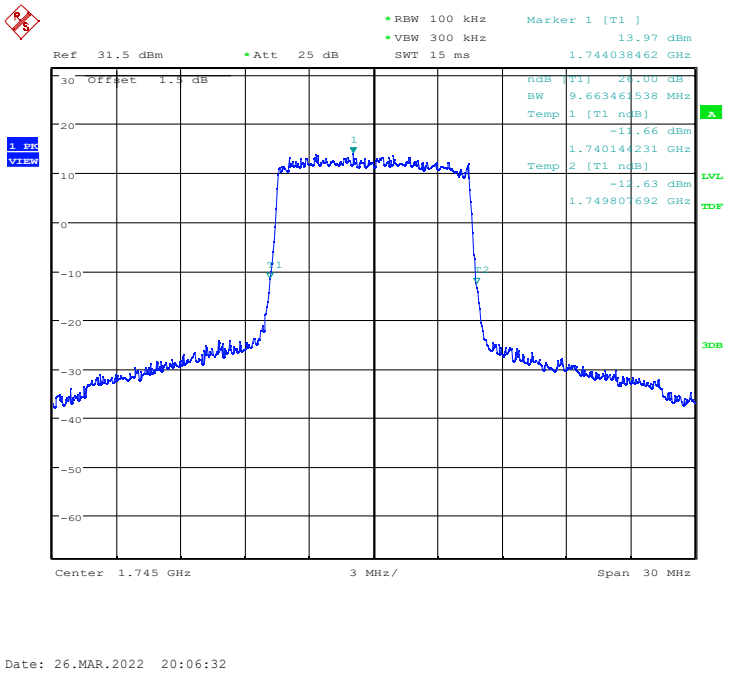
LTE band 66,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	9.760	9.663

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



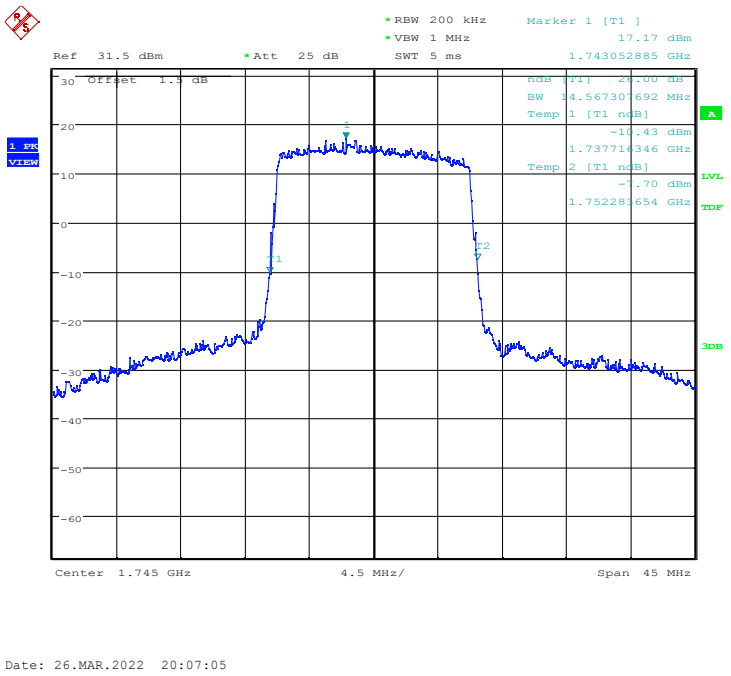
LTE band 66 , 10MHz Bandwidth,16QAM (-26dBc BW)


RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
13.97 dBm
1.744038462 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 9.663461538 MHz
Temp 1 [T1 ndB]
-11.66 dBm
1.740144231 GHz
Temp 2 [T1 ndB]
-12.63 dBm
1.749807692 GHz
1 PK
VIEW
A
LVL
TDF
3DB
Center 1.745 GHz
3 MHz/
Span 30 MHz
Date: 26.MAR.2022 20:06:32

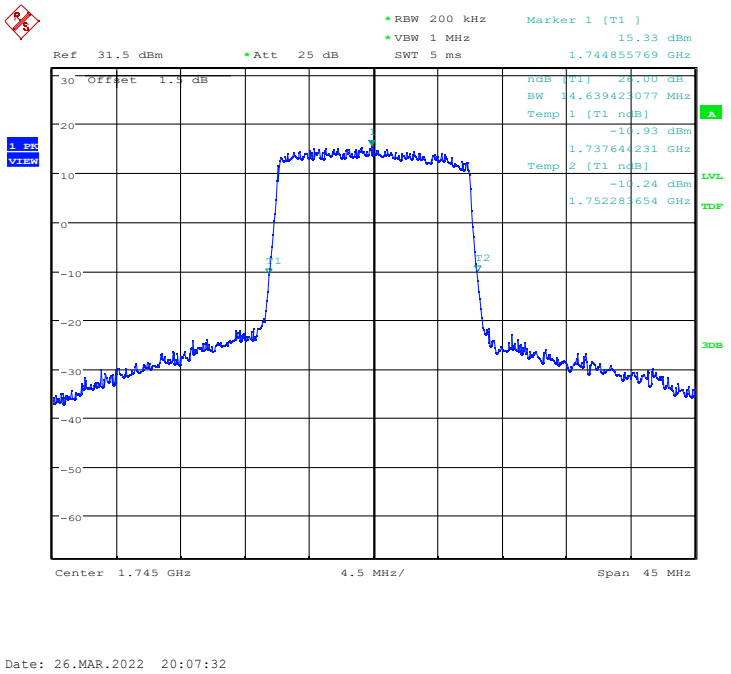
LTE band 66,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	14.567	14.639

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



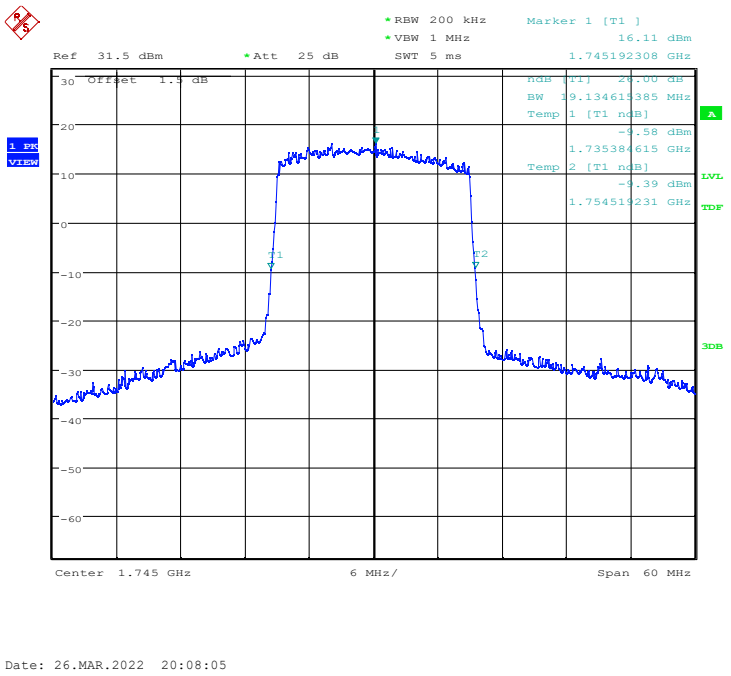
LTE band 66 , 15MHz Bandwidth,16QAM (-26dBc BW)


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
15.33 dBm
1.744855769 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 14.639423077 MHz
Temp 1 [T1 ndB]
-10.93 dBm
1.737644231 GHz
Temp 2 [T1 ndB]
-10.24 dBm
1.752283654 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
30
20
10
0
-10
-20
-30
-40
-50
-60
Center 1.745 GHz
4.5 MHz/
Span 45 MHz
Date: 26.MAR.2022 20:07:32

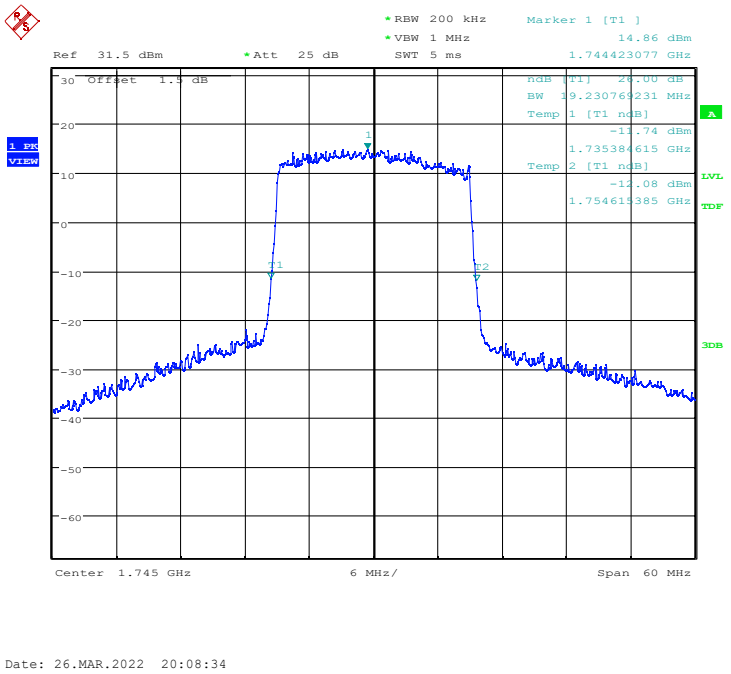
LTE band 66,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	19.135	19.231

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



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


RBW 200 kHz
VBW 1 MHz
SWT 5 ms
Marker 1 [T1]
14.86 dBm
1.744423077 GHz
Ref 31.5 dBm
Att 25 dB
Offset 1.5 dB
ndB [T1] 26.00 dB
BW 19.230769231 MHz
Temp 1 [T1 ndB]
-11.74 dBm
1.735384615 GHz
Temp 2 [T1 ndB]
-12.08 dBm
1.754615385 GHz
1 PK
VIEW
A
LVL
TDF
3DB
T1
T2
Center 1.745 GHz
6 MHz/
Span 60 MHz
Date: 26.MAR.2022 20:08:34

6.5. Conducted spurious emissions

Specifications:	FCC Part 2.1051, 24.238, 2.1053, 22.917, 27.53
DUT Serial Number:	863427042013020
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to Part 24.238 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 Bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10(P) dB.

According to Part 27.53(g):

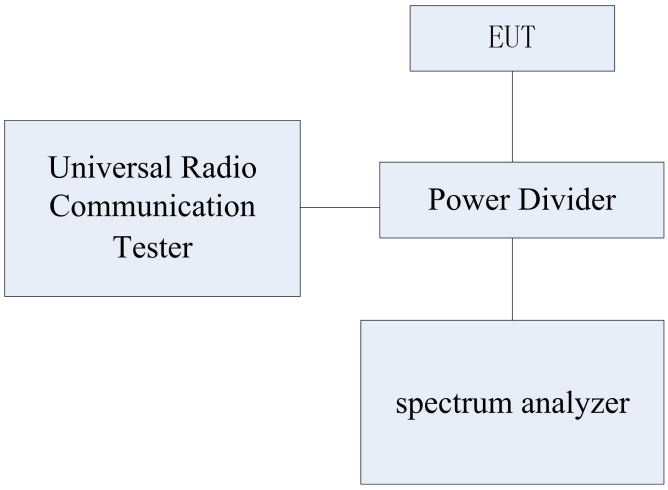
For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

Measurement Uncertainty:

Item	Uncertainty	
Expanded Uncertainty	9kHz < f≤4GHz	0.71 dB (k=2)
	4GHz≤f < 12.75GHz	0.74 dB (k=2)
	12.75GHz≤f < 26GHz	2.70 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

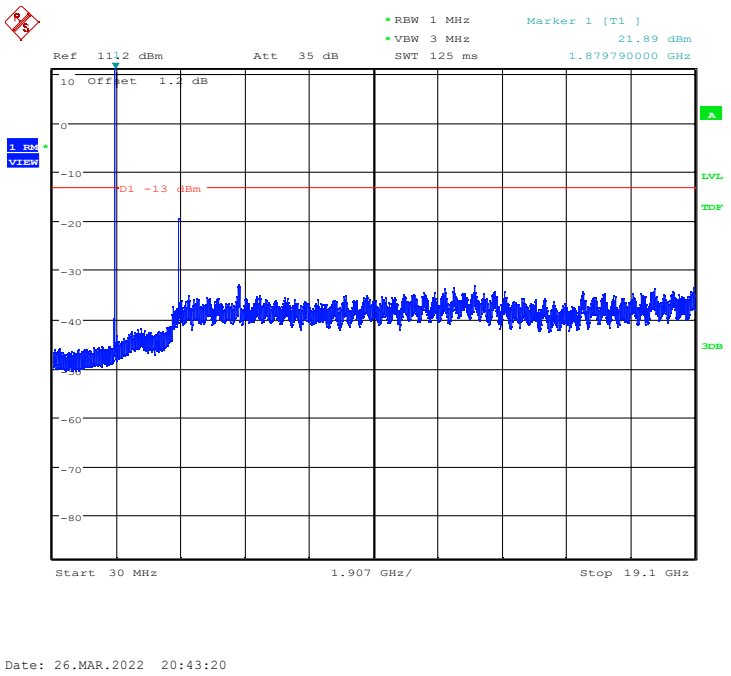
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-Band emissions, if any, up to 10th harmonic. The EUT was scanned for spurious emissions from 30MHz to 20GHz with sufficient Bandwidth and video resolution. The spectrum analyzer was set to Maximum hold mode to ensure that the worst-case emissions were captured.

Note: --

6.5.1 Conducted Spurious Emission Results

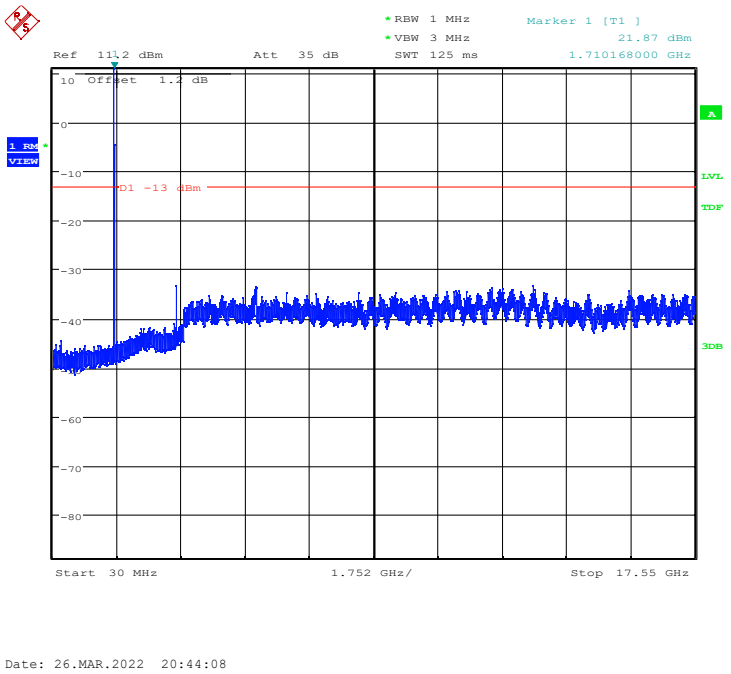
LTE band 2

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



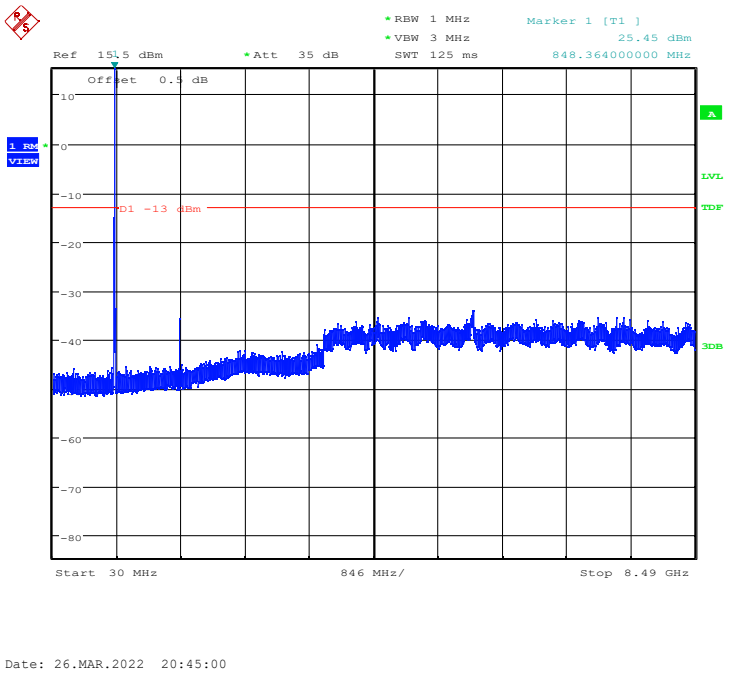
LTE band 4

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



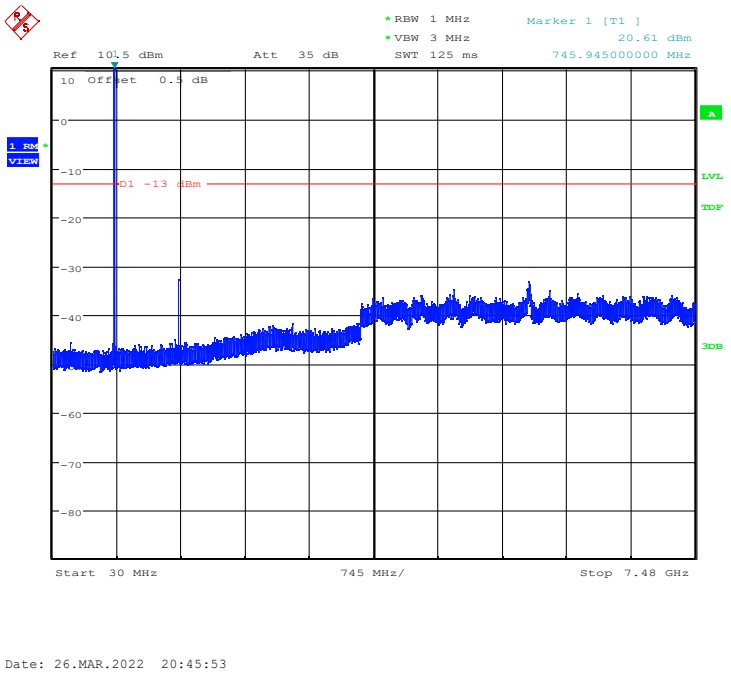
LTE band 5

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



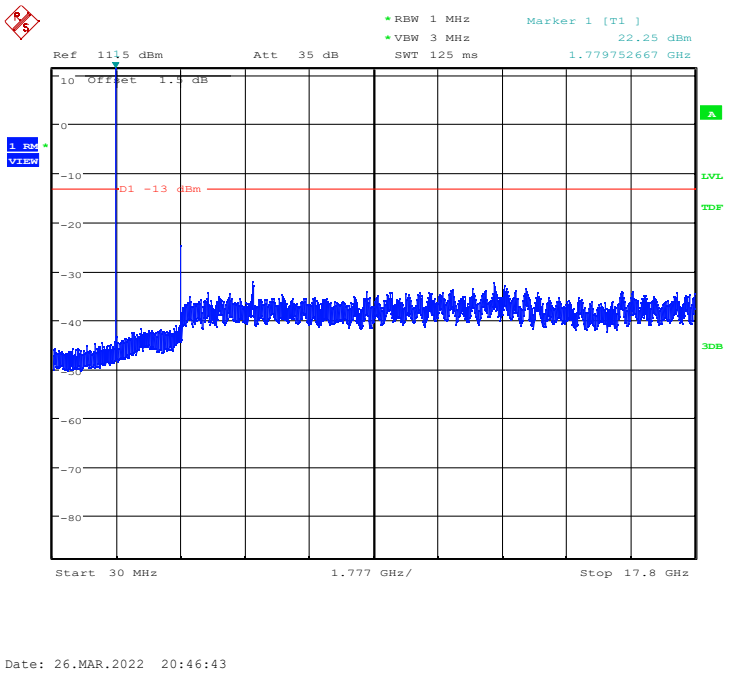
LTE band 28

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



LTE band 66

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



6.6. Radiated Spurious Emission

Specifications:	FCC Part 2.1051, 2.1053, 24.238, 22.917, 27.53
DUT Serial Number:	863427042009036
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to Part 24.238 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(c):

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;

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 Bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10(P) dB.

According to Part 27.53(g):

For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Limits for Radiated spurious emissions(UE)	
Frequency range	**Limit Level /Resolution Bandwidth**
30 MHz to 20000 MHz	-13dBm/1MHz

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty（30MHz-150MHz）	5.15 dB (k=2)
Expanded Uncertainty（150MHz-1GHz）	4.09dB (k=2)
Expanded Uncertainty（1GHz-3GHz）	2.92dB (k=2)
Expanded Uncertainty（3GHz-6GHz）	2.93dB (k=2)
Expanded Uncertainty（3GHz-12.75GHz）	2.69dB (k=2)

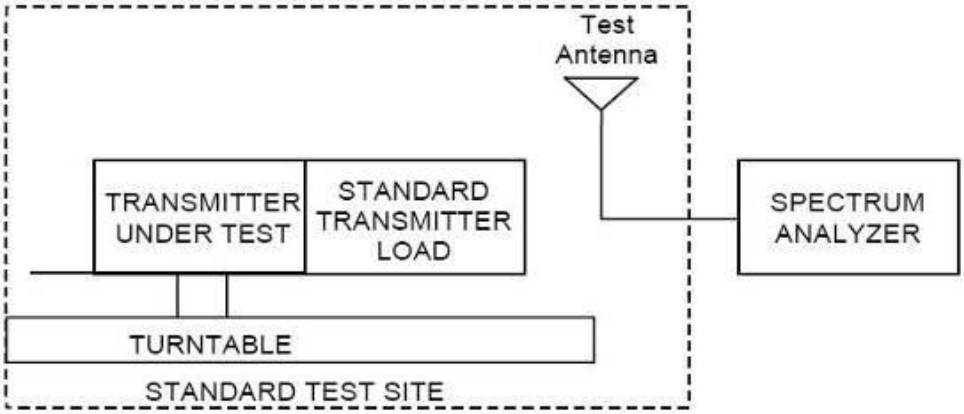
Test Setup:

The EUT was placed in an anechoic chamber. The Wireless Communications Test Set was used to set the TX channel and power level and modulate the TX signal with different bit patterns.

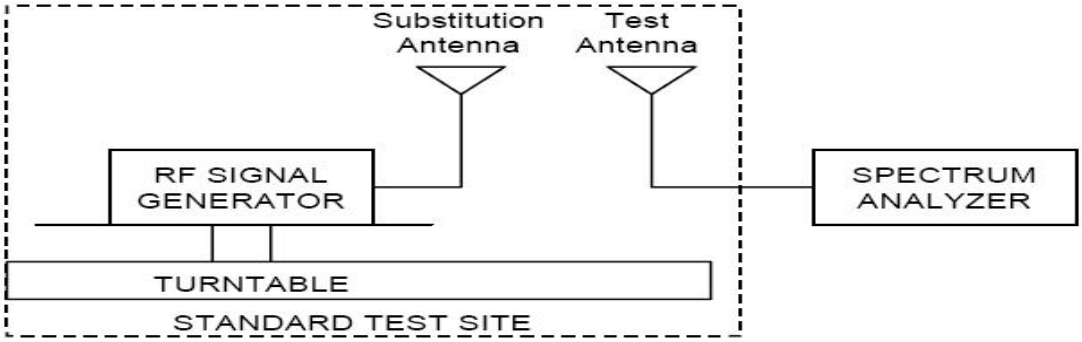
Test Method:

The measurement method is substitution method accordance with section 2.2.12 of ANSI/TIA-603-E: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

(a) Connect the equipment as illustrated and measure the spurious emissions as the method as above. The distance from the device to the antenna is 3 m .



(b) Reconnect the equipment as illustrated.



(c) Remove the transmitter and replace it with a substitution antenna. The center of the substitution antenna should be approximately at the same location as the center of the transmitter.

(d) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

(e) Repeat step d) with both antennas vertically polarized for each spurious frequency.

(f) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps d) and e) by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:

P_d(dBm) = P_g(dBm) – cable loss (dB) + antenna gain (dB)

where:

Pd is the dipole equivalent power and Pg is the generator output power into the substitution antenna.

Note: The evaluation of radiated spurious emission under the simultaneous transmission of WWAN & WLAN.

6.6.1 LTE B2 Radiated Spurious Emission Results

Test Data （10MHz bandwidth 18650 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3710.0	-66.6	6.9	8.9	-64.6	V
5565.0	-65.9	6.8	10.5	-62.2	V
7420.0	-65.6	7.6	11.9	-61.3	V
9275.0	-62.1	8.5	11.5	-59.1	V
11130.0	-62.5	9.2	12.1	-59.6	V
12985.0	-61.8	9.8	12.4	-59.2	V

Test Data （10MHz bandwidth 18900 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3760.0	-67.8	6.9	8.9	-65.8	V
5640.0	-68.1	6.9	10.5	-64.5	V
7520.0	-66.4	7.7	11.9	-62.2	V
9400.0	-64.0	8.7	11.8	-60.9	V
11280.0	-62.2	9.2	12.1	-59.3	V
13160.0	-61.7	9.6	12.4	-58.9	V

Test Data （10MHz bandwidth 19149 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3809.8	-66.7	6.9	9.2	-64.4	V
5714.7	-67.7	6.8	10.5	-64.0	V
7619.6	-65.1	7.6	11.9	-60.8	V
9524.5	-62.8	8.5	11.8	-59.5	V
11429.4	-62.4	9.2	12.2	-59.4	V
13343.3	-61.7	9.8	12.4	-59.1	V

6.6.2 LTE B4 Radiated Spurious Emission Results

Test Data （10MHz bandwidth 20000 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3430.0	-69.3	6.5	8.9	-66.9	V
5145.0	-67.9	6.3	9.9	-64.3	V
6860.0	-67.6	7.2	11.9	-62.9	V
8575.0	-64.7	8.1	11.2	-61.6	V
10290.0	-63.1	9.0	12.0	-60.1	V
12005.0	-61.5	9.1	12.2	-58.4	V

Test Data （10MHz bandwidth 20175 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3465.0	-68.9	6.6	8.9	-66.6	V
5197.5	-67.5	6.5	9.9	-64.1	V
6930.0	-66.9	7.4	11.9	-62.4	V
8662.5	-63.3	8.2	11.2	-60.3	V
10395.0	-63.9	9.3	12.2	-61.0	V
12127.5	-61.7	9.2	12.2	-58.7	V

Test Data （10MHz bandwidth 20349 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3499.8	-68.8	6.9	8.9	-66.8	V
5249.7	-67.4	6.8	9.9	-64.3	V
6999.6	-66.6	7.6	11.9	-62.3	V
8749.5	-63.0	8.4	11.2	-60.2	V
10499.4	-62.2	9.6	12.2	-59.6	V
12249.3	-61.1	9.8	12.2	-58.7	V

6.6.3 LTE B5 Radiated Spurious Emission Results

Test Data （10MHz bandwidth 20450 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
1658.0	-43.6	4.8	7.6	-40.8	H
2487.0	-50.8	5.9	6.6	-50.1	V
3316.0	-61.8	6.8	8.9	-59.7	V
4145.0	-60.1	7.6	9.2	-58.5	V
4974.0	-62.4	7.5	9.9	-60.0	V
5803.0	-63.0	1.4	10.9	-53.5	V

Test Data （10MHz bandwidth 20525 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
1673.0	-45.1	4.7	7.3	-42.5	H
2509.5	-61.8	5.9	6.7	-61.0	V
3346.0	-61.9	6.8	8.9	-59.8	V
4182.5	-60.7	7.8	9.2	-59.3	V
5019.0	-64.2	7.5	9.9	-61.8	V
5855.5	-62.5	1.1	10.5	-53.1	V

Test Data （10MHz bandwidth 20599 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
1687.8	-45.8	4.8	8.1	-42.5	H
2531.7	-55.5	5.9	6.9	-54.5	V
3375.6	-60.8	6.8	8.9	-58.7	V
4219.5	-62.3	7.8	9.2	-60.9	V
5063.4	-63.0	7.1	9.9	-60.2	V
5907.3	-65.1	1.4	10.9	-55.6	V

6.6.4 LTE B28 Radiated Spurious Emission Results

Test Data （3MHz bandwidth 27210 16QAM Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
1409.0	-50.8	4.4	7.8	-47.4	H
2113.5	-50.9	5.4	8.1	-48.2	H
2818.0	-54.2	6.3	7.5	-53.0	H
3522.5	-60.1	7.0	8.9	-58.2	V
4227.0	-63.8	7.8	9.5	-62.1	V
4931.5	-61.6	7.7	9.9	-59.4	V

Test Data （3MHz bandwidth 27435 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1451.0	-51.9	4.4	8.4	-47.9	H
2175.5	-53.9	5.4	6.6	-52.7	H
2902.0	-51.4	6.4	7.6	-50.2	H
3627.5	-62.8	7.2	8.9	-61.1	V
4353.0	-63.1	7.8	9.5	-61.4	V
5078.5	-63.5	6.8	9.9	-60.4	V

Test Data （3MHz bandwidth 27644 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1492.8	-51.1	4.5	9.1	-46.5	H
2239.2	-52.7	5.6	6.6	-51.7	H
2985.6	-53.5	6.5	6	-54.0	H
3732.0	-60.8	7.3	8.9	-59.2	V
4478.4	-62.4	8	9.5	-60.9	V
5224.8	-61.9	5	9.9	-57.0	V

6.6.5 LTE B66 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 131997 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3425.0	-69.7	6.4	8.9	-67.2	V
5137.5	-66.6	6.3	9.8	-63.1	V
6850.0	-65.2	7.1	11.4	-60.9	V
8562.5	-63.6	8.1	12.2	-59.5	V
10275.0	-65.5	9.0	13.2	-61.3	V
11987.5	-62.7	9.0	14.0	-57.7	V

Test Data （5MHz bandwidth 132322 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3490.0	-68.4	6.9	8.9	-66.4	V
5235.0	-66.2	6.8	9.8	-63.2	V
6980.0	-64.9	7.6	11.4	-61.1	V
8725.0	-63.6	8.2	12.2	-59.6	V
10470.0	-64.8	9.6	13.2	-61.2	V
12215.0	-62.5	9.7	14.0	-58.2	V

Test Data （5MHz bandwidth 132646 QPSK Mode）

Frequency [MHz]	Generator output power(Pg)[dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd)[dBm]	Antenna Polarization [H/V]
3554.8	-67.9	7.3	8.9	-66.3	V
5332.2	-65.5	6.9	9.8	-62.6	V
7109.6	-64.8	7.6	11.4	-61.0	V
8887.0	-63.0	8.6	12.2	-59.4	V
10664.4	-64.3	9.9	13.2	-61.0	V
12441.8	-62.3	9.8	14.0	-58.1	V

6.7. Band Edge

Specifications:	FCC Part 2.1051, 24.238, 2.1053, 22.917, 27.53
DUT Serial Number:	863427042013020
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to Part 24.238 (a), i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 Bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10(P) dB.

According to Part 27.53(g):

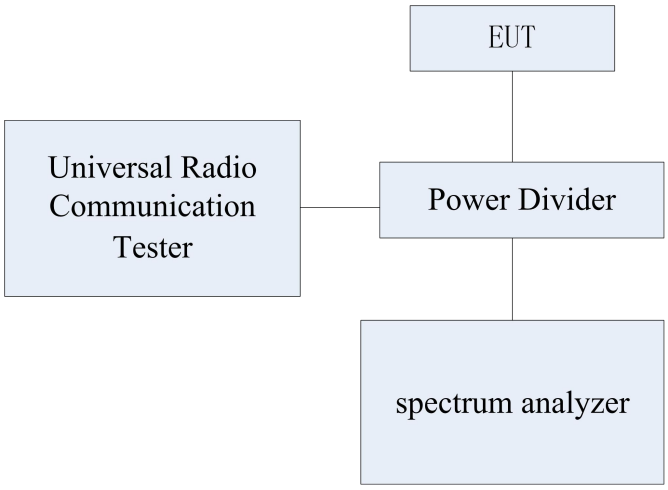
For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

Measurement Uncertainty:

Item	Uncertainty	
Expanded Uncertainty	9kHz < f≤4GHz	0.71 dB (k=2)
	4GHz≤f < 12.75GHz	0.74 dB (k=2)
	12.75GHz≤f < 26GHz	2.70 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

1) The EUT was coupled to the EMI test receiver analyzer mode and the base station simulator through a power divider. The lost of the cables the test system is calibrated to correct the readings.

2) The spectrum analyzer was set to Average Detector function and Maximum hold mode.

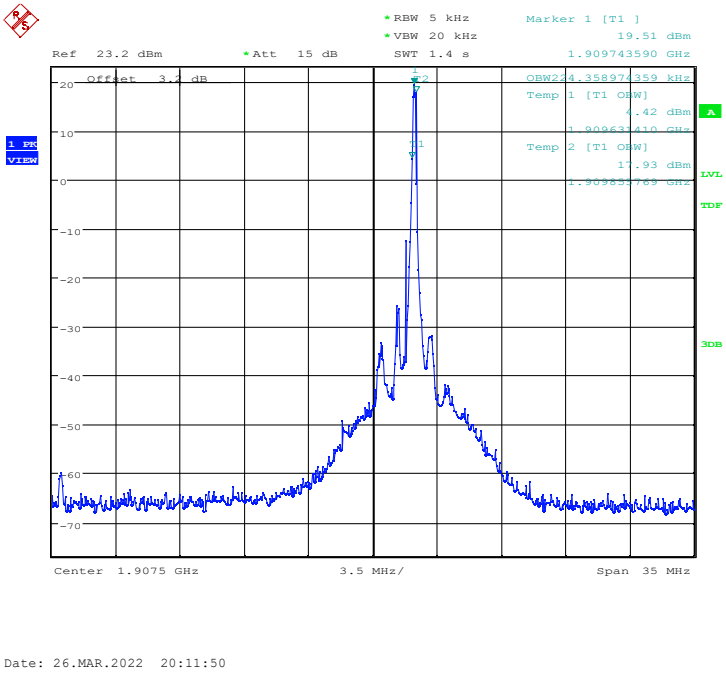
3) The resolution Bandwidth of the spectrum analyzer was a little greater than 1% of the 26dB emission Bandwidth.

Note: In the graphical result description (X, Y), X represents the number of RB, Y represents the RB offset.

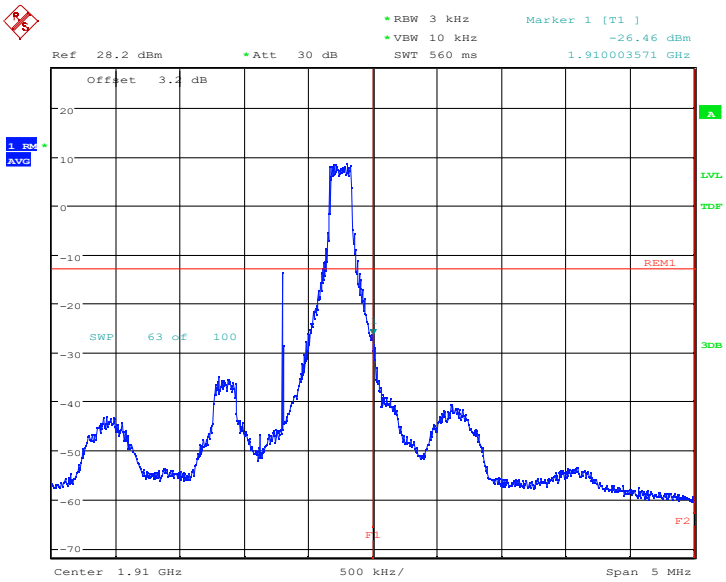
6.7.1 Band Edge Results

LTE band 2

OBW: 1RB-HIGH_offset

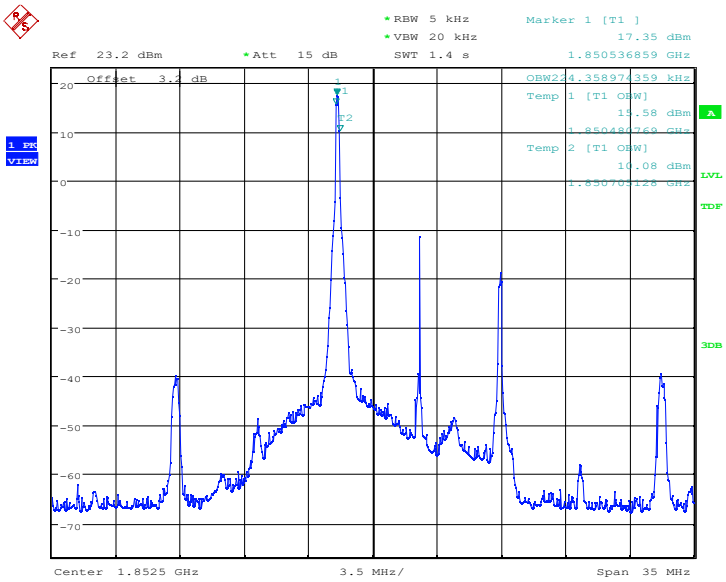


HIGH BAND EDGE BLOCK-1RB-1.4M_offset



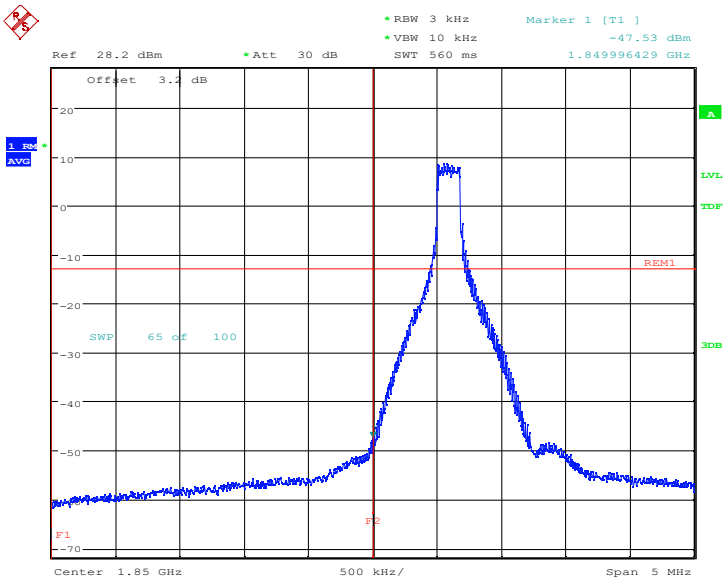
Date: 26.MAR.2022 20:13:30

OBW: 1RB-LOW_offset



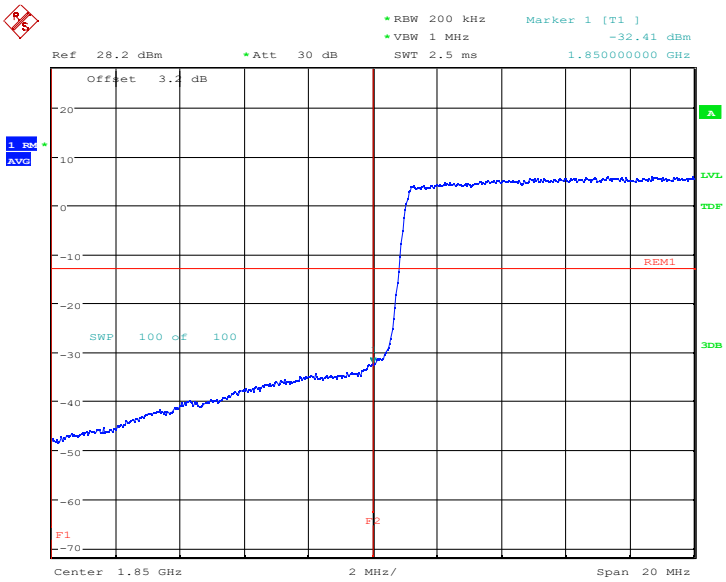
Date: 26.MAR.2022 20:09:41

LOW BAND EDGE BLOCK-1RB-10M_offset



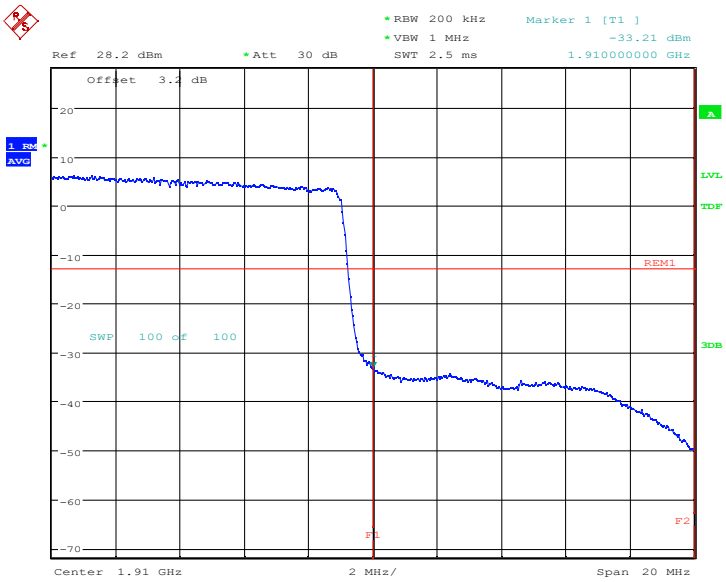
Date: 26.MAR.2022 20:11:17

LOW BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:15:02

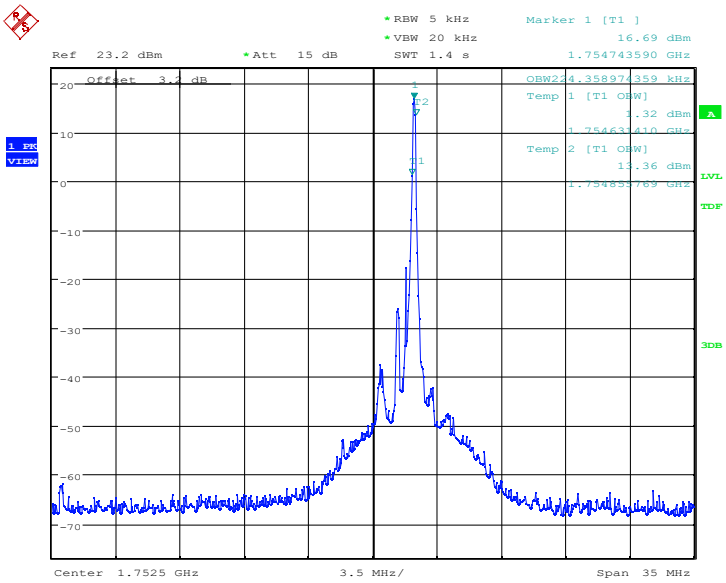
HIGH BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:15:51

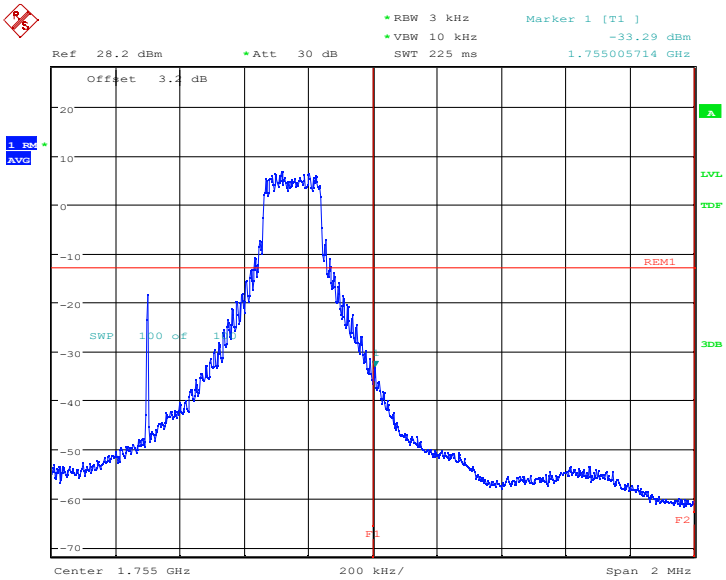
LTE band 4

OBW: 1RB-HIGH_offset



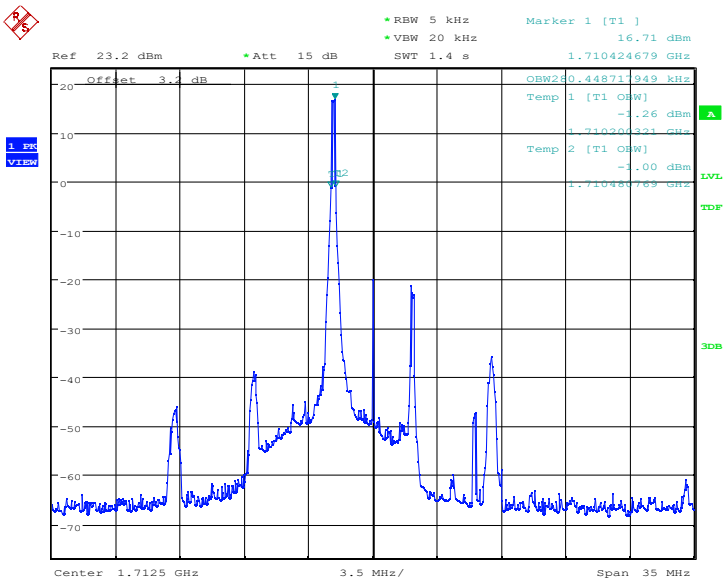
Date: 26.MAR.2022 20:18:03

HIGH BAND EDGE BLOCK-1RB-1.4M_offset



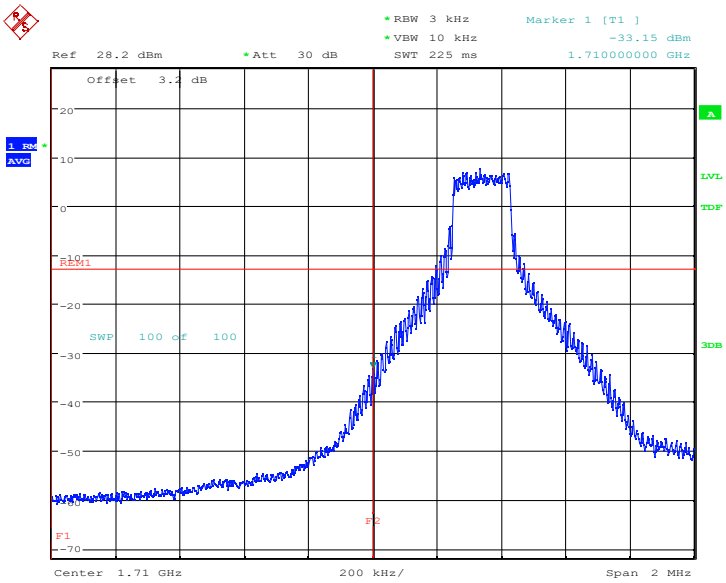
Date: 26.MAR.2022 20:19:05

OBW: 1RB-LOW_offset



Date: 26.MAR.2022 20:16:23

LOW BAND EDGE BLOCK-1RB-5M_offset



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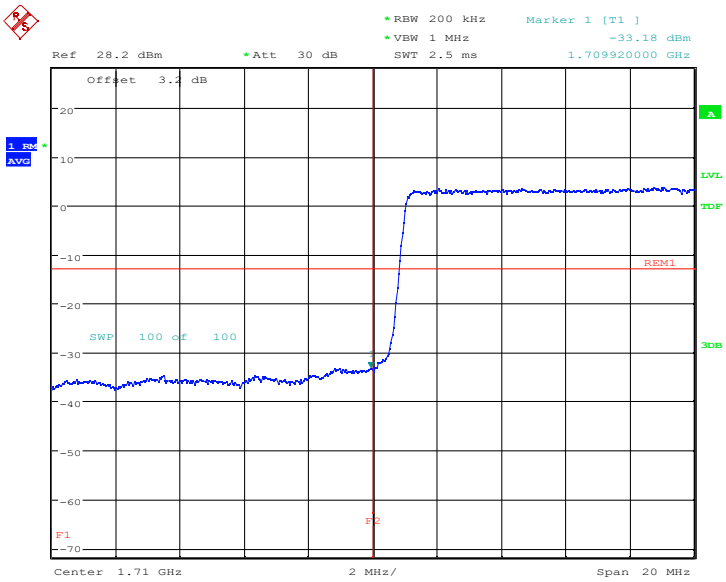
LOW BAND EDGE BLOCK-1RB-20M_offset



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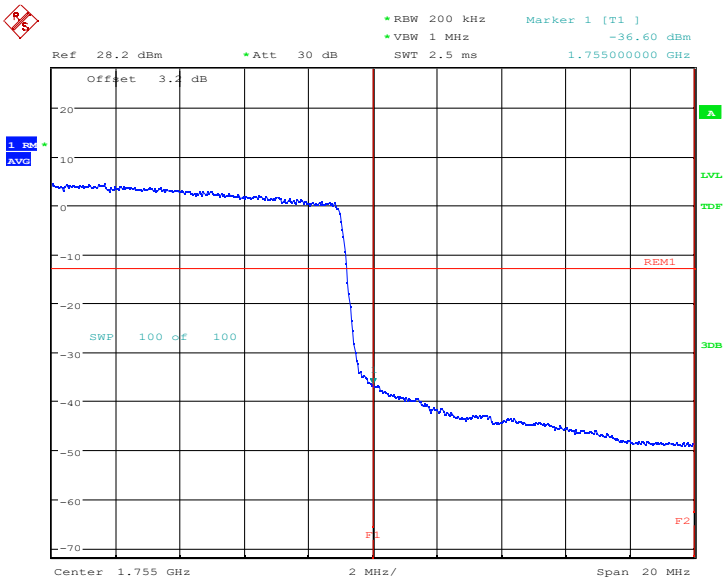
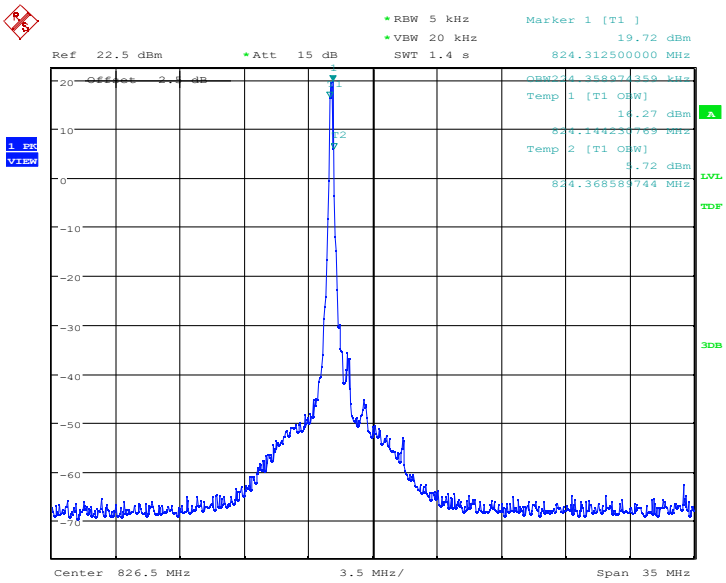
HIGH BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:21:25

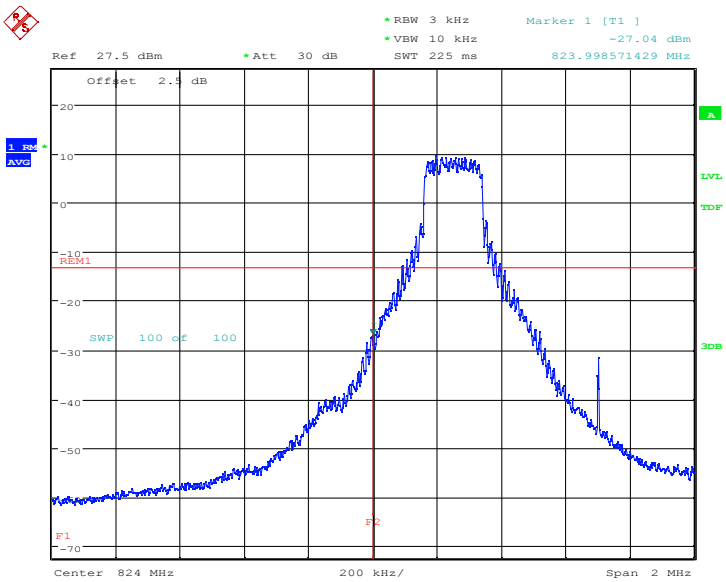
LTE band 5

OBW: 1RB-LOW_offset



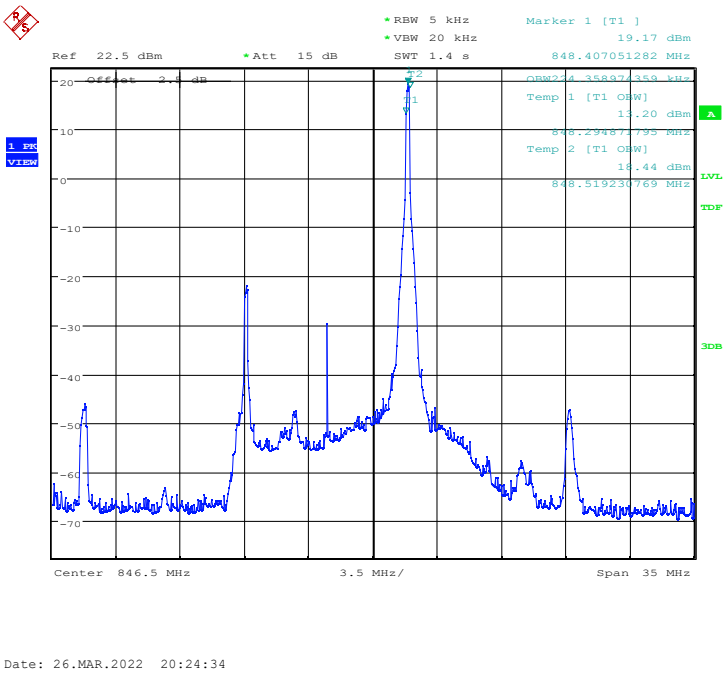
Date: 26.MAR.2022 20:22:34

LOW BAND EDGE BLOCK-1RB-1.4M_offset

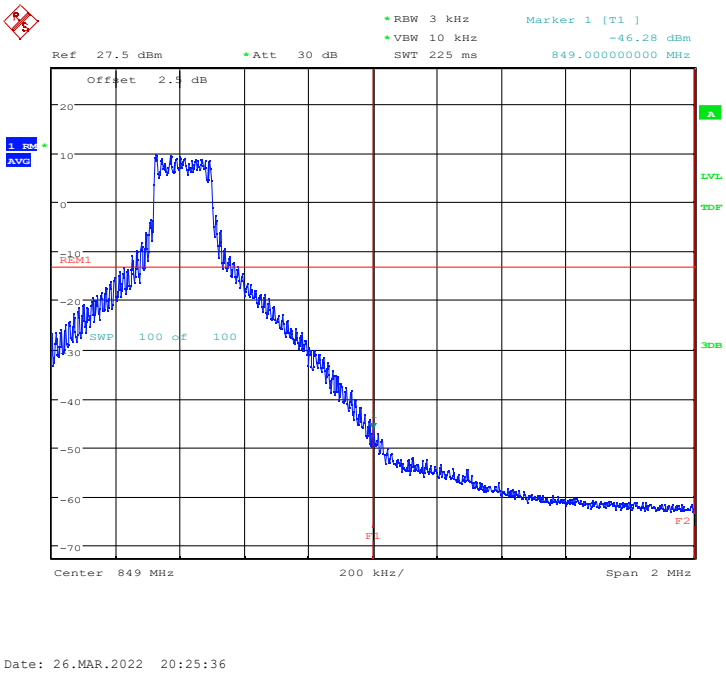


Date: 26.MAR.2022 20:23:36

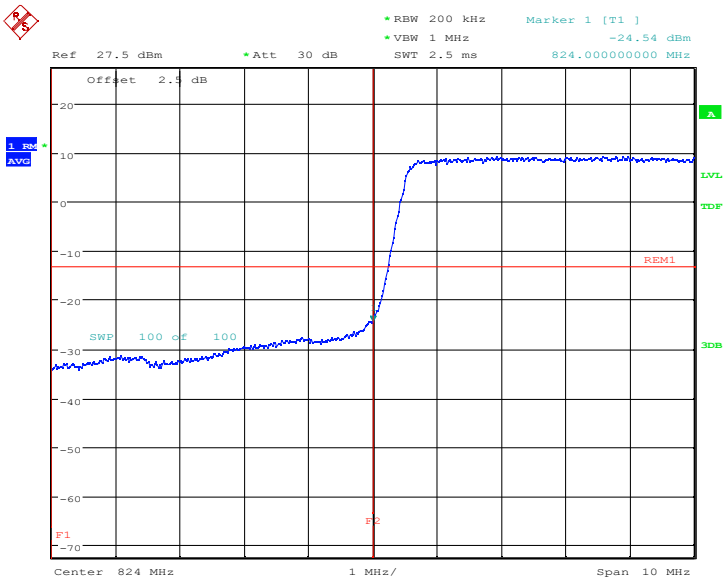
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-10M_offset

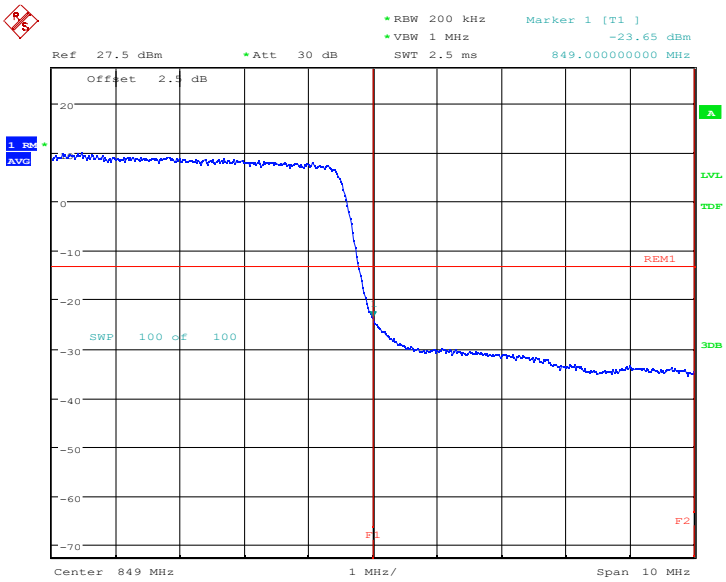


LOW BAND EDGE BLOCK-1RB-10M_offset



Date: 26.MAR.2022 20:26:24

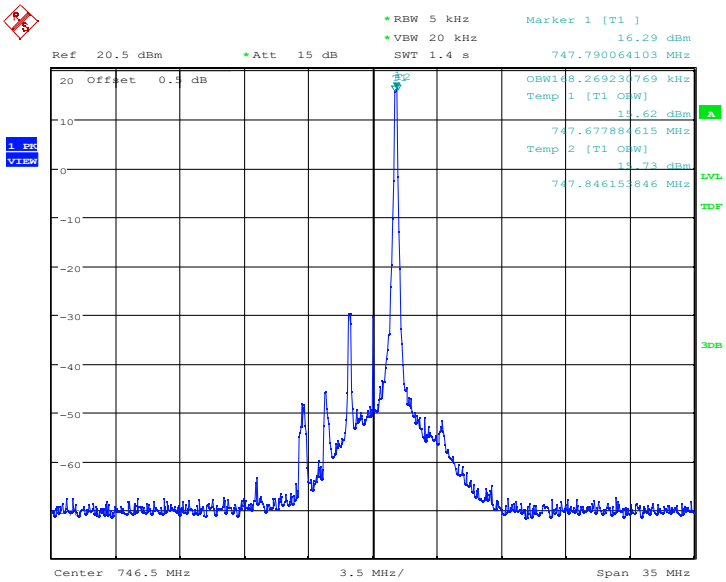
HIGH BAND EDGE BLOCK-1RB-10M_offset



Date: 26.MAR.2022 20:27:12

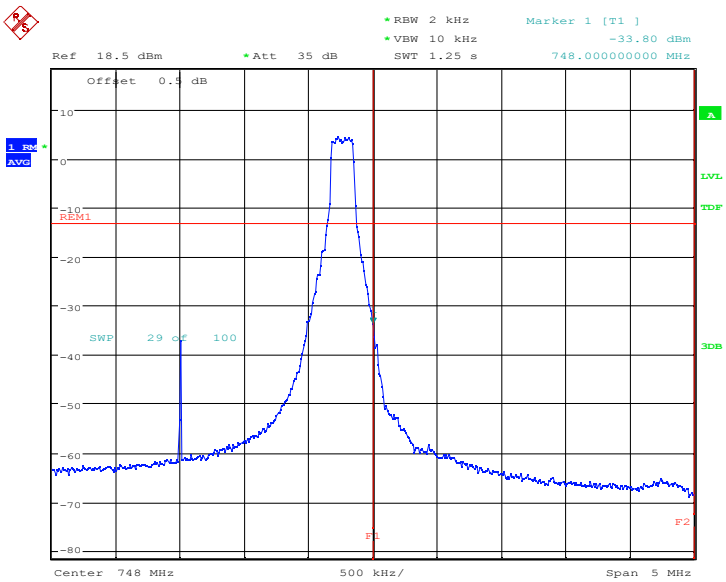
LTE band 28

OBW: 1RB-HIGH_offset



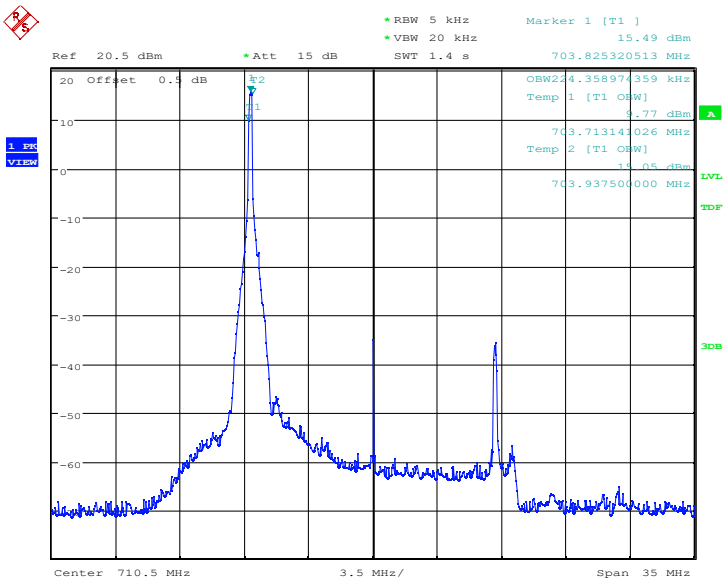
Date: 26.MAR.2022 20:29:57

HIGH BAND EDGE BLOCK-1RB-3M_offset



Date: 26.MAR.2022 20:32:46

OBW: 1RB-LOW_offset



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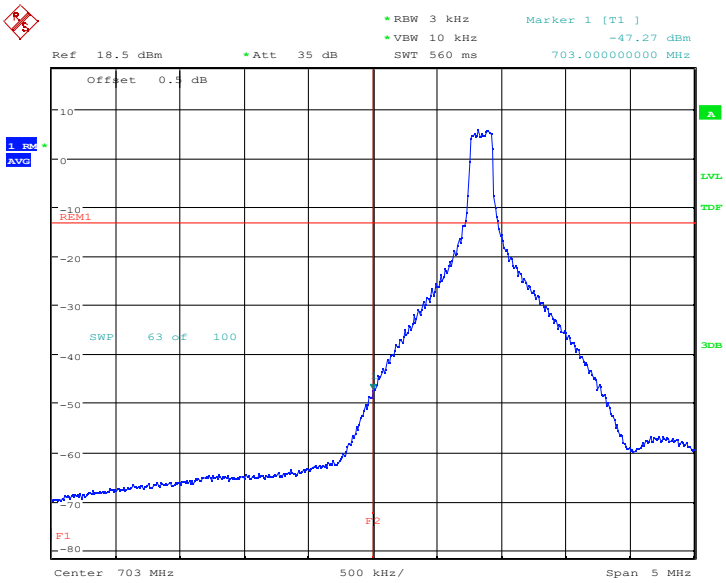
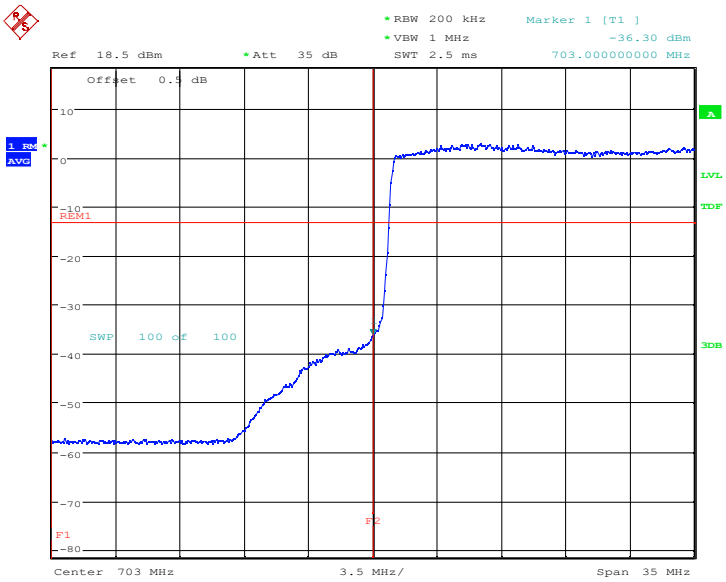
LOW BAND EDGE BLOCK-1RB-15M_offset



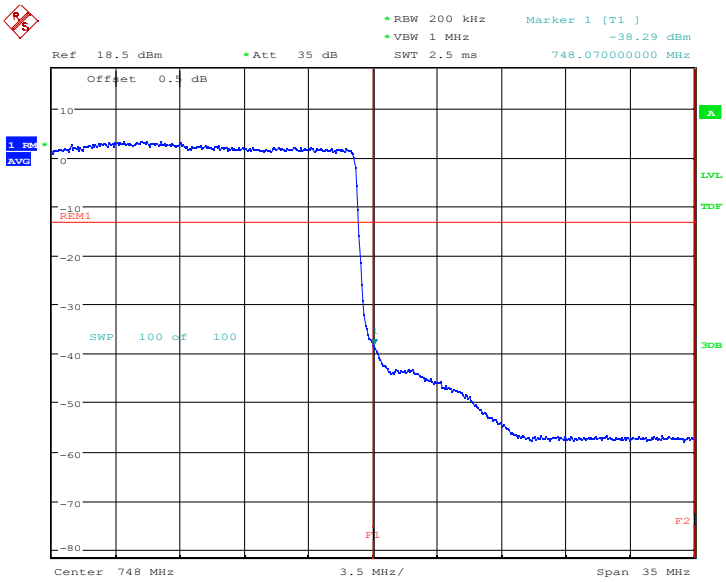
Date: 26.MAR.2022 20:29:26

LOW BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:34:19

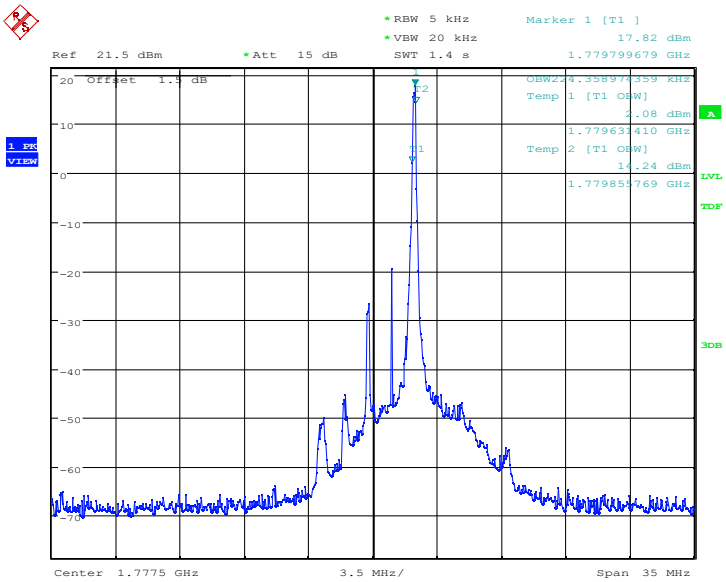
HIGH BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:35:12

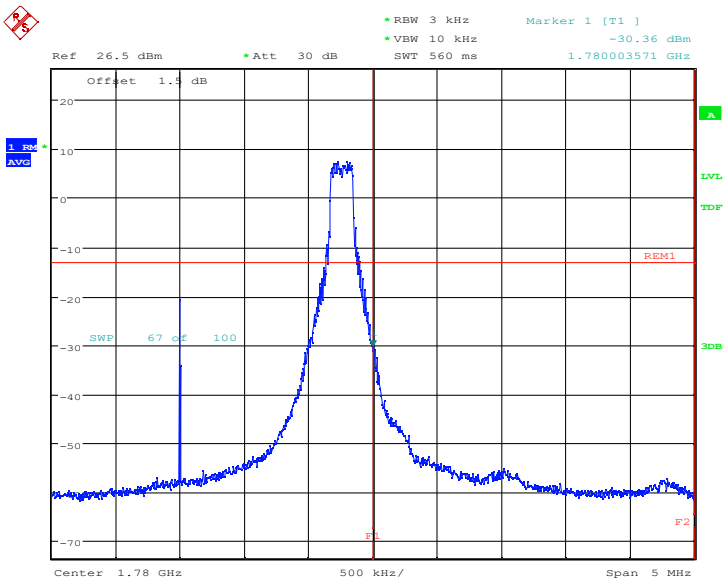
LTE band 66

OBW: 1RB-HIGH_offset



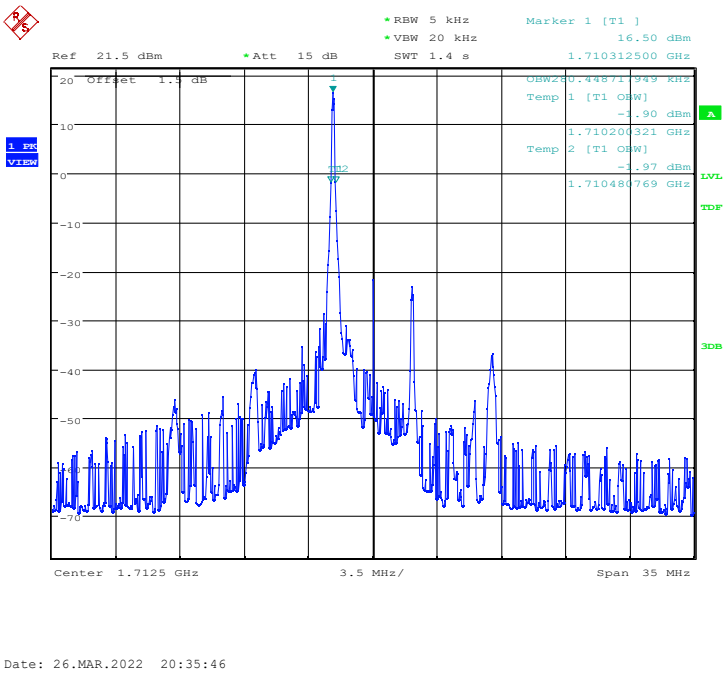
Date: 26.MAR.2022 20:37:58

HIGH BAND EDGE BLOCK-1RB-3M_offset

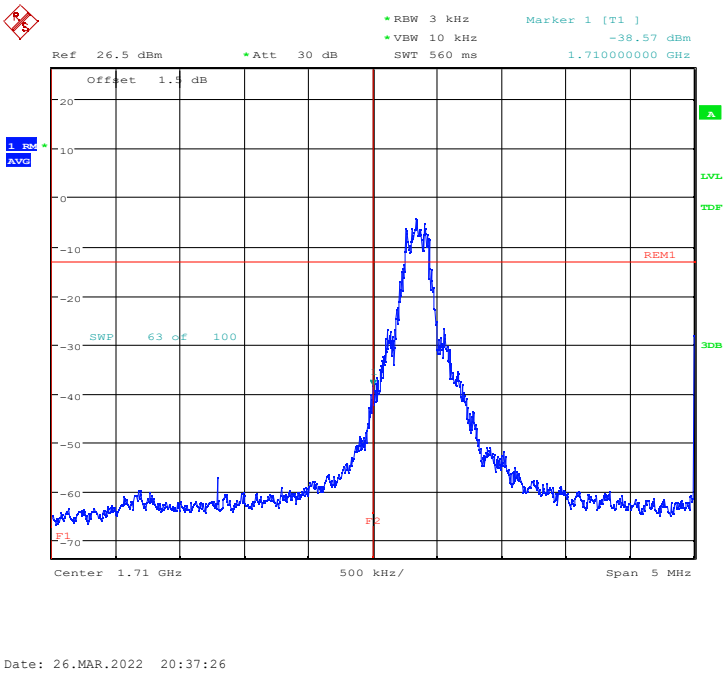


Date: 26.MAR.2022 20:39:37

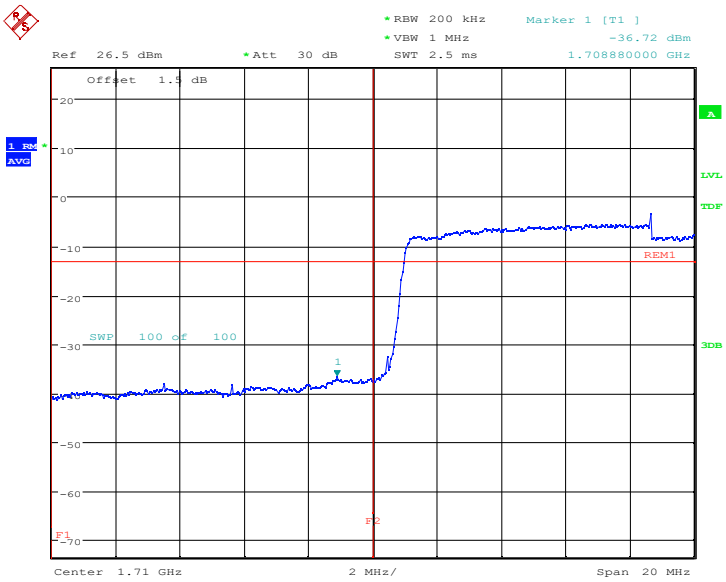
OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-5M_offset

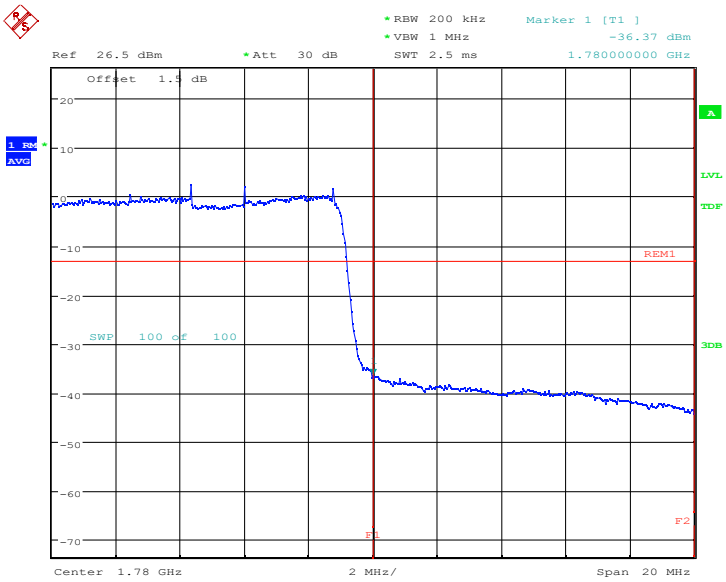


LOW BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:41:04

HIGH BAND EDGE BLOCK-1RB-20M_offset



Date: 26.MAR.2022 20:41:59

6.8. Frequency Stability

Specifications:	FCC Part 2.1055, 22.355, 24.235, 27.54
DUT Serial Number:	863427042013020
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit	
Frequency deviation [ppm]	±2.5

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	1.54 Hz (k=2)

Test Method

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

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

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

6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the center channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °Cincrements from +50°C to -30°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

6.8.1 Frequency Stability over Temperature Variation Results

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.8	1850.770	1909.240		
50				-3.99	0.0021
40				-3.45	0.0018
30				-3.61	0.0019
10				-3.20	0.0017
0				-3.09	0.0016
-10				-3.86	0.0021
-20				-3.48	0.0018
-30				-4.05	0.0022

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.3	20	1850.770	1909.240	-2.65	0.0014
4.2				-3.91	0.0021

LTE band 4, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.8	1710.790	1754.210		
50				0.53	0.0003
40				0.63	0.0004
30				0.50	0.0003
10				0.62	0.0004
0				0.39	0.0002
-10				0.17	0.0001
-20				-0.22	0.0001
-30				0.24	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.3	20	1710.790	1754.210	-0.20	0.0001
4.2				0.57	0.0003

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

Frequency Error vs Temperature

Temperature(°C)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.8	824.400	848.600		
50				-1.14	0.0014
40				-0.27	0.0003
30				-0.66	0.0008
10				-0.59	0.0007
0				-0.97	0.0012
-10				-0.90	0.0011
-20				-0.42	0.0005
-30				-0.73	0.0009

Frequency Error vs Voltage

Voltage(V)	Temperature(°C)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.3	20	824.400	848.600	-0.33	0.0004
4.2				-0.27	0.0003

LTE band 28, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.8	703.810	747.240		
50				-0.17	0.0002
40				-0.11	0.0002
30				-0.32	0.0004
10				-0.22	0.0003
0				0.14	0.0002
-10				-0.13	0.0002
-20				-0.33	0.0005
-30				-0.19	0.0003

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.3	20	703.810	747.240	-0.11	0.0002
4.2				0.14	0.0002

LTE band 66, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.8	1710.770	1779.240		
50				-1.30	0.0007
40				-1.87	0.0011
30				-2.07	0.0012
10				-1.32	0.0008
0				-1.92	0.0011
-10				-2.15	0.0012
-20				-1.30	0.0007
-30				-1.53	0.0009

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.3	20	1710.770	1779.240	-1.89	0.0011
4.2				-2.15	0.0012

6.9. Peak to Average Ratio

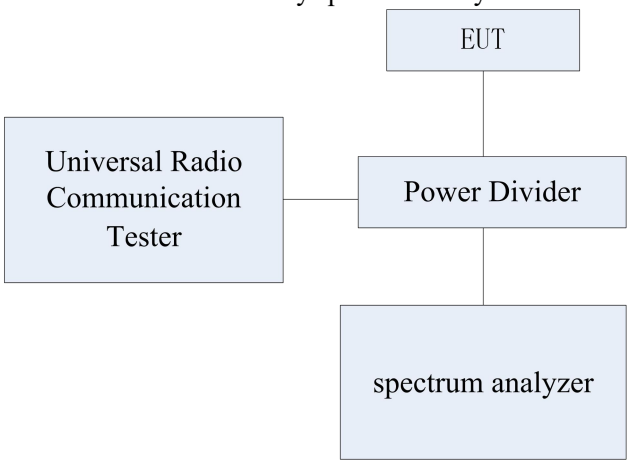
Specifications:	FCC Part 24.232, 27.50,
DUT Serial Number:	863427042013020
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit

The EUT meets the requirement of having a peak to average ratio of less than 13dB.

Test Setup

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	0.62 dB (k=2)

Test Method

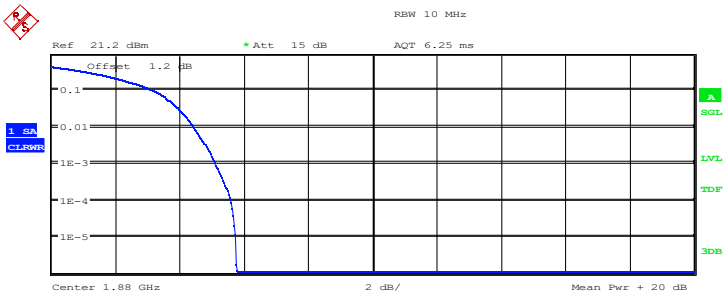
The transmitter output was connected to a CMW500 through a coaxial RF cable and directional coupler, and configured to operate at maximum power. The peak to average ratio was measured at the required operating frequencies in each Band on the Spectrum Analyzer.

6.9.1 Peak to Average Ratio Results

LTE Band 2, 20MHz

Frequency (MHz)	RB	PAPR (dB)	
		QPSK	16QAM
1880	100%,0	5.10	6.47

LTE band 2 , 20MHz Bandwidth,QPSK



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.45 dBm
Peak	26.22 dBm
Crest	5.77 dB
10 %	3.14 dB
1 %	4.42 dB
.1 %	5.10 dB
.01 %	5.58 dB

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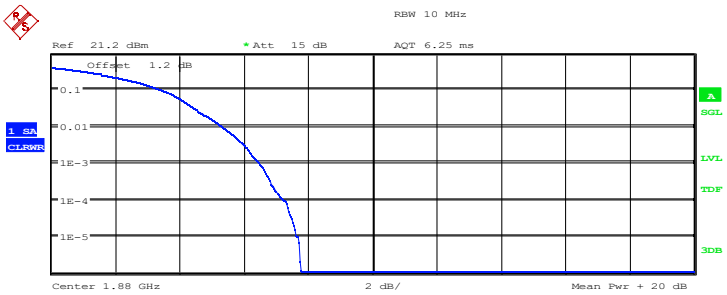
LTE band 2 , 20MHz Bandwidth,16QAM



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

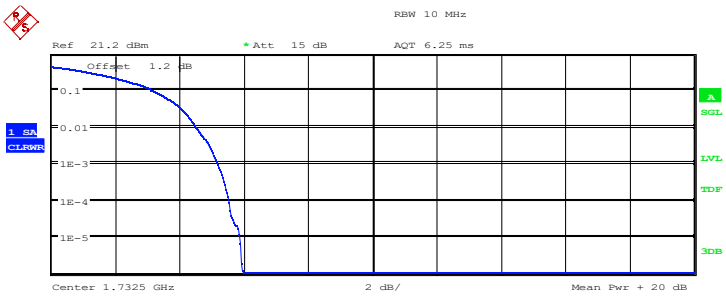
	Trace 1
Mean	19.66 dBm
Peak	27.41 dBm
Crest	7.76 dB
10 %	3.46 dB
1 %	5.32 dB
.1 %	6.47 dB
.01 %	7.28 dB

Date: 25.MAR.2022 05:02:04

LTE Band 4, 20MHz

Frequency (MHz)	RB	PAPR (dB)	
		QPSK	16QAM
1732.5	100%,0	5.19	6.51

LTE band 4 , 20MHz Bandwidth,QPSK



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	18.27 dBm
Peak	24.20 dBm
Crest	5.93 dB
10 %	3.17 dB
1 %	4.52 dB
.1 %	5.19 dB
.01 %	5.51 dB

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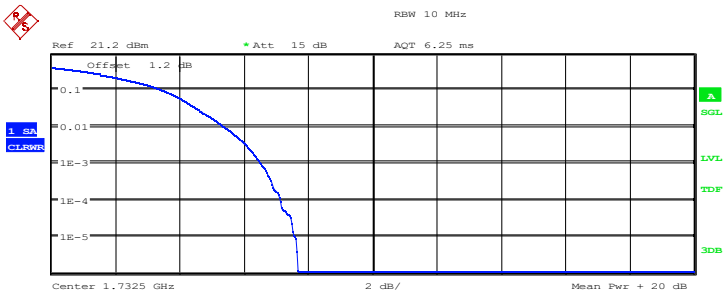
LTE band 4 , 20MHz Bandwidth,16QAM



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

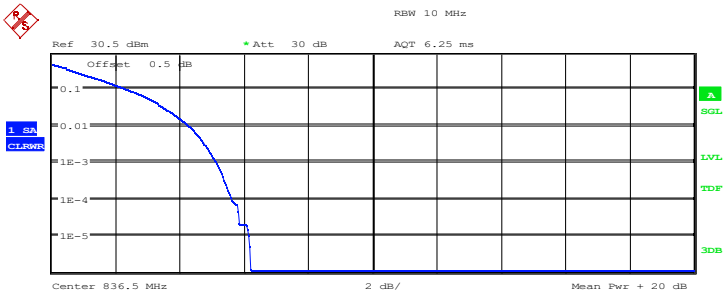
	Trace 1
Mean	17.30 dBm
Peak	24.98 dBm
Crest	7.67 dB
10 %	3.46 dB
1 %	5.35 dB
.1 %	6.51 dB
.01 %	7.12 dB

Date: 25.MAR.2022 05:02:58

LTE Band 5, 10MHz

Frequency (MHz)	RB	PAPR (dB)	
		QPSK	16QAM
836.5	100%,0	5.13	5.93

LTE band 5 , 10MHz Bandwidth,QPSK



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	22.50 dBm
Peak	28.71 dBm
Crest	6.21 dB
10 %	2.34 dB
1 %	4.26 dB
.1 %	5.13 dB
.01 %	5.61 dB

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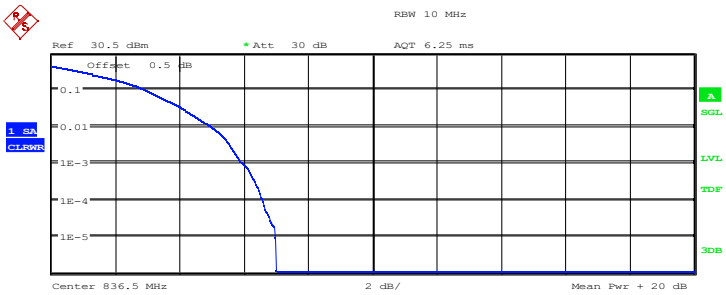
LTE band 5 , 10MHz Bandwidth,16QAM



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

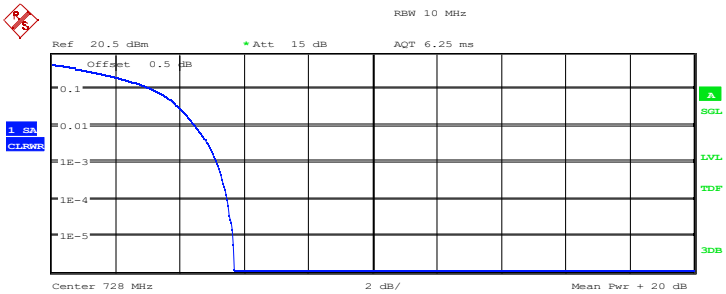
	Trace 1
Mean	21.49 dBm
Peak	28.50 dBm
Crest	7.01 dB
10 %	2.92 dB
1 %	4.97 dB
.1 %	5.93 dB
.01 %	6.57 dB

Date: 27.MAR.2022 22:57:13

LTE Band 28, 20MHz

Frequency (MHz)	RB	PAPR (dB)	
		QPSK	16QAM
728	100%,0	5.13	6.35

LTE band 28 , 20MHz Bandwidth,QPSK



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	19.02 dBm
Peak	24.70 dBm
Crest	5.68 dB
10 %	3.14 dB
1 %	4.46 dB
.1 %	5.13 dB
.01 %	5.48 dB

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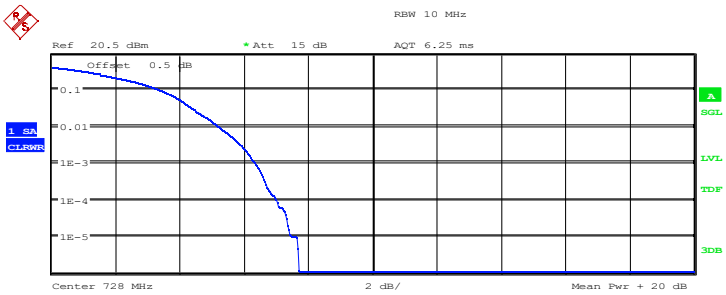
LTE band 28 , 20MHz Bandwidth,16QAM



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

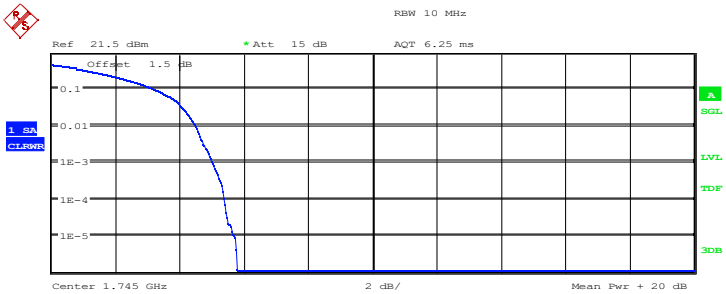
	Trace 1
Mean	18.12 dBm
Peak	25.83 dBm
Crest	7.71 dB
10 %	3.40 dB
1 %	5.19 dB
.1 %	6.35 dB
.01 %	7.02 dB

Date: 25.MAR.2022 05:06:02

LTE Band 66, 20MHz

Frequency (MHz)	RB	PAPR (dB)	
		QPSK	16QAM
1745	100%,0	5.00	6.25

LTE band 66 , 20MHz Bandwidth,QPSK



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.89 dBm
Peak	26.68 dBm
Crest	5.79 dB
10 %	3.21 dB
1 %	4.49 dB
.1 %	5.00 dB
.01 %	5.38 dB

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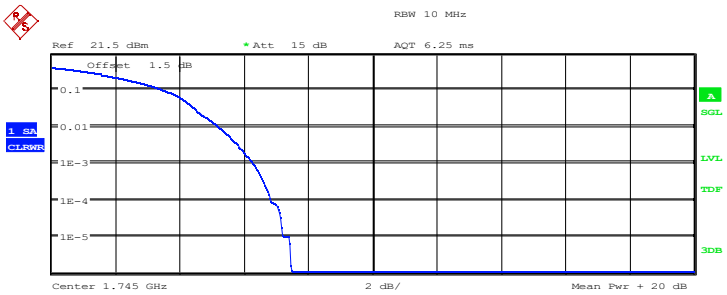
LTE band 66 , 20MHz Bandwidth,16QAM



Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	19.99 dBm
Peak	27.45 dBm
Crest	7.47 dB
10 %	3.49 dB
1 %	5.19 dB
.1 %	6.25 dB
.01 %	6.83 dB

Date: 25.MAR.2022 05:07:13

Annex A EUT Photos

See the document" I22W00025-External Photos".
See the document" I22W00025-Internal Photos ".

ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

*****END OF REPORT*****